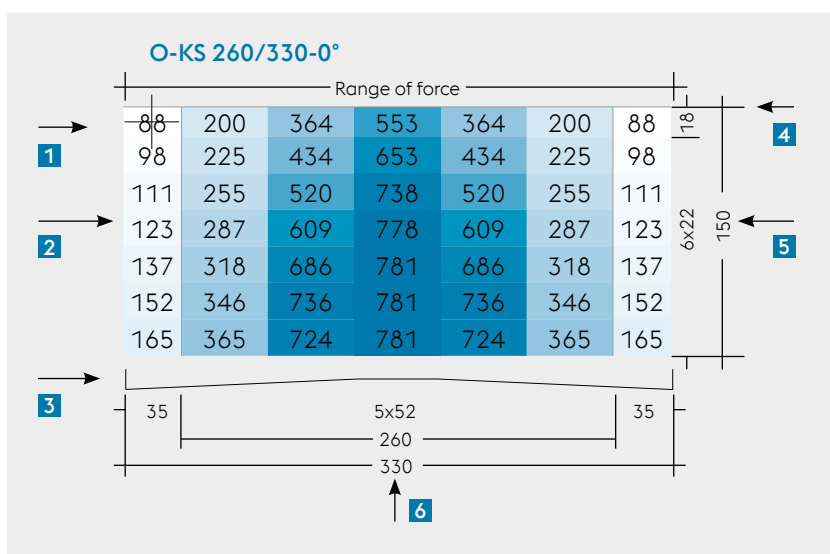
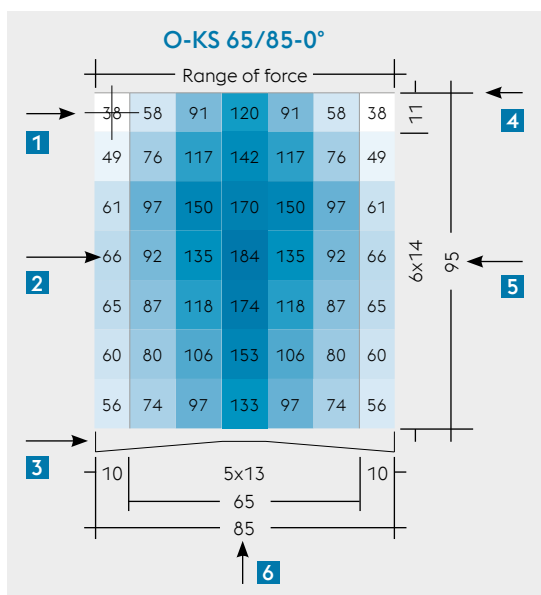
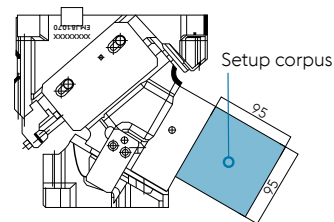


# PERMISSIBLE CAM FORCES

The following overview shows the permissible cam force in the midpoint of each field in the direction of cam travel (rounded values). In the event of several different forces, the common center of force must be determined and compared with the values indicated in the table. All introduced forces must always be lower than those indicated in the table.



As a guideline, the length of the setup corpus must not exceed the height of the work surface. The setup corpus should be as compact as possible. Additional sliding plate supports should be provided for longer superstructures. Please contact [engineering.camtec@voestalpine.com](mailto:engineering.camtec@voestalpine.com) if you have any questions.



The height and width of the work surface are always displayed in proportion to each other.

- 1 Force in the midpoint of each field
- 2 Value of force kN
- 3 Cam unit bottom
- 4 Top work face
- 5 Height of work face
- 6 Work face width

The coloring in the force diagrams reflects tendencies in the range of values from the smallest force to the maximum cam force for each method of support.



The O-KS features a highly convincing force diagram that depicts both shouldering and fitting key support.

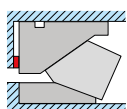
# O-KS SIZE 0

## FORCE DISTRIBUTION

### Cam unit specifications O-KS 60

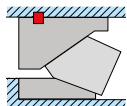
ident. no.	designation	angle [degree]	weight [kg]	stroke [mm]	height cam unit [mm]	length cam unit [mm]
27080	O-KS 60-0°	0°	11	21,85	205	195
27081	O-KS 60-5°	5°	11	21,94	205	195
27082	O-KS 60-10°	10°	11	26,45	205	195
27083	O-KS 60-15°	15°	11	26,96	205	195
27084	O-KS 60-20°	20°	11	25,81	205	195
27085	O-KS 60-25°	25°	11	26,76	205	195
27086	O-KS 60-30°	30°	11	21,23	205	195
27087	O-KS 60-35°	35°	11	22,44	205	199
27088	O-KS 60-40°	40°	11	23,74	205	197
27089	O-KS 60-45°	45°	12	25,72	205	201
27090	O-KS 60-50°	50°	12	28,29	205	196
27091	O-KS 60-55°	55°	12	31,71	205	198
27092	O-KS 60-60°	60°	11	35,45	205	195
27093	O-KS 60-65°	65°	11	41,95	205	195
27094	O-KS 60-70°	70°	11	51,83	205	195
27095	O-KS 60-75°	75°	11	68,49	205	195

### Permissible size of the cam forces



#### Shouldering

Top and bottom support by shouldering



#### Fitting key

Top support by fitting key, bottom support by shouldering

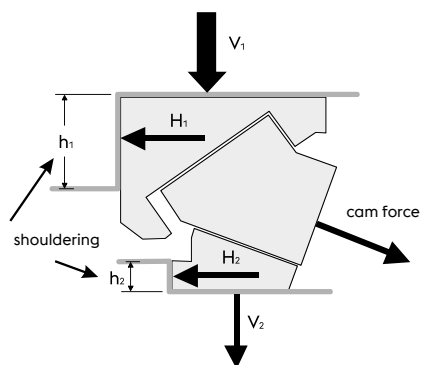
# O-KS SIZE 0

## PERMISSIBLE CAM FORCES

Cam unit force distribution O-KS 60, 1,000,000 strokes

cam unit angle [degree]	max. cam force [kN]	force distribution at max. cam force [kN]				shouldering [mm]		retraction force [kN]
		V1	H1	V2	H2	h1	h2	
0°	124	72	86	72	0	145	26	3,7
5°	131	72	86	64	6	145	26	4,1
10°	119	84	70	69	12	120	26	3,7
15°	126	84	71	61	16	120	26	4,1
20°	119	96	55	67	24	106	48	3,4
25°	126	95	55	57	27	106	48	3,8
30°	152	89	75	34	20	120	48	6,1
35°	157	89	75	25	17	120	48	8,1
40°	153	100	58	30	26	106	48	6,1
45°	157	100	58	21	21	106	48	8,1
50°	160	99	57	13	15	106	48	12,0
55°	162	100	58	6	8	106	48	18,0
60°	154	114	20	20	34	50	90	5,8
65°	162	117	21	13	28	50	90	7,6
70°	161	114	20	7	19	50	90	11,4
75°	162	116	20	3	10	50	90	18,0

The cam unit force is distributed as shown in the sketch:



Shouldering: h<sub>1</sub> (top)  
h<sub>2</sub> (bottom)  
Press: V<sub>1</sub> (vertical)  
Cam base: H<sub>1</sub> (horizontal)  
Driver: H<sub>2</sub> (horizontal)  
V<sub>2</sub> (vertical)

