



 **LamCam™ - Diemount Cams**

www.anchorlamina.com
Check our website for the latest
technical information.

TABLE OF CONTENTS

Introduction	2
General Information	3
50 Series Cams	4
75 Series Cams	8
125-150 Series Cams	12
175-200 Series Cams	16
250-300 Series Cams	20
Installation Instructions	24

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

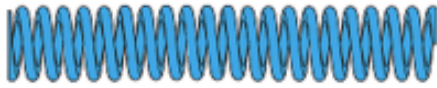
Lamina has long been known for expertise in producing precision products and has applied that knowledge into the design and production of cams with truly interchangeable parts. LamCams™ maintain consistency throughout standard lines available from bump cams to Aerial and Diemount cams to large Modular Styles.

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**
- **Three Return Spring Kit options are available: mechanical ISO spring, combination mechanical/nitrogen springs and nitrogen spring**
- **Pentahedron design ensures smooth and stable slide movement on 125 through 300 Series Cams**
- **Dual external positive return system; Urethane bumper cushion on slide return**
- **Mounting/locating provisions include both square keys and dowel holes**
- **Meets or exceeds all of "NAAMS" cam requirements**
- **Lock-out kit installed, ready for cam installation and set up**
- **Safety back-up provisions for retaining keeper plates**
- **Improved, super-duty accelerator system standard on 0° through 30° angles**
- **Optional hydraulic shock absorber available**

SLIDE RETURN SYSTEM OPTIONS



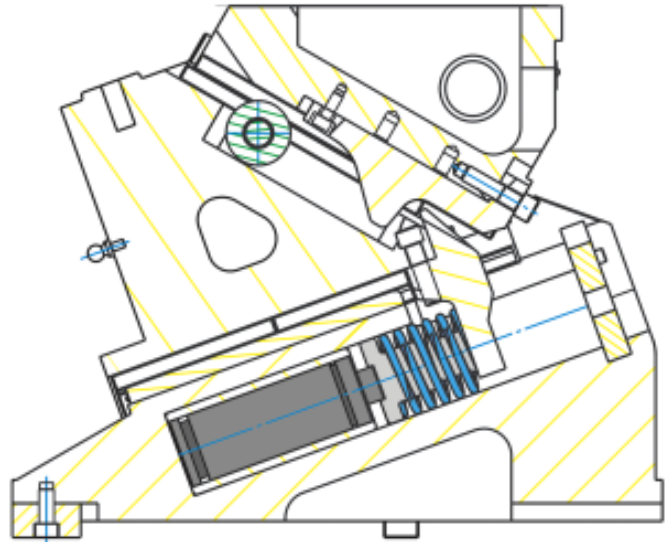
Mechanical Spring



Mechanical & Nitrogen Spring*
(Recommended)



Nitrogen Spring



Recognizing that different cam applications have different requirements, Lamina offers three Slide Return System 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 contact forces low, while providing high final loads from the nitrogen spring for 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).

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

The benefit of using the Combination System is two-fold:

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

NAAMS Diemount

NCD300004

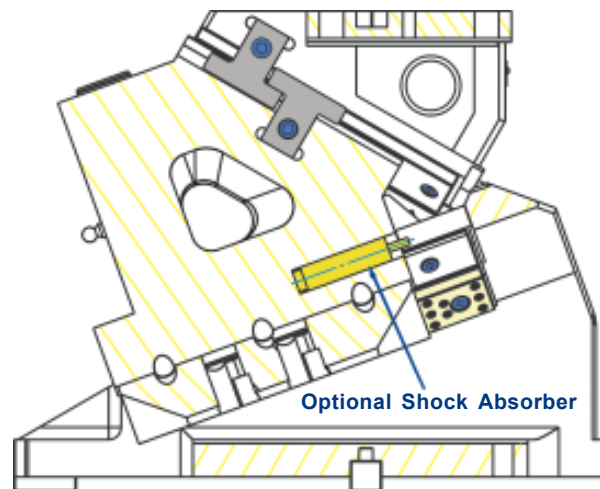
Cam Family Face Width (Series) Generation
Work Angle (degrees)

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 35°) to ensure a gentle return of the slide to its home position.



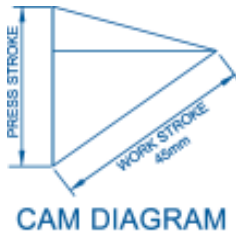
Shock Absorber with
M6x12 Set Screw



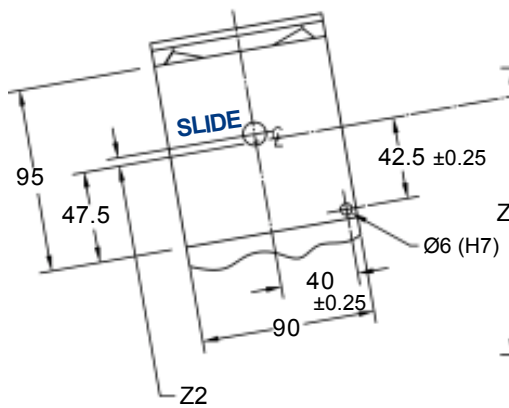
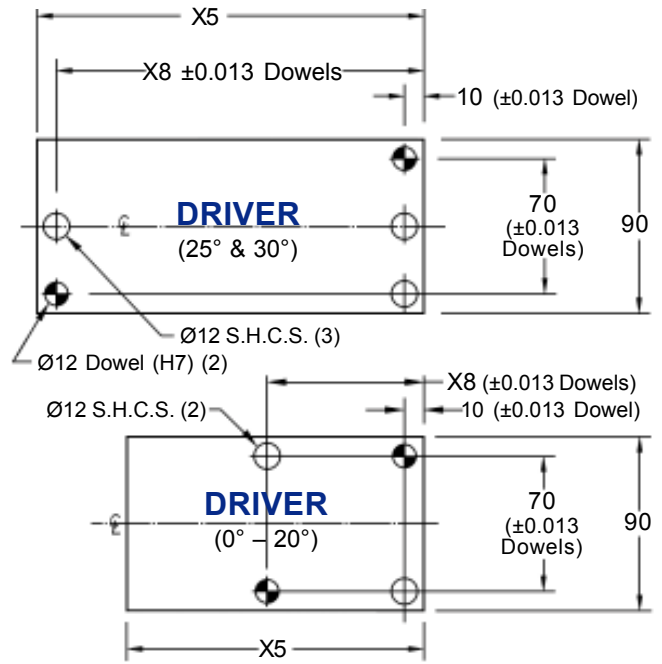
Optional Shock Absorber

