

Aerial Cam Unit

Grade	Working Force [kN (tonf)]		Travel	Catalog No.	W	θ 5° increments	Spring Type PS
	1,000,000 strokes	300,000 strokes					
Sky	22.1 (2.2)	29.4 (3.0)	Short	VACSS	46	00~80	GK NGK
Yellow	30.9 (3.1)	41.2 (4.2)		VACYS			ISO
Pink	42.1 (4.3)	56.4 (5.8)		VACPS			ISOL
Black	56.4 (5.8)	59.0 (6.0)		VACBS			GK NGK

ISO, ISOL: Coil Spring GK: Gas Spring (KALLER)
NGK: Without Gas Spring Parts for spring assembly are included.

Order	Catalog No.	W	θ	PS	Option
	VACSS	46	10	ISOL	
	VACYS	46	10	NGK	SC60
	VACPS	46	10	GK	NF-SC60-K

Option	Option Code	Specification
	NF	Nitrogen gas not charged.
	SC	Mount face length is extended from 1 to 60 mm in increments of 1 mm.
	K	Key attached.

Refer to page 388 for key specification.

Spring Force & Return Force

● Gas Spring
Sky, Yellow, Pink, Black

θ	Spring Force		Return Force	
	N	kgf	N	kgf
00	2887	295	3827	391
05	2887	295	3826	390
10	2887	295	3824	390
15	2887	295	3822	390
20	2887	295	3820	390
25	2887	295	3817	389
30	2887	295	3815	389
35	2887	295	3813	389
40	2887	295	3811	389
45	2887	295	3808	389
50	2887	295	3806	388
55	2715	277	3893	397
60	2948	301	4674	477
65	2819	288	5038	514
70	2689	274	5559	567
75	2854	291	7057	720
80	2750	281	8540	871

● Coil Spring
ISO Sky, Yellow, Pink

θ	Spring Force				Return Force	
	Initial Load		Final Load		Return Force	
	N	kgf	N	kgf	N	kgf
00	157	16.1	1835	187	2439	249
05	157	16.1	1835	187	2437	249
10	157	16.1	1835	187	2436	249
15	157	16.1	1835	187	2434	248
20	157	16.1	1835	187	2431	248
25	157	16.1	1835	187	2429	248
30	157	16.1	1835	187	2427	248
35	157	16.1	1835	187	2425	247
40	157	16.1	1835	187	2423	247
45	157	16.1	1835	187	2420	247
50	157	16.1	1835	187	2418	247
55	290	29.6	1795	183	2573	263
60	261	26.7	1765	180	2796	285
65	262	26.7	1757	179	3138	320
70	263	26.8	1752	179	3619	369
75	312	31.9	1665	170	4113	420
80	366	37.3	1672	171	5187	529

● Coil Spring
ISOL Sky, Yellow, Pink

θ	Spring Force				Return Force	
	Initial Load		Final Load		Return Force	
	N	kgf	N	kgf	N	kgf
00	76	7.7	882	90.0	1181	121
05	76	7.7	882	90.0	1180	120
10	76	7.7	882	90.0	1178	120
15	76	7.7	882	90.0	1176	120
20	76	7.7	882	90.0	1174	120
25	76	7.7	882	90.0	1171	120
30	76	7.7	882	90.0	1169	119
35	76	7.7	882	90.0	1167	119
40	76	7.7	882	90.0	1165	119
45	76	7.7	882	90.0	1162	119
50	76	7.7	882	90.0	1160	118
55	139	14.2	862	87.9	1232	126
60	126	12.8	848	86.5	1340	137
65	126	12.9	846	86.3	1507	154
70	126	12.9	842	85.9	1734	177
75	150	15.3	800	81.6	1970	201
80	176	17.9	803	81.9	2481	253

Cam Travel

θ	Travel mm
00	20.6
05	22.7
10	24.9
15	27.1
20	29.5
25	32.0
30	34.7
35	37.7
40	41.1
45	45.1
50	49.8
55	45.3
60	46.0
65	47.3
70	49.7
75	50.2
80	57.6

Aerial Cam Unit

Weight*1

θ	Total Weight kg	Cam Slider Weight kg	Tool Weight*2 kg
00	6.9	2.0	2.0
05	6.9	2.0	2.0
10	6.9	2.0	2.0
15	6.9	2.0	2.1
20	6.8	2.0	2.1
25	6.8	2.0	2.2
30	6.7	2.0	2.3
35	6.8	2.0	2.4
40	6.9	2.0	2.6
45	6.9	2.0	2.8
50	7.0	2.0	3.3
55	7.3	2.5	3.5
60	7.5	2.7	3.3
65	7.9	3.0	3.0
70	8.0	3.1	2.9
75	8.3	3.3	2.7
80	8.6	3.5	2.5

*1 This is the weight without SC and WC option. Reduce tool weight when with SC and WC option since the slider gets heavier.

