

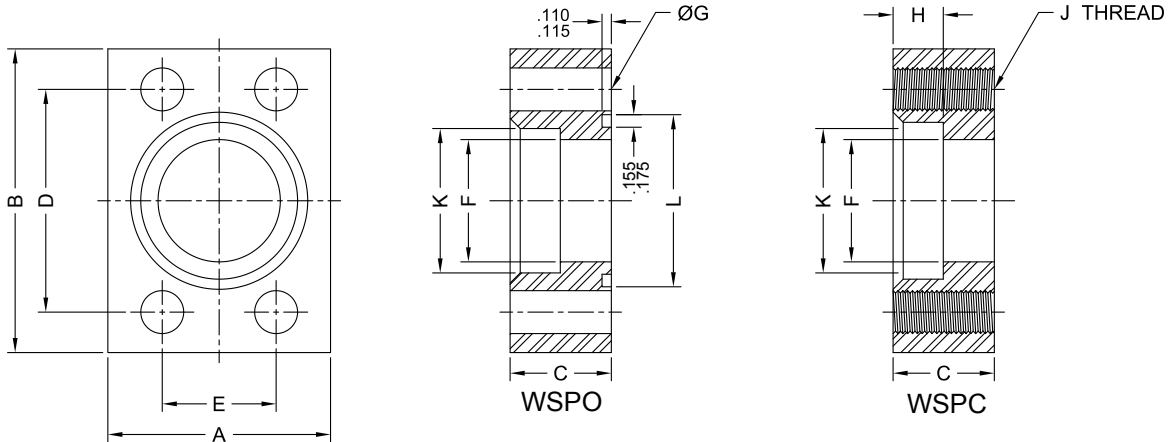


Apollo Machinery Ltd.

The **LEADER** in manifold design and manufacturing since 1969

PRODUCT CATALOGUE

FLANGES
FITTINGS
ADAPTERS
SUBPLATES
BAR MANIFOLDS
CUSTOM MANIFOLDS
PRODUCTION MANIFOLDS



SAE J518/1 CODE 61

PIPE SIZE	PART No. (1)	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
1/2	WSPO-08-61	1.50	2.12	.75	1.500	.688	.50	.34	.38	--	.859	1.000	210	0.6
	WSPC-08-61	1.50	2.12	.75	1.500	.688	.50	--	.38	5/16-18	.859	--	--	0.6
3/4	WSPO-12-61	1.75	2.56	1.00	1.875	.875	.75	.41	.50	--	1.062	1.250	214	1.0
	WSPC-12-61	1.75	2.56	1.00	1.875	.875	.75	--	.50	3/8-16	1.062	--	--	1.0
1	WSPO-16-61	2.00	2.75	1.00	2.062	1.031	1.00	.41	.50	--	1.328	1.562	219	1.2
	WSPC-16-61	2.00	2.75	1.00	2.062	1.031	1.00	--	.50	3/8-16	1.328	--	--	1.2
1 1/4	WSPO-20-61	2.50	3.12	1.00	2.312	1.188	1.25	.47	.50	--	1.687	1.750	222	1.7
	WSPC-20-61	2.50	3.12	1.00	2.312	1.188	1.25	--	.50	7/16-14	1.687	--	--	1.7
1 1/2	WSPO-24-61	2.75	3.75	1.25	2.750	1.406	1.50	.53	.62	--	1.937	2.125	225	2.3
	WSPC-24-61	2.75	3.75	1.25	2.750	1.406	1.50	--	.62	1/2-13	1.937	--	--	2.3
2	WSPO-32-61	3.25	4.00	1.50	3.062	1.688	1.94	.53	.62	--	2.406	2.500	228	3.5
	WSPC-32-61	3.25	4.00	1.50	3.062	1.688	1.94	--	.62	1/2-13	2.406	--	--	3.5
2 1/2	WSPO-40-61	4.00	4.50	1.75	3.500	2.000	2.38	.53	.75	--	2.937	3.000	232	5.7
	WSPC-40-61	4.00	4.50	1.75	3.500	2.000	2.38	--	.75	1/2-13	2.937	--	--	5.7
3	WSPO-48-61	4.50	5.31	2.00	4.188	2.438	2.94	.66	.75	--	3.562	3.625	237	9.2
	WSPC-48-61	4.50	5.31	2.00	4.188	2.438	2.94	--	.75	5/8-11	3.562	--	--	9.2
3 1/2	WSPO-56-61	5.00	6.00	1.50	4.750	2.750	3.38	.66	.75	--	4.062	4.109	241	7.2
	WSPC-56-61	5.00	6.00	1.50	4.750	2.750	3.38	--	.75	5/8-11	4.062	--	--	7.2
4	WSPO-64-61	5.50	6.38	1.50	5.125	3.062	3.88	.66	.75	--	4.562	4.609	245	8.5
	WSPC-64-61	5.50	6.38	1.50	5.125	3.062	3.88	--	.75	5/8-11	4.562	--	--	8.5
5	WSPO-80-61	7.00	7.25	2.00	6.000	3.625	4.81	.66	.75	--	5.625	5.609	253	14.5
	WSPC-80-61	7.00	7.25	2.00	6.000	3.625	4.81	--	.75	5/8-11	5.625	--	--	14.5

(1) previously WSP***-20

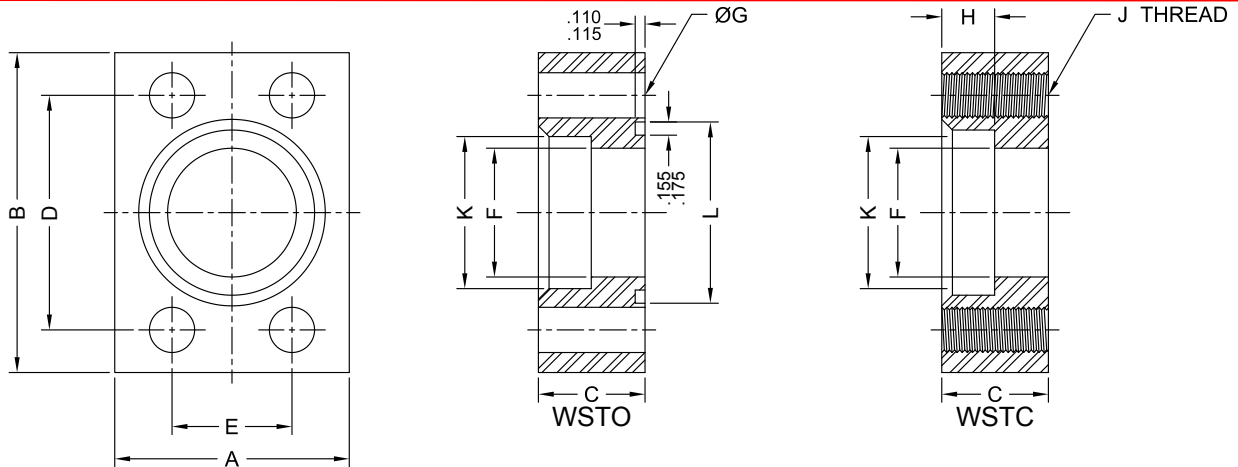
SAE J518/2 CODE 62

PIPE SIZE	PART No. (2)	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
1/2	WSPO-08-62	1.75	2.22	1.00	1.594	.718	.50	.34	.50	--	.859	1.000	210	0.8
	WSPC-08-62	1.75	2.22	1.00	1.594	.718	.50	--	.50	5/16-18	.859	--	--	0.8
3/4	WSPO-12-62	2.00	2.81	1.00	2.000	.937	.75	.41	.50	--	1.062	1.250	214	1.2
	WSPC-12-62	2.00	2.81	1.00	2.000	.937	.75	--	.50	3/8-16	1.062	--	--	1.2
1	WSPO-16-62	2.25	3.19	1.00	2.250	1.093	1.00	.47	.50	--	1.328	1.562	219	1.5
	WSPC-16-62	2.25	3.19	1.00	2.250	1.093	1.00	--	.50	7/16-14	1.328	--	--	1.5
1 1/4	WSPO-20-62	2.75	3.75	1.25	2.625	1.250	1.25	.53	.50	--	1.687	1.750	222	2.7
	WSPC-20-62	2.75	3.75	1.25	2.625	1.250	1.25	--	.50	1/2-13	1.687	--	--	2.7
1 1/2	WSPO-24-62	3.25	4.50	1.50	3.125	1.437	1.50	.66	.50	--	1.937	2.125	225	4.7
	WSPC-24-62	3.25	4.50	1.50	3.125	1.437	1.50	--	.50	5/8-11	1.937	--	--	4.7
2	WSPO-32-62	4.00	5.25	1.75	3.812	1.750	1.94	.78	.62	--	2.406	2.500	228	7.5
	WSPC-32-62	4.00	5.25	1.75	3.812	1.750	1.94	--	.62	3/4-10	2.406	--	--	7.5
2 1/2	WSPO-40-62	5.00	6.88	2.00	4.875	2.312	2.38	.94	.62	--	2.937	3.000	232	14.7
	WSPC-40-62	5.00	6.88	2.00	4.875	2.312	2.38	--	.62	7/8-9	2.937	--	--	14.7
3	WSPO-48-62	6.00	8.50	2.50	6.000	2.812	2.94	1.19	.62	--	3.562	3.625	237	28.0
	WSPC-48-62	6.00	8.50	2.50	6.000	2.812	2.94	--	.62	1 1/8-7	3.562	--	--	28.0

(2) previously WSP***-60

SAE SOCKET WELD STRAIGHT PIPE FLANGES

SAE SOCKET WELD STRAIGHT PIPE FLANGES



SAE J518/1 CODE 61

TUBE SIZE	PART No. ⁽²⁾	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
3/4	WSTO-12-61	1.50	2.12	.75	1.500	.688	.50	.34	.38	--	.760	1.000	210	0.6
	WSTC-12-61	1.50	2.12	.75	1.500	.688	.50	--	.38	5/16-18	.760	--	--	0.6
7/8	WSTO-16-61-T14 ⁽²⁾	1.75	2.56	1.00	1.875	.875	.75	.41	.50	--	.885	1.250	214	1.0
	WSTC-16-61-T14 ⁽²⁾	1.75	2.56	1.00	1.875	.875	.75	--	.50	3/8-16	.885	--	--	1.0
1	WSTO-16-61	1.75	2.56	1.00	1.875	.875	.75	.41	.50	--	1.010	1.250	214	1.0
	WSTC-16-61	1.75	2.56	1.00	1.875	.875	.75	--	.50	3/8-16	1.010	--	--	1.0
1 1/4	WSTO-20-61	2.00	2.75	1.00	2.062	1.031	1.00	.41	.50	--	1.260	1.562	219	1.2
	WSTC-20-61	2.00	2.75	1.00	2.062	1.031	1.00	--	.50	3/8-16	1.260	--	--	1.2
1 1/2	WSTO-24-61	2.50	3.12	1.00	2.312	1.188	1.25	.47	.50	--	1.510	1.750	222	1.7
	WSTC-24-61	2.50	3.12	1.00	2.312	1.188	1.25	--	.50	7/16-14	1.510	--	--	1.7
1 3/4	WSTO-32-61-T28 ⁽²⁾	2.75	3.75	1.25	2.750	1.406	1.50	.53	.62	--	1.760	2.125	225	2.5
	WSTC-32-61-T28 ⁽²⁾	2.75	3.75	1.25	2.750	1.406	1.50	--	.62	1/2-13	1.760	--	--	2.5
2	WSTO-32-61	2.75	3.75	1.25	2.750	1.406	1.50	.53	.62	--	2.010	2.125	225	2.3
	WSTC-32-61	2.75	3.75	1.25	2.750	1.406	1.50	--	.62	1/2-13	2.010	--	--	2.3
2 1/4	WSTO-36-61	3.25	4.00	1.50	3.062	1.688	1.94	.53	.62	--	2.260	2.500	228	3.5
	WSTC-36-61	3.25	4.00	1.50	3.062	1.688	1.94	--	.62	1/2-13	2.260	--	--	3.5
2 3/4	WSTO-44-61	4.00	4.50	1.75	3.500	2.000	2.38	.53	.75	--	2.760	3.000	237	5.7
	WSTC-44-61	4.00	4.50	1.75	3.500	2.000	2.38	--	.75	1/2-13	2.760	--	--	5.7

(1) previously WST**.-20
 (2) T** = TUBE SIZE

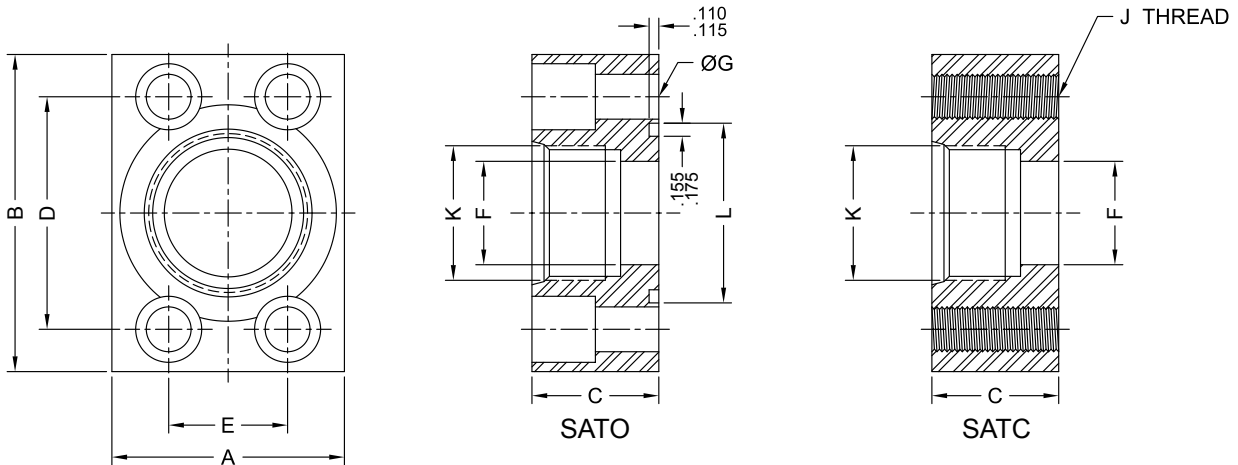
SAE J518/2 CODE 62

TUBE SIZE	PART No. ⁽³⁾	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
3/4	WSTO-12-62	1.75	2.22	1.00	1.594	.718	.50	.34	.50	--	.760	1.000	210	0.8
	WSTC-12-62	1.75	2.22	1.00	1.594	.718	.50	--	.50	5/16-18	.760	--	--	0.8
7/8	WSTO-16-62-T14 ⁽⁴⁾	2.00	2.81	1.00	2.000	.937	.75	.41	.50	--	.885	1.250	214	1.2
	WSTC-16-62-T14 ⁽⁴⁾	2.00	2.81	1.00	2.000	.937	.75	--	.50	3/8-16	.885	--	--	1.2
1	WSTO-16-62	2.00	2.81	1.00	2.000	.937	.75	.41	.50	--	1.010	1.250	214	1.2
	WSTC-16-62	2.00	2.81	1.00	2.000	.937	.75	--	.50	3/8-16	1.010	--	--	1.2
1 1/4	WSTO-20-62	2.25	3.19	1.00	2.250	1.093	1.00	.47	.50	--	1.260	1.562	219	1.5
	WSTC-20-62	2.25	3.19	1.00	2.250	1.093	1.00	--	.50	7/16-14	1.260	--	--	1.5
1 1/2	WSTO-24-62	2.75	3.75	1.25	2.625	1.250	1.25	.53	.50	--	1.510	1.750	222	2.7
	WSTC-24-62	2.75	3.75	1.25	2.625	1.250	1.25	--	.50	1/2-13	1.510	--	--	2.7
1 3/4	WSTO-32-62-T28 ⁽⁴⁾	3.25	4.50	1.50	3.125	1.437	1.50	.66	.50	--	1.760	2.125	225	4.7
	WSTC-32-62-T28 ⁽⁴⁾	3.25	4.50	1.50	3.125	1.437	1.50	--	.50	5/8-11	1.760	--	--	4.7
2	WSTO-32-62	3.25	4.50	1.50	3.125	1.437	1.50	.66	.50	--	2.010	2.125	225	4.6
	WSTC-32-62	3.25	4.50	1.50	3.125	1.437	1.50	--	.50	5/8-11	2.010	--	--	4.6
2 1/4	WSTO-36-62	4.00	5.25	1.75	3.812	1.750	1.94	.78	.62	--	2.260	2.500	228	7.5
	WSTC-36-62	4.00	5.25	1.75	3.812	1.750	1.94	--	.62	3/4-10	2.260	--	--	7.5
2 3/4	WSTO-44-62	5.00	6.88	2.00	4.875	2.312	2.38	.94	.62	--	2.760	3.000	232	14.5
	WSTC-44-62	5.00	6.88	2.00	4.875	2.312	2.38	--	.62	7/8-9	2.760	--	--	14.5

(3) previously WST**.-60
 (4) T## = TUBE SIZE

SAE SOCKET WELD STRAIGHT TUBE FLANGES

SAE SOCKET WELD STRAIGHT TUBE FLANGES



SAE J518/1 CODE 61

TUBE SIZE	PART No. ⁽¹⁾	A	B	C	D	E	F	G	J	K	L	O-Ring
1/2	SATO-08-61	1.50	2.38	1.25	1.500	.688	.38	.34	--	3/4-16	1.000	210
	SATC-08-61	1.50	2.38	1.25	1.500	.688	.38	--	5/16-18	3/4-16	--	--
5/8	SATO-12-61-S10 ⁽²⁾	1.75	2.81	1.50	1.875	.875	.50	.41	--	7/8-14	1.250	214
	SATC-12-61-S10 ⁽²⁾	1.75	2.81	1.50	1.875	.875	.50	--	3/8-16	7/8-14	--	--
3/4	SATO-12-61	1.75	2.81	1.50	1.875	.875	.62	.41	--	11/16-12	1.250	214
	SATC-12-61	1.75	2.81	1.50	1.875	.875	.62	--	3/8-16	11/16-12	--	--
7/8	SATO-16-61-S14 ⁽²⁾	2.00	3.00	1.50	2.062	1.031	.75	.41	--	13/16-12	1.562	219
	SATC-16-61-S14 ⁽²⁾	2.00	3.00	1.50	2.062	1.031	.75	--	3/8-16	13/16-12	--	--
1	SATO-16-61	2.00	3.00	1.50	2.062	1.031	.88	.41	--	15/16-12	1.562	219
	SATC-16-61	2.00	3.00	1.50	2.062	1.031	.88	--	3/8-16	15/16-12	--	--
1 1/4	SATO-20-61	2.50	3.38	1.50	2.312	1.188	1.00	.47	--	15/8-12	1.750	222
	SATC-20-61	2.50	3.38	1.50	2.312	1.188	1.00	--	7/16-14	15/8-12	--	--
1 1/2	SATO-24-61	2.75	3.75	1.75	2.750	1.406	1.25	.53	--	17/8-12	2.125	225
	SATC-24-61	2.75	3.75	1.75	2.750	1.406	1.25	--	1/2-13	17/8-12	--	--
2	SATO-32-61	3.25	4.00	1.75	3.062	1.688	1.25	.53	--	17/8-12	2.500	228
	SATC-32-61	3.25	4.00	1.75	3.062	1.688	1.25	--	1/2-13	17/8-12	--	--
2 1/2	SATO-40-61-S20 ⁽²⁾	4.00	4.50	1.75	3.500	2.000	1.75	.53	--	2 1/2-12	3.000	232
	SATC-40-61-S20 ⁽²⁾	4.00	4.50	1.75	3.500	2.000	1.75	--	1/2-13	2 1/2-12	--	--

