

# R Series Part-turn Gearboxes



## R Series Gearboxes

### Introduction

Part–turn Worm Gearboxes use worm and worm wheel transmission pairs, with high performance needle roller bearing assembled on both ends of worm shaft. It ensures the thrust requirement during rotation. It's in high mechanical efficiency and withstands big torque, small size with compact design, and it's also easy to operate and has reliable self–locking function.

### Characters

- 1.Precision casting ductile iron housing
- 2.Optional output torque,range up to 32000 Nm
- 3.High efficient needle roller bearing
- 4.High strength steel Input shaft
- 5.Stroke  $0^{\circ} - 90^{\circ} (\pm 5^{\circ})$
- 6.Compact structure
- 7.Grease filled for longer life
- 8.Adjustable stopper ( $\pm 5^{\circ}$ )
- 9.Good seal

### Application

Part–turn worm gearboxes are applied to ball valves, butterfly valves,dampers and other  $90^{\circ}$  rotary valves.

### Operating Environment

Part–turn Worm Gearboxes are with good mechanical quality and steady operating performance which apply to deal with variety climate and temperature. We strive to develop valve gear operator to meet higher demands.

Factory Standard:

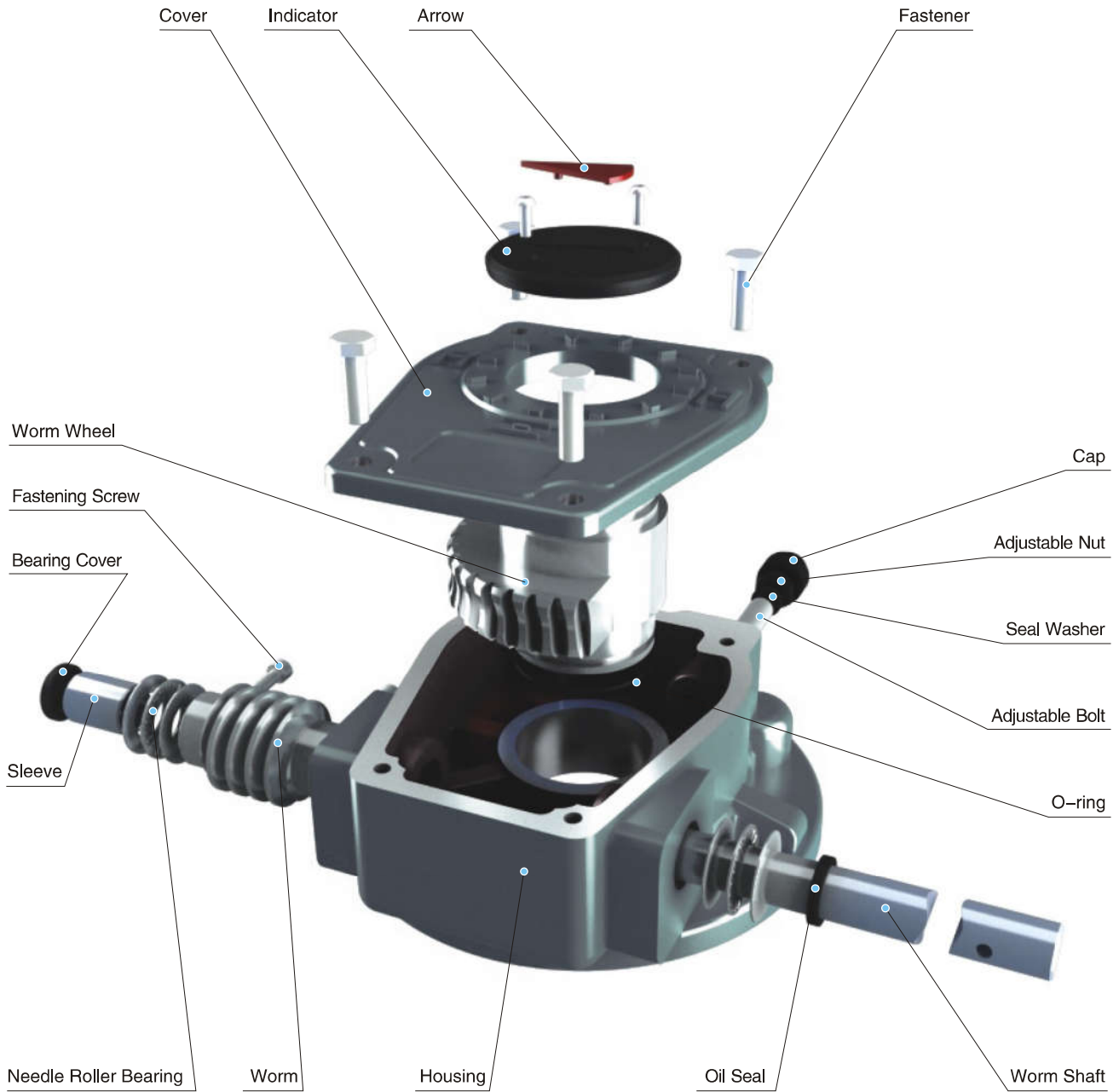
- Enclosure: IP67
- Working Temperature: From  $-20^{\circ}\text{C}$  to  $120^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$  to  $248^{\circ}\text{F}$ )

