



**INSTALLATION, OPERATION and MAINTENANCE
INSTRUCTIONS**

for

EBSRAY GB4 GB5 and GB6 HELICAL GEAR REDUCERS

**EBSRAY PUMPS PTY
LIMITED. 628 Pittwater
Road, Brookvale.
NSW 2100. Australia.
Telephone (02) 9905 0234
Fax: (02) 9938 3825**

SECTION 1 -GENERAL

The EBSRAY helical gear reducer is a precision machined, robust, high quality unit. With careful installation and maintenance, the unit will give many years of trouble free service.

WARNING

EBSRAY helical gear reducers must be operated within the original selected design parameters of power and speed. Should any change be contemplated, please confer with EBSRAY in order to verify the suitability of such a change.

SECTION 2 -INSTALLATION

EBSRAY helical gear reducers must be firmly mounted, preferably to a machined baseplate or foundation. Both input and output shafts must be accurately aligned with their respective driver and driven unit. Refer to alignment instructions in pump manual.

SECTION 3 -MAINTENANCE

LUBRICATION

After approximately 200 hours running time with a new gearbox it is desirable to drain and replace the oil. The oil need then only be replaced every 2000 hours or six months whichever occurs first. Under extreme service conditions the oil should be replaced more frequently.

Ebsray Model	Lubricant	Approximate Quantity
GB4	Castrol ALPHA SP 220 gear oil or equivalent.	600 ml
GB5		150 ml
GB6		1200 ml

SPARE PARTS

- 1 When ordering spare parts, to ensure a minimum delay and correct replacement to original specification, always quote the helical gear reducer serial number which is located on the name plate.
- 2 Advise the name, item number and quantity required. Refer to drawing No: CMP004
- 3 Advise complete delivery instructions, transportation, etc.

PREPARATION FOR DISASSEMBLY

- 1 Obtain the appropriate work permit if required.
- 2 Isolate driver from power supply.
- 3 Remove unit from installation.

DISASSEMBLY

- 1 Drain oil.
- 2 Remove couplings and keys from gear and pinion shafts if fitted
- 3 Remove the two blank bearing cover plates.
- 4 Remove the two seal fitted bearing cover plates and remove the oil seals.
- 5 Remove the top half of the gear casing, including the two locating dowels.
- 6 Remove the gear and pinion assemblies from the gear casing.
- 7 Using a suitable puller, remove the bearings from the pinion
- 8 Using a press or suitable puller remove the gear from the gearshaft and the gearshaft from the non -drive end bearing.
- 9 Remove the drive end bearing from the shaft.

INSPECTION

Inspect all parts for wear or damage, repair or replace as required. To ensure leak-free operation EBSRAY recommend replacement of all seals and gaskets at every overhaul.

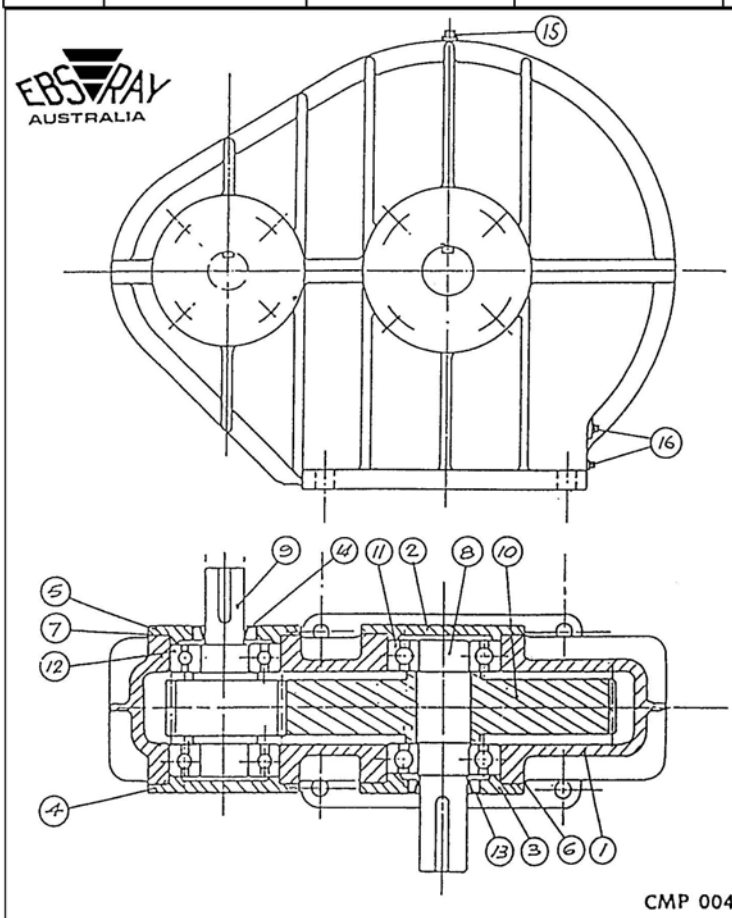
NOTE: If either gear or pinion needs replacement, both should be replaced at the same time to ensure smooth, quiet operation and long life.

