



Bushings and Hubs



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SKF Bushings

SKF bushing range nomenclature has a defined prefix of PHF. The bushing range is covered by limited standards, but main SKF range is interchangeable with other brands.

Bushings

The bushing range designation from SKF has the following is an example to indicate set up.

SKF Designation prefix

PHF TB2517 X55MM

Bushing size and type

Example:

TB2517 – taper bushing size 2517

M – QD series M

FX10 – FX friction bush series 10

Supplementary

Bore sizes and dimensions

QD & taper bushing

X55MM – 55mm bore diameter standard keyway

-2⁻³/₄ – inch shaft 2⁻³/₄ with standard keyway

50X80 – FX bushing bore and OD dimensions

Note

See SKF product training for full supplementary notations

Bushings and Hubs (PHF Product Group)

SKF Taper bushings, QD bushings, Weld-on and Bolt-on hubs are manufactured according to established market standards and are fully interchangeable with other brands.

Metric bore keyway machined according to BS 4235: Part 1 and DIN 6885.

Imperial bore keyway machined according to BS 46: Part 1.

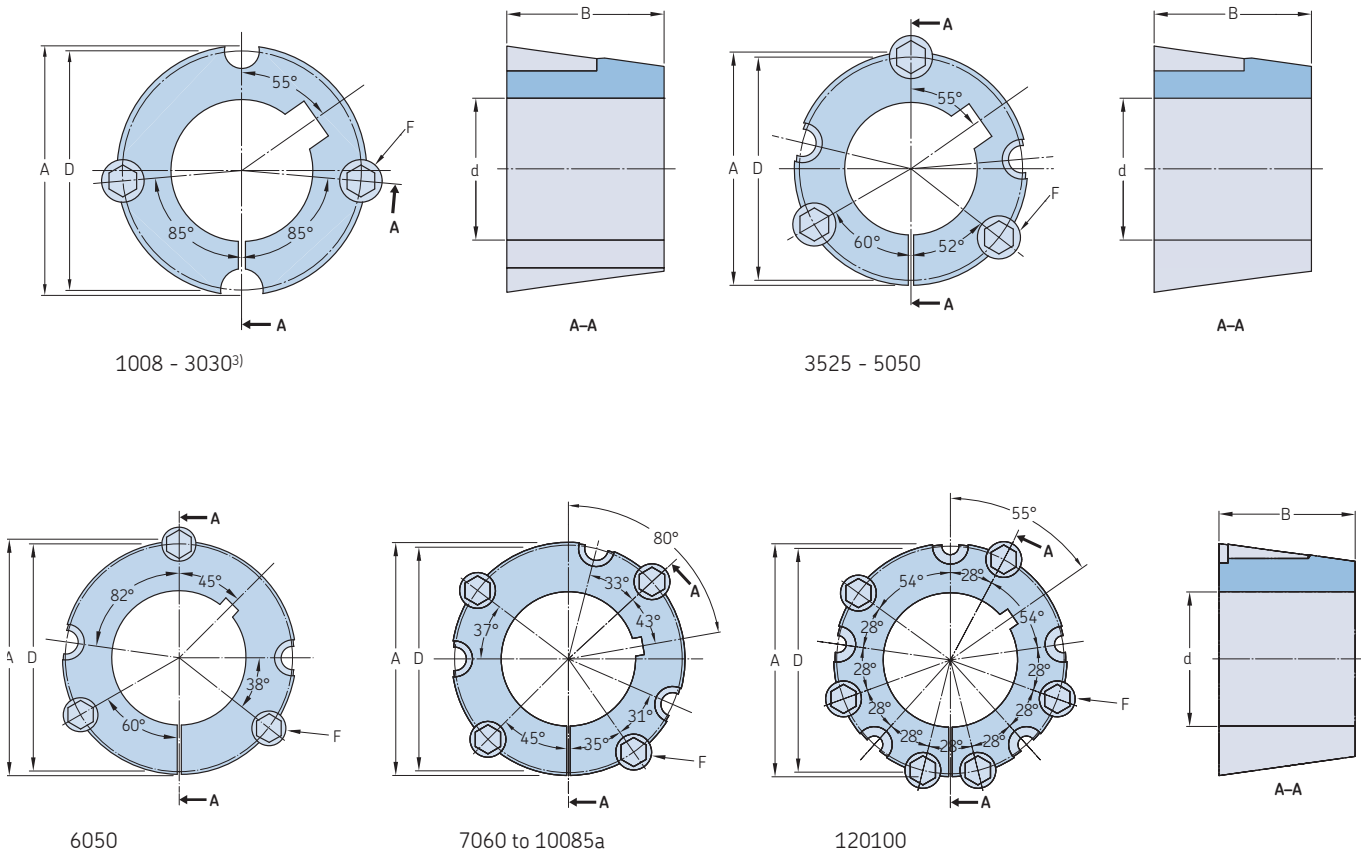
Phosphate coating and blackening are used to improved corrosion resistance, excluding FX bushings.

Main materials used in bushings and hubs

Taper bushing	Grey cast iron HT250
QD bushing	Grey cast iron HT250
Weld on and Bolt on hubs	Grey cast iron HT250
FX Bushings	C45 Steel

Taper bushings

Bushing number 1008 – 120100



Bushing number	Bore		Dimensions							Mass	Designation
	d		A	B	D	E	F ²⁾				
	Min.	Max.							kg		
	mm	in.	mm	in.	mm						
1008	9	3/8	25	1	35,2	22,2	33,7	–	6,350 x 12,700	0,05	PHF TB1008X...
1108	9	3/8	28	1 1/8	38,4	22,2	36,9	–	6,350 x 12,700	0,08	PHF TB1108X...
1210	11	1/2	32	1 1/4	47,6	25,4	44,5	–	9,525 x 15,875	0,19	PHF TB1210X...
1215	11	1/2	32	1 1/4	47,6	38,1	44,5	–	9,525 x 15,875	0,27	PHF TB1215X...
1610	14	1/2	42	1 5/8	57,2	25,4	54,0	–	9,525 x 15,875	0,31	PHF TB1610X...
1615	14	1/2	42	1 5/8	57,2	38,1	54,0	–	9,525 x 15,875	0,46	PHF TB1615X...
2012	14	1/2	50	2	69,9	31,8	66,7	–	11,113 x 22,225	0,65	PHF TB2012X...
2017	14	1/2	50	2	69,9	44,5	66,7	–	11,113 x 22,225	0,91	PHF TB2017X...
2517 ¹⁾	16	1/2	60	2 1/2	85,7	44,5	82,6	–	12,700 x 25,400	1,47	PHF TB2517X...
2525	16	1/2	60	2 1/2	85,7	63,5	82,6	–	12,700 x 25,400	4,30	PHF TB2525X...
3020	25	1	75	3	108,0	50,8	101,6	–	15,875 x 31,750	2,25	PHF TB3020X...
3030	35	1	75	3	108,0	76,2	101,6	–	15,875 x 31,750	3,25	PHF TB3030X...
3525 ¹⁾	35	1 1/4	100 ³⁾	4	127,0	63,5	123,0	–	12,700 x 38,100	4,23	PHF TB3525X...
3535 ¹⁾	35	1 1/4	90	3 1/2	127,0	89,0	123,0	–	12,700 x 38,100	5,78	PHF TB3535X...
4030	40	1 3/4	115 ³⁾	4 1/4	146,0	76,2	141,0	–	15,875 x 44,450	7,00	PHF TB4030X...
4040	40	1 3/4	100	4	146,0	102,0	141,0	–	15,875 x 44,450	9,20	PHF TB4040X...
4535	55	2	125	5	161,0	89,0	156,0	–	19,050 x 50,800	9,10	PHF TB4535X...
4545	55	2	115 ³⁾	4 1/2	161,0	114,0	156,0	–	19,050 x 50,800	11,80	PHF TB4545X...
5040	70	2 5/8	140	5 1/2	178,0	101,6	171,0	–	22,255 x 57,150	12,26	PHF TB5040X...
5050	70	2 5/8	125	5	178,0	127,0	171,0	–	22,255 x 57,150	15,18	PHF TB5050X...
6050	95	3 7/8	150	6	235,0	127,0	228,6	171,5	31,800 x 88,900	25,00	PHF TB6050X...
7060	110	4 5/8	170	7	260,4	152,4	254,0	196,9	31,800 x 88,900	34,00	PHF TB7060X...
8065	130	5 1/16	190	8	285,8	165,1	279,4	222,3	31,800 x 88,900	45,00	PHF TB8065X...
10085	170	6 9/16	260	10	374,7	215,9	368,3	298,5	38,100 x 114,300	104,00	PHF TB10085X...
120100	200	7 9/16	290	12	438,2	254,0	431,8	362,0	38,100 x 114,300	163,00	PHF TB120100X...

Note: Bushings cannot be bored out larger than listed.
 Bushings are supplied with screws: 1008 - 3030 (2 screws); 3525 - 6050 (3 screws); 7060 - 10085 (4 screws); and 120100 (6 screws).
¹⁾ Bushings are also available with coarse thread (UNC) according to ASME/ANSI standard. To complete designation, add U before bushing number and bore size at the end of designation, e.g. PHF TBU3525X70MM.
²⁾ Screw size x length.
 A is the diameter at the face of the bush and D is the bolt pitch diameter.
 To complete designation, add bore size. For example: PHF TB1215X16MM designates a 1215 taper bushing with a 16 mm bore.
³⁾ Indicates shallow key required (e.g. DIN 6885/3).
 Sizes 1008 - 3030 may be supplied in either 3 hole or 4 hole. There is no difference in their respective performance characteristics.

Metric bores and keyway

Bore diameter	Keyway Width	Depth	Shallow keyway depth	Bore sizes available															
				1008	1108	1210	1610	1615	2012	2517	3020	3030	3525	3535	4030	4040	4535	4545	5040
9	3	1,4	—	•	•														
10	3	1,4	—	•	•														
11	4	1,8	—	•	•	•													
12	4	1,8	—	•	•	•													
14	5	2,3	—	•	•	•	•	•											
15	5	2,3	—	•	•	•	•	•											
16	5	2,3	—	•	•	•	•	•	•										
18	6	2,8	—	•	•	•	•	•	•										
19	6	2,8	—	•	•	•	•	•	•										
20	6	2,8	—	•	•	•	•	•	•										
22	6	2,8	—	•	•	•	•	•	•										
24	8	3,3	1,3	• ¹⁾	•	•	•	•	•										
25	8	3,3	1,3	• ¹⁾	•	•	•	•	•										
28	8	3,3	1,3		• ¹⁾	•	•	•	•										
30	8	3,3	—		•	•	•	•	•										
32	10	3,3	—			•	•	•	•										
35	10	3,3	—			•	•	•	•										
38	10	3,3	—			•	•	•	•										
40	12	3,3	1,3			•	•	•	•										
42	12	3,3	1,3			•	•	•	•										
45	14	3,8	—					•	•										
48	14	3,8	—					•	•										
50	14	3,8	—					•	•										
55	16	4,3	—						•										
60	18	4,4	—						•										
65	18	4,4	—																
70	20	4,9	—																
75	20	4,9	—																
80	22	5,4	—																
85	22	5,4	—																
90	25	5,4	—																
95	25	5,4	—																
100	28	6,4	4,4																
105	28	6,4	—																
110	28	6,4	—																
110	32	7,4	5,4																
120	32	7,4	—																
125	32	7,4	—																
130	32	7,4	—																
140	32	8,4	6,4																

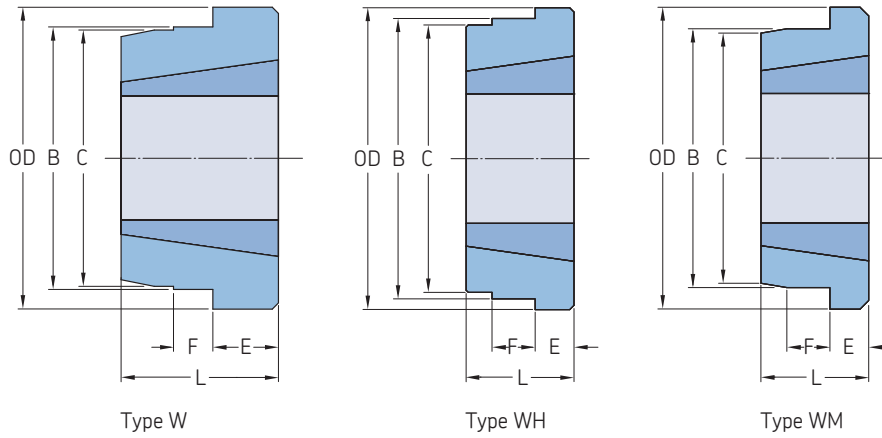
Inch bores and keyway

Bore diameter	Keyway Width	Depth	Shallow keyway depth	Bore sizes available															
				1008	1108	1210	1610	1615	2012	2517	3020	3030	3525	3535	4030	4040	4535	4545	5040
3/8	1/8	1/16	—	•	•														
1/2	1/8	1/16	—	•	•														
5/8	3/32	3/32	—	•	•	•													
3/4	3/32	3/32	—	•	•	•													
7/8	1/4	1/8	—	•	•	•													
1	1/4	1/8	1/16	• ¹⁾	•	•													
1 1/8	5/16	1/8	5/64		• ¹⁾	•													
1 1/4	5/16	1/8	—			•													
1 3/8	3/8	1/8	—			•													
1 1/2	3/8	1/8	—			•													
1 5/8	7/16	5/32	1/8																
1 3/4	7/16	5/32	—																
1 7/8	1/2	5/32	—																
2	1/2	5/32	—																
2 1/8	5/8	7/32	—																
2 1/4	5/8	7/32	—																
2 3/8	5/8	7/32	—																
2 1/2	5/8	7/32	—																
2 5/8	3/4	1/4	—																
2 3/4	3/4	1/4	—																
2 7/8	3/4	1/4	—																
3	3/4	1/4	—																
3 1/8	7/8	5/16	—																
3 1/4	7/8	5/16	—																
3 3/8	7/8	5/16	—																
3 1/2	7/8	5/16	—																
3 3/4	1	3/8	5/16																
4	1	3/8	7/32																
4 1/4	1 1/4	7/16	—																
4 1/2	1 1/4	7/16	11/32																
4 3/4	1 1/4	7/16	—																
5	1 1/4	7/16	11/32																

¹⁾ Bushing comes with a shallow keyway.

