

LAMCAM® VERSION 6 ANGLES 0° – 75°



- Improved Footprint for Heeling Driver
 - More Spring Return Options
 - Higher Pressure for Stripping

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Anchor Lamina has made a commitment to the metal stamping industry by manufacturing and distributing a comprehensive collection of high quality products.

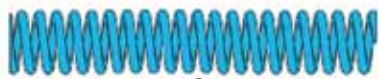
Lamina has long been known for expertise in producing precision products and has applied that knowledge into the design and production of cams. LamCams maintain consistency throughout standard lines available from bump cams to Aerial and Diemount cams. Wide cams (500mm – 1000 mm are produced under the IEM brand.

Input from our customers has been and continues to be an important part of cam development and maintenance which assures Lamina's leadership position.

No other company surpasses our obligation to you, our customer, in supporting cam products. We listen to your needs and respond when you require our assistance.

-
- Ease of spring replacement from back of cam; the cam base incorporates a safety restraint system to retain the slide during spring removal
 - High quality materials used throughout, including high-strength steel castings for major components
 - All wear areas are double-plated with self-lubricated wear plates to reduce maintenance and accommodate high production volumes
 - Four Return Spring Kit Options are available: mechanical ISO spring, combination mechanical/nitrogen springs, nitrogen spring and higher force nitrogen
 - Pentahedron design ensures smooth and stable slide movement on 125 through 300 Series Cams
 - Urethane bumper cushion on slide return; optional hydraulic shock absorber available
 - Mounting/locating provisions include both square keys and dowel holes
 - Meets or exceeds all of “**NAAMS**” cam requirements
 - Lockout kit installed, ready for cam installation and set up
 - Safety backup provisions for retaining keeper plates
 - Improved, super-duty accelerator system standard on 0° through 25° angles
 - Dual external positive return system

SLIDE RETURN SYSTEM OPTIONS



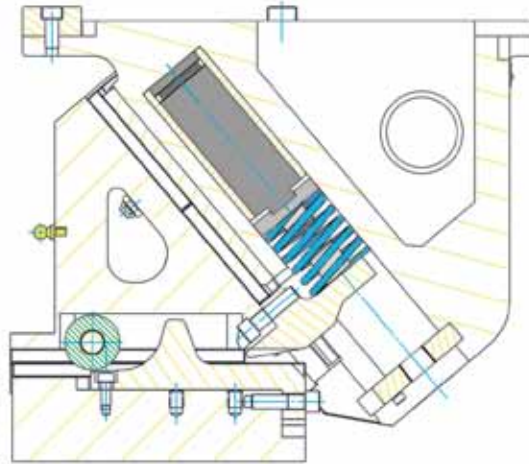
Mechanical Spring



Mechanical & Nitrogen Spring*



Nitrogen Spring &
Higher Force Nitrogen Spring



Recognizing that different cam applications have different requirements, Lamina offers four Return Spring Kit Options.

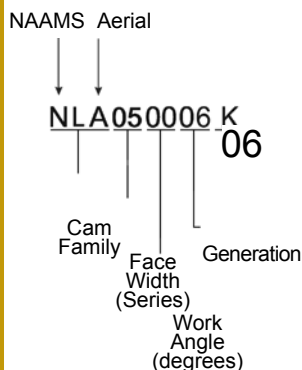
1. **Mechanical** – Employs a conventional ISO Die Spring, used in cam applications where additional stripping force is not required.
2. **Combination Mechanical/Nitrogen** – This unique Lamina design employs an ISO Die Spring in series combination with a Nitrogen Spring. This return system utilizes the mechanical spring for preload, keeping the initial contact forces low, while providing high final loads from the nitrogen spring for part stripping.
3. **Nitrogen** – This return system provides high return spring forces for stripping. By nature of the nitrogen spring, it also has a higher initial contact force than other return spring options. This higher contact force may result in greater wear on the cam and its accelerator system (where applicable).
4. **Higher Force Nitrogen** – Fits the standard gas spring envelope, and delivers more force for stripping.

***Lamina also offers the Nitrogen Cylinder/Mechanical Spring Combination System for the slide return function of all Aerial and Diemount cam units.**

The possible benefit of using the Combination System is twofold:

1. The force developed in the slide return system is low when the accelerator function is active (because only the mechanical spring is operative at that point), thus, wearing of the accelerator components is greatly reduced.
2. The total developed slide return force at the cam's shut height position is greater with the Combination System than it is with the Nitrogen-only option. The result is more on-board capability for part stripping.

PART NUMBER KEY

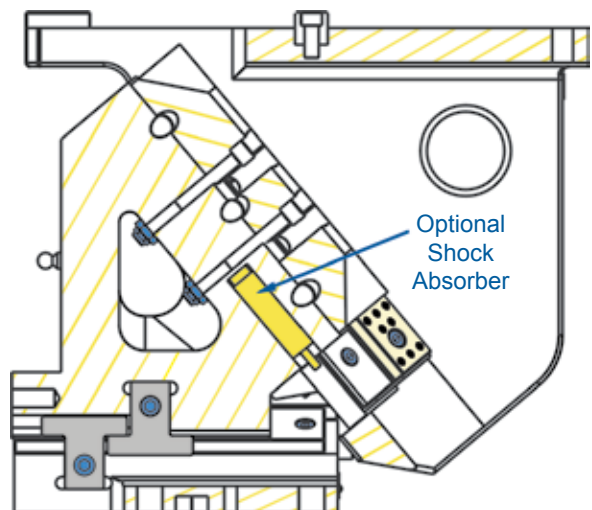


OPTIONAL SHOCK ABSORBERS

Optional shock absorbers are available and should be used in the absence of an accelerator system on low-angle cams (i.e., less than 25°) to ensure a gentle return of the slide to its home position.

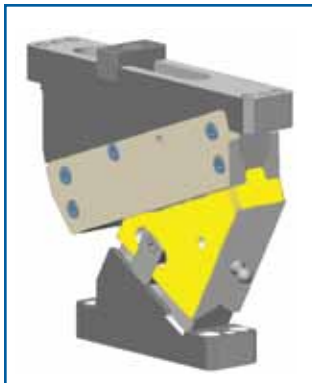
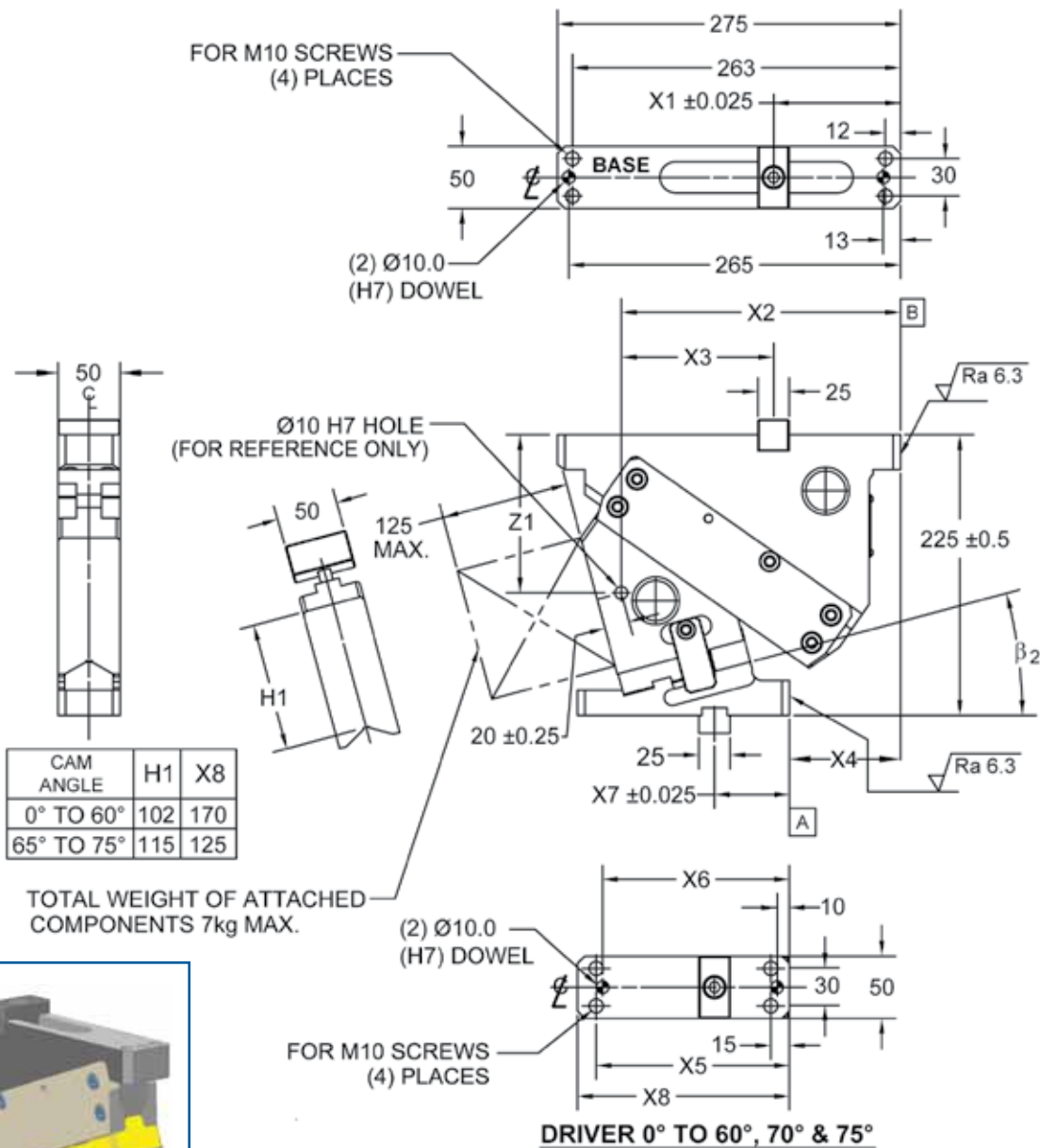


Shock Absorber



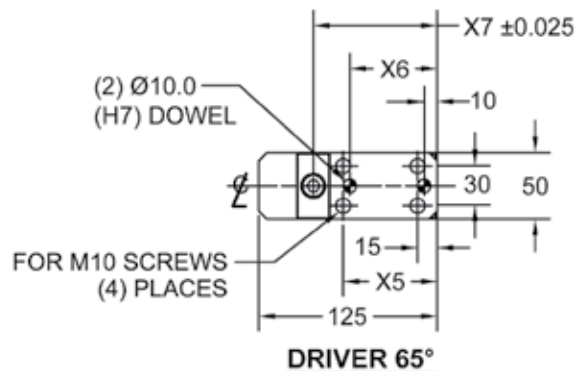
Optional Shock Absorber

SLIMCAM[™] NLA SERIES CAM



0° – 75° Aerial Cam

Aerial configuration offered in 5° increments from 0° to 75° work angles.

