

Teil Nr. Part no.	Bezeichnung	Description	Material		
			DG1 6666 ** T	DG1 6666 ** TK	DG1 6644 2 T
1	Gehäuse	Body	1.4408		
2	Anschluß	End cap	1.4408		GS-C25
3	Kugel	Ball	1.4408		
4	Schaltwelle	Stem	1.4542		
5*	Sitzring	Seat	PTFE / Glas PTFE / glass	PTFE / Kohle PTFE / carbon	PTFE / Glas PTFE / glass
6*	Schaltwellenpackung	Stem packing	PTFE		
7*	Gleitscheibe	Thrust washer	PTFE / Kohle - PTFE / carbon		
8*	Primärdichtung	Primary sealing	PTFE / Glas - PTFE / glass		
9*	Druckscheibe	Thrust washer	PTFE / Kohle - PTFE / carbon		
10	Stopfbuchse	Gland	1.4301		
11	Tellerfeder	Disk spring washer	1.4310		
12	Sechskantmutter	Hexagon nut	DIN 439 - A2 / Stainless steel		
13	Handhebel	Hand lever	1.4308		
14	Zyl.-schraube/Mutter	Cylinder screw / nut	DIN 912 / DIN 934 - A2 / Stainless steel		
15	Zyl.-schraube/Mutter	Cylinder screw / nut	DIN 912 / DIN 934 - A2 / Stainless steel		
17*	Gehäusedichtung	Body seal	PTFE / Glas - PTFE / glass		
18	Schraubenbolzen	Stud bolt	Edelstahl - A2 / Stainless steel		
19	Sechskantmutter	Hexagon nut	DIN 934 - A2 / Stainless steel		
26	Scheibe	Washer	1.4301		
28	Sicherungskappe	Security cap	Edelstahl - A2 / Stainless steel		

* = Verschleißteile (Dichtungssatz)

* = Wearing parts (repair kit)

** 2 = Anschweißenden, kurz

2 = butt weld ends, short version

3 = Gewindeenden

3 = screwed ends

4 = Einsteck - Einschweißenden

4 = socket weld ends

7 = Anschweißenden lang

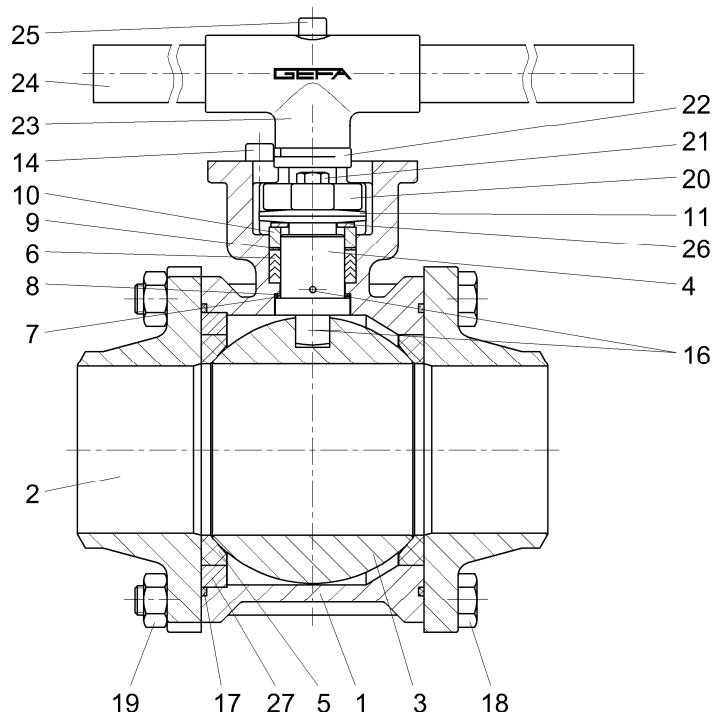
7 = butt weld ends, long version

Wahlweise andere Werkstoffe lieferbar

Other materials available

Änderungen vorbehalten
subject to changes

Werkstoffe / Materials 3-teiliger Kugelhahn Serie DG 3-pce ball valve series DG DN 65-DN 100 voller Durchg. / full bore DN 80-DN 150 red. Durchg. / red. bore



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9*	Druckscheibe	Thrust washer	PTFE / Kohle - PTFE / carbon		
10	Stopfbuchse	Gland	1.4301		
11	Tellerfeder	Disk spring washer	1.4310		
14	Zyl.-schraube/Mutter	Cylinder screw / nut	DIN 912 / DIN 934 - A2 / Stainless steel		
16	Antistatik	Antistatic device	1.4301		
17*	Gehäusedichtung	Body seal	PTFE / Glas - PTFE / glass		
18	Schraubenbolzen	Stud bolt	Edelstahl - A2 / Stainless steel		
19	Sechskantmutter	Hexagon nut	DIN 934 - A2 / Stainless steel		
20	Stopfbuchsbrille	Gland flange	1.4308		
21	Sechskantschraube	Hexagon screw	DIN 933 - A2 / Stainless steel		
22	Anschlagplatte	Stop plate	1.4308		
23	T-Stück	T-piece	1.4308		
24	Rohr	Pipe	Edelstahl / Stainless steel		
25	Zylinderschraube	Cylinder screw	DIN 912 - A2 / Stainless steel		
26	Scheibe	Washer	1.4301		
27	Zentrierring	Centre ring	1.4401		