DIEMOUNT CAM 50 Series

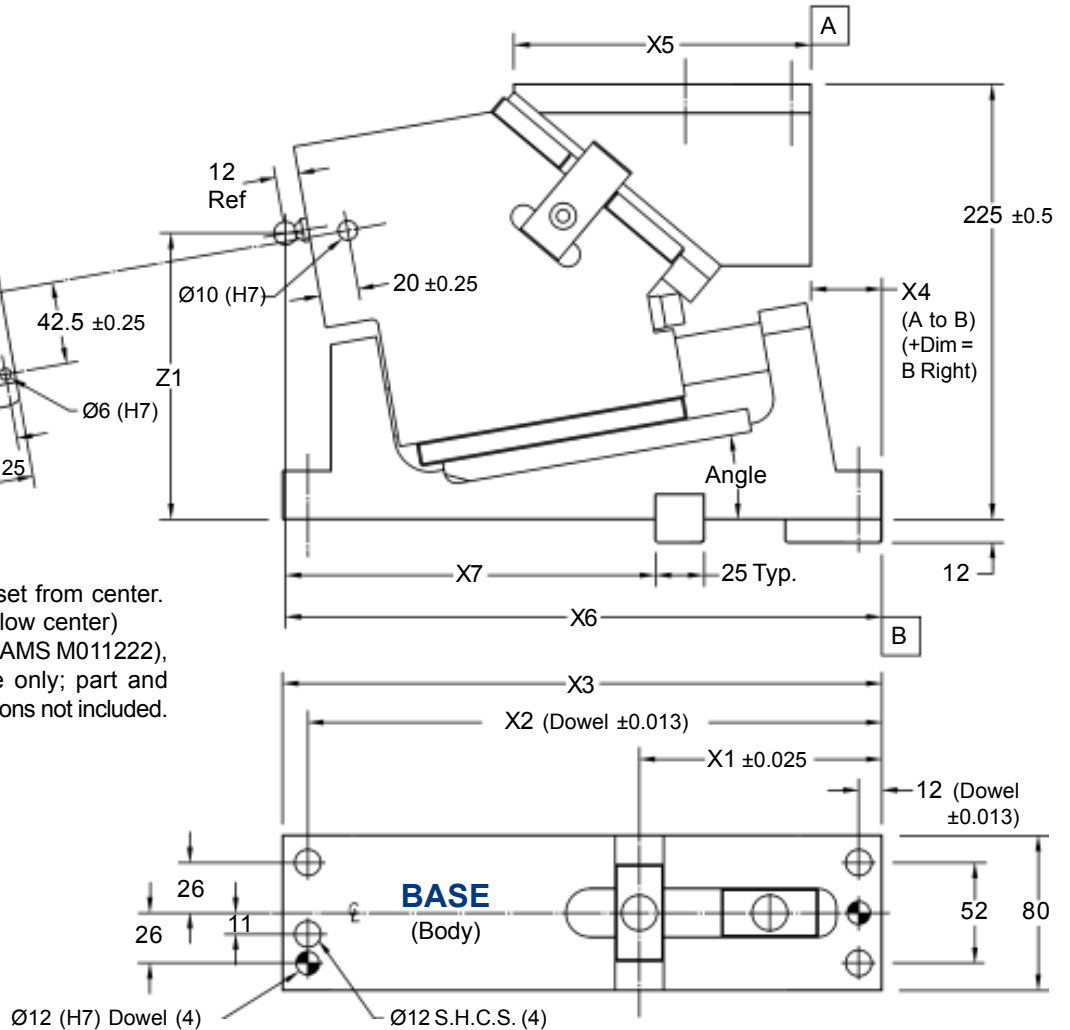
AUTOMOTIVE METRIC
NAAMS STANDARD



STROKE		
ANGLE	PRESS STROKE	WORK STROKE
0	53.6	45
5	48.8	45
10	45.0	45
15	42.1	45
20	39.8	45
25	38.0	45
30	36.7	45



Tooling Ball offset from center.
 (-Dim = T.B. below center)
 NOTE: T.B. (NAAMS M011222),
 is for reference only; part and
 mounting provisions not included.



DIE MOUNT CAM PART NUMBERS & WEIGHTS										
50 SERIES										
PART NUMBERS			WEIGHT		A N G L E	PART NUMBERS			WEIGHT	
With Mechanical Spring Kit	With Kaller Gas Spring Kit	With Dadco Gas Spring Kit	kg	Lbs.		With Mechanical Spring and Kaller Gas Spring Kit	With Mechanical Spring & Dadco Gas Spring Kit	With Double steel wearplates & Dadco Gas Spring Kit	kg	Lbs.
NCD050004M	NCD050004K	NCD050004D	36	79	0	NCD050004MK	NCD050004MD	NCD050044	36	79
NCD050504M	NCD050504K	NCD050504D	37	81	5	NCD050504MK	NCD050504MD	NCD050544	37	81
NCD051004M	NCD051004K	NCD051004D	37	81	10	NCD051004MK	NCD051004MD	NCD051044	37	81
NCD051504M	NCD051504K	NCD051504D	38	83	15	NCD051504MK	NCD051504MD	NCD051544	38	83
NCD052004M	NCD052004K	NCD052004D	37	81	20	NCD052004MK	NCD052004MD	NCD052044	37	81
NCD052504M	NCD052504K	NCD052504D	37	81	25	NCD052504MK	NCD052504MD	NCD052544	37	81
NCD053004M	NCD053004K	NCD053004D	36	79	30	NCD053004MK	NCD053004MD	NCD053044	36	79

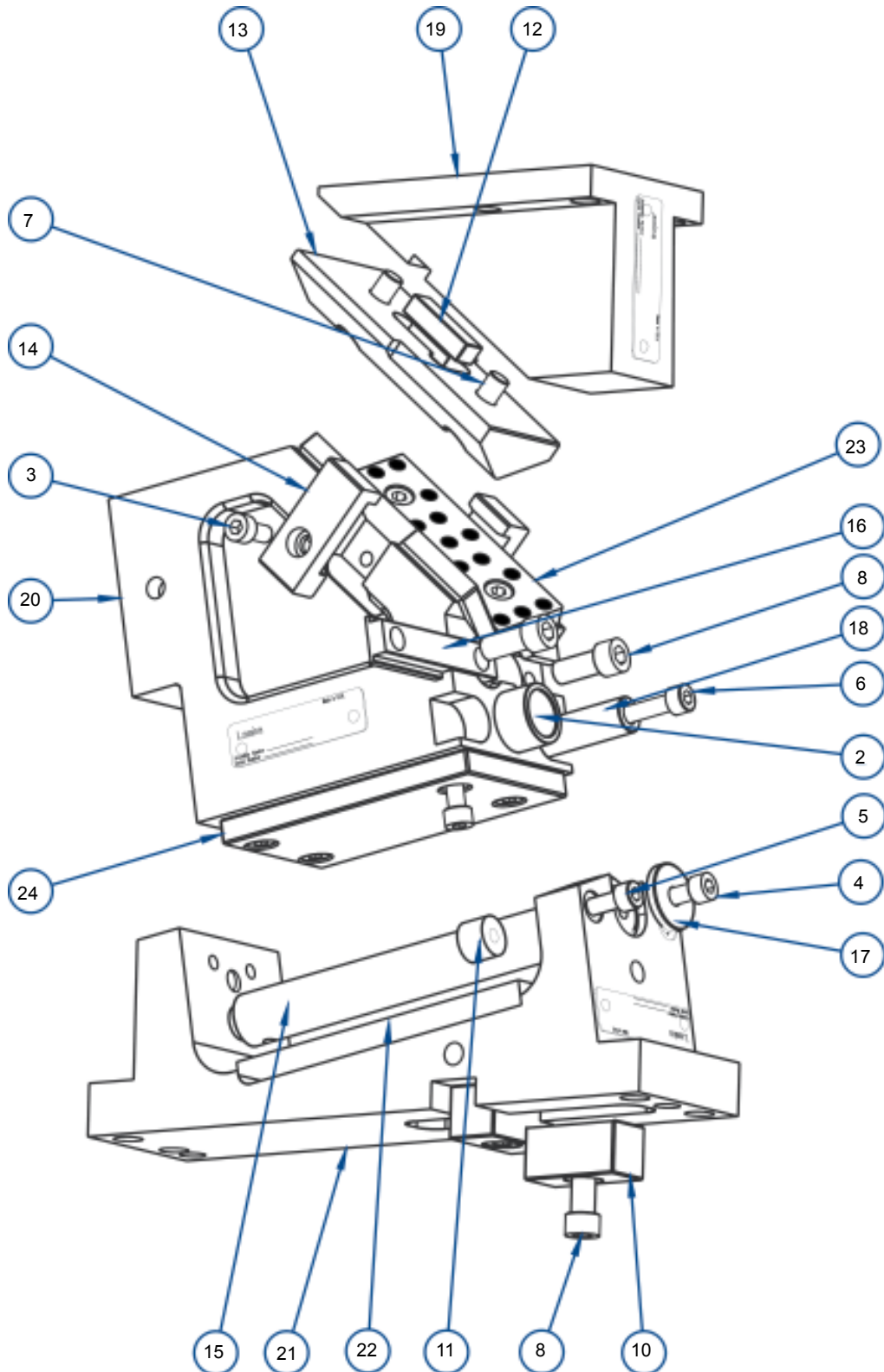
DIE MOUNT CAM DIMENSIONS										
50 SERIES										
WORK ANGLE	X1 Cl of Key	X2	X3 Ref.	X4 Base to Driver Datum	X5	X6	X7	X8	Z1 NAAMS A	Z2 Ref.
0	100.5	288	300	21.9	130.9	283.0	170.0	50.0	160.0	-6.6
5	109.9	298	310	39.4	141.9	302.4	180.0	50.0	150.0	-1.8
10	104.64	297	310	36.8	153.5	307.1	190.0	65.0	140.0	-3.9
15	110.53	307	320	54.3	160.0	323.0	200.0	85.0	135.0	2.3
20	96.74	297	310	55.0	160.0	319.2	210.0	81.0	130.0	4.6
25	100.91	297	310	63.3	200.0	323.4	210.0	190.0	115.0	2.2
30	104.89	288	300	63.7	200.0	317.4	200.0	190.0	105.0	-2.0

Take a look at our extensive line of LamCam™ products:

- Aerial NAAMS Cams
- Diemount NAAMS Cams
- Aerial Modular Cams
- Diemount Modular Cams
- 50mm SlimCams®
- Bump Cams

This apparatus is covered by U.S. Patent No. 5,885,521, European Patent No. 1097010 in Austria, Belgium, Germany, Spain, France, United Kingdom, Ireland and Italy; other patents pending.