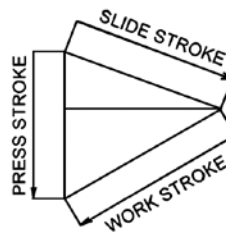


SLIMCAM[™] NLA SERIES CAM

AERIAL CAM DIMENSIONS AND WEIGHTS

CAM PART NUMBER	CAM ANGLE	WT. (KG)	X1	X2	X3	X4	X5	X6	X7	Z1
NLA050006_	0	20	102.6	238.6	136.0	122.0	155	150	70	120.0
NLA050506_	5	20	104.9	235.4	130.5	110.0	155	150	70	118.2
NLA051006_	10	20	105.9	231.4	125.5	102.0	155	150	60	127.0
NLA051506_	15	18	101.8	223.9	122.1	89.0	155	150	60	126.7
NLA052006_	20	18	107.0	224.8	117.8	81.0	155	150	60	126.7
NLA052506_	25	18	109.4	224.7	115.3	75.0	155	150	70	127.7
NLA053006_	30	18	102.9	218.9	116.0	60.0	155	150	70	124.1
NLA053506_	35	18	107.6	217.4	109.8	53.0	155	150	70	130.9
NLA054006_	40	18	92.9	202.7	109.8	37.0	155	150	70	131.2
NLA054506_	45	18	93.7	199.8	106.1	35.0	155	150	70	136.7
NLA055006_	50	18	93.4	198.1	104.7	28.8	155	150	70	139.8
NLA055506_	55	18	93.7	193.5	99.8	20.0	155	150	70	145.9
NLA056006_	60	18	89.4	191.0	101.6	18.0	155	150	70	148.5
NLA056506_	65	18	93.7	186.1	92.4	6.0	58	48	82	160.7
NLA057006_	70	32.5	89.4	182.4	93.0	-1.0	65	55	35	162.6
NLA057506_	75	33.8	89.4	182.1	92.7	-8.0	65	55	35	177.1

↑ Specify spring type (D, K, P, U)
 SlimCam[™] available with Nitrogen ONLY.



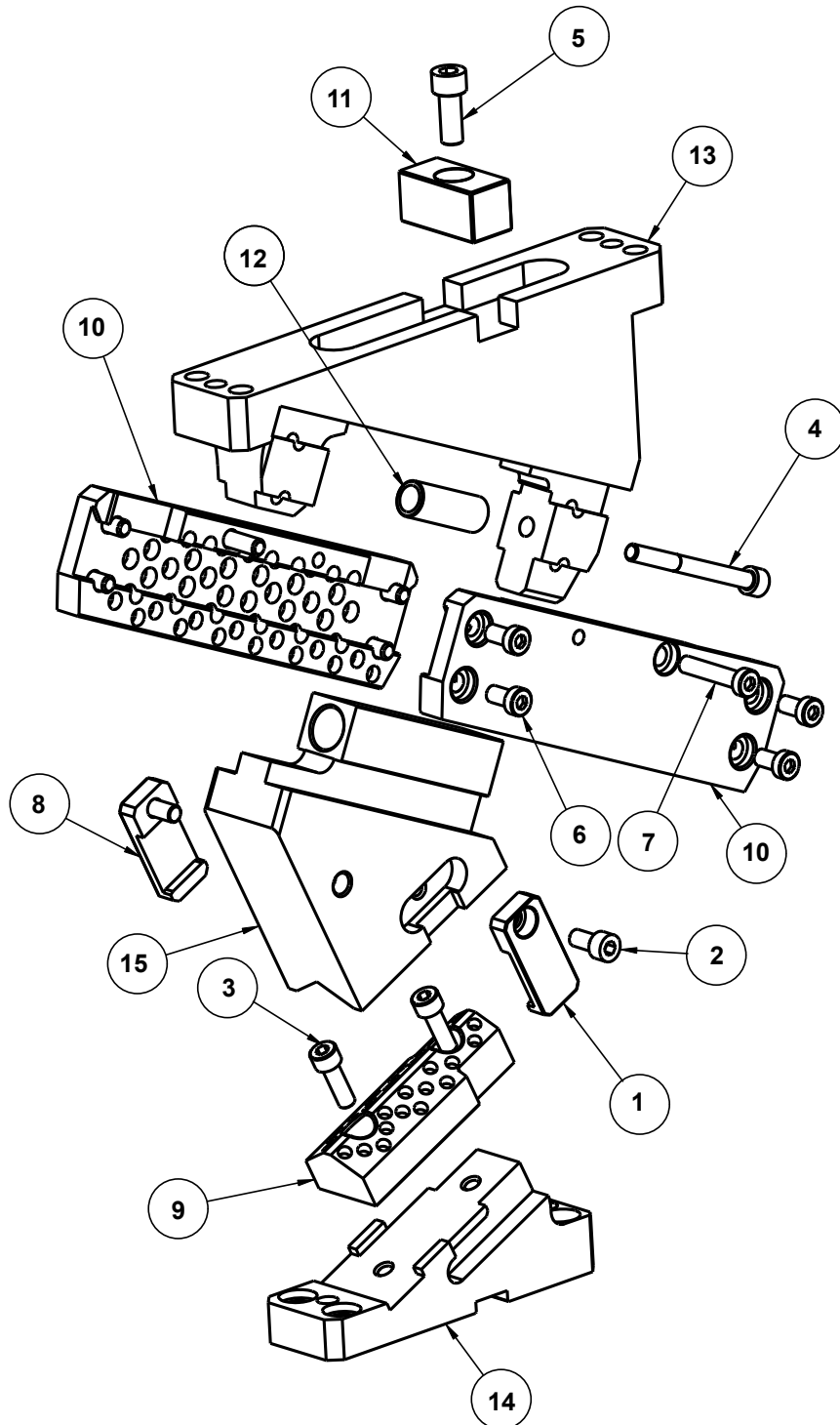
CAM DIAGRAM



Lamina has a ready-made LamCam[™] for nearly every cam application.

CAM ANGLE	PRESS STROKE	WORK STROKE	SLIDE STROKE
0	34.5	28.9	45
5	34.6	31.9	45
10	35.0	35.0	45
15	35.7	38.2	45
20	36.7	41.5	45
25	38.0	45.0	45
30	39.8	48.8	45
35	42.1	53.1	45
40	45.0	57.9	45
45	48.8	63.4	45
50	53.6	70.0	45
55	67.9	78.2	45
60	77.9	90.0	45
65	33.3	35.3	15
70	41.2	43.8	15
75	56.0	58.0	15

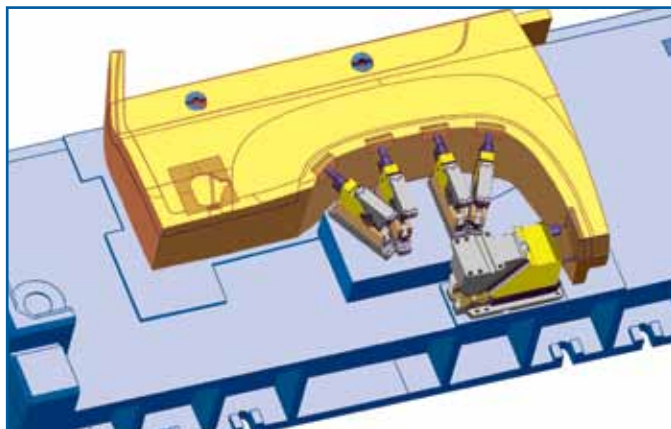
SLIMCAM[™] NLA SERIES CAM COMPONENT PARTS



Look on our website www.daytonlamina.com for our entire line of ready-made Cams. Lamina also provides specials and custom-made Cams.

SLIMCAM™ NLA SERIES CAM

SLIMCAM™ NLA SERIES AERIAL CAMS REPLACEMENT PARTS	
ITEM NUMBER	DESCRIPTION
1	RH Positive Return Bracket
2	M8 x 1.25 x 16 SHCS
3	M8 x 1.25 x 25 SHCS
4	M8 x 1.25 x 80 SHCS
5	M10 x 1.5 x 25 SHCS
6	LHCS M8 x 1.25 x 16
7	LHCS M8 x 1.25 x 40
8	LH Positive Return Bracket
9	V-Block NLA/NLD 50 CAM
10	NLA Keeper Plate
11	25 x 25 x 50mm NAAMS Key
12	Lockout Spacer
13	Body
14	Driver
15	Slide

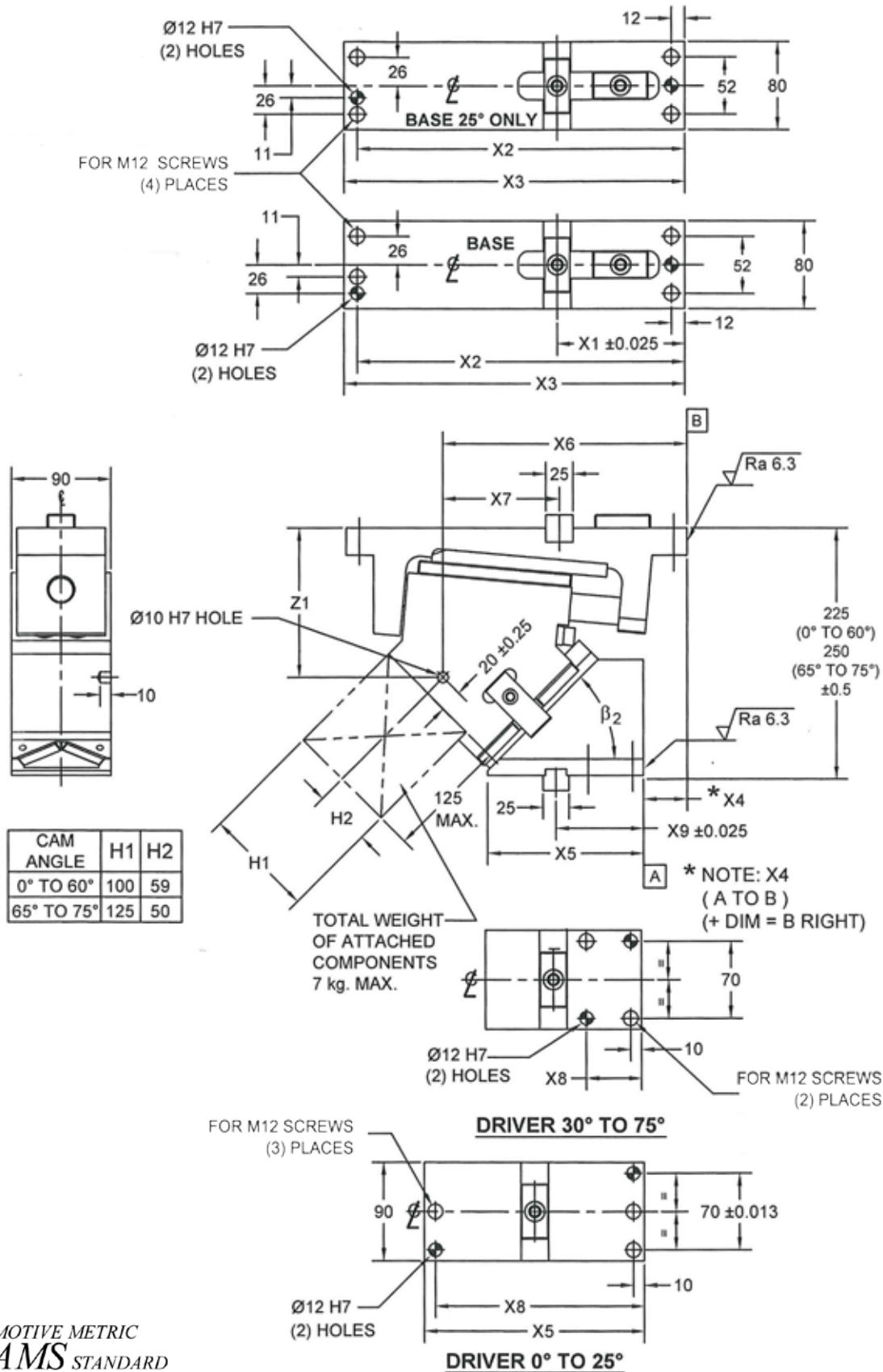


CAM SPECIFICATIONS – SlimCam		
Tooling Allowance		
Size & Weight Parameters	Protrusion	Weight
	125mm	4kg
Rated Capacity - kN		
Cycles	300,000	1,000,000
Load Rating	61kN	53kN

