

Types ZA, ZAG

Angle 60°, 75°

without draw-off thread

Runout

Type ZA max. 0.007 mm

Type ZAG max. 0.003 mm

with test report

Application

For turning and grinding tubes and workpieces with large bores

Mechanical engineering

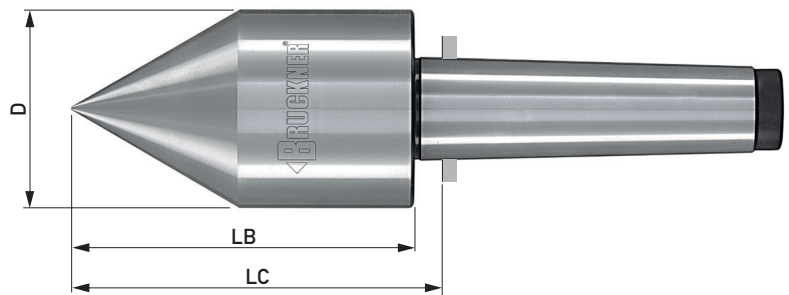
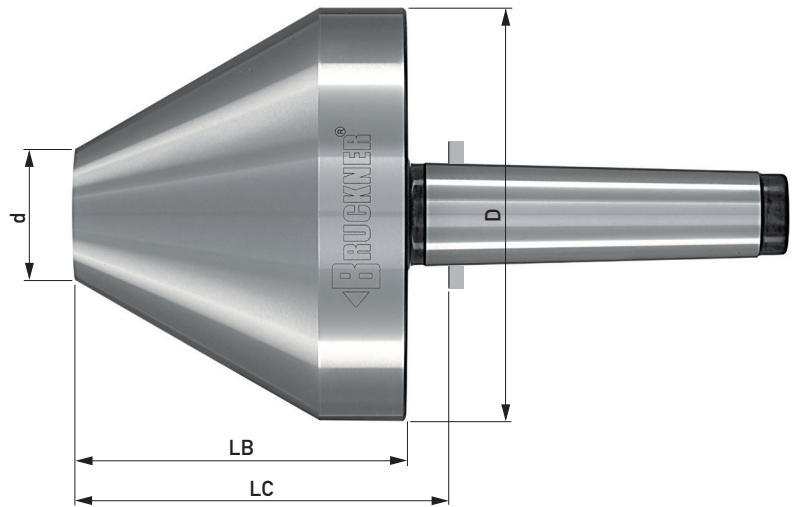
Main spindles for machine tools, hollow shafts, paper rolls, rings and gears

