

## Steam Traps

## Thermodynamic Steam Trap (Repairable)

# TD700S

Thermodynamic

Model	<b>TD700S, TD700HS</b>
Sizes	<b>1/2", 3/4", 1"</b>
Connections	<b>NPT, SW, FLG</b>
Body Material	<b>Chrome-Moly Alloy Steel</b>
Options	<b>Blowdown Valve, Insulation Cap</b>
PMO Max. Operating Pressure	<b>600 PSIG</b>
TMO Max. Operating Temperature	<b>800°F</b>
PMA Max. Allowable Pressure	<b>600 PSIG up to 800°F</b>
TMA Max. Allowable Temperature	<b>800°F @ 600 PSIG</b>

**TD700S is a Direct Replacement for Yarway Model 721**



**TD700S**  
Strainer



**TD700SB**  
Strainer &  
Blowdown Valve

### Typical Applications

**DRIP, TRACING:** TD700S model steam traps are fully in-line repairable and most commonly used in drip applications, such as draining condensate from steam mains and steam supply lines. They can also be used for steam tracing applications. These traps are suitable for outdoor applications that are subject to freezing as well as superheated steam conditions. They feature a "Quick-Replace" capsule that contains the trap's complete internal working mechanism, which is easily replaced while the trap body remains in-line. All models contain an integral strainer for protection against dirt and scale.

### How It Works

The disc is the only moving part inside a thermodynamic trap. When steam enters the trap, it creates an internal pressure above the disc that instantly forces the disc to close tightly on the seat, preventing the steam from escaping. The internal steam pressure (holding the disc and seat shut) eventually drops, and the trap re-opens. When condensate enters the trap, it pushes the disc upwards, allowing the condensate to freely discharge. If steam is present, the trap instantly shuts.

### Features

- "Quick-Replace" 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 (recommended above 30 PSI)
- Suitable for superheated steam
- Freeze-proof when trap is piped in a vertical orientation for complete drainage of condensate
- Non-integral seat and chrome-moly body allow for trap to be welded in-line
- 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 and Maintenance

The TD700S can be installed in any orientation; however, horizontal with cap facing upward is preferred for longest service life. For maintenance, ALL internal components are easily removed and completely changed using a replacement kit. All models of the TD700S contain an integral strainer for protection against dirt and scale. Available in NPT, Socket-Weld and Flange connections.

### Helpful Selection Information

The TD700HS is a high pressure version of the standard TD700S model. While both the TD700S and TD700HS will operate with pressures up to 600 PSIG, the TD700HS has a slightly smaller discharge orifice and is recommended for system pressures over 300 PSIG because of increased efficiency and performance. The TD700S is available in NPT, socket weld, and flange connections from 1/2" through 1". Replacement capsules are available, see Parts & Kits Section.

### Options

Blowdown valve, used for flushing dirt and scale from strainer.  
Customized Flanged Connections:

#### TD700HS

The **TD700HS** is the high pressure version of the TD700S.

The standard model **TD700S** will operate over the entire pressure range, however, the **TD700HS** will operate more efficiently and have a longer service life for pressures over 300 PSIG.

