

CRIMPING BOOKLET

MAY 2023

CONTENTS

UPDATES FROM MARCH 2020 EDITION	4
HOW TO SELECT AN APPROPRIATE CRIMPING SOLUTION	7
HYDRAULIC STYLE HOSE ASSEMBLY INSTRUCTIONS	11
INDUSTRIAL HOSE ASSEMBLY INSTRUCTIONS	31

GLOBAL STANDARD HOSES

TRACTOR/1SN	35
TRACTOR/2SN	37
LYTE-FLEX	39
HARVESTER/17	41
COVER	43
SPIRTEX	44
SPIRTEX/G	45
MULTITEX	46
ASTRO/2	47
ASTRO/3	48

HI-GRADE ISOBARIC HOSES

GOLDENISO/14 PILOT	51
GOLDENISO/21 ANTIWEAR	52
GOLDENISO/28 ANTIWEAR	54
GOLDENISO/21 XTRAFLEX	56
GOLDENISO/28 XTRAFLEX	58
GOLDENISO/35 XTRAFLEX	60
GOLDENISO/42 XTRAFLEX	62
GOLDENISO/38 LONGLIFE	64
GOLDENISO/45 LONGLIFE	65
SHIELDMASTER/14	66
SHIELDMASTER/21	67
SHIELDMASTER/28	69
SHIELDMASTER/35	71
SHIELDMASTER/42	73
DIAMONDSPIR/14	75
DIAMONDSPIR/17	76
DIAMONDSPIR/21	77
DIAMONDSPIR/35	78
MASTERTEX	79

HI-GRADE TRADITIONAL HOSES

ROCKMASTER/1SC	83
ROCKMASTER/2SC	84
ROCKMASTER/1SN	87
ROCKMASTER/2SN	89
ROCKMASTER/2ST	91
ROCKMASTER/2 PLUS SUPER AW	92
ROCKMASTER/4SH	93
ROCKMASTER/4SP	95
ROCKMASTER/12	97
ROCKMASTER/13	99
ROCKMASTER/15	100
EQUATOR/1 (BLACK)	101
EQUATOR/1 (BLUE)	102
EQUATOR/2 (BLACK)	103
EQUATOR/2 (BLUE)	104

INFINITY	105
DIAMONDSPIR	107
SYNERGY	108
XTRAFLOW/2WB	109
XTRAFLOW/4WS	110
XTRAFLOW/HT	111
XTRAFLOW/HTEX	112
SPIRTEX/HT	113
SPIRTEX/HTG	114
PUSHFIT	115

PREMIUM HOSES

GAIA/28	119
GAIA/35	120
GAIA/42	121
FOREMASTER/7	122
FOREMASTER/10	123
FOREMASTER/14	124
FOREMASTER/21	125
FOREMASTER/28	127
FOREMASTER/35	129
FOREMASTER/42	131
CRYOFLEX/21	133
CRYOFLEX/35	135
CRYOFLEX/42	137
ANACONDA	138
HERCULES/HT	139
HYDROROPE	140
DIAMONDSPIR/62	141
SAFEMASTER/2SC	142
SAFEMASTER/2SN	144
SAFEMASTER/2TE	146
T°REX	147
TWINPOWER/4000	148
TWINPOWER/5000	149
TWINPOWER/PLUS	150
FIREND	151
LUBEMASTER	152
JACKMASTER/70	153
GOLDENMINE	154

REFRIGERATION HOSES

REFRIMASTER PLUS	157
REFRIFAST	158
ULTRASTAR	159

WATER CLEANING & BLASTING HOSES

K-JET (BLACK)	163
K-JET (BLUE)	164
SUPERJET (BLACK)	165
SUPERJET (BLUE)	166
SUPERJET/PLUS (BLACK)	167
SUPERJET/PLUS (BLUE)	168
PROJET (BLACK)	169
PROJET (BLUE)	170
GOLDENBLAST	171
GOLDENBLAST/PLUS	172
GOLDENBLAST/SIX	173

INDUSTRIAL HOSES

WATER, AIR & STEAM HOSES

MULTISERVICE/12 D	177
MULTISERVICE/12 SD	178
MULTISERVICE/21 D	179
MULTISERVICE/21 SD	180
GLACIER/60	181
GLACIER/100	182
AIRSERVICE	183
AIRSERVICE/27	184
AIRKING/40	185
COOLER/5	186
COOLSERVICE/G	187

ANTI-STATIC FUEL HOSES

FUELSERVICE/5 SDC	188
FUELSERVICE/10 D	189
FUELSERVICE/10 SD	190
FUELSERVICE/16 D	191
FUELSERVICE/16 SD	192
FUELSERVICE/20 D EN1825-B	193
FUELSERVICE/20 D EN1825-C	194
FUELSERVICE/20 D EN1825-E	195
FUELSERVICE/21 D	196
FUELSERVICE/21 SD	197
FUELDISPENSER/D	198
FUELDISPENSER/SD	199
FUELTRUCK/16 D	200
FUELTRUCK/16 SD	201
FUELFLEX/17 SDC	202
PROGAS LPG D	203
PROGAS LPG SD	204

CHEMICAL HOSES

CHEMKING/10 D	205
CHEMKING/10 SD	206
CHEMKING/16 SDE	207
CHEMKING/16 SDA	208
CHEMKING/16 SD	209

FOOD & BEVERAGE HOSES

BREWERS/12 SD	210
BREWERS/12 SDC	211
MILKYWAY/10 SD	212
MULTIFOOD/10 SD	213
ABRAFOOD/10	214

ABRASIVE FLUID HOSES

SANDSERVICE/21 D	215
ABRASERVICE/10 D	216
ABRASERVICE/10 SD	217
ABRASERVICE/40 D	218
ABRASERVICE/100 D	219

Updates from March 2020 Edition

NEW PRODUCTS or FITTING SOLUTIONS INTRODUCED

Hose type	Remarks
FERRULE M03450-08 FOR HOSES DN12	TRACTOR/1SN, ROCKMASTER/1SN, FIREEND, SHIELDMASTER/21, FOREMASTER/21, GOLDENISO/21 ANTIWEAR, K-JET, LYTE-FLEX, ROCKMASTER/2SC, SUPERJET/PLUS, GOLDENISO/28 ANTIWEAR, SHIELDMASTER/28, FOREMASTER/28, SAFEMASTER/2SC, INFINITY, SHIELDMASTER/35, FOREMASTER/35, CRYOFLEX/35, TRACTOR/2SN, ROCKMASTER/2SN, SAFEMASTER/2SN
M03450-40	ROCKMASTER/2SC DN 63 (& EQUATOR/1 DN 63, SPIRTEX DN 63, SPIRTEX/HT DN 63, XTRAFLOW/HT DN 63, XTRAFLOW/HTEX DN 63, ROCKMASTER/1SC DN 63)
M00920-06 NEW FERRULE (SUBSTITUTE M00910-06)	TRACTOR/2SN, GOLDENISO/28 XTRAFLEX, GOLDENISO/35 XTRAFLEX, GOLDENISO/42 XTRAFLEX, SHIELDMASTER/42, ROCKMASTER/2SN, ROCKMASTER/2ST, ROCKMASTER/2 PLUS SUPER-AW, ROCKMASTER/4SP, ROCKMASTER/12, EQUATOR/2 (BLACK & BLUE), SYNERGY, SAFEMASTER/2SN, JACKMASTER/70, PROJET (BLACK & BLUE)
GOLDENISO/45 LL DN31 (M01850-20 SUBSTITUTE M01800-20)	DESIGN CHANGE
SYNERGY DN12	SIZE ADDED, STD 1 & STD 2
SYNERGY DN19	FERRULE M00930-12
INFINITY HOSE LINE	STD 2 (ONE-PIECE FITTING SOLUTION) AND ALT 1 (NO-SKIVE TWO PIECE SOLUTION) ADDED
ANACONDA DN12 & DN16	NEW SIZES ADDED (STD 1 & STD 2)
SPIRTEX/G	NEW LINE INTRODUCED
SPIRTEX/HTG	NEW LINE INTRODUCED
FOREMASTER/7, FOREMASTER/10 & FOREMASTER/14	NEW LINES INTRODUCED
SHIELDMASTER/14	NEW LINE INTRODUCED
SHIELDMASTER/42 DN16	NEW SIZE DN16 ADDED
GOLDENISO/28 ANTIWEAR DN25	NEW SIZE DN25 ADDED
FOREMASTER/42 DN6, DN10, DN12 & DN16	NEW SMALL SIZES ADDED
FOREMASTER/42 DN12 & DN16	STD 2 (DN12 & DN16), ALT 1 (DN 12)
FOREMASTER/35 DN10 & DN12	NEW SMALL SIZES ADDED
FOREMASTER/28 DN25 (WS HOSE STRUCTURE)	NEW SIZE DN25 ADDED
HYDROROPE	NEW SIZE DN25 ADDED
GOLDENMINE DN76	NEW SIZE DN76 ADDED
SAFEMASTER/2TE	NEW LINE INTRODUCED
GAIA/28, GAIA/35 & GAIA/42	NEW LINES INTRODUCED
INDUSTRIAL HOSES SECTION	FULL RANGE INTRODUCED

PHASE OUT FROM CRIMPING CHART & PRODUCT RANGE

Hose type	Remarks
FOREMASTER/35 DN16	PHASE OUT
REFRISTAR	PHASE OUT
HARVESTER/17, GOLDENISO/21 ANTIWEAR & FOREMASTER/21	ALT 2 REMOVED

NEW STANDARDIZED CRIMPING DIE-SETS

IMPROVED PERFORMANCE & RELIABILITY WITH A MORE ROBUST ASSEMBLY PROCESS

Manuli Hydraulics is globally renowned for the quality, performance and reliability of its hydraulic connectors. However, even the best products can still be made better and, as technologies develop, there is often the opportunity to further improve our products.

In order to further improve the hose crimping process all Manuli Hydraulics crimping machines will have an upgraded set of dies according to our new standardization program.

FEATURES

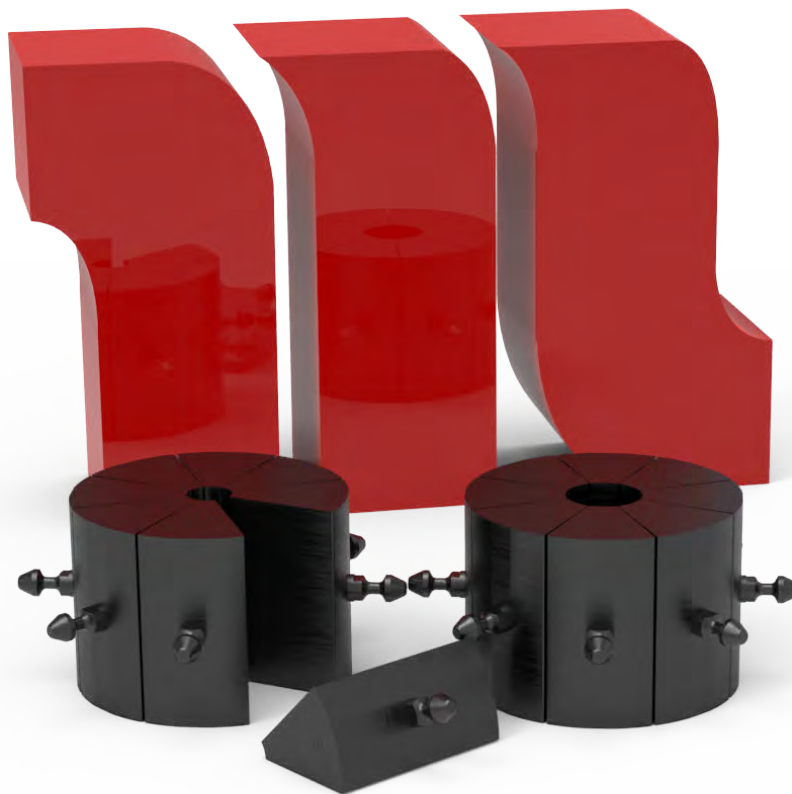
- Improved precision of crimping in the small size range - reduced stresses due to improved deformation of the ferrule during crimping
- Number of dies in the 10mm to 24mm range increased from 6 to 8, with 4 new sizes included
- Simplification of the assembly process by removing the need for the -0.4mm metal-rebound tolerance

The standardized die set sequence will be as follows:

10, 12, 14, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 63, 66, 70, 73

Note: New die sizes are shown in RED.

All future crimping data provided by Manuli Hydraulics will reference the standardized die sets only.



Kit Part Number	Kit Contents	Machine Series
ESA3110N140501	Kit 3 die sets (16 20 27)	80/110 series
ESA3110NH80KT7J	Kit 7 die sets (16 18 20 22 24 27 30)	80/110 series

ESA3220NTKIT4JA	Kit 4 Die sets (16 20 27 33)	137 series
ESA3220NTKIT5JB	Kit 5 Die sets (16 20 27 33 39)	137 series
ESA3220NKIT6JA	Kit 6 Die sets (16 18 20 27 33 39)	137 series
ESA3220NTKIT6JG	Kit 6 Die sets (16 18 20 22 27 30)	137 series
ESA3220NTKIT7JA	Kit 7 Die sets (16 18 20 27 33 39 45)	137 series
ESA3220NTKIT9JA	Kit 9 Die sets (16 18 20 24 27 33 39 45 48)	137 series
ESA3220N137KT9J	Kit 9 Die sets (16 18 20 24 27 30 33 39 48)	137 series
ESA3220N137KT11J	Kit 11 Die sets (16 18 20 22 24 27 30 33 39 45 48)	137 series
ESA3220N137KT15J	Full Kit 15 Die sets (14 16 18 20 22 24 27 30 33 36 39 42 45 48 51)	137 series
ESA3220NTKIT12JUSA	Kit 12 Die sets (16 18 20 22 24 27 30 33 36 39 42 48)	137 series USA

ESA3330NTKIT8JG	Kit 8 Die sets (16 18 20 22 27 30 36 42)	240 series
ESA3330NTKIT9J	Kit 9 Die sets (16 18 20 22 24 27 33 39 45)	240 series
ESA3330NTKIT11J	Kit 11 Die sets (16 18 20 22 24 27 33 39 45 51 57)	240 series
ESA3320N240KT13J	Kit 13 Die sets (16 18 20 22 24 27 30 33 39 45 51 57 66)	240 series
ESA3320N240KT19J	Kit 19 Die sets (14 16 18 20 22 24 27 30 33 36 39 42 45 48 51 57 63 66 70)	240 series
ESA3320NTKIT16JUSA	Kit 16 Die sets (16 18 20 22 24 27 30 33 36 39 42 45 48 51 57 66)	MB 240 EVO USA

ESA3330NTKIT10JG	Kit 10 Die sets (16 18 20 22 27 30 36 42 48 51)	350 series
ESA3330NTKIT12J	Kit 12 Die sets (16 18 20 22 24 27 33 39 45 51 57 66)	350 series
ESA3330N340KT14J	Kit 14 Die sets (16 18 20 22 24 27 30 33 39 45 51 57 66 73)	350 series
ESA3330N340KT21J	Kit 21 Die sets (14 16 18 20 22 24 27 30 33 36 39 42 45 48 51 57 63 66 70 73 76)	350 series

ESA3330N450KT14J	Kit 14 Die sets (16 18 20 22 24 27 30 33 39 45 51 57 66 73)	GC 420 / GC 450
ESA3330N450KT21J	Full Kit 21 Die sets (14 16 18 20 22 24 27 30 33 36 39 42 45 48 51 57 63 66 70 73 76)	GC 420 / GC 450
ESA3320NTKIT19JUSA	Kit 19 Die sets (16 18 20 22 24 27 30 33 36 39 42 45 48 51 57 63 66 70 73)	GC 420 EVO USA

ESA3330N200KT9	KIT 9J Die sets (16 18 20 22 24 27 33 39 45)	MS 200
ESA3330N200KT11J	KIT 11J Die sets (16 18 20 22 24 27 30 33 39 45 48)	MS 200
ESA3330N200KT14J	KIT 14J Die sets (14 16 18 20 22 24 27 30 33 36 39 42 45 48)	MS 200

ESA3430NT320KIT13J	Kit 13 Die sets (16 18 20 22 24 27 30 33 39 45 51 57 66)	MS 320
ESA3540N320KT21J	Kit 21 Die sets (14 16 18 20 22 24 27 30 33 36 39 42 45 48 51 57 63 66 70 73 76)	MS 320

ESA3540N480KT14J	Kit 14 Die sets (16 18 20 22 24 27 30 33 39 45 51 57 66 73)	MS 480
ESA3540N480KT21J	Kit 21 Die sets (14 16 18 20 22 24 27 30 33 36 39 42 45 48 51 57 63 66 70 73 76)	MS 480

How to Select an Appropriate Crimping Solution

In this revision of the Manuli Hydraulics Crimping Booklet you will find one or more fitting solution provided for each hose type and individual reference in the Manuli range. Manuli Hydraulics offers a wide range of fitting solutions to allow it to meet the needs of a complex, global market.

In this chapter, you will find guidelines on how to select the correct fitting solutions for your applications. Should you require additional support, contact your Manuli Hydraulics Sales Engineer who will provide expert advice and information. Also, for special applications support you can contact our Technical Marketing Team.

Definitions:

<p>STANDARD 1</p>	<p>Corresponds to the general purpose MF2000 (two piece fittings) solutions:</p> <ul style="list-style-type: none"> ✓ Multifit insert, available with No-Skive style ferrules for wire and textile braided hoses (easy assembling) and Skive style ferrules for wire braided and wire spiral light duty hoses ✓ Double-Skive Interlock Plus insert and ferrules for heavy duty spiral hoses, preferred by OEMs, for the most severe applications
<p>STANDARD 2</p>	<p>A solution designed according to the North American market preferences, based on a No-Skive ferrule design, available with one-piece (pre-crimped ferrule) and two piece (traditional) design all over the applicable hose range:</p> <ul style="list-style-type: none"> ✓ One-piece OPF fittings (for small bore hoses) and OPK fittings (medium and large bore hoses) ✓ Two-piece SpiralFit, for medium and large bore hoses, that can fit the no-skive applications in North America and in the rest of the world.
<p>ALTERNATIVES</p>	<p>Alternative fitting solutions to the previous STANDARDS, such as:</p> <ol style="list-style-type: none"> 1. Skive style ferrules (Multifit insert) for wire braided hoses, that can offer increased robustness and are preferred by OEMs 2. Interlock solutions on light duty spiral hose requested for longer service life or alternative to safety restraints 3. Non-Interlock or simplified solutions for heavy duty hoses, as preferred in after market 4. Other innovative simplified/compact solutions coming from new market inputs

Always select STD 1 or STD 2 where possible. The alternative fitting solutions type 3 and 4 must be selected for less demanding applications only (basic pressure rating, no relevant pressure peaks, absence of extreme temperatures, no flexing conditions, no relevant vibrations, sufficient hose size to keep an appropriate low fluid velocity).

Guidelines for assemblers:

The wide range of different fitting solutions for each hose line or single hose reference is intended to meet different market needs, in terms of performance (fatigue resistance and life duration), assembling process style (skive/double skive or no-skive), market segment of reference (original equipment, aftermarket/maintenance, retail, field repair, etc.) and geographical areas where different local factors require users to adopt different styles of components and assembling.

STANDARD 1

This is the most common fitting solution of the Manuli Hydraulics range and it is based on the concept of a two piece MF2000 fitting.

Wire braided hoses are proposed with no-skive ferrules associated with the Multifit insert, a universal insert style used for textile reinforced and wire braided hoses. This solution is easy to assemble because it does not require any skiving operation and the visibility of the hose-to-fitting insertion process is very clear thanks to the two piece architecture. In addition the crimp is flat on the ferrule, inventory control is easy and minimal if compared to the one piece fitting style (as a few ferrules lines cover the whole range of hoses with the same universal inserts). This is a common solution throughout Europe but is also well-received globally. In terms of performance, this fitting solution meets and exceeds the basic requirements of international norms; it is therefore appropriate for any basic hydraulic application without severe or out-of-standard stresses. It is also widely used in aftermarket when and where definite and long life expectancy requirements are not a major issue.

Light duty wire spiral hoses are proposed with skive ferrules associated with the Multifit universal insert, this solution is easy to assemble, robust and uses the same inventory of inserts as the wire braided hoses. In terms of performance this fitting solution meets and exceeds the international specifications requirements. It is primarily used in aftermarket and OEM supplies.

Heavy duty wire spiral hoses are proposed with double skive Interlock Plus fittings. These are very robust and reliable, designed for long service life in severe hydraulic applications. This solution is preferred by OEMs and generally selected for the most demanding applications, but advised and commonly used also at distribution market level. In fact, the double skive operation required for assembling is not difficult, and can be easily implemented with dedicated tooling, and carried out by normal qualified personnel.

In terms of performance, the Interlock Plus fitting solution offers a very high fatigue resistance, exceeding the norms requirements (1 million or more impulse cycles). It is highly recommended for demanding applications, particularly those which subject the hose assembly to vibrations, high temperatures and flexing movements, or which require high durability (i.e.: equipment working 24 hours/day).

The Standard 1 fitting solution is normally advised for all the general market needs, at distribution level, retail, field repair and maintenance activities, also for OEM standard applications.

STANDARD 2

A solution generally preferred by the North American market, usually comprising of a one-piece fitting and/or a no-skive assembly style. This type of solution is globally recognised as a simple, mistake-proof method of optimising the assembling operation both in the factory and in the field.

The major advantage of one piece fittings (OPF & OPK fittings) is that the assembling process is mistake proof as the operator has to select only one reference rather than two. However, the inventory needed is higher than for the two piece fitting style. It is also important that the fitting insertion depth is carefully measured and checked before proceeding with the assembling process.

In the North American market, this standard of fitting is commonly used and represents the majority of solutions on the distribution market. This solution is approved according to international norms criteria, and can be proposed for all standard hydraulic applications at the distribution level, for field repair and maintenance activities. Small and middle sized OEMs requiring approvals according to international norms can be served as well.

The heavy-duty medium and large bore high-performance hoses are presented with a no-skive two piece fitting solution from the Spiralfit range. This type of fitting, used worldwide, presents a long insert with high sealing property and no-skive robust ferrules, designed for wire spiral high pressure hoses. This solution is the answer for the no skive need of the North American market, but also finds interest in many other regions worldwide. The Spiralfit fitting is also the solution for large bore wire braided and spiral hoses up to 4".

Spiralfit fitting solutions can be used for all the standard hydraulic applications, including agriculture, industry, construction equipment, mining, etc., mainly for the distribution market, but also for retail and field repair as well. For OEMs applications Spiralfit can be proposed when basic specification requirements have to be guaranteed and working conditions are not extreme. On the contrary, for heavy duty wire spiral hoses, the STD 1 Interlock Plus fitting solution gives unparalleled performance and durability. Interlock Plus remains a competitive advantage to meet the challenges of the most demanding applications, customers and end users.

Further no-skive alternative fitting solutions are sometimes available for some sizes or product lines, in order to satisfy the most demanding needs in terms of price and robustness.

ALTERNATIVES

There are also important alternatives to this standard that must be considered.

1. For wire braided hoses a skive ferrule is often preferred to the no-skive solution. The skive alternative solution for wire braided hoses offers increased robustness, in particular for fatigue resistance and leak proof performance in the case of severe applications. This alternative is suggested when the main hydraulic stresses (pressure and temperature in particular) are constantly close to the maximum performance values. In addition, pressure peaks, high vibrations, high fluid velocity, continuous and wide thermal excursions, flexing movements of the assembly, severe routing with tight bending behind the fittings, etc. can increase the need for this more robust solution. It is widely used for pressure lines on various hydraulic machinery (heavy duty excavators, telescopic booms, injection moulding machines, etc.), and is recommended for assemblies mounted on pumps and actuator outlets. OEMs prefer the skive alternative solution for wire braided hose if the supply is dedicated to original equipment applications.

Although the increased fatigue resistance of the skive fitting solution for wire braided hoses compared to the no-skive solution has not been clearly quantified, from extensive field and laboratory experience it is estimated that the durability of the assembly increases by as much as 30-50%. As such this is often preferred, and sometimes officially requested, by OEMs from their direct suppliers. The current trend towards compact and efficient Hydraulics increases the need for a more reliable solution for use in modern, compact, technological and high performance machines.

2. Light duty wire spiral hose lines also offer alternative Interlock architecture crimping solutions, for increased robustness and longer service life or alternative to safety restraint systems. These solutions are in favour of safety and reliability, offer a high performance profile, to be selected for OEM applications or when is necessary higher robustness than standard.

* Important note on Alternative crimping solutions

Whilst every crimping solution listed in this document fully complies with all relevant international norms and performance standards, it should be noted that the following two Alternative solution types (3 & 4) are generally considered to be less robust than the two Standard solutions (STD 1 and STD 2) offered. This in no way implies any deficiency with these specific Alternative solutions, but care should be taken to ensure that they are fully validated for more demanding applications. If in doubt, the more robust solutions should be selected where possible.

Please also note that the inclusion of this statement is for advisory purposes only and does not represent any downgrading of the solutions concerned. Customers already using these solutions do not need to revalidate them.

Contact the Manuli Hydraulics Technical Helpdesk for assistance if necessary.

3. For heavy duty wire spiral hoses, the non-Interlock solution is sometimes a preferred alternative for easier assembling and cost effectiveness. It is commonly used in aftermarket or field repair activities. Additionally, the light duty wire spiral hose lines offer alternative crimping solutions, no-skive style for aftermarket needs, designed for easy assembling and field repair with minimum performance targets. These solutions should be selected for the less demanding applications only, such as basic pressure rating, no relevant pressure peaks, absence of extreme temperatures, no flexing conditions, no relevant vibrations, sufficient hose size to keep an appropriate low fluid velocity, etc.

The following lines and positions in the hydraulic circuits should be avoided:

- Boom hoses
 - Swing motor hoses
 - Hydrostatic transmission hoses
 - Pumps outlets
 - The road side port of double acting cylinder
 - Any similar application which is in doubt
4. Innovative simplified solutions have been designed and validated for dedicated applications, thus their extension to other applications can involve theoretical risks. It is recommended that Manuli Hydraulics' customer assistance is requested to check the application before their usage.

