

Mondi Štětí a.s.

STANDARD

Part 13.06

STEAM TRAPS, WATER AND SERVICE PIPING ARRANGEMENTS

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STANDARD

Part 13.06

STEAM TRAPS, SEAL WATER AND SERVICE PIPING ARRANGEMENTS

Worked out by:
Name:
Position:

Verified by:
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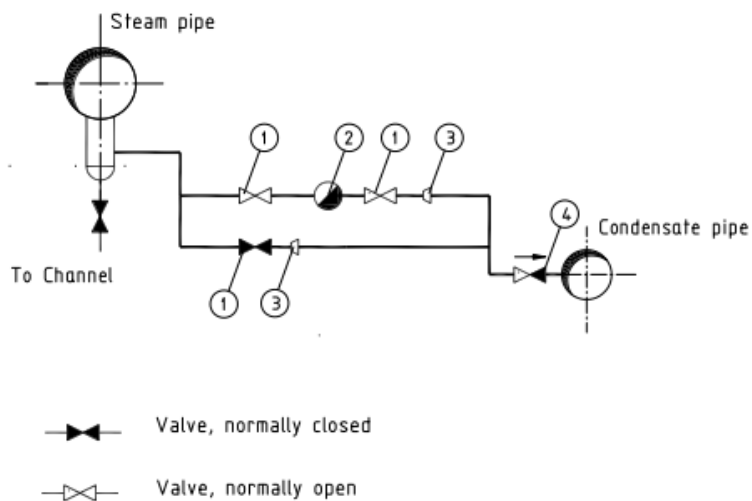
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1 Steam traps medium and low pressure steam piping, $p < 4$ MPa typical arrangement indoors

1.1 Dimensions



4	Check valve
3	Reducer
2	Steam trap with inside filter
1	Shut off valve
Part	Description

Notes: Pipe end in a channel must not reach to the water.

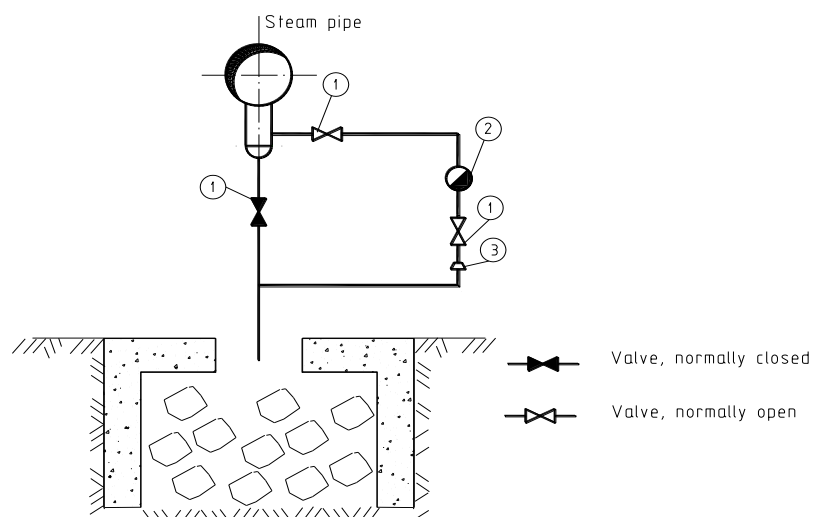
1.2 Designation

Name, standard No.

Example: Steam trap arrangement, 13.06.01

2 Steam traps medium and low pressure steam piping, $p < 4$ MPa typical arrangement outdoors

2.1 Dimensions



3	Reducer
2	Steam trap with inbuilt filter
1	Shut off valve
Part	Description

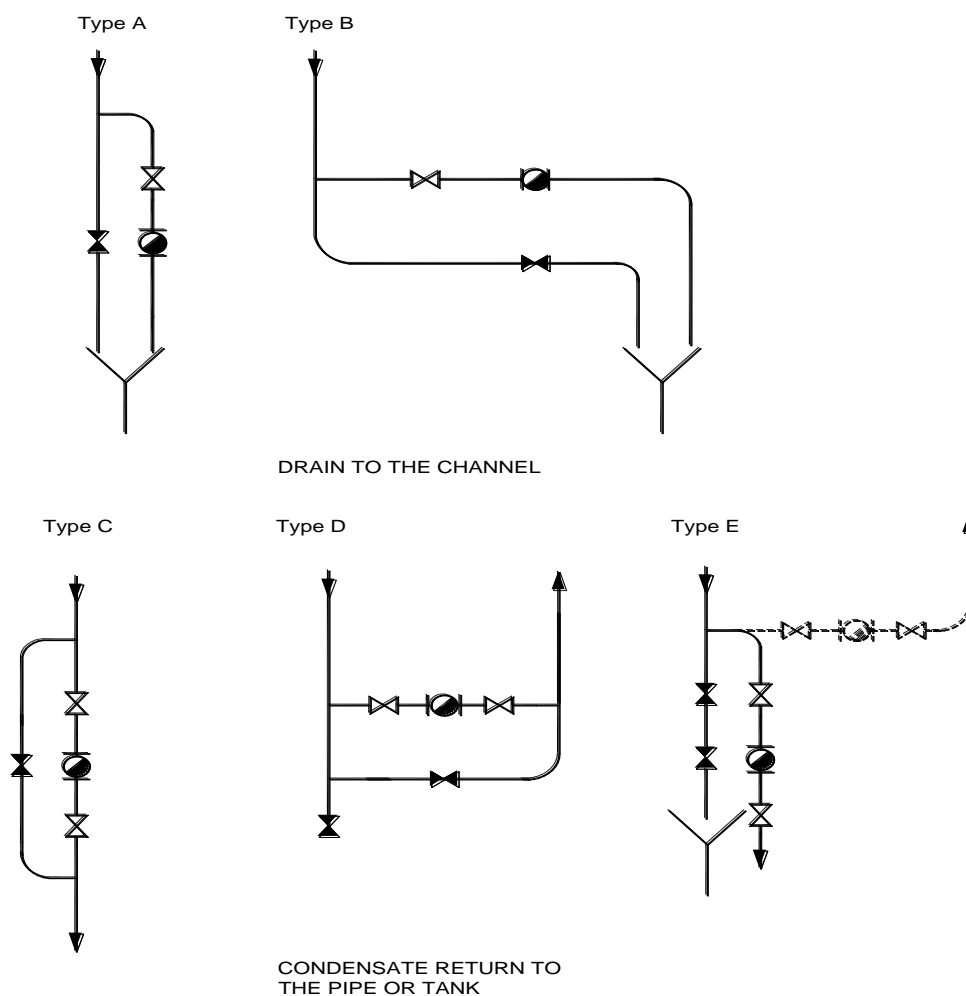
Notes: Pipe end to the cooling pit must not reach to the water.
Nominal size of the piping at least DN 50.

