

Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
P.O. Box 16620
Little Rock, AR 72231
Phone 501-834-3320
Fax 501-834-5416

Date: 1/17/2024

Return Request: 1/27/2024

Project: Academies of Math & Science Little Rock

Supplier: Comfort Systems USA (Arkansas), Inc.

Manufacturer: Various

Submittal: Plumbing (Piping)

Submittal Number: 22 01 00-01

Drawing # and Installation: Plumbing Drawings

ARCHITECT

Lewis Architects Engineers
11225 Huron Lane, Suite 104
Little Rock, AR 72211
501-223-9302

ENGINEER

Lewis Architects Engineers
11225 Huron Lane, Suite 104
Little Rock, AR 72211
501-223-9302

GENERAL CONTRACTOR

Clark Contractors
15825 Cantrell Rd.
Little Rock, AR 72223
501-223-9302

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.
9924 Landers Rd.
N. Little Rock, AR 72117
501-834-3320

Notes:

CSUSA PROJECT NO.

23-1028

jon@comfortar.com

9924 Landers Rd.
No. Little Rock, AR 72117

Pipe Valve & Fitting Schedule - Academies of Math & Science (Plumbing)				
System	Spec Section	Pipe	Fittings	Joint
Sanitary Sewer & Vent Piping - Above Grade	22 01 00; 2.1.1	Schedule 40 PVC DWV; ASTM D2655	PVC DWV; ASTM D2655/ASTM D3311	Solvent Weld (Glue & Primer); ASTM D2564
Sanitary Sewer & Vent Piping - Below Grade	22 01 00; 2.1.1	Schedule 40 PVC DWV; ASTM D2655	PVC DWV; ASTM D2655/ASTM D3311	Solvent Weld (Glue & Primer); ASTM D2564
Grease Waste Piping - Above Grade	22 01 00; 2.1.2	TYLER DURA IRON EPOXY COATED NHCI	TYLER DURA IRON EPOXY COATED NHCI	Standard Hubless Band; ASTM C1277/CISPI 310
Grease Waste Piping - Below Grade	22 01 00; 2.1.2	TYLER DURA IRON EPOXY COATED SVCI	TYLER DURA IRON EPOXY COATED SVCI	Neoprene Gasket; ASTM C564
Domestic Water Piping - Above Grade	22 01 00; 2.1.3	Type L Hard Copper; ASTM B88	Wrought Copper; ASME B.16.22	Lead-Free Solder; ASTM B32
Domestic Water Piping - Below Grade	22 01 00; 2.1.3	Type K Hard Copper; ASTM B42	Wrought Copper; ASME B.16.22	Silfos; AWS A5.8 BCuP
Below Grade Sewer Service - Non-Grease Waste (Beyond 5')	22 01 00; 2.1.4	SDR-26 Gasketed Sewer Piping; ASTM D2412	SDR-26 Gasketed Fittings; ASTM D2412; D2152	Gasket
Storm/Roof Drain Piping - Above Grade	22 01 00; 2.1.5	Hubless Cast Iron; ASTM A888/CISPI 301	Hubless Cast Iron; ASTM A888/CISPI 301	Standard Hubless Band; ASTM C1277/CISPI 310
Storm/Roof Drain Piping - Below Grade	22 01 00; 2.1.5	Schedule 40 PVC DWV; ASTM D2655	PVC DWV; ASTM D2655/ASTM D3311	Solvent Weld (Glue & Primer); ASTM D2564
HVAC Condensate Piping - Above Grade	22 01 00; 2.1.7	Schedule 40 PVC DWV; ASTM D2655	PVC DWV; ASTM D2655/ASTM D3311	Solvent Weld (Glue & Primer); ASTM D2564
Exterior Water Service Piping	22 01 00; 2.1.8	SDR-21 Gasketed Water Piping	SDR-21 Gasketed Fittings	Gasket
Natural Gas 2" & Below - Above Grade	22 01 00; 2.1.9	Schedule 40 Steel; ASTM A53/A53M	Schedule 40 Malleable Iron; ASME B16.3/ASTM A234	Threaded (2" & Smaller)
Natural Gas - Below Grade	22 01 00; 2.1.9	PE Pipe (SDR-11); ASTM D2513	PE Fittings; ASTM D2683	Butt Fusion



ENHANCED EPOXY COATED CAST IRON PIPE & FITTINGS FOR AGGRESSIVE APPLICATIONS



DuRa Pipe™ is an enhanced epoxy coating applied to cast iron soil pipe and fittings made in the U.S.A. DuRaPipe™ is well-suited for aggressive DWV applications where greater performance is required. This is not an equivalent or viable option for acid waste pipe.

