QUALITY

INTELLIGENT DESIGN

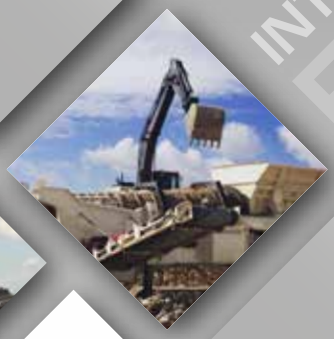
EXCELLENCE

PARTNERSHIP

SKIVE AND NO
FITTING SOLUTIO

INTEGRATED SOLUTIONS

REDUCED INVENTORY



NEXT GENERATION SHIELDMASTER HOSE RANGE

manuli®
HYDRAULICS

Why Manuli?

Manuli Hydraulics is focused on achieving excellence in the design, manufacture and supply of fluid conveyance solutions, components and associated equipment for high pressure hydraulics, refrigeration and oil and marine applications.

Rugged sol

Modern hydraulic system specific solutions to

Quality and sustainable development are the driving forces of all Manuli Hydraulics' activities, with an aim to guarantee worldwide availability of technical and commercial support for it's products and services.

ASSEMBLED ACCORDING TO ISO/TS 17165-2

An integrated approach

Modern hydraulics applications require robust fluid connector solutions with guaranteed long lasting performance. To that end, Manuli Hydraulics offers a complete range of hoses, fittings and assembly equipment which are designed to work seamlessly together. This harmonised approach allows us to guarantee the quality and performance of hose assemblies in a way that others cannot match.

From design to manufacture and assembly, our commitment to this unified philosophy makes us the global leader in providing integrated solutions for hydraulic connector applications.

utions for the toughest applications

systems are required to deal with ever more challenging applications, environments and ations. The Manuli Extreme range has been specifically designed to provide the most robust the toughest hydraulic applications.

Next Generation SHIELDMASTER™

ShieldMaster/21, ShieldMaster/28, ShieldMaster/35 and ShieldMaster/42

Outstanding Environmental Resistance, Low Friction For Minimal Wear

As the demands made of hydraulic systems continue to increase so our ShieldMaster range of hoses continues to evolve. Famed for their high abrasion resistance new generation ShieldMaster offers even greater protection in harsh environments whilst still ensuring almost wear-free movement for hoses held in bundles.

Hose flexibility has also been greatly improved in the new ShieldMaster range with up to 48% reduction in minimum bend radius achieved*, making for far easier installation. Use in maintenance operations has also been simplified with the introduction of no-skive fitting solutions for this new Shieldmaster range.

*ShieldMaster/35 (WP350 bar DN 19) MBR = 120 mm, ShieldMaster/5000 (WP 345 bar DN 19) MBR=230mm.