(1) previously SAT***-20

(2) S## = Port Size

SAE J518/2 CODE 62

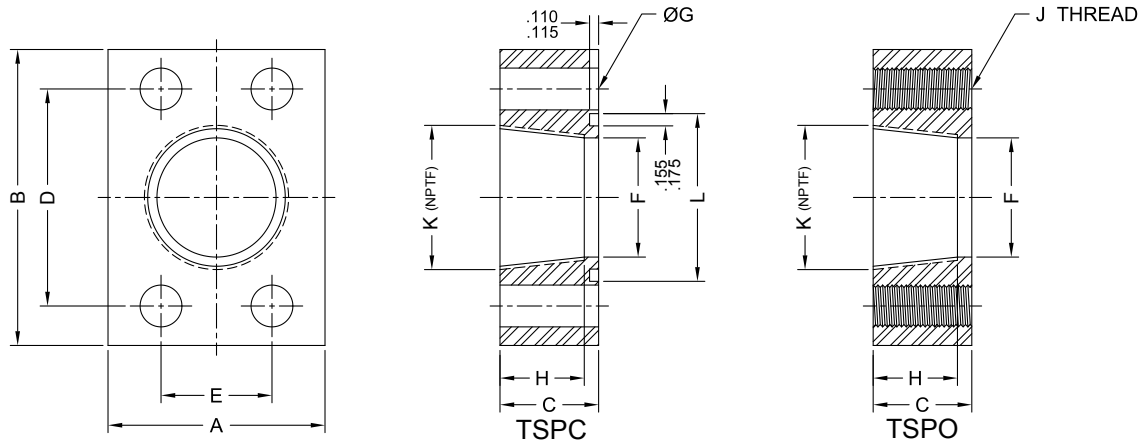
TUBE SIZE	PART No. ⁽³⁾	A	B	C	D	E	F	G	J	K	L	O-Ring
1/2	SATO-08-62	1.75	2.38	1.25	1.594	.718	.38	.34	--	3/4-16	1.000	210
	SATC-08-62	1.75	2.38	1.25	1.594	.718	.38	--	5/16-18	3/4-16	--	--
5/8	SATO-12-62-S10 ⁽⁴⁾	2.00	2.81	1.50	2.000	.937	.50	.41	--	7/8-14	1.250	214
	SATC-12-62-S10 ⁽⁴⁾	2.00	2.81	1.50	2.000	.937	.50	--	3/8-16	7/8-14	--	--
3/4	SATO-12-62	2.00	2.81	1.50	2.000	.937	.62	.41	--	11/16-12	1.250	214
	SATC-12-62	2.00	2.81	1.50	2.000	.937	.62	--	3/8-16	11/16-12	--	--
7/8	SATO-16-62-S14 ⁽⁴⁾	2.25	3.19	1.50	2.250	1.093	.75	.47	--	13/16-12	1.562	219
	SATC-16-62-S14 ⁽⁴⁾	2.25	3.19	1.50	2.250	1.093	.75	--	7/16-14	13/16-12	--	--
1	SATO-16-62	2.25	3.19	1.50	2.250	1.093	.88	.47	--	15/16-12	1.562	219
	SATC-16-62	2.25	3.19	1.50	2.250	1.093	.88	--	7/16-14	15/16-12	--	--
1 1/4	SATO-20-62	3.00	3.75	1.50	2.625	1.250	1.00	.53	--	15/8-12	1.750	222
	SATC-20-62	3.00	3.75	1.50	2.625	1.250	1.00	--	1/2-13	15/8-12	--	--
1 1/2	SATO-24-62	3.25	4.50	1.75	3.125	1.437	1.25	.66	--	17/8-12	2.125	225
	SATC-24-62	3.25	4.50	1.75	3.125	1.437	1.25	--	5/8-11	17/8-12	--	--
2	SATO-32-62	4.00	5.25	1.75	3.812	1.750	1.75	.78	--	2 1/2-12	2.500	228
	SATC-32-62	4.00	5.25	1.75	3.812	1.750	1.75	--	3/4-10	2 1/2-12	--	--

(3) previously SAT***-60

(4) S## = Port Size

SAE O-RING BOSS STRAIGHT THREAD FLANGES

SAE O-RING BOSS STRAIGHT THREAD FLANGES



SAE J518/1 CODE 61

TUBE SIZE	PART No. ⁽¹⁾	A	B	C	D	E	F	G	H	J	K _(NPTF)	L	O-Ring	WT
1/2	TSTO-08-61	1.50	2.12	1.25	1.500	.688	.50	.34	1.06	--	1/2	1.000	210	1.0
	TSTC-08-61	1.50	2.12	1.25	1.500	.688	.50	--	1.06	5/16-18	1/2	--	--	1.0
3/4	TSTO-12-61	1.75	2.56	1.25	1.875	.875	.75	.41	1.06	--	3/4	1.250	214	1.2
	TSTC-12-61	1.75	2.56	1.25	1.875	.875	.75	--	1.06	3/8-16	3/4	--	--	1.2
1	TSTO-16-61	2.00	2.75	1.50	2.062	1.031	1.00	.41	1.25	--	1	1.562	219	1.5
	TSTC-16-61	2.00	2.75	1.50	2.062	1.031	1.00	--	1.25	3/8-16	1	--	--	1.5
1 1/4	TSTO-20-61	2.50	3.12	1.50	2.312	1.188	1.25	.47	1.31	--	1 1/4	1.750	222	2.2
	TSTC-20-61	2.50	3.12	1.50	2.312	1.188	1.25	--	1.31	7/16-14	1 1/4	--	--	2.2
1 1/2	TSTO-24-61	2.75	3.75	1.75	2.750	1.406	1.50	.53	1.31	--	1 1/2	2.125	225	3.2
	TSTC-24-61	2.75	3.75	1.75	2.750	1.406	1.50	--	1.31	1/2-13	1 1/2	--	--	3.2
2	TSTO-32-61	3.25	4.00	1.75	3.062	1.688	1.94	.53	1.31	--	2	2.500	228	4.0
	TSTC-32-61	3.25	4.00	1.75	3.062	1.688	1.94	--	1.31	1/2-13	2	--	--	4.0
2 1/2	TSTO-40-61	4.00	4.50	2.00	3.500	2.000	2.38	.53	1.75	--	2 1/2	3.000	232	6.5
	TSTC-40-61	4.00	4.50	2.00	3.500	2.000	2.38	--	1.75	1/2-13	2 1/2	--	--	6.5
3	TSTO-48-61	4.50	5.31	2.50	4.188	2.438	2.94	.66	2.00	--	3	3.625	237	10.2
	TSTC-48-61	4.50	5.31	2.50	4.188	2.438	2.94	--	2.00	5/8-11	3	--	--	10.2

(1) previously TSP*-**-20

SAE J518/2 CODE 62

TUBE SIZE	PART No. ⁽²⁾	A	B	C	D	E	F	G	H	J	K _(NPTF)	L	O-Ring	WT
1/2	TSTO-08-62	1.75	2.22	1.25	1.594	.718	.50	.34	1.06	--	1/2	1.000	210	1.2
	TSTC-08-62	1.75	2.22	1.25	1.594	.718	.50	--	1.06	5/16-18	1/2	--	--	1.2
3/4	TSTO-12-62	2.00	2.81	1.25	2.000	.937	.75	.41	1.06	--	3/4	1.250	214	1.5
	TSTC-12-62	2.00	2.81	1.25	2.000	.937	.75	--	1.06	3/8-16	3/4	--	--	1.5
1	TSTO-16-62	2.25	3.19	1.50	2.250	1.093	1.00	.47	1.25	--	1	1.562	219	2.5
	TSTC-16-62	2.25	3.19	1.50	2.250	1.093	1.00	--	1.25	7/16-14	1	--	--	2.5
1 1/4	TSTO-20-62	3.00	3.75	1.50	2.625	1.250	1.25	.53	1.31	--	1 1/4	1.750	222	3.2
	TSTC-20-62	3.00	3.75	1.50	2.625	1.250	1.25	--	1.31	1/2-13	1 1/4	--	--	3.2
1 1/2	TSTO-24-62	3.25	4.50	1.75	3.125	1.437	1.50	.66	1.31	--	1 1/2	2.125	225	5.5
	TSTC-24-62	3.25	4.50	1.75	3.125	1.437	1.50	--	1.31	5/8-11	1 1/2	--	--	5.5
2	TSTO-32-62	4.00	5.25	1.75	3.812	1.750	1.94	.78	1.31	--	2	2.500	228	7.5
	TSTC-32-62	4.00	5.25	1.75	3.812	1.750	1.94	--	1.31	3/4-10	2	--	--	7.5
2 1/2	TSTO-40-62	5.00	6.88	2.00	4.875	2.312	2.38	.94	1.75	--	2 1/2	3.000	232	14.7
	TSTC-40-62	5.00	6.88	2.00	4.875	2.312	2.38	--	1.75	7/8-9	2 1/2	--	--	14.7
3	TSTO-48-62	6.00	8.50	2.50	6.000	2.812	2.94	1.19	2.00	--	3	3.625	237	27.0
	TSTC-48-62	6.00	8.50	2.50	6.000	2.812	2.94	--	2.00	1 1/8-7	3	--	--	27.0

(2) previously TSP*-**-60

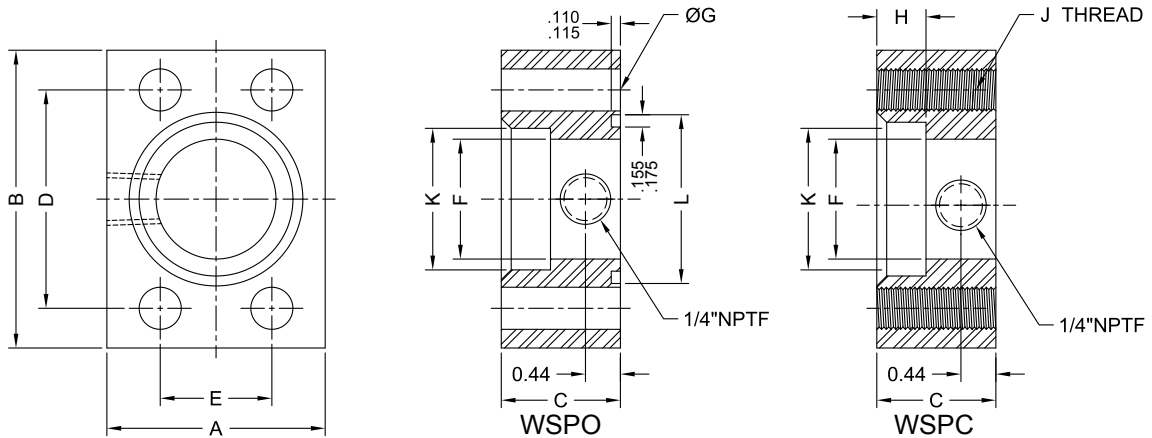
NATIONAL PIPE THREAD (NPTF) STRAIGHT FLANGES

NATIONAL PIPE THREAD (NPTF) STRAIGHT FLANGES



SAE SOCKET WELD STRAIGHT PIPE FLANGES with 1/4NPTF GAUGE PORT

SAE SOCKET WELD STRAIGHT PIPE FLANGES with 1/4NPTF GAUGE PORT



SAE J518/1 CODE 61

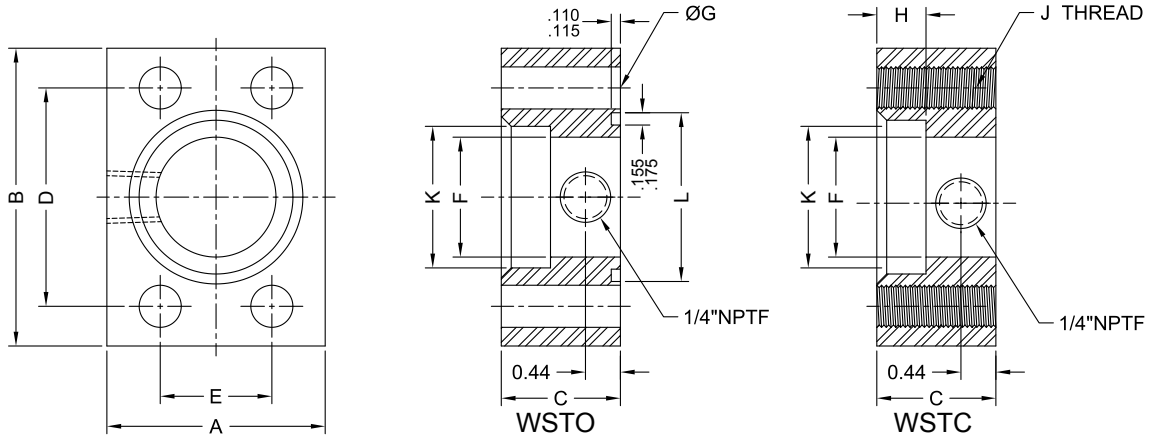
PIPE SIZE	PART No. (1)	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
1/2	WSP0-08-61G	1.50	2.12	1.25	1.500	.688	.50	.34	.38	--	.859	1.000	210	1.0
	WSPC-08-61G	1.50	2.12	1.25	1.500	.688	.50	--	.38	5/16-18	.859	--	--	1.0
3/4	WSP0-12-61G	1.75	2.56	1.25	1.875	.875	.75	.41	.50	--	1.062	1.250	214	1.2
	WSPC-12-61G	1.75	2.56	1.25	1.875	.875	.75	--	.50	3/8-16	1.062	--	--	1.2
1	WSP0-16-61G	2.00	2.75	1.25	2.062	1.031	1.00	.41	.50	--	1.328	1.562	219	1.5
	WSPC-16-61G	2.00	2.75	1.25	2.062	1.031	1.00	--	.50	3/8-16	1.328	--	--	1.5
1 1/4	WSP0-20-61G	2.50	3.12	1.25	2.312	1.188	1.25	.47	.50	--	1.687	1.750	222	2.0
	WSPC-20-61G	2.50	3.12	1.25	2.312	1.188	1.25	--	.50	7/16-14	1.687	--	--	2.0
1 1/2	WSP0-24-61G	2.75	3.75	1.50	2.750	1.406	1.50	.53	.62	--	1.937	2.125	225	3.0
	WSPC-24-61G	2.75	3.75	1.50	2.750	1.406	1.50	--	.62	1/2-13	1.937	--	--	3.0
2	WSP0-32-61G	3.25	4.00	1.50	3.062	1.688	1.94	.53	.62	--	2.406	2.500	228	3.5
	WSPC-32-61G	3.25	4.00	1.50	3.062	1.688	1.94	--	.62	1/2-13	2.406	--	--	3.5
2 1/2	WSP0-40-61G	4.00	4.50	1.75	3.500	2.000	2.38	.53	.75	--	2.937	3.000	232	5.7
	WSPC-40-61G	4.00	4.50	1.75	3.500	2.000	2.38	--	.75	1/2-13	2.937	--	--	5.7
3	WSP0-48-61G	4.50	5.31	2.00	4.188	2.438	2.94	.66	.75	--	3.562	3.625	237	9.2
	WSPC-48-61G	4.50	5.31	2.00	4.188	2.438	2.94	--	.75	5/8-11	3.562	--	--	9.2
3 1/2	WSP0-56-61G	5.00	6.00	1.50	4.750	2.750	3.38	.66	.75	--	4.062	4.109	241	7.2
	WSPC-56-61G	5.00	6.00	1.50	4.750	2.750	3.38	--	.75	5/8-11	4.062	--	--	7.2
4	WSP0-64-61G	5.50	6.38	1.50	5.125	3.062	3.88	.66	.75	--	4.562	4.609	245	8.5
	WSPC-64-61G	5.50	6.38	1.50	5.125	3.062	3.88	--	.75	5/8-11	4.562	--	--	8.5
5	WSP0-80-61G	7.00	7.25	2.00	6.000	3.625	4.81	.66	.75	--	5.625	5.609	253	14.5
	WSP0-80-61G	7.00	7.25	2.00	6.000	3.625	4.81	--	.75	5/8-11	5.625	--	--	14.5

