

**rodaindustria** IBÉRICA S.A.

**Golden ISO™**

NEW ISOBARIC PRODUCTS FOR COMPACT AND EFFICIENT HYDRAULICS



**manuli**<sup>®</sup>  
HYDRAULICS

Today's hydraulics systems offer unbeatable power density and unique technology for high power applications. However this trend continues to evolve with ever increasing demands for a higher performance standard.

Equally today's designers, manufacturers and users are increasingly more sensitive to the cost and the simplicity of power management, giving preference to efficient and easy to use hydraulic systems.

These innovation trends involve both the conceptual design of the hydraulic system and the development of innovative components, able to contribute to the overall goals of power loss control, energy recovery and redeployment, compactness, weight, ergonomics, durability, comfort, recyclability, etc.

The traditional product specifications, that guided the design of any hydraulic components for decades, will be considered insufficient for the challenges of future hydraulics.

Flexible hose in particular has to evolve under more stringent requirements, such as:

- higher **stresses in hydraulic systems** (pressure, temperature, fluid velocity, etc.),
- higher **aggressiveness of hydraulic oils** (rubber compatibility, contamination, etc.),
- more **severe environmental conditions** (vibrations, abrasion, scratching, weathering, etc.),
- higher **installation and routing constraints** (bend radii, compactness, etc.),
- higher needs for **user-friendly solutions** (easy product selection, no-skive fittings, etc.),
- **environmentally friendly** materials and products (lightness, recyclability, materials identification, etc.).

New specifications, both from leading machine manufacturers and international standardization bodies, are developing in order to codify and harmonize these upgraded requirements. Hoses are no longer defined in detailed dimensions and constructions (the overall max outside diameter is recommended only), while performance and qualification criteria is specified in detail. Under these circumstances, the hose, fitting and machine integration becomes a critical success factor for hose performance, reliability and safety.

Among the various specifications, the new ISO 18752 deserves special consideration since it is to become the new reference for hydraulic hose assemblies. It details a complete isobaric approach for hose classification and selection. This modern isobaric approach (same pressure rating of a hose family in all sizes) is recognized to offer many advantages to all users along the product utilization cycle.

# GOLDENISO

## PRODUCTS HIGHLIGHTS

GoldenISO is the new Manuli Hydraulics' hose and fitting range meeting the requirements of the development trend in modern hydraulics. It comprises by three innovative hose families: Anti-wear, LongLife and the most recent, Xtraflex.

### GoldenISO AntiWear (3000, 4000 psi)

Light weight compact structures, with the flexibility of an upgraded wire braid construction, using a Super High Abrasion Resistant Cover (SHARC material) to offer extreme durability even in the most arduous environments.

### GoldenISO Xtraflex (3000, 4000, 5000, 6000 psi)

Compact wire spiral construction, able to offer the standard pressure rating in all traditional levels, light weight with superior flexibility. Durability is guaranteed with integrated fittings: Interlock Plus for maximum impulse resistance and SpiralFit for non-skive assembly.

### GoldenISO LongLife (5500, 6500 psi)

The hose lines are designed to meet the requirement of the most demanding OEMs, achieving up to 2 million impulse cycles with Interlock Plus fittings. Higher pressure levels allow for use in severe working conditions.

The hose families are matched with Manuli Hydraulics' wide and constantly evolving range of connectors and termination ends. All designed to meet the needs of efficient fluid power systems.



# GOLDENISO

## PRODUCTS HIGHLIGHTS

---

### New compact and efficient connectors lines.

#### XTRAFRANGE 61

Reduces the overall dimensions of flanges without reducing their performance.  
6000 PSI FLANGE with code 61 port compatible.

- High pressure rating (420 Bar - 6000 psi) SAE code 61 interchangeable
- Integrated MONOclamp
- Patented toroidal profile for high mechanical resistance
- Width reduction for space saving
- Designed to adopt the new port distance used in modern compact directional valves

#### MQS-SH Screw High power CONNECTION

Manuli SH is a screw type quick release coupling with special internal components designed to reduce flow turbulence and, as a consequence, pressure drop value.

