

# Rotarex

## Ultra High Purity Fittings



# METAL GASKET FACE SEAL FITTINGS

				
<b>DNI-R / JSS-R</b> P.008	<b>DNI/JSS</b> P.008	<b>FN</b> P.009	<b>MN</b> P.009	<b>SMN</b> P.009
				
<b>EBF</b> P.010	<b>EBM</b> P.010	<b>EBL</b> P.010	<b>MG.EMC</b> P.011	<b>MG.EM</b> P.011
				
<b>EMCS-AB</b> P.012	<b>EMS-AB</b> P.012	<b>EMC-AB</b> P.013	<b>EM-AB</b> P.013	<b>EMR-AB</b> P.014
				
<b>EFC</b> P.014	<b>RSW</b> P.014	<b>EF</b> P.015	<b>EM</b> P.015	<b>TA</b> P.015
				
<b>MG.EFC</b> P.016	<b>MG.EF</b> P.016	<b>EFR-AB</b> P.016	<b>EFC-AB</b> P.017	<b>EF-AB</b> P.017
				
<b>UM</b> P.018	<b>DMRU</b> P.018	<b>STMC</b> P.018	<b>RA</b> P.019	<b>RB</b> P.019
				
<b>U-FM</b> P.019	<b>CG</b> P.020	<b>UDF</b> P.020	<b>DFRU</b> P.020	<b>U-F</b> P.021
				
<b>UM-NPT</b> P.021	<b>UF-NPT</b> P.021	<b>UM-NPTF</b> P.022	<b>UF-NPTF</b> P.022	<b>UM-DB</b> P.023

# METAL GASKET FACE SEAL FITTINGS (continued)



**UF-DB** P.023



**BU-NPT** P. 024



**BU-DB** P. 024

# HIGH FLOW FITTINGS



**FN-HF** P. 024



**MN-HF** P. 025



**EM-HF** P. 025



**UM-ABW HF** P. 025



**UM-AB HF** P. 026



**BU-HF** P. 026

# WELD FITTINGS



**EB-ABW** P. 026



**RU-ABW** P. 027



**E-ABW** P. 027



**RE-ABW** P. 027



**T-ABW** P. 028



**RT-ABW** P. 028



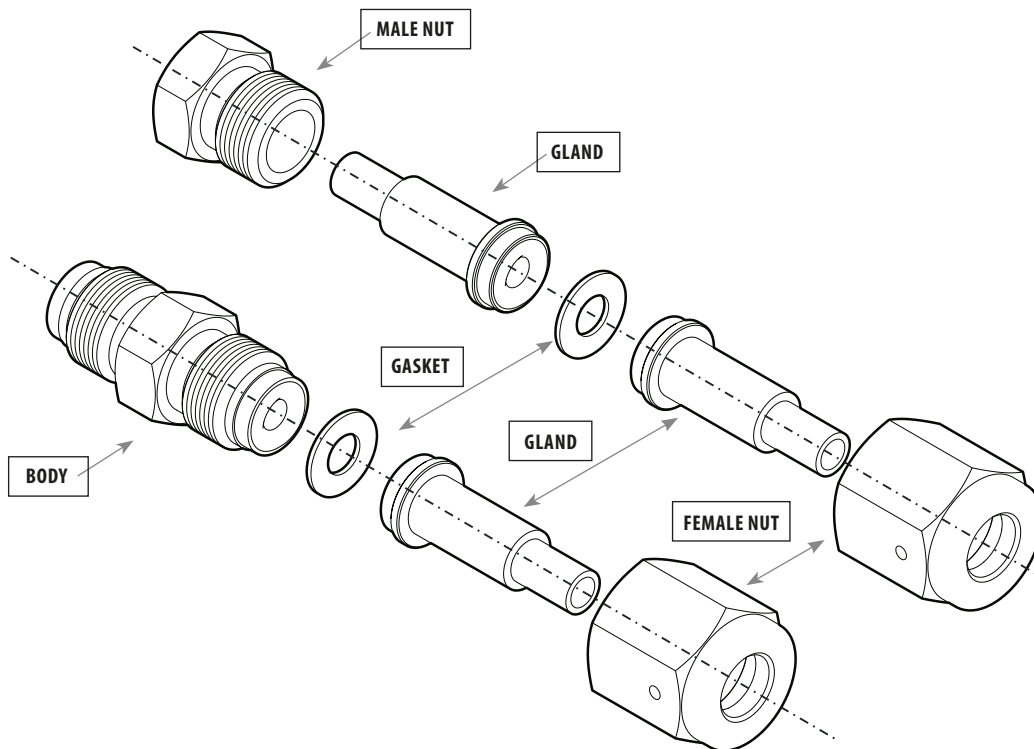
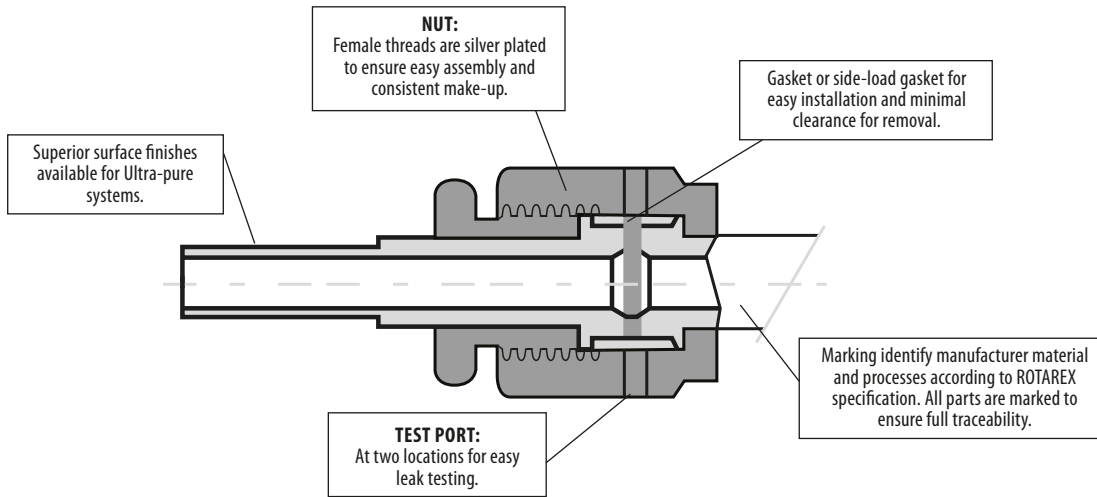
**C-ABW** P. 029

# DESCRIPTION

## GAZEL® METAL GASKET FACE SEAL FITTING

GAZEL® components offer the high purity of a metal to metal seal, providing leak-free service from critical vacuum to high pressure.

The seal on a GAZEL® assembly is made when the gasket is compressed by two highly polished beads during the engagement of a male nut or body hex and a female nut.



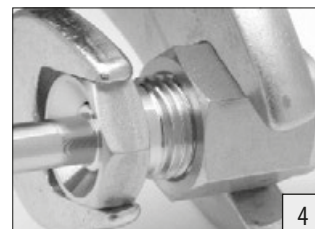
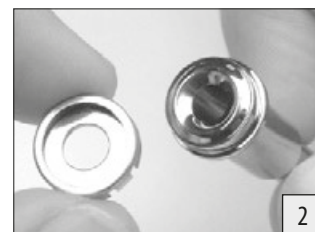
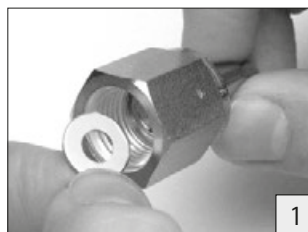
## ASSEMBLY

When using an original style gasket, place it into the female nut whenever possible. No special positioning is needed, because the gasket is self-aligning. (see picture 1)

When using a gasket retainer assembly, press the assembly onto the gland as shown. The retainer assembly will locate the gasket over the bead and hold it in place. Be careful not to scratch or nick the bead as this may affect fitting performance. (see picture 2)

To assemble the connection, hold the male nut or body hex stationary. Tighten the female nut finger-tight. (see picture 3)

Hold the male nut or body hex stationary with a backup wrench. Tighten the female nut 1/8 turn past finger-tight for 316L stainless steel and nickel gaskets. (see picture 4)

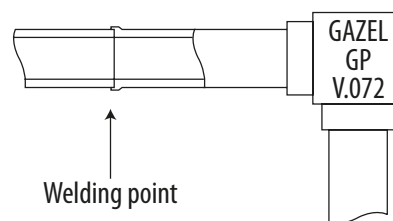
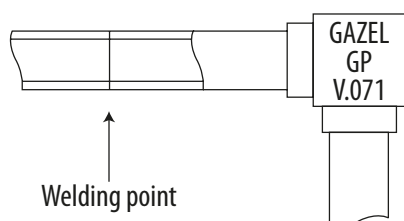


Excessive over-tightening will damage the sealing beads and possibly cause system leakage. The using of a new gasket is necessary for each assembly (the gasket is of single use).

## WELD FITTINGS

We provide two types of configurations for the welding section:

- Without shoulder
- With shoulder



### WITHOUT SHOULDER

This is the optimal configuration for butt welding using an automatic TIG welding machine.

### WITH SHOULDER

Automatic welding configuration with shoulder to facilitate meeting under difficult welding conditions such as not easily accessible or outside piping.

## TECHNICAL DATA

### MATERIALS

Products	Material	Specifications
Gasket	Nickel	ASTM B-162
	316L Stainless steel	ASTM A-167
Nuts	316L Stainless steel	ASME SA-479, ASTM A-276
Glands, Bodies	316L Stainless steel low sulfur	Barstock: ASME SA-479, ASTM A-276 Forgings: ASTM A-182

### DIMENSIONS

Dimensions are in millimeters and in inches.  
Dimensions are only for reference and are subject to change.