# O-KS SIZE 0

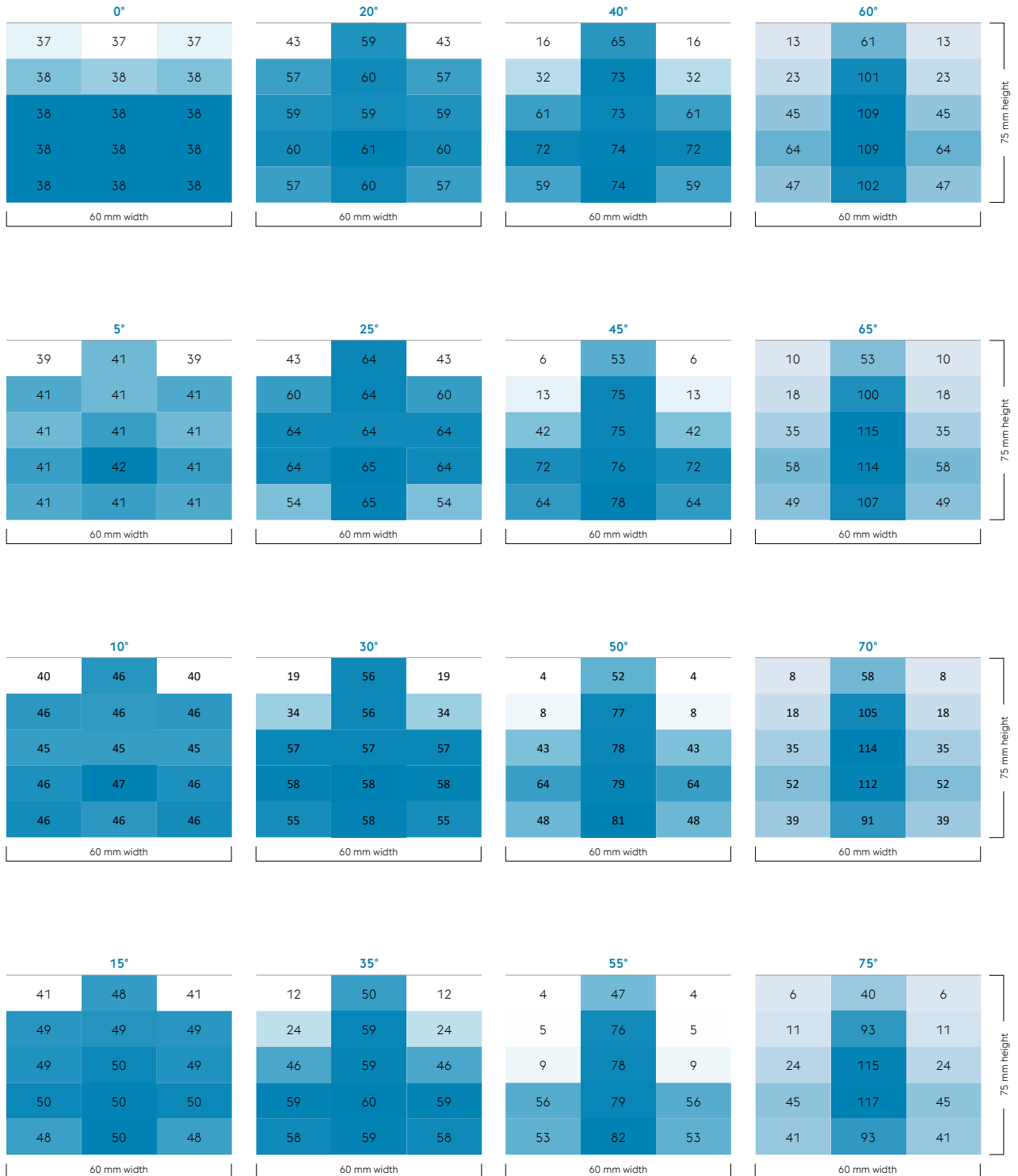
## O-KS 60 | support via cast shoulder



rounded values

# O-KS SIZE 0

## O-KS-60 | support via fitting key



rounded values

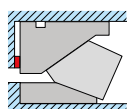
# O-KS SIZE 1

## FORCE DISTRIBUTION

### Cam unit specifications O-KS 65-85

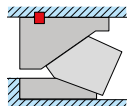
ident. no.		designation		angle [degree]	weight [kg]		stroke [mm]	height cam unit [mm]	length cam unit [mm]
O-KS 65	O-KS 85	size	size		O-KS 65	O-KS 85			
27000	27020	O-KS 65-0°	O-KS 85-0°	0°	16	17	28,93	225	227
27001	27021	O-KS 65-5°	O-KS 85-5°	5°	16	17	29,04	225	227
27002	27022	O-KS 65-10°	O-KS 85-10°	10°	16	17	35,00	225	229
27003	27023	O-KS 65-15°	O-KS 85-15°	15°	16	17	35,69	225	232
27004	27024	O-KS 65-20°	O-KS 85-20°	20°	16	17	36,86	225	247
27005	27025	O-KS 65-25°	O-KS 85-25°	25°	16	17	38,22	225	247
27006	27026	O-KS 65-30°	O-KS 85-30°	30°	16	16	35,38	225	236
27007	27027	O-KS 65-35°	O-KS 85-35°	35°	16	17	37,41	225	239
27008	27028	O-KS 65-40°	O-KS 85-40°	40°	16	17	39,57	225	247
27009	27029	O-KS 65-45°	O-KS 85-45°	45°	16	17	42,87	225	247
27010	27030	O-KS 65-50°	O-KS 85-50°	50°	16	17	47,16	225	247
27011	27031	O-KS 65-55°	O-KS 85-55°	55°	16	17	52,85	225	247
27012	27032	O-KS 65-60°	O-KS 85-60°	60°	16	17	49,24	225	247
27013	27033	O-KS 65-65°	O-KS 85-65°	65°	16	17	46,61	225	252
27014	27034	O-KS 65-70°	O-KS 85-70°	70°	16	17	57,59	225	252
27015	27035	O-KS 65-75°	O-KS 85-75°	75°	16	17	76,10	225	252

### Permissible size of the cam forces



#### Shouldering

Top and bottom support  
by shouldering



#### Fitting key

Top support by fitting key, bottom  
support by shouldering

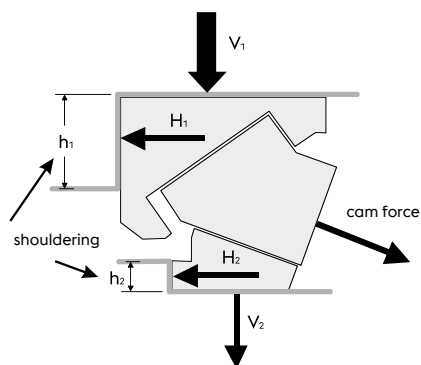
# O-KS SIZE 1

## PERMISSIBLE CAM FORCES

Cam unit force distribution size 1 O-KS, 1,000,000 strokes

cam unit angle [degree]	max. cam force [kN]	force distribution at max. cam force [kN]				shouldering [mm]		retraction force [kN]
		V1	H1	V2	H2	h1	h2	
0°	184	154	184	154	0	155	20	6,8
5°	209	164	195	146	13	155	20	7,6
10°	186	186	156	154	27	125	30	6,8
15°	202	189	159	137	37	125	30	7,6
20°	187	211	122	147	54	100	60	6,5
25°	203	215	124	129	60	100	60	7,3
30°	200	163	137	63	36	105	60	12,2
35°	205	163	136	45	32	105	60	16,1
40°	208	192	111	58	49	100	80	11,6
45°	213	191	110	40	40	100	80	15,3
50°	217	191	110	25	29	100	80	22,9
55°	220	191	110	11	16	100	80	20,5
60°	212	222	39	39	67	40	110	11,6
65°	218	222	39	25	53	40	110	13,8
70°	222	222	39	13	37	40	110	20,5
75°	225	222	39	5	19	40	110	20,5

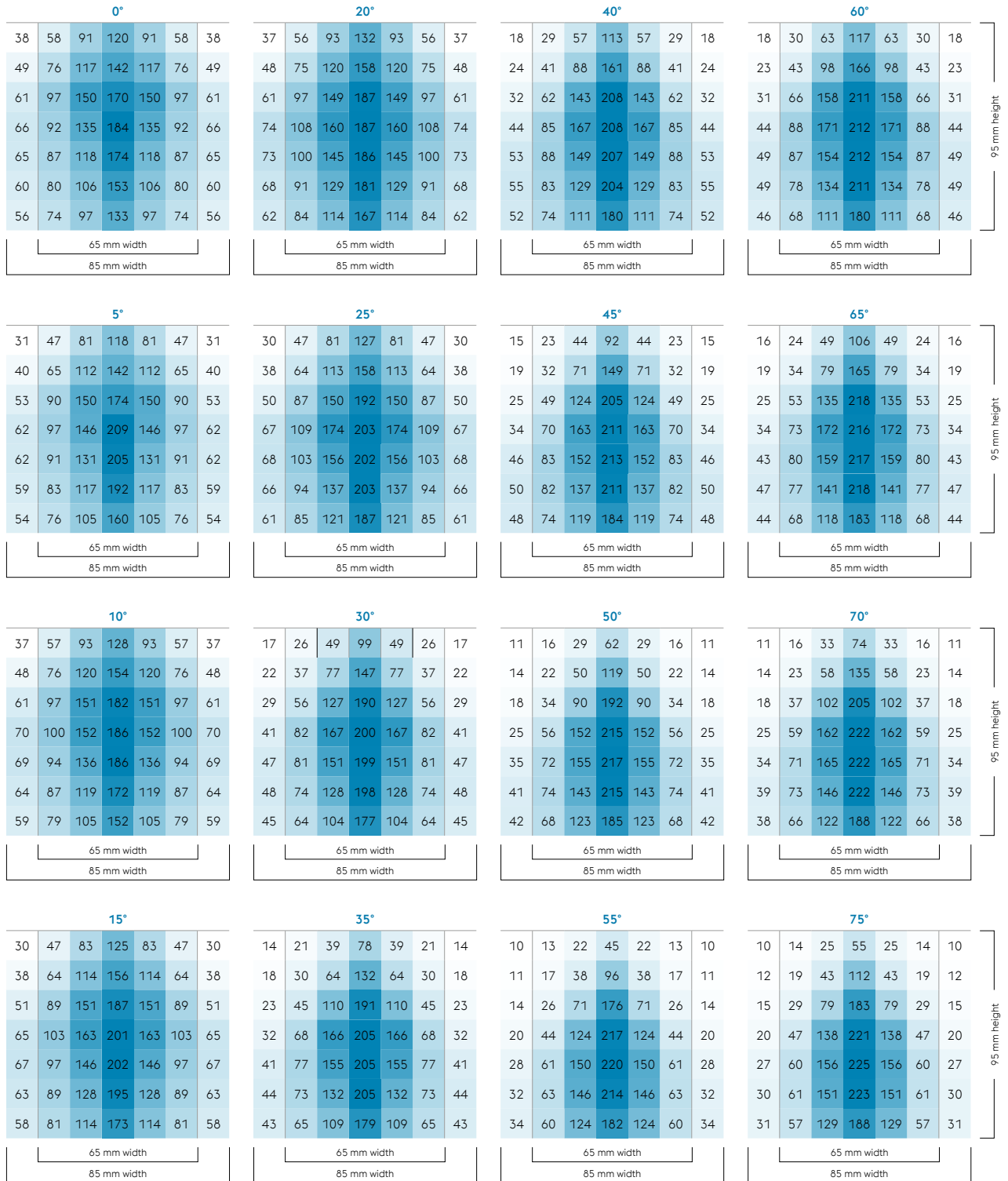
The cam unit force is distributed as shown in the sketch:



- Shouldering: h<sub>1</sub> (top)  
h<sub>2</sub> (bottom)
- Press: V<sub>1</sub> (vertical)
- Cam base: H<sub>1</sub> (horizontal)  
H<sub>2</sub> (horizontal)
- Driver: V<sub>2</sub> (vertical)