Weld-on hubs

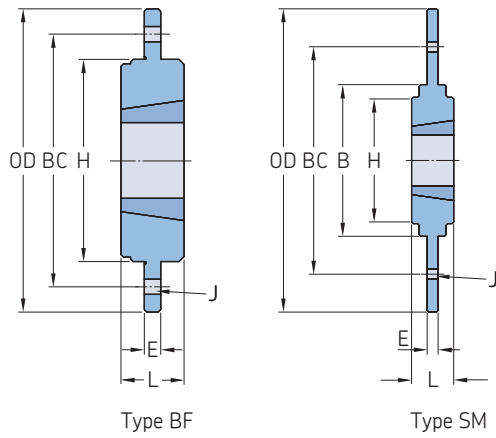
W taper bushed | WH taper bushed | WM taper bushed



Type	Bushing number	Dimensions						Designation	
		OD	B	C	L	E	F		
-	-	mm						-	
W	1215	73,03	63,50	62,71	38,1	15,88	9,53	PHH W12	
	1615	82,55	73,03	72,24	38,1	15,88	9,53	PHH W16	
	2017	101,60	88,90	88,11	44,4	19,05	11,91	PHH W20	
	2517	127,00	111,13	110,34	44,4	19,05	12,70	PHH W25	
	3030	149,86	133,35	132,56	76,2	25,40	19,05	PHH W30	
	3535	184,15	158,75	157,96	88,9	31,75	25,40	PHH W35	
	4040	225,43	196,85	196,06	101,6	31,75	31,75	PHH W40	
	4545	254,00	222,25	221,46	114,3	38,10	38,10	PHH W45	
	WH	1210	70,00	65,00	64,50	25,0	9,00	10,00	PHH WH12
1610		80,00	75,00	74,50	25,0	9,00	10,00	PHH WH16	
2012		95,00	90,00	89,50	32,0	12,00	12,00	PHH WH20	
2517		115,00	110,00	109,50	44,0	19,00	15,00	PHH WH25	
3020		145,00	140,00	139,50	50,0	20,00	15,00	PHH WH30	
3535		190,00	180,00	179,50	89,0	25,00	25,00	PHH WH35-2	
4030		200,00	190,00	189,50	76,0	32,00	30,00	PHH WH40-1	
4040		200,00	190,00	189,50	101,0	32,00	30,00	PHH WH40-2	
4535		210,00	200,00	199,50	89,0	40,00	30,00	PHH WH45-1	
4545		210,00	200,00	199,50	114,0	40,00	30,00	PHH WH45-2	
5040		230,00	220,00	219,50	102,0	40,00	35,00	PHH WH50-1	
5050		230,00	220,00	219,50	127,0	40,00	35,00	PHH WH50-2	
WM		1210	70,00	60,00	58,00	25,0	9,00	10,00	PHH WM12
		1610	83,00	70,00	68,00	25,0	9,00	10,00	PHH WM16-1
		1615	83,00	70,00	68,00	38,0	16,00	11,00	PHH WM16-2
	2012	95,00	90,00	88,00	32,0	12,00	12,00	PHH WM20	
	2517	127,00	110,00	108,00	44,0	19,00	13,00	PHH WM25	
	3020	152,00	130,00	125,00	50,0	20,00	15,00	PHH WM30-1	
	3030	152,00	130,00	125,00	76,0	25,00	19,00	PHH WM30-2	
	3535	184,00	155,00	151,00	89,0	32,00	25,00	PHH WM35	
	4040	225,00	195,00	187,00	102,0	32,00	32,00	PHH WM40	
	4545	254,00	220,00	213,00	114,0	38,00	38,00	PHH WM45	
	5050	276,00	242,00	228,00	127,0	38,00	38,00	PHH WM50	

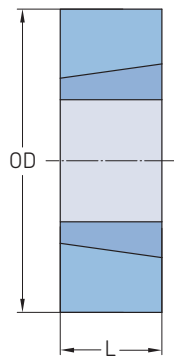
Bolt-on hubs / Adapters

BF taper bushed | SM taper bushed | Taper bushed adapters



Type	Bushing number	Dimensions							Designation
		OD	B	BC	L	E	H	J ¹⁾	
-	-	mm							-
BF	1210	120	-	100	25	6,5	80	6 x 6,6	PHH BF12
	1610	130	-	110	25	6,5	90	6 x 6,6	PHH BF16
	2012	145	-	125	32	8,5	100	6 x 9,0	PHH BF20
	2517	185	-	155	44	11,5	130	6 x 11,0	PHH BF25
	3020	220	-	190	50	11,5	165	6 x 13,0	PHH BF30
SM	1210	180	75	135	25	6,5	90	6 x 7,5	PHH SM12
	1615	200	85	150	38	7,5	110	6 x 7,5	PHH SM16
	2012	270	110	190	32	8,5	140	6 x 9,5	PHH SM20
	2517	340	125	240	45	9,5	170	8 x 11,5	PHH SM25
	3020	430	160	300	51	13,5	220	8 x 13,5	PHH SM30-1
	3020	485	160	340	51	13,5	250	8 x 13,5	PHH SM30-2

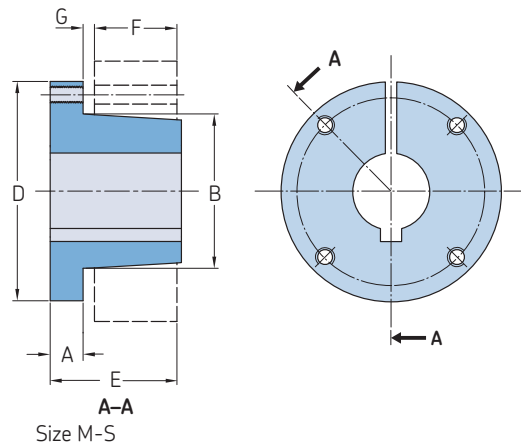
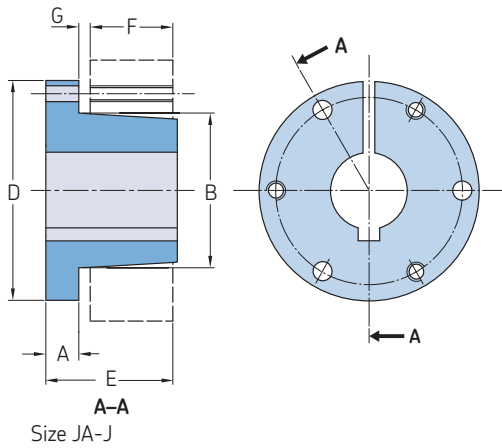
¹⁾ Number of screw holes x hole diameter.



Taper bushed adapters (obsolete)

Type	Bushing number	Dimensions		Keyway Width	Depth	Designation
		OD	L			
-	-	mm		-	-	-
1008KM	1008	45	22	5	2,5	PHH TBA1008KM
1008PM	1008	45	22	-	-	PHH TBA1008PM
1210KM	1210	60	25	6	3,0	PHH TBA1210KM
1210PM	1210	60	25	-	-	PHH TBA1210PM
1215KM	1215	60	38	6	3,0	PHH TBA1215KM
1215PM	1215	60	38	-	-	PHH TBA1215PM
1610KM	1610	70	25	10	4,0	PHH TBA1610KM
1610PM	1610	70	25	-	-	PHH TBA1610PM
1615KM	1615	70	38	10	4,0	PHH TBA1615KM
1615PM	1615	70	38	-	-	PHH TBA1615PM
2517KM	2517	105	45	16	4,0	PHH TBA2517KM
2517PM	2517	105	45	-	-	PHH TBA2517PM
3030KM	3030	130	76	20	5,0	PHH TBA3030KM
3030PM	3030	130	76	-	-	PHH TBA3030PM
3535KM	3535	160	89	22	5,0	PHH TBA3535KM
3535PM	3535	160	89	-	-	PHH TBA3535PM
4040KM	4040	185	102	24	5,0	PHH TBA4040KM
4040PM	4040	185	102	-	-	PHH TBA4040PM

QD Bushings



Bushing number	Bore range			Dimensions						Set screw size	Average mass		Designation
	Min.	Standard keyway Max.	Shallow keyway	A	B	D	E	F	G		kg	lbs.	
-	mm										kg	lbs.	-
JA	9,53	25,40	31,75	7,90	35,10	50,80	25,40	14,22	3,05	10 - 24	0,40	0,9	PHF JA...
SH	12,70	34,92	42,86	10,90	47,80	66,80	33,27	20,57	3,05	6,35	0,50	1,0	PHF SH...
SDS	12,70	42,86	50,80	10,90	55,40	80,80	33,27	19,05	3,05	6,35	0,72	1,0	PHF SDS...
SD	12,70	42,86	49,21	10,90	55,40	80,80	45,97	31,75	3,05	6,35	0,93	1,5	PHF SD...
SK	12,70	53,97	63,50	14,20	71,40	98,60	49,02	31,75	5,58	33,34	0,90	2,0	PHF SK...
SF	12,70	74,61	71,43	16,00	79,50	117,60	52,32	31,75	5,58	33,34	2,23	3,0	PHF SF...
E	22,26	73,02	88,90	22,40	97,30	152,40	69,85	41,02	6,35	9,50	4,62	10,0	PHF E...
F	25,40	100,01	100,01	25,40	112,50	168,40	95,25	63,50	8,64	12,70	5,20	11,5	PHF F...
J	36,51	95,25	114,30	28,70	130,60	184,20	122,68	80,77	9,65	41,27	8,20	18,0	PHF J...
M	74,61	120,65	139,70	31,80	165,10	228,60	171,45	131,57	10,41	19,10	27,00	37,0	PHF M...
N	61,91	130,18	152,40	38,10	177,80	254,00	206,25	158,75	14,22	19,10	37,50	57,0	PHF N...
P	74,61	150,81	177,80	44,50	209,60	298,50	238,25	184,15	16,02	22,20	54,40	120,0	PHF P...
W	101,60	190,50	215,90	50,80	264,70	381,00	289,05	228,60	12,70	25,40	113,40	250,0	PHF W...
S	152,40	209,55	254,00	69,90	308,10	450,90	387,35	304,80	19,05	31,75	181,40	400,0	PHF S...

To complete the designation, add bore size in inch or millimeters (standard bore sizes available on next page).
 E.g.: PHF SDS-1-11/16 and PHF SDS-25MM.