2.2 Designation

Name, standard No.

Example: Steam trap arrangement, 13.06.02

3 Steam traps steam trap mounting arrangements



Notes: Equipment shall be placed at accessible level.

4 Steam traps

4.1 Steam traps review

Thermodynamic steam traps					
	PN	DN 10	DN 15	DN 20	DN 25
94 bar distribution	160	---	BK 29	BK 29	BK 29
25 bar distribution	63	---	BK 37	BK 37	BK 37
12 bar distribution	25	TD 3-3	TD 3-3	TD 3-3	TD 3-3
4 bar distribution	16	TD 3-3	TD 3-3	TD 3-3	TD 3-3

Thermodynamic steam traps suppliers:

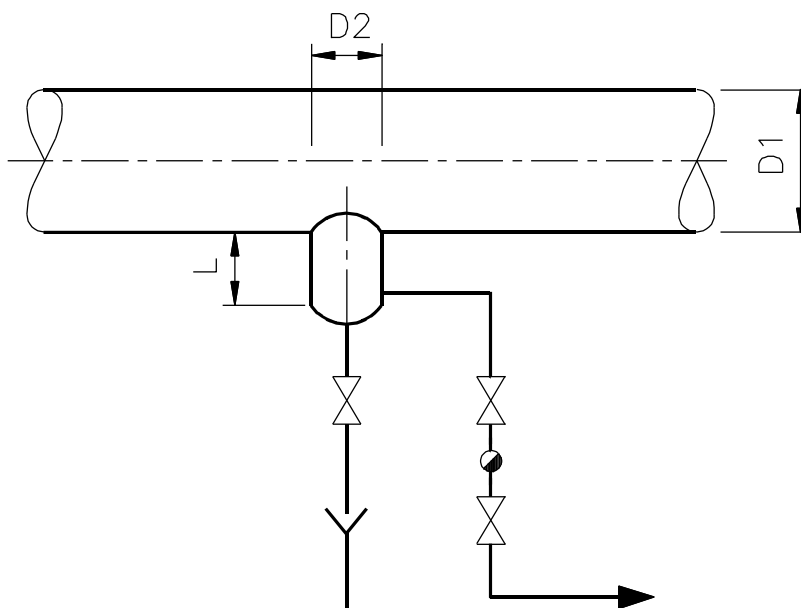
BK 29	Gestra
TD 3-3	Spirax Sarco

Float steam traps				
	PN	DN 25	DN 40	DN 50
94 bar distribution	160	UNA Max 39	---	UNA Max 39
25 bar distribution	63	UNA 27 h	UNA 27 h	UNA 27 h
12 bar distribution	25	UNA 25 h-A013 875932 *	UNA 25 h-A013	UNA 25 h-A013
4 bar distribution	16	UNA 23 h-A04	UNA 23 h-A04	UNA 23 h-A04
2 bar distribution	16	UNA 23 h-A02	UNA 23 h-A02	UNA 23 h-A02

Float steam trap suppliers:

UNA Max 39, UNA 27/25/23 h Type CNU	Gestra Sigmatech
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4.2 Drain at pipe



D ₁	to 40	50	65	80	100	125	150	200	250	300	350	400	450	500	≥600
mm		60.3	76.1	88.9	114.3	139.7	168.3	219.1	273.0	323.9	355.6	406.4	457.2	508.0	610.0
D ₂	25	40	40	65	80	100	125	150	150	200	200	200	250	250	300
mm	33.7	48.3	48.3	76.1	88.9	114.3	139.7	168.3	168.3	219.1	219.1	219.1	273.0	273.0	323.9
L, mm	80		150		200		250								300
Steam trap type	Thermodynamic steam trap						Float steam trap								

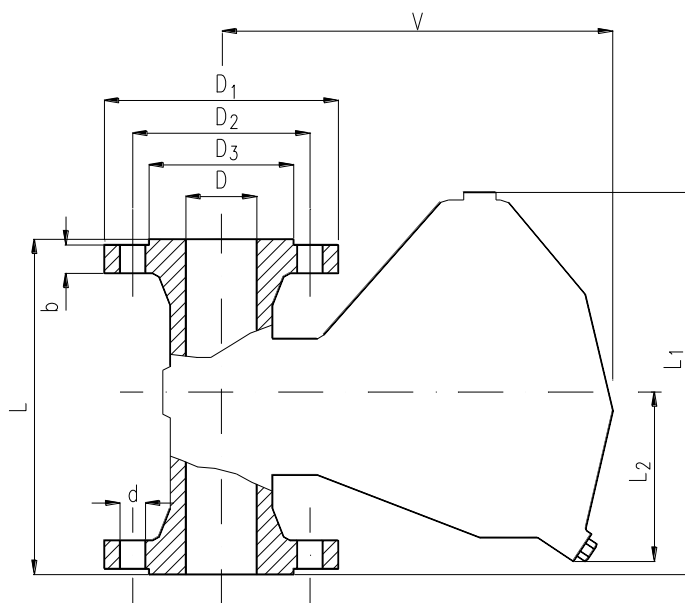
For long steam piping it is recommended to install Gestra AK 35 drainage.

4.3 Float steam TRAP

Float steam trap is used for automatic steam trapping from the equipment operated by steam. The trap can be used in the vertical and horizontal piping. Allowable standard overpressure is as follows:

- 1.30 MPa - temperature up to 120 0C
- 1.28 MPa - temperature up to 200 0C
- 1.12 MPa - temperature up to 250 0C
- 0.96 MPa - temperature up to 300 0C

Allowable overpressure shall be checked case by case before purchasing.



DN	D	D ₁	D ₂	D ₃	d	L	L ₁	L ₂	V	b	kg
25	25	115	85	68	14	180	192	86	195	16	8,6
50	50	165	125	102	18	236	269	116	277	20	22

5 Seal water controls

5.1 Supplier

The sealing water units of John Crane Safematic shall be used.

5.2 Systems

Two distinct types are distinguished.

Control unit for stuffing boxes

The sealing water is lead via the control unit to the sealing unit where the main part is mixed with the medium behind the stuffing box and the surplus water is freely discharged.

Control units for face seal rings

The sealing water is lead to the sealing unit. By a control unit adjusts flow rate. Sealing water is discharged into a collecting container or a tank.

