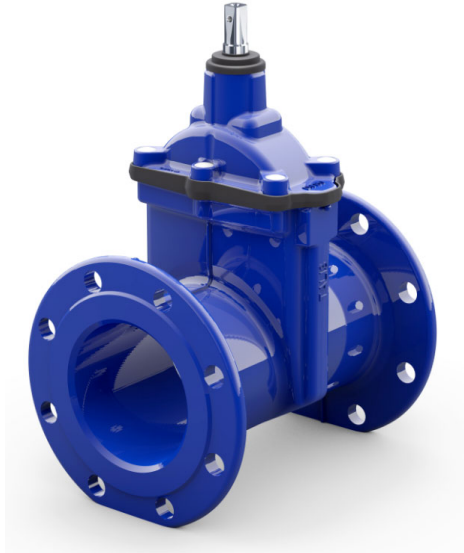


BA27E013



CERHARD
BY TALIS

Operating and Maintenance Instructions

**ERHARD –
INFINITY**
DN 40 – DN 600
bare-shaft and with handwheel

Contents

These operating instructions must always be used together with the standard operating instructions BA01D001!

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Operating Instructions for ERHARD Gate Valve INFINITY - HR, KR and Square Cap Actuation

1 Product and Functional Description

1.1.0 ERHARD INFINITY (S15)

EN 1171 PN10 270 . . 010 3.307419 (DN 80, 200- 600)
 EN 1171 PN16 270 . . 016 3.307419 (DN 40- 600)
 Face-to-face dimension R15 EN 558-1 (with flanges)

1.1.1 ERHARD INFINITY (S14)

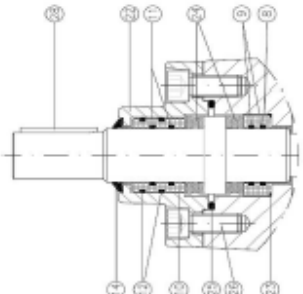
EN 1171 PN10 271 . . 010 3.307419 (DN 80, 200- 600)
 EN 1171 PN16 271 . . 016 3.307419 (DN 40- 600)
 Face-to-face dimension R14 EN 558-1 (with flanges)

Pressures

Face-to-face Face-to-face dimension	Size	PN	PFA [bar]	PMA [bar]	PEA [bar]	Hydrostatic test pressure [bar]		allowable operating pressure in [bar] at Working temperature max. 50° C
						Body	Seal	
R14	80,200-600	10	10	12	17	15	10	10
	40-600	16	16	20	25	24	16	16
R15	80,200-600	10	10	12	17	15	10	10
	40-600	16	16	20	25	24	16	16

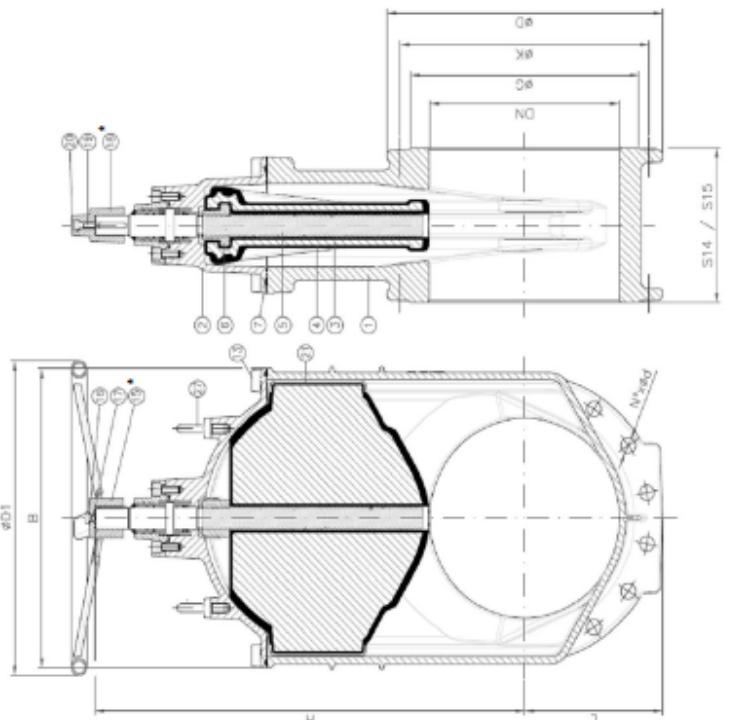
The strength and leaktightness of the gate valves are tested in the manufacturing factory according to EN 12266 and EN 1074. They can be used in both flow directions.

