TI-P169-08
CMGT Issue 3

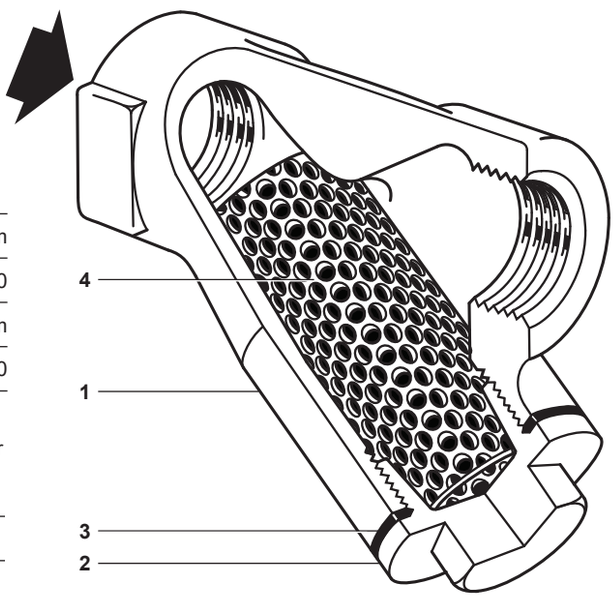
Fig 16HP Stainless Steel Strainer

Description
The Fig 16HP is a stainless steel Y-type strainer designed to remove scale, rust and other debris from the pipeline. The standard stainless steel screen is 0.8 mm perforations.

Standards
This product fully complies with the requirements of the Pressure Equipment Directive (PED).

Certification
The product is available with a manufacturer's Typical Test Report for the body and cap as standard and EN 10204 3.1 to special order at extra cost.
Note: All certification/inspection requirements must be stated at the time of order placement.

Sizes and pipe connections
¼", ⅜", ½", ¾", 1", 1¼" 1½" and 2"
Screwed BSP or NPT
Socket weld ends to BS 3799 Class 3000 lb



Optional extras

Strainer screens

Stainless steel screen	Perforations	1.6 mm and 3.0 mm
	Mesh	40, 100 and 200
Monel screen	Perforations	0.8 mm and 3.0 mm
	Mesh	100

Blowdown or drain valve connections
The cap can be drilled to the following sizes to enable a blowdown or drain valve to be fitted at extra cost.

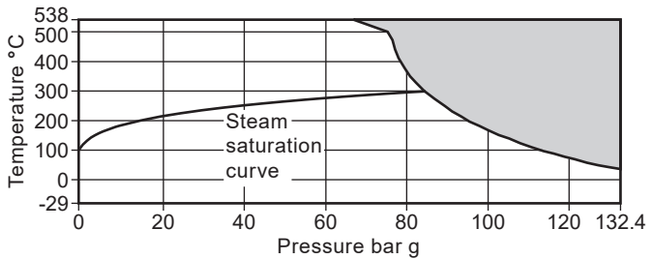
Strainer size	Blowdown valve	Drain valve
¼", ⅜" and ½"	¼"	¼"
¾" and 1"	½"	½"
1¼" and 1½"	1"	¾"
2"	1¼"	¾"

Materials

No.	Part		Material	
1	Body	¼" to ½"	Stainless steel	A182 F316L/1.4404
		¾" to 2"	Stainless steel	ASTM A351 CF8M/1.4408
2	Cap		Stainless steel	ASTM A351 CF8M/1.4408
3	Cap gasket		Reinforced exfoliated graphite	
4	Strainer screen		Stainless steel	A240 316L

Pipeline ancillaries
Strainers and filters

Pressure/temperature limits

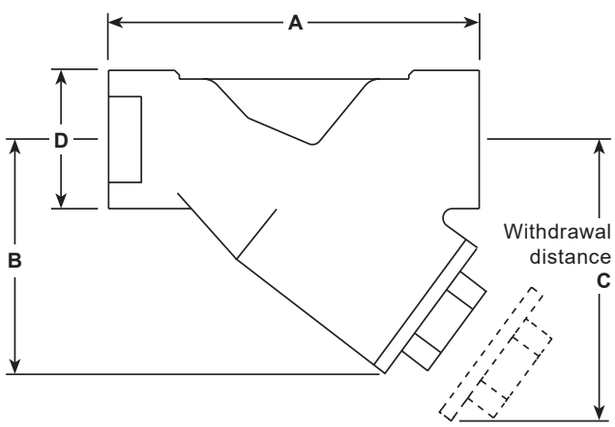


The product **must not** be used in this region.

Body design conditions		ASME Class 800
PMA	Maximum allowable pressure	132.4 bar g @ 38 °C
TMA	Maximum allowable temperature	538 °C @ 66.8 bar g
Minimum allowable temperature		-29 °C
PMO	Maximum operating pressure for saturated steam service	85 bar g @ 300 °C
TMO	Maximum operating temperature	538 °C @ 66.8 bar g
Minimum operating temperature		-29 °C
Note: For lower operating temperatures consult Spirax Sarco.		
Designed for a maximum cold hydraulic test pressure of:		200 bar g

Dimensions/weights (approximate) in mm and kg

Size	A	B	C	D	Screening area cm²	Weight
¼"	70	51	80	32	27	0.43
⅜"	70	51	80	32	27	0.49
½"	73	52	81	32	27	0.56
¾"	90	64	100	36	43	0.72
1"	105	74	120	46	73	1.17
1¼"	140	102	164	60	135	2.35
1½"	152	115	184	70	164	3.30
2"	178	138	224	80	251	4.95



K_v values

Size	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"
Perforations 0.8, 1.6 and 3 mm	1	2.6	3.6	11	15.5	26	41	68
Mesh 40 and 100	1	2.6	3.6	11	15.5	26	41	68
Mesh 200	1	2.6	2.6	9	13.0	21	35	55

For conversion:
C_v (UK) = K_v x 0.963
C_v (US) = K_v x 1.156

Fig 16HP Stainless Steel Strainer

Safety information, installation and maintenance
For full details see the Installation and Maintenance Instructions (IM-S60-17) supplied with the product.

Warning:
The strainer cap gasket contains a thin stainless steel support ring, which may cause physical injury if not handled and disposed of carefully.

Disposal
The product is recyclable. No ecological hazard is anticipated with disposal of this product, providing due care is taken.

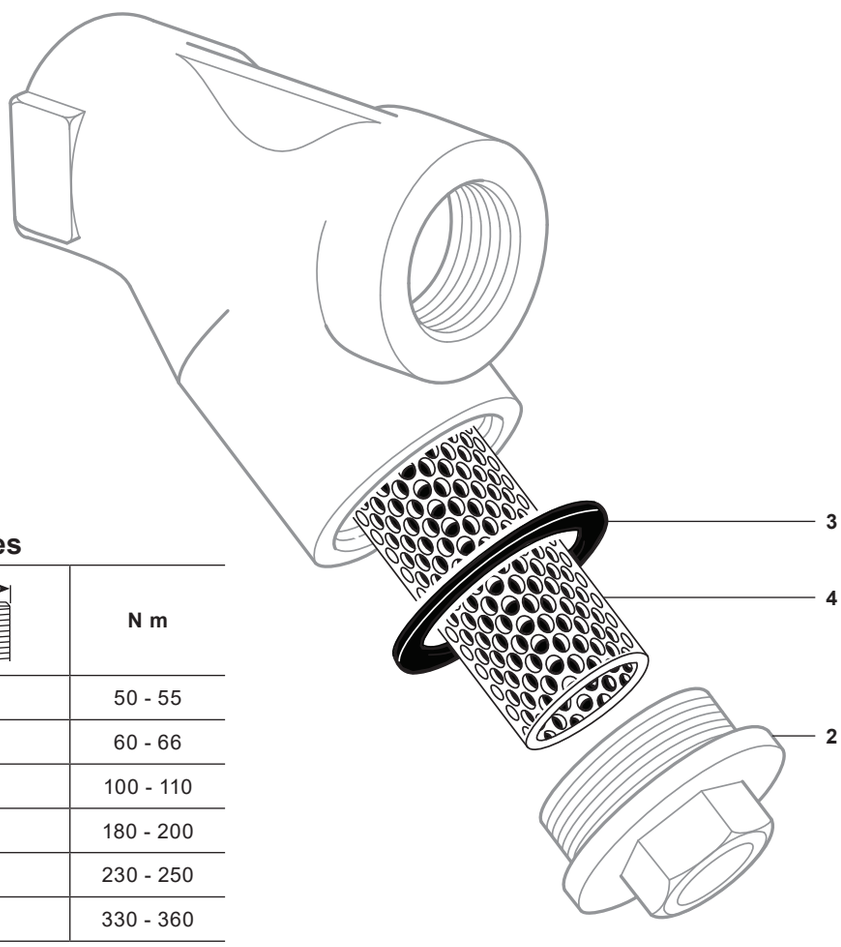
How to order
Example: 1 off Spirax Sarco 1½" Fig 16HP strainer having screwed BSP connections with a stainless steel screen having 0.8 mm perforations.