RETURN SPRING KIT OPTIONS NITROGEN ONLY FOR SLIMCAM					
VENDOR	CAM # SUFFIX	SPRING KIT PART #	QTY	INITIAL LOAD (N)	FINAL LOAD (N)
Dadco 0° – 60°	D	C.090.050	1	890	1109
Dadco 65° – 75°	D	C.090.025	1	890	1025
Dadco Ultra 0° – 60°	U	CLNA0050-0048	1	1700	2550
Dadco Ultra 65° – 75°	U	CLNA0050-0049	1	1700	2186
Kaller 0° – 60°	K	R19-050Y	1	900	1161
Kaller 65° – 75°	K	R19-025Y	1	900	1059
Kaller Powerline 0° – 60°	P	CLNA0050-0019	1	1700	2550
Kaller Powerline 65° – 75°	P	CLNA0050-0021	1	1700	2186



50mm (90mm WIDE FACE) SERIES AERIAL CAM

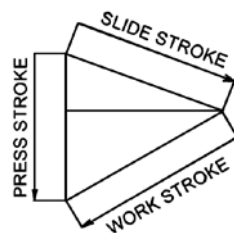


50mm (90mm WIDE FACE) SERIES AERIAL CAM

AERIAL CAM DIMENSIONS AND WEIGHTS

CAM PART NUMBER	CAM ANGLE	WT. (KG)	X1	X2	X3	X4	X5	X6	X7	X8	X9	Z1
NCA050006_	0	29	111.37	267	280	106.9	190	247.37	136.00	180	157	117.96
NCA050506_	5	29	108.97	267	280	87.6	190	239.43	130.46	180	84	118.40
NCA051006_	10	29	116.47	278	290	87.3	190	242.34	125.87	180	71	125.21
NCA051506_	15	33	132.16	297	310	92.3	200	254.60	122.40	190	70	125.49
NCA052006_	20	32	121.07	288	300	63.7	200	238.77	117.70	190	72	126.87
NCA052506_	25	33	125.47	297	310	63.3	200	241.43	115.96	190	76	126.15
NCA053006_	30	33	124.17	297	310	55.0	160	235.77	111.60	81	47	131.71
NCA053506_	35	34	131.07	307	320	54.3	160	240.34	109.27	85	52	131.69
NCA054006_	40	33	119.86	297	310	36.8	154	226.12	106.26	65	35	135.53
NCA054506_	45	33	115.56	298	310	39.4	142	221.89	106.33	50	72	136.45
NCA055006_	50	32	104.66	288	300	21.9	131	203.98	99.32	50	77	144.32
NCA055506_	55	32	114.54	297	310	34.1	128	217.27	102.69	50	82	143.86
NCA056006_	60	32	96.64	288	300	14.5	123	198.56	101.92	50	77	148.29
NCA056506_	65	40	119.86	297	310	9.4	122	197.10	77.20	50	77	173.73
NCA057006_	70	39	115.56	298	310	-1.9	122	189.66	74.06	50	80	171.98
NCA057506_	75	38	104.66	288	300	-6.2	102	168.78	64.07	50	72	176.90

↑ Specify spring type



CAM DIAGRAM

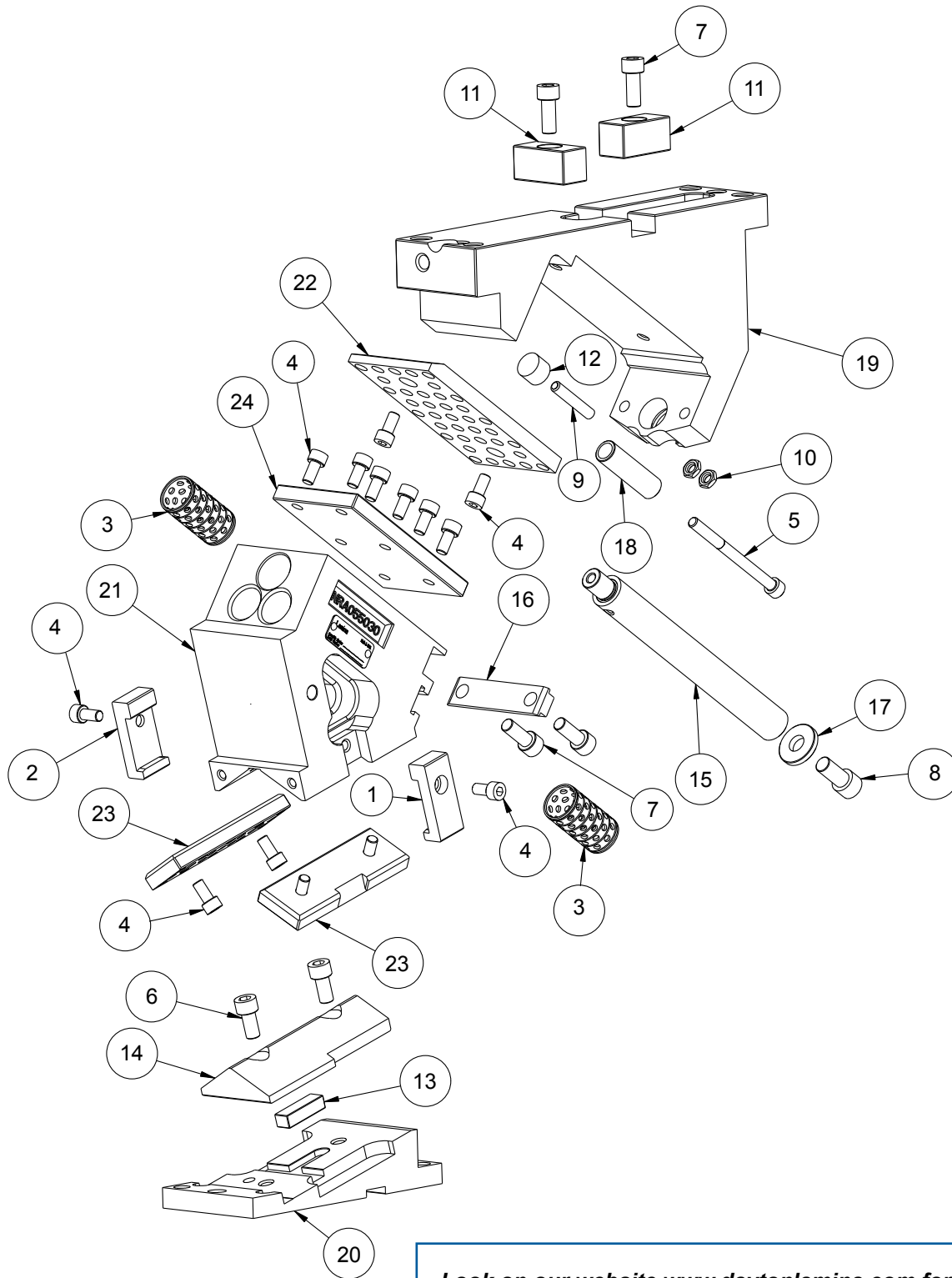
Check out these die mount cams.



From 300mm to 50mm Standard Cams, SlimCam™, and RollerCam to our unique Bump Cams, Diemount modular cams (500mm – 1200mm width) are not pictured.

CAM ANGLE	PRESS STROKE	WORK STROKE	SLIDE STROKE
0	34.5	28.9	45
5	34.6	31.9	45
10	35.0	35.0	45
15	35.7	38.2	45
20	36.7	41.5	45
25	38.0	45.0	45
30	39.8	48.8	45
35	42.1	53.1	45
40	45.0	57.9	45
45	48.8	63.4	45
50	53.6	70.0	45
55	67.9	78.2	45
60	77.9	90.0	45
65	50.3	51.3	22
70	62.1	64.0	22
75	81.7	84.6	22

50mm (90mm WIDE FACE) SERIES AERIAL CAM COMPONENT PARTS



Look on our website www.daytonlamina.com for our entire line of ready-made Cams. Lamina also provides specials and custom-made Cams.

