

# A+R®



*MADE  
IN  
Germany*

**ANSI Class  
150-300-600 lbs**

**Metallisch dichtend**

Angefederte Kugelsitze, Druckentlastung

**Flansch-Kugelhähne Typ KHF 710**

DN 15, 1/2" bis DN 350, 14"  
ASME B 16.5 - 16.10

Werkstoffe:	-EGE-	-SGE-
Gehäuse	1.4408	1.0619
Dichtungen	Metall-Graphit	Metall-Graphit
Kugel	1.4408	1.4408

DIN EN ISO 9001:2008 - TÜV CERT -  
DGRL 97/23/EG  
Herstellung gem. AD-2000  
TA-Luft 2002  
Fire-Safe Design



Einsatzbereiche:  
FCC, CCR, Polysilikon, Chlorsilane,  
abrasive, erosive Medien.

Temperatur: -50 °C (-60 °F) bis +650 °C (1200 °F).

**Metal seated**

Live load ball seats, pressure relief

**flanged-ball valves type KHF 710**

DN 15, 1/2" up to DN 350, 14"  
ASME B 16.5 - 16.10

materials:	-EGE-	-SGE-
body	1.4408	1.0619
seats	Metall-Graphite	Metall-Graphite
ball	1.4408	1.4408

DIN EN ISO 9001:2008 - TÜV CERT -  
PED 97/23/EC  
manufacturing acc. to AD-2000  
TA-Luft 2002  
Fire-Safe Design



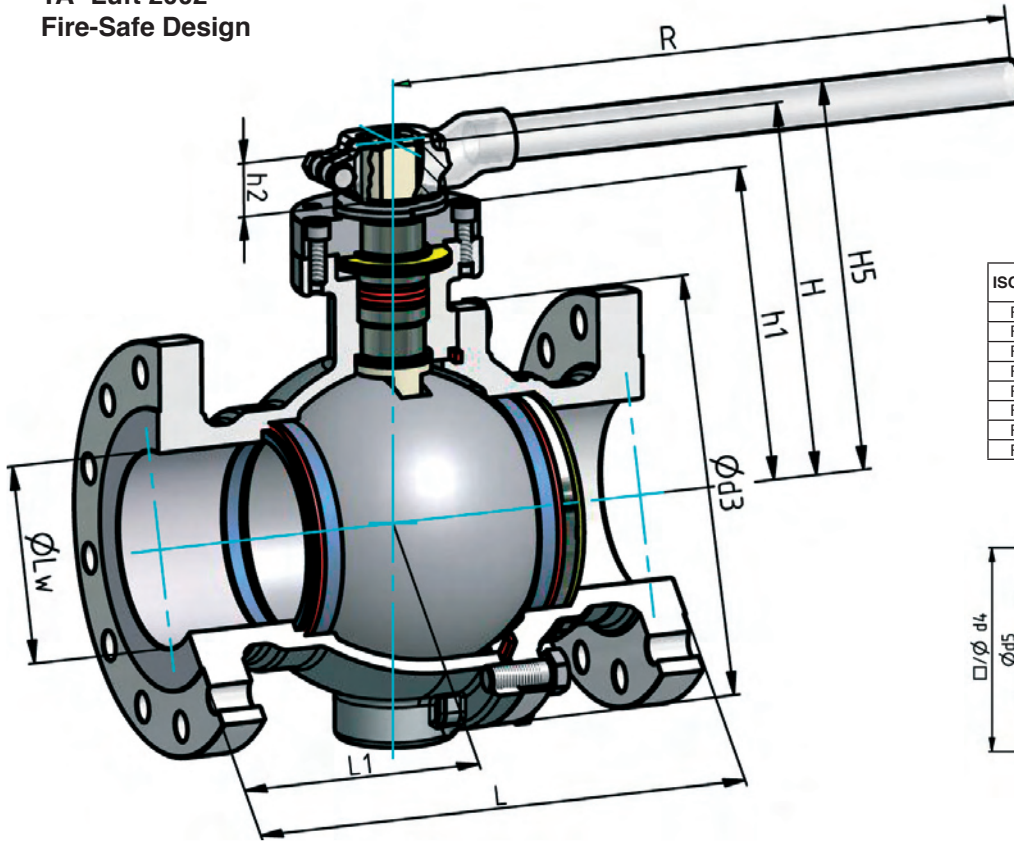
Application:  
FCC, CCR, Polysilikon, Chlorsilane,  
abrasive, erosive Media.

