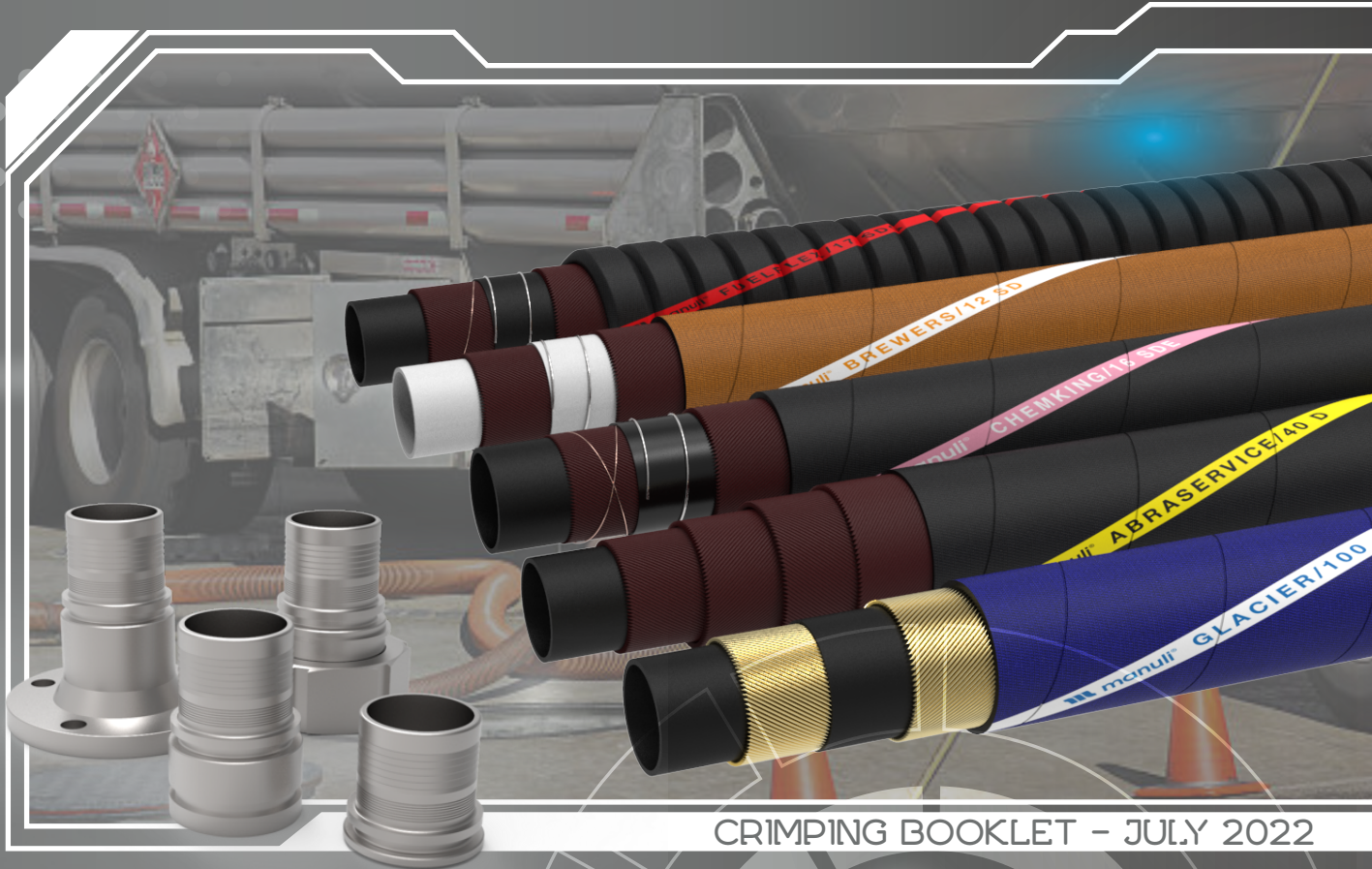


CONVEYING HOSES



CRIMPING BOOKLET - JULY 2022

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HOSE ASSEMBLY INSTRUCTIONS

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.

This booklet from Manuli Hydraulics provides insight to support assemblers in the production of high-quality conveying hose assemblies.

CRIMPING VS. CLAMPING

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.

CLAMPING PROCESS

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.

The clamp installation process is as follows:

1. Measure the outside diameter of the hose and select the clamp by checking its range;
2. Slide the hose clamp over the hose;
3. Insert the fitting into the hose;
4. 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);
5. Tighten the bolts up to reach a sufficient compression of the hose wall to keep firmly fixed the hose onto the fitting.
6. Consult the clamp manufacturer for proper torque moments of bolts or screws.



