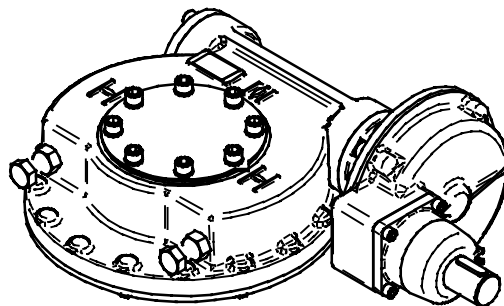


rotork **gears**

REMOVAL AND RE-ASSEMBLY INSTRUCTIONS

FOR IW WORM GEARBOX

OUTPUT SLEEVES



**ROTORK GEARS
REGINA HOUSE
RING ROAD
BRAMLEY
LEEDS
WEST YORKSHIRE
LS13 4ET
ENGLAND**

Introduction

Rotork Gears IW worm gearboxes have an easily removable output sleeve. This can be supplied machined as required by the valve manufacturer, or blank to be machined by the valve manufacturer to his specific requirements. Blank output sleeves can be supplied separately in order for the machining to be carried out in advance and the output sleeve to be ready for fitting when the gearbox is delivered. However, unless separate delivery has been specifically requested at the order stage, the output sleeve will require removal for machining.

Removal

Refer to Rotork Gears drawing IW7A173 for item numbers. Note that item quantities may differ from this drawing.

1. Remove the socket head cap screws (item 21) and two-piece Nordlock washers (item 20) that hold the indicator plate and output sleeve in place. Note the orientation of the two parts of each washer relative to each other. The washers have sloping teeth on their inner faces and radial serrations on their outer faces.
2. Next remove the indicator plate (item 19).
3. Withdraw the output sleeve (item 8). It may be necessary to turn the gearbox over and drive the sleeve out, taking care not to cause damage to the bottom face of the sleeve.