# O-KS SIZE 1

## O-KS 65-85 | support via cast shoulder

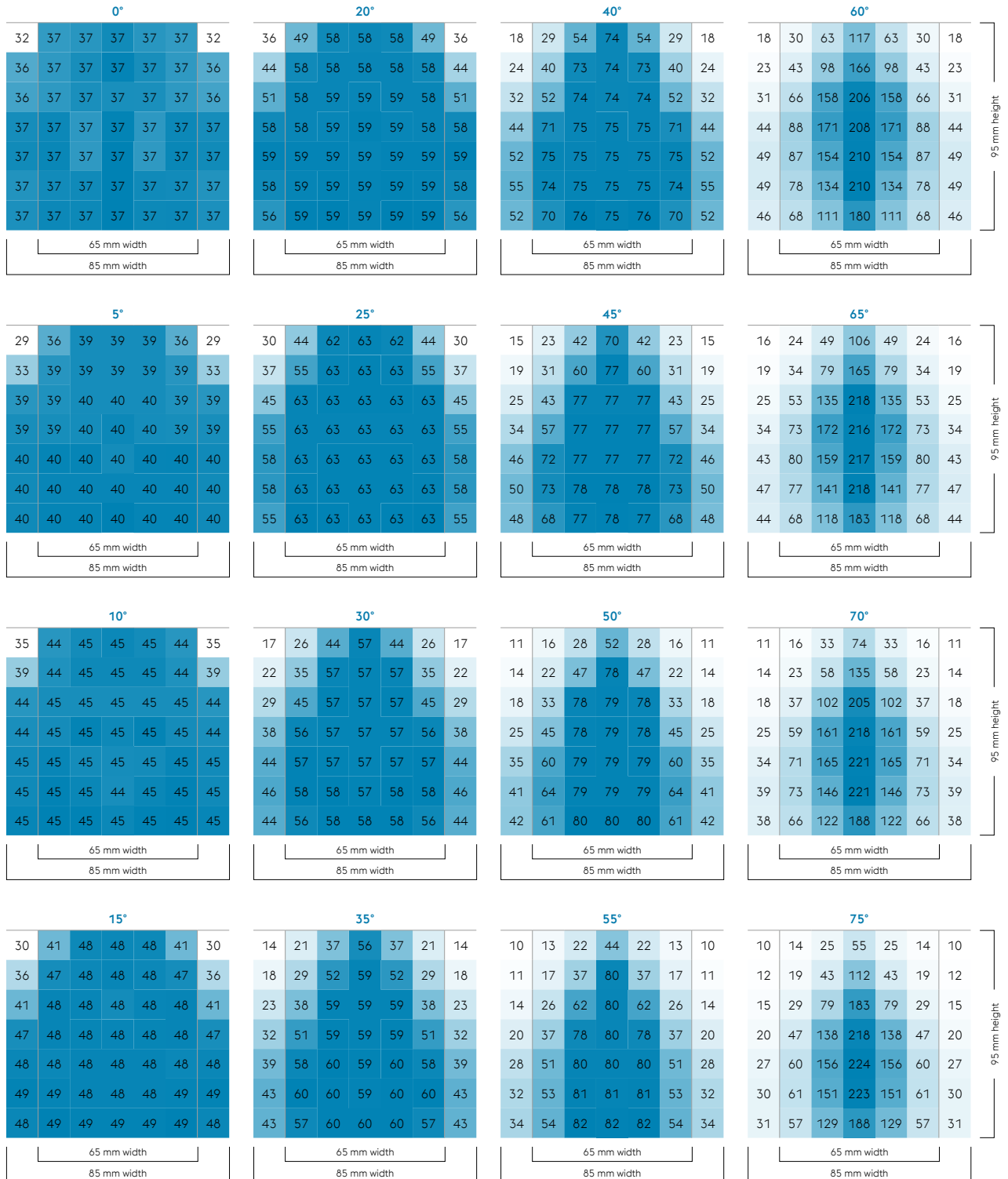


rounded values



# O-KS SIZE 1

## O-KS 65-85 | support via fitting key



rounded values

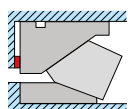
# O-KS SIZE 2

## FORCE DISTRIBUTION

### Cam unit specifications O-KS 90-100

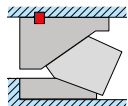
ident. no.		designation		angle [degree]	weight [kg]		stroke [mm]	height cam unit [mm]	length cam unit [mm]
O-KS 90	O-KS 110	size	size		O-KS 90	O-KS 110			
27040	27060	O-KS 90-0°	O-KS 110-0°	0°	35	36	28,93	275	277
27041	27061	O-KS 90-5°	O-KS 110-5°	5°	35	36	29,04	275	277
27042	27062	O-KS 90-10°	O-KS 110-10°	10°	35	36	35,00	275	302
27043	27063	O-KS 90-15°	O-KS 110-15°	15°	35	36	35,69	275	302
27044	27064	O-KS 90-20°	O-KS 110-20°	20°	34	35	36,86	275	302
27045	27065	O-KS 90-25°	O-KS 110-25°	25°	34	35	38,22	275	302
27046	27066	O-KS 90-30°	O-KS 110-30°	30°	34	36	35,38	275	302
27047	27067	O-KS 90-35°	O-KS 110-35°	35°	35	36	37,41	275	302
27048	27068	O-KS 90-40°	O-KS 110-40°	40°	34	35	39,57	275	302
27049	27069	O-KS 90-45°	O-KS 110-45°	45°	34	35	42,89	275	302
27050	27070	O-KS 90-50°	O-KS 110-50°	50°	34	35	47,16	275	302
27051	27071	O-KS 90-55°	O-KS 110-55°	55°	34	36	52,85	275	303
27052	27072	O-KS 90-60°	O-KS 110-60°	60°	33	34	49,24	275	300
27053	27073	O-KS 90-65°	O-KS 110-65°	65°	33	34	46,61	275	300
27054	27074	O-KS 90-70°	O-KS 110-70°	70°	34	35	57,59	275	300
27055	27075	O-KS 90-75°	O-KS 110-75°	75°	34	35	76,10	275	300

### Permissible size of the cam forces



#### Shouldering

Top and bottom support  
by shouldering



#### Fitting key

Top support by fitting key, bottom  
support by shouldering

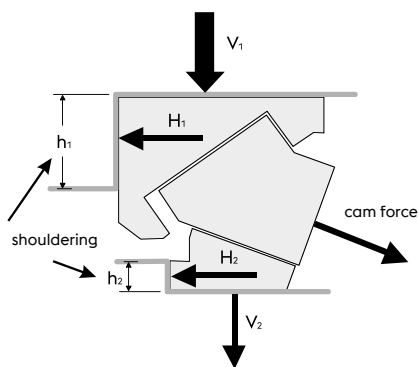
# O-KS SIZE 2

## PERMISSIBLE CAM FORCES

Cam unit force distribution size 2 O-KS, 1,000,000 strokes

cam unit angle [degree]	max. cam force [kN]	force distribution at max. cam force [kN]				shouldering [mm]		retraction force [kN]
		V1	H1	V2	H2	h1	h2	
0°	247	207	247	207	0	190	30	6,8
5°	297	233	278	207	18	190	30	7,6
10°	308	308	258	255	45	148	30	6,7
15°	323	302	253	218	59	148	30	7,5
20°	325	367	212	256	93	109	65	6,4
25°	347	367	212	220	103	109	65	7,2
30°	361	294	247	114	66	143	65	12,2
35°	372	295	248	82	57	143	65	16,1
40°	370	341	197	103	87	102	105	11,7
45°	373	334	193	71	71	102	105	15,4
50°	385	339	195	44	52	102	105	24,4
55°	390	339	196	20	28	102	105	25,3
60°	366	384	68	67	115	52	135	11,1
65°	376	383	68	43	91	52	135	14,0
70°	384	384	68	23	64	52	135	22,1
75°	388	384	68	9	33	52	135	25,2

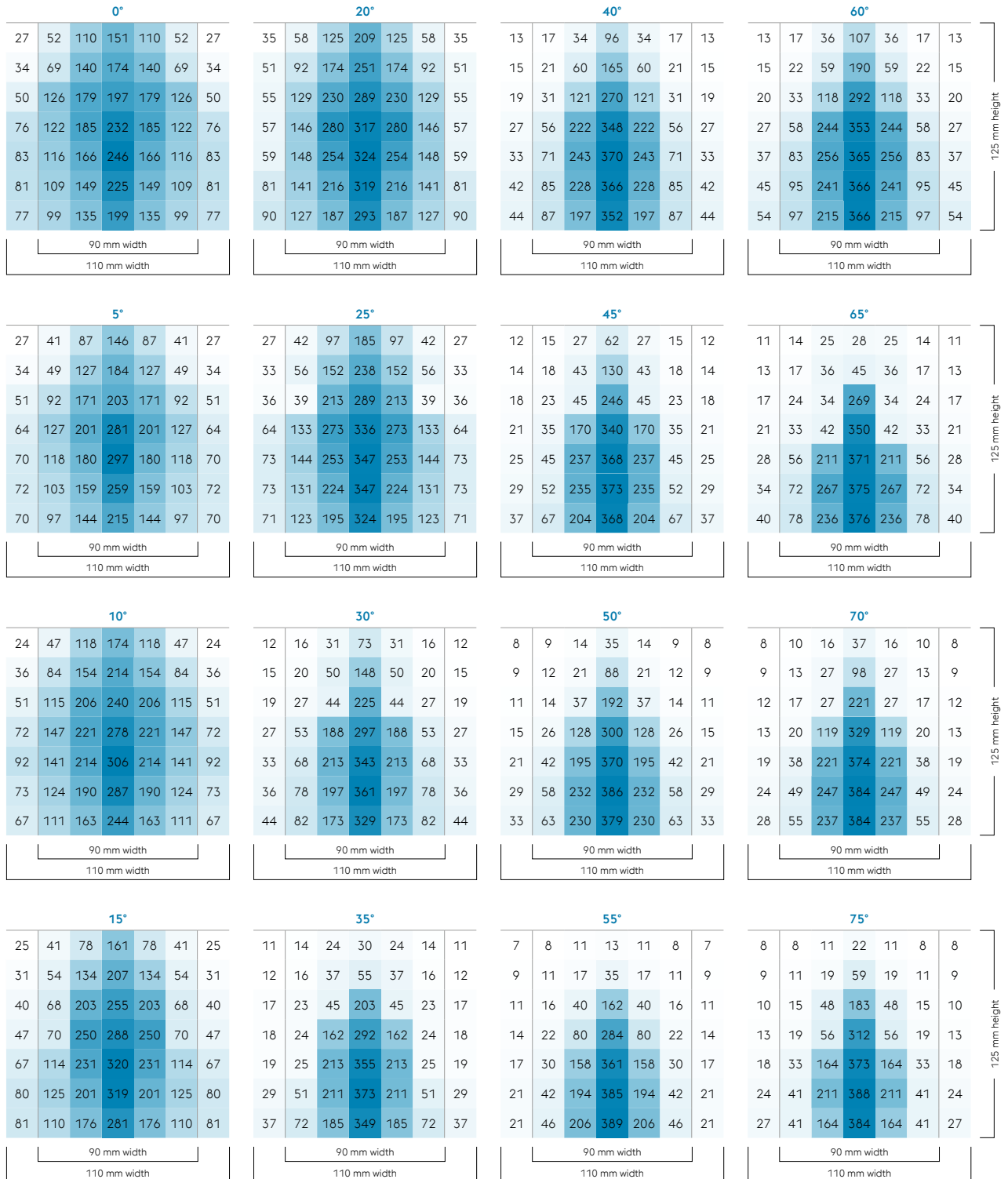
The cam unit force is distributed as shown in the sketch:



- Shouldering: h<sub>1</sub> (top)  
h<sub>2</sub> (bottom)
- Press: V<sub>1</sub> (vertical)
- Cam base: H<sub>1</sub> (horizontal)  
H<sub>2</sub> (horizontal)
- Driver: V<sub>2</sub> (vertical)

