

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)	Long	VACSL	46	00~50	GK NGK
Yellow	30.9 (3.1)	41.2 (4.2)		VACYL			ISO
Pink	42.1 (4.3)	56.4 (5.8)		VACPL			ISOL
Black	56.4 (5.8)	59.0 (6.0)		VACBL			GK NGK

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



Catalog No.	W	—	θ	—	PS	—	Option
VACSL	46	—	10	—	ISOL		
VACYL	46	—	10	—	NGK	—	SC60
VACPL	46	—	10	—	GK	—	NF — SC60 — K



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	
	Final Load			
	N	kgf	N	kgf
00	2959	302	3923	400
05	2959	302	3921	400
10	2959	302	3919	400
15	2959	302	3917	400
20	2959	302	3915	399
25	2959	302	3913	399
30	2959	302	3911	399
35	2959	302	3908	399
40	2959	302	3906	399
45	2937	300	3875	395
50	2850	291	3758	383

● Coil Spring
ISO Sky, Yellow, Pink

θ	Spring Force				Return Force	
	Initial Load		Final Load			
	N	kgf	N	kgf	N	kgf
00	108	11	1140	116	1522	155
05	108	11	1140	116	1520	155
10	108	11	1140	116	1518	155
15	108	11	1140	116	1516	155
20	108	11	1140	116	1514	154
25	108	11	1140	116	1512	154
30	108	11	1140	116	1509	154
35	108	11	1140	116	1507	154
40	108	11	1140	116	1505	154
45	108	11	1117	114	1472	150
50	108	11	1025	105	1349	138

● Coil Spring
ISOL Sky, Yellow, Pink

θ	Spring Force				Return Force	
	Initial Load		Final Load			
	N	kgf	N	kgf	N	kgf
00	76	7.8	805	82.2	1080	110
05	76	7.8	805	82.2	1078	110
10	76	7.8	805	82.2	1076	110
15	76	7.8	805	82.2	1074	110
20	76	7.8	805	82.2	1072	109
25	76	7.8	805	82.2	1070	109
30	76	7.8	805	82.2	1068	109
35	76	7.8	805	82.2	1066	109
40	76	7.8	805	82.2	1063	108
45	76	7.8	789	80.5	1040	106
50	76	7.8	724	73.9	952	97

Cam Travel

θ	Travel mm
00	28.9
05	31.9
10	35.0
15	38.2
20	41.5
25	45.0
30	48.8
35	53.1
40	57.9
45	62.0
50	62.2

Aerial Cam Unit

Weight*1

θ	Total Weight kg	Cam Slider Weight kg	Tool Weight*2 kg
00	7.3	2.0	2.0
05	7.2	2.0	2.0
10	7.1	2.0	2.0
15	7.2	2.0	2.1
20	7.1	2.0	2.1
25	7.0	2.0	2.2
30	7.0	2.0	2.3
35	7.0	2.0	2.4
40	7.1	2.0	2.6
45	7.0	2.0	2.8
50	7.2	2.0	3.3

*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.

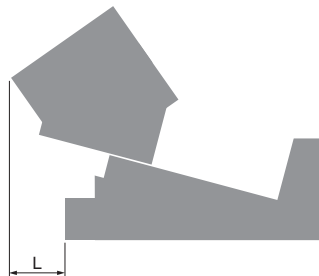
Rear Removal Space

Coil Spring

θ	L mm
00	0.0
05	4.3
10	9.1
15	17.5
20	26.5
25	35.1
30	41.1
35	47.6
40	53.3
45	57.4
50	67.0

Gas Spring

θ	L mm
00	0.0
05	3.1
10	7.8
15	16.1
20	25.0
25	33.5
30	39.5
35	45.9
40	51.6
45	56.7
50	67.0

