

**BETABITE  
HYDRAULICS**



hydraulics, gas, chemical and nuclear industries



highest standards



carbon and stainless steel

quality high pressure pipe couplings



**Metric and Imperial sizes  
in both Carbon & Stainless Steel**





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# BETABITE HYDRAULICS



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# BETABITE HYDRAULICS



Betabite Hydraulics have been manufacturing quality, high-pressure pipe couplings for the hydraulics, gas, chemical and nuclear industries worldwide since 1966. The purpose-built facility, based in Cheshire in the United Kingdom, provides an environment for quality-controlled production. Betabite has continued to invest in the latest technology, utilising precision, state-of-the-art machine-tools dedicated to the needs of the market it serves. The stock-holding in Runcorn is extensive. With the introduction of a full metric range of couplings, to compliment Betabite's Imperial range, the company now supply over 3,500 different items. A skilled workforce provides the mainstay of this progressive, high-volume manufacturing company to meet the stringent demands of an ever-changing market.

Continued expansion has secured a place for Betabite among the leading European manufacturers of high-pressure tube couplings. A significant proportion of Betabite's output is for the export market. As such, the company meets a wide variety of International Standards and Approvals.

All of the products designed by Betabite benefit from extensive tests and field trials during development. These actions have resulted in enhanced product-performance for the customer and the adoption of special production techniques tailored to suit the manufacturing procedures required to furnish a quality high-pressure pipe coupling.

Betabite fittings are suitable for both outside diameter and nominal bore tubes and pipes. The Betabite range of high-pressure couplings, in Imperial sizes, comply fully with BS 4368 part 2. For information on availability, other products and new developments, contact the sales desk in Runcorn or the distributor/stockist indicated on the back cover of this publication.

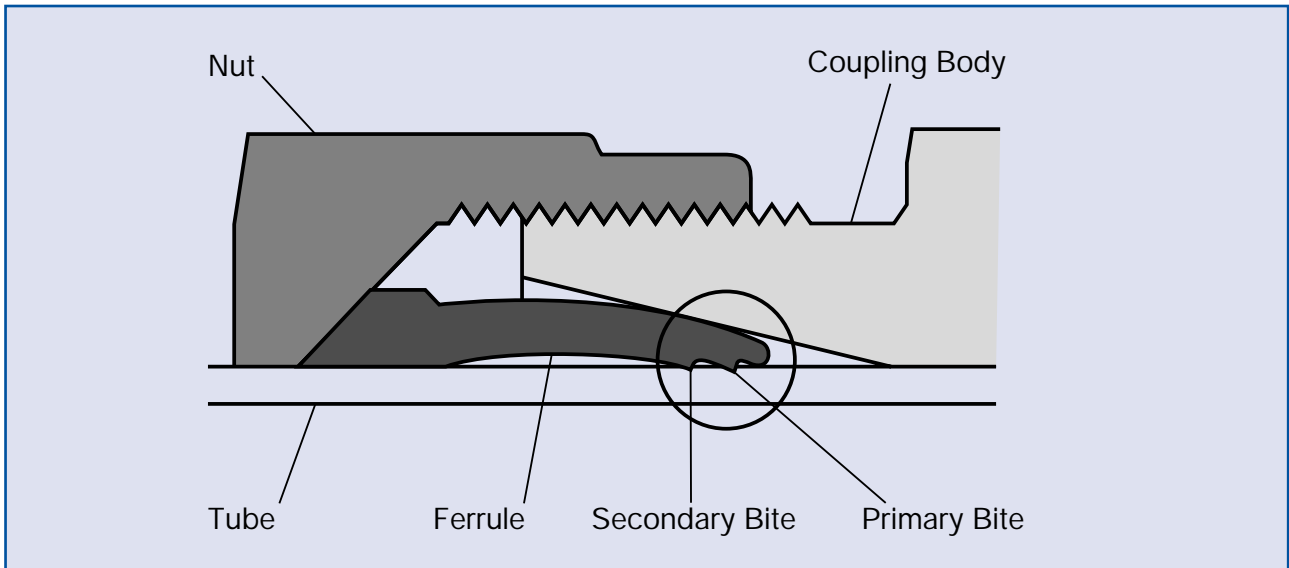
BETABITE HYDRAULICS



# THE BETABITE PRINCIPLE



THE BETABITE PRINCIPLE



As the coupling nut is tightened, the ferrule moves along the tube. When the ferrule outside diameter contacts the inner taper of the coupling body, the front cutting edge (1) of the ferrule makes the primary "bite" cleanly into the outer surface of the tube. At the point where the secondary "bite" (2) comes into contact with the surface of the tube, a sharp increase in torque will occur. This signals to the operative that a perfect, pressure-tight joint has been achieved and no further tightening is necessary. At the same time, the ferrule is clamped firmly by the nut on the tube (3) providing a perfect anti-vibration lock.

## ADVANTAGES OF THE BETABITE PRINCIPLE



THREE POINT CONTACT WITH OUTSIDE DIAMETER OF TUBE.



SUPERIOR SEALING QUALITIES.



THE OPERATIVE WILL "FEEL" WHEN A PERFECT JOINT HAS BEEN MADE.



REMOVES POSSIBILITY OF OVERTIGHTENING.



AVOIDS NARROWING OR "NECKING" OF THIN-WALL TUBES.



JOINT MAY BE BROKEN AND RE-MADE REPEATEDLY.

# USEFUL DATA - METRIC OD



USEFUL DATA

## PERFORMANCE

Betabite manufactures two series of metric coupling, L (light), S (heavy). The performance of both series are summarised in the following table, where it is possible to see the values of operating pressures for each range of outer diameter for the pipes employed. It must be taken into account that the pressure values indicated are calculated considering a safety factor of 4 vs. those obtained during static operating tests at 120°C.

Series	Outside Ø of pipe	Nominal Pressure
L (light)	6 to 18 mm	315 bar
	22 to 42 mm	160 bar
S (heavy)	6 to 14 mm	630 bar
	16 to 30 mm	400 bar
	38 mm	315 bar

## TECHNICAL AND CONSTRUCTION CHARACTERISTICS

All metric couplings are manufactured in accordance with DIN 2353, with either conical (DIN3858 - DIN158 - NPT) or cylindrical (UNI ISO 228 - UNF - UNI 4535) threading. Contrary to the conical threading, which produces the seal by direct coupling, the seal for cylindrical threading is obtained by three methods:

- Using Dowty seal or copper washer to DIN3852, Form A (fig 1).
- Fitting body incorporating cutting edges to DIN3852, Form B (fig 2).
- The fitting of a perbunan or viton ring (soft seal) to DIN3852, form E (fig 3).

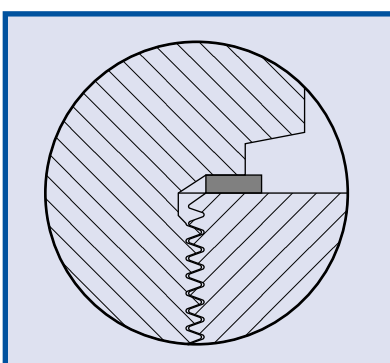


Fig 1.  
Form A

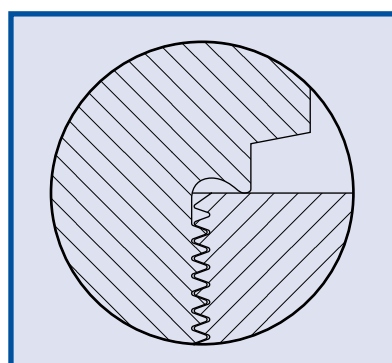


Fig 2.  
Form B

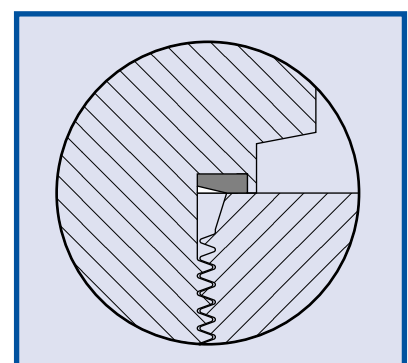


Fig 3.  
Form E

All components are manufactured from either drawn or pressed **steel** (both by the cold and hot treatment system). The units and the nuts are submitted to a corrosion - proof surface treatment (yellow passivated UNI ISO 2081 - 4520).

The cutting rings are submitted both to a heat treatment which enhances their mechanical characteristics leaving almost unchanged elasticity, and to a corrosion proof surface treatment. Fittings are manufactured in both **carbon and stainless steel**.

# USEFUL DATA - METRIC OD



## Recommendations for tubes

For Betabite steel fittings we recommend a tube according to DIN 2391/C of material of special quality (St. 35.4), protective-gas/special-clean-annealed, free of scale (NBK).

USEFUL DATA

Tube o.d. mm	Wall thickness mm	Tube i.d. mm	Design pressure <sup>1)</sup> bar	Weight Kg/m
5	0.75	3.5	376	0.083
5	1	3	432	0.099
6	0.75	4.5	333	0.103
6	1	4	389	0.123
6	1.5	3	549	0.166
6	2	2	692	0.197
6	2.25	1.5	757	0.208
8	1	6	333	0.173
8	1.5	5	431	0.240
8	2	4	549	0.296
8	2.5	3	658	0.339
10	1	8	282	0.222
10	1.5	7	373	0.314
10	2	6	478	0.395
10	2.5	5	576	0.462
10	3	4	666	0.518
12	1	10	235	0.271
12	1.5	9	353	0.388
12	2	8	409	0.493
12	2.5	7	495	0.586
12	3	6	576	0.666
12	3.5	5	651	0.734
14	1	12	201	0.321
14	1.5	11	302	0.462
14	2	10	403	0.592
14	2.5	9	434	0.709
14	3	8	507	0.814
14	3.5	7	576	0.906
14	4	6	641	0.986
15	1	13	188	0.345
15	1.5	11	282	0.499
15	2	11	376	0.641
15	2.5	10	409	0.771
15	3	9	478	0.888
16	1	14	176	0.370
16	1.5	13	264	0.536
16	2	12	353	0.691
16	2.5	11	386	0.832
16	3	10	452	0.962
18	1	16	157	0.419
18	1.5	15	235	0.610
18	2	14	313	0.789
18	2.5	13	392	0.956
18	3	12	409	1.110

Tube o.d. mm	Wall thickness mm	Tube i.d. mm	Design pressure <sup>1)</sup> bar	Weight Kg/m
20	1.5	17	212	0.684
20	2	16	282	0.888
20	2.5	15	353	1.079
20	3	14	373	1.258
20	3.5	13	426	1.424
20	4	12	478	1.578
22	1	20	128	0.518
22	1.5	19	192	0.758
22	2	18	256	0.986
22	2.5	17	320	1.202
22	3	16	385	1.406
25	2	21	226	1.134
25	2.5	20	282	1.387
25	3	19	338	1.628
25	4	17	394	2.072
25	4.5	16	437	2.275
25	5	15	478	2.466
28	1.5	25	151	0.980
28	2	24	201	1.282
28	2.5	23	252	1.572
28	3	22	302	1.850
28	4	20	403	2.368
28	5	18	434	2.836
30	2	26	188	1.381
30	2.5	25	235	1.695
30	3	24	282	1.998
30	4	22	376	2.565
30	5	20	409	3.083
35	2	31	161	1.628
35	2.5	30	201	2.004
35	3	29	242	2.367
35	4	27	322	3.058
35	5	25	403	3.699
35	6	23	419	4.291
38	2.5	33	186	2.189
38	3	32	223	2.589
38	4	30	297	3.354
38	5	28	371	4.069
38	6	26	390	4.735
38	7	24	446	5.352
42	2	38	134	1.973
42	3	36	201	2.885
42	4	34	269	3.749

<sup>1)</sup> Based on the following values the design pressure has been calculated according to DIN 2413 validity I

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.



# USEFUL DATA

## FOR IMPERIAL O.D. TUBES

1.

Outside Dia. of Tube	Minimum Wall Thickness
¼" to ¾"	20 sg. .036"
½" to ⅝"	18 sg. .048"
¾" to 1¼"	16 sg. .064"
1½"	14 sg. .080"

2.

Outside Dia. of Tube	Minimum Wall Thickness
¼" to ½"	16 sg. .064"
⅝" to 1"	14 sg. .080"
1¼" to 1½"	12 sg. .104"

USEFUL DATA

Betabite couplings may be used with either steel or copper tubes, but where high vibration stresses are involved, the use of copper tube is not recommended and a heavier gauge of steel tube is preferred. Two tables are shown giving details of tube wall thicknesses. **1**, minimum wall thickness for which Betabite couplings are suitable (either steel or copper tubes) and **2**, recommended minimum wall thicknesses where high vibration stresses are involved (steel tubes only).

Betabite couplings are suitable for the following working pressures – up to and including:

- 1" O.D. 690 bar (10,000 P.S.I.) hydraulic or 345 bar (5,000 P.S.I.) gas;
- 1¼" O.D. 552 bar (8,000 P.S.I.) hydraulic or 276 bar (4,000 P.S.I.) gas;
- 1½" O.D. 414 bar (6,000 P.S.I.) hydraulic or 207 bar (3,000 P.S.I.) gas.

Please note that the pressures for which Betabite couplings are suitable does not necessarily relate to the tube wall thickness tables listed above. Tubes of heavier gauge should be used for higher pressures and adverse working conditions.

O.D. tubes are manufactured to close tolerances with a wide range of available sizes and a good surface finish, and are eminently suitable for use with Betabite couplings.



# USEFUL DATA

FOR IMPERIAL N.B. TUBES



USEFUL DATA

Basic dimensions of Nominal Bore Tubes.

Nominal Bore	Fractional Outside Dia.	Max. Dia.	Min. Dia.
1/8"	13/32"	.411"	.386"
1/4"	17/32"	.547"	.522"
3/8"	11/16"	.685"	.660"
1/2"	27/32"	.856"	.831"
3/4"	1 1/16"	1.072"	1.047"
1"	1 1/32"	1.346"	1.316"
1 1/4"	1 1/16"	1.687"	1.657"
1 1/2"	1 29/32"	1.919"	1.889"

Note: If A.P.I. piping is to be used, Betabite fittings are suitable for the 1/8", 1/4", 3/8", 1/2", 3/4" and 1 1/2" sizes.

Nominal bore fittings are suitable for nominal bore tubes with diameters as set out in British Standard Specifications BS 1387 Medium or Heavy, or BS 3602.

To obtain the best results, solid drawn tube, annealed and descaled or electric resistance welded tube with an ultimate tensile strength of approximately 22 tons per square inch are preferable.

Nominal bore fittings are available to suit tubes 1/8" to 1 1/2" nominal bore inclusive and are suitable for the following pressures – up to and including:

3/4" N.B. 690 bar (10,000 P.S.I.) hydraulic or 345 bar (5,000 P.S.I.) gas;

1" N.B. 552 bar (8,000 P.S.I.) hydraulic or 276 bar (4,000 P.S.I.) gas;

1 1/4" N.B. 414 bar (6,000 P.S.I.) hydraulic or 207 bar (3,000 P.S.I.) gas;

1 1/2" N.B. 345 bar (5,000 P.S.I.) hydraulic or 173 bar (2,500 P.S.I.) gas.

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# USEFUL DATA - GENERAL



USEFUL DATA

## GASKET SEALING OF THREADS

When copper washers are to be used for port thread sealing, it is recommended that for pressures above 1,000 P.S.I. the port thread entry should be counter bored to shroud the washer.

For pressures above 173 bar (2,500 P.S.I.) it is recommended that steel/rubber bonded washers similar to the 'Dowty' bonded washer, or the 'O' ring method of sealing be adopted.

## THREADS

Whilst the British Standard taper pipe thread (abbreviated to BSTPT or BSPT) is still used in the U.K., by far the most popular in the U.K. and elsewhere in the world is the British Standard parallel pipe thread (abbreviated to BSPPT or BSP). For use mainly on American origin equipment the API or NPTF (Dryseal) threads are supplied as part of our standard range.

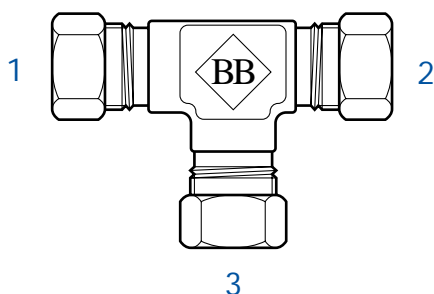
## MILD STEEL COUPLINGS

The body portion and nut are manufactured from mild steel and zinc plated. The ferrule is produced from a special, controlled carbon steel, suitably heat treated and zinc plated. In all cases the nut and ferrule material is purchased in the crack detected condition. When the couplings are to be used for installations where temperatures are in excess of 260°C (500°F), this information should be specified including the operating conditions involved. All couplings supplied in the assembled condition have the compression threads suitably lubricated ready for use. Male threaded couplings are fitted with suitable thread protectors. All nuts have the relevant tube size clearly marked apart from the coding symbol on the coupling body.

## STAINLESS STEEL COUPLINGS

The body portion is manufactured from stainless steel to specification 316 S11. The sealing ferrules are now manufactured as standard, at no extra cost in high grade 316 S11 stainless steel. All stainless steel couplings are supplied with stainless steel nuts as standard, other materials are available on request. Zinc plated mild steel nuts may be ordered as required. On imperial sizes of couplings, the nuts are silver plated as standard to reduce the locking possibility. Where couplings are to be used for installations where temperatures are in excess of 343°C (650°F) this information should be specified on ordering.

## SPECIALS



Whilst the range of fittings illustrated and listed in this catalogue is as comprehensive as it is usually deemed necessary, we are always pleased to quote for items which are not listed. To order non-listed items, please specify as follows:

- a. Describe type of fitting, e.g. male coupling, male elbow etc.
- b. Designate size of tube to be used.
- c. Specify connecting thread required (if applicable).
- d. In the case of tee fittings, specify each end of the tee in the order shown on the illustration above.

# ASSEMBLY INSTRUCTIONS



USEFUL DATA

1. Cut the tube to length and file the ends square.
2. Remove internal and external burrs from the tube end.
3. We always recommend that joints are pre-made whilst the coupling body is held *firmly in a bench vice*.
4. Ascertain that all detail parts of the coupling are suitably *lubricated*, especially the internal body cone, the rear of the ferrule and the internal thread of the nut.



The lubrication process is highly recommended on ALL fittings, however, on stainless steel couplings, the use of a quality lubricant is imperative. Betalube, a copper based paste is highly recommended and available from Betabite Hydraulics or your local distributor.

Please note after assembly, fittings to be used on Oxygen lines should be fully degreased.

5. Slide the nut onto the tube, followed by the ferrule, the open end of the nut should be towards the end of the tube, and similarly, the cutting or smaller end of the ferrule should point towards the tube end.
6. Present the tube, nut and ferrule to the coupling body, making sure that tube passes cleanly through the nut and ferrule & butts firmly against the step (abutment face) provided in the coupling body.



Screw the nut onto the coupling body until finger tight.

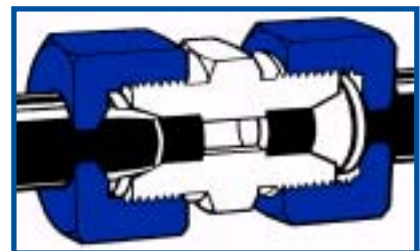
7. Hold the tube in one hand and with the correct spanner in the other hand, tighten the nut until the ferrule is felt to just grip the tube. This point can be determined by rotation or slightly rocking the tube. From this point, the nut should be tightened  $1\frac{1}{4}$  to  $1\frac{1}{2}$  turns from the initial ring grip to obtain a fully effective cutting action.



On larger sizes of fitting, an extension to the spanner is highly recommended to maximise leverage and minimise effort.

8. If the nut is now removed, the ferrule will have cut its own seating on the tube and whilst it will be found to rotate, it cannot be moved towards the tube end.

The 'joint' may now be re-assembled, by re-tightening of the nut until significant resistance is felt and then increase for a further  $\frac{1}{8}$  to  $\frac{1}{4}$  of a turn. The above procedure **MUST** be followed closely to ensure a safe and successful joint.



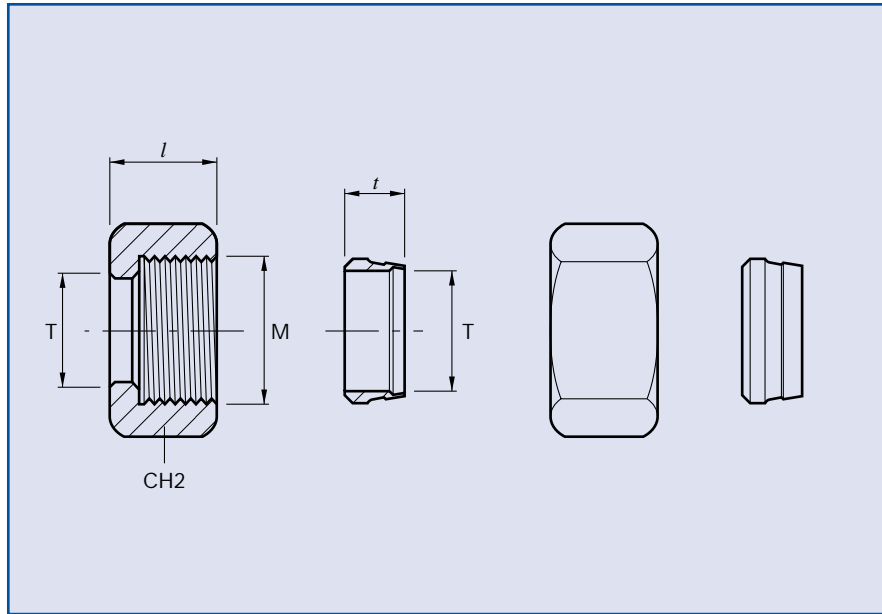
9. Betabite fittings correctly made can be broken repeatedly, when not under pressure and re-made without affecting their pressure tightness and leak-proof quality.

## PRESSURE RATING TABLES FOR YOUR SAFETY, CONVENIENCE AND PEACE OF MIND

Imperial sizes		Metric sizes		
> 1" OD or $\frac{3}{4}$ " NB	Hydraulic 690 bar (10,000 psi)	Gas 345 bar (5,000 psi)	(L) Light series 6 to 18mm	315 bar (4,568 psi)
> $1\frac{1}{4}$ " OD or 1" NB	552 bar (8,000 psi)	276 bar (4,000 psi)	(L) Light series 22 to 42mm	160 bar (2,320 psi)
> $1\frac{1}{2}$ " OD or $1\frac{1}{4}$ " NB	414 bar (6,000 psi)	207 bar (3,000 psi)	(S) Heavy series 6 to 14mm	630 bar (9,135 psi)
			(S) Heavy series 16 to 30mm	400 bar (5,800 psi)

# IMPERIAL NUT & FERRULE

FOR O.D. & N.B. TUBES



NUT & FERRULE

## O.D. TUBES

Nut Part No.	$\varnothing T$	<i>l</i>	<i>M</i>	CH2	Ferrule Part No.	<i>t</i>
N4	1/4"	0.578"	0.514" X 20	0.710"	F4	0.360"
N6	3/8"	0.625"	0.639" X 20	0.820"	F6	0.355"
N8	1/2"	0.656"	0.764" X 20	0.920"	F8	0.375"
N10	5/8"	0.687"	0.889" X 20	1.10"	F10	0.410"
N12	3/4"	0.687"	1.101" X 20	1.20"	F12	0.410"
N14	7/8"	0.750"	1.155" X 20	1.375"	F14	0.450"
N16	1"	0.843"	1.405" X 20	1.67"	F16	0.410"
N20	1 1/4"	1.000"	1.655" X 20	2.05"	F20	0.410"
N24	1 1/2"	1.031"	1.926" X 16	2.22"	F24	0.410"

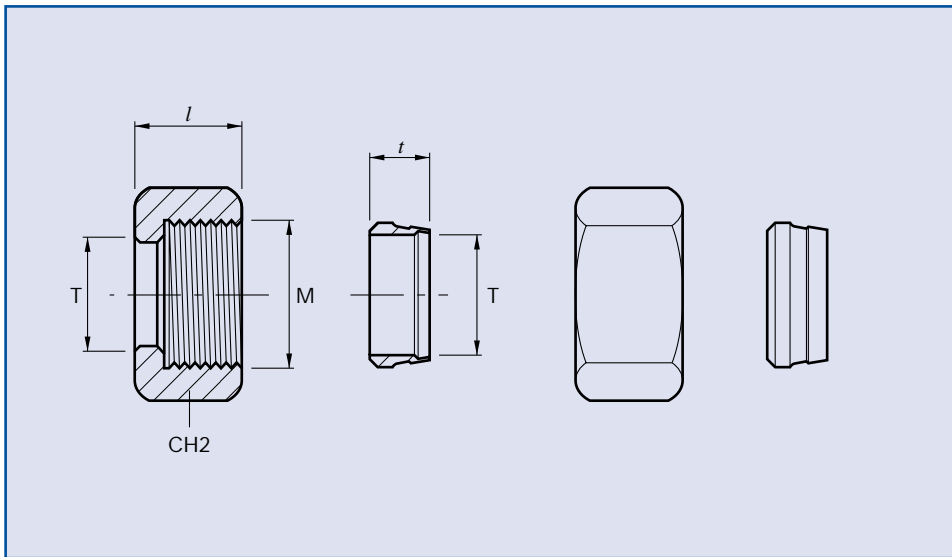
## N.B. TUBES

Part No.	$\varnothing T$	<i>l</i>	<i>M</i>	CH2	Ferrule Part No.	<i>t</i>
NN2	1/8"	0.687"	0.700" X 20	0.820"	NF2	0.375"
NN4	1/4"	0.687"	0.889" X 20	1.10"	NF4	0.375"
NN6	3/8"	0.687"	1.014" X 20	1.20"	NF6	0.375"
NN8	1/2"	0.750"	1.155" X 20	1.375"	NF8	0.375"
NN12	3/4"	0.843"	1.405" X 20	1.67"	NF12	0.410"
NN16	1"	1.000"	1.655" X 20	2.05"	NF16	0.410"
NN20	1 1/4"	1.187"	2.179" X 20	2.58"	NF20	0.410"
NN24	1 1/2"	1.187"	2.429" X 16	3.02"	NF24	0.450"

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC NUT & FERRULE

NUT DIN 3870, FERRULE DIN 3861



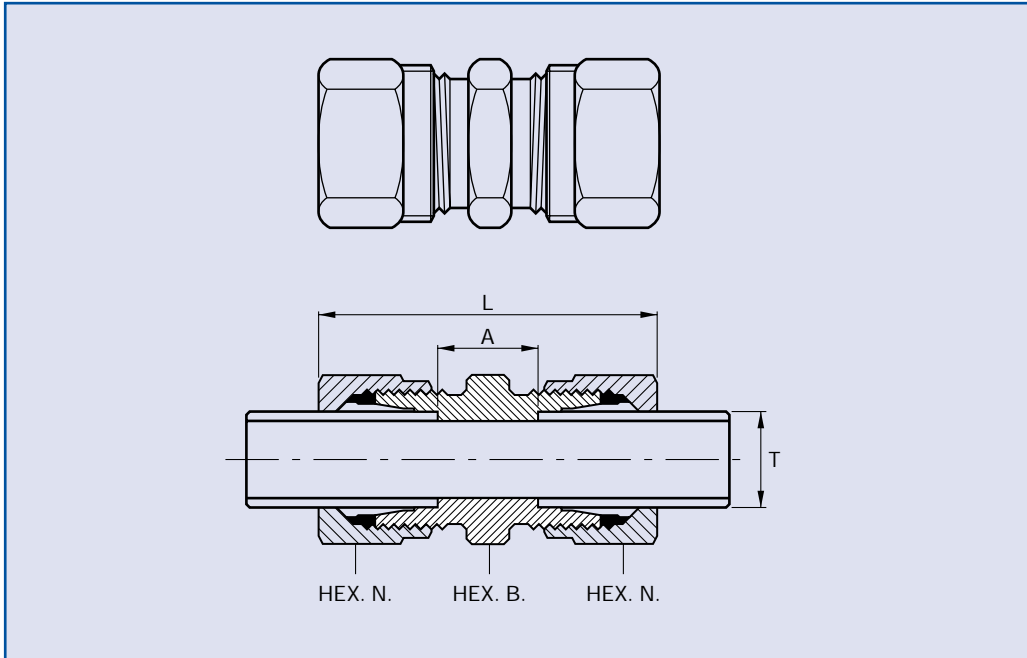
Series	ØT	Nut Part N°	ØM	CH2	l	Ferrule Part N°	t
L	6	MN6L	M12 x 1.5	14	14.5	MF6	9.5
L	8	MN8L	M14 x 1.5	17	14.5	MF8	9.5
L	10	MN10L	M16 x 1.5	19	15.5	MF10	10
L	12	MN12L	M18 x 1.5	22	15.5	MF12	10
L	15	MN15L	M22 x 1.5	27	17	MF15L	10
L	18	MN18L	M26 x 1.5	32	18	MF18L	10
L	22	MN22L	M30 x 2	36	20	MF22L	10.5
L	28	MN28L	M36 x 2	41	21	MF28L	10.5
L	35	MN35L	M45 x 2	50	24	MF35L	13
L	42	MN42L	M52 x 2	60	24	MF42L	13.5
S	6	MN6	M14 x 1.5	17	16.5	MF6	9.5
S	8	MN8	M16 x 1.5	19	16.5	MF8	9.5
S	10	MN10	M18 x 1.5	22	17.5	MF10	10
S	12	MN12	M20 x 1.5	24	17.5	MF12	10
S	14	MN14	M22 x 1.5	27	20.5	MF14	10
S	16	MN16	M24 x 1.5	30	20.5	MF16	10.5
S	20	MN20	M30 x 2	36	24	MF20	12.5
S	25	MN25	M36 x 2	46	27	MF25	12.5
S	30	MN30	M42 x 2	50	29	MF30	13
S	38	MN38	M52 x 2	60	32.5	MF38	13.5

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL STRAIGHT COUPLINGS

FOR O.D. & N.B. TUBES



STRAIGHT COUPLINGS

## O.D. TUBES

Part No.	Tube Dia. T.	Nut Hexagon N. A/F	Body Hexagon B. A/F	Tube Abutment A.	O/A Length L.
SC4	1/4"	.710"	.625"	5/16"	1 23/32"
SC5	5/16"	.710"	.710"	3/8"	1 25/32"
SC6	3/8"	.820"	.710"	3/8"	1 13/16"
SC8	1/2"	.920"	.820"	7/16"	1 15/16"
SC10	5/8"	1.10"	.920"	7/16"	2"
SC12	3/4"	1.20"	1.10"	1/2"	2 1/8"
SC14	7/8"	1.375"	1.20"	9/16"	2 2/16"
SC16	1"	1.67"	1.48"	1 1/16"	2 9/16"
SC20	1 1/4"	2.05"	1.67"	1 5/16"	2 7/8"
SC24	1 1/2"	2.22"	2.05"	1"	3 1/8"

## N.B. TUBES

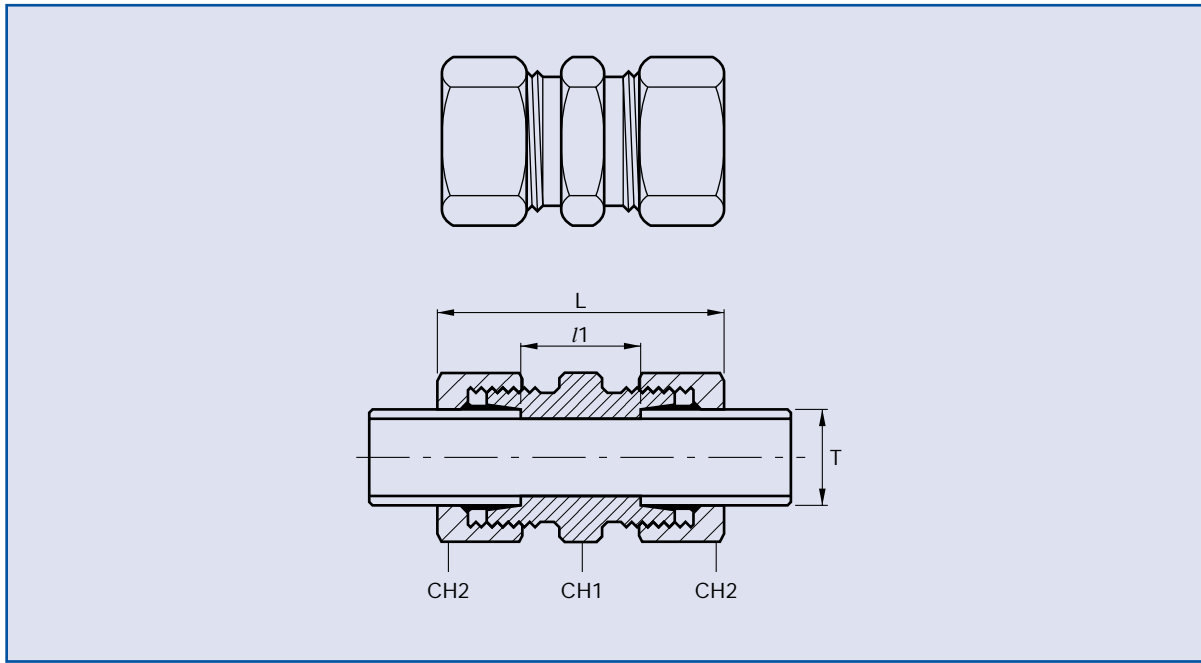
Part No.	N.B. Tube Size T.	Nut Hexagon N.	Body Hexagon B.	Tube Abutment A.	O/A Length L.
NSC2	1/8"	.820"	.710"	7/16"	1 15/16"
NSC4	1/4"	1.10"	.920"	7/16"	2"
NSC6	3/8"	1.20"	1.10"	1/2"	2 1/8"
NSC8	1/2"	1.375"	1.20"	9/16"	2 2/16"
NSC12	3/4"	1.67"	1.48"	3/4"	2 3/4"
NSC16	1"	2.05"	1.67"	1 5/16"	2 7/8"
NSC20	1 1/4"	2.58"	2.22"	1 3/16"	3 3/8"
NSC24	1 1/2"	3.02"	2.58"	1 1/8"	3 1/2"

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC STRAIGHT COUPLINGS



STRAIGHT COUPLINGS



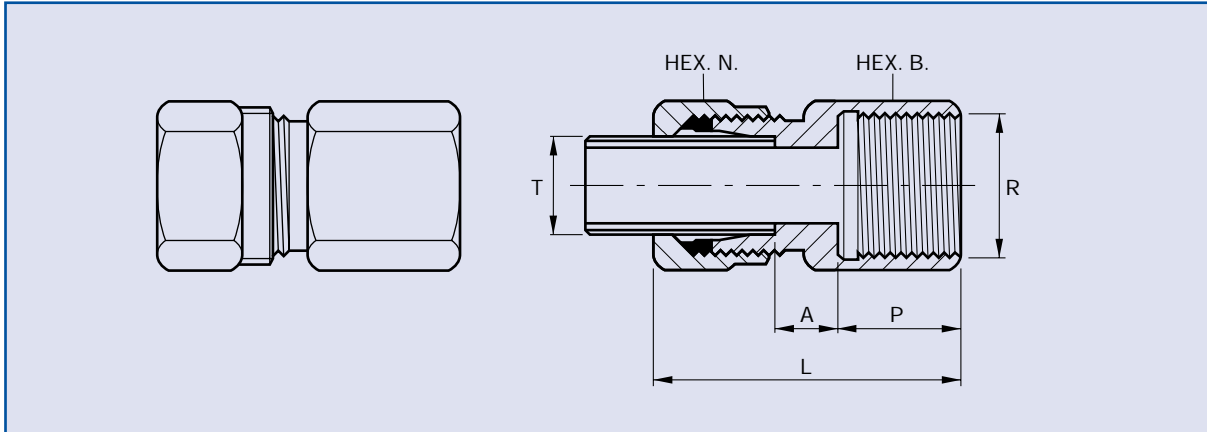
Series	NP	ØT	Part N°	CH1	CH2	L	L1
L	315	6	MSC6L	12	14	39	10
L	315	8	MSC8L	14	17	40	11
L	315	10	MSC10L	17	19	42	13
L	315	12	MSC12L	19	22	43	14
L	315	15	MSC15L	24	27	46	16
L	315	18	MSC18L	27	32	48	16
L	160	22	MSC22L	32	36	52	20
L	160	28	MSC28L	41	41	54	21
L	160	35	MSC35L	46	50	63	20
L	160	42	MSC42L	55	60	66	21
S	630	6	MSC6	14	17	45	16
S	630	8	MSC8	17	19	47	18
S	630	10	MSC10	19	22	49	17
S	630	12	MSC12	22	24	51	19
S	630	14	MSC14	24	27	57	22
S	400	16	MSC16	27	30	57	21
S	400	20	MSC20	32	36	66	23
S	400	25	MSC25	41	46	74	26
S	400	30	MSC30	46	50	80	27
S	315	38	MSC38	55	60	90	29

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL BSP PARALLEL FEMALE STUD COUPLINGS

FOR O.D. & N.B. TUBES

BETABITE  
HYDRAULICS



Part No.	Tube Dia. T.	BSP Thread R.	Nut Hexagon N.	Body Hexagon B.	Tube Abutment A.	Thread Length P.	O/A Length L.
FC4-2	1/4"	1/8"	.710"	.625"	7/32"	3/8"	1 1/32"
FC4-4	1/4"	1/4"	.710"	.710"	7/32"	7/16"	1 1/32"
FC4-6	1/4"	3/8"	.710"	.920"	7/32"	1/2"	1 13/32"
FC6-4	3/8"	1/4"	.820"	.710"	1/4"	7/16"	1 13/32"
FC6-6	3/8"	3/8"	.820"	.920"	1/4"	1/2"	1 15/32"
FC6-8	3/8"	1/2"	.820"	1.10"	5/16"	5/8"	1 21/32"
FC8-4	1/2"	1/4"	.920"	.820"	3/16"	7/16"	1 3/8"
FC8-6	1/2"	3/8"	.920"	.920"	9/32"	1/2"	1 11/32"
FC8-8	1/2"	1/2"	.920"	1.10"	1 1/32"	5/8"	1 23/32"
FC8-12	1/2"	3/4"	.920"	1.30"	1 1/32"	3/4"	1 27/32"
FC10-8	5/8"	1/2"	1.10"	1.10"	5/16"	5/8"	1 23/32"
FC12-12	3/4"	3/4"	1.20"	1.30"	5/16"	3/4"	1 7/8"
FC14-12	7/8"	3/4"	1.375"	1.30"	5/16"	3/4"	1 5/16"
FC16-16	1"	1"	1.67"	1.67"	1 1/32"	7/8"	2 3/32"
FC20-20	1 1/4"	1 1/4"	2.05"	2.05"	1/2"	1"	2 5/32"
FC24-24	1 1/2"	1 1/2"	2.22"	2.22"	1/2"	1"	2 5/16"

Part No.	N.B. Tube Size T.	BSP Thread R.	Nut Hexagon B.	Body Hexagon B.	Tube Abutment A.	Thread Length P.	O/A Length L.
NFC2-2	1/8"	1/8"	.820"	.710"	7/32"	3/8"	1 1/32"
NFC4-2	1/4"	1/8"	1.10"	.920"	3/16"	3/8"	1 1/32"
NFC4-4	1/4"	1/4"	1.10"	.920"	3/16"	7/16"	1 13/32"
NFC4-6	1/4"	3/8"	1.10"	.920"	3/16"	1/2"	1 15/32"
NFC4-8	1/4"	1/2"	1.10"	1.10"	1/4"	5/8"	1 21/32"
NFC6-6	3/8"	3/8"	1.20"	1.10"	3/16"	1/2"	1 1/2"
NFC6-8	3/8"	1/2"	1.20"	1.10"	1/4"	5/8"	1 11/16"
NFC8-6	1/2"	3/8"	1.375"	1.20"	3/16"	1/2"	1 1/16"
NFC8-8	1/2"	1/2"	1.375"	1.20"	1/4"	5/8"	1 3/4"
NFC8-12	1/2"	3/4"	1.375"	1.30"	5/16"	3/4"	1 15/16"
NFC12-12	3/4"	3/4"	1.67"	1.48"	9/32"	3/4"	2 1/32"
NFC16-16	1"	1"	2.05"	1.67"	7/16"	7/8"	2 7/32"
NFC20-20	1 1/4"	1 1/4"	2.58"	2.22"	3/8"	1"	2 5/32"
NFC24-24	1 1/2"	1 1/2"	3.02"	2.58"	7/16"	1"	2 5/8"

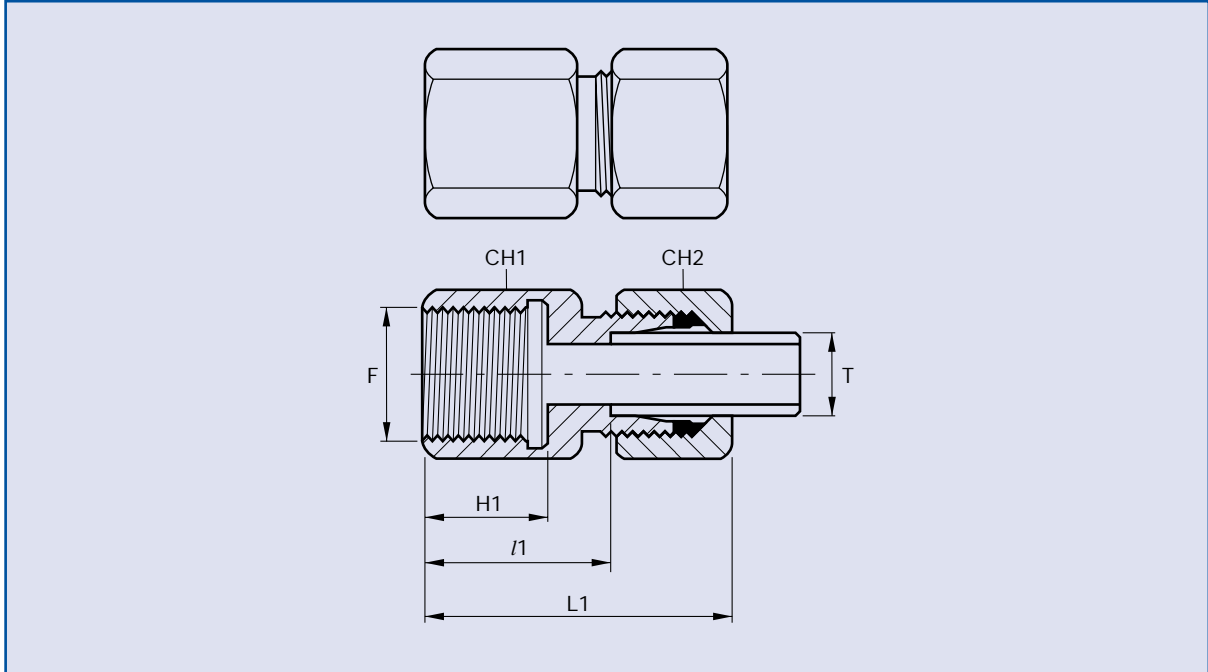
BSP PARALLEL FEMALE STUD COUPLINGS

Part numbers indicated are for Carbon Steel Couplings only.  
For 316 Stainless Steel Couplings, add suffix SS to part number.



