



MISSION STATEMENT

We will provide our customers with the best possible service and value that meets or exceeds their requirements and expectations.

We will be the most responsive supplier in our industry, delivering a superior product, on time, at a fair price.

We will create and maintain a business climate where integrity, competence and hard work are recognized and rewarded; where teamwork and mutual respect make each day's effort more productive and satisfying.

Call us today...

828-655-1700 (Marion, NC)

269-673-2151 (Allegan, MI)

or visit keygas.com



We are ISO 9001:2015 Certified



Key Gas Components, Inc. manufactures high-quality gas train components for gas appliance OEM's. Operating out of two separate facilities in Marion, North Carolina and Allegan, Michigan, the family-owned business produces a wide range of make-to-stock and custom parts.

Serving HVAC, Water Heater, Hydronics & Food Industry OEMS

**Gas Valves • Manifolds • Connectors
Fittings • Burners • Lighters**

**Screw Machine & CNC Machine Shop
Metal Machining Services
Specialty Component Production**

Locations: Marion, NC & Allegan, MI

Founded: 1986

Employees: 85+

Ownership: Privately Owned

NEW!

Put our STAR CNC tube-bending machines to work on your custom tube assemblies



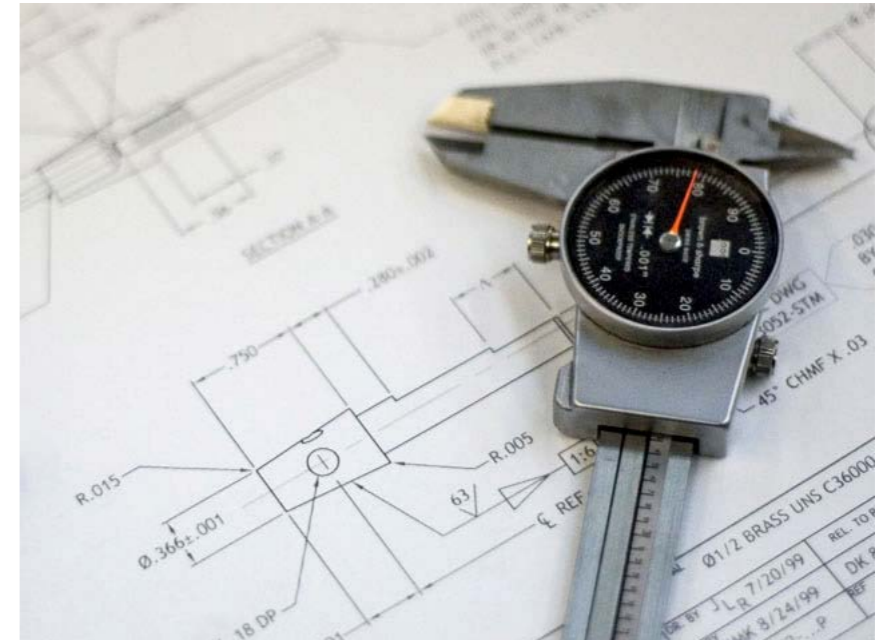
**Call today at 828-655-1700
or visit us at keygas.com**



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ABOUT US

From Custom Tube Fabrication, Custom Manifolds, CNC Machining and Screw Machining, to a complete line of Gas Train Products and more... We're here to serve you!



THE MOST RESPONSIVE GAS COMPONENT AND MACHINED COMPONENTS SUPPLIER IN THE INDUSTRY...



A closely held, family-owned and operated manufacturing and engineering services company operating a 35,000 sq. ft. facility in Marion, North Carolina and a 50,000 sq. ft. facility in Allegan Michigan.

WHO WE ARE

***Our business practices reflect our core values:
Honesty, Integrity, Teamwork and Innovation***

Since 1986, Key Gas has developed a reputation for dependability and leadership by providing creative design and manufacturing solutions for gas equipment manufacturers, industrial manufacturers, consultants, designers and distributors.

THE KEY GAS ADVANTAGE

We offer a broad line of high-quality gas train components and machined components specifically designed to meet the needs of gas appliance OEM's, industrial manufacturers, consultants, designers and distributors. A knowledgeable and experienced engineering staff is always ready to assist customers in the selection of products and to aid in the design of custom components.

A fully equipped model shop, staffed with highly skilled toolmakers, assures that custom prototypes are quickly produced to engineering specifications. A complete testing laboratory is available for compliance testing to CSA, UL, FM and European standards.

Whether the application requires an "off-the shelf" product or a custom-designed solution, Key Gas Components is the right choice to make your business more competitive.

pg. 4

GAS TRAIN COMPONENTS : CUSTOM MANIFOLDS : TUBE FABRICATION : CNC MACHINING : SCREW MACHINING

Have A Question? Need A Quote? Call Us at (828) 655-1700 or email info@keygas.com

keygas.com

WHO WE SERVE

Aerospace • Agricultural & Farming • Appliance Commercial • Appliance Residential • Architecture • Auto/Truck/Transportation • Automation • Automotive • Biomedical • Biopharmaceutical • Biotechnology • Building & Construction • Chemical • Commercial • Communications • Computer and Electronics • Construction • Dental • Department of Energy (DOE) • Department of Defense (DOD) • Electrical • Electronics • Food & Beverage • Government • Heavy Equipment • Highway (DOT) • HVAC • Hydraulics • Ice Making • Industrial • Injection Molding • Laboratory • Laundry • Natural Gas • Liquid Propane • Machine Tools • Machinery • Manufacturing • Marine • Material Handling & Processing -Medical • Medical Devices • Military • Molding • Oil & Gas • Packaging • Packaging & Converting • Paper & Pulp • Paper Mill • Petrochemical • Pharmaceutical • Plumbing • Pneumatics • Power Generation • Printing • Pulp & Paper • Pumps • Railroad • Restaurant • Robotics • Semiconductor • Specialty Machinery • Textile • Tool & Die • Transportation • Turf & Garden • Vacuum Electronics • Waste Management • Wastewater • Water & Wastewater Treatment

THE HIGHEST STANDARDS

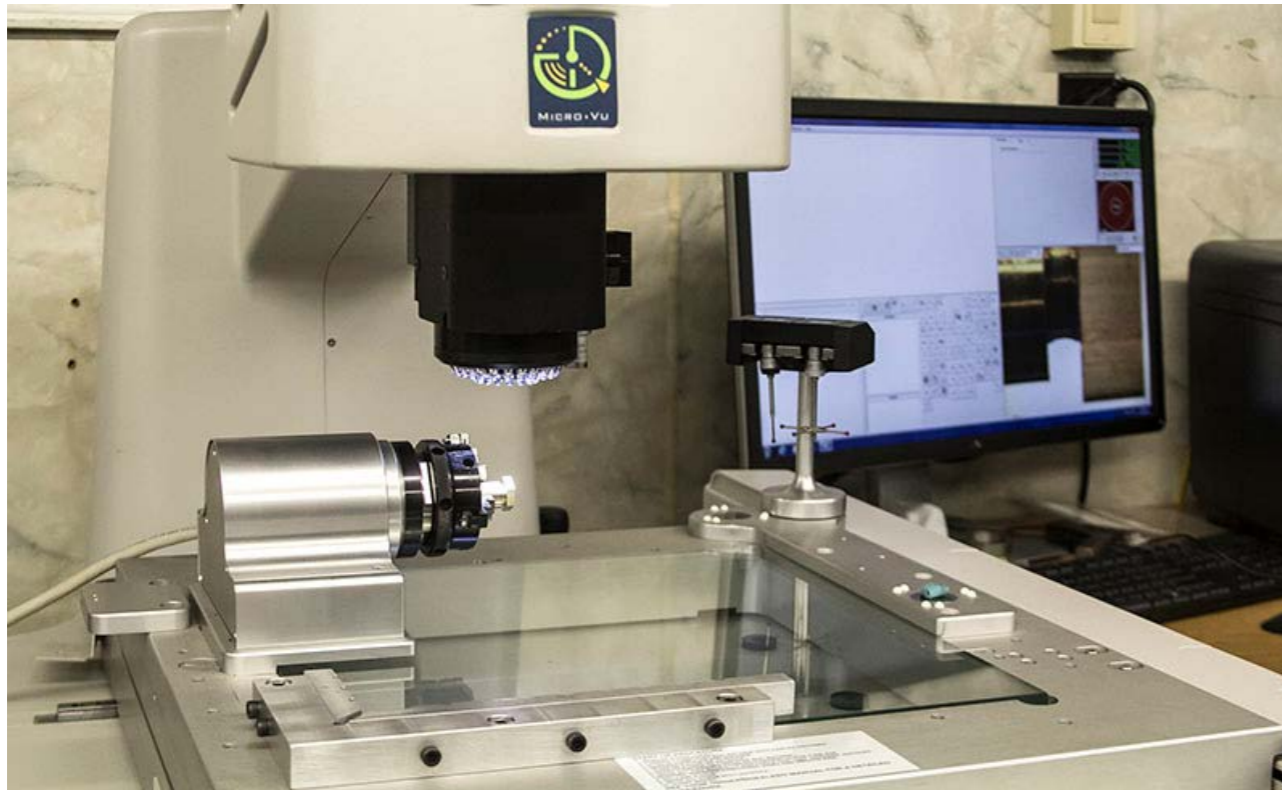
ANSI, American National Standards Institute • ASME, American Society of Mechanical Engineers • ASTM, American Society for Testing and Materials • AWS, American Welding Society • CSA, Canadian Standards Association • ISO 9001 Compliant, International Organization for Standardization • QS, quality standard developed by the Automotive Industries. • RoHS, Restriction Of Hazardous Substances (Compliant) • SAE, Society of Automotive Engineers



Jim Kuhn, President, Key Gas Components, Inc.

Key Gas Components, Inc. is committed to ensure Quality machining products using the latest technologies. We have expanded and improved our measurement techniques using CMM and Vision technology.

We understand that our customers are expecting precision, with tighter and tighter tolerances: we therefore expanded our quality program to ensure our measurement techniques were appropriately robust.

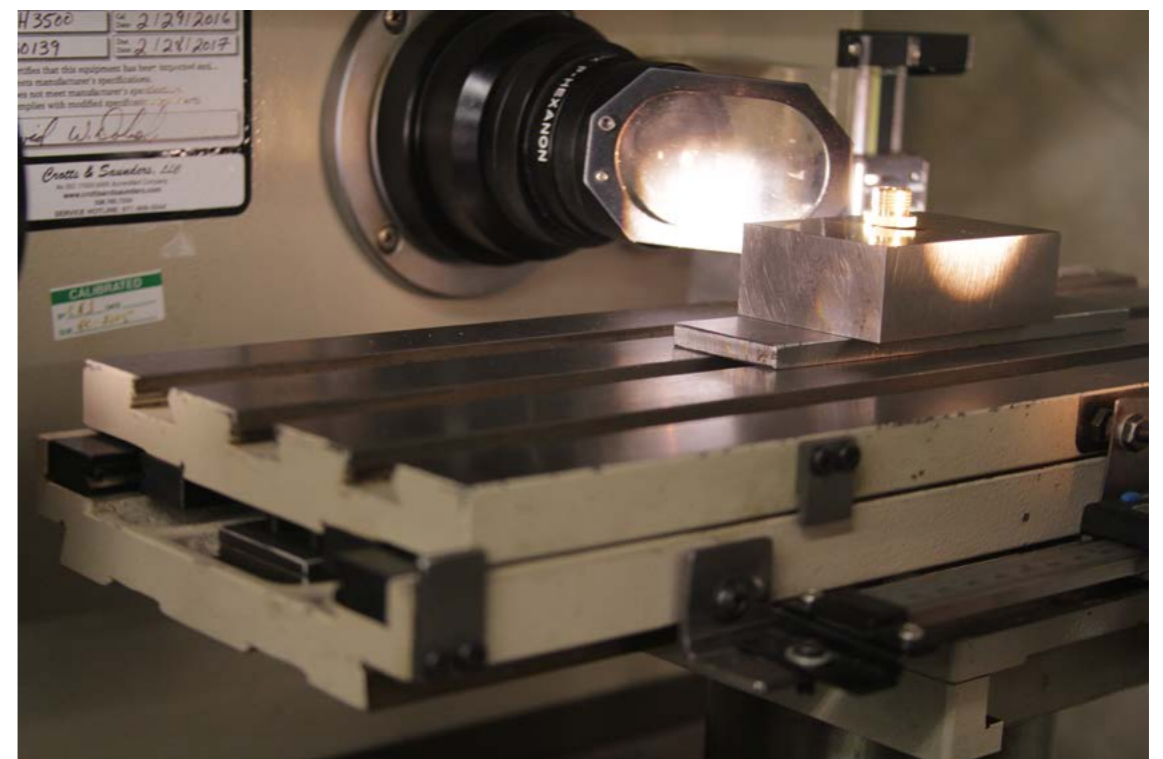


Micro Vu – Model Vertex 311HC Precision Visual Measuring System

The Micro-Vu Vertex is a multi-sensing, CNC measuring system. It incorporates optical vision with touch probe laser and rotary options. Both contact and non-contact measuring utilities are operated by a common software program

Additional Test Equipment

Mitutoyo Comparator
Rockwell Hardness Tester
All types and sizes of Plugs and Gauges
Precision Granite Block for parts Inspection
Several Mitutoyo digital multiple height gauges
Drop Indicators
Complete line of +/- Go/No Go pins





We are always here to help you with your gas component needs. Below is a list of individuals who will be happy to assistance you:

Marion, NC Plant and Company Headquarters
Valves, Fittings, Orifices & Tube Assemblies

NAME	TITLE	PHONE	E-MAIL
Michelle Cline	Customer Service	828.655.1700 ext. 100	mcline@keygas.com
Henderson Cathcart	National Sales Director	828.655.1700 ext. 112	hcathcart@keygas.com
Mart Jarvis	HR/Controller	828.655.1700 ext. 102	mjarvis@keygas.com
Justine Marcus	HR Mgr/Accounts Payable	828.655.1700 ext. 103	jmarcus@keygas.com
Sandy Reynolds	Materials/Purchasing	828.655.1700 ext. 101	sreynolds@keygas.com
Mark Weber	Plant Manager	828.655.1700 ext. 108	mweber@keygas.com
John Plain	Production Supervisor	828.655.1700 ext. 107	JPlain@keygas.com
Jason Drum	Manufacturing Engineer	828.655.1700 ext. 109	jdrum@keygas.com
Michael McPhearson	Technical Drafter	828.655.1700 ext. 111	mmcphearson@keygas.com
James Rowley	Quality Director	828.655.1700 ext. 113	jrowley@keygas.com
Jim Kuhn	President	828.655.1700 ext. 106	jkuhn@keygas.com



Allegan, MI Plant
Gas Manifolds and Tubular Products

NAME	TITLE	PHONE	E-MAIL
Kristian Gerou	Customer Service & Support	269.673.2151 ext. 212	kgerou@keygas.com
Garret Strbik	Plant Manager	269.673.2151 ext. 211	gstrbik@keygas.com
Margaret Williams	Office Manager	269.673.2151 ext. 210	mwilliams@keygas.com
Shane Schoneboom	Materials Manager/ Production Coordinator	269.673.2151 ext. 213	sschoneboom@keygas.com
Greg Huyck	Manufacturing Engineer	269.673.2151 ext. 226	ghuyck@keygas.com
Matt Van Haitsma	Production Manager	269.673.2151 ext. 222	mvanhaitsma@keygas.com
John Blount	Product Engineer	269.673.2151 ext. 217	jblount@keygas.com
Brandon Richardson	Quality Engineer	269.673.2151 ext. 216	BRichardson@keygas.com
James Rowley	Quality Director	828.655.1700 ext. 113	jrowley@keygas.com
Henderson Cathcart	National Sales Director	828.527.3088	hcathcart@keygas.com
Troy Thompson	Sales Engineer	269.673.2151	tthompson@keygas.com
Patrick Newson	Welding Engineer	269.673.2151	pnewson@keygas.com

From special features to a completely custom part, Key Gas Components' machine shop services has the equipment and expertise to produce your hard-to-source items in an economical and timely fashion, while never skimping on quality. We've carefully chosen the services we offer so that we can provide solutions to the most difficult supply problems facing our customers.

With our extensive Tube Fabrication, CNC Machining and Screw Machining capabilities, we can tackle everything from the largest production runs, to small jobs that get you out of a bind.



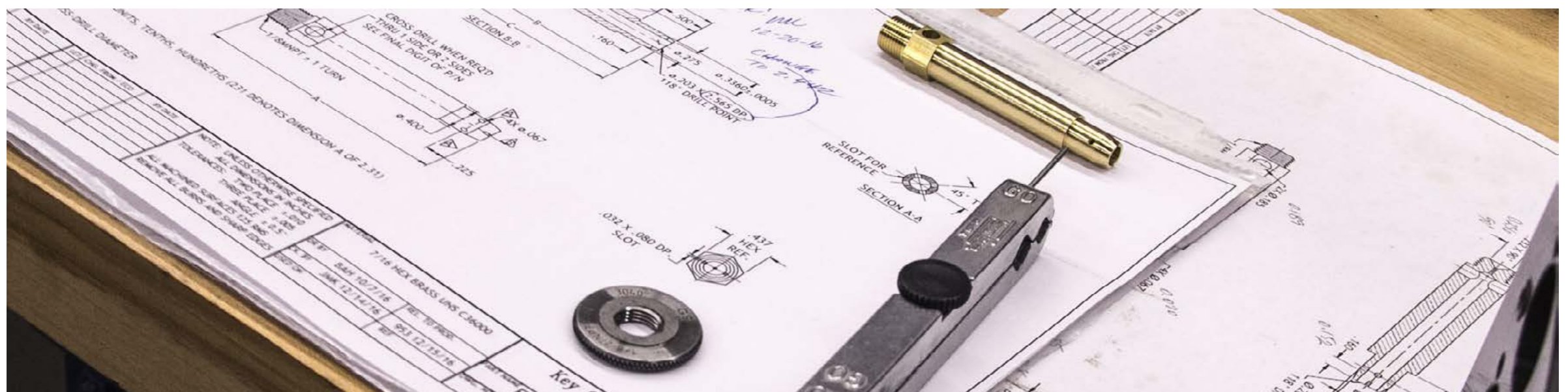
Machinery is not the only component to our solutions: our people are part of it as well. Our customers constantly benefit from access to the industry experience and problem-solving skills of our engineering and manufacturing team.

Industry Standards

ANSI, American National Standards Institute • ASME, American Society of Mechanical Engineers • ASTM, American Society for Testing and Materials • AWS, American Welding Society • CSA, Canadian Standards Association • ISO 9001 Compliant, International Organization for Standardization • QS, quality standard developed by the Automotive Industries. • RoHS, Restriction Of Hazardous Substances (Compliant) • SAE, Society of Automotive Engineers

File Formats Accepted

AutoCAD (DWG, DWZ) • BMP, Bit Mapped Graphics • DXF, Drawing Interchange Format, or Drawing Exchange Format • GIF, Graphics Interchange Format • JPG or JPEG • PDF, Portable Document Format • SolidWorks (SLDPRT, SLDDRW, SLDDRT) • TIFF, Tagged Image File Format



The following pages provide indepth information on our Custom Manifold, CNC Machining, Screw Machining and Tube Fabrication Services...



Custom Manifolds are our specialty – let us help with your complex, “hard-to-source” parts. We have developed many special processes to fabricate custom manifolds to exacting tolerances in a cost-effective manner.

Robotic and other automated welding operations ensure consistently high-quality joining operations and all gas manifold assemblies are 100% inspected for leakage prior to shipment.

Key Gas Components has developed many special processes to fabricate custom manifolds to exacting tolerances in a cost-effective manner.

A special forming process is used to part and seal tubing or pipe in one operation. A special thermal drilling process extrudes holes through the tubing wall, extending the amount of material available for tapping. This allows us to achieve a higher quality pipe thread port that exceeds CSA requirements.

Robotic and other automated welding operations ensure consistently high-quality joining operations. As a final safety check, all gas manifold assemblies are 100% inspected for leakage prior to shipment.

PROCESS CAPABILITIES

Threading – Diameters From 1/8” to 4”

End Forming

CNC Bending – Bend Radii Down to 1.25 X Dia.

CNC Machining – Table Size Up To 20”X50”

Chip-Less Threaded Holes

Robotic MIG Welding

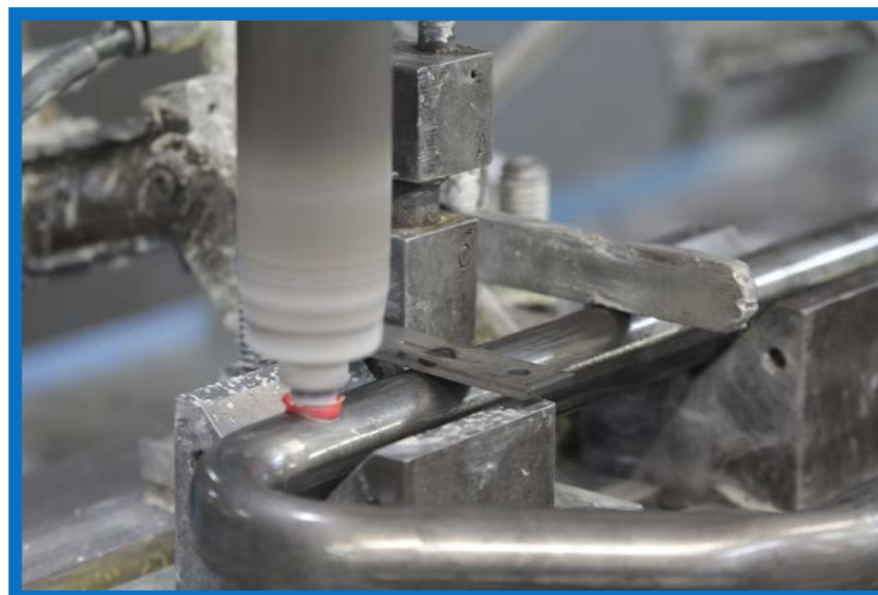
Manual MIG and TIG Welding

Leak Testing

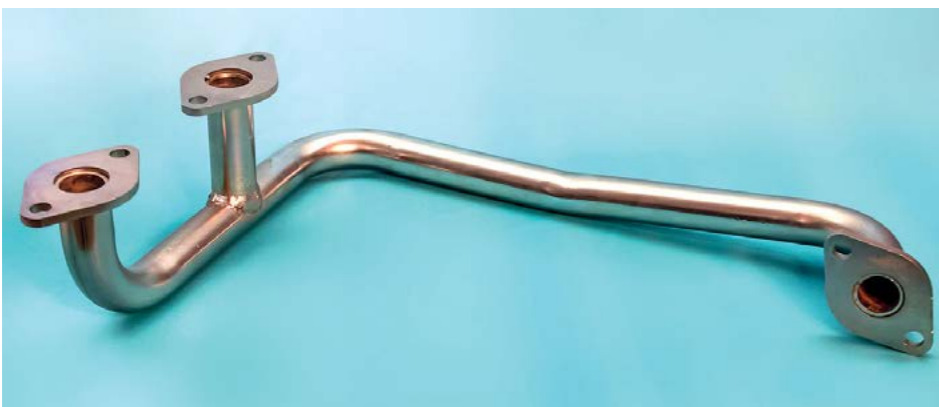
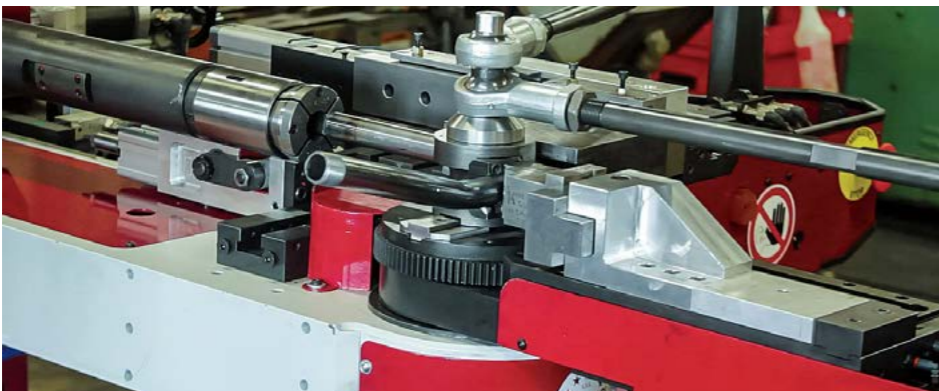
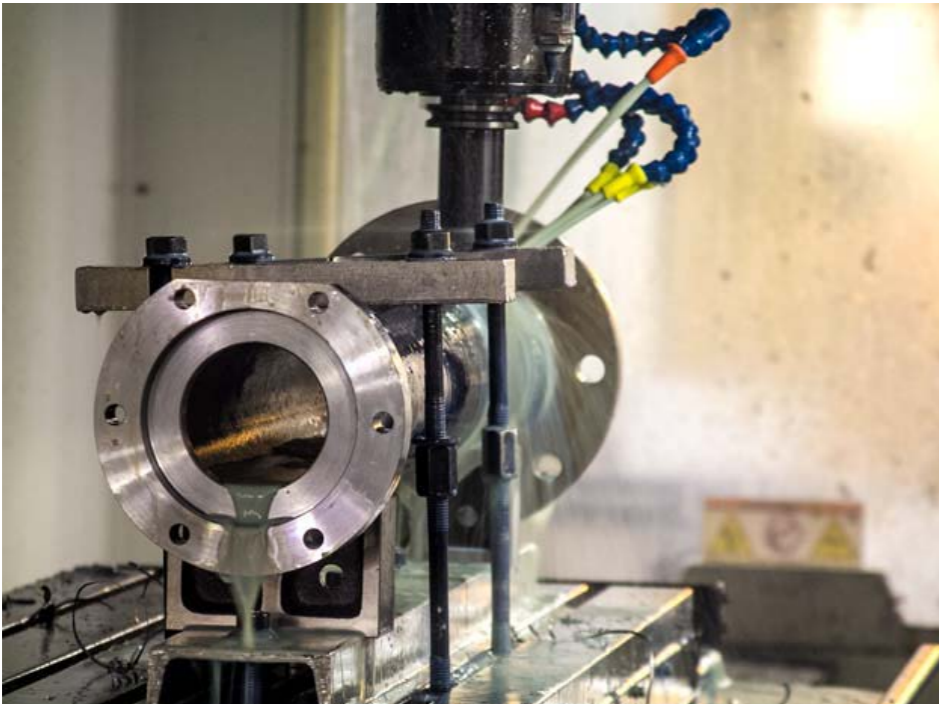
Finishes – Black Paint, Powder Coat, E-Coat,