Size		Fractional						Metric					Jis	
		1/8"	1/4"	3/8"	1/2"	3/4"	1"	6 mm	8 mm	10 mm	12 mm	18 mm	1/4"	3/8"
Nominal wall thickness	mm	0,71	0,89	0,89	1,25	1,25	1,65	1	1	1	1	1,5	1	1
	inch	0,028	0,035	0,035	0,049	0,049	0,065	0,039	0,039	0,039	0,039	0,059	0,039	0,039
Pressure ratings	psig	5100	5100	3300	3500	2400	2400	6800	4800	3500	3100	3000	5600	3300
	Bar	350	350	220	240	160	160	460	330	240	210	200	380	240

### INTERNAL SURFACE FINISH

Grade	Surface finish		Electropolishing
	Ra µm	Ra µinch	
GS	0,40	16	Ext.
GP	0,15	5	Int. / Ext. not available for 1/8"

### FULL TRACEABILITY

Laser marking identifies manufacturer, batch number, material, processes and surface finish.

### TESTING

Gazel fittings has been helium leak tested to a rate of  $10^{-10}$  std cm<sup>3</sup>/sec.

### PRESSURE RATINGS

Pressure ratings are calculated in accordance with power piping code following ASNE B31.1 for stainless steel fittings at ambient temperature.

### MAX. TEMPERATURE

Material	Temperature	
	°C	°F
Nickel	315	600
316L Stainless steel low sulfur	537	1000

# TECHNICAL DATA

## PRODUCT INSPECTION AND TEST

### Product inspection

- Dimensional inspection
- Internal and external visual
- Inspection
- Internal roughness measurement

The following tests are carried out at the request of customers:

- ESCA: Electron Spectroscopy for Chemical Analyses
- AES: Argon Electron Spectroscopy
- Corrosion test
- Internal fitting measurement

## THREE STAR QUALITY PROCESS

- ISO 9001 Certification  
N°:DE-062832 Q1.
- Fully integrated processing (machining, electropolishing, decontamination, packaging, orbital welding).
- Fully traceability at all steps (SPC CAQS).
- Continuous monitoring of key process parameters.

# NOMENCLATURE

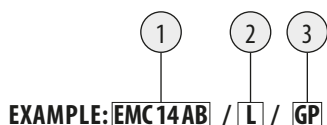
## HOW TO ORDER

- The part number on the fittings data sheets designate the type and the size.
- Just add the material and the surface finish composition symbols shown below.

### EXAMPLE:

- For material composition add A,L, V, M, N or H.
- For surface finish add GS or GP.

## PART NUMBER



1 Write the reference of the selected fittings (according to tables on each product version)

2 A = 316L Standard  
L = 316L Low Sulfur (av. S: 0.005%)  
M = Low Manganese (on request)  
N = NICKEL  
H = Hastelloy® C-22 (on request)

3

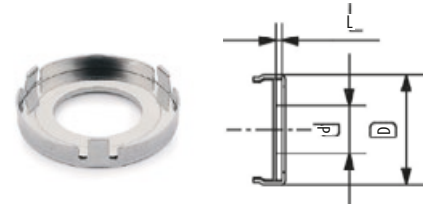
Grade	Surface finish		Electropolishing
	Ra µm	Ra µinch	
GS	0,40	16	Ext.
GP	0,15	5	Int. / Ext. not available for 1/8"

	Fractional							Metric					Jis	
	1/16"	1/8"	1/4"	3/8"	1/2"	3/4"	1"	6 mm	8 mm	10 mm	12 mm	18 mm	1/4"	3/8"
Diameter	1/16"	1/8"	1/4"	3/8"	1/2"	3/4"	1"	6 mm	8 mm	10 mm	12 mm	18 mm	1/4"	3/8"
Size Part Number	116	18	14	38	12	34	100	6M	8M	10M	12M	18M	14J	38J

## GASKET | NICKEL GASKET & RETAINER

### TUBE SIZE

Tube O.D.	Part number	L		d		D	
		mm	inch	mm	inch	mm	inch
¼", 6 mm, 8 mm	DNI 14 R <sup>3</sup>	0,7	0,03	6,1	0,24	12,7	0,50
⅜", ½", 10 mm, 12 mm	DNI 12 R <sup>3</sup>	0,7	0,03	11,2	0,44	20,1	0,79
¾", 18 mm	DNI 34 R	0,7	0,03	16,8	0,66	29,0	1,14
1"	DNI 100 R	0,7	0,03	22,6	0,89	25,6	1,40



## GASKET | NICKEL

### TUBE SIZE

Tube O.D.	Part number	L		d		D	
		mm	inch	mm	inch	mm	inch
⅛"	DNI 18 <sup>1</sup>	0,5	0,02	2,3	0,09	6,6	0,26
¼", 6 mm, 8 mm	DNI 14 <sup>1</sup>	0,7	0,03	6,1	0,24	11,9	0,47
⅜", ½", 10 mm, 12 mm	DNI 12 <sup>1</sup>	0,7	0,03	11,2	0,44	19,8	1,78
¾", 18 mm	DNI 34 <sup>1</sup>	0,7	0,03	16,8	0,66	29,0	1,14
1"	DNI 100 <sup>1</sup>	0,7	0,03	22,6	0,89	35,6	1,40



## GASKET | SILVER PLATED 316L

### TUBE SIZE

Tube O.D.	Part number	L		d		D	
		mm	inch	mm	inch	mm	inch
⅛"	JSS 18	0,5	0,02	2,3	0,09	6,6	0,26
¼", 6 mm, 8 mm	JSS 14 <sup>1,2</sup>	0,7	0,03	6,1	0,24	11,9	0,47
⅜", ½", 10 mm, 12 mm	JSS 12 <sup>1</sup>	0,7	0,03	11,2	0,44	19,8	1,78
¾", 18 mm	JSS 34 <sup>1</sup>	0,7	0,03	16,8	0,66	29,0	1,14
1"	JSS 100 <sup>1</sup>	0,7	0,03	22,6	0,89	35,6	1,40



<sup>1</sup> On request: for silver plated Nickel, use the prefix JNI (Example: JNI 14)

<sup>2</sup> On request: blind gasket, use part number JSS 14 EB

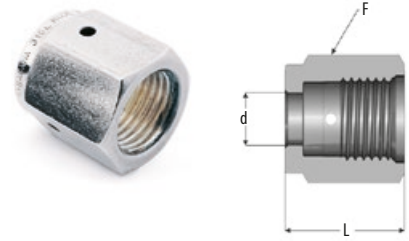
<sup>3</sup> On request in stainless steel, use the prefix JSS (Example: JSS 14 R)



## NUTS | FEMALE NUT

### TUBE SIZE

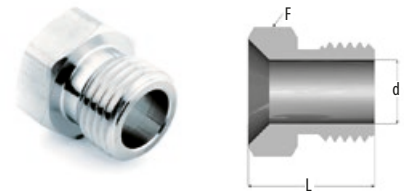
Tube O.D.	Part number	L		d		F
		mm	inch	mm	inch	mm
1/8"	FN 18	13,5	0,53	5,3	0,21	11,1
1/4", 6 mm, 8 mm	FN 14	20,6	0,81	9,1	0,36	19,1
3/8", 1/2", 10 mm, 12 mm	FN 12	22,4	0,88	15,5	0,61	27,0
3/4", 18 mm	FN 34	28,4	1,12	22,6	0,89	38,1
1"	FN 100	34,0	1,34	30,5	1,20	44,5



## NUTS | MALE NUT

### TUBE SIZE

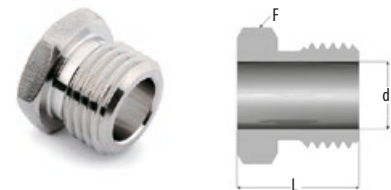
Tube O.D.	Part number	L		d		F
		mm	inch	mm	inch	mm
1/8"	MN 18	12,7	0,50	5,3	0,21	9,5
1/4", 6 mm, 8 mm	MN 14 <sup>1</sup>	18,0	0,71	9,1	0,36	15,9
3/8", 1/2", 10 mm, 12 mm	MN 12	20,6	0,81	15,5	0,61	23,8
3/4", 18 mm	MN 34	25,4	1,00	22,6	0,89	33,3
1"	MN 100	30,2	1,19	30,5	1,20	41,3



## NUTS | SHORT MALE NUT

### TUBE SIZE

Tube O.D.	Part number	L		d		F
		mm	inch	mm	inch	mm
1/4", 6 mm, 8 mm	SMN 14	13,7	0,54	9,1	0,36	15,9
1/4", 6 mm, 8 mm	SMN 14.6	16,5	0,65	9,1	0,36	15,9



<sup>1</sup>A taper at the hex allows the nut to move around 90° tube bends

## PLUGS | FEMALE CAP

### TUBE SIZE

Tube O.D.	Part number	L		L1		F
		mm	inch	mm	inch	mm
1/4", 6 mm, 8 mm	EBF 14 <sup>1</sup>	23,9	0,94	11,2	0,44	19,1
3/8", 1/2", 10 mm, 12 mm	EBF 12 <sup>1</sup>	25,6	1,01	11,4	0,45	27,0
3/4", 18 mm	EBF 34	32,8	1,29	13,7	0,54	38,1
1"	EBF 100	39,1	1,54	16,0	0,63	44,5



## PLUGS | MALE PLUG

### TUBE SIZE

Tube O.D.	Part number	L		F
		mm	inch	mm
1/8"	EBM 18	17,3	0,68	9,5
1/4", 6 mm, 8 mm	EBM 14 <sup>2,3</sup>	23,4	0,92	15,9
3/8", 1/2", 10 mm, 12 mm	EBM 12 <sup>3</sup>	27,4	1,08	23,8
3/4", 18 mm	EBM 34	36,3	1,43	33,3
1"	EBM 100	38,6	1,52	41,3



## PLUGS | GLAND PLUG

### TUBE SIZE

Tube O.D.	Part number	L	
		mm	inch
1/8"	ELB 18	17,8	0,70
1/4", 6 mm, 8 mm	ELB 14 <sup>4</sup>	33,3	1,31
3/8", 1/2", 10 mm, 12 mm	ELB 12	38,1	1,50
3/4", 18 mm	ELB 34	50,8	2,00
1"	ELB 100	56,4	2,22



<sup>1</sup> On request with lanyard, use EBFL as a part number (Example: EBFL 14)

<sup>2</sup> Also available as a rotatable plug. Ordering number: EBMR 14

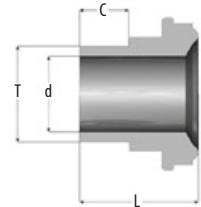
<sup>3</sup> On request with lanyard, use EBML as a part number (Example: EBML 14)