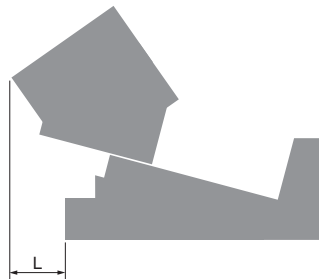
*2 Tool weight is estimated value. Allowable tool weight varies depending on press speed.

Rear Removal Space

● Coil Spring

● Gas Spring

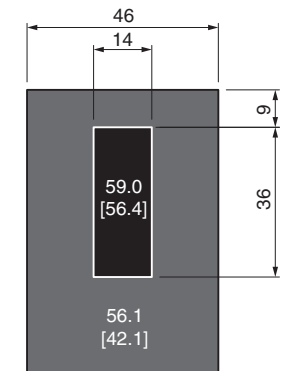
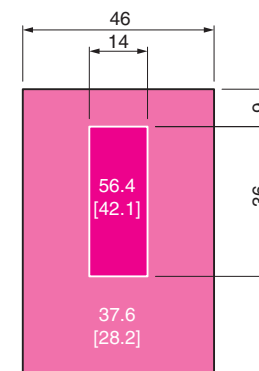
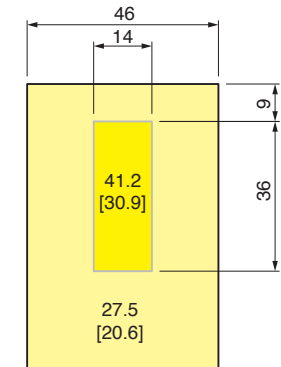
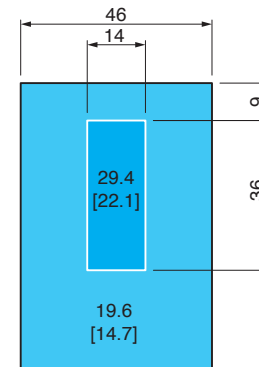
θ	L mm	θ	L mm
00	3.3	00	3.3
05	8.9	05	8.9
10	13.2	10	13.2
15	21.2	15	21.2
20	29.9	20	29.9
25	38.1	25	38.1
30	45.8	30	45.8
35	52.1	35	52.1
40	57.6	40	57.6
45	60.6	45	60.6
50	65.9	50	65.9
55	72.0	55	72.0
60	70.9	60	70.9
65	77.0	65	77.0
70	81.7	70	81.7
75	87.1	75	87.1
80	94.1	80	94.1



Working Force Distribution Diagram

The working forces indicated in the mount face distribution diagram are reached by putting the tooling center of gravity within each area for the following pictures.

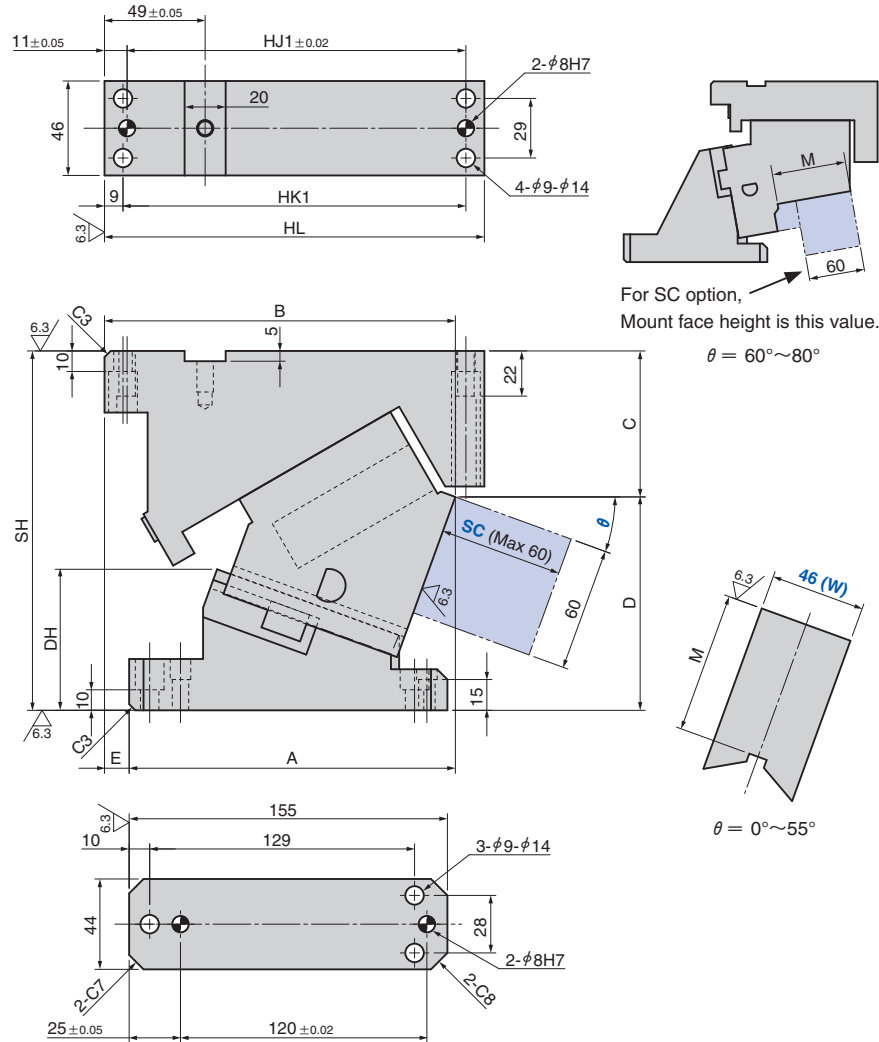
: Working force (kN) allowed for up to 300,000 strokes
 []: Working force (kN) allowed for up to 1,000,000 strokes



