Golden ISO™

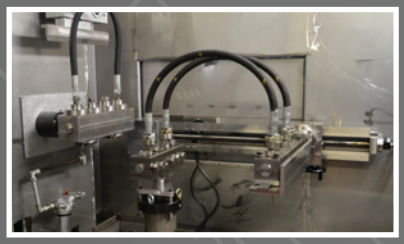
High Performance Isobaric Hoses

manuli® HYDRAULICS

"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, industrial material conveyance, refrigeration and cooling applications."

Our experienced Research & Development team take 2D drawings to 3D models to real life products.

Our world-class hoses, fittings and assembly equipment are manufactured in-house to the highest standards.



We test and validate our products to meet and exceed technical industry standards.

DESIGN → **MANUFACTURE** → **TEST**

SUPPLY ← **INTEGRATED SYSTEMS**

We provide the complete solution: hoses, fittings, crimping parameters and assembly equipment for a fully integrated system.

We supply fluid conveyance solutions directly to our customers whenever and wherever they are.

From design to manufacture, and assembly, Manuli Hydraulics' continual commitment to this unified philosophy makes us a global leader in providing integrated solutions for fluid and material transfer connector applications including hydraulics, refrigeration & air conditioning, oil & gas, water and industrial low-pressure.

Manuli Hydraulics offer a complete range of hoses, fittings and assembly equipment which are purposely designed to work seamlessly together. This harmonized approach allows us to guarantee the quality and performance of our hose assemblies.

Every metre of hose and every single fitting is backed by industry knowledge and experience, made available to you through our dedicated team of application engineers.

From advice on component selection and configuration, our technical expertise allows us to support and work directly with our customers whenever and wherever they are based.

Disclaimer: We reserve the right to modify our products and/or related services and/or discontinue the manufacture and/or supply of any of the products and/or related services, without notice. This document supersedes all previous versions and previously issued documentation. The only official source of technical crimping parameters regarding our products is our Digital Crimp Tools. Printed copies are uncontrolled therefore, please be sure to use the latest versions of our Manuli Crimp App or Crimp Web Tool. Don't mix and match: always use Manuli original hoses and fittings. For more information, see our 'Safety Guide' by scanning the QR code.

DON'T MIX & MATCH

COMPACT & EFFICIENT

Today's hydraulic systems are expected to meet progressively higher standards and increasingly stringent requirements, therefore technology must evolve to accommodate these demands.

New specifications are developing in order to incorporate these changing requirements. ISO 18752 is a modern isobaric approach to hose design, providing a consistent pressure rating across an entire hose family.

FEATURES & BENEFITS:

- **User-Friendly Product Selection:** Isobaric pressure ratings simplify hose selection across the range.
- **Wide Product Range:** Suitable for a broad variety of hydraulic applications and operating requirements.
- **Easy Handling & Installation:** Compact construction supports easier routing and installation.
- **Hydraulic Oil Compatibility:** Compatible with a wide range of modern hydraulic fluids.
- **Abrasion, Weather & Flame Resistance:** Durable cover compound helps protect against harsh operating conditions.
- **Compact & Lightweight Design:** Reduced bend radius supports installation in confined spaces.

EXCEEDING INDUSTRY STANDARDS

GoldenISO hoses are designed to meet the requirements of isobaric specification ISO 18752. This describes hoses according to isobaric pressure levels, and grades them A, B, C or D according to their resistance to impulse pressure, temperature and minimum number of cycles.

These grades allow users to select the most appropriate hose and fitting solutions for their field of application.

ISO 18752 PERFORMANCE GRADES:

Grade	Type[a]	Resistance To Impulse		
		Temperature C	Impulse Pressure (% Of MWP[b])	Minimum Number Of Cycles
A	AS	100	133%	200,000
	AC			
B	BS	100	133%	500,000
	BC			
C	CS	120	133% and 120%	500,000
	CC			
D	DC	120	133% [c]	1,000,000

a - Standard or compact, e.g. CS is grade C and standard type. Standard types have larger outside diameters and larger bend radii and compact types have smaller outside diameters and smaller band radii.

b - Maximum working pressure.

c - 120% of the MWP shall be used for classes 350, 420 and 560 instead of 133%.

