

WaterSaver Product Line Overview



Standard Product Line

FEATURES:

- Styling traditionally used in the U.S. market.
- Polished chrome plated finish is standard. Options for polished chrome with clear epoxy coating and satin finishes.
- Product engineering, including indexing, inlet connections and threads, based on U.S. standards.

PRODUCT RANGE:

- Laboratory Service Fixtures
- Fume Hood Fittings
- Electrical Fixtures
- Pressure Regulator Fixtures
- Vandal-Resistant Products
- Laboratory Safety Equipment
- Installation, Operation and Maintenance Products



ColorTech Product Line

FEATURES:

- Sleek, streamlined "European" styling.
- White epoxy powder coated finish is standard. Options for additional colors, polished chrome and satin finishes.
- Product engineering, including indexing, inlet connections and threads, based on U.S. standards.

PRODUCT RANGE:

- Laboratory Service Fixtures
 - Fume Hood Fittings
 - Electrical Fixtures
 - Pressure Regulator Fixtures
 - Vandal-Resistant Products
 - Laboratory Safety Equipment
 - Installation, Operation and Maintenance Products
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WaterSaver Product Line Overview



ColorTech BT Product Line

FEATURES:

- Sleek, streamlined “European” styling.
- White powder coated finish is standard. Options for additional colors, polished chrome and satin finishes.
- Product engineering, including indexing, inlet connections and threads, based on international norms and standards.

PRODUCT RANGE:

- Laboratory Service Fittings
- Fume Cupboard Fittings
- Pressure Regulator Fittings
- Laboratory Safety Equipment
- Installation, Operation and Maintenance Products

Flexible Lab Fittings

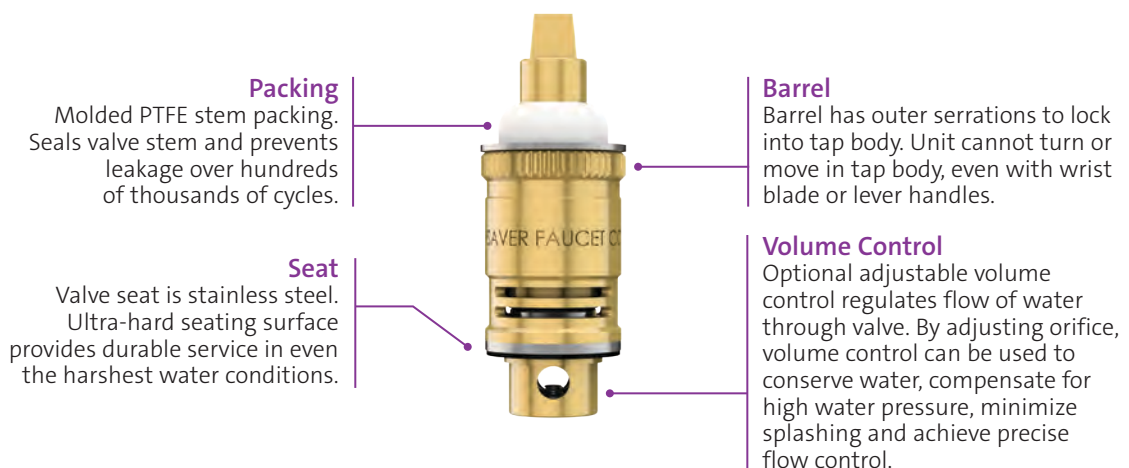
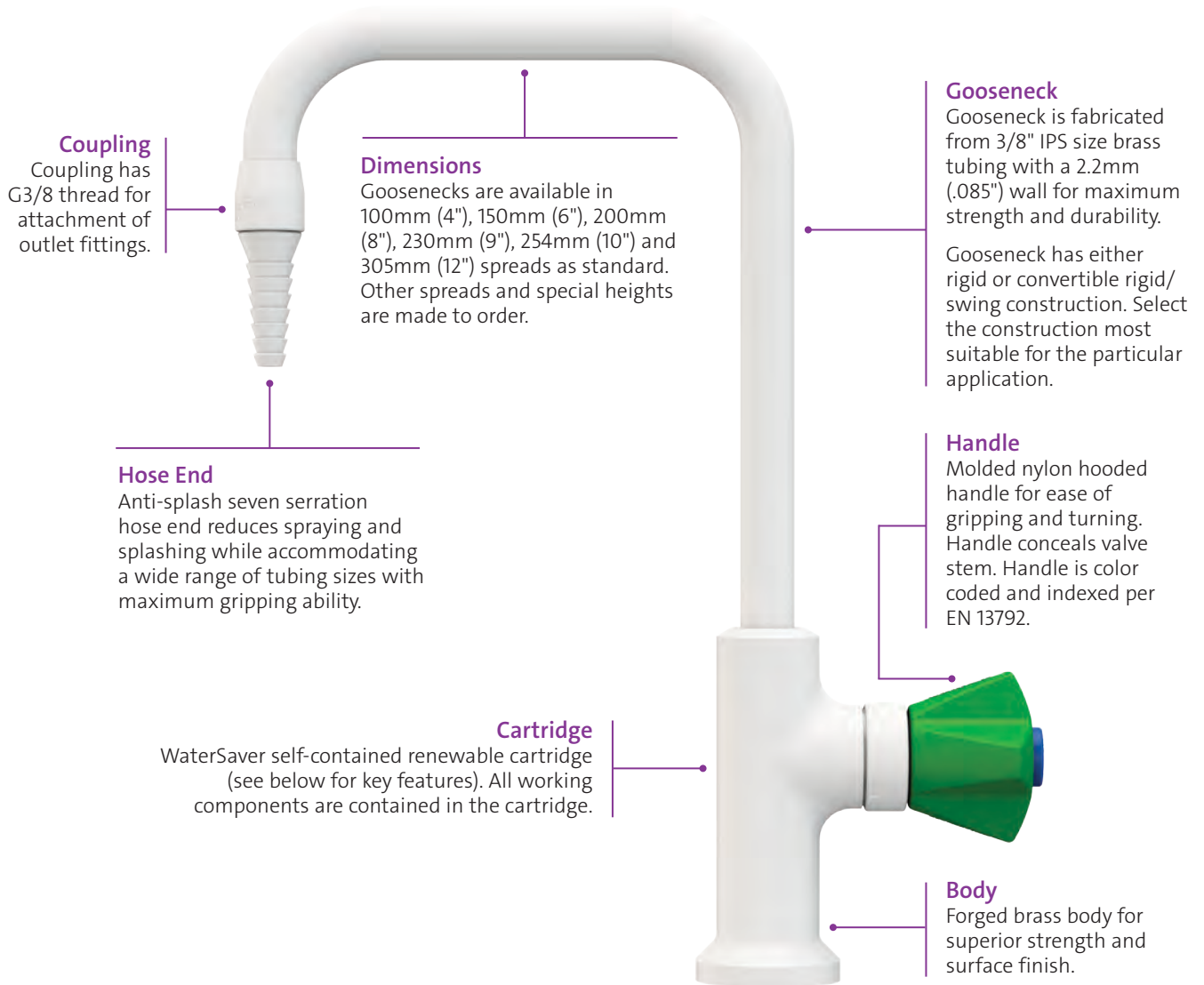
FEATURES:

- Fittings for flexible/reconfigurable laboratories.
- Polished chrome plated finish.
- Product engineering, including indexing, inlet connections and threads, complies with U.S. and international norms and standards.

PRODUCT RANGE:

- Quick Connects
 - Flexible Hose Connectors
 - Service Manifolds
 - Modular Panel Systems
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WaterSaver ColorTech BT water fittings utilize an interchangeable renewable unit cartridge that incorporates a replaceable stainless steel seat. Fittings are certified by (i) CSA International to meet the requirements of ANSI/ASME A112.18.1M and CAN/CSA B.125.M89 and (ii) the Water Regulations Advisory Scheme (WRAS) of the United Kingdom under EN 200. All water fittings meet the requirements of SEFA-7 "Recommended Practices for Laboratory Service." Features of WaterSaver water fittings include:



WaterSaver water fittings are available with a choice of three valve cartridges. All three cartridges are dimensionally identical and therefore totally interchangeable.

All cartridges are completely self-contained and include all working components of the valve mechanism. No wearing components are separate from the valve unit. The tap body itself is thus not subject to wear, making it virtually everlasting. Replacement of the cartridge instantly produces a “new” tap or valve.



Compression Unit (BT Series)

- Cartridge has outer serrations to lock into tap body. Unit cannot turn or move in tap body, even with wrist blade handles.
- Molded PTFE stem packing seals valve stem. Packing prevents leakage over hundreds of thousands of cycles. Adjustable packing nut permits take-up of wear.
- Valve seat is stainless steel. Ultra-hard seating surface provides durable service in even the harshest water conditions. Seat will outperform brass or other materials.
- Hard synthetic rubber valve disc provides positive shut-off of water flow. Valve does not have “spongy” feel.
- Manual and self-closing valve units are interchangeable. Field conversion can be accomplished in seconds.



Compression Unit with Adjustable Volume Control (BTA Series)

- Same construction features as compression unit (stainless steel seat, PTFE stem packing, etc.).
- Adjustable volume control can be adjusted to regulate size of inlet port of valve. Volume control may be used to compensate for high water pressure and conserve water.



Ceramic Disc Unit (BTC Series)

- Rotating ceramic discs control flow of water. Discs are ultra-hard and self-lubricating for durable service.
- 180° rotation from closed to open to permit metering of flow. Available with optional 90° rotation for use with wrist blade handles.
- Wear-resistant thrust washer is low friction for smooth opening and closing of valve.
- Internal baffles reduce noise as water flows through valve.