Hydraulic Style Hose Assembly Instructions

1. Introduction

Hose assembly drawings should report the following components of the final assembly:


- Hose specifications
- End fitting A
- End fitting B
- Accessories




Note: *Re-ending of hoses can lead to premature failure and safety hazards, including equipment damage, fire risk and environmental pollution.*

Recommended practice from international specifications:

- ISO 4413 - Hydraulic fluid power - General rules and safety requirements for systems and their components
- ISO 17165-2 - Hydraulic fluid power - Hose assemblies - Part 2: Practices for hydraulic hose assemblies
- ISO 1402 - Rubber and plastics hoses and hose assemblies - Hydrostatic testing
- SAE J1273 - Recommended Practices for Hydraulic Hose Assemblies
- SAE J343 - Test and Test Procedures for SAE 100R Series Hydraulic Hose and Hose Assemblies

2. Glossary of terms

Term	Notation / Abbreviation	Definition
Nominal Crimping Diameter	D_N	The crimping diameter specified in the crimping data
Actual Crimping Diameter	D_A	The measured diameter of a crimped ferrule
Target Crimping Diameter	D_T	<p>The diameter that the crimping machine is set to in order to achieve an actual crimp diameter which is inside the tolerance limits.</p> <p>Manuli Hydraulics uses a standard tolerance of $+0.0/-0.2\text{mm}$ for hose crimping specifications.</p> <p>In order to successfully and repeatedly achieve a crimping result which is considered “in-tolerance”, it is advisable to set the target crimping diameter to the value which lies in the middle of the tolerance range.</p> <p>Example: $D_N = 23.5\text{mm}^{+0.0/-0.2}$ So: Max. allowable diameter = 23.5mm Min. allowable diameter = 23.3mm Therefore: Suggested $D_T = 23.4\text{mm}$</p>
Crimp Diameter Setting	D_S	The setting value on the crimping machine set-stop
Correction Value	C	<p>The difference between the actual crimping diameter and the target crimping diameter during the preliminary setup.</p> $C = D_A - D_T$
Die-Set Value	V_{DS}	<p>This is the minimum size that the specific die-set will crimp down to.</p> <p>It is embossed on each of the dies in the die-set for ease of reference.</p>
Set-Stop	-	<p>Crimping control device used on crimping machines to precisely control the crimping diameter.</p> <p>Note: <i>Set-stops vary between crimping machines and the types used on Manuli Hydraulics machines are listed below.</i></p>
Mechanical Visual Set-Stop 	-	<p>Functionality is based on a pin achieving a set final position as proof that the target crimping diameter has been reached.</p> <p>Used on basic or manual crimping machines, although less commonly used on modern equipment.</p> <p>Note: <i>The process for setting the initial target crimping diameter for this set-stop type is explained in section 9.2.</i></p>

Term	Notation / Abbreviation	Definition
<p>Mechanical Visual and Acoustic Set-Stop</p> 	-	<p>Functionality is similar to the Mechanical Visual Set-Stop but with the addition of an audio alert when the target crimping diameter is reached.</p> <p>Used on basic or manual crimping machines, although less commonly used on modern equipment.</p> <p>Note: <i>The process for setting the initial target crimping diameter for this set-stop type is explained in section 9.2.</i></p>
<p>Electro-Mechanical Visual Set-Stop</p> 	-	<p>Functionality is based around a mechanically positioned pin activating a switch when the target crimping diameter is reached.</p> <p>A digital position indicator is used to set the target crimping diameter.</p> <p>This type of set-stop is usually associated with SC type control panels.</p> <p>Note: <i>The process for setting the initial target crimping diameter for this set-stop type is explained in section 9.2.</i></p>
<p>Electronic Set-Stop</p> 	-	<p>Functionality is based around an electronic transducer. This generates a specific output voltage which varies linearly according to the current position of the transducer.</p> <p>The variable voltage is interpreted by the software to determine the precise position of the crimping jaws, and by inference, the crimping diameter.</p> <p>This type of set-stop is usually associated with SCE or SCS control panel types.</p> <p>Note: <i>The process for setting the initial target crimping diameter for this set-stop type is explained in section 9.2.</i></p>
<p>Digital Position Indicator</p>	DPI	<p>Vernier dial gauge used to set the position of the electro-mechanical visual set-stop.</p> <p>Coloured numbers indicate 1mm and 0.01mm increments, so a reading of 100 indicates a change to the target crimp diameter of 1.00mm.</p>
<p>Safe Crimp Control Panel</p>	SC	<p>Basic smart control panel used on the modern generation of Manuli Hydraulics crimping machines.</p> <p>Usually used in conjunction with the electro-mechanical visual set-stop.</p>
<p>Safe Crimp Electrical Control Panel</p>	SCE	<p>Touch screen control panel with target crimp diameter and correction value settings.</p> <p>Usually used in conjunction with the electronic set-stop.</p>

Term	Notation / Abbreviation	Definition
Safe Crimp System	SCS	Advanced crimping system with additional calibration and measurement features. Usually used in conjunction with the electronic set-stop.
Tolerance	$A^{\pm x.xx}$ $A^{+x.xx/-x.xx}$	<p>The amount that a given dimension may vary from the nominal value whilst still being accepted as correct.</p> <p>It is usually specified as an upper and lower limit.</p> <p>Tolerances may be symmetrical (eg. 55.4mm ± 0.1) or asymmetrical (eg. 55.4mm $^{+0.0}/_{-0.2}$).</p> <p>Note: <i>If the specified tolerance is symmetrical then $D_N = D_T$</i></p>
Skiving	-	<p>Some fitting types require the removal of rubber from the end of the hose.</p> <p>The most common type of skiving is known as "external skiving", and involves rubber being removed from the outer cover of the hose.</p> <p>In addition, some fitting types may also require removal of rubber from the inside of the hose bore. This is known as "internal skiving"</p>
Kerf	-	The cut thickness of a blade or the material that is removed during a cutting operation. A thick saw blade will remove more material than a thin blade, which creates more dust.
Clocking	-	The term used when two elbow fittings must be installed on a hose at a specific orientation to one another.

3. Safety and Competence

3.1 - Competence to assemble hoses

All persons involved in hose assembly procedures must be competent and have undergone suitable training in the proper use of the equipment, materials, assembly procedures and testing by a qualified Manuli Hydraulics trainer.

The competence of all hose assembly staff should be regularly assessed and the results recorded on file.

Note: *Where applicable, type approved (TA) hose assemblies (such as DNV; ABS; LR; BV, etc.) shall only be assembled by certified assemblers according to related specific rules. Refer to the applicable TA certificates on the Manuli Hydraulics website.*

3.2 - Safety procedures

- Wear suitable PPE (eg: eye protection, hearing protection etc.) when necessary.
- Ensure adequate ventilation and light when working.
- Do not wear loose-fitting clothing, neck-ties and rings when operating moving or rotating equipment, and ensure long hair is tied back.
- Do not mix and match assembly components from different manufacturers.
- Do not reuse fittings unless reuse is specifically authorised by the manufacturer.

Note: *The above is not an exhaustive list of safety precautions, and good workshop practice should always be observed.*

4. Component selection

Select the hose, inserts and ferrules according to the specification document for the hose assembly.



For the most up-to-date information and parts, refer to the latest release of the Manuli Hydraulics Fluid Connectors Catalogue

5. Cutting the Hose

5.1 - Tools required

Hydraulic hose should be cut using an appropriately sized cutting machine fitted with one of the following blade types to minimise heat damage to the rubber:

Scalloped Blade

Suitable for cutting hoses of all types with preference towards small and medium sizes.

Available in sizes:

- Ø254mm
- Ø300mm



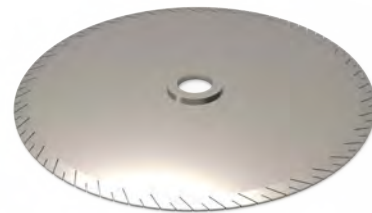
Scalloped blade

Micro-Slotted Blade

Ideal for cutting hoses of all types and sizes. Provides the longest service life and the highest quality of cut

Available in sizes:

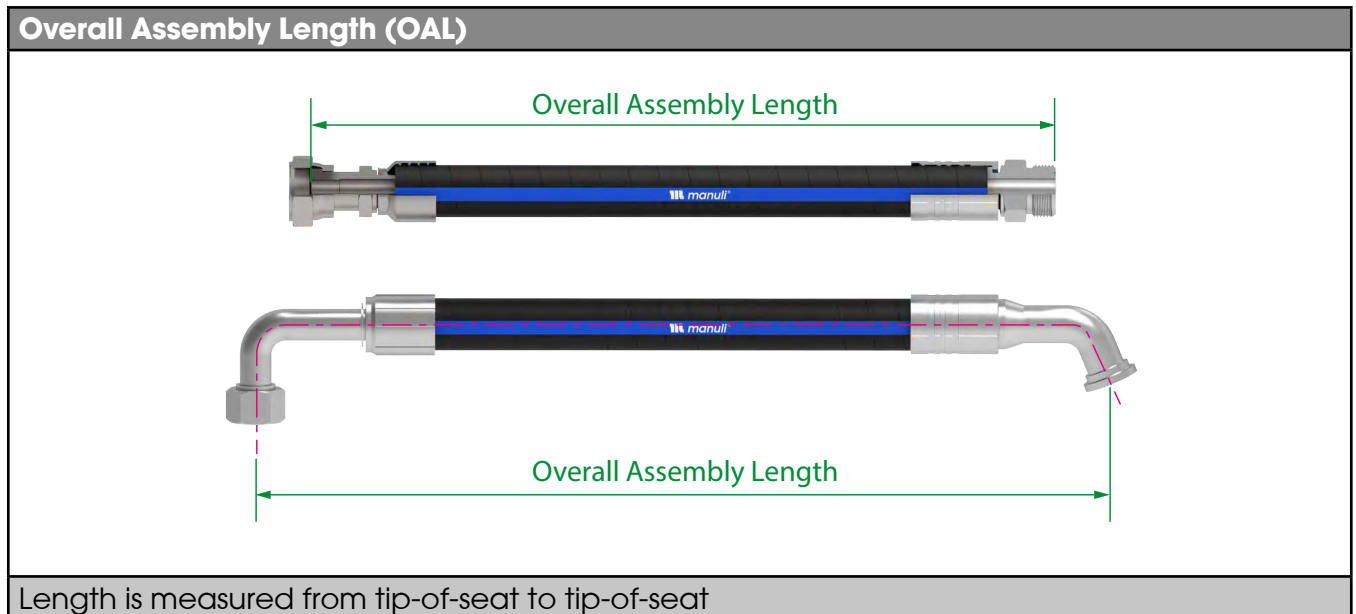
- Ø400mm
- Ø520mm



Micro-Slotted blade

5.2 - Assembly length

According to international specs (e.g. SAE J517), there are two critical lengths referred to a hose assembly:



Cut-Off Length (COL)



This is the cut length of the hose prior to attaching the fittings

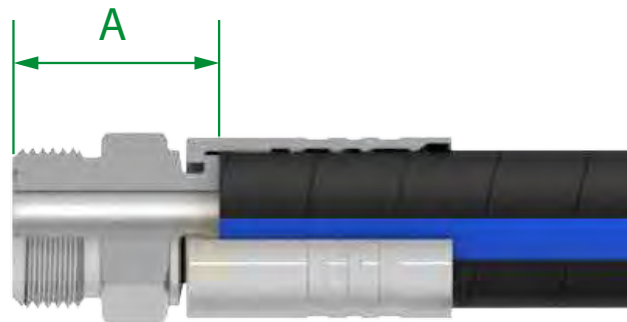
For hose installation and flexibility purposes, there is also a third relevant length known as the “free length”.

Free Length (FL)



This is the length of the exposed rubber portion of the hose assembly

For assembly purposes, the Cut-Off Length is necessary, its calculation is made subtracting the two “A” (fittings Cut-Off values) from the Overall Assembly Length.



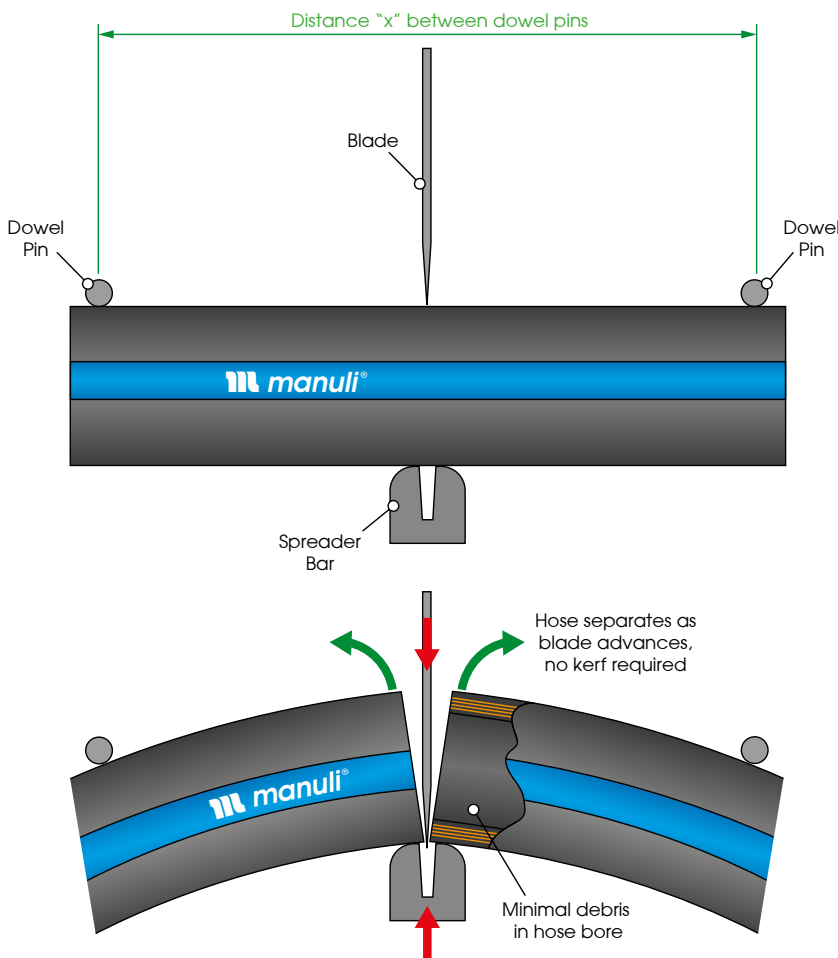
It is important to consider international norms tolerances for deviation of length of assemblies against what is specified.

5.3 - Cutting angle

Cut the hose squarely (cut angle must be less than 2°) using an appropriate blade to minimise heat damage to the rubber.



5.4 - Cutting technique



1 Manuli Hydraulics cutting machines come equipped with re-positionable dowel pins and a spreader bar which bends the hose during the cutting operation.

The optimum distance "x" of the dowel pins varies depending on the diameter of the hose; with smaller and more flexible hoses requiring less horizontal separation than larger or more rigid hoses.

2 During the cutting operation the blade and the spreader bar move towards each other, causing the hose to bend and separate as the blade advances.

This minimises the contact between the cut ends of the hose and the sides of the blade, producing less heat and kerf deposits for a cleaner, safer cut.

Note: After cutting it is possible that there may be some wires from the reinforcement protruding from the cut end of the hose. Use suitable tools to cut or grind the wires away in order to allow safe handling of the hose during the next steps.

6. Cleaning the Hose Bore

Once the hose has been cut there will be rubber and reinforcement particles or cutting grit inside the hose bore, which must be removed.

An appropriate method of cleaning should be chosen depending on the intended application of the hose assembly, or the customer's specifications for cleaning.

It is recommended to use proprietary cleaning pellets propelled through the hose with compressed air.

Hose bore shall be inspected to ensure the cleaning pellet has exited the hose.

WARNING:

Failure to remove debris from the hose prior to use can result in contamination of the entire hydraulic system on which the hose is later used. This can damage components and reduce the service life of the system.

7. Skiving the Hose

7.1 - Tools required

External skiving of hoses can be carried out using a number of tools and methods, including the use of:

- Hand tools
- Wire and abrasive wheels
- Specialised skiving equipment (see Manuli Hydraulics Assembly Equipment Catalogue)

Note: *The use of specialised skiving equipment is highly recommended.*

Note: *Internal skiving requires the use of dedicated, specialised skiving equipment.*

7.2 - Skiving procedure

Using hand tools (external skive only)

- Clamp the hose securely in a vice or other suitable holding device.

Note: *Ensure that the hose is not crushed or otherwise damaged by the clamping action.*

- Mark the correct skive length around the circumference on the outer cover of the hose.
- Cut through the outer cover and down to the reinforcement around the circumference of the hose at the marked length.
- Starting at the circumference cut, use a blade or other suitable tool to remove the rubber in the section to be skived down to the reinforcement.

Using a wire or other abrasive wheel (external skive only)

- If the wire / abrasive wheel machine is bench-mounted, ensure that it is securely fixed to the surface and cannot move during use.
- If the wire / abrasive wheel machine is hand-held, clamp the hose securely in a vice or other suitable holding device.

Note: *Ensure that the hose is not crushed or otherwise damaged by the clamping action.*

- Mark the correct skive length around the circumference on the outer cover of the hose.
- Switch on the wire / abrasive wheel and grind away the cover in the skive section until the reinforcement is visible.

Using specialised skiving equipment (internal & external skive)

Note: Each skiving machine is different and has its own method of operation which should be followed. However the following steps should be observed where appropriate.

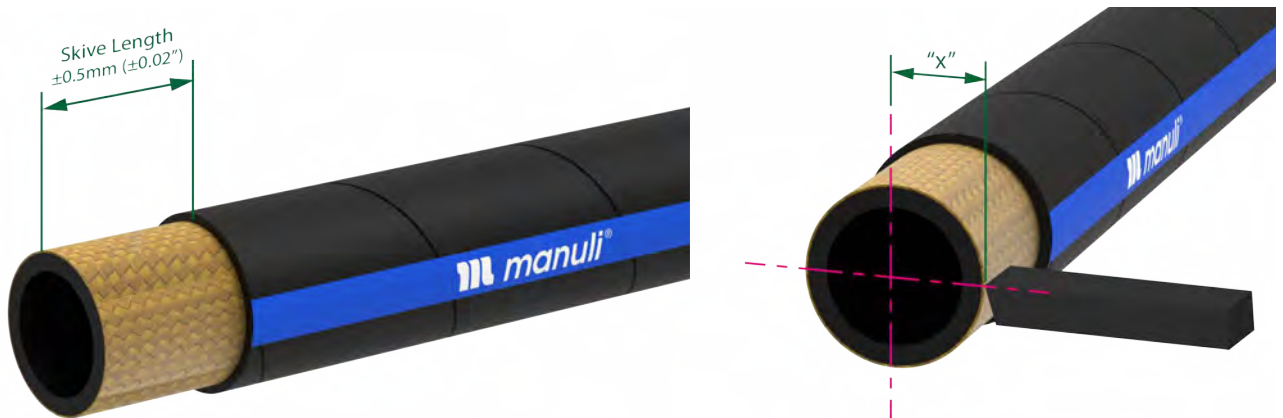
- Select the correct mandrel and skiving tool for the hose size required.

Note: Ensure the knife of the skiving tool is sharp.

WARNING:

Dull tools will not remove material as effectively as sharp tools, and can result in ragged or uneven skiving. They will also require more pressure to perform a cut, which increases the risk of injury to the operator.

- Insert the mandrel and skiving tool according to the equipment manufacturer’s instructions.
- Set the skiving length so that the front edge of the skiving knife is set to the correct length to within $\pm 0.5\text{mm}$ ($\pm 0.02''$).
- Set the skiving knife to the appropriate radius “x”, which will remove the maximum amount of rubber without damaging or displacing the reinforcement.



- Lubricate the mandrel and, if necessary, the internal surface of the hose.
- Start the skiving machine.

Note: When skiving Manuli wire spiral hoses, the direction of rotation of the tool should be anti-clockwise for external skiving, and clockwise for internal skiving.

- Carefully align the hose with the mandrel.
- Apply steady pressure to slide the hose onto the mandrel until it hits the stop on the mandrel.
- Withdraw the hose from the mandrel whilst the skiving machine is running.

Note: It may be necessary to make several passes to achieve complete removal of the rubber from the skived area.

IMPORTANT

Incorrect skiving length can result in deficient hose-fitting attachment and reduced service life of the hose assembly.

Skive type	Too short	Too long
External	Ferrule may not grip the hose correctly	Ferrule may not produce an effective weather seal
Internal	The insert may not be able to be fully inserted	The insert may not locate or seal correctly

8. Insertion of fittings in the hose

8.1 - Two-piece fittings



- 1 Place the ferrule over the prepared end of the hose
Note: Ensure the ferrule is pushed onto the hose until it hits the internal stop

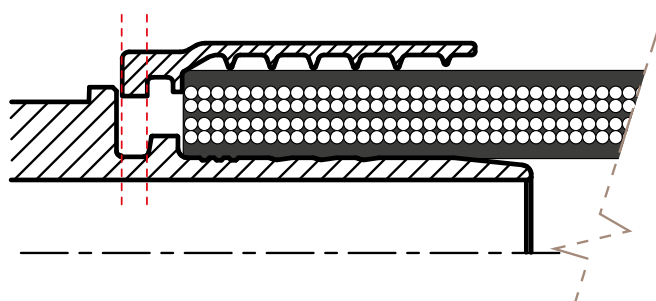


- 2 Push the insert fully into the hose
Note: Large-bore and Interlock fittings may require the use of a pushing machine

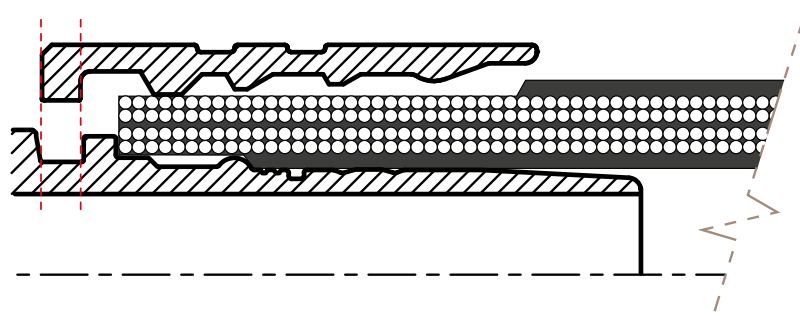


- 3 When correctly mounted, the end of the ferrule should extend past any skiving

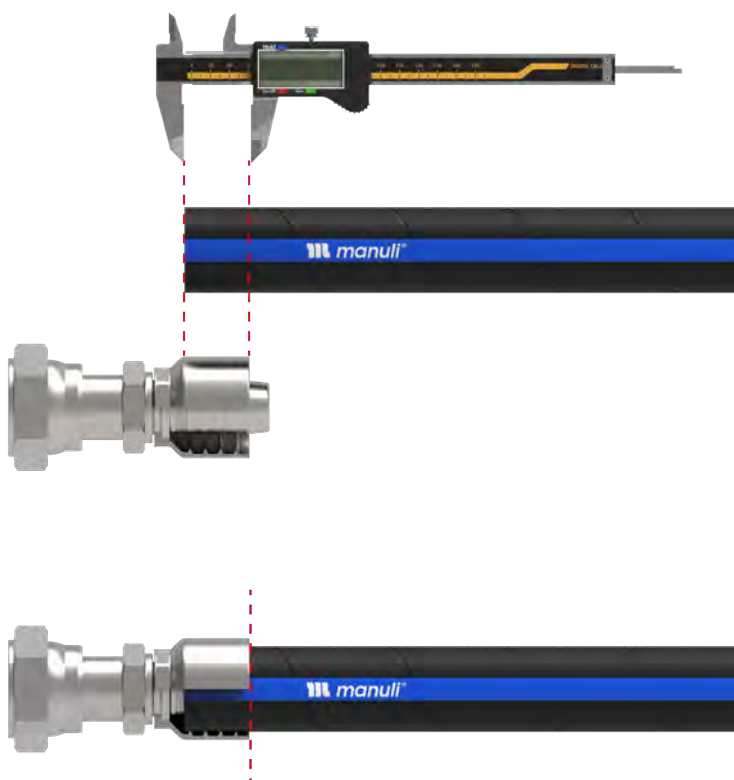
No-Skive type ferrule: ensure the hose is butted up to the stop-collar, push the insert up to contacting the hose, ensure the insert latch and ferrule collar are lined up correctly prior to crimping.



Skive type ferrule: position the ferrule on top of the skived area, push the insert up to contacting the hose, ensure the insert latch and ferrule collar are lined up correctly prior to crimping.



8.2 - One-piece fittings



- 1 Using callipers, measure the distance from the open end of the fitting to the shoulder
Mark this distance on the hose to indicate the correct insertion depth

- 2 Push the fitting onto the hose until the open end is level with the mark on the hose
Note: Large-bore fittings may require the use of a pushing machine

8.3 - Hose clocking

When two elbow connections are specified for the same assembly it is usual for them to be angularly offset from one another as per the assembly drawing - referred to as "clocking".

Unless otherwise specified in the assembly drawing, the angular tolerance according to international norms is:

- $\pm 3^\circ$ for overall assembly lengths (OAL) of up to 24"
- $\pm 5^\circ$ for overall assembly lengths (OAL) over 24"

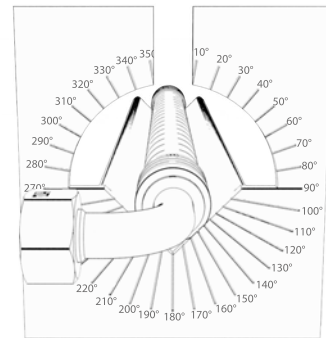
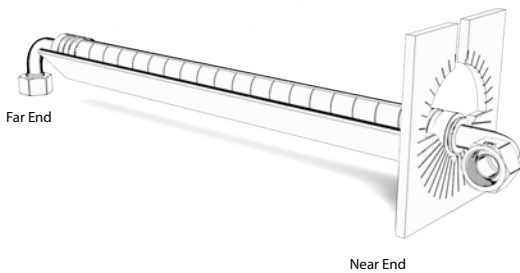
To identify the angle of a hose end, there are two different methods:

- Near End Reference Method (NER)
- Far End Reference Method (FER)

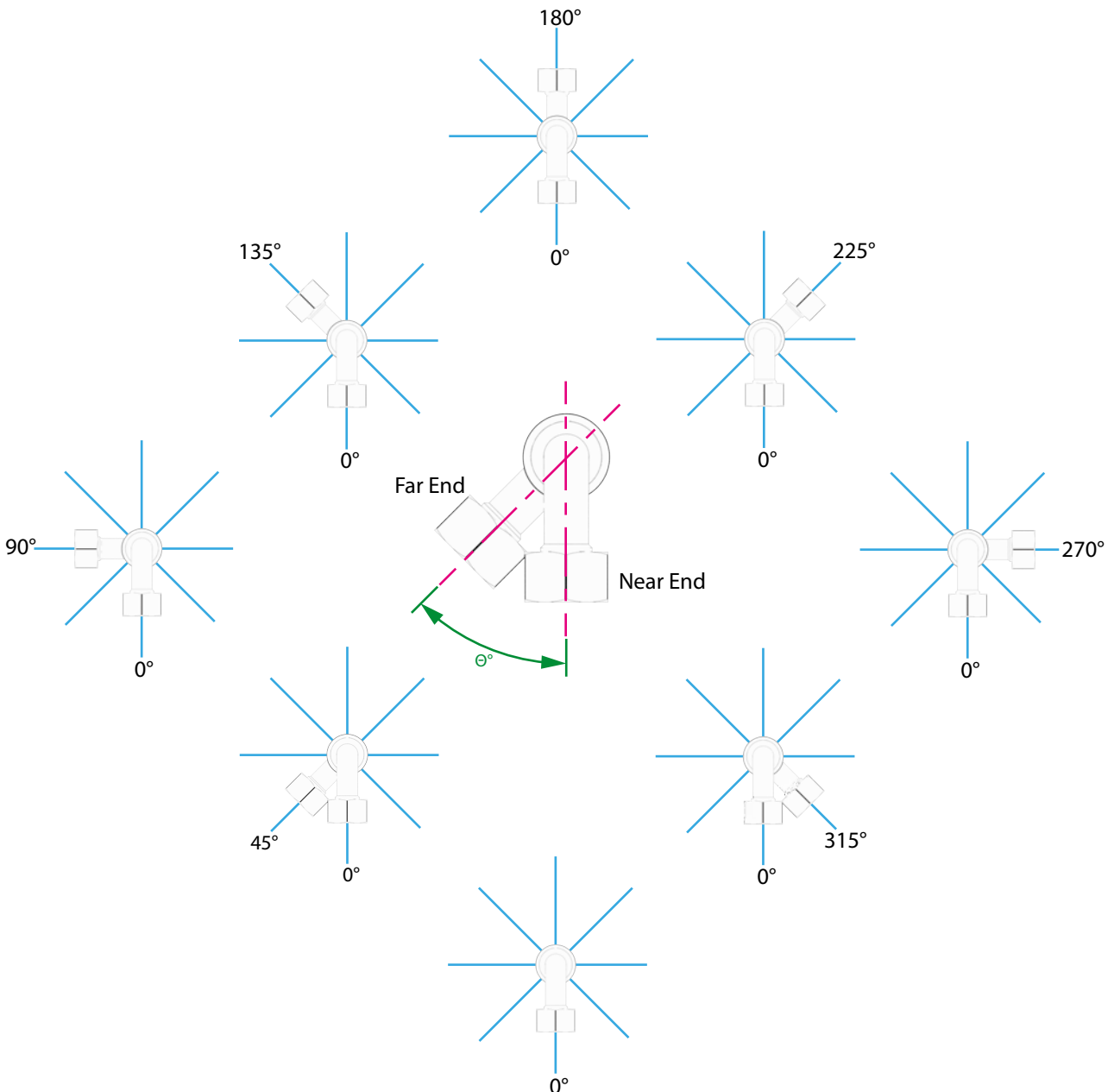
Note: It is important to verify the method of reference according to the assembly drawing.

