

# Fisher™ Yarway™ AT-18/28, AT-38/48, and TempLow 4300 Desuperheater

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## Introduction

### Scope of Manual

This instruction manual includes installation, maintenance, and operation information for the Fisher Yarway AT-18/28, AT-38/48, and TempLow 4300 variable orifice desuperheaters. Refer to separate instruction manuals for information on the actuator and accessories.

Figure 1. Fisher Yarway Desuperheaters



Table 1. Specifications

<p><b>Available Types</b>                  Forged Design: Yarway AT-18/Yarway AT-28,                  Fabricated Design: Yarway AT-38/Yarway AT-48,                  Cast Design: Yarway TempLow 4300 series</p> <p><b>Common Characteristics:</b> ■ Desuperheaters with ASME flange connections are designed according to ASME B16.34 – Valves Flanged, Threaded, and Welding End                  ■ Desuperheaters with EN flange connections are designed in accordance with EN12516 – Industrial Valves-Shell Design Strength</p> <p><b>Body Style and Flow Direction</b>                  Angle Body and Flow Down Configurations<sup>(1)</sup> and Valve Size: See table 1 and figures 10, 11, and 12</p> <p><b>End Connections Styles<sup>(1,2)</sup></b>                  See table 1</p> <p><b>Maximum Inlet Pressure and Temperature<sup>(1)(2)</sup></b>                  Consistent with ASME B16.34 and EN1092-1, unless limited by maximum pressure drop or material temperature capabilities</p> <p><b>Pressure Drop<sup>(1)</sup></b>                  Min pressure drop depends on nozzle selection (1 or 2 bar)                  1 to 59 Bar: A to D<sub>x</sub> nozzles in S41000 stainless steel                  2 to 59 Bar: E to K nozzles in S41000 stainless steel                  60 to 100 Bar: Alloy 6 material nozzle                  Pressure Drop Limitation: 100 Bar<sup>(3)</sup></p>	<p><b>Shutoff Classifications per ANSI/FCI 70-2 and IEC 60534-4</b>                  Standard: Class V</p> <p><b>Flow Coefficients</b>                  See Yarway AT-18/28, AT-38/48 and TempLow 4300 Insertion Style Desuperheater Bulletin (<a href="#">D104714X012</a>)</p> <p><b>Packing Arrangements</b>                  Single Graphite</p> <p><b>Nozzle Material Selection</b>                  See Yarway AT-18/28, AT-38/48 and TempLow 4300 Insertion Style Desuperheater Bulletin (D104714X012)</p> <p><b>Material Temperature Capabilities<sup>(1)</sup></b>                  See table 2</p> <p><b>Approximate Weight</b>                  See table 3</p> <p><b>Maximum Water Flow Capacity in Continuous Service</b>                  Yarway AT-18 and AT-38: 25 m<sup>3</sup>/hr (110GPM)                  Yarway AT-28 and AT-48: 50 m<sup>3</sup>/hr (220GPM)                  Yarway TempLow 4300: 25 m<sup>3</sup>/hr (110GPM)</p>
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1. Do not exceed the pressure or temperature limits in the Yarway AT-18/28, AT-38/48 and TempLow 4300 Insertion Style Desuperheater Bulletin (D104714X012) nor any applicable code or standard limitations.  
 2. EN (or other valve body material) ratings and end connections can usually be supplied; consult your [Emerson sales office](#).  
 3. Consult your Emerson sales office for additional product options when maximum pressure drop exceeds 100 bar.



Do not install, operate, or maintain a Yarway AT-18/28, AT-38/48, and TempLow 4300 Desuperheater without being fully trained and qualified in valve, actuator, and accessory installation, operation, and maintenance. To avoid personal injury or property damage, it is important to carefully read, understand, and follow all the contents of this manual, including all safety cautions and warnings. If you have any questions about these instructions, contact your Emerson sales office before proceeding.

## Description

The Yarway AT-18/28 is a heavy duty A.T.-temp desuperheater with a forged body construction is specially designed for use on medium to high-pressure steam applications. The design is adaptable to various boiler codes and material specifications. The piston and stem are nitrided to give long life and galling resistance. Piston rings are specially hardened and subsequently nitrided and are provided with a special liquid tight slot. These rings offer running properties and enable controllable  $C_v$  ( $K_v$ ) values as low as 0.005  $C_v$  (0.0043  $K_v$ ).

The Yarway 38/48 is a standard duty A.T.-temp desuperheater is developed for use on low to medium pressure applications. The fabricated construction makes it easily adaptable to meet various boiler codes and material specifications. The unit can also be used as a liquid into gas injector for which high grade alloy such as stainless steel is often used. The vital trim components are similar to those used in Yarway AT-18/28 heavy duty A.T.-temp desuperheaters.

The Yarway TempLow 4300 desuperheater comes in standard constructions. The cast body mounts through a 3-inch flange in the steam line and is available in a wide variety of characteristics. Water pressure 3.5 to 100 bar (50 to 1450 psi) above steam pressure is employed to generate thin-film, conical sprays which are injected into the steam flow through a series of vortex spray nozzles. The fine spray evaporates rapidly in the steam, thereby minimizing the tendency for spray water to accumulate in the line.

## Educational Services

Emerson Educational Services  
Phone: 1-800-338-8158  
E-mail: [education@emerson.com](mailto:education@emerson.com)  
[emerson.com/mytraining](http://emerson.com/mytraining)

## Principle of Operation

Fisher Yarway AT-18/28, AT-38/48, and TempLow 4300 Desuperheaters can be used in many applications to efficiently reduce the temperature of superheated steam to the desired set point. These desuperheaters are of insertion style with angle body design and integrated spray water control. General applications are:

- Cooling of process steam or gas
- Boiler superheater attemperator
- Boiler reheater attemperator
- Auxiliary steam desuperheating (e.g. steam let down stations)

The Fisher Yarway AT-18/28, AT-38/48, and TempLow 4300 Desuperheaters regulate the amount of injection water by varying the number of open injection spray nozzles. This enables the water pressure at the nozzles to remain constant, independent of the number of injection nozzles in operation. This results in a near uniform spray over the entire operating range. Control of the nozzle opening is achieved by the positioning of a piston which is operated directly by an actuator mounted on the desuperheater. Because of this feature, a separate spraywater control valve is not required.