COMPONENT PARTS for 50 Series Diemount Cams



Refer to 50 Series Specifications Table for Return Spring Options. See page 3 for more information.

COMPONENT PARTS FOR 50 SERIES DIEMOUNT CAMS

Item No.	Qty	Description	PART NUMBER	Item No.	Qty	Description	PART NUMBER	
			NCDXXXX04				NCDXXXX44*	
2	2	Bushing LIner	BLM025050	15	1	Pin	NCM050011	
3	12	Soc. Hd. Cap Screw M8x1.25x16	F010809	16	1	Spring Bracket	NCM050012	
4	1	Soc. Hd. Cap Screw M12x1.75x25	F011211	17	1	Disk Plate	NCM150013	
5	1	Soc. Hd. Cap Screw M8x1.25x30	F010812	18	1	Lockout Spacer	NCM050015	
6	1	Soc. Hd. Cap Screw M8x1.25x100	F010824	19	1	Driver (See Note 1)	NMA05@@24	
7	2	Soc. Hd. Cap Screw M10x1.5x20	F011010	20	1	Slide (0° - 30°)	NMD055034	
8	4	Soc. Hd. Cap Screw M10x1.5x25	F011011	21	1	Base (See Note 1)	NMD05@@14	
10	2	NAAMS Key 25x25x50mm	M082505	22	1	Bronze S/L Wearplate 12x80x160mm	WCC120012	
11	1	Rubber Bumper	MSC100037	22	1	Steel S/L Wearplate 12x80x160mm		WCT120012
12	1	Key	NCM050003	23	2	Bronze S/L Wearplate 12x40x122.5mm	WCC120014	
13	1	V-Block	NCM050005	23	2	Steel S/L Wearplate 12x40x122.5mm		WCT120014
14	2	Positive Return Bracket	NCM050010	24	1	Steel Wearplate 12x80x145mm	WCS120011	

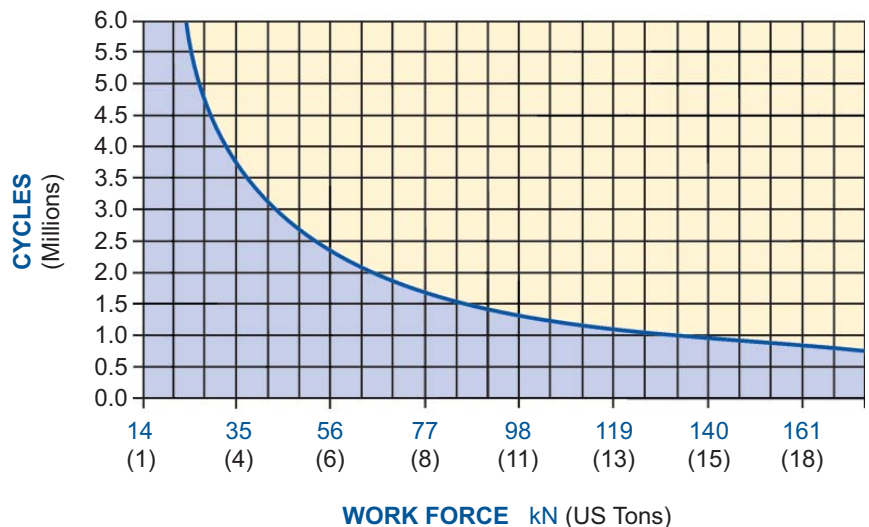
Note 1: For@@ in part numbers insert (50 for 0°); (45 for 5°); (40 for 10°); (35 for 15°); (30 for 20°); (25 for 25°) and (20 for 30°).

RETURN SPRING KIT OPTIONS		50 SERIES SPECIFICATIONS					
Recognizing that different cam applications have different requirements, Lamina offers three Return Spring Kit Options:		Spring Kit Option	Spring Kit Part Number (2 Required)	Pre-Load		Final Load	
				kgf	lbf	kgf	lbf
1	Mechanical – Employs a conventional ISO Die Spring – used in cam applications where additional stripping force is not required.	Mechanical	SKC050001	34	75	129	284
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 pre-load, keeping the forces low, while providing high final loads from the nitrogen spring for stripping.	Combination – Mech./Nitrogen (Kaller) Precharge to 65.5 Bar (950 PSI)	SKC050002	45	98.2	195	430
		Combination – Mech./Nitrogen (Dadco) Precharge to 65.5 Bar (950 PSI)	SKC050012	*45	*98.2	195	430
		Nitrogen (Kaller) Precharge to 48 Bar (690 PSI)	SKC050015	110	242	144	317
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).	Nitrogen (Dadco) Precharge to 44 Bar (639 PSI)	SKC050014	102	224	138	305
		Tooling Allowance	Protrusion - mm	125			
			Weight	7 kg (15.4 lbs)			
		**Rated Capacity	87.3 kN : 8.4 M-Tons : 9.3 US Tons				

* Actual "preload" = 0, this force is at initial contact with nitrogen spring.

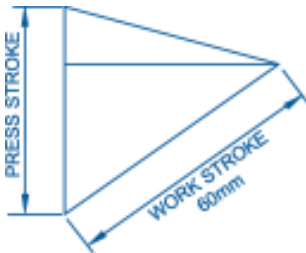
** @1.6 million cycles and 0.04mm wear.

