

STEAM TRAPS

WD600

Thermodynamic Steam Trap

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Model	WD600, WD600L
Sizes	3/8", 1/2", 3/4", 1"
Connections	NPT
Body Material	Stainless Steel 420F
Options	Insulation Cap
PMO Max. Operating Pressure	600 PSIG
TMO Max. Operating Temperature	800°F
PMA Max. Allowable Pressure	600 PSIG up to 800°F
TMA Max. Allowable Temperature	800°F @ 600 PSIG



TYPICAL APPLICATIONS

DRIP, TRACER: The WD600 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; however, thermostatic traps are normally recommended for this service. Ideal for outdoor applications that are subject to freezing and for superheated steam conditions.

HOW IT WORKS

The thermodynamic trap has cyclic on-off operation with a disk that is pushed open by incoming condensate and closes tightly when steam tries to escape.

FEATURES

- High pressure applications up to 600 PSIG
- Hardened stainless steel seat and disc for extended service life even at high pressure
- Single trap will operate over the entire pressure range (3.5-600 PSIG)
- Unaffected by superheated steam
- Freezeproof when trap is piped in a vertical orientation for complete drainage of condensate
- Three hole balanced discharge extends life of the seat area
- Trap will function in any orientation (horizontal preferred)

SAMPLE SPECIFICATION

The steam trap shall be a thermodynamic disc type with all stainless steel construction. Integral seat design and disc to be hardened for long service life. Unit shall be capable of installation in any orientation and self-draining when mounted vertically.

INSTALLATION

Trap can be installed in any position; however, horizontal is preferred. Installation should include isolation valves and a 20 mesh strainer. Do not weld as damage can occur to the seat area.

MAINTENANCE

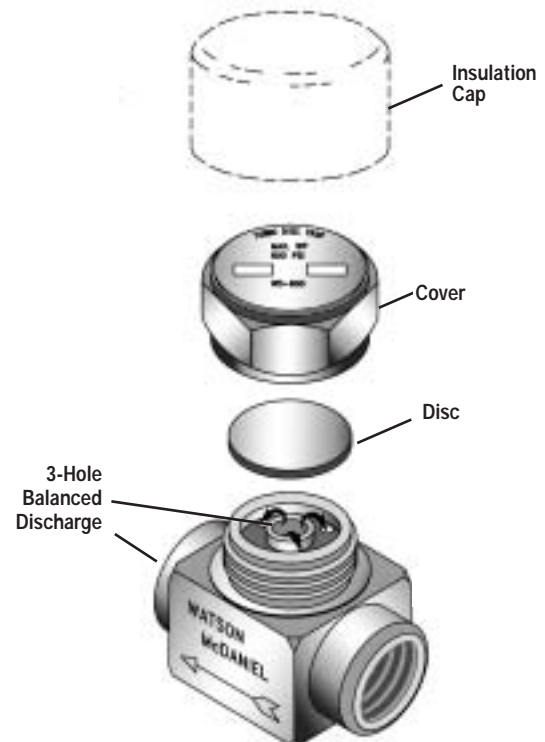
Dirt is the most common cause of premature failure. For full maintenance details, see Installation and Maintenance Manual.

OPTIONS

An insulation cap is available to reduce cycle rates and steam loss in rain, snow, or cold environments.

MATERIALS

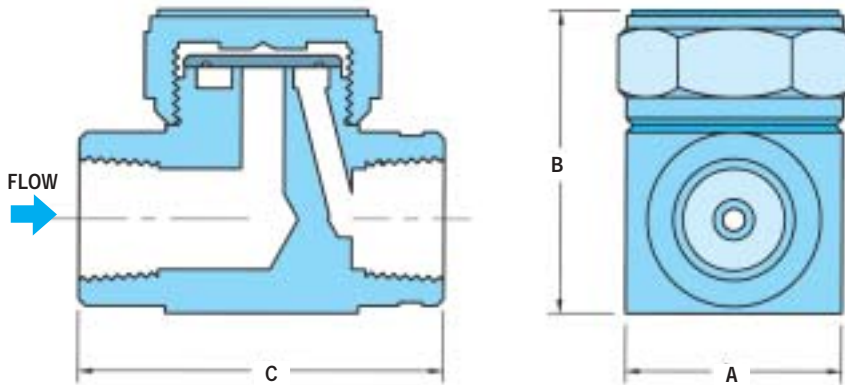
Body	Stainless Steel, AISI 420F
Disc	Stainless Steel, AISI 420
Cover	Stainless Steel, AISI 416
Insulation Cap	Stainless Steel, AISI 304



WD600

Thermodynamic Steam Trap

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DIMENSIONS & WEIGHTS – inches/pounds					
Size/Model	Connection	A	B	C	Weight (lbs)
3/8" WD600	NPT	1 ³ / ₈	1 ¹¹ / ₁₆	2	0.75
1/2" WD600	NPT	1 ¹ / ₂	2	2 ¹¹ / ₁₆	1.25
3/4" WD600	NPT	1 ³ / ₄	2 ³ / ₈	2 ¹³ / ₁₆	2.0
1" WD600	NPT	2 ¹ / ₈	2 ¹³ / ₁₆	3 ³ / ₁₆	3.0
1/2" WD600L	NPT	1 ¹ / ₂	1 ¹³ / ₁₆	2 ²³ / ₃₂	1.0
3/4" WD600L	NPT	1 ¹ / ₂	2 ¹ / ₄	2 ³ / ₄	1.75

WD600L

WD600L is a low capacity version of the standard WD600 model.

1/2" WD600L has the same capacity as the 3/8" WD600.

3/4" WD600L has the same capacity as the 1/2" WD600.

HOW TO ORDER

Refer to the capacity chart using differential pressure to determine which model is required to satisfy the condensate load.

CAPACITIES – Condensate (lbs/hr)																					
Size/Model	Pressure (PSIG)																				
	3.5	5	10	15	20	25	30	40	50	75	100	150	200	250	300	350	400	450	500	550	600
3/8" WD600 1/2" WD600L	180	185	190	195	200	215	220	230	250	310	375	500	620	710	800	825	900	1070	1120	1185	1290
1/2" WD600 3/4" WD600L	300	315	350	380	415	440	470	515	580	710	825	1020	1165	1300	1440	1565	1670	1775	1880	1960	2060
3/4" WD600	415	430	475	520	565	610	650	720	825	1020	1185	1480	1710	1950	2110	2265	2490	2625	2780	2985	3140
1" WD600	650	680	740	815	885	940	1000	1080	1225	1500	1800	2215	2625	2935	3300	3600	3875	4120	4350	4560	4840

Note: Maximum back pressure not to exceed 80% of inlet pressure (measured in absolute pressure) or trap may not close.

STEAM TRAPS

WD600S

Thermodynamic Steam Trap

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Model	WD600S
Sizes	1/2", 3/4"
Connections	NPT
Body Material	Stainless Steel 420F
Options	Blowdown Valve, Insulation Cap
PMO Max. Operating Pressure	600 PSIG
TMO Max. Operating Temperature	750°F
PMA Max. Allowable Pressure	915 PSIG up to 250°F
TMA Max. Allowable Temperature	610°F @ 750 PSIG



WD600S
Strainer



WD600SB
Strainer & Blowdown Valve

TYPICAL APPLICATIONS

DRIP, TRACER: The WD600S 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; however, thermostatic traps are normally recommended for this service. Ideal for outdoor applications that are subject to freezing and for superheated steam conditions.

HOW IT WORKS

The thermodynamic trap has cyclic on-off operation with a disk that is pushed open by incoming condensate and closes tightly when steam tries to escape.

FEATURES

- Integral strainer with optional blowdown valve to protect trap from contamination
- High pressure applications up to 600 PSIG
- Hardened stainless steel seat and disc for extended service life even at high pressure
- Single trap will operate over the entire pressure range (3.5-600 PSIG)
- Unaffected by superheated steam
- Freezeproof when trap is piped in a vertical orientation for complete drainage of condensate
- Three-hole balanced discharge extends life of the seat area
- Trap will function in any orientation (horizontal preferred)

SAMPLE SPECIFICATION

The steam trap shall be all stainless steel thermodynamic type with hardened integral seat and disc with integral strainer and blowdown valve.

INSTALLATION

Trap can be installed in any position; however, horizontal is preferred. Installation should include isolation valves. Do not weld or damage can occur to the seat area.

MAINTENANCE

If trap fails, close isolation valves and remove cap. Clean disc and seating surfaces and replace cap and disc with groove side toward seat. NOTE: Do not over tighten cap. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

An insulation cap is available to reduce cycle rates and steam loss in rain, snow, or cold environments. Blowdown valve.

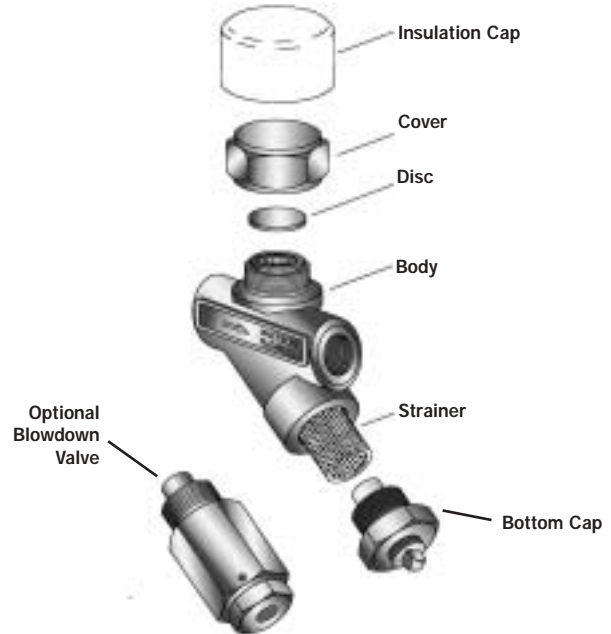
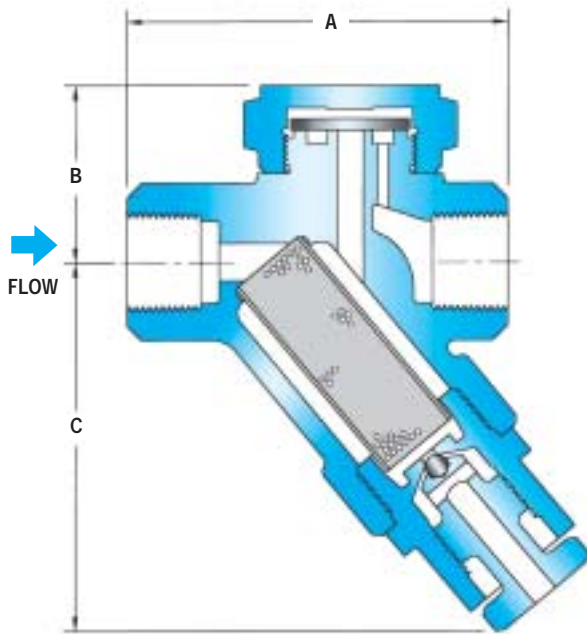
S = Strainer

SB = Strainer and Blowdown Valve

WD600S

Thermodynamic Steam Trap

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DIMENSIONS & WEIGHTS – inches/pounds

Size/Model	Connection	A	B	C	Weight (lbs)
Series WD600S (Strainer)					
1/2" WD600S	NPT	3 ⁵ / ₃₂	1 ¹ / ₂	2 ¹⁷ / ₃₂	2
1/2" WD600LS	NPT	3 ⁵ / ₃₂	1 ⁷ / ₁₆	2 ¹⁷ / ₃₂	1.5
3/4" WD600S	NPT	3 ⁹ / ₁₆	1 ⁵ / ₈	2 ¹⁷ / ₃₂	2.5
3/4" WD600LS	NPT	3 ⁹ / ₁₆	1 ⁹ / ₁₆	2 ¹⁷ / ₃₂	2.4
Series WD600SB (Strainer & Blowdown Valve)					
1/2" WD600SB	NPT	3 ⁵ / ₃₂	1 ¹ / ₂	3 ¹ / ₂	2.3
1/2" WD600LSB	NPT	3 ⁵ / ₃₂	1 ⁷ / ₁₆	3 ¹ / ₂	2.0
3/4" WD600SB	NPT	3 ⁹ / ₁₆	1 ⁵ / ₈	3 ¹ / ₂	2.8
3/4" WD600LSB	NPT	3 ⁹ / ₁₆	1 ⁹ / ₁₆	3 ¹ / ₂	2.7

MATERIALS

Body	Stainless Steel, AISI 420F
Disc	Stainless Steel, AISI 420
Cover	Stainless Steel, AISI 416
Insulation Cap	Stainless Steel, AISI 304
Strainer Screen	Stainless Steel, AISI 304
Blowdown Valve	Stainless Steel, AISI 303

HOW TO ORDER

Example:

1/2"WD600SB 1/2" connections with integral strainer and blowdown valve.

WD600LS

WD600LS is a low capacity version of the standard WD600S model. 3/4" WD600LS has the same capacity as the 1/2" WD600S.

CAPACITIES – Condensate (lbs/hr)

Size/Model	Pressure (PSIG)																				
	3.5	5	10	15	20	25	30	40	50	75	100	150	200	250	300	350	400	450	500	550	600
1/2" WD600LS	180	185	190	195	200	215	220	230	250	310	375	500	620	710	800	825	900	1070	1120	1185	1290
1/2" WD600S	300	315	350	380	415	440	470	515	580	710	825	1020	1165	1300	1440	1565	1670	1775	1880	1960	2060
3/4" WD600LS	415	430	475	520	565	610	650	720	825	1020	1185	1480	1710	1950	2110	2265	2490	2625	2780	2985	3140

Note: Maximum back pressure not to exceed 80% of inlet pressure. Measured in absolute pressure.

STEAM TRAPS

WD700S

Thermodynamic Steam Trap (Repairable)

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Model	WD700S, WD700HS
Sizes	1/2", 3/4", 1"
Connections	NPT, SW, FLG
Body Material	Chrome-Moly Alloy Steel
Options	Blowdown Valve, Insulation Cap
PMO Max. Operating Pressure	600 PSIG
TMO Max. Operating Temperature	800°F
PMA Max. Allowable Pressure	600 PSIG up to 800°F
TMA Max. Allowable Temperature	800°F @ 600 PSIG

WD700S is a Direct Replacement for Yarway Model 721



WD700S
Strainer



WD700SB
Strainer &
Blowdown Valve

TYPICAL APPLICATIONS

DRIP, TRACER: The **WD700S** thermodynamic steam trap is commonly used as a drip trap on steam mains and steam supply lines. These traps are used on tracing applications; however, thermostatic traps are normally recommended for this service. Supplied with an integral strainer and optional blowdown valve to protect the trap from contamination. The internal working mechanism of the WD700S 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.

HOW IT WORKS

The thermodynamic trap has cyclic on-off operation with a disk that is pushed open by incoming condensate and closes tightly when steam tries to escape.

FEATURES

- "Quick Change" capsule design for easy in-line repair
- Integral strainer with optional blowdown valve to protect trap from contamination
- High pressure applications up to 600 PSIG
- Hardened stainless steel seat and disc for extended service life even at high pressure
- Single trap will operate over the entire pressure range (4-600 PSIG)
- Unaffected by superheated steam
- Freezeproof when trap is piped in a vertical orientation for complete drainage of condensate
- Weldable body in chrome-moly alloy steel
- Trap will function in any orientation (horizontal preferred)

SAMPLE SPECIFICATION

The steam trap shall be a thermodynamic style in a chrome-moly alloy steel body with an integral strainer and optional blowdown valve. Unit shall have an all stainless steel in-line removable seat and disc capsule assembly. Trap shall be capable of installation in any orientation and self-draining when mounted vertically.

INSTALLATION

Trap can be installed in any position; however, horizontal is preferred. Installation should include isolation valves.

MAINTENANCE

Complete replacement of capsule assembly can be performed while the steam trap remains in line. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

Blowdown valve.

Customized Flanged Connections:

Specify size, face to face dimensions and metallurgy required for application.

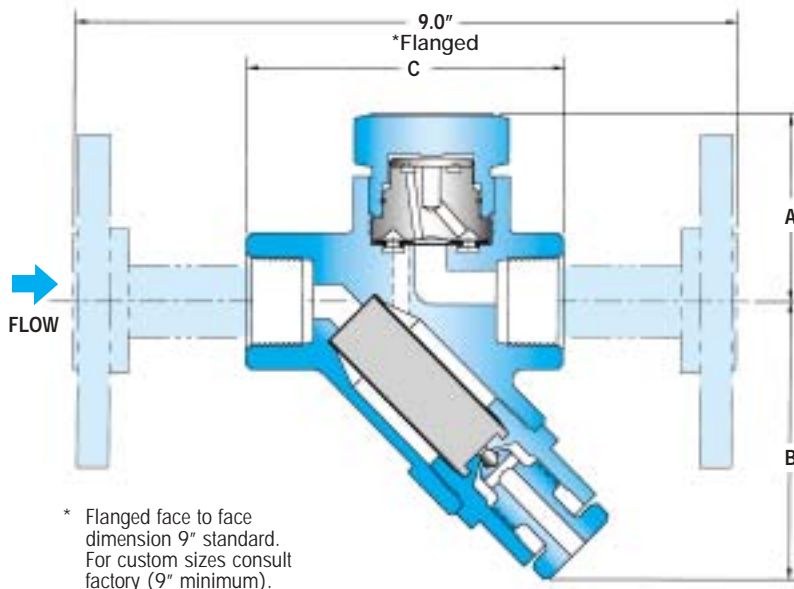
MATERIALS

Body	Chrome Moly ASTM A-217, GR WC9
Seat	Stainless Steel, 420F
Seat Gasket	Clad, Non-Asbestos
Cover	Stainless Steel, 416
Disc	Stainless Steel, 420
Retaining Ring	Stainless Steel Spring Wire
Screen	Stainless Steel, 304
Strainer Plug, Pipe Plug	Stainless Steel, 303
Blowdown Valve	Stainless Steel
Flanges	Carbon Steel

WD700S

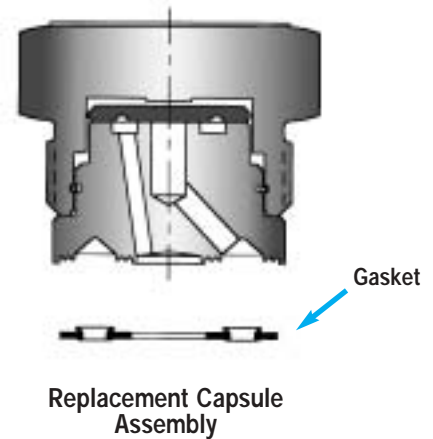
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* Flanged face to face dimension 9" standard. For custom sizes consult factory (9" minimum).

WD700S is a Direct Replacement for Yarway Model 721



DIMENSIONS & WEIGHTS – inches/pounds					
Size/Model	Connection	A	B	C	Weight (lbs)
Series WD700S & WD700HS (Strainer)					
1/2"	NPT, SW	2.04	2.50	3.16	2
3/4"	NPT, SW	2.04	2.50	3.55	2
1"	NPT, SW	2.04	2.50	6.31	2
Series WD700SB & WD700HSB (Strainer & Blowdown Valve)					
1/2"	NPT, SW	2.04	3.06	3.16	2.25
3/4"	NPT, SW	2.04	3.06	3.55	2.25
1"	NPT, SW	2.04	3.06	6.31	2.25

WD700HS

The **WD700HS** is the high pressure version of the WD700S. The standard model **WD700S** will operate over the entire pressure range, however, the **WD700HS** will operate more efficiently and have a longer service life for pressures over 300 PSIG.

- WD700S** Standard pressure capsule 4-300 PSIG
- WD700HS** High pressure capsule 150-600 PSIG

HOW TO ORDER

Example:

- 1/2" WD700SB** 1/2" connections with integral strainer and blowdown valve.
- 1/2" WD700HSB** 1/2" connections with integral strainer and blowdown valve with high pressure capsule for pressures over 150 PSI.

CAPACITIES – Condensate (lbs/hr)

Model/Size	Pressure (PSIG)																							
	1	2	3	4	5	6	7	8	9	10	20	30	40	50	60	80	100	150	200	300	400	500	600	
WD700S (Cold)	65	90	110	130	140	160	175	180	190	200	280	350	400	440	500	575	650	800	925	1200	1450	1600	1750	
WD700S (Hot)				95	105	115	120	125	130	140	180	220	250	265	280	320	350	405	460	550	600	650	700	
WD700HS (Cold)																		350	400	495	500	620	690	
WD700HS (Hot)																		250	280	330	380	410	450	

STEAM TRAPS

WD900S

Thermodynamic Steam Trap

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Model	WD900S
Sizes	1/2", 3/4", 1"
Connections	NPT, SW, 600# FLG
Body Material	Low Carbon Chrome-Moly
Options	Insulation Cap
PMO Max. Operating Pressure	900 PSIG
TMO Max. Operating Temperature	842°F
PMA Max. Allowable Pressure	1500 PSIG @ 100°F
TMA Max. Allowable Temperature	842°F @ 981 PSIG



TYPICAL APPLICATIONS

DRIP: The **WD900S** 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.

HOW IT WORKS

The thermodynamic trap has cyclic on-off operation with a disk that is pushed open by incoming condensate and closes tightly when steam tries to escape.

FEATURES

- High pressure applications up to 900 PSIG
- Integral strainer to protect trap from contamination
- Hardened stainless steel seat and disc for extended service life even at extremely high pressures
- Single trap model will operate over the entire pressure range (20-900 PSIG)
- Unaffected by superheated steam
- Freezeproof when trap is piped in a vertical orientation for complete drainage of condensate
- Trap will function in any orientation (horizontal preferred)

SAMPLE SPECIFICATION

The steam trap shall be a thermodynamic style with body material in chrome-moly alloy steel. Available in size 1/2" and 3/4" Class 600 socket weld ends or flanges. Also available in ANSI 300 FNPT. Unit shall have hardened stainless steel seat and disc with a removable stainless steel strainer.

INSTALLATION

Trap can be installed in any position; however, horizontal is preferred. Installation should include isolation valves.

MAINTENANCE

The strainer should be periodically cleaned to eliminate dirt, which is the most common cause of premature failure. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

Customized Flanged Connections:
Specify size, face to face dimensions and metallurgy required for application.

Trap includes strainer. Blowdown option is NOT available.

MATERIALS

Body	Alloy Steel, GR WC9
Seat	Stainless Steel, AISI 420
Cover	Alloy Steel, GR WC9
Strainer Cap	Alloy Steel, GR WC9
Strainer	Stainless Steel, AISI 300
Disc	Stainless Steel, AISI 420
Gasket	Stainless Steel, AISI 304
Studs	SA-193, GR B7
Nuts	SA-194, GR 2H

HOW TO ORDER

Specify the pipe size and type of connections required.

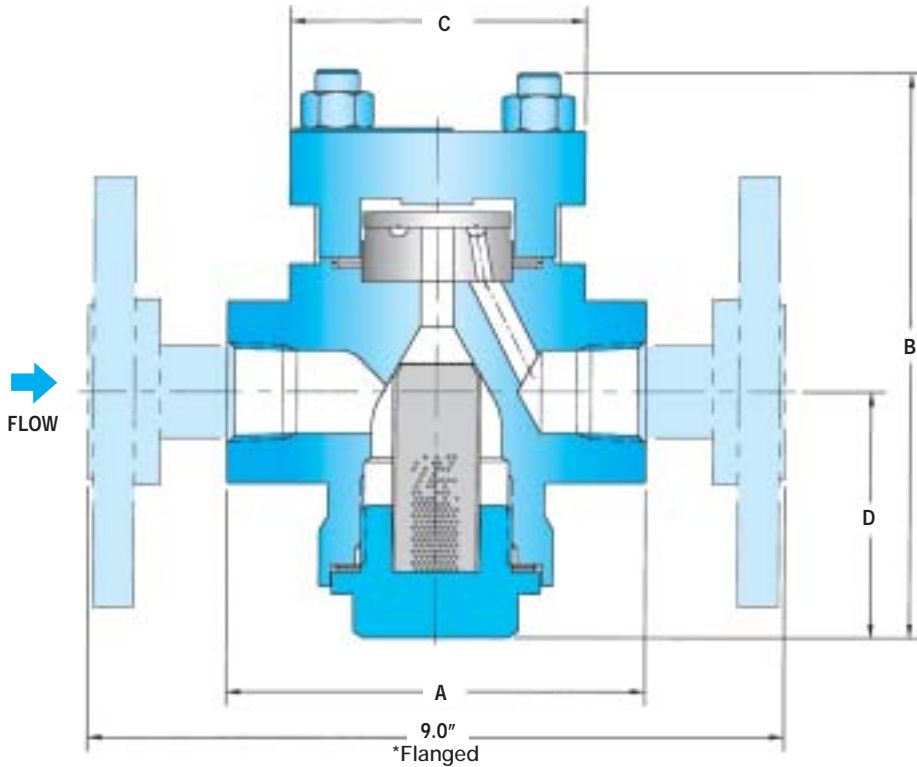
Example:

3/4" WD900 600# FLG

WD900S

Thermodynamic Steam Trap

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* Flanged face to face dimension 9" standard.
For custom sizes consult factory (9" minimum).

DIMENSIONS & WEIGHTS – inches/pounds						
Size/Model	Connection	A	B	C	D	Weight (lbs)
1/2" WD900S	NPT, SW	3.6	4.8	2.6	2.1	4.5
1/2" WD900S	*600# FLG	9.0	4.8	2.6	2.1	9.0
3/4" WD900S	NPT, SW	3.6	4.8	2.6	2.1	4.5
3/4" WD900S	*600# FLG	9.0	4.8	2.6	2.1	11.0
1" WD900S	NPT, SW	6.5	4.8	2.6	2.1	4.5
1" WD900S	*600# FLG	9.0	4.8	2.6	2.1	11.0

CAPACITIES – Condensate (lbs/hr)												
Size	Pressure (PSIG)											
	20	50	100	150	200	300	400	500	600	700	800	900
1/2", 3/4", 1"	243	411	555	641	700	781	835	874	905	930	951	968

Note: Maximum back pressure not to exceed 80% of inlet pressure.