# METRIC BSP PARALLEL FEMALE STUD COUPLINGS

THREAD: BSP CYLINDRICAL (UNI ISO 228)



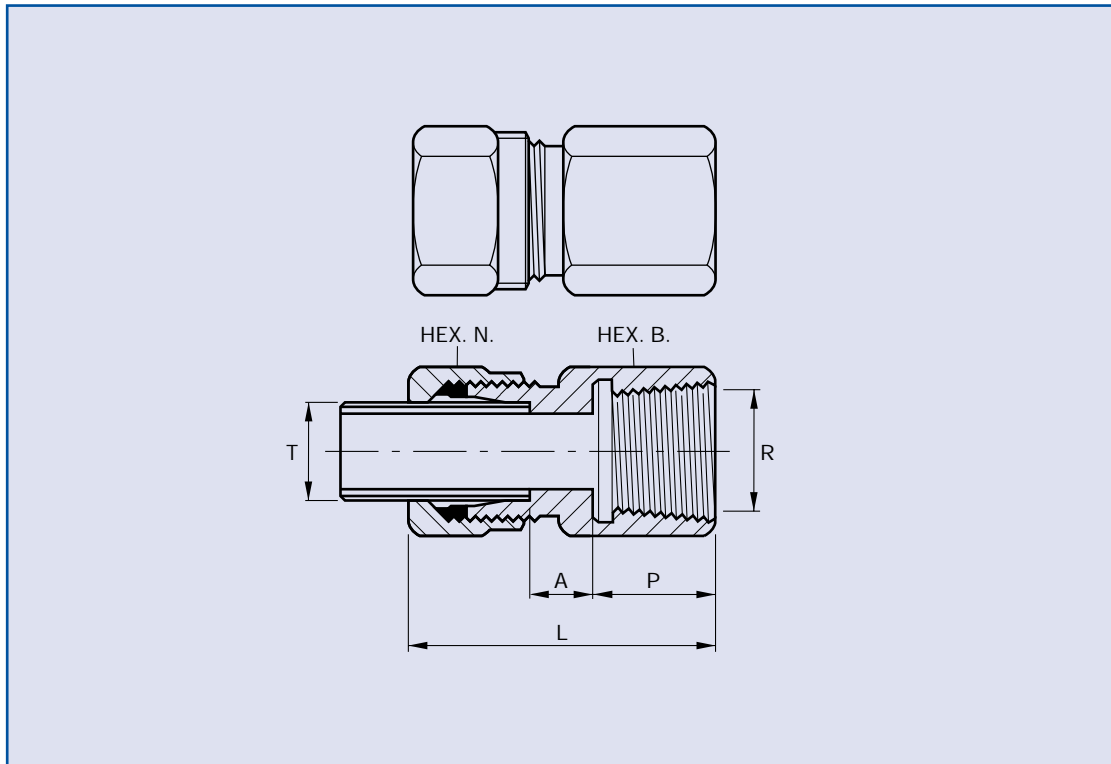
Series	NP	ØT	Part N°	ØF	CH1	CH2	L1	H1	l1
L	315	6	MFC6-2L	1/8"	14	14	34	12	19
L	315	8	MFC8-4L	1/4"	19	17	39	17	24
L	315	10	MFC10-4L	1/4"	19	19	40	17	25
L	315	12	MFC12-4L	1/4"	19	22	41	17	25
L	315	12	MFC12-6L	3/8"	22	22	41	17	26
L	315	12	MFC12-8L	1/2"	27	22	44	20	30
L	315	15	MFC15-8L	1/2"	27	27	45	20	30
L	315	18	MFC18-8L	1/2"	27	32	46	20	29.5
L	160	22	MFC22-12L	3/4"	32	36	51	22	34.5
L	160	28	MFC28-16L	1"	41	41	53.5	24.5	37
L	160	35	MFC35-20L	1 1/4"	50	50	60.5	26.5	39
L	160	42	MFC42-24L	1 1/2"	55	60	63.5	28.5	40.5
S	630	6	MFC6-4	1/4"	19	17	41	17	26
S	630	8	MFC8-4	1/4"	19	19	41	17	26
S	630	10	MFC10-6	3/8"	24	22	42	17	26.5
S	630	12	MFC12-6	3/8"	24	24	42	17	26.5
S	630	14	MFC14-8	1/2"	27	27	50	20	32
S	400	16	MFC16-8	1/2"	27	30	50	20	31.5
S	400	20	MFC20-12	3/4"	36	36	56	22	34.5
S	400	25	MFC25-16	1"	41	46	61.5	24.5	37.5
S	400	30	MFC30-20	1 1/4"	50	55	68.5	26.5	42
S	315	38	MFC38-24	1 1/2"	60	60	74.5	28.5	43.5

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL NPT TAPER FEMALE STUD COUPLINGS

FOR O.D. TUBES



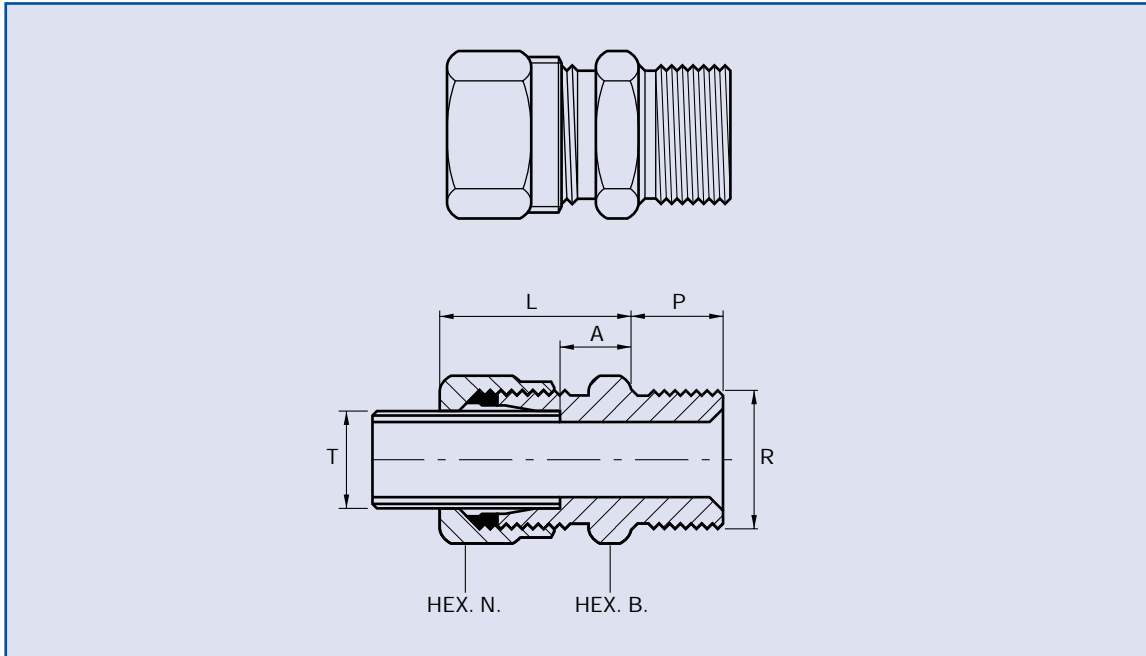
Part No.	Tube Dia. T.	NPT Thread R.	Nut Hexagon N.	Body Hexagon B.	Tube Abutment A.	Thread Length P.	O/A Length L.
FC4-2AT	1/4"	1/8"	.710"	.625"	7/32"	13/32"	1 1/16"
FC4-4AT	1/4"	1/4"	.710"	.710"	7/32"	19/32"	1 1/2"
FC4-6AT	1/4"	3/8"	.710"	.920"	7/32"	5/8"	1 11/32"
FC6-4AT	3/8"	1/4"	.820"	.710"	7/32"	19/32"	1 17/32"
FC6-6AT	3/8"	3/8"	.820"	.920"	1/4"	5/8"	1 19/32"
FC6-8AT	3/8"	1/2"	.820"	1.10"	9/32"	25/32"	1 25/32"
FC8-4AT	1/2"	1/4"	.920"	.820"	3/16"	19/32"	1 17/32"
FC8-6AT	1/2"	3/8"	.920"	.920"	1/4"	5/8"	1 7/8"
FC8-8AT	1/2"	1/2"	.920"	1.10"	11/32"	25/32"	1 7/8"
FC8-12AT	1/2"	3/4"	.920"	1.30"	1 1/32"	13/16"	1 29/32"
FC10-8AT	5/8"	1/2"	1.10"	1.10"	5/16"	25/32"	1 7/8"
FC12-12AT	3/4"	3/4"	1.20"	1.30"	1/4"	13/16"	1 7/8"
FC14-12AT	7/8"	3/4"	1.375"	1.30"	5/16"	13/16"	2"
FC16-16AT	1"	1"	1.67"	1.67"	13/32"	1"	2 11/32"
FC20-20AT	1 1/4"	1 1/4"	2.05"	2.05"	1/2"	1"	2 15/32"
FC24-24AT	1 1/2"	1 1/2"	2.22"	2.22"	15/32"	1 1/32"	2 9/16"

NPT TAPER FEMALE STUD COUPLINGS

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL BSP PARALLEL MALE STUD COUPLINGS

FOR O.D. TUBES



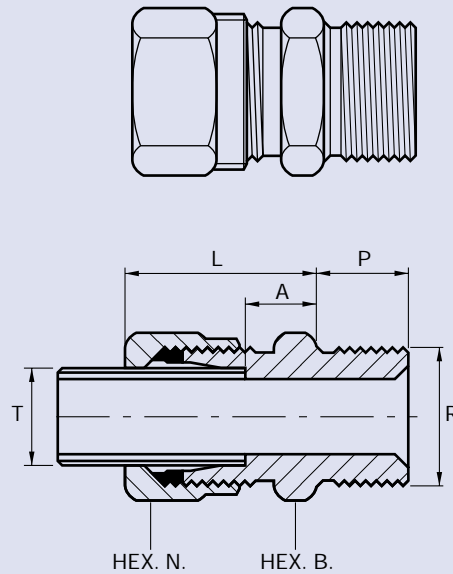
Part No.	Tube Dia. T.	BSP Thread R.	Nut Hexagon N.	Body Hexagon B.	Tube Abutment A.	Thread Length P.	O/A Length L.
MC4-2	1/4"	1/8"	.710"	.625"	9/32"	3/8"	3 1/32"
MC4-4	1/4"	1/4"	.710"	.710"	9/32"	7/16"	3 1/32"
MC4-6	1/4"	3/8"	.710"	.920"	11 1/32"	1/2"	1 1/32"
MC5-4	5/16"	1/4"	.710"	.710"	5/16"	7/16"	1"
MC6-4	3/8"	1/4"	.820"	.710"	5/16"	7/16"	1 1/32"
MC6-6	3/8"	3/8"	.820"	.920"	3/8"	1/2"	1 3/32"
MC6-8	3/8"	1/2"	.820"	1.10"	7/16"	5/8"	1 5/32"
MC8-4	1/2"	1/4"	.920"	.820"	11 1/32"	7/16"	1 3/32"
MC8-6	1/2"	3/8"	.920"	.920"	13 1/32"	1/2"	1 5/32"
MC8-8	1/2"	1/2"	.920"	1.10"	15 1/32"	5/8"	1 7/32"
MC8-12	1/2"	3/4"	.920"	1.30"	19 1/32"	3/4"	1 11/32"
MC10-8	5/8"	1/2"	1.10"	1.10"	7/16"	5/8"	1 7/32"
MC10-12	5/8"	3/4"	1.10"	1.30"	9/16"	3/4"	1 11/32"
MC12-8	3/4"	1/2"	1.20"	1.10"	7/16"	5/8"	1 1/4"
MC12-12	3/4"	3/4"	1.20"	1.30"	9/16"	3/4"	1 3/8"
MC14-12	7/8"	3/4"	1.375"	1.30"	1/2"	3/4"	1 3/8"
MC14-16	7/8"	1"	1.375"	1.67"	5/8"	7/8"	1 1/2"
MC16-12	1"	3/4"	1.67"	1.48"	19 1/32"	3/4"	1 17/32"
MC16-16	1"	1"	1.67"	1.67"	21 1/32"	7/8"	1 19/32"
MC16-20	1"	1 1/4"	1.67"	2.05"	23 1/32"	1"	1 21/32"
MC20-16	1 1/4"	1"	2.05"	1.67"	3/4"	7/8"	1 23/32"
MC20-20	1 1/4"	1 1/4"	2.05"	2.05"	13 1/16"	1"	1 25/32"
MC20-24	1 1/4"	1 1/2"	2.05"	2.22"	7/8"	1"	1 27/32"
MC24-20	1 1/2"	1 1/4"	2.22"	2.05"	13 1/16"	1"	1 1/8"
MC24-24	1 1/2"	1 1/2"	2.22"	2.22"	7/8"	1"	1 15/16"

NOTE: THE BSP THREADS ARE ALL COUNTERSUNK 60°, SUITABLE FOR HOSE CONNECTION.

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL BSP PARALLEL MALE STUD COUPLINGS

FOR N.B. TUBES



Part No.	N.B. Tube Size T.	BSP Thread R.	Nut Hexagon N.	Body Hexagon B.	Tube Abutment A.	Thread Length P.	O/A Length L.
NMC2-2	1/8"	1/8"	.820"	.710"	1 1/32"	3/8"	1 3/32"
NMC2-4	1/8"	1/4"	.820"	.710"	1 1/32"	7/16"	1 3/32"
NMC2-6	1/8"	3/8"	.820"	.920"	1 3/32"	1/2"	1 5/32"
NMC4-2	1/4"	1/8"	1.10"	.920"	3/8"	3/8"	1 5/32"
NMC4-4	1/4"	1/4"	1.10"	.920"	3/8"	7/16"	1 5/32"
NMC4-6	1/4"	3/8"	1.10"	.920"	3/8"	1/2"	1 5/32"
NMC4-8	1/4"	1/2"	1.10"	1.10"	7/16"	5/8"	1 7/32"
NMC6-4	3/8"	1/4"	1.20"	1.10"	7/16"	7/16"	1 1/4"
NMC6-6	3/8"	3/8"	1.20"	1.10"	7/16"	1/2"	1 1/4"
NMC6-8	3/8"	1/2"	1.20"	1.10"	7/16"	5/8"	1 1/4"
NMC8-4	1/2"	1/4"	1.375"	1.20"	1/2"	7/16"	1 3/8"
NMC8-6	1/2"	3/8"	1.375"	1.20"	1/2"	1/2"	1 3/8"
NMC8-8	1/2"	1/2"	1.375"	1.20"	1/2"	5/8"	1 3/8"
NMC8-12	1/2"	3/4"	1.375"	1.30"	9/16"	3/4"	1 7/16"
NMC8-16	1/2"	1"	1.375"	1.67"	5/8"	7/8"	1 1/2"
NMC12-8	3/4"	1/2"	1.67"	1.48"	19/32"	5/8"	1 19/32"
NMC12-12	3/4"	3/4"	1.67"	1.48"	19/32"	3/4"	1 19/32"
NMC12-16	3/4"	1"	1.67"	1.67"	2 1/32"	7/8"	1 21/32"
NMC16-12	1"	3/4"	2.05"	1.67"	3/4"	3/4"	1 23/32"
NMC16-16	1"	1"	2.05"	1.67"	3/4"	7/8"	1 23/32"
NMC16-20	1"	1 1/4"	2.05"	2.05"	13/16"	1"	1 25/32"
NMC20-16	1 1/4"	1"	2.58"	2.22"	15/16"	7/8"	2 1/8"
NMC20-20	1 1/4"	1 1/4"	2.58"	2.22"	15/16"	1"	2 1/8"
NMC20-24	1 1/4"	1 1/2"	2.58"	2.22"	15/16"	1"	2 1/8"
NMC24-24	1 1/2"	1 1/2"	3.02"	2.58"	15/16"	1"	2 1/8"
NMC24-32	1 1/2"	2"	3.02"	2.76"	15/16"	1 1/8"	2 1/8"

NOTE: THE BSP THREADS ARE ALL COUNTERSUNK 60°, SUITABLE FOR HOSE CONNECTION.

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

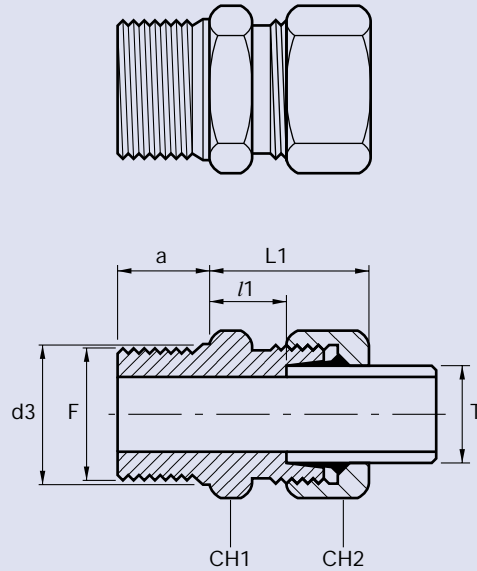
BSP PARALLEL MALE STUD COUPLINGS

# METRIC MALE STUD COUPLINGS

THREAD: BSP CYLINDRICAL (UNI ISO 228)  
L SERIES



MALE STUD COUPLINGS



Series	NP	ØT	Part N°	ØF	CH1	CH2	a	d3	L1	l1
L	315	6	MMC6-2L	1/8"	14	14	8	14	23	8.5
L	315	6	MMC6-4L	1/4"	19	14	12	18	24.5	10
L	315	6	MMC6-6L	3/8"	22	14	12	22	26	11.5
L	315	6	MMC6-8L	1/2"	27	14	14	26	26.5	12
L	315	8	MMC8-4L	1/4"	19	17	12	18	25	10
L	315	8	MMC8-2L	1/8"	14	17	8	14	24	9
L	315	8	MMC8-6L	3/8"	22	17	12	22	26.5	11.5
L	315	8	MMC8-8L	1/2"	27	17	14	26	27	12
L	315	10	MMC10-4L	1/4"	19	19	12	18	26	11
L	315	10	MMC10-2L	1/8"	17	19	8	14	25.5	10.5
L	315	10	MMC10-6L	3/8"	22	19	12	22	27.5	12.5
L	315	10	MMC10-8L	1/2"	27	19	14	26	28	13
L	315	12	MMC12-6L	3/8"	22	22	12	22	27	12.5
L	315	12	MMC12-4L	1/4"	19	22	12	18	26.5	12
L	315	12	MMC12-8L	1/2"	27	22	14	26	27.5	13
L	315	15	MMC15-8L	1/2"	27	27	14	26	29	14
L	315	15	MMC15-6L	3/8"	24	27	12	22	29	14
L	315	15	MMC15-12L	3/4"	32	27	16	32	30	15
L	315	18	MMC18-8L	1/2"	27	32	14	26	31	14.5
L	315	18	MMC18-6L	3/8"	27	32	12	22	30.5	14
L	315	18	MMC18-12L	3/4"	32	32	16	32	31	14.5
L	160	22	MMC22-12L	3/4"	32	36	16	32	33	16.5
L	160	22	MMC22-8L	1/2"	32	36	14	26	33	16.5
L	160	22	MMC22-16L	1"	41	36	18	39	34	17.5
L	160	28	MMC28-16L	1"	41	41	18	39	34	17.5
L	160	28	MMC28-12L	3/4"	41	41	16	32	34	17.5
L	160	35	MMC35-20L	1 1/4"	50	50	20	49	30	17.5
L	160	35	MMC35-16L	1"	50	50	18	39	40	18.5
L	160	42	MMC42-24L	1 1/2"	55	60	22	55	42	19

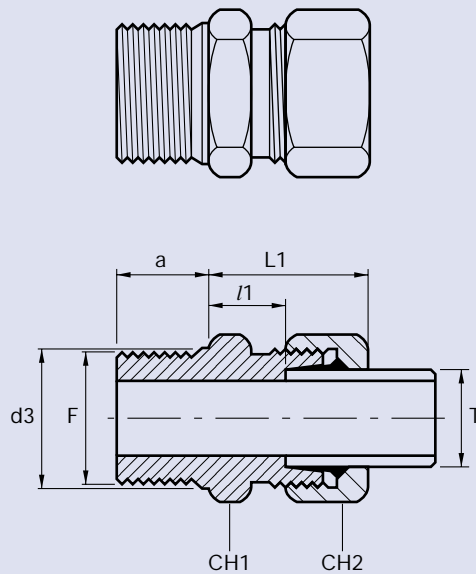
NOTE: THE BSP THREADS ARE ALL COUNTERSUNK 60°, SUITABLE FOR HOSE CONNECTION.

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC MALE STUD COUPLINGS

THREAD: BSP CYLINDRICAL (UNI ISO 228)  
S SERIES



MALE STUD COUPLINGS

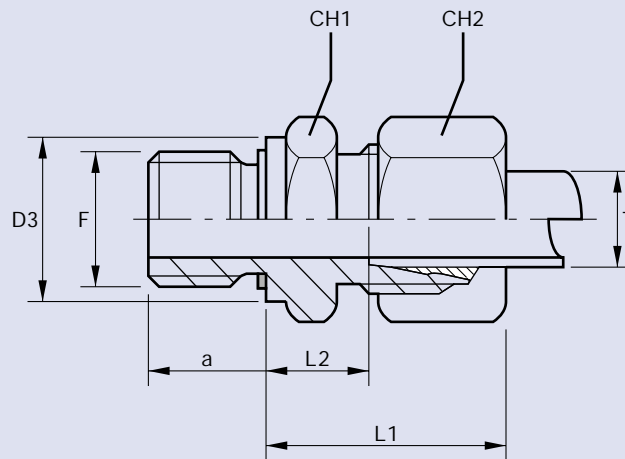
Series	NP	ØT	Part N°	ØF	CH1	CH2	a	d3	L1	l1
S	630	6	MMC6-4	1/4"	19	17	12	18	28	13
S	630	8	MMC8-4	1/4"	19	19	12	18	30	15
S	630	8	MMC8-6	3/8"	22	19	12	22	30.5	15.5
S	630	10	MMC10-6	3/8"	22	22	12	22	31	15
S	630	10	MMC10-8	1/2"	27	22	14	26	33.5	17.5
S	630	12	MMC12-4	1/4"	22	24	12	18	32.5	16.5
S	630	12	MMC12-6	3/8"	22	24	12	22	33	17
S	630	12	MMC12-8	1/2"	27	24	14	26	33.5	17.5
S	630	14	MMC14-6	3/8"	24	27	12	22	36.5	18.5
S	630	14	MMC14-8	1/2"	27	27	14	26	37	19
S	400	16	MMC16-6	3/8"	27	30	12	22	37	18.5
S	400	16	MMC16-8	1/2"	27	30	14	26	37	18.5
S	400	16	MMC16-12	3/4"	32	30	16	32	39	20.5
S	400	20	MMC20-8	1/2"	32	36	14	26	42	20.5
S	400	20	MMC20-12	3/4"	32	36	16	32	42	20.5
S	400	20	MMC20-16	1"	41	36	18	39	44	22.5
S	400	25	MMC25-12	3/4"	41	46	16	32	47	23
S	400	25	MMC25-16	1"	41	46	18	39	47	23
S	250	30	MMC30-16	1"	46	50	18	39	50	23.5
S	250	30	MMC30-20	1 1/4"	50	50	20	49	50	23.5
S	250	38	MMC38-16	1"	55	60	18	39	57	26
S	250	38	MMC38-24	1 1/2"	55	60	22	55	57	26
S	250	38	MMC38-20	1 1/4"	55	60	20	49	57	26

NOTE: THE BSP THREADS ARE ALL COUNTERSUNK 60°, SUITABLE FOR HOSE CONNECTION.

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC MALE STUD COUPLINGS – WD

THREAD: BSP CYLINDRICAL (UNI ISO 228)  
WD CAPTIVE SEAL – PERBUNAN OR VITON



Series	NP	ØT	Part N°	F	L1	L2	a	CH1	CH2	D3
L	315	6	MMC6-2LWD	1/8"	23	8.5	8	14	14	14
L	315	8	MMC8-4LWD	1/4"	25	10	12	19	17	19
L	315	10	MMC10-4LWD	1/4"	26	11	12	19	19	19
L	315	12	MMC12-6LWD	3/8"	27	12.5	12	22	22	22
L	315	15	MMC15-8LWD	1/2"	29	14	14	27	27	27
L	160	18	MMC18-8LWD	1/2"	31	14.5	14	27	32	27
L	160	22	MMC22-12LWD	3/4"	33	16.5	16	32	36	32
L	160	28	MMC28-16LWD	1"	34	17.5	18	41	41	40
L	160	35	MMC35-20LWD	1 1/4"	39	17.5	20	50	50	50
L	160	42	MMC42-24LWD	1 1/2"	42	19	22	55	60	55
S	630	6	MMC6-4WD	1/4"	28	13	12	19	17	19
S	630	8	MMC8-4WD	1/4"	30	15	12	19	19	19
S	630	10	MMC10-6WD	3/8"	31	15	12	22	22	22
S	630	12	MMC12-6WD	3/8"	33	17	12	22	24	22
S	630	14	MMC14-8WD	1/2"	37	19	14	27	27	27
S	630	16	MMC16-8WD	1/2"	37	18.5	14	27	30	27
S	630	20	MMC20-12WD	3/4"	42	20.5	16	32	36	32
S	630	25	MMC25-16WD	1"	47	23	18	41	46	40
S	630	30	MMC30-20WD	1 1/4"	50	23.5	20	50	50	50
S	315	38	MMC38-24WD	1 1/2"	57	26	22	55	60	55

Perbunan captive seal temperature range -20°C to +90°C. (Viton captive seal temperature range -20°C to +200°C on request).

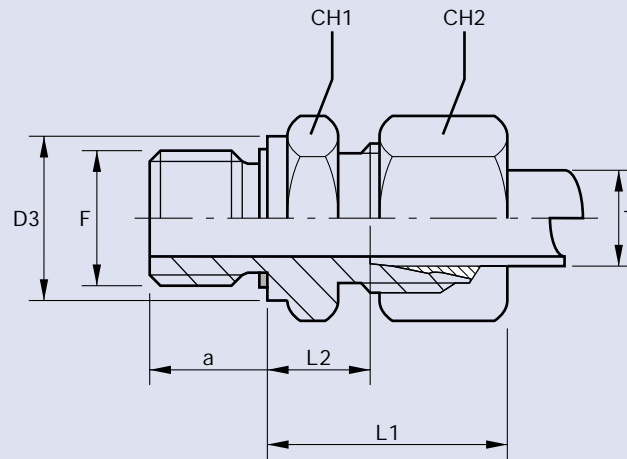
Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC MALE STUD COUPLINGS – WD

THREAD: METRIC PARALLEL

WD CAPTIVE SEAL – PERBUNAN OR VITON



Series	NP	ØT	Part N°	F	L1	L2	a	CH1	CH2	D3
L	315	6	MMC6-10MLWD	10x1	23	8.5	8	14	14	14
L	315	8	MMC8-12MLWD	12x1.5	25	10	12	17	17	17
L	315	10	MMC10-14MLWD	14x1.5	26	11	12	19	19	19
L	315	12	MMC12-16MLWD	16x1.5	27	12.5	12	22	22	22
L	315	15	MMC15-18MLWD	18x1.5	29	14	14	24	27	24
L	160	18	MMC18-22MLWD	22x1.5	31	14.5	14	27	32	27
L	160	22	MMC22-26MLWD	26x1.5	33	16.5	16	32	36	32
L	160	28	MMC28-33MLWD	33x2	34	17.5	18	41	41	40
L	160	35	MMC35-42MLWD	42x2	39	17.5	20	50	50	50
L	160	42	MMC42-48MLWD	48x2	42	19	22	55	60	55
S	630	6	MMC6-12MWD	12x1.5	28	13	12	17	17	17
S	630	8	MMC8-14MWD	14x1.5	30	15	12	19	19	19
S	630	10	MMC10-16MWD	16x1.5	31	15	12	22	22	22
S	630	12	MMC12-18MWD	18x1.5	33	17	12	24	24	24
S	630	14	MMC14-20MWD	20x1.5	37	19	14	27	27	26
S	630	16	MMC16-22MWD	22x1.5	37	18.5	14	27	30	27
S	630	20	MMC20-27MWD	27x2	42	20.5	16	32	36	32
S	630	25	MMC25-33MWD	33x2	47	23	18	41	46	40
S	630	30	MMC30-42MWD	42x2	50	23.5	20	50	50	50
S	315	38	MMC38-48MWD	48x2	57	26	22	55	60	55

Perbunan captive seal temperature range -20°C to +90°C. (Viton captive seal temperature range -20°C to +200°C on request).

Please Note-Metric thread male stud coupling also available without WD seal to form A.