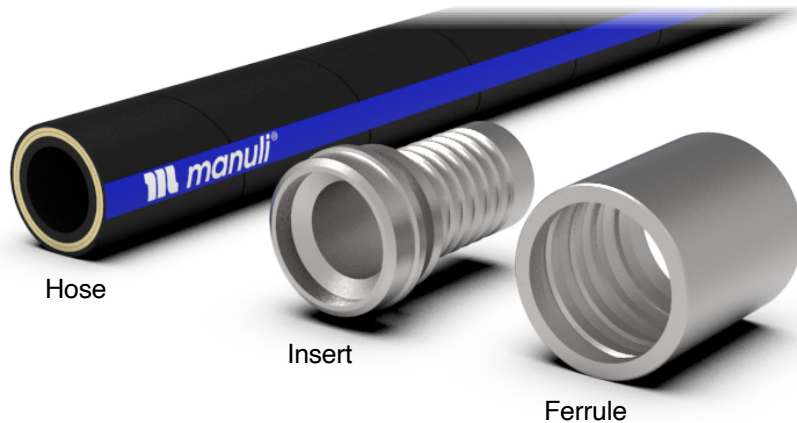
CRIMPING PROCESS

The crimping process, as described in the following procedure, is applicable to both of the insert styles designed by Manuli for conveying hoses:

- SERRATED style (universal solution)
- FULL-FLOW style (dedicated to ABRASERVICE/100 D hose) - *see details at the end of the instructions section.*

1 - COMPONENTS SELECTION

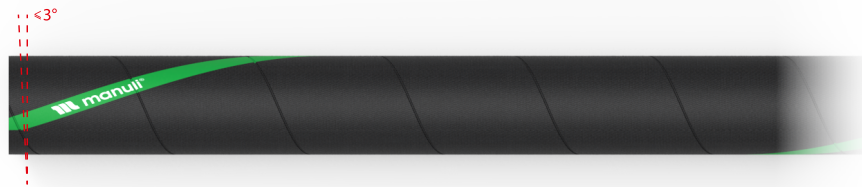
Select the hose, ferrules and inserts required for the assembly.



FOR THE MOST UP TO DATE INFORMATION AND PARTS REFER TO THE LATEST RELEASE OF THE MANULI HYDRAULICS CONVEYING HOSE CATALOGUE

2 - HOSE CUTTING

Cut the hose squarely (cut angle must be less than 3°) using an appropriate blade to minimise heat damage to the rubber

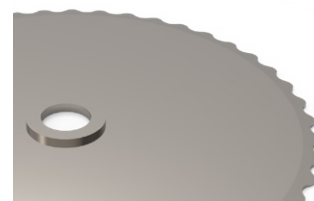


CUTTING DISCS

SCALLOPED BLADE TYPE

Suitable for cutting all hose types, with preference towards small and medium sizes.

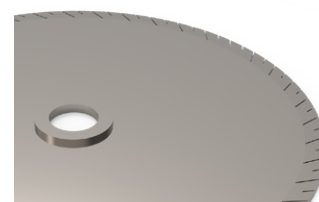
Available in 254, 300, 400 and 520 mm sizes



SLOTTED BLADE TYPE

Ideal for cutting all hose types and sizes. Will have the longest service life and produces the highest quality cut.

Available in 400 and 520 mm sizes



3 - FITTINGS MOUNTING (2-PIECE FITTINGS)

1. Place the ferrule over the prepared end of the hose

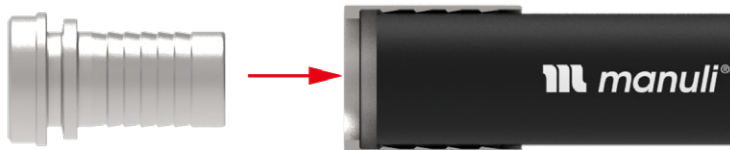


IF THE HOSE IS DESIGNED WITH GROUND WIRES MAKE THEM HAVE CONTACT WITH THE FITTINGS TO ACHIEVE GROUNDING



ENSURE THE HOSE IS PUSHED IN UNTIL IT HITS THE INTERNAL STOP ON THE FERRULE

2. Push the insert fully into the hose until it contacts the ferrule



LARGE BORE FITTINGS MAY REQUIRE THE USE OF A PUSHING MACHINE TO ENSURE PROPER INSERTION INTO THE HOSE



3. When correctly mounted the shoulders of the ferrule should be aligned with the latch area on the insert

4 - DIE-SET SELECTION

Manuli offers a wide range of crimping machines for the conveying hose sector. The selection of Manuli machines is recommended.

