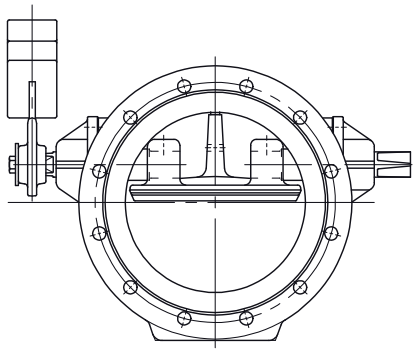
Operating Instructions

ERHARD Tilting-Disc Check Valves

with weight-loaded lever



These operating instructions must always be used in combination with operating instructions BA01E001!

1 Safety Aspects

According to the stipulations concerning safety for technical equipment (DIN 31000 and following) as well as the respective regulations for prevention of accidents (UVV) it is necessary to restrict access to the moving range of the weight-loaded lever. Effective protective guards have to be installed by customers.

On request we will supply suitable protective guards.

2 Description of Product and Range of Application

Nominal size DN	Nominal pressure PN	Hydrostatic test pressure in bars for body	Hydrostatic test pressure in bars for seat	Max. admissible working pressure in bars at a working temperature of 60° C	Product No.
200-1200	10	15	10	10	5503 ..60
150-1200	16	24	16	16	5504 ..60
150-1000	25	37.5	25	25	5505 ..60

The ERHARD Tilting-Disc Check Valve is put on for water speeds under stable flow rates according to table:

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values after EN1074-1: 2000

PFA bar	Velocity of flow m/s
10	3
16	4
25	5

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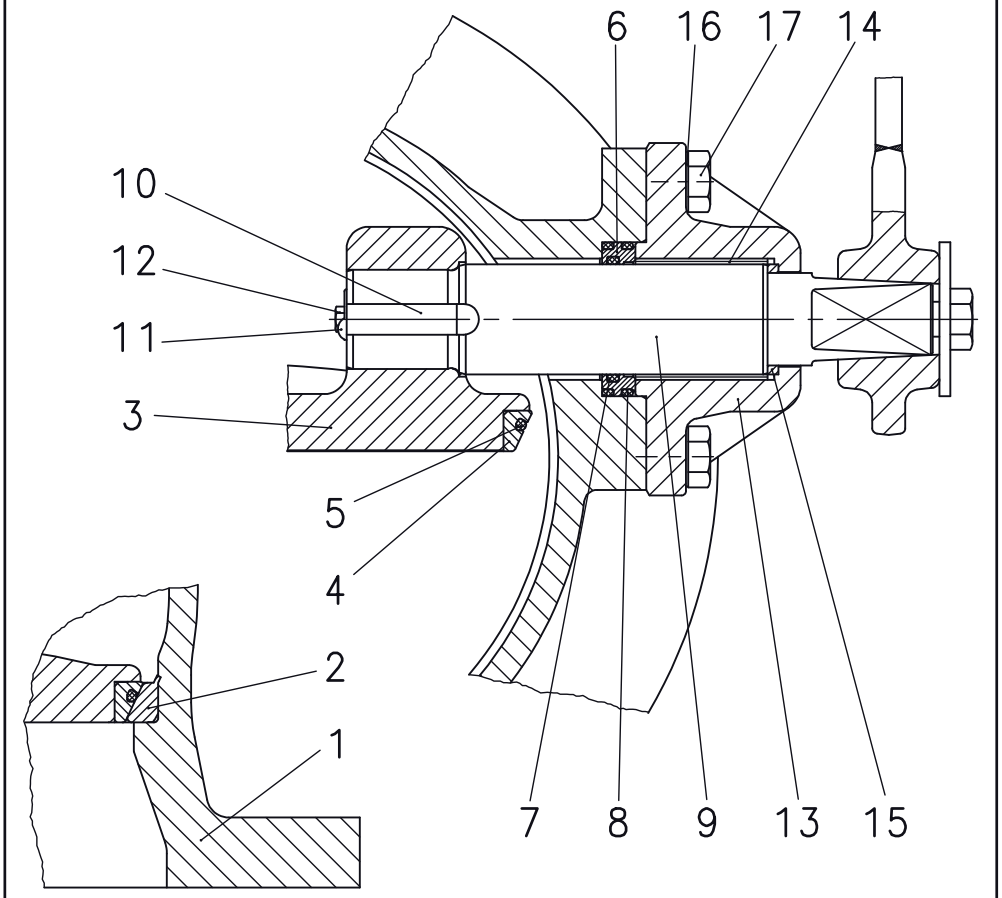
3 Design Features – Technical Data



	1	body	10 key
	2	seat ring	11 safety plate
	3	valve disc	12 hexagon head cap screw
	4	seat ring	13 flanged bearing
*	5	o-ring	14 bush
*	6	spacer	15 fitting key
*	7	o-ring	16 disc
*	8	o-ring	17 hexagon head cap screw
	9	shaft	

* wearing parts

Ⓑ BEZEICHNUNGEN GEAENDERT 09.09.97/BERGERT
Ⓐ AENDERUNG DER BEZEICHNUNGEN / 27.05.94 KUCK W.

