

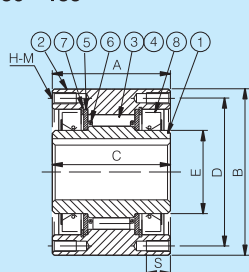
BS & BS-HS SERIES CAM CLUTCH

For Reverse Rotation Prevention on Conveyors

The BS series Cam Clutches are intended for applications where reverse rotation of the slow speed conveyor head shaft is to be prevented (backstopping).

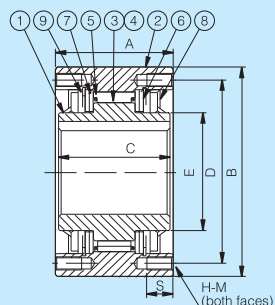
MODELS BS30 TO BS135

BS30~135



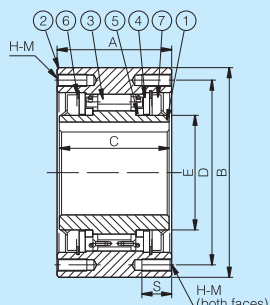
BS30 to BS50

- ① Inner race
- ② Outer race
- ③ Cam
- ④ Roller
- ⑤ Plate
- ⑥ Spring
- ⑦ Snap ring
- ⑧ Oil seal



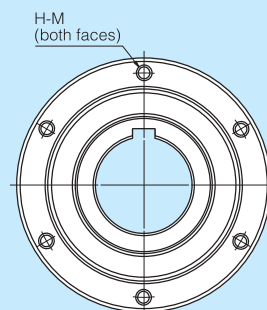
BS65 to BS75

- ① Inner race
- ② Outer race
- ③ Cam
- ④ Roller
- ⑤ Spring
- ⑥ Plate
- ⑦ Thrust metal
- ⑧ Oil seal
- ⑨ Snap ring



BS85 to BS135

- ① Inner race
- ② Outer race
- ③ Cam cage
- ④ Plate
- ⑤ Thrust metal
- ⑥ Snap ring
- ⑦ Oil seal



Chamfer of the bore end faces

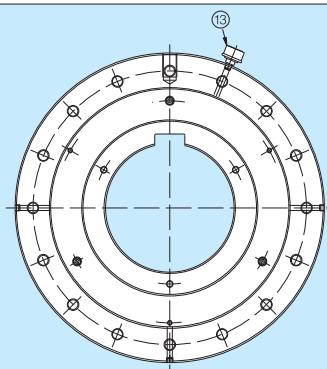
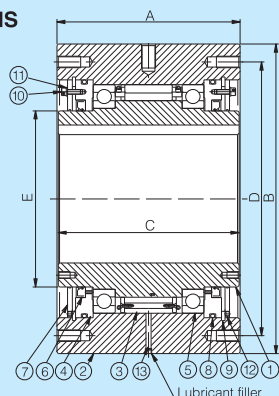
Shaft Diameter	Chamfer
Under 50 mm	1.5 C
50 to 125 mm	2.0 C
125 to 285 mm	3.0 C

BS-HS SERIES CAM CLUTCH

The BS-HS series offer higher torque and speed not found in conventional models.

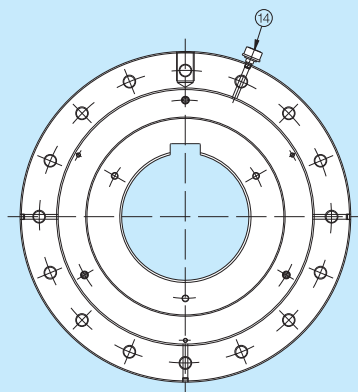
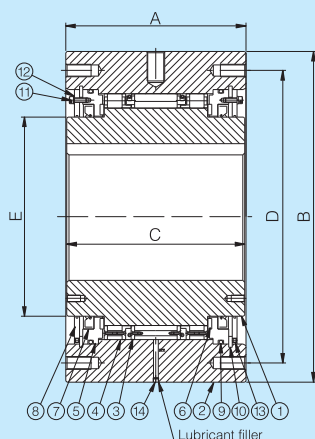
MODELS BS160HS TO BS450HS

BS160HS~BS270HS



- ① Inner race
- ② Outer race
- ③ Cam cage
- ④ Seal supporter
- ⑤ Bearing
- ⑥ Oil seal
- ⑦ Grease fitting
- ⑧ O-ring
- ⑨ Snap ring
- ⑩ Socket bolt
- ⑪ Seal washer
- ⑫ Set screw
- ⑬ Air breather

BS300HS~BS350HS · BS425HS~BS450HS



- ① Inner race
- ② Outer race
- ③ Cam cage
- ④ Roller cage
- ⑤ Seal supporter
- ⑥ Thrust bearing
- ⑦ Oil seal
- ⑧ Grease fitting
- ⑨ O-ring
- ⑩ Snap ring
- ⑪ Socket bolt
- ⑫ Seal washer
- ⑬ Set screw
- ⑭ Air breather

