

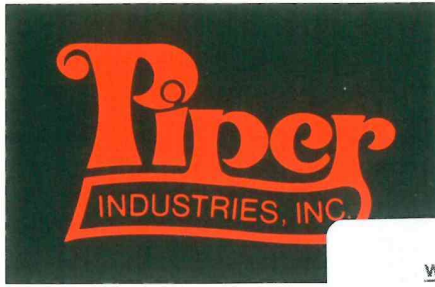


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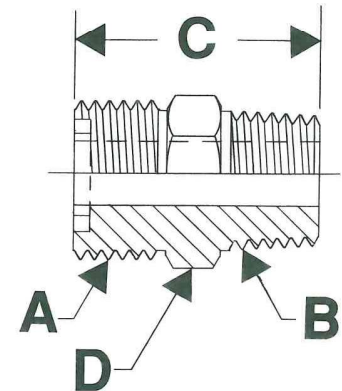
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MALE CONNECTOR

FS-0100

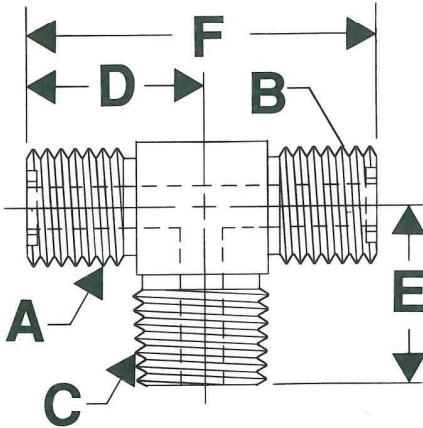


PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	HEX. D	HOLE SIZE
FS-0100-04-02	.250	9/16-18	1/8-27	1.03	.62	.17
FS-0100-04-04	.250	9/16-18	1/4-18	1.24	.62	.17
FS-0100-04-06	.250	9/16-18	3/8-18	1.24	.75	.17
FS-0100-04-08	.250	9/16-18	1/2-14	1.49	.88	.17
FS-0100-06-04	.375	11/16-16	1/4-18	1.30	.75	.26
FS-0100-06-06	.375	11/16-16	3/8-18	1.30	.75	.26
FS-0100-06-08	.375	11/16-16	1/2-14	1.55	.88	.26
FS-0100-08-04	.500	13/16-16	1/4-18	1.36	.88	.28
FS-0100-08-06	.500	13/16-16	3/8-18	1.36	.88	.38
FS-0100-08-08	.500	13/16-16	1/2-14	1.61	.88	.38
FS-0100-08-12	.500	13/16-16	3/4-14	1.68	1.06	.38
FS-0100-10-08	.625	1-14	1/2-14	1.72	1.06	.48
FS-0100-10-12	.625	1-14	3/4-14	1.78	1.06	.48
FS-0100-12-08	.750	1-3/16-12	1/2-14	1.84	1.25	.53
FS-0100-12-12	.750	1-3/16-12	3/4-14	1.84	1.25	.61
FS-0100-12-16	.750	1-3/16-12	1-11 1/2	2.03	1.38	.61
FS-0100-16-12	1.000	1-7/16-12	3/4-14	1.86	1.50	.72
FS-0100-16-16	1.000	1-7/16-12	1-11 1/2	2.05	1.50	.81
FS-0100-16-20	1.000	1-7/16-12	1-1/4-11	2.16	1.69	.81
FS-0100-20-16	1.250	1-11/16-12	1-11 1/2	2.13	1.75	.94
FS-0100-20-20	1.250	1-11/16-12	1-1/4 - 11 1/2	2.16	1.75	1.02
FS-0100-24-24	1.500	2-12	1-1/2- 11 1/2	2.26	2.12	1.26



MALE BRANCH TEE

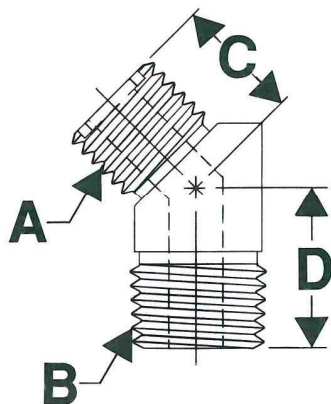
FS-0130



PART NO.	TUBE O.D.	THREAD A	THREAD B	THREAD C	DIM. D	DIM. E	DIM. F	HOLE SIZE
FS-0130-04-04-02	.250	9/16-18	9/16-18	1/8-27	.85	.78	1.70	.17
FS-0130-06-06-04	.375	11/16-16	11/16-16	1/4-18	.98	1.09	1.96	.26
FS-0130-06-06-06	.375	11/16-16	11/16-16	3/8-18	1.04	1.22	2.08	.26
FS-0130-08-08-06	.500	13/16-16	13/16-16	3/8-18	1.10	1.22	2.20	.38
FS-0130-08-08-08	.500	13/16-16	13/16-16	1/2-14	1.21	1.53	2.42	.38
FS-0130-10-10-08	.625	1-14	1-14	1/2-14	1.31	1.53	2.62	.48
FS-0130-12-12-12	.750	1-3/16-12	1-3/16-12	3/4-14	1.47	1.65	2.94	.61
FS-0130-16-16-16	1.000	1-7/16-12	1-7/16-12	1-11 1/2	1.64	2.03	3.28	.81
FS-0130-20-20-20	1.250	1-11/16-12	1-11/16-12	1-1/4-11 1/2	1.76	2.42	3.52	1.02
FS-0130-24-24-24	1.500	2-12	2-12	1-1/2-11 1/2	1.92	2.70	3.84	1.26

45° MALE ELBOW

FS-0145

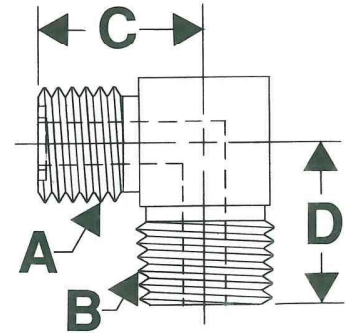


PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	HOLE SIZE
FS-0145-04-02	.250	9/16-18	1/8-27	.63	.68	.17
FS-0145-04-04	.250	9/16-18	1/4-18	.68	.93	.17
FS-0145-04-06	.250	9/16-18	3/8-18	.67	1.04	.17
FS-0145-06-04	.375	11/16-16	1/4-18	.74	.93	.26
FS-0145-06-06	.375	11/16-16	3/8-18	.74	1.04	.26
FS-0145-08-04	.500	13/16-16	1/4-18	.80	.92	.28
FS-0145-08-06	.500	13/16-16	3/8-18	.80	1.04	.38
FS-0145-08-08	.500	13/16-16	1/2-14	.82	1.20	.38
FS-0145-10-08	.625	1-14	1/2-14	.92	1.20	.48
FS-0145-12-12	.750	1-3/16-12	3/4-14	1.02	1.23	.61
FS-0145-16-16	1.000	1-7/16-12	1-11 1/2	1.18	1.51	.81
FS-0145-20-20	1.250	1-11/16-12	1-1/4-11 1/2	1.26	1.69	1.02
FS-0145-24-24	1.500	2-12	1-1/2-11 1/2	1.45	1.80	1.26