* = Verschleißteile (Dichtungssatz)

* = Wearing parts (repair kit)

** 2 = Anschweißenden, kurz

** 2 = butt weld ends, short version

3 = Gewindeenden

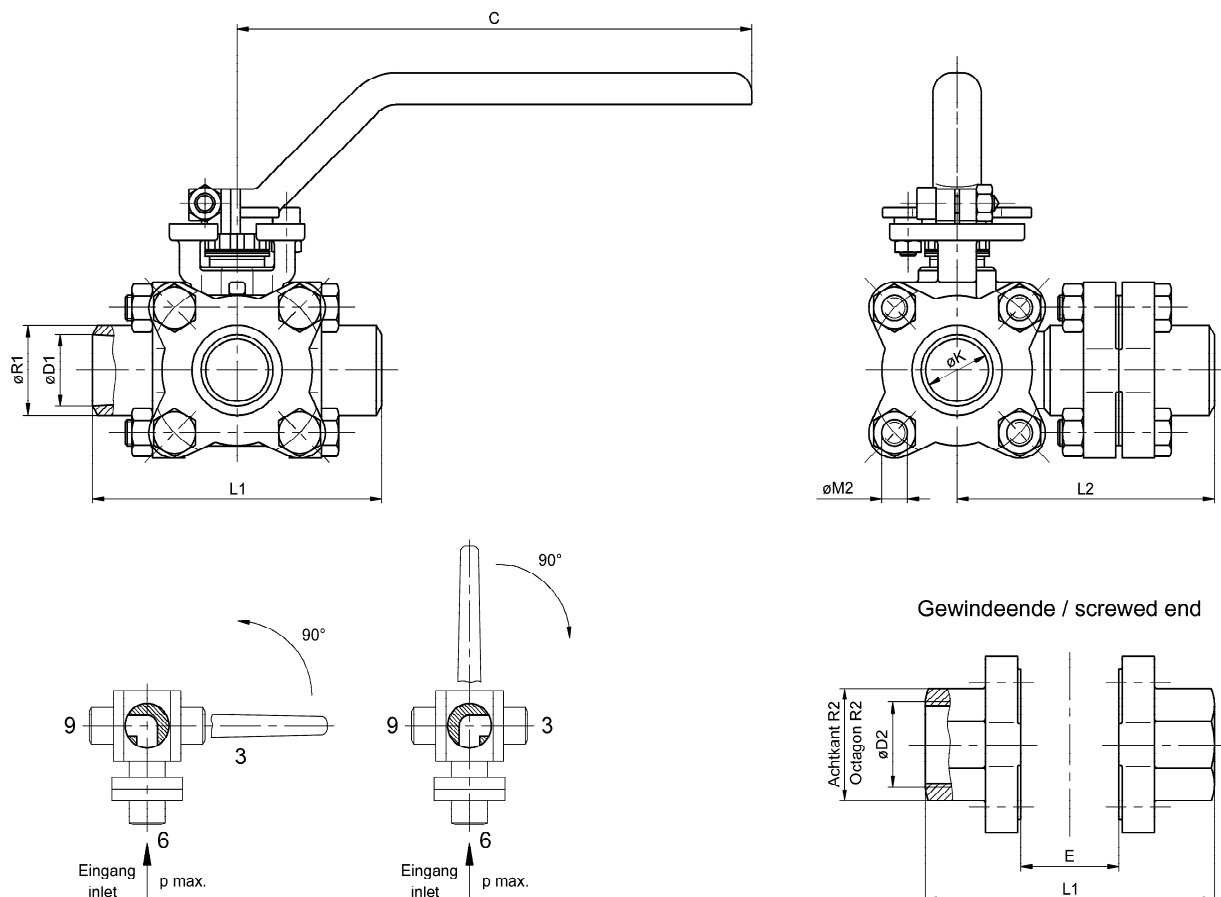
3 = screwed ends

Wahlweise andere Werkstoffe lieferbar
Other materials available

Änderungen vorbehalten
subject to changes

Maße / Dimensions 3-Wege Kugelhahn DG3 3-way ball valve series DG3 DN 8 – DN 50 / PN 40 voller Durchgang / full bore

