

SERIES S1020 ELECTRONIC CYLINDER SCALE

The pressure of a liquefied gas remains constant as material is withdrawn as long as a liquid phase remains in the cylinder. When the liquid phase is exhausted the pressure drops very quickly and the cylinder empties without warning. This phenomenon renders a cylinder pressure gauge virtually useless. The only way to monitor the contents of a cylinder containing a liquefied gas is by weight.

The Series S1020 cylinder scales are designed to give a positive indication of the amount of product remaining in the cylinder. It allows the user to subtract the tare weight of the cylinder so that the net contents can be read directly. The built-in alarm may be set at any weight value from 0-150 pounds. Relay contacts are provided for activation of auxiliary alarms or other equipment during an alarm condition. A switch is provided to mute the audible signal if desired while correcting an alarm condition.

The scale is ruggedly constructed and features a stainless steel cover for durability. The low profile platform provides easy loading and unloading of cylinders without a ramp.

**APPLICATIONS**

Recommended for use with all liquefied gases such as carbon dioxide, ammonia, nitrous oxide, fluorocarbons, hydrogen sulfide, sulfur dioxide, propane and heavier hydrocarbon gases.

SPECIFICATIONS

Tare weight range	0-150 lbs
Net weight range	0-150 lbs
Total weight capacity	0-300 lbs
Alarm set point	0-150 lbs
Alarms	External alarms activated by a normally open relay, single pole, single throw, 10 amp.
Readout	3-1/2 segment red LED 1/2" numerals with 1 pound resolution
Accuracy	±0.5% of full scale
Platform dimension	model 1020 10.5" x 10.5" x 1.25" high model 1022 17" x 17" x 1.25" high
Readout/Controller Box dimensions	8" wide x 2.6" high x 7.75" deep
Electrical	Wall mounted power supply requires 110 VAC, 50-60 Hz electrical outlet. It is UL and CSA class 2 rated. Suitable for indoor use only. Power to scale platform is 5 volts, 50 ma max. Scale designed to meet intrinsically safe standards. Power supply to readout/controller cable length 6 feet Readout/controller to scale cable length - 8 feet

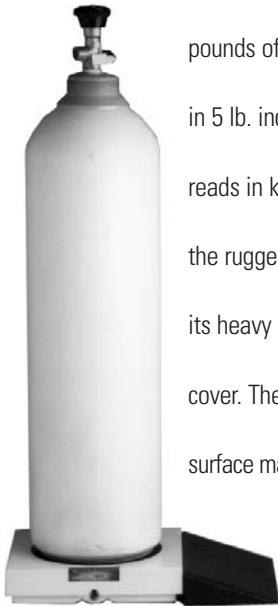
FEATURES

- Large LED readout
- Sturdy, low profile platform construction
- Stainless steel scale platform cover
- Built-in audible and visual alarms
- Relay contacts for activation of auxiliary alarms or equipment

PRODUCT CODE	DESCRIPTION
S1020	Scale and readout with 10.5 x 10.5" platform
S1022	Scale and readout with 17 x 17" platform

SERIES 794 CYLINDER SCALE

The 794 Series Scale provides an economical means to determine the amount of product remaining in liquefied gas cylinders. This is important for gases such as CO₂, N₂O, Cl₂, etc. ...as pressure does not decay in the cylinder as product is consumed. The unit has the capability to measure 120



pounds of tare weight and 140 pounds of product in 5 lb. increments. The color coded scale also reads in kilograms. The dial is built to withstand the rugged service for which it is intended with its heavy steel construction and stainless steel cover. The optional cylinder ramp with non-skid surface makes loading of cylinders easier and safer.

SPECIFICATIONS

Dimensions	10 3/4" x 10 1/4" x 2"
Resolution	5 lb. increments (1 lb. by estimation)
Capacity	260 lb

PRODUCT CODE	DESCRIPTION
S794-S	Series 794 Scale
S794-R	Non-skid Cylinder Ramp

SERIES 7954 PRESSURE MONITOR

The 7954 Series pressure monitor is used to monitor the contents of corrosive and non-corrosive non-liquefied gas cylinders, where cylinder pressure is proportional to the remaining contents. It can be mounted directly to the cylinder, or as a remote unit up to three hundred feet away from the cylinder location. A built in alarm will sound when a field adjustable pressure level is reached. The unit operates on a



single 9 volt battery and is capable of sounding the alarm continuously for up to four days. A push button battery tester is built into the unit for checking the battery condition.