WaterSaver gooseneck water fittings are available with a choice of two types of gooseneck construction. Each type of construction has its own advantages; lab designers and users can therefore choose the type of gooseneck best suited to their particular application.

Goosenecks are fabricated from heavy wall brass tubing with a wall thickness of 2.2mm (.085"). Goosenecks will therefore resist bending and stand up to even the most demanding lab conditions.



Rigid Construction (RG Series)

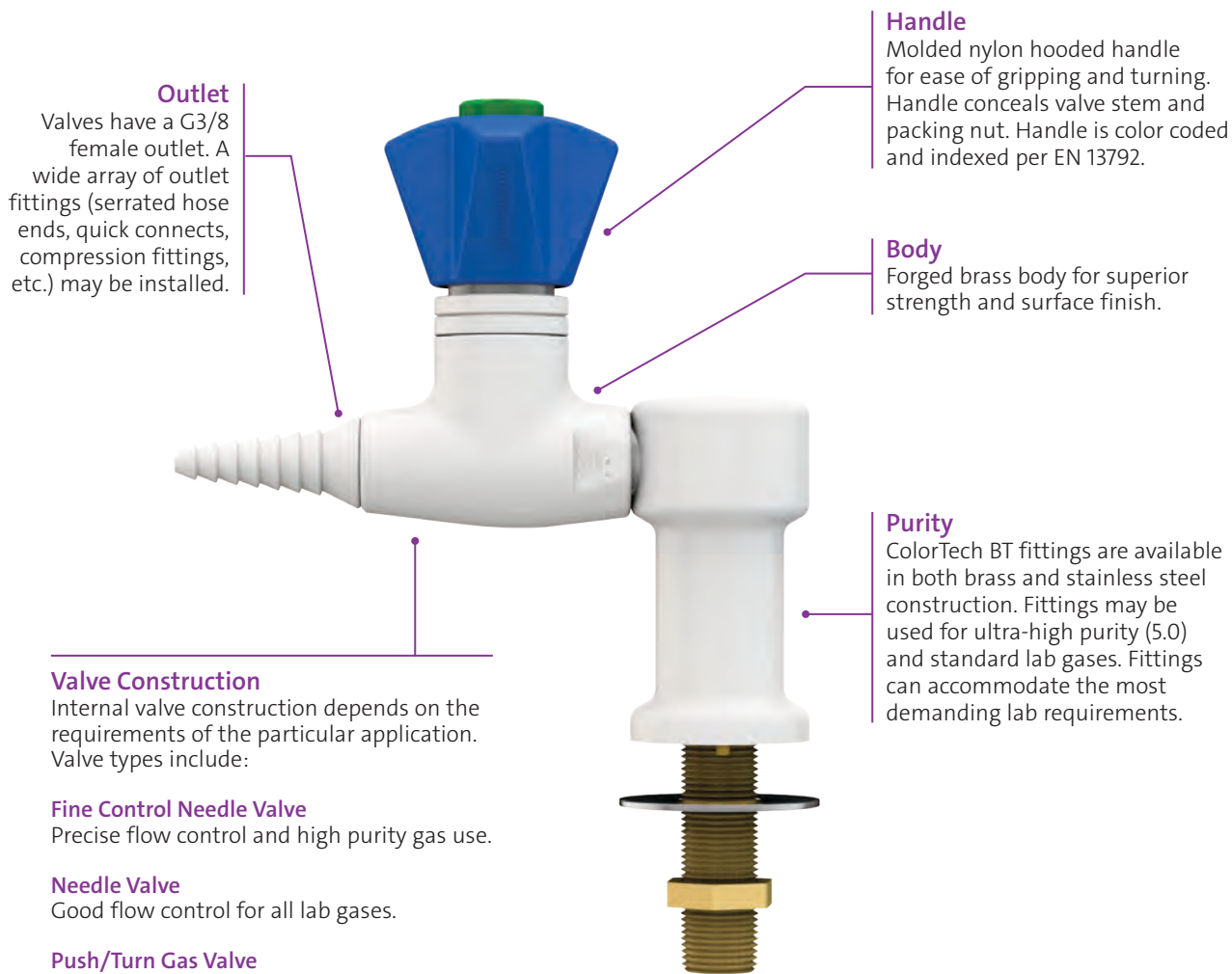
- Gooseneck is threaded directly into top of tap body.
- Gooseneck is held absolutely rigid and cannot be turned. This type of construction is advantageous at cup sinks where the tap outlet should be directed over the sink at all times.
- Taps may be ordered with gooseneck positioned as right hand, left hand or 180°. If not specified, right hand position is furnished.



