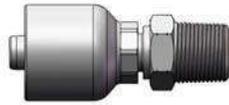




HYDRAULIC HOSE & COUPLINGS

## Braided Hose Couplings

NPTF



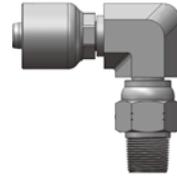
**MP** P28

NPTF RIGID MALE PIPE



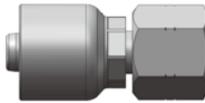
**MPS** P29

NPTF MALE PIPE SWIVEL



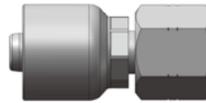
**MPS90** P30

NPTF MALE PIPE SWIVEL 90°



**FP** P31

NPTF FEMALE RIGID PIPE



**FPS** P32

NPTF FEMALE SWIVEL PIPE

JIC 37  
DEGREE  
FLARE



**MJ** P33

MALE JIC



**FJ** P34

FEMALE JIC SWIVEL



**FJ45** P35

FEMALE JIC SWIVEL 45°



**FJ90** P36

FEMALE JIC SWIVEL 90°



**FJ90M** P36

FEMALE JIC SWIVEL 90° M



**FJ90L** P36

FEMALE JIC SWIVEL 90° L

# Braided Hose Couplings

## O-RING FACE SEAL



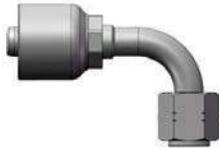
**MF** P37  
MALE O-RING  
FACE SEAL



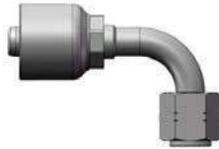
**FF** P38  
FEMALE O-RING  
FACE SEAL



**FF45** P39  
FEMALE O-RING  
FACE SEAL 45°



**FF90** P40  
FEMALE O-RING  
FACE SEAL 90°



**FF90L** P41  
FEMALE O-RING  
FACE SEAL 90° L

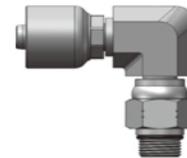
## O-RING BOSS



**MB** P42  
MALE O-RING BOSS



**MBS** P43  
MALE SWIVEL  
O-RING BOSS



**MBS90** P44  
MALE SWIVEL  
90° O-RING BOSS

## O-RING FLANGE



**FL** P45  
CODE 61 FLANGE



**FL22.5** P45  
CODE 61 FLANGE 22.5°



**FL30** P46  
CODE 61 FLANGE 30°

## Braided Hose Couplings



**FL45** P47

CODE 61 FLANGE 45°



**FL60** P48

CODE 61 FLANGE 60°



**FL67.5** P48

CODE 61 FLANGE 67.5°



**FL90** P49

CODE 61 FLANGE 90°

SAE 45  
DEGREE FLARE



**MS** P50

MALE SAE



**FSX** P50

FEMALE SAE

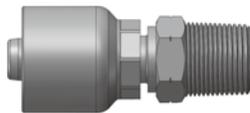


JIS

**FJIS** P51

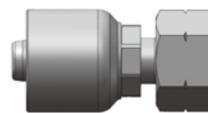
JIS FEMALE SWIVEL  
30° seat

BRITISH



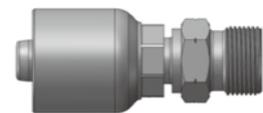
**MBSPT** P52

MALE BRITISH TAPERED  
PIPE



**FBSPP** P53

FEMALE BRITISH PARALLEL  
PIPE 30° seat



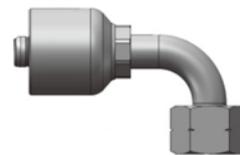
**MBSPP** P54

MALE BRITISH PARALLEL  
PIPE 30° seat



**FBSPP45** P55

FEMALE BRITISH PARALLEL PIPE 45°  
30° seat



**FBSPP90** P56

FEMALE BRITISH PARALLEL PIPE 90°  
30° seat

# Braided Hose Couplings

KOMATSU

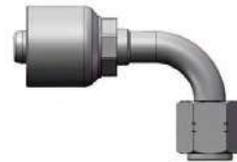
DIN 20078  
LIGHT



**FKS** P57  
KOMATSU FEMALE  
SWIVEL

**MDL** P58  
RIGID MALE MDL -  
DIN 20078 LIGHT

DIN 20078  
LIGHT

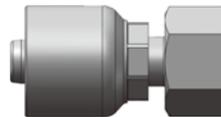


**FDL** P59  
METRIC FEMALE SWIVEL  
DIN 20078 LIGHT -  
W/O-RING

**FDL45** P60  
METRIC FEMALE SWIVEL  
DIN 20078 LIGHT -  
45° W/O-RING

**FDL90** P61  
METRIC FEMALE SWIVEL  
DIN 20078 LIGHT -  
90° W/O-RING

DIN 20078  
HEAVY



**MDH** P62  
RIGID MALE STEM  
DIN 20078 HEAVY

**FDH** P63  
METRIC FEMALE SWIVEL -  
DIN 20078 HEAVY -  
W/O-RING

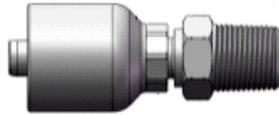


**FDH45** P64  
METRIC FEMALE SWIVEL  
DIN 20078 HEAVY -  
45° W/O-RING

**FDH90** P65  
METRIC FEMALE SWIVEL  
DIN 20078 HEAVY -  
90° W/O-RING

# Spiral Hose Couplings

## NPTF



**MP** P66  
NPTF RIGID MALE PIPE



**MPS** P67  
NPTF MALE PIPE SWIVEL

## JIC 37 DEGREE FLARE



**MJ** P68  
MALE JIC



**FJ** P69  
FEMALE JIC SWIVEL



**FJ45** P70  
FEMALE JIC SWIVEL 45°



**FJ90** P71  
FEMALE JIC SWIVEL 90°

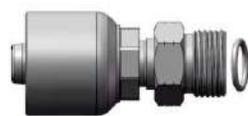


**FJ90M** P71  
FEMALE JIC SWIVEL 90° M



**FJ90L** P72  
FEMALE JIC SWIVEL 90° L

## O-RING FACE SEAL



**MF** P73  
MALE O-RING FACE SEAL



**FF** P74  
FEMALE O-RING FACE SEAL



**FF45** P75  
FEMALE O-RING FACE SEAL 45°

## Spiral Hose Couplings

O-RING  
FACE SEAL



**FF90** P76

FEMALE O-RING  
FACE SEAL 90°



**FF90M** P76

FEMALE O-RING  
FACE SEAL 90° M



**FF90L** P77

FEMALE O-RING  
FACE SEAL 90° L

CODE 61  
O-RING  
FLANGE



**FL** P78

CODE 61 FLANGE



**FL22.5** P79

CODE 61 FLANGE 22.5°



**FL30** P80

CODE 61 FLANGE 30°



**FL45** P81

CODE 61 FLANGE 45°



**FL60** P82

CODE 61 FLANGE 60°



**FL67.5** P83

CODE 61 FLANGE 67.5°



**FL90** P84

CODE 61 FLANGE 90°

# Spiral Hose Couplings

CODE 62  
O-RING  
FLANGE



**FLH** P85  
CODE 62 FLANGE



**FLH22.5** P86  
CODE 62 FLANGE 22.5°



**FLH30** P87  
CODE 62 FLANGE 30°



**FLH45** P88  
CODE 62 FLANGE 45°



**FLH60** P89  
CODE 62 FLANGE 60°



**FLH67** P90  
CODE 62 FLANGE 67°



**FLH90** P91  
CODE 62 FLANGE 90°

CAT O-RING  
FLANGE



**FLC** P92  
CAT O-RING  
FLANGE STRAIGHT



**FLC22.5** P92  
CAT O-RING  
FLANGE 22.5°



**FLC30** P93  
CAT O-RING  
FLANGE 30°



**FLC45** P93  
CAT O-RING  
FLANGE 45°



**FLC60** P94  
CAT O-RING  
FLANGE 60°



**FLC67.5** P94  
CAT O-RING  
FLANGE 67.5°



**FLC90** P95  
CAT O-RING  
FLANGE 90°

BRITISH



**MBSPP** P96  
MALE BRITISH PARALLEL  
PIPE 30° seat



**FBSPP** P97  
FEMALE SWIVEL BRITISH  
PARALLEL PIPE 30° seat



**FBSPP45** P98  
FEMALE SWIVEL BRITISH  
PARALLEL PIPE 45°  
30° seat



**FBSPP90** P99  
FEMALE SWIVEL BRITISH  
PARALLEL PIPE 90°  
30° seat

DIN 20078  
LIGHT



**FDL** P100  
METRIC FEMALE SWIVEL  
DIN 20078 LIGHT -  
W/O-RING



**FDL45** P101  
METRIC FEMALE SWIVEL  
DIN 20078 LIGHT -  
45° W/O-RING



**FDL90** P102  
METRIC FEMALE SWIVEL  
DIN 20078 LIGHT -  
90° W/O-RING

DIN 20078  
HEAVY



**FDH** P103  
METRIC FEMALE SWIVEL  
DIN 20078 HEAVY -  
W/O-RING



**FDH45** P104  
METRIC FEMALE SWIVEL  
DIN 20078 HEAVY -  
45° W/O-RING



**FDH90** P105  
METRIC FEMALE SWIVEL  
DIN 20078 HEAVY -  
90° W/O-RING



## NOMENCLATURE

"P" Series Crimp Fittings are used on all Braided hose  
"H" Series Crimp Fittings are used on Standard Duty Spiral Hose applications  
"XH" Series Crimp Fittings are used on Extreme Duty Spiral Hose applications

<b>JIC</b>
MJ = MALE JIC FJ = FEMALE SWIVEL JIC STRAIGHT FJ45 = FEMALE SWIVEL JIC 45° FJ90C = FEMALE SWIVEL JIC 90° FJ90 = FEMALE SWIVEL JIC 90° FJ90M = FEMALE SWIVEL JIC 90° MEDIUM DROP LENGTH FJ90L = FEMALE SWIVEL JIC 90° LONG DROP LENGTH
<b>NPT</b>
MP = MALE NPT RIGID MPS = MALE NPT SWIVEL MPS90 = MALE NPT SWIVEL 90° FP = FEMALE NPT RIGID FPS = FEMALE SWIVEL NPT
<b>ORFS</b>
MF = MALE O-RING FACE SEAL FF = FEMALE SWIVEL O-RING FACE SEAL FF45 = FEMALE SWIVEL O-RING FACE SEAL 45° FF90 = FEMALE SWIVEL O-RING FACE SEAL 90° FF90M = FEMALE SWIVEL O-RING FACE SEAL 90° MEDIUM DROP LENGTH FF90L = FEMALE SWIVEL O-RING FACE SEAL 90° LONG DROP LENGTH
<b>O-RING BOSS</b>
MB = MALE O-RING BOSS MBS = MALE SWIVEL O-RING BOSS MBS90 = MALE SWIVEL O-RING BOSS 90°

**CODE-61 SPLIT FLANGE**

FL = CODE 61 FLANGE  
FL22 = CODE 61 FLANGE 22°  
FL30 = CODE 61 FLANGE 30°  
FL45 = CODE 61 FLANGE 45°  
FL60 = CODE 61 FLANGE 60°  
FL90 = CODE 61 FLANGE 90°  
FL90L = CODE 61 FLANGE 90° LONG DROP LENGTH

**CODE-62 SPLIT FLANGE**

FL = CODE 62 FLANGE STRAIGHT  
FL22 = CODE 62 FLANGE 22°  
FL30 = CODE 62 FLANGE 30°  
FL45 = CODE 62 FLANGE 45°  
FL60 = CODE 62 FLANGE 60°  
FL90 = CODE 62 FLANGE 90°  
FL90L = CODE 62 FLANGE 90° LONG DROP LENGTH

**CAT SPLIT FLANGE**

FLC FLANGE STRAIGHT  
FLC22.5 FLANGE 22.5°  
FLC30 FLANGE 30°  
FLC45 FLANGE 45°  
FLC60 FLANGE 60°  
FLC67.5 FLANGE 67.5°  
FLC90 FLANGE 90°

**METRIC LIGHT**

MDL = MALE DIN LIGHT  
FDL = FEMALE DIN LIGHT  
FDL45 = FEMALE DIN LIGHT 45°  
FDL90 = FEMALE DIN LIGHT 90°

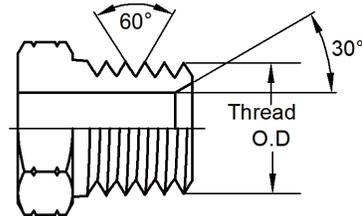
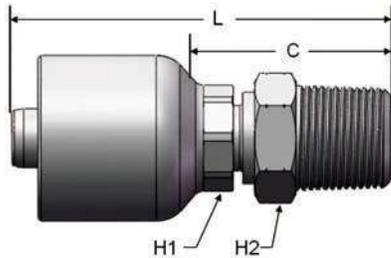
**METRIC DIN-HEAVY**

MDH = MALE DIN HEAVY  
FDH = FEMALE DIN HEAVY  
FDH45 = FEMALE DIN HEAVY 45°  
FDH90 = FEMALE DIN HEAVY 90°

**BRITISH**

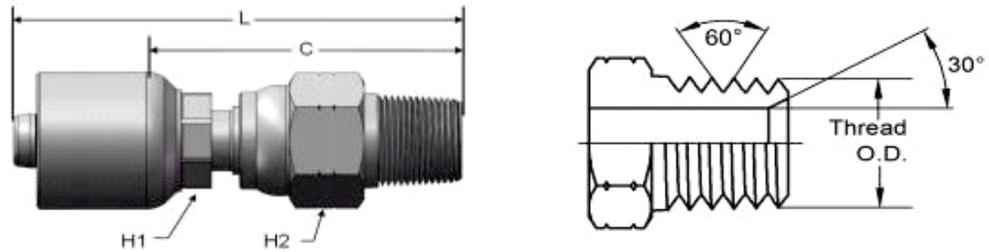
MBSPT = MALE BRITISH TAPERED  
MBSPP = MALE BRITISH PARALLEL  
FBSPP = FEMALE BRITISH PARALLEL  
FBSPP45 = FEMALE BRITISH PARALLEL 45°  
FBSPP90 = FEMALE BRITISH PARALLEL 90°

## Male Pipe - NPTF Dual Seat Tapered 30°



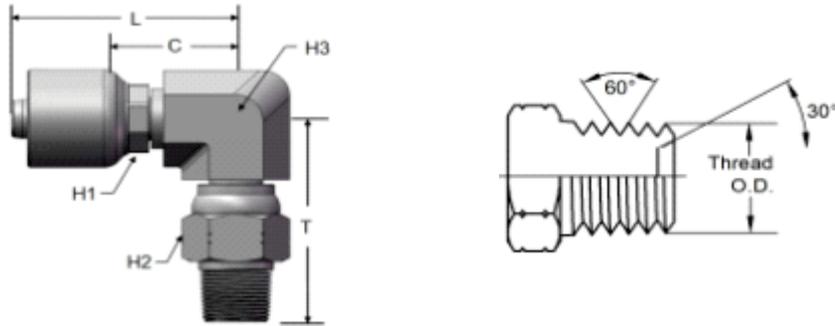
Part Number	Ø			H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-02MP	1/4	6.3	1/8-27	9/16	14	1/2	12	2.15	54.5	1.04	26.3
P04-04MP	1/4	6.3	1/4-18	9/16	14	11/16	17	2.36	60	1.25	31.8
P04-06MP	1/4	6.3	3/8-18	9/16	14	3/4	19	2.42	61.5	1.31	33.3
P06-04MP	3/8	9.5	1/4-18	11/16	17	11/16	17	2.48	63	1.26	32
P06-06MP	3/8	9.5	3/8-18	11/16	17	3/4	19	2.52	64	1.30	33
P06-08MP	3/8	9.5	1/2-14	11/16	17	7/8	22	2.72	69	1.50	38
P08-06MP	1/2	12.7	3/8-18	7/8	22	3/4	19	2.64	67	1.41	35.7
P08-08MP	1/2	12.7	1/2-14	7/8	22	7/8	22	2.80	71	1.56	39.5
P08-12MP	1/2	12.7	3/4-14	7/8	22	1 1/16	27	2.91	74	1.68	42.7
P10-08MP	5/8	15.9	1/2-14	15/16	24	7/8	22	2.91	74	1.62	41.2
P10-12MP	5/8	15.9	3/4-14	15/16	24	1 1/16	27	2.99	76	1.70	43.2
P12-08MP	3/4	19.1	1/2-14	1 1/16	27	1 1/16	27	3.13	79.5	1.71	43.5
P12-12MP	3/4	19.1	3/4-14	1 1/16	27	1 1/16	27	3.19	81	1.77	45
P12-16MP	3/4	19.1	1-11.5	1 1/16	27	1 7/16	36	3.44	87.5	2.03	51.5
P16-12MP	1	25.4	3/4-14	1 1/4	32	1 1/4	32	3.62	92	1.81	46
P16-16MP	1	25.4	1-11.5	1 1/4	32	1 7/16	36	3.90	99	2.09	53
P16-20MP	1	25.4	1 1/4-11.5	1 1/4	32	1 13/16	46	4.04	102.5	2.24	56.5
P20-16MP	1 1/4	31.8	1 1/4-11.5	1 13/16	46	1 5/8	41	5.31	135	2.58	65.5
P20-20MP	1 1/4	31.8	1 1/4-11.5	1 13/16	46	1 13/16	46	5.45	138.5	2.72	69
P20-24MP	1 1/4	31.8	1 1/2-11.5	1 13/16	46	2	50	5.61	142.5	2.87	73
P24-20MP	1 1/2	38.1	1 1/4-11.5	2	50.8	2	50	6.00	153.5	2.85	72.5
P24-24MP	1 1/2	38.1	1 1/2-11.5	2	50.8	2	50	6.08	154.5	2.89	73.5
P24-32MP	1 1/2	38.1	2-11.5	2	50.8	2 9/16	65	6.08	154.5	2.89	73.5

## Male Pipe Swivel - NPTF Dual Seat Tapered 30°



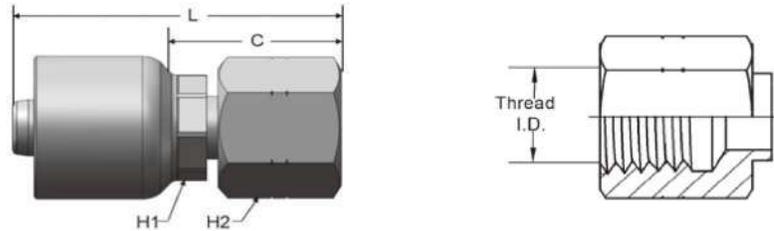
Part Number	⊖		🌀 in	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-02MPS	1/4	6.3	1/8-27	9/16	14	3/4	19	2.73	69.3	1.62	41.1
P04-04MPS	1/4	6.3	1/4-18	9/16	14	3/4	19	2.91	73.8	1.80	45.6
P04-06MPS	1/4	6.3	3/8-18	9/16	14	7/8	22	3.07	78.1	1.96	49.9
P06-04MPS	3/8	9.5	1/4-18	11/16	17	3/4	19	2.93	74.3	1.70	43.3
P06-06MPS	3/8	9.5	3/8-18	11/16	17	7/8	22	3.17	80.6	1.95	49.6
P06-08MPS	3/8	9.5	1/2-14	11/16	17	1 1/16	27	3.42	86.9	2.20	55.9
P08-06MPS	1/2	12.7	3/8-18	7/8	22	7/8	22	3.19	81.1	1.96	49.8
P08-08MPS	1/2	12.7	1/2-14	7/8	22	1 1/16	27	3.54	89.9	2.31	58.6
P08-12MPS	1/2	12.7	3/4-14	7/8	22	1 1/4	32	3.70	94.1	2.47	62.8
P10-08MPS	5/8	15.9	1/2-14	15/16	24	1 1/16	27	3.52	89.4	2.23	56.6
P10-12MPS	5/8	15.9	3/4-14	15/16	24	1 1/4	32	3.78	96.1	2.49	63.3
P12-08MPS	3/4	19.1	1/2-14	1 1/16	27	1 1/16	27	3.72	94.4	2.30	58.4
P12-12MPS	3/4	19.1	3/4-14	1 1/16	27	1 1/4	32	3.98	101.1	2.56	65.1
P12-16MPS	3/4	19.1	1-11.5	1 1/16	27	1 5/8	41	4.30	109.3	2.89	73.3
P16-12MPS	1	25.4	3/4-14	1 1/4	32	1 1/4	32	4.31	109.6	2.50	63.6
P16-16MPS	1	25.4	1-11.5	1 1/4	32	1 5/8	41	4.74	120.3	2.93	74.3

## Male Pipe Swivel-90° Block - NPTF 30° Cone Dual Seat



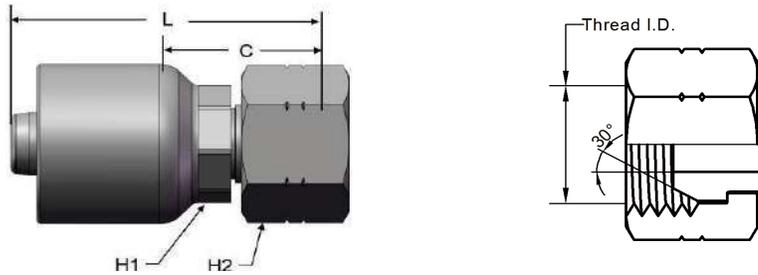
Part Number	Ø		Threads	H1		H2		H3		T		C		L	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
P04-02MPS90	1/4	6.3	1/8-27	9/16	14	3/4	19	9/16	14	1.49	37.8	0.72	18.3	1.83	46.5
P04-04MPS90	1/4	6.3	1/4-18	9/16	14	3/4	19	9/16	14	1.66	42.3	0.72	18.3	1.83	46.5
P04-06MPS90	1/4	6.3	3/8-18	9/16	14	7/8	22	7/8	22	2.17	55.0	1.04	26.3	2.15	54.5
P06-04MPS90	3/8	9.5	1/4-18	11/16	17	3/4	19	7/8	22	2.00	50.8	1.02	26	2.24	57
P06-06MPS90	3/8	9.5	3/8-18	11/16	17	7/8	22	7/8	22	2.17	55.0	1.02	26	2.24	57
P06-08MPS90	3/8	9.5	1/2-14	11/16	17	1 1/16	27	7/8	22	2.41	61.1	1.02	26	2.24	57
P08-06MPS90	1/2	12.7	3/8-18	7/8	22	7/8	22	7/8	22	2.17	55.0	1.13	28.7	2.36	60
P08-08MPS90	1/2	12.7	1/2-14	7/8	22	1 1/16	27	1 1/16	27	2.58	65.6	1.33	33.7	2.56	65
P08-12MPS90	1/2	12.7	3/4-14	7/8	22	1 1/4	32	1 1/4	32	2.86	72.7	1.37	34.7	2.60	66
P10-12MPS90	5/8	15.9	3/4-14	15/16	24	1 1/4	32	1 1/4	32	2.86	72.7	1.48	37.7	2.78	70.5
P12-12MPS90	3/4	19.1	3/4-14	1 1/16	27	1 1/4	32	1 1/4	32	2.86	72.7	1.56	39.5	2.97	75.5
P16-16MPS90	1	25.4	1-11.5	1 1/4	32	1 5/8	41	1 7/16	36	3.36	85.3	1.75	44.5	3.56	90.5

## Female Pipe Rigid - NPTF



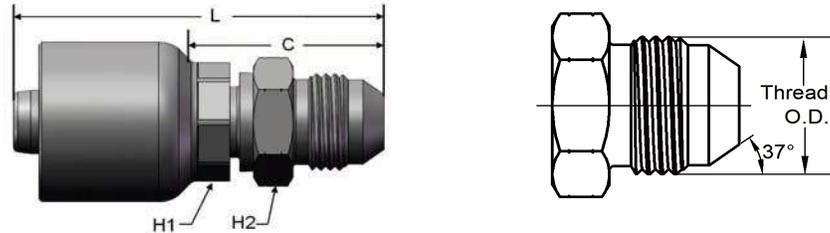
Part Number	⌀		 in	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-02FP	1/4	6.3	1/8-27	9/16	14	9/16	14	14	54.5	1.04	26.3
P04-04FP	1/4	6.3	1/4-18	9/16	14	3/4	19	19	60	1.25	31.8
P04-06FP	1/4	6.3	3/8-18	9/16	14	7/8	22	22	61.5	1.31	33.3
P06-04FP	3/8	9.5	1/4-18	11/16	17	3/4	19	19	62.5	1.24	31.5
P06-06FP	3/8	9.5	3/8-18	11/16	17	7/8	22	22	64	1.30	33
P06-08FP	3/8	9.5	1/2-14	11/16	17	13/16	30	30	67.5	1.44	36.5
P08-06FP	1/2	12.7	3/8-18	7/8	22	7/8	22	22	67	1.41	35.7
P08-08FP	1/2	12.7	1/2-14	7/8	22	13/16	30	30	70.5	1.54	39.2
P10-08FP	5/8	15.9	1/2-14	15/16	24	13/16	30	30	39.7	2.85	72.5
P10-12FP	5/8	15.9	3/4-14	15/16	24	17/16	36	36	76.5	1.72	43.7
P12-12FP	3/4	19.1	3/4-14	1 1/16	27	17/16	36	36	81.5	1.79	45.5
P12-16FP	3/4	19.1	1-11.5	1 1/16	27	15/8	41	41	86	1.97	50
P16-12FP	1	25.4	3/4-14	1 1/4	32	17/16	36	36	92.5	1.83	46.5
P16-16FP	1	25.4	1-11.5	1 1/4	32	15/8	41	41	97	2.01	51
P16-20FP	1	25.4	1 1/4-11.5	1 1/4	32	2	50	50	102	2.20	56
P20-16FP	1 1/4	31.8	1-11.5	1 13/16	46	15/8	41	41	133	2.50	63.5
P20-20FP	1 1/4	31.8	1 1/4-11.5	1 13/16	46	2	50	50	138	2.70	68.5
P20-24FP	1 1/4	31.8	1 1/2-11.5	1 13/16	46	23/8	60	60	142	2.85	72.5
P24-20FP	1 1/2	38.1	1 1/4-11.5	2	50.8	2	50	50	150	2.72	69
P24-24FP	1 1/2	38.1	1 1/2-11.5	2	50.8	23/8	60	60	154	2.87	73

## Female Pipe Swivel NPSM



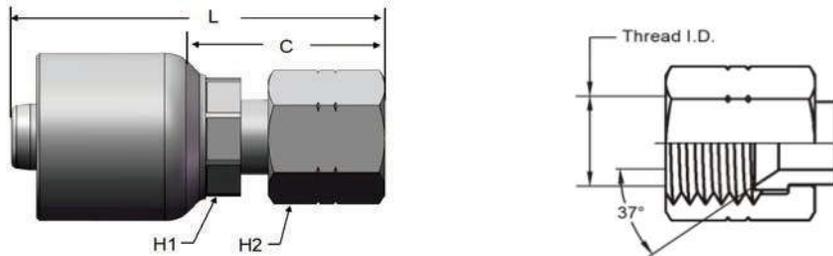
Part Number	Ø		 in	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-04FPS	1/4	6.3	1/4-18	9/16	14	3/4	19	1.88	47.7	0.77	19.5
P04-06FPS	1/4	6.3	3/8-18	9/16	14	7/8	22	1.94	49.2	0.83	21
P06-04FPS	3/8	9.5	1/4-18	11/16	17	3/4	19	2.22	56.5	1.00	25.5
P06-06FPS	3/8	9.5	3/8-18	11/16	17	7/8	22	2.07	52.5	0.85	21.5
P08-08FPS	1/2	12.7	1/2-14	7/8	22	1 1/16	27	2.22	56.5	0.99	25.2
P10-12FPS	5/8	15.9	3/4-14	15/16	24	1 1/4	32	2.35	59.8	1.06	27
P12-12FPS	3/4	19.1	3/4-14	1 1/16	27	1 1/4	32	2.54	64.5	1.12	28.5
P16-16FPS	1	25.4	1-11.5	1 1/4	32	1 5/8	41	3.02	76.8	1.21	30.8
P20-20FPS	1 1/4	31.8	1 1/4-11.5	1 13/16	46	2	50	4.51	114.5	1.77	45

## Male JIC 37° Flare



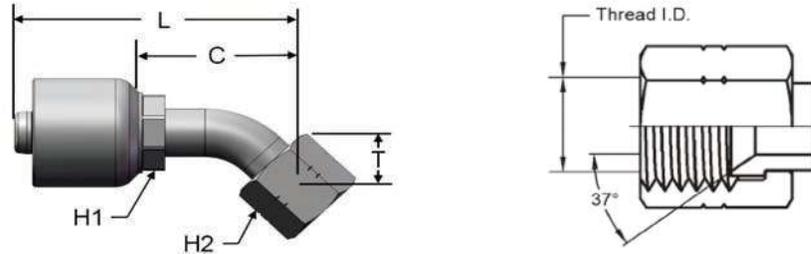
Part Number	Ø		Thread	H1		H2		L		C	
	in	mm		in	in	mm	in	mm	in	mm	in
P04-04MJ	1/4	6.3	7/16-20	9/16	14	9/16	14	2.30	58.5	1.19	30.3
P04-05MJ	1/4	6.3	1/2-20	9/16	14	9/16	14	2.30	58.5	1.19	30.3
P04-06MJ	1/4	6.3	9/16-18	9/16	14	11/16	17	2.33	59.1	1.22	30.9
P06-06MJ	3/8	9.5	9/16-18	11/16	17	11/16	17	2.43	61.6	1.20	30.6
P06-08MJ	3/8	9.5	3/4-16	11/16	17	7/8	22	2.58	65.5	1.36	34.5
P06-10MJ	3/8	9.5	7/8-14	11/16	17	15/16	24	2.70	68.5	1.48	37.5
P08-08MJ	1/2	12.7	3/4-16	7/8	22	7/8	22	2.68	68	1.44	36.7
P08-10MJ	1/2	12.7	7/8-14	7/8	22	15/16	24	2.81	71.5	1.58	40.2
P08-12MJ	1/2	12.7	1 1/16-12	7/8	22	1 1/16	27	2.97	75.5	1.74	44.2
P10-08MJ	5/8	15.9	3/4-16	15/16	24	7/8	22	2.76	70	1.46	37.2
P10-10MJ	5/8	15.9	7/8-14	15/16	24	15/16	24	2.87	73	1.58	40.2
P10-12MJ	5/8	15.9	1 1/16-12	15/16	24	1 1/16	27	3.05	77.5	1.76	44.7
P12-10MJ	3/4	19.1	7/8-14	1 1/16	27	15/16	24	3.07	78	1.65	42
P12-12MJ	3/4	19.1	1 1/16-12	1 1/16	27	1 1/16	27	3.25	82.5	1.83	46.5
P12-14MJ	3/4	19.1	1 3/16-12	1 1/16	27	1 1/4	32	3.27	83	1.85	47
P12-16MJ	3/4	19.1	1 5/16-12	1 1/16	27	1 7/16	36	3.35	85.5	1.95	49.5
P16-12MJ	1	25.4	1 1/16-12	1 1/4	32	1 1/4	32	3.72	94.5	1.91	48.5
P16-14MJ	1	25.4	1 3/16-12	1 1/4	32	1 1/4	32	3.70	94	1.89	48
P16-16MJ	1	25.4	1 5/16-12	1 1/4	32	1 7/16	36	3.78	96.5	1.99	50.5
P16-20MJ	1	25.4	1 5/8-12	1 1/4	32	1 13/16	46	3.92	100	2.13	54
P20-16MJ	1 1/4	31.8	1 5/16-12	1 13/16	46	1 5/8	41	5.22	132.5	2.48	63
P20-20MJ	1 1/4	31.8	1 5/8-12	1 13/16	46	1 13/16	46	5.33	135.5	2.60	66
P20-24MJ	1 1/4	31.8	1 7/8-12	1 13/16	46	2	50	5.61	142.5	2.87	73
P24-20MJ	1 1/2	38.1	1 5/8-12	2	50.8	1 13/16	46	5.81	147.5	2.62	66.5
P24-24MJ	1 1/2	38.1	1 7/8-12	2	50.8	2	50	6.08	154.5	2.89	73.5
P24-32MJ	1 1/2	38.1	2 1/2-12	2	50.8	2 9/16	65	6.34	161	3.15	80

## Female JIC 37° Flare Swivel



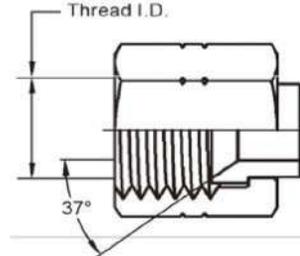
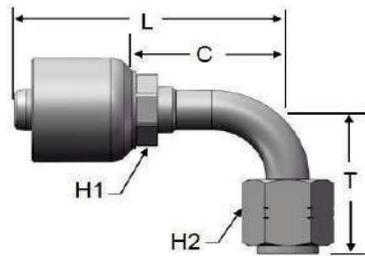
Part Number	Ø			H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-04FJ	1/4	6.3	7/16-20	9/16	14	9/16	14	2.14	54.4	1.03	26.2
P04-05FJ	1/4	6.3	1/2-20	9/16	14	11/16	17	2.26	57.3	1.15	29.1
P04-06FJ	1/4	6.3	9/16-18	9/16	14	3/4	19	2.25	57.2	1.14	29
P06-06FJ	3/8	9.5	9/16-18	11/16	17	3/4	19	2.31	58.7	1.09	27.7
P06-08FJ	3/8	9.5	3/4-16	11/16	17	7/8	22	2.41	61.3	1.19	30.3
P06-10FJ	3/8	9.5	7/8-14	11/16	17	15/16	27	2.61	66.3	1.39	35.3
P08-08FJ	1/2	12.7	3/4-16	7/8	22	7/8	22	2.52	63.9	1.28	32.6
P08-10FJ	1/2	12.7	7/8-14	7/8	22	15/16	27	2.73	69.3	1.50	38
P08-12FJ	1/2	12.7	1 1/16-12	7/8	22	11/4	32	2.77	70.4	1.54	39
P10-08FJ	5/8	15.9	3/4-16	15/16	24	7/8	22	2.75	69.8	1.46	37
P10-10FJ	5/8	15.9	7/8-14	15/16	24	15/16	27	2.75	69.9	1.46	37.1
P10-12FJ	5/8	15.9	1 1/16-12	15/16	24	11/4	32	2.85	72.4	1.56	39.6
P12-10FJ	3/4	19.1	7/8-14	1 1/16	27	15/16	27	2.95	75	1.54	39
P12-12FJ	3/4	19.1	1 1/16-12	1 1/16	27	11/4	32	3.09	78.4	1.67	42.4
P12-14FJ	3/4	19.1	1 3/16-12	1 1/16	27	17/16	36	3.03	77	1.61	41
P12-16FJ	3/4	19.1	1 5/16-12	1 1/16	27	15/8	41	3.19	80.9	1.77	44.9
P16-12FJ	1	25.4	1 1/16-12	1 1/4	32	11/4	32	3.43	87	1.61	41
P16-14FJ	1	25.4	1 3/16-12	1 1/4	32	17/16	36	3.52	89.5	1.71	43.5
P16-16FJ	1	25.4	1 5/16-12	1 1/4	32	15/8	41	3.62	91.9	1.81	45.9
P16-20FJ	1	25.4	1 5/8-12	1 1/4	32	2	50	3.72	94.6	1.91	48.6
P20-16FJ	1 1/4	31.8	1 5/16-12	1 13/16	46	15/8	41	4.86	123.5	2.13	54
P20-20FJ	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	5.10	129.6	2.37	60.1
P20-24FJ	1 1/4	31.8	1 7/8-12	1 13/16	46	23/8	60	5.28	134.1	2.54	64.6
P24-20FJ	1 1/2	38.1	1 5/8-12	2	50.8	2	50	5.39	137	2.20	56
P24-24FJ	1 1/2	38.1	1 7/8-12	2	50.8	23/8	60	6.12	155.4	2.93	74.4

