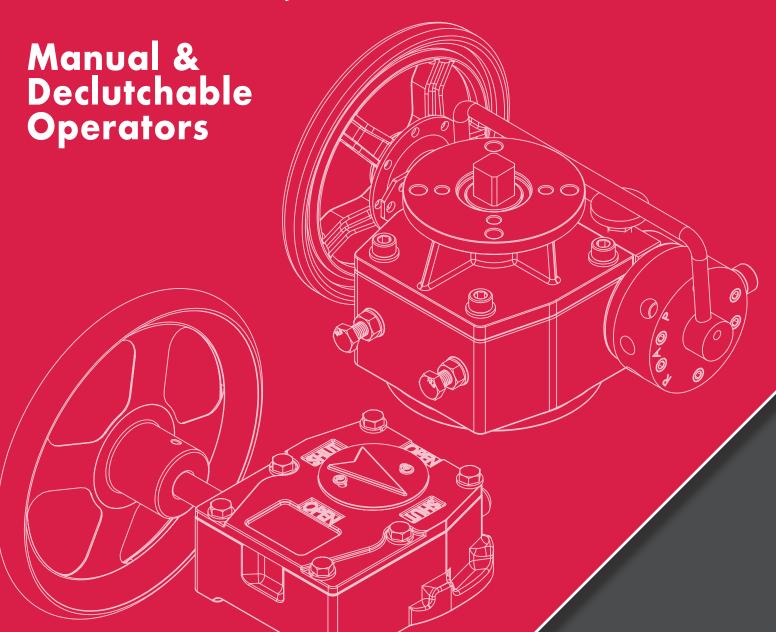


The Best Way To Automate Your Process

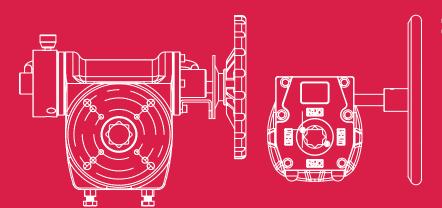


## **Gear Operators Technical Brochure**

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### **Gear Operators**

GO Series Manual & GOW Series Declutchable Gear Operators







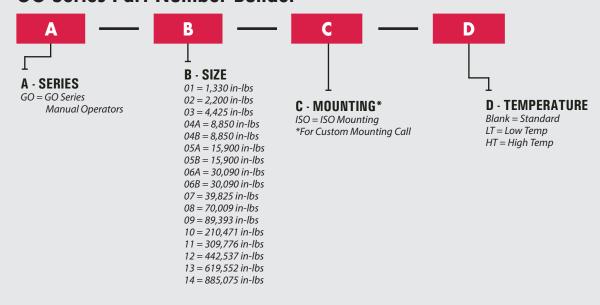




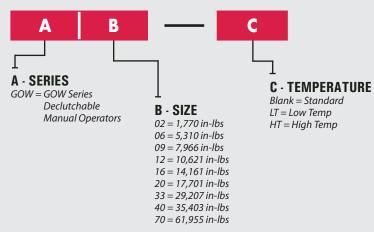


Max-Air Technology offers two primary types of gear operators for use with quarter-turn valves; a manual gear, and a declutchable gear. Direct ISO 5211 valve mounting for easy and compact handwheel operation. Declutchable override gear with triple epoxy coated IP67 housing mounts between ISO 5211 valve and actuator interfaces. Features an easy declutch mechanism, integrated block and Lockout/Tagout bleed capability and lockout/tagout holes.