STEAM TRAPS

WT1000

Thermostatic Steam Trap

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Model	WT1000
Sizes	1/4", 1/2", 3/4"
Connections	NPT
Body Material	Stainless Steel
PMO Max. Operating Pressure	300 PSIG
TMO Max. Operating Temperature	Saturated Steam Temperature
PMA Max. Allowable Pressure	1032 PSIG @ 100°F
TMA Max. Allowable Temperature	750°F @ 800 PSIG



TYPICAL APPLICATIONS

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 all 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.

HOW IT WORKS

The thermostatic trap contains a welded stainless steel thermal element that expands when heated and contracts when cooled. When air and condensate are present the trap is in the open discharge position. When steam reaches the trap the element expands and closes off tightly.

FEATURES

- Excellent air handling capability which allows steam to enter and the system to warm up faster. Extremely important during start up
- Welded stainless steel thermal element which resists shock from water hammer
- Freezeproof when trap is installed in a vertical orientation allowing for complete condensate drainage
- Body is produced from solid stainless steel barstock

SAMPLE SPECIFICATION

The steam trap shall be of thermostatic type with stainless steel body and stainless steel thermal element.

INSTALLATION & MAINTENANCE

Trap can be installed in any position. Steam trap is non-repairable. If new trap is needed, remove from line and replace.

OPTION

Special bellows available upon request.

MATERIALS

Trap Housing	Stainless Steel, AISI 304L
Thermal Element	Stainless Steel, 300 Series
Valve	Stainless Steel, AISI 440C

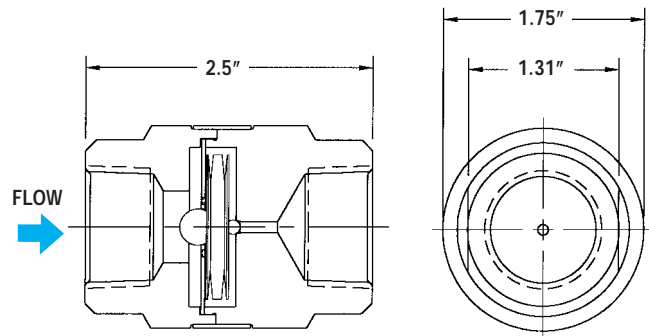
HOW TO ORDER

Specify model and pipe size.

Example:

1/2" WT1000 1/2" pipe connections

DIMENSIONS – inches



CAPACITIES – Condensate (lbs/hr)

Size	Steam Inlet Pressure (PSI)									
	5	10	20	50	100	125	150	200	250	300
1/4", 1/2", 3/4"	95	140	195	305	435	485	530	610	685	750

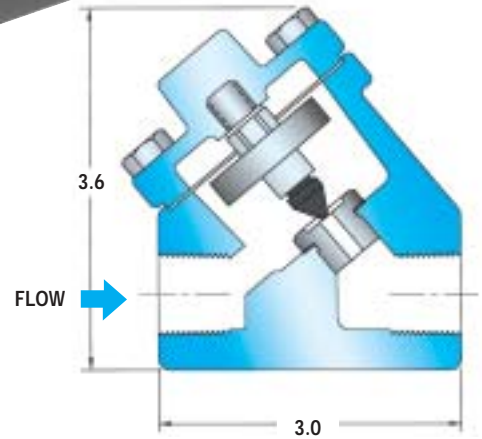
Back Pressure as Percentage of Inlet Pressure	10	20	25	30	40	50	60	70	80	90
Percentage of Reduced Trap Capacity	0	0	0	2	5	12	20	30	40	55

WT2500

Thermostatic Steam Trap

Revised 9/2004

Model	WT2500
Sizes	1/2", 3/4"
Connections	NPT
Body Material	Cast iron
PMO Max. Operating Pressure	250 PSIG
TMO Max. Operating Temperature	406°F
PMA Max. Allowable Pressure	250 PSIG up to 450°F
TMA Max. Allowable Temperature	450°F @ 250 PSIG



TYPICAL APPLICATIONS

DRIP, TRACER, PROCESS: The WT2500 thermostatic steam trap is used for drip, tracing and 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.

HOW IT WORKS

The thermostatic trap contains a welded stainless steel thermal element that expands when heated and contracts when cooled. When air and condensate are present, the trap is in the open discharge position. When steam reaches the trap, the element expands and closes off tightly.

FEATURES

- The thermal element and seat can be easily removed and replaced in minutes with the trap body still in-line
- Operates at steam pressures up to 250 PSIG
- Thermostatic traps have excellent air handling capability allowing air to be discharged rapidly and steam to enter the system quickly during start up
- Welded stainless steel thermal element that resists shock from water hammer
- Freezeproof when the trap is installed in a vertical orientation allowing for complete condensate drainage
- Hardened stainless steel seat for extended service life

MATERIALS

Cover & Body	Cast Iron ASTM A-126 Class B
Thermal Element	Stainless Steel, AISI 302
Valve & Seat	Stainless Steel, AISI 416
Cover Gasket	Garlock

CAPACITIES – condensate (lbs/hr)

Model	Orifice Size	Steam Inlet Pressure (PSIG)								
		5	10	20	50	100	125	150	200	250
WT2500	3/16"	441	625	882	1391	1827	1969	2095	2305	2483
WT2500	5/16"	903	1271	1811	2861	3754	4043	4300	4730	5093

Note: 5/64" low capacity orifice is available upon request.

SAMPLE SPECIFICATION

The steam trap shall be of a thermostatic type with cast iron body and stainless steel thermal element. Trap must be in-line repairable with a bolt on type cover that is sealed with a spiral wound Stainless Steel AISI 316 gasket. Seat and disc to be hardened stainless steel.

MAINTENANCE & INSTALLATION

Trap can be installed in any position. If replacement is required, remove the cover and replace the internal working components. Repair kit includes thermal element, seat and gasket. For full maintenance details see Installation and Maintenance Manual.

OPTION

Special bellows available upon request.

HOW TO ORDER

Refer to the capacity chart to determine which model is required to satisfy the condensate load.

5/16" orifice is standard and will be supplied if not specified. Specify orifice size 3/16" or 5/16".

Example: 1/2" WT2500 5/16" orifice 1/2" connection

STEAM TRAPS

WT2000C

Thermostatic Steam Trap

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Model	WT2000C
Sizes	1/2", 3/4"
Connections	NPT
Body Material	Stainless Steel
PMO Max. Operating Pressure	650 PSIG
TMO Max. Operating Temperature	Saturated Steam Temp.
PMA Max. Allowable Pressure	1032 PSIG @ 100°F
TMA Max. Allowable Temperature	750°F @ 800 PSIG



TYPICAL APPLICATIONS

DRIP, TRACER, PROCESS: The WT2000C thermostatic steam trap is used for drip, tracing, and 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.

HOW IT WORKS

The thermostatic trap contains a welded stainless steel thermal element that expands when heated and contracts when cooled. When air and condensate are present the trap is in the open discharge position. When steam reaches the trap the element expands and closes off tightly.

FEATURES

- Thermostatic traps have excellent air handling capability allowing air to be discharged rapidly and steam to enter the system quickly during start up
- Integral strainer to protect trap from contamination
- Welded stainless steel thermal element which resists shock from water hammer
- Freeze proof when trap is installed in a vertical orientation allowing for complete condensate drainage
- Body is produced from stainless steel investment casting
- Hardened stainless steel seat for extended service life
- Will operate at steam pressures up to 650 PSIG

SAMPLE SPECIFICATION

Steam trap shall be of thermostatic type with stainless steel body, thermal element and internal screen.

INSTALLATION

Isolation valves should be installed with trap. Trap can be installed in any position.

MAINTENANCE

Steam trap is non-repairable. If failure or malfunction occurs, remove and replace.

OPTION

Special bellows available upon request.

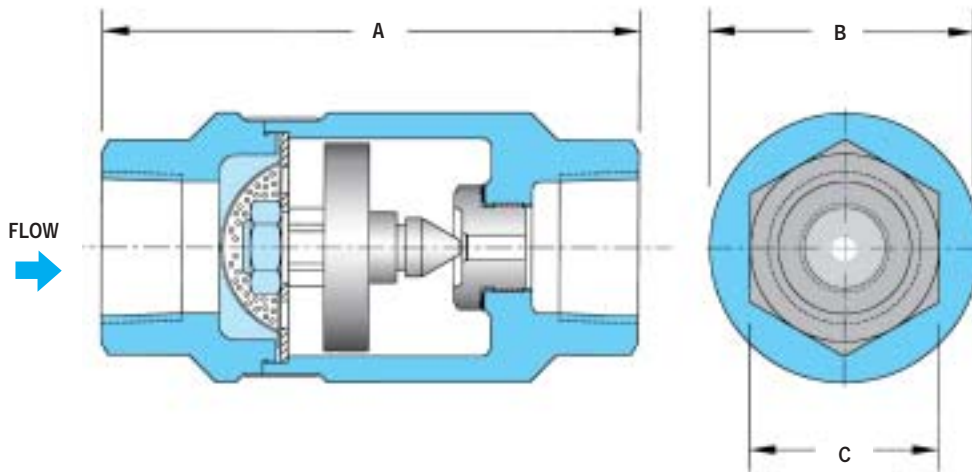
MATERIALS

Trap Housing	Stainless Steel, ASTM A351-CF3
Thermal Element	Stainless Steel
Valve & Seat	Stainless Steel, AISI 416
Strainer Screen	Stainless Steel

WT2000C

Thermostatic Steam Trap

Revised 9/2004



DIMENSIONS & WEIGHTS – inches/pounds				
Size	A	B	C	Weight (lbs)
1/2", 3/4"	3.75	1.88	1.31	1.5

HOW TO ORDER

Specify pipe size and orifice size. If orifice size is not specified, the standard 5/16" diameter will be used.

Example:

1/2" WT2000C 5/16" Orifice 1/2" pipe connections with 5/16" orifice

CAPACITIES – Condensate (lbs/hr)

Model	Orifice Size	Steam Inlet Pressure (PSIG)															
		5	10	20	50	100	125	150	200	250	300	350	400	450	500	600	650
WT2000C	3/16"	441	625	882	1391	1827	1969	2095	2305	2483	2636	2777	2903	3019	3129	3323	3413
WT2000C	5/16"	903	1271	1811	2861	3754	4043	4300	4730	5093	5413	5702	5959	6195	6421	6820	7004

Back Pressure as Percentage of Inlet Pressure	10	20	25	30	40	50	60	70	80	90
Percent Decrease in Trap Capacity	0	0	0	2	5	12	20	30	40	55

Notes: 5/16" orifice size is standard and is normally used on process equipment.
3/16" orifice size is offered for reduced capacity and normally used for tracing applications.

STEAM TRAPS

WT3000

Thermostatic Steam Trap (Repairable)

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Revised 9/2004

Model	WT3000
Sizes	1/2", 3/4"
Connections	NPT, SW, FLG
Body Material	Stainless Steel
Options	Strainer, Blowdown Valve
PMO Max. Operating Pressure	650 PSIG
TMO Max. Operating Temperature	Saturated Steam Temp.
PMA Max. Allowable Pressure	906 PSIG @ 100°F
TMA Max. Allowable Temperature	750°F @ 725 PSIG



TYPICAL APPLICATIONS

PROCESS: The WT3000 thermostatic steam trap is used for industrial 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.

HOW IT WORKS

The thermostatic trap contains a welded stainless steel thermal element that expands when heated and contracts when cooled. When air and condensate are present, the trap is in the open discharge position. When steam reaches the trap, the element expands and closes off tightly.

FEATURES

- The thermal element and seat can be easily removed and replaced in minutes with the trap body still in-line
- Operates at steam pressures up to 650 PSIG
- Thermostatic traps have excellent air handling capability allowing air to be discharged rapidly and steam to enter the system quickly during start up
- Welded stainless steel thermal element that resists shock from water hammer
- Freezeproof when the trap is installed in a vertical orientation allowing for complete condensate drainage
- Body is produced from stainless steel investment casting
- Hardened stainless steel seat for extended service life
- Available with integral strainer and blowdown

SAMPLE SPECIFICATION

The steam trap shall be of a thermostatic type with stainless steel body, stainless steel thermal element and internal strainer. Trap must be in-line repairable with a bolt on type cover that is sealed with a spiral wound Stainless Steel AISI 316 gasket. Seat and disc to be hardened stainless steel.

INSTALLATION

Isolation valves should be installed with trap. Trap can be installed in any position.

MAINTENANCE

If the trap fails, remove the cover and replace the internal working components. Repair kit includes thermal element, seat and gasket. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

Strainer, blowdown valve, and steam lock release.

S = Strainer

SB = Strainer and blowdown valve

Special bellows available upon request.

MATERIALS

Cover & Body	Stainless Steel, AISI 316L
Thermal Element	Stainless Steel, AISI 300
Valve & Seat	Stainless Steel, AISI 416
Cover Gasket	Stainless Steel, AISI 316
Seat Gasket	Stainless Steel, AISI 316
Cover Bolts	Steel, ASTM A193 GR B7 Nickel Plated
Screen*	0.046 Perforated Stainless Steel AISI 304
Blowdown Valve*	Stainless Steel AISI 303

*Screen and blowdown valve are optional

HOW TO ORDER

Refer to the capacity chart to determine which model is required to satisfy the condensate load.

Add **S** to the end of the model code if a strainer is required.

Add **B** to the end of the model code if a blowdown valve is required.

5/16" orifice is standard and will be supplied if not specified. Specify orifice size 3/16" or 5/16".

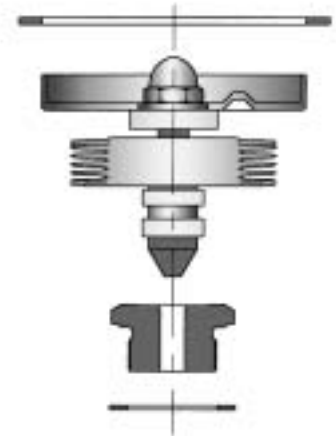
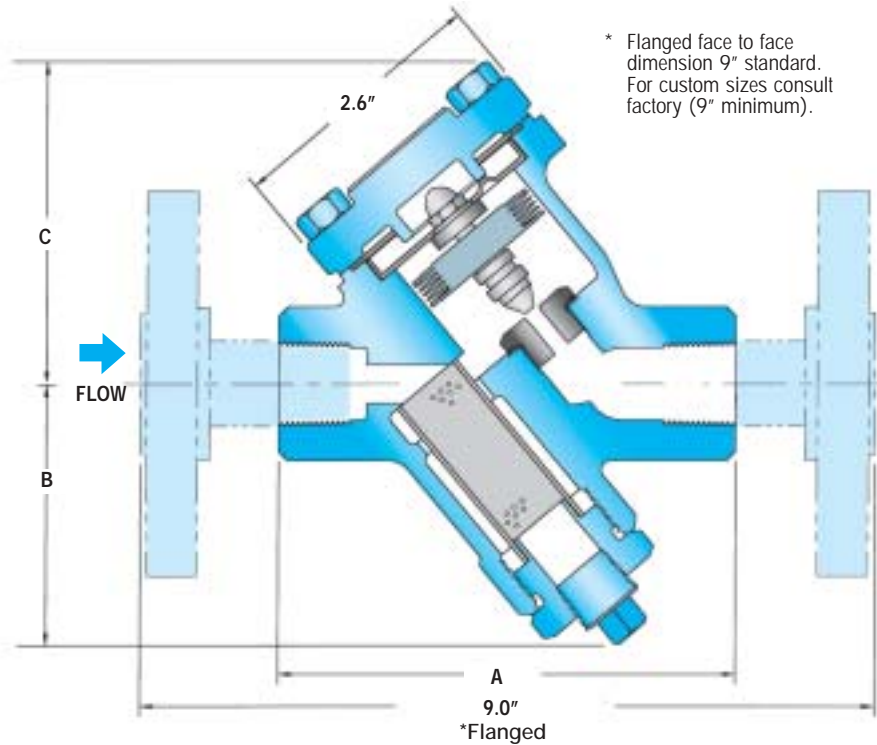
Example:

1/2" WT3000S 5/16" orifice 1/2" connection with strainer
3/4" WT3000SB 3/16" orifice 3/4" connections with strainer and blowdown valve

WT3000

Thermostatic Steam Trap

Revised 9/2004



Internals

DIMENSIONS & WEIGHTS – inches/pounds

Size/Model	Connection	A	B	C	Weight (lbs)
Series WT3000, WT3000S					
1/2"	NPT, SW	4.5	2.57	3.13	4.5
3/4"	NPT, SW	4.5	2.57	3.13	4.5
Series WT3000SB (Strainer & Blowdown Valve)					
1/2"	NPT, SW	4.5	3.2	3.13	4.5
3/4"	NPT, SW	4.5	3.2	3.13	4.5

S = Strainer only

SB = Strainer and Blowdown

CAPACITIES – Condensate (lbs/hr)

Model	Pipe Size	Orifice Size	Steam Inlet Pressure (PSIG)															
			5	10	20	50	100	125	150	200	250	300	350	400	450	500	600	650
WT3000	1/2", 3/4"	3/16"	441	625	882	1391	1827	1969	2095	2305	2483	2636	2777	2903	3019	3129	3323	3413
WT3000S		5/16"	903	1271	1811	2861	3754	4043	4300	4730	5093	5413	5702	5959	6195	6421	6820	7004
WT3000SB																		

Back Pressure as Percentage of Inlet Pressure	10	20	25	30	40	50	60	70	80	90
Percentage Decrease in Trap Capacity	0	0	0	2	5	12	20	30	40	55

Notes: 5/16" orifice size is standard and is normally used on process equipment.

3/16" orifice size is offered for reduced capacity.

5/64" low capacity orifice is available upon request.

STEAM TRAPS

WT4000

Thermostatic Steam Trap (Repairable)

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Model	WT4000
Sizes	3/4", 1"
Connections	NPT, SW, FLG
Body Material	Stainless Steel
Options	Strainer, Blowdown Valve
PMO Max. Operating Pressure	300 PSIG
TMO Max. Operating Temperature	Saturated Steam Temperature
PMA Max. Allowable Pressure	906 PSIG @ 100°F
TMA Max. Allowable Temperature	750°F @ 725 PSIG



TYPICAL APPLICATIONS

PROCESS The WT4000 thermostatic steam trap is used for industrial 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.

HOW IT WORKS

The thermostatic trap contains a welded stainless steel thermal element that expands when heated and contracts when cooled. When air and condensate are present, the trap is in the open discharge position. When steam reaches the trap, the element expands and closes off tightly.

FEATURES

- The thermal element and seat can be easily removed and replaced in minutes with the trap body still in-line
- Operates at steam pressures up to 300 PSIG
- Thermostatic traps have excellent air handling capability allowing air to be discharged rapidly and steam to enter the system quickly during start up
- Welded stainless steel thermal element that resists shock from water hammer
- Freezeproof when the trap is installed in a vertical orientation allowing for complete condensate drainage
- Body is produced from stainless steel investment casting
- Hardened stainless steel seat for extended service life
- Available with integral strainer and blowdown

SAMPLE SPECIFICATION

The steam trap shall be of thermostatic type with stainless steel body, thermal element, and internal strainer. Trap must be in-line repairable with a bolt on type cover that is sealed with a spiral wound Stainless steel AISI 316 gasket. Seat and disc to be hardened stainless steel.

INSTALLATION

Isolation valves should be installed with trap. Trap can be installed in any position.

MAINTENANCE

If trap fails, remove cover and replace the internal working components. Repair kit includes thermal element, seat and gasket. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

Strainer, blowdown valve, and steam lock release.

S = Strainer

SB = Strainer and blowdown Valve

Customized flanged connections: Specify size, face to face dimensions and metallurgy required for application.

MATERIALS

Body	Stainless Steel, AISI 316L
Cover	Stainless Steel, AISI 316L
Cover Gasket	Spiral Wound Stainless Steel, AISI 316
Cover Bolts	Steel, ASTM A193 GR B7 Nickel Plated
Thermal Element	Stainless Steel, AISI 302
Valve & Seat	Hardened Stainless Steel, AISI 416
Seat Gasket	Stainless Steel, AISI 316
Screen*	0.046 Perforated Stainless Steel AISI 304
Blowdown Valve*	Stainless Steel AISI 300

*Screen and blowdown valve are optional

HOW TO ORDER

Refer to the capacity chart to determine which model is required to satisfy the condensate load.

Add **S** to the end of the model code if a strainer is required.

Add **B** to the end of the model code if a blowdown valve is required.

7/16" orifice is standard and will be supplied if not specified. Specify orifice size **5/16"** or **7/16"**.

Example:

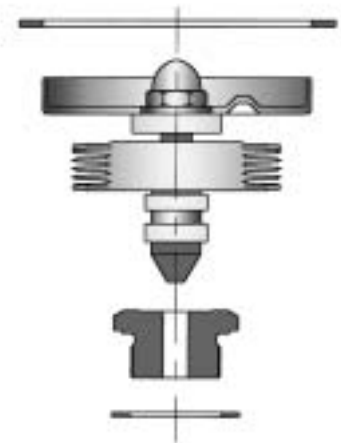
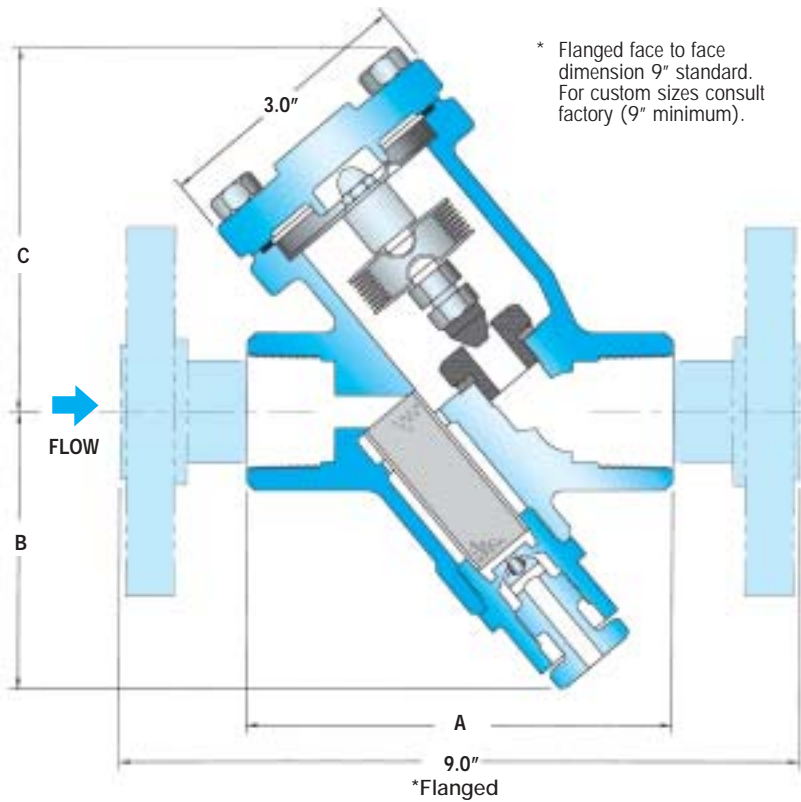
3/4" WT4000S 7/16" orifice 3/4" connection with strainer

1" WT4000SB 5/16" orifice 1" connections with strainer and blowdown valve

WT4000

Thermostatic Steam Trap

Revised 9/2004



Internals

DIMENSIONS & WEIGHTS – inches/pounds

Size/Model	Connection	A	B	C	Weight (lbs)
Series WT4000, WT4000S (Strainer)					
3/4"	NPT, SW	4.5	2.57	4.12	4.5
1"	NPT, SW	4.5	2.57	4.12	4.5
Series WT4000SB, (Strainer & Blowdown Valve)					
3/4"	NPT, SW	4.5	3.12	4.12	4.5
1"	NPT, SW	4.5	3.12	4.12	4.5

CAPACITIES – Condensate (lbs/hr)

Model	Pipe Size	Orifice Size	Steam Inlet Pressure (PSIG)											
			1	2	5	10	20	50	100	125	150	200	250	300
WT4000	3/4", 1"	5/16"	605	855	1350	1910	2705	4275	5610	6045	6425	7070	7615	8095
WT4000S		7/16"	940	1325	2095	2960	4190	6620	8695	9365	9950	10955	11800	12540
WT4000SB														

Back Pressure as Percentage of Inlet Pressure	10	20	25	30	40	50	60	70	80	90
Percent Decrease in Trap Capacity	0	0	0	2	5	12	20	30	40	55

Notes: 7/16" orifice size is standard and is normally used on process equipment.
5/16" orifice size is offered for reduced capacity.

STEAM TRAPS

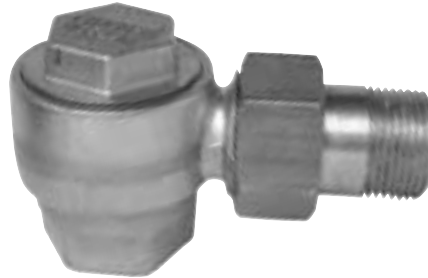
TT25B/TT125

Thermostatic Steam Trap (Repairable)

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Model	TT25B, TT125
Sizes	1/2", 3/4"
Connections	NPT
Body Material	Brass
PMO Max. Operating Pressure	TT25B 25 PSIG TT125 125 PSIG
TMO Max. Operating Temperature	Saturated Steam Temperature
PMA Max. Allowable Pressure	125 PSIG up to 450°F
TMA Max. Allowable Temperature	450°F @125 PSIG



TYPICAL APPLICATIONS

TT25B/TT125 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.

HOW IT WORKS

The thermostatic trap contains a welded stainless steel thermal element that expands when heated and contracts when cooled. When air and condensate are present the trap is in the open discharge position. When steam reaches the trap the element expands and closes off tightly.

FEATURES

- Excellent air handling capability
- In-line repairable
- Welded stainless steel thermal element
- Stainless seat on TT125
- High thermal efficiency

SAMPLE SPECIFICATION

The steam trap shall be of thermostatic type with brass or bronze body and stainless steel thermal element. Trap must be in-line repairable.

INSTALLATION

Isolation valves should be installed with trap. Trap can be installed in any position.