Suppliers of pumps and equipment that needs sealing water must furnish the following data for the selection of the suitable type:

- Type of seal
- Volume of sealing water
- Pressure of sealing water
- Sealing water can to be mixed into fluid substance or shall to be discharged separately
- Nominal sizes of hoses
- Connection points (to and from)

The Standard is binding upon all divisions of the Company and it is binding Contractors which install or repair rotating machines for Mondi Štětí a.s.

5.3 Sealing water requirements

For full operational security, sealing water must be protected by primary and secondary filters (approx. 50 µ).

Sealing water feed lines must be furnished with solenoid valves that close the line with a delay of time when pump stops.

5.4 Electrical monitoring

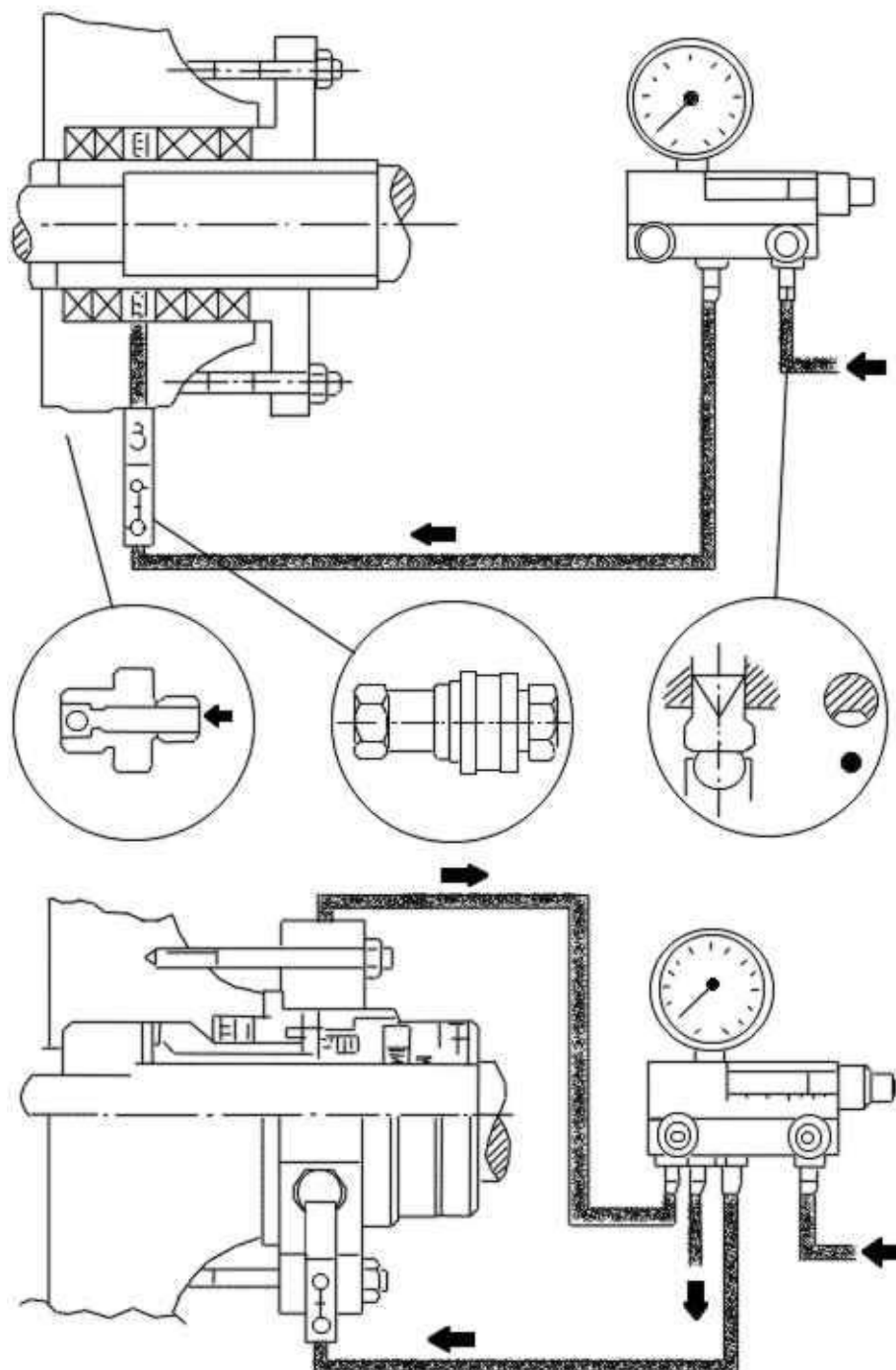
Sealing water units shall be equipped by flow switch which enables monitoring in control system. Opening contact at flow switch activates an alarm at control system.

The flow switch has a local indicating light.

The alarm limit can be adjusted by loosening the shut-off pot.

Individual pumps and equipment that needs sealing water approved by Mondi shall be provided with electrical flow monitoring.

5.5 Control unit for stuffing boxes

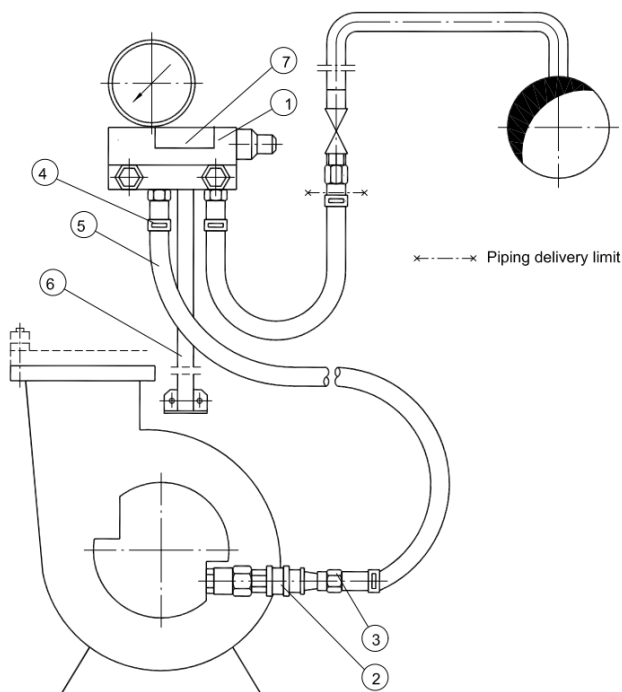
SAFEUNIT-system

Equipment components

SUT-AA-BB-XX*

1. Flow-rate meter SFT-AA-BB
2. Non-return valve **
3. Hose connector
4. Hose clamp
5. Hose 3/8"
6. Stand
7. Alarm unit (flush-seals) ***

