

REV	ECO	Release	Drawn	REVISION HISTORY
-0	2022-033	2022-11-07	SGO	Customer Drawing - MH "3G" Regulator Family

**MH "3G" Regulator Family  
Single-Stage, NO-Gauge Regulators  
— Configuration Matrix —**

Inlet	Outlet	Series	Output	Model #	Weight Oz [g]	MH p/n (N/A = Not Assigned)
CGA-540N	4mm Tube	XCR	Std	310-004	3.0 [84]	00REG-1033-01
	6mm Tube	EOS	Std	310-006	3.0 [85]	00REG-1052-01
	6mm Tube	HP/HF	HP/HF	310-006H	3.0 [86]	00REG-1090-03
	Radial CPC	XCP	Std	310-010	3.6 [102]	00REG-1004-01
	Quad Axial CPC	FPR	Std	310-014	5.8 [164]	00REG-1018-02
DIN-477-9N	4mm Tube	XCR	Std	310-104	3.2 [92]	00REG-1034-02
	6mm Tube	EOS	Std	310-106	3.3 [93]	N/A
	6mm Tube	HP/HF	HP/HF	310-106H	3.3 [94]	00REG-1089-01
	Radial CPC	XCP	Std	310-110	3.9 [110]	N/A
	Quad Axial CPC	FPR	Std	310-114	6.1 [172]	N/A
SAE-4M	4mm Tube	XCR	Std	310-204	2.2 [62]	N/A
	6mm Tube	SVC	Std	310-206	2.2 [63]	ARGX2-0101-01
	6mm Tube	HP/HF	HP/HF	310-206H	2.3 [64]	00REG-1091-01
	Radial CPC	XCP	Std	310-210	2.8 [80]	N/A
	Quad Axial CPC	FPR	Std	310-214	5.0 [142]	N/A

**GENERAL SPECIFICATIONS**

Materials: UNS C36000 (CDA-360) Brass  
UNS A96061 (6061-T6) Aluminum

Inlet Pressure Rating: 3000 PSI MAX

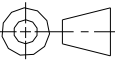
Standard (EDS) Output: 16 ± 2 PSI (Dynamic) (NOM 1 Bar)  
20 ± 2 PSI (Static)  
50 L/min (Average Open Flow Rate)

HP/HF Output: (per customer specifications)

Temperature Range: -50°F to +130°F [-45°C to +55°C]

Inlet Style: (see table)  
Outlet Style: (see table)  
Weight: (see table)  
Dimensions: (see Sheet 3) [Dimensions]

Spare O-rings:  
CGA-540N (310-0xx): MH p/n 09001-0011-90  
DIN-477-9N (310-1xx): MH p/n 09001-3113-70

<small>UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. DIMENSIONS IN [ ] ARE MILLIMETERS (REF)</small> <small>TOLERANCES ARE: 0.X ±.015 ANGLES ±3° 0.XX ±.010 FRACTIONS ±1/64 0.XXX ±.005</small> <small>INTERPRET GD&amp;T PER ASME 14.5</small>	<b>MH MOUNTAIN HIGH E&amp;S CO. REDMOND, OR. USA</b>	
	<small>THIS DOCUMENT AND ALL TECHNICAL DATA HEREON DISCLOSED ARE PROPERTY OF MOUNTAIN HIGH E&amp;S CO. AND SHALL NOT BE USED, RELEASED OR DISCLOSED IN WHOLE OR PART WITHOUT WRITTEN PERMISSION FROM MOUNTAIN HIGH E&amp;S CO. THIS DOCUMENT MUST BE RETURNED TO MOUNTAIN HIGH E&amp;S CO. IMMEDIATELY UPON REQUEST.</small>	
	<b>MH "3G" Regulators, Single-Stage, NO-Gauge, Customer Drawing [SCD]</b>	
	<small>DWG TITLE</small> <b>5SREG-310-xxx</b>	<small>DWG REV.</small> <b>-0</b>
<small>THIRD ANGLE PROJECTION</small>  <small>DO NOT SCALE DRAWING</small>	<small>DRAWN</small> SGO 2022-09-28 <small>CHECKED</small> EAM 2022-11-04 <small>ENGINEER</small> JB 2022-11-04 <small>APPROVED</small> HBS 2022-11-07	<small>DWG NUMBER</small> <b>5SREG-310-xxx</b> <small>SRC FILE</small> 00REG-310-xxx\$-0 <small>INV. PART NUMBER</small> (SEE TABLE) <small>PROD. NAME</small>
<small>DWG FORMAT:</small> ESR-002 Rev H [27] <small>DWG SCALE</small>		<small>DWG SHEET</small> 1 OF 5 <small>DWG SIZE</small> A 8½x11