Rigid/Swing Construction (RS Series)

- Gooseneck has union-style construction with union nut and two O-ring seals.
- Taps with rigid/swing goosenecks may be installed in the field in either rigid or swing configuration. Two spacers are furnished with each gooseneck. For rigid construction, the brass spacer is installed. For swing construction, the nylon spacer is installed. Taps may be readily converted from rigid to swing and vice versa.
- Union-style construction facilitates changing goosenecks in the field, should a different spread or height be desired. Simply loosen union nut, remove the gooseneck and install the replacement gooseneck.

The ColorTech BT product range incorporates a wide variety of valves for laboratory gas services. Lab planners and users can select the valve best suited for any particular application. Key features and options of these valves are as follows:



Outlet

Valves have a G3/8 female outlet. A wide array of outlet fittings (serrated hose ends, quick connects, compression fittings, etc.) may be installed.

Handle

Molded nylon hooded handle for ease of gripping and turning. Handle conceals valve stem and packing nut. Handle is color coded and indexed per EN 13792.

Body

Forged brass body for superior strength and surface finish.

Purity

ColorTech BT fittings are available in both brass and stainless steel construction. Fittings may be used for ultra-high purity (5.0) and standard lab gases. Fittings can accommodate the most demanding lab requirements.

Valve Construction

Internal valve construction depends on the requirements of the particular application. Valve types include:

Fine Control Needle Valve

Precise flow control and high purity gas use.

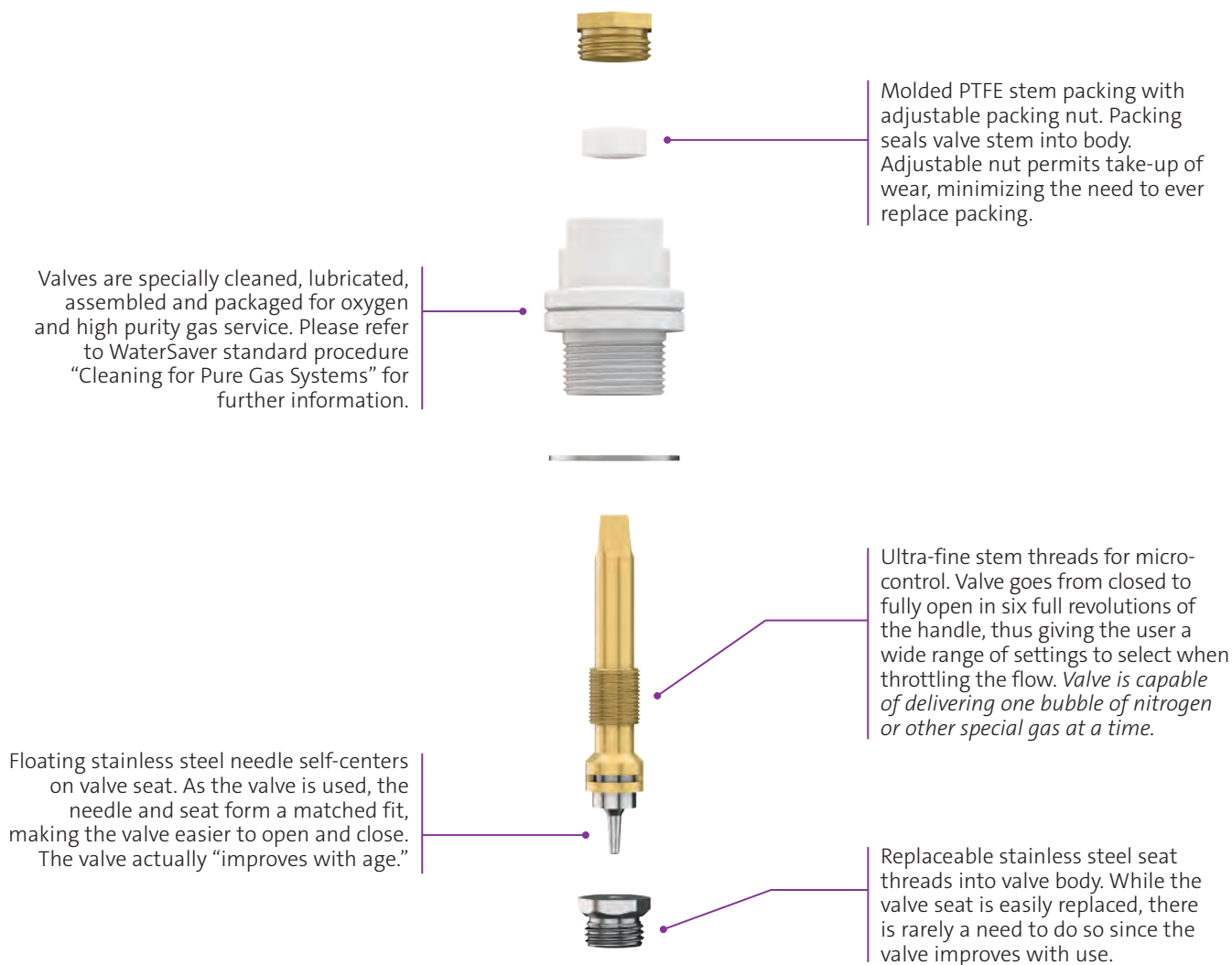
Needle Valve

Good flow control for all lab gases.

