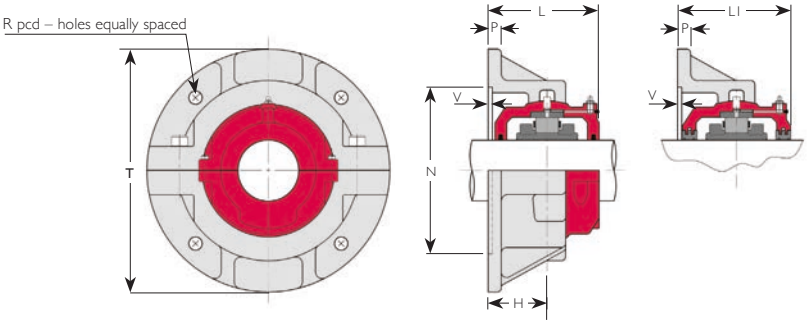
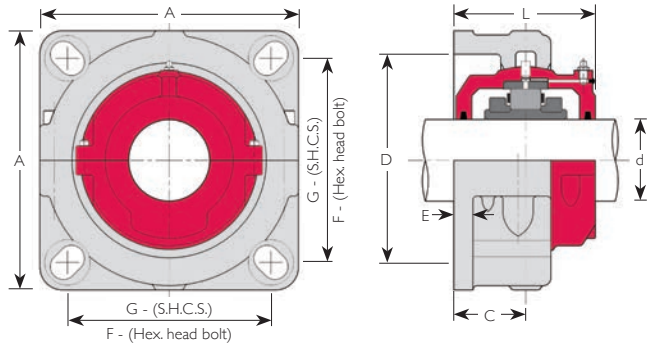


02/02E SERIES

Group Reference	Shaft Diameter d		Bearing Reference (1)		Flange Reference	T(2) (mm)	Bolts	R (mm)	P (mm)	H (mm)	N(3) (mm)	V(3) (mm)	L (mm)	LI (mm)	Mass (flange only) (kg)
02 508	140mm 145mm	5 3/16" 5 7/16" 5 1/2"	02 B 140M 02 B 145M	02 B 503 02 B 507 02 B 508	F30	508	4-off M24 or 1"	444	25	114	377.82	3	208	208	67
02 600	150mm 155mm 160mm	5 15/16" 6"	02 B 150M 02 B 155M 02 B 600-160M	02 B 515 02 B 600	F31	534	4-off M24 or 1"	466	25	124	393.7	3	226	226	81
02E 608	160mm 170mm	6 7/16" 6 1/2"	02E B 160M 02E B 170M	02E B 607 02E B 608	F32	584	4-off M30 or 1 1/4"	508	29	124	428.63	5	227	240	95
02E 700	175mm 180mm	6 15/16" 7"	02E B 175M 02E B 180M	02E B 615 02E B 700	F33	596	4-off M30 or 1 1/4"	524	32	130	444.5	5	241	251	100
02E 800	190mm 200mm	7 15/16" 8"	02E B 190M 02E B 200M	02E B 715 02E B 800	F34	648	4-off M30 or 1 1/4"	572	32	137	492.13	5	254.5	266	138
02E 900	220mm 230mm	9"	02E B 220M 02E B 230M	02E B 900	F35	712	4-off M36 or 1 1/2"	620	35	146	527.05	5	267	283	145
02E 1000	240mm 250mm 260mm	10"	02E B 240M 02E B 250M 02E B 260M	02E B 1000	F36	736	4-off M36 or 1 1/2"	660	38	149	568.33	5	273	289	178
02E 1100	280mm	11"	02E B 280M	02E B 1100	F37	762	8-off M30 or 1 1/4"	682	38	159	603.25	5	291	309	195
02E 1200	300mm	12"	02E B 300M	02E B 1200	F38	788	8-off M30 or 1 1/4"	708	41	162	628.65	5	296	315	195
02 1300	320mm 330mm	13"	02 B 320M 02 B 330M	02 B 1300	F39	914	8-off M30 or 1 1/4"	800	45	190	680	7	339	355	309

1) For full references of bearings and cartridges see pages 38 to 42
2) Dimension shown is as-cast dimension. Depending upon manufacturing method used, flanges supplied may be machined 5mm smaller
3) Dimensions shown are for locating spigot for mounting flange on to. Diameter tolerance of locating spigot: f8



100 SERIES

Group Reference	Shaft Diameter d		Bearing Reference (1)		Flange Reference	A (mm)	SHCS Size	SHCS G centres (mm)	Hex. Head Bolt Size	Hex. Head Bolt F centres (mm)	C (mm)	D (mm)	E (mm)	L(2) (mm)	Mass (flange only) (kg)
100 300	75mm	2 15/16" 3"	100 B 75M	100 B 215 100 B 300	DF03	184	M16	136	5/8"	141	55	146	16	107	5.6
100 307	85mm	3 7/16"	100 B 85M	100 B 307	DF04	217	M20	164	3/4"	171	60	178	16	117	8.5
100 400	100mm	3 15/16" 4"	100 B 100M	100 B 315 100 B 400	DFN0510	214(3)	M20	171	3/4"	171	79	180	25	147	10.9

01E SERIES

Group Reference	Shaft Diameter d		Bearing Reference (1)		Flange Reference	A (mm)	SHCS Size	SHCS G centres (mm)	Hex. Head Bolt Size	Hex. Head Bolt F centres (mm)	C (mm)	D (mm)	E (mm)	L(2) (mm)	Mass (flange only) (kg)
01E 200	45mm 50mm	1 11/16" 1 3/4" 1 15/16" 2"	01E B 45M 01E B 50M	01E B 111 01E B 112 01E B 115 01E B 200	DF02	165	M12	114	1/2"	118	52	120	13	101	4
01E 208	55mm 60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	01E B 55M 01E B 60M 01E B 65M	01 E B 203 01 E B 204 01 E B 207 01 E B 208	DF03	184	M16	136	5/8"	141	55	146	16	107	5.6
01E 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	01E B 70M 01E B 75M	01E B 211 01E B 212 01E B 215 01 E B 300	DF04	217	M20	164	3/4"	171	60	178	16	117	8.5
01E 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	01E B 80M 01E B 85M 01E B 90M	01E B 303 01E B 304 01E B 307 01E B 308	DFN0510	214(3)	M20	171	3/4"	171	79	180	25	147	10.9

1) For full references of bearings and cartridges see pages 30 and 32

2) Applies for cartridges with either single seal groove or TL seals

3) Dimension applies to backface of flange. Joint bosses project beyond footprint of backface. Width over joint bosses: 255mm

HANGERS

Hanger units are a compact means of supporting the shafts of screw conveyors and similar equipment.

The 100 Series units offer the lowest housing frontal area for a given shaft diameter.

The bearing is mounted directly into a split grey iron housing ('hanger') with a threaded boss, to allow suspension from the conveyor cross-bracing. A swivel fixing at the cross-bracing joint is recommended to provide for alignment of the bearing.

Hangers are only suitable for housing expansion ('EX') type bearings.

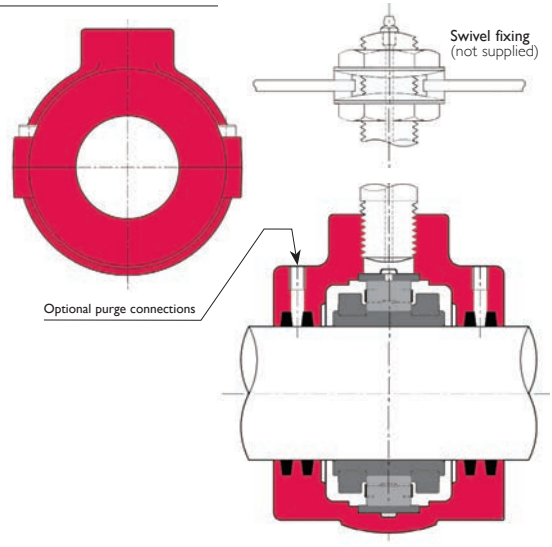
Double felt seals are supplied as standard.The standard seal grooves are also able to accommodate rubber lip seals or high temperature packing. A tapped hole in communication with the space between the seal grooves at each end of the housing is optionally provided. This is for connection to either a grease supply or an air supply for regular or continuous purging of the seals.

Another option is for the housing end bores to be machined to take heavy duty lip seals as illustrated below. The length on shaft of these units may be slightly greater than standard; details will be supplied on request.

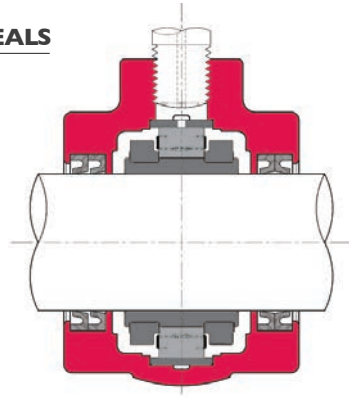
It is recommended that our technical department is contacted in order to obtain a recommendation for the sealing of each hanger unit application.

Lubrication points are not fitted to hangers as standard, with provision for lubrication of the bearing usually made through the suspension rod. Continuous grease feed is sometimes desirable.

STANDARD HANGER



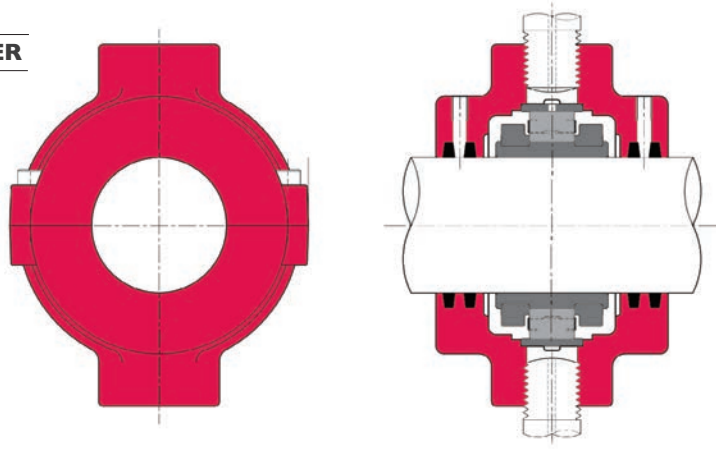
HANGER WITH HEAVY DUTY LIP SEALS



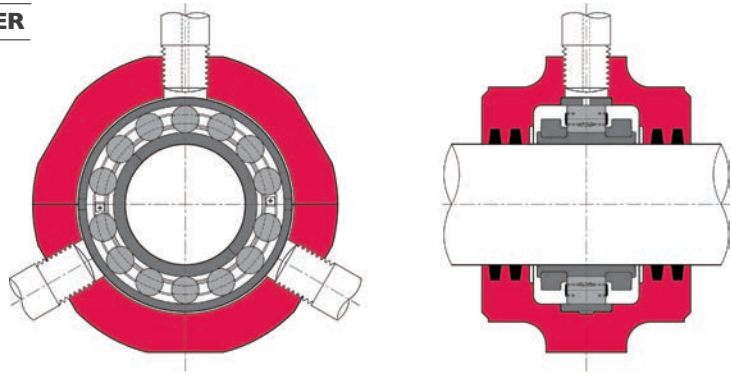
The standard type of hanger has a single threaded boss for suspension from above, by a single rod to minimise the obstruction to material flow in scroll conveyors. For applications where it is desired to locate the housing by rods from above and below, a double boss type is available.

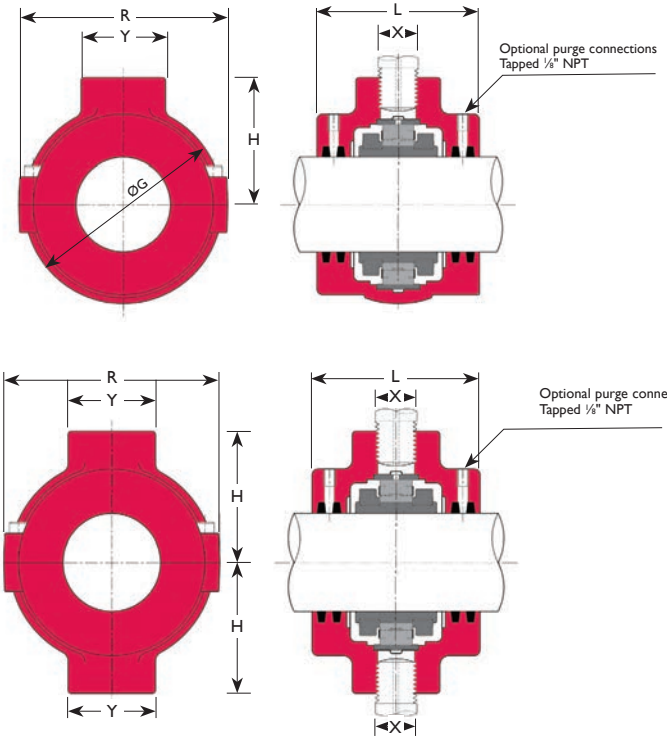
A further type of hanger has three threaded bosses disposed at 120 degree intervals for location by three rods.

DOUBLE BOSS HANGER



TRIPLE BOSS HANGER





100 SERIES

Group Reference	Shaft Diameter d		Bearing Reference		Hanger Only Reference (1)		G (mm)	L (mm)	H (mm)	X (2)		Y (mm)	R (mm)	Hanger Mass (3) (kg)
100 300	75mm	2 15/16" 3"	100 B 75M EX	100 B 215 EX 100 B 300 EX	100 H 75M	100 H 215 100 H 300	134	108	82	M30	1"-8 UNC	50	139	4.7
100 307	85mm	3 7/16"	100 B 85M EX	100 B 307 EX	100 H 85M	100 H 307	158	130	92	M30	1"-8 UNC	50	162	8.0
100 400	100mm	3 15/16" 4"	100 B 100M EX	100 B 315 EX 100 B 400 EX	100 H 100M	100 H 315 100 H 400	178	146	114	M36	1 1/2"-6 UNC	76	188	12.0
100 408	110mm 115mm	4 7/16" 4 1/2"	100 B 110M EX 100 B 115M EX	100 B 407 EX 100 B 408 EX	100 H 110M 100 H 115M	100 H 407 100 H 408	203	152	127	M36	1 1/2"-6 UNC	76	204	14.0
100 500	120mm 125mm 130mm	4 15/16" 5"	100 B 120M EX 100 B 125M EX 100 B 130M EX	100 B 415 EX 100 B 500 EX	100 H 120M 100 H 125M 100 H 130M	100 H 415 100 H 500	232	156	140	M36	1 1/2"-6 UNC	76	226	16.4
100 508	140mm	5 7/16" 5 1/2"	100 B 140M EX	100 B 507 EX 100 B 508 EX	100 H 140M	100 H 507 100 H 508	276	162	156	M36	1 1/2"-6 UNC	76	238	22.3
100 600	150mm	5 15/16" 6"	100 B 150M EX	100 B 515 EX 100 B 600 EX	100 H 150M	100 H 515 100 H 600	280	158	160	M36	1 1/2"-6 UNC	76	264	20.9