#### **GO Series Part Number Builder**



#### **GOW Series Part Number Builder**





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### STANDARD WARRANTY

Max-Air Technology Inc. | The Best Way to Automate Your Process

Max-Air Technology provides the following warranty regarding products manufactured by it. THE WARRANTY STATED HEREIN IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES AND REPRESENTATIONS, EXPRESSED OR IMPLIED, OR STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. Max-Air Technology warrants its products to be free from defects in materials and workmanship when these products are used for the purpose for which they were designed and manufactured. Max-Air Technology does not warrant its products against chemical or stress corrosion or against any other failure other than from defects in materials or workmanship. The warranty period is for twelve (12) months from installation date or eighteen (18) months from shipment date, whichever date comes first. Any claims regarding this warranty must be in writing and received by Max-Air Technology before the last effective date of the warranty period. Upon Max-Air Technology's receipt of a warranty claim, Max-Air Technology reserves the right to inspect the product(s) in question at either the field location or at the Max-Air Technology Manufacturing plant. If, after inspection of the product(s) in question, Max-Air Technology determines that the purchaser's claim is covered by this warranty, Max-Air Technology's sole liability and the purchaser's sole remedy under this warranty is limited to the refunding of the purchase price or repair or replacement thereof at Max-Air Technology option. Max-Air Technology will not be liable for any repairs, labor, material or other expenses that are not specifically authorized in writing by Max-Air Technology, and in no event shall Max-Air Technology be liable for any direct or consequential damages arising out of any defect from any cause whatsoever. If any Max-Air Technology product is modified or altered at any location other than Max-Air Technology, said product is not covered by this warranty. The warranty for such products shall be subject only to the warranty relief, if any, provided by

## **Manual Operators**

Handwheel driven gear operators for standalone operation or declutchable manual override.

# Heavy Duty Gear Operators w/ Options

Max-Air Technology offers two primary types of gear operators for use with quarter-turn valves; a manual gear, and a declutchable gear. Both types are designed with a broad output torque range, and are generally designed for use with ISO 5211 valve mounting interfaces, but not required. For the declutchable gear, an ISO 5211 interface is standard for the actuator and valve connections. Both units come standard with a female double square output drive, which directly couples to square valve stems, or quickly adapts to smaller square drives, or double-D and keyed drives with the use of adapter bushings.

#### Standard Features:

- Direct ISO 5211 standard valve mounting
- Compact Design
- ISO Valve Connection (Double Square)
- Durable Epoxy Coating
- Wide temperature range w/ corresponding high/low temperature gaskets and grease





Torque Range Rotation Ambient Temp. Range

#### **GO Series Manual Gear**

Direct ISO 5211 valve mounting for easy and compact handwheel operation.

See Selection Guide Below
90 ±5° Degrees
-4°F to 176°F Standard/

-40°F Low/ +248°F High



### Lockout/Tagout Standard

#### **GOW Series Declutchable**

Declutchable override gear with triple epoxy coated IP67 housing mounts between ISO 5211 valve and actuator interfaces. Features an easy declutch mechanism, integrated block and bleed capability and lockout/tagout holes.

Mounting	ISO 5211
Materials	WCB, Cast Iron
Available Options	See Selection Guide Below

### **Gear Operator Series Selection**

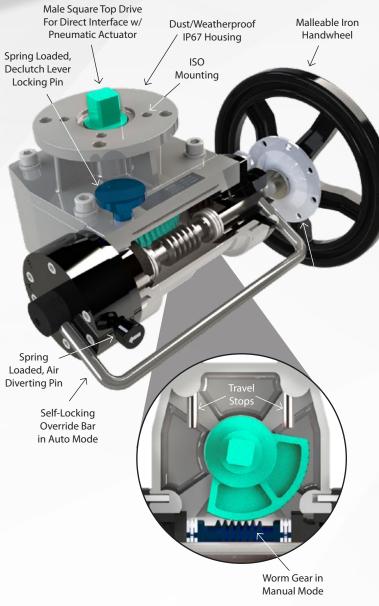
Start from the top of the chart and work down to select the correct Gear Operator Series.

