ZETKAMA Sp. z o.o.
ul. 3 Maja 12
PL 57-410 Ścinawka Średnia

ZETKAMA

USER MANUAL			
CHECK VALVE	**zCHE**	**Fig. 275**	**Edition: 01/2017** **Date: 30.08.2017**

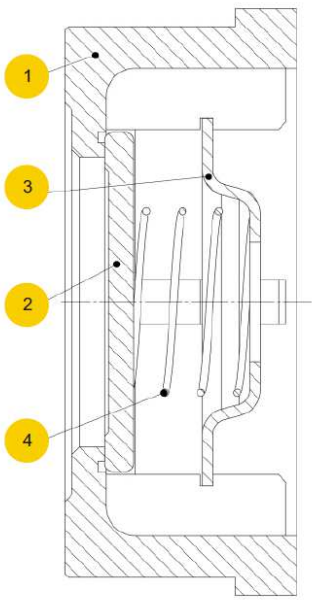
CONTENTS

Brass H DN 15-100

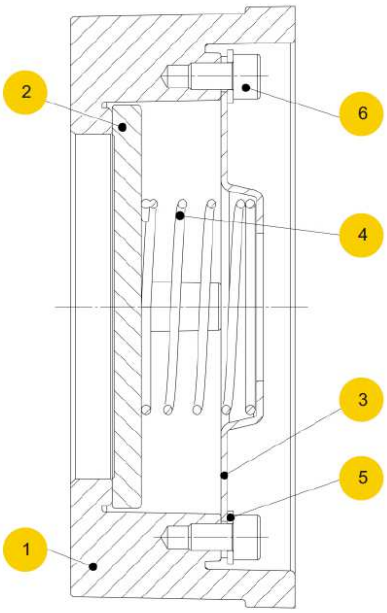
Stainless steel I DN 15-300

1. PRODUCT DESCRIPTION

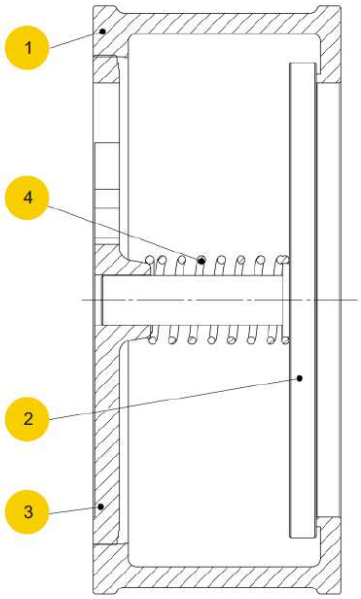
Type 275H DN15-DN100



Type 275I DN15 - DN100



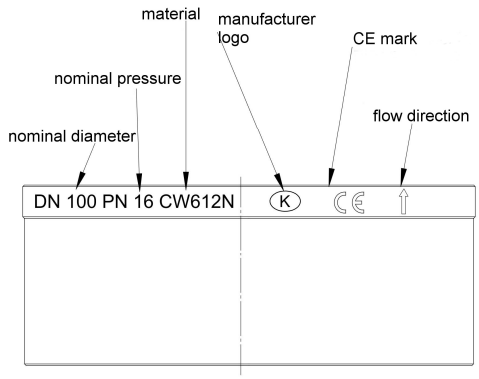
Type 275I DN125 - DN300



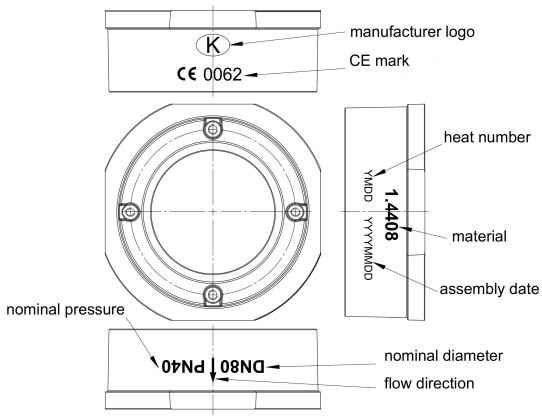
	body material	H	I	I
		DN15 - DN100		DN125 - DN300
	type	50	51	51
1	body	CuZn39Pb2	GX5CrNiMo 19-11-2	GX5CrNiMo 19-11-2
2	disc	X6CrNiMoTi 17-12-2	GX5CrNiMo 19-11-2	X3CrNiMo 17-13-3
3	centring ring	X10CrNi 18-8	X3CrNiMo 17-13-3	GX5CrNiMo 19-11-2
4	spring	X6CrNiMoTi 17-12-2	X3CrNiMo 17-13-3	X3CrNiMo 17-13-3
5	washer	-	A2 (dla DN65 - 100)	-
6	bolt	-	A4	-
	max temperature	200°C	300°C	300°C

Check valves are provided with casted marking according to requirements of PN-EN19 standard. The marking facilitates technical identification and contains:

- diameter nominal DN (mm),
- pressure nominal PN (bar),
- body and bonnet material marking,
- arrow indicating medium flow direction,
- manufacturer marking,
- heat number and assembly date,
- CE marking, for valves subjected 2014/68/UE directive.



Type H brass
DN15 – DN100
CE mark from DN65.



Type I stainless steel
DN15 – DN300
CE 0062 mark from DN32.

2. REQUIREMENTS FOR MAINTENANCE STAFF

The staff assigned to assembly, operating and maintenance tasks should be qualified to carry out such jobs. During valve operation heat parts of the valve, for example body or bonnet parts could cause burn. If necessary user should place protective shields and warning labels.

3. TRANSPORT AND STORAGE