### Connect With Valve

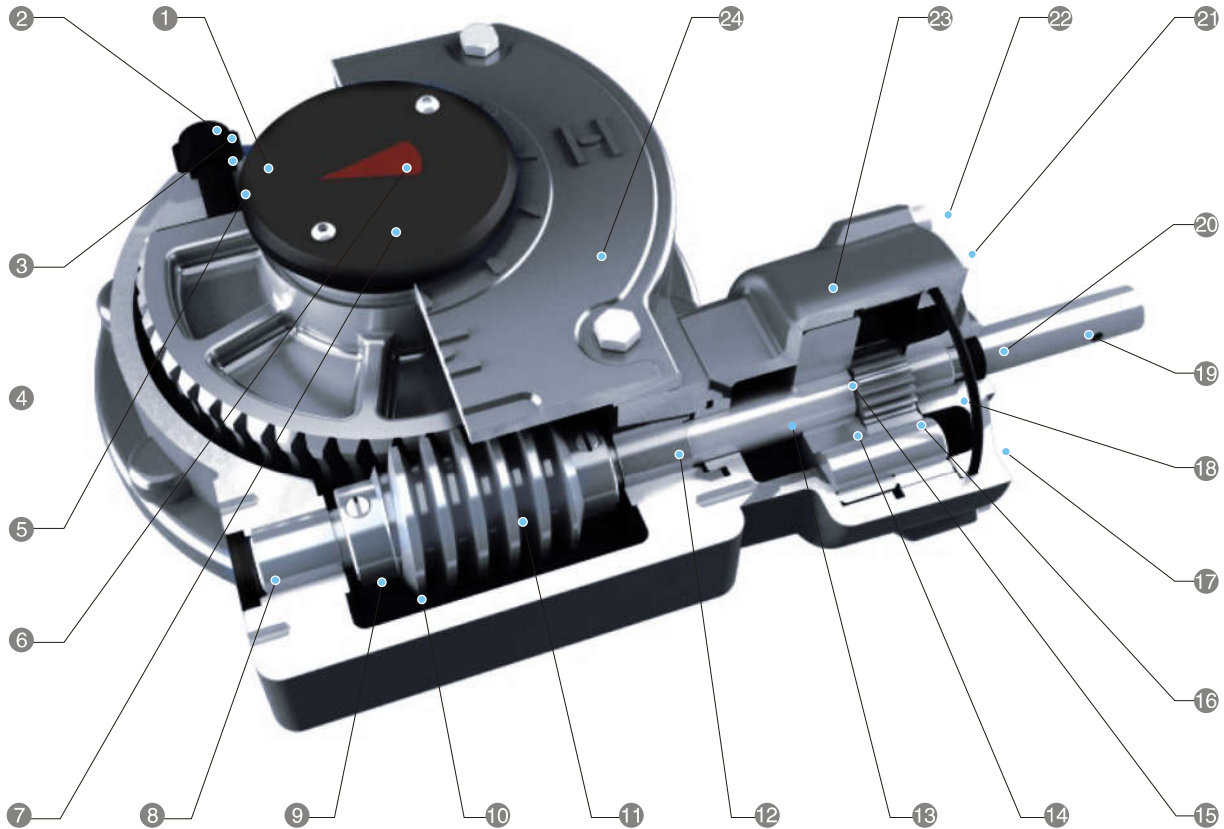
The flange connecting to valve is according to ENISO5210 or DIN3210 (Customization)