CAD DIESE ZEICHNUNG DARF NUR AM BILDSCHIRM GEAENDERT WERDEN
02.10.89 BERGERT

ERHARD TILTING-DISK VALVE
BEARING-AND SEALING ZONE

4E119872

ERHARD-ARMATUREN
ERHARD GMBH & CO
D-89522 HEIDENHEIM AN DER BRENZ

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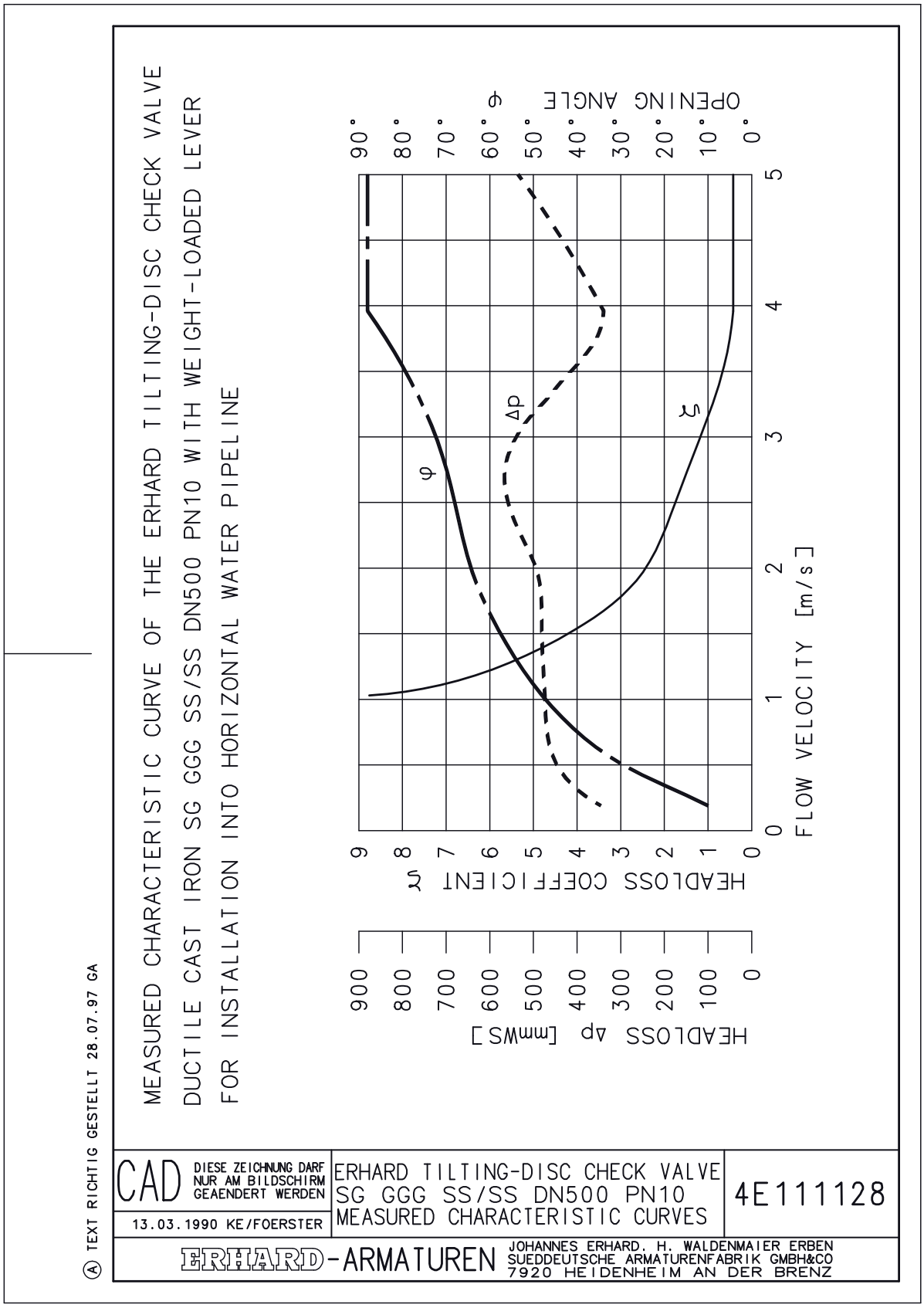

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Horizontal main

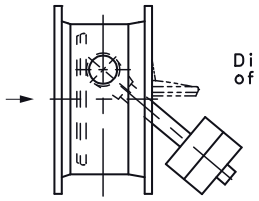

Fig 1
Weight-loaded lever on the left seen in direction of flow

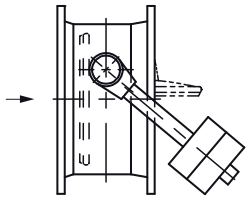

Fig 2
Weight-loaded lever on the right,seen in direction of flow

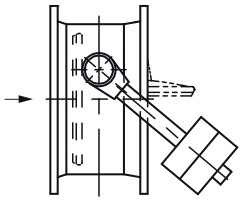

Fig 3
Weight-loaded lever on both sides.