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

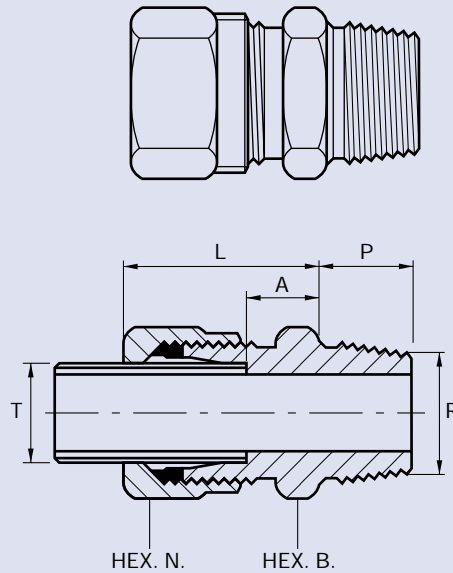


# IMPERIAL BSP TAPER MALE STUD COUPLINGS

FOR O.D. TUBES



BSP TAPER MALE STUD COUPLINGS



Part No.	Tube Dia. T.	BSPT Thread R.	Nut Hexagon N.	Body Hexagon B.	Tube Abutment A.	Thread Length P.	O/A Length L.
MC4-2T	1/4"	1/8"	.710"	.625"	9/32"	3/8"	31/32"
MC4-4T	1/4"	1/4"	.710"	.625"	9/32"	7/16"	31/32"
MC4-6T	1/4"	3/8"	.710"	.710"	9/32"	1/2"	31/32"
MC5-4T	5/16"	1/4"	.710"	.710"	5/16"	7/16"	1"
MC6-4T	3/8"	1/4"	.820"	.710"	5/16"	7/16"	1 1/16"
MC6-6T	3/8"	3/8"	.820"	.710"	5/16"	1/2"	1 1/16"
MC6-8T	3/8"	1/2"	.820"	.920"	3/8"	5/8"	1 1/16"
MC8-4T	1/2"	1/4"	.920"	.820"	11/32"	7/16"	1 3/32"
MC8-6T	1/2"	3/8"	.920"	.820"	11/32"	1/2"	1 3/32"
MC8-8T	1/2"	1/2"	.920"	.920"	13/32"	5/8"	1 3/32"
MC10-8T	5/8"	1/2"	1.10"	.920"	3/8"	5/8"	1 5/32"
MC12-8T	3/4"	1/2"	1.20"	1.10"	7/16"	5/8"	1 1/4"
MC12-12T	3/4"	3/4"	1.20"	1.10"	7/16"	3/4"	1 1/4"
MC14-12T	7/8"	3/4"	1.375"	1.20"	1/2"	3/4"	1 3/8"
MC16-12T	1"	3/4"	1.67"	1.48"	19/32"	3/4"	1 17/32"
MC16-16T	1"	1"	1.67"	1.48"	19/32"	7/8"	1 17/32"
MC20-16T	1 1/4"	1"	2.05"	1.67"	3/4"	7/8"	1 3/4"
MC20-20T	1 1/4"	1 1/4"	2.05"	1.86"	3/4"	1"	1 3/4"
MC24-20T	1 1/2"	1 1/4"	2.22"	2.05"	13/16"	1"	1 7/8"
MC24-24T	1 1/2"	1 1/2"	2.22"	2.05"	13/16"	1"	1 7/8"

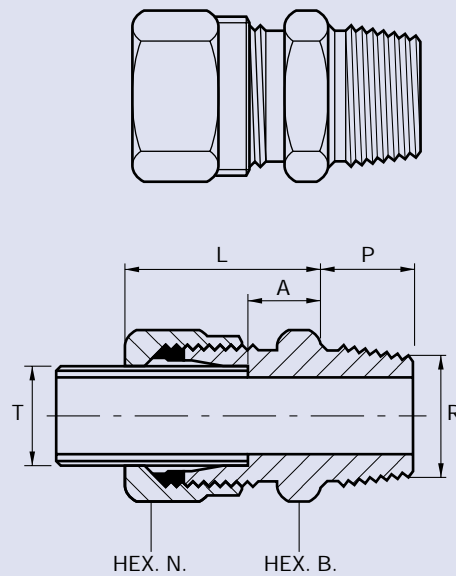
Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL BSP TAPER MALE STUD COUPLINGS

FOR N.B. TUBES

BETABITE  
HYDRAULICS



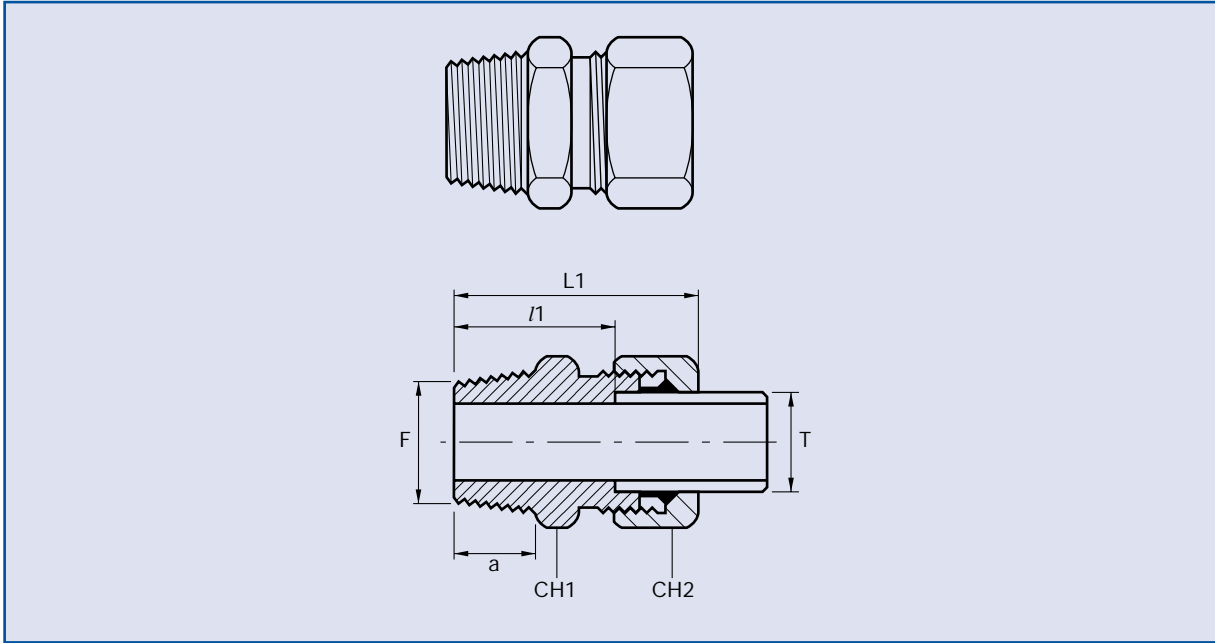
BSP TAPER MALE STUD COUPLINGS

Part No.	N.B. Tube Size T.	BSPT Thread R.	Nut Hexagon N.	Body Hexagon B.	Tube Abutment A.	Thread Length P.	O/A Length L.
NMC4-4T	¼"	¼"	1.10"	.920"	¾"	⅞"	1⅜"
NMC4-6T	¼"	⅜"	1.10"	.920"	¾"	½"	1⅜"
NMC4-8T	¼"	½"	1.10"	.920"	¾"	⅝"	1⅜"
NMC6-4T	⅜"	¼"	1.20"	1.10"	⅞"	⅞"	1¼"
NMC6-6T	⅜"	⅜"	1.20"	1.10"	⅞"	½"	1¼"
NMC6-8T	⅜"	½"	1.20"	1.10"	⅞"	⅝"	1¼"
NMC8-8T	½"	½"	1.375"	1.20"	½"	⅝"	1⅜"
NMC8-12T	½"	¾"	1.375"	1.30"	½"	¾"	1⅜"
NMC12-12T	¾"	¾"	1.67"	1.48"	⅝"	¾"	1⅝"
NMC16-16T	1"	1"	2.05"	1.67"	¾"	⅞"	1¾"
NMC16-20T	1"	1¼"	2.05"	1.86"	1⅜"	1"	1⅜"
NMC20-16T	1¼"	1"	2.58"	2.22"	1⅝"	⅞"	2⅜"
NMC20-20T	1¼"	1¼"	2.58"	2.22"	1⅝"	1"	2⅜"
NMC20-21T	1¼"	1½"	2.58"	2.22"	1⅝"	1"	2⅜"
NMC24-24T	1½"	1½"	3.02"	2.58"	1⅝"	1"	2⅜"

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC BSP TAPER MALE STUD COUPLINGS

THREAD: BSP TAPERED (DIN 3858)



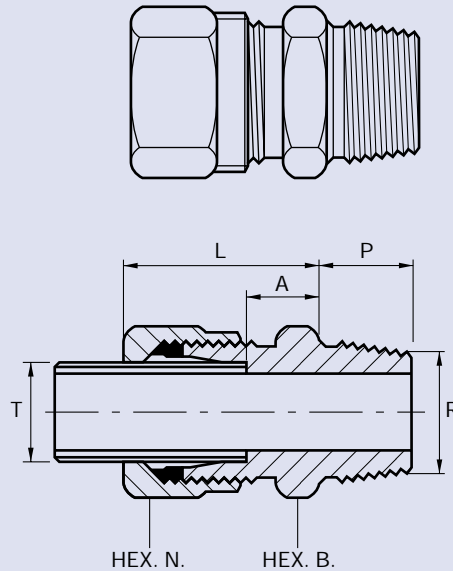
Series	NP	ØT	Part N°	ØF	CH1	CH2	a	L1	l1
L	315	6	MMC6-2TL	1/8"	12	14	10	32	17
L	315	6	MMC6-4TL	1/4"	17	14	13	36	21
L	315	8	MMC8-4TL	1/4"	17	17	13	36	21
L	315	8	MMC8-6TL	3/8"	19	17	13	37	22
L	315	10	MMC10-4TL	1/4"	17	19	13	37	22
L	315	10	MMC10-6TL	3/8"	19	19	13	38	23
L	315	12	MMC12-6TL	3/8"	19	22	13	38	23
L	315	12	MMC12-4TL	1/4"	19	22	13	38	23
L	315	12	MMC12-8TL	1/2"	24	22	16	41	26
L	315	15	MMC15-8TL	1/2"	24	27	16	42	27
L	315	15	MMC15-6TL	3/8"	24	27	13	39	24
L	315	18	MMC18-8TL	1/2"	27	32	16	44	27.5
L	160	22	MMC22-12TL	3/4"	32	36	18	48	31.5
L	160	28	MMC28-16TL	1"	41	41	20	51	34.5
L	160	35	MMC35-20TL	1 1/4"	46	50	21	58	36.5
L	160	42	MMC42-24TL	1 1/2"	55	60	22	61	38
S	630	6	MMC6-4T	1/4"	17	17	13	41	26
S	630	8	MMC8-4T	1/4"	17	19	13	41	26
S	630	10	MMC10-6T	3/8"	19	22	13	42	25.5
S	630	12	MMC12-6T	3/8"	22	24	13	44	27.5
S	630	12	MMC12-8T	1/2"	24	24	16	47.5	30.5
S	630	14	MMC14-8T	1/2"	24	27	16	50	32
S	400	16	MMC16-8T	1/2"	27	30	16	50	31.5
S	400	20	MMC20-12T	3/4"	32	36	18	57	35.5
S	400	25	MMC25-16T	1"	41	46	20	64	40
S	250	30	MMC30-20T	1 1/4"	46	50	21	68	41.5
S	250	38	MMC38-24T	1 1/2"	55	60	22	76	45

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL NPT TAPER MALE STUD COUPLINGS

FOR O.D. TUBES

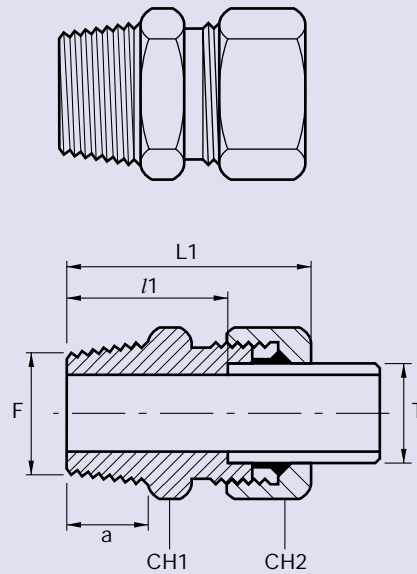


Part No.	Tube Dia. T.	NPT Thread R.	Nut Hexagon N.	Body Hexagon B.	Tube Abutment A.	Thread Length P.	O/A Length L.
MC4-2AT	¼"	⅛"	.710"	.625"	⅝"	13/32"	3 1/32"
MC4-4AT	¼"	¼"	.710"	.625"	⅝"	19/32"	3 1/32"
MC4-6AT	¼"	⅜"	.710"	.710"	⅝"	5/8"	3 1/32"
MC6-4AT	⅜"	¼"	.820"	.710"	⅝"	19/32"	1 1/16"
MC6-6AT	⅜"	⅜"	.820"	.710"	5/16"	5/8"	1 1/16"
MC6-8AT	⅜"	½"	.820"	.920"	⅜"	25/32"	1 3/32"
MC8-4AT	½"	¼"	.920"	.820"	11/32"	19/32"	1 3/32"
MC8-6AT	½"	⅜"	.920"	.820"	11/32"	5/8"	1 3/32"
MC8-8AT	½"	½"	.920"	.920"	13/32"	25/32"	1 5/32"
MC10-8AT	5/8"	½"	1.10"	.920"	3/8"	25/32"	1 5/32"
MC12-8AT	¾"	½"	1.20"	1.10"	7/16"	25/32"	1 1/4"
MC12-12AT	¾"	¾"	1.20"	1.10"	7/16"	13/16"	1 1/4"
MC16-12AT	1"	¾"	1.67"	1.48"	19/32"	13/16"	1 17/32"
MC16-16AT	1"	1"	1.67"	1.48"	19/32"	1"	1 17/32"
MC20-16AT	1 1/4"	1"	2.05"	1.67"	3/4"	1"	1 23/32"
MC20-20AT	1 1/4"	1 1/4"	2.05"	1.86"	13/16"	1"	1 25/32"
MC24-20AT	1 1/2"	1 1/4"	2.22"	2.05"	13/16"	1"	1 7/8"
MC24-24AT	1 1/2"	1 1/2"	2.22"	2.05"	13/16"	1 1/32"	1 7/8"

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC NPT MALE STUD COUPLINGS

THREAD: NPT B2.1 (ASA 1960)



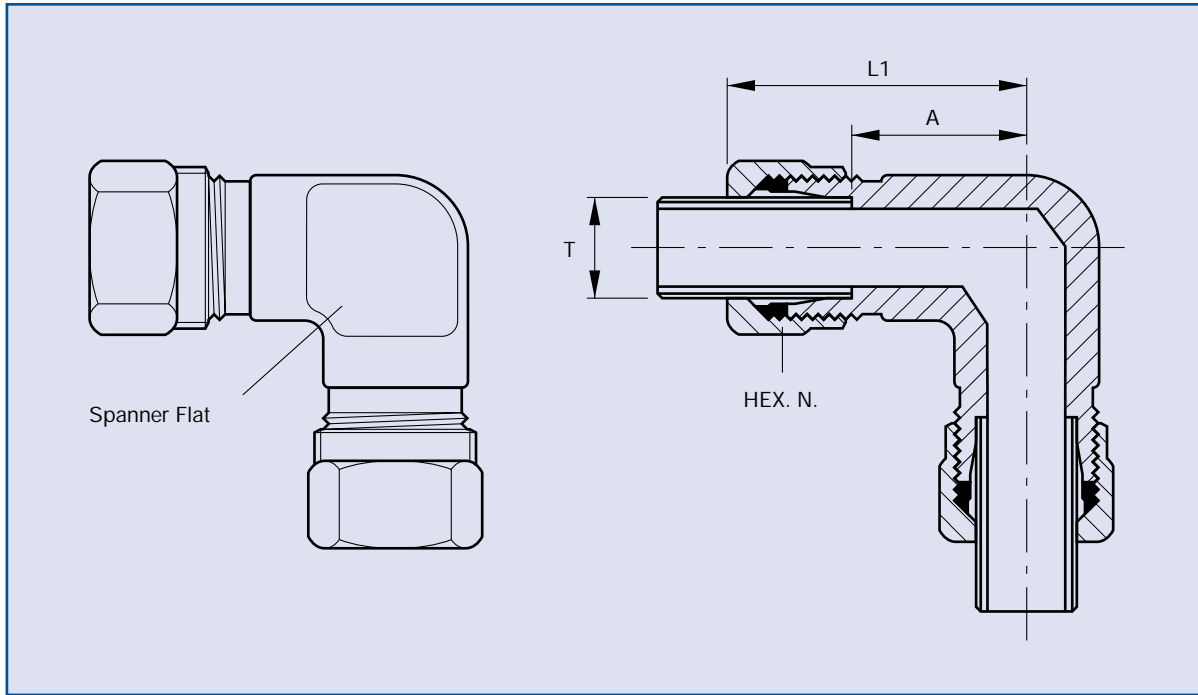
Series	NP	ØT	Part N°	ØF	CH1	CH2	a	L1	l1
L	315	6	MMC 6-2ATL	1/8"	12	14	10	32	17
L	315	6	MMC6-4ATL	1/4"	17	14	15	38	23
L	315	6	MMC6-8ATL	1/2"	24	14	20	44	29
L	315	8	MMC8-4ATL	1/4"	17	17	15	38	23
L	315	8	MMC8-6ATL	3/8"	19	17	15.5	39	24
L	315	10	MMC10-4ATL	1/4"	17	19	15	39	24
L	315	10	MMC10-6ATL	3/8"	19	19	15.5	39.5	25
L	315	12	MMC12-6ATL	3/8"	19	22	15.5	40	25
L	315	12	MMC12-4ATL	1/4"	19	22	15	40	25
L	315	12	MMC12-8ATL	1/2"	24	22	20	45	30
L	315	15	MMC15-8ATL	1/2"	24	27	20	46	31
L	315	15	MMC15-6ATL	3/8"	24	27	15.5	41.5	26.5
L	315	18	MMC18-8ATL	1/2"	27	32	20	48	31.5
L	315	18	MMC18-12ATL	3/4"	32	32	20	48.5	32
L	160	22	MMC22-12ATL	3/4"	32	36	20	50	33.5
L	160	28	MMC28-16ATL	1"	41	41	25	56	39.5
L	160	35	MMC35-20ATL	1 1/4"	46	50	25.5	62	40.5
L	160	42	MMC42-24ATL	1 1/2"	55	60	26	65	42
S	630	6	MMC6-4AT	1/4"	17	17	15	43	28
S	630	8	MMC8-4AT	1/4"	17	19	15	43	28
S	630	10	MMC10-6AT	3/8"	19	22	15.5	44	27.5
S	630	12	MMC12-6AT	3/8"	22	24	15.5	46	29.5
S	630	12	MMC12-8AT	1/2"	24	24	20	51	34.5
S	630	14	MMC14-8AT	1/2"	24	27	20	54	36
S	400	16	MMC16-8AT	1/2"	27	30	20	54	35.5
S	400	20	MMC20-12AT	3/4"	32	36	20	59	37.5
S	400	25	MMC25-16AT	1"	41	46	25	69	45
S	400	30	MMC30-20AT	1 1/4"	46	50	25.5	73	46.5
S	400	30	MMC30-16AT	1"	46	50	25	66.5	40
S	315	38	MMC38-24AT	1 1/2"	55	60	26	80	49

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL EQUAL ELBOWS

FOR O.D. & N.B. TUBES



EQUAL ELBOWS

## O.D. TUBES

Part No.	Tube Dia. T.	Nut Hexagon N.	A/F Spanner Flat	Tube Abutment A.	O/A Length L.
E4	1/4"	.710"	.468"	21/32"	1 3/8"
E5	5/16"	.710"	.600"	23/32"	1 7/16"
E6	3/8"	.820"	.600"	13/16"	1 17/32"
E8	1/2"	.920"	.710"	31/32"	1 23/32"
E10	5/8"	1.10"	.820"	1 1/16"	1 27/32"
E12	3/4"	1.20"	1.10"	1 5/16"	2 1/8"
E14	7/8"	1.375"	1.10"	1 7/16"	2 9/16"
E16	1"	1.67"	1.30"	1 9/32"	2 17/32"
E20	1 1/4"	2.05"	1.56"	1 15/16"	2 29/32"
E24	1 1/2"	2.22"	1.80"	1 15/16"	3 3/8"

## N.B. TUBES

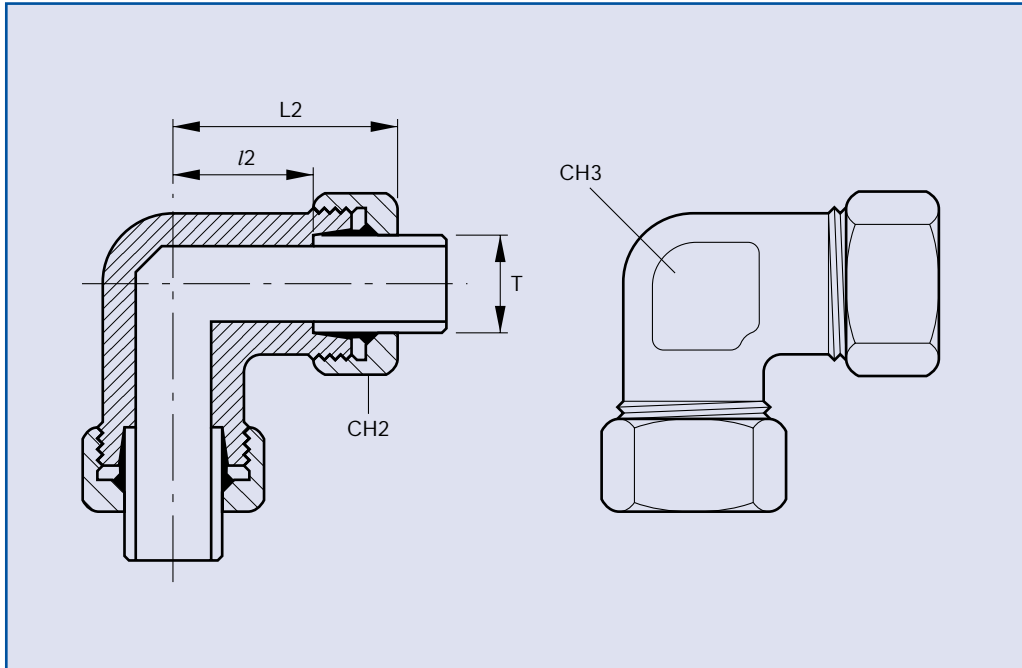
Part No.	N.B. Tube Size T.	Nut Hexagon N.	A/F Spanner Flat	Tube Abutment A.	O/A Length L.
NE2	1/8"	.820"	.710"	27/32"	1 19/32"
NE4	1/4"	1.10"	.820"	1 1/16"	1 27/32"
NE6	3/8"	1.20"	1.062"	1 5/16"	2 1/8"
NE8	1/2"	1.375"	1.062"	1 7/16"	2 3/16"
NE12	3/4"	1.67"	1.312"	1 5/8"	2 5/8"
NE16	1"	2.05"	1.56"	1 15/16"	2 29/32"
NE20	1 1/4"	2.58"	2.31"	2 7/16"	3 17/32"
NE24	1 1/2"	3.02"	2.31"	2 1/16"	3 7/8"

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC EQUAL ELBOWS



EQUAL ELBOWS



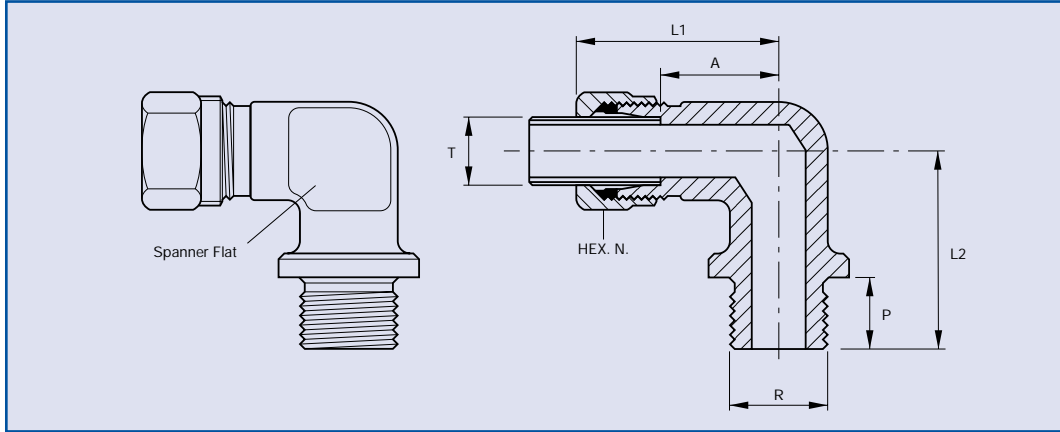
Series	NP	ØT	Part N°	CH2	CH3	L2	l2
L	315	6	ME6L	12	14	27	12
L	315	8	ME8L	12	17	29	14
L	315	10	ME10L	14	19	30	15
L	315	12	ME12L	17	22	32	17
L	315	15	ME15L	19	27	36	21
L	315	18	ME18L	24	32	40	23.5
L	160	22	ME22L	27	36	44	27.5
L	160	28	ME28L	36	41	47	30.5
L	160	35	ME35L	41	50	56	34.5
L	160	42	ME42L	50	60	63	40
S	630	6	ME6	12	17	31	16
S	630	8	ME8	14	19	32	17
S	630	10	ME10	17	22	34	17.5
S	630	12	ME12	17	24	38	21.5
S	630	14	ME14	19	27	40	22
S	400	16	ME16	24	30	43	24.5
S	400	20	ME20	27	36	48	26.5
S	400	25	ME25	36	46	54	30
S	400	30	ME30	41	50	62	35.5
S	315	38	ME38	50	60	72	41

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL BSP PARALLEL MALE STUD ELBOWS

FOR O.D. & N.B. TUBES



## O.D. TUBES

Part No.	Tube Dia. T.	BSP Thread R.	Nut Hexagon N.	A/F Spanner Flat	Tube Abutment A.	Thread Length P.	Overall Length L1.	Overall Length L2.
ME4-2	1/4"	1/8"	.710"	.468"	1 1/6"	3/8"	1 3/8"	1 1/2"
ME4-4	1/4"	1/4"	.710"	.600"	2 5/16"	7/16"	1 15/32"	1 3/16"
ME5-4	5/16"	1/4"	.710"	.600"	1 3/16"	7/16"	1 1/2"	1 3/16"
ME6-4	3/8"	1/4"	.820"	.600"	1 3/16"	7/16"	1 17/32"	1 3/16"
ME6-6	3/8"	3/8"	.820"	.710"	1 1/6"	1/2"	1 25/32"	1 1/2"
ME8-6	1/2"	3/8"	.920"	.710"	1 3/32"	1/2"	1 27/32"	1 1/2"
ME8-8	1/2"	1/2"	.920"	.820"	1 11/32"	5/8"	2 3/32"	1 7/8"
ME10-8	5/8"	1/2"	1.10"	.820"	1 5/16"	5/8"	2 3/32"	1 7/8"
ME12-8	3/4"	1/2"	1.20"	1.10"	1 5/16"	5/8"	2 1/8"	1 7/8"
ME12-12	3/4"	3/4"	1.20"	1.10"	1 1/6"	3/4"	2 3/8"	2 1/4"
ME14-12	7/8"	3/4"	1.375"	1.10"	1 15/32"	3/4"	2 11/32"	2"
ME16-12	1"	3/4"	1.67"	1.30"	1 19/32"	3/4"	2 17/32"	2 1/4"
ME16-16	1"	1"	1.67"	1.56"	1 27/32"	7/8"	2 25/32"	2 5/8"
ME20-16	1 1/4"	1"	2.05"	1.56"	1 15/16"	7/8"	2 29/32"	2 5/8"
ME20-20	1 1/4"	1 1/4"	2.05"	1.80"	2 5/16"	1"	3 1/32"	3"
ME24-24	1 1/2"	1 1/2"	2.22"	1.80"	2 3/8"	1"	3 1/6"	3"

## N.B. TUBES

Part No.	N.B. Tube Size T.	BSP Thread R.	Nut Hexagon N.	A/F Spanner Flat	Tube Abutment A.	Thread Length P.	Overall Length L1.	Overall Length L2.
NME2-2	1/8"	1/8"	.820"	.600"	2 7/32"	3/8"	1 19/32"	1 1/8"
NME2-4	1/8"	1/4"	.820"	.600"	2 7/32"	7/16"	1 19/32"	1 3/16"
NME4-4	1/4"	1/4"	1.10"	.820"	1 1/6"	7/16"	1 27/32"	1 7/16"
NME4-6	1/4"	3/8"	1.10"	.820"	1 1/6"	1/2"	1 27/32"	1 1/2"
NME6-6	3/8"	3/8"	1.20"	.820"	1 5/16"	1/2"	2 1/8"	1 3/4"
NME6-8	3/8"	1/2"	1.20"	.820"	1 5/16"	5/8"	2 1/8"	1 7/8"
NME8-4	1/2"	1/4"	1.375"	1.06"	1 7/16"	7/16"	2 7/16"	1 13/16"
NME8-8	1/2"	1/2"	1.375"	1.06"	1 1/6"	5/8"	2 7/16"	2"
NME8-12	1/2"	3/4"	1.375"	1.06"	1 1/6"	3/4"	2 7/16"	2 1/4"
NME12-12	3/4"	3/4"	1.67"	1.31"	1 5/8"	3/4"	2 5/8"	2 1/4"
NME12-16	3/4"	1"	1.67"	1.56"	1 27/32"	7/8"	2 27/32"	2 5/8"
NME16-8	1"	1/2"	2.05"	1.56"	1 15/16"	5/8"	2 29/32"	2 3/8"
NME16-16	1"	1"	2.05"	1.56"	1 15/16"	7/8"	2 29/32"	2 5/8"
NME16-20	1"	1 1/4"	2.05"	1.81"	2 5/16"	1"	3 1/32"	3"
NME20-20	1 1/4"	1 1/4"	2.58"	2.31"	2 7/16"	1"	3 11/32"	3"
NME20-24	1 1/4"	1 1/2"	2.58"	2.31"	2 7/16"	1"	3 11/32"	3"
NME24-24	1 1/2"	1 1/2"	3.02"	2.31"	2 11/16"	1"	3 7/8"	3 7/16"

Part numbers indicated are for Carbon Steel Couplings only.

For 316 Stainless Steel Couplings, add suffix SS to part number.

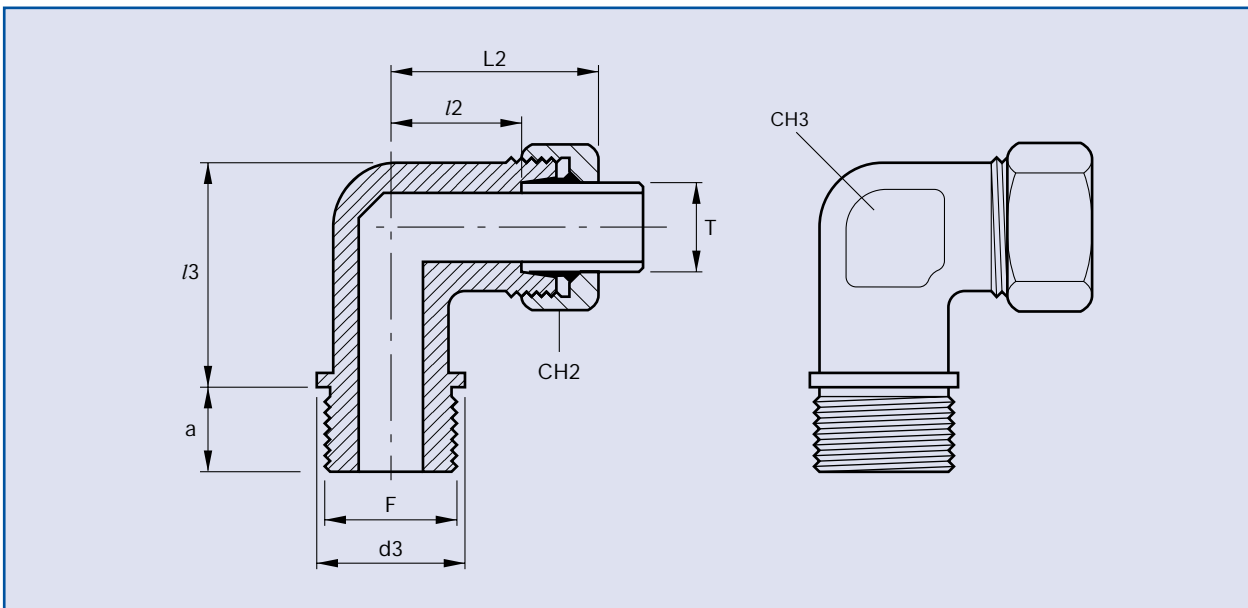


# METRIC BSP MALE STUD ELBOWS

THREAD: BSP CYLINDRICAL (UNI ISO 228)



BSP MALE STUD ELBOWS



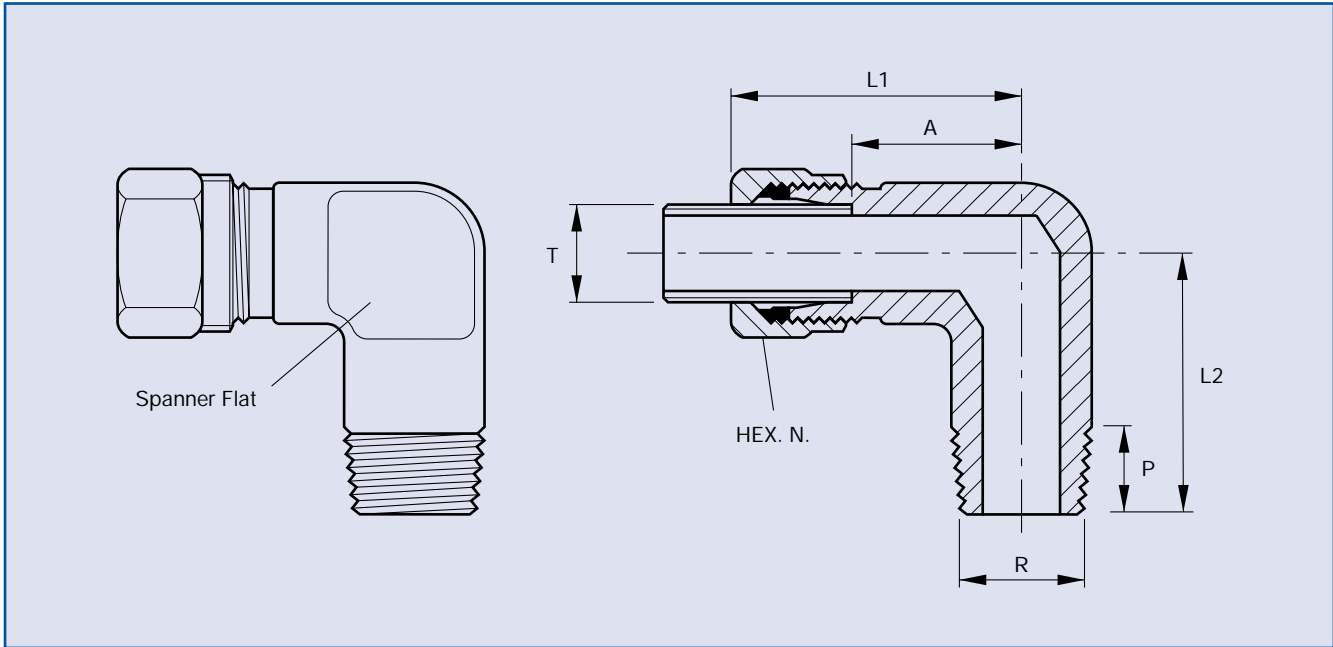
Series	NP	ØT	Part N°	ØF	CH2	CH3	a	d3	L2	l2	l3
L	160	22	MME22-12L	3/4" G	27	36	16	32	44	27.5	26
L	160	28	MME28-16L	1" G	36	41	18	39	47	30.5	30
L	160	35	MME35-20L	1 1/4" G	41	50	20	49	56	34.5	34
L	160	42	MME42-24L	1 1/2" G	50	60	22	55	63	40	39
S	400	20	MME20-12	3/4" G	27	36	16	32	48	26.5	26
S	400	25	MME25-16	1" G	36	41	18	39	54	30	30
S	250	30	MME30-20	1 1/4" G	41	50	20	49	62	35.5	34
S	250	38	MME38-24	1 1/2" G	50	60	22	55	72	41	39

Please Note-other sizes available on request, speak with our technical sales department for assistance.