Standard cast iron pipe and fittings perform exceptionally well in most applications. However, the DuRa Pipe™ enhanced epoxy coated cast iron solution offers significant advantages for aggressive applications.

- Commercial Kitchens
- Hospitals and Medical Office Buildings
- Casinos
- Soda Fountains
- Seasonal Occupancy Buildings
- Any area with exposure to chemicals from pH 2 to pH 12

DuRa Pipe™ enhanced epoxy coating begins with the same high quality cast iron pipe we have always made. However, instead of being dipped in an asphalt coating, the pipe is coated inside and out with a two-component, solvent free, epoxy that provides additional protection against corrosive environments.

Fittings are fully coated with a fusion bonded epoxy that provides the same additional protection against corrosive environments. DuRa Pipe™ is available in ranges from 2" to 15" No-Hub and Hub & Spigot (Service Weight) in 10' lengths.

These products conform to ASTM A 74, ASTM A 888, CISPI 301 standards. It is certified by NSF International complying with performance and quality requirements of all standards.

For Installation guide, please reference the following:

<https://www.tylerpipe.com/resources/technical-data/installation-guides/>

Where an on-site coating of the cut edges is desired or specified, it is recommended to use PPG Multi-Prime 4160 or Fast Dry 4180. In areas where a low VOC is required, we recommend PPG Amerlock 2. Follow the instructions on the data sheets provided in the links below.

Multi-Prime 4160:

<https://www.ppgpmc.com/products/MULTIPRIME-4160>

Fast Dry 4180:

<https://www.ppgpmc.com/products/FAST-DRY-4180>

Amerlock 2:

<https://www.ppgpmc.com/products/amerlock-2-sigma-cover-2>

SPECIFICATIONS

- DuRa Pipe™ coated pipe and fittings shall conform to the requirements of CISPI Standard 301, ASTM A888 and ASTM A74, and be coated with a suitable epoxy coating. Pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute and be listed by NSF International.

- Each pipe and fitting shall be plainly marked with date of manufacture (pipe only), country of origin, and name of manufacture or manufacturer's registered trademark by which the manufacturer can be readily identified after installation.



MULTIPRIME 4160

DESCRIPTION

One-component, multi-purpose tank and structural primer

PRINCIPAL CHARACTERISTICS

- Rust Inhibitive interior/exterior alkyd primer
- Ideal for structural steel, tank exteriors, piping and equipment
- May be topcoated on ferrous metal with epoxy and polyurethane coatings as well as conventional alkyds and latex products
- Fast drying properties
- Lead and chromate free

COLOR AND GLOSS LEVEL

- Gray, White, Red
- Flat

BASIC DATA AT 68°F (20°C)

Data for product	
Number of components	One
Volume solids	51 ± 2%
VOC (Supplied)	max. 3.5 lb/US gal (approx. 418 g/l)
Recommended dry film thickness	2.0 - 2.5 mils (50 - 64 µm) depending on system
Theoretical spreading rate	409 ft ² /US gal for 2.0 mils (10.2 m ² /l for 50 µm)
Shelf life	At least 36 months when stored cool and dry

Notes:

- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Coating performance is, in general, proportional to the degree of surface preparation

Steel

- Remove all rust, dirt, moisture, grease or other contaminants from the surface
- Abrasive blast cleaning to SSPC SP-6 standards will give optimum performance
- Where abrasive blasting is not practical, power tool cleaning in accordance with SSPC SP-3 or hand tool cleaning to SSPC SP-2 requirements is acceptable



MULTIPRIME 4160

Galvanizing

- Degrease to SSPC SP-1 and remove any white corrosion products by hand abrasion
- Galvanizing that has had at least 12 months of exterior weathering may be coated after power washing to remove all contaminants and white rust