QD Bushings

Dimensions

Inch bores and keyway

Bushing number	Bore	Keyway
–	in.	
JA	3/8 – 7/8 1/2 1 1/16 – 1 1/8 1 3/16 1 1/4	No keyway STD 1/4 x 1/16 1/4 x 1/16 No keyway
SH	1/2 – 1 3/8 1 7/16 – 1 1/2 1 9/16 – 1 5/8 1 11/16	STD 3/8 x 1/16 3/8 x 1/16 No keyway
SDS	1/2 – 1 11/16 1 3/4 1 13/16 1 7/8 – 1 15/16 2	STD 3/8 x 1/8 1/2 x 1/8 1/2 x 1/16 No keyway
SD	1/2 – 1 11/16 1 3/4 1 13/16 1 7/8 1 15/16 2	STD 3/8 x 1/8 1/2 x 1/8 1/2 x 1/16 1/2 x 1/16 No keyway
SK	1/2 – 2 1/8 2 3/16 – 2 1/4 2 5/16 – 2 1/2 2 9/16 – 2 5/8	STD 1/2 x 1/8 1 5/8 x 1/16 No keyway
SF	1/2 – 2 1/4 2 5/16 – 2 1/2 2 9/16 – 2 3/4 2 13/16 – 2 7/8 2 15/16	STD 1 5/8 x 3/16 5/8 x 1/16 3/4 x 1/16 3/4 x 1/32
E	7/8 – 2 7/8 2 15/16 – 3 1/4 3 3/8 – 3 1/2	STD ¹⁾ 3/4 x 1/8 7/8 x 1/16
F	1 – 3 15/16 3 3/8 – 3 3/4 3 7/8 – 3 15/16 4	STD ¹⁾ 7/8 x 3/16 1 x 1/8 No keyway
J	1 1/4 – 3 3/4 3 13/16 – 4 1/2	STD ¹⁾ 1 x 1/8
M	2 – 4 3/4 4 13/16 – 5 1/2	STD ¹⁾ 1 1/4 x 1/4
N	2 7/16 5 7/8 – 5 1/2 5 9/16	STD ¹⁾ 1 1/4 x 1/4 1 1/2 x 1/4
P	2 15/16 – 5 15/16 6 – 6 1/2 6 9/16	STD ¹⁾ 1 1/2 x 1/4 1 3/4 x 1/8
W	4 – 7 1/2 7 9/16 – 8 1/2	STD ¹⁾ 2 x 1/4

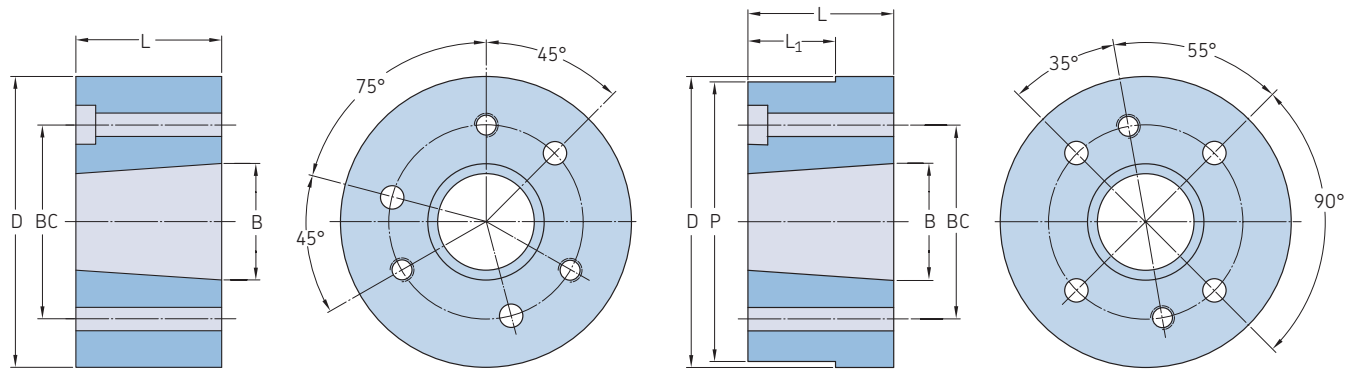
¹⁾ Please contact SKF for details.

Metric bores and keyway

Bushing number	Bore	Keyway - WxT
–	mm	
SH	24, 25 28, 30 32, 35	8 x 7 – 10 x 8
SDS	24, 25 28, 30 32, 35 38 40, 42	8 x 7 – 10 x 8 – 12 x 8
SD	24, 25 28, 30 32, 35 38 40, 42	8 x 7 – 10 x 8 – 12 x 8
SK	24, 25 28, 30 32, 35 38 40, 42 48, 50 55	8 x 7 – 10 x 8 – 12 x 8 14 x 9 16 x 10
SF	28, 30 32, 35 38 40, 42 48, 50 55 60	8 x 7 10 x 8 – 12 x 8 14 x 9 16 x 10 18 x 11
E	35, 38 40, 42 48, 50 55 60, 65 70, 75	10 x 8 12 x 8 14 x 9 16 x 10 18 x 11 20 x 12
F	48, 50 55 60, 65 70, 75 80, 85	14 x 9 16 x 10 18 x 11 20 x 12 22 x 14
J	50 55 60, 65 70, 75 80, 85 90 95 100	14 x 9 16 x 10 18 x 11 20 x 12 22 x 14 25 x 14 28 x 16

The metric system does not refer to keyseat or keyway dimensions as the inch system. Instead, dimensions are given for the key itself which is rectangular in shape, not square as in the inch system.

QD Weld-on hubs



Type 1

Type 2

Bushing number	Dimensions						Type drilling	Approx mass	Mounting	Designation
	D	L	B	P	L ₁	BC				
-	mm						-	kg	-	-
JA	57,2	14,3	34,9	-	-	42,1	1	0,18	Std or reverse mount	PHH WJA
SH	76,2	20,6	47,5	-	-	57,2	1	0,45	Std or reverse mount	PHH WSH
SDS	88,9	19,1	55,6	-	-	68,3	1	0,57	Std or reverse mount	PHH WSDS
SK	111,1	31,8	71,5	-	-	84,1	1	1,36	Std or reverse mount	PHH WSK
SF	127,0	31,8	79,4	-	-	98,4	1	1,81	Std or reverse mount	PHH WSF
E	158,8	41,3	97,3	-	-	127,0	1	4,08	Std or reverse mount	PHH WE
F	177,8	63,5	112,7	-	-	142,9	1	7,26	Std or reverse mount	PHH WF
J	196,9	81,0	130,6	-	-	158,8	1	10,21	Std or reverse mount	PHH WJ
M	241,3	131,8	164,9	235,0	90,5	200,0	2	22,69	Std mount only	PHH WM
N	266,7	158,8	177,5	260,4	114,3	215,9	2	34,03	Std mount only	PHH WN
P	330,2	184,2	209,3	-	-	254,0	2	70,33	Std mount only	PHH WP
W	393,7	228,6	265,1	-	-	323,9	2	136,12	Std mount only	PHH WW
S	495,3	304,8	308,0	476,3	-	381,0	2	253,18	Std mount only	PHH WS

SKF FX Keyless Bushings range



- FX 10**
- Medium torque
 - Not self-centering
 - Medium surface pressures
 - No axial hub movement
 - H11 – h11 tolerances



- FX 20**
- Medium torque
 - Self-centering
 - H8 – h8 tolerances



- FX 30**
- Low torque
 - Medium surface pressures
 - Taper rings only



- FX 40**
- High torque
 - Self-centering
 - Medium surface pressures
 - H8 – h8 tolerances



- FX 41**
- Medium torque
 - Reduced length
 - Medium self-centering
 - High surface pressures
 - H8 – h8 tolerances



- FX 50**
- Medium torque
 - Self-centering
 - Low surface pressures
 - No axial hub movement
 - H8 – h8 tolerances



- FX 51**
- Medium torque
 - Reduced length
 - High surface pressures
 - No axial hub movement
 - H8 – h8 tolerances



- FX 52**
- High torque
 - Self-centering
 - Low-medium surface pressures
 - H8 – h8 tolerances



- FX 60**
- Very high torque
 - Self-centering
 - Medium surface pressures
 - No axial hub movement
 - H8 – h8 tolerances



- FX 80**
- Low torque
 - Short length
 - Not self-centering
 - Low surface pressures
 - H8 – h8 tolerances



- FX 90**
- Low-medium torque
 - Short length
 - Self-centering
 - Low surface pressures
 - H8 – h8 tolerances



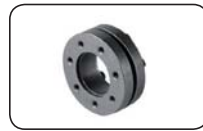
- FX 120**
- Medium torque
 - Reduced length
 - Medium self-centering
 - High surface pressures
 - H8 – h8 tolerances



- FX 130**
- Low-medium torque
 - h8 tolerances



- FX 140**
- Medium torque
 - Reduced length
 - High surface pressures
 - H8 – h8 tolerances



- FX 190**
- High torque
 - No axial hub movement
 - h8 tolerances



- FX 350**
- Low-medium torque
 - Short length
 - Self-centering
 - Low surface pressures
 - H8 – h8 tolerances

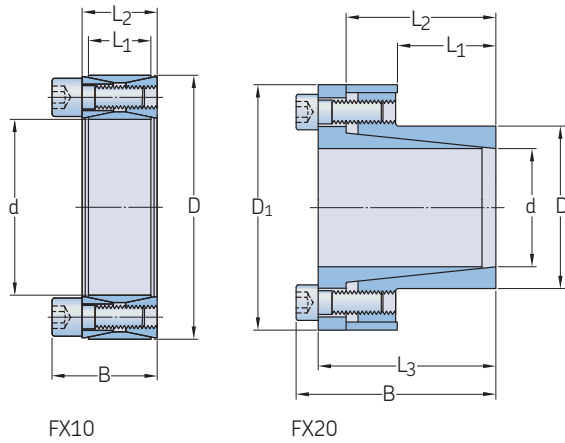


- FX 400**
- High torque
 - Self-centering
 - Low surface pressures
 - No axial hub movement
 - H8 – h8 tolerances

Refer to SKF FX Keyless Bushings PUB PT/P1 10114 EN for other available models.