MAINTENANCE

If the trap fails, remove the cover and replace the internal working components. Repair kit includes thermal element, seat and gasket. For full maintenance details see Installation and Maintenance Manual.

MATERIALS

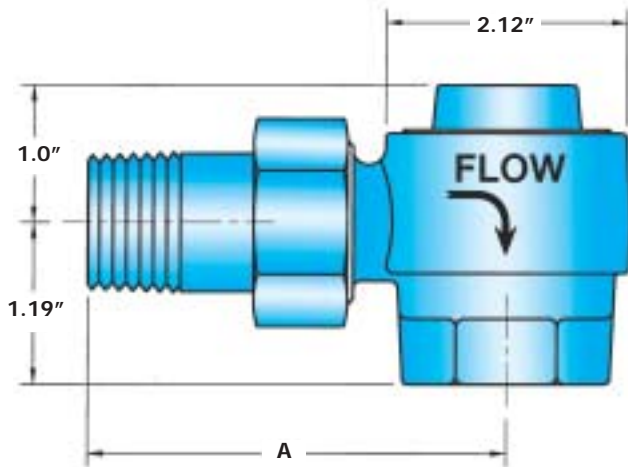
Body	Forged Brass, CA 377
Element	Welded Stainless Steel, AISI 302
Cover	Forged Brass, CA 377
Spring	Stainless Steel, AISI 304
Seat	TT25B: Brass ASTM B-21 TT125: Stainless Steel, AISI 303
Gasket	Brass, ASTM B-21
Union Nipple	Brass, ASTM B-16
Union Nut	Brass, ASTM B-16

STEAM TRAPS

TT25B/TT125

Thermostatic Steam Trap

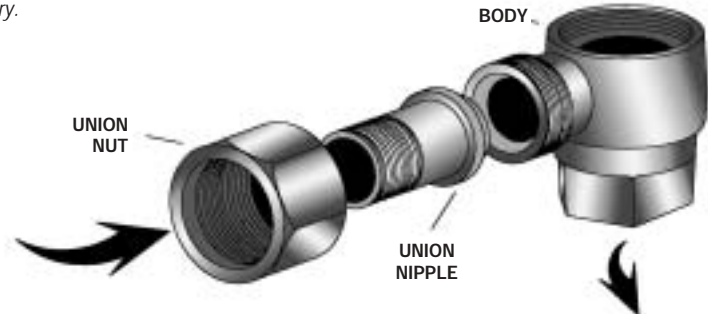
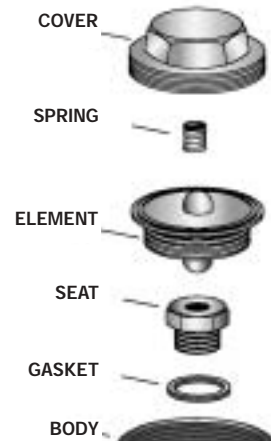
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DIMENSIONS & WEIGHTS – inches/pounds

Model	Pipe Size	A	Weight (lbs)
TT25B, TT125	1/2"	2 ¹³ / ₁₆	1.5
TT25B, TT125	3/4"	3 ¹ / ₁₆	1.5

Note: Other Union Connections and Lengths are available; consult factory.



CAPACITIES – Condensate (lbs/hr)

Pipe Size	Differential Pressure (PSI)				
	15	25	40	65	125
1/2"	825	1070	1323	1610	1950
3/4"	1290	1700	2100	2575	3300

HOW TO ORDER

Specify: Model and pipe size.

Example: 1/2" TT25B

STEAM TRAPS

FT Series

Float & Thermostatic Steam Trap

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Model	FT
Sizes	3/4", 1", 1 1/4", 1 1/2", 2"
Connections	NPT
Body Material	Cast Iron
PMO Max. Operating Pressure	75 PSIG
TMO Max. Operating Temperature	Saturated Steam Temperature
PMA Max. Allowable Pressure	75 PSIG up to 450°F
TMA Max. Allowable Temperature	450°F @ 75 PSIG



TYPICAL APPLICATIONS

DRIP, PROCESS: The FT Series float and thermostatic steam traps are used for HVAC and light industrial process applications, and can be applied to unit heaters, water heaters, pressing machines, heat exchangers, and coils. These traps have excellent air removal capability making them an excellent choice for HVAC and process applications requiring quick start-up.

HOW IT WORKS

Float and thermostatic steam traps have a float and thermostatic element that work together to remove both condensate and air from the steam system. The float, which is attached to a valve, opens when condensate enters the trap. Air is discharged through the thermostatic air vent to the outlet side of the trap. The thermostatic air vent closes when steam enters the trap.

FEATURES

- H-pattern design allows piping from either side of the steam trap (there are two inlet ports at top and two outlet ports at bottom)
- Float & Thermostatic traps have excellent air handling capability allowing air to be discharged rapidly and steam to enter the system quickly during start up
- Welded stainless steel thermostatic air vent resists shock from water hammer
- In-line repairable (all internals are attached to cover)

SAMPLE SPECIFICATION

The trap shall be of float and thermostatic design with cast iron body. Thermostatic element to be welded stainless steel. Float and seating material to be stainless steel. Trap must be in-line repairable.

INSTALLATION

Isolation valves should be installed with trap. The trap must be level and upright for the float mechanism to operate.

MAINTENANCE

All internal components can be replaced with the trap body in-line. Repair kit includes thermostatic element, valve seat and disc, float and sealing gasket. For full maintenance details see Installation and Maintenance Manual.

MATERIALS

Body & Cover	Cast Iron, ASTM A-126 Class B
Nuts & Bolts	High-Tensile Steel
Gasket	Garlock 3400
Float	Stainless Steel
Valve & Seat	Stainless Steel
Thermostatic Assembly	Stainless Steel Bellows & Valve

HOW TO ORDER

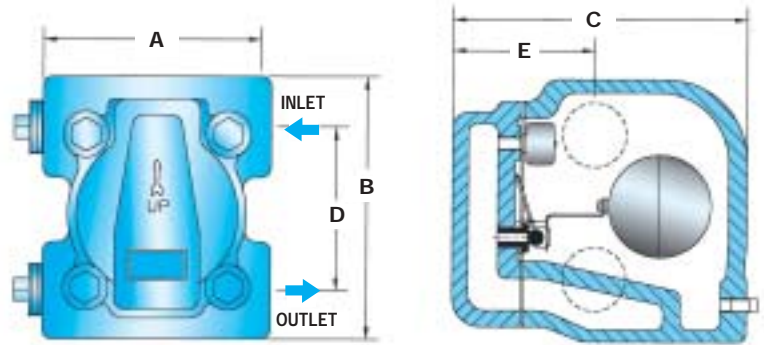
Specify model, pipe size and maximum working pressure. Choose a pressure that is greater than the maximum the trap will see in service. See capacity chart.

FT Series

Float & Thermostatic Steam Trap

Revised 9/2004

DIMENSIONS & WEIGHTS – inches/pounds								
Model	PMO PSIG	Pipe Size	A	B	C	D	E	Weight (lbs)
FT-3	15	3/4"	4.125	5	5.125	3.125	2.75	7.5
FT-4	15	1"						
FT-33	30	3/4"						
FT-34	30	1"						
FT-73	75	3/4"						
FT-74	75	1"	5	6.81	6.47	4.125	3.43	13
FT-6	15	1 1/4"						
FT-35	30	1"						
FT-36	30	1 1/4"						
FT-75	75	1"						
FT-76	75	1 1/4"	6.375	7.68	8-7/32	5.25	4.41	21
FT-7	15	1 1/2"						
FT-37L	30	1 1/2"						
FT-77L	75	1 1/2"	6.5	11	8-31/32	7-15/32	4-17/32	40
FT-8	15	2"						
FT-38	30	2"						
FT-78	75	2"						
FT-S8-15	15	2"						
FT-S8-75	75	2"						



CAPACITIES – Condensate (lbs/hr)																				
Model	PMO PSIG	Pipe Size	Orifice Size	Differential Pressure (PSI)																
				1/4	1/2	1	2	3	5	10	15	20	25	30	40	50	60	75	90	100
FT-3	15	3/4"	9/32"	340	440	600	830	990	1280	1790	2150									
FT-4	15	1"	9/32"	340	440	600	830	990	1280	1790	2150									
FT-6	15	1 1/4"	9/32"	850	1100	1460	2000	2350	2950	4000	4800									
FT-7	15	1 1/2"	1/2"	1300	1700	2050	2550	2900	3500	4400	5300									
FT-8	15	2"	21/32"	2500	3150	4000	5700	6100	6800	8300	9800									
FT-S8-15	15	2"	15/16"	4400	5850	7400	9200	10300	12600	15300	18100									
FT-33	30	3/4"	11/64"	220	300	405	530	650	890	1210	1485	1705	1865	2010						
FT-34	30	1"	11/64"	220	300	405	530	650	890	1210	1485	1705	1865	2010						
FT-35	30	1"	1/4"	450	600	880	1205	1420	1845	2560	3230	3715	4100	4405						
FT-36	30	1 1/4"	1/4"	450	600	880	1205	1420	1845	2560	3230	3715	4100	4405						
FT-37L	30	1 1/2"	7/16"	600	800	1200	1680	2210	2600	3500	4500	5200	5700	6100						
FT-38	30	2"	13/32"	1550	2045	2625	3560	4260	5660	7890	9440	10500	11360	12095						
FT-73	75	3/4"	9/64"	140	195	265	360	430	580	770	990	1110	1210	1290	1430	1560	1680	1830		
FT-74	75	1"	9/64"	140	195	265	360	430	580	710	990	1110	1210	1290	1430	1560	1680	1830		
FT-75	75	1"	#16	270	360	485	660	780	1020	1430	1740	1980	2200	2420	2670	2910	3135	3370		
FT-76	75	1 1/4"	#16	270	360	485	660	780	1020	1430	1740	1980	2200	2420	2670	2910	3135	3370		
FT-77L	75	1 1/2"	5/16"	340	460	690	900	1200	1400	1900	2350	2700	3000	3250	3750	4150	4500	4700		
FT-78	75	2"	5/16"	800	1075	1300	1700	2000	2600	3750	4350	4700	5050	5400	5960	6500	6950	7550		
FT-S8-75	75	2"	13/32"	1360	1800	2100	2800	3300	4300	6300	7300	8000	8500	9000	10000	11000	11600	12500		

STEAM TRAPS

FT600 Series

Float & Thermostatic Steam Trap

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Model	FT600 / FT601
Sizes	3/4", 1", 1 1/2", 2", 3", 4"
Connections	NPT, SW, Flanged
Body Material	Carbon Steel / 316SS
Options	Bimetallic Air Vent
PMO Max. Operating Pressure	450 PSIG
TMO Max. Operating Temperature	750°F
PMA Max. Allowable Pressure	*990 PSIG @ 100°F
TMA Max. Allowable Temperature	*750°F @ 670 PSIG

FT601 Body Material is 316 SS
* 3/4" - 2" only.

TYPICAL APPLICATIONS

PROCESS The FT600 Series high-pressure float and thermostatic steam traps are primarily used on industrial process applications. The excellent air handling capabilities of float and thermostatic traps make them a better choice than bucket traps for applications requiring quick system start-up. These traps have in-line pipe connections. Used in chemical plants and petrochemical refineries on reboilers, heat exchangers, and other critical process applications. Model FT601 is identical to FT600 except body material is 316 SS.

HOW IT WORKS

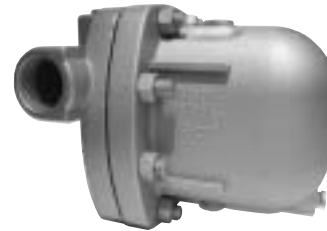
Float and thermostatic steam traps have a float and thermostatic element that work together to remove both condensate and air from the steam system. The float, which is attached to a valve, opens when condensate enters the trap. Air is discharged through the thermostatic air vent to the outlet side of the trap. The thermostatic air vent closes when steam enters the trap.

FEATURES

- Investment cast steel body and cover with class 400 shell rating (670 PSIG @ 750°F)
- Hardened stainless steel seat and disc for extended service life even at extreme temperatures and pressures
- In-line repairable is simplified by having all internals attached to the cover. Studded cover allows for easier removal of body.
- Welded stainless steel air vent resists shock from water hammer. Bimetallic air vent is available for superheated applications
- F & T traps discharge condensate immediately as it is formed. No condensate will back up into the system.

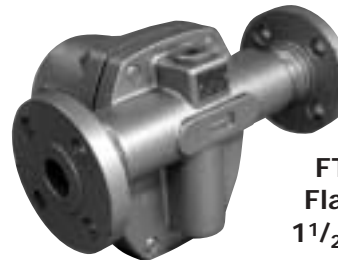
SAMPLE SPECIFICATION

The steam trap shall be of the mechanical float type having cast steel bodies, horizontal in-line connections in NPT, SW, or flanged, and all stainless steel internals. Incorporated into the trap body shall be an all stainless steel welded thermal element air vent which is water hammer resistant. The air vent is to be located at the high point of trap body to assure proper venting of non-condensables. The trap body will be in-line renewable. All bodies and covers shall be class 400 shell design, good for 670 PSIG @ 750°F.



FT600
1 1/2" & 2"

FT600
3/4" & 1"



FT600
Flanged
1 1/2" & 2"

INSTALLATION

Installation should include a strainer and isolation valves for maintenance purposes.

MAINTENANCE

Trap is in-line repairable. Studs are permanently installed into the cover simplifying the replacement of internal components.

OPTIONS

Bimetallic air vent for superheated applications.

MATERIALS

FT 600: Body & Cover	Cast Steel, ASTM A-216
FT 601: Body & Cover	316 SS
Cover Studs	Steel, AS 193, GR B7
Cover Nuts	Steel, SA 194, GR 2H
Cover Gasket	Stainless Steel Reinforced Grafoil
Valve Assembly	Stainless Steel, AISI 431
Gasket, Valve Assembly	Stainless Steel Reinforced Grafoil
Pivot Assembly	Stainless Steel, 17-4 PH
Mounting Screws	Stainless Steel Hex Head, 18-8
Float	Stainless Steel, ASTM -240, 304
Air Vent Assembly	Thermostatic element 304 SS Optional: Bimetallic

HOW TO ORDER

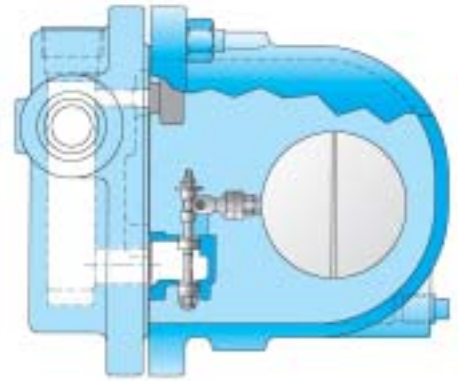
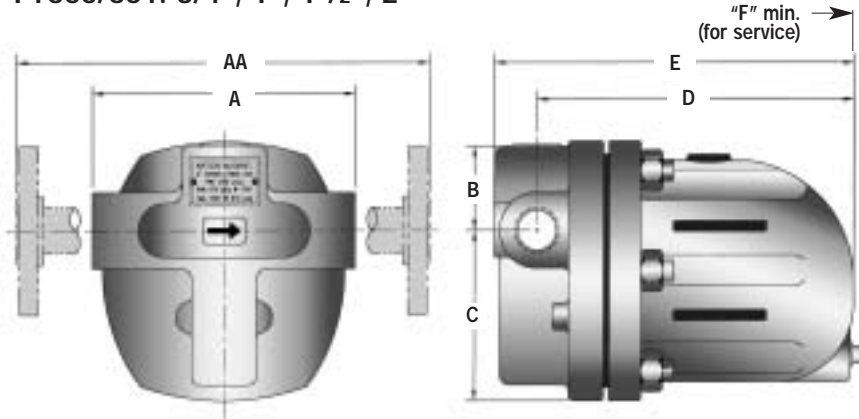
Refer to the capacity chart to determine which model is required to satisfy the condensate load.

FT600 Series

Float & Thermostatic Steam Trap

Revised 9/2004

FT600/601: 3/4", 1", 1 1/2", 2"



DIMENSIONS & WEIGHTS – inches/pounds

Model	Size	A	AA	B	C	D	E	F	Weight (lbs)	
									NPT/SW	FLG
FT600	3/4"	6.1	10.1	2.07	3.93	7.38	8.41	5.75	25	31
FT600	1"	6.5	10.4	2.5	5.5	8.44	9.5	6.25	31	36
FT600	1 1/2"	9.8	14	3.26	6.85	10.4	11.94	7.75	82	91
FT600	2"	11.8	16	3.6	7.4	11.59	13.27	8.0	93	107

CAPACITIES – Condensate (lbs/hr)

Model / PMO	Sizes	Differential Pressure (PSI)																						
		1	2	3	4	5	6	8	10	20	30	40	50	65	80	100	145	200	300	400	450			
FT600-65-13	3/4"	225	300	363	413	463	500	575	635	960	1060	1180	1320	1460										
FT600-65-14	1"	775	1094	1340	1520	1690	1865	2125	2370	3260	3990	4500	5000	5500										
FT600-65-16	1 1/2"	2500	3450	4130	4750	5300	5875	6750	7500	10625	13125	15000	16800	18850										
FT600-65-17	2"	8500	11950	14670	16800	18700	20100	23650	25250	35900	43000	49600	55500	61250										
FT600-145-13	3/4"	137	180	218	250	275	297	340	380	520	625	725	863	895	995	1120	1315							
FT600-145-14	1"	400	555	660	755	850	925	1060	1237	1593	1925	2240	2490	2750	3000	3430	3935							
FT600-145-16	1 1/2"	1275	1750	2125	2430	2740	2930	3370	3750	5100	6250	7200	7995	8875	9900	11250	13300							
FT600-145-17	2"	3125	4400	5375	6250	6900	7100	8700	9250	14625	16875	19375	21875	25000	27500	31000	37000							
FT600-200-13	3/4"	93	137	160	187	205	227	260	287	400	487	560	610	710	775	875	1060	1250						
FT600-200-14	1"	300	410	487	560	610	660	750	925	1140	1375	1520	1687	1875	2060	2312	2750	3100						
FT600-300-13	3/4"	50	68	83	95	106	118	137	155	197	240	275	300	340	375	413	490	570	710					
FT600-300-14	1"	225	300	363	413	463	500	575	635	960	1060	1180	1320	1468	1640	1815	2130	2550	3000					
FT600-450-13	3/4"	32	42	49	56	62	67	76	84	119	145	163	175	192	210	186	275	312	375	425	450			
FT600-450-14	1"	137	180	218	250	275	297	340	380	520	625	725	863	895	995	1120	1315	1500	1870	2125	2250			
FT600-450-16	1 1/2"	825	1130	1400	1570	1760	1937	2190	2500	3375	4125	4740	5250	6000	6600	7300	8650	10200	12600	14375	15200			
FT600-450-17	2"	1560	2187	2800	3100	3490	3750	4300	4800	6750	8250	9500	10625	12400	13700	15000	18120	21200	26250	28700	31250			

Note: 300' PSIG and above, the Thermostatic Air Vent is replaced with a live Orifice.

STEAM TRAPS

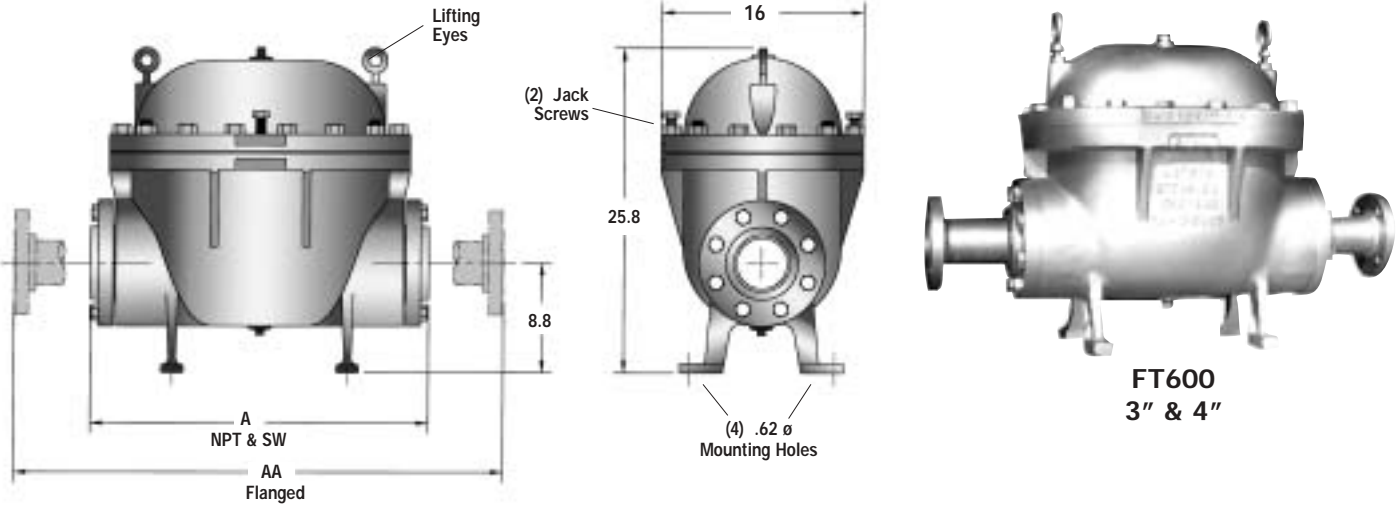
FT600 Series

Float & Thermostatic Steam Trap

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Revised 9/2004

FT600/601: 3" & 4"



DIMENSIONS & WEIGHTS – inches/pounds

Model	Size	A	AA	Weight (lbs)	
				NPT/SW	FLG
FT600	3"	27	39	587	626
FT600	4"	N/A	39	N/A	654

CAPACITIES – Condensate (1000 lbs/hr)

Temp	Differential Pressure (PSI)																				
	1/2	1	2	5	10	15	20	30	40	50	75	100	125	150	175	200	250	300	350	400	450
COLD*	44	59	81	122	170	205	230	280	317	350	425	480	540	580	625	670	740	800	860	910	960
HOT	44	53	64	83	100	112	121	138	149	159	177	190	201	212	222	230	247	260	270	280	290

* Cold Water capacities are to be used when the trap is used as a liquid drain trap. For liquid drain trap applications, please specify liquid drain trap when ordering.

CAPACITY CORRECTION FACTORS

To obtain capacity with a liquid other than water, multiply water capacity by correction factor.

Spec. Gravity-1	.98	.96	.94	.92	.90	.88	.86	.84	.82	.80	.75	.70	.65	.60	.55	.50
Corr. Factor-1	.990	.980	.970	.959	.949	.938	.927	.917	.906	.894	.866	.837	.806	.775	.742	707

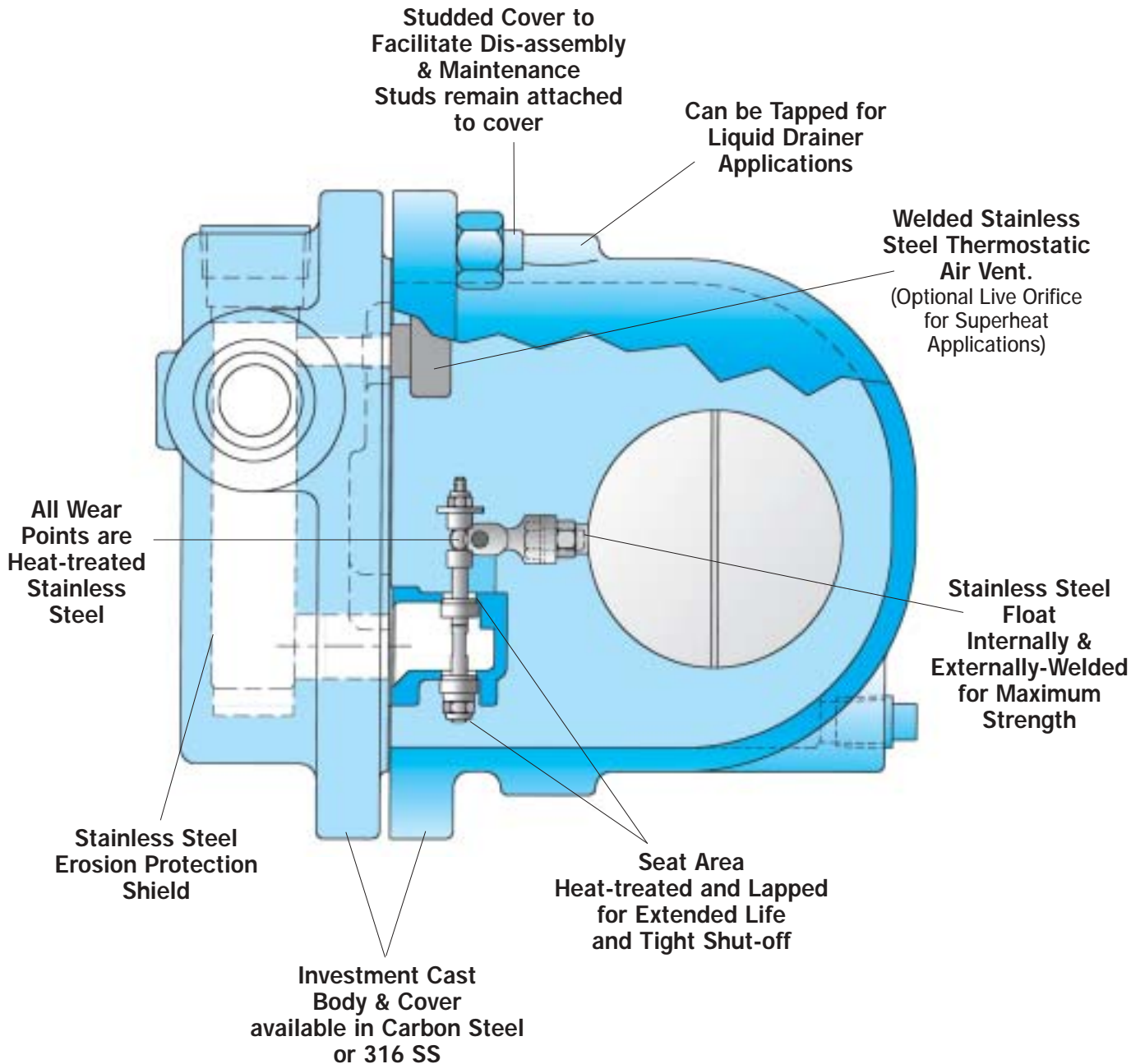
PRESSURE-TEMPERATURE RATING - 3" & 4" Models

PMA 650 PSIG up to 450° F
TMA 750° F @ 375 PSIG

FT600 Series

Float & Thermostatic Steam Trap

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STEAM TRAPS

FTE Series

Float & Thermostatic Steam Trap

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Model	FTE
Sizes	1½", 2", 2½"
Connections	NPT
Body Material	Ductile Iron
PMO Max. Operating Pressure	200 PSIG
TMO Max. Operating Temperature	450°F
PMA Max. Allowable Pressure	300 PSIG up to 450°F
TMA Max. Allowable Temperature	450°F @ 300 PSIG



TYPICAL APPLICATIONS

PROCESS: The FTE Series float and thermostatic steam traps are used in HVAC and on industrial process equipment with very high load requirements. These high capacity steam traps are typically used on reboilers, absorption chillers, large air handling coils, large heat exchangers, and other large process equipment.