SPECIFICATIONS

Maximum inlet pressure	4000 PSI
Temperature range	-25° to 125°F
Wetted parts	Brass or SS
Maximum flow	3000 SCFH
Delivery pressure range	0 - 150 PSI
Power supply	9 Volt Battery

PRODUCT CODE	INLET PRESSURE	DESCRIPTION	MATERIALS
			BRASS
S7954-BC	4000 PSI	Cylinder Mount	✓
S7954-BL	4000 PSI	Line Mount	✓
S7954-BR	4000 PSI	Remote Mount	✓

SERIES 501 BODY PURGE

Purge assemblies are designed for installation on high pressure regulator ports that incorporate a purge port such as our Series 300, and 320. They allow an inert gas to be flushed through the regulator before and after use to reduce corrosion.



PRODUCT CODE	MATERIAL
S501-S	316 SS
S501-M	Monel®

SERIES 503 CROSS PURGE

GTS' cross purge assemblies are designed for use in the semiconductor industry with such gases as arsine, phosphine, silane, chlorine, ammonia and hydrogen chloride. They minimize the danger of air or moisture contamination, or release of flammable or toxic gases during cylinder changes.



SPECIFICATIONS

Maximum working pressure	3000 PSI
Inboard leak rate	< 4x10 ⁻⁸ cc/sec (HE)
Operating temperature	-40°F to 250°F

MATERIALS

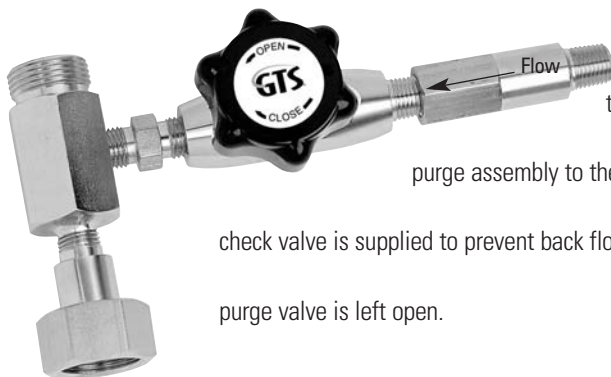
Body	316L SS
Seats/Seals	KEL-F®/Teflon®

PRODUCT CODE	DESCRIPTION
S503-1	1/4" NPT Ports, 1/4 Turn Valves
S503-2	1/4" Face Seal Ports
S503-3	1/4" NPT Ports, Multi Turn Valves

Caution: Do not vent hazardous gases into an occupied environment. Proper ventilation is necessary.

SERIES 502 TEE PURGE

The Tee Purge is designed to be used between the gas cylinder and pressure regulator. It provides a means to flush out atmospheric contamination after a cylinder changeout as well as enabling total system purge. A high purity diaphragm valve is used to connect the tee purge assembly to the purge source. A check valve is supplied to prevent back flow in the event the purge valve is left open.



SPECIFICATIONS

Maximum working pressure	3000 PSI
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MATERIALS

Body	316L SS Brass Monel®
Seats/Seals	KEL-F®/Teflon®

PRODUCT CODE	CGA	
	MATERIAL	OPTIONS
S502-S	316 SS	330, 660, 350, 510
S502-B	Brass	350, 510
S502-M	Monel®	330, 660, 350

This unit is available with the following CGA connections: 350, 330, 510 & 660. Please specify the desired CGA connection when ordering. Maximum operating pressure is 3000 PSI.

SERIES 540 316 SS FLEXIBLE HOSE

GTS' double braided flexible hoses are 100% stainless steel and are capable of working pressures up to 3000 PSIG (burst pressure 5000 PSIG). The inner diameter is 1/4" and 1/4" NPTF end connections are standard. They are available in 2 ft., 3 ft. or 6 ft. lengths from stock, but can be fabricated to fit custom requirements. These all metal hoses provide excellent diffusion and corrosion resistance, and are cleaned for oxygen service.



PRODUCT CODE	BRAID	WORKING	
		PRESSURE @ 70°F	LENGTH
S540-2	Double	3000	2 ft.
S540-3	Double	3000	3 ft.
S540-6	Double	3000	6 ft.
S540-X	Double	3000	Custom

Note: Armor covered hoses also available. Contact nearest GTS location. For cryogenic transfer hoses, please see page 242.