The double cam cage is used in BS425HS, BS450HS

BS & BS-HS SERIES CAM CLUTCH

Dimensions and Capacities

Dimensions in mm

Model	Torque Capacity (N·m)	Max. Overrunning (r/min) Inner Race	Drag Torque (N·m)	A	B	C	PCD D	E	S	H-M Size × Pitch × No. of Tapped Holes	Grease Filler Hole (Size)	Q'ty of Grease (kg)
BS 30	294	350	0.58	64	90	64	80	45	13	M 6 × P1.0 × 4	—	—
BS 50	784	300	0.98	67	125	67	110	70	16	M 8 × P1.25 × 4	—	—
BS 65	1,570	340	3.92	90	160	85	140	90	20	M10 × P1.5 × 6	—	—
BS 75	2,450	300	5.88	90	170	85	150	100	20	M10 × P1.5 × 6	—	—
BS 85	5,880	300	7.84	115	210	110	185	115	30	M12 × P1.75 × 6	—	—
BS 95	7,840	250	9.8	115	230	110	200	130	30	M14 × P2.0 × 6	—	—
BS 110	10,800	250	14.7	115	270	110	220	150	30	M16 × P2.0 × 6	—	—
BS 135	15,700	200	19.6	135	320	130	280	180	30	M16 × P2.0 × 8	—	—
BS 160HS	39,200	350	34.3	180	360	175	315	220	40	M20 × P2.5 × 10	PT 1/4	0.23
BS 200HS	61,700	250	44.1	205	430	200	380	260	40	M22 × P2.5 × 8	PT 1/4	0.31
BS 220HS	102,000	200	73.5	330	500	325	420	290	40	M20 × P2.5 × 16	PT 1/4	1.3
BS 250HS	147,000	170	93.1	370	600	365	530	330	50	M24 × P3.0 × 16	PT 1/4	1.7
BS 270HS	204,000	160	98.0	385	650	380	575	370	50	M24 × P3.0 × 16	PT 1/4	2.0
BS 300HS	294,000	150	108.0	425	780	420	690	470	60	M30 × P3.5 × 16	PT 1/4	3.6
BS 350HS	392,000	110	157.0	440	930	480	815	535	70	M36 × P4.0 × 16	PT 1/4	4.1
BS 425HS	735,000	85	216.0	570	1,030	580	940	635	70	M36 × P4.0 × 18	PT 1/4	6.9
BS 450HS	980,000	80	245.0	570	1,090	600	990	645	80	M42 × P4.5 × 18	PT 1/4	7.2

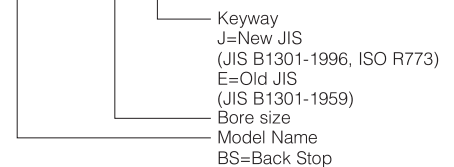
Bore Keyway, Weight

New JIS Keyway JISB1301-1996 ISO R773	Old JIS Keyway JISB1301-1959	Bore Diameter Range (mm)	W. Min (kg)	W. Max (kg)
BS 30-30J	BS 30-30E	20 to 30	2.3	2.1
BS 50-45J	BS 50-45E	30 to 50	4.7	4.0
BS 50-50J	BS 50-50E	40 to 65	13.0	11.5
BS 65-40J	BS 65-40E			
BS 65-45J	BS 65-45E			
BS 65-50J	BS 65-50E			
BS 65-55J	BS 65-55E			
BS 65-60J	BS 65-60E	50 to 75	14.7	13.1
BS 65-65J	BS 65-65E			
BS 75-60J	BS 75-60E			
BS 75-65J	BS 75-65E			
BS 75-70J	BS 75-70E			
BS 75-75J	BS 75-75E	60 to 85	27.2	24.7
BS 85-70J	BS 85-70E			
BS 85-75J	BS 85-75E			
BS 85-80J	BS 85-80E			
BS 85-85J	BS 85-85E			
BS 95-80J	BS 95-80E	70 to 95	32.2	29.4
BS 95-85J	BS 95-85E			
BS 95-90J	BS 95-90E			
BS 95-95J	BS 95-95E			
BS 110-85J	BS 110-85E	80 to 110	38.6	34.2
BS 110-95J	BS 110-95E			
BS 110-100J	BS 110-100E			
BS 110-105J	BS 110-105E			
BS 110-110J	BS 110-110E			
BS 135	BS 135	90 to 135	76.1	68.0
BS 160HS	BS 160HS	100 to 160	120	103
BS 200HS	BS 200HS	100 to 200	200	163
BS 220HS	BS 220HS	150 to 220	390	338
BS 250HS	BS 250HS	175 to 250	760	689
BS 270HS	BS 270HS	200 to 270	850	774
BS 300HS	BS 300HS	230 to 300	1,400	1,300
BS 350HS	BS 350HS	250 to 350	2,300	2,120
BS 425HS	BS 425HS	325 to 425	3,300	2,960
BS 450HS	BS 450HS	350 to 450	3,700	3,400

