



ROTAREX
VALVES - REGULATORS - SYSTEMS



STAINLESS STEEL HOSES

TABLE OF CONTENTS

DESCRIPTION

ROTAREX® hoses guarantee the highest degree of safety. They are designed and certified in accordance with the latest standards in effect. ROTAREX® hoses allow connection of piping systems and equipment under some of the most severe pressure and/or temperature conditions. They can be easily installed through the use of adapters. There are 2 types of hoses based upon their composition and use.

FX02 hoses consist of a 316L stainless steel inner tube and a stainless steel single or double braid.

FX06 hoses consist of a 316L stainless steel inner tube and a stainless steel double braid.

ROTAREX® hoses have a wide range of uses through the addition of various types of adapters of the ROTAREX® instrumentation line of products.

We recommend a safety cable above 1 meter of length. The safety cable is optional.

All hoses are individually tested hydraulically at 1.5 times the maximum working pressure.

APPLICATIONS

ROTAREX® FX02 and FX06 hoses were designed for efficiency, security and convenience. ROTAREX® hoses are used for liquid and gas service or under ultra-vacuum in industries such as:

- chemical
- petrochemical
- gas
- energy
- paper mill
- research centers
- vacuum applications
- hydraulic systems
- pneumatic systems
- laboratories,
- etc...

DESCRIPTION	P.004
- Description of FX02 hoses	P.004
- Description of FX06 hoses	P.004

SPECIFICATIONS OF FX02 AND FX06 HOSES	P.005
- Technical data	P.005
- Corrective factors for increased temperature	P.005
- Corrective factors for dynamic demand	P.005
- Safety cable	P.005

ORDERING INFORMATION	P.006
- Product configurator	P.006
- Connection description	P.007

INSTALLATION	P.010
---------------------	-------

TECHNICAL DATA	P.011
-----------------------	-------

FX02 | STAINLESS STEEL HOSES

- **FX02** hoses are high pressure hoses and consist of a 316L stainless steel corrugated inner tube and 304 stainless steel double-braided on the outside.

SPECIFICATIONS

Fluid media	Liquids and gases compatible with SS 316L (except acetylene)	Max. working pressure	see table page 6
Inside diameter	6 mm*, 10 mm*	Burst pressure	see table page 6
Temperature range	-40°C to +60°C	Standard length (end connections not included)	500 mm, 1000 mm, 1500 mm, 2000 mm
		Certified max. leak Rate (at max. pressure)	$\leq 1.10^{-8}$ mbar.l.s ⁻¹

*double braid

CONSTRUCTION MATERIAL

	Parts	Material
Wetted parts	Core / Inner tube	SS 316L
	End connections	SS 316L
Non-wetted parts	Braid	SS 304L
	Safety cable (optional)	SS 316L



Special demands available upon request

FX06 | STAINLESS STEEL HOSES

- **FX06** hoses are medium pressure hoses and consist of a 316L stainless steel corrugated inner tube and 304 stainless steel double braid on the outside.

SPECIFICATIONS

Fluid media	Liquids and gases compatible with SS 316L (except acetylene)	Max. working pressure	see table page 6
Inside diameter	1/4", 3/8"	Burst pressure	see table page 6
Temperature range	-40°C to +60°C	Standard length (end connections not included)	500 mm, 1000 mm, 1500 mm, 2000 mm
		Certified max. leak Rate (at max. pressure)	$\leq 1.10^{-8}$ mbar.l.s ⁻¹

CONSTRUCTION MATERIAL

	Parts	Material
Wetted parts	Core / Inner tube	SS 316L
	End connections	SS 316L
Non-wetted parts	Braid	SS 304L
	Safety cable (optional)	SS 316L