Operating Instructions for ERHARD Gate Valve INFINITY - HR, KR and Square Cap Actuation



***POSITION 6 (HAND)UMPOSITION 8 (VERHÄNGER)UND POSITION 9 (REDAZIERFLANSCH) MIT VERHÄNGER (OPTIONAL)**

28	WÄGEBODEN	1	STEEL 6,6	EN ISO 888-1	DN 912
27	AUßENSCHWÄBE	2	STEEL 6,6	EN ISO 888-1	DN 580 (JIS-500 Coating)
26	ZWISCHENSCHWÄBE	4	STEEL 6,6	EN ISO 888-1	DN 912 (GEMMET Coating)
25	CHING	1	NBR	ASTM D2000	
24	ANWÄHLER	2	STEEL		
23	CHING	1	EPDM	EN 681-1	
22	OBERWÄHRE	1	GUS 500/7	EN 1563	
21	KEGELSTÜCK	2	PPS + 400GF		
20	VERGÜLASSSTÖPFEN	1	LIPFOLIE		
19	ZWISCHENSCHWÄBE	1	STEEL 6,6	EN ISO 888-1	DN 912 (GEMMET Coating)
18	VERHÄNGSCHNUR	1	EN G25 500/7	EN 1563	
17	SCHWÄBE	1	X5 CrNi 18 10	EN 10208	DN 912
16	BEHÄLTNISCHWÄBE	1	X5 CrNi 18 10	EN 10208	DN 912
15	HANDBÜDEL	1	STAMPED STEEL		
14	SCHWÄBEHÄNDER	1	EPDM	EN 681-1	
13	ZWISCHENSCHWÄBE	2	IN/OUT STEEL 10,9	EN ISO 888-1	DN 912 (GEMMET Coating)
12	CHING	2	NBR	ASTM D2000	
11	CHING	1	POW		
10	DORNBÜCHE	1	POW		
9	CHING	2	EPDM	EN 681-1	
8	BÜCHSE	1	POW		
7	DORNBÜCHE	1	EPDM	EN 681-1	
6	SPINDELNUTZER	1	COOPER ALLOY	EN 12145	OM617N (Cu20Ni70Zn2)
5	SPINDEL	1	X20 Cr13	EN 10208	
4	GUMMERINGEL	1	EPDM	EN 681-1	
3	WEL	1	GUS 500/7	EN 1563	
2	WÄHRE	1	GUS 500/7	EN 1563	
1	GEMÜSE	1	GUS 500/7	EN 1563	



DN	EN 1092-2		EN 558		EN 32022		GEWICHT (kg)											
	PN-10	PN-16	PN-10	PN-16	PN-10	PN-16	PN-10	PN-16	PN-10	PN-16								
350	428	460	16x23	520	428	470	16x28	290	550	81,2	240	506	600	6,1	190	2,13	189	52,5
400	480	515	16x28	580	480	525	16x31	310	600	90,5	290	606	800	58	274	3,11	273	310,5
450	530	565	20x28	640	548	585	20x31	330	650	100,2	320	672	800	65	310	3,63	309	342
500	582	620	20x28	715	609	650	20x34	350	700	100,4	308	748	800	72	398	4,45	396	443
600	682	725	20x31	840	720	770	20x37	380	800	128,6	400	865	800	87	563	6,60	669	775
700	784	840	24x31	910	794	840	24x37	---	900	128,5	455	955	800	87	---	8,15	---	975

* DER AUßENDURCHMESSER BEI DN800 PN10 (Ø D) = 780mm
 DAS MASS * L = 30mm
 * BEI DER AUSFÜHRUNG DN700 HANDELT ES SICH UM EINE ARMATUR DN800 MIT REDUZIERFLANSCHEN DN700/DN600
 DER AUßENDURCHMESSER BEI DN700 PN10 (Ø D) = 680mm
 DAS MASS * L = 440mm