SERIES 304 SAMPLING CYLINDERS

These corrosion resistant, double-ended sampling cylinders are ideal for sampling and transporting any corrosive or non-corrosive gases or liquids that are compatible with stainless steel. They are made to DOT specifications having a pressure rating of 1800 PSI. They come standard with shut-off valves on each end.

PRODUCT CODE	CAPACITY	DIMENSIONS	NPT
		(INCHES)	CONN.
S304-1	75 ml	4.94 x 1-1/2	1/4"
S304-2	150 ml	5.25 x 1-1/2	1/4"
S304-3	300 ml	8.94 x 2	1/4"
S304-4	500 ml	13.75 x 2	1/4"
S304-5	1000 ml	10.88 x 3-1/2	1/4"



SERIES 796 FLASH ARRESTOR

The Series 796 is a practical and highly reliable dry type flash arrestor. Available in brass and stainless steel, it can be used on most flammable gases utilized in the laboratory.



It is highly recommended for use with AA grade acetylene.

FEATURES

- Prevents dangerous flashback
- Meets OSHA requirements
- Factory Mutual Approval
- Positive shut-off checks reverse flow under all conditions
- Also stops forward flow when flashback occurs
- Extinguishes any flame within the housing
- Can be reset and re-used after flashback
- No flow restriction under normal conditions

SPECIFICATIONS

Body	Brass/SS
Seat and O-Rings	butyl rubber
Internal Parts	brass and steel
Service Pressure	150 PSIG
Dimensions	2" diameter x 3 1/2" long
Weight	1.5 lbs
FM Approved	Oxygen to 150 PSIG
	Propane to 50 PSIG
	Hydrogen to 50 PSIG
	Acetylene 15 PSIG
	Natural gas 15 PSIG

PRODUCT CODE	INLET CONNECTION	OUTLET CONNECTION	MATERIALS	
			BRASS	SS
S796-B1	1/4" NPTF	1/4" NPTF	•	
S796-S1	1/4" NPTF	1/4" NPTF		•

*Optional tube fittings available (Refer to page 275, 276)

SERIES 798 N₂O/CO₂/LAR HEATER

The Series 798 heaters are designed to prevent freeze up and malfunctioning of regulators used with these gases, so that gas flow will be uninterrupted. The heating element is inside the block. A three wire extension cord is required, and the



heater should be turned on 5 to 10 minutes before the gas flow. The Model S798-3 is designed for liquid argon and is recommended for ICP and DCP.

Thermostatically controlled operation automatically cycles between 185°F-205°F. Safe handling is required.

SPECIFICATIONS

Maximum inlet pressure	3000 PSI
Voltage	115 VAC
Shipping weight	2 lbs.
Diameter	2"
Length	6"
Power consumption	150 watts 90 SCFH capacity

PRODUCT CODE	CGA INLET CONNECTION
S798-1	326 (N ₂ O)
S798-2	320 (CO ₂)
S798-3	580 (LAR)

SERIES 504 PRESSURE SWITCH

GTS' compact indicating pressure switch is a direct reading pressure gauge and precision switch in one unit. Made with solid state technology, this unit will provide years of trouble free service. All units are cleaned for oxygen service. A variety of pressure ranges are available ranging from vacuum to 3000 PSI. The indicating pressure switches include a red set point indicator to readily identify the adjusted trip point. Also standard is a red LED indicator that illuminates when the switch



has been tripped. The switches

are field adjustable and

can be set to trip on

ascending or descending

pressure. The switches

operate on low voltage and

meet NFPA 493 codes for intrinsic safety.

SPECIFICATIONS

Body	316 SS
Leak integrity	1.5 X 10 ⁻⁷ cc/sec.
Connections	1/4" NPTM or VCRF
Accuracy	+/- 1% full scale
Temperature	-20°F to 135°F

PRODUCT CODE	PRESSURE	
	RANGE	CONNECTION
S504-N1	30"-0-30 PSI	1/4" NPTM
S504-N2	30"-0-60 PSI	1/4" NPTM
S504-N3	0-200 PSI	1/4" NPTM
S504-N4	0-400 PSI	1/4" NPTM
S504-N5	0-1000 PSI	1/4" NPTM
S504-N6	0-3000 PSI	1/4" NPTM
S504-V1	30"-0-30 PSI	1/4" VCRF
S504-V2	30"-0-60 PSI	1/4" VCRF
S504-V3	0-200 PSI	1/4" VCRF
S504-V4	0-400 PSI	1/4" VCRF
S504-V5	0-1000 PSI	1/4" VCRF
S504-V6	0-3000 PSI	1/4" VCRF

SERIES 505 PRESSURE GAUGES

GTS offers a variety of gauges for laboratory and plant applications. The standard gauges listed are provided with a 1/4" NPT bottom mount connection. The chrome plated brass gauges are 2 1/2" in diameter with a full scale accuracy of +/- 3%. The stainless steel gauges are 2" in diameter with a full scale accuracy of +/- 1%. All gauges come with a dual scale. The major scale reads in PSIG while the minor scale reads in KPA.

