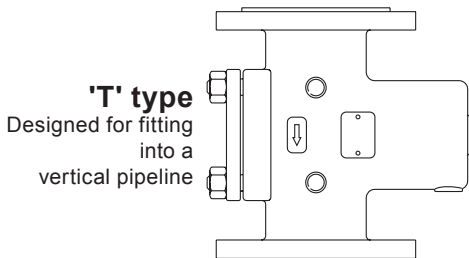
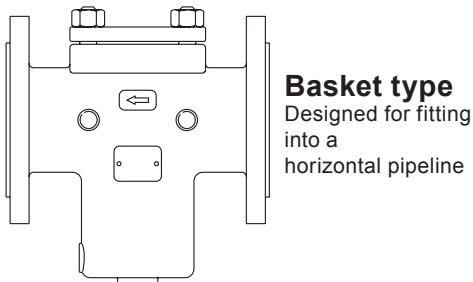


**Fig B34 and Fig B36**  
**'T' Type or Basket Type Strainers**  
Installation and Maintenance Instructions

1. Safety information
2. General product information
3. Installation
4. Commissioning
5. Operation
6. Fault finding
7. Maintenance
8. Spare parts



# 1. Safety information

Safe operation of these products can only be guaranteed if they are properly installed, commissioned, used and maintained by qualified personnel (see Section 1.11) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

## 1.1 Intended use

Referring to the Installation and Maintenance Instructions, name-plate and Technical Information Sheet, check that the product is suitable for the intended use/application. The products listed below comply with the requirements of the European Pressure Equipment Directive 97/23/EC and carry the **CE** mark when so required. It should be noted that products rated as 'SEP' are required by the Directive not to carry the **CE** mark. The products fall within the following Pressure Equipment Directive categories:

Product	Group 1 Gases	Group 2 Gases	Group 1 Liquids	Group 2 Liquids	
<b>Fig B34</b> and <b>Fig B36</b>	DN40 - DN100	2	1	2	SEP
	DN125 - DN200	3	2	2	SEP
	DN250	3	2	2	1
	DN300 - DN350	3	3	2	1

- i) These products have been specifically designed for use with liquids or gases which are in Groups 1 and 2 of the above mentioned Pressure Equipment Directive. The products' use on other fluids may be possible but, if this is contemplated, Spirax Sarco should be contacted to confirm the suitability of the product for the application being considered.
- ii) Check material suitability, pressure and temperature and their maximum and minimum values. If the maximum operating limits of the product are lower than those of the system in which it is being fitted, or if malfunction of the product could result in a dangerous overpressure or overtemperature occurrence, ensure a safety device is included in the system to prevent such over-limit situations.
- iii) Determine the correct installation situation and direction of fluid flow.
- iv) Spirax Sarco products are not intended to withstand external stresses that may be induced by any system to which they are fitted. It is the responsibility of the installer to consider these stresses and take adequate precautions to minimise them.
- v) Remove protection covers from all connections and protective film from all name-plates, where appropriate, before installation on steam or other high temperature applications.

## 1.2 Access

Ensure safe access and if necessary a safe working platform (suitably guarded) before attempting to work on the product. Arrange suitable lifting gear if required.

## 1.3 Lighting

Ensure adequate lighting, particularly where detailed or intricate work is required.

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## 1.4 Hazardous liquids or gases in the pipeline

Consider what is in the pipeline or what may have been in the pipeline at some previous time. Consider: flammable materials, substances hazardous to health, extremes of temperature.

## 1.5 Hazardous environment around the product

Consider: explosion risk areas, lack of oxygen (e.g. tanks, pits), dangerous gases, extremes of temperature, hot surfaces, fire hazard (e.g. during welding), excessive noise, moving machinery.

## 1.6 The system

Consider the effect on the complete system of the work proposed. Will any proposed action (e.g. closing isolation valves, electrical isolation) put any other part of the system or any personnel at risk?

Dangers might include isolation of vents or protective devices or the rendering ineffective of controls or alarms. Ensure isolation valves are turned on and off in a gradual way to avoid system shocks.

## 1.7 Pressure systems

Ensure that any pressure is isolated and safely vented to atmospheric pressure. Consider double isolation (double block and bleed) and the locking or labelling of closed valves. Do not assume that the system has depressurised even when the pressure gauge indicates zero.

## 1.8 Temperature

Allow time for temperature to normalise after isolation to avoid danger of burns.

## 1.9 Tools and consumables

Before starting work ensure that you have suitable tools and/or consumables available. Use only genuine Spirax Sarco replacement parts.

## 1.10 Protective clothing

Consider whether you and/or others in the vicinity require any protective clothing to protect against the hazards of, for example, chemicals, high/low temperature, radiation, noise, falling objects, and dangers to eyes and face.

## 1.11 Permits to work

All work must be carried out or be supervised by a suitably competent person. Installation and operating personnel should be trained in the correct use of the product according to the Installation and Maintenance Instructions.

Where a formal 'permit to work' system is in force it must be complied with. Where there is no such system, it is recommended that a responsible person should know what work is going on and, where necessary, arrange to have an assistant whose primary responsibility is safety.