Vertical main

Vertically upward Direction of flow

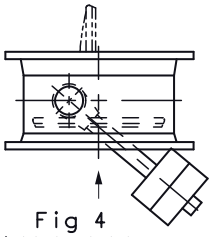

Fig 4
Weight-loaded lever on the left seen in direction of flow

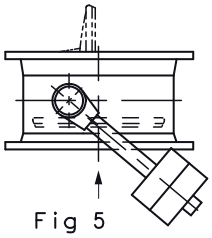

Fig 5
Weight-loaded lever on the right,seen in direction of flow

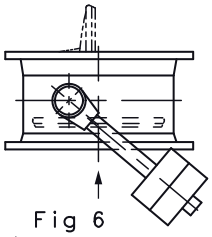

Fig 6
Weight-loaded lever on both sides.

Vertically downward Direction of flow

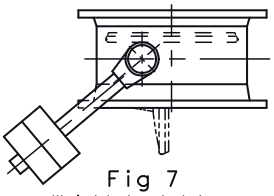

Fig 7
Weight-loaded lever on the left seen in direction of flow

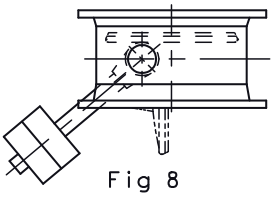

Fig 8
Weight-loaded lever on the right,seen in direction of flow

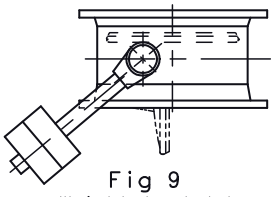

Fig 9
Weight-loaded lever on both sides.

When placing the order, please state Fig.No.

CAD DIESE ZEICHNUNG DARF NUR AM BILDSCHIRM GEAENDERT WERDEN	ERHARD-Tilting-Disc Check Valve Arrangment weight-loaded lever	4E109800
21.09.1995 JAN/BERGERT		
HP-3 ERHARD-ARMATUREN	ERHARD GMBH & CO D-89522 HEIDENHEIM AN DER BRENZ	

M1:21

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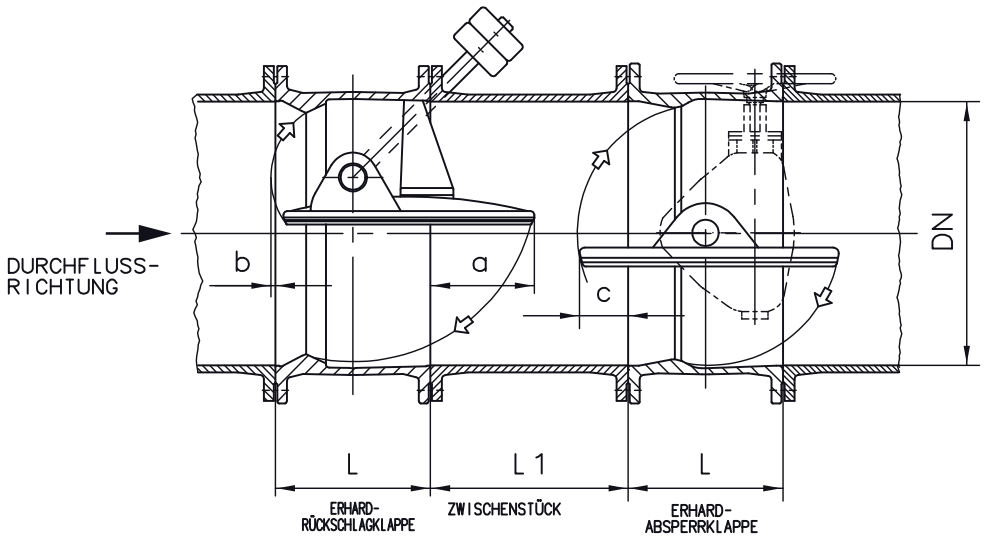

DN	L	L 1	a	b	c
150	210				
200	230	150	20		
250	250	150	45		
300	270	150	70		2
350	290	200	95		25
400	310	225	118		40
450	330	250	142		55
500	350	300	165		65
600	390	400	215		95
700	430	500	263	10	120