IN = sealing water supply



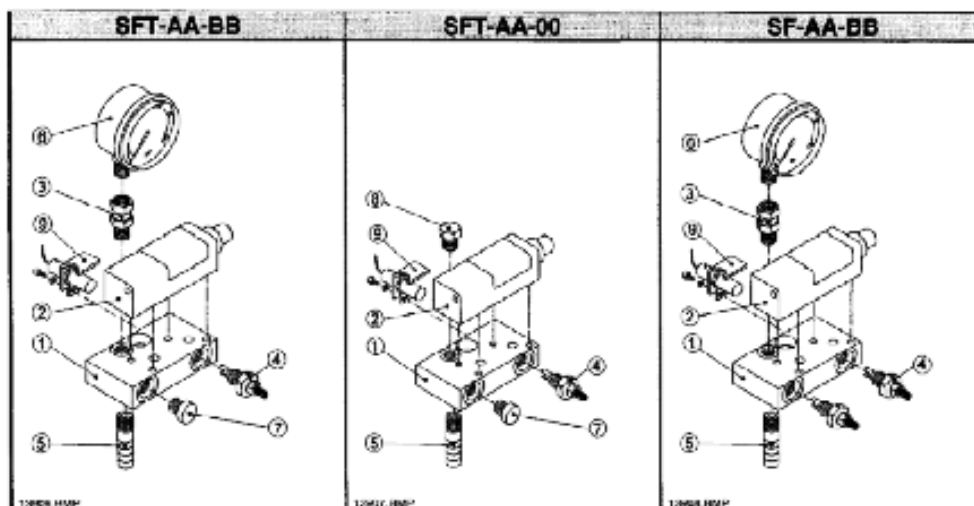
* AA-BB = Spec. in accordance with flow meter

** XX-spec. depending on connection

*** Alarm units, types:

AC-1 or DC-1 (see separate operating instruction 20000101 or 20000116).

Control unit for stuffing boxes



1. BASE PLATE	Pipe thread NPT-thread
2. ACRYLIC COMPONENT	SF(T)-03-BB SF(T)-08-BB SF(T)-15-BB
3. MANOMETER COUPLING	
4. CONTROL VALVE	
5. HOSE CONNECTOR	
6. MANOMETER (BB)	0-10 bar ; 0-10 bar (AISI 316) 0-25 bar ; 0-25 bar (AISI 316)
7. SCREW PLUG FOR CONTROL VALVE	
8. SCREW PLUG FOR MANOMETER	
9. ALARM UNIT	AC-1 DC-1

5.6 Control unit for face seal rings

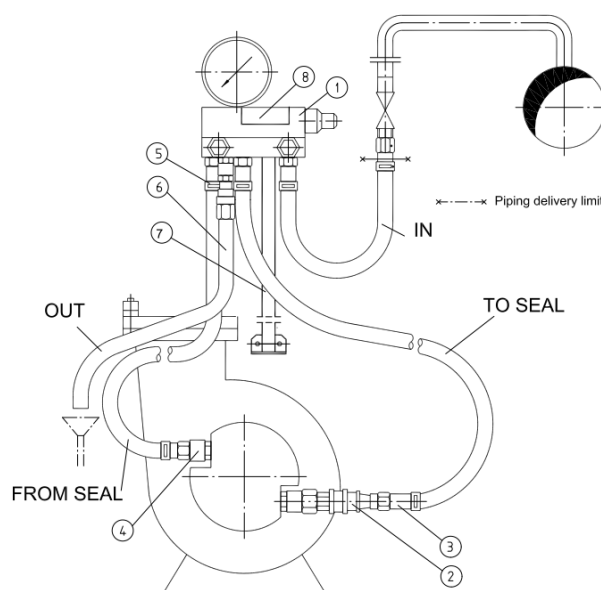
Equipment components

SU-AA-BB-XX *

1. Flow-rate meter SF-AA-BB
2. Non-return valve **
3. Hose connector
4. Hose connector
5. Hose clamp
6. Hose 3/8"
7. Stand
8. Alarm unit ***

IN = sealing water supply

OUT = sealing water discharge



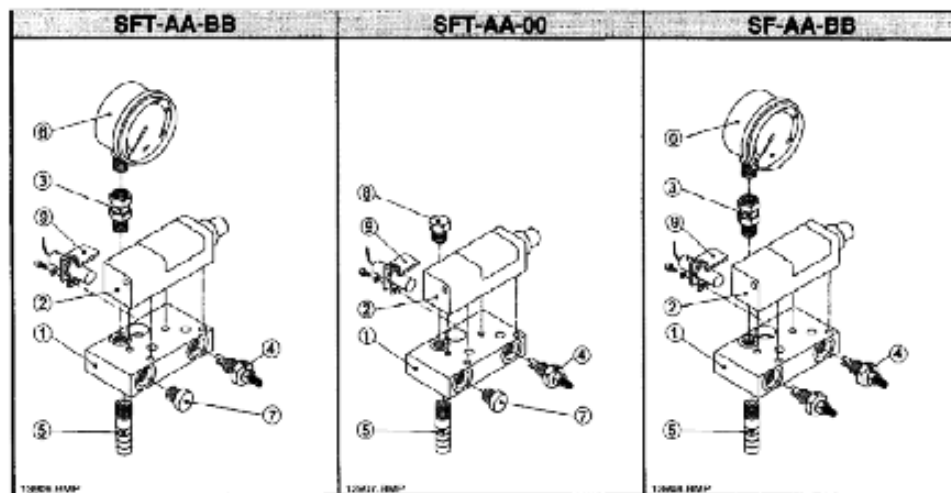
* AA-BB = Spec. in accordance with flow meter

** XX-spec. depending on connection

*** Alarm units, types:

AC-1 or DC-1 (see separate operating instruction 20000101 or 20000116).

Control unit for face seal rings



1. BASE PLATE	pipe thread NPT-thread
2. ACRYLIC SECTION	SF(T)-03-BB SF(T)-08-BB SF(T)-15-BB
3. MANOMETER COUPLING	
4. CONTROL VALVE	
5. HOSE CONNECTOR	
6. MANOMETER (BB)	0-10 bar ; 0-10 bar (AISI 316) 0-25 bar ; 0-25 bar (AISI 316)
7. SCREW PLUG FOR CONTROL VALVE	
8. SCREW PLUG FOR MANOMETER	
9. ALARM UNIT	AC-1 DC-1

5.7 Description

The sealing water is led through a control valve to the flow-rate meter. The spring-loaded floater in the transparent measuring pipe of the flow-rate meter indicates the flow rate. The rate is continuously adjustable via a control valve by loosening the lock nut and adjusting the screw. The adjusted rate shall be secured by re-tightening the lock nut. The control valve may also be used as a shut-off valve.

