

• The bolt hole positions are roughly arranged for the keyway.

**Dimensions**

Unit : mm

Part Number	A	Prepared hole diameter	L	C		B	F		n (item)	a	M	t	Bolt Draft	Coupling bolt Part Number
				C1	C2		F1	F2						
FCL-90	90	—	28	35.5	35.5	60	14	14	4	8	19	3	50	F1
FCL-100	100	—	35.5	42.5	42.5	67	16	16	4	10	23	3	56	F2
FCL-112	112	—	40	50	50	75	16	16	4	10	23	3	56	F2
FCL-125	125	—	45	56	50	85	18	18	4	14	32	3	64	F3
FCL-140	140	—	50	71	63	100	18	18	6	14	32	3	64	F3
FCL-160	160	—	56	80	80	115	18	18	8	14	32	3	64	F3
FCL-180	180	—	63	90	90	132	18	18	8	14	32	3	64	F3
FCL-200	200	18	71	100	100	145	22.4	22.4	8	20	41	4	85	F4
FCL-224	224	18	80	112	112	170	22.4	22.4	8	20	41	4	85	F4
FCL-250	250	20	90	125	125	180	28	28	8	25	51	4	100	F5
FCL-280	280	30	100	140	140	200	28	40	8	28	57	4	116	F6
FCL-315	315	30	112	160	160	236	28	40	10	28	57	4	116	F6
FCL-355	355	30	125	180	180	260	35.5	56	8	35.5	72	5	150	F7
FCL-400	400	48	125	200	200	300	35.5	56	10	35.5	72	5	150	F7
FCL-450	450	58	140	224	224	355	35.5	56	12	35.5	72	5	150	F7
FCL-560	560	78	160	250	250	450	35.5	56	14	35.5	72	5	150	F7
FCL-630	630	90	180	280	280	530	35.5	56	18	35.5	72	5	150	F7
FCL-710B	710	110	224	315	315	600	56	56	24	35.5	72	5	174	F7L
FCL-711B	710	120	250	355	355	580	80	80	20	45	87	7	240	F8
FCL-800B	800	130	265	375	375	670	80	80	22	45	87	7	240	F8
FCLS-112	112	13	40	50	50	75	16	16	4	10	23	3	56	F2
FCLS-125	125	13	45	56	50	85	18	18	4	14	32	3	64	F3
FCLS-140	140	13	50	71	63	100	18	18	6	14	32	3	64	F3
FCLS-160	160	14	56	80	80	115	18	18	8	14	32	3	64	F3
FCLS-180	180	14	63	90	90	132	18	18	8	14	32	3	64	F3
FCLS-200	200	18	71	100	100	145	22.4	22.4	8	20	41	4	85	F4
FCLS-224	224	18	80	112	112	170	22.4	22.4	8	20	41	4	85	F4
FCLS-250	250	20	90	125	125	180	28	28	8	25	51	4	100	F5
FCLS-280	280	30	100	140	140	200	28	40	8	28	57	4	116	F6
FCLS-315	315	32	112	160	160	236	28	40	10	28	57	4	116	F6
FCLS-355	355	32	125	180	180	260	35.5	56	8	35.5	72	5	150	F7
FCLS-400	400	50	125	200	200	300	35.5	56	10	35.5	72	5	150	F7
FCLS-450	450	60	140	224	224	355	35.5	56	12	35.5	72	5	150	F7
FCLS-560	560	80	160	250	250	450	35.5	56	14	35.5	72	5	150	F7
FCLS-630	630	90	180	280	280	530	35.5	56	18	35.5	72	5	150	F7

