

Aerial Cam Unit

Grade	Working Force [kN (tonf)]		Catalog No.	W	θ 5° increments	Spring Type PS
	1,000,000 strokes	300,000 strokes				
Yellow	112.8 (11.5)	135.3 (13.8)	VACYL	140	00~70	GK NGK ISO
Pink	159.3 (16.3)	191.1 (19.5)	VACPL			
Black	235.0 (24.0)	270.0 (27.6)	VACBL			GK NGK

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



Order

Catalog No.	W	—	θ	—	PS	—	Option
VACYL	140	—	10	—	ISO		
VACPL	140	—	10	—	GK	— NF — K	
VACBL	140	—	10	—	GK		



Option

Option Code	Specification
NF	Nitrogen gas not charged.
S	Lock plate attached.
K	Key attached.



Refer to page 388 for key specification.

■ Spring Force & Return Force

● Gas Spring

Yellow, Pink, Black

θ	Spring Force		Return Force	
	Final Load			
	N	kgf	N	kgf
00	11162	1139	14881	1518
05	11162	1139	14866	1517
10	11162	1139	14849	1515
15	11162	1139	14832	1513
20	11162	1139	14814	1512
25	11162	1139	14796	1510
30	11162	1139	14777	1508
35	11162	1139	14757	1506
40	11162	1139	14738	1504
45	11162	1139	14718	1502
50	11162	1139	14698	1500
55	11438	1167	16385	1672
60	10911	1113	17278	1763
65	11327	1156	20226	2064
70	11103	1133	22928	2340

● Coil Spring

Yellow

θ	Spring Force				Return Force	
	Initial Load		Final Load			
	N	kgf	N	kgf	N	kgf
00	523	53.4	4636	473	6267.5	640
05	523	53.4	4636	473	6252.3	638
10	523	53.4	4636	473	6236.0	636
15	523	53.4	4636	473	6218.8	635
20	523	53.4	4636	473	6200.9	633
25	523	53.4	4636	473	6182.3	631
30	523	53.4	4636	473	6163.3	629
35	523	53.4	4636	473	6143.9	627
40	523	53.4	4636	473	6124.3	625
45	523	53.4	4636	473	6104.7	623
50	523	53.4	4636	473	6085.2	621
55	438	44.7	4556	465	6502.5	664
60	575	58.7	4505	460	7106.8	725
65	463	47.3	4518	461	8034.5	820
70	784	80.0	4442	453	9134.2	932

● Coil Spring

Pink

θ	Spring Force				Return Force	
	Initial Load		Final Load			
	N	kgf	N	kgf	N	kgf
00	429	43.8	8902	908	11898	1214
05	429	43.8	8902	908	11883	1213
10	429	43.8	8902	908	11867	1211
15	429	43.8	8902	908	11849	1209
20	429	43.8	8902	908	11831	1207
25	429	43.8	8902	908	11813	1205
30	429	43.8	8902	908	11794	1203
35	429	43.8	8902	908	11774	1201
40	429	43.8	8902	908	11755	1199
45	429	43.8	8902	908	11735	1197
50	429	43.8	8902	908	11716	1195
55	393	40.1	8683	886	12428	1268
60	629	64.2	8683	886	13740	1402
65	525	53.6	8412	858	15007	1531
70	443	45.2	8061	823	16629	1697

■ Cam Travel

θ	Travel mm
00	35.4
05	39.0
10	42.8
15	46.6
20	50.7
25	55.0
30	59.7
35	64.9
40	70.7
45	77.5
50	85.6
55	81.9
60	82.0
65	82.8
70	81.9

Aerial Cam Unit

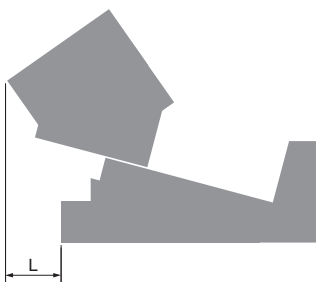
■Weight

θ	Total Weight kg	Cam Slider Weight kg	Tool Weight* ¹ kg
00	47.3	17.2	12.8
05	46.8	17.2	12.8
10	46.3	17.2	12.8
15	45.9	17.2	12.8
20	45.7	17.2	12.8
25	45.5	17.2	12.8
30	45.3	17.2	12.8
35	45.6	17.2	12.8
40	46.4	17.2	12.8
45	47.8	17.2	12.8
50	49.3	17.2	12.8
55	50.9	18.5	11.5
60	51.7	19.1	10.9
65	53.0	20.3	9.7
70	53.3	20.4	9.6