The water flows from the flow-rate meter into the sealing unit or the stuffing box. The manometer shows the pressure. The shut-off valve of the manometer permits replacing the manometer during operation.

With type SF-08-XX (SF-15-XX), the pressure of the return sealing water is controlled by an integrated pressure control valve.

Pressure control is similar to flow-rate control. It is to be noticed that they affect each other and that adjustments of one of them may require re-adjustments of the other.

The control unit shall be furnished with a cleaning or checking button which frees and moves the floater and thus permits particles to be flushed out of the measuring pipe. This cleaning operation shall be available to perform during regular operation. A detrimental effect on flow-rate and pressure situation of the sealing water is not allowed.

5.8 Designation of units

Item	Safematic unit type	Specification
01	SFT-08-10 3400-4083A	for stuffing boxes, without hoses, 0-8 l/min, 10 bar
02	SFT-15-10 3400-4093A	for stuffing boxes, without hoses, 0-15 l/min, 10 bar
03	SFET-08-10 3400-4093A	for stuffing boxes, without hoses, with electrical monitoring, 0-8 l/min, 10 bar
04	SFET-15-10 3400-4093A	for stuffing boxes, without hoses, with electrical monitoring, 0-15 l/min, 10 bar
05	SF-08-10 3400-4049A	for face seal rings, without hoses, 0-8 l/min., 10 bar
06	SF-15-10 3400-4094A	for face seal rings, without hoses, 0-15 l/min., 10 bar
07	SFE-08-10 3400-4049A	for face seal rings, without hoses, with electrical monitoring, 0-8 l/min., 10 bar
08	SFE-15-10 3400-4094A	for face seal rings, without hoses, with electrical monitoring, 0-15 l/min., 10 bar
09	SUT-08-10 3300-4225A	for stuffing boxes, with non-return valve, ready connection coupling and 2-m hose 0-8 l/min., 10 bar
10	SUT-15-10 3300-4225A	for stuffing boxes, with non-return valve, ready connection coupling and 2-m hose 0-15 l/min., 10 bar

Item	Safematic unit type	Specification
11	SUET-08-10 3300-4225A	as item 9, but with electrical monitoring
12	SUET-15-10 3300-4225A	as item 10, but with electrical monitoring
13	SU-08-10 3300-4224A	for face seal rings, with non-return valve, ready connection coupling and 4-m hose 0-8 l/min., 10 bar
14	SU-15-10 3300-4224A	for face seal ring, with non-return valve, ready connection coupling and 4-m hose 0-15 l/min., 10 bar
15	SUE-08-10 3300-4224A	as item 13, but with electrical monitoring
16	SUE-15-10 3300-4224A	as item 14, but with electrical monitoring
17	SFT-50-10 3400-6283	for stuffing boxes, without hoses and hose connectors 0-50 l/min., 10 bar
18	SF-50-10 3400-6281	for face seal rings, without hoses and hose connectors 0-50 l/min., 10 bar
19	AC-1 or DC-1	electrical monitoring

Only complete units, i.e. with hoses, valves, ready connection couplings, stands are to be asked for or ordered in principal.

Electrical monitoring only when explicitly specified by Mondi.

5.9 Installation

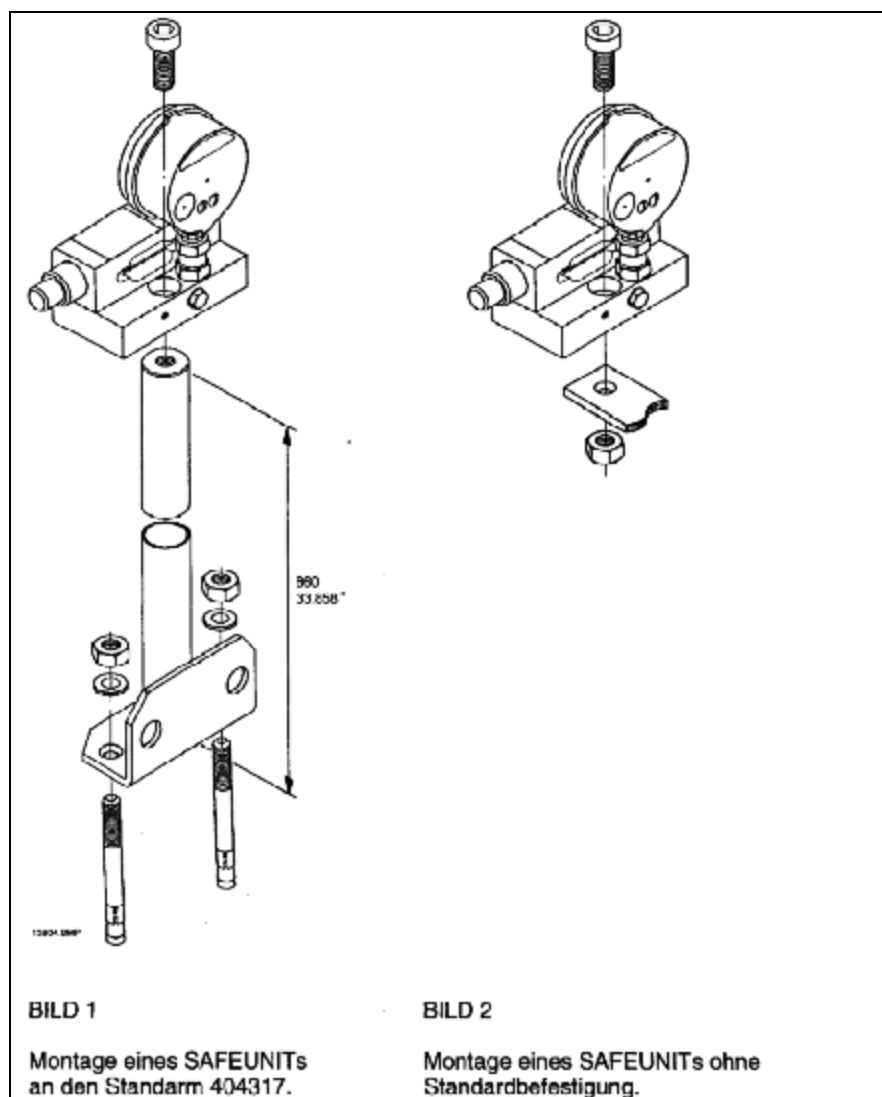
For simple servicing and recording, Safematic unit controls should be installed only at easily accessible places close to equipment that needs sealing water.

5.10 Stands

Stand order No 40 4317 can be used for two versions:

1. Installation on pump frame via lateral mounting plate
2. Floor-mounting via base plate

All materials to be 1.4571.