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MH "3G" Regulator Family  
Single-Stage, NO-Gauge Regulators  
— Model Number Format —

**Model #**

**3 1 0 - x x x**

**"Family" Prefix**

3: "3G" Regulator Family

"3G"

**Type**

1: Single-Stage  
2: Two-Stage

Single-Stage

**Gauge Option**

0: NO Gauge  
1: With Gauge

NO-Gauge

**Inlet Option**

0: CGA-540N  
1: DIN-477-9N  
2: SAE-4M

**Outlet Option**

04: 4mm Tube (XCR) Axial BSPP  
06: 6mm Tube (EOS) Axial BSPP  
10: CPC (XCP) Radial NPT  
14: Quad CPC (FPR) Axial (Built-in)

**Output Option**

<blank> Standard (EDS) Output  
H: High-Pressure/High-Flow (HP/HF) Output

Refer to **Product Insert** documents below for additional information specific to individual regulator models.

<u>Model #</u>	<u>Insert #</u>	<u>Inlet Option</u>	<u>Outlet Option</u>	<u>Output</u>
310-004	5IREG-1033-01	CGA-540N	4mm Axial Tube (XCR)	Standard
310-006	5IREG-1052-01	CGA-540N	6mm Axial Tube (EOS)	Standard
310-006H	5IREG-1090-03	CGA-540N	6mm Axial Tube (HP/HF)	HP/HF
310-010	5IREG-1004-01	CGA-540N	Radial CPC (XCP)	Standard
310-014	5IREG-1018-02	CGA-540N	Quad Axial CPC (FPR)	Standard
310-104	5IREG-1034-02	DIN-477-9N	6mm Axial Tube (XCR)	Standard
310-106	5IREG-3101-06	DIN-477-9N	6mm Axial Tube (EOS)	Standard
310-106H	5IREG-1089-01	DIN-477-9N	6mm Axial Tube (HP/HF)	HP/HF
310-110	5IREG-3101-10	DIN-477-9N	Radial CPC (XCP)	Standard
310-114	5IREG-3101-14	DIN-477-9N	Quad Axial CPC (FPR)	Standard
310-204	5IREG-3102-04	SAE-4M	4mm Axial Tube (XCR)	Standard
310-206	5IREG-0101-01	SAE-4M	6mm Axial Tube (EOS)	Standard
310-206H	5IREG-1091-01	SAE-4M	6mm Axial Tube (HP/HF)	HP/HF
310-210	5IREG-3102-10	SAE-4M	Radial CPC (XCP)	Standard
310-214	5IREG-3102-14	SAE-4M	Quad Axial CPC (FPR)	Standard

DWG  
NUMBER

**5SREG-310-xxx**

DWG  
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DWG  
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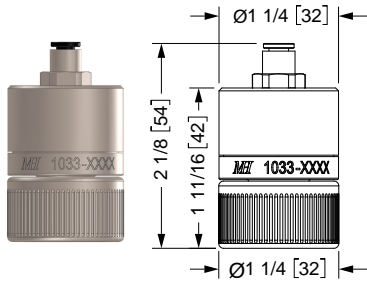
# Overall Dimensions - MH "3G" Regulator Family - Single-Stage, NO-Gauge Regulators

1  
310-0xx (CGA-540N)

