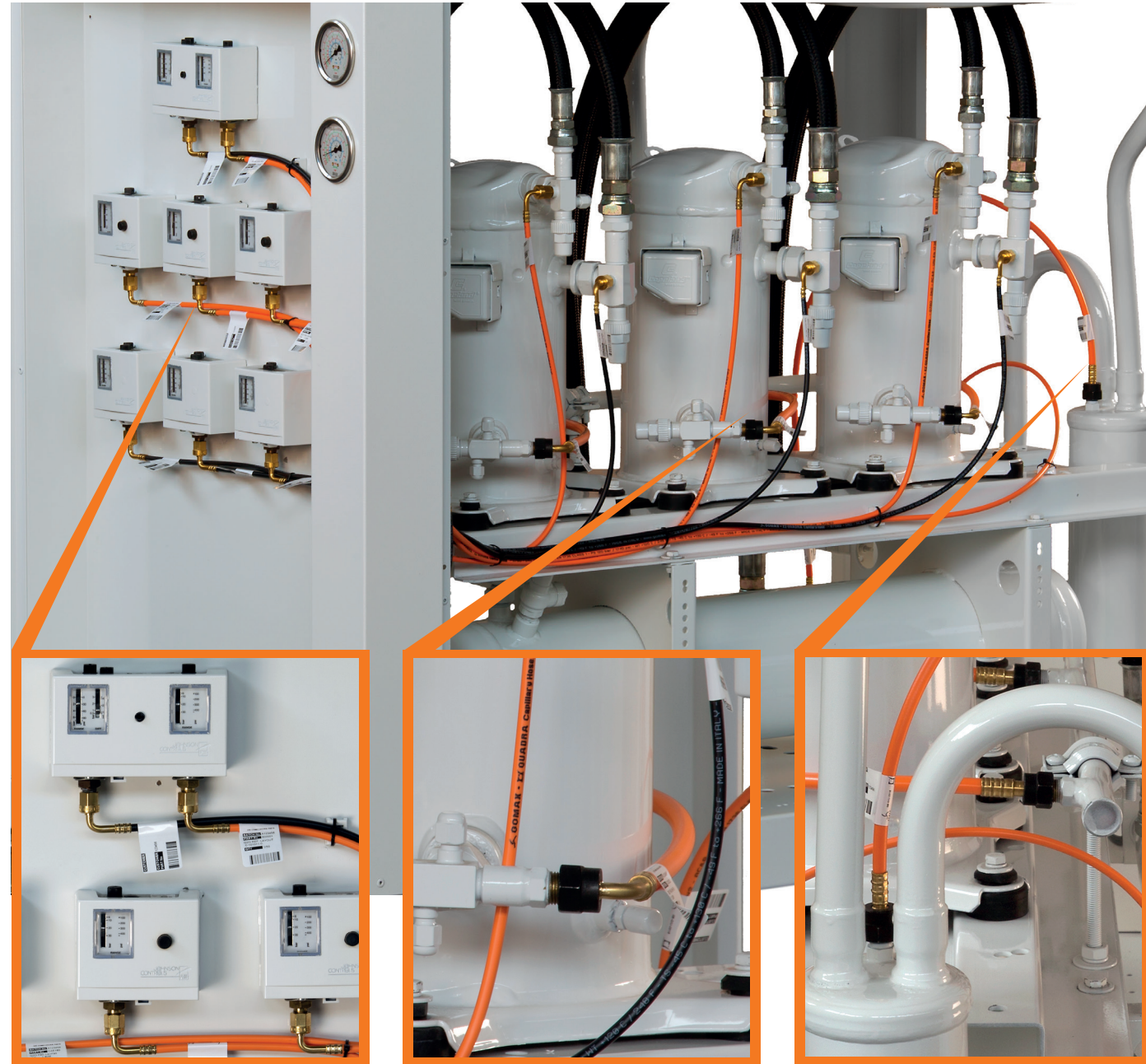


APPLICATIONS



The **QUADRA DN2** flexible hose represents the most efficient solution for the connection of pressure gauges, pressure switches and pressure test points. The **QUADRA DN2** hoses have an internal diameter of 2 mm and therefore they can substitute capillary rigid copper tubing.