Transport and storage should be carried out at temperature from –200 to 650C, and valves should be protected against external forces influence and destruction of painting layer as well. The aim of painting layer is to protect the valves against rust during transport and storage. Valves should be kept at unpolluted rooms and they should be also protected against influence of atmospheric conditions. There should be applied drying agent or heating at damp rooms in order to prevent condensate formation.

4. FUNCTION

Check valves are designed for one direction flow of the medium and to protect against its back flow.

5. APPLICATION

- industry
- shipbuilding industry
- heating
- power engineer
- refrigeration and air conditioning
- glycol
- industrial water
- diathermic oil
- steam
- compressed air
- neutral fluids

Not all of the applications are suitable for all of the types.

The kind of working medium makes some materials to be use or to be prohibited for use. Valves were designed for normal working conditions. In the case that working conditions exceed these requirements (for example for aggressive or abrasive medium) user should ask manufacturer before placing an order.

Working pressure should be adapted to maximum medium temperature according to the table as below.

Acc PN-89/H-02650		Temperature [° C]		
Material	PN	-10 do 120	150	200
CuZn39Pb2	16	16 bar	16 bar	13,6 bar

Acc EN 1092-1		Temperature [° C]				
Material	PN	-40 do 100	150	200	250	300
G-X5CrNiMo 19-11-2	40	40 bar	36,3 bar	33,7 bar	31,8 bar	29,7 bar

6. ASSEMBLY

During the assembly of check valves following rules should be observed:
- to evaluate before an assembly if the valves were not damaged during the transport or storage,
- to make sure that applied valves are suitable for working conditions and medium used in the plant,
- check if the valve body is free of solid particles,

To assembly the valve in such a way that flow direction comply with an arrow placed on the body.

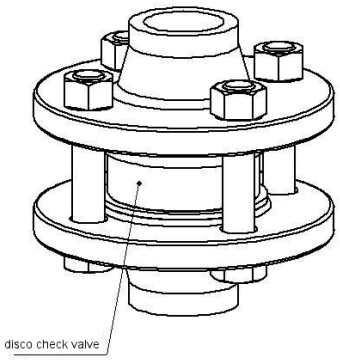
- wafer type check valves Fig. 275 are assembled between pipeline connecting flanges provided with flat raised

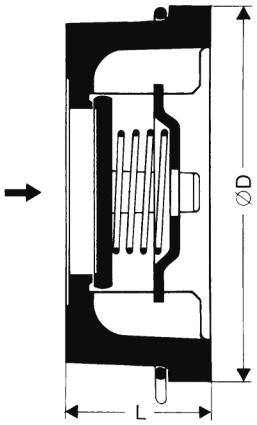
- face, the connection is tighten by bolts.

