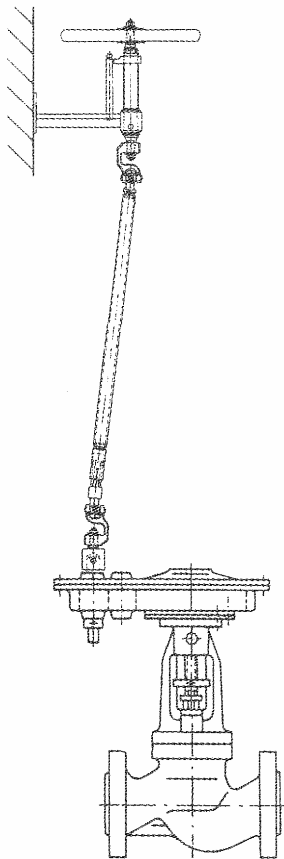
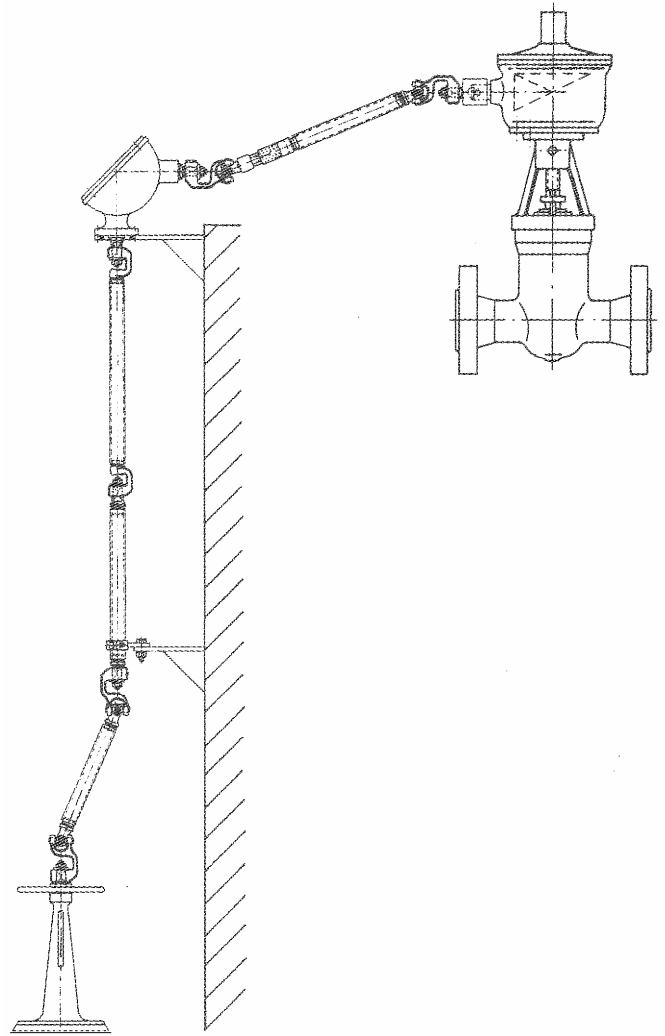


Remote Control for Valves



LINETA
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e-mail: lineta@lineta.es
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Remote control drives and valves
for shipbuilding, chemical-industries,
oil-industries, brewery-industries,
watertreatment, piping and other industries.

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Technical descriptions

You will find in this catalogue tables with some short forms for the materials. For you better understanding please take a look in the following table:

Technical descriptions:

Short form	DIN-Symbol	DIN-Standard	Material-number	U.K.	USA
Rg5	G-Cu Sn 5 Zn Pb (Rg5)	1705	2.1096.01	B.S. 1400:1961 LG 2-C	ASTM B 145-1963 Grade 4A
Rg10	G-Cu Sn 10 Zn (Rg10)	1705	2.1086.01	B.S. 1400:1961 G1 - C	ASTM B 143-1961 Grade 1A
Gbz 10	G-Cu Sn 10 (G Sn Bz 10)	1705	2.1050.01	B.S. 1400:1961 PB 4 - C	-
GG-25	GG-25	1691	0.6025	B.S. 1452:1956 Grade 17	ASTM A 48-1964 Class 35
GGG-40	GGG-40	1693	0.7040	B.S.1289:1961 Grade SNG 24/17	ASTM A 445-1966 Grade 60-45-18
GS-C25	GS-C25	17245	1.0619	B.S 1504:161:1964 Grade B	ASTM A 216-1996 Grade WCA
MS 58	Cu Zn 39 Pb 3	17660	2.0401	B.S. 2874:1962 CZ 121	ASTM B 124- 1966/7 Grade 377
So Ms 59	Cu Zn 35 Ni	17660	2.0540	B.S.2874:1962 CZ 114	ASTM B 283-1956 Alloy A
Cu Sn 8	Cu Sn 8 (Sn Bz 8)	17662	2.1030	B.S. 2874:1962 PB 104	ASTM B 103-1962 Alloy C
Cu Al 10 Ni	Cu Al 10 Ni (Al Bz 10 Ni)	17665	2.0966	B.S.2032.1963 CA 103	≈ ASTM B 150- 1958 Alloy No. 642
1.4301	X 5 Cr Ni 18 9 (V2A supra)	17 440	1.4301	B.S.970:1955 EN 58 E	ASTM A 240-1963 Grade 304
1.4571	X 10 Cr Ni Mo Ti 1810 (V4A extra)	17 440	1.4571	B.S.970:1955 EN 58 H	ASTM A 276-1967 Grade 316
ST 52.3	St 52.3	1652	1.0531	B.S.970:1955 EN 4 A	ASTM A 108-1961 T Grade 1025
1.3952	G-X2CrNiMoN1814	SEW 395	1.3952	-	-

- Selection of the nominal size of the rod is made according to shape and dimensions of the valve stem which has to be operated.

DN	Stem with taper facet square			Stem with parallel facet square			Stem with even spindle ending with keyway		without keyway	Transmission-pipe DIN 2448
	9	11	13	14	17	19	14	16		
22	9	11		11	12		14	16		25 x 2
26	12	13	14	14	17	19	16	18		30 x 2,5
32	16	17	19	22	24		24	25		42,4 x 2,6
38	24			27	32		29	30		48,3 x 2,6
45	27			36			35	37		60,3 x 2,9
52	32	36		41			42	45		76,1 x 2,9

Joints

Fork link, for welding-in connection, DIN 87343,

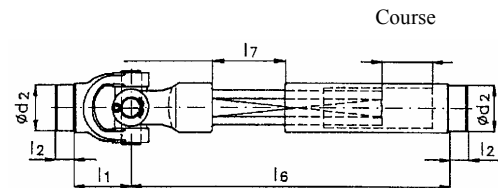
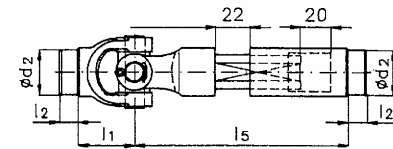
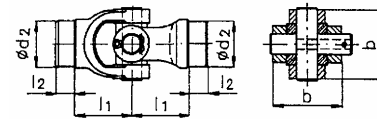
Form A
with weld-in fork

material: steel / brass

Art. Nr.: 1.101

Form B
with short
length-adjustment

Form C
with long
length-adjustment



DN	b	Ø d ₂	l ₁	l ₂	l ₅	l ₆	l ₇	Course
22	36	20,5	30	12	140	200	52	30
26	44	24,5	36	14	160	240	62	40
32	54	36,5	45	15	180	315	102	80
38	64	42,0	53	17	205	375	122	100
45	77	53,5	63	19	230	510	172	150
52	90	69,0	73	22	255	595	192	170

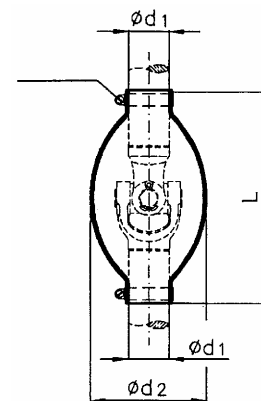
other measurements for Ød₂ on request

Protection sleeve, with clamp for shaft joints

material: Chrome leather

Art. Nr.: 1.102

DN	Ø d ₁	d ₂	L
22	25	55	120
26	30	60	130
32	42	70	150
38	48	80	170
45	60	95	190

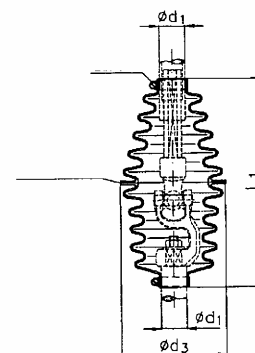


Protection sleeve, with clamp for joints incl. sliding sleeve

material: Molerit / 1.4571

Art. Nr.: 1.103

DN	Ø d ₁	d ₃	L ₁
26	30	100	170
32	41	120	180
38	46	140	240
45	57	160	280



Joins

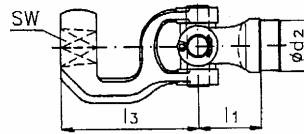
Slip-on joint, DIN 87344

material: steel / brass

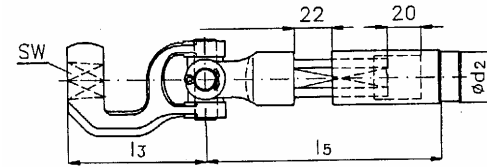
Art. Nr.: 1.201

square with taper facet

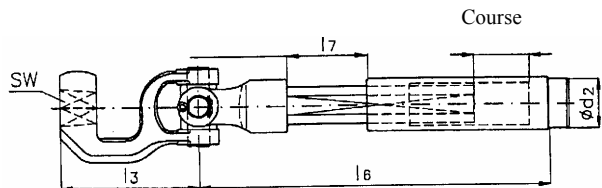
Form A
with weld-in fork



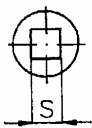
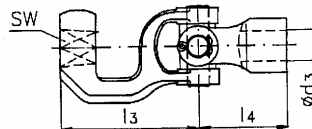
Form B
with short length-adjustment



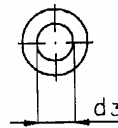
Form C
with long length-adjustment



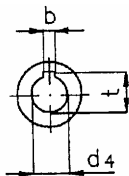
Form K
with shaft fork joint



Type A square with parallel facet



Type B with even drilling



Type C with drilling and keyway

DN	SW	Ød ₂	Ød ₃	l ₁	l ₃	l ₄	l ₅	l ₆	l ₇	Course	Square Keyway DIN 6885			
											s	Ød ₄	b	t
22	9	20,5	16	30	67	43	140	200	52	30	12	14	5	16,3
	11*	20,5	16	30	68	43	140	200	52	30	12	14	5	16,3
26	12	24,5	18	36	79	51	160	240	62	40	14	16	5	18,3
	13	24,5	18	36	80	51	160	240	62	40	14	16	5	18,3
32	14*	24,5	18	36	81	51	160	240	62	40	14	16	5	18,3
	14	36,5	25	45	95	61	180	315	102	80	19	24	8	27,3
32	16	36,5	25	45	95	61	180	315	102	80	19	24	8	27,3
	17	36,5	25	45	97	61	180	315	102	80	19	24	8	27,3
32	19*	36,5	25	45	101	61	180	315	102	80	19	24	8	27,3
38	24*	42	30	53	131	71	205	375	122	100	24	29	8	32,3
45	27*	53,5	37	63	143	82	230	510	172	150	30	35	10	38,3
52	32*	69	45	73	166	95	255	595	192	170	36	42	12	45,3
	36	69	45	73	176	95	255	595	192	170	36	42	12	45,3

For joints within the pipes only the measurements marked with * are allowed

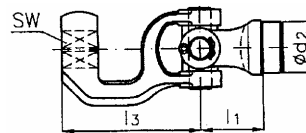
other measurements for Ød₂ and type A, B and C on request

Joists

Slip-on joint, DIN 87344

material: steel / brass

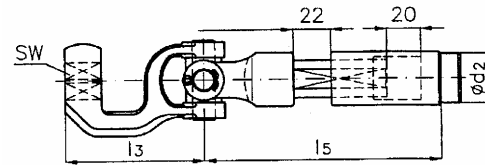
Form D
with weld-in fork



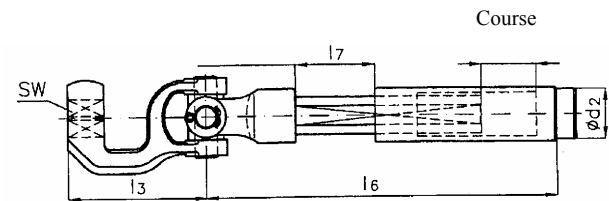
Art. Nr.: 1.202

square with parallel facet

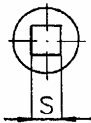
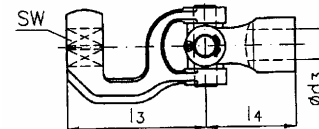
Form E
with short
length-adjustment



