

## **HYDRAULIC FLARELESS FITTINGS**













# HYDRAULIC FLARELESS FITTINGS AND SINGLE FERRULE FITTINGS (DIN 2353, ISO 8434-1)

TMI manufactures 24° bite type hydraulic fittings according to the norms of DIN 2353. The TMI hydraulic fitting consists of three parts: body, ferrule or weld nipple and nut. The heart of the TMI fitting is the design of the hardened ferrule which "bites" into the pipe to provide a leak-proof joint. The unique action of the ferrule provides for a strong, vibration resistent joint which can withstand repeated dismantling and re-assembly. TMI hydraulic fittings are available for Fractional and Metric tubes and are offered in a variety of materials depending upon area of application.

### TMI RANGE OF HYDRAULIC FITTINGS

### Tube to tube (Equal Fittings):

Both ends are tube and the assembly is with Ferrule/Weld Nipple. The joint is made by assembly of fittings with ferrule. A Weld Nipple can be used instead of a ferrule when it is required to join two pipes of an equal size.

### Tube to Threads (Male/Female):

These fittings are generally known as "stud" couplings.

### Tube to Swivel:

During installation, when a swiwelend is needed to fit with a fixed line, a special swiwel nut is provided which can revolve around the body but will not disengage. Swiwel connections are also available.

### **Banjo Fittings:**

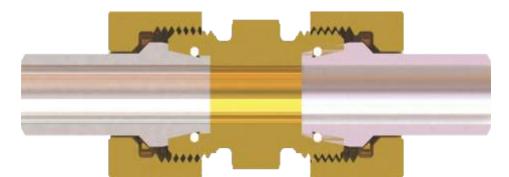
These are used for high pressure applications an provide a 360° rotation facility. These fittings are mainly used for positioning the tube fitting line. The perforated hollow shaped bolts directly on the end pass through the spherical union body for fluid transfer.

### Adaptors:

Used to connect fittings with instruments. TMI has a wide range of adaptors with different threads - Metric, BSP, BSPT, NPT.

### Other Components:

Port reducers, Closing Plugs, Ferrules, Nuts, O rings, U rings, Elastomeric Rings.





### PRESSURE RATING AS PER DIN 2353

### **TECHNICAL DATA**

TMI fittings are available in Light, Medium and Heavy Series depending on the pipe size. Fittings with weld nipples are available only in Heavy Series.

LL - Light Series							
100 Kg/cm <sup>2</sup>	Tube OD 4 mm - 8mm						
L - Medium Series							
250 Kg/cm <sup>2</sup>	Tube OD 6 mm - 15 mm						
160 Kg/cm <sup>2</sup>	Tube OD 18 mm - 22 mm						
100 Kg/cm <sup>2</sup>	Tube OD 28 mm - 42 mm						
S - Heavy Series							
630 Kg/cm <sup>2</sup>	Tube OD 6 mm - 14 mm						
400 Kg/cm <sup>2</sup>	Tube OD 16 mm - 25 mm						
250 Kg/cm <sup>2</sup>	Tube OD 30 mm - 38 mm						

### THREADING INFORMATION

MEDIUM SERIES (L)										
Tube OD	6	8	10	12	15	18	22	28	35	42
BSP/NPT/ BSPT METRIC	1/8", M10X1	1/4", M12X1.5	1/4", M14X1.5	3/8", 1/4", M16X1.5	1/2", M18X1.5	1/2", M22X1.5	3/4", M26X1.5	1", M33X2	1 1/4", M42X2	1 1/2", M48X2

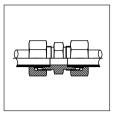
HEAVY SERIES (S)										
Tube OD	6	8	10	12	14	16	20	25	30	38
BSP/NPT/ BSPT METRIC	1/4", M12X1.5	1/4", M14X1.5	3/8", 1/4", M16X1.5	3/8", M18X1.5	1/2", M20X1.5	1/2", M22X1.5	3/4", M27X2	1", M33X2	1 1/4", M42X2	1 1/2", M48X2

# SEMBLY PROCEDURE

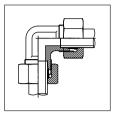
- Cut the pipe at 90° and de-burr the inside & outside edges
- · Lubricate the nut and the threads with oil
- Gently insert the nut and ferrule over the tube end and ensure they are facing the right direction
- Insert this assembly into the body and tighten the nut by hand until finger tight
- Mark the nut and tube and tighten for a ¾ turn. Check the assembly the pipe should be held fast. Tighten a further ¾ turn to achieve the ferrule "Bite" into the pipe
- During dismantling and re-assembly, mark the position of the nut in relation with body before disconnecting the joint. Re-assemble by tightening with a wrench and ensure that the nut comes to its original position in relation with body. Then tighten until slightly rise in torque is felt.