FX keyless bushings

FX10



Bushing no.	Dimensions							Transmissible axial force F_t	Transmissible torque M_t	Shaft surface pressure P_w	Hub surface pressure P_n	Clamp screws Quantity	Clamp screws size	Screw size tightening torque M_s	Mass	Designation
	d	D	L ₁	L ₂	L ₃	B	D ₁									
-	mm							kN	Nm	N/mm ²				Nm	kg	-
FX10	20	47	17	20,0	-	27,5	-	27,0	240	210	90	8	M6	15,0	0,20	PHF FX10-20X47
	22	47	17	20,0	-	27,5	-	27,0	300	195	90	8	M6	15,0	0,20	PHF FX10-22X47
	24	50	17	20,0	-	27,5	-	30,0	360	195	95	8	M6	15,0	0,30	PHF FX10-24X50
	25	50	17	20,0	-	27,5	-	30,0	380	190	95	8	M6	15,0	0,30	PHF FX10-25X50
	28	55	17	20,0	-	27,5	-	33,0	470	185	95	10	M6	15,0	0,30	PHF FX10-28X55
	30	55	17	20,0	-	27,5	-	33,0	500	175	95	10	M6	15,0	0,30	PHF FX10-30X55
	32	60	17	20,0	-	27,5	-	40,0	630	192	105	12	M6	15,0	0,30	PHF FX10-32X60
	35	60	17	20,0	-	27,5	-	40,0	700	180	105	12	M6	15,0	0,30	PHF FX10-35X60
	38	65	17	20,0	-	27,5	-	46,0	870	188	110	14	M6	15,0	0,40	PHF FX10-38X65
	40	65	17	20,0	-	27,5	-	46,0	920	180	110	14	M6	15,0	0,30	PHF FX10-40X65
	42	75	20	24,0	-	33,5	-	72,0	1 500	226	125	12	M8	37,0	0,60	PHF FX10-42X75
	45	75	20	24,0	-	33,5	-	72,0	1 610	210	125	12	M8	37,0	0,60	PHF FX10-45X75
	48	80	20	24,0	-	33,5	-	71,0	1 700	196	115	12	M8	37,0	0,60	PHF FX10-48X80
	50	80	20	24,0	-	33,5	-	71,0	1 770	190	115	12	M8	37,0	0,60	PHF FX10-50X80
	55	85	20	24,0	-	33,5	-	83,0	2 270	200	130	14	M8	37,0	0,60	PHF FX10-55X85
	60	90	20	24,0	-	33,5	-	83,0	2 470	180	120	14	M8	37,0	0,70	PHF FX10-60X90
	65	95	20	24,0	-	33,5	-	93,0	3 040	190	130	16	M8	37,0	0,70	PHF FX10-65X95
	70	110	24	28,0	-	39,5	-	132,0	4 600	210	130	14	M10	70,0	1,30	PHF FX10-70X110
	75	115	24	28,0	-	39,5	-	131,0	4 900	195	125	14	M10	70,0	1,30	PHF FX10-75X115
	80	120	24	28,0	-	39,5	-	131,0	5 200	180	120	14	M10	70,0	1,40	PHF FX10-80X120
	85	125	24	28,0	-	39,5	-	148,0	6 300	195	130	16	M10	70,0	1,40	PHF FX10-85X125
	90	130	24	28,0	-	39,5	-	147,0	6 600	180	125	16	M10	70,0	1,50	PHF FX10-90X130
	95	135	24	28,0	-	39,5	-	167,0	7 900	195	135	18	M10	70,0	1,60	PHF FX10-95X135
	100	145	26	33,0	-	47,0	-	192,0	9 600	195	135	14	M12	127,0	2,20	PHF FX10-100X145
	110	155	26	33,0	-	47,0	-	191,0	10 500	180	125	14	M12	127,0	2,50	PHF FX10-110X155
	120	165	26	33,0	-	47,0	-	218,0	13 100	185	135	16	M12	127,0	2,60	PHF FX10-120X165
	130	180	34	38,0	-	52,0	-	272,0	17 600	165	115	20	M12	127,0	3,80	PHF FX10-130X180
	140	190	34	38,0	-	52,0	-	298,0	20 900	165	125	22	M12	127,0	3,90	PHF FX10-140X190
	150	200	34	38,0	-	52,0	-	324,0	24 200	170	125	24	M12	127,0	4,00	PHF FX10-150X200
	160	210	34	38,0	-	52,0	-	350,0	28 000	170	130	26	M12	127,0	4,30	PHF FX10-160X210
	170	225	38	44,0	-	60,0	-	386,0	32 800	160	120	22	M14	195,0	5,80	PHF FX10-170X225
	180	235	38	44,0	-	60,0	-	420,0	37 800	165	125	24	M14	195,0	6,00	PHF FX10-180X235
	190	250	46	52,0	-	68,0	-	490,0	46 500	150	115	28	M14	195,0	8,50	PHF FX10-190X250
	200	260	46	52,0	-	68,0	-	525,0	52 500	150	115	30	M14	195,0	8,60	PHF FX10-200X260
	220	285	50	56,0	-	74,0	-	620,0	68 000	150	115	26	M16	300,0	11,00	PHF FX10-220X285
	240	305	50	56,0	-	74,0	-	715,0	85 500	160	125	30	M16	300,0	12,00	PHF FX10-240X305
	260	325	50	56,0	-	74,0	-	800,0	104 000	165	130	34	M16	300,0	13,00	PHF FX10-260X325
	280	355	60	66,0	-	86,5	-	915,0	128 000	145	115	32	M18	410,0	19,00	PHF FX10-280X355
	300	375	60	66,0	-	86,5	-	1020,0	153 000	150	120	36	M18	410,0	20,00	PHF FX10-300X375
	320	405	72	78,0	-	100,5	-	1310,0	210 000	150	120	36	M20	590,0	30,00	PHF FX10-320X405
340	425	72	78,0	-	100,5	-	1310,0	224 000	145	115	36	M20	590,0	30,10	PHF FX10-340X425	
360	455	84	90,0	-	116,0	-	1630,0	294 000	145	115	36	M22	790,0	42,00	PHF FX10-360X455	
380	475	84	90,0	-	116,0	-	1620,0	308 000	135	110	36	M22	790,0	44,00	PHF FX10-380X475	
400	495	84	90,0	-	116,0	-	1610,0	322 000	130	105	36	M22	790,0	46,00	PHF FX10-400X495	
420	515	84	90,0	-	116,0	-	1780,0	370 000	135	110	40	M22	790,0	50,00	PHF FX10-420X515	
440	545	96	102,0	-	130,0	-	2050,0	450 000	130	105	40	M24	1 000,0	65,00	PHF FX10-440X545	
460	565	96	102,0	-	130,0	-	2030,0	465 000	125	100	40	M24	1 000,0	67,00	PHF FX10-460X565	
480	585	96	102,0	-	130,0	-	2150,0	505 000	125	100	42	M24	1 000,0	71,00	PHF FX10-480X585	
500	605	96	102,0	-	130,0	-	2200,0	553 000	125	100	44	M24	1 000,0	73,00	PHF FX10-500X605	
520	630	96	102,0	-	130,0	-	2300,0	592 000	125	100	45	M24	1 000,0	80,00	PHF FX10-520X630	
540	650	96	102,0	-	130,0	-	2320,0	618 000	120	100	45	M24	1 000,0	82,00	PHF FX10-540X650	
560	670	96	102,0	-	130,0	-	2430,0	670 000	120	100	48	M24	1 000,0	85,00	PHF FX10-560X670	
580	690	96	102,0	-	130,0	-	2520,0	727 000	120	100	50	M24	1 000,0	88,00	PHF FX10-580X690	
600	710	96	102,0	-	130,0	-	2565,0	770 000	120	100	50	M24	1 000,0	91,00	PHF FX10-600X710	

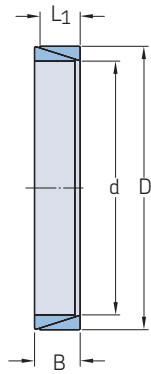
FX keyless bushings

FX10 | FX20

Bushings no.	Dimensions							Transmissible axial force F _t	Transmissible torque M _t	Shaft surface pressure P _w	Hub surface pressure P _n	Clamp screws Quantity	Clamp screws size	Screw tightening torque M _s	Mass	Designation
	d	D	L ₁	L ₂	L ₃	B	D ₁									
–	mm							kN	Nm	N/mm ²				Nm	kg	–
FX10	620	730	96	102,0	–	130,0	–	2647,0	818 000	120	100	52	M24	1 000,0	93,00	PHF FX10-620X730
	640	750	96	102,0	–	130,0	–	2698,0	860 000	115	100	54	M24	1 000,0	96,00	PHF FX10-640X750
	660	770	96	102,0	–	130,0	–	2790,0	919 000	120	100	56	M24	1 000,0	99,00	PHF FX10-660X770
	680	790	96	102,0	–	130,0	–	2820,0	955 000	115	100	56	M24	1 000,0	102,00	PHF FX10-680X790
	700	810	96	102,0	–	130,0	–	2945,0	1 018 000	115	100	60	M24	1 000,0	104,00	PHF FX10-700X810
	720	830	96	102,0	–	130,0	–	2965,0	1 060 000	115	100	60	M24	1 000,0	107,00	PHF FX10-720X830
	740	850	96	102,0	–	130,0	–	3065,0	1 128 000	115	100	62	M24	1 000,0	110,00	PHF FX10-740X850
	760	870	96	102,0	–	130,0	–	3170,0	1 200 000	115	100	64	M24	1 000,0	113,00	PHF FX10-760X870
	780	890	96	102,0	–	130,0	–	3205,0	1 235 000	115	100	65	M24	1 000,0	116,00	PHF FX10-780X890
	800	910	96	102,0	–	130,0	–	3260,0	1 287 000	115	100	66	M24	1 000,0	118,00	PHF FX10-800X910
	820	930	96	102,0	–	130,0	–	3330,0	1 360 000	115	100	68	M24	1 000,0	121,00	PHF FX10-820X930
	840	950	96	102,0	–	130,0	–	3445,0	1 435 000	115	100	70	M24	1 000,0	124,00	PHF FX10-840X950
	860	970	96	102,0	–	130,0	–	3525,0	1 510 000	115	100	72	M24	1 000,0	127,00	PHF FX10-860X970
	880	990	96	102,0	–	130,0	–	3610,0	1 578 000	115	100	74	M24	1 000,0	129,00	PHF FX10-880X990
	900	1 010	96	102,0	–	130,0	–	3660,0	1 635 000	115	100	75	M24	1 000,0	132,00	PHF FX10-900X1010
FX20	6	14	10	18,5	21,0	24,0	25	4,5	13	190	80	3	M3	2,0	0,04	PHF FX20-6X14
	7	15	12	22,0	25,0	29,0	27	6,5	24	230	110	3	M4	4,9	0,06	PHF FX20-7X15
	8	15	12	22,0	25,0	29,0	27	6,7	25	210	110	3	M4	4,9	0,05	PHF FX20-8X15
	9	16	14	23,0	26,0	30,0	28	10,0	45	210	120	4	M4	4,9	0,06	PHF FX20-9X16
	10	16	14	23,0	26,0	30,0	28	10,0	49	180	120	4	M4	4,9	0,06	PHF FX20-10X16
	11	18	14	23,0	26,0	30,0	32	10,0	54	170	105	4	M4	4,9	0,07	PHF FX20-11X18
	12	18	14	23,0	26,0	30,0	32	10,0	60	155	105	4	M4	4,9	0,07	PHF FX20-12X18
	13	23	14	23,0	26,0	30,0	38	10,0	63	145	85	4	M4	4,9	0,11	PHF FX20-13X23
	14	23	14	23,0	26,0	30,0	38	10,0	70	135	85	4	M4	4,9	0,10	PHF FX20-14X23
	15	24	16	29,0	36,0	42,0	45	17,1	120	185	120	3	M6	17,0	0,22	PHF FX20-15X24
	16	24	16	29,0	36,0	42,0	45	17,1	140	180	120	3	M6	17,0	0,22	PHF FX20-16X24
	17	26	18	31,0	38,0	44,0	47	22,0	180	190	125	4	M6	17,0	0,25	PHF FX20-17X26
	18	26	18	31,0	38,0	44,0	47	22,0	200	180	125	4	M6	17,0	0,24	PHF FX20-18X26
	19	27	18	31,0	38,0	44,0	49	22,0	210	170	120	4	M6	17,0	0,26	PHF FX20-19X27
	20	28	18	31,0	38,0	44,0	50	22,0	220	160	115	4	M6	17,0	0,27	PHF FX20-20X28
	22	32	25	38,0	45,0	51,0	54	22,0	250	115	80	4	M6	17,0	0,34	PHF FX20-22X32
	24	34	25	38,0	45,0	51,0	56	22,0	270	105	75	4	M6	17,0	0,36	PHF FX20-24X34
	25	34	25	38,0	45,0	51,0	56	22,0	290	100	75	4	M6	17,0	0,35	PHF FX20-25X34
	28	39	25	38,0	45,0	51,0	61	33,0	465	135	100	6	M6	17,0	0,48	PHF FX20-28X39
	30	41	25	38,0	45,0	51,0	62	33,0	510	125	90	6	M6	17,0	0,48	PHF FX20-30X41
	32	43	25	38,0	45,0	51,0	65	33,0	540	120	90	6	M6	17,0	0,47	PHF FX20-32X43
	35	47	32	45,0	52,0	58,0	69	45,0	790	105	80	8	M6	17,0	0,58	PHF FX20-35X47
	38	50	32	45,0	52,0	58,0	72	45,0	860	100	75	8	M6	17,0	0,61	PHF FX20-38X50
	40	53	32	45,0	52,0	58,0	75	45,0	900	95	70	8	M6	17,0	0,68	PHF FX20-40X53
	42	55	32	45,0	52,0	58,0	78	45,0	950	90	70	8	M6	17,0	0,76	PHF FX20-42X55
	45	59	45	62,0	70,0	78,0	86	84,0	1 890	110	85	8	M8	41,0	1,20	PHF FX20-45X59
	48	62	45	62,0	70,0	78,0	87	84,0	2 010	105	80	8	M8	41,0	1,20	PHF FX20-48X62
	50	65	45	62,0	70,0	78,0	92	84,0	2 100	100	75	8	M8	41,0	1,40	PHF FX20-50X65
	55	71	55	72,0	80,0	88,0	98	94,0	2 600	85	65	9	M8	41,0	1,60	PHF FX20-55X71
	60	77	55	72,0	80,0	88,0	104	94,0	2 840	75	60	9	M8	41,0	1,80	PHF FX20-60X77
	65	84	55	72,0	80,0	88,0	111	94,0	3 070	70	55	9	M8	41,0	2,10	PHF FX20-65X84
	70	90	65	86,0	96,0	106,0	119	150,0	5 250	90	70	9	M10	83,0	3,00	PHF FX20-70X90
	75	95	65	86,0	96,0	106,0	126	150,0	5 600	80	65	9	M10	83,0	3,00	PHF FX20-75X95
	80	100	65	86,0	96,0	106,0	131	200,0	8 020	100	80	12	M10	83,0	3,50	PHF FX20-80X100
	85	106	65	86,0	96,0	106,0	137	200,0	8 500	95	75	12	M10	83,0	3,60	PHF FX20-85X106
	90	112	65	86,0	96,0	106,0	144	200,0	9 000	90	75	12	M10	83,0	3,90	PHF FX20-90X112
95	120	65	86,0	96,0	106,0	149	230,0	11 000	100	80	14	M10	83,0	4,40	PHF FX20-95X120	
100	125	65	86,0	96,0	106,0	154	300,0	15 000	120	95	18	M10	83,0	4,60	PHF FX20-100X125	
110	140	90	114,0	128,0	140,0	180	290,0	16 000	80	65	12	M12	145,0	8,70	PHF FX20-110X140	
120	155	90	114,0	128,0	140,0	198	290,0	17 500	70	55	12	M12	145,0	10,60	PHF FX20-120X155	
130	165	90	114,0	128,0	140,0	208	384,0	25 000	90	70	16	M12	145,0	11,30	PHF FX20-130X165	