HOW IT WORKS

Float and thermostatic steam traps have a float and thermostatic element that work together to remove both condensate and air from the steam system. The float, which is attached to a valve, opens when condensate enters the trap. Air is discharged through the thermostatic air vent to the outlet side of the trap. The thermostatic air vent closes when steam enters the trap.

FEATURES

- Ductile Iron has a higher pressure and temperature rating and is more resistant to shock loads than Cast Iron.
- High Capacity steam trap for draining large process equipment (over 100,000 lbs/hr)
- All stainless steel internals with hardened seat and wear parts
- In-line repairable is simplified by having all internals attached to the cover
- Welded stainless steel thermostatic air vent resists shock from water hammer. Bi-metallic air vent is available for superheated applications
- Excellent air handling capability allowing air to be discharged rapidly and steam to enter the system quickly during start up
- F & T traps discharge condensate immediately as it is formed (no condensate will back up into the system)

SAMPLE SPECIFICATION

The trap shall be of float and thermostatic design with ductile iron body. The trap must incorporate all stainless steel internals with hardened seat and welded stainless steel thermostatic air vent. Trap must be in-line repairable.

INSTALLATION

Isolation valves should be installed with trap to facilitate maintenance. The trap must be level and upright for the float mechanism to operate. Larger traps should not be supported by the piping system alone. Trap must be sized and located properly in the steam system.

MAINTENANCE

All working components can be replaced with the trap body remaining in-line. Repair kits include thermostatic air vent, float, valve seat and disc, and gaskets. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

Bimetallic air vent for superheated steam applications.

Parallel-pipe inlet/outlet connections are standard as shown. An optional In-line inlet/outlet connection is available. Contact factory.

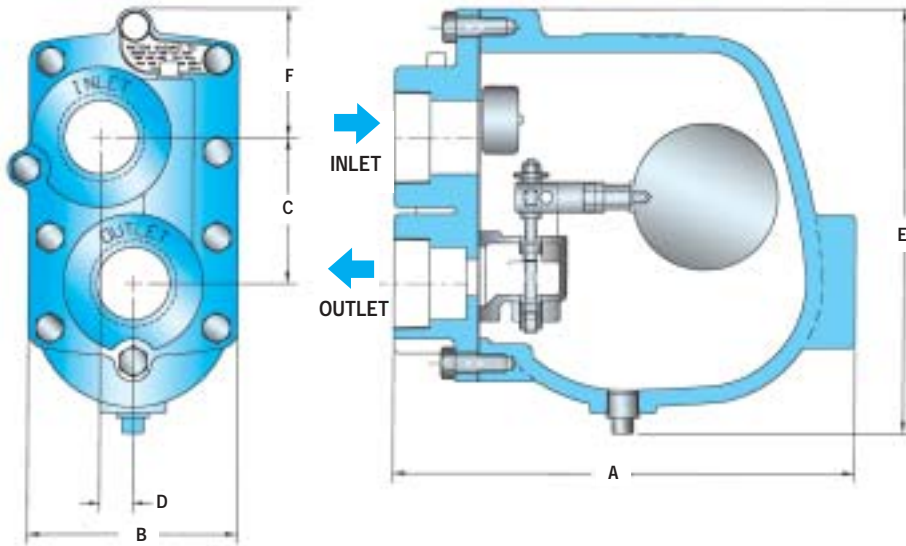
MATERIALS

Body & Cover	Ductile Iron
Cover Screw	Grade 5 Carbon Steel
Cover Gasket	Garlock
Valve Discs	Stainless Steel, AISI 174PH
Main Valve Assembly Housing	Stainless Steel, AISI 174PH
Valve Assembly Gasket	Garlock
Ball Float	Stainless Steel, AISI 304
Thermostatic Vent	Stainless Steel, AISI 300 Optional: Bimetallic air vent

FTE Series

Float & Thermostatic Steam Trap

Revised 9/2004



DIMENSIONS & WEIGHTS – inches/pounds							
Size/Model	A	B	C	D	E	F	Weight
2" FTE-20	12.6	5.7	4.5	0.5	11.1	3.9	54
2" FTE-50	16.0	8.4	7.3	1.4	15.6	3.6	146
2 1/2" FTE-50	15.5	8.4	7.3	1.4	15.6	3.6	140
2 1/2" FTE-125	15.5	8.4	7.3	1.4	15.6	3.6	146
1 1/2" FTE-200	9.6	4.3	3.0	0.7	8.8	2.6	35
2" FTE-200	12.6	5.7	4.5	0.5	11.1	3.9	65
2 1/2" FTE-200	15.5	8.4	7.3	1.4	15.6	3.6	146

HOW TO ORDER

From the capacity chart, select the model that can handle the working pressure of the system (PMO). Select the pipe size that will meet the capacity requirements at the differential pressure.

Example:

2" FTE-200 2" pipe connections
200 PSI max operating pressure

CAPACITIES – Condensate (lbs/hr)		PMO PSIG	Pipe Size	Orifice Size	Differential Pressure (PSI)															
Model	1/4				1/2	1	2	5	10	15	20	30	40	50	75	100	125	150	175	200
FTE-20*	20	2"	.937"	6100	7800	9300	11800	15900	19500	22500	26000									
FTE-50	50	2"	2.125"	12800	16900	20100	25300	33000	40200	43500	46000	47800	50500	52500						
FTE-50	50	2 1/2"	2.125"	20400	25700	31000	37000	46300	55100	60300	65100	72000	77300	82100						
FTE-125	125	2 1/2"	2.125"	20400	25700	31000	37000	46300	55100	60300	65100	72000	77300	82100	90400	97700	105000			
FTE-200	200	1 1/2"	.375"	950	1350	1900	2200	2700	3300	3900	4400	5300	5800	6400	7600	8500	9400	10300	11100	11900
FTE-200	200	2"	.75"	2700	4100	5700	7400	9900	11800	13400	14400	16400	18000	19000	21500	23000	24500	26000	27600	29200
FTE-200	200	2 1/2"	1.5"	7200	12300	17400	21500	27600	32600	36000	39300	43100	46600	49200	54700	58800	61900	64900	69000	74000

* Single seat orifice. All others are double seated.

STEAM TRAPS

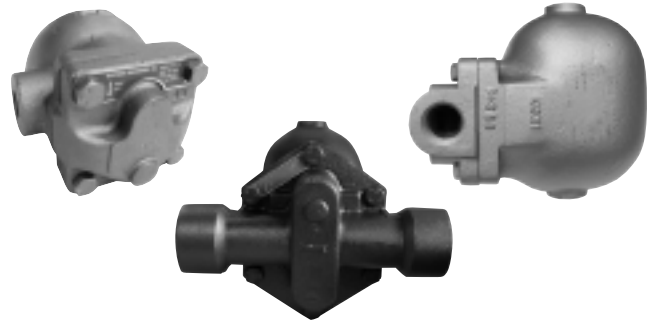
FTT Series

Float & Thermostatic Steam Trap

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Model	FTT
Sizes	1/2", 3/4", 1", 1 1/2", 2"
Connections	NPT
Body Material	Ductile Iron
PMO Max. Operating Pressure	300 PSIG
TMO Max. Operating Temperature	Saturated Steam Temperature
PMA Max. Allowable Pressure	300 PSIG up to 450°F
TMA Max. Allowable Temperature	450°F @ 300 PSIG



TYPICAL APPLICATIONS

DRIP, PROCESS: The FTT Series float and thermostatic steam traps are used in drip and process applications, industrial and HVAC process equipment. The excellent air handling capabilities of float and thermostatic traps make them a better choice than bucket traps for applications requiring quick system start-up. These traps have in-line pipe connections. Used on unit heaters, textile machines, heat exchangers, and other medium sized process equipment.

HOW IT WORKS

Float and thermostatic steam traps have a float and thermostatic element that work together to remove both condensate and air from the steam system. The float, which is attached to a valve, opens when condensate enters the trap. Air is discharged through the thermostatic air vent to the outlet side of the trap. The thermostatic air vent closes when steam enters the trap.

SAMPLE SPECIFICATION

The trap shall be of float and thermostatic design with ductile iron body and in-line piping configuration. Thermostatic air vent to be welded stainless steel. All internals must be stainless steel with hardened seat area. Trap must be in-line repairable.

INSTALLATION

The trap must be level and upright for the float mechanism to operate. Trap must be sized and located properly in the steam system.

MAINTENANCE

All internal components can be replaced with the trap body remaining in-line. Repair kits include thermostatic air vent, float, valve seat and disc, and gaskets. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

Bimetallic air vent for superheated steam applications.

FEATURES

- Ductile Iron has a higher pressure and temperature rating and is more resistant to shock loads than cast iron
- All stainless steel internals with hardened seat and wear parts
- In-line repairable is simplified by having all internals attached to the cover
- Welded stainless steel thermostatic air vent resists shock from water hammer. Bimetallic air vent is available for superheated applications
- Excellent air handling capability allowing air to be discharged rapidly and steam to enter the system quickly during start-up.
- F & T traps discharge condensate immediately as it is formed (no condensate will back-up into the system)

CAPACITIES – Condensate (lbs/hr)

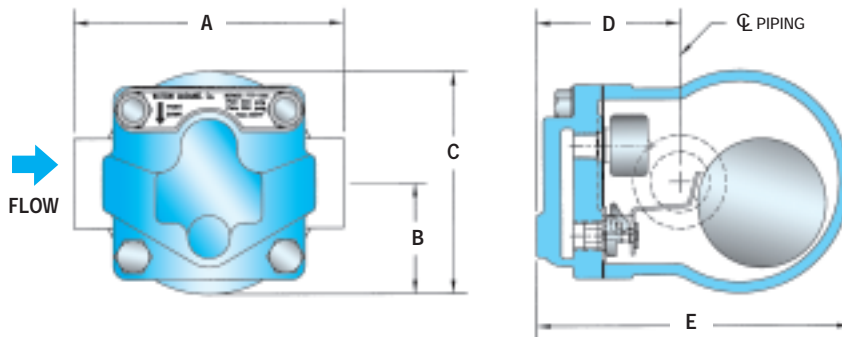
Model	PMO PSIG	Pipe Size	Differential Pressure (PSI)																				
			1/4	1/2	1	2	5	10	15	20	30	40	50	65	75	100	125	145	200	225	250	300	
FTT-65	65	1/2", 3/4"	115	155	205	270	390	520	610	685	810	910	995	1110									
FTT-65	65	1"	340	500	775	1100	1700	2400	2800	3250	3925	4200	5000	5825									
FTT-65	65	1 1/2"	1150	1650	2500	3450	5300	7500	8180	10600	13100	15000	16800	18900									
FTT-65	65	2"	3470	4820	8500	11950	18700	25200	26900	36000	43000	49600	55500	61300									
FTT-145	145	1/2", 3/4"	55	75	100	135	200	270	320	365	435	490	540	600	640	725	795	850					
FTT-145	145	1"	190	275	405	550	840	1200	1380	1600	1850	2200	2450	2750	2920	3400	3700	3900					
FTT-145	145	1 1/2"	685	970	1275	1750	2740	3750	5490	5100	6250	7200	8000	8900	9600	11250	12000	13300					
FTT-145	145	2"	1860	2680	3125	4400	6900	9250	13790	14600	16900	19400	21900	25000	26800	31000	34000	37000					
FTT-225	225	1/2", 3/4"	40	50	70	95	135	185	220	245	290	330	360	405	430	485	530	565	645	680			
FTT-225	225	1"	150	200	300	405	600	820	975	1130	1375	1510	1620	1875	2000	2350	2600	2750	3100	3250			
FTT-250	250	1 1/2"	530	710	825	1130	1760	2500	2950	3375	4125	4740	5250	6000	6400	7300	8000	8650	10200	10800	11300		
FTT-250	250	2"	695	985	1560	2185	3490	4800	5800	6750	8250	9500	10650	12400	13300	15000	16600	18120	21200	22300	23200		
FTT-300	300	1"	100	155	220	300	460	630	750	860	1060	1240	1360	1450	1600	1820	2000	2130	2500	2650	2800	3000	

FTT Series

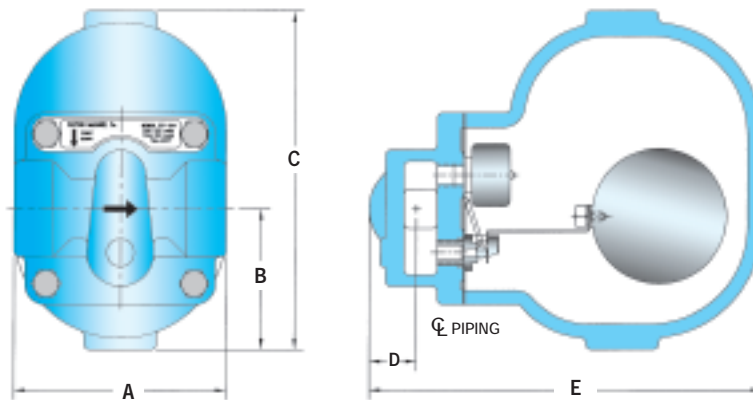
Float & Thermostatic Steam Trap

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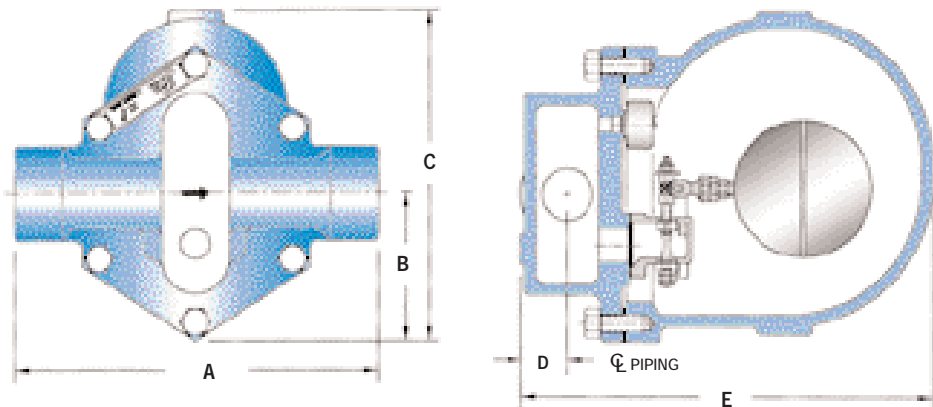
FTT
1/2" & 3/4"



FTT
1"



FTT
1 1/2\" & 2"



DIMENSIONS & WEIGHTS – inches/pounds

Size	A	B	C	D	E	Weight
1/2", 3/4"	4.8	1.9	3.9	2.5	5.5	6
1"	4.8	3.1	7.5	1.1	8.8	16
1 1/2"	10.6	4.3	9.6	1.4	12	40
2"	11.9	4.3	9.6	1.4	12	40

HOW TO ORDER

Specify model, pipe size and maximum working pressure. Choose a pressure that is greater than the maximum the trap will see in service. See capacity chart.

MATERIALS

Body & Cover	Ductile Iron
Gasket	Garlock 3400
Cover Screws	Stainless Steel, GR5
Float	Stainless Steel, AISI 304
Internals	Stainless Steel
Thermostat	Stainless Steel
Valve Seat	Stainless Steel, 17-4 PH
Valve Disc	Stainless Steel, AISI 420F

STEAM TRAPS

WFT Series

Float & Thermostatic Steam Trap

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Model	WFT
Sizes	3/4", 1", 1 1/4", 1 1/2", 2"
Connections	NPT
Body Material	Cast Iron
PMO Max. Operating Pressure	250 PSIG
TMO Max. Operating Temperature	Saturated Steam Temperature
PMA Max. Allowable Pressure	250 PSIG up to 450°F
TMA Max. Allowable Temperature	450°F @ 250 PSIG



WFT
3/4" & 1"



WFT
2"



WFT
1 1/4" & 1 1/2"

TYPICAL APPLICATIONS

PROCESS: The WFT Series float and thermostatic steam traps are used for HVAC and industrial process applications. The excellent air handling capabilities of these traps make them a better choice than bucket traps for applications requiring quick start-up. Used on unit heaters, textile machines, heat exchangers, and other process equipment.

HOW IT WORKS

Float and thermostatic steam traps have a float and thermostatic element that work together to remove both condensate and air from the steam system. The valve, which is attached to a float, opens when condensate enters the trap. Air is discharged through the thermostatic air vent to the outlet side of the trap. The thermostatic air vent closes when steam enters the trap.

FEATURES

- All stainless steel internals with hardened seat and wear parts
- In-line repairable is simplified by having all internals attached to the cover
- Welded stainless steel thermostatic air vent resists shock from water hammer. Bimetallic air vent is available for superheated applications
- Excellent air handling capability allowing air to be discharged rapidly and steam to enter the system quickly during start-up
- F & T traps discharge condensate immediately as it is formed (no condensate will back-up into the system)

SAMPLE SPECIFICATION

The trap shall be of float and thermostatic design with cast iron body and in-line piping configuration. Thermostatic air vent to be welded stainless steel. All internals must be stainless steel with hardened seat area. Trap must be in-line repairable.

INSTALLATION

Isolation valves should be installed with trap to facilitate maintenance. The trap must be level and upright for the float mechanism to operate. Trap must be sized and located properly in the steam system.

MAINTENANCE

Close isolation valves prior to performing any maintenance. All internal components can be replaced with the trap body remaining in-line. Repair kits include thermostatic air vent, float, valve seat and disc, and gaskets. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

Bimetallic air vent for superheated steam applications.

MATERIALS

Body & Cover	Cast Iron
Gasket	Garlock 3400
Cover Screws	Stainless Steel, GR5
Float	Stainless Steel, AISI 304
Internals	Stainless Steel, 300 Series
Thermostat	Stainless Steel
Valve Seat	Stainless Steel, 17-4 PH
Valve Disc	Stainless Steel, AISI 420F

HOW TO ORDER

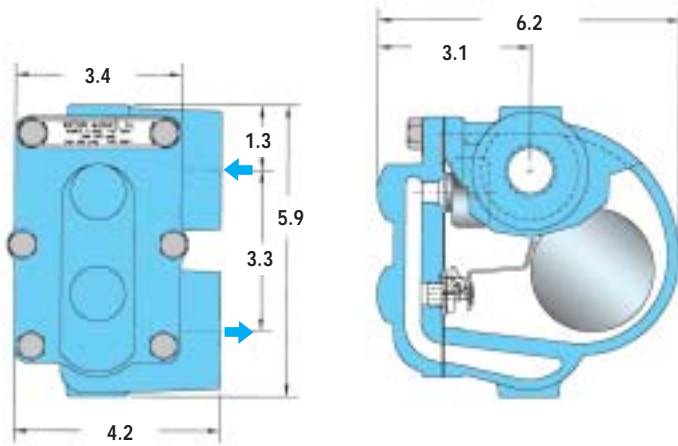
Specify model, pipe size and max operating pressure. Choose a pressure that is greater than the maximum service pressure. See capacity chart.

WFT Series

Float & Thermostatic Steam Trap

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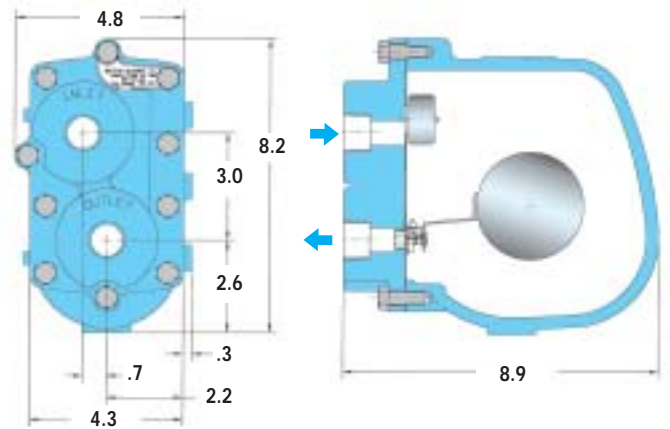
Units: inches



SPECIFICATIONS

Model	Sizes	Connection	PMO PSIG	PMA PSIG	Weight (lbs)
WFT-15	3/4", 1", 1 1/4"	NPT	15	125	9
WFT-30	3/4", 1", 1 1/4"	NPT	30	125	9
WFT-75	3/4", 1"	NPT	75	125	9
WFT-125	3/4", 1"	NPT	125	125	9

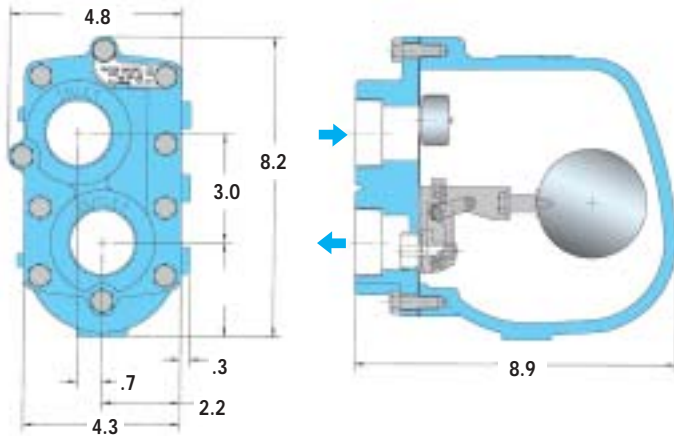
Units: inches



SPECIFICATIONS

Model	Sizes	Connection	PMO PSIG	PMA PSIG	Weight (lbs)
WFT-175	3/4", 1", 1 1/4"	NPT	175	250	20
WFT-250	3/4", 1", 1 1/4"	NPT	250	250	20

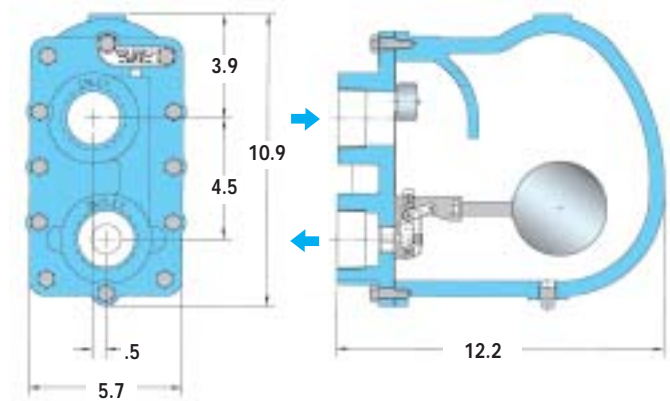
Units: inches



SPECIFICATIONS

Model	Sizes	Connection	PMO PSIG	PMA PSIG	Weight (lbs)
WFT-15	1 1/2"	NPT	15	250	21
WFT-30	1 1/2"	NPT	30	250	21
WFT-75	1 1/4", 1 1/2"	NPT	75	250	21
WFT-125	1 1/4", 1 1/2"	NPT	125	250	21
WFT-175	1 1/4", 1 1/2"	NPT	175	250	21
WFT-250	1 1/4", 1 1/2"	NPT	250	250	21

Units: inches



SPECIFICATIONS

Model	Sizes	Connection	PMO PSIG	PMA PSIG	Weight (lbs)
WFT-15	2"	NPT	15	250	53
WFT-30	2"	NPT	30	250	53
WFT-75	2"	NPT	75	250	53
WFT-125	2"	NPT	125	250	53
WFT-175	2"	NPT	175	250	53
WFT-250	2"	NPT	250	250	53

STEAM TRAPS

WFT Series

Float & Thermostatic Steam Trap

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CAPACITIES – Condensate (lbs/hr)																						
Model	PMO PSIG	Pipe Size	Orifice Size	Differential Pressure (PSI)																		
				1/4	1/2	1	2	5	10	15	20	30	40	50	75	100	125	150	175	200	225	250
WFT-015-13	15	3/4"	0.250	390	490	620	780	1050	1320	1500												
WFT-015-14	15	1"	0.250	390	490	620	780	1050	1320	1500												
WFT-015-15	15	1 1/4"	0.312	610	770	960	1210	1630	2040	2330												
WFT-015-16	15	1 1/2"	0.500	1420	1910	2570	3460	5120	6890	8190												
WFT-015-17	15	2"	0.625	2260	2950	3860	5040	7170	9360	10930												
WFT-030-13	30	3/4"	0.228	330	420	530	670	930	1180	1350	1500	1720										
WFT-030-14	30	1"	0.228	330	420	530	670	930	1180	1350	1500	1720										
WFT-030-15	30	1 1/4"	0.228	330	420	530	670	930	1180	1350	1500	1720										
WFT-030-16	30	1 1/2"	0.390	930	1240	1650	2190	3210	4280	5060	5700	6750										
WFT-030-17	30	2"	0.500	1420	1910	2570	3460	5120	6890	8190	9260	11020										
WFT-075-13	75	3/4"	0.166	175	225	295	385	545	705	825	920	1075	1200	1305	1525							
WFT-075-14	75	1"	0.166	175	225	295	385	545	705	825	920	1075	1200	1305	1525							
WFT-075-15	75	1 1/4"	0.312	640	850	1130	1500	2180	2900	3420	3850	4540	5110	5600	6610							
WFT-075-16	75	1 1/2"	0.312	640	850	1130	1500	2180	2900	3420	3850	4540	5110	5600	6610							
WFT-075-17	75	2"	0.422	1020	1340	1760	2310	3330	4380	5140	5760	6770	7590	8290	9730							
WFT-125-13	125	3/4"	0.128	105	135	180	235	340	445	525	585	690	770	845	990	1110	1210					
WFT-125-14	125	1"	0.128	105	135	180	235	340	445	525	585	690	770	845	990	1110	1210					
WFT-125-15	125	1 1/4"	0.250	410	540	710	930	1340	1770	2070	2320	2730	3050	3340	3920	4390	4790					
WFT-125-16	125	1 1/2"	0.250	410	540	710	930	1340	1770	2070	2320	2730	3050	3340	3920	4390	4790					
WFT-125-17	125	2"	0.332	720	960	1270	1690	2460	3270	3860	4340	5130	5770	6320	7460	8390	9190					
WFT-175-13	175	3/4"	0.166	190	250	320	420	590	770	900	1010	1180	1310	1430	1670	1870	2030	2180	2310			
WFT-175-14	175	1"	0.166	190	250	320	420	590	770	900	1010	1180	1310	1430	1670	1870	2030	2180	2310			
WFT-175-15	175	1 1/4"	0.250	410	540	710	930	1340	1770	2070	2320	2730	3050	3340	3920	4390	4790	5150	5470			
WFT-175-16	175	1 1/2"	0.250	410	540	710	930	1340	1770	2070	2320	2730	3050	3340	3920	4390	4790	5150	5470			
WFT-175-17	175	2"	0.281	520	680	900	1180	1700	2230	2620	2930	3440	3860	4210	4950	5540	6050	6510	6920			
WFT-250-13	250	3/4"	0.128	115	145	190	245	345	450	520	580	675	755	820	955	1060	1155	1235	1310	1375	1440	1495
WFT-250-14	250	1"	0.128	115	145	190	245	345	450	520	580	675	755	820	955	1060	1155	1235	1310	1375	1440	1495
WFT-250-15	250	1 1/4"	0.203	270	350	450	590	820	1070	1240	1380	1600	1780	1940	2250	2500	2720	2910	3080	3240	3380	3520
WFT-250-16	250	1 1/2"	0.203	270	350	450	590	820	1070	1240	1380	1600	1780	1940	2250	2500	2720	2910	3080	3240	3380	3520
WFT-250-17	250	2"	0.250	410	540	710	930	1340	1760	2060	2310	2710	3040	3320	3890	4360	4760	5110	5430	5730	6000	6250

STEAM TRAPS

IB Series

Inverted Bucket Steam Traps

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Model	1031, 1032, 1033, 1034, 1031S, 1041, 1042, 1044, 1038S
Sizes	1/2", 3/4", 1", 1 1/4", 1 1/2"
Connections	NPT
Body Material	Cast Iron
Options	Internal check valve, air vent
PMO Max. Operating Pressure	250 PSIG
TMO Max. Operating Temperature	450°F
PMA Max. Allowable Pressure	250 PSIG up to 450°F
TMA Max. Allowable Temperature	450°F @ 250 PSIG



1031/1032/1033/
1034/1031S
1031S
includes integral strainer



1041/1042/1044/1038S
include
integral strainer

TYPICAL APPLICATIONS

DRIP, TRACER, PROCESS: The **IB Series** inverted bucket traps are available in several sizes and capacity ranges. Inverted bucket traps can handle superheated steam when a check valve is used. The smaller traps are primarily used in drip and tracer applications. These traps are also used on unit heaters, laundry equipment, and other process equipment where slow start-up due to poor air handling capability can be tolerated. Larger sizes are used on process equipment; however, since bucket traps have limited air handling capability, F&T traps are the preferred choice.

