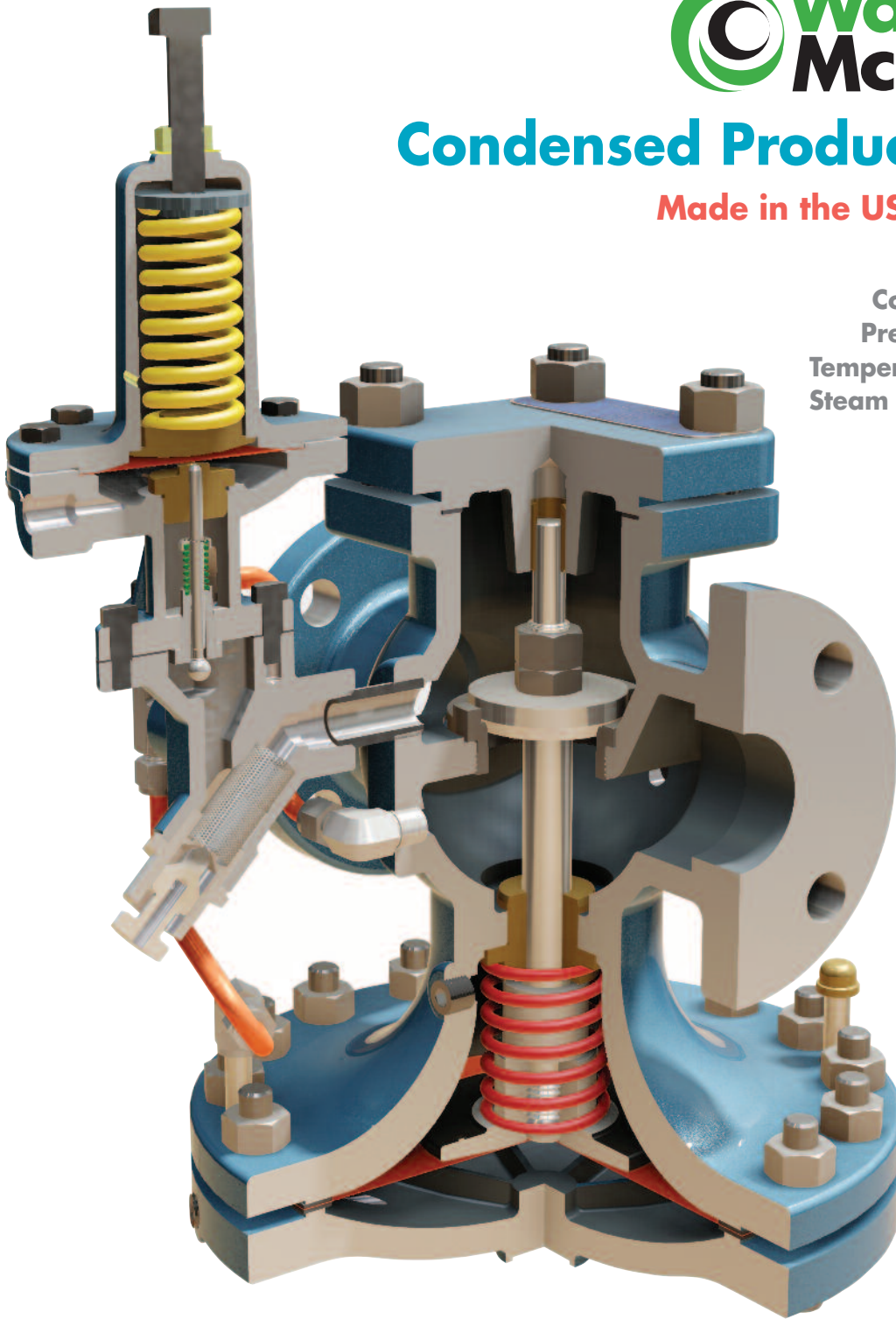




Condensed Product Guide

Made in the USA Since 1878

Steam Traps
Condensate Pumps
Pressure Regulators
Temperature Regulators
Steam to Water Heaters
Control Valves
Relief Valves
Check Valves
Liquid Drainers
Clean Steam



Manufacturing High-Quality Steam & Fluid Specialty Products for Industry

STEAM TRAPS • Thermodynamic

Thermodynamic Traps:

The Thermodynamic Trap is simple and compact with a single moving part (disc) which opens to discharge condensate and closes in the presence of steam. Body materials available are Stainless and Alloy Steels for pressures up to 3,600 psig.

Typical Applications: Widely used on higher pressure drip applications and critical tracing applications (where condensate back-up is not permitted). Ideal for pressures above 30 psig.

Advantages: Rugged design, operation is easy to check due to distinct cyclic operation, relatively small with lower capacities, single model operates over wide pressure range in contrast to mechanical traps, excellent for superheated steam, self-draining when mounted vertically to prevent freezing.

TD600



DRIP, TRACER:

The **TD600 thermodynamic steam trap** is commonly used as a drip trap on steam mains and steam supply lines. These traps can be used on tracing applications. Ideal for outdoor applications that are subject to freezing and for superheated steam conditions.

TD900S



DRIP:

The **TD900S thermodynamic steam trap** is primarily used as a drip trap on high pressure steam mains and steam supply lines. Ideal for outdoor applications that are subject to freezing and for Superheated steam conditions.