Table 1. Yarway Available Valve Connections

TYPE	STEAM FLANGE SIZE			WATER FLANGE SIZE <sup>(1)</sup>			STEAM PIPE SIZE
	NPS	ASME B16.5 Ratings	Connection <sup>(2)</sup>	NPS	ASME B16.5 Ratings	Connection <sup>(2)</sup>	NPS
AT-18	3	CL600-2500	RF, RTJ	1, 1-1/2, 2	CL600-2500	RF, RTJ	6-48
AT-28	4	CL600-2500	RF, RTJ	1-1/2, 2, 3	CL600-2500	RF, RTJ	8-48
AT-38	3	CL150-1500	RF, RTJ	1, 1-1/2, 2	CL150-1500	RF, RTJ	6-48
AT-48	4	CL150-1500	RF, RTJ	1-1/2, 2, 3	CL150-1500	RF, RTJ	8-48
TempLow 4300	3	CL150-1500	RF, RTJ	1	CL150-1500	RF, RTJ	6-16
	DN	EN1092-1 Ratings	Connection <sup>(2)</sup>	DN	EN1092-1 Ratings	Connection <sup>(2)</sup>	DN
AT-18	80	PN100-400	Type B1, B2 (RF)	25, 40, 50	PN100-400	Type B1, B2 (RF)	150-1200
AT-28	100	PN100-400	Type B1, B2 (RF)	40, 50, 80	PN100-400	Type B1, B2 (RF)	200-1200
AT-38	80	PN10-250	Type B1, B2 (RF)	25, 40, 50	PN10-250	Type B1, B2 (RF)	150-1200
AT-48	100	PN10-250	Type B1, B2 (RF)	40, 50, 80	PN10-250	Type B1, B2 (RF)	200-1200

1. Water flange class rating must be equal or greater to the body flange class rating.  
 2. End connection style abbreviations: RF-Raised Face, RTJ-Ring Type Joint.

Table 2. Yarway AT and TempLow 4300 Shell Temperature

TYPE <sup>(3)</sup>	BODY FLANGE MATERIAL <sup>(1)</sup>	OPERATING TEMPERATURE	
		°C	°F
AT-38/48	SA105	-29 to 427	-20 to 800
	F11	-29 to 538	-20 to 1000
	304 SST		
	316 SST		
	SA105/1.0460 <sup>(2)</sup>	-29 to 427	-20 to 800
1.7335	-29 to 538	-20 to 1000	
AT-18/28	F22	-29 to 593	-20 to 1100
	F91		
	F347H		
	1.7383		
	1.4903		
1.4550			
TempLow 4300	WC6	-29 to 538	-20 to 1000

1. For availability of materials other than those listed, consult your [Emerson sales office](#).  
 2. SA105 / 1.0460 material is available for PED.  
 3. CL150 terminates at 538°C (1000°F).

Table 3. Yarway AT and Templo 4300 Weights

TYPE	ASME PRESSURE RATING	WEIGHT	
		kg	lb
AT-18	CL600	50	110
	CL900	64	140
	CL1500	68	150
	CL2500	88	195
	PN100/160	52	115
	PN250	60	135
	PN320	70	155
AT-28	CL600	80	180
	CL900	88	195
	CL1500	106	235
	CL2500	144	315
	PN100/160	80	180
	PN250	96	210
	PN320	120	265
AT-38	CL150	28	60
	CL300	30	65
	CL600	32	70
	CL900	44	95
	CL1500	50	110
	PN10/16	26	60
	PN25/40	28	60
	PN63	32	70
	PN100	34	75
	PN160	36	80
AT-48	CL150	46	105
	CL300	52	115
	CL600	60	130
	CL900	70	155
	CL1500	74	165
	PN10/16	44	95
	PN25/40	46	100
	PN63	50	110
	PN100	56	125
	PN160	60	130
Templo 4300	CL150	39	86
	CL300	43	95
	CL600	45	100
	CL900	53	116
	CL1500	60	132

## Installation

### **⚠ WARNING**

Always wear protective gloves, clothing, and eyewear when performing any installation operations to avoid personal injury.

Personal injury or equipment damage caused by sudden release of pressure may result if the desuperheater is installed where service conditions could exceed the limits given in table 1 or on the nameplate. To avoid such injury or damage, provide a relief valve for over-pressure protection as required by government or accepted industry codes and good engineering practices.

Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

If installing into an existing application, also refer to the WARNING at the beginning of the Maintenance section in this instruction manual.

### **⚠ WARNING**

When ordered, the desuperheater configuration and construction materials were selected to meet particular pressure, temperature, pressure drop, and fluid conditions. Do not apply any other conditions to the desuperheater without first contacting your [Emerson sales office](#)