**Performance**

Part Number	Max. Bore Diameter (mm)		Maximum Torque (N·m)	Max. Rotational Frequency (min <sup>-1</sup> )	Moment of Inertia *1 (kg·m <sup>2</sup> )	Max. Eccentricity (mm)	Max. Angular Alignment (°)	Max. End-Play (mm)	Mass *2 (kg)
	D1	D2							
FCL-90	20	20	15	4000	1.4×10 <sup>-3</sup>	0.1	1 / 6	±2.1	1.55
FCL-100	25	25	29	4000	2.4×10 <sup>-3</sup>	0.1	1 / 6	±2.1	2.32
FCL-112	28	28	33	4000	3.9×10 <sup>-3</sup>	0.1	1 / 6	±2.1	3.10
FCL-125	32	28	73	4000	6.6×10 <sup>-3</sup>	0.1	1 / 6	±2.1	4.18
FCL-140	38	35	130	4000	1.1×10 <sup>-2</sup>	0.2	1 / 6	±2.1	5.80
FCL-160	45	45	200	4000	1.9×10 <sup>-2</sup>	0.2	1 / 6	±2.1	8.22
FCL-180	50	50	230	3500	3.1×10 <sup>-2</sup>	0.2	1 / 6	±2.1	11.1
FCL-200	56	56	440	3200	6.2×10 <sup>-2</sup>	0.2	1 / 6	±2.8	16.6
FCL-224	63	63	510	2850	9.9×10 <sup>-2</sup>	0.2	1 / 6	±2.8	22.0
FCL-250	71	71	850	2550	1.9×10 <sup>-1</sup>	0.2	1 / 6	±2.8	32.2
FCL-280	80	80	1500	2300	3.3×10 <sup>-1</sup>	0.3	1 / 6	±2.8	45.0
FCL-315	90	90	2200	2050	5.4×10 <sup>-1</sup>	0.3	1 / 6	±2.8	61.4
FCL-355	100	100	3500	1800	1.1	0.3	1 / 6	±3.5	94.7
FCL-400	110	110	5000	1600	1.8	0.3	1 / 6	±3.5	118
FCL-450	125	125	7100	1400	3	0.3	1 / 6	±3.5	157
FCL-560	140	140	10000	1150	7	0.3	1 / 6	±3.5	238
FCL-630	160	160	16000	1000	11	0.3	1 / 6	±3.5	316
FCL-710B	180	180	25000	900	22	0.3	1 / 6	±3.5	492
FCL-711B	200	200	34000	900	29	0.3	1 / 6	±4.9	683
FCL-800B	210	210	45000	800	52	0.3	1 / 6	±4.9	855
FCLS-112	30	30	33	6000	4.0×10 <sup>-3</sup>	0.1	1 / 6	±2.1	3.13
FCLS-125	35	30	73	6000	6.8×10 <sup>-3</sup>	0.1	1 / 6	±2.1	4.23
FCLS-140	42	38	130	6000	1.1×10 <sup>-2</sup>	0.2	1 / 6	±2.1	5.90
FCLS-160	48	48	200	6000	2.0×10 <sup>-2</sup>	0.2	1 / 6	±2.1	8.38
FCLS-180	55	55	230	5250	3.2×10 <sup>-2</sup>	0.2	1 / 6	±2.1	11.4
FCLS-200	60	60	440	4800	6.3×10 <sup>-2</sup>	0.2	1 / 6	±2.8	17.1
FCLS-224	70	70	510	4300	1.0×10 <sup>-1</sup>	0.2	1 / 6	±2.8	22.8
FCLS-250	75	75	850	3800	1.9×10 <sup>-1</sup>	0.2	1 / 6	±2.8	33.3
FCLS-280	85	85	1500	3450	3.4×10 <sup>-1</sup>	0.3	1 / 6	±2.8	46.6
FCLS-315	100	100	2200	3050	5.6×10 <sup>-1</sup>	0.3	1 / 6	±2.8	63.3
FCLS-355	110	110	3500	2700	1.2	0.3	1 / 6	±3.5	97.8
FCLS-400	125	125	5000	2400	1.9	0.3	1 / 6	±3.5	122
FCLS-450	140	140	7100	2150	3	0.3	1 / 6	±3.5	162
FCLS-560	150	150	10000	1700	7.2	0.3	1 / 6	±3.5	246
FCLS-630	170	170	16000	1500	12	0.3	1 / 6	±3.5	328

\*1 : These are values with max. bore diameter.

\*2 : These are pilot hole values.

- Full bore alteration service capability. We modify for individual shaft requirement that will allow you for immediate use.



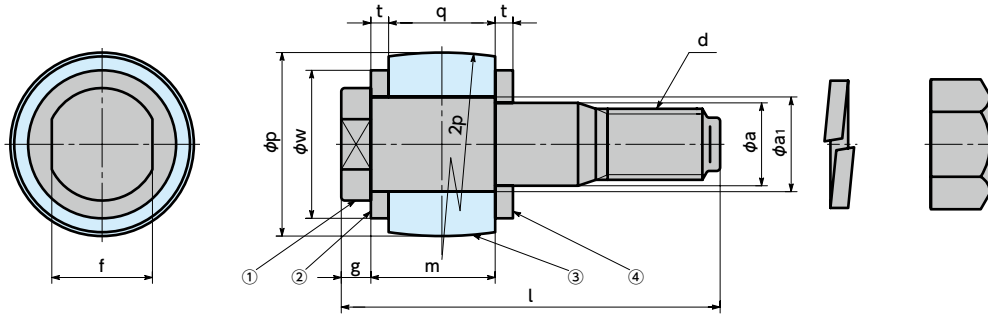
Additional Setscrew at Shaft Hole / Keyway → P.xxxx