## Female JIC 37° Flare Swivel 45° Bent Tube



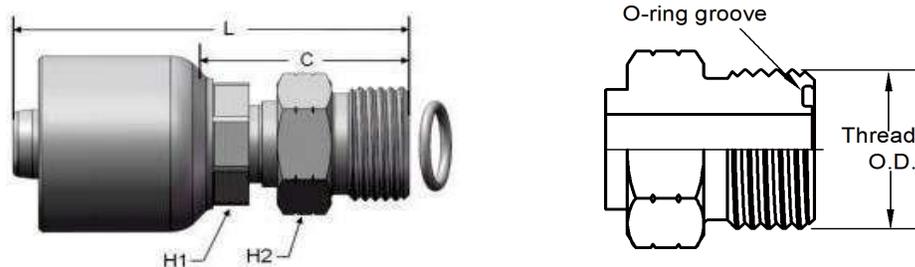
Part Number	⊖		ㄱ	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
P04-04FJ45	1/4	6.3	7/16-20	9/16	14	10/17	15	0.39	10.0	2.24	57	1.13	28.8
P04-06FJ45	1/4	6.3	9/16-18	9/16	14	11/16	17.5	0.43	11.0	2.31	58.6	1.20	30.4
P06-06FJ45	3/8	9.5	9/16-18	11/16	17	11/16	17.5	0.43	11.0	2.46	62.6	1.24	31.6
P06-08FJ45	3/8	9.5	3/4-16	11/16	17	7/8	22	0.59	15.0	2.71	68.8	1.49	37.8
P08-08FJ45	1/2	12.7	3/4-16	7/8	22	7/8	22	0.59	15.0	2.91	74	1.68	42.7
P08-10FJ45	1/2	12.7	7/8-14	7/8	22	1 1/16	27	0.63	16.0	2.95	75	1.72	43.7
P10-10FJ45	5/8	15.9	7/8-14	15/16	24	1 1/16	27	0.63	16.0	3.12	79.2	1.83	46.4
P10-12FJ45	5/8	15.9	1 1/16-12	15/16	24	1 1/4	32	0.83	21.0	3.43	87.1	2.14	54.3
P12-12FJ45	3/4	19.1	1 1/16-12	1 1/16	27	1 1/4	32	0.94	24.0	3.91	99.3	2.49	63.3
P12-16FJ45	3/4	19.1	1 5/16-12	1 1/16	27	1 5/8	41	0.94	24.0	3.98	101.2	2.57	65.2
P16-16FJ45	1	25.4	1 5/16-12	1 1/4	32	1 5/8	41	0.94	24.0	4.64	117.9	2.83	71.9
P16-20FJ45	1	25.4	1 5/8-12	1 1/4	32	2	50	0.98	25.0	4.68	118.9	2.87	72.9
P20-20FJ45	1 1/2	38.1	1 5/8-12	2	50.8	2	50	0.98	25.0	6.42	163.0	3.68	93.5
P24-24FJ45	1 1/2	38.1	1 7/8-12	2	50.8	2 3/8	60	1.06	27.0	7.30	185.3	4.11	104.3

## FEMALE JIC SWIVEL 90°



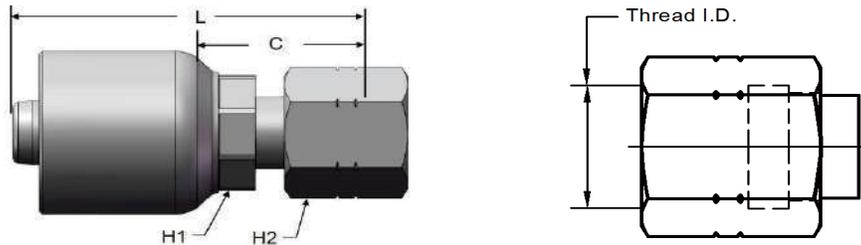
Part Number	⌀		▨	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
P04-04FJ90	1/4	6.3	7/16-20	9/16	14	9/16	14	0.83	21	2.08	52.75	0.97	24.55
P06-06FJ90	3/8	9.5	9/16-18	11/16	17	3/4	19	0.91	23	2.50	63.5	1.28	32.5
P06-08FJ90	3/8	9.5	3/4-16	11/16	17	7/8	22	3.27	83	2.50	63.5	1.28	32.5
P08-08FJ90	1/2	12.7	3/4-16	7/8	22	7/8	22	1.14	29	2.79	70.8	1.56	39.5
P08-10FJ90	1/2	12.7	7/8-14	7/8	22	11/16	27	1.26	32	2.79	70.8	1.56	39.5
P08-12FJ90	1/2	12.7	1 1/16-12	7/8	22	11/4	32	1.89	48	2.81	71.3	1.57	40
P10-10FJ90	5/8	15.9	7/8-14	15/16	24	11/16	27	1.26	32	3.18	80.8	1.89	48
P12-12FJ90	3/4	19.1	1 1/16-12	11/16	27	11/4	32	1.89	48	3.62	92	2.20	56
P12-16FJ90	3/4	19.1	1 5/16-12	11/16	27	15/8	41	2.20	56	3.80	96.5	2.38	60.5
P16-16FJ90	1	25.4	1 5/16-12	11/4	32	15/8	41	2.20	56	4.25	108	2.44	62
P20-20FJ90	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	2.52	64	6.67	169.5	3.94	100
P04-04FJ90M	1/4	6.3	7/16-20	9/16	14	9/16	14	1.26	32	2.24	57	1.13	28.8
P06-06FJ90M	3/8	9.5	9/16-18	11/16	17	3/4	19	1.50	38	2.72	69	1.50	38
P06-08FJ90M	3/8	9.5	3/4-16	11/16	17	7/8	22	1.61	41	2.50	63.5	1.28	32.5
P08-08FJ90M	1/2	12.7	3/4-16	7/8	22	7/8	22	1.61	41	2.98	75.8	1.75	44.5
P08-10FJ90M	1/2	12.7	7/8-14	7/8	22	11/16	27	1.85	47	2.79	70.8	1.56	39.5
P10-10FJ90M	5/8	15.9	7/8-14	15/16	24	11/16	27	1.85	47	3.18	80.8	1.89	48
P10-12FJ90M	5/8	15.9	1 1/16-12	15/16	24	11/4	32	2.28	58	3.22	81.9	1.93	49.1
P12-16FJ90M	3/4	19.1	1 5/16-12	11/16	27	15/8	41	2.80	71	3.80	96.5	2.38	60.5
P16-16FJ90M	1	25.4	1 5/16-12	11/4	32	15/8	41	2.80	71	4.49	114	2.68	68
P20-20FJ90M	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	3.07	78	6.67	169.5	3.94	100
P20-24FJ90M	1 1/4	31.8	1 7/8-12	1 13/16	46	2 3/8	60	3.39	86	6.67	169.5	3.94	100
P24-24FJ90M	1 1/2	38.1	1 7/8-12	2	50.8	2 3/8	60	3.50	89	7.56	192	4.37	111
P04-04FJ90L	1/4	6.3	7/16-20	9/16	14	9/16	14	1.81	46	2.24	57	1.13	28.8
P06-06FJ90L	3/8	9.5	9/16-18	11/16	17	3/4	19	2.13	54	2.72	69	1.50	38
P08-08FJ90L	1/2	12.7	3/4-16	7/8	22	7/8	22	2.52	64	2.98	75.8	1.75	44.5
P08-10FJ90L	1/2	12.7	7/8-14	7/8	22	11/16	27	2.76	70	2.79	70.8	1.56	39.5
P10-10FJ90L	5/8	15.9	7/8-14	15/16	24	11/16	27	2.76	70	3.18	80.8	1.89	48
P12-16FJ90L	3/4	19.1	1 5/16-12	11/16	27	15/8	41	4.49	114	3.80	96.5	2.38	60.5
P16-16FJ90L	1	25.4	1 5/16-12	11/4	32	15/8	41	4.49	114	4.49	114	2.68	68
P16-20FJ90L	1	25.4	1 5/8-12	11/4	32	2	50	5.08	129	4.67	118.5	2.85	72.5
P20-20FJ90L	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	5.08	129	6.67	169.5	3.94	100

## Male O-Ring Face Seal



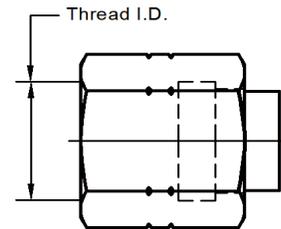
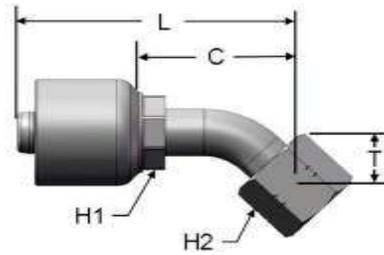
Part Number	⊖		 in	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-04MF	1/4	6.3	9/16-18	9/16	14	11/16	17	2.22	56.5	1.11	28.3
P04-06MF	1/4	6.3	11/16-16	9/16	14	3/4	19	2.26	57.5	1.15	29.3
P06-04MF	3/8	9.5	9/16-18	11/16	17	11/16	17	2.32	59	1.10	28
P06-06MF	3/8	9.5	11/16-16	11/16	17	3/4	19	2.36	60	1.14	29
P06-08MF	3/8	9.5	13/16-16	11/16	17	7/8	22	2.48	63	1.26	32
P08-06MF	1/2	12.7	11/16-16	7/8	22	3/4	19	2.48	63	1.25	31.7
P08-08MF	1/2	12.7	13/16-16	7/8	22	7/8	22	2.60	66	1.37	34.7
P08-10MF	1/2	12.7	1-14	7/8	22	1 1/16	27	2.76	70	1.52	38.7
P10-08MF	5/8	15.9	13/16-16	15/16	24	7/8	22	2.68	68	1.39	35.2
P10-10MF	5/8	15.9	1-14	15/16	24	1 1/16	27	2.83	72	1.54	39.2
P10-12MF	5/8	15.9	1 3/16-12	15/16	24	1 1/4	32	2.97	75.5	1.68	42.7
P12-10MF	3/4	19.1	1-14	1 1/16	27	1 1/16	27	3.03	77	1.61	41
P12-12MF	3/4	19.1	1 3/16-12	1 1/16	27	1 1/4	32	3.17	80.5	1.75	44.5
P12-16MF	3/4	19.1	1 7/16-12	1 1/16	27	1 5/8	41	3.35	85	1.93	49
P16-12MF	1	25.4	1 3/16-12	1 1/4	32	1 1/4	32	3.60	91.5	1.79	45.5
P16-16MF	1	25.4	1 7/16-12	1 1/4	32	1 5/8	41	3.78	96	1.97	50
P16-20MF	1	25.4	1 11/16-12	1 1/4	32	1 13/16	46	3.86	98	2.05	52
P20-16MF	1 1/4	31.8	1 7/16-12	1 13/16	46	1 5/8	41	5.20	132	2.46	62.5
P20-20MF	1 1/4	31.8	1 11/16-12	1 13/16	46	1 13/16	46	5.26	133.5	2.52	64
P20-24MF	1 1/4	31.8	2-12	1 13/16	46	2 3/16	55	5.41	137.5	2.68	68
P24-20MF	1 1/2	38.1	1 11/16-12	2	50.8	1 13/16	46	5.73	145.5	2.54	64.5
P24-24MF	1 1/2	38.1	2-12	2	50.8	2 3/16	55	5.89	149.5	2.70	68.5

# Female O-Ring Face Seal Swivel



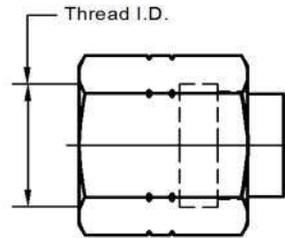
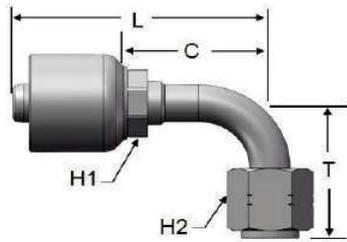
Part Number	Ø			H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-04FF	1/4	6.3	9/16-18	9/16	14	11/16	17	1.99	50.5	0.88	22.3
P04-06FF	1/4	6.3	11/16-16	9/16	14	7/8	22	2.05	52	0.94	23.8
P04-08FF	1/4	6.3	13/16-16	9/16	14	15/16	24	2.13	54	1.02	25.8
P05-06FF	5/16	7.9	11/16-16	5/8	16	7/8	22	2.06	52.2	0.93	23.7
P06-04FF	3/8	9.5	9/16-18	11/16	17	11/16	17	2.15	54.5	0.93	23.5
P06-06FF	3/8	9.5	11/16-16	11/16	17	7/8	22	2.17	55	0.94	24
P06-08FF	3/8	9.5	13/16-16	11/16	17	15/16	24	2.24	57	1.02	26
P06-10FF	3/8	9.5	1-14	11/16	17	1 3/16	30	2.32	59	1.10	28
P08-06FF	1/2	12.7	1 1/16-16	7/8	22	7/8	22	2.40	61	1.17	29.7
P08-08FF	1/2	12.7	1 3/16-16	7/8	22	15/16	24	2.31	58.8	1.08	27.5
P08-10FF	1/2	12.7	1-14	7/8	22	1 3/16	30	2.39	60.8	1.16	29.5
P08-12FF	1/2	12.7	1 3/16-12	7/8	22	1 7/16	36	2.53	64.3	1.30	33
P10-08FF	5/8	15.9	1 3/16-16	15/16	24	15/16	24	2.52	64	1.23	31.2
P10-10FF	5/8	15.9	1-14	15/16	24	1 3/16	30	2.48	62.9	1.19	30.1
P10-12FF	5/8	15.9	1 3/16-12	15/16	24	1 7/16	36	2.61	66.4	1.32	33.6
P12-10FF	3/4	19.1	1-14	1 1/16	27	1 3/16	30	2.64	67	1.22	31
P12-12FF	3/4	19.1	1 3/16-12	1 1/16	27	1 7/16	36	2.73	69.4	1.31	33.4
P12-16FF	3/4	19.1	1 7/16-12	1 1/16	27	1 5/8	41	2.74	69.6	1.32	33.6
P16-12FF	1	25.4	1 3/16-12	1 1/4	32	1 7/16	36	3.41	86.5	1.59	40.5
P16-16FF	1	25.4	1 7/16-12	1 1/4	32	1 5/8	41	3.20	81.2	1.39	35.2
P16-20FF	1	25.4	1 11/16-12	1 1/4	32	2	50	3.25	82.5	1.44	36.5
P20-16FF	1 1/4	31.8	1 7/16-12	1 13/16	46	1 5/8	41	4.84	123	2.11	53.5
P20-20FF	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	4.41	112	1.67	42.5
P20-24FF	1 1/4	31.8	2-12	1 13/16	46	2 3/8	60	4.53	115	1.79	45.5
P24-20FF	1 1/2	38.1	1 11/16-12	2	50.8	2	50	5.35	136	2.17	55
P24-24FF	1 1/2	38.1	2-12	2	50.8	2 3/8	60	5.20	132	2.01	51

## Female O-Ring Face Seal Swivel 45° Bent Tube



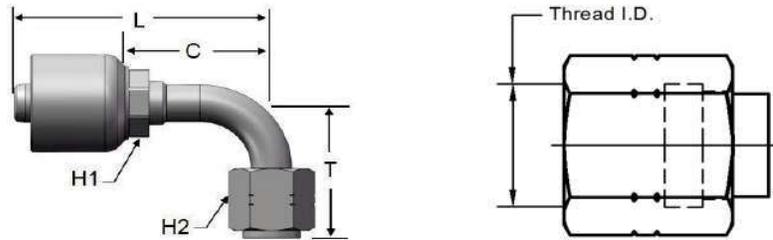
Part Number	⊖		▄▄▄▄	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
P04-04FF45	1/4	6.3	9/16-18	9/16	14	11/16	17	0.39	10	2.33	59.11	1.22	30.91
P04-06FF45	1/4	6.3	11/16-16	9/16	14	7/8	22	0.43	11	2.37	60.11	1.26	31.91
P05-06FF45	5/16	7.9	11/16-16	5/8	16	7/8	22	0.43	11	2.40	60.98	1.28	32.48
P06-04FF45	3/8	9.5	9/16-18	11/16	17	11/16	17	0.39	10	2.42	61.56	1.20	30.56
P06-06FF45	3/8	9.5	11/16-16	11/16	17	7/8	22	0.43	11	2.49	63.18	1.27	32.18
P06-08FF45	3/8	9.5	13/16-16	11/16	17	15/16	24	0.59	15	2.71	68.83	1.49	37.83
P08-06FF45	1/2	12.7	11/16-16	7/8	22	7/8	22	0.43	11	2.63	66.68	1.39	35.38
P08-08FF45	1/2	12.7	13/16-16	7/8	22	15/16	24	0.59	15	2.87	72.96	1.64	41.66
P08-10FF45	1/2	12.7	1-14	7/8	22	13/16	30	0.63	16	2.95	75	1.72	43.7
P08-12FF45	1/2	12.7	1 3/16-12	7/8	22	17/16	36	0.83	21	3.15	80	1.92	48.7
P10-08FF45	5/8	15.9	1 3/16-16	15/16	24	15/16	24	0.59	15	3.12	79.22	1.83	46.42
P10-10FF45	5/8	15.9	1-14	15/16	24	13/16	30	0.63	16	3.23	82.08	1.94	49.28
P10-12FF45	5/8	15.9	1 3/16-12	15/16	24	17/16	36	0.83	21	3.43	87.08	2.14	54.28
P12-10FF45	3/4	19.1	1-14	1 1/16	27	13/16	30	0.63	16	3.54	89.86	2.12	53.86
P12-12FF45	3/4	19.1	1 3/16-12	1 1/16	27	17/16	36	0.83	21	3.82	96.93	2.40	60.93
P12-16FF45	3/4	19.1	1 7/16-12	1 1/16	27	15/8	41	0.94	24	3.98	101.17	2.57	65.17
P16-12FF45	1	25.4	1 3/16-12	1 1/4	32	17/16	36	0.83	21	4.45	113.03	2.64	67.03
P16-16FF45	1	25.4	1 7/16-12	1 1/4	32	15/8	41	0.94	24	4.64	117.9	2.83	71.9
P16-20FF45	1	25.4	1 11/16-12	1 1/4	32	2	50	0.98	25	4.68	118.89	2.87	72.89
P20-20FF45	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	0.98	25	6.36	161.43	3.62	91.93
P24-24FF45	1 1/2	38.1	2-12	2	50.8	23/8	60	1.06	27	7.64	194	4.45	113

## Female O-Ring Face Seal 90°



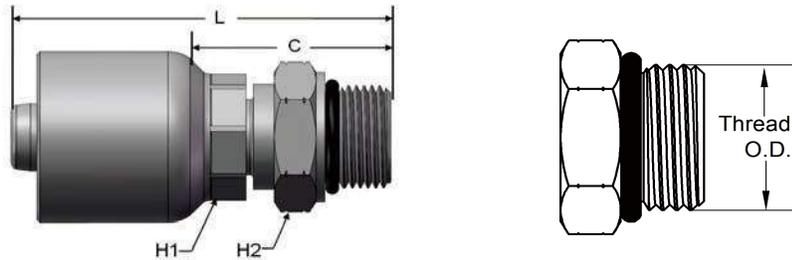
Part Number	⊖		▨	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
P04-04FF90	1/4	6.3	9/16-18	9/16	14	11/16	17	0.83	21	2.24	57	1.13	28.8
B04-06FF90	1/4	6.3	11/16-16	9/16	14	7/8	22	0.91	23	2.13	54.2	1.02	26
P05-06FF90	5/16	7.9	11/16-6	5/8	16	7/8	22	0.91	23	2.32	58.95	1.20	30.45
P06-04FF90	3/8	9.5	9/16-18	11/16	17	11/16	17	0.83	21	2.28	58	1.06	27
P06-06FF90	3/8	9.5	11/16-6	11/16	17	7/8	22	0.91	23	2.50	63.5	1.28	32.5
P06-08FF90	3/8	9.5	13/16-16	11/16	17	15/16	24	1.14	29	2.50	63.5	1.28	32.5
P08-06FF90	1/2	12.7	11/16-16	7/8	22	7/8	22	0.91	23	2.49	63.3	1.26	32
P08-08FF90	1/2	12.7	13/16-16	7/8	22	15/16	24	1.14	29	2.81	71.3	1.57	40
P08-10FF90	1/2	12.7	1-14	7/8	22	1 3/16	30	1.26	32	2.73	69.3	1.50	38
P08-12FF90	1/2	12.7	1 3/16-12	7/8	22	1 7/16	36	1.89	48	2.81	71.3	1.57	40
P10-08FF90	5/8	15.9	13/16-16	15/16	24	15/16	24	1.14	29	3.05	77.4	1.76	44.6
P10-10FF90	5/8	15.9	1-14	15/16	24	1 3/16	30	1.26	32	3.22	81.9	1.93	49.1
P10-12FF90	5/8	15.9	1 3/16-12	15/16	24	1 7/16	36	1.89	48	3.22	81.9	1.93	49.1
P12-10FF90	3/4	19.1	1-14	1 1/16	27	1 3/16	30	1.26	32	3.35	85.1	1.93	49.1
P12-12FF90	3/4	19.1	1 3/16-12	1 1/16	27	1 7/16	36	1.89	48	3.80	96.5	2.38	60.5
P12-16FF90	3/4	19.1	1 7/16-12	1 1/16	27	1 5/8	41	2.20	56	3.80	96.5	2.38	60.5
P16-12FF90	1	25.4	1 3/16-12	1 1/16	27	1 7/16	36	1.89	48	4.31	109.5	2.50	63.5
P16-16FF90	1	25.4	1 7/16-12	1 1/4	32	1 5/8	41	2.20	56	4.67	118.5	2.85	72.5
P16-20FF90	1	25.4	1 11/16-12	1 1/4	32	2	50	2.52	64	4.67	118.5	2.85	72.5
P20-20FF90	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	2.52	64	6.59	167.5	3.86	98
P24-24FF90	1 1/2	38.1	2-12	2	50.8	2 3/8	60	2.72	69	7.76	197.2	4.57	116.2

## Female O-Ring Face Seal 90°



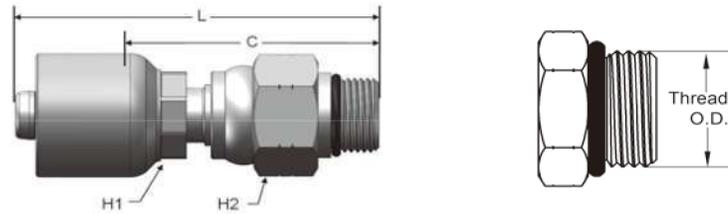
Part Number	⊖		▄▄▄▄	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
P04-04FF90M	1/4	6.3	9/16-18	9/16	14	11/16	17	1.26	32	2.13	54.2	1.02	26
P04-06FF90M	1/4	6.3	11/16-16	9/16	14	7/8	22	1.50	38	2.13	54.2	1.02	26
P06-04FF90M	3/8	9.5	9/16-18	11/16	17	11/16	17	1.26	32	2.50	63.5	1.28	32.5
P06-06FF90M	3/8	9.5	11/16-16	11/16	17	7/8	22	1.50	38	2.72	69	1.50	38
P06-08FF90M	3/8	9.5	13/16-16	11/16	17	15/16	24	1.61	41	2.50	63.5	1.28	32.5
P08-06FF90M	1/2	12.7	11/16-16	7/8	22	7/8	22	1.50	38	2.81	71.3	1.57	40
P08-08FF90M	1/2	12.7	13/16-16	7/8	22	15/16	24	1.61	41	2.81	71.3	1.57	40
P08-10FF90M	1/2	12.7	1-14	7/8	22	1 3/16	30	1.85	47	2.81	71.3	1.57	40
P10-08FF90M	5/8	15.9	13/16-16	15/16	24	15/16	24	1.61	41	3.05	77.4	1.76	44.6
P10-10FF90M	5/8	15.9	1-14	15/16	24	1 3/16	30	1.85	47	3.22	81.9	1.93	49.1
P12-12FF90M	3/4	19.1	1 3/16-12	1 1/16	27	1 7/16	36	2.28	58	3.80	96.5	2.38	60.5
P16-16FF90M	1	25.4	1 7/16-12	1 1/4	32	1 5/8	41	2.80	71	4.67	118.5	2.85	72.5
P16-20FF90M	1	25.4	1 11/16-12	1 1/4	32	2	50	3.07	78	4.67	118.5	2.85	72.5
P20-20FF90M	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	3.07	78	6.59	167.5	3.86	98
P24-24FF90M	1 1/2	38.1	2-12	2	50.8	2 3/8	60	3.39	86	8.06	204.8	4.87	123.8
P04-04FF90L	1/4	6.3	9/16-18	9/16	14	11/16	17	1.81	46	2.13	54.2	1.02	26
P04-06FF90L	1/4	6.3	11/16-16	9/16	14	7/8	22	2.13	54	2.13	54.2	1.02	26
P06-06FF90L	3/8	9.5	11/16-16	11/16	17	7/8	22	2.13	54	2.72	69	1.50	38
P06-08FF90L	3/8	9.5	13/16-16	11/16	17	15/16	24	2.52	64	2.50	63.5	1.28	32.5
P08-06FF90L	1/2	12.7	11/16-16	7/8	22	7/8	22	2.13	54	2.81	71.3	1.57	40
P08-08FF90L	1/2	12.7	13/16-16	7/8	22	15/16	24	2.52	64	2.81	71.3	1.57	40
P08-10FF90L	1/2	12.7	1-14	7/8	22	1 3/16	30	2.76	70	2.81	71.3	1.57	40
P10-08FF90L	5/8	15.9	13/16-16	15/16	24	15/16	24	2.52	64	3.05	77.4	1.76	44.6
P10-10FF90L	5/8	15.9	1-14	15/16	24	1 3/16	30	2.76	70	3.22	81.9	1.93	49.1
P12-12FF90L	3/4	19.1	1 3/16-12	1 1/16	27	1 7/16	36	3.78	96	3.80	96.5	2.38	60.5
P16-16FF90L	1	25.4	1 7/16-12	1 1/4	32	1 5/8	41	4.49	114	4.67	118.5	2.85	72.5
P16-20FF90L	1	25.4	1 11/16-12	1 1/4	32	2	50	5.08	129	4.67	118.5	2.85	72.5
P20-20FF90L	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	5.08	129	6.59	167.5	3.86	98
P24-24FF90L	1 1/2	38.1	2-12	2	50.8	2 3/8	60	5.55	141	8.06	204.8	4.87	123.8

## Male O-Ring Boss Rigid



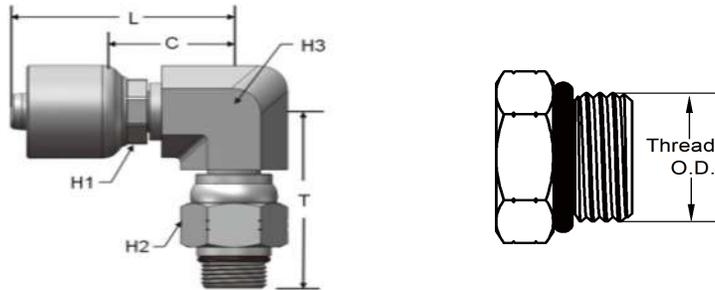
Part Number	Ø			H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-04MB	1/4	6.3	7/16-20	9/16	14	9/16	14	2.13	54.1	1.02	25.9
P04-05MB	1/4	6.3	1/2-20	9/16	14	11/16	17	2.15	54.6	1.04	26.4
P04-06MB	1/4	6.3	9/16-18	9/16	14	11/16	17	2.19	55.5	1.07	27.3
P06-04MB	3/8	9.5	7/16-20	11/16	17	9/16	14	2.23	56.6	1.01	25.6
P06-05MB	3/8	9.5	1/2-20	11/16	17	11/16	17	2.25	57.1	1.03	26.1
P06-06MB	3/8	9.5	9/16-18	11/16	17	11/16	17	2.28	58	1.06	27
P06-08MB	3/8	9.5	3/4-16	11/16	17	7/8	22	2.41	61.1	1.19	30.1
P06-10MB	3/8	9.5	7/8-14	11/16	17	11/16	27	2.56	65	1.34	34
P06-12MB	3/8	9.5	1 1/16-12	11/16	17	1 1/4	32	2.68	68.1	1.44	36.6
P08-06MB	1/2	12.7	9/16-18	7/8	22	11/16	17	2.40	61	1.17	29.7
P08-08MB	1/2	12.7	3/4-16	7/8	22	7/8	22	2.52	64.1	1.29	32.8
P08-10MB	1/2	12.7	7/8-14	7/8	22	1 1/16	27	2.68	68	1.44	36.7
P08-12MB	1/2	12.7	1 1/16-12	7/8	22	1 1/4	32	2.80	71.1	1.57	39.8
P10-08MB	5/8	15.9	3/4-16	15/16	24	7/8	22	2.60	66.1	1.31	33.3
P10-10MB	5/8	15.9	7/8-14	15/16	24	1 1/16	27	2.76	70	1.46	37.2
P10-12MB	5/8	15.9	1 1/16-12	15/16	24	1 1/4	32	2.88	73.1	1.59	40.3
P12-10MB	3/4	19.1	7/8-14	1 1/16	27	1 1/16	27	2.95	75	1.54	39
P12-12MB	3/4	19.1	1 1/16-12	1 1/16	27	1 1/4	32	3.07	78.1	1.66	42.1
P12-14MB	3/4	19.1	1 3/16-12	1 1/16	27	1 7/16	36	3.13	79.6	1.72	43.6
P12-16MB	3/4	19.1	1 5/16-12	1 1/16	27	1 5/8	41	3.19	81.1	1.78	45.1
P16-14MB	1	25.4	1 3/16-12	1 1/4	32	1 7/16	36	3.57	90.6	1.76	44.6
P16-16MB	1	25.4	1 5/16-12	1 1/4	32	1 5/8	41	3.63	92.1	1.81	46.1
P16-20MB	1	25.4	1 5/8-12	1 1/4	32	2	50	3.76	95.6	1.95	49.6
P20-16MB	1 1/4	31.8	1 5/16-12	1 13/16	46	1 5/8	41	5.04	128.1	2.31	58.6
P20-20MB	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	5.18	131.6	2.44	62.1
P20-24MB	1 1/4	31.8	1 7/8-12	1 13/16	46	2 3/16	55	5.20	132.1	2.46	62.6
P24-20MB	1 1/2	38.1	1 5/8-12	2	50.8	2	50	5.65	143.6	2.46	62.6
P24-24MB	1 1/2	38.1	1 7/8-12	2	50.8	2 3/16	55	5.67	144.1	2.48	63.1

## Male O-Ring Boss Swivel



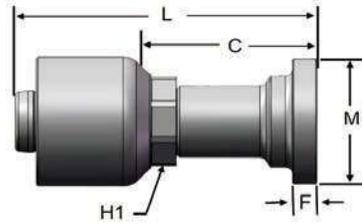
Part Number	Ø		Thread	H1		H2		L		C	
	in	mm		in	in	mm	in	mm	in	mm	in
P04-04MBS	1/4	6.3	7/16-20	9/16	14	3/4	19	1.64	41.6	2.75	69.8
P04-05MBS	1/4	6.3	1/2-20	9/16	14	3/4	19	1.64	41.6	2.75	69.8
P04-06MBS	1/4	6.3	9/16-18	9/16	14	7/8	22	1.81	45.9	2.91	73.8
P06-04MBS	3/8	9.5	7/16-20	11/16	17	3/4	19	1.55	39.3	2.77	70.3
P06-05MBS	3/8	9.5	1/2-20	11/16	17	3/4	19	1.55	39.3	2.77	70.3
P06-06MBS	3/8	9.5	9/16-18	11/16	17	7/8	22	1.80	45.6	3.02	76.6
P06-08MBS	3/8	9.5	3/4-16	11/16	17	1 1/16	27	1.98	50.4	3.20	81.4
P06-10MBS	3/8	9.5	7/8-14	11/16	17	1 1/16	27	1.87	47.4	3.09	78.4
P06-12MBS	3/8	9.5	1 1/16-12	11/16	17	7/8	32	2.31	58.6	3.53	89.6
P08-06MBS	1/2	12.7	9/16-18	7/8	22	7/8	22	1.80	45.8	3.04	77.1
P08-08MBS	1/2	12.7	3/4-16	7/8	22	1 1/16	27	2.09	53.1	3.32	84.4
P08-10MBS	1/2	12.7	7/8-14	7/8	22	1 1/16	27	1.97	50.1	3.20	81.4
P08-12MBS	1/2	12.7	1 1/16-12	7/8	22	1 1/4	32	2.41	61.3	3.65	92.6
P10-08MBS	5/8	15.9	3/4-16	15/16	24	1 1/16	27	2.01	51.1	3.30	83.9
P10-10MBS	5/8	15.9	7/8-14	15/16	24	1 1/16	27	1.89	48.1	3.19	80.9
P10-12MBS	5/8	15.9	1 1/16-12	15/16	24	1 1/4	32	2.43	61.8	3.72	94.6
P12-10MBS	3/4	19.1	7/8-14	1 1/16	27	1 1/16	27	1.96	49.9	3.38	85.9
P12-12MBS	3/4	19.1	1 1/16-12	1 1/16	27	1 1/4	32	2.50	63.6	3.92	99.6
P12-16MBS	3/4	19.1	1 5/16-12	1 1/16	27	1 5/8	41	2.61	66.3	4.03	102.3
P16-16MBS	1	25.4	1 5/16-12	1 1/4	32	1 5/8	41	2.65	67.3	4.46	113.3

# Male O-Ring Boss Swivel 90° Block



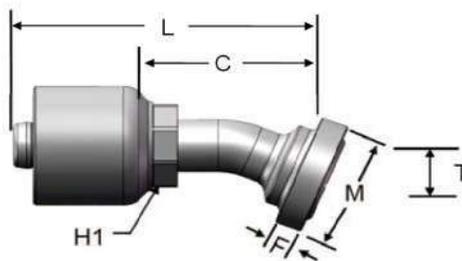
Part Number	Ø		Thread	H1		H2		H3		T		C		L	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
P04-02MBS90	1/4	6.3	7/16-20	9/16	14	3/4	19	9/16	14	1.51	38.3	0.72	18.3	1.83	46.5
P04-04MBS90	1/4	6.3	7/16-20	9/16	14	3/4	19	9/16	14	1.51	38.3	0.72	18.3	1.83	46.5
P04-05MBS90	1/4	6.3	1/2-20	9/16	14	3/4	19	9/16	14	1.51	38.3	0.72	18.3	1.83	46.5
P04-06MBS90	1/4	6.3	9/16-18	9/16	14	7/8	22	7/8	22	2.01	51.0	1.04	26.3	2.15	54.5
P06-04MBS90	3/8	9.5	7/16-20	11/16	17	3/4	19	7/8	22	1.84	46.8	1.02	26	2.24	57
P06-05MBS90	3/8	9.5	1/2-20	11/16	17	3/4	19	7/8	22	1.84	46.8	1.02	26	2.24	57
P06-06MBS90	3/8	9.5	9/16-18	11/16	17	7/8	22	7/8	22	2.01	51.0	1.02	26	2.24	57
P06-08MBS90	3/8	9.5	3/4-16	11/16	17	1 1/16	27	7/8	22	2.19	55.6	1.02	26	2.24	57
P06-10MBS90	3/8	9.5	7/8-14	11/16	17	1 1/16	27	7/8	22	2.07	52.6	1.02	26	2.24	57
P06-12MBS90	3/8	9.5	1 1/16-12	11/16	17	7/8	32	1 1/4	32	2.80	71.2	1.26	32	2.48	63
P08-06MBS90	1/2	12.7	9/16-18	7/8	22	7/8	22	7/8	22	2.01	51.0	1.13	28.7	2.36	60
P08-08MBS90	1/2	12.7	3/4-16	7/8	22	1 1/16	27	1 1/16	27	2.37	60.1	1.33	33.7	2.56	65
P08-10MBS90	1/2	12.7	7/8-14	7/8	22	1 1/16	27	1 1/16	27	2.25	57.1	1.33	33.7	2.56	65
P08-12MBS90	1/2	12.7	1 1/16-12	7/8	22	1 1/4	32	1 1/4	32	2.80	71.2	1.37	34.7	2.60	66
P10-08MBS90	5/8	15.9	3/4-16	15/16	24	1 1/16	27	1 1/16	27	2.37	60.1	1.35	34.2	2.64	67
P10-10MBS90	5/8	15.9	7/8-14	15/16	24	1 1/16	27	1 1/16	27	2.25	57.1	1.35	34.2	2.64	67
P10-12MBS90	5/8	15.9	1 1/16-12	15/16	24	1 1/4	32	1 1/4	32	2.80	71.2	1.48	37.7	2.78	70.5
P12-10MBS90	3/4	19.1	7/8-14	1 1/16	27	1 1/16	27	1 1/4	32	2.25	57.1	1.42	36	2.83	72
P12-12MBS90	3/4	19.1	1 1/16-12	1 1/16	27	1 1/4	32	1 1/4	32	2.80	71.2	1.56	39.5	2.97	75.5
P12-16MBS90	3/4	19.1	1 5/16-12	1 1/16	27	1 5/8	41	1 7/16	36	3.08	78.3	1.56	39.5	2.97	75.5
P16-16MBS90	1	25.4	1 5/16-12	1 1/4	32	1 5/8	41	1 7/16	36	3.08	78.3	1.75	44.5	3.56	90.5