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

■Rear Removal Space

θ	L mm
00	0.0
05	0.0
10	0.0
15	6.8
20	14.1
25	27.5
30	40.7
35	51.7
40	62.3
45	67.5
50	68.3
55	77.2
60	85.8
65	92.7
70	98.8

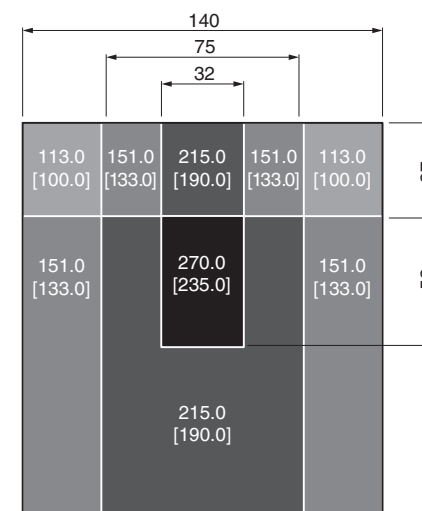
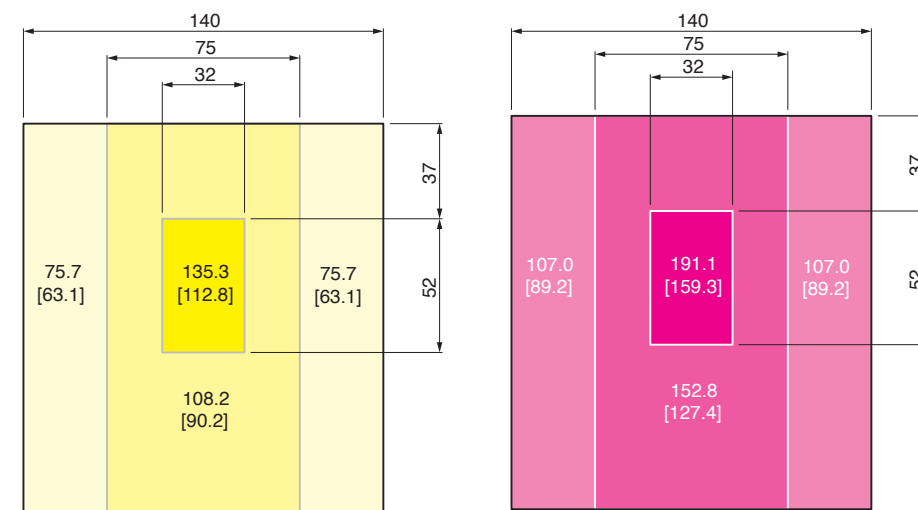


■Working Force Distribution Diagram

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.

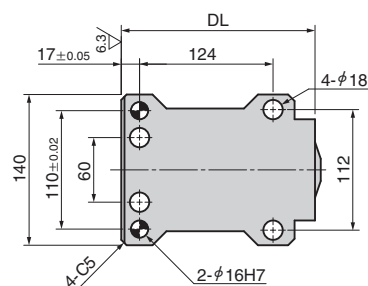
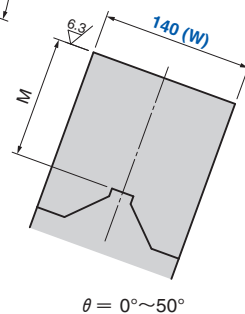
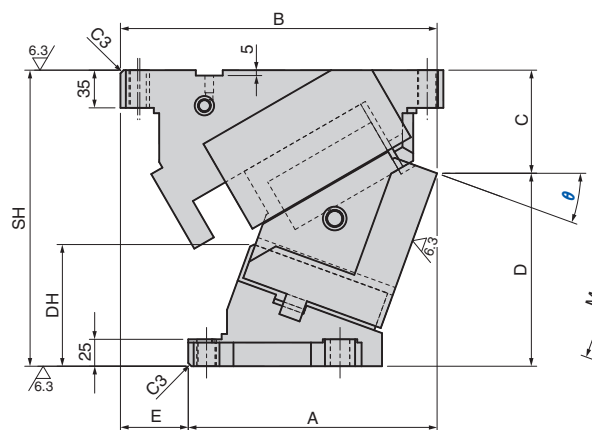
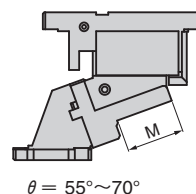
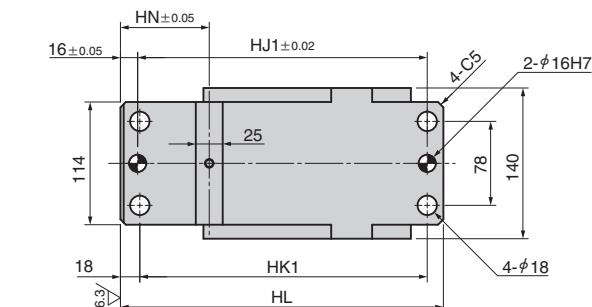
: Working force (kN) allowed for up to 300,000 strokes