Aluminized Tubing, Rust Preventative

We Design and Build Our Own Tooling and Specialty Equipment



SPECIFICATIONS



Materials

Aluminum • Aluminized Steel • Brass • Bronze • Copper • Nickel • Nickel Alloy • Stainless Steel • Steel • Titanium

Fabrication Method

Star CNC Bender • Computer-Numerically Controlled (CNC) Machines • Thermally Extruded holes • Manual and Robotic welding • Radial Draw and Compression Bending • Threading • Turning • Milling • Swaging • Drilling • End Forming • Painting • Powder Coating • Zinc Plating • Mandrel Bending

Fabrication Product

Boiler Parts • Condensers • Exercise Equipment • Heat Exchangers • Hypodermic Tubing

Body Cross-Section

Oval • Round • Square

Fabrication Features

Burrless Chamfer • Chip-less drilling • Tapping • Threading • Flanging • High Pressure • Sanitary for potable water • Serpentine

Environmental Properties

Corrosion Resistance • Moisture Resistance • Rust Resistance

Additional Services Provided

Brazing • Crimping • Cutting • Deburring • Drilling • End Trimming • Leak Checking • Machining • Repair • Welding

Outer Diameter

Min .675 in • Max 3 in

Wall Thickness

Min .030 in • Max .180 in

Tube Length

Min 6 in • Max 60 in

Bend Radius

Min 1.25 in • Max 12.5 in

Tolerance (+/-)

+/- 5 degrees

Equipment List

Star CNC Bending Machine

Production Volume

Prototype • Low Volume • High Volume • Blanket Orders

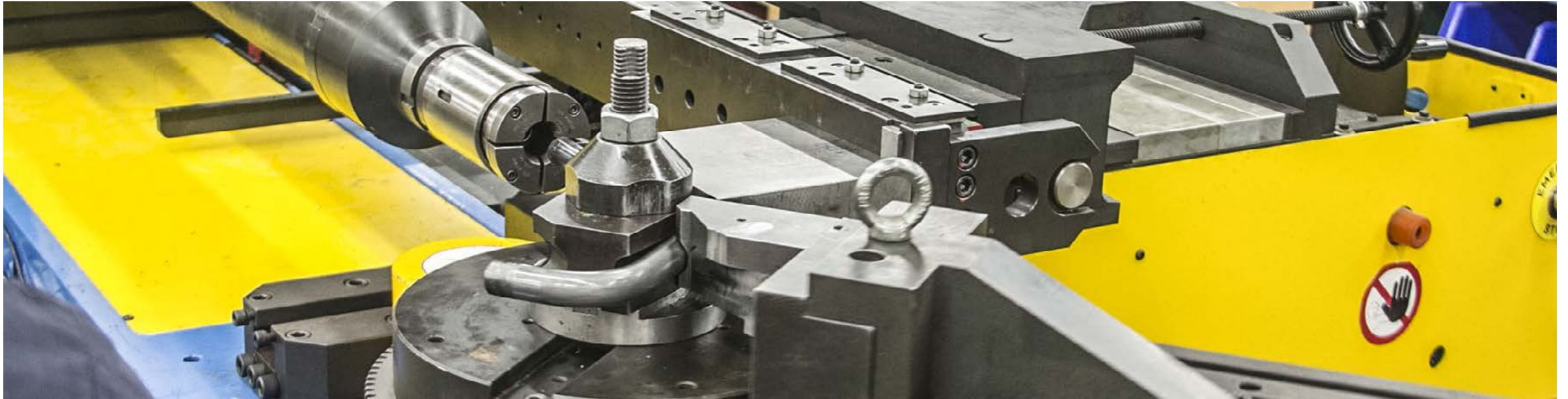
Lead Times

Min: 2 weeks • Max: 8 weeks • Quoted on job by job basis • Emergency services available • Rush Services Available

Efficiency

Lights Out Manufacturing • Lean Manufacturing • Kaizen/5S

At Key Gas Components, Custom Tube Fabrication is also one of our strong suits. With capabilities that include forging, forming, and bending, we supply custom tube products that exhibit an exceptionally high standard of quality. As an accomplished supplier of gas train components, we have the technical ability to manufacture products with complex specifications that require close manufacturing tolerances.



Over the years, we have developed many innovative methods for tube fabrication and have invested in specialized, state-of-the-art machinery to keep quality high and unit costs competitive.



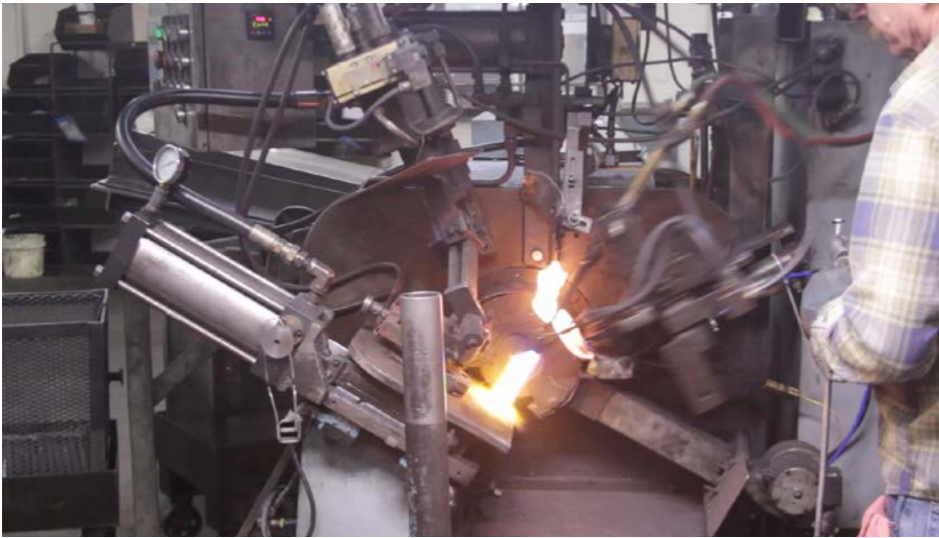
We manufacture custom corrosion, moisture, and rust-resistant tubing in round, oval, and square cross-sectional profiles with wall thickness in the .030" to .180" range. Burrless chamfers, serpentine shapes, and custom flange configurations are a just a few of the many design options we can accommodate.

We produce sanitary tubing for potable water applications as well as structurally stable tubing that withstands high-pressure service. Materials of construction include aluminum, steel, stainless steel, copper, nickel alloys, and many others.

We supply custom tube products as narrow as .125" in diameter or as wide as 3.0" in diameter in lengths from 3" to 9' long. Bend radii are dependent on material and wall thickness and can be produced +/- 0.5° accuracy.



SPECIFICATIONS



Materials

Aluminum • Aluminized Steel • Brass • Bronze • Copper • Nickel • Nickel Alloy • Stainless Steel • Steel • Titanium

Fabrication Method

Star CNC Bender • Computer-Numerically Controlled (CNC) Machines • Thermally Extruded holes • Manual and Robotic welding • Radial Draw and Compression Bending • Threading • Turning • Milling • Swaging • Drilling • End Forming • Painting • Powder Coating • Zinc Plating • Mandrel Bending

Fabrication Product

Boiler Parts • Condensers • Exercise Equipment • Heat Exchangers • Hypodermic Tubing

Body Cross-Section

Oval • Round • Square

Fabrication Features

Burrless Chamfer • Chip-less drilling • Tapping • Threading • Flanging • High Pressure • Sanitary for potable water • Serpentine

Environmental Properties

Corrosion Resistance • Moisture Resistance • Rust Resistance

Additional Services Provided

Brazing • Crimping • Cutting • Deburring • Drilling • End Trimming • Leak Checking • Machining • Repair • Welding

Outer Diameter

Min .675 in • Max 3 in

Wall Thickness

Min .030 in • Max .180 in

Tube Length

Min 6 in • Max 60 in

Bend Radius

Min 1.25 in • Max 12.5 in

Tolerance (+/-)

+/- 5 degrees

Equipment List

Star CNC Bending Machine

Production Volume

Prototype • Low Volume • High Volume • Blanket Orders

Lead Times

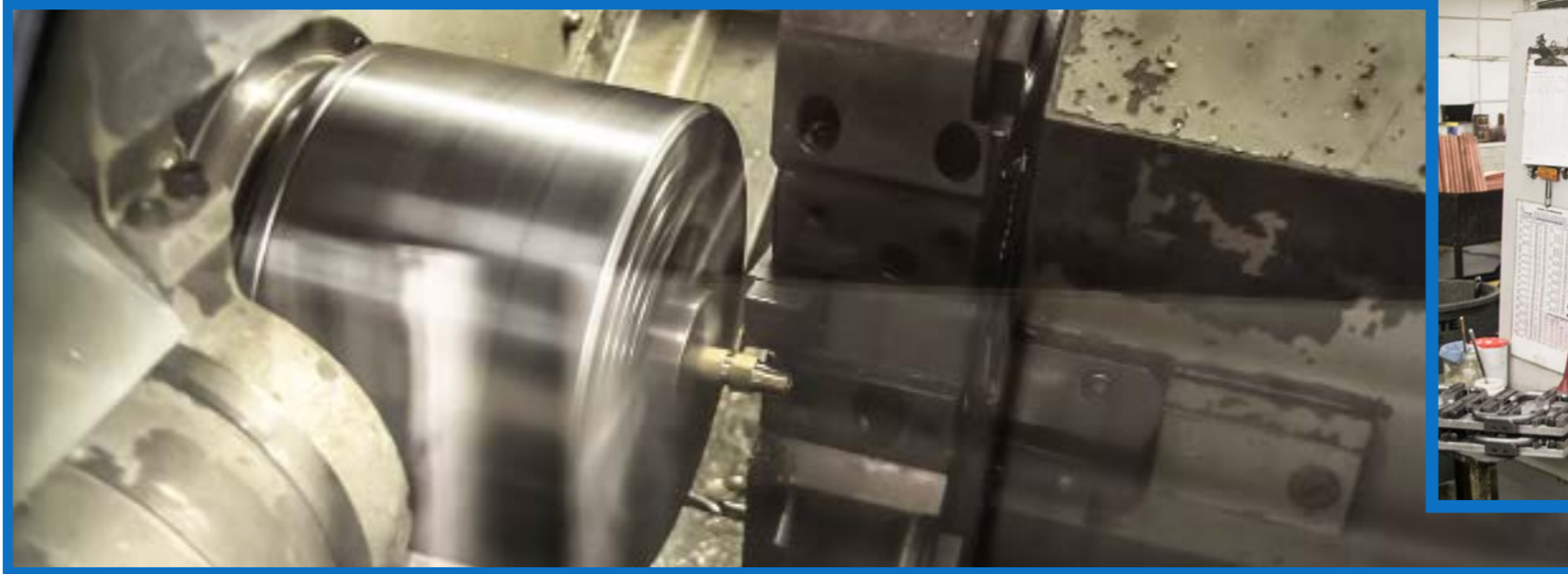
Min: 2 weeks • Max: 8 weeks • Quoted on job by job basis • Emergency services available • Rush Services Available

Efficiency

Lights Out Manufacturing • Lean Manufacturing • Kaizen/5S



With our expertise in CNC machining, Key Gas Components has attained a leadership position in the manufacture of high-quality gas train components. We operate a well-equipped machining department that incorporates state-of-the-art turning and milling centers and is staffed by production specialists that work as a team to ensure the quality and integrity of your machined components.



Our years of experience serving gas equipment manufacturers give us the depth of knowledge to provide creative and cost-conscious solutions for supplying custom products that satisfy the strictest quality and safety criteria.

Our CNC machining capabilities enable us to produce parts with the utmost level of precision. Along with metals like alloy steel and aluminum, we machine parts from copper, bronze, nickel, super alloys, and many others. We can uphold dimensional tolerances as close as ± 0.001 " on milled parts that measure as large as 118.0" in length x 12.0" in width x 16.0" in height.

Within a maximum diameter turning capacity of 1.625" bar-fed, and 4" as a chucker, we can achieve ± 0.0005 " tolerances on concentricity. Our technical competency enables us to develop highly specialized processes for creating complex features and thread patterns that conform to your specifications and meet or exceed industry standards.

As an experienced manufacturing and engineering company, we have staff available to help you with product development and design to ensure your machined components meet your functional and quality requirements.

We are capable of handling small orders as well as those that involve mass production with just-in-time delivery. By embracing lean manufacturing strategies, we keep costs low and prices competitive. For more information about our CNC machining capabilities and our other manufacturing services, contact us directly.



SPECIFICATIONS

Machining Processes

Milling – Drilling – Boring – Contour, Form, Taper & Straight Turning – External & Internal Threading – Tapping – Thread Milling – Internal Forming – Knurling – Broaching – Counterboring – Countersinking – Pocketing – Profiling – Reaming – Parting/Cutting – Facing

Equipment

Lathe – Engine, Turret & CNC

Equipment Capabilities

Multi-Spindle – With 3 axis – CNC Control Capabilities – Large Swing Lathe-14" – Bar Feed – Milling – CAD Design Services – CAM Programming Services – Reverse Engineering

Machinery Axis

2,3, and 10 Axis – Live Tooling

Fixturing

Three-jaw chuck – Four-jaw chuck – Pallets – In-House Fixturing & Tooling

Part Diameter

Min .196 in (5mm) – Max 1.625 in (42mm)

Part Length

Min .118 in (3mm) – Max 4.15 in (105.5mm)

Part Width

Min .5 in (13mm) – Max 12 in (305mm)

Part Height

Min .25 in (6mm) – Max 16 in (405mm)

Tolerances

Straightness : $\pm .0015$ – Concentricity: $\pm .0005$ – Length (over 2 in): $\pm .002$ in

Materials (Metals)

Alloy Steels – Aluminum – Brass – Bronze Alloys – Carbide – Carbon Steel – Copper – Lead – Nickel – Stainless Steel – Tin – Titanium – Tungsten – Zinc

Materials (Exotic & Precious Metals)

Gold – Monel – Platinum – Silver – Superalloys

Secondary Services Offered

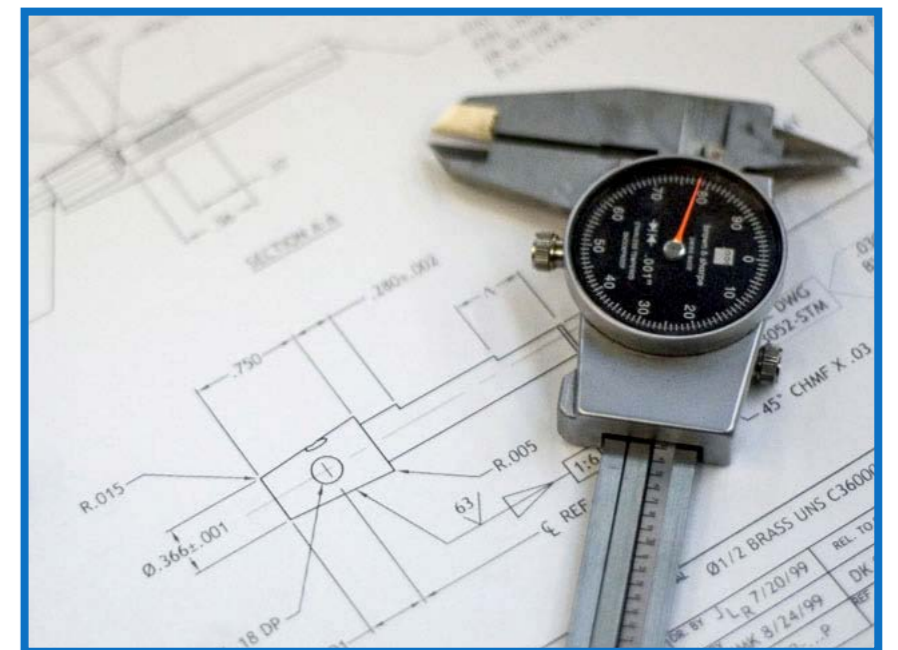
Assembly – Drilling – Tapping – Bending – Threading – Broaching – Counter Sinking – Pressing – Milling – Reaming – Welding – Plating – Etch and Chromating – Heat Treating – Anodizing

Production Volume

Min: 50 pieces – Max: infinite – Prototype – Low Volume – High Volume – Blanket Orders

Lead Times

Min: 2 weeks – Max: 8 weeks – Quoted on job by job basis – Emergency services available – Rush Services Available



We offer exceptional capabilities in the field of precision screw machining. As a leading manufacturer of high-quality gas train components, we have the ability to produce custom screw machined parts that conform to your exact specifications. With an inventory of Davenport screw machines that includes more than a dozen pieces of high-speed, high-accuracy, and multi-spindle equipment, we have the capacity to handle custom production orders quickly and competently.

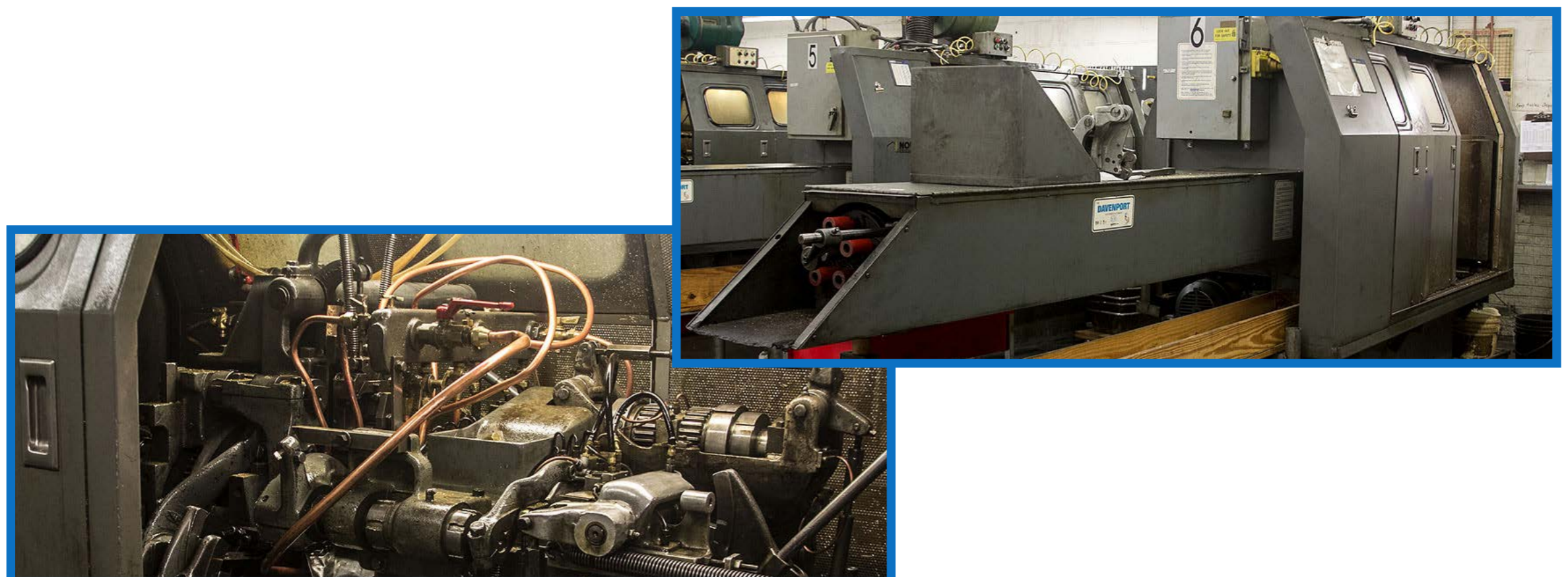


With our ability to uphold close dimensional tolerances and the versatility of our operations, we provide innovative and cost competitive design and manufacturing solutions for a wide range of industries and applications.

In addition to copper, aluminum, brass, and bronze alloys, we supply screw machined parts constructed from carbon steel, stainless steel, and other metals. We have developed many specialized processes that allow us to create detailed features of any geometric complexity to exacting tolerances.

Our production staff leverages the power and precision of our screw machining equipment to ensure a high degree of repeatable accuracy and consistent quality from the very first part to the very last. The stability of our process combined with our automation capabilities enables us to run our screw machines lights-out, allowing us to achieve steady and predictable throughput rates and meet all targeted delivery dates.

We strongly emphasize quality and routinely supply screw machined products that meet or exceed a variety of industry and trade group standards. If you need design assistance, our staff is always available to help you solve problems or assist with up-front product development. For more information about our screw machining capabilities, contact us directly.



SPECIFICATIONS

Processes

Counter-Boring • Deburring • Drilling • Knurling • Milling • Reaming • Turning • Broaching • Slotting • External Thread Cutting • Internal Thread Cutting • Roll Turning • Tapping • Thread Milling • Thread Rolling • Micro-Drilling • Stamping • Plating

Machinery Axis

5 Spindle Davenport Screw Machines • Equipment Capabilities • Multi-Spindle (5) • Single Spindle (1) • Davenport Screw Machines, 12 standard and long bed machines.