FX keyless bushings

FX30



FX30

Bushings no.	Dimensions				Transmissible axial force F _t	Transmissible torque M _t	Shaft surface pressure P _w	Hub surface pressure P _n	Mass	Designation
	d	D	L ₁	B						
-	mm				kN	Nm	N/mm ²		kg	-
FX30	6	9	3,7	4,5	0,8	3	115	75	0,002	PHF FX30-6X9
	7	10	3,7	4,5	0,9	3	105	70	0,002	PHF FX30-7X10
	8	11	3,7	4,5	1,2	5	120	90	0,002	PHF FX30-8X11
	9	12	3,7	4,5	1,8	8	140	105	0,002	PHF FX30-9X12
	10	13	3,7	4,5	1,9	10	135	105	0,002	PHF FX30-10X13
	12	15	3,7	4,5	1,9	11	115	90	0,002	PHF FX30-12X15
	13	16	3,7	4,5	2,0	13	110	90	0,002	PHF FX30-13X16
	14	18	5,3	6,3	3,2	22	115	90	0,005	PHF FX30-14X18
	15	19	5,3	6,3	3,2	24	110	85	0,005	PHF FX30-15X19
	16	20	5,3	6,3	3,4	27	105	85	0,006	PHF FX30-16X20
	17	21	5,3	6,3	3,5	30	105	85	0,006	PHF FX30-17X21
	18	22	5,3	6,3	3,6	32	100	80	0,007	PHF FX30-18X22
	19	24	5,3	6,3	5,2	49	140	110	0,007	PHF FX30-19X24
	20	25	5,3	6,3	5,3	53	135	105	0,009	PHF FX30-20X25
	22	26	5,3	6,3	6,0	66	135	115	0,007	PHF FX30-22X26
	24	28	5,3	6,3	6,1	73	130	110	0,008	PHF FX30-24X28
	25	30	5,3	6,3	5,8	72	115	95	0,009	PHF FX30-25X30
	28	32	5,3	6,3	6,3	86	115	100	0,010	PHF FX30-28X32
	30	35	5,3	6,3	6,1	91	100	85	0,011	PHF FX30-30X35
	32	36	5,3	6,3	8,2	131	130	115	0,011	PHF FX30-32X36
	35	40	6,0	7,0	9,8	171	125	110	0,016	PHF FX30-35X40
	36	42	6,0	7,0	9,4	169	115	100	0,021	PHF FX30-36X42
	38	44	6,0	7,0	9,6	181	110	95	0,021	PHF FX30-38X44
	40	45	6,6	8,0	11,6	231	115	105	0,021	PHF FX30-40X45
	42	48	6,6	8,0	11,2	235	110	95	0,026	PHF FX30-42X48
	45	52	8,6	10,0	15,7	353	105	95	0,045	PHF FX30-45X52
	48	55	8,6	10,0	23,8	572	155	135	0,043	PHF FX30-48X55
	50	57	8,6	10,0	24,1	602	150	130	0,045	PHF FX30-50X57
	55	62	8,6	10,0	24,4	670	140	125	0,049	PHF FX30-55X62
	56	64	10,4	12,0	28,2	790	130	115	0,070	PHF FX30-56X64
60	68	10,4	12,0	28,6	860	125	110	0,070	PHF FX30-60X68	
63	71	10,4	12,0	28,8	910	120	105	0,080	PHF FX30-63X71	
65	73	10,4	12,0	29,2	950	115	100	0,090	PHF FX30-65X73	
70	79	12,2	14,0	39,4	1 380	125	110	0,115	PHF FX30-70X79	
71	80	12,2	14,0	39,4	1 400	120	110	0,110	PHF FX30-71X80	
75	84	12,2	14,0	38,6	1 450	115	100	0,120	PHF FX30-75X84	
80	91	15,0	17,0	55,0	2 200	125	105	0,210	PHF FX30-80X91	
85	96	15,0	17,0	56,4	2 400	120	105	0,210	PHF FX30-85X96	
90	101	15,0	17,0	60,5	2 730	120	105	0,220	PHF FX30-90X101	
95	106	15,0	17,0	64,2	3 050	120	110	0,230	PHF FX30-95X106	
100	114	18,7	21,0	84,0	4 200	120	105	0,390	PHF FX30-100X114	
110	124	18,7	21,0	93,6	5 150	120	105	0,420	PHF FX30-110X124	
120	134	18,7	21,0	100,8	6 050	120	105	0,460	PHF FX30-120X134	
130	148	25,3	28,0	147,6	9 600	120	105	0,860	PHF FX30-130X148	
140	158	25,3	28,0	158,5	11 000	120	105	0,960	PHF FX30-140X158	
150	168	25,3	28,0	172,0	12 900	120	105	1,000	PHF FX30-150X168	
160	178	25,3	28,0	182,5	14 600	120	110	1,000	PHF FX30-160X178	
170	191	30,0	33,0	229,0	19 500	120	105	1,540	PHF FX30-170X191	
180	201	30,0	33,0	236,0	21 300	120	105	1,500	PHF FX30-180X201	
190	211	30,0	33,0	255,0	24 200	120	110	1,800	PHF FX30-190X211	
200	224	34,8	38,0	310,0	31 000	120	105	2,400	PHF FX30-200X224	
210	234	34,8	38,0	333,0	35 000	120	110	2,500	PHF FX30-210X234	
220	244	34,8	38,0	345,0	38 000	120	110	2,600	PHF FX30-220X244	
230	257	39,5	43,0	408,0	47 000	120	105	3,400	PHF FX30-230X257	

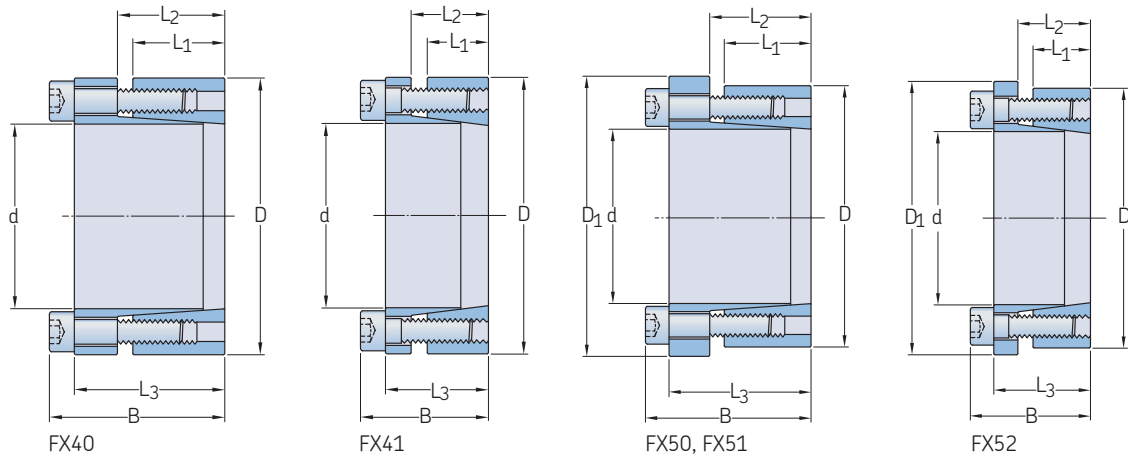
FX keyless bushings

FX30

Bushing no.	Dimensions				Transmissible axial force F_t	Transmissible torque M_t	Shaft surface pressure P_w	Hub surface pressure P_n	Mass	Designation
	d	D	L_1	B						
–	mm				kN	Nm	N/mm ²		kg	–
FX30	240	267	39,5	43,0	425,0	51 000	120	110	3,800	PHF FX30-240X267
	250	280	44,0	48,0	415,0	52 000	100	90	4,800	PHF FX30-250X280
	260	290	44,0	48,0	435,0	56 500	100	90	4,900	PHF FX30-260X290
	270	300	44,0	48,0	450,0	61 000	100	90	5,000	PHF FX30-270X300
	280	313	49,0	53,0	520,0	72 500	100	90	6,400	PHF FX30-280X313
	290	323	49,0	53,0	535,0	77 500	100	90	6,500	PHF FX30-290X323
	300	333	49,0	53,0	555,0	83 000	100	90	6,800	PHF FX30-300X333
	320	360	59,0	65,0	710,0	114 000	100	90	11,000	PHF FX30-320X360
	340	380	59,0	65,0	755,0	128 500	100	90	11,500	PHF FX30-340X380
	360	400	59,0	65,0	800,0	144 000	100	90	12,300	PHF FX30-360X400
	380	420	59,0	65,0	845,0	160 500	100	90	13,000	PHF FX30-380X420
	400	440	59,0	65,0	890,0	178 000	100	90	13,700	PHF FX30-400X440
	420	460	59,0	65,0	935,0	196 000	100	90	14,100	PHF FX30-420X460
	440	480	59,0	65,0	980,0	215 000	100	90	14,800	PHF FX30-440X480
	460	500	59,0	65,0	1020,0	235 000	100	90	15,500	PHF FX30-460X500
	480	520	59,0	65,0	1070,0	256 000	100	90	16,000	PHF FX30-480X520
	500	540	59,0	65,0	1110,0	278 000	100	90	16,700	PHF FX30-500X540
	520	570	73,0	80,0	1430,0	372 000	100	90	27,000	PHF FX30-520X570
	540	590	73,0	80,0	1480,0	400 000	100	90	28,000	PHF FX30-540X590