The robust design guarantees very high working pressure dynamic from 60Mpa to 70Mpa.  
High flow rate, high working pressure = EFFICIENT connectors

- Screw-on connection/disconnection system
- Sleeve with hexagon area
- Hardened valve bodies
- Three-part poppet valve with a moulded shaped seal
- Mechanical backstop to prevent partial enclosures of valves due to peaks and reverse flow
- Interchangeable with other products and widely used in the market
- Accessories (plugs and caps) and spare part kits available
- Wide range of termination ends

#### Q.Safe MQS-DHI - Direct Hose Integration

New concept of quick coupling integrated with direct to hose insert.

- Avoiding intermediate connections components
- Improved resistance against oil leakage with the elimination of possible leakage points
- Risk elimination of unscrewing issues in the field
- Reduction of components to be assembled
- Design solution available for most common series ISO A; ISO B; Push-Pull & Flat-Face

#### ROTOFIT, swivel fitting driven by

- DIRECT to HOSE concept: fewer sealing surfaces lead to oil leakage risk reduction
- DIRECT to PORT concept: avoids the use of adapters, allows the direct connection on port

- Full flow design minimizes pressure drop for optimum system performance
- Cr3 surface coating for maximum corrosion resistance
- Safety factor 4:1
- High performance material with hardened areas in the most stressed points to increase service life
- High bearing number to guarantee a low rotation effort in all pressure conditions and reduce concentrated load
- Rotation system totally sealed to avoid dirt inclusion
- Full range of termination ends

**rodaindustria** IBÉRICA S.A.

# GOLDENISO

## CUSTOMER ADDED VALUES

Thanks to its structured approach, the GoldenIso hose range can successfully meet the requirements of most hydraulic applications.

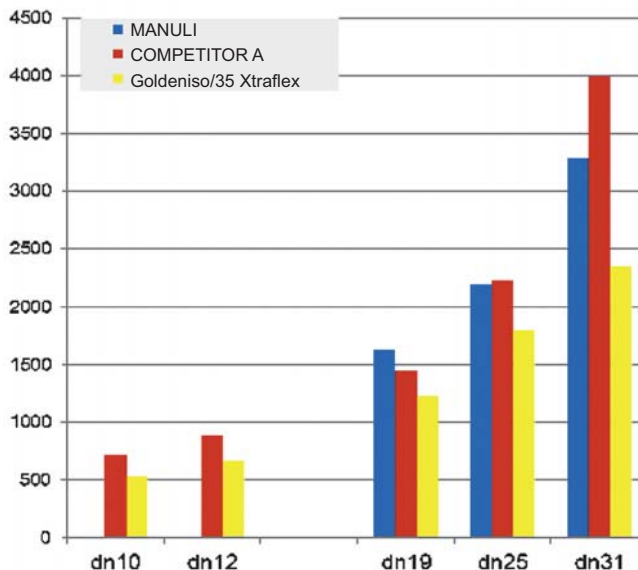
The Isobaric approach leads to **user friendly product selection, installation and replacement.**

GoldenIso Xtraflex is the ideal solution for most replacement applications. Hose assemblers will appreciate its **ease off use in crimping and installation**, thanks to its flexibility and the availability of no-skive fittings. With Interlock fittings, the line can meet most OEM requirements with **improved features of low weight and compactness**, which contribute to the overall energy efficiency of machines.

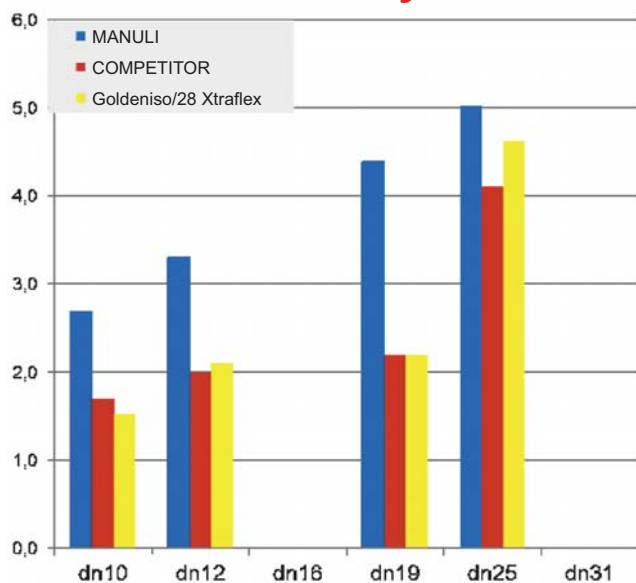
OEM designers, maintainers and users can achieve **increased durability** when using GoldenIso Long Life.