BEZ. GEB.	DESCRIPTION	DATE	REVISION	DATE	NAME
	SPINDELE	01.08.2017			0000007
	GRANDY	01.08.2017			000007302
	DIN EN 1092-2				
	PN10-16				
	MS-INFINITY				
	MULTIMEDSCHIEBER INFINITY				
	MULTIMED GATE VALVE INFINITY				
	3D4026889				1/1

1.3 Functional description

ERHARD INFINITY are resilient-seated gate valves for "OPEN - CLOSED" operation. They conform to the normative requirements to EN 1171. The valve is closed by turning the control, e.g. handwheel or square cap to the right, i.e. in a clockwise direction.

1.4 Intended use

By virtue of their design, gate valves INFINITY are used in (see BA01D001 section 1.2.2).

1.5 Allowable operation

The valve is actuated using the handwheel, chainwheel or square cap. Do not apply excessive force.

If used in technically clean fluids, e.g. drinking water, flow speeds up to 4 m/s are allowed in the fully opened position of the shut-off wedge. Temperature of the medium max. 50°C.

1.6 Unacceptable operation

Continuous operation in the flow-restricting position causes increased wear. This type of gate valves is suitable for "OPEN-CLOSED operation". Special types of valves are to be used for typically controlled operation. Extending the operating elements, e.g. with levers or similar devices is not allowed. Do not exceed temperature limits for the flow media.

Do not exceed operating pressure limits.

The closed valve may only be loaded up to the nominal pressure.

If ERHARD INFINITY are equipped with an EPDM seal, the EPDM parts must not be allowed to come into contact with oil or grease, as EPDM swells.

Risk of burns due to hot flow medium; install thermal valve insulation on site.





Operating Instructions for ERHARD Gate Valve INFINITY - HR, KR and Square Cap Actuation



+ **Extending the operating elements, e.g. with levers or similar devices is not allowed – risk of damage!**

1.7 Installation in the pipe

Remove all packaging materials from the valve. Use suitable lifting gear, e.g. wide belts to transport valves and protect them from damage. Avoid chains and ropes. Before installation, the pipe must be checked for dirt and foreign bodies and cleaned if necessary. The valves are installed with vertical stems. Any installation position can be chosen for technically clean flow media. Ensure that the valves are accessible for operation and maintenance. If installed outdoors, protect the valves on site against direct exposure to weather conditions.

 <p>Warning</p>	<p>Warning</p> <p>Follow the relevant safety regulations in accordance with VGB 9a and wear the required personal protective equipment. Risk of injuries</p>
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 <p>Warning</p>	<p>Warning</p> <p>Failure to use suitable load carrying devices for transport and installation of Multamed gate valves can cause health damage.</p>
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  <p>Caution! Crushing hazard</p>	<p>Warning</p> <p>During the functional testing (pneumatic or electrical) of the Multamed gate valve, there is a risk of crushing fingers when the wedge is actuated.</p>
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Operating Instructions for ERHARD Gate Valve INFINITY - HR, KR and Square Cap Actuation

For clean medium, we recommend the position describe in the figure 1.
For other assembly positions, the manufacturer will not be able to guarantee proper operation of the valve.