## Code 61 O-Ring Flange



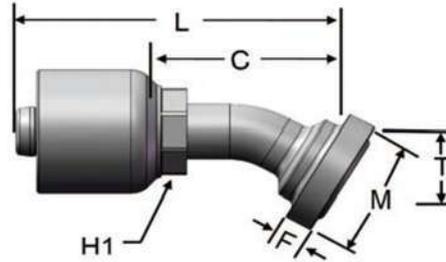
Part Number	⊖		H1		M		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
P08-08FL	1/2	12.7	7/8	22	1.19	30.2	3.04	77.3	1.81	46	0.27	6.8
P10-12FL	5/8	15.9	15/16	24	1.50	38.1	3.18	80.8	1.89	48	0.27	6.8
P12-12FL	3/4	19.1	1 1/16	27	1.50	38.1	3.31	84	1.89	48	0.27	6.8
P12-16FL	3/4	19.1	1 1/16	27	1.75	44.45	3.43	87	2.01	51	0.31	8
P16-12FL	1	25.4	1 1/4	32	1.50	38.1	3.74	95	1.93	49	0.27	6.8
P16-16FL	1	25.4	1 1/4	32	1.75	44.45	3.86	98	2.05	52	0.31	8
P16-20FL	1	25.4	1 1/4	32	2.00	50.8	4.06	103	2.24	57	0.31	8
P20-16FL	1 1/4	31.8	1 13/16	46	1.75	44.45	4.84	123	2.72	69	0.31	8
P20-20FL	1 1/4	31.8	1 13/16	46	2.00	50.8	5.47	139	2.74	69.5	0.31	8
P20-24FL	1 1/4	31.8	1 13/16	46	2.38	60.35	5.56	141.2	2.82	71.7	0.31	8
P24-20FL	1 1/2	38.1	2	50.8	2.00	50.8	6.22	158	3.03	77	0.31	8
P24-24FL	1 1/2	38.1	2	50.8	2.38	60.35	6.36	161.5	3.17	80.5	0.31	8
P24-32FL	1 1/2	38.1	2	50.8	2.81	71.4	6.42	163	3.23	82	0.38	9.6

## Code 61 O-Ring Flange 22.5° Bent Tube



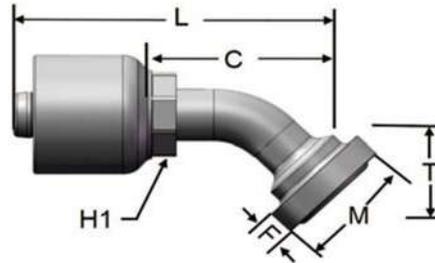
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
P08-08FL22.5	1/2	12.7	7/8	22	1.19	30.2	0.35	9	2.98	75.71	1.75	44.41	0.27	6.8
P12-12FL22.5	3/4	19.1	1 1/16	27	1.50	38.1	0.43	11	3.80	96.62	2.39	60.62	0.27	6.8
P12-16FL22.5	3/4	19.1	1 1/16	27	1.75	44.45	0.55	14	4.09	103.86	2.67	67.86	0.31	8
P16-16FL22.5	1	25.4	1 1/4	32	1.75	44.45	0.55	14	4.67	118.65	2.86	72.65	0.31	8
P16-20FL22.5	1	25.4	1 1/4	32	2.00	50.8	0.59	15	4.77	121.06	2.96	75.06	0.31	8
P20-20FL22.5	1 1/4	31.8	1 13/16	46	2.00	50.8	0.59	15	6.58	167.15	3.84	97.65	0.31	8
P20-24FL22.5	1 1/4	31.8	1 13/16	46	2.38	60.35	0.71	18	6.87	174.4	4.13	104.9	0.31	8
P24-24FL22.5	1 1/2	38.1	2	50.8	2.38	60.35	0.71	18	7.69	195.38	4.50	114.38	0.31	8
P24-32FL22.5	1 1/2	38.1	2	50.8	2.81	71.4	0.87	22	8.07	205.04	4.88	124.04	0.38	9.6

## Code 61 O-Ring Flange 30° Bent Tube



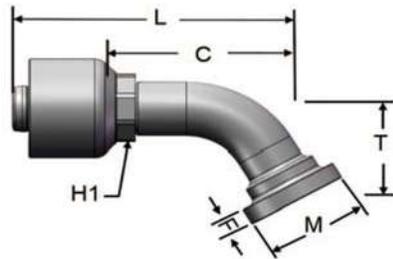
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
P08-08FL30	1/2	12.7	7/8	22	1.19	30.2	0.47	12	3.00	76.21	1.77	44.91	0.27	6.8
P08-12FL30	1/2	12.7	7/8	22	1.50	38.1	0.63	16	3.27	83.14	2.04	51.84	0.27	6.8
P12-12FL30	3/4	19.1	1 1/16	27	1.50	38.1	0.63	16	3.94	100.06	2.52	64.06	0.27	6.8
P12-16FL30	3/4	19.1	1 1/16	27	1.75	44.45	0.75	19	4.14	105.25	2.73	69.25	0.31	8
P16-16FL30	1	25.4	1 1/4	32	1.75	44.45	0.75	19	4.75	120.66	2.94	74.66	0.31	8
P16-20FL30	1	25.4	1 1/4	32	2.00	50.8	0.87	22	4.95	125.85	3.14	79.85	0.31	8
P20-20FL30	1 1/4	31.8	1 13/16	46	2.00	50.8	0.79	20	6.67	169.38	3.93	99.88	0.31	8
P20-24FL30	1 1/4	31.8	1 13/16	46	2.38	60.35	1.18	30	7.35	186.7	4.61	117.2	0.31	8
P24-24FL30	1 1/2	38.1	2	50.8	2.38	60.35	0.98	25	7.87	199.79	4.68	118.79	0.31	8
P24-32FL30	1 1/2	38.1	2	50.8	2.81	71.4	1.26	32	8.34	211.91	5.15	130.91	0.38	9.6
P20-20FL30M	1 1/4	31.8	1 13/16	46	2.00	50.8	0.87	22	6.80	172.84	4.07	103.34	0.31	8
P24-24FL30M	1 1/2	38.1	2	50.8	2.38	60.35	1.18	30	8.21	208.45	5.02	127.45	0.31	8

## Code 61 O-Ring Flange 45° Bent Tube



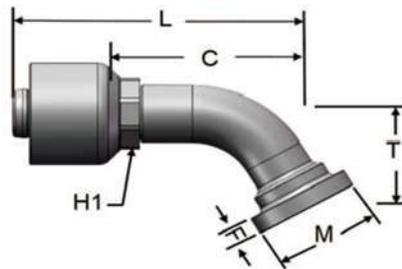
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
P06-08FL45	3/8	9.5	11/16	17	1.19	30.2	0.75	19	2.87	72.83	1.65	41.83	0.27	6.8
P08-08FL45	1/2	12.7	7/8	22	1.19	30.2	0.75	19	3.05	77.5	1.82	46.2	0.27	6.8
P08-12FL45	1/2	12.7	7/8	22	1.50	38.1	1.02	26	3.33	84.5	2.09	53.2	0.27	6.8
P10-12FL45	5/8	15.9	15/16	24	1.50	38.1	1.02	26	3.63	92.08	2.33	59.28	0.27	6.8
P12-12FL45	3/4	19.1	1 1/16	27	1.50	38.1	1.02	26	4.06	103.17	2.64	67.17	0.27	6.8
P12-16FL45	3/4	19.1	1 1/16	27	1.75	44.45	1.26	32	4.30	109.17	2.88	73.17	0.31	8
P16-16FL45	1	25.4	1 1/4	32	1.75	44.45	1.10	28	4.80	121.89	2.99	75.89	0.31	8
P16-20FL45	1	25.4	1 1/4	32	2.00	50.8	1.26	32	4.96	125.89	3.15	79.89	0.31	8
P20-16FL45	1 1/4	31.8	1 13/16	46	1.75	44.45	1.26	32	6.52	165.64	3.79	96.14	0.31	8
P20-20FL45	1 1/4	31.8	1 13/16	46	2.00	50.8	1.26	32	6.88	174.78	4.14	105.28	0.31	8
P20-24FL45	1 1/4	31.8	1 13/16	46	2.38	60.35	1.50	38	7.12	180.78	4.38	111.28	0.31	8
P24-20FL45	1 1/2	38.1	2	50.8	2.00	50.8	1.50	38	7.72	196.08	4.53	115.08	0.31	8
P24-24FL45	1 1/2	38.1	2	50.8	2.38	60.35	1.50	38	8.04	204.14	4.85	123.14	0.31	8
P24-32FL45	1 1/2	38.1	2	50.8	2.81	71.4	2.05	52	8.59	218.14	5.40	137.14	0.38	9.6
P16-16FL45M	1	25.4	1 1/4	32	1.75	44.45	1.26	32	4.96	125.89	3.15	79.89	0.31	8
P16-20FL45M	1	25.4	1 1/4	32	2.00	50.8	1.50	38	5.19	131.89	3.38	85.89	0.31	8
P20-20FL45M	1 1/4	31.8	1 13/16	46	2.00	50.8	1.50	38	7.12	180.78	4.38	111.28	0.31	8
P20-24FL45M	1 1/4	31.8	1 13/16	46	2.38	60.35	1.73	44	7.35	186.78	4.62	117.28	0.31	8
P24-24FL45M	1 1/2	38.1	2	50.8	2.38	60.35	1.73	44	8.27	210.14	5.08	129.14	0.31	8
P24-32FL45M	1 1/2	38.1	2	50.8	2.81	71.4	2.20	56	8.75	222.14	5.56	141.14	0.38	9.6

## Code 61 O-Ring Flange 60° Bent Tube



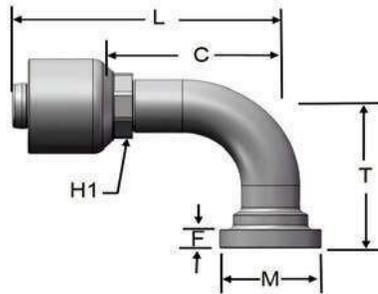
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
P08-08FL60	1/2	12.7	7/8	22	1.19	30.2	1.06	27	3.05	77.5	1.82	46.2	0.27	6.8
P12-12FL60	3/4	19.1	1 1/16	27	1.50	38.1	1.46	37	4.09	103.91	2.67	67.91	0.27	6.8
P12-16FL60	3/4	19.1	1 1/16	27	1.75	44.45	1.73	44	4.25	107.96	2.83	71.96	0.31	8
P16-16FL60	1	25.4	1 1/4	32	1.75	44.45	1.73	44	4.97	126.15	3.16	80.15	0.31	8
P16-20FL60	1	25.4	1 1/4	32	2.00	50.8	2.17	55	5.22	132.5	3.41	86.5	0.31	8
P20-20FL60	1 1/4	31.8	1 13/16	46	2.00	50.8	1.77	45	7.00	177.74	4.26	108.24	0.31	8
P20-24FL60	1 1/4	31.8	1 13/16	46	2.38	60.35	2.52	64	7.43	188.7	4.69	119.2	0.31	8
P24-24FL60	1 1/2	38.1	2	50.8	2.38	60.35	2.09	53	8.17	207.5	4.98	126.5	0.31	8
P24-32FL60	1 1/2	38.1	2	50.8	2.81	71.4	3.27	83	8.85	224.83	5.66	143.83	0.38	9.6
P20-20FL60M	1 1/4	31.8	1 13/16	46	2.00	50.8	2.17	55	7.22	183.51	4.49	114.01	0.31	8
P24-24FL60M	1 1/2	38.1	2	50.8	2.38	60.35	2.52	64	8.42	213.86	5.23	132.86	0.31	8

## Code 61 O-Ring Flange 67.5° Bent Tube



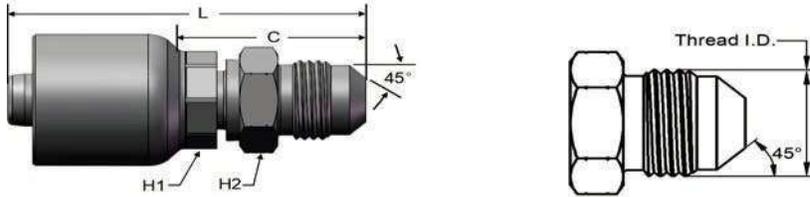
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
P08-08FL67.5	1/2	12.7	7/8	22	1.19	30.2	1.18	30	3.00	76.26	1.77	44.96	0.27	6.8
P08-12FL67.5	1/2	12.7	7/8	22	1.50	38.1	1.65	42	3.20	81.23	1.97	49.93	0.27	6.8
P12-12FL67.5	3/4	19.1	1 1/16	27	1.50	38.1	1.65	42	4.05	102.95	2.64	66.95	0.27	6.8
P12-16FL67.5	3/4	19.1	1 1/16	27	1.75	44.45	2.01	51	4.20	106.67	2.78	70.67	0.31	8
P16-16FL67.5	1	25.4	1 1/4	32	1.75	44.45	2.01	51	4.95	125.68	3.14	79.68	0.31	8
P16-20FL67.5	1	25.4	1 1/4	32	2.00	50.8	2.52	64	5.16	131.07	3.35	85.07	0.31	8
P20-20FL67.5	1 1/4	31.8	1 13/16	46	2.00	50.8	2.01	51	7.00	177.87	4.27	108.37	0.31	8
P20-24FL67.5	1 1/4	31.8	1 13/16	46	2.38	60.35	2.91	74	7.38	187.4	4.64	117.9	0.31	8
P24-24FL67.5	1 1/2	38.1	2	50.8	2.38	60.35	2.40	61	8.20	208.17	5.01	127.17	0.31	8
P24-32FL67.5	1 1/2	38.1	2	50.8	2.81	71.4	3.82	97	8.78	223.08	5.59	142.08	0.38	9.6
P20-20FL67.5M	1 1/4	31.8	1 13/16	46	2.00	50.8	2.52	64	7.21	183.26	4.48	113.76	0.31	8
P24-24FL67.5M	1 1/2	38.1	2	50.8	2.38	60.35	2.91	74	8.41	213.55	5.22	132.55	0.31	8

## Code 61 O-Ring Flange 90° Bent Tube



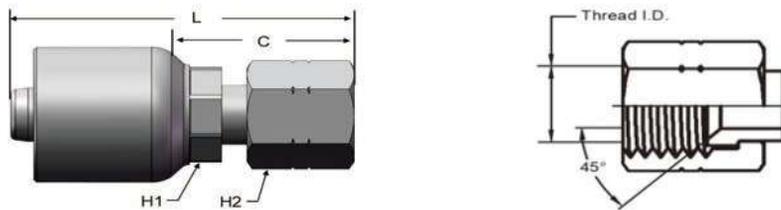
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
P06-08FL90	3/8	9.5	11/16	17	1.19	30.2	1.57	40	2.50	63.5	1.28	32.5	0.27	6.8
P08-08FL90	1/2	12.7	7/8	22	1.19	30.2	1.57	40	2.79	70.8	1.56	39.5	0.27	6.8
P08-12FL90	1/2	12.7	7/8	22	1.50	38.1	2.28	58	2.79	70.8	1.56	39.5	0.27	6.8
P10-12FL90	5/8	15.9	15/16	24	1.50	38.1	2.28	58	3.22	81.9	1.93	49.1	0.27	6.8
P12-12FL90	3/4	19.1	1 1/16	27	1.50	38.1	2.28	58	3.80	96.5	2.38	60.5	0.27	6.8
P12-16FL90	3/4	19.1	1 1/16	27	1.75	44.45	2.76	70	3.80	96.5	2.38	60.5	0.31	8
P16-12FL90	1	25.4	1 1/4	32	1.50	38.1	2.28	58	4.25	108	2.44	62	0.27	6.8
P16-16FL90	1	25.4	1 1/4	32	1.75	44.45	2.40	61	4.67	118.5	2.85	72.5	0.31	8
P16-20FL90	1	25.4	1 1/4	32	2.00	50.8	2.68	68	4.67	118.5	2.85	72.5	0.31	8
P20-16FL90	1 1/4	31.8	1 13/16	46	1.75	44.45	3.23	82	6.30	160	3.56	90.5	0.31	8
P20-20FL90	1 1/4	31.8	1 13/16	46	2.00	50.8	2.68	68	6.89	175	4.15	105.5	0.31	8
P20-24FL90	1 1/4	31.8	1 13/16	46	2.38	60.35	3.19	81	6.89	175	4.15	105.5	0.31	8
P24-20FL90	1 1/2	38.1	2	50.8	2.00	50.8	3.54	90	7.49	190.3	4.30	109.3	0.31	8
P24-24FL90	1 1/2	38.1	2	50.8	2.38	60.35	3.19	81	8.06	204.8	4.87	123.8	0.31	8
P24-32FL90	1 1/2	38.1	2	50.8	2.81	71.4	4.72	120	8.06	204.8	4.87	123.8	0.38	9.6
P16-16FL90M	1	25.4	1 1/4	32	1.75	44.45	2.76	70	4.67	118.5	2.85	72.5	0.31	8
P16-20FL90M	1	25.4	1 1/4	32	2.00	50.8	3.54	90	4.67	118.5	2.85	72.5	0.31	8
P20-20FL90M	1 1/4	31.8	1 13/16	46	2.00	50.8	3.54	90	6.89	175	4.15	105.5	0.31	8
P20-24FL90M	1 1/4	31.8	1 13/16	46	2.38	60.35	4.09	104	6.89	175	4.15	105.5	0.31	8
P24-24FL90M	1 1/2	38.1	2	50.8	2.38	60.35	4.09	104	8.06	204.8	4.87	123.8	0.31	8
P24-32FL90M	1 1/2	38.1	2	50.8	2.81	71.4	5.43	138	8.06	204.8	4.87	123.8	0.38	9.6

## Male SAE 45° Flare



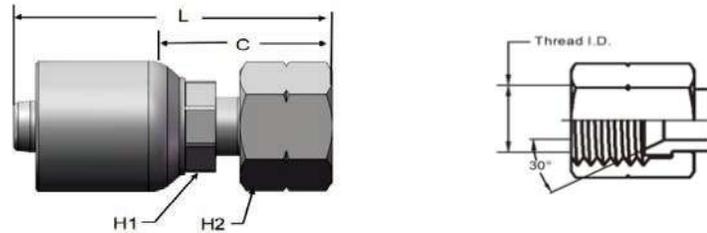
Part Number	⊖		🌀 in	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P06-06MS	3/8	9.5	5/8-18	11/16	17	11/16	17	2.45	62.15	1.23	31.15
P12-12MS	3/4	19.1	1-1/16-14	1 1/16	27	1 1/16	27	3.39	86	1.97	50

## Female Swivel SAE 45 Degree Flare



Part Number	⊖		🌀 in	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-04FSX	1/4	6.3	7/16-20	9/16	14	9/16	14	2.14	54.4	1.03	26.2
P06-06FSX	3/8	9.5	5/8-18	11/16	17	7/8	22	2.38	60.5	1.16	29.5
P08-08FSX	1/2	12.7	3/4-16	7/8	22	15/16	24	2.56	65	1.33	33.7
P10-10FSX	5/8	15.9	7/8-14	15/16	24	1 1/16	27	2.72	69	1.43	36.2
P12-12FSX	3/4	19.1	1 1/16-12	1 3/16	30	1 1/4	32	2.91	73.9	1.63	41.4

# Female Swivel Japanese Industrial Standard 30° Flare



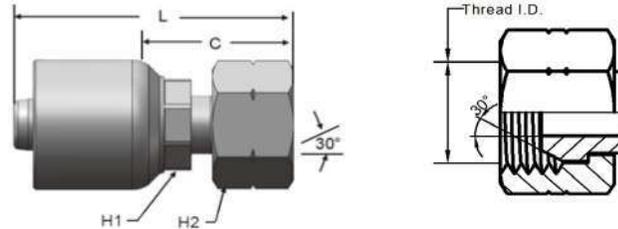
Part Number	⌀			H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-04FJIS	1/4	6.3	1/4-19	9/16	14	3/4	19	2.12	53.8	1.01	25.6
P04-06FJIS	1/4	6.3	3/8-19	9/16	14	7/8	22	2.20	56	1.10	28
P05-06FJIS	5/16	7.9	3/8-19	5/8	16	7/8	22	2.21	56.2	1.09	27.7
P06-04FJIS	3/8	9.5	1/4-19	11/16	17	3/4	19	2.28	57.8	1.06	26.8
P06-06FJIS	3/8	9.5	3/8-19	11/16	17	7/8	22	2.31	58.7	1.09	27.7
P06-08FJIS	3/8	9.5	1/2-14	11/16	17	1 1/16	27	2.46	62.5	1.24	31.5
P08-06FJIS	1/2	12.7	3/8-19	7/8	22	7/8	22	2.43	61.7	1.20	30.4
P08-08FJIS	1/2	12.7	1/2-14	7/8	22	1 1/16	27	2.58	65.5	1.35	34.2
P08-10FJIS	1/2	12.7	5/8-14	7/8	22	1 3/16	30	2.60	66	1.37	34.7
P10-08FJIS	5/8	15.9	1/2-14	15/16	24	1 1/16	27	2.62	66.5	1.33	33.7
P10-10FJIS	5/8	15.9	5/8-14	15/16	24	1 3/16	30	2.68	68	1.39	35.2
P10-12FJIS	5/8	15.9	3/4-14	15/16	24	1 1/4	32	2.70	68.5	1.41	35.7
P12-10FJIS	3/4	19.1	5/8-14	1 1/16	27	1 3/16	30	2.91	74	1.52	38.5
P12-12FJIS	3/4	19.1	3/4-14	1 1/16	27	1 1/4	32	2.89	73.5	1.48	37.5
P12-16FJIS	3/4	19.1	1-11	1 1/16	27	1 5/8	41	2.97	75.5	1.56	39.5
P16-12FJIS	1	25.4	3/4-14	1 1/4	32	1 1/4	32	3.39	86	1.57	40
P16-16FJIS	1	25.4	1-11	1 1/4	32	1 5/8	41	3.41	86.5	1.59	40.5
P16-20FJIS	1	25.4	1 1/4-11	1 1/4	32	2	50	3.70	94	1.89	48
P20-16FJIS	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	4.84	123	2.11	53.5
P20-20FJIS	1 1/4	31.8	1 1/4-11	1 13/16	46	2	50	5.14	130.5	2.40	61
P20-24FJIS	1 1/4	31.8	1 1/2-11	1 13/16	46	2 3/16	55	5.14	130.5	2.40	61
P24-20FJIS	1 1/2	38.1	1 1/4-11	2	50.8	2	50	5.49	139.5	2.30	58.5
P24-24FJIS	1 1/2	38.1	1 1/2-11	2	50.8	2 3/16	55	5.61	142.5	2.42	61.5

## Male British Standard Pipe Tapered



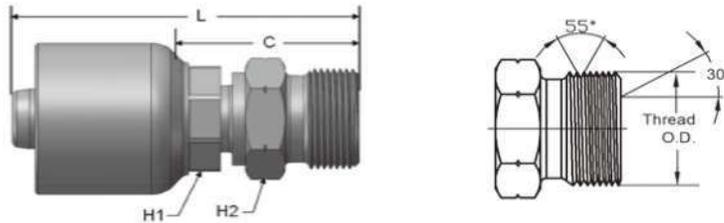
Part Number	⊖		🌀 in	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-02MBSPT	1/4	6.3	1/8-28	9/16	14	1/2	12	2.15	54.5	1.04	26.3
P04-04MBSPT	1/4	6.3	1/4-19	9/16	14	11/16	17	2.32	59	1.21	30.8
P04-06MBSPT	1/4	6.3	3/8-19	9/16	14	11/16	17	2.34	59.5	1.23	31.3
P06-04MBSPT	3/8	9.5	1/4-19	11/16	17	11/16	17	2.46	62.5	1.24	31.5
P06-06MBSPT	3/8	9.5	3/8-19	11/16	17	11/16	17	2.44	62	1.22	31
P06-08MBSPT	3/8	9.5	1/2-14	11/16	17	7/8	22	2.74	69.5	1.52	38.5
P08-06MBSPT	1/2	12.7	3/8-19	7/8	22	3/4	19	2.60	66	1.37	34.7
P08-08MBSPT	1/2	12.7	1/2-14	7/8	22	7/8	22	2.85	72.5	1.62	41.2
P10-08MBSPT	5/8	15.9	1/2-14	15/16	24	7/8	22	2.93	74.5	1.64	41.7
P10-12MBSPT	5/8	15.9	3/4-14	15/16	24	1 1/16	27	3.01	76.5	1.72	43.7
P12-12MBSPT	3/4	19.1	3/4-14	1 1/16	27	1 1/16	27	3.21	81.5	1.79	45.5
P12-16MBSPT	3/4	19.1	1-11	1 1/16	27	1 7/16	36	3.46	88	2.05	52
P16-12MBSPT	1	25.4	3/4-14	1 1/4	32	1 1/4	32	3.64	92.5	1.83	46.5
P16-16MBSPT	1	25.4	1-11	1 1/4	32	1 7/16	36	3.90	99	2.09	53
P16-20MBSPT	1	25.4	1 1/4-11	1 1/4	32	1 13/16	46	4.04	102.5	2.22	56.5
P20-16MBSPT	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	5.31	135	2.58	65.5
P20-20MBSPT	1 1/4	31.8	1 1/4-11	1 13/16	46	1 13/16	46	5.45	138.5	2.72	69
P20-24MBSPT	1 1/4	31.8	1 1/2-11	1 13/16	46	2	50	5.45	138.5	2.72	69
P24-20MBSPT	1 1/2	38.1	1 1/4-11	2	50.8	1 13/16	46	5.93	150.5	2.74	69.5
P24-24MBSPT	1 1/2	38.1	1 1/2-11	2	50.8	2	50	5.93	150.5	2.74	69.5

# Female Swivel British Standard Parallel Pipe



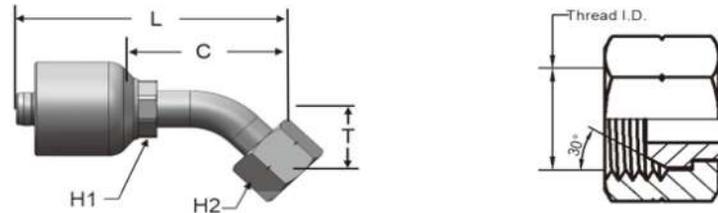
Part Number	Ø		Thread	H1		H2		L		C	
	in	mm		in	in	mm	in	mm	in	mm	in
P04-02FBSPP	1/4	6.3	1/8-28	9/16	14	9/16	14	2.03	51.5	0.92	23.3
P04-04FBSPP	1/4	6.3	1/4-19	9/16	14	3/4	19	2.07	52.5	0.96	24.3
P04-06FBSPP	1/4	6.3	3/8-19	9/16	14	7/8	22	2.15	54.7	1.04	26.5
P05-06FBSPP	5/16	7.9	3/8-19	5/8	16	7/8	22	2.15	54.7	1.03	26.2
P06-04FBSPP	3/8	9.5	1/4-19	11/16	17	3/4	19	2.28	57.8	1.06	26.8
P06-06FBSPP	3/8	9.5	3/8-19	11/16	17	7/8	22	2.31	58.7	1.09	27.7
P06-08FBSPP	3/8	9.5	1/2-14	11/16	17	11/16	27	2.40	61	1.18	30
P08-06FBSPP	1/2	12.7	3/8-19	15/16	24	7/8	22	2.33	59.2	1.10	27.9
P08-08FBSPP	1/2	12.7	1/2-14	15/16	24	11/16	27	2.52	64	1.29	32.7
P08-10FBSPP	1/2	12.7	5/8-14	15/16	24	13/16	30	2.60	66	1.37	34.7
P10-08FBSPP	5/8	15.9	1/2-14	1 1/16	27	11/16	27	2.62	66.5	1.33	33.7
P10-10FBSPP	5/8	15.9	5/8-14	1 1/16	27	13/16	30	2.68	68	1.39	35.2
P10-12FBSPP	5/8	15.9	3/4-14	1 1/16	27	11/4	32	2.70	68.5	1.41	35.7
P12-10FBSPP	3/4	19.1	5/8-14	1 3/16	30	13/16	30	2.93	74.5	1.52	38.5
P12-12FBSPP	3/4	19.1	3/4-14	1 3/16	30	11/4	32	2.89	73.5	1.48	37.5
P12-16FBSPP	3/4	19.1	1-11	1 3/16	30	15/8	41	2.97	75.5	1.56	39.5
P16-12FBSPP	1	25.4	3/4-14	1 7/16	36	11/4	32	3.27	83	1.46	37
P16-16FBSPP	1	25.4	1-11	1 7/16	36	15/8	41	3.41	86.5	1.59	40.5
P16-20FBSPP	1	25.4	1 1/4-11	1 7/16	36	2	50	3.56	90.5	1.75	44.5
P20-16FBSPP	1 1/4	31.8	1-11	1 13/16	46	15/8	41	4.65	118	1.91	48.5
P20-20FBSPP	1 1/4	31.8	1 1/4-11	1 13/16	46	2	50	5.02	127.5	2.28	58
P20-24FBSPP	1 1/4	31.8	1 1/2-11	1 13/16	46	23/16	55	5.20	132.1	2.46	62.6
P24-20FBSPP	1 1/2	38.1	1 1/4-11	2	50.8	2	50	5.37	136.5	2.19	55.5
P24-24FBSPP	1 1/2	38.1	1 1/2-11	2	50.8	23/16	55	5.69	144.5	2.50	63.5

## Male British Standard Parallel Pipe



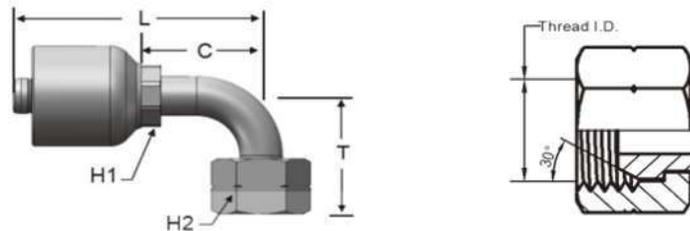
Part Number	Ø			H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-02MBSPP	1/4	6.3	1/8-28	9/16	14	9/16	14	2.07	52.5	0.96	24.3
P04-04MBSPP	1/4	6.3	1/4-19	9/16	14	11/16	17	2.19	55.5	1.07	27.3
P04-06MBSPP	1/4	6.3	3/8-19	9/16	14	3/4	19	2.26	57.5	1.15	29.3
P06-04MBSPP	3/8	9.5	1/4-19	11/16	17	11/16	17	2.28	58	1.06	27
P06-06MBSPP	3/8	9.5	3/8-19	11/16	17	3/4	19	2.36	60	1.14	29
P06-08MBSPP	3/8	9.5	1/2-14	11/16	17	7/8	22	2.48	63	1.26	32
P08-06MBSPP	1/2	12.7	3/8-19	7/8	22	3/4	19	2.46	62.5	1.23	31.2
P08-08MBSPP	1/2	12.7	1/2-14	7/8	22	7/8	22	2.58	65.5	1.35	34.2
P08-10MBSPP	1/2	12.7	5/8-14	7/8	22	15/16	24	2.70	68.5	1.46	37.2
P10-08MBSPP	5/8	15.9	1/2-14	15/16	24	7/8	22	2.66	67.5	1.37	34.7
P10-10MBSPP	5/8	15.9	5/8-14	15/16	24	15/16	24	2.78	70.5	1.48	37.7
P10-12MBSPP	5/8	15.9	3/4-14	15/16	24	1 3/16	30	2.85	72.5	1.56	39.7
P12-10MBSPP	3/4	19.1	5/8-14	1 1/16	27	15/16	24	2.97	75.5	1.56	39.5
P12-12MBSPP	3/4	19.1	3/4-14	1 1/16	27	1 3/16	30	3.05	77.5	1.63	41.5
P12-16MBSPP	3/4	19.1	1-11	1 1/16	27	1 7/16	36	3.25	82.5	1.83	46.5
P16-12MBSPP	1	25.4	3/4-14	1 1/4	32	1 3/16	30	3.48	88.5	1.67	42.5
P16-16MBSPP	1	25.4	1-11	1 1/4	32	1 7/16	36	3.68	93.5	1.87	47.5
P16-20MBSPP	1	25.4	1 1/4-11	1 1/4	32	1 13/16	46	3.84	97.5	2.03	51.5
P20-16MBSPP	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	5.08	129	2.34	59.5
P20-20MBSPP	1 1/4	31.8	1 1/4-11	1 13/16	46	1 13/16	46	5.24	133	2.50	63.5
PP20-24MBSPP	1 1/4	31.8	1 1/2-11	1 13/16	46	2	50	5.31	135	2.58	65.5
P24-20MBSPP	1 1/2	38.1	1 1/4-11	2	50.8	1 13/16	46	5.71	145	2.52	64
P24-24MBSPP	1 1/2	38.1	1 1/2-11	2	50.8	2	50	5.79	147	2.60	66

## Female British Standard Parallel Pipe Swivel 45° Bent Tube



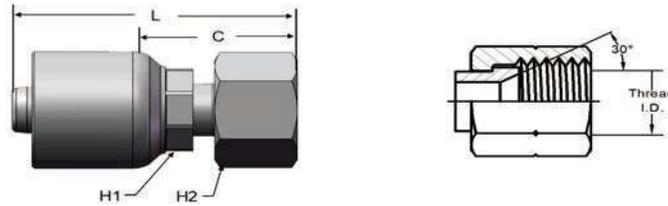
Part Number	Ø		Thread	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
P04-02FBSP45	1/4	6.3	1/8-28	9/16	14	9/16	14	0.59	15	2.47	62.66	1.36	34.46
P04-04FBSP45	1/4	6.3	1/4-19	9/16	14	3/4	19	0.59	15	2.51	63.8	1.40	35.6
P04-06FBSP45	1/4	6.3	3/8-19	9/16	14	7/8	22	0.63	16	2.55	64.8	1.44	36.6
P05-06FBSP45	5/16	7.9	3/8-19	5/8	16	7/8	22	0.71	18	2.70	68.6	1.58	40.1
P06-04FBSP45	3/8	9.5	1/4-19	11/16	17	3/4	19	0.75	19	2.83	71.9	1.61	40.9
P06-06FBSP45	3/8	9.5	3/8-19	11/16	17	7/8	22	0.71	18	2.83	71.83	1.61	40.83
P06-08FBSP45	3/8	9.5	1/2-14	11/16	17	1 1/16	27	0.71	18	2.83	71.83	1.61	40.83
P08-06FBSP45	1/2	12.7	3/8-19	15/16	24	7/8	22	0.91	23	3.23	82.13	2.00	50.83
P08-08FBSP45	1/2	12.7	1/2-14	15/16	24	1 1/16	27	0.79	20	3.10	78.83	1.87	47.53
P08-10FBSP45	1/2	12.7	5/8-14	15/16	24	1 3/16	30	0.91	23	3.23	82	2.00	50.7
P10-08FBSP45	5/8	15.9	1/2-14	1 1/16	27	1 1/16	27	1.02	26	3.61	91.7	2.32	58.9
P10-10FBSP45	5/8	15.9	5/8-14	1 1/16	27	1 3/16	30	0.98	25	3.59	91.21	2.30	58.41
P10-12FBSP45	5/8	15.9	3/4-14	1 1/16	27	1 1/4	32	1.10	28	3.70	94.08	2.41	61.28
P12-10FBSP45	3/4	19.1	5/8-14	1 3/16	30	1 3/16	30	1.30	33	4.06	103.08	2.64	67.08
P12-12FBSP45	3/4	19.1	3/4-14	1 3/16	30	1 1/4	32	1.14	29	4.11	104.3	2.69	68.31
P12-16FBSP45	3/4	19.1	1-11	1 3/16	30	1 5/8	41	1.26	32	4.30	109.17	2.88	73.04
P16-12FBSP45	1	25.4	3/4-14	1 7/16	36	1 1/4	32	1.57	40	5.28	134.17	3.47	88.17
P16-16FBSP45	1	25.4	1-11	1 7/16	36	1 5/8	41	1.38	35	5.07	128.89	3.26	82.89
P16-20FBSP45	1	25.4	1 1/4-11	1 7/16	36	2	50	1.54	39	5.23	132.89	3.42	86.89
P20-16FBSP45	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	1.38	35	6.57	166.89	3.83	97.39
P20-20FBSP45	1 1/4	31.8	1 1/4-11	1 13/16	46	2	50	1.57	40	7.03	178.5	4.29	109
P20-24FBSP45	1 1/4	31.8	1 1/2-11	1 13/16	46	2 3/16	55	2.13	54	7.75	196.78	5.01	127.28
P24-20FBSP45	1 1/2	38.1	1 1/4-11	2	50.8	2	50	1.57	40	7.86	199.58	4.67	118.58
P24-24FBSP45	1 1/2	38.1	1 1/2-11	2	50.8	2 3/16	55	1.97	50	8.18	207.78	4.99	126.78