Any application will benefit by materials performance: the tube offers a **high compatibility with a wide range of modern hydraulic oils** and the cover is a **high abrasion, weather and flame resistance** for any kind of application: off road machinery, mining, off shore installation, etc.

### Lightness



### Flexibility



## GOLDENISO

### KEY FEATURES

#### GOLDENISO ANTIWEAR

Compact wire braid reinforced hoses with excellent flexibility and low bending force. Recommended for applications with space constraints, the GoldenIso AntiWear hoses are quick and easy to install.

#### Key features

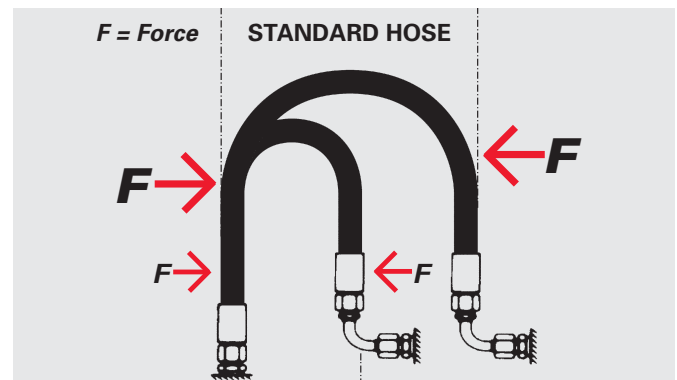
- Extreme abrasion resistance
- Approved at 200.000 impulse cycles, 133% WP at T=100°C (ISO 18752 grade A)
- Very low bend radius to suit restricted space installations
- High robust and compact hose structure compared to rated pressure
- Vacuum resistance according to SAE 100R4 requirements

#### GOLDENISO XTRAFLEX

The new ISOBARIC hose range following the new ISO 18752 international specifications.

#### Key features

- Improved flexibility and bending force
- Reduced bend radius
- Compact & Light weight
- Skive and no-skive fittings
- High fatigue resistance
- Large oil compatibility (NBR tube material)
- High abrasion, ozone and aging resistant cover
- Suitability for mining, thanks to certified properties of compounds



#### GOLDENISO LONG LIFE

Premium class hose designed for heavy duty applications and high fatigue resistance. The LongLife series is the innovative wire spiral hose line approved to 2 million impulse cycles, for special applications and market needs, particularly designed to meet high demanding requirements of OEMs and special applications. These hoses are dedicated to arduous environments such as mining and heavy industry, large equipment or machines working 24 hours a day.

#### Key features

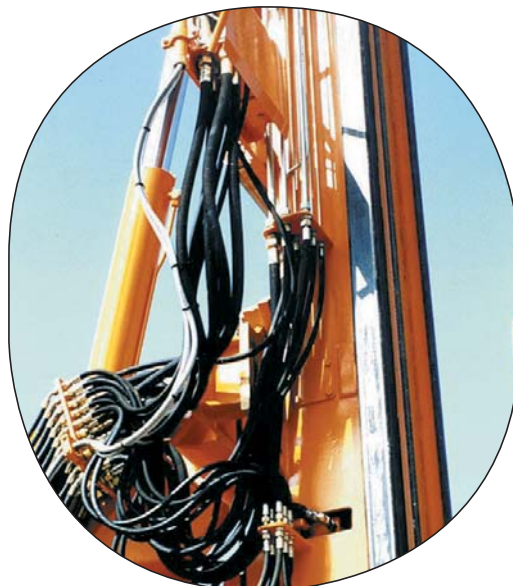
- Above standard pressure rating
- Approved with two severe fatigue qualification programs:
  - 2 millions flexing impulse cycles (ISO 6802, T=100°C, test pressure=120% WP)
  - 1 million flexing impulse cycles (ISO 6802, T=120°C, test pressure=133%)
- High performance Nitrile tube compound for the best chemical compatibility with a wide range of hydraulic oils
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic properties of the cover
- Wide compatibility with hydraulic fluids, mineral and biodegradable oils
- Low bend radius and high flexibility
- New Interlock-Plus easy mounting system