TD600S



DRIP, TRACER:

The **TD600S thermodynamic steam trap** is commonly used as a drip trap on steam mains and steam supply lines. Supplied with integral strainer and optional blowdown valve to protect the trap from contamination. These traps can be used on tracing applications. Ideal for outdoor applications that are subject to freezing and for superheated steam conditions.

TD3600



DRIP:

The **TD3600 thermodynamic steam trap** is commonly used as a drip trap on high-pressure steam mains and steam supply lines. Supplied with an integral strainer to protect the trap from contamination. The internal working mechanism of the TD3600 can be completely replaced while the trap body remains in line. Ideal for outdoor applications that are subject to freezing and for superheated steam conditions.

TD700S



DRIP, TRACER:

The **TD700S thermodynamic steam trap** is commonly used as a drip trap on steam mains and steam supply lines. These traps are used on tracing applications. Supplied with an integral strainer and optional blowdown valve to protect the trap from contamination. The internal working mechanism of the TD700S can be completely replaced while the trap body remains in line. Ideal for outdoor applications that are subject to freezing and for superheated steam conditions.



WDF1 & WDF2 DIFFUSERS

The WDF1 & WDF2 Diffusers were specifically designed to cushion the discharge from steam or air traps. They work to suppress the high velocity discharge often associated with blast-type steam traps in order to reduce noise, erosion and waterhammer. These compact units are made from Stainless Steel and are available in 1/2" and 3/4" NPT and SW connections.

Model	Body Material	PMO (PSIG)	Sizes	Connections	Key Features
TD600	420F SS	600	3/8" – 1"	NPT	Cost-effective
TD600S	420F SS	600	1/2", 3/4", 1"	NPT	Integral Strainer
TD700S	Alloy Steel	600	1/2", 3/4", 1"	NPT, SW, FLG	Repairable
TD900S	Alloy Steel	900	1/2", 3/4", 1"	NPT, SW, FLG	Repairable
TD3600	Alloy Steel	3600	1/2", 3/4", 1"	SW, BW, FLG	Repairable

Thermostatic Traps:

A typical Thermostatic Trap contains a heavy-duty, industrial-purpose welded stainless steel thermal element designed to control condensate discharge by sensing the temperature difference between steam and cooler condensate. Body materials available are Brass, Cast Iron, Stainless and Alloy Steels with thermal element designs available for pressures up to 650 psig. The Bi-metallic design will handle pressures up to 2,260 psig.

Typical Applications: Extremely versatile and energy efficient, these traps are suitable for a wide range of applications. Thermal element designs are suitable for applications ranging from general service drip and tracing applications to small-to-medium batch style processes. Bi-metal designs can be used in high pressure, superheated drip applications or in lower pressure tracing applications.

WT1000



DRIP, TRACER:

The **WT1000 thermostatic steam trap** was specifically designed for drip and tracing applications as well as an air vent for heat exchangers. Like most thermostatic traps, the WT1000 is small, light, and has excellent air handling capabilities. The discharging of air on start-up allows steam to enter the system more quickly.

WT3000/4000



PROCESS:

The **WT3000/4000 thermostatic steam trap** is used for industrial batch process applications. Their compact size, all stainless steel construction, excellent air handling capability and wide operating pressure range make them a great choice for most process applications. Thermostatic traps are far superior to bucket traps and thermodynamic disc traps in their ability to remove air from the system.

WT2500



DRIP, TRACER, PROCESS:

The **WT2500 thermostatic steam trap** is used for drip, tracing and batch process applications. Their compact size, excellent air handling capability and wide operating pressure range make them a great choice for most applications. Thermostatic traps are far superior to bucket traps and thermodynamic disc traps in their ability to remove air from the system.

WT5000



TRACER:

The **WT5000 Series "Temperature-Adjustable" Bi-metal Steam Trap** is used in steam tracing applications (process lines, instrumentation and winterization, general steam jacketing) and small process applications where accurate control of condensate discharge temperature is required to utilize the sensible heat of the condensate.

WT2000



DRIP, TRACER, PROCESS:

The **WT2000 thermostatic steam trap** is used for drip, tracing, and batch process applications. Their compact size, all stainless steel construction, excellent air handling capabilities, and the ability to operate over a wide pressure range make them a good choice for most applications. They can also be used as an air vent on heat exchangers. Thermostatic traps are far superior to bucket traps and thermodynamic traps in their ability to remove air from the system. The discharging of air on start-up allows steam to enter the system more quickly.

TS/TA



TS/TA thermostatic steam traps are predominantly used in the HVAC industry. They are referred to as radiator traps because the quick-disconnect right angle connection is found on most radiator installations. Their excellent air handling capabilities, compact size, and economical cost make them a great choice for air vents on heat exchangers or for steam trap applications on OEM equipment.

Model	Body Material	PMO (PSIG)	Sizes	Connections	Key Features
WT1000	Stainless Steel	300	1/2", 3/4"	NPT	Cost-effective
WT2000	Stainless Steel	650	1/2", 3/4"	NPT	Cost-effective
WT3000	Stainless Steel	650	1/2", 3/4", 1"	NPT, SW, FLG	Repairable
WT4000	Stainless Steel	300	3/4", 1"	NPT, SW, FLG	Repairable
WT5000	Stainless Steel	650	3/8" – 1"	NPT, SW	Repairable
TA/TS	Brass	25/125	1/2", 3/4"	NPT	Repairable
WT2500	Cast Iron	250	1/2", 3/4"	NPT	Repairable

STEAM TRAPS • F&T (Float & Thermostatic)

Float & Thermostatic Traps:

Float & Thermostatic Steam Traps contain a float-operated valve to continually discharge condensate and a thermostatic air vent which discharges air. Body materials available are Cast Iron, Ductile Iron, Cast Steel & Stainless Steel for pressures up to 450 psig. (F&T traps are referred to as mechanical traps.)

