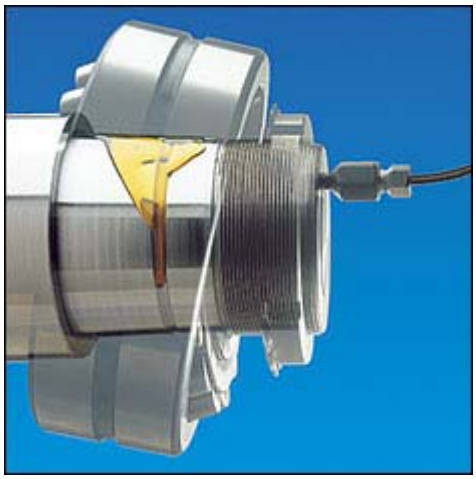
The SKF oil-injection method

The SKF oil-injection method is widely used for mounting and dismounting components with an interference fit, especially rolling bearings. Oil is injected under high pressure - in the region of 50 MPa (7,250 psi) for bearings - between the surfaces through ducts and distribution grooves. The oil film that forms over the seating decreases friction to almost zero. In case you want to prepare your shaft for the oil injection method, refer to the drawings and dimensions given below. The distribution groove should always be positioned one third of the bearing width from the end of the seating.

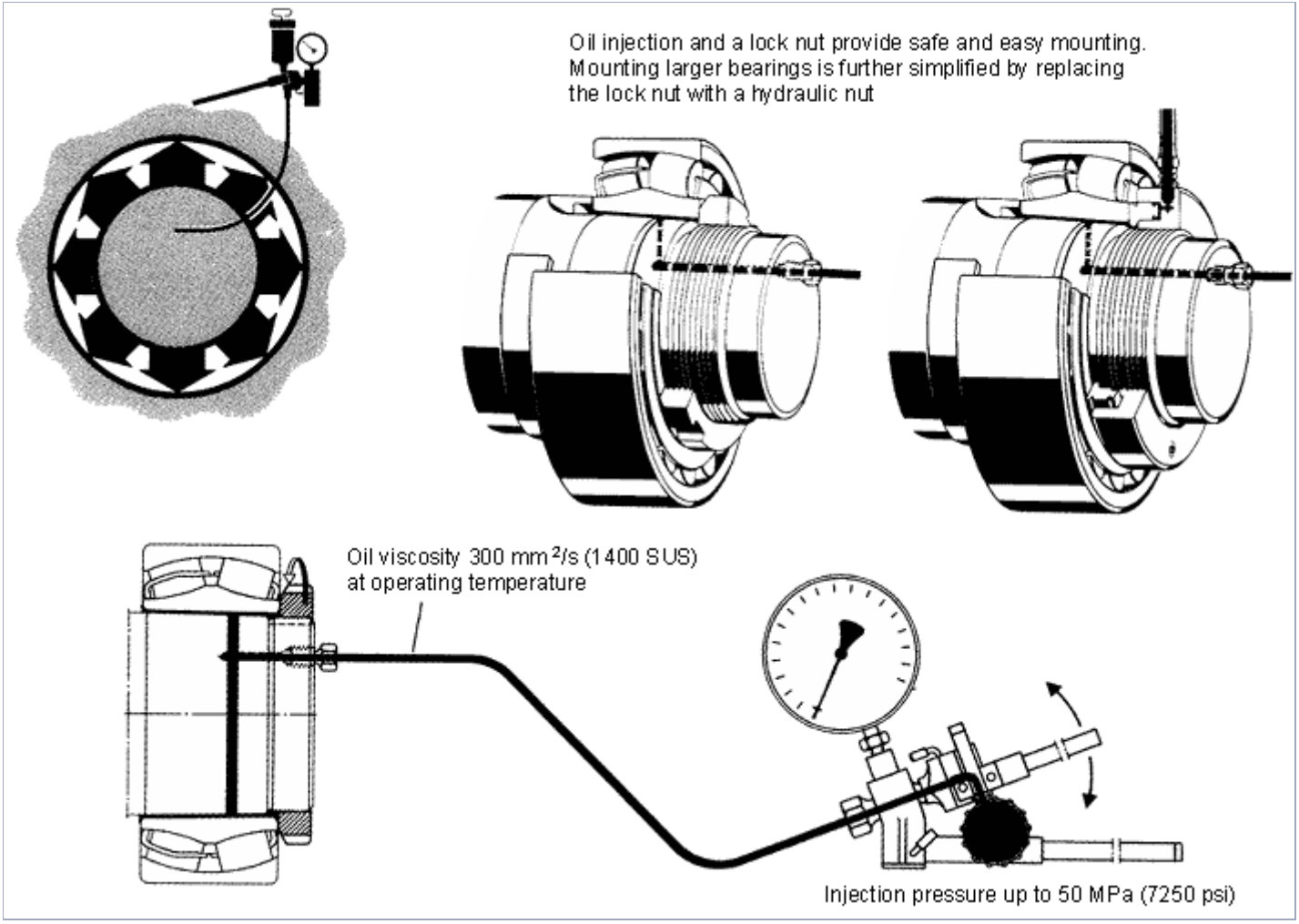
Tapered contact surfaces
Oil injection can be used for mounting as well as dismounting on tapered seatings. A combination of oil injection and a hydraulic nut will further facilitate the mounting of larger bearings.