Post 'warning notices' if necessary.

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## **1.12 Handling**

Manual handling of large and/or heavy products may present a risk of injury. Lifting, pushing, pulling, carrying or supporting a load by bodily force can cause injury particularly to the back. You are advised to assess the risks taking into account the task, the individual, the load and the working environment and use the appropriate handling method depending on the circumstances of the work being done.

## **1.13 Residual hazards**

In normal use the external surface of the product may be very hot. If used at the maximum permitted operating conditions the surface temperature of some products may reach temperatures of 538°C (1000°F).

Many products are not self-draining. Take due care when dismantling or removing the product from an installation (refer to 'Maintenance instructions').

## **1.14 Freezing**

Provision must be made to protect products which are not self-draining against frost damage in environments where they may be exposed to temperatures below freezing point.

## **1.15 Disposal**

Unless otherwise stated in the Installation and Maintenance Instructions, these products are recyclable and no ecological hazard is anticipated with disposal providing due care is taken.

## **1.16 Returning products**

Customers and stockists are reminded that under EC Health, Safety and Environment Law, when returning products to Spirax Sarco they must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk. This information must be provided in writing including Health and Safety data sheets relating to any substances identified as hazardous or potentially hazardous.

## 2. General product information

### 2.1 General description

The **Fig B34 / Fig B36 basket type** strainers have been designed for fitting into horizontal pipelines and have a drain plug fitted at the bottom of the body to drain the unit. The **Fig B34 / Fig B36 'T' type** strainers have been designed for fitting into vertical pipelines and can have an optional drain plug fitted on the side of the body to drain the unit. These strainers are supplied as integrally flanged units and have a stainless steel strainer screen with 3 mm perforations as standard and the cover has a tapping for fitting a handling eyebolt:

- DN125 to DN150 ¾" UNC-2B tapping.
- DN200 to DN350 ¾" UNC-2B tapping.

**Optional strainer screens - Available on request for all sizes:**

- Stainless steel strainer screen **having 0.8 mm perforations.**
- Stainless steel strainer screen **having 1.6 mm perforations.**
- Stainless steel strainer screen **having Mesh 40.**
- Stainless steel strainer screen **having Mesh 100.**

#### Option

The body has two bosses that can be drilled and tapped to accommodate pressure gauges

#### Standards

These products fully complies with the requirements of the European Pressure Equipment Directive 97 / 23 / EC and carries the **CE** mark when so required.

#### Certification

These products are available with certification to EN 10204 3.1 and NACE approval. **Note:** All certification/ inspection requirements must be stated at the time of order placement.

#### Optional extras - Available at extra cost

**Pressure gauge connections** - Bosses are provided on the body upstream and downstream of the screen which can be drilled and tapped to accommodate pressure gauges.

**The cover can be drilled and tapped for an air vent** - If you want to use the strainer on a vertical pipeline ('T' position) the body should be drained of condensate via a drain plug that is situated at the side of the body.

### 2.2 Sizes and pipe connections

DN40, DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250, DN300 and DN350.

#### Flanged:

- EN 1092 PN16, PN25 and PN40.
- JIS / KS 10K and JIS / KS 20K.
- ASME B 16.5 Class 150 and Class 300.

**Face-to-face dimensions are in accordance with:**

- EN 558 Series 1 for the PN and JIS / KS.
- ASME B16.10 Class 150 for the ASME Class 150 rated design.
- ASME B16.10 Class 300 for the ASME Class 300 rated design.

### 2.3 Kv values

For conversion:  $C_V(\text{UK}) = K_V \times 0.963$      $C_V(\text{US}) = K_V \times 1.156$

Size	DN40	DN50	DN65	DN80	DN100
K <sub>v</sub>	25	43	84	156	353

## 2.4 Materials

No. Part	Material		
1 Body	Carbon steel	<b>Fig B34</b>	EN 10213 1.0619+N and ASTM A216 WCB
	Stainless steel	<b>Fig B36</b>	EN 10213 1.4308 and ASTM A 351-CF8
2 Cover	Carbon steel	<b>Fig B34</b>	EN 10213 1.0619+N and ASTM A216 WCB
	Stainless steel	<b>Fig B36</b>	EN 10213 1.4308 and ASTM A 351-CF8
3 Screen	Stainless steel		
4 Gasket	Reinforced exfoliated graphite		
5 Studs	Carbon steel	<b>Fig B34</b>	ASTM A193 Gr. B7
		<b>Fig B36</b>	ASTM A193 Gr. B8M2
6 Nuts	Carbon steel	<b>Fig B34</b>	ASTM A194 Gr. 2H
		<b>Fig B36</b>	ASTM A194 Gr. 8M