# GOLDENISO ANTIWEAR

## MAIN APPLICATIONS



General hydraulics  
in mobile applications



Hydraulics pressure lines  
with installation constraints



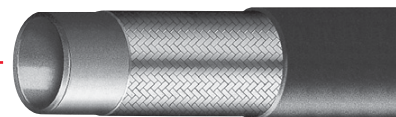
Forestry machines



Mining

# TECHNICAL DATA SHEETS

## GOLDENISO/21 ANTIWEAR OUTSTANDING ABRASION RESISTANCE



PART. REF.	HOSE SIZE	R.O.D.	O.D.	MAX W.P.	BURST PRESSURE	MIN. BEND RADIUS	WEIGHT	FITTING

	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	STD 1	STD 2
H01125005*	5	-03	3/16"	8,7	0,34	10,5	0,41	210	3040	840	12180	45	1,77	150	0,10	-	OPB-03
H01125006*	6	-04	1/4"	10,2	0,40	12,0	0,47	210	3040	840	12180	50	1,97	180	0,12	MF+M00830-04	OPB-04
H01125008*	8	-05	5/16"	11,5	0,45	13,6	0,54	210	3040	840	12180	55	2,17	210	0,14	MF+M00830-05	OPB-05
H01125010*	10	-06	3/8"	14,4	0,57	16,2	0,64	210	3040	840	12180	65	2,56	300	0,20	MF+M03400-06	OPB-06
H01125012*	12	-08	1/2"	17,9	0,70	19,7	0,78	210	3040	840	12180	90	3,54	415	0,28	MF+M03400-08	OPB-08
H01125016*	16	-10	5/8"	22,2	0,87	24,0	0,94	210	3040	840	12180	100	3,94	620	0,42	MF+M03400-10	OPB-10
H01125019*	19	-12	3/4"	25,6	1,01	27,7	1,09	210	3040	840	12180	120	4,72	780	0,52	MF+M03400-12	OPB-12
H01125025*	25	-16	1"	33,0	1,30	35,2	1,39	210	3040	840	12180	150	5,91	1120	0,75	MF+M03400-16	OPB-16



Extreme abrasion resistance ■ Approved at 200.000 impulse cycles, 133% WP at T=100°C (ISO 18752 grade A) ■ Very low bend radius to suit restricted space installations ■ High robust and compact hose structure compared to rated pressure ■ High environmental agents resistance ■ Vacuum resistance accordingly to SAE 100R4 requirements

### MAIN APPLICATIONS

Medium and high pressure hydraulic lines with installation constraints, pilot lines, return, drain and suction lines

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40°F / +212°F -40°C / +100°C