PRODUCT CODE	PRESSURE	MATERIAL
	RANGE	
S505-B1	0-15 PSIG	Chrome Plated Brass
S505-B2	0-30 PSIG	Chrome Plated Brass
S505-B3	0-100 PSIG	Chrome Plated Brass
S505-B4	0-200 PSIG	Chrome Plated Brass
S505-B5	0-400 PSIG	Chrome Plated Brass
S505-B6	0-1000 PSIG	Chrome Plated Brass
S505-B7	0-4000 PSIG	Chrome Plated Brass
S505-S1	30-0-30 PSIG	Stainless Steel
S505-S2	30-0-100 PSIG	Stainless Steel
S505-S3	30-0-200 PSIG	Stainless Steel
S505-S4	0-200 PSIG	Stainless Steel
S505-S5	0-400 PSIG	Stainless Steel
S505-S6	0-1000 PSIG	Stainless Steel
S505-S7	0-4000 PSIG	Stainless Steel



SERIES 44 CHECK VALVES

The Series 44 check valves are designed to allow unrestricted forward flow with a very small differential pressure, and no reverse flow (positive shutoff) with a very small reverse differential pressure of between 0.25 and 1 PSI. They are available in brass, stainless steel, and monel® with a maximum working pressure of 3000 PSI.

SPECIFICATIONS

Flow coefficient	CV = 0.42
Operating temperature	S44-B (40°F to 240°F) S44-S (30°F to 400°F)



PRODUCT CODE	DESCRIPTION
S44-B	Brass with 1/4" NPTF connections
S44-S	316 SS with 1/4" NPTF connections
S44-M	Monel® with 1/4" NPTF connections

SERIES 530 ADJUSTABLE RELIEF VALVES

The Series S530 adjustable relief valves are designed for use in high purity gas systems as protection for low pressure components. They are typically installed on an unused low pressure port of a regulator for entire system protection. The relief valves are available in brass and stainless steel for use in all types of gas applications. Adjustments to the relief pressure are easily made in the field with an allen wrench.

SPECIFICATIONS

Body	Brass or 316 SS
Seals	Viton® (Kalrez® Optional)
Spring and Poppet	316 SS
Inlet	1/4" NPTM
Outlet	1/4" NPTF
CV	.37












PRODUCT CODE	PRESSURE	MATERIAL
	RANGE	
S530-B1	3-50 PSIG	Brass
S530-B2	50-100 PSIG	Brass
S530-B3	150-350 PSIG	Brass
S530-B4	350-600 PSIG	Brass

PRODUCT CODE	PRESSURE	MATERIAL
	RANGE	
S530-S1	3-50 PSIG	Stainless Steel
S530-S2	50-150 PSIG	Stainless Steel
S530-S3	150-350 PSIG	Stainless Steel
S530-S4	350-600 PSIG	Stainless Steel








TUBE FITTINGS

Instrumentation tube fittings are the industry standard for use with high purity gas delivery systems. They are suitable from vacuum to high pressure and require no special tools, soldering or welding for installation. The "Tube" sizes listed correspond to the outside diameter of the tubing to be used.

