

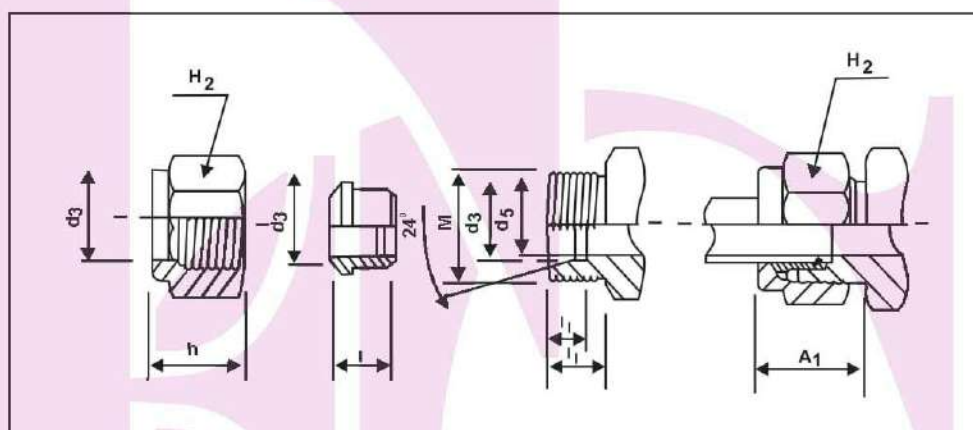


FLOW CONTROL

ERMETO FITTING



NUTS & FERRULES

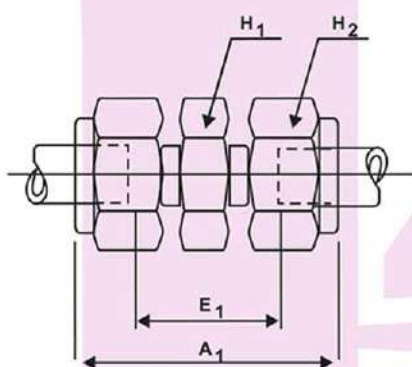


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O. D. d3	Thread M	d5	t1	t1	H2	h	l	A1	Part Number	
										Nut	Nut
LL LIGHT NP 100	4	M 8X1	3	4	8	10	11.5	6	14	N 4-LL	F 4-LL
	6	M 10X1	4.5	5.5	8	12	12	7	14	N 6-LL	F 6-LL
	8	M 12X1	6	5.5	9	14	12.5	7	15	N 8-LL	F 8-LL
L MEDUM NP 250	6	M 12X1.5	4	7	10	14	15	9.5	18	N 6-L	F 6-L
	8	M 14X1.5	6	7	10	17	15	9.5	18	N 8-L	F 8-L
	10	M 16X1.5	8	7	11	19	16	10	19	N 10-L	F 10-L
	12	M 18X1.5	10	7	11	22	16	10	19	N 12-L	F 12-L
	15	M 22X1.5	12	7	12	27	17.5	10	20	N 15-L	F 15-L
NP 160	18	M 26X1.5	15	7.5	12	32	18	10	21	N 18-L	F 18-L
	22	M 30X2	19	7.5	14	36	20.5	10.5	23	N 22-L	F 22-L
NP 100	28	M 36X2	24	7.5	14	41	21	10.5	23	N 28-L	F 28-L
	35	M 45X2	30	10.5	16	50	24	13	27	N 35-L	F 35-L
	42	M 52X2	36	11	16	60	24	13.5	28	N 42-L	F 42-L
H HEAVY NP 640	6	M 14X1.5	4	7	12	17	16	9.5	20	N 6-L	F 6-L
	8	M 16X1.5	5	7	12	19	16	9.5	20	N 8-L	F 8-L
	10	M 18X1.5	7	7.5	12	22	17.5	10	21	N 10-L	F 10-L
	12	M 20X1.5	8	7.5	12	24	18	10	21	N 12-L	F 12-L
	14	M 22X1.5	10	8	14	27	20	10	24	N 14-L	F 14-L
NP 400	16	M 24X1.5	12	8.5	14	30	21	10.5	24	N 16-H	F 16-H
	20	M 30X2	16	10.5	16	36	24	12.5	27	N 20-H	F 20-H
	25	M 36X2	20	12	18	46	26.5	12.5	30	N 25-H	F 25-H
NP 250	30	M 42X2	25	13.5	20	50	29.5	13	33	N 30-H	F 30-H
	38	M 52X2	32	16	22	60	32.5	13.5	37	N 38-H	F 38-H



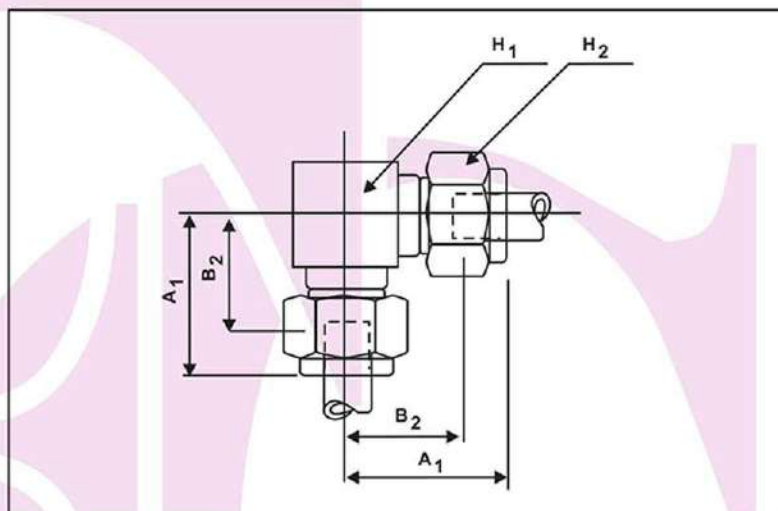
STRAIGHT COUPLING



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D. d3	H1	H2	B1	A1	Part Number
LL	4	9	10	12	31	C 4-LL
LIGHT	6	11	12	9	32	C 6-LL
NP 100	8	12	14	12	32	C 8-LL
L	6	12	14	10	39	C 6-LL
MEDIUM	8	14	17	11	41	C 8-LL
NP 250	10	17	19	13	43	C 10-LL
	12	19	22	14	44	C 12-LL
	15	24	27	16	46	C 15-LL
NP 160	18	27	32	16	49	C 18-LL
	22	32	36	20	53	C 22-LL
NP 100	28	41	41	21	54	C 28-LL
	35	46	50	20	63	C 35-LL
	42	55	60	21	67	C 42-LL
H	6	14	17	16	46	C 6-H
HEAVY	8	17	19	18	47	C 8-H
NP 640	10	19	22	17	48	C 10-H
	12	22	24	19	50	C 12-H
	14	24	27	22	52	C 14-H
NP 400	16	27	30	30	58	C 16-H
	20	32	36	36	68	C 20-H
	25	41	46	46	74	C 25-H
NP 250	30	46	50	29.5	80	C 30-H
	38	55	60	32.5	91	C 38-H

EQUAL ELBOW UNION

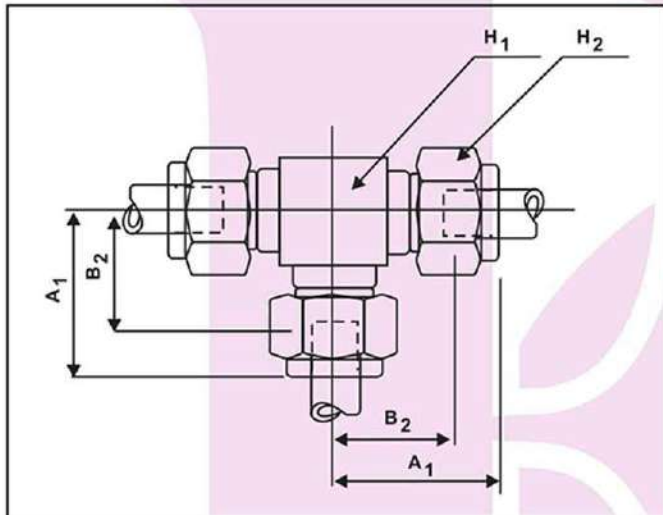


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D. d3	H1	H2	B2	A2	Part Number
LL	4	10	10	11	21	E 4-LL
LIGHT	6	12	12	9.5	21	E 6-LL
NP 100	8	14	14	11.5	23	E 8-LL
L	6	12	14	12	27	E 6-L
MEDIUM	8	14	17	14	29	E 8-L
NP 250	10	17	19	15	30	E 10-L
	12	19	22	17	32	E 12-L
	15	24	27	21	36	E 15-L
NP 160	18	27	32	23.5	40	E 18-L
	22	32	36	27.5	44	E 22-L
NP 100	28	41	41	30.5	47	E 28-L
	35	46	50	34.5	56	E 35-L
	42	55	60	40	63	E 42-L
H	6	14	17	16	31	E 6-H
HEAVY	8	17	19	17	32	E 8-H
NP 640	10	19	22	17.5	34	E 10-H
	12	22	24	21.5	38	E 12-H
	14	22	27	22	40	E 14-H
NP 400	16	24	30	24.5	43	E 16-H
	20	30	36	26.5	48	E 20-H
	25	36	46	30	54	E 25-H
NP 250	30	44.5	50	35.5	62	E 30-H
	38	55	60	41	72	E 38-H



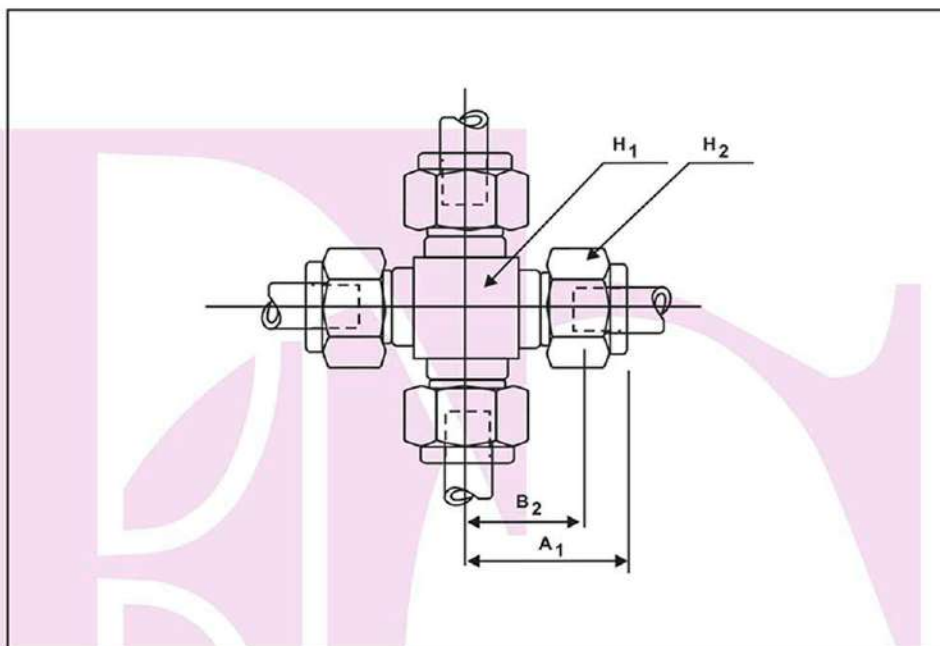
EQUAL TEEN UNION



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D. d3	H1	H2	B2	A2	Part Number
LL LIGHT NP 100	4	10	10	11	21	T 4-LL
	6	12	12	9.5	21	T 6-LL
	8	14	14	11.5	23	T 8-LL
L MEDIUM NP 250	6	12	14	12	27	T 6-L
	8	14	17	14	29	T 8-L
	10	17	19	15	30	T 10-L
	12	19	22	17	32	T 12-L
	15	22	27	21	36	T 15-L
NP 160	18	27	32	23.5	40	T 18-L
	22	30	36	27.5	44	T 22-L
NP 100	28	41	41	30.5	47	T 28-L
	35	46	50	34.5	56	T 35-L
	42	55	60	40	63	T 42-L
H HEAVY NP 640	6	14	17	16	31	T 6-H
	8	17	19	17	32	T 8-H
	10	19	22	17.5	34	T 10-H
	12	22	24	21.5	38	T 12-H
	14	22	27	22	40	T 14-H
NP 400	16	24	30	24.5	43	T 16-H
	20	30	36	26.5	48	T 20-H
	25	36	46	30	54	T 25-H
NP 250	30	44.6	50	35.5	62	T 30-H
	38	55	60	41	72	T 38-H

EQUAL CROSS UNION

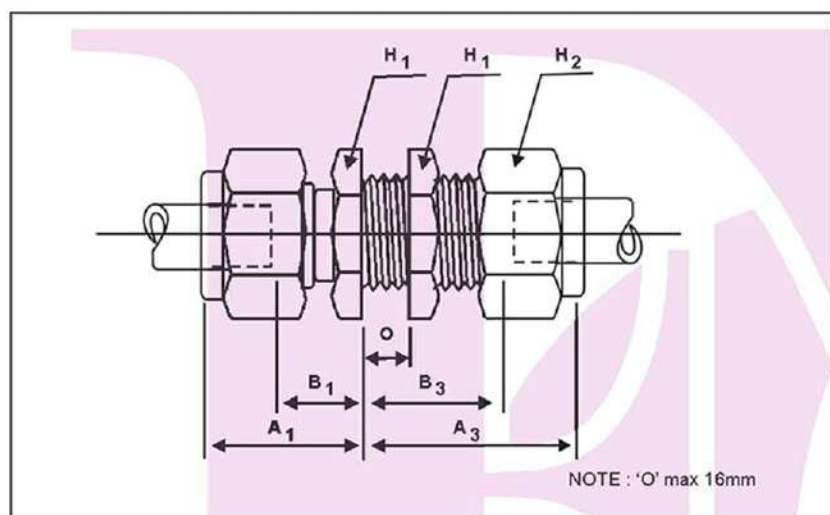


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D. d3	H1	H2	B2	A2	Part Number
LL LIGHT NP 100	4	10	10	11	21	K 4-LL
	6	12	12	9.5	21	K 6-LL
	8	14	14	11.5	23	K 8-LL
L MEDIUM NP 250	6	12	14	12	27	K 6-L
	8	14	17	14	29	K 8-L
	10	17	19	15	30	K 10-L
	12	19	22	17	32	K 12-L
	15	22	27	21	36	K 15-L
NP 160	18	27	32	23.5	40	K 18-L
	22	30	36	27.5	44	K 22-L
NP 100	28	41	41	30.5	47	K 28-L
	35	46	50	34.5	56	K 35-L
	42	55	60	40	63	K 42-L
H HEAVY NP 640	6	14	17	16	31	K 6-H
	8	17	19	17	32	K 8-H
	10	19	22	17.5	34	K 10-H
	12	22	24	21.5	38	K 12-H
	14	22	27	22	40	K 14-H
NP 400	16	24	30	24.5	43	K 16-H
	20	30	36	26.5	48	K 20-H
	25	36	46	30	54	K 25-H
NP 250	30	44.6	50	35.5	62	D 30-H
	38	55	60	41	72	D 38-H



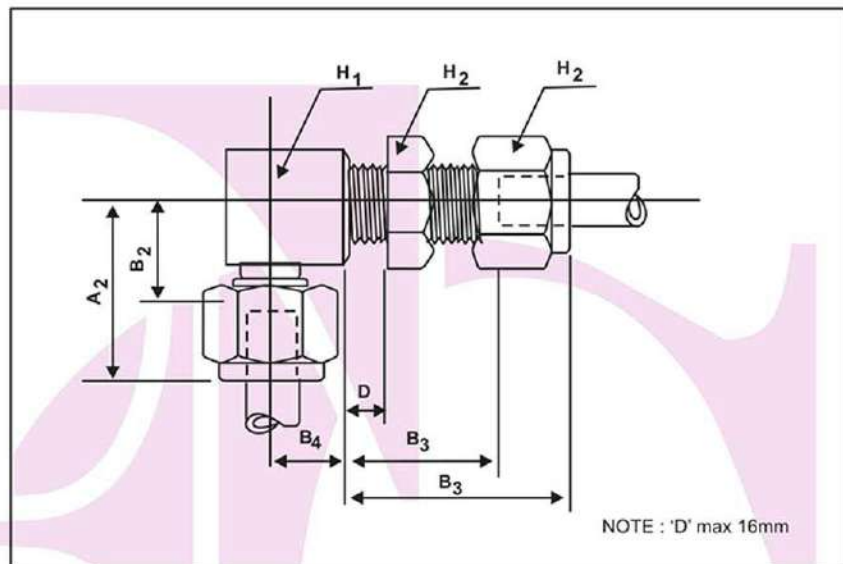
BULKHEAD STRAIGHT COUPLING



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D. d3	H1	H2	B1	A1	B3	A3	Part Number
LL LIGHT NP 250	6	17	14	7	22	27	42	CV 6-L
	8	19	17	8	23	27	42	CV 8-L
	10	22	19	10	25	28	43	CV 10-L
	12	24	22	10	25	29	44	CV 12-L
	15	27	27	12	27	31	46	CV 15-L
NP 160	18	32	32	13.5	30	59	59	CV 18-L
	22	36	36	16.5	33	51	51	CV 22-L
NP 100	28	41	41	18.5	35	52	52	CV 28-L
	35	50	50	18.5	40	58	58	CV 35-L
	42	60	60	19	42	59	59	CV 42-L
H HEAVY NP 640	6	19	17	12	27	44	44	CV 6-H
	8	22	19	13	28	44	44	CV 8-H
	10	24	22	14.5	31	46	46	CV 10-H
	12	27	24	14.5	31	47	47	CV 12-H
	14	30	27	17	35	50	50	CV 14-H
NP 400	16	32	30	16.5	35	50	50	CV 16-H
	20	41	36	17.5	39	55	55	CV 20-H
	25	46	46	20	44	59	59	CV 25-H
NP 250	30	50	50	21.5	48	64	64	CV 30-H
	38	65	60	22	53	68	68	CV 38-H

BULKHEAD ELBOW UNION

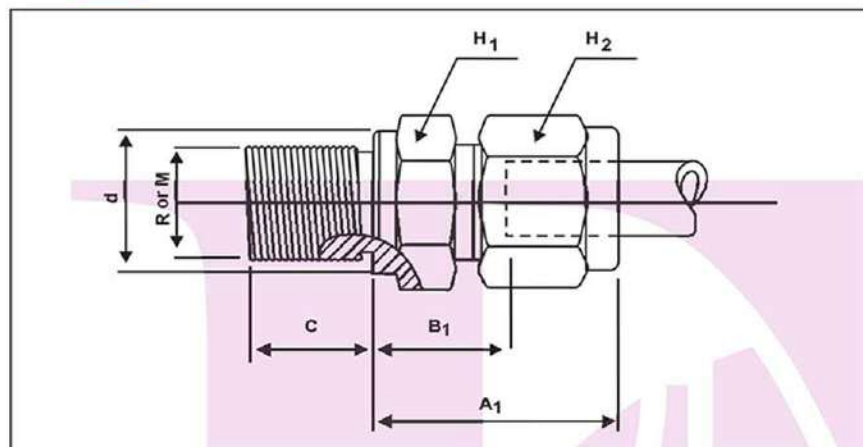


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D. d3	H1	H2	A1	B2	A3	B3	B4	Part Number
LL LIGHT NP 250	6	17	14	27	12	42	27	14	EV 6-L
	8	19	17	29	14	42	27	17	EV 8-L
	10	22	19	30	15	43	28	18	EV 10-L
	12	24	22	32	17	44	29	20	EV 12-L
	15	27	27	36	21	46	31	23	EV 15-L
NP 160	18	32	32	40	23.5	59	32.5	24	EV 18-L
	22	36	36	44	27.5	51	34.5	30	EV 22-L
NP 100	28	41	41	47	30.5	52	35.5	34	EV 28-L
	35	50	50	56	34.5	58	36.5	39	EV 35-L
	42	60	60	63	40	59	36	43	EV 42-L
H HEAVY NP 640	6	19	17	31	16	44	29	14	EV 6-H
	8	22	19	32	17	44	29	17	EV 8-H
	10	24	22	34	17.5	46	29.5	18	EV 10-H
	12	27	24	38	21.5	47	30.5	20	EV 12-H
	14	27	27	40	22	50	32	23	EV 14-H
NP 400	16	30	30	43	24.5	50	31.5	24	EV 16-H
	20	36	36	48	26.5	55	33.5	30	EV 20-H
	25	41	46	54	30	59	35	34	EV 25-H
NP 250	30	50	50	62	35.5	64	37.5	39	EV 30-H
	38	60	60	72	41	68	37	43	EV 38-H