Temperatur: -50 °C (-60 °F) to +650 °C (1200 °F).

**A+R - Armaturen® GmbH - Germany**

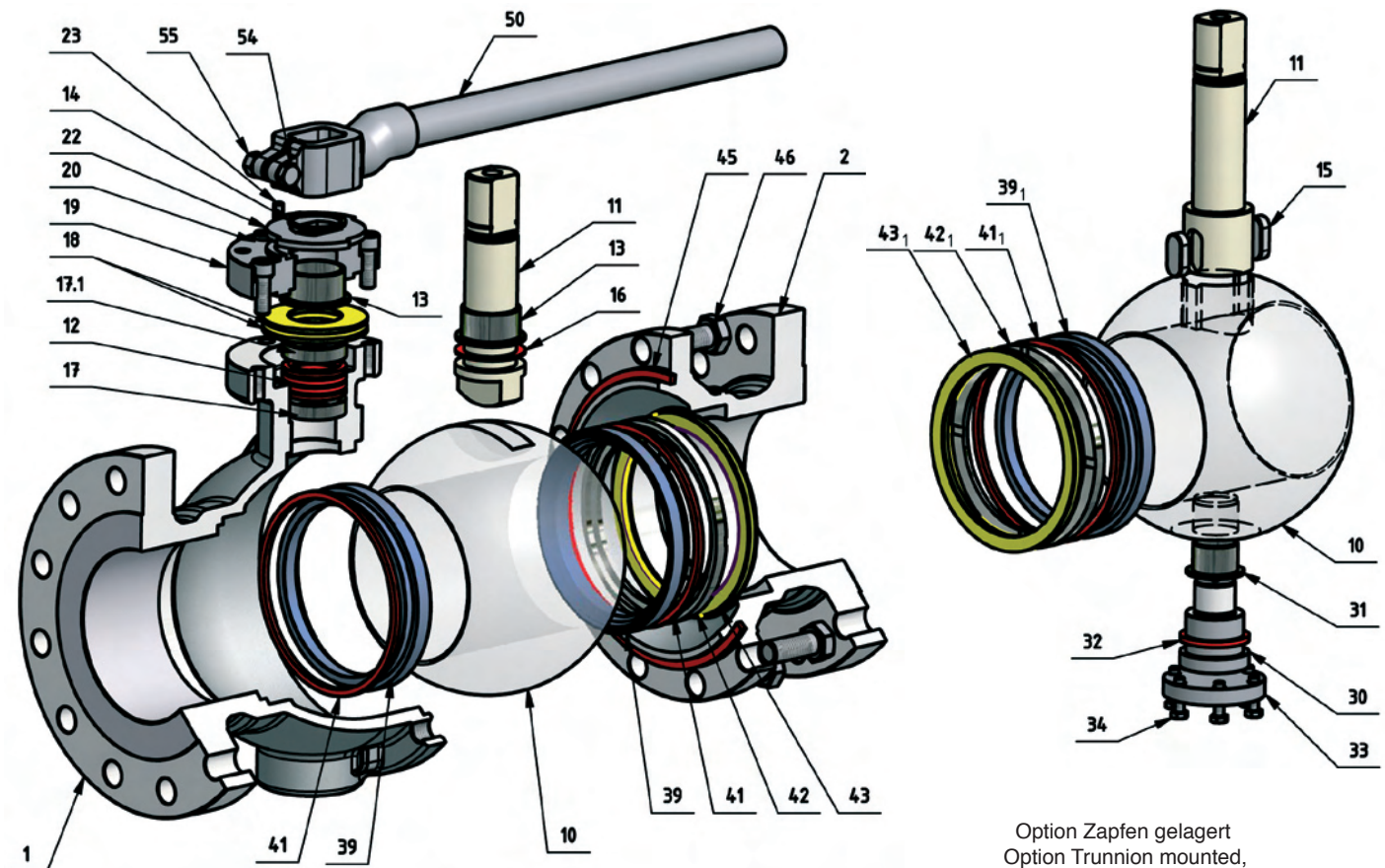
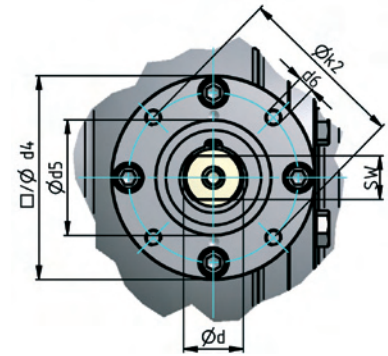
# Flansch-Kugelhähne Typ KHF 710 / flanged ball valves type KHF 710