Substrate temperature and application conditions

- Surface temperature during application should be between 50°F (10°C) and 120°F (49°C)
- Surface temperature during application should be at least 5°F (3°C) above dew point
- Relative humidity during application and curing should not exceed 85%

Warning

Removal of old paint by sanding, scraping or other means may generate dust or fumes which contain lead. EXPOSURE TO LEAD DUST OR FUMES MAY CAUSE ADVERSE HEALTH EFFECTS, ESPECIALLY IN CHILDREN OR PREGNANT WOMEN. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted and approved (e.g., NIOSH approved) respirator and proper containment and cleanup. For additional information, contact the USEPA/Lead Information Hotline at 1-800-424-LEAD or the regional Health Canada office

SYSTEM SPECIFICATION

- Primers: Direct to metal
- Topcoats: HPC RUST PREVENTATIVE ALKYD 4306, HPC INDUSTRIAL ALKYD 4308, HPC INDUSTRIAL ALKYD 4308H, PITT-TECH PLUS 4216 HP, UNI-GRIP 4380, UNI-GRIP 4382, consult PPG Technical Sales for additional options

Note: Consult your sales representative for additional topcoat offerings

INSTRUCTIONS FOR USE

- Inspect the top surface and remove any “skins” that may have formed on top
- Agitate with a power mixer for 1 – 2 minutes until completely dispersed. Ensure good off-bottom mixing

Application

- Area should be sheltered from airborne particulates and pollutants
- Ensure good ventilation during application and curing
- Provide shelter to prevent wind from affecting spray patterns

Air spray

- Separate air and fluid pressure regulators and a moisture and oil trap in the main air supply line are recommended.

Recommended thinner

No thinner should be added

Nozzle orifice

Approx. 0.070 in (1.8 mm)



MULTIPRIME 4160

Airless spray

- 30:1 pump or larger
- Adjust pump pressure as needed

Recommended thinner

No thinner should be added

Nozzle orifice

0.015 – 0.017 in (approx. 0.38 – 0.43 mm)

Note: Adjust pump pressure as needed

Brush/roller

- Use a high quality polyester/nylon brush and/or a high quality 3/8" nap roller. In hot or dry conditions, layoff lightly rolling with 3/8" nap roller cover. Multiple coats may be required to achieve specified film thickness

Recommended thinner

No thinner should be added

Cleaning solvent

Paint Thinner (laquer thinner/mineral spirits) or PPG Thinner 21-06/65 Thinner

ADDITIONAL DATA

Overcoating interval for DFT up to 2.0 mils (51 µm)		
Overcoating with...	Interval	77°F (25°C)
itself	Minimum	2 hours
	Maximum	Extended

Notes:

- Overcoating times valid for a relative humidity of 50%
- Drying times may vary depending on temperature, humidity, and air movement

Curing time for DFT up to 2.0 mils (51 µm)		
Substrate temperature	Dry to touch	Dry hard
70°F (21°C)	20 minutes	1 hour

Note: Curing times valid for a relative humidity of 50%

MULTIPRIME 4160

Product Qualifications

- Meets MPI Category #23, Primer, Metal, Surface Tolerant
- Meets MPI Category #76, Primer, Alkyd, Quick Dry, for Metal
- Meets MPI category #79, Primer, alkyd, Anti-Corrosive for metal

DISCLAIMER

- For professional use only. Not for household use

SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets

Danger

Rags, steel wool or waste soaked with this product may spontaneously catch fire if improperly discarded. Immediately after use, place rags, steel wool or waste in a sealed water-filled metal container. Refer to www.pittsburghpaints.com, Spontaneous Combustion Advisory for additional information

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective and Marine Coatings to supply the same product on a worldwide basis. However, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

REFERENCES

• CONVERSION TABLES	INFORMATION SHEET	1410
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411
• SAFETY INDICATIONS	INFORMATION SHEET	1430
• SAFETY IN CONFINED SPACES AND HEALTH SAFETY, EXPLOSION HAZARD – TOXIC HAZARD	INFORMATION SHEET	1431

WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product. THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