Antriebsanschluss nach DIN 3337 / ISO 5211 - siehe Datenblatt „Antriebsanschluss“
Mounting plate acc. to DIN 3337 / ISO 5211 - see data sheet „mounting plate“



DN	NPS	A	B	C	ØD1	ØD2*	E	ØK	L1	L2	ØM2	ØR1	R2	kg
8	1/4"	35	55	120	8	1/4"	21,5	10,7	70	65	4xM6	14	21	0,8
10	3/8"	35	55	120	13	3/8"	21,5	10,7	70	65	4xM6	18	24	0,8
15	1/2"	43	90	160	17	1/2"	26	14	75	70	4xM8	22	29	1,2
20	3/4"	46	93	160	22,3	3/4"	30,5	18	90	80	4xM8	28	35	1,5
25	1"	50	97	160	28	1"	38	22,5	100	85	4xM8	34	42	2,0
32	1 1/4"	61	113	175	37	1 1/4"	44	29,3	110	95	4xM10	43	52	3,1
40	1 1/2"	66	118	175	42,8	1 1/2"	52	35,5	125	105	4xM10	49	57	4,4
50	2"	83	139	220	54,2	2"	65	48,2	150	125	4xM12	61	71	7,3

Gewicht inklusive Handhebel / Weight including hand lever

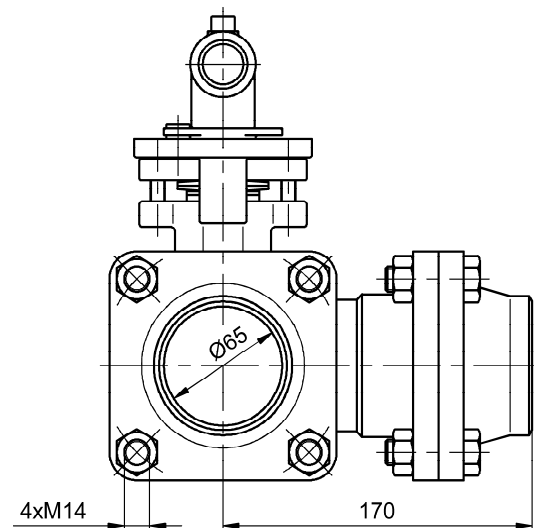
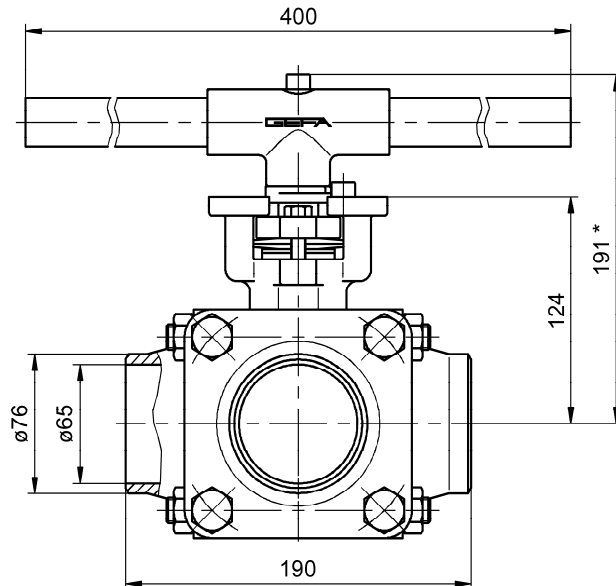
* Rohrgewinde DIN 2999-Rp, ISO 228/1-G / Pipe thread DIN 2999-Rp, ISO 228/1-G

Optional: Reduzierte Enden, Anschweißenden lang, Orbital-Anschweißenden

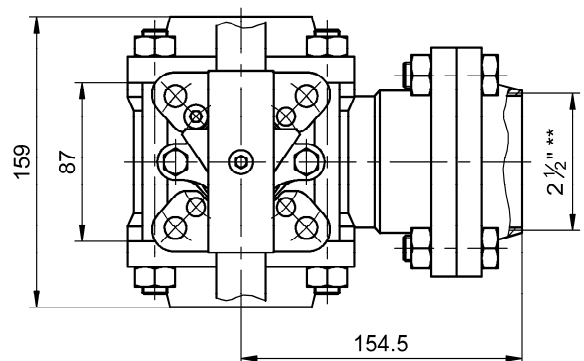
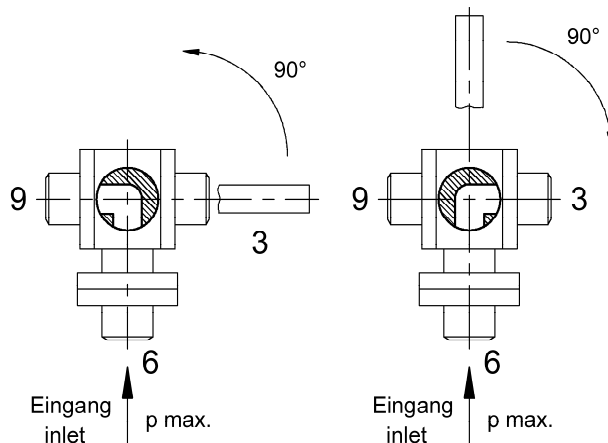
Optional: reduced ends, long butt weld ends, orbital butt weld ends