Туре	Manual (	Operation	Declutchak	ole Operation			
Torque	Up to 885	,000 in-lbs	Up to 61,955 in-lbs				
Environment	Stan	dard	Standard	& Corrosive			
Temperature	Standard	Extreme (High/Low)	Standard	Extreme (High/Low)			
Recommended Series/Options	GO Series	GO Series w/ Temp. Seals	GOW Series	GOW Series w/ Temp. Seals			
Features	N	/A		ate Standard Block & Bleed			
Available Options	Stem Ex Square Ope Custom Size Limit Switch I	el Operators tensions erating Nuts e Handwheel Mounting Kits ockout Plate	Chain Whe	e Handwheel eel Operators erating Nuts			



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### **GOW Series Declutchable**

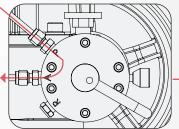
Max-Air offers a declutchable override gear with triple epoxy coated IP67 housing mounts between ISO 5211 valve and actuator interfaces. It features an easy declutch mechanism, integrated block and bleed capability and lockout/tagout holes. GOW Series comes standard with a female double square output drive, which directly couples to square valve stems, or quickly adapt to smaller square drives, or double-D and keyed drives with the use of adapter bushings.

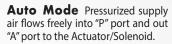
Seals	Temperature Range
Standard (BUNA-N)	-4°F (-20°C) to 176°F (80°C)
High Temp. (FKM)	5°F (-15°C) to +248°F (120°C)
Low Temp. (BUNA-N)	-40°F (-40°C) to 176°F (80°C)

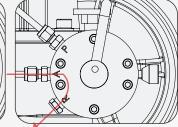
**Integrated Block & Bleed Air Tubing** GOW Series includes an integrated block & bleed valve triggered by the clutching mechanism which can be used. If using a separate block & bleed device, please follow manufacturer's instructions. Air tubing from integrated block & bleed valve to actuator air ports should be as follows. If not using, leave ports plugged or install dust screens/filters.

"R" – Relief - Exhaust to Atmosphere
"A" – Actuator - To Solenoid/ Actuator Supply
"P" – Pressure - Instrument Air Supply Here

Override Bar Raised to Enter Manual Mode







**Manual Mode** Pressurized supply air flow is blocked at "P" port. Air exhausts from the actuator/solenoid "A" port through "R" port to atmosphere.

### **GO Series Manual**

Direct ISO 5211 valve mounting for easy and compact handwheel operation. The GO Series comes standard with a female double square output drive, which directly couples to square valve stems, or quickly adapt to smaller square drives, or double-D and keyed drives with the use of adapter bushings.

Seals	Temperature Range
Standard (BUNA-N)	-4°F (-20°C) to 176°F (80°C)
High Temp. (FKM)	5°F (-15°C) to +248°F (120°C)
Low Temp. (Silicone)	-40°F (-40°C) to 176°F (80°C)