REASSEMBLY

- 1 Fit the key and gear to the gear shaft.
- 2 Press the bearings onto the pinion and gearshaft, ensuring force is only applied to the inner ring of the bearing.
- 3 Fit gear and pinion assemblies in their correct positions in the lower half of the gear casing. Ensure the gear and pinion mesh together with full width contact.
- 4 Fit the top half of the gear casing using a suitable jointing compound on the machined faces between the two halves. Take care to avoid contaminating the bearings with jointing compound. Locate casing halves with dowel pins and fit casing nuts and bolts, do not tighten at this stage.
- 5 Fit new oil seals to the bearing cover plates.
- 6 With new gaskets fitted replace the four bearing covers, take care to avoid damaging the oil seals. Fit setscrews but do not tighten at this stage.
- 7 Tighten casing nuts and bolts, then tighten bearing cover setscrews.
- 8 Check for freedom of rotation.
- 9 Fill to level plug hole with required quantity of recommended oil. Replace filler/vent plug ensuring vent hole is unobstructed.

SECTION 4 -PARTS DESIGNATION Refer Drawing No CMP004

Cat #	GB4 Part No.	GB5 Part No.	GB6 Part No.	Description	Qty.
1	GB4-1	GB5/2/1	GB6-1	HOUSING	1
2	GB4-2	GB5/3/3	GB6-2	BLANKING COVER	1
3	GB4-3	GB5/3/2	GB6-3	SEAL COVER	1
4	GB4-4	GB5/4/5	GB6-4	BLANKING COVER	1
5	GB4-5	GB5/4/4	GB6-5	SEAL COVER	1
6	GB4-9	GB5/5/6	GB6-6	GASKET	2
7	GB4-10	GB5/5/7	GB6-7	GASKET	2
8	GB4-8	GB5/8/10	GB6-8	DRIVEN SHAFT	1
9	GB4-13	GB5/6/8	GB6-9	PINION AND SHAFT	1
10	GB4-14	GB5/7/9	GB6-10	GEAR	1
11	B33	B19	B38	BALL BEARING	2
12	B28	B13	B47	BALL BEARING	2
13	Z026	Z013	Z030	SHAFT SEAL	1
14	Z016	Z007	Z033	SHAFT SEAL	1
15	GB5-11	GB5-11	GB5-11	PLUG - FILLER/VENT	1
16	1/4"BSP	1/4"BSP	1/4"BSP	PLUG - LEVEL & DRAIN	2
				SETSCREWS - COVERS	20
				BOLTS & NUTS - CASING	8
				TAPER PINS	2



SECTION 5 - TAPERED ROLLER BEARINGS FOR GB6

Some GB6 Gearboxes are fitted with tapered roller bearings to replace the ball bearings as described in this manual. The following drawing shows the assembly of the tapered roller bearing arrangement. Disassembly is straight forward however during reassembly the correct thickness of mylar shims must be determined to ensure that the bearing contact is firm but not excessively tight.

