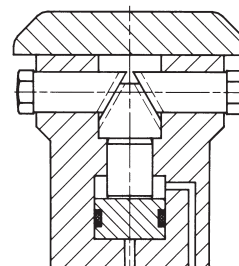
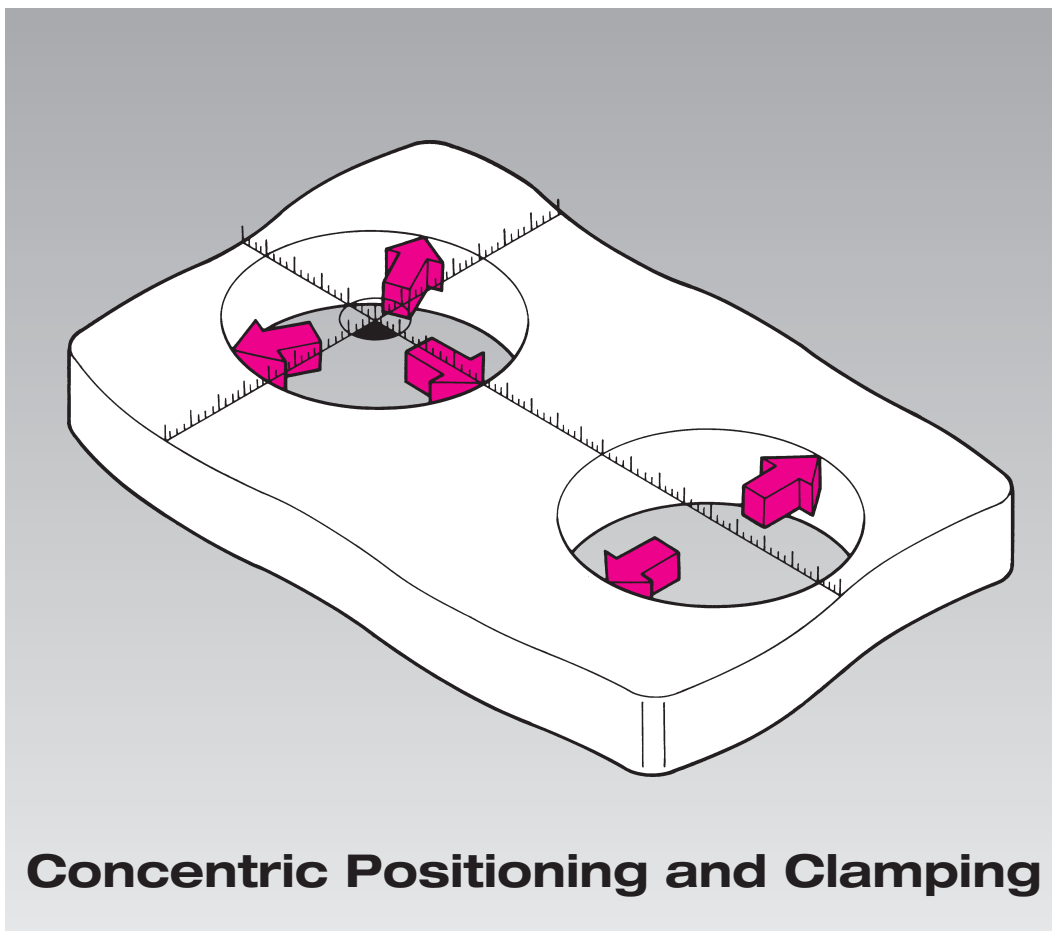


**Concentric Positioning and Clamping Elements**

2 and 3-point positioning, double acting, **hydraulically operated**  
max. operating pressure 250 bar