Automation Capabilities

Continuous Machining • High-Speed Machining • High-Velocity Machining • Continuous Feed

Materials (Metals)

Aluminum • Brass • Bronze Alloys • Carbon Steel • Copper • Nickel • Stainless Steel • Tin

Part Dimension

Min .25 in, Max 2.5 in • Outer Diameter Min 3/16 in, Max 7/8 in • Tolerance +/- .001 in • Precision • Tight Tolerance

Additional Capabilities

CAD Design Services • CAM Programming Services • Coordinate Measuring Machines (CMM) • Reverse Engineering

Equipment List

Davenport Multi-Spindle (5), 12 machines with 1 long-bed

Production Volume

Min: 10K • Max: infinite • Prototype • Low Volume • High Volume • Blanket Orders

Lead Times

8 Weeks standard • Quoted on job by job basis • Emergency services available • Rush Services Available

Efficiency

Lights Out Manufacturing • Lean Manufacturing • Kiazen/5S





ALUMINUM SHUTOFF VALVE WITH SIDE-PORTS

MANUAL GAS VALVES – ALUMINUM SERIES

Looking for a high quality aluminum shutoff valve? Look no further. Our manually operated gas valves are intended to be used as the main shutoff to a gas appliance. 1/4-turn operation lets the user easily shutoff the gas to the appliance.

Model 300, 400, 500, 600 Main Gas Shutoff Valves Series 208, 216, 223, and 224

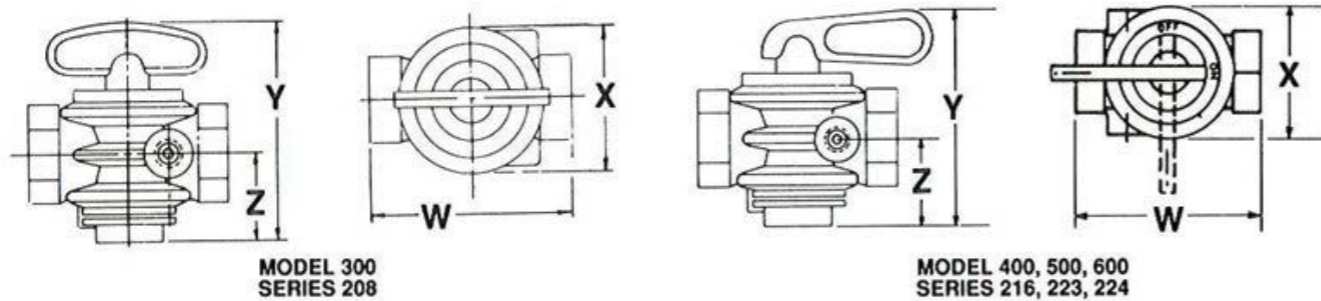
Application Data

The Key Gas Main Gas Shutoff Valves (Series 300, 400, 500, 600) are designed for furnaces, boilers, water heaters and other general heating and appliance applications. All aluminum shut-off valves from Key Gas have low resistance to flow and therefore have greater capacity with lower pressure drop. CSA Certified for Natural Gas, LP Gas-Air Mixtures, Manufactured Gas, LP and Mixed Gases.

Engineering Data

Key Gas's Aluminum Main Gas Shutoff Valves are die-cast and machined from the finest aluminum alloy to exacting standards of precision. Quality-controlled throughout production, they will withstand severe impact loads due to their superior strength, rigidity and time-proven design. And there is no maintenance on these leak-tested Key Gas shutoff valves – all of them are permanently lubricated at the factory.

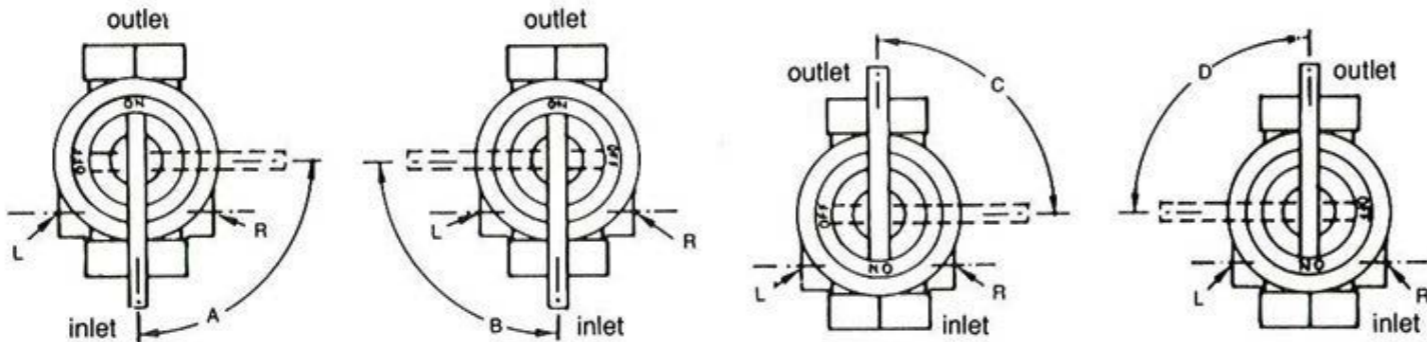
Operating Pressure: 0.5 PSIG Maximum



Model No.	NTP Inch Size	Capacity BTU/hr 1.0: W.C. Pressure Drop for gasses of 1,000 BTU per CU ft. or more	Dimensions In Inches			
			W	X	Y	Z
300*	3/8 x 3/8	510,000	2.81	2	2.94	1.19
300*	1/2 x 1/2	687,000	2.81	2	2.94	1.19
400**	3/4 x 3/4	1,400,000	3.13	2.38	3.59	1.47
500**	1 x 1	1,807,000	3.5	2.63	3.97	1.66
600**	1 1/4 x 1 1/4	2,800,000	4	3.13	5.16	2.16

*"T" Handle Only

**Handle rotations are available in four variations as shown. A-B-C-D. Pilot tapping is available L (Left), R (Right) or both.



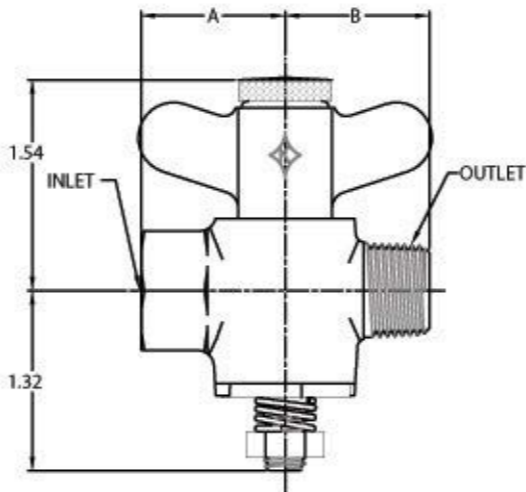


ADJUSTABLE FLOW GAS BURNER VALVE

THROTTLING SHUT-OFF VALVES

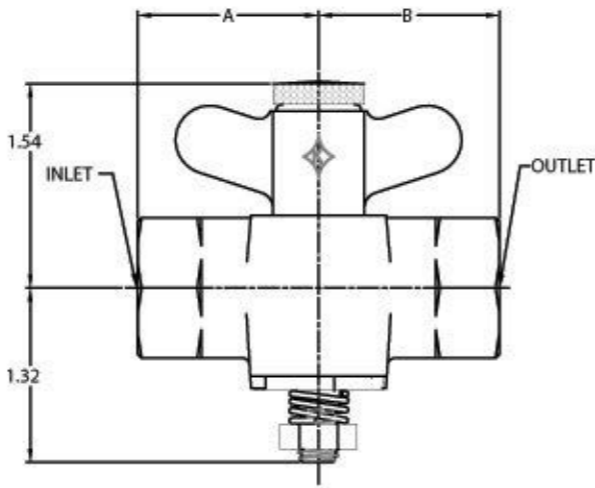
Our manually operated adjustable flow gas throttling shut-off valves combine the features of a main gas shutoff valve with that of an adjustable orifice. In the closed position, the valve shuts off all gas flow. In the open position, the flow rate of gas can be adjusted or “fine tuned” from full flow down to almost no flow for each application. To adjust the flow rate, the cap on top of the valve plug is removed and the position of the internal throttle is adjusted with a screwdriver.

After the adjustment is complete, the cap is then replaced. The throttle has an anti-rotation feature that prevents inadvertent movement of the throttle after it has been adjusted. Maximum operating pressures range from 0.5 psig to 1.0 psig. Operating temperatures range from 32°F (0°C) to 350°F (176°C). Most models are design-certified by Canadian Standards Association (CSA) for use in the U.S. and Canada.



NPT Inlet	NPT Outlet	DIM A	DIM B	Max T	Cert	Cap*	Model#
1/4 FNPT	1/4 MNPT	1.03	1.03	250° F	CSA	62,000	3049
3/8 FNPT	1/4 MNPT	1.03	1.03	250° F	CSA	137,000	3038-1
3/8 FNPT	1/4 MNPT /3/8-24(F)	1.03	1.03	250° F	CSA	137,000	3049-1
3/8 FNPT	3/8 MNPT	1.03	1.03	250° F	CSA	137,000	3038
3/8 FNPT	3/8 MNPT	1.03	1.03	250° F	CSA	175,000	3014
1/2 FNPT	1/2 MNPT	1.37	1.37	250° F	CSA	175,000	3050

*Capacity in BTU/hr



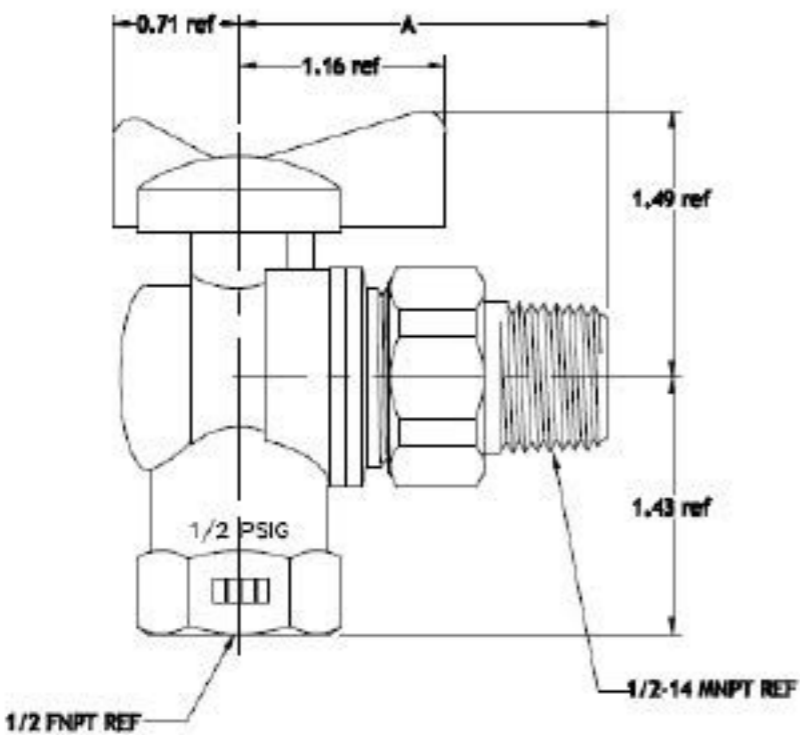
NPT Inlet	NPT Outlet	DIM A	DIM B	Max T	Cert	Cap*	Model#
3/8 FNPT	3/8 FNPT	1.37	1.37	250° F	CSA	175,000	3033
1/2 FNPT	1/2 FNPT	1.37	1.37	250° F	CSA	175,000	3018

*Capacity in BTU/hr

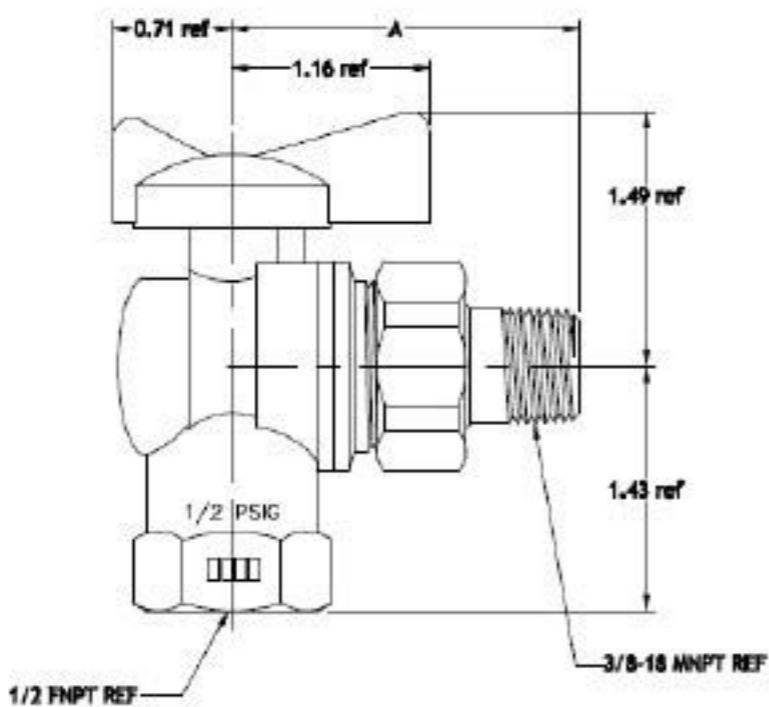
Manually operated appliance control valves (appliance connector valves) are intended to be used between the gas supply piping and the appliance connector attached to the appliance. The valves have a non-displaceable rotor (rotating valve member), an internal pipe thread inlet and a male pipe thread union outlet. Maximum operating pressure is 0.5 psig. Operating temperatures range from -22°F(-30°C) to 149°F(65°C). These models are design-certified by Canadian Standards Association (CSA) to ANSI Z21.15/CSA 9.1 and ASME B16.44 for use in the U.S. and Canada.

*For more information on connection see our Tail Piece Union Connections

3001-01 and 3001-02



3001-03

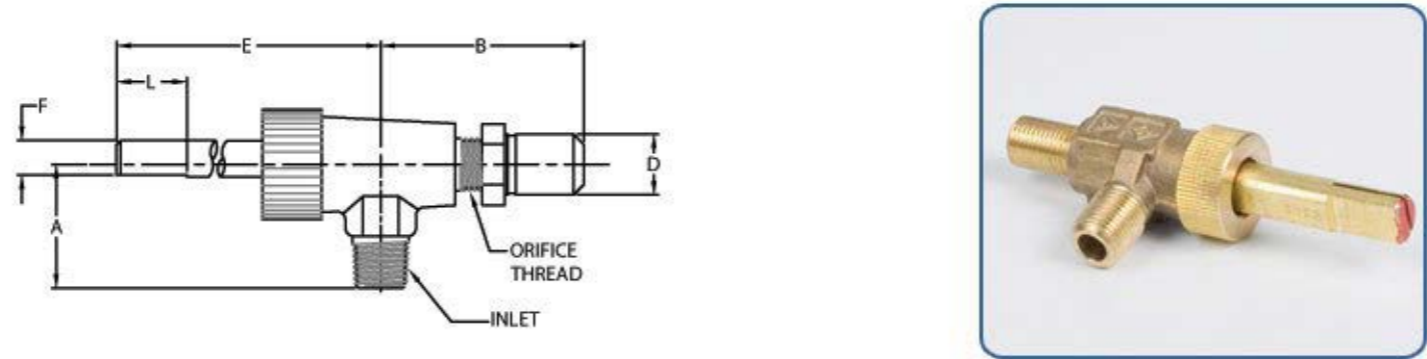


NPT INLET	NPT OUTLET	DIM A	MAX T	CERT	CAP*	MODEL #	DIRECTION TO CLOSE
1/2 FNPT	3/8 MNPT UNION	2.04	149° F	CSA	245,000	3001-03	CW
1/2 FNPT	1/2 MNPT UNION	2.06	149° F	CSA	275,000	3001-01	CW
1/2 FNPT	1/2 MNPT UNION	2.19	149° F	CSA	275,000	3001-02	CW

*Capacity in BTU/hr

These Top Burner Valves are shown in closed position with stem flat in same quadrant as inlet. Valves with stem flats in other quadrants are also available. Turn counter-clockwise, 90° to each successive position indicated in function column. LA designates an adjustable low.

Stem diameter is .34, customer to specify stem dimensions E, F, L and whether slit (on the end of the stem, either parallel or perpendicular to the flat) is required. Dimension E (in whole inches, tenths, hundredths) is substituted for “eee” in model number. To specify the hood orifice size, complete model number with orifice drill size in place of “-xx”; e.g., off-on valve with 1/8 MNPT x 3/8-27 orifice thread, dimension E of 1.88 (1 and 7/8) inches and hood with #42 (.0935 diameter) drill orifice is model 3051H-188-S-42. Add P to include a solid point; e.g., 3051H-188-S-42P



NPT INLET	ORIFICE THREAD	DIM A	DIM B	DIM E	DIA D	MAX T	CERT	CAP*	FUNCTION	MODEL #	DRILL SIZE
1/8 MNPT	3/8-27	0.88	1.44	*	0.43	350°F	CSA	29,500	OFF-ON	3051H-eee-S	XX
1/8 MNPT	3/8-27	0.88	1.44	*	0.43	350°F	CSA	29,500	OFF-HI-LA	3052-eee-S	XX

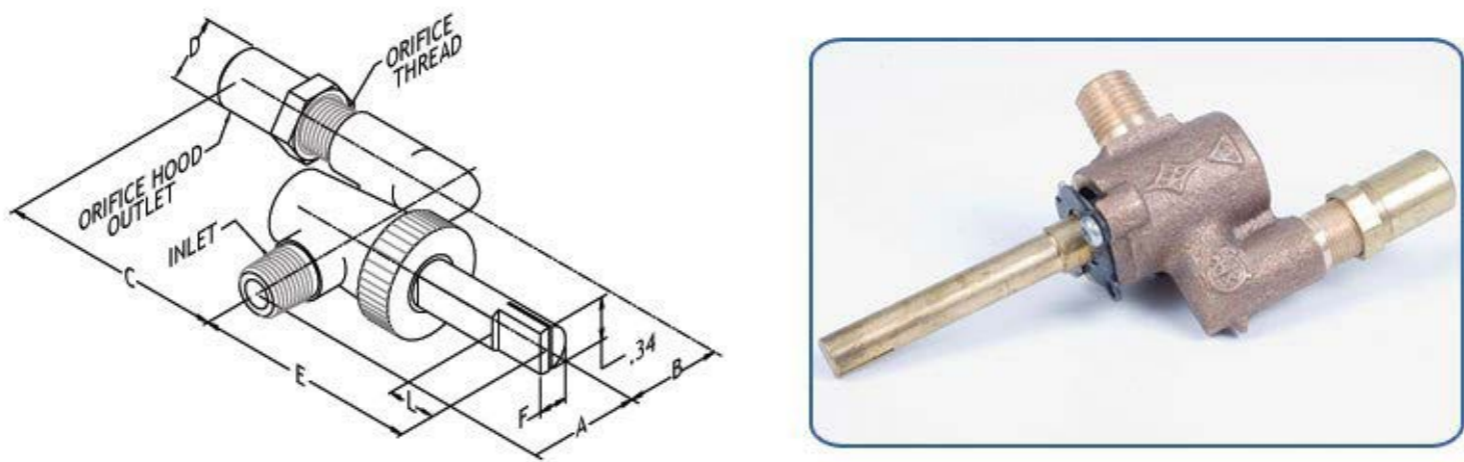
LA=Low Position is Adjustable *Capacity in BTU/hr

NPT INLET X ORIFICE THREAD OUTLET

These valves have off, high and adjustable low positions and are shown in closed position with stem flat in same quadrant as inlet. The stem flat can be configured for other quadrants if desired.

Turn counter-clockwise, 90° to full open, 170° to low. Stem diameter is .40, customer to specify whether slit (on the end of stem, either parallel or perpendicular to the flat) is required. Orifice hoods and solid points for model 3060, and 3062-01 may be purchased separately.

Model 3062-02 includes a solid point. To specify a valve with hood, complete model number with orifice drill size in place of “-xx”; e.g., off, high, adjustable low, angled valve with 1/4 MNPT x 1/2-27 orifice thread, (inlet) dimension A of 1.07, .24 stem flat and hood with #42 (.0935 diameter) drill orifice is model 3079-01-42. Add P to include a solid point; e.g., 3079-02-42P



NPT INLET	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM E	FLAT F	MAX T	CERT	CAP*	FUNCTION	MODEL #	DRILL SIZE
1/4 MNPT	1/2-27	1.81	1.53	2.08	2.31	0.34	275° F	CSA	61,000	OFF-HI-LA	3062-01	XX
1/4 MNPT	1/2-27	1.62	1.53	2.08	2.31	0.34	275° F	CSA	61,000	OFF-HI-LA	3062-02	XX
1/4 MNPT	1/2-27	2.12	1.53	1.97	2.31	0.34	275° F	CSA	61,000	OFF-HI-LA	3063-01	XX

LA=Low Position is Adjustable *Capacity in BTU/hr



TOP BURNER VALVES

NPT INLET X ORIFICE HOOD OUTLET

NPT INLET X ORIFICE THREAD OUTLET

These valves have off, high and adjustable low positions and are shown in closed position with stem flat in same quadrant as inlet.

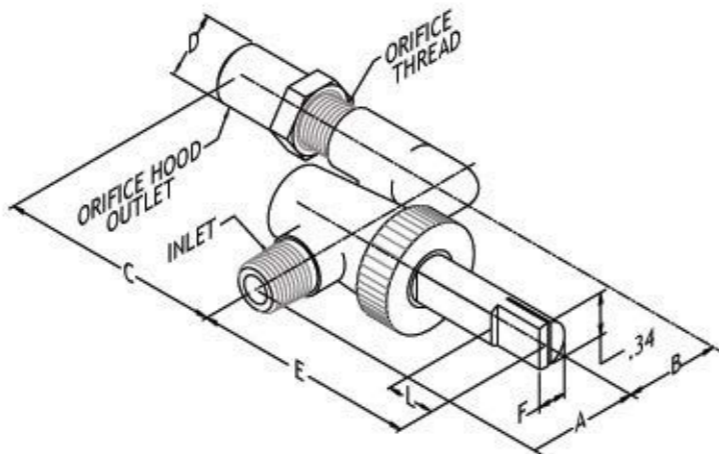
The stem flat can be configured for other quadrants if desired.

Turn counter-clockwise, 90° to full open, 170° to low. Stem diameter is .40, customer to specify whether slit (on the end of stem, either parallel or perpendicular to the flat) is required.

Orifice hoods and solid points for model 3060, and 3062-01 may be purchased separately.

Model 3062-02 includes a solid point. To specify a valve with hood, complete model number with orifice drill size in place of “-xx”; e.g., off, high, adjustable low, angled valve with 1/4 MNPT x 1/2-27 orifice thread, (inlet) dimension A of 1.07, .24 stem flat and hood with #42 (.0935 diameter) drill orifice is model 3079-01-42.

Add P to include a solid point; e.g., 3079-02-42P



NPT INLET	ORIFICE THREAD	DIM A	DIM B	DIM C	DIA D	MAX T	CERT	CAP*	FUNCTION	MODEL #	DRILL SIZE
1/8 MNPT	3/8-27	0.88	0.75	1.73	0.43	350° F	CSA	29,500	OFF-ON	3072-eee-S	XX
1/4 MNPT	1/2-27	1.13	0.88	2.06	0.56	275° F	CSA	61,000	OFF-ON	3075-eee-S	XX

*Capacity in BTU/hr

Continued on next page



TOP BURNER VALVES

NPT INLET X ORIFICE HOOD OUTLET

NPT INLET X CC OUTLET

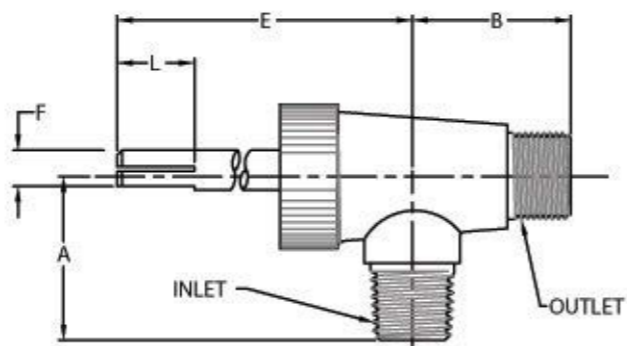
These valves are shown in closed position, with flat on stem in same quadrant as inlet.

Compression ferrule and nut are included to complete outlet connection.

Turn counter-clockwise to each successive position indicated in function column. L, M, designate fixed low or medium positions, LA designates an adjustable low.