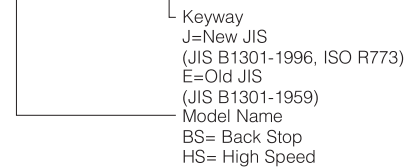
W.Min Weight at Minimum Bore
W.Max Weight at Maximum Bore

Format

BS85 - 85 J



BS250HS - 250J



Notes:

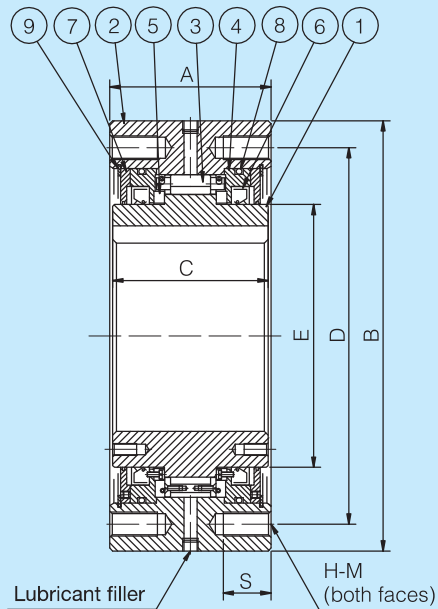
1. The tolerance of Stock Finished Bore is H7.
2. Items highlighted in bold type are stock items, the others are built to order.
3. BS Cam Clutch can be bored according to your specification. Specify the bore diameter with tolerance and keyway dimensions. Please be sure to specify.
4. As for Torque Arm and Safety Cover, please refer to pages 51 and 53.

BS & BS-HS SERIES CAM CLUTCH

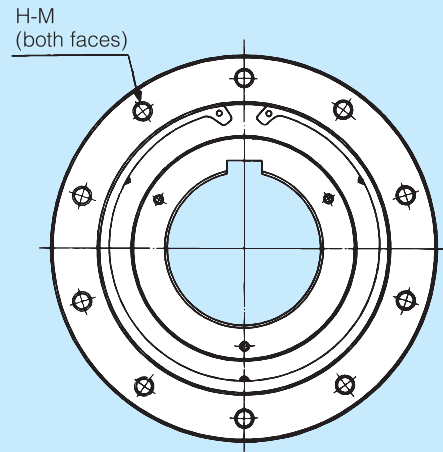
The BS series Cam Clutches are intended for applications where reverse rotation of the slow speed conveyor head shaft is to be prevented (backstopping).

MODELS BS160 TO BS450

BS160 to BS220



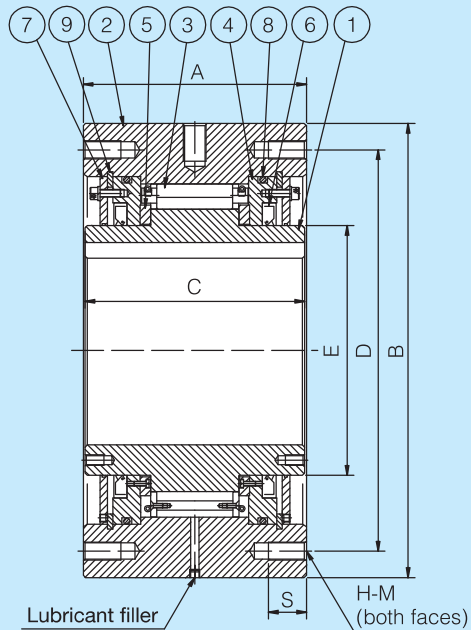
- ① Inner race
- ② Outer race
- ③ Cam cage
- ④ Seal supporter
- ⑤ Thrust metal
- ⑥ Oil seal
- ⑦ Grease fitting
- ⑧ O-ring
- ⑨ Snap ring



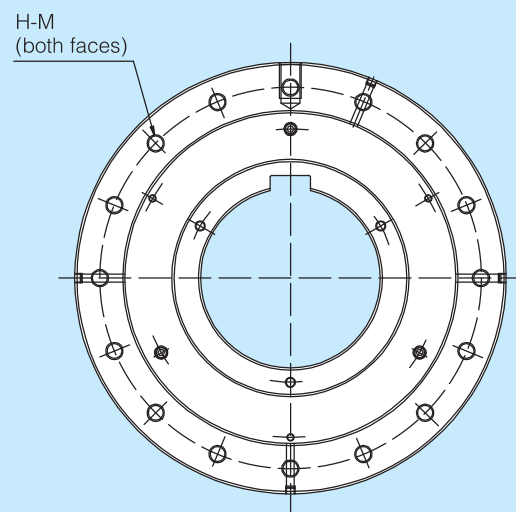
Chamfer of the bore end faces

Shaft Diameter	Chamfer
50 to 125 mm	2.0 C
125 to 285 mm	3.0 C

BS250 to BS450



- ① Inner race
- ② Outer race
- ③ Cam cage
- ④ Seal supporter
- ⑤ Thrust metal
- ⑥ Oil seal
- ⑦ Grease fitting
- ⑧ O-ring
- ⑨ Snap ring