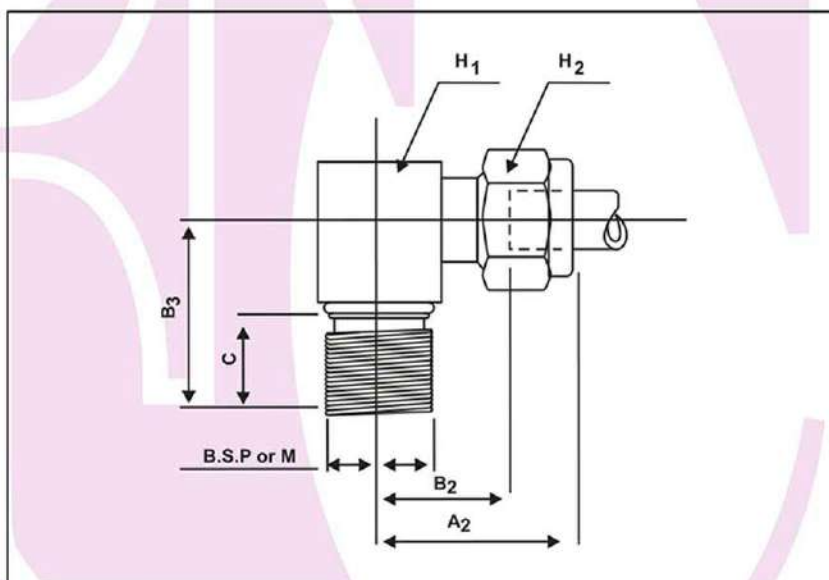
PARALLEL MALE STUD FITTING



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	C	B1	A1	d	R	Part Number		
LL LIGHT NP 250	6	14	14	8	8.5	23	14	1/8"	CP 6-LR	M 10 X 1	CP 6-LM
	6	19	14	12	10	25	18	1/4"	CP 6-LR R1/4"	----	----
	8	19	17	12	10	25	18	1/4"	CP 8-LR	----	CP 8-LM
	8	17	17	12	10	25	17	----	----	M 12 X 1.5	----
	10	19	19	12	11	26	18	1/4"	CP 10-LR	----	----
	10	22	19	12	12.5	27.5	22	1/8"	CP 10-LR R3/8"	----	CP 10-LM
	10	19	19	12	11	26	19	----	----	M 10 X 1.5	----
	12	19	22	12	12	27	18	1/4"	CP 12-LR1/4"	----	CP 12-LM
	12	22	22	12	12.5	27.5	22	3/8"	CP 12-LR	M 14 X 15	----
	12	27	22	14	13	28	27	1/2"	CP 12-LR1/2"	----	----
	15	24	27	12	14	29	22	3/8"	CP 15-LR1/8"	----	----
	15	27	27	14	14	29	27	1/2"	CP 15-LR	----	----
NP 160	15	24	27	12	13.5	28.5	24	----	----	M 10 X 1.5	CP 15-LM
	18	27	32	14	14.5	31	27	1/2"	CP 18-LR	M 22 X 1.5	CP 6-LM
	22	32	36	16	16.5	33	32	3/4"	CP 22-LR	----	----
	22	41	36	18	17.5	34	39	1"	CP 22-LR1"	----	CP 8-LM
NP 100	22	32	36	16	16.5	33	31	----	----	M 26 X 1.5	CP 22-LM
	28	41	41	18	17.5	34	33	1"	CP 28-LR	M 33 X 2	CP 28-LM
	35	50	50	20	17.5	39	49	1 1/4"	CP 35-LR	M 42 X 2	CP 35-LM
H HEAVY NP 640	42	55	56	22	19	42	55	1 1/2"	CP 42-LR	M 48 X 2	CP 42-LM
	6	19	17	12	13	28	18	1/4"	CP 6-HR	----	CP 6-HM
	6	17	17	12	13	28	17	----	----	M 12 X 1.5	----
	8	19	19	12	15	30	13	1/4"	CP 6-HR	----	CP 8-HM
	8	19	19	12	15	30	19	----	----	M 14 X 1.5	CP 10-HM
	10	22	22	12	15	31.5	22	3/8"	CP 10-HR	M 16 X 1.5	----
	12	22	24	12	17	33.5	22	3/8"	CP 12-HR	----	----
	12	27	24	14	17.5	34	27	1/2"	CP 10-HR1/2"	----	----
	12	24	24	12	17	33.5	24	----	----	M 18 X 1.5	CP 12-HM
	14	27	27	14	19	37	27	1/2"	CP 14-HR	M 20 X 1.5	CP 14-HM
NP 400	16	27	30	14	18.5	37	27	1/2"	CP 16-HR	M 22 X 1.5	CP 16-HM
	20	32	36	14	18.5	41	26	1/2"	CP 20-HR1/2	----	----
	20	32	36	16	20.5	43	32	3/4"	CP 20-HR	M 27 X 2	CP 20-HM
	25	41	46	16	21	45	32	3/4"	CP 25-HR3/4	----	----
	25	41	46	18	23	47	39	1"	CP 25-HR	M 33 X 2	CP 25-HM
NP 250	30	46	50	18	23.5	50	39	1"	CP 30-HR1"	----	----
	30	50	50	20	23.5	50	49	1"	CP 30-HR	M 42 X 2	CP 30-HM
	30	55	50	20	26	57	49	1 1/4"	CP 30-HR 1 1/2"	----	----
	38	55	60	22	26	57	55	1 1/2"	CP 38-HR	M 48 X 2	CP 38-HM
	38	70	60	24	26	57	70	2"	CP 30-HR2"	----	----

PARALLEL MALE STUD ELBOW

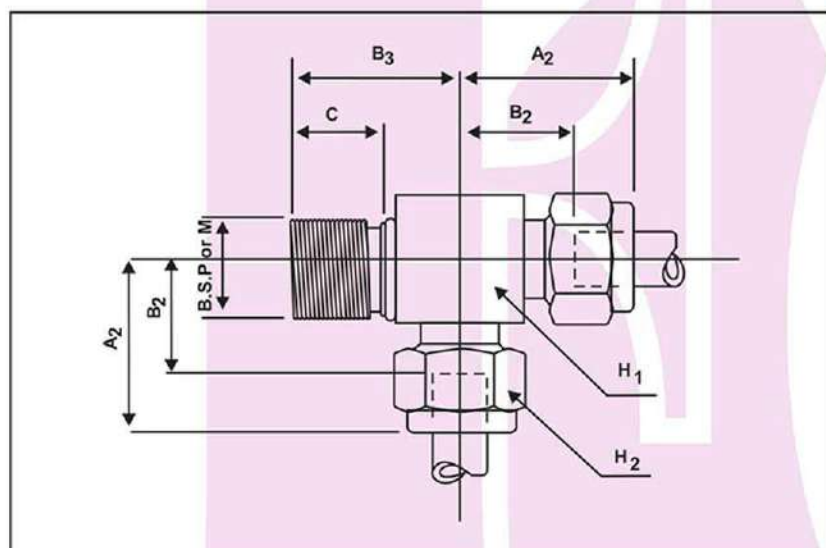


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D. d3	H1	H2	B2	A2	B3	C	R	Part Number	M	Metric Thread Part Number
NP 160	22	32	27.5	27.5	44	42	16	3/4"	BP 22-LR	M 26 X 1.5	EP 22-LR
LL LIGHT NP 250	16	41	30.5	30.5	47	48	18	1"	EP 28-LR	M 33 X 2	EP 28-LR
	20	50	34.5	34.5	56	54	20	1 1/2"	EP 35-LR	M 42 X 2	EP 35-LR
	25	55	40	40	63	61	22	1 1/2"	EP 42-LR	M 42 X 2	EP 42-LR
NP 400	30	32	26.5	26.5	48	42	16	3/4"	EP 20-LR	M 27 X 2	EP 20-HR
	38	41	30	30	54	48	18	1"	EP 25-LR	M 33 X 2	EP 25-HR
NP 250	30	50	35.5	35.5	62	54	20	1 1/2"	EP 30-LR	M 42 X 2	EP 30-HR
	38	60	41	41	72	61	22	1 1/2"	EP 38-LR	M 48 X 2	EP 38-HR



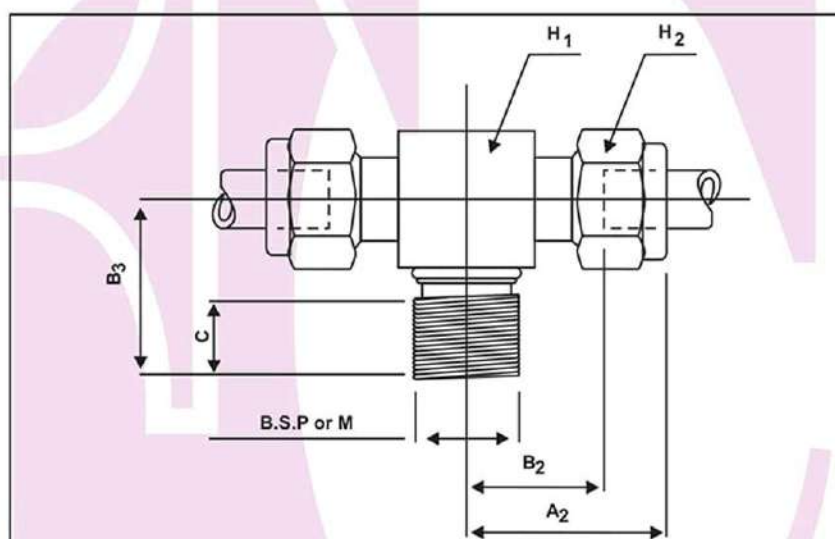
PARALLEL MALE RUN TEE



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D. d3	H1	H2	B2	A2	B3	B.S.P.	R	Part Number	Parallel Male Run Tee M Part Number
NP 160	22	32	27.5	27.5	44	42	16	3/4"	TRP 22-LL	TRP 22-LM
LL	28	41	30.5	30.5	47	48	18	1"	TRP 28-LL	TRP 28-LM
LIGHT	35	50	34.5	34.5	56	54	20	1 1/4"	TRP 35-LR	TRP 35-LM
NP 250	42	55	40	40	63	61	22	1 1/2"	TRP 42-LR	TRP 42-LM
H	20	32	26.5	26.5	48	42	16	3/4"	TRP 20-HR	TRP 20-HM
NP 400	25	41	30	30	54	48	18	1"	TRP 25-HR	TRP 25-HM
NP 250	30	50	35.5	35.5	62	54	20	1 1/4"	TRP 30-HR	TRP 30-HM
	38	55	41	41	72	61	22	1 1/2"	TRP 38-HR	TRP 38-HM

PARALLEL MEAL BRANCH TEE

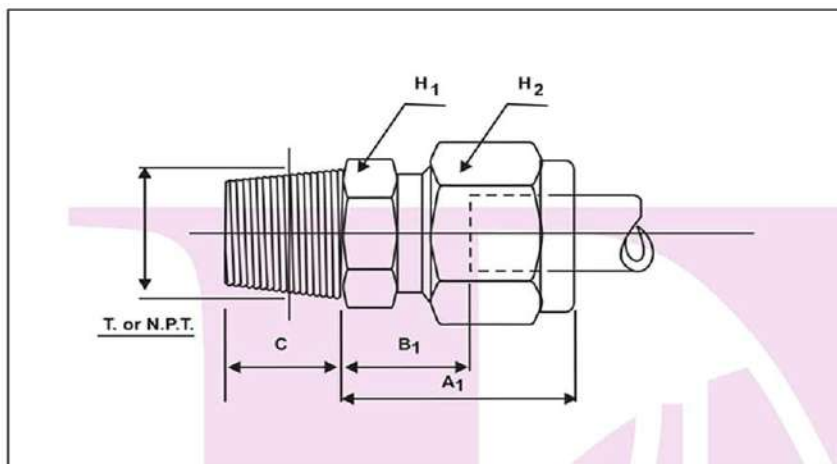


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	B2	A2	B3	C	B.S.P.	Threads Part Number	Parallel Male Branch Tee M	Metric Threads Part Number
NP 160	22	32	36	27.5	44	42	16	3/4"	TBP 22-LL	M 26 X 1.5	TBP 22-LM
LL	28	41	41	30.5	47	48	18	1"	TBP 28-LL	M 33 X 2	TBP 28-LM
LIGHT	35	50	50	34.5	56	54	20	1 1/4"	TBP 35-LR	M 42 X 2	TBP 35-LM
NP 250	42	55	60	40	63	61	22	1 1/2"	TBP 42-LR	M 48 X 2	TBP 42-LM
H	20	32	36	26.5	48	42	16	3/4"	TBP 20-HR	M 27 X 2	TBP 20-HM
NP 400	25	41	46	30	54	48	18	1"	TBP 25-HR	M 33 X 2	TBP 25-HM
NP 250	30	50	50	35.5	62	54	20	1 1/4"	TBP 30-HR	M 42 X 2	TBP 30-HM
	38	55	60	41	72	61	22	1 1/2"	TBP 38-HR	M 48 X 2	TBP 38-HM



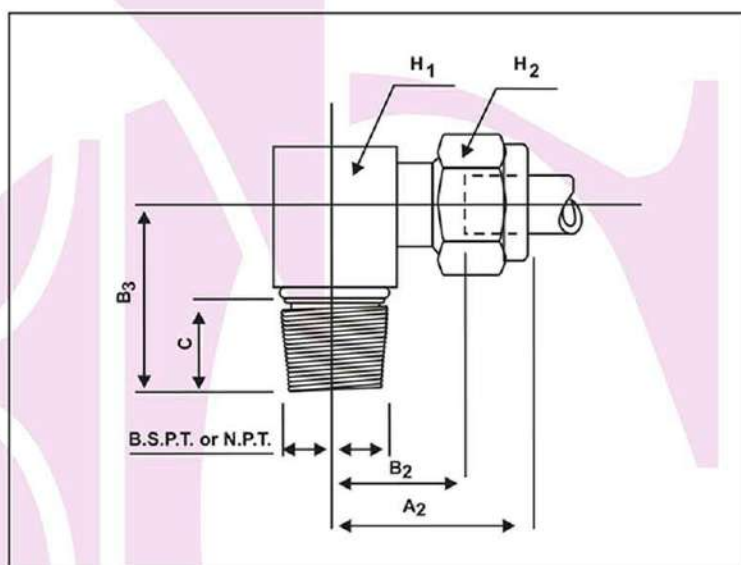
TAPER MALE STUD FITTING



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	C	B1	A1	d	R	Part Number		
LL LIGHT NP 250	6	14	14	8	8.5	23	14	1/8"	M 10 X 1	CX 6-LM	----
	6	19	14	12	10	25	18	1/4"	----	CX 8-LM	----
	8	19	17	12	10	25	18	1/4"	----	----	----
	8	17	17	12	10	25	17	----	M 12 X 1.5	----	----
	10	19	19	12	11	26	18	1/4"	----	----	----
	10	22	19	12	12.5	27.5	22	3/8"	----	CX 10-LM	----
	10	19	19	12	11	26	19	----	M 14 X 1.5	----	----
	12	19	22	12	12	27	18	1/4"	----	CX 12-LM	----
	12	22	22	12	12.5	27.5	22	3/8"	M 16 X 15	----	----
	12	27	22	14	13	28	27	1/2"	----	----	----
	15	24	27	12	14	29	22	3/8"	----	----	----
	15	27	27	14	14	29	27	1/2"	----	----	----
	15	24	27	12	13.5	28.5	24	----	M 16 X 1.5	CX 15-LM	----
NP 160	18	27	32	14	14.5	31	27	1/2"	M 22 X 1.5	CX 6-LM	----
	22	32	36	16	16.5	33	32	3/4"	----	----	----
	22	41	36	18	17.5	34	39	1"	----	CX 8-LM	----
	22	32	36	16	16.5	33	31	----	M 26 X 1.5	CX 22-LM	----
NP 100	28	41	41	18	17.5	34	33	1"	M 33 X 2	CX 28-LM	----
	35	50	50	20	17.5	39	49	1 1/4"	M 42 X 2	CX 35-LM	----
	42	55	56	22	19	42	55	1 1/2"	M 48 X 2	CX 42-LM	----
H HEAVY NP 640	6	19	17	12	13	28	18	1/4"	M 12 X 1.5	CX 6-HM	----
	6	17	17	12	13	28	17	----	----	----	----
	8	19	19	12	15	30	13	1/4"	----	CX 8-HM	----
	8	19	19	12	15	30	19	----	M 14 X 1.5	CX10-HM	----
	10	22	22	12	15	31.5	22	3/8"	M 16 X 1.5	----	----
	12	22	24	12	17	33.5	22	3/8"	----	----	----
	12	27	24	14	17.5	34	27	1/2"	----	----	----
	12	24	24	12	17	33.5	24	----	M 18 X 1.5	CX 12-HM	----
NP 400	14	27	27	14	19	37	27	1/2"	M 20 X 1.5	CX 14-HM	----
	16	27	30	14	18.5	37	27	1/2"	M 22 X 1.5	CX 16-HM	----
	20	32	36	14	18.5	41	26	1/2"	----	----	----
	20	32	36	16	20.5	43	32	3/4"	M 27 X 2	CX 20-HM	----
	25	41	46	16	21	45	32	3/4"	----	----	----
NP 250	25	41	46	18	23	47	39	1"	M 33 X 2	CX 25-HM	----
	30	46	50	18	23.5	50	39	1"	----	----	----
	30	50	50	20	23.5	50	49	1"	M 42 X 2	CX 30-HM	----
	30	55	50	20	26	57	49	1 1/4"	----	----	----
	38	55	60	22	26	57	55	1 1/2"	M 48 X 2	CX 38-HM	----
	38	70	60	24	26	57	70	2"	----	----	----

TAPER MALE STUD ELBOW

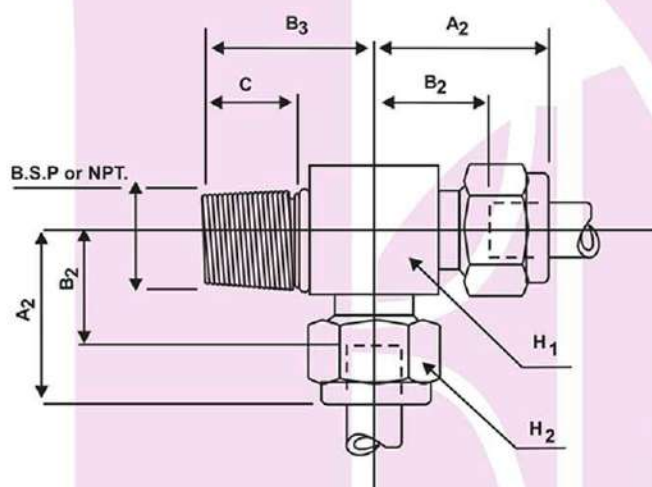


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	A2	B2	R	C	B3	Threads Part Number	N	C	N. P. T. Thread B3	Part Number
LL	4	11	10	21	11	1/8"	10	17	EX 4-LLR	1/8"	9.97	17	EX 4-LLN
LIGHT	6	12	12	21	9.5	1/8"	10	17	EX 6-LLR	1/8"	9.97	17	EX 6-LLN
NP 250	8	12	14	23	11.5	1/8"	10	20	EX 8-LLR	1/8"	9.97	20	EX 8-LLN
LL	6	12	14	27	12	1/8"	10	20	EX 6-LR	1/8"	9.97	20	EX 6-LN
LIGHT	6	14	14	29	14	1/4"	14	24	EX 6-LR1/4	1/4"	15.10	24	EX 6-LN1/4"
NP 250	8	14	17	29	14	1/4"	14	26	EX 8-LR	1/4"	15.10	26	EX 8-LN
	10	14	19	30	15	1/4"	14	27	EX 10-LR	1/4"	15.10	27	EX 10-LN
	10	17	19	30	15	3/8"	14	27	EX 10-LR3/8"	3/8"	15.26	27	EX 10-LN3/8"
	12	17	22	32	17	3/8"	14	28	EX 12-LR	3/8"	15.26	28	EX 12-LN
	12	19	22	33	18	1/2"	16	30	EX 12-LR1/2"	1/2"	19.85	30	EX 12-LN
	15	22	27	36	21	1/2"	16	24	EX 15-LR	1/2"	19.85	24	EX 15-LN
NP 160	18	27	32	40	23.5	1/2"	16	36	EX 18-LLR	1/2"	19.85	36	EX 18-LN
H	6	14	17	31	16	1/4"	14	26	EX 6-HR	1/4"	15.10	26	EX 6-HN
	8	17	19	32	17	1/4"	14	27	EX 8-HR	1/4"	15.10	27	EX 8-HN
	10	19	22	34	17.5	3/8"	14	28	EX 10-LR	3/8"	15.26	28	EX 10-LN
	12	22	24	38	21.5	4/8"	14	28	EX 12-HR	4/8"	15.26	28	EX 12-HN
	12	22	24	39	22.5	1/2"	16	32	EX 12-HR1/2"	1/2"	19.85	34	EX 12-HN1/2"
	14	22	27	40	22	1/2"	16	32	EX 14-HR	1/2"	19.85	34	EX 14-HN
NP 400	16	24	30	43	24.5	1/2"	16	32	EX 16-HR	1/2"	19.00	36	EX 16-HN



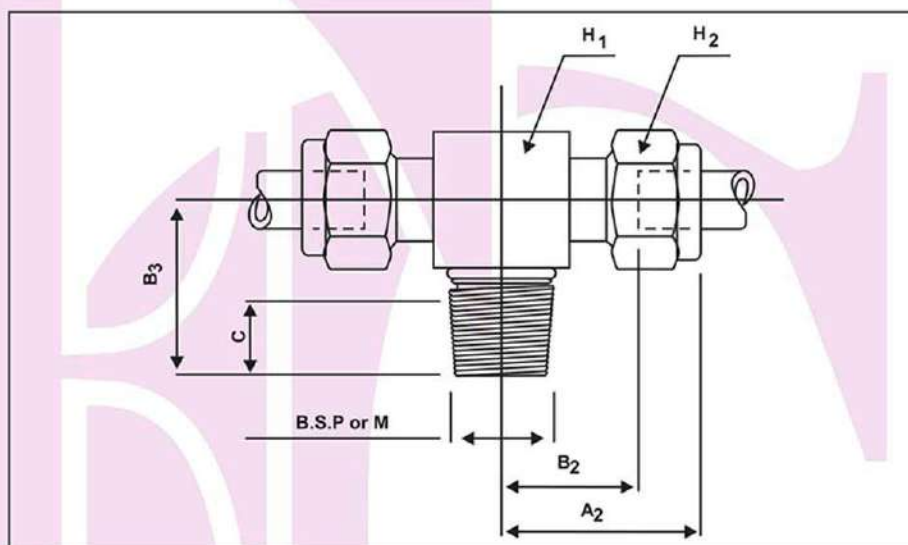
TAPER MALE RUN TEE



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	A2	B2	R	C	B3	Threads Part Number	Taper Male Run Tee			
										N	C	N. P. T. Thread B3	Thread Part Number
LL LIGHT NP 250	4	11	10	21	11	1/8"	10	17	TRX 4-LLR	1/8"	9.97	17	TRX 4-LLN
	6	12	12	21	9.5	1/8"	10	17	TRX 6-LLR	1/8"	9.97	17	TRX 6-LLN
	8	12	14	23	11.5	1/8"	10	20	TRX 8-LLR	1/8"	9.97	20	TRX 8-LLN
LL LIGHT NP 250	6	12	14	27	12	1/8"	10	20	TRX 6-LR	1/8"	9.97	20	TRX 6-LN
	6	14	14	29	14	1/4"	14	24	TRX 6-LR1/4	1/4"	15.10	26	TRX 6-LN1/4"
	8	14	17	29	14	1/4"	14	26	TRX 8-LR	1/4"	15.10	27	TRX 8-LN
	10	14	19	30	15	1/4"	14	27	TRX 10-LR	1/4"	15.10	27	TRX 10-LN
	10	17	19	30	15	3/8"	14	27	TRX 10-LR3/8"	3/8"	15.26	28	TRX 10-LN3/8"
	12	17	22	32	17	3/8"	14	28	TRX 12-LR	3/8"	15.26	28	TRX 12-LN
	12	19	22	33	18	1/2"	16	30	TRX 12-LR1/2"	1/2"	19.85	34	TRX 12-LN
	15	22	27	36	21	1/2"	16	24	TRX 15-LR	1/2"	19.85	34	TRX 15-LN
NP 160	18	27	32	40	23.5	1/2"	16	36	TRX 18-LLR	1/2"	19.85	36	TRX 18-LN
H	6	14	17	31	16	1/4"	14	26	TRX 6-HR	1/4"	15.10	26	TRX 6-HN
	8	17	19	32	17	1/4"	14	27	TRX 8-HR	1/4"	15.10	27	TRX 8-HN
	10	19	22	34	17.5	3/8"	14	28	TRX 10-HR	3/8"	15.26	28	TRX 10-LN
	12	22	24	38	21.5	4/8"	14	28	TRX 12-HR	3/8"	15.26	28	TRX 12-HN
	12	22	24	39	22.5	1/2"	16	32	TRX 12-HR1/2"	1/2"	19.85	34	TRX 12-HN1/2"
	14	22	27	40	22	1/2"	16	32	TRX 14-HR	1/2"	19.85	34	TRX 14-HN
NP 400	16	24	30	43	24.5	1/2"	16	32	TRX 16-HR	1/2"	19.00	36	TRX 16-HN