Sketch 1

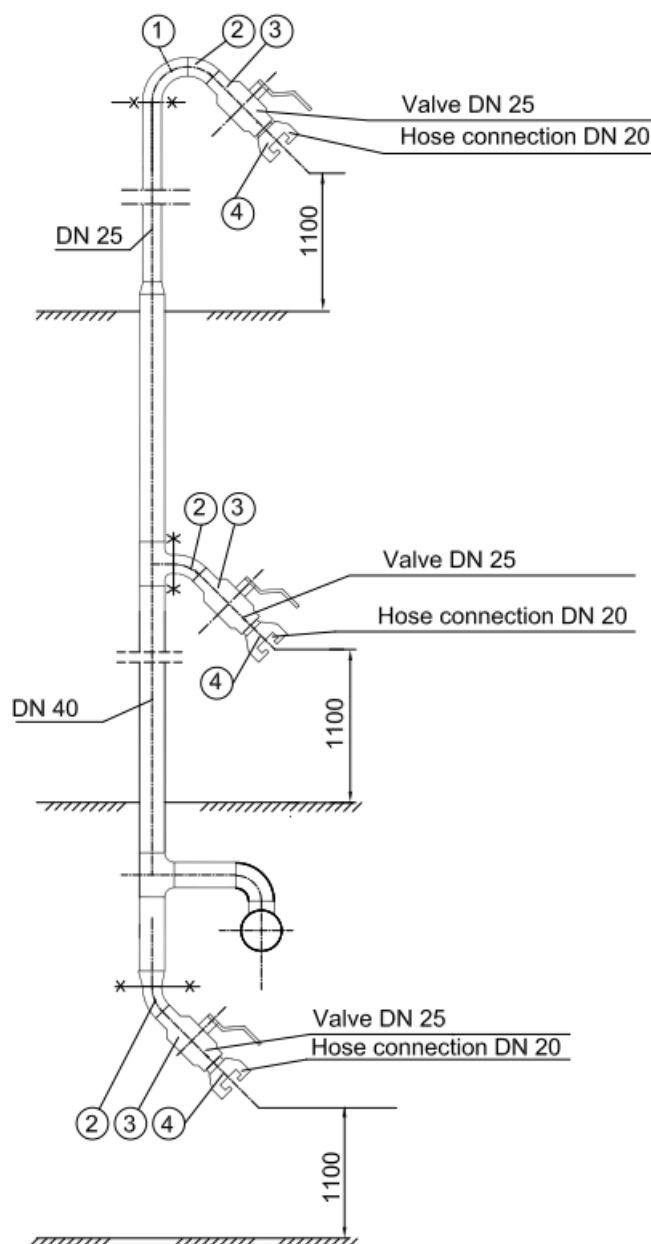
Installation on
stand arm 404317

Sketch 2

Floor-mounted via
base plate

6 Compressed air supply system DN 20

6.1 Dimensions



4	3	Hose connection R ¾" external thread R 1"		
3	3	Valve DN 25 welded/ R 1" thread see valve specification		1.4404
2	3	Elbow 45° / DN25 – 33.7 x 2.0	EN 10253-4	1.4404
1	1	Elbow 90° / DN25 – 33.7 x 2.0	EN 10253-4	1.4404
Part	Pcs	Description	Standard No.	Material

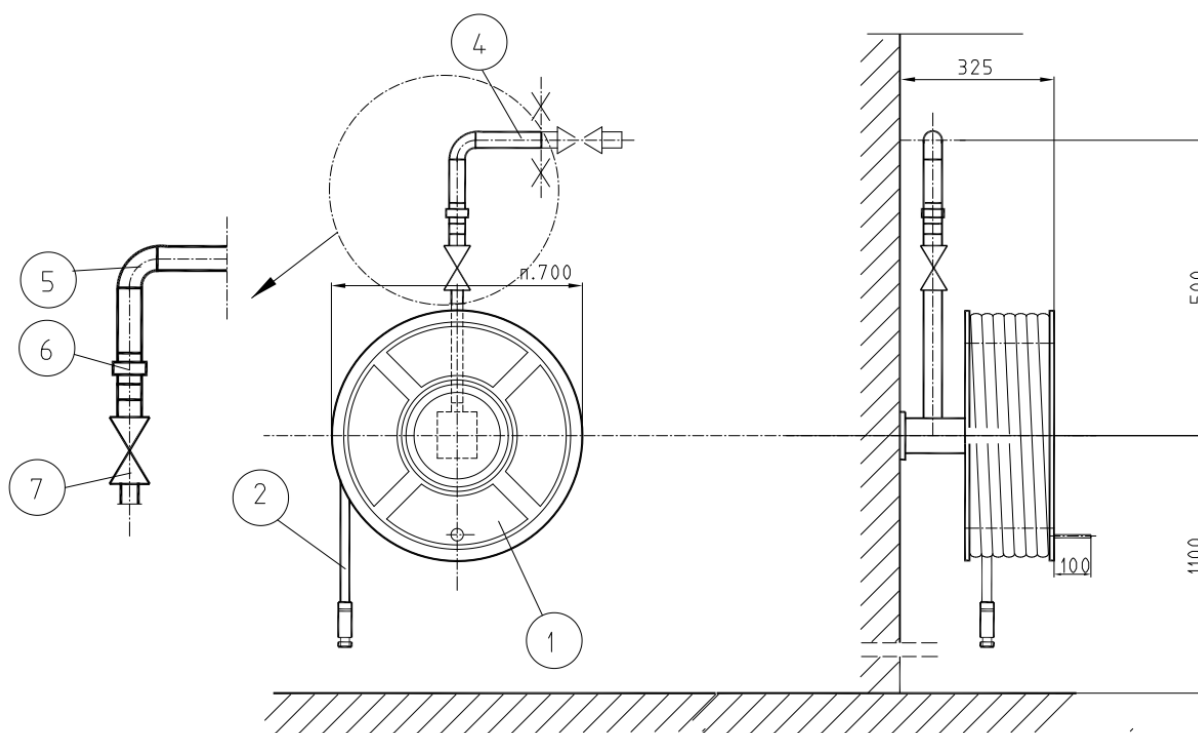
6.2 Designation

Name, DN, standard No.