Maße / Dimensions
3-Wege Kugelhahn DG3
3-way ball valve series DG3
DN 65 / PN 40
voller Durchgang / full bore

Antriebsanschluss nach DIN 3337 / ISO 5211 - siehe Datenblatt „Antriebsanschluss“
Mounting plate acc. to DIN 3337 / ISO 5211 - see data sheet „mounting plate“



Gewindeende / screwed end



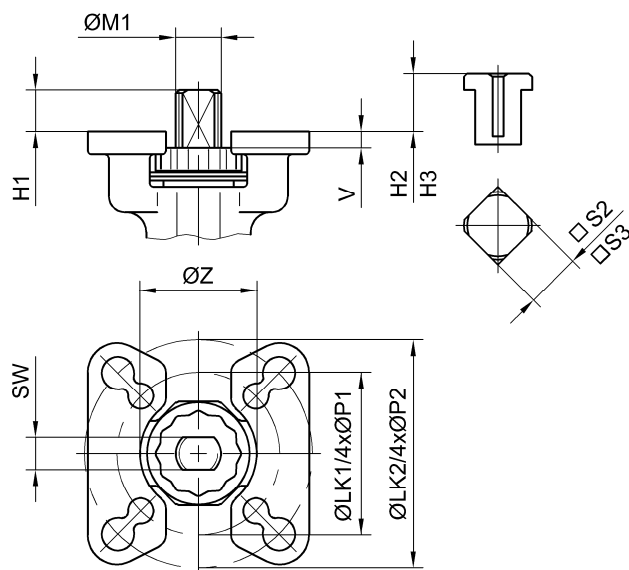
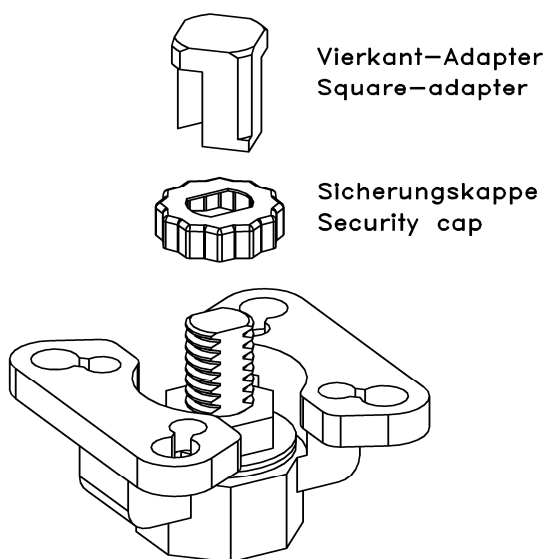
Gewicht = 15 kg inklusive Handhebel / Weight = 15 kg including hand lever

* Option: um 100 mm verlängert für Isolierbauhöhe
length increased by 100 mm for insulation

** Rohrgewinde DIN 2999-Rp, ISO 228/1-G / Pipe thread DIN 2999-Rp, ISO 228/1-G

Optional: Reduzierte Enden, Anschweißenden lang, Orbital-Anschweißenden
Optional: reduced ends, long butt weld ends, orbital butt weld ends