<sup>4</sup> On request it can be delivered with L = 19.0 (0.75") Part number: EB 14

## GLANDS | MINI SHORT FEMALE GLAND

### TUBE SIZE

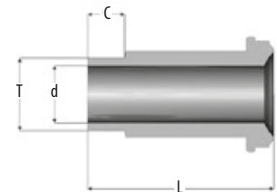
Tube O.D.	Part number	L		d		C		Nominal Wall Thickness		Working Pressure	
		mm	inch	mm	inch	mm	inch	mm	inch	psig	bar
<b>FRACTIONAL</b>											
¼"	MG.EMC 14	15,2	0,60	4,6	0,18	6,4	0,25	0,89	0,035	5100	350
⅜"	MG.EMC 38	15,7	0,62	7,7	0,30	6,4	0,25	0,89	0,035	3300	220
½"	MG.EMC 12	15,7	0,62	10,2	0,40	6,4	0,25	1,25	0,049	3500	240
<b>METRIC</b>											
6 mm	MG.EMC 6M	15,2	0,60	4,0	0,16	6,4	0,25	1,0	0,039	6800	460
8 mm	MG.EMC 8M	15,7	0,62	6,0	0,24	6,4	0,25	1,0	0,039	4800	330
<b>JIS</b>											
¼"	MG.EMC 14J	15,2	0,60	4,4	0,17	6,4	0,25	1,0	0,039	5600	380
⅜"	MG.EMC 38J	15,7	0,62	7,5	0,39	6,4	0,25	1,0	0,039	3500	240



## GLANDS | MINI MALE GLAND

### TUBE SIZE

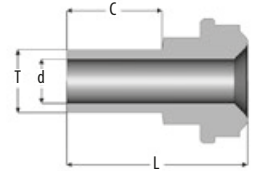
Tube O.D.	Part number	L		d		C		Nominal Wall Thickness		Working Pressure	
		mm	inch	mm	inch	mm	inch	mm	inch	psig	bar
<b>FRACTIONAL</b>											
⅛"	MG.EM 18	23,4	0,92	2,1	0,08	6,4	0,25	0,71	0,028	5100	350
¼"	MG.EM 14	30,5	1,20	4,6	0,18	6,4	0,25	0,89	0,035	3300	220
⅜"	MG.EM 38	32,8	1,29	7,7	0,30	6,4	0,25	0,89	0,035	3300	240
½"	MG.EM 12	32,8	1,29	10,2	0,40	6,4	0,25	1,25	0,049	3500	240
<b>METRIC</b>											
6 mm	MG.EM 6M	30,5	1,20	4,0	0,16	6,4	0,25	1,0	0,039	6800	460
<b>JIS</b>											
¼"	MG.EM 14J	30,5	1,20	4,4	0,17	6,4	0,25	1,0	0,039	5600	380
⅜"	MG.EM 38J	32,8	1,29	7,5	0,29	6,4	0,25	1,0	0,039	3500	240



## GLANDS | AUTOMATIC TUBE WELD SHORT FEMALE GLAND

## TUBE SIZE

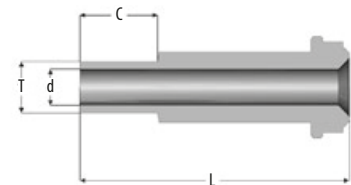
Tube O.D.	Part number	L		d		C		Nominal Wall Thickness		Working Pressure	
		mm	inch	mm	inch	mm	inch	mm	inch	psig	bar
<b>FRACTIONAL</b>											
1/4"	EMCS 14 AB	18,3	0,72	4,6	0,18	9,6	0,38	0,89	0,035	5100	350
1/2"	EMCS 12 AB	18,8	0,74	10,2	0,40	9,6	0,38	1,25	0,049	3500	240
<b>JIS</b>											
1/4"	EMCS 14J AB	18,3	0,72	4,4	0,17	9,6	0,38	1,0	0,039	5600	380
3/8"	EMCS 38J AB	18,8	0,74	7,5	0,29	9,6	0,38	1,0	0,039	3500	240



## GLANDS | AUTOMATIC TUBE WELD MALE GLAND

## TUBE SIZE

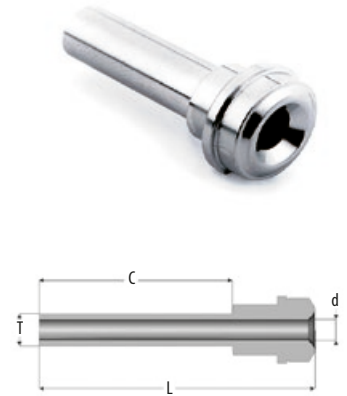
Tube O.D.	Part number	L		d		C		Nominal Wall Thickness		Working Pressure	
		mm	inch	mm	inch	mm	inch	mm	inch	psig	bar
<b>FRACTIONAL</b>											
1/4"	EMCA 14 AB	33,3	1,31	4,6	0,18	9,1	0,36	0,89	0,035	5100	350
1/4"	EMS 14 AB	33,5	1,32	4,6	0,18	9,6	0,38	0,89	0,035	5100	350
1/2"	EMS 12 AB	38,8	1,33	10,2	0,40	9,6	0,38	1,25	0,049	3500	240
<b>JIS</b>											
1/4"	EMS 14J AB	33,5	1,32	4,4	0,17	9,6	0,38	1,0	0,039	5600	380
3/8"	EMS 38J AB	35,8	1,41	7,5	0,29	9,6	0,38	1,0	0,039	3500	240



## GLANDS | AUTOMATIC TUBE WELD SHORT FEMALE GLAND

### TUBE SIZE

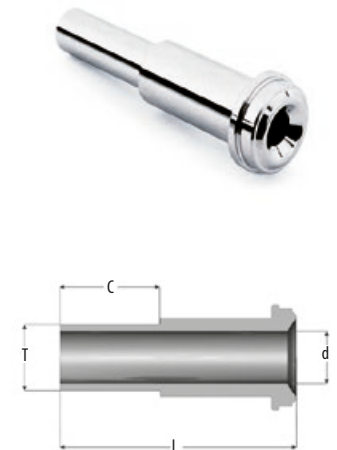
Tube O.D.	Part number	L		d		C		Nominal Wall Thickness		Working Pressure	
		mm	inch	mm	inch	mm	inch	mm	inch	psig	bar
<b>FRACTIONAL</b>											
1/2"	EMC 18 AB	27,4	1,08	2,1	0,08	19,1	0,75	0,71	0,028	5100	350
1/4"	EMC 14 AB	27,9	1,10	4,6	0,18	19,1	0,75	0,89	0,035	5100	350
3/8"	EMC 38 AB	28,4	1,12	7,7	0,30	19,1	0,75	0,89	0,035	3300	220
1/2"	EMC 12 AB	28,4	1,12	10,2	0,40	19,1	0,75	1,25	0,049	3500	240
<b>METRIC</b>											
6 mm	EMC 6M AB	29,5	1,16	4,0	0,16	19,1	0,75	1,0	0,039	6800	460
8 mm	EMC 8M AB	29,5	1,16	6,0	0,24	19,1	0,75	1,0	0,039	4800	330
10 mm	EMC 10M AB	29,5	1,16	8,0	0,31	19,1	0,75	1,0	0,039	3500	240
12 mm	EMC 12M AB	29,5	1,16	10,0	0,39	19,1	0,75	1,0	0,039	3100	210
18 mm	EMC 18M AB	31,0	1,22	15,0	0,59	19,1	0,75	1,5	0,059	3000	200
<b>JIS</b>											
1/4"	EMC 14J AB	27,9	1,10	4,4	0,17	19,1	0,75	1,0	0,039	5600	380
3/8"	EMC 38J AB	28,4	1,12	7,5	0,29	19,1	0,75	1,0	0,039	3300	240



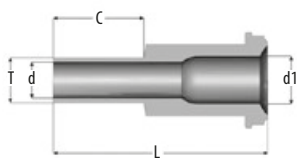
## GLANDS | AUTOMATIC TUBE WELD MALE GLAND

### TUBE SIZE

Tube O.D.	Part number	L		d		C		Nominal Wall Thickness		Working Pressure	
		mm	inch	mm	inch	mm	inch	mm	inch	psig	bar
<b>FRACTIONAL</b>											
1/8"	EM 18 AB	36,1	1,42	2,1	0,08	19,1	0,75	0,71	0,028	5100	350
1/4"	EM 14 AB	43,2	1,70	4,6	0,18	19,1	0,75	0,89	0,035	5100	350
3/8"	EM 38 AB	45,5	1,79	7,7	0,30	19,1	0,75	0,89	0,035	3300	220
1/2"	EM 12 AB	45,5	1,79	10,2	0,40	19,1	0,75	1,25	0,049	3500	240
3/4"	EM 34 AB	51,6	2,03	16,5	0,65	19,1	0,75	1,25	0,049	2400	160
1"	EM 100 AB	58,9	2,32	22,1	0,87	19,1	0,75	1,65	0,065	2400	160
<b>METRIC</b>											
6 mm	EM 6M AB	43,1	1,70	4,0	0,16	19,1	0,75	1,0	0,039	6800	460
8 mm	EM 8M AB	43,1	1,70	6,0	0,24	19,1	0,75	1,0	0,039	4800	330
10 mm	EM 10M AB	45,5	1,79	8,0	0,31	19,1	0,75	1,0	0,039	3500	240
12 mm	EM 12M AB	45,5	1,79	10,0	0,39	19,1	0,75	1,0	0,039	3100	210
18 mm	EM 18M AB	51,6	2,03	15,0	0,59	19,1	0,75	2,5	0,059	3100	200
<b>JIS</b>											
1/4"	EM 14J AB	43,2	1,70	4,4	0,17	19,1	0,75	1,0	0,039	5600	380
3/8"	EM 38J AB	45,5	1,79	7,5	0,29	19,1	0,75	1,0	0,039	3300	240