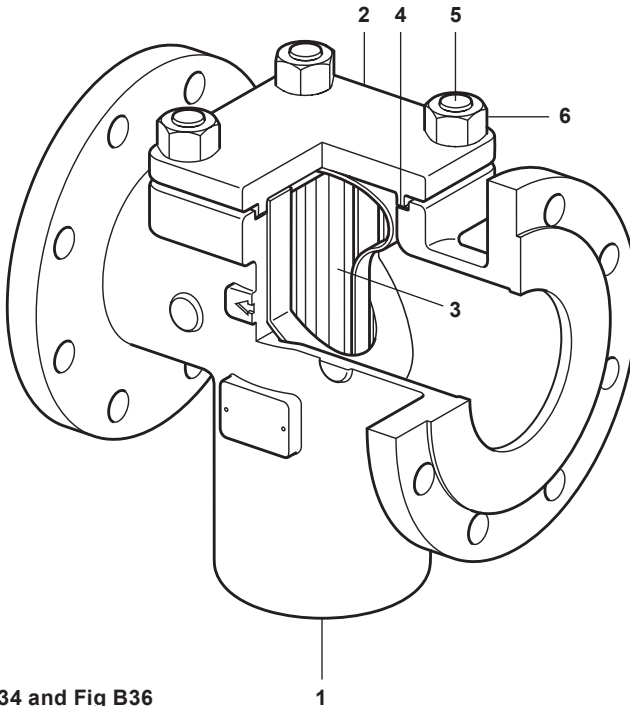


Fig. 1 Fig B34 and Fig B36

DN125	DN150	DN200	DN250	DN300	DN350
488	748	1869	3686	5244	8100

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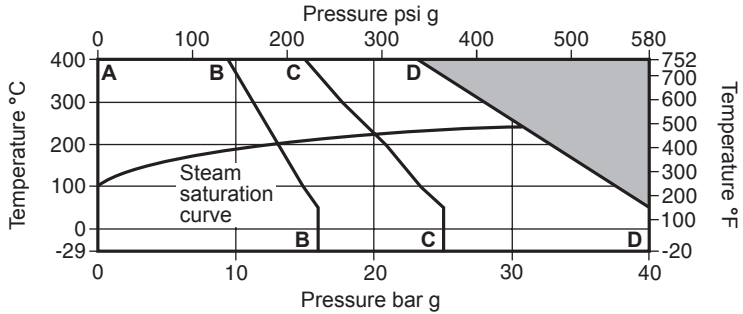
## 2.5 Typical product name-plate - Fig B34


<b>spirax/sarco</b>			
Type	FIG B34 DN250 PN40		
○	PMA: 40 bar g	3 mm	○
	T max : 400°C	T min : -29°C	
Serial No	<input type="text"/>		
<b>CE</b> 0038		Made in France	



## 2.6 Pressure/temperature limits - Fig B34

**Flanged:**  
**PN16**  
**PN25**  
**PN40**

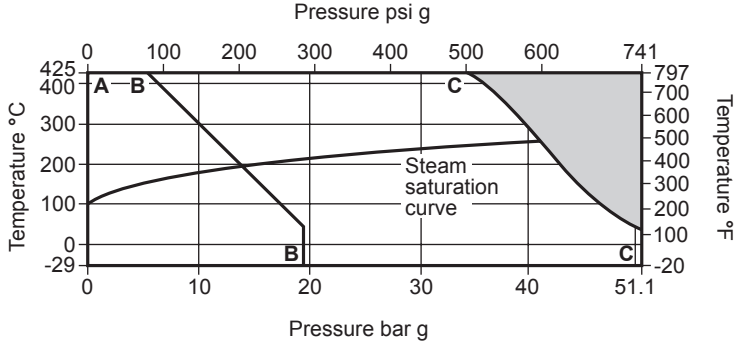



 The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

	Body design condition	PN16
	PMA Maximum allowable pressure	16 bar g @ 50°C (232 psi g @ 122°F)
	TMA Maximum allowable temperature	400°C @ 9.5 bar g (752°F @ 138 psi g)
	Minimum allowable temperature	-29°C (-20°F)
<b>A - B - B</b>		
<b>PN16</b>	PMO Maximum operating pressure for saturated steam service	13.4 bar g @ 193°C (194 psi g @ 379°F)
	TMO Maximum operating temperature	400°C @ 9.5 bar g (752°F @ 138 psi g)
	Minimum operating temperature	-29°C (-20°F)
	Designed for a maximum cold hydraulic test pressure of:	24 bar g (348 psi g)
	Body design condition	PN25
	PMA Maximum allowable pressure	25 bar g @ 50°C (362 psi g @ 122°F)
	TMA Maximum allowable temperature	400°C @ 14.8 bar g (752°F @ 215 psi g)
	Minimum allowable temperature	-29°C (-20°F)
<b>A - C - C</b>		
<b>PN25</b>	PMO Maximum operating pressure for saturated steam service	20.2 bar g @ 217°C (293 psi g @ 422°F)
	TMO Maximum operating temperature	400°C @ 14.8 bar g (752°F @ 215 psi g)
	Minimum operating temperature	-29°C (-20°F)
	Designed for a maximum cold hydraulic test pressure of:	37.5 bar g (543 psi g)
	Body design condition	PN40
	PMA Maximum allowable pressure	40 bar g @ 50°C (580 psi g @ 122°F)
	TMA Maximum allowable temperature	400°C @ 23.8 bar g (752°F @ 345 psi g)
	Minimum allowable temperature	-29°C (-20°F)
<b>A - D - D</b>		
<b>PN40</b>	PMO Maximum operating pressure for saturated steam service	31.2 bar g @ 236°C (452 psi g @ 457°F)
	TMO Maximum operating temperature	400°C @ 23.8 bar g (752°F @ 345 psi g)
	Minimum operating temperature	-29°C (-20°F)
	Designed for a maximum cold hydraulic test pressure of:	60 bar g (870 psi g)