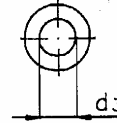
Form F
with long
length-adjustment



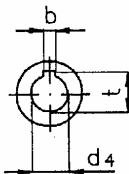
Form L
with shaft fork joint



Type A square with parallel facet



Type B with even drilling



Type C with drilling and keyway

DN	SW	Ø d ₂	l ₁	l ₃	Ø d ₃	l ₄	l ₅	l ₆	l ₇	Course	Square Keyway DIN 6885			
											s	Ø d ₄	b	t
22	9	20,5	30	61	16	43	140	200	52	30	12	14	5	16,3
	11	20,5	30	61	16	43	140	200	52	30	12	14	5	16,3
	12	20,5	30	62	16	43	140	200	52	30	12	14	5	16,3
	14	20,5	30	62	16	43	140	200	52	30	12	14	5	16,3
26	12	24,5	36	79	18	51	160	240	62	40	14	16	5	18,3
	14	24,5	36	79	18	51	160	240	62	40	14	16	5	18,3
	17	24,5	36	82	18	51	160	240	62	40	14	16	5	18,3
	19	24,5	36	84	18	51	160	240	62	40	14	16	5	18,3
32	19	36,5	45	99	25	61	180	315	102	80	19	24	8	27,3
	22	36,5	45	99	25	61	180	315	102	80	19	24	8	27,3
	24	36,5	45	106	25	61	180	315	102	80	19	24	8	27,3
38	24	42,0	53	124	30	61	205	375	122	100	24	29	8	32,3
	27	42,0	53	124	30	61	205	375	122	100	24	29	8	32,3
	32	42,0	53	129	30	71	205	375	122	100	24	29	8	32,3
45	32	53,5	63	147	37	82	230	510	172	150	30	35	10	38,3
	36	53,5	63	147	37	82	230	510	172	150	30	35	10	38,3
52	36	69,0	73	167	45	95	255	595	192	170	36	42	12	45,3
	41	69,0	73	167	45	95	255	595	192	170	36	42	12	45,3

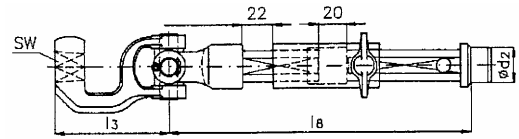
other measurements for Ød₂ and type A, B and C on request

Joins

Slip-on joint, for uncoupling, DIN 87380

material: steel / brass

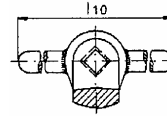
Form A
with short length-adjustment
and without handle



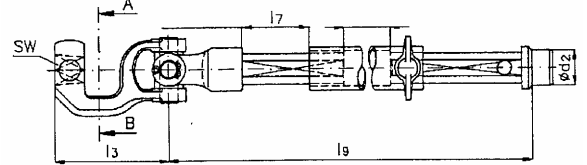
Section A-B

Art. Nr.: 1.203
square with taper facet

Form B
like Form A, with handle



Form C
with long length-adjustment
and handle

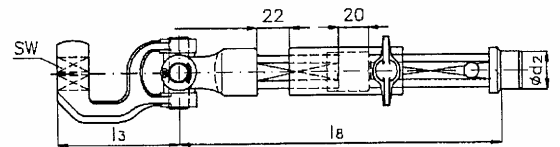


DN	SW	Ø d ₂	l ₃	l ₇	l ₈	l ₉	l ₁₀	Course
22	9	20,5	68	52	220	310	150	30
	11	20,5	68	52	220	310	150	30
26	13	24,5	81	62	253	373	175	40
	14	24,5	81	62	253	373	175	40
32	17	36,5	101	102	285	525	225	80
	19	36,5	101	102	285	525	225	80
38	24	42,0	131	122	328	628	300	100

Slip-on joint, for uncoupling, DIN 87380

material: steel / brass

Form D
with short length-adjustment
and without handle

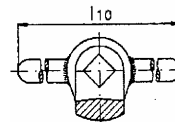


Art. Nr.: 1.204

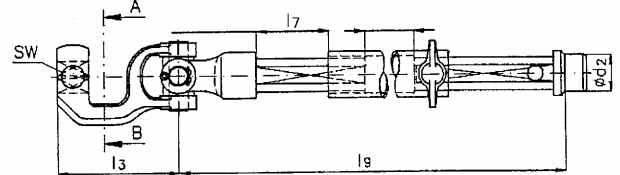
Section A-B

square with taper facet

Form F
like form D, with handle



Form G
with long length-adjustment
and handle



DN	SW	Ø d ₂	l ₃	l ₇	l ₈	l ₉	l ₁₀	Course
22	9	20,5	64	52	220	310	150	30
	11	20,5	66	52	220	310	150	30
	12	20,5	67	52	220	310	150	30
26	14	24,5	79	62	253	373	175	40
	17	24,5	82	62	253	373	175	40
	19	24,5	84	62	253	373	175	40
32	22	36,5	103	102	285	525	225	80
	24	36,5	106	102	285	525	225	80
38	27	42	124	122	328	628	300	100
	32	42	129	122	328	628	300	100

other measurements for Ø d₂ on request

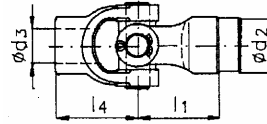
Joints

Shaft fork joint, 1098/344

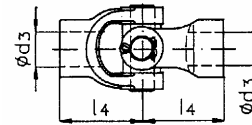
material: steel / brass

Art. Nr.: 1.301

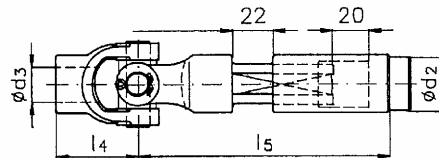
Form E
with weld-in fork



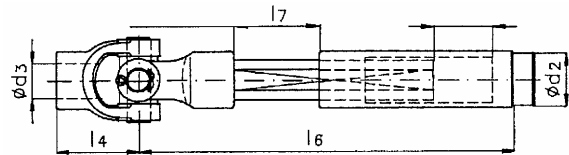
Form G
with shaft fork joint



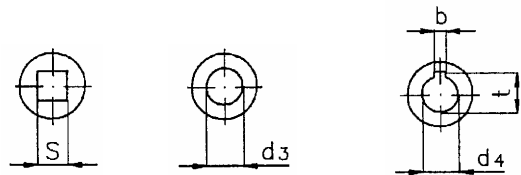
Form H
with short
length-adjustment



Form J
with long
length-adjustment



- Type A** square with parallel facet
- Type B** with even drilling
- Type C** with drilling and keyway



Type A

Type B

Type C

DN	l ₁	l ₄	Ø d ₂	Ø d ₃	s	Keyway DIN 6885		
						Ø d ₄	b	t
22	30	43	20,5	16	12	14	5	16,3
26	36	51	24,5	18	14	16	5	18,3
32	45	61	36,5	25	19	24	8	27,3
38	53	71	42,0	30	24	29	8	32,3
45	63	82	53,5	37	30	35	10	38,3
52	73	95	69,0	45	36	42	12	45,3

missing measure, see Art. No. 1.201

other measurements for Ød₂ and type A, B and C on request

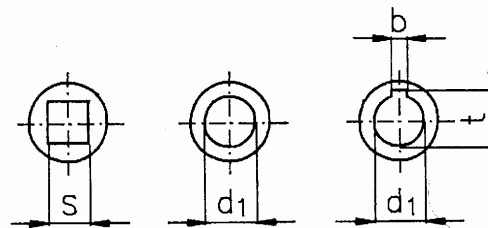
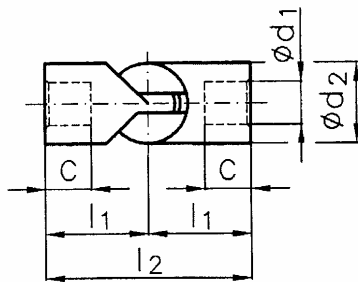
Joints

Vexier-ball joint

diffraction angle max. 35°

material: steel

Art. Nr.: 1.501



Type A
square with
parallel facet

Type B
with even
drilling

Type C
with drilling
and keyway

DN	$\text{Ø } d_1$	$\text{Ø } d_2$	c	l_1	l_2	s	b	t
1	12	24	14	30	60	12	4	13,8
2	14	28	17	35	70	14	5	16,3
3	16	32	19	40	80	16	5	18,3
4	18	36	22	45	90	18	6	20,8
5	20	40	24	50	100	20	6	22,8
6	22	45	26	55	110	22	6	24,8
7	25	50	30	62,5	125	25	8	28,3
8	30	55	35	67,5	135	30	8	33,3
9	35	60	43	82,5	165	33	10	38,3
10	40	65	50	95	190	36	12	43,3
11	45	70	55	105	210	40	14	48,8
12	50	80	60	115	230	45	14	53,8
13	60	90	70	130	260	50	18	64,3
14	70	100	80	145	290	55	20	74,8
15	80	110	90	160	320	60	22	85,8
16	90	120	100	175	350	65	25	95,8

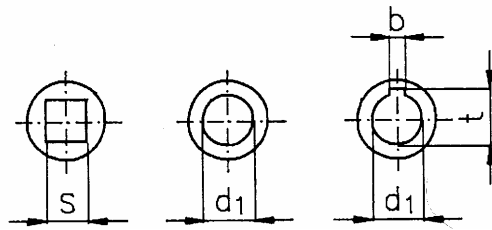
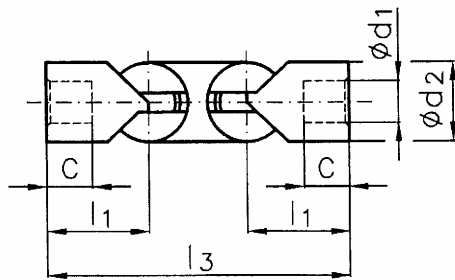
Joints

Vexier-ball joint,

diffraction angle max. 70°

material: steel

Art. Nr.: 1.502



Type A
square with
parallel facet

Type B
with even
drilling

Type C
with drilling
and keyway

DN	Ø d ₁	Ø d ₂	c	l ₁	l ₂	l ₃	s	b	t
1	12	24	14	30	60	87	12	4	13,8
2	14	28	17	35	70	102	14	5	16,3
3	16	32	19	40	80	117	16	5	18,3
4	18	36	22	45	90	132	18	6	20,8
5	20	40	24	50	100	147	20	6	22,8
6	22	45	26	55	110	163	22	6	24,8
7	25	50	30	62,5	125	184	25	8	28,3
8	30	55	35	67,5	135	200	30	8	33,3
9	35	60	43	82,5	165	236	33	10	38,3
10	40	65	50	95	190	267	36	12	43,3
11	45	70	55	105	210	292	40	14	48,8
12	50	80	60	115	230	322	45	14	53,8
13	60	90	70	130	260	362	50	18	64,3
14	70	100	80	145	290	404	55	20	74,8
15	80	110	90	160	320	444	60	22	85,8
16	90	120	100	175	350	489	65	25	95,8

Vexier-ball joint, DIN 808

Type G with sleeve bearing

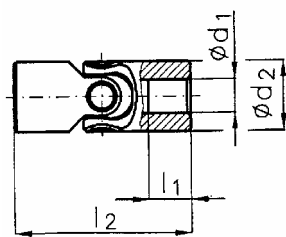
material: steel

Art. Nr.: 1.504

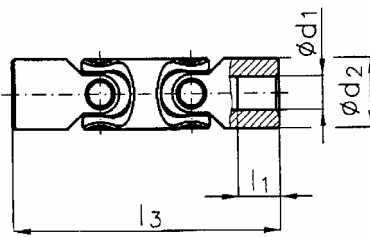
Art. Nr.: 1.505

Form E, diffraction angle max. 45°

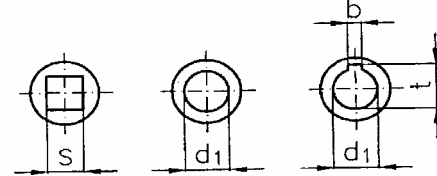
Form D, diffraction angle max. 90°



Art Nr.: 1.504



Art. Nr.: 1.505



Type A
square with
parallel facet

Type B
with even
drilling

Type C
with drilling
and keyway

DN	Ø d ₁	Ø d ₂	l ₁	l ₂	l ₃	s	b	t
10 x 20	10	20	12	48	74	8	3	11,4
12 x 25	12	25	14	56	86	10	4	13,8
16 x 32	16	32	16	68	104	14	5	18,3
20 x 40	20	40	20	82	128	19	6	22,3
25 x 50	25	50	25	104	160	24	8	28,3
32 x 63	32	63	33	130	200	30	10	35,3
40 x 75	40	75	43	160	245	36	12	43,3
50 x 90	50	90	52	190	290	46	14	53,8