Typical Applications: F&Ts are the most commonly used trap for both batch type processes and continuous process applications with rapidly changing pressures and loads.

Advantages: F&Ts quickly respond to load and pressure changes, discharge large amounts of air present at start-up which allows steam to quickly enter the system, continuously discharge condensate as it forms and offer a wide range of capacities for any process application.



FT Series



WFT Series



FTT Series



FTE/FTES Series



FT600/FT601 Series

Model	Body Material	PMO (PSIG)	Sizes	Connections
WFT	Cast Iron	250	3/4" – 2"	NPT
FTT/FTTS	Ductile Iron/Stainless Steel	300/225	1/2" – 2"	NPT, SW, FLG
FTE/FTES	Ductile Iron/Cast Steel	200/300	1 1/2", 2", 2 1/2"	NPT, SW, FLG
FT600/FT601	Carbon Steel/Stainless Steel	450	1/2" – 4"	NPT, SW, FLG
FT	Cast Iron	75	3/4" – 2"	NPT

Features: Hardened Stainless Steel internals and welded Stainless Steel Thermal Air vent.

STEAM TRAPS • Inverted Bucket

The Inverted Bucket Trap uses an inverted bucket as a float device to control the opening and closing of the plug and seat to discharge condensate. Body materials available are Cast Iron and Stainless Steel for pressures up to 450 psig. (IB traps are referred to as mechanical traps.)

Typical Applications: These traps have a discharge orifice positioned at the top of the trap body which make them ideal for drip applications on systems containing excessive pipe scale and debris. They may be considered for process applications where air venting is less of a concern or handled by a separate air vent.

Advantages: Rugged and simple design, top-mounted discharge orifice less susceptible to failure from dirt and debris, service life often exceeds other style traps.



SIB/SIBH

All Stainless Steel



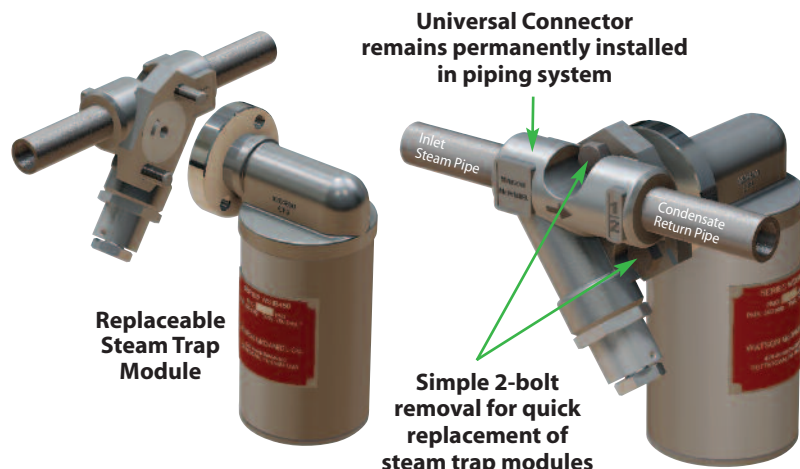
1030 & 1040 Series

Capacities up to 5,500 lbs/hr; up to 250 PSIG Operating Pressure

No Strainer	Strainer	Body Material	PMO (PSIG)	Sizes	Connections
		Stainless Steel	450	1/2", 3/4"	NPT, SW
SIB/SIBH					
IB 1031	IB 1041	Cast Iron	150	1/2", 3/4"	NPT
IB 1032	IB 1042	Cast Iron	250	1/2", 3/4", 1"	NPT
IB 1033		Cast Iron	250	1/2", 3/4"	NPT
IB 1034	IB 1044	Cast Iron	250	3/4", 1"	NPT
	IB 1038S	Cast Iron	250	1 1/4", 1 1/2"	NPT

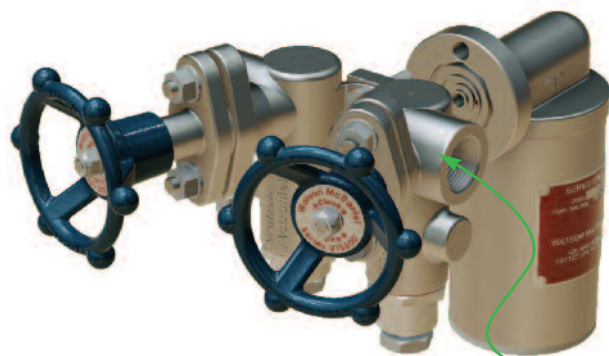
Quick-Change Universal Style Trap-Connector System

The **UC450 Series QUICK-CHANGE Universal Trap-Connector System** with multiple choices for trap modules and multiple choices for connectors is used in steam systems where a simplified and economical maintenance program of steam traps is desired. These Universal Style quick replacement steam traps can be used on steam supply lines as well as for tracing and small process applications. They are commonly used in chemical plants, petrochemical refineries, paper mills and other industrial facilities.



