Manual Worm Gear Operators

Max-Gear Series worm gear operators are designed to be used as quarter turn actuators. They are ideal for applications on Ball Valves, Butterfly Valves, Plug Valves, and Dampers requiring a Self-Locking Mechanism.

Torque Range: 2832 in-lb to 37173 in-lb

Gear Operator
Single Stage

Gear Operator
Double Stage

Design Features

- Fully Lubricated
- Long Life Reliability
- Precision Machining
- Stainless Steel Bolting
- Epoxy Coated Housing
- Weather Proof Housing
- Grease Fittings Standard
- Large Diameter Input Shafts
- Mounting Dimensions to ISO 5211
- External Fully Adjustable End Stops
- Optional Locking Device & Other Features
- Rugged Compact Heavy Duty Construction

Design Options

shown with high visibility indicator

Manual Overide

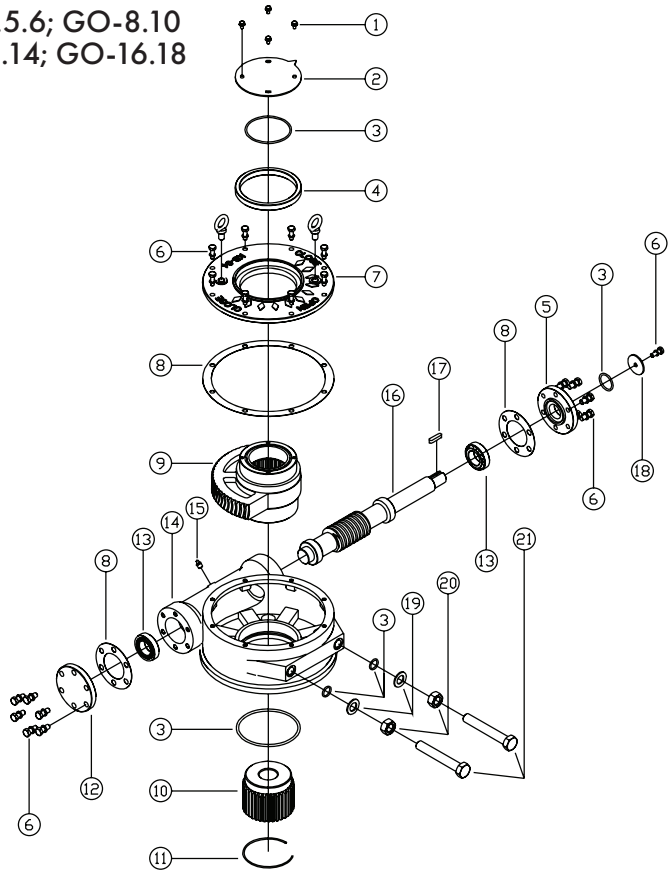
MO-Series

Torque Range:
2655 in-lb
to
53105 in-lb

Max-Gear simplifies gear mounting, eliminates costly keyway machining, all sizes utilize ISO square drives.