The Far End Reference Method is the most commonly used:

- Hold the hose assembly as if you are looking into a telescope



- Position the elbow fitting farthest from you to 6 o'clock position (straight down)



- Identify the position of the closest fitting, reading clockwise

WARNING:

Once crimped, do not attempt to forcibly rotate or re-orientate the inserts. Doing so may damage the insert, ferrule or hose resulting in assembly failure.

Note: Incorrect elbow orientation may generate twist of the hose leading to premature failure.

9. Crimping

9.1 - Selecting the correct die-set

- In order to achieve a high-quality crimp, it is important that the correct crimping die-set is selected
- The die-set used should be the one closest-to, and smaller, than the listed crimping diameter.

Crimp. Diam.		DIE N.
mm	Inch	
16.9	0.665	16
18.6	0.732	18
20.7	0.814	20
23.5	0.925	22

Example:

To achieve a target crimp diameter of **23.5mm**, the die-set chosen would be **22mm**.

Note: For your convenience, and to minimise the risk of errors, Manuli Hydraulics' published crimping data includes the recommended die-set for each hose and fitting-type combination.

IMPORTANT:

Always use the most recent crimping data published by Manuli Hydraulics

Note: Each die-set has a permitted crimping range, which must be respected.

The complete range of Manuli Hydraulics die-sets and their crimping ranges are detailed below.

Nominal Die Size	Crimp Min. (mm)	Crimp Max. (mm)
10	10.0	11.9
12	12.0	13.9
14	14.0	15.9
16	16.0	17.9
18	18.0	19.9
20	20.0	21.9
22	22.0	23.9
24	24.0	26.9
27	27.0	29.9
30	30.0	32.9
33	33.0	35.9
36	36.0	38.9

Nominal Die Size	Crimp Min. (mm)	Crimp Max. (mm)
39	39.0	41.9
42	42.0	44.9
45	45.0	47.9
48	48.0	50.9
51	51.0	53.9
54	54.0	56.9
57	57.0	62.9
63	63.0	65.9
66	66.0	69.9
70	70.0	72.9
73	73.0	75.9

Note: Users working with a reduced number of die-sets will not be able to produce satisfactory crimps on diameters outside of their die-set range.

WARNING:

Crimping with the wrong sized die-set can reduce the performance and quality of the hose assembly.

9.2 - Preliminary setup of Manuli crimping machines

During the crimping setup, input the Nominal Crimping Diameter (D_N) on the machine using the relevant set-stop mechanism.

Initial setup of mechanical and electro-mechanical visual set-stops

On machines with mechanical or electro-mechanical visual set-stops the formula for setting the Crimping Diameter Setting (D_s) is:

$$(\text{Nominal Crimping Diameter} - \text{Die-Set Value}) \times 100$$

$$D_s = (D_N - V_{DS}) \times 100$$

The above formula should produce an Actual Crimping Diameter (D_A) which is close to the required value.

Example:

To achieve an Actual Crimping Diameter of 23.5mm using Die-Set 22:

$$D_s = (23.5 - 22) \times 100$$

$$D_s = 150$$

So, the mechanical / electro-mechanical visual set-stop should be set to a value of **150**.

Note: The initial value of D_s obtained from the formula above is intended as a starting point for correct setup.

Using the above formula does not guarantee an accurate Actual Crimping Diameter, and the validation and modification process (see section 10) should always be followed to ensure that the Actual Crimping Diameter is accurate.

Initial setup of electronic set-stops

On machines with SCE or SCS control, simply enter the Nominal Crimping Diameter listed in the crimping data (eg. 23.5mm), and the automated system will calculate the correct Crimping Diameter Settings.

Note: The initial value calculated by the system is only intended as a starting point for correct setup.

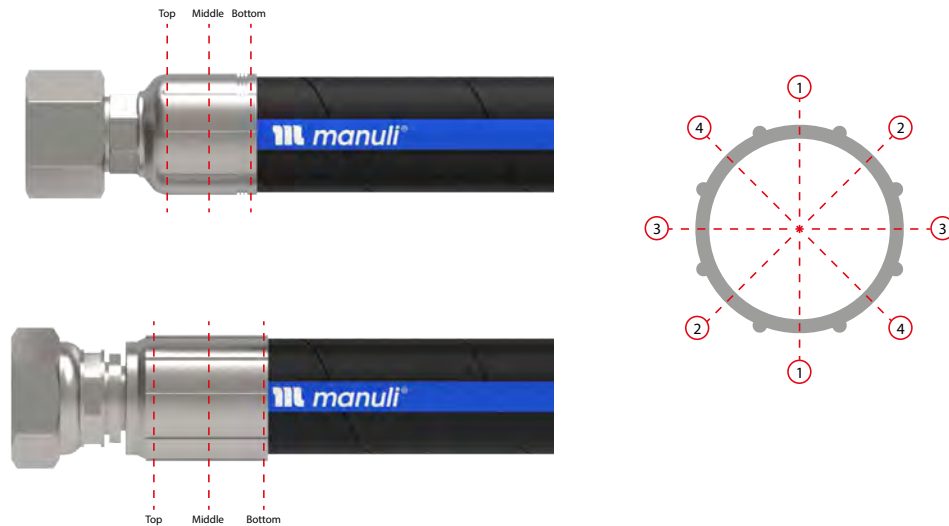
The validation and modification process (see section 10) should always be followed to ensure that the Actual Crimping Diameter is accurate.

10. Validation and modification of crimping settings

After the initial crimping operation, the crimped ferrule should be inspected according to the following procedures.

10.1 - Actual crimping diameter (D_A) check

- Take 4 measurements across the crimped ferrule diameter at 45° to one another as shown using vernier callipers or a micrometer gauge. The measurements should be taken from the middle section of the ferrule's crimped length and from across the die landing areas NOT from across the raised ridges (see below).



- Calculate the average crimping diameter using the four measurements taken.
- Verify that the calculated average of the measured values is within the acceptable tolerances of +0mm / -0.2mm of the Nominal Crimping Diameter.

Note: In order to have a robust crimping process, it is recommended that the Target Crimping Diameter be the value in the middle of the tolerance range - ($D_N - 0.1mm$). In this way it is easier to avoid out-of-tolerance crimps.

- If the calculated value is outside of the acceptable limits calculate the difference between this value and the required (Target Crimping Diameter) value. If this difference is greater than 0.1mm, mark the ferrule with an "X" and adjust the crimping machine settings by this value (either up or down depending on if the actual crimp is under- or over-sized).

Oversized ferrule diameter - Insufficient crimping

If the crimped ferrule diameter is too large, REDUCE the Crimping Diameter Setting (D_S) by the calculated error value and re-crimp the same ferrule.

Example:

If the measured value is 23.8mm rather than 23.5mm then the error is +0.3mm.

To correct for this error the Crimping Diameter Setting (D_S) should be reduced by 0.3mm.

In the case of a mechanical / electro-mechanical visual set-stop, the reduction would be $0.3 \times 100 = 30$.

In the case of an SCS or SCE controlled machine, the Correction Value (C) would be -0.3mm

Undersized ferrule diameter - Excessive crimping

If the crimped ferrule diameter is too small, INCREASE the crimping machine setting by the calculated error value.

Example:

If the measured value is 23.1mm rather than 23.5mm then the error is -0.4mm.

To correct for this error the Crimping Diameter Setting (D_s) should be increased by 0.4mm.

In the case of a mechanical / electro-mechanical visual set-stop, the increase would be $0.4 \times 100 = 40$.

In the case of an SCS or SCE controlled machine, the Correction Value (C) would be **+0.4mm**

Then crimp the other end fitting of the assembly and then restart the validation procedure at Step 1.

Crimping correction

In this phase it is important to consider the crimp correction versus the preliminary set up for the following reasons:

- Reducing the Crimping Diameter Setting (D_s) by "X" mm to compensate for the elastic rebound of the ferrule.
Normal values of correction are: "X" = 0.1mm to 0.4 mm (depending on hose size and type)

Note: On SCS controlled machines, the rebound value is already pre-set inside the uploaded chart.

In order to have a robust crimping process, it is recommended that the Target Crimping Diameter be the value in the middle of the tolerance range (Nominal Crimping Diameter -0.1mm). In this way it is easier to avoid out-of-tolerance crimps.

10.2 - Crimp Ovality check:

- Calculate the Crimp Ovality as the difference between the highest and lowest values that were measured at the start of section 10.1.
- **If the Crimp Ovality exceeds 0.2mm, mark an "X" on the ferrule and inspect the crimping machine die head, springs and dies for damage or wear, replacing any defective parts.**

10.3 - Crimp Taper check

- Take four diameter measurements (as described at the start of section 10.1) from both the top and bottom sections of the crimped ferrule.
- Calculate the average diameter of each position.
- Calculate the difference between the two average values - The result is the Crimp Taper value.
- Verify that the Crimp Taper value is within the following limits:
 - For hoses up to and including DN16 (5/8"), taper should not exceed 0.3mm
 - For hoses from DN19 (3/4") up to and including DN76 (3"), taper should not exceed 0.6mm

- **If the calculated Crimp Taper value exceeds these limits, mark an “X” on the ferrule and inspect the crimping machine die-head, springs and dies for damage or wear, replacing any defective parts.**

The crimping machine should now be correctly setup and calibrated ready for production.

IMPORTANT:

Scrap any assembly which has an “X” on the ferrule.

After completing the above setup process the crimping machine setting should not be altered.

Double striking of the ferrule is not allowed.

11. Crimping operations

In the case of:

- MF2000 two-piece fittings and
- MF3000 OPF & OPK type one-piece fittings
- RH one piece couplings,

Position the entire length of the ferrule inside the dies in order to obtain a completely flat crimp.

Note: *Leave some margin from the die set edge to include the possible elongation of the ferrule during crimping.*

Double crimping of ferrules covering partial lengths in two or more strikes is not allowed.

- Crimp the next hose assembly end using the same crimp setting that was determined during the setup process.
- Take 4 measurements across the crimped ferrule diameter at 45° to one another as shown using vernier callipers or a micrometer gauge. The measurements should be taken from the middle section of the ferrule’s crimped length and from across the die landing areas NOT from across the raised ridges.
- Calculate the average crimping diameter using the four measurements taken.
- Verify that the calculated average of the measured values is within the acceptable tolerances of +0mm / -0.2mm of the Nominal Crimping Diameter.
- **If the measured crimping diameter is outside of the allowable limits it indicates that the crimping machine is “out of control” and must be subjected to maintenance or repair as required.**
- Repeat the above process for all hose assemblies of the same type.

It is not permitted to crimp Manuli hose assemblies to a value outside of the defined range (ie: Crimping chart value +0/-0.2) as specified in the latest version of the Manuli Hydraulics Crimping Data.

12. PROOF TESTING, LABELLING, CERTIFICATION

12.1 - Proof pressure testing

If internal proof pressure testing is required, it is recommended to follow the ISO 1402 or SAE J343 test procedures.

**Proof testing should be carried out using compatible hydraulic fluid or water.
Do not use compressed gases.**

If Individual Hose Assembly Test Documentation is required, each test certificate should bear a unique number for traceability. Test certificates should include the following information as required:

- i. Test certificate number
- ii. Testing location and name
- iii. Test procedure reference number
- iv. Assembler's name
- v. Fabrication number (if applicable)
- vi. Hose assembly part-number and / or serial number(s)
- vii. Hose assembly details including length, type of hose and size
- viii. Hose assembly standard
- ix. End fitting details that can identify types of ferrules and seals used
- x. Test date
- xi. Confirmation that the hose assembly consisted of matched hose and hose ends
- xii. Hose end information and check for correct matching of hose ends to hose
- xiii. Test pressure
- xiv. Pass / fail
- xv. Signature of person inspecting

Note: For DNV Type Approval (or other TA such as ABS, LR, BV etc...) the Type Approval certificate number shall be listed on the test certificate.

12.2 - Labelling hose assemblies

When required, it is necessary to apply tagging on the hydraulic hose assemblies; tagging will make them:

- Identifiable
- Traceable
- Manageable
- Easier to be maintained.

The serial number and bar code on the tag is linked to:

- Product Bill of Materials
- Manufacturing information
- Test reports
- All other asset information

Tags are applied when hoses are assembled. Many tags types are available:

- Visually read types (Self-laminating label stickers, plastic tags, stainless steel tags)
- Radio Frequency types (RFID)

Note: *Stainless steel may be required in the case with some Naval or DNV requirements.*

All tags shall be resistant to weather, UV, corrosion and comply with country legislation.

12.3 - Certification of hose assemblies

A certificate of conformance should be supplied when requested. The certificate of conformance should have the following information, if applicable:

- i. Customer's name, address, purchase order, contact details
- ii. Specification, drawings, standards the assembly conforms to
- iii. Supplier's name, address, purchase order, contact details
- iv. Supplier's order number
- v. Description and quantity of supply
- vi. Additional information as requested
- vii. Supplier's authorisation Signature
- viii. Date of supply

13. CLEANING & PACKAGING

Hose assemblies should be supplied free from water, debris, metal shavings, dirt, or any other foreign material.

Hose bore shall have been cleaned carefully.

One suggested method is to clean with a foam projectile pellet being shot through the hose assembly in both directions.

Hose bore shall be inspected to ensure the cleaning pellet has exited the hose.

In case of specific requirements of hose assembly cleanliness, it is necessary to proceed with specific cleaning procedures of flushing and drying, following the detailed information of these processes (refer to equipment recommendations).

End connections should be sealed and capped to maintain cleanliness.

Hose assemblies should be packaged such that external abuse during shipping, handling and storage does not damage the hose or fittings.

Industrial Hose Assembly Instructions

1. Introduction

In the conveying hose sector, regulation of the hose assembly process is, in most cases, linked to the assembler's experience.

Norms that precisely describe the assembling process do not exist.

Basic generic guidelines on hose assembling process are available from hose manufacturers and distributors, but in the field each assembler manufactures hose assemblies according to his knowledge which is usually based on experience.

In the conveying hose sector the main two types of assembling process are crimping and clamping.

Manuli Hydraulics recommends selecting the crimping of conveying hoses for the following reasons:

- Crimped solutions offer a superior seal compared to clamps, making the hose assembly more reliable against leaks, especially in high pressure applications;
- Crimped solutions favour safety more than clamps.

2. Clamping

The clamping system available in the conveying hose sector can be proposed by assemblers for low pressures and for applications that don't have a severe mission profile (eg: general purpose applications, water low pressure, etc.).

Commercial clamps are widely available on the market to suit specific applications.

The SERRATED insert by Manuli can be used for assembling with market clamps, provided that assemblers carry out dedicated laboratory verifications, proof test and field tests, to ascertain the performance requirements of the assemblies.

2.1 - Clamping process



The clamp installation process is as follows:

- Measure the outside diameter of the hose and select the clamp by checking its range.
- Slide the hose clamp over the hose and insert the fitting into the hose.
- Position the clamp over the joint between the fitting and the hose.

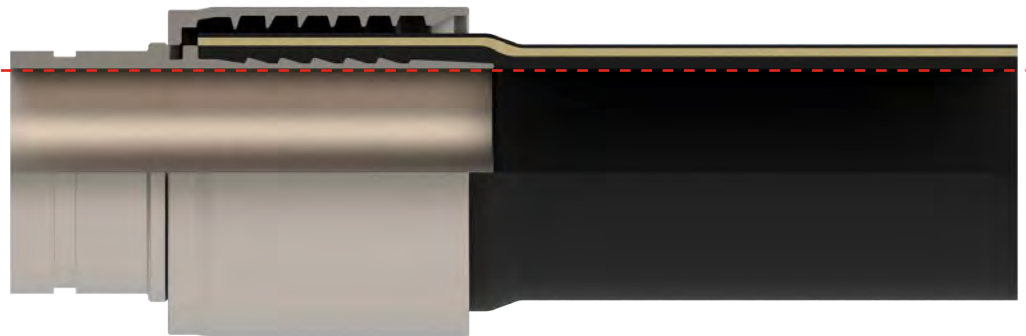
To reduce the risk of leaking the clamp needs to be placed at least 6mm (1/4") from the end of the hose);

- Tighten the bolts up to reach a sufficient compression of the hose wall to keep firmly fixed the hose onto the fitting.
- Consult the clamp manufacturer for proper torque moments of bolts or screws.

3. FULL-FLOW FITTING ASSEMBLY

Manuli Hydraulics offers full-flow fittings for use in high-pressure concrete conveyance (ABRASERVICE/100 D), and designed to provide minimal resistance to flow by providing a "smooth bore" interface between the fitting and the hose.

Due to the high insertion force required for deformation of the hose end, an Insert Pushing Machine is required for this operation



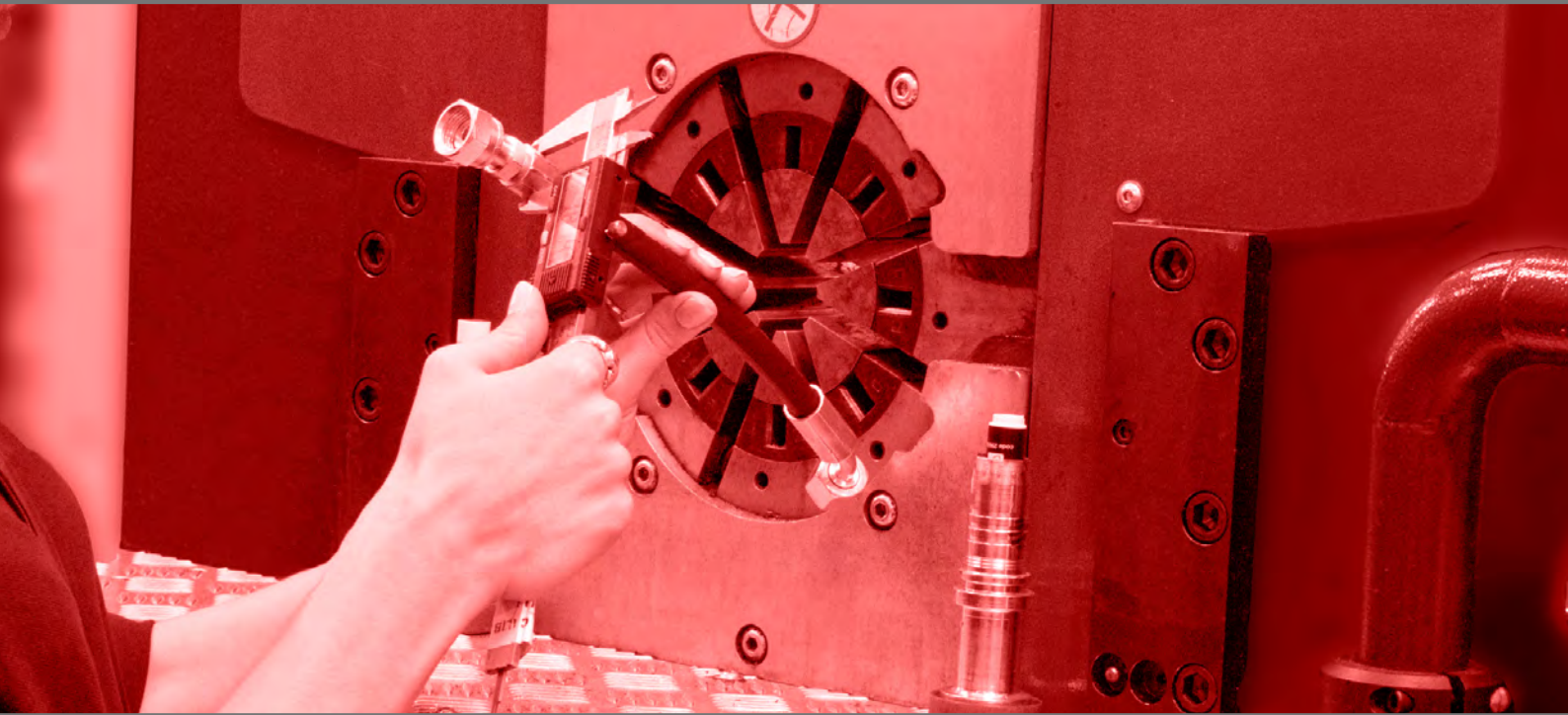
3.1 - Insert mounting

- Locate the ferrule on the hose.
- Clamp the hose securely in the insert pushing machine.
- Lubricate the outer surface of the insert with a light oil.
- Locate the insert in the insert pushing machine and ensure that the insert and hose are axially aligned.
- Push the insert into the hose until it reaches the mechanical stop on the insert

Note: *The hose should visibly deform around the insert.*

3.2 - Crimping and validation procedure

- Carry out the crimping and validation of the hose in accordance with the instructions provided in the previous section of this document.



GLOBAL STANDARD HOSES

TRACTOR/1SN

CRIMP VERSION: Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02004A06*	6	- 4	1/4"	Multifit	M03400-04	No Skive	17.9	0.704	16
H02004008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	18.7	0.736	18
H02004010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.6	0.811	20
H02004012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.0	0.944	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02004A06*	6	- 4	1/4"		OPF-04	No Skive	17.8	0.7	16
H02004008*	8	- 5	5/16"		OPF-05	No Skive	18.4	0.724	18
H02004010*	10	- 6	3/8"		OPF-06	No Skive	20.6	0.811	20
H02004012*	12	- 8	1/2"		OPF-08	No Skive	22.8	0.897	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

TRACTOR/1SN

CRIMP VERSION: Alternative 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H02004A06*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.3	0.641	16
H02004008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.4	0.685	16
H02004010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	19.6	0.771	18
H02004012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	22.5	0.885	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 2

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02004A06*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.9	0.665	16
H02004008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	18.3	0.72	18
H02004010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.7	0.814	20
H02004012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.5	0.925	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GLOBAL STANDARD 36

TRACTOR/2SN

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01027006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.6	0.732	18
H01027008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.7	0.775	18
H01027010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	21.4	0.842	20
H01027012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	25.0	0.984	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01027006*	6	- 4	1/4"		OPF-04	No Skive	18.8	0.74	18
H01027008*	8	- 5	5/16"		OPF-05	No Skive	19.7	0.775	18
H01027010*	10	- 6	3/8"		OPF-06	No Skive	21.5	0.846	20
H01027012*	12	- 8	1/2"		OPF-08	No Skive	24.1	0.948	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

TRACTOR/2SN

CRIMP VERSION: Alternative 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01027006*	6	- 4	1/4"	Multifit	M00910-04	External Skive	25.0	0.98	17.5	0.688	16
H01027008*	8	- 5	5/16"	Multifit	M00910-05	External Skive	23.0	0.9	21.0	0.826	20
H01027010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.0	0.866	22
H01027012*	12	- 8	1/2"	Multifit	M00910-08	External Skive	28.0	1.1	25.5	1.003	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01027010*	10	- 6	3/8"		OPK-06	No Skive	23.5	0.925	22
H01027012*	12	- 8	1/2"		OPK-08	No Skive	27.1	1.066	27

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

LYTE-FLEX

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01084006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.9	0.665	16
H01084008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	18.6	0.732	18
H01084010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.7	0.814	20
H01084012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.5	0.925	22
H01084016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	27.3	1.074	27
H01084019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	31.2	1.228	30
H01084025*	25	- 16	1"	Multifit	M03400-16	No Skive	38.7	1.523	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01084006*	6	- 4	1/4"		OPF-04	No Skive	17.7	0.696	16
H01084008*	8	- 5	5/16"		OPF-05	No Skive	18.5	0.728	18
H01084010*	10	- 6	3/8"		OPF-06	No Skive	20.8	0.818	20
H01084012*	12	- 8	1/2"		OPF-08	No Skive	23.5	0.925	22
H01084016*	16	- 10	5/8"		OPF-10	No Skive	27.0	1.062	27
H01084019*	19	- 12	3/4"		OPF-12	No Skive	30.8	1.212	30
H01084025*	25	- 16	1"		OPF-16	No Skive	38.4	1.511	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

LYTE-FLEX

CRIMP VERSION: Alternative 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01084006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.6	0.653	16
H01084008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.8	0.7	16
H01084010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	20.4	0.803	20
H01084012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	23.6	0.929	22
H01084016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	28.1	1.106	27
H01084019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	31.6	1.244	30
H01084025*	25	- 16	1"	Multifit	M00130-16	External Skive	36.0	1.41	38.3	1.507	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 2

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01084006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.1	0.712	18
H01084008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.0	0.748	18
H01084010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.7	0.814	20
H01084012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.4	0.96	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

HARVESTER/17

GLOBAL STANDARD
41

CRIMP VERSION: Standard 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01056006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.5	0.649	16
H01056008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	17.6	0.692	16
H01056A10*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.2	0.795	20
H01056A12*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.1	0.909	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01056006*	6	- 4	1/4"		OPF-04	No Skive	16.9	0.665	16
H01056008*	8	- 5	5/16"		OPF-05	No Skive	17.9	0.704	16
H01056A10*	10	- 6	3/8"		OPF-06	No Skive	20.4	0.803	20
H01056A12*	12	- 8	1/2"		OPF-08	No Skive	22.8	0.897	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

HARVESTER/17

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01056006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	15.8	0.622	14
H01056008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	16.5	0.649	16
H01056A10*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	19.8	0.779	18
H01056A12*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	22.6	0.889	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

COVER

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H05002005*	5	- 4	3/16"	Multifit	M00310-03	No Skive	14.6	0.574	14
H05002006*	6	- 5	1/4"	Multifit	M00310-04	No Skive	16.7	0.657	16
H05002008*	8	- 6	5/16"	Multifit	M00310-05	No Skive	17.5	0.688	16
H05002010*	10	- 8	13/32"	Multifit	M00310-06	No Skive	20.7	0.814	20
H05002012*	12	- 10	1/2"	Multifit	M00310-08	No Skive	24.2	0.952	24
H05002016*	16	- 12	5/8"	Multifit	M00310-10	No Skive	27.7	1.09	27

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H05002005*	5	- 4	3/16"		OPF-03	No Skive	14.7	0.578	14
H05002006*	6	- 5	1/4"		OPF-04	No Skive	19.7	0.775	18
H05002008*	8	- 6	5/16"		OPF-05	No Skive	20.6	0.811	20
H05002010*	10	- 8	13/32"		OPF-06	No Skive	21.4	0.842	20
H05002012*	12	- 10	1/2"		OPF-08	No Skive	23.6	0.929	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SPIRTEX

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80002019*	19	- 12	3/4"	Multifit	M00321-12	No Skive	32.5	1.279	30
H80002025*	25	- 16	1"	Multifit	M00930-16	No Skive	42.2	1.661	42
H80002031*	31	- 20	1.1/4"	Multifit	M00920-20	No Skive	49.8	1.96	48
H80002038*	38	- 24	1.1/2"	Multifit	M00910-24	No Skive	58.0	2.283	57
H80002051*	51	- 32	2"	Multifit	M00910-32	No Skive	72.0	2.834	70
H80002063*	63	- 40	2.1/2"	Multifit	M03450-40	No Skive	82.7	3.255	82
H80002076*	76	- 48	3"	Multifit	M03400-48	No Skive	95.2	3.748	95
H80002089*	89	- 56	3.1/2"	Multifit	M03400-56	No Skive	113.5	4.468	112
H80002102*	102	- 64	4"	Multifit	M03400-64	No Skive	125.0	4.921	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GLOBAL STANDARD 44

SPIRTEX/G

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80023019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.9	1.295	30
H80023025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.0	1.535	39
H80023031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.2	1.858	45
H80023038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	53.5	2.106	51
H80023051*	51	- 32	2"	Serrated	D08100-32	No Skive	66.4	2.614	66
H80023063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	80.0	3.149	76
H80023076*	76	- 48	3"	Serrated	D08100-48	No Skive	91.8	3.614	90
H80023089*	89	- 56	3.1/2"	Serrated	D08100-56	No Skive	108.5	4.271	105
H80023102*	102	- 64	4"	Serrated	D08100-64	No Skive	120.2	4.732	112