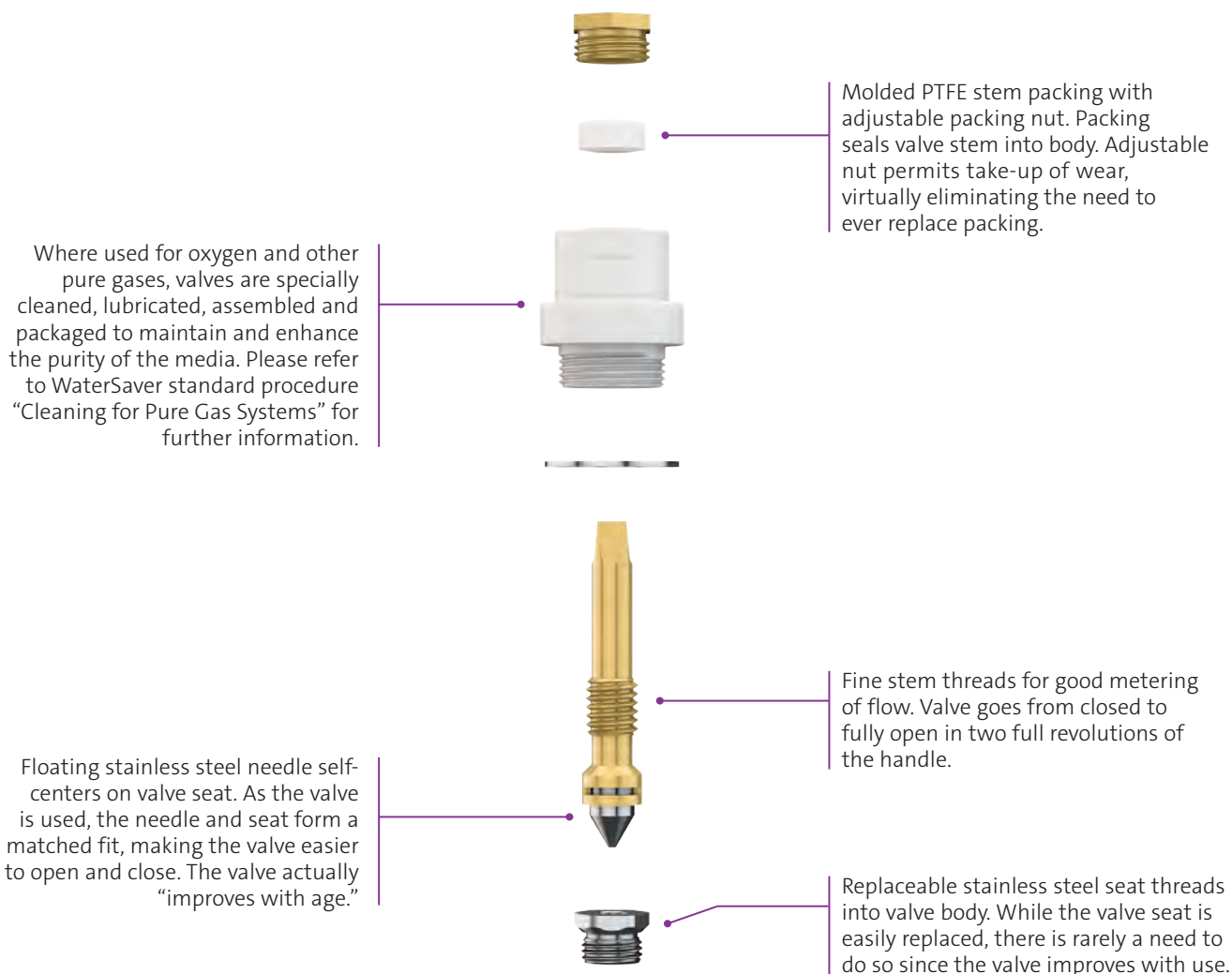
Push/Turn Gas Valve

For burning gases. Locking safety handle mechanism prevents accidental opening. Furnished with pop-up indicator buttons to indicate if valve is open or closed.