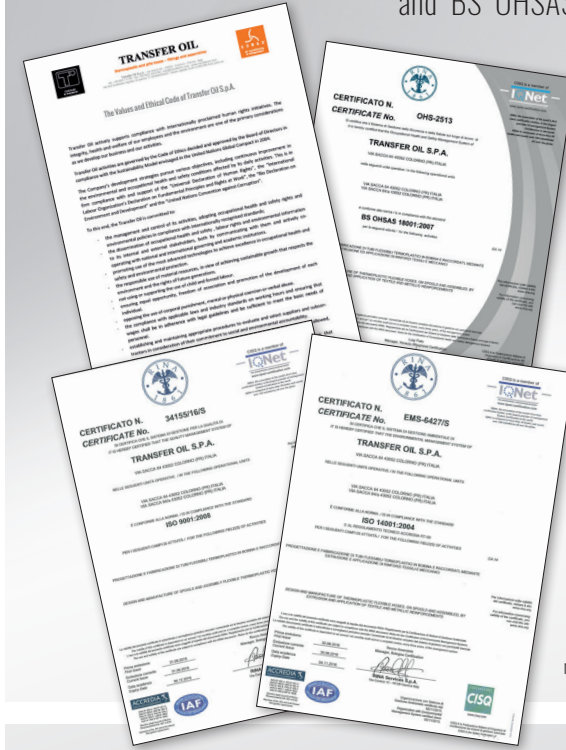
The **QUADRA DN6** flexible hose is the perfect solution for the oil return lines and for the oil equalization systems. The **QUADRA DN6** hoses are characterized by an internal diameter of 6 mm, and therefore they can substitute rigid copper tubing of OD 8 mm or 5/16".

The **QUADRA DN4** flexible hose is the ideal solution for equalizing and oil return lines. The **QUADRA DN4** hoses have an internal diameter of 4 mm and therefore they can substitute rigid copper tubing of OD 6 mm or 1/4".

Due to its FLEXIBILITY the introduction of the QUADRA product range assures the following advantages:

- SPEED UP the assembly procedure
- ABSORB the VIBRATION of the compressor
- REDUCE the NOISE
- Exceeds EN 1736 CLASS 1
- UL compliant
- CO2 compatibility with working pressure up to 120 bar
- UV resistant
- RoHS compliance

Transfer Oil S.p.A. with more than 35 years of experience, are today one of the major independent thermoplastic hose manufacturers in Europe. With a constant attention to quality and innovation and with a total capacity of more than 13 million meters (42 million feet) per year, all of our hose and bespoke fitting products are conceived, developed and produced to the highest internal standards which have been duly accredited by ISO 9001:2008, ISO 14001:2004 and BS OHSAS 18001:2007 certification.



Our products are segmented into four main market sectors
TO HYDRAULIC - thermoplastic hose and fitting solutions used in a wide variety of high pressure hydraulic fluid power management systems.
TO INDUSTRIAL - thermoplastic and PTFE hose and fitting solutions for a wide variety of pressurised fluids and gasses.
TO UHP - Multi Spiral Ultra High Pressure thermoplastic hose and bespoke fitting solutions for hydraulic fluid management and a wide variety of Ultra High pressure fluids and gasses (up to 2800 bar/40600 psi).
GOMAX - thermoplastic hose and bespoke fitting solutions specifically tailored for the air conditioning and refrigeration Industry. **UL and EN 1736:2008 compliant.**

Extra care is taken in the preparation of this leaflet, but Transfer Oil S.p.A. is not responsible for any inadvertent typographical errors or omissions. Information subject to change without notice. The information in this catalogue is only accurate as of the date of publication. Transfer Oil S.p.A. assume no liability on mistakes nor errors appearing in catalogues, releases or other documents. Transfer Oil reserve the right to change his products without any previous notice. These changes might be made on purchased products provided. Transfer Oil and the GOMAX logo are registered trade marks. No use is allowed without Transfer Oil written approval.

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flexible hoses and fittings for AC&R



FULL TRACEABILITY



- Production batch code traceability of every individual component used in the assembly and the final hose assembly data.
- Customer part numbers cross referenced with Transfer Oil part numbers.
- Production history data stored on tag provides data for warranty assessment for the Manufacturer and predictive maintenance for the end user.

QUICK REFERENCE GUIDE

OEM KITTING SERVICE

1 Through one single part number the customer can now order all the finished hose (capillary) assemblies of specific units instead of multiple part numbers from the bill of material (BOM).

2 SIMPLIFIED ORDER PROCESSING

Kits are prepared as factory made hose assemblies in all types and lengths, delivered in a sturdy cardboard box.

FACTORY MADE

3 SMART ASSEMBLY

The production personnel is now dedicated to one unique activity without loss of time stabilizing and rationalizing the process.

4 FAST GOODS HANDLING

Each box contains all the connections ready to be installed on a specific unit.

OEM

the preferred flexible choice for all pressure switch, manometer and oil line connections

The same box can be delivered worldwide in case of service contracts, as spare parts for forecasted planned maintenance of any given unit.