## R01-R35 Size Gearboxes

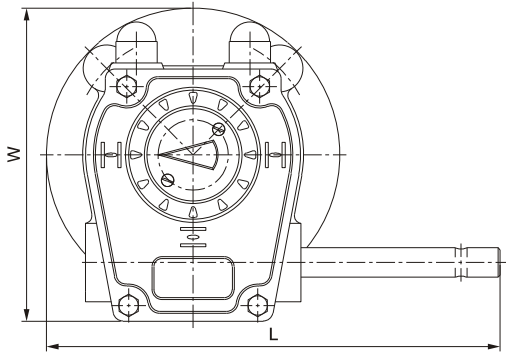
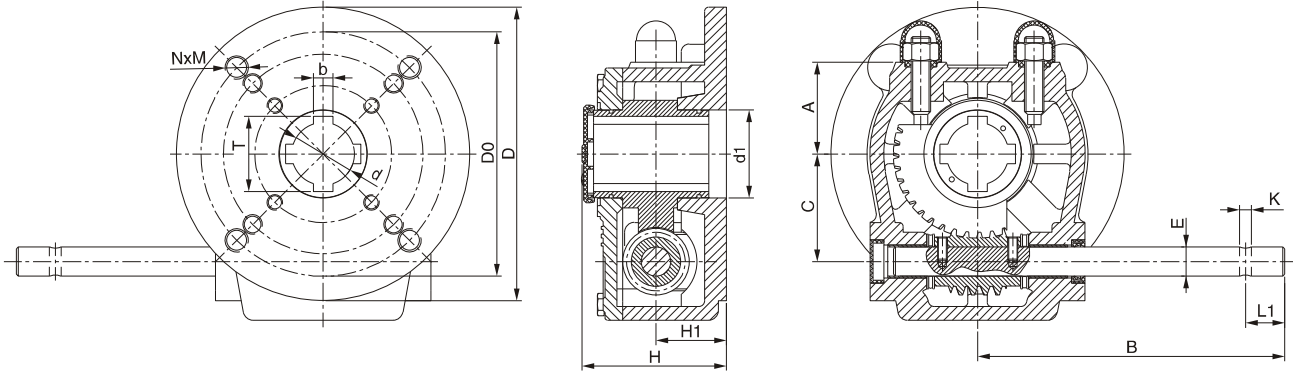


## R55-R90 Size Gearboxes

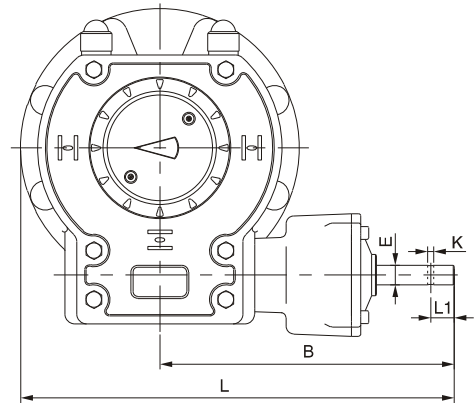


No.	Description	Material	No.	Description	Material
1	Housing	Ductile iron	13	Worm Shaft	Steel
2	Cap	NBR	14	Planet Carrier	Steel
3	Adjustable Nut	Steel	15	Parallel Key	Steel
4	Seal Washer	NBR	16	Planet Gear	Steel
5	Adjustable Bolt	Steel	17	O-ring	NBR
6	Arrow	Engineering plastic	18	Sleeve	Bearing steel
7	Indicator	Engineering plastic	19	Worm Shaft	Steel
8	Bearing cover	Engineering plastic	20	Oil Seal	NBR
9	Needle Roller bearing	Bearing steel	21	2-Stage Cover	Ductile iron
10	Lubrication	Grease	22	Fastener	Steel
11	Worm	Steel	23	2-Stage Housing	Ductile iron
12	Sleeve	Bearing steel	24	Cover	Ductile iron

## Dimensions



R01-R35 Size Gearboxes

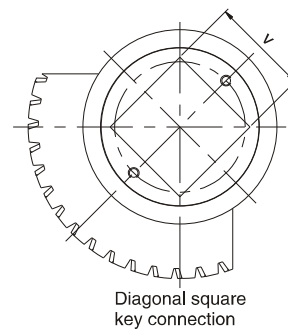
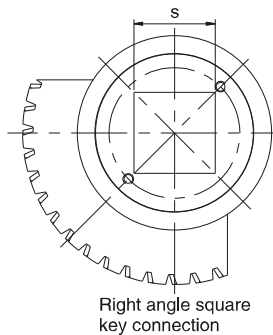
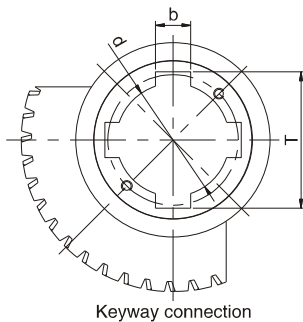