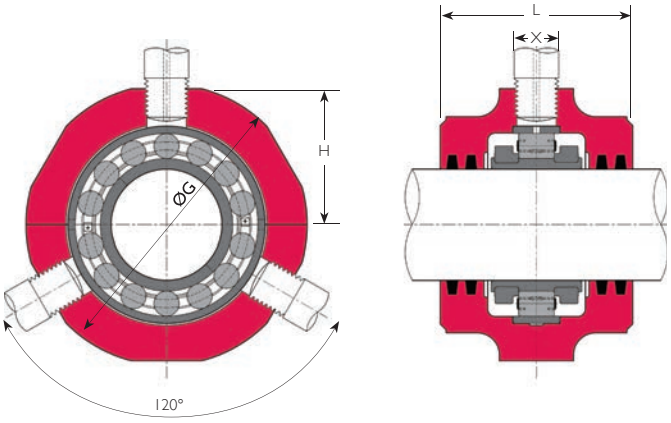
01/01E SERIES

Group Reference	Shaft Diameter d		Bearing Reference		Hanger Only Reference (1)		G (mm)	L (mm)	H (mm)	X (2)		Y (mm)	R (mm)	Hanger Mass (3) (kg)
01 108	35mm 40mm	1 3-16" 1 1/4" 1 7/16" 1 1/2"	01 B 35M EX 01 B 40M EX	01 B 103 EX 01 B 104 EX 01 B 107 EX 01 B 108 EX	01 H 35M 01 H 40M	01 H 103 01 H 104 01 H 107 01 H 108	100	108	66	M30	1"-8 UNC	50	106	2.6
01E 200	45mm 50mm	1 11/16" 1 3/4" 1 15/16" 2"	01E B 45M EX 01E B 50M EX	01E B 111 EX 01E B 112 EX 01E B 115 EX 01E B 200 EX	01 H 45M 01 H 50M	01 H 111 01 H 112 01 H 115 01 H 200	118	108	76	M30	1"-8 UNC	50	123	4.1
01E 208	55mm 60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	01E B 55M EX 01E B 60M EX 01E B 65M EX	01E B 203 EX 01E B 204 EX 01E B 207 EX 01E B 208 EX	01 H 55M 01 H 60M 01 H 65M	01 H 203 01 H 204 01 H 207 01 H 208	134	108	82	M30	1"-8 UNC	50	139	4.7
01E 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	01E B 70M EX 01E B 75M EX	01E B 211 EX 01E B 212 EX 01E B 215 EX 01E B 300 EX	01 H 70M 01 H 75M	01 H 211 01 H 212 01 H 215 01 H 300	158	130	92	M30	1"-8 UNC	50	162	8.0
01E 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	01E B 80M EX 01E B 85M EX 01E B 90M EX	01E B 303 EX 01E B 304 EX 01E B 307 EX 01E B 308 EX	01 H 80M 01 H 85M 01 H 90M	01 H 303 01 H 304 01 H 307 01 H 308	178	146	114	M36	1 1/2"-6 UNC	76	188	12.0
01E 400	95mm 100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	01E B 95M EX 01E B 100M EX 01E B 105M EX	01E B 311 EX 01E B 312 EX 01E B 315 EX 01E B 400 EX	01 H 95M 01 H 100M 01 H 105M	01 H 311 01 H 312 01 H 315 01 H 400	203	152	127	M36	1 1/2"-6 UNC	76	204	14.0
01 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	01 B 110M EX 01 B 115M EX	01 B 403 EX 01 B 407 EX 01 B 408 EX	01 H 110M 01 H 115M	01 H 403 01 H 407 01 H 408	232	156	140	M36	1 1/2"-6 UNC	76	226	16.4
01 500	120mm 125mm 130mm	4 15/16" 5"	01 B 120M EX 01 B 125M EX 01 B 130M EX	01 B 415 EX 01 B 500 EX	01 H 120M 01 H 125M 01 H 130M	01 H 415 01 H 500	276	162	156	M36	1 1/2"-6 UNC	76	238	22.3
01 508	135mm 140mm	5 3/16" 5 7/16" 5 1/2"	01 B 135M EX 01 B 140M EX	01 B 503 EX 01 B 507 EX 01 B 508 EX	01 H 135M 01 H 140M	01 H 503 01 H 507 01 H 508	280	158	160	M36	1 1/2"-6 UNC	76	264	20.9

1) For grease / air purge points to seals add 'AP' to reference, e.g.: 01 H 125M AP For double boss type add 'DOUBLE BOSS' to reference, e.g.: 01 H 125M AP
For double boss type with purge points to seals add 'DOUBLE BOSS AP' to reference, e.g.: 01 H 125M DOUBLE BOSS AP

2) Hangers with metric bore sizes have metric mounting threads as standard.
Hangers with inch-size bore sizes have UNC mounting threads as standard.

3) Mass of single boss version. Double boss version slightly heavier.



TRIPLE BOSS HANGERS

Group Reference	Shaft Diameter d		Bearing Reference		Hanger Only Reference (1)		G (mm)	L (mm)	H (mm)	X(1)		Hanger Mass (kg)
01E 200	45mm 50mm	1 11/16" 1 3/4" 1 15/16" 2"	01E B 45M EX 01E B 50M EX	01E B 111 EX 01E B 112 EX 01E B 115 EX 01E B 200 EX	01 H 45M TRIPLE BOSS 01 H 50M TRIPLE BOSS	01 H 111 TRIPLE BOSS 01 H 112 TRIPLE BOSS 01 H 115 TRIPLE BOSS 01 H 200 TRIPLE BOSS	160	109	76	M30	1"-8 UNC	6.4
01E 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	01E B 70M EX 01E B 75M EX	01E B 211 EX 01E B 212 EX 01E B 215 EX 01E B 300 EX	01 H 70M TRIPLE BOSS 01 H 75M TRIPLE BOSS	01 H 211 TRIPLE BOSS 01 H 212 TRIPLE BOSS 01 H 215 TRIPLE BOSS 01 H 300 TRIPLE BOSS	190	130	92	M30	1"-8 UNC	10.0
100 307	85mm	3 7/16"	100 B 85M EX	100 B 307 EX	100 H 85M TRIPLE BOSS	100 H 307 TRIPLE BOSS	190	130	92	M30	1"-8 UNC	10.0
01 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	01 B 110M EX 01 B 115M EX	01 B 403 EX 01 B 407 EX 01 B 408 EX	01 H 110M TRIPLE BOSS 01 H 115M TRIPLE BOSS	01 H 403 TRIPLE BOSS 01 H 407 TRIPLE BOSS 01 H 408 TRIPLE BOSS	290	170	140	M36	1 1/2"-6 UNC	30.0
100 500	120mm 125mm 130mm	4 15/16" 5"	100 B 120M EX 100 B 125M EX 100 B 130M EX	100 B 415 EX 100 B 500 EX	100 H 120M TRIPLE BOSS 100 H 125M TRIPLE BOSS 100 H 130M TRIPLE BOSS	100 H 415 TRIPLE BOSS 100 H 500 TRIPLE BOSS	290	170	140	M36	1 1/2"-6 UNC	30.0

1) Hangers with metric bore sizes have metric mounting threads as standard.
Hangers with inch-size bore sizes have UNC mounting threads as standard.

TAKE-UP UNITS

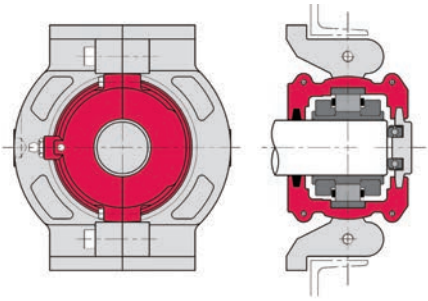
Cooper Take-up units are an efficient means of tensioning the pulleys of conveyors and elevators.

Each take-up unit consists of a Cooper split roller bearing in a swivel cartridge mounted in a cast iron sliding unit. Two basic configurations are available – the 'push' type and 'tension' type as illustrated.

Usually a Cooper take-up will be mounted at each end of the shaft. Up to and including 90mm/3½" bore size the standard arrangement uses two expansion (EX) bearings, with axial location provided by blanking plates and ball thrust bearings. Above 90mm/3½" bore size the standard arrangement uses two fixed (GR) bearings and plain blanking plates. If a through-shaft or different method of axial location is required, please consult our technical department.

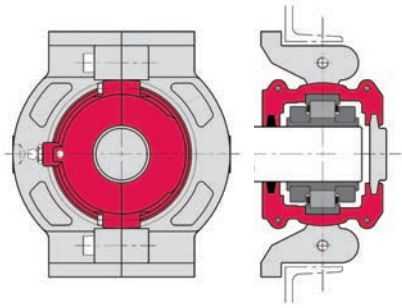
PUSH TYPE

Up to 90mm arrangement



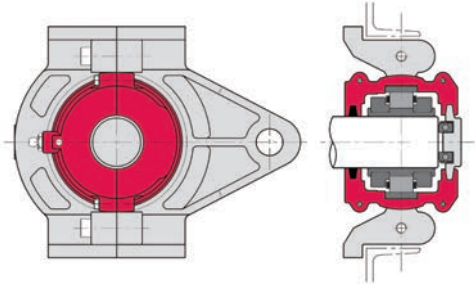
PUSH TYPE

Over 90mm arrangement



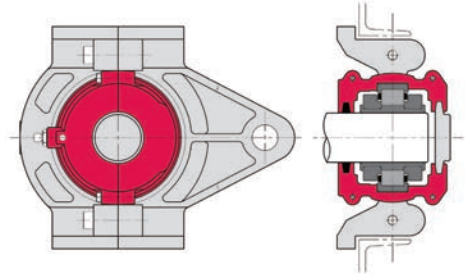
TENSION TYPE

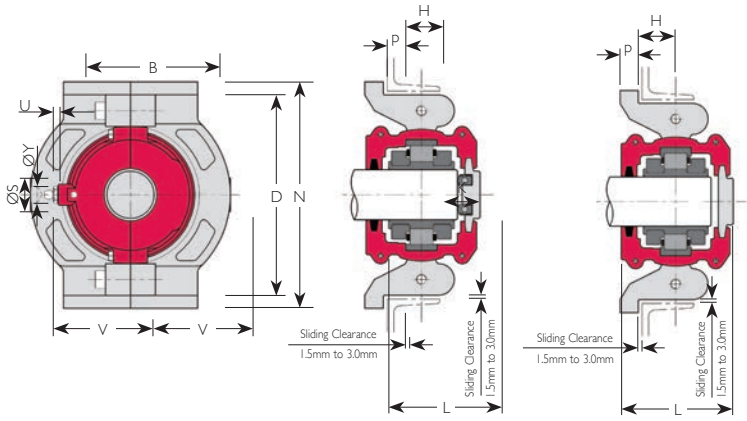
Up to 90mm arrangement



TENSION TYPE

Over 90mm arrangement





100 SERIES UP TO 90mm BORE SIZE

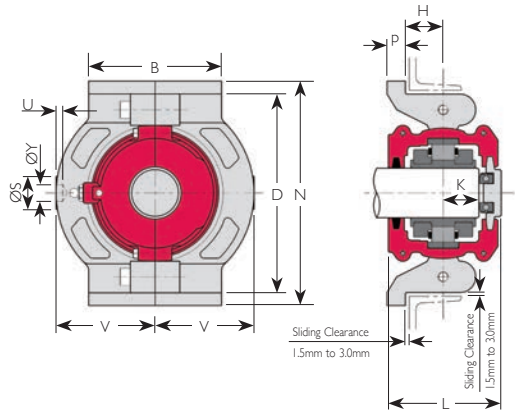
Group Reference	Shaft Diameter d		References (1) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	K (mm)	P (mm)	H (mm)	L (mm)	S (mm)	Y (mm)	U (mm)	Mass (Complete unit) (kg)
100 300	75mm	2 15/16" 3"	100 B 75M	100 B 215 100 B 300	TP03	128	235	203	102	30	20	32	104	38	16	6	13
100 307	85mm	3 7/16"	100 B 85M	100 B 307	TP04	152	266	229	114	35	22	40	114	41	16	6	17

1) For radial bearing only reference (for standard arrangement) add 'EX' e.g. 100 B 75M EX. Ball thrust bearings are usually supplied complete with blanking plate. Refer to page 12
For cartridge reference refer to page 28

100 SERIES OVER 90mm BORE SIZE

Group Reference	Shaft Diameter d		References (2) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	P (mm)	H (mm)	L (mm)	S (mm)	Y (mm)	U (mm)	Mass (Complete unit) (kg)
100 400	100mm	3 15/16" 4"	100 B 100M	100 B 315 100 B 400	TP05	190	318	280	140	22	40	136	51	16	6	26
100 408	110mm 115mm	4 7/16" 4 1/2"	100 B 110M 100 B 115M	100 B 407 100 B 408	TP06	204	342	305	152	22	43	134	51	19	6	29
100 500	120mm 125mm 130mm	4 15/16" 5"	100 B 120M 100 B 125M 100 B 130M	100 B 415 100 B 500	TP07	216	382	343	162	22	48	142	70	19	6	42
100 508	140mm	5 7/16" 5 1/2"	100 B 140M	100 B 507 100 B 508	TP08	254	420	381	190	25	51	156	76	19	6	60
100 600	150mm	5 15/16" 6"	100 B 150M	100 B 515 100 B 600	TP09	266	438	400	196	25	54	168	76	23	8	73

2) For radial bearing only reference (for standard arrangement) add 'GR' e.g. 100 B 100M GR
For cartridge reference refer to page 30

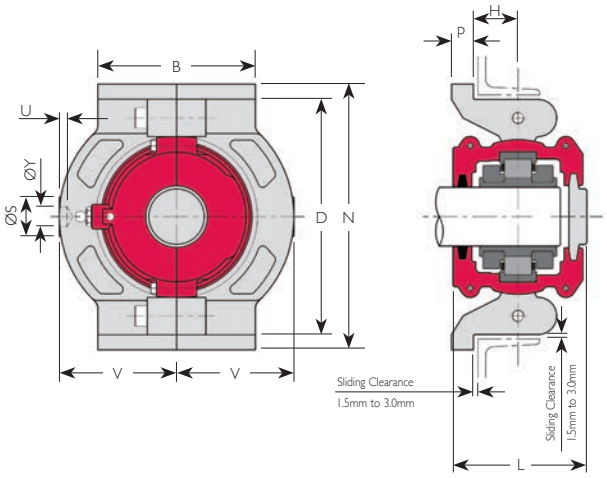


01/01E SERIES UP TO 90mm BORE SIZE

Group Reference	Shaft Diameter d	References (1) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	K (mm)	P (mm)	H (mm)	L (mm)	S (mm)	Y (mm)	U (mm)	Mass (Complete unit) (kg)
01 108	35mm 40mm	1 3-16" 1 1/4" 1 7/16" 1 1/2"	01 B 35M 01 B 40M	01 B 103 01 B 104 01 B 107 01 B 108	TP01	102	172	153	76	27	14	29	86	25	13	5	6
01E 200	45mm 50mm	1 11/16" 1 3/4" 1 15/16" 2"	01E B 45M 01E B 50M	01E B 111 01E B 112 01E B 115 01E B 200	TP02	114	204	178	88	29	16	29	98	29	13	5	9
01E 208	55mm 60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	01E B 55M 01E B 60M 01E B 65M	01E B 203 01E B 204 01E B 207 01E B 208	TP03	128	235	203	102	30	20	32	104	38	16	6	13
01E 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	01E B 70M 01E B 75M	01E B 211 01E B 212 01E B 215 01E B 300	TP04	152	266	229	114	35	22	40	114	41	16	6	17
01E 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	01E B 80M 01E B 85M 01E B 90M	01E B 303 01E B 304 01E B 307 01E B 308	TP05	190	318	280	140	40	22	40	136	51	16	6	27

1) For radial bearing only reference (for standard arrangement) add 'EX' e.g. 01 B 40M EX

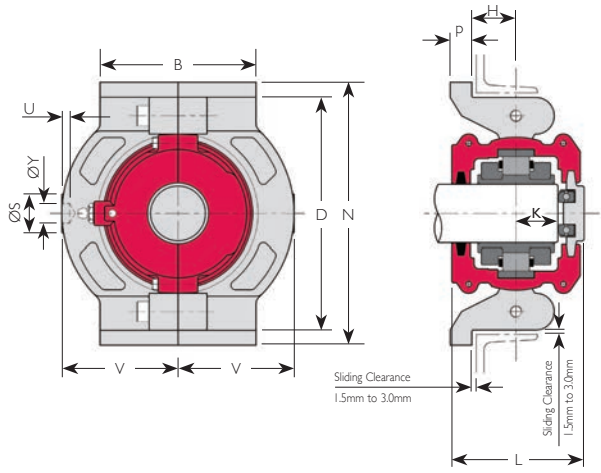
For cartridge reference refer to page 32



01/01E SERIES OVER 90mm BORE SIZE

Group Reference	Shaft Diameter d		References (1) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	P (mm)	H (mm)	L (mm)	S (mm)	Y (mm)	U (mm)	Mass (Complete unit) (kg)
01E 400	95mm 100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	01E B 95M 01E B 100M 01E B 105M	01E B 311 01E B 312 01E B 315 01E B 400	TP06	204	342	305	152	22	43	134	51	19	6	31
01 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	01 B 110M 01 B 115M	01 B 403 01 B 407 01 B 408	TP07	216	382	343	162	22	48	142	70	19	6	46
01 500	120mm 125mm 130mm	4 15/16" 5"	01 B 120M 01 B 125M 01 B 130M	01 B 415 01 B 500	TP08	254	420	381	190	25	51	156	76	19	6	65
01 508	135mm 140mm	5 3/16" 5 7/16" 5 1/2"	01 B 135M 01 B 140M	01 B 503 01 B 507 01 B 508	TP09	266	438	400	196	25	54	168	76	23	8	80
01 600	150mm 160mm	5 15/16" 6"	01 B 150M 01 B 600-160M	01 B 515 01 B 600	TP10	266	464	426	204	25	57	174	86	23	8	91