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

Available spares		
Strainer screen (state material, perforations or mesh and size of strainer)		4
Cap gasket	(packet of 3)	3

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 perforation or mesh required.
Example: 1 off Stainless steel strainer screen having 0.8 mm perforations for a ¾" Spirax Sarco Fig 16HP strainer.

Note: When replacing the strainer cap coat the thread only with anti-seize compound, making sure none gets on the gasket or gasket faces.



Recommended tightening torques

Item	Size	or mm	N m
2	¼", ⅝" and ½"	22 A/F	50 - 55
	¾"	27 A/F	60 - 66
	1"	32 A/F	100 - 110
	1¼"	46 A/F	180 - 200
	1½"	50 A/F	230 - 250
	2"	60 A/F	330 - 360

TI-P160-01
CMGT Issue 8

Fig 16 and Fig 16L
Austenitic Stainless Steel Strainers

Description
The Fig 16 and Fig 16L are austenitic stainless steel screwed Y-type strainers. The Fig 16 is 316 and the Fig 16L is 316L. The standard stainless steel screen is 0.8 mm perforations. As options, other perforations and mesh sizes are available as well as monel screens. The strainer cap can be drilled and tapped for blowdown and drain valves if required.

Standards
This product fully complies with the requirements of the Pressure Equipment Directive (PED).

Certification
The Fig 16 is available with a manufacturers Typical Test Report.
The Fig 16L is available with certification to EN 10204 3.1.
Note: All certification/inspection requirements must be stated at the time of order placement.

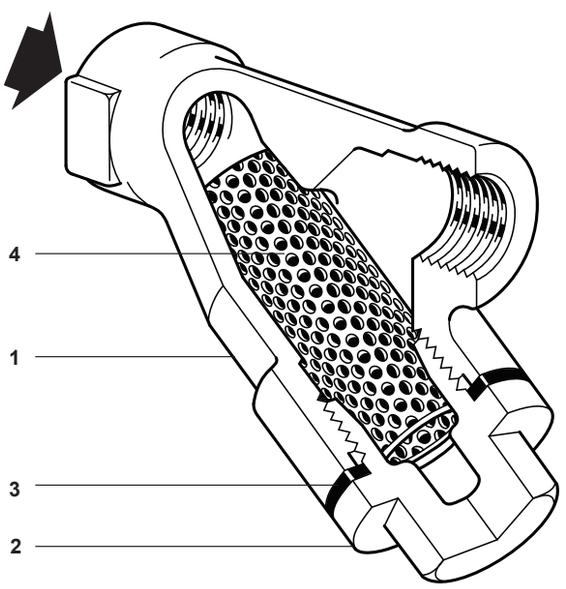
Optional extras

Strainer screens	**Stainless steel screens**	Perforations	1.6 mm and 3 mm
		Mesh	40, 100 and 200
	Monel screens	Perforations	0.8 mm and 3 mm
		Mesh	100

Blowdown or drain valve connections
The cap can be drilled to the following sizes to enable a blowdown or drain valve to be fitted at extra cost.

Strainer size	Blowdown valve	Drain valve
⅜" and ½"	¼"	¼"
¾"	½"	⅜"
1"	½"	½"
1¼" and 1½"	1"	¾"
2"	1¼"	¾"

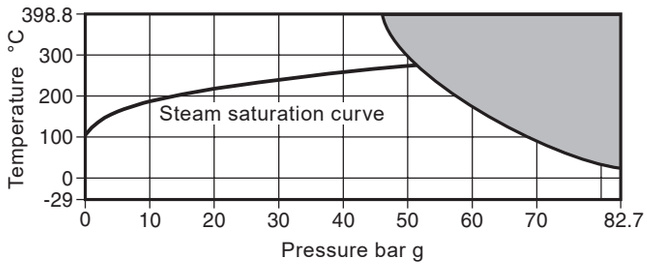
Sizes and pipe connections
⅜", ½", ¾", 1", 1¼", 1½" and 2"
Screwed BSP or NPT
Socket weld ends to BS 3799 Class 3000 lb (Fig 16L only).



Materials

No.	Part		Material	
1	Body	Fig 16	Austenitic stainless steel	ASTM A351 Gr. CF8M (316)
		Fig 16L	Austenitic stainless steel	ASTM A351 Gr. CF3M (316L)
2	Cap	Fig 16	Austenitic stainless steel	ASTM A351 Gr. CF8M (316)
		Fig 16L	Austenitic stainless steel	ASTM A351 Gr. CF3M (316L)
3	Cap gasket		Reinforced exfoliated graphite	
4	Strainer screen		Austenitic stainless steel	316L

Pressure/temperature limits



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

Body design conditions	ANSI 600
PMA Maximum allowable pressure	82.7 bar g @ 37.7 °C
TMA Maximum allowable temperature	398.8 °C @ 46.2 bar g
Minimum allowable temperature	-29 °C
PMO Maximum operating pressure	82.7 bar g @ 37.7 °C
TMO Maximum operating temperature	398.8 °C @ 46.2 bar g
Minimum operating temperature **Note:** For lower operating temperatures consult Spirax Sarco	-29 °C
Designed for a maximum cold hydraulic test pressure of:	125 bar g

K_v values

Size	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"
Perforations 0.8, 1.6 and 3 mm	1	2.6	3.6	11	15.5	26	41	68
Mesh 40 and 100	1	2.6	3.6	11	15.5	26	41	68
Mesh 200	1	2.6	2.6	9	13.0	21	33	55

For conversion:
C_v (UK) = K_v x 0.963
C_v (US) = K_v x 1.156

Dimensions/weights (approximate) in mm and kg

Size	A	B	C	D	Screening area cm²	Weight
⅜"	69	55	87	26	25	0.32
½"	76	55	87	32	25	0.38
¾"	88	65	110	38	42	0.51
1"	106	78	125	46	71	0.87
1¼"	133	103	155	56	135	1.56
1½"	146	115	190	62	161	2.10
2"	172	140	230	76	251	3.46

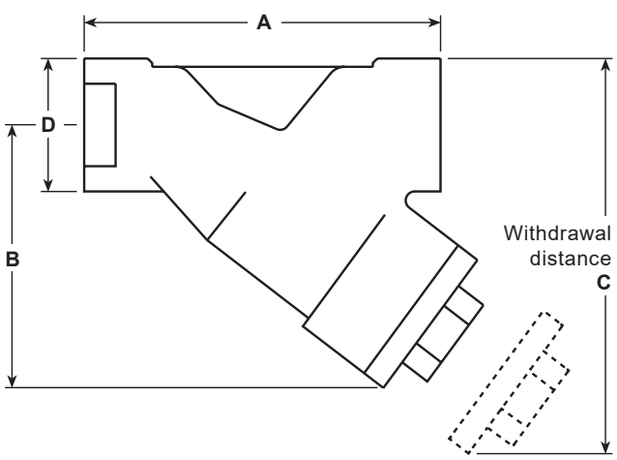


Fig 16 and Fig 16L Austenitic Stainless Steel Strainers

Safety information, installation and maintenance
For full details see the Installation and Maintenance Instructions (IM-S60-17) supplied with the product.

Warning:
The strainer cap gasket contains a thin stainless steel support ring, which may cause physical injury if not handled and disposed of carefully.

Disposal
The product is recyclabe. No ecological hazard is anticipated with disposal of this product, providing due care is taken.

How to order
Example: 1 off Spirax Sarco 1½" Fig 16 strainer with screwed BSP connections and a stainless steel screen having 0.8 mm perforations.