Part no and crimping diameters

non UL part number		part number		DN	OD	BEND RADIUS	CRIMPING DIAMETER		
50m	10m	50m	10m	mm	mm	mm	Ø mm		
0780C 0780BC	0780K 0780BK	0380C 0380BC	0380K 0380BK	DN2	6,1	10	7-0,1	NA	7-0,1
		0785C 0785BC	0785K 0785BK	DN4	8,3	25	NA	9,8-0,1	9,8-0,1
		0786C 0786BC	0786K 0786BK	DN6	10,9	35	NA	12,4-0,1	12,4-0,1

Working Pressure - Working Temperature

WP			BP			WT	
bar	MPa	psi	bar	MPa	psi	min °C	max °C
120	12,0	1740	600	60	8700	-45°	+130°

* the above data refer to all QUADRA hoses

Technical Data

INNER TUBE
Thermoplastic polymer
REINFORCEMENT
Polyester braid of high tensile strenght with high modulus
COVER
Thermoplastic polymer
COVER
<ul style="list-style-type: none"> Connection of pressure gauges, pressure switches and pressure test points Oil equalization Oil return lines

FEATURES

The QUADRA system - comprising of thermoplastic flexible capillary hose, fittings in brass and dedicated tooling - gives quick production, in a few simple steps, with superior quality connections to the pressure test points, gauges, and pressure switches including the oil return circuits and oil level equalization, for air conditioning and refrigeration units of each type and size.

TEMPERATURE RANGE

TS - Min allowable temperature Class -45°C | (-50°F)
TS - Max allowable temperature Class +130°C | (+266°F)

PERMITTED FLUIDS

HFO/HFC (R134a, R404A, R407A, R407B, R407C, R410A, R507, R32, R448A, R449A, R450A, R513A, R1234yf, R1234ze) R744, R290

SPECIFICATIONS

Fully compliant to Directive 97/2/CE - paragraph 3 article 3
RoHS 2011/65/EU compliant
WEEE 2002/96/EC compliant
REACH 1907/2006 compliant

Permeability classification according to the European Standard EN 1736:2008 for non metallic tubes used in air conditioning and refrigeration systems

low permeability	CLASS 1	CLASS 2	CLASS 3	high permeability

	TEST DATA		Test temperature	
	+32 °C	+100 °C	bar	g/m ² /year
R404A				
Test pressure	14,0	60,0	bar	
QUADRA™ DN2 permeability rate	0,12	8,20	g/m ² /year	
QUADRA™ DN4 permeability rate	0,19	9,10	g/m ² /year	
QUADRA™ DN6 permeability rate	0,13	6,50	g/m ² /year	
R407C				
Test pressure	13,3	60,0	bar	
QUADRA™ DN2 permeability rate	0,11	7,63	g/m ² /year	
QUADRA™ DN4 permeability rate	0,17	8,46	g/m ² /year	
QUADRA™ DN6 permeability rate	0,11	6,05	g/m ² /year	
R410A				
Test pressure	18,8	60,0	bar	
QUADRA™ DN2 permeability rate	0,14	7,13	g/m ² /year	
QUADRA™ DN4 permeability rate	0,22	7,92	g/m ² /year	
QUADRA™ DN6 permeability rate	0,15	5,66	g/m ² /year	
R134a				
Test pressure	7,1	60,0	bar	
QUADRA™ DN2 permeability rate	0,06	8,45	g/m ² /year	
QUADRA™ DN4 permeability rate	0,10	9,37	g/m ² /year	
QUADRA™ DN6 permeability rate	0,07	6,69	g/m ² /year	
R744*				
Test pressure	73,8	60,0	bar	
QUADRA™ DN2 permeability rate	2,04	5,51	g/m ² /year	
QUADRA™ DN4 permeability rate	0,98	6,12	g/m ² /year	
QUADRA™ DN6 permeability rate	0,45	4,37	g/m ² /year	

Figures indicated are average of all the highest obtained values converted from Helium to refrigerant leak rate, as specified within EN 1736:2008.

* test procedures according with the relevant sections of EN 1736:2008 (R744 is not included into the specification). Test at 73,7 bar has been performed at 31°C (the maximum allowable temperature for the refrigerant to have saturated pressure).