HOW IT WORKS

When there is condensate in the system, the inverted bucket inside the steam trap sits on the bottom of the trap due to its inherent weight. This allows condensate to enter the trap and to be discharged through the seat orifice located at the top. When steam enters the trap, the bucket floats to the surface and closes off the discharge valve containing the steam in the system. Eventually steam is bled off through a small hole in the top of the bucket causing the bucket to sink which repeats the cycle.

FEATURES

- Handles superheated steam (use internal check valve option to eliminate loss of prime)
- Water hammer resistant
- In-line repairability is simplified by having all internals attached to the cover
- Valve & seat are at the top of the trap making it less sensitive to dirt
- All stainless steel internals with hardened valve & seat

SAMPLE SPECIFICATION

The steam trap shall be of an inverted bucket trap design. Trap body and cover shall be of cast iron construction with all stainless steel internals and hardened seat and disc.

INSTALLATION

Trap must be installed in upright position to function properly.

MAINTENANCE

All working components can be replaced with the trap body remaining in-line. The repair kit for the traps contain a lever and seat assembly with gasket. If a new trap is required, remove and replace. With superheated steam, a check valve must be installed at inlet of trap. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

Blowdown valve connection available on 1041, 1042, 1044 & 1038S. Thermic vent to improve air handling capability. Internal check valve for superheat or condensate backflow applications.

HOW TO ORDER

Determine from system requirements, the maximum pressure the trap will see and the amount of condensate the trap needs to handle.

Search down the PMO column in the capacity chart for required pressure. Move across to the right to determine if that model can handle the differential pressure it will be operating at.

Specify: Model, Pipe Size, and PMO.

Example:

3/4" IB-1034 80 PSIG 80 PSI max operating pressure

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CAPACITIES – Condensate (lbs/hr)																					
Model	Pipe Size	Orifice Size	PMO PSIG	Differential Pressure (PSI)																	
				1/4	1/2	1	2	5	10	15	20	30	50	60	70	80	100	125	150	180	200
1031 1041 1031S	1/2", 3/4"	3/16"	20	139	200	270	340	450	560	640	690										
	1/2", 3/4"	1/8"	80					300	350	400	440	500	580	635	660	690					
	1/2", 3/4"	7/64"	125					240	280	320	350	410	490	520	560	580	640	680			
	1/2", 3/4"	#38	150						250	280	300	350	400	420	450	470	500	550	570		
1032 1042	1/2", 3/4"	1/4"	15	191	300	450	590	830	950	1060											
	1/2", 3/4"	3/16"	30					530	700	820	880	1000									
	1/2", 3/4"	5/32"	70						500	560	620	710	840	900	950						
	1/2", 3/4"	1/8"	125									560	670	720	780	800	860	950			
	1/2", 3/4"	7/64"	200										500	550	580	620	650	700	810	840	860
	1/2", 3/4"	#38	250											500	530	550	580	630	660	690	710
1033	1/2", 3/4"	5/16"	15	350	570	850	1140	1600	1900	2100											
	1/2", 3/4"	1/4"	30					1000	1300	1600	1800	2050									
	1/2", 3/4"	3/16"	70					750	950	1200	1375	1600	1900	2000	2200						
	1/2", 3/4"	5/32"	125								900	1100	1380	1480	1600	1650	1800	2000			
	1/2", 3/4"	1/8"	200									700	900	980	1080	1120	1220	1400	1500	1560	1600
	1/2", 3/4"	7/64"	250											600	700	800	900	1000	1100	1180	1220
1034 1044	3/4", 1"	1/2"	15	950	1410	1880	2300	2900	3500	3900											
	3/4", 1"	3/8"	30					2200	2800	3300	3500	4000									
	3/4", 1"	5/16"	60					1750	2200	2600	2900	3500	4100	4400							
	3/4", 1"	9/32"	80						1800	2100	2400	2800	3300	3600	3800	4000					
	3/4", 1"	1/4"	125						1650	1800	1900	2200	2600	2800	3000	3200	3600	3900			
	3/4", 1"	7/32"	180									1800	2100	2300	2500	2700	2900	3200	3500	3700	
	3/4", 1"	3/16"	250										1700	1800	2000	2100	2300	2700	2800	3100	3200
1038S	1 1/4", 1 1/2"	1/2"	15	1188	1763	2350	2875	3625	4375	4875											
	1 1/4", 1 1/2"	3/8"	30					2750	3500	4125	4375	5125									
	1 1/4", 1 1/2"	5/16"	60					2188	2750	3250	3625	4375	5125	5500							
	1 1/4", 1 1/2"	9/32"	80						2250	2625	3000	3500	4125	4500	4750	5000					
	1 1/4", 1 1/2"	1/4"	125						2063	2250	2375	2750	3250	3500	3750	4000	4500	4875			
	1 1/4", 1 1/2"	7/32"	180									2063	2375	2875	3125	3375	3625	4000	4375	4625	
	1 1/4", 1 1/2"	3/16"	250										2125	2250	2500	2625	2875	3375	3500	3875	4000

* 1031S available with 125 PSI only

STEAM TRAPS

IB Series

Inverted Bucket Steam Traps

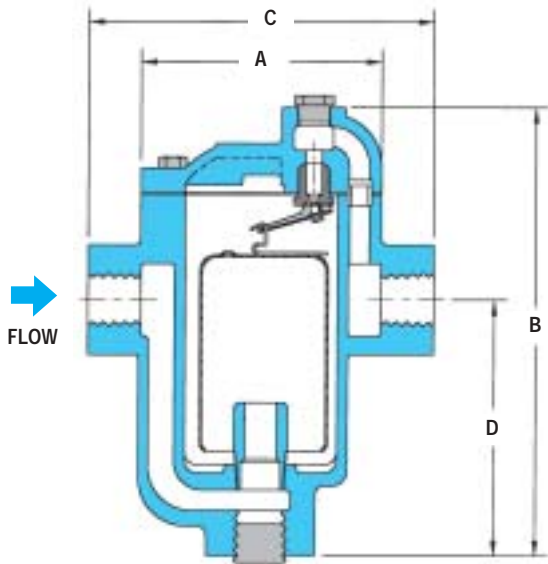
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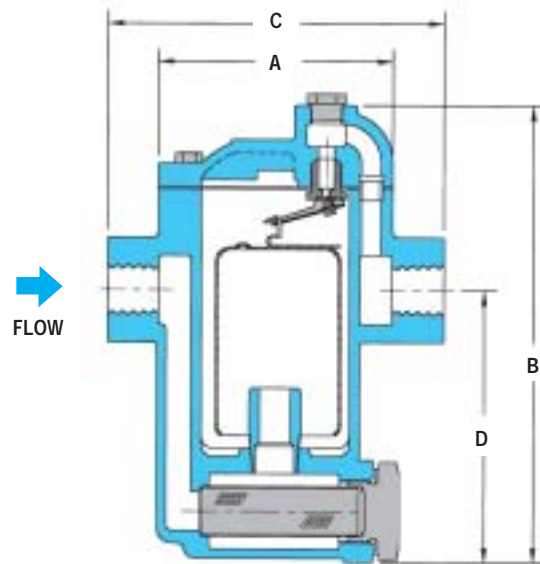
MATERIALS

Body & Cover	Cast Iron, ASTM A-278 Class 30
Nuts & Bolts	High-Tensile Steel
Gasket	Non-Asbestos Fiber
Bucket	Stainless Steel
Lever & Seat Assembly	Stainless Steel
Valve & Seat	Hardened Stainless Steel
Integral Strainer*	Stainless Steel

*1031S, 1038S, 1041, 1042, 1044 models only.



1031/1031S/1032/1033/1034



1041/1042/1044/1038S
with Strainer

DIMENSIONS & WEIGHTS – inches/pounds

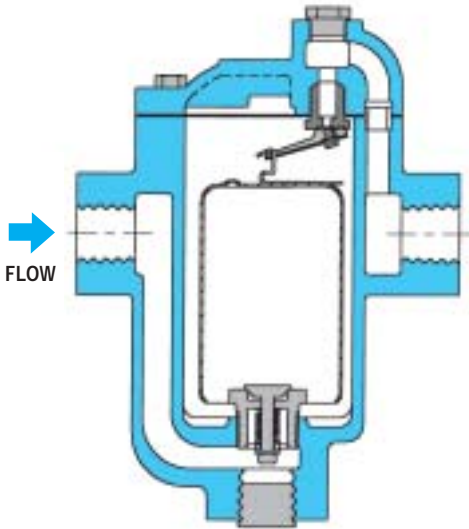
Model	Capacity (lbs/hr)	A	B	C	D	Weight (lbs)
1031	690	3 ³ / ₄	5 ⁷ / ₈	5	2 ³ / ₄	5
1031S*	690	3 ³ / ₄	5 ⁷ / ₈	5	2 ³ / ₄	5
1032	1060	3 ³ / ₄	6 ⁷ / ₈	5	4 ¹ / ₄	6
1033	2200	5 ⁵ / ₈	9 ¹ / ₁₆	6 ¹ / ₂	5 ³ / ₈	15
1034	4100	7	11 ³ / ₄	7 ³ / ₄	7 ¹ / ₃₂	27
1041*	690	3 ³ / ₄	6 ¹ / ₁₆	5	3 ⁷ / ₁₆	5
1042*	1060	3 ³ / ₄	7 ¹ / ₁₆	5	4 ⁷ / ₁₆	6
1044*	4100	7	12 ³ / ₈	7 ¹ / ₈	7 ³ / ₈	30
1038S*	5500	7	12 ³ / ₈	7 ¹ / ₈	7 ³ / ₈	30

* With Integral Strainer

IB Series

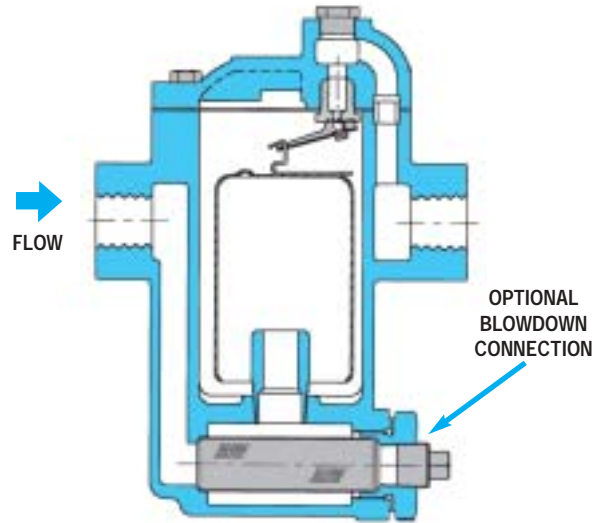
Inverted Bucket Steam Traps

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CHECK VALVE

The optional internal check valve allows the bucket trap to retain its prime even when exposed to superheated steam. Under vacuum conditions it will also stop condensate from back-flowing from the condensate return line into the steam system.



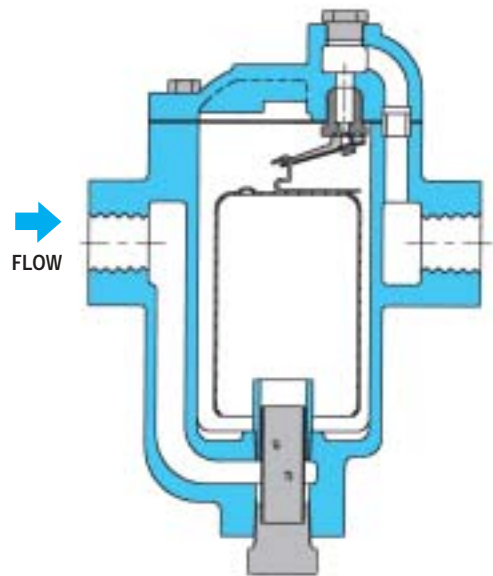
BLOWDOWN CONNECTION OPTION

A blowdown valve connection is available as an option on the **1041**, **1042**, **1044**, and **1038S** models. This simplifies maintenance by allowing the strainer to be cleaned without removal. User to supply blowdown valve.

REPLACEMENT KITS

More economical than replacing the entire steam trap is to replace the lever and seat assembly. Also available are replacement screens, gaskets and buckets.

When ordering replacement lever and seat assemblies specify model and operating pressure. Reference price sheet for exact x-reference to Armstrong PCA Kits.



1031S

The **1031S** is equipped with a small protection screen to guard against dirt in the steam system. It is a more economical alternative than the 1041 which has a full-port strainer. Specifically designed for use in laundries. Available in 125 PSI only.

STEAM TRAPS

WPN Series

Bi-Metallic Steam Traps

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Model	WPN-40						WPN-63						
	1/2", 3/4", 1", 1 1/4", 1 1/2", 2"						1/2", 3/4", 1"			1 1/4", 1 1/2", 2"			
Sizes	1/2", 3/4", 1", 1 1/4", 1 1/2", 2"						1/2", 3/4", 1"			1 1/4", 1 1/2", 2"			
Connections	NPT, FLG, SW, Butt-weld						FLG, SW, Butt-weld			FLG, SW, Butt-weld			
Body & Cover Material	C22.8			15M03			15M03			15M03			
PMO Max. Operating Pressure PSIG	470	325	220	520	470	420	825	690	660	590	825	735	660
TMO Max. Operating Temperature °F	482	725	842	572	635	842	572	552	842	932	572	662	842
Max. Pressure Drop for Pres. Controller	470	325	190	470	325	190	680			825	470	470	
Pressure Controller	R32	R22	R13	R32	R22	R13	R46			R53	R32	R32	

Model	WPN-100			WPN-160				WPN-250			
	1/2", 3/4", 1"			1/2", 3/4", 1"				1/2", 3/4", 1"			
Sizes	1/2", 3/4", 1"			1/2", 3/4", 1"				1/2", 3/4", 1"			
Connections	FLG, SW, Butt-weld			FLG, SW, Butt-weld				FLG, SW, Butt-weld			
Body & Cover Material	15M03			13 CrMo44				10CrMo 9-10			
PMO Max. Operating Pressure	1325	825	400	2250	1470	910	515	2700	2260	1580	1190
TMO Max. Operating Temperature	842	923	986	932	950	986	1022	932	950	986	1022
Max. Pressure Drop for Pres. Controller	1325	1325/880	880	1620				2260			
Pressure Controller	R90	R90/R60	R60	R110				R154			

TYPICAL APPLICATIONS

DRIP, TRACER, PROCESS: The WPN Series of Bimetallic Steam Traps are used in steam tracing, steam main drips and non-critical process equipment. They can be used in outdoor applications that are subject to freezing. Bimetallic traps will back up some condensate into the system and should only be used when this condition is permissible.

HOW IT WORKS

When the system is cold the trap is wide open discharging air and cold condensate. When the bimetallic plates inside the trap heat up, they pull the seat closed and the flow becomes restricted. When steam temperature is reached the trap shuts off tightly.

FEATURES

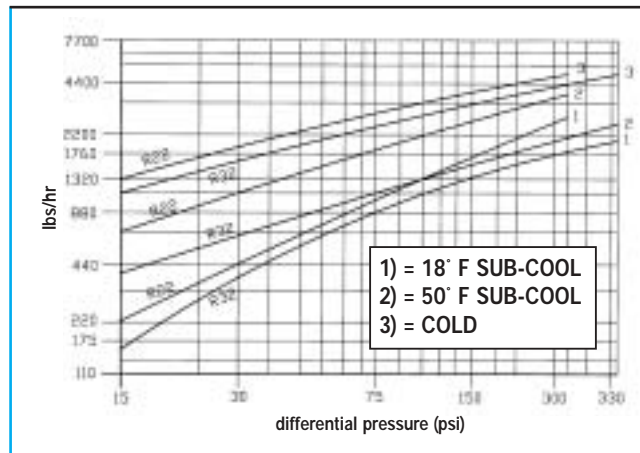
- Excellent for high pressure and superheated steam applications
- Freeze-proof and resistant to water hammer
- Handles superheated steam with check valve installed at inlet
- In-line repairable
- Trap can be welded into line

SAMPLE SPECIFICATION

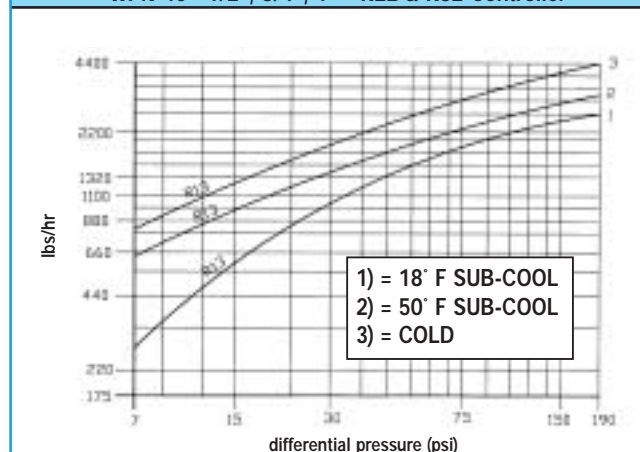
Steam trap shall be Watson McDaniel WPN Series Bimetallic steam trap. Trap must be capable of being completely serviced while still in line.

INSTALLATION

The trap can be installed in a vertical or horizontal plane. See Installation and Maintenance Manual.

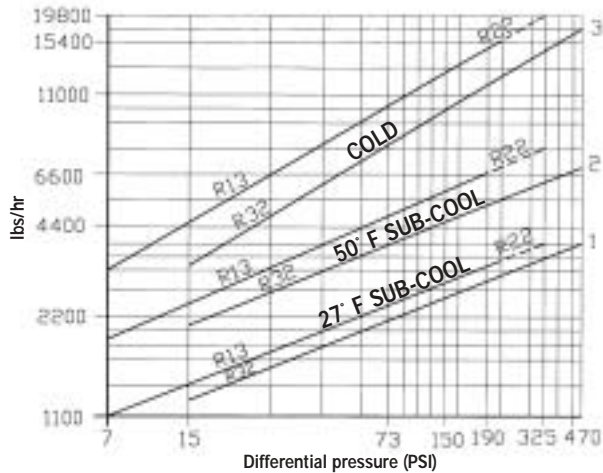


WPN-40 1/2", 3/4", 1" - R22 & R32 Controller

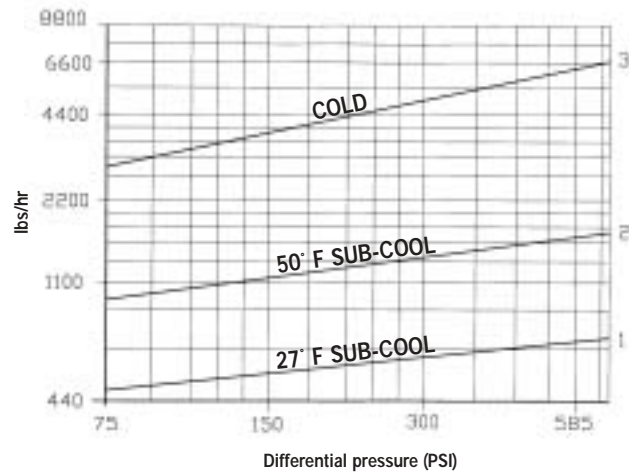


WPN-40 1/2", 3/4", 1" - R13 Controller

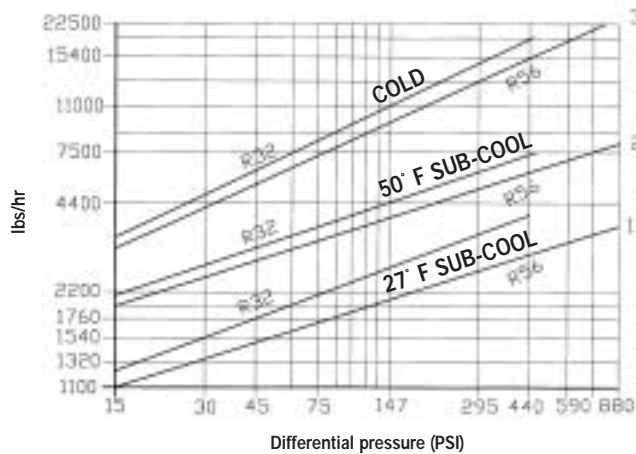
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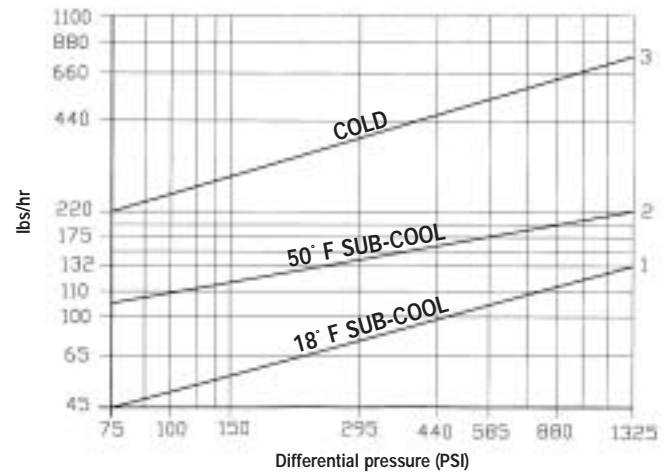
WPN-40 1-1/4", 1-1/2", 2" R13, R22 & R32 Controller



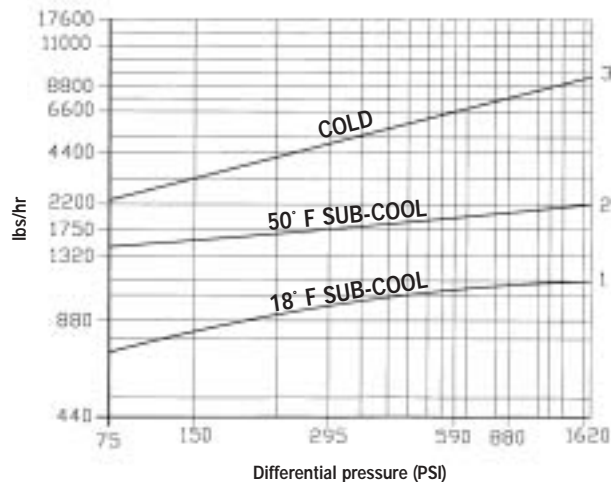
WPN-63 1/2", 3/4", 1"