(1) previously WSP*-**-25

SAE J518/2 CODE 62

PIPE SIZE	PART No. (2)	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
1/2	WSP0-08-62G	1.75	2.22	1.00	1.594	.718	.50	.34	1.25	--	.859	1.000	210	0.8
	WSPC-08-62G	1.75	2.22	1.00	1.594	.718	.50	--	1.25	5/16-18	.859	--	--	0.8
3/4	WSP0-12-62G	2.00	2.81	1.00	2.000	.937	.75	.41	1.25	--	1.062	1.250	214	1.2
	WSPC-12-62G	2.00	2.81	1.00	2.000	.937	.75	--	1.25	3/8-16	1.062	--	--	1.2
1	WSP0-16-62G	2.25	3.19	1.00	2.250	1.093	1.00	.47	1.25	--	1.328	1.562	219	1.5
	WSPC-16-62G	2.25	3.19	1.00	2.250	1.093	1.00	--	1.25	7/16-14	1.328	--	--	1.5
1 1/4	WSP0-20-62G	2.75	3.75	1.25	2.625	1.250	1.25	.53	1.25	--	1.687	1.750	222	2.7
	WSPC-20-62G	2.75	3.75	1.25	2.625	1.250	1.25	--	1.25	1/2-13	1.687	--	--	2.7
1 1/2	WSP0-24-62G	3.25	4.50	1.50	3.125	1.437	1.50	.66	1.50	--	1.937	2.125	225	4.7
	WSPC-24-62G	3.25	4.50	1.50	3.125	1.437	1.50	--	1.50	5/8-11	1.937	--	--	4.7
2	WSP0-32-62G	4.00	5.25	1.75	3.812	1.750	1.94	.78	1.75	--	2.406	2.500	228	7.5
	WSPC-32-62G	4.00	5.25	1.75	3.812	1.750	1.94	--	1.75	3/4-10	2.406	--	--	7.5
2 1/2	WSP0-40-62G	5.00	6.88	2.00	4.875	2.312	2.38	.94	2.00	--	2.937	3.000	232	14.7
	WSPC-40-62G	5.00	6.88	2.00	4.875	2.312	2.38	--	2.00	7/8-9	2.937	--	--	14.7
3	WSP0-48-62G	6.00	8.50	2.50	6.000	2.812	2.94	1.19	2.50	--	3.562	3.625	237	28.0
	WSPC-48-62G	6.00	8.50	2.50	6.000	2.812	2.94	--	2.50	1 1/8-7	3.562	--	--	28.0

(2) previously WSP*-**-65



SAE J518/1 CODE 61

TUBE SIZE	PART No. ⁽¹⁾	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
3/4	WSTO-12-61G	1.50	2.12	1.25	1.500	.688	.50	.34	.38	--	.760	1.000	210	1.1
	WSTC-12-61G	1.50	2.12	1.25	1.500	.688	.50	--	.38	5/16-18	.760	--	--	1.1
7/8	WSTO-16-61G-T14 ⁽²⁾	1.75	2.56	1.25	1.875	.875	.75	.41	.50	--	.885	1.250	214	1.4
	WSTC-16-61G-T14 ⁽²⁾	1.75	2.56	1.25	1.875	.875	.75	--	.50	3/8-16	.885	--	--	1.4
1	WSTO-16-61G	1.75	2.56	1.25	1.875	.875	.75	.41	.50	--	1.010	1.250	214	1.4
	WSTC-16-61G	1.75	2.56	1.25	1.875	.875	.75	--	.50	3/8-16	1.010	--	--	1.4
1 1/4	WSTO-20-61G	2.00	2.75	1.25	2.062	1.031	1.00	.41	.50	--	1.260	1.562	219	1.7
	WSTC-20-61G	2.00	2.75	1.25	2.062	1.031	1.00	--	.50	3/8-16	1.260	--	--	1.7
1 1/2	WSTO-24-61G	2.50	3.12	1.50	2.312	1.188	1.25	.47	.50	--	1.510	1.750	222	2.8
	WSTC-24-61G	2.50	3.12	1.50	2.312	1.188	1.25	--	.50	7/16-14	1.510	--	--	2.8
1 3/4	WSTO-32-61G-T28 ⁽²⁾	2.75	3.75	1.50	2.750	1.406	1.50	.53	.62	--	1.760	2.125	225	3.6
	WSTC-32-61G-T28 ⁽²⁾	2.75	3.75	1.50	2.750	1.406	1.50	--	.62	1/2-13	1.760	--	--	3.6
2	WSTO-32-61G	2.75	3.75	1.50	2.750	1.406	1.50	.53	.62	--	2.010	2.125	225	3.6
	WSTC-32-61G	2.75	3.75	1.50	2.750	1.406	1.50	--	.62	1/2-13	2.010	--	--	3.6
2 1/4	WSTO-36-61G	3.25	4.00	1.50	3.062	1.688	1.94	.53	.62	--	2.260	2.500	228	4.3
	WSTC-36-61G	3.25	4.00	1.50	3.062	1.688	1.94	--	.62	1/2-13	2.260	--	--	4.3
2 3/4	WSTO-44-61G	4.00	4.50	1.75	3.500	2.000	2.38	.53	.75	--	2.760	3.000	237	6.7
	WSTC-44-61G	4.00	4.50	1.75	3.500	2.000	2.38	--	.75	1/2-13	2.760	--	--	6.7

(1) previously WST**.-25
 (2) T## = TUBE SIZE

SAE J518/2 CODE 62

TUBE SIZE	PART No. ⁽³⁾	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
3/4	WSTO-12-62G	1.75	2.22	1.25	1.594	.718	.50	.34	.50	--	.760	1.000	210	1.3
	WSTC-12-62G	1.75	2.22	1.25	1.594	.718	.50	--	.50	5/16-18	.760	--	--	1.3
7/8	WSTO-16-62G-T14 ⁽⁴⁾	2.00	2.81	1.25	2.000	.937	.75	.41	.50	--	.885	1.250	214	1.8
	WSTC-16-62G-T14 ⁽⁴⁾	2.00	2.81	1.25	2.000	.937	.75	--	.50	3/8-16	.885	--	--	1.8
1	WSTO-16-62G	2.00	2.81	1.25	2.000	.937	.75	.41	.50	--	1.010	1.250	214	1.8
	WSTC-16-62G	2.00	2.81	1.25	2.000	.937	.75	--	.50	3/8-16	1.010	--	--	1.8
1 1/4	WSTO-20-62G	2.25	3.19	1.25	2.250	1.093	1.00	.47	.50	--	1.260	1.562	219	2.3
	WSTC-20-62G	2.25	3.19	1.25	2.250	1.093	1.00	--	.50	7/16-14	1.260	--	--	2.3
1 1/2	WSTO-24-62G	2.75	3.75	1.50	2.625	1.250	1.25	.53	.50	--	1.510	1.750	222	3.9
	WSTC-24-62G	2.75	3.75	1.50	2.625	1.250	1.25	--	.50	1/2-13	1.510	--	--	3.9
1 3/4	WSTO-32-62G-T28 ⁽⁴⁾	3.25	4.50	1.50	3.125	1.437	1.50	.66	.50	--	1.760	2.125	225	5.5
	WSTC-32-62G-T28 ⁽⁴⁾	3.25	4.50	1.50	3.125	1.437	1.50	--	.50	5/8-11	1.760	--	--	5.5
2	WSTO-32-62G	3.25	4.50	1.50	3.125	1.437	1.50	.66	.50	--	2.010	2.125	225	5.5
	WSTC-32-62G	3.25	4.50	1.50	3.125	1.437	1.50	--	.50	5/8-11	2.010	--	--	5.5
2 1/4	WSTO-36-62G	4.00	5.25	1.75	3.812	1.750	1.94	.78	.62	--	2.260	2.500	228	8.9
	WSTC-36-62G	4.00	5.25	1.75	3.812	1.750	1.94	--	.62	3/4-10	2.260	--	--	8.9
2 3/4	WSTO-44-62G	5.00	6.88	2.00	4.875	2.312	2.38	.94	.62	--	2.760	3.000	232	17.0
	WSTC-44-62G	5.00	6.88	2.00	4.875	2.312	2.38	--	.62	7/8-9	2.760	--	--	17.0

(3) previously WST**.-65
 (4) T## = TUBE SIZE

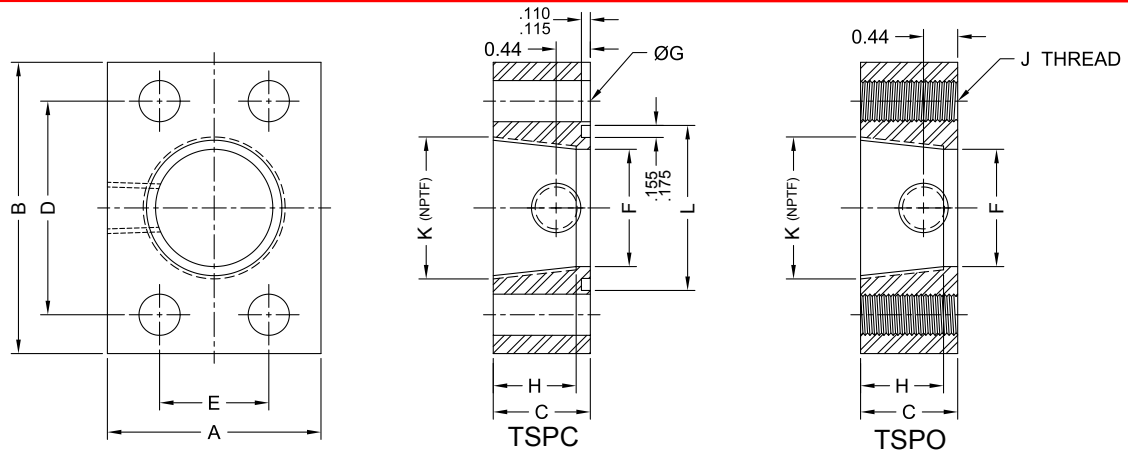
SAE SOCKET WELD STRAIGHT TUBE FLANGES with 1/4NPTF GAUGE PORT

SAE SOCKET WELD STRAIGHT TUBE FLANGES with 1/4NPTF GAUGE PORT



NATIONAL PIPE THREAD (NPTF) STRAIGHT FLANGES with 1/4NPTF GAUGE PORT

NATIONAL PIPE THREAD (NPTF) STRAIGHT FLANGES with 1/4NPTF GAUGE PORT



SAE J518/1 CODE 61

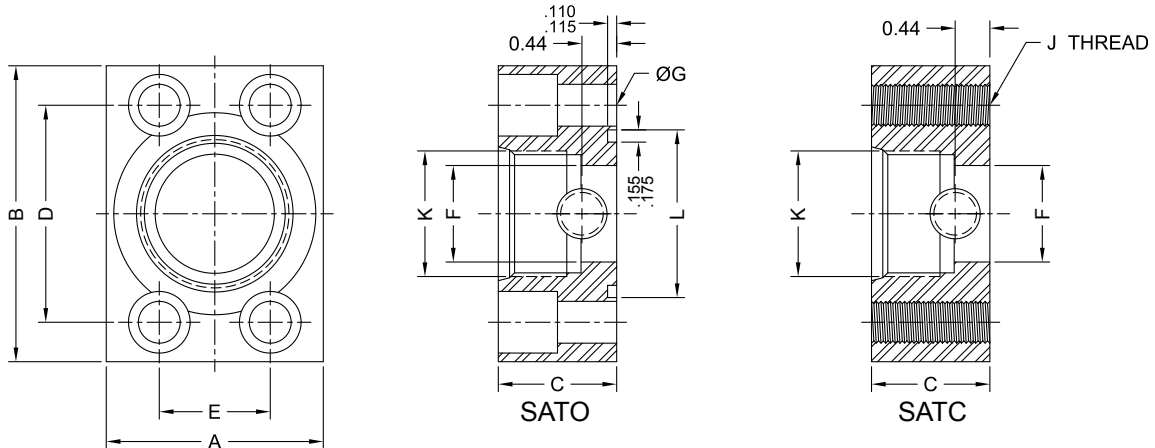
TUBE SIZE	PART No. ⁽¹⁾	A	B	C	D	E	F	G	H	J	K _(NPTF)	L	O-Ring	WT
1/2	TSPO-08-61G	1.50	2.12	1.25	1.500	.688	.50	.34	1.06	--	1/2	1.000	210	1.0
	TSPC-08-61G	1.50	2.12	1.25	1.500	.688	.50	--	1.06	5/16-18	1/2	--	--	1.0
3/4	TSPO-12-61G	1.75	2.56	1.25	1.875	.875	.75	.41	1.06	--	3/4	1.250	214	1.2
	TSPC-12-61G	1.75	2.56	1.25	1.875	.875	.75	--	1.06	3/8-16	3/4	--	--	1.2
1	TSPO-16-61G	2.00	2.75	1.50	2.062	1.031	1.00	.41	1.25	--	1	1.562	219	1.5
	TSPC-16-61G	2.00	2.75	1.50	2.062	1.031	1.00	--	1.25	3/8-16	1	--	--	1.5
1 1/4	TSPO-20-61G	2.50	3.12	1.50	2.312	1.188	1.25	.47	1.31	--	1 1/4	1.750	222	2.2
	TSPC-20-61G	2.50	3.12	1.50	2.312	1.188	1.25	--	1.31	7/16-14	1 1/4	--	--	2.2
1 1/2	TSPO-24-61G	2.75	3.75	1.75	2.750	1.406	1.50	.53	1.31	--	1 1/2	2.125	225	3.2
	TSPC-24-61G	2.75	3.75	1.75	2.750	1.406	1.50	--	1.31	1/2-13	1 1/2	--	--	3.2
2	TSPO-32-61G	3.25	4.00	1.75	3.062	1.688	1.94	.53	1.31	--	2	2.500	228	4.0
	TSPC-32-61G	3.25	4.00	1.75	3.062	1.688	1.94	--	1.31	1/2-13	2	--	--	4.0
2 1/2	TSPO-40-61G	4.00	4.50	2.00	3.500	2.000	2.38	.53	1.75	--	2 1/2	3.000	232	6.5
	TSPC-40-61G	4.00	4.50	2.00	3.500	2.000	2.38	--	1.75	1/2-13	2 1/2	--	--	6.5
3	TSPO-48-61G	4.50	5.31	2.50	4.188	2.438	2.94	.66	2.00	--	3	3.625	237	10.2
	TSPC-48-61G	4.50	5.31	2.50	4.188	2.438	2.94	--	2.00	5/8-11	3	--	--	10.2

(1) previously TSP***-25

SAE J518/2 CODE 62

TUBE SIZE	PART No. ⁽²⁾	A	B	C	D	E	F	G	H	J	K _(NPTF)	L	O-Ring	WT
1/2	TSPO-08-62G	1.75	2.22	1.25	1.594	.718	.50	.34	1.06	--	1/2	1.000	210	1.2
	TSPC-08-62G	1.75	2.22	1.25	1.594	.718	.50	--	1.06	5/16-18	1/2	--	--	1.2
3/4	TSPO-12-62G	2.00	2.81	1.25	2.000	.937	.75	.41	1.06	--	3/4	1.250	214	1.5
	TSPC-12-62G	2.00	2.81	1.25	2.000	.937	.75	--	1.06	3/8-16	3/4	--	--	1.5
1	TSPO-16-62G	2.25	3.19	1.50	2.250	1.093	1.00	.47	1.25	--	1	1.562	219	2.5
	TSPC-16-62G	2.25	3.19	1.50	2.250	1.093	1.00	--	1.25	7/16-14	1	--	--	2.5
1 1/4	TSPO-20-62G	3.00	3.75	1.50	2.625	1.250	1.25	.53	1.31	--	1 1/4	1.750	222	3.2
	TSPC-20-62G	3.00	3.75	1.50	2.625	1.250	1.25	--	1.31	1/2-13	1 1/4	--	--	3.2
1 1/2	TSPO-24-62G	3.25	4.50	1.75	3.125	1.437	1.50	.66	1.31	--	1 1/2	2.125	225	5.5
	TSPC-24-62G	3.25	4.50	1.75	3.125	1.437	1.50	--	1.31	5/8-11	1 1/2	--	--	5.5
2	TSPO-32-62G	4.00	5.25	1.75	3.812	1.750	1.94	.78	1.31	--	2	2.500	228	7.5
	TSPC-32-62G	4.00	5.25	1.75	3.812	1.750	1.94	--	1.31	3/4-10	2	--	--	7.5
2 1/2	TSPO-40-62G	5.00	6.88	2.00	4.875	2.312	2.38	.94	1.75	--	2 1/2	3.000	232	14.7
	TSPC-40-62G	5.00	6.88	2.00	4.875	2.312	2.38	--	1.75	7/8-9	2 1/2	--	--	14.7
3	TSPO-48-62G	6.00	8.50	2.50	6.000	2.812	2.94	1.19	2.00	--	3	3.625	237	27.0
	TSPC-48-62G	6.00	8.50	2.50	6.000	2.812	2.94	--	2.00	1 1/8-7	3	--	--	27.0

(2) previously TSP***-65



SAE J518/1 CODE 61

TUBE SIZE	PART No. (2)	A	B	C	D	E	F	G	J	K	L	O-Ring
1/2	SATO-08-61G	1.50	2.38	1.25	1.500	.688	.38	.34	--	3/4-16	1.000	210
	SATC-08-61G	1.50	2.38	1.25	1.500	.688	.38	--	5/16-18	3/4-16	--	--
5/8	SATO-12-61G-S10(2)	1.75	2.81	1.50	1.875	.875	.50	.41	--	7/8-14	1.250	214
	SATC-12-61G-S10(2)	1.75	2.81	1.50	1.875	.875	.50	--	3/8-16	7/8-14	--	--
3/4	SATO-12-61G	1.75	2.81	1.50	1.875	.875	.62	.41	--	11/16-12	1.250	214
	SATC-12-61G	1.75	2.81	1.50	1.875	.875	.62	--	3/8-16	11/16-12	--	--
7/8	SATO-16-61G-S14(2)	2.00	3.00	1.50	2.062	1.031	.75	.41	--	13/16-12	1.562	219
	SATC-16-61G-S14(2)	2.00	3.00	1.50	2.062	1.031	.75	--	3/8-16	13/16-12	--	--
1	SATO-16-61G	2.00	3.00	1.50	2.062	1.031	.88	.41	--	15/16-12	1.562	219
	SATC-16-61G	2.00	3.00	1.50	2.062	1.031	.88	--	3/8-16	15/16-12	--	--
1 1/4	SATO-20-61G	2.50	3.38	1.50	2.312	1.188	1.00	.47	--	15/8-12	1.750	222
	SATC-20-61G	2.50	3.38	1.50	2.312	1.188	1.00	--	7/16-14	15/8-12	--	--
1 1/2	SATO-24-61G	2.75	3.75	1.75	2.750	1.406	1.25	.53	--	17/8-12	2.125	225
	SATC-24-61G	2.75	3.75	1.75	2.750	1.406	1.25	--	1/2-13	17/8-12	--	--
2	SATO-32-61G	3.25	4.00	1.75	3.062	1.688	1.25	.53	--	17/8-12	2.500	228
	SATC-32-61G	3.25	4.00	1.75	3.062	1.688	1.25	--	1/2-13	17/8-12	--	--
2 1/2	SATO-40-61G-S20(2)	4.00	4.50	1.75	3.500	2.000	1.75	.53	--	2 1/2-12	3.000	232
	SATC-40-61G-S20(2)	4.00	4.50	1.75	3.500	2.000	1.75	--	1/2-13	2 1/2-12	--	--