Fine control needle valves provide precise flow control of all laboratory gases. They are used where precision metering of flow and higher working pressures are involved. Valves are individually tested at 25 bar (375 PSI) nitrogen pressure and are rated for use at working pressures up to 17 bar (250 PSI). Fine control needle valves are cleaned for high purity gas as standard. All fine control needle valves meet the requirements of SEFA-7 "Recommended Practices for Laboratory Service Fixtures." Features of these valves include:



Standard needle valves provide excellent flow control of all laboratory gases. They are the most versatile and widely used WaterSaver valve, well suited for almost every laboratory application. Valves are certified by CSA International to comply with ANSI Z21.15 and CGA 9.1 for use on natural gas systems at pressures up to 1/2 PSI. Valves are individually tested at 17 bar (250 PSI) nitrogen pressure and are rated for use at working pressures up to 10 bar (150 PSI). All needle valves meet the requirements of SEFA-7 "Recommended Practices for Laboratory Services Fixtures." Features of these valves include:



WaterSaver Faucet Co. offers a wide selection of valves for use with laboratory gases. The selection of a valve for any particular application depends upon many factors, including the working pressure of the gas, the degree of metering or control desired and the characteristics (including the corrosiveness) of the gas. This Valve Selection Guide is presented to assist in selecting the most appropriate valve for an application. However, care must be taken in selecting valves and WaterSaver cannot be responsible for the results obtained from using any particular valve in any particular application. In particular, reference must be made to applicable plumbing and piping codes, life safety standards and project specifications when selecting valves.

	Fine Control Needle Valve	Standard Needle Valve	Push/Turn Valve
Models	BT2870, BT3170, BT4870, BT5170, etc.	BT2880, BT3180, BT4880, BT5180, etc.	BT2860, BT3160, BT4860, BT5160, etc.
Construction	Needle Point	Needle Point	Ceramic Disc
Control	Precise Metering	Good Metering	On/Off
Body Material	Brass or St Steel	Brass or St Steel	Brass
Handle	Hooded Nylon	Hooded Nylon	Hooded Metal or Nylon
Test Pressure/Media	25 bar (375 PSI)/Nit	17 bar (250 PSI)/Nit	10 bar (150 PSI)/Air
Maximum Working Pressure	17 bar (250 PSI)	10 bar (150 PSI)	7 bar (100 PSI)
CSA Certified for Natural Gas	No	Yes	Yes
Use with Pressure Regulator	Yes	No	No
Cleaned for High Purity Gas	Standard	When Ordered	No

Gas Compatibility by Service

Air	Yes	Yes	No
Ammonia	Yes (St Steel only)	Yes (St Steel only)	No
Acetylene	Yes (St Steel only; 1 bar max)	Yes (St Steel only; 1 bar max)	No
Argon	Yes	Yes	No
Butane	Yes	Yes	Yes
Carbon Dioxide	Yes	Yes	No
Carbon Monoxide	Yes	Yes	No
Compressed Air	Yes	Yes	No
Cylinder Gas (Note 1)	Yes	Yes	No
Natural Gas	Yes	Yes	Yes
Helium	Yes	Yes	No
High Vacuum	Yes	Yes	No
Hydrogen	Yes	Yes (Specially Clean)	No
Low Vacuum	Yes	Yes	No
Methane	Yes	Yes	Yes
Nitrogen	Yes	Yes	No
Oxygen	Yes	Yes (Specially Clean)	No
Propane	Yes	Yes	Yes
Special Gas (Note 1)	Yes	Yes	No
Steam (Note 2)	No	No	No
Vacuum	Yes	Yes	No

Note

- For gases not specifically listed here, please refer to the WaterSaver website (wsflab.com).
- Steam service requires a valve with specialized internal construction only. Refer to the WaterSaver website (wsflab.com) for information.

Except for water taps with wrist blade handles, ColorTech BT fittings are furnished with handles that are color coded and indexed per EN 13792 “Colour Coding of Taps and Valves for Use in Laboratories.” Wrist blade handles are finished in the same color as the tap body. The index disc color matches the “Disc Color” shown below.

Set forth below is a list of services, handle colors and index symbols prescribed by EN 13792:

Water	Symbol	Handle Color	Ring Color	Disc Color
Cooling Tower/ Sprinkling Water	WCS	Green	Green	Yellow
Potable Water, Hot	WPH	Green	Green	Red
Potable Water, Cold	WPC	Green	Green	Blue
Spring Water	WSP	Green	Yellow	Yellow
Non-Potable Water, Hot	WNH	Green	Yellow	Red
Non-Potable Water, Cold	WNC	Green	Yellow	Blue
Steam	WST	Green	Red	Red
Condensate	WCO	Green	Red	Blue
Super-Clean Water, Hot	WCH	Green	Red	White
Super-Clean Water, Cold	WCC	Green	Blue	White
Coolant Water Feed	WCF	Green	Blue	Blue
Coolant Water Return	WCR	Green	Blue	Red
Surface Water, Hot	WSH	Green	Black	Red
Surface Water, Cold	WSC	Green	Black	Blue
Deionised Water, Hot	WDH	Green	Gray	Red
Deionised Water, Cold	WDC	Green	Gray	Blue
River Water, Hot	WRH	Green	White	Red
River Water, Cold	WRC	Green	White	Blue
Distilled Water	WDI	Green	White	White