Diameter from 25 mm to 177 mm



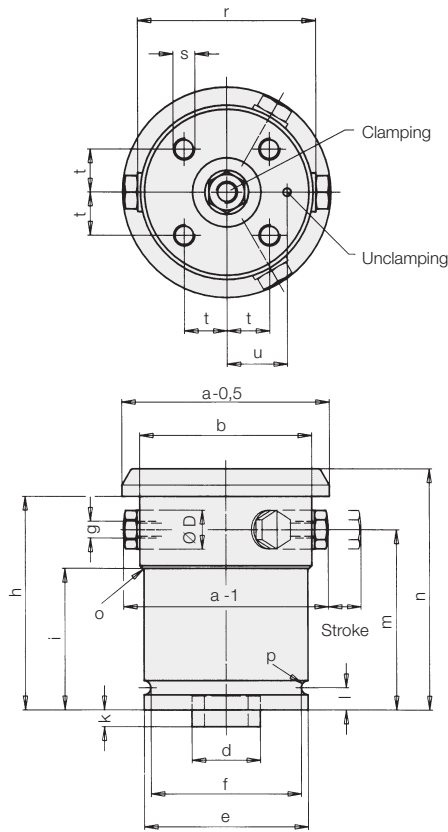
## 2 and 3-point concentric positioning and clamping elements



Version 4312-00X, -02X, -05X, -07X



Version 4312-1XX, -2XX, -3XX, -4XX, -5XX



Clamping Ø a	Part-no. 2-point element	Part-no. 3-point element
25 – 29	4312-000	4312-025
28 – 32	001	026
32 – 36	002	027
36 – 40	4312-050	4312-075
39 – 43	051	076
42 – 46	052	077
45 – 49	053	078
48 – 52	054	079
51 – 55	055	080
54 – 59	4312-100	4312-150
58 – 63	101	151
62 – 67	102	152
67 – 72	103	153
71 – 76	104	154
76 – 84	4312-200	4312-250
83 – 91	201	251
90 – 98	202	252
98 – 109	4312-300	4312-350
109 – 120	301	351
119 – 130	302	352
130 – 145	4312-400	4312-450
141 – 156	401	451
152 – 167	402	452
163 – 177	403	453

Elements for clamping diameters above 177 are available on request

### Description

Workpieces with cast or machined bores, reliefs or break-outs, can be easily loaded to the fixture with the concentric positioning and clamping elements and can be concentrically clamped or positioned for machining. Overstressed conditions can be avoided and clamping can be completely solved by an ingenious combination of 2 and 3-point elements. Various mounting and connecting possibilities extend the use for multiple applications. Different sizes and correspondingly adapted contact bolts allow exact adaptation to the required clamping diameter.

### Important note

2 and 3-point concentric positioning and clamping elements are not suitable for use on turning machines.

	4312-00X 4312-02X	4312-05X 4312-07X	4312-1XX	4312-2XX	4312-3XX	4312-4XX	
Clamping range Ø	[mm]	25-36	36-55	54-76	76-98	98-130	130-177
Clamping force at 100 bar	[kN]	4	4	3	7	11	17
at 250 bar	[kN]	10	10	7	17	28	44
Absol. repetitive accuracy of clamping force	[mm]	0.02	0.02	0.02	0.02	0.02	0.02
Min. operating pressure	[bar]	20	20	20	20	20	20
Max. operating pressure	[bar]	250	250	250	250	250	250
Oil vol./mm clamping stroke	[cm <sup>3</sup> ]	0.35	0.35	0.35	0.85	1.39	2.17
/mm return stroke	[cm <sup>3</sup> ]	0.15	0.15	0.15	0.50	0.84	1.33
Bolt Ø D	[mm]	14	14	12	14	18	22
Stroke	[mm]	2.5	2.5	3	4.5	6	8
b	[mm]	24	35	45	65	85	115
d j6	[mm]	16	16	16	25	32	40
e -0.1	[mm]	45	45	45	60	74	90
f -0.1	[mm]	40	40	40	54	67	81
g x depth of thread	[mm]	-	M 8 x 6	M 6 x 6	M 6 x 12	M 8 x 16	M 10 x 20
h	[mm]	64	64	57	68	80	91
i	[mm]	28	28	-	41	47	52
k	[mm]	6	6	6	6	6	7
l	[mm]	8	8	8	9	10	12
m	[mm]	51	51	45	56	64	72
n	[mm]	66.5	72	65	77	91	105
o	[mm]	R 6	R 6	-	R 0.5	R 2.5	R 2.5
p	[mm]	2.6	2.6	2.6	3.1	3.6	4.6
r	[mm]	-	29	45	65	85	115
s x depth of thread	[mm]	M 6 x 12	M 6 x 12	M 6 x 12	M 8 x 16	M 10 x 20	M 12 x 24
t	[mm]	11.3	11.3	11.3	15.6	19.1	23.3
u	[mm]	16.8	16.8	16.8	22	27	33
Weight	[kg]	0.5	0.7	1.1	1.8	3.6	7.2