## 2.6 Pressure/temperature limits - Fig B34 (continued)

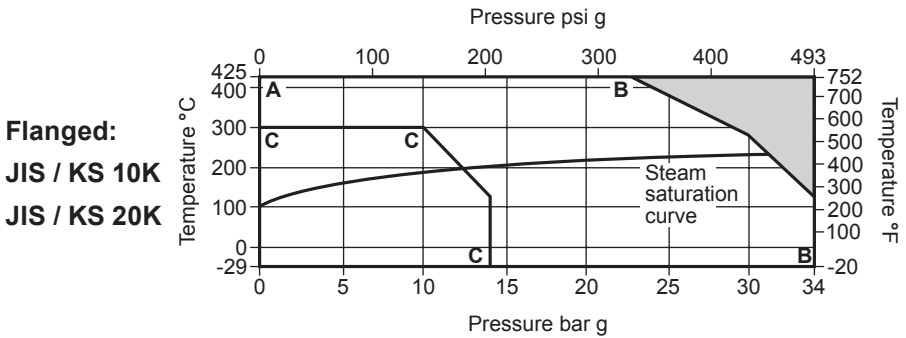
**Flanged:**  
**ASME**  
**Class 150**  
**ASME**  
**Class 300**




 The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

	Body design condition	ASME Class 150	
	PMA Maximum allowable pressure	19.6 bar g @ 38°C	(284 psi g @ 100°F)
	TMA Maximum allowable temperature	425°C @ 5.5 bar g	(797°F @ 80 psi g)
<b>A - B - B</b>	Minimum allowable temperature	-29°C	(-20°F)
<b>ASME 150</b>	PMO Maximum operating pressure for saturated steam service	13.9 bar g @ 197°C	(201 psi g @ 386°F)
	TMO Maximum operating temperature	425°C @ 5.5 bar g	(797°F @ 80 psi g)
	Minimum operating temperature	-29°C	(-20°F)
	Designed for a maximum cold hydraulic test pressure of:	29.4 bar g	(426 psi g)
	Body design condition	ASME Class 300	
	PMA Maximum allowable pressure	51.1 bar g @ 38°C	(741 psi g @ 100°F)
	TMA Maximum allowable temperature	425°C @ 28.8 bar g	(797°F @ 418 psi g)
<b>A - C - C</b>	Minimum allowable temperature	-29°C	(-20°F)
<b>ASME 300</b>	PMO Maximum operating pressure for saturated steam service	42 bar g @ 255°C	(609 psi g @ 491°F)
	TMO Maximum operating temperature	425°C @ 28.8 bar g	(797°F @ 418 psi g)
	Minimum operating temperature	-29°C	(-20°F)
	Designed for a maximum cold hydraulic test pressure of:	77 bar g	(1 116 psi g)

## 2.6 Pressure/temperature limits - Fig B34 (continued)



 The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

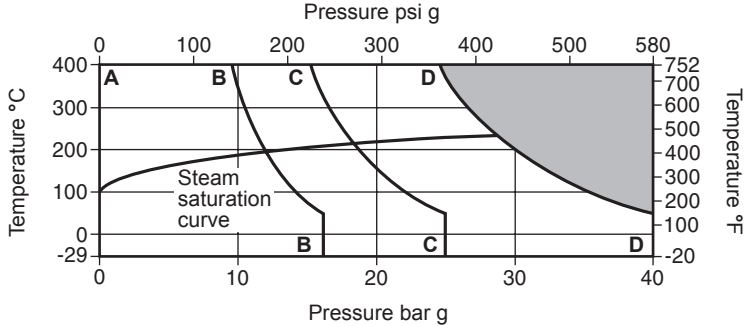
	Body design condition		JIS/KS 20K
	PMA	Maximum allowable pressure	34 bar g @ 120°C (493 psi g @ 248°F)
	TMA	Maximum allowable temperature	425°C @ 20 bar g (797°F @ 290 psi g)
<b>A - B - B</b>		Minimum allowable temperature	-29°C (-20°F)
<b>JIS 20K</b>	PMO	Maximum operating pressure for saturated steam service	30.7 bar g @ 232°C (445 psi g @ 449°F)
<b>KS 20K</b>	TMO	Maximum operating temperature	425°C @ 20 bar g (797°F @ 290 psi g)
		Minimum operating temperature	-29°C (-20°F)
		Designed for a maximum cold hydraulic test pressure of:	51 bar g (739 psi g)
	Body design condition		JIS/KS 10K
	PMA	Maximum allowable pressure	14 bar g @ 120°C (203 psi g @ 248°F)
	TMA	Maximum allowable temperature	300°C @ 10 bar g (572°F @ 145 psi g)
<b>A - C - C</b>		Minimum allowable temperature	-29°C (-20°F)
<b>JIS 10K</b>	PMO	Maximum operating pressure for saturated steam service	12.6 bar g @ 193°C (183 psi g @ 379°F)
<b>KS 10K</b>	TMO	Maximum operating temperature	300°C @ 10 bar g (572°F @ 145 psi g)
		Minimum operating temperature	-29°C (-20°F)
		Designed for a maximum cold hydraulic test pressure of:	21 bar g (304 psi g)