## System Considerations

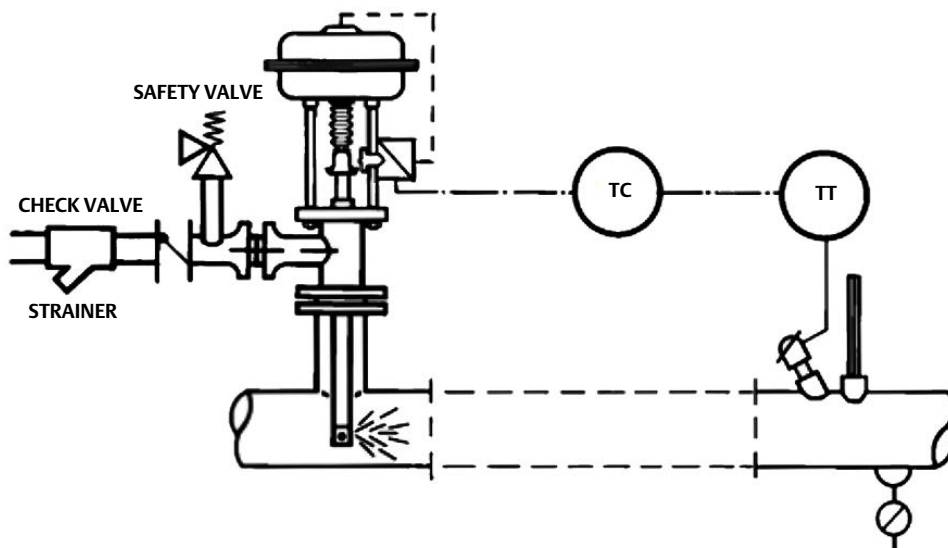
### **Note**

The desuperheater water supply should be of good quality, clean and filtered – for example, boiler feed water – and should have a constant pressure as specified in the order documents. Each water supply line should be protected with its own individual strainer, Emerson recommends a strainer with a mesh size of approximately 100 mu (400 mu upon request) in the water supply line to protect the Desuperheater from clogging.

- Where there are positive shut-off components in the water supply, including electric actuators, then a safety relief valve of an approved type should be fitted.
- A straight run of pipe is required downstream of the desuperheater to ensure complete vaporization of the cooling water. Consult the desuperheater sizing sheet for installation recommendations, including the recommended straight pipe distance required.
- A temperature sensor should be mounted in accordance with the manufacturer's instructions. The recommended distance from the desuperheater to the temperature sensor changes with the velocity and percentage of spraywater required. Consult the desuperheater sizing sheet for installation recommendations, including the recommended distance required before the temperature sensor.
- Allow no branching out from the steam line, to divide or to add to the steam flow, between the temperature sensor and the desuperheater.

A typical control loop is illustrated in figure 2. A temperature sensor generates a signal (pneumatic or digital) through a transmitter. This signal is transmitted to the positioner on the desuperheater. The positioner output signal is piped to the actuator, which strokes the desuperheater governing the amount of spraywater flow.

Figure 2. Typical Control Loop with the Yarway Desuperheater



## Preliminary Checks

1. Check that the information on the documentation, identification plate, and tag number complies with the order specification.
2. Check the desuperheater, actuator and accessories for any visible damage.
3. Remove the desuperheater carefully from its packaging, lifting by appropriately positioned straps around the body.

### **⚠ WARNING**

To prevent personal injury and damage to equipment, do not use the water inlet connection, yoke, actuator or any of its accessories for lifting.

4. Leave the flange covers in place during transportation, until ready to install in the piping.

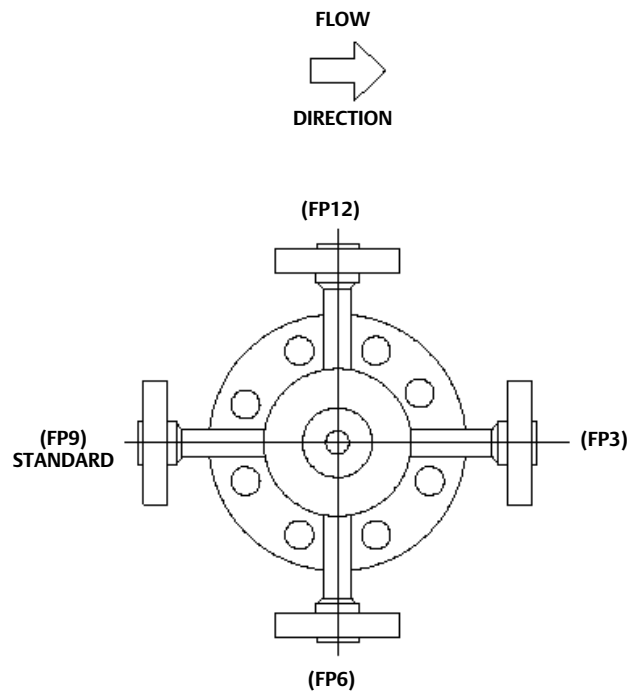
## Mounting Considerations

### **⚠ WARNING**

Personal injury could result from packing leakage. Packing was tightened prior to shipment. However, some readjustment will be required to meet specific service conditions.

- When installing the desuperheater, use gaskets and bolting material in accordance with the relevant piping code.
- Place the gasket onto the mounting flange and carefully insert the nozzle into the branch pipe.
- Ensure that the spray cylinder is pointed in the direction of the steam flow before tightening the mounting bolts. Reference figure 3 for water flange positions.

Figure 3. Yarway Desuperheater Water Flange Positions



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**Note**

The desuperheater should be free of forces, moments, and torques.

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- The desuperheater is provided with a lower body length, as specified in the general arrangement drawing and the mounting branch for the steam pipework must be manufactured to suit.
- The length of the T-dimension in figure 4, should be such that, the centerline of the spray cylinder is located on the centerline of the steam pipe (figure 6).
- The mounting branch should be NPS 3 (DN 80) or NPS 4 (DN 100) nominal bore, maximum pipe schedule 160 for clearance purposes (check the applicable power piping code).



