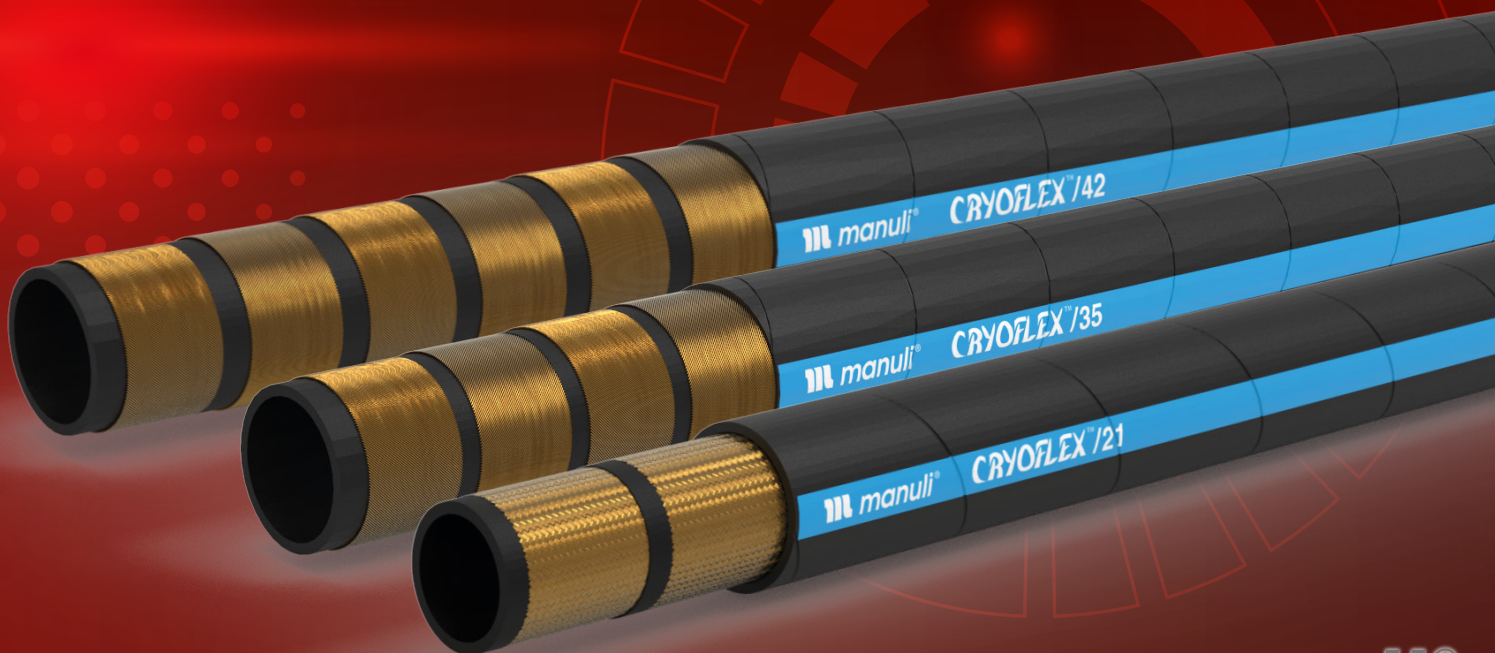


# CRYOFLEX™



SUPERIOR PERFORMANCE IN COLD TEMPERATURES



**manuli®**  
HYDRAULICS HP



## WHEN FAILURE IS NOT AN OPTION...

**Manuli Hydraulics is proud to introduce the Cryoflex hose range - the new standard for ultra low temperature applications.**

Manuli Hydraulics has long been at the forefront of the hydraulic connectors industry when it comes to providing hoses that can cope with extreme environments. One of the biggest challenges for rubber hydraulic hoses is extreme low temperatures.

Typical synthetic rubber compounds used in hydraulic hoses tend to become brittle at around  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ); and even the best compounds begin to struggle as they approach  $-50^{\circ}\text{C}$  ( $-58^{\circ}\text{F}$ ).

**Cryoflex on the other hand remains flexible down to  $-60^{\circ}\text{C}$  ( $-76^{\circ}\text{F}$ ).**

## CRYOFLEX WON'T LET YOU DOWN

### EXCEPTIONAL FLEXIBILITY IN THE COLDEST CONDITIONS

#### **The ideal solution for challenging low temperature applications**

With a continuous service temperature of  $-60^{\circ}\text{C}$  ( $-76^{\circ}\text{F}$ ), Cryoflex is perfectly suited for use in the most demanding low temperature situations. At temperatures where other hoses would rapidly begin to fail due to cracking of the rubber, Cryoflex's incredibly low glass transition point allows it to maintain flexibility and structural integrity.

In addition, the innovative outer cover and inner tube rubber compounds allow Cryoflex to be "cold-fit" in maintenance situations in extremely cold environments.