# O-KS SIZE 2

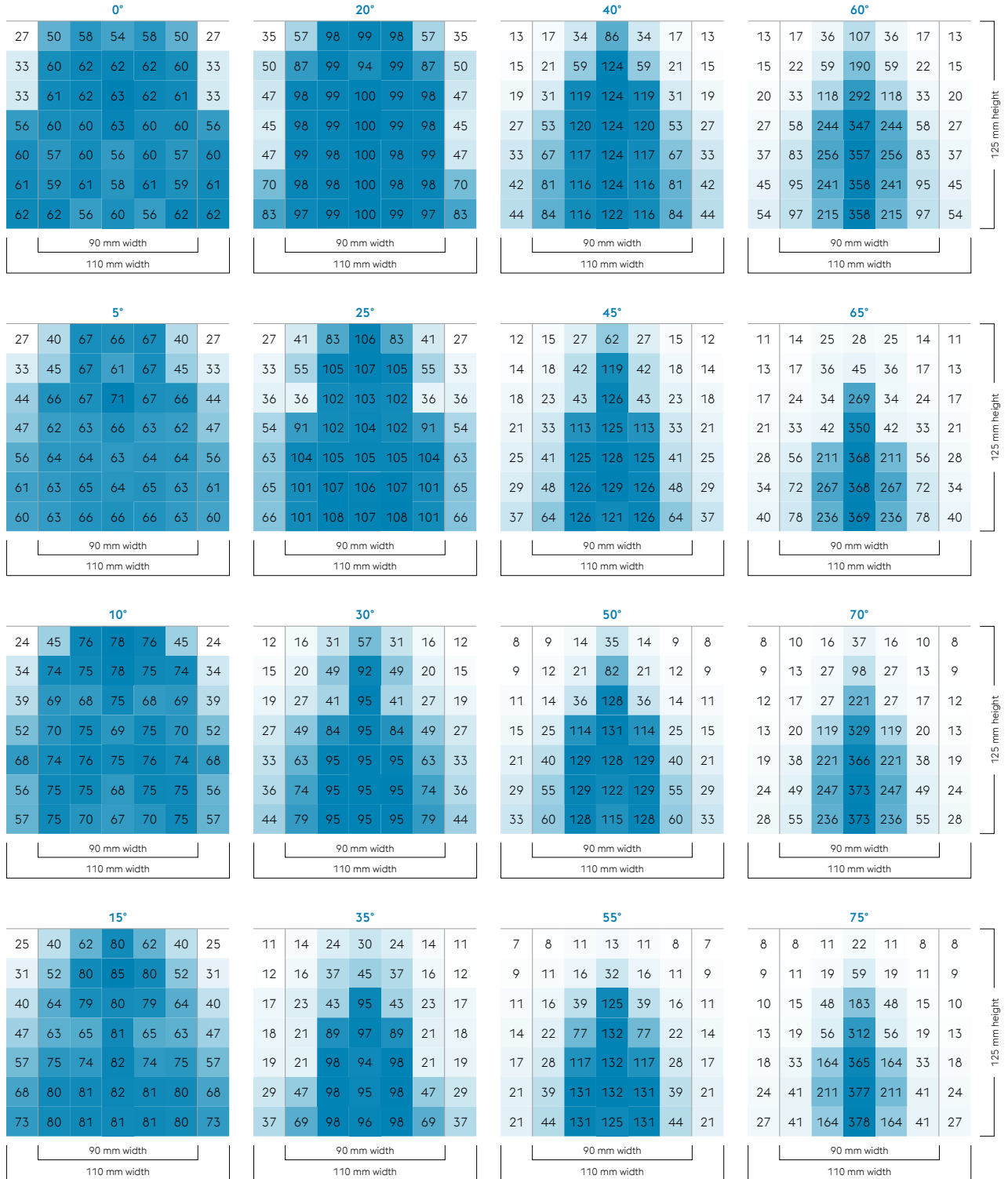
## O-KS 90-110 | support via cast shoulder



rounded values

# O-KS SIZE 2

## O-KS 90-110 | support via fitting key



rounded values

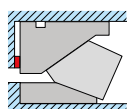
# O-KS SIZE 3

## FORCE DISTRIBUTION

### Cam unit specifications O-KS 125-160

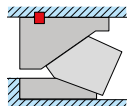
ident. no.		designation		angle [degree]	weight [kg]		stroke [mm]	height cam unit [mm]	length cam unit [mm]
O-KS 125	O-KS 160	size	size		O-KS 125	O-KS 160			
27100	27120	O-KS 125-0°	O-KS 160-0°	0°	58	60	35,35	300	300
27101	27121	O-KS 125-5°	O-KS 160-5°	5°	57	60	35,49	300	298
27102	27122	O-KS 125-10°	O-KS 160-10°	10°	57	60	42,78	300	288
27103	27123	O-KS 125-15°	O-KS 160-15°	15°	57	59	43,62	300	290
27104	27124	O-KS 125-20°	O-KS 160-20°	20°	57	59	46,08	300	301
27105	27125	O-KS 125-25°	O-KS 160-25°	25°	57	59	47,78	300	298
27106	27126	O-KS 125-30°	O-KS 160-30°	30°	54	56	44,23	300	323
27107	27127	O-KS 125-35°	O-KS 160-35°	35°	54	57	46,76	300	322
27108	27128	O-KS 125-40°	O-KS 160-40°	40°	54	57	50,87	300	323
27109	27129	O-KS 125-45°	O-KS 160-45°	45°	54	57	55,11	300	323
27110	27130	O-KS 125-50°	O-KS 160-50°	50°	55	57	48,50	300	323
27111	27131	O-KS 125-55°	O-KS 160-55°	55°	55	58	54,36	300	323
27112	27132	O-KS 125-60°	O-KS 160-60°	60°	55	57	49,24	300	333
27113	27133	O-KS 125-65°	O-KS 160-65°	65°	55	57	46,61	300	328
27114	27134	O-KS 125-70°	O-KS 160-70°	70°	55	57	57,59	300	323
27115	27135	O-KS 125-75°	O-KS 160-75°	75°	55	57	76,10	300	323

### Permissible size of the cam forces



#### Shouldering

Top and bottom support  
by shouldering



#### Fitting key

Top support by fitting key, bottom  
support by shouldering

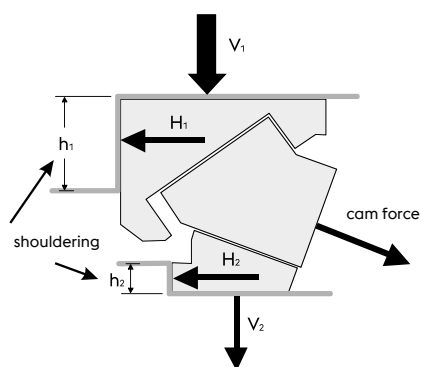
# O-KS SIZE 3

## PERMISSIBLE CAM FORCES

Cam unit force distribution size 3 O-KS, 1,000,000 strokes

cam unit angle [degree]	max. cam force [kN]	force distribution at max. cam force [kN]				shouldering [mm]		retraction force [kN]
		V1	H1	V2	H2	h1	h2	
0°	302	253	302	253	0	190	40	9,2
5°	305	239	285	213	19	190	40	10,3
10°	376	376	316	311	55	150	40	9,2
15°	395	369	310	267	72	150	40	10,3
20°	392	443	256	309	113	115	85	8,8
25°	422	446	258	268	125	115	85	9,9
30°	405	330	277	128	74	130	85	17,6
35°	420	333	280	92	65	130	85	23,2
40°	422	389	225	118	99	105	135	16,8
45°	440	394	228	83	83	105	135	22,2
50°	430	378	218	49	58	105	135	28,9
55°	445	387	223	22	32	105	135	28,6
60°	428	449	79	78	135	53	160	14,8
65°	441	450	79	50	107	53	160	18,6
70°	460	460	81	28	76	53	160	27,7
75°	445	440	78	10	38	53	160	28,5

The cam unit force is distributed as shown in the sketch:



Shouldering: h<sub>1</sub> (top)  
h<sub>2</sub> (bottom)  
Press: V<sub>1</sub> (vertical)  
Cam base: H<sub>1</sub> (horizontal)  
Driver: H<sub>2</sub> (horizontal)  
V<sub>2</sub> (vertical)