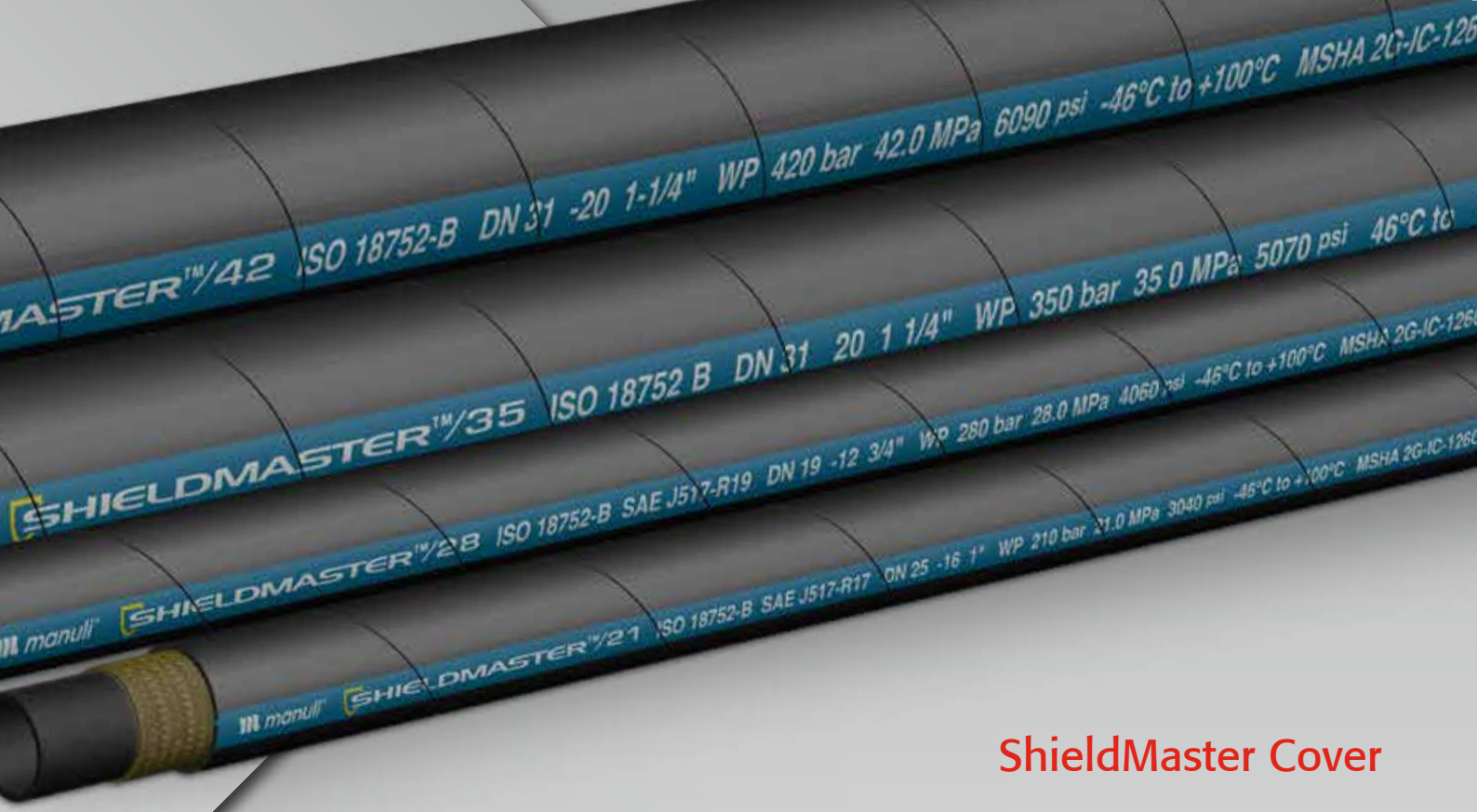
ShieldMaster hoses offer the following benefits:

- Outstanding abrasion resistance for longer service life
- Skive and no-skive fitting solutions
- Low friction covers for minimal contact wear when used in bundles
- High flexibility with low minimum bend radius for difficult installations
- Flame retardant, with MSHA approval
- Electrical antistatic cover properties, with FRAS approval in progress
- Extremely robust and durable, with high fatigue resistance
- Isobaric design for ease of product selection
- Fully compatible with Manuli fittings and assembly machines as part of our integrated approach to fluid connector solutions

manuli® HYDRAULICS

Next Generation ShieldMaster – A More Robust, Simplified Product Offering, for the Most Severe Environments.

With an even more resilient cover compound, improved flexibility and simplified hose selection, the new ShieldMaster range improves upon the old ShieldMaster range in almost every way. The new ShieldMaster hoses take all the best qualities from the various old ShieldMaster families and merge them into a simpler range comprising just four families and with the option for no-skive fittings. So, the new ShieldMaster range is fully capable of replacing its predecessor in all situations, making it the hose of choice where extreme abrasion resistance is required.



ShieldMaster Cover

The ShieldMaster Cover is designed for maximum abrasion and weathering resistance in none friction-flexing and non-impact applications

Comprising a robust synthetic rubber layer with an additional ultra-high molecular weight polyethylene (UHMW PE) outer skin, the ShieldMaster Cover outperforms all other Manuli cover types in its resistance to both abrasion and ozone.