Chamfer of the bore end faces

Shaft Diameter	Chamfer
125 to 285 mm	3.0 C
Over 285 mm	5.0 C

BS & BS-HS SERIES CAM CLUTCH

Dimensions and Capacities

Dimensions in mm

Model	Torque Capacity (N-m)	Max. Overrunning (r/m) Inner Race	Drag Torque (N-m)	A	B	C	PCD D	E	S	H-M Size × Pitch × No. of Tapped Holes	Grease Filler Hole (Size)	Q'ty of Grease (kg)	Bore Diameter Range (mm)	W. Min (kg)	W. Max (kg)
BS 160	24,500	100	34.3	135	360	130	315	220	40	M20 × P2.5 × 10	PT 1/4	0.12	100 to 160	98.1	85.6
BS 200	37,200	100	44.1	150	430	145	380	265	40	M22 × P2.5 × 8	PT 1/4	0.14	100 to 200	167	140
BS 220	49,000	80	73.5	235	500	230	420	290	40	M20 × P2.5 × 16	PT 1/4	0.8	150 to 220	301	264
BS 250	88,200	50	93.1	295	600	290	530	330	50	M24 × P3.0 × 16	PT 1/4	1.1	175 to 250	580	523
BS 270	123,000	50	98	295	650	290	575	370	50	M24 × P3.0 × 16	PT 1/4	1.2	200 to 270	620	562
BS 300	176,000	50	108	295	780	290	690	470	60	M30 × P3.5 × 16	PT 1/4	1.3	230 to 300	952	885
BS 335	265,000	50	137	305	850	320	750	495	70	M36 × P4.0 × 16	PT 1/4	1.4	250 to 335	1,140	1,040
BS 350	314,000	50	157	320	930	360	815	535	70	M36 × P4.0 × 16	PT 1/4	1.5	250 to 350	1,600	1,470
BS 425	510,000	50	216	440	1,030	450	940	635	70	M36 × P4.0 × 18	—	Oil 6,000ml	325 to 425	2,450	2,240
BS 450	686,000	50	245	450	1,090	480	990	645	80	M42 × P4.5 × 18	—	Oil 7,000ml	350 to 450	2,820	2,580

W. Min Weight at Minimum Bore
W. Max Weight at Maximum Bore

Installation and Usage

1. Recommended shaft tolerance is h7 or h8.
2. Before installation, verify that the direction of the rotation of the inner race of the BS Cam Clutch (shown by the arrow on the end face of the inner race) is the same as the direction of the rotation of the conveyor.
3. Securely install the torque arm to the BS Cam Clutch using bolts with a strength class of 10.9 grade or higher. Make sure the surface of the torque arm that contacts the end face of the outer race is flat and free of dust in order to get enough frictional force.
4. Apply pressure only on the end face of the inner race when inserting the BS Cam Clutch on to the shaft. Do not hit the inner race directly with a hammer or apply pressure on the outer race, oil seal, or grease fitting.
5. Always use a parallel key for installation onto the shaft and then fix the BS Cam Clutch to the shaft with the end plate. Never use a tapered key, otherwise the Cam Clutch will be damaged.
6. When installing models BS160HS or BS160 and above (grease lubrication types), place one of the four socket plugs underneath the Cam Clutch. This will allow for easy drainage of the grease during maintenance.
7. The end tip of the torque arm will swing to some extent while the conveyor is operating. Support the torque arm end tip only in the direction of rotation, but be sure to allow it a certain amount of free movement axially. (Refer to installation diagram.) The Cam Clutch will sustain damage if the torque arm end tip is fixed securely.
8. A single torque arm is sufficient for models from BS30 to BS220, BS160HS and BS200HS. One torque arm on each side is required for models from BS220HS to BS450HS and from BS220 to BS450, and to stop the rotation by both torque arms so that the reverse load operates on the torque arms evenly. It is recommended to use the standardized torque arm and safety cover for the BS Cam Clutch.
9. In case the ambient temperature rises 40°C and above, it is recommended to set shield or roof and avoid direct sunlight in order to extend the life span of Cam Clutch.
10. Refer to page 79 for "Lubrication and Maintenance".

INSTALLATION AND USAGE