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL BSP TAPER MALE STUD ELBOWS

FOR O.D. & N.B. TUBES



BSP TAPER MALE STUD ELBOWS

Part No.	Tube Dia. T.	BSPT Thread R.	Nut Hexagon N.	A/F Spanner Flat	Tube Abutment A.	Length Thread P.	Overall Length	
							L1.	L2.
ME4-2T	1/4"	1/8"	.710"	.468"	1 1/6"	3/8"	1 3/8"	1 1/2"
ME4-4T	1/4"	1/4"	.710"	.468"	1 1/6"	7/16"	1 1/2"	1 3/2"
ME6-4T	3/8"	1/4"	.820"	.600"	1 3/16"	7/16"	1 7/32"	1 3/8"
ME6-6T	3/8"	3/8"	.820"	.600"	1 3/16"	1/2"	1 7/32"	1 1/4"
ME8-6T	1/2"	3/8"	.920"	.710"	1 3/32"	1/2"	1 27/32"	1 3/8"
ME8-8T	1/2"	1/2"	.920"	.710"	1 3/32"	5/8"	1 27/32"	1 1/2"
ME10-8T	5/8"	1/2"	1.10"	.820"	1 11/16"	5/8"	2 3/32"	1 5/8"
ME12-8T	3/4"	1/2"	1.20"	1.10"	1 5/8"	5/8"	2 1/8"	1 5/8"
ME12-12T	3/4"	3/4"	1.20"	1.10"	1 5/8"	3/4"	2 1/8"	1 3/4"
ME16-12T	1"	3/4"	1.67"	1.30"	1 13/32"	3/4"	2 17/32"	2"
ME16-16T	1"	1"	1.67"	1.30"	1 9/32"	7/8"	2 17/32"	2 1/8"
ME20-16T	1 1/4"	1"	2.05"	1.56"	1 15/16"	7/8"	2 29/32"	2 1/4"
ME20-20T	1 1/4"	1 1/4"	2.05"	1.56"	1 15/16"	1"	2 7/8"	2 3/8"
ME24-24T	1 1/2"	1 1/2"	2.22"	1.80"	2 5/16"	1"	3 3/8"	2 3/4"

Part No.	N.B. Tube Size T.	BSPT Thread R.	Nut Hexagon N.	A/F Spanner Flat	Tube Abutment A.	Thread Length P.	Overall Length	
							L1.	L2.
NME2-4T	1/8"	1/4"	.820"	.600"	2 7/32"	7/16"	1 19/32"	1 3/16"
NME4-4T	1/4"	1/4"	1.10"	.820"	1 1/6"	7/16"	1 27/32"	1 1/2"
NME4-6T	1/4"	1/8"	1.10"	.820"	1 1/6"	1/2"	1 27/32"	1 1/6"
NME6-6T	3/8"	3/8"	1.20"	1.06"	1 1/6"	1/2"	2 1/8"	1 1/2"
NME8-8T	1/2"	1/2"	1.375"	1.06"	1 1/6"	5/8"	2 5/16"	1 5/8"
NME12-12T	3/4"	3/4"	1.67"	1.31"	1 5/8"	3/4"	2 5/8"	2"
NME16-16T	1"	1"	2.05"	1.56"	1 15/16"	7/8"	2 29/32"	2 1/4"
NME20-20T	1 1/4"	1 1/4"	2.58"	2.31"	2 7/16"	1"	3 17/32"	3 1/4"
NME24-24T	1 1/2"	1 1/2"	3.02"	2.31"	2 11/16"	1"	3 7/8"	3 1/4"

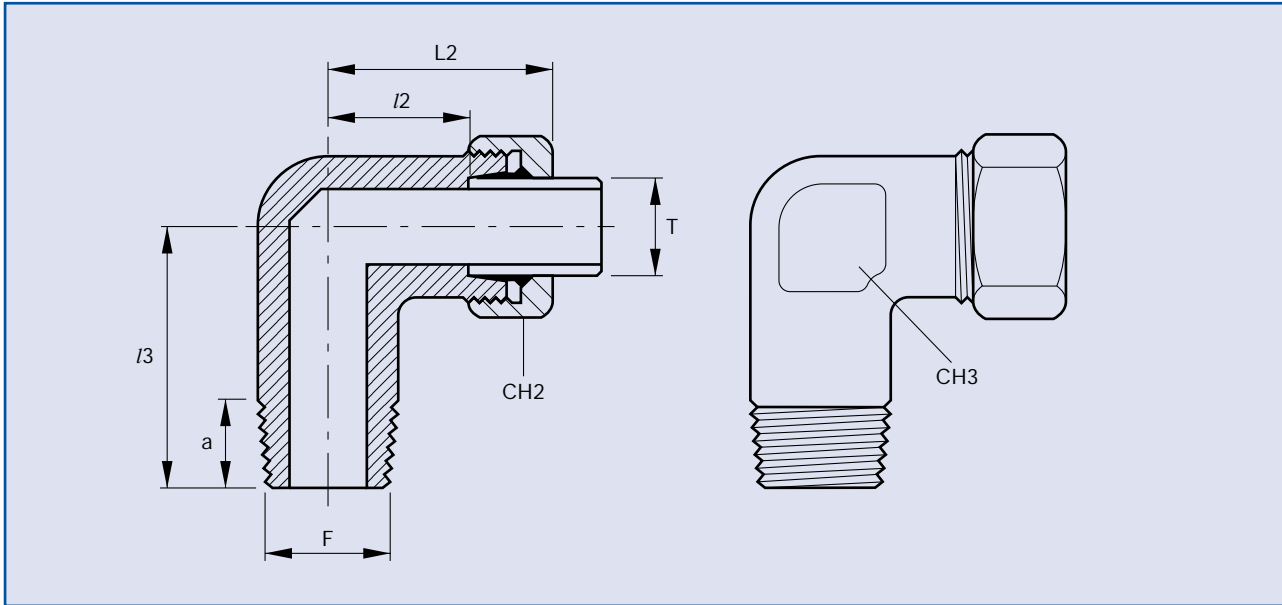
Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC BSP TAPER MALE STUD ELBOWS

THREAD: BSP TAPERED (DIN 3858)



BSP TAPER MALE STUD ELBOWS



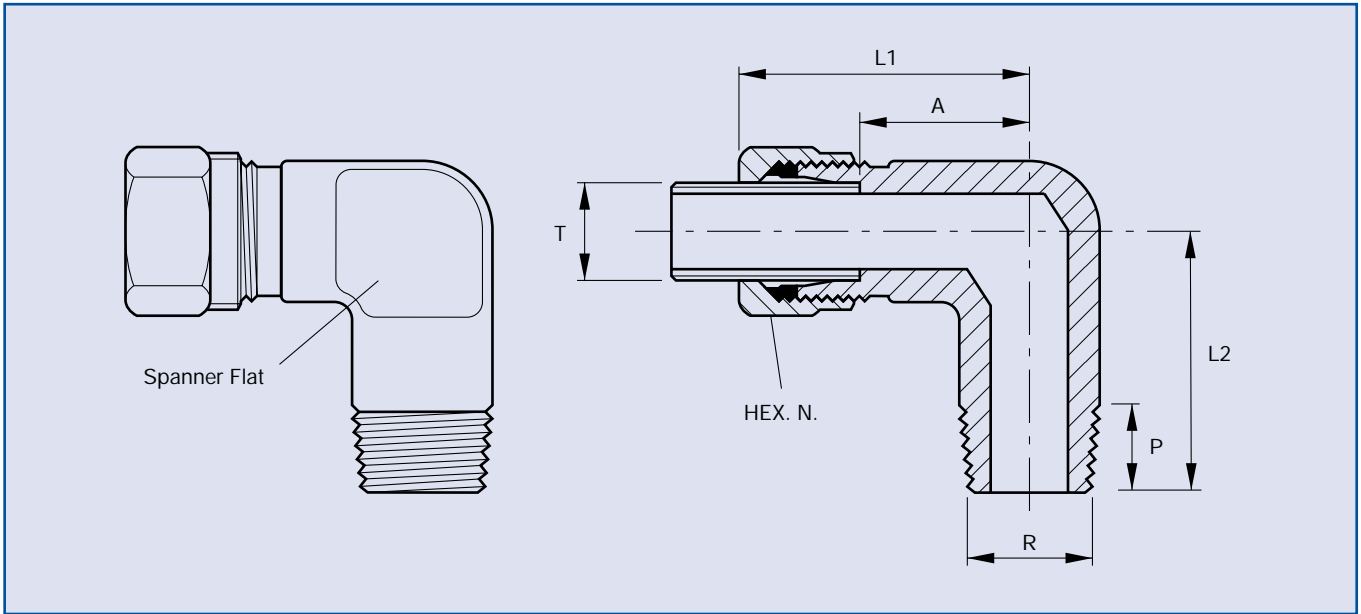
Series	NP	ØT	Part N°	ØF	CH3	CH2	a	L2	l2	l3
L	315	6	MME6-2TL	1/8" GC	12	14	8	27	12	20
L	315	6	MME6-4TL	1/4" GC	12	17	12	29	14	26
L	315	8	MME8-4TL	1/4" GC	12	17	12	29	14	26
L	315	8	MME8-2TL	1/8" GC	12	17	8	29	14	26
L	315	8	MME8-6TL	3/8" GC	17	17	12	34	19	28
L	315	10	MME10-4TL	1/4" GC	14	19	12	30	15	27
L	315	10	MME10-6TL	3/8" GC	17	19	12	32	17	28
L	315	10	MME10-8TL	1/2" GC	19	19	14	38	23	34
L	315	12	MME12-4TL	1/4" GC	17	22	12	32	17	28
L	315	12	MME12-6TL	3/8" GC	17	22	12	32	17	28
L	315	12	MME12-8TL	1/2" GC	19	22	14	38	23	34
L	315	15	MME15-6TL	3/8" GC	19	27	14	36	21	34
L	315	15	MME15-8TL	1/2" Gc	19	27	12	36	21	34
L	315	18	MME18-8TL	1/2" Gc	24	32	14	40	23.5	36
L	160	22	MME22-12TL	3/4" GC	27	36	16	44	27.5	42
L	160	28	MME28-16TL	1" GC	36	41	18	47	30.5	48
L	160	35	MME35-20TL	1 1/4" GC	41	50	20	56	34.5	54
L	160	42	MME42-24TL	1 1/2" GC	50	60	22	63	40	61
S	630	6	MME6-4T	1/4" GC	12	17	12	31	16	26
S	630	8	MME8-4T	1/4" GC	17	19	12	32	17	27
S	630	10	MME10-6T	3/8" GC	17	22	12	34	17.5	28
S	630	12	MME12-6T	3/8" GC	17	24	12	38	21.5	28
S	630	12	MME12-8T	1/2" GC	19	24	14	40	23.5	34
S	630	14	MME14-8T	1/2" GC	19	27	14	40	22	32
S	400	16	MME16-8T	1/2" GC	24	30	14	43	24.5	32
S	400	20	MME20-12T	3/4" GC	27	36	16	48	26.5	42
S	400	25	MME25-16T	1" GC	36	41	18	54	30	48
S	250	30	MME30-20T	1 1/4" GC	41	50	20	62	35.5	54
S	250	38	MME38-24T	1 1/2" GC	50	60	22	64	41	61

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL NPT TAPER MALE STUD ELBOWS

FOR O.D. TUBES



NPT TAPER MALE STUD ELBOWS

Part No.	Tube Dia. T.	NPT Thread R.	Nut Hexagon N.	A/F Spanner Flat	Tube Abutment A.	Length Thread P.	Overall Length	
							L1.	L2.
ME4-2AT	1/4"	1/8"	.710"	.468"	1 1/16"	1 3/32"	1 3/8"	1 1/16"
ME4-4AT	1/4"	1/4"	.710"	.468"	1 1/16"	1 9/32"	1 1/2"	1 3/4"
ME5-4AT	5/16"	1/4"	.710"	.600"	1 3/16"	1 9/32"	1 1/2"	1 11/32"
ME6-4AT	3/8"	1/4"	.820"	.600"	1 3/16"	1 9/32"	1 17/32"	1 11/32"
ME6-6AT	3/8"	3/8"	.820"	.600"	1 3/16"	5/8"	1 17/32"	1 3/8"
ME8-6AT	1/2"	3/8"	.920"	.710"	1 3/16"	5/8"	1 27/32"	1 1/2"
ME8-8AT	1/2"	1/2"	.920"	.710"	1 3/16"	25/32"	1 27/32"	1 21/32"
ME10-8AT	5/8"	1/2"	1.10"	.820"	1 11/32"	25/32"	2 7/32"	1 25/32"
ME12-8AT	3/4"	1/2"	1.20"	1.10"	1 5/16"	25/32"	2 1/8"	1 25/32"
ME12-12AT	3/4"	3/4"	1.20"	1.10"	1 5/16"	1 3/16"	2 1/8"	1 3 1/16"
ME16-12AT	1"	3/4"	1.67"	1.30"	1 9/16"	1 3/16"	2 17/32"	2 1/16"
ME16-16AT	1"	1"	1.67"	1.30"	1 9/16"	1"	2 17/32"	2 1/4"
ME20-16AT	1 1/4"	1"	2.05"	1.56"	1 5/16"	1"	2 29/32"	2 3/8"
ME20-20AT	1 1/4"	1 1/4"	2.05"	1.56"	1 5/16"	1"	2 7/8"	2 3/8"
ME24-20AT	1 1/2"	1 1/4"	2.22"	1.80"	2 3/16"	1"	3 3/8"	2 3/4"
ME24-24AT	1 1/2"	1 1/2"	2.22"	1.80"	2 5/16"	1 1/32"	3 3/8"	2 25/32"

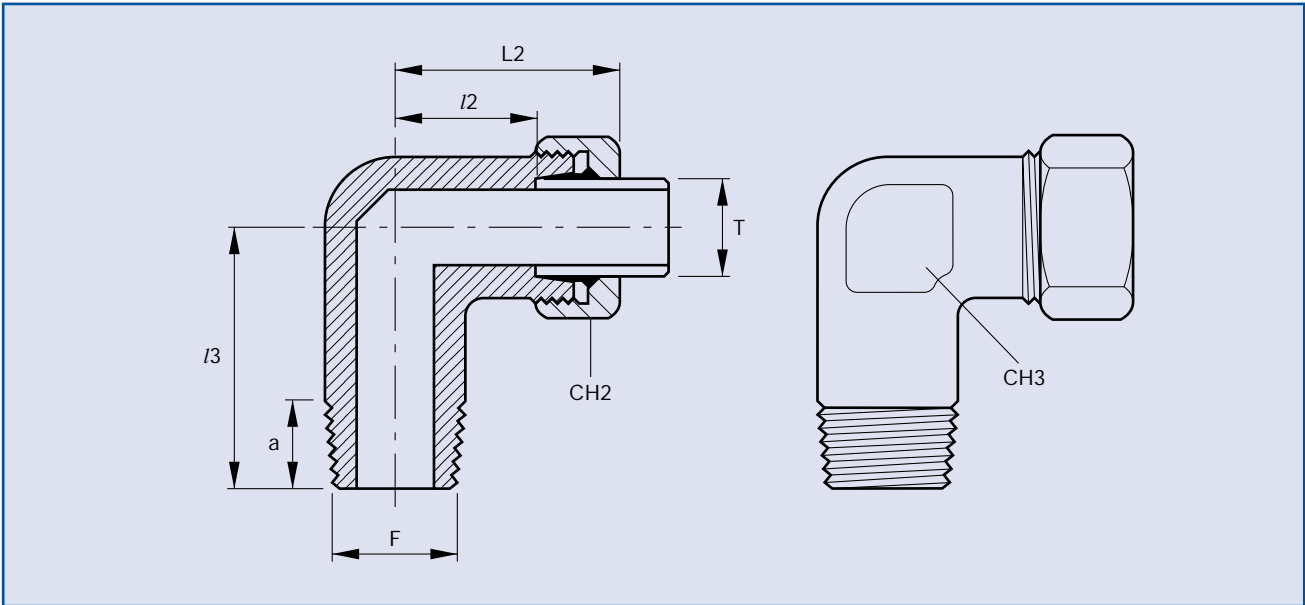
Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC NPT MALE STUD ELBOWS

THREAD: NPT (ASA B2.1 – 1960)



NPT TAPER MALE STUD ELBOWS



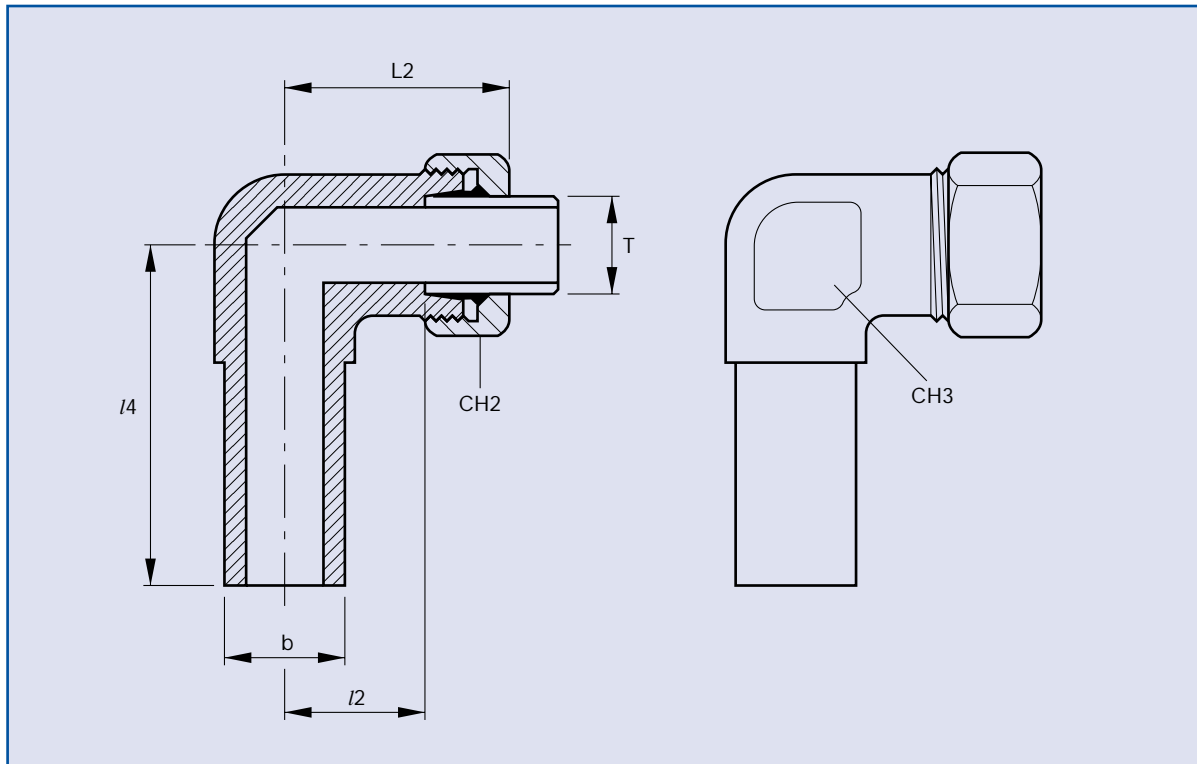
Series	NP	ØT	Part N°	ØF	CH3	CH2	a	L2	l2	l3
L	315	6	MME6-2ATL	1/8" NPT	12	14	10	27	12	20
L	315	6	MME6-4ATL	1/4" NPT	12	14	15	29	14	26
L	315	6	MME6-8ATL	1/2" NPT	19	14	20	38	23	34
L	315	8	MME8-4ATL	1/4" NPT	12	17	15	29	14	26
L	315	10	MME10-4ATL	1/4" NPT	14	19	15	30	15	27
L	315	12	MME12-6ATL	3/8" NPT	17	22	15.5	32	17	28
L	315	12	MME12-4ATL	1/4" NPT	17	22	15	32	17	28
L	315	12	MME12-8ATL	1/2" NPT	19	22	20	38	23	34
L	315	15	MME15-8ATL	1/2" NPT	19	27	20	36	21	34
L	315	18	MME18-8ATL	1/2" NPT	24	32	20	40	23.5	36
L	160	22	MME22-12ATL	3/4" NPT	27	36	20	44	27.5	42
L	160	28	MME28-16ATL	1" NPT	36	41	25	47	30.5	48
L	160	35	MME35-20ATL	1 1/4" NPT	41	50	25.5	56	34.5	54
L	160	42	MME42-24ATL	1 1/2" NPT	50	60	26	63	40	61
S	630	6	MME6-4AT	1/4" NPT	12	17	15	31	16	26
S	630	8	MME8-4AT	1/4" NPT	14	19	15	32	17	27
S	630	10	MME10-6AT	3/8" NPT	17	22	15.5	34	17.5	28
S	630	12	MME12-6AT	3/8" NPT	17	24	15.5	38	21.5	28
S	630	14	MME14-8AT	1/2" NPT	19	27	20	40	22	34
S	400	16	MME16-8AT	1/2" NPT	24	30	20	43	24.5	36
S	400	20	MME20-12AT	3/4" NPT	27	36	20	48	26.5	42
S	400	25	MME25-16AT	1" NPT	36	46	25	54	30	48
S	400	30	MME30-20AT	1 1/4" NPT	41	50	25.5	62	35.5	54
S	315	38	MME38-24AT	1 1/2" NPT	50	60	26	72	41	61

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC SWIVEL ELBOWS

BODY ONLY



SWIVEL ELBOWS

Series	NP	ØT	Part N°	CH3	CH2	l4	Øb	L2	l2
L	315	6	MSE6LB	12	14	26	6	27	12
L	315	8	MSE8LB	12	17	27	8	29	14
L	315	10	MSE10LB	14	19	28.5	10	30	15
L	315	12	MSE12LB	17	22	29	12	32	17
L	315	15	MSE15LB	19	27	32	15	36	21
L	315	18	MSE18LB	24	32	35	18	40	23.5
L	160	22	MSE22LB	27	36	38	22	44	27.5
L	160	28	MSE28LB	36	41	41.5	28	47	30.5
L	160	35	MSE35LB	41	50	51	35	56	34.5
L	160	42	MSE42LB	50	60	56	42	63	40
S	630	6	MSE6B	12	17	27	6	31	16
S	630	8	MSE8B	14	19	27	8	32	17
S	630	10	MSE10B	17	22	29.5	10	34	17.5
S	630	12	MSE12B	17	24	30.5	12	38	21.5
S	630	14	MSE14B	19	27	34.5	14	40	22
S	400	16	MSE16B	24	30	36	16	43	24.5
S	400	20	MSE20B	27	36	44	20	48	26.5
S	400	25	MSE25B	36	46	49.5	25	54	30
S	400	30	MSE30B	41	50	55	30	62	35.5
S	315	38	MSE38B	50	60	63	38	72	41

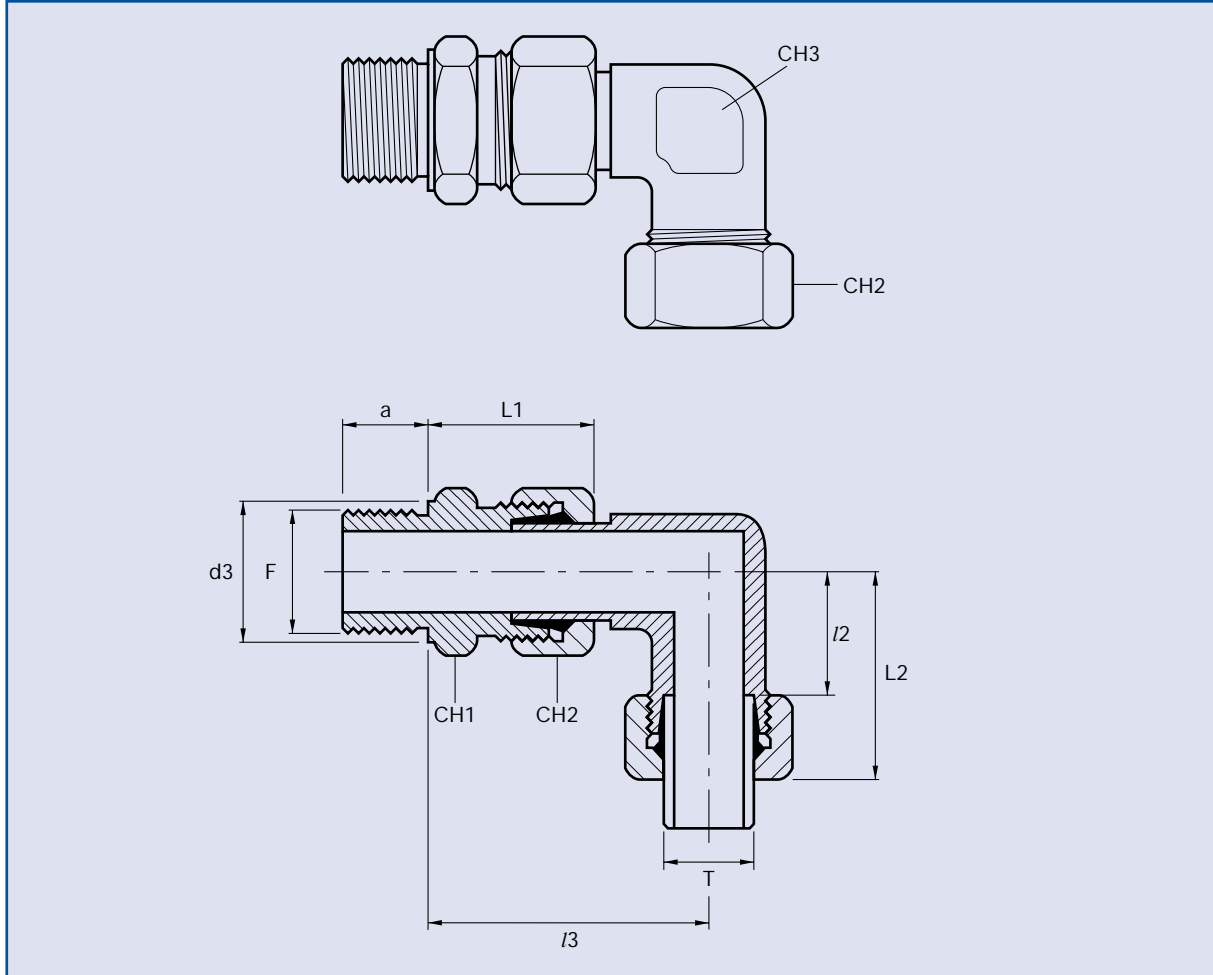
Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC SWIVEL ELBOWS

THREAD: BSP CYLINDRICAL (UNI ISO 228)  
COMPLETE ASSEMBLY



SWIVEL ELBOWS



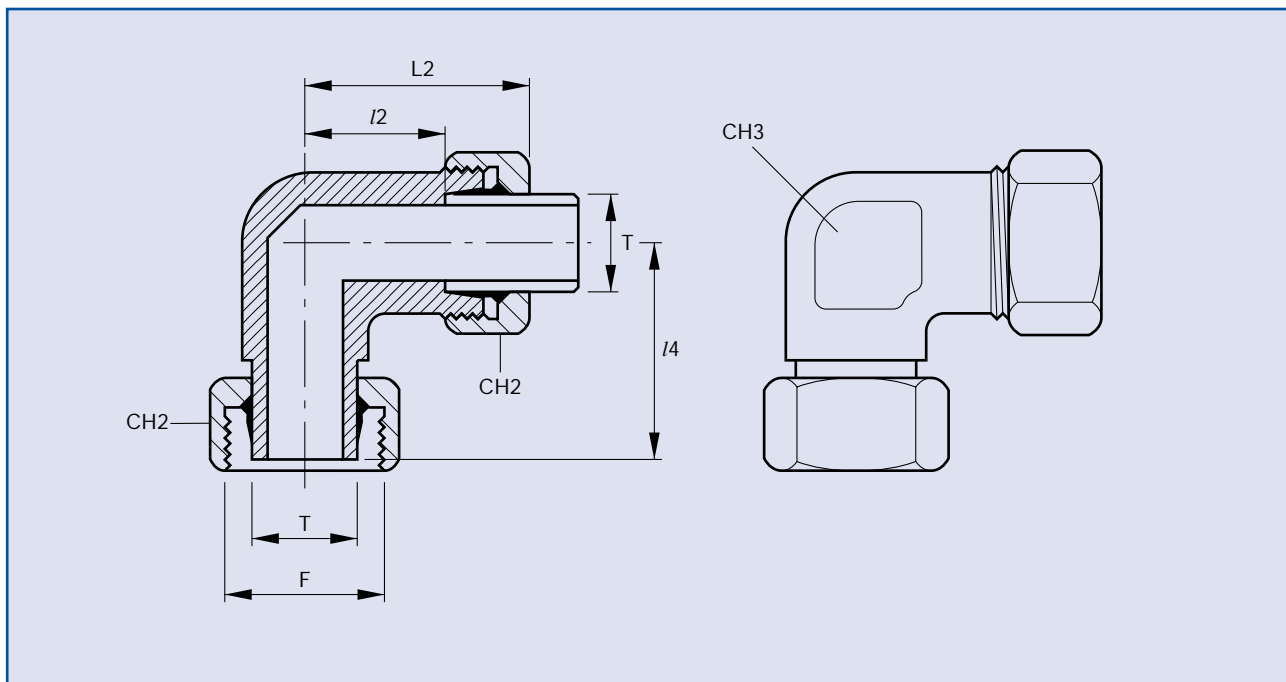
Series	NP	ØT	Part N°	ØF	CH1	CH3	CH2	a	Ød3	L2	/2	/3	L1
L	315	6	MSE6-2L	1/8"	14	12	14	8	14	27	12	34.5	23
L	315	8	MSE8-4L	1/4"	19	12	17	12	18	29	14	37	25
L	315	10	MSE10-4L	1/4"	19	14	19	12	18	30	15	39.5	26
L	315	12	MSE12-6L	3/8"	22	17	22	12	22	32	17	41.5	27
L	315	15	MSE15-8L	1/2"	27	19	27	14	26	36	21	46	29
L	315	18	MSE18-8L	1/2"	27	24	32	14	26	40	23.5	49.5	31
L	160	22	MSE22-12L	3/4"	32	27	36	16	32	44	27.5	54.5	33
L	160	28	MSE28-16L	1"	41	36	41	18	39	47	30.5	59	34
L	160	35	MSE35-20L	1 1/4"	50	41	50	20	49	56	34.5	68.5	39
L	160	42	MSE42-24L	1 1/2"	55	50	60	22	55	63	40	75	42
S	630	6	MSE6-4	1/4"	19	12	17	12	18	31	16	40	28
S	630	8	MSE8-4	1/4"	19	14	19	12	18	32	17	42	30
S	630	10	MSE10-6	3/8"	22	17	22	12	22	34	17.5	44.5	31
S	630	12	MSE12-6	3/8"	22	17	24	12	22	38	21.5	47.5	33
S	630	14	MSE14-8	1/2"	27	19	27	14	26	40	22	53.5	37
S	400	16	MSE16-8	1/2"	27	22	30	14	26	43	24.5	54.5	37
S	400	20	MSE20-12	3/4"	32	27	36	16	32	48	26.5	64.5	42
S	400	25	MSE25-16	1"	41	36	46	18	39	54	30	72.5	47
S	250	30	MSE30-20	1 1/4"	50	41	50	20	49	62	35.5	78.5	50
S	250	38	MSE38-24	1 1/2"	55	50	60	22	55	72	41	89	57

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC SWIVEL ELBOWS

## CAPTIVE NUT TYPE



SWIVEL ELBOWS

Series	NP	ØT	Part N°	ØF	CH3	CH2	I4	Øb	L2	l2
L	315	6	MSE6L	M12 x1.5	12	14	26	6	27	12
L	315	8	MSE8L	M14 x1.5	12	17	27	8	29	14
L	315	10	MSE10L	M16 x1.5	14	19	28.5	10	30	15
L	315	12	MSE12L	M18 x1.5	17	22	29	12	32	17
L	315	15	MSE15L	M22 x1.5	19	27	32	15	36	21
L	315	18	MSE18L	M26 x1.5	24	32	35	18	40	23.5
L	160	22	MSE22L	M30 x 2	27	36	38	22	44	27.5
L	160	28	MSE28L	M36 x 2	36	41	41.5	28	47	30.5
L	160	35	MSE35L	M45 x 2	41	50	51	35	56	34.5
L	160	42	MSE42L	M52 x 2	50	60	56	42	63	40
S	630	6	MSE6	M14 x 1.5	12	17	27	6	31	16
S	630	8	MSE8	M16 x 1.5	14	19	27	8	32	17
S	630	10	MSE10	M18 x 1.5	17	22	29.5	10	34	17.5
S	630	12	MSE12	M20 x 1.5	17	24	30.5	12	38	21.5
S	630	14	MSE14	M22 x 1.5	19	27	34.5	14	40	22
S	400	16	MSE16	M24 x 1.5	24	30	36	16	43	24.5
S	400	20	MSE20	M30 x 2	27	36	44	20	48	26.5
S	400	25	MSE25	M36 x 2	36	46	49.5	25	54	30
S	400	30	MSE30	M42 x 2	41	50	55	30	62	35.5
S	315	38	MSE38	M52 x 2	50	60	63	38	72	41

Part numbers indicated are for **Carbon Steel Couplings** only.  
 For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

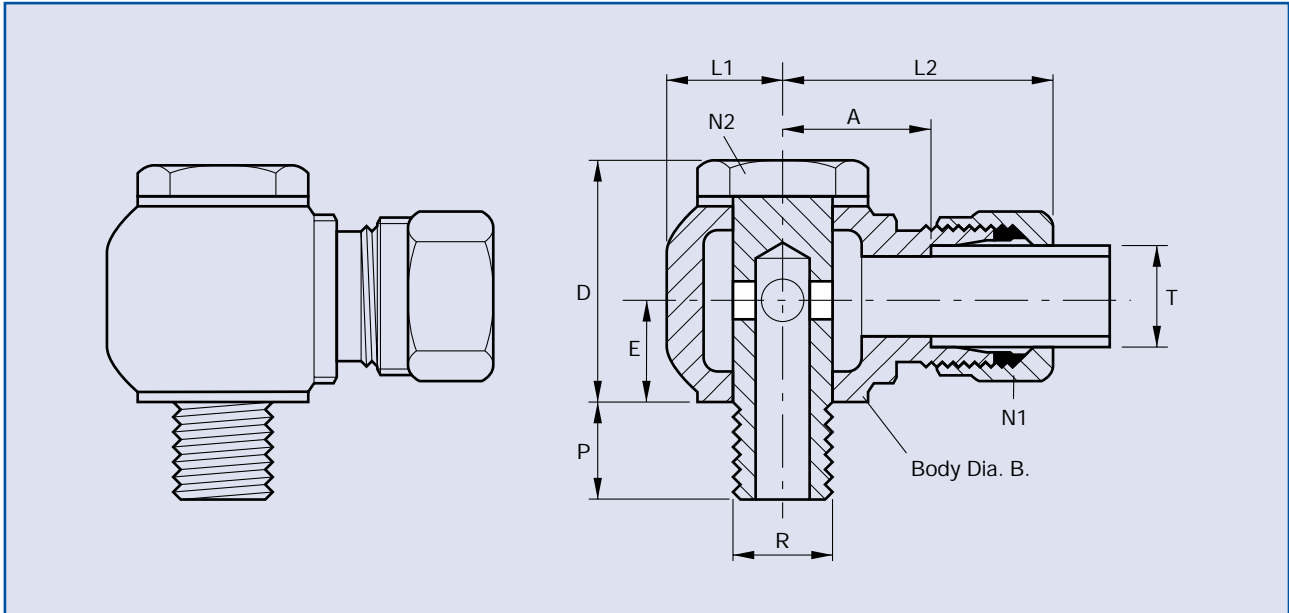


# IMPERIAL BANJO COUPLINGS

FOR O.D. & N.B. TUBES



BANJO COUPLINGS



## O.D. TUBES

Part No.	Tube Dia. T.	BSP Thread R.	Nut Hex. N1.	Bolt Hex. N2.	Tube Abut. A.	Thread Length P.	C/L to Face E.	Length D.	Body Dia. B.	Overall Length L1.	L2.
BJ4-2	1/4"	1/8"	.710"	.625"	1 1/16"	5/16"	1 9/32"	1 1/8"	1"	7/16"	1 13/32"
BJ4-4	1/4"	1/4"	.710"	.710"	3/4"	3/8"	1 5/32"	1 3/16"	1 1/8"	1/2"	1 15/32"
BJ5-4	5/16"	1/4"	.710"	.710"	3/4"	3/8"	1 1/32"	1 5/16"	1 1/8"	1/2"	1 15/32"
BJ6-4	3/8"	1/4"	.820"	.710"	3/4"	3/8"	1 1/32"	1 7/16"	1 1/4"	9/16"	1 17/32"
BJ6-6	3/8"	3/8"	.820"	.920"	7/8"	7/16"	1 1/32"	1 5/8"	1 3/8"	5/8"	1 19/32"
BJ8-6	1/2"	3/8"	.920"	.920"	1 5/16"	7/16"	1 9/32"	1 7/8"	1 1/2"	1 1/8"	1 11/8"
BJ8-8	1/2"	1/2"	.920"	1.10"	1 1/16"	9/16"	2 1/32"	1 9/16"	1 5/8"	3/4"	1 13/16"
BJ10-8	5/8"	1/2"	1.10"	1.10"	1 1/16"	9/16"	3/4"	1 3/4"	1 3/4"	13/16"	1 21/32"
BJ12-8	3/4"	1/2"	1.20"	1.10"	1 1/16"	9/16"	3/4"	1 23/32"	1 7/8"	7/8"	1 7/8"
BJ12-12	3/4"	3/4"	1.20"	1.30"	1 3/16"	1 1/16"	3/4"	1 13/16"	2"	7/8"	2"
BJ14-12	7/8"	3/4"	1.375"	1.30"	1 1/4"	1 1/16"	29/32"	2 1/8"	2 1/8"	1"	2 1/8"
BJ14-16	7/8"	1"	1.375"	1.67"	1 1/2"	1 3/16"	29/32"	2 5/16"	2 3/8"	1 1/8"	2 3/8"

## N.B. TUBES

Part No.	N.B. Tube Size T.	BSP Thread R.	Nut Hex. N1.	Bolt Hex. N2.	Tube Abut. A.	Thread Length P.	C/L to face E.	Length D.	Body Dia. B.	Overall Length L1.	L2.
NBJ2-2	1/8"	1/8"	.820"	.625"	1 3/16"	5/16"	1 9/32"	1 1/16"	1 1/4"	9/16"	1 1/16"
NBJ2-4	1/8"	1/4"	.820"	.710"	1 3/16"	3/8"	1 9/32"	1 1/16"	1 1/4"	9/16"	1 1/16"
NBJ4-4	1/4"	1/4"	1.10"	.710"	1 5/16"	3/8"	2 3/32"	1 11/16"	1 1/2"	5/8"	1 23/32"
NBJ4-6	1/4"	3/8"	1.10"	.920"	1"	7/16"	2 3/32"	1 3/4"	1 5/8"	3/4"	1 25/32"
NBJ6-6	3/8"	3/8"	1.20"	.920"	1"	7/16"	2 1/32"	2"	1 3/4"	3/4"	1 13/16"
NBJ6-8	3/8"	1/2"	1.20"	1.10"	1 3/16"	9/16"	2 1/32"	2 1/16"	2"	7/8"	2"
NBJ8-8	1/2"	1/2"	1.375"	1.10"	1 1/4"	9/16"	2 9/32"	2 3/16"	2"	7/8"	2 1/8"
NBJ8-12	1/2"	3/4"	1.375"	1.30"	1 1/4"	1 1/16"	2 9/32"	2 1/4"	2 1/8"	1"	2 1/8"

Part numbers indicated are for **Carbon Steel Couplings** only.