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80023019*	19	- 12	3/4"	Multifit	M00321-12	No Skive	32.9	1.295	30
H80023025*	25	- 16	1"	Multifit	M03400-16	No Skive	41.0	1.614	39
H80023031*	31	- 20	1.1/4"	Multifit	M00920-20	No Skive	50.5	1.988	48
H80023038*	38	- 24	1.1/2"	Multifit	M00910-24	No Skive	59.1	2.326	57
H80023051*	51	- 32	2"	Multifit	M00910-32	No Skive	71.7	2.822	70
H80023063*	63	- 40	2.1/2"	Multifit	M03450-40	No Skive	83.9	3.303	82
H80023076*	76	- 48	3"	Multifit	M03400-48	No Skive	96.0	3.779	95
H80023089*	89	- 56	3.1/2"	Multifit	M03400-56	No Skive	121.1	4.767	112
H80023102*	102	- 64	4"	Multifit	M03400-64	No Skive	124.9	4.917	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

MULTITEX

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H09067005*	5	- 3	3/16"	Multifit	M00820-03	No Skive	12.1	0.476	12
H09067006*	6	- 4	1/4"	Multifit	M00830-04	No Skive	15.0	0.59	14
H09067008*	8	- 5	5/16"	Multifit	M00830-05	No Skive	16.0	0.629	16
H09067010*	10	- 6	3/8"	Multifit	M00820-06	No Skive	18.4	0.724	18
H09067012*	12	- 8	1/2"	Multifit	M00820-08	No Skive	22.6	0.889	22
H09073016*	16	- 10	5/8"	Multifit	M00820-10	No Skive	26.1	1.027	24
H09073019*	19	- 12	3/4"	Multifit	M00820-12	No Skive	29.7	1.169	27
H09073025*	25	- 16	1"	Multifit	M00820-16	No Skive	36.3	1.429	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GLOBAL STANDARD 4/6

ASTRO/2

CRIMP VERSION:

Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H09075006*	6	- 4	1/4"	Multifit	M00830-04	No Skive	15.9	0.625	14
H09075008*	8	- 5	5/16"	Multifit	M00830-05	No Skive	16.9	0.665	16
H09075010*	10	- 6	3/8"	Multifit	M00820-06	No Skive	19.2	0.755	18
H09075012*	12	- 8	1/2"	Multifit	M00820-08	No Skive	22.9	0.901	22
H09075016*	16	- 10	5/8"	Multifit	M00820-10	No Skive	26.9	1.059	24
H09045019*	19	- 12	3/4"	Multifit	M00820-12	No Skive	30.4	1.196	30
H09045025*	25	- 16	1"	Multifit	M00820-16	No Skive	38.1	1.5	36
H09045032*	31	- 20	1.1/4"	Multifit	M00820-20	No Skive	45.7	1.799	45

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ASTRO/3

CRIMP VERSION: Standard 1

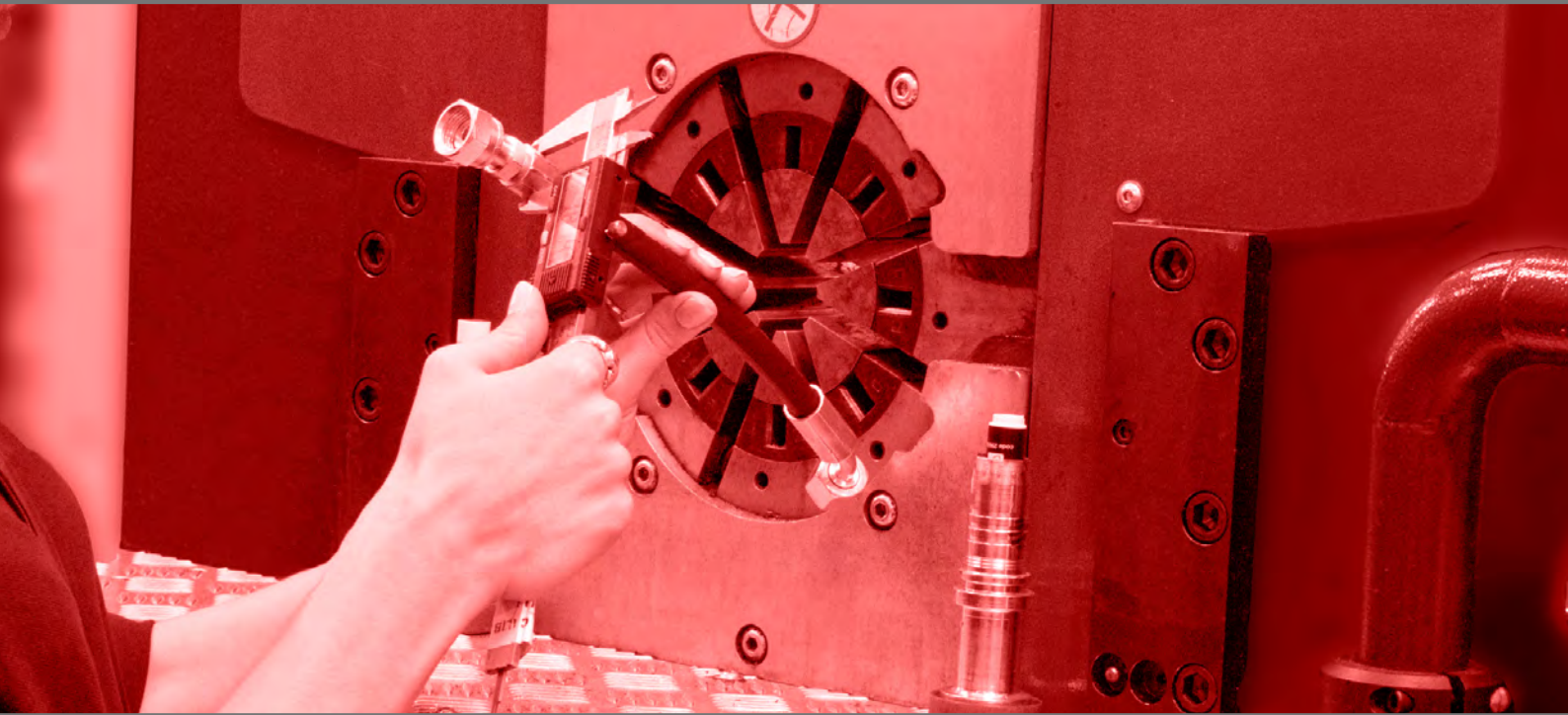
Release number: 5.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H09046006*	6	- 4	1/4"	Multifit	M00310-04	No Skive	16.1	0.633	16
H09046008*	8	- 5	5/16"	Multifit	M00310-05	No Skive	17.2	0.677	16
H09046010*	10	- 6	3/8"	Multifit	M00310-06	No Skive	20.4	0.803	20
H09046012*	12	- 8	1/2"	Multifit	M00310-08	No Skive	23.2	0.913	22
H09046016*	16	- 10	5/8"	Multifit	M00310-10	No Skive	27.0	1.062	27
H09046019*	19	- 12	3/4"	Multifit	M00321-12	No Skive	31.6	1.244	30
H09046025*	25	- 16	1"	Multifit	M00310-16	No Skive	38.3	1.507	36
H09046032*	31	- 20	1.1/4"	Multifit	M00310-20	No Skive	44.2	1.74	42
H09046040*	38	- 24	1.1/2"	Multifit	M00910-24	No Skive	58.4	2.299	57
H09046051*	51	- 32	2"	Multifit	M00910-32	No Skive	71.5	2.814	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GLOBAL STANDARD 48



HI-GRADE ISOBARIC HOSES

GOLDENISO/14 PILOT

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01172005*	5	- 3	3/16"	Minifit	M02400-03	No Skive	14.7	0.578	14
H01172006*	6	- 4	1/4"	Minifit	M02400-04	No Skive	14.6	0.574	14
H01172008*	8	- 5	5/16"	Minifit	M02400-05	No Skive	16.7	0.657	16
H01172010*	10	- 6	3/8"	Minifit	M02400-06	No Skive	19.0	0.748	18
H01172012*	12	- 8	1/2"	Minifit	M02400-08	No Skive	20.9	0.822	20

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01172005*	5	- 3	3/16"	Multifit	M03300-03	No Skive	15.1	0.594	14
H01172006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.4	0.645	16
H01172008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	17.6	0.692	16
H01172010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	19.8	0.779	18
H01172012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	22.4	0.881	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GOLDENISO/21 ANTIWEAR

CRIMP VERSION: Standard 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01173005*	5	- 3	3/16"	Multifit	M03300-03	No Skive	15.4	0.606	14
H01173006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.5	0.649	16
H01173008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	17.6	0.692	16
H01173010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.2	0.795	20
H01173012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.1	0.909	22
H01173016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	27.3	1.074	27
H01173019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	31.2	1.228	30
H01173025*	25	- 16	1"	Multifit	M03400-16	No Skive	39.1	1.539	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01173005*	5	- 3	3/16"		OPF-03	No Skive	15.4	0.606	14
H01173006*	6	- 4	1/4"		OPF-04	No Skive	16.9	0.665	16
H01173008*	8	- 5	5/16"		OPF-05	No Skive	17.9	0.704	16
H01173010*	10	- 6	3/8"		OPF-06	No Skive	20.4	0.803	20
H01173012*	12	- 8	1/2"		OPF-08	No Skive	22.8	0.897	22
H01173016*	16	- 10	5/8"		OPF-10	No Skive	27.0	1.062	27
H01173019*	19	- 12	3/4"		OPF-12	No Skive	30.8	1.212	30
H01173025*	25	- 16	1"		OPF-16	No Skive	38.7	1.523	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

GOLDENISO/21 ANTIWEAR

CRIMP VERSION:

Alternative 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01173006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	15.8	0.622	14
H01173008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	16.5	0.649	16
H01173010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	19.8	0.779	18
H01173012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	22.6	0.889	22
H01173016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	28.1	1.106	27
H01173019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	31.6	1.244	30
H01173025*	25	- 16	1"	Multifit	M00130-16	External Skive	36.0	1.41	38.6	1.519	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GOLDENISO/28 ANTIWEAR

CRIMP VERSION: Standard 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01142006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.9	0.665	16
H01142008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	18.6	0.732	18
H01142010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.7	0.814	20
H01142012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.5	0.925	22
H01142016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	28.2	1.11	27
H01142019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	32.4	1.275	30
H01142025*	25	- 16	1"	Multifit	M03500-16	No Skive	43.0	1.692	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01142006*	6	- 4	1/4"		OPF-04	No Skive	17.7	0.696	16
H01142008*	8	- 5	5/16"		OPF-05	No Skive	18.5	0.728	18
H01142010*	10	- 6	3/8"		OPF-06	No Skive	20.8	0.818	20
H01142012*	12	- 8	1/2"		OPF-08	No Skive	23.5	0.925	22
H01142016*	16	- 10	5/8"		OPF-10	No Skive	27.9	1.098	27
H01142019*	19	- 12	3/4"		OPK-12	No Skive	34.9	1.374	33
H01142025*	25	- 16	1"		OPK-16	No Skive	43.0	1.692	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

HI-GRADE ISOBARIC 54

GOLDENISO/28 ANTIWEAR

CRIMP VERSION: Alternative 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01142006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.6	0.653	16
H01142008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.8	0.7	16
H01142010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	20.4	0.803	20
H01142012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	23.6	0.929	22
H01142016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	28.5	1.122	27
H01142019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	32.6	1.283	30
H01142025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	42.5	1.673	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 2

Release number: 5.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01142006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.1	0.712	18
H01142008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.0	0.748	18
H01142010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.7	0.814	20
H01142012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.4	0.96	24
H01142016*	16	- 10	5/8"		OPK-10	No Skive	29.8	1.173	27

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GOLDENISO/21 XTRAFLEX

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10093031*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive			48.0	1.88	48.4	1.905	48
H10093038*	38	- 24	1.1/2"	Interlock-Plus	M01500-24	Double Skive	25.0	0.98	73.0	2.87	56.0	2.204	54
H10093051*	51	- 32	2"	Interlock-Plus	M01500-32	Double Skive	31.0	1.22	86.0	3.38	73.3	2.885	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10093031*	31	- 20	1.1/4"	Spiralfit	M05400-20	No Skive	52.5	2.066	51
H10093038*	38	- 24	1.1/2"	Spiralfit	M05400-24	No Skive	60.1	2.366	57
H10093051*	51	- 32	2"	Spiralfit	M05400-32	No Skive	74.6	2.937	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GOLDENISO/21 XTRAFLEX

CRIMP VERSION:

Alternative 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
* H10093031*	31	- 20	1.1/4"		OPK-20	No Skive	50.8	2.0	48
* H10093038*	38	- 24	1.1/2"		OPK-24	No Skive	58.6	2.307	57
* H10093051*	51	- 32	2"		OPK-32	No Skive	72.7	2.862	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

***** This is a simplified solution, please refer to page 10 for further information.

CRIMP VERSION:

Alternative 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10093031*	31	- 20	1.1/4"	Multifit	M03500-20	No Skive	50.2	1.976	48

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GOLDENISO/28 XTRAFLEX

CRIMP VERSION: Standard 1

Release number: 5.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10095010*	10	- 6	3/8"	Multifit	M00920-06	External Skive			26.0	1.02	21.8	0.858	20
H10095012*	12	- 8	1/2"	Multifit	M00910-08	External Skive			28.0	1.1	25.1	0.988	24
H10095016*	16	- 10	5/8"	Multifit	M00910-10	External Skive			33.0	1.29	28.6	1.125	27
H10095019*	19	- 12	3/4"	Multifit	M00930-12	External Skive			32.0	1.25	33.0	1.299	33
H10095025*	25	- 16	1"	Multifit	M00930-16	External Skive			42.0	1.65	40.8	1.606	39
H10095031*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive			48.0	1.88	48.4	1.905	48
H10095038*	38	- 24	1.1/2"	Interlock-Plus	M01500-24	Double Skive	25.0	0.98	73.0	2.87	56.0	2.204	54
H10095051*	51	- 32	2"	Interlock-Plus	M01500-32	Double Skive	29.0	1.14	86.0	3.38	73.9	2.909	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10095010*	10	- 6	3/8"		OPK-06	No Skive	23.4	0.921	22
H10095012*	12	- 8	1/2"		OPK-08	No Skive	27.0	1.062	27
H10095016*	16	- 10	5/8"		OPK-10	No Skive	29.9	1.177	27
H10095019*	19	- 12	3/4"		OPK-12	No Skive	34.6	1.362	33
H10095025*	25	- 16	1"		OPK-16	No Skive	42.2	1.661	42
H10095031*	31	- 20	1.1/4"		OPK-20	No Skive	50.8	2.0	48

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GOLDENISO/28 XTRAFLEX

CRIMP VERSION: Alternative 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10095019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.5	1.437	36
H10095025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.6	1.755	42
H10095031*	31	- 20	1.1/4"	Spiralfit	M05400-20	No Skive	52.5	2.066	51
H10095038*	38	- 24	1.1/2"	Spiralfit	M05400-24	No Skive	59.4	2.338	57
H10095051*	51	- 32	2"	Spiralfit	M05400-32	No Skive	75.1	2.956	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10095010*	10	- 6	3/8"	Multifit	M03500-06	No Skive	23.5	0.925	22
H10095012*	12	- 8	1/2"	Multifit	M03500-08	No Skive	27.1	1.066	27
H10095016*	16	- 10	5/8"	Multifit	M03500-10	No Skive	30.1	1.185	30
H10095019*	19	- 12	3/4"	Multifit	M03500-12	No Skive	34.6	1.362	33
H10095025*	25	- 16	1"	Multifit	M03500-16	No Skive	42.0	1.653	42
H10095031*	31	- 20	1.1/4"	Multifit	M03500-20	No Skive	50.2	1.976	48

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GOLDENISO/35 XTRAFLEX

CRIMP VERSION: Standard 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10096010*	10	- 6	3/8"	Multifit	M00920-06	External Skive			26.0	1.02	21.8	0.858	20
H10096012*	12	- 8	1/2"	Multifit	M00910-08	External Skive			28.0	1.1	25.1	0.988	24
H10096016*	16	- 10	5/8"	Multifit	M00910-10	External Skive			33.0	1.29	28.6	1.125	27
H10096019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.0	1.338	33
H10096025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.1	1.618	39
H10096031*	31	- 20	1.1/4"	Interlock-Plus	M01500-20	Double Skive	22.0	0.86	67.0	2.63	48.9	1.925	48
H10096038*	38	- 24	1.1/2"	Interlock-Plus	M01600-24	Double Skive	25.0	0.98	77.0	3.03	60.2	2.37	57
H10096051*	51	- 32	2"	Interlock-Plus	M01800-32	Double Skive	29.0	1.14	84.0	3.3	75.1	2.956	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10096010*	10	- 6	3/8"		OPK-06	No Skive	23.4	0.921	22
H10096012*	12	- 8	1/2"		OPK-08	No Skive	26.8	1.055	24
H10096016*	16	- 10	5/8"		OPK-10	No Skive	30.2	1.188	30
H10096019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.2	1.425	36
H10096025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	43.9	1.728	42
H10096031*	31	- 20	1.1/4"	Spiralfit	M05400-20	No Skive	51.8	2.039	51
H10096038*	38	- 24	1.1/2"	Spiralfit	M05500-24	No Skive	65.2	2.566	63
H10096051*	51	- 32	2"	Spiralfit	M05500-32	No Skive	79.3	3.122	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GOLDENISO/35 XTRAFLEX

CRIMP VERSION: Alternative 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H10096019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	33.3	1.311	33
* H10096025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	41.0	1.614	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

* This is a simplified solution, please refer to page 10 for further information.

CRIMP VERSION: Alternative 2

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10096010*	10	- 6	3/8"	Multifit	M03500-06	No Skive	23.5	0.925	22
H10096012*	12	- 8	1/2"	Multifit	M03500-08	No Skive	27.1	1.066	27
H10096016*	16	- 10	5/8"	Multifit	M03500-10	No Skive	30.3	1.192	30
* H10096019*	19	- 12	3/4"		OPK-12	No Skive	34.9	1.374	33
* H10096025*	25	- 16	1"		OPK-16	No Skive	42.5	1.673	42
* H10096031*	31	- 20	1.1/4"		OPK-20	No Skive	51.0	2.007	51
H10096038*	38	- 24	1.1/2"	SpiralfitGX	M05500-24GX	No Skive	65.3	2.57	63

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

* This is a simplified solution, please refer to page 10 for further information.

GOLDENISO/42 XTRAFLEX

CRIMP VERSION: Standard 1

Release number: 7.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10097006*	6	- 4	1/4"	Multifit	M00120-04	External Skive			23.0	0.9	16.4	0.645	16
H10097010*	10	- 6	3/8"	Multifit	M00920-06	External Skive			26.0	1.02	22.8	0.897	22
H10097012*	12	- 8	1/2"	Multifit	M00910-08	External Skive			28.0	1.1	25.8	1.015	24
H10097016*	16	- 10	5/8"	Interlock-Plus	M01500-10	Double Skive	12.0	0.47	30.0	1.18	29.1	1.145	27
H10097019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.1	1.342	33
H10097025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.3	1.625	39
H10097031*	31	- 20	1.1/4"	Interlock-Plus	M01600-20	Double Skive	22.0	0.86	67.0	2.63	52.7	2.074	51
H10097038*	38	- 24	1.1/2"	Interlock-Plus	M01600-24	Double Skive	25.0	0.98	77.0	3.03	60.6	2.385	57
H10097051*	51	- 32	2"	Interlock-Super	M02700-32	Double Skive	30.0	1.18	92.0	3.62	80.0	3.149	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

REMARK:

DN51: this reference must be crimped with one of the following machines:

- MS400
- MS480
- MS800
- GOLDENCRIMP420
- GOLDENCRIMP450

using a special die set n°76 with length 135mm (code: ESA3540N135-76).

Please verify the pins codes when ordering this special die set according to machine model.

GOLDENISO/42 XTRAFLEX

CRIMP VERSION: Standard 2

Release number: 6.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10097012*	12	- 8	1/2"	Multifit	M03500-08	No Skive	27.6	1.086	27
H10097016*	16	- 10	5/8"	Spiralfit	M05400-10	No Skive	32.7	1.287	30
H10097019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.4	1.433	36
H10097025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.1	1.736	42
H10097031*	31	- 20	1.1/4"	Spiralfit	M05500-20	No Skive	57.6	2.267	57
H10097038*	38	- 24	1.1/2"	SpiralfitGX	M05500-24GX	No Skive	65.5	2.578	63
H10097051*	51	- 32	2"	SpiralfitGX	M05500-32GX	No Skive	83.0	3.267	82

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10097012*	12	- 8	1/2"		OPK-08	No Skive	27.5	1.082	27

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GOLDENISO/38 LONGLIFE

CRIMP VERSION: Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10098006*	6	- 4	1/4"	Multifit	M00120-04	External Skive			23.0	0.9	16.7	0.657	16
H10098008*	8	- 5	5/16"	Multifit	M00120-05	External Skive			23.0	0.9	17.8	0.7	16
H10098010*	10	- 6	3/8"	Multifit	M00120-06	External Skive			23.0	0.9	20.4	0.803	20
H10098012*	12	- 8	1/2"	Multifit	M00120-08	External Skive			26.0	1.02	23.6	0.929	22
H10098019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.1	1.342	33
H10098025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.3	1.625	39
H10098A31*	31	- 20	1.1/4"	Interlock-Plus	M01600-20	Double Skive	22.0	0.86	67.0	2.63	52.7	2.074	51

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 / -0.2 mm (0 / -0.008 inch)

GOLDENISO/45 LONGLIFE

CRIMP VERSION: Standard 1

Release number: 5.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10089006*	6	- 4	1/4"	Interlock-Plus	M01500-04	Double Skive	10.0	0.39	30.0	1.18	20.1	0.791	20
H10089016*	16	- 10	5/8"	Interlock-Plus	M01500-10	Double Skive	12.0	0.47	30.0	1.18	29.8	1.173	27
H10089019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	35.2	1.385	33
H10089025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.9	1.649	39
H10089031*	31	- 20	1.1/4"	Interlock-Plus	M01850-20	Double Skive	22.0	0.86	71.0	2.79	56.0	2.204	54
H10089038*	38	- 24	1.1/2"	Interlock-Plus	M01600-24	Double Skive	25.0	0.98	77.0	3.03	60.8	2.393	57

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SHIELDMASTER/14

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01184006*	6	- 4	1/4"	Minifit	M02400-04	No Skive	14.4	0.566	14
H01184010*	10	- 6	3/8"	Minifit	M02400-06	No Skive	19.0	0.748	18
H01184012*	12	- 8	1/2"	Minifit	M02400-08	No Skive	20.9	0.822	20

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01184005*	5	- 3	3/16"	Multifit	M03300-03KM	No Skive	14.1	0.555	14
H01184006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.2	0.637	16
H01184010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	19.8	0.779	18
H01184012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	22.4	0.881	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

SHIELDMASTER/21

CRIMP VERSION:

Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01154006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	15.8	0.622	14
H01154008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	16.5	0.649	16
H01154010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	19.8	0.779	18
H01154012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	22.6	0.889	22
H01154016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	28.1	1.106	27
H01154019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	31.6	1.244	30
H01154025*	25	- 16	1"	Multifit	M00130-16	External Skive	36.0	1.41	38.6	1.519	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION:

Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01154006*	6	- 4	1/4"		OPF-04	No Skive	16.9	0.665	16
H01154008*	8	- 5	5/16"		OPF-05	No Skive	17.9	0.704	16
H01154010*	10	- 6	3/8"		OPF-06	No Skive	20.4	0.803	20
H01154012*	12	- 8	1/2"		OPK-08	No Skive	26.4	1.039	24
H01154016*	16	- 10	5/8"		OPF-10	No Skive	27.0	1.062	27
H01154019*	19	- 12	3/4"		OPF-12	No Skive	30.8	1.212	30
H01154025*	25	- 16	1"		OPF-16	No Skive	38.7	1.523	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SHIELDMASTER/21

CRIMP VERSION: Alternative 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01154006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.5	0.649	16
H01154008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	17.6	0.692	16
H01154010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.2	0.795	20
H01154012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.0	0.944	24
H01154016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	27.3	1.074	27
H01154019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	31.2	1.228	30
H01154025*	25	- 16	1"	Multifit	M03400-16	No Skive	39.1	1.539	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 / -0.2 mm (0 / -0.008 inch)

SHIELDMASTER/28

CRIMP VERSION:

Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H01155006*	6	- 4	1/4"	Multifit	M00120-04	External Skive			23.0	0.9	16.6	0.653	16
H01155008*	8	- 5	5/16"	Multifit	M00120-05	External Skive			23.0	0.9	17.8	0.7	16
H01155010*	10	- 6	3/8"	Multifit	M00120-06	External Skive			23.0	0.9	20.4	0.803	20
H01155012*	12	- 8	1/2"	Multifit	M00120-08	External Skive			26.0	1.02	23.6	0.929	22
H01155016*	16	- 10	5/8"	Multifit	M00120-10	External Skive			30.0	1.18	28.5	1.122	27
H01155019*	19	- 12	3/4"	Multifit	M00120-12	External Skive			32.0	1.25	32.6	1.283	30
H01155025*	25	- 16	1"	Multifit	M00930-16	External Skive			42.0	1.65	40.8	1.606	39
H01155031*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive			48.0	1.88	48.4	1.905	48
H01155051*	51	- 32	2"	Interlock-Plus	M01500-32	Double Skive	29.0	1.14	86.0	3.38	73.9	2.909	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION:

Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01155006*	6	- 4	1/4"		OPF-04	No Skive	17.7	0.696	16
H01155008*	8	- 5	5/16"		OPF-05	No Skive	18.5	0.728	18
H01155010*	10	- 6	3/8"		OPF-06	No Skive	20.8	0.818	20
H01155012*	12	- 8	1/2"		OPK-08	No Skive	26.2	1.031	24
H01155016*	16	- 10	5/8"		OPK-10	No Skive	29.8	1.173	27
H01155019*	19	- 12	3/4"		OPK-12	No Skive	34.9	1.374	33
H01155025*	25	- 16	1"		OPK-16	No Skive	41.8	1.645	39
H01155031*	31	- 20	1.1/4"		OPK-20	No Skive	50.8	2.0	48

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SHIELDMASTER/28

CRIMP VERSION: Alternative 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01155006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.9	0.665	16
H01155008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	18.6	0.732	18
H01155010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.7	0.814	20
H01155012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.4	0.96	24
H01155016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	28.2	1.11	27
H01155019*	19	- 12	3/4"	Multifit	M03500-12	No Skive	34.9	1.374	33
H01155025*	25	- 16	1"	Multifit	M03500-16	No Skive	41.6	1.637	39
H01155051*	51	- 32	2"	Spiralfit	M05400-32	No Skive	75.1	2.956	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SHIELDMASTER/35

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10119006*	6	- 4	1/4"	Multifit	M00120-04	External Skive			23.0	0.9	16.4	0.645	16
H10119008*	8	- 5	5/16"	Multifit	M00120-05	External Skive			23.0	0.9	17.8	0.7	16
H10119010*	10	- 6	3/8"	Multifit	M00120-06	External Skive			23.0	0.9	20.4	0.803	20
H10119012*	12	- 8	1/2"	Multifit	M00120-08	External Skive			26.0	1.02	23.6	0.929	22
H10119016*	16	- 10	5/8"	Multifit	M00910-10	External Skive			33.0	1.29	28.6	1.125	27
H10119019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.0	1.338	33
H10119025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.1	1.618	39
H10119031*	31	- 20	1.1/4"	Interlock-Plus	M01500-20	Double Skive	22.0	0.86	67.0	2.63	48.9	1.925	48
H10119038*	38	- 24	1.1/2"	Interlock-Plus	M01600-24	Double Skive	25.0	0.98	77.0	3.03	60.2	2.37	57
H10119051*	51	- 32	2"	Interlock-Plus	M01800-32	Double Skive	29.0	1.14	84.0	3.3	75.1	2.956	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10119006*	6	- 4	1/4"		OPF-04	No Skive	17.9	0.704	16
H10119008*	8	- 5	5/16"		OPF-05	No Skive	18.5	0.728	18
H10119010*	10	- 6	3/8"		OPF-06	No Skive	20.6	0.811	20
H10119012*	12	- 8	1/2"		OPK-08	No Skive	26.2	1.031	24
H10119016*	16	- 10	5/8"		OPK-10	No Skive	30.2	1.188	30
H10119019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.2	1.425	36
H10119025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	43.9	1.728	42
H10119031*	31	- 20	1.1/4"	Spiralfit	M05400-20	No Skive	51.8	2.039	51
H10119038*	38	- 24	1.1/2"	Spiralfit	M05500-24	No Skive	65.2	2.566	63
H10119051*	51	- 32	2"	Spiralfit	M05500-32	No Skive	79.3	3.122	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SHIELDMASTER/35

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10119006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.2	0.716	18
H10119008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.0	0.748	18
H10119010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.6	0.811	20
H10119012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.5	0.964	24
H10119016*	16	- 10	5/8"	Multifit	M03500-10	No Skive	30.6	1.204	30

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SHIELDMASTER/42

CRIMP VERSION: Standard 1

Release number: 5.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10120006*	6	- 4	1/4"	Multifit	M00120-04	External Skive			23.0	0.9	16.4	0.645	16
H10120010*	10	- 6	3/8"	Multifit	M00920-06	External Skive			26.0	1.02	22.8	0.897	22
H10120012*	12	- 8	1/2"	Multifit	M00910-08	External Skive			28.0	1.1	25.8	1.015	24
H10120016*	16	- 10	5/8"	Interlock-Plus	M01500-10	Double Skive	12.0	0.47	30.0	1.18	29.1	1.145	27
H10120019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.1	1.342	33
H10120025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.3	1.625	39
H10120031*	31	- 20	1.1/4"	Interlock-Plus	M01600-20	Double Skive	22.0	0.86	67.0	2.63	52.7	2.074	51
H10120038*	38	- 24	1.1/2"	Interlock-Plus	M01600-24	Double Skive	25.0	0.98	77.0	3.03	60.6	2.385	57
H10120051*	51	- 32	2"	Interlock-Super	M02700-32	Double Skive	30.0	1.18	92.0	3.62	80.0	3.149	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

REMARK:

DN51: this reference must be crimped with one of the following machines:

- MS400
- MS480
- MS800
- GOLDENCRIMP420
- GOLDENCRIMP450

using a special die set n°76 with length 135mm (code: ESA3540N135-76).
 Please verify the pins codes when ordering this special die set according to machine model.