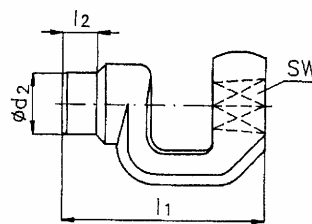
Lengthenings for spindles

Lengthening for spindle, DIN 87351

material: steel

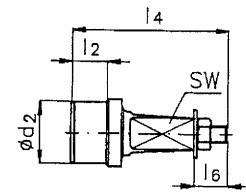
Art. Nr.: 2.103

square with taper facet



Form A

slip - on pipe connection



Form B

square - weld - in tenon

DN	SW	Ø d ₂	l ₁	l ₂	l ₄	l ₆
22	8	20,5	74	12	61	18
	9	20,5	74	12	61	18
	11	20,5	74	12	61	18
	13	20,5	74	12	61	18
26	12	24,5	82	14	71	18
	13	24,5	82	14	72	18
	14	24,5	84	14	75	20
32	16	36,5	100	15	81	20
	17	36,5	102	15	83	20
	19	36,5	106	15	87	20
38	24	42,0	132	17	97	23
	27	42,0	132	17	97	23
45	27	53,5	140	19	105	23
52	32	69,0	170	22	119	27
	36	69,0	170	22	132	27

other facet extra charge

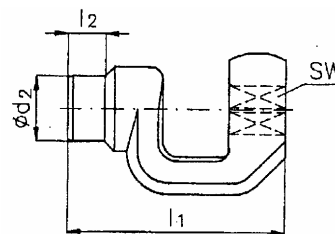
other measurements for Ø d₂ on request

Lengthening for spindle, DIN 87381

material: steel

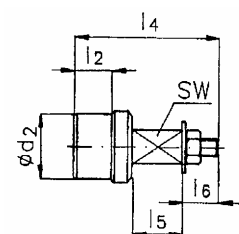
Art. Nr.: 2.104

square with parallel facet



Form C

slip - on pipe connection



Form D

square - weld - in tenon

DN	SW	Ø d ₁	l ₁	l ₂	l ₄	l ₅	l ₆
22	8	20,5	69	12	45	12	13
	9	20,5	69	12	45	12	13
	11	20,5	71	12	47	14	13
	12	20,5	72	12	50	15	15
26	14	20,5	72	12	50	15	15
	12	24,5	82	14	56	17	17
	14	24,5	82	14	56	17	17
	17	24,5	85	14	59	20	17
32	19	24,5	87	14	64	22	20
	19	36,5	104	15	70	25	20
	22	36,5	104	15	70	25	20
38	24	36,5	107	15	80	27	28
	27	42,0	127	17	85	30	28
	32	42,0	132	17	95	35	34
	36	42,0	132	17	95	35	34

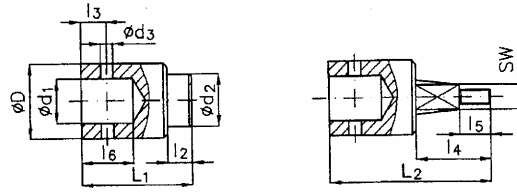
Other facet extra charge

other measurements for Ø d₂ on request

Couplings

Coupling, 860

material: steel



Art. Nr.: 2.402

Form A

Form B

DN	SW	Ø D	Ø d ₁	Ø d ₂	Ø d ₃	L ₁	L ₂	l ₂	l ₃	l ₄	l ₅	l ₆
22	11	25	18	20,5	6	45	65	15	10	35	15	20
26	14	30	24	24,5	6	55	80	17	12	47	18	25
32	19	40	32	36,5	8	65	105	18	15	58	20	35
38	24	45	36	42,0	8	70	115	20	20	64	22	40
45	27	50	40	53,5	10	80	125	22	22	70	22	45
52	32	65	40	69,0	10	100	155	25	32	80	25	65

Coupling

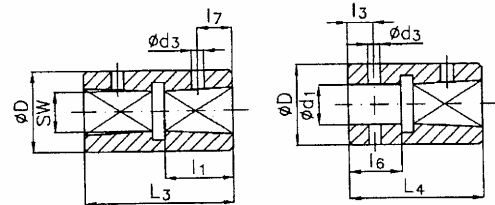
material: steel

Art. Nr.: 2.404

Art. Nr.: 2.405

square with taper facet

one side with drilling, other side square with taper facet



Art. Nr. 2.404

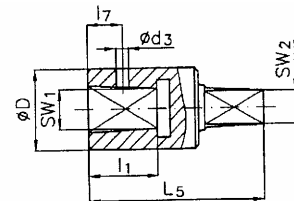
Art. Nr.: 2.405

DN	SW	Ø D	Ø d ₁	Ø d ₃	L ₃	L ₄	l ₁	l ₃	l ₆	l ₇
22	17	40	18	6	78	64	34	10	20	17
26	19	45	24	6	86	73	38	12	25	19
32	24	45	32	8	94	87	42	15	35	21
38	27	50	36	8	104	97	47	20	40	23
45	32	60	40	10	120	110	55	22	45	27
52	36	65	-	10	140	125	65	-	-	32
52	41	70	-	10	158	144	74	-	-	37

Check cover depth

material: steel

Art. Nr.: 2.501 square with taper facet



DN	SW ₁	SW ₂	Ø D	Ø d ₃	L ₅	l ₁	l ₇
22	14	27	40	8	100	29	14
22	17	27	40	6	110	34	17
26	19	27	45	8	110	38	19
32	24	27	45	8	115	42	21
38	27	27	50	10	120	47	23
45	32	27	60	10	130	55	27
52	36	27	65	10	150	65	32
52	41	27	70	10	160	74	37

Transmission - pipes

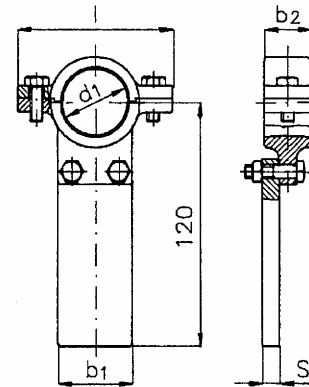
Pipe support, DIN 87371

material: brass

Art. Nr.: 2.201

DN	b ₁	b ₂	Ø d ₁	l	s	Linkage for pipe Ø
22	25	18	25,5	60	8	25,0
26	35	22	30,5	75	8	30,0
32	40	22	43,0	95	8	42,4
38	45	28	49,0	110	10	48,3
45	60	30	61,0	130	12	60,3
52	75	40	77,0	185	12	76,1

other drillings d₁ on request



Transmission – pipe

material: Stahl / steel

Art. Nr.: 2.102

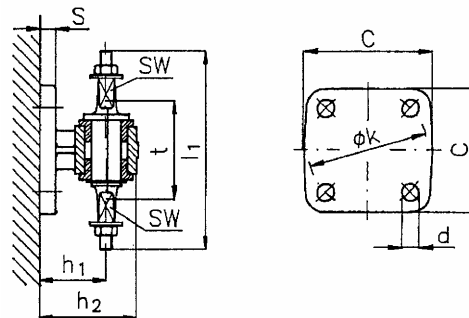
DN	for pipe
22	25 x 2,0
26	30 x 2,5
32	42,4 x 2,6

DN	for pipe
38	48,3 x 2,6
45	60,3 x 2,9
52	76,1 x 2,9

Bearings

Bearing, DIN 87346 Form C

material: cast iron / steel



Art. Nr.: 3.101

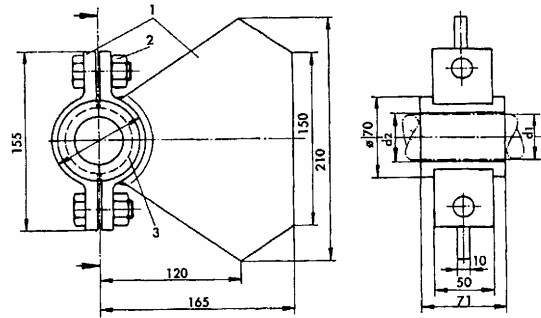
DN	SW	c	Ø d	h ₁	h ₂	k	l ₁	s	t±5
22	11	78	11	42	62	75	130	10	69
26	14	82	11	48	70	82	160	10	86
32	19	90	11	55	80	90	190	12	102
38	24	100	14	60	88	100	215	12	112
45	27	110	14	68	100	110	240	14	131
52	32	120	14	75	112	120	280	14	143

Bearings

Shaft bearing, with rod fastening, S5

material: steel / timber

Art. Nr.: 3.201



DN	Ø d ₁	Ø d ₂
30	30	31
35	35	36
40	40	41

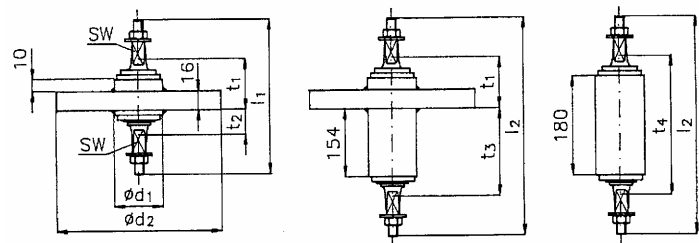
Also available made of 1.4571, and with PTFE- or POM- bearing bushing

Through - bearings

Leading - through bearing, watertight, DIN 87373

material: steel

Art. Nr.: 4.101



Form A

Form B

Form C

Form A short type

Form B long type

Form C long type, without welding ring

DN	SW	Ø d ₁	Ø d ₂	l ₁	l ₂	t ₁ ±2,5	t ₂ ±2,5	t ₃ ±2,5	t ₄ ±5
22	11	40	140	130	280	45	24	174	219
26	14	45	150	160	303	50	36	179	229
32	19	50	150	190	325	54	48	183	237
38	24	55	160	215	340	54	58	183	237
45	27	65	160	240	354	58	73	187	245
52	32	80	180	280	382	58	85	187	245

Through - bearings

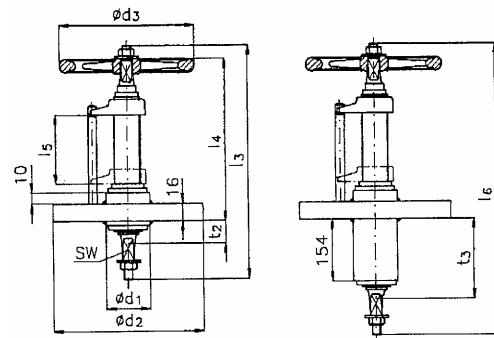
Leading - through bearing, with handwheel and indicator, DIN 87373

material: steel

Art. Nr.: 4.102

Form D short type

Form E long type



Form D

Form E

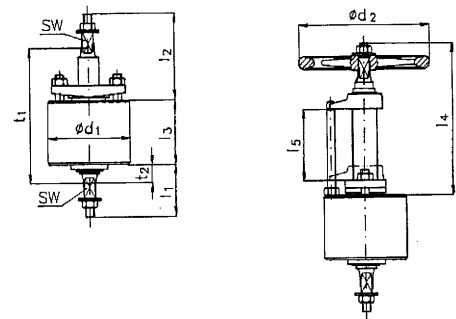
DN	SW	$\varnothing d_1$	$\varnothing d_2$	$\varnothing d_3$	l_3	l_4 $\pm 2,5$	l_5 max	l_6	t_2 $\pm 2,5$	t_3 $\pm 2,5$	max. No. of spindle turns	
											Y	Z
22	11	40	140	125	185	114	37	335	24	174	6	22
26	14	45	150	200	225	133	45	368	36	179	8	28
32	19	50	150	315	315	205	105	450	48	183	20	66
38	24	55	160	400	360	226	115	485	58	183	21	75
45	27	65	160	500	405	254	135	519	73	187	25	83
52	32	80	180	630	465	287	160	567	85	187	31	105

Leading - through bearing, with stuffing-box

material: steel

Art. Nr.: 4.201 S 160 without indicator

Art. Nr.: 4.202 S 161 with indicator and handwheel



S 160

S 161

DN	SW	$\varnothing d_1$	$\varnothing d_2$	l_1	l_2	l_3	l_4	l_5 max	$t_1 \pm 5$	t_2	max. No. of spindle turns S 161	
											Y	Z
22	11	80	120	50	86	62	141	37	137	19	6	22
26	14	90	200	61	110	78	175	45	177	24	8	28
32	19	100	315	75	130	95	255	105	209	28	20	66
38	24	110	360	80	140	105	285	115	222	28	21	75
45	27	120	500	88	147	117	312	135	241	33	25	83