Stem diameter is .34 unless otherwise noted, customer to specify dimensions E, F, and L and whether slit (on the end of the stem, either parallel or perpendicular to the flat) is required.

Dimension E (in whole inches, tenths, hundredths) is substituted for “eee” in model number; e.g., 1/8 MNPT x 1/4 CC angle valve with off, high, medium and adjustable low positions and dimension E of 1.88 (1 and 7/8 inches) is model number 3064-188

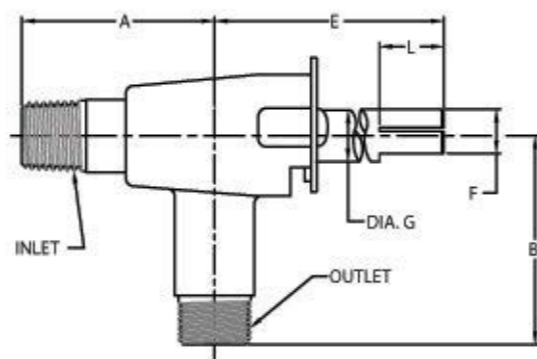


NPT INLET	TUBE OUTLET CC SIZE	DIM A	DIM B	DIM E	MAX T	CERT	CAP*	FUNCTION	MODEL #
1/8 MNPT	3/8	0.88	0.94	*	350° F	CSA	29,500	OFF-ON	3061-eee-S06
1/8 MNPT	7/16	0.88	0.94	*	350° F	CSA	29,500	OFF-ON	3061-eee-S07
1/4 MNPT	3/8	1.03	1.03	*	275° F	CSA	82,000	OFF-HI-LA	3068-eee-S-6
1/4 MNPT	3/8	1.06	1.03	*	275° F	CSA	82,000	OFF-ON	3069-eee-S-6
1/4 MNPT	7/16	1.09	1.06	*	275° F	CSA	82,000	OFF-ON	3069-eee-S-7
1/4 MNPT	7/16	0.94	1.03	*	275° F	CSA	82,000	OFF-HI-LA	3068-eee-S-7
1/4 MNPT	7/16	1.03	1.03	*	275° F	CSA	82,000	OFF-HI-M-LA	3080-eee-S
1/4 MNPT	1/2	1.06	1.06	*	275° F	CSA	82,000	OFF-ON	3069-eee-S-8
9/16-27 UNS	7/16	0.94	1.06	*	275° F	CSA	82,000	OFF-ON	3073-eee-S-7

NPT INLET X CC OUTLET

These valves are shown in closed position, with flat on stem in same quadrant as inlet. The stem flat can be configured for other quadrants if desired. Compression ferrule and nut are included to complete outlet connection. Turn counter-clockwise to each successive position indicated in function column. L designates fixed low, LA designates an adjustable low.

Stem diameter is .34 unless otherwise noted, customer to specify dimensions E, F, and L and whether slit (on the end of the stem, either parallel or perpendicular to the flat) is required. Dimension E (in whole inches, tenths, hundredths) is substituted for “eee” in model number; e.g., 3/8 MNPT x 7/16 CC angle valve with off, on positions and dimension E of 1.88 (1 and 7/8 inches) is model number 3078-188-S-7



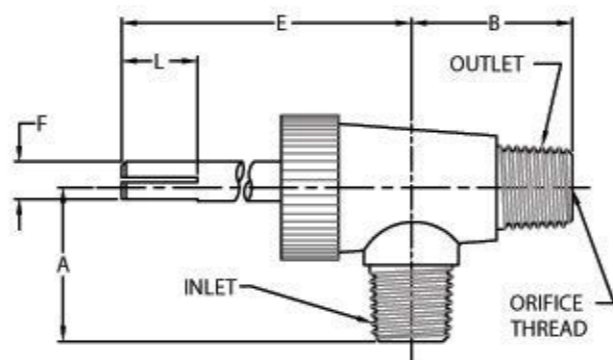
NPT INLET	TUBE OUTLET CC SIZE	DIM A	DIM B	DIM E	DIM F	DIA G	MAX T	CERT	CAP*	FUNCTION	MODEL #
1/4 MNPT	3/8	1.5	1.62	2.31	0.34	0.4	275° F	CSA	61,000	OFF-HI-LA	3063-02
1/4 MNPT	3/8	1.5	1.12	2.31	0.25	0.34	275° F	CSA	61,000	OFF-HI-L	3063-03

LA=Low Position is Adjustable *Capacity in BTU/hr

NPT INLET X NTP OUTLET

The valve above is shown in closed position, with flat on stem in same quadrant as inlet. The stem flat can be configured for other quadrants if desired. Turn counter-clockwise, 90° to each successive position indicated in function column. L, M, designate fixed low or medium positions, LA designates an adjustable low.

Stem diameter is .34, customer to specify dimensions E, F, and L and whether a slit (on the end of the stem, wither parallel or perpendicular to the flat) is required. Dimension E (in whole inches, tenths, hundredths) is substituted for “eee” in model number; e.g., 1/4 MNPT x 1/4 MNPT angle valve with off, high and adjustable low positions and dimension E of 1.88(1 and 7/8 inches) is model number 3071-188-S.



NPT INLET	TUBE OUTLET CC SIZE	DIM A	DIM B	DIM E	DIM F	DIA G	MAX T	CERT	CAP*	FUNCTION	MODEL #
1/4 MNPT	1/8 MNPT	1.5	1.62	2.31	0.34	0.4	275° F	CSA	61,000	OFF-HI-LA	3063-02
1/4 MNPT	1/4 MNPT	1.5	1.12	2.31	0.25	0.34	275° F	CSA	61,000	OFF-HI-L	3063-03

LA=Low Position is Adjustable *Capacity in BTU/hr



CHINESE WOK RANGE VALVES

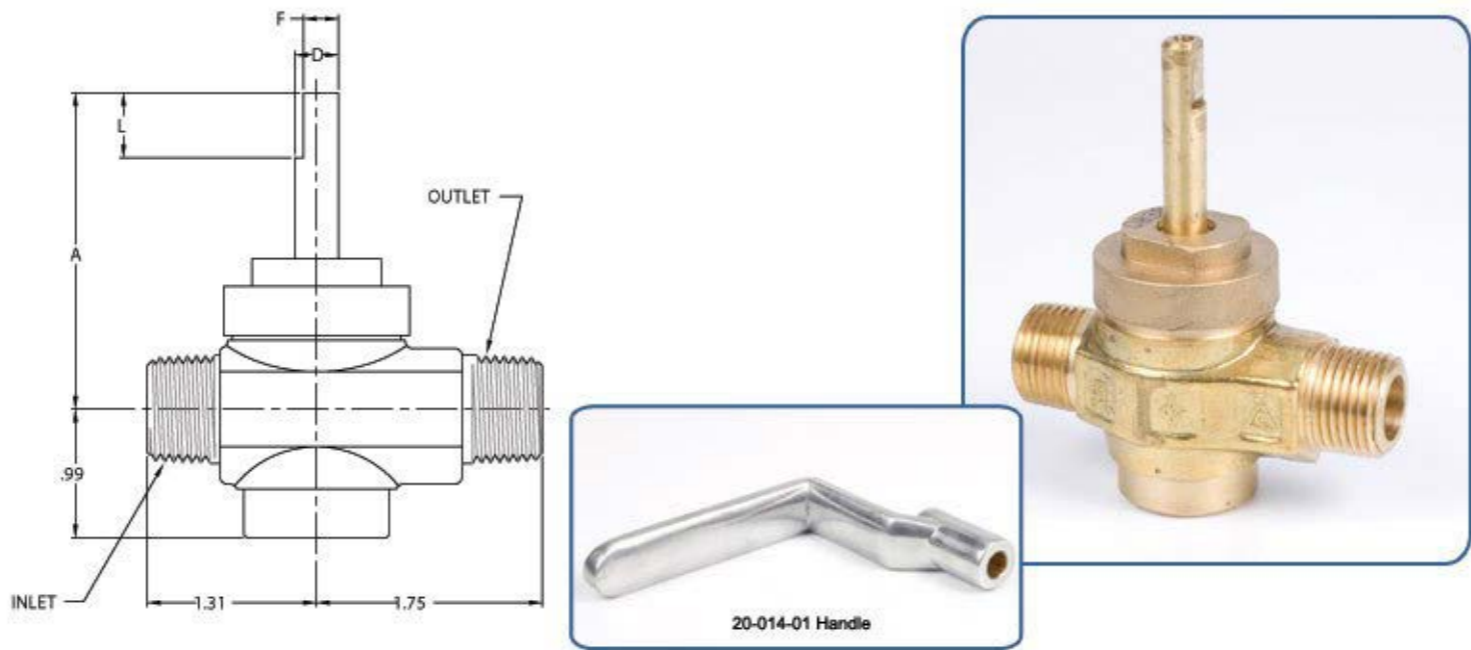
Handle is optional

Stem dimensions D, F, and L can be varied to provide an exact fit to the handle customer chooses to apply.

Customer also specifies turning direction to close and position of stem flat in closed position.

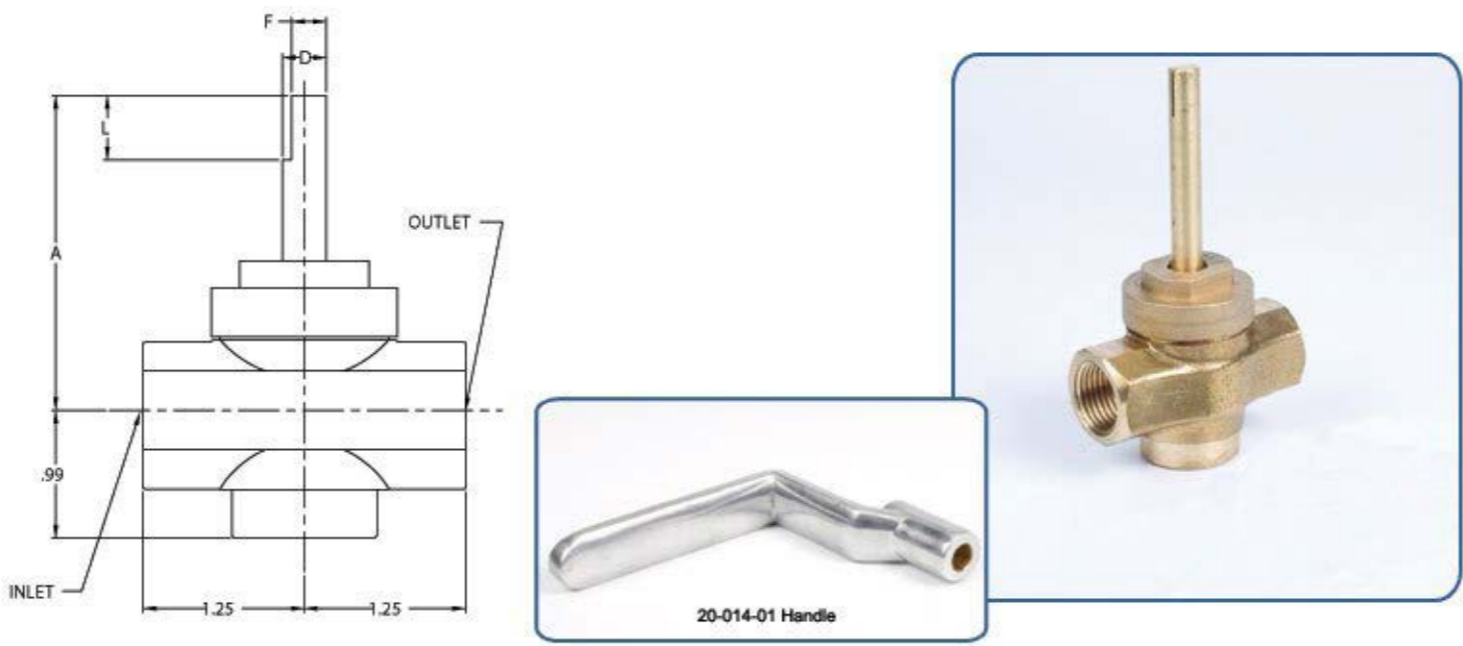
Constructed of brass with a stainless steel spring

Approved for commercial cooking equipment - Ideal for application as Chinese range valve



NPT INLET	NPT OUTLET	DIM A	DIM D	DIM F	DIM L	MAX T	CERT	CAP*	MODEL #
3/8 MNPT	3/8 MNPT	2.69	0.34	0.27	0.5	300° F	CSA	298,700	3058-01
1/2 MNPT	1/2 MNPT	2.69	0.34	0.27	0.5	300° F	CSA	456,500	3059-01

Stem is configured to accept 20-014-0-1 handle. Other stem configurations available upon request.
*Capacity in BTU/hr



NPT INLET	NPT OUTLET	DIM A	DIM D	DIM F	DIM L	MAX T	CERT	CAP*	MODEL #
3/8 FNPT	3/8 FNPT	2.69	0.34	0.27	0.5	300° F	CSA	298,700	3081
1/2 FNPT	1/2 FNPT	2.69	0.34	0.27	0.5	300° F	CSA	456,500	3065

Stem is configured to accept 20-014-0-1 handle. Other stem configurations available upon request.
*Capacity in BTU/hr



PILOT SHUTOFF VALVES

Model P2 Pilot Valves-Series 230

Manually operated gas valves used to control gas flow to a pilot light or small burner.
1/4-turn operation lets the user easily control or shutoff gas.

INLETS	OUTLETS
1/8 MNPT	1/8 MNPT
1/8 FNPT	1/8 FNPT
	1/4cc



Application Data

Model P2 Pilot valves are manufactured from the finest aluminum alloy. They receive the same careful inspections and quality control given to all Key Gas Products.

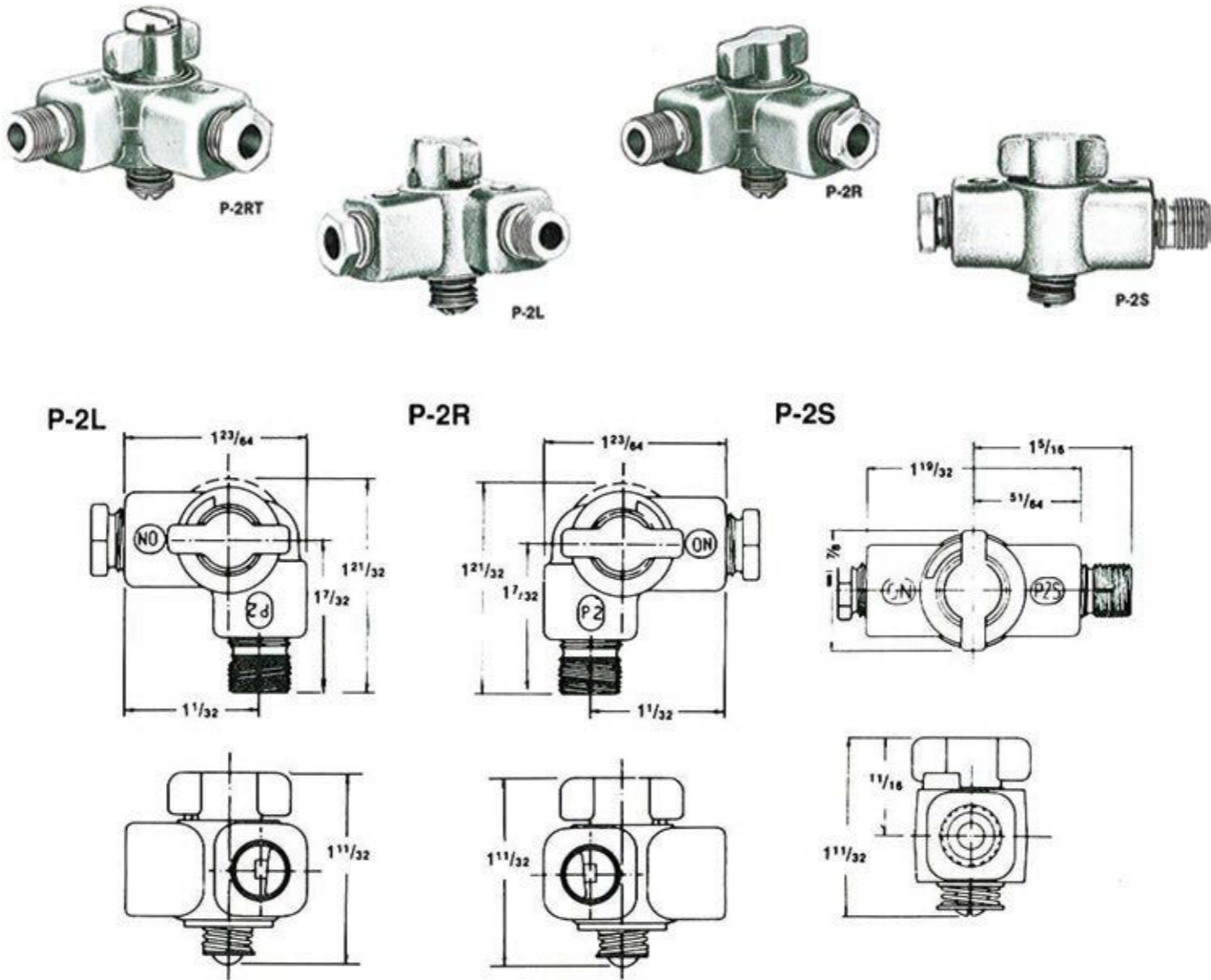
Engineering Data

The various inlet and outlet connections are listed in the table below. Other fittings such as flared tubing connections can be installed upon request. The Pilot Valves are CSA Certified and feature a 3/16" gasway.

Throttle Adjustment

All P2 Pilot Valves are available with a slotted throttle adjustment for fine setting of the pilot flame. This setting is maintained independently of normal off-on operation. Order P-2LT, P-2RT, or P-2ST for throttle adjustment.

Operating Pressure: 0.5 PSIG Maximum



Manually operated gas pilot adjusting valves used to precisely control the height of a pilot flame. The throttle can be adjusted with a screw driver or a nut runner. Configurations include:

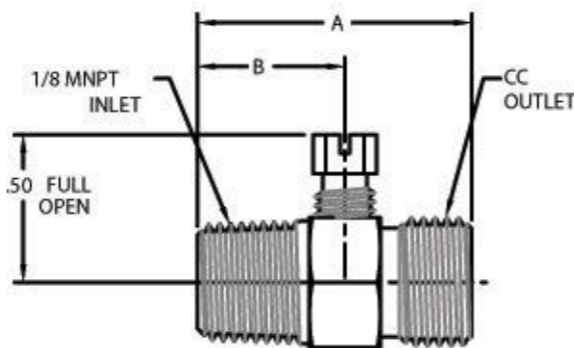
- Single outlet, straight through design
- Single outlet, 90° elbow design
- Dual outlet, straight through design
- Optional 65 micron filter screen removes impurities & particles in the gas line

Maximum operating pressure is 0.5 psig. Operating temperature range is 32°F (0°C) to 350°F (176°C). All models are design-certified by Canadian Standards Association (CSA) for use in the U.S. and Canada.

Pilot adjusting devices are shown in fully opened position.

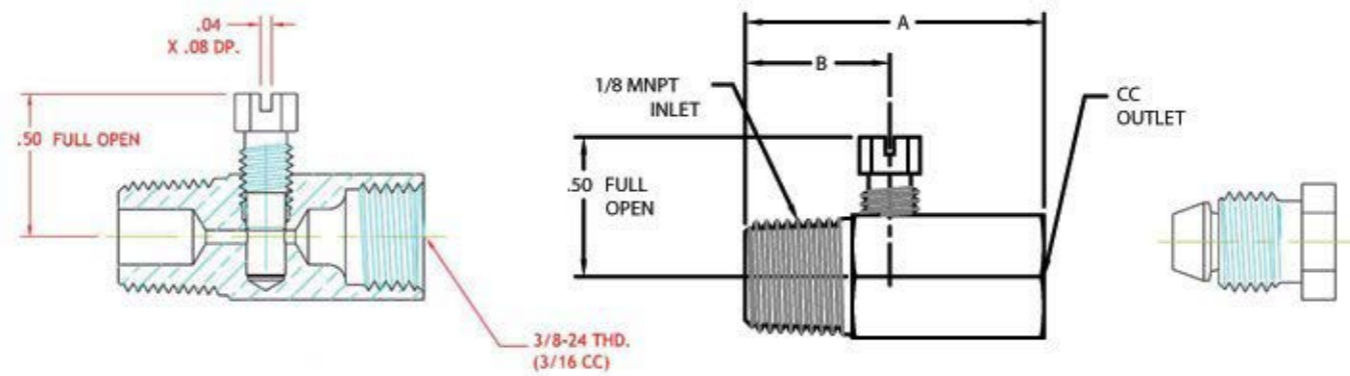
With a flat blade screwdriver or 3/16 inch nut driver turn adjusting screw clockwise (up to 3 turns) to decrease flow. Compression ferrules and nuts are included for all pilot adjusting devices on this page having compression connection (CC) outlets.