Special demands available upon request

SPECIFICATIONS OF FX02 AND FX06 HOSES

TECHNICAL DATA

FX02

Stainless Steel						
Tube nominal diameter	Inner diameter(mm)	Outer diameter (mm)	Max. working pressure at 20°C (bar)	Burst pressure at 20°C (bar)	Min. bend radius (mm)	
					Static	Dynamic
DN 6	6.0	14.3	300	1320	30	190
DN 10	10.0	20.1	240	960	45	250

FX06

Stainless Steel						
Tube nominal diameter	Inner diameter(mm)	Outer diameter (mm)	Max. working pressure at 20°C (bar)	Burst pressure at 20°C (bar)	Min. bend radius (mm)	
					Static	Dynamic
DN ¼"	6.3	9.6	200	800	30	190
DN ⅜"	10.2	14.3	150	600	42	250

CORRECTIVE FACTORS FOR INCREASED TEMPERATURE

FX02 AND FX06

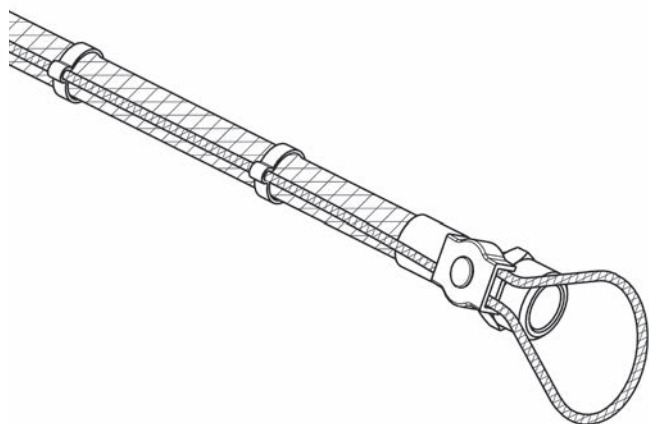
Temperature (°C)	20	60
Corrective factor	1.00	0.90

CORRECTIVE FACTORS FOR DYNAMIC DEMAND

FX02 AND FX06

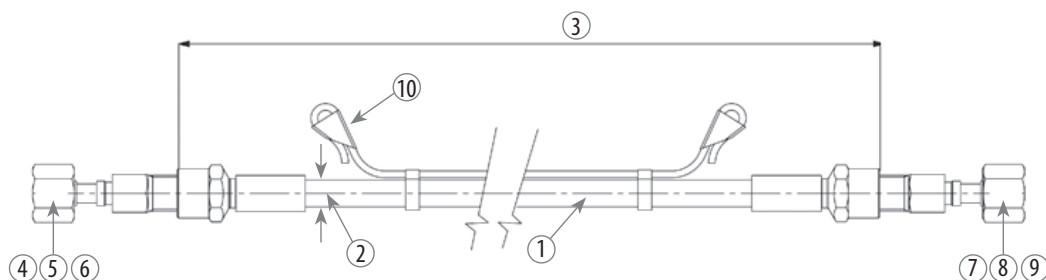
	Without vibration, low and slow motion	Low vibration, frequent uniform flow	Strong vibration, rhythmical ongoing motion
Stationary or slow uniform flow	1.00	1.00	0
Pulsating and swelling flow	0.80	0.64	0.32
Rhythmical and discontinuous flow	0.40	0.32	0.16

SAFETY CABLE



We recommend a safety cable above 1 meter of length of the hose. The safety cable is optional for FX02 and FX06. Hoses for racks and switch over boards are standardly equipped with a stainless steel safety cable.