R55-R90 Size Gearboxes

Type	Dimension ( mm )															
	R01	R02	R02	R05	R05	R10	R10	R20	R20	R35	R35	R55	R75	R85	R87	R90
A	33	36	36	47	47	66.5	66.5	78	81	81	81	95	108	110	110	110
B	84	124	124	157	157	201	201	189	230	230	230	301	322	353.5	353.5	414.5
C	36.5	44.6	44.6	55	55	71	71	86	104.5	104.5	104.5	130	150	182	182	256
ΦD	90	90	125	125	150	175	210	255	214	300	300	300	300	350	415	475
ΦE	10	12	12	15	15	20	20	20	20	20	20	20	20	20	20	20
ΦK	4	5	5	5	5	6	6	8	8	8	8	6	6	6	6	6
L1	15	18	18	20	20	24	24	24	24	24	24	24	24	24	24	24
W	103	114.5	131.5	147.5	160	200.5	218	263.5	259	302	302	322.5	347	407	407	570
H	54	67	67	73	73	97	97	105	108.5	108.5	108.5	124	125	133	133	179
H1	24	32	32	36	36	47.5	47.5	51	55	55	55	57	59	59	59	82
L	129	169.5	186.5	219.5	232	288.5	306	316.5	337	380	380	443.5	472	538.5	538.5	672

## Gear box Parameters

Type	Output torque N · m	Ratio	Input torque N · m	Standard Flange	Optional Flange	Max Stem Dia.mm	Right angle square Key S mm	Max Diagonal square key V mm	Max Stem Height mm	Ref. weight without handwheel kg	Factory standard Handwheel Dia. mm
R01	160	41	14	F07	F05	22	16.9-11	20	45	1.5	140
R02	200	42	18	F07	F05	26	19	24	55	2.5	140
R02	200	42	18	F05/F07/F10	N/A	26	19	24	55	3	140
R05	500	40	46	F07/F10	N/A	32	23	28	65	4.7	200
R05	500	40	46	F07/F10/F12	N/A	32	23	28	65	5	200
R10	1000	34	109	F10/F14	F07/F12	42	28	35	85	10	400
R10	1000	34	109	F10/F12/F16	F07/F14	42	28	35	85	11	400
R20	2000	38	175	F12/F16	F10/F14	55	38	45	90	17	500
R20	2000	38	175	F12/F16/F20	F10/F14	55	38	45	90	19.5	500
R35	3250	55	197	F12/F16	F10/F14	65	45	50	95	20.5	600
R35	3250	55	197	F12/F16/F25	F10/F14	65	45	50	95	25.5	600
R55/PG4	5500	217	106	F16/F25	F12/F14/(F20)	80	56	65	110	38	400
R55/PG41	7000	217	134	F16/F25	F12/F14/(F20)	80	56	65	110	38	500
R75/PG4	9000	259	145	F16/F25	F20	100	70	80	110	47	600
R75/PG6	11000	372	123	F16/F25	F20	100	70	80	110	47	600
R85/PG6	12500	468	111	F25/F30	F20	105	72	82	115	68.5	500
R85/PG61	17000	468	151	F25/F30	F20	105	72	82	115	68.5	600
R87/PG10	26000	729	149	F30/F35	F25	160	115	125	142	142	600
R90/PG10	32000	870	153	F30/F35	F25/F40	160	115	125	155	194	600



- Remarks:
- About Flange, the threaded hole center distance and quantity are according to standard ISO5211.
  - About Axle hole  $\Phi d$ , the corresponding "b x T" we adopt is according to standard GB/T1095-2003. Please specify if special sizes are required.
  - Static safety factor: 1.5  
\* Handwheel diameter formula:  $D=2 \cdot M/Q$  Customer can select base on this formula or actual need.
  - D—handwheel diameter(mm) M—input torque(N,mm) Q—the circumferential force acting on the handwheel(N), Standard value of API 6D is 360N.
  - Handwheel Diameter also can be selected according to actual operating input torque and output torque requirements. If no special requirements or instructions, handwheel diameter is selected based on our above table, please check when inquire.