(1) previously SAT***-25

(2) S## = Port Size

SAE J518/2 CODE 62

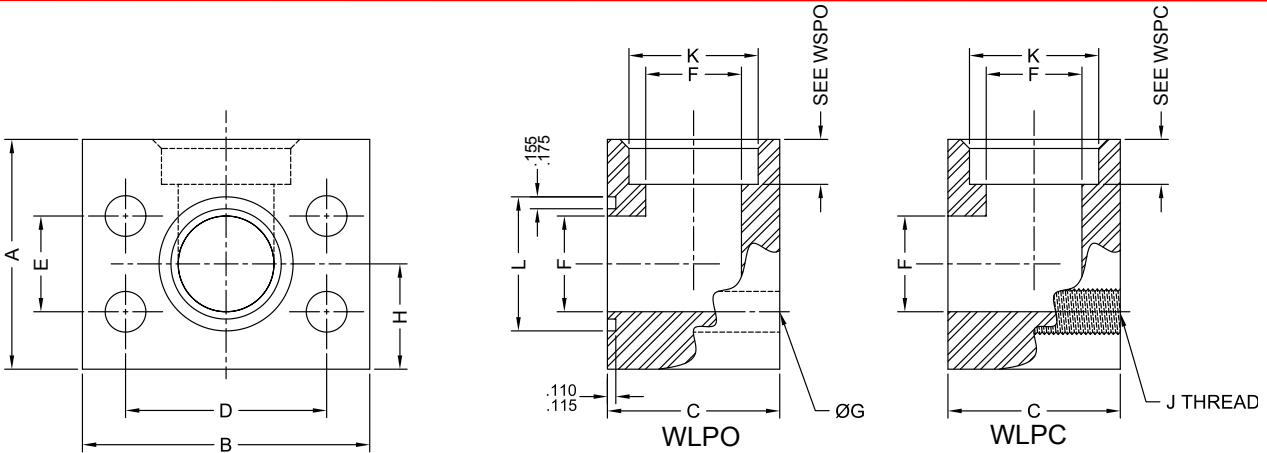
TUBE SIZE	PART No. (3)	A	B	C	D	E	F	G	J	K	L	O-Ring
1/2	SATO-08-62G	1.75	2.38	1.25	1.594	.718	.38	.34	--	3/4-16	1.000	210
	SATC-08-62G	1.75	2.38	1.25	1.594	.718	.38	--	5/16-18	3/4-16	--	--
5/8	SATO-12-62G-S10(4)	2.00	2.81	1.50	2.000	.937	.50	.41	--	7/8-14	1.250	214
	SATC-12-62G-S10(4)	2.00	2.81	1.50	2.000	.937	.50	--	3/8-16	7/8-14	--	--
3/4	SATO-12-62G	2.00	2.81	1.50	2.000	.937	.62	.41	--	11/16-12	1.250	214
	SATC-12-62G	2.00	2.81	1.50	2.000	.937	.62	--	3/8-16	11/16-12	--	--
7/8	SATO-16-62G-S14(4)	2.25	3.19	1.50	2.250	1.093	.75	.47	--	13/16-12	1.562	219
	SATC-16-62G-S14(4)	2.25	3.19	1.50	2.250	1.093	.75	--	7/16-14	13/16-12	--	--
1	SATO-16-62G	2.25	3.19	1.50	2.250	1.093	.88	.47	--	15/16-12	1.562	219
	SATC-16-62G	2.25	3.19	1.50	2.250	1.093	.88	--	7/16-14	15/16-12	--	--
1 1/4	SATO-20-62G	3.00	3.75	1.50	2.625	1.250	1.00	.53	--	15/8-12	1.750	222
	SATC-20-62G	3.00	3.75	1.50	2.625	1.250	1.00	--	1/2-13	15/8-12	--	--
1 1/2	SATO-24-62G	3.25	4.50	1.75	3.125	1.437	1.25	.66	--	17/8-12	2.125	225
	SATC-24-62G	3.25	4.50	1.75	3.125	1.437	1.25	--	5/8-11	17/8-12	--	--
2	SATO-32-62G	4.00	5.25	1.75	3.812	1.750	1.75	.78	--	2 1/2-12	2.500	228
	SATC-32-62G	4.00	5.25	1.75	3.812	1.750	1.75	--	3/4-10	2 1/2-12	--	--

(3) previously SAT**-*65

(4) S## = Port Size

SAE O-RING BOSS STRAIGHT THREAD FLANGES with 1/4NPTF GAUGE PORT

SAE O-RING BOSS STRAIGHT THREAD FLANGES with 1/4NPTF GAUGE PORT



SAE J518/1 CODE 61

PIPE SIZE	PART No. ⁽¹⁾	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
1/2	WLPO-08-61	1.75	2.12	1.50	1.500	.688	.50	.34	.75	--	.859	1.000	210	1.3
	WLPC-08-61	1.75	2.12	1.50	1.500	.688	.50	--	.75	5/16-18	.859	--	--	1.3
3/4	WLPO-12-61	2.00	2.56	1.75	1.875	.875	.75	.41	.88	--	1.062	1.250	214	2.0
	WLPC-12-61	2.00	2.56	1.75	1.875	.875	.75	--	.88	3/8-16	1.062	--	--	2.0
1	WLPO-16-61	2.25	2.75	2.00	2.062	1.031	1.00	.41	1.00	--	1.328	1.562	219	2.7
	WLPC-16-61	2.25	2.75	2.00	2.062	1.031	1.00	--	1.00	3/8-16	1.328	--	--	2.7
1 1/4	WLPO-20-61	2.75	3.12	2.25	2.312	1.188	1.25	.47	1.25	--	1.687	1.750	222	4.0
	WLPC-20-61	2.75	3.12	2.25	2.312	1.188	1.25	--	1.25	7/16-14	1.687	--	--	4.0
1 1/2	WLPO-24-61	3.00	3.75	3.00	2.750	1.406	1.50	.53	1.38	--	1.937	2.125	225	7.0
	WLPC-24-61	3.00	3.75	3.00	2.750	1.406	1.50	--	1.38	1/2-13	1.937	--	--	7.0
2	WLPO-32-61	3.50	4.00	3.50	3.062	1.688	1.94	.53	1.62	--	2.406	2.500	228	9.5
	WLPC-32-61	3.50	4.00	3.50	3.062	1.688	1.94	--	1.62	1/2-13	2.406	--	--	9.5
2 1/2	WLPO-40-61	4.00	4.50	4.00	3.500	2.000	2.38	.53	2.00	--	2.937	3.000	232	15.0
	WLPC-40-61	4.00	4.50	4.00	3.500	2.000	2.38	--	2.00	1/2-13	2.937	--	--	15.0
3	WLPO-48-61	5.00	5.31	5.00	4.188	2.438	2.94	.66	2.25	--	3.562	3.625	237	27.2
	WLPC-48-61	5.00	5.31	5.00	4.188	2.438	2.94	--	2.25	5/8-11	3.562	--	--	27.2
3 1/2	WLPO-56-61	5.50	6.00	5.50	4.750	2.750	3.38	.66	2.50	--	4.062	4.109	241	37.0
	WLPC-56-61	5.50	6.00	5.50	4.750	2.750	3.38	--	2.50	5/8-11	4.062	--	--	37.0
4	WLPO-64-61	6.00	6.38	6.00	5.125	3.062	3.88	.66	2.75	--	4.562	4.609	245	48.0
	WLPC-64-61	6.00	6.38	6.00	5.125	3.062	3.88	--	2.75	5/8-11	4.562	--	--	48.0

(1) previously WLP*-**-20

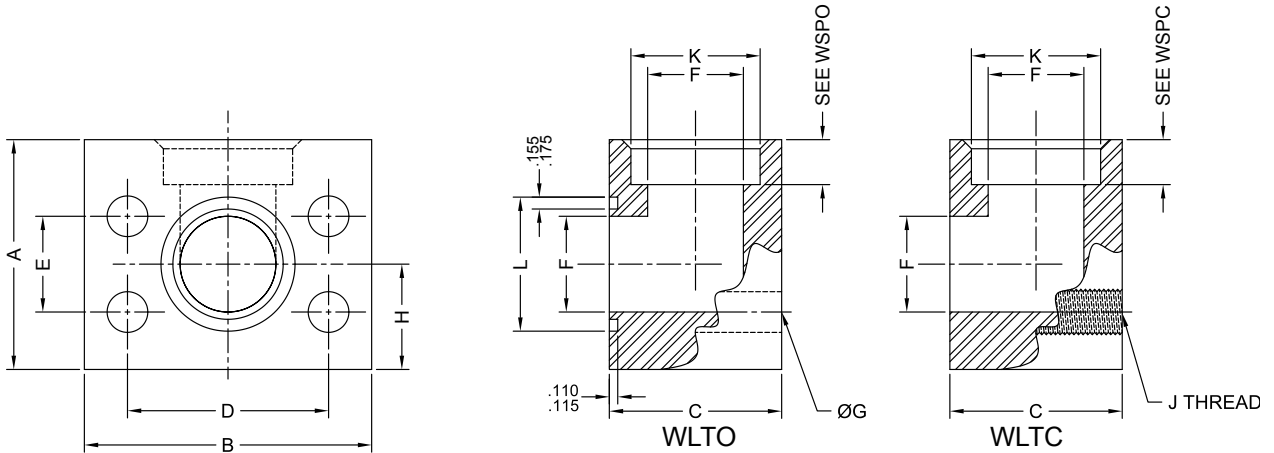
SAE J518/2 CODE 62

PIPE SIZE	PART No. ⁽²⁾	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
1/2	WLPO-08-62	2.00	2.22	1.50	1.594	.718	.50	.34	.88	--	.859	1.000	210	1.5
	WLPC-08-62	2.00	2.22	1.50	1.594	.718	.50	--	.88	5/16-18	.859	--	--	1.5
3/4	WLPO-12-62	2.25	2.81	1.75	2.000	.937	.75	.41	1.00	--	1.062	1.250	214	2.5
	WLPC-12-62	2.25	2.81	1.75	2.000	.937	.75	--	1.00	3/8-16	1.062	--	--	2.5
1	WLPO-16-62	2.50	3.19	2.00	2.250	1.093	1.00	.47	1.12	--	1.328	1.562	219	3.5
	WLPC-16-62	2.50	3.19	2.00	2.250	1.093	1.00	--	1.12	7/16-14	1.328	--	--	3.5
1 1/4	WLPO-20-62	3.00	3.75	2.25	2.625	1.250	1.25	.53	1.38	--	1.687	1.750	222	5.5
	WLPC-20-62	3.00	3.75	2.25	2.625	1.250	1.25	--	1.38	1/2-13	1.687	--	--	5.5
1 1/2	WLPO-24-62	3.50	4.50	3.00	3.125	1.437	1.50	.66	1.62	--	1.937	2.125	225	10.0
	WLPC-24-62	3.50	4.50	3.00	3.125	1.437	1.50	--	1.62	5/8-11	1.937	--	--	10.0
2	WLPO-32-62	4.00	5.25	3.50	3.812	1.750	1.94	.78	2.00	--	2.406	2.500	228	15.0
	WLPC-32-62	4.00	5.25	3.50	3.812	1.750	1.94	--	2.00	3/4-10	2.406	--	--	15.0
2 1/2	WLPO-40-62	5.50	6.88	4.00	4.875	2.312	2.38	.94	2.50	--	2.937	3.000	232	31.2
	WLPC-40-62	5.50	6.88	4.00	4.875	2.312	2.38	--	2.50	7/8-9	2.937	--	--	31.2
3	WLPO-48-62	6.00	8.50	4.50	6.000	2.812	2.94	1.19	3.00	--	3.562	3.625	237	48.0
	WLPC-48-62	6.00	8.50	4.50	6.000	2.812	2.94	--	3.00	1 1/8-7	3.562	--	--	48.0

(2) previously WLP*-**-60

SAE SOCKET WELD 90° PIPE FLANGES

SAE SOCKET WELD 90° PIPE FLANGES



SAE J518/1 CODE 61

TUBE SIZE	PART No. (1)	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
3/4	WLTO-08-61	1.75	2.12	1.50	1.500	.688	.50	.34	.75	--	.760	1.000	210	1.3
	WLTC-08-61	1.75	2.12	1.50	1.500	.688	.50	--	.75	5/16-18	.760	--	--	1.3
7/8	WLTO-16-61-T14(2)	2.00	2.56	1.75	1.875	.875	.75	.41	.88	--	.885	1.250	214	2.0
	WLTC-16-61-T14(2)	2.00	2.56	1.75	1.875	.875	.75	--	.88	3/8-16	.885	--	--	2.0
1	WLTO-16-61	2.00	2.56	1.75	1.875	.875	.75	.41	.88	--	1.010	1.250	214	2.0
	WLTC-16-61	2.00	2.56	1.75	1.875	.875	.75	--	.88	3/8-16	1.010	--	--	2.0
1 1/4	WLTO-20-61	2.25	2.75	2.00	2.062	1.031	1.00	.41	1.00	--	1.260	1.562	219	2.7
	WLTC-20-61	2.25	2.75	2.00	2.062	1.031	1.00	--	1.00	3/8-16	1.260	--	--	2.7
1 1/2	WLTO-24-61	2.75	3.12	2.25	2.312	1.188	1.25	.47	1.25	--	1.510	1.750	222	4.0
	WLTC-24-61	2.75	3.12	2.25	2.312	1.188	1.25	--	1.25	7/16-14	1.510	--	--	4.0
1 3/4	WLTO-32-61-T28(2)	3.00	3.75	3.00	2.750	1.406	1.50	.53	1.38	--	1.760	2.125	225	7.0
	WLTC-32-61-T28(2)	3.00	3.75	3.00	2.750	1.406	1.50	--	1.38	1/2-13	1.760	--	--	7.0
2	WLTO-32-61	3.00	3.75	3.00	2.750	1.406	1.50	.53	1.38	--	2.010	2.125	225	6.8
	WLTC-32-61	3.00	3.75	3.00	2.750	1.406	1.50	--	1.38	1/2-13	2.010	--	--	6.8
2 1/4	WLTO-36-61	3.50	4.00	3.50	3.062	1.688	1.94	.53	1.62	--	2.260	2.500	228	9.5
	WLTC-36-61	3.50	4.00	3.50	3.062	1.688	1.94	--	1.62	1/2-13	2.260	--	--	9.5
2 3/4	WLTO-44-61	4.00	4.50	4.00	3.500	2.000	2.38	.53	2.00	--	2.760	3.000	237	15.0
	WLTC-44-61	4.00	4.50	4.00	3.500	2.000	2.38	--	2.00	1/2-13	2.760	--	--	15.0

(1) previously WLT***-20
 (2) T** = TUBE SIZE

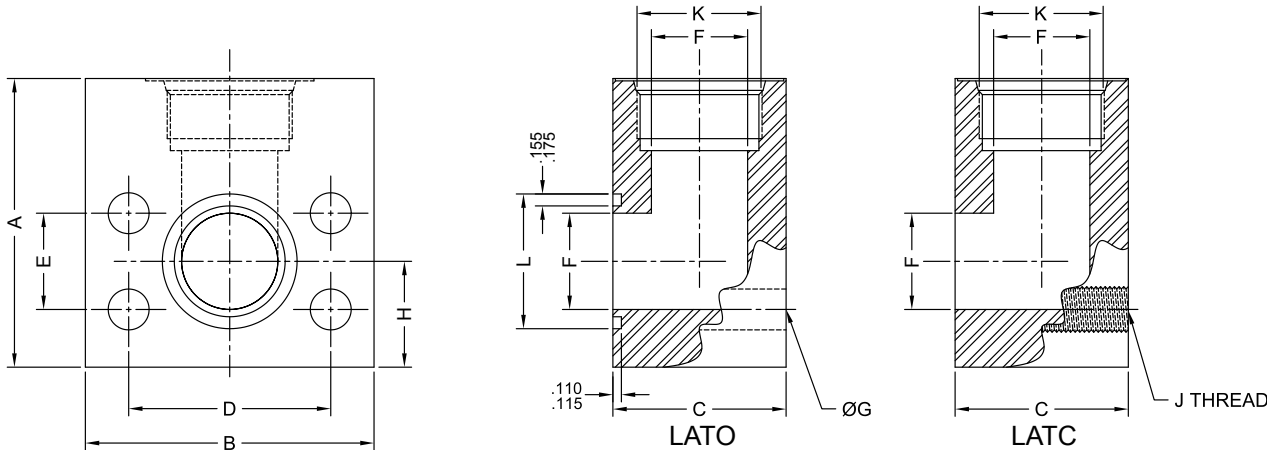
SAE J518/2 CODE 62

TUBE SIZE	PART No. (3)	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
3/4	WLTO-12-62	2.00	2.22	1.50	1.594	.718	.50	.34	.88	--	.760	1.000	210	1.5
	WLTC-12-62	2.00	2.22	1.50	1.594	.718	.50	--	.88	5/16-18	.760	--	--	1.5
7/8	WLTO-16-62-T14(4)	2.25	2.81	1.75	2.000	.937	.75	.41	1.00	--	.885	1.250	214	2.5
	WLTC-16-62-T14(4)	2.25	2.81	1.75	2.000	.937	.75	--	1.00	3/8-16	.885	--	--	2.5
1	WLTO-16-62	2.25	2.81	1.75	2.000	.937	.75	.41	1.00	--	1.010	1.250	214	2.5
	WLTC-16-62	2.25	2.81	1.75	2.000	.937	.75	--	1.00	3/8-16	1.010	--	--	2.5
1 1/4	WLTO-20-62	2.50	3.19	2.00	2.250	1.093	1.00	.47	1.12	--	1.260	1.562	219	3.5
	WLTC-20-62	2.50	3.19	2.00	2.250	1.093	1.00	--	1.12	7/16-14	1.260	--	--	3.5
1 1/2	WLTO-24-62	3.00	3.75	2.25	2.625	1.250	1.25	.53	1.38	--	1.510	1.750	222	5.5
	WLTC-24-62	3.00	3.75	2.25	2.625	1.250	1.25	--	1.38	1/2-13	1.510	--	--	5.5
1 3/4	WLTO-32-62-T28(4)	3.50	4.50	3.00	3.125	1.437	1.50	.66	1.62	--	1.760	2.125	225	10.2
	WLTC-32-62-T28(4)	3.50	4.50	3.00	3.125	1.437	1.50	--	1.62	5/8-11	1.760	--	--	10.2
2	WLTO-32-62	3.50	4.50	3.00	3.125	1.437	1.50	.66	1.62	--	2.010	2.125	225	10.0
	WLTC-32-62	3.50	4.50	3.00	3.125	1.437	1.50	--	1.62	5/8-11	2.010	--	--	10.0
2 1/4	WLTO-36-62	4.00	5.25	3.50	3.812	1.750	1.94	.78	2.00	--	2.260	2.500	228	15.0
	WLTC-36-62	4.00	5.25	3.50	3.812	1.750	1.94	--	2.00	3/4-10	2.260	--	--	15.0
2 3/4	WLTO-44-62	5.50	6.88	4.00	4.875	2.312	2.38	.94	2.50	--	2.760	3.000	232	31.2
	WLTC-44-62	5.50	6.88	4.00	4.875	2.312	2.38	--	2.50	7/8-9	2.760	--	--	31.2