90° MALE ELBOW

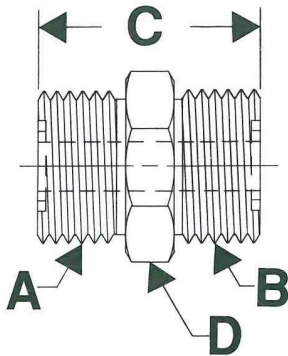
FS-0190

PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	HOLE SIZE
FS-0190-04-02	.250	9/16-18	1/8-27	.85	.78	.17
FS-0190-04-04	.250	9/16-18	1/4-18	.92	1.09	.17
FS-0190-06-04	.375	11/16-16	1/4-18	.98	1.07	.26
FS-0190-06-06	.375	11/16-16	3/8-18	1.04	1.22	.26
FS-0190-06-08	.375	11/16-16	1/2-14	1.15	1.53	.26
FS-0190-08-04	.500	13/16-16	1/4-18	1.10	1.13	.26
FS-0190-08-06	.500	13/16-16	3/8-18	1.10	1.22	.38
FS-0190-08-08	.500	13/16-16	1/2-14	1.21	1.53	.38
FS-0190-08-12	.500	13/16-16	3/4-14	1.32	1.65	.38
FS-0190-10-08	.625	1-14	1/2-14	1.31	1.53	.48
FS-0190-10-12	.625	1-14	3/4-14	1.41	1.65	.48
FS-0190-12-08	.750	1-3/16-12	1/2-14	1.47	1.65	.53
FS-0190-12-12	.750	1-3/16-12	3/4-14	1.47	1.65	.61
FS-0190-12-16	.750	1-3/16-12	1-11 1/2	1.62	2.03	.61
FS-0190-16-12	1.000	1-7/16-12	3/4-14	1.64	1.84	.72
FS-0190-16-16	1.000	1-7/16-12	1-11 1/2	1.64	2.03	.81
FS-0190-20-20	1.250	1-11/16-12	1-1/4-11 1/2	1.76	2.42	1.02
FS-0190-24-24	1.500	2-12	1-1/2-11 1/2	1.92	2.70	1.26



UNION
(520101)

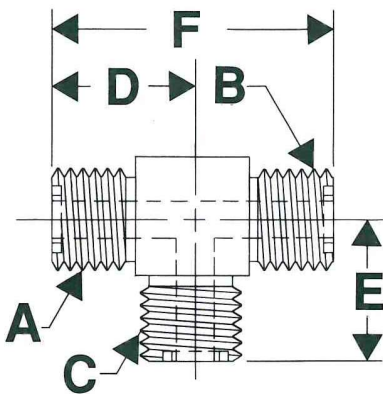
FS-0400-SH



PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	HEX. D	HOLE SIZE
FS-0400-SH-04-04	.250	9/16-18	9/16-18	1.08	.62	.17
FS-0400-SH-06-04	.375	11/16-16	9/16-18	1.17	.75	.17
FS-0400-SH-06-06	.375	11/16-16	11/16-16	1.22	.75	.26
FS-0400-SH-08-06	.500	13/16-16	11/16-16	1.33	.88	.26
FS-0400-SH-08-08	.500	13/16-16	13/16-16	1.39	.88	.38
FS-0400-SH-10-08	.625	1-14	13/16-16	1.57	1.06	.38
FS-0400-SH-10-10	.625	1-14	1-14	1.68	1.06	.48
FS-0400-SH-12-10	.750	1-3/16-12	1-14	1.80	1.25	.48
FS-0400-SH-12-12	.750	1-3/16-12	1-3/16-12	1.86	1.25	.61
FS-0400-SH-16-12	1.000	1-7/16-12	1-3/16-12	1.92	1.50	.61
FS-0400-SH-16-16	1.000	1-7/16-12	1-7/16-12	1.94	1.50	.81
FS-0400-SH-20-20	1.250	1-11/16-12	1-11/16-12	2.02	1.75	1.02
FS-0400-SH-24-24	1.500	2-12	2-12	2.09	2.12	1.26

UNION TEE
(520401)

FS-0430



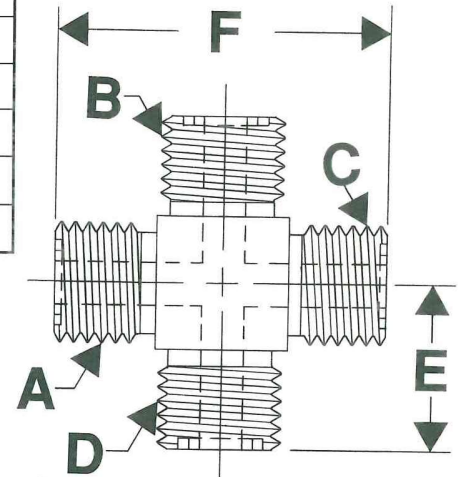
PART NO.	TUBE O.D.	THREAD A	THREAD B	THREAD C	DIM. D	DIM. E	DIM. F	HOLE SIZE
FS-0430-04-04-04	.250	9/16-18	9/16-18	9/16-18	.85	.85	1.70	.17
FS-0430-06-06-06	.375	11/16-16	11/16-16	11/16-16	.98	.98	1.96	.26
FS-0430-08-08-08	.500	13/16-16	13/16-16	13/16-16	1.10	1.10	2.20	.38
FS-0430-10-10-10	.625	1-14	1-14	1-14	1.31	1.31	2.62	.48
FS-0430-12-12-12	.750	1-3/16-12	1-3/16-12	1-3/16-12	1.47	1.47	2.94	.61
FS-0430-16-16-16	1.000	1-7/16-12	1-7/16-12	1-7/16-12	1.64	1.64	3.28	.81
FS-0430-20-20-20	1.250	1-11/16-12	1-11/16-12	1-11/16-12	1.76	1.76	3.52	1.02
FS-0430-24-24-24	1.500	2-12	2-12	2-12	1.92	1.92	3.84	1.26