When setting up the crimping machine, the die-set selected should be the die-set closest to, and smaller than the listed Crimping Diameter



THE NOMINAL VALUE FOR DIES ALREADY CONSIDERS THE NECESSARY TOLERANCES FOR METAL REBOUND AFTER CRIMPING AND FOR ANY BULGING OF THE FERRULE WHICH MAY OCCUR WHEN CRIMPING CLOSE TO THE DIE-SET'S MINIMUM CLOSURE DIAMETER



IF USERS OBSERVE THAT CRIMPING IS OUT OF TOLERANCE USING THE RECOMMENDED DIE-SET, THEY CAN SELECT THE NEXT DIE-SET DOWN



ALWAYS USE THE MOST RECENT CRIMPING DATA PROVIDED BY MANULI HYDRAULICS

Example

To achieve a finished crimped diameter of 24.1mm the die-set would be selected as follows:

24.1mm Die-Set 24 required

For your convenience, and to minimise the risk of error, we have included the die-set number for each fitting solution in our crimping tables.

Crimp. Diam.		DIE N.
mm	inch	
15,9	0,626	15
16,9	0,665	15
19,2	0,756	18
22,9	0,902	21

5 - PRELIMINARY SETUP OF MANULI CRIMPING MACHINES

Manuli crimping machines have two distinct types of crimping control, the standard vernier dial gauge type and the SCS (Safe Crimp System) / SCE (Smart Control Electronic) automated type.

SETTING THE INITIAL CRIMPING DIAMETER ON VERNIER DIAL GAUGE MACHINES

On machines with the vernier dial gauge the formula for setting the crimp diameter value is:

$$(Nominal Crimp Diameter - Die-Set Value) \times 100$$

The above formula should produce a crimping diameter close to the required value.

Example:

To achieve a final crimping diameter of 23.5mm using Die-Set 21:

$$(23.5 - 21) \times 100 = 250$$

So the vernier dial gauge should be set to a value of **250**.



THE INITIAL SETTING VALUE OBTAINED FROM THE ABOVE FORMULA IS INTENDED AS A STARTING POINT FOR CORRECT SETUP. USING THE ABOVE FORMULA DOES NOT GUARANTEE AN ACCURATE FINAL CRIMPING DIAMETER AND THE VALIDATION AND MODIFICATION PROCESS (SEE STEP 7) SHOULD ALWAYS BE FOLLOWED TO ENSURE THAT THE FINAL CRIMP DIAMETER IS ACCURATE.

SETTING THE INITIAL CRIMPING DIAMETER ON SCS / SCE MACHINES

On machines with SCS / SCE control simply enter the nominal crimping diameter (for example 23.5mm) and the automated system will calculate the correct settings.



THE INITIAL SETTING VALUE CALCULATED BY THE SCS / SCE IS ONLY INTENDED AS A STARTING POINT FOR CORRECT SETUP. THE VALIDATION AND MODIFICATION PROCESS (SEE STEP 7) SHOULD ALWAYS BE FOLLOWED TO ENSURE THAT THE FINAL CRIMP DIAMETER IS ACCURATE.

Once the initial crimping operation has been carried out, measure the actual crimped diameter of the ferrule and calculate the difference between this value and the nominal value required (as explained in the following steps).

Enter this calculated value as the offset in the SCS / SCE system.

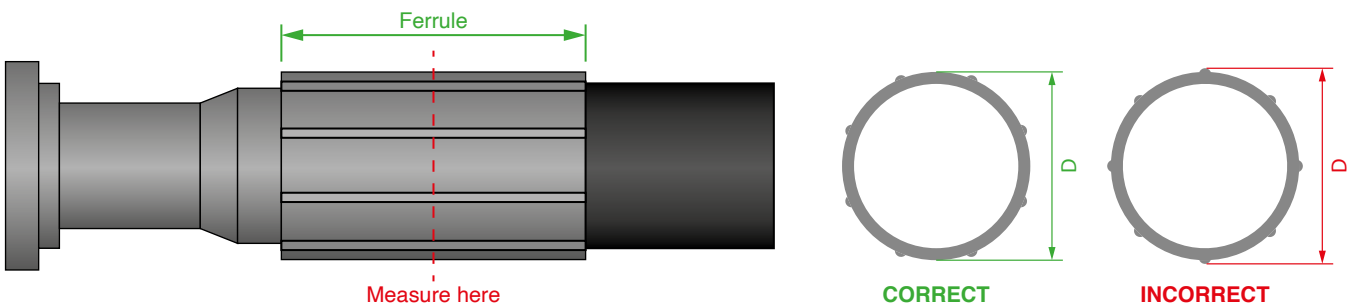


FOR FURTHER INFORMATION ON THE CORRECT USE AND SETUP OF THE SCS / SCE PLEASE REFER TO THE SPECIFIC PROCEDURE

6 - VALIDATION AND MODIFICATION OF CRIMP SETTINGS

After the initial crimping operation, the crimped ferrule should be inspected according to the following procedure:

1. Measure the crimped ferrule diameter using vernier callipers or 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 pips (see below).