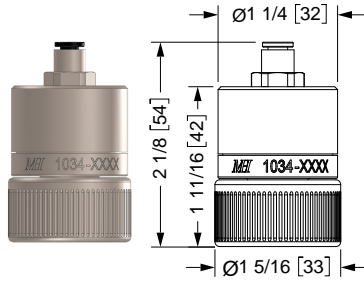
2  
310-1xx (DIN-477-9N)

3  
310-2xx (SAE-4M)

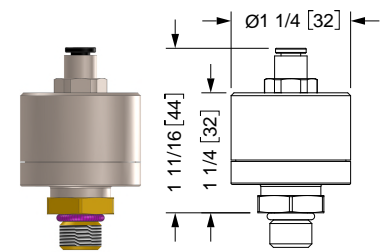
-x04 (4mm Axial Tube Outlet)



Model 310-004  
p/n 00REG-1033-01

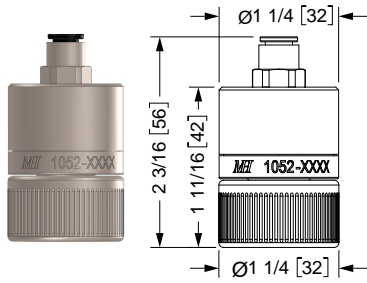


Model 310-104  
p/n 00REG-1034-02

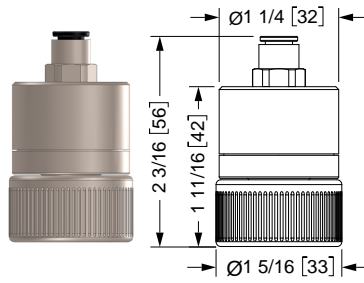


Model 310-204  
p/n (N/A)

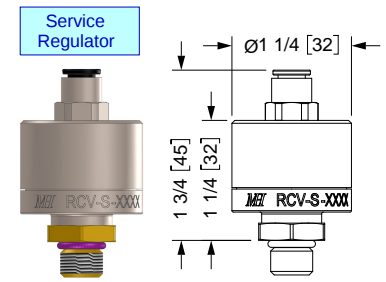
-x06 (6mm Axial Tube Outlet)



Model 310-006  
p/n 00REG-1052-01  
Model 310-006H (HP/HF)  
p/n 00REG-1090-03

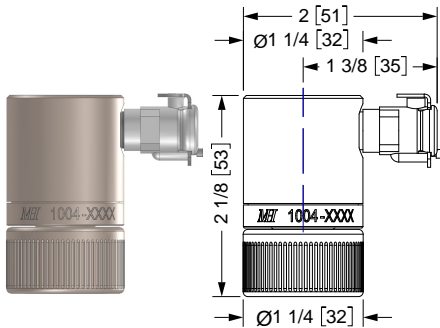


Model 310-106  
p/n (N/A)  
Model 310-106H (HP/HF)  
p/n 00REG-1089-01

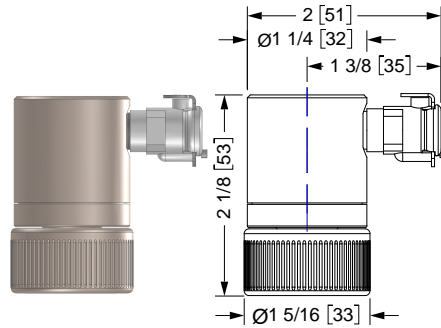


Model 310-206  
p/n ARGX2-0101-01  
Model 310-206H (HP/HF)  
p/n 00REG-1091-01

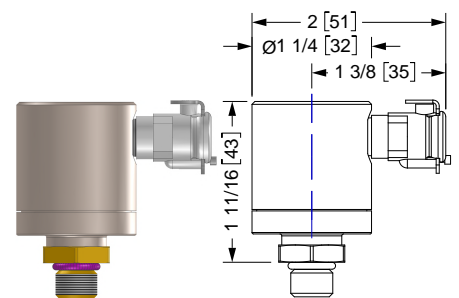
-x10 (Radial CPC Outlet)