50 Series PERFORMANCE GRAPH
(Based on .04mm wear on bronze)



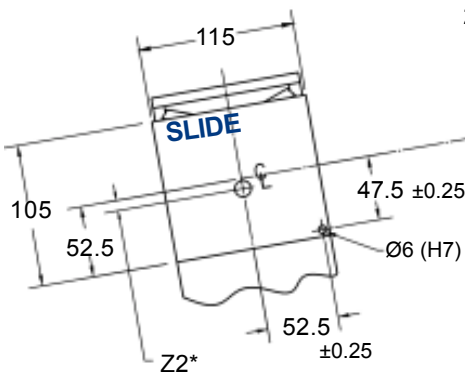
DIEMOUNT CAM 75 Series

AUTOMOTIVE METRIC
NAAMS STANDARD

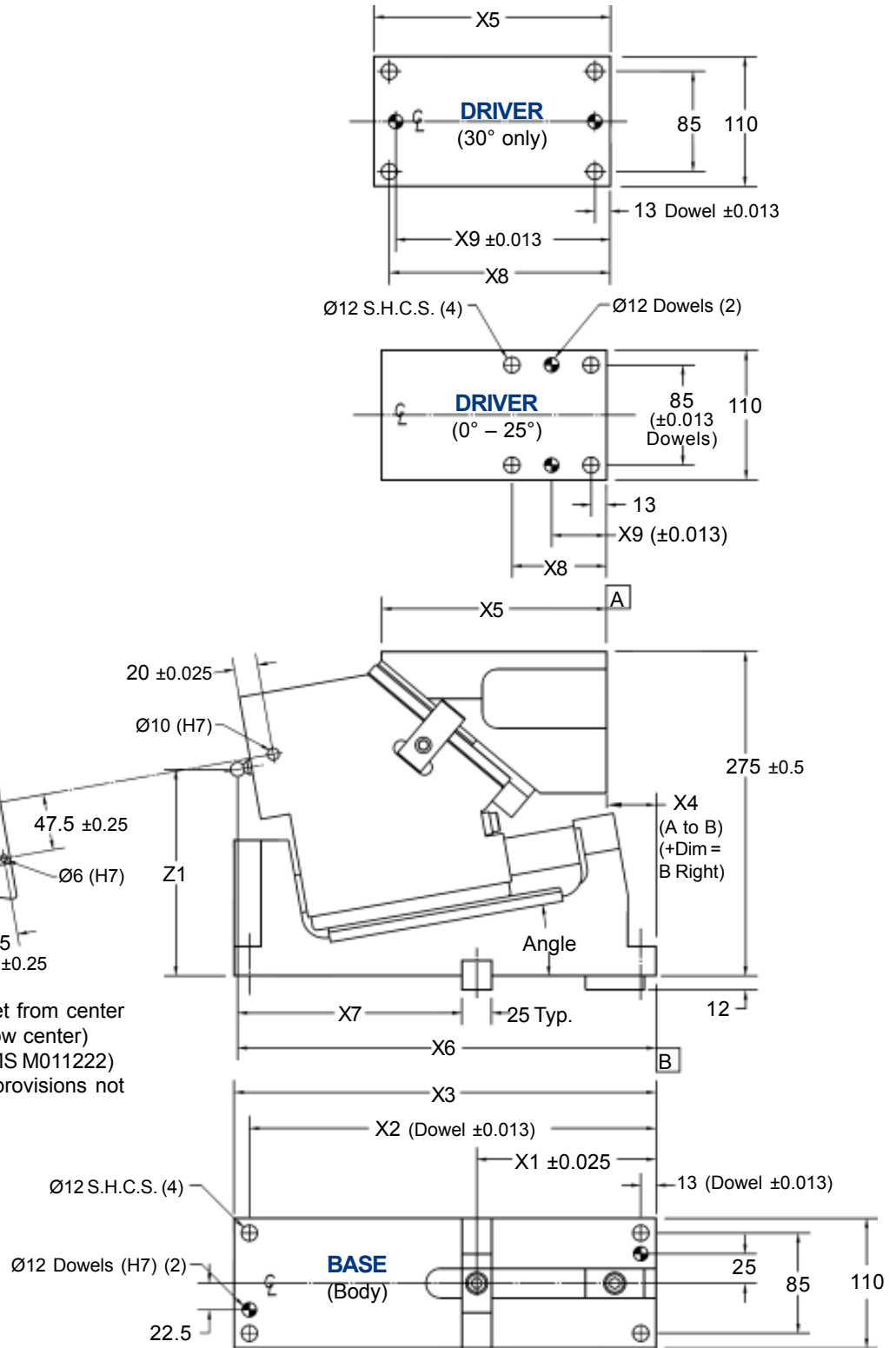


CAM DIAGRAM

STROKE		
ANGLE	PRESS STROKE	WORK STROKE
0	71.5	60
5	65.0	60
10	60.0	60
15	56.1	60
20	53.1	60
25	50.7	60
30	48.9	60



* Tooling Ball offset from center
(-Dim = T.B. below center)
Note: T.B. (NAAMS M011222)
is for mounting provisions not
included.



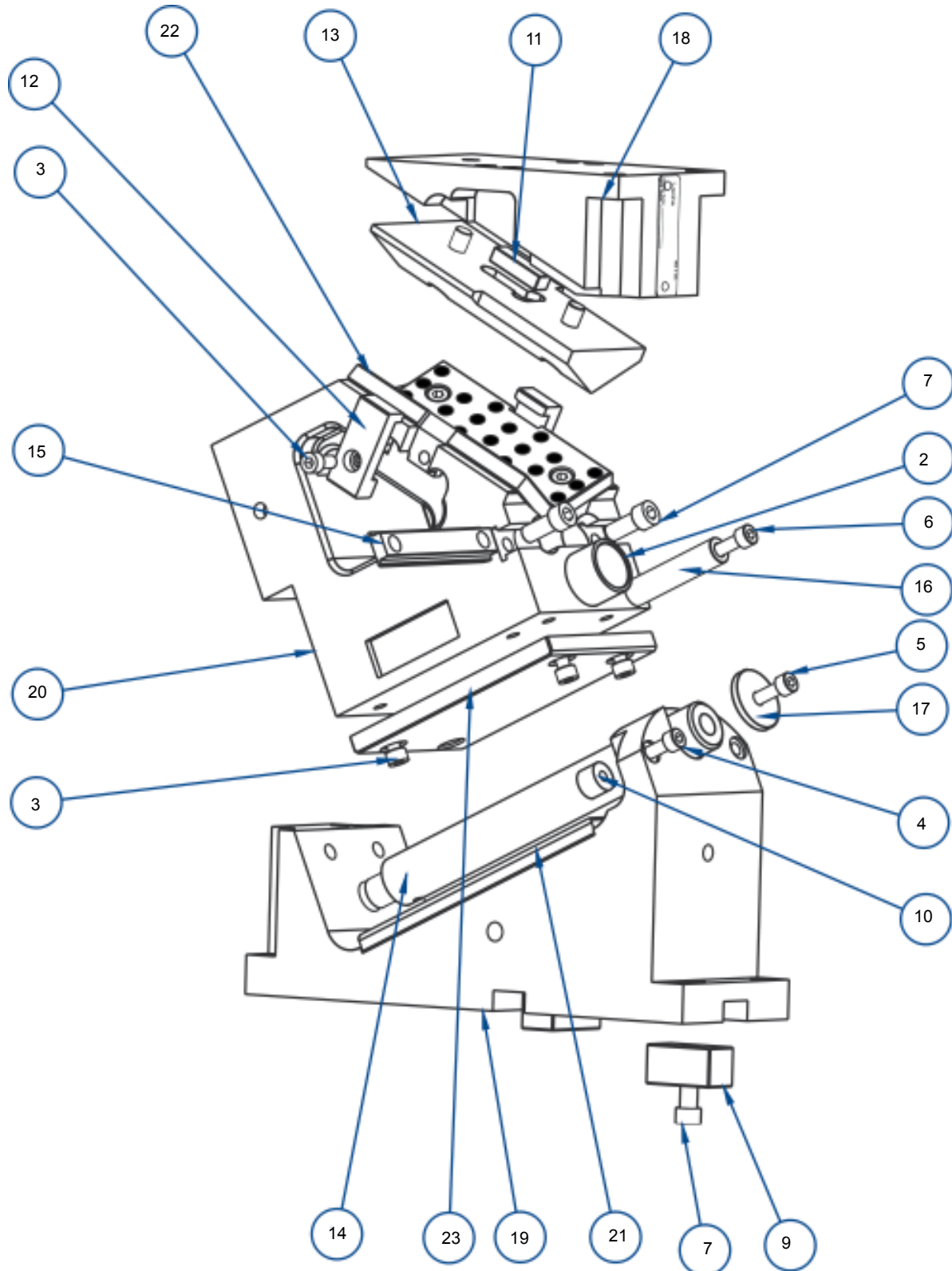
DIEMOUNT CAM PART NUMBERS & WEIGHTS										
75 SERIES										
PART NUMBERS			WEIGHT		A N G L E	PART NUMBERS			WEIGHT	
With Mechanical Spring Kit	With Kaller Gas Spring Kit	With Dadco Gas Spring Kit	kg	Lbs.		With Mechanical Spring and Kaller Gas Spring Kit	With Mechanical Spring & Dadco Gas Spring Kit	With Double steel wearplates & Dadco Gas Spring Kit	kg	Lbs.
NCD070004M	NCD070004K	NCD070004D	49	108	0	NCD070004MK	NCD070004MD	NCD070044	49	108
NCD070504M	NCD070504K	NCD070504D	51	112	5	NCD070504MK	NCD070504MD	NCD070544	51	112
NCD071004M	NCD071004K	NCD071004D	51	112	10	NCD071004MK	NCD071004MD	NCD071044	51	112
NCD071504M	NCD071504K	NCD071504D	52	114	15	NCD071504MK	NCD071504MD	NCD071544	52	114
NCD072004M	NCD072004K	NCD072004D	51	112	20	NCD072004MK	NCD072004MD	NCD072044	51	112
NCD072504M	NCD072504K	NCD072504D	52	114	25	NCD072504MK	NCD072504MD	NCD072544	52	114
NCD073004M	NCD073004K	NCD073004D	51	112	30	NCD073004MK	NCD073004MD	NCD073044	51	112

DIEMOUNT CAM DIMENSIONS											
75 SERIES											
WORK ANGLE	X1 (Cl of Key)	X2	X3 Ref	X4 Base to Driver Datum	X5 Ref	X6 (NAAMS E)	X7 (NAAMS C)	X8	X9	Z1 (NAAMS A)	Z2
0	149.50	352.0	365.0	47.6	150	332.0	170.0	70.0	41.5	200.0	4
5	149.60	352.0	365.0	30.4	180	342.1	180.0	75.0	44.0	190.0	1
10	151.96	344.5	357.5	42.1	190	354.5	190.0	80.0	46.5	175.0	-8
15	147.50	332.0	345.0	45.6	200	360.0	200.0	105.0	80.0	165.0	-11
20	144.47	347.0	360.0	60.4	200	367.0	210.0	110.0	85.0	155.0	-13
25	137.48	333.0	346.0	68.0	200	365.0	215.0	115.0	94.0	145.0	-15
30	138.96	334.5	347.5	77.0	245	371.5	220.0	232.0	229.0	135.0	-7



LamCam™ is the perfect solution to your Aerial Cam needs.