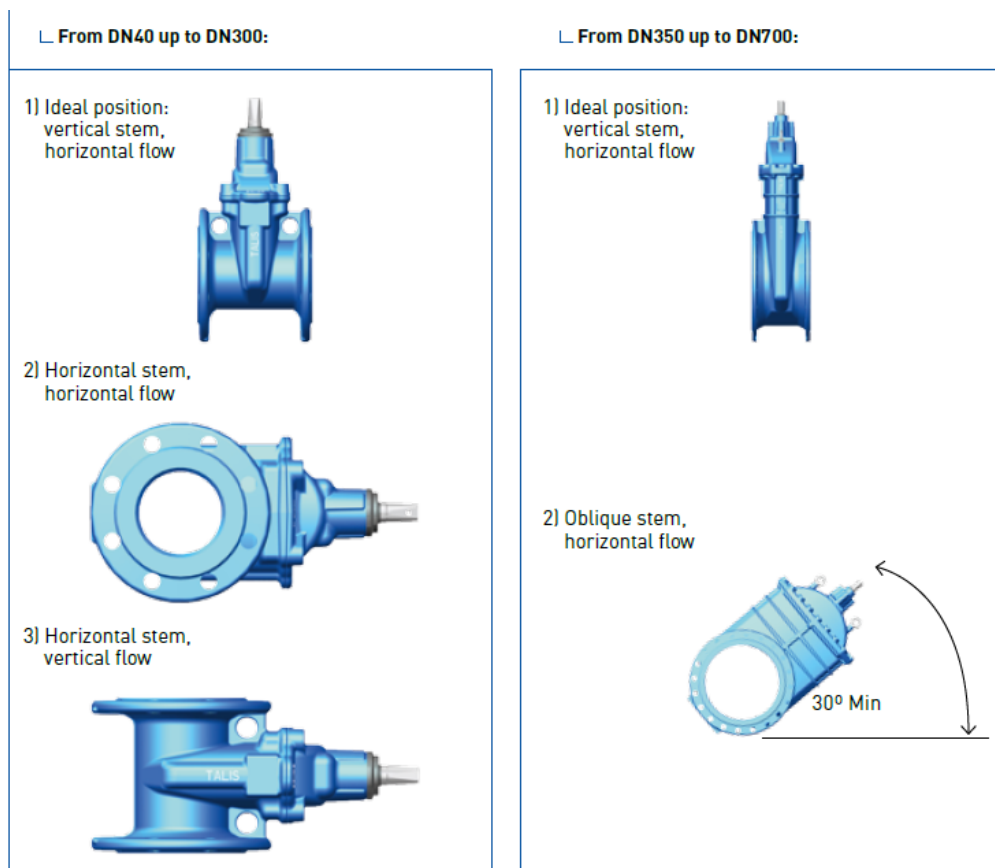


Figure 1: positions

Other installation positions require approval !!

1.7.1 "Flanged gate valve" installation

Gate valve INFINITY

Steel-reinforced rubber seals are recommended as flange seals. During installation of the valve, the distance between the pipe flanges should be at least 20 mm larger than the face-to-face dimensions of the valve so that the working strips are not damaged and the seals can be inserted.

The mating flanges of the pipe must be plane-parallel and concentric. The connecting bolts must be tightened uniformly (without distortion) and cross-wise. The pipe is to be installed free of stresses.

Operating Instructions for ERHARD Gate Valve INFINITY - HR, KR and Square Cap Actuation

See also installation guidelines to
DVGW leaflet W332, Part IV and DIN 19630.

2 Maintenance


2.1 Maintenance





ERHARD INFINITY are “maintenance-free”. However, we do not have any influence on the quality and properties of the flow medium and recommend that gate valves INFINITY with ERHARD Pro-enamelling be installed where the flow media tend to form deposits and encrustations.

The function and leaktightness should be regularly monitored according to DVGW leaflet W 392 at maximum intervals of 4 years.



Klüber Unisilikon L641 recommended as the lubricant for flow medium water for wedge guide and Klüber Synth VT 69-252 recommended for stem nut and stem bearing.

Klüber Synth VR 69-252 recommended as the lubricant for flow medium water and silicone-free lubricant.

 Warning	<p>WARNING</p> <p>Before starting the maintenance work, all pressurised pipes must be depressurised and secured against being switched back on again!</p> <p>After completing the maintenance work, check all connections for tightness and secure fit</p>
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	<p>DANGER</p> <p>If harmful liquids, substances, gases or vapours escape, the plant must be immediately shut down, the responsible supervisor informed and appropriate repair work carried out.</p> <p>Personal protective equipment must be used according to the health & safety regulations of the relevant body (in Germany the</p>	  
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Operating Instructions for ERHARD Gate Valve INFINITY - HR, KR and Square Cap Actuation

Danger	"Berufsgenossenschaft" regulations). Depending on the flow medium, there is a risk of poisoning and contamination, caustic burns, scalds, harm due to biological and microbiological substances as well as a fire and explosion hazard!	 
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ERHARD INFINITY is maintenance free. Proceed as follows if part of the gate valve has to be replaced:

Replace wedge:

Depressurise the gate valve, open slightly and remove the handwheel (or other controls).

