

IW Quarter-turn

rotork[®]
Gears

Gearbox Series sizes 14 - 17



Cast Iron Housing Gearboxes - IW Quarter-turn Gear Series

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IW Gearbox Series

Quarter-turn Gearbox Series sizes 14 - 17

Description

The IW14 and above large worm quadrant operators have been designed to withstand twice their torque to accommodate actuator stall torques.

Due to their large size and the logistics involved these gearboxes were designed for low or no maintenance.

The design also takes care of installation with the ability to have the input from either side of the gearbox and caters also for both clock and anti-clock valve actuation.

All inputs and outputs can be supplied to ISO standards and can also be adapted to any other standards or variations.

Application

The IW series gearboxes are quarter-turn operators intended for the operation of quarter-turn Ball, Butterfly and Plug valves and any other quarter-turn device requiring a reduction for its operation.

They are used mainly for motorised applications but can also be used manually or with power tools.



Features

- Designed with a minimum safety factor twice the maximum output torque to cater for stall torques and site variations.
- High quality tapered roller bearings are used to support the worm screw, with a pre-load adjusted one by one with ground spacers.
- The worm screw is in alloy steel 18 NiCrMo5Pb, casehardened and ground to give a minimum friction with the quadrant creating a high efficiency and a larger number of operations unlike the traditional worm screws.
- Tighter and controlled tolerances obtained through grinding give a negligible backlash between the worm and the quadrant resulting in a better accuracy in the movements and reduced vibrations during travel or partial open movement.
- The housing is a much stronger ductile iron.
- All the input reducer gears are in carbon steel with the pinions in alloy steel.
- The Planetary gears use planet carrier machined from solid carbon steel.
- Grease filled for life and fully sealed with O-Rings.
- Comprehensive gear ratio with combination spur and planetary gear reducers.
- Adjustable mechanical stops at 0° and 90° +/- 5°.

