

Swaging



SHARPS

SWAGING CHART



GOLDENSPIR™ / 4SP
ROCKMASTER™ / 4SP

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M00910-04	18.3	25	—
8	05	5/16"	7.9				
10	06	3/8"	9.5	M00910-06	22.8	27	—
12	08	1/2"	12.7	M00910-08	25.8	28	—
16	10	5/8"	15.9	M00910-10	28.8	33	—
19	12	3/4"	19.0	M00920-12	33.6	32	—
25	16	1"	25.4	M00920-16	41.5	42	—
31	20	1. 1/4"	31.8	M00920-20	51.0	48	—
38	24	1. 1/2"	38.1	M00910-24	59.5	60	—
51	32	2"	50.8	M00910-32	72.5	61	—

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



GOLDENSPIR™ / 4SH
ROCKMASTER™ / 4SH

INSERT:

MF2000™ - INTERLOCK TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4				
8	05	5/16"	7.9				
10	06	3/8"	9.5				
12	08	1/2"	12.7				
16	10	5/8"	15.9	M01300-10	31.3	36	13
19	12	3/4"	19.0	M01300-12	35.4	38	10
25	16	1"	25.4	M01300-16	43.0	50	14
31	20	1. 1/4"	31.8	M01400-20	50.0	68	17
38	24	1. 1/2"	38.1	M01400-24	56.5	80	25
51	32	2"	50.8	M01400-32	73.7	87	26

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



GOLDENSPIR™ / 9T

INSERT:

MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4				
8	05	5/16"	7.9				
10	06	3/8"	9.5	M00910-06	22.3	27	—
12	08	1/2"	12.7	M00910-08	25.5	28	—
16	10	5/8"	15.9				
19	12	3/4"	19.0	M00920-12	33.5	32	—
25	16	1"	25.4	M00920-16	41.5	42	—
31	20	1. 1/4"	31.8	M00920-20	50.2	48	—
38	24	1. 1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



GOLDENSPIR™ / 12
ROCKMASTER™ / 12

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4				
8	05	5/16"	7.9				
10	06	3/8"	9.5	M00910-06	22.3	27	—
12	08	1/2"	12.7	M00910-08	25.8	28	—
16	10	5/8"	15.9	M00910-10	29.3	33	—
19	12	3/4"	19.0	M00920-12	33.7	32	—
25	16	1"	25.4	M00920-16	41.8	42	—
31	20	1. 1/4"	31.8	M00920-20	50.2	48	—
38	24	1. 1/2"	38.1	M00910-24	58.0	60	—
51	32	2"	50.8	M00910-32	71.0	61	—

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



GOLDENSPIR™ / 13
ROCKMASTER™ / 13

INSERT:

MF2000™ - INTERLOCK TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	*	*	*	*
8	05	5/16"	7.9				
10	06	3/8"	9.5	*	*	*	*
12	08	1/2"	12.7	*	*	*	*
16	10	5/8"	15.9				
19	12	3/4"	19.0	M01300-12	36.0	38	10
25	16	1"	25.4	M01300-16	43.5	50	14
31	20	1. 1/4"	31.8	M01300-20	54.6	73	17
38	24	1. 1/2"	38.1	M01300-24	60.3	80	25
51	32	2"	50.8	M01300-32	76.9	87	26

* Contact Manuli Rubber Industries

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



GOLDENSPIR™ / 15
ROCKMASTER™ / 15

INSERT:

MF2000™ - INTERLOCK TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4				
8	05	5/16"	7.9				
10	06	3/8"	9.5				
12	08	1/2"	12.7				
16	10	5/8"	15.9				
19	12	3/4"	19.0	M01300-12	35.4	38	10
25	16	1"	25.4	M01300-16	43.0	50	14
31	20	1. 1/4"	31.8	M01300-20	54.5	73	17
38	24	1. 1/2"	38.1	M01300-24	61.0	80	25
51	32	2"	50.8	*	*	*	*

* Contact Manuli Rubber Industries

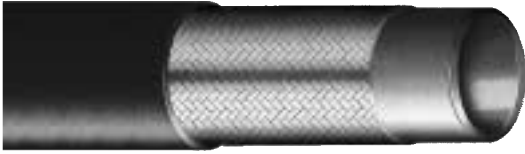
SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