PART NO.	TUBE O.D.	THREAD A	THREAD B	THREAD C	THREAD D	DIM. E	DIM. F	HOLE SIZE
FS-0440-04-04-04-04	.250	9/16-18	9/16-18	9/16-18	9/16-18	.85	1.70	.17
FS-0440-06-06-06-06	.375	11/16-16	11/16-16	11/16-16	11/16-16	.98	1.96	.26
FS-0440-08-08-08-08	.500	13/16-16	13/16-16	13/16-16	13/16-16	1.10	2.20	.38
FS-0440-10-10-10-10	.625	1-14	1-14	1-14	1-14	1.31	2.62	.48
FS-0440-12-12-12-12	.750	1-3/16-12	1-3/16-12	1-3/16-12	1-3/16-12	1.47	2.94	.61
FS-0440-16-16-16-16	1.000	1-7/16-12	1-7/16-12	1-7/16-12	1-7/16-12	1.64	3.28	.81
FS-0440-20-20-20-20	1.250	1-11/16-12	1-11/16-12	1-11/16-12	1-11/16-12	1.76	3.52	1.02
FS-0440-24-24-24-24	1.500	2-12	2-12	2-12	2-12	1.92	3.84	1.26

UNION CROSS

(520501)

FS-0440

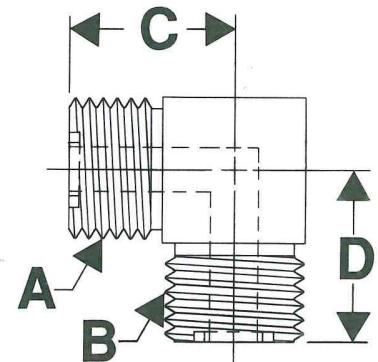


PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	HOLE SIZE
FS-0490-04-04	.250	9/16-18	9/16-18	.85	.85	.17
FS-0490-06-04	.375	11/16-16	9/16-18	.98	.92	.17
FS-0490-06-06	.375	11/16-16	11/16-16	.98	.98	.26
FS-0490-08-04	.500	13/16-16	9/16-18	1.10	.97	.17
FS-0490-08-06	.500	13/16-16	11/16-16	1.10	1.04	.26
FS-0490-08-08	.500	13/16-16	13/16-16	1.10	1.10	.38
FS-0490-10-10	.625	1-14	1-14	1.31	1.31	.48
FS-0490-12-12	.750	1-3/16-12	1-3/16-12	1.47	1.47	.61
FS-0490-16-16	1.00	1-7/16-12	1-7/16-12	1.64	1.64	.81
FS-0490-20-20	1.25	1-11/16-12	1-11/16-12	1.76	1.76	1.02
FS-0490-24-24	1.50	2-12	2-12	1.92	1.92	1.26

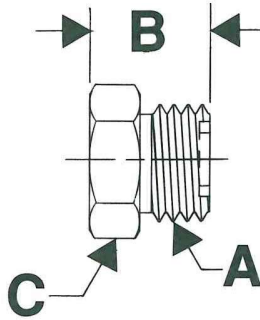
90° UNION ELBOW

(520201)

FS-0490

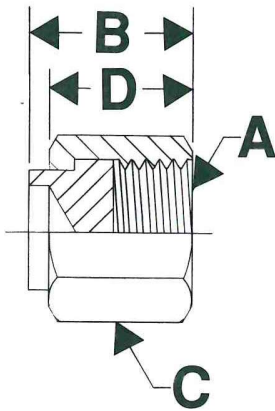


PLUG
(520109)
FS-0510



PART NO.	TUBE O.D.	THREAD A	DIM. B	HEX. C
FS-0510-04	.250	9/16-18	.66	.62
FS-0510-06	.375	11/16-16	.75	.75
FS-0510-08	.500	13/16-16	.86	.88
FS-0510-10	.625	1-14	1.02	1.06
FS-0510-12	.750	1-3/16-12	1.08	1.25
FS-0510-16	1.00	1-7/16-12	1.10	1.50
FS-0510-20	1.25	1-11/16-12	1.10	1.75
FS-0510-24	1.50	2-12	1.10	2.12

CAP
(520112)
FS-0520

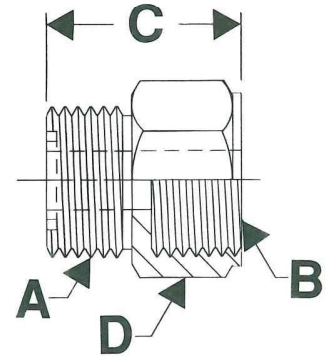


PART NO.	TUBE O.D.	THREAD A	DIM. B	HEX. C	DIM. D
FS-0520-04	.250	9/16-18	.66	.69	.58
FS-0520-06	.375	11/16-16	.75	.81	.67
FS-0520-08	.500	13/16-16	.90	.94	.83
FS-0520-10	.625	1-14	1.00	1.12	.93
FS-0520-12	.750	1-3/16-12	1.10	1.38	1.02
FS-0520-16	1.000	1-7/16-12	1.17	1.62	1.10
FS-0520-20	1.250	1-11/16-12	1.17	1.88	1.10
FS-0520-24	1.500	2-12	1.17	2.25	1.10

PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	HEX D	HOLE SIZE
FS-0530-04-08	.500	9/16-18	13/16-16	.86	.94	.17
FS-0530-04-10	.625	9/16-18	1-14	.90	1.12	.17
FS-0530-06-10	.625	11/16-16	1-14	.95	1.12	.26
FS-0530-08-10	.625	13/16-16	1-14	1.02	1.12	.38
FS-0530-04-12	.750	9/16-18	1-3/16-12	.98	1.38	.17
FS-0530-06-12	.750	11/16-16	1-3/16-12	1.03	1.38	.26
FS-0530-08-12	.750	13/16-16	1-3/16-12	1.10	1.38	.38
FS-0530-08-16	1.000	13/16-16	1-7/16-12	1.15	1.62	.38
FS-0530-10-16	1.000	1-14	1-7/16-12	1.26	1.62	.48

TUBE END REDUCER

FS-0530

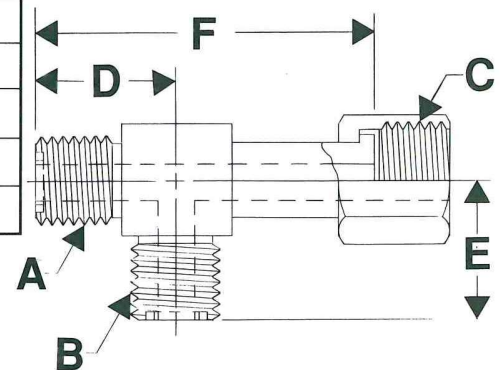


PART NO.	TUBE O.D.	THREAD A	THREAD B	THREAD C	DIM. D	DIM. E	DIM. F	HOLE SIZE
FS-0620-04-04-04	.250	9/16-18	9/16-18	9/16-18	.85	.85	1.89	.17
FS-0620-06-06-06	.375	11/16-16	11/16-16	11/16-16	.98	.98	2.13	.26
FS-0620-08-08-08	.500	13/16-16	13/16-16	13/16-16	1.10	1.10	2.59	.36
FS-0620-10-10-10	.625	1-14	1-14	1-14	1.31	1.31	2.93	.46
FS-0620-12-12-12	.750	1-3/16-12	1-3/16-12	1-3/16-12	1.47	1.47	3.29	.55
FS-0620-16-16-16	1.000	1-7/16-12	1-7/16-12	1-7/16-12	1.64	1.64	3.74	.78
FS-0620-20-20-20	1.250	1-11/16-12	1-11/16-12	1-11/16-12	1.76	1.76	4.05	1.02
FS-0620-24-24-24	1.500	2-12	2-12	2-12	1.92	1.92	4.33	1.26