## Female Swivel British Standard Parallel Pipe 90° Bent Tube



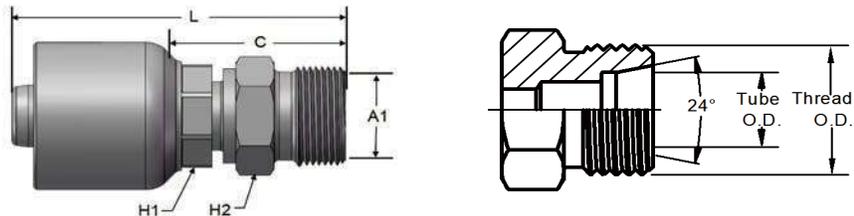
Part Number	Ø		▨	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
P04-02FBSP90	1/4	6.3	1/8-28	9/16	14	9/16	14	1.06	27	2.13	54.2	1.02	26
P04-04FBSP90	1/4	6.3	1/4-19	9/16	14	3/4	19	1.10	28	2.13	54.2	1.02	26
P04-06FBSP90	1/4	6.3	3/8-19	9/16	14	7/8	22	1.22	31	2.24	57	1.13	28.8
P05-06FBSP90	5/16	7.9	3/8-19	5/8	16	7/8	22	1.34	34	2.32	58.95	1.20	30.45
P06-04FBSP90	3/8	9.5	1/4-19	11/16	17	3/4	19	1.34	34	2.50	63.5	1.28	32.5
P06-6FBSP90	3/8	9.5	3/8-19	11/16	17	7/8	22	1.34	34	2.50	63.5	1.28	32.5
P06-08FBSP90	3/8	9.5	1/2-14	11/16	17	1 1/16	27	1.38	35	2.50	63.5	1.28	32.5
P08-06FBSP90	1/2	12.7	3/8-19	15/16	24	7/8	22	1.65	42	2.71	68.8	1.48	37.5
P08-08FBSP90	1/2	12.7	1/2-14	15/16	24	1 1/16	27	1.61	41	2.85	72.3	1.61	41
P08-10FBSP90	1/2	12.7	5/8-14	15/16	24	1 3/16	30	1.77	45	2.81	71.3	1.57	40
P10-08FBSP90	5/8	15.9	1/2-14	1 1/16	27	1 1/16	27	2.05	52	3.07	78	1.78	45.2
P10-10FBSP90	5/8	15.9	5/8-14	1 1/16	27	1 3/16	30	2.01	51	3.26	82.9	1.97	50.1
P10-12FBSP90	5/8	15.9	3/4-14	1 1/16	27	1 1/4	32	2.20	56	3.22	81.9	1.93	49.1
P12-10FBSP90	3/4	19.1	5/8-14	1 3/16	30	1 3/16	30	2.28	58	3.46	88	2.05	52
P12-12FBSP90	3/4	19.1	3/4-14	1 3/16	30	1 1/4	32	2.28	58	3.62	92	2.20	56
P12-16FBSP90	3/4	19.1	1-11	1 3/16	30	1 5/8	41	2.44	62	3.80	96.5	2.38	60.5
P16-12FBSP90	1	25.4	3/4-14	1 7/16	36	1 1/4	32	2.80	71	4.47	113.5	2.66	67.5
P16-16FBSP90	1	25.4	1-11	1 7/16	36	1 5/8	41	2.76	70	4.67	118.5	2.85	72.5
P16-20FBSP90	1	25.4	1 1/4-11	1 7/16	36	2	50	2.99	76	4.67	118.5	2.85	72.5
P20-16FBSP90	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	2.76	70	6.16	156.5	3.43	87
P20-20FBSP90	1 1/4	31.8	1 1/4-11	1 13/16	46	2	50	3.35	85	6.59	167.5	3.86	98
P20-24FBSP90	1 1/4	31.8	1 1/2-11	1 13/16	46	2 3/16	55	3.62	92	6.89	175	4.15	105.5
P24-20FBSP90	1 1/2	38.1	1 1/4-11	2	50.8	2	50	3.35	85	7.55	191.8	4.36	110.8
P24-24FBSP90	1 1/2	38.1	1 1/2-11	2	50.8	2 3/16	55	3.94	100	7.56	192	4.37	111

## Female Swivel Komatsu Style Japanese Metric



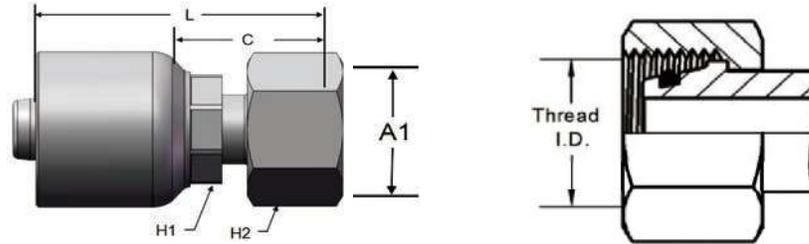
Part Number	⌀		 mm	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
P04-14FKS	1/4	6.3	M14-1.5	9/16	14	3/4	19	1.81	46.1	0.70	17.9
P06-18FKS	3/8	9.5	M18-1.5	11/16	17	15/16	24	2.03	51.5	0.81	20.5
P08-22FKS	1/2	12.7	M22-1.5	7/8	22	1 1/16	27	2.11	53.6	0.88	22.3
P08-24FKS	1/2	12.7	M24-1.5	7/8	22	1 3/16	30	2.28	58	1.05	26.7
P10-24FKS	5/8	15.9	M24-1.5	15/16	24	1 3/16	30	2.36	60	1.07	27.2
P12-30FKS	3/4	19.1	M30-1.5	1 3/16	30	1 7/16	36	3.05	77.5	1.26	32
P16-33FKS	1	25.4	M33-1.5	1 7/16	36	1 5/8	41	3.68	93.5	1.14	29
P20-36FKS	1 1/4	31.8	M36-1.5	1 13/16	46	1 13/16	46	4.33	110	1.59	40.5

## Male DIN 24° Cone-Light Series



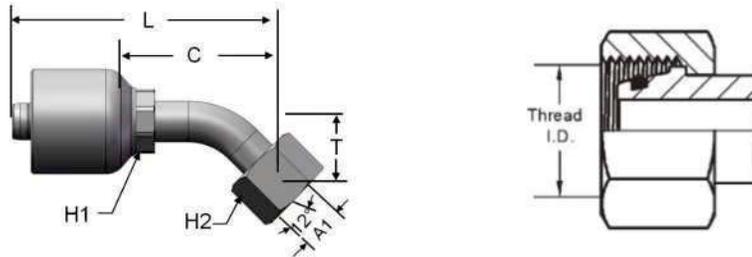
Part Number	⊖		mm	A1	H1		H2		L		C	
	in	mm			mm	in	mm	in	mm	in	mm	in
P04-06-12MDL	1/4	6.3	M12-1.5	12	9/16	14	9/16	14	2.09	53	0.98	24.8
P04-08-14MDL	1/4	6.3	M14-1.5	14	9/16	14	11/16	17	2.15	54.5	1.04	26.3
P04-10-16MDL	1/4	6.3	M16-1.5	16	9/16	14	11/16	17	2.19	55.5	1.07	27.3
P05-10-16MDL	5/16	7.9	M16-1.5	16	5/8	16	11/16	17	2.15	54.5	1.02	26
P05-12-18MDL	5/16	7.9	M18-1.5	18	5/8	16	3/4	19	2.19	55.5	1.06	27
P06-10-16MDL	3/8	9.5	M16-1.5	16	11/16	17	11/16	17	2.28	58	1.06	27
P06-12-18MDL	3/8	9.5	M18-1.5	18	11/16	17	3/4	19	2.28	58	1.06	27
P06-15-22MDL	3/8	9.5	M22-1.5	22	11/16	17	15/16	24	2.32	59	1.10	28
P08-12-18MDL	1/2	12.7	M18-1.5	18	15/16	24	3/4	19	2.38	60.5	1.15	29.2
P08-15-22MDL	1/2	12.7	M22-1.5	22	15/16	24	15/16	24	2.46	62.5	1.23	31.2
P08-18-26MDL	1/2	12.7	M26-1.5	26	15/16	24	1 1/16	27	2.48	63	1.25	31.7
P10-15-22MDL	5/8	15.9	M22-1.5	22	1 1/16	27	15/16	24	2.54	64.5	1.25	31.7
P10-18-26MDL	5/8	15.9	M26-1.5	26	1 1/16	27	1 1/16	27	2.54	64.5	1.25	31.7
P10-22-30MDL	5/8	15.9	M30-2	30	1 1/16	27	1 1/4	32	2.66	67.5	1.37	34.7
P12-18-26MDL	3/4	19.1	M26-1.5	26	1 3/16	30	1 1/16	27	2.76	70	1.34	34
P12-22-30MDL	3/4	19.1	M30-2	30	1 3/16	30	1 1/4	32	2.85	72.5	1.44	36.5
P12-28-36MDL	3/4	19.1	M36-2	36	1 3/16	30	1 5/8	41	2.97	75.5	1.56	39.5
P16-22-30MDL	1	25.4	M30-2	30	1 7/16	36	1 1/4	32	3.29	83.5	1.48	37.5
P16-28-36MDL	1	25.4	M36-2	36	1 7/16	36	1 5/8	41	3.37	85.5	1.56	39.5
P16-35-45MDL	1	25.4	M45-2	45	1 7/16	36	1 13/16	46	3.52	89.5	1.71	43.5
P20-28-36MDL	1 1/4	31.8	M36-2	36	1 13/16	46	1 5/8	41	4.78	121.5	2.05	52
P20-35-45MDL	1 1/4	31.8	M45-2	45	1 13/16	46	1 13/16	46	4.92	125	2.19	55.5
P20-42-52MDL	1 1/4	31.8	M52-2	52	1 13/16	46	2 3/16	56	4.94	125.5	2.20	56
P24-35-45MDL	1 1/2	38.1	M45-2	45	2	50.8	1 13/16	46	5.39	137	2.20	56
P24-42-52MDL	1 1/2	38.1	M52-2	52	2	50.8	2 3/16	56	5.41	137.5	2.22	56.5

## Female Swivel DIN 24° Cone-Light Series with O-Ring



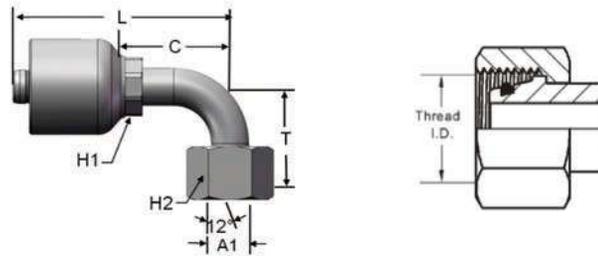
Part Number	⊖		mm	A1	H1		H2		L		C	
	in	mm			mm	in	mm	in	mm	in	mm	in
P04-06-12FDL	1/4	6.3	M12-1.5-6H	6	9/16	14	9/16	14	2.05	52	0.94	23.8
P04-08-14FDL	1/4	6.3	M14-1.5-6H	8	9/16	14	11/16	17	2.01	51	0.90	22.8
P04-10-16FDL	1/4	6.3	M16-1.5-6H	10	9/16	14	3/4	19	2.01	51	0.90	22.8
P05-10-16FDL	5/16	7.9	M16-1.5-6H	10	5/8	16	3/4	19	2.01	51	0.89	22.5
P05-12-18FDL	5/16	7.9	M18-1.5-6H	12	5/8	16	7/8	22	2.07	52.5	0.94	24
P06-10-16FDL	3/8	9.5	M16-1.5-6H	10	11/16	17	3/4	19	2.11	53.5	0.89	22.5
P06-12-18FDL	3/8	9.5	M18-1.5-6H	12	11/16	17	7/8	22	2.17	55	0.94	24
P06-15-22FDL	3/8	9.5	M22-1.5-6H	15	11/16	17	11/16	27	2.22	56.5	1.00	25.5
P08-12-18FDL	1/2	12.7	M18-1.5-6H	12	7/8	22	15/16	24	2.50	63.5	1.27	32.2
P08-15-22FDL	1/2	12.7	M22-1.5-6H	15	7/8	22	1 1/16	27	2.34	59.5	1.11	28.2
P08-18-26FDL	1/2	12.7	M26-1.5-6H	18	7/8	22	11/4	32	2.46	62.5	1.23	31.2
P10-15-22FDL	5/8	15.9	M22-1.5-6H	15	15/16	24	11/16	27	2.46	62.5	1.17	29.7
P10-18-26FDL	5/8	15.9	M26-1.5-6H	18	15/16	24	11/4	32	2.54	64.5	1.25	31.7
P10-22-30FDL	5/8	15.9	M30-2-6H	22	15/16	24	17/16	36	2.52	64	1.23	31.2
P12-18-26FDL	3/4	19.1	M26-1.5-6H	18	1 1/16	27	11/4	32	2.74	69.5	1.32	33.5
P12-22-30FDL	3/4	19.1	M30-2-6H	22	1 1/16	27	17/16	36	2.72	69	1.30	33
P12-28-36FDL	3/4	19.1	M36-2-6H	28	1 1/16	27	15/8	41	2.80	71	1.38	35
P16-28-36FDL	1	25.4	M36-2-6H	28	1 1/4	32	15/8	41	3.23	82	1.42	36
P16-35-45FDL	1	25.4	M45-2-6H	35	1 1/4	32	2	50	3.25	82.5	1.44	36.5
P20-35-45FDL	1 1/4	31.8	M45-2-6H	35	1 13/16	46	2	50	4.67	118.5	1.93	49
P20-42-52FDL	1 1/4	31.8	M52-2-6H	42	1 13/16	46	23/8	60	4.72	120	1.99	50.5

## Female Swivel DIN 24° Cone-Light Series with O-Ring 45° Bent Tube



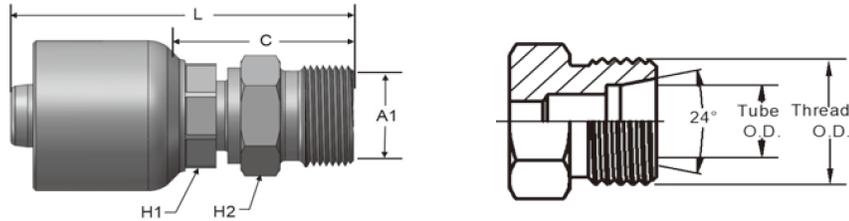
Part Number	Ø		mm	mm	A1	H1		H2		T		L		C	
	in	mm				in	mm	in	mm	in	mm	in	mm	in	mm
P04-06-12FDL45	1/4	6.3	M12-1.5	6	9/16	14	11/16	17	0.59	15	2.48	62.97	1.37	34.77	
P04-08-14FDL45	1/4	6.3	M14-1.5	8	9/16	14	11/16	17	0.63	16	2.55	64.8	1.44	36.6	
P04-10-16FDL45	1/4	6.3	M16-1.5	10	9/16	14	3/4	19	0.67	17	2.59	65.8	1.48	37.6	
P05-10-16FDL45	5/16	7.9	M16-1.5	10	5/8	16	3/4	19	0.67	17	2.66	67.6	1.54	39.1	
P05-12-18FDL45	5/16	7.9	M18-1.5	12	5/8	16	7/8	22	0.73	18.5	2.72	69.1	1.60	40.6	
P06-10-16FDL45	3/8	9.5	M16-1.5	10	11/16	17	3/4	19	0.67	17	2.93	74.49	1.71	43.49	
P06-12-18FDL45	3/8	9.5	M18-1.5	12	11/16	17	7/8	22	0.73	18.5	2.85	72.33	1.63	41.33	
P06-15-22FDL45	3/8	9.5	M22-1.5	15	11/16	17	1	27	0.77	19.5	2.89	73.33	1.67	42.33	
P08-12-18FDL45	1/2	12.7	M18-1.5	12	7/8	22	15/16	24	0.77	19.5	3.09	78.5	1.86	47.2	
P08-15-22FDL45	1/2	12.7	M22-1.5	15	7/8	22	1	27	0.77	19.5	3.09	78.5	1.86	47.2	
P08-18-26FDL45	1/2	12.7	M26-1.5	18	7/8	22	1 1/4	32	0.93	23.5	3.25	82.5	2.02	51.2	
P10-15-22FDL45	5/8	15.9	M22-1.5	15	15/16	24	1	27	0.93	23.5	3.53	89.72	2.24	56.92	
P10-18-26FDL45	5/8	15.9	M26-1.5	18	15/16	24	1 1/4	32	0.93	23.5	3.53	89.58	2.24	56.78	
P10-22-30FDL45	5/8	15.9	M30-2	22	15/16	24	1 4/9	36	1.00	25.5	3.61	91.58	2.31	58.78	
P12-18-26FDL45	3/4	19.1	M26-1.5	18	1 1/16	27	1 1/4	32	1.00	25.5	3.94	100.18	2.53	64.18	
P12-22-30FDL45	3/4	19.1	M30-2	22	1 1/16	27	1 4/9	36	1.00	25.5	4.04	102.67	2.62	66.67	
P12-28-36FDL45	3/4	19.1	M36-2	28	1 1/16	27	1 5/8	41	1.26	32	4.30	109.17	2.88	73.17	
P16-28-36FDL45	1	25.4	M36-2	28	1 1/4	32	1 5/8	41	1.26	32	4.96	125.9	3.15	79.9	
P16-35-45FDL45	1	25.4	M45-2	35	1 1/4	32	2	50	1.50	38	5.19	131.89	3.36	85.39	
P20-35-45FDL45	1 1/4	31.8	M45-2	35	1 13/16	46	2	50	1.50	38	7.08	179.75	4.34	110.25	
P20-42-52FDL45	1 1/4	31.8	M52-2	42	1 13/16	46	2 3/8	60	1.75	44.5	7.37	187.28	4.64	117.78	
P24-42-52FDL45	1 1/2	38.1	M52-2	42	2	50.8	2 3/8	60	1.75	44.5	8.24	209.4	5.06	128.4	

## Female Swivel DIN 24° Cone-Light Series with O-Ring 90° Bent Tube



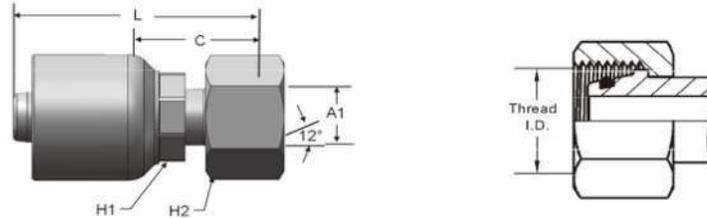
Part Number	⊖		mm	A1	H1		H2		T		L		C	
	in	mm			in	mm	in	mm	in	mm	in	mm	in	mm
P04-06-12FDL90	1/4	6.3	M12-1.5	6	9/16	14	11/16	17	1.18	30	2.24	57	1.13	28.8
P04-08-14FDL90	1/4	6.3	M14-1.5	8	9/16	14	11/16	17	1.20	30.5	2.24	57	1.13	28.8
P04-10-16FDL90	1/4	6.3	M16-1.5	10	9/16	14	3/4	19	1.30	33	2.24	57	1.13	28.8
P05-10-16FDL90	5/16	7.9	M16-1.5	10	5/8	16	3/4	19	1.30	33	2.32	58.95	1.20	30.45
P05-12-18FDL90	5/16	7.9	M18-1.5	12	5/8	16	7/8	22	1.42	36	2.32	58.95	1.20	30.45
P06-10-16FDL90	3/8	9.5	M16-1.5	10	11/16	17	3/4	19	1.38	35	2.66	67.5	1.44	36.5
P06-12-18FDL90	3/8	9.5	M18-1.5	12	11/16	17	7/8	22	1.42	36	2.50	63.5	1.28	32.5
P06-15-22FDL90	3/8	9.5	M22-1.5	15	11/16	17	1	27	1.59	40.5	2.50	63.5	1.28	32.5
P08-12-18FDL90	1/2	12.7	M18-1.5	12	7/8	22	15/16	24	1.59	40.5	2.81	71.3	1.57	40
P08-15-22FDL90	1/2	12.7	M22-1.5	15	7/8	22	1	27	1.59	40.5	2.81	71.3	1.57	40
P08-18-26FDL90	1/2	12.7	M26-1.5	18	7/8	22	1 1/4	32	2.03	51.5	2.81	71.3	1.57	40
P10-15-22FDL90	5/8	15.9	M22-1.5	15	15/16	24	1	27	1.89	48	3.03	76.9	1.74	44.1
P10-18-26FDL90	5/8	15.9	M26-1.5	18	15/16	24	1 1/4	32	2.03	51.5	3.22	81.9	1.93	49.1
P10-22-30FDL90	5/8	15.9	M30-2	22	15/16	24	1 4/9	36	2.20	56	3.22	81.9	1.93	49.1
P12-18-26FDL90	3/4	19.1	M26-1.5	18	1 1/16	27	1 1/4	32	2.19	55.5	3.50	88.9	2.08	52.9
P12-22-30FDL90	3/4	19.1	M30-2	22	1 1/16	27	1 4/9	36	2.20	56	3.80	96.5	2.38	60.5
P12-28-36FDL90	3/4	19.1	M36-2	28	1 1/16	27	1 5/8	41	2.70	68.5	3.80	96.5	2.38	60.5
P16-28-36FDL90	1	25.4	M36-2	28	1 1/4	32	1 5/8	41	2.70	68.5	4.67	118.5	2.85	72.5
P16-35-45FDL90	1	25.4	M45-2	35	1 1/4	32	2	50	3.09	78.5	4.67	118.5	2.85	72.5
P20-35-45FDL90	1 1/4	31.8	M45-2	35	1 13/16	46	2	50	3.09	78.5	6.89	175	4.15	105.5
P20-42-52FDL90	1 1/4	31.8	M52-2	42	1 13/16	46	2 3/8	60	3.74	95	6.89	175	4.15	105.5
P24-42-52FDL90	1 1/2	38.1	M52-2	42	2	50.8	2 3/8	60	3.74	95	8.06	204.8	4.87	123.8

## Male DIN 24° Cone - Heavy Series



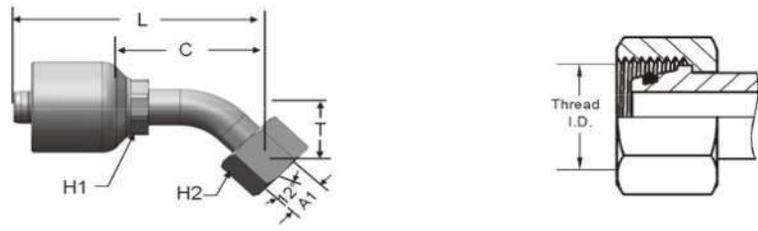
Part Number	Ø		mm	AI	H1		L		C	
	in	mm			mm	mm	in	mm	in	mm
P04-06-14MDH	1/4	6.3	M14-1.5	14	9/16	14	2.20	56	1.09	27.8
P04-08-16MDH	1/4	6.3	M16-1.5	16	9/16	14	2.30	58.5	1.19	30.3
P04-10-18MDH	1/4	6.3	18-1.5	18	9/16	14	2.30	58.5	1.19	30.3
P05-08-16MDH	5/16	7.9	16-1.5	16	5/8	16	2.30	58.5	1.18	30
P05-10-18MDH	5/16	7.9	18-1.5	18	5/8	16	2.32	59	1.20	30.5
P05-12-20MDH	5/16	7.9	20-1.5	20	5/8	16	2.38	60.5	1.26	32
P06-10-18MDH	3/8	9.5	M18-1.5	18	11/16	17	2.42	61.5	1.20	30.5
P06-12-20MDH	3/8	9.5	M20-1.5	20	11/16	17	2.48	63	1.26	32
P06-14-22MDH	3/8	9.5	M22-1.5	22	11/16	17	2.48	63	1.26	32
P08-12-20MDH	1/2	12.7	M20-1.5	20	15/16	24	2.58	65.5	1.35	34.2
P08-14-22MDH	1/2	12.7	M22-1.5	22	15/16	24	2.58	65.5	1.35	34.2
P08-16-24MDH	1/2	12.7	M24-1.5	24	15/16	24	2.70	68.5	1.46	37.2
P08-20-30MDH	1/2	12.7	M30-2	30	15/16	24	2.83	72	1.60	40.7
P10-16-24MDH	5/8	15.9	M24-1.5	24	1 1/16	27	2.78	70.5	1.48	37.7
P10-20-30MDH	5/8	15.9	M30-2	30	1 1/16	27	2.91	74	1.62	41.2
P10-25-36MDH	5/8	15.9	M36-2	36	1 1/16	27	3.05	77.5	1.76	44.7
P12-20-30MDH	3/4	19.1	M30-2	30	1 3/16	30	3.11	79	1.69	43
P12-25-36MDH	3/4	19.1	M36-2	36	1 3/16	30	3.25	82.5	1.83	46.5
P12-30-42MDH	3/4	19.1	M42-2	42	1 3/16	30	3.33	84.5	1.91	48.5
P16-25-36MDH	1	25.4	M36-2	36	1 7/16	36	3.68	93.5	1.87	47.5
P16-30-42MDH	1	25.4	M42-2	42	1 7/16	36	3.76	95.5	1.95	49.5
P16-38-52MDH	1	25.4	M52-2	52	1 7/16	36	3.94	100	2.13	54
P20-38-52MDH	1 1/4	31.8	M52-2	52	1 13/16	46	5.35	136	2.62	66.5
P24-38-52MDH	1 1/2	38.1	M52-2	52	2	50.8	5.83	148	2.64	67

## Female Swivel DIN 24° Cone-Heavy Series with O-Ring



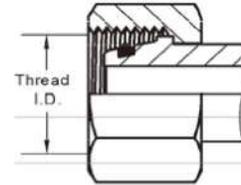
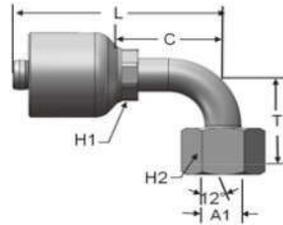
Part Number	Ø		mm	A1	H1		H2		L		C	
	in	mm			in	mm	in	mm	in	mm	in	mm
P04-06-14FDH	1/4	6.3	M14-1.5	6	9/16	14	11/16	17	2.03	51.5	0.92	23.3
P04-08-16FDH	1/4	6.3	M16-1.5	8	9/16	14	3/4	19	2.03	51.5	0.92	23.3
P04-10-18FDH	1/4	6.3	M18-1.5	10	9/16	14	7/8	22	2.09	53	0.98	24.8
P05-08-16FDH	5/16	7.9	M16-1.5	8	5/8	16	3/4	19	2.03	51.5	0.91	23
P05-10-18FDH	5/16	7.9	M18-1.5	10	5/8	16	7/8	22	2.09	53	0.96	24.5
P05-12-20FDH	5/16	7.9	M20-1.5	12	5/8	16	15/16	24	2.13	54	1.00	25.5
P06-10-18FDH	3/8	9.5	M18-1.5	10	11/16	17	7/8	22	2.19	55.5	0.96	24.5
P06-12-20FDH	3/8	9.5	M20-1.5	12	11/16	17	15/16	24	2.22	56.5	1.00	25.5
P06-14-22FDH	3/8	9.5	M22-1.5	14	11/16	17	11/16	27	2.24	57	1.02	26
P08-12-20FDH	1/2	12.7	M20-1.5	12	7/8	22	15/16	24	2.34	59.5	1.11	28.2
P08-14-22FDH	1/2	12.7	M22-1.5	14	7/8	22	1 1/16	27	2.34	59.5	1.11	28.2
P08-16-24FDH	1/2	12.7	M24-1.5	16	7/8	22	1 3/16	30	2.36	60	1.13	28.7
P08-20-30FDH	1/2	12.7	M30-2	20	7/8	22	1 7/16	36	2.46	62.5	1.23	31.2
P10-16-24FDH	5/8	15.9	M24-1.5	16	15/16	24	1 3/16	30	2.44	62	1.15	29.2
P10-20-30FDH	5/8	15.9	M30-2	20	15/16	24	1 7/16	36	2.54	64.5	1.25	31.7
P10-25-36FDH	5/8	15.9	M36-2	25	15/16	24	1 13/16	46	2.56	65	1.27	32.2
P12-20-30FDH	3/4	19.1	M30-2	20	1 1/16	27	1 7/16	36	2.74	69.5	1.32	33.5
P12-25-36FDH	3/4	19.1	M36-2	25	1 1/16	27	1 13/16	46	2.76	70	1.34	34
P12-30-42FDH	3/4	19.1	M42-2	30	1 1/16	27	2	50	2.81	71.5	1.40	35.5
P16-25-36FDH	1	25.4	M36-2	25	1 1/4	32	1 13/16	46	3.19	81	1.38	35
P16-30-42FDH	1	25.4	M42-2	30	1 1/4	32	2	50	3.25	82.5	1.44	36.5
P16-38-52FDH	1	25.4	M52-2	38	1 1/4	32	2 3/8	60	3.27	83	1.46	37
P20-38-52FDH	1 1/4	31.8	M52-2	38	1 13/16	46	2 3/8	60	4.69	119	1.95	49.5
P24-38-52FDH	1 1/2	38.1	M52-2	38	2	50.8	2 3/8	60	5.16	131	1.97	50

## Female Swivel DIN 24° Cone-Heavy Series with O-Ring 45° Bent Tube



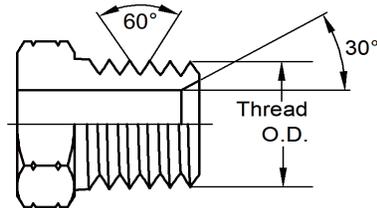
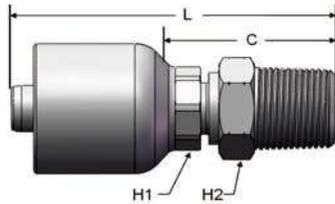
Part Number	Ø		mm	mm	A1	H1		H2		T		L		C	
	in	mm				in	mm	in	mm	in	mm	in	mm	in	mm
P04-06-14FDH45	1/4	6.3	M14-1.5	6	9/16	14	11/16	17	0.67	17	2.59	65.8	1.48	37.6	
P04-08-16FDH45	1/4	6.3	M16-1.5	8	9/16	14	3/4	19	0.67	17	2.59	65.8	1.48	37.6	
P04-10-18FDH45	1/4	6.3	M18-1.5	10	9/16	14	7/8	22	0.67	17	2.59	65.85	1.48	37.65	
P05-08-16FDH45	5/16	7.9	M16-1.5	8	5/8	16	3/4	19	0.71	18	2.70	68.6	1.58	40.1	
P05-10-18FDH45	5/16	7.9	M18-1.5	10	5/8	16	7/8	22	0.71	18	2.70	68.6	1.58	40.1	
P05-12-20FDH45	5/16	7.9	M20-1.5	12	5/8	16	15/16	24	0.71	18	2.70	68.57	1.58	40.07	
P06-10-18FDH45	3/8	9.5	M18-1.5	10	11/16	17	7/8	22	0.71	18	2.83	71.83	1.61	40.83	
P06-12-20FDH45	3/8	9.5	M20-1.5	12	11/16	17	15/16	24	0.73	18.5	2.85	72.33	1.63	41.33	
P08-16-24FDH45	1/2	12.7	M24-1.5	16	7/8	22	1 3/16	30	0.83	21	3.15	80	1.92	48.7	
P08-20-30FDH45	1/2	12.7	M30-2	20	7/8	22	1 7/16	36	0.98	25	3.31	84	2.07	52.7	
P10-16-24FDH45	5/8	15.9	M24-1.5	16	15/16	24	1 3/16	30	0.98	25	3.53	89.63	2.24	56.83	
P10-20-30FDH45	5/8	15.9	M30-2	20	15/16	24	1 7/16	36	0.98	25	3.59	91.08	2.29	58.28	
P10-25-36FDH45	5/8	15.9	M36-2	25	15/16	24	1 13/16	46	1.20	30.5	3.80	96.58	2.51	63.78	
P12-20-30FDH45	3/4	19.1	M30-2	20	1 1/16	27	1 7/16	36	1.18	30	4.22	107.17	2.80	71.17	
P12-25-36FDH45	3/4	19.1	M36-2	25	1 1/16	27	1 13/16	46	1.20	30.5	4.24	107.67	2.82	71.67	
P12-30-42FDH45	3/4	19.1	M42-2	30	1 1/16	27	2	50	1.40	35.5	4.44	112.67	3.02	76.67	
P16-25-36FDH45	1	25.4	M36-2	25	1 1/4	32	1 13/16	46	1.30	33	5.00	126.89	3.18	80.89	
P16-30-42FDH45	1	25.4	M42-2	30	1 1/4	32	2	50	1.40	35.5	5.09	129.39	3.28	83.39	
P16-38-52FDH45	1	25.4	M52-2	38	1 1/4	32	23/8	60	1.65	42	5.35	135.89	3.54	89.89	
P20-38-52FDH45	1 1/4	31.8	M52-2	38	1 13/16	46	23/8	60	1.65	42	7.27	184.78	4.54	115.28	
P24-38-52FDH45	1 1/2	38.1	M52-2	38	2	50.8	23/8	60	1.65	42	8.15	206.9	4.96	125.9	

## Female Swivel DIN 24° Cone-Heavy Series with O-Ring 90° Bent Tube



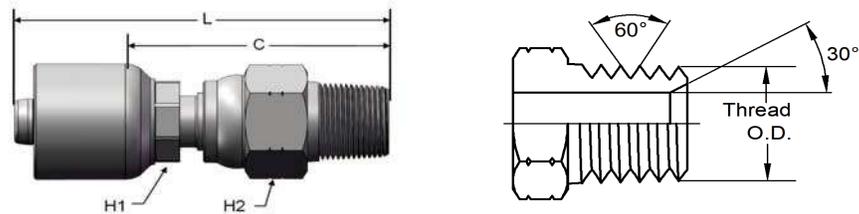
Part Number	⊖		mm	A1	H1		H2		T		L		C	
	in	mm			in	mm	in	mm	in	mm	in	mm	in	mm
P04-06-14FDH90	1/4	6.3	M14-1.5	6	9/16	14	11/16	17	1.26	32	2.24	57	1.13	28.8
P04-08-16FDH90	1/4	6.3	M16-1.5	8	9/16	14	3/4	19	1.26	32	2.24	57	1.13	28.8
P04-10-18FDH90	1/4	6.3	M18-1.5	10	9/16	14	7/8	22	1.26	32	2.24	57	1.13	28.8
P05-08-16FDH90	5/16	7.9	M16-1.5	8	5/8	16	3/4	19	1.34	34	2.32	58.95	1.20	30.45
P05-10-18FDH90	5/16	7.9	M18-1.5	10	5/8	16	7/8	22	1.34	34	2.32	58.95	1.20	30.45
P05-12-20FDH90	5/16	7.9	M20-1.5	12	5/8	16	15/16	24	1.34	34	2.32	58.95	1.20	30.45
P06-10-18FDH90	3/8	9.5	M18-1.5	10	11/16	17	7/8	22	1.34	34	2.50	63.5	1.28	32.5
P06-12-20FDH90	3/8	9.5	M20-1.5	12	11/16	17	15/16	24	1.34	34	2.50	63.5	1.28	32.5
P08-12-20FDH90	1/2	12.7	M20-1.5	12	7/8	22	15/16	24	1.40	35.5	2.81	71.3	1.57	40
P08-16-24FDH90	1/2	12.7	M24-1.5	16	7/8	22	1 3/16	30	1.69	43	2.81	71.3	1.57	40
P08-20-30FDH90	1/2	12.7	M30-2	20	7/8	22	1 7/16	36	1.95	49.5	2.81	71.3	1.57	40
P10-16-24FDH90	5/8	15.9	M24-1.5	16	15/16	24	1 3/16	30	1.95	49.5	3.22	81.9	1.93	49.1
P10-20-30FDH90	5/8	15.9	M30-2	20	15/16	24	1 7/16	36	1.95	49.5	3.22	81.9	1.93	49.1
P10-25-36FDH90	5/8	15.9	M36-2	25	15/16	24	1 13/16	46	2.32	59	3.22	81.9	1.93	49.1
P12-20-30FDH90	3/4	19.1	M30-2	20	1 1/16	27	1 7/16	36	2.32	59	3.80	96.5	2.38	60.5
P12-25-36FDH90	3/4	19.1	M36-2	25	1 1/16	27	1 13/16	46	2.32	59	3.80	96.5	2.38	60.5
P12-30-42FDH90	3/4	19.1	M42-2	30	1 1/16	27	2	50	2.76	70	3.80	96.5	2.38	60.5
P16-25-36FDH90	1	25.4	M36-2	25	1 1/4	32	1 13/16	46	2.76	70	4.67	118.5	2.85	72.5
P16-30-42FDH90	1	25.4	M42-2	30	1 1/4	32	2	50	2.76	70	4.67	118.5	2.85	72.5
P16-38-52FDH90	1	25.4	M52-2	38	1 1/4	32	2 3/8	60	3.43	87	4.67	118.5	2.85	72.5
P20-38-52FDH90	1 1/4	31.8	M52-2	38	1 13/16	46	2 3/8	60	3.43	87	6.89	175	4.15	105.5
P24-38-52FDH90	1 1/2	38.1	M52-2	38	2	50.8	2 3/8	60	3.43	87	7.87	199.8	4.68	118.8