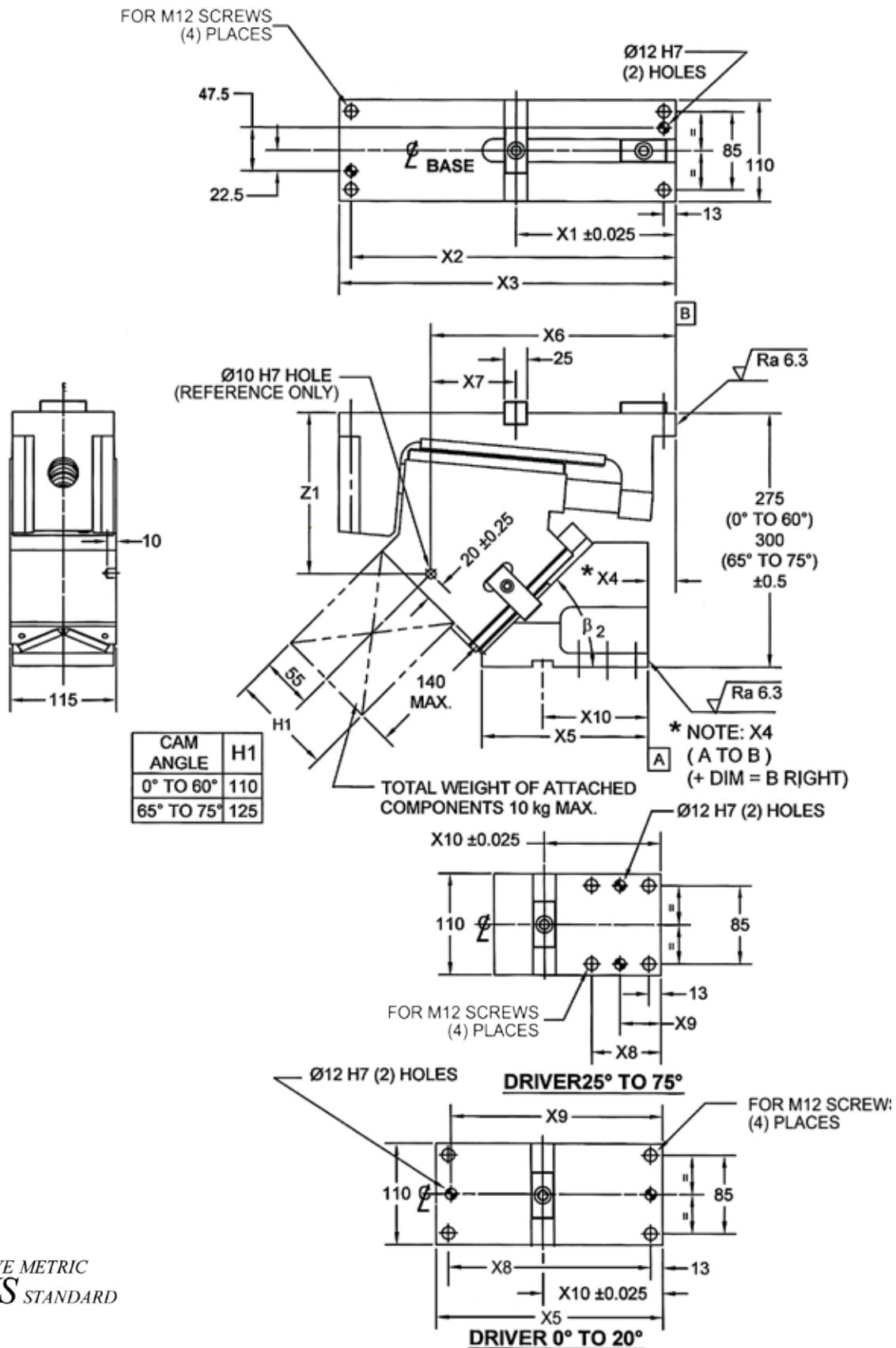
50mm (90mm WIDE FACE) SERIES AERIAL CAM

50 SERIES AERIAL CAMS REPLACEMENT PARTS			
ITEM NUMBER	DESCRIPTION	ITEM NUMBER	DESCRIPTION
1	RH Positive Return Bracket	13	Key 10 x 12.7 x 40mm
2	LH Positive Return Bracket	14	V-Block
3	Bronze Self Lube Bushing	15	Guide Pin
4	M8 x 1.25 x 16 SHCS	16	Spring Bracket
5	M8 x 1.25 x 100 SHCS	17	Disk Plate
6	M10 x 1.5 x 20 SHCS	18	Lockout Spacer x 59mm LG
7	M10 x 1.5 x 25 SHCS	19	Body
8	M12 x 1.75 x 25 SHCS	20	Driver
9	M8 x 45mm LG Soc Set Screw	21	Slide
10	M8 X 1.25 Jam Nut	22	12 x 80 x 160mm BRZ S/L WP
11	25 x 25 x 50mm NAAMS Key	23	12 x 40 x 122.5mm BRZ S/L WP
12	Bumper	24	12 x 80 x 145mm HD Steel WP

CAM SPECIFICATIONS – 50 Series Cam		
Tooling Allowance		
Size & Weight Parameters	Protrusion	Weight
	125mm	7kg
Rated Capacity - kN		
Cycles	300,000	1,000,000
Load Rating	174kN	152kN

RETURN SPRING KIT OPTIONS					
VENDOR	CAM # SUFFIX	SPRING KIT PART #	QTY	INITIAL LOAD (N)	FINAL LOAD (N)
Coil Spring 0° – 60°	C	SKC050001	2	167	635
Dadco 0° – 60°	D	SKC050014	2	4000	4933
Dadco 65° – 75°	D	CLNA0050-0016	2	4000	5215
Dadco Ultra 0° – 60°	U	CLNA0050-0050	2	6400	8773
Dadco Ultra 65° – 75°	U	CLNA0050-0051	2	6400	9598
Dadco Coil/Nitrogen 0° – 60°	CD	SKC050012	2	219	751
Kaller 0° – 60°	K	SKC050005	2	4000	5272
Kaller 65° – 75°	K	CLNA0050-0014	2	4000	5785
Kaller Powerline 0° – 60°	P	CLNA0050-0036	2	6400	8926
Kaller Powerline 65° – 75°	P	CLNA0050-0038	2	6400	9674
Kaller Coil/Nitrogen 0° – 60°	CK	SKC050002	2	219	751

75mm SERIES (115 WIDE FACE) AERIAL CAM



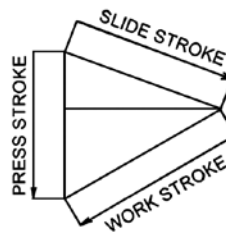
AUTOMOTIVE METRIC
NAAMS STANDARD

75mm SERIES (115 WIDE FACE) AERIAL CAM

AERIAL CAM DIMENSIONS AND WEIGHTS

CAM PART NUMBER	CAM ANGLE	WT. (kg)	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	Z1
NCA070006_	0	42	139.64	319.0	331.0	123.6	225.0	300.10	160.46	199.0	209.0	80	140.71
NCA070506_	5	42	164.60	333.0	346.0	120.0	235.0	306.91	142.30	210.5	220.5	80	144.33
NCA071006_	10	43	165.52	322.0	335.0	104.9	235.0	300.85	135.33	209.0	219.0	80	151.81
NCA071506_	15	47	174.42	343.0	356.0	94.0	235.0	300.98	126.56	209.0	219.0	80	158.10
NCA072006_	20	45	179.20	334.5	347.5	77.1	245.0	299.33	120.13	219.0	229.0	80	160.64
NCA072506_	25	47	186.50	333.0	346.0	68.1	200.0	294.46	107.96	102.0	94.0	55	171.91
NCA073006_	30	47	192.50	347.0	360.0	60.5	200.0	293.90	101.40	97.0	85.0	50	174.37
NCA073506_	35	48	188.80	332.0	345.0	45.7	200.0	284.87	96.07	92.0	80.0	50	175.50
NCA074006_	40	47	185.85	344.5	357.5	42.2	190.0	278.06	92.22	67.0	46.5	125	175.30
NCA074506_	45	47	173.70	352.0	366.2	30.4	180.0	266.37	91.67	62.0	44.0	125	174.76
NCA075006_	50	45	166.34	352.0	365.0	47.7	150.0	256.71	90.37	57.0	41.5	95	175.93
NCA075506_	55	45	193.34	342.0	356.0	38.8	145.0	251.63	58.30	47.0	36.5	85	189.98
NCA076006_	60	45	175.40	337.0	350.0	30.9	135.0	239.75	64.35	47.0	36.5	85	193.71
NCA076506_	65	54	185.85	344.5	357.5	39.7	137.0	268.07	82.22	47.0	36.5	80	218.95
NCA077006_	70	54	173.70	353.2	366.2	22.0	135.0	252.60	78.91	47.0	36.5	85	217.37
NCA077506_	75	53	166.34	352.0	365.0	5.0	135.0	239.29	72.96	47.0	36.5	85	217.18

↑ Specify spring type



CAM DIAGRAM

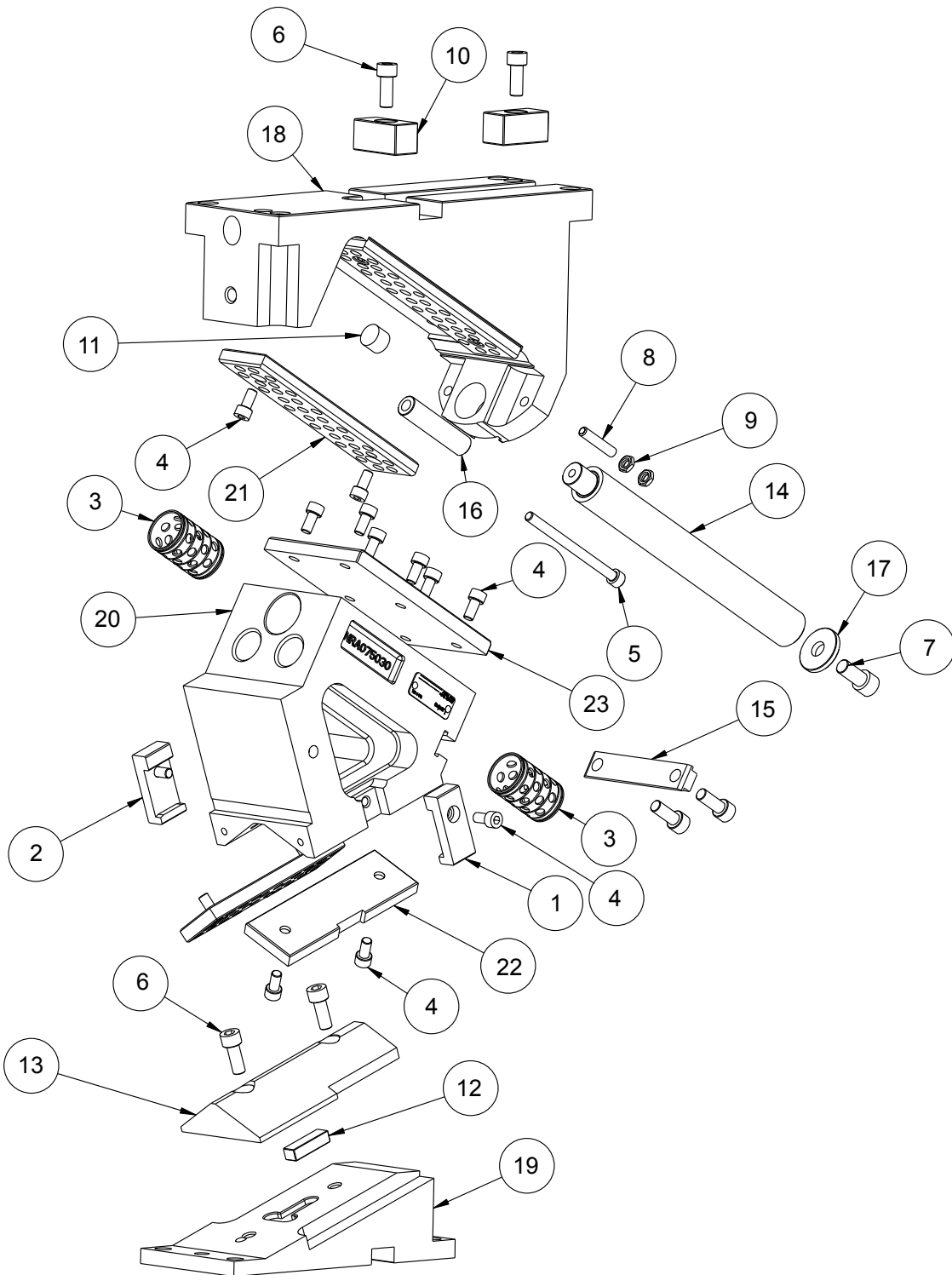
CAM ANGLE	PRESS STROKE	WORK STROKE	SLIDE STROKE
0	46.0	38.6	60
5	46.1	42.6	60
10	46.7	46.7	60
15	47.6	50.9	60
20	48.9	55.3	60
25	50.7	60.0	60
30	53.1	65.1	60
35	56.1	70.8	60
40	60.0	77.1	60
45	65.0	84.5	60
50	71.5	93.3	60
55	90.6	104.2	60
60	103.8	120.0	60
65	50.2	51.2	22
70	62.2	64.1	22
75	82.1	85.0	22



Also look for Lamina
Die Mount Cams.

75mm SERIES (115 WIDE FACE) AERIAL CAM

COMPONENT PARTS



Look on our website www.daytonlamina.com for our entire line of ready-made Cams. Lamina also provides specials and custom-made Cams.