Test report: B0-TIS-219890-TUV-01-03-12 issued by TÜV Italia. The test method and procedures have been verified by TÜV Italia as third party. As a result of the assessment and inspection of the characteristics and performance of the permeability test machine, of the test procedures utilized, carried out at the premises of Transfer Oil S.p.A. - Italy, TÜV Italia confirms that it meets the requirements of EN 1736:2008

DN2 fittings

1/4 SAE straight female XBA02C, WBA02C, KBA02C 50 pcs, 50 pcs, 10 pcs	1/4 SAE straight female + valve opener XBB02C, WBB02C, KBB02C 50 pcs, 50 pcs, 10 pcs	1/4 SAE elbow female 90° XCA02C, WCA02C, KCA02C 50 pcs, 50 pcs, 10 pcs	Elbow 90° WPD2C1, KPD2C1 50 pcs, 10 pcs	"T" fitting WPB0C1, KPB0C1 50 pcs, 10 pcs	"T" fitting with 1 female 1/4 SAE XPB0C2, WPB0C2, KPB0C2 50 pcs, 50 pcs, 10 pcs	"T" fitting with 1 female 1/4 SAE XPB2C4, WPB2C4, KPB2C4 50 pcs, 50 pcs, 10 pcs	"T" fitting with 2 females 1/4 SAE at 90° XPB2C7, WPB2C7, KPB2C7 50 pcs, 50 pcs, 10 pcs
"T" fitting with 2 females 1/4 SAE at 180° XPB2C3, WPB2C3, KPB2C3 50 pcs, 50 pcs, 10 pcs	Cross fitting WPA2C1, KPA2C1 50 pcs, 10 pcs	Cross fitting with 1 female 1/4 SAE XPA2C2, WPA2C2, KPA2C2 50 pcs, 50 pcs, 10 pcs	Cross fitting with 2 females 1/4 SAE at 180° XPA2C3, WPA2C3, KPA2C3 50 pcs, 50 pcs, 10 pcs	Cross fitting with 2 females 1/4 SAE at 90° XPA2C4, WPA2C4, KPA2C4 50 pcs, 50 pcs, 10 pcs	Cross fitting with 3 females 1/4 SAE XPA2C5, WPA2C5, KPA2C5 50 pcs, 50 pcs, 10 pcs	1/4 SAE straight male WDN22C, KDN22C 50 pcs, 10 pcs	Copper brazing fitting (4x6x100 mm) WZE2C1 50 pcs

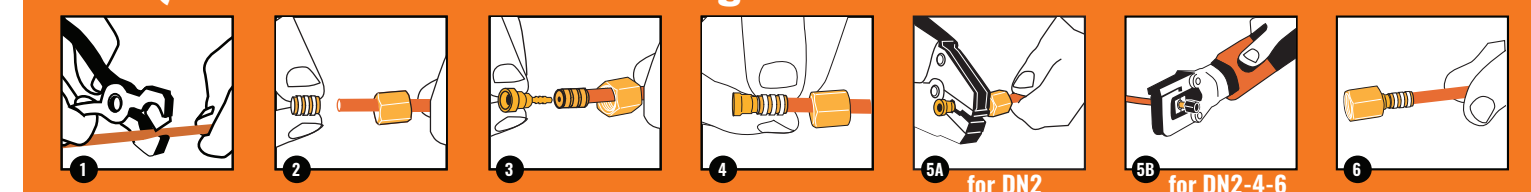
DN4 fittings

1/4 SAE straight female XBA02M, WBA02M, KBA02M 50 pcs, 50 pcs, 10 pcs	1/4 SAE straight female + valve opener XBB22M, WBB22M, KBB22M 50 pcs, 50 pcs, 10 pcs	3/8 SAE straight female XBA04M, WBA04M, KBA04M 50 pcs, 50 pcs, 10 pcs	1/4 SAE elbow female 90° XCA02M, WCA02M, KCA02M 50 pcs, 50 pcs, 10 pcs	3/8 SAE elbow female 90° XCA04M, WCA04M, KCA04M 50 pcs, 50 pcs, 10 pcs
"T" fitting WPB0M1, KPB0M1 50 pcs, 10 pcs	"T" fitting with 1 female 1/4 SAE XPB2M4, WPB2M4, KPB2M4 50 pcs, 50 pcs, 10 pcs	"T" fitting with 1 female 1/4 SAE XPB2M2, WPB2M2, KPB2M2 50 pcs, 50 pcs, 10 pcs	1/4 SAE straight male WDN22M, KDN22M 50 pcs, 10 pcs	Copper brazing fitting (4x6x100 mm) WZE2M1 50 pcs

DN6 fittings

1/4 SAE straight female XBA02N, WBA02N, KBA02N 50 pcs, 50 pcs, 10 pcs	3/8 SAE straight female XBA04N, WBA04N, KBA04N 50 pcs, 50 pcs, 10 pcs	1/4 SAE elbow female 90° XCA02N, WCA02N, KCA02N 50 pcs, 50 pcs, 10 pcs	3/8 SAE elbow female 90° XCA04N, WCA04N, KCA04N 50 pcs, 50 pcs, 10 pcs	Copper brazing fitting (6x8x100 mm) WZE2N1 50 pcs
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THE QUADRA SYSTEM - Assembling instructions



1 Cut the QUADRA capillary hose to the required length using the special WXA004 cutter

2 Slip the nut over the hose (depending on fitting type). Ensure that the threaded side is pointing towards the end of the hose that needs the assembling.