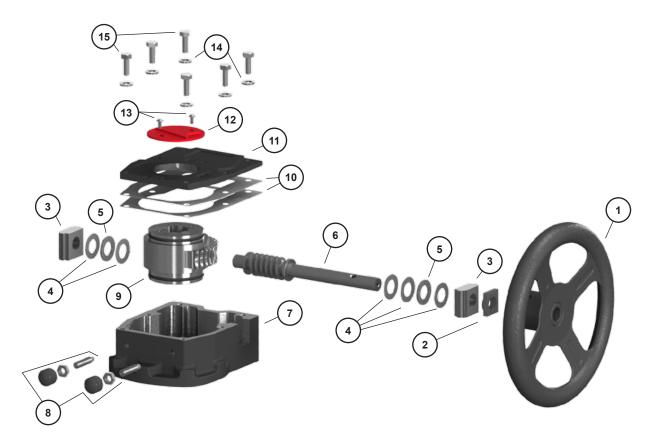


## **GO Series Technical Data**

Exploded View, Materials of Construction, & Dimensional Data

### **GO Series**

## Exploded View & Bill of Materials



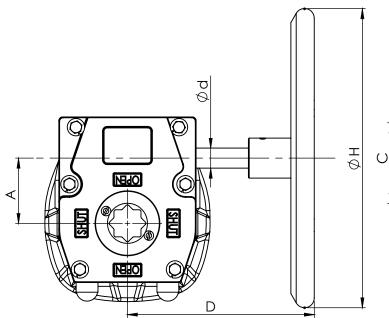
#	DESCRIPTION	MATERIALS					
1	Hand Wheel	Cast Iron					
2	Shaft Gasket	Plated Carbon Steel					
3	Shaft Holders	Plated Carbon Steel					
4	Shaft Washers	Cast Iron					
5	Shaft Bearings	Poly-fiber					
6	Worm Shaft	Plated Carbon Steel					
7	Body	Cast Iron					
8	Travel Stops	Plated Carbon Steel					
9	Segment Gear	Ductile Iron					
10	Cover Gaskets	Poly-fiber					

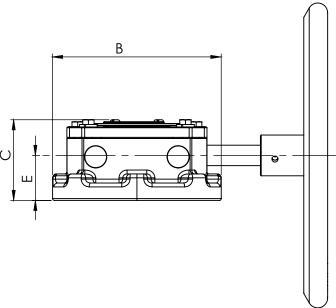
#	DESCRIPTION	MATERIALS
11	Cover	Cast Iron
12	Indicator	Plated Steel
13	Indicator Screws	Plated Carbon Steel
14	Cover Plate Washers	BUNA-N
15	Cover Plate Screws	Plated Carbon Steel

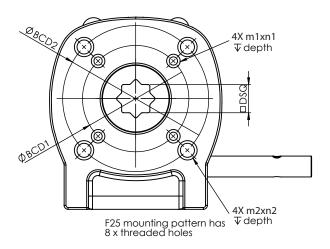
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### GO-01-ISO thru GO-07-ISO







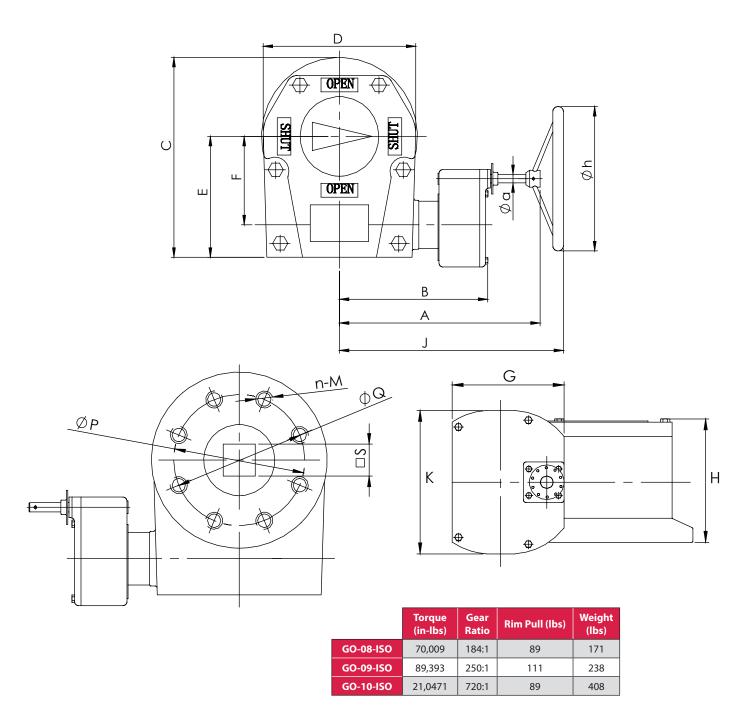
	Torques (in-lbs)	Gear Ratio	Rim Pull (lbs)	Weight (lbs)
GO-01-ISO	1,330	40:1	80	3
GO-02-ISO	2,200	37:1	78	6
GO-03-ISO	4,425	42:1	100	12
GO-04A-ISO	8,850	42:1	133	22
GO-04B-ISO	8,850	42:1	133	22
GO-05A-ISO	15,900	60:1	163	41
GO-05B-ISO	15,900	60:1	163	41
GO-06A-ISO	30,090	68:1	183	78
GO-06B-ISO	30,090	68:1	183	78
GO-07-ISO	39,825	88:1	183	101