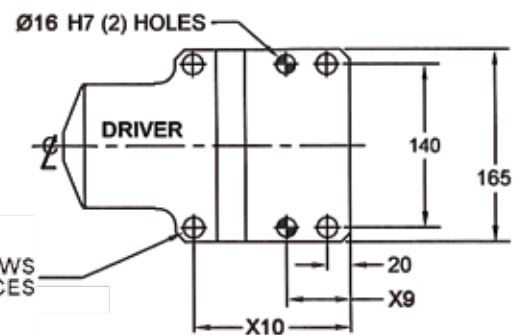
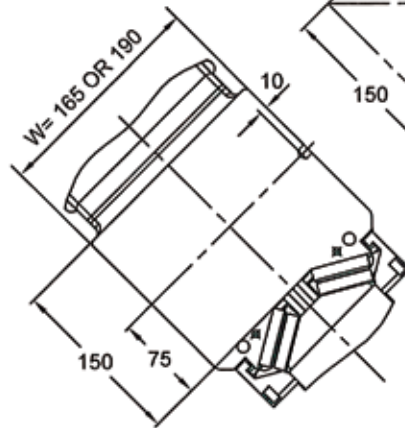
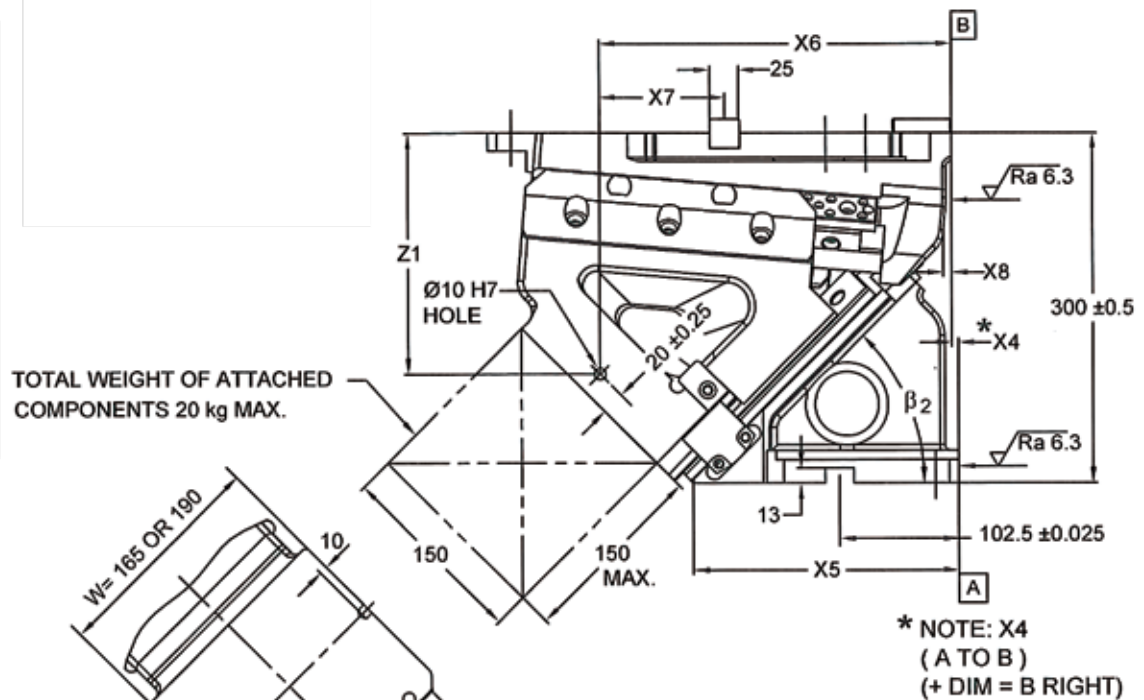
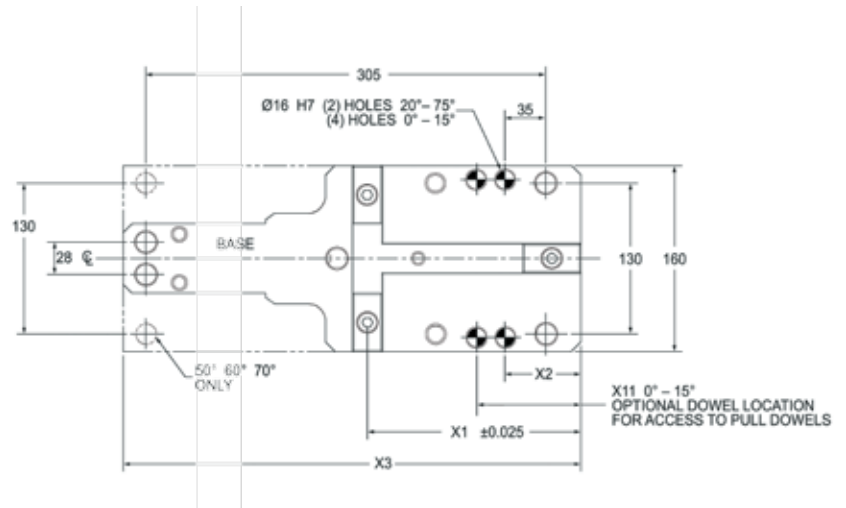
75mm SERIES (115 WIDE FACE) AERIAL CAM

75 SERIES AERIAL CAMS REPLACEMENT PARTS			
ITEM NUMBER	DESCRIPTION	ITEM NUMBER	DESCRIPTION
1	RH Positive Return Bracket	13	V-Driver
2	LH Positive Return Bracket	14	Guide Pin
3	Bronze Bushing	15	Spring Bracket
4	M8 x 1.25 x 16 SHCS	16	Lockout Spacer
5	M8 x 1.25 x 110 SHCS	17	Disk Plate
6	M10 x 1.5 x 25 SHCS	18	Body
7	M12 x 1.75 x 25 SHCS	19	Driver
8	M8 x 40mm LG Soc. Set Screw	20	Slide
9	M8 x 1.25 Jam Nut	21	12 x 50 x 200mm BRZ S/L WP
10	25 x 25 x 50mm NAAMS Key	22	12 x 50 x 150mm BRZ S/L WP
11	Bumper	23	12 x 170 x 110mm HRD Steel WP
12	Key 10 x 12.7 x 40mm		

CAM SPECIFICATIONS – 75 Series Cam		
Tooling Allowance		
Size & Weight Parameters	Protrusion 140mm	Weight 10kg
Rated Capacity - kN		
Cycles	300,000	1,000,000
Load Rating	214kN	187kN

RETURN SPRING KIT OPTIONS					
VENDOR	CAM # SUFFIX	SPRING KIT PART #	QTY	INITIAL LOAD (N)	FINAL LOAD (N)
Coil Spring	C	SKC070001	2	372	2620
Dadco 0° – 60°	D	SKC070014	2	4000	4933
Dadco 65° – 75°	D	CLNA0075-0010	2	4000	5785
Dadco Ultra 0° – 60°	U	CLNA0075-0023	2	6400	9106
Dadco Ultra 65° – 75°	U	CLNA0075-0024	2	6400	9674
Dadco Coil/Nitrogen 0° – 60°	CD	SKC070012	2	412	2824
Kaller 0° – 60°	K	SKC070005	2	4000	5381
Kaller 65° – 75°	K	CLNA0075-0009	2	4000	5785
Kaller Powerline 0° – 60°	P	CLNA0075-0014	2	6400	9106
Kaller Powerline 65° – 75°	P	CLNA0075-0016	2	6400	9674
Kaller Coil/Nitrogen 0° – 60°	CK	SKC070002	2	412	2824

125 – 150mm SERIES (165/190 WIDE FACE) AERIAL CAM



AUTOMOTIVE METRIC
NAAMS STANDARD

125 – 150mm SERIES (165/190 WIDE FACE) AERIAL CAM

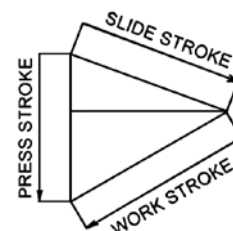
AERIAL CAM DIMENSIONS

CAM ANGLE	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	Z1
0	175.56	65	355	130	229.5	339.41	163.83	5	55	135	90	146.12
5	183.89	65	355	109.8	237	342.06	158.09	3	55	135	90	153.08
10	182.97	65	355	90.7	231	328.77	145.77	-10	55	135	95	172.55
15	193.16	65	355	78.7	231	331.03	137.79	-13	55	135	93	177.57
20	184.91	65	355	63.6	222	316.10	131.13	-25	55	135	N/A	179.59
25	176.98	65	355	35.3	227	299.40	122.35	-34	55	135	N/A	183.70
30	214.60	103	393	32.3	254	333.04	118.38	5	55	135	N/A	186.96
35	197.53	100	390	28.3	229	312.18	114.58	-8	55	135	N/A	191.78
40	200.49	108	398	17.7	223	311.71	111.14	5	55	135	N/A	197.56
45	194.82	108	398	-5.5	228	302.35	107.45	5	55	135	N/A	206.23
50	180.26	108	398	-22	224	288.16	107.81	5	55	135	N/A	211.66
55	152.06	108	398	-31.8	214	276.39	124.25	5	55	135	N/A	221.66
60	104.19	108	398	-54.2	214	260.95	120.68	5	55	135	N/A	230.81
65	200.49	108	375	-48.6	162	256.14	55.57	5	50	105	N/A	224.71
70	194.82	108	375	-58.7	157	244.53	49.63	5	50	105	N/A	230.61
75	180.26	108	365	-72.5	156	228.34	48.00	5	50	105	N/A	233.09

AERIAL CAM PART NUMBERS AND WEIGHTS

CAM PART NUMBER	WT. (kg)	CAM PART NUMBER	WT. (kg)	CAM ANGLE
NCA120006	80	NCA150006	81	0
NCA120506	78	NCA150506	80	5
NCA121006	80	NCA151006	82	10
NCA121506	82	NCA151506	84	15
NCA122006	81	NCA152006	86	20
NCA122506	80	NCA152506	82	25
NCA123006	82	NCA153006	84	30
NCA123506	81	NCA153506	83	35
NCA124006	82	NCA154006	84	40
NCA124506	84	NCA154506	86	45
NCA125006	87	NCA155006	89	50
NCA125506	85	NCA155506	87	55
NCA126006	92	NCA156006	93	60
NCA126506	83	NCA156506	85	65
NCA127006	83	NCA157006	86	70
NCA127506	86	NCA157506	88	75