PRODUCT CONFIGURATOR



1		2		3		4 & 7		5 & 8		6 & 9			
Type		Inner Diameter		Length		Type of connection		Size of connection or cylinder connection		Thread		Options	
FX02		DN6		1500		RB		6		N		C	
Stainless steel 316L / 304	FX02	6 mm	DN6	1500 mm	1500	tube fitting	RB	6 mm	6	NPT	N	Safety cable (recommended)	C
Stainless steel* 316L / 304	FX06	10 mm	DN10	3000 mm	3000	female pipe adapter	UF	10 mm	10	BSPP-RP	G	Elbow on cylinder side**	B
		1/4"*	DN1/4			male pipe adapter	UM	1/4 inch	1/4"	16 x 1,336 F	16	No safety cable, no elbow	A
		3/8"*	DN3/8			tube adapter	ADB	3/8 inch	3/8"	G 3/8 - Female w/ rotating nut	G6		
						female face seal fitting	RVF	1/2 inch	1/2"				
						male face seal fitting	RVM	cylinder connection					
						French Standard cylinder connection	NF						
						German cylinder connection	DIN						

*FX06 Hoses uniquely available with DN1/4 and DN3/8 and vice versa

**with safety cable

NB.: If a cylinder connection is required, please specify the connection and gas type.

Other: special, on demand, according to availability and required quantity

EXAMPLE

REF.: FX02\DN06\1000\BS/3\G6\B

is a hose with the following characteristics:

- SS316L tube, SS304L braid
- Length without adapters: 1000 mm
- Connections: elbow on the side of cylinder for a BS341-3 No. 3 Cylinder and on the other side G3/8 - Female w/ rotating nut
- Safety cable

CONNECTIONS

FX02

METRIC			FRACTIONAL		
Nominal Diameter (DN)	6 mm	10 mm	6 mm	10 mm	
Connection Diameter	6	10	1/4"	3/8"	1/2"
DOUBLE BRAID					
Stainless Steel	RB	X	X	X	X
	UF	-	X	X	X
	UM	-	X	X	X
	RVF	-	X	-	X
	RVM	-	X	-	X
	ADB	X	X	X	X

x = possible configuration

FX06

METRIC			FRACTIONAL		
Nominal Diameter (DN)	1/4"	3/8"	1/4"	3/8"	3/8"
Connection Diameter	6	10	1/4"	3/8"	1/2"
Stainless Steel	RB	X	X	X	X
	UF	-	X	X	X
	UM	-	X	X	X
	RVF	-	X	-	X
	RVM	-	X	-	X
	ADB	X	X	X	X

x = possible configuration

TYPES OF STANDARD THREADS

TAPERED THREADS

N : NPT National Pipe Tapered seal is made on the thread. Thread sealant is required

STRAIGHT OR PARALLEL THREADS

G : BSPP Whitworth cylindrical RP to ISO228/1, BS 2779, JIS B0202
Metal-to-metal sealing to DIN 3852, Form B. O-ring sold separately

MALE UNION

	1/4"	3/8"	1/2"
NPT	X	X	X
G or RP	X	X	X

x = possible configuration

FEMALE UNION

	1/4"	3/8"	1/2"
NPT	X	X	X
G or RP	X	X	X

x = possible configuration

GASKET TYPES*

TYPE	WASHER MATERIAL
FX02 & FX06	PTCFE standard (others on request)

*used with screwed connections



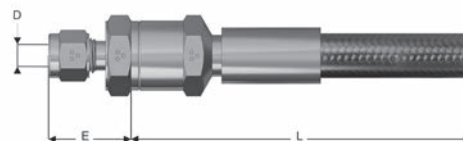
Please note that for carbon monoxide (CO) use copper washers. For acetylene (C₂H₂) & oxygen (O₂) use nickel washers.

CONNECTION DESCRIPTION

TUBE FITTING

RB

- Type: FX02 & FX06
- Dimensions: 6, 10 mm
- 1/4", 3/8", 1/2"

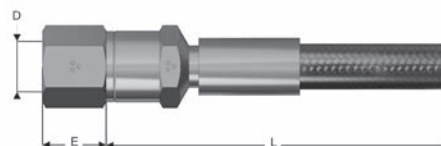


FEMALE PIPE ADAPTER NPT / BSPT / BSPP

UF

- Type: FX02 & FX06
- Dimensions:
- 1/4", 3/8", 1/2"

NOTE: For threads BSPP 1/4", 3/8", 1/2", there is no crewed-on adapter or washer.