STRAIGHT PILOT ADJUSTER



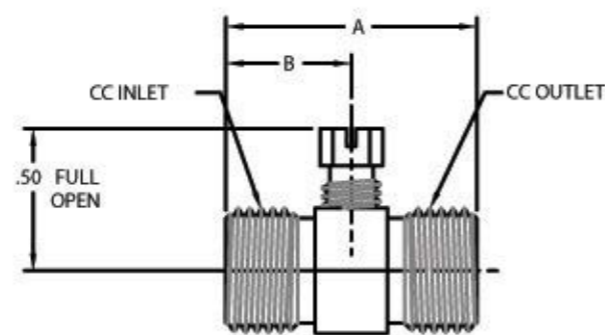
TUBE OUTLET CC SIZE	OUTLET THREAD	DIM A	DIM B	MAX T	CERT	65 MICRON FILTER	MODEL #
1/8	5/16-24 (M)	0.87	0.5	350° F	CSA	No	6004-02
1/8	5/16-24 (M)	0.87	0.5	350° F	CSA	Yes	6004-02SCRN
3/16	3/8-24 (M)	0.9	0.5	350° F	CSA	No	6004-03
3/16	3/8-24 (M)	0.9	0.5	350° F	CSA	Yes	6004-03SCRN
1/4	7-16-24(M)	0.93	0.5	350° F	CSA	No	6004-04
1/4	7-16-24(M)	0.93	0.5	350° F	CSA	Yes	6004-04SCRN

STRAIGHT PILOT ADJUSTER



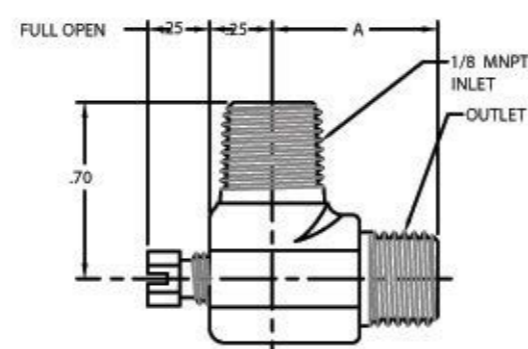
NPT INLET	TUBE OUTLET CC SIZE	OUTLET THREAD	DIM A	DIM B	MAX T	CERT	MODEL #
1/8 MNPT	3/16	3/8-24 (F)	1.06	0.51	350° F	CSA	6005

STRAIGHT PILOT ADJUSTER



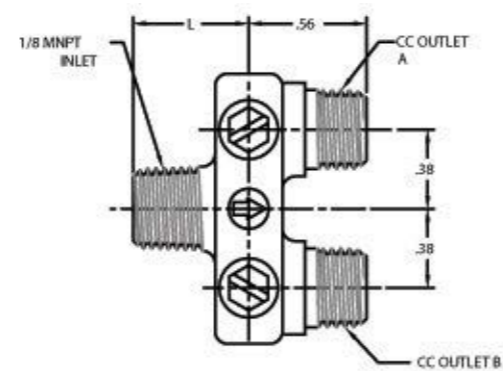
TUBE INLET CC SIZE	TUBE OUTLET CC SIZE	INLET / OUTLET THREAD	DIM A	DIM B	MAX TEMP	CERT	MODEL #
3/16	3/16	3/8-24 (M)	1.12	0.47	350	CSA	6009-33A
1/4	1/4	7-16-24 (M)	0.87	0.44	350	CSA	6009-44

ANGLED OUTLET PILOT ADJUSTER



NPT INLET	TUBE OUTLET CC SIZE	OUTLET THREAD	DIM A	65 MICRON	MAX T	CERT	MODEL #
1/8 MNPT	1/8	5/16-24 (M)	0.66	No	350° F	CSA	6008-02
1/8 MNPT	1/8	5/16-24 (M)	0.66	Yes	350° F	CSA	6008-02SCRN
1/8 MNPT	3/16	3/8-24 (M)	0.66	No	350° F	CSA	6008-03
1/8 MNPT	3/16	3/8-24 (M)	0.66	Yes	350° F	CSA	6008-03SCRN
1/8 MNPT	1/4	7-16-24 (M)	0.66	No	350° F	CSA	6008-04
1/8 MNPT	1/4	7-16-24 (M)	0.66	Yes	350° F	CSA	6008-04SCRN
1/8 MNPT	---	1/8 MNPT	0.73	No	350° F	CSA	6008-11
1/8 MNPT	---	1/8 MNPT	0.73	Yes	350° F	CSA	6008-11SCRN

DUAL OUTLET PILOT ADJUSTER



NPT INLET	TUBE OUTLET A CC SIZE	TUBE OUTLET B CC SIZE	DIM L	65 MICRON FILTER	MAX T	CERT	MODEL #
1/8 MNPT	1/8, 3/16, or 1/4	1/8, 3/16, or 1/4	0.55	No	350° F	CSA	6010-AB
1/8 MNPT	1/8, 3/16, or 1/4	1/8, 3/16, or 1/4	0.83	No	350° F	CSA	6010-1AB
1/8 MNPT	1/8, 3/16, or 1/4	1/8, 3/16, or 1/4	0.83	Yes	350° F	CSA	6010-1ABSCRN

To specify outlet size and configuration for model 6010, refer to the table below

TUBE OUTLET CC SIZE	1/8	3/16	1/4
Replace A, B in Model Number with	2	3	4

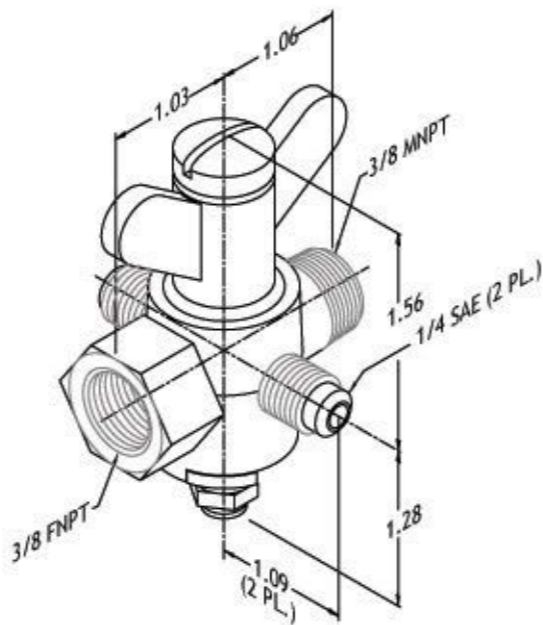
As an example, an independently adjustable dual outlet pilot device with a dimension L=.55, a 3/16 tube connection at outlet A and 1/8 tube connection at outlet B is model 6010-32



FM APPROVED SAFETY GAS VALVE

Our FM Approved Safety Gas Valve is a manually operated gas valve designed to prevent fuel explosions in multi-burner gas-fired industrial furnaces, ovens, dryers, and boilers. For more details on FM approved safety gas valves, please see the FM Approval Documentation.

Model 3013 – is an adjustable flow, safety gas valve approved by Factory Mutual Research Corporation. Body and plug are forged brass, (2) 1/4" SAE nuts included. Capacity, 175,000 BTU per hour, recommended operating temperatures, 32°-125°F; 1 psi (6.9 kPa) maximum operating pressure.

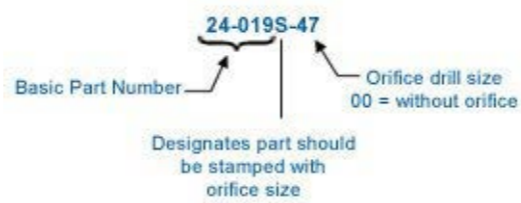


MODEL#	BODY AND PLUG	SAE NUTS	GAS SAFETY COCK APPROVAL	CAPACITY	RECOMMENDED TEMP	MAX OPERATING PRESSURE
3013	Forged Brass	(2) 1/4" SAE Nuts Included	Factory Mutual	175,000 BTU/hr	32°-125°F	1 PSI (6.9 kPa)

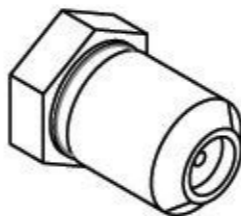
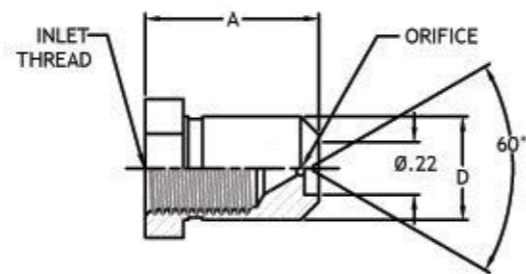


ORIFICE HOODS

Orifice drill size replaces part number suffix -xx; e.g. part number 24-034-45 specifies a #45 (0.82) orifice drill
Insert "S" as sixth digit in part number to order orifices with stamped identification, e.g. 24-034S-45

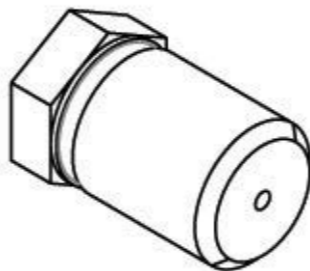
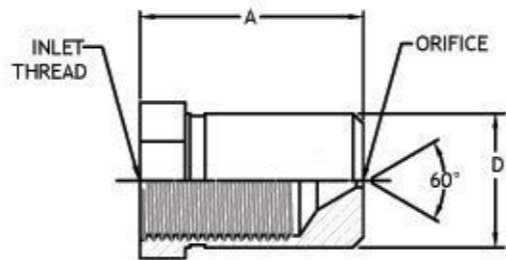


60° APPROACH, COUNTER-BORED EXIT



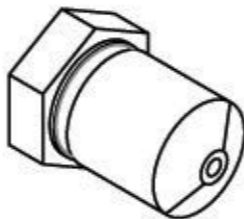
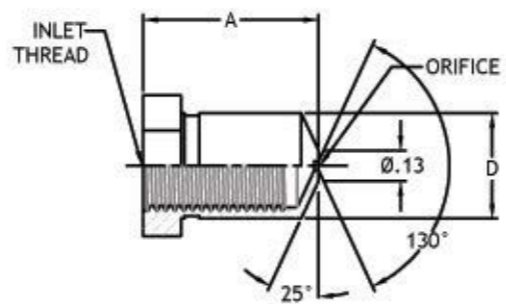
INLET THREAD	DIM A	DIA D	BASE PART #	ORIFICE DRILL SIZE
3/8-27 (F)	0.72	0.43	24-019S	XX
1/2-27 (F)	0.56	0.56	24-038S	XX

60°, 180° APPROACH, NO COUNTER-BORE



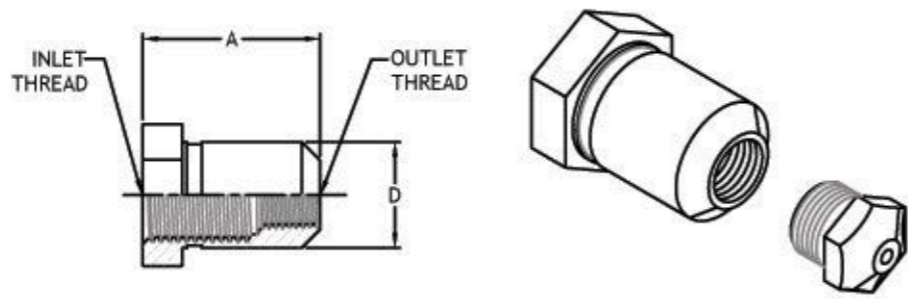
INLET THREAD	DIM A	DIA D	BASE PART #	ORIFICE DRILL SIZE
3/8-27 (F)	0.72	0.43	24-019NCB	XX
1/2-27 (F)	0.94	0.56	24-035S	XX

130° APPROACH, 130° SEATING SURFACE, NO COUNTER-BORE

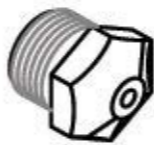
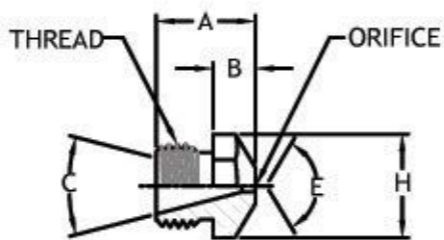


INLET THREAD	DIM A	DIA D	BASE PART #	ORIFICE DRILL SIZE
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HOODS WITH INTERCHANGEABLE ORIFICE SPUDS



INLET THREAD	OUTLET THREAD	DIM A	DIA D	PART #
3/8-27 (F)	16-36 (F)	0.72	0.43	24-019-1636
1/2-27 (F)	16-36 (F)	0.94	0.56	24-038-1636



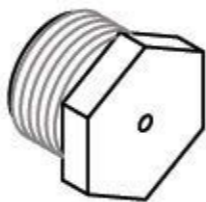
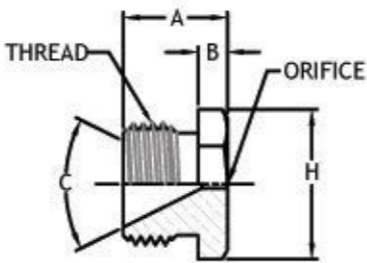
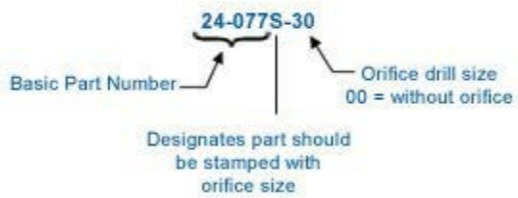
THREAD	HEX SIZE	DIM A	DIM B	APPROACH ANGLE C	PROFILE ANGLE E	(ACROSS HEX CORNERS) H	BASE PART #	ORIFICE DRILL SIZE
16-36 (M)	0.31	0.33	0.21	22°	75°	0.36	24-072-	XX

Orifice drill size replaces part number suffix -xx; e.g. part number 24-077-30 specifies a #30 (0.1285) orifice drill

Three digit suffixes specify orifice diameter in inches, e.g. 24-077-375 has .375 diameter orifice.

Insert "S" as sixth digit in part number to order orifices with stamped identification, e.g. 24-077S-375

Distance H (across hex corners)

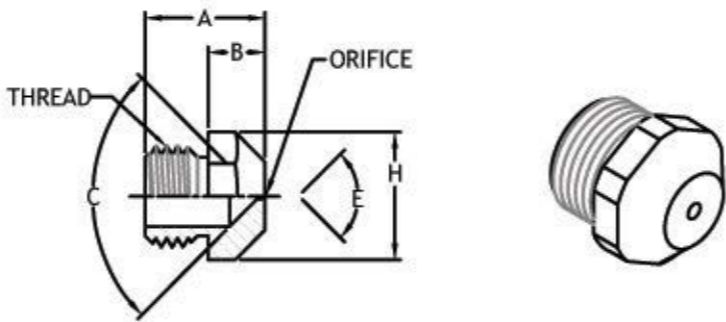


THREAD	HEX SIZE	DIM A	DIM B	APPROACH ANGLE C	(ACROSS HEX CORNERS) H	BASE PART #	ORIFICE DRILL SIZE
1/4-28 (M)	0.25	0.34	0.13	118°	0.29	24-070	-XX
1/4-28 (M)	0.25	0.28	0.12	28°	0.29	24-086	-XX
1/8 MNPT	0.44	1.5	1.12	118°	0.5	24-003	-XX
1/8 MNPT	0.44	0.44	0.12	40°	0.5	24-079	-XX
1/8 MNPT	0.44	0.56	0.12	40°	0.5	24-080	-XX
1/8 MNPT	0.44	0.75	0.31	40°	0.5	24-071	-XX
1/8 MNPT	0.44	0.88	0.5	40°	0.5	24-102	-XX
1/8 MNPT	0.5	0.57	0.25	20°	0.58	24-122	-XX
3/8 MNPT	0.75	0.7	0.28	40°	0.87	24-089	-XX
5/8-27 (M)	0.69	0.53	0.15	46°	0.79	24-105	-XX
7/16-27 (M)	0.5	0.39	0.11	35°	0.58	24-008	-XX
7/16-27 (M)	0.5	0.39	0.11	45°	0.58	24-101	-XX
7/16-27 (M)	0.5	0.34	0.12	45°	0.58	24-074	-XX
9/16-18 (M)	0.62	0.52	0.15	40°	0.68	24-088	-XX
7/8-14 (M)	0.94	0.59	0.19	60°	1.05	24-077	-XX
9/16/18	0.62	0.56	0.16	36°	0.72	24-090	-XX
9/16/18	0.56	0.5	0.16	60°	0.65	24-111	-XX
7/16/27	0.5	0.44	0.16	38°	0.58	24-114	-XX
11/32-32 (M)	0.38	0.31	0.13	40°	0.43	24-006	-XX
11/32-32 (M)	0.38	0.31	0.13	45°	0.43	24-005	-XX
11/32-32 (M)	0.44	0.31	0.12	46°	0.5	24-076	-XX
M6 x 0.75	7mm	0.41	0.19	48°	0.32	24-112	-XX

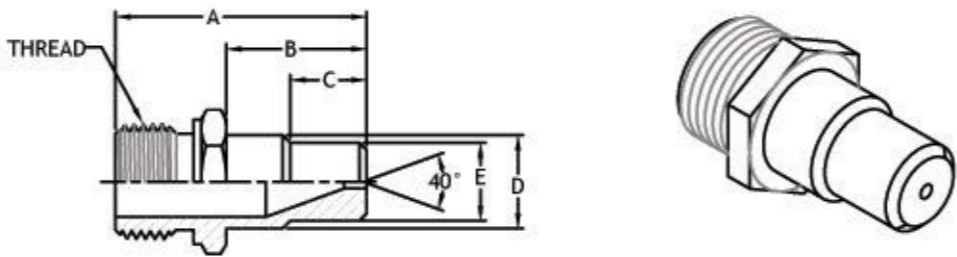
SPECIAL PROFILE ORIFICE SPUDS



THREAD	HEX SIZE	DIM A	DIM B	APPROACH ANGLE C	(ACROSS HEX CORNERS) H	BASE PART #	ORIFICE DRILL SIZE
16-36	0.31	0.41	0.21	75°	0.36	24-072	-XX

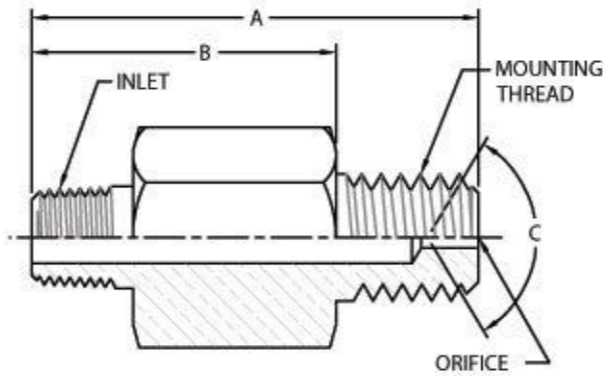


THREAD	HEX SIZE	DIM A	DIM B	APPROACH ANGLE C	PROFILE ANGLE E	(ACROSS HEX CORNERS) H	BASE PART #	ORIFICE DRILL SIZE
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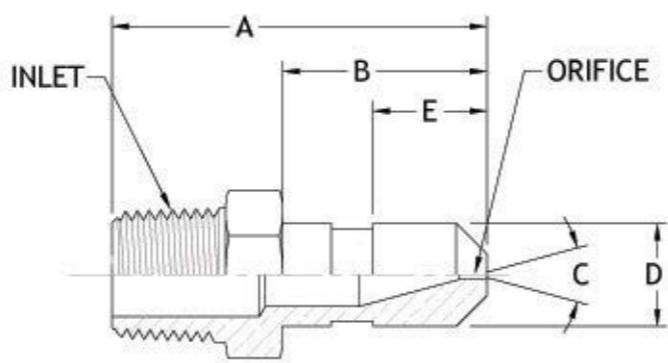
THREAD	HEX SIZE	DIM A	DIM B	DIM C	DIA D	DIA E	BASE PART #	ORIFICE DRILL SIZE
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ORIFICE NOZZLES

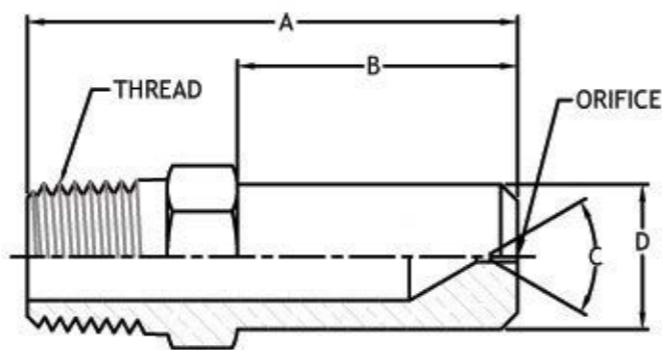


INLET	HEX SIZE	MOUNTING THREAD	DIM A	DIM B	APPROACH ANGLE C	BASE PART #	ORIFICE DRILL SIZE
7/16-24 (M) (1/4CC)	0.44	1/8 MNPT	0.86	0.58	90°	24-069-	-XX

ORIFICE NOZZLES



INLET	HEX SIZE	DIM A	DIM B	APPROACH ANGLE C	DIA D	DIM E	BASE PART #	ORIFICE DRILL SIZE
1/8 MNPT	0.44	1.12	0.61	30°	0.31	0.34	24-045	-XX
7/16-20 (M) (1/4 SAE)	0.44	1.28	0.63	118°	0.31	0.34	24-103	-XX



THREAD	HEX SIZE	DIM A	DIM B	DIA D	APPROACH ANGLE C	BASE PART #	ORIFICE DRILL SIZE
1/4 MNPT	0.56	1.06	0.5	0.49	45°	24-078	-XX
1/4 MNPT	0.56	1.38	0.75	0.52	30°	24-107	-XX
1/4 MNPT	0.56	1.75	1	0.52	60°	24-060	-XX
1/4 MNPT	0.56	1.25	0.437	0.5	22.5°	24-121	-XX
1/8 MNPT	0.44	1	0.44	0.36	118°	24-001	-XX
1/8 MNPT	0.44	1.18	0.47	0.39	54°	24-002	-XX
1/8 MNPT	0.44	1	0.44	0.36	118°	24-004	-XX
1/8 MNPT	0.44	0.97	0.47	0.37	53°	24-073	-XX
1/8 MNPT	0.44	1.06	0.5	0.5	22.5°	24-120	-XX
1/8 MNPT	0.5	0.81	0.44	0.49	61°	24-081	-XX
1/8 MNPT	0.5	0.88	0.37	0.49	30°	24-092	-XX
1/8 MNPT	0.5	1.1	0.56	0.43	118°	24-026	-XX
1/8 MNPT	0.5	0.87	0.4	0.48	40°	24-093	-XX
1/8 MNPT	0.5	1.14	0.515	0.432	60°	24-117	-XX
7/16-27 (M)	0.5	0.99	0.31	0.37	40°	24-109	-XX

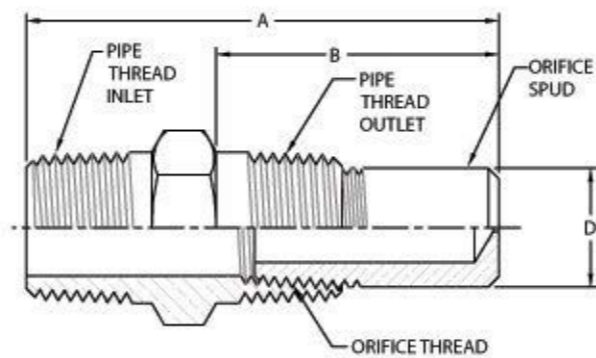


STRAIGHT IN-LINE GAS RESTRICTOR

Orifice drill size replaces part suffix -xx; e.g., part number 4040-65 indicates orifice hood with #65 drill (.035 dia.)

