

SAE Oval Flange Clamps



SAE Oval Flanges Clamp connection system
SAE J518-3 two-screw oval flange connection code 61

SAE 2-screw flange clamps connection

SAE code 61 2-screw bolt flange connections is used as hydraulic flange clamps, only low working pressure rating as like the SAE J518-1 (code 61) connections, but it is not SAE J518-1 4-screw flange connections.

Code 61 flange clamps used in the same standards of SAE J518-1 port dimensions, flange head dimensions, also compatible with ISO 6162-1 port connections and flange heads.

Material of SAE 2-screw flange clamps connections:

Flange clamps material is carbon steel C45, stainless steel 304, 316 or 316L.

Hexagon head screws or socket head screws of property class 10.9 (minimum)

Washers conform to ISO 7089 Type A, Class 300HV

O-ring Seals is NBR(Nitrile) with a hardness of 90 ± 5 IRHD

Corrosion protection

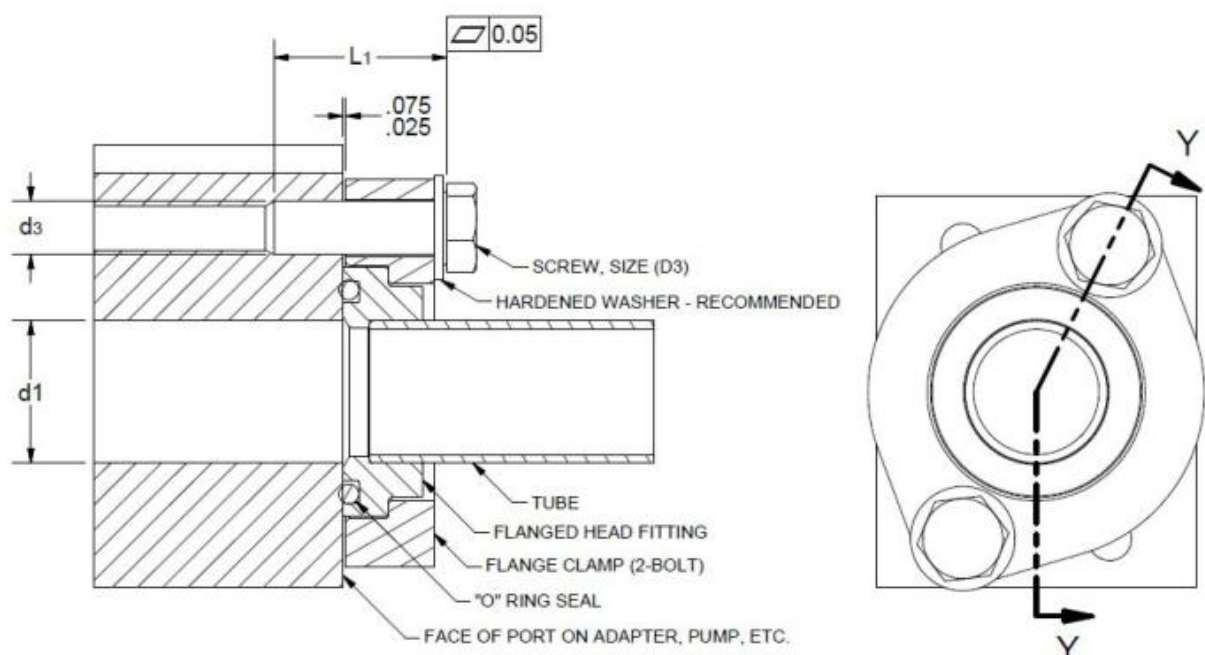
All carbon steel flanges shall be plated or coated with a suitable material that passes a 72-h salt spray test in accordance with ASTM B117 (ISO 9227).

Pressure/temperature requirement

Pressure test: Burst test and cyclic endurance testing shall be conducted in accordance with ISO 19879.

Temperatures: Carbon steel flange clamp connectors used at fluid temperatures between -40°C and $+120^{\circ}\text{C}$; Stainless steel flange clamps used at temperatures between -60°C and $+50^{\circ}\text{C}$.

Assembly drawing – flange clamp, flange head, screws, washer, and port



SAE J518 Code 61 2 screw flange clamp, Oval flange type, Customized flange clamps

Dimensions, torques, and pressures for code 61 flange clamp assemblies
type 1 with metric screw class 10.9.