Available / Add'l charge

- Part number specification

**FCL -200**

Product Code    Outside Diameter



## Bolt Set Dimensions

Unit : mm

Bolt set Part Number	Bush Part Number	Nominal $a \times l$	1) Bolt							2), 4) Washer		3) Bush		Tightening torque (N·m)
			d	$a_1$	a	f	g	m	l	w	t	p	q	
F1-SET	F1-G	8×50	M8	9	8	10	4	17	50	14	3	18	14	11
F2-SET	F2-G	10×56	M10	12	10	13	4	19	56	18	3	22	16	22
F3-SET	F3-G	14×64	M12	16	14	17	5	21	64	25	3	31	18	39
F4-SET	F4-G	20×85	M20	22.4	20	24	5	26.4	85	32	4	40	22.4	190
F5-SET	F5-G	25×100	M24	28	25	30	6	32	100	40	4	50	28	330
F6-SET	F6-G	28×116	M24	31.5	28	32	6	44	116	45	4	56	40	330
F7-SET	F7-G	35.5×150	M30	40	35.5	41	8	61	150	56	5	71	56	650
F7L-SET	F7-G	35.5×174	M30	40	35.5	41	8	61	174	56	5	71	56	650
F8-SET	F8-G	45×240	M42	50	45	50	10	87	240	71	7	85	80	1800

## Reference Material

- Surface pressure of the bushing and the bending stress of the bolt

Joint Outside Diameter A (mm)	Rated Torque (N·m)	Pitch Circle Diameter B (mm)	Number of Bolts n (pc)	Load per Piece*1 (N)	Area in Bushing $q \times a_1$ (mm <sup>2</sup> )	Inner Periphery Pressure $P_1$ (MPa)	Bushing Width q (mm)	Clearance t (mm)	Arm $t+q/2$ (mm)	Bending Moment (N·m)	Bolt Diameter a (mm)	Section Modulus $\pi a^3 / 32$ (mm <sup>3</sup> )	Bending Stress $\sigma$ (MPa)
90	4.9	60	4	82	14×9	0.65	14	3	10	0.82	8	50.3	16.2
100	9.8	67	4	146	16×12	0.76	16	3	11	1.61	10	98.2	16.4
112	15.7	75	4	209	16×12	1.09	16	3	11	2.30	10	98.2	23.4
125	24.5	85	4	288	18×16	1.00	18	3	12	3.46	14	269.4	12.8
140	49	100	6	327	18×16	1.13	18	3	12	3.92	14	269.4	14.6
160	110	115	8	478	18×16	1.66	18	3	12	5.74	14	269.4	21.3
180	157	132	8	595	18×16	2.06	18	3	12	7.14	14	269.4	26.5
200	245	145	8	845	22.4×22.4	1.68	22.4	4	15.2	12.8	20	785.4	16.4
224	392	170	8	1150	22.4×22.4	2.30	22.4	4	15.2	17.5	20	785.4	22.3
250	618	180	8	1720	28×28	2.19	28	4	18	30.9	25	1535	20.1
280	980	200	8	2450	40×32	1.94	40	4	24	58.8	28	2155	27.3
315	1570	236	10	2660	40×32	2.11	40	4	24	63.9	28	2155	29.6
355	2450	260	8	4710	56×40	2.10	56	5	33	155	35.5	4390	35.4
400	3920	300	10	5230	56×40	2.33	56	5	33	172	35.5	4390	39.3
450	6180	355	12	5800	56×40	2.59	56	5	33	191	35.5	4390	43.6
560	9800	450	14	6220	56×40	2.78	56	5	33	205	35.5	4390	46.8
630	15700	530	18	6580	56×40	2.94	56	5	33	217	35.5	4390	49.5
710B	24500	600	24	6810	56×40	3.04	56	5	33	225	35.5	4390	51.3
711B	33300	580	20	11500	80×50	2.88	80	7	47	541	45	8950	60.4
800B	45000	670	22	12200	80×50	3.05	80	7	47	573	45	8950	64.0

\*1: The effective number of bolts is calculated as half of the actual number of bolts "n".