	A	В	c	D	E	Ød	ØΗ	ØBCD1	m1xn1-depth	ØBCD2	m2xn2-depth	ISO Mount	DSQ
GO-01-ISO	1.69	3.16	2.12	3.9	1.02	0.472	6	1.968	M6X1.0 - 0.394	2.756	M8X1.25 - 0.551	F05+F07	0.433
GO-02-ISO	2.49	3.64	2.25	5.8	1.16	0.472	6	2.756	M8X1.25 - 0.630	-	-	F07	0.669
GO-03-ISO	2.38	4.66	2.51	8.4	1.44	0.591	10	2.756	M8X1.25 - 0.669	4.016	M10X1.5 - 0.669	F07+F10	0.866
GO-04A-ISO	2.63	6.51	3.08	8.3	1.73	0.787	12	4.016	M10X1.5 - 0.984	5.512	M16X2 - 0.787	F10+F14	1.063
GO-04B-ISO	2.63	6.51	3.08	8.3	1.73	0.787	12	4.921	M12X1.75 - 0.866	-	-	F12	1.063
GO-05A-ISO	3.49	7.86	3.42	11.1	1.96	0.787	16	4.921	M12X1.75 - 1.063	6.496	M20X2.5 - 0.906	F12+F16	1.811
GO-05B-ISO	3.49	7.86	3.42	11.1	1.96	0.787	16	5.512	M16X2 - 0.984	-	-	F14	1.811
GO-06A-ISO	4.98	10.1	3.86	13.5	2.00	1.181	16	6.496	M20X2.5 - 0.984	-	-	F16	1.811
GO-06B-ISO	4.98	10.1	3.86	13.5	2.00	1.181	16	5.512	M16X2 - 0.984	-	-	F14	1.811
GO-07-ISO	6.05	12.4	3.99	14.4	1.99	1.181	16	6.496	M20X2.5 - 0.984	10.000	M16X2 - 0.866	F16+F25	1.811