Figure 4. Yarway Desuperheater T Dimension

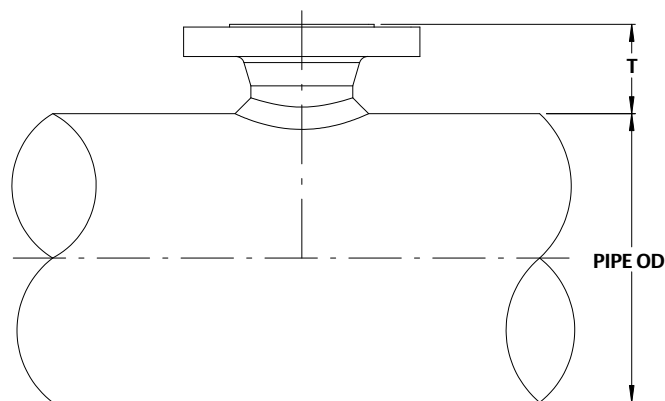
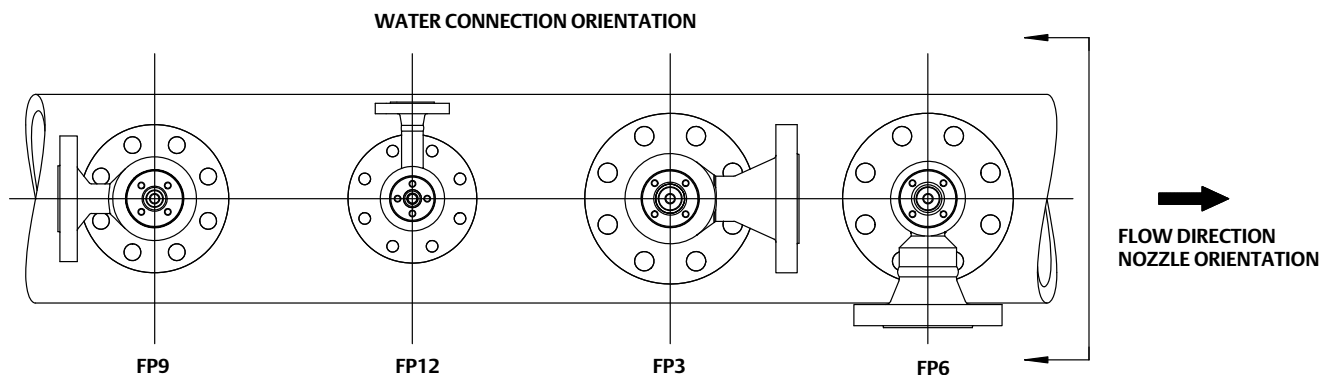


Figure 5. Yarway Desuperheater Mounting Orientations



- The "vertical-up" position is preferred for the valve stem and actuator.
- Consult actuator documentation for assistance in actuator assembly.
- Installation may be in vertical or horizontal, but the direction of water injection should always be with the steam flow.
- The desuperheater may be mounted at 90° to the steam pipe, for all steam flow orientations, but avoid installation in the vertically downwards position, wherever possible.

**Note**

Horizontal oriented desuperheater must be installed with a support for weight compensation. Consideration must be given to supporting the actuator.

## Maintenance

### **⚠ WARNING**

Avoid personal injury or property damage from sudden release of process pressure or bursting of parts. Before performing any maintenance operations:

- Always wear protective gloves, clothing, and eyewear when performing any maintenance operations to avoid personal injury.
- Disconnect any operating lines providing air pressure, electric power, or a control signal to the actuator. Be sure the actuator cannot suddenly open or close the desuperheater.
- Use bypass valves or completely shut off the process to isolate the desuperheater from process pressure. Relieve process pressure from both sides of the desuperheater. Drain the process media from both sides of the desuperheater.
- Use lock-out procedures to be sure that the above measures stay in effect while you work on the equipment.
- Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

## Nozzle Maintenance

### Note

The spray cylinder is an assembly. Do not completely disassemble the individual nozzles.

## Inspection Considerations

When subjected to normal operating conditions, thermal cycling does occur and temperature differentials at the desuperheater are usually the highest in the plant, it is possible that wear, blockage, and/or weld fatigue will occur to the desuperheater body or nozzle assembly.

- Wear is defined as any nicks, cuts, or gouges.
- Erosion/corrosion is defined as any form of rust or erosion of the metal on the nozzle.
- Blockages are defined as small particulate trapped within the nozzle.
- Weld fatigue is defined as appearance of cracks.

Spray cylinder (key 1), fastener ring (key 4), piston/stem assembly (key 3) and piston rings (key 2) are to be considered wear parts. During regularly scheduled maintenance (table 4), visually inspect the desuperheater welds for cracks and inspect nozzles for wear and blockage. Poor performing nozzles or nozzle failure is typically caused by wear, corrosion, erosion, and/or blockage. The following instructions will help to determine if any of these problems are present and provide a recommended course of action for each.

Table 4. Recommended Inspection and Replacement Schedule

Key	Part Name	Recommended Inspection	Recommended Replacement
1	Yarway Spray Cylinder	Inspect after first year of service and once every two years thereafter.	Once every 5 years of service
2	Piston Rings	N/A	Any time the unit is disassembled. Once every 5 years of service
3	Piston/Stem Assembly	N/A	Once every 5 years of service
4	Fastener Ring and Tack Welds	After first year of service	Once every 5 years of service
See Parts List	Packing Components	See Parts List	Any time the unit is disassembled

# Inspection Procedure

## **⚠ WARNING**

Refer to the **WARNING** at the beginning of the **Maintenance** section in this instruction manual.

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## Disassembly Procedure

1. Disconnect all external connections. Consult actuator documentation for assistance in actuator removal.
2. Ensure that there is no residual pressure in either the steam or water lines.
3. Loosen steam flange and water flange bolting, but vent connections before complete removal.
4. The desuperheater may now be removed from the system.
5. Carefully lift the desuperheater using accepted lifting and rigging practices. Follow the lifting warning and instructions provided in the Preliminary Checks section. Ensure all accessories and all sealing surfaces are protected from damage during lifting.
6. Disassemble when in the horizontal position with the body extension section secured.

## Disassembly Procedure

1. Mark the body extension (key 5) and the spray cylinder (key 1) with witness marks to ensure proper alignment at reassembly.
2. Grind off the nozzle tack welds. Make sure that the weld is removed sufficiently to allow rotation of the fastener ring (key 4) without damage.
3. Unscrew the fastener ring (key 4).
  - For AT-18/28 and AT-38/48 unscrew the fastener ring counter clockwise.
    - Threading on the body extension is right handed (key 5).
  - For TempLow 4300 unscrew fastener ring clockwise.
    - Threading on the body extension is left handed.