FX keyless bushings

FX40 | FX41



Bushings no.	Dimensions							Transmissible axial force F_t	Transmissible torque M_t	Shaft surface pressure P_w	Hub surface pressure P_n	Clamp screws Quantity	Clamp screws size	Screw tightening torque M_s	Mass	Designation
	d	D	L ₁	L ₂	L ₃	B	D ₁									
	mm							kN	Nm	N/mm ²			Nm	kg		
FX40	20	47	26	29,0	42,0	48,0	-	54,0	540	250	105	6	M6	17,0	0,40	PHF FX40-20X47
	22	47	26	29,0	42,0	48,0	-	54,0	600	230	105	6	M6	17,0	0,40	PHF FX40-22X47
	24	50	26	29,0	42,0	48,0	-	54,0	650	210	100	6	M6	17,0	0,40	PHF FX40-24X50
	25	50	26	29,0	42,0	48,0	-	54,0	680	200	100	6	M6	17,0	0,40	PHF FX40-25X50
	28	55	26	29,0	42,0	48,0	-	54,0	760	180	95	6	M6	17,0	0,50	PHF FX40-28X55
	30	55	26	29,0	42,0	48,0	-	54,0	820	170	95	6	M6	17,0	0,50	PHF FX40-30X55
	32	60	26	29,0	42,0	48,0	-	82,0	1 310	235	125	9	M6	17,0	0,60	PHF FX40-32X60
	35	60	26	29,0	42,0	48,0	-	82,0	1 440	215	125	9	M6	17,0	0,50	PHF FX40-35X60
	38	65	26	29,0	42,0	48,0	-	82,0	1 560	200	115	9	M6	17,0	0,60	PHF FX40-38X65
	40	65	26	29,0	42,0	48,0	-	82,0	1 640	190	115	9	M6	17,0	0,60	PHF FX40-40X65
	42	75	30	34,4	51,0	59,0	-	101,0	2 130	215	120	6	M8	41,0	1,00	PHF FX40-42X75
	45	75	30	34,4	51,0	59,0	-	101,0	2 280	200	120	6	M8	41,0	1,00	PHF FX40-45X75
	48	80	30	34,4	51,0	59,0	-	101,0	2 430	190	115	6	M8	41,0	1,10	PHF FX40-48X80
	50	80	30	34,4	51,0	59,0	-	101,0	2 530	180	115	6	M8	41,0	1,00	PHF FX40-50X80
	55	85	30	34,4	51,0	59,0	-	152,0	4 180	245	160	9	M8	41,0	1,10	PHF FX40-55X85
	60	90	30	34,4	51,0	59,0	-	152,0	4 560	225	150	9	M8	41,0	1,20	PHF FX40-60X90
	65	95	30	34,4	51,0	59,0	-	152,0	4 940	210	145	9	M8	41,0	1,30	PHF FX40-65X95
	70	110	40	45,0	56,0	66,0	-	186,0	6 500	175	110	7	M10	83,0	2,20	PHF FX40-70X110
	75	115	40	45,0	56,0	66,0	-	186,0	9 000	165	110	7	M10	83,0	2,50	PHF FX40-75X115
	80	120	40	45,0	56,0	66,0	-	186,0	7 400	155	100	7	M10	83,0	2,60	PHF FX40-80X120
85	125	40	45,0	56,0	66,0	-	213,0	9 000	170	115	8	M10	83,0	2,80	PHF FX40-85X125	
90	130	40	45,0	56,0	66,0	-	213,0	9 600	160	110	8	M10	83,0	2,70	PHF FX40-90X130	
95	135	40	45,0	56,0	66,0	-	267,0	12 600	185	130	10	M10	83,0	2,90	PHF FX40-95X135	
100	145	46	52,0	65,0	77,0	-	270,0	13 300	160	105	7	M12	145,0	3,90	PHF FX40-100X145	
110	155	46	52,0	65,0	77,0	-	270,0	14 700	140	100	7	M12	145,0	4,20	PHF FX40-110X155	
120	165	46	52,0	65,0	77,0	-	309,0	18 400	150	110	8	M12	145,0	4,80	PHF FX40-120X165	
130	180	46	52,0	65,0	77,0	-	388,0	25 100	175	125	10	M12	145,0	5,00	PHF FX40-130X180	
140	190	51	58,5	73,5	87,5	-	586,0	40 150	220	160	11	M14	230,0	6,50	PHF FX40-140X190	
FX41	20	47	17	22,0	28,0	34,0	-	38,0	380	295	125	5	M6	14,0	0,30	PHF FX41-20X47
	22	47	17	22,0	28,0	34,0	-	38,0	410	270	125	5	M6	14,0	0,30	PHF FX41-22X47
	24	50	17	22,0	28,0	34,0	-	38,0	450	245	120	5	M6	14,0	0,30	PHF FX41-24X50
	25	50	17	22,0	28,0	34,0	-	45,6	570	285	140	6	M6	14,0	0,30	PHF FX41-25X50
	28	55	17	22,0	28,0	34,0	-	45,6	630	255	130	6	M6	14,0	0,40	PHF FX41-28X55
	30	55	17	22,0	28,0	34,0	-	45,6	660	235	130	6	M6	14,0	0,40	PHF FX41-30X55
	32	60	17	22,0	28,0	34,0	-	60,5	970	295	155	8	M6	14,0	0,40	PHF FX41-32X60
	35	60	17	22,0	28,0	34,0	-	60,5	1 060	270	155	8	M6	14,0	0,40	PHF FX41-35X60
	38	65	17	22,0	28,0	34,0	-	60,5	1 150	250	145	8	M6	14,0	0,50	PHF FX41-38X65
	40	65	17	22,0	28,0	34,0	-	60,5	1 210	235	145	8	M6	14,0	0,50	PHF FX41-40X65
	42	75	20	25,0	33,0	41,0	-	98,0	2 050	300	170	7	M8	35,0	0,80	PHF FX41-42X75
	45	75	20	25,0	33,0	41,0	-	98,0	2 200	290	170	7	M8	35,0	0,70	PHF FX41-45X75
	48	80	20	25,0	33,0	41,0	-	98,0	2 350	270	160	7	M8	35,0	0,80	PHF FX41-48X80
	50	80	20	25,0	33,0	41,0	-	98,0	2 450	260	160	7	M8	35,0	0,80	PHF FX41-50X80
	55	85	20	25,0	33,0	41,0	-	112,0	3 080	270	175	8	M8	35,0	0,90	PHF FX41-55X85
	60	90	20	25,0	33,0	41,0	-	112,0	3 360	245	165	8	M8	35,0	0,90	PHF FX41-60X90
	65	95	20	25,0	33,0	41,0	-	126,0	4 090	255	175	9	M8	35,0	1,00	PHF FX41-65X95
	70	110	24	30,0	40,0	50,0	-	179,0	6 300	280	180	8	M10	70,0	1,90	PHF FX41-70X110
	75	115	24	30,0	40,0	50,0	-	179,0	6 700	260	170	8	M10	70,0	2,00	PHF FX41-75X115
	80	120	24	30,0	40,0	50,0	-	179,0	7 150	250	170	8	M10	70,0	2,00	PHF FX41-80X120
85	125	24	30,0	40,0	50,0	-	200,0	8 500	260	180	9	M10	70,0	2,00	PHF FX41-85X125	
90	130	24	30,0	40,0	50,0	-	200,0	9 100	250	170	9	M10	70,0	2,20	PHF FX41-90X130	
95	135	24	30,0	40,0	50,0	-	224,0	10 600	260	180	10	M10	70,0	2,30	PHF FX41-95X135	
100	145	26	32,0	44,0	56,0	-	268,0	13 400	270	190	8	M12	125,0	3,00	PHF FX41-100X145	
110	155	26	32,0	44,0	56,0	-	268,0	14 600	240	180	8	M12	125,0	3,20	PHF FX41-110X155	

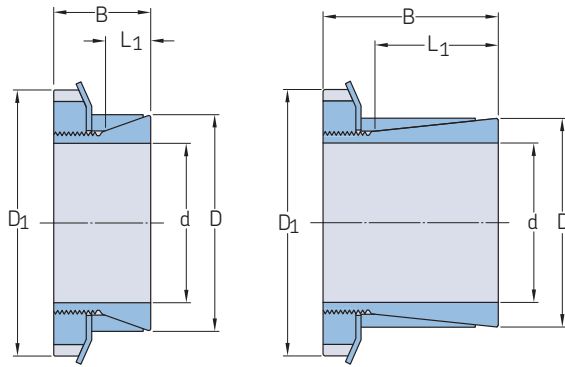
FX keyless bushings

FX60

Bushing no.	Dimensions							Transmissible axial force F_t	Transmissible torque M_t	Shaft surface pressure P_w	Hub surface pressure P_n	Clamp screws Quantity	Clamp screws size	Screw tightening torque M_s	Mass	Designation
	d	D	L ₁	L ₂	L ₃	B	D ₁									
–	mm							kN	Nm	N/mm ²			Nm	kg	–	
FX60	200	260	134	146,0	–	162,0	–	1 466,0	146 500	145	112	16	M16	355,0	22,00	PHF FX60-200X260
	220	285	134	146,0	–	162,0	–	1 833,0	201 500	165	127	20	M16	355,0	25,00	PHF FX60-220X285
	240	305	134	146,0	–	162,0	–	2 017,0	242 000	166	131	22	M16	355,0	27,00	PHF FX60-240X305
	260	325	134	146,0	–	162,0	–	2 017,0	262 000	154	123	22	M16	355,0	30,00	PHF FX60-260X325
	280	355	165	177,0	–	197,0	–	2 862,0	400 000	164	130	20	M20	690,0	46,00	PHF FX60-280X355
	300	375	165	177,0	–	197,0	–	3 148,0	472 000	169	135	22	M20	690,0	50,00	PHF FX60-300X375
	320	405	165	177,0	–	197,0	–	3 148,0	503 500	158	125	22	M20	690,0	60,00	PHF FX60-320X405
	340	425	165	177,0	–	197,0	–	3 434,0	583 500	162	130	24	M20	690,0	65,00	PHF FX60-340X425
	360	455	190	202,0	–	224,0	–	3 918,0	705 000	152	120	22	M22	930,0	89,00	PHF FX60-360X455
	380	475	190	202,0	–	224,0	–	4 631,0	880 000	170	136	26	M22	930,0	93,00	PHF FX60-380X475
	400	495	190	202,0	–	224,0	–	4 631,0	926 000	162	131	26	M22	930,0	98,00	PHF FX60-400X495

FX keyless bushings

FX80 | FX90



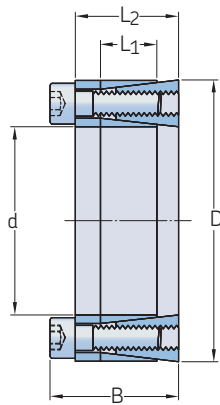
FX80

FX90

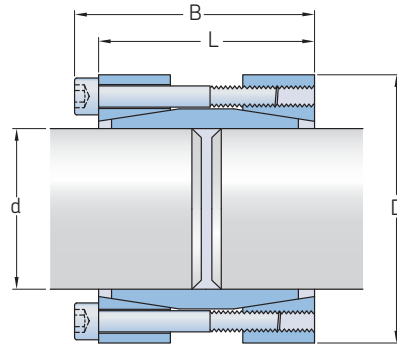
Bushings no.	Dimensions				Transmissible axial force F_t	Transmissible torque M_t	Shaft surface pressure P_w	Hub surface pressure P_n	Clamp screws sizes	Clamp screws sizes	Screw tightening torque M_s	Mass	Designation	
	d	D	L_1	B										D_1
–	mm				kN	Nm	N/mm ²				Nm	kg	–	
FX80	14	25	6,5	16,5	32	5,1	38	200	110	–	KM4	95,0	0,05	PHF FX80-14X25
	15	25	6,5	16,5	32	5,5	41	185	110	–	KM4	95,0	0,05	PHF FX80-15X25
	16	25	6,5	16,5	32	5,5	43	174	110	–	KM4	95,0	0,04	PHF FX80-16X25
	17	26	6,5	16,5	32	5,5	47	164	107	–	KM4	95,0	0,04	PHF FX80-17X26
	18	26	6,5	16,5	32	5,4	49	155	107	–	KM4	95,0	0,04	PHF FX80-18X26
	19	30	6,5	18,0	38	6,6	62	176	112	–	KM5	160,0	0,08	PHF FX80-19X30
	20	30	6,5	18,0	38	6,6	66	167	111	–	KM5	160,0	0,07	PHF FX80-20X30
	22	32	6,5	18,0	38	6,6	73	152	105	–	KM5	160,0	0,10	PHF FX80-22X32
	24	35	6,5	18,0	45	8,8	105	185	127	–	KM6	220,0	0,09	PHF FX80-24X35
	25	35	6,5	18,0	45	8,8	110	178	127	–	KM6	220,0	0,09	PHF FX80-25X35
	28	36	6,5	18,0	45	8,6	120	159	124	–	KM6	220,0	0,07	PHF FX80-28X36
	30	40	7,0	19,5	52	10,6	160	164	123	–	KM7	340,0	0,07	PHF FX80-30X40
	32	42	7,0	19,5	52	10,6	170	154	117	–	KM7	340,0	0,17	PHF FX80-32X42
	35	45	8,0	21,5	58	13,1	230	153	120	–	KM8	480,0	0,17	PHF FX80-35X45
	36	45	8,0	21,5	58	13,3	240	149	120	–	KM8	480,0	0,15	PHF FX80-36X45
38	48	8,0	21,5	58	13,1	250	141	112	–	KM8	480,0	0,15	PHF FX80-38X48	
40	52	10,0	24,5	65	15,5	310	120	93	–	KM9	680,0	0,24	PHF FX80-40X52	
42	55	10,0	25,5	65	15,2	320	114	87	–	KM9	680,0	0,25	PHF FX80-42X55	
45	57	10,0	25,5	70	17,7	400	122	96	–	KM10	870,0	0,28	PHF FX80-45X57	
48	62	10,0	25,5	75	20,8	500	135	105	–	KM11	970,0	0,32	PHF FX80-48X62	
50	62	10,0	25,5	75	20,8	520	130	105	–	KM11	970,0	0,30	PHF FX80-50X62	
55	68	12,0	27,5	80	22,0	610	103	84	–	KM12	1 100,0	0,36	PHF FX80-55X68	
56	68	12,0	27,5	80	22,0	620	101	82	–	KM12	1 100,0	0,34	PHF FX80-56X68	
60	73	12,0	28,5	85	26,6	800	113	93	–	KM13	1 300,0	0,40	PHF FX80-60X73	
63	79	14,0	30,5	92	31,1	980	107	86	–	KM14	1 600,0	0,56	PHF FX80-63X79	
65	79	14,0	30,5	92	31,1	1 010	104	86	–	KM14	1 600,0	0,52	PHF FX80-65X79	
70	84	14,0	31,5	98	35,4	1 240	110	92	–	KM15	2 000,0	0,60	PHF FX80-70X84	
FX90	14	25	20,0	30,0	32	9,0	64	85	45	KM4	–	95,0	0,08	PHF FX90-14X25
	15	25	20,0	30,0	32	9,0	70	80	45	KM4	–	95,0	0,08	PHF FX90-15X25
	16	25	20,0	30,0	32	9,0	73	75	45	KM4	–	95,0	0,07	PHF FX90-16X25
	17	25	20,0	32,0	32	9,0	80	70	45	KM4	–	160,0	0,07	PHF FX90-17X25
	18	30	20,0	32,0	38	9,0	83	65	40	KM4	–	160,0	0,12	PHF FX90-18X30
	19	30	20,0	32,0	38	11,0	105	75	45	KM5	–	160,0	0,12	PHF FX90-19X30
	20	30	20,0	32,0	38	11,0	112	70	45	KM5	–	160,0	0,11	PHF FX90-20X30
	22	35	25,0	36,0	45	14,0	163	70	45	KM6	–	220,0	0,18	PHF FX90-22X35
	24	35	25,0	36,0	45	14,0	178	65	45	KM6	–	220,0	0,16	PHF FX90-24X35
	25	35	25,0	36,0	45	14,0	185	60	45	KM6	–	220,0	0,15	PHF FX90-25X35
	28	40	30,0	42,0	52	17,0	250	55	40	KM7	–	340,0	0,24	PHF FX90-28X40
	30	40	30,0	42,0	52	17,0	270	50	40	KM7	–	340,0	0,21	PHF FX90-30X40
	32	45	30,0	44,0	58	21,0	350	60	45	KM8	–	480,0	0,32	PHF FX90-32X45
	35	45	30,0	44,0	58	21,0	390	55	45	KM8	–	480,0	0,26	PHF FX90-35X45
	38	50	30,0	45,0	65	26,0	500	60	45	KM9	–	680,0	0,35	PHF FX90-38X50
	40	50	30,0	45,0	65	26,0	520	55	45	KM9	–	680,0	0,33	PHF FX90-40X50
	42	55	30,0	46,0	70	30,0	680	60	50	KM10	–	870,0	0,43	PHF FX90-42X55
	45	55	30,0	46,0	70	30,0	680	60	50	KM10	–	870,0	0,39	PHF FX90-45X55
	48	60	30,0	46,0	75	35,0	840	60	50	KM11	–	970,0	0,45	PHF FX90-48X60
	50	60	30,0	46,0	75	35,0	880	60	50	KM11	–	970,0	0,40	PHF FX90-50X60
	55	65	30,0	46,0	80	37,0	1 030	60	50	KM12	–	1 100,0	0,44	PHF FX90-55X65
60	70	30,0	52,0	85	45,0	1 360	65	55	KM13	–	1 300,0	0,55	PHF FX90-60X70	