Manual Worm Gear Operators - without Reducer

GO-4.5.6; GO-8.10
GO-12.14; GO-16.18

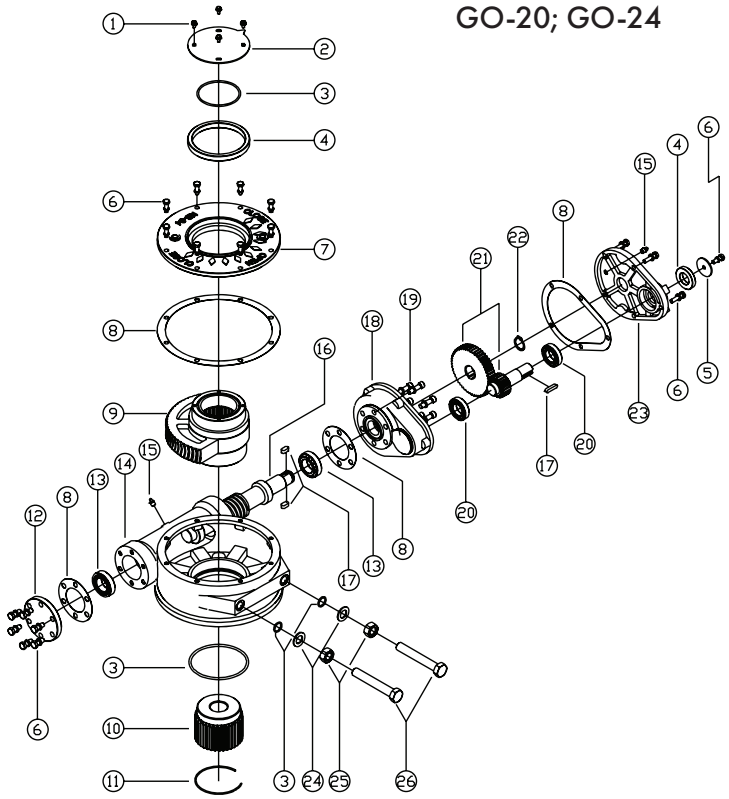


Bill of Materials

No	Name	Material	Qty
1	Bolt	SS304	set
2	Indicator Plate	ASTM A29M-1020	1
3	O-Ring	NBR	set
4	Oil Seal	NBR	1
5	Gland Cover	ASTM A29M-1020	1
6	Bolts	SS304	set
7	Cover	ASTM A536 65-45-12	1
8	Sealing Gasket	Insulation Paper or Rubber	set
9	Worm Gear	ASTM A536 65-45-12	1
10	Stem Bush	ASTM A29M-1020	1
11	Snap Ring	ASTM A29-1566	1
12	End Cover	ASTM A29M-1020	1
13	Bearing	ASTM A295-52100	set
14	Body	ASTM A536 65-45-12	1
15	Grease Nipple	ASTM A29M-1020	1
16	Worm	ASTM A29M-1045	1
17	Key	ASTM A29M-1045	1
18	Handwheel Indicator	ASTM A29M-1020	1
19	Washer of Nuts	SS304	set
20	Adjusting Nuts	SS304	set
21	Adjusting Bolts	SS304	set

Manual Worm Gear Operators - with Reducer

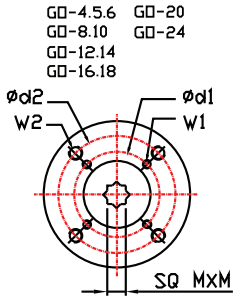
GO-20; GO-24

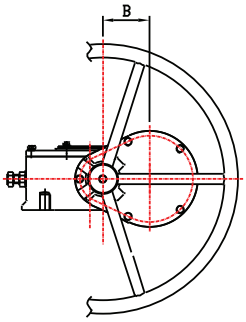


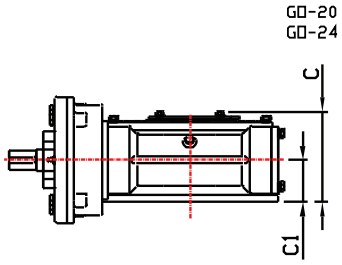
Bill of Materials

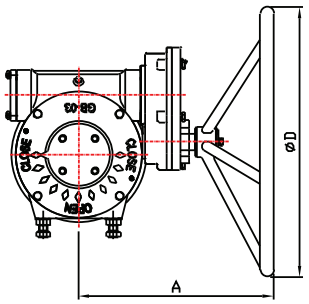
No	Name	Material	Qty
1	Bolt	SS304	set
2	Indicator Plate	ASTM A29M-1020	1
3	O-Ring	NBR	set
4	Oil Seal	NBR	set
5	Handwheel Indicator	ASTM A29M-1020	1
6	Bolts	SS304	sets
7	Cover	ASTM A536 65-45-12	1
8	Sealing Gasket	Insulation Paper or Rubber	set
9	Worm Gear	ASTM A536 65-45-12	1
10	Stem Bush	ASTM A29M-1020	1
11	Snap Ring	ASTM A29-1566	1
12	End Cover	ASTM A29M-1020	1
13	Bearing	ASTM A295-52100	set
14	Body	ASTM A536 65-45-12	1
15	Grease Nipple	ASTM A29M-1020	2
16	Worm	ASTM A29M-1045	1
17	Key	ASTM A29M-1045	set
18	Reduction Body	ASTM A536 65-45-12	1
19	Bolts	SS304	set
20	Bearing	ASTM A295-52100	set
21	Gears	ASTM A29M-1045	2
22	Snap Ring	ASTM A29-1566	1
23	Reduction Cover	ASTM A536 65-45-12	1
24	Washer of Nuts	SS304	2
25	Adjusting Nuts	SS304	set
26	Adjusting Bolts	SS304	set