COMPONENT PARTS for 75 Series Diemount Cams



Refer to 75 Series Specifications Table for Return Spring Options. See page 3 for more information.

COMPONENT PARTS FOR 75 SERIES DIEMOUNT CAMS

ITEM NO	QTY	Description	PART NUMBER	ITEM NO	QTY	Description	PART NUMBER	
			NCDXXXX04				NCDXXXX04	NCDXXXX44*
2	2	Bushing Liner	BLM032055	15	1	Spring Bracket	NCM070012	
3	14	Soc. Hd. Cap Screw M8x1.25x16	F010809	16	1	Lockout Spacer	NCM070013	
4	1	Soc. Hd. Cap Screw M8x1.25x25	F010811	17	1	Disk Plate	NCM070015	
5	1	Soc. Hd. Cap Screw M12x1.75x25	F011211	18	1	Driver (See Note 1)	NMA07@@24	
6	1	Soc. Hd. Cap Screw M8x1.25x100	F010824	19	1	Base (See Note 1)	NMD07@@14	
7	6	Soc. Hd. Cap Screw M10x1.5x25	F011011	20	1	Slide (0° - 30°)	NMD075034	
9	2	NAAMS Key 25x25x50mm	M082505	21	2	Bronze S/L Wearplate 12x50x200mm	WCC120002	
10	1	Rubber Bumper	MSC100037	21	2	Steel S/L Wearplate 12x50x200mm		WCT120002
11	1	Key	NCM050003	22	2	Bronze S/L Wearplate 12x50x150mm	WCC120017	
12	2	Positive Return Bracket	NCM050010	22	2	Steel S/L Wearplate 12x50x150mm		WCT120017
13	1	V-Driver	NCM070005	23	1	Hard Steel Wearplate 12x170x110mm	WCS120015	
14	1	Pin	NCM070009					

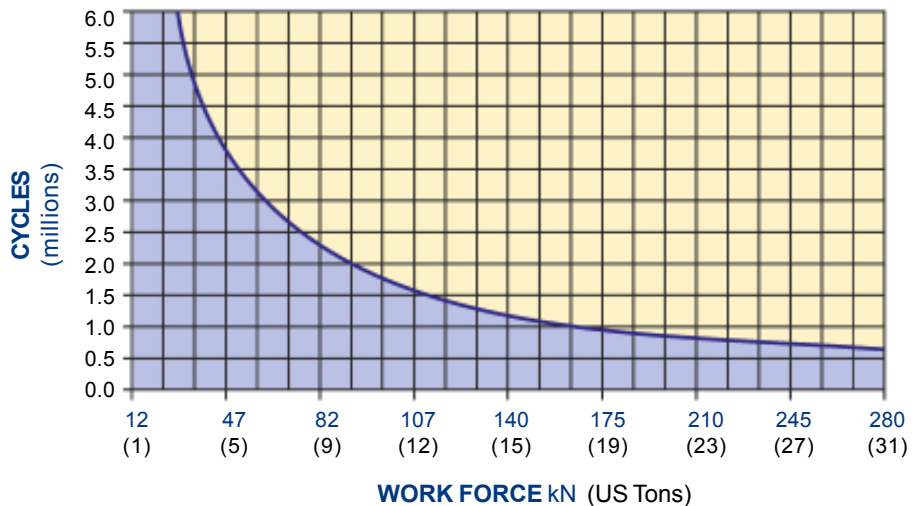
Note1: For @@ in part numbers insert: (50 for 0°); (45 for 5°); (40 for 10°); (35 for 15°); (30 for 20°); (25 for 25°) and (20 for 30°).

RETURN SPRING KIT OPTIONS		75 Series Specifications			
Recognizing that different cam applications have different requirements, Lamina offers three Return Spring Kit Options:		Spring Kit Option	Spring Kit Part # (2 Required)	Pre-Load kg (lbs.) -f	Final Load kg (lbs.) -f
		1	Mechanical - Employs a conventional ISO Die Spring - used in cam applications where additional stripping force is not required.	SKC070001	19 (42)
2		Combination Mech./Nitrogen (Kaller) Precharge to 96 Bar (1400 PSI)	SKC070002	40 (88)	288 (634)
		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 pre-load, keeping the forces low, while providing high final loads from the nitrogen spring for stripping.	SKC070012	40 (88)	288 (634)
3		Nitrogen (Kaller) Precharge to 95 Bar (1380 PSI)	SKC070015	219 (284) (a)	280 (615)
		Nitrogen (Dadco) Precharge to 89 Bar (1284 PSI)	SKC070014	204 (450) (a)	263 (580)
		Tooling Allowance	Protrusion - mm	140	
			Weight - kg (lbs)	10 (22)	
		Rated Capacity (b)	107 kN : 10.7 M-Tons : 11.8 US Tons		

(a) Actual "preload" = 0, this force is at initial contact with nitrogen spring.

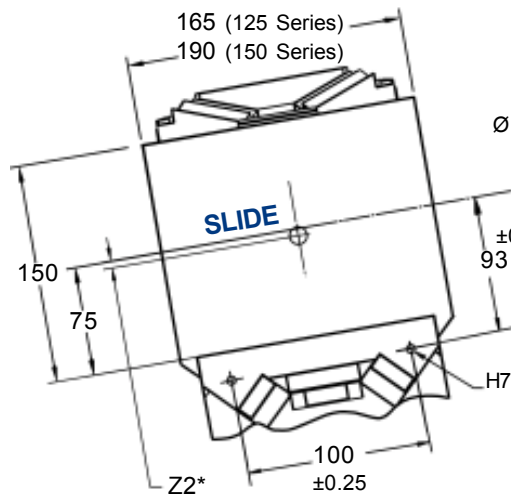
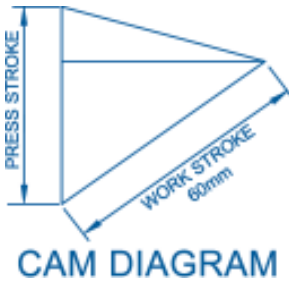
(b) @ 1.6 million cycles and 0.04mm wear.