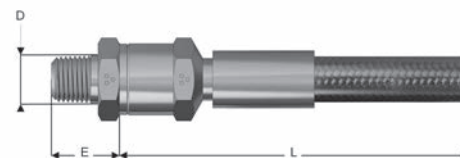
CONNECTION DESCRIPTION

MALE PIPE ADAPTER NPT / BSPP

(SEE TABLE OF STANDARD THREADS ON P. 10)

UM

- Type: FX02 & FX06
- Dimensions:
1/4", 3/8", 1/2"

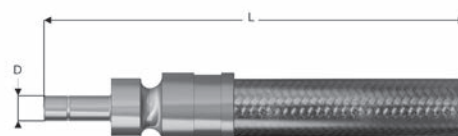


TUBE ADAPTER

ADB

- Type: FX02 & FX06
- Dimensions: 6, 8, 10 mm
1/4", 3/8", 1/2"

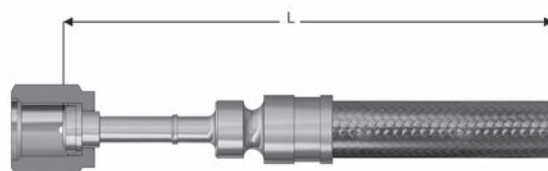
Each connector from our "Tube Fitting" catalog can be mounted on the type ADB Tube adapter to obtain any desired connection.



GAZEL FITTING (FACE SEAL) FEMALE

RVF

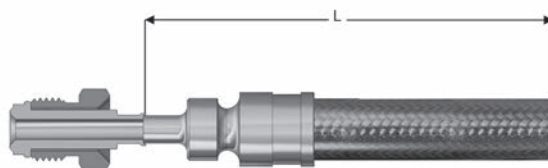
- Type: FX02
- Dimensions:
1/4", 1/2"



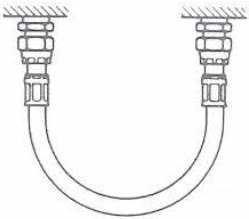
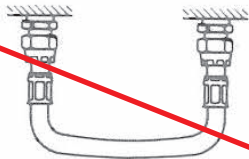
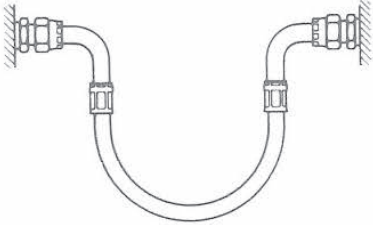
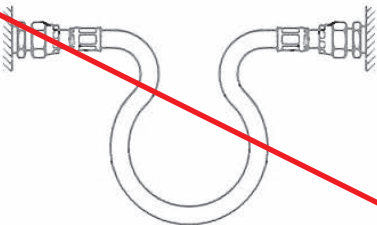
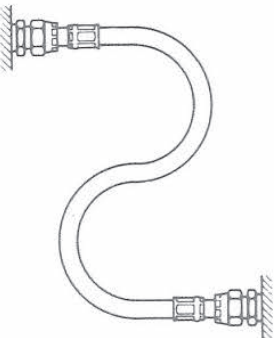
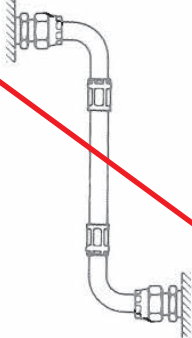
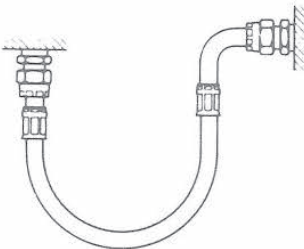
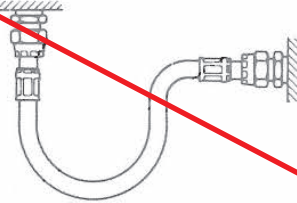
GAZEL FITTING (FACE SEAL) MALE