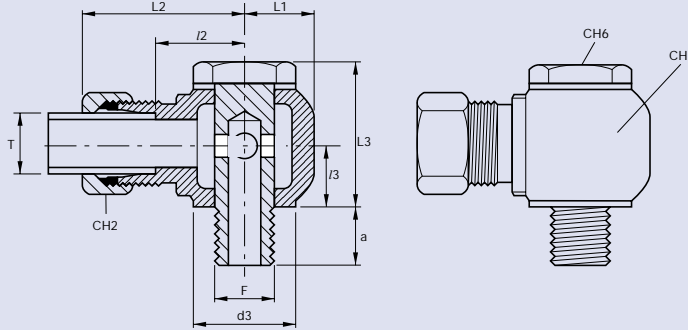
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC BANJO COUPLINGS BSP THREAD

BETABITE  
HYDRAULICS

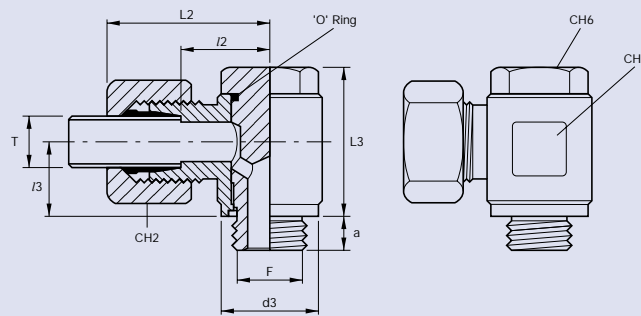


## BETABITE DESIGN



Series	NP	ØT	Part N°	ØF	CH2	CH3	CH6	a	Ød3	L3	L2	L1	I3	I2
S	630	6	MBJ6-4	1/4" BSP	17	28	19	8.8	16.5	31.2	30.7	12.7	12.6	20
S	630	8	MBJ8-4	1/4" BSP	19	28	19	11.3	16.5	33.2	30.7	12.7	13.6	20
S	630	10	MBJ10-6	3/8" BSP	22	35	22	10.3	24	34.2	36	16	14.1	22
S	630	12	MBJ12-6	3/8" BSP	24	38	22	10.3	24	37.2	37	17	15.6	23
S	630	14	MBJ14-8	1/2" BSP	27	44	27	12.8	28	45.2	42	21	19.6	27
S	400	16	MBJ16-8	1/2" BSP	32	44	27	12.8	28	45.2	43	21	19.6	27
S	400	20	MBJ20-12	3/4" BSP	36	52	32	18	35	51	52	22	21.5	31
L	315	6	MBJ6-2L	1/8" BSP	14	25	14	8.5	11.9	28	34	11	11	17
L	315	8	MBJ8-4L	1/4" BSP	17	28	19	13	16.5	28	37	11.7	11	19
L	315	10	MBJ10-4L	1/4" BSP	19	28	19	14.3	16.5	30.2	37	12.7	12.1	19
L	315	12	MBJ12-6L	3/8" BSP	22	35	22	13.3	24.0	31	39.5	16	12.7	21.5
L	315	15	MBJ15-8L	1/2" BSP	27	44	27	15.8	28	38.2	46	21	18.1	27
L	315	18	MBJ18-8L	1/2" BSP	32	44	27	15.8	28	38.2	47	21	18.1	28
L	160	22	MBJ22-12L	3/4" BSP	36	52	32	18	35	51	52	22	21.5	31

## EUROPEAN DESIGN



Series	NP	ØT	Part N°	ØF	CH2	CH3	CH6	a	Ød3	L3	L2	I3	I2	'O' Ring
L	315	6	MBJ6-2LE	1/8"	14	17	17	8	14	23.5	27	10.5	12	2031
L	315	8	MBJ8-4LE	1/4"	17	22	19	12	18	30	29	14	14.5	114
L	315	10	MBJ10-4LE	1/4"	19	22	19	12	18	30	30	14	15.5	114
L	315	12	MBJ12-6LE	3/8"	22	27	24	12	22	35	33	16.5	18	2056
L	315	15	MBJ15-8LE	1/2"	27	30	27	12	26	46	36	21.5	21.5	2075
L	315	18	MBJ18-8LE	1/2"	32	32	27	12	26	46	37.5	21.5	21	2075
L	160	22	MBJ22-12LE	3/4"	36	41	36	16	32	52	44	24	27.5	132
L	160	28	MBJ28-16LE	1"	41	50	46	18	39	64	48.5	30.5	32	3118
L	160	35	MBJ35-20LE	1 1/4"	50	60	50	20	49	75	58	35.5	36	3150
L	160	42	MBJ42-24LE	1 1/2"	60	70	60	22	55	74	63.5	40.5	40.5	146
S	400	6	MBJ6-4E	1/4"	17	22	19	12	18	30	31.5	14	16.5	114
S	400	8	MBJ8-4E	1/4"	19	22	19	12	18	30	31.5	14	16.5	114
S	400	10	MBJ10-6E	3/8"	22	27	24	12	22	35	34.5	16.5	18.5	2056
S	400	12	MBJ12-6E	3/8"	24	27	24	12	22	35	34.5	16.5	18.5	2056
S	400	14	MBJ14-8E	1/2"	27	30	27	12	26	46	40.5	21.5	22.5	2075
S	400	16	MBJ16-8E	1/2"	30	30	27	12	26	46	40.5	21.5	22	2075
S	400	20	MBJ20-12E	3/4"	36	41	36	16	32	52	48	24	26.5	132
S	250	25	MBJ25-16E	1"	46	50	46	18	39	64	55.5	30.5	31.5	3118
S	250	30	MBJ30-20E	1 1/4"	50	60	50	20	49	75	63.5	35.5	37	3150
S	250	38	MBJ38-24E	1 1/2"	60	70	60	22	55	74	72.5	40.5	41.5	146

Part numbers indicated are for **Carbon Steel Couplings** only.

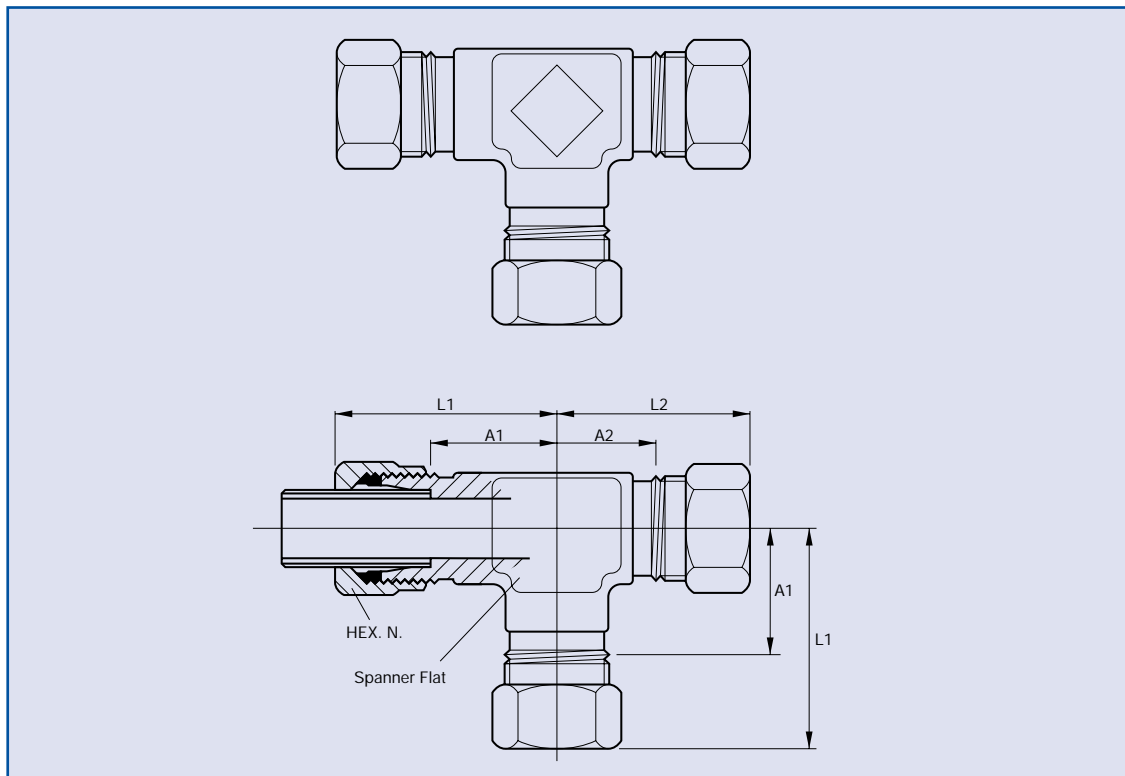
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL EQUAL TEES

FOR O.D. & N.B. TUBES



IMPERIAL EQUAL TEES



## O.D. TUBES

Part No.	Tube Dia. T.	Nut Hexagon N.	A/F Spanner Flat	Tube Abutment A1.	Tube Abutment A2.	O/A Length L1.	O/A Length L2.
T4	1/4"	.710"	.50"	2 1/32"	1 5/32"	1 3/8"	1 3/16"
T5	5/16"	.710"	.50"	2 3/32"	9/16"	1 1/8"	1 1/32"
T6	3/8"	.820"	.710"	1 3/16"	5/8"	1 1/2"	1 1/2"
T8	1/2"	.920"	.710"	3 1/32"	2 3/32"	1 23/32"	1 15/32"
T10	5/8"	1.10"	.96"	1 1/16"	3/4"	1 27/32"	1 17/32"
T12	3/4"	1.20"	.96"	1 5/16"	7/8"	2 1/8"	1 11/16"
T14	7/8"	1.375"	1.10"	1 7/16"	1 5/16"	2 5/8"	1 3/16"
T16	1"	1.67"	1.30"	1 11/32"	1 7/32"	2 1/2"	2 1/2"
T20	1 1/4"	2.05"	1.56"	1 5/16"	1 3/8"	2 29/32"	2 11/32"
T24	1 1/2"	2.22"	1.80"	2 5/16"	1 9/16"	3 3/8"	2 5/8"

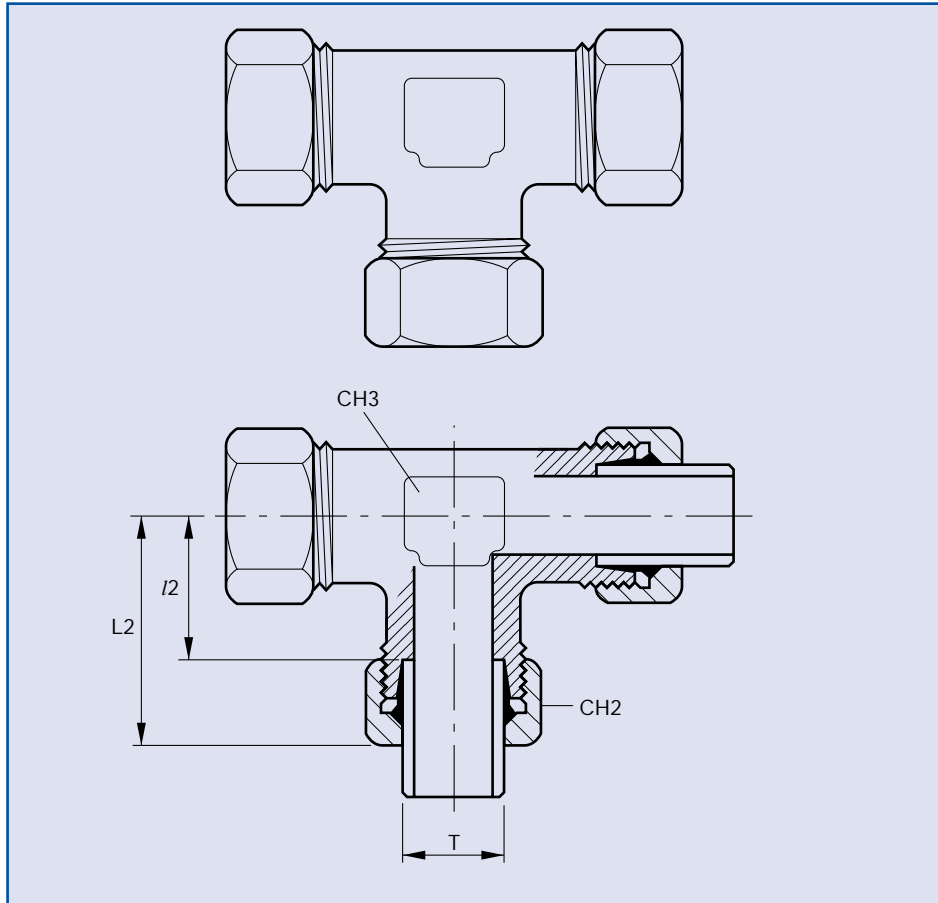
## N.B. TUBES

Part No.	N.B. Tube Size T.	Nut Hexagon N.	A/F Spanner Flat	Tube Abutment A1.	Tube Abutment A2.	O/A Length L1.	O/A Length L2.
NT2	1/8"	.820"	.710"	2 7/32"	2 1/32"	1 19/32"	1 13/32"
NT4	1/4"	1.10"	.968"	1 1/16"	3/4"	1 27/32"	1 17/32"
NT6	3/8"	1.20"	.968"	1 5/16"	7/8"	2 1/8"	1 11/16"
NT8	1/2"	1.375"	1.062"	1 7/16"	1 5/16"	2 5/8"	1 3/16"
NT12	3/4"	1.67"	1.312"	1 5/8"	1 1/8"	2 5/8"	2 1/8"
NT16	1"	2.05"	1.56"	1 11/16"	1 3/8"	2 29/32"	2 11/32"
NT20	1 1/4"	2.58"	2.31"	2 7/16"	1 3/4"	3 17/32"	2 27/32"
NT24	1 1/2"	3.02"	2.31"	2 11/16"	1 5/8"	3 3/8"	3 3/8"

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC EQUAL TEES



EQUAL TEES

Series	NP	ØT	Part N°	CH3	CH2	L2	l2
L	315	6	MT6L	12	14	27	12
L	315	8	MT8L	12	17	29	14
L	315	10	MT10L	14	19	30	15
L	315	12	MT12L	17	22	32	17
L	315	15	MT15L	19	27	36	21
L	315	18	MT18L	24	32	40	23.5
L	160	22	MT22L	27	36	44	27.5
L	160	28	MT28L	36	41	47	30.5
L	160	35	MT35L	41	50	56	34.5
L	160	42	MT42L	50	60	63	40
S	630	6	MT6	12	17	31	16
S	630	8	MT8	14	19	32	17
S	630	10	MT10	17	22	34	17.5
S	630	12	MT12	17	24	38	21.5
S	630	14	MT14	19	27	40	22
S	400	16	MT16	24	30	43	24.5
S	400	20	MT20	27	36	48	26.5
S	400	25	MT25	36	46	54	30
S	400	30	MT30	41	50	62	35.5
S	315	38	MT38	50	60	72	41

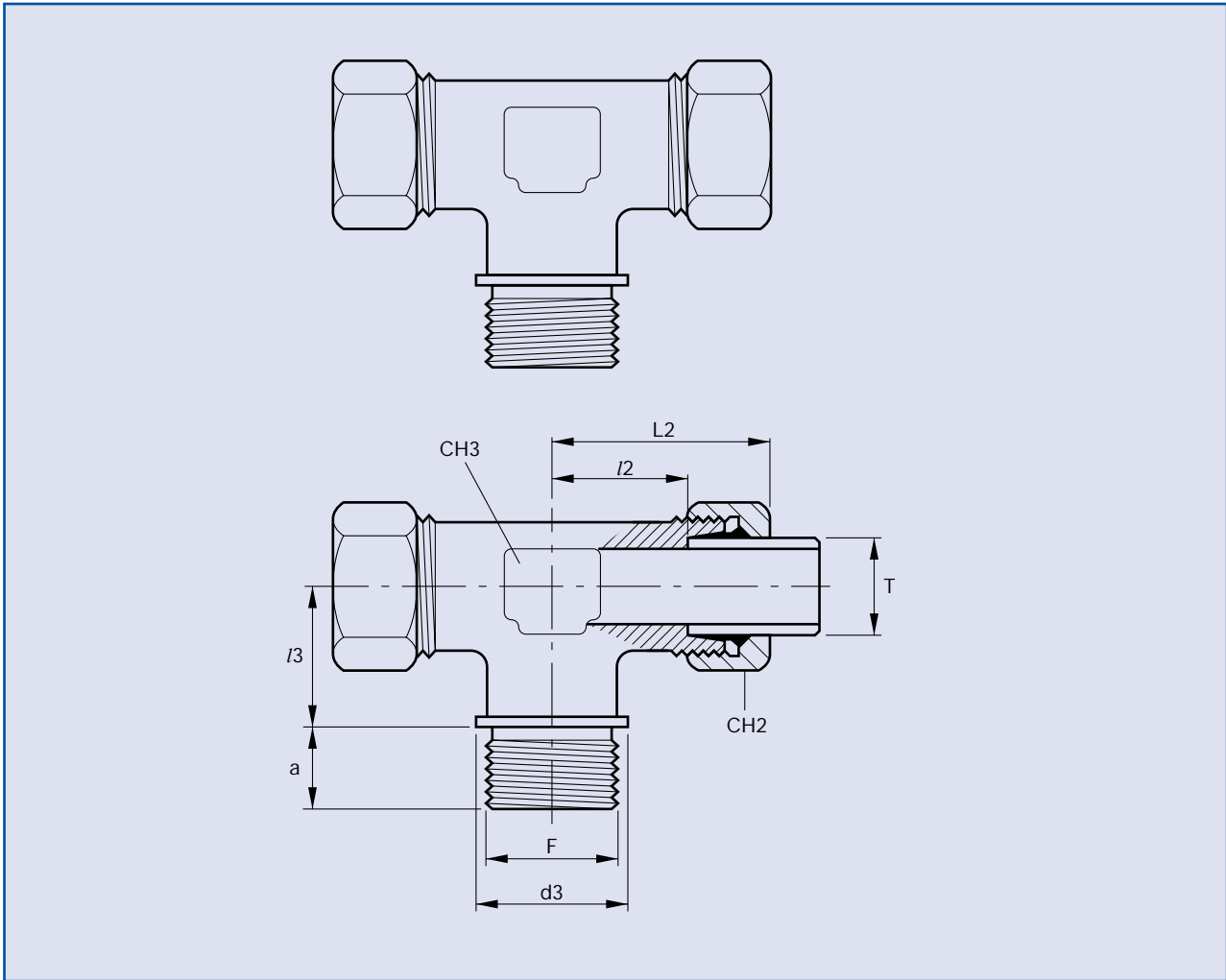
Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC MALE BRANCH TEES

THREAD: BSP CYLINDRICAL (UNI ISO 228)



MALE BRANCH TEES



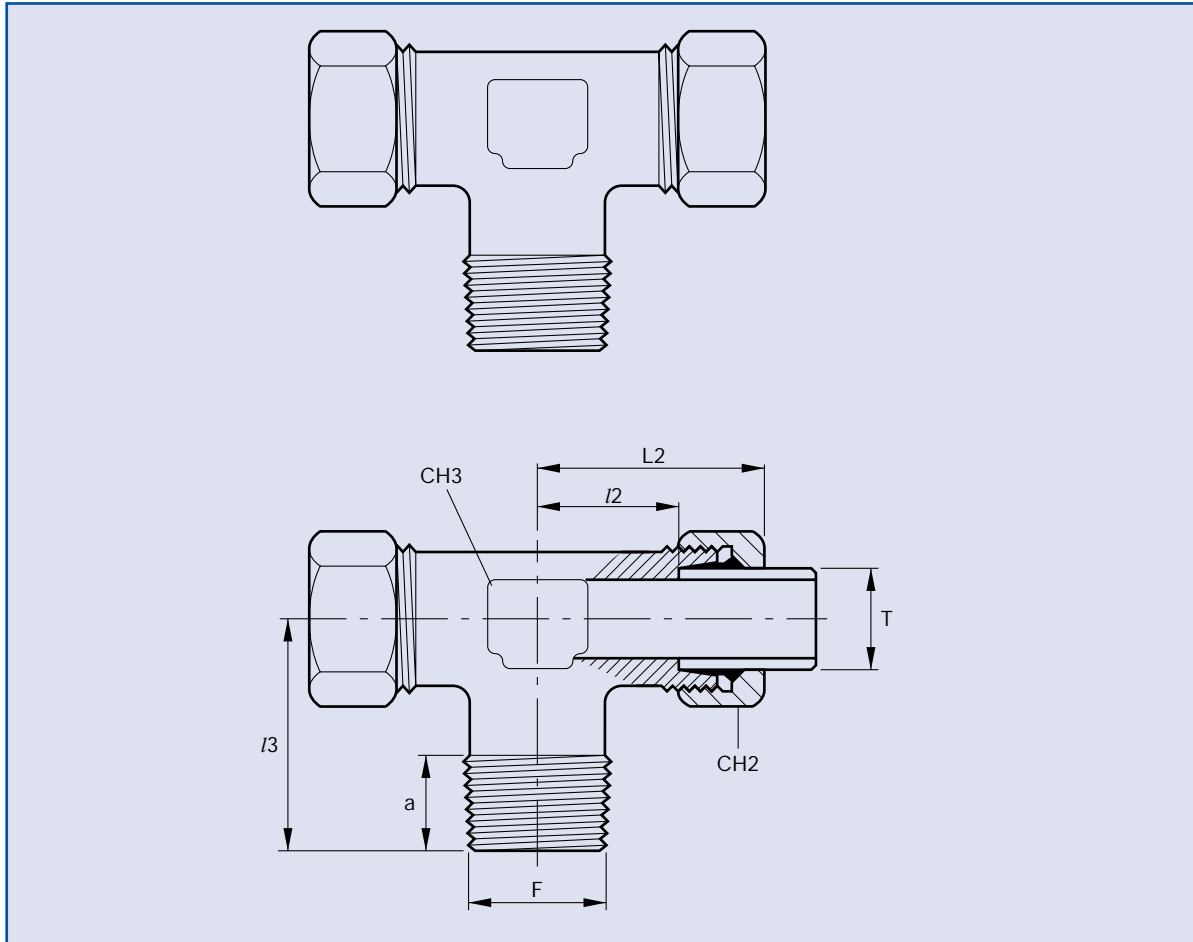
Series	NP	ØT	Part N°	ØF	CH3	CH2	a	d3	L2	l2	l3
L	160	22	MMBT22-12L	3/4" G	27	36	16	32	44	27.5	26
L	160	28	MMBT28-16L	1" G	36	41	18	39	47	30.5	30
L	160	35	MMBT35-20L	1 1/4" G	41	50	20	49	56	34.5	34
L	160	42	MMBT42-24L	1 1/2" G	50	60	22	55	63	40	39
S	400	20	MMBT20-12	3/4" G	27	36	16	32	48	26.5	26
S	400	25	MMBT25-16	1" G	36	46	18	39	54	30	30
S	250	30	MMBT30-20	1 1/4" G	41	50	20	49	62	35.5	34
S	250	38	MMBT38-24	1 1/2" G	50	60	22	55	72	41	39

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC BSP TAPER MALE BRANCH TEES

THREAD: BSP TAPERED (DIN 3858)



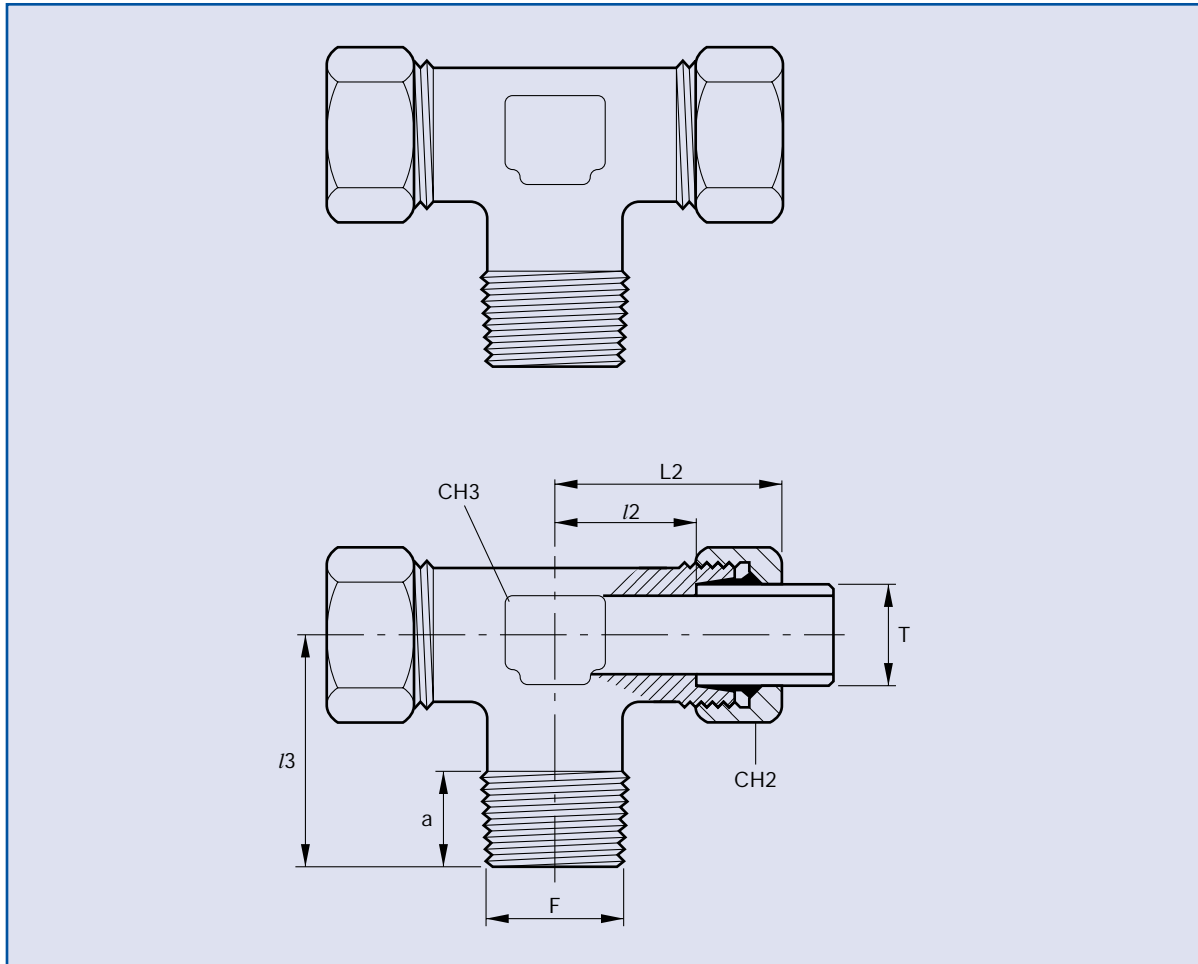
BSP TAPER MALE BRANCH TEES

Series	NP	ØT	Part N°	ØF	CH3	CH2	a	L2	l2	l3
L	315	6	MMBT6-2TL	1/8" GC	12	14	9.9	3	12	20
L	315	8	MMBT8-4TL	1/4" GC	14	17	15.1	12	14	26
L	315	10	MMBT10-4TL	1/4" GC	14	19	15.1	12	15	27
L	315	12	MMBT12-6TL	3/8" GC	17	22	15.2	12	17	28
L	315	15	MMBT15-8TL	1/2" GC	24	27	19.8	14	21	34
L	315	18	MMBT18-8TL	1/2" GC	24	32	19.8	14	23.5	36
L	160	22	MMBT22-12TL	3/4" GC	27	36	20.1	16	27.5	42
L	160	28	MMBT28-16TL	1" GC	36	41	25	18	30.5	48
L	160	35	MMBT35-20TL	1 1/4" GC	41	50	25.6	20	34.5	54
L	160	42	MMBT42-24TL	1 1/2" GC	50	60	26	22	40	61
S	630	6	MMBT6-4T	1/4" GC	14	17	15.1	12	16	26
S	630	8	MMBT8-4T	1/4" GC	14	19	15.1	12	17	27
S	630	10	MMBT10-6T	3/8" GC	17	22	15.2	12	17.5	28
S	630	12	MMBT12-6T	3/8" GC	17	24	15.2	12	21.5	28
S	630	14	MMBT14-8T	1/2" GC	24	27	19.8	14	22	32
S	400	16	MMBT16-8T	1/2" GC	24	30	19.8	14	24.5	32
S	400	20	MMBT20-12T	3/4" GC	27	36	20.1	16	26.5	42
S	400	25	MMBT25-16T	1" GC	36	46	25	18	30	48
S	250	30	MMBT30-20T	1 1/4" GC	41	50	25.6	20	35.5	54
S	250	38	MMBT38-24T	1 1/2" GC	50	60	26	22	41	61

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC NPT MALE BRANCH TEES

THREAD: NPT (ASA B2.1 – 1960)



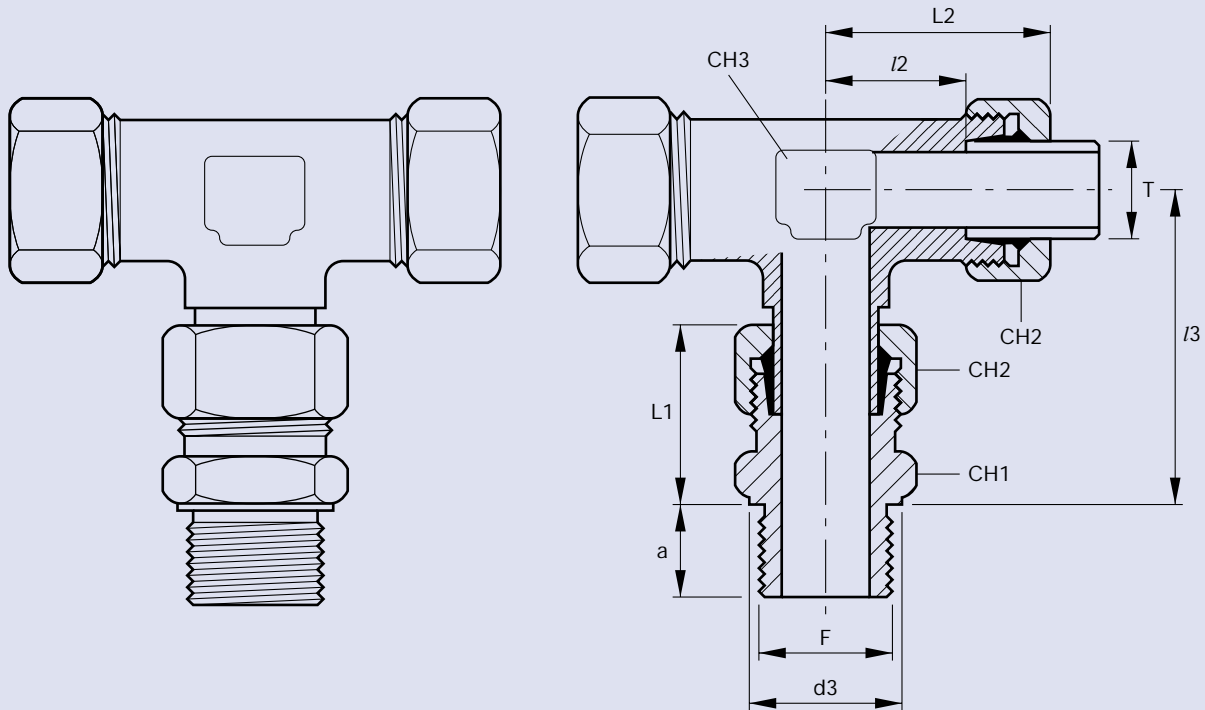
Series	NP	ØT	Part N°	ØF	CH3	CH2	a	L2	l2	l3
L	315	6	MMBT6-2ATL	1/8" NPT	12	14	9.9	27	12	20
L	315	8	MMBT8-4ATL	1/4" NPT	14	17	15.1	29	14	26
L	315	10	MMBT10-4ATL	1/4" NPT	14	19	15.1	30	15	27
L	315	12	MMBT12-6ATL	3/8" NPT	17	22	15.2	32	17	28
L	315	15	MMBT15-8ATL	1/2" NPT	24	27	19.8	36	21	34
L	315	18	MMBT18-8ATL	1/2" NPT	24	32	19.8	40	23.5	36
L	160	22	MMBT22-12ATL	3/4" NPT	27	36	20.1	44	27.5	42
L	160	28	MMBT28-16ATL	1" NPT	36	41	25	47	30.5	48
L	160	35	MMBT35-20ATL	1 1/4" NPT	41	50	25.6	56	34.5	54
L	160	42	MMBT42-24ATL	1 1/2" NPT	50	60	26	63	40	61
S	630	6	MMBT6-4AT	1/4" NPT	14	17	15.1	31	16	26
S	630	8	MMBT8-4AT	1/4" NPT	14	19	15.1	32	17	27
S	630	10	MMBT10-6AT	3/8" NPT	17	22	15.2	34	17.5	28
S	630	12	MMBT12-6AT	3/8" NPT	17	24	15.2	38	21.5	28
S	630	14	MMBT14-8AT	1/2" NPT	24	27	19.8	40	22	34
S	400	16	MMBT16-8AT	1/2" NPT	24	30	19.8	43	24.5	36
S	400	20	MMBT20-12AT	3/4" NPT	27	36	20.1	48	26.5	42
S	400	25	MMBT25-16AT	1" NPT	36	46	25	54	30	48
S	400	30	MMBT30-20AT	1 1/4" NPT	41	50	25.6	62	35.5	54
S	315	38	MMBT38-24AT	1 1/2" NPT	50	60	26	72	41	61

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC SWIVEL BRANCH TEES

THREAD: BSP CYLINDRICAL (UNI ISO 228)  
COMPLETE ASSEMBLY



SWIVEL BRANCH TEES

Series	NP	ØT	Part N°	ØF	CH1	CH3	CH2	a	Ød3	L1	l3	l2	L2
L	315	6	MSBT6-2L	1/8"	14	12	14	8	14	23	34,5	12	27
L	315	8	MSBT8-4L	1/4"	19	12	17	12	18	25	37	14	29
L	315	10	MSBT10-4L	1/4"	19	14	19	12	18	26	39,5	15	30
L	315	12	MSBT12-6L	3/8"	22	17	22	12	22	27	41,5	17	32
L	315	15	MSBT15-8L	1/2"	27	19	27	14	26	29	46	21	36
L	315	18	MSBT18-8L	1/2"	27	24	32	14	26	31	49,5	23,5	40
L	160	22	MSBT22-12L	3/4"	32	27	36	16	32	33	54,5	27,5	44
L	160	28	MSBT28-16L	1"	41	36	41	18	39	34	59	30,5	47
L	160	35	MSBT35-20L	1 1/4"	50	41	50	20	49	39	68,5	34,5	56
L	160	42	MSBT42-24L	1 1/2"	55	50	60	22	55	42	75	40	63
S	630	6	MSBT6-4	1/4"	19	12	17	12	18	28	40	16	31
S	630	8	MSBT8-4	1/4"	19	14	19	12	18	30	42	17	32
S	630	10	MSBT10-6	3/4"	22	17	22	12	22	31	44,5	17,5	34
S	630	12	MSBT12-6	3/8"	22	17	24	12	22	33	47,5	21,5	38
S	630	14	MSBT14-8	1/2"	27	19	27	14	26	37	53,5	22	40
S	400	16	MSBT16-8	1/2"	27	24	30	14	26	37	54,5	24,5	43
S	400	20	MSBT20-12	3/4"	32	27	36	16	32	42	64,5	26,5	48
S	400	25	MSBT25-16	1"	41	36	46	18	39	47	72,5	30	54
S	250	30	MSBT30-20	1 1/4"	50	41	50	20	49	50	78,5	35,5	62
S	250	38	MSBT38-24	1 1/2"	55	50	60	22	55	57	89	41	72

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

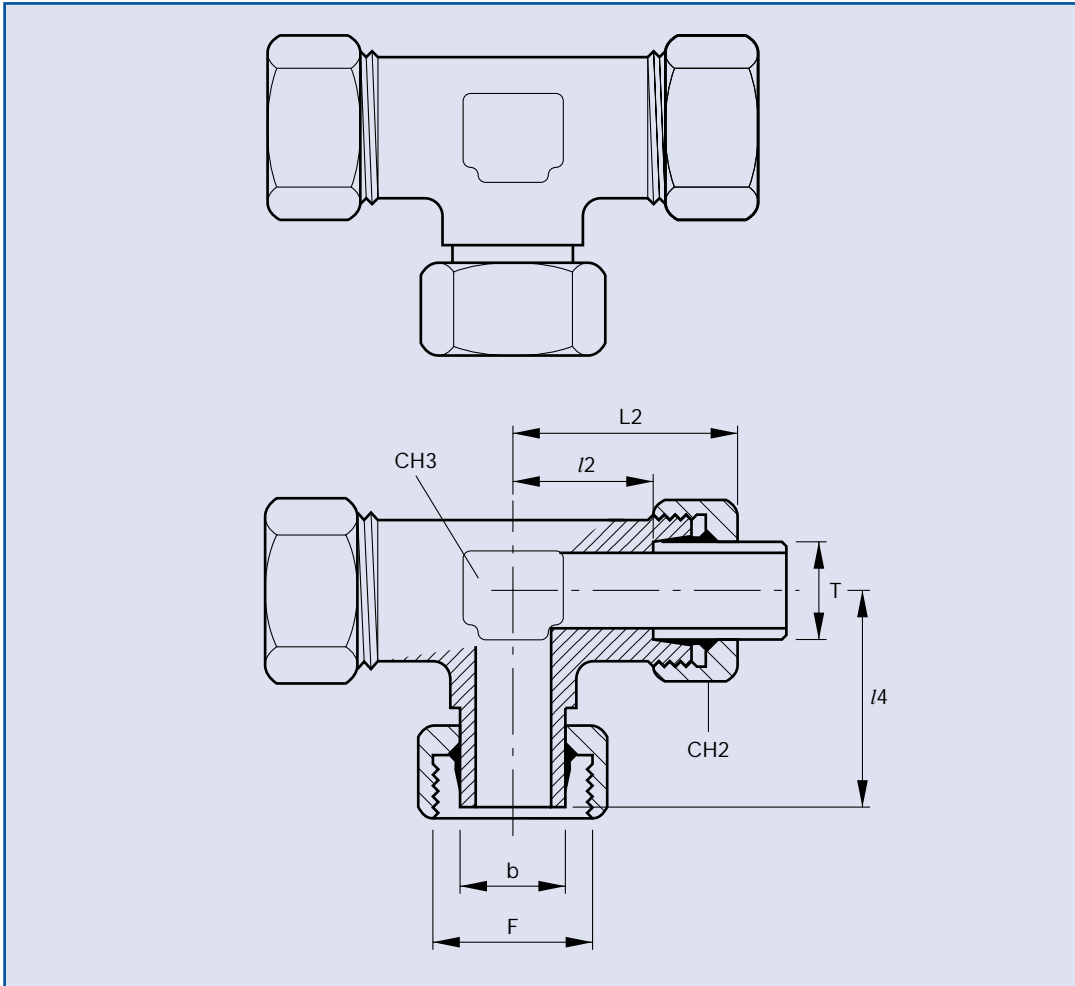


# METRIC SWIVEL BRANCH TEES

## CAPTIVE NUT TYPE



SWIVEL BRANCH TEES



Series	NP	ØT	Part N°	ØF	CH3	CH2	L2	l2	l4	Øb
L	315	6	MSBT6L	M12 x 1.5	12	14	27	12	26	6
L	315	8	MSBT8L	M14 x 1.5	12	17	29	14	27	8
L	315	10	MSBT10L	M16 x 1.5	14	19	30	15	28.5	10
L	315	12	MSBT12L	M18 x 1.5	17	22	32	17	29	12
L	315	15	MSBT15L	M22 x 1.5	19	27	36	21	32	15
L	315	18	MSBT18L	M26 x 1.5	24	32	40	23.5	35	18
L	160	22	MSBT22L	M30 x 2	27	36	44	27.5	38	22
L	160	28	MSBT28L	M36 x 2	36	41	47	41.5	30.5	28
L	160	35	MSBT35L	M45 x 2	41	50	56	51	34.5	35
L	160	42	MSBT42L	M52 x 2	50	60	63	56	40	42
S	630	6	MSBT6	M14 x 1.5	12	17	31	27	16	6
S	630	8	MSBT8	M16 x 1.5	14	19	32	27	17	8
S	630	10	MSBT10	M18 x 1.5	17	22	34	29.5	17.5	10
S	630	12	MSBT12	M20 x 1.5	17	24	38	30.5	21.5	12
S	630	14	MSBT14	M22 x 1.5	19	27	40	34.5	22	14
S	400	16	MSBT16	M24 x 1.5	24	30	43	36	24.5	16
S	400	20	MSBT20	M30 x 2	27	36	48	44	26.5	20
S	400	25	MSBT25	M36 x 2	36	46	54	49.5	30	25
S	400	30	MSBT30	M42 x 2	41	50	62	55	36.5	30
S	315	38	MSBT38	M52 x 2	50	60	72	63	41	38