SWIVEL RUN TEE

(SAE 520432)

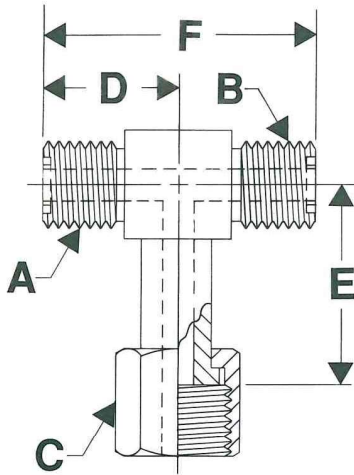
FS-0620





SWIVEL BRANCH TEE (520433)

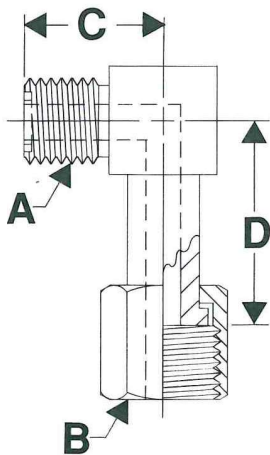
FS-0630



PART NO.	TUBE O.D.	THREAD A	THREAD B	THREAD C	DIM. D	DIM. E	DIM. F	HOLE SIZE
FS-0630-04-04-04	.250	9/16-18	9/16-18	9/16-18	.85	1.04	1.70	.17
FS-0630-06-06-06	.375	11/16-16	11/16-16	11/16-16	.98	1.15	1.96	.26
FS-0630-08-08-08	.500	13/16-16	13/16-16	13/16-16	1.10	1.49	2.20	.36
FS-0630-10-10-10	.625	1-14	1-14	1-14	1.31	1.62	2.62	.46
FS-0630-12-12-12	.750	1-3/16-12	1-3/16-12	1-3/16-12	1.47	1.82	2.94	.55
FS-0630-16-16-16	1.000	1-7/16-12	1-7/16-12	1-7/16-12	1.64	2.10	3.28	.78
FS-0630-20-20-20	1.250	1-11/16-12	1-11/16-12	1-11/16-12	1.76	2.29	3.52	1.02
FS-0630-24-24-24	1.500	2-12	2-12	2-12	1.92	2.41	3.84	1.26

90° SWIVEL ELBOW (520221)

FS-0690



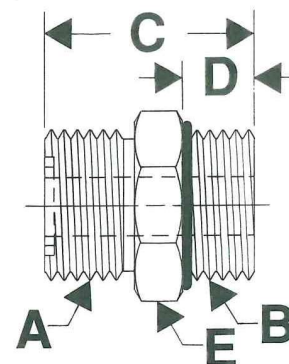
PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	HOLE SIZE
FS-0690-04-04	.250	9/16-18	9/16-18	.85	1.04	.17
FS-0690-06-06	.375	11/16-18	11/16-18	.98	1.15	.26
FS-0690-08-08	.500	13/16-16	13/16-16	1.10	1.49	.36
FS-0690-10-10	.625	1-14	1-14	1.31	1.62	.46
FS-0690-12-12	.750	1-3/16-12	1-3/16-12	1.47	1.82	.55
FS-0690-16-16	1.000	1-7/16-12	1-7/16-12	1.64	2.10	.78
FS-0690-20-20	1.250	1-11/16-12	1-11/16-12	1.76	2.29	1.02
FS-0690-24-24	1.500	2-12	2-12	1.92	2.41	1.26

STRAIGHT THREAD CONNECTOR

(520120)

FS-0700

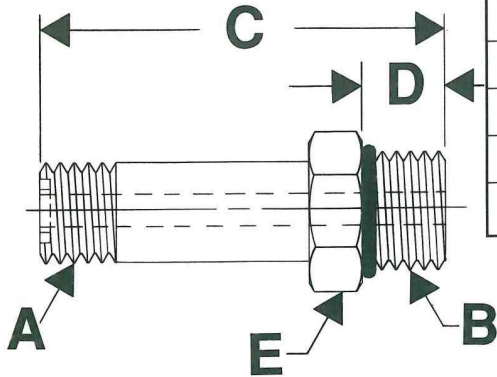
PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	HOLE SIZE	HEX. E
FS-0700-04-04	.250	9/16-18	7/16-20	1.13	.43	.17	.62
FS-0700-04-06	.250	9/16-18	9/16-18	1.20	.47	.17	.69
FS-0700-04-08	.250	9/16-18	3/4-16	1.32	.55	.17	.88
FS-0700-06-04	.375	11/16-16	7/16-20	1.34	.43	.17	.75
FS-0700-06-05	.375	11/16-16	1/2-20	1.22	.43	.23	.75
FS-0700-06-06	.375	11/16-16	9/16-18	1.25	.47	.26	.75
FS-0700-06-08	.375	11/16-16	3/4-16	1.38	.55	.26	.88
FS-0700-06-10	.375	11/16-16	7/8-14	1.53	.63	.26	1.00
FS-0700-08-06	.500	13/16-16	9/16-18	1.48	.47	.30	.88
FS-0700-08-08	.500	13/16-16	3/4-16	1.44	.55	.38	.88
FS-0700-08-10	.500	13/16-16	7/8-14	1.59	.63	.38	1.00
FS-0700-08-12	.500	13/16-16	1-1/16-12	1.75	.73	.38	1.25
FS-0700-10-08	.625	1-14	3/4-16	1.78	.55	.39	1.06
FS-0700-10-10	.625	1-14	7/8-14	1.70	.63	.48	1.06
FS-0700-10-12	.625	1-14	1-1/16-12	1.86	.73	.48	1.25
FS-0700-12-06	.750	1-3/16-12	9/16-18	1.77	.47	.30	1.25
FS-0700-12-08	.750	1-3/16-12	3/4-16	1.91	.55	.39	1.25
FS-0700-12-10	.750	1-3/16-12	7/8-14	1.99	.63	.48	1.25
FS-0700-12-12	.750	1-3/16-12	1-1/16-12	1.92	.73	.61	1.25
FS-0700-12-14	.750	1-3/16-12	1-3/16-12	1.92	.73	.61	1.38
FS-0700-12-16	.750	1-3/16-12	1-5/16-12	1.96	.73	.61	1.50
FS-0700-16-12	1.00	1-7/16-12	1-1/16-12	2.14	.73	.61	1.50
FS-0700-16-16	1.00	1-7/16-12	1-5/16-12	1.98	.73	.81	1.50
FS-0700-16-20	1.00	1-7/16-12	1-5/8-12	2.06	.73	.81	1.88
FS-0700-20-16	1.25	1-11/16-12	1-5/16-12	2.28	.73	.84	1.75
FS-0700-20-20	1.25	1-11/16-12	1-5/8-12	2.06	.73	1.02	1.88
FS-0700-20-24	1.25	1-11/16-12	1-7/8-12	2.06	.73	1.02	2.12
FS-0700-24-20	1.50	2-12	1-5/8-12	2.35	.73	1.02	2.12
FS-0700-24-24	1.50	2-12	1-7/8-12	2.13	.73	1.26	2.12





