USM21 and USM32
Sealed Bimetallic Steam Trap (for use with Universal Connectors)

Model	USM21	USM32
PMO	300 psig	464 psig
Trap Construction	Stainless Steel	
Connector Sizes	½", ¾", 1"	
Connector Connections	NPT, SW	
Connector Construction	Straight or strainer type (left or right hand) Stainless steel or cast steel	
Connector Options	SW connections to ANSI B16.11 Carbon steel USTSII trap station	

Description

The USM21 and USM32 is a pre-set and maintenance free sealed bimetallic steam trap manufactured in stainless steel. It is designed for applications such as steam tracing and main drips. When installed in any position with a suitable connector the USM21 or USM32 can easily and simply be removed without breaking in the pipeline, thus speeding up trap replacement with minimal system downtime.

Materials

No.	Part	Material	
1	Body	Stainless steel	ASTM A351 CF8
2	Cover	Stainless steel	
3	Seat	Stainless steel	
4	Stem	Stainless steel	
5	Bimetal	Nickel alloy	
6	Lock-nuts	Stainless steel	
7	Body/seat gasket	Stainless steel	
8	Screen	Stainless steel	
9	Inner gasket	Stainless steel / Graphite filler	Spirally wound AISI 304 strip
10	Outer gasket	Stainless steel / Graphite filler	Spirally wound AISI 304 strip
11	Connector screws	Carbon steel	ASTM A193 B7

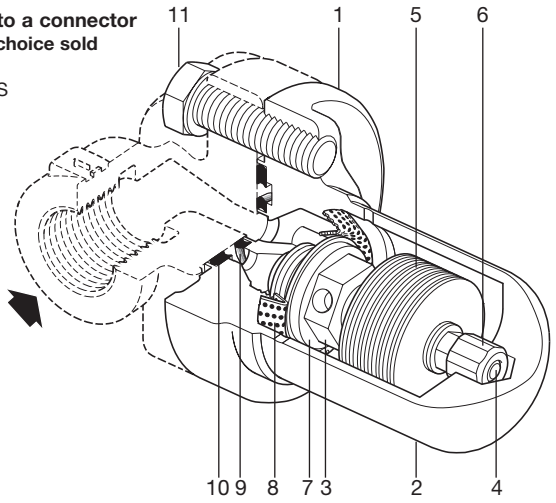
Capacities #/hr. Flow

Pressure (psig)	USM21		USM32	
	Cold Condensate	Hot condensate	Cold Condensate	Hot condensate
10	499	177	1966	349
25	995	300	2680	518
50	1677	447	3387	697
65	1954	520	3701	781
100	2507	666	4282	940
150	3027	842	4910	1118
200	3396	898	5412	1266
300	3917	988	6207	1507
400			6841	1705
435			7193	1818

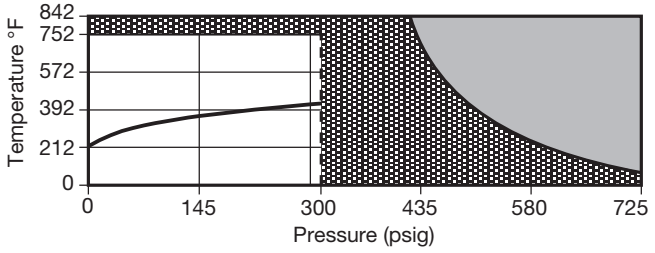
Traps are available in a range of subcooled temperature settings. Except for start-up and shutdown, they must operate above the minimum differential pressure values shown in the table below:

	Nominal subcooled temperature	External identification	Minimum differential pressure
USM21	-18°F (-10°C)	"-1"	73 psig (5 bar g)
USM21	-54°F (-30°C)	"-3"	29 psig (2 bar g)
USM21	-90°F (-50°C)	"-5"	8 psig (0.5 bar g)
USM21	-126°F (-70°C)	"-7"	2 psig (0.1 bar g)
USM32	-30°F (-18°C)	N/A	15 psig (1 bar g)

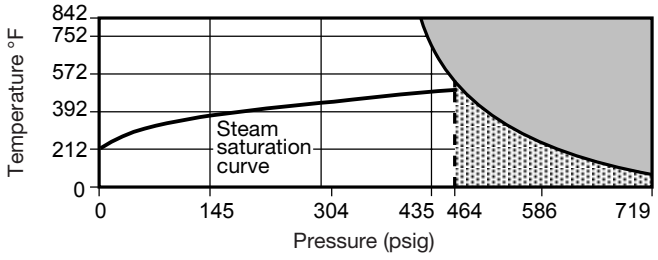
USM21 fitted to a connector (Connector of choice sold separately)
See TI-2-519-US



Pressure / temperature limits USM21



Pressure / temperature limits USM32



The product **must not** be used in this region.

The product should not be used in this region or beyond its operating range as damage to the internals may occur.