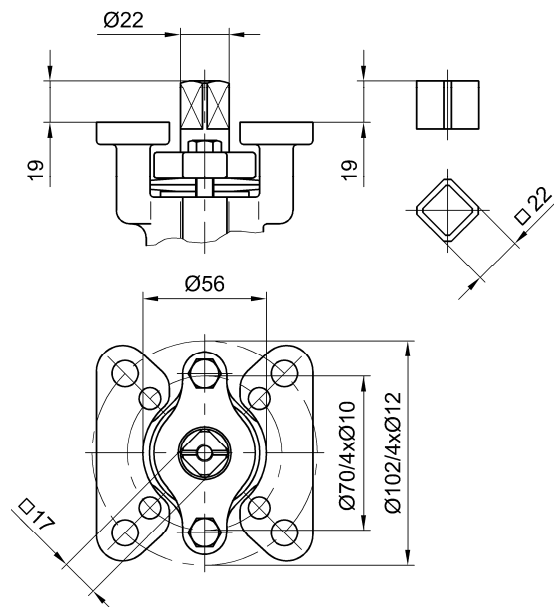
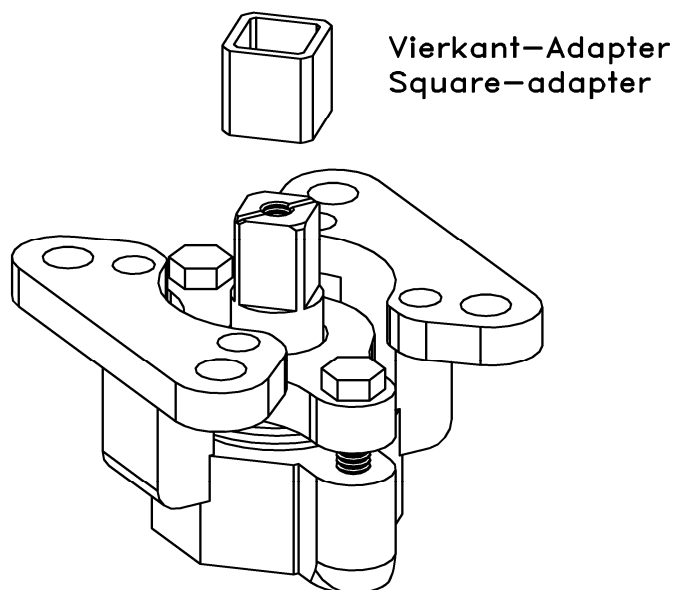
MULTITOP Antriebsanschluss Kugelhahn Serie FG / DG MULTITOP Mounting plate Ball valve series FG / DG DIN 3337 / ISO 5211



DG1		FG		H1	LK1	LK2	$\varnothing M1$	$\varnothing P1$	$\varnothing P2$	SW	V	$\varnothing Z$	Vierkant-Adapter/Square-adapter				
DN (F)	DN (R)	DN (F)	DN (R)										DIN 3337 ISO 5211	$\square S2$	H2	$\square S3$	H3
8 / 10	15	-	-	7	36	42	8	6	6	5,5	3,5	26	F03/F04	9	10	11	12
15 - 25	20 - 32	15 / 20	-	8	42	50	9	6	7	7	3	26	F04/F05	11	12	14	16
32 / 40	40 / 50	25 / 32	-	9	42	50	11	6	7	8	3,5	31	F04/F05	11	12	14	16
50	65	40 / 50	-	13	50	70	14	7	9	10	4,5	36	F05/F07	14	16	17	19

(F) = voller Durchgang / full bore

(R) = reduzierter Durchgang / reduced bore



DG1: DN 65 (F) - DN 100 (F)
DN 80 (R) - DN 150 (R)
FG: DN 65 (F) - DN 100 (F)

DIN 3337 / ISO 5211: F07 / F10

Drehmomente voller Durchgang [Nm]
Torques full bore [Nm]

DN	Betriebsdruck / working pressure			
	0 bar	25 bar	50 bar	125/63 bar
8	5,5	5,9	6,5	7,5
10	5,5	5,9	6,5	7,5
15	9	9,4	10	11
20	12	12,4	13	14,5
25	14	14,6	15,4	18,5
32	18	18,8	20	23
40	20	21,4	23,5	29,5
50	35	39	45	58
65	75	84	97	125
80	90	100	116	150
100	135	151	175	225