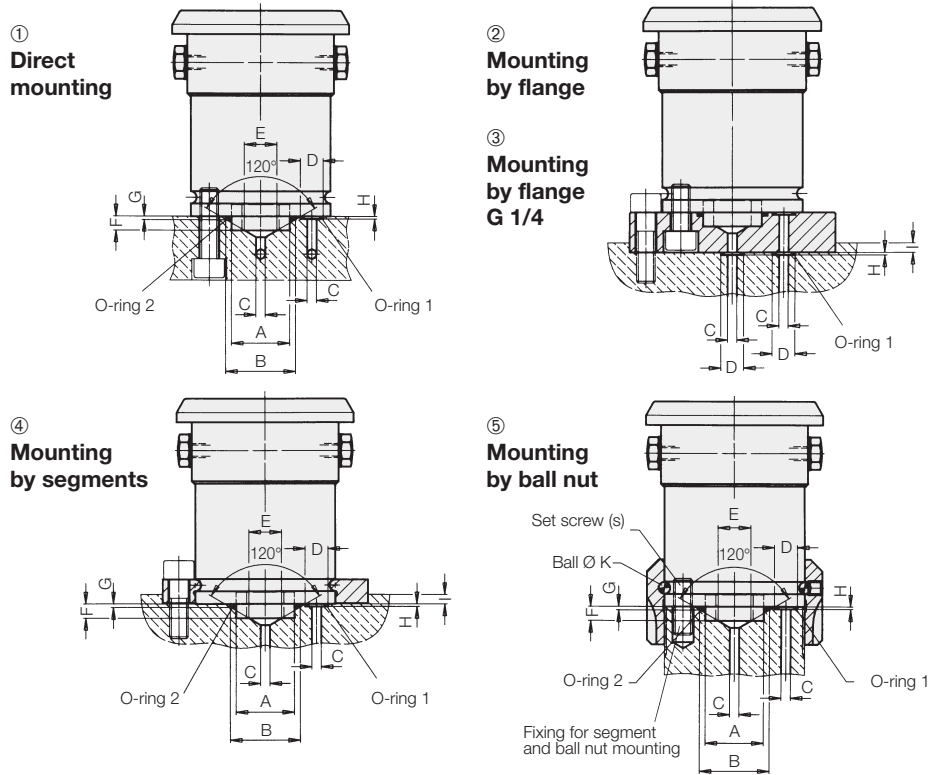
## Mounting possibilities

To obtain arrangement according to the clamping height and the fixture body five mounting and connecting possibilities are provided.

## Remarks for ordering

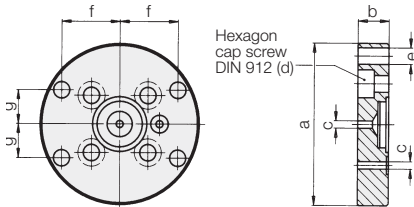
The elements, except for 4312-000/-025, are supplied with short, crowned and hardened contact bolts. Other contact bolts see data sheet G 3.800.

Please indicate on your order the relevant workpiece diameter as well as the tolerance range.