FITTING TYPE	DESCRIPTION	PRODUCT CODE	
		BRASS	316 S.S.
 Male Connector	1/8" NPTM x 1/8" Tube	S850-B1	S850-S1
	1/8" NPTM x 1/4" Tube	S850-B2	S850-S2
	1/4" NPTM x 1/8" Tube	S850-B3	S850-S3
	1/4" NPTM x 1/4" Tube	S850-B4	S850-S4
 Female Connector	1/8" NPTF x 1/8" Tube	S851-B1	S851-S1
	1/8" NPTF x 1/4" Tube	S851-B2	S851-S2
	1/4" NPTF x 1/8" Tube	S851-B3	S851-S3
	1/4" NPTF x 1/4" Tube	S851-B4	S851-S4
 Male Elbow	1/8" NPTM x 1/8" Tube	S852-B1	S852-S1
	1/8" NPTM x 1/4" Tube	S852-B2	S852-S2
	1/4" NPTM x 1/8" Tube	S852-B3	S852-S3
	1/4" NPTM x 1/4" Tube	S852-B4	S852-S4
 Female Elbow	1/8" NPTF x 1/8" Tube	S853-B1	S853-S1
	1/8" NPTF x 1/4" Tube	S853-B2	S853-S2
	1/4" NPTF x 1/8" Tube	S853-B3	S853-S3
	1/4" NPTF x 1/4" Tube	S853-B4	S853-S4
 Union	1/16" Tube Both Ends	S854-B1	S854-S1
	1/8" Tube Both Ends	S854-B2	S854-S2
	1/4" Tube Both Ends	S854-B3	S854-S3
 Reducing Union	1/8" Tube x 1/16" Tube	S855-B1	S855-S1
	1/4" Tube x 1/8" Tube	S855-B2	S855-S2
 Bulkhead Union	1/8" Tube Both Ends	S856-B1	S856-S1
	1/4" Tube Both Ends	S856-B2	S856-S2
 Union Tee	1/8" Tube All Ends	S857-B1	S857-S1
	1/4" Tube All Ends	S857-B2	S857-S2
 Nut and Ferrules	1/16" Tube	S858-B1	S858-S1
	1/8" Tube	S858-B2	S858-S2
	1/4" Tube	S858-B3	S858-S3

GTS offers other fitting configurations and sizes. Please contact your nearest GTS location for details.

TUBE FITTINGS (cont.)

FITTING TYPE	DESCRIPTION	PRODUCT CODE	
		BRASS	316 S.S.
 Male Hose Barb	1/8" NPTM x 1/8" Hose I.D.	S859-B1	S859-S1
	1/4" NPTM x 1/8" Hose I.D.	S859-B2	S859-S2
	1/8" NPTM x 3/16" Hose I.D.	S859-B3	S859-S3
	1/4" NPTM x 3/16" Hose I.D.	S859-B4	S859-S4
	1/8" NPTM x 1/4" Hose I.D.	S859-B5	S859-S5
	1/4" NPTM x 1/4" Hose I.D.	S859-B6	S859-S6
 Female Hose Barb	1/8" NPTF x 1/8" Hose I.D.	S860-B1	S860-S1
	1/4" NPTF x 1/8" Hose I.D.	S860-B2	S860-S2
	1/8" NPTF x 3/16" Hose I.D.	S860-B3	S860-S3
	1/4" NPTF x 3/16" Hose I.D.	S860-B4	S860-S4
	1/8" NPTF x 1/4" Hose I.D.	S860-B5	S860-S5
	1/4" NPTF x 1/4" Hose I.D.	S860-B6	S860-S6
 Hex Nipple	1/8" NPTM x 1/8" NPTM	S861-B1	S861-S1
	1/4" NPTM x 1/4" NPTM	S861-B2	S861-S2
 Hex Reducing Nipple	1/8" NPTM x 1/4" NPTM	S862-B1	S862-S1
		S862-B2	S862-S2
 Hex Long Nipple	1/4" NPTM x 1/4" NPTM x 1.5" L	S863-B1	S863-S1
	1/4" NPTM x 1/4" NPTM x 2.0" L	S863-B2	S863-S2
	1/4" NPTM x 1/4" NPTM x 3.0" L	S863-B3	S863-S3
 Reducing Adapter	1/4" NPTF x 1/8" NPTM	S864-B1	S864-S1
	3/8" NPTF x 1/4" NPTM	S864-B2	S864-S2
 Elbow	1/8" NPTF x 1/8" NPTF	S865-B1	S865-S1
	1/4" NPTF x 1/4" NPTF	S865-B2	S865-S2

GTS offers other fitting configurations and sizes. Please contact your nearest GTS location for details.

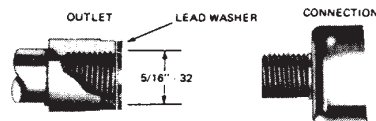
CYLINDER CONNECTION LISTING

The drawings of valve outlets and connections shown on this chart are those now in common use by the compressed gas industry. Whenever possible, valve outlets standardized by the Compressed Gas Association (CGA) and accepted by the American Standards Association are used. Valves accepted by the CGA as "limited standards" and lecture bottle valves are not shown.