## **GO Series Technical Data**

Exploded View, Materials of Construction, & Dimensional Data

### GO-08-ISO thru GO-10-ISO

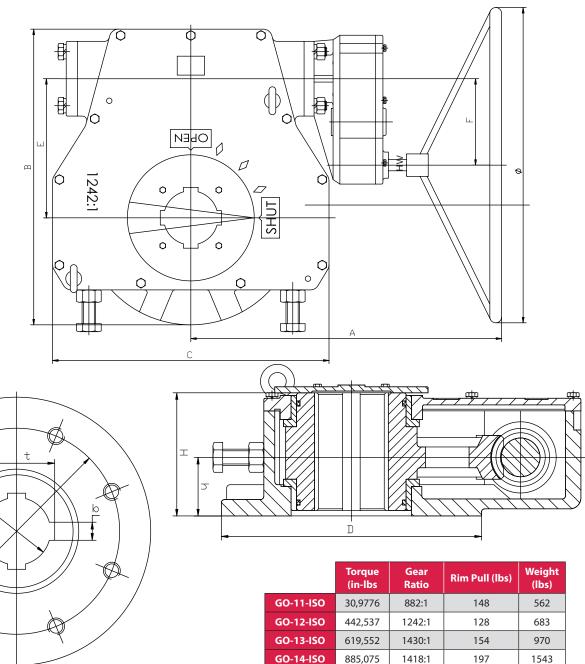


	A	В	C	D	E	F	G	Н	J	K	ØΡ	Ø <b>Q</b>	n-M	S	øh	Øa
GO-08-ISO	15.08	10.9	13.74	11.26	5.39	5.39	8.31	5.43	22.05	6.73	11.81	10.00	8-M16	1.811	22.9	1.00
GO-09-ISO	16.26	11.3	17.28	13.98	10.3	7.13	8.31	7.48	22.05	6.73	11.81	10.00	8-M16	2.165	24.0	1.00
GO-10-ISO	19.72	14.8	20.79	18.23	12.6	9.33	11.34	7.48	26.77	7.36	11.81	11.73	8-M20	2.953	22.9	1.25

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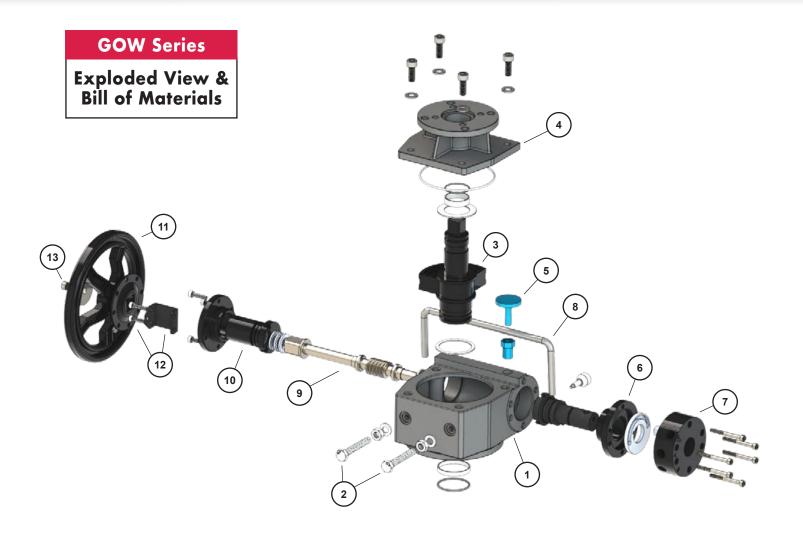
### GO-11-ISO thru GO-14-ISO



	HW	d	b	t	D1	n-M	Α	В	С	D	Е	F	н	h	ISO 5211	ISO 5211 Optional
GO-11-ISO	27.6	4.72	1.26	5.31	14.00	8-M30	25.5	22.5	22	16.3	11.1	5.94	6.77	3.31	F35	F30
GO-12-ISO	27.6	4.72	1.26	5.31	14.00	8-M30	27	25.9	24	18.7	12.2	7.56	8.86	4.21	F35	F30, F40
GO-13-ISO	27.6	5.91	1.42	6.57	16.00	8-M36	27.8	27.4	27.2	18.7	13.7	7.56	9.09	4.33	F40	F35
GO-14-ISO	31.5	5.91	1.42	6.57	16.00	8-M36	32.3	32.5	29.9	22.0	15.4	10.4	10.6	5.12	F40	F35, F48

## **GOW Series Technical Data**

Exploded View, Materials of Construction, & Dimensional Data



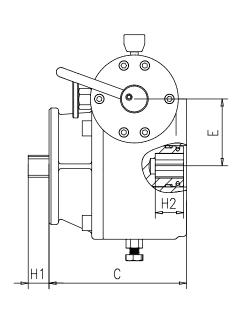
#	DESCRIPTION	MATERIALS					
1	Body	Coated WCB					
2	Travel Stops	304SS					
3	Segment Gear Assembly	Plated Steel					
4	Cover	Coated WCB					
5	Locking Pin Assembly	Aluminum Steel					
6	Worm Bearing Cap	Aluminum					
7	Block & Bleed Valve	Coated Steel					
8	Clutch Lever	Plated Steel					
9	Worm Gear Assembly	Plated Steel					
10	Worm Bearing Cap	Coated Steel					