The All Stainless Steel Universal-Style Steam Traps feature a permanent installation of the Universal Connector with a 2-bolt mounting arrangement for the Universal Steam Trap Module to be:

- Replaced in minutes by removing only 2 bolts with a socket or open-end wrench
- Installed without having to unthread piping
- Swiveled 360° on the Universal Connector for proper orientation
- Threaded-NPT, Socket Weld and Flanged Connections available



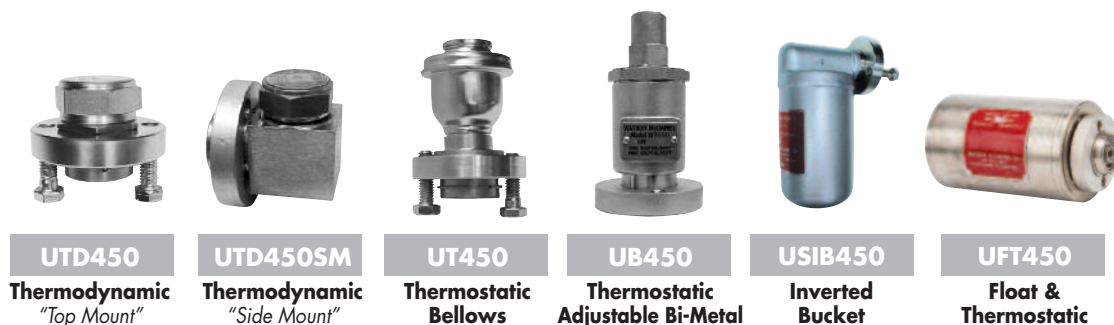
For an All-In-One Universal Connector solution consider the UTS600 Series Trap Station Connector which includes:

- Integral inlet and outlet isolation valves
- Strainer blowdown valve on the inlet side
- Test valve on the outlet side
- Threaded-NPT, Socket Weld and Flanged Connections available

Universal Connector remains permanently installed in piping system

"QUICK-CHANGE" Universal Trap Modules

STEP 1:
Select an appropriate Universal **STEAM TRAP MODULE**



"QUICK-CHANGE" Universal Connectors

STEP 2:
Select appropriate Universal **CONNECTOR**. Any Universal Connector (shown right) will work with any Universal Steam Trap Module (Including those of other manufacturers. See product catalog for full offering of Connectors.) Trap orientation must be considered.



CONDENSATE PUMPS

Watson McDaniel offers Pressure Motive Stand Alone Pumps and conventional Electric Pumps for condensate recovery. Our fully-equipped ASME qualified fabrication facility will design and build either standard or specialized skid packages to meet your specific system needs.

Stand Alone Pump Units (Include **Patented** Snap-Assure Mechanism and Inlet & Outlet Check Valves)

PMPC

Cast
Ductile
Iron



- Basic Pumping Applications
- PMO 200 PSIG

PMPF

Fabricated
Carbon
Steel



- Basic Pumping Applications
- PMO 200 PSIG
- High-pressure and temperature ratings

PMPSS

304L
Stainless
Steel
Corrosion
Resistant



- Extremely Corrosive Applications
- PMO 150 PSIG

PMPLS

Carbon
Steel
Reduced-
Profile



- Low-Profile Applications
- PMO 150 PSIG

PMPNT

Ductile Iron
Low-
Profile



- Low-Profile Applications
- PMO 150 PSIG
- Convenient top-mount mechanism
- Also available in SS (PMPNTS)

PMPSP & PMPSP "Pit Boss"

Fabricated Carbon Steel



PMPSP

PMPSP
Low-profile

Sump Drainer

- PMO 150 PSIG
- Non-electric sump drainer designed to drain unwanted water from sumps, pits, underground tunnels and low lying areas

Snap-Assure Internal Mechanism

Included in all Watson McDaniel Stand Alone Pump Units

Motive Steam Inlet

Motive steam or air is used to discharge condensate from the pump tank (1/2" NPT)

Vent

Vents air & steam which allows condensate to enter pump tank (1" NPT, 1/2" NPT on PMPNT)

Cover

Inlet and Vent Valves

Made from heat-treated 17-4 stainless steel; adds durability for extended life.

Inconel-X-750 Dual Compression Springs

Inconel-X-750 is not susceptible to stress corrosion cracking caused by corrosive condensate.

Pins and Wear Points

Pivot pins and wear points are made from heat-treated stainless steel for extended service life.

Support Bracket

Made from corrosion resistant stainless steel.

Float

All STAINLESS STEEL Internals

Snap-Assure
U.S. Patent No. 6572340

Internal Mechanism:

- All Stainless Steel
- **Hard-chrome plated** pivot pins and wear points
- **17-4 Stainless** heat-treated inlet and vent valve
- Dual compression springs minimize stress and last indefinitely
- **Inconel-X-750** Spring material for high-temperature corrosive service
- Precision manufactured mechanism requires no adjustment
- Competitor replacements available

Accessories & Options

Custom Tanks, Insulation Jackets, Gauge Glasses, Cycle Counters, Pre-piped Accessories, Replacement Mechanisms, Check Valves, etc.