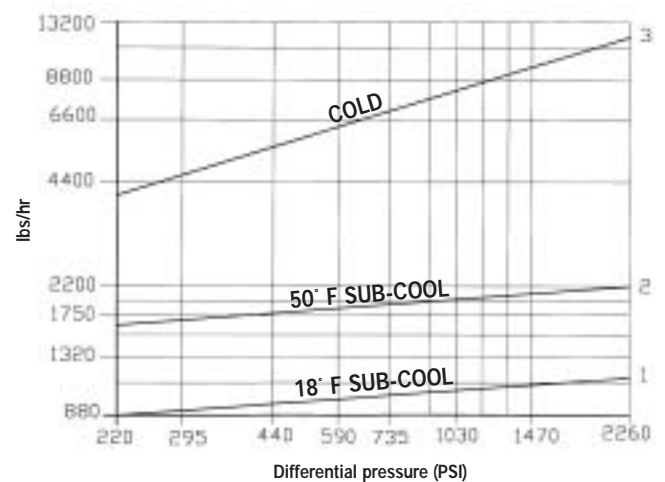
WPN-63 - 1-1/4", 1-1/2", 2"



WPN-100 - 1/2", 3/4", 1"



WPN-160 1/2", 3/4", 1"



WPN-250 - 1/2", 3/4", 1"

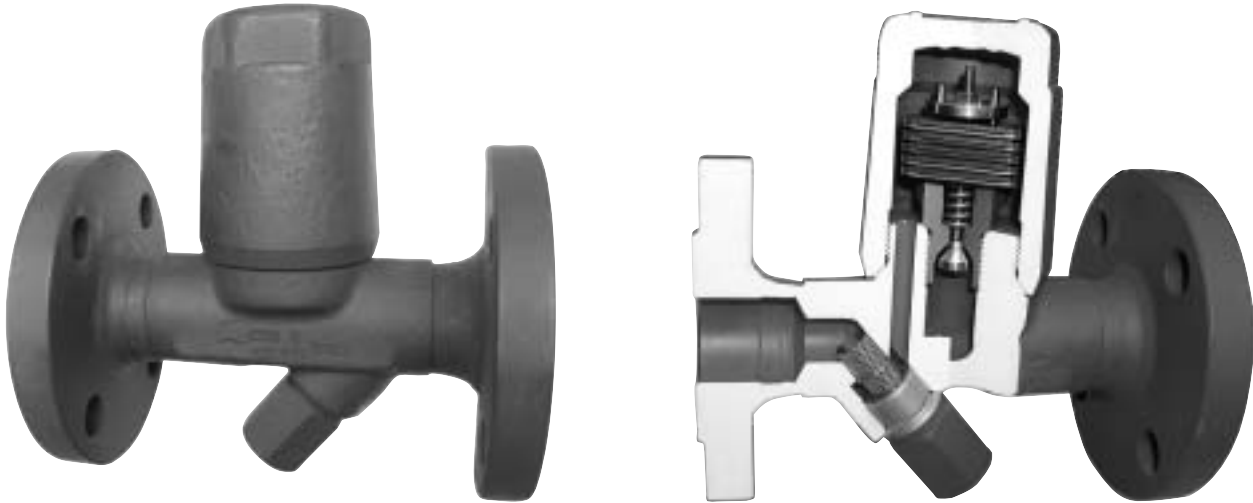
STEAM TRAPS

WPN Series

Bi-Metallic Steam Traps

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DIMENSIONS & WEIGHTS – inches/pounds								
Model	Size	Connection	L	H	H1	H2	H3	Weight (lbs)
WPN-40	1/2", 3/4"	FLG #150/300	6.0	3.92	2.48	.96	2.8	7.7
	1"	FLG #150/300	8.4	3.92	2.48	.96	2.8	9.2
	1 1/4", 1 1/2", 2"	FLG #150/300	9.2	5.76	-	-	3.6	25.0
	1/2", 3/4"	NPT, SW	3.92	3.92	2.48	.96	2.8	3.7
	1"	NPT, SW	4.12	4.12	2.20	.52	2.8	4.6
	1 1/4", 1 1/2"	NPT, SW	5.2	5.76	-	-	3.6	17.6
	2"	NPT, SW	8.4	5.76	-	-	3.6	17.6
	1 1/2", 3/4", 1"	Butt-weld	10.0	3.92	2.48	.96	2.8	5.0
1 1/4", 1 1/2", 2"	Butt-weld	10.0	5.76	-	-	3.6	21.0	
WPN-63	1/2", 3/4", 1"	FLG #600	8.4	4.16	1.68	-	2.8	17.6
	1 1/4"	FLG #600	9.2	5.76	-	-	3.6	28
	1 1/2"	FLG #600	10.4	5.76	-	-	3.6	29
	2"	FLG #600	12.0	5.76	-	-	3.6	30.8
	1/2", 3/4", 1"	SW	6.4	4.16	1.68	-	2.8	10.0
	1 1/4", 1 1/2"	SW	5.2	5.76	-	-	3.6	17.6
	2"	SW	8.4	5.76	-	-	3.6	17.6
	1 1/2", 3/4", 1"	Butt-weld	6.4	4.16	1.68	-	2.8	10.0
1 1/4", 1 1/2", 2"	Butt-weld	10.0	5.76	-	-	3.6	21	
WPN-100	1/2", 3/4"	FLG #600	8.4	4.16	1.68	-	2.8	14.0
	1"	FLG #600	9.2	4.16	1.68	-	2.8	20.5
	1/2", 3/4", 1"	SW	6.4	4.16	1.68	-	2.8	10.0
	1/2", 3/4", 1"	Butt-weld	6.4	4.16	1.68	-	2.8	10.0
WPN-160 *	1/2", 3/4"	FLG #900/1500	8.4	4.16	1.68	-	2.8	14.0
	1"	FLG #900/1500	9.2	4.16	1.68	-	2.8	21.0
WPN-250 *	1/2", 3/4", 1"	SW	6.4	4.16	1.68	-	2.8	10.3
	1/2", 3/4", 1"	Butt-weld	6.4	4.16	1.68	-	2.8	10.3

* WPN-160 FLG #900, * WPN-250 FLG #1500

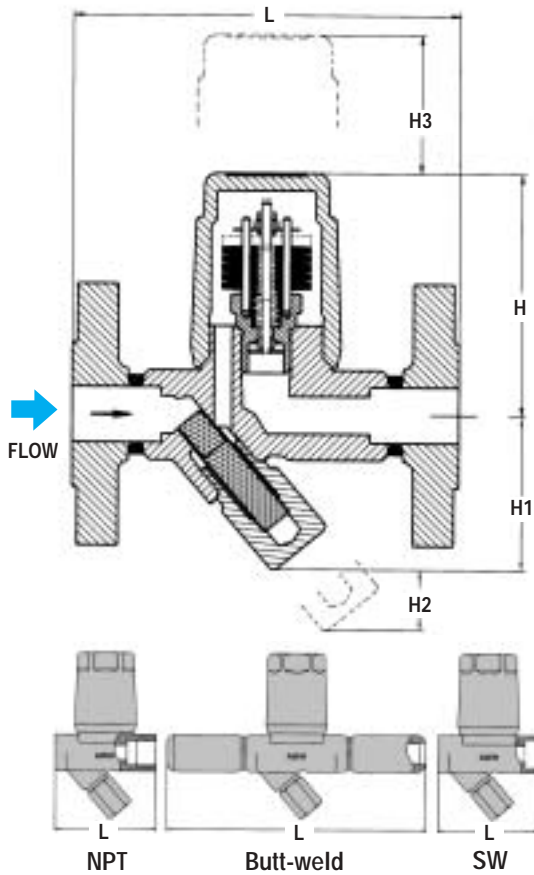
WPN Series

Bi-Metallic Steam Traps

Revised 9/2004

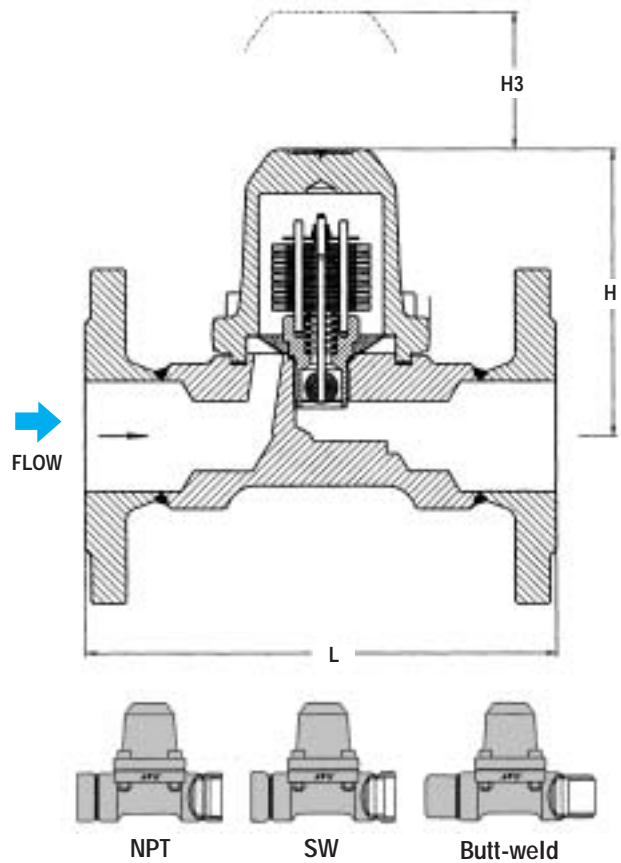
WPN-40

1/2", 3/4", 1"



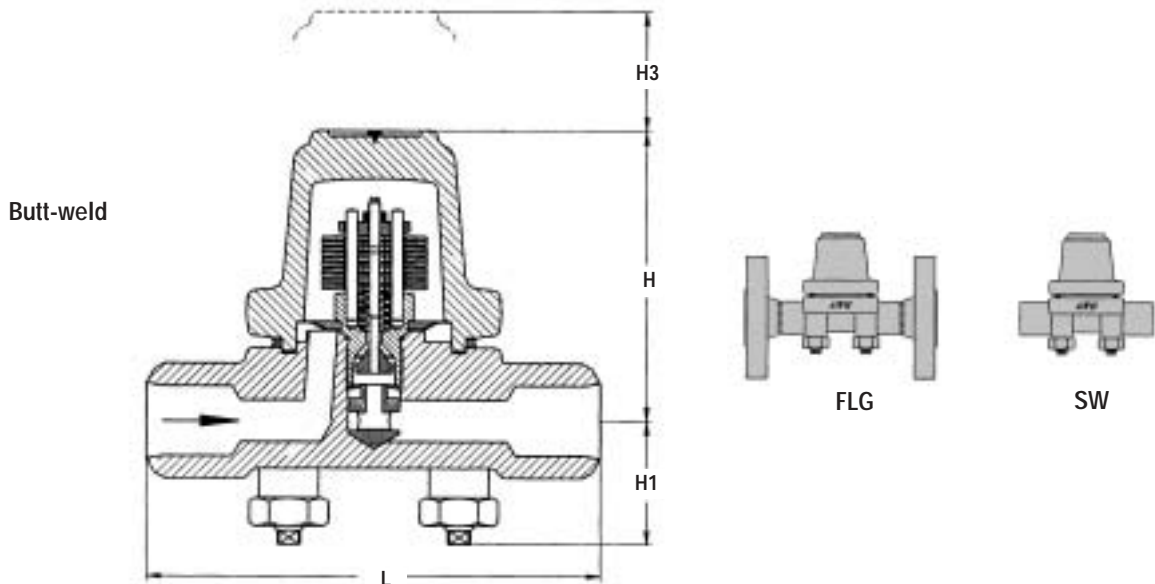
WPN-40/63

1 1/4", 1 1/2", 2"



WPN-63/100/160/250

1/2", 3/4", 1"



UNIVERSAL STEAM TRAPS

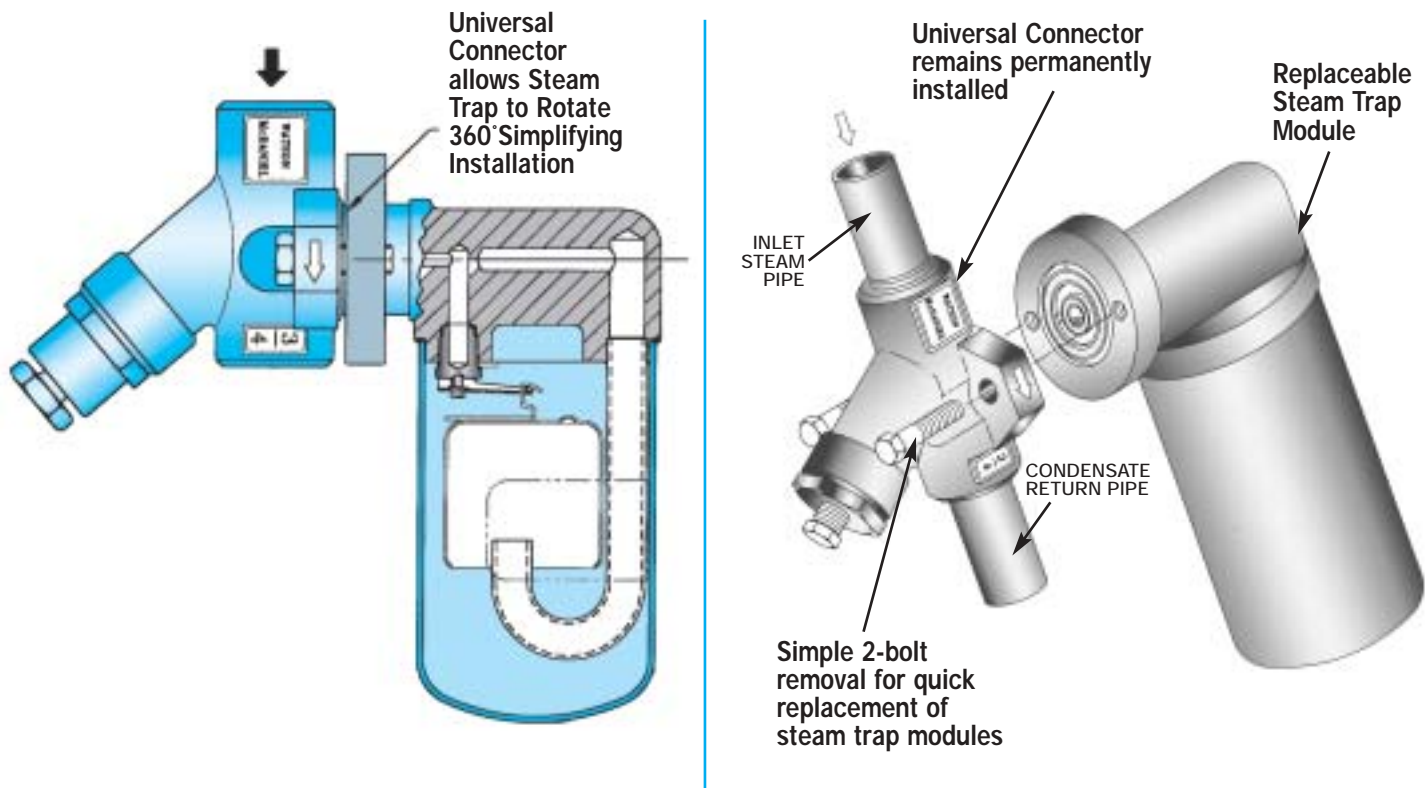
Universal Connectors

for Steam Trap Modules

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Revised 9/2004

Universal Connectors are used in steam systems to simplify the replacement and maintenance of Steam Traps.



Universal Connectors allow Steam Traps to be removed and replaced in minutes without having to disconnect any piping.

Two bolts connect the steam trap module to the permanently-installed universal connector, allowing the trap module to be quickly and easily removed and replaced using an open-end or socket wrench. The **Universal Connector System** is commonly used in chemical plants, petrochemical refineries, paper mills and most other industrial facilities. Watson McDaniel's WU450 connectors conform to industrial standards, making them compatible with other manufacturers' universal steam trap modules.

Watson McDaniel recommends using the Universal Connector System in any application*, but especially those which require frequent maintenance or replacement of steam traps.

**within the capacity and pressure/temperature range of the universal connector system.*

- Universal connector with 2-bolt mounting allows for fast, easy replacement of trap module, making it more cost-effective than replacing conventional type steam traps
- All stainless steel construction
- Trap module can swivel 360° on the universal connector allowing any orientation during installation
- Compatible with most other manufacturer's trap modules
- Available with integral strainer and blowdown valve

UNIVERSAL STEAM TRAPS

WU450 Series

Universal Connectors for Steam Trap Modules

Revised 9/2004

Model	WU450, WU450S, WU450SB
Sizes	1/2", 3/4", 1"
Connections	NPT, SW
Body Material	Stainless Steel
PMO Max. Operating Pressure	(trap module dependent)
TMO Max. Operating Temperature	(trap module dependent)
PMA Max. Allowable Pressure	720 PSIG @ 100°F
TMA Max. Allowable Temperature	800°F @ 400 PSIG

Steam Trap Modules that mount to Universal Connectors are shown on the following pages: Trap modules available in: Inverted Bucket, Float & Thermostatic, Thermodynamic and Thermostatic.

TYPICAL APPLICATIONS

DRIP, TRACER: The **WU450 Series** Universal Connectors are used in steam systems where a simplified and economical maintenance program of steam traps is desired. These universal connectors can be used for drip service on steam mains and steam supply lines, tracing, or small process equipment. Industrial standard 2-bolt universal connectors are commonly used in chemical plants, petrochemical refineries, paper mills and other industrial facilities. The WU450 connectors conform to industrial standards, making them compatible with other manufacturers' universal steam trap modules.

Used with the following Watson McDaniel Steam Trap Modules:

- WSIB450 - Inverted Bucket
- WD450 - Thermodynamic
- WT450 - Thermostatic
- WFT450 - Float & Thermostatic

HOW IT WORKS

WU450 universal connectors remain permanently installed in the piping system. The convenient 2-bolt mounting system allows the trap module to be replaced quickly and easily using a socket or open-end wrench.

FEATURES

- Universal connector with 2-bolt mounting allows for fast, easy replacement of trap module making it more cost-effective than replacing conventional type steam traps
- All stainless steel construction
- Trap module can rotate 360° on the universal connector allowing any orientation during installation
- Compatible with most other manufacturers' trap modules
- Available with integral strainer and blowdown valve

SAMPLE SPECIFICATION

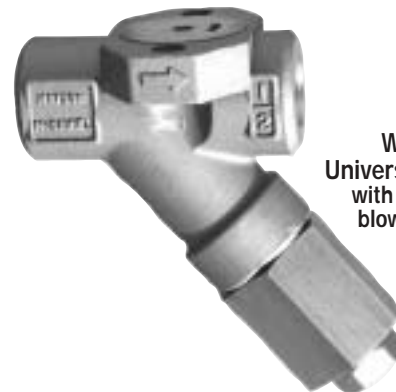
The Universal Connector shall be all stainless steel construction with a two-bolt 360 degree swivel mount flange design and available with integral strainer and blowdown valve.



WU450
Universal Connector



WU450S
Universal Connector
with strainer



WU450SB
Universal Connector
with strainer and
blowdown valve

INSTALLATION

The universal connector can be installed in any position. Installation should include isolation valves.

MAINTENANCE

The strainer should be periodically cleaned by removal or use of the optional blowdown valve. For full maintenance details see Installation and Maintenance Manual.

MATERIALS

Body	Stainless Steel, AISI 316
Strainer*	40 Mesh Stainless Steel, AISI 304
Blowdown Valve**	Stainless Steel, AISI 303

* Strainer available on WU450S and WU450SB models only.

**Blowdown Valve available on WU450SB model only.

HOW TO ORDER

Specify universal connector. See following pages for Steam trap Modules.

UNIVERSAL STEAM TRAPS

WFT450

Float & Thermostatic Module
(mounts to WU450 Universal Connector)

Revised 9/2004

Model	WFT450
Connections	Fits WU450 universal connector
Body Material	Stainless Steel
PMO Max. Operating Pressure	225 PSIG
TMO Max. Operating Temperature	397°F
PMA Max. Allowable Pressure	720 PSIG @ 100°F
TMA Max. Allowable Temperature	800°F @ 400 PSIG



WFT450
Float & Thermostatic
Steam Trap Module

Steam trap modules **must be used** with the WU450 Universal Connectors which are shown on previous pages.

TYPICAL APPLICATIONS

PROCESS, DRIP: The WFT450 Float & Thermostatic trap module mounted on a universal connector is typically used on process equipment that generate light condensate loads and require excellent air handling capabilities. These low capacity float & thermostatic trap modules can also be used in drip service on steam mains, tracer systems and steam supply lines. The WFT450 module mounts to the WU450 universal connector.

HOW IT WORKS

The universal connector is permanently installed into the pipeline where the steam trap would normally be placed. The trap module is bolted to the universal connector with two bolts and sealed with a gasket. When a new trap module is needed, it can be easily removed and replaced with a standard open-end or socket wrench without disturbing the existing piping.

SAMPLE SPECIFICATION

The steam trap shall be an all stainless steel module design float & thermostatic unit. The thermostatic air vent to be pressure balanced welded bellows. The trap shall have a 360 degree swivel mount on a stainless steel Universal Connector that is available with integral strainer and blowdown valve options.

INSTALLATION & MAINTENANCE

Universal connectors can be installed in any position. Installation should include isolation valves. For full maintenance details, see Installation and Maintenance Manual.

OPTIONS

Universal Connector are available with an integral strainer and blowdown valve. Connector is purchased separately. See the WU450 Universal Connector section for more information.

FEATURES

- Trap module can be easily removed and replaced in minutes without having to disconnect any piping
- Hardened stainless steel valves and seat
- Freeze resistant
- Connectors available with integral strainers and blowdown valves
- 360° swivel design for convenient installation

MATERIALS

Body	Stainless Steel GR CF3
Cover	304L Stainless Steel
Internals	300 Series Stainless Steel
Valve Disc	420F Stainless Steel
Valve Seat	17-4 Ph Stainless Steel
Bolts	ASTM A193 GR B7
Gasket	Spiral-Wound 304 Stainless Steel with Grafoil Filler
Swivel Flange	303 Stainless Steel

CAPACITIES – Condensate (lbs/hr)		Differential Pressure (PSI)																	
Model	PMO PSIG	1/4	1/2	1	2	5	10	15	20	30	40	50	65	75	100	125	145	200	225
WFT450-65	65	115	155	205	270	390	520	610	685	810	910	995	1110						
WFT450-145	145	55	75	100	135	200	270	320	365	435	490	540	600	640	725	795	850		
WFT450-225	225	40	50	70	95	135	185	220	245	290	330	360	405	430	485	530	565	645	680

UNIVERSAL STEAM TRAPS

WD450

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Thermodynamic Module (mounts to WU450 Universal Connector)

Revised 9/2004

Model	WD450
Connections	Fits WU450 universal connector
Body Material	Stainless Steel
PMO Max. Operating Pressure	450 PSIG
TMO Max. Operating Temperature	750°F
PMA Max. Allowable Pressure	720 PSIG @ 100°F
TMA Max. Allowable Temperature	800°F @ 400 PSIG

Steam trap modules **must be used** with the WU450 Universal Connectors which are shown on previous pages.

TYPICAL APPLICATIONS

DRIP, TRACER: The WD450 steam trap module mounted on a universal connector can be used anywhere conventional thermodynamic steam traps are used. Used on drip, tracing and light process applications where removal of air is not critical. The WD450 module mounts to the WU450 universal connector.

HOW IT WORKS

The universal connector is permanently installed into the pipeline where the steam trap would normally be placed. The trap module is bolted to the universal connector with two bolts and sealed with a gasket. When a new trap module is needed, it can be easily removed and replaced with a standard open-end or socket wrench without disturbing the existing piping.

FEATURES

- Trap module can be easily removed and replaced in minutes without having to disconnect any piping
- Trap modules can be used with most manufacturer's 2-bolt universal connector
- All stainless steel construction with hardened seat

SAMPLE SPECIFICATION

The steam trap module shall be designed to attach to the industry standard two-bolt universal connector. Trap module shall be of a thermodynamic design. Universal connector shall conform to the two bolt industry standard with integral strainer and blowdown options.



**WD450
Thermodynamic
Steam Trap
Module**

INSTALLATION

Isolation valves should be installed before and after the universal connector to facilitate maintenance. The universal connector can be installed in any orientation. Trap module is attached to the connector using two bolts and a sealing gasket.

MAINTENANCE

If the trap fails for any reason, replace only the trap module. If universal connector is equipped with an integral strainer it should be cleaned periodically. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

Universal Connector are available with an integral strainer and blowdown valve. Connector is purchased separately. See the WU450 Universal Connector section for more information.

MATERIALS

Body	Stainless Steel, AISI 420
Disc	Stainless Steel, AISI 420
Cap	Stainless Steel, AISI 416
Insulation Cover	Stainless Steel, AISI 304
Bolts	Steel, ASTM A193 GR B7
Gaskets (2)	Spiral Wound 304 Stainless Steel with Grafoil Filler

CAPACITIES – Condensate (lbs/hr)

Model	Differential Pressure (PSI)																
	4	10	15	20	25	30	40	50	75	100	150	200	250	300	350	400	450
WD450L	140	215	242	270	295	320	355	390	455	510	600	670	730	790	840	880	925
WD450	247	370	420	475	520	560	625	685	800	900	1060	1185	1300	1400	1485	1560	1630

UNIVERSAL STEAM TRAPS

WT450

Thermostatic Module (mounts to WU450 Universal Connector)

Revised 9/2004

Model	WT450
Connections	Fits WU450 universal connector
Body Material	Stainless Steel
PMO Max. Operating Pressure	450 PSIG
TMO Max. Operating Temperature	Saturated Steam Temp.
PMA Max. Allowable Pressure	720 PSIG @ 100°F
TMA Max. Allowable Temperature	800°F @ 400 PSIG

Steam trap modules must be used with the WU450 Universal Connectors which are shown on previous pages.

TYPICAL APPLICATIONS

DRIP, TRACER, PROCESS: The WT450 steam trap module mounted on a universal connector can be used anywhere conventional thermostatic steam traps are used. Used on drip, tracing and light process applications. The WT450 module mounts to the WU450 universal connector.