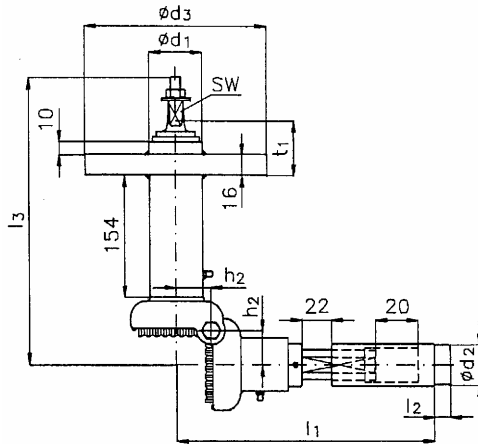
Through - bearings

Leading - through bearing, watertight, with angle gear, DIN 87 382

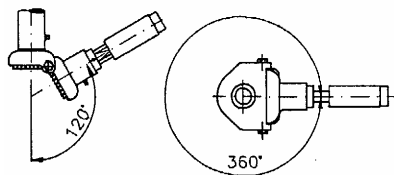
material: gunmetal

Art. Nr.: 4.401 without indicator

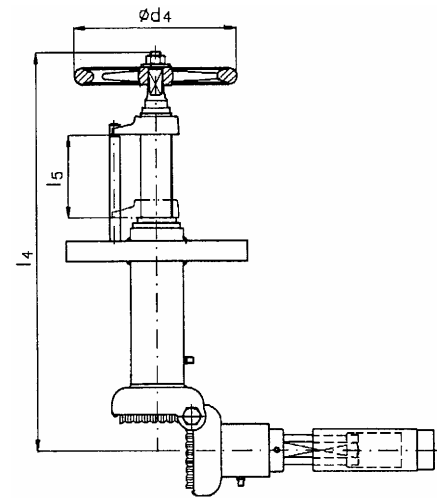
Art. Nr.: 4.404 with indicator and handwheel



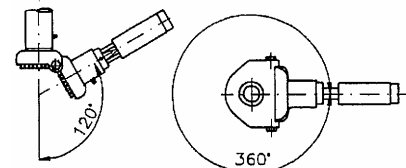
field of traverse



Art. Nr.: 4.401



field of traverse



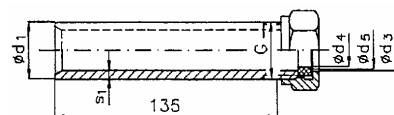
Art. Nr.: 4.404

DN	SW	Ø d ₁	Ø d ₂	Ø d ₃	Ø d ₄	h ₂	l ₁	l ₂	l ₃	l ₄	l ₅	t ₁	max. No. of spindle turns	
													Y	Z
22	11	40	20,5	140	125	25	189	12	300	355	37	56	6	22
26	14	50	24,5	150	200	32	226	14	328	393	45	62	8	28
32	19	60	36,5	150	315	46	274	15	353	478	105	64	20	66
38	24	70	42	160	400	55	314	17	375	520	115	66	21	75

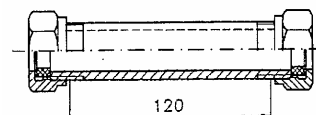
Conduit pipes, DIN 86 056

material: steel

Art. Nr.: 4.601



Form A one side screw
SW



Form B both sides screw

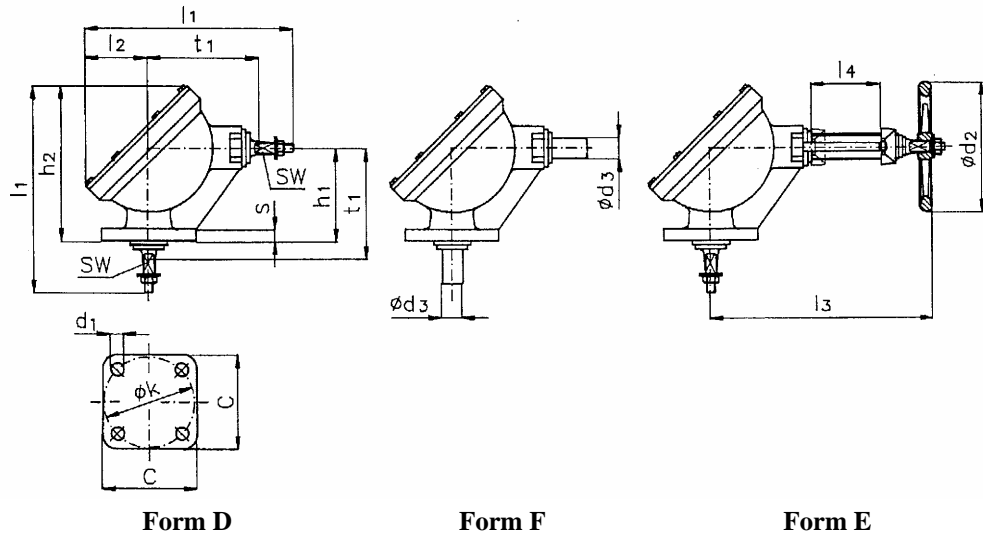
DN	for Pipe Ø	s ₁	Ø d ₁	G	Ø d ₃	Ø d ₄	Ø d ₅	s ₁
6	6	17	13,5	R 1/4"	7	6	6,5	2,9
10	6 - 10	22	17,2	R 3/8"	11	10	10,5	2,9
13,5	12 - 13,5	27	21,3	R 1/2"	14	13,5	14,0	3,2
17,2	15 - 17,2	32	26,9	R 3/4"	18	17	17,5	4,0
22	18 - 22	41	33,7	R1"	23	22	22,5	5,0
28	25 - 28	50	42,4	R1 1/4"	29	28	28,5	5,6
35	30 - 35	55	48,3	R1 1/2"	36	35	35,5	5,6
38	38	70	60,3	R2"	45	38	38,5	5,6
44,5	42 - 44,5	70	60,3	R2"	45	44,5	45,0	5,6

Gears

Bevel gear unit, DIN 87349

material: cast iron / steel

Art. Nr.: 5.101 **Form D** for connection of slip-on joints
 Form F with shaft ending $\varnothing d_3$ to specification
 Form E with handwheel and indicator



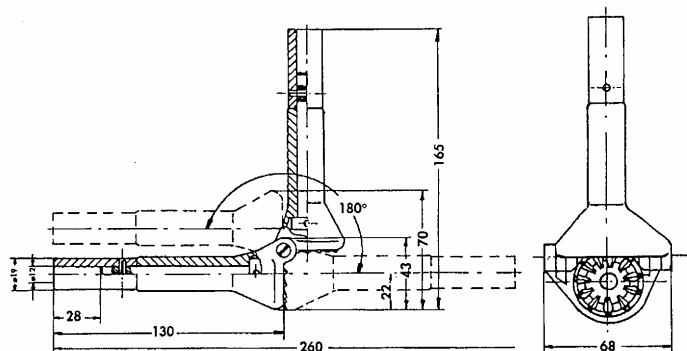
DN	SW	c	$\varnothing d_1$	$\varnothing d_2$	$\varnothing d_3$ max	h_1	h_2	k	$l_1 \approx$	$l_2 \approx$	l_3	s	t_1	l_4 max	Form E max. number of spindle turns	
															Y	Z
22	11	78	11	125	30	77	127	75	177	49	170,5	10	96,5	37	6	22
26	14	82	11	200	35	92	149	82	205	56	204,5	10	116,5	45	8	28
32	19	90	11	315	40	111	176	90	250	64	295,5	12	139,5	105	20	66
38	24	100	14	400	45	137	217	100	297	80	342,5	12	165,5	115	21	75
45	27	110	14	500	52	160	249	110	337	89	393,5	14	192,5	135	25	83
52	32	120	14	630	62	194	304	120	404	110	460,5	14	226,5	160	31	105

Swiveling angle gear, S 20

material: steel / brass

Art. Nr.: 5.601

$\frac{DN}{12}$

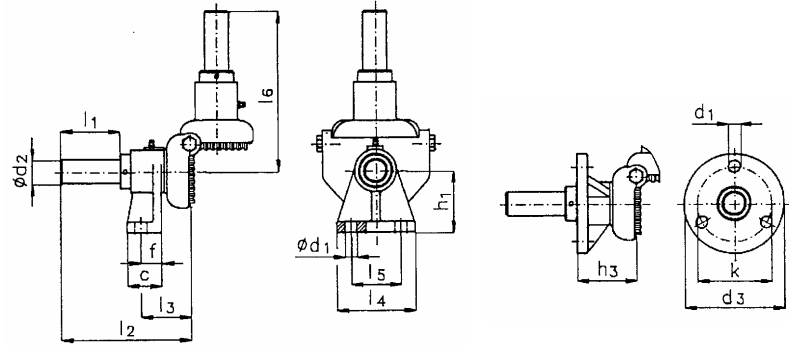
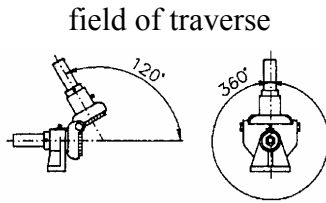


Gears

Swivelling angle gear, S 15

material: gunmetal / steel

Art. Nr.: 5.602



Form A
with foot

Form B
with flange

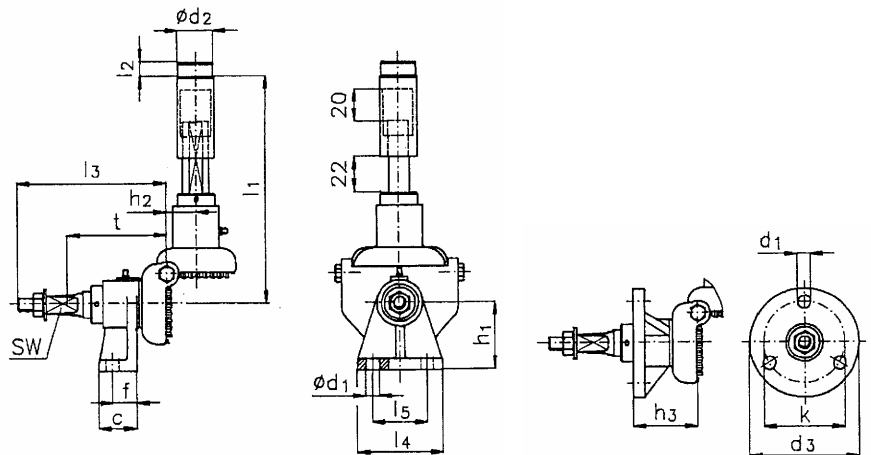
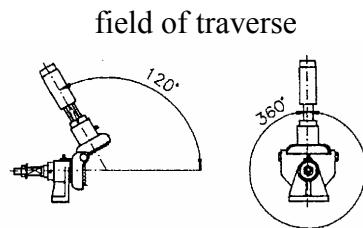
DN	c	Ø d ₁	Ø d ₂	Ø d ₃	f	h ₁	h ₃	k	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆
18	25	9	16	75	14	46	43	56	45	98	35	60	38	118
22	37	11	22	102	22	55	62	75	60	132	59	100	68	157
26	50	14	25	125	30	70	78	90	75	166	74	125	80	197
32	60	18	32	150	38	96	90	110	90	195	84	160	100	242
38	70	22	35	180	42	125	103	130	100	225	90	190	135	280

Swivelling angle gear, DIN 87 350

With lenght-adjustment

material: gunmetal / steel

Art.: 5.605



Form A
with foot

Form B
with flange

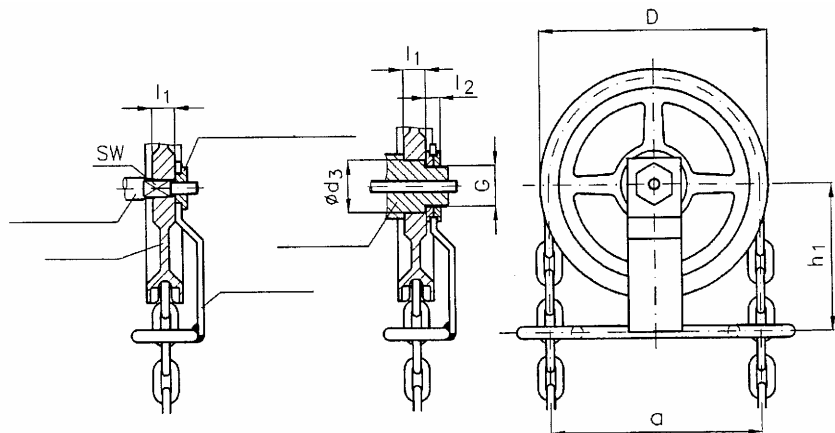
DN	SW	c	d ₁	d ₂	d ₃	f	h ₁	h ₂	h ₃	k	l ₁ ≈	l ₂	l ₄	l ₅	t±2,5
22	11	37	11	20,5	102	22	55	25	62	75	189	12	100	68	88,5
26	14	50	14	24,5	125	30	70	32	78	90	226	14	125	80	111,0
32	19	60	18	36,5	150	38	96	46	90	110	274	15	160	100	133,5
38	24	70	22	42,0	180	42	125	55	103	130	314	17	190	135	157,5

Chain Gears

Chain gear, for valve operating, SK 1
for chain DIN 766 A5/6

material: cast iron / steel

Art. Nr.: 5.501



Form A
for valve
with revolving stem

Form B
for valve with
ext. thread for rising stem

Wheel Ø D	a	SW	h ₁	l ₁	Ø d ₃	G	l ₂
110	82	9	76	17	42		
135	118	11	80	18	42		
165	141	11	80	18	42		
185	165	12	85	20	45		
200	177	14	90	22	45		
215	188	14	100	22	42		
235	212	17	110	26	42		
250	224	17	120	26	42		
300	283	19	140	30	42		
380	353	24	175	34	52		
410	377	24	190	34	52		
435	400	27	200	36	52		
530	506	27	240	38	70		
620	589	32	290	46	75		
765	742	36	360	56	75		