### RECOMMENDED FLUIDS

Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

**TUBE:** Synthetic rubber

**REINFORCEMENT:** One wire braid (DN 5÷12).  
Two wire braid (DN 16÷25)

**COVER:** High abrasion resistant synthetic rubber

**APPLICABLE SPECS.:** ISO 18752 grade A; SAE J517 type 100 R17; ISO 11237-R17

**TYPE APPROVALS:** MSHA; GOST-R

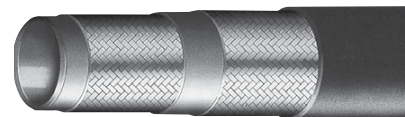
**STANDARD PACKAGING:** Reel



# TECHNICAL DATA SHEETS

## GOLDENISO/28 ANTIWEAR

### OUTSTANDING ABRASION RESISTANCE



PART. REF.	HOSE SIZE	R.O.D.	O.D.	MAX W.P.	BURST PRESSURE	MIN. BEND RADIUS	WEIGHT	FITTING

	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	STD 1	STD 2
H01126006*	6	-04	1/4"	11,6	0,46	13,2	0,52	280	4060	1120	16240	50	1,97	260	0,17	MF+M03400-04	OPB-04
H01126008*	8	-05	5/16"	12,9	0,51	14,5	0,57	280	4060	1120	16240	55	2,17	280	0,19	MF+M03400-05	OPB-05
H01126010*	10	-06	3/8"	15,4	0,61	17,0	0,67	280	4060	1120	16240	63	2,48	380	0,26	MF+M03400-06	OPB-06
H01126012*	12	-08	1/2"	18,5	0,73	20,3	0,80	280	4060	1120	16240	80	3,15	495	0,33	MF+M03400-08	OPB-08
H01126016*	16	-10	5/8"	22,7	0,89	24,7	0,97	280	4060	1120	16240	90	3,54	730	0,49	MF+M03400-10	OPNS-10
H01126019*	19	-12	3/4"	27,1	1,07	29,3	1,15	280	4060	1120	16240	120	4,72	1060	0,71	MF+M03400-12	OPNS-12



Extreme abrasion resistance ■ Approved at 200.000 impulse cycles, 133% WP at T=100°C (ISO 18752 grade A) ■ Very low bend radius to suit restricted space installations ■ High robust and compact hose structure compared to rated pressure ■ High environmental agents resistance ■ Vacuum resistance accordingly to SAE 100R4 requirements

#### MAIN APPLICATIONS

Medium and high pressure hydraulic lines with installation constraints, pilot lines, return, drain and suction lines

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40°F / +212°F -40°C / +100°C

#### RECOMMENDED FLUIDS

Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

**TUBE:** Synthetic rubber

**REINFORCEMENT:** Two wire braids

**COVER:** High abrasion resistant synthetic rubber

**APPLICABLE SPECS.:** ISO 18752 grade A; SAE J517 type 100R19

**TYPE APPROVALS:** MSHA; GOST-R










**STANDARD PACKAGING:** Reel

# TECHNICAL DATA SHEETS

## GOLDENISO/21 XTRAFLEX

ISO 18752-C/D



								
PART. REF.	HOSE SIZE	R.O.D.	O.D.	MAX W.P.	BURST PRESSURE	MIN. BEND RADIUS	WEIGHT	FITTING
	DN dash inch	mm inch	mm inch	bar psi	bar psi	mm inch	g/m lb/ft	STD 1 STD 2
H10093031*	31 -20 1.1/4"	41,7 1,64	44,5 1,75	210 3040	840 12180	210 8,27	2071 1,39	MF+M00920-20 OPK-20
H10093038*	38 -24 1.1/2"	48,9 1,93	52,1 2,05	210 3040	840 12180	260 10,24	2989 2,01	IP+M01500-24 SP+M05400-24
H10093051*	51 -32 2"	63,2 2,49	66,8 2,63	210 3040	840 12180	330 12,99	4310 2,90	IP+M01500-32 SP+M05400-32



Excellent flexibility (low bending force), also in low temperature applications ■ Reduced bend radius ■ Easy mounting in severe installations ■ Isobaric pressure rating ■ BIO biological and mineral oils compatibility ■ No-skive fitting solution

### MAIN APPLICATIONS

Medium pressure hydraulic lines with short assemblies in severe installations, return lines

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40°F / +250°F -40°C / +121°C