## GLANDS | AUTOMATIC TUBE WELD REDUCING MALE GLAND



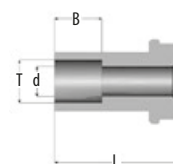
### TUBE SIZE - FRACTIONAL

T1 Tube O.D.	T Tube O.D.	Part number	L		d1		d		C		Nominal Wall Thickness		Working Pressure	
			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	psig	bar
1/2"	1/4"	EMR 12 14 AB	45,5	1,79	10,2	0,40	4,6	0,18	19,1	0,75	0,89	0,035	3500	240
1/2"	3/8"	EMR 12 38 AB	45,5	1,79	10,2	0,40	7,7	0,30	19,1	0,75	0,89	0,035	3300	220
1/2"	1/4"	EMCR 12 14 AB	28,4	1,12	10,2	0,40	4,6	0,18	19,1	0,75	0,89	0,035	3500	240
1/2"	3/8"	EMCR 12 38 AB	28,4	1,12	10,2	0,40	7,7	0,30	19,1	0,75	0,89	0,035	3300	220

## GLANDS | SHORT SOCKET WELD GLAND

### TUBE SIZE - FRACTIONAL

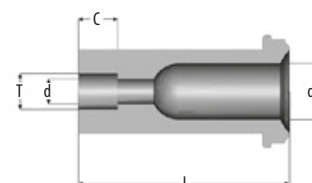
T Tube O.D.	Part number	L		d		B	Working Pressure	
		mm	inch	mm	inch		psig	bar
1/4"	EFC 14	12,7	0,50	4,6	0,18	7,9	5500	370
1/4"	EFC 14	19,1	0,75	4,6	0,18	7,1	5500	370



## GLANDS | REDUCING SOCKET WELD GLAND

### TUBE SIZE - FRACTIONAL

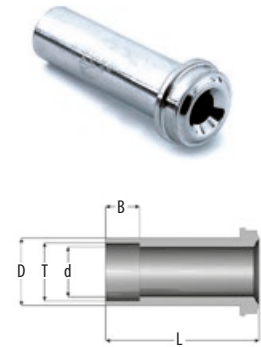
T1 Tube O.D.	T Tube O.D.	Part number	L		d1		d		B	Working Pressure	
			mm	inch	mm	inch	mm	inch		psig	bar
1/4"	1/8"	RSW 14 18	33,3	1,31	4,6	0,18	2,1	0,08	2,5	8000	550
1/2"	1/4"	RSW 12 14	38,0	1,50	10,2	0,40	4,6	0,18	7,1	3500	240



## GLANDS | SOCKET WELD GLAND

### TUBE SIZE - FRACTIONAL

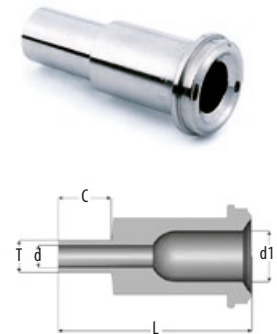
T Tube O.D.	Part number	L		d		D	B	Working Pressure	
		mm	inch	mm	inch			psig	bar
1/16"	EF 116 <sup>1,2</sup>	17,8	0,70	1,5	0,06	3,3	2,5	9000	620
1/8"	EF 18	17,8	0,70	2,1	0,08	5,1	2,5	7100	480
1/4"	EF 14	33,3	1,31	4,6	0,18	8,9	7,1	5500	370
3/8"	EF 38	38,1	1,50	7,7	0,30	15,2	8,0	3500	240
1/2"	EF 12	38,1	1,50	10,2	0,40	15,2	9,6	3000	200
3/4"	EF 34	50,8	2,00	16,5	0,65	22,4	11,2	2800	190
1"	EF 100	56,4	2,22	22,1	0,87	30,2	15,7	2400	160



## GLANDS | MALE WELD GLAND

### TUBE SIZE - FRACTIONAL

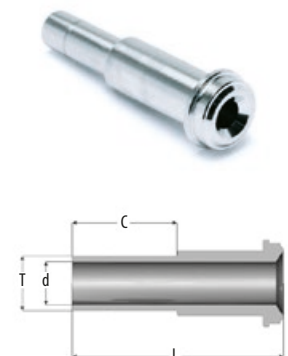
T1 Tube O.D.	T Tube O.D.	Part number	L		d		d1		C		Working Pressure	
			mm	inch	mm	inch	mm	inch	mm	inch	psig	bar
1/8"	1/8"	EM 18	17,8	0,70	1,5	0,06	2,1	0,08	7,1	0,28	9000	620
1/4"	1/8"	EMR 14 18	33,3	1,31	1,5	0,06	2,1	0,08	7,1	0,28	8000	550
1/4"	1/4"	EM 14	33,3	1,31	3,0	0,12	4,6	0,18	10,4	0,41	8000	550
1/2"	1/4"	EMR 12 14	38,1	1,50	3,0	0,12	4,6	0,18	10,4	0,41	3500	240
1/2"	3/8"	EM 38	38,1	1,50	7,1	0,28	7,7	0,30	10,4	0,41	3500	240
1/2"	1/2"	EM 12	38,1	1,50	10,2	0,40	10,2	0,40	12,7	0,50	3500	240
3/4"	3/4"	EM 34	50,8	2,00	13,5	0,53	16,5	0,65	15,7	0,62	3000	200
1"	1"	EM 100	56,4	2,22	19,1	0,75	22,1	0,87	20,6	0,81	2400	160



## GLANDS | TUBE ADAPTER

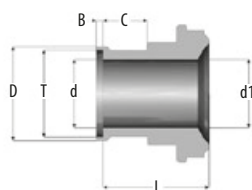
### TUBE SIZE - FRACTIONAL

T1 Tube O.D.	Part number	L		d		C		Working Pressure	
		mm	inch	mm	inch	mm	inch	psig	bar
1/4"	TA 14	41,0	1,61	4,6	0,18	16,2	0,64	2400	160
3/8"	TA 38	46,0	1,81	7,7	0,30	17,8	0,70	1500	100
1/2"	TA 12	49,3	1,94	10,2	0,40	24,4	0,96	1500	100



1) Use DNI 18 and FN 18 or MN 18  
2) Minimum quantity

## GLANDS | MINI SHORT FEMALE GLAND



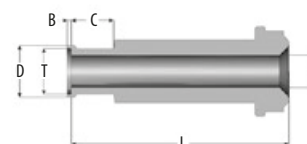
### TUBE SIZE - FRACTIONAL

T1 Tube O.D.	T Tube O.D.	Part number	L		d1		d		D	B	C		Nominal Wall Thickness		Working Pressure	
			mm	inch	mm	inch	mm	inch			mm	inch	mm	inch	psig	bar
1/8"	1/8"	MG.EFC 14 18	15,6	0,61	4,6	0,18	2,1	0,08	3,8	0,3	6,4	0,25	0,71	0,028	5100	350
1/4"	1/4"	MG.EFC 14	15,7	0,62	4,6	0,18	4,6	0,18	7,4	0,5	6,4	0,25	0,89	0,035	5100	350
3/8"	3/8"	MG.EFC 38	16,5	0,65	7,7	0,30	7,7	0,30	10,5	0,8	6,4	0,25	0,89	0,035	3300	220
1/2"	1/2"	MG.EFC 12	16,7	0,66	10,2	0,40	10,2	0,40	14,0	1,0	6,4	0,25	1,25	0,049	3500	240

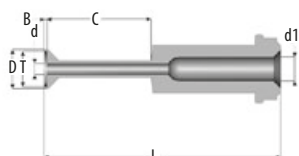
## GLANDS | MINI MALE GLAND

### TUBE SIZE - FRACTIONAL

T Tube O.D.	Part number	L		d		D	B	C		Nominal Wall Thickness		Working Pressure	
		mm	inch	mm	inch			mm	inch	mm	inch	psig	bar
1/8"	MG.EF 18	23,8	0,94	2,1	0,08	3,8	0,5	6,4	0,25	0,71	0,028	5100	350
1/4"	MG.EF 14	31,0	1,22	4,6	0,18	7,4	0,5	6,4	0,25	0,89	0,035	5100	350
1/2"	MG.EF 12	33,8	1,33	10,2	0,40	14,0	1,0	6,4	0,25	1,3	0,049	3500	240



## GLANDS | AUTOMATIC TUBE WELD REDUCING GLAND



### TUBE SIZE - FRACTIONAL

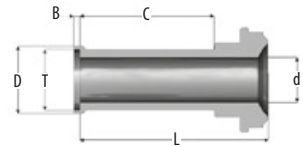
T Tube O.D.	Part number	L		d1		d		D	B	C		Nominal Wall Thickness		Working Pressure	
		mm	inch	mm	inch	mm	inch			mm	inch	mm	inch	psig	bar
1/4"	EFR 14 18 AB	43,5	1,71	4,6	0,18	2,1	0,08	3,8	0,5	19,1	0,75	0,71	0,028	5100	350
1/4"	EFCR 14 18 AB	28,2	1,11	4,6	0,18	2,1	0,08	3,8	0,5	19,1	0,75	0,71	0,028	5100	350
1/2"	EFR 12 14 AB	46,2	1,82	10,2	0,40	4,6	0,18	7,4	0,5	19,1	0,75	0,89	0,035	3500	240
1/2"	EFR 12 38 AB	46,2	1,82	10,2	0,40	7,7	0,30	14,0	0,8	19,1	0,75	0,89	0,035	3500	240