Car industry/Motor construction

Truck axial tubes, pistons, cylinder liners, crankshafts, wheel hubs

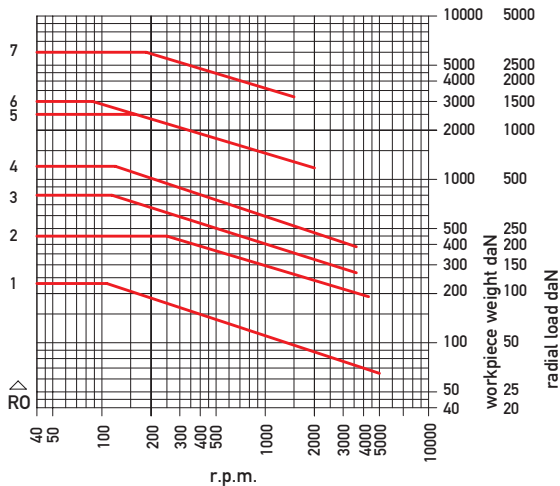
Aircraft industry/Shipbuilding

Engine main shafts and transmission components, turbines, drive shafts

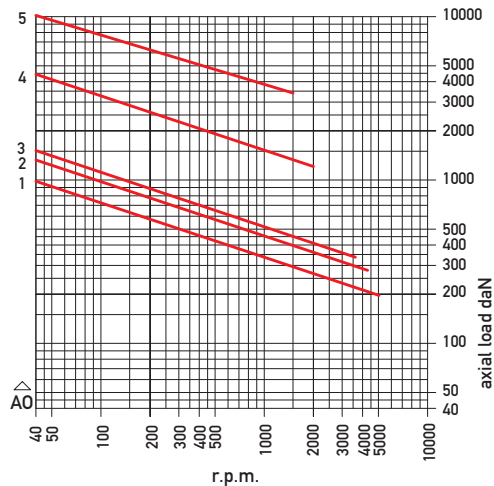


Radial and axial loads for a bearing life of 2000 operating hours

Radial – Types ZA, ZAG without draw-off-thread



Axial – Types ZA, ZAG without draw-off-thread



Types ZA, ZAG 60° without draw-off thread										
Morse taper	ID.No.		D	d	LC	LB	Workpiece weight max. daN*	r.p.m. max.*	Load graph	
	ZA	ZAG							radial	axial
2	1920:60	2120:60	45	15	78	70	230	5000	R01	A01
2	1821:60	2021:60	60	1	93	85				
2	1921:60	2121:60	60	20	74	66				
2	1922:60	2122:60	80	25	70	62				
3	1930:60	2130:60	45	15	78	70				
3	1831:60	2031:60	60	1	111	104				
3	1931:60	2131:60	60	20	95	88	450	4300	R02	A02
3	1932:60	2132:60	80	25	95	88				
3	1933:60	2133:60	100	35	95	88				
4	1841:60	2041:60	60	1	113	104				
4	1941:60	2141:60	60	20	97	88	1200	3600	R04	A03
4	1942:60	2142:60	80	25	113	100				
4	1943:60	2143:60	100	35	113	100				
4	1944:60	2144:60	125	40	113	100				
4	1945:60	2145:60	150	50	113	100				
4	1947:60	2147:60	200	75	135	122				
5	1952:60	2152:60	80	25	113	100	1200	3600	R04	A03
5	1953:60	2153:60	100	35	113	100				
5	1954:60	2154:60	125	40	144	130	2500	2000	R05	A04
5	1955:60	2155:60	150	50	136	122				
5	1957:60	2157:60	200	75	136	122				
5	1958:60	2158:60	250	130	136	122				
5	1959:60	2159:60	300	180	136	122				
6	1964:60	2164:60	125	40	146	130				
6	1965:60	2165:60	150	50	138	122	3000	2000	R06	A04
6	1967:60	2167:60	200	75	138	122				
6	1968:60	2168:60	250	130	138	122				
6	1969:60	2169:60	300	180	138	122				
6	1970:60	2170:60	350	230	138	122				
6	1983:60	2183:60	250	100	176	160				
6	1985:60	2185:60	350	180	186	170	6000	1500	R07	A05

Bullnose centres with other shanks on request

*observe the load graphs

Types ZA, ZAG 75° without draw-off thread										
Morse taper	ID.No.		D	d	LC	LB	Workpiece weight max. daN*	r.p.m. max.*	Load graph	
	ZA	ZAG							radial	axial
5	1953:75	2153:75	100	25	109	96	1200	3600	R04	A03
5	1954:75	2154:75	125	30	144	130				
5	1955:75	2155:75	150	50	134	120	2500	2000	R05	A04
5	1957:75	2157:75	200	75	124	110				
5	1958:75	2158:75	250	110	124	110				
5	1959:75	2159:75	300	160	124	110				
6	1964:75	2164:75	125	30	146	130	3000	2000	R06	A04
6	1965:75	2165:75	150	50	136	120				
6	1967:75	2167:75	200	75	126	110				
6	1968:75	2168:75	250	110	126	110				
6	1969:75	2169:75	300	160	126	110				
6	1970:75	2170:75	350	190	138	122				
6	1983:75	2183:75	250	75	181	165	6000	1500	R07	A05
6	1985:75	2185:75	350	120	186	170				

Bullnose centres with other shanks on request

*observe the load graphs