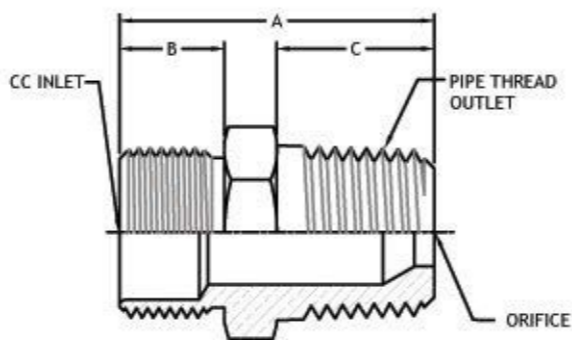


PIPE THREADED INLET



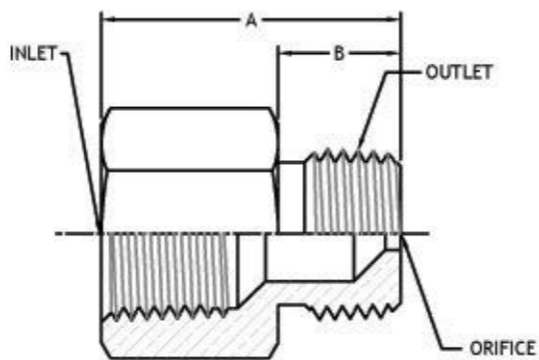
NPT INLET	NPT OUTLET	ORIFICE THREAD	DIM A	DIM B	DIA D	BASE PART #	ORIFICE DRILL SIZE
3/8 MNPT	3/8 MNPT	1/4 NPT	2.12	1.26	0.53	4040	-XX

COMPRESSION INLET



TUBE INLET CC SIZE	INLET THREAD	NPT OUTLET	DIM A	DIM B	BASE PART #	ORIFICE DIAMETER
5/8	13-16-18 (M)	1/2 MNPT	1.5	0.75	23-073	-XX

PIPE THREADED INLET



NPT INLET	NPT OUTLET	DIM A	DIM B	BASE PART #	ORIFICE DIAMETER
1/8 FNPT	1/8 MNPT	0.69	0.28	24-046	-XX
3/4 FNPT	3/4 MNPT	1.69	0.75	23-071	-XX

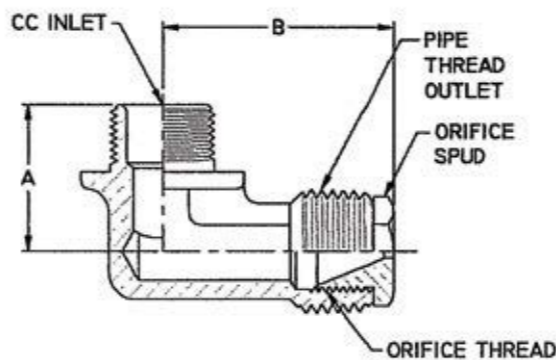


ELBOW IN-LINE GAS RESTRICTOR

Orifice drill size replaces part suffix -xx; e.g., part number 4113-65 indicates orifice spud with #65 drill (.035 diameter)

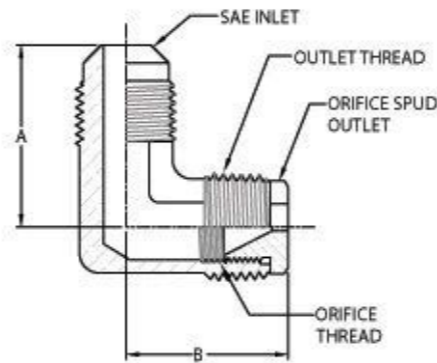


COMPRESSION INLET



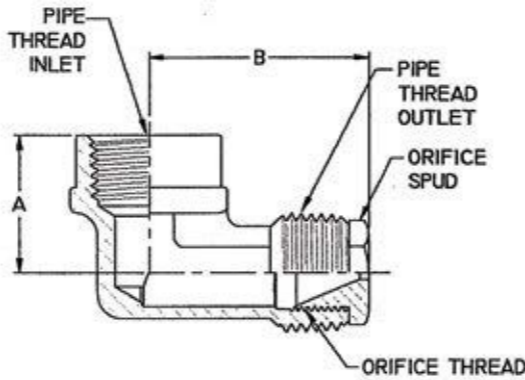
TUBE INLET CC SIZE	NPT OUTLET	ORIFICE THREAD	DIM A	DIM B	BASE PART #	ORIFICE DRILL SIZE
3/8	3/8 MNPT	1/8 NPT	0.78	1.23	4113	-XX
3/8	3/8 MNPT	3/8-27	0.78	1.22	4068-06	-XX
3/8	3/8 MNPT	7/16-27	0.78	1.22	6/2/68	-XX
3/8	3/8 MNPT	1/2-27	0.78	1.22	6/1/68	-XX

SAE (45° FLARE) INLET



TUBE INLET SAE SIZE	NPT OUTLET	ORIFICE THREAD	DIM A	DIM B	BASE PART #	ORIFICE DRILL SIZE
3/8	3/8 MNPT	7/16-27	1.06	1.13	4044	-XX

PIPE THREADED INLET



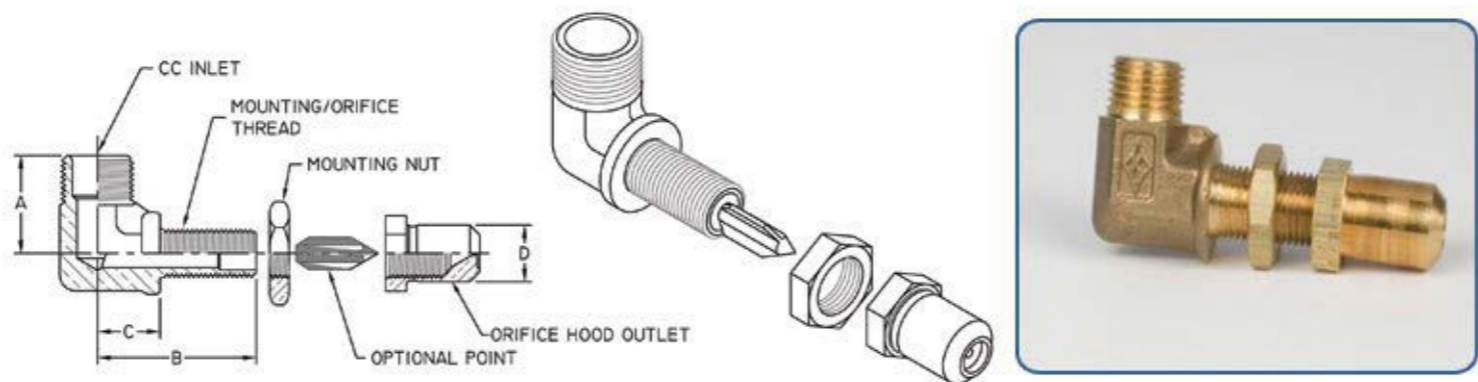
NPT INLET	NPT OUTLET	ORIFICE THREAD	DIM A	DIM B	BASE PART #	ORIFICE DRILL SIZE
3/8 FNPT	3/8 MNPT	7/16-27	0.76	1.2	4042	-XX



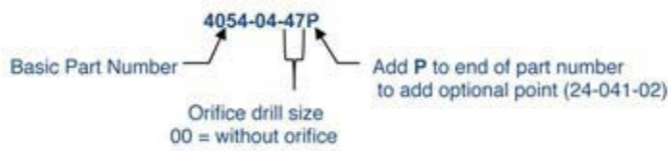
BULKHEAD ELBOW ORIFICE HOLDERS

- Bulkhead design allows mounting connector to sheet metal
- Compression ferrule and nut are included with all Orifice Holders having Compression Conn. (CC) inlets
- Gas orifice can be changed from fixed to adjustable by adding optional point
- Orifice drill size number replaces suffix -xx; e.g., part number 4061-02-65 includes orifice spud with #65 drill (.035 diameter)
- Locknuts are available in different styles: stamped sheet metal type, zinc plated steel hex or brass hex.
- Part numbers ending in P include solid point (p/n 24-041-02)

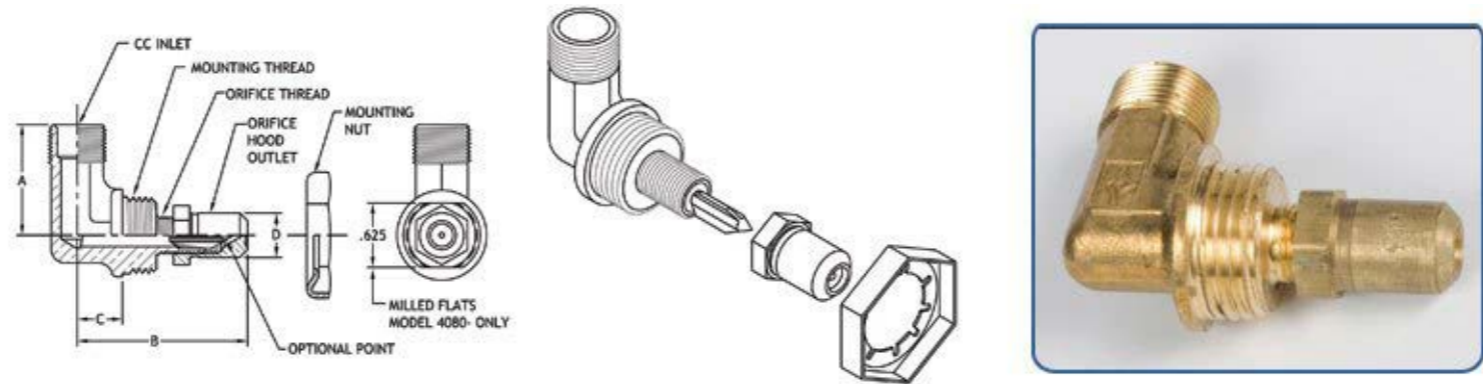
COMPRESSION INLET – ORIFICE HOOD OUTLET



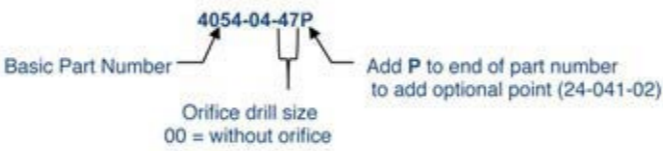
TUBE INLET CC SIZE	INLET THREAD	MOUNTING ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
1/8	5/16-24 (M)	3/8-27	0.63	1.13	0.43	0.43	4054-02	-xx	P
3/16	3/8-24 (M)	3/8-27	0.63	1.13	0.43	0.43	4054-03	-xx	P
1/4	7/16-24 (M)	3/8-27	0.66	1.13	0.43	0.43	4054-04	-xx	P
5/16	1/2-24 (M)	3/8-27	0.69	1.13	0.43	0.43	4054-05	-xx	P
3/8	9/16-24 (M)	3/8-27	0.75	1.13	0.43	0.43	4054-06	-xx	P
7/16	5/8-24 (M)	3/8-27	0.75	1.13	0.43	0.43	4054-07	-xx	P



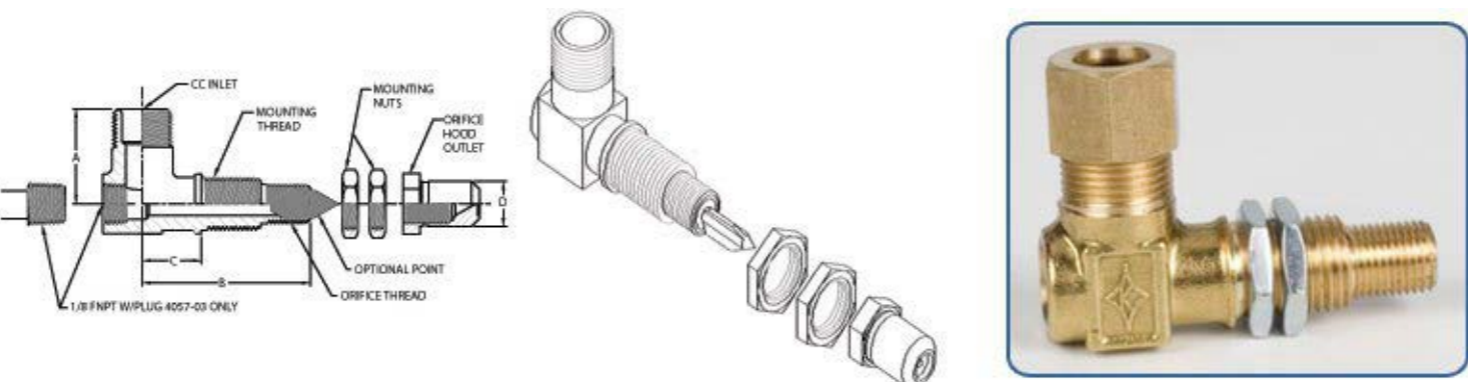
COMPRESSION INLET – ORIFICE HOOD OUTLET



TUBE INLET CC SIZE	INLET THREAD	MOUNTING THREAD	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
1/4	7/16-24 (M)	3/4-16 (M)	3/8-27	1.03	1.66	0.44	0.43	4086	-xx	P
3/8	9/16-24 (M)	3/4-16 (M)	3/8-27	1.03	1.56	0.44	0.43	4080	-xx	P
3/8	9/16-24 (M)	3/4-16 (M)	3/8-27	1.03	1.56	0.44	0.43	4069	-xx	P
7/16	5/8-24 (M)	3/4-16 (M)	3/8-27	1.03	1.56	0.44	0.43	4055	-xx	P
7/16	5/8-24 (M)	3/4-16 (M)	1/2-27	1.03	1.72	0.44	0.56	4056	-xx	P
1/2	1 1/16-20 (M)	3/4-16 (M)	1/2-27	1.11	1.92	0.44	0.56	4117	-xx	P



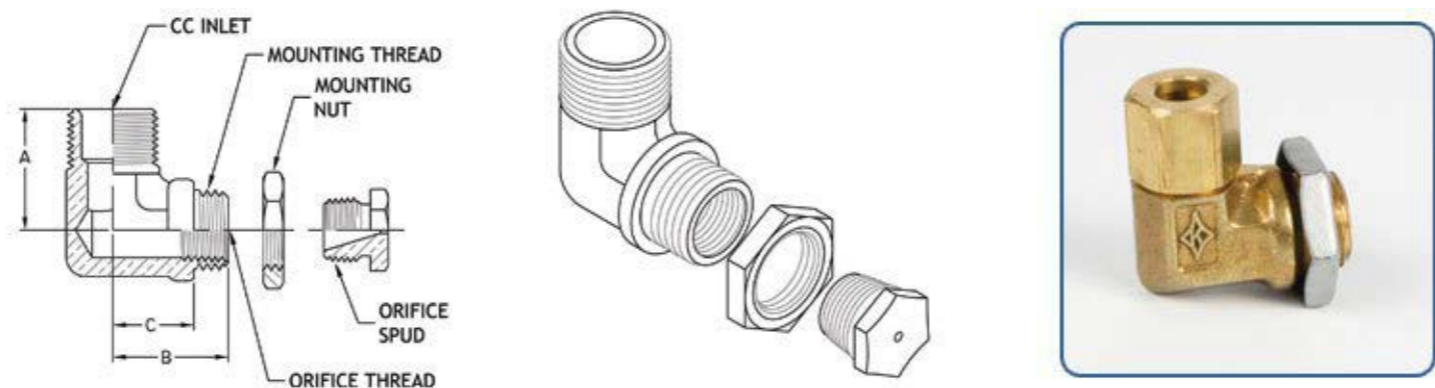
COMPRESSION INLET – ORIFICE HOOD OUTLET



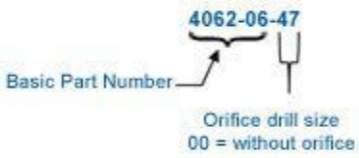
TUBE INLET CC SIZE	INLET THREAD	MOUNTING THREAD	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
3/8	9/16-24 (M)	1/2-20 (M)	3/8-27	0.9	1.59	0.56	0.43	4057-02	-xx	P
3/8	9/16-24 (M)	1/2-20 (M)	3/8-27	0.9	1.59	0.56	0.56	4057-03	-xx	P
7/16	5/8-24 (M)	1/2-20 (M)	3/8-27	0.91	1.59	0.56	0.56	4057-01	-xx	P



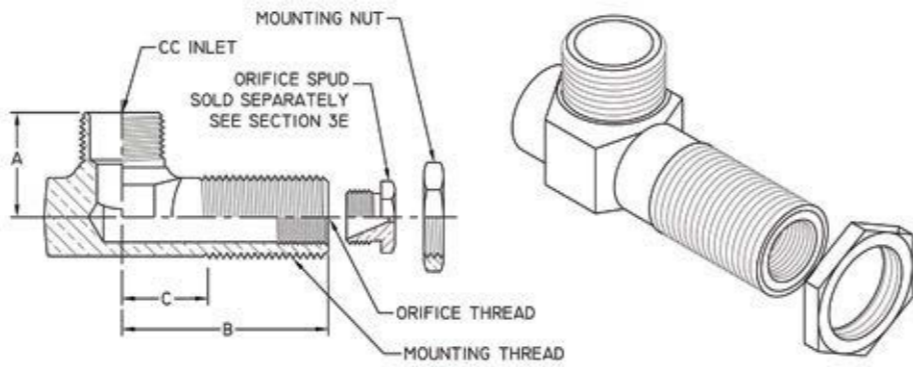
COMPRESSION INLET – ORIFICE SPUD OUTLET



TUBE INLET CC SIZE	INLET THREAD	MOUNTING THREAD	ORIFICE THREAD	DIM A	DIM B	DIM C	BASE PART #	ORIFICE DRILL SIZE
1/4	7/16-24 (M)	3/8-27 (M)	#16-36	0.66	0.66	0.41	4062-04	-XX
1/4	7/16-24 (M)	1/2-20 (M)	5/16-24	0.66	0.75	0.49	4061-04	-XX
1/4	7/16-24 (M)	1/2-20 (M)	1/8 NPT	0.66	0.75	0.49	4090-04	-XX
1/8	5/16-24 (M)	3/8-27 (M)	#16-36	0.63	0.66	0.41	4062-02	-XX
1/8	5/16-24 (M)	1/2-20 (M)	5/16-24	0.63	0.75	0.49	4061-02	-XX
1/8	5/16-24 (M)	1/2-20 (M)	1/8 NPT	0.63	0.75	0.49	4090-02	-XX
3/8	9/16-24 (M)	3/8-27 (M)	#16-36	0.75	0.66	0.41	4062-06	-XX
3/8	9/16-24 (M)	1/2-20 (M)	5/16-24	0.75	0.75	0.49	4061-06	-XX
3/8	9/16-24 (M)	1/2-20 (M)	1/8 NPT	0.75	0.75	0.49	4090-06	-XX
3/8	9/16-24 (M)	3/4-16 (M)	1/8 NPT	1.03	0.72	0.39	4119-06	-XX
3/8	9/16-24 (M)	3/8 NPSM	7/16-27	0.76	0.91	0.41	4116-06	-XX
3/16	3/8-24 (M)	3/8-27 (M)	#16-36	0.66	0.66	0.41	4062-03	-XX
3/16	3/8-24 (M)	1/2-20 (M)	5/16-24	0.66	0.75	0.49	4061-03	-XX
3/16	3/8-24 (M)	1/2-20 (M)	1/8 NPT	0.66	0.75	0.49	4090-03	-XX
5/16	1/2-24 (M)	3/8-27 (M)	#16-36	0.69	0.66	0.41	4062-05	-XX
5/16	1/2-24 (M)	1/2-20 (M)	5/16-24	0.69	0.75	0.49	4061-05	-XX
5/16	1/2-24 (M)	1/2-20 (M)	1/8 NPT	0.69	0.75	0.49	4090-05	-XX
7/16	5/8-24 (M)	3/8-27 (M)	#16-36	0.75	0.66	0.41	4062-07	-XX
7/16	5/8-24 (M)	1/2-20 (M)	5/16-24	0.75	0.75	0.49	4061-07	-XX
7/16	5/8-24 (M)	1/2-20 (M)	1/8 NPT	0.75	0.75	0.49	4090-07	-XX



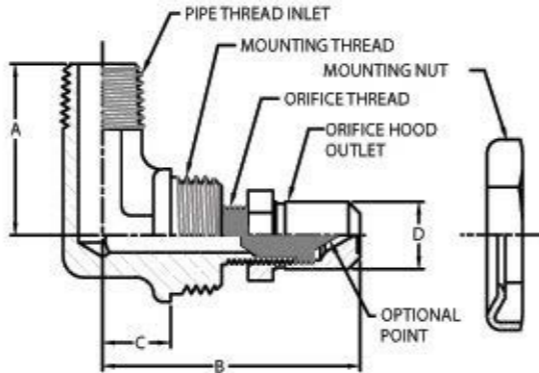
COMPRESSION INLET – ORIFICE SPUD OUTLET



TUBE INLET CC SIZE	INLET THREAD	MOUNTING THREAD	ORIFICE THREAD	DIM A	DIM B	DIM C	BASE PART #	ORIFICE DRILL SIZE
3/8	9/16-24 (M)	3/8 NPSM	7/16-27	0.76	0.91	0.41	4116-06	-xx
7/16	5/8-24 (M)	3/8 NPSM	7/16-27	0.84	0.84	0.84	4084-07	-xx
1/2	11/16-24 (M)	3/8 NPSM	7/16-27	0.84	1.66	0.66	4084-08	-xx

Basic Part Number **4084-08-47**
 Orifice drill size
 00 = without orifice

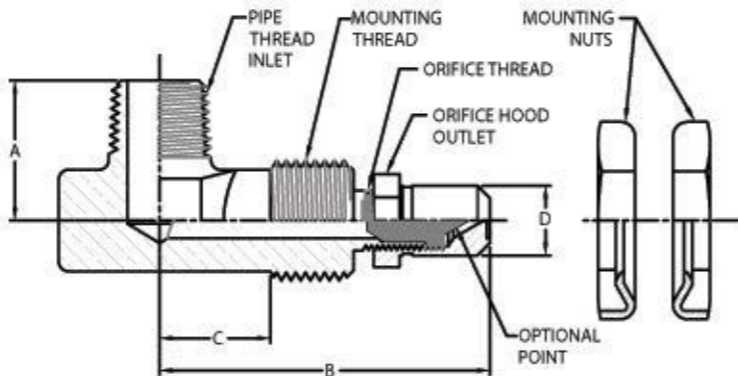
MALE PIPE THREAD INLET – ORIFICE HOOD OUTLET



NPT INLET	MOUNTING THREAD	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
1/4 MNPT	3/4-16 (M)	3/8-27	1.1	1.66	0.44	0.43	4052	-xx	P
3/8 MNPT	3/4-16 (M)	3/8-27	1.1	1.66	0.44	0.43	4139	-xx	P

Basic Part Number **4052-47P**
 Add P to end of part number to add optional point
 Orifice drill size
 00 = without orifice

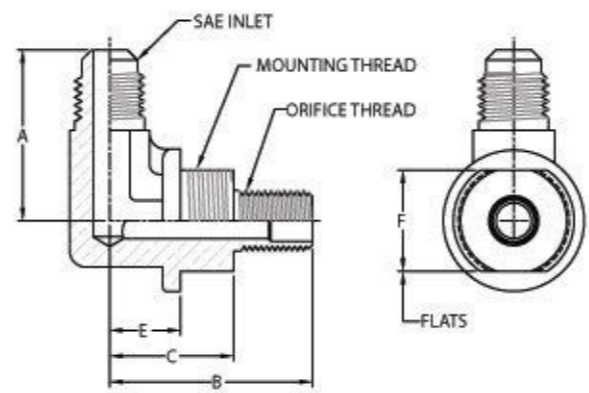
MALE PIPE THREAD INLET – ORIFICE HOOD OUTLET



NPT INLET	MOUNTING THREAD	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
3/8 MNPT	5/8-18 (M)	3/8-27	0.87	2.06	0.69	0.43	4104	-xx	P

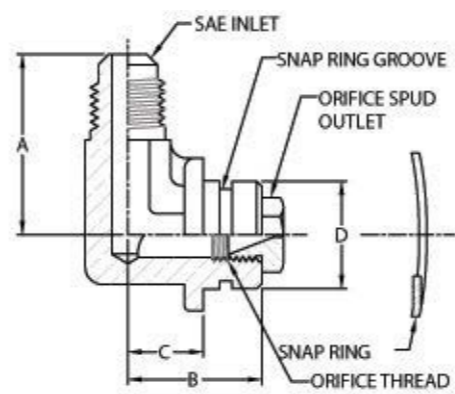
Basic Part Number **4104-47P**
 Add P to end of part number to add optional point
 Orifice drill size
 00 = without orifice

SAE (45° FLARE) INLET – ORIFICE HOOD OUTLET

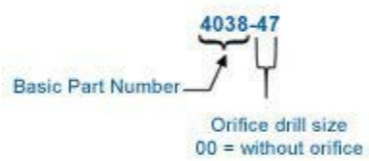


SAE INLET TUBE	MOUNTING THEAD	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM E	FLATS F	PART #
1/4	3/4-16 (M)	3/8-27 (M)	1.06	1.26	0.77	0.44	0.63	23-002-27

NOTE: Inlet connector nut, mounting nut and orifice hood for 23-002-27 are sold separately



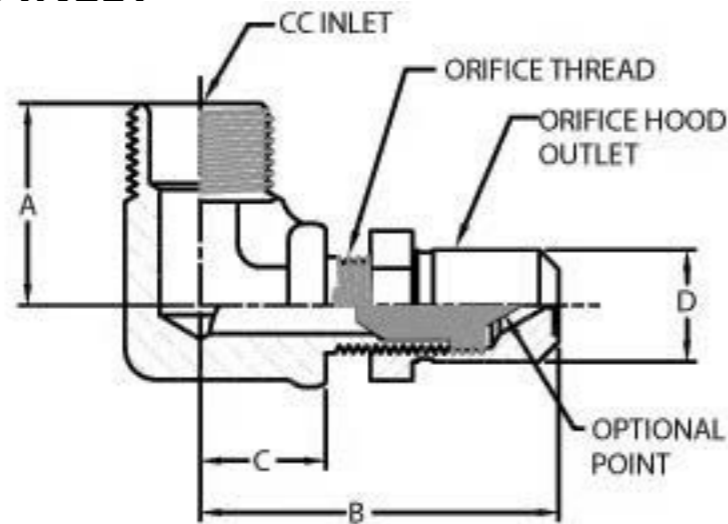
TUBE INLET SAE SIZE	INLET THREAD	MOUNTING FASTENER	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	BASE PART #	ORIFICE DRILL SIZE
1/4	7/16-20 (M)	Snap Ring	5/16-24	1.05	0.78	0.44	0.63	4038	-XX
3/8	5/8-18 (M)	Snap Ring	16-36	1.12	0.78	0.44	0.63	4092	-XX



Compression ferrule and nut are included with all Orifice Holders having Compression Conn. (CC)
 Orifice drill size number replaces suffix -xx; e.g., part number 4082-02-65 includes orifice hood with #65 drill (.035 diameter)
 Part numbers ending in P include solid point (p/n 24-041-02)