Re-assembly

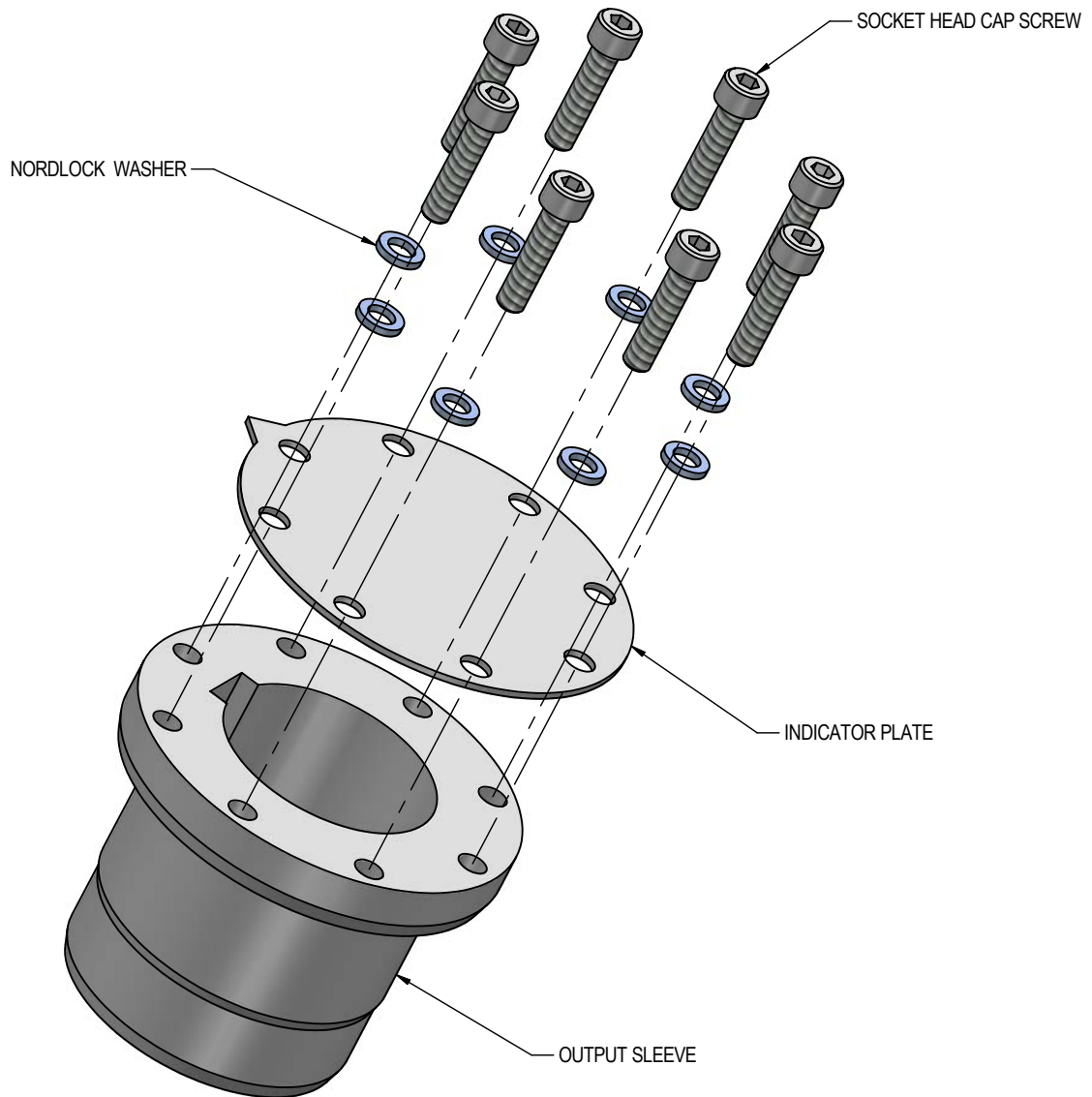
1. Inspect the output sleeve for signs of physical damage. Any burrs on keyways should be removed by light dressing with emery cloth or a fine file. Check the areas of the sleeve that seal against the o-rings for nicks or other damage. Slight damage can be repaired using emery cloth. The emery should be run around the circumference of the component and not along its length. Check the condition of the two o-ring seals (items 31 & 32) located in the baseplate (item 2) and gearcase (item 1) respectively. If damaged, replacement of these seals is advisable before replacing the output sleeve.
2. Ensure that the mating faces of the output sleeve, baseplate and gearcase are coated with grease (Renolit CL-X2 or equivalent).
3. Insert the output sleeve ensuring that the keyway (or square, slot or other machined shape) is in the required position relative to the quadrant (item 7) to allow correct valve operation.
4. Replace the indicator plate. Ensure that the pointer on the plate correctly indicates the valve position against the cast symbols on the gearcase.
5. Check that the top surface of the indicator plate is free from loose particles. Refit the retaining screws and washers.
6. Tighten each screw to the recommended torque (given on the label affixed to the underside of the indicator plate, and reproduced below).
7. Check the gearbox for smooth operation by rotating the input shaft.