CRIMP VERSION: Standard 2

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10120006*	6	- 4	1/4"		OPF-04	No Skive	17.7	0.696	16
H10120012*	12	- 8	1/2"		OPK-08	No Skive	27.5	1.082	27
H10120016*	16	- 10	5/8"	Spiralfit	M05400-10	No Skive	32.7	1.287	30
H10120019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.4	1.433	36
H10120025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.1	1.736	42
H10120031*	31	- 20	1.1/4"	Spiralfit	M05500-20	No Skive	57.6	2.267	57
H10120038*	38	- 24	1.1/2"	SpiralfitGX	M05500-24GX	No Skive	65.5	2.578	63

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SHIELDMASTER/42

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10120006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.2	0.716	18
H10120012*	12	- 8	1/2"	Multifit	M03500-08	No Skive	27.6	1.086	27

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

DIAMONDSPIR/14

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10104076*	76	- 48	3"	Interlock-Plus	M01500-48	Double Skive	33.0	1.29	102.0	4.01	97.0	3.818	95

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

DIAMONDSPIR/17

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10135076*	76	- 48	3"	Interlock-Plus	M01500-48	Double Skive	33.0	1.29	102.0	4.01	97.4	3.834	95
H10135089*	89	- 56	3.1/2"	Interlock-Super	M02610-56	Double Skive	77.0	3.03	196.0	7.71	127.5	5.019	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

DIAMONDSPIR/21

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10102063*	63	- 40	2.1/2"	Interlock-Plus	M01500-40	Double Skive	32.0	1.25	101.0	3.97	86.6	3.409	86
H10102076*	76	- 48	3"	Interlock-Plus	M01810-48	Double Skive	33.0	1.29	100.0	3.93	102.2	4.023	95

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

DIAMONDSPIR/35

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10103063*	63	- 40	2.1/2"	Interlock-Plus	M01810-40	Double Skive	32.0	1.25	101.0	3.97	90.5	3.562	90
H10103076*	76	- 48	3"	Interlock-Super	M02700-48	Double Skive	57.0	2.24	135.0	5.31	108.5	4.271	105

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

REMARK:

Crimp. Toll:
 DN63: 0 /-0.2 mm (0 /-0.008 inch);
 DN76: 0 /-0.3 mm (0 /-0.012 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10103076*	76	- 48	3"	Interlock-Super	M02800-48	Double Skive	54.0	2.12	132.0	5.19	108.5	4.271	105

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance:

Crimp. Toll:
 DN76: 0 /-0.3 mm (0 /-0.012 inch)

It's recommended only with crimp machine MS1600 / MS2000.

MASTERTEX

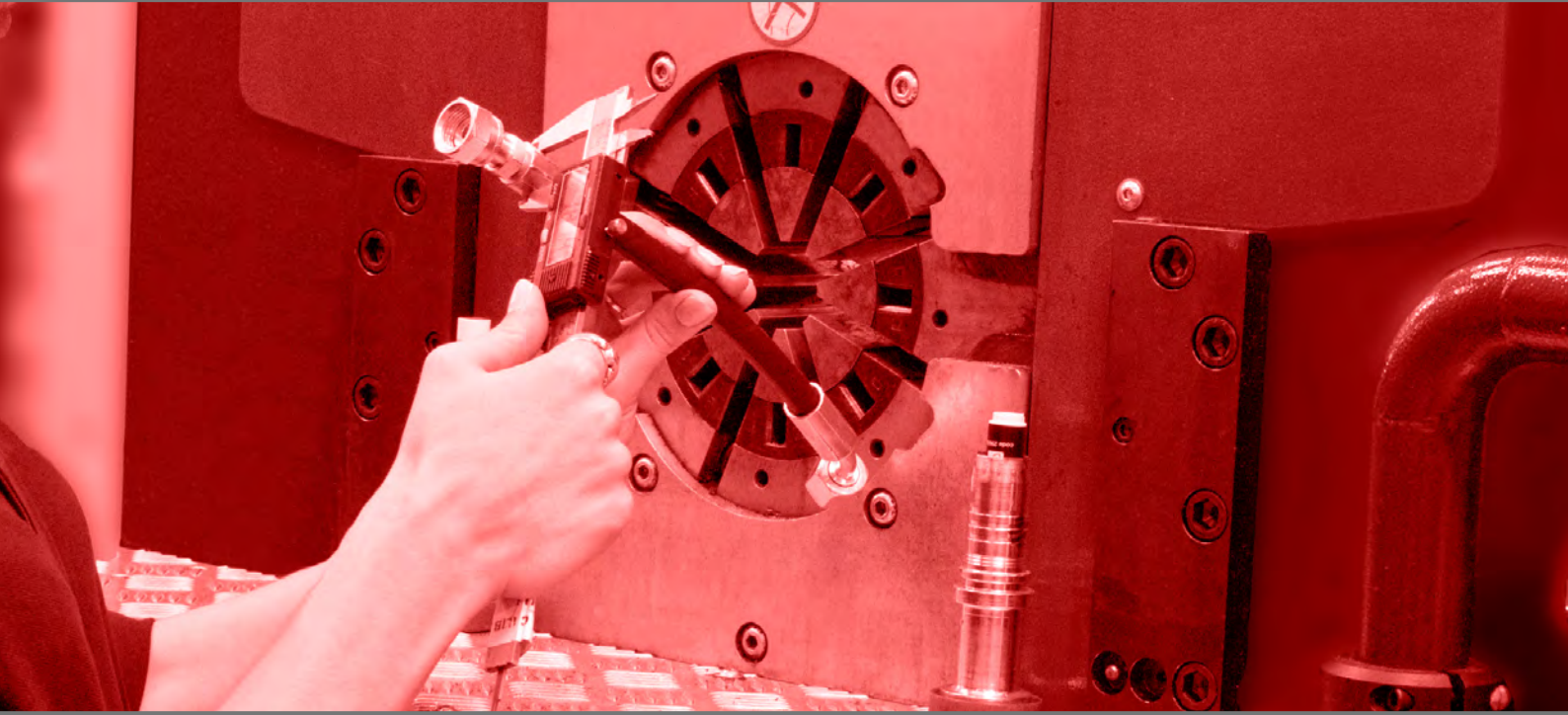
CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H09069006*	6	- 4	1/4"	Multifit	M00830-04	No Skive	15.0	0.59	14
H09069010*	10	- 6	3/8"	Multifit	M00820-06	No Skive	18.4	0.724	18
H09069012*	12	- 8	1/2"	Multifit	M00820-08	No Skive	22.6	0.889	22
H09069016*	16	- 10	5/8"	Multifit	M00820-10	No Skive	26.1	1.027	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)



HI-GRADE TRADITIONAL HOSES

ROCKMASTER/1SC

CRIMP VERSION: Standard 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01108006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.5	0.649	16
H01108008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	17.6	0.692	16
H01108010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	19.7	0.775	18
H01108012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.2	0.913	22
H01108016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	27.2	1.07	27
H01108019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	30.7	1.208	30
H01108025*	25	- 16	1"	Multifit	M03400-16	No Skive	38.3	1.507	36
H01108031*	31	- 20	1.1/4"	Multifit	M03400-20	No Skive	47.5	1.87	45
H01108038*	38	- 24	1.1/2"	Multifit	M00820-24	No Skive	51.8	2.039	51
H01108051*	51	- 32	2"	Multifit	M00820-32	No Skive	64.6	2.543	63
H01108063*	63	- 40	2.1/2"	Multifit	M03450-40	No Skive	79.5	3.129	76
H01108076*	76	- 48	3"	Multifit	M03400-48	No Skive	94.3	3.712	90

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01108006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	15.8	0.622	14
H01108008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	16.5	0.649	16
H01108010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	19.1	0.751	18
H01108012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	22.5	0.885	22
H01108016*	16	- 10	5/8"	Multifit	M00820-10	External Skive	29.0	1.14	24.4	0.96	24
H01108019*	19	- 12	3/4"	Multifit	M00820-12	External Skive	32.0	1.25	27.4	1.078	27
H01108025*	25	- 16	1"	Multifit	M00820-16	External Skive	38.0	1.49	36.0	1.417	36
H01108031*	31	- 20	1.1/4"	Multifit	M00820-20	External Skive	43.0	1.69	43.2	1.7	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/2SC

CRIMP VERSION: Standard 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01030005*	5	- 3	3/16"	Multifit	M03300-03	No Skive	15.4	0.606	14
H01030006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	17.0	0.669	16
H01030008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	18.6	0.732	18
H01030010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.5	0.807	20
H01030012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.5	0.925	22
H01030016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	27.4	1.078	27
H01030019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	31.1	1.224	30
H01030025*	25	- 16	1"	Multifit	M03400-16	No Skive	39.4	1.551	39
H01030031*	31	- 20	1.1/4"	Multifit	M03400-20	No Skive	48.7	1.917	48
H01030038*	38	- 24	1.1/2"	Multifit	M03400-24	No Skive	56.2	2.212	54
H01030051*	51	- 32	2"	Multifit	M03400-32	No Skive	69.0	2.716	66
H01030063*	63	- 40	2.1/2"	Multifit	M03450-40	No Skive	82.0	3.228	82
H01030076*	76	- 48	3"	Multifit	M03400-48	No Skive	96.0	3.779	95

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

ROCKMASTER/2SC

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01030005*	5	- 3	3/16"		OPF-03	No Skive	15.8	0.622	14
H01030006*	6	- 4	1/4"		OPF-04	No Skive	17.7	0.696	16
H01030008*	8	- 5	5/16"		OPF-05	No Skive	18.5	0.728	18
H01030010*	10	- 6	3/8"		OPF-06	No Skive	20.6	0.811	20
H01030012*	12	- 8	1/2"		OPF-08	No Skive	23.5	0.925	22
H01030016*	16	- 10	5/8"		OPF-10	No Skive	26.8	1.055	24
H01030019*	19	- 12	3/4"		OPF-12	No Skive	30.7	1.208	30
H01030025*	25	- 16	1"		OPF-16	No Skive	38.7	1.523	36
H01030031*	31	- 20	1.1/4"		OPK-20	No Skive	50.4	1.984	48
H01030038*	38	- 24	1.1/2"		OPK-24	No Skive	57.8	2.275	57
H01030051*	51	- 32	2"		OPK-32	No Skive	71.3	2.807	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01030005*	5	- 3	3/16"	Multifit	M00120-03	External Skive	18.0	0.7	14.6	0.574	14
H01030006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.5	0.649	16
H01030008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.8	0.7	16
H01030010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	20.2	0.795	20
H01030012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	23.6	0.929	22
H01030016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	27.8	1.094	27
H01030019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	31.5	1.24	30
H01030025*	25	- 16	1"	Multifit	M00130-16	External Skive	36.0	1.41	38.6	1.519	36
H01030031*	31	- 20	1.1/4"	Multifit	M00110-20	External Skive	45.0	1.77	46.6	1.834	45
H01030038*	38	- 24	1.1/2"	Multifit	M00110-24	External Skive	59.0	2.32	52.9	2.082	51
H01030051*	51	- 32	2"	Multifit	M00110-32	External Skive	59.0	2.32	66.0	2.598	66

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/2SC

CRIMP VERSION:

Alternative 2

Release number: 5.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01030005*	5	- 3	3/16"	Multifit	M03400-03	No Skive	16.3	0.641	16
H01030006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.2	0.716	18
H01030008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.0	0.748	18
H01030010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.6	0.811	20
H01030012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.4	0.96	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$

Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

ROCKMASTER/1SN

CRIMP VERSION: Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01007006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	17.9	0.704	16
H01007008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	18.7	0.736	18
H01007010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.6	0.811	20
H01007012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.0	0.944	24
H01007016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	27.0	1.062	27
H01007019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	30.9	1.216	30
H01007025*	25	- 16	1"	Multifit	M03400-16	No Skive	39.2	1.543	39
H01007032*	31	- 20	1.1/4"	Multifit	M03400-20	No Skive	48.6	1.913	48
H01007040*	38	- 24	1.1/2"	Multifit	M03400-24	No Skive	57.0	2.244	57
H01007051*	51	- 32	2"	Multifit	M03400-32	No Skive	69.5	2.736	66
H01007060*	60	- 38	2.3/8"	Multifit	M03400-38	No Skive	76.1	2.996	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01007006*	6	- 4	1/4"		OPF-04	No Skive	17.8	0.7	16
H01007008*	8	- 5	5/16"		OPF-05	No Skive	18.4	0.724	18
H01007010*	10	- 6	3/8"		OPF-06	No Skive	20.6	0.811	20
H01007012*	12	- 8	1/2"		OPF-08	No Skive	22.8	0.897	22
H01007019*	19	- 12	3/4"		OPF-12	No Skive	30.6	1.204	30
H01007025*	25	- 16	1"		OPF-16	No Skive	38.4	1.511	36
H01007032*	31	- 20	1.1/4"		OPK-20	No Skive	49.8	1.96	48
H01007040*	38	- 24	1.1/2"		OPK-24	No Skive	57.2	2.251	57
H01007051*	51	- 32	2"		OPK-32	No Skive	71.7	2.822	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/1SN

CRIMP VERSION: Alternative 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01007006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.3	0.641	16
H01007008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.4	0.685	16
H01007010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	19.6	0.771	18
H01007012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	22.5	0.885	22
H01007016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	27.3	1.074	27
H01007019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	31.3	1.232	30
H01007025*	25	- 16	1"	Multifit	M00130-16	External Skive	36.0	1.41	38.6	1.519	36
H01007032*	31	- 20	1.1/4"	Multifit	M00110-20	External Skive	42.0	1.65	47.5	1.87	45
H01007040*	38	- 24	1.1/2"	Multifit	M00110-24	External Skive	56.0	2.2	53.0	2.086	51
H01007051*	51	- 32	2"	Multifit	M00110-32	External Skive	56.0	2.2	66.0	2.598	66

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 2

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01007006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.9	0.665	16
H01007008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	18.3	0.72	18
H01007010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.7	0.814	20
H01007012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.5	0.925	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/2SN

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01038006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.6	0.732	18
H01038008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.7	0.775	18
H01038010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	21.4	0.842	20
H01038012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	25.0	0.984	24
H01038016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	28.1	1.106	27
H01038019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	31.9	1.255	30
H01038025*	25	- 16	1"	Multifit	M03400-16	No Skive	40.0	1.574	39
H01038032*	31	- 20	1.1/4"	Multifit	M03400-20	No Skive	50.7	1.996	48
H01038040*	38	- 24	1.1/2"	Multifit	M03400-24	No Skive	59.6	2.346	57
H01038051*	51	- 32	2"	Multifit	M03400-32	No Skive	72.5	2.854	70
H01038060*	60	- 38	2.3/8"	Multifit	M03400-38	No Skive	76.1	2.996	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01038006*	6	- 4	1/4"		OPF-04	No Skive	18.8	0.74	18
H01038008*	8	- 5	5/16"		OPF-05	No Skive	19.7	0.775	18
H01038010*	10	- 6	3/8"		OPK-06	No Skive	23.5	0.925	22
H01038012*	12	- 8	1/2"		OPK-08	No Skive	27.1	1.066	27
H01038016*	16	- 10	5/8"		OPK-10	No Skive	30.1	1.185	30
H01038019*	19	- 12	3/4"		OPK-12	No Skive	34.9	1.374	33
H01038025*	25	- 16	1"		OPK-16	No Skive	43.0	1.692	42
H01038032*	31	- 20	1.1/4"		OPK-20	No Skive	52.7	2.074	51
H01038040*	38	- 24	1.1/2"		OPK-24	No Skive	59.8	2.354	57
H01038051*	51	- 32	2"		OPK-32	No Skive	73.6	2.897	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/2SN

CRIMP VERSION: Alternative 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01038006*	6	- 4	1/4"	Multifit	M00910-04	External Skive	25.0	0.98	17.5	0.688	16
H01038008*	8	- 5	5/16"	Multifit	M00910-05	External Skive	23.0	0.9	21.0	0.826	20
H01038010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.0	0.866	22
H01038012*	12	- 8	1/2"	Multifit	M00910-08	External Skive	28.0	1.1	25.5	1.003	24
H01038016*	16	- 10	5/8"	Multifit	M00910-10	External Skive	33.0	1.29	28.7	1.129	27
H01038019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	33.4	1.314	33
H01038025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	41.5	1.633	39
H01038032*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive	48.0	1.88	51.0	2.007	51
H01038040*	38	- 24	1.1/2"	Multifit	M00910-24	External Skive	58.0	2.28	58.1	2.287	57
H01038051*	51	- 32	2"	Multifit	M00910-32	External Skive	59.0	2.32	71.6	2.818	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

CRIMP VERSION: Alternative 2

Release number: 5.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
* H01038010*	10	- 6	3/8"		OPF-06	No Skive	21.5	0.846	20
* H01038012*	12	- 8	1/2"		OPF-08	No Skive	24.1	0.948	24
* H01038016*	16	- 10	5/8"		OPF-10	No Skive	27.6	1.086	27
* H01038019*	19	- 12	3/4"		OPF-12	No Skive	31.9	1.255	30
* H01038025*	25	- 16	1"		OPF-16	No Skive	39.7	1.562	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

This is a simplified solution, please refer to page 10 for further information.

ROCKMASTER/2ST

CRIMP VERSION: Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01035005*	5	- 3	3/16"	Multifit	M00910-03	External Skive	21.0	0.82	17.4	0.685	16
H01035006*	6	- 4	1/4"	Multifit	M00910-04	External Skive	25.0	0.98	17.5	0.688	16
H01035008*	8	- 5	5/16"	Multifit	M00910-05	External Skive	23.0	0.9	21.0	0.826	20
H01035010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.0	0.866	22
H01035012*	12	- 8	1/2"	Multifit	M00910-08	External Skive	28.0	1.1	25.5	1.003	24
H01035016*	16	- 10	5/8"	Multifit	M00910-10	External Skive	33.0	1.29	28.7	1.129	27
H01035019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	33.4	1.314	33
H01035025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	41.5	1.633	39
H01035032*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive	50.0	1.96	51.0	2.007	51
H01035040*	38	- 24	1.1/2"	Multifit	M00910-24	External Skive	60.0	2.36	58.1	2.287	57
H01035051*	51	- 32	2"	Multifit	M00910-32	External Skive	61.0	2.4	71.6	2.818	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/2 PLUS SUPER-AW

CRIMP VERSION: Standard 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01139006*	6	- 4	1/4"	Multifit	M03400-04	No Skive			18.2	0.716	18
H01139010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.0	0.866	22
H01139012*	12	- 8	1/2"	Multifit	M00910-08	External Skive	28.0	1.1	25.7	1.011	24
H01139016*	16	- 10	5/8"	Multifit	M00910-10	External Skive	33.0	1.29	29.1	1.145	27
H01139019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	33.2	1.307	33
H01139025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	41.7	1.641	39
H01139031*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive	48.0	1.88	50.8	2.0	48
H01139038*	38	- 24	1.1/2"	Multifit	M00910-24	External Skive	60.0	2.36	58.7	2.311	57
H01139051*	51	- 32	2"	Multifit	M00910-32	External Skive	61.0	2.4	71.0	2.795	70
H01139076*	76	- 48	3"	Multifit	M03400-48	External Skive	61.0	2.4	95.0	3.74	95

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01139006*	6	- 4	1/4"		OPF-04	No Skive	17.7	0.696	16
H01139010*	10	- 6	3/8"		OPK-06	No Skive	23.8	0.937	22
H01139012*	12	- 8	1/2"		OPK-08	No Skive	27.4	1.078	27
H01139016*	16	- 10	5/8"		OPK-10	No Skive	30.3	1.192	30
H01139019*	19	- 12	3/4"		OPK-12	No Skive	34.9	1.374	33
H01139025*	25	- 16	1"		OPK-16	No Skive	42.9	1.688	42
H01139031*	31	- 20	1.1/4"		OPK-20	No Skive	52.9	2.082	51

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/4SH

CRIMP VERSION: Standard 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10044016*	16	- 10	5/8"	Interlock-Plus	M01500-10	Double Skive	12.0	0.47	30.0	1.18	29.8	1.173	27
H10044019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.8	1.37	33
H10044025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.5	1.633	39
H10044032*	31	- 20	1.1/4"	Interlock-Plus	M01500-20	Double Skive	22.0	0.86	67.0	2.63	49.5	1.948	48
H10044038*	38	- 24	1.1/2"	Interlock-Plus	M01500-24	Double Skive	25.0	0.98	73.0	2.87	56.4	2.22	54
H10044051*	51	- 32	2"	Interlock-Plus	M01500-32	Double Skive	29.0	1.14	86.0	3.38	73.5	2.893	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10044019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.7	1.444	36
H10044025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.5	1.751	42
H10044032*	31	- 20	1.1/4"	Spiralfit	M05400-20	No Skive	52.0	2.047	51
H10044038*	38	- 24	1.1/2"	Spiralfit	M05400-24	No Skive	59.7	2.35	57
H10044051*	51	- 32	2"	Spiralfit	M05400-32	No Skive	74.7	2.94	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/4SH

CRIMP VERSION: Alternative 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
* H10044019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	33.6	1.322	33
* H10044025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	41.6	1.637	39
* H10044032*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive	48.0	1.88	48.8	1.921	48

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)



This is a simplified solution, please refer to page 10 for further information.