TRACTOR™ / 1 ROCKMASTER™ / 1ST

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M00110-03	14.8	20	—
6	04	1/4"	6.4	M00110-04	17.4	23	—
8	05	5/16"	7.9	M00110-05	18.9	24	—
10	06	3/8"	9.5	M00110-06	20.7	24	—
12	08	1/2"	12.7	M00110-08	23.8	25	—
16	10	5/8"	15.9	M00110-10	27.6	28	—
19	12	3/4"	19.0	M00110-12	31.6	32	—
25	16	1"	25.4	M00110-16	39.0	38	—
31	20	1.1/4"	31.8	M00110-20	47.5	45	—
38	24	1.1/2"	38.1	M00110-24	53.0	59	—
51	32	2"	50.8	M00110-32	66.0	59	—

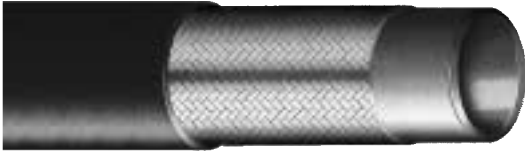
SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



TRACTOR™ / 1T ROCKMASTER™ / 1SN

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M03400-03	16.1	—	—
6	04	1/4"	6.4	M03400-04	17.9	—	—
8	05	5/16"	7.9	M03400-05	18.7	—	—
10	06	3/8"	9.5	M03400-06	20.6	—	—
12	08	1/2"	12.7	M03400-08	23.5	—	—
16	10	5/8"	15.9	M03400-10	27.0	—	—
19	12	3/4"	19.0	M03400-12	30.9	—	—
25	16	1"	25.4	M03400-16	39.2	—	—
31	20	1.1/4"	31.8	M03400-20	48.6	—	—
38	24	1.1/2"	38.1	M03400-24	57.0	—	—
51	32	2"	50.8	M03400-32	69.5	—	—
60	38	2.3/8"	60.0	M03400-38	76.1	—	—
63	40	2.1/2"	63.5	M03400-40	80.0	—	—
76	48	3"	76.2	M03400-48	94.3	—	—

SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



TRACTOR™ / 2 ROCKMASTER™ / 2ST

INSERT:

MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M00910-03	17.4	21	—
6	04	1/4"	6.4	M00910-04	17.5	25	—
8	05	5/16"	7.9	M00910-05	21.0	23	—
10	06	3/8"	9.5	M00910-06	22.0	27	—
12	08	1/2"	12.7	M00910-08	25.5	28	—
16	10	5/8"	15.9	M00910-10	28.7	33	—
19	12	3/4"	19.0	M00920-12	33.4	32	—
25	16	1"	25.4	M00920-16	41.5	42	—
31	20	1.1/4"	31.8	M00920-20	51.0	50	—
38	24	1.1/2"	38.1	M00910-24	58.1	60	—
51	32	2"	50.8	M00910-32	71.6	61	—

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



TRACTOR™ / 2T
ROCKMASTER™ / 2SN
SUPERJET / 2T

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M03400-03	16.8	—	—
6	04	1/4"	6.4	M03400-04	19.0	—	—
8	05	5/16"	7.9	M03400-05	19.7	—	—
10	06	3/8"	9.5	M03400-06	21.4	—	—
12	08	1/2"	12.7	M03400-08	24.5	—	—
16	10	5/8"	15.9	M03400-10	28.3	—	—
19	12	3/4"	19.0	M03400-12	32.1	—	—
25	16	1"	25.4	M03400-16	40.4	—	—
31	20	1. 1/4"	31.8	M03400-20	51.0	—	—
38	24	1. 1/2"	38.1	M03400-24	59.9	—	—
51	32	2"	50.8	M03400-32	72.5	—	—
60	38	2.3/8"	60.0	M03400-38	76.1	—	—
63	40	2.1/2"	63.5	M03400-40	82.3	—	—
76	48	3"	76.2	M03400-48	96.0	—	—

SWAGING DATA TOLERANCES:

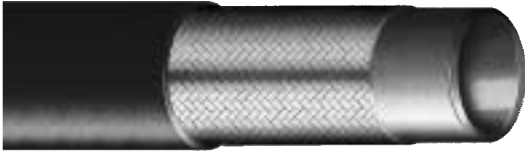
– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