HOW IT WORKS

The universal connector is permanently installed into the pipeline where the steam trap would normally be placed. The trap module is bolted to the universal connector with two bolts and sealed with a gasket. When a new trap module is needed, it can be easily removed and replaced with a standard open-end or socket wrench without disturbing the existing piping.

FEATURES

- Trap module can be easily removed and replaced in minutes without having to disconnect any piping
- Trap modules can be used with most manufacturer's 2-bolt universal connector
- All stainless steel construction with hardened seat

SAMPLE SPECIFICATION

The steam trap module shall be designed to attach to the industry standard two-bolt universal connector. Trap module shall be of a thermostatic design. The universal connector shall conform to the two-bolt industry standard with integral strainer and blowdown options.



WT450
Thermostatic
Steam Trap
Module

INSTALLATION

Isolation valves should be installed before and after the universal connector to facilitate maintenance. The universal connector can be installed in any orientation. Trap module is attached to the connector using two bolts and a sealing gasket.

MAINTENANCE

When a new trap module is needed, it can be easily removed and replaced with a standard open end wrench without disturbing the existing piping. If the universal connector is equipped with an integral strainer it should be cleaned periodically. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

Universal Connector are available with an integral strainer and blowdown valve. Connector is purchased separately. See the WU450 Universal Connector section for more information.

MATERIALS

Body	Stainless Steel, AISI 420
Thermal Element	Stainless Steel, AISI 302
Disc & Seat	Stainless Steel, AISI 420
Insulation Cover	Stainless Steel, AISI 304
Bolts	Steel, ASTM A193 GR B7
Gaskets (2)	Spiral Wound 304 Stainless Steel with Grafoil Filler

CAPACITIES – Condensate (lbs/hr)

Model	Orifice Size	Steam Inlet Pressure (PSIG)												
		5	10	20	50	100	125	150	200	250	300	350	400	450
WT450	3/16"	441	625	882	1391	1827	1969	2095	2305	2483	2636	2777	2903	3019

Note: 5/64" low capacity orifice is available upon request.

Back Pressure as Percentage of Inlet Pressure	10	20	25	30	40	50	60	70	80	90
Percent Decrease in Trap Capacity	0	0	0	2	5	12	20	30	40	55

UNIVERSAL STEAM TRAPS

450 Series

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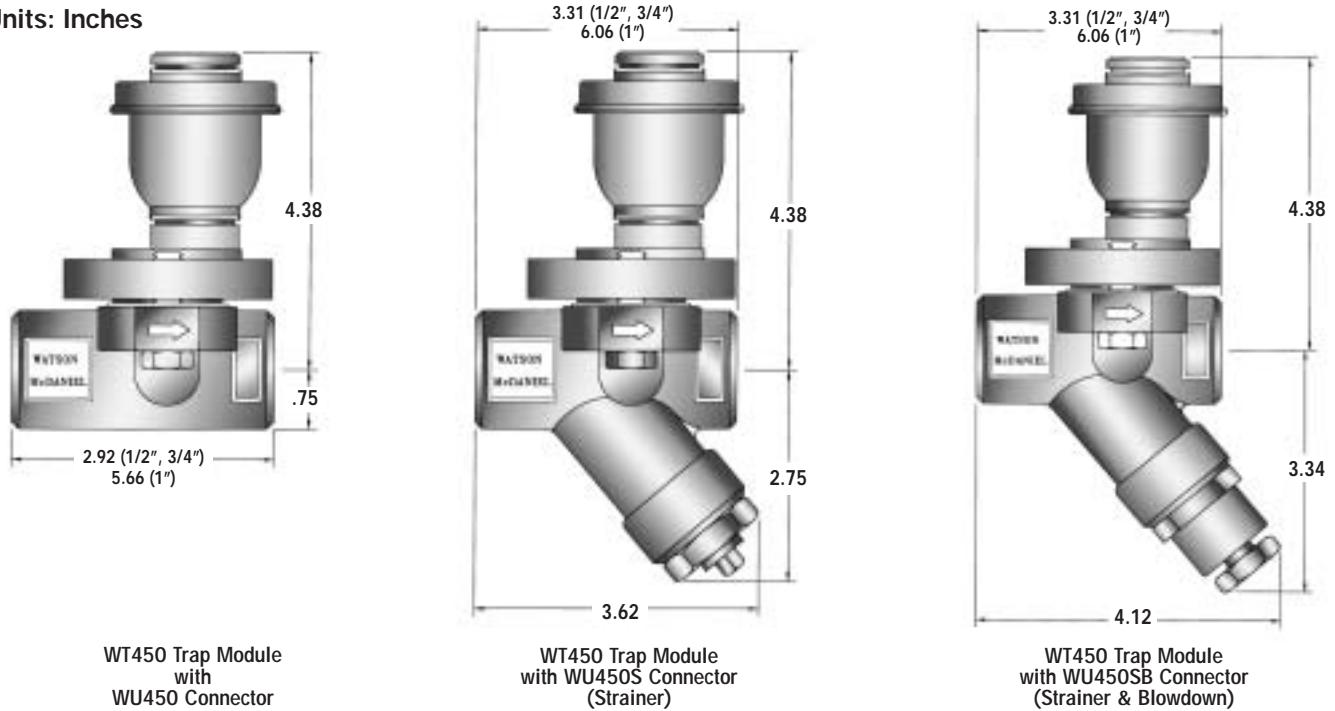
Dimensions - WD450 & WT450 with Universal Connectors

Revised 9/2004

WT450 Trap Module with Universal Connectors

Connectors available in 1/2", 3/4" and 1" sizes in NPT and Socket-Weld Connections

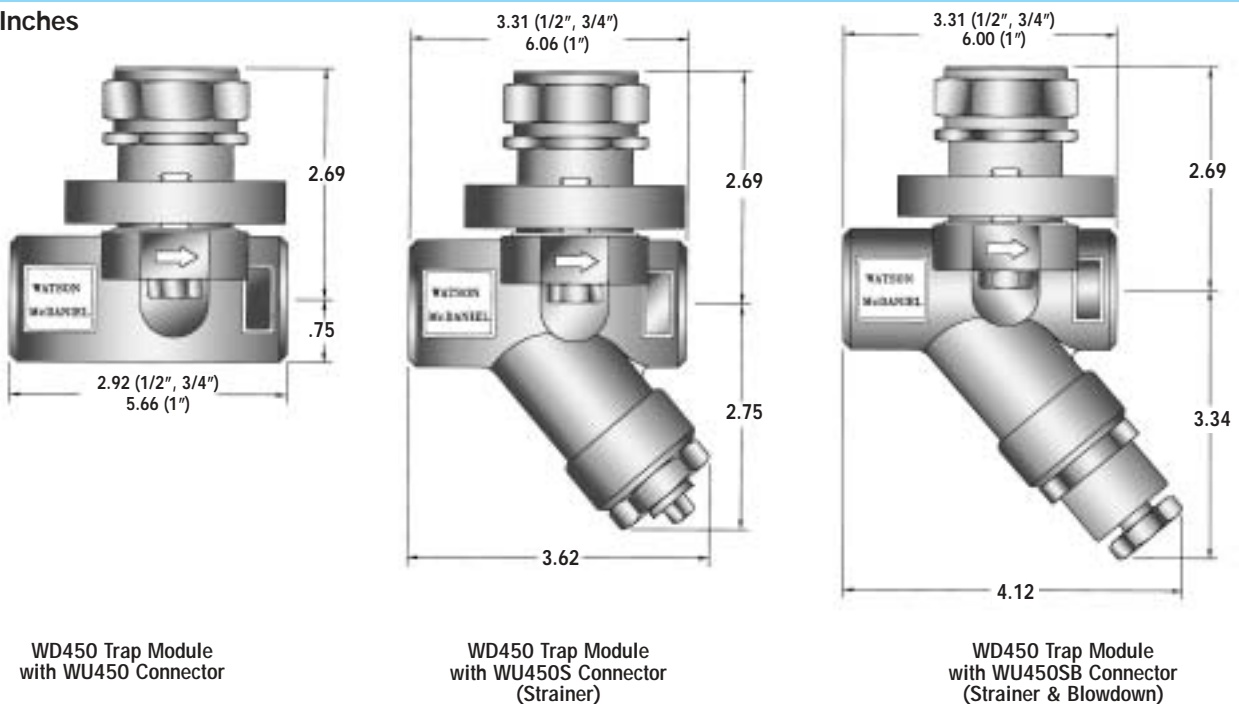
Units: Inches



WD450 Trap Module with Universal Connectors

Connectors available in 1/2", 3/4" and 1" sizes in NPT and Socket-Weld Connections

Units: Inches



450 Series

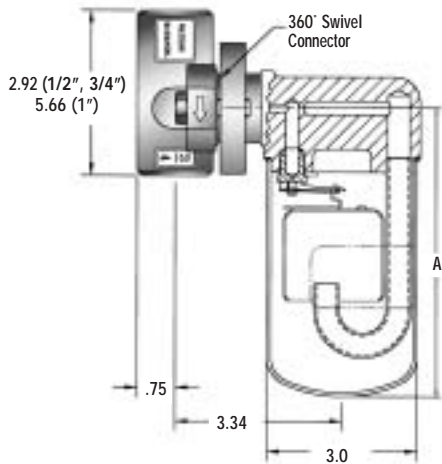
Dimensions - WSIB450 & WFT450 with Universal Connectors

Revised 9/2004

WSIB450 Trap Module with Universal Connectors

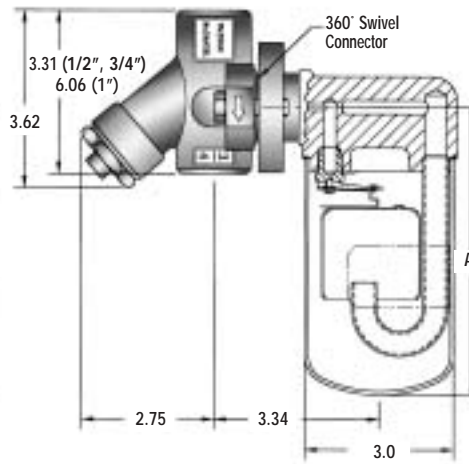
Connectors available in 1/2", 3/4" and 1" sizes in NPT and Socket-Weld Connections

Unit: Inches



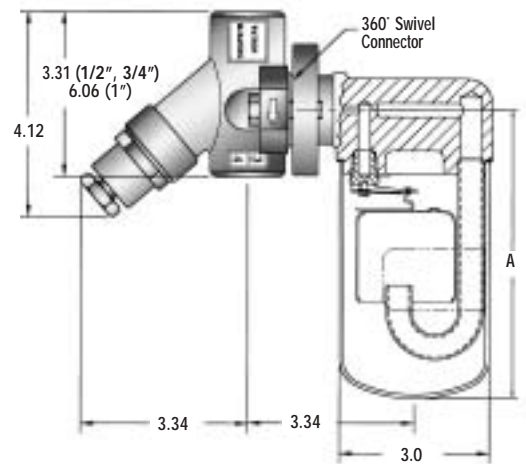
WSIB450 A-Dimension 5-7/8"
WSIB450H A-Dimension 6-9/16"

WSIB450 Trap Module
with
WU450 Connector



WSIB450 A-Dimension 5-7/8"
WSIB450H A-Dimension 6-9/16"

WSIB450 Trap Module
with
WU450S Connector (Strainer)



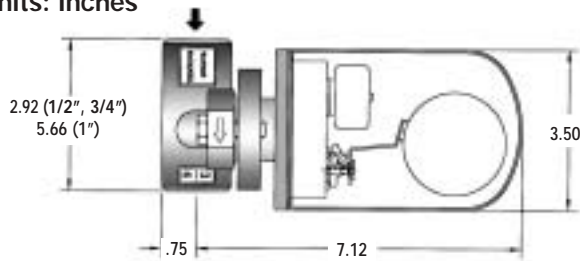
WSIB450 A-Dimension 5-7/8"
WSIB450H A-Dimension 6-9/16"

WSIB450 Trap Module
with
WU450SB Connector (Strainer & Blowdown)

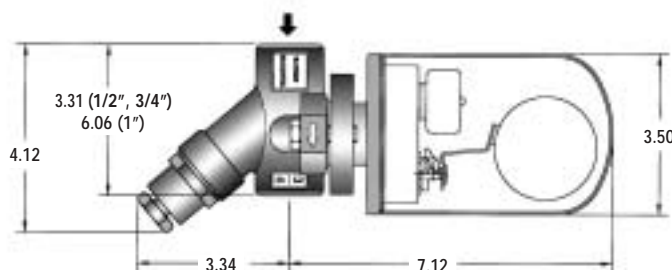
WFT450 Trap Module with Universal Connectors

Connectors available in 1/2", 3/4" and 1" sizes in NPT and Socket-Weld Connections

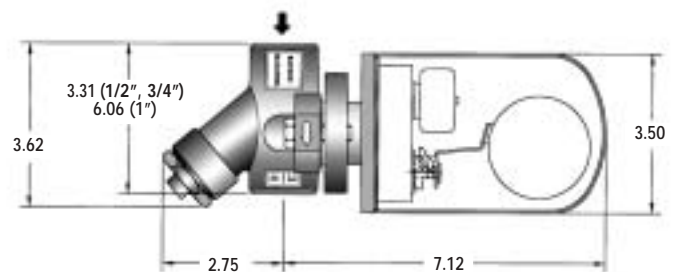
Units: Inches



WFT450 Trap Module
with WU450 Connector



WFT450 Trap Module
with WU450SB Connector (Strainer & Blowdown)



WFT450 Trap Module
with WU450S Connector (Strainer)

STEAM TRAPS

WFT Series

Float & Thermostatic Steam Trap

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Model	WFT
Sizes	3/4", 1", 1 1/4", 1 1/2", 2"
Connections	NPT
Body Material	Cast Iron
PMO Max. Operating Pressure	250 PSIG
TMO Max. Operating Temperature	Saturated Steam Temperature
PMA Max. Allowable Pressure	250 PSIG up to 450°F
TMA Max. Allowable Temperature	450°F @ 250 PSIG



WFT
3/4" & 1"



WFT
2"



WFT
1 1/4" & 1 1/2"

TYPICAL APPLICATIONS

PROCESS: The WFT Series float and thermostatic steam traps are used for HVAC and industrial process applications. The excellent air handling capabilities of these traps make them a better choice than bucket traps for applications requiring quick start-up. Used on unit heaters, textile machines, heat exchangers, and other process equipment.

HOW IT WORKS

Float and thermostatic steam traps have a float and thermostatic element that work together to remove both condensate and air from the steam system. The valve, which is attached to a float, opens when condensate enters the trap. Air is discharged through the thermostatic air vent to the outlet side of the trap. The thermostatic air vent closes when steam enters the trap.

FEATURES

- All stainless steel internals with hardened seat and wear parts
- In-line repairable is simplified by having all internals attached to the cover
- Welded stainless steel thermostatic air vent resists shock from water hammer. Bimetallic air vent is available for superheated applications
- Excellent air handling capability allowing air to be discharged rapidly and steam to enter the system quickly during start-up
- F & T traps discharge condensate immediately as it is formed (no condensate will back-up into the system)

SAMPLE SPECIFICATION

The trap shall be of float and thermostatic design with cast iron body and in-line piping configuration. Thermostatic air vent to be welded stainless steel. All internals must be stainless steel with hardened seat area. Trap must be in-line repairable.

INSTALLATION

Isolation valves should be installed with trap to facilitate maintenance. The trap must be level and upright for the float mechanism to operate. Trap must be sized and located properly in the steam system.

MAINTENANCE

Close isolation valves prior to performing any maintenance. All internal components can be replaced with the trap body remaining in-line. Repair kits include thermostatic air vent, float, valve seat and disc, and gaskets. For full maintenance details see Installation and Maintenance Manual.

OPTIONS

Bimetallic air vent for superheated steam applications.

MATERIALS

Body & Cover	Cast Iron
Gasket	Garlock 3400
Cover Screws	Stainless Steel, GR5
Float	Stainless Steel, AISI 304
Internals	Stainless Steel, 300 Series
Thermostat	Stainless Steel
Valve Seat	Stainless Steel, 17-4 PH
Valve Disc	Stainless Steel, AISI 420F

HOW TO ORDER

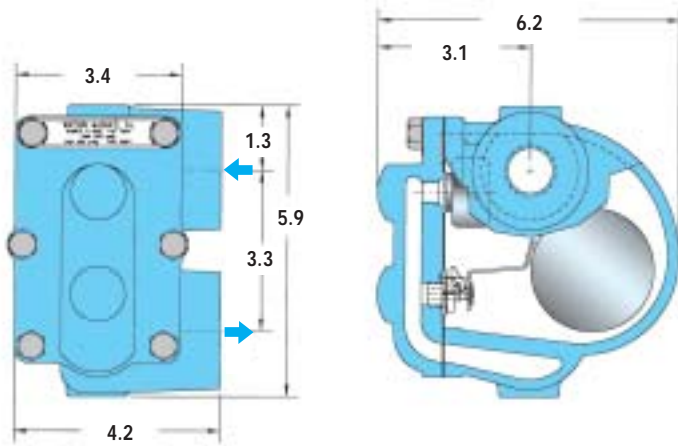
Specify model, pipe size and max operating pressure. Choose a pressure that is greater than the maximum service pressure. See capacity chart.

WFT Series

Float & Thermostatic Steam Trap

Revised 9/2004

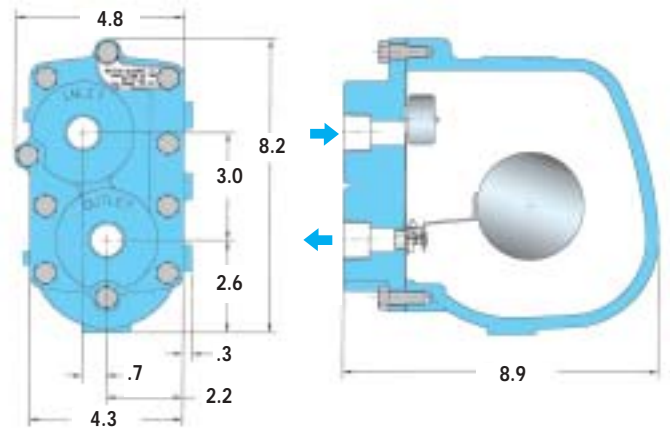
Units: inches



SPECIFICATIONS

Model	Sizes	Connection	PMO PSIG	PMA PSIG	Weight (lbs)
WFT-15	3/4", 1", 1 1/4"	NPT	15	125	9
WFT-30	3/4", 1", 1 1/4"	NPT	30	125	9
WFT-75	3/4", 1"	NPT	75	125	9
WFT-125	3/4", 1"	NPT	125	125	9

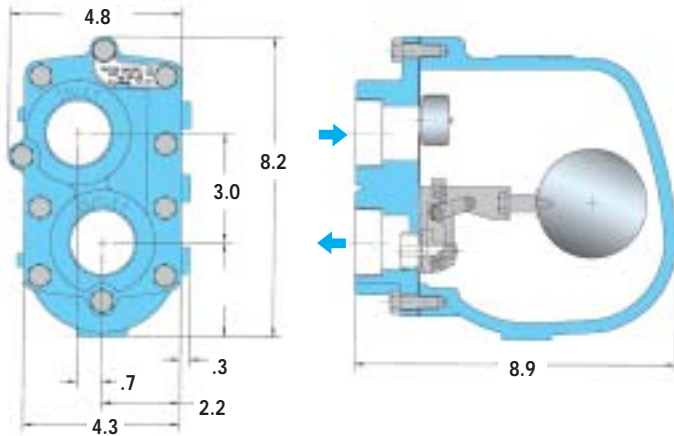
Units: inches



SPECIFICATIONS

Model	Sizes	Connection	PMO PSIG	PMA PSIG	Weight (lbs)
WFT-175	3/4", 1", 1 1/4"	NPT	175	250	20
WFT-250	3/4", 1", 1 1/4"	NPT	250	250	20

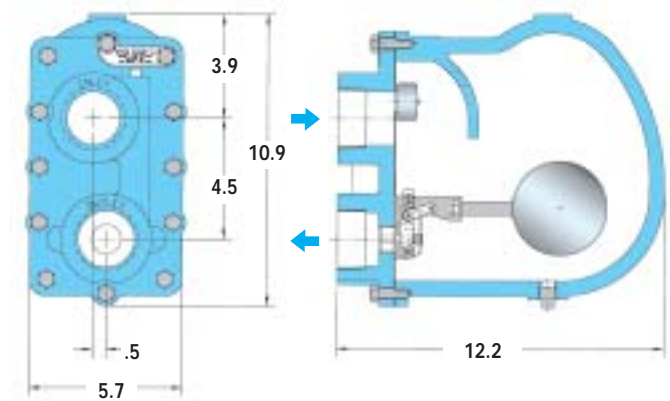
Units: inches



SPECIFICATIONS

Model	Sizes	Connection	PMO PSIG	PMA PSIG	Weight (lbs)
WFT-15	1 1/2"	NPT	15	250	21
WFT-30	1 1/2"	NPT	30	250	21
WFT-75	1 1/4", 1 1/2"	NPT	75	250	21
WFT-125	1 1/4", 1 1/2"	NPT	125	250	21
WFT-175	1 1/4", 1 1/2"	NPT	175	250	21
WFT-250	1 1/4", 1 1/2"	NPT	250	250	21

Units: inches



SPECIFICATIONS

Model	Sizes	Connection	PMO PSIG	PMA PSIG	Weight (lbs)
WFT-15	2"	NPT	15	250	53
WFT-30	2"	NPT	30	250	53
WFT-75	2"	NPT	75	250	53
WFT-125	2"	NPT	125	250	53
WFT-175	2"	NPT	175	250	53
WFT-250	2"	NPT	250	250	53

STEAM TRAPS

WFT Series

Float & Thermostatic Steam Trap

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CAPACITIES – Condensate (lbs/hr)																						
Model	PMO PSIG	Pipe Size	Orifice Size	Differential Pressure (PSI)																		
				1/4	1/2	1	2	5	10	15	20	30	40	50	75	100	125	150	175	200	225	250
WFT-015-13	15	3/4"	0.250	390	490	620	780	1050	1320	1500												
WFT-015-14	15	1"	0.250	390	490	620	780	1050	1320	1500												
WFT-015-15	15	1 1/4"	0.312	610	770	960	1210	1630	2040	2330												
WFT-015-16	15	1 1/2"	0.500	1420	1910	2570	3460	5120	6890	8190												
WFT-015-17	15	2"	0.625	2260	2950	3860	5040	7170	9360	10930												
WFT-030-13	30	3/4"	0.228	330	420	530	670	930	1180	1350	1500	1720										
WFT-030-14	30	1"	0.228	330	420	530	670	930	1180	1350	1500	1720										
WFT-030-15	30	1 1/4"	0.228	330	420	530	670	930	1180	1350	1500	1720										
WFT-030-16	30	1 1/2"	0.390	930	1240	1650	2190	3210	4280	5060	5700	6750										
WFT-030-17	30	2"	0.500	1420	1910	2570	3460	5120	6890	8190	9260	11020										
WFT-075-13	75	3/4"	0.166	175	225	295	385	545	705	825	920	1075	1200	1305	1525							
WFT-075-14	75	1"	0.166	175	225	295	385	545	705	825	920	1075	1200	1305	1525							
WFT-075-15	75	1 1/4"	0.312	640	850	1130	1500	2180	2900	3420	3850	4540	5110	5600	6610							
WFT-075-16	75	1 1/2"	0.312	640	850	1130	1500	2180	2900	3420	3850	4540	5110	5600	6610							
WFT-075-17	75	2"	0.422	1020	1340	1760	2310	3330	4380	5140	5760	6770	7590	8290	9730							
WFT-125-13	125	3/4"	0.128	105	135	180	235	340	445	525	585	690	770	845	990	1110	1210					
WFT-125-14	125	1"	0.128	105	135	180	235	340	445	525	585	690	770	845	990	1110	1210					
WFT-125-15	125	1 1/4"	0.250	410	540	710	930	1340	1770	2070	2320	2730	3050	3340	3920	4390	4790					
WFT-125-16	125	1 1/2"	0.250	410	540	710	930	1340	1770	2070	2320	2730	3050	3340	3920	4390	4790					
WFT-125-17	125	2"	0.332	720	960	1270	1690	2460	3270	3860	4340	5130	5770	6320	7460	8390	9190					
WFT-175-13	175	3/4"	0.166	190	250	320	420	590	770	900	1010	1180	1310	1430	1670	1870	2030	2180	2310			
WFT-175-14	175	1"	0.166	190	250	320	420	590	770	900	1010	1180	1310	1430	1670	1870	2030	2180	2310			
WFT-175-15	175	1 1/4"	0.250	410	540	710	930	1340	1770	2070	2320	2730	3050	3340	3920	4390	4790	5150	5470			
WFT-175-16	175	1 1/2"	0.250	410	540	710	930	1340	1770	2070	2320	2730	3050	3340	3920	4390	4790	5150	5470			
WFT-175-17	175	2"	0.281	520	680	900	1180	1700	2230	2620	2930	3440	3860	4210	4950	5540	6050	6510	6920			
WFT-250-13	250	3/4"	0.128	115	145	190	245	345	450	520	580	675	755	820	955	1060	1155	1235	1310	1375	1440	1495
WFT-250-14	250	1"	0.128	115	145	190	245	345	450	520	580	675	755	820	955	1060	1155	1235	1310	1375	1440	1495
WFT-250-15	250	1 1/4"	0.203	270	350	450	590	820	1070	1240	1380	1600	1780	1940	2250	2500	2720	2910	3080	3240	3380	3520
WFT-250-16	250	1 1/2"	0.203	270	350	450	590	820	1070	1240	1380	1600	1780	1940	2250	2500	2720	2910	3080	3240	3380	3520
WFT-250-17	250	2"	0.250	410	540	710	930	1340	1760	2060	2310	2710	3040	3320	3890	4360	4760	5110	5430	5730	6000	6250

STEAM TRAPS

FDA400 Series

Thermostatic Clean Steam Trap (Repairable)

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Revised 9/2004

Model	FDA401, FDA402, FDA403
Sizes	1/2", 3/4"
Connections	Clamped
Body Material	Stainless Steel
PMO Max. Operating Pressure	90 PSIG
TMO Max. Operating Temperature	Saturated Steam Temperature
PMA Max. Allowable Pressure	145 PSIG up to 338°F
TMA Max. Allowable Temperature	350°F @ 132 PSIG



Model FDA402 Shown



TYPICAL APPLICATIONS

DRIP, PROCESS: The FDA400 Series thermostatic steam traps are used on clean steam applications as drip traps on piping runs as well as drainage for CIP/SIP systems and various process vessels. The FDA 400 Series allows for a 90° connection on either the inlet or outlet capable of 360° orientation.