TAPER MALE BRANCH

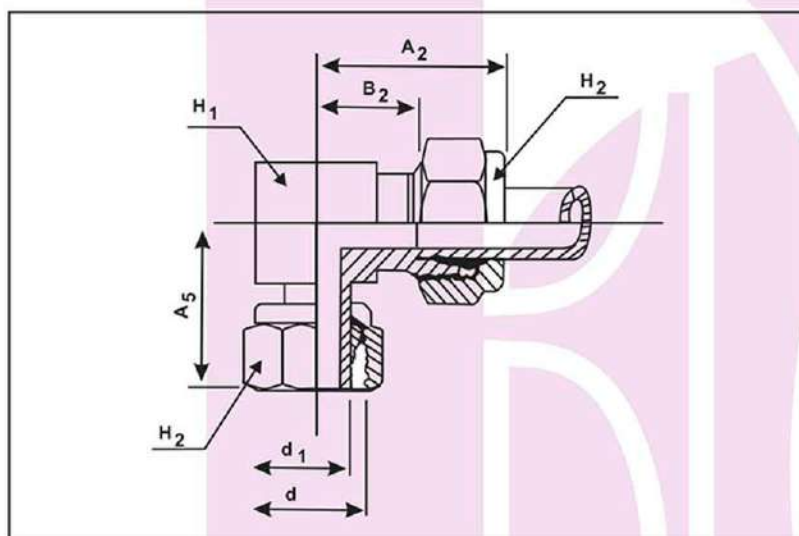


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	A2	B2	R	C	B3	Threads Part Number	Taper Male Branch Tee			
										N	C	N. P. T. Thread B3	Thread Part Number
LL	4	11	10	21	11	1/8"	10	17	TBX 4-LLR	1/8"	9.97	17	TBX 4-LLN
LIGHT	6	12	12	21	9.5	1/8"	10	17	TBX 6-LLR	1/8"	9.97	17	TBX 6-LLN
NP 250	8	12	14	23	11.5	1/8"	10	20	TBX 8-LLR	1/8"	9.97	20	TBX 8-LLN
LL LIGHT NP 250	6	12	14	27	12	1/8"	10	20	TBX 6-LR	1/8"	9.97	20	TBX 6-LN
	6	14	14	29	14	1/4"	14	24	TBX 6-LR1/4	1/4"	15.10	26	TBX 6-LN1/4"
	8	14	17	29	14	1/4"	14	26	TBX 8-LR	1/4"	15.10	27	TBX 8-LN
	10	14	19	30	15	1/4"	14	27	TBX 10-LR	1/4"	15.10	27	TBX 10-LN
	10	17	19	30	15	3/8"	14	27	TBX 10-LR3/8"	3/8"	15.26	28	TBX 10-LN3/8"
	12	17	22	32	17	3/8"	14	28	TBX 12-LR	3/8"	15.26	28	TBX 12-LN
	12	19	22	33	18	1/2"	16	30	TBX 12-LR1/2"	1/2"	19.85	34	TBX 12-LN
NP 160	15	22	27	36	21	1/2"	16	24	TBX 15-LR	1/2"	19.85	34	TBX 15-LN
	18	27	32	40	23.5	1/2"	16	36	TBX 18-LLR	1/2"	19.85	36	TBX 18-LN
H	6	14	17	31	16	1/4"	14	26	TBX 6-HR	1/4"	15.10	26	TBX 6-HN
	8	17	19	32	17	1/4"	14	27	TBX 8-HR	1/4"	15.10	27	TBX 8-HN
	10	19	22	34	17.5	3/8"	14	28	TBX 10-HR	3/8"	15.26	28	TBX 10-HN
	12	22	24	38	21.5	4/8"	14	28	TBX 12-HR	3/8"	15.26	28	TBX 12-HN
	12	22	24	39	22.5	1/2"	16	32	TBX 12-HR1/2"	1/2"	19.85	34	TBX 12-HN1/2"
	14	22	27	40	22	1/2"	16	32	TBX 14-HR	1/2"	19.85	34	TBX 14-HN
NP 400	16	24	30	43	24.5	1/2"	16	32	TBX 16-HR	1/2"	19.00	36	TBX 16-HN



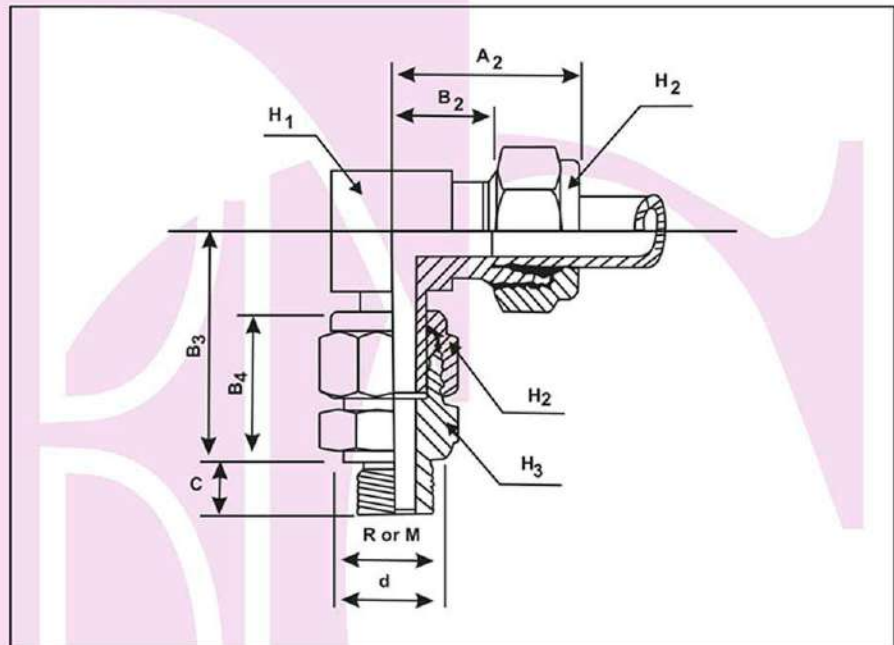
SWIVEL ELBOW



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	d	B1	A2	A5	d1	Part Number	
L MEDIUM NP 250	6	12	14	M 12 x 1.5	12	27	26	6	ESW	6-L
	8	14	17	M 14 x 1.5	14	29	27	8	ESW	8-L
	10	17	19	M 16 x 1.5	15	30	28.5	10	ESW	10-L
	12	19	22	M 18 x 1.5	17	32	29	12	ESW	12-L
	15	22	27	M 22 x 1.5	21	36	32	15	ESW	15-L
NP 160	18	27	32	M 26 x 1.5	23.5	40	35	18	ESW	18-L
	22	30	36	M 30 x 2	27.5	44	38	22	ESW	22-L
NP 100	28	36	41	M 36 x 2	30.5	47	41.5	28	ESW	28-L
	35	46	50	M 45 x 2	34.5	56	51	35	ESW	35-L
	42	55	60	M 52 x 2	40	63	56	42	ESW	42-L
H HEAVY NP 640	6	14	17	M 14 x 1.5	16	31	27	6	ESW	6-H
	8	17	19	M 16 x 1.5	17	32	27	8	ESW	8-H
	10	19	22	M 18 x 1.5	17.5	34	29.5	10	ESW	10-H
	12	22	24	M 20 x 1.5	21.5	38	30.5	12	ESW	12-H
	14	22	27	M 22 x 1.5	22	40	34.5	14	ESW	14-H
NP 400	16	24	30	M 24 x 1.5	24.5	43	36	16	ESW	16-H
	20	30	36	M 30 x 2	26.5	48	44	20	ESW	20-H
	25	36	46	M 36 x 2	30	54	49.5	25	ESW	25-H
NP 250	30	44.5	50	M 42 x 2	35.5	62	55	30	ESW	30-H
	38	55	60	M 52 x 2	41	72	63	38	ESW	38-H

SWIVEL ELBOW CONNECTOR

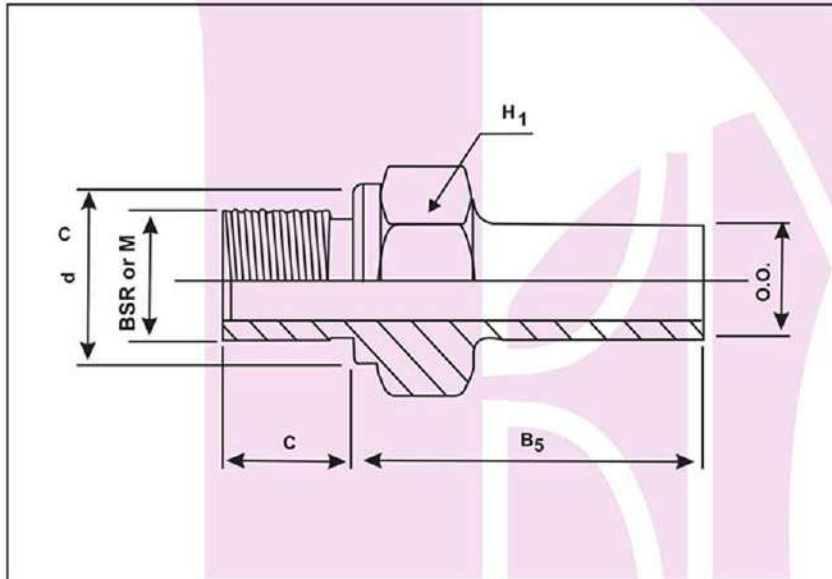


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	E3	B4	C	H3	d3	B.S.P. Thread		Part Number	H3	d3	Metric Thread		Part Number
							R					M		
L MEDIUM NP 250	6	34.5	23	8	14	14	1/8"		ESW 6-LR	14	14	M 10 x 1		ESW 6-L
	8	37	25	12	18	18	1/4"		ESW 8-LR	17	17	M 12 x 1.5		ESW 8-L
	10	39.5	26	12	18	18	1/4"		ESW 10-LR	19	19	M 14 x 1.5		ESW 10-L
	12	41.5	27	12	22	22	3/8"		ESW 12-LR	22	22	M 16 x 1.5		ESW 12-L
	15	46	29	14	26	26	1/2"		ESW 15-LR	24	24	M 18 x 1.5		ESW 15-L
NP 160	18	49.5	31	14	27	26	1/2"		ESW 18-LR	27	27	M 12 x 1.5		ESW 18-L
	22	54.5	33	16	32	32	3/4"		ESW 22-LR	32	31	M 26 x 1.5		ESW 22-L
NP 100	28	59	34	18	41	39	1"		ESW 28-LR	41	39	M 33 x 2		ESW 28-L
	35	68.5	39	20	50	49	1 1/4"		ESW 35-LR	50	49	M 42 x 2		ESW 35-L
	42	75	42	22	55	55	1 1/2"		ESW 42-LR	55	55	M 48 x 2		ESW 42-L
H HEAVY NP 640	6	40	28	12	19	18	1/4"		ESW 6-HR	17	17	M 12 x 1.5		ESW 6-H
	8	42	30	12	19	18	1/4"		ESW 8-HR	19	19	M 14 x 1.5		ESW 8-H
	10	44.5	31	12	22	22	3/8"		ESW 10-HR	22	21	M 16 x 1.5		ESW 10-H
	12	47.5	33	12	22	22	3/8"		ESW 12-HR	24	23	M 18 x 1.5		ESW 12-H
	14	53.5	37	14	27	26	1/2"		ESW 14-HR	27	25	M 20 x 1.5		ESW 14-H
NP 400	16	54.5	37	14	27	26	1"		ESW 16-HR	27	27	M 22 x 1.5		ESW 16-H
	20	64.5	42	16	32	32	3/4"		ESW 20-HR	32	32	M 27 x 1.5		ESW 20-H
	25	72.5	47	18	41	39	1"		ESW 25-HR	41	39	M 33 x 1.5		ESW 25-H
NP 250	30	78.5	50	20	50	46	1 1/4"		ESW 30-HR	50	49	M 42 x 2		ESW 30-H
	38	89	57	22	55	55	1 1/2"		ESW 38-HR	55	55	M 48 x 2		ESW 38-H



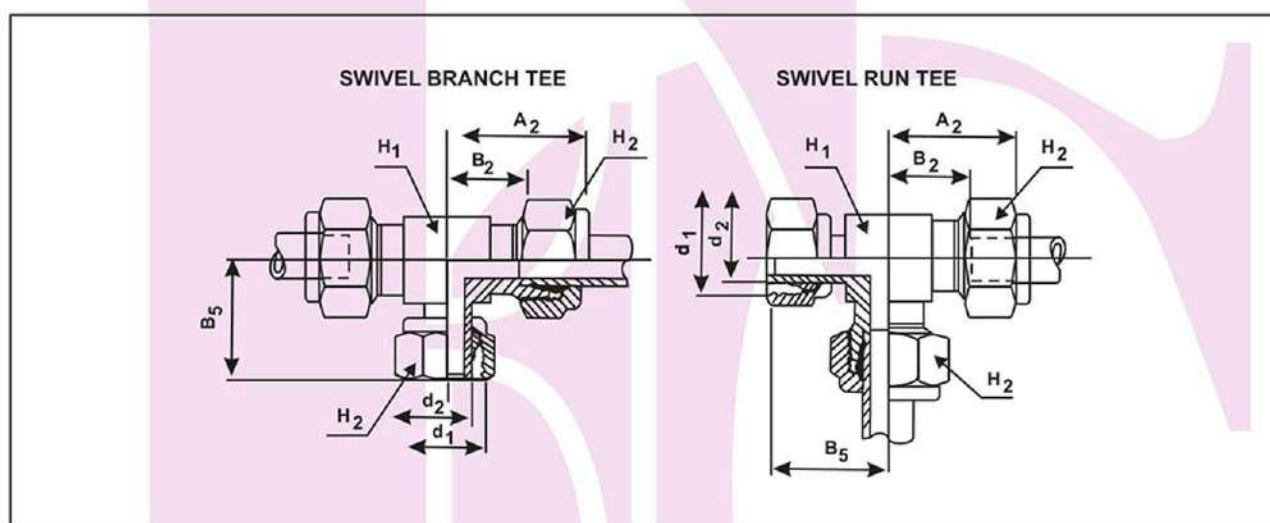
STANDPIPE ADAPTOR



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	B5	C	H1	d	B.S.P. R	Thread Part Number	d	d3	Metric Thread Part Number	Part Number
L	6	24.5	8	14	14	1/8"	SP 6-LR	14	14	M 10 x 1	SP 6-LM
MEDIUM	8	29.5	12	18	19	1/4"	SP 8-LR	17	17	M 12 x 1.5	SP 8-LM
NP 250	10	27.5	12	18	1	1/4"	SP 10-LR	19	19	M 14 x 1.5	SP 10-LM
	12	30	12	22	22	3/8"	SP 12-LR	22	22	M 16 x 1.5	SP 12-LM
	15	32	14	26	27	1/2"	SP 15-LR	24	24	M 18 x 1.5	SP 15-LM
NP 160	18	32	14	27	27	1/2"	SP 18-LR	27	27	M 12 x 1.5	SP 18-LM
	22	32.5	16	32	32	3/4"	SP 22-LR	32	31	M 26 x 1.5	SP 22-LM
NP 100	28	35	18	41	40	1"	SP 28-LR	41	39	M 33 x 2	SP 28-LM
	35	42.5	20	50	50	1 1/4"	SP 35-LR	50	49	M 42 x 2	SP 35-LM
	42	46.5	22	55	55	1 1/2"	SP 42-LR	55	55	M 48 x 2	SP 42-LM
H	6	27	12	19	19	1/4"	SP 6-HR	17	17	M 12 x 1.5	SP 6-HM
HEAVY	8	29.5	12	19	19	1/4"	SP 8-HR	19	19	M 14 x 1.5	SP 8-HM
NP 640	10	32	12	22	22	3/8"	SP 10-HR	22	21	M 16 x 1.5	SP 10-HM
	12	34	12	22	22	3/8"	SP 12-HR	24	23	M 18 x 1.5	SP 12-HM
	12	34.5	14	27	27	1/2"	SP 12-HR	27	25		
	14	36.5	14	27	27	1/2"	SP 14-HR			M 20 x 1.5	SP 14-HM
NP 400	16	37	14	27	27	1"	SP 16-HR	27	27	M 22 x 1.5	SP 16-HM
	16	39	16	32	32	3/4"	SP 16-HR3/4		32		
	20	43	16	32	32	3/4"	SP 20-HR	32	39	M 27 x 1.5	SP 20-HM
	25	43	18	41	40	1"	SP 25-HR	41		M 33 x 1.5	SP 25-HM
NP 250	30	51	20	50	50	1 1/4"	SP 30-HR	50	49	M 42 x 2	SP 30-HM
	38	50	22	55	55	1 1/2"	SP 38-HR	55	55	M 48 x 2	SP 38-HM

SWIVEL TEES



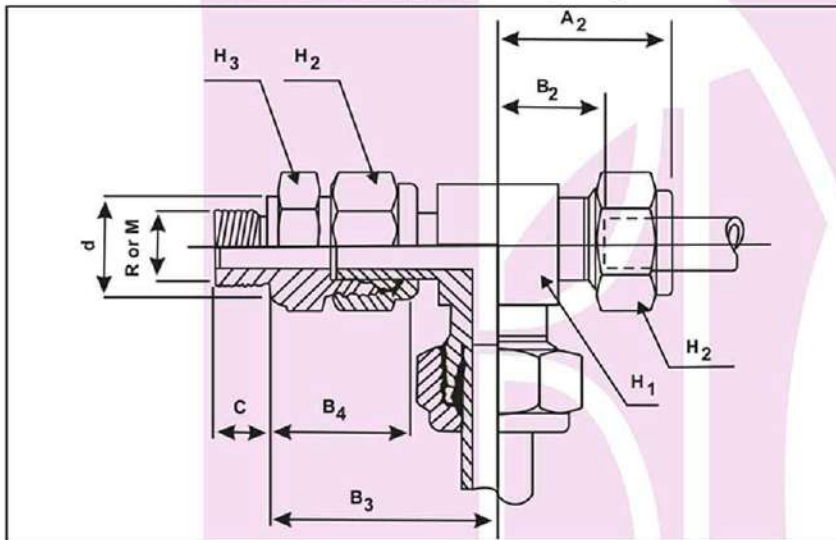
FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	E3	B4	C	H3	d3	B.S.P. Thread		Part Number	H3	d3	Metric Thread		Part Number
							R					M		
L MEDIUM NP 250	6	34.5	23	8	14	14	1/8"	ESW	6-LR	14	14	M 10 x 1	TBSW	6-L
	8	37	25	12	18	18	1/4"	ESW	8-LR	17	17	M 12 x 1.5	TBSW	8-L
	10	39.5	26	12	18	18	1/4"	ESW	10-LR	19	19	M 14 x 1.5	TBSW	10-L
	12	41.5	27	12	22	22	3/8"	ESW	12-LR	22	22	M 16 x 1.5	TBSW	12-L
	15	46	29	14	26	26	1/2"	ESW	15-LR	24	24	M 18 x 1.5	TBSW	15-L
NP 160	18	49.5	31	14	27	26	1/2"	ESW	18-LR	27	27	M 12 x 1.5	TBSW	18-L
	22	54.5	33	16	32	32	3/4"	ESW	22-LR	32	31	M 26 x 1.5	TBSW	22-L
NP 100	28	59	34	18	41	39	1"	ESW	28-LR	41	39	M 33 x 2	TBSW	28-L
	35	68.5	39	20	50	49	1 1/4"	ESW	35-LR	50	49	M 42 x 2	TBSW	35-L
	42	75	42	22	55	55	1 1/2"	ESW	42-LR	55	55	M 48 x 2	TBSW	42-L
H HEAVY NP 640	6	40	28	12	19	18	1/4"	ESW	6-HR	17	17	M 12 x 1.5	TBSW	6-H
	8	42	30	12	19	18	1/4"	ESW	8-HR	19	19	M 14 x 1.5	TBSW	8-H
	10	44.5	31	12	22	22	3/8"	ESW	10-HR	22	21	M 16 x 1.5	TBSW	10-H
	12	47.5	33	12	22	22	3/8"	ESW	12-HR	24	23	M 18 x 1.5	TBSW	12-H
	14	53.5	37	14	27	26	1/2"	ESW	14-HR	27	25	M 20 x 1.5	TBSW	14-H
NP 400	16	54.5	37	14	27	26	1"	ESW	16-HR	27	27	M 22 x 1.5	TBSW	16-H
	20	64.5	42	16	32	32	3/4"	ESW	20-HR	32	32	M 27 x 1.5	TBSW	20-H
	25	72.5	47	18	41	39	1"	ESW	25-HR	41	39	M 33 x 1.5	TBSW	25-H
NP 250	30	78.5	50	20	50	46	1 1/4"	ESW	30-HR	50	49	M 42 x 2	TBSW	30-H
	38	89	57	22	55	55	1 1/2"	ESW	38-HR	55	55	M 48 x 2	TBSW	38-H