### RECOMMENDED FLUIDS

Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

**TUBE:** Oil resistant synthetic rubber

**REINFORCEMENT:** 4 high tensile steel spirals

**COVER:** Synthetic rubber with high abrasion, ozone, weather and heat resistance

**APPLICABLE SPECS.:** ISO 18752-C/D; JIS K6349-3

**TYPE APPROVALS:** MSHA

**STANDARD PACKAGING:** Reel

# TECHNICAL DATA SHEETS

## GOLDENISO/28 XTRAFLEX

ISO 18752-C/D



PART. REF.	HOSE SIZE	R.O.D.	O.D.	MAX W.P.	BURST PRESSURE	MIN. BEND RADIUS	WEIGHT	FITTING

	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	STD 1	STD 2
H10095010*	10	-06	3/8"	16,7	0,66	18,9	0,74	280	4060	1120	16240	65	2,56	520	0,35	MF+M00910-06	OPK-06
H10095012*	12	-08	1/2"	19,6	0,77	21,8	0,86	280	4060	1120	16240	90	3,54	650	0,44	MF+M00910-08	OPK-08
H10095016*	16	-10	5/8"	23,5	0,93	25,7	1,01	280	4060	1120	16240	100	3,94	934	0,63	MF+M00910-10	OPK-10
H10095019*	19	-12	3/4"	26,9	1,06	29,3	1,15	280	4060	1120	16240	120	4,72	1040	0,70	MF+M00920-12	OPK-12
H10095025*	25	-16	1"	34,1	1,34	36,5	1,44	280	4060	1120	16240	150	5,91	1530	1,03	MF+M00920-16	OPK-16
H10095031*	31	-20	1.1/4"	41,7	1,64	44,5	1,75	280	4060	1120	16240	210	8,27	2160	1,45	MF+M00920-20	OPK-20
H10095038*	38	-24	1.1/2"	48,9	1,93	52,1	2,05	280	4060	1120	16240	280	11,02	2994	2,01	IP+M01500-24	SP+M05400-24



Excellent flexibility (low bending force), also in low temperature applications ■ Approved 1 Million impulse cycles (MF2000 fittings)  
 ■ Reduced bend radius ■ Easy mounting in severe installations ■ Isobaric pressure rating ■ BIO biological and mineral oils compatibility ■ No-skive fitting solution

### MAIN APPLICATIONS

High pressure power lines with short assemblies in severe installations

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40°F / +250°F -40°C / +121°C

### RECOMMENDED FLUIDS

Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

**TUBE:** Oil resistant synthetic rubber

**REINFORCEMENT:** 4 high tensile steel spirals

**COVER:** Synthetic rubber with high abrasion, ozone, weather and heat resistance

**APPLICABLE SPECS.:** ISO 18752-C/D; JIS K6349-3

**TYPE APPROVALS:** MSHA

**STANDARD PACKAGING:** Reel

# TECHNICAL DATA SHEETS

## GOLDENISO/35 XTRAFLEX

ISO 18752-C/D



PART. REF.	HOSE SIZE	R.O.D.	O.D.	MAX W.P.	BURST PRESSURE	MIN. BEND RADIUS	WEIGHT	FITTING

	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	STD 1	STD 2
H10096010*	10	-06	3/8"	16,7	0,66	18,9	0,74	350	5070	1400	20300	80	3,15	530	0,36	MF+M00910-06	OPK-06
H10096012*	12	-08	1/2"	19,6	0,77	21,8	0,86	350	5070	1400	20300	90	3,54	660	0,44	MF+M00910-08	OPK-08
H10096016*	16	-10	5/8"	23,5	0,93	25,7	1,01	350	5070	1400	20300	100	3,94	934	0,63	MF+M00910-10	OPK-10
H10096019*	19	-12	3/4"	27,5	1,08	30,1	1,19	350	5070	1400	20300	120	4,72	1220	0,82	MF+M00920-12	OPK-12
H10096025*	25	-16	1"	34,6	1,36	37,2	1,46	350	5070	1400	20300	150	5,91	1800	1,21	MF+M00920-16	OPK-16
H10096031*	31	-20	1.1/4"	42,1	1,66	44,9	1,77	350	5070	1400	20300	230	9,06	2340	1,57	IP+M01500-20	OPK-20
H10096038*	38	-24	1.1/2"	52,9	2,08	56,1	2,21	350	5070	1400	20300	300	11,81	4140	2,78	IP+M01600-24	SP+M05500-24



Excellent flexibility (low bending force) also in low temperature applications ■ Approved 1 Million impulse cycles (MF2000 fittings)  
 ■ Reduced bend radius ■ Easy mounting in severe installations ■ Isobaric pressure rating ■ BIO biological and mineral oils compatibility ■ No skive fitting solution available

### MAIN APPLICATIONS

Heavy duty power lines with short assemblies in severe installations

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40°F / +250°F -40°C / +121°C