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### Note

If difficulties are encountered with the removal of the fastener ring (key 4), then the fastener ring may be removed by grinding through at two diametrically opposite points. Do not damage the body and spray cylinder threading.

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## Spray Cylinder Inspection

1. Inspect the condition of the cylinder internally.

- **Wear** is defined as any nicks, cuts, or gouges of the nozzle, especially in or around the orifice.
- **Erosion/corrosion** is defined as any form of rust or erosion of the metal on the nozzle.
- **Blockages** are defined as small particulate trapped within the nozzle orifice.

If any of the preceding problems are present, replacement of the spray cylinder is recommended. If not, proceed to step 2.

2. Scratches and blemishes may be removed by either polishing or honing. The cylinder bore should not exceed 32 mm (1.25 in) with a maximum eccentricity of 0.25 mm (0.009 in).
3. Debris can be removed from the nozzles by blowing through with compressed air.
4. Inspect the nozzle atomizer outlet holes. These should not show any undue elliptical wear, roughness or damage. If any are over-sized or non circular in shape, the nozzle will need to be replaced.
5. Carefully clean the cylinder threading. Where necessary, dressing with a small file.
6. Inspect seating surface. The seating surface should be clean and free from cuts, gouges or wire drawing. A proper seat shows a narrow concentric lapped seating band.
7. Clean the spray cylinder to remove scale. Thoroughly rinse.

## Body Extension Inspection

1. Examine the threading on the body extension. Where necessary, dressing with a small file. If the threading is damaged, then weld repair may be possible. Contact your [Emerson sales office](#) for more information.

## Piston and Stem Assembly Inspection

1. Remove the piston and stem (key 3). The piston and stem are always supplied as a complete assembly.
2. Inspect the piston for wear and tear.
3. Replace piston rings (key 2) any time that the unit is disassembled.

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### Note

Take care not to overstress the piston rings when fitting. The rings are marked 'top' and should always point in the direction of the packing box, for proper functioning.

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4. Examine the condition of the stem. Where it runs in the packing box, remove any graphite with a fine grade emery cloth, polishing in the longitudinal direction.
5. The stem disc and seat may be lapped using a lapping compound to repair.

## Packing Box Inspection

1. Remove all rings, lantern ring and packing material from the valve body.
2. Clean the packing box carefully, using a rotating wire brush and/or honing device.
3. Inspect the packing box and stem for straightness, wear, scratches, pitting and other abnormalities which would prevent establishment of a good seal around the packing.

4. If a spacer is supplied with this packing or if a spacer was removed from the packing box, make sure it is installed first. If one end of the spacer is chamfered, install chamfered end down so that it sits at bottom of packing box.

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**Note**

Cleanliness of the packing area is vital for proper valve sealing. Do not use grease or lubricants in combination with graphite packing.

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## Reassembly

Reference installation content where needed in the subsequent sections of this Instruction Manual.

## Packing Set Installation

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**Note**

Packing (see Parts List) is supplied as a complete set and rings should be in same order as packaged in the set.

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1. Install one ring at a time using a packing driver or gland bushing. Measure the depth of the packing box before and after ring insertion to be certain that it has traveled to the bottom of the packing box. Each ring must be seated individually with a packing driver. Pre-compression of each ring during installation is very important for the tightness of the seal.

### **NOTICE**

**Do not use screwdriver or other sharp object to install the packing. This could damage the packing and/or stem. If a packing driver is used, make sure that the diametrical clearances between the inner dimension (ID) of the driver and outer dimension (OD) of the stem and the OD of the driver and ID of the stuffing box do not exceed 0.5 mm (0.020 inch).**

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2. Stagger the joints (if present) on each successive ring 180° apart.
3. Check packing rings for proper fit. They should be push fit into packing box.

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**Note**

Do not over compress the packing. The amount of compression should be only that which is required to the install the correct number of rings into the stuffing box. Compression of the packing in a partially filled packing box, to make room for the rest of the packing, can be accomplished using the gland bushing and taking up on the gland nuts.

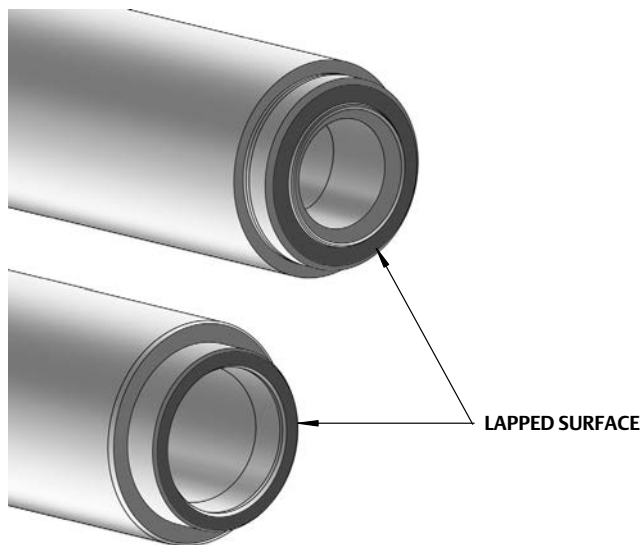
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4. After all packing rings are installed, thoroughly lubricate the studs and insert the packing follower and the packing flange (see Parts List).
5. Tighten the hex nuts to 45 N • m

## Spray Cylinder Reassembly

1. Apply a thin coating of the lapping compound to the piston rings to prevent scoring. Position the slots in the piston rings (key 2), such that they are at 120° to each other.
2. Lapping spray cylinder (key 1) / seat surfaces (key 5) together. Use a fine grade polishing paste to lap the seating area of cylinder and body extension. The seal is metal to metal so a concentric seat area is vital.

Figure 6. Lapped Surfaces



3. Clean lapped surfaces before mounting.

### Note

Always use a new fastener ring.

4. Mount fastener ring on the spray cylinder.
5. Mount fastener ring and spray cylinder on the body.
  - For AT-18/28 and AT-38/48 screw the fastener ring clockwise.
  - Threading on the body extension is right handed (key 5).
  - For TempLow 4300 screw the fastener ring counter-clockwise.
  - Threading on the body extension is left handed.