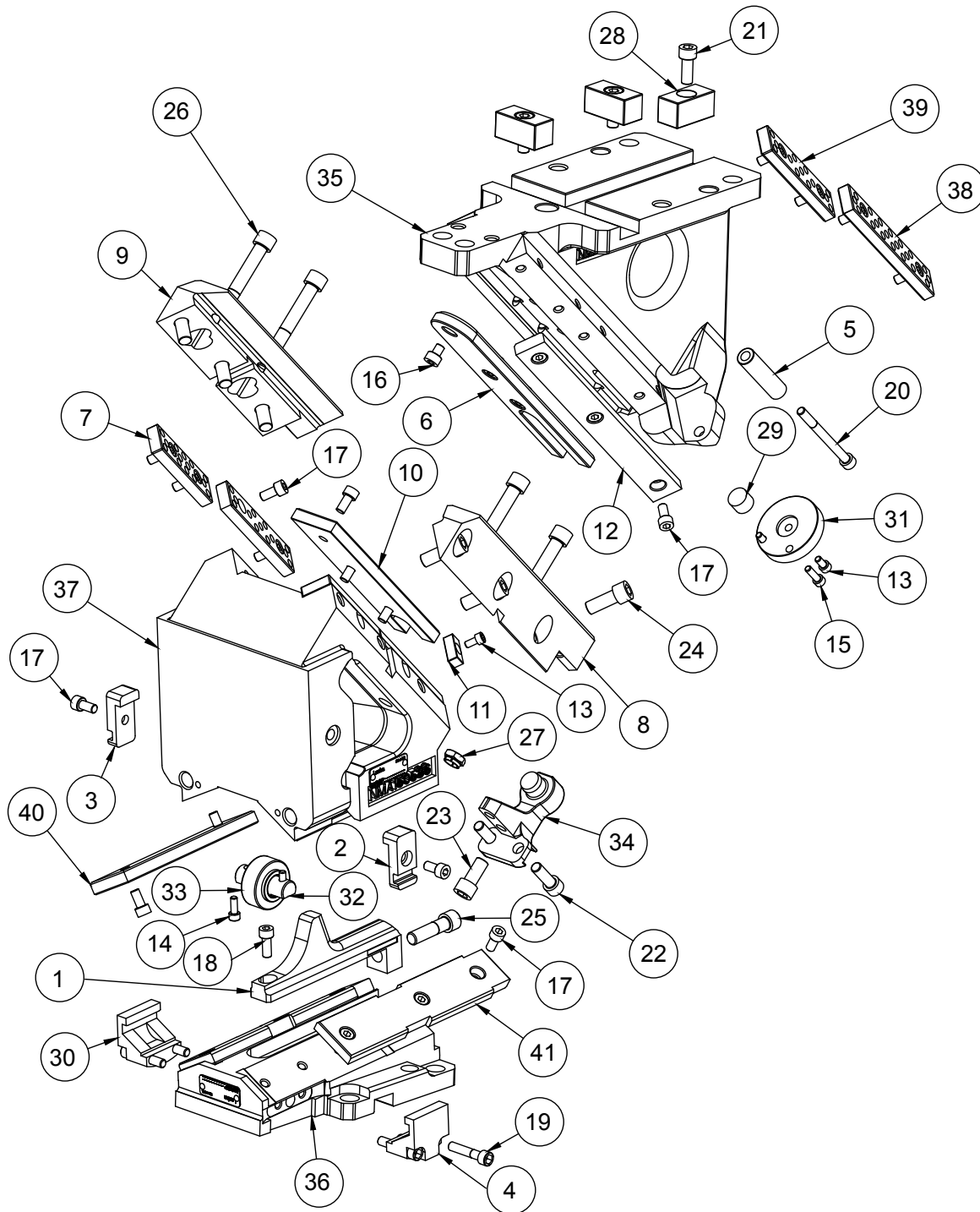
↑ ↑ Specify spring type



CAM DIAGRAM

CAM ANGLE	PRESS STROKE	WORK STROKE	SLIDE STROKE
0	46.0	38.6	60
5	46.1	42.6	60
10	46.7	46.7	60
15	47.6	50.9	60
20	48.9	55.3	60
25	50.7	60.0	60
30	53.1	65.1	60
35	56.1	70.8	60
40	60.0	77.1	60
45	65.0	84.5	60
50	71.5	93.3	60
55	90.6	104.2	60
60	103.8	120.0	60
65	50.2	51.2	22
70	62.2	64.1	22
75	82.2	85.0	22

125 – 150mm SERIES (165/190 WIDE FACE) AERIAL CAM COMPONENT PARTS



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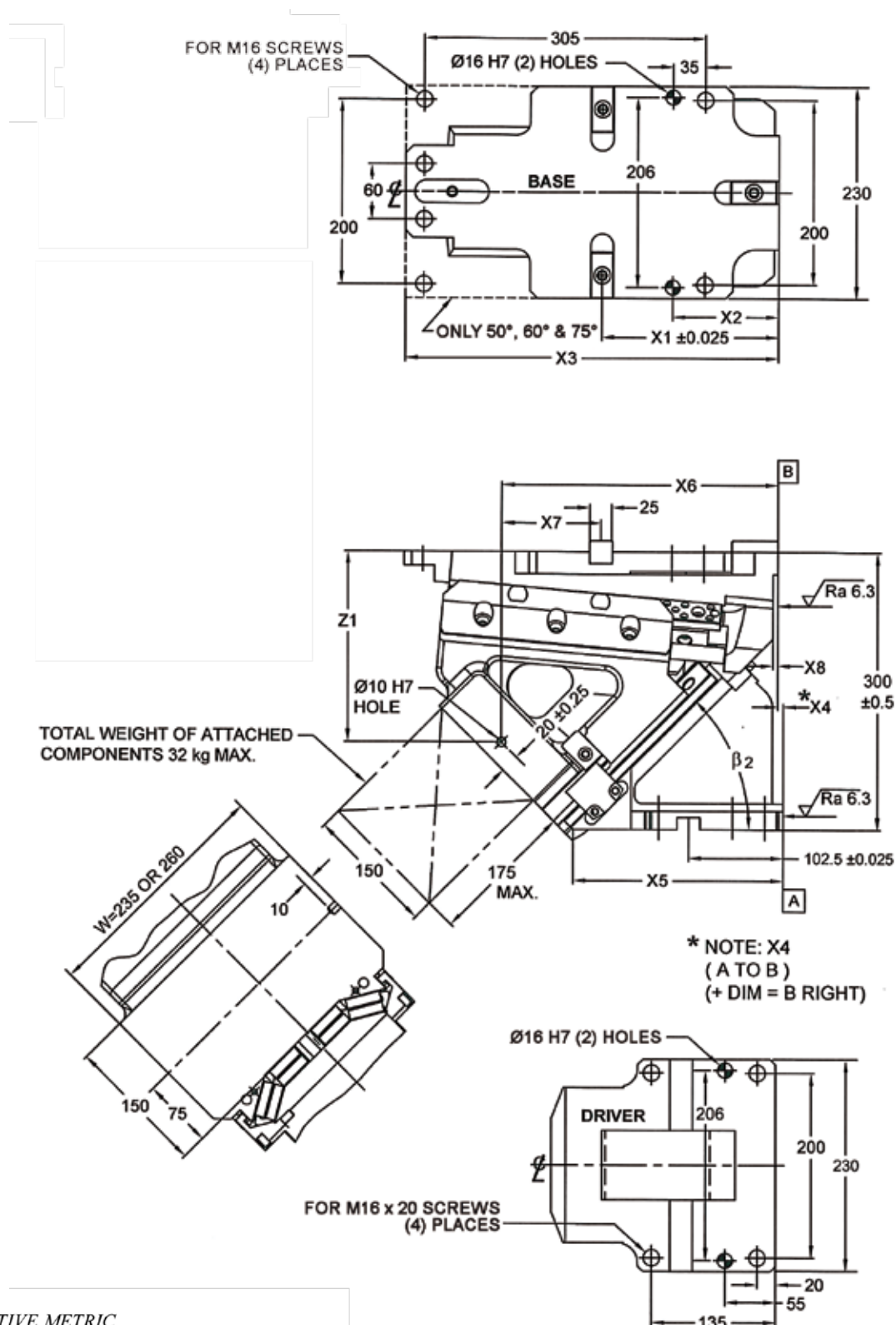
125 – 150mm SERIES (165/190 WIDE FACE) AERIAL CAM

125 – 150 SERIES AERIAL CAMS REPLACEMENT PARTS			
ITEM NUMBER	DESCRIPTION	ITEM NUMBER	DESCRIPTION
1	Accelerator Ramp (0° – 25° only)	22	M10 x 1.5 x 30 SHCS
2	RH Positive Return Guideway	23	M12 x 1.75 x 25 SHCS
3	LH Positive Return Guideway	24	M12 x 1.75 x 30 SHCS
4	RH Positive Return Bracket	25	M12 x 1.75 x 45 SHCS
5	Lockout Spacer	26	M12 x 1.75 x 90 SHCS
6	Steel Wear Plate	27	M12 x 1.75 Hex Locknut
7	Bronze S/L Wear Plate	28	25 x 25 x 50mm NAAMS Key
8	RH Keeper Plate	29	Bumper
9	LH Keeper Plate	30	LH Positive Return Bracket
10	Bronze S/L Wear Plate	31	Disk Plate
11	Key 10 x 12.7 x 40mm (0° and 5° only)	32	Roller Shaft
12	Steel Wear Plate	33	Roller (0° – 25° only)
13	M6 x 1.0 x 12 SHCS	34	Spring Return Bracket
14	M6 x 1.0 x 16 SHCS	35	Body (Adapter)
15	M6 x 1.0 x 20 SHCS	36	Driver
16	M8 x 1.25 x 10 SHCS	37	Slide
17	M8 x 1.25 x 16 SHCS	38	Bronze S/L Wear Plate
18	M8 x 1.25 x 20 SHCS	39	Bronze S/L Wear Plate
19	M8 x 1.25 x 40 SHCS	40	Bronze S/L Wear Plate
20	M8 x 1.25 x 90 SHCS	41	Steel Wear Plate
21	M10 x 1.5 x 25 SHCS		

CAM SPECIFICATIONS - 125/150 Series		
Tooling Allowance		
Size & Weight Parameters	Protrusion	Weight
	150mm	20kg
Rated Capacity - kN		
Cycles	300,000	1,000,000
Load Rating	352kN	308kN

RETURN SPRING KIT OPTIONS					
VENDOR	CAM # SUFFIX	SPRING KIT PART #	QTY	INITIAL LOAD (N)	FINAL LOAD (N)
Coil Spring	C	SPG243811CAM	1	265	1559
Dadco 0° – 60°	D	90.3.0300.080	1	3020	4010
Dadco 65° – 75°	D	90.3.0300.025	1	3020	4010
Dadco Ultra 0° – 60°	U	CLNA0125-0025	1	4619	5932
Dadco Ultra 65° – 75°	U	CLNA0125-0031	1	4700	6355
Dadco Coil/Nitrogen 0° – 60°	CD	SKC120012	1	432	3540
Kaller 0° – 60°	K	TU250-080Y	1	2650	3240
Kaller 65° – 75°	K	TU250-025Y	1	2650	3084
Kaller Powerline 0° – 60°	P	CLNA0125-0016	1	4700	6355
Kaller Powerline 65° – 75°	P	CLNA0125-0026	1	4700	5883
Kaller Coil/Nitrogen 0° – 60°	CK	SKC120002	1	432	3403

175 – 200mm SERIES (235/260 WIDE FACE) AERIAL CAM



AUTOMOTIVE METRIC
NAAMS STANDARD

175 – 200mm SERIES (235/260 WIDE FACE) AERIAL CAM

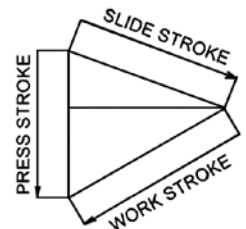
AERIAL CAM DIMENSIONS

CAM ANGLE	X1	X2	X3	X4	X5	X6	X7	X8	Z1
0	175.50	65	355	119.5	230	336.45	160.95	5.0	146.15
5	183.90	65	355	109.6	237	339.10	155.20	3.0	152.86
10	177.20	65	355	86.7	231	323.79	146.59	-17.2	173.96
15	193.20	65	355	84.6	231	331.05	137.85	-11.0	177.61
20	184.90	65	355	63.6	222	316.15	131.25	-25.0	179.67
25	177.00	65	355	34.1	226	299.44	122.44	-36.0	183.80
30	214.65	103	393	35.3	254	333.07	118.42	5.0	187.05
35	202.50	100	390	32.4	229	317.21	114.71	-4.0	191.86
40	202.50	110	400	22.1	223	313.72	111.22	5.0	197.64
45	191.90	115	405	-6.4	228	299.36	107.46	5.0	206.31
50	180.27	108	398	-20.1	224	288.15	107.88	5.0	211.75
55	148.89	115	405	-33.3	214	273.19	124.30	5.0	221.75
60	140.20	108	398	-51.9	213	260.96	120.76	5.0	230.86
65	202.50	110	375	-79.6	194	253.14	50.64	5.0	217.33
70	191.90	115	380	-100.8	194	237.54	45.64	5.0	226.81
75	180.27	108	368	-108.2	183	224.70	44.43	5.0	234.96