In fact the abrasion resistance of the ShieldMaster Cover is so great that under standard ISO 6945 test conditions it is necessary to perform around 1 million cycles to register a discernible weight loss.

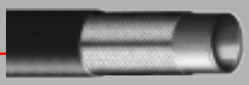
The self-lubricating properties of UHMW PE make the ShieldMaster Cover perfect for situations where bunches of hoses rub against each other, and the smooth cover finish provides an easy-to-clean alternative to spring guards.

In addition to its outstanding abrasion and weathering resistance, the ShieldMaster Cover also resists cracking down to -46°C and has flame retardant and anti-static properties, making it suitable for use in even the harshest environments.

manuli® HYDRAULICS

SHIELDMASTER/21

OUTSTANDING WEAR RESISTANCE



KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact and light structures
- Very low bend radius makes the product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS

- Low, medium pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, easy cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART. REF.	HOSE SIZE			R.O.D.		O.D.		MAX W.P.		BURST		MIN.BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std1	Std2
H01154006*	6	- 4	1/4"	10,2	0,40	12,2	0,48	210	3040	840	12180	50	1,97	188	0,13	MF+M00120-04	OPF-04
H01154008*	8	- 5	5/16"	11,5	0,45	13,6	0,54	210	3040	840	12180	55	2,17	212	0,14	MF+M00120-05	OPF-05

CONTINUOUS SERVICE TEMPERATURE RANGE
-50 °F / 212 °F
-46 °C / 100 °C

MAX OPERATING TEMPERATURE PEAKS
125 °C, 257 °F

TUBE
Oil resistant synthetic rubber

REINFORCEMENT
One high tensile steel braid (DN 6÷8)

COVER
Composite bi-layer structure with outstanding abrasion and ozone resistance

APPLICABLE SPECS
ISO 18752 Grade B

TYPE APPROVALS
MSHA, FRAS (requested)

Remarks:
Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

SHIELDMASTER/28

OUTSTANDING WEAR RESISTANCE

KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact and light structures
- Very low bend radius makes the product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS

- Medium and high pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, easy cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART. REF.	HOSE SIZE			R.O.D.		O.D.		MAX W.P.		BURST		MIN.BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std1	Std2
H01155008*	8	- 5	5/16"	12,9	0,51	14,9	0,59	280	4060	1120	16240	55	2,17	299	0,20	MF+M00120-05	OPF-05
H01155010*	10	- 6	3/8"	15,4	0,61	17,4	0,69	280	4060	1120	16240	63	2,48	397	0,27	MF+M00120-06	OPF-06
H01155012*	12	- 8	1/2"	18,5	0,73	20,5	0,81	280	4060	1120	16240	80	3,15	507	0,34	MF+M00120-08	OPK-08
H01155019*	19	- 12	3/4"	27,1	1,07	29,3	1,15	280	4060	1120	16240	120	4,72	1058	0,71	MF+M00120-12	OPK-12
H01155025*	25	- 16	1"	34,1	1,34	36,5	1,44	280	4060	1120	16240	150	5,91	1536	1,03	MF+M00930-16	OPK-16

CONTINUOUS SERVICE TEMPERATURE RANGE
-50 °F / 212 °F
-46 °C / 100 °C

MAX OPERATING TEMPERATURE PEAKS
125 °C, 257 °F

TUBE
Oil resistant synthetic rubber

REINFORCEMENT
Two high tensile steel braids (DN 8÷19), four high tensile steel spirals (DN 25)

COVER
Composite bi-layer structure with outstanding abrasion and ozone resistance

APPLICABLE SPECS
ISO 18752 Grade B

TYPE APPROVALS
MSHA, FRAS (requested)

Remarks:

Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

manuli® HYDRAULICS

SHIELDMASTER/35

OUTSTANDING WEAR RESISTANCE

KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact and light structures
- Very low bend radius makes the product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS

- High pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, easy cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART. REF.	HOSE SIZE			R.O.D.		O.D.		MAX W.P.		BURST		MIN.BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std1	Std2
H10119006*	6	- 4	1/4"	11,3	0,44	13,1	0,52	350	5070	1400	20300	45	1,77	288	0,19	MF+M00120-04	OPF-04
H10119008*	8	- 5	5/16"	12,9	0,51	14,9	0,59	350	5070	1400	20300	55	2,17	330	0,22	MF+M00120-05	OPF-05
H10119010*	10	- 6	3/8"	15,0	0,59	16,8	0,66	350	5070	1400	20300	65	2,56	393	0,26	MF+M00120-06	OPF-06
H10119012*	12	- 8	1/2"	18,6	0,73	20,4	0,80	350	5070	1400	20300	80	3,15	556	0,37	MF+M00120-08	OPK-08
H10119016*	16	- 10	5/8"	23,5	0,93	25,9	1,02	350	5070	1400	20300	100	3,94	964	0,65	MF+M00910-10	OPK-10
H10119019*	19	- 12	3/4"	27,5	1,08	29,9	1,18	350	5070	1400	20300	120	4,72	1229	0,83	IP+M01500-12	SP+M05400-12
H10119025*	25	- 16	1"	34,6	1,36	37,0	1,46	350	5070	1400	20300	150	5,91	1795	1,21	IP+M01500-16	SP+M05400-16
H10119031*	31	- 20	1.1/4"	42,1	1,66	44,9	1,77	350	5070	1400	20300	230	9,06	2369	1,59	IP+M01500-20	SP+M05400-20
H10119038*	38	- 24	1.1/2"	51,2	2,02	56,1	2,21	350	5070	1400	20300	300	11,81	4214	2,83	IP+M01600-24	SP+M05500-24

CONTINUOUS SERVICE TEMPERATURE RANGE
-50 °F / 212 °F
-46 °C / 100 °C

MAX OPERATING TEMPERATURE PEAKS
125 °C, 257 °F

TUBE
Oil resistant synthetic rubber

REINFORCEMENT
Two high tensile steel braids (DN 6÷12), four high tensile steel spirals (DN 16÷31), six high tensile steel spirals (DN 38)

COVER
Composite bi-layer structure with outstanding abrasion and ozone resistance

APPLICABLE SPECS
ISO 18752 Grade B

TYPE APPROVALS
MSHA, FRAS (requested)

Remarks:

Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

SHIELDMASTER/42

OUTSTANDING WEAR RESISTANCE

KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact and light structures
- Very low bend radius makes the product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS

- High pressure hydraulic lines
- Heavy duty power lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, easy cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART. REF.	HOSE SIZE			R.O.D.		O.D.		MAX W.P.		BURST		MIN.BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std1	Std2
H10120006*	6	- 4	1/4"	11,3	0,44	13,3	0,52	420	6090	1680	24360	45	1,77	294	0,20	MF+M00120-04	OPF-04
H10120012*	12	- 8	1/2"	20,3	0,80	22,7	0,89	420	6090	1680	24360	120	4,72	808	0,54	MF+M00910-08	OPK-08
H10120031*	31	- 20	1.1/4"	44,7	1,76	49,5	1,95	420	6090	1680	24360	260	10,24	3701	2,49	IP+M01600-20	SP+M05500-20

CONTINUOUS SERVICE TEMPERATURE RANGE
-50 °F / 212 °F
-46 °C / 100 °C

MAX OPERATING TEMPERATURE PEAKS
125 °C, 257 °F

TUBE
Oil resistant synthetic rubber

REINFORCEMENT
Two high tensile steel wire braids (DN 6).Four high tensile steel spirals (DN 10÷25). Six high tensile steel spirals (DN 31)

COVER
Composite bi-layer structure with outstanding abrasion and ozone resistance

APPLICABLE SPECS
ISO 18752 Grade B

TYPE APPROVALS
MSHA, FRAS (requested)

Remarks:

Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

* More sizes are currently in development for release in the near future

manuli® HYDRAULICS

www.manuli-hydraulics.com

manuli® HYDRAULICS

GENERAL HYDRAULICS

Global Sales & Marketing Office, Suite 9a 111 Piccadilly, Manchester, M1 2HY, UK
Tel: +44 (0)161 871 1130; Email: marketing@manuli-hydraulics.com