EQUATOR / 1



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M00110-03	14.8	20	—
6	04	1/4"	6.4	M00110-04	17.4	21	—
8	05	5/16"	7.9	M00110-05	18.9	22	—
10	06	3/8"	9.5	M00110-06	20.7	22	—
12	08	1/2"	12.7	M00110-08	23.8	23	—
16	10	5/8"	15.9	M00110-10	27.6	25	—
19	12	3/4"	19.0	M00110-12	31.6	30	—
25	16	1"	25.4	M00110-16	39.0	34	—
31	20	1.1/4"	31.8	M00110-20	47.5	42	—
38	24	1.1/2"	38.1	M00110-24	53.0	56	—
51	32	2"	50.8	M00110-32	66.0	56	—

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

EQUATOR / 2



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M00910-03	17.4	21	—
6	04	1/4"	6.4	M00910-04	17.5	25	—
8	05	5/16"	7.9	M00910-05	21.0	23	—
10	06	3/8"	9.5	M00910-06	22.0	27	—
12	08	1/2"	12.7	M00910-08	25.5	28	—
16	10	5/8"	15.9	M00910-10	28.7	33	—
19	12	3/4"	19.0	M00920-12	33.4	32	—
25	16	1"	25.4	M00920-16	41.5	42	—
31	20	1.1/4"	31.8	M00920-20	51.0	48	—
38	24	1.1/2"	38.1	M00910-24	58.1	58	—
51	32	2"	50.8	M00910-32	71.6	59	—

SWAGING DATA TOLERANCES:

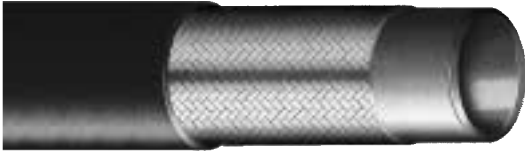
- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

TRACTOR™ / 1K



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M00820-04	15.0	—	—
8	05	5/16"	7.9	M00820-05	16.3	—	—
10	06	3/8"	9.5	M00820-06	18.6	—	—
12	08	1/2"	12.7	M00820-08	22.7	—	—
16	10	5/8"	15.9	M00810-10	25.8	—	—
19	12	3/4"	19.0	M00810-12	28.9	—	—
25	16	1"	25.4	M03400-16	38.3	—	—
31	20	1. 1/4"	31.8				
38	24	1. 1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



TRACTOR™ / 2K
ROCKMASTER™ / 2SC
NOZONE™ / 2K

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M03400-03	16.3	—	—
6	04	1/4"	6.4	M03400-04	18.2	—	—
8	05	5/16"	7.9	M03400-05	19.0	—	—
10	06	3/8"	9.5	M03400-06	20.9	—	—
12	08	1/2"	12.7	M03400-08	23.5	—	—
16	10	5/8"	15.9	M03400-10	27.4	—	—
19	12	3/4"	19.0	M03400-12	31.1	—	—
25	16	1"	25.4	M03400-16	39.1	—	—
31	20	1. 1/4"	31.8				
38	24	1. 1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



LYTEFLEX™ ROCKMASTER™ / 16

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M03400-04	18.1	—	—
8	05	5/16"	7.9	M03400-05	19.0	—	—
10	06	3/8"	9.5	M03400-06	20.7	—	—
12	08	1/2"	12.7	M03400-08	23.5	—	—
16	10	5/8"	15.9	M03400-10	27.4	—	—
19	12	3/4"	19.0	M03400-12	31.2	—	—
25	16	1"	25.4	M03400-16	38.7	—	—
31	20	1. 1/4"	31.8	M03400-20	47.5	—	—
38	24	1. 1/2"	38.1				
51	32	2"	50.8				

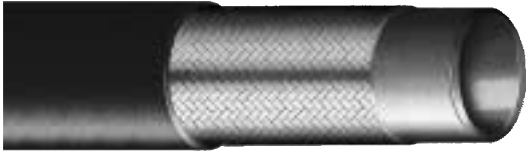
SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