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

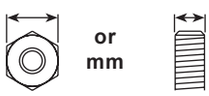
Available spares

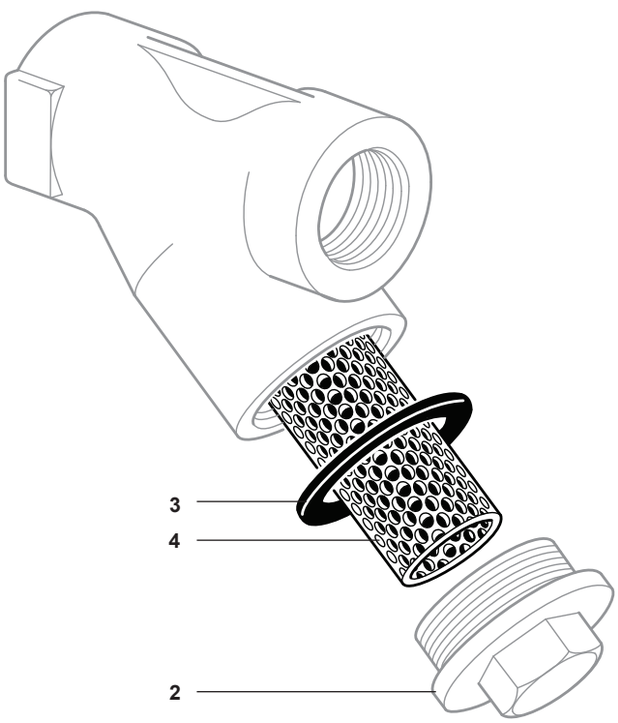
Strainer screen (state material, size of perforation or mesh and size of strainer)	**4**
Cap gasket (packet of 3)	**3**

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 perforation or mesh required.
Example: 1 off Stainless steel strainer screen, having 1.6 mm perforations, for a ¾" Spirax Sarco Fig 16 strainer with screwed BSP connections.

Note: When replacing the strainer cap coat the thread only with anti-seize compound, making sure none gets on the gasket or gasket faces.

Recommended tightening torques

Item	Size	 or mm	N m
	⅜"	22 A/F	45 - 50
	½"	22 A/F	45 - 50
	¾"	27 A/F	60 - 66
2	1"	27 A/F	100 - 110
	1¼"	46 A/F	240 - 260
	1½"	46 A/F	260 - 280
	2"	60 A/F	310 - 340



10 Pipeline ancillaries
Strainers and filters

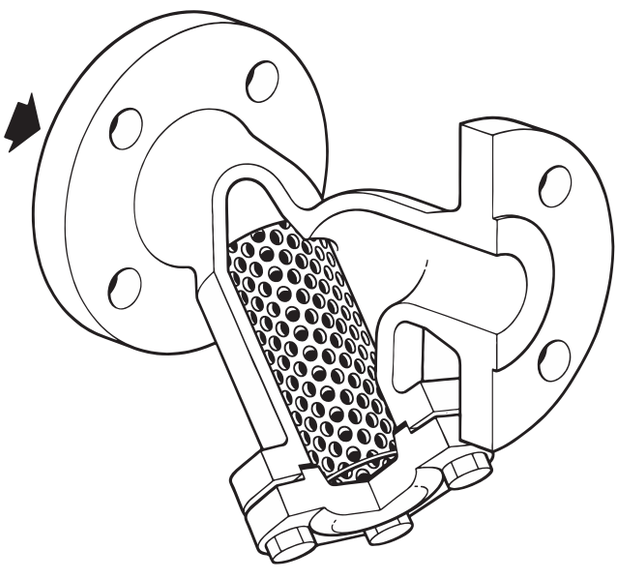
TI-P160-02
CMGT Issue 12

Fig 36
Austenitic Stainless Steel Strainer

Description
The Fig 36 is an austenitic stainless steel integrally flanged Y-type strainer. The standard stainless steel screen in the DN15 to DN80 size range has 0.8 mm perforations, in the DN100 to DN200 size range it has 1.6 mm perforations. Other perforations, mesh sizes and monel screens are available as options. The strainer cap can be drilled and tapped for blowdown and drain valves if required.

Standards
This product fully complies with the requirements of the Pressure Equipment Directive (PED) and carries the CE mark when so required.

Certification
The product is available with a manufacturers' Typical Test Report as standard and EN 10204 3.1 for body and cap by special request.
Note: All certification/inspection requirements must be stated at the time of order placement.



Sizes and pipe connections
DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN125, DN150 and DN200
Standard flange:
EN 1092 PN16, PN25 and PN40 (DN15 to DN50)
EN 1092 PN25 and PN40 (DN65 to DN150)
EN 1092 PN40 (DN200)
ANSI Class 150 and ANSI Class 300 (All sizes)
JIS/KS flanges are available on request.

Optional extras

Strainer screens	**Stainless steel screens**	Perforations	1.6 mm (DN15 to DN80)
			3.0 mm (DN15 to DN200)
		Mesh	40, 100, 200
	Monel screens	Perforations	0.8 mm (DN15 to DN80)
			1.6 mm (DN100 to DN200)
			3.0 mm (DN15 to DN200)
		Mesh	100

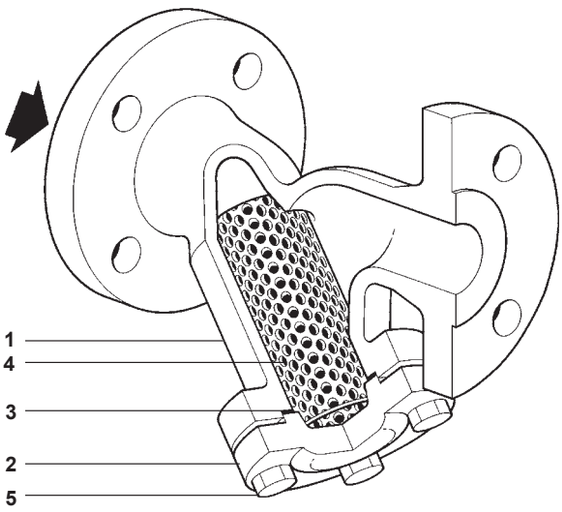
Blowdown or drain valve connections
The cap can be drilled to the following sizes to enable a blowdown or drain valve to be fitted.

Strainer size	Blowdown valve	Drain valve
DN15	¼"	¼"
DN20 and DN25	½"	½"
DN32 and DN40	1"	¾"
DN50 to DN125	1¼"	¾"
DN150 and DN200	2"	¾"

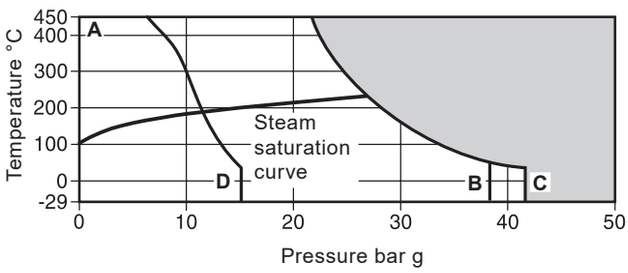
Pipeline ancillaries
Strainers and filters

Materials

No.	Part	Size	Material
1	Body		Austenitic stainless steel ASTM A351 CF3M
2	Cap	DN15 - DN50	Austenitic stainless steel ASTM A182F316L
		DN65 - DN200	Austenitic stainless steel ASTM A351 CF3M
3	Cap gasket		Reinforced exfoliated graphite
4	Strainer screen		Austenitic stainless steel ASTM A240 316L
5	Cap bolt		Austenitic stainless steel ISO 3506 A2-70



Pressure/temperature limits



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

A - B Flanged ANSI 300.

A - C Flanged EN 1092 PN40.

Body design conditions			ANSI 300 (PN50)
PMA	Maximum allowable pressure		41 bar g @ 38 °C
TMA	Maximum allowable temperature		450 °C @ 21 bar g
Minimum allowable temperature			-29 °C
PMO	Maximum operating pressure	ANSI 150	16 bar g
		PN40	38 bar g
		ANSI 300	41 bar g
TMO	Maximum operating temperature		450 °C @ 21 bar g
Minimum operating temperature **Note:** For lower operating temperatures consult Spirax Sarco.			-29 °C
Designed for a maximum cold hydraulic test pressure of:			76 bar g

K_v values

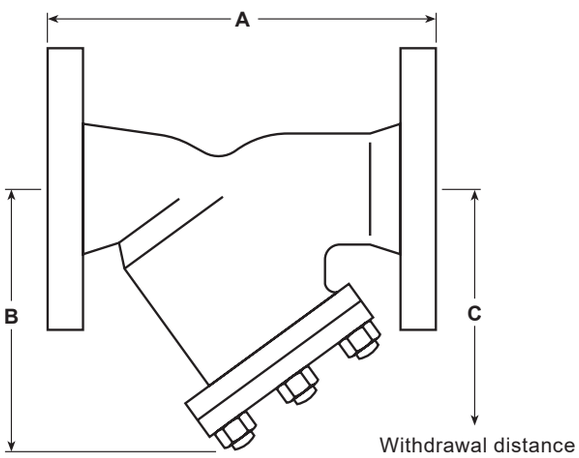
Size	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200
Perforations 0.8, 1.6 and 3 mm	5	8	13	22	29	46	72	103	155	237	340	588
Mesh 40 and 100	5	8	13	22	29	46	72	103	155	237	340	588
Mesh 200	4	6	10	17	23	37	58	83	124	186	268	464