SWIVEL RUN TEES CONNECTOR

NOTE : Dimension H1 H2 B2 & A2 are Identical to Corresponding Swivel Tees



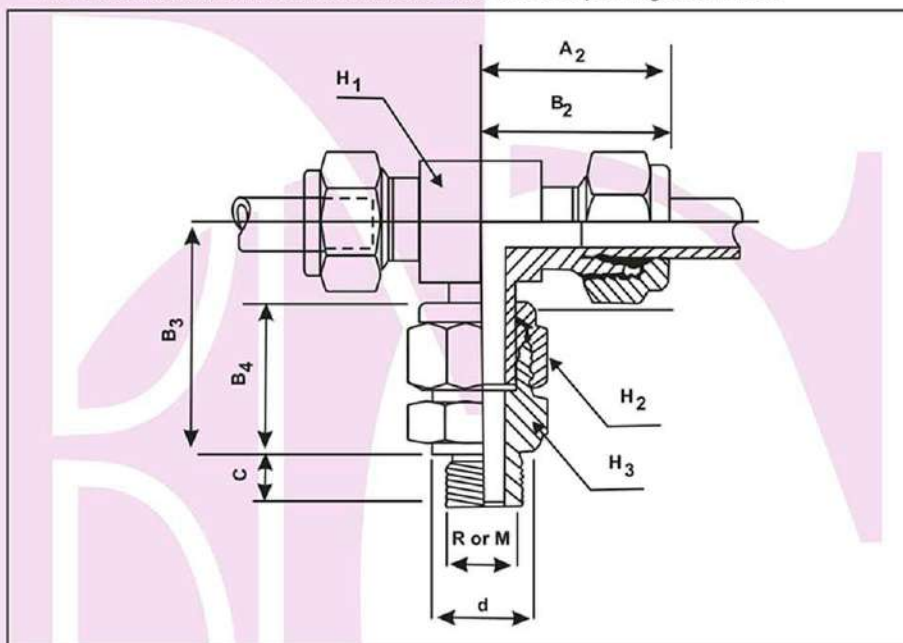
FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.					B.S.P. Thread				Metric Thread			
		E3	B4	C	H3	d3	R	Part Number	H3	d3	M	Part Number	
L MEDIUM NP 250	6	34.5	23	8	14	14	1/8"	TRSW 6-LR	14	14	M 10 x 1	TRSW 6-L	
	8	37	25	12	18	18	1/4"	TRSW 8-LR	17	17	M 12 x 1.5	TRSW 8-L	
	10	39.5	26	12	18	18	1/4"	TRSW 10-LR	19	19	M 14 x 1.5	TRSW 10-L	
	12	41.5	27	12	22	22	3/8"	TRSW 12-LR	22	22	M 16 x 1.5	TRSW 12-L	
	15	46	29	14	26	26	1/2"	TRSW 15-LR	24	24	M 18 x 1.5	TRSW 15-L	
NP 160	18	49.5	31	14	27	26	1/2"	TRSW 18-LR	27	27	M 12 x 1.5	TRSW 18-L	
	22	54.5	33	16	32	32	3/4"	TRSW 22-LR	32	31	M 26 x 1.5	TRSW 22-L	
NP 100	28	59	34	18	41	39	1"	TRSW 28-LR	41	39	M 33 x 2	TRSW 28-L	
	35	68.5	39	20	50	49	1 1/4"	TRSW 35-LR	50	49	M 42 x 2	TRSW 35-L	
	42	75	42	22	55	55	1 1/2"	TRSW 42-LR	55	55	M 48 x 2	TRSW 42-L	
H HEAVY NP 640	6	40	28	12	19	18	1/4"	TRSW 6-HR	17	17	M 12 x 1.5	TRSW 6-H	
	8	42	30	12	19	18	1/4"	TRSW 8-HR	19	19	M 14 x 1.5	TRSW 8-H	
	10	44.5	31	12	22	22	3/8"	TRSW 10-HR	22	21	M 16 x 1.5	TRSW 10-H	
	12	47.5	33	12	22	22	3/8"	TRSW 12-HR	24	23	M 18 x 1.5	TRSW 12-H	
	14	53.5	37	14	27	26	1/2"	TRSW 14-HR	27	25	M 20 x 1.5	TRSW 14-H	
NP 400	16	54.5	37	14	27	26	1"	TRSW 16-HR	27	27	M 22 x 1.5	TRSW 16-H	
	20	64.5	42	16	32	32	3/4"	TRSW 20-HR	32	32	M 27 x 1.5	TRSW 20-H	
	25	72.5	47	18	41	39	1"	TRSW 25-HR	41	39	M 33 x 1.5	TRSW 25-H	
NP 250	30	78.5	50	20	50	46	1 1/4"	TRSW 30-HR	50	49	M 42 x 2	TRSW 30-H	
	38	89	57	22	55	55	1 1/2"	TRSW 38-HR	55	55	M 48 x 2	TRSW 38-H	

SWIVEL BRANCH TEES CONNECTOR



NOTE : Dimension H1 H2 B2 & A2 are Identical to Corresponding Swivel Tees

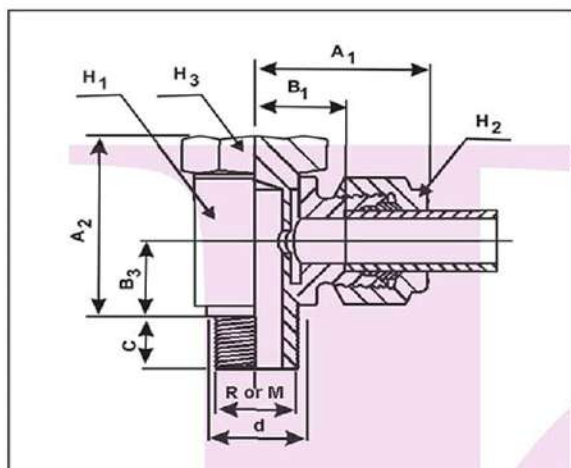


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	E3	B4	C	H3	d3	B.S.P. Thread		Part Number	H3	d3	Metric Thread		Part Number
							R					M		
L MEDIUM NP 250	6	34.5	23	8	14	14	1/8"		TBSW 6-LR	14	14	M 10 x 1		TBSW 6-L
	8	37	25	12	18	18	1/4"		TBSW 8-LR	17	17	M 12 x 1.5		TBSW 8-L
	10	39.5	26	12	18	18	1/4"		TBSW 10-LR	19	19	M 14 x 1.5		TBSW 10-L
	12	41.5	27	12	22	22	3/8"		TBSW 12-LR	22	22	M 16 x 1.5		TBSW 12-L
	15	46	29	14	26	26	1/2"		TBSW 15-LR	24	24	M 18 x 1.5		TBSW 15-L
NP 160	18	49.5	31	14	27	26	1/2"		TBSW 18-LR	27	27	M 12 x 1.5		TBSW 18-L
	22	54.5	33	16	32	32	3/4"		TBSW 22-LR	32	31	M 26 x 1.5		TBSW 22-L
NP 100	28	59	34	18	41	39	1"		TBSW 28-LR	41	39	M 33 x 2		TBSW 28-L
	35	68.5	39	20	50	49	1 1/4"		TBSW 35-LR	50	49	M 42 x 2		TBSW 35-L
	42	75	42	22	55	55	1 1/2"		TBSW 42-LR	55	55	M 48 x 2		TBSW 42-L
H HEAVY NP 640	6	40	28	12	19	18	1/4"		TBSW 6-HR	17	17	M 12 x 1.5		TBSW 6-H
	8	42	30	12	19	18	1/4"		TBSW 8-HR	19	19	M 14 x 1.5		TBSW 8-H
	10	44.5	31	12	22	22	3/8"		TBSW 10-HR	22	21	M 16 x 1.5		TBSW 10-H
	12	47.5	33	12	22	22	3/8"		TBSW 12-HR	24	23	M 18 x 1.5		TBSW 12-H
	14	53.5	37	14	27	26	1/2"		TBSW 14-HR	27	25	M 20 x 1.5		TBSW 14-H
NP 400	16	54.5	37	14	27	26	1"		TBSW 16-HR	27	27	M 22 x 1.5		TBSW 16-H
	20	64.5	42	16	32	32	3/4"		TBSW 20-HR	32	32	M 27 x 1.5		TBSW 20-H
	25	72.5	47	18	41	39	1"		TBSW 25-HR	41	39	M 33 x 1.5		TBSW 25-H
NP 250	30	78.5	50	20	50	46	1 1/4"		TBSW 30-HR	50	49	M 42 x 2		TBSW 30-H
	38	89	57	22	55	55	1 1/2"		TBSW 38-HR	55	55	M 48 x 2		TBSW 38-H



SWIVEL BANJO CONNECTOR

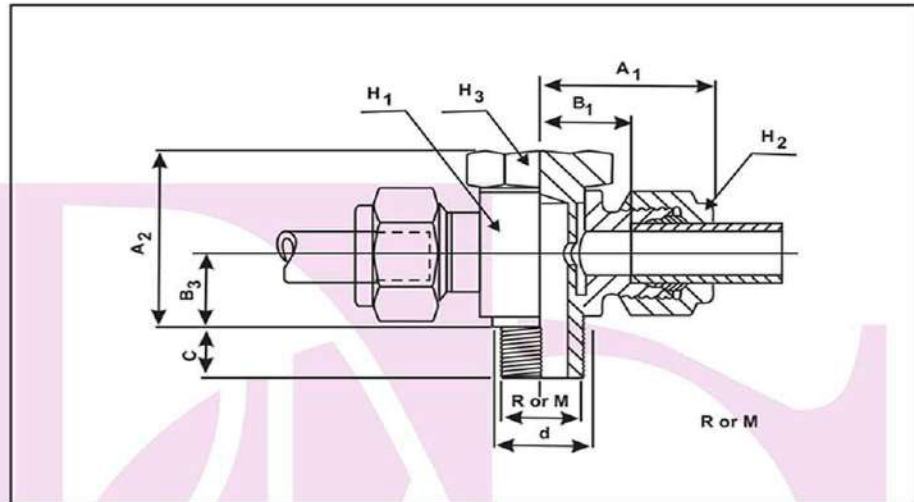
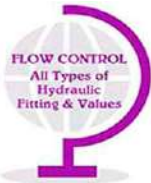


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	H3	C	A2	B1	A1	B3	d	R	N. S. P. Thread	Part Number
LL	4	14	10	14	6	21	11.5	21	10	14.0	1/8"	BE 4-LLR	
LIGHT	6	14	12	14	6	21	10	22	10	14.0	1/8"	BE 6-LLR	
NP 40	8	14	14	14	6	21	11	23	10	14.0	1/8"	BE 8-LLR	
LL MEDIUM NP 100	6	14	14	14	7	22	10	25	10	14.0	1/8"	BE 6-LLR	
	8	19	17	19	9	25	12.5	27	11	18.5	1/4"	BE 8-LLR	
	10	19	19	19	9	27	13.5	28	13	18.5	1/8"	BE 10-LLR	
	12	22	22	22	10	31	15	30	15	22	3/8"	BE 12-LLR	
	15	27	27	27	12	37	18.5	34	17	26.6	1/2"	BE 15-LLR	
NP 64	18	30	32	27	11	41	19.5	36	20	27	1/2"	BE 18-LLR	
	22	36	36	32	13	48	24.5	41	23.5	32	3/4"	BE 22-LLR	
H HEAVY NP 160	6	19	17	19	9	25	14.5	29	11	18.5	1/4"	BE 6-LLR	
	8	19	19	19	9	29	14.5	29	13	18.5	1/4"	BE 8-LLR	
	10	22	22	22	10	31	15.5	32	15	22	3/8"	BE 10-LLR	
	12	22	24	22	12	32	15.5	32	16	22	3/8"	BE 12-LLR	
	14	27	27	27	11	37	19.5	37	18	27	1/2"	BE 15-LLR	
HP 64	16	30	30	27	11	40	21.5	40	20	27	1/2"	BE 16-LLR	
	20	36	36	32	13	48	23.5	46	23.5	32	3/4"	BE 20-LLR	

Series	Tube O.D.	H1	H2	H3	C	A2	B1	A1	B3	d	R	N. S. P. Thread	Part Number
LL	4	14	10	14	6	21	11.5	21	10	12.5	1/8"	M 8 X 1	BE 4-LLR
LIGHT	6	14	12	14	6	21	10	22	10	14.5	1/8"	M 10 X 1	BE 6-LLR
NP 40	8	14	14	14	6	21	11	23	10	14.5	1/8"	M 10 X 1	BE 8-LLR
LL	6	14	14	14	7	22	10	25	10	14.5	1/8"	M 10 X 1	BE 6-LLR
MEDIUM	8	19	17	19	9	25	12.5	27	11	17.5	1/4"	M 12 X 1.5	BE 8-LLR
NP 100	10	19	19	19	9	27	13.5	28	13	19.5	1/8"	M 14 X 1.5	BE 10-LLR
	12	22	22	22	10	31	15	30	15	21.5	3/8"	M 16 X 1.5	BE 12-LLR
	15	27	27	27	12	37	18.5	34	17	23.5	1/2"	M 18 X 1.5	BE 15-LLR
NP 64	18	30	32	27	11	41	19.5	36	20	27	1/2"	M 22 X 1.5	BE 18-LLR
	22	36	36	32	13	48	24.5	41	23.5	31	3/4"	M 16 X 1.5	BE 22-LLR
H	6	19	17	19	9	25	14.5	29	11	17.5	1/4"	M 12 X 1.5	BE 6-LLR
HEAVY	8	19	19	19	9	29	14.5	29	13	19.5	1/4"	M 14 X 1.5	BE 8-LLR
NP 160	10	22	22	22	10	31	15.5	32	15	21.5	3/8"	M 16 X 1.5	BE 10-LLR
	12	22	24	22	12	32	15.5	32	16	23.5	3/8"	M 18 X 1.5	BE 12-LLR
	14	27	27	27	11	37	19.5	37	18	25.5X	1/2"	M 20 X 1.5	BE 15-LLR
HP 64	16	30	30	27	11	40	21.5	40	20	27	1/2"	M 22 X 1.5	BE 16-LLR
	20	36	36	32	13	48	23.5	46	23.5	32	3/4"	M 27X 2	BE 20-LLR

SWIVEL BANJO TEE CONNECTOR



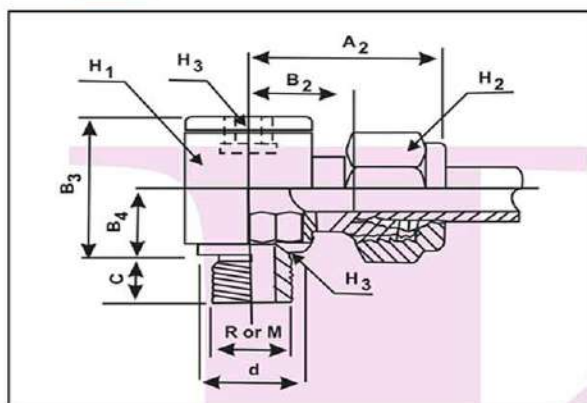
FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	H3	C	A2	B1	A1	B3	d	R	N. S. P. Thread	Part Number
LL	4	14	10	14	6	21	11.5	21	10	14.0	1/8"	BT	4-LR
LIGHT	6	14	12	14	6	21	10	22	10	14.0	1/8"	BT	6-LR
NP 40	8	14	14	14	6	21	11	23	10	14.0	1/8"	BT	8-LR
LL MEDIUM NP 100	6	14	14	14	7	22	10	25	10	14.0	1/8"	BT	6-LR
	8	19	17	19	9	25	12.5	27	11	18.5	1/4"	BT	8-LR
	10	19	19	19	9	27	13.5	28	13	18.5	1/8"	BT	10-LR
	12	22	22	22	10	31	15	30	15	22	3/8"	BT	12-LR
NP 64	15	27	27	27	12	37	18.5	34	17	26.6	1/2"	BT	15-LR
	18	30	32	27	11	41	19.5	36	20	27	1/2"	BT	18-LR
	22	36	36	32	13	48	24.5	41	23.5	32	3/4"	BT	22-LR
H HEAVY NP 160	6	19	17	19	9	25	14.5	29	11	18.5	1/4"	BT	6-HR
	8	19	19	19	9	29	14.5	29	13	18.5	1/4"	BT	8-HR
	10	22	22	22	10	31	15.5	32	15	22	3/8"	BT	10-HR
	12	22	24	22	12	32	15.5	32	16	22	3/8"	BT	12-HR
	14	27	27	27	11	37	19.5	37	18	27	1/2"	BT	15-HR
HP 64	16	30	30	27	11	40	21.5	40	20	27	1/2"	BT	16-HR
	20	36	36	32	13	48	23.5	46	23.5	32	3/4"	BBT	20-HR

Series	Tube O.D.	H1	H2	H3	C	A2	B1	A1	B3	d	R	N. S. P. Thread	Part Number
LL	4	14	10	14	6	21	11.5	21	10	12.5	1/8"	M 8 X 1	BT 4-LLM
LIGHT	6	14	12	14	6	21	10	22	10	14.5	1/8"	M 10 X 1	BT 6-LLM
NP 40	8	14	14	14	6	21	11	23	10	14.5	1/8"	M 10 X 1	BT 8-LLM
LL	6	14	14	14	7	22	10	25	10	14.5	1/8"	M 10 X 1	BT 6-LLM
MEDIUM	8	19	17	19	9	25	12.5	27	11	17.5	1/4"	M 12 X 1.5	BT 8-LLM
NP 100	10	19	19	19	9	27	13.5	28	13	19.5	1/8"	M 14 X 1.5	BT 10-LLM
	12	22	22	22	10	31	15	30	15	21.5	3/8"	M 16 X 1.5	BT 12-LLM
	15	27	27	27	12	37	18.5	34	17	23.5	1/2"	M 18 X 1.5	BT 15-LLM
NP 64	18	30	32	27	11	41	19.5	36	20	27	1/2"	M 22 X 1.5	BT 18-LLM
	22	36	36	32	13	48	24.5	41	23.5	31	3/4"	M 16 X 1.5	BT 22-LLM
H	6	19	17	19	9	25	14.5	29	11	17.5	1/4"	M 12 X 1.5	BT 6-HM
HEAVY	8	19	19	19	9	29	14.5	29	13	19.5	1/4"	M 14 X 1.5	BT 8-HM
NP 160	10	22	22	22	10	31	15.5	32	15	21.5	3/8"	M 16 X 1.5	BT 10-HM
	12	22	24	22	12	32	15.5	32	16	23.5	3/8"	M 18 X 1.5	BT 12-HM
	14	27	27	27	11	37	19.5	37	18	25.5X	1/2"	M 20 X 1.5	BT 15-HM
HP 64	16	30	30	27	11	40	21.5	40	20	27	1/2"	M 22 X 1.5	BT 16-HM
	20	36	36	32	13	48	23.5	46	23.5	32	3/4"	M 27X 2	BT 20-HM



THROTTLE FREE SWIVEL BANJO CONNECTOR



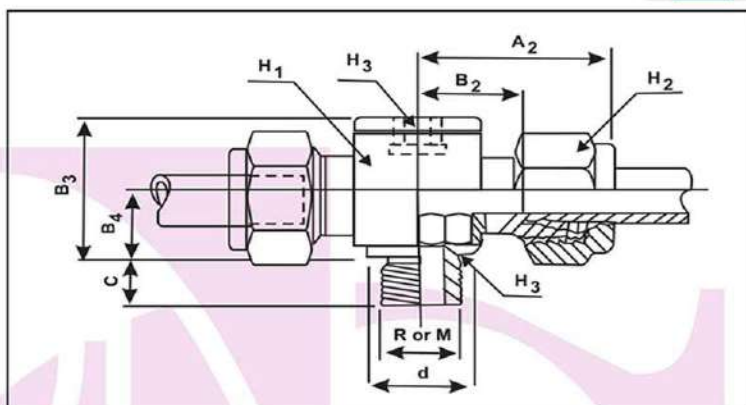
FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	H3	C	B2	A2	B3	B4	d	R	N. S. P. Thread	Part Number
L LIGHT NP 100	6	18	14	6	8	12	27	24.2	12.2	14	1/8"	DBE	6-LR
	8	22	17	8	12	14	29	30	15.5	18	1/4"	DBE	8-LR
	10	22	19	8	12	15	30	30	15.5	18	1/4"	DBE	10-LR
	12	27	22	10	12	17.5	32	36	18	24	3/8"	DBE	12-LR
	15	30	27	12	15	22	37	39	19	27	1/2"	DBE	15-LR
	18	32	32	12	15	19.5	36	39	19	27	1/2"	DBE	18-LR
	22	41	36	17	16	27	43	52.5	25.5	32	3/4"	DBE	22-LR
	28	46	41	22	18	29.5	46	58.5	29	39	1"	DBE	28-LR
H LIGHT NP 400	35	55	50	27	20	33	55	69.5	34	49	1 1/4"	DBE	35-LR
	42	70	60	32	22	40	63	84.5	41.5	56	1 1/2"	DBE	42-LR
	6	22	17	8	12	16	31	30	15.5	18	1/4"	DBE	6-HR
	8	22	19	8	12	16	31	30	15.5	18	1/4"	DBE	8-HR
	10	27	22	10	12	18	34	36	18	24	3/8"	DBE	10-HR
HP 250	12	27	24	10	12	18	34	36	18	24	3/8"	DBE	12-HR
	14	32	27	12	15	22	40	40	20	27	1/2"	DBE	14-HR
	16	32	30	12	15	21.5	40	40	20	27	1/2"	DBE	16-HR
	20	46	36	17	15	28.5	50	58.5	29	32	3/4"	DBE	20-HR