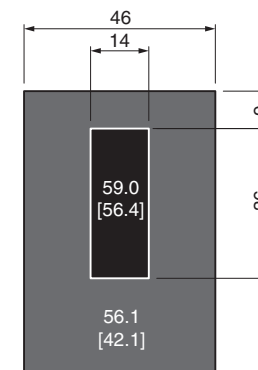
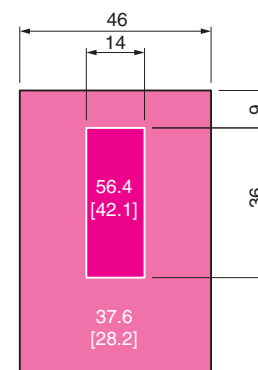
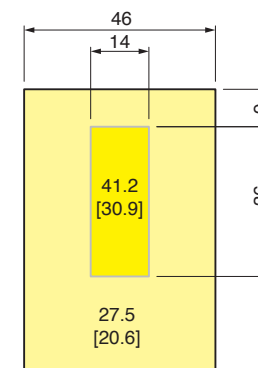
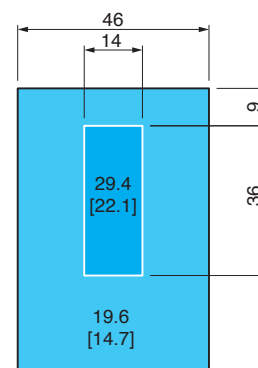


Working Force Distribution Diagram

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.

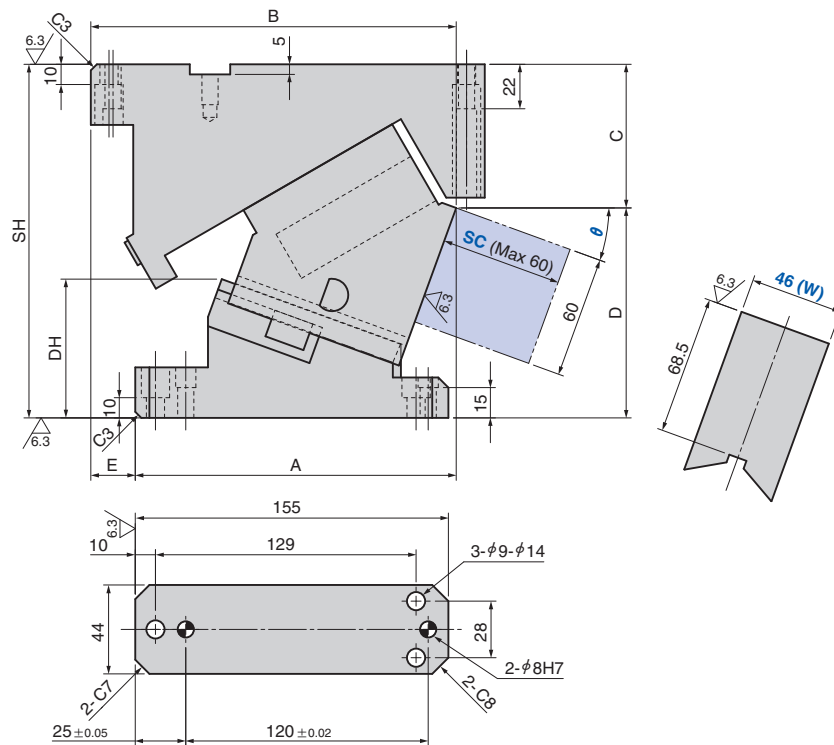
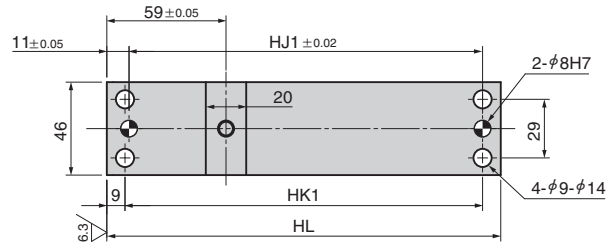
: Working force (kN) allowed for up to 300,000 strokes

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



Aerial Cam Unit

VACSL46
VACYL46
VACPL46
VACBL46



θ	A	B	C	D	E	SH	HL	HK1	HJ1	DH
00	132.00	170.00	57.00	118.00	38		180	162	160	45.2
05	138.89	173.89	60.44	114.56	35		185	167	165	50.6
10	145.66	177.66	64.77	110.23	32		190	172	170	55.4
15	152.31	180.31	67.99	107.01	28		195	177	175	61.8
20	158.87	180.87	71.09	103.91	22		195	177	175	68.7
25	164.34	180.34	74.06	100.94	16	175	195	177	175	76.0
30	170.72	180.72	76.89	98.11	10		197	179	177	84.6
35	176.04	179.04	79.58	95.42	3		197	179	177	92.6
40	185.31	176.31	83.12	91.88	-9		197	179	177	102.3
45	190.54	172.54	85.51	89.49	-18		195	177	175	112.3
50	194.73	161.73	93.74	86.26	-33	180	190	172	170	119.9

Cam Diagram