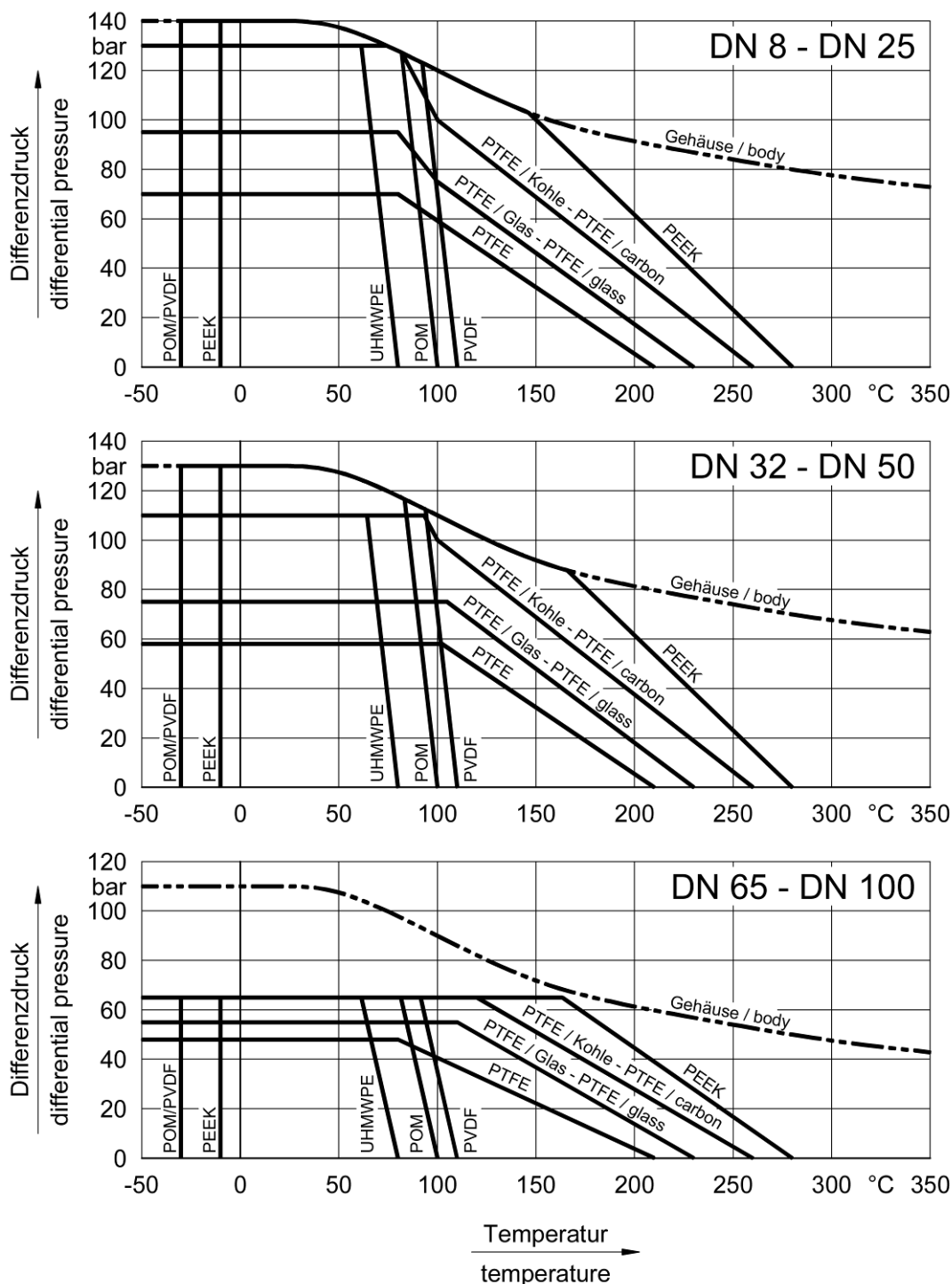
Drehmomente reduzierter Durchgang [Nm]
Torques reduced bore [Nm]

DN	Betriebsdruck / working pressure			
	0 bar	25 bar	50 bar	125/63 bar
15	5,5	5,9	6,5	7,5
20	9	9,4	10	11
25	12	12,4	13	14,5
32	14	14,6	15,4	18,5
40	18	18,8	20	23
50	20	21,4	23,5	29,5
65	35	39	45	58
80	75	84	97	125
100	90	100	116	150
150	135	151	175	225

Die Drehmomente beziehen sich auf Kugelhähne mit Sitzringen aus PTFE, PTFE/Glas oder PTFE/Kohle.
 Für Kugelhähne mit PEEK Sitzringen, sind die angegebenen Drehmomente um den Faktor 1,5 zu erhöhen.
 Die angegebenen Werte sind Losbrechmomente für Wasser bei Umgebungstemperatur.
 Die Losbrechmomente können je nach Medium, Temperatur und Schalthäufigkeit variieren.

Torques refer to ball valves with seats made of PTFE, PTFE/glass or PTFE/carbon.
 For ball valves with PEEK seats, the specified torques must be increased by the factor 1,5.
 The mentioned values are breakaway torques, based on medium water at ambient temperature.
 The breakaway torques may vary acc. to medium, temperature and frequency of operations.

Druck-Temperatur-Diagramm 3-teiliger Kugelhahn Serie DG Pressure-temp. range diagram 3-pce ball valve series DG



Die Diagramme beziehen sich auf Kugelhähne mit vollem Durchgang.
Für Kugelhähne mit reduziertem Durchgang eine Nennweite kleiner wählen.

The diagrams refer to ball valves with full bore. Torques for ball valves with reduced bore:
see next smaller size.

Max. Betriebsdruck für DG3, DG4 und DGF: 40bar /
Max. working pressure for DG3, DG4 and DGF: 40bar

Änderungen vorbehalten
subject to changes

General information

- The valve may be fitted in any position in the pipework.
- Prior to the mounting of the valve flush the pipelines to remove all traces of soiling, welding residues etc.
- The pipes must not have any tension.
- **CAUTION:** The rotating ball may cause injury. Keep away from space between ball and body!

Installation of valves with screwed ends

- Use hemp core, PTFE etc. to tighten the threads. Apply the wrench only on the screwed ends to tighten the valve to the pipe.
- Tightening by using the valve body or hand lever can lead to damage.