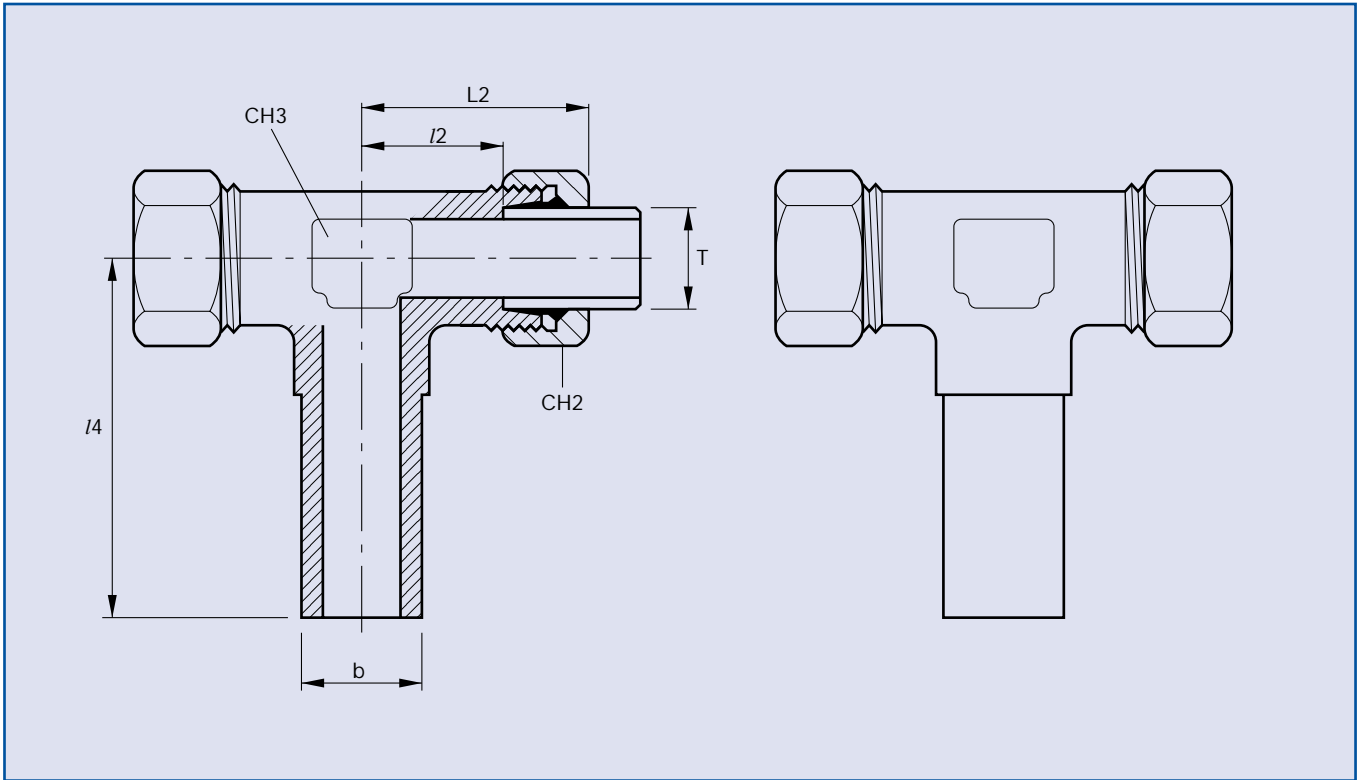
Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC SWIVEL BRANCH TEES

BODY ONLY

BETABITE  
HYDRAULICS



SWIVEL BRANCH TEES

Series	NP	ØT	Part N°	CH3	CH2	L2	l2	l4	Øb
L	315	6	MSBT6LB	12	14	27	12	26	6
L	315	8	MSBT8LB	12	17	29	14	27	8
L	315	10	MSBT10LB	14	19	30	15	28.5	10
L	315	12	MSBT12LB	17	22	32	17	29	12
L	315	15	MSBT15LB	19	27	36	21	32	15
L	315	18	MSBT18LB	24	32	40	23.5	35	18
L	160	22	MSBT22LB	27	36	44	27.5	38	22
L	160	28	MSBT28LB	36	41	47	30.5	41.5	28
L	160	35	MSBT35LB	41	50	56	34.5	51	35
L	160	42	MSBT42LB	50	60	63	40	56	42
S	630	6	MSBT6B	12	17	31	16	27	6
S	630	8	MSBT8B	14	19	32	17	27	8
S	630	10	MSBT10B	17	22	34	17.5	29.5	10
S	630	12	MSBT12B	17	24	38	21.5	30.5	12
S	630	14	MSBT14B	19	27	40	22	34.5	14
S	400	16	MSBT16B	24	30	43	24.5	36	16
S	400	20	MSBT20B	27	36	48	26.5	44	20
S	400	25	MSBT25B	36	46	54	30	49.5	25
S	400	30	MSBT30B	41	50	62	36.5	55	30
S	315	38	MSBT38B	50	60	72	41	63	38

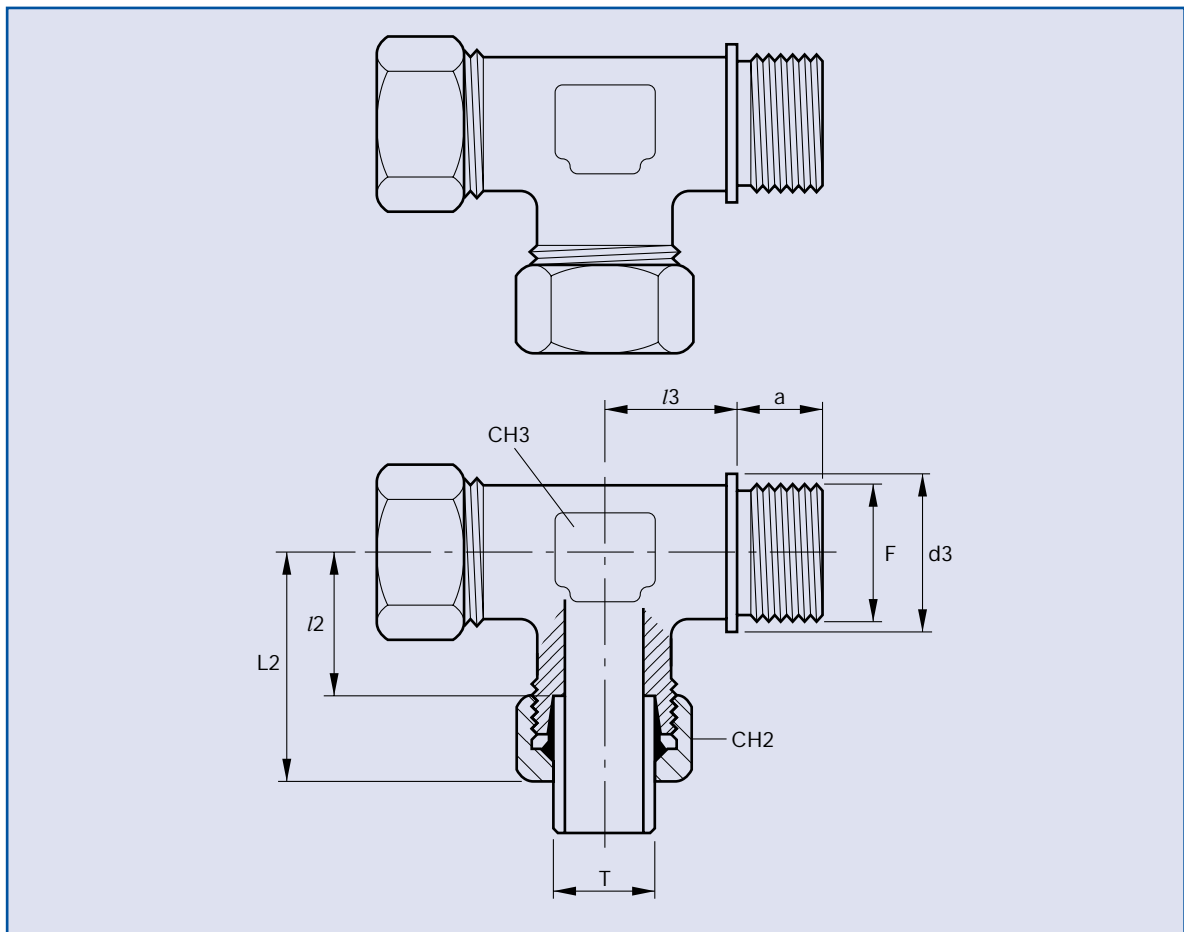
Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC MALE RUN TEES

THREAD: BSP CYLINDRICAL (UNI ISO 228)



MALE RUN TEES

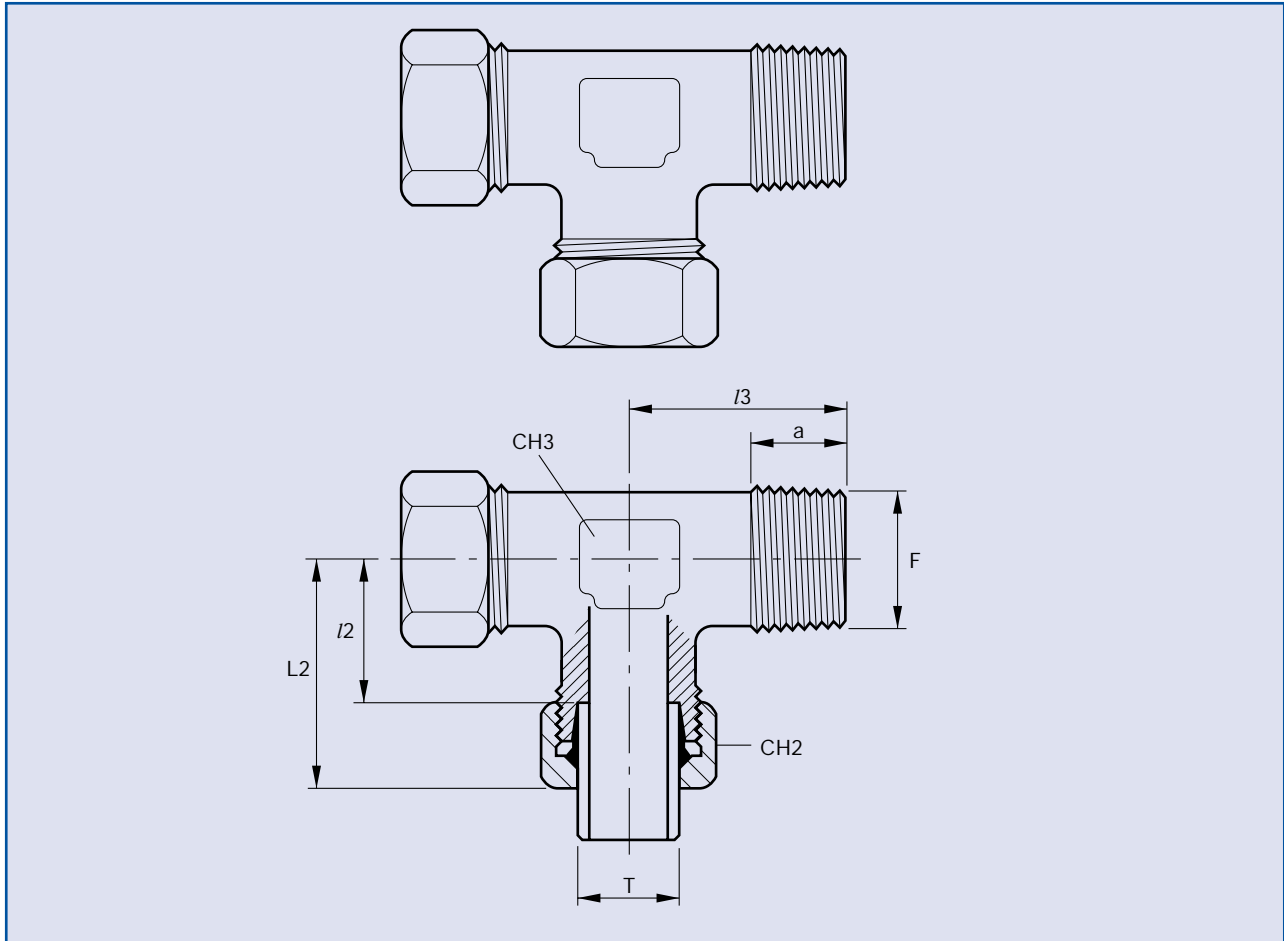


Series	NP	ØT	Part N°	ØF	CH3	CH2	a	d3	L2	l2	l3
L	160	22	MMRT22-12 L	3/4" G	27	36	16	32	44	27.5	26
L	160	28	MMRT28-16 L	1" G	36	41	18	39	47	30.5	30
L	160	35	MMRT35-20 L	1 1/4" G	41	50	20	49	56	34.5	34
L	160	42	MMRT42-24 L	1 1/2" G	50	60	22	55	63	40	39
S	400	20	MMRT20-12	3/4" G	27	36	16	32	48	26.5	26
S	400	25	MMRT25-16	1" G	36	46	18	39	54	30	30
S	250	30	MMRT30-20	1 1/4" G	41	50	20	49	62	35.5	34
S	250	38	MMRT38-24	1 1/2" G	50	60	22	55	63	40	39

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC BSP TAPER MALE RUN TEES

THREAD: BSP TAPERED (DIN 3858)



BSP TAPER MALE RUN TEES

Series	NP	ØT	Part N°	ØF	CH3	CH2	a	L2	l2	l3
L	315	6	MMRT6-2 TL	1/8" GC	12	14	8	21	11	17
L	315	8	MMRT8-4 TL	1/4" GC	12	17	12	29	14	26
L	315	10	MMRT10-4 TL	1/4" GC	14	19	12	30	15	27
L	315	12	MMRT12-6 TL	3/8" GC	17	22	12	32	17	28
L	315	15	MMRT15-8 TL	1/2" GC	19	27	14	36	21	34
L	315	18	MMRT18-8 TL	1/2" GC	24	32	14	40	23.5	36
L	160	22	MMRT22-12 TL	3/4" GC	27	36	16	44	27.5	42
L	160	28	MMRT28-16 TL	1" GC	36	41	18	47	30.5	48
L	160	35	MMRT35-20 TL	1 1/4" GC	41	50	20	56	34.5	54
L	160	42	MMRT42-24 TL	1 1/2" GC	50	60	22	63	40	61
S	630	6	MMRT6-4 T	1/4" GC	12	17	12	31	16	26
S	630	8	MMRT8-4 T	1/4" GC	14	19	12	32	17	27
S	630	10	MMRT10-6 T	3/8" GC	17	22	12	34	17.5	28
S	630	12	MMRT12-6 T	3/8" GC	17	24	12	38	21.5	28
S	630	14	MMRT14-8 T	1/2" GC	19	27	14	40	22	32
S	400	16	MMRT16-8 T	1/2" GC	24	30	14	43	24.5	32
S	400	20	MMRT20-12 T	3/4" GC	27	36	16	48	26.5	42
S	400	25	MMRT25-16 T	1" GC	36	46	18	54	30	48
S	250	30	MMRT30-20 T	1 1/4" GC	41	50	20	62	35.5	54
S	250	38	MMRT38-24 T	1 1/4" GC	50	60	22	72	41	61

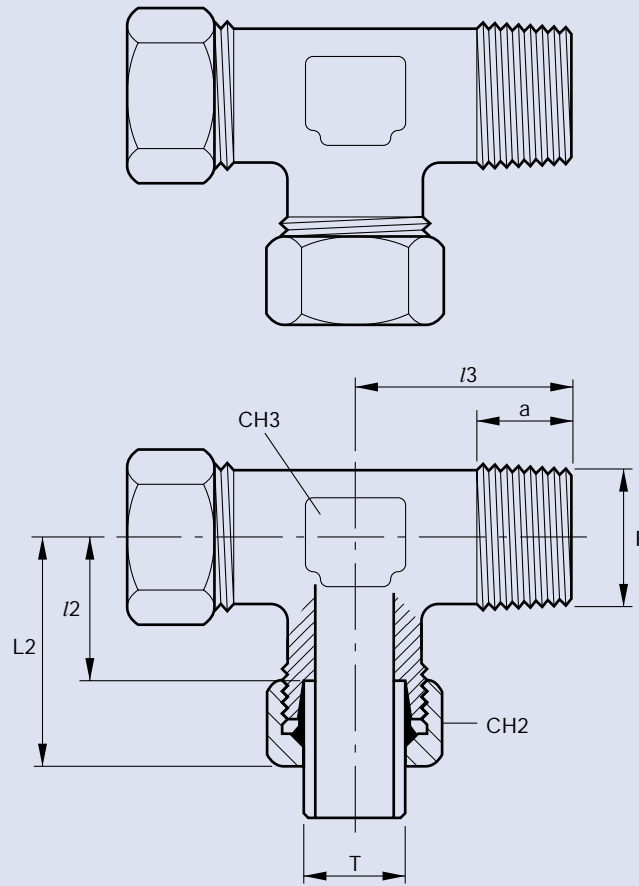
Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC NPT TAPER MALE RUN TEES

THREAD: NPT (ASA B2.1 – 1960)



NPT TAPER MALE RUN TEES



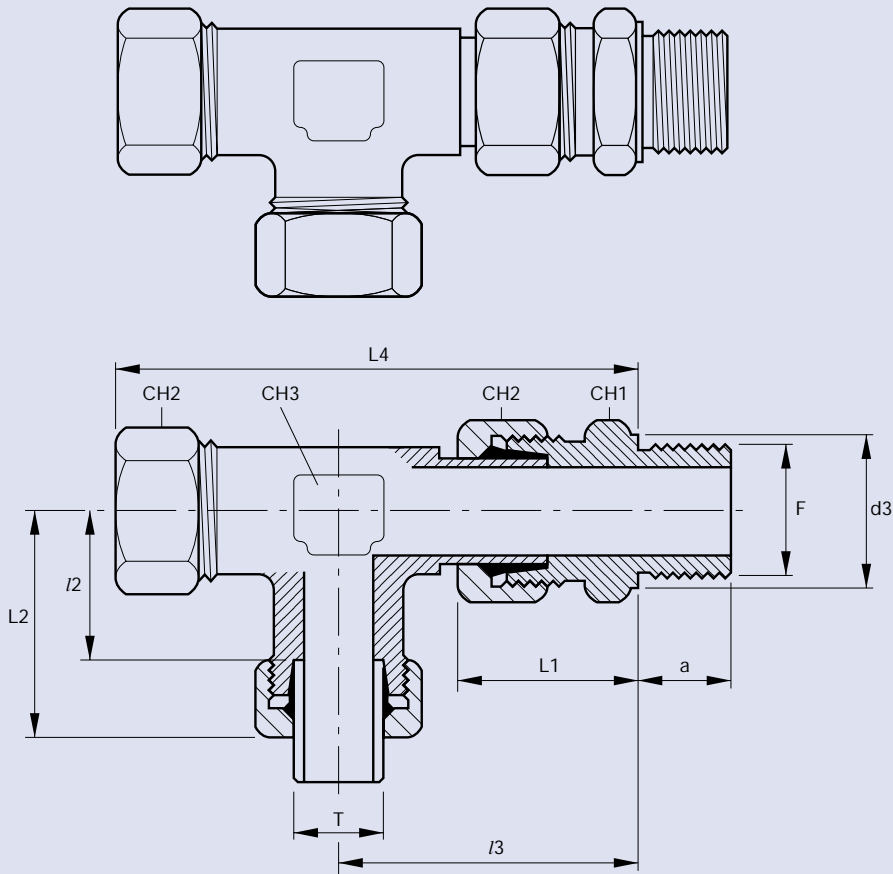
Series	NP	ØT	Part N°	ØF	CH3	CH2	a	L2	l2	l3
L	315	6	MMRT6-2 ATL	1/8" NPT	12	14	9.9	27	12	20
L	315	8	MMRT8-4 ATL	1/4" NPT	12	17	15.1	29	14	26
L	315	10	MMRT10-4 ATL	1/4" NPT	14	19	15.1	30	15	27
L	315	12	MMRT12-6 ATL	3/8" NPT	17	22	15.2	32	17	28
L	315	15	MMRT15-8 ATL	1/2" NPT	19	27	19.8	36	21	34
L	315	18	MMRT18-8 ATL	1/2" NPT	24	32	19.8	40	23.5	36
L	160	22	MMRT22-12 ATL	3/4" NPT	27	36	20.1	44	27.5	42
L	160	28	MMRT28-16 ATL	1" NPT	36	41	25	47	30.5	48
L	160	35	MMRT35-20 ATL	1 1/4" NPT	41	50	25.6	56	34.5	54
L	160	42	MMRT42-24 ATL	1 1/2" NPT	50	60	26	63	40	61
S	630	6	MMRT6-4 AT	1/4" NPT	12	17	15.1	31	16	26
S	630	8	MMRT8-4 AT	1/4" NPT	14	19	15.1	32	17	27
S	630	10	MMRT10-6 AT	3/8" NPT	17	22	15.2	34	17.5	28
S	630	12	MMRT12-6 AT	3/8" NPT	17	24	15.2	38	21.5	28
S	630	14	MMRT14-8 AT	1/2" NPT	19	27	19.8	40	22	34
S	400	16	MMRT16-8 AT	1/2" NPT	24	30	19.8	43	24.5	36
S	400	20	MMRT20-12 AT	3/4" NPT	27	36	20.1	48	26.5	42
S	400	25	MMRT25-16 AT	1" NPT	36	46	25	54	30	48
S	400	30	MMRT30-20 AT	1 1/4" NPT	41	50	25.6	62	35.5	54
S	315	38	MMRT38-24 AT	1 1/2" NPT	50	60	26	72	41	61

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC SWIVEL RUN TEES

COMPLETE ASSEMBLY



SWIVEL RUN TEES

Series	NP	ØT	Part N°	ØF	CH1	CH3	CH2	a	Ød3	L4	L1	β	l2	L2
L	315	6	MSRT6-2L	1/8"	14	12	14	8	14	61	23	34.5	12	27
L	315	8	MSRT8-4L	1/4"	19	12	17	12	18	66	25	37	14	29
L	315	10	MSRT10-4L	1/4"	19	14	19	12	18	69	26	39.5	15	30
L	315	12	MSRT12-6L	3/8"	22	17	22	12	22	73	27	41.5	17	32
L	315	15	MSRT15-8L	1/2"	27	19	27	14	26	82	29	46	21	36
L	315	18	MSRT18-8L	1/2"	27	24	32	14	26	89	31	49.5	23.5	40
L	160	22	MSRT22-12L	3/4"	32	27	36	16	32	98	33	54.5	27.5	44
L	160	28	MSRT28-16L	1"	41	36	41	18	39	106	34	59	30.5	47
L	160	35	MSRT35-20L	1 1/4"	50	41	50	20	49	125	39	68.5	34.5	56
L	160	42	MSRT42-24L	1 1/2"	55	50	60	22	55	138	42	75	40	63
S	630	6	MSRT6-4	1/4"	19	12	17	12	18	71	28	40	16	31
S	630	8	MSRT8-4	1/4"	19	14	19	12	18	74	30	42	17	32
S	630	10	MSRT10-6	3/8"	22	17	22	12	22	78	31	44.5	17.5	34
S	630	12	MSRT12-6	3/8"	22	17	24	12	22	85	33	47.5	21.5	38
S	630	14	MSRT14-8	1/2"	27	19	27	14	26	93	37	53.5	22	40
S	400	16	MSRT16-8	1/2"	27	24	30	14	26	97	37	54.5	24.5	43
S	400	20	MSRT20-12	3/4"	32	27	36	16	32	113	42	64.5	26.5	48
S	400	25	MSRT25-16	1"	41	36	46	18	39	127	47	72.5	30	54
S	250	30	MSRT30-20	1 1/4"	50	41	50	20	49	141	50	78.5	35.5	62
S	250	38	MSRT38-24	1 1/2"	55	50	60	22	55	161	57	89	41	72

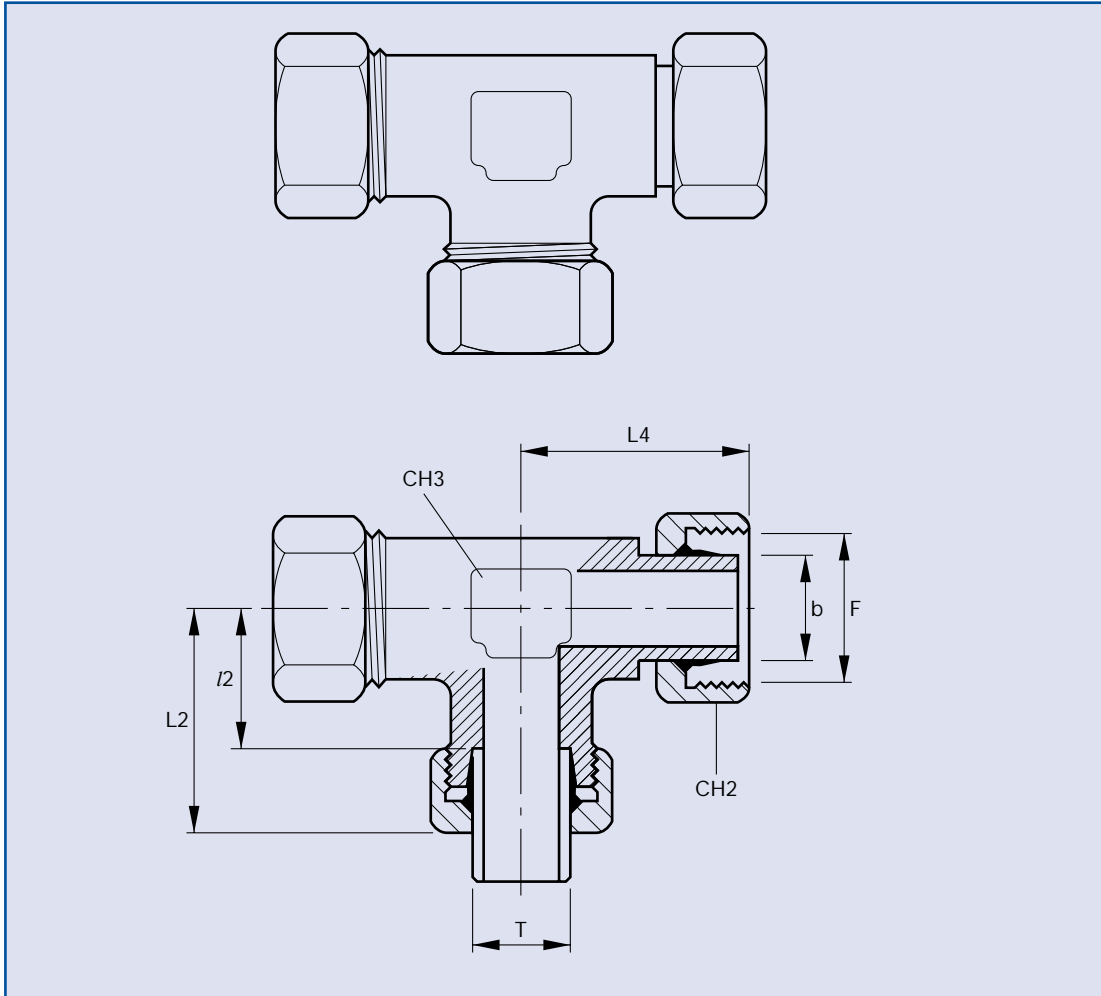
Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC SWIVEL RUN TEES

## CAPTIVE NUT TYPE



SWIVEL RUN TEES



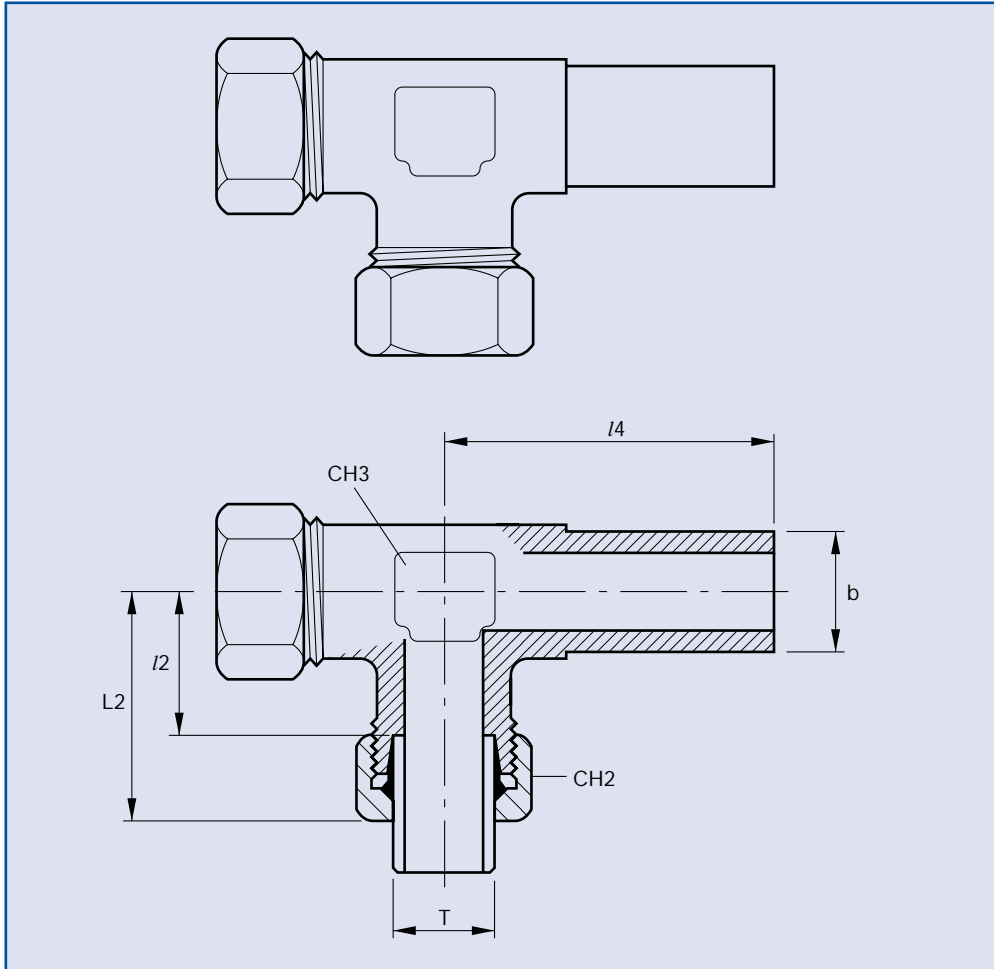
Series	NP	ØT	Part N°	ØF	CH3	CH2	L2	/2	L4	Øb
L	315	6	MSRT6L	M12 x 1.5	12	14	27	12	26	6
L	315	8	MSRT8L	M14 x 1.5	12	17	29	14	27	8
L	315	10	MSRT10L	M16 x 1.5	14	19	30	15	28.5	10
L	315	12	MSRT12L	M18 x 1.5	17	22	32	17	29	12
L	315	15	MSRT15L	M22 x 1.5	19	27	36	21	32	15
L	315	18	MSRT18L	M26 x 1.5	24	32	40	23.5	35	18
L	160	22	MSRT22L	M30 x 2	27	36	44	27.5	38	22
L	160	28	MSRT28L	M36 x 2	36	41	47	30.5	41.5	28
L	160	35	MSRT35L	M45 x 2	41	50	56	34.5	51	35
L	160	42	MSRT42L	M52 x 2	50	60	63	40	56	42
S	630	6	MSRT6	M14 x 1.5	12	17	31	16	27	6
S	630	8	MSRT8	M16 x 1.5	14	19	32	17	27	8
S	630	10	MSRT10	M18 x 1.5	17	22	34	17.5	29.5	10
S	630	12	MSRT12	M20 x 1.5	17	24	38	21.5	30.5	12
S	630	14	MSRT14	M22 x 1.5	19	27	40	22	34.5	14
S	400	16	MSRT16	M24 x 1.5	24	30	43	24.5	36	16
S	400	20	MSRT20	M30 x 2	27	36	48	26.5	44	20
S	400	25	MSRT25	M36 x 2	36	46	54	30	49.5	25
S	400	30	MSRT30	M42 x 2	41	50	62	35.5	55	30
S	315	38	MSRT38	M52 x 2	50	60	72	41	63	38

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC SWIVEL RUN TEES

BODY ONLY



SWIVEL RUN TEES

Series	NP	ØT	Part N°	CH3	CH2	L2	/2	/4	Øb
L	315	6	MSRT6LB	12	14	27	12	26	6
L	315	8	MSRT8LB	12	17	29	14	27	8
L	315	10	MSRT10LB	14	19	30	15	28.5	10
L	315	12	MSRT12LB	17	22	32	17	29	12
L	315	15	MSRT15LB	19	27	36	21	32	15
L	315	18	MSRT18LB	24	32	40	23.5	35	18
L	160	22	MSRT22LB	27	36	44	27.5	38	22
L	160	28	MSRT28LB	36	41	47	30.5	41.5	28
L	160	35	MSRT35LB	41	50	56	34.5	51	35
L	160	42	MSRT42LB	50	60	63	40	56	42
S	630	6	MSRT6B	12	17	31	16	27	6
S	630	8	MSRT8B	14	19	32	17	27	8
S	630	10	MSRT10B	17	22	34	17.5	29.5	10
S	630	12	MSRT12B	17	24	38	21.5	30.5	12
S	630	14	MSRT14B	19	27	40	22	34.5	14
S	400	16	MSRT16B	24	30	43	24.5	36	16
S	400	20	MSRT20B	27	36	48	26.5	44	20
S	400	25	MSRT25B	36	46	54	30	49.5	25
S	400	30	MSRT30B	41	50	62	35.5	55	30
S	315	38	MSRT38B	50	60	72	41	63	38

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

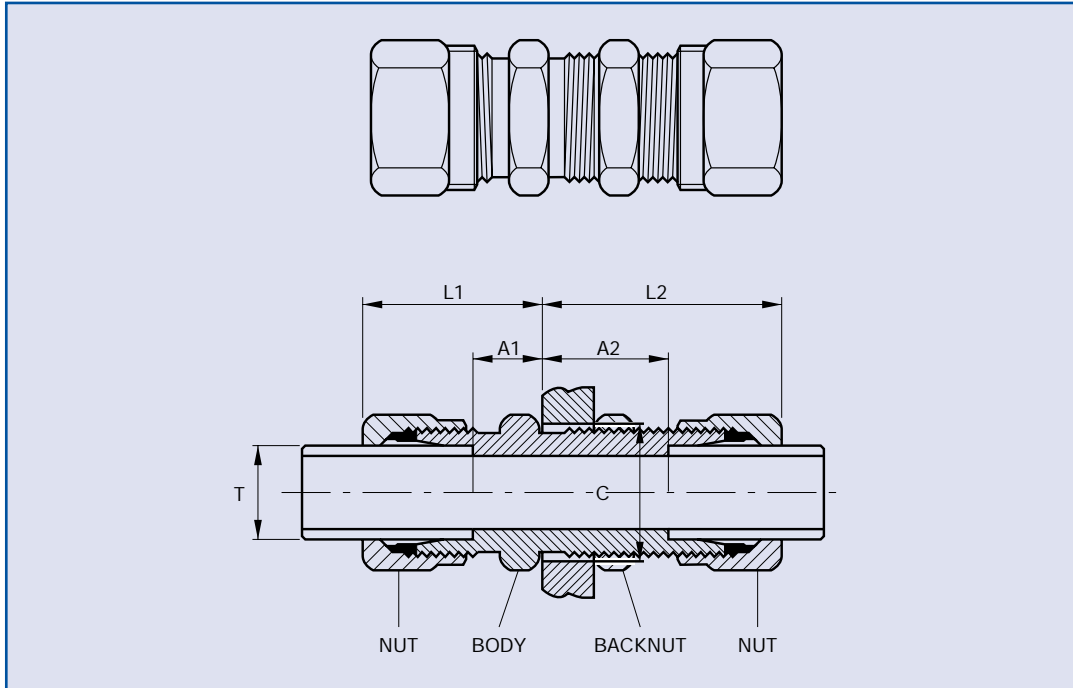


# IMPERIAL BULKHEAD COUPLINGS

FOR O.D. & N.B. TUBES



BULKHEAD COUPLINGS



## O.D. TUBES

Part No.	Tube Dia. T.	Hexagons A/F		Tube Abutment		Overall Length		Clearance Hole dia. C.
		Nut	Body & Backnut	A1.	A2.	L1.	L2.	
BH4	1/4"	.710"	.820"	3/32"	29/32"	1"	1 5/8"	9/16"
BH5	5/16"	.710"	.820"	5/16"	19/16"	1 1/32"	1 21/32"	19/32"
BH6	3/8"	.820"	.920"	3/8"	1"	1 3/32"	1 23/32"	1 1/16"
BH8	1/2"	.920"	1.10"	13/32"	1 1/32"	1 5/8"	1 25/32"	13/16"
BH10	5/8"	1.10"	1.20"	3/8"	1"	1 5/32"	1 25/32"	15/16"
BH12	3/4"	1.20"	1.375"	7/16"	1 1/16"	1 1/4"	1 7/8"	1 1/16"
BH14	7/8"	1.375"	1.48"	1/2"	1 1/8"	1 3/8"	2"	1 3/16"
BH16	1"	1.67"	1.86"	19/32"	1 1/32"	1 17/32"	2 5/32"	1 7/16"
BH20	1 1/4"	2.05"	2.05"	1 1/16"	1 3/16"	1 21/32"	2 9/32"	1 11/16"
BH24	1 1/2"	2.22"	2.41"	3/4"	1 3/8"	1 13/16"	2 7/16"	2"

## N.B. TUBES

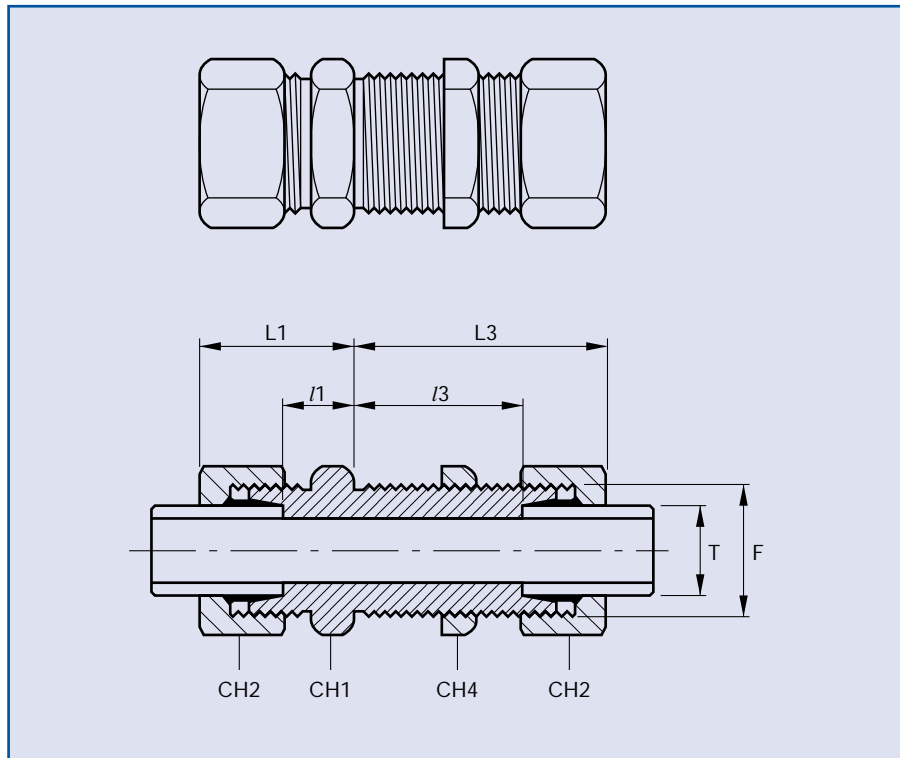
Part No.	N.B. Tube Size T.	Hexagons A/F		Tube Abutment		Overall Length		Clearance Hole dia. C.
		Nut	Body & Backnut	A1.	A2.	L1.	L2.	
NBH2	1/8"	.820"	1.01"	13/32"	1 1/32"	1 5/32"	1 25/32"	3/4"
NBH4	1/4"	1.10"	1.20"	3/8"	1"	1 5/32"	1 25/32"	15/16"
NBH6	3/8"	1.20"	1.375"	7/16"	1 1/16"	1 1/4"	1 7/8"	1 1/16"
NBH8	1/2"	1.375"	1.48"	1/2"	1 1/8"	1 3/8"	2"	1 3/16"
NBH12	3/4"	1.67"	1.86"	5/8"	1 1/4"	1 5/8"	2 1/4"	1 7/16"
NBH16	1"	2.05"	2.05"	1 1/16"	1 3/16"	1 21/32"	2 9/32"	1 11/16"
NBH20	1 1/4"	2.58"	2.76"	1 3/16"	1 7/16"	1 29/32"	2 17/32"	2 1/4"
NBH24	1 1/2"	3.02"	3.02"	1 3/16"	1 7/16"	2"	2 5/8"	2 1/2"

The above couplings are suitable for bulkheads with a Maximum thickness of 1/2".