ANSI Class 150-300-600 lbs,  
metallisch dichtend / metal seated  
DGRL 97/23/EG / PED 97/23/EC  
TA- Luft 2002  
Fire-Safe Design



Antriebsaufbau  
nach DIN ISO 5211  
actuator attachment  
acc. to DIN ISO 5211

ISO 5211	Øk2	d6	thread length	Ød5	□/Ø d4
F 05	50,0	4xM6	10,0	35,0	□48
F 07	70,0	4xM8	12,0	55,0	□68
F 10	102,0	4xM10	15,0	70,0	□96
F 12	125,0	4xM12	18,0	85,0	Ø150
F 14	140,0	4xM16	24,0	100,0	Ø175
F 16	165,0	4xM20	30,0	130,0	Ø210
F 25	254,0	8xM16	24,0	200,0	Ø285
F 30	298,0	8xM20	30,0	230,0	Ø350



Schwimmende Kugel, angefedert  
Floating ball, live load

Option Zapfen gelagert  
Option Trunnion mounted,  
double block and bleed

DN 3" bis DN 14"  
DN 3" to DN 14"

# Flansch-Kugelhähne Typ KHF 710 / flanged ball valves type KHF 710

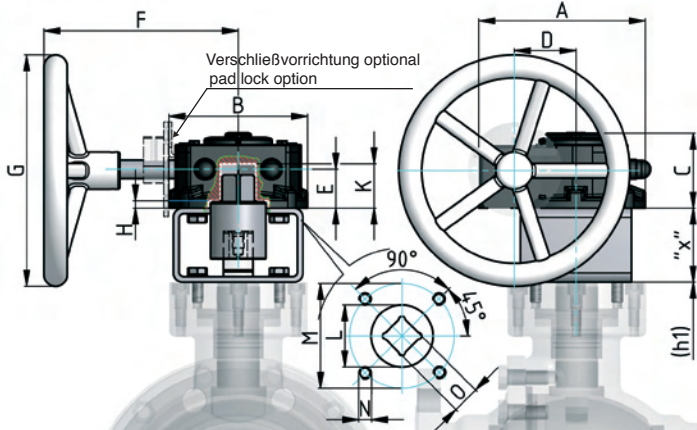
ANSI Class 150-300-600 lbs

DN	ØLw	L			L1			H		h1		h2		Ød		SW			Ød3			H5			R			Weight Kg			ISO 5211			
		150	300	600	150	300	600	150	300	150	300	150	300	150	300	150	300	600	150	300	600	150	300	600	150	300	600	150	300	600	150	300		
1/2"	mm in	16,0 0,63	108,0 4,25	139,7 5,50	165,1 6,50	147,0 1,85	47,0 1,85	58,0 2,28	80,0 3,15	63,0 2,48	10,0 0,39	16,0 0,63	12,4 0,49	90,0 3,54	90,0 3,54	91,0 3,58	133,0 5,24	150 6,30	160,0 6,30	3,0	3,7	4,2												F 05
3/4"	mm in	19,0 0,75	117,3 4,62	152,4 6,00	190,5 7,50	148,0 1,89	48,0 1,89	58,0 2,28	80,0 3,15	63,0 2,48	10,0 0,39	16,0 0,63	12,4 0,49	90,0 3,54	90,0 3,54	91,0 3,58	133,0 5,24	150 6,30	160,0 6,30	3,3	4,7	5,4												F 05
1"	mm in	25,0 0,98	127,0 5,00	165,1 6,50	215,9 8,50	148,0 1,89	48,0 1,89	63,0 2,48	80,0 3,15	63,0 2,48	10,0 0,39	16,0 0,63	12,4 0,49	90,0 3,54	90,0 3,54	105,0 4,13	133,0 5,24	150 6,30	160,0 6,30	3,7	5,3	7,1												F 05
1 1/2"	mm in	38,1 1,50	165,1 6,50	190,5 7,50	241,3 9,50	167,5 2,66	67,5 2,66	102,5 4,04	109,0 4,29	80,0 3,15	14,0 0,55	20,0 0,79	14,0 0,55	120,0 4,72	120,0 4,72	130,0 5,12	158,0 6,22	175,0 6,88	215,0 8,46	7,4	10,6	13,5												F 07