**TD700S** Standard pressure capsule 4-300 PSIG

**TD700HS** High pressure capsule 150-600 PSIG

Option: **TD700SB** = Blowdown Valve

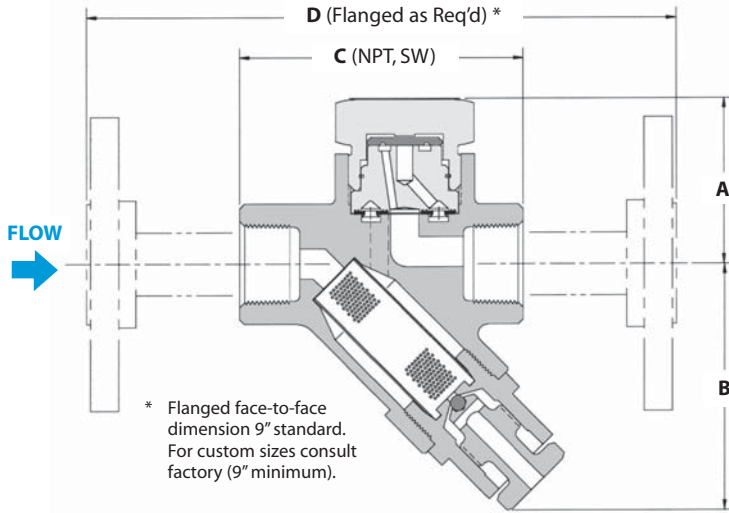
# Steam Traps

## Thermodynamic Steam Trap (Repairable)

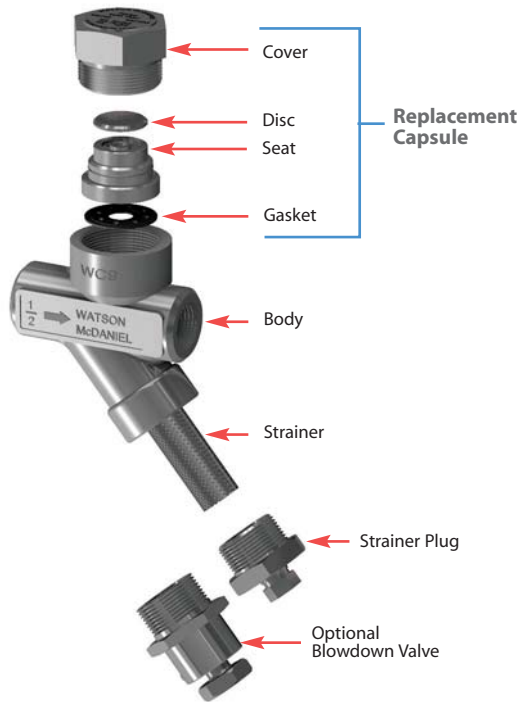
# TD700S

Thermodynamic

STEAM TRAPS



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



### DIMENSIONS & WEIGHTS - inches

Size/Model	Connection	A	B	C	Weight (lbs)
<b>Series TD700S &amp; TD700HS (Strainer)</b>					
1/2"	NPT, SW	2.04	2.50	3.16	2.0
3/4"	NPT, SW	2.04	2.50	3.55	2.0
1"	NPT, SW	2.04	2.50	6.31	2.0
<b>Series TD700SB &amp; TD700HSB (Strainer &amp; Blowdown Valve)</b>					
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

### MATERIALS

Body	Chrome Moly ASTM A-217, GR WC9
Seat	Stainless Steel, 420F
Seat Gasket	316SS/Grafoil
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

### How to Size / Order

Select working pressure; follow column down to correct capacity (lbs/hr) block. Example:

Application: 275 lbs/hr at 100 PSIG working inlet pressure

Size/Model: **TD700S**, specify pipe size and connections (NPT, SW, FLG)

### CAPACITIES - Condensate (lbs/hr)

Size	Conn.	Model Code	Steam Inlet Pressure (PSIG)																		
			4	5	6	7	8	9	10	20	30	40	50	60	80	100	150	300	400	500	600
1/2"	NPT	TD700S-12-N	95	105	115	120	125	130	140	180	220	250	265	280	320	350	405	550	600	650	700
	SW	TD700S-12-SW																			
3/4"	NPT	TD700S-13-N	95	105	115	120	125	130	140	180	220	250	265	280	320	350	405	550	600	650	700
	SW	TD700S-13-SW																			
1"	NPT	TD700S-14-N	95	105	115	120	125	130	140	180	220	250	265	280	320	350	405	550	600	650	700
	SW	TD700S-14-SW																			
1/2"	NPT	TD700HS-12-N															250	330	380	410	450
	SW	TD700HS-12-SW																			
3/4"	NPT	TD700HS-13-N															250	330	380	410	450
	SW	TD700HS-13-SW																			
1"	NPT	TD700HS-14-N															250	330	380	410	450
	SW	TD700HS-14-SW																			

Notes: 1) Maximum back pressure not to exceed 80% of inlet pressure (measured in absolute pressure) or trap may not close.  
2) For optimum performance, recommended for operating pressure above 30 PSIG.