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



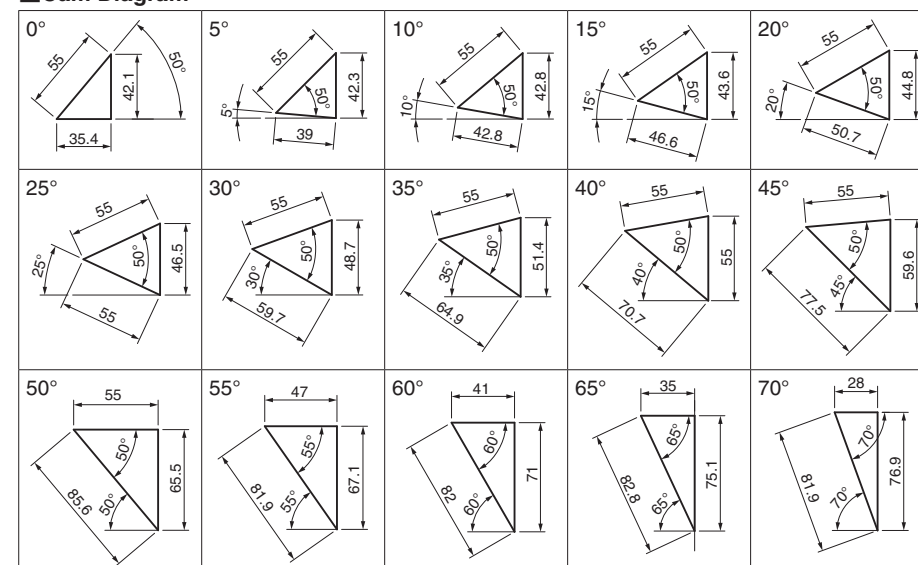
Aerial Cam Unit

VACYL140
VACPL140
VACBL140



θ	A	B	C	D	E	SH	HL	HK1	HJ1	HN	DH	DL	M
00	175.00	280.00	73.00	202.00	105		280	247	249		81.7		
05	188.85	285.85	77.40	197.60	97		285	252	254	122.5	89.7		
10	203.32	290.32	81.69	193.31	87		290	257	259		98.6		
15	217.42	292.42	88.82	186.18	75		295	262	264		105.4		
20	231.16	294.16	95.78	179.22	63	275	300	267	269		113.0	180	
25	243.57	294.57	103.52	171.48	51		305	272	274	82.5	120.3		113
30	255.67	292.67	113.03	161.97	37		305	272	274		126.3		
35	267.47	290.47	123.26	151.74	23		310	277	279		131.8		
40	277.00	286.00	139.21	140.79	9	280	310	277	279		136.7		
45	287.28	284.28	155.84	129.16	-3	285	315	282	284		141.0		
50	292.36	284.36	171.14	118.86	-8	290	325	292	294		146.9	175	
55	303.54	277.54	176.20	118.80	-26	295	325	292	294	122.5	148.8		115
60	312.88	273.88	177.03	122.97	-39	300	325	292	294		155.2	170	
65	324.56	270.56	180.76	124.24	-54	305	325	292	294		159.1		120
70	327.00	266.00	182.41	122.59	-61		325	292	294		166.9	161	

Cam Diagram



Refer to page 391 for Table of Components.