		Dimensions in mm unless noted								
Nominal Size		O-ring Size	Flat Washer (optional)	d ₁ ref	Clamp Load ^h N	Type 1 (Metric Screw) Class 10.9			Maximum Working Pressure ^b MPa	Minimum Burst Pressure ^b MPa
Metric Size	Dash Size					d ₃ Screw Thread ^c	L ₁ Screw Length ^d	Screw Torque ^e Nm +10% / -0%		
13	-8	210	M8	13.0	23500	M8	25	32	2.0	8.0
19	-12	214	M10	19.2	41200	M10	30	70	2.0	8.0
25	-16	219	M10	25.6	41200	M10	30	70	2.0	8.0
32	-20	222	M10	32.0	41200	M10	30	70	2.0	8.0
38	-24	225	M12	38.2	63700	M12	35	130	2.0	8.0
51	-32	228	M12	51.0	63700	M12	35	130	2.0	8.0
64	-40	232	M12	63.5	63700	M12	40	130	2.0	8.0
76	-48	237	M16	76.2	108000	M16	50	295	2.0	8.0
89	-56	241	M16	89.0	108000	M16	50	295	2.0	8.0
102	-64	245	M16	101.6	108000	M16	50	295	2.0	8.0
127	-80	253	M16	127.0	108000	M16	55	295	2.0	8.0

type 2 with inch screw grade 8.

		Dimensions in mm unless noted								
Nominal Size		O-ring Size	Flat Washer (optional)	d ₁ ref	Clamp Load ^h N	Type 2 (Inch Screw) ^a Grade 8			Maximum Working Pressure ^b MPa	Minimum Burst Pressure ^b MPa
Metric Size	Dash Size					d ₃ Screw Thread ^f	L ₁ Screw Length ^d	Screw Torque ^e Nm +10% / -0%		
13	-8	210	M8	13.0	23500	5/16-18	32	32	2.0	8.0
19	-12	214	M10	19.2	41200	3/8-16	32	60	2.0	8.0
25	-16	219	M10	25.6	41200	3/8-16	32	60	2.0	8.0
32	-20	222	7/16 ^g	32.0	63700	7/16-14	38	92	2.0	8.0
38	-24	225	M12	38.2	63700	1/2-13	38	150	2.0	8.0
51	-32	228	M12	51.0	63700	1/2-13	38	150	2.0	8.0
64	-40	232	M12	63.5	63700	1/2-13	44	150	2.0	8.0
76	-48	237	M16	76.2	108000	5/8-11	44	295	2.0	8.0
89	-56	241	M16	89.0	108000	5/8-11	51	295	2.0	8.0
102	-64	245	M16	101.6	108000	5/8-11	51	295	2.0	8.0
127	-80	253	M16	127.0	108000	5/8-11	57	295	2.0	8.0

Cross table Flange Dash size to Normal flange size to DN size

SAE J518 code 61/62 Flange dash size Nominal Flange Size In Nominal Size DN mm

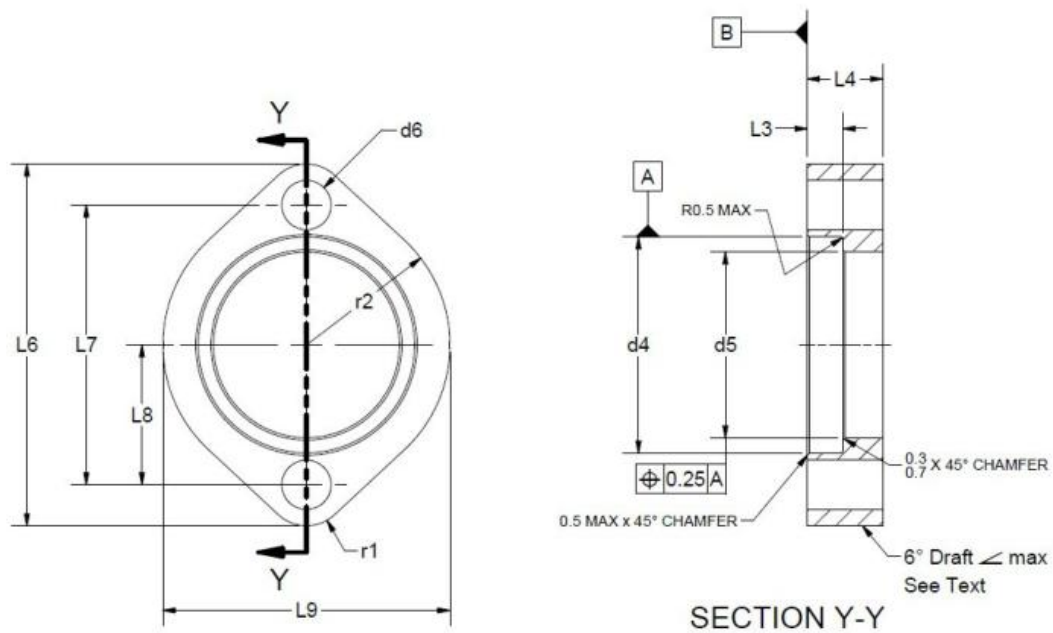
SAE J518 code 61/62 Flange dash size	Nominal Flange Size In	Nominal Size DN mm
-8	1/2	13
-12	3/4	19
-16	1	25
-20	1-1/4	32
-24	1-1/2	38
-32	2	51
-40	2-1/2	64
-48	3	76
-56	3-1/2	89
-64	4	102
-80	5	127