Model 310-010  
p/n 00REG-1004-01

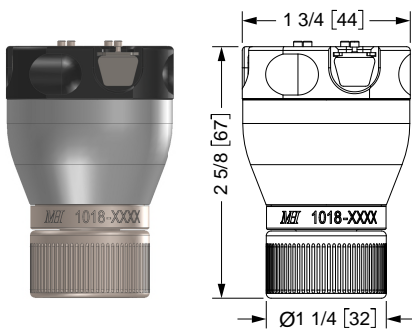


Model 310-110  
p/n (N/A)

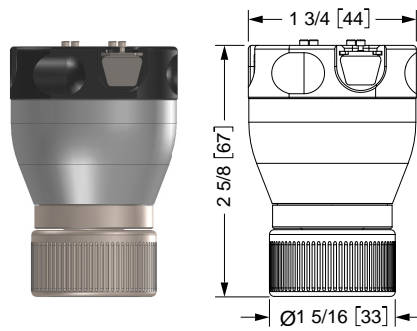


Model 310-210  
p/n (N/A)

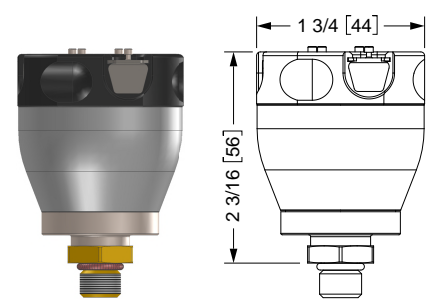
-x14 (Quad Axial CPC Outlets)



Model 310-014  
p/n 00REG-1018-02



Model 310-114  
p/n (N/A)



Model 310-214  
p/n (N/A)

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**5SREG-310-xxx**

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# MH "3G" Regulators - Assembly and Parts List

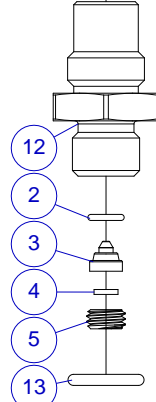
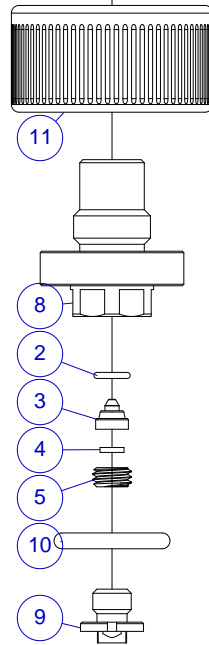
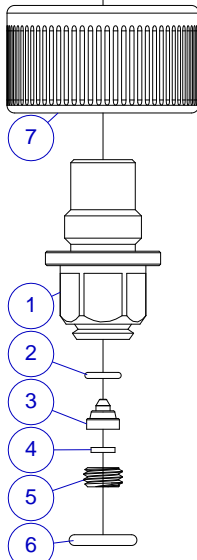
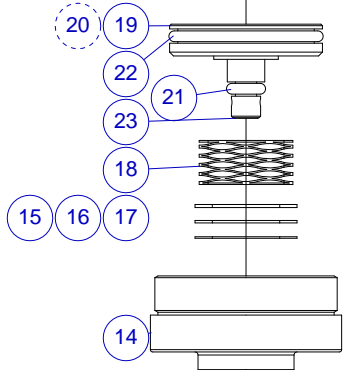
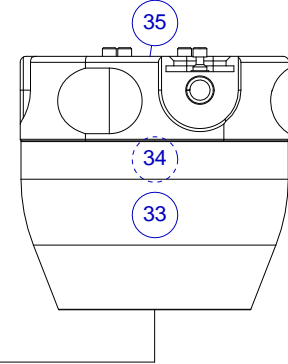
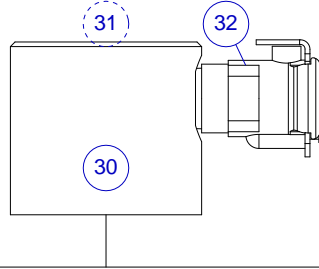
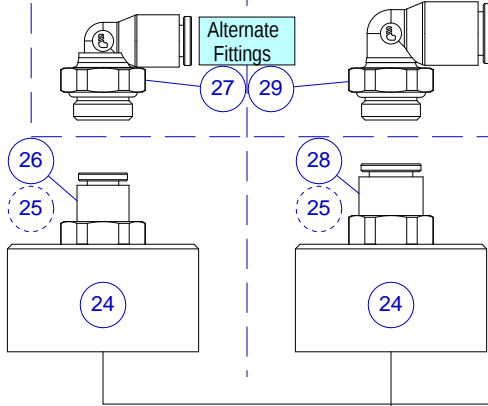
## Outlet Options