## Male Pipe - NPTF Dual Seat Tapered 30°



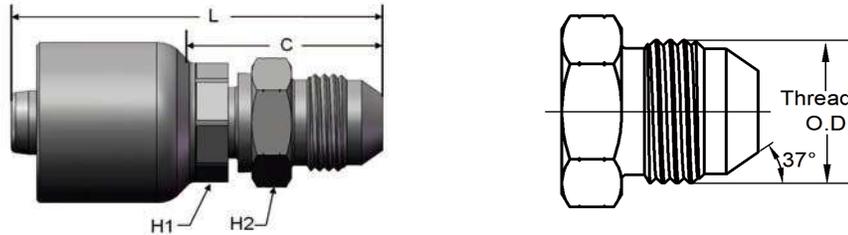
Part Number	Ø			H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
H08-06MP	1/2	12.7	3/8-18	15/16	24	3/4	19	2.97	75.5	1.46	37
H08-08MP	1/2	12.7	1/2-14	15/16	24	7/8	22	3.15	80	1.63	41.5
H08-12MP	1/2	12.7	3/4-14	15/16	24	1 1/16	27	3.25	82.5	1.73	44
H10-08MP	5/8	15.9	1/2-14	1 1/16	27	7/8	22	3.33	84.5	1.71	43.5
H10-12MP	5/8	15.9	3/4-14	1 1/16	27	1 1/16	27	3.41	86.5	1.79	45.5
H12-08MP	3/4	19.1	1/2-14	1 3/16	30	1 1/16	27	3.54	90	1.75	44.5
H12-12MP	3/4	19.1	3/4-14	1 3/16	30	1 1/16	27	3.60	91.5	1.81	46
H12-16MP	3/4	19.1	1-1.5	1 3/16	30	1 7/16	36	3.86	98	2.07	52.5
H16-12MP	1	25.4	3/4-14	1 7/16	36	1 1/4	32	4.39	111.5	1.85	47
H16-16MP	1	25.4	1-11.5	1 7/16	36	1 7/16	36	4.67	118.5	2.13	54
H16-20MP	1	25.4	1 1/4-11.5	1 7/16	36	1 13/16	46	4.80	122	2.26	57.5
H20-16MP	1 1/4	31.8	1-11.5	1 13/16	46	1 5/8	41	5.31	135	2.58	65.5
H20-20MP	1 1/4	31.8	1 1/4-11.5	1 13/16	46	1 13/16	46	5.45	138.5	2.72	69
H20-24MP	1 1/4	31.8	1 1/2-11.5	1 13/16	46	2	50	5.61	142.5	2.87	73
H24-20MP	1 1/2	38.1	1 1/4-11.5	2	50.8	2	50	6.04	153.5	2.85	72.5
H24-24MP	1 1/2	38.1	1 1/2-11.5	2	50.8	2	50	6.08	154.5	2.89	73.5
H24-32MP	1 1/2	38.1	2-11.5	2	50.8	2 9/16	65	6.08	154.5	2.89	73.5

## Male Pipe Swivel - NPTF Dual Seat Tapered 30°



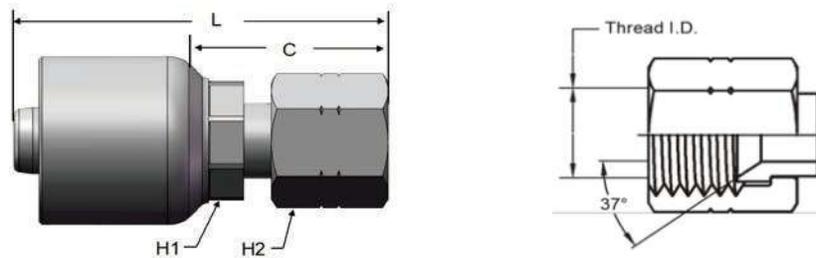
Part Number	⊖		 in	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
H08-06MPS	1/2	12.7	3/8-18	15/16	24	7/8	22	3.53	89.61	2.01	51.11
H08-08MPS	1/2	12.7	1/2-14	15/16	24	1 1/16	27	3.87	98.39	2.36	59.89
H08-12MPS	1/2	12.7	3/4-14	15/16	24	1 1/4	32	4.04	102.64	2.53	64.14
H10-08MPS	5/8	15.9	1/2-14	1 1/16	27	1 1/16	27	3.93	99.89	2.32	58.89
H10-12MPS	5/8	15.9	3/4-14	1 1/16	27	1 1/4	32	4.20	106.64	2.58	65.64
H12-08MPS	3/4	19.1	1/2-14	1 3/16	30	1 1/16	27	4.13	104.89	2.34	59.39
H12-12MPS	3/4	19.1	3/4-14	1 3/16	30	1 1/4	32	4.40	111.64	2.60	66.14
H12-16MPS	3/4	19.1	1-11.5	1 3/16	30	1 5/8	41	4.72	119.84	2.93	74.34
H16-12MPS	1	25.4	3/4-14	1 7/16	36	1 1/4	32	5.08	129.14	2.54	64.64
H16-16MPS	1	25.4	1-11.5	1 7/16	36	1 5/8	41	5.51	139.83	2.97	75.33

## Male JIC 37° Flare



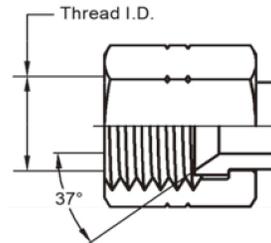
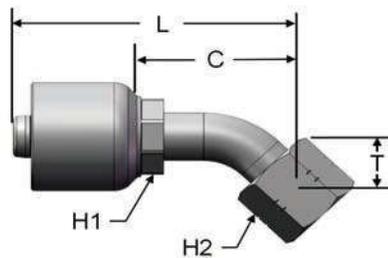
Part Number	Ø			H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
H08-08MJ	1/2	12.7	3/4-16	15/16	24	7/8	22	3.01	76.5	1.50	38
H08-10MJ	1/2	12.7	7/8-14	15/16	24	15/16	24	3.15	80	1.63	41.5
H08-12MJ	1/2	12.7	1 1/16-12	15/16	24	11/16	27	3.31	84	1.79	45.5
H10-08MJ	5/8	15.9	3/4-16	11/16	27	7/8	22	3.17	80.5	1.56	39.5
H10-10MJ	5/8	15.9	7/8-14	1 1/16	27	1 5/16	24	3.29	83.5	1.67	42.5
H10-12MJ	5/8	15.9	1 1/16-12	1 1/16	27	1 1/16	27	3.46	88	1.85	47
H12-10MJ	3/4	19.1	7/8-14	1 3/16	30	1 5/16	24	3.48	88.5	1.69	43
H12-12MJ	3/4	19.1	1 1/16-12	1 3/16	30	1 1/16	27	3.66	93	1.87	47.5
H12-14MJ	3/4	19.1	1 3/16-12	1 3/16	30	1 1/4	32	3.68	93.5	1.89	48
H12-16MJ	3/4	19.1	1 5/16-12	1 3/16	30	1 7/16	36	3.78	96	1.99	50.5
H16-12MJ	1	25.4	1 1/16-12	1 7/16	36	1 1/4	32	4.49	114	1.95	49.5
H16-14MJ	1	25.4	1 3/16-12	1 7/16	36	1 1/4	32	4.47	113.5	1.93	49
H16-16MJ	1	25.4	1 5/16-12	1 7/16	36	1 7/16	36	4.57	116	2.03	51.5
H16-20MJ	1	25.4	1 5/8-12	1 7/16	36	1 13/16	46	4.70	119.5	2.17	55
H20-16MJ	1 1/4	31.8	1 5/16-12	1 13/16	46	1 5/8	41	5.22	132.5	2.48	63
H20-20MJ	1 1/4	31.8	1 5/8-12	1 13/16	46	1 13/16	46	5.33	135.5	2.60	66
H20-24MJ	1 1/4	31.8	1 7/8-12	1 13/16	46	2	50	5.61	142.5	2.87	73
H24-20MJ	1 1/2	38.1	1 5/8-12	2	50.8	1 13/16	46	5.81	147.5	2.62	66.5
H24-24MJ	1 1/2	38.1	1 7/8-12	2	50.8	2	50	6.08	154.5	2.89	73.5
H24-32MJ	1 1/2	38.1	2 1/2-12	2	50.8	2 9/16	65	6.34	161	3.15	80
XH12-10MJ	3/4	19.1	7/8-14	1 3/16	30	1 5/16	24	3.48	88.5	1.69	43
XH12-16MJ	3/4	19.1	1 5/16-12	1 3/16	30	1 7/16	36	3.78	96	1.99	50.5
XH16-12MJ	1	25.4	1 1/16-12	1 7/16	36	1 1/4	32	4.49	114	1.95	49.5
XH16-14MJ	1	25.4	1 3/16-12	1 7/16	36	1 1/4	32	4.47	113.5	1.93	49
XH16-16MJ	1	25.4	1 5/16-12	1 7/16	36	1 7/16	36	4.57	116	2.03	51.5
XH16-20MJ	1	25.4	1 5/8-12	1 7/16	36	1 13/16	46	4.70	119.5	2.17	55
XH20-16MJ	1 1/4	31.8	1 5/16-12	1 13/16	46	1 5/8	41	5.22	132.5	2.48	63
XH20-20MJ	1 1/4	31.8	1 5/8-12	1 13/16	46	1 13/16	46	5.33	135.5	2.60	66
XH20-24MJ	1 1/4	31.8	1 7/8-12	1 13/16	46	2	50	5.61	142.5	2.87	73
XH24-20MJ	1 1/2	38.1	1 5/8-12	2	50.8	1 13/16	46	5.81	147.5	2.62	66.5
XH24-24MJ	1 1/2	38.1	1 7/8-12	2	50.8	2	50	6.08	154.5	2.89	73.5
XH24-32MJ	1 1/2	38.1	2 1/2-12	2	50.8	2 9/16	65	6.34	161	3.15	80

## Female Swivel JIC 37° Flare



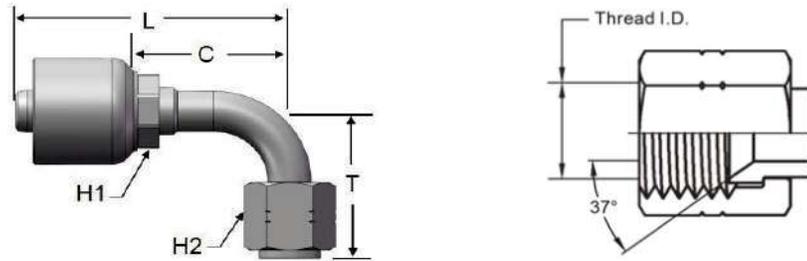
Part Number	Ø		Thread	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
H08-08FJ	1/2	12.7	3/4-16	15/16	24	7/8	22	2.93	74.5	1.42	36
H08-10FJ	1/2	12.7	7/8-14	15/16	24	15/16	27	3.06	77.8	1.55	39.3
H08-12FJ	1/2	12.7	1 1/16-12	15/16	24	1 1/4	32	3.11	78.9	1.59	40.4
H10-08FJ	5/8	15.9	3/4-16	1 1/16	27	7/8	22	2.97	75.5	1.36	34.5
H10-10FJ	5/8	15.9	7/8-14	1 1/16	27	15/16	27	3.22	81.8	1.61	40.8
H10-12FJ	5/8	15.9	1 1/16-12	1 1/16	27	1 1/4	32	3.26	82.9	1.65	41.9
H12-10FJ	3/4	19.1	7/8-14	1 3/16	30	15/16	27	3.35	85	1.56	39.5
H12-12FJ	3/4	19.1	1 1/16-12	1 3/16	30	1 1/4	32	3.54	89.9	1.75	44.4
H12-14FJ	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	3.44	87.5	1.65	42
H12-16FJ	3/4	19.1	1 5/16-12	1 3/16	30	1 5/8	41	3.54	89.9	1.75	44.4
H16-12FJ	1	25.4	1 1/16-12	1 7/16	36	1 1/4	32	4.39	111.5	1.85	47
H16-14FJ	1	25.4	1 3/16-12	1 7/16	36	1 7/16	36	4.29	109	1.75	44.5
H16-16FJ	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	4.39	111.4	1.85	46.9
H16-20FJ	1	25.4	1 5/8-12	1 7/16	36	2	50	4.55	115.6	2.01	51.1
H20-16FJ	1 1/4	31.8	1 5/16-12	1 13/16	46	1 5/8	41	4.86	123.5	2.13	54
H20-20FJ	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	5.10	129.6	2.37	60.1
H20-24FJ	1 1/4	31.8	1 7/8-12	1 13/16	46	2 3/8	60	5.28	134.1	2.54	64.6
H24-20FJ	1 1/2	38.1	1 5/8-12	2	50.8	2	50	5.39	137	2.20	56
H24-24FJ	1 1/2	38.1	1 7/8-12	2	50.8	2 3/8	60	6.12	155.4	2.93	74.4
XH12-10FJ	3/4	19.1	7/8-14	1 3/16	30	15/16	27	3.35	85	1.56	39.5
XH12-12FJ	3/4	19.1	1 1/16-12	1 3/16	30	1 1/4	32	3.54	89.9	1.75	44.4
XH12-14FJ	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	3.44	87.5	1.65	42
XH12-16FJ	3/4	19.1	1 5/16-12	1 3/16	30	1 5/8	41	3.54	89.9	1.75	44.4
XH16-12FJ	1	25.4	1 1/16-12	1 7/16	36	1 1/4	32	4.39	111.5	1.85	47
XH16-14FJ	1	25.4	1 3/16-12	1 7/16	36	1 7/16	36	4.29	109	1.75	44.5
XH16-16FJ	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	4.39	111.4	1.85	46.9
XH16-20FJ	1	25.4	1 5/8-12	1 7/16	36	2	50	4.55	115.6	2.01	51.1
XH20-16FJ	1 1/4	31.8	1 5/16-12	1 13/16	46	1 5/8	41	4.86	123.5	2.13	54
XH20-20FJ	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	5.10	129.6	2.37	60.1
XH20-24FJ	1 1/4	31.8	1 7/8-12	1 13/16	46	2 3/8	60	5.28	134.1	2.54	64.6
XH24-20FJ	1 1/2	38.1	1 5/8-12	2	50.8	2	50	5.39	137	2.20	56
XH24-24FJ	1 1/2	38.1	1 7/8-12	2	50.8	2 3/8	60	6.12	155.4	2.93	74.4

## Female Swivel JIC 37° Flare 45° Bent Tube



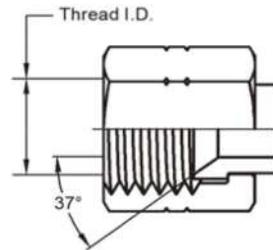
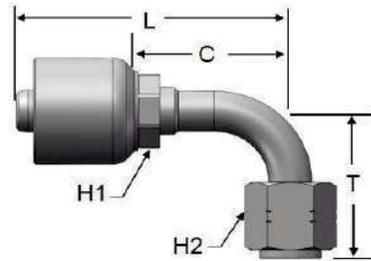
Part Number	⊖		▨	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FJ45	1/2	12.7	3/4-16	15/16	24	7/8	22	0.59	15	3.20	81.3	1.69	42.8
H08-10FJ45	1/2	12.7	7/8-14	15/16	24	1 1/16	27	0.63	16	3.24	82.3	1.72	43.8
H10-10FJ45	5/8	15.9	7/8-14	1 1/16	27	1 1/16	27	0.63	16	3.43	87.08	1.81	46.08
H10-12FJ45	5/8	15.9	1 1/16-12	1 1/16	27	1 1/4	32	0.83	21	3.75	95.18	2.13	54.18
H12-12FJ45	3/4	19.1	1 1/16-12	1 3/16	30	1 1/4	32	0.83	21	4.20	106.8	2.41	61.3
H12-16FJ45	3/4	19.1	1 5/16-12	1 3/16	30	1 5/8	41	0.94	24	4.40	111.67	2.61	66.17
H16-16FJ45	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	0.94	24	5.41	137.4	2.87	72.9
H16-20FJ45	1	25.4	1 5/8-12	1 1/4	32	2	50	0.98	25	5.45	138.4	2.91	73.9
H20-20FJ45	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	0.98	25	6.42	163.0	3.68	93.5
H24-24FJ45	1 1/2	38.1	1 7/8-12	2	50.8	2 3/8	60	1.06	27	7.30	185.3	4.11	104.3
H16-16FJ45M	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	1.50	38	6.23	158.1	3.69	93.64
XH12-12FJ45	3/4	19.1	1 1/16-12	1 3/16	30	1 1/4	32	0.83	21	4.20	106.8	2.41	61.3
XH12-16FJ45	3/4	19.1	1 5/16-12	1 3/16	30	1 5/8	41	0.94	24	4.40	111.67	2.61	66.17
XH16-16FJ45	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	0.94	24	5.41	137.4	2.87	72.9
XH16-20FJ45	1	25.4	1 5/8-12	1 1/4	32	2	50	0.98	25	5.45	138.4	2.91	73.9
XH20-20FJ45	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	0.98	25	6.42	163.0	3.68	93.5
XH24-24FJ45	1 1/2	38.1	1 7/8-12	2	50.8	2 3/8	60	1.06	27	7.30	185.3	4.11	104.3
XH16-16FJ45M	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	1.50	38	5.99	152.2	3.45	87.74

## JIC Female Swivel 90°



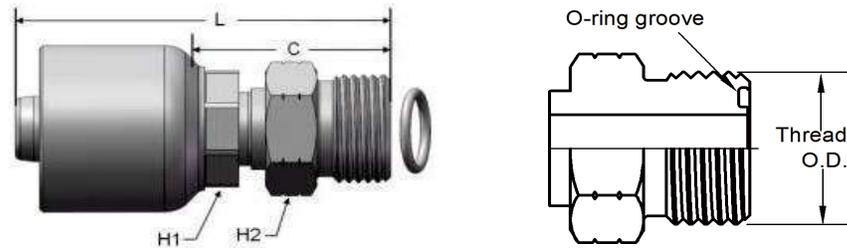
Part Number	Ø		Thread	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FJ90	1/2	12.7	3/4-16	15/16	24	7/8	22	1.14	29	3.09	78.5	1.57	40
H08-10FJ90	1/2	12.7	7/8-14	15/16	24	1 1/16	27	1.26	32	3.09	78.6	1.58	40.1
H08-12FJ90	1/2	12.7	1 1/16-12	15/16	24	1 1/4	32	1.89	48	3.09	78.6	1.58	40.1
H10-10FJ90	5/8	15.9	7/8-14	1 1/16	27	1 1/16	27	1.26	32	3.54	90	1.93	49
H12-12FJ90	3/4	19.1	1 1/16-12	1 3/16	30	1 1/4	32	1.89	48	4.21	107	2.42	61.5
H12-16FJ90	3/4	19.1	1 5/16-12	1 3/16	30	1 5/8	41	2.20	56	4.21	107	2.42	61.5
H16-16FJ90	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	2.20	56	5.24	133	2.70	68.5
H20-20FJ90	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	2.52	64	6.67	169.5	3.94	100
H24-24FJ90-089	1 1/2	38.1	1 7/8-12	2	50.8	2 3/8	60	3.50	89	7.56	192	4.37	111
H24-24FJ90-118	1 1/2	38.1	1 7/8-12	2	50.8	2 3/8	60	4.65	118	7.56	192	4.37	111
H08-08FJ90M	1/2	12.7	3/4-16	15/16	24	7/8	22	1.61	41	3.27	83	1.75	44.5
H08-10FJ90M	1/2	12.7	7/8-14	15/16	24	1 1/16	27	1.85	47	3.09	78.6	1.58	40.1
H10-10FJ90M	5/8	15.9	7/8-14	1 1/16	27	1 1/16	27	1.85	47	3.54	90	1.93	49
H10-12FJ90M	5/8	15.9	1 1/16-12	1 1/16	27	1 1/4	32	2.28	58	3.54	90	1.93	49
H12-12FJ90M	3/4	19.1	1 1/16-12	1 3/16	30	1 1/4	32	2.28	58	4.21	107	2.42	61.5
H12-16FJ90M	3/4	19.1	1 5/16-12	1 3/16	30	1 5/8	41	2.80	71	4.21	107	2.42	61.5
H16-16FJ90M	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	2.80	71	5.24	133	2.70	68.5
H20-20FJ90M	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	3.07	78	6.67	169.5	3.94	100
H20-24FJ90M	1 1/4	31.8	1 7/8-12	1 13/16	46	2 3/8	60	3.39	86	6.67	169.5	3.94	100
H08-08FJ90L	1/2	12.7	3/4-16	15/16	24	7/8	22	2.52	64	3.27	83	1.75	44.5
H08-10FJ90L	1/2	12.7	7/8-14	15/16	24	1 1/16	27	2.76	70	3.09	78.6	1.58	40.1
H10-10FJ90L	5/8	15.9	7/8-14	1 1/16	27	1 1/16	27	2.76	70	3.54	90	1.93	49
H12-12FJ90L	3/4	19.1	1 1/16-12	1 3/16	30	1 1/4	32	3.78	96	4.21	107	2.42	61.5
H12-16FJ90L	3/4	19.1	1 5/16-12	1 3/16	30	1 5/8	41	4.49	114	4.21	107	2.42	61.5
H16-16FJ90L	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	4.49	114	5.24	133	2.70	68.5
H16-20FJ90L	1	25.4	1 5/8-12	1 7/16	36	2	50	5.08	129	5.77	146.5	3.23	82
H20-20FJ90L	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	5.08	129	6.67	169.5	3.94	100

## JIC Female Swivel 90°



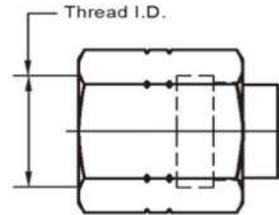
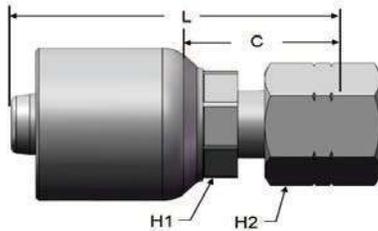
Part Number	⊖		▧	H1		H2		T		L		C	
	in	mm		in	in	mm	in	mm	in	mm	in	mm	in
XH12-12FJ90	3/4	19.1	1 1/16-12	1 3/16	30	1 1/4	32	1.89	48	4.21	107	2.42	61.5
XH12-14FJ90-60	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	2.36	60	4.21	107	2.42	61.5
XH12-16FJ90	3/4	19.1	1 5/16-12	1 3/16	30	1 5/8	41	2.20	56	4.21	107	2.42	61.5
XH16-16FJ90	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	2.20	56	5.77	146.5	3.23	82
XH20-20FJ90	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	2.52	64	6.67	169.5	3.94	100
XH24-24FJ90-089	1 1/2	38.1	1 7/8-12	2	50.8	2 3/8	60	3.50	89	7.56	192	4.37	111
XH24-24FJ90-118	1 1/2	38.1	1 7/8-12	2	50.8	2 3/8	60	4.65	118	7.56	192	4.37	111
XH12-12FJ90M	3/4	19.1	1 1/16-12	1 3/16	30	1 1/4	32	2.28	58	4.21	107	2.42	61.5
XH12-16FJ90M	3/4	19.1	1 5/16-12	1 3/16	30	1 5/8	41	2.80	71	4.21	107	2.42	61.5
XH16-16FJ90M	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	2.80	71	5.24	133	2.70	68.5
XH20-20FJ90M	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	3.07	78	6.67	169.5	3.94	100
XH20-24FJ90M	1 1/4	31.8	1 7/8-12	1 13/16	46	2 3/8	60	3.39	86	6.67	169.5	3.94	100
XH12-12FJ90L	3/4	19.1	1 1/16-12	1 3/16	30	1 1/4	32	3.78	96	4.21	107	2.42	61.5
XH12-16FJ90L	3/4	19.1	1 5/16-12	1 3/16	30	1 5/8	41	4.49	114	4.21	107	2.42	61.5
XH16-16FJ90L	1	25.4	1 5/16-12	1 7/16	36	1 5/8	41	4.49	114	5.24	133	2.70	68.5
XH16-20FJ90L	1	25.4	1 5/8-12	1 7/16	36	2	50	5.08	129	5.77	146.5	3.23	82
XH20-20FJ90L	1 1/4	31.8	1 5/8-12	1 13/16	46	2	50	5.08	129	6.67	169.5	3.94	100

# Male O-Ring Face Seal



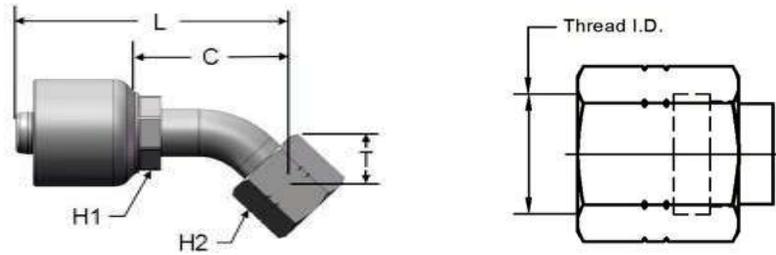
Part Number	⌀		🌀 in	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
H08-06MF	1/2	12.7	1 1/16-16	15/16	24	3/4	19	2.81	71.5	1.30	33
H08-08MF	1/2	12.7	1 3/16-16	15/16	24	7/8	22	2.93	74.5	1.42	36
H08-10MF	1/2	12.7	1-14	15/16	24	1 1/16	27	3.09	78.5	1.57	40
H10-08MF	5/8	15.9	1 3/16-16	1 1/16	27	7/8	22	3.09	78.5	1.48	37.5
H10-10MF	5/8	15.9	1-14	1 1/16	27	1 1/16	27	3.25	82.5	1.63	41.5
H10-12MF	5/8	15.9	1 3/16-12	1 1/16	27	1 1/4	32	3.39	86	1.77	45
H12-10MF	3/4	19.1	1-14	1 3/16	30	1 1/16	27	3.44	87.5	1.65	42
H12-12MF	3/4	19.1	1 3/16-12	1 3/16	30	1 1/4	32	3.58	91	1.79	45.5
H12-16MF	3/4	19.1	1 7/16-12	1 3/16	30	1 5/8	41	3.76	95.5	1.97	50
H16-12MF	1	25.4	1 3/16-12	1 7/16	36	1 1/4	32	4.37	111	1.83	46.5
H16-16MF	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	4.55	115.5	2.01	51
H16-20MF	1	25.4	1 11/16-12	1 7/16	36	1 13/16	46	4.63	117.5	2.09	53
H20-16MF	1 1/4	31.8	1 7/16-12	1 13/16	46	1 5/8	41	5.20	132	2.46	62.5
H20-20MF	1 1/4	31.8	1 11/16-12	1 13/16	46	1 13/16	46	5.26	133.5	2.52	64
H20-24MF	1 1/4	31.8	2-12	1 13/16	46	2 3/16	55	5.41	137.5	2.68	68
H24-20MF	1 1/2	38.1	1 11/16-12	2	50.8	1 13/16	46	5.73	145.5	2.54	64.5
H24-24MF	1 1/2	38.1	2-12	2	50.8	2 3/16	55	5.89	149.5	2.70	68.5
XH12-10MF	3/4	19.1	1-14	1 3/16	30	1 1/16	27	3.44	87.5	1.65	42
XH12-12MF	3/4	19.1	1 3/16-12	1 3/16	30	1 1/4	32	3.58	91	1.79	45.5
XH12-16MF	3/4	19.1	1 7/16-12	1 3/16	30	1 5/8	41	3.76	95.5	1.97	50
XH16-12MF	1	25.4	1 3/16-12	1 7/16	36	1 1/4	32	4.37	111	1.83	46.5
XH16-16MF	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	4.55	115.5	2.01	51
XH16-20MF	1	25.4	1 11/16-12	1 7/16	36	1 13/16	46	4.63	117.5	2.09	53
XH20-16MF	1 1/4	31.8	1 7/16-12	1 13/16	46	1 5/8	41	5.20	132	2.46	62.5
XH20-20MF	1 1/4	31.8	1 11/16-12	1 13/16	46	1 13/16	46	5.26	133.5	2.52	64
XH20-24MF	1 1/4	31.8	2-12	1 13/16	46	2 3/16	55	5.41	137.5	2.68	68
XH24-20MF	1 1/2	38.1	1 11/16-12	2	50.8	1 13/16	46	5.73	145.5	2.54	64.5
XH24-24MF	1 1/2	38.1	2-12	2	50.8	2 3/16	55	5.89	149.5	2.70	68.5

## Female O-Ring Face Seal Swivel



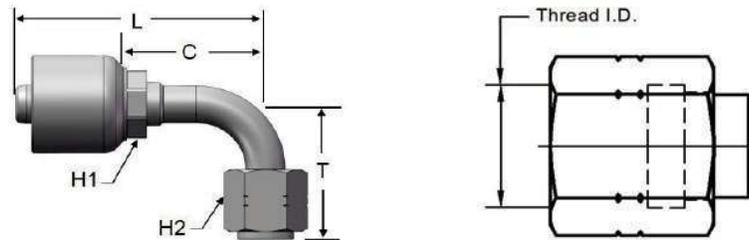
Part Number	Ø			H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
H08-06FF	1/2	12.7	11/16-16	15/16	24	7/8	22	2.74	69.5	1.22	31
H08-08FF	1/2	12.7	13/16-16	15/16	24	15/16	24	2.64	67	1.12	28.5
H08-10FF	1/2	12.7	1-14	15/16	24	1 3/16	30	2.70	68.5	1.18	30
H08-12FF	1/2	12.7	1 3/16-12	15/16	24	1 7/16	36	2.85	72.5	1.34	34
H10-08FF	5/8	15.9	1 3/16-16	1 1/16	27	15/16	24	2.93	74.5	1.32	33.5
H10-10FF	5/8	15.9	1-14	1 1/16	27	1 3/16	30	2.89	73.5	1.28	32.5
H10-12FF	5/8	15.9	1 3/16-12	1 1/16	27	1 7/16	36	3.01	76.5	1.40	35.5
H12-10FF	3/4	19.1	1-14	1 3/16	30	1 3/16	30	3.31	84	1.52	38.5
H12-12FF	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	3.14	79.7	1.35	34.2
H12-16FF	3/4	19.1	1 7/16-12	1 3/16	30	1 5/8	41	3.15	79.9	1.35	34.4
H16-12FF	1	25.4	1 3/16-12	1 7/16	36	1 7/16	36	4.17	106	1.63	41.5
H16-16FF	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	3.94	100.2	1.41	35.7
H16-20FF	1	25.4	1 11/16-12	1 7/16	36	2	50	4.02	102	1.48	37.5
H20-16FF	1 1/4	31.8	1 7/16-12	1 13/16	46	1 5/8	41	4.84	123	2.11	53.5
H20-20FF	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	4.41	112	1.67	42.5
H20-24FF	1 1/4	31.8	2-12	1 13/16	46	2 3/8	60	4.53	115	1.79	45.5
H24-20FF	1 1/2	38.1	1 11/16-12	2	50.8	2	50	5.35	136	2.17	55
H24-24FF	1 1/2	38.1	2-12	2	50.8	2 3/8	60	5.20	132	2.01	51
XH12-10FF	3/4	19.1	1-14	1 3/16	30	1 3/16	30	3.31	84	1.52	38.5
XH12-12FF	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	3.14	79.7	1.35	34.2
XH12-16FF	3/4	19.1	1 7/16-12	1 3/16	30	1 5/8	41	3.15	79.9	1.35	34.4
XH16-12FF	1	25.4	1 3/16-12	1 7/16	36	1 7/16	36	4.17	106	1.63	41.5
XH16-16FF	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	3.94	100.2	1.41	35.7
XH16-20FF	1	25.4	1 11/16-12	1 7/16	36	2	50	4.02	102	1.48	37.5
XH20-16FF	1 1/4	31.8	1 7/16-12	1 13/16	46	1 5/8	41	4.84	123	2.11	53.5
XH20-20FF	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	4.41	112	1.67	42.5
XH20-24FF	1 1/4	31.8	2-12	1 13/16	46	2 3/8	60	4.53	115	1.79	45.5
XH24-20FF	1 1/2	38.1	1 11/16-12	2	50.8	2	50	5.35	136	2.17	55
XH24-24FF	1 1/2	38.1	2-12	2	50.8	2 3/8	60	5.20	132	2.01	51

## Female O-Ring Face Seal Swivel 45° Bent Tube



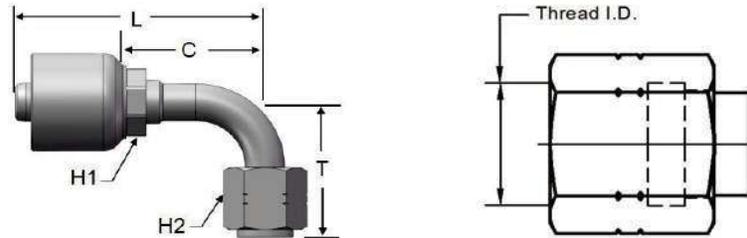
Part Number	Ø		in	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
H8-06FF45	1/2	12.7	11/16-16	15/16	24	7/8	22	0.43	11	3.05	77.38	1.53	38.88
H08-08FF45	1/2	12.7	13/16-16	15/16	24	1 5/16	24	0.59	15	3.21	81.46	1.69	42.96
H08-10FF45	1/2	12.7	1-14	15/16	24	1 3/16	30	0.63	16	3.24	82.3	1.72	43.8
H08-12FF45	1/2	12.7	1 3/16-12	15/16	24	1 7/16	36	0.83	21	3.44	87.3	1.92	48.8
H10-08FF45	5/8	15.9	1 3/16-16	1 1/16	27	1 5/16	24	0.59	15	3.44	87.25	1.82	46.25
H10-10FF45	5/8	15.9	1-14	1 1/16	27	1 3/16	30	0.63	16	3.45	87.7	1.84	46.7
H10-12FF45	5/8	15.9	1 3/16-12	1 1/16	27	1 7/16	36	0.83	21	3.75	95.18	2.13	54.18
H12-10FF45	3/4	19.1	1-14	1 3/16	30	1 3/16	30	0.63	16	4.07	103.36	2.28	57.86
H12-12FF45	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	0.83	21	4.22	107.25	2.43	61.75
H12-16FF45	3/4	19.1	1 7/16-12	1 3/16	30	1 5/8	41	0.94	24	4.40	111.67	2.61	66.17
H16-16FF45	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	0.94	24	5.51	139.9	2.97	75.4
H16-20FF45	1	25.4	1 11/16-12	1 7/16	36	2	50	0.98	25	5.70	144.9	2.87	72.89
H20-20FF45	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	0.98	25	6.36	161.43	3.62	91.93
H24-24FF45	1 1/2	38.1	2-12	2	50.8	2 3/8	60	1.06	27	7.64	194	4.45	113
XH12-10FF45	3/4	19.1	1-14	1 3/16	30	1 3/16	30	0.63	16	4.07	103.36	2.28	57.86
XH12-12FF45	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	0.83	21	4.22	107.25	2.43	61.75
XH12-16FF45	3/4	19.1	1 7/16-12	1 3/16	30	1 5/8	41	0.94	24	4.40	111.67	2.61	66.17
XH16-16FF45	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	0.94	24	5.51	139.9	2.97	75.4
XH16-20FF45	1	25.4	1 11/16-12	1 7/16	36	2	50	0.98	25	5.70	144.9	2.87	72.89
XH20-20FF45	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	0.98	25	6.36	161.43	3.62	91.93
XH24-24FF45	1 1/2	38.1	2-12	2	50.8	2 3/8	60	1.06	27	7.64	194	4.45	113

## Female O-Ring Face Seal Swivel 90°



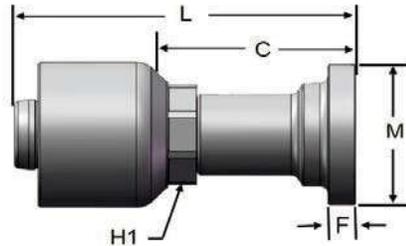
Part Number	Ø		in	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FF90	1/2	12.7	13/16-16	15/16	24	15/16	24	1.14	29	3.09	78.6	1.58	40.1
H08-10FF90	1/2	12.7	1-14	15/16	24	1 3/16	30	1.26	32	3.01	76.5	1.50	38
H08-12FF90	1/2	12.7	1 3/16-12	15/16	24	1 7/16	36	1.89	48	3.09	78.6	1.58	40.1
H10-08FF90	5/8	15.9	13/16-16	1 1/16	27	15/16	24	1.14	29	3.41	86.5	1.79	45.5
H10-10FF90	5/8	15.9	1-14	1 1/16	27	1 3/16	30	1.26	32	3.54	90	1.93	49
H10-12FF90	5/8	15.9	1 3/16-12	1 1/16	27	1 7/16	36	1.89	48	3.54	90	1.93	49
H12-10FF90	3/4	19.1	1-14	1 3/16	30	1 3/16	30	1.26	32	3.72	94.5	1.93	49
H12-12FF90	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	1.89	48	4.12	104.7	2.33	59.2
H12-16FF90	3/4	19.1	1 7/16-12	1 3/16	30	1 5/8	41	2.20	56	4.21	107	2.42	61.5
H16-12FF90	1	25.4	1 3/16-12	1 7/16	36	1 7/16	36	1.89	48	5.24	133	2.70	68.5
H16-16FF90	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	2.20	56	5.53	140.5	2.99	76
H16-20FF90	1	25.4	1 11/16-12	1 7/16	36	2	50	2.52	64	5.77	146.5	3.23	82
H20-20FF90	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	2.52	64	6.59	167.5	3.86	98
H24-24FF90	1 1/2	38.1	2-12	2	50.8	2 3/8	60	2.72	69	7.76	197.2	4.57	116.2
H08-08FF90M	1/2	12.7	13/16-16	15/16	24	15/16	24	1.61	41	3.09	78.6	1.58	40.1
H08-10FF90M	1/2	12.7	1-14	15/16	24	1 3/16	30	1.85	47	3.09	78.6	1.58	40.1
H10-08FF90M	5/8	15.9	13/16-16	1 1/16	27	15/16	24	1.61	41	3.41	86.5	1.79	45.5
H10-10FF90M	5/8	15.9	1-14	1 1/16	27	1 3/16	30	1.85	47	3.54	90	1.93	49
H12-12FF90M	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	2.28	58	4.21	107	2.42	61.5
H16-16FF90M	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	2.80	71	5.43	138	2.89	73.5
H16-20FF90M	1	25.4	1 11/16-12	1 7/16	36	2	50	3.07	78	5.77	146.5	3.23	82
H20-20FF90M	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	3.07	78	6.59	167.5	3.86	98
H24-24FF90M	1 1/2	38.1	2-12	2	50.8	2 3/8	60	3.39	86	8.06	204.8	4.87	123.8
H8-08FF90L	1/2	12.7	13/16-16	15/16	24	15/16	24	2.52	64	3.09	78.5	1.57	40
H08-10FF90L	1/2	12.7	1-14	15/16	24	1 3/16	30	2.76	70	3.09	78.6	1.58	40.1
H10-08FF90L	5/8	15.9	13/16-16	1 1/16	27	15/16	24	2.52	64	3.41	86.5	1.79	45.5
H10-10FF90L	5/8	15.9	1-14	1 1/16	27	1 3/16	30	2.76	70	3.54	90	1.93	49
H12-12FF90L	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	3.78	96	4.21	107	2.42	61.5
H16-16FF90L	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	4.49	114	5.43	138	2.89	73.5
H16-20FF90L	1	25.4	1 11/16-12	1 7/16	36	2	50	5.08	129	5.77	146.5	3.23	82
H20-20FF90L	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	5.08	129	6.59	167.5	3.86	98
H24-24FF90L	1 1/2	38.1	2-12	2	50.8	2 3/8	60	5.55	141	8.06	204.8	4.87	123.8