MULTIPRIME 4160

LIMITATIONS OF LIABILITY

IN NO EVENT WILL PPG BE LIABLE UNDER ANY THEORY OF RECOVERY (WHETHER BASED ON NEGLIGENCE OF ANY KIND, STRICT LIABILITY OR TORT) FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO, ARISING FROM, OR RESULTING FROM ANY USE MADE OF THE PRODUCT. The information in this sheet is intended for guidance only and is based upon laboratory tests that PPG believes to be reliable. PPG may modify the information contained herein at any time as a result of practical experience and continuous product development. All recommendations or suggestions relating to the use of the PPG product, whether in technical documentation, or in response to a specific inquiry, or otherwise, are based on data, which to the best of PPG's knowledge, is reliable. The product and related information is designed for users having the requisite knowledge and industrial skills in the industry and it is the end-user's responsibility to determine the suitability of the product for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk. PPG has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, PPG does not accept any liability arising from any loss, injury or damage resulting from such use or the contents of this information (unless there are written agreements stating otherwise). Variations in the application environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results. This sheet supersedes all previous versions and it is the Buyer's responsibility to ensure that this information is current prior to using the product. Current sheets for all PPG Protective & Marine Coatings Products are maintained at www.ppgpmc.com. The English text of this sheet shall prevail over any translation thereof.

AVAILABILITY

Packaging

1-gallon and 5-gallon containers





NGR02 Series

PRESSURE REDUCING REGULATORS
for Residential, Commercial or Industrial Applications



The NGR02 Series spring loaded gas regulators with internal relief provide consistent and controlled pressure in a variety of residential, industrial and commercial applications. The NGR02 is fully certified to ANSI Z21.80/CSA 6.22 for Class I, Class II, Vent Limiting and OPD (Overpressure Protection Device) applications and are designed to be used in many applications where non-corrosive dry gases are used.

FEATURES

- **ANSI Z21.80/CSA 6.22 CERTIFIED**
- Vent Limiting Option
- Internal Relief - OPD
- Outlet pressures up to 5 psig
- Conforms to ANSI B109.4
- Corrosion resistant exterior
- Inlet pressure tap standard

SPECIFICATIONS

Pipe Sizes:	1/2" to 1-1/4" NPT
Gas Types:	Natural Gas, LPG, other non-corrosive dry gases
Maximum Inlet Pressure:	10 to 125 psig per Orifice
Outlet Pressure Range:	2" w.c. to 5 psig
Maximum Emergency Inlet Pressure:	175 psig
Operating Temp:	-40F - +140F
Materials:	Housing: Epoxy Coated Aluminum Valve Body: Cast Iron Diaphragm/Valve Seat: Buna N Orifice: High Strength Brass

NGR02 Series PRESSURE REDUCING REGULATORS

7" w.c. Set Point - 1" Pressure Drop

Inlet Pressure	ORIFICE				
	1/8"	3/16"	1/4"	3/8"	1/2"
0.5	117	101	169	203	242
1	136	148	210	260	571
2	221	210	296	377	1039
3	234	257	460	468	1429
5	292	351	649	1169	1558
10	338	545	1091	1748	1740
15	390	701	1481	2104	
20	491	818	1870	2403	
30	619	1286	2571		
40	717	2260	3251		
50	805	2494	3636		
60	997	2571	4052		
80	1403	3696			
100	1675	4595			
125	1850	4812			

Green S02A and 1" VB used to develop table

14" w.c. Set Point - 2" Pressure Drop

Inlet Pressure	ORIFICE				
	1/8"	3/16"	1/4"	3/8"	1/2"
0.5					
1	156	94	187	285	584
2	182	156	292	325	1143
3	265	195	374	792	1688
5	335	234	592	1562	2013
10	386	390	1083	1792	2338
15	530	545	1535	2208	
20	600	623	2049	2338	
30	753	1558	2766		
40	922	2338	3384		
50	1052	2435	3701		
60	1183	2571	3896		
80	1403	3790			
100	1753	4749			
125	1900	5214			

Silver S02B and 1" VB used to develop table

1 psig Set Point - 20% Pressure Drop

Inlet Pressure	ORIFICE				
	1/8"	3/16"	1/4"	3/8"	1/2"
0.5					
1					
2	195	195	273	468	623
3	218	234	312	623	1013
5	234	351	506	857	1714
10	358	545	779	1870	3117
15	468	740	1091	2727	
20	545	857	1636	3429	
30	701	1247	2727		
40	584	2260	3740		
50	701	2338	4519		
60	779	2649	5143		
80	1558	3671			
100	2104	4570			
125	2250	5210			