2.7 Typical product name-plate - Fig B36

<b>spirax/sarco</b>				
Type	FIG B36 DN250 PN40			
○	PMA: 40 bar g	3 mm		○
	T max : 400°C	T min : -29°C		
Serial No	<input type="text"/>			
<b>CE</b> 0038		Made in France		

## 2.8 Pressure/temperature limits - Fig B36

**Flanged:**  
**PN16**  
**PN25**  
**PN40**

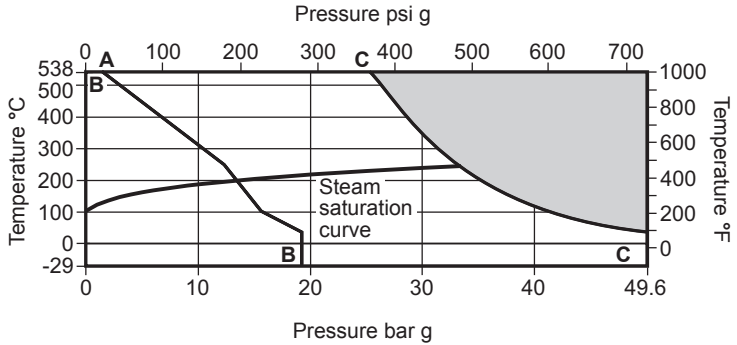



 The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

	Body design condition	PN16
	PMA Maximum allowable pressure	16 bar g @ 50°C (232 psi g @ 122°F)
	TMA Maximum allowable temperature	400°C @ 9.5 bar g (752°F @ 138 psi g)
	Minimum allowable temperature	-29°C (-20°F)
<b>A - B - B</b>		
<b>PN16</b>	PMO Maximum operating pressure for saturated steam service	12.1 bar g @ 192°C (175 psi g @ 377°F)
	TMO Maximum operating temperature	400°C @ 9.5 bar g (752°F @ 138 psi g)
	Minimum operating temperature	-29°C (-20°F)
	Designed for a maximum cold hydraulic test pressure of:	24 bar g (348 psi g)
	Body design condition	PN25
	PMA Maximum allowable pressure	25 bar g @ 50°C (362 psi g @ 122°F)
	TMA Maximum allowable temperature	400°C @ 15.1 bar g (752°F @ 219 psi g)
	Minimum allowable temperature	-29°C (-20°F)
<b>A - C - C</b>		
<b>PN25</b>	PMO Maximum operating pressure for saturated steam service	18.4 bar g @ 209°C (267 psi g @ 408°F)
	TMO Maximum operating temperature	400°C @ 15.1 bar g (752°F @ 219 psi g)
	Minimum operating temperature	-29°C (-20°F)
	Designed for a maximum cold hydraulic test pressure of:	37.5 bar g (543 psi g)
	Body design condition	PN40
	PMA Maximum allowable pressure	40 bar g @ 50°C (580 psi g @ 122°F)
	TMA Maximum allowable temperature	400°C @ 24.1 bar g (752°F @ 349 psi g)
	Minimum allowable temperature	-29°C (-20°F)
<b>A - D - D</b>		
<b>PN40</b>	PMO Maximum operating pressure for saturated steam service	28.7 bar g @ 232°C (416 psi g @ 449°F)
	TMO Maximum operating temperature	400°C @ 24.1 bar g (752°F @ 349 psi g)
	Minimum operating temperature	-29°C (-20°F)
	Designed for a maximum cold hydraulic test pressure of:	60 bar g (870 psi g)

## 2.8 Pressure/temperature limits - Fig B36 (continued)

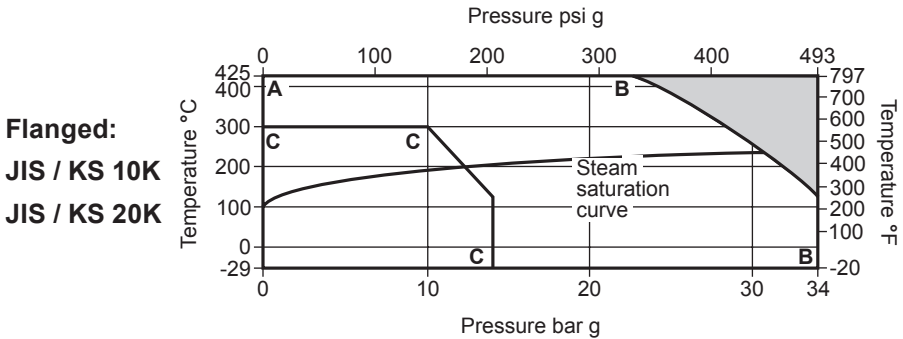
**Flanged:**  
**ASME**  
**Class 150**  
**ASME**  
**Class 300**