Series	Tube O.D.	H1	H2	H3	C	B2	A2	B3	B4	d	M	Metric. Thread	Part Number
L LIGHT NP 100	6	18	14	6	8	12	27	24.2	12.2	14	M 10 X 1	DBE	6-LR
	8	22	17	8	12	14	29	30	15.5	18	M 12 X 1.5	DBE	8-LR
	10	22	19	8	12	15	30	30	15.5	18	M 14 X 1.5	DBE	10-LR
	12	27	22	10	12	17.5	32	36	18	24	M 16 X 1.5	DBE	12-LR
	15	30	27	12	15	22	37	39	19	27	M 18 X 1.5	DBE	15-LR
	18	32	32	12	15	19.5	36	39	19	27	M 22 X 1.5	DBE	18-LR
	22	41	36	17	16	27	43	52.5	25.5	32	M 26 X 1.5	DBE	22-LR
	28	46	41	22	18	29.5	46	58.5	29	39	M 33 X 2	DBE	28-LR
H LIGHT NP 400	35	55	50	27	20	33	55	69.5	34	49	M 42 X 2	DBE	35-LR
	42	70	60	32	22	40	63	84.5	41.5	56	M 48 X 2	DBE	42-LR
	6	22	17	8	12	16	31	30	15.5	18	M 12 X 1.5	DBE	6-HR
	8	22	19	8	12	16	31	30	15.5	18	M 14 X 1.5	DBE	8-HR
	10	27	22	10	12	18	34	36	18	24	M 16 X 1.5	DBE	10-HR
HP 250	12	27	24	10	12	18	34	36	18	24	M 18 X 1.5	DBE	12-HR
	14	32	27	12	15	22	40	40	20	27	M 20 X 1.5	DBE	14-HR
	16	32	30	12	15	21.5	40	40	20	27	M 22 X 1.5	DBE	16-HR
	20	46	36	17	15	28.5	50	58.5	29	32	M 27 X 2	DBE	20-HR

THROTTLE FREE SWIVEL BANJO CONNECTOR

FLOW CONTROL
All Types of
Hydraulic
Fitting & Valves



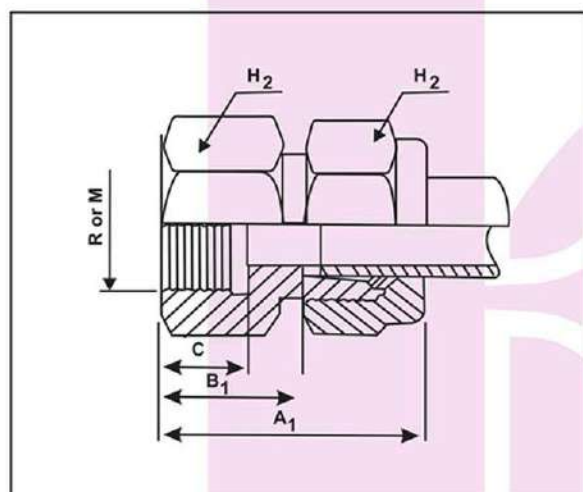
FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	H3	C	B2	A2	B3	B4	d	R	N. S. P. Thread	Part Number
L LIGHT NP 100	6	18	14	6	8	12	27	24.2	12.2	14	1/8"	DBT	6-LR
	8	22	17	8	12	14	29	30	15.5	18	1/4"	DBT	8-LR
	10	22	19	8	12	15	30	30	15.5	18	1/4"	DBT	10-LR
	12	27	22	10	12	17.5	32	36	18	24	3/8"	DBT	12-LR
	15	30	27	12	15	22	37	39	19	27	1/2"	DBT	15-LR
	18	32	32	12	15	19.5	36	39	19	27	1/2"	DBT	18-LR
	22	41	36	17	16	27	43	52.5	25.5	32	3/4"	DBT	22-LR
	28	46	41	22	18	29.5	46	58.5	29	39	1"	DBT	28-LR
H LIGHT NP 400	35	55	50	27	20	33	55	69.5	34	49	1 1/4"	DBT	35-LR
	42	70	60	32	22	40	63	84.5	41.5	56	1 1/2"	DBT	42-LR
	6	22	17	8	12	16	31	30	15.5	18	1/4"	DBT	6-HR
	8	22	19	8	12	16	31	30	15.5	18	1/4"	DBT	8-HR
	10	27	22	10	12	18	34	36	18	24	3/8"	DBT	10-HR
	12	27	24	10	12	18	34	36	18	24	3/8"	DBT	12-HR
	14	32	27	12	15	22	40	40	20	27	1/2"	DBT	14-HR
	16	32	30	12	15	21.5	40	40	20	27	1/2"	DBT	16-HR
HP 250	20	46	36	17	15	28.5	50	58.5	29	32	3/4"	DBT	20-HR
	25	50	46	22	18	31	55	60	31	39	1"	DBT	25-HR
	30	60	50	27	20	36.5	63	71.5	36.5	49	1 1/4"	DBT	30-HR
	38	70	60	32	32	22	41	84.5	41.5	56	1 1/2"	DBT	38-HR

Series	Tube O.D.	H1	H2	H3	C	B2	A2	B3	B4	d	M	Metric. Thread	Part Number
L LIGHT NP 100	6	18	14	6	8	12	27	24.2	12.2	14	M 10 X 1	DBT	6-LR
	8	22	17	8	12	14	29	30	15.5	18	M 12 X 1.5	DBT	8-LR
	10	22	19	8	12	15	30	30	15.5	18	M 14 X 1.5	DBT	10-LR
	12	27	22	10	12	17.5	32	36	18	24	M 16 X 1.5	DBT	12-LR
	15	30	27	12	15	22	37	39	19	27	M 18 X 1.5	DBT	15-LR
	18	32	32	12	15	19.5	36	39	19	27	M 22 X 1.5	DBT	18-LR
	22	41	36	17	16	27	43	52.5	25.5	32	M 26 X 1.5	DBT	22-LR
	28	46	41	22	18	29.5	46	58.5	29	39	M 33 X 2	DBT	28-LR
H LIGHT NP 400	35	55	50	27	20	33	55	69.5	34	49	M 42 X 2	DBT	35-LR
	42	70	60	32	22	40	63	84.5	41.5	56	M 48 X 2	DBT	42-LR
	6	22	17	8	12	16	31	30	15.5	18	M 12 X 1.5	DBT	6-HR
	8	22	19	8	12	16	31	30	15.5	18	M 14 X 1.5	DBT	8-HR
	10	27	22	10	12	18	34	36	18	24	M 16 X 1.5	DBT	10-HR
	12	27	24	10	12	18	34	36	18	24	M 18 X 1.5	DBT	12-HR
	14	32	27	12	15	22	40	40	20	27	M 20 X 1.5	DBT	14-HR
	16	32	30	12	15	21.5	40	40	20	27	M 22 X 1.5	DBT	16-HR
HP 250	20	46	36	17	15	28.5	50	58.5	29	32	M 27 X 2	DBT	20-HR
	25	50	46	22	18	31	55	60	31	39	M 33 X 2	DBT	25-HR
	30	60	50	27	20	36.5	63	71.5	36.5	49	M 42 X 2	DBT	30-HR
	38	70	60	32	32	22	41	84.5	41.5	56	M 48 X 2	DBT	38-HR



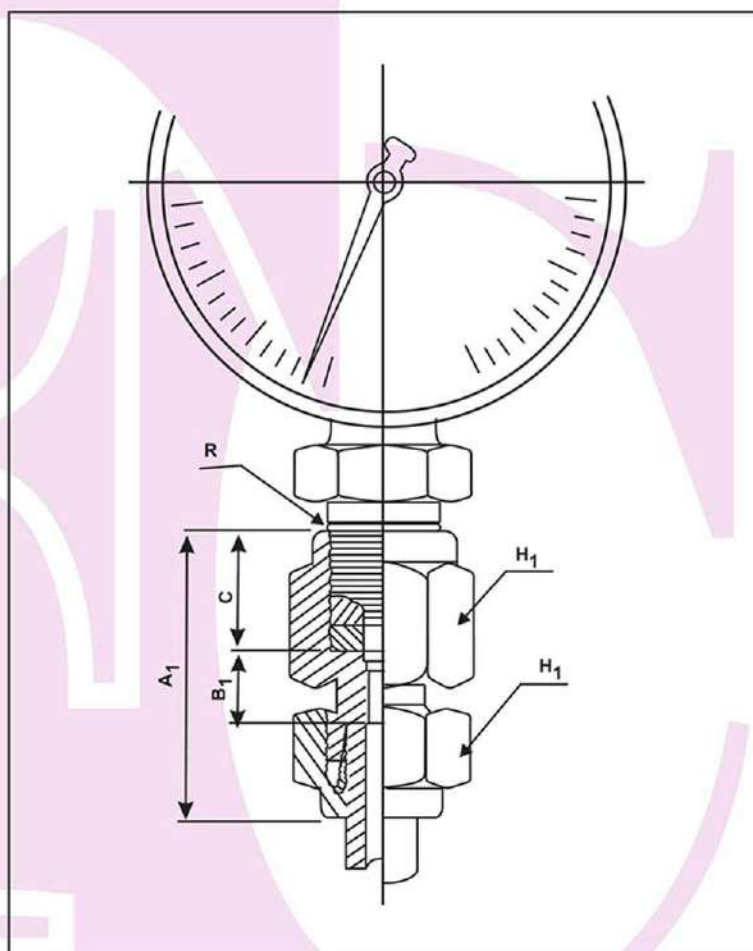
PARALLEL FEMALE STUD COUPLING



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	C	B1	A1	B.S.P. Thread	R	Part Number	Part Number	Part Number
L MEDIUM NP 250	6	14	14	6	8	15	1/8"		CFP 6-LR	M 10 x 1	CFP 6-LM
	8	17	17	8	12	19	1/4"		CFP 8-LR	M 12 x 1.5	CFP 8-LM
	10	19	19	10	12	20	1/4"		CFP 10-LR	M 14 x 1.5	CFP 10-LM
	12	22	22	12	12	21	3/8"		CFP 12-LR	M 16 x 1.5	CFP 12-LM
	15	27	27	15	14	24	1/2"		CFP 15-LR	M 18 x 1.5	CFP 15-LM
NP 160	18	27	32	18	14	23.5	1/2"		CFP 18-LR	M 22 x 1.5	CFP 18-LM
	22	32	36	22	16	28.5	3/4"		CFP 22-LR	M 26 x 1.5	CFP 22-LM
NP 100	28	41	41	28	18	30.5	1"		CFP 28-LR	M 33 x 2	CFP 28-LM
	35	50	50	35	20	32.5	1 1/4"		CFP 35-LR	M 42 x 2	CFP 35-LM
	42	55	60	42	22	34	1 1/2"		CFP 42-LR	M 48 x 2	CFP 42-LM
H HEAVY NP 640	6	19	17	6	12	21	1/4"		CFP 6-HR	M 12 x 1.5	CFP 6-HM
	8	19	19	8	12	21	1/4"		CFP 8-HR	M 14 x 1.5	CFP 8-HM
	10	22	22	10	12	21.5	3/8"		CFP 10-HR	M 16 x 1.5	CFP 10-HM
	12	24	24	12	12	21.5	3/8"		CFP 12-HR	M 18 x 1.5	CFP 12-HM
	14	27	27	14	14	26	1/2"		CFP 14-HR	M 20 x 1.5	CFP 14-HM
NP 400	16	27	30	16	14	25.5	1"		CFP 16-HR	M 22 x 1.5	CFP 16-HM
	20	36	36	20	16	28.5	3/4"		CFP 20-HR	M 27 x 1.5	CFP 20-HM
	25	41	46	25	18	31	1"		CFP 25-HR	M 33 x 1.5	CFP 25-HM
NP 250	30	55	50	20	30	35.5	1 1/4"		CFP 30-HR	M 42 x 2	CFP 30-HM
	38	60	60	22	38	37	1 1/2"		CFP 38-HR	M 48 x 2	CFP 38-HM

MONOMETER CONNECTOR

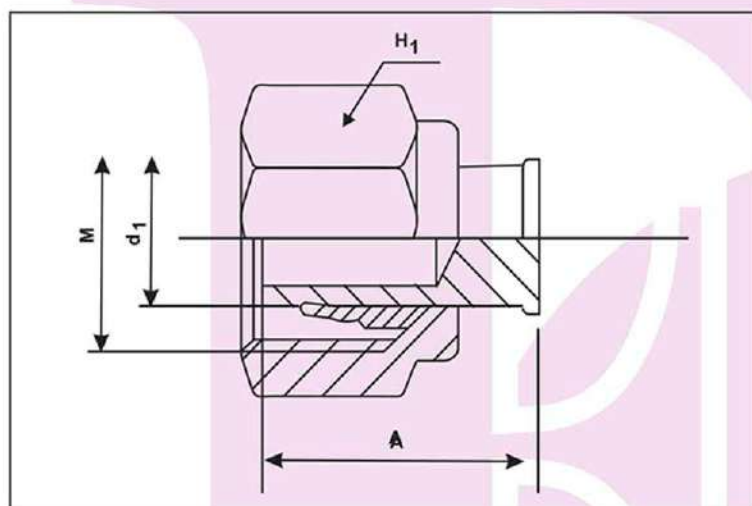


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H1	H2	C	B1	A1	Tread R	Part Number	
L	6	19	14	14.5	7.5	37	1/4"	MAN	6-LR
MEDIUM	8	19	17	14.5	7.5	37	1/4"	MAN	8-LR
NP 250	10	19	19	14.5	8.5	38	1/8"	MAN	10-LR
	12	19	22	14.5	8.5	38	1/2"	MAN	12-LR
L	6	27	17	20	11	46	1/2"	MAN	6-HR
MEDIUM	8	27	19	20	11	46	1/2"	MAN	8-HR
NP 640	10	27	22	20	10.5	47	1/2"	MAN	10-HR
	12	27	24	20	10.5	47	1/2"	MAN	12-HR



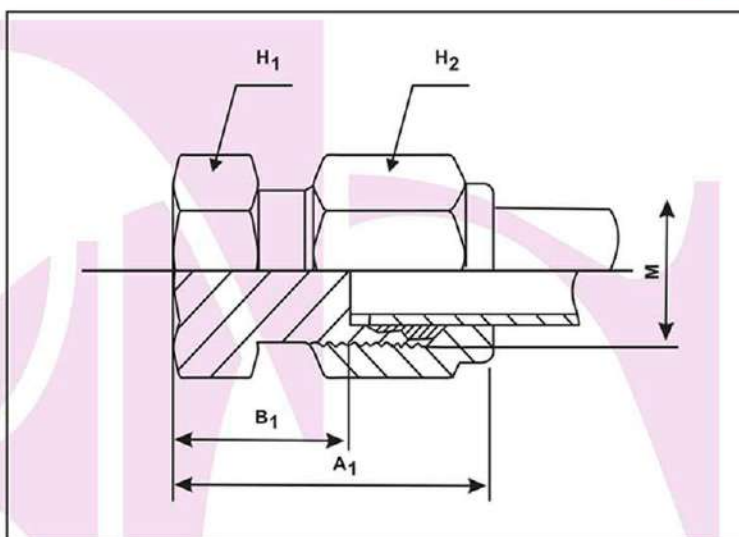
FITTING PLUG



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	d1	M	A	H1	Part Number
L MEDIUM NP 250	6	M 12 X 1.5	17	14	PC 6-L
	8	M 14 X 1.5	17	17	PC 8-L
	10	M 16 X 1.5	20	19	PC 10-L
	12	M 18 X 1.5	21	22	PC 12-L
	15	M 22 X 1.5	20	27	PC 15-L
NP 160	18	M 26 X 1.5	21	32	PC 18-L
	22	M 30 X 2	23	36	PC 22-L
NP 100	28	M 36 X 2	23	41	PC 28-L
	35	M 45 X 2	29	50	PC 35-L
	42	M 52 X 2	30	60	PC 42-L
H HEAVY NP 640	6	M 14 X 1.5	17	17	PC 6-H
	8	M 16 X 1.5	17	19	PC 8-H
	10	M 18 X 1.5	20	22	PC 10-H
	12	M 20 X 1.5	21	24	PC 12-H
	14	M 22 X 1.5	23	27	PC 14-H
NP 400	16	M 24 X 1.5	24	30	PC 16-H
	20	M 30 X 2	28	36	PC 20-H
	25	M 36 X 2	31	46	PC 25-H
NP 250	30	M 42 X 2	34	50	PC 30-H
	38	M 52 X 2	38	60	PC 38-H

PIPE CLOSURE END

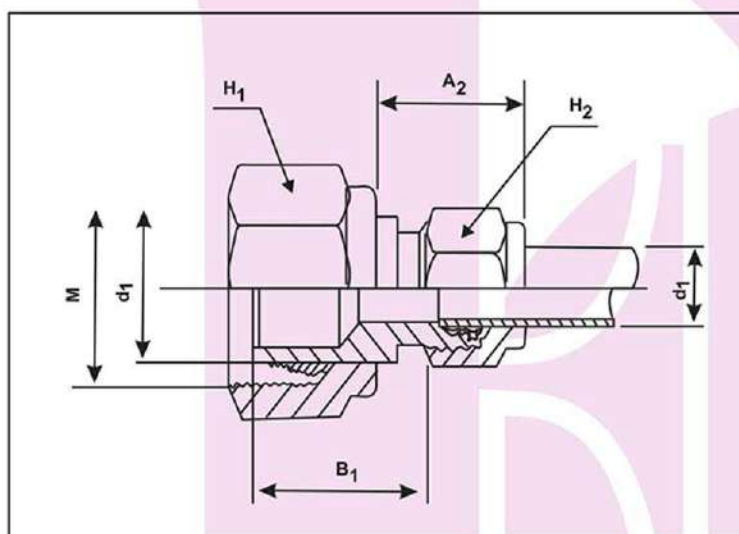


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	M	H2	H1	B1	A1	Part Number
LL LIGHT NP 100	4	M 8x1	10	11	16	26	BUZ 4-LL
	6	M 10x1	12	11	14.5	26	BUZ 6-LL
	8	M 12x1	14	12	16.5	27	BUZ 8-LL
L MEDIUM NP 250	6	M 12x1.5	14	14	8.5	23	BUZ 6-L
	8	M 14x1.5	17	19	10	25	BUZ 8-L
	10	M 16x1.5	19	19	11	26	BUZ 10-L
	12	M 18x1.5	22	22	12.5	27.5	BUZ 12-L
	15	M 22x1.5	27	27	14	29	BUZ 15-L
NP 160	18	M 26x1.5	32	32	14.5	31	BUZ 18-L
	22	M 30x2	36	36	16.5	33	BUZ 22-L
NP 100	28	M 36x2	41	41	17.5	34	BUZ 28-L
	35	M 46x2	50	50	17.5	39	BUZ 35-L
	42	M 52x2	60	55	19	42	BUZ 42-L
H HEAVY NP 640	6	M 14x1.5	17	19	13	28	BUZ 6-H
	8	M 16x1.5	19	19	15	30	BUZ 8-H
	10	M 18x1.5	22	22	15	31.5	BUZ 10-H
	12	M 20x1.5	24	22	17	33.5	BUZ 12-H
	14	M 22x1.5	27	27	19	37	BUZ 14-H
NP 400	16	M 24x1.5	30	27	18.5	37	BUZ 16-H
	20	M 30x2	36	32	20.5	43	BUZ 20-H
	25	M 36x2	46	41	23	47	BUZ 25-H
NP 250	30	M 42x2	50	50	23.5	50	BUZ 30-H
	38	M 52x2	60	55	26	57	BUZ 38-H



REDUCTION SLEEVE L - SERIES

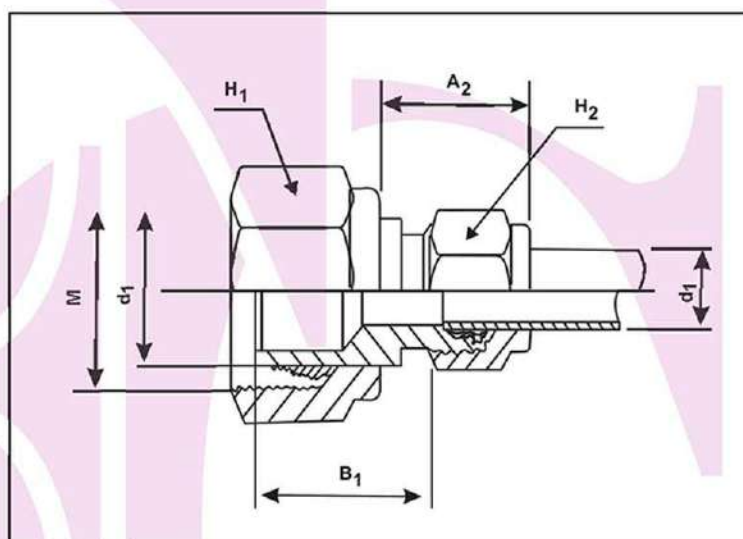


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Tube O.D. d1	d2	M	A2	B1	H1	H2	Part Number
8	6	M 14x1.5	24	23.5	19	14	CLR 8 6-L
10	6	M 16x1.5	24	23.5	19	14	CLR 10 6-L
10	8	M 16x1.5	24	23.5	19	17	CLR 10 8-L
12	6	M 18x1.5	24	23.5	22	14	CLR 12 6-L
12	8	M 18x1.5	24	23.5	22	17	CLR 12 8-L
12	10	M 18x1.5	25	24.5	22	19	CLR 12 10-L
15	6	M 22x1.5	23	23.5	27	14	CLR 15 6-L
15	8	M 22x1.5	23	23.5	27	17	CLR 15 8-L
15	10	M 22x1.5	24	24.5	27	19	CLR 15 10-L
15	12	M 22x1.5	24	24.5	27	22	CLR 15 12-L
18	6	M 26x1.5	23	24.5	32	14	CLR 18 6-L
18	8	M 26x1.5	23	24.5	32	17	CLR 18 8-L
18	10	M 26x1.5	24	25.5	32	19	CLR 18 10-L
18	12	M 26x1.5	24	25.5	32	22	CLR 18 12-L
18	15	M 26x1.5	26	26.5	32	27	CLR 18 15-L
22	6	M 30x2	24	24	36	14	CLR 22 6-L
22	8	M 30x2	24	24	36	17	CLR 22 8-L
22	10	M 30x2	25	25	36	19	CLR 22 10-L
22	12	M 30x2	25	25	36	22	CLR 22 12-L
22	15	M 30x2	27	27	36	27	CLR 22 15-L
22	18	M 30x2	27	27	36	32	CLR 22 18-L