### Note

For a two-column cylinder, the middle of two columns needs to be the centerline of spray cylinder when aligning with the water flange position, (figure 7). For a three-column cylinder, the middle column needs to be the centerline of spray cylinder when aligning with the water flange position.

Figure 7. Two-Column Spray Cylinder

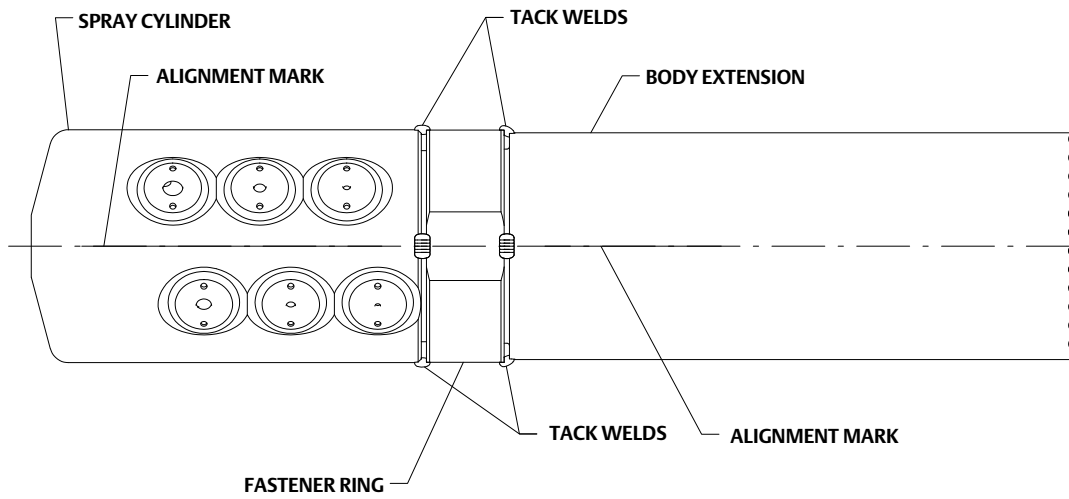
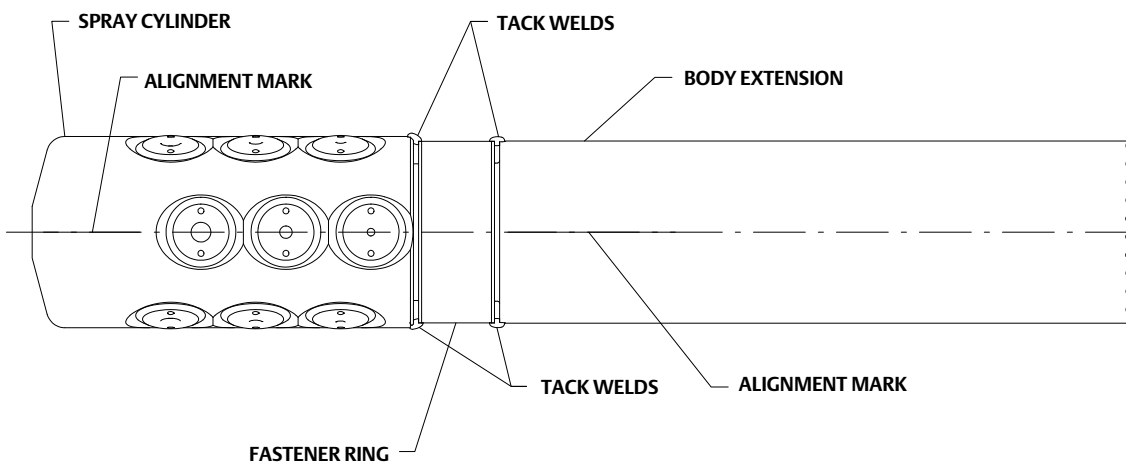
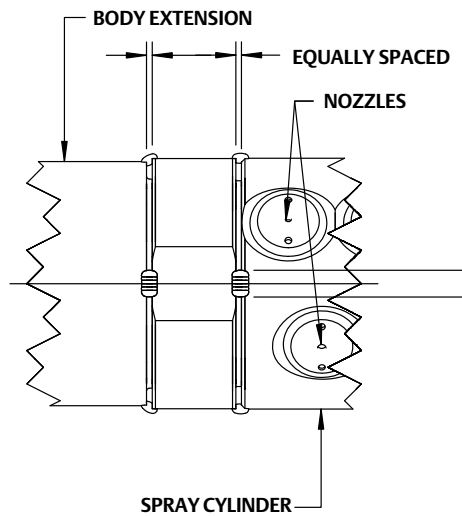


Figure 8. Three-Column Spray Cylinder



6. Center spray cylinder. The gap at both side of fastener ring should be equal. 0.4 mm (1/64 inch) minimum, (figure 9).
7. Align spray cylinder with reference to water flange according to required position in general arrangement drawing, (figure 3 and 5).
8. Once positioned with reference to water flange, align the centerline of the spray cylinder.
9. Tighten fastener ring (key 4).
10. Tackweld between fastener ring and spray cylinder. Tackweld fastener ring and body to prevent unthreading. Place multiple welds around the unit (see figure 9).

Figure 9. Tackweld Details



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# Troubleshooting

The following guide (table 2) is a basic first line troubleshooting guide. Contact your [Emerson sales office](#) for assistance if you are unable to resolve your field operation problem.