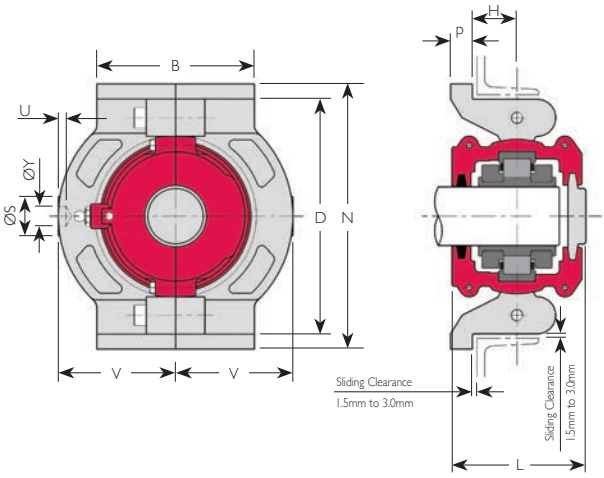
1) For radial bearing only reference (for standard arrangement) add 'GR' e.g. 01E B 100M GR
Ball thrust bearings are usually supplied complete with blanking plate. Refer to page 12
For cartridge reference refer to page 32



02 SERIES UP TO 90mm BORE SIZE

Group Reference	Shaft Diameter d		Reference (1) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	K (mm)	P (mm)	H (mm)	L (mm)	S (mm)	Y (mm)	U (mm)	Mass (Complete unit) (kg)
02 200	50mm	1 15/16" 2"	02 B 50M	02 B 115 02 B 200	TP03	128	235	203	102	35	20	32	114	38	16	6	12
02 208	60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	02 B 60M 02 B 65M	02 B 203 02 B 204 02 B 207 02 B 208	TP04	152	266	229	114	38	22	40	126	41	16	6	17
02 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	02 B 70M 02 B 75M	02 B 211 02 B 212 02 B 215 02 B 300	TP05	190	318	280	140	41	22	40	140	51	16	6	27
02 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	02 B 80M 02 B 85M 02 B 90M	02 B 303 02 B 304 02 B 307 02 B 308	TP06	204	342	305	152	48	22	43	154	51	19	6	31

1) For radial bearing only reference (for standard arrangement) add 'EX' e.g. 02 B 50M EX
For cartridge reference refer to page 38

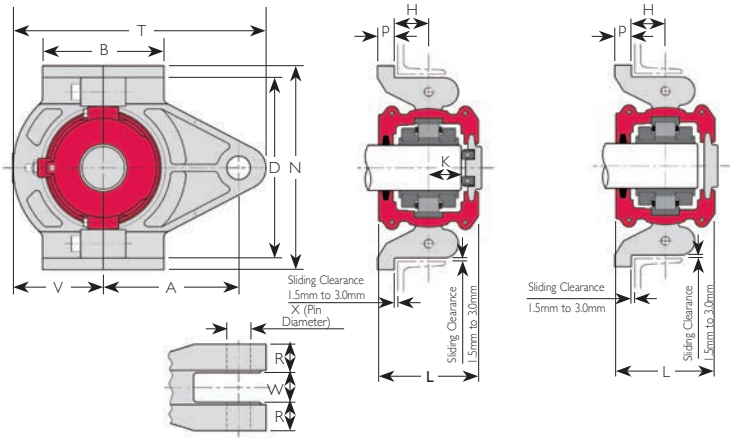


02 SERIES OVER 90mm BORE SIZE

Group Reference	Shaft Diameter d	References (1) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	V (mm)	P (mm)	H (mm)	L (mm)	S (mm)	Y (mm)	U (mm)	Mass (Complete unit) (kg)
02 400	100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	02 B 100M 02 B 105M	02 B 311 02 B 312 02 B 315 02 B 400	TP07	216	382	343	162	22	48	146	70	19	6	46
02 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	02 B 110M 02 B 115M	02 B 403 02 B 407 02 B 408	TP08	254	420	381	190	25	51	162	76	19	6	65
02 500	120mm 125mm 130mm	4 15/16" 5"	02 B 120M 02 B 125M 02 B 130M	02 B 415 02 B 500	TP10	266	464	426	204	25	57	184	86	23	8	91
02 508	140mm 145mm	5 3/16" 5 7/16" 5 1/2"	02 B 140M 02 B 145M	02 B 503 02 B 507 02 B 508	TP09	266	438	400	196	25	54	168	76	23	8	109
02 600	150mm 155mm 160mm	5 15/16" 6"	02 B 150M 02 B 155M 02 B 600-160M	02 B 515 02 B 600	TP31	305	528	489	235	25	64	204	92	26	10	109

1) For radial bearing only reference (for standard arrangement) add 'GR' e.g. 02 B 100M GR

For cartridge reference refer to pages 38 and 40



100 SERIES UP TO 90mm BORE SIZE

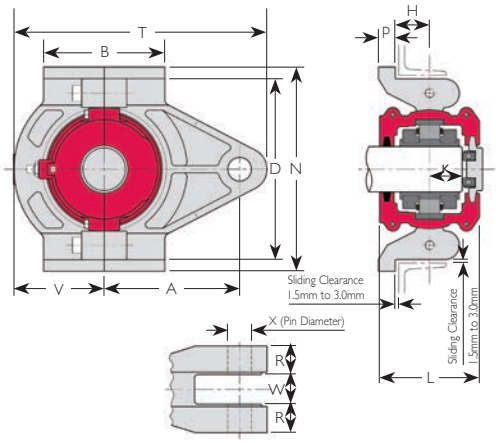
Group Reference	Shaft Diameter d		References (1) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	K (mm)	P (mm)	H (mm)	W (mm)	R (mm)	L (mm)	Mass (Complete unit) (kg)
100 300	75mm	2 15/16" 3"	100 B 75M	100 B 215 100 B 300	TT03	128	235	203	146	280	24	102	30	20	32	30	29	104	13
100 307	85mm	3 7/16"	100 B 85M	100 B 307	TT04	152	266	229	158	305	24	114	35	22	40	30	32	114	19

100 SERIES OVER 90mm BORE SIZE

Group Reference	Shaft Diameter d		References (2) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	P (mm)	H (mm)	W (mm)	R (mm)	L (mm)	Mass (Complete unit) (kg)
100 400	100mm	3 15/16" 4"	100 B 100M	100 B 315 100 B 400	TT05	190	318	280	190	368	30	140	22	40	38	35	136	29
100 408	110mm 115mm	4 7/16" 4 1/2"	100 B 110M 100 B 115M	100 B 407 100 B 408	TT06	204	342	305	210	414	36	152	22	43	44	35	134	33
100 500	120mm 125mm 130mm	4 15/16" 5"	100 B 120M 100 B 125M 100 B 130M	100 B 415 100 B 500	TT07	216	382	343	228	445	42	162	22	48	44	41	142	47
100 508	140mm	5 7/16" 5 1/2"	100 B 140M	100 B 507 100 B 508	TT08	254	420	381	260	508	42	190	25	51	44	44	156	67
100 600	150mm	5 15/16" 6"	100 B 150M	100 B 515 100 B 600	TT09	266	438	400	266	514	42	196	25	54	44	48	168	82

1) For radial bearing only reference (for standard arrangement) add 'EX' e.g. 100 B 75M EX. Ball thrust bearings are usually supplied complete with blanking plate. Refer to page 12
For cartridge reference refer to page 30

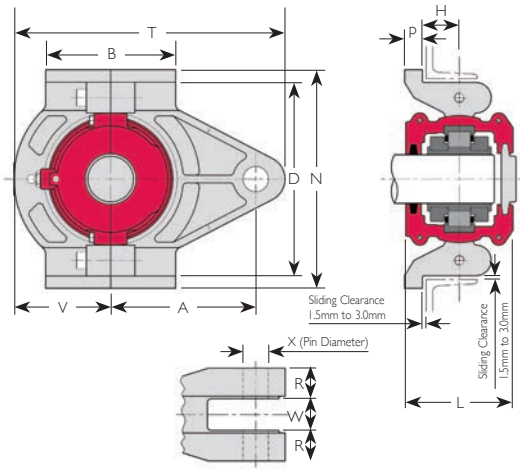
2) For radial bearing only reference (for standard arrangement) add 'GR' e.g. 100 B 100M GR
For cartridge reference refer to page 30



01/01E SERIES UP TO 90mm BORE SIZE

Group Reference	Shaft Diameter d	References (1) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	K (mm)	P (mm)	H (mm)	W (mm)	R (mm)	L (mm)	Mass (Complete unit) (kg)
01 108	35mm 40mm	1 3-16" 1 1/4" 1 7/16" 1 1/2"	01 B 35M 01 B 40M	01 B 103 01 B 104 01 B 107 01 B 108	TT01	102	172	153	114	216	20	76	27	14	29	25	24	86	7
01E 200	45mm 50mm	1 11/16" 1 3/4" 1 15/16" 2"	01E B 45M 01E B 50M	01E B 111 01E B 112 01E B 115 01E B 200	TT02	114	204	178	128	242	24	88	29	16	29	25	25	98	10
01E 208	55mm 60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	01E B 55M 01E B 60M 01E B 65M	01E B 203 01E B 204 01E B 207 01E B 208	TT03	128	235	203	146	280	24	102	30	20	32	30	29	104	13
01E 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	01E B 70M 01E B 75M	01E B 211 01E B 212 01E B 215 01E B 300	TT04	152	266	229	158	305	24	114	35	22	40	30	32	114	19
01E 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	01E B 80M 01E B 85M 01E B 90M	01E B 303 01E B 304 01E B 307 01E B 308	TT05	190	318	280	190	368	30	140	40	22	40	38	35	136	30

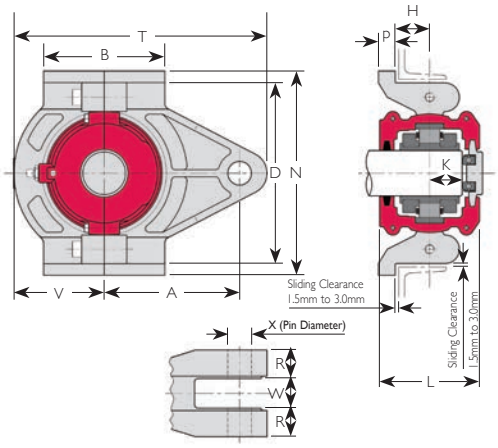
1) For radial bearing only reference (for standard arrangement) add 'EX' e.g. 01 B 40M EX
Ball thrust bearings are usually supplied complete with blanking plate. Refer to page 12
For cartridge reference refer to page 32



01/01E SERIES OVER 90mm BORE SIZE

Group Reference	Shaft Diameter d		Reference (1) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	P (mm)	H (mm)	W (mm)	R (mm)	L (mm)	Mass (Complete unit) (kg)
01E 400	95mm 100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	01E B 95M 01E B 100M 01E B 105M	01E B 311 01E B 312 01E B 315 01E B 400	TT06	204	342	305	210	414	36	152	22	43	44	35	134	34
01 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	01 B 110M 01 B 115M	01 B 403 01 B 407 01 B 408	TT07	216	382	343	228	445	42	162	22	48	44	41	142	51
01 500	120mm 125mm 130mm	4 15/16" 5"	01 B 120M 01 B 125M 01 B 130M	01 B 415 01 B 500	TT08	254	420	381	260	508	42	190	25	51	44	44	156	71
01 508	135mm 140mm	5 3/16" 5 7/16" 5 1/2"	01 B 135M 01 B 140M	01 B 503 01 B 507 01 B 508	TT09	266	438	400	266	514	42	196	25	54	44	48	168	89
01 600	150mm 160mm	5 15/16" 6"	01 B 150M 01 B 600-160M	01 B 515 01 B 600	TT10	266	464	426	280	546	48	204	25	57	50	51	174	100

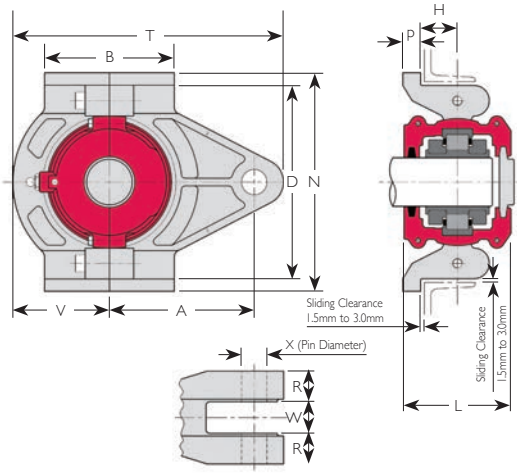
1) For radial bearing only reference (for standard arrangement) add 'GR' e.g. 01E B 100M GR
For cartridge reference refer to page 32



02 SERIES UP TO 90mm BORE SIZE

Group Reference	Shaft Diameter d		References (1) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	K (mm)	P (mm)	H (mm)	W (mm)	R (mm)	L (mm)	Mass (Complete unit) (kg)
02 200	50mm	1 15/16" 2"	02 B 50M	02 B 115 02 B 200	TT03	128	235	203	146	280	24	102	35	20	32	30	29	114	13
02 208	60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	02 B 60M 02 B 65M	02 B 203 02 B 204 02 B 207 02 B 208	TT04	152	266	229	158	305	24	114	38	22	40	30	32	126	19
02 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	02 B 70M 02 B 75M	02 B 211 02 B 212 02 B 215 02 B 300	TT05	190	318	280	190	368	30	140	41	22	40	38	35	140	30
02 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	02 B 80M 02 B 85M 02 B 90M	02 B 303 02 B 304 02 B 307 02 B 308	TT06	204	342	305	210	414	36	152	48	22	43	44	35	154	34

1) For radial bearing only reference (for standard arrangement) add 'EX' e.g. 02 B 50M EX
Ball thrust bearings are usually supplied complete with blanking plate. Refer to page 12
For cartridge reference refer to page 32



02 SERIES OVER 90mm BORE SIZE

Group Reference	Shaft Diameter d	References (1) Bearing		Take-up housing	B (mm)	N (mm)	D (mm)	A (mm)	T (mm)	X (mm)	V (mm)	P (mm)	H (mm)	W (mm)	R (mm)	L (mm)	Mass (Complete unit) (kg)
02 400	100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	02 B 100M 02 B 105M	02 B 311 02 B 312 02 B 315 02 B 400	TT07	216	382	343	228	445	42	162	22	48	44	41	146	51
02 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	02 B 110M 02 B 115M	02 B 403 02 B 407 02 B 408	TT08	254	420	381	260	508	42	190	25	51	44	44	162	71
02 500	120mm 125mm 130mm	4 15/16" 5"	02 B 120M 02 B 125M 02 B 130M	02 B 415 02 B 500	TT10	266	464	426	280	546	48	204	25	57	50	51	184	100
02 508	140mm 145mm	5 3/16" 5 7/16" 5 1/2"	02 B 140M 02 B 145M	02 B 503 02 B 507 02 B 508	TT30	280	502	464	298	584	48	222	25	60	50	54	188	119
02 600	150mm 155mm 160mm	5 15/16" 6"	02 B 150M 02 B 155M 02 B 600-160M	02 B 515 02 B 600	TT31	305	528	489	312	616	48	235	25	64	50	57	204	141

1) For radial bearing only reference (for standard arrangement) add 'GR' e.g. 02 B 100M GR
For cartridge reference refer to pages 38 and 40

ROD ENDS

Cooper split roller bearings in rod end housings provide a simple way of mounting roller bearings on cranks. As the complete bearing and housing unit is split radially, cranks can be made solid rather than being built-up or overhung. Typical applications include shaker screens and classifiers. Rod ends are available to suit 100, 01/01E and 02 Series bearings as shown on pages 30 to 32 and 38 to 40.

Each rod end consists of a split outer casing, which encloses a fixed (GR) bearing in a swivel cartridge. Two basic configurations are available – the 'T' type and the 'shoe' type. These can be modified to suit various rods and attachments.

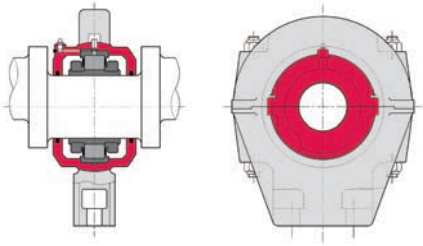
Standard rod ends are of grey iron. Spheroidal graphite iron or steel versions are available. Rod ends are supplied with matched cartridge to reduce the clearance between the cartridge and rod-end (S1 fit).

Except for very slow speed applications, bearings with C2 clearance should be specified. Dimensions and load capacities of housings should be confirmed before finalising designs.