It also simplifies dismounting because the bearing will free itself as soon as the oil is injected. A stop must be provided; otherwise, the bearing might be ejected with considerable force. To facilitate drainage after mounting, use oil with a viscosity of about 300 mm²/s (1.400 SUS) at operating temperature (such as SKF LHMF 300).

Cylindrical contact surfaces
For this type of seating use only oil for dismounting. Make sure oil does not drain too quickly by using a viscosity of about 1.000 mm²/s (4.600 SUS) at operating temperature (such as SKF LHDF 900). This is important because when the bearing is withdrawn past the distribution groove, no more oil will be injected between the surfaces and the bearing may make metal-to-metal contact with the shaft.



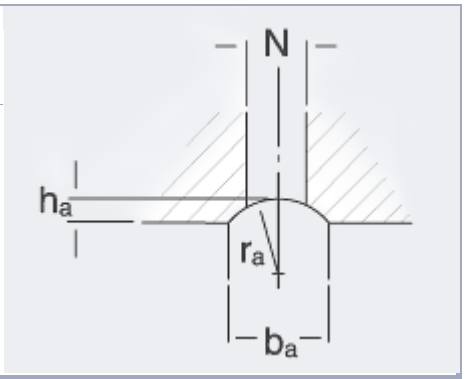
For detailed information concerning the Oil injection method refer to SKF Oil Injection CD-ROM ref. MP3601.



Recommended dimensions for oil distribution grooves with associated duct

Diameter of mating surfaces	
over incl.	over incl.
mm	inch
0 - 30	0 - 1.18
30 - 50	1.18 - 1.97
50 - 100	1.97 - 3.94
100 - 150	3.94 - 5.91

100 - 150	3.94 - 5.91
150 - 200	5.91 - 7.87
200 - 250	7.87 - 9.84
250 - 300	9.84 - 11.8
300 - 400	11.8 - 15.7
400 - 500	15.7 - 19.7
500 - 650	19.7 - 25.6
650 - 800	25.6 - 31.5
800 - 1000	31.5 - 39.4

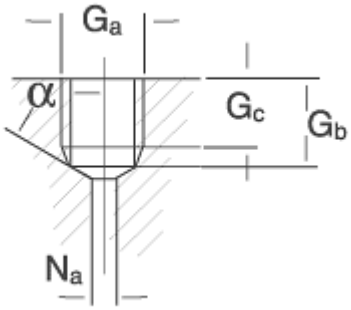


General applications

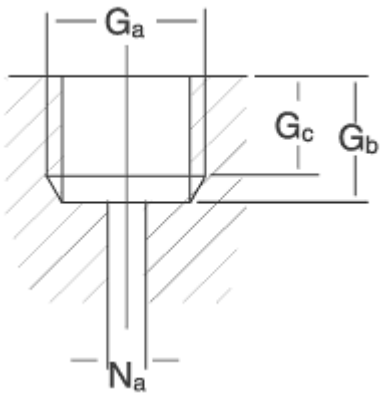
ba		ha		ra		N		ba		ha		ra		N	
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
2,5	0.10	0,5	0.02	2	0.08	2	0.08	2,5	0.10	0,3	0.012	2	0.08	2	0.08
3	0.12	0,5	0.02	2,5	0.10	2,5	0.10	2,5	0.10	0,5	0.02	2	0.08	2	0.08
4	0.16	0,8	0.03	3	0.12	3	0.12	3	0.12	0,5	0.02	2,5	0.10	2,5	0.10
5	0.20	1	0.04	4	0.16	4	0.16	4	0.16	0,8	0.03	3	0.12	3	0.12
6	0.24	1,25	0.05	4,5	0.18	5	0.20	4	0.16	0,8	0.03	3	0.12	3	0.12
7	0.28	1,5	0.06	5	0.20	5	0.20	5	0.20	1	0.04	4	0.16	4	0.16
8	0.31	1,5	0.06	6	0.24	6	0.24	5	0.20	1	0.04	4	0.16	4	0.16
10	0.39	2	0.08	7	0.28	7	0.28	6	0.24	1,25	0.05	4,5	0.18	5	0.20
12	0.47	2,5	0.10	8	0.31	8	0.31	7	0.28	1,5	0.06	5	0.20	5	0.20
14	0.55	3	0.12	10	0.39	10	0.39	8	0.31	1,5	0.06	6	0.24	6	0.24
16	0.63	3	0.12	12	0.47	12	0.47	10	0.39	2	0.08	7	0.28	7	0.28
18	0.71	4	0.16	12	0.47	12	0.47	12	0.47	2,5	0.10	8	0.31	8	0.31

Recommended designs of connection holes with associated duct

Thread G_a	Design	Angle *a*	Dimensions G_b		G_c *		N_a max.	
-	-	degrees	mm	inch	mm	inch	mm	inch
M 4x0,5	A	60	5	0.20	4	0.16	2	0.08
M 6	A	60	10	0.39	8	0.31	3	0.12
G 1/8	A	60	12**	0.47**	10**	0.39**	3	0.12
G 1/4	A	60	15	0.59	12	0.47	5	0.20
G 3/8	B	-	15	0.59	12	0.47	8	0.31
G 1/2	B	-	18	0.71	14	0.55	8	0.31
G 3/4	B	-	20	0.79	16	0.63	8***	0.31***



Design A



Design B

* *Effective threaded length*
** *Minimum value, which may be increased by 2 mm (0.08 in) if material thickness allows*
*** *Minimum value 6 mm (0.24 in)*

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