75 SERIES PERFORMANCE GRAPH
(Based on .04mm wear on bronze)

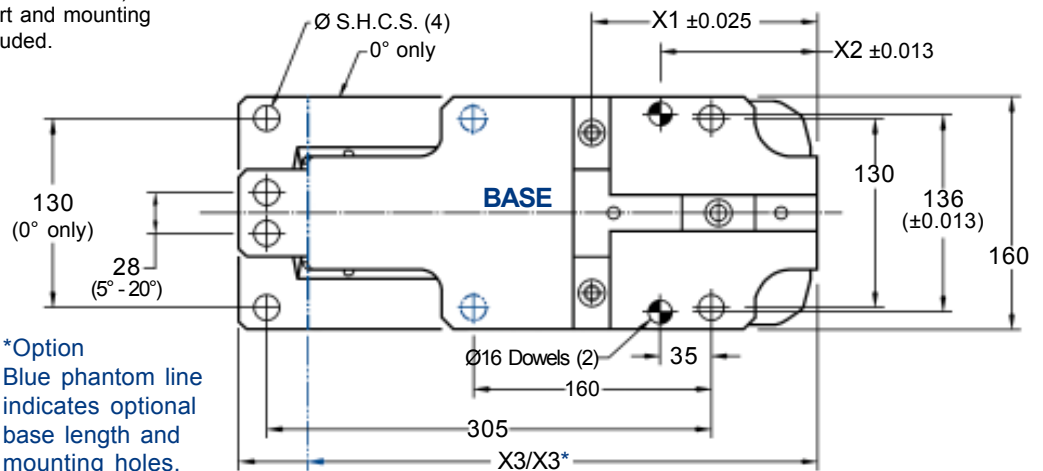
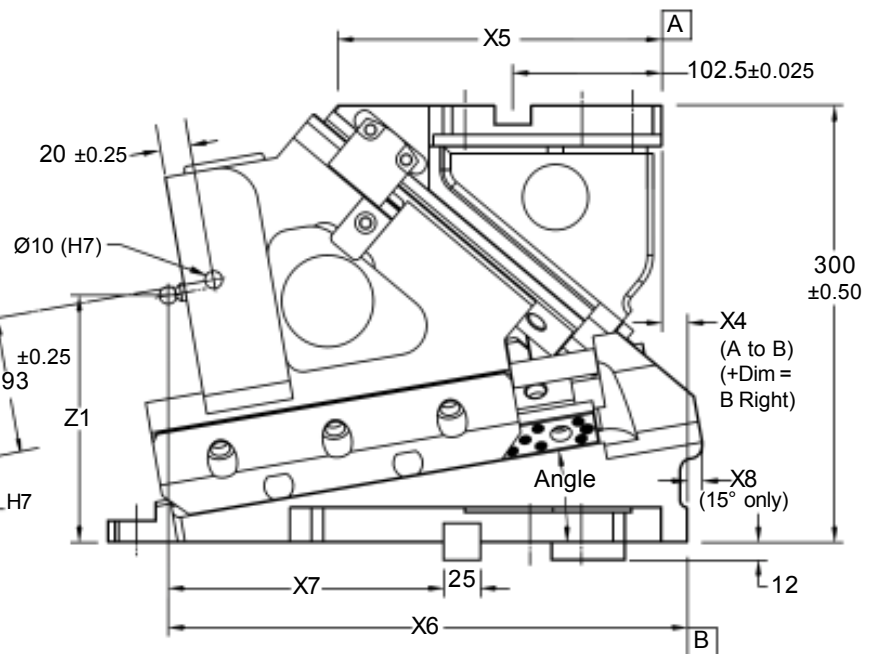
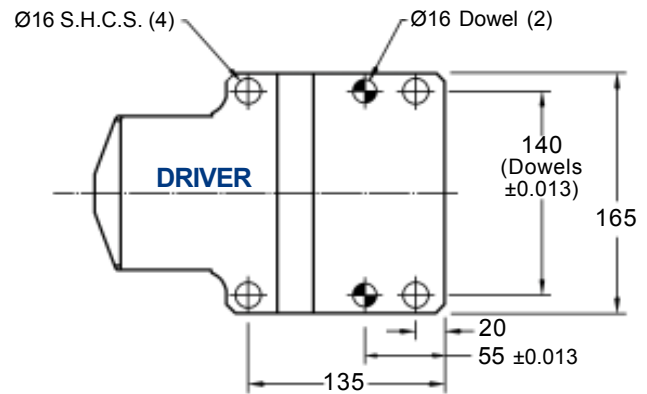


DIEMOUNT CAM 125 - 150 Series

AUTOMOTIVE METRIC
NAAMS STANDARD



*Tooling ball offset from center (-Dim = T.B. (NAAMS M011222) is for reference only; part and mounting provisions not included.



*Option
Blue phantom line indicates optional base length and mounting holes.

ANGLE	STROKE	
	PRESS STROKE	WORK STROKE
0	71.5	60
5	65.0	60
10	60.0	60
15	56.1	60
20	53.1	60
25	50.7	60
30	48.9	60

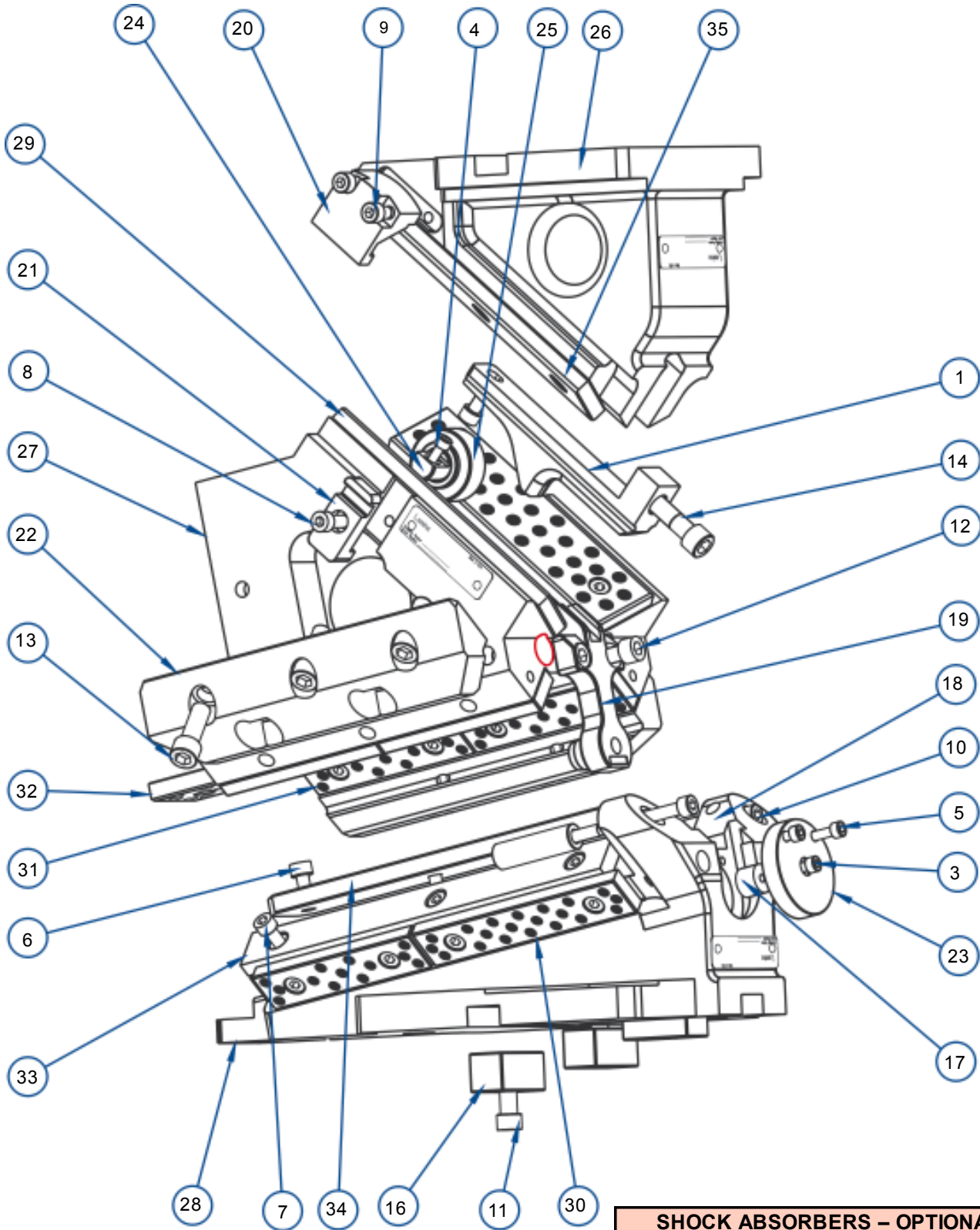
DIEMOUNT CAM PART NUMBERS & WEIGHTS										
125 SERIES					A N G L E	150 SERIES				
PART NUMBERS			WEIGHT			PART NUMBERS			WEIGHT	
With Mechanical Spring Kit	With Kaller Gas Spring Kit	With Dadco Gas Spring Kit	kg	Lbs.		With Mechanical Spring Kit	With Kaller Gas Spring Kit	With Dadco Gas Spring Kit	kg	Lbs.
NCD120004M	NCD120004K	NCD120004D	83	183	0	NCD150004M	NCD150004K	NCD150004D	86	189
NCD120504M	NCD120504K	NCD120504D	84	185	5	NCD150504M	NCD150504K	NCD150504D	87	191
NCD121004M	NCD121004K	NCD121004D	86	189	10	NCD151004M	NCD151004K	NCD151004D	89	196
NCD121504M	NCD121504K	NCD121504D	85	187	15	NCD151504M	NCD151504K	NCD151504D	88	194
NCD122004M	NCD122004K	NCD122004D	86	189	20	NCD152004M	NCD152004K	NCD152004D	89	196
NCD122504M	NCD122504K	NCD122504D	80	176	25	NCD152504M	NCD152504K	NCD152504D	83	183
NCD123004M	NCD123004K	NCD123004D	83	183	30	NCD153004M	NCD153004K	NCD153004D	86	189
With Mechanical Spring and Kaller Gas Spring Kit	With Mechanical Spring & Dadco Gas Spring Kit	With Double steel wearplates & Dadco Gas Spring Kit	kg	Lbs.		With Mechanical Spring and Kaller Gas Spring Kit	With Mechanical Spring & Dadco Gas Spring Kit	With Double steel wearplates & Dadco Gas Spring Kit	kg	Lbs.
NCD120004MK	NCD120004MD	NCD120044	83	183	0	NCD150004MK	NCD150004MD	NCD150044	86	189
NCD120504MK	NCD120504MD	NCD120544	84	185	5	NCD150504MK	NCD150504MD	NCD150544	87	191
NCD121004MK	NCD121004MD	NCD121044	86	189	10	NCD151004MK	NCD151004MD	NCD151044	89	196
NCD121504MK	NCD121504MD	NCD121544	85	187	15	NCD151504MK	NCD151504MD	NCD151544	88	194
NCD122004MK	NCD122004MD	NCD122044	86	189	20	NCD152004MK	NCD152004MD	NCD152044	89	196
NCD122504MK	NCD122504MD	NCD122544	80	176	25	NCD152504MK	NCD152504MD	NCD152544	83	183
NCD123004MK	NCD123004MD	NCD123044	83	183	30	NCD153004MK	NCD153004MD	NCD153044	86	189