Tube O.D. d1	d2	M	A2	B1	H1	H2	Part Number
28	6	M 36x2	25	26.5	41	14	CRL 28 6-L
28	8	M 36x2	25	26.5	41	17	CRL 28 8-L
28	10	M 36x2	26	27.5	41	19	CRL 28 10-L
28	12	M 36x2	26	27.5	41	22	CRL 28 12-L
28	15	M 36x2	27	28.5	41	27	CRL 28 15-L
28	18	M 36x2	28	28	41	32	CRL 28 18-L
28	22	M 36x2	30	30	41	36	CRL 28 22-L
35	6	M 45x2	25	31.5	50	14	CRL 35 6-L
35	8	M 45x2	25	31.5	50	17	CRL 35 8-L
35	10	M 45x2	26	32.5	50	19	CRL 35 10-L
35	12	M 45x2	27	32.5	50	22	CRL 35 12-L
35	15	M 45x2	28	33.5	50	27	CRL 35 15-L
35	18	M 45x2	30	33	50	32	CRL 35 18-L
35	22	M 45x2	30	35	50	36	CRL 35 22-L
35	28	M 45x2	30	35	50	41	CRL 35 28-L
42	6	M 52x2	25	32.5	60	14	CRL 42 6-L
42	8	M 52x2	25	32.5	60	17	CRL 42 8-L
42	10	M 52x2	26	33.5	60	19	CRL 42 10-L
42	12	M 52x2	26	33.5	60	22	CRL 42 12-L
42	15	M 52x2	27	34.5	60	27	CRL 42 15-L
42	18	M 52x2	28	34	60	32	CRL 42 18-L
42	22	M 52x2	30	36	60	36	CRL 42 22-L
42	28	M 52x2	30	36	60	41	CRL 42 28-L
42	35	M 52x2	34	35	60	50	CRL 42 35-L

REDUCTION SLEEVE H - SERIES



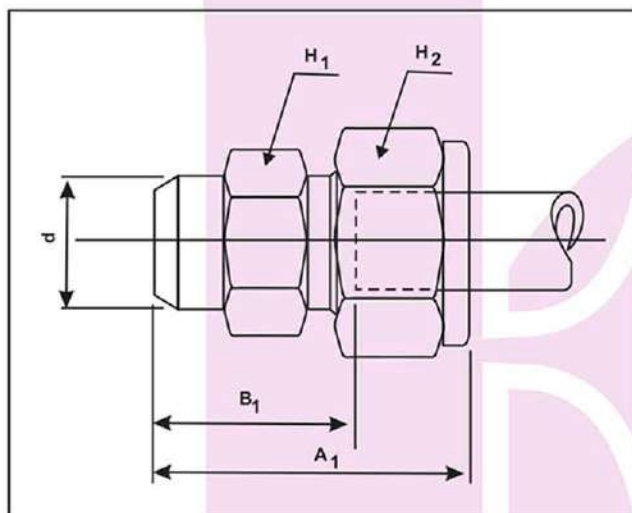
FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Tube O.D. d1	d2	M	A2	B1	H1	H2	Part Number
8	6	M 16x1.5	24	23.5	19	14	CRS 8 6-H
10	6	M 18x1.5	25	26	26	17	CRS 10 6-H
10	8	M 18x1.5	25	26	26	19	CRS 10 8-H
12	6	M 20x1.5	26	27	27	14	CRS 12 6-H
12	8	M 20x1.5	26	27	27	17	CRS 12 8-H
12	10	M 20x1.5	27	26.5	26.5	22	CRS 12 10-H
15	6	M 22x1.5	26	29	29	14	CRS 14 6-H
15	8	M 22x1.5	26	29	29	17	CRS 14 8-H
15	10	M 22x1.5	27	28.5	28.5	19	CRS 14 10-H
15	12	M 22x1.5	27	28.5	28.5	24	CRS 14 12-H
18	6	M 24x1.5	26	29	29	17	CRS 16 6-H
18	8	M 24x1.5	26	29	29	19	CRS 16 8-H
18	10	M 24x1.5	27	28.5	28.5	22	CRS 16 10-H
18	12	M 24x1.5	27	28.5	28.5	24	CRS 16 12-H
18	15	M 24x1.5	30	30	30	27	CRS 16 15-H
22	6	M 30x2	27	34	36	17	CRS 20 6-H
22	8	M 30x2	27	34	36	19	CRS 20 8-H
22	10	M 30x2	28	33.5	36	22	CRS 20 10-H
22	12	M 30x2	28	33.5	36	24	CRS 20 12-H
22	15	M 30x2	31	35	36	27	CRS 20 15-H
22	18	M 30x2	31	34.5	36	32	CRS 20 18-H

Tube O.D. d1	d2	M	A2	B1	H1	H2	Part Number
25	6	M 36x2	28	26.5	46	17	CRS 25 6-L
25	8	M 36x2	28	26.5	46	19	CRS 25 8-L
25	10	M 36x2	29	27.5	46	22	CRS 25 10-L
25	12	M 36x2	29	27.5	46	24	CRS 25 12-L
25	14	M 36x2	32	28.5	46	27	CRS 25 14-L
25	16	M 36x2	32	28	46	30	CRS 25 16-L
25	20	M 36x2	35	30	46	36	CRS 25 20-L
30	6	M 45x2	27	31.5	50	17	CRS 30 6-L
30	8	M 45x2	27	31.5	50	19	CRS 30 8-L
30	10	M 45x2	28	32.5	50	22	CRS 30 10-L
30	12	M 45x2	28	32.5	50	24	CRS 30 12-L
30	14	M 45x2	28	33.5	50	27	CRS 30 14-L
30	16	M 45x2	31	33	50	30	CRS 30 16-L
30	20	M 45x2	35	35	50	36	CRS 30 20-L
30	25	M 45x2	38	35	50	46	CRS 30 25-L
38	6	M 52x2	27	43	60	17	CRS 38 6-L
38	8	M 52x2	27	43	60	19	CRS 38 8-L
38	10	M 52x2	28	42.5	60	22	CRS 38 10-L
38	12	M 52x2	28	42.5	60	24	CRS 38 12-L
38	15	M 52x2	31	44	60	27	CRS 38 14-L
38	18	M 52x2	31	43.5	60	30	CRS 38 16-L
38	22	M 52x2	35	43.5	60	36	CRS 38 20-L
38	28	M 52x2	38	44	60	46	CRS 38 25-L
38	30	M 52x2	41	44.5	60	50	CRS 38 30-L



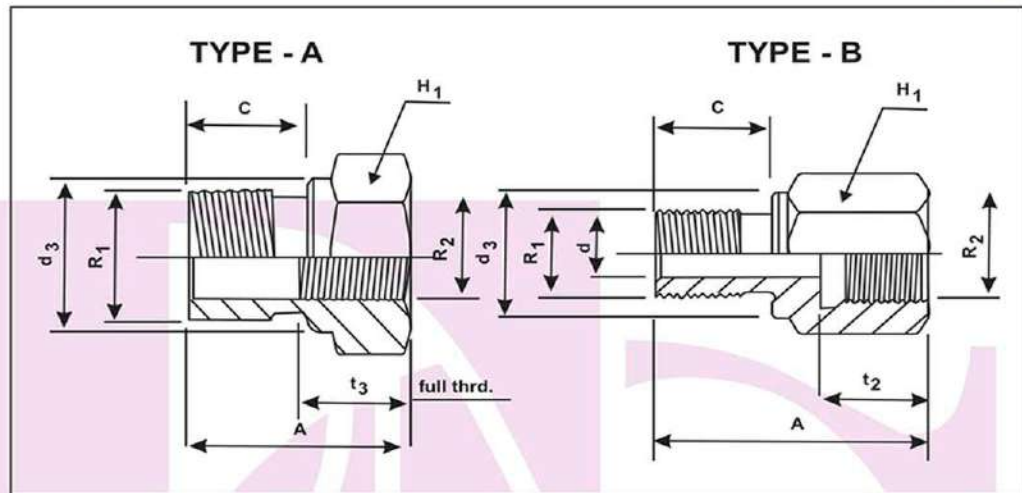
WELDING CONNECTOR



FOR METRIC SIZE OUTSIDE DIAMETER TUBING

Series	Tube O.D.	H2	H2	B1	A1	d	Part Number
L MEDIUM NP 250	6	12	14	14	29	10	CW 6-L
	8	14	17	16	31	12	CW 8-L
	10	17	19	18	33	14	CW 10-L
	12	19	22	18	33	16	CW 12-L
	15	22	27	22	37	19	CW 15-L
NP 160	18	27	32	23.5	40	22	CW 18-L
	22	32	36	28.5	45	27	CW 22-L
NP 100	28	41	41	30.5	47	32	CW 28-L
	35	46	50	32.5	54	40	CW 35-L
	42	55	60	35	58	46	CW 42-L
H HEAVY NP 640	6	14	17	19	34	11	CW 6-H
	8	17	19	21	36	13	CW 8-H
	10	19	22	22.5	39	15	CW 10-H
	12	22	24	24.5	41	17	CW 12-H
	14	24	27	27	45	19	CW 14-H
NP 400	16	27	30	26.5	45	21	CW 16-H
	20	32	36	29.5	51	26	CW 20-H
	25	41	44.5	32	56	31	CW 25-H
NP 250	30	44.5	50	35.5	62	36	CW 30-H
	38	55	60	38	69	44	CW 38-H

MALE / FEMALE REDUCING ADAPTOR

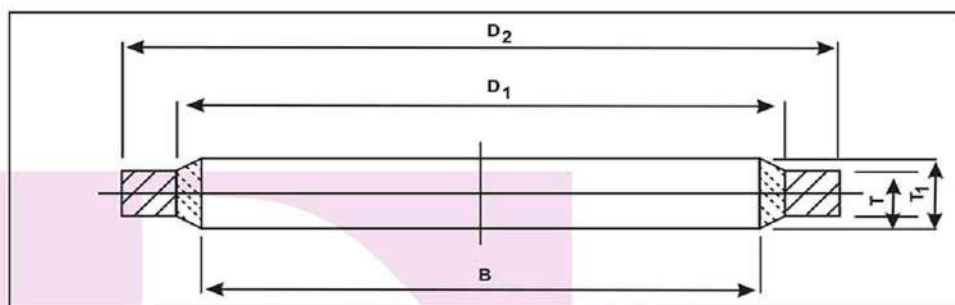


FOR METRIC SIZE OUTSIDE DIAMETER TUBING

B.S.P. (M) R1	B.S.P. (F) R2	Type	A	C	H1	d	d	t2	t3	Part Number
1/8"	1/4"	B	31	8	19	4	14	17	—	RI 1/8" x 1/4"
1/8"	3/8"	B	32	8	24	4	14	17	—	RI 1/8" x 3/8"
1/4"	1/8"	B	28	12	19	5	18	12	—	RI 1/4" x 1/8"
1/4"	3/8"	B	36	12	24	5	18	17	—	RI 1/4" x 3/8"
1/4"	1/2"	B	40	12	30	5	18	20	—	RI 1/4" x 1/2"
1/4"	3/4"	B	43	12	36	5	18	22	—	RI 1/4" x 3/4"
3/8"	1/8"	A	22.5	12	22	—	22	—	8	RI 3/8" x 1/8"
3/8"	1/4"	B	36	12	22	8	22	17	—	RI 3/8" x 1/4"
3/8"	1/2"	B	41	12	30	8	22	20	—	RI 3/8" x 1/2"
3/8"	3/4"	B	44	12	36	8	22	22	—	RI 3/8" x 3/4"
1/2"	1/4"	A	24	14	27	—	26	—	12	RI 1/2" x 1/4"
1/2"	3/8"	B	36	14	27	12	26	17	—	RI 1/2" x 3/8"
1/2"	3/4"	B	46	14	36	12	26	22	—	RI 1/2" x 3/4"
1/2"	1"	B	49	14	41	12	26	24.5	—	RI 1/2" x 1"
1/2"	1 1/2"	B	53	14	55	10	26	26.5	—	RI 1/2" x 1 1/2"
3/4"	1/4"	A	26	16	32	—	32	—	12	RI 3/4" x 1/4"
3/4"	3/8"	A	26	16	32	—	32	—	12	RI 3/4" x 3/8"
3/4"	1/2"	B	41	16	32	16	32	20	—	RI 3/4" x 1/2"
3/4"	1"	B	51	16	41	16	32	24.5	—	RI 3/4" x 1"
3/4"	1 1/4"	B	55	16	55	16	32	26.5	—	RI 3/4" x 1 1/4"
3/4"	1 1/2"	B	57	16	60	16	32	28.5	—	RI 3/4" x 1 1/2"
1"	1/4"	A	29	18	41	—	39	—	12	RI 1" x 1/4"
1"	3/8"	A	29	18	41	—	39	—	12	RI 1" x 3/8"
1"	1/2"	A	29	18	41	—	39	—	14	RI 1" x 1/2"
1"	3/4"	B	47	18	41	20	39	22	—	RI 1" x 3/4"
1"	1 1/2"	B	57	18	55	20	39	26.5	—	RI 1" x 1 1/2"
1"	1 1/2"	B	59	18	60	20	39	28.5	—	RI 1" x 1 1/2"
1 1/4"	1/2"	A	32	20	50	—	49	—	14	RI 1 1/4" x 1/2"
1 1/4"	3/4"	A	32	20	50	—	49	—	16	RI 1 1/4" x 3/4"
1 1/4"	1"	B	52	20	50	25	49	24.5	—	RI 1 1/4" x 1"
1 1/4"	1 1/2"	B	60	20	50	25	49	28.5	—	RI 1 1/4" x 1 1/2"
1 1/2"	1/2"	A	36	22	55	—	55	—	14	RI 1 1/2" x 1/2"
1 1/2"	3/4"	A	36	22	55	—	55	—	16	RI 1 1/2" x 3/4"
1 1/2"	1"	B	36	22	55	—	55	—	18	RI 1 1/2" x 1"
1 1/2"	1 1/4"	B	58	22	55	32	55	26.5	—	RI 1 1/2" x 1 1/4"



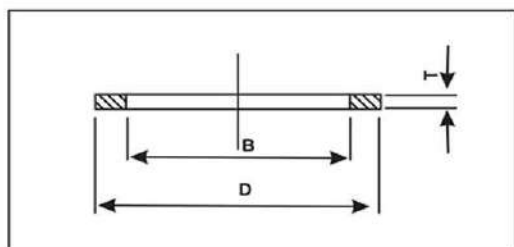
BONDED SEALS



Thread						
B.S.P.	U.N.C.	B	D1	D2	T1	T2
	1.4"	6.9	8.0	13.2	1.25	1.85
	5/16"	8.3	9.5	13.4	1.25	1.85
1/8"	3/8"	10.3	11.8	16.2	2.00	2.80
	7/16"	11.7	13.0	19.0	2.00	2.80
1/4"	1/2"	13.7	15.2	20.6	2.00	2.80
	5/8"	16.5	18.6	25.5	2.00	2.80
3/8"	3/4"	17.2	18.8	23.9	2.00	2.80
	13/16"	19.7	21.2	27.0	2.50	3.30
1/2"	7/8"	21.5	23.0	28.6	2.50	3.30
5/8"	1"	23.5	26.0	31.8	2.50	3.30
3/4"	1 1/8"	27.0	28.5	35.0	2.50	3.30
	1 1/4"	29.3	31.0	36.6	3.00	3.30
	1 1/2"	32.6	35.7	41.5	3.00	3.80
1"	1 3/4"	33.8	36.8	42.8	3.00	3.80
	2"	36.0	40.0	44.5	3.00	3.80
1 1/4"	1 3/8"	39.0	42.0	47.7	3.00	3.80
	1 1/2"	43.0	46.0	52.5	3.00	3.80
1 1/2"	1 3/4"	45.3	48.5	57.0	3.00	3.80
	1 7/8"	48.5	51.5	58.8	3.00	3.80
2"	2"	51.7	54.7	63.5	3.00	3.80
		60.5	63.5	73.0	3.00	3.80

FOR METRIC SIZE OUTSIDE DIAMETER TUBING

COPPER WASHERS (TO DIN 7603)



B.S.P.	B	D	D
1/8"	10 + 0.3	13.9 - 0.2	1 ± 0.1
1/4"	13.5 + 0.3	17.9 - 0.2	1.5 ± 0.15
3/8"	17.2 + 0.3	20.9 - 0.2	1.5 ± 0.15
1/2"	21.2 + 0.3	25.9 - 0.2	1.5 ± 0.15
5/8"	23.3 + 0.3	27.9 - 0.2	2 ± 0.2
3/4"	27.3 + 0.3	31.9 - 0.2	2 ± 0.2
1"	33.3 + 0.3	38.9 - 0.2	2 ± 0.2
1 1/4"	42.3 + 0.3	48.9 - 0.2	2 ± 0.2
1 1/2"	48.3 + 0.3	54.9 - 0.2	2 ± 0.2
2"	60.5 + 0.5	67.8 - 0.3	2 ± 0.2

UNIQUAL JOINTS & UNIQUE CONFIGURATIONS

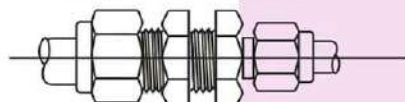


A large variety of Unequal joint like Unequal Straight, Elbow, Tee & Cross Couplings, Unequal Bulkhead Union & Unequal Bulkhead Elbow Unibow Unions.

Unequal Straight Coupling

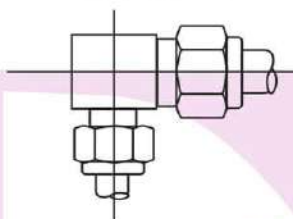


Unequal Bulkhead Union

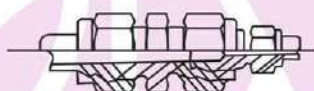


These joints can be obtained by using Reduction Sleeve (Page 32, 33) along with Equal Coupling.

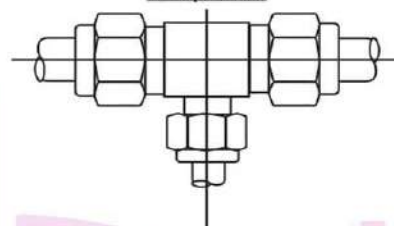
Unequal Elbow



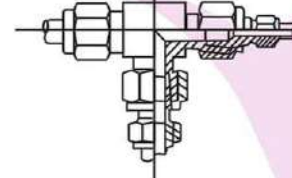
Straight Coupling with Reduction Sleeve



Unequal Tee



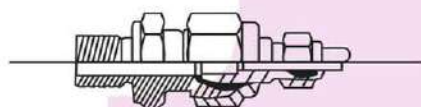
Equal Tee with different Reduction Sleeves



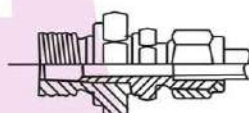
Items not in our regular manufacturing programs have comparatively longer deliveries depending on the quantities required. It is understood that not every fitting shown here in is carried in our stock. If non standard fitting are required in small quantities or to bridge your difficulties we suggest to use combinations of our standing items.

Non standards connectors which are not in our regular manufacturing programs can be made with to combinations. A stud coupling with a combination of pipes O.D. and stud end thread not listed in our catalogue can be obtained in either of two ways.

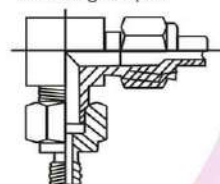
1. By using a coupling with requited pipe O.D in conjunction with a suitable Male/Female Reducing Adaptor (Page 35)



Stud Coupling with Reducing Adaptor



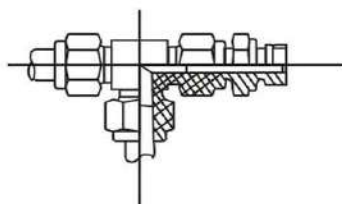
Taper Stud Elbow with Reducing Adaptor



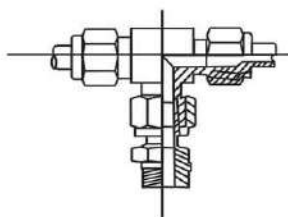
2. By taking a coupling with stud end thread required and using a reduction sleeve (Page 32, 33) to fit the pipe end (this is suggested only when the pipe O.D required is less than listed as standard for the stud end thread)

Regarding requirements of no standard stud Elbows, Tees and Swivel Elbows, Tees, the use of Standpipe Adaptors (Page 20) is invariably preferred for use in combination with Equal Elbows & Tees. Different Stand Pipe Adaptor can be used with Equal Tees & Crosses.