(3) previously WLT***-60
 (4) T## = TUBE SIZE

SAE SOCKET WELD 90° TUBE FLANGES

SAE SOCKET WELD 90° TUBE FLANGES



SAE J518/1 CODE 61

TUBE SIZE	PART No. ⁽¹⁾	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
1/2	LATO-08-61	2.00	2.38	1.50	1.500	.688	.38	.34	.75	--	3/4-16	1.000	210	1.5
	LATC-08-61	2.00	2.38	1.50	1.500	.688	.38	--	.75	5/16-18	3/4-16	--	--	1.5
5/8	LATO-12-61-S10 ⁽²⁾	2.50	2.81	1.75	1.875	.875	.50	.41	.88	--	7/8-14	1.250	214	2.7
	LATC-12-61-S10 ⁽²⁾	2.50	2.81	1.75	1.875	.875	.50	--	.88	3/8-16	7/8-14	--	--	2.7
3/4	LATO-12-61	2.50	2.81	1.75	1.875	.875	.62	.41	.88	--	11/16-12	1.250	214	2.5
	LATC-12-61	2.50	2.81	1.75	1.875	.875	.62	--	.88	3/8-16	11/16-12	--	--	2.5
7/8	LATO-16-61-S14 ⁽²⁾	3.00	3.00	2.00	2.062	1.031	.75	.41	1.00	--	13/16-12	1.562	219	3.7
	LATC-16-61-S14 ⁽²⁾	3.00	3.00	2.00	2.062	1.031	.75	--	1.00	3/8-16	13/16-12	--	--	3.7
1	LATO-16-61	3.00	3.00	2.00	2.062	1.031	.88	.41	1.00	--	15/16-12	1.562	219	3.5
	LATC-16-61	3.00	3.00	2.00	2.062	1.031	.88	--	1.00	3/8-16	15/16-12	--	--	3.5
1 1/4	LATO-20-61	3.75	3.38	2.25	2.312	1.188	1.00	.47	1.25	--	15/8-12	1.750	222	5.7
	LATC-20-61	3.75	3.38	2.25	2.312	1.188	1.00	--	1.25	7/16-14	15/8-12	--	--	5.7
1 1/2	LATO-24-61	4.00	3.75	3.00	2.750	1.406	1.25	.53	1.38	--	17/8-12	2.125	225	10.0
	LATC-24-61	4.00	3.75	3.00	2.750	1.406	1.25	--	1.38	1/2-13	17/8-12	--	--	10.0
2	LATO-32-61	4.25	4.00	3.50	3.062	1.688	1.25	.53	1.62	--	17/8-12	2.500	228	12.2
	LATC-32-61	4.25	4.00	3.50	3.062	1.688	1.25	--	1.62	1/2-13	17/8-12	--	--	12.2

(1) previously LAT***-20

(2) S## = Port Size

SAE J518/2 CODE 62

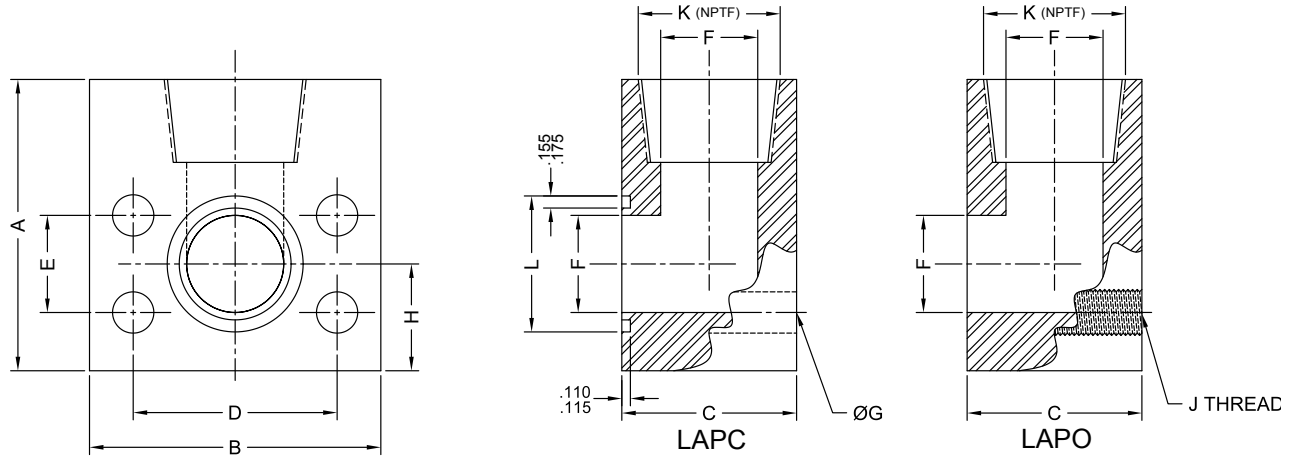
TUBE SIZE	PART No. ⁽³⁾	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
1/2	LATO-08-62	2.00	2.38	1.50	1.594	.718	.38	.34	.88	--	3/4-16	1.000	210	1.7
	LATC-08-62	2.00	2.38	1.50	1.594	.718	.38	--	.88	5/16-18	3/4-16	--	--	1.7
5/8	LATO-12-62-S10 ⁽⁴⁾	2.50	2.81	1.75	2.000	.937	.50	.41	1.00	--	7/8-14	1.250	214	3.0
	LATC-12-62-S10 ⁽⁴⁾	2.50	2.81	1.75	2.000	.937	.50	--	1.00	3/8-16	7/8-14	--	--	3.0
3/4	LATO-12-62	2.50	2.81	1.75	2.000	.937	.62	.41	1.00	--	11/16-12	1.250	214	2.7
	LATC-12-62	2.50	2.81	1.75	2.000	.937	.62	--	1.00	3/8-16	11/16-12	--	--	2.7
7/8	LATO-16-62-S14 ⁽⁴⁾	3.0	3.19	2.00	2.250	1.093	.75	.47	1.12	--	13/16-12	1.562	219	4.5
	LATC-16-62-S14 ⁽⁴⁾	3.0	3.19	2.00	2.250	1.093	.75	--	1.12	7/16-14	13/16-12	--	--	4.5
1	LATO-16-62	3.0	3.19	2.00	2.250	1.093	.88	.47	1.12	--	15/16-12	1.562	219	4.2
	LATC-16-62	3.0	3.19	2.00	2.250	1.093	.88	--	1.12	7/16-14	15/16-12	--	--	4.2
1 1/4	LATO-20-62	3.75	3.75	2.25	2.625	1.250	1.00	.53	1.38	--	15/8-12	1.750	222	7.2
	LATC-20-62	3.75	3.75	2.25	2.625	1.250	1.00	--	1.38	1/2-13	15/8-12	--	--	7.2
1 1/2	LATO-24-62	4.00	4.50	3.00	3.125	1.437	1.25	.66	1.62	--	17/8-12	2.125	225	12.0
	LATC-24-62	4.00	4.50	3.00	3.125	1.437	1.25	--	1.62	5/8-11	17/8-12	--	--	12.0
2	LATO-32-62	5.00	5.25	3.50	3.812	1.750	1.75	.78	2.00	--	21/2-12	2.500	228	20.2
	LATC-32-62	5.00	5.25	3.50	3.812	1.750	1.75	--	2.00	3/4-10	21/2-12	--	--	20.2

(3) previously LAT***-60

(4) S## = Port Size

SAE O-RING BOSS STRAIGHT THREAD 90° FLANGES

SAE O-RING BOSS STRAIGHT THREAD 90° FLANGES



SAE J518/1 CODE 61

TUBE SIZE	PART No. ⁽¹⁾	A	B	C	D	E	F	G	H	J	K _(NPTF)	L	O-Ring	WT
1/2	LAPO-08-61	2.00	2.12	1.50	1.500	.688	.50	.34	.75	--	1/2	1.000	210	1.3
	LAPC-08-61	2.00	2.12	1.50	1.500	.688	.50	--	.75	5/16-18	1/2	--	--	1.3
3/4	LAPO-12-61	2.50	2.56	1.75	1.875	.875	.75	.41	.88	--	3/4	1.250	214	2.5
	LAPC-12-61	2.50	2.56	1.75	1.875	.875	.75	--	.88	3/8-16	3/4	--	--	2.5
1	LAPO-16-61	3.00	2.75	2.00	2.062	1.031	1.00	.41	1.00	--	1	1.562	219	3.5
	LAPC-16-61	3.00	2.75	2.00	2.062	1.031	1.00	--	1.00	3/8-16	1	--	--	3.5
1 1/4	LAPO-20-61	4.00	3.12	2.00	2.312	1.188	1.25	.47	1.25	--	1 1/4	1.750	222	5.3
	LAPC-20-61	4.00	3.12	2.00	2.312	1.188	1.25	--	1.25	7/16-14	1 1/4	--	--	5.3
1 1/2	LAPO-24-61	4.00	3.75	3.00	2.750	1.406	1.50	.53	1.38	--	1 1/2	2.125	225	9.5
	LAPC-24-61	4.00	3.75	3.00	2.750	1.406	1.50	--	1.38	1/2-13	1 1/2	--	--	9.5
2	LAPO-32-61	4.25	4.00	3.00	3.062	1.688	1.94	.53	1.62	--	2	2.500	228	10.0
	LAPC-32-61	4.25	4.00	3.00	3.062	1.688	1.94	--	1.62	1/2-13	2	--	--	10.0
2 1/2	LAPO-40-61	4.50	4.50	3.50	3.500	2.000	2.38	.53	2.00	--	2 1/2	3.000	232	16.2
	LAPC-40-61	4.50	4.50	3.50	3.500	2.000	2.38	--	2.00	1/2-13	2 1/2	--	--	16.2
3	LAPO-48-61	5.25	5.31	4.00	4.188	2.438	2.94	.66	2.25	--	3	3.625	237	23.9
	LAPC-48-61	5.25	5.31	4.00	4.188	2.438	2.94	--	2.25	5/8-11	3	--	--	23.9

(1) previously LAP***-20

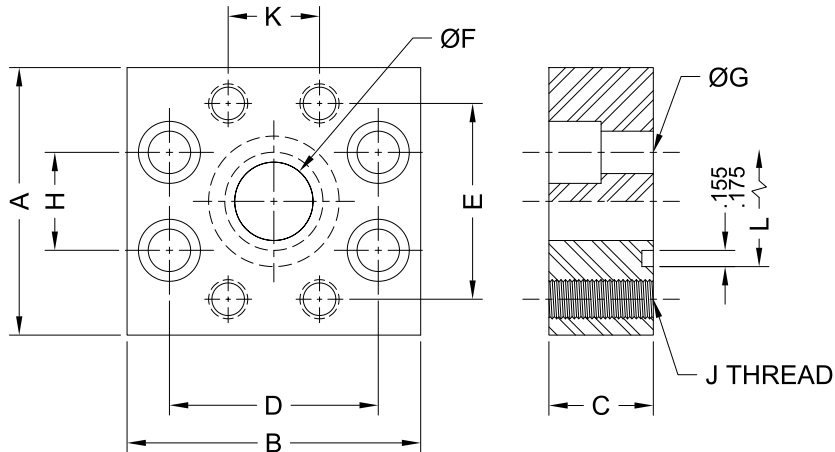
SAE J518/2 CODE 62

TUBE SIZE	PART No. ⁽²⁾	A	B	C	D	E	F	G	H	J	K _(NPTF)	L	O-Ring	WT
1/2	LAPO-08-62	2.00	2.22	1.50	1.594	.718	.50	.34	.88	--	1/2	1.000	210	1.5
	LAPC-08-62	2.00	2.22	1.50	1.594	.718	.50	--	.88	5/16-18	1/2	--	--	1.5
3/4	LAPO-12-62	2.50	2.81	1.75	2.000	.937	.75	.41	1.00	--	3/4	1.250	214	2.7
	LAPC-12-62	2.50	2.81	1.75	2.000	.937	.75	--	1.00	3/8-16	3/4	--	--	2.7
1	LAPO-16-62	3.00	3.19	2.00	2.250	1.093	1.00	.47	1.12	--	1	1.562	219	4.2
	LAPC-16-62	3.00	3.19	2.00	2.250	1.093	1.00	--	1.12	7/16-14	1	--	--	4.2
1 1/4	LAPO-20-62	4.00	3.75	2.00	2.625	1.250	1.25	.53	1.38	--	1 1/4	1.750	222	6.5
	LAPC-20-62	4.00	3.75	2.00	2.625	1.250	1.25	--	1.38	1/2-13	1 1/4	--	--	6.5
1 1/2	LAPO-24-62	4.00	4.50	3.00	3.125	1.437	1.50	.66	1.62	--	1 1/2	2.125	225	11.7
	LAPC-24-62	4.00	4.50	3.00	3.125	1.437	1.50	--	1.62	5/8-11	1 1/2	--	--	11.7
2	LAPO-32-62	6.00	5.25	3.00	3.812	1.750	1.94	.78	2.00	--	2	2.500	228	20.2
	LAPC-32-62	6.00	5.25	3.00	3.812	1.750	1.94	--	2.00	3/4-10	2	--	--	20.2
2 1/2	LAPO-40-62	6.00	6.88	3.50	4.875	2.312	2.38	.94	2.62	--	2 1/2	3.000	232	36.7
	LAPC-40-62	6.00	6.88	3.50	4.875	2.312	2.38	--	2.62	7/8-9	2 1/2	--	--	36.7
3	LAPO-48-62	7.00	8.50	4.00	6.000	2.812	2.94	1.19	3.50	--	3	3.625	237	59.7
	LAPC-48-62	7.00	8.50	4.00	6.000	2.812	2.94	--	3.50	1 1/8-7	3	--	--	59.7

(2) previously LAP***-60

NATIONAL PIPE THREAD (NPTF) 90° FLANGES

NATIONAL PIPE THREAD (NPTF) 90° FLANGES



CODE 61/CODE 62 FLANGE ADAPTER

NOMINAL SIZE	PART No. ⁽¹⁾⁽²⁾	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
1/2	FA-0861C-0862O	2.38	2.25	1.00	1.500	1.594	.50	.34	.688	5/16-18	.718	1.000	210	1.2
	FA-0862C-0861O	2.25	2.38	1.00	1.594	1.500	.50	.34	.718	5/16-18	.688	1.000	210	1.2
3/4	FA-1261C-1262O	2.81	2.75	1.00	1.875	2.000	.75	.41	.875	3/8-16	.937	1.250	214	1.7
	FA-1262C-1261O	2.75	2.81	1.00	2.000	1.875	.75	.41	.937	3/8-16	.875	1.250	214	1.7
1	FA-1661C-1662O	3.19	3.00	1.00	2.062	2.250	1.00	.41	1.031	7/16-14	1.562	1.562	219	2.0
	FA-1662C-1661O	3.00	3.19	1.00	2.250	2.062	1.00	.47	1.562	3/8-16	1.031	1.562	219	2.0
1 1/4	FA-2061C-2062O	3.75	3.25	1.00	2.312	2.625	1.25	.47	1.188	1/2-13	1.250	1.750	222	2.5
	FA-2062C-2061C	3.25	3.75	1.00	2.625	2.312	1.25	.53	1.250	7/16-14	1.188	1.750	222	2.5
1 1/2	FA-2461C-2462O	4.50	3.75	1.25	2.750	3.125	1.50	.53	1.406	5/8-11	1.437	2.125	225	4.4
	FA-2462C-2461O	3.75	4.50	1.25	3.125	2.750	1.50	.66	1.437	1/2-13	1.406	2.125	225	4.2
2	FA-3261C-3262O	5.25	4.00	1.25	3.062	3.812	1.94	.53	1.688	3/4-10	1.750	2.500	228	5.2
	FA-3262C-3261O	4.00	5.25	1.25	3.812	3.062	1.94	.78	1.750	1/2-13	1.688	2.500	228	5.0
2 1/2	FA-4061C-4062O	6.88	5.00	1.50	3.500	4.875	2.38	.53	2.000	7/8-9	2.312	3.000	232	11.0
	FA-4062C-4061O	5.00	6.88	1.50	4.875	3.500	2.38	.94	2.312	1/2-13	2.000	3.000	232	10.2
3	FA-4861C-4862O	8.50	6.00	1.75	4.188	6.000	2.94	.66	2.438	1 1/8-7	2.812	3.625	237	18.7
	FA-4862C-4861O	6.00	8.50	1.75	6.000	4.188	2.94	1.19	2.812	5/8-11	2.438	3.625	237	17.2