According to specification

According to specification

Prices without chain
Keyway after DIN 6885

Chain for Art. Nr. 5.501

DN

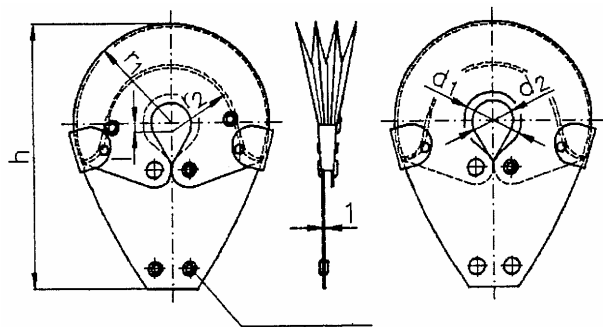
A 5 x 18,5
A 6 x 18,5

Protection cover, DIN 87 352

material: polyamide (oil-proof)

Art. Nr.: 5.801

DN	No. of folds	d ₁	d ₂	h	l	r ₁	r ₂
18	3	34	27	170	4	54	35
22	3	45	33	212	7	80	52
26	5	50	40	272	10	96	70
32	7	65	50	325	15	120	80
38	7	72	55	362	15	130	95



Spindle drives

Spindle drive sleeve, S6 for valves with rising stem

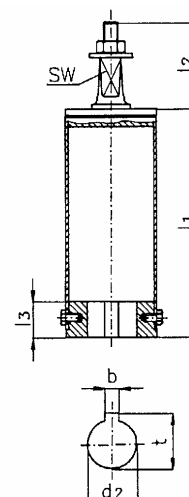
material: steel

Art. Nr.: 6.101

Keyway DIN 6885

DN	SW	l_1	l_2	l_3	b	max d_2	t
22	11	225	50	24	12	40	43,3
26	14	225	60	24	12	44	47,3
32	19	396	72	33	14	46	49,8
38	24	590	80	38	16	52	56,3
45	27	655	86	45	18	62	66,4
52	36	985	110	65	20	75	79,9

other lengths and connections on request

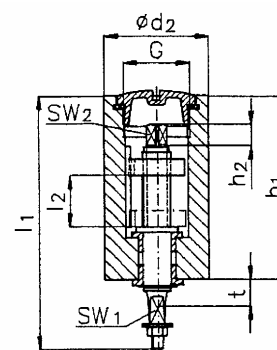


Operation-devices

Deck operating device, DIN 87374 welding in type

material: steel / gunmetal

Art. Nr.: 7.101



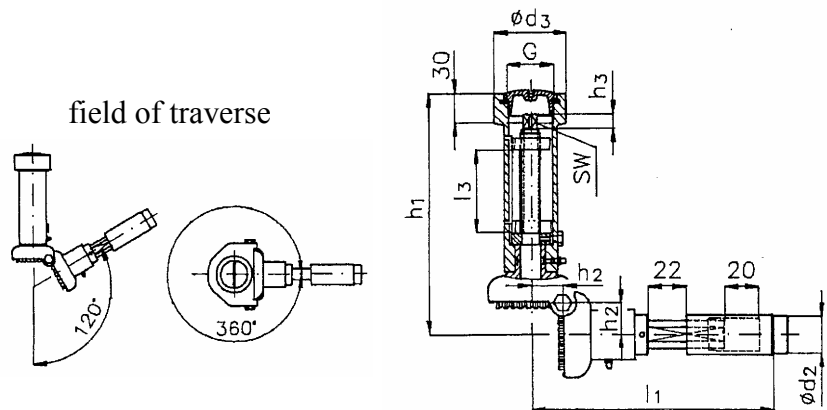
DN	SW1 conical	SW2 parallel	G	Ø d_2	h_1	h_2	l_1	l_2 max.	t ±2,5	max. No. of Spindle turns	
										Y	Z
22	11	12	R1 ½"	75	133	13	185	37	19,5	6	22
26	14	14	R2"	90	155	15	215	45	24,5	8	28
32	19	19	R2 ½"	100	230	20	300	105	28,5	20	66
38	24	24	R2 ½"	100	260	24	340	115	28,5	21	75

Operations-devices

Deck operating device, DIN 87375 with swivelling angle gear

material: steel / gunmetal

Art. Nr.: 7.102



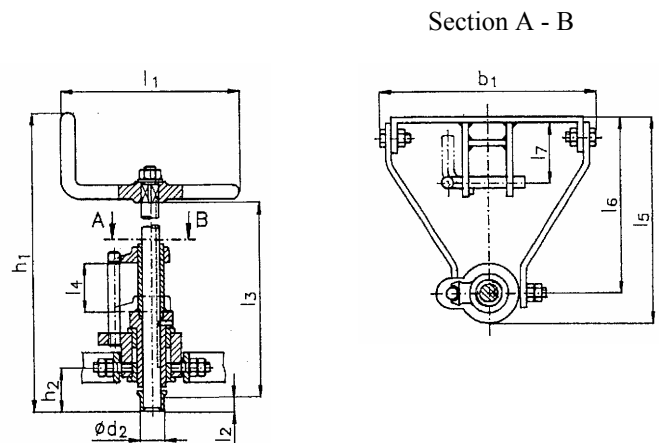
DN	SW	G	Ø d ₂	Ø d ₃	h ₁	h ₂	h ₃	l ₁	l ₃ max.	max. No. of Spindle turns	
										Y	Z
22	12	R1 ½"	20,5	75	243	25	13	189	37	6	22
26	14	R2"	24,5	90	248	32	15	226	45	8	28
32	19	R2 ½"	36,5	100	325	46	20	274	105	20	66
38	24	R2 ½"	42,0	100	405	55	24	314	115	21	75

Operating device, hinged with indicator, DIN 87384

material: steel / brass

Art. Nr.: 7.201

- Form A**
with crank VG 850 86 Form A
- Form B**
with crank VG 850 87 Form A
- Form C**
with crank VG 850 86 Form B
- Form D**
with crank VG 850 87 Form B



DN	b ₁	Ø d ₂	h ₁	h ₂	l ₁	l ₂	l ₃	l ₄ max.	l ₅	l ₆	l ₇	max. No. of Spindle turns	
												Y	Z
22	185	20,5	337	38	150	12	250	37	175	150	60	6	22
26	185	24,5	354	40	175	14	260	45	175	150	60	8	28
32	215	36,5	475	45	225	15	365	105	220	185	75	20	66
38	215	42,0	507	47	300	17	380	115	220	185	75	21	75

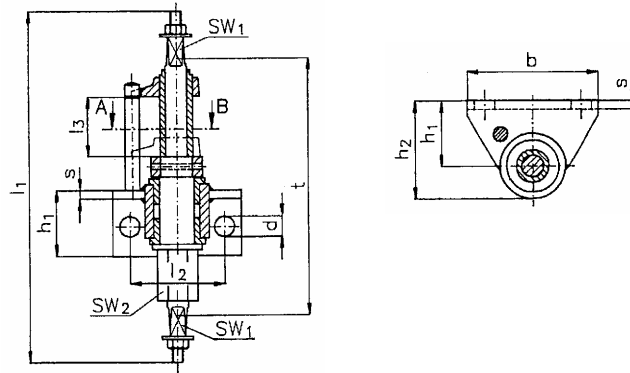
Operations-devices

Intermediate operating device, DIN 87383 with indicator

Section A - B

material: steel / brass

Art. Nr.: 7.301

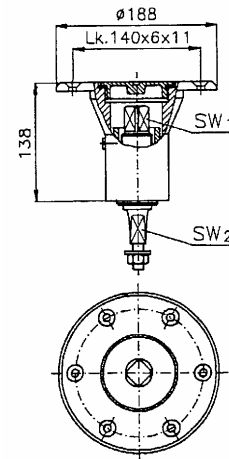


DN	conical		b	Ø d	h ₁	h ₂	l ₁	l ₂	l ₃ max.	s	t±5	max. No. of Spindle turns	
	SW ₁	SW ₂										Y	Z
22	11	24	90	14	45	68	241	65	37	6	180	6	22
26	14	27	90	14	45	68	271	65	45	6	197	8	28
32	19	32	128	18	65	95	374	100	105	8	285	20	66
38	24	36	128	18	65	95	405	100	115	8	302	21	75

Deck operating device, S 17 for screwing

material: gunmetal / steel

Art. Nr.: 7.601



DN	SW ₁	SW ₂	max. No. of Spindle turns
22	12	11	25
26	14	14	25
32	19	19	25
38	24	24	25

Floor stands

Floor stand, S 10

material: Steel

Art. Nr.: 8.101

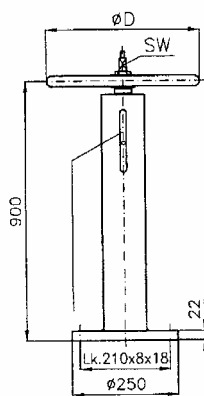
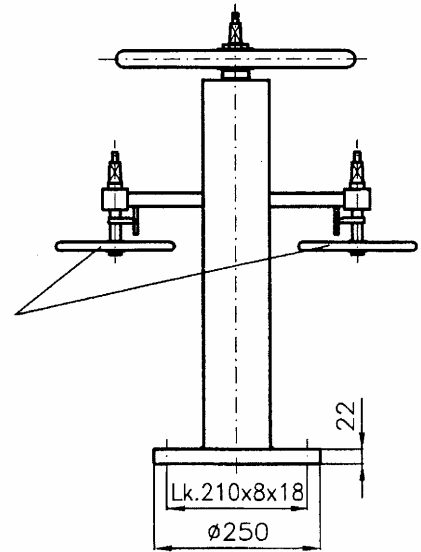
Form A
Form B

Connection top
Connection bottom

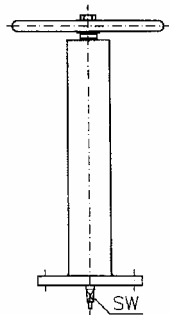
Art. Nr.: 8.102

Form C
Form D
Form E

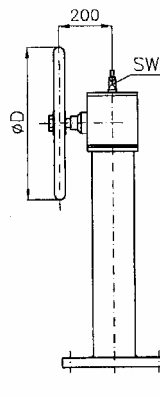
Connection top
Connection bottom
Connection E



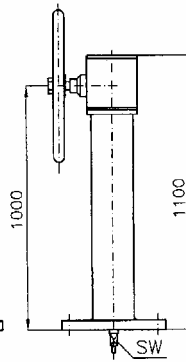
Form A



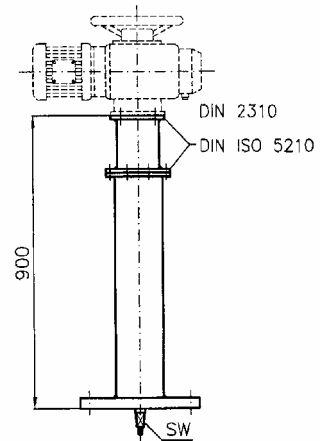
Form B



Form C



Form D



Form E

Connection slip-on joint		max. No. of Spindle turns	
DIN 87344	Ø D	Y	Z
22 x 11	200	31	105
26 x 14	315	31	105
32 x 19	400	31	105
38 x 24	500	31	105
45 x 27	630	31	105

Deck-stands

Deck-stand, S4, with indicator

material: steel

Art. Nr.: 9.201

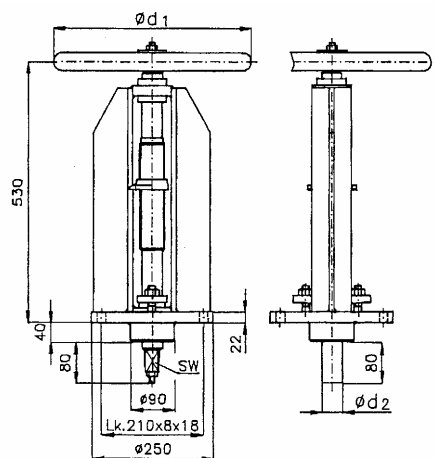
Form A

For connecting of slip-on-joints

Form B

With shaft ending

DN	SW	Ø d ₁	Ø d ₂	max. No. of Spindle turns	
				Y	Z
100/125	19	315	30	22	73
150/200	24	400	35	26	86
250/300	27	500	40	31	103



Form A

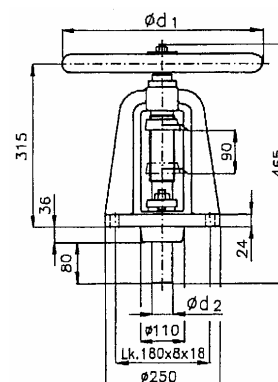
Form B

Deck stand, S 11, with indicator for adaptor

material: cast iron / steel

Art. Nr.: 9.203

DN	Ø d ₁	Ø d ₂	max. No. of Spindle turns	
			Y	Z
100/125	315	30	18	60
150/200	400	35	18	60
250-350	500	40	18	60



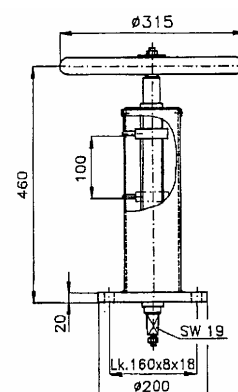
Deck stand, S4d, with indicator, with o-ring sealing

material: steel

Art. Nr.: 9.204

DN	max. No. of Spindle turns	
	Y	Z
32	22	73

Spindle-end also available with shaft ending up to 30 mm.



