

## SAPAG



### 1. General instructions

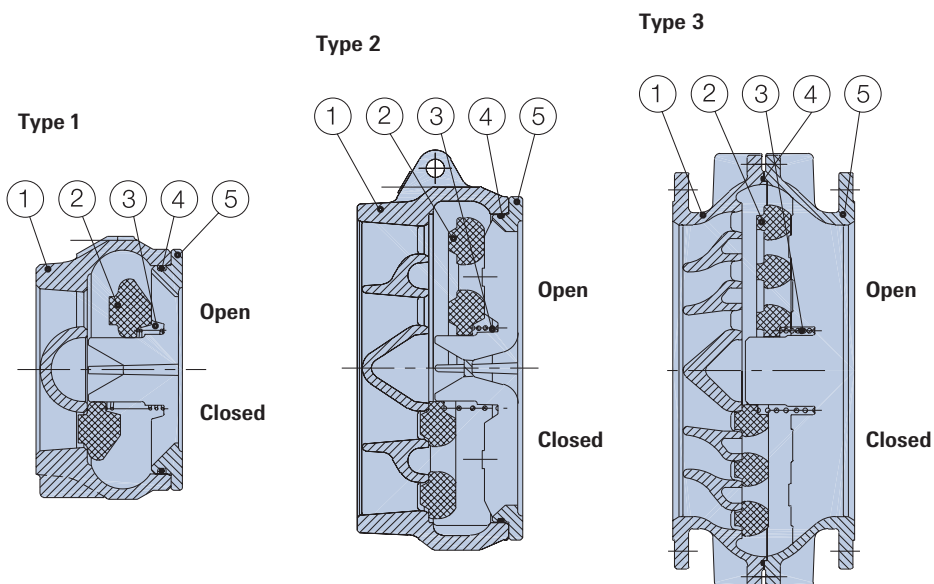
#### 1.1 General functioning

CLASAR check valve shutters move axially and valves can operate in any position, e.g. horizontal flow, upward and downward flows.

#### 1.2 Description

There are three types of CLASAR check valves:

- CLASAR type I for wafer-mounting between flanges DN 150
- CLASAR type II for wafer-mounting between flanges from DN 200 to DN 500
- CLASAR type III complete with flanges for DN > 600



#### Parts list

Rep	Designation
1	Body
2	Obturator
3	Spring
4	O-Ring
5	Counter flange

#### CLASAR valves components

- Body
- Counter flange or rear shell
- Shutter
- Spring

**Note:** CLASAR valves are delivered without flange or support seals or tie-rods or bolts to secure valves to pipework.

As for most valves and fittings, sliding flanges or similar on the pipework are recommended to provide the clearances needed to insert and remove the valve and to prevent unacceptable stressing due to inevitable misalignment.

At least one of the pipes connected to the valve must be firmly anchored to withstand the thrust occurring on valve closure.

## 2. Installation

### 2.1 Instructions before start up

- Before mounting, carefully check the valve for cleanliness. Remove all foreign bodies from the pipework and flush the system through with water or compressed air as appropriate.
- Never weld flanges to the pipe when the CLASAR is in position because this might damage the shutter.
- Provide a trashrack or other solids removal device if solids are liable to be borne along by the flow and foul the shutter region and prevent closure.
- Check that the flow takes place in the direction shown by the arrow on the valve.
- CLASAR valve types I and II for Wafer-mounting must be perfectly aligned with the pipe centre-line. Use spacer tubes mounted on tie-rods if necessary.



### IMPORTANT

Particular care should be taken to remove pieces of weld metal and shavings liable to damage the shutter and sealing surfaces.

## 3 Maintenance

### 3.1 Spare parts

Available spares are as follows:

- Shutter
- Return spring
- Ring seal between body and counterflange or rear shell

No special tool is needed for CLASAR valve maintenance.

### 3.2 Dismantling

#### Wafer-mounted CLASAR

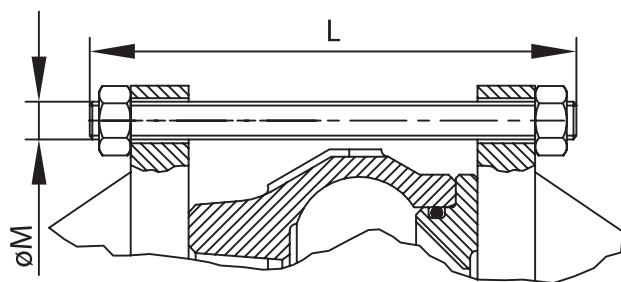
- Remove valve from pipe and place on a clean plane surface with the upstream or body side facing downwards and the downstream or counter flange side uppermost. The shutter and spring should be visible. Uncouple the counter flange in the recesses provided at the junction between the counter flange and the body, lever out and remove the counter flange.
- Remove spring and shutter.