Installation of valves with short butt weld ends DN 8 - DN 50 full bore

- **ATTENTION:** Short butt weld ends (DN 8 - DN 50 full bore) are only pre-assembled.
After installation the body screws have to be tightened (see table „tightening moments“).
- Spot weld the valve in the pipe.
- Unscrew all body screws.
- Remove the body screw and nut which are below the top plate (screw which is not going through the body).
- Swing out the centre section (valve to be in open position).
- Secure seats against falling out (e.g. with tape).
- After having finished the welding swing back the centre section.
- Replace screw and nut.
- Secure that the ball valve is exactly in „open“ position.
- Tighten the body screws (see table „tightening moments“).
- **ATTENTION:** Do not operate the valve before flushing, **the valve must stay in open position**, as otherwise the seats may be damaged!

Installation of firesafe valves, valves with long butt weld ends, ends for orbital welding or but weld ends DN 65 - DN 100 full bore

- Weld the valve in the pipe (**ball must be in open position**, centre section must not be dismantled).
After dismantling of firesafe valves use new graphite sealings.
- **ATTENTION:** Do not operate the valve before flushing, **the valve must stay in open position**, as otherwise the seats may be damaged!

Putting into operation

- Flush the ball valve and pipe thoroughly again.
- Open and close the valve for test run.
- In case of any leakage between centre section and end caps the body screws and nuts must be tightened again (see table „tightening moments“).

Mounting of actuators

- It must be ensured that the actuator is centred on the valve shaft.
- Before mounting the actuator the gland nut has to be secured by the security cap.
- The mounted actuator must not cause a thrust load on the valve shaft. If necessary the actuator must be fastened / supported. NOTE: In case of moving pipelines the fastening of the actuator must not be rigid.
- For working temperatures up to max. 140°C the actuators can be directly mounted. If temperatures are higher a mounting bracket should be used as thermal isolation between actuator and valve.

Tightening moments

Max. tightening moments must not be significantly exceeded.

DN	8/10	15	20	25	32	40	50	65	80	100
M [Nm]	7	15	15	15	35	35	60	80	80	125

Maintenance

- The ball valves are maintenance-free.
- Should a leakage occur at the gland packing, retighten the gland nut/screws (12/21). Take care that the gland nut/screws are not tightened too much. Normally the leakage can be stopped by simply turning the nut/screws by 30° to 60°.

Replacement of seats and seals

- Check whether the pipeline has been rendered depressurised and is empty.
- Set valve in **open position** and remove centre section.
- Close the valve and remove centre ring (DN 65-100 / 27) seats (5) and ball (3). Be careful not to damage the ball.
- Remove body seals (17).
- Remove handle nut/screw (15/25), hand lever (13/23 and 24) and stop plate (DN 65-100 / 22) respectively security cap (DN 8-50 / 28) and unscrew gland nut/screws (12/21).
- Take off gland flange (DN 65-100 / 20), disk spring washers (11), washer (26) and remove gland (10).
- Push stem (4) into the valve body and remove it carefully.
- Remove thrust washer (7) and primary sealing (8) from the stem.
- Remove stem packing (6) and thrust washer (9).
- Clean all parts, especially the sealing surfaces of the ends.

Assembly

- Put the thrust washer (7) and the primary sealing (8) on the stem (4) and insert stem from the inside of the body.
- Put stem packing (6), thrust washer (9), gland (10), washer (26) and disk spring washers (11) on stem.
- DN 8-50: Replace gland nut (12) and tighten. Avoid rotating the stem (4) by applying a suitable wrench. Secure the gland nut by mounting the security cap (28)
- DN 65-100: Replace gland flange (20) and fix it using the screws (21). See table tightening moments for gland nut/screws.
- Replace stop plate (DN 65-100 / 22), hand lever (13/23 and 24) and handle nut/screw (15/25).
- Insert ball (3), centre ring (DN 65-100 / 27), seats (5) and body seals (17).
- Mount complete centre section (ball in open position) between the ends.
- Set ball in **closed position** and tighten the body screws (18/19) (see table tightening moments for body screws).
- Open and close the valve for test run.
- **CAUTION:** The rotating ball may cause injury. Keep away from space between ball and body!

Tightening moments for body screws

Max. tightening moments must not be significantly exceeded.