AERIAL CAM PART NUMBERS AND WEIGHTS

CAM PART NUMBER	WT. (kg)	CAM PART NUMBER	WT. (kg)	CAM ANGLE
NCA170006_	113	NCA200006_	115	0
NCA170506_	112	NCA200506_	114	5
NCA171006_	112	NCA201006_	112	10
NCA171506_	114	NCA201506_	115	15
NCA172006_	113	NCA202006_	114	20
NCA172506_	111	NCA202506_	112	25
NCA173006_	114	NCA203006_	115	30
NCA173506_	112	NCA203506_	114	35
NCA174006_	115	NCA204006_	117	40
NCA174506_	117	NCA204506_	118	45
NCA175006_	120	NCA205006_	122	50
NCA175506_	118	NCA205506_	119	55
NCA176006_	124	NCA206006_	126	60
NCA176506_	114	NCA206506_	115	65
NCA177006_	115	NCA207006_	117	70
NCA177506_	120	NCA207506_	121	75

↑ ↑ Specify spring type

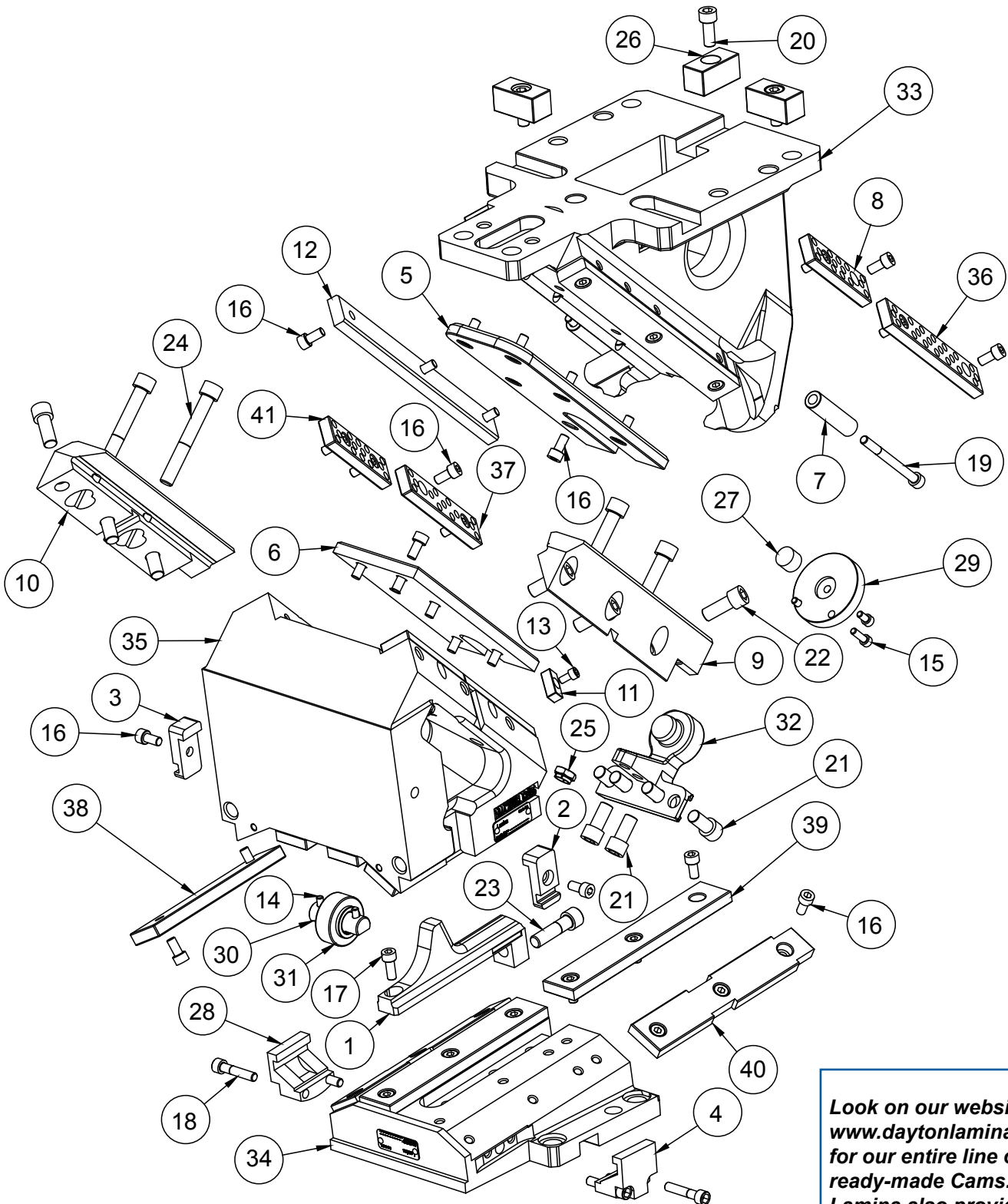


CAM DIAGRAM

CAM ANGLE	PRESS STROKE	WORK STROKE	SLIDE STROKE
0	46.0	38.6	60
5	46.1	42.6	60
10	46.7	46.7	60
15	47.6	50.9	60
20	48.9	55.3	60
25	50.7	60.0	60
30	53.1	65.1	60
35	56.1	70.8	60
40	60.0	77.1	60
45	65.0	84.5	60
50	71.5	93.3	60
55	90.6	104.2	60
60	103.8	120.0	60
65	50.2	51.2	22
70	62.2	64.1	22
75	82.2	85.0	22

175 – 200mm SERIES (235/260 WIDE FACE) AERIAL CAM

COMPONENT PARTS



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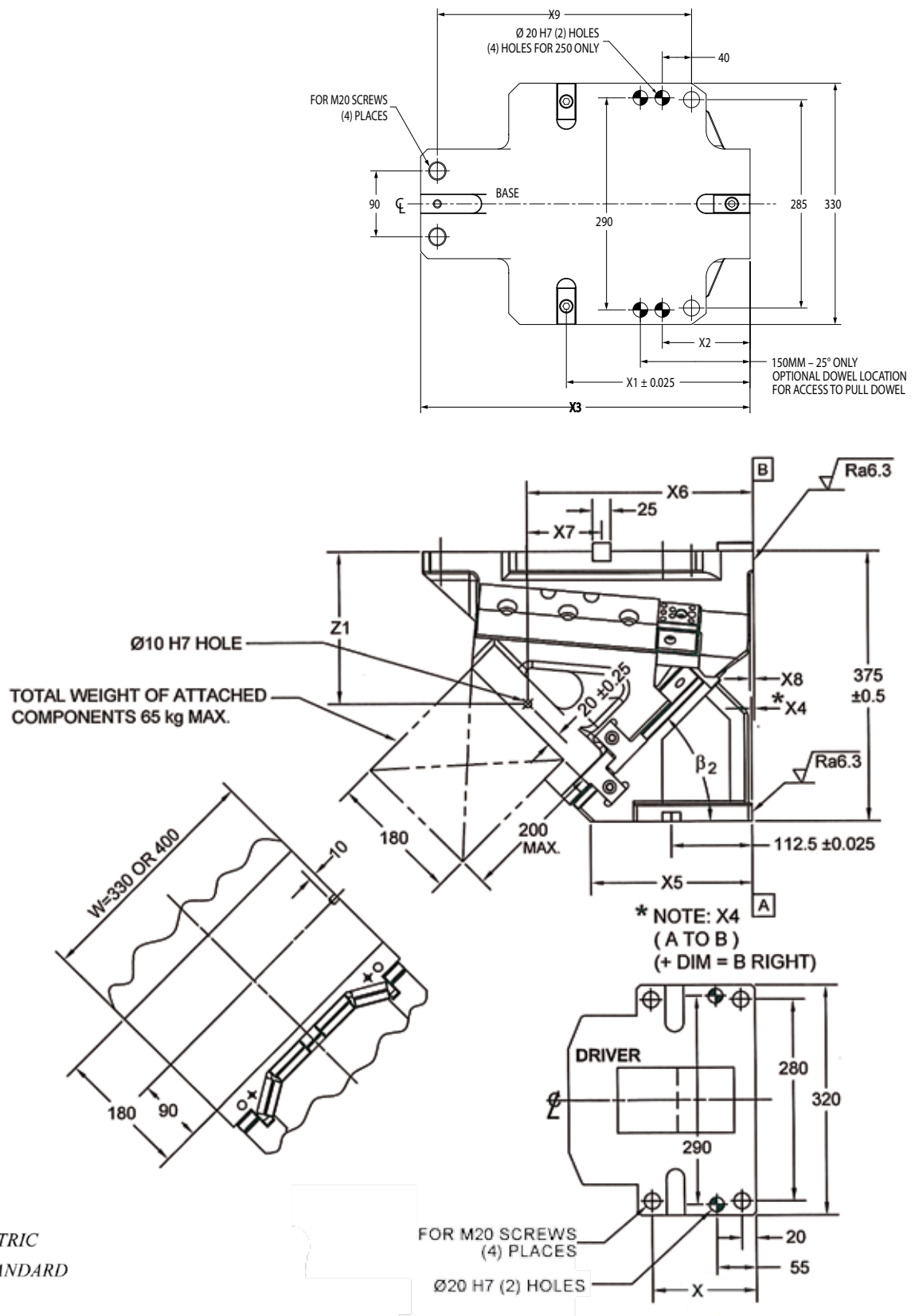
175 – 200mm SERIES (235/260 WIDE FACE) AERIAL CAM

175 – 200 SERIES AERIAL CAMS REPLACEMENT PARTS			
ITEM NUMBER	DESCRIPTION	ITEM NUMBER	DESCRIPTION
1	Accelerator Ramp (0° – 25° only)	22	M12 x 1.75 x 30 SHCS
2	Positive Return Guideway RH	23	M12 x 1.75 x 45 SHCS
3	Positive Return Guideway LH	24	M12 x 1.75 x 90 SHCS
4	Positive Return Bracket RH	25	M12 x 1.75 Hex Locknut
5	Steel Wear Plate	26	25 x 25 x 50mm NAAMS Key
6	Bronze S/L Wear Plate	27	Bumper
7	Lockout Spacer	28	Positive Return Bracket LH
8	Bronze S/L Wear Plate	29	Disk Plate
9	Keeper Plate RH	30	Roller Shaft (0° – 25° only)
10	Keeper Plate LH	31	Roller (0° – 25° only)
11	Key	32	Spring Return Bracket
12	Steel Wear Plate	33	Body (Adapter)
13	M6 x 1.0 x 12 SHCS	34	Driver
14	M6 x 1.0 x 16 SHCS	35	Slide
15	M6 x 1.0 x 20 SHCS	36	Bronze S/L Wear Plate
16	M8 x 1.25 x 16 SHCS	37	Bronze S/L Wear Plate
17	M8 x 1.25 x 20 SHCS	38	Bronze S/L Wear Plate
18	M8 x 1.25 x 40 SHCS	39	Steel Wear Plate
19	M8 x 1.25 x 90 SHCS	40	Steel Wear Plate
20	M10 x 1.5 x 25 SHCS	41	Bronze S/L Wear Plate
21	M12 x 1.75 x 25 SHCS		

CAM SPECIFICATIONS - 175/200 Series		
Tooling Allowance		
Size & Weight Parameters	Protrusion	Weight
	175mm	32kg
Rated Capacity - kN		
Cycles	300,000	1,000,000
Load Rating	484kN	424kN