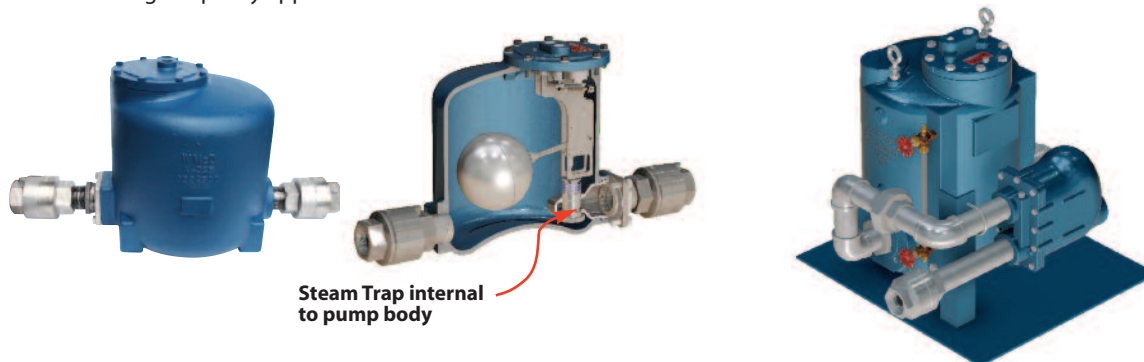
CONDENSATE PUMPS

Pump & Trap Combination (Pump Tank PMP & Steam Trap) PMPT & WPT

PMPT, PMPTS & WPT

Pump & Trap combinations are used for draining condensate from a single piece of heat transfer equipment. Model PMPT includes steam trap internal to the pump body which allows condensate to discharge under all operating conditions of modulating equipment including vacuum.

The **WPT Series** have an appropriately sized external steam trap attached to the pump and are mounted on a common base for high-capacity applications.



PMPT LOW PROFILE Pump with INTERNAL Steam Trap

The **PMPT** low-profile pressure motive pump has an internal Steam Trap for applications requiring compact design due to spatial constraints. It is an excellent choice for drainage of various process heating equipment. Steam Trap internal to pump body will function like a normal float trap discharging condensate as its formed. If heating equipment and condensate backs up, the pumping mechanism will use motive steam pressure to discharge the condensate.

Also available in Stainless Steel, Model PMPTS

WPT Pump with EXTERNAL Steam Trap

The **WPT Series** are stand-alone pump units with an appropriately sized Steam Trap preassembled at the factory and mounted on a common base plate, allowing for simple installation. Pump-trap combos with an external trap are suitable when capacity requirements exceed internal steam trap designs such as the PMPT.

Pump Systems (Pumps with Receiver Tanks)



Simplex, Duplex, Triplex & Quadraplex Systems

Standardized Simplex, Duplex, Triplex, and Quadraplex systems are fully-integrated condensate recovery systems which include the stand alone pumps and check valves with receiver tank mounted on a steel base and frame. Multiple pumping units can be used for increased capacity or for system redundancy. The units are available in Ductile Iron, Carbon Steel and Stainless Steel.

Additional options such as sight glasses, insulation jackets, cycle counters, motive and vent piping, pressure regulators, steam traps, strainers, ASME code stamps, etc. are available.

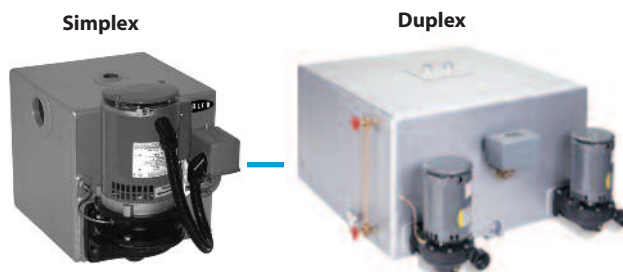
Customized Skid Packages



Watson McDaniel's fully equipped **ASME U** and **UM** qualified fabrication facility stands ready to assist you with all your fabrication needs. Our engineering staff specializes in the design of pressure motive condensate pumping systems for both industrial and institutional applications. We offer either standard packages, or specialized systems to meet your specific needs.

Electric Pumps

Electric Condensate and Boiler Feed pumps are available in both Duplex and Simplex configurations with either **Steel, SS** or **Cast Iron** pump tanks. Consult factory for electric pump options.

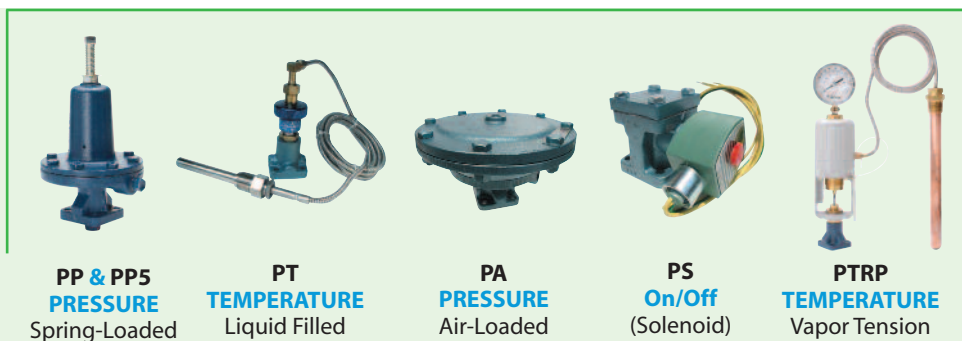
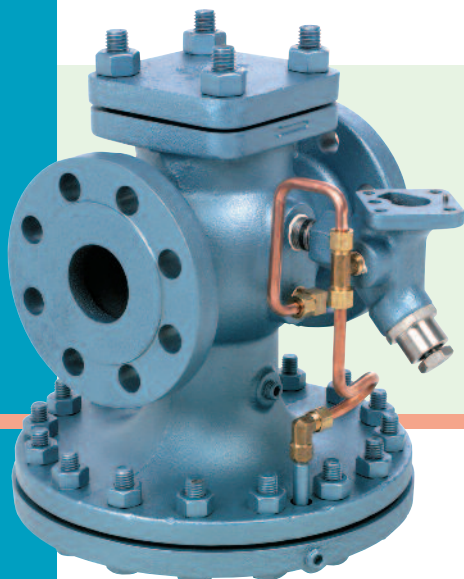