## GLANDS | AUTOMATIC TUBE WELD SHORT FEMALE GLAND

### TUBE SIZE

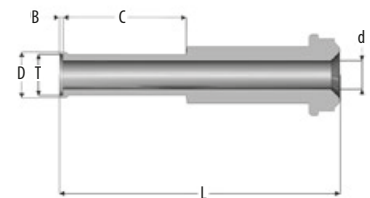
T Tube O.D.	Part number	L		d		D	B	C		Nominal Wall Thickness		Working Pressure	
		mm	inch	mm	inch			mm	mm	mm	inch	mm	inch
<b>FRACTIONAL</b>													
1/4"	EFC 14 AB	28,4	1,12	4,6	0,18	7,4	0,5	19,1	0,75	0,89	0,035	5100	350
3/8"	EFC 38 AB	29,2	1,15	7,7	0,30	10,5	0,8	19,1	0,75	0,89	0,035	3300	220
1/2"	EFC 12 AB	29,5	1,16	10,2	0,40	14,0	1,0	19,1	0,75	1,25	0,049	3500	240
<b>METRIC</b>													
6 mm	EFC 6M AB	30,0	1,18	4,0	0,16	6,9	0,5	19,1	0,75	1,0	0,039	6800	460
8 mm	EFC 8M AB	30,2	1,19	6,0	0,24	8,9	0,8	19,1	0,75	1,0	0,039	4800	330
10 mm	EFC 10M AB	31,0	1,22	8,0	0,31	10,9	0,8	19,1	0,75	1,0	0,039	3500	240
12 mm	EFC 12M AB	30,5	1,20	10,0	0,39	13,2	1,0	19,1	0,75	1,0	0,039	3100	210
<b>JIS</b>													
1/4"	EFC 14J AB	43,7	1,72	4,4	0,17	7,4	0,5	19,1	0,75	1,0	0,039	5600	380
3/8"	EFC 38J AB	46,2	1,82	7,5	0,29	10,5	0,8	19,1	0,75	1,0	0,039	3500	240



## GLANDS | AUTOMATIC TUBE WELD MALE GLAND

### TUBE SIZE

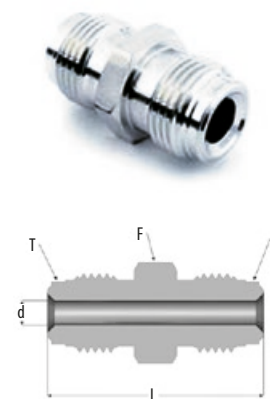
T Tube O.D.	Part number	L		d		D	B	C		Nominal Wall Thickness		Working Pressure	
		mm	inch	mm	inch			mm	mm	mm	inch	mm	inch
<b>FRACTIONAL</b>													
1/4"	EF 14 AB	43,7	1,72	4,6	0,18	7,4	0,5	19,1	0,75	0,89	0,035	5100	350
3/8"	EF 38 AB	46,2	1,82	7,7	0,30	10,5	0,8	19,1	0,75	0,89	0,035	3300	220
1/2"	EF 12 AB	46,5	1,83	10,2	0,40	14,0	1,0	19,1	0,75	1,25	0,049	3500	240
3/4"	EF 34 AB	52,6	2,07	16,5	0,65	20,3	1,0	19,1	0,75	1,25	0,049	2400	160
1/2"	EF 100 AB	65,3	2,57	22,1	0,87	26,9	1,0	24,4	0,75	1,65	0,065	2400	160
<b>METRIC</b>													
6 mm	EF 6M AB	43,7	1,72	4,0	0,16	6,9	0,5	19,1	0,75	1,0	0,039	6800	460
8 mm	EF 8M AB	44,0	1,73	6,0	0,24	8,9	0,8	19,1	0,75	1,0	0,039	4800	330
12 mm	EF 12M AB	46,5	1,83	10,0	0,39	13,2	1,0	19,1	0,75	1,0	0,039	3500	240
18 mm	EF 18M AB	52,6	2,07	15,0	0,59	19,2	1,0	19,1	0,75	1,5	0,059	3100	210
<b>JIS</b>													
1/4"	EF 14J AB	43,7	1,72	4,4	0,17	7,4	0,5	19,1	0,75	1,0	0,039	5600	380
3/8"	EF 38J AB	46,2	1,83	7,5	0,29	10,5	0,8	19,1	0,75	1,0	0,039	3500	240



## UNIONS | DOUBLE MALE UNION

### TUBE SIZE - FRACTIONAL

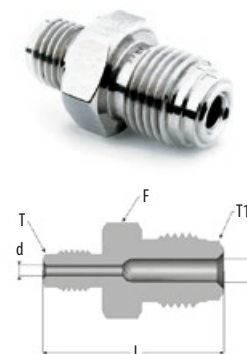
T Tube O.D.	Part number	L		d		F	Working Pressure	
		mm	inch	mm	inch		psig	bar
1/8"	UM 18 <sup>1</sup>	28,7	1,13	2,1	0,08	9,5	9000	620
1/4"	UM 14 <sup>1</sup>	39,4	1,55	4,6	0,18	15,9	8000	550
1/2"	UM 12 <sup>1</sup>	46,7	1,84	10,2	0,40	23,8	3500	240
3/4"	UM 34 <sup>1</sup>	62,0	2,44	16,5	0,65	33,3	3000	200
1"	UM 100 <sup>1</sup>	65,8	2,59	22,1	0,87	41,3	2400	160



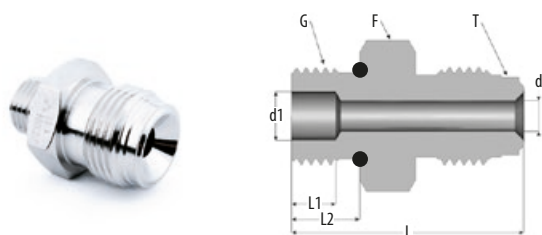
## UNIONS | DOUBLE MALE REDUCING UNION

### TUBE SIZE - FRACTIONAL

T1 Tube O.D.	T Tube O.D.	Part number	L		d1		d		F	Working Pressure	
			mm	inch	mm	inch	mm	inch		mm	psig
1/4"	1/8"	DMRU 14 18 <sup>1</sup>	34,8	1,37	2,1	0,08	4,6	0,18	15,9	8000	550
1/2"	1/4"	DMRU 12 14 <sup>1</sup>	43,4	1,71	4,6	0,18	10,2	0,40	23,8	3500	240



## UNIONS | STRAIGHT THREAD MALE CONNECTOR, O-RING



### TUBE SIZE - FRACTIONAL

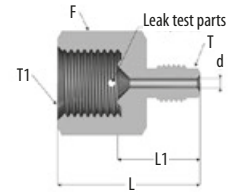
T Tube O.D.	Part number	L		L1	L2	d1		d		F	G	O-ring Size N°	Working Pressure	
		mm	inch			mm	inch	mm	inch				mm	psig
1/4"	STMC 14 <sup>1,2</sup>	33,8	1,33	6,4	9,9	7,1	0,28	4,6	0,18	19,1	9-16"-18	FLUOROCARBON 906	4500	310
1/2"	STMC 12 12 <sup>1,2</sup>	42,2	1,66	10,2	12,7	15	0,59	7,1	0,28	25,4	7/8"-14	FLUOROCARBON 910	3500	240
1/2"	STMC 12 14 <sup>1,2</sup>	37,6	1,48	6,4	9,9	7,1	0,28	7,1	0,28	23,8	9/16"-18	FLUOROCARBON 906	3500	240

1) These fittings should be assembled only with rotating male or female nuts  
2) O-rings fluorocarbon FKM standard, other materials on request

## UNIONS | REDUCING ADAPTER

### TUBE SIZE - FRACTIONAL

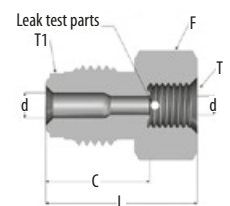
T1 Tube O.D.	T Tube O.D.	Part number	L		L1		d		F		Working Pressure	
			mm	inch	mm	mm	mm	inch	mm	psig	bar	
1/4"	1/8"	RA 14 18 <sup>1</sup>	30,2	1,19	17,5	2,1	0,08	19,1	8000	550		
1/2"	1/4"	RA 12 14 <sup>1</sup>	35,8	1,41	21,6	4,6	0,18	27,0	3500	240		



## UNIONS | REDUCING ADAPTER

### TUBE SIZE - FRACTIONAL

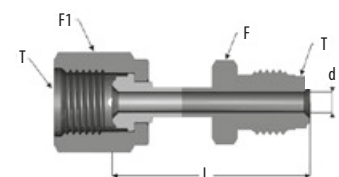
T1 Tube O.D.	T Tube O.D.	Part number	L		L1		d		F		Working Pressure	
			mm	inch	mm	mm	mm	inch	mm	psig	bar	
1/4"	1/8"	RB 14 18 <sup>1</sup>	36,9	1,06	19,3	3,6	0,14	15,9	8000	550		
1/2"	1/4"	RB 12 14 <sup>1</sup>	35,8	1,41	23,1	6,3	0,25	23,8	3500	240		



## UNIONS | MALE FEMALE UNION

### TUBE SIZE - FRACTIONAL

T Tube O.D.	Part number	L		d		F		F1		Working Pressure	
		mm	inch	mm	inch	mm	mm	mm	psig	bar	
1/4"	U 14 FM <sup>1</sup>	43,4	1,71	4,6	0,18	15,9	19,1	5100	350		

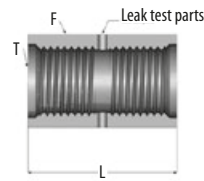


1) These fittings should be assembled only with rotating male or female nuts

## UNIONS | COUPLING

### TUBE SIZE - FRACTIONAL

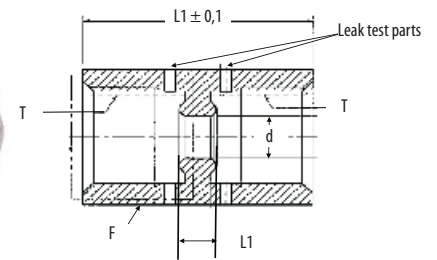
T Tube O.D.	Part number	L		F
		mm	inch	mm
1/8"	CG 18 <sup>1</sup>	16,8	0,66	11,1
1/4"	CG 14 <sup>1</sup>	30,2	1,19	19,1
1/2"	CG 12 <sup>1</sup>	33,3	1,31	27,0
3/4"	CG 34 <sup>1</sup>	42,7	1,68	38,1
1"	CG 100 <sup>1</sup>	51,8	2,04	44,5



## UNIONS | DOUBLE FEMALE UNION

### TUBE SIZE - FRACTIONAL

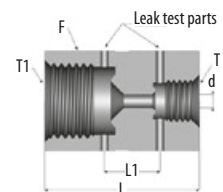
T Tube O.D.	Part number	L		L1	d	F	Working Pressure	
		mm	inch	mm	mm	mm	psig	bar
1/4"	UDF 14	30,2	1,19	4,9	5,9	19	8000	550
1/4"	UDF 14 HF	30,2	1,19	4,9	6,4	19	8000	550
1/2"	UDF 12	33,3	1,31	4,9	10,2	27	3500	240