## Female O-Ring Face Seal Swivel 90°



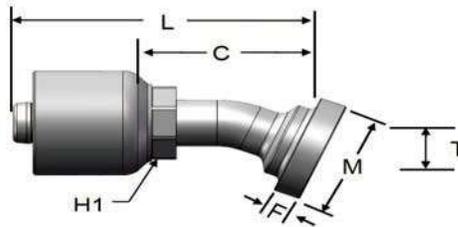
Part Number	Ø		in	H1		H2		T		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
XH12-12FF90	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	1.77	45	4.12	104.7	2.33	59.2
XH12-16FF90	3/4	19.1	1 7/16-12	1 3/16	30	1 5/8	41	2.20	56	4.21	107	2.42	61.5
XH16-12FF90	1	25.4	1 3/16-12	1 7/16	36	1 7/16	36	1.89	48	5.24	133	2.70	68.5
XH16-16FF90	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	2.20	56	5.53	140.5	2.99	76
XH16-20FF90	1	25.4	1 11/16-12	1 7/16	36	2	50	2.52	64	5.77	146.5	3.23	82
XH20-20FF90	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	2.52	64	6.59	167.5	3.86	98
XH24-24FF90	1 1/2	38.1	2-12	2	50.8	2 3/8	60	2.72	69	7.76	197.2	4.57	116.2
XH12-12FF90M	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	2.28	58	4.21	107	2.42	61.5
XH16-16FF90M	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	2.80	71	5.43	138	2.89	73.5
XH16-20FF90M	1	25.4	1 11/16-12	1 7/16	36	2	50	3.07	78	5.77	146.5	3.23	82
XH20-20FF90M	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	3.07	78	6.59	167.5	3.86	98
XH24-24FF90M	1 1/2	38.1	2-12	2	50.8	2 3/8	60	3.39	86	8.06	204.8	4.87	123.8
XH12-12FF90L	3/4	19.1	1 3/16-12	1 3/16	30	1 7/16	36	3.78	96	4.21	107	2.42	61.5
XH16-16FF90L	1	25.4	1 7/16-12	1 7/16	36	1 5/8	41	4.49	114	5.43	138	2.89	73.5
XH16-20FF90L	1	25.4	1 11/16-12	1 7/16	36	2	50	5.08	129	5.77	146.5	3.23	82
XH20-20FF90L	1 1/4	31.8	1 11/16-12	1 13/16	46	2	50	5.08	129	6.59	167.5	3.86	98
XH24-24FF90L	1 1/2	38.1	2-12	2	50.8	2 3/8	60	5.55	141	8.06	204.8	4.87	123.8

## Code 61 O-Ring Flange



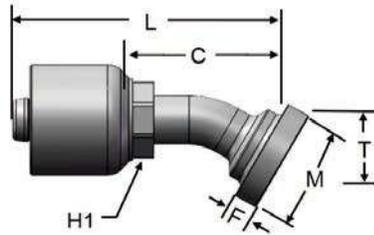
Part Number	⊖		H1		M		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FL	1/2	12.7	15/16	24	1.19	30.2	3.15	80	1.63	41.5	0.27	6.8
H10-12FL	5/8	15.9	1 1/16	27	1.50	38.1	3.50	89	1.89	48	0.27	6.8
H12-12FL	3/4	19.1	1 3/16	30	1.50	38.1	3.71	94.2	1.92	48.7	0.27	6.8
H12-16FL	3/4	19.1	1 3/16	30	1.75	44.45	3.86	98	2.07	52.5	0.31	8
H16-12FL	1	25.4	1 7/16	36	1.50	38.1	4.47	113.5	1.93	49	0.27	6.8
H16-16FL	1	25.4	1 7/16	36	1.75	44.45	4.63	117.5	2.09	53	0.31	8
H16-20FL	1	25.4	1 7/16	36	2.00	50.8	4.78	121.5	2.24	57	0.31	8
H20-16FL	1 1/4	31.8	1 13/16	46	1.75	44.45	5.45	138.5	2.72	69	0.31	8
H20-20FL	1 1/4	31.8	1 13/16	46	2.00	50.8	5.47	139	2.74	69.5	0.31	8
H20-24FL	1 1/4	31.8	1 13/16	46	2.38	60.35	5.56	141.2	2.82	71.7	0.31	8
H24-20FL	1 1/2	38.1	2	50.8	2.00	50.8	6.22	158	3.03	77	0.31	8
H24-24FL	1 1/2	38.1	2	50.8	2.38	60.35	6.36	161.5	3.17	80.5	0.31	8
H24-32FL	1 1/2	38.1	2	50.8	2.81	71.4	6.42	163	3.23	82	0.38	9.6
XH12-12FL	3/4	19.1	1 3/16	30	1.50	38.1	3.71	94.2	1.92	48.7	0.27	6.8
XH12-16FL	3/4	19.1	1 3/16	30	1.75	44.45	3.86	98	2.07	52.5	0.31	8
XH16-12FL	1	25.4	1 7/16	36	1.50	38.1	4.47	113.5	1.93	49	0.27	6.8
XH16-16FL	1	25.4	1 7/16	36	1.75	44.45	4.63	117.5	2.09	53	0.31	8
XH16-20FL	1	25.4	1 7/16	36	2.00	50.8	4.78	121.5	2.24	57	0.31	8
XH20-16FL	1 1/4	31.8	1 13/16	46	1.75	44.45	5.45	138.5	2.72	69	0.31	8
XH20-20FL	1 1/4	31.8	1 13/16	46	2.00	50.8	5.47	139	2.74	69.5	0.31	8
XH20-24FL	1 1/4	31.8	1 13/16	46	2.38	60.35	5.56	141.2	2.82	71.7	0.31	8
XH24-20FL	1 1/2	38.1	2	50.8	2.00	50.8	6.22	158	3.03	77	0.31	8
XH24-24FL	1 1/2	38.1	2	50.8	2.38	60.35	6.36	161.5	3.17	80.5	0.31	8
XH24-32FL	1 1/2	38.1	2	50.8	2.81	71.4	6.42	163	3.23	82	0.38	9.6

## Code 61 O-Ring Flange 22.5° Bent Tube



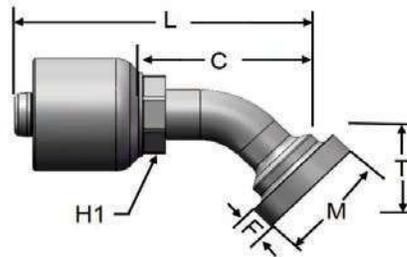
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FL22.5	1/2	12.7	15/16	24	1.19	30.2	0.35	9	3.29	83.51	1.77	45.01	0.27	6.8
H12-12FL22.5	3/4	19.1	1 3/16	30	1.50	38.1	0.43	11	4.22	107.12	2.43	61.62	0.27	6.8
H12-16FL22.5	3/4	19.1	1 3/16	30	1.75	44.45	0.55	14	4.50	114.36	2.71	68.86	0.31	8
H16-16FL22.5	1	25.4	1 7/16	36	1.75	44.45	0.55	14	5.68	144.25	3.14	79.75	0.31	8
H16-20FL22.5	1	25.4	1 7/16	36	2.00	50.8	0.59	15	5.77	146.66	3.23	82.16	0.31	8
H20-20FL22.5	1 1/4	31.8	1 13/16	46	2.00	50.8	0.59	15	6.58	167.15	3.84	97.65	0.31	8
H20-24FL22.5	1 1/4	31.8	1 13/16	46	2.38	60.35	0.71	18	6.87	174.4	4.13	104.9	0.31	8
H24-24FL22.5	1 1/2	38.1	2	50.8	2.38	60.35	0.71	18	7.69	195.38	4.50	114.38	0.31	8
H24-32FL22.5	1 1/2	38.1	2	50.8	2.81	71.4	0.87	22	8.07	205.04	4.88	124.04	0.38	9.6
XH12-12FL22.5	3/4	19.1	1 3/16	30	1.50	38.1	0.43	11	4.22	107.12	2.43	61.62	0.27	6.8
XH12-16FL22.5	3/4	19.1	1 3/16	30	1.75	44.45	0.55	14	4.50	114.36	2.71	68.86	0.31	8
XH16-16FL22.5	1	25.4	1 7/16	36	1.75	44.45	0.55	14	5.68	144.25	3.14	79.75	0.31	8
XH16-20FL22.5	1	25.4	1 7/16	36	2.00	50.8	0.59	15	5.77	146.66	3.23	82.16	0.31	8
XH20-20FL22.5	1 1/4	31.8	1 13/16	46	2.00	50.8	0.59	15	6.58	167.15	3.84	97.65	0.31	8
XH20-24FL22.5	1 1/4	31.8	1 13/16	46	2.38	60.35	0.71	18	6.87	174.4	4.13	104.9	0.31	8
XH24-24FL22.5	1 1/2	38.1	2	50.8	2.38	60.35	0.71	18	7.69	195.38	4.50	114.38	0.31	8
XH24-32FL22.5	1 1/2	38.1	2	50.8	2.81	71.4	0.87	22	8.07	205.04	4.88	124.04	0.38	9.6

## Code 61 O-Ring Flange 30° Bent Tube



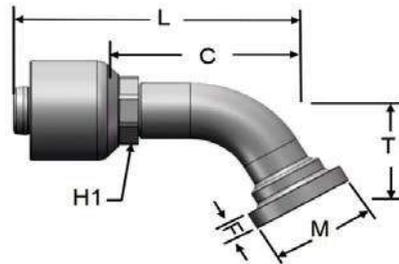
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FL30	1/2	12.7	15/16	24	1.19	30.2	0.47	12	3.31	84.01	1.79	45.51	0.27	6.8
H08-12FL30	1/2	12.7	15/16	24	1.50	38.1	0.63	16	3.58	90.94	2.06	52.44	0.27	6.8
H12-12FL30	3/4	19.1	1 3/16	30	1.50	38.1	0.63	16	4.35	110.56	2.56	65.06	0.27	6.8
H12-16FL30	3/4	19.1	1 3/16	30	1.75	44.45	0.75	19	4.56	115.75	2.77	70.25	0.31	8
H16-16FL30	1	25.4	1 7/16	36	1.75	44.45	0.75	19	5.77	146.47	3.23	81.97	0.31	8
H16-20FL30	1	25.4	1 7/16	36	2.00	50.8	0.87	22	5.97	151.66	3.43	87.16	0.31	8
H20-20FL30	1 1/4	31.8	1 13/16	46	2.00	50.8	0.79	20	6.67	169.38	3.93	99.88	0.31	8
H20-24FL30	1 1/4	31.8	1 13/16	46	2.38	60.35	1.18	30	7.35	186.7	4.61	117.2	0.31	8
H24-24FL30	1 1/2	38.1	2	50.8	2.38	60.35	0.98	25	7.87	199.79	4.68	118.79	0.31	8
H24-32FL30	1 1/2	38.1	2	50.8	2.81	71.4	1.26	32	8.34	211.91	5.15	130.91	0.38	9.6
H20-20FL30M	1 1/4	31.8	1 13/16	46	2.00	50.8	0.87	22	6.80	172.84	4.07	103.34	0.31	8
H24-24FL30M	1 1/2	38.1	2	50.8	2.38	60.35	1.18	30	8.21	208.45	5.02	127.45	0.31	8
XH12-12FL30	3/4	19.1	1 3/16	30	1.50	38.1	0.63	16	4.35	110.56	2.52	64.06	0.27	6.8
XH12-16FL30	3/4	19.1	1 3/16	30	1.75	44.45	0.75	19	4.56	115.75	2.77	70.25	0.31	8
XH16-16FL30	1	25.4	1 7/16	36	1.75	44.45	0.75	19	5.77	146.47	3.23	81.97	0.31	8
XH16-20FL30	1	25.4	1 7/16	36	2.00	50.8	0.87	22	5.97	151.66	3.43	87.16	0.31	8
XH20-20FL30	1 1/4	31.8	1 13/16	46	2.00	50.8	0.79	20	6.67	169.38	3.93	99.88	0.31	8
XH20-24FL30	1 1/4	31.8	1 13/16	46	2.38	60.35	1.18	30	7.35	186.7	4.61	117.2	0.31	8
XH24-24FL30	1 1/2	38.1	2	50.8	2.38	60.35	0.98	25	7.87	199.79	4.68	118.79	0.31	8
XH24-32FL30	1 1/2	38.1	2	50.8	2.81	71.4	1.26	32	8.34	211.91	5.15	130.91	0.38	9.6
XH20-20FL30M	1 1/4	31.8	1 13/16	46	2.00	50.8	0.87	22	6.80	172.84	4.07	103.34	0.31	8
XH24-24FL30M	1 1/2	38.1	2	50.8	2.38	60.35	1.18	30	8.21	208.45	5.02	127.45	0.31	8

## Code 61 O-Ring Flange 45° Bent Tube



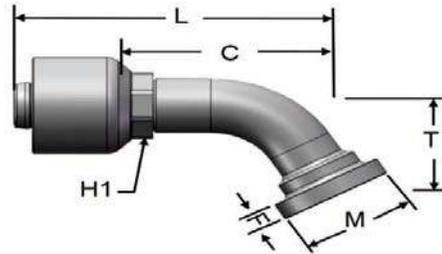
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FL45	1/2	12.7	15/16	24	1.19	30.2	0.75	19	3.36	85.3	1.84	46.8	0.27	6.8
H18-12FL45	1/2	12.7	15/16	24	1.50	38.1	1.02	26	3.63	92.3	2.12	53.8	0.27	6.8
H10-12FL45	5/8	15.9	1 1/16	27	1.50	38.1	1.02	26	3.94	100.2	2.33	59.28	0.27	6.8
H12-12FL45	3/4	19.1	1 3/16	30	1.50	38.1	1.02	26	4.48	113.7	2.68	68.17	0.27	6.8
H12-16FL45	3/4	19.1	1 3/16	30	1.75	44.45	1.26	32	4.71	119.7	2.92	74.17	0.31	8
H16-16FL45	1	25.4	1 7/16	36	1.75	44.45	1.10	28	5.83	148.1	3.29	83.64	0.31	8
H16-20FL45	1	25.4	1 7/16	36	2.00	50.8	1.26	32	5.99	152.1	3.45	87.64	0.31	8
H20-16FL45	1 1/4	31.8	1 13/16	46	1.75	44.45	1.26	32	6.52	165.6	3.79	96.14	0.31	8
H20-20FL45	1 1/4	31.8	1 13/16	46	2.00	50.8	1.26	32	6.88	174.8	4.14	105.3	0.31	8
H20-24FL45	1 1/4	31.8	1 13/16	46	2.38	60.35	1.50	38	7.12	180.8	4.38	111.3	0.31	8
H24-20FL45	1 1/2	38.1	2	50.8	2.00	50.8	1.50	38	7.72	196	4.53	115.1	0.31	8
H24-24FL45	1 1/2	38.1	2	50.8	2.38	60.35	1.50	38	8.04	204.1	4.85	123.1	0.31	8
H24-32FL45	1 1/2	38.1	2	50.8	2.81	71.4	2.05	52	8.59	218.1	5.40	137.1	0.38	9.6
H16-16FL45M	1	25.4	1 7/16	36	1.75	44.45	1.26	32	5.99	152.1	3.45	87.64	0.31	8
H16-20FL45M	1	25.4	1 7/16	36	2.00	50.8	1.50	38	6.23	158.1	3.69	93.64	0.31	8
H20-20FL45M	1 1/4	31.8	1 13/16	46	2.00	50.8	1.50	38	7.12	180.8	4.38	111.3	0.31	8
H20-24FL45M	1 1/4	31.8	1 13/16	46	2.38	60.35	1.73	44	7.35	186.8	4.62	117.3	0.31	8
H24-24FL45M	1 1/2	38.1	2	50.8	2.38	60.35	1.73	44	8.27	210.1	5.08	129.1	0.31	8
H24-32FL45M	1 1/2	38.1	2	50.8	2.81	71.4	2.20	56	8.75	222.1	5.56	141.1	0.38	9.6
XH12-12FL45	3/4	19.1	1 3/16	30	1.50	38.1	1.02	26	4.48	113.7	2.68	68.17	0.27	6.8
XH12-16FL45	3/4	19.1	1 3/16	30	1.75	44.45	1.26	32	4.71	119.7	2.92	74.17	0.31	8
XH16-16FL45	1	25.4	1 7/16	36	1.75	44.45	1.10	28	5.83	148.1	3.29	83.64	0.31	8
XH16-20FL45	1	25.4	1 7/16	36	2.00	50.8	1.26	32	5.99	152.1	3.45	87.64	0.31	8
XH20-16FL45	1 1/4	31.8	1 13/16	46	1.75	44.45	1.26	32	6.52	165.6	3.79	96.14	0.31	8
XH20-20FL45	1 1/4	31.8	1 13/16	46	2.00	50.8	1.26	32	6.88	174.8	4.14	105.3	0.31	8
XH20-24FL45	1 1/4	31.8	1 13/16	46	2.38	60.35	1.50	38	7.12	180.8	4.38	111.3	0.31	8
XH24-20FL45	1 1/2	38.1	2	50.8	2.00	50.8	1.50	38	7.72	196	4.53	115.1	0.31	8
XH24-24FL45	1 1/2	38.1	2	50.8	2.38	60.35	1.50	38	8.04	204.1	4.85	123.1	0.31	8
XH24-32FL45	1 1/2	38.1	2	50.8	2.81	71.4	2.05	52	8.59	218.1	5.40	137.1	0.38	9.6
XH16-16FL45M	1	25.4	1 7/16	36	1.75	44.45	1.26	32	5.99	152.1	3.45	87.64	0.31	8
XH16-20FL45M	1	25.4	1 7/16	36	2.00	50.8	1.50	38	6.23	158.1	3.69	93.64	0.31	8
XH20-20FL45M	1 1/4	31.8	1 13/16	46	2.00	50.8	1.50	38	7.12	180.8	4.38	111.3	0.31	8
XH20-24FL45M	1 1/4	31.8	1 13/16	46	2.38	60.35	1.73	44	7.35	186.8	4.62	117.3	0.31	8
XH24-24FL45M	1 1/2	38.1	2	50.8	2.38	60.35	1.73	44	8.27	210.1	5.08	129.1	0.31	8
XH24-32FL45M	1 1/2	38.1	2	50.8	2.81	71.4	2.20	56	8.75	222.1	5.56	141.1	0.38	9.6

## Code 61 O-Ring Flange 60° Bent Tube



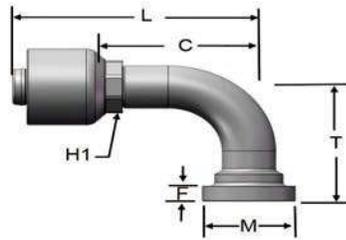
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FL60	1/2	12.7	15/16	24	1.19	30.2	1.06	27	3.36	85.31	1.84	46.81	0.27	6.8
H12-12FL60	3/4	19.1	1 3/16	30	1.50	38.1	1.46	37	4.50	114.41	2.71	68.91	0.27	6.8
H12-16FL60	3/4	19.1	1 3/16	30	1.75	44.45	1.73	44	4.66	118.45	2.87	72.95	0.31	8
H16-16FL60	1	25.4	1 7/16	36	1.75	44.45	1.73	44	6.02	152.89	3.48	88.39	0.31	8
H16-20FL60	1	25.4	1 7/16	36	2.00	50.8	2.17	55	6.27	159.24	3.73	94.74	0.31	8
H20-20FL60	1 1/4	31.8	1 13/16	46	2.00	50.8	1.77	45	7.00	177.74	4.26	108.24	0.31	8
H20-24FL60	1 1/4	31.8	1 13/16	46	2.38	60.35	2.52	64	7.43	188.7	4.69	119.2	0.31	8
H24-24FL60	1 1/2	38.1	2	50.8	2.38	60.35	2.09	53	8.17	207.51	4.98	126.5	0.31	8
H24-32FL60	1 1/2	38.1	2	50.8	2.81	71.4	3.27	83	8.85	224.83	5.66	143.83	0.38	9.6
H20-20FL60M	1 1/4	31.8	1 13/16	46	2.00	50.8	2.17	55	7.22	183.51	4.49	114.01	0.31	8
H24-24FL60M	1 1/2	38.1	2	50.8	2.38	60.35	2.52	64	8.42	213.86	5.23	132.86	0.31	8
XH12-12FL60	3/4	19.1	1 3/16	30	1.50	38.1	1.46	37	4.50	114.41	2.71	68.91	0.27	6.8
XH12-16FL60	3/4	19.1	1 3/16	30	1.75	44.45	1.73	44	4.66	118.45	2.87	72.95	0.31	8
XH16-16FL60	1	25.4	1 7/16	36	1.75	44.45	1.73	44	6.02	152.89	3.48	88.39	0.31	8
XH16-20FL60	1	25.4	1 7/16	36	2.00	50.8	2.17	55	6.27	159.24	3.73	94.74	0.31	8
XH20-20FL60	1 1/4	31.8	1 13/16	46	2.00	50.8	1.77	45	7.00	177.74	4.26	108.24	0.31	8
XH20-24FL60	1 1/4	31.8	1 13/16	46	2.38	60.35	2.52	64	7.43	188.7	4.69	119.2	0.31	8
XH24-24FL60	1 1/2	38.1	2	50.8	2.38	60.35	2.09	53	8.17	207.51	4.98	126.5	0.31	8
XH24-32FL60	1 1/2	38.1	2	50.8	2.81	71.4	3.27	83	8.85	224.83	5.66	143.83	0.38	9.6
XH20-20FL60M	1 1/4	31.8	1 13/16	46	2.00	50.8	2.17	55	7.22	183.51	4.49	114.01	0.31	8
XH24-24FL60M	1 1/2	38.1	2	50.8	2.38	60.35	2.52	64	8.42	213.86	5.23	132.86	0.31	8

## Code 61 O-Ring Flange 67.5° Bent Tube



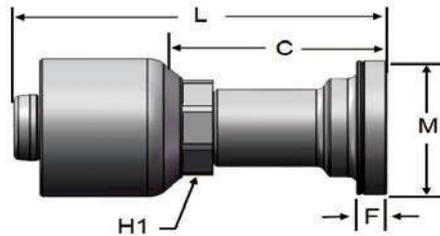
Part Number	Ø		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FL67.5	1/2	12.7	15/16	24	1.19	30.2	1.18	30	3.31	84.06	1.79	45.56	0.27	6.8
H08-12FL67.5	1/2	12.7	15/16	24	1.50	38.1	1.65	42	3.51	89.03	1.99	50.53	0.27	6.8
H12-12FL67.5	3/4	19.1	1 3/16	30	1.50	38.1	1.65	42	4.47	113.45	2.68	67.95	0.27	6.8
H12-16FL67.5	3/4	19.1	1 3/16	30	1.75	44.45	2.01	51	4.61	117.17	2.82	71.67	0.31	8
H16-16FL67.5	1	25.4	1 7/16	36	1.75	44.45	2.01	51	6.01	152.69	3.47	88.19	0.31	8
H16-20FL67.5	1	25.4	1 7/16	36	2.00	50.8	2.52	64	6.22	158.08	3.68	93.58	0.31	8
H20-20FL67.5	1 1/4	31.8	1 13/16	46	2.00	50.8	2.01	51	7.00	177.87	4.27	108.37	0.31	8
H20-24FL67.5	1 1/4	31.8	1 13/16	46	2.38	60.35	2.91	74	7.38	187.4	4.64	117.9	0.31	8
H24-24FL67.5	1 1/2	38.1	2	50.8	2.38	60.35	2.40	61	8.20	208.17	5.01	127.17	0.31	8
H24-32FL67.5	1 1/2	38.1	2	50.8	2.81	71.4	3.82	97	8.78	223.08	5.59	142.08	0.38	9.6
H20-20FL67.5M	1 1/4	31.8	1 13/16	46	2.00	50.8	2.52	64	7.21	183.26	4.48	113.76	0.31	8
H24-24FL67.5M	1 1/2	38.1	2	50.8	2.38	60.35	2.91	74	8.41	213.55	5.22	132.55	0.31	8
XH12-12FL67.5	3/4	19.1	1 3/16	30	1.50	38.1	1.65	42	4.47	113.45	2.68	67.95	0.27	6.8
XH12-16FL67.5	3/4	19.1	1 3/16	30	1.75	44.45	2.01	51	4.61	117.17	2.82	71.67	0.31	8
XH16-16FL67.5	1	25.4	1 7/16	36	1.75	44.45	2.01	51	6.01	152.69	3.47	88.19	0.31	8
XH16-20FL67.5	1	25.4	1 7/16	36	2.00	50.8	2.52	64	6.22	158.08	3.68	93.58	0.31	8
XH20-20FL67.5	1 1/4	31.8	1 13/16	46	2.00	50.8	2.01	51	7.00	177.87	4.27	108.37	0.31	8
XH20-24FL67.5	1 1/4	31.8	1 13/16	46	2.38	60.35	2.91	74	7.38	187.4	4.64	117.9	0.31	8
XH24-24FL67.5	1 1/2	38.1	2	50.8	2.38	60.35	2.40	61	8.20	208.17	5.01	127.17	0.31	8
XH24-32FL67.5	1 1/2	38.1	2	50.8	2.81	71.4	3.82	97	8.78	223.08	5.59	142.08	0.38	9.6
XH20-20FL67.5M	1 1/4	31.8	1 13/16	46	2.00	50.8	2.52	64	7.21	183.26	4.48	113.76	0.31	8
XH24-24FL67.5M	1 1/2	38.1	2	50.8	2.38	60.35	2.91	74	8.41	213.55	5.22	132.55	0.31	8

## Code 61 O-Ring Flange 90° Bent Tube



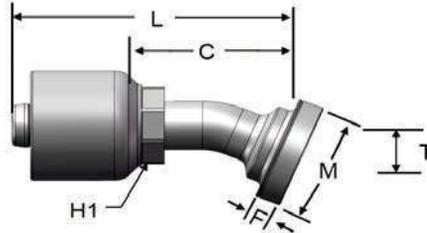
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FL90	1/2	12.7	15/16	24	1.19	30.2	1.57	40	3.09	78.6	1.58	40.1	0.27	6.8
H08-12FL90	1/2	12.7	15/16	24	1.50	38.1	2.28	58	3.09	78.6	1.58	40.1	0.27	6.8
H10-12FL90	5/8	15.9	1 1/16	27	1.50	38.1	2.28	58	3.54	90	1.93	49	0.27	6.8
H12-12FL90	3/4	19.1	1 3/16	30	1.50	38.1	2.28	58	4.21	107	2.42	61.5	0.27	6.8
H12-16FL90	3/4	19.1	1 3/16	30	1.75	44.45	2.76	70	4.21	107	2.42	61.5	0.31	8
H16-12FL90	1	25.4	1 7/16	36	1.50	38.1	2.28	58	5.16	131	2.62	66.5	0.27	6.8
H16-16FL90	1	25.4	1 7/16	36	1.75	44.45	2.40	61	5.77	146.5	3.23	82	0.31	8
H16-20FL90	1	25.4	1 7/16	36	2.00	50.8	2.68	68	5.77	146.5	3.23	82	0.31	8
H20-16FL90	1 1/4	31.8	1 13/16	46	1.75	44.45	3.23	82	6.30	160	3.56	90.5	0.31	8
H20-20FL90	1 1/4	31.8	1 13/16	46	2.00	50.8	2.68	68	6.89	175	4.15	105.5	0.31	8
H20-24FL90	1 1/4	31.8	1 13/16	46	2.38	60.35	3.19	81	6.89	175	4.15	105.5	0.31	8
H24-20FL90	1 1/2	38.1	2	50.8	2.00	50.8	3.54	90	7.49	190.3	4.30	109.3	0.31	8
H24-24FL90	1 1/2	38.1	2	50.8	2.38	60.35	3.19	81	8.06	204.8	4.87	123.8	0.31	8
H24-32FL90	1 1/2	38.1	2	50.8	2.81	71.4	4.72	120	8.06	204.8	4.87	123.8	0.38	9.6
H24-32FL90M	1 1/2	38.1	2	50.8	2.81	71.4	5.43	138	8.06	204.8	4.87	123.8	0.38	9.6
H16-16FL90M	1	25.4	1 7/16	36	1.75	44.45	2.76	70	5.77	146.5	3.23	82	0.31	8
H16-20FL90M	1	25.4	1 7/16	36	2.00	50.8	3.54	90	5.77	146.5	3.23	82	0.31	8
H20-20FL90M	1 1/4	31.8	1 13/16	46	2.00	50.8	3.54	90	6.89	175	4.15	105.5	0.31	8
H20-24FL90M	1 1/4	31.8	1 13/16	46	2.38	60.35	4.09	104	6.89	175	4.15	105.5	0.31	8
H24-24FL90M	1 1/2	38.1	2	50.8	2.38	60.35	4.09	104	8.06	204.8	4.87	123.8	0.31	8
XH12-12FL90	3/4	19.1	1 3/16	30	1.50	38.1	2.28	58	4.21	107	2.42	61.5	0.27	6.8
XH12-16FL90	3/4	19.1	1 3/16	30	1.75	44.45	2.76	70	4.21	107	2.42	61.5	0.31	8
XH16-12FL90	1	25.4	1 7/16	36	1.50	38.1	2.28	58	5.77	146.5	3.23	82	0.27	6.8
XH16-16FL90	1	25.4	1 7/16	36	1.75	44.45	2.40	61	5.77	146.5	3.23	82	0.31	8
XH16-20FL90	1	25.4	1 7/16	36	2.00	50.8	2.68	68	5.77	146.5	3.23	82	0.31	8
XH20-16FL90	1 1/4	31.8	1 13/16	46	1.75	44.45	3.23	82	6.30	160	3.56	90.5	0.31	8
XH20-20FL90	1 1/4	31.8	1 13/16	46	2.00	50.8	2.68	68	6.89	175	4.15	105.5	0.31	8
XH20-24FL90	1 1/4	31.8	1 13/16	46	2.38	60.35	3.19	81	6.89	175	4.15	105.5	0.31	8
XH24-20FL90	1 1/2	38.1	2	50.8	2.00	50.8	3.54	90	7.49	190.3	4.30	109.3	0.31	8
XH24-24FL90	1 1/2	38.1	2	50.8	2.38	60.35	3.19	81	8.06	204.8	4.87	123.8	0.31	8
XH24-32FL90	1 1/2	38.1	2	50.8	2.81	71.4	4.72	120	8.06	204.8	4.87	123.8	0.38	9.6
XH16-16FL90M	1	25.4	1 7/16	36	1.75	44.45	2.76	70	5.77	146.5	3.23	82	0.31	8
XH16-20FL90M	1	25.4	1 7/16	36	2.00	50.8	3.54	90	5.77	146.5	3.23	82	0.31	8
XH20-20FL90M	1 1/4	31.8	1 13/16	46	2.00	50.8	3.54	90	6.89	175	4.15	105.5	0.31	8
XH20-24FL90M	1 1/4	31.8	1 13/16	46	2.38	60.35	4.09	104	6.89	175	4.15	105.5	0.31	8
XH24-24FL90M	1 1/2	38.1	2	50.8	2.38	60.35	4.09	104	8.06	204.8	4.87	123.8	0.31	8
XH24-32FL90M	1 1/2	38.1	2	50.8	2.81	71.4	5.43	138	8.06	204.8	4.87	123.8	0.38	9.6

## Code 62 O-Ring Flange Heavy



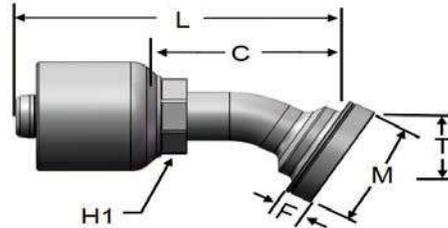
Part Number	$\ominus$		H1		M		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FLH	1/2	12.7	15/16	24	1.25	31.75	3.37	85.5	1.85	47	0.31	7.8
H10-08FLH	5/8	15.9	1 1/16	27	1.25	31.75	3.46	88	1.85	47	0.31	7.8
H10-12FLH	5/8	15.9	1 1/16	27	1.63	41.3	3.64	92.5	2.03	51.5	0.35	8.8
H12-12FLH	3/4	19.1	1 3/16	30	1.63	41.3	3.86	98	2.07	52.5	0.35	8.8
H12-16FLH	3/4	19.1	1 3/16	30	1.88	47.65	4.06	103	2.26	57.5	0.37	9.5
H16-12FLH	1	25.4	1 7/16	36	1.63	41.3	4.63	117.5	2.09	53	0.35	8.8
H16-16FLH	1	25.4	1 7/16	36	1.88	47.65	4.84	123	2.30	58.5	0.37	9.5
H16-20FLH	1	25.4	1 7/16	36	2.13	54	5.19	131.7	2.65	67.2	0.41	10.3
H0-16FLH	1 1/4	31.8	1 13/16	46	1.88	47.65	5.93	150.5	3.19	81	0.37	9.5
H20-20FLH	1 1/4	31.8	1 13/16	46	2.13	54	5.79	147	3.05	77.5	0.41	10.3
H20-24FLH	1 1/4	31.8	1 13/16	46	2.50	63.5	6.02	153	3.29	83.5	0.50	12.6
H24-20FLH	1 1/2	38.1	2	50.8	2.13	54	6.12	155.5	2.93	74.5	0.41	10.3
H24-24FLH	1 1/2	38.1	2	50.8	2.50	63.5	6.71	170.5	3.52	89.5	0.50	12.6
H24-32FLH	1 1/2	38.1	2	50.8	3.13	79.4	6.87	174.5	3.68	93.5	0.50	12.6
XH12-12FLH	3/4	19.1	1 3/16	30	1.63	41.3	3.86	98	2.07	52.5	0.35	8.8
XH12-16FLH	3/4	19.1	1 3/16	30	1.88	47.65	4.06	103	2.26	57.5	0.37	9.5
XH16-12FLH	1	25.4	1 7/16	36	1.63	41.3	4.63	117.5	2.09	53	0.35	8.8
XH16-16FLH	1	25.4	1 7/16	36	1.88	47.65	4.84	123	2.30	58.5	0.37	9.5
XH16-20FLH	1	25.4	1 7/16	36	2.13	54	5.19	131.7	2.65	67.2	0.41	10.3
XH20-16FLH	1 1/4	31.8	1 13/16	46	1.88	47.65	5.93	150.5	3.19	81	0.37	9.5
XH20-20FLH	1 1/4	31.8	1 13/16	46	2.13	54	5.79	147	3.05	77.5	0.41	10.3
XH20-24FLH	1 1/4	31.8	1 13/16	46	2.50	63.5	6.02	153	3.29	83.5	0.50	12.6
XH24-20FLH	1 1/2	38.1	2	50.8	2.13	54	6.12	155.5	2.93	74.5	0.41	10.3
XH24-24FLH	1 1/2	38.1	2	50.8	2.50	63.5	6.71	170.5	3.52	89.5	0.50	12.6
XH24-32FLH	1 1/2	38.1	2	50.8	3.13	79.4	6.87	174.5	3.68	93.5	0.50	12.6