Flammable Gaseous Hydrocarbons	Symbol	Handle Color	Ring Color	Disc Color
Natural Gas	G	Yellow	Yellow	Yellow
Propane/Butane (liquefied gases)	LPG	Yellow	Red	Yellow
Methane	CH ₄	Yellow	Blue	Yellow
Propane	C ₃ H ₈	Yellow	Blue	Red
Butane	C ₄ H ₁₀	Yellow	Blue	Blue
Ethene	C ₂ H ₄	Yellow	Black	Green
Propene	C ₃ H ₆	Yellow	Black	Red
Butene	C ₄ H ₈	Yellow	Black	Blue
Acetylene	C ₂ H ₂	Yellow	White	Green

Other Combustible Gases and Gas Mixtures	Symbol	Handle Color	Ring Color	Disc Color
Argon/Methane	AR/CH ₄	Red	Yellow	Gray
Hydrogen/Nitrogen	H ₂ /N ₂	Red	Red	Green
Hydrogen	H ₂	Red	Red	Red
Silane	SiH ₄	Red	Red	Black
Hydrogen/Helium	H ₂ /He	Red	Red	Gray
Deuterium	D ₂	Red	Red	White

Non-Flammable Gases, Including Combustion- Enhancing Gases	Symbol	Handle Color	Ring Color	Disc Color
Nitrogen	N ₂	Blue	Green	Green
Dinitrogen Monoxide	N ₂ O	Blue	Green	Blue
Air, Synthetic, 80/20	SA	Blue	Blue	Green
Compressed Air	CA	Blue	Blue	Yellow
Oxygen	O ₂	Blue	Blue	Blue
Carbon Dioxide	CO ₂	Blue	Blue	Black
Regulated Air	RA	Blue	Blue	Gray
Breathing Air	BA	Blue	Blue	White
Carbogen (CO ₂ + O ₂)	CB	Blue	Black	Blue
Krypton	Kr	Blue	Gray	Yellow
Xenon	Xe	Blue	Gray	Red
Neon	Ne	Blue	Gray	Black
Argon	Ar	Blue	Gray	Gray
Helium	He	Blue	Gray	White

Toxic Gases	Symbol	Handle Color	Ring Color	Disc Color
Ammonia	NH ₃	Black	Green	Red
Nitrogen Dioxide	NO ₂	Black	Green	Blue
Nitrogen Monoxide	NO	Black	Green	Black
Hydrogen Sulphide	H ₂ S	Black	Red	Yellow
Arsine	AsH ₃	Black	Red	Black
Phosphine	PH ₃	Black	Red	Gray
Hydrogen Chloride	HCl	Black	Red	White
Sulphur Dioxide	SO ₂	Black	Blue	Yellow
Carbon Monoxide	CO	Black	Blue	Black
Phosgene	COCl ₂	Black	Black	White
Chlorine	Cl ₂	Black	White	White

Vacuum	Symbol	Handle Color	Ring Color	Disc Color
Low Vacuum (1,000 – 1mbar)	V	Gray	Gray	Black
Fine Vacuum	VF	Gray	Gray	Gray
High Vacuum	VH	Gray	Gray	White

Miscellaneous	Symbol	Handle Color	Ring Color	Disc Color
Formaldehyde Solution	CH ₂ O	White	Red	Green
Propanol	C ₃ H ₈ O	White	Red	Yellow
Methanol	CH ₄ O	White	Red	Blue
Acetone	C ₃ H ₆ O	White	Red	Gray
Trichloroethylene	C ₂ HCl ₃	White	Red	White
Perchloric acid	HClO ₄	White	White	Red

Water



Potable Water, Hot



Potable Water, Cold



Non-Potable Water, Hot



Non-Potable Water, Cold



Coolant Water Feed



Coolant Water Return

Pure Water



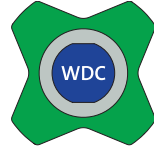
Super-Clean Water, Hot



Super-Clean Water, Cold



Deionised Water, Hot



Deionised Water, Cold



Distilled Water

Flammable Gaseous Hydrocarbons



Natural Gas



Methane



Propane



Butane



Acetylene

Non-Flammable Gases (Including Combustion-Enhancing Gases)



Air, Synthetic, 80/20



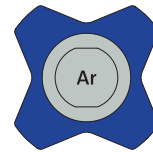
Air, Breathing



Air, Compressed



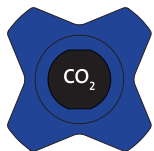
Air, Regulated



Argon



Carbogen (CO₂ + O₂)



