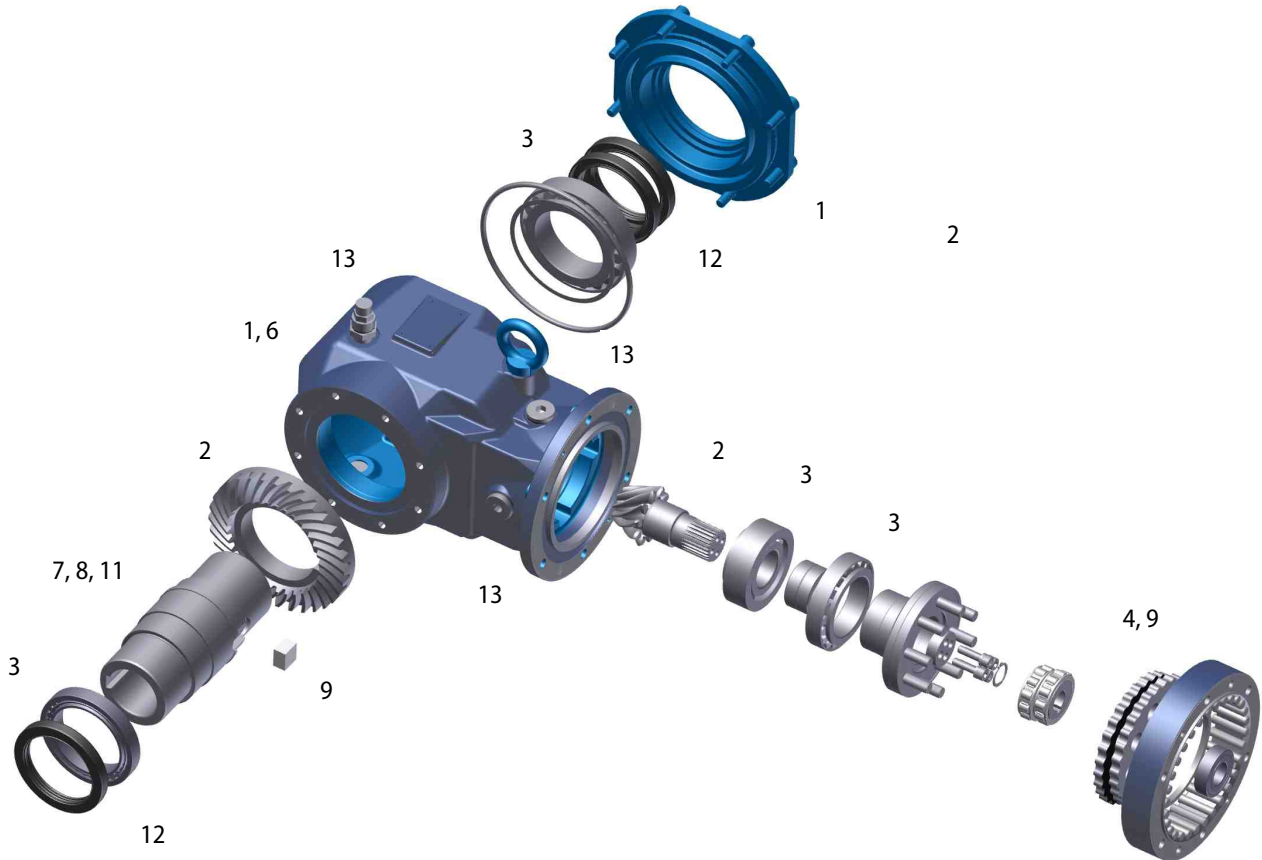


Cyclo® BBB 5 Series: Features & Options

Features of the New 5-Series



1. JIS AC4C-T6 or equivalent (ASTM B26-536-T6) die cast aluminum housings, input flanges, and covers for size 5Z. JIS FC200 or equivalent (ASTM A48 Class No. 35) gray cast iron housings, input flanges, and covers for sizes 5A – 5C.
2. Lapped steel spiral bevel pinions and gears heat treated and hardened to 58 – 62 Rockwell C.
3. JIS B 1514 Class 0 or equivalent (ANSI/AFBMA 19.1 Class K) tapered roller bearing tolerances.
4. JIS B 1514 Class 0 or equivalent (ANSI ABEC ABEC0-1) radial bearing tolerances.
5. JIS SCM435 (AISI 4135) steel size 5Z and 5A shrink disc hubs, quenched and tempered to HB 269-331.
6. JIS S45C (AISI 1045) steel size 5B and 5C shrink disc hubs, normalized to HB 167-229.
7. JIS S45C (AISI 1045) steel size 5A keyed hollow bore hubs, quenched and tempered to HB 201-269.
8. JIS S45C (AISI 1045) steel size 5Z, 5B, and 5C keyed hollow bore hubs, normalized HB 167-229.
9. All keys inside the housings are captured.
10. The housing facilitates six mounting positions (shaft mounted configurations only).
11. All input shafts and all output shafts, except for the shrink disc option, are available in inch and metric sizes. The shrink disc output shaft option is available in metric sizes only.
12. Integrated seal pair on each side of the BBB5Z and BBB5A outputs, and dual seals on each side of the BBB5B and BBB5C outputs, prevent lubricant leaks and protect from contamination.
13. Oil level gauges, oil drain hole plugs, and breathers strategically located according to the selected mounting position.