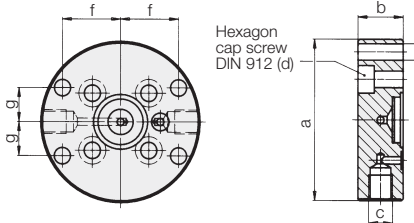
## O-rings for mounting versions ① ② ③ ④ ⑤

for elements	A H7	B +0.2	C	D +0.2	E	F -0.1	G ±0.05	H ±0.05	K	I	O-ring 1	Part-no.	O-ring 2	Part-no.
4312-0XX	16	20.6	3	7.8	8	6	1.3	1.1	5	4	5 x 1.5	<b>3000-340</b>	17.17 x 1.78	<b>3000-663</b>
4312-1XX	16	20.6	3	7.8	8	6	1.3	1.1	5	4	5 x 1.5	<b>3000-340</b>	17.17 x 1.78	<b>3000-663</b>
4312-2XX	25	30	4	9.8	14	6	1.5	1.1	6	4	7 x 1.5	<b>3000-342</b>	26 x 2	<b>3000-769</b>
4312-3XX	32	36.6	5	10.8	16	6	1.3	1.1	7	4	8 x 1.5	<b>3000-343</b>	33.05 x 1.78	<b>3001-238</b>
4312-4XX	40	46.6	5	10.8	18	7	2	1.1	9	4	8 x 1.5	<b>3000-343</b>	40.95 x 2.62	<b>3000-944</b>



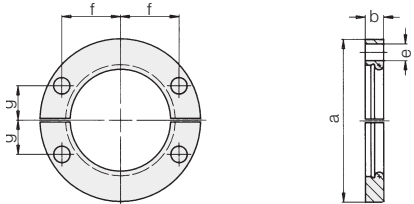
## Mounting by flange ②

for elements	a h7	b	c	d	e	f	g	Part-no.
4312-0XX	68	15	3	M 6x16	∅ 6.6	24.2	14.0	<b>3456-033</b>
4312-1XX	68	15	3	M 6x16	∅ 6.6	24.2	14.0	<b>3456-033</b>
4312-2XX	88	17	4	M 8x20	∅ 9	32.0	18.5	<b>3456-035</b>
4312-3XX	110	20	5	M 10x25	∅ 11	39.8	23.0	<b>3456-037</b>
4312-4XX	130	22	5	M 12x25	∅ 13.5	47.6	27.5	<b>3456-038</b>



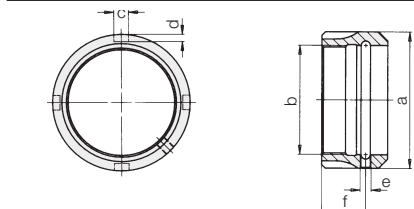
## Mounting by flange G 1/4 ③

for elements	a h7	b	c	d	e	f	g	Part-no.
4312-0XX	68	30	G 1/4	M 6x35	∅ 6.6	24.2	14.0	<b>3456-042</b>
4312-1XX	68	30	G 1/4	M 6x35	∅ 6.6	24.2	14.0	<b>3456-042</b>
4312-2XX	88	30	G 1/4	M 8x35	∅ 9	32.0	18.5	<b>3456-043</b>
4312-3XX	110	30	G 1/4	M 10x35	∅ 11	39.8	23.0	<b>3456-044</b>
4312-4XX	130	30	G 1/4	M 12x35	∅ 13.5	47.6	27.5	<b>3456-045</b>



## Mounting by segments ④

for elements	a	b	e	f	g	Part-no.
4312-0XX	68	10.1	∅ 6.6	24.2	14.0	<b>3533-240</b>
4312-1XX	68	10.1	∅ 6.6	24.2	14.0	<b>3533-240</b>
4312-2XX	88	11.6	∅ 9	32.0	18.5	<b>3533-241</b>
4312-3XX	110	13.1	∅ 11	39.8	23.0	<b>3533-242</b>
4312-4XX	130	16.1	∅ 13.5	47.6	27.5	<b>3533-243</b>



## Mounting by ball nut (with balls and screws) ⑤

for elements	a	b	c	d	e	f	Part-no.
4312-0XX	63	M 48x1.5	8	3.5	M 6	22	<b>0352-762</b>
4312-1XX	63	M 48x1.5	8	3.5	M 6	22	<b>0352-762</b>
4312-2XX	78	M 60x1.5	8	3.5	M 8	25	<b>0352-763</b>
4312-3XX	94	M 75x2	10	4	M 10	27	<b>0352-765</b>

# Clamping possibilities