**Table 2. Fisher Yarway AT-18/28, AT-38/48, and TempLow 4300 Desuperheater Troubleshooting**

Problem	Reason	Possible Solution
Low temperature	Valve cycling, low system flow, valve throttling too close to seat	Reduce water pressure. Must be steam saturated pressure plus 50 psi
	Controller action reversed	Check system signal sense
	Water pressure too high	Reduce inlet water pressure
	Valve does not shut off	1. Check valve stroke 2. Check Instrument Signal (IS) shutoff point
	Valve seat leakage indicated	Secure system and evaluate seat leakage
High temperature, no control	Water pressure at valve inlet less than specified	1. Open water valve 2. Blow down strainer 3. Check supply pressure
	Air pressure to actuator/positioner	1. Air pressure too low. Adjust to 40-50 psi 2. Clean air set filter 3. Blow down air supply line 4. Check for moisture in instrument air
	Water pressure at valve as specified	1. Check valve stroke 2. Check water temperature 3. Check for valve plugging 4. Check water quality
Hunting or limit cycling	Temperature setpoint too close to saturation pressure temperature	1. Increase temperature (steam superheat) 2. Evaluate and readjust controller action
	Temperature controller tuning not correct	1. Positioner arm link bent, loose or binding
	Valve binding or friction	1. Check packing adjustment (some leakage expected) 2. Check packing gland/stem clearance 3. Use correct original type packing 4. Review positioner calibration 5. Check instrument air supply pressure

## Parts Ordering

Each desuperheater is assigned a serial number that can be found on the desuperheater nameplate attached to the body or on a tag attached to the water pipe. Refer to the serial number when contacting your [Emerson sales office](#) for technical assistance. When ordering a replacement parts, refer to the serial number and key number. The key numbers in figure 7, 8, and 9 can be used to help in part identification.

### **⚠ WARNING**

**Use only genuine Fisher replacement parts. Components that are not supplied by Emerson should not, under any circumstances, be used in any Fisher Yarway desuperheater, because they may void your warranty, might adversely affect the performance of the desuperheater, and could cause personal injury and property damage.**

## Parts List

### Note

Contact your Emerson sales office for Part Ordering information.

### AT-18/28 (figure 10)

Key	Description
1*	Spray Cylinder
2*	Piston Rings
3*	Piston / Stem Assembly
4*	Fastener Ring
5	Forging Body
6	Weld Neck Flange
7	Spacer
8	Hex Nut
9*	Packing Set
10	Bolt Stud
11*	Packing Follower
12*	Packing Flange
13*	Yoke Locknut

### AT-38/48 (figure 11)

Key	Description
1*	Spray Cylinder
2*	Piston Rings
3*	Piston / Stem Assembly
4*	Fastener Ring
5	Body Assembly
6	Body Flange
7	Flange Adaptor
8	Water Flange
9	Spacer
10	Body Flange
11*	Packing Set
12	Bolt Stud
13*	Packing Follower
14*	Packing Flange
15*	Yoke Locknut
16	Nord-Lock Washer

### TempLow 4300 (figure 12)

Key	Description
1*	Spray Cylinder
2*	Piston Rings Set
3*	Piston / Stem Assembly
4*	Fastener Ring
5	Welded Lower Body
6	Upper Body
7	Cap Screw Set
8*	Packing Set
9*	Packing Follower
10*	Packing Flange
11*	Yoke Locknut