2"	mm in	50,0 1,97	177,8 7,00	215,9 8,50	292,1 11,50	170,0 2,76	77,5 3,05	112,5 4,43	126,0 4,96	93,0 3,66	18,0 0,71	20,0 0,79	14,0 0,55	152,0 5,98	155,0 6,10	160,0 6,30	171,0 6,73	215,0 8,46	12,1	15,4	19,8													F 07
2 1/2"	mm in	64,0 2,52	190,5 7,50	241,3 9,50	330,2 13,00	180,0 3,15	80,0 3,15	102,5 4,04	150,0 5,91	115,0 4,53	18,0 0,71	20,0 0,79	14,0 0,55	190,0 7,48	190,0 7,48	190,0 7,48	195,0 7,68	215,0 8,46	19,5	23,0	29,7												F 10	
3"	mm in	76,1 3,00	203,2 8,00	282,5 11,12	355,6 14,00	182,5 3,25	102,5 4,04	142,5 5,61	161,5 6,36	124,5 4,90	20,0 0,79	25,0 0,98	19,3 0,76	202,0 7,95	202,0 7,95	215,0 8,46	211,0 8,31	300,0 11,81	24,5	32,4	41,7												F 10	
4"	mm in	100,0 3,94	228,6 9,00	304,8 12,00	431,8 17,00	194,5 3,72	117,5 4,63	162,5 6,40	178,0 7,01	141,0 5,55	20,0 0,79	25,0 0,98	19,3 0,76	235,0 9,25	238,0 9,37	253,0 9,96	228,0 8,98	300,0 11,81	36,1	48,7	75,5												F 10	
6"	mm in	150,0 5,91	393,7 15,50	403,4 15,88	558,8 22,00	175,0 6,89	195,0 7,68	210,0 8,27	297,5 11,71	242,5 9,55	41,5 1,63	44,0 1,73	32,0 1,26	320,0 12,60	320,0 12,60	365,0 14,37	301,0 11,85	800,0 31,50	95,2	113,8	182,0												F 12	
8"	mm in	200,0 7,87	457,2 18,00	501,7 19,75	660,4 26,00	210,0 8,27	235,0 9,25	265,0 10,43	335,0 13,19	280,0 11,02	41,5 1,63	44,0 1,73	32,0 1,26	397,0 15,63	405,0 15,94	465,0 18,31	338,0 13,31	800,0 31,50	159,5	193,3	348,5	F 12											F 16	
10"	mm in	250 9,84	533,4 21,00	568,5 22,38	787,4 31,00	245,0 9,65	275,0 10,83	310,0 12,20	390,0 15,35	401,0 15,79	330,0 12,99	337,0 13,27	51,0 2,01	58,0 2,28	48,0 1,89	70,0 2,76	36,0 1,42	52,0 2,05	487,0 19,17	505,0 19,88	540,0 21,26	-	-	255,5	329,6	582,0						F 14 F 16	F 25	
12"	mm in	300,0 11,81	609,6 24,00	647,7 25,50	838,2 33,00	270,0 10,63	305,0 12,01	360,0 14,17	426,0 16,77	441,0 17,36	365,0 14,37	377,0 14,84	51,0 2,01	58,0 2,28	48,0 1,89	70,0 2,76	36,0 1,42	52,0 2,05	570,0 22,44	580,0 22,83	620,0 24,41	-	-	361,8	456,9	766,0						F 14 F 16	F 25	
14"	mm in	350,0 13,78	685,8 27,00	762,0 30,00	-	340,0 13,39	385,0 15,16	-	473,0 18,62	-	410,0 16,14	-	58,0 2,28	-	70,0 2,76	-	52,0 2,05	-	670,0 26,38	690,0 27,17	-	-	-	-	553,5	737,5	-					F 25	-	