DN	8/10	15	20	25	32	40	50	65	80	100
M [Nm]	7	15	15	15	35	35	60	80	80	125

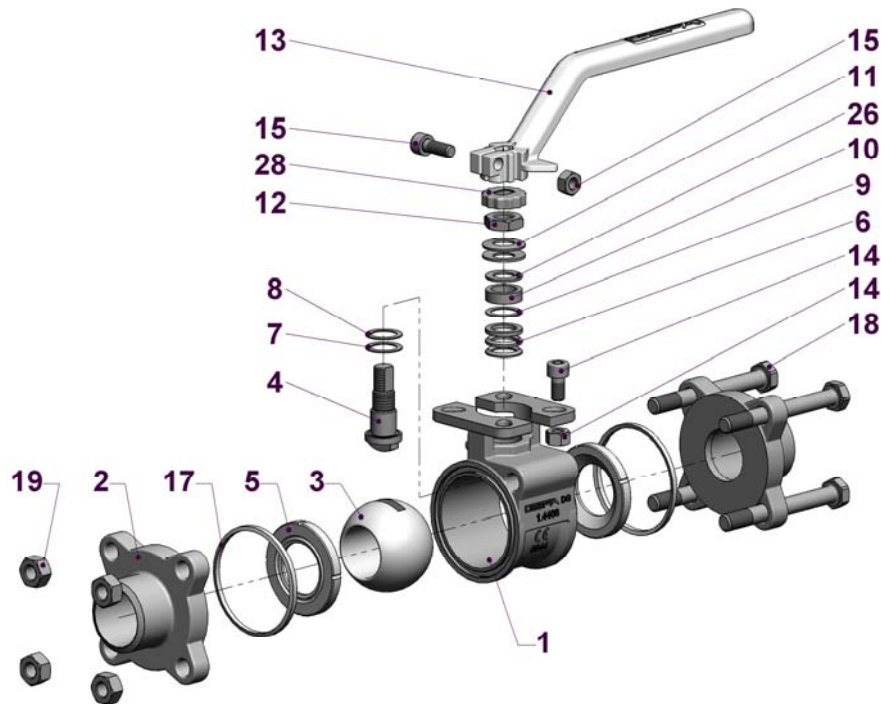
Tightening moments for gland nut / screws

DN	8/10	15	20	25	32	40	50	65	80	100
M [Nm]	10	14	14	14	18	18	25	7	7	7

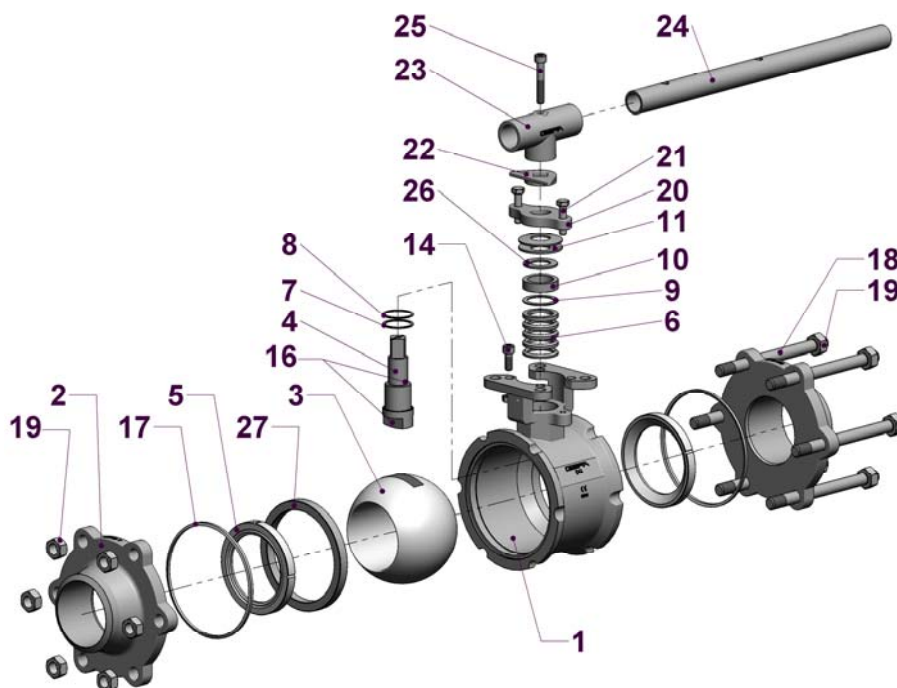
Storage

- Storage and transport of the valves to be dry and clean (without any dirt).
- Temperatures for storing: - 15°C to + 30°C
- In humid rooms drying material respectively heating is necessary to avoid condensation of water.
- Valves have to be protected against force (shock, blow, vibration etc.).
- During storage or transport the ball valve must be either in open or closed position (no intermediate position!).

DN8-50



DN65-100



- | | | |
|-------------------|-------------------------|-------------------|
| 1 Body | 11 Disk spring washer | 21 Hexagon screw |
| 2 End cap | 12 Hexagon nut | 22 Stop plate |
| 3 Ball | 13 Hand lever | 23 T-piece |
| 4 Stem | 14 Cylinder screw / nut | 24 Pipe |
| 5 Seat | 15 Cylinder screw / nut | 25 Cylinder screw |
| 6 Stem packing | 16 Antistatic device | 26 Washer |
| 7 Thrust washer | 17 Body seal | 27 Centre ring |
| 8 Primary sealing | 18 Stud bolt | 28 Security cap |
| 9 Thrust washer | 19 Hexagon nut | |
| 10 Gland | 20 Gland flange | |