



TI-P806-01
CMGT Issue 3

PC90 4-Bolt Pipeline Connector

Description

The 4-Bolt PC90 pipeline connector is designed for the quick fitment of replacement steam traps without the need to break into the steam pipeline itself, reducing system downtime. The PC90 is designed to ASME Class 900 with all stainless steel construction specifically for use with the UTDS90 and USM90 steam traps.

The PC90 is available in both Left to Right and Right to Left flow configurations and with or without a strainer blowdown connection.

Standards

This product fully complies with the requirements of the European Pressure Equipment Directive 2014/68/EU and is considered SEP.

This product has been designed in line with the following standards: ASME B31.3 and B16.34 Class 900 (body design conditions).

Certification

This product is supplied with EN 10204 3.1 certification as standard.

Note: All certification/inspection requirements must be stated at the time of order placement.

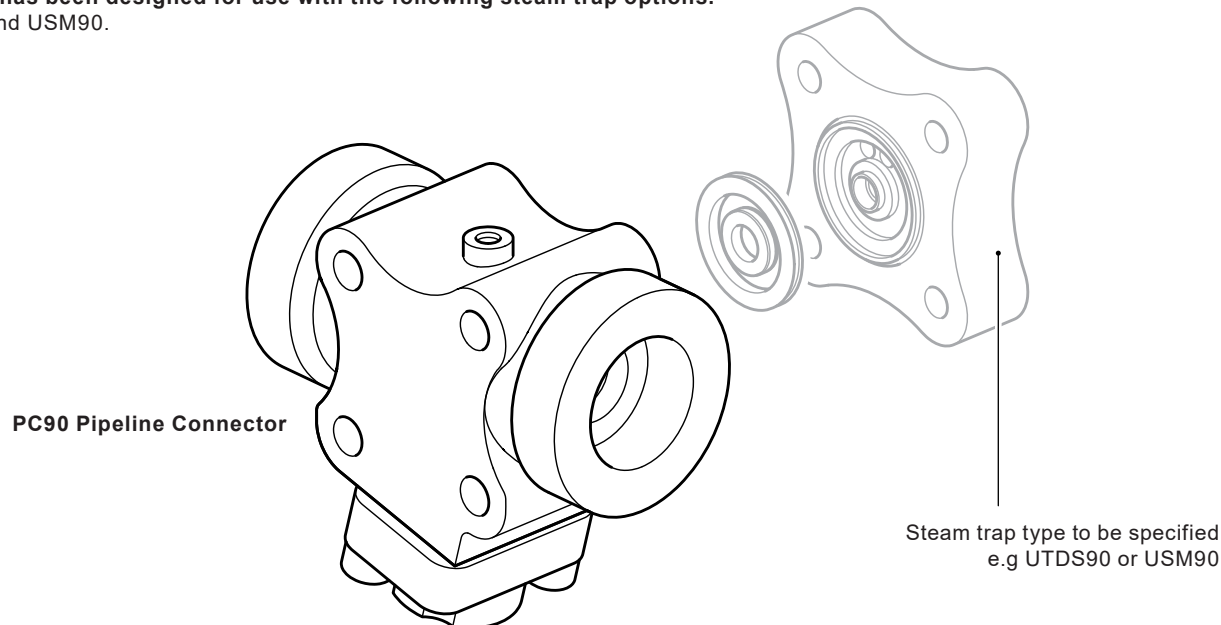
Canadian Registration (CRN) for the PC90 is pending.