RETURN SPRING KIT OPTIONS					
VENDOR	CAM # SUFFIX	SPRING KIT PART #	QTY	INITIAL LOAD (N)	FINAL LOAD (N)
Coil Spring	C	SPG323911CAM	1	402	2442
Dadco 0° – 60°	D	SKC170013	1	4710	5810
Dadco 65° – 75°	D	90.10.00500.025	1	4710	5516
Dadco Ultra 0° – 60°	U	CLNA0175-0030	1	7360	10140
Dadco Ultra 65° – 75°	U	CLNA0175-0031	1	7360	9336
Dadco Coil/Nitrogen 0° – 60°	CD	SKC170012	1	503	6903
Kaller 0° – 60°	K	SKC170003	1	4700	6056
Kaller 65° – 75°	K	TU500-25Y	1	4700	5597
Kaller Powerline 0° – 60°	P	CLNA0175-0020	1	7400	10386
Kaller Powerline 65° – 75°	P	CLNA0175-0028	1	7400	9511
Kaller Coil/Nitrogen 0° – 60°	CK	SKC170002	1	503	4540

250 – 300mm (330/400 WIDE FACE) SERIES AERIAL CAM



AUTOMOTIVE METRIC
NAAMS STANDARD

250 – 300mm (330/400 WIDE FACE) SERIES AERIAL CAM

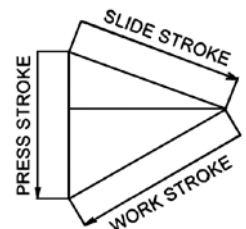
AERIAL CAM DIMENSIONS

CAM ANGLE	X	X1	X2	X3	X4	X5	X6	X7	X8	X9	Z1
0	215	214.17	60	435	194.0	250	387.67	173.50	20	390	176.18
5	215	213.96	60	435	170.7	253	376.95	162.85	20	390	183.68
10	215	207.60	60	433	134.3	245	359.65	151.91	5	390	189.77
15	145	200.87	60	414	102.9	245	342.44	141.47	-20	370	192.37
20	145	198.07	60	414	68.7	248	327.76	129.54	-25	370	199.33
25	145	251.18	120	474	97.3	250	370.49	119.17	5	370	201.53
30	145	241.90	120	474	73.2	243	353.73	111.80	5	370	204.11
35	145	231.00	125	479	61.9	225	340.97	109.93	5	370	202.87
40	145	231.00	125	455	38.7	225	326.84	95.70	10	345	219.79
45	145	211.37	126	460	3.9	225	315.41	103.90	5	349	211.17
50	145	212.80	135	455	-3.7	220	305.23	92.28	5	335	235.00
55	145	246.77	126	460	-15.6	220	335.36	70.43	5	349	265.86
60	145	248.65	132	452	-36.2	220	317.33	68.53	2	335	276.22
65	145	231.00	125	425	-81.2	215	267.93	36.77	10	315	291.15
70	145	231.00	125	425	-108.0	215	243.43	12.28	5	315	290.82
75	145	231.00	125	425	-139.5	215	218.45	12.71	4	315	301.74

AERIAL CAM PART NUMBERS AND WEIGHTS

CAM PART NUMBER	WT. (kg)	CAM PART NUMBER	WT. (kg)	CAM ANGLE
NCA250006	218	NCA300006	218	0
NCA250506	210	NCA300506	210	5
NCA251006	206	NCA301006	206	10
NCA251506	199	NCA301506	199	15
NCA252006	199	NCA302006	199	20
NCA252506	200	NCA302506	200	25
NCA253006	198	NCA303006	198	30
NCA253506	197	NCA303506	197	35
NCA254006	199	NCA304006	199	40
NCA254506	201	NCA304506	201	45
NCA255006	218	NCA305006	218	50
NCA255506	221	NCA305506	221	55
NCA256006	223	NCA306006	223	60
NCA256506	231	NCA306506	231	65
NCA257006	234	NCA307006	234	70
NCA257506	238	NCA307506	238	75

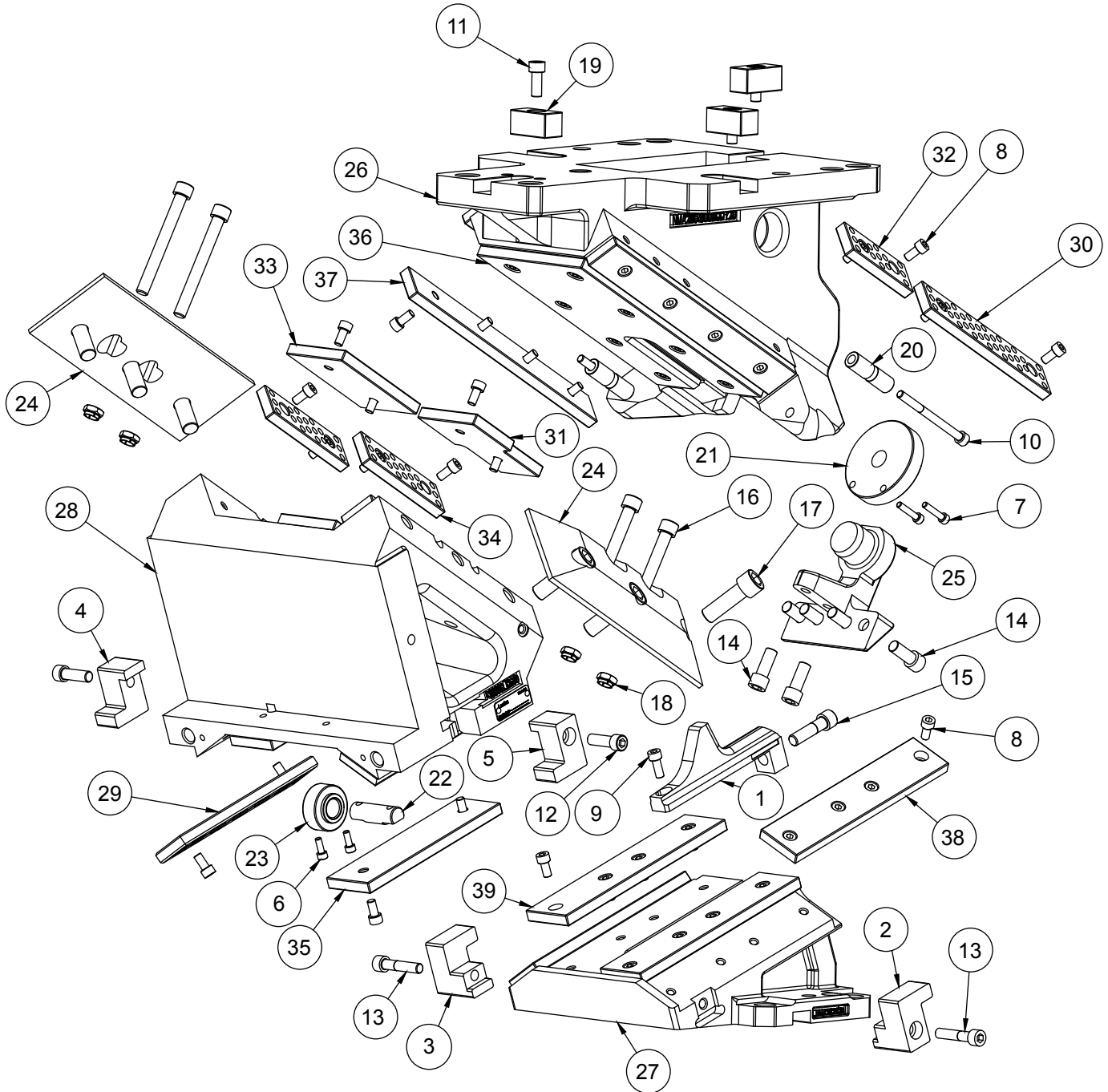
↑ ↑ Specify spring type



CAM DIAGRAM

CAM ANGLE	PRESS STROKE	WORK STROKE	SLIDE STROKE
0	46.0	38.6	60
5	46.1	42.6	60
10	46.7	46.7	60
15	47.6	50.9	60
20	48.9	55.3	60
25	50.7	60.0	60
30	53.1	65.1	60
35	56.1	70.8	60
40	60.0	77.1	60
45	65.0	84.5	60
50	71.5	93.3	60
55	90.6	104.2	60
60	103.8	120.0	60
65	50.2	51.2	22
70	62.2	64.1	22
75	82.2	85.0	22

250 – 300mm (330/400 WIDE FACE) SERIES AERIAL CAM COMPONENT PARTS



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250 – 300mm (330/400 WIDE FACE) SERIES AERIAL CAM

250 – 300 SERIES AERIAL CAMS REPLACEMENT PARTS			
ITEM NUMBER	DESCRIPTION	ITEM NUMBER	DESCRIPTION
1	Accelerator Ramp (0° – 25° only)	21	Disk Plate
2	Driver Return Bracket RH	22	Roller Shaft (0° – 25° only)
3	Driver Return Bracket LH	23	Roller (0° – 25° only)
4	Positive Return Key – Slide LH	24	Keeper Plate
5	Positive Return Key – Slide RH	25	Spring Return Bracket
6	M6 x 1.0 x 16 SHCS	26	Body (Adapter)
7	M6 x 1.0 x 30 SHCS	27	Driver
8	M8 x 1.25 x 16 SHCS	28	Slide
9	M8 x 1.25 x 20 SHCS	29	Bronze S/L Wear Plate
10	M8 x 1.25 x 100 SHCS	30	Bronze S/L Wear Plate
11	M10 x 1.5 x 25 SHCS	31	Bronze S/L Wear Plate
12	M10 x 1.5 x 35 SHCS	32	Bronze S/L Wear Plate
13	M10 x 1.5 x 50 SHCS	33	Bronze S/L Wear Plate
14	M12 x 1.75 x 30 SHCS	34	Bronze S/L Wear Plate
15	M12 x 1.75 x 45 SHCS	35	Bronze S/L Wear Plate
16	M12 x 1.75 x 110 SHCS	36	Steel Wear Plate
17	M16 x 2.0 x 50 SHCS	37	Steel Wear Plate
18	M12 x 1.75 Hex Locknut	38	Steel Wear Plate
19	25 x 25 x 50mm NAAMS Key	39	Steel Wear Plate
20	Lockout Spacer		

CAM SPECIFICATIONS - 250/300 Series		
Tooling Allowance		
Size & Weight Parameters	Protrusion	Weight
	200mm	65kg
Rated Capacity - kN		
Cycles	300,000	1,000,000
Load Rating	651kN	558kN

RETURN SPRING KIT OPTIONS					
VENDOR	CAM # SUFFIX	SPRING KIT PART #	QTY	INITIAL LOAD (N)	FINAL LOAD (N)
Coil Spring	C	SPG404621CAM	1	471	4462
Dadco 0° – 60°	D	SKC250013	1	7400	10386
Dadco 65° – 75°	D	CLNA0300-0016	1	7400	9511
Dadco Ultra 0° – 60°	U	CLNA0300-0017	1	9240	13526
Dadco Ultra 65° – 75°	U	CLNA0300-0018	1	9240	11505
Dadco Coil/Nitrogen 0° – 60°	CD	SKC250012	1	1108	7139
Kaller 0° – 60°	K	SKC250003	1	7400	10386
Kaller 65° – 75°	K	CLNA0300-0013	1	7400	9511
Kaller Powerline 0° – 60°	P	CLNA0250-0009	1	9200	12384
Kaller Powerline 65° – 75°	P	CLNA0250-0015	1	9200	11478
Kaller Coil/Nitrogen 0° – 60°	CK	SKC250002	1	1108	7139

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