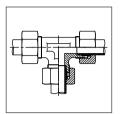
### **TUBE TO TUBE**



SU Straight Union



EU Equal Elbow

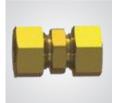




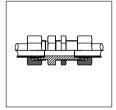
TU Equal Tee



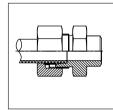




**KU Equal Cross** 



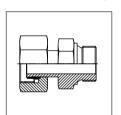
SBU Straight Bulk Head Coupling



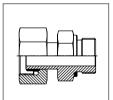
WC Weld Coupling

### **TUBE TO TUBE**

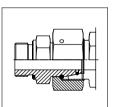
### Adapter Fittings (M-Metric, R-BSP)



SPA-M / SPA-R Stand Pipe Adapter



SPA-M-es / SPA-R-es Stand Pipe Adapter with Elastomeric Seal



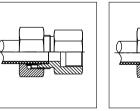
SAO-M-es / SAO-R-es Straight Stud Adapter with Elasto. Seal, Swivel Nut



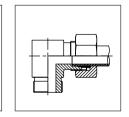
### **Stud Coupling (M-Metric, R-BSP)**



SFU-M / SFU-R Straight Female Stud Coupling

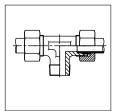


SMU-M / SMU-R Straight Male Stud Coupling

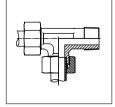


MEC-M / MEC-R Male Stud Elbow Coupling

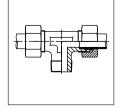
### Stud Tee Fittings (M- Metric, R- BSP, Rx-BSPT, N-NPT)



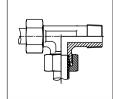
MBT-M / MBT-R Male Stud Branch Tee



MRT-M / MRT-R Male Stud Run Tee



TMBT-Rx / N Taper Male Stud Branch Tee



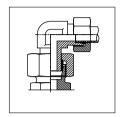
TMRT-Rx / N Taper Male Stud Run Tee



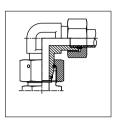


### **SWIVEL FITTINGS**

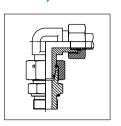
### Swivel Elbow Fittingss (M-Metric, R-BSP)



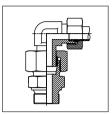
SWE Swivel Elbow



SWEO Swivel Elbow with O ring



SWEOC-Mes/SWEOC-Res Swivel Elbow with O ring and Connector



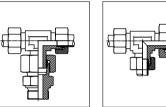
SWEC-M/SWEC-R Swivel Elbow with Connector



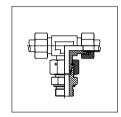
### **Swivel Tee Fittings (M-Metric, R-BSP)**



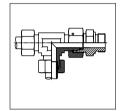
SWBTC-M/ SWBTC-R Swivel Branch Tee Connector



SWRTC-R Swivel Run Tee with Connector



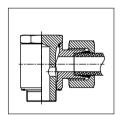
SWBTOC-Mes/ SWBTOC-Res Swivel Run Tee with O ring & Connector



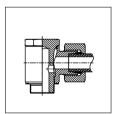
SWRTOC-Mes/ SWRTOC-Res Swivel Branch Tee with O ring and Connector

### **BANJO CONNECTORS**

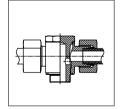
### **Banjo Fittings (M-Metric, R-BSP)**



SWBC-M/ SWBC-R Swivel Banjo Elbow Connector



HSWBC-M/ HSWBC-R High Pressure Elbow Banjo Connector



HSWTBC-M/ HSWTBC-R High Pressure Tee Banjo Connector











### **REDUCING ADAPTOR & WELD NIPPLE**



HA Hose Adaptor RTA Reducing Thread Adaptor RTAes Reducing Thread Adaptor with elastomeric seal WN Weld Nipple

Adaptors are available in male, female and male-female combinations and in sizes as per the chart below:

OPTIONS	1/8"	1/4"	3/8"	1/2"	3 / 4 "	1 "	11/4"	11/2"
1/8 "		<b>√</b>	<b>✓</b>	$\checkmark$				
1/4 "	<b>✓</b>		<b>✓</b>	$\checkmark$	<b>✓</b>			
3/8 "	<b>✓</b>	$\checkmark$		$\checkmark$	$\checkmark$			
1/2 "	<b>✓</b>	<b>✓</b>	<b>✓</b>		<b>✓</b>	<b>√</b>	$\checkmark$	$\checkmark$
3/4 "		<b>✓</b>	<b>✓</b>	$\checkmark$		<b>√</b>	$\checkmark$	$\checkmark$
1"		<b>✓</b>	<b>✓</b>	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$
11/4 "				$\checkmark$	<b>✓</b>	<b>✓</b>		$\checkmark$
11/2"				$\checkmark$	<b>✓</b>	<b>√</b>	<b>√</b>	

Weld Nipple Fittings are available as per client requirements and tube size. Reducing Weld Nipple Adaptors can also be supplied.

### SWRTOC-25Res-SS: Swiwel Run Tee 'O' ring, Connector & Elastomeric Seal

**Series** 

SWRTOC - 25 - S - R - es - SS

Type of Pipe Pressure Threads Sealant Material

Type

Type

Type

### **Material Code for Ordering**

OD

**Fitting** 

No Code Carbon Steel Stainless Steel 304 S SL Stainless Steel 304L SS Stainless Steel 316 SSL Stainless Steel 316L SST Stainless Steel 316Ti В Brass (Is319) es Elastromeric Seal (Viton/Nitrile)



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