## UNIONS | DOUBLE FEMALE REDUCING UNION

### TUBE SIZE - FRACTIONAL

T1 Tube O.D.	T Tube O.D.	Part number	L		L1	d		F	Working Pressure	
			mm	inch	mm	mm	inch	mm	psig	bar
1/4"	1/8"	DFRU 14 18 <sup>1</sup>	29,5	1,16	9,1	3,3	0,13	19,1	8000	550
1/2"	1/4"	DFRU 12 14 <sup>1</sup>	35,8	1,41	8,9	6,3	0,25	27,0	3500	240

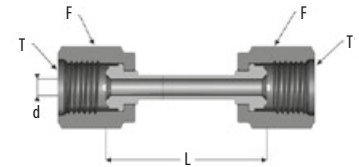


1) These fittings should be assembled only with rotating male or female nuts  
 2) On request it can be delivered with a double female, reducing union 1/2" F and 1/4" F (Part number UR 12 14 F)

## UNIONS | DOUBLE FEMALE UNION

### TUBE SIZE - FRACTIONAL

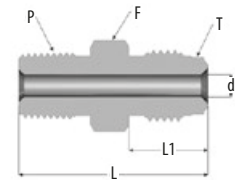
T Tube O.D.	Part number	L		d		F	Working Pressure	
		mm	inch	mm	inch		psig	bar
1/4"	U 14 F <sup>2</sup>	43,4	1,71	4,6	0,18	19,1	5100	350
1/2"	U 12 F <sup>2</sup>	46,7	1,84	10,2	0,40	27,0	3500	240



## UNIONS | MALE CONNECTOR

### TUBE SIZE - FRACTIONAL

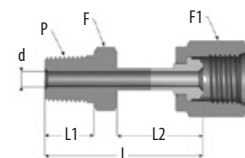
T Tube O.D.	P NPT	Part number	L		L1	d		F	Working Pressure	
			mm	inch	mm	mm	inch		mm	psig
1/8"	1/16"	UM 18 NPT 116 <sup>1,2</sup>	27,2	1,07	9,6	2,1	0,08	9,5	9000	620
1/8"	1/8"	NPT 18 <sup>1</sup>	27,2	1,07	9,6	2,1	0,08	9,5	9000	620
1/4"	1/8"	UM 14 NPT 18 <sup>1</sup>	33,3	1,31	9,6	4,6	0,18	15,9	8000	550
1/4"	1/4"	NPT 14 <sup>1</sup>	37,8	1,49	14,2	4,6	0,18	15,9	8000	550
1/2"	3/8"	UM 12 NPT 38 <sup>1</sup>	41,9	1,65	14,2	9,7	0,38	23,8	3500	240
1/2"	1/2"	NPT 12 <sup>1</sup>	46,7	1,84	19,1	10,2	0,40	23,8	3500	240
3/4"	3/4"	NPT 34 <sup>1</sup>	55,6	2,19	19,1	15,8	0,62	33,3	3000	200
1"	1"	NPT 100 <sup>1</sup>	62,7	2,47	22,3	22,3	0,88	41,3	2400	160



## UNIONS | FEMALE CONNECTOR

### TUBE SIZE - FRACTIONAL

T Tube O.D.	T Tube O.D.	Part number	L		L1	L2	d		F	F1	Working Pressure	
			mm	inch	mm	mm	mm	inch			mm	mm
1/4"	1/8"	UF 14 NPT 18	40,1	1,58	9,6	24,1	4,6	0,18	15,9	19,1	5100	350
1/4"	1/4"	NPT 14 F	45,5	1,79	14,2	23,4	4,6	0,18	15,9	19,1	5100	350
1/2"	3/8"	UF 12 NPT 38	48,0	1,89	14,2	25,4	9,9	0,39	23,8	27,0	3500	240
1/2"	1/2"	NPT 12 F	53,1	2,09	19,1	25,6	9,9	0,39	23,8	27,0	3500	240

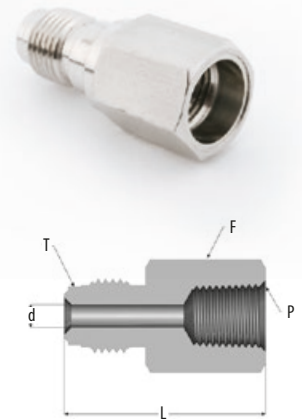


1) These fittings should be assembled only with rotating male or female nuts  
2) Minimum quantity

## UNIONS | FEMALE CONNECTOR

### TUBE SIZE - FRACTIONAL

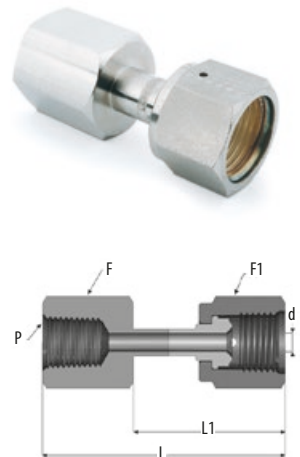
T Tube O.D.	P NPT	Part number	L		d		F mm	Working Pressure	
			mm	inch	mm	inch		psig	bar
1/8"	1/16"	UM 18 NPTF 116 <sup>1</sup>	27,9	1,10	2,3	0,09	11,1	6700	460
1/8"	1/8"	UM 18 NPTF 18 <sup>1</sup>	30,2	1,19	2,3	0,09	14,3	6500	440
1/4"	1/8"	UM 14 NPTF 18 <sup>1</sup>	35,8	1,41	4,6	0,18	15,9	8000	550
1/4"	1/4"	UM 14 NPTF 14 <sup>1</sup>	39,1	1,54	4,6	0,18	19,1	6600	450
1/2"	3/8"	UM 12 NPTF 38 <sup>1</sup>	44,7	1,76	10,2	0,40	23,8	3500	240
1/2"	1/2"	UM 12 NPTF 12 <sup>1</sup>	50,5	1,99	10,2	0,40	27,0	3500	240
3/4"	3/4"	UM 34 NPTF 34 <sup>1</sup>	59,7	2,36	15,7	0,62	33,3	3000	200
1"	1"	UM 100 NPTF 100 <sup>1</sup>	63,8	2,51	22,1	0,87	41,3	2400	160



## UNIONS | FEMALE CONNECTOR

### TUBE SIZE - FRACTIONAL

T Tube O.D.	P NPT	Part number	L		L1	d		F	F1	Working Pressure	
			mm	inch		mm	inch			mm	mm
1/4"	1/4"	UF 14 NPTF 14	45,2	1,78	23,4	4,6	0,18	19,1	19,1	5100	350
1/2"	3/8"	UF 12 NPTF 38	49,5	1,95	26,9	10,2	0,40	27,0	27,0	3300	220
1/2"	1/2"	UF 12 NPTF 12	55,4	2,18	26,4	10,2	0,40	27,0	27,0	3500	240

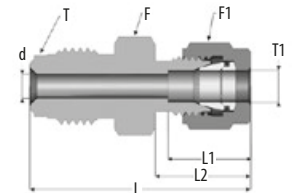


1) These fittings should be assembled only with rotating male or female nuts

## UNIONS | TUBE FITTING MALE CONNECTOR

### TUBE SIZE

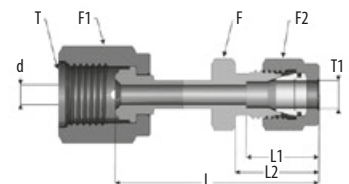
T Tube O.D.	T1 Tube O.D.	Part number	L		L1	L2	d		F	F1	Working Pressure	
			mm	inch	mm	mm	mm	inch	mm	mm	psig	bar
<b>FRACTIONAL</b>												
¼"	⅛"	UM 14 18 DB <sup>1</sup>	39,2	1,54	13,2	15,6	2,4	0,08	15,9	12	8000	550
¼"	¼"	UM 14 14 DB <sup>1</sup>	41,7	1,64	15,9	18,3	4,5	0,18	15,9	14	8000	550
½"	⅜"	UM 12 38 DB <sup>1</sup>	47	1,85	17,2	19,6	7,7	0,30	23,8	19	3500	240
½"	½"	UM 12 12 DB <sup>1</sup>	49,7	1,96	23,1	22,3	10,1	0,40	23,8	22	3500	240
<b>METRIC</b>												
¼"	6 mm	UM 14 6M DB	41,3	1,63	15,5	17,9	4,5	0,18	15,9	14	6800	460
¼"	8 mm	UM 14 8M DB	42,9	1,69	16,1	18,5	4,5	0,18	15,9	17	4800	330
½"	10 mm	UM 12 10M DB	46,7	1,84	16,9	19,3	8	0,32	23,8	19	3500	240



## UNIONS | TUBE FITTING FEMALE CONNECTOR

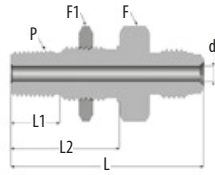
### TUBE SIZE

T1 Tube O.D.	T Tube O.D.	Part number	L		L1	L2	d		F	F1	F2	Working Pressure	
			mm	inch	mm	mm	mm	inch	mm	mm	mm	psig	bar
<b>FRACTIONAL</b>													
¼"	¼"	UF 14 14 DB	49,9	1,94	15,9	18,3	4,5	0,18	15,9	19,1	14	5100	350
½"	⅜"	UF 12 38 DB	50,0	1,97	17,2	19,6	7,1	0,28	23,8	27	19	3300	220
½"	½"	UF 12 12 DB	56,6	2,23	23,1	22,3	10,1	0,4	23,8	27	22	3500	240
<b>METRIC</b>													
¼"	6 mm	UF 14 6M DB	49,3	1,94	15,7	18,0	4,5	0,18	14	19,1	14	5100	350
¼"	8 mm	UF 14 8M DB	49,3	1,94	16,1	18,5	4,5	0,18	14	19,1	17	4800	330
½"	10 mm	UF 12 10M DB	56,6	2,23	16,9	19,3	8	0,31	17	27	19	3500	240
½"	12 mm	UF 12 12M DB	56,6	2,23	22,7	21,9	10,1	0,4	22	27	22	3100	210