SAE J518 Code 61 2 screw flange clamp, Oval flange type, Customized flange clamps

Dimensions of code 61 2 bolt flange clamp

Part no. Explanation: FCO-xx(Dash number)

A code 61 flange clamp for use with metric screws made of carbon steel size DN 32 (-20)

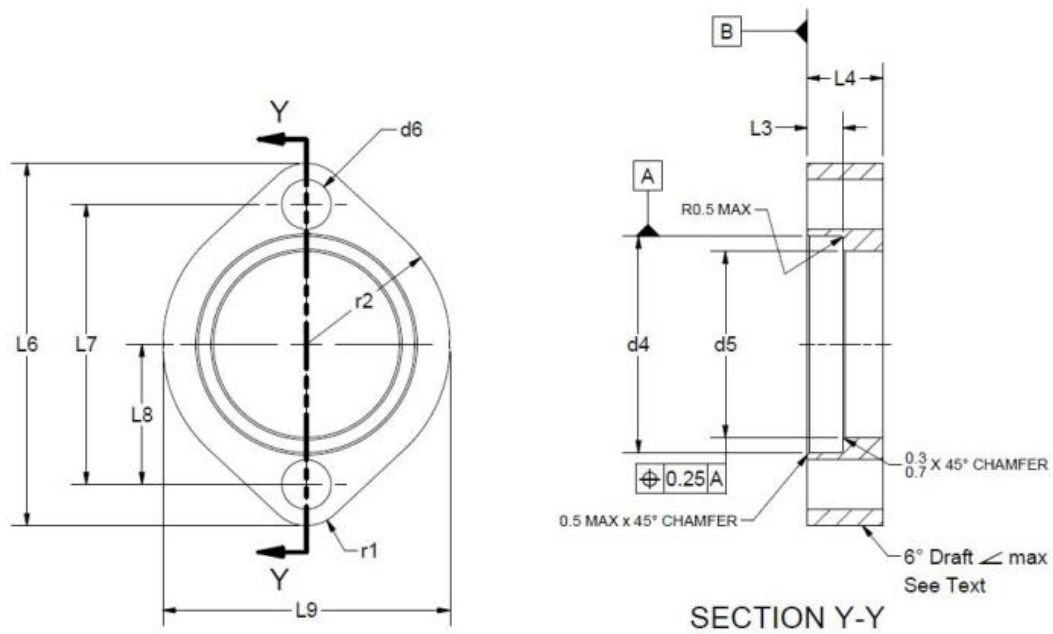


Part No.	d4	d5	d6	L3	L4	L6	L7	L8	L9
FCO-12	30.95	24.25	8.9	6.2	12.7	57.9	41.93	20.97	46.0
FCO-16	38.90	32.15	10.6	6.2	14.2	69.6	52.52	26.26	52.3
FCO-20	45.25	38.50	10.6	7.5	15.8	75.5	58.58	29.29	58.7
FCO-24	51.60	43.70	10.62	7.5	14.2	87.0	66.01	33.01	73.2
FCO-32	61.10	50.80	13.3	7.5	15.8	102.5	78.49	39.25	82.6
FCO-40	72.25	62.75	13.3	9.0	15.8	112.8	88.84	44.42	96.8
FCO-48	84.95	74.95	13.3	9.0	15.8	127.4	102.39	51.20	108.7
FCO-56	102.40	90.95	16.7	9.0	19.1	151.1	123.10	61.55	131.1

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Oval Flange Connection for air compressor

FCA-xx(L7 size) It is difference L7 size from SAE J518-2 series.



Part No.	d4	d5	d6	L3	L4	L6	L7	L8	L9	r1	r2
FCA-44	21	19	11	7.5	7.8	61	44	22	34	9.85	17
FCA-70	30	28	13.5	7.5	12	96	70	35	56	13	28
FCA-751A	45.25	38.8	11	7.5	15	100	75	37.5	72	13	36
FCA-75B	51.6	44.1	13.5	7.6	18	100	75	37.5	72	13	36
FCA-85	61.1	51.2	13.1	7.5	18	111	85	42.5	80	13	40
FCA-90	61.1	51.2	13.1	7.5	18	120	90	45	80	15	40