RVM

- Type: FX02
- Dimensions:
1/4", 1/2"



INSTRUCTIONS FOR PROPER INSTALLATION

RIGHT	WRONG
	
	
	
	
	

TECHNICAL DATA

UNITS

1 bar	=	14,50 psi	=	100 kPa.
1 psi	=	0.069 bar	=	6,89 kPa
1 kPa (ISO)	=	0.01 bar	=	0,1451 psi
1 Kg/cm ²	=	0.980 bar	=	14,22 psi = 98 kPa
T° C (C : Celsius)	=	(T°F – 32) / 1.8	=	T°K - 273,15
T° F (F : Farenheit)	=	(1.8 x T°C) + 32	=	(1.8 x T°K) + 523,69
T° K (K : Kelvin)	=	T°C + 273.16	=	(T°F/ 1.8) + 255,38
T° R (R : Rankine)	=	(1.8 x T°C) + 491.69	=	T°F + 459,69
1 inch	=	25.4 mm		
1 mm	=	0.045 inch		

NORMS TAPERED

Tapered (ISO 7/1)

NPT(National Pipe Tapered) NFE 03-601



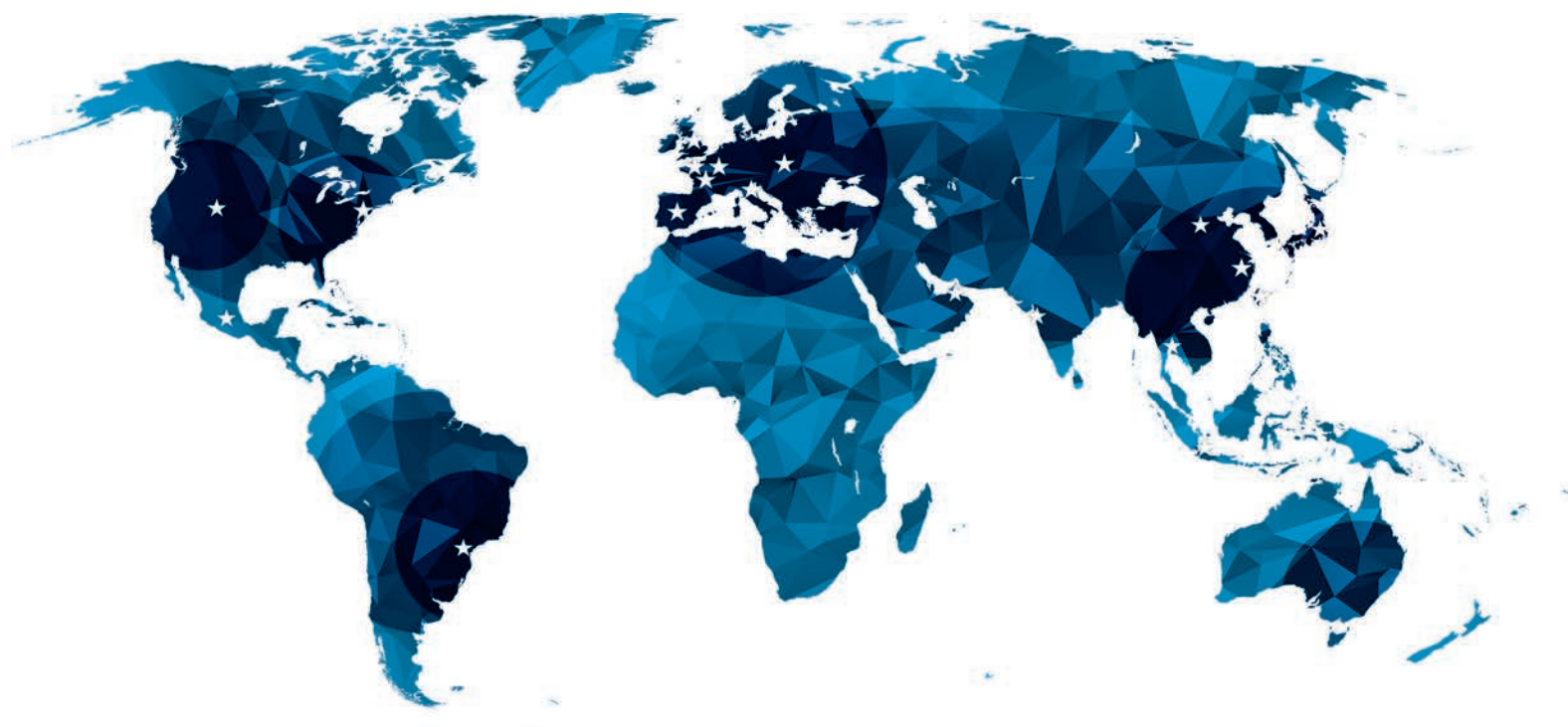
Parallel (ISO228/1)