Model	TDF700S, TDF700HS
Sizes	1/2", 3/4", 1"
Connections	NPT, SW, FLG
Body Material	ASME SA-182 F-11 Chrome-Moly
Options	Blowdown Valve, Insulation Cap
PMO Max. Operating Pressure	650 PSIG
TMO Max. Operating Temperature	800°F
PMA Max. Allowable Pressure	650 PSIG up to 800°F
TMA Max. Allowable Temperature	800°F @ 650 PSIG

**TDF700S is a Direct Replacement for Yarway Model 721 Complete with Material Traceability (CMTRs)**



**TDF700SB**  
Strainer &  
Blowdown Valve

### Typical Applications

**DRIP, TRACING:** TDF700S model steam traps are fully in-line repairable and most commonly used in drip applications, such as draining condensate from steam mains and steam supply lines. They can also be used for steam tracing applications. These traps are suitable for outdoor applications that are subject to freezing as well as superheated steam conditions. They feature a "Quick-Replace" capsule that contains the trap's complete internal working mechanism, which is easily replaced while the trap body remains in-line. All models contain an integral strainer for protection against dirt and scale.

### How It Works

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### Features

- "Quick-Replace" capsule design for easy in-line repair
- Integral strainer with optional blowdown valve to protect trap from contamination
- High pressure applications up to 650 PSIG
- Hardened stainless steel seat and disc for extended service life even at high pressure
- Single trap will operate over the entire pressure range 4-650 PSIG (recommended above 30 PSI)
- Suitable for superheated steam
- Freeze-proof when trap is piped in a vertical orientation for complete drainage of condensate
- Non-integral seat and chrome-moly body allow for trap to be welded in-line
- 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 and Maintenance

The TDF700S can be installed in any orientation; however, horizontal with cap facing upward is preferred for longest service life. For maintenance, ALL internal components are easily removed and completely changed using a replacement kit. All models of the TDF700S contain an integral strainer for protection against dirt and scale. Available in NPT, socket welded and flanged connections.

### Helpful Selection Information

The TDF700HS is a high pressure version of the standard TDF700S model. While both the TDF700S and TDF700HS will operate with pressures up to 650 PSIG, the TDF700HS has a slightly smaller discharge orifice and is recommended for system pressures over 300 PSIG because of increased efficiency and performance. The TDF700S is available in NPT, socket welded, and flanged connections from 1/2" through 1". Replacement capsules are available, see Parts & Kits Section.

### Options

Blowdown valve - used for flushing dirt and scale from strainer.  
Customized Flanged Connections.

### TDF700HS

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The standard model **TDF700S** will operate over the entire pressure range, however, the **TDF700HS** will operate more efficiently and have a longer service life for pressures over 300 PSIG.