ROCKMASTER/4SP

CRIMP VERSION: Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H10008006*	6	- 4	1/4"	Multifit	M00910-04	External Skive	24.0	0.94	18.3	0.72	18
H10008010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.8	0.897	22
H10008012*	12	- 8	1/2"	Multifit	M00910-08	External Skive	28.0	1.1	25.8	1.015	24
H10008016*	16	- 10	5/8"	Multifit	M00910-10	External Skive	33.0	1.29	28.8	1.133	27
H10008019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	33.6	1.322	33
H10008025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	41.5	1.633	39
H10008032*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive	48.0	1.88	51.0	2.007	51
H10008038*	38	- 24	1.1/2"	Multifit	M00910-24	External Skive	60.0	2.36	59.5	2.342	57
H10008051*	51	- 32	2"	Multifit	M00910-32	External Skive	61.0	2.4	72.5	2.854	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10008019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.7	1.444	36
H10008025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.4	1.748	42
H10008032*	31	- 20	1.1/4"	Spiralfit	M05500-20	No Skive	57.2	2.251	57
H10008038*	38	- 24	1.1/2"	Spiralfit	M05500-24	No Skive	64.8	2.551	63
H10008051*	51	- 32	2"	Spiralfit	M05400-32	No Skive	75.8	2.984	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/4SP

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10008016*	16	- 10	5/8"	Interlock-Plus	M01500-10	Double Skive	12.0	0.47	30.0	1.18	29.0	1.141	27
H10008019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.8	1.37	33
H10008025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.5	1.633	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/12

CRIMP VERSION: Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H10031010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.3	0.877	22
H10031012*	12	- 8	1/2"	Multifit	M00910-08	External Skive	28.0	1.1	25.8	1.015	24
H10031016*	16	- 10	5/8"	Multifit	M00910-10	External Skive	33.0	1.29	29.3	1.153	27
H10031019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	33.5	1.318	33
H10031025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	41.5	1.633	39
H10031A32*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive	48.0	1.88	49.5	1.948	48
H10031040*	38	- 24	1.1/2"	Multifit	M00910-24	External Skive	60.0	2.36	58.0	2.283	57
H10031051*	51	- 32	2"	Multifit	M00910-32	External Skive	61.0	2.4	71.0	2.795	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10031010*	10	- 6	3/8"		OPK-06	No Skive	24.3	0.956	24
H10031012*	12	- 8	1/2"		OPK-08	No Skive	27.5	1.082	27
H10031016*	16	- 10	5/8"		OPK-10	No Skive	31.0	1.22	30
H10031019*	19	- 12	3/4"		OPK-12	No Skive	34.8	1.37	33
H10031025*	25	- 16	1"		OPK-16	No Skive	42.8	1.685	42
H10031A32*	31	- 20	1.1/4"		OPK-20	No Skive	51.4	2.023	51
H10031040*	38	- 24	1.1/2"		OPK-24	No Skive	59.3	2.334	57
H10031051*	51	- 32	2"		OPK-32	No Skive	73.2	2.881	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/12

CRIMP VERSION: Alternative 1

Release number: 5.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10031019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.5	1.437	36
H10031025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.6	1.755	42
H10031A32*	31	- 20	1.1/4"	Spiralfit	M05400-20	No Skive	52.5	2.066	51
H10031040*	38	- 24	1.1/2"	Spiralfit	M05400-24	No Skive	60.8	2.393	57
H10031051*	51	- 32	2"	Spiralfit	M05400-32	No Skive	74.7	2.94	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 2

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10031010*	10	- 6	3/8"	Multifit	M03500-06	No Skive	24.0	0.944	24
H10031012*	12	- 8	1/2"	Multifit	M03500-08	No Skive	27.5	1.082	27
H10031016*	16	- 10	5/8"	Multifit	M03500-10	No Skive	31.0	1.22	30
H10031019*	19	- 12	3/4"	Multifit	M03500-12	No Skive	35.0	1.377	33
H10031025*	25	- 16	1"	Multifit	M03500-16	No Skive	42.6	1.677	42
H10031A32*	31	- 20	1.1/4"	Multifit	M03500-20	No Skive	50.5	1.988	48

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/13

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10035019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	35.8	1.409	33
H10035025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	42.4	1.669	42
H10035032*	31	- 20	1.1/4"	Interlock-Plus	M01600-20	Double Skive	22.0	0.86	67.0	2.63	53.1	2.09	51
H10035040*	38	- 24	1.1/2"	Interlock-Plus	M01600-24	Double Skive	25.0	0.98	77.0	3.03	61.0	2.401	57
H10035051*	51	- 32	2"	Interlock-Plus	M01800-32	Double Skive	29.0	1.14	84.0	3.3	75.8	2.984	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10035019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	37.3	1.468	36
H10035025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	45.1	1.775	45
H10035032*	31	- 20	1.1/4"	Spiralfit	M05500-20	No Skive	57.9	2.279	57
H10035040*	38	- 24	1.1/2"	Spiralfit	M05500-24	No Skive	65.8	2.59	63
H10035051*	51	- 32	2"	Spiralfit	M05500-32	No Skive	79.8	3.141	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ROCKMASTER/15

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10049019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.8	1.37	33
H10049025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.5	1.633	39
H10049A32*	31	- 20	1.1/4"	Interlock-Plus	M01600-20	Double Skive	22.0	0.86	67.0	2.63	52.9	2.082	51
H10049040*	38	- 24	1.1/2"	Interlock-Plus	M01600-24	Double Skive	25.0	0.98	77.0	3.03	61.0	2.401	57

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10049019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.7	1.444	36
H10049025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.5	1.751	42
H10049A32*	31	- 20	1.1/4"	Spiralfit	M05500-20	No Skive	57.6	2.267	57
H10049040*	38	- 24	1.1/2"	Spiralfit	M05500-24	No Skive	65.8	2.59	63

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

EQUATOR/1 (BLACK)

CRIMP VERSION: Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01058006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.3	0.641	16
H01058008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.2	0.677	16
H01058010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	19.6	0.771	18
H01058012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	22.5	0.885	22
H01058016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	27.3	1.074	27
H01058019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	31.3	1.232	30
H01058025*	25	- 16	1"	Multifit	M00130-16	External Skive	37.0	1.45	38.6	1.519	36
H01058031*	31	- 20	1.1/4"	Multifit	M00110-20	External Skive	42.0	1.65	47.5	1.87	45
H01058038*	38	- 24	1.1/2"	Multifit	M00110-24	External Skive	56.0	2.2	53.0	2.086	51
H01058051*	51	- 32	2"	Multifit	M00110-32	External Skive	56.0	2.2	66.0	2.598	66
H01058063*	63	- 40	2.1/2"	Multifit	M03450-40	External Skive	60.0	2.36	80.5	3.169	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01058006*	6	- 4	1/4"		OPF-04	No Skive	17.8	0.7	16
H01058031*	31	- 20	1.1/4"		OPK-20	No Skive	49.8	1.96	48
H01058038*	38	- 24	1.1/2"		OPK-24	No Skive	57.2	2.251	57
H01058051*	51	- 32	2"		OPK-32	No Skive	71.7	2.822	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

EQUATOR/1 (BLUE)

CRIMP VERSION: Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01059006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.3	0.641	16
H01059008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.2	0.677	16
H01059010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	19.6	0.771	18
H01059012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	22.5	0.885	22
H01059016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	27.3	1.074	27
H01059019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	31.3	1.232	30
H01059025*	25	- 16	1"	Multifit	M00130-16	External Skive	37.0	1.45	38.6	1.519	36
H01059032*	31	- 20	1.1/4"	Multifit	M00110-20	External Skive	42.0	1.65	47.5	1.87	45
H01059038*	38	- 24	1.1/2"	Multifit	M00110-24	External Skive	56.0	2.2	53.0	2.086	51
H01059051*	51	- 32	2"	Multifit	M00110-32	External Skive	56.0	2.2	66.0	2.598	66
H01059063*	63	- 40	2.1/2"	Multifit	M03450-40	External Skive	60.0	2.36	80.5	3.169	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01059006*	6	- 4	1/4"		OPF-04	No Skive	17.8	0.7	16
H01059032*	31	- 20	1.1/4"		OPK-20	No Skive	49.8	1.96	48
H01059038*	38	- 24	1.1/2"		OPK-24	No Skive	57.2	2.251	57
H01059051*	51	- 32	2"		OPK-32	No Skive	71.7	2.822	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

EQUATOR/2 (BLACK)

CRIMP VERSION: Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01060006*	6	- 4	1/4"	Multifit	M00910-04	External Skive	25.0	0.98	17.5	0.688	16
H01060008*	8	- 5	5/16"	Multifit	M00910-05	External Skive	23.0	0.9	21.0	0.826	20
H01060010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.0	0.866	22
H01060012*	12	- 8	1/2"	Multifit	M00910-08	External Skive	28.0	1.1	25.5	1.003	24
H01060016*	16	- 10	5/8"	Multifit	M00910-10	External Skive	33.0	1.29	28.7	1.129	27
H01060019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	33.4	1.314	33
H01060025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	41.5	1.633	39
H01060031*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive	48.0	1.88	51.0	2.007	51
H01060038*	38	- 24	1.1/2"	Multifit	M00910-24	External Skive	58.0	2.28	58.1	2.287	57
H01060051*	51	- 32	2"	Multifit	M00910-32	External Skive	59.0	2.32	71.6	2.818	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01060006*	6	- 4	1/4"		OPF-04	No Skive	18.8	0.74	18
H01060038*	38	- 24	1.1/2"		OPK-24	No Skive	59.9	2.358	57
H01060051*	51	- 32	2"		OPK-32	No Skive	73.6	2.897	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

EQUATOR/2 (BLUE)

CRIMP VERSION: Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01061006*	6	- 4	1/4"	Multifit	M00910-04	External Skive	25.0	0.98	17.5	0.688	16
H01061008*	8	- 5	5/16"	Multifit	M00910-05	External Skive	23.0	0.9	21.0	0.826	20
H01061010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.0	0.866	22
H01061012*	12	- 8	1/2"	Multifit	M00910-08	External Skive	28.0	1.1	25.5	1.003	24
H01061016*	16	- 10	5/8"	Multifit	M00910-10	External Skive	33.0	1.29	28.7	1.129	27
H01061019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	33.4	1.314	33
H01061025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	41.5	1.633	39
H01061032*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive	48.0	1.88	51.0	2.007	51
H01061040*	38	- 24	1.1/2"	Multifit	M00910-24	External Skive	58.0	2.28	58.1	2.287	57
H01061051*	51	- 32	2"	Multifit	M00910-32	External Skive	59.0	2.32	71.6	2.818	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01061006*	6	- 4	1/4"		OPF-04	No Skive	18.8	0.74	18
H01061040*	38	- 24	1.1/2"		OPK-24	No Skive	59.9	2.358	57
H01061051*	51	- 32	2"		OPK-32	No Skive	73.6	2.897	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

INFINITY

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01164006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.7	0.657	16
H01164008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.8	0.7	16
H01164010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	20.4	0.803	20
H01164012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	23.6	0.929	22
H01164016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	28.5	1.122	27
H01164019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	32.6	1.283	30
H01164025*	25	- 16	1"	Multifit	M00130-16	External Skive	36.0	1.41	39.2	1.543	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$

Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01164006*	6	- 4	1/4"		OPF-04	No Skive	17.7	0.696	16
H01164008*	8	- 5	5/16"		OPF-05	No Skive	18.5	0.728	18
H01164010*	10	- 6	3/8"		OPF-06	No Skive	21.1	0.83	20
H01164012*	12	- 8	1/2"		OPF-08	No Skive	23.5	0.925	22
H01164016*	16	- 10	5/8"		OPK-10	No Skive	29.5	1.161	27
H01164019*	19	- 12	3/4"		OPK-12	No Skive	34.8	1.37	33
H01164025*	25	- 16	1"		OPK-16	No Skive	41.8	1.645	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$

Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

INFINITY

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01164006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.2	0.716	18
H01164008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.0	0.748	18
H01164010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	21.1	0.83	20
H01164012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.2	0.952	24
H01164016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	28.4	1.118	27
H01164019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	32.6	1.283	30
H01164025*	25	- 16	1"	Multifit	M03400-16	No Skive	39.4	1.551	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

DIAMONDSPIR

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10018019*	19	- 12	3/4"	Interlock-Plus	M01850-12	Double Skive	13.0	0.51	39.0	1.53	39.1	1.539	39
H10018025*	25	- 16	1"	Interlock-Plus	M01850-16	Double Skive	15.0	0.59	51.0	2.0	48.5	1.909	48
H10018032*	31	- 20	1.1/4"	Interlock-Plus	M01850-20	Double Skive	22.0	0.86	71.0	2.79	58.3	2.295	57
H10018038*	38	- 24	1.1/2"	Interlock-Super	M02700-24	Double Skive	26.0	1.02	82.0	3.22	66.5	2.618	66
H10018051*	51	- 32	2"	Interlock-Super	M02700-32	Double Skive	30.0	1.18	92.0	3.62	79.6	3.133	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

REMARK:

DN51 and DN38 references must be crimped with one of the following machines:

- MS400
- MS480
- MS800
- GOLDENCRIMP420
- GOLDENCRIMP450

DN51 & DN38 require the usage of a special die set with increased length (code: ESA3540N135-76 & ESA3440NL125D066L4) and please verify the pins codes when ordering this special die set according to machine model.

SYNERGY

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H10137006*	6	- 4	1/4"	Multifit	M00910-04	External Skive	25.0	0.98	17.9	0.704	16
H10137010*	10	- 6	3/8"	Multifit	M03500-06	No Skive			23.2	0.913	22
H10137012*	12	- 10	1/2"	Multifit	M03500-08	No Skive			27.0	1.062	27
H10137019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive			36.7	1.444	36
H10137025*	25	- 16	1"	Spiralfit	M05400-16	No Skive			44.4	1.748	42
H10137031*	31	- 20	1.1/4"	Spiralfit	M05400-20	No Skive			52.8	2.078	51

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H10137010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	21.8	0.858	20
H10137019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	34.0	1.338	33
H10137025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	41.5	1.633	39
H10137031*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive	48.0	1.88	49.7	1.956	48

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

XTRAFLOW/2WB

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01129063*	63	- 40	2.1/2"	Spiralfit	M05400-40	No Skive	86.6	3.409	86
H01129076*	76	- 48	3"	Spiralfit	M05400-48	No Skive	99.7	3.925	95
H01129089*	89	- 56	3.1/2"	Spiralfit	M05400-56	No Skive	114.9	4.523	112

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

XTRAFLOW/4WS

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10091063*	63	- 40	2.1/2"	Spiralfit	M05400-40	No Skive	87.6	3.448	86
H10091076*	76	- 48	3"	Spiralfit	M05400-48	No Skive	98.2	3.866	95
H10091089*	89	- 56	3.1/2"	Spiralfit	M05400-56	No Skive	116.0	4.566	112
H10091102*	102	- 64	4"	Spiralfit	M05400-64	No Skive	131.1	5.161	130

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

CRIMP VERSION: Alternative 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10091063*	63	- 40	2.1/2"	Interlock-Plus	M01500-40	Double Skive	32.0	1.25	101.0	3.97	86.6	3.409	86
H10091076*	76	- 48	3"	Interlock-Plus	M01500-48	Double Skive	33.0	1.29	100.0	3.93	97.0	3.818	95

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

HI-GRADE TRADITIONAL 110

XTRAFLOW/HT

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01128063*	63	- 40	2.1/2"	Multifit	M03450-40	No Skive	83.2	3.275	82
H01128076*	76	- 48	3"	Multifit	M03400-48	No Skive	95.4	3.755	95
H01128089*	89	- 56	3.1/2"	Multifit	M03400-56	No Skive	113.4	4.464	112

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

REMARK:

DN89 - Crimping diameter valid only for M03400-56 and Multifit insert type release 01 and following

XTRAFLOW/HTEX

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01161063*	63	- 40	2.1/2"	Multifit	M03450-40	No Skive	81.0	3.188	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

SPIRTEX/HT

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80003019*	19	- 12	3/4"	Multifit	M00321-12	No Skive	32.0	1.259	30
H80003025*	25	- 16	1"	Multifit	M00930-16	No Skive	41.7	1.641	39
H80003031*	31	- 20	1.1/4"	Multifit	M00920-20	No Skive	49.3	1.94	48
H80003038*	38	- 24	1.1/2"	Multifit	M00910-24	No Skive	57.5	2.263	57
H80003051*	51	- 32	2"	Multifit	M00910-32	No Skive	71.5	2.814	70
H80003063*	63	- 40	2.1/2"	Multifit	M03450-40	No Skive	81.7	3.216	76
H80003076*	76	- 48	3"	Multifit	M03400-48	No Skive	94.7	3.728	90
H80003089*	89	- 56	3.1/2"	Multifit	M03400-56	No Skive	113.0	4.448	112
H80003102*	102	- 64	4"	Multifit	M03400-64	No Skive	124.5	4.901	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SPIRTEX/HTG

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80058016*	16	- 10	5/8"	Serrated	D08100-10	No Skive	29.0	1.141	27
H80058019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.9	1.295	30
H80058025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.0	1.535	39
H80058031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.2	1.858	45

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80058016*	16	- 10	5/8"	Multifit	M00310-10	No Skive	27.9	1.098	27
H80058019*	19	- 12	3/4"	Multifit	M00321-12	No Skive	32.9	1.295	30
H80058025*	25	- 16	1"	Multifit	M03400-16	No Skive	41.0	1.614	39
H80058031*	31	- 20	1.1/4"	Multifit	M00920-20	No Skive	50.5	1.988	48

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

PUSHFIT

CRIMP VERSION:

Standard 1

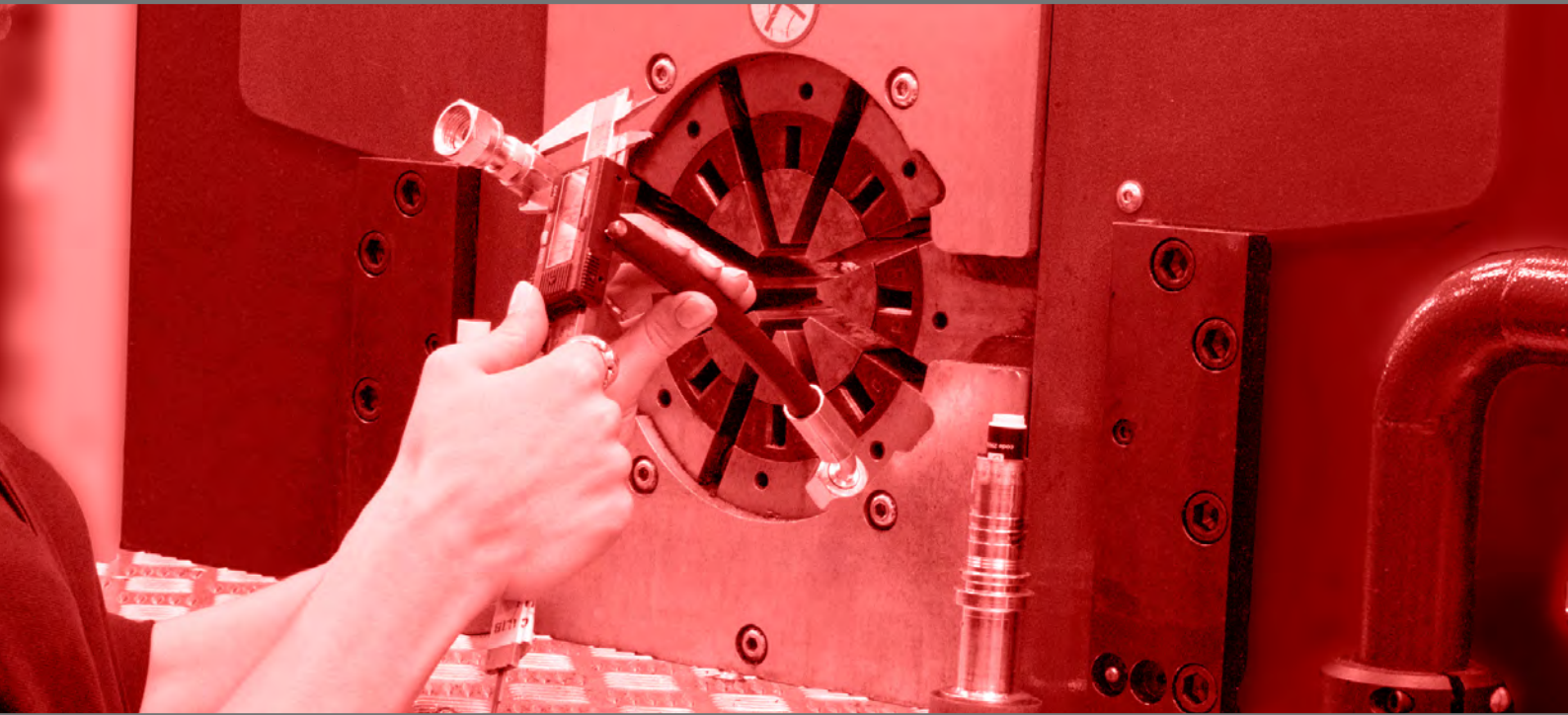
Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type
	DN	Dash	inch			
H09066006*	6	- 4	1/4"	Push-lock	NA	No Crimp
H09066008*	8	- 5	5/16"	Push-lock	NA	No Crimp
H09066010*	10	- 6	3/8"	Push-lock	NA	No Crimp
H09066012*	12	- 8	1/2"	Push-lock	NA	No Crimp
H09066016*	16	- 10	5/8"	Push-lock	NA	No Crimp
H09066019*	19	- 12	3/4"	Push-lock	NA	No Crimp
H09066025*	25	- 16	1"	Push-lock	NA	No Crimp

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)



PREMIUM HOSES

GAIA/28

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H10146010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	20.4	0.803	20
H10146012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	23.6	0.929	22
H10146016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	28.5	1.122	27
H10146019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	33.0	1.299	33
H10146025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	40.8	1.606	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10146010*	10	- 6	3/8"		OPF-06	No Skive	20.8	0.818	20
H10146012*	12	- 8	1/2"		OPF-08	No Skive	23.5	0.925	22
H10146016*	16	- 10	5/8"		OPF-10	No Skive	27.9	1.098	27
H10146019*	19	- 12	3/4"		OPK-12	No Skive	34.6	1.362	33
H10146025*	25	- 16	1"		OPK-16	No Skive	42.2	1.661	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

GAIA/35

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10144012*	12	- 8	1/2"	Multifit	M00120-08	External Skive			26.0	1.02	23.6	0.929	22
H10144016*	16	- 10	5/8"	Multifit	M00910-10	External Skive			33.0	1.29	28.6	1.125	27
H10144019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.0	1.338	33
H10144025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.1	1.618	39
H10144031*	31	- 20	1.1/4"	Interlock-Plus	M01500-20	Double Skive	22.0	0.86	67.0	2.63	48.9	1.925	48

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10144012*	12	- 8	1/2"		OPF-08	No Skive	23.5	0.925	22
H10144016*	16	- 10	5/8"		OPK-10	No Skive	30.2	1.188	30
H10144019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.2	1.425	36
H10144025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	43.9	1.728	42
H10144031*	31	- 20	1.1/4"	Spiralfit	M05400-20	No Skive	51.8	2.039	51

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

GAIA/42

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10145012*	12	- 8	1/2"	Multifit	M00910-08	External Skive			28.0	1.1	25.8	1.015	24
H10145016*	16	- 10	5/8"	Interlock-Plus	M01500-10	Double Skive	12.0	0.47	30.0	1.18	29.1	1.145	27
H10145019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.1	1.342	33
H10145025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.3	1.625	39
H10145031*	31	- 20	1.1/4"	Interlock-Plus	M01600-20	Double Skive	22.0	0.86	67.0	2.63	52.7	2.074	51

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10145012*	12	- 8	1/2"	Multifit	M03500-08	No Skive	27.6	1.086	27
H10145016*	16	- 10	5/8"	Spiralfit	M05400-10	No Skive	32.7	1.287	30
H10145019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.4	1.433	36
H10145025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.1	1.736	42
H10145031*	31	- 20	1.1/4"	Spiralfit	M05500-20	No Skive	57.6	2.267	57

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

FOREMASTER/7

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01187031*	31	- 20	1.1/4"	Multifit	M03400-20	No Skive	47.5	1.87	45

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01187031*	31	- 20	1.1/4"	Multifit	M00820-20	External Skive	43.0	1.69	43.2	1.7	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

FOREMASTER/10

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01188025*	25	- 16	1"	Multifit	M03400-16	No Skive	38.3	1.507	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01188025*	25	- 16	1"	Multifit	M00820-16	External Skive	38.0	1.49	36.0	1.417	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

FOREMASTER/14

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01176005*	5	- 3	3/16"	Minifit	M02400-03	No Skive	14.7	0.578	14
H01176006*	6	- 4	1/4"	Minifit	M02400-04	No Skive	14.6	0.574	14
H01176008*	8	- 5	5/16"	Minifit	M02400-05	No Skive	16.7	0.657	16
H01176010*	10	- 6	3/8"	Minifit	M02400-06	No Skive	19.0	0.748	18
H01176012*	12	- 8	1/2"	Minifit	M02400-08	No Skive	20.9	0.822	20
H01176016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	27.2	1.07	27
H01176019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	30.7	1.208	30

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01176005*	5	- 3	3/16"	Multifit	M03300-03	No Skive			15.1	0.594	14
H01176006*	6	- 4	1/4"	Multifit	M03300-04	No Skive			16.4	0.645	16
H01176008*	8	- 5	5/16"	Multifit	M03300-05	No Skive			17.6	0.692	16
H01176010*	10	- 6	3/8"	Multifit	M03300-06	No Skive			19.8	0.779	18
H01176012*	12	- 8	1/2"	Multifit	M03300-08	No Skive			22.4	0.881	22
H01176016*	16	- 10	5/8"	Multifit	M00820-10	External Skive	29.0	1.14	24.4	0.96	24
H01176019*	19	- 12	3/4"	Multifit	M00820-12	External Skive	32.0	1.25	27.4	1.078	27

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

FOREMASTER/21

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01166006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	15.8	0.622	14
H01166008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	16.5	0.649	16
H01166010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	19.8	0.779	18
H01166012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	22.6	0.889	22
H01166016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	28.1	1.106	27
H01166019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	31.6	1.244	30
H01166025*	25	- 16	1"	Multifit	M00130-16	External Skive	36.0	1.41	38.6	1.519	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01166006*	6	- 4	1/4"		OPF-04	No Skive	16.9	0.665	16
H01166008*	8	- 5	5/16"		OPF-05	No Skive	17.9	0.704	16
H01166010*	10	- 6	3/8"		OPF-06	No Skive	20.4	0.803	20
H01166012*	12	- 8	1/2"		OPF-08	No Skive	22.8	0.897	22
H01166016*	16	- 10	5/8"		OPF-10	No Skive	27.0	1.062	27
H01166019*	19	- 12	3/4"		OPF-12	No Skive	30.8	1.212	30
H01166025*	25	- 16	1"		OPF-16	No Skive	38.7	1.523	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

FOREMASTER/21

CRIMP VERSION:

Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01166006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.5	0.649	16
H01166008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	17.6	0.692	16
H01166010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.2	0.795	20
H01166012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.1	0.909	22
H01166016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	27.3	1.074	27
H01166019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	31.2	1.228	30
H01166025*	25	- 16	1"	Multifit	M03400-16	No Skive	39.1	1.539	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

FOREMASTER/28

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01167006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.6	0.653	16
H01167008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.8	0.7	16
H01167010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	20.4	0.803	20
H01167012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	23.6	0.929	22
H01167016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	28.5	1.122	27
H01167019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	32.6	1.283	30
H01167A25*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	40.8	1.606	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01167006*	6	- 4	1/4"		OPF-04	No Skive	17.7	0.696	16
H01167008*	8	- 5	5/16"		OPF-05	No Skive	18.5	0.728	18
H01167010*	10	- 6	3/8"		OPF-06	No Skive	20.8	0.818	20
H01167012*	12	- 8	1/2"		OPF-08	No Skive	23.5	0.925	22
H01167016*	16	- 10	5/8"		OPF-10	No Skive	27.9	1.098	27
H01167019*	19	- 12	3/4"		OPK-12	No Skive	34.9	1.374	33
H01167A25*	25	- 16	1"		OPK-16	No Skive	42.2	1.661	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

FOREMASTER/28

CRIMP VERSION: Alternative 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01167006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.9	0.665	16
H01167008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	18.6	0.732	18
H01167010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.7	0.814	20
H01167012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.5	0.925	22
H01167016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	28.2	1.11	27
H01167019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	32.4	1.275	30
H01167A25*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.6	1.755	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 2

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01167006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.1	0.712	18
H01167008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.0	0.748	18
H01167010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.7	0.814	20
H01167012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.4	0.96	24
H01167016*	16	- 10	5/8"		OPK-10	No Skive	29.8	1.173	27
H01167A25*	25	- 16	1"	Multifit	M03500-16	No Skive	42.0	1.653	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

FOREMASTER/35

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10133010*	10	- 6	3/8"	Multifit	M00120-06	External Skive			23.0	0.9	20.4	0.803	20
H10133012*	12	- 8	1/2"	Multifit	M00120-08	External Skive			26.0	1.02	23.6	0.929	22
H10133019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.0	1.338	33
H10133025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.1	1.618	39
H10133031*	31	- 20	1.1/4"	Interlock-Plus	M01500-20	Double Skive	22.0	0.86	67.0	2.63	48.9	1.925	48
H10133038*	38	- 24	1.1/2"	Interlock-Plus	M01600-24	Double Skive	25.0	0.98	77.0	3.03	60.2	2.37	57
H10133051*	51	- 32	2"	Interlock-Plus	M01800-32	Double Skive	29.0	1.14	84.0	3.3	75.1	2.956	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10133019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.6	1.44	36
H10133025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.3	1.744	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

FOREMASTER/35

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H10133019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	34.0	1.33	33.4	1.314	33
H10133025*	25	- 16	1"	Multifit	M00930-16	External Skive	44.0	1.73	41.5	1.633	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

FOREMASTER/42

CRIMP VERSION: Standard 1

Release number: 5.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10134006*	6	- 4	1/4"	Multifit	M00120-04	External Skive			23.0	0.9	16.4	0.645	16
H10134010*	10	- 6	3/8"	Multifit	M00920-06	External Skive			26.0	1.02	22.8	0.897	22
H10134012*	12	- 8	1/2"	Multifit	M00910-08	External Skive			28.0	1.1	25.8	1.015	24
H10134016*	16	- 10	5/8"	Interlock-Plus	M01500-10	Double Skive	12.0	0.47	30.0	1.18	29.1	1.145	27
H10134019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.1	1.342	33
H10134025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.3	1.625	39
H10134031*	31	- 20	1.1/4"	Interlock-Plus	M01500-20	Double Skive	22.0	0.86	67.0	2.63	49.5	1.948	48
H10134038*	38	- 24	1.1/2"	Interlock-Plus	M01600-24	Double Skive	25.0	0.98	77.0	3.03	60.6	2.385	57
H10134051*	51	- 32	2"	Interlock-Super	M02700-32	Double Skive	30.0	1.18	92.0	3.62	80.0	3.149	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

REMARK:

DN51: this reference must be crimped with one of the following machines:

- MS400
- MS480
- MS800
- GOLDENCRIMP420
- GOLDENCRIMP450

using a special die set n°76 with length 135mm (code: ESA3540N135-76).
 Please verify the pins codes when ordering this special die set according to machine model.