Example: Compressed air supply system DN 20, 13.06.06

7 Wash water hydrant DN 40 with hose reel

7.1 Dimensions



X – X Specification limit

7	1	Ball valve with welding ends DN 40	1.4404
6	1	Union with butt weld ends R 1 ½ " EN 10241	1.4404
5		Elbow 48.3 x 2	1.4404, EN 10253-4
4		Pipe 48.3 x 1.6	1.4404, EN 10217-7
2	1	Steel reinforced hose 1 1/2" Length 30 m	
1	1	Hose reel, hose 1 1/2"	
Part	Pcs	Description	Material

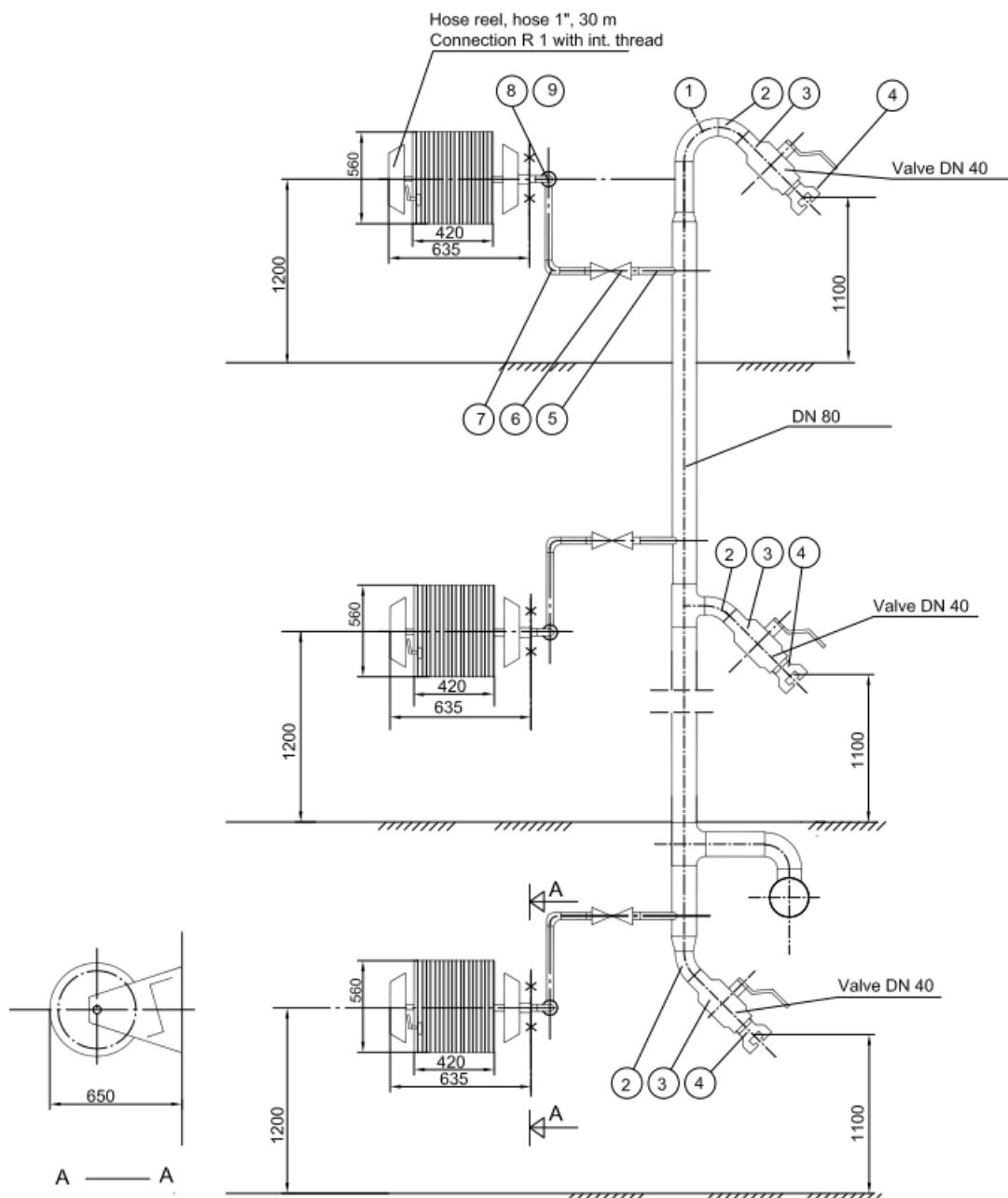
7.2 Designation

Name, standard No.

Example: Wash water hydrant DN 40 with hose reel, 13.06.07

8 Fire hydrant DN 40 with hose reel, indoors

8.1 Dimensions



9	3	Bend with socket 90°, R 1"	EN 10241	1.4404
8	3	Welding nipple, R 1"	EN 10241	1.4404
7	6	Elbow 90° / DN 25 – 33.7 x 2.0	EN 10253-4	1.4404 EN 10253-4
6	3	Valve DN 25 welding ends see valve specification		1.4404
5		Pipe DN 25 33.7 x 1.6	EN 10217-7	1.4404 EN 10217-7
4	3	Fire fighting nipple		Aluminium
3	3	Valve DN 40 welded/1 1/2" thread see valve specification		1.4404
2	3	Elbow 45° / DN 40 – 48.3 x 2.0	EN 10253-4	1.4404 EN 10253-4
1	1	Elbow 90° / DN 40 - 48.3 x 2.0	EN 10253-4	1.4404 EN 10253-4
Part	Pcs	Description	Standard No.	Material

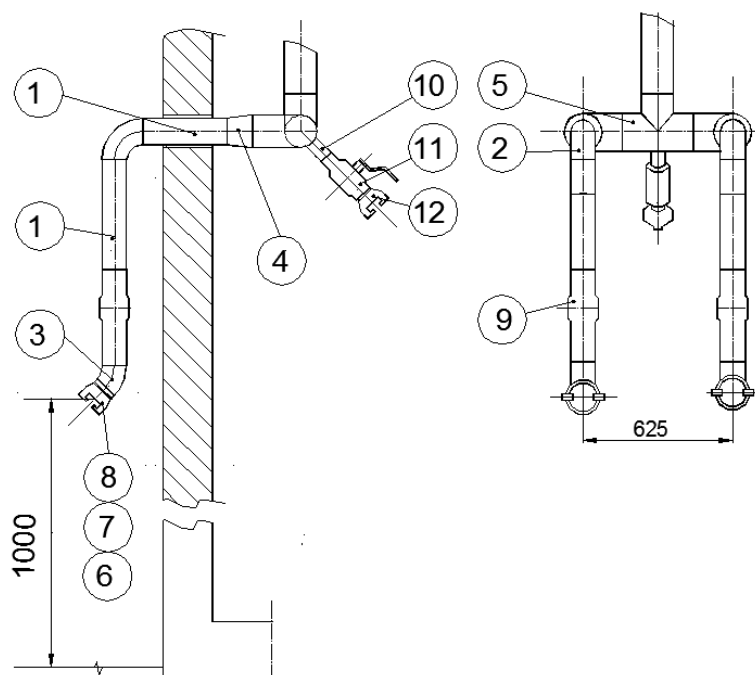
8.2 Designation

Name, DN, standard No.