## Code 62 O-Ring Flange Heavy 22.5° Bent Tube



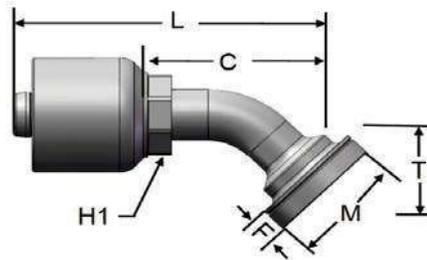
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FLH22.5	1/2	12.7	15/16	24	1.25	31.75	0.35	9	3.29	83.51	1.77	45	0.31	7.8
H12-12FLH22.5	3/4	19.1	1 3/16	30	1.63	41.3	0.43	11	4.22	107.12	2.43	61.62	0.35	8.8
H12-16FLH22.5	3/4	19.1	1 3/16	30	1.88	47.65	0.55	14	4.50	114.41	2.71	68.91	0.37	9.5
H16-16FLH22.5	1	25.4	1 7/16	36	1.88	47.65	0.55	14	4.50	114.25	3.14	79.75	0.37	9.5
H16-20FLH22.5	1	25.4	1 7/16	36	2.13	54	0.59	15	5.77	146.66	3.23	82.16	0.41	10.3
H20-20FLH22.5	1 1/4	31.8	1 13/16	46	2.13	54	0.59	15	6.58	167.15	3.84	97.65	0.41	10.3
H20-24FLH22.5	1 1/4	31.8	1 13/16	46	2.50	63.5	0.71	18	6.87	174.4	4.13	104.9	0.50	12.6
H24-24FLH22.5	1 1/2	38.1	2	50.8	2.50	63.5	0.71	18	7.69	195.38	4.50	114.38	0.50	12.6
H24-32FLH22.5	1 1/2	38.1	2	50.8	3.13	79.4	0.87	22	8.07	205.04	4.99	126.81	0.50	12.6
XH12-12FLH22.5	3/4	19.1	1 3/16	30	1.63	1.63	0.43	11	0.43	107.12	2.43	61.6	0.35	8.8
XH12-16FLH22.5	3/4	19.1	1 3/16	30	1.88	1.88	0.55	14	0.55	114.41	2.71	68.91	0.37	9.5
XH 16-16FLH22.5	1	25.4	1 7/16	36	1.88	1.88	0.55	14	0.55	144.25	3.14	79.75	0.37	9.5
XH 16-20FLH22.5	1	25.4	1 7/16	36	2.13	2.13	0.59	15	0.59	146.66	3.23	82.16	0.41	10.3
XH20-20FLH22.5	1 1/4	31.8	1 13/16	46	2.13	2.13	0.59	15	0.59	167.15	3.84	97.65	0.41	10.3
XH20-24FLH22.5	1 1/4	31.8	1 13/16	46	2.50	2.50	0.71	18	0.71	174.4	4.13	104.9	0.50	12.6
XH24-24FLH22.5	1 1/2	38.1	2	50.8	2.50	2.50	0.71	18	0.71	195.38	4.50	114.38	0.50	12.6
XH24-32FLH22.5	1 1/2	38.1	2	50.8	3.13	3.13	0.87	22	0.87	205.04	4.99	126.81	0.50	12.6

## Code 62 O-Ring Flange Heavy 30° Bent Tube



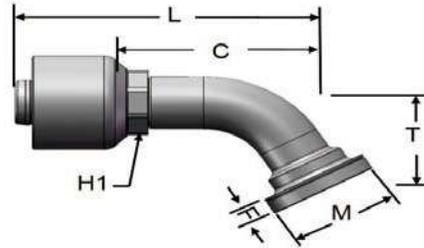
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FLH30	1/2	12.7	15/16	24	1.25	31.75	0.47	12	3.31	84.01	1.79	45.51	0.31	7.8
H08-12FLH30	1/2	12.7	15/16	24	1.63	41.3	0.63	16	3.56	90.44	2.04	51.94	0.35	8.8
H12-12FLH30	3/4	19.1	1 3/16	30	1.63	41.3	0.63	16	4.35	110.53	2.56	65.03	0.35	8.8
H12-16FLH30	3/4	19.1	1 3/16	30	1.88	47.65	0.75	19	4.56	115.8	2.77	70.3	0.37	9.5
H16-16FLH30	1	25.4	1 7/16	36	1.88	47.65	0.75	19	5.77	146.47	3.23	81.97	0.37	9.5
H16-20FLH30	1	25.4	1 7/16	36	2.13	54	0.87	22	5.97	151.66	3.43	87.16	0.41	10.3
H20-20FLH30	1 1/4	31.8	1 13/16	46	2.13	54	0.79	20	6.67	169.38	3.93	99.88	0.41	10.3
H20-24FLH30	1 1/4	31.8	1 13/16	46	2.50	63.5	1.18	30	7.35	186.7	4.61	117.2	0.50	12.6
H24-24FLH30	1 1/2	38.1	2	50.8	2.50	63.5	0.98	25	7.87	199.79	4.68	118.79	0.50	12.6
H24-32FLH30	1 1/2	38.1	2	50.8	3.13	79.4	1.26	32	8.34	211.91	5.15	130.91	0.50	12.6
H20-20FLH30M	1 1/4	31.8	1 13/16	46	2.13	54	0.87	22	6.80	172.84	4.07	103.34	0.41	10.3
H24-24FLH30M	1 1/2	38.1	2	50.8	2.50	63.5	1.18	30	8.21	208.45	5.02	127.45	0.50	12.6
XH12-12FLH30	3/4	19.1	1 3/16	30	1.63	41.3	0.63	16	4.35	110.53	2.56	65.03	0.35	8.8
XH12-16FLH30	3/4	19.1	1 3/16	30	1.88	47.65	0.75	19	4.56	115.8	2.77	70.3	0.37	9.5
XH16-16FLH30	1	25.4	1 7/16	36	1.88	47.65	0.75	19	5.77	146.47	3.23	81.97	0.37	9.5
XH16-20FLH30	1	25.4	1 7/16	36	2.13	54	0.87	22	5.97	151.66	3.43	87.16	0.41	10.3
XH20-20FLH30	1 1/4	31.8	1 13/16	46	2.13	54	0.79	20	6.67	169.38	3.93	99.88	0.41	10.3
XH20-24FLH30	1 1/4	31.8	1 13/16	46	2.50	63.5	1.18	30	7.35	186.7	4.61	117.2	0.50	12.6
XH24-24FLH30	1 1/2	38.1	2	50.8	2.50	63.5	0.98	25	7.87	199.79	4.68	118.79	0.50	12.6
XH24-32FLH30	1 1/2	38.1	2	50.8	3.13	79.4	1.26	32	8.34	211.91	5.15	130.91	0.50	12.6
XH20-20FLH30M	1 1/4	31.8	1 13/16	46	2.13	54	0.87	22	6.80	172.84	4.07	103.34	0.41	10.3
XH24-24FLH30M	1 1/2	38.1	2	50.8	2.50	63.5	1.18	30	8.21	208.45	5.02	127.45	0.50	12.6

## Code 62 O-Ring Flange Heavy 45° Bent Tube



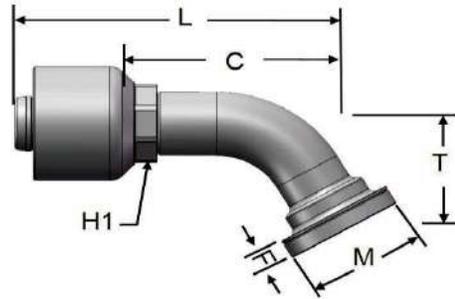
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H06-08FLH45	3/8	9.5	11/16	17	1.25	31.75	0.75	19	3.14	79.84	1.67	42.33	0.31	7.8
H08-08FLH45	1/2	12.7	15/16	24	1.25	31.75	0.75	19	3.36	85.3	1.84	46.8	0.31	7.8
H08-12FLH45	1/2	12.7	15/16	24	1.63	41.3	1.02	26	3.63	92.3	2.12	53.8	0.35	8.8
H10-12FLH45	5/8	15.9	1 1/16	27	1.63	41.3	1.02	26	3.95	100.38	2.34	59.38	0.35	8.8
H12-12FLH45	3/4	19.1	1 3/16	30	1.63	41.3	1.02	26	4.48	113.67	2.68	68.17	0.35	8.8
H12-16FLH45	3/4	19.1	1 3/16	30	1.88	47.65	1.26	32	4.71	119.67	2.92	74.17	0.37	9.5
H16-16FLH45	1	25.4	1 7/16	36	1.88	47.65	1.10	28	5.83	148.14	3.29	83.64	0.37	9.5
H16-20FLH45	1	25.4	1 7/16	36	2.13	54	1.26	32	5.99	152.14	3.45	87.64	0.41	10.3
H20-16FLH45	1 1/4	31.8	1 13/16	46	1.88	47.65	1.26	32	6.52	165.64	3.79	96.14	0.37	9.5
H20-20FLH45	1 1/4	31.8	1 13/16	46	2.13	54	1.26	32	6.88	174.78	4.14	105.28	0.41	10.3
H20-24FLH45	1 1/4	31.8	1 13/16	46	2.50	63.5	1.50	38	7.12	180.78	4.38	111.28	0.50	12.6
H24-20FLH45	1 1/2	38.1	2	50.8	2.13	54	1.50	38	7.67	194.78	4.48	113.78	0.41	10.3
H24-24FLH45	1 1/2	38.1	2	50.8	2.50	63.5	1.50	38	8.04	204.14	4.85	123.14	0.50	12.6
H24-32FLH45	1 1/2	38.1	2	50.8	3.13	79.4	2.05	52	8.59	218.14	5.40	137.14	0.50	12.6
H16-16FLH45M	1	25.4	1 7/16	36	1.88	47.65	1.26	32	5.99	152.14	3.45	87.64	0.37	9.5
H16-20FLH45M	1	25.4	1 7/16	36	2.13	54	1.50	38	6.23	158.14	3.69	93.64	0.41	10.3
H20-20FLH45M	1 1/4	31.8	1 13/16	46	2.13	54	1.50	38	7.12	180.78	4.38	111.28	0.41	10.3
H20-24FLH45M	1 1/4	31.8	1 13/16	46	2.50	63.5	1.73	44	7.43	188.78	4.70	119.28	0.50	12.6
H24-24FLH45M	1 1/2	38.1	2	50.8	2.50	63.5	1.73	44	8.27	210.14	5.08	129.14	0.50	12.6
H24-32FLH45M	1 1/2	38.1	2	50.8	3.13	79.4	2.20	56	8.75	222.14	5.56	141.14	0.50	12.6
XH12-12FLH45	3/4	19.1	1 3/16	30	1.63	41.3	1.02	26	4.48	113.67	2.68	68.17	0.35	8.8
XH12-16FLH45	3/4	19.1	1 3/16	30	1.88	47.65	1.26	32	4.71	119.67	2.92	74.17	0.37	9.5
XH16-16FLH45	1	25.4	1 7/16	36	1.88	47.65	1.10	28	5.83	148.14	3.29	83.64	0.37	9.5
XH16-20FLH45	1	25.4	1 7/16	36	2.13	54	1.26	32	5.99	152.14	3.45	87.64	0.41	10.3
XH20-16FLH45	1 1/4	31.8	1 13/16	46	1.88	47.65	1.26	32	6.52	165.64	3.79	96.14	0.37	9.5
XH20-20FLH45	1 1/4	31.8	1 13/16	46	2.13	54	1.26	32	6.88	174.78	4.14	105.28	0.41	10.3
XH20-24FLH45	1 1/4	31.8	1 13/16	46	2.50	63.5	1.50	38	7.12	180.78	4.38	111.28	0.50	12.6
XH24-20FLH45	1 1/2	38.1	2	50.8	2.13	54	1.50	38	7.67	194.78	4.48	113.78	0.41	10.3
XH24-24FLH45	1 1/2	38.1	2	50.8	2.50	63.5	1.50	38	8.04	204.14	4.85	123.14	0.50	12.6
XH24-32FLH45	1 1/2	38.1	2	50.8	3.13	79.4	2.05	52	8.59	218.14	5.40	137.14	0.50	12.6
XH16-16FLH45M	1	25.4	1 7/16	36	1.88	47.65	1.26	32	5.99	152.14	3.45	87.64	0.37	9.5
XH16-20FLH45M	1	25.4	1 7/16	36	2.13	54	1.50	38	6.23	158.14	3.69	93.64	0.41	10.3
XH20-20FLH45M	1 1/4	31.8	1 13/16	46	2.13	54	1.50	38	7.12	180.78	4.38	111.28	0.41	10.3
XH20-24FLH45M	1 1/4	31.8	1 13/16	46	2.50	63.5	1.73	44	7.43	188.78	4.70	119.28	0.50	12.6
XH24-24FLH45M	1 1/2	38.1	2	50.8	2.50	63.5	1.73	44	8.27	210.14	5.08	129.14	0.50	12.6
XH24-32FLH45M	1 1/2	38.1	2	50.8	3.13	79.4	2.20	56	8.75	222.14	5.56	141.14	0.50	12.6

## Code 62 O-Ring Flange Heavy 60° Bent Tube



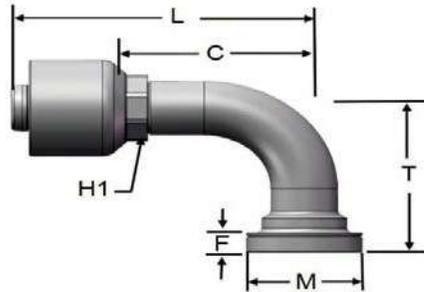
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FLH60	1/2	12.7	15/16	24	1.25	31.75	1.06	27	3.36	85.31	1.84	46.81	0.31	7.8
H12-12FLH60	3/4	19.1	1 3/16	30	1.63	41.3	1.46	37	4.50	114.41	2.71	68.91	0.35	8.8
H12-16FLH60	3/4	19.1	1 3/16	30	1.88	47.65	1.73	44	4.66	118.46	2.87	72.96	0.37	9.5
H16-16FLH60	1	25.4	1 7/16	36	1.88	47.65	1.73	44	6.02	152.88	3.48	88.38	0.37	9.5
H16-20FLH60	1	25.4	1 7/16	36	2.13	54	2.17	55	6.27	159.24	3.73	94.74	0.41	10.3
H20-24FLH60	1 1/4	31.8	1 13/16	46	2.50	63.5	2.52	64	7.22	188.7	4.69	119.2	0.50	12.6
H24-32FLH60	1 1/2	38.1	2	50.8	3.13	79.4	3.27	83	7.43	224.83	5.66	143.83	0.50	12.6
H20-20FLH60M	1 1/4	31.8	1 13/16	46	2.13	54	2.17	55	8.42	183.51	4.49	114.01	0.41	10.3
H24-24FLH60M	1 1/2	38.1	2	50.8	2.50	63.5	2.52	64	8.85	213.86	5.23	132.86	0.50	12.6
XH12-12FLH60	3/4	19.1	1 3/16	30	1.63	41.3	1.46	37	4.50	114.41	2.71	68.91	0.35	8.8
XH12-16FLH60	3/4	19.1	1 3/16	30	1.88	47.65	1.73	44	4.66	118.46	2.87	72.96	0.37	9.5
XH16-16FLH60	1	25.4	1 7/16	36	1.88	47.65	1.73	44	6.02	152.88	3.48	88.38	0.37	9.5
XH16-20FLH60	1	25.4	1 7/16	36	2.13	54	2.17	55	6.27	159.24	3.73	94.74	0.41	10.3
XH20-24FLH60	1 1/4	31.8	1 13/16	46	2.50	63.5	2.52	64	7.22	188.7	4.69	119.2	0.50	12.6
XH24-32FLH60	1 1/2	38.1	2	50.8	3.13	79.4	3.27	83	7.43	224.83	5.66	143.8	0.50	12.6
XH20-20FLH60M	1 1/4	31.8	1 13/16	46	2.13	54	2.17	55	8.42	183.51	4.49	114	0.41	10.3
XH24-24FLH60M	1 1/2	38.1	2	50.8	2.50	63.5	2.52	64	8.85	213.86	5.23	132.9	0.50	12.6

## Code 62 O-Ring Flange Heavy 67.5° Bent Tube



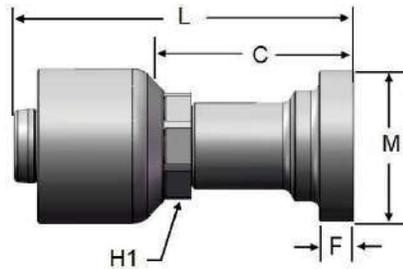
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H08-08FLH67.5	1/2	12.7	15/16	24	1.25	31.75	1.18	30	3.31	84.06	1.79	45.56	0.31	7.8
H12-12FLH67.5	3/4	19.1	1 3/16	30	1.63	41.3	1.65	42	4.47	113.44	2.67	67.94	0.35	8.8
H12-16FLH67.5	3/4	19.1	1 3/16	30	1.88	47.65	2.01	51	4.61	117.17	2.82	71.67	0.37	9.5
H16-16FLH67.5	1	25.4	1 7/16	36	1.88	47.65	2.01	51	6.01	152.69	3.47	88.19	0.37	9.5
H16-20FLH67.5	1	25.4	1 7/16	36	2.13	54	2.52	64	6.22	158.08	3.68	93.58	0.41	10.3
H20-24FLH67.5	1 1/4	31.8	1 13/16	46	2.50	63.5	2.91	74	7.38	187.4	4.64	117.9	0.50	12.6
H24-32FLH67.5	1 1/2	38.1	2	50.8	3.13	79.4	3.82	97	8.78	223.08	5.59	142.08	0.50	12.6
H20-20FLH67.5M	1 1/4	31.8	1 13/16	46	2.13	54	2.52	64	7.21	183.26	4.48	113.76	0.41	10.3
H24-24FLH67.5M	1 1/2	38.1	2	50.8	2.50	63.5	2.91	74	8.41	213.55	5.22	132.55	0.50	12.6
XH12-12FLH67.5	3/4	19.1	1 3/16	30	1.63	41.3	1.65	42	4.47	113.44	2.67	67.94	0.35	8.8
XH12-16FLH67.5	3/4	19.1	1 3/16	30	1.88	47.65	2.01	51	4.61	117.17	2.82	71.67	0.37	9.5
XH16-16FLH67.5	1	25.4	1 7/16	36	1.88	47.65	2.01	51	6.01	152.69	3.47	88.19	0.37	9.5
XH16-20FLH67.5	1	25.4	1 7/16	36	2.13	54	2.52	64	6.22	158.08	3.68	93.58	0.41	10.3
XH20-24FLH67.5	1 1/4	31.8	1 13/16	46	2.50	63.5	2.91	74	7.38	187.4	4.64	117.9	0.50	12.6
XH24-32FLH67.5	1 1/2	38.1	2	50.8	3.13	79.4	3.82	97	8.78	223.08	5.59	142.08	0.50	12.6
XH20-20FLH67.5M	1 1/4	31.8	1 13/16	46	2.13	54	2.52	64	7.21	183.26	4.48	113.76	0.41	10.3
XH24-24FLH67.5M	1 1/2	38.1	2	50.8	2.50	63.5	2.91	74	8.41	213.55	5.22	132.55	0.50	12.6

## Code 62 O-Ring Flange Heavy 90° Bent Tube



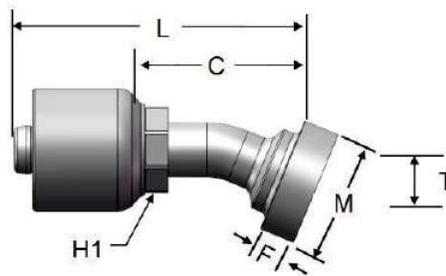
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H06-08FLH90	3/8	9.5	11/16	17	1.25	31.75	1.57	40	2.78	70.5	1.30	33	0.31	7.8
H08-08FLH90	1/2	12.7	15/16	24	1.25	31.75	1.57	40	3.09	78.6	1.58	40.1	0.31	7.8
H08-12FLH90	1/2	12.7	15/16	24	1.63	41.3	2.28	58	3.09	78.6	1.58	40.1	0.35	8.8
H10-12FLH90	5/8	15.9	1 1/16	27	1.63	41.3	2.28	58	3.55	90.2	1.94	49.2	0.35	8.8
H12-12FLH90	3/4	19.1	1 3/16	30	1.63	41.3	2.28	58	4.21	107	2.42	61.5	0.35	8.8
H12-16FLH90	3/4	19.1	1 3/16	30	1.88	47.65	2.76	70	4.21	107	2.42	61.5	0.37	9.5
H16-12FLH90	1	25.4	1 7/16	36	1.63	41.3	2.28	58	5.53	140.5	2.99	76	0.35	8.8
H20-16FLH90	1 1/4	31.8	1 13/16	46	1.88	47.65	3.23	82	6.30	160	3.56	90.5	0.37	9.5
H24-20FLH90	1 1/2	38.1	2	50.8	2.13	54	3.54	90	7.49	190.3	4.30	109.3	0.41	10.3
H16-16FLH90M	1	25.4	1 7/16	36	1.88	47.65	2.76	70	5.77	146.5	3.23	82	0.37	9.5
H16-20FLH90M	1	25.4	1 7/16	36	2.13	54	3.54	90	5.77	146.5	3.23	82	0.41	10.3
H20-20FLH90M	1 1/4	31.8	1 13/16	46	2.13	54	3.54	90	6.89	175	4.15	105.5	0.41	10.3
H20-24FLH90M	1 1/4	31.8	1 13/16	46	2.50	63.5	4.09	104	6.89	175	4.15	105.5	0.50	12.6
H24-24FLH90M	1 1/2	38.1	2	50.8	2.50	63.5	4.09	104	8.06	204.8	4.87	123.8	0.50	12.6
H24-32FLH90M	1 1/2	38.1	2	50.8	3.13	79.4	5.43	138	8.06	204.8	4.87	123.8	0.50	12.6
XH12-12FLH90	3/4	19.1	1 3/16	30	1.63	41.3	2.28	58	4.21	107	2.42	61.5	0.35	8.8
XH12-16FLH90	3/4	19.1	1 3/16	30	1.88	47.65	2.76	70	4.21	107	2.42	61.5	0.37	9.5
XH16-12FLH90	1	25.4	1 7/16	36	1.63	41.3	2.28	58	5.53	140.5	2.99	76	0.35	8.8
XH20-16FLH90	1 1/4	31.8	1 13/16	46	1.88	47.65	3.23	82	6.30	160	3.56	90.5	0.37	9.5
XH24-20FLH90	1 1/2	38.1	2	50.8	2.13	54	3.54	90	7.49	190.3	4.30	109.3	0.41	10.3
XH16-16FLH90M	1	25.4	1 7/16	36	1.88	47.65	2.76	70	5.77	146.5	3.23	82	0.37	9.5
XH16-20FLH90M	1	25.4	1 7/16	36	2.13	54	3.54	90	5.77	146.5	3.23	82	0.41	10.3
XH20-20FLH90M	1 1/4	31.8	1 13/16	46	2.13	54	3.54	90	6.89	175	4.15	105.5	0.41	10.3
XH20-24FLH90M	1 1/4	31.8	1 13/16	46	2.50	63.5	4.09	104	6.89	175	4.15	105.5	0.50	12.6
XH24-24FLH90M	1 1/2	38.1	2	50.8	2.50	63.5	4.09	104	8.06	204.8	4.87	123.8	0.50	12.6
XH24-32FLH90M	1 1/2	38.1	2	50.8	3.13	79.4	5.43	138	8.06	204.8	4.87	123.8	0.50	12.6

## CAT Flange



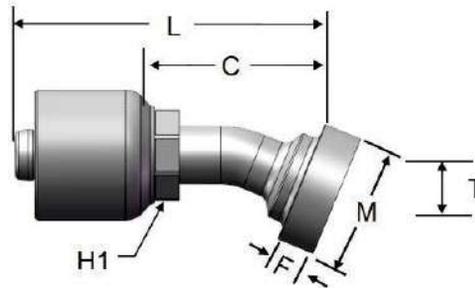
Part Number	⊖		H1		M		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H12-12FLC	3/4	19.1	1 3/16	30	1.63	41.3	4.15	105.5	2.36	60	0.56	14.3
H16-16FLC	1	25.4	1 7/16	36	1.88	47.65	5.10	129.5	2.56	65	0.56	14.3
H20-20FLC	1 1/4	31.8	1 13/16	46	2.13	54	5.89	149.5	3.15	80	0.56	14.3
H24-24FLC	1 1/2	38.1	2	50.8	2.50	63.5	6.50	165	3.31	84	0.56	14.3

## CAT Flange 22.5° Bent Tube



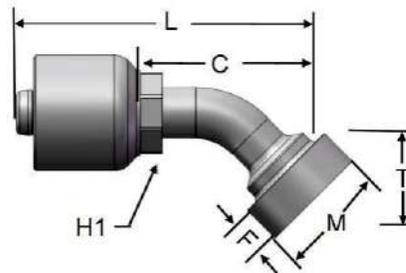
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H12-12FLC22.5	3/4	19.1	1 3/16	30	1.63	41.3	0.63	16	4.69	119.19	2.90	73.69	0.56	14.3
H16-16FLC22.5	1	25.4	1 7/16	36	1.88	47.65	0.67	17	5.96	151.49	3.42	86.99	0.56	14.3
H20-20FLC22.5	1 1/4	31.8	1 13/16	46	2.13	54	0.63	16	6.68	169.57	3.94	100.07	0.56	14.3
H24-24FLC22.5	1 1/2	38.1	2	50.8	2.50	63.5	0.71	18	7.69	195.38	4.50	114.38	0.56	14.3

## CAT Flange 30° Bent Tube



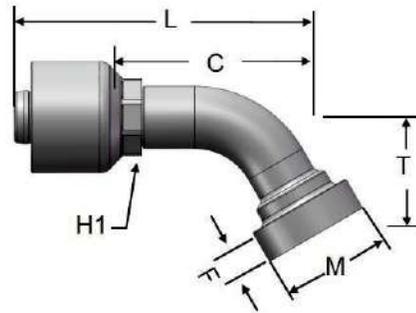
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H12-12FLC30	3/4	19.1	1 3/16	30	1.63	41.3	0.87	22	3.42	120.95	2.97	75.45	0.56	14.3
H16-16FLC30	1	25.4	1 7/16	36	1.88	47.65	0.91	23	4.33	153.39	3.50	88.89	0.56	14.3
H20-20FLC30	1 1/4	31.8	1 13/16	46	2.13	54	0.87	22	4.88	172.84	4.07	103.34	0.56	14.3
H24-24FLC30	1 1/2	38.1	2	50.8	2.50	63.5	0.98	25	5.64	199.79	4.68	118.79	0.56	14.3

## CAT Flange 45° Bent Tube



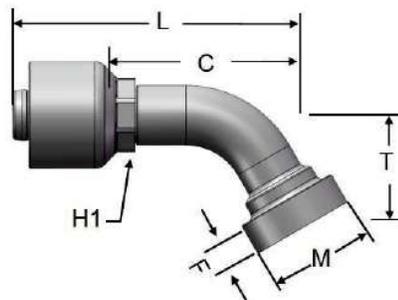
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H12-12FLC30	3/4	19.1	1 3/16	30	1.63	41.3	0.87	22	3.42	120.95	2.97	75.45	0.56	14.3
H16-16FLC30	1	25.4	1 7/16	36	1.88	47.65	0.91	23	4.33	153.39	3.50	88.89	0.56	14.3
H20-20FLC30	1 1/4	31.8	1 13/16	46	2.13	54	0.87	22	4.88	172.84	4.07	103.34	0.56	14.3
H24-24FLC30	1 1/2	38.1	2	50.8	2.50	63.5	0.98	25	5.64	199.79	4.68	118.79	0.56	14.3

## CAT Flange 60° Bent Tube



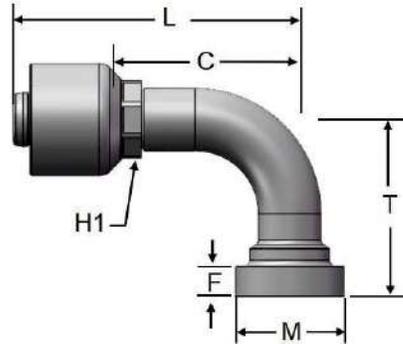
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H12-12FLC60	3/4	19.1	1 3/16	30	1.63	41.3	1.77	45	4.69	119.03	2.89	73.53	0.56	14.3
H16-16FLC60	1	25.4	1 7/16	36	1.88	47.65	1.97	50	6.16	156.35	3.62	91.85	0.56	14.3
H20-20FLC60	1 1/4	31.8	1 13/16	46	2.13	54	1.97	50	8.03	203.85	4.37	111.12	0.56	14.3
H24-24FLC60	1 1/2	38.1	2	50.8	2.50	63.5	2.28	58	8.28	210.39	5.09	129.39	0.56	14.3

## CAT Flange 67.5° Bent Tube



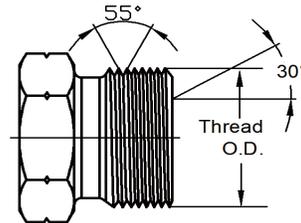
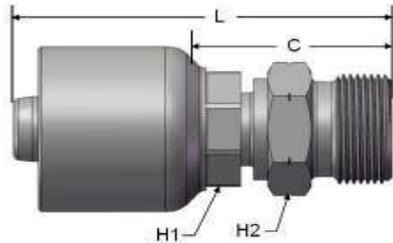
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H12-12FLC67.5	3/4	19.1	1 3/16	30	1.63	41.3	1.97	50	4.60	116.76	2.81	71.26	0.56	14.3
H16-16FLC67.5	1	25.4	1 7/16	36	1.88	47.65	2.20	56	6.09	154.76	3.55	90.26	0.56	14.3
H20-20FLC67.5	1 1/4	31.8	1 13/16	46	2.13	54	2.24	57	7.10	180.36	4.36	110.86	0.56	14.3
H24-24FLC67.5	1 1/2	38.1	2	50.8	2.50	63.5	2.60	66	8.28	210.24	5.09	129.24	0.56	14.3

## CAT Flange 90° Bent Tube



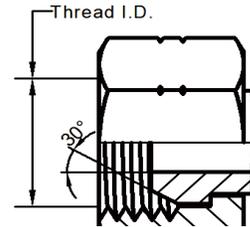
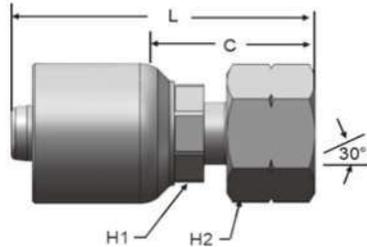
Part Number	⊖		H1		M		T		L		C		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H12-12FLC90	3/4	19.1	13/16	30	1.63	41.3	2.52	64	4.21	107	2.42	61.5	0.56	14.3
H12-12FLC90-129	3/4	19.1	13/16	30	1.63	41.3	5.08	129	4.21	107	2.42	61.5	0.56	14.3
H16-16FLC90	1	25.4	17/16	36	1.88	47.65	2.87	73	5.77	146.5	3.23	82	0.56	14.3
H16-16FLC90-132	1	25.4	17/16	36	1.88	47.65	5.20	132	5.77	146.5	3.23	82	0.56	14.3
H20-20FLC90	1 1/4	31.8	1 13/16	46	2.13	54	3.03	77	6.89	175	4.15	105.5	0.56	14.3
H20-20FLC90-H150	1 1/4	31.8	1 13/16	46	2.13	54	5.91	150	6.89	175	4.15	105.5	0.56	14.3
H24-24FLC90	1 1/2	38.1	2	50.8	2.50	63.5	3.54	90	8.06	204.8	4.87	123.8	0.56	14.3
H24-24FLC90-106	1 1/2	38.1	2	50.8	2.50	63.5	4.17	106	8.06	204.8	4.87	123.8	0.56	14.3

## Male British Standard Parallel Pipe



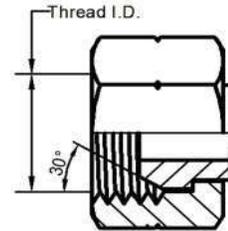
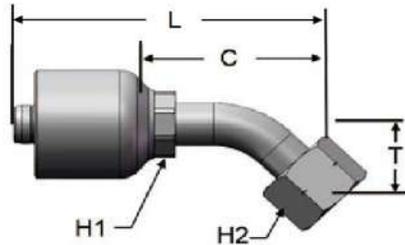
Part Number	Ø		Thread	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
H08-06MBSPP	1/2	12.7	3/8-19	15/16	24	3/4	19	2.80	71	1.28	32.5
H08-08MBSPP	1/2	12.7	1/2-14	15/16	24	7/8	22	2.91	74	1.40	35.5
H08-10MBSPP	1/2	12.7	5/8-14	15/16	24	15/16	24	3.03	77	1.52	38.5
H10-08MBSPP	5/8	15.9	1/2-14	1 1/16	27	7/8	22	3.07	78	1.46	37
H10-10MBSPP	5/8	15.9	5/8-14	1 1/16	27	15/16	24	3.19	81	1.57	40
H10-12MBSPP	5/8	15.9	3/4-14	1 1/16	27	1 3/16	30	3.27	83	1.65	42
H12-10MBSPP	3/4	19.1	5/8-14	1 3/16	30	15/16	24	3.39	86	1.59	40.5
H12-12MBSPP	3/4	19.1	3/4-14	1 3/16	30	1 3/16	30	3.46	88	1.67	42.5
H12-16MBSPP	3/4	19.1	1-11	1 3/16	30	1 7/16	36	3.66	93	1.87	47.5
H16-12MBSPP	1	25.4	3/4-14	1 7/16	36	1 3/16	30	4.25	108	1.71	43.5
H16-16MBSPP	1	25.4	1-11	1 7/16	36	1 7/16	36	4.45	113	1.91	48.5
H16-20MBSPP	1	25.4	1 1/4-11	1 7/16	36	1 13/16	46	4.61	117	2.07	52.5
H20-16MBSPP	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	5.08	129	2.34	59.5
H20-20MBSPP	1 1/4	31.8	1 1/4-11	1 13/16	46	1 13/16	46	5.24	133	2.50	63.5
H20-24MBSPP	1 1/4	31.8	1 1/2-11	1 13/16	46	2	50	5.31	135	2.58	65.5
H24-20MBSPP	1 1/2	38.1	1 1/4-11	2	50.8	1 13/16	46	5.71	145	2.52	64
H24-24MBSPP	1 1/2	38.1	1 1/2-11	2	50.8	2	50	5.79	147	2.60	66
H24-32MBSPP	1 1/2	38.1	2-11	2	50.8	2 9/16	65	6.10	155	2.91	74
XH12-10MBSPP	3/4	19.1	5/8-14	1 3/16	30	15/16	24	3.39	86	1.59	40.5
XH12-12MBSPP	3/4	19.1	3/4-14	1 3/16	30	1 3/16	30	3.46	88	1.67	42.5
XH12-16MBSPP	3/4	19.1	1-11	1 3/16	30	1 7/16	36	3.66	93	1.87	47.5
XH16-12MBSPP	1	25.4	3/4-14	1 7/16	36	1 3/16	30	4.25	108	1.71	43.5
XH16-16MBSPP	1	25.4	1-11	1 7/16	36	1 7/16	36	4.45	113	1.91	48.5
XH16-20MBSPP	1	25.4	1 1/4-11	1 7/16	36	1 13/16	46	4.61	117	2.07	52.5
XH20-16MBSPP	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	5.08	129	2.34	59.5
XH20-20MBSPP	1 1/4	31.8	1 1/4-11	1 13/16	46	1 13/16	46	5.24	133	2.50	63.5
XH20-24MBSPP	1 1/4	31.8	1 1/2-11	1 13/16	46	2	50	5.31	135	2.58	65.5
XH24-20MBSPP	1 1/2	38.1	1 1/4-11	2	50.8	1 13/16	46	5.71	145	2.52	64
XH24-24MBSPP	1 1/2	38.1	1 1/2-11	2	50.8	2	50	5.79	147	2.60	66
XH24-32MBSPP	1 1/2	38.1	2-11	2	50.8	2 9/16	65	6.10	155	2.91	74