DIEMOUNT CAM DIMENSIONS 125 & 150 SERIES											
ANGLE	X1 CL OF KEY	X2	X3	X3*	X4 Base to Driver Datum	X5	X6 (NAAMS E)	X7 (NAAMS C)	X8	Z1 (NAAMS A)	Z2
0	154.50	108.0	398.0	360	-22.0	223	337.0	170.0	-	200.0	3
5	157.46	108.0	398.0	365	-5.6	228	350.0	180.0	-	190.0	2.6
10	154.83	108.0	398.0	365	17.7	223	357.3	190.0	-	175.0	0.4
15	143.08	100.0	390.0	357	28.2	229	355.6	200.0	8	165.0	0
20	150.89	103.0	393.0	360	32.3	254	373.4	210.0	-	155.0	-1.6
25	115.07	65.0	355.0	320	35.3	226	337.6	210.0	34	150.0	-0.2
30	127.15	65.0	355.0	320	63.5	222	349.7	210.0	25	140.0	-2.9



Bump Cams are important components in the LamCam™ line of products.

COMPONENT PARTS for 125–150 Series Diemount Cams



SHOCK ABSORBERS – OPTIONAL		
Qty	PART NUMBER	DESCRIPTION
2	MSC100028	Shock Absorber Assemblies
Shock absorber location noted in red on drawing		

Refer to 125–150 Series Specifications Table for Return Spring Options. See page 3 for more information.

COMPONENT PARTS FOR 125-150 SERIES DIEMOUNT CAMS

ITEM NO	QTY	Description	PART NUMBER	ITEM NO	QTY	Description	PART NUMBER	
			NCDXXXX04				NCDXXXX04	NCDXXXX44*
1	1	Accelerator Block (See Note 1)	14A1230@@R	22	2	Keeper Plate	NCM150010	
3	1	Soc. Hd. Cap Screw M6x1.0x12	F010608	23	1	Disk Plate	NCM150014	
4	2	Soc. Hd. Cap Screw M6x1.0x16	F010609	24	1	Roller Shaft	NCM300011	
5	2	Soc. Hd. Cap Screw M6x1.0x20	F010610	25	1	Roller/Liner Assembly	NCM300014	
6	3	Soc. Hd. Cap Screw M8x1.25x10	F010807	26	1	Driver (See Note 1)	NMA12@@24	
7	35	Soc. Hd. Cap Screw M8x1.25x16	F010809	27	1	Slide (0° – 30°)	NMD155034	
8	3	Soc. Hd. Cap Screw M8x1.25x20	F010810	28	1	Base (See Note 1)	NMD12@@13	
9	4	Soc. Hd. Cap Screw M8x1.25x40	F010814	29	2	Bronze S/L Wearplate 12x50x200mm	WCC120002	
10	2	Soc. Hd. Cap Screw M8x1.25x90	F010823	29	2	Steel S/L Wearplate 12x50x200mm		WCT120002
11	3	Soc. Hd. Cap Screw M10x1.5x25	F011011	30	2	Bronze S/L Wearplate 12x30x160mm	WCC120006	
12	2	Soc. Hd. Cap Screw M12x1.50x30	F011012	30	2	Steel S/L Wearplate 12x30x160mm		WCT120006
13	6	Soc. Hd. Cap Screw M12x1.75x35	F011213	31	6	Bronze S/L Wearplate 12x30x125mm	WCC120009	
14	1	Soc. Hd. Cap Screw M12x1.75x45	F011215	31	6	Steel S/L Wearplate 12x30x125mm		WCT120009
16	3	NAAMS Key 25x25x50mm	M082505	32	1	Bronze S/L Wearplate 12x50x225mm	WCC120011	
17	1	Rubber Bumpers	MSC100003	32	1	Steel S/L Wearplate 12x50x225mm		WCT120011
18	2	Lockout Spacer	NCM070008	33	2	Steel Wearplate 12x30x285mm	WCS120008	
19	1	Spring Return Bracket	NCM150001	34	1	Steel Wearplate 12x48x280mm	WCS120010	
20	2	Positive Return Bracket	NCM150008	35	1	Steel Wear Plate 12x48x225mm	WCS120012	
21	2	Positive Return Guideway	NCM150009					

Note1: For @@ in part numbers insert: (50 for 0°); (45 for 5°); (40 for 10°); (35 for 15°); (30 for 20°); (25 for 25°) and (20 for 30°).

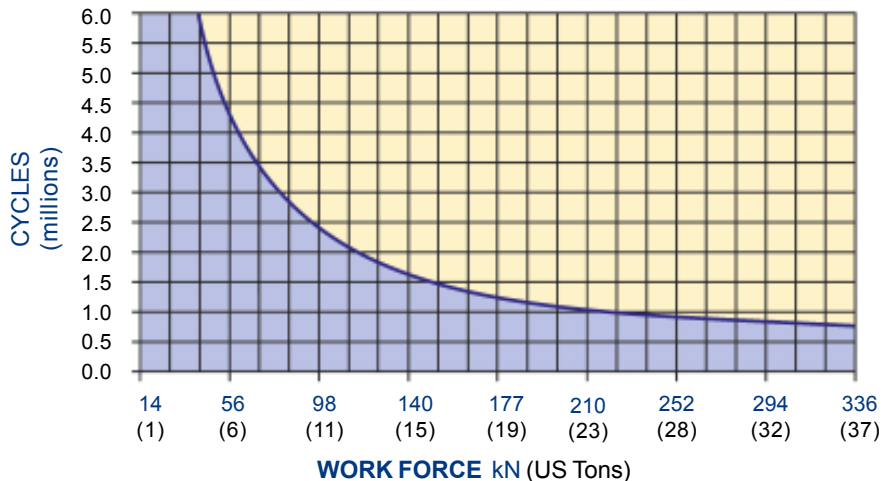
RETURN SPRING KIT OPTIONS		125 - 150 Series Specifications			
Recognizing that different cam applications have different requirements, Lamina offers three Return Spring Kit Options:		Spring Kit Option	Spring Kit Part # (2 Required)	Pre-Load kg (lbs.) -f	Final Load kg (lbs.) -f
1	Mechanical - Employs a conventional ISO Die Spring - used in cam applications where additional stripping force is not required.	Mechanical	ILD040254	45 (99)	149 (328)
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 pre-load, keeping the forces low, while providing high final loads from the nitrogen spring for stripping.	Combination - Mech./Nitrogen (Kaller) PreCharge to 150 Bar (2175 PSI)	SKC120002	33 (73)	361 (797)
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).	Combination - Mech./Nitrogen (Dadco) PreCharge to 150 Bar (2175 PSI)	SKC120012	33 (73)	361 (797)
		Nitrogen (Kaller) PreCharge to 121 Bar (1750 PSI)	SKC120003	276 (609) (a)	373 (822)
		Nitrogen (Dadco) PreCharge to 121 Bar (1750 PSI)	SKC120013	276 (609) (a)	348 (767)
		Tooling Allowance	Protrusion - mm	150	
			Weight - kg (lbs)	20 (44)	
		Rated Capacity (b)	176 kN : 17.7 M-Tons : 19.5 US Tons		

(a) Actual "preload" = 0, this force is at initial contact with nitrogen spring.