For conversion:
C_v (UK) = K_v x 0.963
C_v (US) = K_v x 1.156

Fig 36 Austenitic Stainless Steel Strainer

Dimensions/weights (approximate) in mm and kg

Size	A	EN1092 PN16/25/40 A	A	ANSI 150 B	ANSI 300 C	Screening area cm²	Weight
DN15	130	124	130	70	120	28	2.5
DN20	150	142	149	80	130	46	4.5
DN25	160	156	163	95	162	79	5.0
DN32	180	180	180	130	235	135	10.0
DN40	200	200	208	146	260	161	12.0
DN50	230	230	241	180	320	251	16.5
DN65	290	290	290	200	325	325	23.0
DN80	310	310	310	205	330	360	35.6
DN100	351	351	351	255	405	540	38.5
DN125	400	400	400	315	510	840	76.0
DN150	480	475	480	345	560	1 115	109.0
DN200	600	594	600	440	710	1 905	144.0



Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-S60-18) supplied with the product.

Installation note:

The strainer should be installed in the direction of flow, as indicated on the body. On applications involving steam or gases the pocket should be in the horizontal plane. On liquid systems the pocket should point downwards. Suitable isolation valves must be installed to allow for safe maintenance and trap replacement.

Maintenance note:

Maintenance can be completed with the strainer in the pipeline, once the safety procedures have been observed. It is recommended that a new gasket is used whenever maintenance is undertaken.

Warning:

The strainer cap gasket contains a thin stainless steel support ring, which may cause physical injury if it is not handled and disposed of carefully.

Disposal

The product is recyclable. No ecological hazard is anticipated with disposal of this product, providing due care is taken.

How to order

Example: 1 off Spirax Sarco DN32 Fig 36 strainer having a stainless steel screen with 0.8 mm perforations. The connections are to be flanged EN 1092 PN40.

Fig 36 Austenitic Stainless Steel Strainer

Spare parts

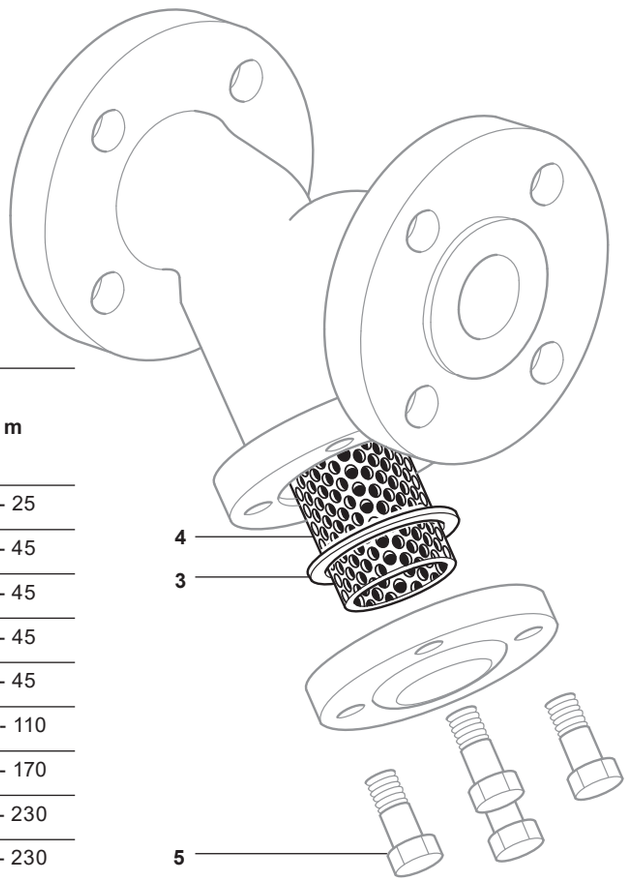
The spare parts available are shown in solid outline. Parts drawn in a grey line are not supplied as spares.

Available spares

Strainer screen (state material, size of perforations or mesh and size of strainer)	**4**
Cap gasket (3 off)	**3**

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 perforation or mesh required.
Example: 1 off stainless steel strainer screen, having 0.8 mm perforations for a DN50 Spirax Sarco Fig 36 strainer having EN 1092 PN40 connections.



Recommended tightening torques

Item	Size	Qty	or mm		N m
	DN15 - DN25	4	16 A/F	M10 x 30	22 - 25
	DN32 - DN40	4	19 A/F	M12 x 35	40 - 45
	DN50	8	19 A/F	M12 x 35	40 - 45
	DN65	8	19 A/F	M12 x 45	40 - 45
5	DN80	8	19 A/F	M12 x 50	40 - 45
	DN100	8	24 A/F	M16 x 50	100 - 110
	DN125	8	30 A/F	M20 x 60	160 - 170
	DN150	8	30 A/F	M20 x 65	210 - 230
	DN200	8	36 A/F	M20 x 75	210 - 230

Fig 36 Austenitic Stainless Steel Strainer

TI-P160-11
CMGT Issue 3

Fig 36HP Stainless Steel Strainer

Description

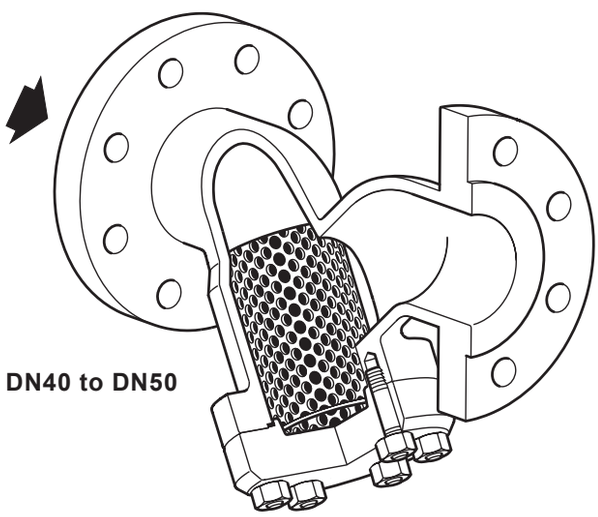
The Fig 36HP is a Stainless steel Y-type strainer that has been designed in accordance with ASME B16.34:2004 and ASME VIII, that is readily available with integrally flanged or butt weld connections. The standard stainless steel screen in the DN15 to DN80 size range has 0.8 mm perforations, and 1.6 mm perforations in the DN100 to DN200 size range - See 'Optional extras' for alternative perforations/mesh sizes and screen materials. If required, the strainer cover can be drilled and tapped for blowdown and drain valves.

Standards

This product fully complies with the requirements of the Pressure Equipment Directive (PED) and carries the CE mark when so required.

Certification

This product is 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.


DN40 to DN50

Sizes and pipe connections

Flanged:
EN 1092 PN100, EN 1092 PN63, ASME (ANSI) B16.5 Class 600 and ASME (ANSI) 600 RTJ -
DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100, DN150 and DN200.
Screwed: BSP or NPT - ½", ¾", 1", 1½" and 2"
Socket weld:
ASME (ANSI) B16.11 Class 3000 - ½", ¾", 1", 1½" and 2"
Butt weld:
ASME (ANSI) B16.25 Schedule 40 and Schedule 80 -
½", ¾", 1", 1½", 2", 2½", 3", 4", 6" and 8"

Optional extras

The following optional extras are available for all unit sizes at an extra cost and must be stated at the time of order placement:

Perforations:	0.8 mm (standard), 1 mm, 1.6 mm, 3 mm and 6 mm
	Contact Spirax Sarco for availability of perforations not displayed.
	M20, M40, M60, M100, M200 and M400
Mesh:	Contact Spirax Sarco for availability of mesh screens not displayed.
Screen material:	AISI 316, AISI 316L (standard), AISI 304,
	AISI 304L and Monel

Blowdown/drain valve connection
The cover can be drilled to the following sizes to enable a blowdown or drain valve to be fitted. This option is available at extra cost.