Cyclo® BBB 5 Series: Features & Options (Continued)



- **Style:** Right-angle shaft orientation – the output shaft is at 90° to the motor shaft, or to a solid or quill input shaft.
- **Flange:** Includes a centering pilot, plus thru holes on a bolt circle diameter conforming to FF series flanges per IEC60072-1 frame sizes (sometimes referenced as B5).

Unit Size	Flange Size
5Z	IEC215
5A	
5B	IEC265
5C	IEC300

- **Input Types:** Accommodates NEMA, IEC, JIS, UL, CSA, and CE motors; solid and quill input shafts; torque limiters; and shovel bases.
- **Output Shaft – Keyed:** Hollow output shafts available in inch or metric diameters and supplied with safety covers.
- **Output Shaft – Keyless:** Metric shrink discs available.
- Additional information about input and output options can be found in **EDOC1-12-011 “Cyclo® BBB4 & 5 Series: Input & Output Options”**..
- **Mounting:** Available with flange, hollow shaft, or housing mounting.
- **Torque Ratings:** According to mechanical capacity under continuous operation.
- **Torque Capacity:** From 1095 in-lbs (size 5Z100) to 45,450 in-lbs (size 5C16DA)
- **Shaft Rotation:** Clockwise and counterclockwise are allowable.
- **Efficiency:** High performance steel spiral bevel gearing delivers up to 94% efficiency across the entire product range.
- **Single Reduction Ratio Range:** 11 nominal (10.5 actual) – 305 nominal (304.5 actual)
- **Double Reduction Ratio Range:** 364 nominal (364.0 actual) – 10,658 nominal (10,657.5 actual)
- **Shock Capacity:** 500% momentary, intermittent shock load capacity for the Cyclo (input) stage; 200% momentary, intermittent shock load capacity for the spiral bevel (output) stage.

Housing Material

JIS AC4C-T6 or equivalent (ASTM B26-536-T6) die cast aluminum housings, input flanges, and covers for size 5Z.

- Cast aluminum is lightweight.
- Cast aluminum is easily molded and machined.
- Cast aluminum dissipates heat well and is dimensionally heat resistant.

JIS FC200 or equivalent (ASTM A48 Class No. 35) gray cast iron housings, input flanges, and covers for sizes 5A – 5C.

- Grey cast iron has a high strength / weight ratio.
- Grey cast iron is easily molded and machined.
- Grey cast has a high damping ability, extending bearing and gear life by minimizing vibrations.
- Grey cast iron has a high compressive strength.

Cyclo® BBB 5 Series: Features & Options (Continued)

Matched Spiral Bevel Sets



Pinions are mated with gears during the lapping process, thereby creating a matched set. This matching process leads to a smoothly operating gear set and low noise levels.

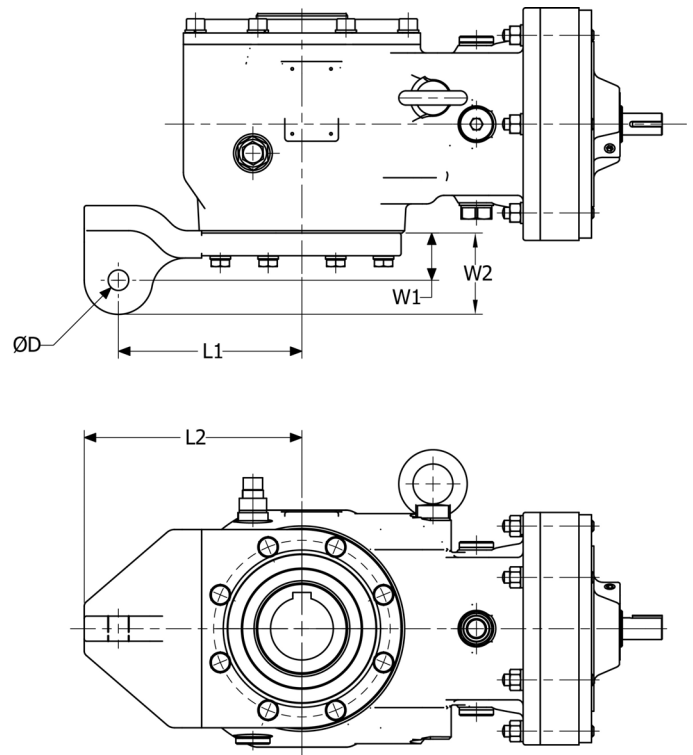
After lapping, the gear set's backlash is measured and a serial number is etched into the pinion and the gear. Both share the same serial number, linking them as a pair. The measurement data and serial number are then stored for future reference should a need for the data ever arise. Material certifications can be traced as well. These are examples of Sumitomo's focus on delivering quality products and services to our customers.