 The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

	Body design condition	ASME Class 150	
	PMA Maximum allowable pressure	19 bar g @ 38°C	(284 psi g @ 100°F)
	TMA Maximum allowable temperature	538°C @ 1.4 bar g	(1000°F @ 20 psi g)
<b>A - B - B</b>	Minimum allowable temperature	-29°C	(-20°F)
<b>ASME 150</b>	PMO Maximum operating pressure for saturated steam service	13.3 bar g @ 195°C	(193 psi g @ 383°F)
	TMO Maximum operating temperature	538°C @ 1.4 bar g	(1000°F @ 20 psi g)
	Minimum operating temperature	-29°C	(-20°F)
	Designed for a maximum cold hydraulic test pressure of:	28.5 bar g	(413 psi g)
	Body design condition	ASME Class 300	
	PMA Maximum allowable pressure	49.6 bar g @ 38°C	(719 psi g @ 100°F)
	TMA Maximum allowable temperature	538°C @ 24.4 bar g	(1000°F @ 354 psi g)
<b>A - C - C</b>	Minimum allowable temperature	-29°C	(-20°F)
<b>ASME 300</b>	PMO Maximum operating pressure for saturated steam service	33 bar g @ 241°C	(478 psi g @ 466°F)
	TMO Maximum operating temperature	538°C @ 24.4 bar g	(1000°F @ 354 psi g)
	Minimum operating temperature	-29°C	(-20°F)
	Designed for a maximum cold hydraulic test pressure of:	74.4 bar g	(1080.5 psi g)

## 2.8 Pressure/temperature limits - Fig B36 (continued)

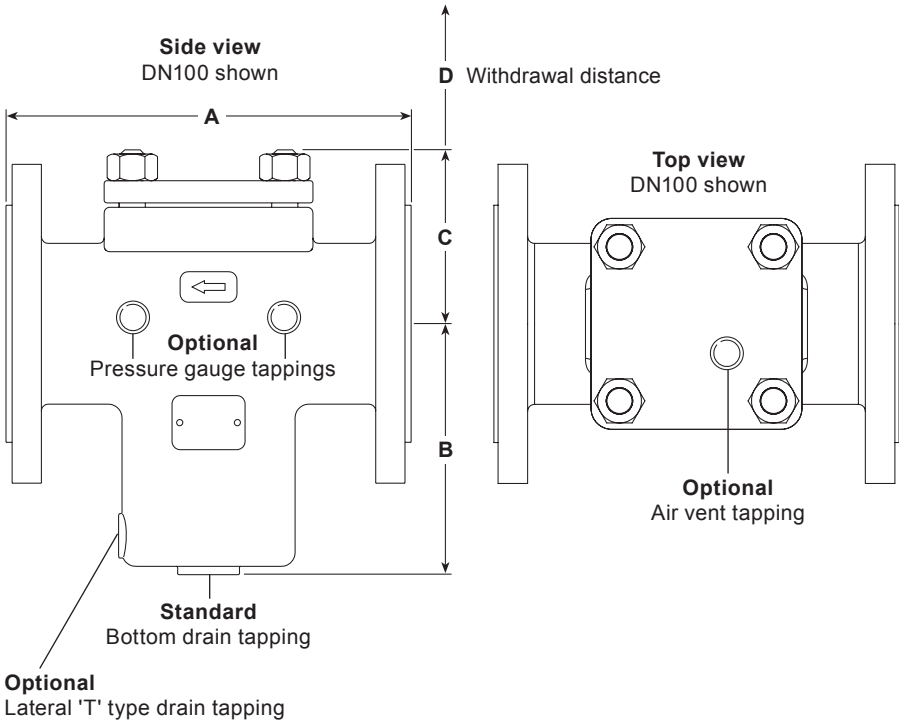


 The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

	Body design condition		JIS / KS 20K
	PMA	Maximum allowable pressure	34 bar g @ 120°C (493 psi g @ 248°F)
	TMA	Maximum allowable temperature	425°C @ 20 bar g (797°F @ 290 psi g)
<b>A - B - B</b>		Minimum allowable temperature	-29°C (-20°F)
<b>JIS 20K</b>	PMO	Maximum operating pressure for saturated steam service	30.5 bar g @ 240°C (442 psi g @ 464°F)
<b>KS 20K</b>	TMO	Maximum operating temperature	425°C @ 20 bar g (797°F @ 290 psi g)
		Minimum operating temperature	-29°C (-20°F)
		Designed for a maximum cold hydraulic test pressure of:	51 bar g (739 psi g)
	Body design condition		JIS / KS 10K
	PMA	Maximum allowable pressure	14 bar g @ 120°C (203 psi g @ 248°F)
	TMA	Maximum allowable temperature	300°C @ 10 bar g (572°F @ 145 psi g)
<b>A - C - C</b>		Minimum allowable temperature	-29°C (-20°F)
<b>JIS 10K</b>	PMO	Maximum operating pressure for saturated steam service	12.5 bar g @ 193°C (183 psi g @ 383°F)
<b>KS 10K</b>	TMO	Maximum operating temperature	300°C @ 10 bar g (572°F @ 145 psi g)
		Minimum operating temperature	-29°C (-20°F)
		Designed for a maximum cold hydraulic test pressure of:	21 bar g (304 psi g)