Strainer size	Blowdown valve	Drain valve
DN15	¼"	¼"
DN20 and DN25	½"	½"
DN40	1"	¾"
DN50 to DN100	1¼"	¾"
DN150 to DN200	2"	¾"

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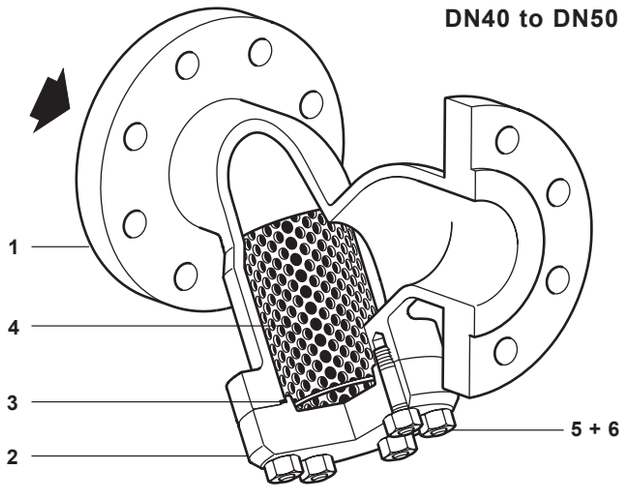
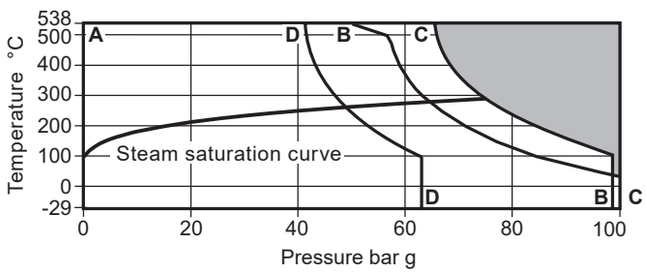
Pipeline ancillaries
Strainers and filters

Materials

No.	Part	Material	
1	Body	Stainless steel	EN 10213 1.4408 and ASTM A351 CF8M
2	Cover	Stainless steel	EN 10213 1.4408 and ASTM A351 CF8M
3	Cover gasket	Stainless steel + Graphite	Spiral wound
4	Strainer screen	Stainless steel	AISI 316L
5	Cover stud	Stainless steel	ASTM A193 Gr. B8M2
6	Cover nut	Stainless steel	ASTM A194 Gr. 8M



Pressure/temperature limits



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

A - B Flanged ASME (ANSI) B16.5 Class 600, ASME (ANSI) 600 RTJ, Screwed NPT, Socket weld ASME (ANSI) B16.11 Class 3000 and Butt weld ASME (ANSI) B16.25 Schedule 40 and 80.

A - C Flanged EN 1092 PN100 and Screwed BSP.

A - D Flanged EN 1092 PN63.

		A - B Flanged ASME 600 and 600 RTJ Screwed NPT Socket weld and Butt weld	A - C Flanged EN 1092 PN100 and Screwed BSP	A - D Flanged EN 1092 PN63
Body design conditions		ASME 600	PN100	PN63
PMA	Maximum allowable pressure	99.3 bar g @ 38 °C	100 bar g @ 50 °C	63 bar g @ 50 °C
TMA	Maximum allowable temperature	538 °C @ 50 bar g	538 °C @ 65.4 bar g	538 °C @ 41.2 bar g
Minimum allowable temperature		-29 °C	-29 °C	-29 °C
PMO	Maximum operating pressure	99.3 bar g @ 38 °C	100 bar g @ 50 °C	63 bar g @ 50 °C
TMO	Maximum operating temperature	538 °C @ 50 bar g	538 °C @ 65.4 bar g	538 °C @ 41.2 bar g
Minimum operating temperature **Note:** For lower operating temperatures consult Spirax Sarco.		-29 °C	-29 °C	-29 °C
Designed for a maximum cold hydraulic test pressure of:		153 bar g	150 bar g	95 bar g

Fig 36HP Stainless Steel Strainer

K_V values

Size	DN15	DN20	DN25	DN40	DN50	DN65	DN80	DN100	DN150	DN200
Perforations 0.8, 1.6 and 3 mm	5	8	13	29	46	72	103	155	340	588
Mesh M40 and M100	5	8	13	29	46	72	103	155	340	588
Mesh M200	4	6	10	23	37	58	83	124	268	464

Please consult Spirax Sarco for the K_V values of the following screens: 1 mm, 6 mm, M20, M60 and M400.

For conversion:
C_V (UK) = K_V x 0.963
C_V (US) = K_V x 1.156

Dimensions/weights (approximate) in mm and kg

Size	A ASME 600	A PN100	A Screwed Socket weld Butt weld	B	C	Weights ASME 600	Weights PN100	Weights Screwed Socket weld Butt weld
DN15	165	210	165	117	200	3.6	4.0	1.6
DN20	190	230	190	117	200	4.6	4.9	1.8
DN25	216	230	216	117	200	5.6	7.6	2.2
DN40	241	260	241	195	330	12.2	12.2	7.2
DN50	292	300	292	195	330	17.4	18.0	7.6
DN65	330	340	330	222	340	34.0	35.0	16.2
DN80	356	380	356	222	340	35.0	36.0	20.6
DN100	432	430	432	280	458	60.0	59.0	31.9
DN150	559	550	559	360	610	130.0	128.0	74.8
DN200	660	650	660	455	775	222.0	222.0	143.5

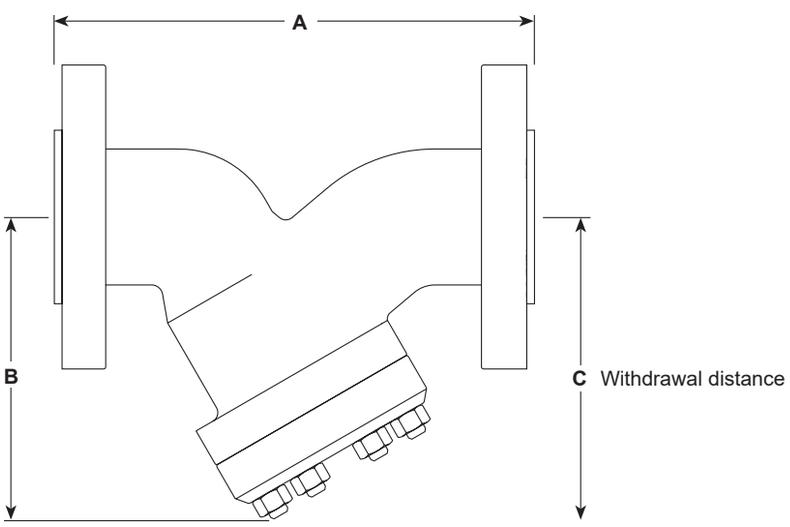


Fig 36HP Stainless Steel Strainer

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Pipeline ancillaries
Strainers and filters

Safety information, installation and maintenance
For full details see the Installation and Maintenance Instructions (IM-S60-18) supplied with the product.

Installation note:
The strainer should be installed in the direction of flow, as indicated on the body. On applications involving steam or gases the pocket should be in horizontal plane. On liquid systems the pocket should point downwards.

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

Disposal
This product is recyclable. No ecological hazard is anticipated with the disposal of this product, provided due care is taken.

How to order
Example: 1 off Spirax Sarco DN40 Fig 36HP strainer having the standard stainless steel screen with 0.8 mm perforations and flanged EN 1092 PN100 connections.

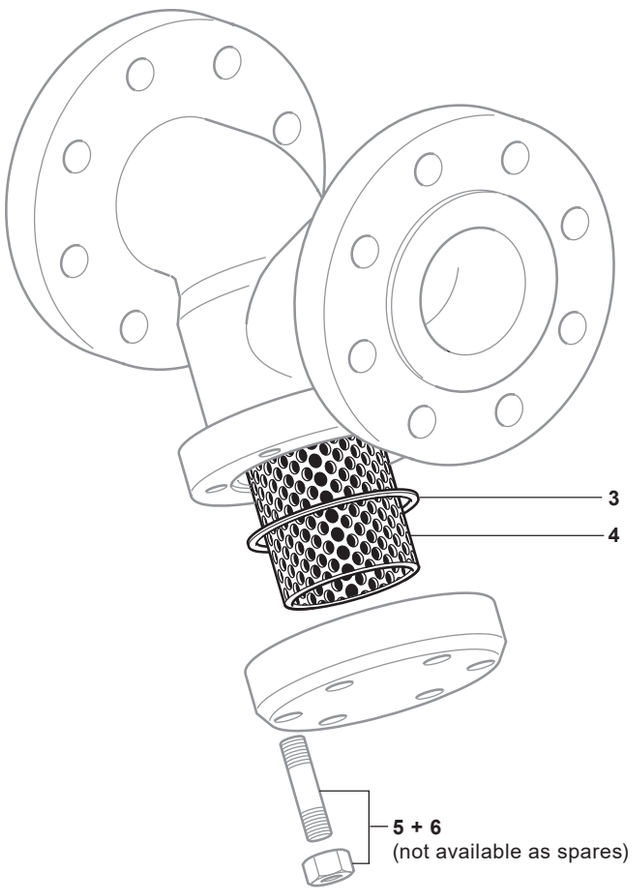
Spare parts
The spare parts available are shown in solid outline.
Parts drawn in a grey line are not supplied as spares.