Shaft Mounting with a Keyed Hollow Shaft and Flange Mount (Banjo) Torque Arm

The standard torque arm is the flange mount (banjo) type. Since a shaft-mounted gearbox is not held in place by a foot or flange, a torque arm is required to prevent gearbox rotation during operation.

Dimensions are in inches (*mm*).

Unit Size	ØD	L1	L2	W1	W2
5Z100, 5Z105	0.71	5.12	6.30	1.45	2.63
5Z110, 5Z115	(18)	(130)	(160)	(36.8)	(66.8)
5Z120, 5Z125					
5A110, 5A115	0.71	6.30	7.39	1.47	2.65
5A120, 5A125	(18)	(160)	(188)	(37.3)	(67.3)
5A140, 5A145					
5B120, 5B125	0.87	7.68	9.02	1.61	3.03
5B140, 5B145	(22)	(195)	(229)	(40.9)	(76.9)
5B160, 5B165					
5C140, 5C145	1.02	94.5	11.2	2.32	4.29
5C160, 5C165	(26)	(240)	(284)	(58.9)	(109)
5C170, 5C175					



Cyclo® BBB 5 Series: Features & Options (Continued)

Options

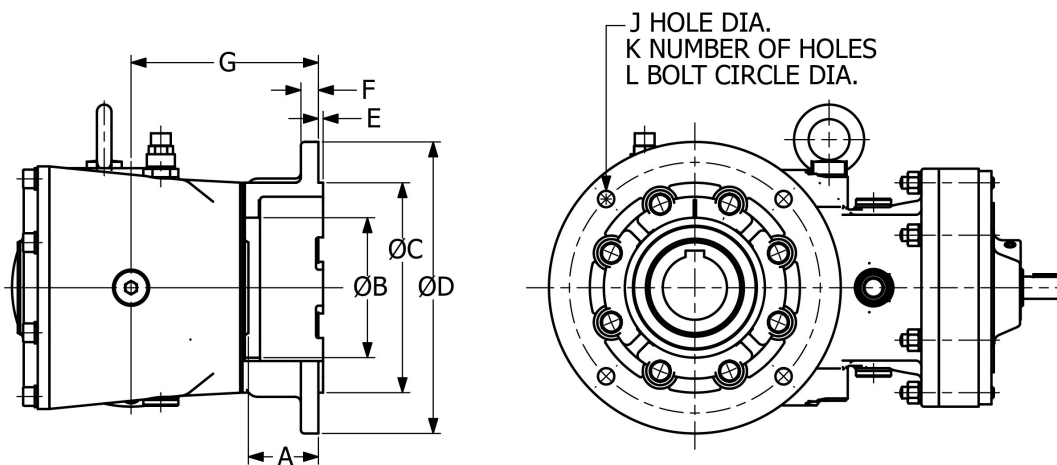
1. Shrink Disc

Available in the following metric diameters:

Unit Size	Metric (mm)
5Z100, 5Z105	(45)
5Z110, 5Z115	
5Z120, 5Z125	
5A110, 5A115	(55)
5A120, 5A125	
5A140, 5A145	
5B120, 5B125	(65)
5B140, 5B145	
5B160, 5B165	
5C140, 5C145	(75)
5C160, 5C165	
5C170, 5C175	



2. Output Flange Mounting



Dimensions are in inches (mm).

Unit Size	A	ØB	ØC	ØD	E	F	G	J	K	L
5Z100, 5Z105	0.91	4.33	7.09	9.84	0.16	0.59	4.57	0.53	4	8.46
5Z110, 5Z115	(23)	(110)	(180)	(250)	(4)	(15)	(116)	(14)		(215)
5Z120, 5Z125										
5A110, 5A115	2.36	4.72	7.09	9.84	0.16	0.59	6.30	0.55	4	8.46
5A120, 5A125	(60)	(120)	(180)	(250)	(4)	(15)	(160)	(14)		(215)
5A140, 5A145										
5B120, 5B125	2.40	5.51	9.06	11.8	0.16	0.63	7.40	0.55	4	10.4
5B140, 5B145	(61)	(140)	(230)	(300)	(4)	(16)	(188)	(14)		(265)
5B160, 5B165										
5C140, 5C145	2.87	6.50	9.84	13.8	0.20	0.71	7.95	0.71	4	11.8
5C160, 5C165	(73)	(165)	(250)	(350)	(5)	(18)	(202)	(18)		(300)
5C170, 5C175										