KHF 710		EGE		SGE	
55	Sechskantmutter	Nut	A2/304	A2/304	A2/304
54	Sechskantschraube	Hex Bolt	A2/304	A2/304	A2/304
50	Handhebel	Handle	1.4308/CF8	1.4308/CF8	1.4308/CF8
46	Sechskantschraube	Hex Bolt	A4-70/316	A2-70/304	A2-70/304
45	Gehäusedichtring <sup>2</sup>	Body seal <sup>2</sup>	Graphite	Graphite	Graphite
43	Tellerfeder	Cup spring	Inconel 718	Inconel 718	Inconel 718
42	Druckring	Ring	1.4404/316L	1.4401/316L	1.4401/316L
41	Dichtring <sup>2</sup>	Seat ring <sup>2</sup>	Graphite	Graphite	Graphite
39	Kugeldichtring <sup>2,3</sup>	Ball seat <sup>2,3</sup>	1.4404/316L/1.4571/316Ti	1.4404/316L/1.4571/316Ti	1.4404/316L/1.4571/316Ti
34	Sechskantschraube <sup>1</sup>	Hex Bolt <sup>1</sup>	A4-70/316	A2-70/304	A2-70/304
33	Deckel <sup>1</sup>	Cover <sup>1</sup>	1.4401/316	1.4401/316	1.4401/316
32	Dichtring Lagerbolzen <sup>1,2</sup>	Trunnion seal <sup>1,2</sup>	Graphite	Graphite	Graphite
31	Lagerbuchse <sup>1,3</sup>	Bearing bush <sup>1,3</sup>	1.4401/316	1.4401/316	1.4401/316
30	Lagerbolzen <sup>1</sup>	Trunnion <sup>1</sup>	1.4401/316	1.4401/316	1.4401/316
23	Anschlag	Limit stop	1.4301/304	1.4301/304	1.4301/304
22	Anschlagscheibe	Stop disc	1.4301/304	1.4301/304	1.4301/304
20	Zylinderschraube	Hex.-socket screw	A2-70/304	A2-70/304	A2-70/304
19	Deckel	Cover	1.4408/CF8M	1.4408/CF8M	1.4408/CF8M
18	Tellerfeder	Cup spring	1.4310/301/1.4568	1.4310/301/1.4568	1.4310/301/1.4568
17.1	Druckstück	Gland	1.4401/316	1.4401/316	1.4401/316
17	Druckring	Ring	1.4401/316	1.4401/316	1.4401/316
16	Gleitring <sup>2</sup>	Thrust ring <sup>2</sup>	Graphite	Graphite	Graphite
15	Passfeder <sup>1</sup>	Key <sup>1</sup>	1.4571/316 Ti	1.4571/316 Ti	1.4571/316 Ti
14	Sicherungsring	Safety ring	1.4310/301	1.4310/301	1.4310/301
13	Lagerbuchse <sup>3</sup>	Bearing bush <sup>3</sup>	1.4401/316	1.4401/316	1.4401/316
12	Dichtring <sup>2</sup>	Stem seal <sup>2</sup>	Graphite	Graphite	Graphite
11	Schaltwelle	Stem	1.4401/316	1.4401/316	1.4401/316
10	Kugel <sup>3</sup>	Ball <sup>3</sup>	1.4408/CF8M	1.4408/CF8M	1.4408/CF8M
2	Seitenteil	Side cap	1.4408/CF8M	1.0619/WCB	1.0619/WCB
1	Gehäuse	Body	1.4408/CF8M	1.0619/WCB	1.0619/WCB
Pos/ item	Benennung	Denomination	Werkstoff / material		