Available spares

Cover gasket (packet of 3)		**3**
Strainer screen + Cover gasket	Strainer screen	**4**
	Cover gasket	**3**

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 perforation or mesh required.

Example: 1 - Strainer screen + Cover gasket. The strainer screen is to be stainless steel having 0.8 mm perforations for a DN50 Spirax Sarco Fig 36HP strainer having EN 1092 PN63 flanged connections.



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Recommended tightening torques - Items 5 and 6

Sizes	Qty	or mm		N m
DN15 - DN25	4	7/16"	1/2" - 13 UNC	20 - 30
DN40 - DN50	8	7/16"	1/2" - 13 UNC	30 - 40
DN65 - DN80	8	1 1/16"	5/8" - 11 UNC	50 - 60
DN100	8	1 1/4"	3/4" - 10 UNC	80 - 90
DN150	8	1 7/16"	7/8" - 9 UNC	100 - 110
DN200	12	1 13/16"	1 1/4" - 7 UNC	180 - 190

TI-P160-04
CMGT Issue 10

Fig 3616
Austenitic Stainless Steel Strainer - ASTM Material

Description

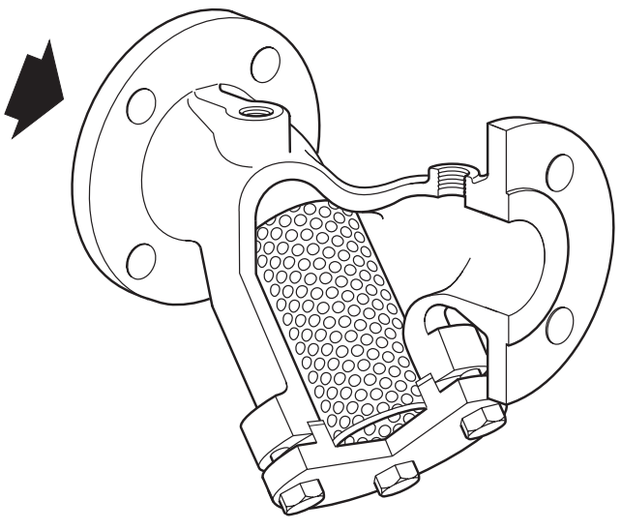
The Fig 3616 is an austenitic stainless steel integrally flanged Y-type strainer with flanged screen cover in ASTM material. The standard stainless steel screen in the ½" to 3" has 0.8 mm perforations and in the 4" to 8" it has 1.6 mm perforations. As options, other perforation and mesh sizes are available as well as monel screens. The strainer cap can be drilled and tapped for blowdown and drain valves if required. The body can also be drilled and tapped for pressure tappings if required.

Standards

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

Certification

This product is available with certification to EN 10204 3.1. Note: All certification / inspection requirements must be stated at the time of order placement.



Sizes and pipe connections

½", ¾", 1", 1¼", 1½", 2", 2½", 3", 4", 5", 6" and 8"
Standard flange ASME (ANSI) Class 150.

Optional extras

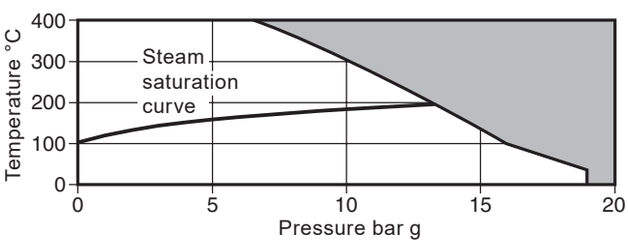
Strainer screens

Stainless steel screen	Perforations	1.6 mm	(½" to 3")
		3.0 mm	(½" to 8")
	Mesh	40, 100, 200	
Monel screen	Perforations	0.8 mm	(½" to 3")
		1.6 mm	(4" to 8")
		3.0 mm	(½" to 8")
	Mesh	100	

Blowdown, drain valve and pressure connections
The cap can be tapped to enable a blowdown or drain valve to be fitted. The body can be drilled for pressure tappings. These options are available at extra cost.
Connection sizes are as shown below:

Strainer size	Blowdown valve	Drain valve	Pressure tapping
½" to ¾"	⅜"	⅜"	¼"
1" to 1¼"	½"	½"	¼"
1½" to 3"	¾"	¾"	¼"
4" to 8"	1"	1"	¼"

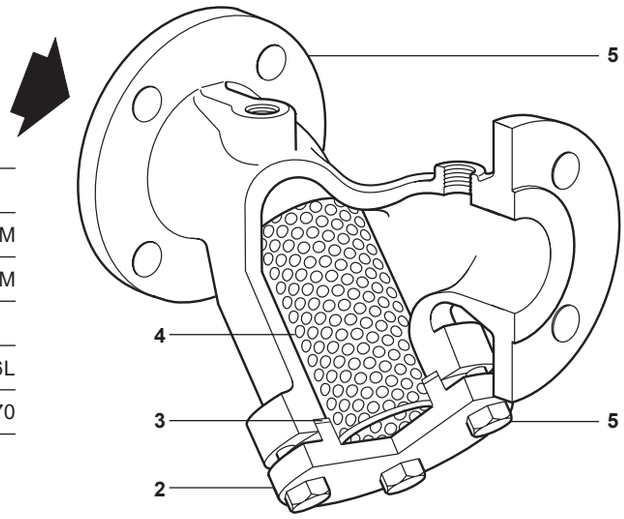
Pressure / temperature limits



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

Note: Special testing to allow lower temperature operation can be provided at extra cost. Consult Spirax Sarco.

Body design conditions		ASME (ANSI) 150
PMA Maximum allowable pressure	19 bar g	(275.5 psi g)
TMA Maximum allowable temperature	400 °C	(752 °F)
Minimum allowable temperature	-29 °C	(-20 °F)
PMO Maximum operating pressure for saturated steam service		
TMO Maximum operating temperature	400 °C	(752 °F)
Minimum operating temperature	-29 °C	(-20 °F)
Designed for a maximum cold hydraulic test pressure of:	30 bar g	(435 psi g)



Materials

No.	Part	Material	
1	Body	Austenitic stainless steel	ASTM A351 CF8M
2	Cap	Austenitic stainless steel	ASTM A351 CF8M
3	Cap gasket	Reinforced exfoliated graphite	
4	Strainer screen	Austenitic stainless steel	ASTM A240 316L
5	Bolts	Austenitic stainless steel	EN ISO 3506 A2 - 70

K_V values

Size	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
Perforations 0.8, 1.6 and 3 mm	5	8	13	22	29	46	72	103	155	237	340	588
Mesh 40 and 100	5	8	13	22	29	46	72	103	155	237	340	588
Mesh 200	4	6	10	17	23	37	58	83	124	186	268	464

For conversion:
C_V (UK) = K_V x 0.963
C_V (US) = K_V x 1.156

Dimensions/weights approximate in mm (ins) and kg (lb)

Size	ASME (ANSI) 150 A		B		C		Screening area cm²		Weight	
½"	135	(5.31)	69	(2.71)	101	(3.97)	28	(4.34)	2.1	(4.6)
¾"	144	(5.66)	82	(3.22)	125	(4.92)	46	(7.13)	2.9	(6.4)
1"	154	(6.06)	90	(3.54)	140	(5.51)	79	(12.24)	3.8	(8.4)
1¼"	180	(7.08)	114	(4.48)	198	(7.79)	135	(20.92)	6.6	(14.5)
1½"	200	(7.87)	127	(5.00)	210	(8.26)	161	(24.95)	9.0	(19.8)
2"	230	(9.05)	150	(5.90)	248	(9.76)	251	(38.90)	10.5	(23.1)
2½"	290	(11.41)	162	(6.37)	263	(10.35)	325	(50.37)	17.5	(38.6)
3"	310	(12.20)	178	(7.00)	272	(10.70)	360	(55.80)	20.0	(44.1)
4"	351	(13.81)	210	(8.26)	323	(12.71)	540	(83.70)	24.0	(52.9)
5"	401	(15.78)	253	(9.96)	393	(15.47)	840	(130.20)	38.0	(83.7)
6"	473	(18.62)	293	(11.53)	454	(17.87)	1 115	(172.82)	50.5	(111.1)
8"	593	(23.34)	375	(14.76)	584	(22.99)	1 905	(295.27)	88.0	(194.0)