LONG STRAIGHT THREAD CONNECTOR

FS-0700-XL

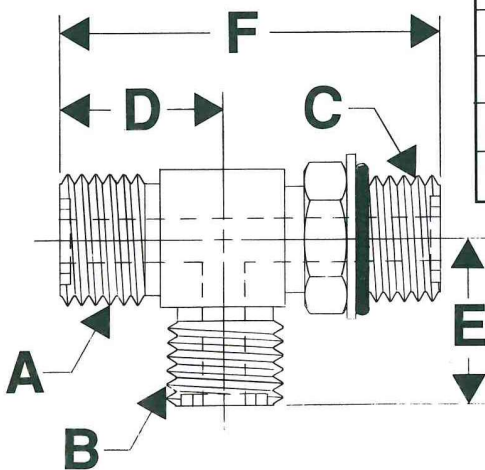


PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	HEX. E	HOLE SIZE
FS-0700-XL-04-04	.250	9/16-18	7/16-20	2.07	.43	.63	.17
FS-0700-XL-06-06	.375	11/16-16	9/16-18	2.27	.47	.75	.26
FS-0700-XL-06-08	.375	11/16-16	3/4-16	2.61	.55	.88	.26
FS-0700-XL-08-08	.500	13/16-16	3/4-16	2.67	.55	.88	.38
FS-0700-XL-10-10	.625	1-14	7/8-14	3.13	.63	1.06	.48
FS-0700-XL-12-12	.750	1-3/16-12	1-1/16-12	3.75	.73	1.25	.61
FS-0700-XL-16-16	1.000	1-7/16-12	1-5/16-12	4.13	.73	1.50	.81
FS-0700-XL-20-20	1.250	1-11/16-12	1-5/8-12	4.75	.73	1.88	1.05
FS-0700-XL-24-24	1.500	2-12	1-7/8-12	5.26	.73	2.12	1.31

STRAIGHT THREAD RUN TEE

(520428)

FS-0720

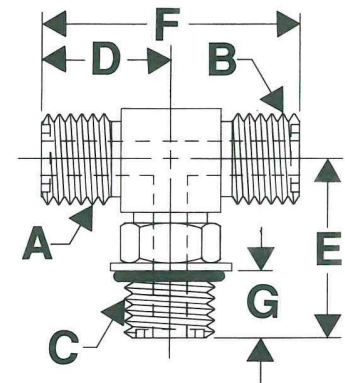


PART NO.	TUBE O.D.	THREAD A	THREAD B	THREAD C	DIM. D	DIM. E	DIM. F	HOLE SIZE
FS-0720-04-04-04	.250	9/16-18	9/16-18	7/16-20	.85	.85	2.14	.17
FS-0720-06-06-06	.375	11/16-16	11/16-16	9/16-18	.98	.98	2.43	.26
FS-0720-08-08-08	.500	13/16-16	13/16-16	3/4-16	1.10	1.10	2.70	.38
FS-0720-10-10-10	.625	1-14	1-14	7/8-14	1.31	1.31	3.28	.48
FS-0720-12-12-12	.750	1-3/16-12	1-3/16-12	1-1/16-12	1.47	1.47	3.64	.61
FS-0720-16-16-16	1.000	1-7/16-12	1-7/16-12	1-5/16-12	1.64	1.64	3.99	.81
FS-0720-20-20-20	1.250	1-11/16-12	1-11/16-12	1-5/8-12	1.76	1.76	4.21	1.02
FS-0720-24-24-24	1.500	2-12	2-12	1-7/8-12	1.92	1.92	4.51	1.26

STRAIGHT THREAD BRANCH TEE

(520429)

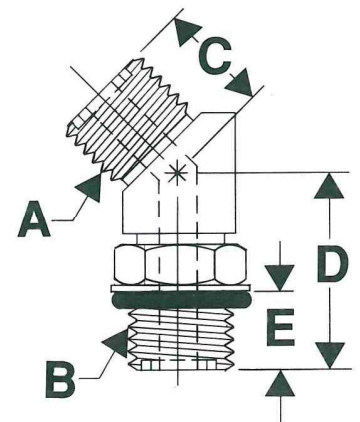
FS-0730



45° STRAIGHT THREAD ELBOW

(520320)

FS-0745



PART NO.	TUBE O.D.	THREAD A	THREAD B	THREAD C	DIM. D	DIM. E	DIM. F	DIM. G
FS-0730-04-04-04	.250	9/16-18	9/16-18	7/16-20	.85	1.29	1.70	.43
FS-0730-06-06-06	.375	11/16-16	11/16-16	9/16-18	.98	1.45	1.96	.47
FS-0730-06-06-08	.375	11/16-16	11/16-16	3/4-16	1.04	1.60	2.08	.55
FS-0730-08-08-08	.500	13/16-16	13/16-16	3/4-16	1.10	1.60	2.20	.55
FS-0730-10-10-10	.625	1-14	1-14	7/8-14	1.31	1.97	2.62	.63
FS-0730-12-12-10	.750	1-3/16-12	1-3/16-12	7/8-14	1.47	2.01	2.94	.63
FS-0730-12-12-12	.750	1-3/16-12	1-3/16-12	1-1/16-12	1.47	2.17	2.94	.73
FS-0730-16-16-16	1.000	1-7/16-12	1-7/16-12	1-5/16-12	1.64	2.35	3.28	.73
FS-0730-20-20-20	1.250	1-11/16-12	1-11/16-12	1-5/8-12	1.76	2.45	3.52	.73
FS-0730-24-24-24	1.500	2-12	2-12	1-7/8-12	1.92	2.59	3.84	.73