1 - nur bei gelagerter Ausführung / only for trunnion mounted design  
 2 - empfohlene Ersatzteile / recommended spare parts  
 3 - hartbeschichtet / hard coated

Handgetriebe Typ AR  
manual worm gear Type AR

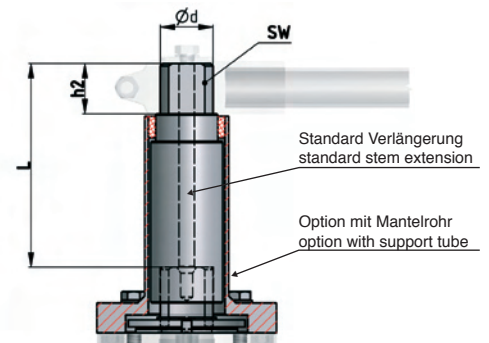


Type	A	B	C	D	E	F	G	H	K	L	M	N	O	ISO 5211
AR 1	122	112	69	38,5	30,5	195	200	2,5	55	38	102	M10	22	F 10
AR 2	180	150	81	66,7	42	235	250	7,5	72	64,5	125	M12	27	F 12
AR 3	217	198	93,5	89,5	50	285	457	8	81	90	140	M16	36	F 14
AR 4	292	252	105,5	123	50	355	600	10	92	115	140	M16	36	F 14

"x" -- Brückenhöhe (Standard)/ dimension of bracket (standard)

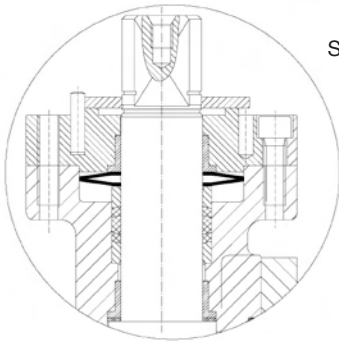
worm gear Type	Type KHF DN/NPS	DN 80 NPS 3"	DN 100 NPS 4"	DN 125 NPS 5"	DN 150 NPS 6"	DN 200 NPS 8"	DN 250 NPS 10"	DN 300 NPS 12"	DN 350 NPS 14"
AR 1	F 10	80		80					
AR 2	F 12	80			80				
AR 3	F 14					90		90	
AR 4	F 14								180

Schaltwellenverlängerung  
stem extension



	DN 15 - 25 NPS ½"-1"	DN 40 - 65 NPS 1 ½"- 2 ½"	DN 80 - 100 NPS 3"- 4"	DN 150 - 200 NPS 6"- 8"	DN 250 - 300 NPS 10"- 12"	DN 350 NPS 14"
L *	100	100	100	100	100	100
Ød	16	20	25	44	48	70
SW	12,4	14	19,3	32	36	52
h2	10	18	20	42	50	55