The Cryoflex range is designed in accordance with the latest Isobaric standard (ISO 18752), meaning that each family has a constant pressure rating regardless of bore size, allowing for simpler, more user-friendly hose selection.

With working pressures of either 21, 35 or 42 MPa, the Cryoflex range is available in sizes DN 6 to DN 31.



## INTEGRATION FOR THE HIGHEST QUALITY ASSEMBLIES

**The Cryoflex range can be combined with a variety of Manuli Hydraulics' fittings, ensuring a long-lasting and robust assembly.**

With skive and no-skive solutions available, it is possible to adopt a fully integrated approach to hose manufacturing.

### SKIVE SOLUTIONS

Manuli Hydraulics' range of two piece fittings are manufactured with an eco-friendly zinc plating treatment, which also provides high corrosion resistance. For smaller Cryoflex hose the Multifit range provides an ideal solution, whilst Interlock Plus can be used for the larger sizes. Both solutions are highly robust, with Interlock Plus available in stainless steel for increased durability.

### NO-SKIVE SOLUTIONS

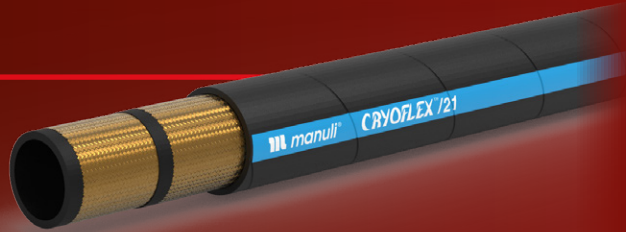
No-skive fitting solutions allow for easy and fast hose assembly operations, and are intended primarily for aftermarket and maintenance activities. Manuli Hydraulics' One-Piece Flat (OPF) fittings are no-skive, compact and flat-crimp fittings, suitable for the smaller bore Cryoflex hoses. For the larger sizes, SpiralFit inserts are the no-skive solution.














# CRYOFLEX/21

EXTREME COLD ENVIRONMENTS



## 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	Std 1	Std 2
H01158016*	16	-10	5/8"	22.2	0.87	24.0	0.94	210	3,040	840	12,180	100	3.94	609	0.41	MF+M00120-10	OPF-10
H01158019*	19	-12	3/4"	25.6	1.01	27.7	1.09	210	3,040	840	12,180	120	4.72	765	0.51	MF+M00120-12	OPF-12
H01158025*	25	-16	1"	33.0	1.30	35.2	1.39	210	3,040	840	12,180	150	5.91	1,188	0.80	MF+M00130-16	OPF-16

## KEY FEATURES

- Good flexibility at very low temperatures
- Reduced bend radius, according to compact hoses standard requirements
- Easy mounting in any installation
- High impulse resistance according to ISO 18752
- Weight saving vs. traditional hose construction
- No-skive fitting solution available
- Isobaric pressure rating for easy selection and product management

## APPLICATIONS & FLUIDS

- Medium pressure hydraulic lines for general hydraulics in extreme cold environment
- Applications with installation constraints (short assemblies, compact spaces, low bend radii etc.)
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

## CONTINUOUS SERVICE TEMPERATURE RANGE

-60 °C, -76 °F

100 °C, 212 °F

## TUBE

Oil resistant synthetic rubber

## REINFORCEMENT

2 high tensile steel braids

## COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

## APPLICABLE SPECS

ISO 18752-B Ext.

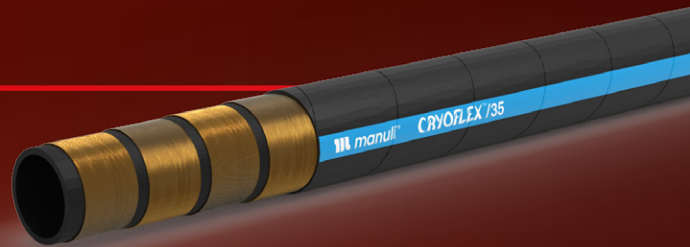
## TYPE APPROVALS

MSHA; CU-TR












# CRYOFLEX/35

EXTREME COLD ENVIRONMENTS



## 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	Std 1	Std 2
H01159006*	6	-4	1/4"	11.3	0.44	13.1	0.52	350	5,070	1,400	20,300	45	1.77	285	0.19	MF+M00120-04	OPF-04
H01159006*	8	-5	5/16"	12.9	0.51	14.7	0.58	350	5,070	1,400	20,300	55	2.17	320	0.22	MF+M00120-05	OPF-05
H01159010*	10	-6	3/8"	15.0	0.59	16.8	0.66	350	5,070	1,400	20,300	65	2.56	390	0.26	MF+M00120-06	OPF-06
H01159012*	12	-8	1/2"	18.6	0.73	20.4	0.80	350	5,070	1,400	20,300	80	3.15	553	0.37	MF+M00120-08	OPF-08
H01159019*	19	-12	3/4"	27.5	1.08	29.9	1.18	350	5,070	1,400	20,300	120	4.72	1,212	0.81	IP+M01500-12	SP+M05400-12
H01159025*	25	-16	1"	34.6	1.36	37.0	1.46	350	5,070	1,400	20,300	150	5.91	1,773	1.19	IP+M01500-16	SP+M05400-16
H01159031*	31	-20	1.1/4"	42.1	1.66	44.9	1.77	350	5,070	1,400	20,300	230	9.06	2,335	1.57	IP+M01500-20	SP+M05400-20