# O-KS SIZE 3

## O-KS 125-160 | support via cast shoulder

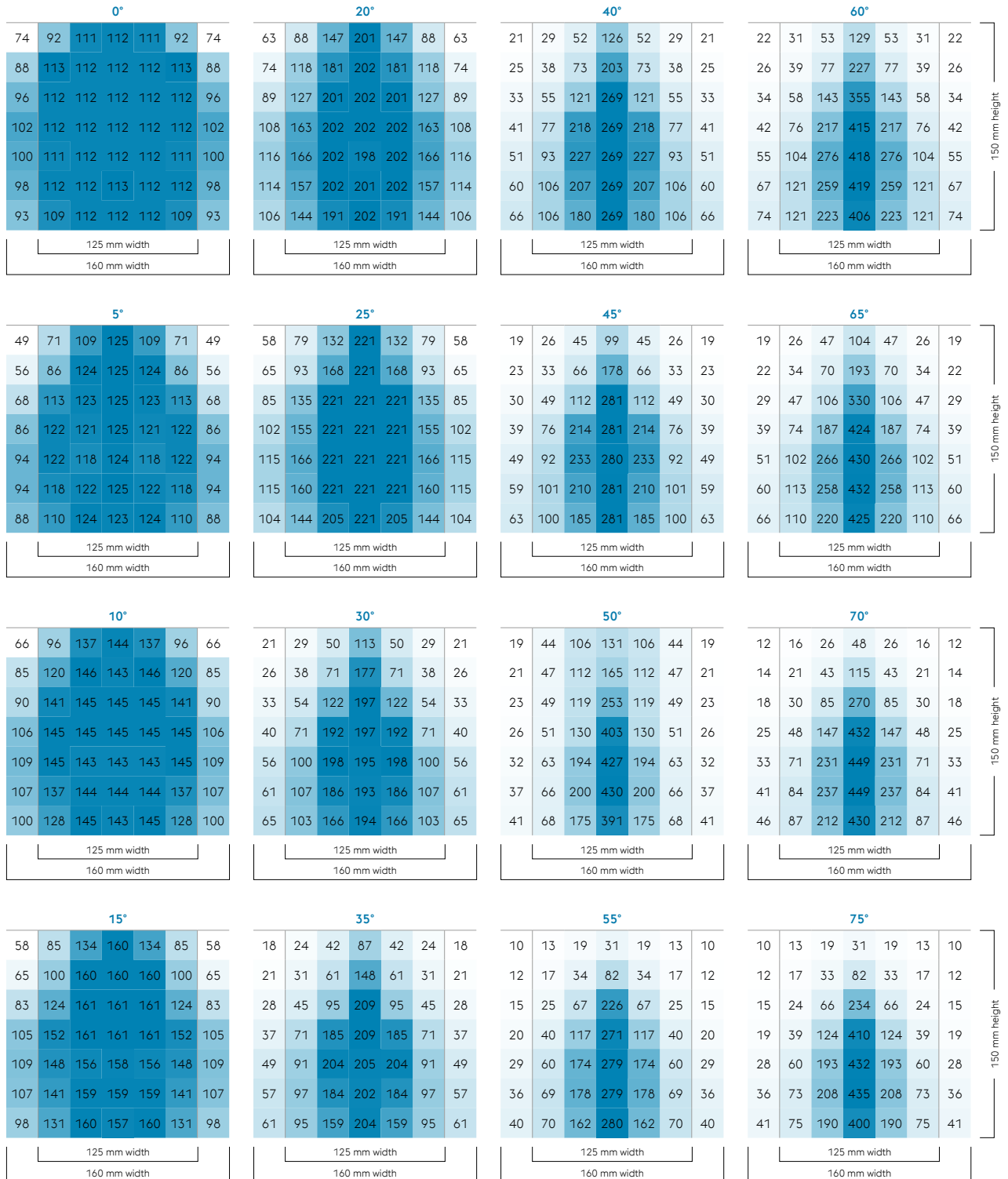
0°							20°							40°							60°						
70	105	176	216	176	105	70	57	80	150	300	150	80	57	12	18	38	102	38	18	12	14	20	42	113	42	20	14
85	131	213	239	213	131	85	71	110	204	345	204	110	71	15	24	63	191	63	24	15	17	27	69	217	69	27	17
103	161	251	264	251	161	103	91	146	265	380	265	146	91	20	38	106	320	106	38	20	22	40	109	359	109	40	22
111	152	226	293	226	152	111	111	168	270	388	270	168	111	30	72	221	405	221	72	30	33	73	213	420	213	73	33
105	138	195	302	195	138	105	118	173	274	392	274	173	118	41	85	234	422	234	85	41	47	100	273	428	273	100	47
99	125	169	263	169	125	99	117	161	242	385	242	161	117	54	99	212	410	212	99	54	59	115	257	428	257	115	59
93	114	149	222	149	114	93	108	145	206	335	206	145	108	61	101	180	347	180	101	61	66	114	221	413	221	114	66
125 mm width 160 mm width							125 mm width 160 mm width							125 mm width 160 mm width							125 mm width 160 mm width						
150 mm height							150 mm height							150 mm height							150 mm height						
5°							25°							45°							65°						
45	62	111	177	111	62	45	49	75	139	295	139	75	49	10	14	27	70	27	14	10	10	14	27	71	27	14	10
54	80	149	211	149	80	54	60	93	170	358	170	93	60	12	20	53	162	53	20	12	12	20	52	174	52	20	12
64	107	210	232	210	107	64	71	132	244	400	244	132	71	16	33	113	309	113	33	16	16	31	106	333	106	31	16
82	146	240	264	240	146	82	91	166	341	422	341	166	91	25	63	213	411	213	63	25	24	59	195	434	195	59	24
94	136	208	305	208	136	94	107	169	304	420	304	169	107	38	83	229	435	229	83	38	37	87	265	441	265	87	37
94	124	177	282	177	124	94	109	158	257	416	257	158	109	48	94	220	440	220	94	48	49	102	256	440	256	102	49
87	114	154	240	154	114	87	104	145	218	366	218	145	104	54	93	189	386	189	93	54	56	103	223	431	223	103	56
125 mm width 160 mm width							125 mm width 160 mm width							125 mm width 160 mm width							125 mm width 160 mm width						
150 mm height							150 mm height							150 mm height							150 mm height						
10°							30°							50°							70°						
58	88	154	247	154	88	58	13	18	37	88	37	18	13	14	44	106	131	106	44	14	6	23	107	130	107	23	6
68	111	208	283	208	111	68	15	25	62	169	62	25	15	19	47	112	165	112	47	19	8	25	116	188	116	25	8
85	142	288	317	288	142	85	20	38	106	285	106	38	20	21	49	119	253	119	49	21	10	31	129	265	129	31	10
106	173	283	342	283	173	106	31	75	235	359	235	75	31	23	51	130	403	130	51	23	15	41	147	434	147	41	15
114	160	243	376	243	160	114	46	93	226	405	226	93	46	24	63	194	427	194	63	24	21	59	221	457	221	59	21
109	145	207	334	207	145	109	55	101	200	374	200	101	55	24	66	200	430	200	66	24	26	68	226	460	226	68	26
99	132	178	279	178	132	99	61	98	168	314	168	98	61	31	68	175	391	175	68	31	33	73	204	440	204	73	33
125 mm width 160 mm width							125 mm width 160 mm width							125 mm width 160 mm width							125 mm width 160 mm width						
150 mm height							150 mm height							150 mm height							150 mm height						
15°							35°							55°							75°						
49	66	137	244	137	66	49	9	12	23	55	23	12	9	13	22	57	106	57	22	13	10	21	98	148	98	21	10
58	96	197	297	197	96	58	11	18	46	138	46	18	11	15	28	68	137	68	28	15	11	25	111	184	111	25	11
68	126	277	332	277	126	68	14	29	101	274	101	29	14	20	39	88	207	88	39	20	14	33	136	215	136	33	14
95	165	304	365	304	165	95	22	54	180	370	180	54	22	28	60	113	398	113	60	28	20	45	168	414	168	45	20
105	161	261	395	261	161	105	35	79	215	420	215	79	35	40	86	168	441	168	86	40	31	62	188	442	188	62	31
105	145	220	366	220	145	105	46	88	194	400	194	88	46	49	104	178	445	178	104	49	41	71	194	445	194	71	41
100	133	190	308	190	133	100	52	88	165	339	165	88	52	50	107	164	396	164	107	50	47	73	181	397	181	73	47
125 mm width 160 mm width							125 mm width 160 mm width							125 mm width 160 mm width							125 mm width 160 mm width						

rounded values



# O-KS SIZE 3

## O-KS 125-160 | support via fitting key



rounded values

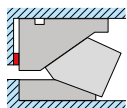
# O-KS SIZE 4

## FORCE DISTRIBUTION

### Cam unit specifications O-KS 175-220

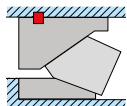
ident. no.		designation		angle [degree]	weight [kg]		stroke [mm]	height cam unit [mm]	length cam unit [mm]
O-KS 175	O-KS 220	size	size		O-KS 175	O-KS 220			
27140	27160	O-KS 175-0°	O-KS 220-0°	0°	86	88	41,78	300	300
27141	27161	O-KS 175-5°	O-KS 220-5°	5°	85	88	41,94	300	298
27142	27162	O-KS 175-10°	O-KS 220-10°	10°	84	87	50,56	300	304
27143	27163	O-KS 175-15°	O-KS 220-15°	15°	84	87	51,55	300	310
27144	27164	O-KS 175-20°	O-KS 220-20°	20°	82	85	55,30	300	323
27145	27165	O-KS 175-25°	O-KS 220-25°	25°	82	85	57,33	300	323
27146	27166	O-KS 175-30°	O-KS 220-30°	30°	79	82	53,07	300	306
27147	27167	O-KS 175-35°	O-KS 220-35°	35°	80	83	56,11	300	311
27148	27168	O-KS 175-40°	O-KS 220-40°	40°	79	82	62,18	300	323
27149	27169	O-KS 175-45°	O-KS 220-45°	45°	79	82	67,36	300	323
27150	27170	O-KS 175-50°	O-KS 220-50°	50°	80	83	60,63	300	323
27151	27171	O-KS 175-55°	O-KS 220-55°	55°	80	83	67,94	300	328
27152	27172	O-KS 175-60°	O-KS 220-60°	60°	80	83	68,94	300	323
27153	27173	O-KS 175-65°	O-KS 220-65°	65°	79	82	60,59	300	323
27154	27174	O-KS 175-70°	O-KS 220-70°	70°	80	83	74,86	300	323
27155	27175	O-KS 175-75°	O-KS 220-75°	75°	79	82	76,10	300	323

### Permissible size of the cam forces



#### Shouldering

Top and bottom support  
by shouldering



#### Fitting key

Top support by fitting key, bottom  
support by shouldering

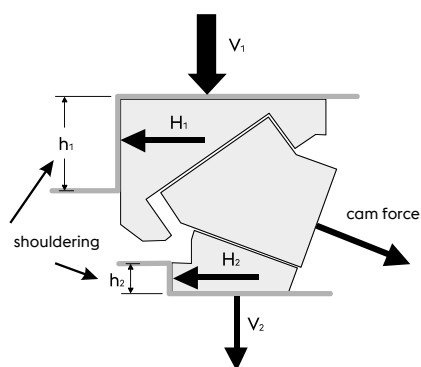
# O-KS SIZE 4

## PERMISSIBLE CAM FORCES

Cam unit force distribution size 4 O-KS, 1,000,000 strokes

cam unit angle [degree]	max. cam force [kN]	force distribution at max. cam force [kN]				shouldering [mm]		retraction force [kN]
		V1	H1	V2	H2	h1	h2	
0°	404	339	404	339	0	190	38	15,6
5°	456	358	426	318	28	190	38	17,5
10°	566	566	475	468	82	148	38	15,5
15°	606	567	476	410	110	148	38	17,3
20°	576	651	376	454	165	115	82	14,9
25°	605	640	369	384	179	115	82	16,7
30°	562	458	384	177	102	130	82	28,3
35°	544	431	362	119	84	130	82	37,4
40°	605	558	322	169	142	100	130	28,8
45°	615	551	318	117	117	100	130	38,0
50°	650	572	330	74	88	100	130	44,9
55°	643	559	323	32	46	100	130	44,4
60°	637	668	118	116	201	50	148	25,9
65°	638	650	115	72	155	50	148	31,4
70°	663	663	117	40	110	50	148	44,7
75°	662	654	115	15	56	50	148	44,3