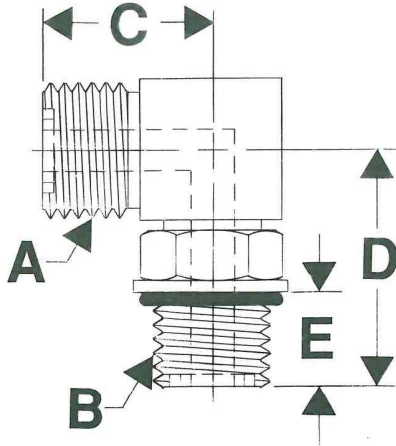
PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	DIM. E	HOLE SIZE
FS-0745-04-04	.250	9/16-18	7/16-20	.63	1.18	.37	.17
FS-0745-04-06	.250	9/16-18	9/16-18	.68	1.30	.47	.17
FS-0745-04-08	.250	9/16-18	3/4-16	.67	1.43	.55	.17
FS-0745-06-04	.375	11/16-16	7/16-20	.74	1.22	.43	.17
FS-0745-06-06	.375	11/16-16	9/16-18	.74	1.30	.47	.26
FS-0745-06-08	.375	11/16-16	3/4-16	.74	1.43	.55	.26
FS-0745-08-06	.500	13/16-16	9/16-18	.80	1.29	.47	.30
FS-0745-08-08	.500	13/16-16	3/4-16	.80	1.43	.55	.38
FS-0745-08-10	.500	13/16-16	7/8-14	.82	1.76	.63	.38
FS-0745-08-16	.500	13/16-16	1-5/16-12	1.01	2.06	.73	.38
FS-0745-10-08	.625	1-14	3/4-16	.92	1.59	.55	.38
FS-0745-10-10	.625	1-14	7/8-14	.92	1.76	.63	.48
FS-0745-10-12	.625	1-14	1-1/16-12	.96	1.97	.73	.48
FS-0745-12-10	.750	1-3/16-12	7/8-14	1.02	1.81	.63	.48
FS-0745-12-12	.750	1-3/16-12	1-1/16-12	1.02	1.97	.73	.61
FS-0745-12-16	.750	1-3/16-12	1-5/16-12	1.16	2.06	.73	.61
FS-0745-16-12	1.000	1-7/16-12	1-1/16-12	1.18	2.03	.73	.61
FS-0745-16-16	1.000	1-7/16-12	1-5/16-12	1.18	2.06	.73	.81
FS-0745-16-20	1.000	1-7/16-12	1-5/8-12	1.26	2.11	.73	.81
FS-0745-20-20	1.250	1-11/16-12	1-5/8-12	1.26	2.11	.73	1.02
FS-0745-24-24	1.500	2-12	1-7/8-12	1.45	2.11	.73	1.26



90° STRAIGHT THREAD ELBOW

(520220)

FS-0790

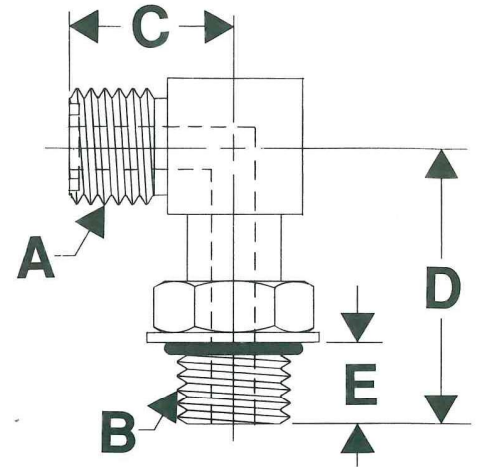


PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	DIM. E	HOLE SIZE
FS-0790-04-04	.250	9/16-18	7/16-20	.85	1.29	.43	.17
FS-0790-04-05	.250	9/16-18	1/2-20	.92	1.37	.43	.17
FS-0790-04-06	.250	9/16-18	9/16-18	.92	1.45	.47	.17
FS-0790-04-08	.250	9/16-18	3/4-16	.97	1.60	.55	.17
FS-0790-06-04	.375	11/16-16	7/16-20	.98	1.37	.43	.17
FS-0790-06-05	.375	11/16-16	1/2-20	.98	1.37	.43	.23
FS-0790-06-06	.375	11/16-16	9/16-18	.98	1.45	.47	.26
FS-0790-06-08	.375	11/16-16	3/4-16	1.04	1.60	.55	.26
FS-0790-06-10	.375	11/16-16	7/8-14	1.15	1.97	.63	.26
FS-0790-06-12	.375	11/16-16	1-1/16-12	1.25	2.17	.73	.26
FS-0790-08-06	.500	13/16-16	9/16-18	1.10	1.44	.47	.30
FS-0790-08-08	.500	13/16-16	3/4-16	1.10	1.60	.55	.38
FS-0790-08-10	.500	13/16-16	7/8-14	1.21	1.97	.63	.38
FS-0790-08-12	.500	13/16-16	1-1/16-12	1.32	2.17	.73	.38
FS-0790-10-08	.625	1-14	3/4-16	1.31	1.80	.55	.39
FS-0790-10-10	.625	1-14	7/8-14	1.31	1.97	.63	.48
FS-0790-10-12	.625	1-14	1-1/16-14	1.41	2.17	.73	.48
FS-0790-12-08	.750	1-3/16-12	3/4-16	1.47	1.84	.55	.39
FS-0790-12-10	.750	1-3/16-12	7/8-14	1.47	2.01	.63	.48
FS-0790-12-12	.750	1-3/16-12	1-1/16-12	1.47	2.17	.73	.61
FS-0790-12-16	.750	1-3/16-12	1-5/16-12	1.62	2.35	.73	.61
FS-0790-16-12	1.00	1-7/16-12	1-1/16-12	1.64	2.32	.73	.61
FS-0790-16-16	1.00	1-7/16-12	1-5/16-12	1.64	2.35	.73	.81
FS-0790-16-20	1.00	1-7/16-12	1-5/8-12	1.76	2.45	.73	.81
FS-0790-20-16	1.25	1-11/16-12	1-5/16-12	1.76	2.42	.73	.84
FS-0790-20-20	1.25	1-11/16-12	1-5/8-12	1.76	2.45	.73	1.02
FS-0790-24-20	1.50	2-12	1-5/8-12	1.92	2.56	.73	1.08
FS-0790-24-24	1.50	2-12	1-7/8-12	1.92	2.59	.73	1.26

90° STRAIGHT THREAD ELBOW LONG

FS-0790-L

PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	DIM. E	HOLE SIZE
FS-0790-L-04-04	.250	9/16-18	7/16-20	.85	2.23	.43	.17
FS-0790-L-06-06	.375	11/16-16	9/16-18	.98	2.61	.47	.26
FS-0790-L-08-08	.500	13/16-16	3/4-16	1.10	2.95	.55	.38
FS-0790-L-10-10	.625	1-14	7/8-14	1.31	3.51	.63	.48
FS-0790-L-12-12	.750	1-3/16-12	1-1/16-12	1.47	3.97	.73	.61
FS-0790-L-16-16	1.000	1-7/16-12	1-5/16-12	1.64	4.51	.73	.81
FS-0790-L-20-20	1.250	1-11/16-12	1-5/8-12	1.76	4.98	.73	1.02
FS-0790-L-24-24	1.500	2-12	1-7/8-12	1.92	5.48	.73	1.26