Sizes and pipe connections

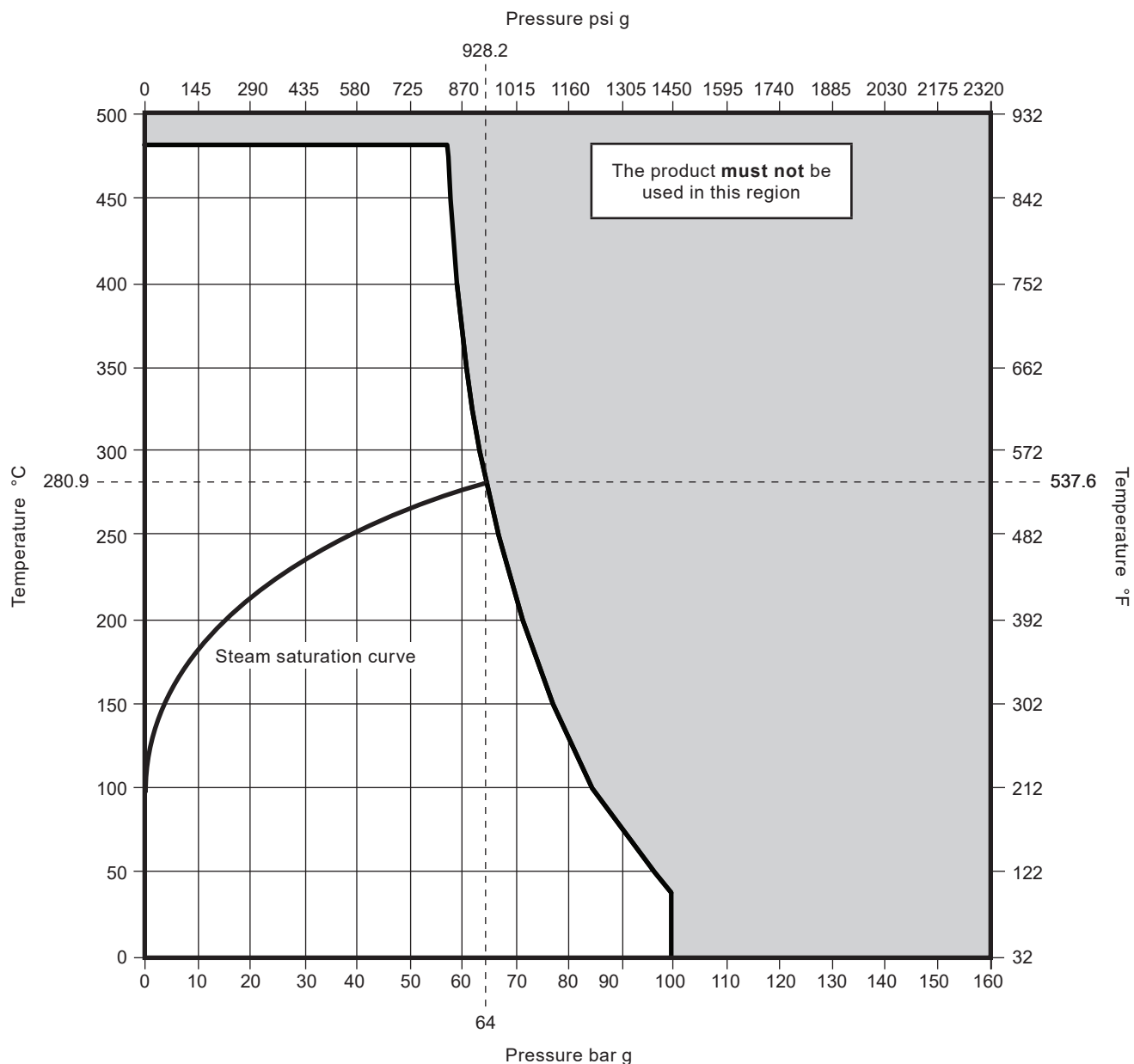
Condensate inlet/outlet

Size	ASME B16.11 Class 3000 Socket Weld	Butt Weld	Flanged ASME Class 600	Flanged ASME Class 900
½" (DN15)	Y		Y	Y
¾" (DN20)	Y	Y	Y	Y
1" (DN25)	Y	Y	Y	Y

The PC90 has been designed for use with the following steam trap options:-
UTDS90 and USM90.