# Female Swivel British Standard Parallel Pipe



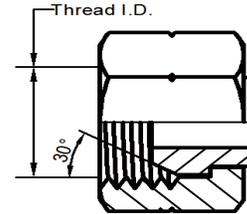
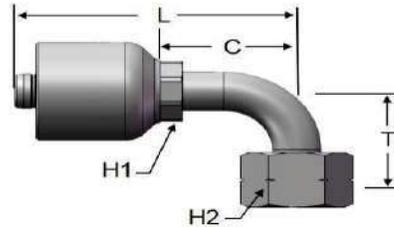
Part Number	⌀		Thread	H1		H2		L		C	
	in	mm		in	mm	in	mm	in	mm	in	mm
H08-06FBSPP	1/2	12.7	3/8-19	15/16	24	7/8	22	2.67	67.7	1.15	29.2
H08-08FBSPP	1/2	12.7	1/2-14	15/16	24	1 1/16	27	2.85	72.5	1.34	34
H08-10FBSPP	1/2	12.7	5/8-14	15/16	24	1 3/16	30	2.93	74.5	1.42	36
H10-08FBSPP	5/8	15.9	1/2-14	1 1/16	27	1 1/16	27	2.93	74.5	1.32	33.5
H10-10FBSPP	5/8	15.9	5/8-14	1 1/16	27	1 3/16	30	3.09	78.5	1.48	37.5
H10-12FBSPP	5/8	15.9	3/4-14	1 1/16	27	1 1/4	32	3.11	79	1.50	38
H12-10FBSPP	3/4	19.1	5/8-14	1 3/16	30	1 3/16	30	3.25	82.5	1.46	37
H12-12FBSPP	3/4	19.1	3/4-14	1 3/16	30	1 1/4	32	3.26	82.9	1.47	37.4
H12-16FBSPP	3/4	19.1	1-11	1 3/16	30	1 5/8	41	3.39	86	1.59	40.5
H16-12FBSPP	1	25.4	3/4-14	1 7/16	36	1 1/4	32	4.06	103	1.52	38.5
H16-16FBSPP	1	25.4	1-11	1 7/16	36	1 5/8	41	4.13	105	1.59	40.5
H16-20FBSPP	1	25.4	1 1/4-11	1 7/16	36	2	50	4.31	109.5	1.77	45
H20-16FBSPP	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	4.65	118	1.91	48.5
H20-20FBSPP	1 1/4	31.8	1 1/4-11	1 13/16	46	2	50	5.02	127.5	2.28	58
H20-24FBSPP	1 1/4	31.8	1 1/2-11	1 13/16	46	2 3/16	55	5.20	132.1	2.46	62.6
H24-20FBSPP	1 1/2	38.1	1 1/4-11	2	50.8	2	50	5.37	136.5	2.19	55.5
H24-24FBSPP	1 1/2	38.1	1 1/2-11	2	50.8	2 3/16	55	5.69	144.5	2.50	63.5
XH12-10FBSPP	3/4	19.1	5/8-14	1 3/16	30	1 3/16	30	3.25	82.5	1.46	37
XH12-12FBSPP	3/4	19.1	3/4-14	1 3/16	30	1 1/4	32	3.26	82.9	1.47	37.4
XH12-16FBSPP	3/4	19.1	1-11	1 3/16	30	1 5/8	41	3.39	86	1.59	40.5
XH16-12FBSPP	1	25.4	3/4-14	1 7/16	36	1 1/4	32	4.06	103	1.52	38.5
XH16-16FBSPP	1	25.4	1-11	1 7/16	36	1 5/8	41	4.13	105	1.59	40.5
XH16-20FBSPP	1	25.4	1 1/4-11	1 7/16	36	2	50	4.31	109.5	1.77	45
XH20-16FBSPP	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	4.65	118	1.91	48.5
XH20-20FBSPP	1 1/4	31.8	1 1/4-11	1 13/16	46	2	50	5.02	127.5	2.28	58
XH20-24FBSPP	1 1/4	31.8	1 1/2-11	1 13/16	46	2 3/16	55	5.20	132.1	2.46	62.6
XH24-20FBSPP	1 1/2	38.1	1 1/4-11	2	50.8	2	50	5.37	136.5	2.19	55.5
XH24-24FBSPP	1 1/2	38.1	1 1/2-11	2	50.8	2 3/16	55	5.69	144.5	2.50	63.5

## Female Swivel British Standard Parallel Pipe 45° Bent Tube



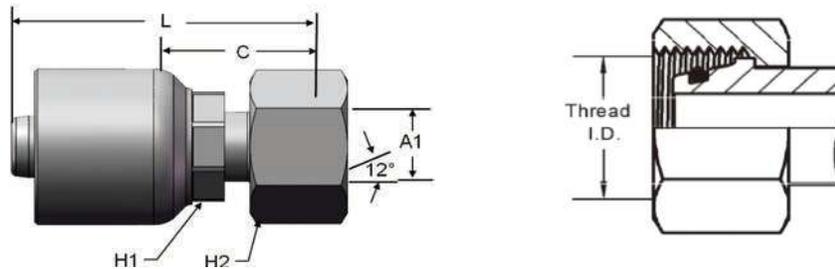
Part Number	⊖		⋈	H1		H2		T		L		C	
	in	mm		in	in	mm	in	mm	in	mm	in	mm	in
H08-06FBSP45	1/2	12.7	3/8-19	15/16	24	7/8	22	0.91	23	3.44	87.43	1.93	48.93
H08-08FBSP45	1/2	12.7	1/2-14	15/16	24	1 1/16	27	0.79	20	3.40	86.3	1.88	47.8
H08-10FBSP45	1/2	12.7	5/8-14	15/16	24	1 3/16	30	0.91	23	3.52	89.3	2.00	50.8
H10-08FBSP45	5/8	15.9	1/2-14	1 1/16	27	1 1/16	27	1.02	26	3.85	97.7	2.23	56.7
H10-10FBSP45	5/8	15.9	5/8-14	1 1/16	27	1 3/16	30	0.98	25	3.93	99.81	2.32	58.81
H10-12FBSP45	5/8	15.9	3/4-14	1 1/16	27	1 1/4	32	1.10	28	4.02	102.18	2.41	61.28
H12-10FBSP45	3/4	19.1	5/8-14	1 3/16	30	1 3/16	30	1.30	33	4.65	118.18	2.86	72.68
H12-12FBSP45	3/4	19.1	3/4-14	1 3/16	30	1 1/4	32	1.14	29	4.50	114.18	2.70	68.68
H12-16FBSP45	3/4	19.1	1-11	1 3/16	30	1 5/8	41	1.26	32	4.71	119.67	2.92	74.17
H16-12FBSP45	1	25.4	3/4-14	1 7/16	36	1 1/4	32	1.57	40	6.11	155.17	3.57	90.67
H16-16FBSP45	1	25.4	1-11	1 7/16	36	1 5/8	41	1.38	35	6.11	155.14	3.57	90.64
H16-20FBSP45	1	25.4	1 1/4-11	1 7/16	36	2	50	1.54	39	6.27	159.14	3.73	94.64
H20-16FBSP45	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	1.38	35	6.57	166.89	3.83	97.39
H20-20FBSP45	1 1/4	31.8	1 1/4-11	1 13/16	46	2	50	1.57	40	7.03	178.5	4.29	109
H20-24FBSP45	1 1/4	31.8	1 1/2-11	1 13/16	46	2 3/16	55	2.13	54	7.75	196.78	5.01	127.28
H24-20FBSP45	1 1/2	38.1	1 1/4-11	2	50.8	2	50	1.57	40	7.86	199.58	4.67	118.58
H24-24FBSP45	1 1/2	38.1	1 1/2-11	2	50.8	2 3/16	55	1.97	50	8.18	207.78	4.99	126.78
XH12-10FBSP45	3/4	19.1	5/8-14	1 3/16	30	1 3/16	30	1.30	33	4.65	118.18	2.86	72.68
XH12-12FBSP45	3/4	19.1	3/4-14	1 3/16	30	1 1/4	32	1.14	29	4.50	114.18	2.70	68.68
XH12-16FBSP45	3/4	19.1	1-11	1 3/16	30	1 5/8	41	1.26	32	4.71	119.67	2.92	74.17
XH16-12FBSP45	1	25.4	3/4-14	1 7/16	36	1 1/4	32	1.57	40	6.11	155.17	3.57	90.67
XH16-16FBSP45	1	25.4	1-11	1 7/16	36	1 5/8	41	1.38	35	6.11	155.14	3.57	90.64
XH16-20FBSP45	1	25.4	1 1/4-11	1 7/16	36	2	50	1.54	39	6.27	159.14	3.73	94.64
XH20-16FBSP45	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	1.38	35	6.57	166.89	3.83	97.39
XH20-20FBSP45	1 1/4	31.8	1 1/4-11	1 13/16	46	2	50	1.57	40	7.03	178.5	4.29	109
XH20-24FBSP45	1 1/4	31.8	1 1/2-11	1 13/16	46	2 3/16	55	2.13	54	7.75	196.78	5.01	127.28
XH24-20FBSP45	1 1/2	38.1	1 1/4-11	2	50.8	2	50	1.57	40	7.86	199.58	4.67	118.58
XH24-24FBSP45	1 1/2	38.1	1 1/2-11	2	50.8	2 3/16	55	1.97	50	8.18	207.78	4.99	126.78

# Female Swivel British Standard Parallel Pipe 90° Bent Tube



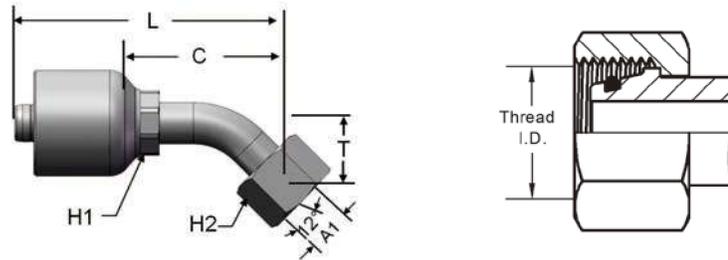
Part Number	⊖		⋈	H1		H2		T		L		C	
	in	mm		in	in	mm	in	mm	in	mm	in	mm	in
H08-06FBSPP90	1/2	12.7	3/8-19	15/16	24	7/8	22	1.65	42	3.09	78.6	1.58	40.1
H08-08FBSPP90	1/2	12.7	1/2-14	15/16	24	1 1/16	27	1.61	41	3.13	79.5	1.61	41
H08-10FBSPP90	1/2	12.7	5/8-14	15/16	24	1 3/16	30	1.77	45	3.09	78.6	1.58	40.1
H10-08FBSPP90	5/8	15.9	1/2-14	1 1/16	27	1 1/16	27	2.05	52	3.54	90	1.93	49
H10-10FBSPP90	5/8	15.9	5/8-14	1 1/16	27	1 3/16	30	2.01	51	3.54	90	1.93	49
H10-12FBSPP90	5/8	15.9	3/4-14	1 1/16	27	1 1/4	32	2.20	56	3.54	90	1.93	49
H12-10FBSPP90	3/4	19.1	5/8-14	1 3/16	30	1 3/16	30	2.28	58	4.21	107	2.42	61.5
H12-12FBSPP90	3/4	19.1	3/4-14	1 3/16	30	1 1/4	32	2.28	58	4.21	107	2.42	61.5
H12-16FBSPP90	3/4	19.1	1-11	1 3/16	30	1 5/8	41	2.44	62	4.21	107	2.42	61.5
H16-12FBSPP90	1	25.4	3/4-14	1 7/16	36	1 1/4	32	2.80	71	5.77	146.5	3.23	82
H16-16FBSPP90	1	25.4	1-11	1 7/16	36	1 5/8	41	2.76	70	5.77	146.5	3.23	82
H16-20FBSPP90	1	25.4	1 1/4-11	1 7/16	36	2	50	2.99	76	5.77	146.5	3.23	82
H20-16FBSPP90	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	2.76	70	6.16	156.5	3.43	87
H20-20FBSPP90	1 1/4	31.8	1 1/4-11	1 13/16	46	2	50	3.35	85	6.59	167.5	3.86	98
HH0-24FBSPP90	1 1/4	31.8	1 1/2-11	1 13/16	46	2 3/16	55	3.62	92	6.89	175	4.15	105.5
H24-20FBSPP90	1 1/2	38.1	1 1/4-11	2	50.8	2	50	3.35	85	7.55	191.8	4.36	110.8
H24-24FBSPP90	1 1/2	38.1	1 1/2-11	2	50.8	2 3/16	55	3.94	100	7.56	192	4.37	111
XH12-10FBSPP90	3/4	19.1	5/8-14	1 3/16	30	1 3/16	30	2.28	58	4.21	107	2.42	61.5
XH12-12FBSPP90	3/4	19.1	3/4-14	1 3/16	30	1 1/4	32	2.28	58	4.21	107	2.42	61.5
XH12-16FBSPP90	3/4	19.1	1-11	1 3/16	30	1 5/8	41	2.44	62	4.21	107	2.42	61.5
XH16-12FBSPP90	1	25.4	3/4-14	1 7/16	36	1 1/4	32	2.80	71	5.77	146.5	3.23	82
XH16-16FBSPP90	1	25.4	1-11	1 7/16	36	1 5/8	41	2.76	70	5.77	146.5	3.23	82
XH16-20FBSPP90	1	25.4	1 1/4-11	1 7/16	36	2	50	2.99	76	5.77	146.5	3.23	82
XH20-16FBSPP90	1 1/4	31.8	1-11	1 13/16	46	1 5/8	41	2.76	70	6.16	156.5	3.43	87
XH20-20FBSPP90	1 1/4	31.8	1 1/4-11	1 13/16	46	2	50	3.35	85	6.59	167.5	3.86	98
XH20-24FBSPP90	1 1/4	31.8	1 1/2-11	1 13/16	46	2 3/16	55	3.62	92	6.89	175	4.15	105.5
XH24-20FBSPP90	1 1/2	38.1	1 1/4-11	2	50.8	2	50	3.35	85	7.55	191.8	4.36	110.8
XH24-24FBSPP90	1 1/2	38.1	1 1/2-11	2	50.8	2 3/16	55	3.94	100	7.56	192	4.37	111

## Female DIN 24° Cone Swivel - Light Series with O-Ring



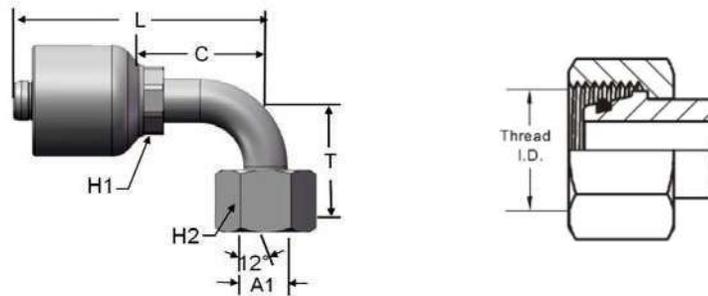
Part Number	⊖		mm	A1 mm	H1		H2		L		C	
	in	mm			in	mm	in	mm	in	mm	in	mm
H08-12-18FDL	1/2	12.7	M18-1.5	12	15/16	24	15/16	24	2.83	72	1.32	33.5
H08-15-22FDL	1/2	12.7	M22-1.5	15	15/16	24	1 1/16	27	2.68	68	1.16	29.5
H08-18-26FDL	1/2	12.7	M26-1.5	18	15/16	24	1 1/4	32	2.80	71	1.28	32.5
H10-15-22FDL	5/8	15.9	M22-1.5	15	1 1/16	27	1 1/16	27	2.83	72	1.22	31
H10-18-26FDL	5/8	15.9	M26-1.5	18	1 1/16	27	1 1/4	32	2.95	75	1.34	34
H10-22-30FDL	5/8	15.9	M30-2	22	1 1/16	27	1 7/16	36	2.93	74.5	1.32	33.5
H12-18-26FDL	3/4	19.1	M26-1.5	18	1 3/16	30	1 1/4	32	2.95	75	1.16	29.5
H12-22-30FDL	3/4	19.1	M30-2	22	1 3/16	30	1 7/16	36	3.13	79.5	1.34	34
H12-28-36FDL	3/4	19.1	M36-2	28	1 3/16	30	1 1/4	32	3.21	81.5	1.42	36
H16-28-36FDL	1	25.4	M36-2	28	1 7/16	36	1 1/4	32	4.00	101.5	1.46	37
H16-35-45FDL	1	25.4	M45-2	35	1 7/16	36	2	50	4.02	102	1.48	37.5
H20-35-45FDL	1 1/4	31.8	M45-2	35	1 13/16	46	2	50	4.67	118.5	1.93	49
H20-42-52FDL	1 1/4	31.8	M52-2	42	1 13/16	46	2 3/8	60	4.72	120	1.99	50.5
H24-42-52FDL	1 1/2	38.1	M52-2	42	2	50.8	2 3/8	60	5.20	132	2.01	51
XH12-18-26FDL	3/4	19.1	M26-1.5	18	1 3/16	30	1 1/4	32	2.95	75	1.16	29.5
XH12-22-30FDL	3/4	19.1	M30-2	22	1 3/16	30	1 7/16	36	3.13	79.5	1.34	34
XS12-28-36FDL	3/4	19.1	M36-2	28	1 3/16	30	1 1/4	32	3.21	81.5	1.42	36
XH16-28-36FDL	1	25.4	M36-2	28	1 7/16	36	1 1/4	32	4.00	101.5	1.46	37
XH16-35-45FDL	1	25.4	M45-2	35	1 7/16	36	2	50	4.02	102	1.48	37.5
XH20-35-45FDL	1 1/4	31.8	M45-2	35	1 13/16	46	2	50	4.67	118.5	1.93	49
XH20-42-52FDL	1 1/4	31.8	M52-2	42	1 13/16	46	2 3/8	60	4.72	120	1.99	50.5
XH24-42-52FDL	1 1/2	38.1	M52-2	42	2	50.8	2 3/8	60	5.20	132	2.01	51

## Female DIN 24° Cone Swivel - Light Series with O-Ring 45° Bent Tube



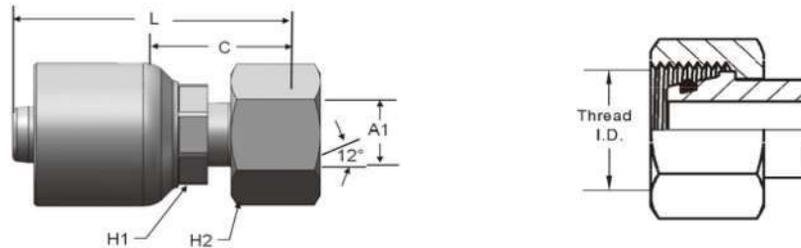
Part Number	⊖		mm	mm	mm	H1		H2		T		L		C	
	in	mm				in	mm	in	mm	in	mm	in	mm	in	mm
H08-12-18FDL45	1/2	12.7	M18-1.5	12	15/16	24	15/16	24	0.77	19.5	3.38	85.8	1.86	47.3	
H08-15-22FDL45	1/2	12.7	M22-1.5	15	15/16	24	1 1/16	27	0.77	19.5	3.38	85.8	1.86	47.3	
H08-18-26FDL45	1/2	12.7	M26-1.5	18	15/16	24	1 1/4	32	0.93	23.5	3.54	89.8	2.02	51.3	
H10-15-22FDL45	5/8	15.9	M22-1.5	15	1 1/16	27	1 1/16	27	0.93	23.5	3.77	95.82	2.16	54.82	
H10-18-26FDL45	5/8	15.9	M26-1.5	18	1 1/16	27	1 1/4	32	0.93	23.5	3.85	97.68	2.23	56.68	
H10-22-30FDL45	5/8	15.9	M30-2	22	1 1/16	27	1 7/16	36	1.00	25.5	3.92	99.68	2.31	58.68	
H12-18-26FDL45	3/4	19.1	M26-1.5	18	1 3/16	30	1 1/4	32	1.00	25.5	4.36	110.68	2.57	65.18	
H12-22-30FDL45	3/4	19.1	M30-2	22	1 3/16	30	1 7/16	36	1.00	25.5	4.46	113.17	2.66	67.67	
H12-28-36FDL45	3/4	19.1	M36-2	28	1 3/16	30	1 1/4	32	1.26	32	4.71	119.67	2.92	74.17	
H16-28-36FDL45	1	25.4	M36-2	28	1 7/16	36	1 1/4	32	1.26	32	5.94	150.9	3.40	86.4	
H16-35-45FDL45	1	25.4	M45-2	35	1 7/16	36	2	50	1.50	38	6.23	158.14	3.69	93.64	
H20-35-45FDL45	1 1/4	31.8	M45-2	35	1 13/16	46	2	50	1.50	38	7.08	179.75	4.34	110.25	
H20-42-52FDL45	1 1/4	31.8	M52-2	42	1 13/16	46	2 3/8	60	1.75	44.5	7.37	187.28	4.64	117.78	
H24-42-52FDL45	1 1/2	38.1	M52-2	42	2	50.8	2 3/8	60	1.75	44.5	8.24	209.4	5.06	128.4	
XH12-18-26FDL45	3/4	19.1	M26-1.5	18	1 3/16	30	1 1/4	32	1.00	25.5	4.36	110.68	2.57	65.18	
XH12-22-30FDL45	3/4	19.1	M30-2	22	1 3/16	30	1 7/16	36	1.00	25.5	4.46	113.17	2.66	67.67	
XH12-28-36FDL45	3/4	19.1	M36-2	28	1 3/16	30	1 1/4	32	1.26	32	4.71	119.67	2.92	74.17	
XH16-28-36FDL45	1	25.4	M36-2	28	1 7/16	36	1 1/4	32	1.26	32	5.94	150.9	3.40	86.4	
XH16-35-45FDL45	1	25.4	M45-2	35	1 7/16	36	2	50	1.50	38	6.23	158.14	3.69	93.64	
XH20-35-45FDL45	1 1/4	31.8	M45-2	35	1 13/16	46	2	50	1.50	38	7.08	179.75	4.34	110.25	
XH20-42-52FDL45	1 1/4	31.8	M52-2	42	1 13/16	46	2 3/8	60	1.75	44.5	7.37	187.28	4.64	117.78	
XH24-42-52FDL45	1 1/2	38.1	M52-2	42	2	50.8	2 3/8	60	1.75	44.5	8.24	209.4	5.06	128.4	

## Female Swivel DIN 24° Cone-Light Series with O-Ring 90° Bent Tube



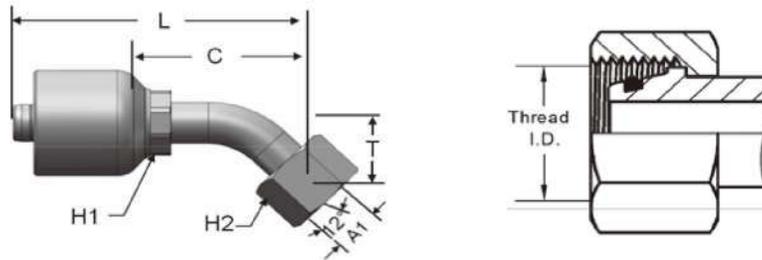
Part Number	Ø		mm	mm	A1	H1		H2		T		L		C	
	in	mm				in	mm	in	mm	in	mm	in	mm	in	mm
H08-12-18FDL90	1/2	12.7	M18-1.5	12	15/16	24	15/16	24	1.59	40.5	3.09	78.6	1.58	40.1	
H08-15-22FDL90	1/2	12.7	M22-1.5	15	15/16	24	1 1/16	27	1.59	40.5	3.09	78.6	1.58	40.1	
H08-18-26FDL90	1/2	12.7	M26-1.5	18	15/16	24	1 1/4	32	2.03	51.5	3.09	78.6	1.58	40.1	
H10-15-22FDL90	5/8	15.9	M22-1.5	15	1 1/16	27	1 1/16	27	1.89	48	3.37	85.5	1.75	44.5	
H10-18-26FDL90	5/8	15.9	M26-1.5	18	1 1/16	27	1 1/4	32	2.03	51.5	3.55	90.2	1.94	49.2	
H10-22-30FDL90	5/8	15.9	M30-2	22	1 1/16	27	1 7/16	36	2.20	56	3.54	90	1.93	49	
H12-18-26FDL90	3/4	19.1	M26-1.5	18	1 3/16	30	1 1/4	32	2.19	55.5	3.98	101	2.19	55.5	
H12-22-30FDL90	3/4	19.1	M30-2	22	1 3/16	30	1 7/16	36	2.20	56	4.21	107	2.42	61.5	
H12-28-36FDL90	3/4	19.1	M36-2	28	1 3/16	30	1 1/4	32	2.70	68.5	4.21	107	2.42	61.5	
H16-28-36FDL90	1	25.4	M36-2	28	1 7/16	36	1 1/4	32	2.70	68.5	5.65	143.5	3.11	79	
H16-35-45FDL90	1	25.4	M45-2	35	1 7/16	36	2	50	3.09	78.5	5.77	146.5	3.23	82	
H20-35-45FDL90	1 1/4	31.8	M45-2	35	1 13/16	46	2	50	3.09	78.5	6.89	175	4.15	105.5	
H20-42-52FDL90	1 1/4	31.8	M52-2	42	1 13/16	46	2 3/8	60	3.74	95	6.89	175	4.15	105.5	
H24-42-52FDL90	1 1/2	38.1	M52-2	42	2	50.8	2 3/8	60	3.74	95	8.06	204.8	4.87	123.8	
XH12-18-26FDL90	3/4	19.1	M26-1.5	18	1 3/16	30	1 1/4	32	2.19	55.5	3.98	101	2.19	55.5	
XH12-22-30FDL90	3/4	19.1	M30-2	22	1 3/16	30	1 7/16	36	2.20	56	4.21	107	2.42	61.5	
XH12-28-36FDL90	3/4	19.1	M36-2	28	1 3/16	30	1 1/4	32	2.70	68.5	4.21	107	2.42	61.5	
XH16-28-36FDL90	1	25.4	M36-2	28	1 7/16	36	1 1/4	32	2.70	68.5	5.65	143.5	3.11	79	
XH16-35-45FDL90	1	25.4	M45-2	35	1 7/16	36	2	50	3.09	78.5	5.77	146.5	3.23	82	
XH20-35-45FDL90	1 1/4	31.8	M45-2	35	1 13/16	46	2	50	3.09	78.5	6.89	175	4.15	105.5	
XH20-42-52FDL90	1 1/4	31.8	M52-2	42	1 13/16	46	2 3/8	60	3.74	95	6.89	175	4.15	105.5	
XH24-42-52FDL90	1 1/2	38.1	M52-2	42	2	50.8	2 3/8	60	3.74	95	8.06	204.8	4.87	123.8	

## Female Swivel DIN 24° Cone-Heavy Series with O-Ring



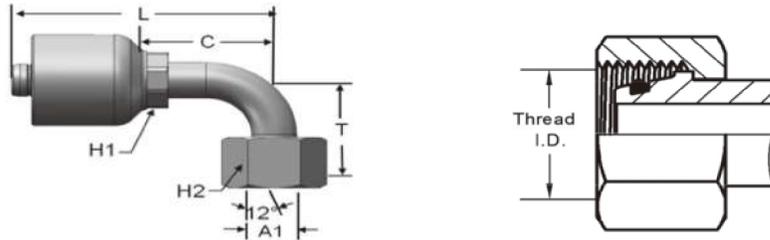
Part Number	Ø		mm	A1	H1		H2		L		C	
	in	mm			in	mm	in	mm	in	mm	in	mm
H08-12-20FDH	1/4	6.3	M12-1.5	12	9/16	14	15/16	24	2.68	68	1.16	29.5
H08-14-22FDH	1/4	6.3	M14-1.5	14	9/16	14	1 1/16	27	2.68	68	1.16	29.5
H08-16-24FDH	1/4	6.3	M16-1.5	16	9/16	14	1 3/16	30	2.64	67	1.12	28.5
H08-20-30FDH	5/16	7.9	M16-1.5	20	5/8	16	1 7/16	36	2.80	71	1.28	32.5
H10-16-24FDH	5/16	7.9	M18-1.5	16	5/8	16	1 3/16	30	2.83	72	1.22	31
H10-20-30FDH	3/8	9.5	M16-1.5	20	11/16	17	1 7/16	36	2.95	75	0.94	24
H10-25-36FDH	3/8	9.5	M18-1.5	25	11/16	17	1 13/16	46	2.97	75.5	1.36	34.5
H12-20-30FDH	3/8	9.5	M22-1.5	20	11/16	17	1 7/16	36	3.15	80	1.36	34.5
H12-25-36FDH	1/2	12.7	M18-1.5	25	15/16	24	1 13/16	46	3.17	80.5	1.38	35
H12-30-42FDH	1/2	12.7	M22-1.5	30	15/16	24	2	50	3.23	82	1.44	36.5
H16-25-36FDH	1/2	12.7	M26-1.5	25	15/16	24	1 13/16	46	3.96	100.5	1.42	36
H16-30-42FDH	5/8	15.9	M22-1.5	30	1 1/16	27	2	50	4.02	102	1.48	37.5
H16-38-52FDH	5/8	15.9	M26-1.5	38	1 1/16	27	2 3/8	60	4.04	102.5	1.50	38
H20-38-52FDH	5/8	15.9	M30-2	38	1 1/16	27	2 3/8	60	4.69	119	1.95	49.5
XH4-38-52FDH	3/4	19.1	M26-1.5	38	1 3/16	30	2 3/8	60	5.16	131	1.97	50
XH12-20-30FDH	3/4	19.1	M30-2	20	1 3/16	30	1 7/16	36	3.15	80	1.36	34.5
XH12-25-36FDH	3/4	19.1	M36-2	25	1 3/16	30	1 13/16	46	3.17	80.5	1.38	35
XH12-30-42FDH	1	25.4	M30-2	30	1 7/16	36	2	50	3.23	82	1.44	36.5
XH16-25-36FDH	1	25.4	M36-2	25	1 7/16	36	1 13/16	46	3.96	100.5	1.42	36
XH16-30-42FDH	1	25.4	M45-2	30	1 7/16	36	2	50	4.02	102	1.48	37.5
XH16-38-52FDH	1 1/4	31.8	M36-2	38	1 13/16	46	2 3/8	60	4.04	102.5	1.50	38
XH20-38-52FDH	1 1/4	31.8	M45-2	38	1 13/16	46	2 3/8	60	4.69	119	1.95	49.5
XH24-38-52FDH	1 1/4	31.8	M52-2	38	1 13/16	46	2 3/8	60	5.16	131	1.97	50

# Female Swivel DIN 24° Cone-Heavy Series with O-Ring 45° Bent Tube



Part Number	Ø		mm	A1	H1		H2		T		L		C	
	in	mm			in	mm	in	mm	in	mm	in	mm	in	mm
H08-16-24FDH45	1/2	12.7	M24-1.5	16	15/16	24	1 3/16	30	0.83	21	3.43	87.2	1.92	48.7
H08-20-30FDH45	1/2	12.7	M30-2	20	15/16	24	1 7/16	36	0.98	25	3.59	91.3	2.08	52.8
H10-16-24FDH45	5/8	15.9	M24-1.5	16	1 1/16	27	1 3/16	30	0.98	25	3.88	98.56	2.27	57.56
H10-20-30FDH45	5/8	15.9	M30-2	20	1 1/16	27	1 7/16	36	0.98	25	3.98	101.18	2.37	60.18
H10-25-36FDH45	5/8	15.9	M36-2	25	1 1/16	27	1 13/16	46	1.20	30.5	4.12	104.68	2.51	63.68
H12-20-30FDH45	3/4	19.1	M30-2	20	1 3/16	30	1 7/16	36	1.18	30	4.63	117.67	2.84	72.2
H12-25-36FDH45	3/4	19.1	M36-2	25	1 3/16	30	1 13/16	46	1.20	30.5	4.65	118.17	2.86	72.67
H12-30-42FDH45	3/4	19.1	M42-2	30	1 3/16	30	2	50	1.40	35.5	4.85	123.17	3.06	77.67
H16-25-36FDH45	1	25.4	M36-2	25	1 7/16	36	1 13/16	46	1.30	33	5.98	151.89	3.44	87.39
H16-30-42FDH45	1	25.4	M42-2	30	1 7/16	36	2	50	1.40	35.5	6.13	155.64	3.59	91.14
H16-38-52FDH45	1	25.4	M52-2	38	1 7/16	36	2 3/8	60	1.65	42	6.38	162.14	3.84	97.64
H20-38-52FDH45	1 1/4	31.8	M52-2	38	1 13/16	46	2 3/8	60	1.65	42	7.27	184.78	4.54	115.28
H24-38-52FDH45	1 1/2	38.1	M52-2	38	2	50.8	2 3/8	60	1.65	42	8.15	206.9	4.96	125.9
XH12-20-30FDH45	3/4	19.1	M30-2	20	1 3/16	30	1 7/16	36	1.18	30	4.63	117.67	2.84	72.2
XH12-25-36FDH45	3/4	19.1	M36-2	25	1 3/16	30	1 13/16	46	1.20	30.5	4.65	118.17	2.86	72.67
XH12-30-42FDH45	3/4	19.1	M42-2	30	1 3/16	30	2	50	1.40	35.5	4.85	123.17	3.06	77.67
XH16-25-36FDH45	1	25.4	M36-2	25	1 7/16	36	1 13/16	46	1.30	33	5.98	151.89	3.44	87.39
XH16-30-42FDH45	1	25.4	M42-2	30	1 7/16	36	2	50	1.40	35.5	6.13	155.64	3.59	91.14
XH16-38-52FDH45	1	25.4	M52-2	38	1 7/16	36	2 3/8	60	1.65	42	6.38	162.14	3.84	97.64
XH20-38-52FDH45	1 1/4	31.8	M52-2	38	1 13/16	46	2 3/8	60	1.65	42	7.27	184.78	4.54	115.28
XH24-38-52FDH45	1 1/2	38.1	M52-2	38	2	50.8	2 3/8	60	1.65	42	8.15	206.9	4.96	125.9

## Female Swivel DIN 24° Cone-Heavy Series with O-Ring 90° Bent Tube



Part Number	⊖		mm	A1	H1		H2		T		L		C	
	in	mm			in	mm	in	mm	in	mm	in	mm	in	mm
H08-12-20FDH90	1/2	12.7	M20-1.5	12	15/16	24	15/16	24	1.40	35.5	3.11	79	1.59	40.5
H08-16-24FDH90	1/2	12.7	M24-1.5	16	15/16	24	1 3/16	30	1.69	43	3.09	78.6	1.58	40.1
H08-20-30FDH90	1/2	12.7	M30-2	20	15/16	24	1 7/16	36	1.95	49.5	3.09	78.6	1.58	40.1
H10-16-24FDH90	5/8	15.9	M24-1.5	16	1 1/16	27	1 3/16	30	1.95	49.5	3.48	88.5	1.87	47.5
H10-20-30FDH90	5/8	15.9	M30-2	20	1 1/16	27	1 7/16	36	1.95	49.5	3.62	92	2.01	51
H10-25-36FDH90	5/8	15.9	M36-2	25	1 1/16	27	1 13/16	46	2.32	59	3.54	90	1.93	49
H12-20-30FDH90	3/4	19.1	M30-2	20	1 3/16	30	1 7/16	36	2.32	59	4.21	107	2.42	61.5
H12-25-36FDH90	3/4	19.1	M36-2	25	1 3/16	30	1 13/16	46	2.32	59	4.21	107	2.42	61.5
H12-30-42FDH90	3/4	19.1	M42-2	30	1 3/16	30	2	50	2.76	70	4.21	107	2.42	61.5
H16-25-36FDH90	1	25.4	M36-2	25	1 7/16	36	1 13/16	46	2.76	70	5.43	138	2.89	73.5
H16-30-42FDH90	1	25.4	M42-2	30	1 7/16	36	2	50	2.91	74	5.53	140.5	2.99	76
H16-38-52FDH90	1	25.4	M52-2	38	1 7/16	36	2 3/8	60	3.43	87	5.77	146.5	3.23	82
H20-38-52FDH90	1 1/4	31.8	M52-2	38	1 13/16	46	2 3/8	60	3.43	87	6.89	175	4.15	105.5
H24-38-52FDH90	1 1/2	38.1	M52-2	38	2	50.8	2 3/8	60	3.43	87	7.87	199.8	4.68	118.8
XH12-20-30FDH90	3/4	19.1	M30-2	20	1 3/16	30	1 7/16	36	2.32	59	4.21	107	2.42	61.5
XH12-25-36FDH90	3/4	19.1	M36-2	25	1 3/16	30	1 13/16	46	2.32	59	4.21	107	2.42	61.5
XH12-30-42FDH90	3/4	19.1	M42-2	30	1 3/16	30	2	50	2.76	70	4.21	107	2.42	61.5
XH16-25-36FDH90	1	25.4	M36-2	25	1 7/16	36	1 13/16	46	2.76	70	5.43	138	2.89	73.5
XH16-30-42FDH90	1	25.4	M42-2	30	1 7/16	36	2	50	2.91	74	5.53	140.5	2.99	76
XH16-38-52FDH90	1	25.4	M52-2	38	1 7/16	36	2 3/8	60	3.43	87	5.77	146.5	3.23	82
XH20-38-52FDH90	1 1/4	31.8	M52-2	38	1 13/16	46	2 3/8	60	3.43	87	6.89	175	4.15	105.5
XH24-38-52FDH90	1 1/2	38.1	M52-2	38	2	50.8	2 3/8	60	3.43	87	7.87	199.8	4.68	118.8

### Hose



- Hydraulic Braided Hose
- Hydraulic Spiral Hose
- Suction Hose
- Abrasion Hose

Available to customize according to customer's request.

### Hose Couplings



- One Piece Braided Hose Couplings
- One Piece Spiral Hose Couplings
- Reusable Hose Couplings

Threads and connections: Metric, Imperial, JIC, ORFS, NPTF, JIS, BSP, ORB, SAE Flanges and non-standard connections

### Adapters



Threads and connections: metric, imperial, JIC, ORFS, NPTF, JIS, SAE flanges, various and non-standard connections

### Manifolds



Materials: Carbon Steel, Stainless Steel, Cooper, Aluminium Alloy, Cast Iron.  
An extensive array of non-standard valve blocks, profiles, forgings and castings can be customized

## Cylinders



- Miniature Excavator Cylinders 1.611.St 3.51
- Various Types Excavator Cylinders
- Aerial Work Platform Cylinders
- Agricultural Machinery Cylinders
- Loader Cylinders
- Dump Truck Cylinders
- Tower Crane Cylinders
- Metallurgical Cylinders
- Die Casting Cylinders

Vertically integrated manufacturing controls processes from forgings to electroplating, ensuring high quality cost effective solutions.

For all industries and all types of cylinders, non-standard customization is available.

## Test Systems



- Test Points
- Test Hose
- Test Hose Fittings
- Test Hose Assemblies
- Pressure Gauges And Gauge Kits

Material:

Fittings: Carbon Steel, Stainless Steel

Seals: Nitrile rubber (NBR), Fluororubber (FKM)

## Steel Tube Assemblies



- Weld
- Flare or Pattern
- Bite Type

Material: Carbon Steel (Zinc or Phosphate Plating), Stainless Steel

# Hydraport Hydraulics

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[hydraportmfg.com](http://hydraportmfg.com)