2. Verify that the measured crimped diameter is within the acceptable tolerances of [+0mm / -0.2mm] of the required crimping diameter.

OVERSIZED FERRULE DIAMETER (IE: INSUFFICIENT CRIMPING)

If the crimped ferrule diameter is too large, **REDUCE** the crimping machine setting by the calculated error value and re-crimp the same ferrule.



RE-CRIMPING OF FERRULES IS ONLY PERMITTED DURING SETUP, AND SHOULD NEVER BE DONE TO FERRULES WHICH WILL BE USED FOR PRODUCTION.

UNDERSIZED FERRULE DIAMETER (IE: EXCESSIVE CRIMPING)

If the crimped ferrule diameter is too small, **INCREASE** the crimping machine setting by the calculated error value, crimp the other end fitting of the assembly and then restart the validation procedure at Step 1.



AFTER COMPLETING THE ABOVE SETUP PROCESS THE CRIMPING MACHINE SETTING SHOULD NOT BE ALTERED

7 - CRIMPING OPERATIONS

POSITION THE ENTIRE LENGTH OF THE FERRULE INSIDE THE DIES IN ORDER TO OBTAIN A COMPLETELY FLAT CRIMP.



DOUBLE CRIMPING OF FERRULES COVERING PARTIAL LENGTHS IN TWO OR MORE STRIKES IS NOT ALLOWED.

1. Crimp the next hose assembly end using the same crimp setting that was determined during the setup process.
2. Measure the crimped ferrule diameter using vernier calipers or 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 pips.
3. Verify that the measured crimped diameter is within the specified limits of [+0mm / -0.2mm] of the required crimping diameter as specified in the relevant crimping data charts.
4. 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.



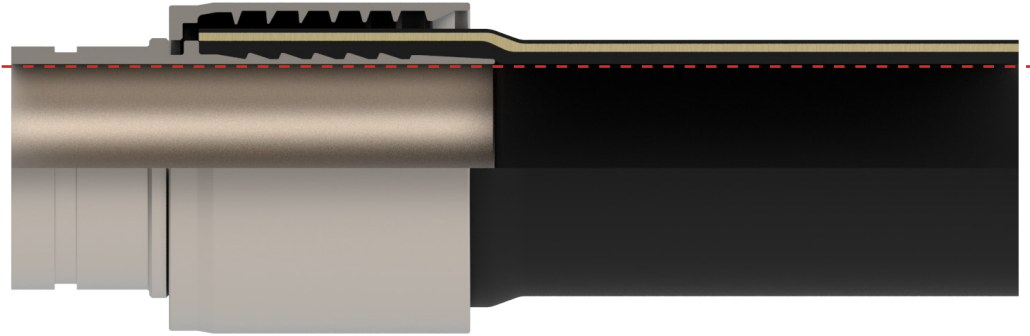
IT IS NOT PERMITTED TO CRIMP MANULI HOSE ASSEMBLIES TO A CRIMPING DIAMETER OUTSIDE OF THE DEFINED RANGE (IE: CRIMPING CHART VALUE +0/-0.2) OF THOSE SPECIFIED IN THE LATEST VERSION OF THE MANULI CRIMPING DATA.

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



1 - INSERT MOUNTING

1. Locate the ferrule on the hose.
2. Clamp the hose securely in the insert pushing machine.
3. Lubricate the outer surface of the insert with a light oil.
4. Locate the insert in the insert pushing machine and ensure that the insert and hose are axially aligned.
5. Push the insert into the hose until it reaches the mechanical stop on the insert - the hose should visibly deform around the insert.

2 - CRIMPING & VALIDATION PROCEDURE

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

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

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

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: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 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

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

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

WATER, AIR & STEAM HOSES 10

- 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

- 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: ± 0.5 mm / ± 0.02 inches
 Crimping diameter tolerance: 0 /-0.2mm (0 /-0.008 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

- 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

- 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

- 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

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

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

- 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 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

- 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

- 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	21
H80049010*	10	- 6	3/8"	Serrated	D08100-06	No Skive	23.4	0.921	21
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: $0 / -0.2\text{mm} (0 / -0.008 \text{ inch})$

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

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

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

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



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