### RECOMMENDED FLUIDS

Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

**TUBE:** Oil resistant synthetic rubber

**REINFORCEMENT:** Four high tensile steel spirals (DN 6÷31)  
 Six high tensile steel spirals (DN 38÷51)

**COVER:** Synthetic rubber with high abrasion, ozone, weather and heat resistance

**APPLICABLE SPECS.:** ISO 18752-C/D, JIS K6349-3

**TYPE APPROVALS:** MSHA

**STANDARD PACKAGING:** Reel

# TECHNICAL DATA SHEETS

## GOLDENISO/42 XTRAFLEX

ISO 18752-C/D



PART. REF.	HOSE SIZE	R.O.D.	O.D.	MAX W.P.	BURST PRESSURE	MIN. BEND RADIUS	WEIGHT	FITTING

	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	STD 1	STD 2
H10097019*	19	-12	3/4"	27,7	1,09	30,2	1,19	420	6090	1680	24360	150	5,91	1285	0,86	IP+M01500-12	SP+M05400-12
H10097025*	25	-16	1"	34,8	1,37	37,3	1,47	420	6090	1680	24360	210	8,27	1915	1,29	IP+M01500-16	SP+M05400-16
H10097031*	31	-20	1.1/4"	46,3	1,82	49,5	1,95	420	6090	1680	24360	260	10,24	3663	2,46	IP+M01600-20	SP+M05500-20



Excellent flexibility (low bending force), also in low temperature applications ■ Approved 1 Million impulse cycles (MF2000 skive fittings) ■ Reduced bend radius ■ Easy mounting in severe installations ■ Isobaric pressure rating ■ BIO biological and mineral oils compatibility ■ No-skive fitting solution

### MAIN APPLICATIONS

Heavy duty power lines with short assemblies in severe installations

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40°F / +250°F -40°C / +121°C

### RECOMMENDED FLUIDS

Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

**TUBE:** Oil resistant synthetic rubber

**REINFORCEMENT:** Four high tensile steel spirals (DN 6÷25)  
Six high tensile steel spirals (DN 31÷51)

**COVER:** Synthetic rubber with high abrasion, ozone, weather and heat resistance

**APPLICABLE SPECS.:** ISO 18752-C/D

**TYPE APPROVALS:** MSHA

**STANDARD PACKAGING:** Reel

# TECHNICAL DATA SHEETS

## GOLDENISO/38 LONGLIFE HIGH FATIGUE RESISTANCE



PART. REF.	HOSE SIZE	R.O.D.	O.D.	MAX W.P.	BURST PRESSURE	MIN. BEND RADIUS	WEIGHT	FITTING

	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	STD 1
H10098019*	19	-12	3/4"	27,7	1,09	32,0	1,26	380	5510	1520	22040	170	6,69	1410	0,95	IP+M01500-12
H10098025*	25	-16	1"	34,8	1,37	38,1	1,50	380	5510	1520	22040	220	8,66	1990	1,34	IP+M01500-16
H10098031*	31	-20	1.1/4"	46,3	1,82	49,5	1,95	380	5510	1520	22040	267	10,51	3663	2,46	IP+M01600-20

Over standard pressure rating ■ Approved with two severe fatigue qualification programs: 2 millions flexing impulse cycles (ISO 6802, T=100°C, test pressure=120% WP) ■ 1,2 million flexing impulse cycles (ISO 8032, T=120°C, test pressure=133%) ■ Superior abrasion resistance ■ High ozone and weather resistance ■ Flame retardant and antistatic properties of the cover ■ Wide compatibility with hydraulic fluids, mineral and biodegradable oils ■ Low bend radius and high flexibility ■ New Interlock-Plus easy mounting system

### MAIN APPLICATIONS

Heavy duty pressure lines, hydrostatic transmissions, heavy duty earth moving equipment, hydraulic presses, drilling applications, injection moulding machines, specific installations with severe abrasion conditions and/or heavy duty environmental conditions, marine applications, underground and open pit mining

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40°F / +250°F -40°C / +121°C

### MAX OPERATING TEMPERATURE

+257°F +125°C

### RECOMMENDED FLUIDS

Mineral oils, vegetable oils and synthetic ester based oils, glycols and polyglycols, mineral oils in aqueous emulsion, water