Silver S02B and 1" VB used to develop table

2 psig Set Point - 20% Pressure Drop

Inlet Pressure	ORIFICE				
	1/8"	3/16"	1/4"	3/8"	1/2"
0.5					
1					
2					
3	187	179	234	351	429
5	265	257	390	545	1091
10	358	390	623	1169	2104
15	468	545	935	1714	
20	545	701	1403	2416	
30	701	935	2026		
40	1013	2026	3117		
50	1052	2182	3662		
60	1130	2260	4442		
80	1661	3271			
100	2150	4110			
125	2381	5170			

Yellow S02D and 1" VB used to develop table

5 psig Set Point (HP) - 20% Pressure Drop

Inlet Pressure	ORIFICE				
	1/8"	3/16"	1/4"	3/8"	1/2"
0.5					
1					
2					
3					
5					
10	273	468	701	1714	2805
15	351	655	1169	2494	
20	390	779	1792	3039	
30	468	1481	2571		
40	584	2338	3662		
50	662	2455	4364		
60	825	2494	5065		
80	1350	3752			
100	1467	4673			
125	1596	5794			

White (HP) S0204E and 1" VB used to develop table

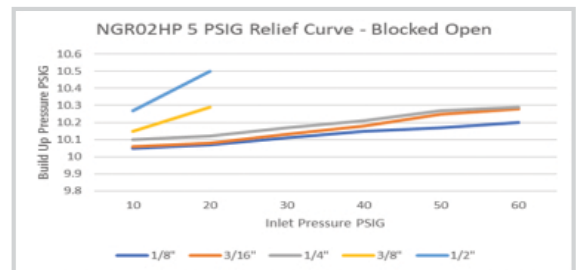
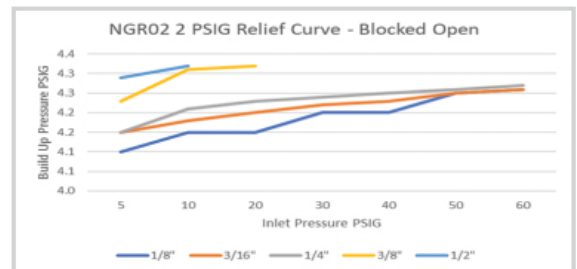
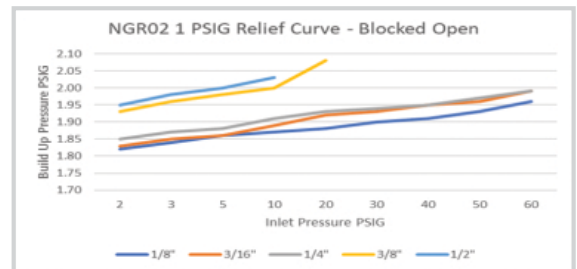
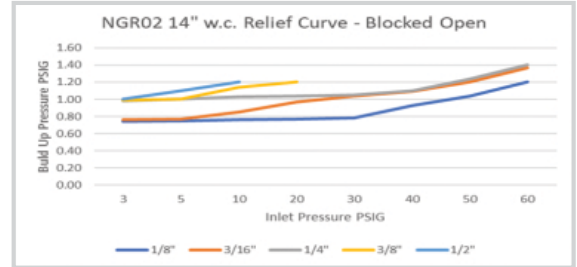
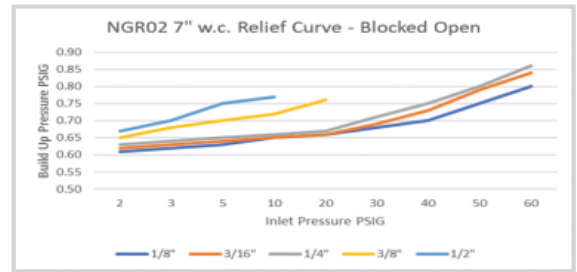
Flow capacities in SCFH of 0.60 specific gravity gas @ 60° F and 14.7 psia.
Individual results may vary.