Figure 10. Fisher Yarway AT-18/28 Desuperheater Assembly

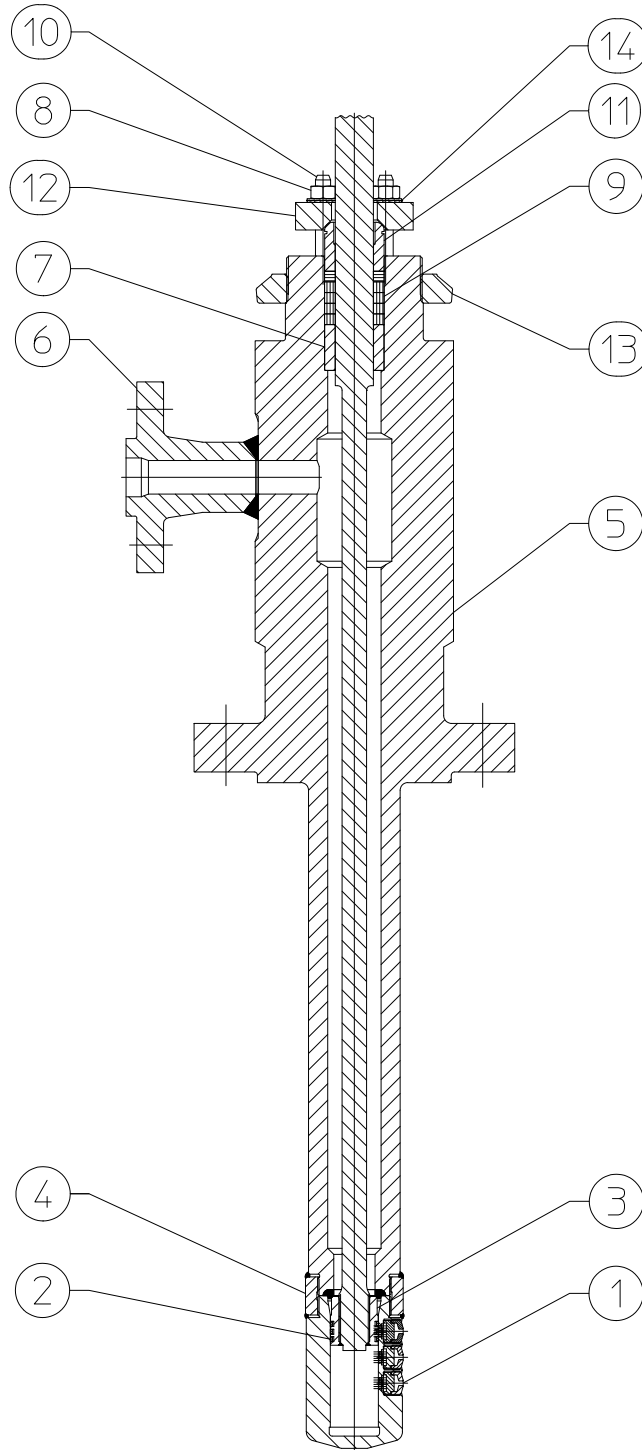


Figure 11. Fisher Yarway AT-38/48 Desuperheater Assembly

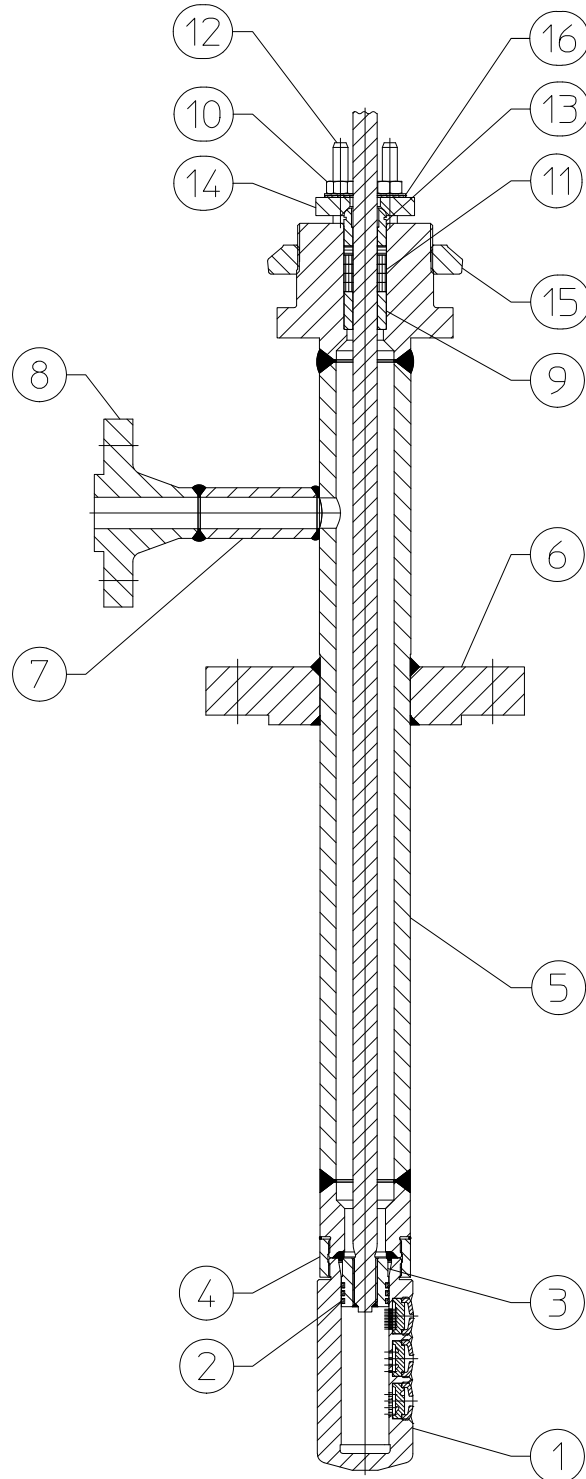
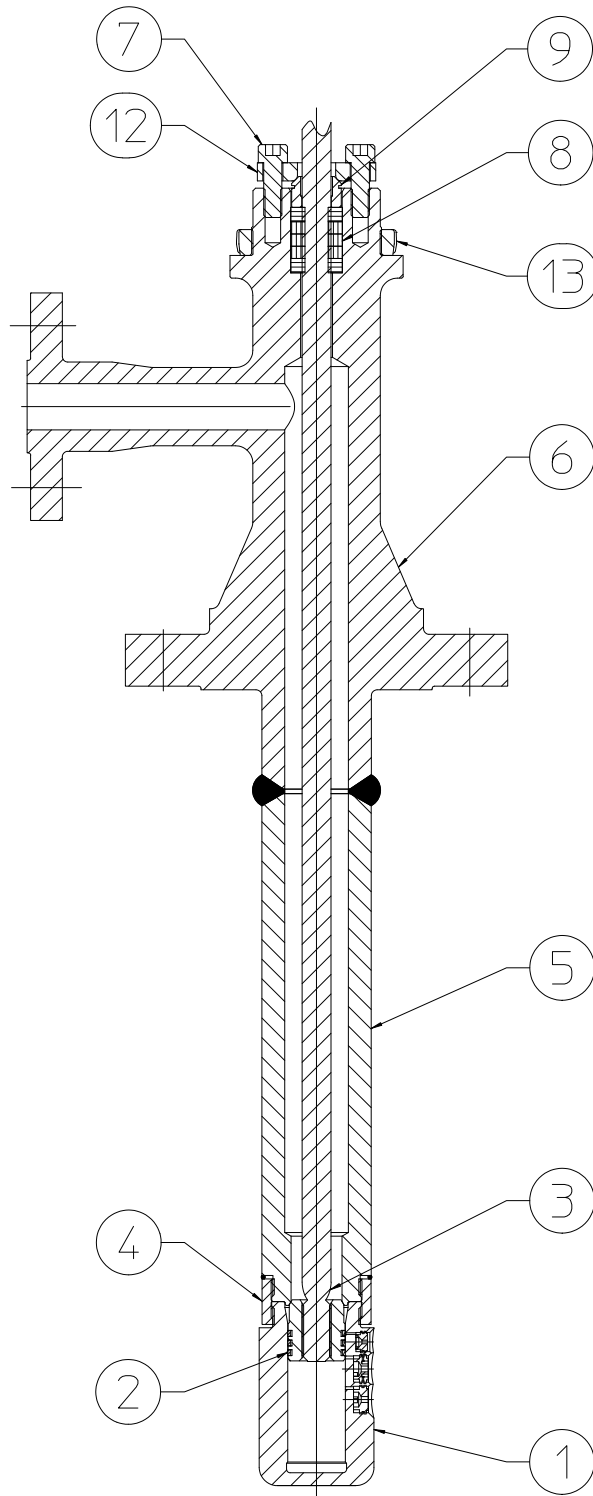


Figure 12. Fisher Yarway TempLow 4300 Desuperheater Assembly







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