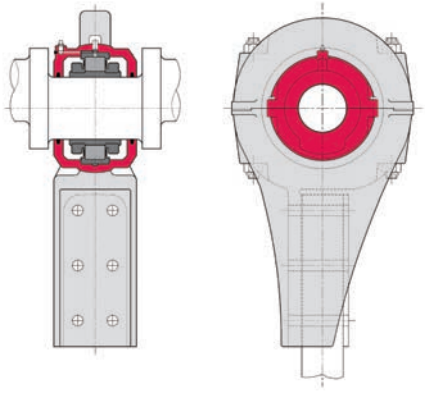
SHAFT DIMENSIONS

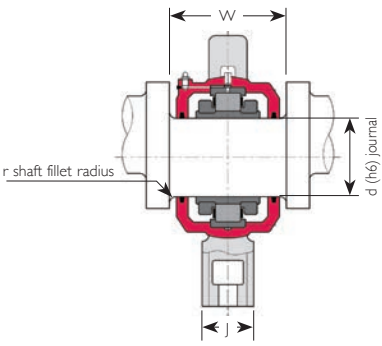
Journals should be machined to h6 tolerance. Close tolerance machining to the sides of the journal is not required. These are clearance only (i.e. not locating) as the bearing is positioned by the inner race being clamped onto the shaft. The journal widths and fillet radii listed in the tables are suggested dimensions to clear standard Cooper cartridges. Other combinations of journal width and fillet radius may be used. Special cartridges may be supplied if narrower journals are required.

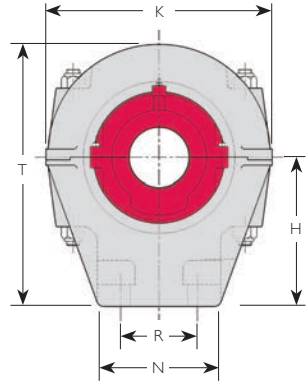
'T' TYPE



SHOE TYPE



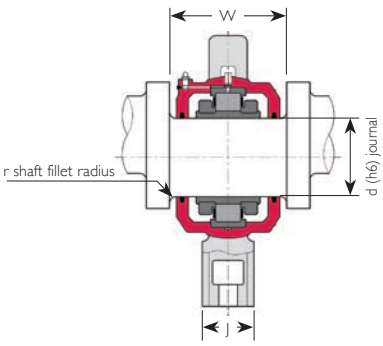


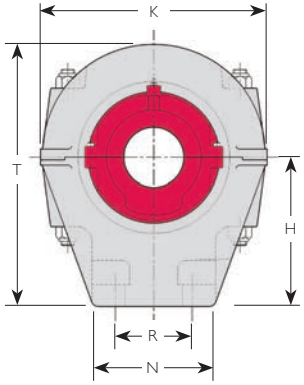


100 SERIES

Group Reference	Shaft Diameter d		Bearing Reference (1)		Housing Reference (2)		W (max) (mm)	r (mm)	N (mm)	J (mm)	H (mm)	K (mm)	T (mm)	R (mm)	Bolts	Mass (Complete unit) (kg)
100 300	75mm	2 15/16" 3"	100 B 75M GR C2	100 B 215 GR C2 100 B 300 GR C2	100 CRET 75M	100 CRET 215 100 CRET 300	113	4.5	115	38	95	197	194	76(3)	M16	9
100 307	85mm	3 7/16"	100 B 85M GR C2	100 B 307 GR C2	100 CRET 85M	100 CRET 307	126	6	128	44	108	216	220	89(3)	M16	13
100 400	100mm	3 15/16" 4"	100 B 100M GR C2	100 B 315 GR C2 100 B 400 GR C2	100 CRET 100M	100 CRET 315 100 CRET 400	148	6	146	48	127	248	256	102(3)	M20	19
100 408	110mm 115mm	4 7/16" 4 1/2"	100 B 110M GR C2 100 B 115M GR C2	100 B 407 GR C2 100 B 408 GR C2	100 CRET 110M 100 CRET 115M	100 CRET 407 100 CRET 408	146	6	170	76	200	308	356	124	M24	35
100 500	120mm 125mm 130mm	4 15/16" 5"	100 B 120M GR C2 100 B 125M GR C2 100 B 130M GR C2	100 B 415 GR C2 100 B 500 GR C2	100 CRET 120M 100 CRET 125M 100 CRET 130M	100 CRET 415 100 CRET 500	154	6	190	86	222	334	390	136	M30	48
100 508	140mm	5 7/16" 5 1/2"	100 B 140M GR C2	100 B 507 GR C2 100 B 508 GR C2	100 CRET 140M	100 CRET 507 100 CRET 508	168	6	190	86	222	375	425	136	M30	60
100 600	150mm	5 15/16" 6"	100 B 150M GR C2	100 B 515 GR C2 100 B 600 GR C2	100 CRET 150M	100 CRET 515 100 CRET 600	187	9.5	204	102	279	442	502	140	M30	82

1) These are reduced clearance bearings which are standard specification for rod ends
2) Reference refers to matched rod-end housing and cartridge together
3) Holes tapped in end face





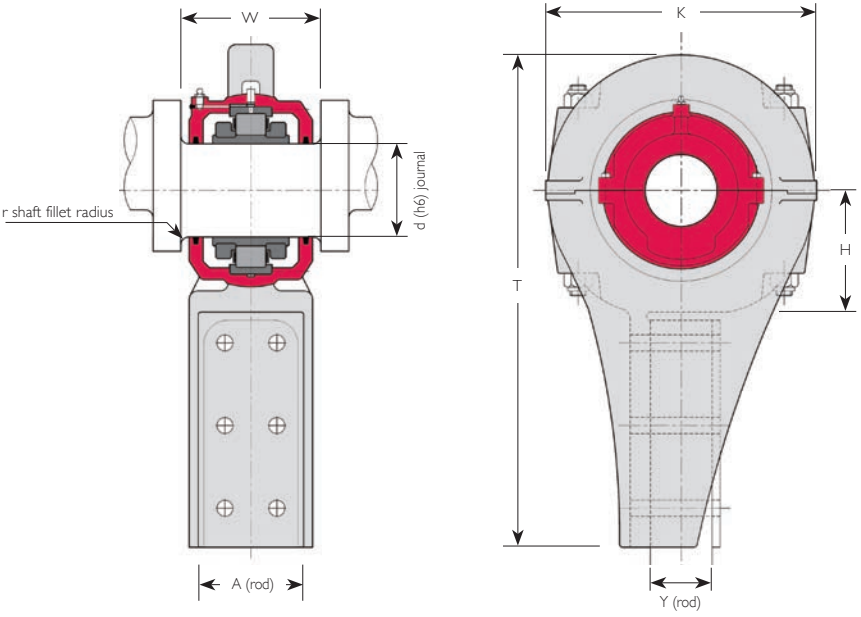
01/01E SERIES

Group Reference	Shaft Diameter d		Bearing Reference (1)	Housing Reference (2)	W (mm)	r (max) (mm)	N (mm)	J (mm)	H (mm)	K (mm)	T (mm)	R (mm)	Bolts	Mass (Complete unit) (kg)
01 108	35mm 40mm	1 3-16" 1 1/4" 1 7/16" 1 1/2"	01 B 35M GR C2 01 B 40M GR C2	01 B 103 GR C2 01 B 104 GR C2 01 B 107 GR C2 01 B 108 GR C2	01 CRET 35M 01 CRET 40M	01 CRET 103 01 CRET 104 01 CRET 107 01 CRET 108	92	3	86	30	76	140	152	57(3)	M12	6
01E 200	45mm 50mm	1 11/16" 1 3/4" 1 15/16" 2"	01E B 45M GR C2 01E B 50M GR C2	01E B 111 GR C2 01E B 112 GR C2 01E B 115 GR C2 01E B 200 GR C2	01 CRET 45M 01 CRET 50M	01 CRET 111 01 CRET 112 01 CRET 115 01 CRET 200	104	3	102	32	102	166	190	70(3)	M10	8
01E 208	55mm 60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	01E B 55M GR C2 01E B 60M GR C2 01E B 65M GR C2	01E B 203 GR C2 01E B 204 GR C2 01E B 207 GR C2 01E B 208 GR C2	01 CRET 55M 01 CRET 60M 01 CRET 65M	01 CRET 203 01 CRET 204 01 CRET 207 01 CRET 208	113	4.5	115	38	95	197	194	76(3)	M16	9
01E 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	01E B 70M GR C2 01E B 75M GR C2	01E B 211 GR C2 01E B 212 GR C2 01E B 215 GR C2 01E B 300 GR C2	01 CRET 70M 01 CRET 75M	01 CRET 211 01 CRET 212 01 CRET 215 01 CRET 300	126	6	128	44	108	216	220	89(3)	M16	13
01E 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	01E B 80M GR C2 01E B 85M GR C2 01E B 90M GR C2	01E B 303 GR C2 01E B 304 GR C2 01E B 307 GR C2 01E B 308 GR C2	01 CRET 80M 01 CRET 85M 01 CRET 90M	01 CRET 303 01 CRET 304 01 CRET 307 01 CRET 308	148	6	146	48	127	248	256	102(3)	M20	20
01E 400	95mm 100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	01E B 95M GR C2 01E B 100M GR C2 01E B 105M GR C2	01E B 311 GR C2 01E B 312 GR C2 01E B 315 GR C2 01E B 400 GR C2	01 CRET 95M 01 CRET 100M 01 CRET 105M	01 CRET 311 01 CRET 312 01 CRET 315 01 CRET 400	146	6	170	76	200	308	356	124	M24	36
01 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	01 B 110M GR C2 01 B 115M GR C2	01 B 403 GR C2 01 B 407 GR C2 01 B 408 GR C2	01 CRET 110M 01 CRET 115M	01 CRET 403 01 CRET 407 01 CRET 408	154	6	190	86	222	334	390	136	M30	52
01 500	120mm 125mm 130mm	4 15/16" 5"	01 B 120M GR C2 01 B 125M GR C2 01 B 130M GR C2	01 B 415 GR C2 01 B 500 GR C2	01 CRET 120M 01 CRET 125M 01 CRET 130M	01 CRET 415 01 CRET 500	168	6	190	86	222	375	425	136	M30	65
01 508	135mm 140mm	5 3/16" 5 7/16" 5 1/2"	01 B 135M GR C2 01 B 140M GR C2	01 B 503 GR C2 01 B 507 GR C2 01 B 508 GR C2	01 CRET 135M 01 CRET 140M	01 CRET 503 01 CRET 507 01 CRET 508	187	9.5	204	102	279	442	502	140	M30	89
01 600	150mm 155mm 160mm	5 15/16" 6"	01 B 150M GR C2 01 B 155M GR C2 01 B 600-160M GR C2	01 B 515 GR C2 01 B 600 GR C2	01 CRET 150M 01 CRET 155M 01 CRET 600-160M	01 CRET 515 01 CRET 600	193	9.5	204	102	279	442	502	140	M30	99

02 SERIES

Group Reference	Shaft Diameter d		Bearing Reference (1)		Housing Reference (2)		W (mm)	r (max) (mm)	N (mm)	J (mm)	H (mm)	K (mm)	T (mm)	R (mm)	Bolts	Mass (Complete unit) (kg)
02 200	50mm	1 15/16" 2"	02 B 50M GR C2	02 B 115 GR C2 02 B 200 GR C2	02 CRET 50M	02 CRET 115 02 CRET 200	123	4.5	115	38	95	197	194	76(3)	M16	9
02 208	60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	02 B 60M GR C2 02 B 65M GR C2	02 B 203 GR C2 02 B 204 GR C2 02 B 207 GR C2 02 B 208 GR C2	02 CRET 60M 02 CRET 65M	02 CRET 203 02 CRET 204 02 CRET 207 02 CRET 208	138	6	128	44	108	216	220	89(3)	M16	13
02 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	02 B 70M GR C2 02 B 75M GR C2	02 B 211 GR C2 02 B 212 GR C2 02 B 215 GR C2 02 B 300 GR C2	02 CRET 70M 02 CRET 75M	02 CRET 211 02 CRET 212 02 CRET 215 02 CRET 300	152	6	146	48	127	248	256	102(3)	M20	20
02 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	02 B 80M GR C2 02 B 85M GR C2 02 B 90M GR C2	02 B 303 GR C2 02 B 304 GR C2 02 B 307 GR C2 02 B 308 GR C2	02 CRET 80M 02 CRET 85M 02 CRET 90M	02 CRET 303 02 CRET 304 02 CRET 307 02 CRET 308	173	9.5	170	76	200	308	356	124	M24	36
02 400	100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	02 B 100M GR C2 02 B 105M GR C2	02 B 311 GR C2 02 B 312 GR C2 02 B 315 GR C2 02 B 400 GR C2	02 CRET 100M 02 CRET 105M	02 CRET 311 02 CRET 312 02 CRET 315 02 CRET 400	171	12.5	190	86	222	334	390	136	M30	52
02 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	02 B 110M GR C2 02 B 115M GR C2	02 B 403 GR C2 02 B 407 GR C2 02 B 408 GR C2	02 CRET 110M 02 CRET 115M	02 CRET 403 02 CRET 407 02 CRET 408	187	12.5	190	86	222	375	425	136	M30	65
02 500	120mm 125mm 130mm	4 15/16" 5"	02 B 120M GR C2 02 B 125M GR C2 02 B 130M GR C2	02 B 415 GR C2 02 B 500 GR C2	02 CRET 120M 02 CRET 125M 02 CRET 130M	02 CRET 415 02 CRET 500	209	12.5	204	102	279	442	502	140	M30	99
02 508	140mm 145mm	5 3/16" 5 7/16" 5 1/2"	02 B 140M GR C2 02 B 145M GR C2	02 B 503 GR C2 02 B 507 GR C2 02 B 508 GR C2	02 CRET 140M 02 CRET 145M	02 CRET 503 02 CRET 507 02 CRET 508	213	12.5	204	102	279	445	558	140	M30	119
02 600	150mm 155mm 160mm	5 15/16" 6"	02 B 150M GR C2 02 B 155M GR C2 02 B 600-160M GR C2	02 B 515 GR C2 02 B 600 GR C2	02 CRET 150M 02 CRET 155M 02 CRET 600-160M	02 CRET 515 02 CRET 600	229	12.5	204	102	279	445	558	140	M30	131

1) These are reduced clearance bearings which are standard specification for rod ends
2) Reference refers to matched rod-end housing and cartridge together
3) Holes tapped in end face



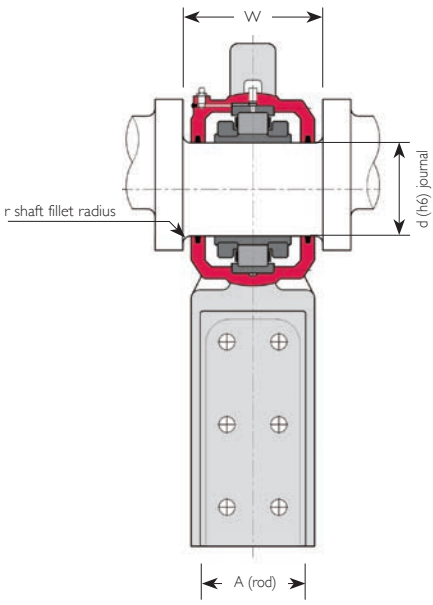
100 SERIES

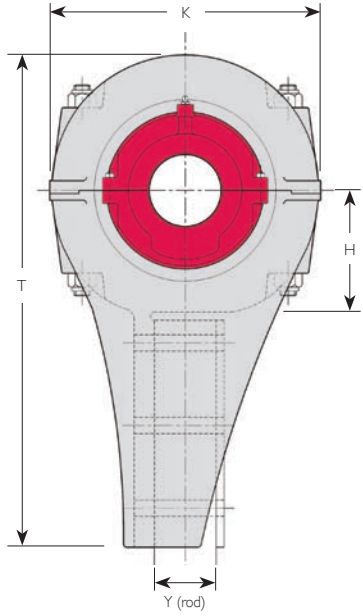
Group Reference	Shaft Diameter d		Bearing Reference (1)		Housing Reference (2)		W (mm)	r (max) (mm)	A(3) (rod) (mm)	Y(3) (rod) (mm)	H (mm)	K (mm)	T (mm)	Mass (Complete unit) (kg)
100 300	75mm	2 15/16" 3"	100 B 75M GR C2	100 B 215 GR C2 100 B 300 GR C2	100 CRES 75M	100 CRES 215 100 CRES 300	113	4.5	62	10	79	190	330	13
100 307	85mm	3 7/16"	100 B 85M GR C2	100 B 307 GR C2	100 CRES 85M	100 CRES 307	126	6	88	50	108	248	432	23
100 400	100mm	3 15/16" 4"	100 B 100M GR C2	100 B 315 GR C2 100 B 400 GR C2	100 CRES 100M	100 CRES 315 100 CRES 400	148	6	114	38	130	248	540	36
100 408	110mm 115mm	4 7/16" 4 1/2"	100 B 110M GR C2 100 B 115M GR C2	100 B 407 GR C2 100 B 408 GR C2	100 CRES 110M 100 CRES 115M	100 CRES 407 100 CRES 408	146	6	100	58	125	308	572	43
100 500	120mm 125mm 130mm	4 15/16" 5"	100 B 120M GR C2 100 B 125M GR C2 100 B 130M GR C2	100 B 415 GR C2 100 B 500 GR C2	100 CRES 120M 100 CRES 125M 100 CRES 130M	100 CRES 415 100 CRES 500	154	6	126	58	149	354	618	59
100 508	140mm	5 7/16" 5 1/2"	100 B 140M GR C2	100 B 507 GR C2 100 B 508 GR C2	100 CRES 140M	100 CRES 507 100 CRES 508	168	6	126	64	158	400	654	78
100 600	150mm	5 15/16" 6"	100 B 150M GR C2	100 B 515 GR C2 100 B 600 GR C2	100 CRES 150M	100 CRES 515 100 CRES 600	187	9.5	152	76	177	442	696	91