Limiting Operating Conditions

USM21

Max operating pressure	(PMO) 300 psig (21 bar g)
Max operating temperature	(TMO) 752°F (400°C)

USM32

Max operating pressure	(PMO) 464 psig (32 bar g)
Max operating temperature	(TMO) 842°F (400°C)

Local regulation may restrict the use of this product below the conditions quoted.
Limiting conditions refer to standard connections only.

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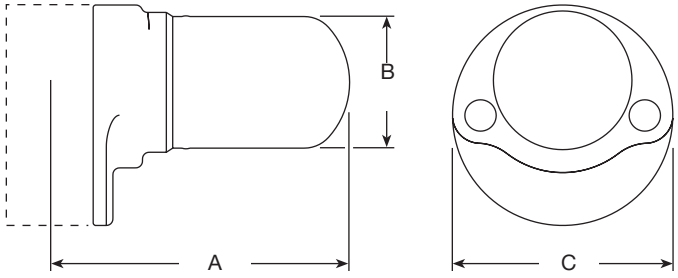
Pressure Shell Design Conditions

USM21	
PMA Max allowable pressure	725 psig @ 104°F (50 barg @ 40°C)
TMA Max allowable temperature	842°F @ 420 psig (400°C @ 29 barg)
USM32	
PMA Max allowable pressure	719 psig @ 100°F (49.6 barg @ 38°C)
TMA Max allowable temperature	842°F @ 418 psig (450°C @ 28.8 barg)



Connector Size	A Straight Connector	A Strainer Connector	A USTS II
½"	4.1"	4.1"	3.7"
¾"	4.1"	4.1"	3.7"
1"	4.5	4.5	N/A
all	B	C	WEIGHT TRAP ONLY
all	1.6"	2.7"	1.3 lb

Sample Specification

Steam trap shall be a sealed stainless steel bimetallic thermostatic USM21 or USM32 type manufactured in stainless steel and be suitable for operating pressures up to 300 psig(21 barg). The traps to be zero maintenance and to be connected to separate pipeline connectors or universal trap station, by two screws for quick and simple installation/ replacement. The thermostatic element has 4 operating ranges and will discharge condensate at 18, 54,90 and 126 deg F blow steam temperature depending on you choice of range. Trap can be installed in any plane.

Installation

The connector can be installed in horizontal or vertical pipeline. The trap station USTS II in horizontal pipeline. The connector face must be in a vertical plane. The trap shall be fitted to the connector or trap station with 2 bolts with a torque of 22-26 FT-LB. Full port isolation valves should be installed upstream and down stream of the trap connector unit.

Maintenance

Trap must be isolated and cooled before performing any work. There are no internal parts, which can be serviced. Trap module will be completely replaced if it is determined to be failed. 9/16" socket will remove bolts to allow for remove of the trap module. Make sure gasket surface on connector is clean and replace with a new module. Torque to 22-26 FT-LB. Apply steam and check for proper operation and any steam leaks. Complete Installation and maintenance instruction are given on the IM-P625-03, which accompanies the product.

Spare parts

The USM21 and the USM32 are sealed non-maintainable trap units. No internal spares are available. The spares which are available are shown in heavy outline. Parts shown in a broken line are not available as spares.

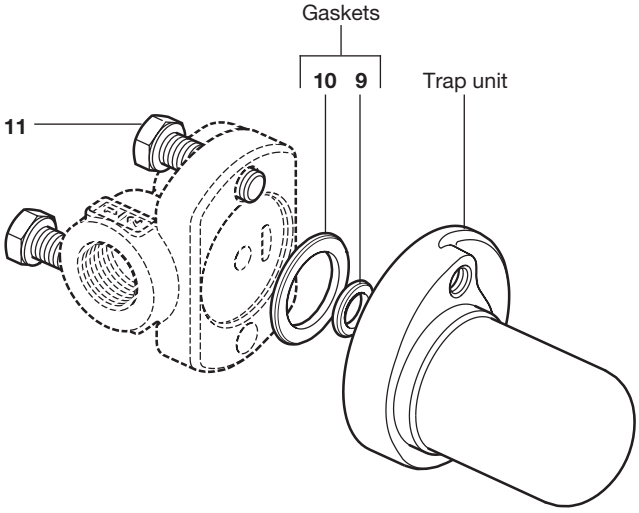
Available spares: USM21 and USM32	
Connector screws (2 off)	**11**
Complete trap unit inclusive of gaskets (**9** and **10**) and connector screws (**11**)	

Note: The gaskets contain sharp metal reinforcement, please handle with care.

How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state if ordering a complete trap the nominal operating temperature of the steam trap.

Example: Connector screws for a USM21 sealed bimetallic steam trap.



Recommended tightening torques

Item No.	Part	or / mm	22 - 26 ft-lb
11	Connector screws	9/16"	30 - 35 Nm

Spirax Sarco, Inc., 1150 Northpoint Blvd, Blythewood, SC 29016 Telephone: (803) 714-2000 FAX (803) 714-2222