## 2.9 Dimensions / Weights (approximate in mm and kg)

Body rating	Size	Dimensions						Weights	
		PN JIS KS	A		B	C	D	PN JIS KS	ASME
			150	300					
PN40	DN40	200	165	229	121.5	71.5	150	14.0	15.0
	DN50	230	203	267	131.5	79.0	170	16.0	16.5
PN25	DN65	290	216	292	152.0	97.5	190	19.0	20.0
PN16	DN80	310	241	318	161.0	114.5	210	30.0	33.0
JIS/KS 20	DN100	350	292	350	181.0	125.5	250	35.5	42.5
JIS/KS 10	DN125	400	330	400	218.5	148.0	290	67.0	74.5
ASME 150	DN150	480	356	444	238.5	174.5	330	76.0	86.5
and	DN200	600	495	559	290.5	206.0	400	166.0	175.0
ASME 300	DN250	730	622	622	325.5	244.0	480	205.0	210.5
	DN300	850	698	711	368.5	307.5	550	341.5	369.5
	DN350	980	787	838	383.5	332.0	600	459.5	426.5





Body rating	Size	Tappings			
		Standard Bottom drain	Lateral 'T' type drain	Optional Pressure gauge	Air vent on the cover
PN40	DN40	1/2"	3/8"	1/4"	1/4"
	DN50	1/2"	3/8"	1/4"	1/4"
PN25	DN65	3/4"	1/2"	1/4"	1/4"
PN16	DN80	3/4"	1/2"	1/4"	1/4"
JIS/KS 20	DN100	3/4"	1/2"	1/4"	1/4"
JIS/KS 10	DN125	1 1/2"	3/4"	1/4"	1/4"
	DN150	1 1/2"	3/4"	1/4"	1/4"
ASME 150 and ASME 300	DN200	1 1/2"	3/4"	1/4"	1/4"
	DN250	1 1/2"	3/4"	1/4"	1/2"
	DN300	2"	1"	1/4"	1/2"
	DN350	2"	1"	1/4"	1/2"

Size	Screening area (cm <sup>2</sup> )	Opening %				Opening / Inlet ratio			
		3.0	1.6	0.8	M100 M40	3.0	1.6	0.8	M100 M40
DN40	139	32%	30%	26%	23%	3.54	3.32	2.88	2.53
DN50	216					3.52	3.30	2.86	2.51
DN65	343					3.31	3.10	2.69	2.36
DN80	590					3.76	3.52	3.05	2.68
DN100	916					3.73	3.50	3.03	2.66
DN125	1191					3.11	2.91	2.52	2.22
DN150	1692					3.06	2.87	2.49	2.19
DN200	3486					3.55	3.33	2.89	2.54
DN250	5223					3.40	3.19	2.77	2.43
DN300	7379					3.34	3.13	2.71	2.39
DN350	9597					3.19	2.99	2.59	2.28

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## 3. Installation

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**Note:** Before actioning any installation observe the 'Safety information' in Section 1.

Referring to the installation and Maintenance Instructions, name-plate and Technical Information Sheet, check that the product is suitable for the intended installation:

- 3.1** Check materials, pressure and temperature and their maximum values. If the maximum operating limit of the product is lower than that of the system in which it is being fitted, ensure that a safety device is included in the system to prevent overpressurisation.
- 3.2** Determine the correct installation situation and the direction of fluid flow.
- 3.3** Remove protection covers from all connections and protective film from all name-plates, where appropriate, before installation on steam or other high temperature applications.
- 3.4** Strainers can be fitted on liquid or steam/gas systems in either horizontal pipework or vertical pipework. Use basket type strainers for horizontal applications and 'T' Type strainers for vertical applications where the flow is downward.
- 3.5** Suitable isolation valves must be installed to allow for safe maintenance and strainer replacement.
- 3.6** The strainers may be lagged if required.

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## 4. Commissioning

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After installation or maintenance ensure that the system is fully functional. Carry out tests on any alarms or protective devices.

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## 5. Operation

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Strainers are passive items and will prevent the onward movement of dirt and debris, which is larger than the holes in the screen. The pressure drop across the strainer will increase as the screen becomes blocked. Regular cleaning / blowdown is recommended to keep the screen clean.

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## 6. Fault finding

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Symptom	Possible cause	Remedy
No flow through strainer	Blocked screen	Clean or replace screen See Section 7.2
	System is isolated	Check isolation valves
Increased pressure drop across strainer	Screen is blocked up	Clean or replace screen See Section 7.2

# 7. Maintenance

**Note: Before actioning any maintenance programme observe the 'Safety information' in Section 1.**

## Warning

**The cover gasket contains a thin stainless steel support ring which may cause physical injury if not handled and disposed of carefully.**

### 7.1 General information

Maintenance can be completed with the strainer in the pipeline. It is recommended that a new gasket is used whenever maintenance is undertaken. Before undertaking any maintenance on the strainer, it must be isolated from both the supply line and return line and any pressure allowed to safely normalise to atmosphere. The strainer should then be allowed to cool. When reassembling, ensure that all joint faces are clean.