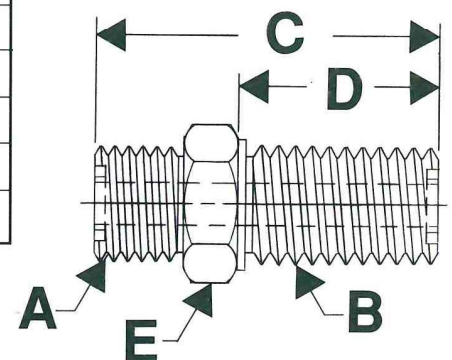


BULKHEAD UNION

(520601)

FS-1000

PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	HEX. E	HOLE SIZE
FS-1000-04-04	.250	9/16-18	9/16-18	1.90	1.24	.81	.17
FS-1000-06-06	.375	11/16-16	11/16-16	2.09	1.34	1.00	.26
FS-1000-08-08	.500	13/16-16	13/16-16	2.30	1.44	1.12	.38
FS-1000-10-10	.625	1-14	1-14	2.62	1.60	1.31	.48
FS-1000-12-12	.750	1-3/16-12	1-3/16-12	2.72	1.64	1.50	.61
FS-1000-16-16	1.000	1-7/16-12	1-7/16-12	2.76	1.66	1.75	.81
FS-1000-20-20	1.250	1-11/16-12	1-11/16-12	2.76	1.66	2.00	1.02
FS-1000-24-24	1.500	2-12	2-12	2.76	1.66	2.38	1.26

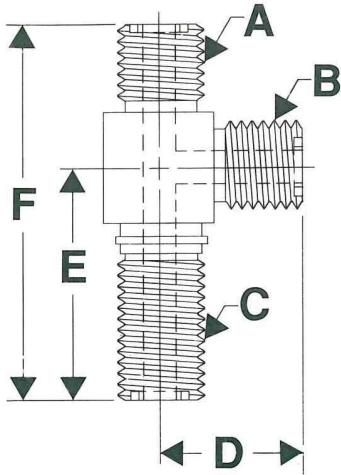




BULKHEAD TEE

(520958)

FS-1020

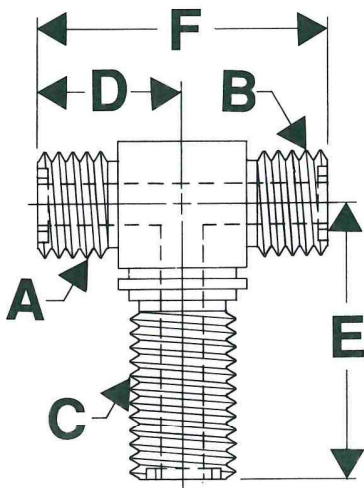


PART NO.	TUBE O.D.	THREAD A	THREAD B	THREAD C	DIM. D	DIM. E	DIM. F	HOLE SIZE
FS-1020-04-04-04	.250	9/16-18	9/16-18	9/16-18	.89	1.85	2.74	.17
FS-1020-06-06-06	.375	11/16-16	11/16-16	11/16-16	1.02	2.05	3.07	.26
FS-1020-08-08-08	.500	13/16-16	13/16-16	13/16-16	1.14	2.18	3.32	.38
FS-1020-10-10-10	.625	1-14	1-14	1-14	1.36	2.48	3.84	.48
FS-1020-12-12-12	.750	1-3/16-12	1-3/16-12	1-3/16-12	1.52	2.65	4.17	.61
FS-1020-16-16-16	1.000	1-7/16-12	1-7/16-12	1-7/16-12	1.67	2.80	4.47	.81
FS-1020-20-20-20	1.250	1-11/16-12	1-11/16-12	1-11/16-12	1.79	2.97	4.76	1.02
FS-1020-24-24-24	1.500	2-12	2-12	2-12	1.95	3.13	5.08	1.26

BULKHEAD BRANCH TEE

(520959)

FS-1030

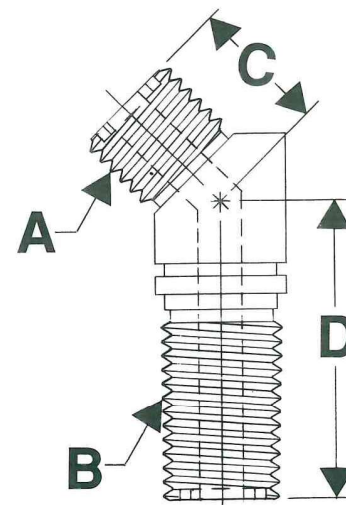


PART NO.	TUBE O.D.	THREAD A	THREAD B	THREAD C	DIM. D	DIM. E	DIM. F	HOLE SIZE
FS-1030-04-04-04	.250	9/16-18	9/16-18	9/16-18	.89	1.85	1.78	.17
FS-1030-06-06-06	.375	11/16-16	11/16-16	11/16-16	1.02	2.05	2.04	.26
FS-1030-08-08-08	.500	13/16-16	13/16-16	13/16-16	1.14	2.18	2.28	.38
FS-1030-10-10-10	.625	1-14	1-14	1-14	1.36	2.48	2.72	.48
FS-1030-12-12-12	.750	1-3/16-12	1-3/16-12	1-3/16-12	1.52	2.65	3.04	.61
FS-1030-16-16-16	1.000	1-7/16-12	1-7/16-12	1-7/16-12	1.67	2.80	3.34	.81
FS-1030-20-20-20	1.250	1-11/16-12	1-11/16-12	1-11/16-12	1.79	2.97	3.58	1.02
FS-1030-24-24-24	1.500	2-12	2-12	2-12	1.95	3.13	3.90	1.26

PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	HOLE SIZE
FS-1045-04-04	.250	9/16-18	9/16-18	.63	1.73	.17
FS-1045-06-06	.375	11/16-16	11/16-16	.74	1.91	.26
FS-1045-08-08	.500	13/16-16	13/16-16	.80	2.01	.38
FS-1045-10-10	.625	1-14	1-14	.92	2.23	.48
FS-1045-12-12	.750	1-3/16-12	1-3/16-12	1.02	2.39	.61
FS-1045-16-16	1.000	1-7/16-12	1-7/16-12	1.18	2.57	.81
FS-1045-20-20	1.250	1-11/16-12	1-11/16-12	1.26	2.64	1.02
FS-1045-24-24	1.500	2-12	2-12	1.45	2.64	1.26

45° BULKHEAD UNION ELBOW (520801)

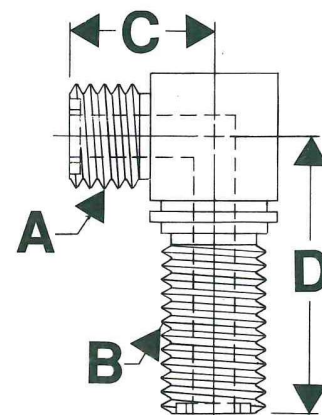
FS-1045



PART NO.	TUBE O.D.	THREAD A	THREAD B	DIM. C	DIM. D	HOLE SIZE
FS-1090-04-04	.250	9/16-18	9/16-18	.89	1.85	.17
FS-1090-06-06	.375	11/16-16	11/16-16	1.02	2.05	.26
FS-1090-08-08	.500	13/16-16	13/16-16	1.14	2.18	.38
FS-1090-10-10	.625	1-14	1-14	1.36	2.48	.48
FS-1090-12-12	.750	1-3/16-12	1-3/16-12	1.52	2.65	.61
FS-1090-16-16	1.000	1-7/16-12	1-7/16-12	1.67	2.80	.81
FS-1090-20-20	1.250	1-11/16-12	1-11/16-12	1.79	2.97	1.02
FS-1090-24-24	1.500	2-12	2-12	1.95	3.13	1.26