-x04 (XCR)  
4mm Tube Outlet

-x06 (EOS)  
6mm Tube Outlet

-x10 (XCP)  
Radial CPC Outlet

-x14 (FPR)  
Quad Axial CPC Outlets



-0xx (CGA-540N)

-1xx (DIN-477-9N)

-2xx (SAE-4M)

## Inlet Options

Item	Description
1	Inlet Nipple, CGA-540N
2	O-Ring
3	Inlet Seat
4	Filter Disc
5	Setscrew
6	O-Ring
7	Grip-Nut, CGA-540
8	Inlet Nipple, DIN-477-9N
9	DIN Adapter Tip
10	O-Ring
11	Grip-Nut, DIN-477
12	Inlet Nipple, SAE-4M
13	O-Ring (AS-568-904, SAE-4)
14	Inlet Body
15	Shim, .010
16	Shim, .016
17	Shim, .020
18	Spring
19	Piston
20	Diffuser
21	O-Ring
22	O-Ring
23	Puck
24	Outlet Body, Axial
25	Label
26	Outlet Fitting, 4mm tube, Axial
27	Outlet Fitting, 4mm tube, 90° Elbow
28	Outlet Fitting, 6mm tube, Axial
29	Outlet Fitting, 6mm tube, 90° Elbow
30	Outlet Body, Radial
31	Label
32	CPC Coupling
33	Center Body, 4-place
34	O-Ring
35	FPR Outlet Cap Assy

DWG NUMBER

**5SREG-310-xxx**

DWG REV. **-0**

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**Notes**

See **Product Insert** documents referenced on Sheet 2 for additional information specific to individual regulator models.

MH "3G" Regulators

The MH 3G Regulator Family is the latest iteration in the constant evolution of our oxygen regulator products. While the 3G Regulators may *look* exactly like previous MH regulators, the internal components have been re-designed to provide better performance, longer service life, and greater versatility. The improved performance and service life is particularly evident in the case of higher inlet (cylinder) pressures (up to 3000 psi, 207 bar) as is more common outside of North America.

High-Pressure/High-Flow (HP/HF) Regulators

"Standard" output MH Regulators are calibrated specifically for compatibility with the MH family of EDS Pulse-Demand™ oxygen delivery systems (or MH constant-flow systems with MH-3 or MH-4 Flowmeters). For custom installations with different output requirements, MH can provide 3G Regulators in a special HP/HF configuration. Contact MH Customer Service to discuss your particular requirements.

HP/HF regulators are nominally offered in the EOS configuration with a 6mm tube outlet fitting. Contact MH Customer Service to request a special order for a different outlet configuration.

Note that dimensions of HP/HF configurations are identical (and weights virtually identical) to their "base" configuration counterparts (e.g., "-006H" vs "-006").

Unimplemented Configurations

The MH 3G Regulator design is extremely versatile and can potentially be configured in any combination of (at this time) 3 Inlet Connection standards and 4 Outlet Connection configurations. While this document describes *all* of these potential inlet/outlet combinations, not all are currently available and are indicated as "N/A" ("Not Assigned") in the **MH p/n** column in the Configuration Matrix Table on Sheet 1. However, *any* configuration may be requested as a special order. Contact MH Customer Service to discuss your particular requirements.

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**5SREG-310-xxx**

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