1) These fittings should be assembled only with rotating male or female nuts

## BULKHEAD UNIONS | BULKHEAD NPT UNION

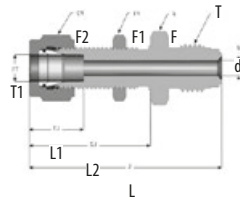


### TUBE SIZE - FRACTIONAL

T Tube O.D.	P NPT	Part number	L		d		L1	L2	F	F1	Panel hole size	Max panel thickness	Working Pressure	
			mm	inch	mm	inch							psig	bar
1/4"	1/4"	BU 14 NPT 14 <sup>1</sup>	56,1	2,21	4,6	0,18	14,2	31,5	23,8	23,8	16,7	9,7	8000	550
1/2"	1/4"	BU 12 NPT 14 <sup>1</sup>	59,4	2,34	10,2	0,40	14,2	31,5	23,8	23,8	16,7	9,7	3500	240

<sup>1)</sup> These fittings should be assembled only with rotating male or female nuts

## BULKHEAD UNIONS | TUBE FITTING BULKHEAD CONNECTOR



### TUBE SIZE

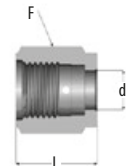
T Tube O.D.	T1 Tube O.D.	Part number	L		L1	L2	d		F	F1	F2	Working Pressure	
			mm	inch			mm	inch				mm	mm
<b>FRACTIONAL</b>													
1/4"	1/4"	BU 14 14 DB <sup>1</sup>	57,2	2,25	15,2	33,5	4,6	0,18	19,1	19,1	14,3	5100	350
1/4"	1/4"	BUS 14 14 DB <sup>1</sup>	47,8	1,88	15,2	26,7	4,6	0,18	19,1	19,1	14,3	5100	350
1/2"	3/8"	BU 12 38 DB <sup>1</sup>	64,5	2,54	16,8	36,8	7,7	0,30	23,8	23,8	17,5	3300	220
1/2"	1/2"	BU 12 12 DB <sup>1</sup>	69,6	2,74	22,9	41,9	10,2	0,40	23,8	23,8	22,2	3500	240
<b>METRIC</b>													
1/4"	6 mm	BU 14 6M DB	57,3	2,26	15,5	33,6	4,5	0,18	19,1	17	14	6800	460
1/4"	8 mm	BU 14 8M DB	57,2	2,25	15,3	33,4	4,5	0,18	19,1	17	17	4800	330

<sup>1)</sup> These fittings should be assembled only with rotating male or female nuts

## NUTS | FEMALE NUT FOR HIGH FLOW APPLICATIONS

### TUBE SIZE - FRACTIONAL

T Tube O.D.	Part number	L		d		Thread size	F
		mm	inch	mm	inch		
3/8"	FN 14 HF	20,6	0,81	9,9	0,75	9/16" - 18	19,1



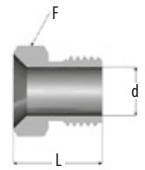
<sup>1)</sup> These fittings should be assembled only with rotating male or female nuts



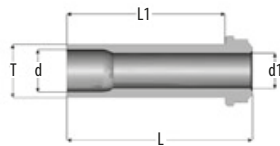
## NUTS | MALE NUT FOR HIGH FLOW APPLICATIONS

### TUBE SIZE - FRACTIONAL

T Tube O.D.	Part number	L		d		Thread size	F
		mm	inch	mm	inch		
3/8"	MN 14 HF	18,3	0,72	9,9	0,39	3/16"- 18	17



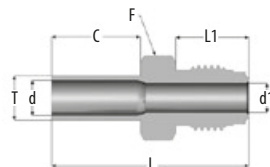
## GLANDS | SHORT MALE GLAND FOR HIGH FLOW APPLICATIONS



### TUBE SIZE - FRACTIONAL

T Tube O.D.	Part number	L		L1		d1		d		Nominal Wall Thickness		Working Pressure	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	psig	bar
3/8"	EMC 14 38 HF	15,2	0,60	10,4	0,41	6,4	0,25	7,7	0,30	0,89	0,035	3300	220
3/8"	EMS 14 38 HF	30,2	1,19	25,4	1,00	6,4	0,25	7,7	0,30	0,89	0,035	3300	220
3/8"	EM 14 38 HF	33,3	1,31	28,4	1,12	6,4	0,25	7,7	0,30	0,89	0,035	3300	220

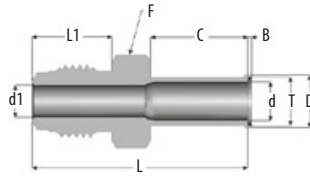
## GLANDS | AUTOMATIC BUTTWELD BODY FOR HIGH FLOW APPLICATIONS



### TUBE SIZE - FRACTIONAL

T Tube O.D.	Part number	L		L1	d1		d		C		F	Working Pressure	
		mm	inch	mm	mm	inch	mm	inch	mm	inch	mm	psig	bar
3/8"	UM 14 38 ABW HF	42,7	1,68	15,7	6,4	0,25	7,7	0,30	19,1	0,30	19,1	3300	220

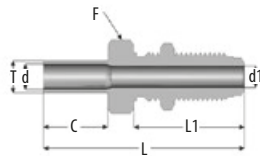
## GLANDS | AUTOMATIC BUTTWELD BODY FOR HIGH FLOW APPLICATIONS



### TUBE SIZE - FRACTIONAL

T Tube O.D.	Part number	L		L1	d1		d		D	B	C		F	Working Pressure	
		mm	inch	mm	mm	inch	mm	inch	mm	mm	mm	inch	mm	psig	bar
3/8"	UM 14 38 AB HF	43,4	1,71	15,7	6,4	0,25	7,7	0,30	10,5	0,8	19,1	0,75	15,7	3300	220

## BULKHEAD UNIONS | BUTTWELD BULKHEAD UNION FOR HIGH FLOW APPLICATIONS



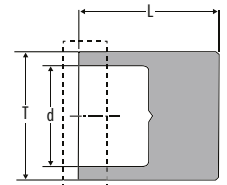
### TUBE SIZE - FRACTIONAL

T Tube O.D.	Part number	L		L1	d1		d		C		F	F1	Panel Hole Size	Max Panel Thickness	Working Pressure	
		mm	inch	mm	mm	inch	mm	inch	mm	inch	mm	inch			psig	bar
3/8"	BU 14 38 HF	59,9	2,36	33,0	6,4	0,25	7,7	0,30	19,2	0,76	19	19	15,1	11,2	3300	220

## UNIONS | EB-ABW

### TUBE SIZE

T Tube O.D.	Part number	L		d		Working Pressure	
		mm	inch	mm	inch	psig	bar
<b>FRACTIONAL</b>							
1/4"	EB 14 ABW	4,8	0,19	4,5	0,18	5100	350
3/8"	EB 38 ABW	5,6	0,22	7,7	0,30	3300	220
1/2"	EB 12 ABW	6,9	0,27	10,1	0,40	3500	240
<b>METRIC</b>							
12 mm	13 mm	14 mm	15 mm	16 mm	17 mm	18 mm	19 mm



## UNIONS | AUTOMATIC BUTTWELD REDUCING UNION WITHOUT SHOULDER

### TUBE SIZE

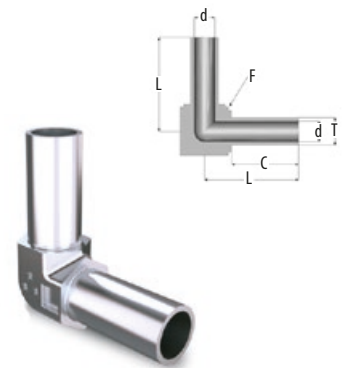
T1 Tube O.D.	T Tube O.D.	Part number	L		d1		d		C		Working Pressure	
			mm	inch	mm	mm	mm	inch	psig	bar		
<b>FRACTIONAL</b>												
3/8"	1/4"	RU 38 14 ABW	38,1	1,50	7,7	4,6	19,1	0,75	3300	220		
1/2"	1/4"	RU 12 14 ABW	38,1	1,50	10,2	4,6	19,1	0,75	3500	240		
1/2"	3/8"	RU 12 38 ABW	38,1	1,50	10,2	7,7	19,1	0,75	3300	220		
3/4"	1/2"	RU 34 12 ABW	38,1	1,50	16,5	10,2	19,1	0,75	2400	160		
<b>METRIC</b>												
8 mm	6 mm	RU 8M 6M ABW	38,1	1,50	6,0	4,0	19,1	0,75	4800	330		
12 mm	6 mm	RU 12M 6M ABW	38,1	1,50	10,0	4,0	19,1	0,75	3100	210		
12 mm	8 mm	RU 12M 8M ABW	38,1	1,50	10,0	6,0	19,1	0,75	3100	210		
18 mm	6 mm	RU 18M 6M ABW	38,1	1,50	15,0	4,0	19,1	0,75	3100	210		
18 mm	12 mm	RU 18M 12M ABW	38,1	1,50	15,0	10,0	19,1	0,75	3100	210		
<b>JIS</b>												
3/8"	1/4"	RU 38J 14J ABW <sup>1</sup>	38,1	1,50	7,5	4,4	19,1	0,75	3500	240		
1/2"	1/4"	RU 12 14J ABW <sup>1</sup>	38,1	1,50	10,2	4,4	19,1	0,75	3500	240		
1/2"	3/8"	RU 12 38J ABW <sup>1</sup>	38,1	1,50	10,2	7,5	19,1	0,75	3500	240		