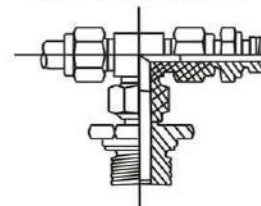
EQUAL TEE WITH STANDPIPE ADAPTOR ON THE RUN SIDE

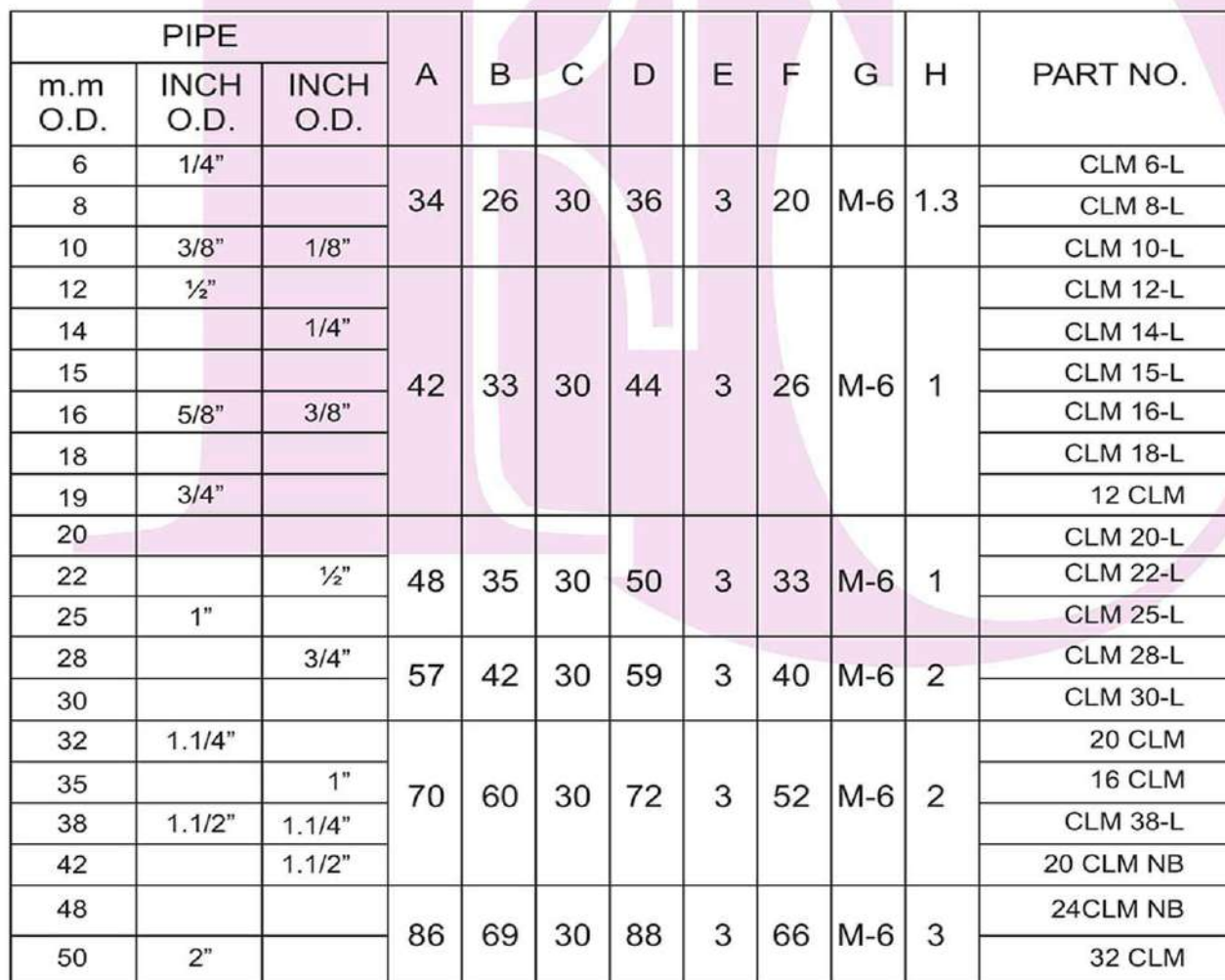


EQUAL TEE WITH STANDPIPE ADAPTOR ON THE BRANCH SIDE

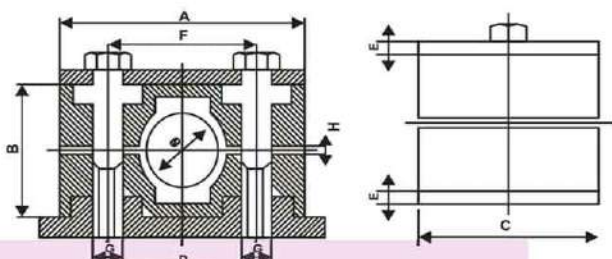


EQUAL TEE WITH DEFERENT STANDPIPE ADAPTOR





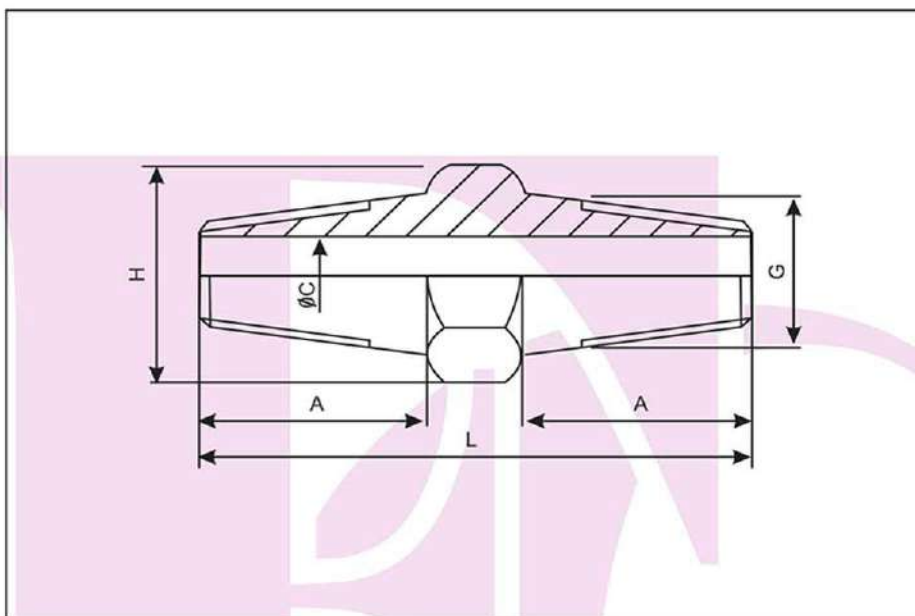
FLOW CONTROL
All Types of
Hydraulic
Fitting & Values



PIPE			A	B	C	D	E	F	G	H	PART NO.
m.m O.D.	INCH O.D.	INCH O.D.									
6	1/4"		55	32	32	70	6	33	M.10	2	CLM 6-H
8											CLM 8-H
10	3/8"	1/8"									CLM 10-H
12	1/2"										CLM 12-H
14		1/4"									CLM 14-H
15											CLM 15-H
16	5/8"	3/8"									CLM 16-H
18											CLM 18-H
20	3/4"		70	48	32	84	6	45	M.10	2	CLM 20-H
22	7/8"	1/2"									CLM 22-H
25	1"										CLM 25-H
28		3/4"									CLM 28-H
30	1.1/4"		84	60	32	100	6	60	M.10	2	CLM 30-H
35		1"									CLM 35-H
38	1.1/4"										CLM 38-H
42		1.1/4"	115	90	45	152	10	90.5	M.12	3	CLM 42-H
50	2"	1.1/2"									CLM 50-H
60		2"									CLM 60-H
-	2.1/2"	-									32 CLM NB
65											CLM 40-H
70			152	120	60	200	10	122	M.16	3.5	CLM 70-H
-		2.1/2"									40 CLM NB
75	3"										48 CLM NB
-	3.1/2"	3"									48 CLM NB
90											CLM 90-H
100	4"	3.1/2"	205	170	80	270	15	163	M.20	4.5	56 CLM NB
	4.1/2"	4"									64 CLM NB
	5.1/2"	5"									80 CLM NB
150	6"	5.1/2"	250	200	90	310	15	205	M.24	4.5	88 CLM NB
-	6.1/2"	6"									96 CLM NB

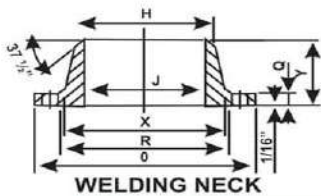


HEXAGONAL NIPPLE

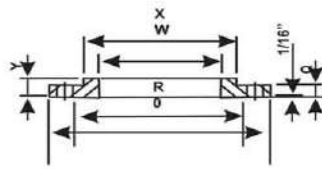


THREAD G CONICAL		SERIES				2000 LBS 140 BAR	3000 LBS 210 BAR	6000 LBS 420 BAR
		A	H	L	SW SUR PLATS	C		
R-INCH	MM	MM						
1/8	6	11	16,2	29	14	5		
1/4	8	16	16,2	39	14	7	6,8	
3/8	10	16	21,9	40	19	10	9,2	
½	15	18	25,9	46	22	14	12,5	6,8
3/4	20	20	31,2	51	27	19	16,0	9,2
1	25	23	34,7	57	30	25	21,0	12,5
1 1/4	32	25	47,3	65	41	34	27,0	16,0
1 ½	40	25	53,1	66	46	39	35,0	21,0
2	50	26	63,5	70	55	51	41,0	27,0
2 ½	65	32	75,5	84	65	60	52,0	35,0
3	80	34	92,4	90	80	73	63,0	41,0
4	100	36	116,0	104	100	97	78,0	52,0

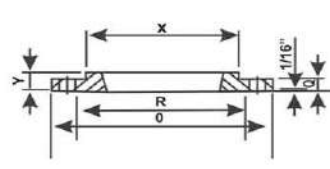
PIPE FLANGES



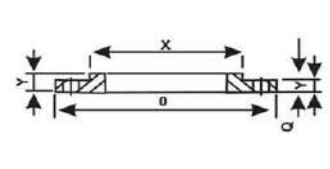
WELDING NECK



SLIP-ON



THREADED



LAP JOINT

150 L. B. FLANGES

NORMAL PIPE SIZE	OUTSIDE DIA OF FLANGE	MINIMUM THICKNESS OF FLANGE	OVERALL LENGTH			BOLD CIRCLE	NO. AND SIZE OF HOLES	O. D. OF RAISED FACE
			WELDING NECK	SLIP-ON & SOCKET WELDING	LAP JOINT			
	O	Q	Y			DIAM.	NO. DIA	R
1/2	89	11.2	47.6	22.2	15.9	60.5	4 15	35
3/4	98	12.7	52.4	25.4	15.9	70.0	4 15	43
1	108	14.3	55.6	27.0	17.5	79.5	4 15	51
1.1/4	117	15.9	57.2	27.0	20.6	89.0	4 15	64
1.1/2	127	17.5	61.9	30.2	22.2	98.5	4 15	73
2	152	19.1	63.5	33.3	25.4	120.5	4 19	92
2.1/2	178	22.3	69.8	38.1	28.6	139.5	4 19	105
3	190	23.9	69.8	42.9	30.2	152.5	4 19	127
3.1/2	216	23.9	71.4	44.5	31.8	178.0	8 19	140
4	229	23.9	76.2	47.6	33.3	190.5	8 19	157
5	254	23.9	88.9	50.8	36.5	216.0	8 22	186
6	279	25.4	88.9	52.4	39.7	241.5	8 22	216
8	343	28.6	101.6	61.9	44.4	298.5	8 22	270
10	406	30.2	101.6	66.7	49.2	362.0	12 25	324
12	483	31.8	114.3	73.0	55.6	432.0	12 25	381
14	533	35.0	127.0	76.2	79.4	476.0	12 29	413
16	597	36.6	127.0	82.6	87.3	539.5	16 29	470
18	635	39.7	139.7	88.9	96.8	578.0	16 32	533
20	698	42.9	144.5	95.2	103.2	635.0	20 32	584
24	813	47.7	152.4	106.4	111.1	749.5	20 35	692

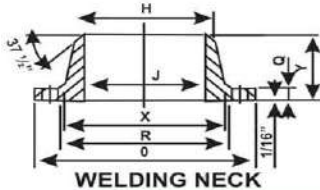
300 L. B. FLANGES

NORMAL PIPE SIZE	OUTSIDE DIA OF FLANGE	MINIMUM THICKNESS OF FLANGE	OVERALL LENGTH			BOLD CIRCLE	NO. AND SIZE OF HOLES	O. D. OF RAISED FACE
			WELDING NECK	SLIP-ON & SOCKET WELDING	LAP JOINT			
	O	Q	Y			DIAM.	NO. DIA	R
1/2	95	14.3	52.4	22.2	22.2	66.5	4 15	35
3/4	117	15.9	57.2	25.4	25.4	82.5	4 19	43
1	124	17.5	61.9	27.0	27.0	89.0	4 19	51
1.1/4	133	19.1	65.1	27.0	27.0	98.5	4 19	64
1.1/2	156	20.7	68.3	30.2	30.2	114.5	4 22	73
2	165	22.3	69.8	33.3	33.3	127.0	8 19	92
2.1/2	190	25.4	76.2	38.1	38.1	149.0	8 22	105
3	210	28.6	79.4	42.9	42.9	168.0	8 22	127
3.1/2	229	30.2	81.0	44.5	44.5	184.0	8 22	140
4	254	31.8	85.7	47.6	47.6	200.0	8 22	157
5	279	35.0	98.4	50.8	50.8	235.0	8 22	186
6	313	36.6	98.4	52.4	52.4	270.0	12 22	216
8	381	41.3	111.1	61.9	61.9	330.0	12 25	270
10	444	47.7	117.5	66.7	95.3	387.5	16 29	324
12	521	50.8	130.2	73.0	101.6	451.0	16 32	381
14	584	54.0	142.9	76.2	111.1	514.5	20 32	413
16	648	57.2	146.0	82.6	120.7	571.5	20 35	470
18	711	60.4	158.8	88.9	130.2	628.5	24 35	533
20	775	63.5	161.9	95.2	139.7	686.0	24 35	584
24	914	69.9	168.3	106.4	152.4	813.0	24 41	692

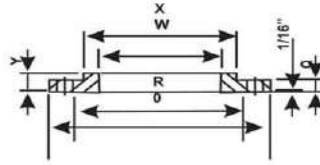
NOTE : ALL THE ABOVE DIMENSION ARE INCHES



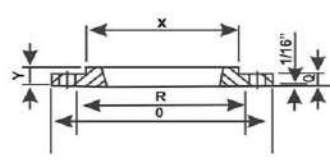
PIPE FLANGES



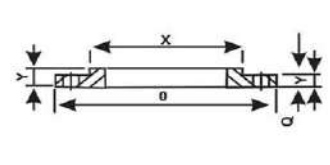
WELDING NECK



SLIP-ON



THREADED



LAP JOINT

600 L. B. FLANGES

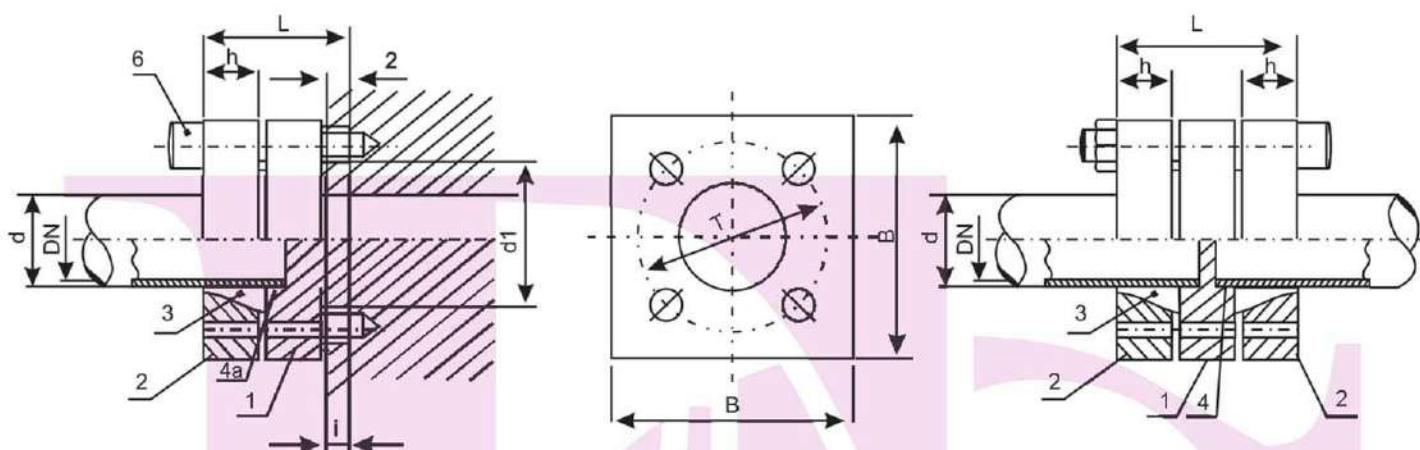
NORMAL PIPE SIZE	OUTSIDE DIA OF FLANGE	MINIMUM THICKNESS OF FLANGE	OVERALL LENGTH			BOLD CIRCLE	NO. AND SIZE OF HOLES	O. D. OF RAISED FACE
			WELDING NECK	SLIP-ON & SOCKET WELDING	LAP JOINT			
	O	Q	Y			DIAM.	NO. DIA	R
1/2	95	14.3	52.4	22.2	22.2	66.5	4 15	35
3/4	117	15.9	57.4	25.4	25.4	82.5	4 19	43
1	124	17.5	61.9	27.0	27.0	89.0	4 19	51
1.1/4	133	20.7	66.7	28.6	28.6	98.5	4 19	64
1.1/2	156	22.3	69.8	31.8	31.8	114.5	4 22	73
2	165	25.4	73.0	36.5	36.5	127.0	8 19	92
2.1/2	190	28.6	79.4	41.3	41.3	149.0	8 22	105
3	210	31.8	82.6	46.0	46.0	168.0	8 22	127
3.1/2	229	35.0	85.7	49.2	49.2	184.0	8 25	140
4	273	38.1	101.6	54.0	54.0	216.0	8 25	157
5	330	44.5	114.3	60.3	60.3	266.5	8 29	186
6	356	47.7	117.5	66.7	66.7	292.0	12 29	216
8	419	55.6	133.4	76.2	76.2	349.0	12 32	270
10	508	63.5	152.4	85.7	115.1	432.0	16 35	324
12	559	66.7	155.6	92.1	111.1	489.0	20 35	381
14	603	69.9	165.1	93.7	117.5	527.0	20 38	413
16	686	76.2	177.8	106.4	127.0	603.0	20 41	470
18	743	82.6	184.2	117.6	139.7	654.0	250 45	533
20	813	88.9	190.5	127.0	165.1	724.0	24 45	584
24	940	101.6	302.2	139.7	184.2	838.0	24 51	692

900 L. B. FLANGES

NORMAL PIPE SIZE	OUTSIDE DIA OF FLANGE	MINIMUM THICKNESS OF FLANGE	OVERALL LENGTH			BOLD CIRCLE	NO. AND SIZE OF HOLES	O. D. OF RAISED FACE
			WELDING NECK	SLIP-ON & SOCKET WELDING	LAP JOINT			
	O	Q	Y			DIAM.	NO. DIA	R
1/2	121	22.3	60.3	31.8	31.8	82.5	4 22	35
3/4	130	25.4	69.8	34.9	34.9	89.0	4 22	43
1	149	28.6	73.0	41.3	41.3	101.5	4 25	51
1.1/4	159	28.6	73.0	41.3	41.3	111.0	4 25	64
1.1/2	178	31.8	82.6	44.4	44.4	124.0	4 29	73
2	216	38.1	101.6	57.2	57.2	165.0	8 25	92
2.1/2	244	41.3	104.8	36.5	36.5	190.5	8 29	105
3	241	38.1	101.6	54.0	54.0	190.5	8 25	127
3.1/2								
4	292	44.5	114.3	69.8	69.8	235.0	8 32	157
5	349	50.8	127.0	79.4	79.4	279.5	8 35	186
6	381	55.6	139.7	85.7	85.7	317.5	12 32	216
8	470	68.5	161.9	101.8	114.3	393.5	12 38	270
10	546	69.9	184.2	108.0	127.0	470.0	16 38	324
12	610	79.4	200.0	117.5	142.9	533.5	20 38	381
14	641	85.8	212.7	130.2	155.6	559.0	20 41	413
16	705	88.9	215.8	133.4	165.1	161.0	20 45	470
18	787	101.6	228.6	125.4	190.5	686.0	20 51	533
20	857	108.0	247.6	158.8	209.6	749.5	20 54	584
24	1041	139.7	292.1	203.2	266.7	901.5	20 67	692

NOTE : ALL THE ABOVE DIMENSION ARE INCHES

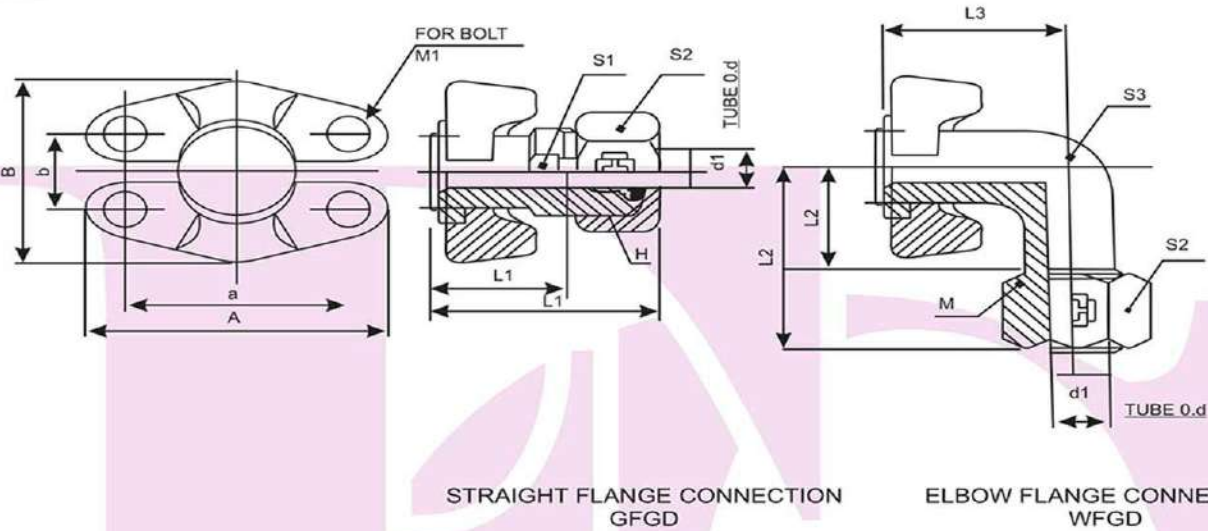
SQUARE FLANGE



DN	B	h	T	d1	i	L	SCREWS DN 912/10.9	O - RING	WEIGHT	ORDER	EXAMPLE: d X WALL PN 160 BAR	THICKNESS PN 250 BAR
16	60	19	54	38	42	65	M10 X 60 M10 X 75	25.3 X 2.4	1.1 1.5	SFG SFG	20 X 2.0	20 X 2.5
19	60	19	54	38	42	65	M10 X 60 M10 X 75	25.3 X 2.4	1.1 1.5	SFG SFG	25 X 3.0	25 X 3.0
24	70	19	64	46	42	65	M12 X 60 M12 X 80	29.8 X 2.6	1.4 2.8	SFG SFG	30 X 3.0	30 X 4.0
30	80	24	72	55	52	80	M12 X 70 M12 X 90	34.5 X 2.6	2.2 3.4	SFG SFG	38 X 4.0	38 X 5.0
38	80	29	80	60	62	95	M16 X 80 M16 X 110	46.0 X 3.0	3.1 4.3	SFG SFG	50 X 6.0	50 X 7.0