01/01E SERIES

Group Reference	Shaft Diameter d		Bearing Reference (1)		Bearing Reference (2)		W (mm)	r (max) (mm)	A(3) (rod) (mm)	Y(3) (rod) (mm)	H (mm)	K (mm)	T (mm)	Mass (Complete unit) (kg)
01 108	35mm 40mm	1 3-16" 1 1/4" 1 7/16" 1 1/2"	01 B 35M GR C2 01 B 40M GR C2	01 B 103 GR C2 01 B 104 GR C2 01 B 107 GR C2 01 B 108 GR C2	01 CRES 35M 01 CRES 40M	01 CRES 103 01 CRES 104 01 CRES 107 01 CRES 108	92	3	62	10	65	160	258	5
01E 200	45mm 50mm	1 11/16" 1 3/4" 1 15/16" 2"	01E B 45M GR C2 01E B 50M GR C2	01E B 111 GR C2 01E B 112 GR C2 01E B 115 GR C2 01E B 200 GR C2	01 CRES 45M 01 CRES 50M	01 CRES 111 01 CRES 112 01 CRES 115 01 CRES 200	104	3	62	10	70	166	308	7
01E 208	55mm 60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	01E B 55M GR C2 01E B 60M GR C2 01E B 65M GR C2	01E B 203 GR C2 01E B 204 GR C2 01E B 207 GR C2 01E B 208 GR C2	01 CRES 55M 01 CRES 60M 01 CRES 65M	01 CRES 203 01 CRES 204 01 CRES 207 01 CRES 208	113	4.5	62	10	79	190	330	13
01E 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	01E B 70M GR C2 01E B 75M GR C2	01E B 211 GR C2 01E B 212 GR C2 01E B 215 GR C2 01E B 300 GR C2	01 CRES 70M 01 CRES 75M	01 CRES 211 01 CRES 212 01 CRES 215 01 CRES 300	126	6	88	50	108	248	432	22
01E 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	01E B 80M GR C2 01E B 85M GR C2 01E B 90M GR C2	01E B 303 GR C2 01E B 304 GR C2 01E B 307 GR C2 01E B 308 GR C2	01 CRES 80M 01 CRES 85M 01 CRES 90M	01 CRES 303 01 CRES 304 01 CRES 307 01 CRES 308	148	6	100	50	133	264	602	43
01E 400	95mm 100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	01E B 95M GR C2 01E B 100M GR C2 01E B 105M GR C2	01E B 311 GR C2 01E B 312 GR C2 01E B 315 GR C2 01E B 400 GR C2	01 CRES 95M 01 CRES 100M 01 CRES 105M	01 CRES 311 01 CRES 312 01 CRES 315 01 CRES 400	146	6	100	58	125	308	572	44
01 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	01 B 110M GR C2 01 B 115M GR C2	01 B 403 GR C2 01 B 407 GR C2 01 B 408 GR C2	01 CRES 110M 01 CRES 115M	01 CRES 403 01 CRES 407 01 CRES 408	154	6	126	58	149	354	618	63
01 500	120mm 125mm 130mm	4 15/16" 5"	01 B 120M GR C2 01 B 125M GR C2 01 B 130M GR C2	01 B 415 GR C2 01 B 500 GR C2	01 CRES 120M 01 CRES 125M 01 CRES 130M	01 CRES 415 01 CRES 500	168	6	126	64	158	400	654	83
01 508	135mm 140mm	5 3/16" 5 7/16" 5 1/2"	01 B 135M GR C2 01 B 140M GR C2	01 B 503 GR C2 01 B 507 GR C2 01 B 508 GR C2	01 CRES 135M 01 CRES 140M	01 CRES 503 01 CRES 507 01 CRES 508	187	9.5	152	76	177	442	696	98
01 600	150mm 155mm 160mm	5 15/16" 6"	01 B 150M GR C2 01 B 155M GR C2 01 B 600-160M GR C2	01 B 515 GR C2 01 B 600 GR C2	01 CRES 150M 01 CRES 155M 01 CRES 600-160M	01 CRES 515 01 CRES 600	193	9.5	152	76	177	442	696	107

1) These are reduced clearance bearings which are standard specification for rod ends
2) Reference refers to matched rod-end housing and cartridge together
3) Rod fixing varies from 2 to 6 bolts according to size, and can be adapted to requirements


W
r shaft fillet radius
d (h6) journal
A (rod)


K
T
H
Y (rod)

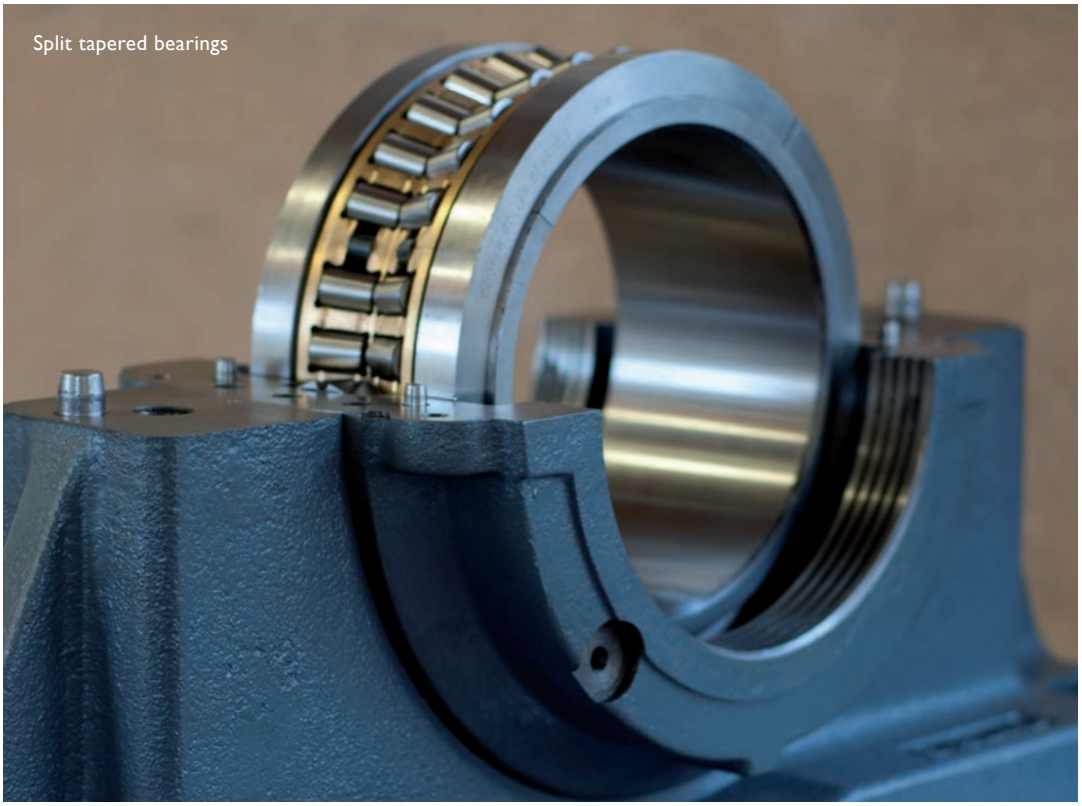
02 SERIES

Group Reference	Shaft Diameter d		Bearing Reference (1)		Housing Reference (2)		W (mm)	r (max) (mm)	A(3) (rod) (mm)	Y(3) (rod) (mm)	H (mm)	K (mm)	T (mm)	Mass (Complete unit) (kg)
02 200	50mm	1 15/16" 2"	02 B 50M GR C2	02 B 115 GR C2 02 B 200 GR C2	02 CRES 50M	02 CRES 115 02 CRES 200	123	4.5	62	32	76	190	330	10
02 208	60mm 65mm	2 3/16" 2 1/4" 2 7/16" 2 1/2"	02 B 60M GR C2 02 B 65M GR C2	02 B 203 GR C2 02 B 204 GR C2 02 B 207 GR C2 02 B 208 GR C2	02 CRES 60M 02 CRES 65M	02 CRES 203 02 CRES 204 02 CRES 207 02 CRES 208	138	6	88	50	108	248	432	20
02 300	70mm 75mm	2 11/16" 2 3/4" 2 15/16" 3"	02 B 70M GR C2 02 B 75M GR C2	02 B 211 GR C2 02 B 212 GR C2 02 B 215 GR C2 02 B 300 GR C2	02 CRES 70M 02 CRES 75M	02 CRES 211 02 CRES 212 02 CRES 215 02 CRES 300	152	6	114	38	130	248	540	40
02 308	80mm 85mm 90mm	3 3/16" 3 1/4" 3 7/16" 3 1/2"	02 B 80M GR C2 02 B 85M GR C2 02 B 90M GR C2	02 B 303 GR C2 02 B 304 GR C2 02 B 307 GR C2 02 B 308 GR C2	02 CRES 80M 02 CRES 85M 02 CRES 90M	02 CRES 303 02 CRES 304 02 CRES 307 02 CRES 308	173	9.5	126	76	149	334	610	62
02 400	100mm 105mm	3 11/16" 3 3/4" 3 15/16" 4"	02 B 100M GR C2 02 B 105M GR C2	02 B 311 GR C2 02 B 312 GR C2 02 B 315 GR C2 02 B 400 GR C2	02 CRES 100M 02 CRES 105M	02 CRES 311 02 CRES 312 02 CRES 315 02 CRES 400	171	12.5	126	76	149	354	618	71
02 408	110mm 115mm	4 3/16" 4 7/16" 4 1/2"	02 B 110M GR C2 02 B 115M GR C2	02 B 403 GR C2 02 B 407 GR C2 02 B 408 GR C2	02 CRES 110M 02 CRES 115M	02 CRES 403 02 CRES 407 02 CRES 408	187	12.5	126	76	162	400	654	91
02 500	120mm 125mm 130mm	4 15/16" 5"	02 B 120M GR C2 02 B 125M GR C2 02 B 130M GR C2	02 B 415 GR C2 02 B 500 GR C2	02 CRES 120M 02 CRES 125M 02 CRES 130M	02 CRES 415 02 CRES 500	209	12.5	152	76	177	442	696	124
02 508	140mm 145mm	5 3/16" 5 7/16" 5 1/2"	02 B 140M GR C2 02 B 145M GR C2	02 B 503 GR C2 02 B 507 GR C2 02 B 508 GR C2	02 CRES 140M 02 CRES 145M	02 CRES 503 02 CRES 507 02 CRES 508	213	12.5	152	76	177	442	696	145
02 600	150mm 155mm 160mm	5 15/16" 6"	02 B 150M GR C2 02 B 155M GR C2 02 B 600-160M GR C2	02 B 515 GR C2 02 B 600 GR C2	02 CRES 150M 02 CRES 155M 02 CRES 600-160M	02 CRES 515 02 CRES 600	229	12.5	152	64	203	444	736	166

1) These are reduced clearance bearings which are standard specification for rod ends

2) Reference refers to matched rod-end housing and cartridge together

3) Rod fixing varies from 2 to 6 bolts according to size, and can be adapted to requirements


Split tapered bearings

SPLIT TAPERED BEARINGS

INTRODUCTION

The Cooper split tapered bearing is intended for the 'fixed' bearing position of shafts where there is both radial and axial loading and our 'GR' type cylindrical bearing is unsuitable. It is constructed with two rows of opposed rollers to take axial loading in either direction.

Cooper split tapered roller bearings are usually mounted in a cartridge in a similar way to Cooper cylindrical bearings. Cartridges for tapered bearings are machined with grease groove seals as standard and provision made for a temperature element. Alternative seal types are available as page 10 and 11, and flange-mounted units may be supplied with bulkhead sealing arrangements. The proximity of the temperature element hole to the shaft means that if it is of a headed type, generally it will have to have a cranked probe. Alternative positions for the temperature element are possible.

The cartridge is mounted by its spherical seat in an outer housing. Various housing types are available, as for cylindrical bearings, but the most common types are the pedestal and flange. Cooper technical department should be consulted to confirm housing strength against the anticipated loads before finalising selection. Ductile iron housings are generally used with these bearings, as indicated by the part numbers listed on the following pages.

BEARING SELECTION

Bearing ratings for dynamic radial capacity (Cr) and static radial capacity (Cor) shown in this leaflet are in accordance with ISO 281-1990 and ISO 76-1987 respectively.

Radial and axial loads must be considered together as combined 'equivalent loads', as explained below. Generally, maximum instantaneous loading is governed by housing strength rather than bearing static capacity.

Dynamic rating

Expected bearing life is calculated by the following equation:

$$L_{10} = [Cr/(P \times fd)]^{(10/3)}$$

where:

L_{10} =	expected life of 90% of similar bearings under similar operating conditions
Cr =	radial dynamic rating
P =	equivalent dynamic load
fd =	dynamic or service factor, generally from 1 for steady loading to 3.5 for heavy shock, reciprocation or vibration

The dynamic equivalent load is calculated as follows:

when $F_a/F_r \leq e$: $P = F_r + Y1F_a$
when $F_a/F_r > e$: $P = 0.67F_r + Y2F_a$

where:
F_r = applied radial load
F_a = applied axial load
and calculation factors Y_1, Y_2 and e are given in the product data tables.

Life calculation with multiple load conditions

Where varying loads are experienced in operation, using the maximum load condition may lead to an unrealistically low calculated life. For n load conditions constituting the full load cycle (at constant speed), an overall dynamic equivalent load may be calculated as follows:

$$P = \left[\sum_{i=i}^{i=n} P_i^{(10/3)} p_i\right]^{0.3}$$

where:
Pi = dynamic equivalent load under load condition i
pi = proportion of time load condition i is applicable

Where the load is continuously variable it may be broken down into a discrete approximation to the actual load cycle.

Minimum loading

In order to avoid excessive skidding of the rollers, sufficient loading must be applied to the bearing, as follows:

$P \geq 0.01Cr$

ASSEMBLY

The assembly procedure for a Cooper split tapered roller bearing unit is substantially similar to that of a cylindrical bearing and housing. However, some additional points need to be drawn to the attention of the fitter and a full set of assembly instructions for split tapered bearings should be referred to before commencing installation. This may be obtained in electronic form from Cooper technical department.

GREASE QUANTITY FOR INITIAL LUBRICATION

The quantity of grease required on initial lubrication is dependent upon operating speed and temperature.

If the operating temperature is below 80°C the quantity of grease may be determined directly according to the bearing reference and operating speed from the table below. If the operating temperature is above 80°C a 25% pack of grease should be used regardless of operating speed (refer to the right hand column of the table).

With a 'full pack' of grease the space within the housing (i.e. surrounding the bearing components) in the assembled unit is completely filled with grease.

The table assumes normal density grease (about 0.85 g/cm3).