(1) previously AP-***20-***60

(2) C = Companion side; O = O-Ring side; 61 = Code 61; 62 = Code 62

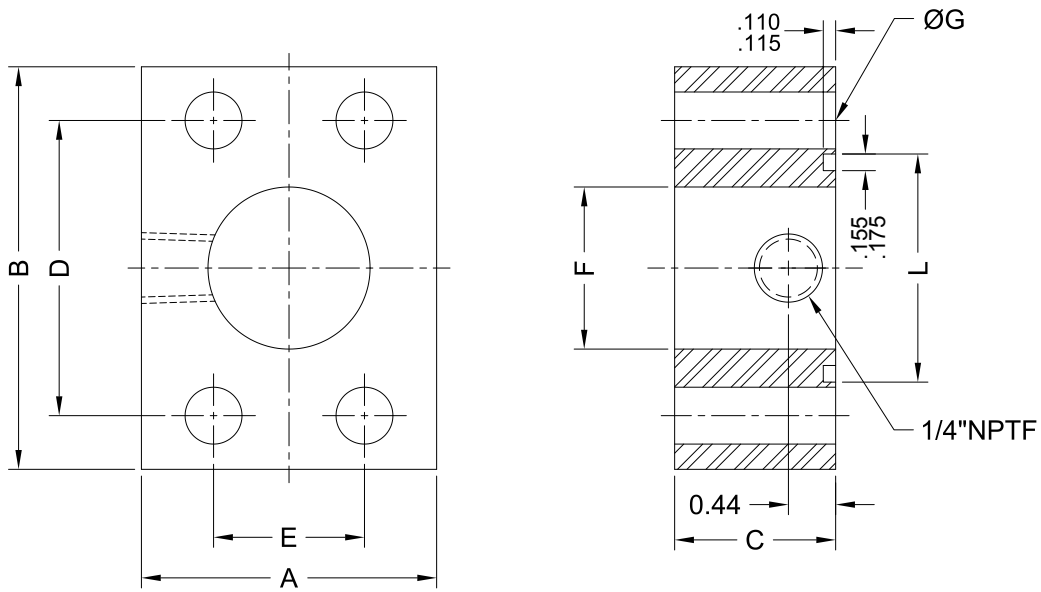
CODE 61 FLANGE STEP ADAPTER

PIPE SIZE	PART No. ⁽³⁾	A	B	C	D	E	F	G	H	J	K	L	O-Ring	WT
1/2	FSA-61-08C-12O	2.13	2.63	1.00	1.875	1.500	.50	.41	.875	--	.688	1.000	210	1.5
	FSA-61-08C-16O	2.13	2.75	1.00	2.063	1.500	.50	.41	1.031	5/16-18	.688	--	--	1.6
3/4	FSA-61-12C-16O	2.63	2.75	1.00	2.063	1.875	.75	.41	1.031	--	.875	1.250	214	1.9
	FSA-61-12C-20O	2.63	3.13	1.00	2.312	1.875	.75	.47	1.188	3/8-16	.875	--	--	2.2
1	FSA-61-16C-20O	2.75	3.13	1.00	2.312	2.062	1.00	.47	1.188	--	1.031	1.562	219	2.2
	FSA-61-16C-24O	2.75	3.75	1.00	2.750	2.062	1.00	.53	1.406	7/16-14	1.031	--	--	2.7
1 1/4	FSA-61-20C-24O	3.13	3.75	1.00	2.750	2.312	1.25	.53	1.406	--	1.188	1.750	222	3.0
	FSA-61-20C-32O	3.13	4.00	1.00	3.062	2.312	1.25	.53	1.688	1/2-13	1.188	--	--	3.2
1 1/2	FSA-61-24C-32O	3.75	4.00	1.25	3.062	2.750	1.50	.53	1.688	--	1.406	2.125	225	3.3
	FSA-61-24C-40O	3.75	4.50	1.25	3.500	2.750	1.50	.53	2.000	5/8-11	1.406	--	--	3.8
2	FSA-61-32C-40O	4.00	4.50	1.25	3.500	3.062	2.00	.53	2.000	--	1.688	2.500	228	5.3
	FSA-61-32C-48O	4.00	5.31	1.25	4.188	3.062	2.00	.66	2.438	3/4-10	1.688	--	--	6.4
2 1/2	FSA-61-40C-48O	5.13	5.31	1.50	4.188	3.500	2.50	.66	2.438	--	2.000	3.000	232	9.5
	FSA-61-40C-56O	5.50	6.00	1.50	4.750	3.500	2.50	.66	2.750	7/8-9	2.000	--	--	11.9
3	FSA-61-48C-56O	5.50	6.00	1.75	4.750	4.188	3.00	.66	2.750	--	2.438	3.625	237	12.8
	FSA-61-48C-64O	6.00	6.38	1.75	5.125	4.188	3.00	.66	3.062	1 1/8-7	2.438	--	--	15.5

(3) C = Companion Side; O = O-Ring side; 61 = Code 61; 62 = Code 62

SAE CODE 61/62 FLANGE ADAPTERS

SAE CODE 61/62 FLANGE ADAPTERS



CODE 61/CODE 62 GAUGE PORT FLANGE ADAPTER

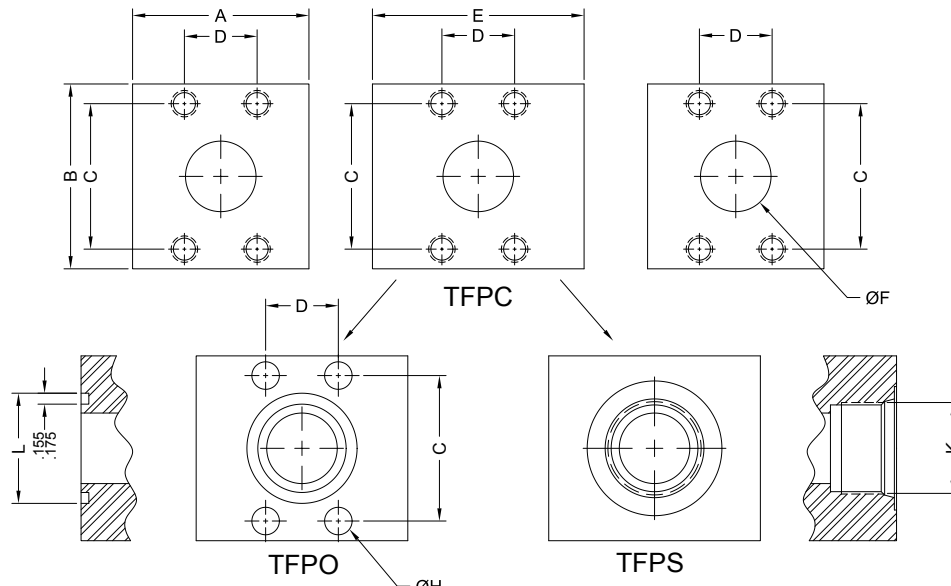
NOMINAL SIZE	PART No. (1)(2)	A	B	C	D	E	F	G	L	O-Ring	WT
1/2	GPFA-61-08	1.50	2.12	1.00	1.500	.688	.50	.34	1.000	210	0.8
	GPFA-62-08	1.75	2.22	1.00	1.594	.718	.50	.34	1.000	210	1.0
3/4	GPFA-61-12	1.75	2.56	1.00	1.875	.875	.75	.41	1.250	214	1.1
	GPFA-62-12	2.00	2.81	1.00	2.000	.937	.75	.41	1.250	214	1.5
1	GPFA-61-16	2.00	2.75	1.00	2.062	1.031	1.00	.41	1.562	219	1.3
	GPFA-62-16	2.25	3.19	1.00	2.250	1.562	1.00	.47	1.562	219	1.8
1 1/4	GPFA-61-20	2.50	3.12	1.00	2.312	1.188	1.25	.47	1.750	222	1.9
	GPFA-62-20	2.75	3.75	1.00	2.625	1.250	1.25	.53	1.750	222	2.6
1 1/2	GPFA-61-24	2.75	3.75	1.00	2.750	1.406	1.50	.53	2.125	225	2.4
	GPFA-62-24	3.25	4.50	1.00	3.125	1.437	1.50	.66	2.125	225	3.6
2	GPFA-61-32	3.25	4.00	1.00	3.062	1.688	1.94	.53	2.500	228	2.8
	GPFA-62-32	4.00	5.25	1.00	3.812	1.750	1.94	.78	2.500	228	5.1
2 1/2	GPFA-61-40	4.00	4.50	1.00	3.500	2.000	2.38	.53	3.000	232	3.8
	GPFA-62-40	5.00	6.88	1.00	4.875	2.312	2.38	.94	3.000	232	8.5
3	GPFA-61-48	4.50	5.31	1.00	4.188	2.438	2.94	.66	3.625	237	4.8
	GPFA-62-48	6.00	8.50	1.00	6.000	2.812	2.94	1.19	3.625	237	12.5
3 1/2	GPFA-61-56	5.00	6.00	1.00	4.750	2.750	3.38	.66	4.109	241	6.0
4	GPFA-61-64	5.50	6.38	1.00	5.125	3.062	3.88	.66	4.609	245	6.6
	--	--	--	--	--	--	--	--	--	--	--
5	GPFA-61-80	7.00	7.25	1.00	6.000	3.625	4.81	.66	5.609	253	9.2
	--	--	--	--	--	--	--	--	--	--	--

(1) previously AP-**-25 or AP-**-65

(2) 61 = Code 61; 62 = Code 62

SAE CODE 61/62 GAUGE PORT FLANGE ADAPTERS

SAE CODE 61/62 GAUGE PORT FLANGE ADAPTERS



SAE J518/1 CODE 61

PIPE SIZE	PART No. (1)	A	B	C	D	E	F	G	J	K	L	O-Ring	WT
3/4	TFPC-12-61	2.50	2.62	1.875	.875	3.00	.75	--	3/8-16	--	--	--	5.2
	TFPO-12-61	2.50	2.62	1.875	.875	3.00	.75	.39	3/8-16	--	1.250	214	5.2
	TFPS-12-61	2.50	2.62	1.875	.875	3.00	.75	--	3/8-16	11/16-12	--	--	5.0
1	TFPC-16-61	2.50	2.81	2.062	1.031	3.00	1.00	--	3/8-16	--	--	--	5.3
	TFPO-16-61	2.50	2.81	2.062	1.031	3.00	1.00	.39	3/8-16	--	1.562	219	5.3
	TFPS-16-61	2.50	2.81	2.062	1.031	3.00	1.00	--	3/8-16	15/16-12	--	--	5.1
1 1/4	TFPC-20-61	3.00	3.19	2.312	1.188	3.50	1.25	--	7/16-14	--	--	--	8.3
	TFPO-20-61	3.00	3.19	2.312	1.188	3.50	1.25	.46	7/16-14	--	1.750	222	8.3
	TFPS-20-61	3.00	3.19	2.312	1.188	3.50	1.25	--	7/16-14	15/8-12	--	--	8.1
1 1/2	TFPC-24-61	3.50	3.75	2.750	1.406	3.50	1.50	--	1/2-13	--	--	--	11.3
	TFPO-24-61	3.50	3.75	2.750	1.406	3.50	1.50	.53	1/2-13	--	2.125	225	11.3
	TFPS-24-61	3.50	3.75	2.750	1.406	3.50	1.50	--	1/2-13	17/8-12	--	--	11.1
2	TFPC-32-61	4.00	4.06	3.062	1.688	4.00	2.00	--	1/2-13	--	--	--	14.8
	TFPO-32-61	4.00	4.06	3.062	1.688	4.00	2.00	.53	1/2-13	--	2.500	228	14.8
	TFPS-32-61	4.00	4.06	3.062	1.688	4.00	2.00	--	1/2-13	17/8-12	--	--	14.6
2 1/2	TFPC-40-61	4.50	4.56	3.500	2.000	4.50	2.50	--	1/2-13	--	--	--	19.9
	TFPO-40-61	4.50	4.56	3.500	2.000	4.50	2.50	.53	1/2-13	--	3.000	232	19.9
	TFPS-40-61	--	--	--	--	--	--	--	--	--	--	--	--

(1) previously FFP***-20

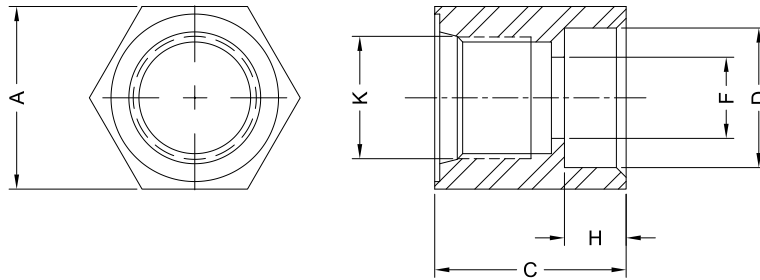
SAE J518/2 CODE 62

PIPE SIZE	PART No. (2)	A	B	C	D	E	F	G	J	K	L	O-Ring	WT
3/4	TFPC-12-62	2.50	2.81	2.000	.937	3.00	.75	--	3/8-16	--	--	--	5.6
	TFPO-12-62	2.50	2.81	2.000	.937	3.00	.75	.39	3/8-16	--	1.250	214	5.6
	TFPS-12-62	2.50	2.81	2.000	.937	3.00	.75	--	3/8-16	11/16-12	--	--	5.4
1	TFPC-16-62	3.00	3.19	2.250	1.093	3.50	1.00	--	7/16-14	--	--	--	8.7
	TFPO-16-62	3.00	3.19	2.250	1.093	3.50	1.00	.46	7/16-14	--	1.562	219	8.7
	TFPS-16-62	3.00	3.19	2.250	1.093	3.50	1.00	--	7/16-14	15/16-12	--	--	8.5
1 1/4	TFPC-20-62	3.50	3.75	2.625	1.250	4.00	1.25	--	1/2-13	--	--	--	13.5
	TFPO-20-62	3.50	3.75	2.625	1.250	4.00	1.25	.53	1/2-13	--	1.750	222	13.5
	TFPS-20-62	3.50	3.75	2.625	1.250	4.00	1.25	--	1/2-13	15/8-12	--	--	13.3
1 1/2	TFPC-24-62	4.00	4.50	3.125	1.437	5.00	1.50	--	5/8-11	--	--	--	23.0
	TFPO-24-62	4.00	4.50	3.125	1.437	5.00	1.50	.66	5/8-11	--	2.125	225	23.0
	TFPS-24-62	4.00	4.50	3.125	1.437	5.00	1.50	--	5/8-11	17/8-12	--	--	22.8
2	TFPC-32-62	4.50	5.25	3.812	1.750	5.50	2.00	--	3/4-10	--	--	--	31.9
	TFPO-32-62	4.50	5.25	3.812	1.750	5.50	2.00	.78	3/4-10	--	2.500	228	31.9
	TFPS-32-62	4.50	5.25	3.812	1.750	5.50	2.00	--	3/4-10	17/8-12	--	--	31.7

(2) previously FFP***-60

SAE TEE FLANGE BLOCKS

SAE TEE FLANGE BLOCKS



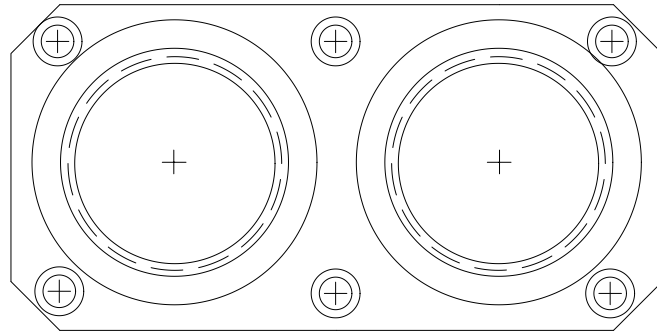
WEOP/WEOT

SOCKET WELD ORB PIPE/TUBE CONNECTOR

PIPE SIZE	PART No.	A	C	D	H	F	K
1/2	WEOP-08	1.13	1.00	.859	.38	.50	3/4-16
	WEOT-08	--	--	--	--	--	--
3/4	WEOP-12	1.50	1.25	1.062	.50	.75	11/16-12
	WEOT-12	1.13	1.00	.760	.38	.75	11/16-12
1	WEOP-16	1.75	1.75	1.328	.50	1.00	15/16-12
	WEOT-16	1.50	1.25	1.010	.50	1.00	15/16-12
1 1/4	WEOP-20	2.13	1.75	1.687	.50	1.25	15/8-12
	WEOT-20	1.75	1.75	1.260	.50	1.25	15/8-12
1 1/2	WEOP-24	2.50	2.00	1.937	.63	1.50	17/8-12
	WEOT-24	2.13	1.75	1.510	.50	1.50	17/8-12
2	WEOP-32	3.25	2.00	2.406	.63	2.00	17/8-12
	WEOT-32	2.50	2.00	2.010	.63	2.00	17/8-12

SOCKET WELD O-RING BOSS STRAIGHT THREAD CONNECTORS

SOCKET WELD O-RING BOSS STRAIGHT THREAD CONNECTORS

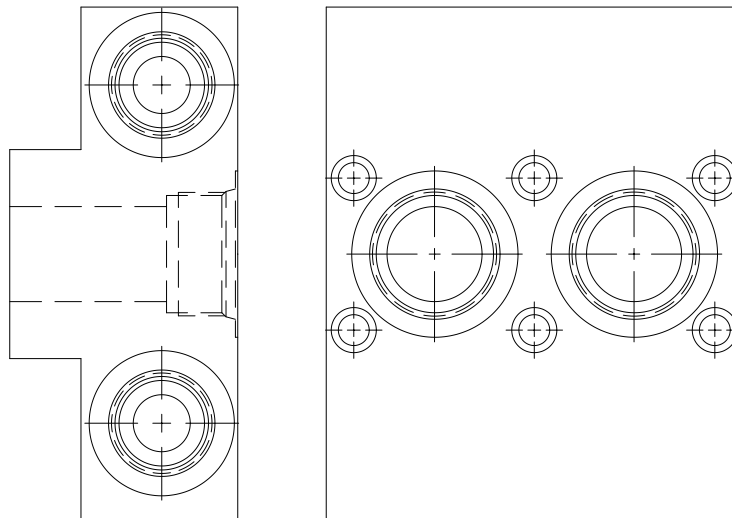


FLANGE

STAFFA FLANGES

STAFFA MOTOR	CONFIG.	PART No.	PORT	K ^{(SAE)(1)(2)}	K ^{(NPTF)(1)}
B10	FLANGE	F80-16	SAE	15/16-12	--
	FLANGE	F80-10	NPTF	--	1
	DUAL RELIEF	--	--	--	--
B80/100/125 C80/200	FLANGE	F64-16	SAE	15/16-12	--
	FLANGE	F64-10	NPTF	--	1
	DUAL RELIEF	AMHP-64F	SAE	15/16-12	--
B150/200	FLANGE	F55-16	SAE	15/16-12	--
	FLANGE	F55-10	NPTF	--	1
	DUAL RELIEF	AMHP-55F	SAE	15/16-12	--
B210/C270	FLANGE	F56-20	SAE	15/8-12	--
	FLANGE	F56-10	NPTF	--	1 1/4
	DUAL RELIEF	AMHP-56F	SAE	15/8-12	--
B400	FLANGE	F81-24	SAE	17/8-12	--
	FLANGE	F81-12	NPTF	--	1 1/2
	DUAL RELIEF	AMHP-81F	SAE	17/8-12	--