FX keyless bushings

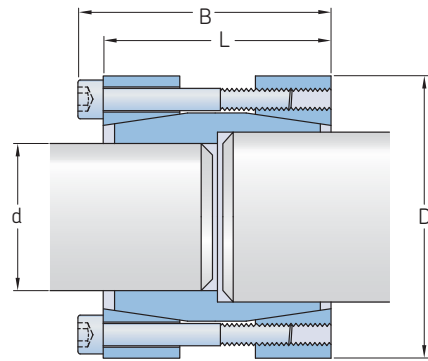
FX120 | FX130



FX120



FX130 Standard version

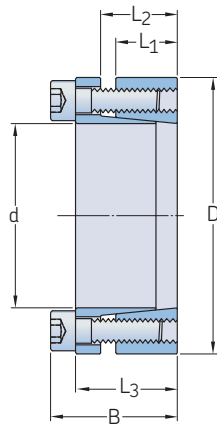


FX130 Double diameter version

Bushing no.	Dimensions					Transmissible axial force F_t	Transmissible torque M_t	Shaft surface pressure P_w	Hub surface pressure P_n	Clamp screws Quantity	Clamp screws size	Screw tightening torque M_s	Mass kg	Designation	
	d	D	L	L_1	L_2										B
mm															
						kN	Nm	N/mm ²				Nm	kg	-	
FX120	18	40	-	12,0	18,5	24,5	-	190	260	120	6	M6	16,0	-	PHF FX120-18X40
	19	41	-	12,0	18,5	24,5	-	210	260	120	6	M6	16,0	-	PHF FX120-19X41
	20	42	-	12,0	18,5	24,5	-	240	250	120	6	M6	16,0	-	PHF FX120-20X42
	24	46	-	12,0	18,5	24,5	-	290	250	120	6	M6	16,0	-	PHF FX120-24X46
	25	47	-	12,0	18,5	24,5	-	330	230	120	8	M6	16,0	-	PHF FX120-25X47
	28	50	-	12,0	18,5	24,5	-	370	220	120	8	M6	16,0	-	PHF FX120-28X50
	30	52	-	12,0	18,5	24,5	-	430	210	120	8	M6	16,0	-	PHF FX120-30X52
	35	57	-	15,0	22,0	28,0	-	610	170	100	12	M6	16,0	-	PHF FX120-35X57
	38	60	-	15,0	22,0	28,0	-	680	170	100	12	M6	16,0	-	PHF FX120-38X60
	40	62	-	15,0	22,0	28,0	-	780	170	100	12	M6	16,0	-	PHF FX120-40X62
	42	70	-	18,0	28,0	36,0	-	1 480	190	110	12	M8	41,0	-	PHF FX120-42X70
	45	73	-	18,0	28,0	36,0	-	1 500	210	130	12	M8	41,0	-	PHF FX120-45X73
	48	76	-	18,0	28,0	36,0	-	1 550	210	130	12	M8	41,0	-	PHF FX120-48X76
	50	78	-	18,0	28,0	36,0	-	1 650	190	120	12	M8	41,0	-	PHF FX120-50X78
	55	83	-	18,0	28,0	36,0	-	2 000	190	120	16	M8	41,0	-	PHF FX120-55X83
	60	88	-	18,0	28,0	36,0	-	2 350	190	120	16	M8	41,0	-	PHF FX120-60X88
	70	105	-	22,0	35,0	45,0	-	3 900	180	120	12	M10	70,0	-	PHF FX120-70X105
	80	115	-	22,0	35,0	45,0	-	4 800	170	120	16	M10	70,0	-	PHF FX120-80X115
FX130	17	50	50	-	-	56,0	24,5	210	-	-	4	M6	17,0	0,50	PHF FX130-17X50
	18	50	50	-	-	56,0	24,5	230	-	-	4	M6	17,0	0,50	PHF FX130-18X50
	19	50	50	-	-	56,0	24,5	240	-	-	4	M6	17,0	0,50	PHF FX130-19X50
	20	50	50	-	-	56,0	24,5	250	-	-	4	M6	17,0	0,50	PHF FX130-20X50
	22	55	60	-	-	66,0	24,5	270	-	-	4	M6	17,0	0,60	PHF FX130-22X55
	24	55	60	-	-	66,0	24,5	300	-	-	4	M6	17,0	0,60	PHF FX130-24X55
	25	55	60	-	-	66,0	36,5	460	-	-	6	M6	17,0	0,60	PHF FX130-25X55
	28	60	60	-	-	66,0	36,5	520	-	-	6	M6	17,0	0,70	PHF FX130-28X60
	30	60	60	-	-	66,0	36,5	560	-	-	6	M6	17,0	0,70	PHF FX130-30X60
	32	63	60	-	-	66,0	36,5	590	-	-	6	M6	17,0	0,70	PHF FX130-32X63
	35	75	75	-	-	83,0	45,5	770	-	-	4	M8	41,0	1,30	PHF FX130-35X75
	38	75	75	-	-	83,0	45,5	860	-	-	4	M8	41,0	1,30	PHF FX130-38X75
	40	75	75	-	-	83,0	45,5	910	-	-	4	M8	41,0	1,30	PHF FX130-40X75
	42	78	75	-	-	83,0	45,5	940	-	-	4	M8	41,0	2,00	PHF FX130-42X78
	45	85	85	-	-	93,0	67,5	1 530	-	-	6	M8	41,0	2,20	PHF FX130-45X85
	48	90	85	-	-	93,0	67,5	1 610	-	-	6	M8	41,0	2,40	PHF FX130-48X90
	50	90	85	-	-	93,0	67,5	1 700	-	-	6	M8	41,0	2,30	PHF FX130-50X90
	55	94	85	-	-	93,0	90,5	2 460	-	-	8	M8	41,0	2,90	PHF FX130-55X94
	60	100	85	-	-	93,0	90,5	2 720	-	-	8	M8	41,0	3,20	PHF FX130-60X100
	65	105	85	-	-	93,0	90,5	2 940	-	-	8	M8	41,0	3,00	PHF FX130-65X105
	70	115	100	-	-	110,0	107,5	3 780	-	-	6	M10	83,0	4,30	PHF FX130-70X115
	75	125	100	-	-	110,0	107,5	4 040	-	-	6	M10	83,0	5,00	PHF FX130-75X125
	80	125	100	-	-	110,0	107,5	4 300	-	-	6	M10	83,0	4,70	PHF FX130-80X125

FX keyless bushings

FX140

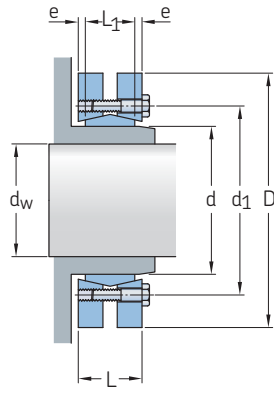


FX140

Bushing no.	Dimensions						Transmissible axial force F_t	Transmissible torque M_t	Shaft surface pressure P_w	Hub surface pressure P_n	Clamp screws Quantity	Clamp screws size	Screw tightening torque M_s	Mass	Designation
	d	D	L_1	L_2	L_3	B									
–	mm						kN	Nm	N/mm ²				Nm	kg	–
FX140	18	40	12,0	15,0	20,0	24,0	23,7	210	235	130	6	M4	5,0	0,20	PHF FX140-18X40
	19	41	12,0	15,0	20,0	24,0	23,7	220	220	128	6	M4	5,0	0,20	PHF FX140-19X41
	20	42	12,0	15,0	20,0	24,0	27,7	270	245	145	7	M4	5,0	0,20	PHF FX140-20X42
	22	44	12,0	15,0	20,0	24,0	27,7	300	225	140	7	M4	5,0	0,20	PHF FX140-22X44
	24	46	12,0	15,0	20,0	24,0	27,7	330	205	135	7	M4	5,0	0,20	PHF FX140-24X46
	25	47	12,0	15,0	20,0	24,0	27,7	340	195	130	7	M4	5,0	0,20	PHF FX140-25X47
	28	50	12,0	15,0	20,0	24,0	35,6	500	225	155	9	M4	5,0	0,20	PHF FX140-28X50
	30	52	12,0	15,0	20,0	24,0	35,6	530	210	151	9	M4	5,0	0,20	PHF FX140-30X52
	32	54	12,0	15,0	20,0	24,0	35,6	570	197	146	9	M4	5,0	0,20	PHF FX140-32X54
	35	57	16,0	19,0	24,0	28,0	39,5	690	158	115	10	M4	5,0	0,30	PHF FX140-35X57
	36	58	16,0	19,0	24,0	28,0	39,5	710	155	113	10	M4	5,0	0,30	PHF FX140-36X58
	38	60	16,0	19,0	24,0	28,0	43,5	830	160	120	11	M4	5,0	0,30	PHF FX140-38X60
	40	62	16,0	19,0	24,0	28,0	43,5	870	150	116	11	M4	5,0	0,40	PHF FX140-40X62
	42	70	19,0	23,0	30,0	36,0	73,0	1 530	200	146	8	M6	17,0	0,60	PHF FX140-42X70
	45	73	19,0	23,0	30,0	36,0	73,0	1 640	185	140	8	M6	17,0	0,60	PHF FX140-45X73
	48	76	19,0	23,0	30,0	36,0	73,0	1 750	175	134	8	M6	17,0	0,60	PHF FX140-48X76
50	78	19,0	23,0	30,0	36,0	73,0	1 820	165	131	8	M6	17,0	0,60	PHF FX140-50X78	
55	83	19,0	23,0	30,0	36,0	73,0	2 000	150	123	8	M6	17,0	0,70	PHF FX140-55X83	
56	84	19,0	23,0	30,0	36,0	73,0	2 040	150	120	8	M6	17,0	0,70	PHF FX140-56X84	
60	88	19,0	23,0	30,0	36,0	82,1	2 460	158	130	9	M6	17,0	0,70	PHF FX140-60X88	
63	91	19,0	23,0	30,0	36,0	82,1	2 580	150	125	9	M6	17,0	0,90	PHF FX140-63X91	
65	93	19,0	23,0	30,0	36,0	82,1	2 660	140	120	9	M6	17,0	1,00	PHF FX140-65X93	
70	105	23,0	28,0	37,0	45,0	134,8	4 720	180	148	8	M8	41,0	1,50	PHF FX140-70X105	
75	110	23,0	28,0	37,0	45,0	134,8	5 050	170	140	8	M8	41,0	1,50	PHF FX140-75X110	
80	115	23,0	28,0	37,0	45,0	134,8	5 390	160	135	8	M8	41,0	1,70	PHF FX140-80X115	
85	120	23,0	28,0	37,0	45,0	134,8	5 730	150	130	8	M8	41,0	2,00	PHF FX140-85X120	
90	125	23,0	28,0	37,0	45,0	168,5	7 580	156	156	10	M8	41,0	2,30	PHF FX140-90X125	