BSPP (Whitworth) : NFE 03-005



WORLDWIDE HEADQUARTERS

ROTAREX S.A.
24, rue de Diekirch,
L-7440 Lintgen
Luxembourg
Tel.: +352 32 78 32-1
Fax: +352 32 78 32-854
E-mail: info@rotarex.com



REGIONAL / COUNTRY HEADQUARTERS

NORTH AMERICA

USA
Rotarex North America
Hackettstown
E-mail: northamerica@rotarex.com

SOUTH AMERICA

BRASIL
Rotarex Brazil Ltda
São Paulo
E-mail: brasil@rotarex.com

CENTRAL AMERICA

MEXICO
Rotarex Mexico
Mexico City
E-mail: mexico@rotarex.com

EUROPE

EUROPEAN HEADQUARTERS

Rotarex S.A. Luxembourg
24, rue de Diekirch,
L-7440 Lintgen, Luxembourg
Tel.: +352 32 78 32-1
E-mail: sales@rotarex.com

ITALY

Rotarex Italia S.r.l.
Ciliverghe di Mazzano
E-mail: italia@rotarex.com

SPAIN

Rotarex Spain
Madrid
E-mail: spain@rotarex.com

FRANCE

Rotarex France
Paris
E-mail: france@rotarex.com

GERMANY

Rotarex Germany
Gladenbach
E-mail: germany@rotarex.com

POLAND

Rotarex Polska
Brzeg
E-mail: polska@rotarex.com

UNITED KINGDOM

Rotarex UK Ltd.
London
E-mail: uk@rotarex.com

ASIA - PACIFIC

SINGAPORE

Rotarex Fareast Pte Ltd
Singapore
E-mail: fareast@rotarex.com

CHINA

Rotarex Star
Shanghai
E-mail: china@rotarex.com

JAPAN

Rotarex Japan Ltd
Tokyo
E-mail: japan@rotarex.com

INDIA

Rotarex ENGG. PVT. LTD.
Mumbai
E-mail: india@rotarex.com

SOUTH KOREA

Rotarex South Korea
Hwasung-si
E-mail: korea@rotarex.com

THAILAND

Rotarex (Thailand) Co Ltd.
Pakkret
E-mail: thailand@rotarex.com

TAIWAN

Rotarex Taiwan
Taipei
E-mail: info-taiwan@rotarex.com

MALAYSIA

Rotarex Malaysia
Kuala Lumpur
E-mail: malaysia@rotarex.com

PHILIPPINES

Rotarex Philippines
Manila
E-mail: philippines@rotarex.com

INDONESIA

Rotarex Indonesia
Jakarta
E-mail: Indonesia@rotarex.com

VIETNAM

Rotarex Vietnam
Hanoi
E-mail: vietnam@rotarex.com

MIDDLE EAST / AFRICA

MIDDLE EAST

Rotarex Middle East
Dubai
E-mail: middle-east@rotarex.com



For more contact details go to
www.rotarex.com/locations