ASME Class 600 Pressure/temperature limits (ISO 6552)



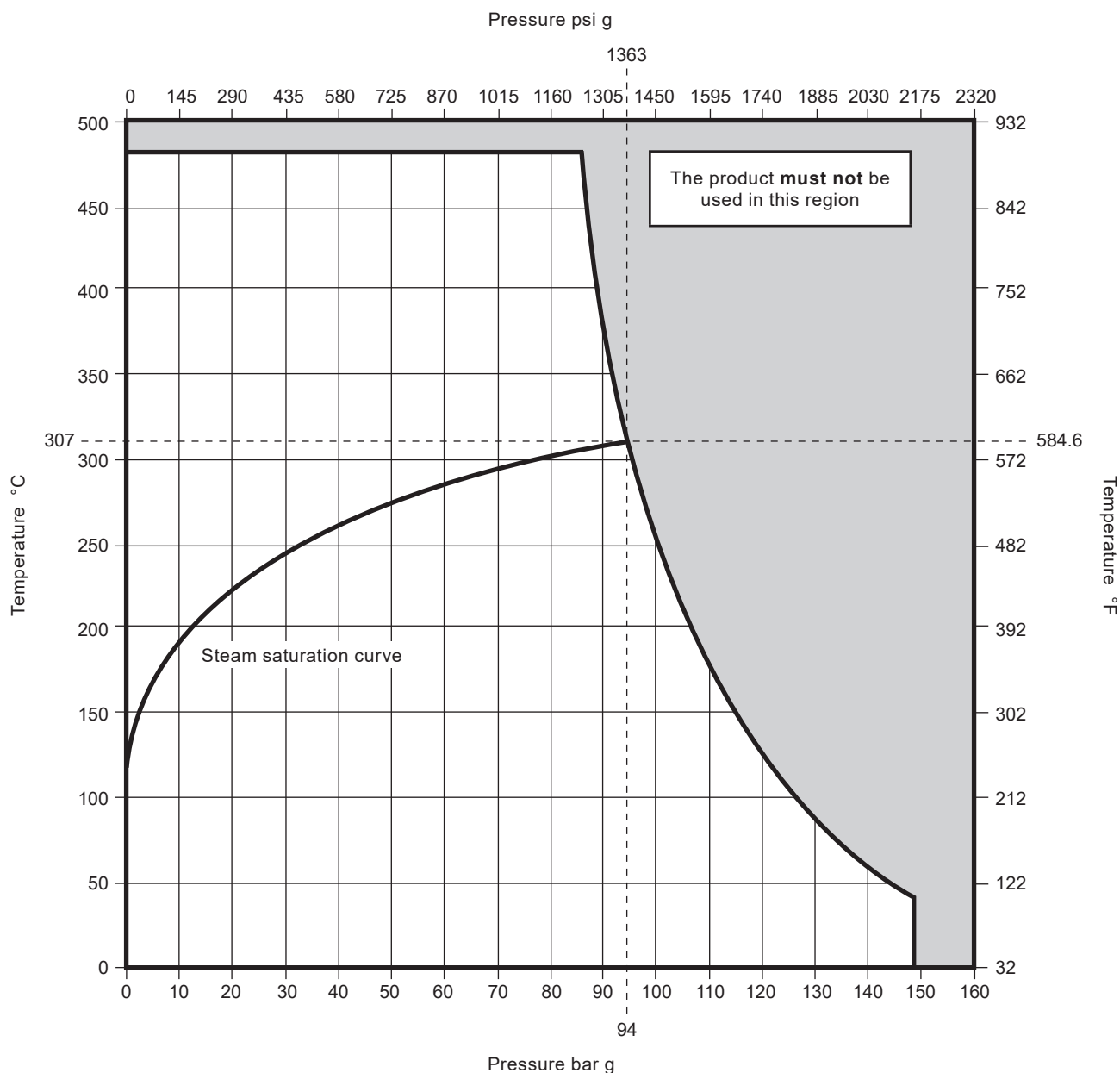
- Notes:**
- If flange connections are fitted then these will limit the maximum design conditions of the pipeline connector.
 - The maximum operating limits of the complete assembly will be dictated by the steam trap of choice. Reference the specific steam trap Technical Information sheet for its maximum pressure/temperature limitations.