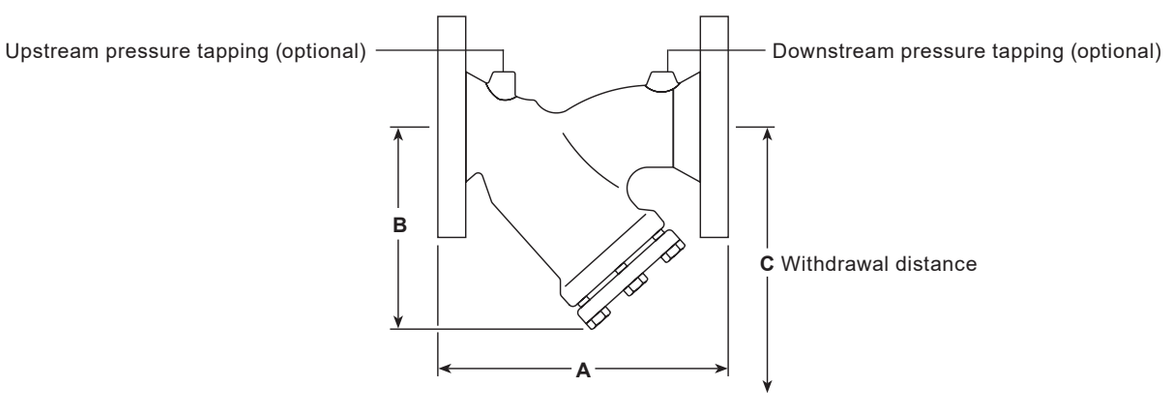


Fig 3616 Austenitic Stainless Steel Strainer - ASTM Material

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions supplied with the product.

Installation note:
The strainer should be installed in the direction of flow, as indicated on the body. On applications involving steam or gases the pocket should be in the horizontal plane. On liquid systems the pocket should point downwards. Suitable isolation valves must be installed to allow for safe maintenance and trap replacement.

Maintenance note:
Maintenance can be completed with the strainer in the pipeline.

Disposal
The product is recyclable. No ecological hazard is anticipated with disposal of this product, providing due care is taken.

Spare parts

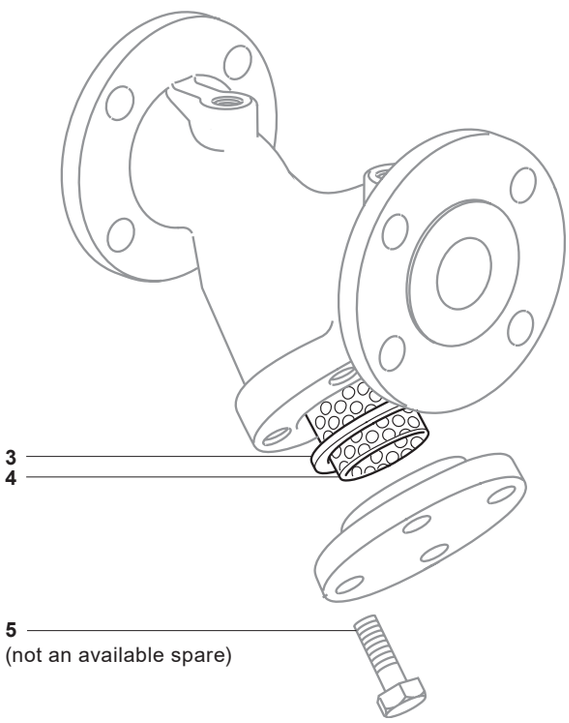
The spare parts available are shown in solid outline. Parts drawn in a grey line are not supplied as spares.

Available spares

Strainer screen (state material, perforations or mesh and size of strainer)			**4**
Cap gasket	½" to 8"	(3 off)	**3**
	5" to 8"	(1 off)	**3**

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 perforation or mesh required.

Example: 1 - stainless steel strainer screen, having 0.8 mm perforations for a 2" Spirax Sarco Fig 3616 strainer having flanged ASME (ANSI) 150 connections.



Recommended tightening torques

Item	Size	Qty	or mm		N m	(lbf ft)
5	½"	4	13 A/F	M8 x 20	15 - 20	(11 - 15)
	¾"	4	13 A/F	M8 x 20	15 - 20	(11 - 15)
	1"	4	13 A/F	M8 x 20	15 - 20	(11 - 15)
	1¼"	4	13 A/F	M8 x 20	15 - 20	(11 - 15)
	1½"	4	13 A/F	M8 x 20	15 - 20	(11 - 15)
	2"	4	17 A/F	M10 x 25	22 - 25	(16 - 18)
	2½"	4	17 A/F	M10 x 30	22 - 25	(16 - 18)
	3"	6	17 A/F	M10 x 30	22 - 25	(16 - 18)
	4"	6	19 A/F	M12 x 35	50 - 60	(36 - 44)
	5"	8	19 A/F	M12 x 40	50 - 60	(36 - 44)
	6"	8	19 A/F	M12 x 40	50 - 60	(36 - 44)
	8"	8	24 A/F	M16 x 50	100 - 110	(73 - 80)

How to order

Example: 1 off Spirax Sarco 1½" Fig 3616 strainer, flanged ASME (ANSI) 150 with austenitic stainless steel screen having 0.8 mm perforations and flanged screen cap.

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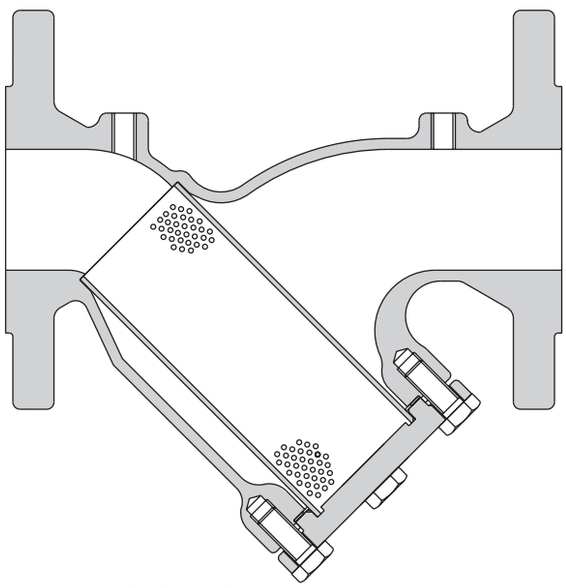
Fig 3616
Austenitic Stainless Steel Strainer - DIN Material



Description

The Fig 3616 is an austenitic stainless steel integrally flanged Y-type strainer with flanged screen cover in DIN material.
The standard stainless steel screen in the DN15 to 80 has 0.8 mm perforations and in the DN100 to 200 it has 1.6 mm perforations.
As options, other perforation and mesh sizes are available as well as monel screens. The strainer cap can be drilled and tapped for blowdown and drain valves if required. The body can also be drilled and tapped for pressure tappings if required.

Certification

The product is available with material certification to EN 10204 3.1.B for body and cap at extra cost.
Note: All certification must be requested at the time of order placement.

Sizes and pipe connections

DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN125, DN150 and DN200.
Standard flange BS 4504 PN16.

Optional extras

Strainer screens	**Stainless steel screen**	Perforations	1.6 mm (DN15 to 80)
			3.0 mm (DN15 to 200)
		Mesh	40, 100, 200
	Monel screen	Perforations	0.8 mm (DN15 to 80)
			1.6 mm (DN100 to 200)
			3.0 mm (DN15 to 200)
		Mesh	100

Blowdown, drain valve and pressure connections

The cap can be tapped to enable a blowdown or drain valve to be fitted. The body can be drilled for pressure tappings. These options are available at extra cost. Connection sizes are as shown opposite.