3 When pushing the ferrule over the hose end, ensure its correct positioning, in line with the hose end. Push the insert into the hose end you want to assemble.

4 Pay attention not to move the ferrule over the hose towards the insert positioning it in line with the insert.

5 Crimp the ferrule with our hand pliers type RXA007, up to the limit stop of the pliers: once the optimal deformation has been achieved the pliers will open automatically.

6 Crimp the ferrule using our pliers cod. RXA010. The deformation is achieved when the plier release.

7 The assembling is finished and the eventual nut can easily slide over the ferrule: check the correct positioning of the components and make sure the entire surface of the ferrule has been swaged.

Note:
Once the hose has been installed in the system, do not move or rotate it, to avoid unscrewing of the nut or damaging the fitting and the risk of leakage. Do not exceed maximum performance limits. Respect the nut torque value: Torque wrench 14 7/16" - 20 UNF for 1/4" SAE connections | 16 - 18 N.m. Do not exceed 20 N.m - Torque wrench 22 5/8" - 18 UNF for 3/8" SAE connections | 30 - 32 N.m. Do not exceed 34 N.m.

ACCESSORIES

CUTTER AND BLADES FOR DN2-DN4-DN6 HOSES Cutter blades WXA004, WXB004 1 pcs, 2 pcs	HAND PLIERS FOR DN2 RXA007 1 pcs	HYDRAULIC PLIERS FOR DN4-DN6 HOSES RXA005 1 pcs
QUADRA CASE Empty MR293, Complete W00005 1 pcs, 1 pcs	VALVE OPENER GASKETS NUT CAPS Removable valve opener WTD2Z1, Copper gasket 1/4 WRP502, Copper gasket 3/8 WRP504, QUADRA 1/4 fitting plugs WRW912, QUADRA 3/8 fitting plugs WRW914 50 pcs, 50 pcs, 50 pcs, 50 pcs, 50 pcs	

NEW FREE STAND DISPLAY RACK

W00006 DN2 display
W00007 DN2-4 display
W00008 DN2-4-6 display

NEW ELECTRIC PLIER DN2-4-6

RXA011 Bundle
RXA012 Complete

A tool designed to be powerful, reliable and at the same time easy to use with its long lasting battery. The benefits of using our new Quadra Electric Plier are from the extremely compact design which will be particularly appreciated by our customers. It is lightweight for ease of transport, ease of use and simplifies assembling operations.

POINT TO POINT

Simple and easy to fit pre-assembled solutions made to customer specifications. QUADRA DN2, DN4 and DN6 are assembled to the specific length and fittings required by the customer. The QUADRA assemblies are supplied in 50 unit packs.

type and name of the assembled hose
Straight female 1/4" - Elbow female 1/4"
XXX - total length of QUADRA capillary hose in cm (multiple lengths of 10 cm)
image of an assembled hose
Part number CAGXXX, CCHXXX
Pack 50 pcs, 50 pcs
Code for orange hose
Code for black hose
50 UNIT PACKS

MULTI POINT

Possibility of supplying laid out capillary circuits to customer specification especially designed for pressure test points, gauges, pressure switches including the oil return circuits and oil level equalization, for air conditioning and refrigeration units of each type.

Assemblies and quality management

THE QUALITY SYSTEM - We take great pride in being one of the first companies of our industry to obtain the original ISO 9001 certification back in 1993. In 2013 we achieved ISO 14001:2004 certification which in 2015 was further complemented in our approval to BS OHSAS 18001:2007 certification. We have progressively developed our own internal quality systems to ensure our customer's satisfaction by utilising bespoke computerized production control systems to which all processes within our production facilities are intrinsically linked

Laser scanning system for most accurate measurement	Permeability machine To evaluate the permeability of GOMAX QUADRA hoses for every batch according to EN 1736	FT-IR spectroscopy For a straightforward polymer identification	Logistic up to date
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Every Gomax Component has been Designed, Developed and Certified to ensure Total integrity of the final hose assembly.
Every Gomax Component and hose types are identified with Indelible permanent marking to ensure guaranteed traceability.
Every Gomax finished hose assembly (capillary) is individually identity tagged and uniquely bar coded detailing.