**TUBE:** Oil resistant synthetic rubber

**REINFORCEMENT:** Four high tensile steel wire spirals

**COVER:** Synthetic rubber with high ozone, abrasion and weather resistance

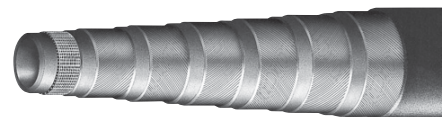
**APPLICABLE SPECS.:** Manuli special design exceeds SAE J517 type 100R13; ISO 3862 R13; ISO 18752-C-D extension

**TYPE APPROVALS:** MSHA

**STANDARD PACKAGING:** Reel

# TECHNICAL DATA SHEETS

## GOLDENISO/45 LONGLIFE HIGH FATIGUE RESISTANCE



PART. REF.	HOSE SIZE	R.O.D.	O.D.	MAX W.P.	BURST PRESSURE	MIN. BEND RADIUS	WEIGHT	FITTING

	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	STD 1
H10089016*	16	-10	5/8"	25,5	1,00	28,5	1,12	460	6670	1840	26680	250	9,84	1290	0,87	IP+M01500-10
H10089019*	19	-12	3/4"	28,4	1,12	32,0	1,26	460	6670	1840	26680	280	11,02	1530	1,03	IP+M01500-12
H10089025*	25	-16	1"	35,4	1,39	38,1	1,50	460	6670	1840	26680	340	13,39	2150	1,44	IP+M01500-16
H10089031*	31	-20	1.1/4"	46,3	1,82	49,5	1,95	450	6520	1800	26100	420	16,54	3790	2,55	IP+M01800-20

Over standard pressure rating ■ Approved with two severe fatigue qualification programs: 2 millions flexing impulse cycles (ISO 6802, T=100°C, test pressure=120% WP) ■ 1 million flexing impulse cycles (ISO 6802, T=120°C, test pressure=133% WP for DN 16, 19, 25 - 120% WP for DN 31) ■ High performance Nitrile tube compound for the best chemical compatibility with a wide range of hydraulic oils ■ Superior abrasion resistance ■ High ozone and weather resistance ■ Flame retardant and antistatic properties of the cover ■ Wide compatibility with hydraulic fluids, mineral and biodegradable oils ■ Low bend radius and high flexibility ■ New Interlock-Plus easy mounting system

### MAIN APPLICATIONS

Heavy duty pressure lines, hydrostatic transmissions, heavy duty earth moving equipment, hydraulic presses, drilling applications, injection moulding machines, specific installations with severe abrasion conditions and/or heavy duty environmental conditions, marine applications, underground and open pit mining

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40°F / +250°F -40°C / +121°C

### MAX OPERATING TEMPERATURE

+257°F +125°C

### RECOMMENDED FLUIDS

Mineral oils, vegetable oils and synthetic ester based oils, glycols and polyglycols, mineral oils in aqueous emulsion, water

**TUBE:** Oil resistant synthetic rubber

**REINFORCEMENT:** Four high tensile steel wire spirals (DN 16÷25). Six high tensile steel wire spirals (DN 31)

**COVER:** Synthetic rubber with high ozone, abrasion and weather resistance

**APPLICABLE SPECS.:** Manuli special design exceeds SAE J517 type100R15; ISO 3862 R15; ISO 18752-D extension

**TYPE APPROVALS:** MSHA; GOST-R

**STANDARD PACKAGING:** Reel

**rodaindustria**  **IBÉRICA S.A.**  
C/ Paralela Tres  
Polígono Industrial A Granxa  
36400 **PORRIÑO** (Pontevedra)  
Tel.: 34.986.213.083 Fax: 34.986.295.138  
e-mail: [ventasvig@rodaindustria.com](mailto:ventasvig@rodaindustria.com)

**MANULI HYDRAULICS**

Via Cadorna, 73 ■ 20090 Vimodrone (MI), Italy  
Tel +39 02 62713.1 ■ Fax +39 02 62713.382  
[www.manuli-hydraulics.com](http://www.manuli-hydraulics.com) ■ [info@manuli-hydraulics.com](mailto:info@manuli-hydraulics.com)