Unscrew body bolts and remove bonnets;

Replace damaged wedge and/or stem nut and profile seal.

We recommend replacing not only the the O-Ring, also all other sealings (4, 7, 8, 9, 11, 12, 20) at the same time.

Replace stem seals:

The following seals can be replaced under pressure:

Dismantle handwheel and remove dust cover (14).

Use a screwdriver to pull the plastic fastener (20) out of its position between the bearing bush and bonnet.

The bearing bush is unlocked by pushing it downwards while at the same time turning it and can then be pulled off from above. Use a screwdriver to remove the two O-rings (11) in the bearing bush (10) and insert new O-rings.

Check the O-ring (12) underneath the bearing bush and if necessary replace.

When replaced, this O-ring (12) must lie in the shoulder provided cleanly against the outer diameter. When the bearing bush is installed, this O-Ring is pressed together.

Replace only if gate valve is depressurised:

The O-ring part 9 and washer part 8 can only be replaced if the valve is depressurised.

Remove the bonnet, the stem must be unscrewed and removed from the stem nut.

2.2 Spare parts PN10/16

Operating Instructions for ERHARD Gate Valve INFINITY - HR, KR and Square Cap Actuation

PN10/16
Drawings:
3.307419 (DN40 – DN300)
3d402689 (DN350 –DN600)

2.2.1 Item 3, Wedge with seat profile made of PERB (NBR) or EPDM-W270

2.2.2 only for DN 350 – 600: Seal set made of PERB (NBR) or EPDM-W270
consisting of:

Item 7 Profile seal
Item 9 O-ring
Item11 O-ring
Item12 O-ring
Item14 Protective cap
Item19 Edge protection

For DN 40 – DN 300 we recommend a kpl. mounted bonnet !!

2.2.3 DN 350 – DN 600:
Stem, stem nut module made of

- Standard: stem (5) made of 1.4021, stem nut (6)
bearing bolt

- Sewage: stem made of 1.4401, stem nut made of 2.0978,
bearing bush made of 2.0978

Operating Instructions for ERHARD Gate Valve INFINITY - HR, KR and Square Cap Actuation

2.2.4 Turns / Stroke:

Nominal Diameter	DN40	DN50	DN65	DN80	DN100	DN125
Turns per stroke	11,5	14	15	18	21,5	27
Nominal Diameter	DN150	DN200	DN250	DN300		
Turns per stroke	32	41.5	43	51		
Nominal Diameter	350	400	450	500	600	700/600
Turns per stroke	51	58	65	72	87	87

2.2.5 Weights:

	weight in kg	weight in kg
DN	FtF S14	FtF S15
40	7	7,5
50	8,5	9
65	12,5	13
80	14	15
100	16,5	18
125	22,5	25,5
150	27,5	31
200	47	54,5
250	70	79
300	96,5	114,5

	weight in kg	weight in kg
DN	FtF S14	FtF S15
350	190	213
400	274	311
450	310	363
500	398	445
600	660	775
700/600		975

Operating Instructions for ERHARD Gate Valve INFINITY - HR, KR and Square Cap Actuation

7.2 Trouble shooting guide

TROUBLE	ROOT CAUSE	SOLUTION
Leakage at the top of the bonnet around the stem	Stuffing nut in wrong position	Re-assemble correctly the stuffing nut
	Defective Stuffing nut	Change Stuffing nut
	Defective O-rings	Change O-rings
Leakage between the bonnet and the body	Defective gasket	Change the gasket between body and bonnet
The valve is not closing	Defective wedge nut	Replace wedge nut
	Foreign body under the wedge	Remove the foreign body
	Curved operating stem	Replace operating stem
	Large deposits and incrustations in the guiding areas	Clean the guiding area
	Defective wedge	Replace wedge
The valve is not opening	Defective wedge nut	Replace wedge nut
	Foreign body blocking the wedge	Remove the foreign body
	Curved operating stem	Replace operating stem
	Large deposits and incrustations in the guiding areas	Clean the guiding area
	Defective wedge	Replace wedge

Table 6: Trouble shooting guide

8 After sales service contact

Germany ERHARD, Heidenheim Tel.: 07321-320-530