Example: Fire hydrant indoors, DN 40, 13.06.08

9 Fire hydrant 2 x DN 80, outdoors

9.1 Dimensions



12	1	Fire fighting nipple	Aluminium
11	1	Valve DN 40 PN 16 welded/ R 1 1/2" thread	1.4404
10	1	Pipe DN 40-48.3 x 2.0	1.4404, EN 10217-7
9	2	Valve DN 80 PN 16 with long welding ends	1.4404
8	2	Quick coupling cover	Aluminium
7	2	Quick coupling nipple	Aluminium
6	2	Welding nipple R 3" external thread	1.4404
5	1	T-piece DN 100/ DN 100 – 114.3 x 114.3 x 2.6	1.4404, EN 10253-4
4	2	Reducer DN 100/ DN 80 – 114.3/ 88.9 x 2.0	1.4404, EN 10253-4
3	2	Elbow 45° / DN 80 – 88.9 x 2.6	1.4404, EN 10253-4
2	2	Elbow 90° / DN 100 – 114.3 x 2.6	1.4404, EN 10253-4
1	4	Pipe DN 80 – 88.9 x 2.0	1.4404, EN 10217-7
Part	Pcs	Description	Material

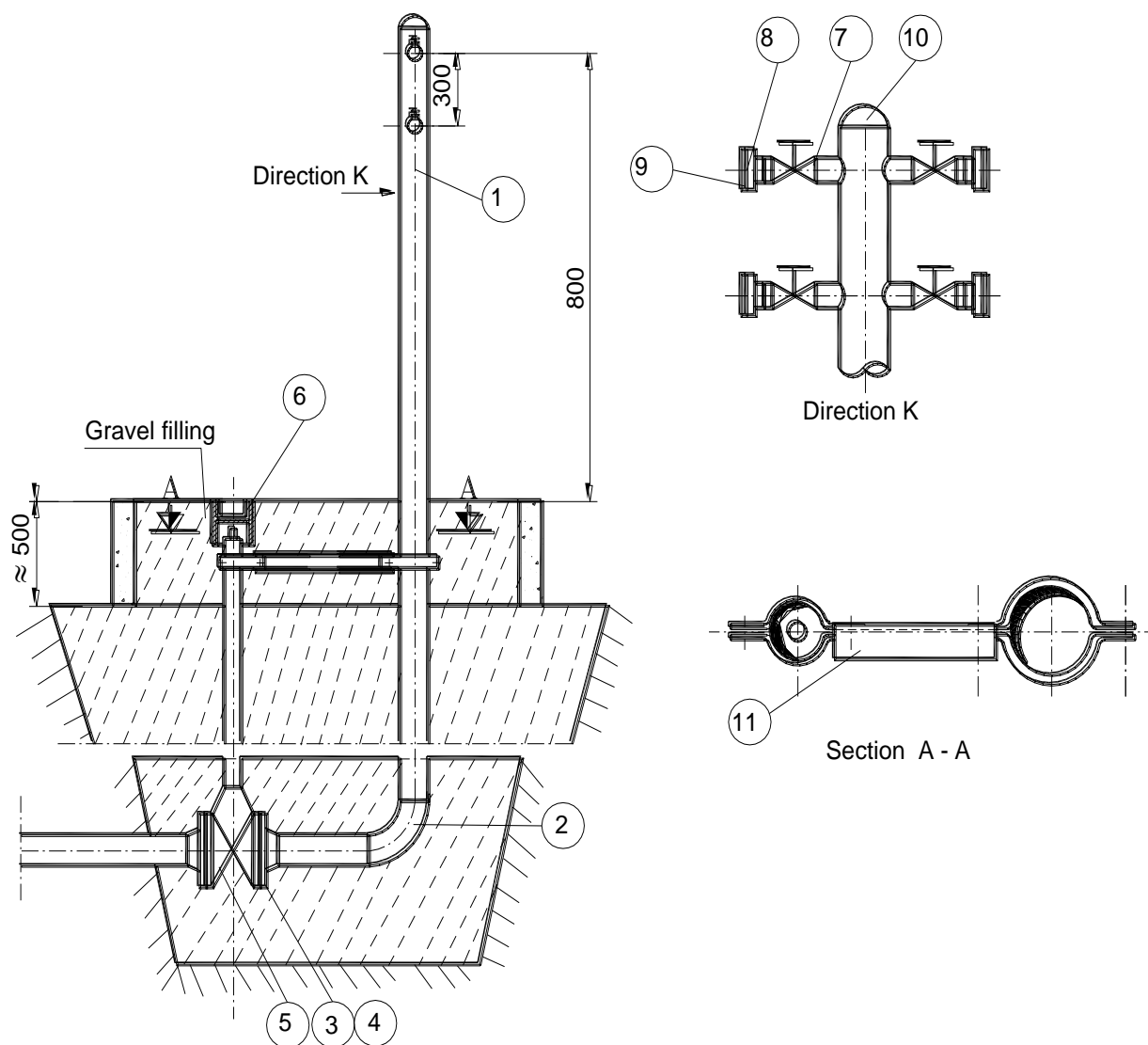
9.2 Designation

Name, DN, standard No.

Example: Fire hydrant outdoors, 2 x DN 80, 13.06.09

10 Fire hydrant 4 x DN 80, outdoor area

10.1 Dimensions



Notes: Pipe parts under earth shall be handled with bitumen, other parts shall be painted.

11	1	Support	1.4404
10	1	Cap DN 150 – 168.3 x 2.6, EN 10253-4	1.4404
9	4	Quick coupling cover	Aluminium
8	4	Quick coupling nipple	Aluminium
7	4	Ball valve DN 80, PN 16 internal thread, long welding end / R 3" thread	1.4404
6	1	Embedded collar with cover	Cast iron
5	1	Shut-off valve DN 150 PN 16 (ball or gate valve), flanged	
4	2	Loose flange EN 1092-1 Type 02, DN 150, PN 16	P235GH
3	2	Collar EN 1092-1 Type 35, DN 150, PN 16	1.4404
2	1	Elbow 90° / DN 150 – 168.3 x 4.0	1.4404, EN 10253-4
1	1	Pipe DN 150 – 168.3 x 2.6	1.4404, EN 10217-7
Part	Pcs	Description	Material

10.2 Designation

Name, DN, standard No.

Example: Fire hydrant outdoor area, 4 x DN 80, 13.06.10