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

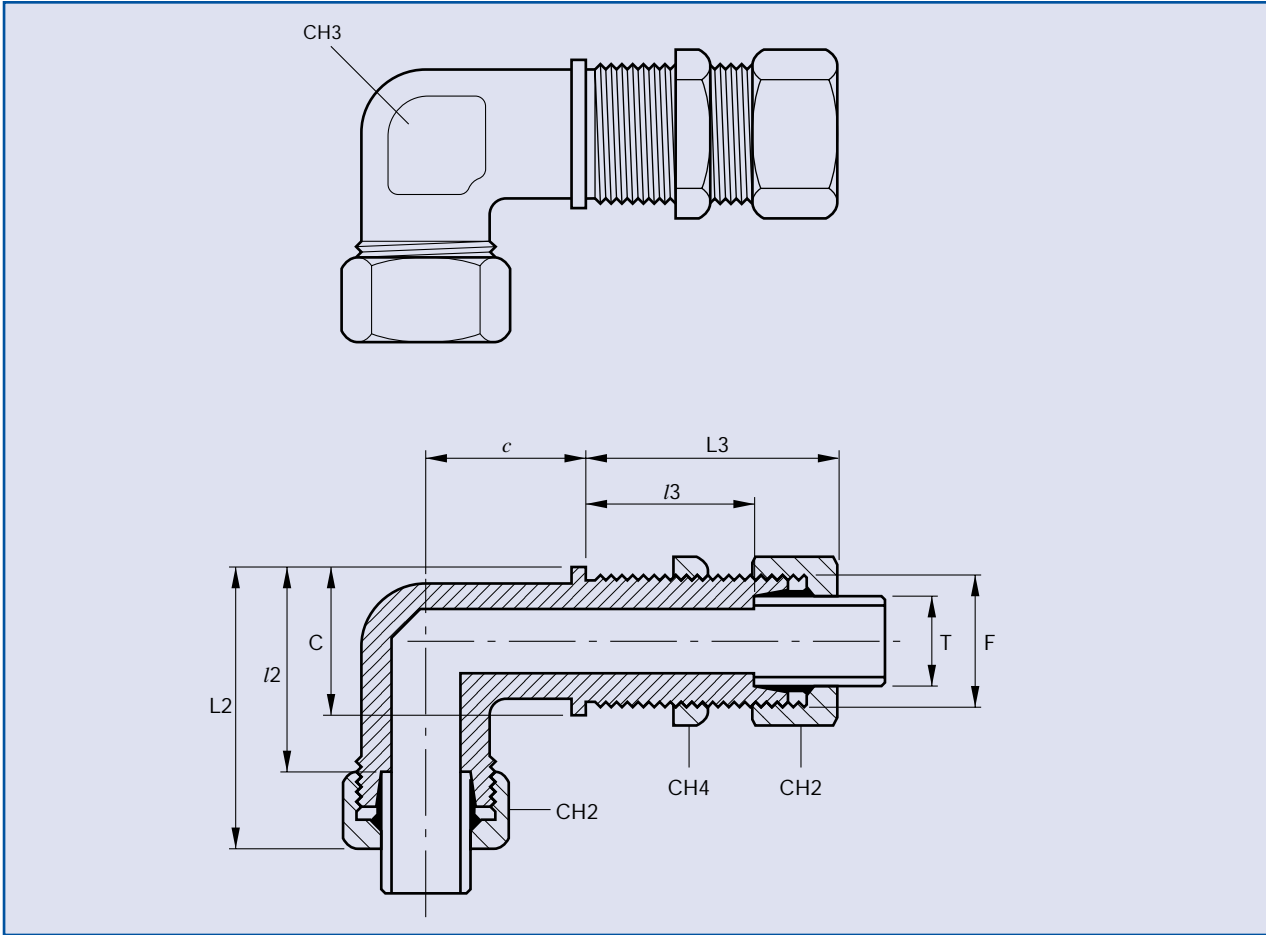
# METRIC BULKHEAD COUPLINGS



Series	NP	ØT	Part N°	ØF	CH1	CH4	CH2	L1	l1	L3	l3
L	315	6	MBH6L	M12 x 1.5	17	17	14	22	7	42	27
L	315	8	MBH8L	M14 x 1.5	19	19	17	23	8	42	27
L	315	10	MBH10L	M16 x 1.5	22	22	19	25	10	43	28
L	315	12	MBH12L	M18 x 1.5	24	24	22	25	10	44	29
L	315	15	MBH15L	M22 x 1.5	27	30	27	27	12	46	31
L	315	18	MBH18L	M26 x 1.5	32	36	32	30	13.5	49	32.5
L	160	22	MBH22L	M30 x 2	36	41	36	33	16.5	51	34.5
L	160	28	MBH28L	M36 x 2	41	46	41	35	18.5	52	35.5
L	160	35	MBH35L	M45 x 2	50	55	50	40	18.5	58	36.5
L	160	42	MBH42L	M52 x 2	60	65	60	42	19	59	36
S	630	6	MBH6	M14 x 1.5	19	19	17	27	12	44	29
S	630	8	MBH8	M16 x 1.5	22	22	19	28	13	44	29
S	630	10	MBH10	M18 x 1.5	24	24	22	31	14.5	46	29.5
S	630	12	MBH12	M20 x 1.5	27	27	24	31	14.5	47	30.5
S	630	14	MBH14	M22 x 1.5	30	30	27	35	17	50	32
S	400	16	MBH16	M24 x 1.5	32	32	30	35	16.5	50	31.5
S	400	20	MBH20	M30 x 2	41	41	36	39	17.5	55	33.5
S	400	25	MBH25	M36 x 2	46	46	46	44	20	59	35
S	400	30	MBH30	M42 x 2	50	50	50	48	21.5	64	37.5
S	315	38	MBH38	M52 x 2	65	65	60	53	22	68	37

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC BULKHEAD ELBOWS

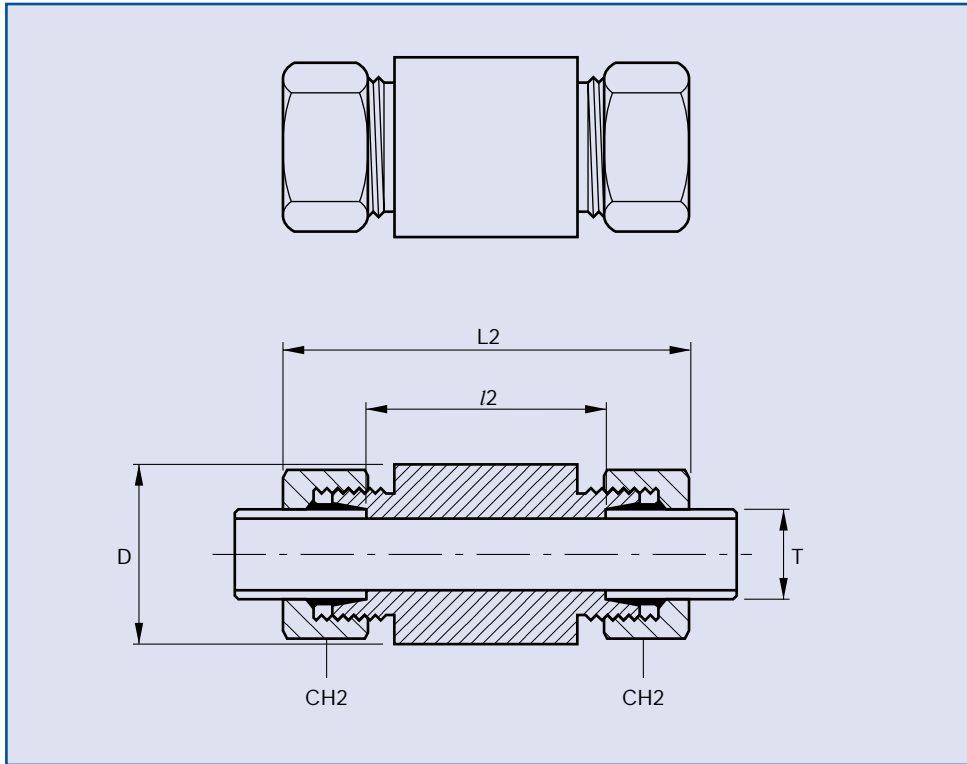


Series	NP	ØT	Part N°	ØF	CH3	CH4	CH2	L2	l2	L3	l3	ØC	c
L	315	6	MBHE6L	M12 x 1.5	12	17	14	27	12	42	27	17	14
L	315	8	MBHE8L	M14 x 1.5	12	19	17	29	14	42	27	19	17
L	315	10	MBHE10L	M16 x 1.5	14	22	19	30	15	43	28	22	18
L	315	12	MBHE12L	M18 x 1.5	17	24	22	32	17	44	29	24	20
L	315	15	MBHE15L	M22 x 1.5	19	30	27	36	21	46	31	27	23
L	315	18	MBHE18L	M26 x 1.5	24	36	32	40	23.5	49	32.5	32	24
L	160	22	MBHE22L	M30 x 2	27	41	36	44	27.5	51	34.5	36	30
L	160	28	MBHE28L	M36 x 2	36	46	41	47	30.5	52	35.5	42	34
L	160	35	MBHE35L	M45 x 2	41	55	50	56	34.5	58	36.5	50	39
L	160	42	MBHE42L	M52 x 2	50	65	60	63	40	59	36	60	43
S	630	6	MBHE6	M14 x 1.5	12	19	17	31	16	44	29	19	17
S	630	8	MBHE8	M16 x 1.5	14	22	19	32	17	44	29	22	18
S	630	10	MBHE10	M18 x 1.5	17	24	22	34	17.5	46	29.5	24	20
S	630	12	MBHE12	M20 x 1.5	17	27	24	38	21.5	47	30.5	27	21
S	630	14	MBHE14	M22 x 1.5	19	30	27	40	22	50	32	27	23
S	400	16	MBHE16	M24 x 1.5	24	32	30	43	24.5	50	31.5	30	24
S	400	20	MBHE20	M30 x 2	27	41	36	48	26.5	55	33.5	36	30
S	400	25	MBHE25	M36 x 2	36	46	46	54	30	59	35	42	34
S	400	30	MBHE30	M42 x 2	41	50	50	62	35.5	64	37.5	50	39
S	315	38	MBHE38	M52 x 2	50	65	60	72	41	68	37	60	43

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC WELDING BULKHEADS

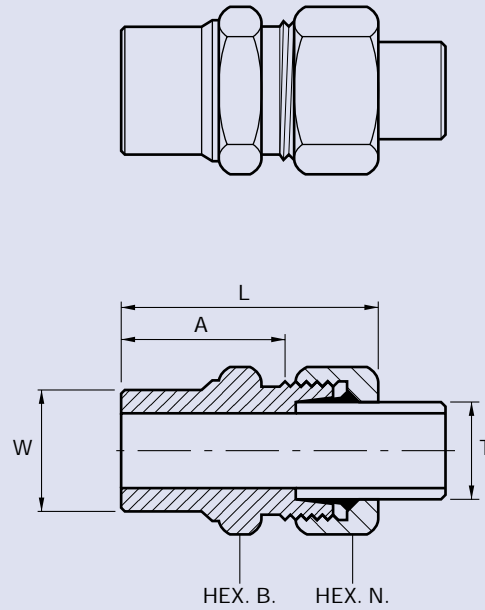


WELDING BULKHEADS

Series	NP	ØT	Part N°	CH2	L2	l2	D
L	315	6	MWBH6L	14	85	56	18
L	315	8	MWBH8L	17	85	56	20
L	315	10	MWBH10L	19	87	58	22
L	315	12	MWBH12L	22	87	58	25
L	315	15	MWBH15L	27	100	70	28
L	315	18	MWBH18L	32	101	69	32
L	160	22	MWBH22L	36	105	73	36
L	160	28	MWBH28L	41	106	73	40
L	160	35	MWBH35L	50	114	71	50
L	160	42	MWBH42L	60	115	70	60
S	630	6	MWBH6	17	89	60	20
S	630	8	MWBH8	19	89	60	22
S	630	10	MWBH10	22	91	59	25
S	630	12	MWBH12	24	91	59	28
S	630	14	MWBH14	27	107	72	30
S	400	16	MWBH16	30	107	71	35
S	400	20	MWBH20	36	114	71	38
S	400	25	MWBH25	46	120	72	45
S	400	30	MWBH30	50	126	73	50
S	315	38	MWBH38	60	133	72	60

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC WELDING BOSSES



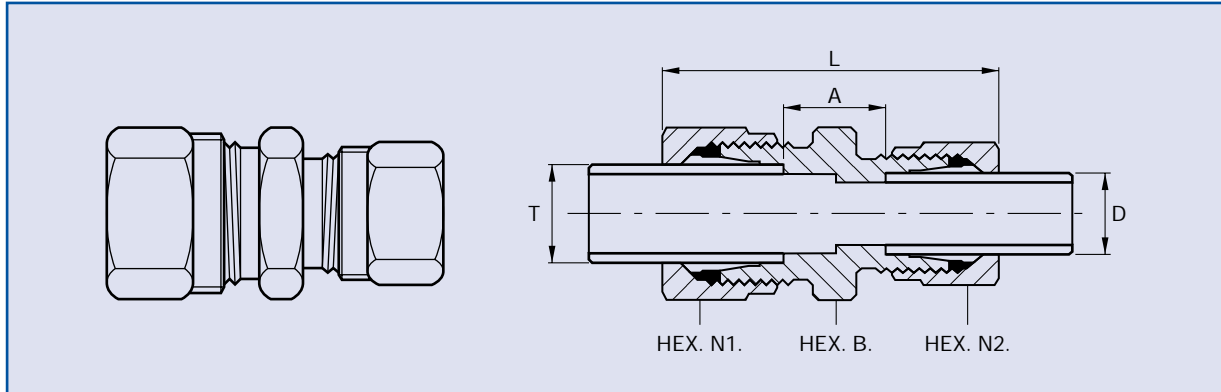
Series	Tube Ø (T)	Part N°	Boss Ø (W)	Nut Hex N	Body Hex (B)	Abut Length (A)	Overall Length (L)
L	6	MWB6L	10	14	12	14	29
L	8	MWB8L	12	17	14	16	31
L	10	MWB10L	14	19	17	18	33
L	12	MWB12L	16	22	19	18	33
L	15	MWB15L	19	27	22	22	37
L	18	MWB18L	22	32	27	23.5	40
L	22	MWB22L	27	36	32	28.5	45
L	28	MWB28L	32	41	41	30.5	47
L	35	MWB35L	40	50	46	32.5	54
L	42	MWB42L	46	60	55	35	58
S	6	MWB6	11	17	14	19	34
S	8	MWB8	13	19	17	21	36
S	10	MWB10	15	22	19	22.5	39
S	12	MWB12	17	24	22	24.5	41
S	14	MWB14	19	27	24	27	45
S	16	MWB16	21	30	27	26.5	45
S	20	MWB20	26	36	32	29.5	51
S	25	MWB25	31	46	41	32	56
S	30	MWB30	36	50	46	35.5	62
S	38	MWB38	44	60	55	38	69

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL REDUCING COUPLINGS

FOR O.D. & N.B. TUBES



## O.D. TUBES

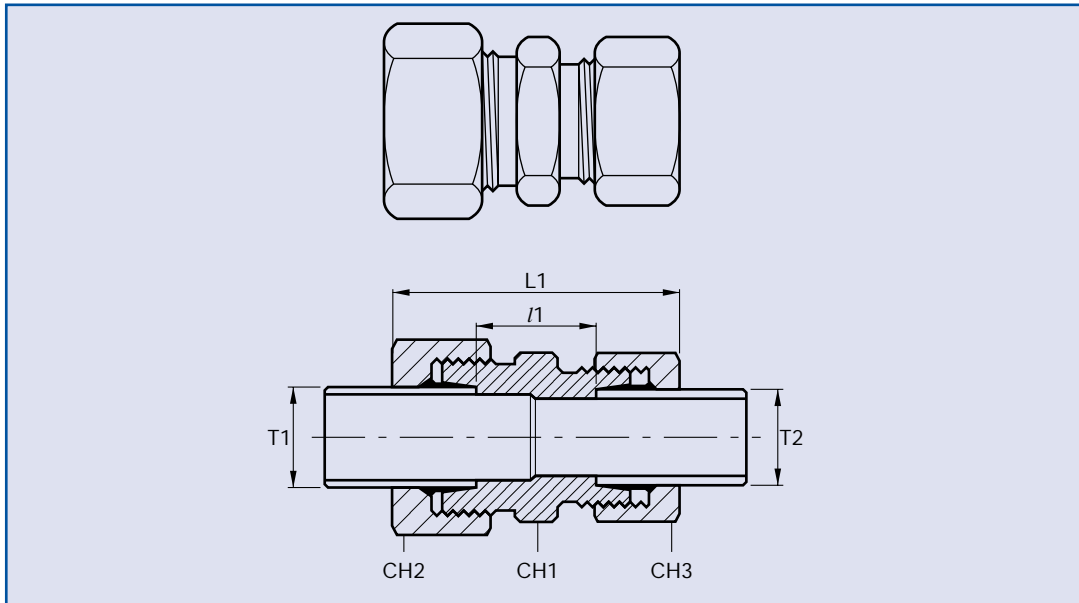
Part No.	Tube Dia. T.	Tube Dia. D.	Nut Hexagon N1.	Nut Hexagon N2.	Body Hexagon B.	Tube Abutment A.	O/A Length L.
RC5-4	5/16"	1/4"	.710"	.710"	.625"	11/32"	1 23/32"
RC6-4	3/8"	1/4"	.820"	.710"	.710"	11/32"	1 3/4"
RC6-5	3/8"	5/16"	.820"	.710"	.710"	3/8"	1 25/32"
RC8-4	1/2"	1/4"	.920"	.710"	.820"	3/8"	1 13/16"
RC8-6	1/2"	3/8"	.920"	.820"	.820"	13/13"	1 7/8"
RC10-8	5/8"	1/2"	1.10"	.920"	.920"	15/32"	2"
RC12-6	3/4"	3/8"	1.20"	.820"	1.10"	1/2"	2 1/32"
RC12-8	3/4"	1/2"	1.20"	.920"	1.10"	17/32"	2 3/32"
RC12-10	3/4"	5/8"	1.20"	1.10"	1.10"	1/2"	2 3/32"
RC16-8	1"	1/2"	1.67"	.920"	1.48"	11/16"	2 3/8"
RC16-12	1"	3/4"	1.67"	1.20"	1.48"	21/32"	2 13/32"
RC16-14	1"	7/8"	1.67"	1.375"	1.48"	21/32"	2 15/32"
RC20-12	1 1/4"	3/4"	2.05"	1.20"	1.67"	13/16"	2 19/32"
RC20-16	1 1/4"	1"	2.05"	1.67"	1.67"	21/32"	2 3/4"
RC24-16	1 1/2"	1"	2.22"	1.67"	2.05"	29/32"	2 29/32"
RC24-20	1 1/2"	1 1/4"	2.22"	2.05"	2.05"	1"	3 1/32"

## N.B. TUBES

Part No.	N.B. Tube Size T.	N.B. Tube Size D.	Nut Hexagon N1.	Nut Hexagon N2.	Body Hexagon B.	Tube Abutment A.	O/A Length L.
NRC4-2	1/4"	1/8"	1.10"	.820"	.920"	15/32"	2"
NRC6-2	3/8"	1/8"	1.20"	.820"	1.10"	17/32"	2 1/32"
NRC6-4	3/8"	1/4"	1.20"	1.10"	1.10"	1/2"	2 3/32"
NRC8-4	1/2"	1/4"	1.375"	1.10"	1.20"	9/16"	2 1/32"
NRC8-6	1/2"	3/8"	1.375"	1.20"	1.20"	9/16"	2 1/4"
NRC12-6	3/4"	3/8"	1.67"	1.20"	1.48"	11/16"	2 1/2"
NRC12-8	3/4"	1/2"	1.67"	1.375"	1.48"	11/16"	2 1/2"
NRC16-8	1"	1/2"	2.05"	1.375"	1.67"	13/16"	2 31/32"
NRC16-12	1"	3/4"	2.05"	1.67"	1.67"	7/8"	2 27/32"
NRC20-12	1 1/4"	3/4"	2.58"	1.67"	2.22"	1 1/16"	3 5/32"
NRC20-16	1 1/4"	1"	2.58"	2.05"	2.22"	1 1/8"	3 3/16"
NRC24-16	1 1/2"	1"	3.02"	2.05"	2.58"	1 1/8"	3 3/32"
NRC24-20	1 1/2"	1 1/4"	3.02"	2.58"	2.58"	1 3/16"	3 15/32"

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC REDUCING COUPLINGS



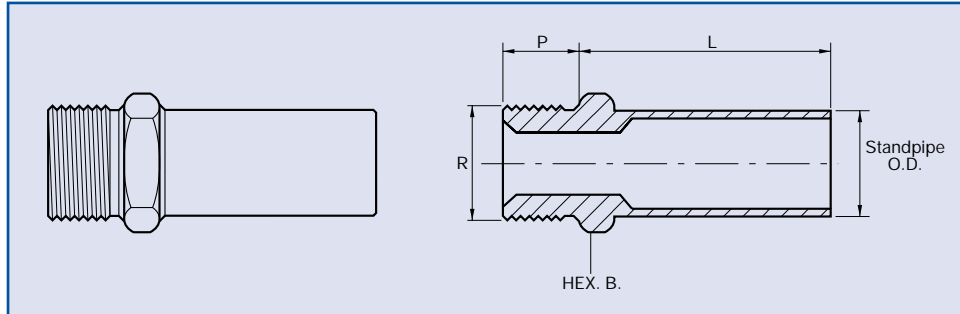
Series	NP	ØT	Part N°	CH1	CH2	CH3	L1	l1
L	315	8-06	MRC8-6L	14	17	14	41	11
L	315	10-06	MRC10-6L	17	19	14	42	12
L	315	10-08	MRC10-8L	17	19	17	42	12
L	315	12-08	MRC12-8L	19	22	17	42	13
L	315	12-10	MRC12-10L	19	22	19	44	14
L	315	15-10	MRC15-10L	24	27	19	45	15
L	315	15-12	MRC15-12L	24	27	22	45	15
L	315	18-12	MRC18-12L	27	32	22	47	15.5
L	315	18-15	MRC18-15L	27	32	27	48	16.5
L	160	22-15	MRC22-15L	32	36	27	50	18.5
L	160	22-18	MRC22-18L	32	36	32	51	18
L	160	28-18	MRC28-18L	41	41	32	52	19
L	160	28-22	MRC28-22L	41	41	36	54	21
L	160	35-22	MRC35-22L	46	50	36	59	21
L	160	35-28	MRC35-28L	46	50	41	59	21
L	160	42-28	MRC42-28L	55	60	41	62	22.5
L	160	42-35	MRC42-35L	55	60	50	66	21.5
S	630	8-06	MRC8-6	17	19	17	48	18
S	630	10-06	MRC10-6	19	22	17	49	17.5
S	630	10-08	MRC10-8	19	22	19	49	17.5
S	630	12-08	MRC12-8	22	24	19	51	19.5
S	630	12-10	MRC12-10	22	24	22	52	19
S	630	14-10	MRC14-10	24	27	22	55	20.5
S	630	14-12	MRC14-12	24	27	24	55	20.5
S	400	16-12	MRC16-12	27	30	24	55	20
S	400	16-14	MRC16-14	27	30	27	58	21.5
S	400	20-14	MRC20-14	32	36	27	63	23.5
S	400	20-16	MRC20-16	32	36	30	63	23
S	400	25-16	MRC25-16	41	46	30	68	25.5
S	400	25-20	MRC25-20	41	46	36	71	25.5
S	400	30-20	MRC30-20	46	50	36	74	26
S	400	30-25	MRC30-25	46	50	46	77	26.5
S	315	38-25	MRC38-25	55	60	46	84	29
S	315	38-30	MRC38-30	55	60	50	87	29.5

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL STUD STANDPIPE ADAPTORS

FOR O.D. & N.B. FITTINGS



## O.D. TUBES

Part No.	BSP Thread R.	O.D. of Standpipe	Body Hexagon B.	P.	L.
SA2-4	1/8"	1/4"	.625"	3/8"	1 1/4"
SA4-4	1/4"	1/4"	.710"	7/16"	1 1/4"
SA4-5	1/4"	5/16"	.710"	7/16"	1 1/32"
SA4-6	1/4"	3/8"	.710"	7/16"	1 1/16"
SA6-6	3/8"	3/8"	.920"	1/2"	1 3/8"
SA6-8	3/8"	1/2"	.920"	1/2"	1 1/16"
SA8-8	1/2"	1/2"	1.10"	5/8"	1 1/16"
SA8-10	1/2"	5/8"	1.10"	5/8"	1 1/16"
SA8-12	1/2"	3/4"	1.10"	5/8"	1 5/8"
SA12-12	3/4"	3/4"	1.30"	3/4"	1 3/4"
SA12-14	3/4"	7/8"	1.30"	3/4"	1 13/16"
SA12-16	3/4"	1"	1.30"	3/4"	1 15/16"
SA16-16	1"	1"	1.67"	7/8"	2"
SA16-20	1"	1 1/4"	1.67"	7/8"	2 1/32"
SA20-20	1 1/4"	1 1/4"	2.05"	1"	2 1/32"
SA20-24	1 1/4"	1 1/2"	2.05"	1"	2 9/16"
SA24-24	1 1/2"	1 1/2"	2.22"	1"	2 3/8"

## N.B. TUBES

Part No.	BSP Thread R.	N.B. Size Standpipe	Body Hexagon B.	P.	L.
NSA4-4	1/4"	1/4"	.710"	7/16"	1 1/16"
NSA6-4	3/8"	1/4"	.920"	1/2"	1 1/2"
NSA6-6	3/8"	3/8"	.920"	1/2"	1 1/2"
NSA8-6	1/2"	3/8"	1.10"	5/8"	1 1/16"
NSA8-8	1/2"	1/2"	1.10"	5/8"	1 11/16"
NSA12-8	3/4"	1/2"	1.30"	3/4"	1 13/16"
NSA12-12	3/4"	3/4"	1.30"	3/4"	2 1/16"
NSA12-16	3/4"	1"	1.375"	3/4"	2 1/32"
NSA16-12	1"	3/4"	1.67"	7/8"	2 1/16"
NSA16-16	1"	1"	1.67"	7/8"	2 1/32"
NSA16-20	1"	1 1/4"	1.86"	7/8"	2 13/32"
NSA20-16	1 1/4"	1"	2.05"	1"	2 1/32"
NSA20-20	1 1/4"	1 1/4"	2.05"	1"	2 13/32"
NSA24-24	1 1/2"	1 1/2"	2.22"	1"	2 9/16"

NOTE: THE BSP THREADS ARE COUNTERSUNK 60°, SUITABLE FOR HOSE CONNECTION.

Alternatively supplied fitted with nut and ferrule, at extra cost, on standpipe end.

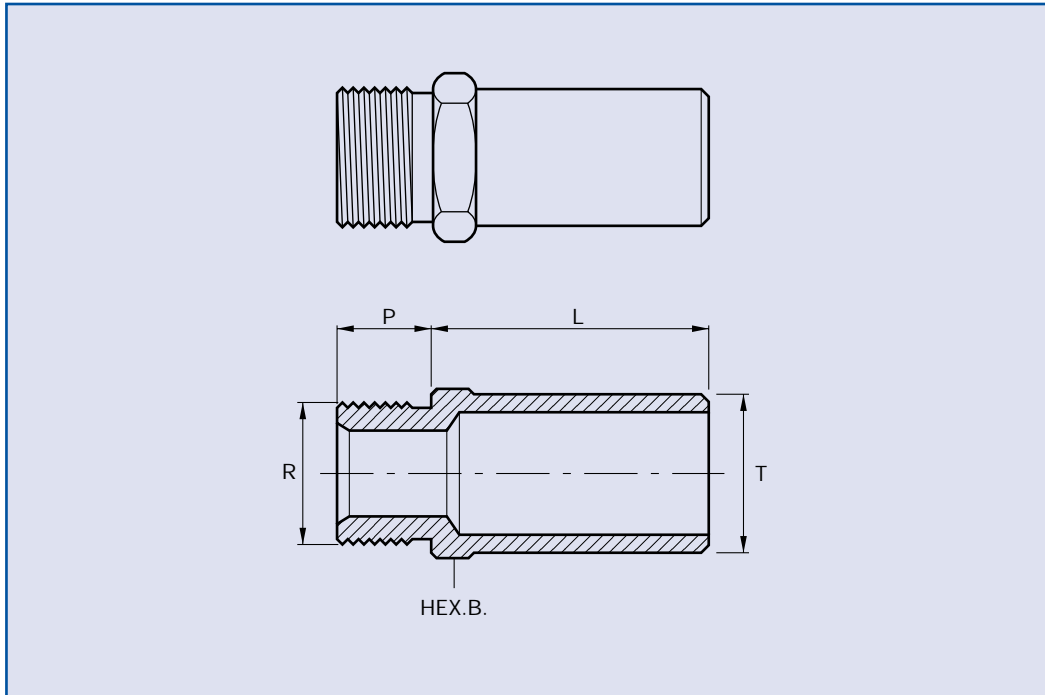
Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.



# METRIC STUD STANDPIPE ADAPTORS

CONED 60°



Series	ØT	Part N°	BSP Thread R	Body Hex. B	P	L
L	6	MSA6-2L	1/8"	14	9.5	23.5
L	8	MSA8-4L	1/4"	18	11	26
L	10	MSA10-4L	1/4"	18	11	27.5
L	12	MSA12-6L	3/8"	23.4	13	32
L	15	MSA15-8L	1/2"	28	16	28
L	18	MSA18-8L	1/2"	28	16	33.5
L	22	MSA22-12L	3/4"	33	19	32.5
L	28	MSA28-16L	1"	42.4	22	34
L	35	MSA35-20L	1 1/4"	52	25.4	39.1
L	42	MSA42-24L	1 1/2"	56	25.4	38.6
S	6	MSA6-4	1/4"	18	11	26
S	8	MSA8-4	1/4"	18	11	26
S	10	MSA10-6	3/8"	23.4	13	30
S	12	MSA12-6	3/8"	23.4	13	32
S	14	MSA14-8	1/2"	28	16	24
S	16	MSA16-8	1/2"	28	16	37.5
S	20	MSA20-12	3/4"	33	19	41
S	25	MSA25-16	1"	42.4	22	51
S	30	MSA30-20	1 1/4"	52	25.4	46
S	38	MSA38-24	1 1/2"	56	25.4	54.6

BSP Threads internal 60° coned as standard.

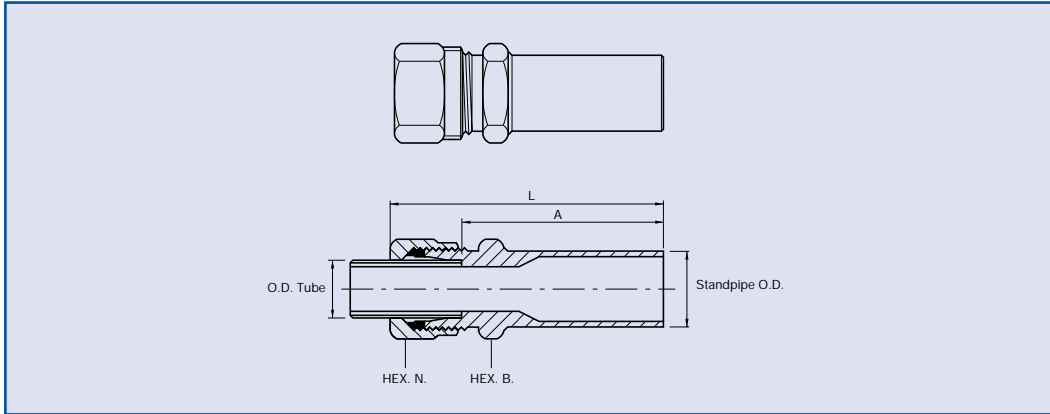
Nut and ferrule can be pre-assembled if required.