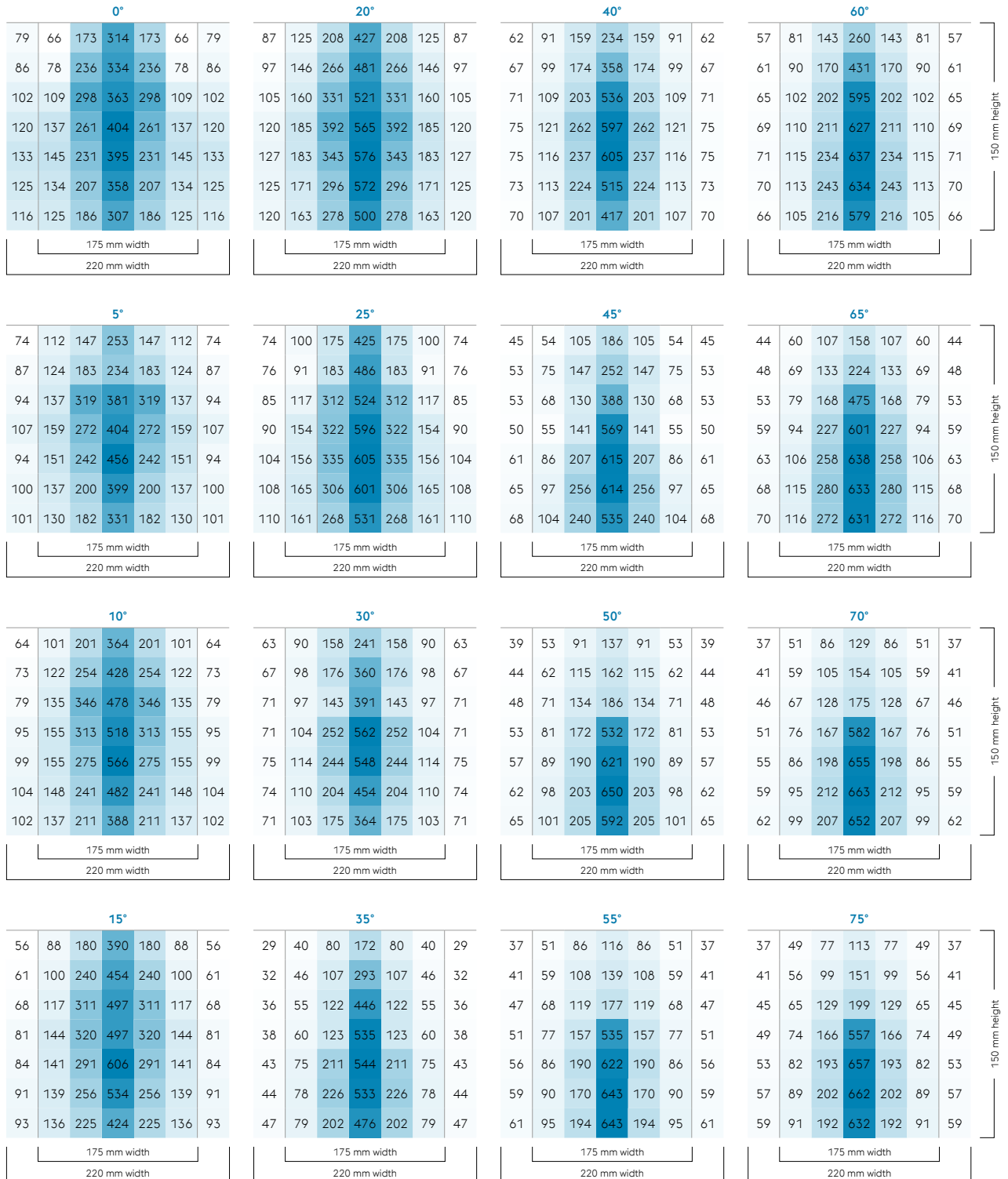
The cam unit force is distributed as shown in the sketch:



Shouldering: h<sub>1</sub> (top)  
h<sub>2</sub> (bottom)  
Press: V<sub>1</sub> (vertical)  
Cam base: H<sub>1</sub> (horizontal)  
Driver: H<sub>2</sub> (horizontal)  
V<sub>2</sub> (vertical)

# O-KS SIZE 4

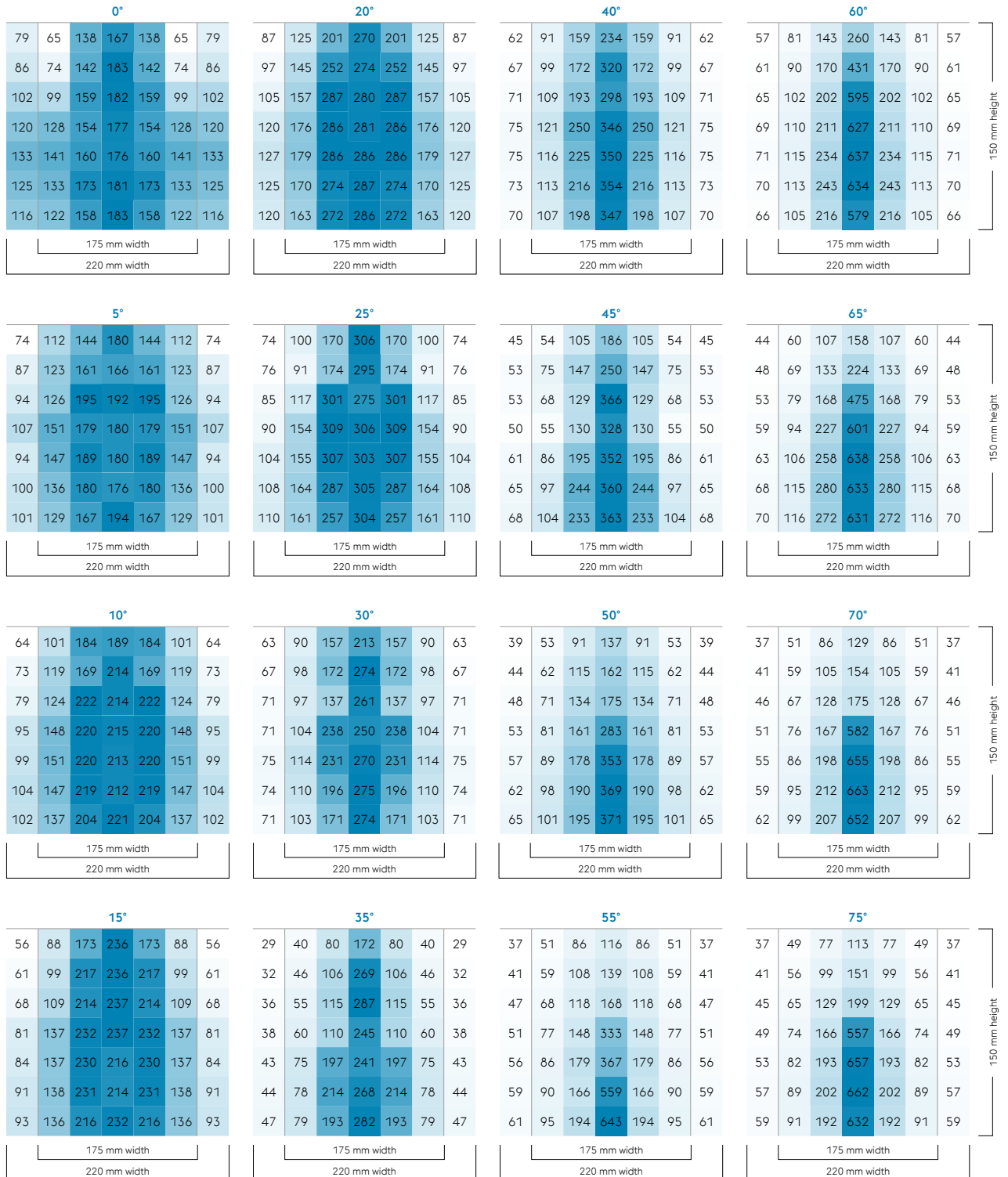
## O-KS 175-220 | support via cast shoulder



rounded values

# O-KS SIZE 4

## O-KS 175-220 | support via fitting key



rounded values

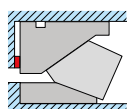
# O-KS SIZE 5

## FORCE DISTRIBUTION

### Cam unit specifications O-KS 260-330

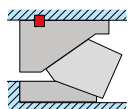
ident. no.		designation		angle [degree]	weight [kg]		stroke [mm]	height cam unit [mm]	length cam unit [mm]
O-KS 260	O-KS 330	size	size		O-KS 260	O-KS 330			
27180	27200	O-KS 260-0°	O-KS 330-0°	0°	152	157	41,78	300	310
27181	27201	O-KS 260-5°	O-KS 330-5°	5°	151	157	42,75	300	305
27182	27202	O-KS 260-10°	O-KS 330-10°	10°	149	154	52,04	300	305
27183	27203	O-KS 260-15°	O-KS 330-15°	15°	149	154	53,68	300	305
27184	27204	O-KS 260-20°	O-KS 330-20°	20°	148	153	57,82	300	311
27185	27205	O-KS 260-25°	O-KS 330-25°	25°	148	153	61,50	300	306
27186	27206	O-KS 260-30°	O-KS 330-30°	30°	142	148	56,61	300	325
27187	27207	O-KS 260-35°	O-KS 330-35°	35°	143	148	60,26	300	325
27188	27208	O-KS 260-40°	O-KS 330-40°	40°	141	146	67,04	300	330
27189	27209	O-KS 260-45°	O-KS 330-45°	45°	141	146	73,32	300	325
27190	27210	O-KS 260-50°	O-KS 330-50°	50°	142	147	64,94	300	325
27191	27211	O-KS 260-55°	O-KS 330-55°	55°	142	147	75,63	300	325
27192	27212	O-KS 260-60°	O-KS 330-60°	60°	143	149	68,94	300	325
27193	27213	O-KS 260-65°	O-KS 330-65°	65°	143	149	60,59	300	325
27194	27214	O-KS 260-70°	O-KS 330-70°	70°	143	149	74,86	300	325
27195	27215	O-KS 260-75°	O-KS 330-75°	75°	143	148	98,93	300	325

### Permissible size of the cam forces



#### Shouldering

Top and bottom support  
by shouldering



#### Fitting key

Top support by fitting key, bottom  
support by shouldering

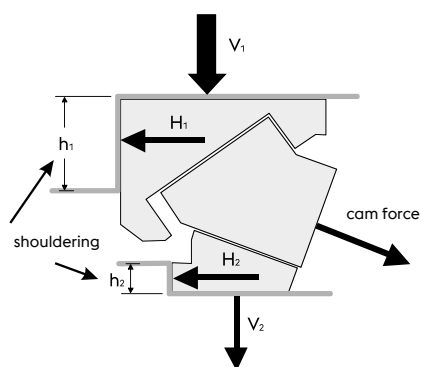
# O-KS SIZE 5

## PERMISSIBLE CAM FORCES

Cam unit force distribution size 5 O-KS, 1,000,000 strokes

cam unit angle [degree]	max. cam force [kN]	force distribution at max. cam force [kN]				shouldering [mm]		retraction force [kN]
		V1	H1	V2	H2	h1	h2	
0°	781	655	781	655	0	186	48	30,9
5°	827	649	773	577	50	186	48	34,6
10°	802	802	673	663	117	142	48	30,7
15°	857	801	672	580	155	142	48	34,4
20°	773	874	505	610	222	110	82	29,6
25°	827	874	505	525	245	110	82	33,2
30°	806	657	551	254	147	125	83	47,8
35°	829	657	552	182	127	125	83	47,0
40°	830	765	442	231	194	95	145	48,0
45°	846	759	438	160	160	95	145	47,2
50°	536	471	272	61	72	95	145	45,6
55°	725	630	364	36	52	95	145	44,2
60°	830	870	153	151	262	45	180	47,4
65°	849	866	153	96	206	45	190	46,2
70°	666	666	117	40	110	45	190	45,3
75°	639	632	111	14	54	45	190	44,0