R17-ISO / 3000™ ROCKMASTER™ / 17

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M00820-04	15.0	—	—
8	05	5/16"	7.9	M00820-05	16.3	—	—
10	06	3/8"	9.5	M00820-06	18.6	—	—
12	08	1/2"	12.7	M03400-08	23.5	—	—
16	10	5/8"	15.9	M03400-10	27.3	—	—
19	12	3/4"	19.0	M03400-12	31.2	—	—
25	16	1"	25.4	M03400-16	39.4	—	—
31	20	1. 1/4"	31.8				
38	24	1. 1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

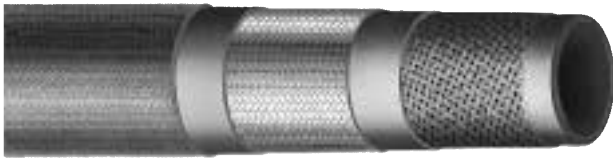
– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

COVER



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	04	3/16"	4.8	M00310-03	14.1	—	—
6	05	1/4"	6.4	M00310-04	16.7	—	—
8	06	5/16"	7.9	M00310-05	17.5	—	—
10	08	13/32"	10.3	M00310-06	20.7	—	—
12	10	1/2"	12.7	M00310-08	24.2	—	—
16	12	5/8"	15.9	M00310-10	27.7	—	—
22	16	7/8"	22.2	*	*	*	*
28	20	1. 1/8"	28.6	*	*	*	*
35	24	1. 3/8"	34.9	*	*	*	*
46	32	1. 13/16"	46.0	*	*	*	*

* Contact Manuli Rubber Industries

SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

ADLER / 1



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M00820-03	12.1	—	—
6	04	1/4"	6.4	M00820-04	15.3	—	—
8	05	5/16"	7.9	M00820-05	16.2	—	—
10	06	3/8"	9.5	M00820-06	18.7	—	—
12	08	1/2"	12.7	M00820-08	23.1	—	—
16	10	5/8"	15.9	M00810-10	25.6	—	—
19	12	3/4"	19.0	M00810-12	28.4	—	—
25	16	1"	25.4	M00810-16	35.7	—	—
31	20	1. 1/4"	31.8				
38	24	1. 1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

ADLER / 2



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M00310-04	16.5	—	—
8	05	5/16"	7.9	M00310-05	17.9	—	—
10	06	3/8"	9.5	M00310-06	20.9	—	—
12	08	1/2"	12.7	M00310-08	25.0	—	—
16	10	5/8"	15.9	M00310-10	27.8	—	—
19	12	3/4"	19.0	M00310-12	33.2	—	—
25	16	1"	25.4	M00310-16	39.3	—	—
31	20	1. 1/4"	31.8	M00310-20	45.5	—	—
38	24	1. 1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

ASTRO / 1



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M00820-03	12.4	—	—
6	04	1/4"	6.4	M00820-04	15.2	—	—
8	05	5/16"	7.9	M00820-05	16.2	—	—
10	06	3/8"	9.5	M00820-06	18.5	—	—
12	08	1/2"	12.7	M00820-08	22.4	—	—
16	10	5/8"	15.9	M00810-10	25.6	—	—
19	12	3/4"	19.0	M00810-12	28.6	—	—
25	16	1"	25.4	M00810-16	36.7	—	—
31	20	1. 1/4"	31.8				
38	24	1. 1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

ASTRO / 2



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M00310-03	13.7	—	—
6	04	1/4"	6.4	M00820-04	15.9	—	—
8	05	5/16"	7.9	M00820-05	16.9	—	—
10	06	3/8"	9.5	M00820-06	19.2	—	—
12	08	1/2"	12.7	M00820-08	22.9	—	—
16	10	5/8"	15.9	M00810-10	26.4	—	—
19	12	3/4"	19.0	M00810-12	29.4	—	—
25	16	1"	25.4	M00810-16	37.3	—	—
31	20	1. 1/4"	31.8	M00810-20	45.7	—	—
38	24	1. 1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