GOLDENISO PRODUCT RANGE

GOLDENISO ANTIWEAR (3000, 4000 PSI)

COMPACT WIRE BRAID REINFORCED HOSES WITH EXCELLENT FLEXIBILITY & LOW BENDING FORCE

FEATURES & BENEFITS:

- **ISO 18752 Grade A Performance:** Approved for 200,000 impulse cycles at 100°C for reliable hydraulic performance.
- **Reduced Bend Radius:** Tighter bend radius than ISO 18752 requirements support installation in restricted spaces.
- **Extreme Abrasion Resistance:** Highly durable cover helps extend hose service life in abrasive environments.
- **Compact Hose Construction:** Robust and compact design supports high pressure performance with reduced hose dimensions.
- **Environmental Resistance:** Resistant to environmental agents for improved durability in harsh operating conditions.
- **Vacuum Resistance:** Meets SAE 100R4 vacuum resistance requirements for demanding applications.

GOLDENISO XTRAFLEX (3000,4000,5000,6000 PSI)

COMPACT WIRE SPIRAL HOSE STRUCTURES, CHARACTERISED BY THEIR LOW WEIGHT & EXCELLENT FLEXIBILITY

FEATURES & BENEFITS:

- **ISO 18752 Grade C Performance:** Achieves 500,000 impulse cycles at 120°C with approved no-skive fitting solutions.
- **ISO 18752 Grade C(+) & D Extension**: Designed to meet higher performance requirements across demanding applications.
- **One Million Impulse Cycle Capability:** Delivers up to 1,000,000 impulse cycles at 121°C with approved skive fitting solutions.
- **Reduced Bend Radius:** Tighter bend radius support easier installation in confined spaces.
- **Improved Cold Resistance:** Maintains flexibility and performance in temperatures as low as -46°C.
- **Maintenance Friendly Design:** High flexibility and no-skive fitting options simplify service and installation.
- **High Fatigue Resistance:** Durable construction supports long service life under cyclic pressure conditions.
- **Broad Oil Compatibility:** NBR tube material is compatible with a wide range of hydraulic oils
- **Abrasion, Ozone & Ageing Resistance:** Robust cover compound helps protect against harsh environmental conditions.
- **Mining Ready Construction:** Flame-retardant and antistatic cover properties support use in mining applications.

GOLDENISO/14 PILOT (2000 PSI)

COMPACT WIRE BRAID HOSE, HIGHLY FLEXIBLE WITH A VERY LOW BEND RADIUS

FEATURES & BENEFITS:

- **ISO 18752 Grade C Performance:** Approved at 500,000 impulse cycles at 120 °C.
- **Small Bore Range:** Available in DN5 and DN12 sizes for low pressure hydraulic applications.
- **Ultra Flexible Design:** Very low bend radius supports installation in tight and restricted spaces.
- **Flame Retardant Cover:** MSHA-approved cover provides enhanced safety in demanding environments.
- **Auxiliary System Compatibility:** Suitable for low pressure lines, pilot lines, and auxiliary hydraulic systems.
- **Integrated With Compact MiniFit Fitting Solution:** special dedicated fittings with compact dimensions designed for small bore 1 wire braid hose.

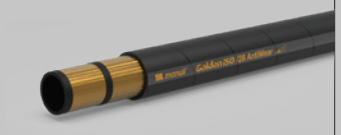
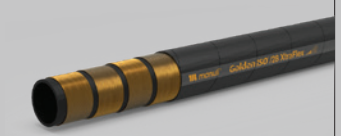
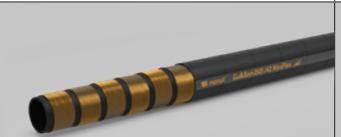
GOLDENISO LONGLIFE (5500,6500 PSI)

INNOVATIVE WIRE SPIRAL, PREMIUM CLASS HOSE DESIGNED FOR HEAVY DUTY APPLICATIONS AND HIGH FATIGUE RESISTANCE

FEATURES & BENEFITS:

- **Exceeds ISO 18752 Grade D Extension**: 1,000,000 impulse cycles at 120 °C - tested at a higher pressure rating than the standard demands.
- **Durable Construction:** Meets the requirements of demanding OEM applications with excellent abrasion, ozone, and weather resistance.
- **Flame Resistant Cover:** Antistatic, flame-resistant cover supports safe operation in challenging environments.
- **High Flexibility:** Low bend radius enables easier routing and installation in confined spaces.
- **High Compatability Performance:** Nitrile tube compound for the best chemical compatibility with a wide range of hydraulic oils.
- **Interlock Plus Fittings Solution:** provides superior robustness and durability.

GOLDENISO HOSE RANGE

HOSE	HOSE STRUCTURE	NORM	KEY PERFORMANCE
GOLDENISO/21 ANTIWEAR	Wire Braided	ISO 18752-A, ISO 11237-R17, SAE J517-100R17	Extreme Abrasion Resistance
GOLDENISO/28 ANTIWEAR 	Wire Braided	ISO 18752-A, ISO 11237-R19, SAE J517-100R19	Extreme Abrasion Resistance
GOLDENISO/21 XTRAFLEX	Wire Spiralled	ISO 18752-C/D, JIS K6349	Extreme Flexibility
GOLDENISO/28 XTRAFLEX 	Wire Spiralled	ISO 18752-C/D, JIS K6349	Extreme Flexibility
GOLDENISO/35 XTRAFLEX	Wire Spiralled	ISO 18752-C/D, JIS K6349	Extreme Flexibility
GOLDENISO/42 XTRAFLEX 	Wire Spiralled	ISO 18752-C/C Plus	Extreme Flexibility
GOLDENISO/14 PILOT	Wire Braided	ISO 18752-C	High Flexibility for Auxiliary Systems
GOLDENISO/38 LONGLIFE	Wire Spiralled	ISO 18752-C/D	High Fatigue Resistance
GOLDENISO/45 LONGLIFE	Wire Spiralled	ISO 18752-D ext., ISO 11237-R15, SAE J517-100R15	High Fatigue Resistance

HOSES BY WORKING PRESSURE

HOSE SIZE	WORKING PRESSURE (bar)										
DN	5	6	8	10	12	16	19	25	31	38	51
Dash	-03	-04	-05	-06	-08	-10	-12	-16	-20	-24	-32
GOLDENISO/21 ANTIWEAR	210	210	210	210	210	210	210	210			
GOLDENISO/28 ANTIWEAR		280	280	280	280	280	280				
GOLDENISO/21 XTRAFLEX									210	210	210
GOLDENISO/28 XTRAFLEX				280	280	280	280	280	280	280	280
GOLDENISO/35 XTRAFLEX				350	350	350	350	350	350	350	350
GOLDENISO/42 XTRAFLEX				420	420	420	420	420	420	420	420
GOLDENISO/38 LONGLIFE							380	380	380	380	380
GOLDENISO/45 LONGLIFE		460				460	460	460	450		
GOLDENISO/14 PILOT	140	140	140	140	140						

HOSES BY APPROVAL

	HYDRAULICS, MARINE EQUIPMENT TYPE APPROVALS	MINING SAFETY TYPE APPROVALS			GOVERNMENT, SAFETY & SPECIAL TYPE APPROVALS
	DNV-GL	MSHA	FRAS	POLISH "B"	CU-TR
GOLDENISO/21 ANTIWEAR	*	*	*	*	*
GOLDENISO/28 ANTIWEAR	*	*	*	*	*
GOLDENISO/21 XTRAFLEX	*	*	*	*	*
GOLDENISO/28 XTRAFLEX	*	*	*	*	*
GOLDENISO/35 XTRAFLEX	*	*	*	*	*
GOLDENISO/42 XTRAFLEX	*	*	*	*	*
GOLDENISO/38 LONGLIFE	*	*	*		*
GOLDENISO/45 LONGLIFE	*	*	*		*
GOLDENISO/14 PILOT		*			*

manuli® HYDRAULICS

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