90° BULKHEAD UNION ELBOW (520701)

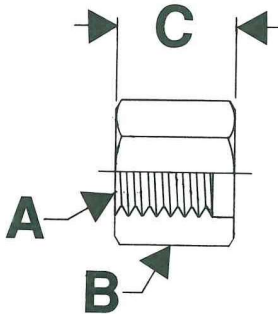
FS-1090



TUBE NUT

(520110)

FS-1801

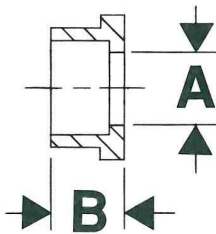


PART NO.	TUBE O.D.	THREAD A	HEX B	DIM. C
FS-1801-04	.250	9/16-18	.69	.58
FS-1801-06	.375	11/16-16	.81	.67
FS-1801-08	.500	13/16-16	.94	.83
FS-1801-10	.625	1-14	1.12	.93
FS-1801-12	.750	1-3/16-12	1.37	1.02
FS-1801-16	1.000	1-7/16-12	1.62	1.10
FS-1801-20	1.250	1-11/16-12	1.87	1.10
FS-1801-24	1.500	2-12	2.25	1.10

TUBE SLEEVE

(520115)

FS-1802

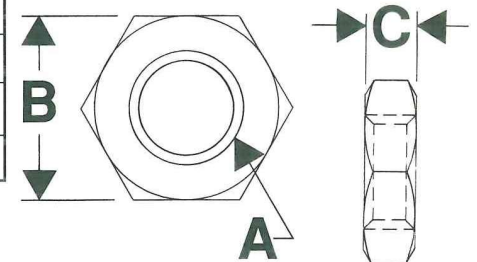


PART NO.	TUBE O.D.	DIM. A	DIM. B
FS-1802-04-04	.250	.17	.37
FS-1802-06-04	.250	.17	.41
FS-1802-06-06	.375	.27	.37
FS-1802-08-06	.375	.27	.47
FS-1802-08-08	.500	.38	.37
FS-1802-10-08	.500	.38	.53
FS-1802-10-10	.625	.48	.41
FS-1802-12-08	.500	.38	.57
FS-1802-12-10	.625	.48	.57
FS-1802-12-12	.750	.61	.55
FS-1082-16-12	.750	.61	.67
FS-1802-16-16	1.000	.81	.61
FS-1802-20-16	1.000	.81	.69
FS-1802-20-20	1.250	1.05	.61
FS-1802-24-20	1.250	1.05	.74
FS-1802-24-24	1.500	1.31	.61

STRAIGHT THREAD LOCKNUT

(520117)

FS-1804

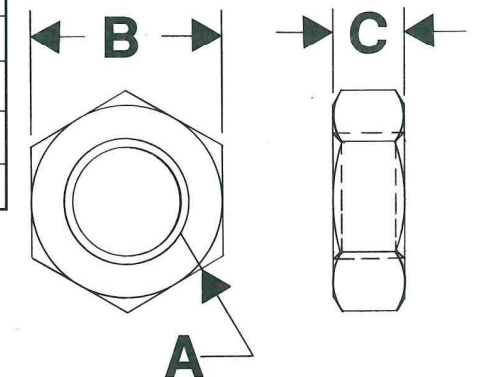


PART NO.	TUBE O.D.	THREAD A	DIM. B	DIM. C
FS-1804-04	.250	7/16-20	.625	.31
FS-1804-06	.375	9/16-18	.750	.33
FS-1804-08	.500	3/4-16	.938	.41
FS-1804-10	.625	7/8-14	1.06	.45
FS-1804-12	.750	1-1/16-12	1.37	.50
FS-1804-16	1.000	1-5/16-12	1.63	.54
FS-1804-20	1.250	1-5/8-12	1.87	.54
FS-1804-24	1.500	1-7/8-12	2.12	.54

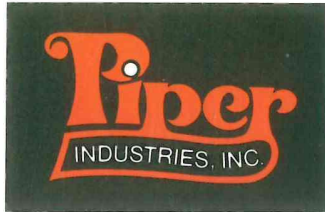
BULKHEAD LOCKNUT

(520118)

FS-1805



PART NO.	TUBE O.D.	THREAD A	DIM. B	DIM. C
FS-1805-04	.250	9/16-18	.81	.27
FS-1805-06	.375	11/16-16	1.00	.31
FS-1805-08	.500	13/16-16	1.12	.35
FS-1805-10	.625	1-14	1.31	.41
FS-1805-12	.750	1-3/16-12	1.50	.41
FS-1805-16	1.000	1-7/16-12	1.75	.41
FS-1805-20	1.250	1-11/16-12	2.00	.41
FS-1805-24	1.500	2-12	2.38	.41



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Since 1946, Piper Industries, Inc. has dedicated itself to service, quality and performance in the design and manufacturing of precision Fittings and Hydraulic Adaptors. Our standard line of Hydraulic Adaptors were designed to meet the latest SAE Standards. The SAE Part Number is shown above the Piper Part Number in the catalog.

We offer a full line of Hydraulic Adaptors from 1/8" to 2" in size. We can supply Face Seal, Specials and Manifolds that are designed to eliminate potential leaks by eliminating unnecessary joints.

Our factory is located in Roseville, Michigan in the suburbs of Detroit. We can assist you with technical help from the factory or from our experienced network of Regional Representatives in your local area.

All sizes are indicated in graduations of sixteenths of an inch according to the outside diameter of the tubing with which it will be mated. For example: 1/2 inch O.D. Tube is equal to 8/16 of an inch or a -8 size. Both Male and Female Pipe Threads are also indicated by sixteenths. For example: 1/2 NPTF is equal to 8/16 NPTF or a -8 size. When ordering Fittings, first use the series number, followed by Size A then Size B, etc. For example: FS-0790-08-08.

The following chart was designed to assist in the ordering of a standard adaptor with an additional fitting incorporated for your need. The chart below will provide you with the necessary information.

- | | |
|----------------------------|--------------------------------------|
| 1. FP -Female Pipe | 4. MF -37 deg J.I.C. Flare |
| 2. MP -Male Pipe | 5. MFS -Male Face Seal |
| 3. FOB -Female O'Ring Boss | 6. DBL-THD - Adj. Double Thread Port |

Example