Strainer size	Blowdown valve	Drain valve	Pressure tapping
DN15 to 20	⅜"	⅜"	¼"
DN25 to 32	½"	½"	¼"
DN40 and 80	¾"	¾"	¼"
DN100 to 200	1"	1"	¼"

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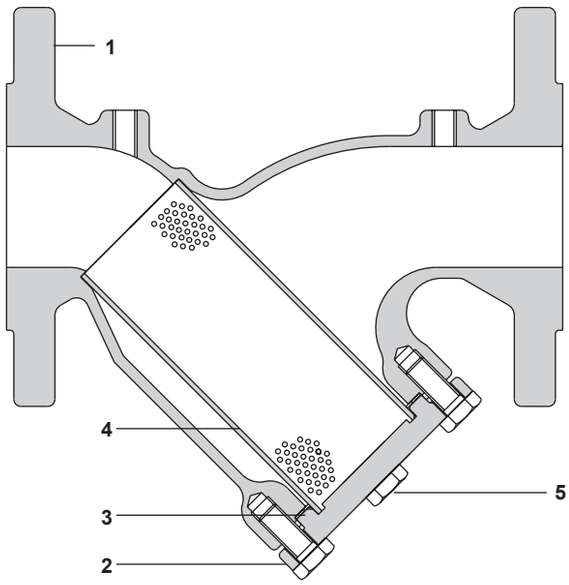
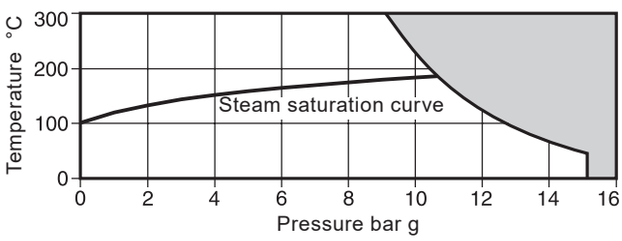
Pipeline ancillaries
Strainers and filters

Materials

No.	Part	Material	
1	Body	Austenitic stainless steel	EN10213 pt 4 1.4408
2	Cap	Austenitic stainless steel	EN10088 pt 3 1.4401
3	Cap gasket	Reinforced exfoliated graphite	
4	Strainer screen	Austenitic stainless steel	ASTM A240 316L
5	Bolts	Austenitic stainless steel	EN ISO 3506 A2 - 70



Pressure/temperature limits



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

Body design conditions		PN16
PMA	Maximum allowable pressure	15 bar g
TMA	Maximum allowable temperature	300 °C
Minimum allowable temperature		-29 °C
PMO	Maximum operating pressure	15 bar g @ 0 °C to 20 °C
TMO	Maximum operating temperature	300 °C @ 9.5 bar g
Minimum operating temperature **Note:** For lower operating temperatures consult Spirax Sarco		-10 °C
Designed for a maximum cold hydraulic test pressure of:		24 bar g

K_v values

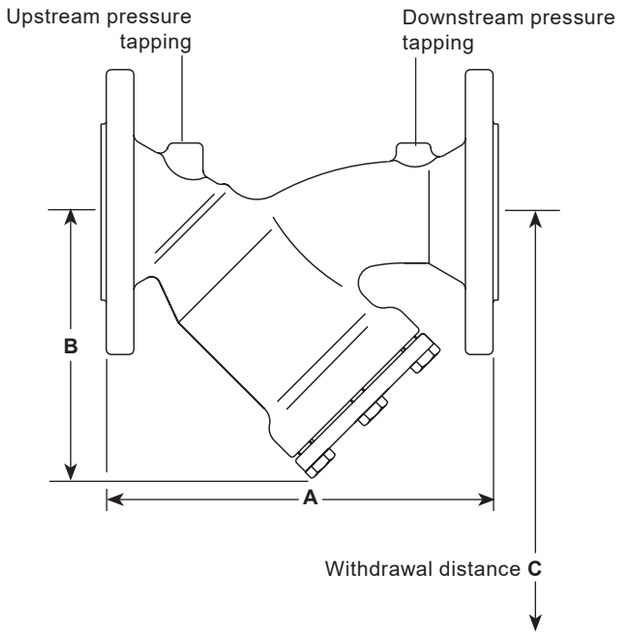
Size	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200
Perforations 0.8, 1.6 and 3 mm	5	8	13	22	29	46	72	103	155	237	340	588
Mesh 40 and 100	5	8	13	22	29	46	72	103	155	237	340	588
Mesh 200	4	6	10	17	23	37	58	83	124	186	268	464

For conversion:
C_v (UK) = K_v x 0.963
C_v (US) = K_v x 1.156

Fig 3616 Austenitic Stainless Steel Strainer - DIN Material

Dimensions/weights (approximate) in mm and kg

Size	PN16 A	B	C	Screening area cm²	Weight
DN15	130	69	101	28	2.1
DN20	150	82	125	46	2.9
DN25	160	90	140	79	3.8
DN32	180	114	198	135	6.6
DN40	200	127	210	161	9.0
DN50	230	150	248	251	10.5
DN65	290	162	263	325	17.5
DN80	310	178	272	360	20.0
DN100	350	210	323	540	24.0
DN125	400	253	393	840	38.0
DN150	480	293	454	1 115	50.5
DN200	600	375	584	1 905	88.0



Safety information
For full details see the Installation and Maintenance Instructions (IM-S60-18) supplied with the product.

Pressure
Before attempting any maintenance of the strainer, consider what is or may have been in the pipeline. Ensure that any pressure is isolated and safely vented to atmospheric pressure before attempting to maintain the strainer. This is easily achieved by fitting Spirax Sarco depressurisation valves type DV (see separate literature for details). Do not assume that the system is depressurised even when a pressure gauge indicates zero.

Temperature
Allow time for temperature to normalise after isolation to avoid the danger of burns and consider whether protective clothing (including safety glasses) is required.

Warning: The strainer cap gasket contains a thin stainless steel support ring, which may cause physical injury if it is not handled and disposed of carefully.

Installation
For full details see the Installation and Maintenance Instructions (IM-S60-18) supplied with the product.

The strainer should be installed in the direction of flow, as indicated on the body. On applications involving steam or gases the pocket should be in the horizontal plane. On liquid systems the pocket should point downwards. Suitable isolation valves must be installed to allow for safe maintenance and trap replacement. Remove all protective caps prior to installation. Open isolation valves slowly until normal operating conditions are achieved. Check for leaks and correct operation.

Maintenance
For full details see the Installation and Maintenance Instructions (IM-S60-18) supplied with the product. Maintenance can be completed with the strainer in the pipeline, once the safety procedures have been observed. It is recommended that a new gasket is used whenever maintenance is undertaken.

Disposal
The product is recyclable. No ecological hazard is anticipated with disposal of this product, providing due care is taken.

How to order
Example: 1 off Spirax Sarco DN40 Fig 3616 strainer, flanged BS 4504 PN16 with austenitic stainless steel screen having 0.8 mm perforations and flanged screen cap.

Spare parts

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

Available spares

Strainer screen (state material, perforations or mesh and size of strainer)			**4**
Cap gasket	DN15 to 100	(3 off)	**3**
	DN125 to 200	(1 off)	**3**

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 perforation or mesh required.
Example: 1 - Strainer screen, stainless steel having 0.8 mm perforations for DN50 Spirax Sarco Fig 3616 strainer PN16.

Recommended tightening torques

Item	Size	Qty	or mm		N m
5	DN15 and 20	4	13 A/F	M8 x 20	15 - 20
	DN25	4	13 A/F	M8 x 20	15 - 20
	DN32 and 40	4	13 A/F	M8 x 20	15 - 20
	DN50	4	17 A/F	M10 x 25	22 - 25
	DN65	4	17 A/F	M10 x 30	22 - 25
	DN80	6	17 A/F	M10 x 30	22 - 25
	DN100	6	19 A/F	M12 x 35	50 - 60
	DN125	8	19 A/F	M12 x 40	50 - 60
	DN150	8	19 A/F	M12 x 40	50 - 60
	DN200	8	24 A/F	M16 x 50	100 - 110

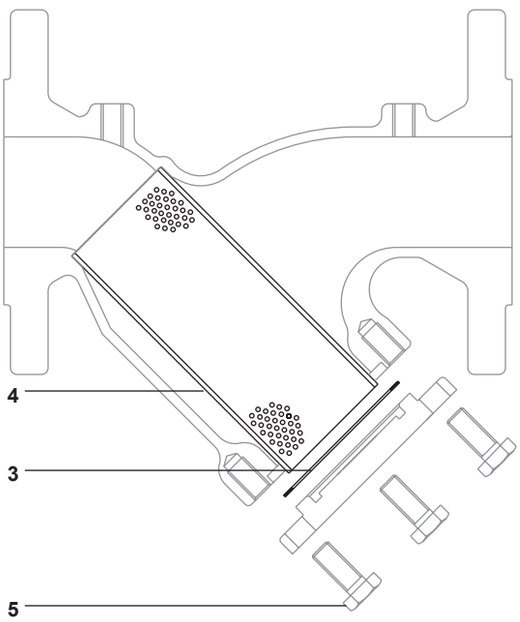


Fig 3616 Austenitic Stainless Steel Strainer - DIN Material