Torque Settings

GEARBOX	HEX HD SCREW & NORDLOCK WASHER	TORQUE (Nm)	TORQUE (lb ft)
IW3	M8 x 30 LG	30	22
IW4	M8 x 35 LG	30	22
IW5	M10 x 40 LG	59	44
IW6	M12 x 45 LG	103	76
IW7	M16 x 60 LG	250	185
IW8	M20 x 70 LG	490	362
IW9	M20 x 80 LG	490	362
IW10	M24 x 80 LG	850	627
IW11	M30 x 80 LG	1000	737

Documentation

1. Typical worm gearbox general assembly - drawing IW7A173
2. Typical exploded view of indicator plate, output sleeve and output sleeve screws.



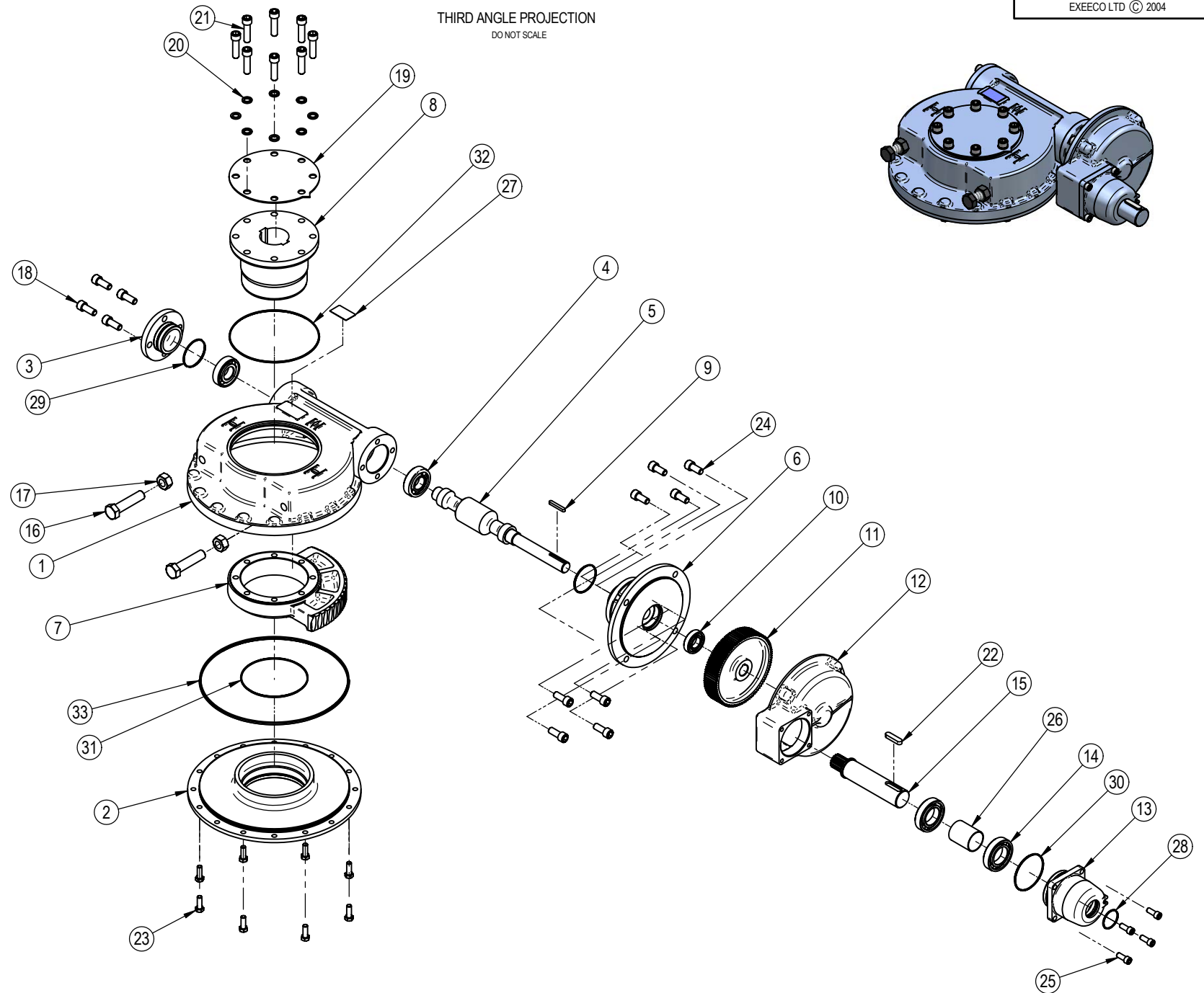
TYPICAL EXPLODED VIEW OF INDICATOR PLATE,
OUTPUT SLEEVE AND OUTPUT SLEEVE SCREWS

IW7A173

ISSUE	ALTERATIONS
A	ORIGINAL ISSUE
1	CN1596 JE 18/2/05

ITEM	DESCRIPTION	QTY
1	GEARCASE	1
2	BASEPLATE	1
3	END CAP	1
4	ANGULAR CONTACT BALL BEARING	2
5	WORM SHAFT 60:1	1
6	INPUT FLANGE	1
7	WORM QUADRANT	1
8	OUTPUT SLEEVE	1
9	KEY	1
10	DEEP GROOVE BALL BEARING	1
11	OUTPUT GEAR	1
12	GEARCASE	1
13	MANUAL INPUT HOUSING	1
14	DEEP GROOVE BALL BEARING	2
15	INPUT SHAFT & GEAR 6:1	1
16	HEXAGON HEAD SCREW	2
17	HEX NUT	2
18	SOCKET HEAD CAP SCREW	8
19	INDICATOR PLATE	1
20	NORD-LOCK WASHER	8
21	SOCKET HEAD CAP SCREW	8
22	KEY	1
23	HEXAGON HEAD SCREW	8
24	SOCKET HEAD CAP SCREW	4
25	SOCKET HEAD CAP SCREW	4
26	SPACER	1
27	NAMEPLATE	1
28	O-RING	1
29	O-RING	2
30	O-RING	1
31	O-RING	1
32	O-RING	1
33	O-RING	1
34*	GREASE	3.0 Kg

THIRD ANGLE PROJECTION
DO NOT SCALE



ROTORK GEARS

REGINA HOUSE
RING ROAD
BRAMLEY
LEEDS
WEST YORKSHIRE

MATERIAL:- SEE TABLE

PROJECT:- IW7 360:1 MANUAL INPUT

APPROX WEIGHT: 142 kg

DRAWN:- SW 06/04/2004
CHECKED:- CF 18/02/2005

SCALE
1 : 10 (A3)

HEAT TREATMENT

PROTECTIVE TREATMENT
SUITABLY PROTECT FOR STORAGE

EXPLODED VIEW

IW7A173