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10134012*	12	- 8	1/2"	Multifit	M03500-08	No Skive	27.6	1.086	27
H10134016*	16	- 10	5/8"	Spiralfit	M05400-10	No Skive	32.7	1.287	30

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

FOREMASTER/42

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10134012*	12	- 8	1/2"		OPK-08	No Skive	27.5	1.082	27

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

CRYOFLEX/21

CRIMP VERSION:

Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01158016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	28.1	1.106	27
H01158019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	31.6	1.244	30
H01158025*	25	- 16	1"	Multifit	M00130-16	External Skive	36.0	1.41	38.6	1.519	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION:

Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01158016*	16	- 10	5/8"		OPF-10	No Skive	27.0	1.062	27
H01158019*	19	- 12	3/4"		OPF-12	No Skive	30.8	1.212	30
H01158025*	25	- 16	1"		OPF-16	No Skive	38.7	1.523	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRYOFLEX/21

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01158016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	27.3	1.074	27
H01158019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	31.2	1.228	30
H01158025*	25	- 16	1"	Multifit	M03400-16	No Skive	39.1	1.539	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

CRYOFLEX/35

CRIMP VERSION:

Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H01159006*	6	- 4	1/4"	Multifit	M00120-04	External Skive			23.0	0.9	16.7	0.657	16
H01159008*	8	- 5	5/16"	Multifit	M00120-05	External Skive			23.0	0.9	17.8	0.7	16
H01159010*	10	- 6	3/8"	Multifit	M00120-06	External Skive			23.0	0.9	20.4	0.803	20
H01159012*	12	- 8	1/2"	Multifit	M00120-08	External Skive			26.0	1.02	23.6	0.929	22
H01159019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.0	1.338	33
H01159025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.1	1.618	39
H01159031*	31	- 20	1.1/4"	Interlock-Plus	M01500-20	Double Skive	22.0	0.86	67.0	2.63	48.9	1.925	48

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION:

Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01159006*	6	- 4	1/4"		OPF-04	No Skive	17.7	0.696	16
H01159008*	8	- 5	5/16"		OPF-05	No Skive	18.5	0.728	18
H01159010*	10	- 6	3/8"		OPF-06	No Skive	20.6	0.811	20
H01159012*	12	- 8	1/2"		OPF-08	No Skive	23.5	0.925	22
H01159019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.2	1.425	36
H01159025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	43.9	1.728	42
H01159031*	31	- 20	1.1/4"	Spiralfit	M05400-20	No Skive	51.8	2.039	51

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRYOFLEX/35

CRIMP VERSION: Alternative 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01159006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.2	0.716	18
H01159008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.0	0.748	18
H01159010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.6	0.811	20
H01159012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.5	0.964	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$

Crimping diameter tolerance: $0 \text{ } / -0.2 \text{ mm} (0 \text{ } / -0.008 \text{ inch})$

CRYOFLEX/42

CRIMP VERSION: Standard 1

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10123019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.1	1.342	33
H10123025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.3	1.625	39
H10123031*	31	- 20	1.1/4"	Interlock-Plus	M01600-20	Double Skive	22.0	0.86	67.0	2.63	52.7	2.074	51
H10123051*	51	- 32	2"	Interlock-Super	M02700-32	Double Skive	30.0	1.18	92.0	3.62	80.0	3.149	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

REMARK:

DN51: this reference must be crimped with one of the following machines:

- MS400
- MS480
- MS800
- GOLDENCRIMP420
- GOLDENCRIMP450

using a special die set n°76 with length 135mm (code: ESA3540N135-76).
 Please verify the pins codes when ordering this special die set according to machine model.

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10123019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	37.0	1.456	36
H10123025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.1	1.736	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

ANACONDA

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10132012*	12	- 8	1/2"	Multifit	M00910-08	External Skive			28.0	1.1	25.8	1.015	24
H10132016*	16	- 10	5/8"	Interlock-Plus	M01500-10	Double Skive	12.0	0.47	30.0	1.18	29.1	1.145	27
H10132019*	19	- 12	3/4"	Interlock-Plus	M01500-12	Double Skive	13.0	0.51	38.0	1.49	34.1	1.342	33
H10132025*	25	- 16	1"	Interlock-Plus	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.3	1.625	39
H10132031*	31	- 20	1.1/4"	Interlock-Plus	M01500-20	Double Skive	22.0	0.86	67.0	2.63	49.5	1.948	48
H10132038*	38	- 24	1.1/2"	Interlock-Plus	M01600-24	Double Skive	25.0	0.98	77.0	3.03	60.0	2.362	57

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H10132012*	12	- 8	1/2"	Multifit	M03500-08	No Skive	27.6	1.086	27
H10132016*	16	- 10	5/8"	Spiralfit	M05400-10	No Skive	32.7	1.287	30
H10132019*	19	- 12	3/4"	Spiralfit	M05400-12	No Skive	36.4	1.433	36
H10132025*	25	- 16	1"	Spiralfit	M05400-16	No Skive	44.1	1.736	42
H10132031*	31	- 20	1.1/4"	Spiralfit	M05400-20	No Skive	51.7	2.035	51

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

HERCULES/HT

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10125031*	31	- 20	1.1/4"	Interlock-Plus	M01850-20	Double Skive	22.0	0.86	71.0	2.79	58.3	2.295	57
H10125038*	38	- 24	1.1/2"	Interlock-Super	M02700-24	Double Skive	26.0	1.02	82.0	3.22	66.5	2.618	66
H10125051*	51	- 32	2"	Interlock-Super	M02700-32	Double Skive	30.0	1.18	92.0	3.62	80.0	3.149	76

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

REMARK:

DN51 and DN38 references must be crimped with one of the following machines:

- MS400
- MS480
- MS800
- GOLDENCRIMP420
- GOLDENCRIMP450

DN51 & DN38 require the usage of a special die set with increased length (code: ESA3540N135-76 & ESA3440NL125D066L4) and please verify the pins codes when ordering this special die set according to machine model.

HEAT-SHRINKABLE SLEEVE length around 15 (± 1) cm positioned half length on the ferrule and half on the hose side.

HYDROROPE

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10136025*	25	- 16	1"	Interlock-Plus	M01850-16	Double Skive	15.0	0.59	51.0	2.0	48.0	1.889	45
H10136031*	31	- 20	1.1/4"	Interlock-Plus	M01600-20	Double Skive	22.0	0.86	67.0	2.63	52.9	2.082	51
H10136038*	38	- 24	1.1/2"	Interlock-Super	M02700-24	Double Skive	26.0	1.02	82.0	3.22	66.2	2.606	66
H10136A38*	38	- 24	1.1/2"	Interlock-Plus	M01600-24	Double Skive	26.0	1.02	77.0	3.03	60.0	2.362	57

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

REMARK:

H10136038* must be crimped with one of the following machines:

- MS400
- MS480
- MS800
- GOLDENCRIMP420
- GOLDENCRIMP450

H10136038* requires the usage of a special die set with increased length (code: ESA3440NL125D062L4) and please verify the pins codes when ordering this special die set according to machine model.

DIAMONDSPIR/62

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10118031*	31	- 20	1.1/4"	Interlock-Plus	M01900-20	Double Skive	22.0	0.86	67.0	2.63	60.3	2.374	57
H10118038*	38	- 24	1.1/2"	Interlock-Super	M02900-24	Double Skive	26.0	1.02	82.0	3.22	71.4	2.811	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

REMARK:

This references must be crimped with one of the following machines:

- MB350 (only for DN31)
- MS400
- MS480
- MS800
- GOLDENCRIMP420
- GOLDENCRIMP450

SAFEMASTER/2SC

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01162006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	17.0	0.669	16
H01162008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	18.6	0.732	18
H01162010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.5	0.807	20
H01162012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.5	0.925	22
H01162016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	27.4	1.078	27
H01162019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	31.1	1.224	30
H01162025*	25	- 16	1"	Multifit	M03400-16	No Skive	39.4	1.551	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01162006*	6	- 4	1/4"		OPF-04	No Skive	17.7	0.696	16
H01162008*	8	- 5	5/16"		OPF-05	No Skive	18.5	0.728	18
H01162010*	10	- 6	3/8"		OPF-06	No Skive	20.6	0.811	20
H01162012*	12	- 8	1/2"		OPF-08	No Skive	23.5	0.925	22
H01162016*	16	- 10	5/8"		OPF-10	No Skive	26.8	1.055	24
H01162019*	19	- 12	3/4"		OPF-12	No Skive	30.7	1.208	30
H01162025*	25	- 16	1"		OPF-16	No Skive	38.7	1.523	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SAFEMASTER/2SC

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01162006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.5	0.649	16
H01162008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.8	0.7	16
H01162010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	20.2	0.795	20
H01162012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	23.6	0.929	22
H01162016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	27.8	1.094	27
H01162019*	19	- 12	3/4"	Multifit	M00120-12	External Skive	32.0	1.25	31.5	1.24	30
H01162025*	25	- 16	1"	Multifit	M00130-16	External Skive	36.0	1.41	38.6	1.519	36

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01162006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.2	0.716	18
H01162008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.0	0.748	18
H01162010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.6	0.811	20
H01162012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.4	0.96	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SAFEMASTER/2SN

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01165006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.6	0.732	18
H01165008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.7	0.775	18
H01165010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	21.4	0.842	20
H01165012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	25.0	0.984	24
H01165016*	16	- 10	5/8"	Multifit	M03400-10	No Skive	28.1	1.106	27
H01165019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	31.9	1.255	30
H01165025*	25	- 16	1"	Multifit	M03400-16	No Skive	40.0	1.574	39
H01165031*	31	- 20	1.1/4"	Multifit	M03400-20	No Skive	50.7	1.996	48
H01165038*	38	- 24	1.1/2"	Multifit	M03400-24	No Skive	59.6	2.346	57

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01165006*	6	- 4	1/4"		OPF-04	No Skive	18.8	0.74	18
H01165008*	8	- 5	5/16"		OPF-05	No Skive	19.7	0.775	18
H01165010*	10	- 6	3/8"		OPK-06	No Skive	23.5	0.925	22
H01165012*	12	- 8	1/2"		OPK-08	No Skive	27.1	1.066	27
H01165016*	16	- 10	5/8"		OPK-10	No Skive	30.1	1.185	30
H01165019*	19	- 12	3/4"		OPK-12	No Skive	34.9	1.374	33
H01165025*	25	- 16	1"		OPK-16	No Skive	43.0	1.692	42
H01165031*	31	- 20	1.1/4"		OPK-20	No Skive	52.7	2.074	51
H01165038*	38	- 24	1.1/2"		OPK-24	No Skive	59.8	2.354	57

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

SAFEMASTER/2SN

CRIMP VERSION: Alternative 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01165006*	6	- 4	1/4"	Multifit	M00910-04	External Skive	25.0	0.98	17.5	0.688	16
H01165008*	8	- 5	5/16"	Multifit	M00910-05	External Skive	23.0	0.9	21.0	0.826	20
H01165010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.0	0.866	22
H01165012*	12	- 8	1/2"	Multifit	M00910-08	External Skive	28.0	1.1	25.5	1.003	24
H01165016*	16	- 10	5/8"	Multifit	M00910-10	External Skive	33.0	1.29	28.7	1.129	27
H01165019*	19	- 12	3/4"	Multifit	M00930-12	External Skive	32.0	1.25	33.4	1.314	33
H01165025*	25	- 16	1"	Multifit	M00930-16	External Skive	42.0	1.65	41.5	1.633	39
H01165031*	31	- 20	1.1/4"	Multifit	M00920-20	External Skive	48.0	1.88	51.0	2.007	51
H01165038*	38	- 24	1.1/2"	Multifit	M00910-24	External Skive	58.0	2.28	58.1	2.287	57

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

SAFEMASTER/2TE

CRIMP VERSION:

Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H09076005*	5	- 3	3/16"	Multifit	M00310-03	No Skive	14.4	0.566	14
H09076006*	6	- 4	1/4"	Multifit	M00830-04	No Skive	15.9	0.625	14
H09076008*	8	- 5	5/16"	Multifit	M00830-05	No Skive	16.9	0.665	16
H09076010*	10	- 6	3/8"	Multifit	M00820-06	No Skive	19.2	0.755	18
H09076012*	12	- 8	1/2"	Multifit	M00820-08	No Skive	22.9	0.901	22
H09076016*	16	- 10	5/8"	Multifit	M00820-10	No Skive	26.9	1.059	24
H09076019*	19	- 12	3/4"	Multifit	M00820-12	No Skive	30.4	1.196	30
H09076025*	25	- 16	1"	Multifit	M00820-16	No Skive	38.1	1.5	36
H09076031*	31	- 20	1.1/4"	Multifit	M00820-20	No Skive	45.7	1.799	45

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

T°REX

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01127031*	31	- 20	1.1/4"	Multifit	M00110-20TX	No Skive	46.0	1.811	45

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

TWINPOWER 4000

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01119010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	20.4	0.803	20
H01119012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	23.5	0.925	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

TWINPOWER 5000

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01120008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.8	0.7	16
H01120010*	10	- 6	3/8"	Multifit	M00120-06	External Skive	23.0	0.9	20.2	0.795	20
H01120012*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	23.5	0.925	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

TWINPOWER/PLUS

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01112A12*	12	- 8	1/2"	Multifit	M00120-08	External Skive	26.0	1.02	23.5	0.925	22
H01112016*	16	- 10	5/8"	Multifit	M00120-10	External Skive	30.0	1.18	28.5	1.122	27

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

FIREND

CRIMP VERSION:

Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01124006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	17.9	0.704	16
H01124010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.6	0.811	20
H01124012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.0	0.944	24
H01124019*	19	- 12	3/4"	Multifit	M03400-12	No Skive	30.9	1.216	30
H01124025*	25	- 16	1"	Multifit	M03400-16	No Skive	39.2	1.543	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION:

Standard 2

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01124006*	6	- 4	1/4"		OPF-04	No Skive	17.8	0.7	16
H01124010*	10	- 6	3/8"		OPF-06	No Skive	20.6	0.811	20
H01124012*	12	- 8	1/2"		OPF-08	No Skive	22.8	0.897	22
H01124019*	19	- 12	3/4"		OPF-12	No Skive	30.6	1.204	30
H01124025*	25	- 16	1"		OPF-16	No Skive	39.0	1.535	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

LUBEMASTER

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01135006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.5	0.649	16
H01135010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.2	0.795	20

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01135006*	6	- 4	1/4"		OPF-04	No Skive	17.2	0.677	16
H01135010*	10	- 6	3/8"		OPF-06	No Skive	20.4	0.803	20

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01135010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.2	0.795	20

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

JACKMASTER/70

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01168006*	6	- 4	1/4"	Multifit	M00910-04	External Skive	25.0	0.98	17.5	0.688	16
H01168010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.5	0.885	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01168006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.6	0.732	18
H01168010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	21.0	0.826	20

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

GOLDENMINE

CRIMP VERSION: Standard 1

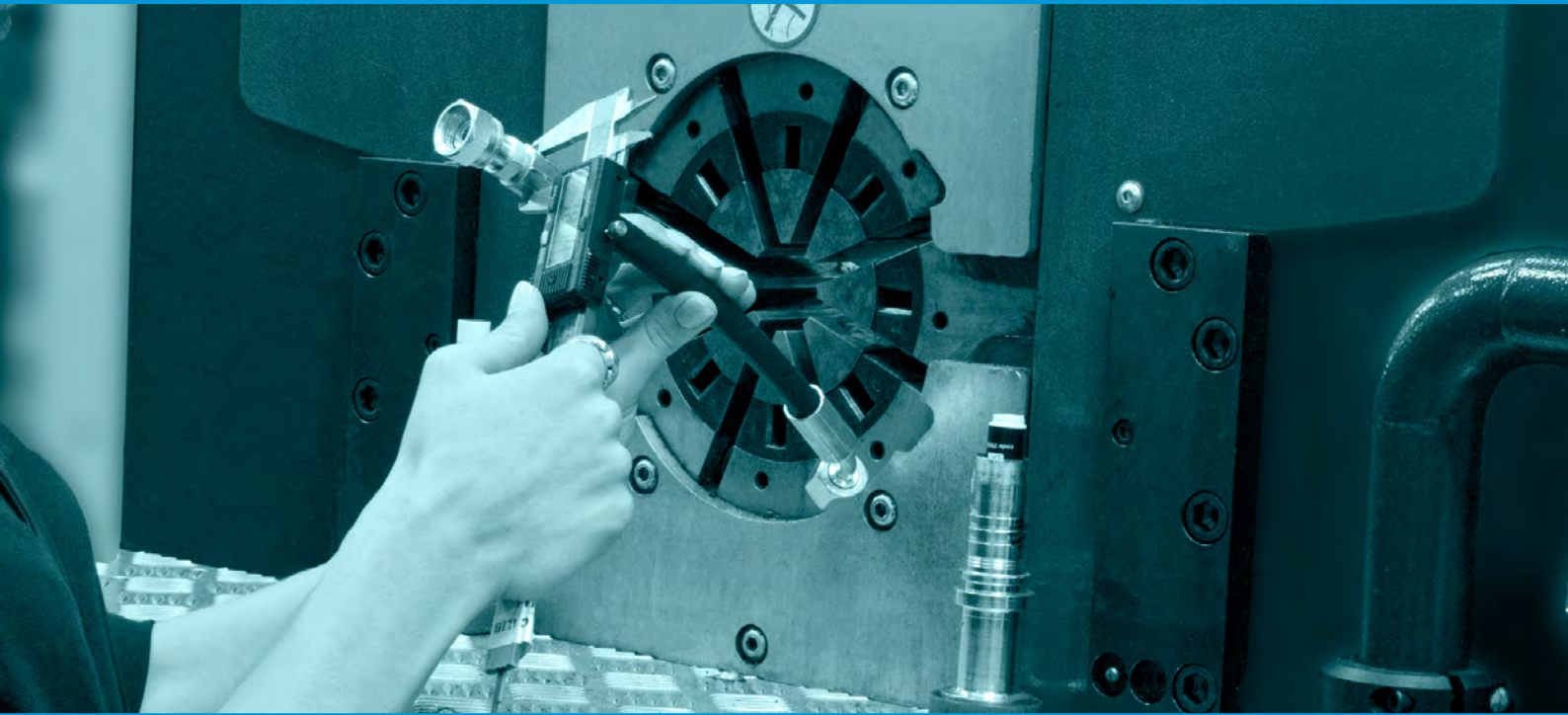
Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10116063*	63	- 40	2.1/2"	Interlock-Plus	M01810-40	Double Skive	32.0	1.25	101.0	3.97	90.5	3.562	90
H10116076*	76	- 48	3"	Interlock-Plus	M01500-48	Double Skive	33.0	1.29	102.0	4.01	97.4	3.834	95

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)



REFRIGERATION HOSES

REFRIMASTER PLUS

CRIMP VERSION: Standard 1

Release number: 2.0

PART. NO.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	Inch				mm	inch	
H09071008*	8	- 6	5/16"	Frigoclic	C00700-06	Crimped	16,9	0,665	16
H09071010*	10	- 8	13/32"	Frigoclic	C00700-08	Crimped	19,9	0,783	18
H09071013*	13	- 10	1/2"	Frigoclic	C00750-10	Crimped	23,2	0,913	22
H09071016*	16	- 12	5/8"	Frigoclic	C00750-12	Crimped	27,1	1,067	27
H09071022*	22	- 16	7/8"	Frigoclic	C00750-16	Crimped	35,2	1,386	33

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

 Skive length tolerance: $\pm 0.5\text{mm}/\pm 0.02$ inches

 Crimping diameter tolerance: $\pm 0.1\text{mm}/\pm 0.004$ inch

CRIMP VERSION: Standard 2

Release number: 1.0

PART. NO.	HOSE SIZE			Insert Type	Ferrule	Crimping Type
	DN	Dash	Inch			
H09071008*	8	- 6	5/16"	Frigoclic	C01000-06	Clamp Style
H09071010*	10	- 8	13/32"	Frigoclic	C01000-08	Clamp Style
H09071013*	13	- 10	1/2"	Frigoclic	C01050-10	Clamp Style
H09071016*	16	- 12	5/8"	Frigoclic	C01050-12	Clamp Style

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

REFRIFAST

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H09068008*	8	- 6	5/16"	Fast-Crimp	OPC-06	Bubble Crimp	14.8	0.582	14
H09068010*	10	- 8	13/32"	Fast-Crimp	OPC-08	Bubble Crimp	16.6	0.653	16
H09068012*	13	- 10	1/2"	Fast-Crimp	OPC-10	Bubble Crimp	18.8	0.74	18
H09068016*	16	- 12	5/8"	Fast-Crimp	OPC-12	Bubble Crimp	21.1	0.83	20

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance:

Crimping diameter tolerance: $\pm 0.1\text{mm}/\pm 0.004\text{ inch}$

ULTRASTAR

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01133005*	5	- 4	3/16"	Star-Crimp	C00300-04	Crimped	15.6	0.614	14
H01133008*	8	- 6	5/16"	Star-Crimp	C00300-06	Crimped	20.2	0.795	20
H01133010*	10	- 8	13/32"	Star-Crimp	C00300-08	Crimped	21.3	0.838	20
H01133012*	12	- 10	1/2"	Star-Crimp	C00300-10	Crimped	26.0	1.023	24
H01133016*	16	- 12	5/8"	Star-Crimp	C00300-12	Crimped	30.8	1.212	30
H01133022*	22	- 16	7/8"	Star-Crimp	C00300-16	Crimped	34.4	1.354	33
H01133028*	28	- 20	1.1/8"	Star-Crimp	C00300-20	Crimped	42.5	1.673	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance:

 Crimping diameter tolerance: $\pm 0.1\text{mm} \pm 0.004\text{ inch}$

CRIMP VERSION: Standard 2

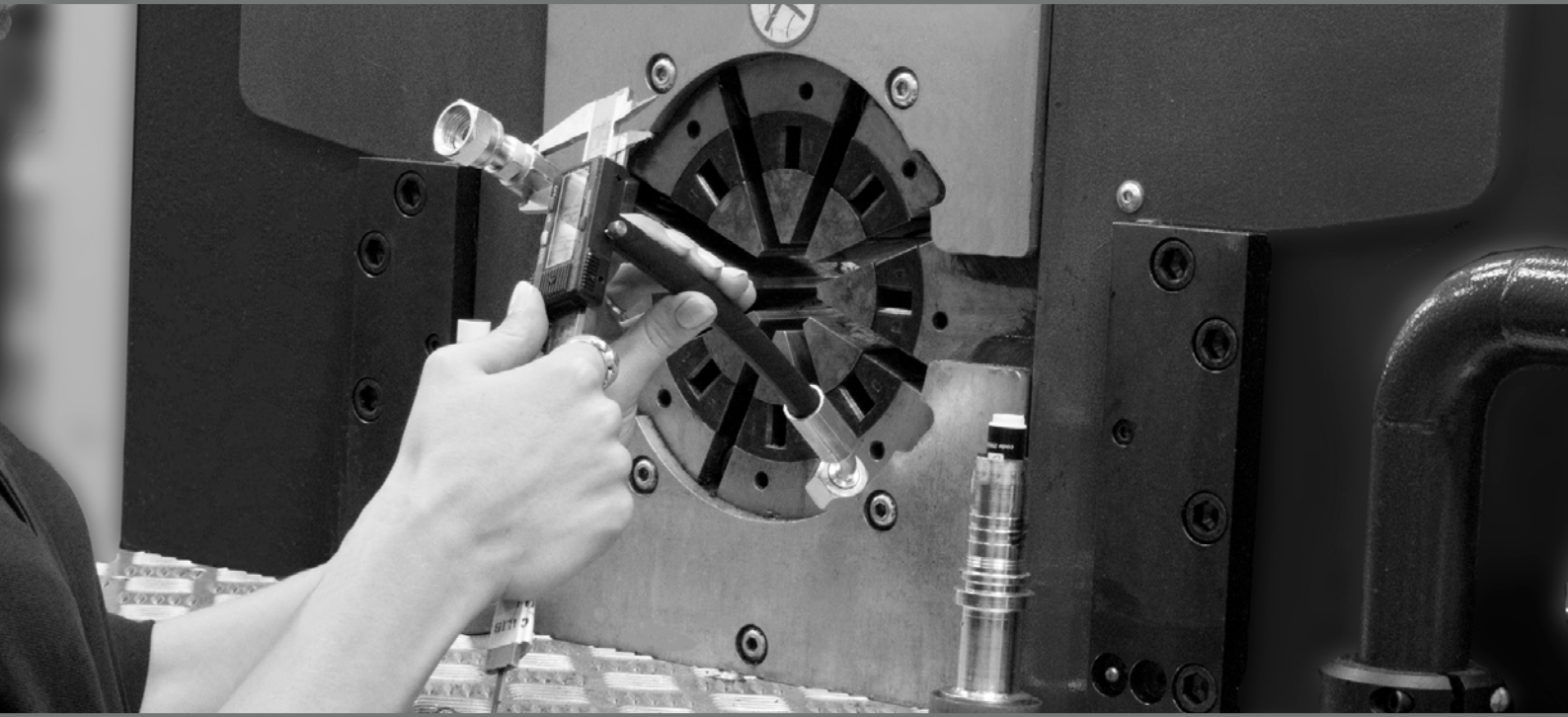
Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type
	DN	Dash	inch			
H01133005*	5	- 4	3/16"	Star-Fit	K00400-04	Reusable
H01133008*	8	- 6	5/16"	Star-Fit	K00400-06	Reusable
H01133010*	10	- 8	13/32"	Star-Fit	K00400-08	Reusable
H01133012*	12	- 10	1/2"	Star-Fit	K00400-10	Reusable
H01133016*	16	- 12	5/8"	Star-Fit	K00400-12	Reusable
H01133022*	22	- 16	7/8"	Star-Fit	K00400-16	Reusable
H01133028*	28	- 20	1.1/8"	Star-Fit	K00400-20	Reusable
H01133035*	35	- 24	1.3/8"	Star-Fit	K00400-24	Reusable

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance:

Crimping diameter tolerance:



WATER CLEANING & BLASTING HOSES

K-JET (BLACK)

CRIMP VERSION: Standard 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02003006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.5	0.649	16
H02003008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	17.6	0.692	16
H02003010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.2	0.795	20
H02003012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.0	0.905	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02003006*	6	- 4	1/4"		OPF-04	No Skive	16.9	0.665	16
H02003010*	10	- 6	3/8"		OPF-06	No Skive	20.4	0.803	20

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 2

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02003010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	19.8	0.779	18
H02003012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	23.7	0.933	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

K-JET (BLUE)

CRIMP VERSION: Standard 1

Release number: 4.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02008006*	6	- 4	1/4"	Multifit	M03300-04	No Skive	16.5	0.649	16
H02008008*	8	- 5	5/16"	Multifit	M03300-05	No Skive	17.6	0.692	16
H02008010*	10	- 6	3/8"	Multifit	M03300-06	No Skive	20.2	0.795	20
H02008012*	12	- 8	1/2"	Multifit	M03300-08	No Skive	23.0	0.905	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02008006*	6	- 4	1/4"		OPF-04	No Skive	16.9	0.665	16
H02008010*	10	- 6	3/8"		OPF-06	No Skive	20.4	0.803	20

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 2

Release number: 3.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02008010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	19.8	0.779	18
H02008012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	23.7	0.933	22

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SUPERJET (BLACK)

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02001006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	17.9	0.704	16
H02001008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	18.7	0.736	18

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02001006*	6	- 4	1/4"		OPF-04	No Skive	17.8	0.7	16
H02001008*	8	- 5	5/16"		OPF-05	No Skive	18.4	0.724	18

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H02001006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.3	0.641	16
H02001008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.4	0.685	16

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

SUPERJET (BLUE)

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02002006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	17.9	0.704	16
H02002008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	18.7	0.736	18

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Standard 2

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H02002006*	6	- 4	1/4"		OPF-04	No Skive	17.8	0.7	16
H02002008*	8	- 5	5/16"		OPF-05	No Skive	18.4	0.724	18

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

CRIMP VERSION: Alternative 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H02002006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.3	0.641	16
H02002008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.4	0.685	16

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SUPERJET/PLUS (BLACK)

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01A78006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.8	0.74	18
H01A78008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.7	0.775	18
H01A78010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.6	0.811	20
H01A78012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.4	0.96	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

SUPERJET/PLUS (BLUE)