FX keyless bushings

FX190

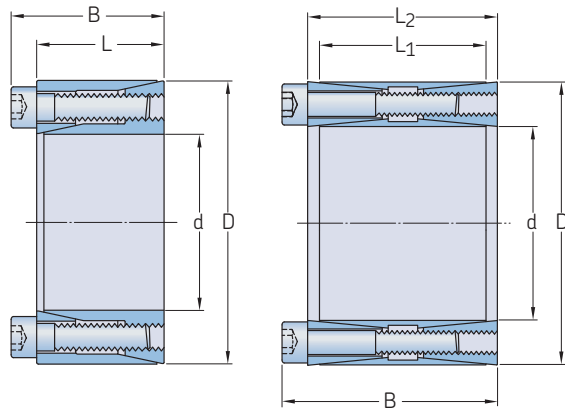


FX190

Bushings no.	Dimensions							Transmissible axial force F_t	Transmissible torque M_t	Clamp screws Quantity	Clamp screws size	Screw tightening torque M_s	Mass	Designation
	d	D	d_w	L	L_1	d_1	e							
-	mm							kN	Nm			Nm	kg	-
FX190	14	38	11	11,0	7,0	23,0	2,00	6,00	30	4	M5*	4,0	0,10	PHF FX190-14X38
	16	41	13	15,0	11,0	26,0	2,00	10,00	70	5	M5*	4,0	0,10	PHF FX190-16X41
	24	50	19	19,5	14,0	36,0	2,75	25,00	170	6	M5*	4,0	0,20	PHF FX190-24X50
	30	60	24	21,5	16,0	44,0	2,75	29,00	300	7	M5*	4,0	0,30	PHF FX190-30X60
	36	72	28	23,5	18,0	52,0	2,75	50,00	440	5	M6	12,0	0,40	PHF FX190-36X72
	44	80	32	25,5	20,0	61,0	2,75	64,00	620	7	M6	12,0	0,60	PHF FX190-44X80
	50	90	38	27,5	22,0	70,0	2,75	79,00	940	8	M6	12,0	0,80	PHF FX190-50X90
	55	100	42	30,5	23,0	75,0	3,75	79,00	1 160	8	M6	12,0	1,10	PHF FX190-55X100
	62	110	48	30,5	23,0	86,0	3,75	100,00	1 850	10	M6	12,0	1,30	PHF FX190-62X110
	68	115	50	30,5	23,0	86,0	3,75	97,00	2 000	10	M6	12,0	1,40	PHF FX190-68X115
	75	138	55	32,5	25,0	100,0	3,75	119,00	2 500	7	M8	30,0	1,70	PHF FX190-75X138
	80	145	60	32,5	25,0	100,0	3,75	124,00	3 200	7	M8	30,0	1,90	PHF FX190-80X145
	85	155	65	39,0	30,0	114,0	4,50	175,00	4 800	10	M8	30,0	3,50	PHF FX190-85X155
	90	155	65	39,0	30,0	114,0	4,50	170,00	4 750	10	M8	30,0	3,30	PHF FX190-90X155
	100	170	70	44,0	34,0	124,0	5,00	195,00	6 900	12	M8	30,0	4,70	PHF FX190-100X170
	110	185	75	50,0	39,0	136,0	5,50	229,00	7 200	9	M10	59,0	5,90	PHF FX190-110X185
	115	188	80	50,0	39,0	141,0	5,50	235,00	7 400	9	M10	59,0	5,50	PHF FX190-115X188
	120	215	80	54,0	42,0	160,0	6,00	285,00	10 600	12	M10	59,0	9,00	PHF FX190-120X215
	125	215	85	54,0	42,0	160,0	6,00	296,00	11 000	12	M10	59,0	8,30	PHF FX190-125X215
	130	215	90	54,0	42,0	160,0	6,00	304,00	11 300	12	M10	59,0	8,00	PHF FX190-130X215
	140	230	95	60,5	46,0	175,0	7,25	367,00	15 100	10	M12	100,0	10,00	PHF FX190-140X230
	155	265	105	64,5	50,0	192,0	7,25	447,00	22 000	12	M12	100,0	15,00	PHF FX190-155X265
	160	265	110	64,5	50,0	192,0	7,25	460,00	22 600	12	M12	100,0	14,50	PHF FX190-160X265
	165	290	115	71,0	56,0	210,0	7,50	595,00	31 000	8	M16	250,0	22,00	PHF FX190-165X290
	170	290	120	71,0	56,0	210,0	7,50	610,00	31 900	8	M16	250,0	21,00	PHF FX190-170X290
	175	300	125	71,0	56,0	220,0	7,50	605,00	36 000	8	M16	250,0	22,00	PHF FX190-175X300
	180	330	130	86,0	71,0	236,0	7,50	778,00	52 000	8	M16	250,0	21,00	PHF FX190-180X330
	185	330	135	86,0	71,0	236,0	7,50	778,00	52 000	10	M24	250,0	37,00	PHF FX190-185X330
	190	330	140	86,0	71,0	236,0	7,50	800,00	63 500	10	M16	250,0	36,00	PHF FX190-190X330
	195	350	140	86,0	71,0	246,0	7,50	933,00	65 000	12	M16	250,0	41,00	PHF FX190-195X350
	200	350	150	86,0	71,0	246,0	7,50	990,00	74 000	12	M16	250,0	41,00	PHF FX190-200X350
	220	370	160	104,0	88,0	270,0	8,00	1 190,00	95 000	15	M16	250,0	54,00	PHF FX190-220X370
	240	405	170	109,0	92,0	295,0	8,50	1 464,00	120 000	12	M20	490,0	67,00	PHF FX190-240X405
	260	430	190	120,0	103,0	321,0	8,50	1 760,00	164 000	14	M20	490,0	82,00	PHF FX190-260X430
	280	460	210	134,0	114,0	346,0	10,00	2 090,00	217 000	16	M20	490,0	102,00	PHF FX190-280X460
	300	485	230	142,0	122,0	364,0	10,00	2 431,00	275 000	18	M20	490,0	118,00	PHF FX190-300X485
320	520	240	142,0	122,0	386,0	10,00	2 647,00	312 000	20	M20	490,0	131,00	PHF FX190-320X520	
340	570	250	156,0	134,0	408,0	11,00	3 119,00	390 000	24	M20	490,0	186,00	PHF FX190-340X570	
350	580	270	162,0	140,0	432,0	11,00	3 276,00	442 000	24	M20	490,0	195,00	PHF FX190-350X580	
360	590	280	162,0	140,0	432,0	11,00	3 310,00	463 000	24	M20	490,0	204,00	PHF FX190-360X590	
380	645	290	168,0	144,0	458,0	12,00	3 910,00	567 000	20	M24	840,0	239,00	PHF FX190-380X645	
390	660	300	168,0	144,0	468,0	12,00	4 160,00	624 000	21	M24	840,0	260,00	PHF FX190-390X660	
400	680	315	168,0	144,0	480,0	12,00	4 260,00	670 000	21	M24	840,0	280,00	PHF FX190-400X680	
420	690	330	188,0	164,0	504,0	12,00	4 850,00	780 000	24	M24	840,0	316,00	PHF FX190-420X690	
440	750	340	202,0	177,0	527,0	12,50	4 740,00	806 000	24	M24	840,0	408,00	PHF FX190-440X750	
460	770	360	202,0	177,0	547,0	12,50	5 670,00	1 000 000	28	M24	840,0	420,00	PHF FX190-460X770	
480	800	380	213,0	188,0	570,0	12,50	6 150,00	1 170 000	30	M24	840,0	505,00	PHF FX190-480X800	

FX keyless bushings

FX350 | FX400



FX350

FX400

Bushing no.	Dimensions						Transmissible axial force F_t	Transmissible torque M_t	Shaft surface pressure P_w	Hub surface pressure P_n	Clamp screws	Clamp screws size	Screw tightening torque	Mass	Designation	
	d	D	L	L ₁	L ₂	B										
mm																
kN																
Nm																
N/mm ²																
Quantity																
Nm																
kg																
FX350	10	20	13	-	-	15,5	-	15	110	55	4	M2.5	1,2	0,02	PHF FX350-10X20	
	12	22	13	-	-	15,5	-	20	90	50	4	M2.5	1,2	0,02	PHF FX350-12X22	
	14	26	17	-	-	20,0	-	35	105	55	4	M3	2,1	0,04	PHF FX350-14X26	
	15	28	17	-	-	20,0	-	40	100	50	4	M3	2,1	0,04	PHF FX350-15X28	
	16	32	17	-	-	21,0	-	70	130	65	4	M4	4,9	0,07	PHF FX350-16X32	
	18	35	21	-	-	25,0	-	80	115	60	4	M4	4,9	0,09	PHF FX350-18X35	
	19	35	21	-	-	25,0	-	85	110	60	4	M4	4,9	0,08	PHF FX350-19X35	
	20	38	21	-	-	26,0	-	220	220	115	6	M5	10,0	0,10	PHF FX350-20X38	
	22	40	21	-	-	26,0	-	240	200	110	6	M5	10,0	0,11	PHF FX350-22X40	
	24	47	26	-	-	32,0	-	380	220	110	6	M6	17,0	0,19	PHF FX350-24X47	
		25	47	26	-	-	32,0	-	390	210	110	6	M6	17,0	0,19	PHF FX350-25X47
	FX400	45	75	-	56,0	64,0	72,0	155	3 460	165	100	8	M8	41,0	1,30	PHF FX400-45X75
48		80	-	56,0	64,0	72,0	155	3 680	150	95	8	M8	41,0	1,50	PHF FX400-48X80	
50		80	-	56,0	64,0	72,0	155	3 820	147	95	8	M8	41,0	1,40	PHF FX400-50X80	
55		85	-	56,0	64,0	72,0	155	4 260	135	85	8	M8	41,0	1,50	PHF FX400-55X85	
60		90	-	56,0	64,0	72,0	190	5 820	155	100	10	M8	41,0	1,50	PHF FX400-60X90	
65		95	-	56,0	64,0	72,0	190	6 270	140	95	10	M8	41,0	1,60	PHF FX400-65X95	
70		110	-	70,0	78,0	88,0	305	10 730	170	105	10	M10	83,0	3,00	PHF FX400-70X110	
75		115	-	70,0	78,0	88,0	305	11 540	155	100	10	M10	83,0	3,10	PHF FX400-75X115	
80		120	-	70,0	78,0	88,0	369	14 700	175	115	12	M10	83,0	3,50	PHF FX400-80X120	
85		125	-	70,0	78,0	88,0	369	15 700	165	110	12	M10	83,0	3,50	PHF FX400-85X125	
90		130	-	70,0	78,0	88,0	370	16 610	157	106	12	M10	83,0	3,80	PHF FX400-90X130	
95		135	-	70,0	78,0	88,0	370	17 530	150	102	12	M10	83,0	4,00	PHF FX400-95X135	
100		145	-	90,0	100,0	112,0	538	26 900	160	110	12	M12	145,0	6,00	PHF FX400-100X145	
110		155	-	90,0	100,0	112,0	538	29 530	143	102	12	M12	145,0	6,20	PHF FX400-110X155	
120		165	-	90,0	100,0	112,0	628	37 610	154	112	14	M12	145,0	6,80	PHF FX400-120X165	
130		180	-	104,0	116,0	130,0	738	48 000	143	106	12	M14	230,0	9,80	PHF FX400-130X180	
140		190	-	104,0	116,0	130,0	861	60 290	160	117	14	M14	230,0	10,20	PHF FX400-140X190	
150		200	-	104,0	116,0	130,0	985	73 800	165	125	16	M14	230,0	10,90	PHF FX400-150X200	
160		210	-	104,0	116,0	130,0	983	78 770	155	118	16	M14	230,0	11,50	PHF FX400-160X210	
170		225	-	134,0	146,0	162,0	1197	101 730	140	108	14	M16	355,0	17,20	PHF FX400-170X225	
180		235	-	134,0	146,0	162,0	1369	123 200	150	115	16	M16	355,0	18,00	PHF FX400-180X235	
190		250	-	134,0	146,0	162,0	1368	129 880	141	110	16	M16	355,0	21,50	PHF FX400-190X250	
200		260	-	134,0	146,0	162,0	1368	136 840	137	104	16	M16	355,0	22,00	PHF FX400-200X260	
220		285	-	134,0	146,0	162,0	1710	188 000	155	120	20	M16	355,0	25,00	PHF FX400-220X285	
240		305	-	134,0	146,0	162,0	1880	225 000	155	120	22	M16	355,0	27,00	PHF FX400-240X305	
260		325	-	134,0	146,0	162,0	1880	244 000	155	115	22	M16	355,0	30,00	PHF FX400-260X325	
280		355	-	165,0	177,0	197,0	2670	373 000	145	120	20	M20	690,0	46,00	PHF FX400-280X355	
300		375	-	165,0	177,0	197,0	2930	440 000	155	125	22	M20	690,0	50,00	PHF FX400-300X375	
320		405	-	165,0	177,0	197,0	2930	470 000	145	115	22	M20	690,0	60,00	PHF FX400-320X405	
340		425	-	165,0	177,0	197,0	3200	544 000	150	120	24	M20	690,0	65,00	PHF FX400-340X425	
360		455	-	190,0	202,0	224,0	3650	658 000	140	110	22	M22	930,0	89,00	PHF FX400-360X455	
380		475	-	190,0	202,0	224,0	4320	821 000	160	130	26	M22	930,0	93,00	PHF FX400-380X475	
400	495	-	190,0	202,0	224,0	4320	864 000	150	120	26	M22	930,0	98,00	PHF FX400-400X495		