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL REDUCING ADAPTORS

FOR O.D. & N.B. FITTINGS



Part No.	O.D. of Tube	O.D. of Standpipe	Nut Hexagon N.	Body Hexagon B.	A.	L.
RA4-6	¼"	¾"	.710"	.625"	1 <sup>11</sup> / <sub>32</sub> "	2 <sup>1</sup> / <sub>32</sub> "
RA4-8	¼"	½"	.710"	.625"	1 <sup>13</sup> / <sub>32</sub> "	1 <sup>3</sup> / <sub>32</sub> "
RA4-10	¼"	5/8"	.710"	.710"	1 <sup>15</sup> / <sub>32</sub> "	2 <sup>7</sup> / <sub>32</sub> "
RA6-8	¾"	½"	.820"	.710"	1 <sup>1</sup> / <sub>6</sub> "	2 <sup>5</sup> / <sub>32</sub> "
RA6-10	¾"	5/8"	.820"	.710"	1 <sup>1</sup> / <sub>2</sub> "	2 <sup>7</sup> / <sub>32</sub> "
RA6-12	¾"	¾"	.820"	.820"	1 <sup>1</sup> / <sub>2</sub> "	2 <sup>7</sup> / <sub>32</sub> "
RA8-10	½"	5/8"	.920"	.820"	1 <sup>17</sup> / <sub>32</sub> "	2 <sup>7</sup> / <sub>32</sub> "
RA8-12	½"	¾"	.920"	.820"	1 <sup>17</sup> / <sub>32</sub> "	2 <sup>7</sup> / <sub>32</sub> "
RA8-14	½"	7/8"	.920"	.920"	1 <sup>23</sup> / <sub>32</sub> "	2 <sup>15</sup> / <sub>32</sub> "
RA8-16	½"	1"	.920"	1.10"	1 <sup>29</sup> / <sub>32</sub> "	1 <sup>2</sup> / <sub>16</sub> "
RA10-12	5/8"	¾"	1.10"	.920"	1 <sup>1</sup> / <sub>6</sub> "	2 <sup>1</sup> / <sub>32</sub> "
RA12-16	¾"	1"	1.20"	1.10"	1 <sup>7</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>16</sub> "
RA12-20	¾"	1 <sup>1</sup> / <sub>4</sub> "	1.20"	1.30"	2 <sup>5</sup> / <sub>32</sub> "	2 <sup>3</sup> / <sub>32</sub> "
RA14-20	7/8"	1 <sup>1</sup> / <sub>4</sub> "	1.375"	1.30"	2 <sup>5</sup> / <sub>32</sub> "	3 <sup>1</sup> / <sub>32</sub> "
RA14-24	7/8"	1 <sup>1</sup> / <sub>2</sub> "	1.375"	1.67"	2 <sup>5</sup> / <sub>16</sub> "	3 <sup>7</sup> / <sub>16</sub> "
RA16-20	1"	1 <sup>1</sup> / <sub>4</sub> "	1.67"	1.48"	2 <sup>3</sup> / <sub>16</sub> "	3 <sup>1</sup> / <sub>8</sub> "
RA20-24	1 <sup>1</sup> / <sub>4</sub> "	1 <sup>1</sup> / <sub>2</sub> "	2.05"	1.67"	2 <sup>7</sup> / <sub>16</sub> "	3 <sup>3</sup> / <sub>32</sub> "

Part No.	N.B. Size of Tube	N.B. Dia. of Standpipe	Nut Hexagon N.	Body Hexagon B.	A.	L.
NRA2-4	1/8"	¼"	.820"	.710"	1 <sup>1</sup> / <sub>32</sub> "	2 <sup>9</sup> / <sub>32</sub> "
NRA2-6	1/8"	3/8"	.820"	.710"	1 <sup>1</sup> / <sub>32</sub> "	2 <sup>9</sup> / <sub>32</sub> "
NRA4-6	¼"	3/8"	1.10"	.920"	1 <sup>1</sup> / <sub>6</sub> "	2 <sup>1</sup> / <sub>32</sub> "
NRA4-8	¼"	½"	1.10"	.920"	1 <sup>3</sup> / <sub>4</sub> "	2 <sup>17</sup> / <sub>32</sub> "
NRA4-12	¼"	¾"	1.10"	1.10"	1 <sup>5</sup> / <sub>16</sub> "	2 <sup>27</sup> / <sub>32</sub> "
NRA4-16	¼"	1"	1.10"	1.375"	2 <sup>5</sup> / <sub>32</sub> "	2 <sup>15</sup> / <sub>16</sub> "
NRA6-8	3/8"	½"	1.20"	1.10"	1 <sup>3</sup> / <sub>16</sub> "	2 <sup>5</sup> / <sub>8</sub> "
NRA6-12	3/8"	¾"	1.20"	1.10"	1 <sup>5</sup> / <sub>16</sub> "	2 <sup>7</sup> / <sub>4</sub> "
NRA6-16	3/8"	1"	1.20"	1.375"	2 <sup>5</sup> / <sub>32</sub> "	2 <sup>3</sup> / <sub>32</sub> "
NRA8-12	½"	¾"	1.375"	1.20"	2 <sup>1</sup> / <sub>6</sub> "	2 <sup>15</sup> / <sub>16</sub> "
NRA8-16	½"	1"	1.375"	1.375"	2 <sup>5</sup> / <sub>32</sub> "	3 <sup>1</sup> / <sub>32</sub> "
NRA8-20	½"	1 <sup>1</sup> / <sub>4</sub> "	1.375"	1.86"	2 <sup>15</sup> / <sub>32</sub> "	3 <sup>1</sup> / <sub>32</sub> "
NRA8-24	½"	1 <sup>1</sup> / <sub>2</sub> "	1.375"	2.05"	2 <sup>1</sup> / <sub>6</sub> "	3 <sup>7</sup> / <sub>16</sub> "
NRA12-16	¾"	1"	1.67"	1.48"	2 <sup>3</sup> / <sub>16</sub> "	3 <sup>7</sup> / <sub>16</sub> "
NRA12-20	¾"	1 <sup>1</sup> / <sub>4</sub> "	1.67"	1.86"	2 <sup>1</sup> / <sub>2</sub> "	3 <sup>1</sup> / <sub>2</sub> "
NRA12-24	¾"	1 <sup>1</sup> / <sub>2</sub> "	1.67"	2.05"	2 <sup>19</sup> / <sub>32</sub> "	3 <sup>19</sup> / <sub>32</sub> "
NRA16-20	1"	1 <sup>1</sup> / <sub>4</sub> "	2.05"	1.86"	2 <sup>1</sup> / <sub>32</sub> "	3 <sup>7</sup> / <sub>16</sub> "
NRA16-24	1"	1 <sup>1</sup> / <sub>2</sub> "	2.05"	2.05"	2 <sup>1</sup> / <sub>16</sub> "	3 <sup>2</sup> / <sub>32</sub> "
NRA20-24	1 <sup>1</sup> / <sub>4</sub> "	1 <sup>1</sup> / <sub>2</sub> "	2.58"	2.22"	2 <sup>13</sup> / <sub>16</sub> "	3 <sup>29</sup> / <sub>32</sub> "

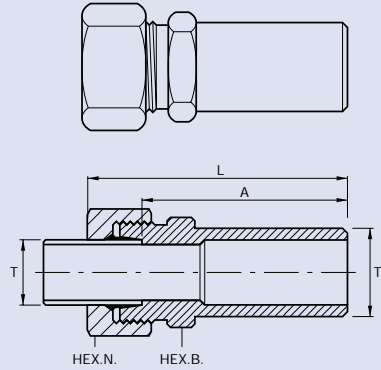
Alternatively supplied fitted with nut and ferrule on each end, at extra cost.

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

REDUCING ADAPTORS

# METRIC REDUCING ADAPTORS

## L SERIES



Series	ØT	Part N°	ØT1	Nut Hex. N	Body Hex. B	A	L
L	6	MRA6-8L	8	14	12	27.5	42.5
L	6	MRA6-10L	10	14	12	27.5	42.5
L	8	MRA8-10L	10	17	14	28.5	43.5
L	6	MRA6-12L	12	14	14	28.5	43.5
L	8	MRA8-12L	12	17	14	28.5	43.5
L	10	MRA10-12L	12	19	17	29.5	4.5
L	6	MRA6-15L	15	14	17	28.5	43.5
L	8	MRA8-15L	15	17	17	28.5	43.5
L	10	MRA10-15L	15	19	17	29.5	44.5
L	12	MRA12-15L	15	22	19	30.5	45.5
L	6	MRA6-18L	18	14	19	30.5	45.5
L	8	MRA8-18L	18	17	19	30.5	45.5
L	10	MRA10-18L	18	19	19	31.5	46.5
L	12	MRA12-18L	18	22	19	31.5	46.5
L	15	MRA15-18L	18	27	24	32.5	47.5
L	6	MRA6-22L	22	14	24	31.5	46.5
L	8	MRA8-22L	22	17	24	31.5	46.5
L	10	MRA10-22L	22	19	24	32.5	47.5
L	12	MRA12-22L	22	22	24	32.5	47.5
L	15	MRA15-22L	22	27	24	33.5	48.5
L	18	MRA18-22L	22	32	27	34	50.5
L	6	MRA6-28L	28	14	30	33.5	48.5
L	8	MRA8-28L	28	17	30	33.5	48.5
L	10	MRA10-28L	28	19	30	34.5	49.5
L	12	MRA12-28L	28	22	30	34.5	49.5
L	15	MRA15-28L	28	27	30	35.5	50.5
L	18	MRA18-28L	28	32	30	35	51.5
L	22	MRA22-28L	28	36	32	37	53.5
L	6	MRA6-35L	35	14	36	39.5	54.5
L	8	MRA8-35L	35	17	36	39.5	54.5
L	10	MRA10-35L	35	19	36	40.5	55.5
L	12	MRA12-35L	35	22	36	40.5	55.5
L	15	MRA15-35L	35	27	36	41.5	56.5
L	18	MRA18-35L	35	32	36	41	57.5
L	22	MRA22-35L	35	36	36	43	59.5
L	28	MRA28-35L	35	41	36	43	59.5
L	6	MRA6-42L	42	14	46	41.5	56.5
L	8	MRA8-42L	42	17	46	41.5	56.5
L	10	MRA10-42L	42	19	46	42.5	57.5
L	12	MRA12-42L	42	22	46	42.5	57.5
L	15	MRA15-42L	42	27	46	43.5	58.5
L	18	MRA18-42L	42	32	46	43	59.5
L	22	MRA22-42L	42	36	46	45	61.5
L	28	MRA28-42L	42	41	46	45	61.5
L	35	MRA35-42L	42	50	46	44	65.5

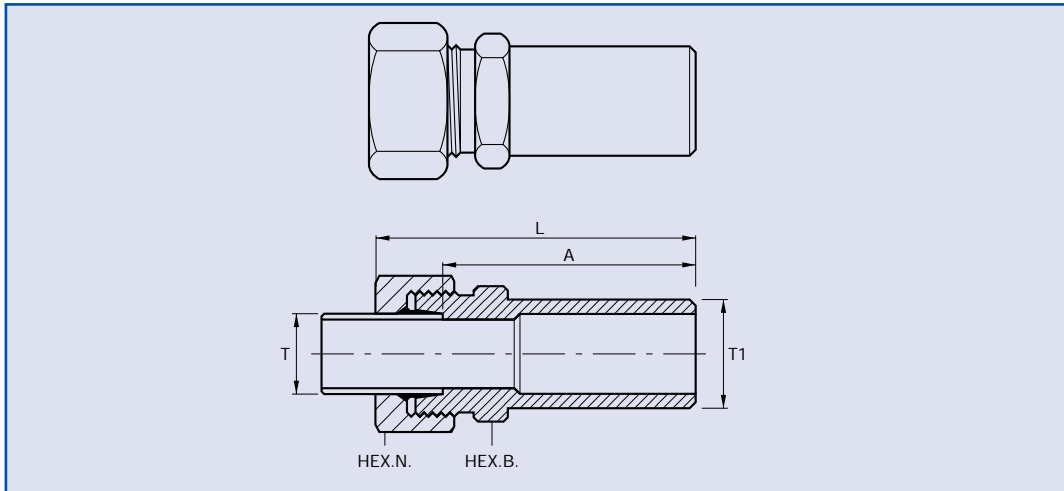
Nut and ferrule can be pre-assembled if required.

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC REDUCING ADAPTORS

## S SERIES



Series	ØT	Part N°	ØT1	Nut Hex. N	Body Hex. B	A	L
S	6	MRA6-8	8	17	14	31	46
S	8	MRA8-10	10	19	17	33	48
S	6	MRA6-10	10	17	14	32	47
S	10	MRA10-12	12	22	19	34.5	51
S	8	MRA8-12	12	19	17	35	50
S	6	MRA6-12	12	17	14	33	48
S	12	MRA12-14	14	24	22	38.5	55
S	10	MRA10-14	14	22	19	36.5	53
S	8	MRA8-14	14	19	17	37	52
S	6	MRA6-14	14	17	17	37	52
S	14	MRA14-16	16	27	24	40	58
S	12	MRA12-16	16	24	22	38.5	55
S	10	MRA10-16	16	22	19	36.5	53
S	8	MRA8-16	16	19	17	37	52
S	6	MRA6-16	16	17	17	37	52
S	16	MRA16-20	20	30	27	44.5	63
S	14	MRA14-20	20	27	24	45	63
S	12	MRA12-20	20	24	22	43.5	60
S	10	MRA10-20	20	22	22	43.5	60
S	8	MRA8-20	20	19	22	44	59
S	20	MRA20-25	25	36	32	49.5	71
S	16	MRA16-25	25	30	27	47.5	66
S	14	MRA14-25	25	27	27	48	66
S	12	MRA12-25	25	24	27	46.5	63
S	10	MRA10-25	25	22	27	46.5	63
S	25	MRA25-30	30	46	41	54	78
S	20	MRA20-30	30	36	32	51.5	73
S	16	MRA16-30	30	30	32	51.5	70
S	14	MRA14-30	30	27	32	52	70
S	12	MRA12-30	30	24	32	50.5	67
S	30	MRA30-38	38	50	46	58.5	85
S	25	MRA25-38	38	46	41	58	82
S	20	MRA20-38	38	36	41	57.5	79
S	16	MRA16-38	38	30	41	57.5	76

Nut and ferrule can be pre-assembled if required.

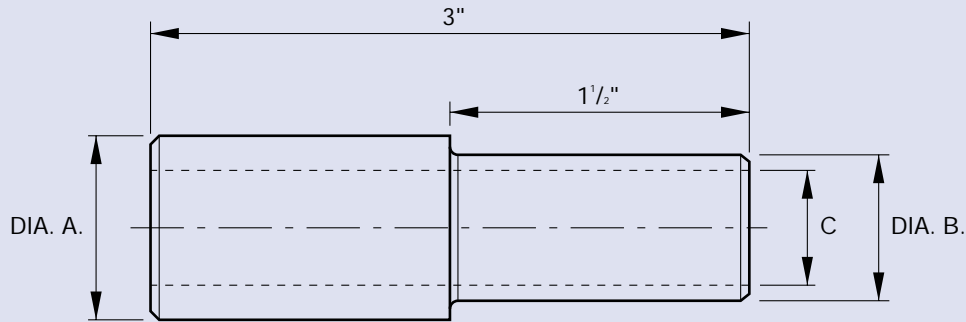
Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL REDUCING STANDPIPES

FOR O.D. & N.B. FITTINGS

BETABITE  
HYDRAULICS



## O.D. TUBES

Part No.	Dia. A.	Dia. B.	C.
RS6-4	3/8"	1/4"	1/8"
RS8-4	1/2"	1/4"	1/8"
RS8-6	1/2"	3/8"	1/4"
RS10-6	5/8"	3/8"	1/4"
RS10-8	5/8"	1/2"	3/8"
RS12-6	3/4"	3/8"	1/4"
RS12-8	3/4"	1/2"	3/8"
RS12-10	3/4"	5/8"	15/32"
RS14-8	7/8"	1/2"	3/8"
RS14-10	7/8"	5/8"	19/32"
RS14-12	7/8"	3/4"	19/32"
RS16-8	1"	1/2"	3/8"
RS16-12	1"	3/4"	19/32"
RS16-14	1"	7/8"	23/32"
RS20-12	1 1/4"	3/4"	19/32"
RS20-14	1 1/4"	7/8"	23/32"
RS20-16	1 1/4"	1"	27/32"
RS24-12	1 1/2"	3/4"	19/32"
RS24-16	1 1/2"	1"	27/32"
RS24-20	1 1/2"	1 1/4"	1 1/16"

## N.B. TUBES

Part No.	Nominal Bore Tube Sizes		Dia. A.	Dia. B.	C.
NRS6-4	3/8"	1/4"	.685" / .675"	.540" / .530"	11/32"
NRS8-4	1/2"	1/4"	.849" / .839"	.540" / .530"	11/32"
NRS8-6	1/2"	3/8"	.849" / .839"	.685" / .675"	15/32"
NRS12-6	3/4"	3/8"	1.065" / 1.055"	.685" / .675"	15/32"
NRS12-8	1"	1/2"	1.065" / 1.055"	.849" / .839"	39/64"
NRS16-8	1"	1/2"	1.341" / 1.331"	.849" / .839"	39/64"
NRS16-12	1"	3/4"	1.341" / 1.331"	1.065" / 1.055"	51/64"
NRS20-12	1 1/4"	3/4"	1.682" / 1.672"	1.065" / 1.055"	1 1/32"
NRS20-16	1 1/4"	1"	1.682" / 1.672"	1.341" / 1.331"	1 1/32"
NRS24-16	1 1/2"	1"	1.914" / 1.904"	1.341" / 1.331"	1 1/32"
NRS24-20	1 1/2"	1 1/4"	1.914" / 1.904"	1.682" / 1.672"	1 11/32"

Alternatively supplied fitted with nut and ferrule on each end, at extra cost.

Part numbers indicated are for **Carbon Steel Couplings** only.

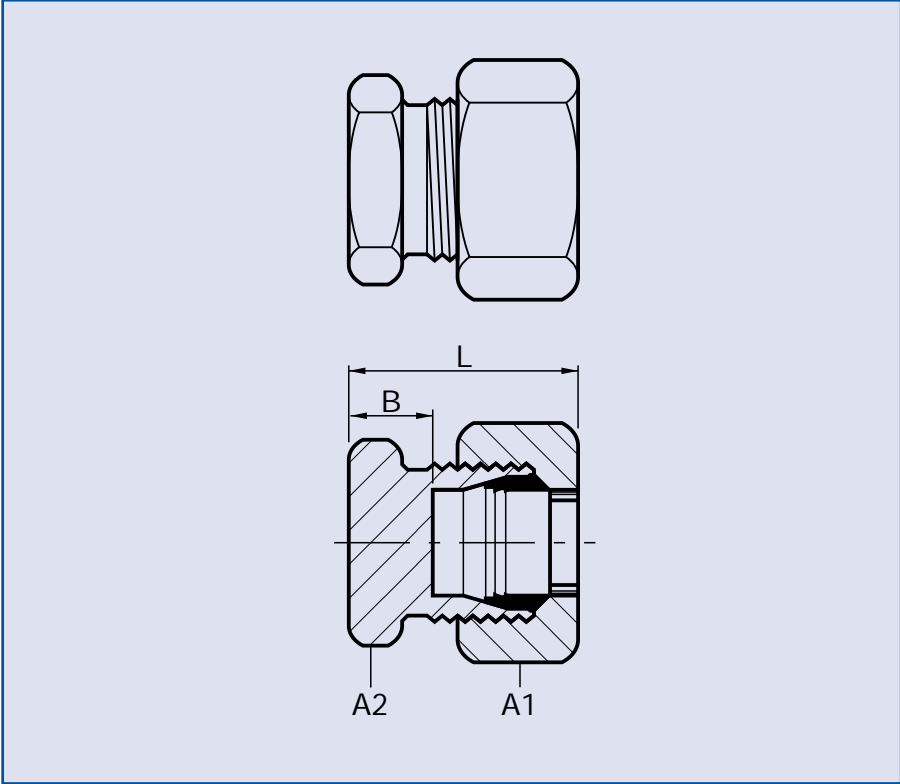
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.



# BLANKING ENDS

## FOR O.D. & N.B. TUBES

BLANKING ENDS



### O.D. TUBES

PART NO.	O.D. TUBE SIZE T.	L.	B.	A1.	A2.
BE4	1/4"	3 <sup>1</sup> / <sub>32</sub> "	9 <sup>1</sup> / <sub>32</sub> "	0.71"	0.625"
BE6	3/8"	1 <sup>1</sup> / <sub>32</sub> "	7 <sup>1</sup> / <sub>16</sub> "	0.82"	0.71"
BE8	1/2"	1 <sup>3</sup> / <sub>32</sub> "	1 <sup>1</sup> / <sub>32</sub> "	0.92"	0.82"
BE12	3/4"	1 <sup>1</sup> / <sub>4</sub> "	7 <sup>1</sup> / <sub>16</sub> "	1.20"	1.10"
BE16	1"	1 <sup>1</sup> / <sub>32</sub> "	1 <sup>9</sup> / <sub>32</sub> "	1.67"	1.48"
BE20	1 <sup>1</sup> / <sub>4</sub> "	1 <sup>23</sup> / <sub>32</sub> "	3/4"	2.05"	1.67"
BE24	1 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>8</sub> "	1 <sup>3</sup> / <sub>16</sub> "	2.22"	2.05"

### N.B. TUBES

Part No.	N.B. Tube Size T.	L.	B.	A1.	A2.
NBE2	1/8"	1 <sup>3</sup> / <sub>32</sub> "	1 <sup>1</sup> / <sub>32</sub> "	0.82"	0.71"
NBE4	1/4"	1 <sup>7</sup> / <sub>32</sub> "	3/8"	1.10"	0.92"
NBE6	3/8"	1 <sup>1</sup> / <sub>4</sub> "	7 <sup>1</sup> / <sub>16</sub> "	1.20"	1.10"
NBE8	1/2"	1 <sup>3</sup> / <sub>8</sub> "	1/2"	1.375"	1.20"
NBE12	3/4"	1 <sup>5</sup> / <sub>8</sub> "	5/8"	1.67"	1.48"
NBE16	1"	1 <sup>23</sup> / <sub>32</sub> "	3/4"	2.05"	1.67"
NBE20	1 <sup>1</sup> / <sub>4</sub> "	2 <sup>1</sup> / <sub>32</sub> "	1 <sup>5</sup> / <sub>16</sub> "	2.58"	2.22"
NBE24	1 <sup>1</sup> / <sub>2</sub> "	2 <sup>1</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>16</sub> "	3.02"	2.58"

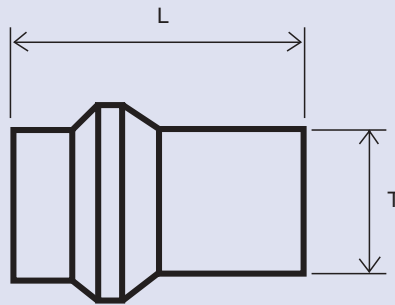
Part numbers indicated are for **Carbon Steel Couplings** only.  
 For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# IMPERIAL BLANKING PLUGS

FOR O.D. & N.B. TUBES



New Drawing for Imperial Blanking Plug



## O.D. TUBES

Part No.	O.D. Tube Size	
	T.	L.
BP4	1/4"	1 3/8"
BP6	3/8"	1 1/4"
BP8	1/2"	1 7/8"
BP12	3/4"	1 3/8"
BP16	1"	1 5/8"
BP20	1 1/4"	1 3/4"
BP24	1 1/2"	1 7/8"

## N.B. TUBES

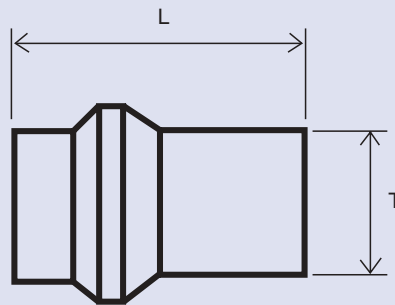
Part No.	N.B. Tube Size	
	T.	L.
NBP2	1/8"	1 5/8"
NBP4	1/4"	1 3/8"
NBP6	3/8"	1 1/8"
NBP8	1/2"	1 1/2"
NBP12	3/4"	1 1 1/8"
NBP16	1"	1 3/4"
NBP20	1 1/4"	1 5/8"
NBP24	1 1/2"	2 1/8"

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC BLANKING PLUGS



New Drawing for Metric Blanking Plug



BLANKING PLUGS

Series	NP	ØT	Part N°	L
L	315	6	MBP6L	21.5
L	315	8	MBP8L	21.5
L	315	10	MBP10L	22
L	315	12	MBP12L	22
L	315	15	MBP15L	22
L	315	18	MBP18L	23
L	160	22	MBP22L	23
L	160	28	MBP28L	24
L	160	35	MBP35L	29
L	160	42	MBP42L	30
S	630	6	MBP6	21.5
S	630	8	MBP8	21.5
S	630	10	MBP10	22
S	630	12	MBP12	22
S	630	14	MBP14	23
S	400	16	MBP16	23
S	400	20	MBP20	26.5
S	400	25	MBP25	28
S	400	30	MBP30	31
S	315	38	MBP38	33.5

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

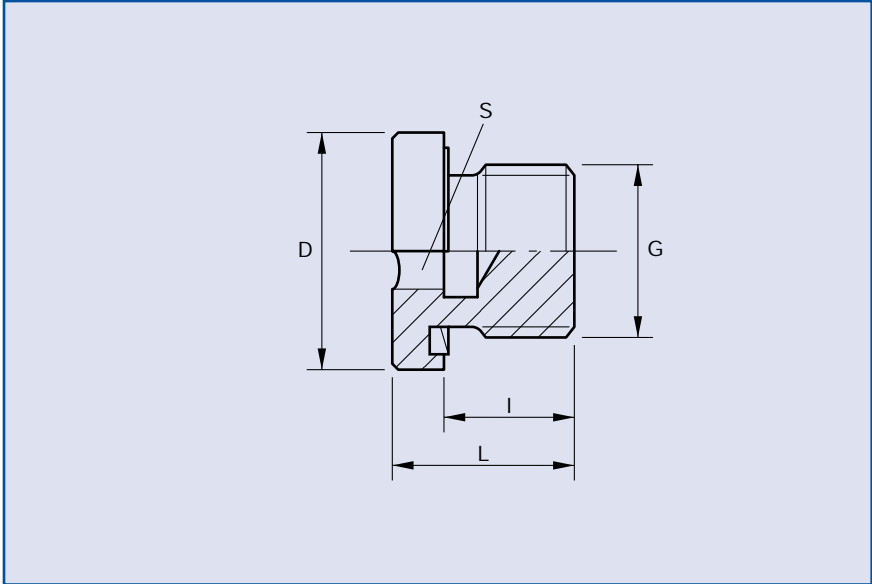


# SOCKET SCREW PLUG

BSP & METRIC THREADS  
WD CAPTIVE SEAL



SOCKET SCREW PLUGS



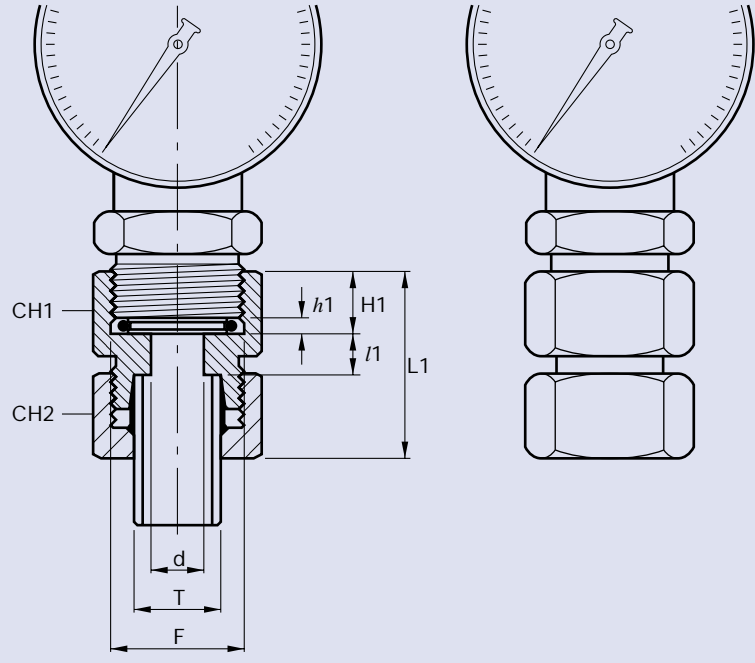
NP	Part N°	G	L	i	S	D
400	SSP2	1/8" A	12	8	5	14
400	SSP4	1/4" A	17	12	6	18.9
400	SSP6	3/8" A	17	12	8	22
400	SSP8	1/2" A	19	14	10	26.9
400	SSP12	3/4" A	21	16	12	32
400	SSP16	1" A	22.5	16	17	39.9
250	SSP20	1 1/4" A	22.5	16	22	49.9
250	SSP24	1 1/2" A	22.5	16	24	55
400	MSSP10	M10 x 1	12	8	5	14
400	MSSP12	M12 x 1.5	17	12	6	17
400	MSSP14	M14 x 1.5	17	12	6	19
400	MSSP16	M16 x 1.5	17	12	8	21.9
400	MSSP18	M18 x 1.5	17	12	8	23.9
400	MSSP20	M20 x 1.5	19	14	10	25.9
400	MSSP22	M22 x 1.5	19	14	10	27
400	MSSP26	M26 x 1.5	21	16	12	31.9
400	MSSP27	M27 x 2	21	16	12	32
400	MSSP33	M33 x 2	22.5	16	17	39.9
250	MSSP42	M42 x 2	22.5	16	22	49.9
250	MSSP48	M48 x 2	22.5	16	24	55

Perbunan captive seal temperature range -20°C to +90°C. (Viton captive seal temperature range -20°C to +20°C on request).

Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC PRESSURE GAUGE ADAPTORS

THREAD: BSP CYLINDRICAL (UNI ISO 228)



PRESSURE GAUGE ADAPTORS

Series	NP	ØT	Part N°	ØF	CH1	CH2	L1	Ød	l1	H1	h1
L	315	6	MPGA6-4L	1/4"	19	14	37	2.5	7.5	14.5	4.5
L	315	8	MPGA8-4L	1/4"	19	17	37	2.5	7.5	14.5	4.5
L	315	10	MPGA10-4L	1/4"	19	19	38	2.5	8.5	14.5	4.5
L	315	12	MPGA12-4L	1/4"	19	22	38	2.5	8.5	14.5	4.5
S	630	6	MPGA6-8	1/2"	27	17	46	3.5	11	20	5
S	630	8	MPGA8-8	1/2"	27	19	46	3.5	11	20	5
S	630	10	MPGA10-8	1/2"	27	22	47	3.5	10.5	20	5
S	630	12	MPGA12-8	1/2"	27	24	47	3.5	10.5	20	5

Seals for gauge adaptors:

Int. thread	Part N°	D1	D	H
1/4"	PGAS4	11.3	6	4.5
1/2"	PGAS8	18.5	12	5

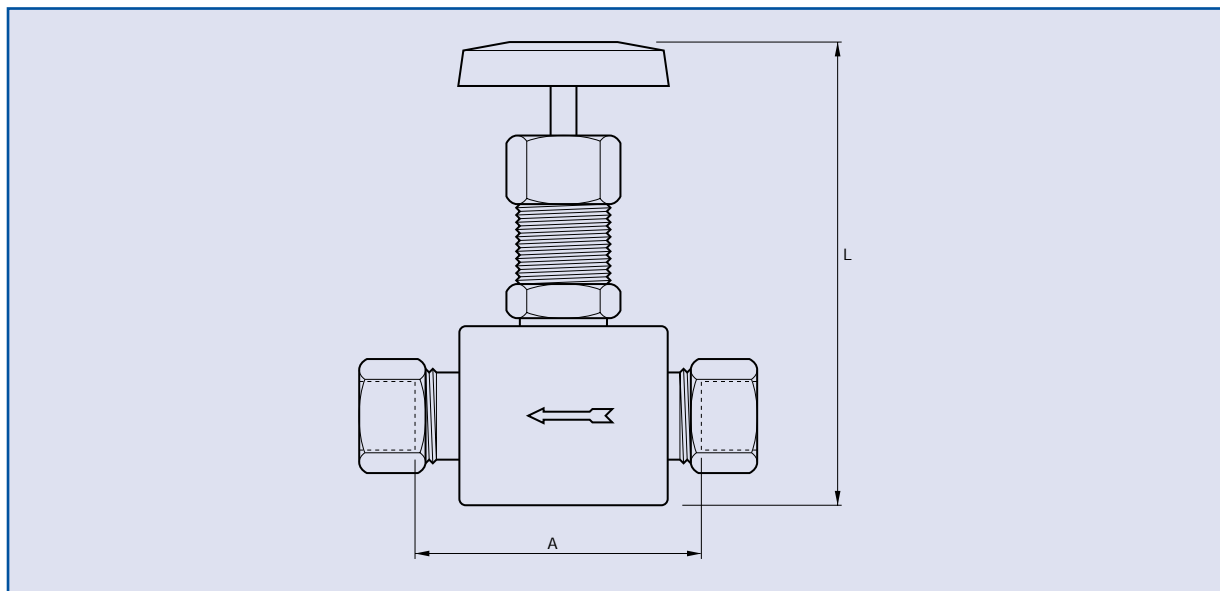
Part numbers indicated are for **Carbon Steel Couplings** only.  
For **316 Stainless Steel Couplings**, add suffix **SS** to part number.





# SHUT OFF VALVES

FOR O.D. TUBES, N.B. TUBES & BSP THREADS



SHUT OFF VALVES

	Part No.	ØT	Tube Abutment A.	Approx. Height L.	Panel Mounting Clearance Hole
<b>O.D. Tubes</b>	SOV 4	1/4"	1 1/4"	3 1/4"	3/4"
	SOV 6	3/8"	1 7/8"	3 7/8"	1 5/16"
	SOV 8	1/2"	1 7/8"	3 3/8"	1 5/16"
	SOV 12	3/4"	1 11/16"	3 5/8"	1 1/8"
<b>N.B. Tubes</b>	NSOV 2	1/8"	1 7/8"	3 5/8"	1 5/16"
	NSOV 4	1/4"	1 7/8"	3 3/8"	1 5/16"
	NSOV 6	3/8"	1 11/16"	3 5/8"	1 1/8"
	NSOV 8	1/2"	1 11/16"	3 5/8"	1 1/8"
<b>Female Tapped for BSP Threads</b>	FSOV 2	1/8"	1 5/8"	3 1/4"	3/4"
	FSOV 4	1/4"	2"	3 1/4"	3/4"
	FSOV 6	3/8"	2 3/8"	3 3/8"	1 5/16"
	FSOV 8	1/2"	3 1/2"	3 5/8"	1 1/8"
	FSOV 12	3/4"	3 1/2"	3 5/8"	1 1/8"

Betabite High-Pressure Shut Off valves are designed for use in hydraulic systems and are suitable for pressures up to 350 bar (5,000 p.s.i.) with flow in one direction. All valves are tested to 525 bar (7,500 p.s.i.). In the event that valves are to be used for systems other than oil hydraulics, the medium to be passed through the valve should be stated, together with the pressure involved, to enable a suitable gland packing to be selected. The valves listed are machined with integral Betabite connections or female tapped ports. Solid cone spindles are supplied as standard.

**MATERIAL:**

Body, Stuffing Box, Retaining Washer and Gland Nut	Mild Steel, Zinc Plated
Spindle	Stainless Steel
Gland Packing	P.T.F.E.
Handwheel	Steel / Painted

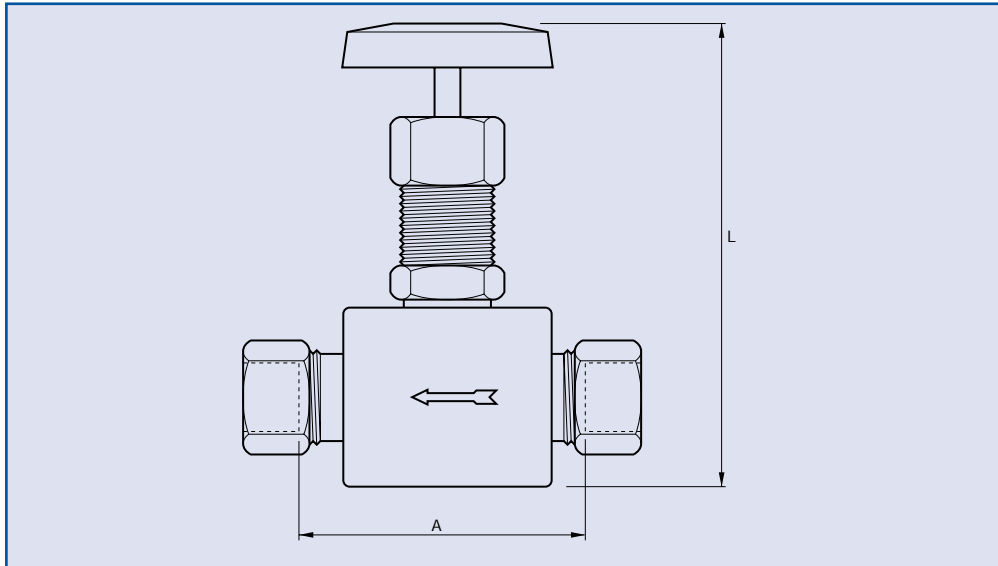
**VALVES COMPLETE WITH BETABITE INTEGRAL IMPERIAL TUBE CONNECTIONS**

These valves are not suitable for gases or steam. Panel mounting of these valves is possible by the provision of a panel mounting gland nut. Please specify when ordering. The correct direction of flow is clearly marked by an arrow stamped on the valve body.

Part numbers indicated are for **Carbon Steel Couplings** only.

For **316 Stainless Steel Couplings**, add suffix **SS** to part number.

# METRIC SHUT OFF VALVES



SHUT OFF VALVES

Series	N.P.	ØT	Part N°	Tube Abutment	Approx. Height	Panel Mounting Clearance Hole
L	315	15	MSOV15L	40	86	24
L	315	18	MSOV18L	43	92	27
L	160	22	MSOV22L	43	92	27
S	630	6	MSOV6S	32	83	20
S	630	8	MSOV8S	32	83	20
S	630	10	MSOV10S	36	84	24
S	630	12	MSOV12S	36	84	24
S	630	14	MSOV14S	40	86	24
S	400	16	MSOV16S	43	92	27
S	400	20	MSOV20S	43	92	27

Betabite High Pressure Shut Off valves are designed for use in hydraulic systems and are suitable for pressures up to 350 bar (5,000 p.s.i.) with flow in one direction. All valves are tested to 525 bar (7,500 p.s.i.). In the event that valves are to be used for systems other than oil hydraulics the medium to be passed through the valve should be stated, together with the pressure involved, to enable a suitable gland packing to be selected. The valves listed are machined with integral Betabite connections or female tapered ports. Solid cone spindles are supplied as standard.

**MATERIAL:**

Body, Stuffing Box, Retaining Washer and Gland Nut	Mild Steel, Zinc Plated
Spindle	Stainless Steel
Gland Packing	P.T.F.E.
Handwheel	Aluminium / Powder Coated

**VALVES COMPLETE WITH BETABITE INTEGRAL METRIC TUBE CONNECTIONS**

These valves are not suitable for gases or steam. Panel mounting of these valves is possible by the provision of a panel mounting gland nut. Please specify when ordering. The correct direction of flow is clearly marked by an arrow stamped on the valve body.

Part numbers indicated are for **Carbon Steel Couplings** only.  
 For **316 Stainless Steel Couplings**, add suffix **SS** to part number.