Pilot-Operated Pressure & Temperature Regulating Valves

HD Series Pilot-Operated Regulating Valve (PMO 300 psig)

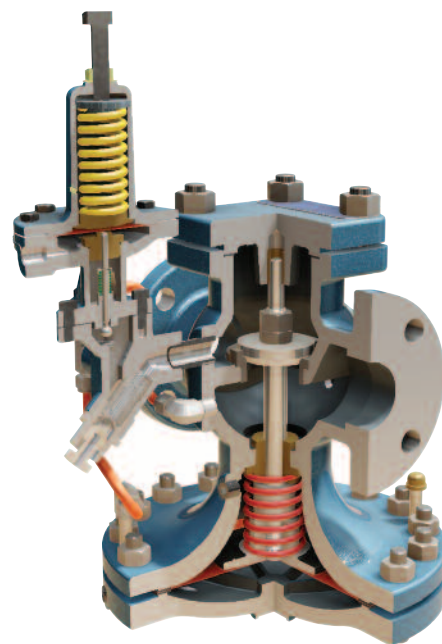
DUCTILE IRON BODY

Most Common HD Pilots



HD Main Valve is used in conjunction with the appropriate Pilot(s) to control Steam Pressure or Process Temperature

- HD Series Regulators are made from Ductile Iron bodies with hardened stainless steel trim (55Rc)
- Pressure and temperature pilots can be used in combination eliminating the need for separate pressure and temperature regulators.
- Modular design allows any pilot to be added to the main regulating valve.
- Available in Ductile Iron for higher-pressure ranges and increased safety.
- HD Series Regulators come standard with full port strainers and blow down valve on the pilot mount. This guards against dirt in the steam system which can cause regulators to fail.
- Innovative design allows the pilot to be mounted on either side of the regulator and is easily field reversible with no need to re-bend transmission tubing.
- Pilot adapter and tubing come fully assembled to the regulator. The control pilot requires only four bolts to complete the installation.



HS Series Pilot-Operated Regulating Valve (PMO 450 psig)

CAST STEEL BODY



The Watson McDaniel HS Pilot-Operated Regulating Valve is constructed of Cast Carbon Steel for higher pressure & temperature ratings.

- Cast Steel body for higher pressure and temperature ratings
- New, convenient 2-bolt pilot design simplifies installation
- Hardened stainless steel trim for extended life
- Optional Stellite trim available
- Full port strainer and blowdown valve on pilot adapter for ultimate protection from dirt and scale
- Maintains downstream pressure + 1.0 PSIG
- Pre-mounted pilot & tubing simplifies installation
- Multiple pilot options available

Direct-Operated Pressure & Temperature Regulating Valves

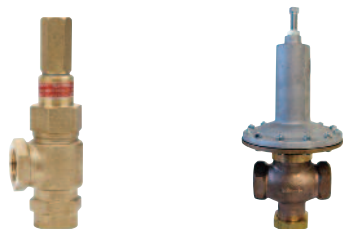


Pressure Regulating Valves

Watson McDaniel's wide range of pressure regulators are available in bronze, cast iron, stainless steel and ductile-iron and are designed for steam, air, liquid and other fluid service. These regulators can handle inlet pressures up to **450 PSIG** and are available in threaded and flanged connections.

Model	Max Operating Pressure PSIG	Sizes	Service	Body Material
455 Series	250	1/2" – 4"	Steam, Air, Water	SST/Bronze/Cast Iron
403 Series	450	1/2" – 4"	Steam, Air	Ductile Iron
B-Series	250	1/2" – 4"	Air, Water	Bronze/Cast Iron
O-Series	250	3/8" – 2"	Steam, Air, Water	Cast Iron
OSS-Series	250	1/2" – 1 1/4"	Steam, Air, Water	SST

Relief & Back Pressure Valves



R Series & 10691 3040 Series

Relief and Back Pressure Valves

are typically used for water pump by-pass, sprinkler systems, fountains, irrigation, and fire protection systems.

Materials: Bronze, Cast Iron & SS
Max Inlet Pressure: up to 300 PSI
Sizes: 1/2" – 3"

Self-Operated Temperature Regulating Valves

For Heating, Cooling and Mixing/Diverting Applications

The **W91 & W94** Self-Operating Temperature Regulating Valves require no external power source making them easy to install and maintain.