**TDF700S** Standard pressure capsule 4-300 PSIG

**TDF700HS** High pressure capsule 150-650 PSIG

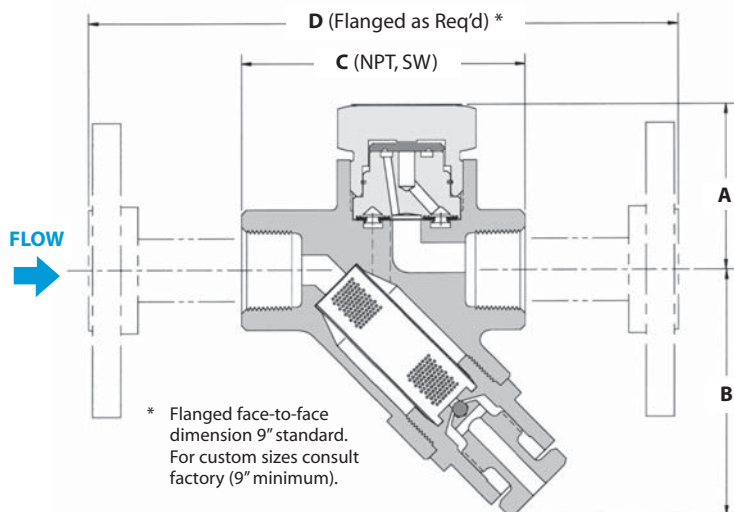
Option: **TDF700SB** = Blowdown Valve

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# TDF700S

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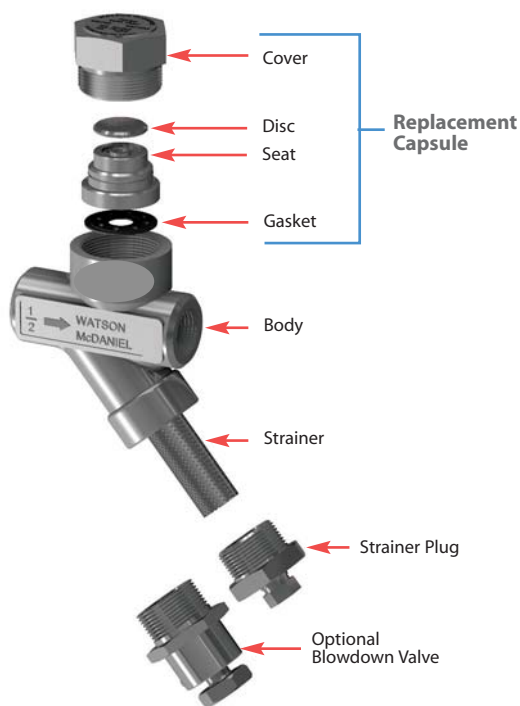
### DIMENSIONS & WEIGHTS – inches

Size/Model	Connection	A	B	C	Weight (lbs)
<b>Series TDF700S &amp; TDF700HS (Strainer)</b>					
1/2"	NPT, SW	2.04	2.50	3.16	2.0
3/4"	NPT, SW	2.04	2.50	3.55	2.0
1"	NPT, SW	2.04	2.50	6.31 *	2.0
<b>Series TDF700SB &amp; TDF700HSB (Strainer &amp; Blowdown Valve)</b>					
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

\* Note: 1" units include weld adapters.

### MATERIALS

Body	Forged Chrome Moly ASME SA-182 F-11 (0.15% Carbon max.)
Seat	Stainless Steel, 420F
Seat Gasket	316SS/Grafoil
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



### How to Size / Order

Select working pressure; follow column down to correct capacity (lbs/hr) block. Example:

Application: 275 lbs/hr at 100 PSIG working inlet pressure  
 Size/Model: **TDF700S**, specify pipe size and connections (NPT, SW, FLG)

### CAPACITIES – Condensate (lbs/hr)

Size	Conn.	Model Code	Steam Inlet Pressure (PSIG)																		
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	SW	TDF700S-12-SW	95	105	115	120	125	130	140	180	220	250	265	280	320	350	405	550	600	650	700
3/4"	NPT	TDF700S-13-N	95	105	115	120	125	130	140	180	220	250	265	280	320	350	405	550	600	650	700
	SW	TDF700S-13-SW	95	105	115	120	125	130	140	180	220	250	265	280	320	350	405	550	600	650	700
1"	NPT	TDF700S-14-N	95	105	115	120	125	130	140	180	220	250	265	280	320	350	405	550	600	650	700
	SW	TDF700S-14-SW	95	105	115	120	125	130	140	180	220	250	265	280	320	350	405	550	600	650	700
1/2"	NPT	TDF700HS-12-N															250	330	380	410	450
	SW	TDF700HS-12-SW															250	330	380	410	450
3/4"	NPT	TDF700HS-13-N															250	330	380	410	450
	SW	TDF700HS-13-SW															250	330	380	410	450
1"	NPT	TDF700HS-14-N															250	330	380	410	450
	SW	TDF700HS-14-SW															250	330	380	410	450

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