Manual Worm Gear Operators
Double D & ISO Square Female Drive







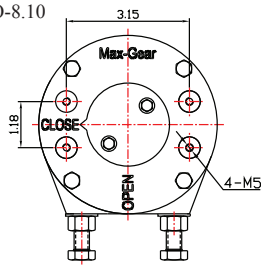


ISO Star Female Drive Design

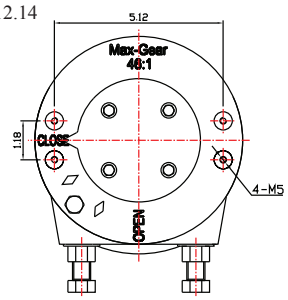
									Mounting Pad 1			Mounting Pad 2			Torque in-lbs	Weight lbs
Model #	Ref. #	Gear Ratio	A	B	C	C1	D	M	d1	W1	ISO	d2	W2	ISO		
GO-4.5.6	GB-BF	28:1	5.26	1.57	2.68	1.10	6.30	0.551	1.97	1/4-20UNC	F05	2.76	5/16-18UNC	F07	2832	11
GO-8.10	GB-00	41:1	5.86	2.17	3.23	1.30	11.81	0.866	2.76	5/16-18UNC	F07	4.02	3/8-16UNC	F10	4425	18
GO-12.14	GB-01	46:1	11.36	2.95	4.22	1.89	15.75	0.866	4.02	3/8-16UNC	F10	5.51	5/8-11UNC	F14	12391	35
GO-16.18	GB-02	49:1	13.36	3.62	4.93	2.50	19.69	1.063	4.92	1/2-13UNC	F14	n/a	n/a	n/a	22127	57
GO-20	GB-02-1S	129:1	13.78	0.22	4.93	2.50	17.72	1.417	5.51	5/8-11UNC	F14	n/a	n/a	n/a	26552	84
GO-24	GB-03-1S	158:1	14.25	0.96	5.00	2.32	19.69	1.417	6.50	3/4-10UNC	F16	n/a	n/a	n/a	37173	90

Limit Switch Mounting Capability

GO-4.5.6
GO-8.10



GO-12.14



All gear operators are supplied as standard with drilled and tapped holes to mount limit switches with SS bolting.

Technical Data

Model (ISO Square)	Model (Double)	Ref. #	Gear Ratio	Efficiency %	Mechanical Advantage	Input Torque in-lb	Output Torque in-lb	Handwheel Dia. (mm)	Rim Pull lb
GO-4.5.6		GB-BF	28:1	25	7	398	2832	160	126
GO-8.10		GB-00	41.:1	27	11	398	4425	300	67
GO-12.14	GO-D3.4	GB-01	46:1	30	13.8	929	12391	400	118
GO-16.18	GO-D6.8	GB-02	49:1	30	14.7	1505	22127	500	153
GO-20	GO-D10	GB-02-1S	129:1	25	33	797	26552	450	90
GO-24	GO-D12	GB-03-1S	158:1	25	40	929	37173	500	94

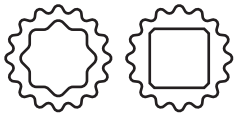
Options

- Star Drive
- Locking Device
- Special Coatings
- Flow Plan Indicators for Multi-Port Valves
- Chain Wheel Operators
- Adjustable Memory Stops in Open Position 45°–90°

Replaceable Drive Insert Design

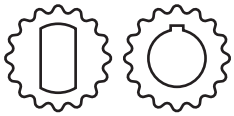
Standard gears are fitted with square drive insert or double D, but a variety of other inserts such as key way are also available. Inserts can be easily replaced or remachined as needed.