Body design conditions		ASME Class 600	
PMA	Maximum allowable pressure	99.4 bar g @ 38 °C	1442 psi g @ 100 °F
TMA	Maximum allowable temperature	482 °C @ 57 bar g	900 °F @ 828 psi g
Minimum allowable temperature		-46 °C	-50.8 °F
PMO	Maximum operating pressure for saturated steam	64 bar g @ 281 °C	928.2 psi g @ 537.6 °F
TMO	Maximum operating temperature	482 °C @ 57 bar g	900 °F @ 828 psi g
Minimum operating temperature *		0 °C	32 °F
Designed for a maximum cold hydraulic test pressure of		149 bar g	2161 psi g

The PC90 is suitable for full vacuum condition.

* **Note:** For lower operating temperatures consult Spirax Sarco

ASME Class 900 Pressure/temperature limits (ISO 6552)



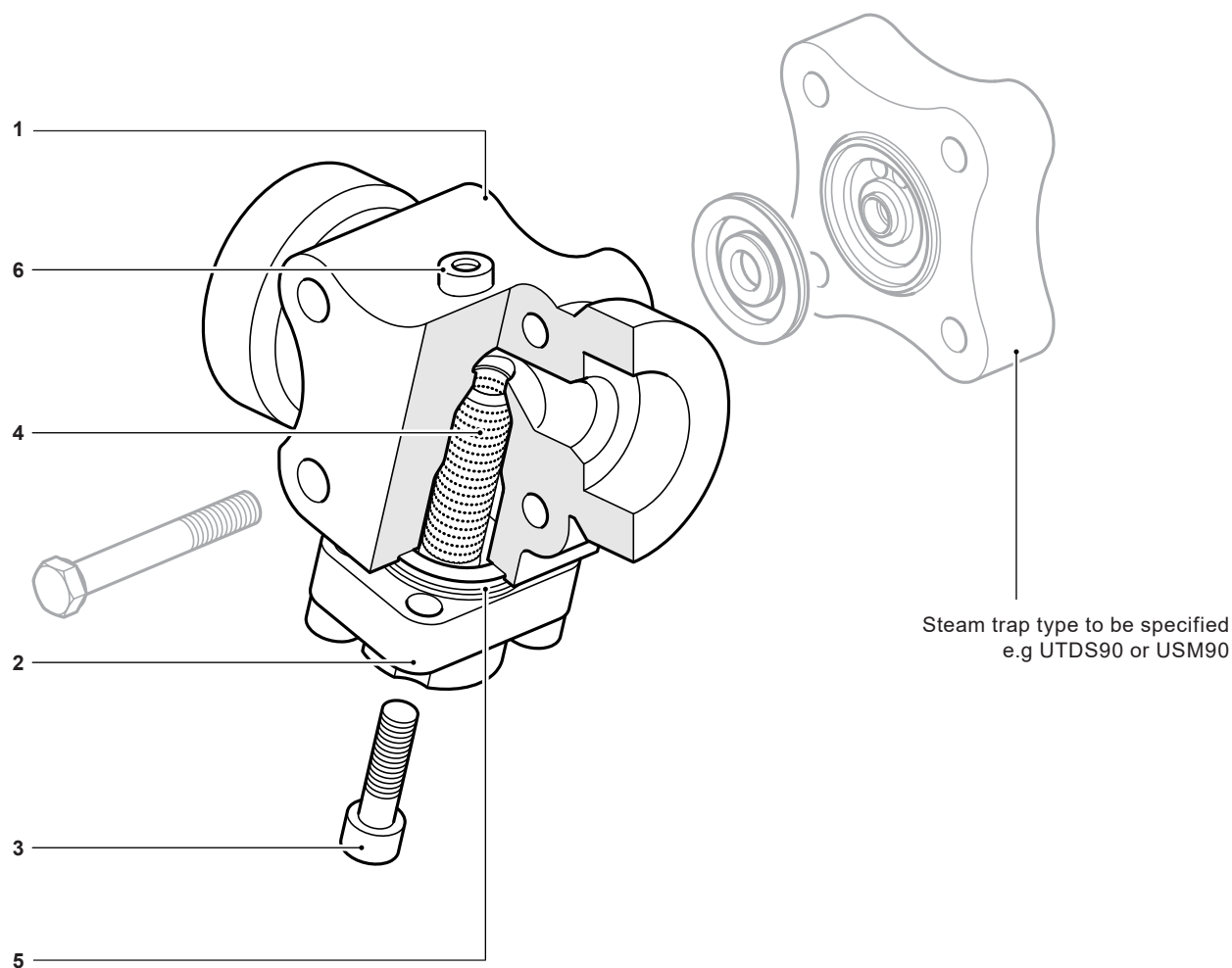
- Notes:**
- If flange connections are fitted then these will limit the maximum design conditions of the pipeline connector.
 - The maximum operating limits of the complete assembly will be dictated by the steam trap of choice. Reference the specific steam trap Technical Information sheet for its maximum pressure/temperature limitations.