## KEY FEATURES

- Good flexibility at very low temperatures
- Bend radius which exceeds the standard requirements by -30% to -50%
- Easy mounting in any installation
- High impulse resistance according to ISO 18752
- Weight saving of 20% vs. traditional R13 hose construction
- No-skive fitting solution available
- Isobaric pressure rating for easy selection and product management

## APPLICATIONS & FLUIDS

- High pressure hydraulic lines for general hydraulics in extreme cold environment
- Applications with installation constraints (short assemblies, compact spaces, low bend radii etc.)
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

## CONTINUOUS SERVICE TEMPERATURE RANGE

-60 °C, -76 °F

100 °C, 212 °F

## TUBE

Oil resistant synthetic rubber

## REINFORCEMENT

2 high tensile steel braids (DN 6-12). Four high tensile steel spirals (DN 19-31)

## COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

## APPLICABLE SPECS

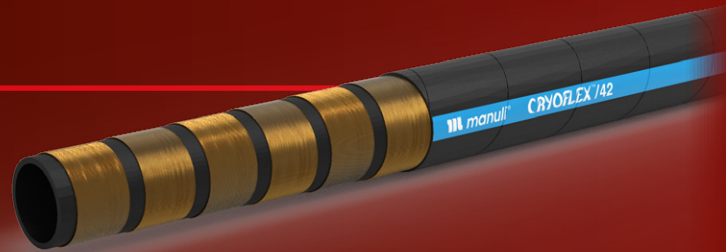
ISO 18752-B Ext.

## TYPE APPROVALS










MSHA; CU-TR

# CRYOFLEX/42

EXTREME COLD ENVIRONMENTS



## 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	Std 1	Std 2
H10123019*	19	-12	3/4"	27.7	1.09	30.2	1.19	420	6,090	1,680	24,360	150	5.91	1,281	0.86	IP+M01500-12	SP+M05400-12
H10123025*	25	-16	1"	35.0	1.38	37.5	1.48	420	6,090	1,680	24,360	210	8.27	2,004	1.35	IP+M01500-16	SP+M05400-16
H10123031*	31	-20	1.1/4"	46.3	1.82	49.5	1.95	420	6,090	1,680	24,360	260	10.24	3,665	2.46	IP+M01600-20	
H10123051*	51	-32	2"	68.9	2.71	72.4	2.85	420	6,090	1,680	24,360	500	19.69	7,302	4.91	IS+M02700-32	

## KEY FEATURES

- Good flexibility at very low temperatures
- Bend radius which exceeds the standard requirements by -30% to -50%
- Easy mounting in any installation
- High impulse resistance according to ISO 18752
- Weight saving of 20% vs. traditional R15 hose construction
- No-skive fitting solution available
- Isobaric pressure rating for easy selection and product management

## APPLICATIONS & FLUIDS

- High pressure hydraulic lines for general hydraulics in extreme cold environment
- Applications with installation constraints (short assemblies, compact spaces, low bend radii etc.)
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

## CONTINUOUS SERVICE TEMPERATURE RANGE

-60 °C, -76 °F

100 °C, 212 °F

## TUBE

Oil resistant synthetic rubber

## REINFORCEMENT

Four high tensile steel spirals (DN 19-25). Six high tensile steel spirals (DN 31-51)

## COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

## APPLICABLE SPECS

ISO 18752-B Ext.

## TYPE APPROVALS

MSHA; CU-TR



# A GLOBAL REPUTATION

Manuli Hydraulics is the world's leading manufacturer and supplier of fully integrated hydraulic connector solutions and as such we have a great deal to be proud of. Our globally renowned reputation, developed over our 85 year history, is one which few, if any, of our competitors can match, as each and every Manuli Hydraulics product is designed to integrate seamlessly with a carefully selected range of complimentary products, making them some of the most reliable and efficient solutions on the market.

*“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”*

Our company culture embodies sustainable value, customer centrality and ethical responsibility, whilst our stable, family-owned status allows us to have clear long-term strategies and financial robustness, with global revenues of circa €200M per annum.

With direct operations at 20 locations in 15 countries, and around 1,600 employees around the world, Manuli Hydraulics has the logistical network and personnel expertise that allows us to support and work directly with our customers wherever they are based.



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