Temp Range: 20° - 440°F
Sizes: 1/2" – 4"



W94 Series

"Heat Miser" • Instantaneous Steam to Water Heater

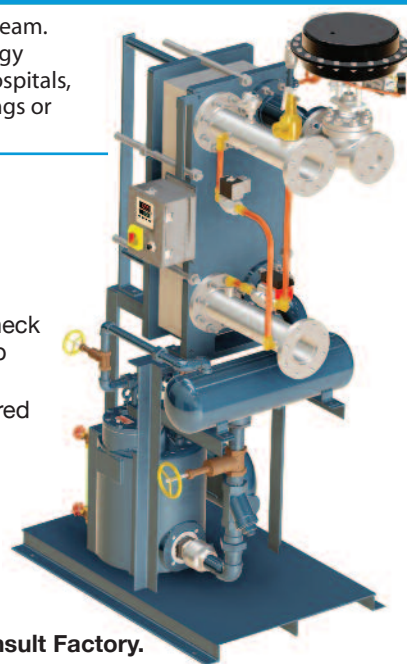
The **Heat Miser Series** Instantaneous Steam to Water Heater produces hot water from steam. This unit eliminates the need for large hot water storage tanks and saves significant energy which is required for large standing tanks of hot water. Common applications include: Hospitals, Schools & Universities, Hotels, Process Washdown Stations, Residential Apartment Buildings or any other facility with an existing steam boiler.

The **Heat Miser Series** includes the following standard components:

- Plate & Frame Heat Exchanger with steam rated EPDM gaskets and single wall 316 SS plates
- Control Valve with Pneumatic Actuator and Electro-Pneumatic Positioner
- Pressure Motive Pump-Trap Combination (1P Series) / 2" Float & Thermostatic Steam Trap & Pressure Motive Pump (2P & 3P Series) with Gauge Glass, SS Check Valves and Pre-Piped Vent Line and Motive Line w/ Thermodynamic Steam Trap
- NEMA 4X Control Panel Box with Electronic PID Controller w/Full Auto-Tune Capability, Controller and Pump On/Off Selector Switches, Conduit and Pre-Wired 120V Electrical

Other standard auxiliary items include:

- Steam Inlet & Condensate Return Y-Strainers
- Steam Inlet Pressure Gauge
- SS Electronic Temperature Sensor with Thermowell
- Valve for Cold Water Injection
- SS Recirculation Pump w/Unions
- Carbon Steel Receiver



Options Available; Consult Factory.

Control Valves

HB Series • 2-Way

Pneumatic Actuator



Electric Actuator

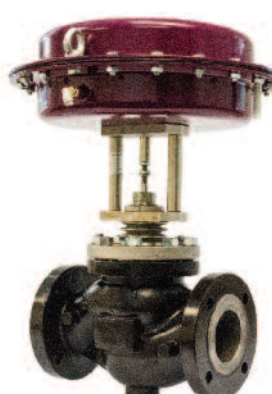


Stainless Steel Body

1/2" - 2 1/2"
(NPT & Flanged)

CV Series • 2-Way

Pneumatic Actuator



Electric Actuator



Cast Steel Body

3" - 4"
(Flanged)

Control Valves

A control valve is a device capable of modulating flow at varying degrees between minimal flow and full capacity in response to a signal from an external control device. The valve modulates flow through movement of a valve plug in relation to the port(s). The actuator, which can be pneumatically or electrically operated, directs the movement of the stem as dictated by the external control device.

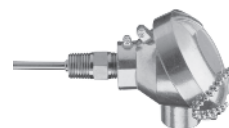


Type 2000 Valve Positioner (Pneumatic or Electro-Pneumatic)

Type 2000 Valve Positioners (Pneumatic or Electro-Pneumatic) improve control accuracy and increase maximum close-off pressure capability of the valve. The Positioner is mounted to the valve's yoke assembly and linked to the valve stem. It receives a signal from the electronic controller and compares the control signal to the actual position of the valve plug. The Positioner then sends a corrected signal to the valve's actuator, thereby positioning the valve plug for optimum flow modulation.

Control Valves & Control Loop Components

A Control Valve is one component of a control loop and relies upon other components for proper function and operation (i.e. controller, sensor, transducer, etc.).



Pneumatic Actuator

3-Way Valves • W910TB & W910E

Bronze Body • 1/2" - 4"
NPT & Flanged

3-Way Valves are used for mixing two flows together, or for diverting a flow to or around a device (bypass).

Pipeline Accessories



WSSCV

Check Valves are used in petrochemical, pulp & paper, textile and the food & beverage industry. Available with 1/4 PSI and 5 PSI cracking pressure. Material: Stainless Steel Sizes: 1/2" – 3"



CIY/CSY/SSY

"Y" Strainers are used for straining dirt particles from fluid & steam in pipe lines.

Materials: Cast Iron, Steel, Stainless Steel
Sizes: 1/2" – 4"
Pressures: up to 600 PSI



Suction Tee

Suction Tees are used for blending, agitation, recirculation and mixing.

Materials: Cast Iron, Bronze, Stainless Steel
Sizes: 1/2" – 3"



EJECT/LM/ELL

Ejectors are used for exhausting, pumping and mixing.

Materials: Cast Iron, Bronze
Sizes: 1/2" – 2"



AE1800/AV813W

Air Eliminators are used for the removal of air and other gases from liquid systems.

Materials: Cast Iron, Stainless Steel
Sizes: 1/2" & 3/4"



AV2000

Air Vents are used on industrial steam systems for the removal of air and other non-condensable gases from steam mains and process equipment.