ASTRO / 3



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M00310-03	13.7	—	—
6	04	1/4"	6.4	M00310-04	16.1	—	—
8	05	5/16"	7.9	M00310-05	17.2	—	—
10	06	3/8"	9.5	M00310-06	20.4	—	—
12	08	1/2"	12.7	M00310-08	23.2	—	—
16	10	5/8"	15.9	M00310-10	27.0	—	—
19	12	3/4"	19.0	M00310-12	31.6	—	—
25	16	1"	25.4	M00310-16	38.3	—	—
31	20	1. 1/4"	31.8	M00310-20	44.2	—	—
38	24	1. 1/2"	38.1	M00910-24	59.0	—	—
51	32	2"	50.8	M00910-32	71.5	—	—

SWAGING DATA TOLERANCES:

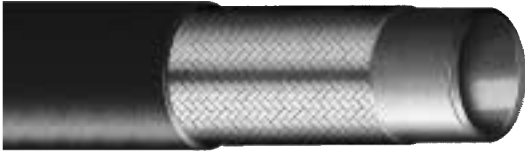
– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

SUPERJET



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M03400-04	17.9	—	—
8	05	5/16"	7.9	M03400-05	18.9	—	—
10	06	3/8"	9.5	M03400-06	20.6	—	—
12	08	1/2"	12.7	M03400-08	23.5	—	—
16	10	5/8"	15.9				
19	12	3/4"	19.0				
25	16	1"	25.4				
31	20	1.1/4"	31.8				
38	24	1.1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

PROJET



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M00110-04	17.7	21	—
8	05	5/16"	7.9	M00110-05	18.8	22	—
10	06	3/8"	9.5	M00910-06	22.0	27	—
12	08	1/2"	12.7	M00910-08	25.5	28	—
16	10	5/8"	15.9				
19	12	3/4"	19.0				
25	16	1"	25.4				
31	20	1.1/4"	31.8				
38	24	1.1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

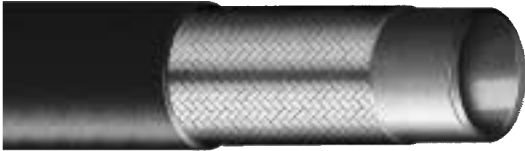
- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

PILOT



INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M00820-03	12.1	—	—
6	04	1/4"	6.4	M00820-04	14.8	—	—
8	05	5/16"	7.9	M00820-05	15.7	—	—
10	06	3/8"	9.5	M00820-06	18.1	—	—
12	08	1/2"	12.7	M03400-08	22.4	—	—
16	10	5/8"	15.9				
19	12	3/4"	19.0				
25	16	1"	25.4				
31	20	1. 1/4"	31.8				
38	24	1. 1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



POWERPLAST POWERTWIN

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8	M00820-03	11.8	—	—
6	04	1/4"	6.4	M00820-04	14.7	—	—
8	05	5/16"	7.9	M00820-05	16.3	—	—
10	06	3/8"	9.5	M00820-06	18.5	—	—
12	08	1/2"	12.7	M00820-08	22.3	—	—
16	10	5/8"	15.9				
19	12	3/4"	19.0				
25	16	1"	25.4				
31	20	1. 1/4"	31.8				
38	24	1. 1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

– Swaging diameter 0/-0,2 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



TRACTOR™ / 2AST ROCKMASTER™ / 2AST

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4				
8	05	5/16"	7.9				
10	06	3/8"	9.5	M00910-06	22.0	27	—
12	08	1/2"	12.7	M00910-08	25.7	28	—
16	10	5/8"	15.9	M00910-10	29.1	33	—
19	12	3/4"	19.0	M00920-12	33.6	32	—
25	16	1"	25.4	M00920-16	41.7	42	—
31	20	1. 1/4"	31.8	M00920-20	50.8	48	—
38	24	1. 1/2"	38.1				
51	32	2"	50.8	M00910-32	71.0	61	—

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



SHIELDMASTER™/1500

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M00110-04	17.4	21	—
8	05	5/16"	7.9				
10	06	3/8"	9.5	M00110-06	20.7	22	—
12	08	1/2"	12.7	M00110-08	23.4	25	—
16	10	5/8"	15.9				
19	12	3/4"	19.0	M00810-12	26.4	31	—
25	16	1"	25.4	M00810-16	34.6	40	—
31	20	1 1/4"	31.8	M00110-20	46.6	45	—
38	24	1 1/2"	38.1	M00110-24	52.9	59	—
51	32	2"	50.8	M00110-32	66.0	59	—