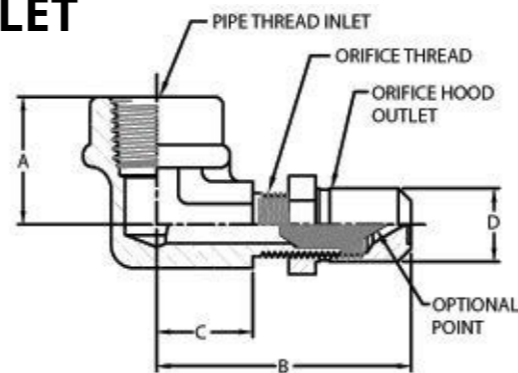


COMPRESSION INLET



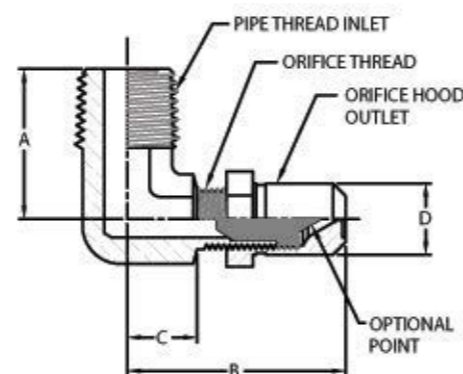
INLET CC SIZE	INLET THREAD	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
1/8	5-16-24 (M)	3/8-27	0.63	1.31	0.42	0.43	4082-02	-xx	-P
3/16	3/8-24 (M)	3/8-27	0.63	1.31	0.42	0.43	4082-03	-xx	-P
1/4	7/16-24 (M)	3/8-27	0.72	1.31	0.42	0.43	4082-04	-xx	-P
5/16	1/2-24 (M)	3/8-27	1.68	0.87	0.37	0.43	4106	-xx	-P
3/8	9/16-24 (M)	3/8-27	0.75	1.31	0.42	0.43	4082-06	-xx	-P

FEMALE PIPE THREAD INLET



NPT INLET	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
1/8 FNPT	3/8-27	0.76	1.44	0.47	0.43	4059	-XX	-P
1/4 FNPT	3/8-27	0.75	1.44	0.57	0.43	4105	-XX	-P
3/8 FNPT	3/8-27	0.75	1.44	0.57	0.43	4066	-XX	-P
1/2 FNPT	1/2-27	0.97	1.93	0.81	0.56	4124	-XX	-P

MALE PIPE THREAD INLET



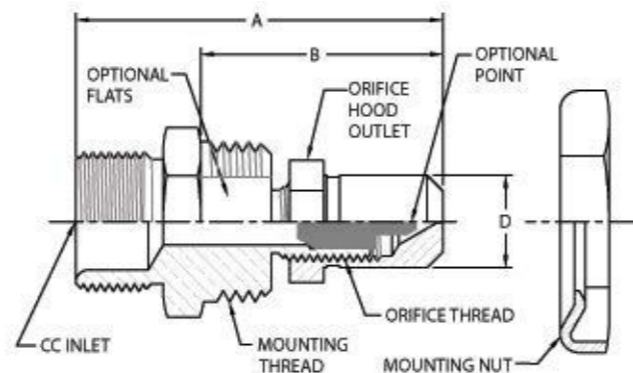
NPT INLET	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
1/8 MNPT	3/8-27	0.69	1.46	0.47	0.43	4053	-xx	-P
1/4 MNPT	3/8-27	1.24	1.09	0.56	0.43	4099	-xx	-P
3/8 MNPT	3/8-27	0.24	1.09	0.56	0.43	4031	-xx	-P
3/8 MNPT	1/2-27	1.25	1.12	0.47	0.56	4100	-xx	-P

BULKHEAD STRAIGHT ORIFICE HOLDERS

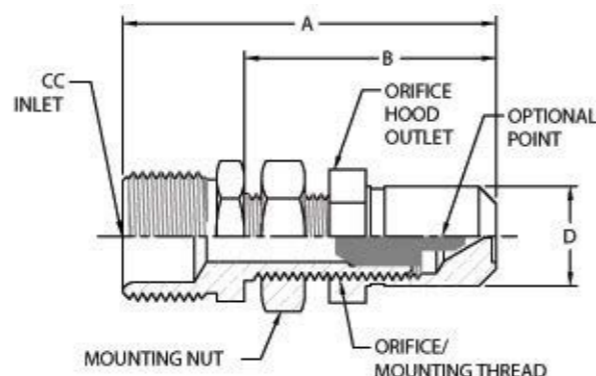
Compression ferrule and nut are included with all Orifice Holders having Compression Connection (CC) inlets
 Gas orifice can be changed from fixed to adjustable by adding optional point
 Locknuts are available in different styles: stamped sheet metal type, zinc plated steel hex or brass hex.
 Orifice drill size number replaces suffix -xx; e.g., part number 4081-65 includes orifice hood with #65 drill (.035 diameter)



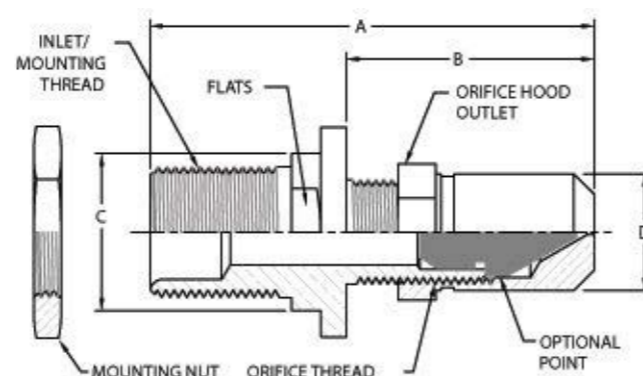
COMPRESSION INLET



TUBE INLET CC SIZE	INLET THREAD	MOUNTING THREAD	ORIFICE THREAD	DIM A	DIM B	DIM D	ACCROSS FLATS	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
3/8	9/16-24 (M)	3/4-16 (M)	3/8-27	1.75	1.23	0.43	0.63	4081	-xx	P
7/16	5/8-24 (M)	3/4-16 (M)	3/8-27	1.83	1.24	0.43	N/A	4087	-xx	P
1/2	1 1/16-20 (M)	3/4-16 (M)	1/2-27	2.01	1.3	0.56	N/A	4060	-xx	P

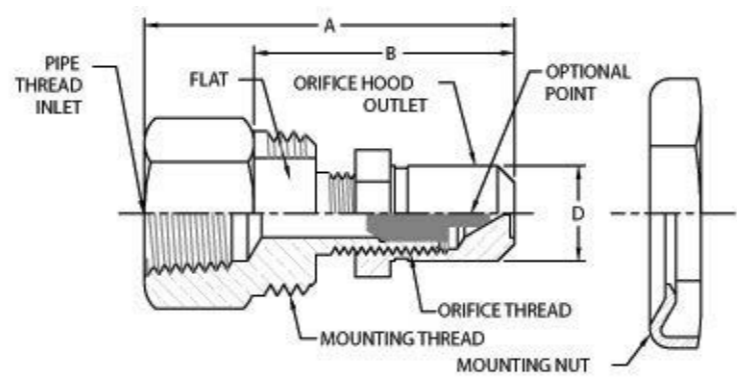


TUBE INLET CC SIZE	INLET THREAD	ORIFICE MOUNTING G THREAD	DIM A	DIM B	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
3/8	9/16-24 (M)	3/8-27 (M)	1.66	1.16	0.43	4067	-xx	P

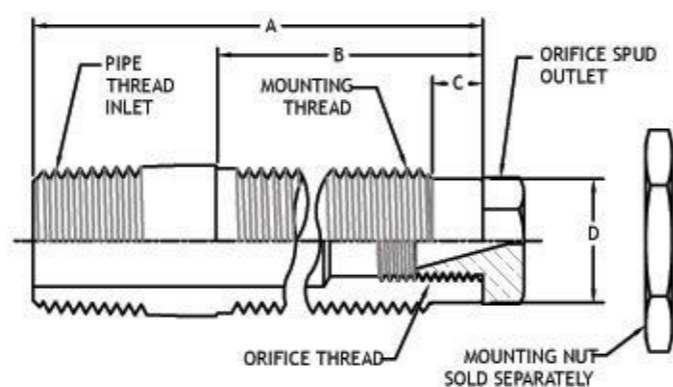


TUBE INLET CC SIZE	INLET MOUNTING THREAD	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	ACCROSS FLATS	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
3/8	9/16-24 (M)	3/8-27	1.73	1.04	0.75	0.43	0.63	4118-06	-XX	P
7/16	5/8-24 (M)	1/2-27	2.12	1.04	0.75	0.56	0.63	4118-07	-XX	P

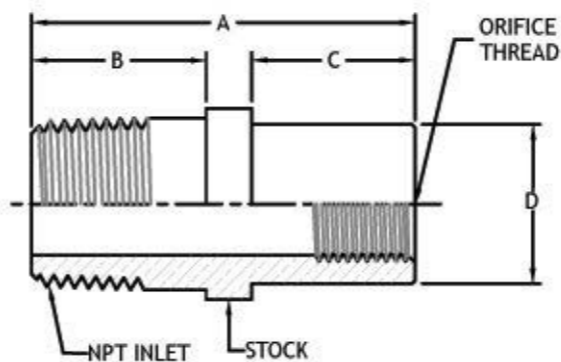
PIPE THREADED INLET



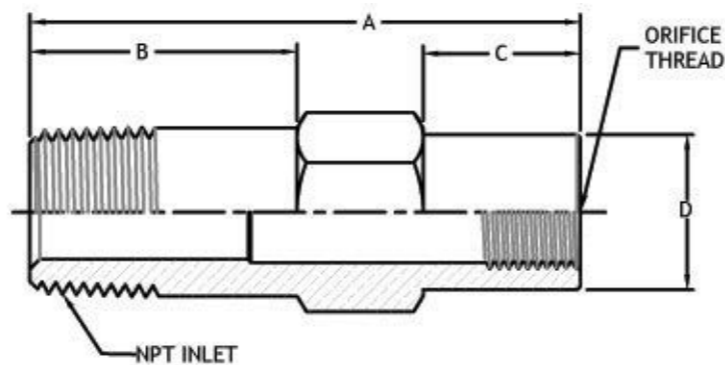
NPT INLET	MOUNTING THREAD	ORIFICE THREAD	DIM A	DIM B	DIM D	ACCROSS FLATS	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
1/4 FNPT	3/4-16 (M)	3/8-27	1.68	1.18	0.43	0.56	4026	-xx	P



NPT INLET	STOCK	MOUNTING G THREAD	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	BASE PART #	ORIFICE DRILL SIZE
3/8 MNPT	Ø .69 BRASS	3/8 NPSM	3/8-27	2.72	1.81	0.23	0.56	4047	-xx



NPT INLET	STOCK	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	PART #
3/8 MNPT	Ø .75 CRS	7/16-27	1.52	0.65	0.69	0.63	23-133-06
3/8 MNPT (+2 turns)	Ø .75 CRS	7/16-27	1.52	0.65	0.69	0.63	23-134-06



NPT INLET	STOCK	ORIFICE THREAD	DIM A	DIM B	DIM C	DIM D	PART #
3/8 MNPT (+2 turns)	Ø .69 HEX BRASS	7/16-27	1.52	0.65	0.69	0.63	23-135-06



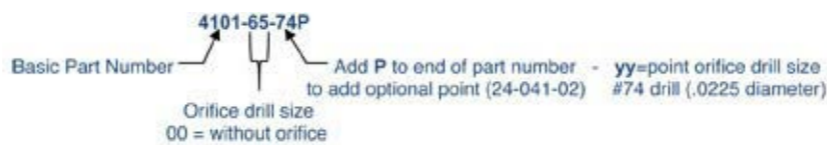
REGULAR STRAIGHT ORIFICE HOLDERS

Orifice drill size replaces part suffix-xx; e.g., part number 4101-65 indicates orifice hood with #65 drill (.035 diameter)

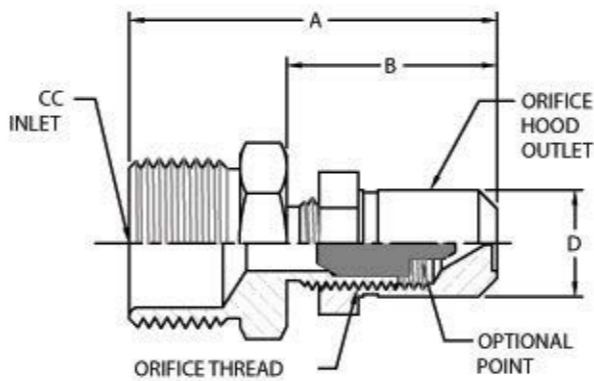
Gas orifice can be changed from fixed to adjustable by adding optional point (24-041-02)

To order assemblies with points, add suffix -yyP to part number where yy is the point orifice drill size; e.g. orifice holder 4101-65-74P will have hood with a #65 drill and a point with a #74 drill (.0225 diameter)

To specify a solid point (no orifice drill), add suffix -00P

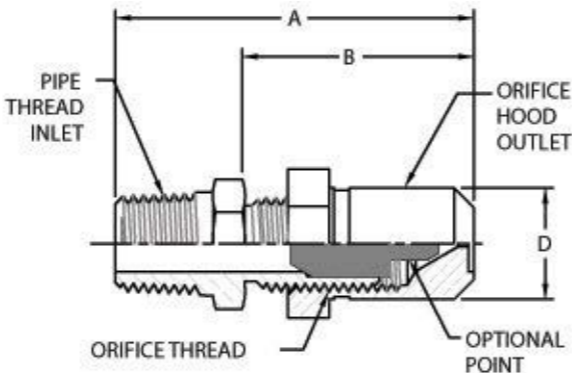


COMPRESSION INLET



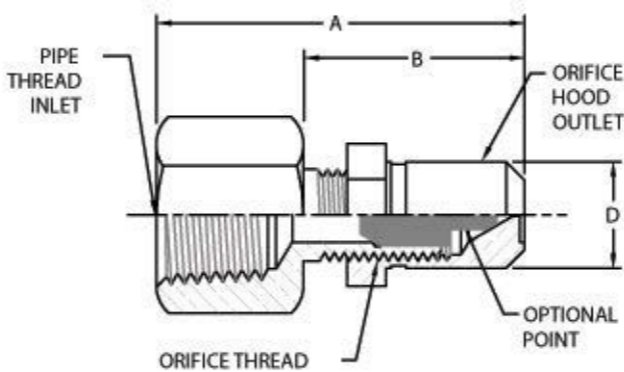
TUBE INLET CC SIZE	INLET THREAD	ORIFICE THREAD	DIM A	DIM B	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
1/2	11/16-20 (M)	3/8-27	1.45	0.76	0.43	4101	-xx	P

PIPE THREADED INLET

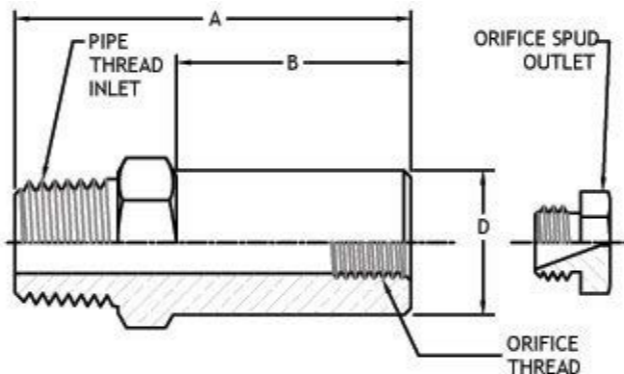


NPT INLET	ORIFICE THREAD	DIM A	DIM B	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
1/8 MNPT	3/8-27	1.31	0.81	0.43	4048	-xx	P
1/4 MNPT	3/8-27	1.47	0.88	0.43	4070	-xx	P

PIPE THREADED INLET



NPT INLET	ORIFICE THREAD	DIM A	DIM B	DIM D	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
3/8-27 (FT)*	3/8-27	2.6	0.99	0.43	4071	-XX	P
1/8 FNPT	3/8-27	1.34	0.8	0.43	4127	-XX	P
1/8 FNPT	3/8-27	1.5	0.9	0.43	4097	-XX	P



NPT INLET	ORIFICE THREAD	DIM A	DIM B	DIM D	BASE PART #	ORIFICE DRILL SIZE
1/4 MNPT	5/16-24	2	1.37	0.49	4130	-XX
1/4 MNPT	11/32-32	1.69	1	0.62	4131	-XX

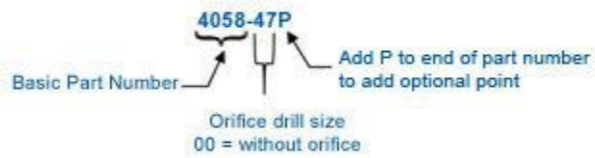
4101-65-74P
 Basic Part Number Add P to end of part number - yy=point orifice drill size
 Orifice drill size to add optional point (24-041-02) #74 drill (.0225 diameter)
 00 = without orifice



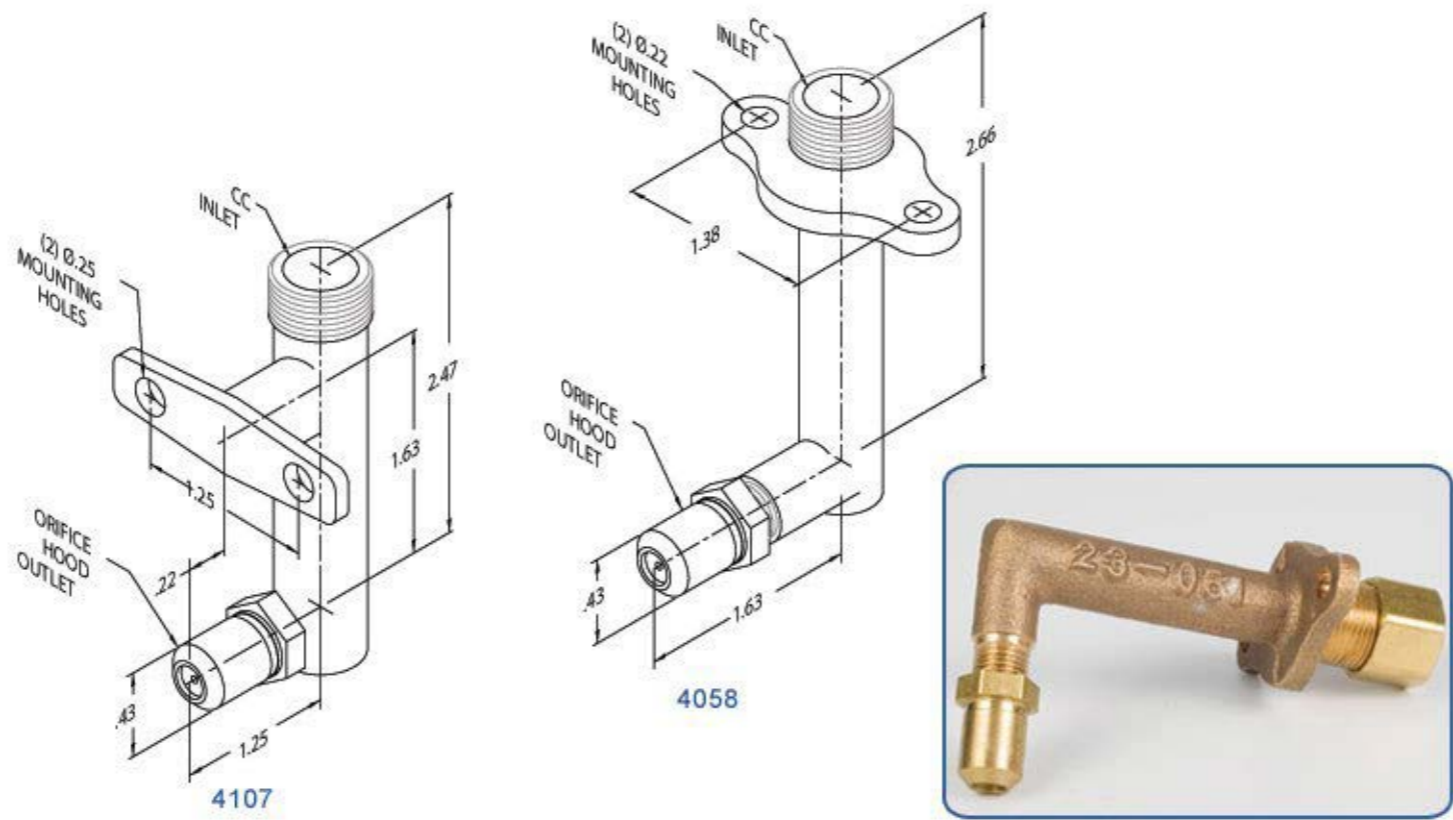
FLANGE MOUNT ORIFICE HOLDERS – ELBOW

Orifice drill size number replaces suffix -xx; e.g., part number 4061-02-65 includes orifice spud with #65 drill (.035 diameter)

Part numbers ending in P include solid point (p/n 24-041-02)

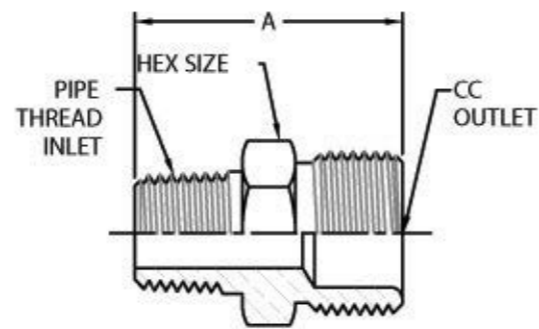


COMPRESSION INLET



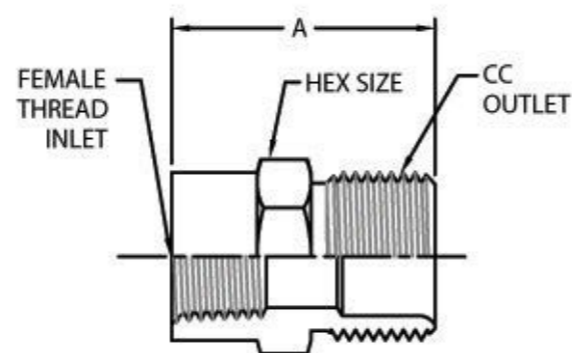
TUBE INLET CC SIZE	ORIFICE THREAD	BASE PART #	ORIFICE DRILL SIZE	OPTIONAL POINT
5/8	3/8/27	4058	-xx	P
5/8	3/8/27	4107	-xx	P

COMPRESSION CONNECTOR



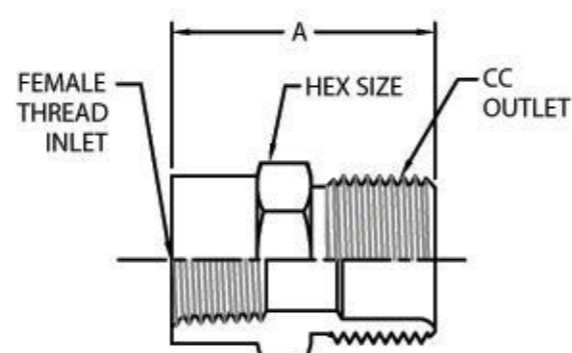
NPT INLET	TUBE OUTLET CC SIZE	DIM A	HEX SIZE	FLOW DIA	PART #
1/8 MNPT	1/4	0.86	0.44	0.19	4045
1/8 MNPT	3/8	0.97	0.56	0.25	4096-06
1/8 MNPT	7/16	0.98	0.62	0.19	4096-07
1/4 MNPT	3/8	1.06	0.56	0.33	4123-06
1/4 MNPT	7/16	1.09	0.62	0.33	4123-07
3/8 MNPT	7/16	1.13	0.69	0.34	4051-07