### 7.2 How to clean or replace the strainer screen:

**For identification of parts refer to Section 8 'Spare parts'**

- Remove the strainer cover (2) by undoing the cover nuts (6) from the cover studs (5). The number of bolts / nuts used will depend on the strainer size, material of construction and design rating.
- Once the cover has been removed the strainer screen (3) can be taken out.
- Clean the strainer screen (3) or replace with a new one.
- Reassemble the strainer screen (3) by pushing it into the recess of the body (1).
- Always fit a new strainer cover gasket (4) ensuring the jointing faces are clean.
- Refit the strainer cover (2) using 'Neverseize' compound on the cover studs and nuts (5 + 6) and tighten. Caution: Ensure that the cover nuts (6) are tightened equally before final torque is applied - See Table 1 for the recommended tightening torque.
- Check for leaks.

**Table 1 - Recommended tightening torques**

Size	Quantity	Dimensions	Torque	
			N m	lbf ft
DN40 (1½")	4	½" - 13 UNC	15	11.0
DN50 (2")			22	16.2
DN65 (2½")	4	⅝" - 11 UNC	40	29.5
DN80 (3")	4	¾" - 10 UNC	70	51.6
DN100 (4")			100	73.7
DN125 (5")	6	⅞" - 11 UNC	100	73.7
DN150 (6")	6		160	118.0
DN200 (8")	8		205	151.2
DN250 (10")	12		205	151.2
DN300 (12")	12	1⅞" - 7 UNC	375	276.5
DN350 (14")	14		420	309.7

## 8. Spare parts

The spare parts available are shown in solid outline. Parts shown in broken line are not supplied as spares.

### Available spares

Strainer screen (state material, size of perforations and size of strainer)	<b>4</b>
Cover gasket (packet of 3)	<b>3</b>
Set of cover studs and nuts	<b>5, 6</b>

### How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of strainer and perforations required for the screen.

**Example:** 1 - Stainless steel screen having 3 mm perforations for a DN250 Spirax Sarco Fig B36 strainer.

**Note:** When ordering a spare screen it is advisable to order a cover gasket (packet of 3).

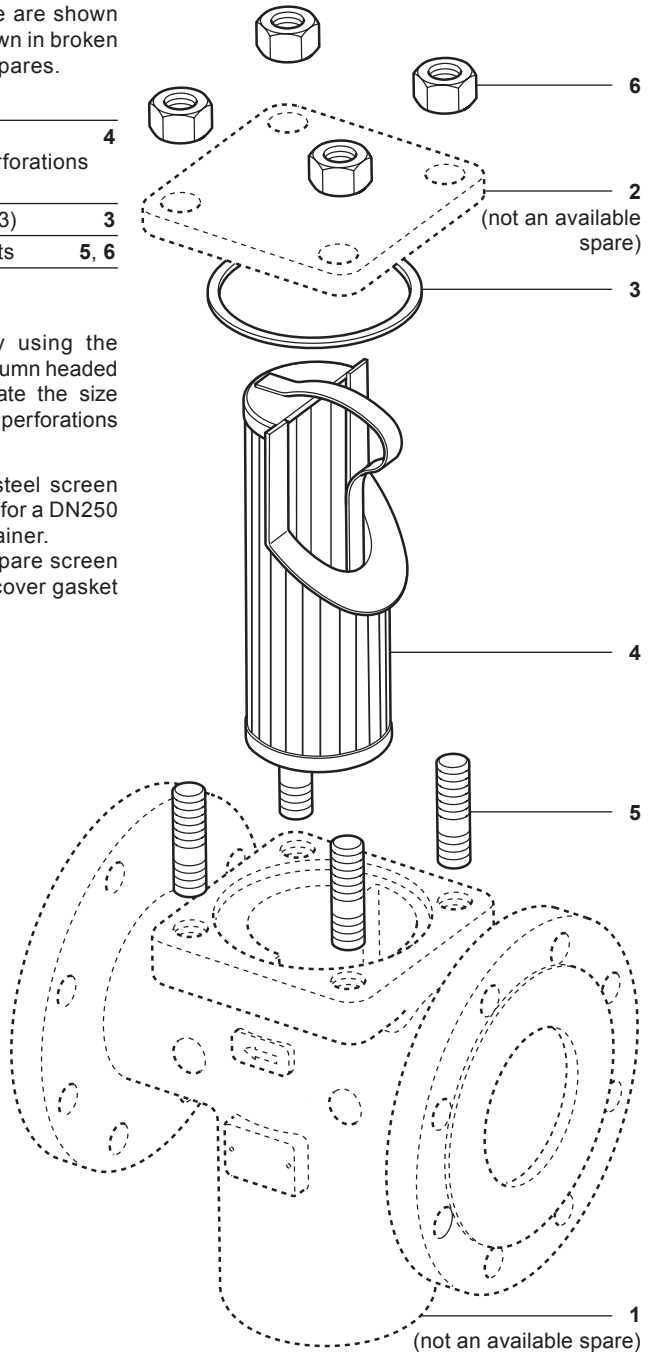


Fig. 2