Body design conditions		ASME Class 900	
PMA	Maximum allowable pressure	149.1 bar g @ 38 °C	2163 psi g @ 100 °F
TMA	Maximum allowable temperature	482 °C @ 86 bar g	900 °F @ 1245 psi g
Minimum allowable temperature		-46 °C	-50.8 °F
PMO	Maximum operating pressure for saturated steam service	94 bar g @ 307 °C	1363 psi g @ 584.6 °F
TMO	Maximum operating temperature	482 °C @ 86 bar g	900 °F @ 1245 psi g
Minimum operating temperature		0 °C	32 °F
Designed for a maximum cold hydraulic test pressure of		224 bar g	3249 psi g

The PC90 is suitable for full vacuum condition.

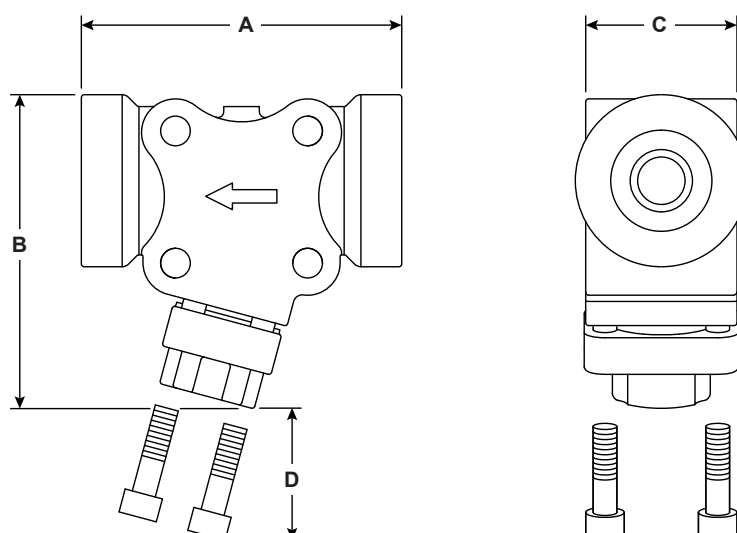
* **Note:** For lower operating temperatures consult Spirax Sarco

Materials



No.	Part	Material
1	Body	Austenitic stainless steel ASTM A351 CF8M
2	Strainer cap	Austenitic stainless steel ASTM A351 CF8M
3	Strainer cap screw (4 off)	Austenitic stainless steel ASTM A193 grade B8 class 2
4	Strainer screen	Austenitic stainless steel ASTM A478 316L
5	Gasket	Graphite/stainless steel Graphite Foil/UNS S30400 - EN 1.4301
6	M6 Digital Steam Trap Monitoring Interface	

Dimensions/weights (approximate) in mm (inches) and kg (lbs)