Drain screws

Drain screw, DIN 87721

material: steel / 1.4571

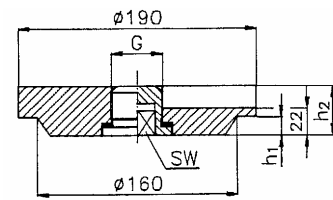
Art. Nr.: **10.101** with metrical thread

Form A

with drainscrew with internal hexagonal for oil-leading drain

Form B

with drainscrew with internal square for water - leading drain



metrical

G	h ₁	h ₂	Form A	Form B
			SW	SW
M 42 x 2	8/15/22	35	22	22
M 72 x 3	8/15/22	40	27	26

declare height h₁ when order

Screw for drain screw, DIN 87721, for drain screw

material: 1.4571

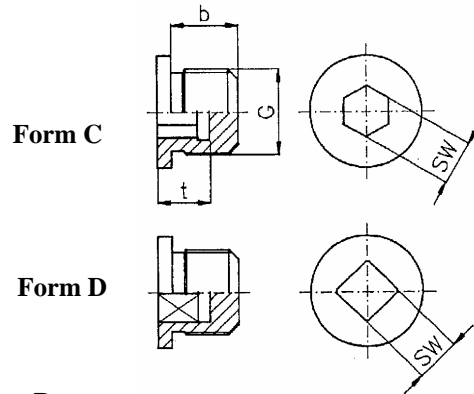
Art. Nr.: **10.301**

Form C

with internal hexagonal for oil - leading drains

Form D

with internal square for water - leading drains



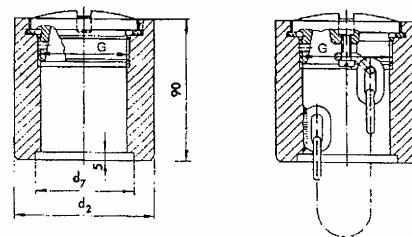
G	t	b	Form C	Form D
			SW	SW
M 42 x 2	20	33	22	22
M 72 x 3	25	35	27	26

Weld-in deck screw cap, Sound tube deck plate for welding, DIN 86111

material: steel / gunmetal

Art. Nr.: **10.501**

DN	Ø d ₂	Ø d ₇	G
32	70,0	43,4	R1 ¼"
40	76,1	49,3	R1 ½"
50	88,9	61,4	R2"
65	108,0	77,4	R2 ½"
80	127,0	90,3	R3"
100	152,4	115,5	R4"



Form D
without chain

Form DK
with chain

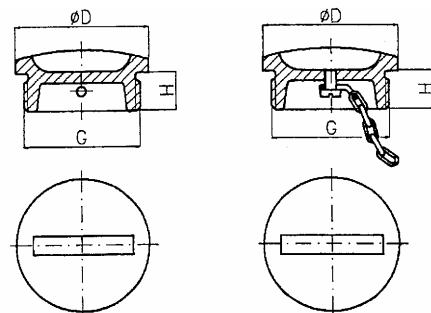
Plug screws, DIN 86 129

for filling and sounding pipes

material: gunmetal

Art. Nr.: **10.502**

DN	G	Ø D	H
32	R1 ¼"	49	18
40	R1 ½"	56	18
50	R2"	69	20
65	R2 ½"	85	20
80	R3"	99	23
100	R4"	125	23



Form D
without chain

Form DK
with chain

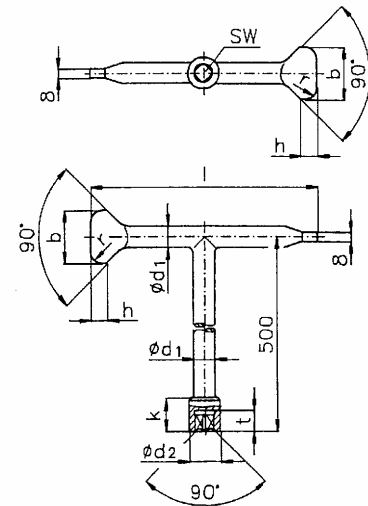
Keys

Multi purpose key, DIN 87 310

material: steel

Art. Nr.: 11.102

SW	b	d ₁	d ₂	h	k	l	r	t
12	35	16	25	13	29	175	10	13
14	52	20	30	16	33	225	13	15
19	52	20	38	16	38	300	13	20
24	52	20	45	16	43	400	13	24



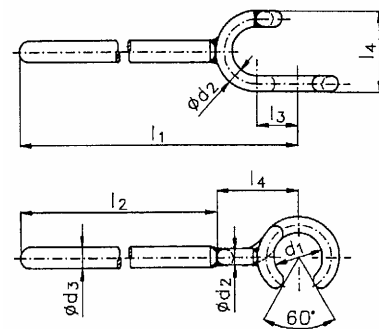
Key for hand wheel, DIN 87 311

material: steel

Art. Nr.: 11.103

for

handwheel Ø	Ø d ₁	Ø d ₂	Ø d ₃	l ₁ ≈	l ₂	l ₃	l ₄
up to 200	36	12	16	320	260	30	60
250 - 400	48	16	20	400	320	40	80
500 - 800	62	20	25	500	398	51	102



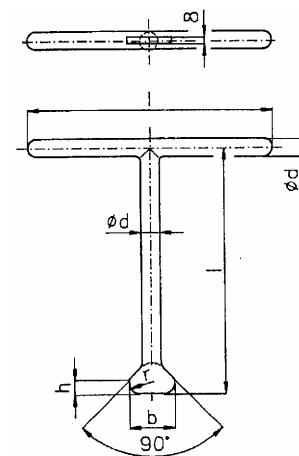
Flat-ended key, DIN 87 312

for deck screw caps for filling and sounding pipes

material: steel

Art. Nr.: 11.104

b	d	h	l	r
35 x 8	16	13	350	10
52 x 8	20	16	400	13



Key for drain screw, DIN 87 314

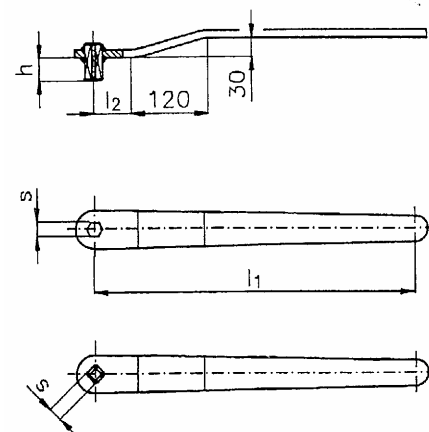
material: steel

Art. Nr.: 11.105

Form A male-hexagonal-wrench

Form B male-square-wrench

SW	h	l ₁	l ₂
17	29	400	60
22	36	500	60
24	39	560	60
26	43	630	80
27	43	630	80



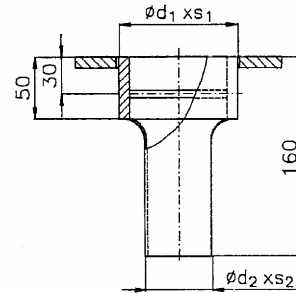
Scuppers

Scupper, without water trap
straight with connection LORO-X-tubes, ST

material: steel / galvanised

Art. Nr.: 12.101

DN	$\varnothing d_1 \times s_1$	$\varnothing d_2 \times s_2$
50	76,1 x 8,8	53 x 1,5
70	95 x 8,8	73 x 1,5
100	133 x 8,8	102 x 2,0
125	168,3 x 10	133 x 2,5
150	168,3 x 10	159 x 2,5



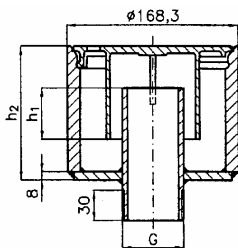
Scupper, DN 50, with water trap

material: steel / galvanised

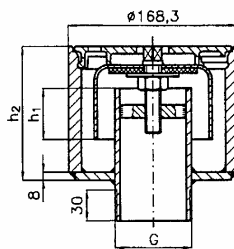
Art. Nr.: 12.301 DIN 87223 non shut-off type

Art. Nr.: 12.401 DIN 87224 shut-off type

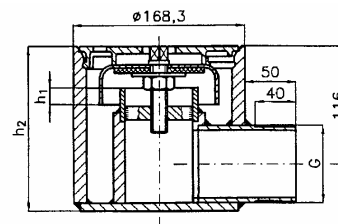
Connection: with male-thread



DIN 87223



DIN 87224



Type Z

DIN	h_1	h_2	G
87223	50	105	R 2"
	50	105	R 2 1/2"
	75	131	R 2"
	75	131	R 2 1/2"
87224	50	131	R 2"
	50	131	R 2 1/2"
	75	156	R 2"
	75	156	R 2 1/2"
Type Z	20	162	R 2"
	20	162	R 2 1/2"

Scuppers

Scupper, DN 50, with water trap

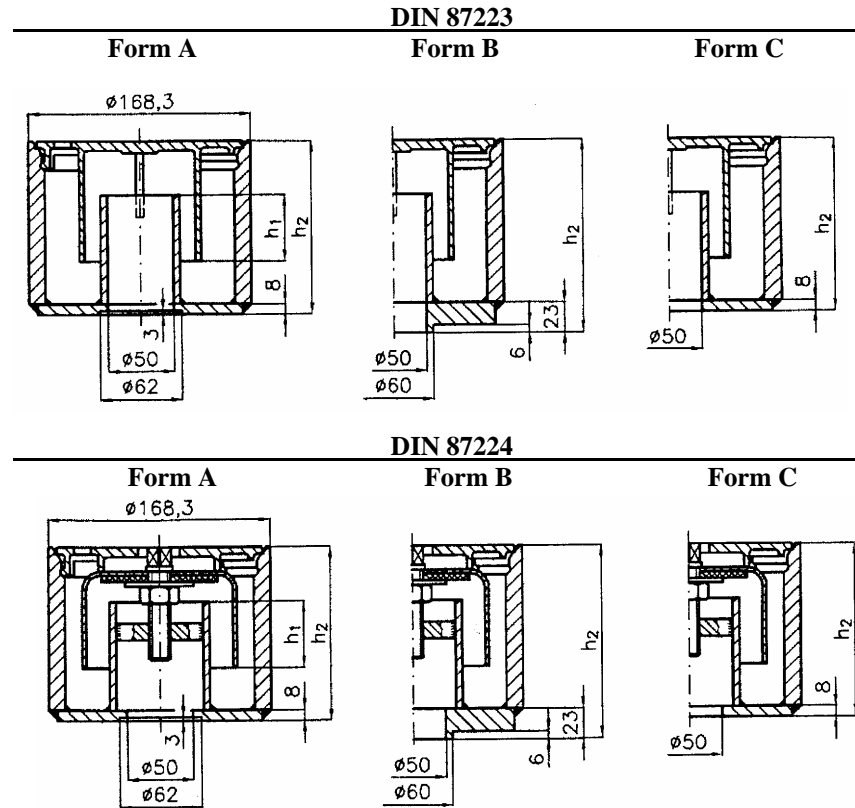
material: steel / galvanised

Art. Nr.: 12.305

DIN 87223 non shut-off type

Art. Nr.: 12.405

DIN 87224 shut-off type

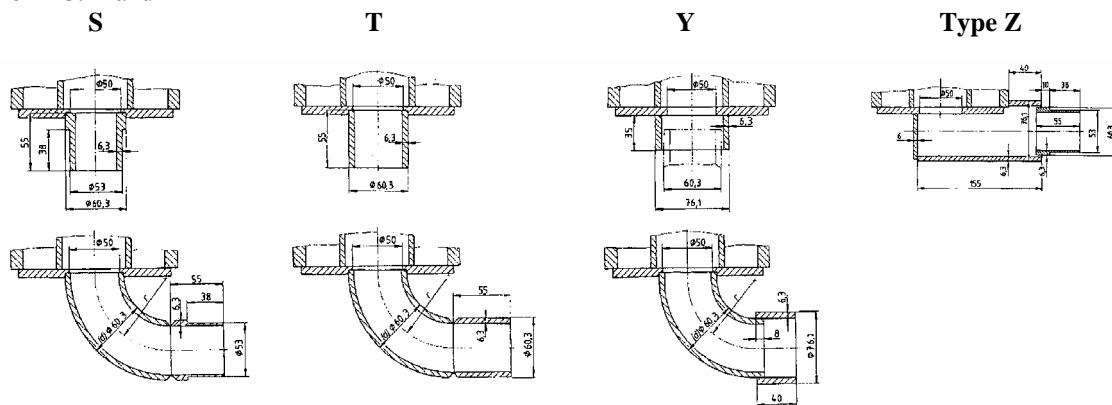


Connections:

Form A: S, T, U, V, W and X

Form B: welding ring-welding edge-tubular joint

Form C: Y and Z



Type U: with pipe bend $r = d$

Type V: with pipe bend $r = d$

Type P: with pipe bend $r = d$

Type W: with pipe bend $r = 1,5 d$

Type X: with pipe bend $r = 1,5 d$

Type P: with pipe bend $r = 1,5 d$

DIN	h_1	h_2		
		A1	A2	A3
87223	50	105	120	105
	75	131	146	131
87224	50	131	146	131
	75	156	174	156

Scuppers

Scupper, without water trap, DIN 87 225, for free decks

material:

Type X: steel / 1.4571

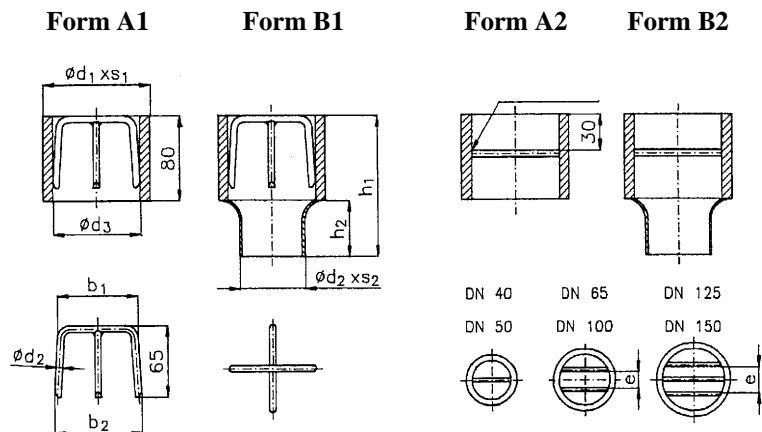
Type Y: steel

Art. Nr.: 12.501

Form A for connection with bushing

Form B for connection with plug-in bushing

Form C with elbow for connection with plug-in bushing



Applications

Type X removable

Type Y welded together (grates)

DN	Hausing pipe		outlet pipe		h_1	h_2
	$\phi d_1 \times s_1$	$\phi d_2 \times s_1$	ϕd_3	$\phi d_2 \times s_2$		
40	48,3 x 5,6	42 x 1,5	48,3		110	30
50	76,1 x 6,3	53 x 1,5	60,3		118	38
65	101,6 x 11,0	73 x 1,5	76,1		135	55
80	114,3 x 11,0	89 x 1,5	88,9		142	62
100	139,7 x 11,0	102 x 2,0	114,3		150	70
125	168,3 x 12,5	133 x 2,5	139,7		155	75
150	193,7 x 11,0	159 x 2,5	168,3		160	80

Scupper, without water trap, DIN 87 226 side for free decks

material:

Type X: steel / 1.4571

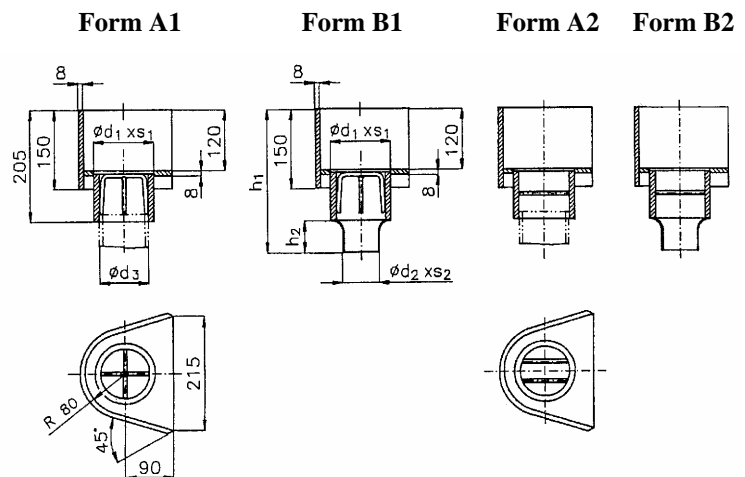
Type Y: steel

Art. Nr.: 12.601

Form A for connection with bushing

Form B for connection with plug-in bushing.

Form C with elbow for connection with plug-in bushing



Applications

Type X removable

Type Y welded together (grates)

DN	Hausing pipe		outlet pipe		h_1	h_2
	$\phi d_1 \times s_1$	$\phi d_2 \times s_2$	ϕd_3	$\phi d_2 \times s_2$		
40	48,3 x 5,6	42 x 1,5	33,7		235	30
50	76,1 x 6,3	53 x 1,5	60,3		243	38
65	101,6 x 11,0	73 x 1,5	76,1		260	55
80	114,3 x 11,0	89 x 1,5	88,9		267	62
100	139,7 x 11,0	102 x 2,0	114,3		275	70

other types on request.

Scuppers

Drain well

Form A and B

for inner decks and shipping room

Form C

for rudder actuating room and rope basket

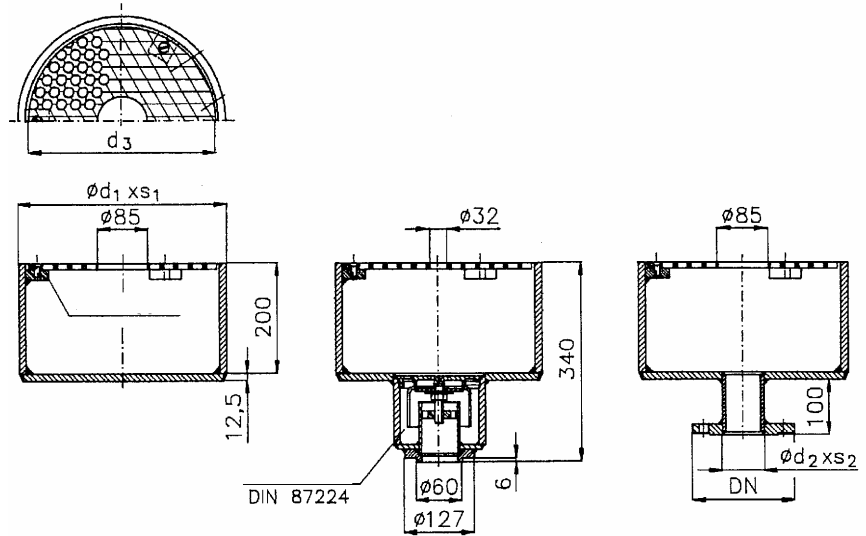
material: steel / 1.4571

Art. Nr.: 12.801

Form A Drain well

Form B Drain well to scupper with watertrap shut-off type

Form C Drain well to scupper



Form A

Form B

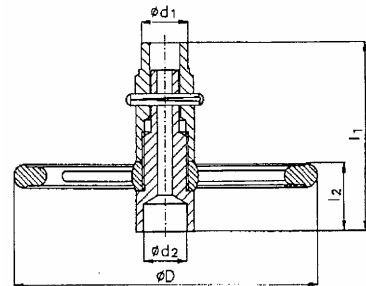
Form C

DN	Hausing pipe Ø d ₁ x s ₁	Hausing pipe Ø d ₂ x s ₂	d ₃	Form C Drainstuls DN
350	355,6 x 12,5	76,1 x 7,1	320	65
500	508,0 x 12,5	88,9 x 8,0	458	80

Handwheel for welding, 309

Art. Nr.: 13.102

DN	Ø D	Ø d ₁	Ø d ₂	l ₁	l ₂
22	120	20,5	21	80	35
26	200	24,5	25	86	39
32	320	36,5	37	96	44
38	400	42	42,5	105	52
45	500	53,5	54	123	60
52	630	69	70	150	73

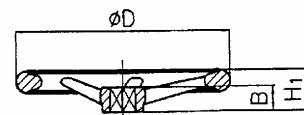
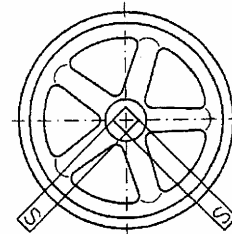
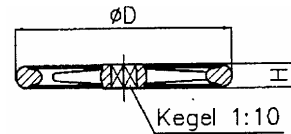


Handwheel

Art. Nr.: 13.103 DIN 3220

Art. Nr.: 13.104 DIN 3319

DIN 3220



DIN 3319

Ø D	s	B	H	H ₁	No. of arms
100	9	17	17	33	3
125	11	18	18	36	3
160	12	20	20	40	3
200	14	22	22	43	3
250	17	26	26	48	5
315	19	30	30	53	5
400	24	34	34	59	5
500	27	-	38	-	5
630	32	-	46	-	7

Directives for installation

1. In general

The minimum in loss of power of a remote control gear with transmission tubing for manual operating is only guaranteed by uniform transmission of motion. Therefore the directives according to the sections 2 to 6 have to be considered thoroughly in planing an installation.

2. Fork position

- 2.1 The axles of the bore-holes of the weld-in forks (A) and (B) have to be flush with each other, when welding into the transmission tube (C), see **picture 1**.
- 2.2 Twisted weld-in forks connected by transmission tube - e.g. in **picture 2** - are not proper. Just a relative small twisting of the forks leads to a high reduction of efficiency.

3. Angle of deflection

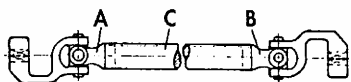
- 3.1 The angular position of the joints should not be wider than 25° . In exceptions the angle could be 30° , if the remote control consists of a small number of diversions.
- 3.2 The angles a and b at the ends of the transmission tube (C) have to be equal-sized, see **picture 3**.
- 3.3 Unequal angles - e.g. in **picture 4** - are not appropriate and lead to an enormous reduction of efficiency, see also section 2.2.

4. Angular speed

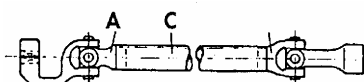
- 4.1 Only if there is an odd number of shafts, equal angular speeds are possible. Hereby a couple of shafts of a bevel gear unit (e.g. DIN 87 350) the shaft in the bearing bracket holds for one shaft and the shaft of the swivel part holds for a joint.

5. Supports

- 5.1 If a transmission tube is beared by two spaced pipe support (DIN 87 371), this transmission tube holds for a shaft, see **picture 5**.
- 5.2 If a long transmission tube between two joints, which are beared at fixed ends of shafts (e.g. DIN 87 376), has to be supported, only one pipe support (DIN 87 371) shall be attached in the middle of the pipe. In other cases the needed swinging of the pipe is hindered, see **picture 6**.

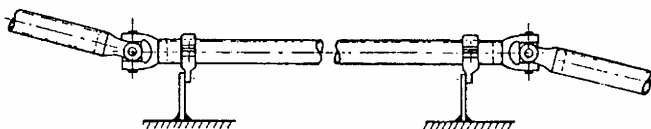
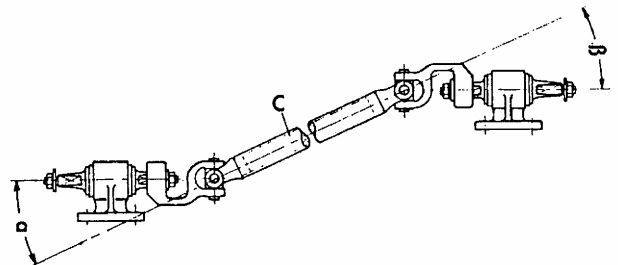


Picture 1: right position of fork

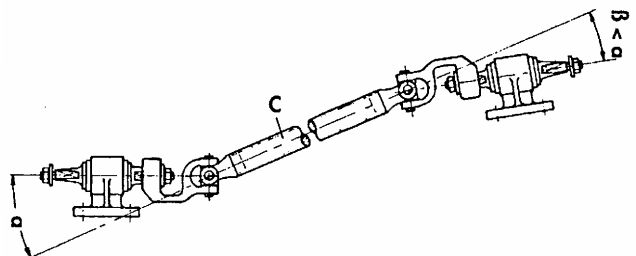


Picture 2: wrong position of fork

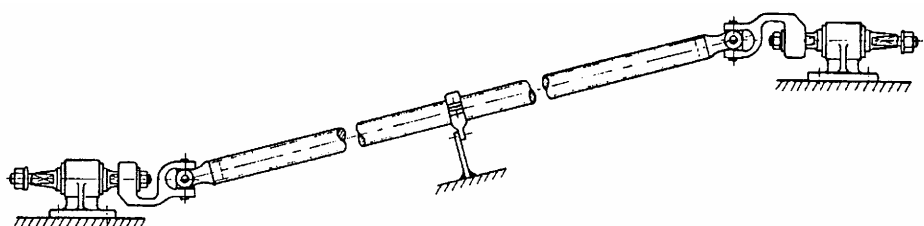
Picture 3: right position of angle



Picture 5: transmission tube with 2 clamps (shaft)