INITIAL LUBRICANT QUANTITIES

Shaft Diameter (mm)	Bearing Reference	Speed (rpm) up to	Grease (full pack) (Kg)	Speed (rpm) from	Speed (rpm) to	Grease (75% full pack) (Kg)	Speed (rpm) from	Speed (rpm) to	Grease (50% full pack) (Kg)	Speed (rpm) from	Speed (rpm) to	Grease (33% full pack) (Kg)	Speed (rpm) over	Grease (25% full pack) (Kg)
75	IDTB75M	667	0.19	667	1333	0.14	1333	2000	0.10	2000	2667	0.06	2667	0.05
80	IDTB80M	625	0.23	625	1250	0.17	1250	1875	0.12	1875	2500	0.08	2500	0.06
90	IDTB90M	556	0.25	556	1111	0.19	1111	1667	0.12	1667	2222	0.08	2222	0.06
100	IDTB100M	500	0.41	500	1000	0.31	1000	1500	0.20	1500	2000	0.13	2000	0.10
110	IDTB110M	455	0.44	455	909	0.33	909	1364	0.22	1364	1818	0.14	1818	0.11
120	IDTB120M	417	0.50	417	833	0.38	833	1250	0.25	1250	1667	0.17	1667	0.13
130	IDTB130M	357	0.65	357	714	0.48	714	1071	0.32	1071	1429	0.21	1429	0.16
140	IDTB140M	357	0.65	357	714	0.48	714	1071	0.32	1071	1429	0.21	1429	0.16
150	IDTB150M	313	0.63	313	625	0.47	625	938	0.32	938	1250	0.21	1250	0.16
160	IDTB160M	313	0.63	313	625	0.47	625	938	0.32	938	1250	0.21	1250	0.16
180	IDTB180M	278	0.77	278	556	0.58	556	833	0.39	833	1111	0.25	1111	0.19

ROUTINE GREASING

Relubricate the bearing weekly or every 150 hours of operation. Sizes up to and including 120mm: Use 2ml of fresh grease. Sizes over 120mm: Use 4ml of fresh grease. Note that 2ml is approximately 1 shot from a conventional side-lever grease gun. Automatic lubrication systems should be metered to deliver grease at an average rate equivalent to the routine greasing periods and quantities specified. If it can be done safely, the bearing should be re-greased as it rotates to help distribute the grease. Do not mix different types of grease in the bearing. Excessive quantities of lubricant should not be used, particularly at high speeds, as this may result in excessive churning and overheating.

TIGHTENING TORQUES

The tightening torques for the assembly of the bearings and housing are given in the following table. All screws are metric coarse thread, grade 12.9. Full assembly instructions are provided with each order, and are available separately if required.

TIGHTENING TORQUES

Shaft Diameter (mm)	Bearing Reference	Clamping ring screw			Cartridge joint screw			Side screw			Pedestal joint screw			Flange joint screw		
		Screw size	Key size A/F (mm)	Torque (Nm)	Screw size	Key size A/F (mm)	Torque (Nm)	Screw size	Key size A/F (mm)	Torque (Nm)	Screw size	Key size A/F (mm)	Torque (Nm)	Screw size	Key size A/F (mm)	Torque (Nm)
75	1DTB75M	M5x25	4	8.5	M6x25	5	11	M6x10	3	7.8	M16x65	14	225	M12x55	10	90
80	1DTB80M	M5x25	4	8.5	M10x45	8	52.5	M6x10	3	7.8	M16x65	14	225	M16x65	14	225
90	1DTB90M	M5x25	4	8.5	M10x45	8	52.5	M6x10	3	7.8	M16x65	14	225	M16x65	14	225
100	1DTB100M	M8x30	6	35	M10x45	8	52.5	M6x10	3	7.8	M20x80	17	420	M16x65	14	225
110	1DTB110M	M8x30	6	35	M12x55	10	90	M6x10	3	7.8	M20x80	17	420	M20x80	17	420
120	1DTB120M	M8x30	6	35	M10x45	8	52.5	M6x10	3	7.8	M20x80	17	420	M20x80	17	420
130	1DTB130M	M10x45	8	70	M10x45	8	52.5	M6x10	3	7.8	M20x80	17	420	M20x80	17	420
140	1DTB140M	M8x30	6	35	M10x45	8	52.5	M6x10	3	7.8	M20x80	17	420	M20x80	17	420
150	1DTB150M	M10x45	8	70	M10x45	8	52.5	M10x16	5	30	M16x65	14	225	M20x100	17	420
160	1DTB160M	M8x30	6	35	M10x45	8	52.5	M10x16	5	30	M16x65	14	225	M20x100	17	420
180	1DTB180M	M8x30	6	35	M10x55	8	52.5	M10x16	5	30	M20x80	17	420	M24x100	19	712

TAPER BEARING FREQUENCIES

Shaft Diameter d (mm)	Bearing Reference	Part Frequencies (per shaft rev.)				PCD (mm)	Roller details		
		Cage	Roller	Outer	Inner		No.	Diameter (mm)	Roller axis angle (°)
75	1DTB75M	0.445	4.264	8.006	9.994	102.6	18	11.95	17.50
80	1DTB80M	0.448	4.507	8.959	11.041	108.2	20	11.95	18.50
90	1DTB90M	0.453	4.898	9.955	12.045	117.4	22	11.95	20.13
100	1DTB100M	0.449	4.627	9.888	12.112	136.0	22	14.63	19.00
110	1DTB110M	0.455	5.167	10.926	13.074	147.9	24	14.29	21.25
120	1DTB120M	0.457	5.404	11.895	14.105	154.5	26	14.29	22.25
130	1DTB130M	0.461	6.022	12.901	15.099	176.4	28	14.62	18.00
140	1DTB140M	0.461	6.022	12.901	15.099	176.4	28	14.62	18.00
150	1DTB150M	0.461	6.145	12.918	15.082	196.9	28	15.99	17.21
160	1DTB160M	0.461	6.145	12.918	15.082	196.9	28	15.99	17.21
180	1DTB180M	0.465	6.776	13.959	16.041	216.8	30	15.99	19.00

COOPER®

THE

ORIGINAL

SPLIT ROLLER BEARING

The inventor of the split to the shaft roller bearing, Cooper has unrivalled expertise gained in over 100 years manufacturing both the bearing and the housing at their site in King's Lynn (UK)





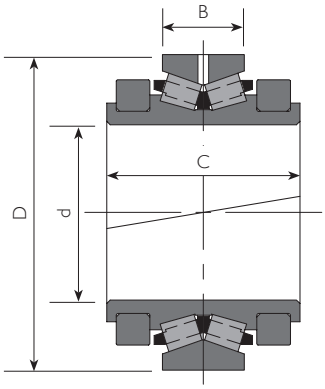
HIGHEST CAPACITY

Cooper's position as a leader in the field has been recently re-affirmed with the introduction of the 01E/02E series. Equipped with a robust brass cage and larger rollers the new series ensures significant improvements in radial and axial capacity confirming Cooper as the highest capacity split bearing on the market.

WIDEST RANGE

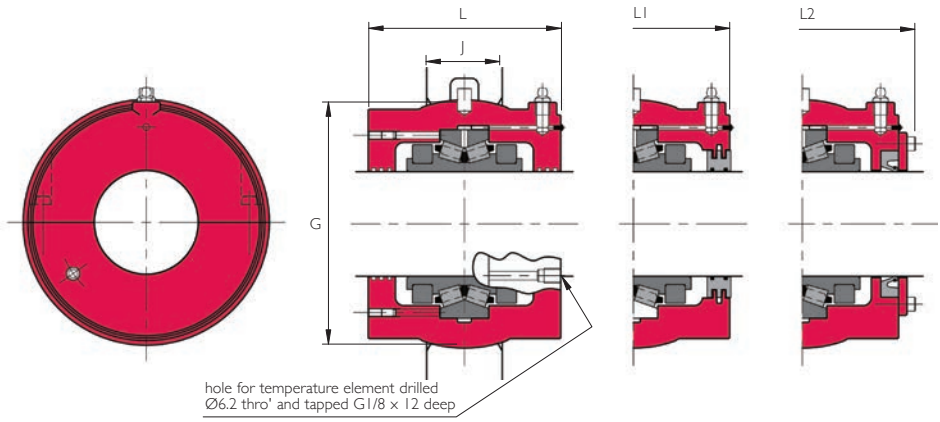
With 4 series of split cylindrical roller bearings: 100 (light), 01 (medium), 02 (heavy) and 03 (extra heavy) as well as a range of split taper roller bearings, Cooper has a range unmatched by any manufacturer.





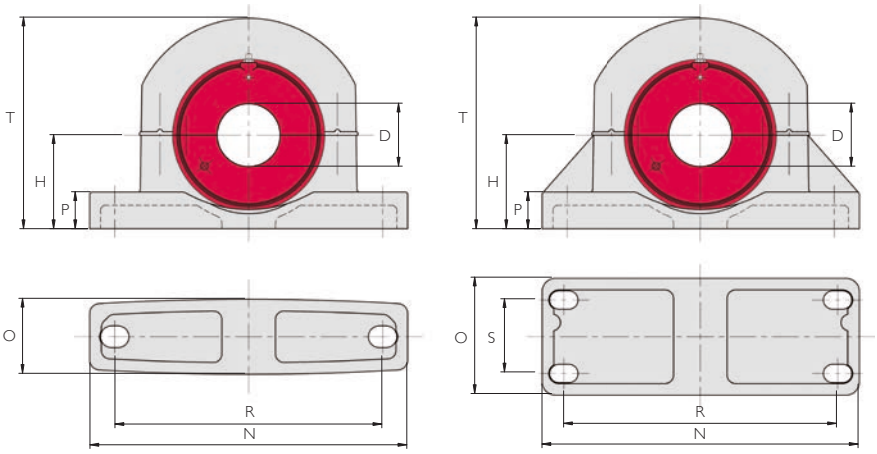
BEARING DATA

Shaft Diameter d (mm)	Reference	Bearing Ratings Cr (kN)	Cor (kN)	Max. Speed (rpm)	Calculation Factors Y1	Y2	e	Yo	Principal Dimensions D (mm)	C (mm)	B (mm)	Mass (kg)
75	1DTB75M	143	208	3410	1.27	1.89	0.53	1.24	135	82.6	35	4.0
80	1DTB80M	152	232	3200	1.20	1.79	0.56	1.18	145	85	35	4.6
90	1DTB90M	160	254	2840	1.11	1.65	0.61	1.08	150	85	35	4.7
100	1DTB100M	235	379	2560	1.17	1.75	0.58	1.15	175	100	40	8.3
110	1DTB110M	282	504	2330	1.05	1.56	0.64	1.02	190	110	48	11.4
120	1DTB120M	295	544	2130	1.00	1.49	0.68	0.98	200	110	48	11.9
130	1DTB130M	296	555	1830	1.27	1.90	0.53	1.24	215	125	45	13.9
140	1DTB140M	296	555	1830	1.27	1.90	0.53	1.24	215	110	45	12.2
150	1DTB150M	350	670	1600	1.34	1.99	0.50	1.31	240	123.8	45	16.8
160	1DTB160M	350	670	1600	1.34	1.99	0.50	1.31	240	110	45	14.8
180	1DTB180M	358	716	1420	1.21	1.80	0.56	1.18	265	110	45	17.0



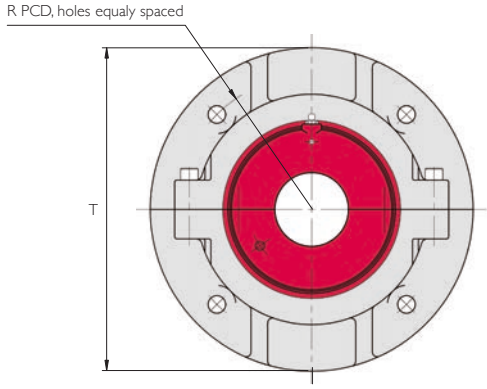
CARTRIDGE DATA

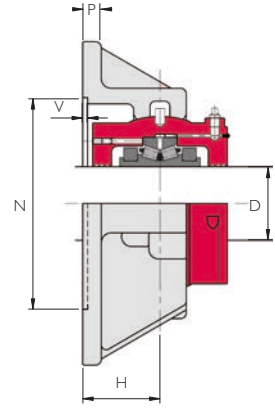
References		Principal Dimensions					
Cartridge for LAB seals	Cartridge for ATL seals	G (mm)	J (mm)	L (mm)	L1 (mm)	L2 (mm)	Mass (kg)
1DTC75GR75M	1DTC75GR30TL	177.80	50	138	140	162	11.8
1DTC80GR80M	1DTC80GR35TL	203.20	50	140	142	164	15.1
1DTC90GR90M	1DTC90GR35TL	203.20	50	146	148	170	13.5
1DTC100GR100M	1DTC100GR40TL	231.78	64	170	172	202	20.1
1DTC110GR110M	1DTC110GR45TL	266.70	76	178	180	210	29.8
1DTC120GR120M	1DTC120GR50TL	266.70	76	178	180	210	26.5
1DTC140GR130M	1DTC140GR50TL	279.40	76	190	192	222	31.2
1DTC140GR140M	1DTC140GR55TL	279.40	76	190	192	222	31.2
1DTC160GR150M	1DTC160GR60TL	311.15	76	200	202	232	47.0
1DTC160GR160M	1DTC160GR65TL	311.15	76	200	202	232	47.0
1DTC180GR180M	1DTC180GR70TL	336.55	95	200	206	232	42.5



PEDESTAL DATA

Shaft Diameter d (mm)	Bearing Reference	Pedestal Reference	H (mm)	R Min. (mm)	Max. (mm)	S (mm)	Bolts No.	Size	N (mm)	O (mm)	P (mm)	T (mm)	Mass (Pedestal only) (Kg)
75	1DTB75M	PN05	112	312	328	-	2	M24	380	90	44	252	13.3
80	1DTB80M	PN06	125	342	366	-	2	M24	420	102	52	272	14.7
90	1DTB90M	PN06	125	342	366	-	2	M24	420	102	52	272	14.7
100	1DTB100M	PN07	143	374	410	-	2	M24	466	120	60	314	20.6
110	1DTB110M	PN08	162	438	462	120	4	M24	508	178	38	372	43.3
120	1DTB120M	PN08	162	438	462	120	4	M24	508	178	38	372	43.3
130	1DTB130M	PN09	181	470	494	120	4	M24	558	178	41	405	52
140	1DTB140M	PN09	181	470	494	120	4	M24	558	178	41	405	52
150	1DTB150M	PN11	213	356	380	114	4	M24	508	178	32	430	53
160	1DTB160M	PN11	213	356	380	114	4	M24	508	178	32	430	53
180	1DTB180M	PN31	210	546	570	128	4	M24	636	204	50	470	83





FLANGE DATA

Shaft Diameter d (mm)	Bearing Reference	Flane Reference	T(1) (mm)	Bolt Size	R (mm)	P (mm)	H (mm)	N(2) (mm)	V(2) (mm)	Mass (flange only) (kg)
75	1DTB75M	FN05	330	M16	274	19	79	215.90	3	19.4
80	1DTB80M	FN06	356	M16	302	19	86	244.48	3	22.0
90	1DTB90M	FN06	356	M16	302	19	86	244.48	3	22.0
100	1DTB100M	FN07	382	M16	334	22	92	276.23	3	26.6
110	1DTB110M	FN08	432	M24	374	22	98	314.33	3	34.9
120	1DTB120M	FN08	432	M24	374	22	98	314.33	3	34.9
130	1DTB130M	FN09	444	M24	384	25	98	317.50	3	40.8
140	1DTB140M	FN09	444	M24	384	25	98	317.50	3	40.8
150	1DTB150M	FN11	496	M24	426	25	105	352.43	3	58
160	1DTB160M	FN11	496	M24	426	25	105	352.43	3	58
180	1DTB180M	FN31	534	M24	466	25	124	393.70	3	81

1) Dimension shown is as-cast dimension. Depending upon manufacturing method used, flanges supplied may be machined 5mm smaller

2) Dimensions shown are for locating spigot for mounting flange on to. Diameter tolerance of locating spigot: f8 Where SRSRP seals are used cartridge assembly may protrude into bulkhead. Consult Cooper for minimum bulkhead aperture size.



LARGE BORE BEARINGS

The following table lists some of the bearings over 600mm/24" bore size manufactured by Cooper recently.

This table may be used as a guide for selecting or designing-in large bore bearings, but it should be borne in mind that these larger sizes of bearing are frequently adapted to meet application requirements. They may be modified to match existing or required envelopes and capacities. Many of the bearings may be supplied with slightly different bore sizes to those under which they are listed, while alternative versions may already be available at some bore sizes without modification.

Generally, these bearing are available in expansion 'EX' or fixed 'GR' types (see page 3). Extra-expansion 'EXILOG' types are also made regularly, but often have different envelope dimensions (in particular, the inner race is usually wider).

Lighter duty 04 Series bearings are shown separately on page 98. It is always advisable to contact Cooper when specifying large bearings.