#### CLASAR with flanges

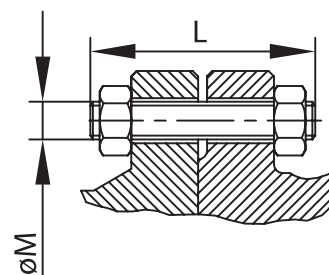
- Remove valve from pipe and place on a clean plane surface with the body facing downwards and the counter flange uppermost so that the shutter and spring are accessible. Loosen tie-bolts securing the sleeve to the valve body and remove the rear shell followed by the spring and shutter.
- When the dismantling is finished:
  - Check condition of body mating surfaces, there should be no corrosion pitting or material torn away. Make especially careful check in the shutter bearing region. Clean as necessary with emery paper.
  - Check condition of shutter supports in contact with the body. Check condition of ring connecting fins. Change shutter if necessary.
  - Check return spring.
  - Change ring seal.

### 3.3 Reassembly

- Position shutter in body so that mating surfaces are in contact each other.
- Insert spring.
- Generously lubricate the ring seal and body bore.
- Pressing by hand, fit the counterflange to the valve body (type I and II CLASAR).
- Alternatively, bolt the rear shell into position (type III CLASAR with flanges).



**DN80 - DN500**  
Mounting between flanges



**DN60 - DN1800**  
Mounting with flanges

**Bolting**

DN		80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1200	
PN10	Number of bolts	8	8	8	8	8	12	12	16	16	20	20	20	24	24	28	28	32	
NF E 29203	ø of bolts	M16	M16	M16	M20	M20	M20	M20	M20	M24	M24	M24	M27	M27	M30	M30	M33	M36	
NF E 29209	Length of thru-bolts	S	160	180	210	240	220	240	280	320	340	320	400	130	130	140	150	150	170
DIN 2501	Length of thru-bolts	F	160	180	210	240	220	240	280	320	350	340	420	140	150	160	170	190	190
BS 4504																			
PN16	Number of bolts	8	8	8	8	12	12	12	16	16	20	20	20	24	24	28	28	32	
NF E 29203	ø of bolts	M16	M16	M16	M20	M20	M24	M24	M24	M27	M27	M30	M33	M33	M36	M36	M39	M45	
NF E 29209	Length of thru-bolts	S	160	180	210	240	220	260	290	330	350	340	430	150	150	170	160	170	190
DIN 2501	Length of thru-bolts	F	160	180	210	240	220	260	300	330	360	360	440	150	150	170	180	190	220
BS 4504																			
PN20	Number of bolts	4	8	8	8	8	12	12	12	16	16	16	20	-	-	32	36		
NF E 29203	ø of bolts	M16	M16	M20	M20	M20	M24	M24	M27	M27	M30	M30	M33	-	-	M38	M39		
NF E 29209	Length of thru-bolts	S	170	190	230	260	240	260	300	350	360	360	440	170	-	210	220		
DIN 2501	Length of thru-bolts	F	170	190	220	260	240	270	320	370	390	380	470	170	-	180	190		
BS 4504																			
PN25	Number of bolts	8	8	8	8	12	12	16	16	16	20	20	20	24	24				
NF E 29203	ø of bolts	M16	M20	M24	M24	M20	M27	M27	M30	M33	M33	M33	M36	M39	M45				
NF E 29209	Length of thru-bolts	S	170	200	230	260	240	270	310	360	380	370	450	160	170	180			
DIN 2501	Length of thru-bolts	F	1770	200	230	2660	2440	270	310	360	3880	370	450	170	170	180			
BS 4504																			
PN40	Number of bolts	8	8	8	8	12	12	16	16	16	20	20	20						
NF E 29203	ø of bolts	M16	M20	M24	M24	M27	M30	M30	M33	M36	M36	M39	M45						
DIN 2501	Length of thru-bolts	S	170	200	230	260	250	280	330	380	400	390	470	200					
BS 4504	Length of thru-bolts	F	170	200	230	2660	260	2880	330	380	400	390	490	210					
PN50	Number of bolts	8	8	8	8	12	16	16	20	20	24	24							
NF E 29203	ø of bolts	M20	M20	M20	M20	M24	M27	M30	M30	M33	M33	M33							
DIN 2501	Length of thru-bolts		180	180	240	270	260	300	340	390	410	400	490						
BS 4504																			