SAE- FLANGE CONNECTION - 3000 PSI

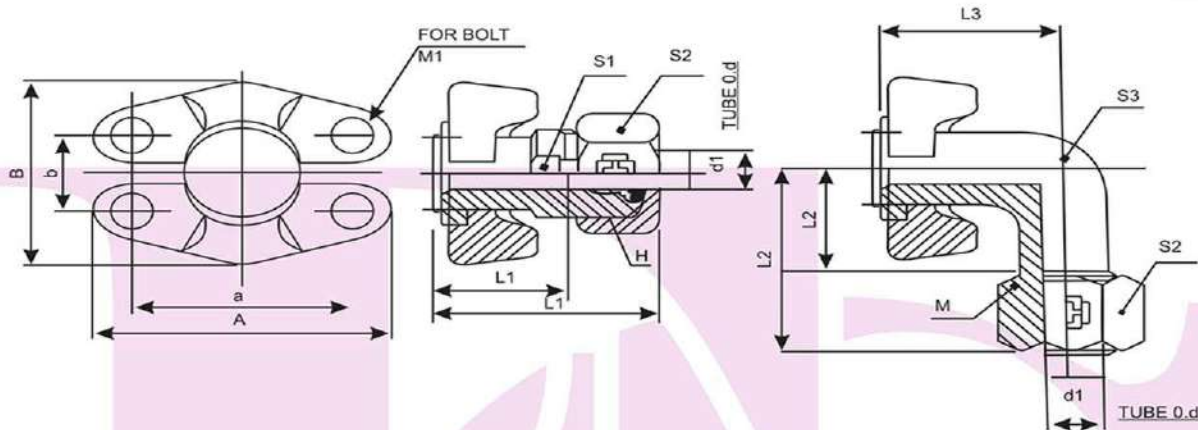


SIZE	TUBE O. D.	A	a	B	b	d1	M	SOCKET HEAD CAP SCREW DIN 912-10.8 M1	O-RING, BUNA - N 90 SHORE A
3/4"	18 - L 22 - L 20 - S 25 - S	65	47.6	52	22.2	15 19 16 17	M26 X 1.5 M30 X 2 M30 X 2 M36 X 2	M10 X 35	25.00 X 3.53
1"	28 - L 30 - S 30 / 400	70	52.4	59	26.2	24 24 19	M36 X 2 M42 X 2 M45 X 2	M10 X 35	32.92 X 3.53
1 1/4"	35 - L 25 - L 30 - S 38 - S 30 / 400 38 / 400	79	58.7	73	30.2	30 20 25 28 19 24	M45 X 2 M36 X 2 M42 X 2 M52 X 2 M45 X 2 M56 X 2	M12 X 40	37.70 X 3.53
1 1/2"	42 - L 38 - S	94	69.9	83	35.7	36 32	M52 X 2 M52 X 2	M12 X 40	47.22 X 3.53

SIZE	TUBE O. D.	PB (BAR)	L1	I1	L2	I2	I3	S1	S2	S3	PART NO.	PART NO.
3/4"	18 - L 22 - L 20 - S 25 - S	160 160 350 350	62 62 68 69	45.5 45.5 46.5 45.0	48 50 54 57	31.5 33.5 32.5 33.0	42	30	32 36 36 46	30	GFGS - 18 - PL GFGS - 22 - PL GFGS - 20 - PS GFGS - 25 - PS	WFGS - 18 - PL WFGS - 22 - PL WFGS - 20 - PS WFGS - 25 - PS
1"	28 - L 30 - S 30 / 400	100 250 350	63 76 86	46.5 49.5 48.0	53 63 80	36.5 36.5 42.0	45	36	41 50 55	36	GFGS - 28 - PL GFGS - 30 - PS GFGS - 30/400	WFGS - 28 - PL WFGS - 30 - PS WFGS - 30/400
1 1/4"	35 - L 25 - L 30 - S 38 - S 30 / 400 38 / 400	100 280 250 250 280 280	69 72 75 81 90 94	47.5 48.0 48.5 50.0 52.0 49.0	68 67 70 74 82 93	46.5 43.0 43.5 43.0 44.0 48.0	50	41 41 41 46 41 46	50 46 50 60 55 70	41	GFGS - 38 - PL GFGS - 25 - PL GFGS - 30 - PS GFGS - 38 - PS GFGS - 30/400 GFGS - 38/400	WFGS - 38 - PL WFGS - 25 - PL WFGS - 30 - PS WFGS - 38 - PS WFGS - 30/400 WFGS - 38/400
1 1/2"	42 - L 38 - S	100 210	76 85	53.0 54.0	70 79	47.0 48.0	55	46	60 60	50	GFGS - 42 - PL GFGS - 38 - PS	WFGS - 42 - PL WFGS - 38 - PS

NOTE : ALL DIMENSION ARE IN MM

SAE- FLANGE CONNECTION - 6000 PSI



STRAIGHT FLANGE CONNECTION
GFGD

ELBOW FLANGE CONNECTION
WFGD

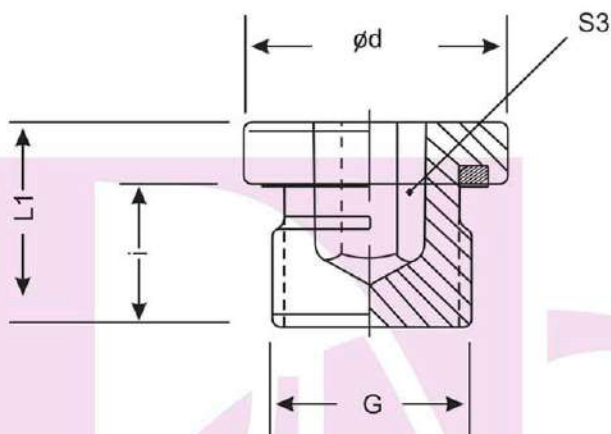
SIZE	TUBE O. D.	A	a	B	b	d1	M	SOCKET HEAD CAP SCREW DIN 912-10.8 M1	O-RING, BUNA - N 90 SHORE A
3/4"	16 - L 20 - S 25 - S	71	50.8	60	23.8	12 16 17	M24 X 1.5 M30 X 2 M36 X 2	M10 X 35	25.00 X 3.53
1"	25 - L 30 - S 30 / 400	81	57.2	70	27.8	20 24 19	M36 X 2 M42 X 2 M45 X 2	M12 X 35	32.92 X 3.53
1 1/4"	30 - S 38 / 400 38 - S 38/400	95	66.7	77	31.8	25 19 30 24	M42 X 2 M45 X 2 M52 X 2 M56 X 2	M14 X 50	37.70 X 3.53
1 1/2"	42 - L 38 - S	113	79.4	95	36.5	30 24	M52 X 2 M56 X 2	M16 X 55	47.22 X 3.53

SIZE	TUBE O. D.	PB (BAR)	L1	I1	L2	I2	I3	S1	S2	S3	PART NO.	PART NO.
3/4"	16 - S 20 - S 25 - S	400	69 72 75	50.5 50.5 51.0	55 57 60	36.5 35.5 36.0	48	30	30 36 46	32	GFGS / 16 - PS GFGS / 20 - PS GFGS / 25 - PS	WFGS / 16 - PS WFGS / 20 - PS WFGS / 25 - PS
1"	25 - S 30 - S 30 / 400	400 250 400	84 87 97	60.0 60.5 59.0	65 68 82	41.0 41.5 44.0	60	36	41 50 55	41	GFGS / 25 - PS GFGS / 30 - PS GFGS / 30/400	WFGS / 25 - PS WFGS / 30 - PS WFGS / 30/400
1 1/4"	30 - S 30 / 400 38 - S 38 / 400	250 400 250 400	92 104 98 111	65.5 66.0 67.0 66.0	71 83 76 94	44.5 45.0 45.0 49.0	68	41 41 46 41 46	50 46 50 60 55 70	46	GFGS / 30 - PS GFGS / 30/400 GFGS / 38 - PS GFGS / 38/400	WFGS / 30 - PS WFGS / 30/400 WFGS / 38 - PS WFGS / 38/400
1 1/2"	38 - S 38/400	250 400	104 117	73.0 72.0	87 102	56.0 57.0	76	46	60 60	50	GFGS / 38 - PS GFGS / 38/400	WFGS / 38 - PS WFGS / 38/400

NOTE : ALL DIMENSION ARE IN MM

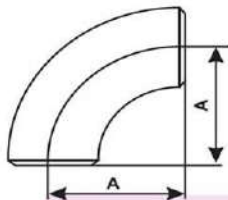
VSTI PLUG

hydraulic-socket-head-blanking-plugs-type-vsti-g-jpg

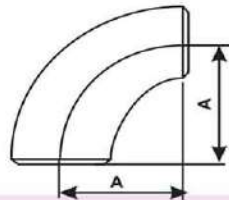


Part No.	G Male Thread BSPP	O d4	I	L1	S3
VSTIG01E	G 1/8	14	8	13	5
VSTIG01E	G 1/8	19	12	17	6
VSTIG01E	G 1/8	22	12	17	8
VSTIG01E	G 1/8	27	14	20	10
VSTIG01E	G 1/8	32	16	22	12
VSTIG01E	G 1/8	40	16	24	17
VSTIG01E	G 1/8	50	16	24	22
VSTIG01E	G 1/8	55	16	24	24

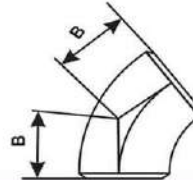
BUTT-WELD FITTING



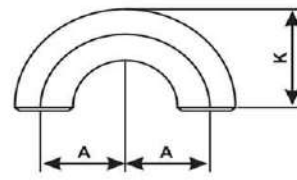
90° LONG RAD.
ELBOW



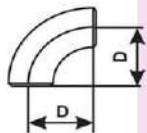
90° REDUCING
L. R. ELBOW



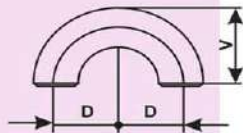
45° LONG RAD.
ELBOW



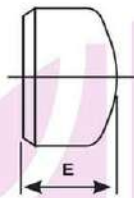
180° LONG RADIUS
ELBOW



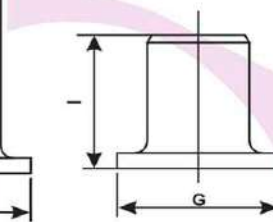
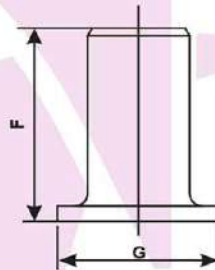
90° SHORT RAD.
ELBOW



180° SHORT RAD.
ELBOW



CAP



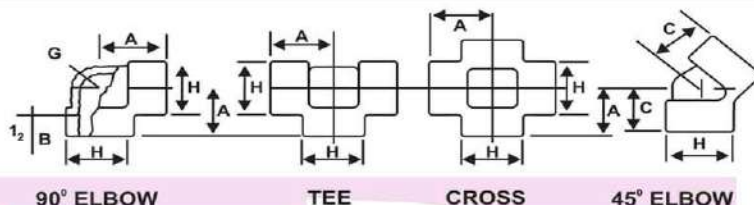
LAP JOINT
STUB ENDS

NOM. PIPE SIZE (INCHES)	PIPE O.D.	ELBOW				CAPS	STUD ENDS (SEE NOT BELOW)							NOM. PIPE SIZE (INCHES)	
		A	B	D	K		V	E	G O.D. OF LAP	TYPE "A"			TYPE B, C, A.		
										F (LENGTH) ANSI STD.	I (LENGTH) MSS STD.	CORNER RADIUS	I (LENGTH) MSS STD.		CORNER RADIUS
½"	0.84	1.50	0.62	—	0.88	—	1.00	1.38	3.00	2.00	0.12	2.00	1/32	½	
¾"	1.05	1.12	0.44	—	1.69	—	1.00	1.69	3.00	2.00	0.12	2.00	1/32	¾	
1"	1.32	1.50	0.88	1.00	2.19	1.62	1.50	2.00	4.00	2.00	0.12	2.00	1/32	1	
1 1/4"	1.66	1.68	1.00	1.25	2.75	2.06	1.50	2.50	4.00	2.00	0.19	2.00	1/32	1 1/4	
1 1/2"	1.90	2.25	1.01	1.50	3.25	2.44	1.50	2.88	4.00	2.00	0.25	2.00	1/32	1 1/2	
2"	2.38	3.00	1.38	2.00	4.19	3.19	1.50	3.62	6.00	2.50	0.31	2.50	1/32	2"	
2 1/4"	2.88	3.75	1.75	2.50	5.19	3.94	1.50	4.12	6.00	2.50	0.31	2.50	1/32	2 1/2	
3"	3.50	4.50	2.00	3.00	6.25	4.75	2.00	5.00	6.00	2.50	0.38	2.50	1/32	3	
1 ½"	4.00	5.25	2.25	3.50	7.25	5.50	2.50	5.50	6.00	3.00	0.38	3.00	1/32	1 1/2	
4"	4.50	6.00	2.50	4.00	8.25	6.25	2.50	6.19	6.00	3.00	0.44	3.00	1/32	4	
5"	5.56	7.50	3.12	6.00	10.31	7.75	3.00	7.31	8.00	3.00	0.44	3.00	1/16	5	
6"	6.62	9.00	3.75	6.00	12.31	9.31	3.50	8.50	8.00	3.50	0.50	3.50	1/16	6	
8"	8.62	12.00	5.00	8.00	16.31	12.31	4.00	10.62	8.00	4.00	0.50	4.00	1/16	8	
10"	10.75	15.00	6.25	10.00	20.38	15.38	5.00	12.75	10.00	5.00	0.50	5.00	1/16	10	
12"	12.75	18.00	7.50	12.75	24.38	18.38	6.00	15.00	10.00	6.00	0.50	6.00	1/16	12	
14"	14.00	21.00	8.75	14.00	28.00	21.00	6.50	16.25	12.00	—	0.50	—	—	14	
16"	16.00	24.00	10.00	16.00	32.00	24.00	7.00	18.50	12.00	—	0.50	—	—	16	
18"	18.00	27.00	11.25	18.00	36.00	27.00	8.00	21.00	12.00	—	0.50	—	—	18	
20"	20.00	30.00	12.50	20.00	40.00	30.00	9.00	23.00	12.00	—	0.50	—	—	20	
22"	22.00	33.00	13.50	22.00	44.00	33.00	10.50	25.25	12.00	—	0.50	—	—	22	
24"	24.00	36.00	15.00	24.00	48.00	36.00	10.50	27.50	—	—	0.50	—	—	24	

NOTE: 1) ALL THE ABOVE DIMENSIONS ARE IN INCHES
2) BUTT WELD FITTINGS FOR NOMINAL BORE PIPE



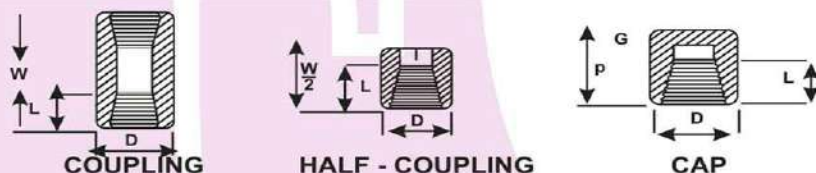
SCREWED FITTING



Normina Pipe Size	Center to End Elbows, Tees, Cross A			Center to End 45° Elbow c			Outside Diameter of Bank H			Minimum Wall Thickness G		Length of Thred Min (1)	
	2000												
1/8"	21	21	25	17	17	19	22	22	25	3.0	3.0	6.5	6.5
1/4"	21	25	29	17	19	22	22	25	33	3.0	3.5	6.6	8.0
3/8"	25	29	33	19	22	25	25	33	38	3.0	3.5	7.0	9.0
1/2"	29	33	38	22	25	29	33	38	46	3.0	4.0	8.0	11.0
3/4"	33	38	44	25	29	33	38	46	56	3.0	4.5	8.5	12.5
1"	38	44	51	29	33	35	46	56	62	3.5	5.0	10.0	14.5
1 1/4"	44	51	60	33	35	43	56	62	75	4.0	5.5	10.5	17.0
1 1/2"	51	60	64	35	43	44	62	75	84	4.0	5.5	11.0	18.0
2"	60	64	83	43	45	52	75	84	102	4.5	7.0	12.0	19.0
2 1/2"	76	83	95	52	52	64	92	102	121	5.5	7.5	15.5	23.5
3"	86	95	106	64	64	79	110	121	146	6.0	9.0	16.5	26.0
4"	106	114	114	79	79	79	146	152	152	6.5	11.0	18.5	27.5

Dimensions are in millimetres

Dimension B is minimum length of perfect thread. The length of useful threads with fully formed roots are flatcrests) shall not be less than L2 (effective length of external thread) required by American National Standard for pipe threads (ANSI B 22.1)



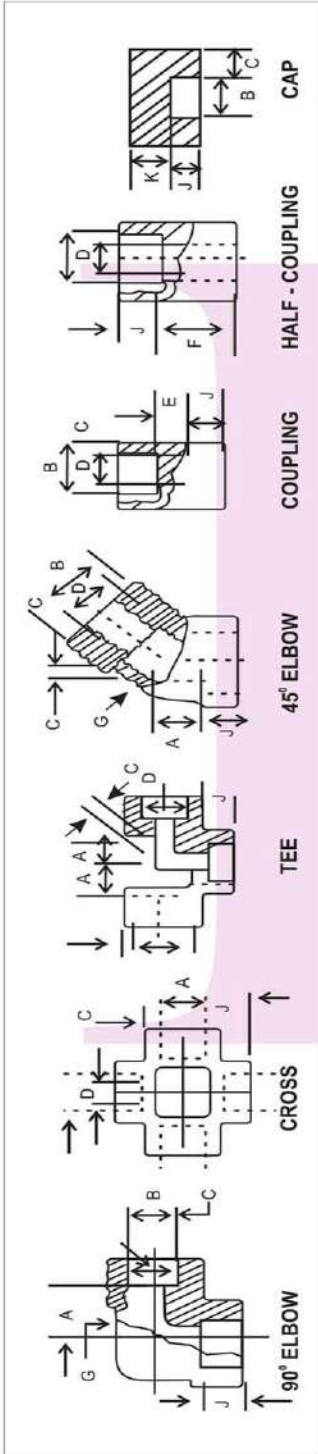
Normina Pipe Size	End to End Couplings W	End to End Caps P		Outside Diameter D		End Wall Thickness G Mini		Length of Thred Min (L)	
	3000 & 6000	3000	6000	3000	6000				
1/8"	32	19		16	22	5.0		6.5	6.5
1/4"	35	25	27	19	25	5.0	6.5	8.0	10.5
3/8"	38	25	27	22	32	5.0	6.5	9.0	10.5
1/2"	48	32	33	29	38	6.5	8.0	11.0	13.5
3/4"	51	37	38	35	44	6.5	8.0	12.5	14.0
1"	60	41	43	44	57	9.5	11.0	14.5	17.5
1 1/4"	67	44	46	57	64	9.5	11.0	17.0	18.0
1 1/2"	79	44	48	64	76	11.5	12.5	18.0	18.5
2"	86	48	51	76	92	12.5	16.5	19.0	19.0
2 1/2"	92	60	64	92	108	16.0	19.0	23.5	29.0
3"	108	65	68	108	127	19.0	22.0	26.0	30.5
4"	121	68	75	140	159	22.0	28.5	27.5	33.0

Dimensions are in millimetres

Dimension B is minimum length of perfect thread. The length of useful threads with fully formed roots are flatcrests) shall not be less than L2 (effective length of external thread) required by American National Standard for pipe threads (ANSI B 22.1)

SOCKET WELD FITTING

FLOW CONTROL
All Types of
Hydraulic
Fitting & Values



American National Standard Forged Steel Fittings, Socket - Welding &
Threaded Steel Socket - Welding Fittings Ansl B 16.11

Non. Pipe Size	Socket Bore Dia ² B	Bore Diameter of Fitting 2			Socket wall thickness - C (1) Pressure Class Designation						Body wall thickness-G Pressure Class Designation			Depth of Socket J	Centre to Bottom of socket - A						Laying Lenth				
		D			3000			6000			9000				3000			6000			9000			Cou- plings	Half Cou- plings
		Pressure Class Designation			Ave.	Min	Ave.	Min	Ave.	Min	3000	6000	9000		3000	6000	9000	3000	6000	9000					
		3000	6000	9000																					E
1/8	10.9	7.6	4.8		3.20	3.20	3.95	3.45					2.40	3.15		10	12	12		9			8	17	
	10.65	6.1	3.2														10	10		7			5	15	
	14.35	10.0	7.1		3.80	3.80	4.60	4.00		3.00			3.70			10	12	17		9			8	17	
	14.10	8.5	5.6														10	13		7			5	15	
	17.80	13.3	9.9		4.0	3.50	5.05	4.35				3.20	4.00		10	15	17		9			9	19		
	17.55	11.8	8.4														12	14		6			3	16	
	21.95	16.6	12.5	7.2	4.65	4.10	5.95	5.20	9.35	8.20	7.45		3.75	4.80		10	17	21	27	13			13	24	
	21.70	15.0	11.0	5.6													14	18		10			6	21	
	27.30	21.7	16.3	11.8	4.90	4.25	6.95	6.05	9.80	8.55	7.80		3.90	5.55		13	21	24	30	14			13	25	
	27.05	20.2	14.8	10.3													18	21		11			6	22	
	34.05	27.4	21.5	16.0	5.70	5.00	7.90	6.95	11.40	9.95	9.10		4.55	6.35		13	24	29	34	16			17	31	
	33.80	25.9	19.9	17.5													20	25		12			9	27	
	24.80	35.8	30.2	23.5	6.05	5.30	7.90	6.95	12.15	10.60	9.70		4.85	6.35		13	29	34	37	19			17	32	
	42.35	34.3	28.7	22.0													25	30	33	15			9	28	
48.90	41.7	34.7	28.7	6.35	5.55	8.90	7.80	12.70	11.15	10.15		5.10	7.15		13	34	40	40	23			17	34		
48.85	40.1	33.2	27.2													30	36	36	19			9	30		
61.35	53.5	43.6	38.9	5.95	6.05	10.90	9.50	13.85	12.15	11.05		5.55	8.75		16	40	43	55	27			23	43		
61.10	51.7	42.1	37.4													36	39		23			15	39		
74.20	64.2			8.75	7.65							7.00			16	44		52	31			24	45		
73.80	61.2															39			27			14	40		
90.15	79.5			9.50	8.30							7.60			16	60			34			24	47		
89.80	46.4			9.50	8.30							7.60				55			29			14	42		
115.80	103.8			10.70	9.35							8.55			19	69			44			24	50		
115.45	100.7			10.70	9.35											64				39		14	45		

Dimensions are in millimeters

1. Average of socket wall thickness around penphery shall not be less than listed values. The minimum values are permitted in localized areas.
2. Upper and lower values for each size the respective maximum and minimum dimension

AMERICAN STANDARD PIPES, TUBES, PIPEFITTING & FANGES

FLOW CONTROL

Manufactures of :

Dorged (Cs, SS) Pipe Fittings, Socket Weld, Butt Weld, Threaded Fittings & Flanges with IBR/Non-IBR in Carbon Steel, Alloy & Stainless Steel under any third party inspection on agencies.

WROUGHT STEEL BUTT-WELDING FITTINGS (Carbon and Allow Steel)