Pipeline where the valves are fitted should be conducted and assembled in such a way that the valve body is not subjected to bending moment and stretching forces.
Bolted joints on the pipeline must not cause additional stress resulted from excessive tightening, and fastener materials must comply with working conditions of the plant.

- use expansion pipe joints in order to reduce influence of pipeline thermal expansion,
- there is used return spring which enables to fit these valves at any position for horizontal and vertical pipelines as well,
- these valve are not recommended for use at pulsatory flow plants,
- before plant startup, especially after repairs carried out, flash out the pipeline
- strainer (wire mesh filter) installed before the valve increases certainty of its correct action
- before and after the valve a straight pipe should be used of the lenght at least of min 5x DN

Method of installation the valve on the pipeline





- check the tightness of the connections by the pressure test.

The responsibility for correct selection of the valve to the operating conditions, distribution and installation is borne by system designer, contractor and user.

7. MAINTENANCE

During maintenance following rules should be observed:

- startup process – sudden changes of pressure and temperature should be avoided when starting the plant,
- valves work automaticaly and require no maintenance during operation

8. SERVICE AND REPAIR

Before taking up any service jobs make sure that medium supply to the pipeline was cut off, pressure was decreased to ambient pressure, medium was removed from the pipeline and plant was cooled down.

- All service and repair jobs should be carried out by authorized staff using suitable tools and original spare parts.
- Before disassembly of complete valve from the pipeline or before service, the pipeline should be out of operation.
- During service and repair jobs personal health protective in pursuance of existing threat should be used,
- After valve disassembly it is necessary to replace flange connection gaskets between valve and pipeline,
- Every time when valve bonnet was disassembled sealing surface ion.

9. REASONS OF OPERATING DISTURBANCES AND REMEDY

- When seeking of valve malfunction reasons safety rules should be strictly obeyed

Fault	**Possible reason**	**Remedy**
Poor flow	Dirty filter before the valve	Clean or replace the screen
	Clogged pipeline	Check the pipeline
Seat leakage	Damaged seat, disc or flap	Replace the valve and contact supplier or manufacturer
	Medium polluted with solid particles	Clean the valve. Fit a strainer before the valve
Noisy valve operation	Heavy turbulent flow	Check the design once again, make necessary amendments, apply flow throttling
	Valve fitted too close the pump or after pipe elbow	
	Lack of rubber expansion joints or lack of straight pipelines to stabilize the flow before and after the valve	
	Valve size DN is not matched up with medium flow rate	Match up suitable valve size DN, apply flow throttling

10. VALVE SERVICE DISCOUNTINUITY

All obsolete and dismantled valves must not be disposed with household waste. ZETKAMA valves are made of materials which can be re-used and should be delivered to designated recycling centres.

11. WARRANTY TERMS

ZETKAMA grants quality warranty with assurance for proper operation of its products, providing that assembly of them is done according to the user's manual and they are operated according to technical conditions and parameters described in ZETKAMA's catalogue cards. Warranty period is 18 months starting from assembly date, however not longer than 24 months from the sales date.

Warranty claim does not cover assembly of foreign parts and design changes done by user as well as natural wear.

Immediately after detection the user should inform ZETKAMA about hidden defects of the product.

Claim should be prepared in written form.

Address for correspondence:

ZETKAMA Sp. z o.o.
ul. 3 Maja 12
57-410 Ścinawka Średnia

Phone +48 74 86 52 111
Fax +48 74 86 52 101
Website: www.zetkama.com