Materials: Stainless Steel
Sizes: 1/2" & 3/4"



AVT125

Air Vents are used on steam systems for the removal of air and other non-condensable gases from process equipment.

Materials: Brass
Sizes: 1/2" & 3/4"

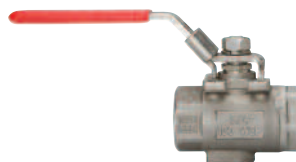


SVB/SVI

Safety Relief Valves

are used for over pressure protection on unfired pressure vessels.

Materials: Cast Iron, Bronze
Sizes: 1/2" – 6"
Pressures: up to 250 PSI



WSTTV

Steam Trap Test Valve

can be installed downstream of any steam trap to check its operation.

Materials: Stainless Steel
Sizes: 1/2" – 1"
Pressures: up to 150 PSI



WDS/WCIS

Steam Moisture Separators

are used for the removal of entrained liquid or solids from steam.

Materials: Cast Iron, Steel, DI
Sizes: 3/4" – 12"
Pressures: up to 300 PSI



EHC/EHF

Exhaust Heads are used to separate all entrained water and particles from flash steam prior to being discharged directly to the atmosphere.

Material: Cast Iron, Steel, SS
Sizes: 1" – 10"
Pressures: up to 150 PSI



WVBSS

Vacuum Breakers

are used on heat exchangers, air coils, jacketed kettles and other process equipment to break the vacuum caused by condensing steam.

Material: Stainless Steel
Sizes: 1/2"



WFPV/WSPV

Freeze Protection Valves

are used to drain liquid from pipes or tanks prior to freezing.

Materials: Stainless Steel.
Sizes: 1/2"

Scald Protection Valves

are used to protect personnel from accidental scalding when water temperatures rise above 95°F.

Material: Stainless Steel
Sizes: 1/2" – 3/4"



WFLV

Flash Recovery Vessels

are installed in condensate return systems to capture and utilize the flash steam that is generated from the hot condensate.

Material: Steel
Sizes: up to 16" flanged

Liquid Drainers

Watson McDaniel's line of Liquid Drainers are manufactured from a variety of materials including Cast Iron, Ductile Iron, Cast Steel, and Stainless Steel. Internal mechanisms are made from Stainless Steel with hardened seats and include wear points for extended service life.



WLD1900

Materials: Cast Iron
Max Capacities: 23,800 lbs/hr
Sizes: 3/4" – 2"



WLD600/WLD601

Materials: Carbon Steel, SS
Max Capacities: 960,000 lbs/hr
Sizes: 3/4" – 4"



WLD1400

Material: Ductile Iron
Max Capacities: 75,000 lbs/hr
Sizes: 1/2" – 2"



WLDE/WLDES

Materials: Ductile Iron/
Carbon Steel
Max Capacities: 435,000 lbs/hr
Sizes: 1 1/2" – 2 1/2"



WLD1800/WLD1800R

Materials: 304 Stainless Steel
Max Capacities: 2,150 lbs/hr
Sizes: 1/2" & 3/4"
Non-repairable/Repairable

Clean Steam

Watson McDaniel's line of **Clean Steam Products** are used in clean steam applications and were especially designed and manufactured to service the Pharmaceutical and Biotech industries.

The **FDA300, 400 & 500 Thermostatic Steam Traps** are used on Sanitary Clean Steam applications as drip traps on piping runs as well as drainage for **CIP** (clean-in-place) and **SIP** (sterilize-in-place) systems. Manufactured using certified 316 stainless steel these products are precision machined and electro-polished to less than 25 RMS surface finish. The **FDA600 Series Thermostatic** and **FDA800 Series Thermodynamic Steam Traps** are used on similar clean steam applications where sanitary surface finishes are not required.



FDA300



FDA400



FDA500



FDA600



FDA800

Consult factory for other Clean Steam product offerings.

Steam Traps

Thermodynamic
Thermostatic

- Bellows Type
- Bi-metal Type
- Float & Thermostatic
- Inverted Bucket
- Universal Connector
- Clean Steam
- Manifolds

Condensate Pumps

Pressure Motive Pumps

- Ductile Iron
- Carbon Steel
- Stainless Steel
- High Pressure
- Low Profile
- Pump/Trap Combinations
- Sump Drainer
- High Capacity
- Fabricated Custom Skid Packages

Electric Pumps

- Cast Iron
- Carbon Steel
- SS

Regulators

Pilot-Operated Regulators with

- Pressure Pilot
- Back Pressure Pilot
- Differential Pressure Pilot
- Temperature Pilot
- Air Pilot
- Solenoid Pilot
- Pneumatic Controllers
- Noise Attenuators

Direct-Operated Regulators

- Pressure-Steam, Air, Water
- Relief & Back Pressure Valves
- Temperature

Control Valves

- 2-Way
- 3-Way
- Control Loop Accessories

Liquid Drainers

- Float Type-CI, CS, DI, SS
- Inverted Bucket Type
- Guided Float Type

Specialty Products

- Safety Relief Valve
- Strainer
- Mixing Tee
- Ejector
- Air Eliminator
- Air Vent
- Separator
- Exhaust Head
- Vacuum Breaker
- Freeze Protection Valve
- Scald Protection Valve
- Check Valve
- Drip Pan Elbow