## ELBOWS | AUTOMATIC BUTTWELD ELBOW WITHOUT SHOULDER

### TUBE SIZE

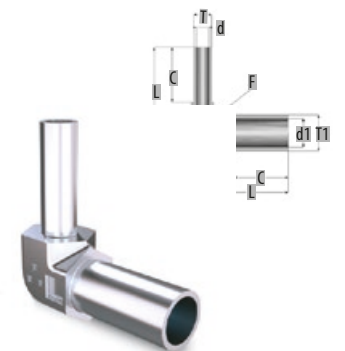
T Tube O.D.	Part number	L		d		C		F	Working Pressure	
		mm	inch	mm	inch	mm	inch		psig	bar
<b>FRACTIONAL</b>										
1/4"	E 14 ABW	27,0	1,06	4,6	0,18	19,1	0,75	10	5100	350
1/4"	ECA 14 ABW	31,2	1,23	4,6	0,18	19,1	0,75	10	5100	350
3/8"	E 38 ABW	27,0	1,06	7,7	0,30	19,1	0,75	14	3300	220
3/8"	ECA 38 ABW	30,5	1,20	7,7	0,30	19,1	0,75	14	3300	220
1/2"	E 12 ABW	30,0	1,18	10,2	0,40	19,1	0,75	17	3500	240
1/2"	ECA 12 ABW	34,0	1,34	10,2	0,40	19,1	0,75	17	3500	240
3/4"	E 34 ABW	35,0	1,38	16,5	0,65	19,1	0,75	24	2400	160
1"	E 100 ABW	40,0	1,57	22,1	0,87	24,4	0,96	35	2400	160
<b>METRIC</b>										
6 mm	E 6M ABW	27,0	1,06	4,0	0,16	19,1	0,75	10	6800	460
8 mm	E 8M ABW	27,0	1,06	6,0	0,24	19,1	0,75	14	4800	330
10 mm	E 10M ABW	27,0	1,06	8,0	0,31	19,1	0,75	14	3500	240
12 mm	E 12M ABW	30,0	1,18	10,0	0,39	19,1	0,75	17	3100	210
<b>JIS</b>										
1/4"	E 14J ABW <sup>1</sup>	27,0	1,06	4,4	0,17	19,1	0,75	10	5600	380
3/8"	E 38J ABW <sup>1</sup>	27,0	1,06	7,5	0,29	19,1	0,75	14	3500	240



## ELBOWS | AUTOMATIC BUTTWELD REDUCING ELBOW WITHOUT SHOULDER

### TUBE SIZE

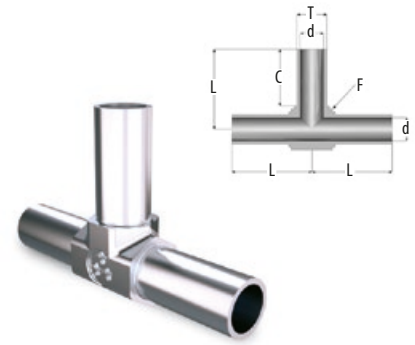
T1 Tube O.D.	T Tube O.D.	Part number	L		d1		d		C		F	Working Pressure	
			mm	inch	mm	inch	mm	inch	mm	inch		psig	bar
<b>FRACTIONAL</b>													
3/8"	1/4"	RE 38 14 ABW	27,0	1,06	7,7	0,30	4,6	0,18	19,1	0,75	14	3300	220
1/2"	1/4"	RE 12 14 ABW	30,0	1,18	10,2	0,40	4,6	0,18	19,1	0,75	17	3500	240
1/2"	3/8"	RE 12 38 ABW	30,0	1,18	10,2	0,40	7,7	0,30	19,1	0,75	17	3300	220
<b>JIS</b>													
3/8"	1/4"	RE 38J 14J ABW	27,0	1,06	7,5	0,29	4,4	0,17	19,1	0,75	14	3500	240
1/2"	1/4"	RE 12 14J ABW	30,0	1,18	10,2	0,40	4,4	0,17	19,1	0,75	17	3500	240
1/2"	3/8"	RE 12 38J AB W	30,0	1,18	10,2	0,40	7,5	0,29	19,1	0,75	17	3500	240



## TEES | AUTOMATIC BUTTWELD TEE WITHOUT SHOULDER

### TUBE SIZE

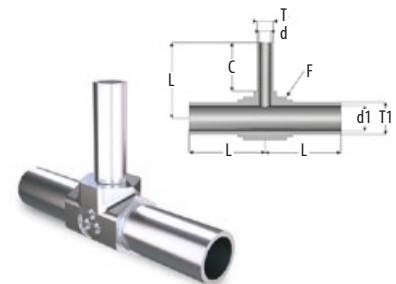
T Tube O.D.	Part number	L		d		C		F	Working Pressure	
		mm	inch	mm	inch	mm	inch		mm	psig
<b>FRACTIONAL</b>										
1/4"	T 14 ABW	27,0	1,06	4,6	0,18	19,1	0,75	10	5100	350
1/4"	TCA 14 ABW	31,2	1,23	4,6	0,18	19,1	0,75	10	5100	350
3/8"	T 38 ABW	27,0	1,06	7,7	0,30	19,1	0,75	14	3300	220
3/8"	TCA 38 ABW	30,5	1,20	7,7	0,30	19,1	0,75	14	3300	220
1/2"	T 12 ABW	30,0	1,18	10,2	0,40	19,1	0,75	17	3500	240
1/2"	TCA 12 ABW	34,0	1,34	10,2	0,40	19,1	0,75	17	3500	240
3/4"	T 34 ABW	35,0	1,38	16,5	0,65	19,1	0,75	24	2400	160
1"	T 100 ABW	40,0	1,57	22,1	0,87	24,4	0,96	35	2400	160
<b>METRIC</b>										
6 mm	T 6M ABW	27,0	1,06	4,0	0,16	19,1	0,75	10	6800	460
6 mm	TCA 6M ABW	31,2	1,06	4,0	0,16	19,1	0,75	10	6800	460
8 mm	T 8M ABW	27,0	1,06	6,0	0,24	19,1	0,75	14	4800	330
10 mm	T 10M ABW	27,0	1,06	8,0	0,31	19,1	0,75	14	3500	240
12 mm	T 12M ABW	30,0	1,18	10,0	0,39	19,1	0,75	17	3100	210
12 mm	TCA 12M ABW	34,0	1,34	10,0	0,39	19,1	0,75	17	3100	210
<b>JIS</b>										
1/4"	T 14J ABW <sup>1</sup>	27,0	1,06	4,4	0,17	19,1	0,75	10	5600	380
3/8"	T 38J ABW <sup>1</sup>	27,0	1,06	7,5	0,29	19,1	0,75	14	3500	240



## TEES | AUTOMATIC BUTTWELD REDUCING TEE WITHOUT SHOULDER

### TUBE SIZE

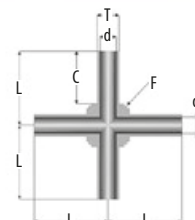
T1 Tube O.D.	T Tube O.D.	Part number	L		d1		d		C	F	Working Pressure	
			mm	inch	mm	inch	mm	inch			mm	psig
<b>FRACTIONAL</b>												
3/8"	1/4"	RT 38 14 ABW	27,0	1,06	7,7	0,30	4,6	0,18	19,1	0,75	14	3300 220
1/2"	1/4"	RT 12 14 ABW	30,0	1,18	10,2	0,40	4,6	0,18	19,1	0,75	17	3500 240
1/2"	3/8"	RT 12 38 ABW	30,0	1,18	10,2	0,40	7,7	0,30	19,1	0,75	17	3300 220
<b>METRIC</b>												
8 mm	6 mm	RT 8M 6M ABW	27,0	1,06	6,0	0,24	4,0	0,16	19,1	0,75	14	4800 330
12 mm	6 mm	RT 12M 6M ABW	30,0	1,18	10,0	0,39	4,0	0,16	19,1	0,75	17	3100 210
12 mm	8 mm	RT 12M 8M ABW	30,0	1,18	10,0	0,39	6,0	0,24	19,1	0,75	17	3100 210
18 mm	6 mm	RT 18M 6M ABW	35,0	1,38	15,0	0,59	4,0	0,16	19,1	0,75	24	3000 200
18 mm	12 mm	RT 18M 12M ABW	35,0	1,38	15,0	0,59	10,0	0,39	19,1	0,75	24	3000 200
<b>JIS</b>												
3/8"	1/4"	RE 38J 14J ABW <sup>1</sup>	27,0	1,06	7,5	0,29	4,4	0,17	19,1	0,75	14	3500 240
1/2"	1/4"	RE 12 14J ABW <sup>1</sup>	30,0	1,18	10,2	0,40	4,4	0,17	19,1	0,75	17	3500 240
1/2"	3/8"	RE 12 38J ABW <sup>1</sup>	30,0	1,18	10,2	0,40	7,5	0,29	19,1	0,75	17	3500 240



# TEES | AUTOMATIC BUTTWELD CROSS WITHOUT SHOULDER

## TUBE SIZE

T Tube O.D.	Part number	L		d		C		F	Working Pressure	
		mm	inch	mm	inch	mm	inch		mm	psig
<b>FRACTIONAL</b>										
¼"	C 14 ABW	27,0	1,06	4,6	0,18	19,1	0,75	10	5100	350
⅜"	C 38 ABW	27,0	1,06	7,7	0,30	19,1	0,75	14	3300	220
½"	C 12 ABW	30,0	1,18	10,2	0,40	19,1	0,75	17	3500	240
<b>METRIC</b>										
6 mm	C 6M ABW	27,0	1,06	4,0	0,16	19,1	0,75	10	6800	460
8 mm	C 8M ABW	27,0	1,06	6,0	0,24	19,1	0,75	14	4800	330
12 mm	C 12M ABW	30,0	1,18	10,0	0,39	19,1	0,75	17	3100	210



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SYSTEMS**



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& REGULATORS**



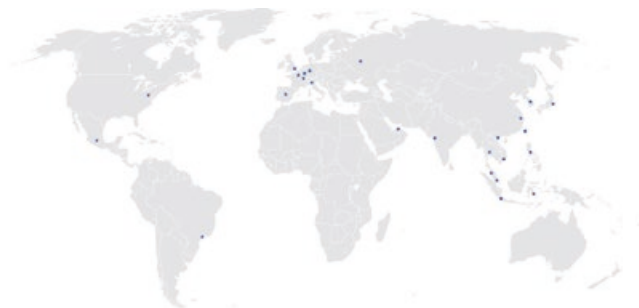
**LPG CYLINDER VALVES  
& REGULATORS**



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The logo for Indutrade, featuring a stylized 'I' symbol composed of three slanted parallel lines to the left of the word 'Indutrade' in a bold, white, sans-serif font.

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