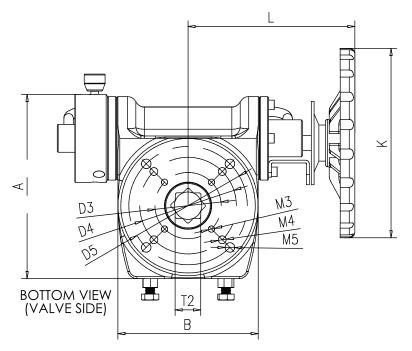
#	DESCRIPTION	MATERIALS
11	Handweheel	Cast Iron
12	Handwheel Locking Plates	Coated Steel
13	Handwheel Retaining Screw	304 SS

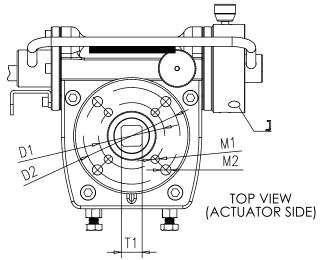
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### GOW02 thru GOW70







	Torque (in-lbs)	Gear Ratio	Rim Pull (lbs)	Weight (lbs)
GOW02	1,770	35:1	50	12
GOW06	5,310	55:1	94	33
GOW09	7,966	55:1	126	37
GOW12	10,621	55:1	144	39
GOW16	14,161	60:1	103	73
GOW20	17,701	60:1	112	75
GOW33	29,207	67:1	142	120
GOW40	35,403	67:1	148	139
GOW70	61,955	315:1	99	243

	Α	В	C	D1.D2	D3.D4.D5	E	L	M1	M2	М3	M4	M5	T1	T2	H1	H2	K	J
GOW02	4.7	3.9	4.09	F05.F07	F05.F07	1.75	4.7	0.28	0.35	M6↓0.35	M8↓0.47	-	0.551	0.669	0.67	0.98	7.9	1/4" NPT
GOW06	7.6	5.8	5.71	F07.F10	F07.F10	2.80	6.9	0.35	0.43	M8↓0.47	M10↓0.59	-	0.866	1.063	0.87	1.18	7.9	1/4" NPT
GOW09	7.6	5.8	5.71	F07.F10	F07.F10.F12	2.80	7.0	0.35	0.43	M8↓0.47	M10↓0.59	M12↓0.71	1.063	1.063	1.10	1.18	9.8	1/4" NPT
GOW12	7.6	5.8	5.71	F07.F10	F07.F10.F12	2.80	7.1	0.35	0.43	M8↓0.47	M10↓0.59	M12↓0.71	1.063	1.063	1.10	1.18	11.8	1/4" NPT
GOW16	10.2	7.7	7.54	F10.F12	F10.F12	4.23	10.6	0.43	0.51	M10↓0.59	M12↓0.71	-	1.417	1.417	1.34	1.57	13.8	1/4" NPT
GOW20	10.2	7.7	7.54	F10.F12	F10.F12	4.23	10.7	0.43	0.51	M10↓0.59	M12↓0.71	-	1.417	1.417	1.34	1.57	15.7	1/4" NPT
GOW33	13.1	10.0	7.13	F12.F16	F12.F16	4.84	10.7	0.87	0.87	M12↓0.71	M20 ↓ 1.18	-	1.811	1.811	1.77	6.93	23.6	1/4" NPT
GOW40	13.1	10.0	7.13	F12.F16	F12.F16	4.84	10.8	0.87	0.87	M12↓0.71	M20 ↓ 1.18	-	1.811	1.811	1.77	6.93	23.6	1/4" NPT
GOW70	15.3	11.7	9.80	F16.F25	F16.F25	6.14	16.5	0.87	8x0.51	M20 ↓ 1.18	8xM16 ↓ 0.94	-	1.811	1.811	1.77	7.72	19.7	1/2" NPT

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