Carbon Dioxide



Helium

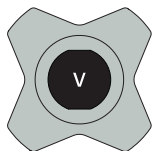


Nitrogen

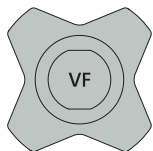


Oxygen

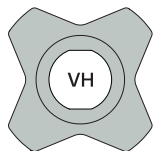
Vacuum



Low Vacuum



Fine Vacuum

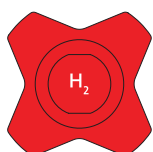


High Vacuum

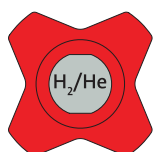
Other Media



Ammonia



Hydrogen



Hydrogen/Helium



Hydrogen/Nitrogen



Steam

Pipe Sizing and Material

Requirements for the size and material of supply piping are generally covered by applicable plumbing codes. Reference should be made to such codes when laying out piping for service fittings and safety equipment. Pipe sizing is also affected by the number of valves or outlets installed on a run. However, typical piping standards for single fittings and outlets are as follows:

Service	Piping Material	Minimum Pipe Size
Natural Gas	Black Iron or Stainless Steel	3/8"
Inert Gases	Copper	3/8"
Special Gases	Copper or Stainless Steel	3/8"
Water	Copper	1/2"
Distilled, Deionised and Purified Water	PVC/ Polypropylene/ PVDF	1/2"
Emergency Showers	Copper	1"
Eye, Eye/Face Wash and Drench Hose Units	Copper	1/2"
Safety Stations	Copper	1-1/4"

Inlet Shanks/Hole Sizing

WaterSaver fittings are furnished with standard size inlet shanks to penetrate the bench or wall surface. Minimum hole sizes for these shanks are listed below:

Inlet Shank	Minimum Hole Size
G1/2 Mounting Shank	22mm (7/8")
1-3/16" diameter Mounting Shank (ex: BT400 series mixer taps)	32mm (1-1/4")
G1 Mounting Shank (ex: BTEW1022 eyewash/drench hose unit)	35mm (1-3/8")

Locator Pins

Except for fume cupboard outlet fittings, all ColorTech BT fittings are furnished with (2) locator pins to prevent the fitting from turning on the counter or panel. Pins are 3.2mm diameter x 2.4mm exposed length. When drilling countertops or panels, provide holes in the required locations for the locator pins.

Locator pins are pressed into the base of the fitting. If the pins are not required, they are easily removed with pliers.

Installation Procedures

Installing WaterSaver laboratory taps, valves and safety equipment requires the use of common plumbing installation techniques. Observing the following guidelines will help to assure trouble-free installation:

1. *Thoroughly clean and flush supply lines prior to installing taps and valves. Pipe shavings, scale, tape and other debris can be carried through a pipe and into a tap or valve when the system is activated. This debris can damage valve components and interfere with the proper operation of the tap or valve.*
2. When placing a tap or valve on a laboratory countertop or wall, secure the fitting using the lockwasher and locknut provided. Tighten the locknut sufficiently to secure the fitting to the counter or wall. Do not overtighten.
3. ColorTech BT fittings are furnished with either (i) G inlet threads in accordance with ISO 228-1 or (ii) plain tube ends in metric sizes. For fittings with G inlet threads, a PTFE gasket is supplied for the inlet of the thread to be used with a mating fitting. Since a pressure-tight joint is not made on the thread, there should be no need to use pipe or thread sealant. If sealant is used, do not apply the sealant in a way that will permit it to enter into the tap or valve.
4. Observe the maximum test and working pressures for taps and valves. Testing or using a valve at pressures for which it is not designed can result in leakage or failure. Refer to the Valve Selection Guide on page 11 for information on maximum test and working pressures.
5. Do not use valves for services and applications for which they are not intended. In particular:
 - Valves for oxygen service and high purity gases must be specially cleaned, lubricated, assembled and packaged. Valves that have not been specially cleaned are not acceptable.
 - Needle valves should be used for gas services only. They are not suitable for water or steam services.
 - Push/turn valves should be used for burning gas services only. They are not recommended for use with other gases.
 - Valves for ammonia and acetylene must be stainless steel.
6. To prevent surface damage, use caution when applying a wrench or other tool to the exterior of a tap or valve.
7. Every ColorTech BT fitting is fully assembled and pressure tested at the factory. Full assembly enables us to inspect and test the fitting as a complete assembly. Fittings are tagged when testing is complete. If a fitting is received without an inspection tag, please notify the factory.
8. Clean fittings using a soft cloth and soapy water. Do not use abrasives, detergents or other cleaners that can damage the finish on the fitting. In particular, do not use any solvent in or near a tap or valve. Solvents can dissolve the lubricants used in the valve mechanism.