*Compression ferrule and nut are included with this connector



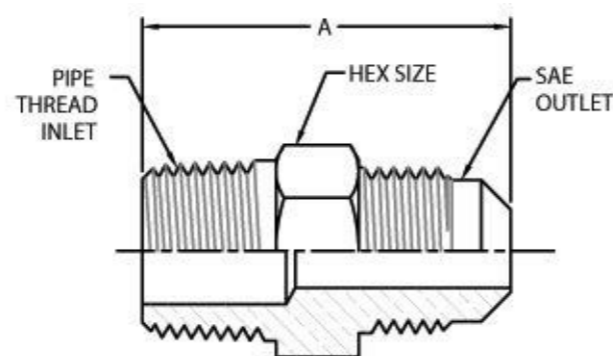
NPT INLET	TUBE OUTLET CC SIZE	DIM A	HEX SIZE	FLOW DIA	PART #
1/8 FNPT	1/4	0.78	0.56	0.19	4050-04
1/8 FNPT	3/8	0.88	0.56	0.31	4050-06
1/4 FNPT	3/8	1	0.62	0.31	4125-06

VALVE ADAPTOR



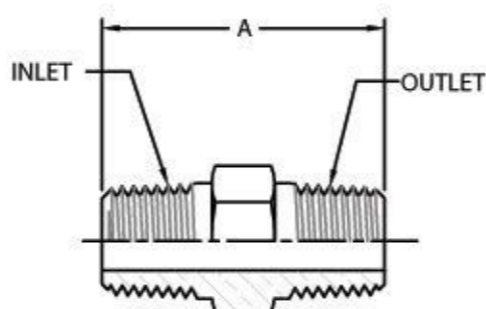
NPT INLET	TUBE OUTLET CC SIZE	DIM A	HEX SIZE	FLOW DIA	PART #
3/8-27 (F)	1/4	0.75	0.5	0.19	4095-04
3/8-27 (F)	3/8	0.78	0.56	0.34	4095-06

45° FLARE CONNECTOR



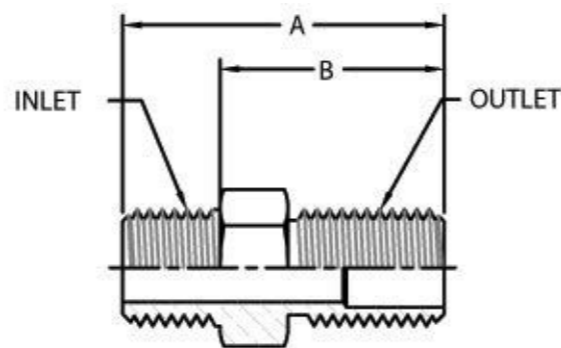
NPT INLET	TUBE OUTLET CC SIZE	DIM A	HEX SIZE	FLOW DIA	PART #
1/8 MNPT	1/4	1.06	0.44	0.19	230-67-04
1/8 MNPT	3/8	0.24	0.62	0.22	230-67-05
3/8 MNPT	3/8	1.38	0.69	0.28	23-065-02

HEX NIPPLE



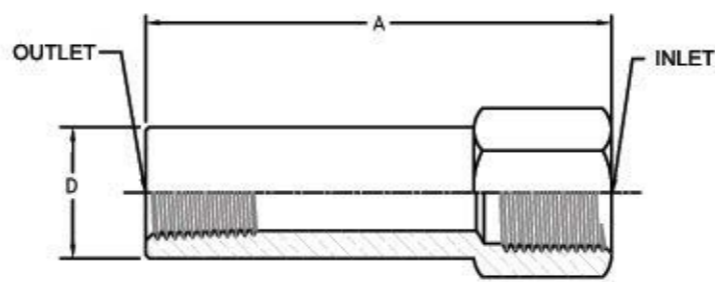
INLET	OUTLET	DIM A	FLOW DIA	PART #	PART #
1/8 MNPT	1/8 MNPT	0.97	0.22	230-67-08	230-67-04
3/8 MNPT	3/8 MNPT	1.41	0.44	23-010-02	230-67-05

ORIFICE ADAPTOR



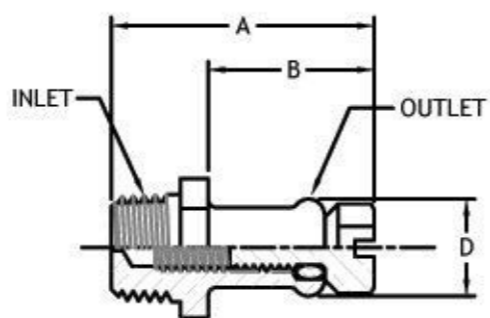
INLET	OUTLET	DIM A	DIM B	FLOW DIA	PART #
1/8 MNPT	3/8-27 (M)	1.03	0.65	0.22	23-048

VALVE EXTENSION ADAPTOR



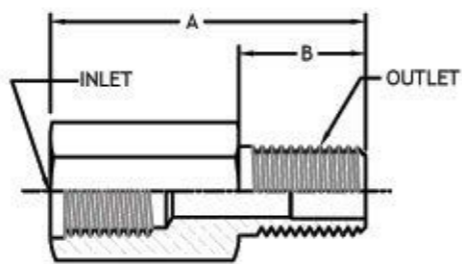
INLET	OUTLET	DIM A	DIA D	FLOW DIA	PART #
1/8 FNPT	1/2-27 (F)	2	0.56	0.34	23-058-01

MANIFOLD PRESSURE TAP



NPT INLET	D (HOSE OUTLET SIZE)	DIM A	DIM B	FLOW DIA	PART #
1/8 MNPT	5/16 (8mm)	0.95	0.6	0.028	4120-02

VALVE OUTLET EXTENSION



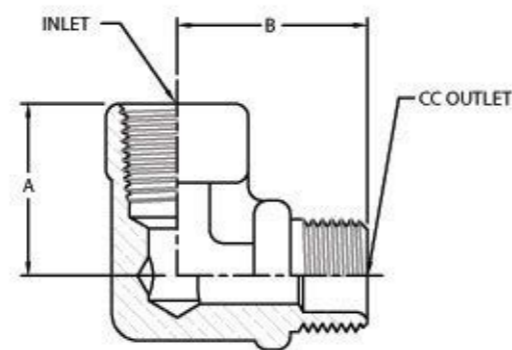
INLET	OUTLET	DIM A	FLOW DIA.	PART NUMBER
3/8-27 (FT)*	3/8-27 (M)	2.12	0.2	23-069-01
3/8-27 (FT)*	3/8-27 (M)	2.63	0.2	23-069-04
3/8-27 (FT)*	3/8-27 (M)	3.22	0.2	23-069-03

*special female tapered thread

ELBOW CONNECTORS

Compression Ferrule and nut are included with fittings having Compression Connection Outlets

VALVE OUTLET ADAPTOR

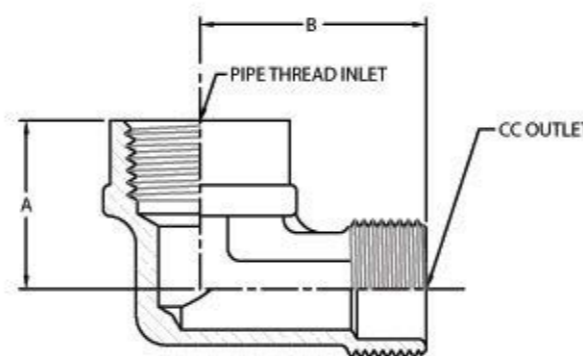


INLET	TUBE OUTLET CC SIZE	DIM A	DIM B	PART #
3/8-27 (FT)*	1/4	0.69	0.72	4063-04
3/8-27 (FT)*	3/8	0.69	0.75	4063-06

*Converts a valve otherwise configured for an orifice hood outlet to a tube outlet at a 90 degree angle.

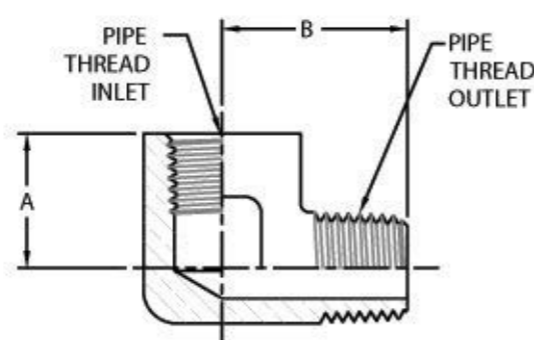
COMPRESSION CONNECTOR

Female pipe to compression outlet



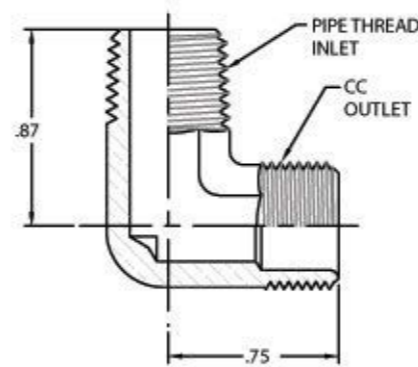
INLET	TUBE OUTLET CC SIZE	DIM A	DIM B	PART #
3/8 FNPT	7/16	0.76	1.03	4083

STANDARD PIPE ELBOWS



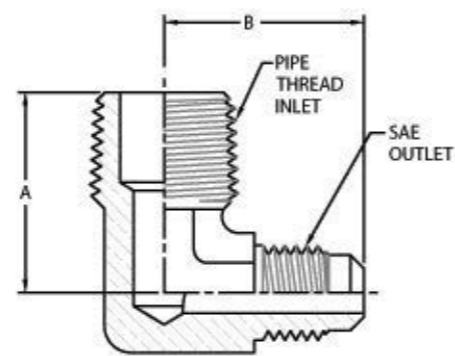
INLET	OUTLET	DIM A	DIM B	PART #
1/8 FNPT	1/8 MNPT	0.48	0.66	23-076-01
1/2 FNPT	1/2 MNPT	0.94	1.43	23-076-04
1/4 FNPT	1/4 MNPT	0.94	0.97	23-088-BLKN

COMPRESSION CONNECTOR

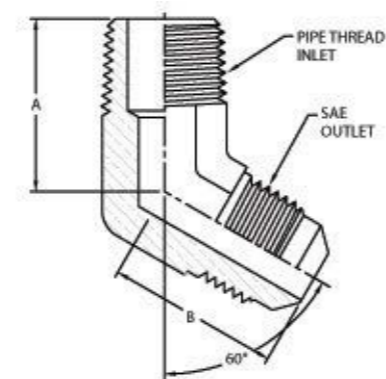


INLET	TUBE OUTLET CC SIZE	DIM A	DIM B	PART #
1/8 MNPT	3/16	0.7	0.66	4088-03
1/8 MNPT	1/4	0.7	0.66	4088-04
1/4 MNPT	3/8	0.87	0.75	4122-06

45° FLARE CONNECTOR



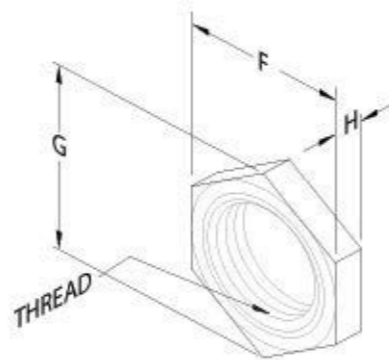
INLET	TUBE OUTLET CC SIZE	DIM A	DIM B	PART #
1/8 MNPT	1/4	0.75	0.81	230-67-06
3/8 MNPT	1/4	0.91	0.91	23-095-04
3/8 MNPT	3/8	1	0.9	23-042-01



INLET	OUTLET	DIM A	DIM B	PART #
3/8 MNPT	3/8	0.94	0.94	23-065-01

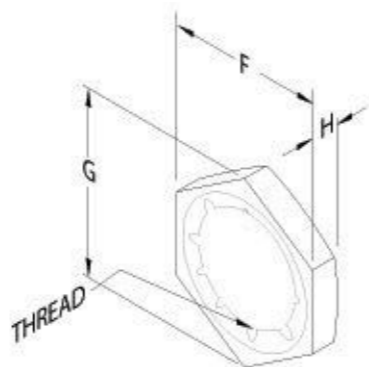
MOUNTING NUTS

HEX JAM NUTS



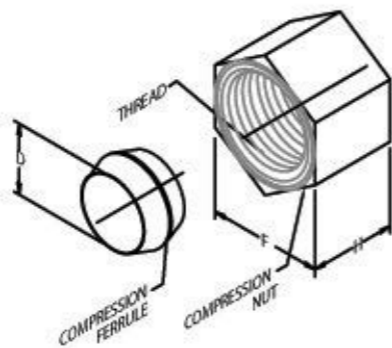
THREAD	HEX SIZE F	ACROSS CORNERS G	THICKNESS H	MATERIAL	PART #
1/4 NPSM	0.75	0.87	0.16	Steel	15-015-02
3/8-27	0.56	0.65	0.16	Brass	15-005
1/2-24	0.62	0.72	0.13	Brass	15-011-05
3/8-24	0.56	0.65	0.13	Brass	15-011-03
5/8-24	0.87	1.00	0.13	Brass	15-011-07
1/2-20	0.62	0.72	0.13	Steel	15-022-01
1/2-20	0.62	0.72	0.13	Brass	15-022-02
5/8-18	0.93	1.07	0.16	Steel	15-016
3/4-16	0.93	1.07	0.13	Brass	15-020-02
3/4-16	0.93	1.07	0.13	Steel	15-020-01
3/8 NPSM	0.87	1.00	0.13	Steel	15-015-03
3/8 NPSM	0.87	1.00	0.13	Steel	15-015-03C
3/8 NPSM	0.87	1.00	0.13	Brass	15-015-03B
#6-40	0.31	0.36	0.10	Steel	15-018-01

SPRING TEMPER STEEL LOCKING NUTS WITH ZINC PLATE FINISH



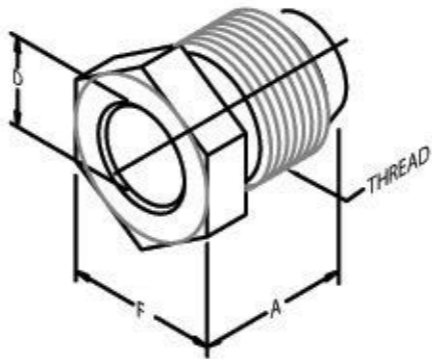
THREAD	HEX SIZE F	ACROSS CORNERS G	THICKNESS H	PART #
3/8-27	0.56	0.65	0.09	15-021-02
1/2-20	0.75	0.87	0.17	15-021-01
3/4-16	1.06	1.22	0.23	15-004

TUBE NUTS COMPRESSION FERRULE & NUT



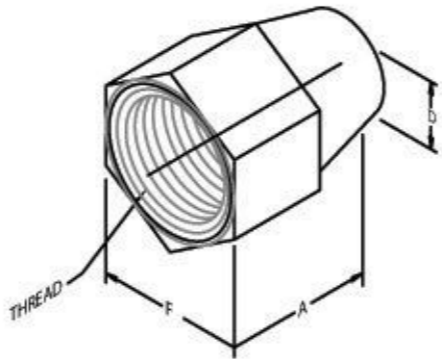
TUBE SIZE D	THREAD	HEX SIZE F	THICKNESS H	FERRULE PART NUMBER	NUT PART #
1/8	5-16-24	0.38	0.38	16-001-02	15-001-02
3/16	3/8-24	0.44	0.41	16-001-03	15-001-03
1/4	7/16-24	0.50	0.44	16-001-04	15-001-04
5/16	1/2-24	0.56	0.44	16-001-05	15-001-05
3/8	9/16-24	0.63	0.47	16-001-06	15-001-06
7/16	5/8-24	0.69	0.50	16-001-07	15-001-07
1/2	1 1/16-20	0.81	0.62	16-001-08	15-001-08

THREADED SLEEVE TUBE CONNECTOR



TUBE SIZE D	HEX SIZE F	DIM A	THREAD	PART #
3/16	0.38	0.61	3/8-24	15-008-03
1/4	0.44	0.63	7/16-24	15-008-04
3/8	0.63	0.80	9/16-24	15-008-06

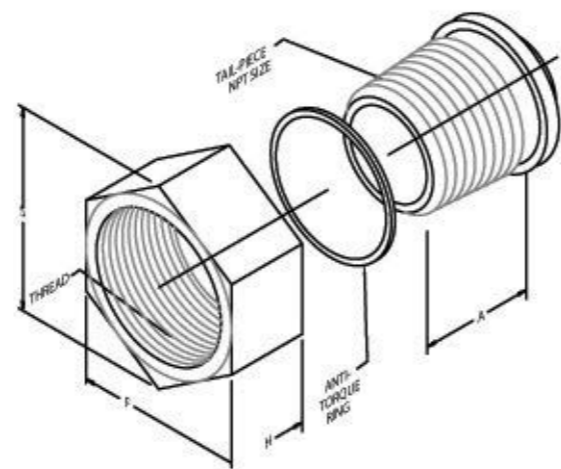
SAE 45° FLARED TUBE NUT



TUBE SIZE D	THREAD	HEX SIZE F	DIM A	PART #
1/4	7-16-20	0.56	0.75	15-009-04
3/8	5/8-18	0.75	1	15-009-06

OTHER CONNECTORS

TAIL PIECES FOR UNION CON



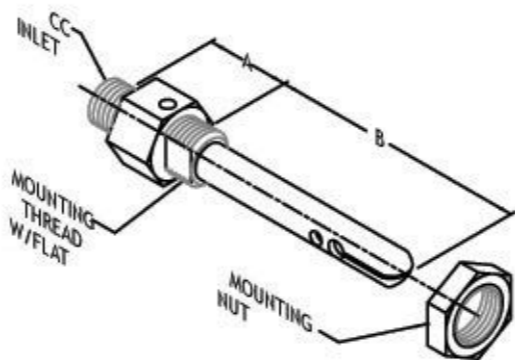
NPT SIZE	HEX SIZE F	ACROSS CORNERS G	THICKNESS H	THREAD	PROJECTED LENGTH A	NUT PART #	A-T RING PART #	TAIL PIECE PART #	NOTE
1/8	0.63	0.73	0.47	9-16-24	1.13	15-019-01	--	25-009-01	
3/8	1.13	1.30	0.54	1-20	0.62	2445B	2874	2892-C	A
1/2	1.13	1.30	0.54	1-20	0.66	2445B	2874	2892-B	A
1/2	1.13	1.30	0.54	1-20	0.85	245B	2874	2892B-1	A
1/2	1.13	1.3	0.54	1-20	1.16	2445B	2874	2892B-2	A

Note A: May be used as optional outlets with Key Gas valve models 3026, 3028.

PILOT BURNERS

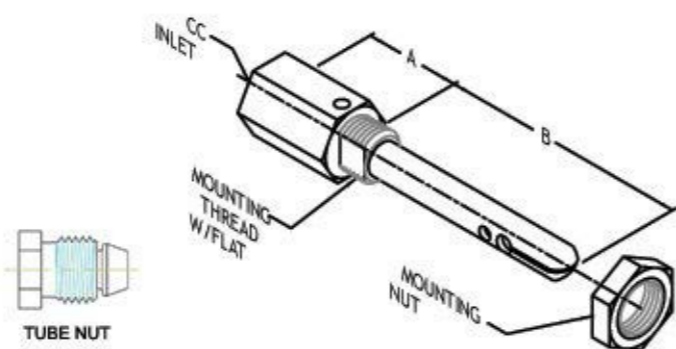
Available in many different styles, pilot burners are used to ignite larger burners with the use of a standing pilot flame. Some configurations use pure gas for the pilot flame while others use a gas-air mixture to achieve a cleaner-burning, blue flame. The latter models incorporate an orifice jet that induces air flow into the gas flow prior to reaching the burner tip. Other models incorporate a pilot adjusting device to regulate the height of the pilot flame at the burner tip.

PRIMARY AIR INLET TYPE



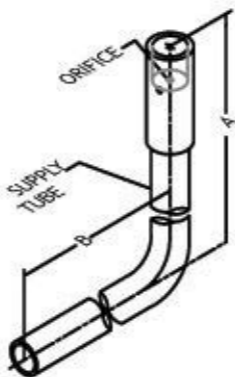
TUBE INLET CC SIZE	MOUNTING THREAD	ACROSS FLAT	MATERIAL: INLET END	BURNER TIP	DIM A	DIM B	INTERNAL ORIDICE	MODEL #
1/8	0.63	0.73	0.47	9-16-24	1.13	15-019-01	--	25-009-01
3/8	1.13	1.30	0.54	1-20	0.62	2445B	2874	2892-C

Note: Model 2001-2013 include compression nut & ferrule and zinc plated steel locknut. Burner can be made to customer's requirements for flame location and configuration.



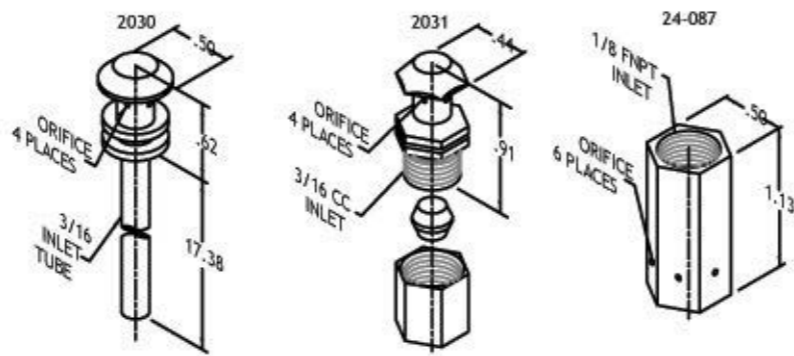
TUBE INLET CC SIZE	MOUNTING THREAD	ACROSS FLAT	MATERIAL: INLET END	BURNER TIP	DIM A	DIM B	INTERNAL ORIFICE	MODEL #
1/4	3/8-27 (M)	0.34	brass	Ni plated steel	0.75	3.18	#78 Drill	2006
1/4	3/8-27 (M)	0.34	brass	Ni plated steel	0.75	3.18	#80 Drill	2007

Note: Model 2006-2007 include matching tube nut and zinc plated steel locknut. Burner can be made to customer's requirements for flame location and configuration.

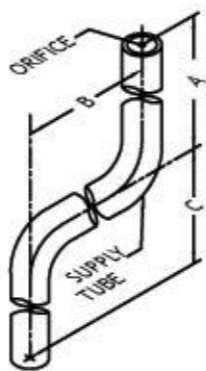


SUPPLY TUBE	DIM A	DIM B	BURNER TIP	ORIFICE	MODEL #
3/16 Cu clad steel	7	---	brass	#74 Drill	2034
1/4 steel, plain	4	3.06	brass	#74 Drill	
2028	2028	2028	2028	2028	2028

PILOT BURNERS



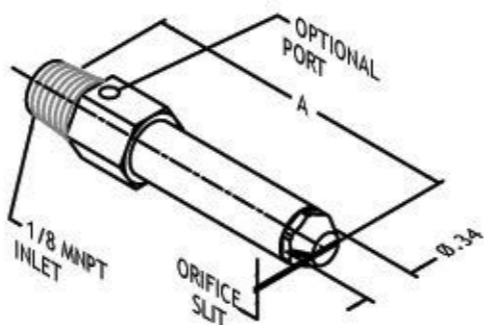
SUPPLY TUBE	BURNER HEAD	ORIFICE DIAMETER	MODEL NUMBER
3/16 (not included)	Zn plated steel	.062	2030
3/16 Cu clad steel	brass	.062	2031 (includes compression connectors, can be disassembled easily for cleaning)
1/8 pipe not included	brass	optional	24-087-xx



SUPPLY TUBE	BURNER HEAD	DIM A	DIM B	DIM C	ORIFICE	MODEL NUMBER
1/4 steel, plain	stainless steel	3.19	2.0	3.12	#68 drill	2032
1/4 stainless steel	stainless steel	5.34	1/1	---	#68 drill	2033

Note: Length and bending configuration to be customer specified.

PILOT BURNER FOR GAS LIGHTS



MODEL #	DIM A	INTERNAL ORIFICE	PORT DRILL
2025	units, tenths, hundredths (three digits)	per customer requirement	per customer requirement

Note: Model 2025 is constructed of brass and features removable / interchangeable orifice spud.



CUSTOM "G" BSPP THREADED SWIVEL NUTS AND SLEEVES

for your heat exchanger applications