Environmental specification

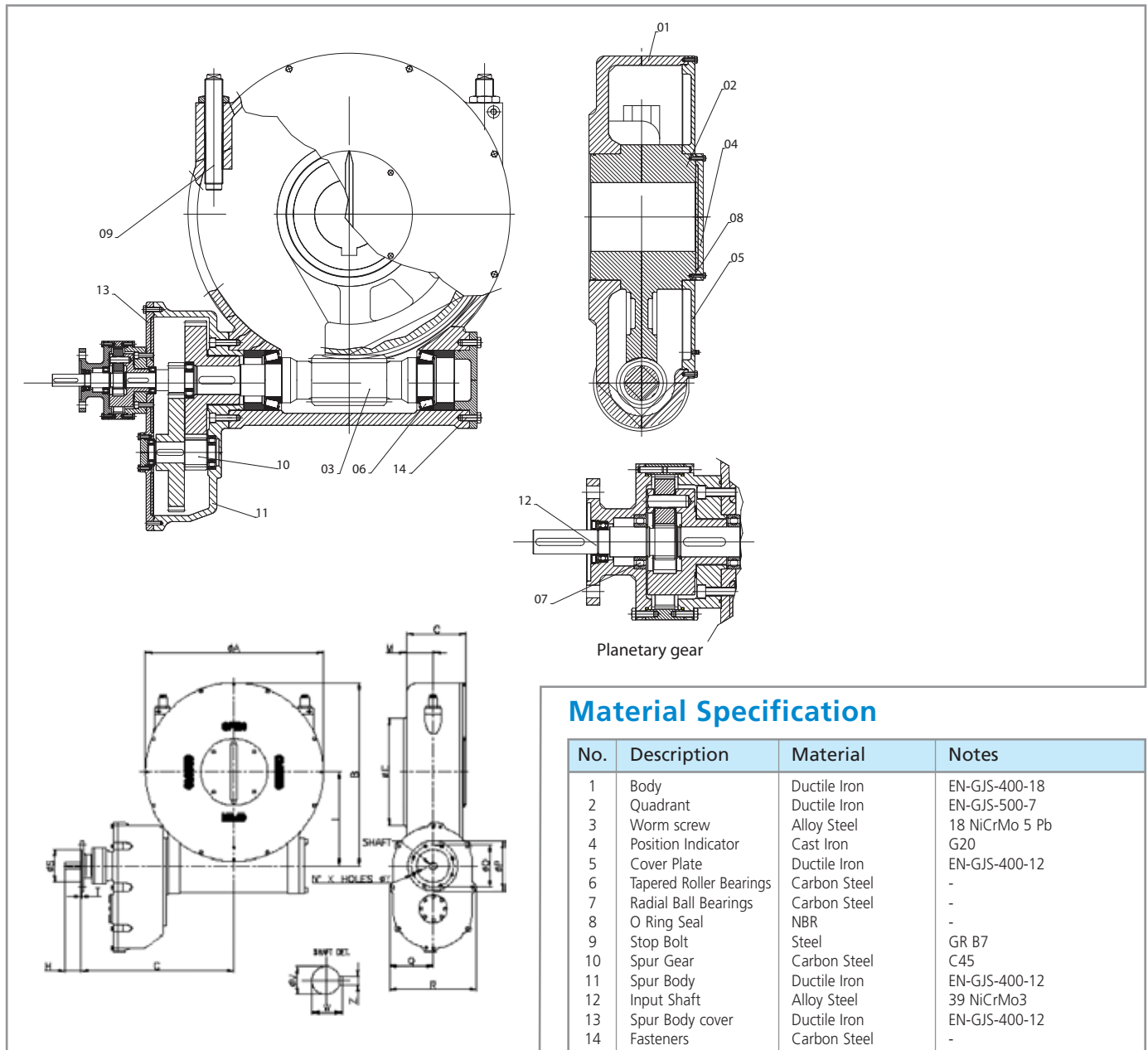
- IP67 Enclosure
- -20 °C to +80 °C

Options

- IP68 Enclosure
- AWWA application
- High and Low Temperature
- Padlockable kits
- Limit Switches
- All types of environments
- Flexible Extensions

Established Leaders in Actuation Technology

Gearbox IW Series sizes 14 - 17



Material Specification

No.	Description	Material	Notes
1	Body	Ductile Iron	EN-GJS-400-18
2	Quadrant	Ductile Iron	EN-GJS-500-7
3	Worm screw	Alloy Steel	18 NiCrMo 5 Pb
4	Position Indicator	Cast Iron	G20
5	Cover Plate	Ductile Iron	EN-GJS-400-12
6	Tapered Roller Bearings	Carbon Steel	-
7	Radial Ball Bearings	Carbon Steel	-
8	O Ring Seal	NBR	-
9	Stop Bolt	Steel	GR B7
10	Spur Gear	Carbon Steel	C45
11	Spur Body	Ductile Iron	EN-GJS-400-12
12	Input Shaft	Alloy Steel	39 NiCrMo3
13	Spur Body cover	Ductile Iron	EN-GJS-400-12
14	Fasteners	Carbon Steel	-

Gearbox Size	Valve Flange	A	B	C	E	G	H	I	M	O	P	Q	R	S	T	V	W	X	Y	Z	Weight (Kg)
IW14R3F14	F48-F60	1070	1087	355	680	899	55	552	150	140	175	260	520	100	5	30	33.3	4	17	8	1900
IW14R3F16	F48-F60	1070	1087	355	680	899	89	552	150	165	210	260	520	130	6	40	43.3	4	21	12	1900
IW14R3F25	F48-F60	1070	1087	355	680	899	109	552	150	254	300	260	520	200	6	50	54.4	8	17	14	1900
IW14R3F30	F48-F60	1070	1087	355	680	899	109	552	150	298	350	260	520	210	6	50	54.4	8	21	14	1900
IW15R3F14	F48-F60	1070	1087	355	680	899	55	552	150	140	175	260	520	100	5	30	33.3	4	17	8	1980
IW15R3F16	F48-F60	1070	1087	355	680	899	89	552	150	165	210	260	520	130	6	40	43.3	4	21	12	1980
IW15R3F25	F48-F60	1070	1087	355	680	899	109	552	150	254	300	260	520	200	6	50	54.4	8	17	14	1980
IW15R3F30	F48-F60	1070	1087	355	680	899	109	552	150	298	350	260	520	210	6	50	54.4	8	21	14	1980
IW16R3F14	F60 or larger	1255	1288	421	750	1082	55	660	185	140	175	305	610	100	5	30	33.3	4	17	8	3080
IW16R3F16	F60 or larger	1255	1288	421	750	1082	89	660	185	165	210	305	610	130	6	40	43.3	4	21	12	3080
IW16R3F25	F60 or larger	1255	1288	421	750	1082	109	660	185	254	300	305	610	200	6	50	54.4	8	17	14	3080
IW16R3F30	F60 or larger	1255	1288	421	750	1082	109	660	185	298	350	305	610	210	6	50	54.4	8	21	14	3080
IW17R3F14	F60 or larger	1255	1288	421	750	1082	55	660	185	140	175	305	610	100	5	30	33.3	4	17	8	3180
IW17R3F16	F60 or larger	1255	1288	421	750	1082	89	660	185	165	210	305	610	130	6	40	43.3	4	21	12	3180
IW17R3F25	F60 or larger	1255	1288	421	750	1082	109	660	185	254	300	305	610	200	6	50	54.4	8	17	14	3180
IW17R3F30	F60 or larger	1255	1288	421	750	1082	109	660	185	298	350	305	610	210	6	50	54.4	8	21	14	3180