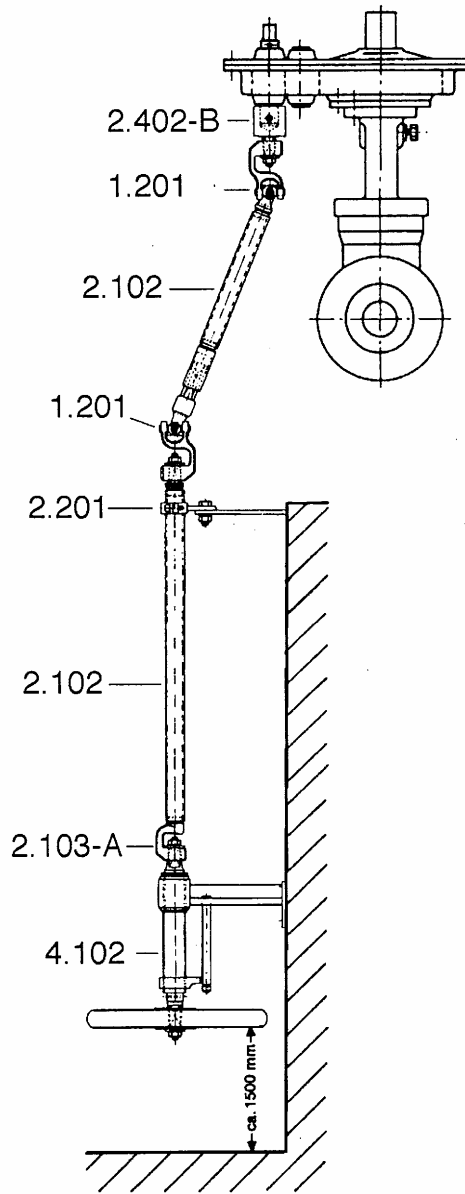
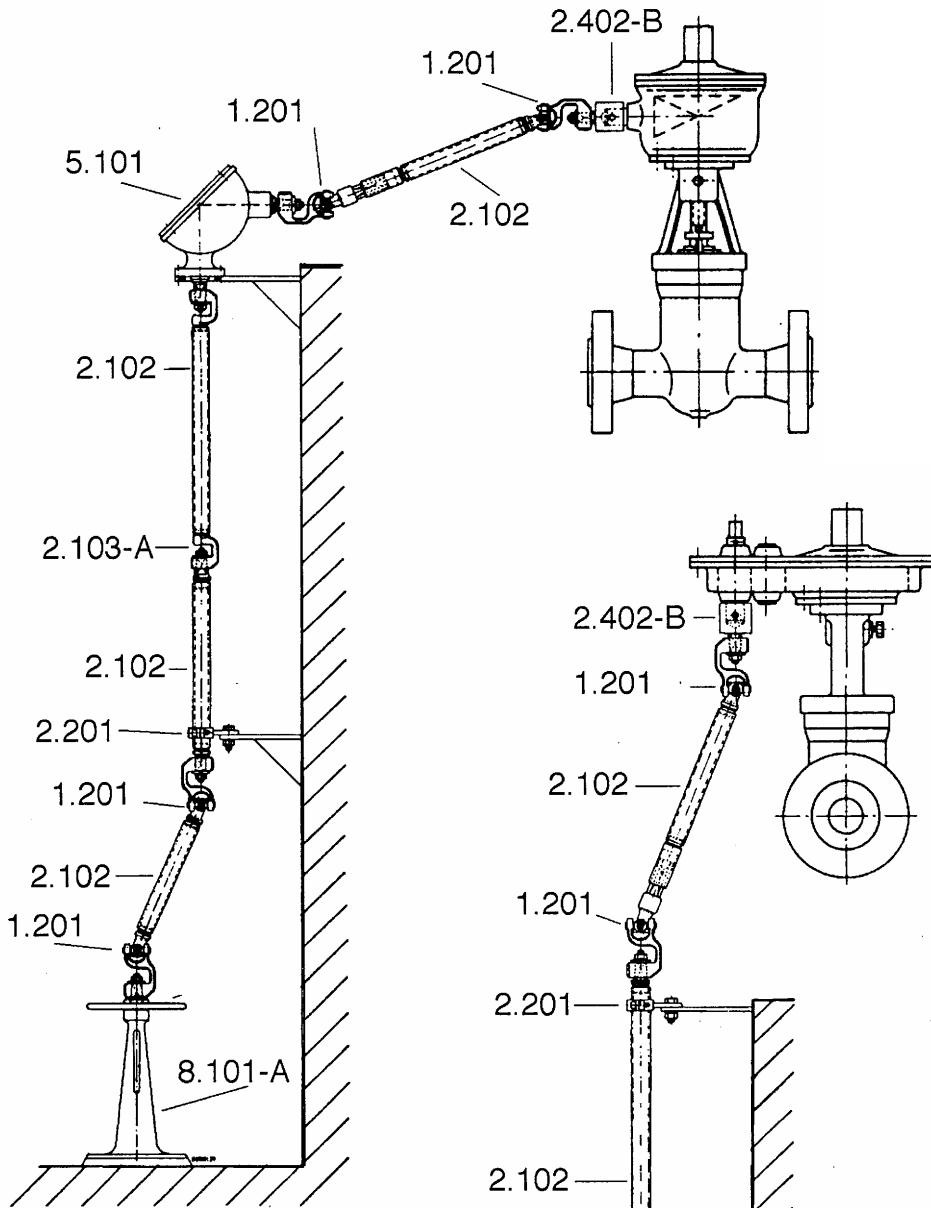
Picture 4: wrong position of angle



Picture 6: with 1 holder

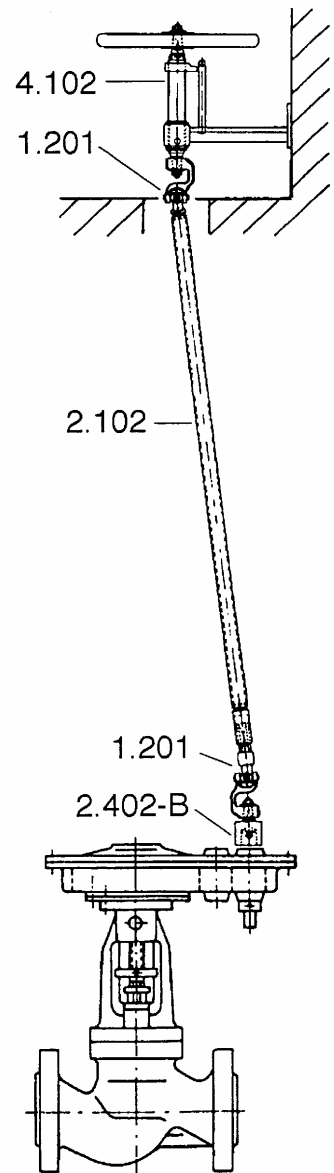
Examples for installation

Lengthening for spindle



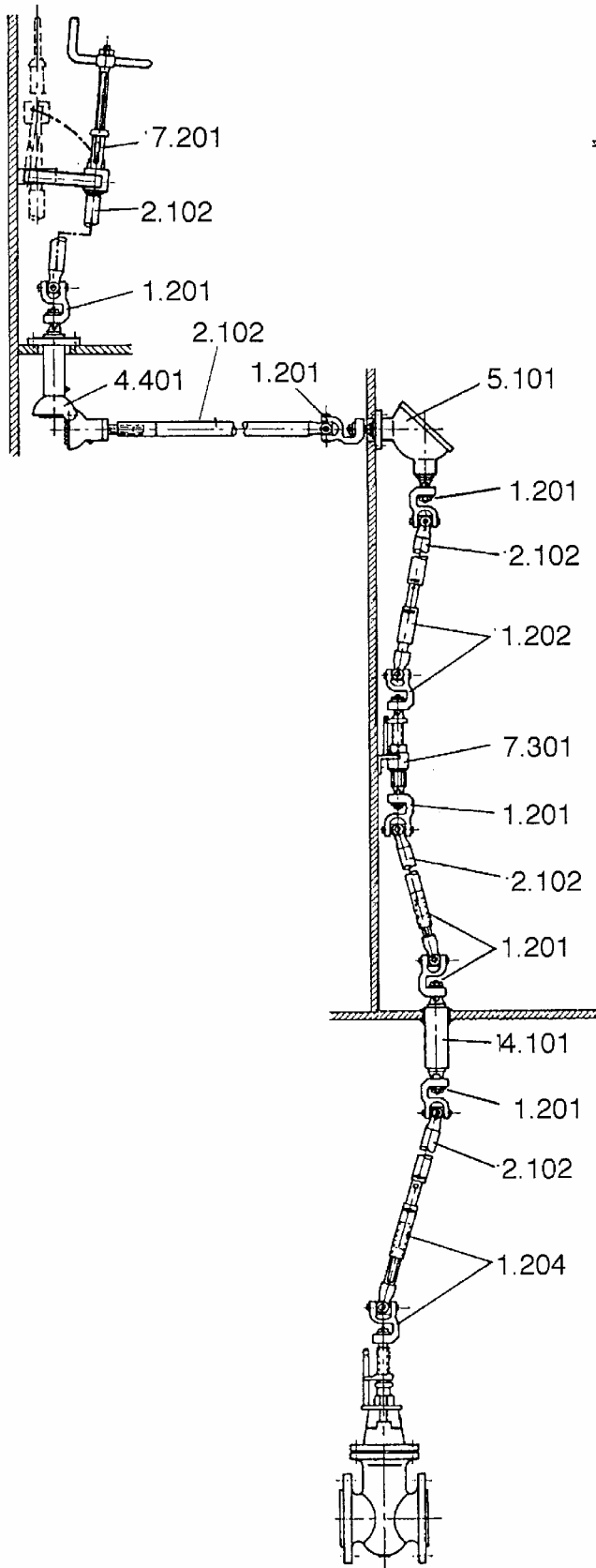
Upper floor handling

Under floor handling

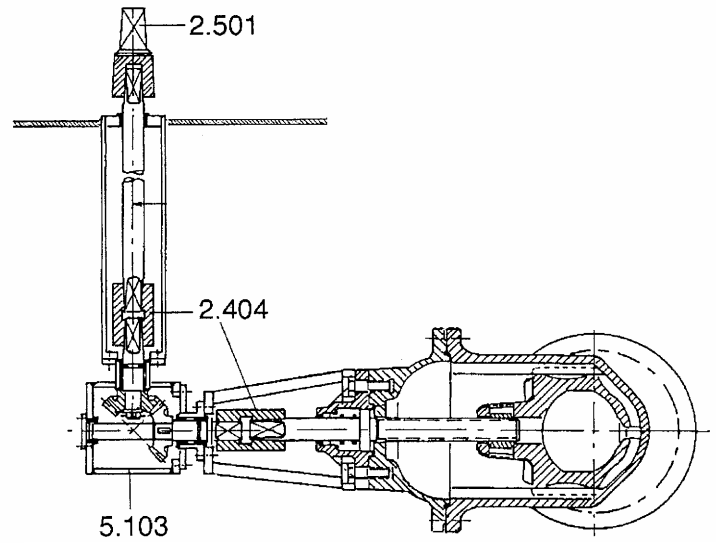


Examples for installation

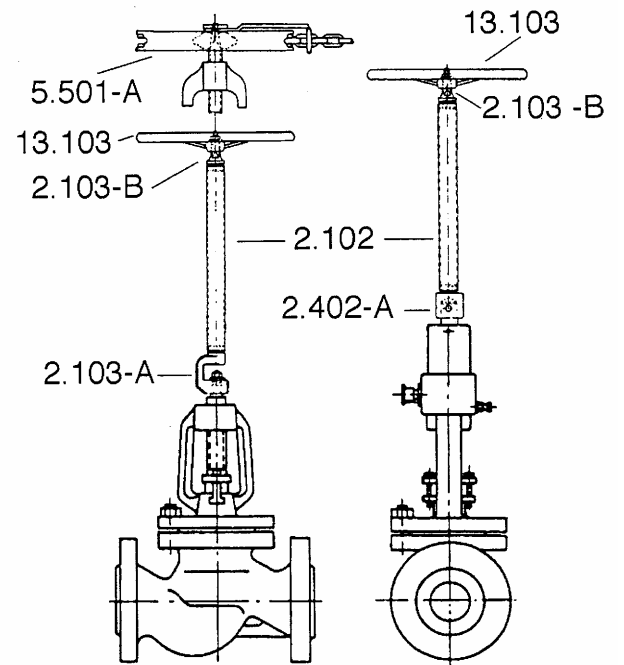
Deck installation



Ground installation



Lengthening for lever



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Remote control parts for valves and other applications for industrial and shipbuilding usage.

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- Guaranteed spare stock keeping until 15 years
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- Production acc. to DIN-standard

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- Spindellebents
- Joke - assemblies
- Drain screws
- Keys
- Water - drains
- Hand - grips
- Handwheels
- Bogies
- Pulleys
- Fork screws
- Oiling nipples