Size	A Blank cap and BD adaptor				B with Blank cap			
	SW	BW	Class 600	Class 900	SW	BW	Class 600	Class 900
1/2"	108 (4.25)		260 (10.24)	260 (10.24)	106 (4.17)		124.5 (4.90)	137.5 (5.41)
3/4"		107 (4.21)	238 (9.37)	264 (10.39)		106 (4.17)	135.5 (5.33)	142 (5.59)
1"			248 (9.76)	270 (10.63)			139 (5.47)	151.5 (5.96)

Size	B with BD adaptor				C	D
	SW	BW	Class 600	Class 900		
1/2"	104 (4.09)		122.5 (4.82)	135.5 (5.33)	51 (2.00)	85 (3.35)
3/4"		104 (4.09)	133.5 (5.26)	140 (5.51)		
1"			137 (5.39)	149.5 (5.89)		

Weight - with Blank Cap

	1/2"	3/4"	1"
SW	2.48 (5.46)	2.43 (5.36)	2.35 (5.18)
BW		2.11 (4.65)	2.14 (4.72)
Class 600	4.31 (9.50)	5.14 (11.33)	5.97 (13.16)
Class 900	6.41 (14.13)	7.43 (16.38)	9.88 (21.78)

Weight - with Blow Down Adaptor

	1/2"	3/4"	1"
SW	2.42 (5.33)	2.37 (5.22)	2.29 (5.05)
BW		2.05 (4.52)	2.08 (4.59)
Class 600	4.25 (9.37)	5.08 (11.20)	5.91 (13.03)
Class 900	6.35 (14.00)	7.37 (16.25)	9.82 (21.65)

Safety information, installation and maintenance

For full details see Installation and Maintenance Instructions (IM-P806-02) supplied with the product.

Disposal

Some or all components of this product are recyclable. No environmental hazards are anticipated during the disposal of recyclable parts. For more information, please contact your local Spirax Sarco manufacturing or sales centre.

Installation note:

The following criteria must be satisfied to ensure that the steam trap will operate correctly and ensure effective condensate removal.

- The PC90 shall be installed with flow in the direction of the arrow. Flow can be horizontal (either direction) or vertical with flow downwards.
- The connection face for the connector steam trap must always be in the vertical.
- The correct steam trap and end connection must be selected to meet the system design conditions.
- Steam trap connector bolts are supplied with the selected steam trap.

After installation it is recommended that the pipeline connector is insulated to minimise radiated heat losses and to protect personnel from burns risk. Please note that there are some trap types that should not be insulated.

Suitable isolation valves must be installed to allow for safe maintenance/replacement.

How to specify

Pipeline connector shall be a Spirax Sarco PC90 4-bolt pipeline connector, designed to ASME Class 900. The connector shall be of all stainless steel construction and suitable for use with UTDS90 and USM90 steam traps.

The pipeline connector shall be provided with Left to Right or Right to Left flow configuration and with or without a strainer blowdown connection.

End connections shall be specified to suit the application - connection type and size.

How to order

The PC90 is typically used with a USM90, UTDS90 or other suitable pipeline connector steam trap, which needs to be ordered separately.