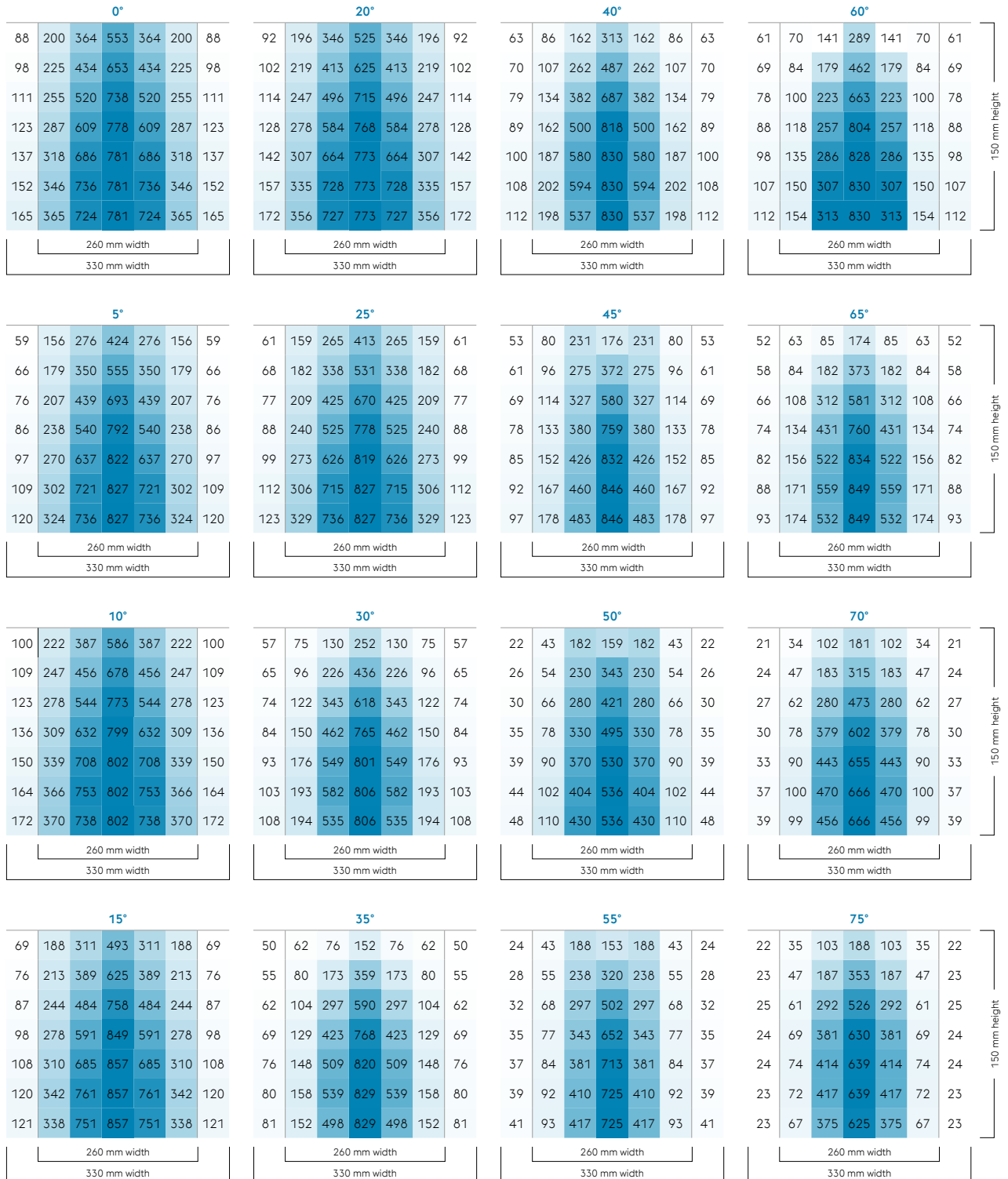
The cam unit force is distributed as shown in the sketch:



- Shouldering: h<sub>1</sub> (top)  
h<sub>2</sub> (bottom)
- Press: V<sub>1</sub> (vertical)
- Cam base: H<sub>1</sub> (horizontal)  
H<sub>2</sub> (horizontal)
- Driver: V<sub>2</sub> (vertical)

# O-KS SIZE 5

## O-KS 260-330 | support via cast shoulder



rounded values



# O-KS SIZE 5

## O-KS 260-330 | support via fitting key

0°							20°							40°							60°						
65	115	164	221	164	115	65	70	112	156	210	156	112	70	63	77	82	157	82	77	63	61	70	141	289	141	70	61
72	128	195	261	195	128	72	77	125	186	250	186	125	77	70	92	119	221	119	92	70	69	84	179	462	179	84	69
82	145	234	295	234	145	82	87	141	223	286	223	141	87	79	112	174	312	174	112	79	78	100	223	663	223	100	78
92	163	274	311	274	163	92	98	158	263	307	263	158	98	89	134	227	372	227	134	89	88	118	257	804	257	118	88
103	180	309	313	309	180	103	108	174	299	309	299	174	108	100	153	264	377	264	153	100	98	135	286	828	286	135	98
114	196	332	313	332	196	114	120	190	329	309	329	190	120	108	168	270	377	270	168	108	107	150	307	830	307	150	107
124	207	327	313	327	207	124	132	202	328	309	328	202	132	112	167	244	377	244	167	112	112	154	313	830	313	154	112
260 mm width 330 mm width							260 mm width 330 mm width							260 mm width 330 mm width							260 mm width 330 mm width						
150 mm height							150 mm height							150 mm height							150 mm height						
5°							25°							45°							65°						
41	89	124	169	124	89	41	19	84	103	144	103	84	19	53	68	119	86	119	68	53	52	63	85	174	85	63	52
46	102	157	222	157	102	46	22	96	142	202	142	96	22	61	80	125	169	125	80	61	58	84	182	373	182	84	58
53	118	197	277	197	118	53	27	110	185	266	185	110	27	69	95	149	264	149	95	69	66	108	312	581	312	108	66
60	134	243	317	243	134	60	32	126	236	315	236	126	32	78	112	173	345	173	112	78	74	134	431	760	431	134	74
68	152	287	329	287	152	68	39	142	291	331	291	142	39	85	128	194	378	194	128	85	82	156	522	834	522	156	82
77	170	325	331	325	170	77	46	160	337	331	337	160	46	92	141	209	385	209	141	92	88	171	559	849	559	171	88
85	183	332	331	332	183	85	52	174	329	331	329	174	52	97	151	220	385	220	151	97	93	174	532	849	532	174	93
260 mm width 330 mm width							260 mm width 330 mm width							260 mm width 330 mm width							260 mm width 330 mm width						
150 mm height							150 mm height							150 mm height							150 mm height						
10°							30°							50°							70°						
74	127	174	234	174	127	74	48	43	58	101	58	43	48	22	33	93	76	93	33	22	21	34	102	181	102	34	21
81	141	205	271	205	141	81	54	54	101	174	101	54	54	26	41	105	156	105	41	26	24	47	183	315	183	47	24
91	158	245	309	245	158	91	61	68	154	247	154	68	61	30	50	127	191	127	50	30	27	62	280	473	280	62	27
102	176	285	320	285	176	102	69	83	208	306	208	83	69	35	59	150	225	150	59	35	30	78	379	602	379	78	30
112	192	320	321	320	192	112	77	97	247	320	247	97	77	39	68	168	241	168	68	39	33	90	443	655	443	90	33
123	208	340	321	340	208	123	84	107	262	323	262	107	84	44	78	184	244	184	78	44	37	100	470	666	470	100	37
131	210	333	321	333	210	131	89	108	241	323	241	108	89	48	85	195	244	195	85	48	39	99	456	666	456	99	39
260 mm width 330 mm width							260 mm width 330 mm width							260 mm width 330 mm width							260 mm width 330 mm width						
150 mm height							150 mm height							150 mm height							150 mm height						
15°							35°							55°							75°						
47	108	140	197	140	108	47	42	36	34	61	34	36	42	24	43	188	153	188	43	24	22	35	103	188	103	35	22
52	122	175	250	175	122	52	46	46	77	144	77	46	46	28	55	238	320	238	55	28	23	47	187	353	187	47	23
59	139	218	303	218	139	59	51	58	133	236	133	58	51	32	68	297	502	297	68	32	25	61	292	526	292	61	25
67	158	266	340	266	158	67	57	71	190	307	190	71	57	35	77	343	652	343	77	35	24	69	381	630	381	69	24
75	176	309	343	309	176	75	62	81	229	328	229	81	62	37	84	381	713	381	84	37	24	74	414	639	414	74	24
83	193	343	343	343	193	83	66	87	243	332	243	87	66	39	92	410	725	410	92	39	23	72	417	639	417	72	23
84	191	339	343	339	191	84	66	84	224	332	224	84	66	41	93	417	725	417	93	41	23	67	375	625	375	67	23
260 mm width 330 mm width							260 mm width 330 mm width							260 mm width 330 mm width							260 mm width 330 mm width						
150 mm height							150 mm height							150 mm height							150 mm height						

rounded values

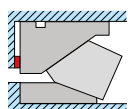
# O-KS SIZE 6

## FORCE DISTRIBUTION

### Cam unit specifications O-KS 400-500

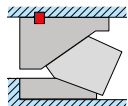
ident. no.		designation		angle [degree]	weight [kg]		stroke [mm]	height cam unit [mm]	length cam unit [mm]
O-KS 400	O-KS 500	size	size		O-KS 400	O-KS 500			
27220	27240	O-KS 400-0°	O-KS 500-0°	0°	309	321	41,78	375	407
27221	27241	O-KS 400-5°	O-KS 500-5°	5°	307	320	42,75	375	407
27222	27242	O-KS 400-10°	O-KS 500-10°	10°	301	313	52,04	375	407
27223	27243	O-KS 400-15°	O-KS 500-15°	15°	300	313	53,68	375	407
27224	27244	O-KS 400-20°	O-KS 500-20°	20°	295	307	57,82	375	406
27225	27245	O-KS 400-25°	O-KS 500-25°	25°	294	307	61,50	375	406
27226	27246	O-KS 400-30°	O-KS 500-30°	30°	284	296	56,61	375	407
27227	27247	O-KS 400-35°	O-KS 500-35°	35°	288	301	60,26	375	407
27228	27248	O-KS 400-40°	O-KS 500-40°	40°	280	293	67,04	375	406
27229	27249	O-KS 400-45°	O-KS 500-45°	45°	287	300	73,32	375	406
27230	27250	O-KS 400-50°	O-KS 500-50°	50°	288	301	64,94	375	406
27231	27251	O-KS 400-55°	O-KS 500-55°	55°	292	304	75,62	375	406
27232	27252	O-KS 400-60°	O-KS 500-60°	60°	281	293	68,94	375	421
27233	27253	O-KS 400-65°	O-KS 500-65°	65°	285	298	60,59	375	426
27234	27254	O-KS 400-70°	O-KS 500-70°	70°	289	302	74,86	375	431
27235	27255	O-KS 400-75°	O-KS 500-75°	75°	289	301	98,93	375	431