HOW IT WORKS

The thermostatic trap contains a welded 316L stainless steel thermal element that expands when heated and contracts when cooled. When air and condensate are present the trap is in the open discharge position. When steam reaches the trap the element expands closing the trap tightly.

FEATURES

- Universal horizontal connection swivels to any angle
- All wetted parts are 316L stainless steel
- Electro-polish finish of 20-25 microinches RA on internal body
- Electro-polish finish of 25-32 microinches RA on external body
- Operates close to saturation curve to minimize condensate back-up
- Completely self-draining in the vertical downward flow orientation

MATERIALS

Body	Stainless Steel, AISI 316L
Gasket	Teflon Coated Elastomer
Element Plate	Stainless Steel, AISI 316L
Thermal Element	Stainless Steel, AISI 316L
Clamp	Stainless Steel, AISI 316L

CAPACITIES – Condensate (lbs/hr)

Orifice (inches)	Differential Pressure (PSI)					
	5	10	20	50	75	90
9/64	140	240	400	690	850	950
5/16	280	480	800	1380	1700	1900

Capacities at 10° F below saturation.

SAMPLE SPECIFICATION

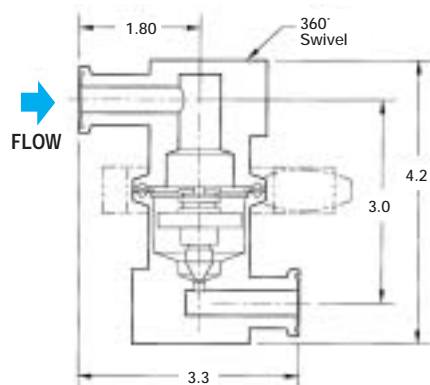
The Steam Trap shall be all 316L stainless steel thermostatic type with a balanced pressure bellows that operates close to saturated steam temperatures. Inlet, outlet or both connections must contain a 90° swivel arrangement capable of 360° orientation. Internal body parts shall have an electro-polish finish of 20-25 microinches RA internally and a 25-32 finish externally. The unit shall have a split-body sanitary clamp design for easy maintenance. Trap shall be completely self-draining when mounted vertically.

INSTALLATION & MAINTENANCE

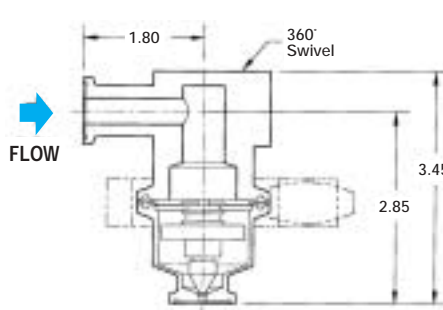
Trap is designed for installation in a vertical, downward flow orientation to ensure that the self-draining clean steam requirement is satisfied. For full maintenance details see Installation and Maintenance Manual.

FDA400 Series Connections: 1/2" & 3/4"

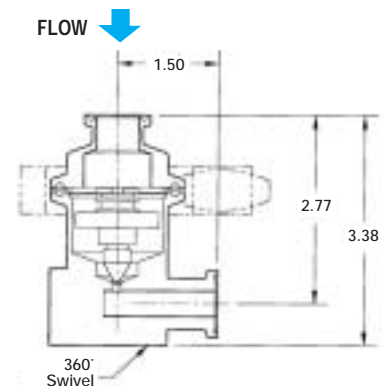
Unit: inches



FDA 401 Inlet: 90° Angle
Outlet: 90° Angle



FDA 402 Inlet: 90° Angle
Outlet: Straight



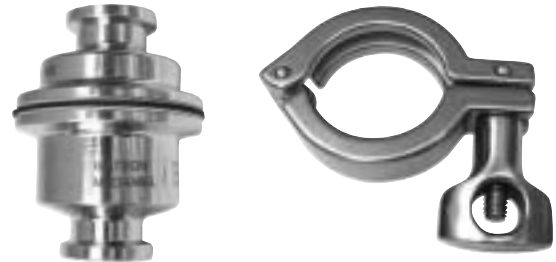
FDA 403 Inlet: Straight
Outlet: 90° Angle

FDA500

Thermostatic Clean Steam Trap (Repairable)

Revised 9/2004

Model	FDA500
Sizes	1/2", 3/4", 1"
Connections	Clamped, NPT, Tube Weld
Body Material	Stainless Steel
PMO Max. Operating Pressure	90 PSIG
TMO Max. Operating Temperature	Saturated Steam Temperature
PMA Max. Allowable Pressure	145 PSIG up to 338°F
TMA Max. Allowable Temperature	350°F @ 132 PSIG



TYPICAL APPLICATIONS

DRIP, PROCESS: The FDA500 Series thermostatic steam traps are used on clean steam applications as drip traps on piping runs as well as drainage for CIP/SIP systems and various process vessels.

HOW IT WORKS

The thermostatic trap contains a welded 316L stainless steel thermal element that expands when heated and contracts when cooled. When air and condensate are present the trap is in the open discharge position. When steam reaches the trap the element expands closing the trap tightly.

FEATURES

- All wetted parts are 316L stainless steel
- Electro-polish finish of 20-25 microinches RA on internal body
- Electro-polish finish of 25-32 microinches RA on external body
- Operates close to saturation curve to minimize condensate back-up
- Completely self-draining in the vertical downward flow orientation

SAMPLE SPECIFICATION

The steam Trap shall be all 316L stainless steel thermostatic type with a balanced pressure bellows that operates close to saturated steam temperatures. Internal body parts shall have an electro-polish finish of 20-25 microinches RA internally and a 25-32 finish externally. The unit shall have a split-body sanitary clamp design for easy maintenance. Trap shall be completely self-draining when mounted vertically.

INSTALLATION

Trap is designed for installation in a vertical, downward flow orientation to ensure that the self-draining clean steam requirement is satisfied. Isolation valves should be installed for maintenance purposes. For welded installations removal of the body gasket and thermal element is necessary.

MAINTENANCE

Dirt is the most common cause of premature failure. Therefore, the upstream strainer should be periodically inspected and cleaned. For full maintenance details see Installation and Maintenance Manual.

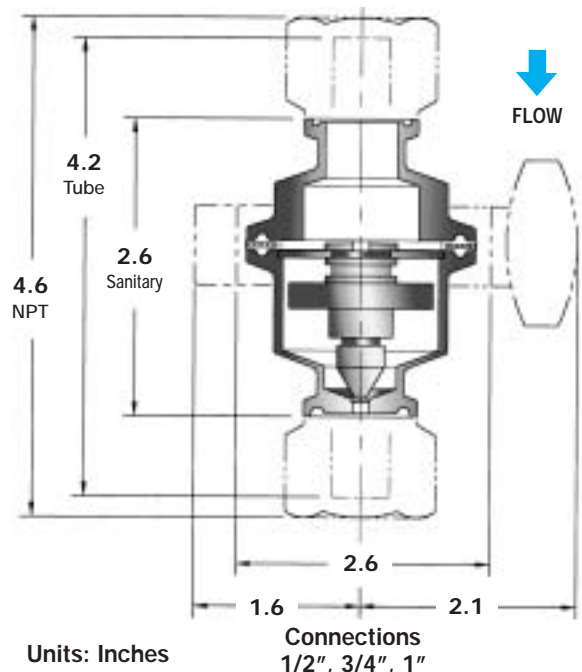
MATERIALS

Body	Stainless Steel, AISI 316L
Gasket	Teflon/Encapsulated Viton
Element Plate	Stainless Steel, AISI 316L
Thermal Element	Stainless Steel, AISI 316L
Clamp	Stainless Steel, AISI 316L

CAPACITIES – Condensate (lbs/hr)

Orifice (inches)	Differential Pressure (PSI)					
	5	10	20	50	75	90
9/64	140	240	400	690	850	950
5/16	280	480	800	1380	1700	1900

Capacities at 10° F below saturation.



STEAM TRAPS

FDA600

Thermostatic Clean Steam Trap

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Model	FDA600
Sizes	1/2", 3/4", 1"
Connections	Clamped, NPT, Tube Weld
Body Material	Stainless Steel
PMO Max. Operating Pressure	110 PSIG
TMO Max. Operating Temperature	Saturated Steam Temperature
PMA Max. Allowable Pressure	145 PSIG up to 338°F
TMA Max. Allowable Temperature	350°F @ 132 PSIG

TYPICAL APPLICATIONS

DRIP, PROCESS: The FDA600 Steam Traps are used on clean steam applications as drip traps on piping runs as well as drainage for CIP/SIP systems and various process vessels.

HOW IT WORKS

The thermostatic trap contains a welded 316L stainless steel thermal element that expands when heated and contracts when cooled. When air and condensate are present the trap is in the open discharge position. When steam reaches the trap the element expands closing the trap tightly.

FEATURES

- All wetted parts are 316L stainless steel
- Operates close to saturation curve to minimize condensate back-up
- Completely self-draining in the vertical downward flow orientation

SAMPLE SPECIFICATION

The Steam Trap shall be all 316L stainless steel thermostatic type with a balanced pressure bellows that operates close to saturated steam temperatures. The unit shall have a split-body design for easy maintenance. Trap shall be completely self-draining when mounted vertically.

INSTALLATION

The trap is designed for installation in a vertical, downward flow orientation to ensure that the self-draining clean steam requirement is satisfied. Isolation valves should be installed for maintenance purposes. For welded installations removal of the body gasket and thermal element is necessary.

MAINTENANCE

Dirt is the most common cause of premature failure. Therefore, the upstream strainer should be periodically cleaned. For full maintenance details see Installation and Maintenance Manual.



MATERIALS

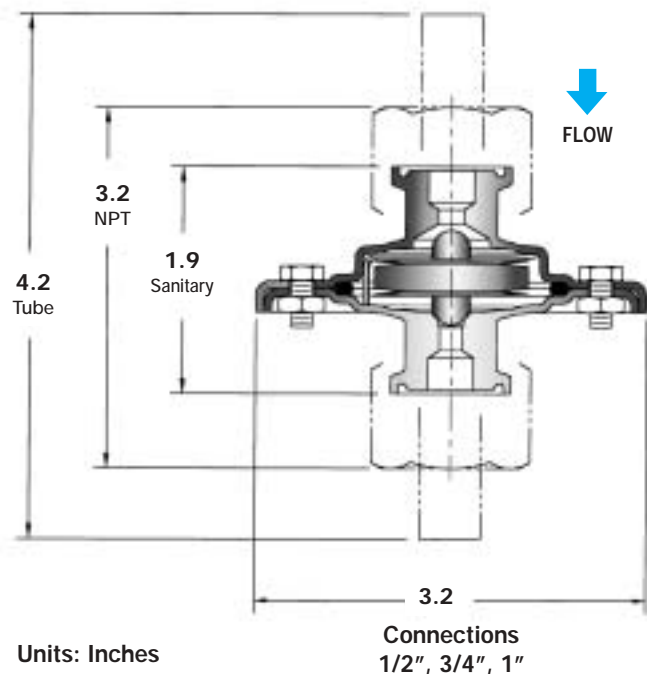
Body	Stainless Steel, AISI 316L
Thermal Element	Stainless Steel, AISI 316L
O-Ring, FDA Grade	Teflon Coated Silicone/FEP
Nuts & Bolts	Stainless Steel, AISI 316L

HOW TO ORDER

Refer to the capacity chart to determine which model is required to satisfy the condensate load.

CAPACITIES – Condensate (lbs/hr)

Condensate Temp Below Saturation	Differential Pressure (PSI)						
	1	5	10	20	50	75	110
10 °F	32	105	175	290	615	805	1160
20 °F	42	115	225	440	1060	1500	1850
Cold Water	735	1070	1375	1900	3100	3500	4600



FDA800

Thermodynamic Clean Steam Trap

Revised 9/2004

Model	FDA800
Sizes	1/4", 3/8", 1/2"
Connections	Tri-Clamp, NPT, Tube Weld
Body Material	Stainless Steel
PMO Max. Operating Pressure	150 PSIG
TMO Max. Operating Temperature	500°F
PMA Max. Allowable Pressure	230 PSIG @ 850°F
TMA Max. Allowable Temperature	850°F @ 230 PSIG



NPT



Tri-Clamp

TYPICAL APPLICATIONS

DRIP, PROCESS: The FDA800 Series Thermostatic Clean Steam Traps are used in sanitary systems as drip traps on steam mains as well as for drainage on various process vessels such as separators and filters.

HOW IT WORKS

The thermodynamic trap has a cyclic on/off operation with a disc that is pushed open when condensate is present and pulled closed when steam tries to escape.

FEATURES

- Small and compact
- All 316L stainless steel components
- Works in any position (horizontal preferred)

SAMPLE SPECIFICATION

The steam trap shall be a thermodynamic disc type with an all 316L stainless steel construction and integral seat design. Unit shall be capable of installation in any orientation and self-draining when mounted vertically.

INSTALLATION

The trap can be installed in any position; however, horizontal is preferred. For self-draining or freezeproof requirements, the trap may be installed vertically. Installation should include a strainer and isolation valves for maintenance purposes.

MAINTENANCE

Dirt is the most common cause of premature failure. Therefore, the upstream strainer should be periodically cleaned. For full maintenance details see Installation and Maintenance Manual.

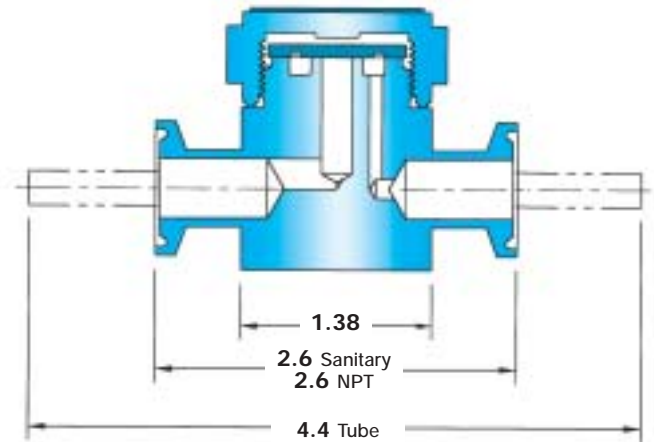
MATERIALS

Body	Stainless Steel, AISI 316L
Disc	Stainless Steel, AISI 316L
Cap	Stainless Steel, AISI 316L

HOW TO ORDER

Refer to the capacity chart to determine which model is required to satisfy the condensate load.

Units: Inches



Connections
 Tube - 1/4", 3/8", 1/2"
 NPT - 1/4", 3/8", 1/2"
 Sanitary - 1/2"

CAPACITIES – Condensate (lbs/hr)

Size	Differential Pressure (PSI)											
	3.5	5	10	15	20	25	30	40	50	75	100	150
3/8", 1/2"	180	185	190	195	200	215	220	230	250	310	375	500
1/4"	40	50	70	80	95	105	115	135	150	180	195	225

Note: Maximum back pressure not to exceed 80% of inlet pressure.

STEAM TRAPS

FM/FSM Series

Manifolds

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Model	FM	FSM
Sizes	1/2", 3/4"	1/2", 3/4"
Connections	NPT, SW	NPT, SW
Body Material	Fabricated Carbon Steel	Forged Steel
PMO Max. Operating Pressure	720 PSIG	600 PSIG
Pressure/Temperature Rating	720 PSIG @ 508°F	600 PSIG @ 500°F

TYPICAL APPLICATION

The **FM /FSM Manifolds** are used for steam distribution to the tracing system and for condensate collection. Typically used in chemical plants, petrochemical plants, textile industries, rubber plants and general industry. Manifolding your distribution and condensate collection system not only cuts down on installation and maintenance time, but also provides freeze protection.

DESCRIPTION FM

The **FM Manifold** is equipped with threaded or socket welded mount holes for ease of installation. Condensate collection manifolds are provided with a built-in siphon tube to minimize bi-phase flow, which reduces water hammer, and allows flash steam space to prevent isolation station freeze damage.

DESCRIPTION FSM

The **FSM Manifold** has a sealing system that utilizes an austenitic stainless steel piston that slides into two rings, one upper made of reinforced graphite, and one lower made of graphite interposed with thin stainless steel plates. The sealing surface is the surface of the piston. By tightening the bonnet nuts that are on the spring washers, a constant load on the upper ring is obtained, securing a tight seal to atmosphere. The same load, through the upper ring and the lantern, is applied to the lower ring that by expanding toward the body wall and toward the surface of the piston when the valve is in the closed position, ensures a perfect seal of the valve against the flow of the fluid.

FEATURES

- Compact design saves valuable plant space
- Available in 4, 6, 8 & 12 branch designs
- Available with preassembled steam trap stations
- Standard designs or custom built manifolds available
- Provides freeze protection
- Cuts down on installation and maintenance time
- On **FSM Model** valve bonnets are long neck type to allow for installation of insulation, keeping temperatures low



FM Manifold



FSM Manifold

MATERIALS – FM

Body	Carbon Steel
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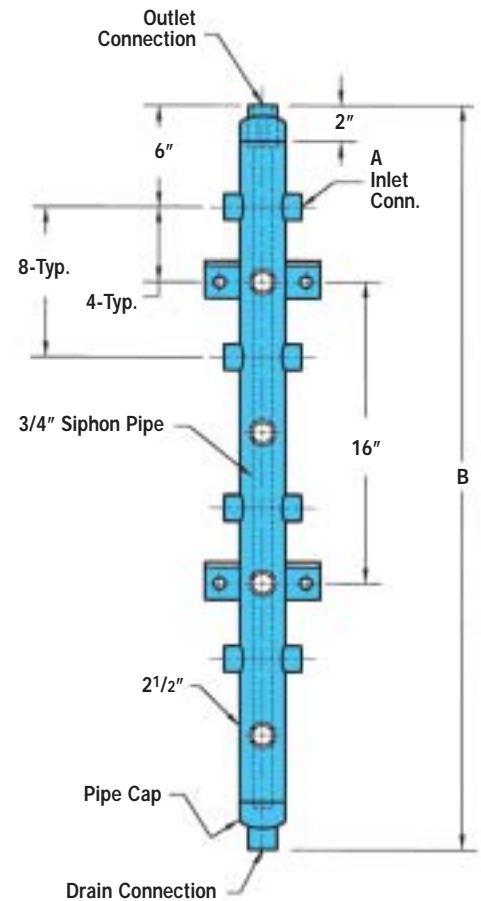
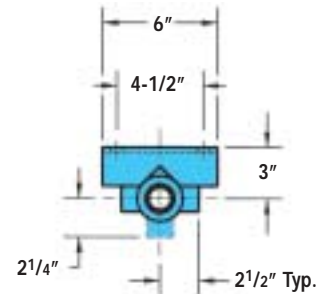
MATERIALS – FSM

Body	Forged Steel, A105
Hand Wheel	Sheet Metal
Bonnet	Forged Steel, A105
Valve ring above	Graphite
Valve ring below	Graphite/Stainless Steel
Piston	Stainless Steel, A304

Revised 9/2004

DIMENSIONS & WEIGHTS – inches / pounds

Description	Condensate Inlet Connection Cl. 3000 Per ANSI B16.11					B Length	Weight (lbs)
	A		# Conn. on Side	# Conn. on Front	Conn. Total		
	Size	Type					
Vertical Coll. Manifold w/ 4 Side Conn. 1/2" NPT Carbon Steel	1/2"	NPT	4	0	4	24	25
Vertical Coll. Manifold w/ 4 Side Conn. 1/2" SW Carbon Steel	1/2"	SW	4	0	4	24	25
Vertical Coll. Manifold w/ 4 Side Conn. 3/4" NPT Carbon Steel	3/4"	NPT	4	0	4	24	27
Vertical Coll. Manifold w/ 4 Side Conn. 3/4" SW Carbon Steel	3/4"	SW	4	0	4	24	27
Vertical Coll. Manifold w/ 4 Side & 2 Front Conn. 1/2" NPT Carbon Steel	1/2"	NPT	4	2	6	24	27
Vertical Coll. Manifold w/ 4 Side & 2 Front Conn. 1/2" SW Carbon Steel	1/2"	SW	4	2	6	24	27
Vertical Coll. Manifold w/ 4 Side & 2 Front Conn. 3/4" NPT Carbon Steel	3/4"	NPT	4	2	6	24	29
Vertical Coll. Manifold w/ 4 Side & 2 Front Conn. 3/4" SW Carbon Steel	3/4"	SW	4	2	6	24	29
Vertical Coll. Manifold w/ 8 Side Conn. 1/2" NPT Carbon Steel	1/2"	NPT	8	0	8	40	40
Vertical Coll. Manifold w/ 8 Side Conn. 1/2" SW Carbon Steel	1/2"	SW	8	0	8	40	40
Vertical Coll. Manifold w/ 8 Side Conn. 3/4" NPT Carbon Steel	3/4"	NPT	8	0	8	40	42
Vertical Coll. Manifold w/ 8 Side Conn. 3/4" SW Carbon Steel	3/4"	SW	8	0	8	40	42
Vertical Coll. Manifold w/ 8 Side & 4 Front Conn. 1/2" NPT Carbon Steel	1/2"	NPT	8	4	12	40	46
Vertical Coll. Manifold w/ 8 Side & 4 Front Conn. 1/2" SW Carbon Steel	1/2"	SW	8	4	12	40	46
Vertical Coll. Manifold w/ 8 Side & 4 Front Conn. 3/4" NPT Carbon Steel	3/4"	NPT	8	4	12	40	48
Vertical Coll. Manifold w/ 8 Side & 4 Front Conn. 3/4" SW Carbon Steel	3/4"	SW	8	4	12	40	48
Vertical Coll. Manifold w/ 12 Side Conn. 1/2" NPT Carbon Steel	1/2"	NPT	12	0	12	56	56
Vertical Coll. Manifold w/ 12 Side Conn. 1/2" SW Carbon Steel	1/2"	SW	12	0	12	56	56
Vertical Coll. Manifold w/ 12 Side Conn. 3/4" NPT Carbon Steel	3/4"	NPT	12	0	12	56	58
Vertical Coll. Manifold w/ 12 Side Conn. 3/4" SW Carbon Steel	3/4"	SW	12	0	12	56	58



STEAM TRAPS

FSM Series

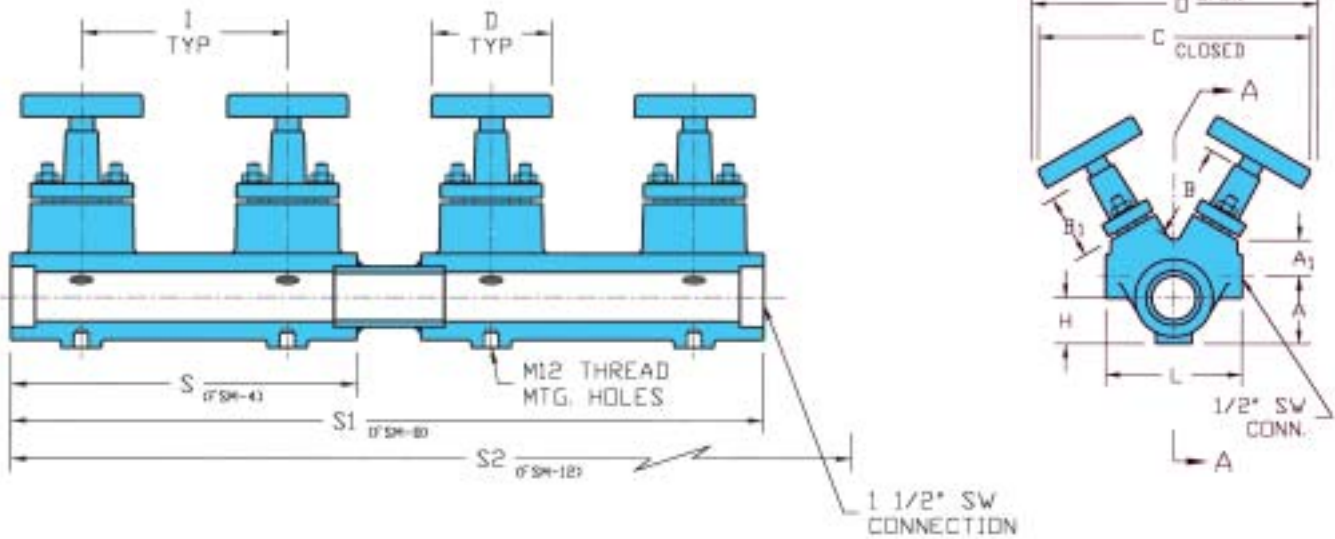
Manifolds

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DIMENSIONS & WEIGHTS – inches/pounds

Series	L	H	D	C	O	I	S	S1	S2	A	A1	B	B1	No. of Holes	No. of Holes	Weight (lbs)
FSM-4	4.33"	1.61"	3.94"	8.97"	10.63"	6.30"	13.03"			2.79"	1.22"	3.23"	2.79"	4	2(M14)	23
FSM-8	4.33"	1.61"	3.94"	8.97"	10.63"	6.30"		28.1"		2.79"	1.22"	3.23"	2.79"	8	4(M14)	49
FSM-12	4.33"	1.61"	3.94"	8.97"	10.63"	6.30"			36.22"	2.79"	1.22"	3.23"	2.79"	12	6(M14)	72



CAPACITIES

Pressure (PSIG)	Condensate lbs/hr ¹	Steam lbs/hr ²
25	1850	160
50	1000	310
75	840	460
100	610	730
125	660	760
150	620	900
200	570	1200
250	535	1500
300	510	1800
400	470	2350
500	460	3000
600	440	3550

¹Saturated condensate discharging into 20 psi backpressure

²Saturated Steam flow @ 5000 ft/min velocity