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



SHIELDMASTER™ / 3000

INSERT:
MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M00110-04	17.0	21	—
8	05	5/16"	7.9	M00110-05	18.0	22	—
10	06	3/8"	9.5	M00110-06	20.0	22	—
12	08	1/2"	12.7	M00110-08	24.1	23	—
16	10	5/8"	15.9	M00110-10	28.3	25	—
19	12	3/4"	19.0	M00110-12	31.9	30	—
25	16	1"	25.4	M00110-16	38.9	34	—
31	20	1.1/4"	31.8	M00920-20	50.2	48	—
38	24	1.1/2"	38.1	M00910-24	58.0	60	—
51	32	2"	50.8	M00910-32	71.0	61	—

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



SHIELDMASTER™ / 4000

INSERT:

MF2000™ - MULTIFIT TYPE (DN 6÷38)

MF2000™ - INTERLOCK TYPE (DN 51)

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M00110-04	17.8	21	—
8	05	5/16"	7.9	M00110-05	19.0	22	—
10	06	3/8"	9.5	M00110-06	20.9	22	—
12	08	1/2"	12.7	M00110-08	24.5	23	—
16	10	5/8"	15.9	M00110-10	28.7	25	—
19	12	3/4"	19.0	M00110-12	32.7	30	—
25	16	1"	25.4	M00920-16	41.6	42	—
31	20	1.1/4"	31.8	M00920-20	50.2	48	—
38	24	1.1/2"	38.1	M00910-24	58.0	60	—
51	32	2"	50.8	M01400-32	73.7	87	26

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

SHIELDMASTER™ / 5000

**INSERT:**

MF2000™ - MULTIFIT TYPE (DN 6÷16)

MF2000™ - INTERLOCK TYPE (DN 19÷51)

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M00110-04	17.8	21	—
8	05	5/16"	7.9	M00110-05	19.0	22	—
10	06	3/8"	9.5	M00110-06	20.9	22	—
12	08	1/2"	12.7	M00910-08	25.5	28	—
16	10	5/8"	15.9	M00910-10	29.3	33	—
19	12	3/4"	19.0	M01300-12	35.8	38	10
25	16	1"	25.4	M01300-16	43.0	50	14
31	20	1.1/4"	31.8	M01400-20	50.0	68	17
38	24	1.1/2"	38.1	M01400-24	56.5	80	25
51	32	2"	50.8	M01300-32	76.9	87	26

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

SHIELDMASTER™ / 6000

**INSERT:**

MF2000™ - MULTIFIT TYPE (DN 6÷16)

MF2000™ - INTERLOCK TYPE (DN 19÷51)

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4	M00110-04	17.7	21	—
8	05	5/16"	7.9				
10	06	3/8"	9.5	M00910-06	22.8	27	—
12	08	1/2"	12.7	M00910-08	25.8	28	—
16	10	5/8"	15.9	M00910-10	28.8	33	—
19	12	3/4"	19.0	M01300-12	35.6	38	10
25	16	1"	25.4	M01300-16	43.0	50	14
31	20	1.1/4"	31.8	M01300-20	54.5	73	17
38	24	1.1/2"	38.1	M01300-24	61.0	80	25
51	32	2"	50.8	*	*	*	*

* Contact Manuli Rubber Industries

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART



XTRAFLEX™ / 4000

INSERT:

MF2000™ - MULTIFIT TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4				
8	05	5/16"	7.9				
10	06	3/8"	9.5				
12	08	1/2"	12.7				
16	10	5/8"	15.9				
19	12	3/4"	19.0	M00920-12	33.4	32	—
25	16	1"	25.4	M00920-16	41.6	42	—
31	20	1.1/4"	31.8	M00920-20	50.2	48	—
38	24	1.1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

SWAGING CHART

XTRAFLEX™ / 5000



INSERT:

MF2000™ - INTERLOCK TYPE

DN	dash	inch	mm	Ferrule	Swaging Diameter mm	External Skive length mm	Internal Skive length mm
5	03	3/16"	4.8				
6	04	1/4"	6.4				
8	05	5/16"	7.9				
10	06	3/8"	9.5				
12	08	1/2"	12.7				
16	10	5/8"	15.9				
19	12	3/4"	19.0	M01300-12	35.8	38	10
25	16	1"	25.4	M01300-16	43.0	50	14
31	20	1.1/4"	31.8	M01400-20	50.0	68	17
38	24	1.1/2"	38.1				
51	32	2"	50.8				