HOUSINGS

If the bearing is to be mounted in a housing made by the equipment manufacturer, Cooper will supply details of the required mounting tolerances upon request.

If the bearing is to be fitted into an existing housing, accurate details of the mounting dimensions should be supplied to Cooper to ensure compatibility.

Cooper can supply suitable housings, including cartridges, pedestals, flanges, and custom housings for large bearings. (See other sections for explanations of these housing types). Please contact Cooper with application details so that we can supply details of the most suitable housing, or design or adapt a housing to suit if required.

DOUBLE BEARINGS

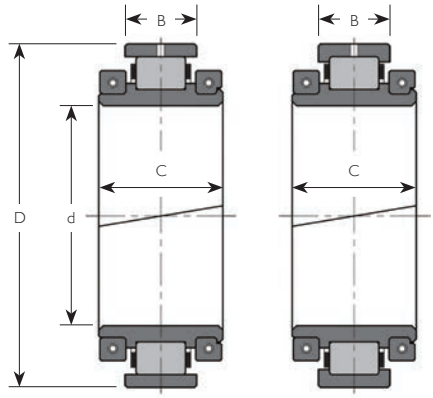
Large bearings are often paired to form a 'double bearing' of increased capacity.

To calculate the dynamic capacity of a double bearing, multiply the dynamic capacity (Cr) of the single bearing by 1.714.

To calculate the static capacity of the double bearing, multiply the static capacity (Cor) of the single bearing by 2.

Mountings for double bearings should be designed to equalise the loading on the two rows of rollers.

Bearings should only be mounted together to form a two-row bearing if they are supplied by Cooper specifically for this purpose, and the bearings should be maintained in their allocated pairings.



LARGE BEARINGS

Shaft Diameter d	Reference	D (mm)	C (mm)	B (mm)	Cr (kN)	Cor (kN)
610mm	01 B 610M	780	172	84.1	1431	3311
613.2mm	03E B 613.2M	980	370(1)	200(1)	5593	9863
630mm	01 B 630M 03 B 630M	794 980	190 361.6	88 216	1780 7036(2)	4181 14708(2)
25"	02 B 2500	866.78	219.08	117.48	2724	5833
650mm	02 B 650M 03E B 650M	860 980	220 320	120 200	2724 5738	5833 11253
670mm	02 B 670M 03 B 670M	900 1050	260 410	142 250	3923(2) 8866(2)	8652(2) 18398(2)
26"	03E B 2600	980	320	200	5738	11253
27"	01 B 2700	864	170	94	1761	4014
690mm	01 B 690M	864	170	94	1761	4014
710mm	01 B 710M 02 B 710M 03 B 710M	890 980 1090	185 290 383	95 155 230	1817 3530 8594(2)	4234 7019 17990(2)
28"	01 B 2800	892.18	184.15	87.31	1682	4038
750mm	01 B 750M 02 B 750M 03 B 750M	971.55 990 1060	206 240 310	101.6 140 185	2321 3554 5173	5685 7582 10544
775mm	01 B 775M	945	165	80	1762	3974
850mm	01 B 850M 02 B 850M	1046 1112	200 260	106 156	2555 4335	6401 9585
860mm	03 B 860M	1170	330	190	5698	12404
950mm	01 B 950M 02 B 950M	1172 1212	220 260	120 156	3238 4882	8209 11587
40"	01 B 4000	1270	260	139.7	3958	10084
1100mm	03 B 1100M	1467	410	250	9654(2)	23450(2)
1150mm	4DS B 1150M	1490	305	175	5737	13445
1250mm	03 B 1250M	1630	350	214	8587	21001

1) Dimensions of 03E B 613.2mm refer to EXILOG type with roller axial guide surfaces to outer race only

2) These capacities are achieved with a special type of cage and roller assembly.

04 SERIES BEARINGS

Cooper 04 Series bearings are specialised bearings for lighter duties at large bore sizes.

04 Series bearings are capable of high speeds, but are also used on lower speed applications. Use of these bearings at high speeds requires special attention to lubrication.

If the bearing is to be used at slow speeds only it may be possible to omit some of the 'high speed' features of the bearing, allowing a more economical bearing specification.

Generally, these bearing are available in expansion 'EX' or fixed 'GR' types (see page 3). Alternative configurations are possible where appropriate. These bearings may be subjected to a degree of adaption to suit application requirements. They may also be supplied with slightly different bore sizes to those under which they are listed.

It is advisable to contact Cooper when specifying 04 Series bearings.

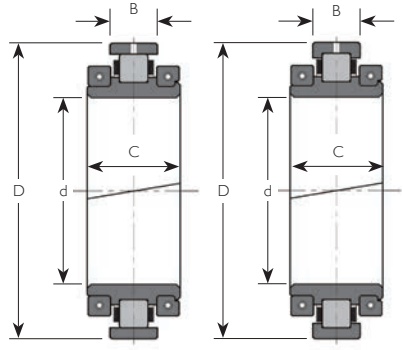
HOUSINGS

Most commonly, 04 Series bearings are mounted in customer's own housings or into housings integrated into the structure of the machine. Details of appropriate mounting tolerances can be supplied on request.

If it is wished for Cooper to supply bearings complete with housings, please contact us with application details.

In general, if operating conditions and envelope restrictions allow, it is more economical to supply 01 Series bearings complete with housings, as a greater range of standardised housings is available for the 01 Series.

Shaft Diameter d (mm)	(inches)	Reference	D (mm)	C (mm)	B (mm)	Cr (kN)	Cor (kN)	Max. Speed (rpm)	Mass (kg)
	6	04 B 600	257.18	79	38.1	198	246	3000	14
	10⅜	04 B 1010	365.13	103	48.4	336	367	2470	27
340		04 B 340M	438.15	103	48.4	261	282	1950	35
	13½	04 B 1308	438.15	103	48.4	261	282	1950	34
400		04 B 400M	505	100	36	214	235	1650	34
	17½	04 B 1708	546.1	108	48.4	302	367	1460	45
	18½	04 B 1808	571.5	108	48.4	316	395	1370	50
	20¾	04 B 2012	635	114	48.4	326	423	1210	54
550		04 B 550M	655	98	36	266	289	1150	54
	22	04 B 2200	666.75	101	38.1	361	452	1130	54
	23	04 B 2300	692.15	101	38.1	368	470	1080	59
	24	04 B 2400	717.55	101	38.1	413	543	1020	61
	26½	04 B 2608	781.05	114	48.4	509	818	910	77
	30	04 B 3000	882.65	114	44.5	372	509	780	95
	32	04 B 3200	939.8	114	44.5	394	579	730	104
	33	04 B 3300	965.2	114	44.5	403	602	705	104
	36	04 B 3600	1041.4	114	44.5	418	556	620	118
1060		04 B 1060M	1220	127	60	954	1472	560	180
	44	04 B 4400	1295.4	168	76.2	1339	1822	140	200
	48	04 B 4800	1371.6	140	69.9	1094	1693	350	146
1295		04 B 1295AM	1435.1	127	63.5	988	1606	340	193
1295		04 B 1295BM	1473.2	168	76.2	1831	2877	120	313
1550		04 B 1550M	1720	140	75	1364	2418	300	336



WHAT TO DO WITH YOUR USED BEARING

RECONDITIONING

Cooper offer a reconditioning service for larger bearings. A used bearing is thoroughly cleaned and a detailed report prepared on its condition and the work required to bring it back to an as-new functional condition. Generally a reconditioned bearing will consist of a combination of remachined components of the original bearing and new components to give the correct clearances.

Reconditioning is generally more economical than manufacture of new bearings, depending upon the amount of work required to the subject bearing, for the following bearings:

01 Series: 320mm/13" bore size and over
02 Series: 320mm/13" bore size and over
03 Series: 160mm/6½" bore size and over
04 Series: all sizes
Thrust bearings: all sizes

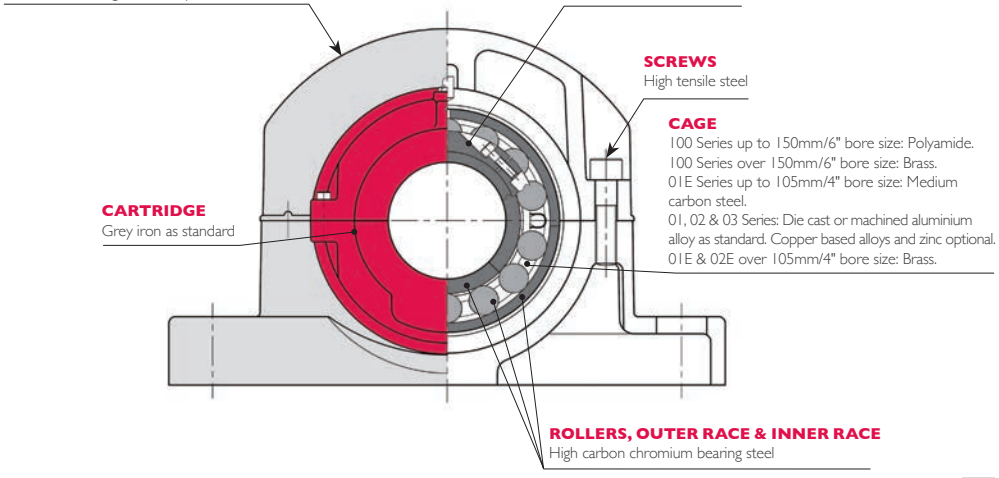
Cooper are also able to recondition radial and thrust cylindrical bearings of non-Cooper manufacture.

FAILURE ANALYSIS

Cooper offer a failure analysis service for all sizes of bearing, of any age. Where appropriate, we will offer advice on fitting practices, lubrication regime, or modifications to the mounting arrangements to help improve future bearing life. Bearings sent for analysis may be reconditioned, recycled or returned as appropriate.
Please inform Cooper if you wish to use this service, before returning bearings to one of our sites. A small charge may be made depending on requirements.

RECYCLING

The materials used in a Cooper bearing unit are almost completely recyclable. The diagram below helps to identify the various materials used in standard and popular optional versions of Cooper bearings so that they can be segregated as required.



SPECIAL FEATURES

Suffix characters may be used to indicate special features. Examples include:

BEARING FEATURES

C2/C3/C5	Special clearances
AF	Axial float. This is preceded by the amount of axial float, e.g.: 2mm AF
AL(D)F	Aluminium cage with (double) flange (usually race riding)
AP	Air / grease purge points
CHAM	Special chamfer to inner race bore. This is followed by size of chamfer, e.g. (to indicate 7mm x 45° chamfer): CHAM 7
EXILOG	Bearing with fixed type outer race and floating inner race
FR	Full complement of rollers (no cage)
GM	Gunmetal / brass / bronze cage
GM(D)F	Gunmetal / brass / bronze cage with (double) flange (usually race riding)
GROSL	Single lipped outer race
OSO	Outer race set out (particularly for large bearings where outer race is usually retained in housing by radial screws)
XJR	Joint relief (to allow inner race to be mounted in recess)
ZN	Zinc alloy cage

CARTRIDGE FEATURES

BOBP	Bolt-on blanking plate
BOBT	Bolt-on blanking plate with thrust bearing
BP/BT/BPTL/BTTL	See page 12
IH	Inspection hole (for measuring position of inner race of expansion bearings once assembled)
OB	Overbore (cartridge end bore is larger than bearing bore) This is followed by end bore size, using same format as bearing bore reference, e.g.: OB 207 or OB 65M (or OB 65mm)
TE	Drilled for temperature indicator element
OIL LUB	Oil lubricated

A letter may succeed the 'C' in the cartridge designation to indicate that the cartridge is made from non-standard material. Taking the examples of 01 C 60M and 01 C 03 as examples:

01 CN 60M and 01 CN 03 would indicate nodular (ductile) iron.
01 CS 60M and 01 CS 03 would indicate steel.
01 CA 60M and 01 CA 03 would indicate aluminium.

OUTER HOUSING FEATURES

BEM	Base ends machined. This may be followed by machined length, e.g.: BEM 500mm
SI	Reduced swivel clearance between outer housing and cartridge
SLUB	Lubrication to spherical seat

For outer housings made in material other than standard, letters are interposed between the letter(s) designating the housing type (e.g. 'P' for pedestal, 'F' for flange or 'RET' for rod-end T-type) and the size designation. Taking the example of a P06 pedestal:

PN06 indicates a P06 in nodular (ductile) iron
PS06 indicates a P06 in steel
PA06 indicates a P06 in aluminium

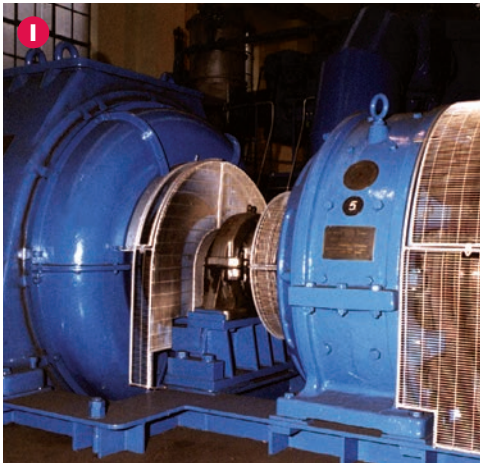
Ductile iron and steel versions of an RET06 would be designated RETN06 and RETS06 respectively.

Numbers may be suffixed to bearing, cartridge or outer housing designations indicating a combination of special features or parts to special dimensions.

MINING EXCELLENCE

Underground or surface, Cooper bearings make mining more profitable and are used on key applications across the industry. From material handling through hauling, screening and stockpile management, Cooper split bearings have long been recognized as a benchmark for reliability.

MINE WINDERS



1. Coal industry mine winders include 03 Series 600mm for an operating load of 80 tonnes per bearing at 48 rpm and 02 Series 400mm for an operating load of 32 tonnes per bearing at 31 rpm.



2. A 700mm diameter special double bearing supplied for a tower mounted winder in a copper mine. Normal operating load is 185 tonnes and the speed is 54 rpm.

3. STACKER RECLAIMERS

This bucket wheel stacker reclaimer can handle 3,500 tons per hour and the boom can operate on a pile up to 50 feet high. The slewing ring pinion gear is supported by 6½ inch and 7 inch 01 Series Cooper bearing in flange housings.

Cooper Bearings up to 380mm in diameter are used on the shaft of the bucket wheel as shown.



SUGAR PRODUCTION

The Cooper value proposition is universally recognised by both cane and beet sugar manufacturers and is used across a range of demanding applications from cane knives to conveyors, fans and blowers etc. Besides the savings in downtime from the split bearing, the Cooper sealing solution is the ideal defence against the abrasive effects of "bagasse" and other contaminants.



1. CANE KNIVES AND CRUSHERS

This cane knife machine is fitted with 03 BCP 200mm EX (Expansion) and GR (Fixed) bearings.



2. SCROLL CONVEYOR

Cleanliness requirements during the final stage of transporting white sugar to the bagging area demanded the use of custom-built 100mm stainless steel hanger unit.



SPLIT ROLLER BEARING APPLICATIONS

The following pages show Cooper Split Roller Bearings "in action" across a range of industries and applications.

The examples shown underline the key advantages in terms of ease of installation, inspection and replacement, as well as graphically illustrating the superior efficiency of the Cooper sealing solution in even the most adverse environments.



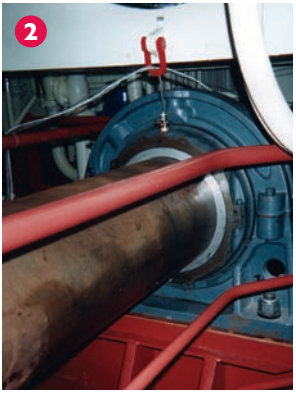
MARINE SOLUTIONS

Cooper bearings have long-standing expertise in supplying both the commercial and military fleets of the world and are installed on a variety of vessel types from water-jet and z-drive driven passenger, cargo and support vessels to powered-from-amidships minesweepers.

Cooper offers an extensive range of split cylindrical and taper roller bearings in a variety of housing materials including aluminium and stainless steel. Application expertise gained over the years results in a range of "customized" options including jacking screws for easy alignment and spherical cartridge lubrication to counter hull flexing.



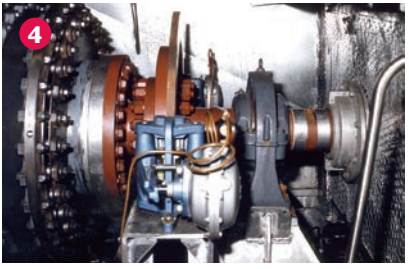
1. This Offshore Supply Vessel is fitted with Cooper 01 BCP 500 EX and 02 BCP 500 GR on the propulsion shaft.