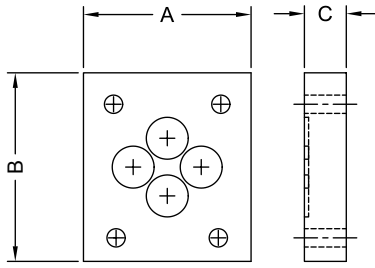
(1) THREAD SIZE
(2) STRAIGHT THREAD



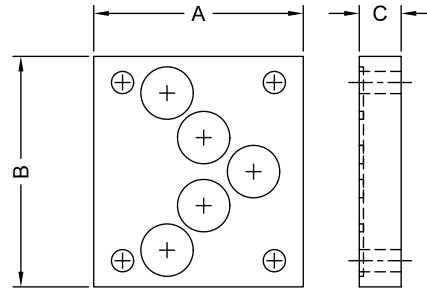
DUAL RELIEF

STAFFA FLANGES

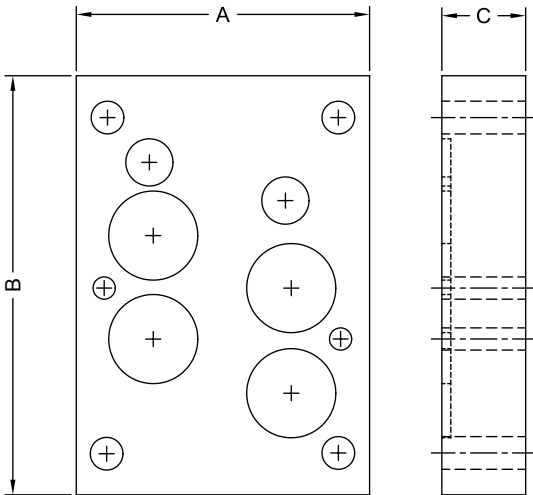
STAFFA FLANGES



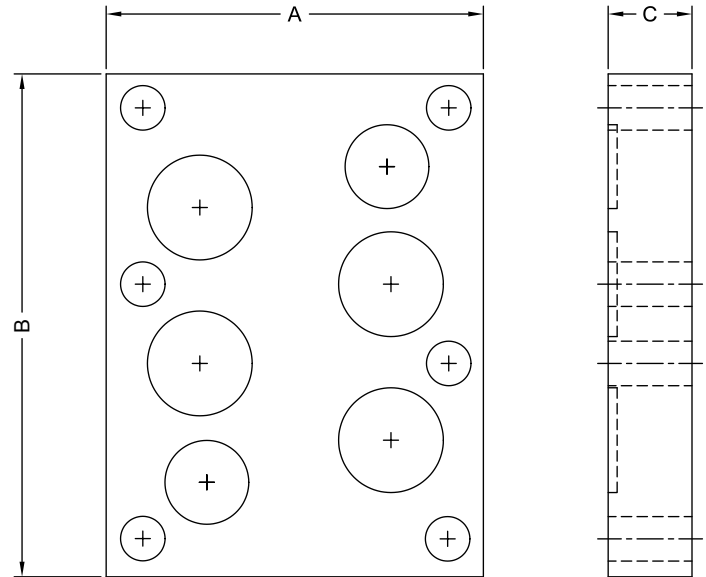
CD03*



CD05*



CD07*



CD08*

COVER PLATES

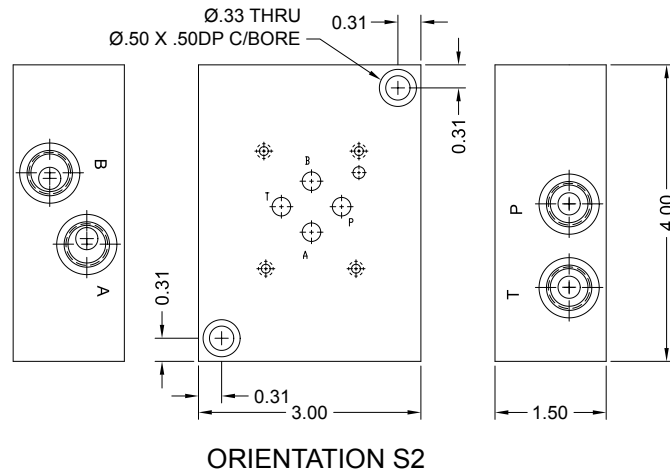
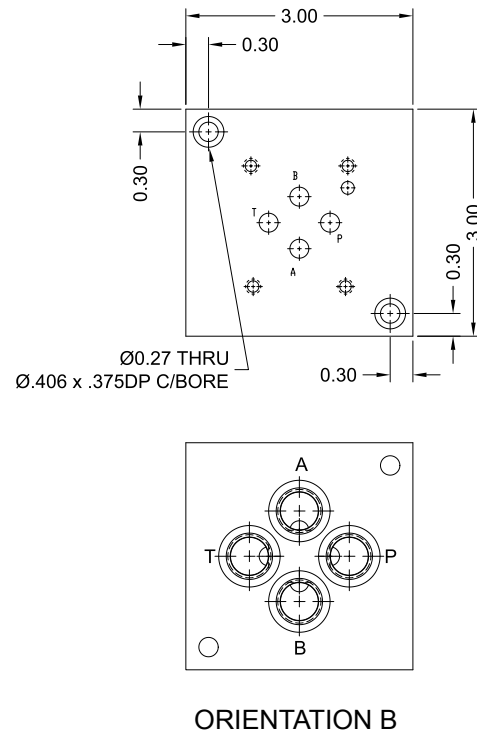
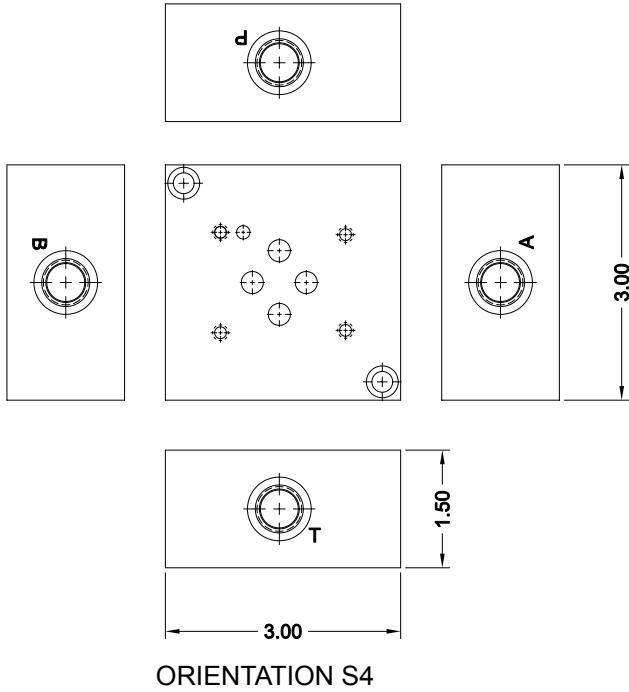
PATTERN	PART No.	A	B	C	MATL
D03	CD03A	2.00	2.35	.50	ALUM
D03	CD03S	2.00	2.35	.50	STEEL
D05	CD05A	2.50	2.75	.50	ALUM
D05	CD05S	2.50	2.75	.50	STEEL
D06	CD06A	3.25	4.25	1.00	ALUM
D06	CD06S	3.25	4.25	1.00	STEEL
D07	CD07A	3.50	5.00	1.00	ALUM
D07	CD07S	3.50	5.00	1.00	STEEL
D08	CD08A	4.50	6.00	1.00	ALUM
D08	CD08S	4.50	6.00	1.00	STEEL
D10	CD10A	7.88	9.00	1.00	ALUM
D10	CD10S	7.88	9.00	1.00	STEEL

ANSI/NFPA COVER PLATES

ANSI/NFPA COVER PLATES



APOLLO MACHINERY LTD.



SD03

ORIENTATION	CODE
SIDE PORTED, 4 SIDES	S4
SIDE PORTED, 2 SIDES	S2
BOTTOM PORTED	B
SIDE & BOTTOM*	X

MATERIAL	CODE
ALUMINUM	A
STEEL	S

PORTING	CODE
SAE 06	1
3/8-18 NPT	2
1/4-18 NPT	3
SAE 08	8

*PORTING CODE 3 ONLY

D03 SUBPLATES

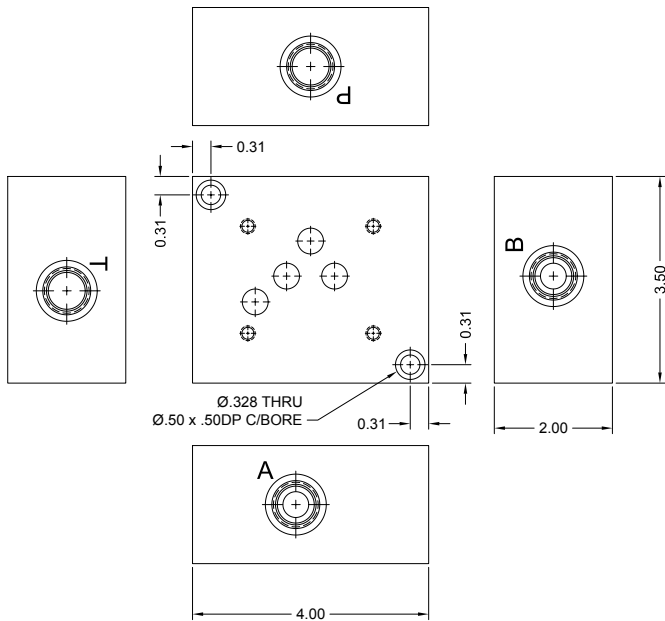
D03 SUBPLATES

120 - 7198 Vantage Way, Delta, BC, Canada, V4G 1K7

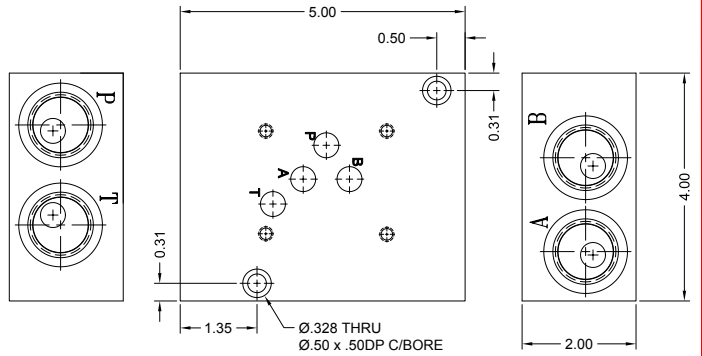
Ph: 604.940.0941 Fax: 604.676.2569 Email: info@hydraulic-manifold.com Web: www.hydraulic-manifold.com



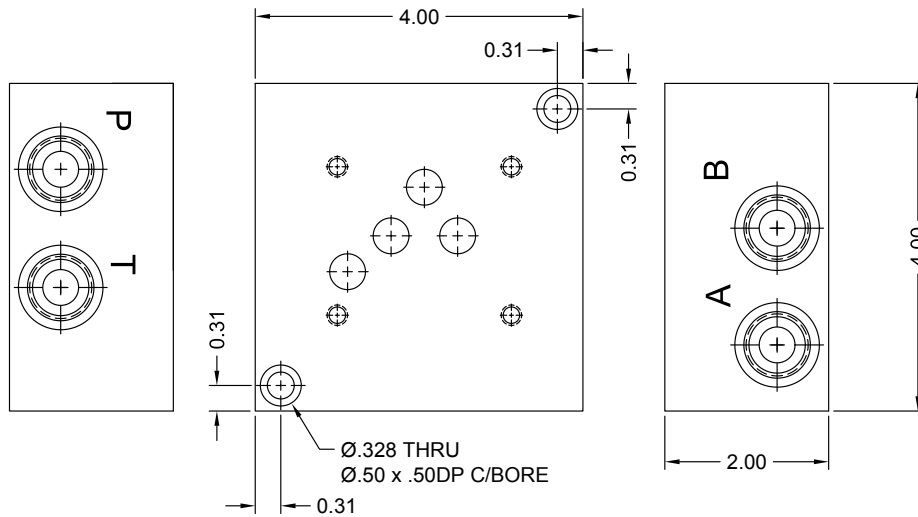
APOLLO MACHINERY LTD.



SD05S4**



SD05S2*2



SD05S2*1

SD05

ORIENTATION	CODE
SIDE PORTED, 4 SIDES	S4
SIDE PORTED, 2 SIDES	S2

MATERIAL	CODE
ALUMINUM	A
STEEL	S

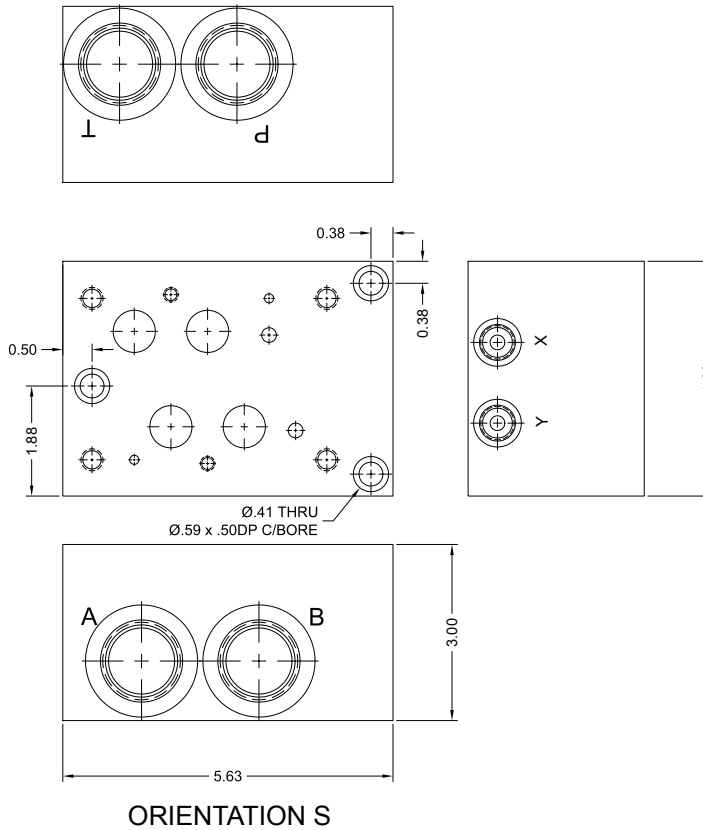
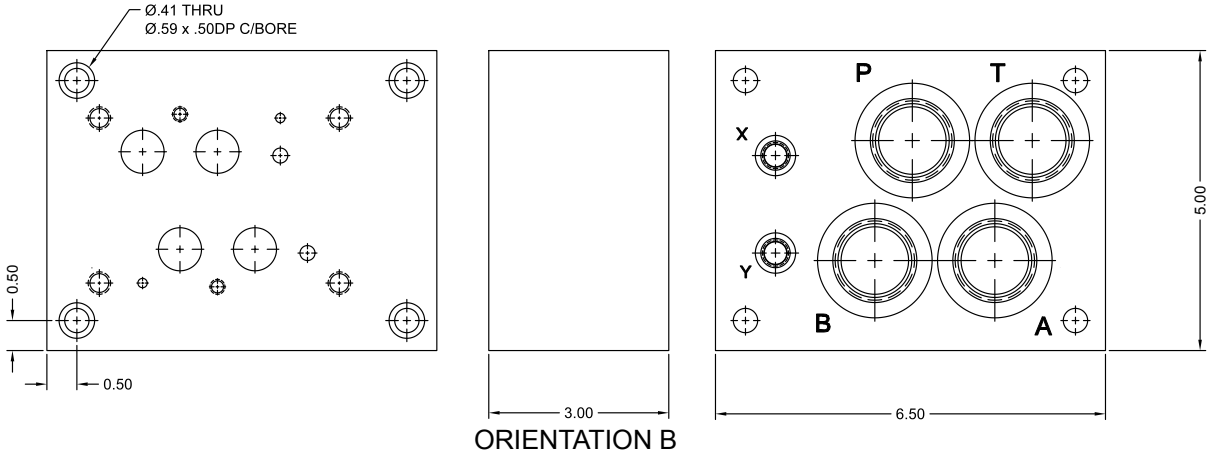
PORTING	CODE
SAE 08	1
SAE 12	2

D05 SUBPLATES

D05 SUBPLATES



APOLLO MACHINERY LTD.