SWAGING DATA TOLERANCES:

- Swaging diameter 0/-0,2 mm
- Skive Length ± 0,5 mm

NOTES:

- For optimum performance use the recommended machines and tools in the Manuli Catalogue.
- Always use hose and fittings from the Manuli Manufacturing Integrated Program.
- Insert pushing can be helped by using emulsions of light paraffinic oils (limited quantity is recommended).
- Swaging procedures should include insert bore collapse control as indicated in the specific recommendations.

Insert
Bore
Collapse

RECOMMENDATIONS

INSERT BORE COLLAPSE MEASUREMENT AND CONTROL

RECOMMENDATIONS

What is the insert bore collapse

It is the localised reduction or 'collapse' of the bore diameter of the insert in the effective seal area of the fitting due to the compression force applied on the hose wall during the swaging operation.

What is its importance

The performance of a hose assembly, in terms of its resistance to blow-off and leakage, is mostly determined by the level of hose wall and tube compression achieved upon swaging.

Insert bore collapse gives an indirect indication / confirmation of the level of hose wall compression. It also can function like a 'safety valve' for preventing excessive hose wall and tube compression which may lead to premature hose assembly failure at fittings.

A very high insert collapse indicates an over-swaged condition with excessive tube and hose wall compression which may introduce the risk of premature hose assembly failures at the fitting. Also an excessive reduction in bore size can result in additional pressure drops/losses at these zones of restriction along the fluid flow path thus reducing the efficiency of the high pressure high flow rate hydraulic circuits.

A very low insert collapse may be indicative of low tube and hose wall compression which can increase the risks of leakage at the fittings and of fitting blow-off, especially when the hose has 'aged' in service.

Proper measurement and effective control of insert bore collapse during hose assemblies production can help achieve superior consistency in product quality and performance and may significantly reduce the risk of premature hose assembly failures.

How to measure and control it (Collapse Procedure)

Insert bore collapse can be measured simply by checking the insert bore of the swaged fitting with an appropriate pair of 'GO' and 'NO-GO' Gauges / Mandrels indicated for each hose nominal size in **Table 1**. Such measurements can also be made with suitable mechanical / electronic bore callipers.

Table 1 lists the recommended range of insert collapse levels (minimum and maximum values) along with the best collapse level for Manuli MF2000™ Style inserts (both Multifit and Interlock types). MRI Swage Chart crimp diameters are designed to achieve the best collapse. However, on rare occasions, cumulated tolerances on hose, ferrules and inserts may generate an out of standard collapse. It is therefore recommended to check the bore collapse by the use of GO, NO-GO mandrels as follows.

What to do in case of out-of-standard results

When isolated production lots can have a tolerance combination giving insert bore collapse values out of the recommended range, modification of the swaging diameters around the indicated value is allowed (\pm few tenths of mm).

COLLAPSE PROCEDURE

MF2000™ - GO, NO - GO MANDRELS

- 1.** Select the corresponding mandrel for the size, type of hose (wire spiral or wire braid) and type of insert (Multifit or Interlock).
- 2.** Swage to the dimension stated, following the standard swage procedure.
- 3.** Insert the no-go end of the mandrel into an insert tail. The mandrel should stop halfway down the tail. This indicates the minimum collapse has been reached (**Figure 1**).

Remark: If the assembly is fitted with 90°/45° elbows at both ends, then a sample should be swaged, cut off below the ferrule and the collapse inspected from the bottom of the insert tail.