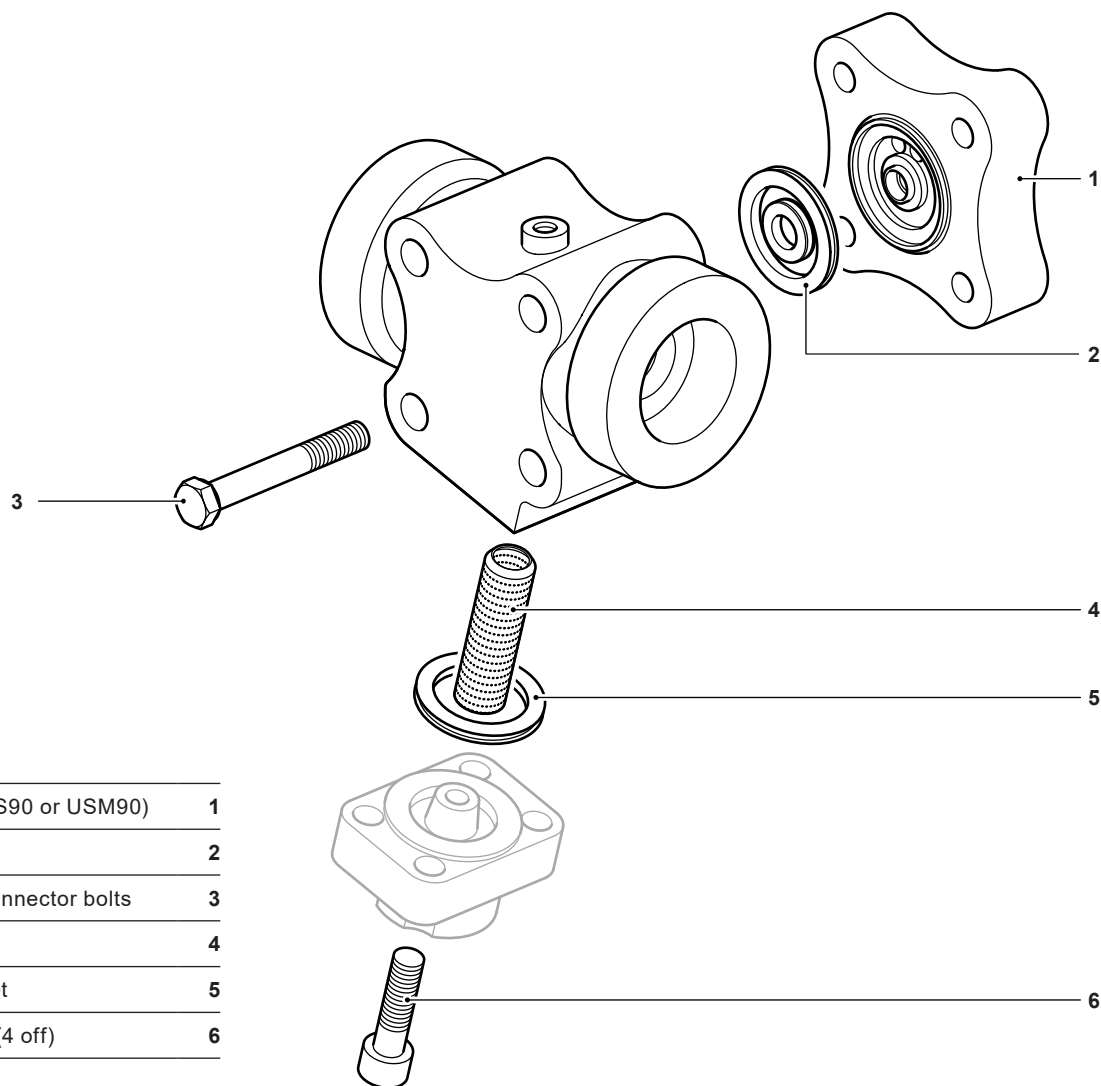
Note: Any optional extras need to be specified at the time of order placement.

How to order example:

1 off Spirax Sarco ¾" PC90 pipeline connector with socket weld connections.

Spare parts

The spare parts available are shown below. Parts drawn in a grey line are not supplied as spares.



Steam Trap (e.g UTDS90 or USM90)	1
Pipeline Gaskets	2
Pipeline heavy hex connector bolts	3
Strainer Screen	4
Strainer screen gasket	5
Strainer Cap Screws (4 off)	6

Available spares

Maintenance Kit (contains strainer screen and gasket)	4, 5
---	------

How to order spares

Always order spares using the description given in the column headed 'Available spares' and state model number.
Example: 1 - Maintenance Kit for ½" PC90 connector.

Recommended tightening torques

Item	Part				N m	ft lbs
						
6	Strainer Cap Screws		¼" A/F	⅝" UNC	14	10.3
3	Heavy hex connector bolts		1 ⅛" A/F	⅜" UNC	26	19.2