SD07

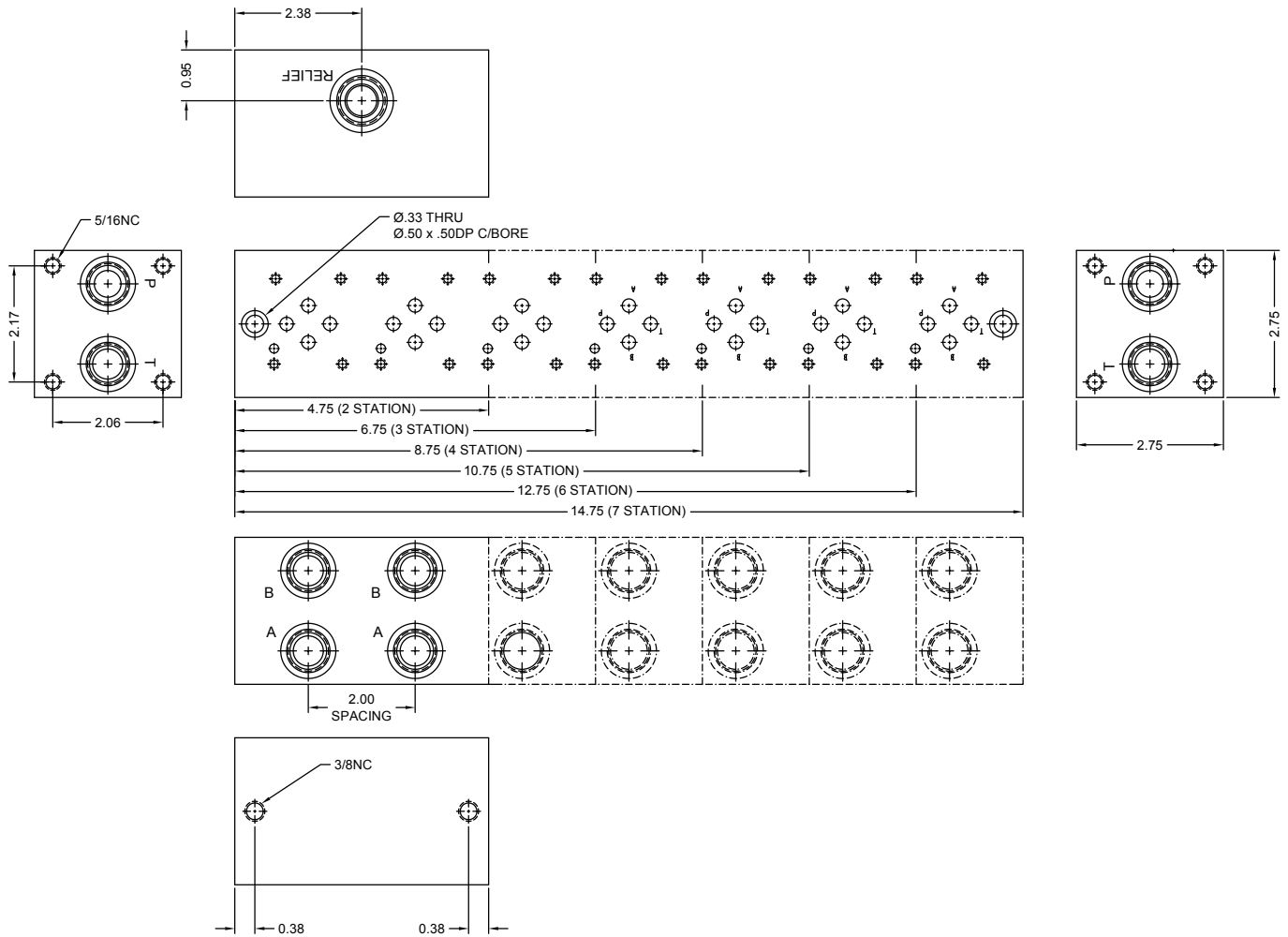
ORIENTATION CODE	
SIDE	S
BOTTOM	B

MATERIAL CODE	
ALUMINUM	A
STEEL	S

PORTING CODE RELIEF		
SAE 12	1	YES
SAE 12	2	NO
SAE 16	3	YES
SAE 16	4	NO

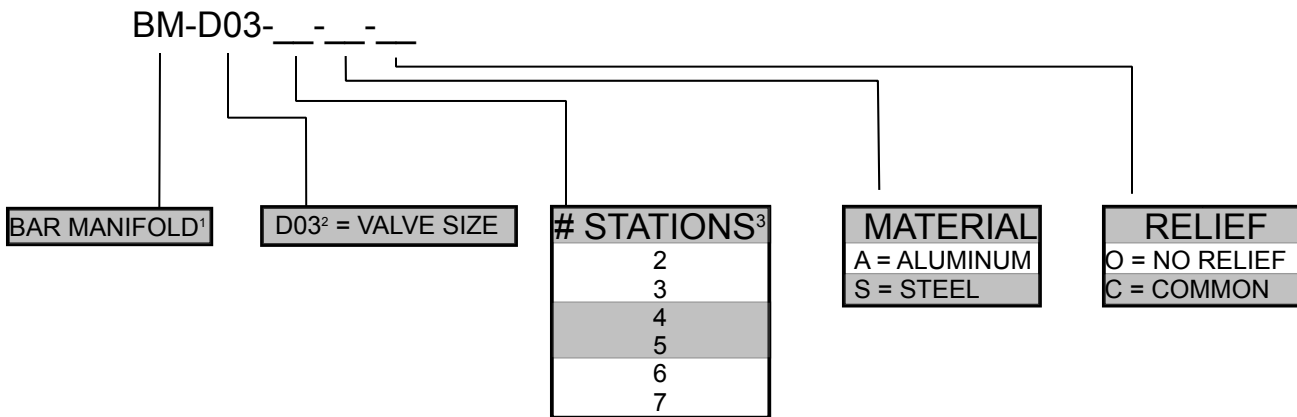
D07 SUBPLATES

D07 SUBPLATES

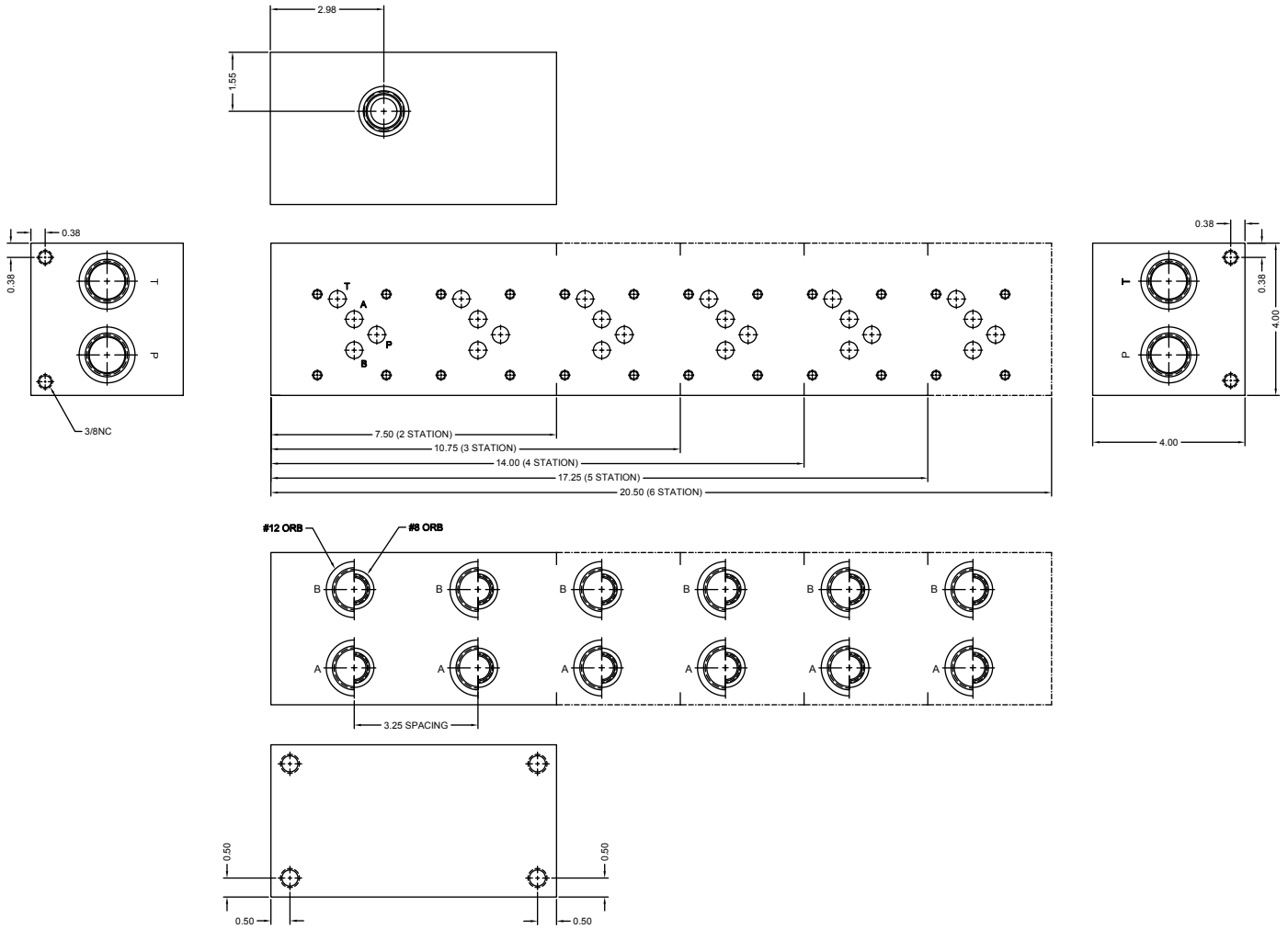


D03 PARALLEL BAR MANIFOLD

D03 PARALLEL BAR MANIFOLD



1) PREVIOUSLY AM1493-**
 2) MEETS NFPA T3.5.1M, ANSI/B93, ISO 4401
 3) ADDITIONAL STATIONS AVAILABLE



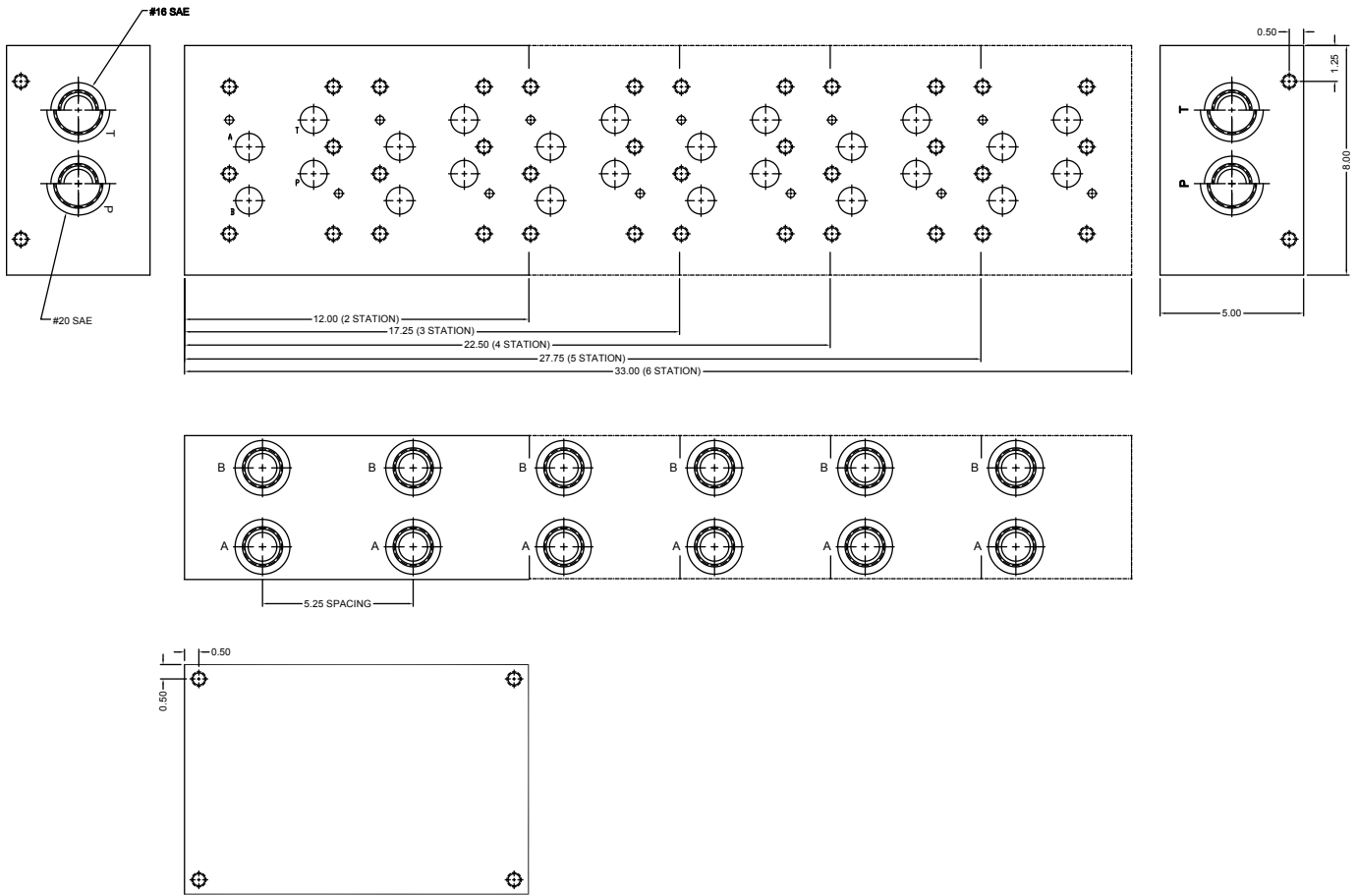
D05 PARALLEL BAR MANIFOLD

D05 PARALLEL BAR MANIFOLD

BM-D05- - - -

BAR MANIFOLD¹	D05² = VALVE SIZE	# STATIONS³	MATERIAL	RELIEF	PORTS
		2	A = ALUMINUM	O = NO RELIEF	08 = #8 SAE
		3	S = STEEL	C = COMMON	12 = #12 SAE
		4		S = SUN	
		5			
		6			
		7			

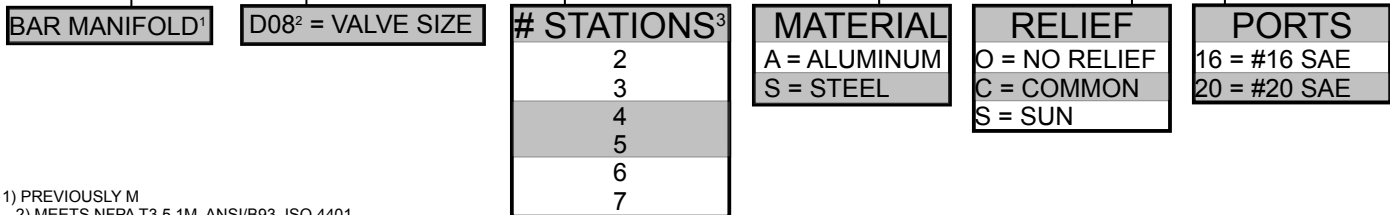
1) PREVIOUSLY M
 2) MEETS NFPA T3.5.1M, ANSI/B93, ISO 4401
 3) ADDITIONAL STATIONS AVAILABLE. CALL FOR DETAILS



D08 PARALLEL BAR MANIFOLD

D08 PARALLEL BAR MANIFOLD

BM-D08- - - -



1) PREVIOUSLY M
 2) MEETS NFPA T3.5.1M, ANSI/B93, ISO 4401
 3) ADDITIONAL STATIONS AVAILABLE. CALL FOR DETAILS



APOLLO MACHINERY LTD.

CUSTOM, PROTOTYPE & PRODUCTION MANIFOLDS

CUSTOM, PROTOTYPE & PRODUCTION MANIFOLDS

CUSTOM MANIFOLDS



Apollo Machinery will design and manufacture manifolds to your specifications and custom hydraulic circuit. It is recommended that valves, ports, materials and any other specific requirements be specified, however Apollo Machinery staff are experienced in hydraulic and mechanical design and can assist you with valve and component selection if required.

Unless otherwise requested, valve and port locations will be positioned for the most efficient manifold design to minimize construction holes and ports, and to reduce manifold size and cost.

A drawing will be submitted to you for approval prior to manufacture. Upon drawing approval, manufacturing will commence. Manifold designs remain the property of Apollo Machinery Ltd, and will not be disclosed or released to others without your prior approval.

Apollo Machinery Ltd. can also machine custom manifolds to your designs and drawings.

PROTOTYPE MANIFOLDS



Apollo Machinery Ltd. can provide design and prototyping services for your production manifolds. Prototyping differs from custom manifolds by the manufacturing method. In order to provide a true production prototype, prototype manifolds are normally machined using Apollo Machinery's CNC machining centres.

Apollo Machinery can design to your specifications and hydraulic circuit, or manufacture to your design and drawing.

Our experienced staff will work with you to provide the most efficient design, with the goal of reducing material and manufacturing costs.

PRODUCTION MANIFOLDS



Apollo Machinery Ltd. can provide machining services for your production manifolds. We have extensive experience with small to large production runs, with quantities from as few as 5 pcs to more than 2000.

Apollo Machinery Ltd. can provide value added services such as anodizing for aluminum manifolds, and electroless nickel and black oxide coatings for steel manifolds.

Apollo Machinery Ltd. can provide complete manifold assemblies, including valves, plugs and seals.

Apollo Machinery uses



DAEWOO

TOOL WALL

GiltsCAM



MATERIALS

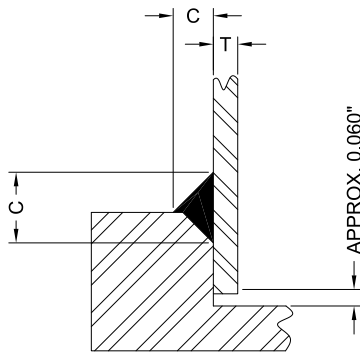
FLANGES:	AISI C1018 MILD STEEL
MANIFOLDS:	AISI C1018 MILD STEEL or G40.21 44W MILD STEEL PLATE or ASTM B221 6061-T6 ALUMINUM

PRESSURE RATING - MANIFOLDS

MATERIAL	MAXIMUM WORKING PRESSURE	
	PSI	BAR
ALUMINUM	3000	206
STEEL	5000	345

FLANGE WELDING SPECIFICATIONS*

T = NOMINAL WALL THICKNESS OF PIPE
C = 1.25T BUT NOT LESS THAN 0.16"



USE LOW HYDROGEN ELECTRODE
AWS E7018 SERIES OR EQUIV.

* per ANSI B31.1

PRESSURE RATING - CODE 61 FLANGES

NOMINAL SIZE	MAXIMUM WORKING PRESSURE*	
	PSI	BAR
1/2"	5000	345
3/4"	5000	345
1"	5000	345
1 1/4"	4000	275
1 1/2"	3000	205
2"	3000	205
2 1/2"	2500	170
3"	2000	135
3 1/2"	500	35
4"	500	35
5"	500	35

* per SAE J518/1

PRESSURE RATING - CODE 62 FLANGES

NOMINAL SIZE	MAXIMUM WORKING PRESSURE**	
	PSI	BAR
1/2"	6000	410
3/4"	6000	410
1"	6000	410
1 1/4"	6000	410
1 1/2"	6000	410
2"	6000	410
2 1/2"	NOT STANDARD	NOT STANDARD
3"	NOT STANDARD	NOT STANDARD

** per SAE J518/2

RETURNED GOODS

No returns will be accepted without a Return Goods Authorization (RGA) number. Returns may be subject to a restocking charge. Returns must be unused, undamaged and in original packaging. Returned goods must be sent freight prepaid by the original purchaser within 30 days of purchase. Custom manufactured parts are non-returnable and are subject to a cancellation fee for time and materials.

LIMITED WARRANTY

Apollo Machinery Ltd warranties flanges and manifolds for dimensional accuracy and workmanship only. No implied warranty is provided for the application, selection or suitability of products. The quality of the material(s) cannot be and is not guaranteed.

Liability under this limited warranty will extend to replacement or repair only, when returned freight prepaid to our plant within 90 days of purchase. Apollo Machinery Ltd. will not be liable for any other costs or consequential damages.

Catalogue dimensions are for reference only and are subject to engineering changes without notice.