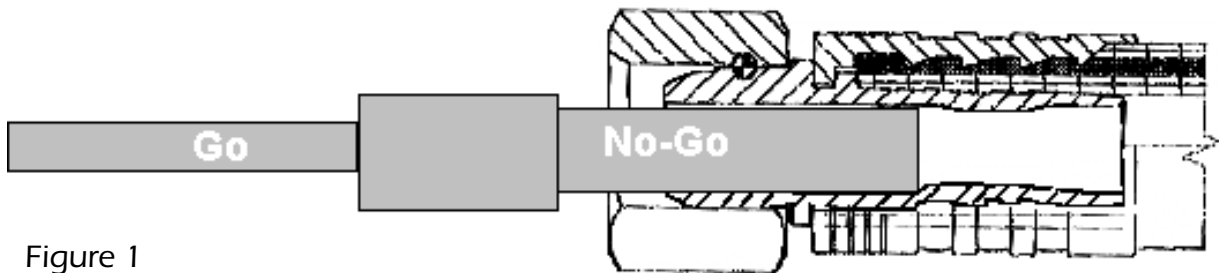


Figure 1

- 4.** Insert the go end of the mandrel into the insert tail. The mandrel should pass through the tail (**Figure 2**).
- 5.** Continue to swage the assembly or batch of assemblies using the current swage setting, and control the bore collapse by suitable statistical frequency.
- 6.** The insert collapse should be re-checked should the current batch of hoses, inserts or ferrules be changed.

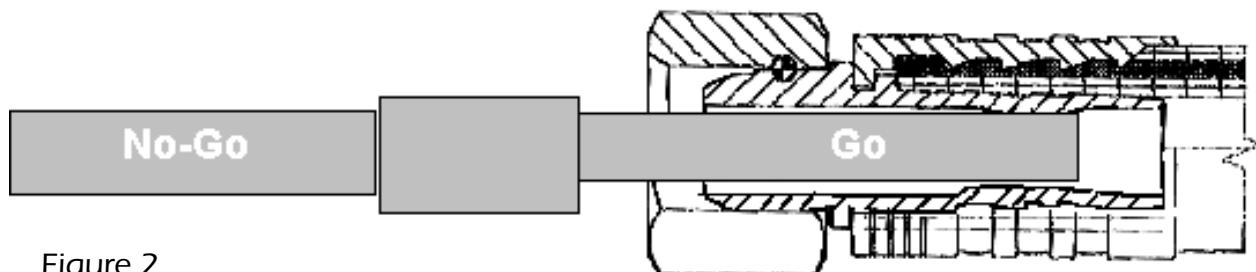


Figure 2

STYLE INSERTS VALUES

CHARTS

TABLE 1-A: WIRE SPIRAL HOSES

NOMINAL SIZE (INCH)	INSERT COLLAPSE (mm)			GO, NO-GO MANDRELS (Gauges) DIAMETERS (mm)			
				for MULTIFIT Type		for INTERLOCK Type	
	MINIMUM	MAXIMUM	BEST	NO - GO	GO	NO - GO	GO
1/4"	0.40	0.80	0.60	3.60	3.15	—	—
3/8"	0.70	1.40	1.00	6.25	5.60	—	—
1/2"	0.85	1.70	1.20	8.40	7.60	—	—
5/8"	1.00	2.00	1.40	11.40	10.55	10.90	10.05
3/4"	1.10	2.20	1.60	13.80	12.85	13.10	12.15
1"	1.30	2.60	1.80	18.35	17.30	17.55	16.50
1. 1/4"	1.45	2.90	2.00	24.35	23.25	22.35	21.25
1. 1/2"	1.50	3.00	2.10	30.30	29.15	28.80	27.65
2"	1.75	3.50	2.45	40.00	38.70	39.00	37.70

TABLE 1-B: WIRE BRAIDED HOSES

NOMINAL SIZE (INCH)	INSERT COLLAPSE (mm)			GO, NO-GO MANDRELS (Gauges) DIAMETERS (mm) - for MULTIFIT Type	
	MINIMUM	MAXIMUM	BEST	NO - GO	GO
3/16"	0.25	0.50	0.40	2.80	2.40
1/4"	0.30	0.60	0.45	3.75	3.30
5/16"	0.35	0.70	0.50	5.20	4.70
3/8"	0.40	0.90	0.65	6.55	6.05
1/2"	0.50	1.10	0.80	8.75	8.15
5/8"	0.60	1.20	0.85	11.90	11.25
3/4"	0.65	1.30	0.95	14.30	13.70
1"	0.75	1.50	1.05	19.00	18.30
1. 1/4"	1.00	2.00	1.40	24.90	24.05
1. 1/2"	1.15	2.30	1.60	30.70	29.80
2"	1.25	2.50	1.75	40.60	39.60