Aerial Cam Unit

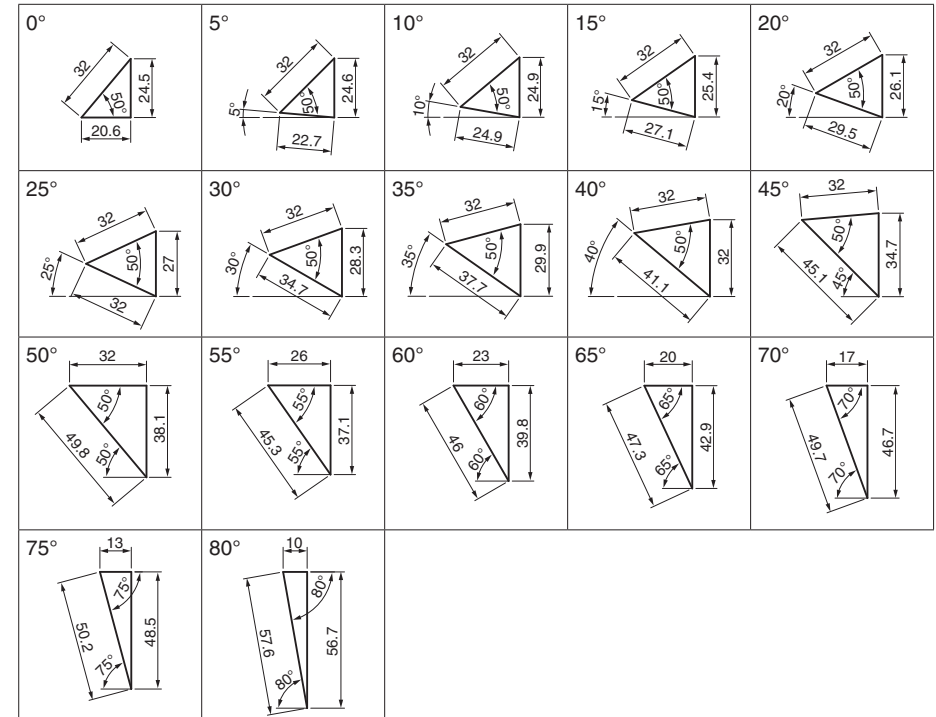


VACSS46
VACYS46
VACPS46
VACBS46



θ	A	B	C	D	E	SH	HL	HK1	HJ1	DH	M
00	132.00	160.00	57.00	118.00	28		170	152	150	45.2	
05	138.89	163.89	60.44	114.56	25		175	157	155	50.6	
10	145.66	167.66	64.77	110.23	22		180	162	160	55.4	
15	152.31	170.31	67.99	107.01	18		185	167	165	61.8	
20	158.87	170.87	71.09	103.91	12		185	167	165	68.7	
25	164.34	170.34	74.06	100.94	6	175	185	167	165	76.0	68.5
30	170.72	168.72	76.89	98.11	-2		185	167	165	84.6	
35	176.04	167.04	79.58	95.42	-9		185	167	165	92.6	
40	185.31	164.31	83.12	91.88	-21		185	167	165	102.3	
45	190.54	162.54	85.51	89.49	-28		185	167	165	112.3	
50	194.73	156.73	93.74	86.26	-38	180	180	162	160	119.9	
55	206.23	161.23	102.82	82.18	-45	185	180	162	160	109.6	83.5
60	207.78	157.78	111.81	78.19	-50	190	180	162	160	112.2	
65	217.23	155.23	113.72	81.28	-62		180	162	160	115.2	75
70	225.36	152.36	115.46	79.54	-73		180	162	160	118.6	
75	235.38	151.38	117.45	77.55	-84	195	180	162	160	120.6	
80	244.82	150.82	118.42	76.58	-94		180	162	160	126.1	80

Cam Diagram



Refer to page 390 for Table of Components.