DN	L	L 1	a	b	c
800	470	600	315	15	150
900	510	650	364	30	180
1000	550	750	410	40	210
1100	590	800	455	55	225
1200	630	900	515	62	270
1300	670	1000	560	60	295
1400	710	1100	615	80	320
1500	750	1200	660	80	360
1600	790	1300	705	90	385
1800	870	1400	815	110	445
2000	950	1600	915	130	505

Alle MaBe in mm

ACHTUNG:

Einbau muß so erfolgen, daß Hebel und Gewicht der ERHARD-Rückschlagklappe links in Durchflußrichtung und Getriebe der ERHARD-Absperrklappe rechts in Durchflußrichtung angeordnet wird, damit Hebel und Gewicht nicht mit dem Getriebe kollidiert.

Ⓐ MASSE GEÄNDERT

CAD DIESE ZEICHNUNG DARF NUR AM BILDSCHIRM GEAENDERT WERDEN

22.05.1995 MB/LUTZ HP 2

EINBAUVORSCHLAG

ERHARD-RÜCKSCHLAGKLAPPE-ERHARD-ABSPERRKLAPPE

4. 98300

ERHARD-ARMATUREN

ERHARD GMBH & CO
D-89522 HEIDENHEIM AN DER BRENZ

ERSETZT FUER BLATT GLEICHER NUMMER V. 14.10.1981

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4 Performance and Mode of Operation

The ERHARD Tilting-Disc Check Valves operate to the principle of a free-swinging check valve. The disc is double offset to a very high degree and is opened by the upstream flow. The closing moment resulting from the weight of the disc and weight-loaded lever acts against this opening moment. This closing moment initiates closing when the flow ceases. It can be reduced within certain limits by moving the counterweight on the lever towards the shaft. However, it must be in any case ensured that the valve disc closes even without counterpressure.

The shaft of the ERHARD Tilting-Disc Check Valves protrudes on both sides (square connection). As a standard, the weight-loaded lever is fastened on the left seen in flow direction, as shown on print **4E109 800**, fig. 1, for installation into horizontal pipeline. For other installations, for example into vertical pipeline, the weight-loaded lever must be re-arranged on the shaft. If necessary, the valves have to be fitted with weight-loaded lever on both sides. For more details see drawing **4E109 800**.

At the manufacturer's plant the valves have been tested for strength and tightness to DIN EN12 266.

5 Installation into the Pipeline - Mounting

Remove all packing material from the valve. Prior to installation, check the pipeline for impurities and foreign matters and clean it if necessary.

Observe direction of installation according to arrow pointing in flow direction!

It is important that all around the valve there is free access for operation and maintenance. For outdoor installation, the customer has to protect the valve against the direct effects of the weather.

During installation of the valve, the distance between the pipe flanges should exceed the valve face-to-face dimension by at least 20 mm. Thus, the raised faces will not be damaged and the gaskets can be inserted. Steel-reinforced rubber seals are recommended for use as flange gaskets (consider resistance to flow medium and temperature).

The mating pipe flanges must be plain-parallel and concentric.

Tighten the connecting bolts evenly (without distortion) and crosswise.

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ERHARD Tilting-Disc Check Valves shall not be installed directly upstream or downstream of pipeline components, as bends, valves, etc., as due to the short face-to-face dimension of the valve, the valve disc extends beyond the body flanges. The valve disc could otherwise collide with these components or disturb the flow because the valve disc does not open or opens only partly (for DN 800 and larger also consider the stop when installing and removing the valve. A dismantling piece is required in this case. See catalogue sheet, table of dimensions, dimensions e4, e5, and e6).

Before filling the pipeline with water, check the valve for easy running: Operate the weight-loaded lever over the total travel (90°). Do not drop the weight-loaded lever.

6 Maintenance

ERHARD Tilting-Disc Check Valves are equipped with maintenance-free plain bearings. The precise elastomer seal inserted into the metallic sealing face of the valve disc is replaceable.

Precise elastomer seal and complete shaft seal are available as spare parts.

Prior to carrying out works at the valve, the pipeline section has to be made pressureless and emptied.

1. Replacing the shaft seal

   to drawing **4E119 872**

   1.1 Remove bolt, washer and weight-loaded lever from shaft (9).

   1.2 Loosen hexagon bolts (17) and remove together with flanged bearing (13).

   1.3 Dismantle complete spacer with O-rings (6, 7, 8) by means of two screw drivers.

   1.4 Mount new spacer with O-rings as well as flanged bearing in reverse order.

2. Replacing the valve disc seal

   to drawing **4E119 872**

   2.1 Remove O-ring (5)

   2.2 Rub grease approved for potable water on the new endless O-ring. Slightly extend O-ring and evenly press into dove-tail groove of the valve disc.

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