Orifice Max Pressure

Size	Max Inlet Pressure	P/N
1/8"	125 psig	F02A
3/16"	125 psig	F02E
1/4"	60 psig	F02B
3/8"	20 psig	F02C
1/2"	10 psig	F02D

Spring Chart

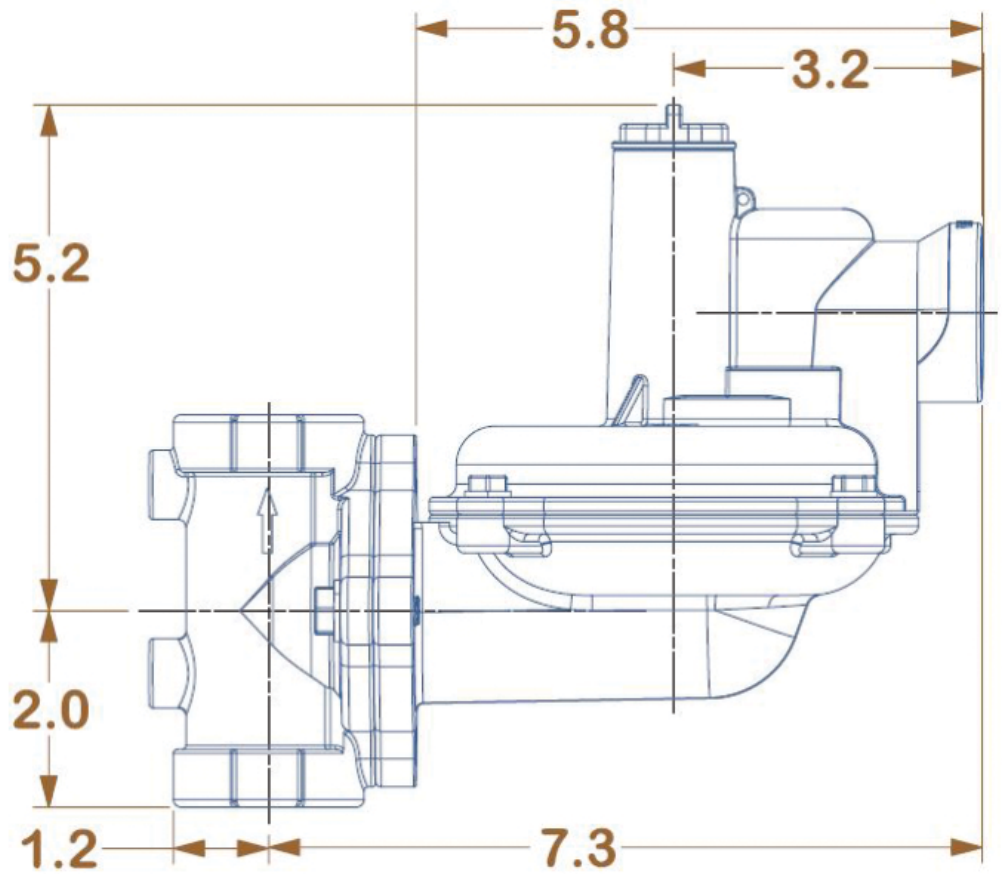
Color	Outlet Range	P/N
Orange	2"wc - 7"wc	S02F
Green	6.5"wc - 16"wc	S02A
Silver	14"wc - 1psig	S02B
Yellow/Black	26"wc - 1.5psig	S02C
Yellow	1psig - 3psig	S02D
White (HP)	2psig - 5psig	S0204E



Blocked open relief curves developed using a 3/32" blockage across valve seat. Lever disconnect curves available upon request. Individual results may vary.

Gas Type	Specific Gravity	Correction Factor (CF)
Natural Gas	0.60	1.00
Propane	1.53	0.63
Air	1.00	0.77
Propane-Air-Mix	1.20	0.71
Nitrogen	0.97	0.79
Butane	2.01	0.55
Carbon Dioxide (Dry)	1.52	0.63
Carbon Monoxide (Dry)	0.97	0.79

Model	NGR02
Pipe Size	1/2", 3/4", 1", 1-1/4"
Vent (NPT)	1"
Wt. (lb)	3.75



DISTRIBUTED BY:



3321 Winbrook Drive
 Memphis, TN 38116

ph# 800-238-4405