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H01A79006*	6	- 4	1/4"	Multifit	M03400-04	No Skive	18.8	0.74	18
H01A79008*	8	- 5	5/16"	Multifit	M03400-05	No Skive	19.7	0.775	18
H01A79010*	10	- 6	3/8"	Multifit	M03400-06	No Skive	20.6	0.811	20
H01A79012*	12	- 8	1/2"	Multifit	M03450-08	No Skive	24.4	0.96	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

PROJET (BLACK)

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01A94006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.5	0.649	16
H01A94008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.6	0.692	16
H01A94010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.0	0.866	22
H01A94012*	12	- 8	1/2"	Multifit	M00910-08	External Skive	28.0	1.1	25.5	1.003	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

PROJET (BLUE)

CRIMP VERSION: Standard 1

Release number: 2.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	
H01A95006*	6	- 4	1/4"	Multifit	M00120-04	External Skive	23.0	0.9	16.5	0.649	16
H01A95008*	8	- 5	5/16"	Multifit	M00120-05	External Skive	23.0	0.9	17.6	0.692	16
H01A95010*	10	- 6	3/8"	Multifit	M00920-06	External Skive	27.0	1.06	22.0	0.866	22
H01A95012*	12	- 8	1/2"	Multifit	M00910-08	External Skive	28.0	1.1	25.5	1.003	24

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

GOLDENBLAST

CRIMP VERSION: **Standard 1**

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10072010*	10	- 6	3/8"	Blastlock	M01700-06	Double Skive	15.0	0.59	47.0	1.85	24.4	0.96	24
H10072A12*	12	- 8	1/2"	Blastlock	M01700-08	Double Skive	16.0	0.62	52.0	2.04	28.4	1.118	27

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GOLDENBLAST/PLUS

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10066010*	10	- 6	3/8"	Blastlock	M01700-06	Double Skive	15.0	0.59	47.0	1.85	24.6	0.968	24
H10066A12*	12	- 8	1/2"	Blastlock	M01700-08	Double Skive	16.0	0.62	52.0	2.04	29.1	1.145	27
H10066019*	19	- 12	3/4"	Blastlock	M01700-12	Double Skive	19.0	0.74	54.0	2.12	38.9	1.531	36
H10066025*	25	- 16	1"	Blastlock	M01500-16	Double Skive	15.0	0.59	49.0	1.92	41.5	1.633	39

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)

GOLDENBLAST/SIX

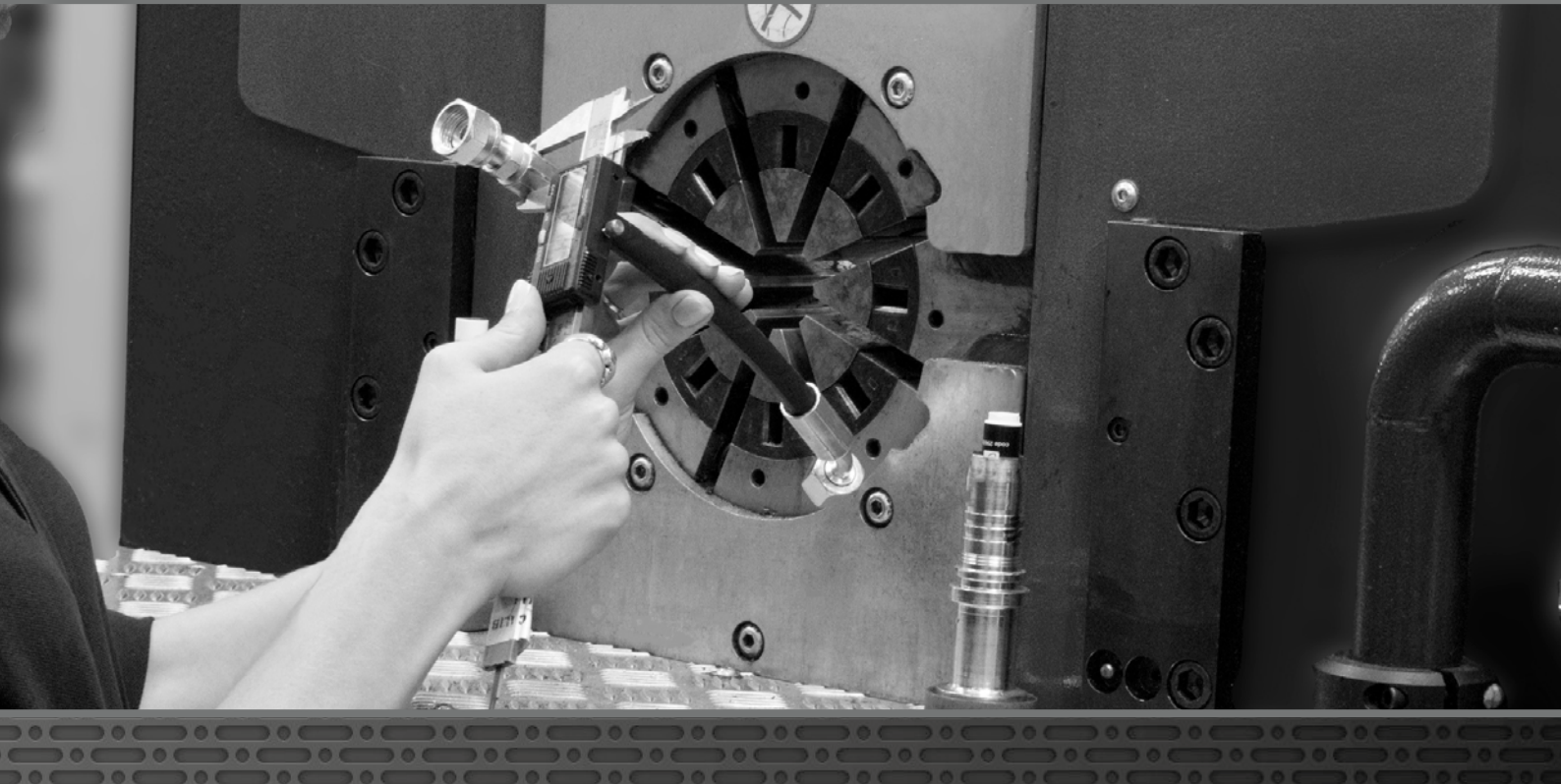
CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Int. Skive Len.		Ext. Skive Len.		Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	mm	inch	mm	inch	
H10067012*	12	- 8	1/2"	Blastlock	M01800-08	Double Skive	16.0	0.62	52.0	2.04	33.3	1.311	33
H10067019*	19	- 12	3/4"	Blastlock	M01800-12	Double Skive	19.0	0.74	54.0	2.12	42.7	1.681	42

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2 mm (0 /-0.008 inch)



INDUSTRIAL HOSES

MULTISERVICE/12 D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80007013*	13	- 10	1/2"	Serrated	D08100-08	No Skive	24.1	0.948	24
H80007019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.2	1.267	30
H80007025*	25	- 16	1"	Serrated	D08100-16	No Skive	38.3	1.507	36
H80007031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	46.6	1.834	45
H80007038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	52.6	2.07	51
H80007051*	51	- 32	2"	Serrated	D08100-32	No Skive	65.8	2.59	63
H80007063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	79.1	3.114	76
H80007076*	76	- 48	3"	Serrated	D08100-48	No Skive	91.2	3.59	90

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

MULTISERVICE/12 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80008019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	31.2	1.228	30
H80008025*	25	- 16	1"	Serrated	D08100-16	No Skive	37.2	1.464	36
H80008031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	45.2	1.779	42
H80008038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	51.2	2.015	48
H80008051*	51	- 32	2"	Serrated	D08100-32	No Skive	65.0	2.559	63
H80008063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	78.0	3.07	76
H80008076*	76	- 48	3"	Serrated	D08100-48	No Skive	90.5	3.562	90

WATER, AIR & STEAM 178

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

MULTISERVICE/21 D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80009013*	13	- 10	1/2"	Serrated	D08100-08	No Skive	24.1	0.948	24
H80009019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.2	1.267	30
H80009025*	25	- 16	1"	Serrated	D08100-16	No Skive	38.3	1.507	36
H80009031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	46.6	1.834	45
H80009038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	52.6	2.07	51
H80009051*	51	- 32	2"	Serrated	D08100-32	No Skive	65.8	2.59	63
H80009063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	79.1	3.114	76
H80009076*	76	- 48	3"	Serrated	D08100-48	No Skive	91.2	3.59	90

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

MULTISERVICE/21 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80022051*	51	- 32	2"	Serrated	D08100-32	No Skive	65.0	2.559	63
H80022076*	76	- 48	3"	Serrated	D08100-48	No Skive	90.5	3.562	90

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

GLACIER/60

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80054025*	25	- 16	1"	Serrated	D08100-16	No Skive	40.8	1.606	39
H80054031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	49.1	1.933	48
H80054038*	38	- 24	1.1/2"	Serrated	D08300-24	No Skive	55.6	2.188	54

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 \text{ /-}0.2\text{mm} (0 \text{ /-}0.008 \text{ inch})$

GLACIER/100

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80055025*	25	- 16	1"	Serrated	D08100-16	No Skive	41.6	1.637	39
H80055031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	49.9	1.964	48
H80055038*	38	- 24	1.1/2"	Serrated	D08300-24	No Skive	57.1	2.248	54

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

AIRSERVICE

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80010019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80010025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.7	1.562	39
H80010031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	48.0	1.889	45
H80010038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80010051*	51	- 32	2"	Serrated	D08100-32	No Skive	68.0	2.677	66
H80010063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	82.3	3.24	76
H80010076*	76	- 48	3"	Serrated	D08100-48	No Skive	95.6	3.763	95
H80010102*	102	- 64	4"	Serrated	D08100-64	No Skive	124.7	4.909	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

AIRSERVICE/27

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80017013*	13	- 10	1/2"	Serrated	D08100-08	No Skive	24.9	0.98	24
H80017019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.2	1.267	30
H80017025*	25	- 16	1"	Serrated	D08100-16	No Skive	37.9	1.492	36
H80017032*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	46.2	1.818	45
H80017038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	51.9	2.043	51
H80017051*	51	- 32	2"	Serrated	D08100-32	No Skive	65.0	2.559	63
H80017076*	76	- 48	3"	Serrated	D08100-48	No Skive	91.2	3.59	90

WATER, AIR & STEAM 184

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

AIRKING/40

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80053051*	51	- 32	2"	Serrated	D08300-32	No Skive	73.4	2.889	73
H80053076*	76	- 48	3"	Serrated	D08300-48	No Skive	100.8	3.968	95
H80053102*	102	- 64	4"	Serrated	D08300-64	No Skive	129.1	5.082	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches

Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

COOLER/5

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80041016*	16	- 10	5/8"	Serrated	D08100-10	No Skive	29.2	1.149	27
H80041019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.2	1.267	30
H80041025*	25	- 16	1"	Serrated	D08100-16	No Skive	37.9	1.492	36
H80041031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	46.2	1.818	45
H80041038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	51.9	2.043	51
H80041051*	51	- 32	2"	Serrated	D08100-32	No Skive	65.0	2.559	63
H80041076*	76	- 48	3"	Serrated	D08300-48	No Skive	97.9	3.854	95
H80041102*	102	- 64	4"	Serrated	D08100-64	No Skive	118.9	4.681	112

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

COOLSERVICE/G

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80059016*	16	- 10	5/8"	Serrated	D08100-10	No Skive	30.7	1.208	30
H80059019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80059022*	22	- 16	7/8"	Serrated	D08100-14	No Skive	35.8	1.409	33
H80059025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.0	1.535	36
H80059031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.3	1.862	45

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

FUELSERVICE/5 SDC

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80024019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80024025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.7	1.562	39
H80024031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80024038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80024051*	51	- 32	2"	Serrated	D08100-32	No Skive	68.0	2.677	66
H80024063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	81.3	3.2	76
H80024076*	76	- 48	3"	Serrated	D08100-48	No Skive	95.6	3.763	95
H80024102*	102	- 64	4"	Serrated	D08100-64	No Skive	123.2	4.85	122

ANTI-STATIC FUEL 188

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

FUELSERVICE/10 D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80004019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.2	1.267	30
H80004025*	25	- 16	1"	Serrated	D08100-16	No Skive	38.3	1.507	36
H80004031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	46.6	1.834	45
H80004038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	52.6	2.07	51
H80004051*	51	- 32	2"	Serrated	D08100-32	No Skive	65.8	2.59	63
H80004063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	79.1	3.114	76
H80004076*	76	- 48	3"	Serrated	D08100-48	No Skive	91.2	3.59	90

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

FUELSERVICE/10 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80005019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	31.2	1.228	30
H80005025*	25	- 16	1"	Serrated	D08100-16	No Skive	37.2	1.464	36
H80005031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	45.2	1.779	42
H80005038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	51.2	2.015	48
H80005051*	51	- 32	2"	Serrated	D08100-32	No Skive	65.0	2.559	63
H80005063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	78.0	3.07	76
H80005076*	76	- 48	3"	Serrated	D08100-48	No Skive	90.5	3.562	90

ANTI-STATIC FUEL 190

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

FUELSERVICE/16 D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80028019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80028025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.4	1.551	36
H80028031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80028038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80028051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70
H80028063*	63	- 40	2.1/2"	Serrated	D08300-40	No Skive	83.3	3.279	82
H80028076*	76	- 48	3"	Serrated	D08100-48	No Skive	94.1	3.704	90
H80028102*	102	- 64	4"	Serrated	D08300-64	No Skive	124.7	4.909	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

FUELSERVICE/16 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80029019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80029025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.4	1.551	36
H80029031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80029038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80029051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70
H80029063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	82.3	3.24	76
H80029076*	76	- 48	3"	Serrated	D08100-48	No Skive	94.1	3.704	90
H80029102*	102	- 64	4"	Serrated	D08100-64	No Skive	121.8	4.795	112

ANTI-STATIC FUEL 192

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

FUELSERVICE/20 D EN 1825-B

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80032019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.2	1.267	30
H80032025*	25	- 16	1"	Serrated	D08100-16	No Skive	40.1	1.578	39
H80032031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	48.4	1.905	45
H80032038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80032051*	51	- 32	2"	Serrated	D08100-32	No Skive	68.0	2.677	66
H80032076*	76	- 48	3"	Serrated	D08100-48	No Skive	94.1	3.704	90
H80032102*	102	- 64	4"	Serrated	D08100-64	No Skive	123.2	4.85	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

FUELSERVICE/20 D EN 1825-C

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80033019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.2	1.267	30
H80033025*	25	- 16	1"	Serrated	D08100-16	No Skive	40.1	1.578	39
H80033031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	48.4	1.905	45
H80033038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80033051*	51	- 32	2"	Serrated	D08100-32	No Skive	68.0	2.677	66
H80033063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	81.6	3.212	76
H80033076*	76	- 48	3"	Serrated	D08100-48	No Skive	94.1	3.704	90
H80033102*	102	- 64	4"	Serrated	D08100-64	No Skive	123.2	4.85	122

ANTI-STATIC FUEL 194

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

FUELSERVICE/20 SD EN 1825-E

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80034019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80034025*	25	- 16	1"	Serrated	D08100-16	No Skive	40.8	1.606	39
H80034031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	49.1	1.933	48
H80034038*	38	- 24	1.1/2"	Serrated	D08300-24	No Skive	56.4	2.22	54
H80034051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70
H80034063*	63	- 40	2.1/2"	Serrated	D08300-40	No Skive	84.1	3.311	82
H80034076*	76	- 48	3"	Serrated	D08300-48	No Skive	97.1	3.822	95
H80034102*	102	- 64	4"	Serrated	D08300-64	No Skive	125.4	4.937	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

FUELSERVICE/21 D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80006019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.2	1.267	30
H80006025*	25	- 16	1"	Serrated	D08100-16	No Skive	38.3	1.507	36
H80006031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	46.6	1.834	45
H80006038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	52.6	2.07	51
H80006051*	51	- 32	2"	Serrated	D08100-32	No Skive	65.8	2.59	63
H80006063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	79.1	3.114	76
H80006076*	76	- 48	3"	Serrated	D08100-48	No Skive	91.2	3.59	90

ANTI-STATIC FUEL 196

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

FUELSERVICE/21 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80020051*	51	- 32	2"	Serrated	D08100-32	No Skive	65.0	2.559	63
H80020076*	76	- 48	3"	Serrated	D08100-48	No Skive	90.5	3.562	90

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 \text{ /-}0.2\text{mm} (0 \text{ /-}0.008 \text{ inch})$

FUELDIPENSER/D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80026012*	12	- 8	1/2"	Serrated	D08100-08	No Skive	25.9	1.019	24
H80026016*	16	- 10	5/8"	Serrated	D08100-10	No Skive	29.2	1.149	27
H80026019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.9	1.295	30
H80026025*	25	- 16	1"	Serrated	D08100-16	No Skive	40.1	1.578	39
H80026031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	48.4	1.905	45
H80026038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

FUELDISPENSER/SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80027019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.9	1.295	30
H80027025*	25	- 16	1"	Serrated	D08100-16	No Skive	40.1	1.578	39
H80027031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	48.4	1.905	45
H80027038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

FUELTRUCK/16 D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80030019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80030025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.4	1.551	36
H80030031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80030038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80030051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70
H80030063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	81.6	3.212	76
H80030076*	76	- 48	3"	Serrated	D08100-48	No Skive	94.1	3.704	90
H80030102*	102	- 64	4"	Serrated	D08100-64	No Skive	121.8	4.795	112

ANTI-STATIC FUEL 200

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

FUELTRUCK/16 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80031019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80031025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.4	1.551	36
H80031031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80031038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80031051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70
H80031063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	81.6	3.212	76
H80031076*	76	- 48	3"	Serrated	D08100-48	No Skive	94.1	3.704	90
H80031102*	102	- 64	4"	Serrated	D08100-64	No Skive	121.8	4.795	112

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

FUELFLEX/17 SDC

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80025019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80025025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.4	1.551	36
H80025031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80025038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	52.6	2.07	51
H80025051*	51	- 32	2"	Serrated	D08100-32	No Skive	65.8	2.59	63
H80025063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	79.4	3.125	76
H80025076*	76	- 48	3"	Serrated	D08100-48	No Skive	91.2	3.59	90
H80025102*	102	- 64	4"	Serrated	D08100-64	No Skive	119.6	4.708	112

ANTI-STATIC FUEL 202

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

PROGAS LPG D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80011012*	12	- 8	1/2"	Serrated	D08100-08	No Skive	26.6	1.047	24
H80011016*	16	- 10	5/8"	Serrated	D08100-10	No Skive	29.2	1.149	27
H80011019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80011025*	25	- 16	1"	Serrated	D08100-16	No Skive	40.1	1.578	39
H80011031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	48.4	1.905	45
H80011038*	38	- 24	1.1/2"	Serrated	D08300-24	No Skive	55.6	2.188	54
H80011051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70
H80011063*	63	- 40	2.1/2"	Serrated	D08300-40	No Skive	84.1	3.311	82
H80011076*	76	- 48	3"	Serrated	D08100-48	No Skive	95.6	3.763	95
H80011102*	102	- 64	4"	Serrated	D08100-64	No Skive	123.2	4.85	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

PROGAS LPG SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80057012*	12	- 8	1/2"	Serrated	D08100-08	No Skive	26.6	1.047	24
H80057016*	16	- 10	5/8"	Serrated	D08100-10	No Skive	29.2	1.149	27
H80057019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80057025*	25	- 16	1"	Serrated	D08100-16	No Skive	40.1	1.578	39
H80057031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	48.4	1.905	45
H80057038*	38	- 24	1.1/2"	Serrated	D08300-24	No Skive	55.6	2.188	54
H80057051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70
H80057063*	63	- 40	2.1/2"	Serrated	D08300-40	No Skive	84.1	3.311	82
H80057076*	76	- 48	3"	Serrated	D08100-48	No Skive	95.6	3.763	95
H80057102*	102	- 64	4"	Serrated	D08100-64	No Skive	123.2	4.85	122

ANTI-STATIC FUEL 204

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

CHEMKING/10 D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80049006*	6	- 4	1/4"	Serrated	D08100-04	No Skive	19.3	0.759	18
H80049008*	8	- 5	5/16"	Serrated	D08100-05	No Skive	21.4	0.842	20
H80049010*	10	- 6	3/8"	Serrated	D08100-06	No Skive	23.4	0.921	22
H80049012*	12	- 8	1/2"	Serrated	D08100-08	No Skive	26.6	1.047	24
H80049016*	16	- 10	5/8"	Serrated	D08100-10	No Skive	29.2	1.149	27
H80049019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.2	1.267	30
H80049025*	25	- 16	1"	Serrated	D08100-16	No Skive	37.9	1.492	36
H80049031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80049038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	53.4	2.102	51
H80049051*	51	- 32	2"	Serrated	D08100-32	No Skive	68.0	2.677	66

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

 Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$

 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

CHEM KING/10 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80050019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80050025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.4	1.551	36
H80050031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80050038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80050051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70
H80050063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	82.3	3.24	76
H80050076*	76	- 48	3"	Serrated	D08100-48	No Skive	94.1	3.704	90
H80050102*	102	- 64	4"	Serrated	D08100-64	No Skive	121.8	4.795	112

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

CHEMKING/16 SDE

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80061019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80061025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.4	1.551	36
H80061031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80061038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80061051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70
H80061063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	82.3	3.24	76
H80061076*	76	- 48	3"	Serrated	D08100-48	No Skive	94.1	3.704	90
H80061102*	102	- 64	4"	Serrated	D08100-64	No Skive	121.8	4.795	112

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

 Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$

 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

CHEMKING/16 SDA

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80047019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80047025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.4	1.551	36
H80047031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80047038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80047051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70
H80047063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	82.3	3.24	76
H80047076*	76	- 48	3"	Serrated	D08100-48	No Skive	94.1	3.704	90
H80047102*	102	- 64	4"	Serrated	D08100-64	No Skive	121.8	4.795	112

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

CHEMKING/16 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80048012*	12	- 8	1/2"	Serrated	D08100-08	No Skive	28.1	1.106	27
H80048019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	33.7	1.326	33
H80048025*	25	- 16	1"	Serrated	D08100-16	No Skive	39.4	1.551	36
H80048031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80048038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	54.1	2.129	51
H80048051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

BREWERS/12 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80042019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	34.4	1.354	33
H80042025*	25	- 16	1"	Serrated	D08100-16	No Skive	40.1	1.578	39
H80042031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	49.1	1.933	48
H80042038*	38	- 24	1.1/2"	Serrated	D08300-24	No Skive	55.6	2.188	54
H80042051*	51	- 32	2"	Serrated	D08100-32	No Skive	68.0	2.677	66
H80042063*	63	- 40	2.1/2"	Serrated	D08300-40	No Skive	84.1	3.311	82
H80042076*	76	- 48	3"	Serrated	D08300-48	No Skive	97.1	3.822	95
H80042102*	102	- 64	4"	Serrated	D08300-64	No Skive	124.7	4.909	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

 Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$

 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

BREWERS/12 SDC

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80043031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	49.1	1.933	48
H80043038*	38	- 24	1.1/2"	Serrated	D08300-24	No Skive	55.6	2.188	54
H80043051*	51	- 32	2"	Serrated	D08300-32	No Skive	69.8	2.748	66
H80043063*	63	- 40	2.1/2"	Serrated	D08300-40	No Skive	84.1	3.311	82
H80043076*	76	- 48	3"	Serrated	D08300-48	No Skive	97.1	3.822	95
H80043102*	102	- 64	4"	Serrated	D08300-64	No Skive	124.7	4.909	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

MILKYWAY/10 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80044019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	32.2	1.267	30
H80044025*	25	- 16	1"	Serrated	D08100-16	No Skive	37.9	1.492	36
H80044031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80044038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	53.4	2.102	51
H80044051*	51	- 32	2"	Serrated	D08100-32	No Skive	67.2	2.645	66
H80044063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	80.2	3.157	76
H80044076*	76	- 48	3"	Serrated	D08100-48	No Skive	92.7	3.649	90
H80044102*	102	- 64	4"	Serrated	D08100-64	No Skive	120.3	4.736	112

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 \text{ /-}0.2\text{mm} (0 \text{ /-}0.008 \text{ inch})$

MULTIFOOD/10 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80045038*	38	- 24	1.1/2"	Serrated	D08100-24	No Skive	53.4	2.102	51
H80045051*	51	- 32	2"	Serrated	D08100-32	No Skive	66.5	2.618	66
H80045063*	63	- 40	2.1/2"	Serrated	D08100-40	No Skive	80.9	3.185	76
H80045076*	76	- 48	3"	Serrated	D08100-48	No Skive	93.4	3.677	90
H80045102*	102	- 64	4"	Serrated	D08100-64	No Skive	123.2	4.85	122

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2 \text{ mm} (0 / -0.008 \text{ inch})$

ABRAFOOD/10

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80046102*	102	- 64	4"	Serrated	D08100-64	No Skive	117.4	4.622	112

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 inch)

SANDSERVICE/21 D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80019019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	34.4	1.354	33
H80019025*	25	- 16	1"	Serrated	D08100-16	No Skive	40.1	1.578	39
H80019031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	50.6	1.992	48
H80019038*	38	- 24	1.1/2"	Serrated	D08300-24	No Skive	58.5	2.303	57
H80019051*	51	- 32	2"	Serrated	D08300-32	No Skive	74.1	2.917	73

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 \text{ } / -0.2\text{mm} (0 \text{ } / -0.008 \text{ inch})$

ABRASERVICE/10 D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80021051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 \text{ /-}0.2\text{mm} (0 \text{ /-}0.008 \text{ inch})$

ABRASERVICE/10 SD

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80012051*	51	- 32	2"	Serrated	D08300-32	No Skive	72.7	2.862	72
H80012063*	63	- 40	2.1/2"	Serrated	D08300-40	No Skive	87.0	3.425	86
H80012076*	76	- 48	3"	Serrated	D08300-48	No Skive	99.3	3.909	95

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 \text{ /-}0.2\text{mm} (0 \text{ /-}0.008 \text{ inch})$

ABRASERVICE/40 D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80014019*	19	- 12	3/4"	Serrated	D08100-12	No Skive	34.4	1.354	33
H80014025*	25	- 16	1"	Serrated	D08100-16	No Skive	40.1	1.578	39
H80014031*	31	- 20	1.1/4"	Serrated	D08100-20	No Skive	47.7	1.877	45
H80014038*	38	- 24	1.1/2"	Serrated	D08300-24	No Skive	57.1	2.248	54
H80014051*	51	- 32	2"	Serrated	D08300-32	No Skive	71.2	2.803	70

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

ABRASERVICE/100 D

CRIMP VERSION: Standard 1

Release number: 1.0

PART. REF.	HOSE SIZE			Insert Type	Ferrule	Crimping Type	Crimp. Diam.		DIE N.
	DN	Dash	inch				mm	inch	
H80015051*	51	- 32	2"	Full Flow	D08200-32	No Skive	80.5	3.169	76
H80015063*	63	- 40	2.1/2"	Full Flow	D08200-40	No Skive	96.0	3.779	95
H80015076*	76	- 48	3"	Full Flow	D08200-48	No Skive	110.2	4.338	105
H80015102*	102	- 64	4"	Full Flow	D08200-64	No Skive	137.0	5.393	130

- It is recommended to follow the instructions and training information present on the Manuli website "Assembling information and instructions".
- The present crimp chart document is related to the Manuli Hydraulics integrated package of hoses, fittings and hose-assembling equipment and is valid under the condition of use of original components from the Manuli Manufacturing Integrated Program, coherently with the recommendations of international norms of the sector, ref. ISO/TR 17165-2 "Recommended practices for hydraulic hose assemblies".
- For optimum performance use the recommended machines and tools of the Manuli Hydraulics integrated catalogue.

Skive length tolerance: $\pm 0.5 \text{ mm} / \pm 0.02 \text{ inches}$
 Crimping diameter tolerance: $0 \text{ } / -0.2\text{mm} (0 \text{ } / -0.008 \text{ inch})$



©Copyright 2023 Manuli Hydraulics.
All rights reserved.

www.manuli-hydraulics.com