\* - andere Längen auf Anfrage/ other dimensions on request

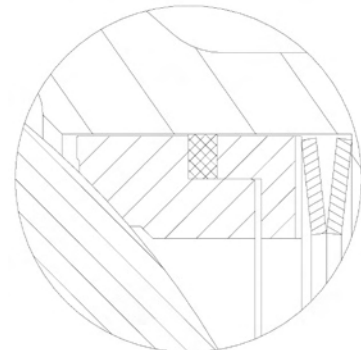


Schaltwellenabdichtung mit Tellerfedern, vorgespannter Graphitpackung und doppelter Lagerung erreicht eine Helium-Leckrate von  $\approx 10^{-6}$  mbar-l-s<sup>-1</sup>.m<sup>-1</sup> und erfüllt die TA-Luft 2002. Der Einbauraum der Tellerfedern ist vor Umwelteinflüssen geschützt und garantiert langlebige Funktionalität. Bis zu 50.000 Schaltungen werden ohne sichtbare Leckage erreicht.

Graphite stem packing with live load and double bushing ensures a Helium tightness of  $\approx 10^{-6}$  mbar-l-s<sup>-1</sup>.m<sup>-1</sup> and fulfils the TA-Clean Air 2002. The live load room is fully encapsulated from any negative environment impact and guarantees a long term functionality. Up to 50.000 quarter turns will be performed without visible leakage.

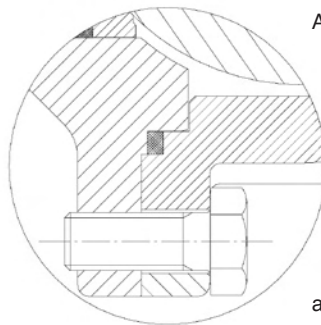
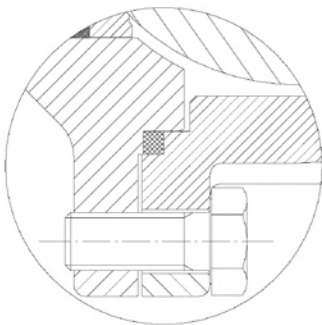
Metallische Sitzdichtungen mit Abstreifkanten und offenem Einbauraum der Tellerfeder. Optional gekapselte Tellerfeder möglich. Helium Dichtheit QL $\approx 10^{-6}$  mbar-l-s<sup>-1</sup>.

Metal Seats with scraping edges and open live load room. Optional encapsulated live load room available. Helium tight QL $\approx 10^{-6}$  mbar-l-s<sup>-1</sup>.



Vor Montage  
Before tightening

Nach Montage  
After tightening



Allseitig gekammerte Mittelflanschdichtung aus Graphit. Montage mit definierter Vorspannung garantiert dauerhafte Dichtigkeit bei hoher Temperatur- und Druckbelastung oder schnellen Temperaturwechseln. Beide Mittelflanschteile auf metallischen Kraftschluss verschraubt.

Fully supported middle flange Graphite sealing. Ensures absolute tightness by accurate preload of sealing between body and side cap during pressure and temperature service or thermal cycling. Middle flange of body and side cap were screwed on metal closure.

**A+R® Headquarters:**  
A+R-Armaturen GmbH  
Altenhagener Str. 4a  
D-32107 Bad Salzuflen, Germany  
Tel. 49-5208-9102 0  
Fax 49-5208-9102 90  
Email: postoffice@ar-armaturen.com

**Romania & Balkans:**  
A+R-Armaturen (Romania)  
400058 Cluj-Napoca, Romania  
Tel. 40-364 410010  
Fax 40-364 410011  
Email: office.ro@ar-armaturen.com

**China**  
A+R-Armaturen (China),  
Shanghai 201204, China  
Tel. 86-13901744069  
Email: office.cn@ar-armaturen.com

[www.ar-armaturen.com](http://www.ar-armaturen.com)