Standard



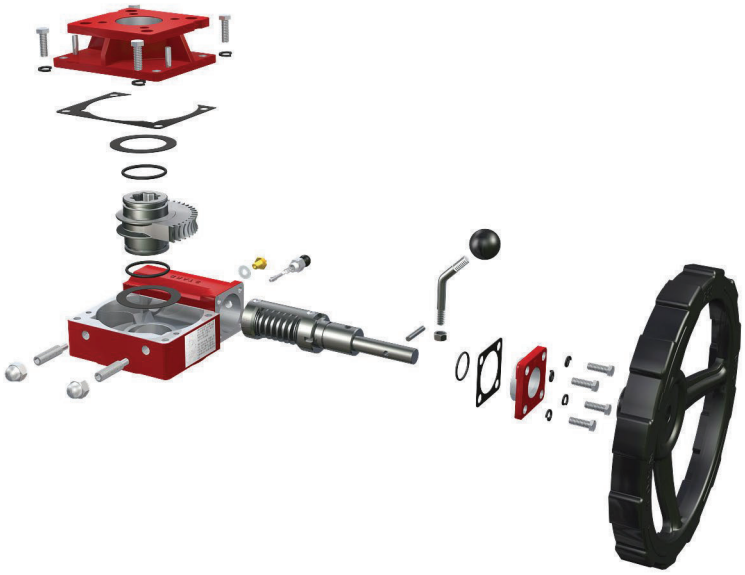
ISO-Star ISO-SQ

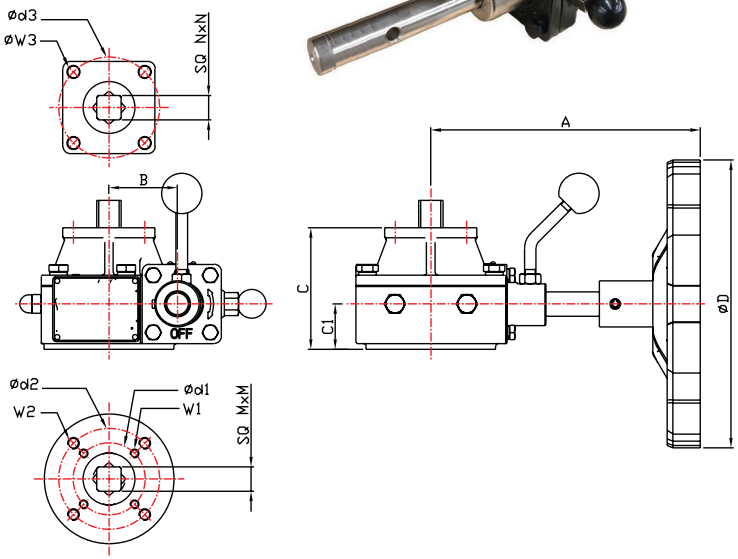
Options



Double-D Key

Declutchable Gear Operators





Bill of Materials (major parts)

No	Name	Material	Qty
1	Handlewheel	Steel	1
2	Off Center Sleeves	Carbon Steel ASTM A29M-1045	2
3	Small Cap	ASTM A216 WCB	1
4	Housing	ASTM A216 WCB	1
5	Worm	Carbon Steel ASTM A29M-1045	1
6	Worm Gear	Ductile Iron	1
7	Bracket Cap	ASTM A216 WCB	1
8	Worm Shaft	Carbon Steel ASTM A29M-1045	1

Technical Data

Model	Gear Ratio	Efficiency %	Mechanical Advantage	Input Torqure in-lb	Output Torque in-lb	Hand-wheel Dia. (mm)	Rim Pull lb
MO-J26	26:1	23	6	443	2655	200	112
MO-J38	38:1	23	8.74	575	4868	200	146
				620	5487	250	126
				708	6196	300	120
MO-J54	54:1	25	13.5	664	8851	250	135
				797	10621	300	135
MO-J80	80:1	26	20.8	841	17702	350	122
MO-J78	78:1	26	20.3	1416	28322	600	120
MO-J270	270:1	25	67.5	797	53105	500	81

Dimensional Data

										Valve Side Mounting Pad			Actuator Side Mount Pad			Weight
Model #	Ref. #	Gear Ratio	A	B	C	C1	D	M	N	d1	W1	ISO	d3	W3	ISO	lbs
MO-J26	SLJ26	26:1	7.36	1.87	3.32	1.24	7.87	0.669	0.669	2.76	M8	F07	2.76	0.35	F07	10
MO-J38	SLJ38	38:1	8.98	2.46	3.36	1.12	9.84	1.063	1.063	4.02	M10	F10	4.02	0.47	F10	17
MO-J54	SLJ54	54:1	9.44	3.25	3.93	1.38	11.81	1.417	1.417	4.92	M12	F12	5.51	0.71	F14	26
MO-J80	SLJ80	80:1	11.44	4.72	4.49	1.77	13.78	1.811	1.811	5.51	M16	F14	6.50	0.87	F16	55
MO-J78	SLJ78	78:1	12.72	5.43	4.61	1.91	23.62	1.811	1.811	6.50	M20	F16	6.50	0.87	F16	68
MO-J270	SLJ270	270:1	14.41	3.75	7.40	2.58	19.69	2.362	2.362	6.50	M20	F16	6.50	0.87	F16	151

Model MO-J26 is equipped with an extra set of mounting pattern on valve side, d2=1.97", W2=M6; ISO F05

MAX SEAL Valves & Controls

Max-Seal, Inc.
4815 West 5th St.
Lumberton, NC 28358

P.O. Box 1293
Lumberton, NC 28359
www.maxsealinc.com

910-738-2866
910-739-1733
sales@maxsealinc.com

This brochure is general in nature and the manufacturer reserves the right to alter dimensions, materials, or to make design improvements.