### Permissible size of the cam forces



#### Shouldering

Top and bottom support  
by shouldering



#### Fitting key

Top support by fitting key, bottom  
support by shouldering

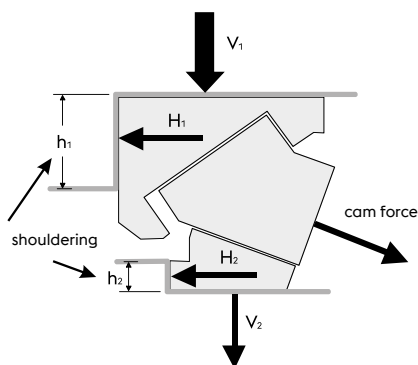
# O-KS SIZE 6

## PERMISSIBLE CAM FORCES

Cam unit force distribution size 6 O-KS , 1,000,000 strokes

cam unit angle [degree]	max. cam force [kN]	force distribution at max. cam force [kN]				shouldering [mm]		retraction force [kN]
		V1	H1	V2	H2	h1	h2	
0°	1361	1142	1361	1142	0	228	30	78,4
5°	1453	1140	1359	1014	89	228	41	75,1
10°	1264	1264	1061	1045	184	179	45	78,4
15°	1179	1103	925	797	214	179	45	75,1
20°	1358	1535	886	1071	390	135	79	77,0
25°	1449	1532	884	920	429	135	90	73,8
30°	1237	1008	846	390	225	157	90	66,1
35°	1148	910	764	252	176	157	90	61,0
40°	1125	1037	599	314	263	120	140	65,3
45°	1156	1036	598	219	219	120	160	60,5
50°	1090	959	553	124	147	120	160	54,3
55°	1013	881	508	51	73	120	160	49,0
60°	1131	1185	209	206	356	59	155	62,3
65°	1151	1173	207	130	280	59	170	57,1
70°	1174	1174	207	71	195	59	185	52,9
75°	1022	1010	178	23	86	59	185	48,2

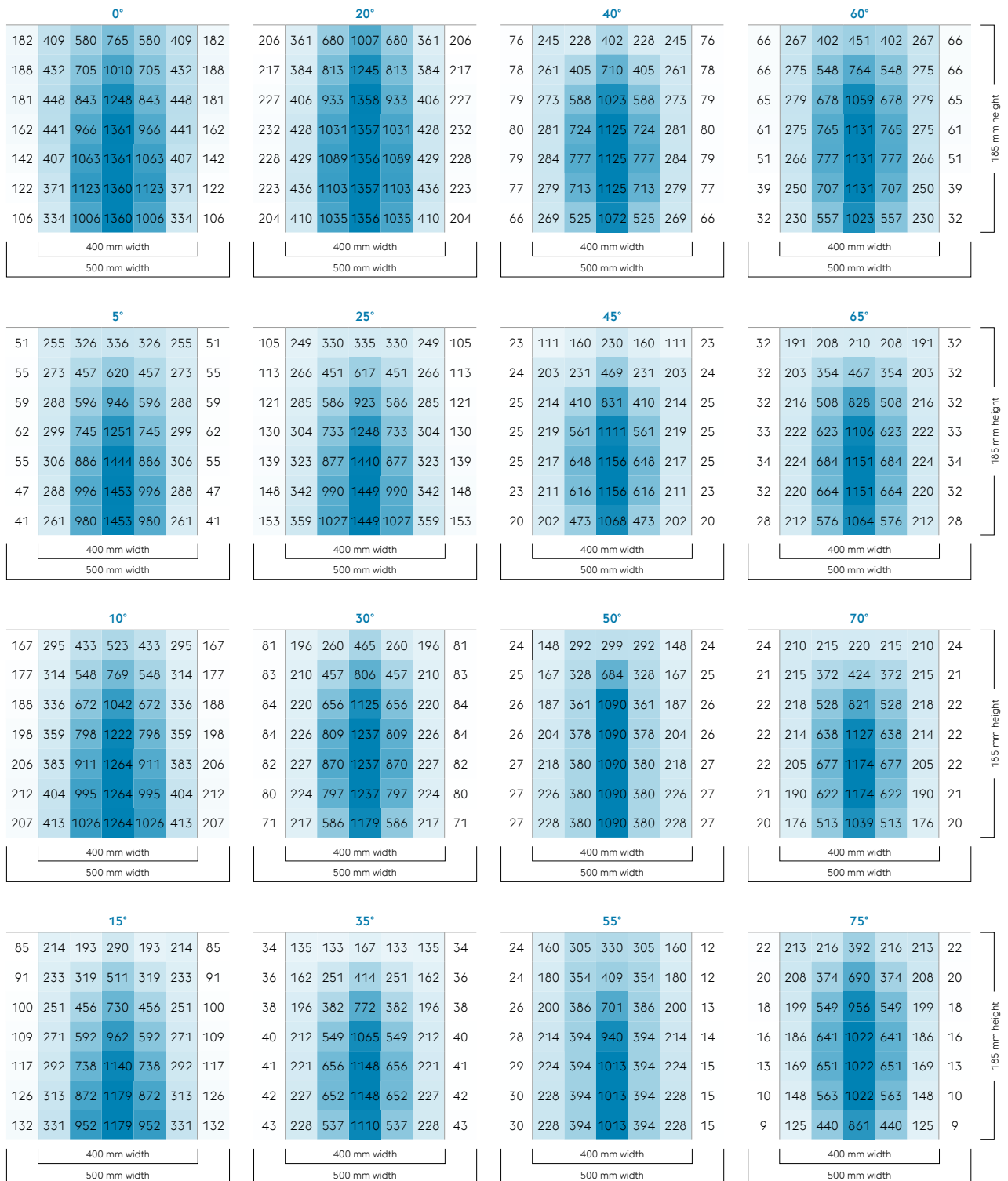
The cam unit force is distributed as shown in the sketch:



Shouldering: h<sub>1</sub> (top)  
h<sub>2</sub> (bottom)  
Press: V<sub>1</sub> (vertical)  
Cam base: H<sub>1</sub> (horizontal)  
H<sub>2</sub> (horizontal)  
Driver: V<sub>2</sub> (vertical)

# O-KS SIZE 6

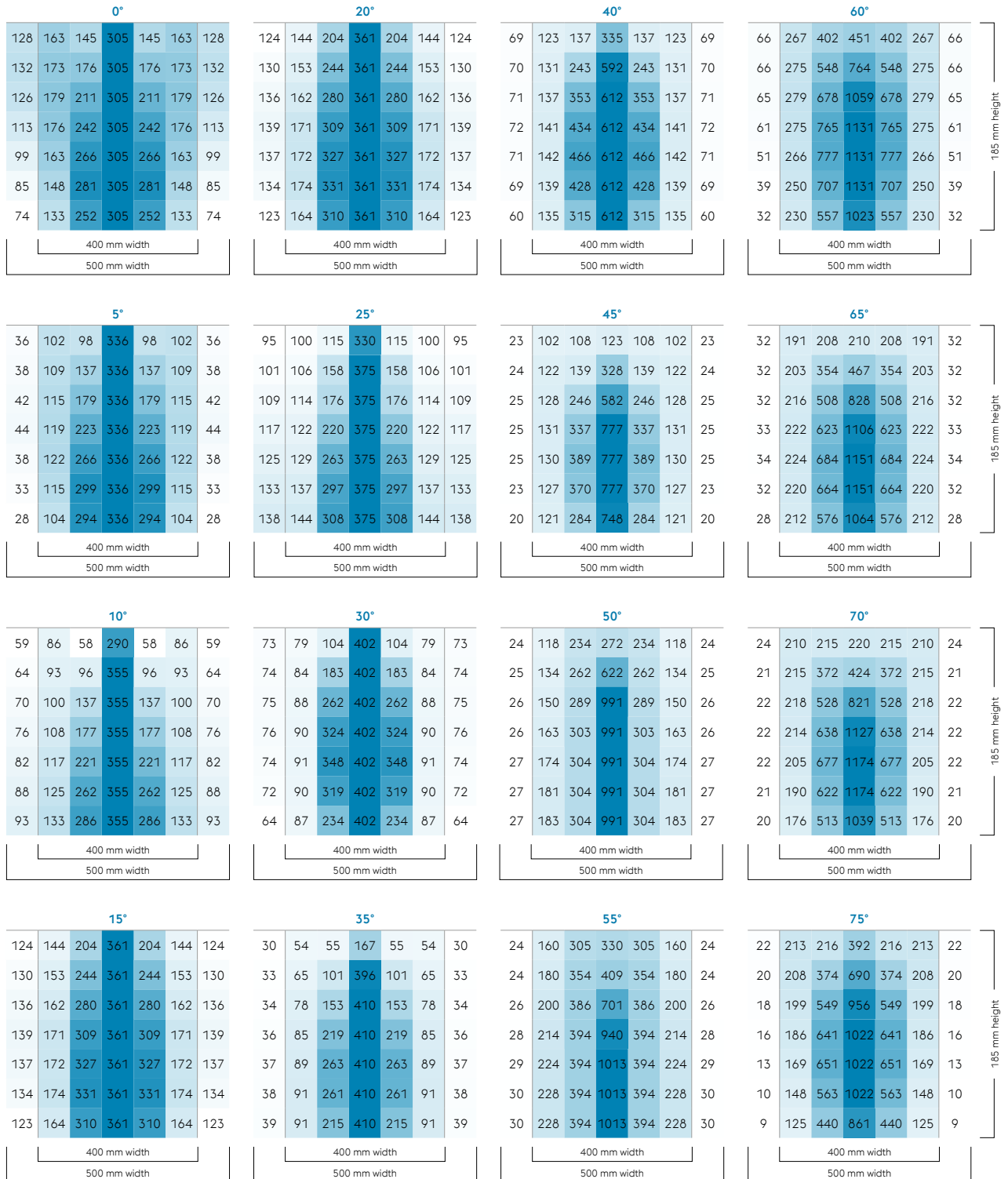
## O-KS 400-500 | support via cast shoulder



rounded values

# O-KS SIZE 6

## O-KS 400-500 | support via fitting key



rounded values