2. A typical installation of a Cooper BCP on a propulsion shafting application.



3. Hoverspeed Super SeaCat is fitted with weight saving aluminium 01 BCAPLA 210mm EX cartridges and pedestals.

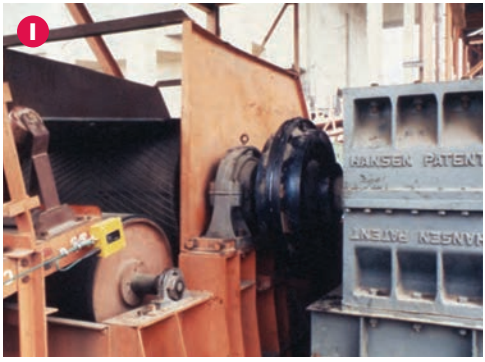


4. A typical waterjet drive trapped position utilising a 240mm BCP EX with felt seals.

POWER GENERATION CONVENTIONAL

Cooper split roller bearings support the power generation industry in both conventional and renewable segments across a wide range of key applications such as fans and blowers, conveyors, motors and generators etc.

Our experience and technology means many of our solutions can be "Made to Order" to suit the individual conditions and requirements.





1. CONVEYORS

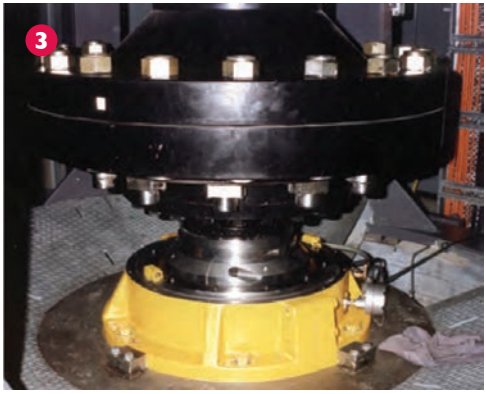
The roles of conveyors include the transport of fuels (ranging from coal to organic wastes) and raw materials such as limestone for scrubbing. They remove waste products from both nuclear and conventional processes. You will find Cooper bearings assuring the smooth running of belt feeder, screw and other conveyors in power plants all over the world, in the harshest conditions and especially in 'trapped' locations where no other type of bearing can easily be installed or inspected.

2. FANS AND BLOWERS

Fans play an important role in regulating temperature, removing dust, maintaining ventilation and scrubbing flue gases, often in harsh or corrosive conditions. Bearing locations are often trapped, with the result that split-to-the-shaft Cooper products offer distinct advantages in terms of accessibility.

3. PUMPS AND PUMP DRIVES

Hardworking bearings support vital pumping activities, feeding boilers, circulating cooling fluids and extracting condensates. Cooper bearings find application on a wide range of pump shafts, many in hard-to-access situations.



POWER GENERATION RENEWABLE

1. HYDRO TURBINES





02 BCF 2500 EX fitted to a Hydro Turbine vertical shaft. The customer chose Cooper for ease of installation and inspection. The elimination of oil lubrication was also a bonus for the customer as they could comply with environmental legislation.



2. 01 BCF 380mm fitted to a vertical shaft water turbine.

01 BCF 380mm EX was selected in conjunction with the OEM on this 11,000kW vertical shaft 'Kaplan' turbine. Cooper was chosen for simplified installation, and uncomplicated inspection & maintenance

3. WIND TURBINES

Housing manufactured at our foundry for 1250mm bearing for a wind turbine test rig. The Cooper solution offered significant advantages over hydrodynamic/plain bearings in terms of requirements for shaft tolerance. At the same time significant power savings are achieved on start up and the risk of loss of lubricant film due to power failure is eliminated avoiding potential damage to the shaft.



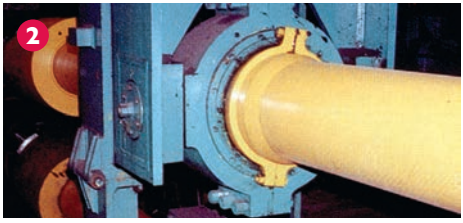
STEEL EXPERTISE

Specialists in steel for decades, Cooper Bearings offer optimum performance, simple and speedy bearing inspection for preventative maintenance and immense downtime savings during inspection or replacement.

1. CONTINUOUS SLAB CASTER BEARINGS

Cooper is renowned with steel end users and OEM customers around the world for their expertise and experience in producing bearings and water-cooled housings for this most demanding of applications.





2. LINK SPINDLES

A Cooper 01 B 560mm on a link spindle drive to a high speed reversing (78rpm in 2 seconds) rolling mill. The use of 01 Series bearings, double mounted in one specially manufactured housing provided the required load capacity while meeting the high speed reversal speed requirements.

3. PILGER MILLS

The Cooper brand has long been synonymous with longer bearing life in this most demanding of applications and is the bearing of choice for OE manufacturers and tube makers.

With a range from 125mm to 500mm bore, Cooper split bearings are used across the world for the manufacture of pilgered tube in copper, stainless steel and titanium.



4. COOLING BEDS

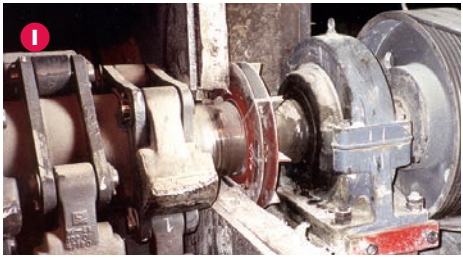
Cooling beds are an application which perfectly illustrates the advantages in maintenance and downtime savings in trapped applications as well as the efficiency of the superior Cooper sealing solution.

Cooling bed drive mechanism utilising 200mm 01 Series BCP units.



CEMENT/AGGREGATES ROBUST SOLUTIONS

Cooper Bearings are proven to operate effectively in hostile and abrasive conditions across a range of applications in the cement and quarrying industries.



1. CLINKER BREAKERS

Detail of cement works clinker breaker showing a Cooper 03 BCP 180mm GR. This machine also uses 03 BCP 180mm EX Expansion bearings.



2. BALL MILLS

01 BCP 1016mm EXILOG GR fitted to a 10 feet diameter Silica Mill.

3. BALL MILLS

Lichtenberg Lafarge use Cooper 03BCP 320mm on this ball mill.

In addition to these illustrations and numerous UK applications, Cooper bearings are also used on ball mills in: Egypt, Greece, Ireland, USA and Turkey.

Sizes range from 01 BCP 300mm EX and GR to 01 BCP 950mm EXILOG GR

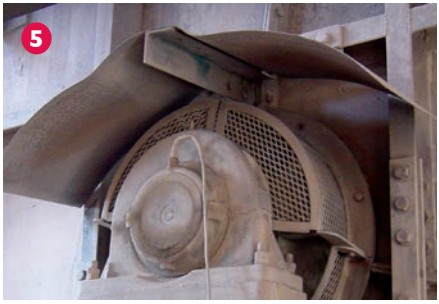




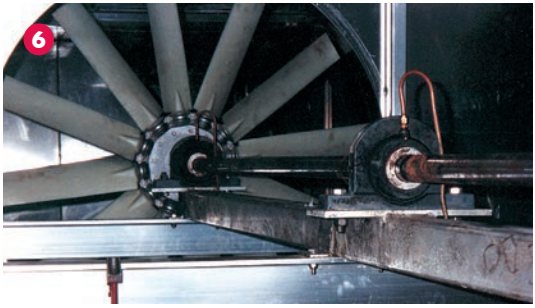
4. SCREW CONVEYORS

This Kaolin screw conveyor is fitted with 01 BH 60mm EX bearing and uses automatic lubrication. The hanger bearing has a double heavy duty lip seal to retain the lubrication and keep out the Kaolin

CEMENT/AGGREGATES ROBUST SOLUTIONS



5. FANS
This lubricator equipped cement industry fan is fitted with an 02 BCP 8" EXTL.



6. FANS
Cooper 01 Series BCP on a Canadian lumber drying kiln.



7. FANS
This cement works ventilation fan uses Cooper 02 BCP 900 EX TL SI and 02 BCP 900 GR TL SI.

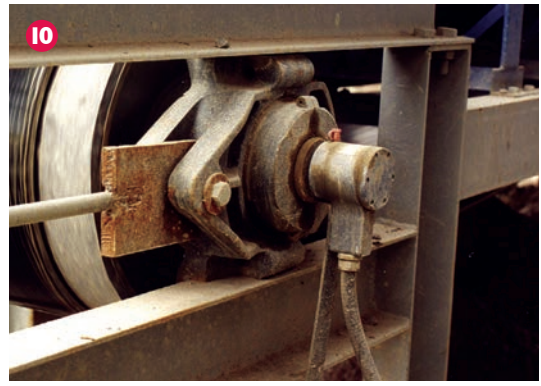


8. CEMENT KILN
Cement kiln using 10 inch 03 Series with roller thrust bearings in the cartridge end plates which support the under rollers on the kiln. The radial load is 28 tons, the axial load 10 tons and the speed is 4-5rpm.



9. BUCKET ELEVATORS

This German bucket elevator uses Cooper 01 BCP 160mm GR in trapped positions. The advantages of Cooper split to the shaft bearings are easily seen in these pictures.



10. BELT CONVEYORS

Take up housings (Tension Type) with Cooper 01E 80mm EX (Expansion) and GR (Fixed) bearings fitted to a raw materials conveyor at an aggregate depot.



11. BELT CONVEYORS

A German chalk extraction conveyor operates in dusty, dirty and moist conditions which caused the motor and gearbox to be firmly stuck to the shaft. The main conveyor bearing failed requiring immediate replacement.

The existing 150mm bearing was replaced with a Cooper 01 BCP 150mm GR SRS. The split rubber seal was specified to combat the moist environmental conditions.

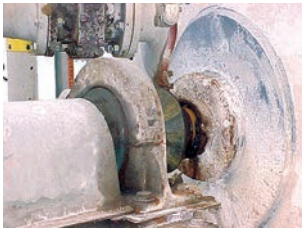


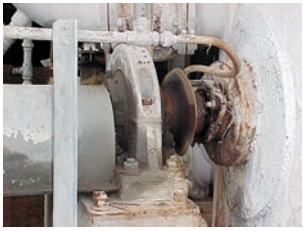
12. BELT CONVEYORS

Water collected in the tail drum pit entered the bearings. As a result, the SNL 515 - 612 bearing fitted to the 100mm shaft failed every 2 to 3 months.

Cooper recommended a BCP 100mm GR (Fixed) and EX (Expansion) bearing equipped with the Cooper SRSRP seal to solve the problem of water penetration.

MISCELLANEOUS APPLICATIONS





PAPER

Trapped 01E BCP 315 EX ATL and 01 BCP 415 EX ATL bearings are shown in use on agitators in the paper industry.

GRAIN

The previously fitted SF75/1075/75 bearings used on this 600 staggered bucket elevator had the 75mm, 106RPM drive shaft bearings fitted in trapped applications behind a 13-1 reduction gearbox which caused immense maintenance access problems.

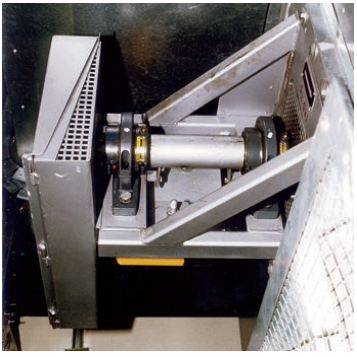
In order to reduce the customer maintenance expense, Cooper recommended 01E BCDFN 75mm EX (Expansion) and GR (Fixed) bearings.





ASPHALT

This application is a conversion from a solid pillow block unit to a split to the shaft 01E 65mm GR Cooper SN compatible pedestal. For trapped applications such as this Cooper split bearings are the ideal solution.



AUTOMOTIVE

The UK General Motors paint shop uses Cooper 01E BCP 75mm EX and GR bearings for fume extraction bearings.

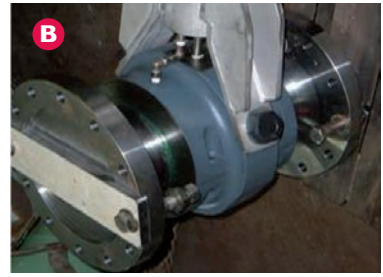
BESPOKE SOLUTIONS

Cooper has a long and proud tradition of manufacturing "Made to Measure" solutions for individual customer requirements. Our facility for customising encompasses both bearing and housing both of which are manufactured in our factory. The following examples are merely a selection of the kind of configurations which we are pleased to do for continuing customer satisfaction.

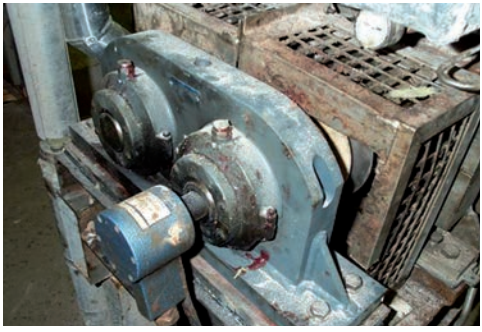
1. SCROLL CONVEYORS



Picture A shows a plain bearing on a scroll conveyor at a French sugar plant where short bearing life, shaft wear and product contamination from oil and rust were causing major problems.

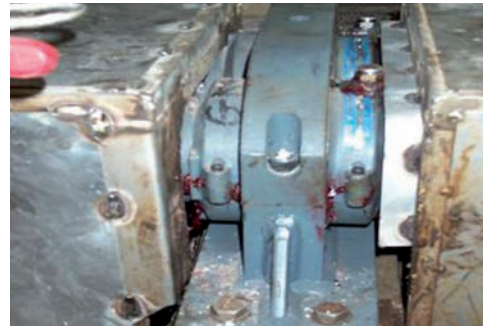


The custom-built Cooper solution in picture B combined a triple boss hanger mounting with split roller bearing equipped with double sealing and air purge provision on each end.



2. MIXERS

Twin-screw mixer for processing Ammonia Nitrate for fertilizer. Due to both cost and the toxic environment the user wanted to reduce changeover time to an absolute minimum.



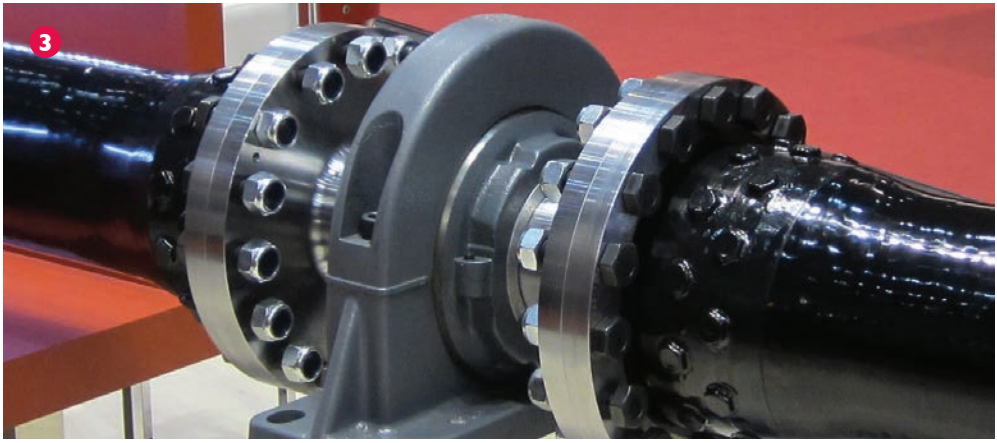
The use of a special tandem unit comprising a double pedestal housing with 02 BCP 60mm EX/GR bearings with special extended HTP seals reduced change time considerably with a saving of £4500 per outage.

BESPOKE SOLUTIONS

3. MARINE "Z-LINE" UNITS

The image shows a Cooper Pedestal unit mounted by a Spanish coupling manufacturer on a composite propulsion shaft. The pedestal base is solid to enable mounting in "Chock-fast"® on the vessel.

The housing is drilled to enable mounting of a temperature sensor and a spherical lubrication point added to assist alignment when the ship's hull flexes during operation.



4. SPLIT TAPERED ROLLER BEARINGS

In recent years Cooper expertise and split bearing technology has seen the expansion of our product offering to include a range of split tapered roller bearings examples of which are shown below.



Cooper double row 780mm bore split tapered roller bearing on a link-spindle for a steel making plant.



Cooper tapered roller bearing for marine Z-drive propulsion for intermittent thrust loading.

NOTES

NOTES

NOTES

NOTES

CUSTOMER SERVICE CENTRES

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