S = welding neck or slip-on flanges

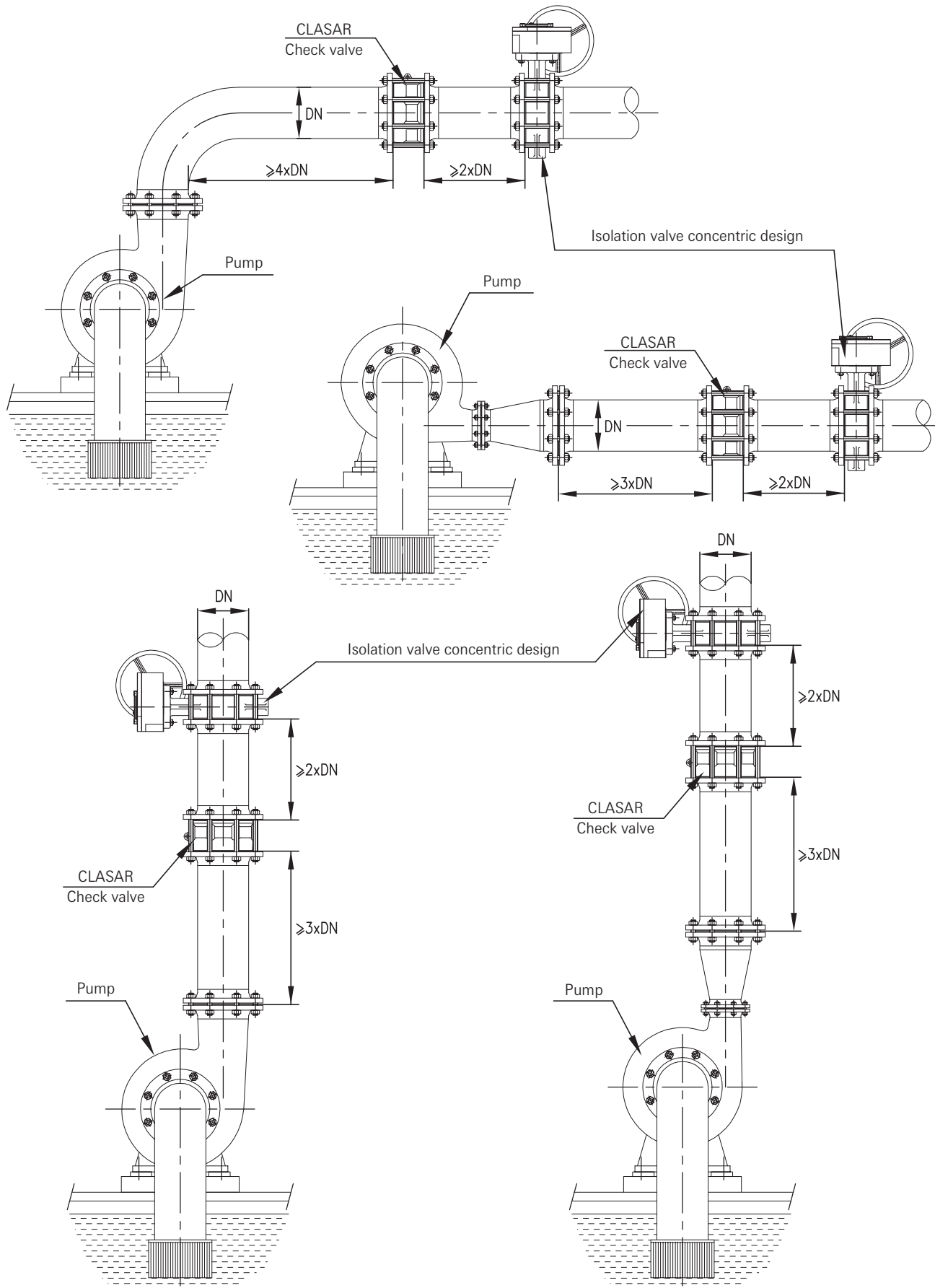
F = flat flanges

**Torque**

**Max. torque for thru-bolting (Nm) - non oxidized new bolting**

ø	Max. torque	Quality class
M16	110	6/8
M20	220	6/8
M22	290	6/8
M24	370	6/8
M27	540	6/8
M30	340	4/6
M33	500	4/6
M36	650	4/6
M39	800	4/6
M45	1300	4/6

**CLASAR pipe mounting - Force pump**



**CLASAR pipe mounting - In line mounting**