All dimensions in millimetres. Contents may change without previous notice.

Gearbox Series

Gearbox sizing data

Gearbox Model	Ratios	Mech. Adv.	Input turns to close	Max. Input torque Nm	Max. Output torque 7000 Cycles Nm	Max. Output torque 1000 Cycles Nm	Output Flange	Stem diam. Min. Max.	Stem height mm	Approx. Weight Kg
IW14R1	9600 7886 6600 6071 5600 4800 4457	3045 2502 2094 1926 1776 1523 1414	2400 1971 1650 1518 1400 1200 1114	98.5 119.9 143.3 155.8 168.9 197.0 210.0	250000 250000 250000 250000 250000 250000 250000	300000 300000 300000 300000 300000 300000 296926	F48-F60	220 350	355	2200
IW14R2	4400 3733 3200 2971 2764 2400 2240 1956 1829 1600	1395.8 1184.3 1015.1 942.6 876.7 761.3 710.6 620.4 580.1 507.6	1100 933 800 743 691 600 560 489 457 400	214.9 253.3 295.5 318.3 342.2 394.0 422.2 483.6 517.2 591.1	250000 250000 250000 250000 250000 250000 250000 250000 250000 250000	300000 300000 300000 300000 300000 300000 300000 300000 300000 300000	F48-F60	220 350	355	2200
IW15R1	8160 7886 6600 6071 5600 4800 4457	2729 2502 2094 1926 1776 1523 1414	2040 1971 1650 1518 1400 1200 1114	132 119.9 143.3 155.8 168.9 197.0 210.0	300000 250000 250000 250000 250000 250000 250000	360000 300000 300000 300000 300000 300000 296926	F48-F60	220 350	355	2200
IW15R2	4917 4080 3740 3440 3173 2935 2720 2526 2188 1904 1778	1644 1364 1251 1150 1061 981 910 845 732 637 595	1229 1020 935 860 793 734 680 631 547 476 445	219 264 288 313 339 367 396 426 492 565 605	300000 300000 300000 300000 300000 300000 300000 300000 300000 300000 300000	360000 360000 360000 360000 360000 360000 360000 360000 360000 360000 360000	F48-F60	220 350	355	2300
IW16R1	7271 6572 5973 5454	2493.2 2253.5 2048 1870	1818 1643 1493 1364	241 266 293 321	500000 500000 500000 500000	600000 600000 600000 600000	F60 or larger	230 380	410	3100
IW16R2	4960 4074 3410 3136 2893 2480 2303 1995 1860 1736	1397.3 1275.8 1169.5 1075.7 992.3 850.5 789.8 684.1 637.9 595.4	1240 1019 853 784 723 620 576 499 465 434	429 470 513 558 605 705 760 877 941 1008	500000 500000 500000 500000 500000 500000 500000 500000 500000 500000	600000 600000 600000 600000 600000 600000 600000 600000 600000 600000	F60 or larger	230 380	410	3100
IW17R1	6450 5830 5299 4838 4435	2219 2006 1823 1664 1526	1613 1458 1325 1210 1109	383 424 466 511 557	750000 750000 750000 750000 750000	850000 850000 850000 850000 850000	F60 or Larger	230 380	410	3200
IW17R2	4400 3977 3614 3300 3025 2782 2567 2374 2200	1514 1368 1243 1135 1041 957 883 817 757	1100 994 904 825 756 696 642 593 550	562 621 684 749 817 888 963 1041 1123	750000 750000 750000 750000 750000 750000 750000 750000 750000	850000 850000 850000 850000 850000 850000 850000 850000 850000	F60 or Larger	230 380	410	3200

More ratios are available.

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