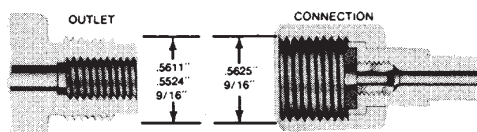
GAS	CGA VALVE OUTLET & CONN. NO	GAS	CGA VALVE OUTLET & CONN. NO	GAS	CGA VALVE OUTLET & CONN. NO	GAS	CGA VALVE OUTLET & CONN. NO
Acetylene	510	Deuterium	350	Hexafluoropropylene	660	Nitrogen—3500 psig	680
Air, Breathing	346	Dichlorosilane	678	Hydrogen	350	Nitrogen—6000 psig	677
Air, All Other	590	Dimethylamine	705	Hydrogen—3500 psig	695	Nitrogen Dioxide	660
Allene	510	Dimethyl Ether	510	Hydrogen—6000 psig	703	Nitrous Oxide	326
Ammonia, Anhydrous	705	Dinitrogen Tetroxide	660	Hydrogen Bromide	330	Octafluorocyclobutane	660
Ammonia, Electronic	660	Ethane	350	Hydrogen Chloride	330	Octafluoropropane	660
Argon	580	Ethyl Chloride	300	Hydrogen Fluoride	670	Oxygen	540
Argon—3500 psig	680	Ethylene	350	Hydrogen Sulfide	330	Phosgene	660
Argon—6000 psig	677	Ethylene Oxide	510	Isobutane	510	Phosphine	350
Arsine	350	Fluorine	679	Isobutylene	510	Propane	510
Boron Trichloride	660	Germane	350	Krypton	580	Propylene	510
Boron Trifluoride	330	Halocarbon 14 (Tetrafluoromethane)	580	Methane	350	Silane	350
1-3 Butadiene	510	Halocarbon 23 (Fluoroform)	660	Methyl Bromide	330	Silicon Tetrafluoride	330
Butane	510	Halocarbon 116 (Hexafluoroethane)	660	3-Methyl Butene-1	510	Sulfur Dioxide	660
Butenes	510	Helium	580	Methyl Chloride	510	Sulfur Hexafluoride	(820)
Carbon Dioxide	320	Helium—3500 psig	680	Methyl Mercaptan	330	Trimethylamine	590
Carbon Monoxide	350	Helium—6000 psig	677	Monomethylamine	705	Xenon	705
Chlorine	660 (820)			Neon	580		580
Cyclopropane	510			Nitric Oxide	660		
				Nitrogen	580		

All drawings are arranged in numerical order according to the valve connection number. The accurate diameter of the valve outlet is given below each drawing along with the thread designation. For ease of measurement and identification, approximate fractional dimensions may be found on each drawing.

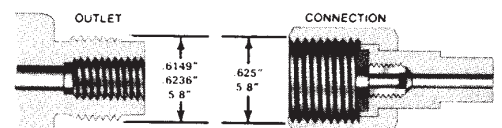
The left hand portion of each drawing marked "outlet" represents the cylinder valve, while the right hand portion marked "connection" represents the mating connection normally found in regulators, control valves, and manifolds.



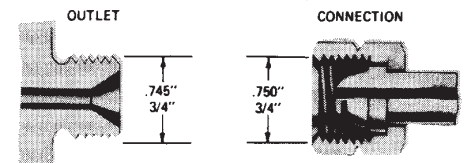
CONNECTION 110
LECTURE BOTTLE OUTLET—CORROSIVE GASES
5/16" - 32 RH INT. using Flat Seat with Washer



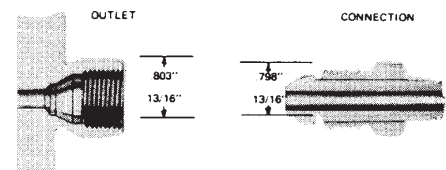
CONNECTION 170
LECTURE BOTTLE OUTLET—NON-CORROSIVE GASES
9/16" - 18 RH EXT. and 5/16" - 32 RH INT. using Flat Seat with Washer



CONNECTION 180
LECTURE BOTTLE OUTLET—CORROSIVE GASES
5/8" - 18 RH EXT AND 5/16" - 32 RH INT. using Flat Seat with Washer



CONNECTION 290
.745" - 14 LH EXT. accepting a Bullet Shaped Nipple



CONNECTION 296
.803" - 14 RH INT. accepting a Bullet Shaped Nipple