(b) @ 1.6 million cycles and 0.04mm wear

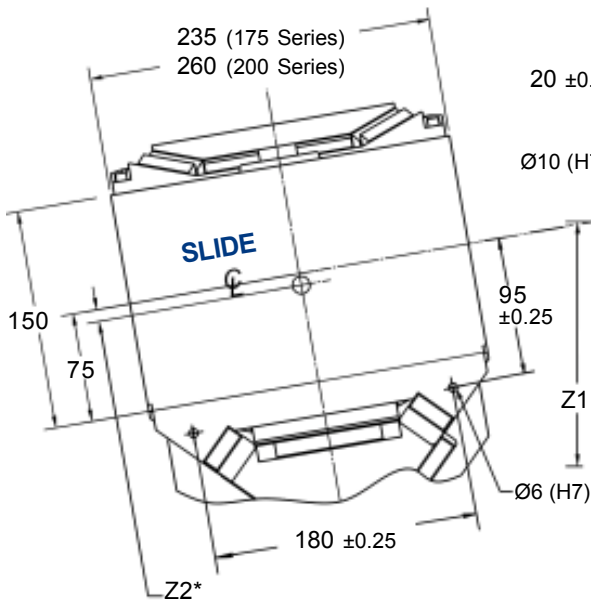
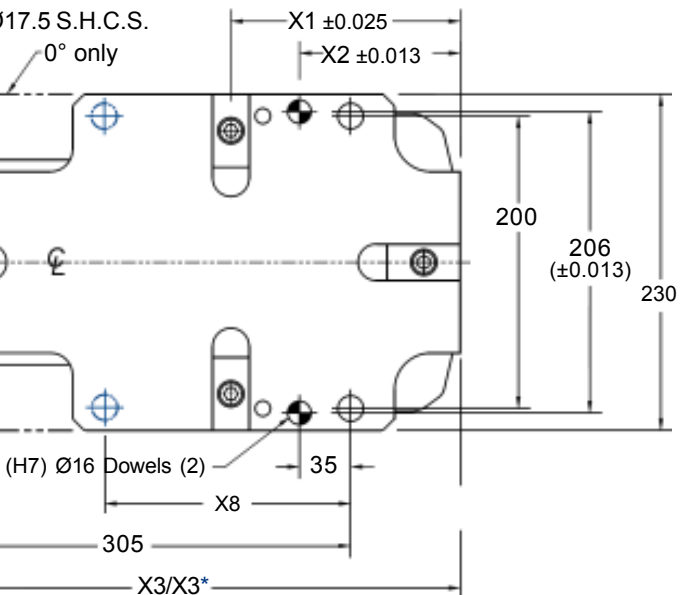
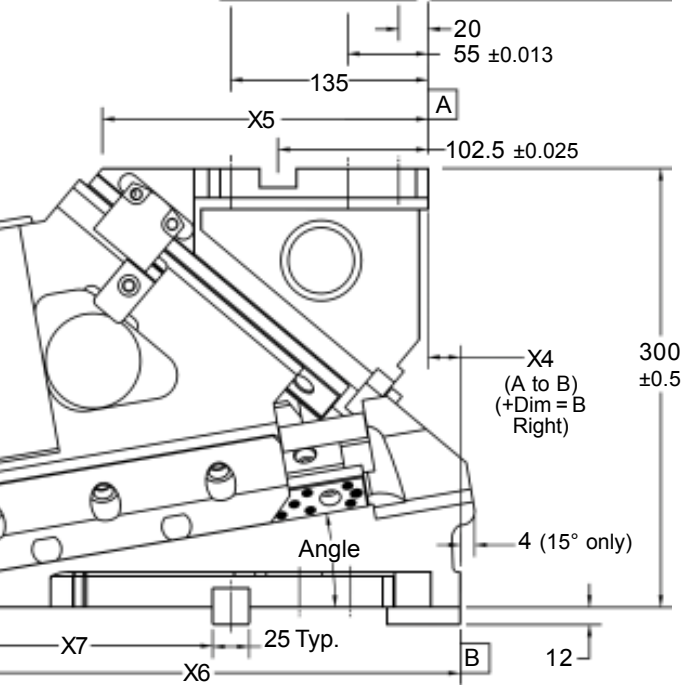
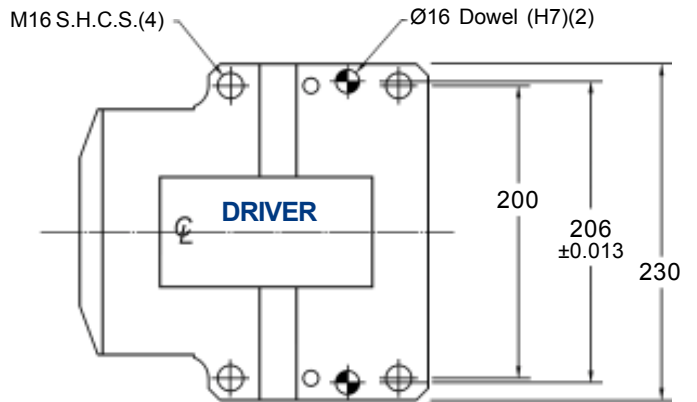
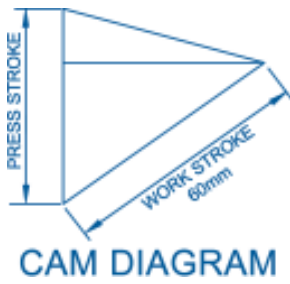
125-150 SERIES PERFORMANCE GRAPH

(Based on .04mm wear on bronze)



DIEMOUNT CAM 175 - 200 Series

AUTOMOTIVE METRIC
NAAMS STANDARD



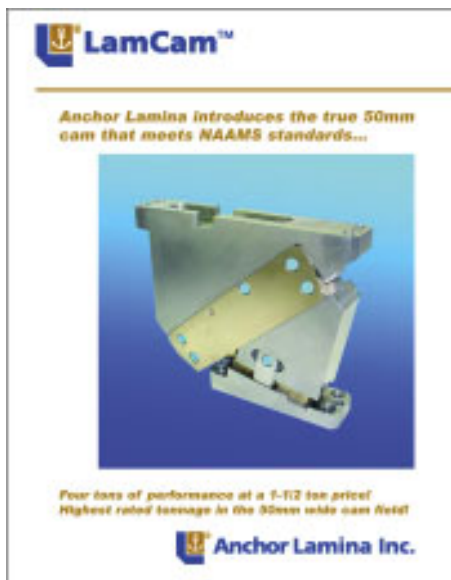
* Tooling Ball offset from center.
(-Dim = T.B. below center)
Note: T.B. (NAAMS M011222)
is for reference only; part and
mounting provision not included.

STROKE		
ANGLE	PRESS STROKE	WORK STROKE
0	71.5	60
5	65.0	60
10	60.0	60
15	56.1	60
20	53.1	60
25	50.7	60
30	48.9	60

*Option
Blue phantom line
indicates optional
base length and
mounting holes.

DIEMOUNT CAM PART NUMBERS & WEIGHTS										
175 SERIES					A N G L E	200 SERIES				
PART NUMBERS			WEIGHT						WEIGHT	
With Mechanical Spring Kit	With Kaller Gas Spring Kit	With Dadco Gas Spring Kit	kg	Lbs.		With Mechanical Spring Kit	With Kaller Gas Spring Kit	With Dadco Gas Spring Kit	kg	Lbs.
NCD170004M	NCD170004K	NCD170004D	126	277	0	NCD200004M	NCD200004K	NCD200004D	128	282
NCD170504M	NCD170504K	NCD170504D	117	257	5	NCD200504M	NCD200504K	NCD200504D	119	262
NCD171004M	NCD171004K	NCD171004D	115	253	10	NCD201004M	NCD201004K	NCD201004D	117	257
NCD171504M	NCD171504K	NCD171504D	110	242	15	NCD201504M	NCD201504K	NCD201504D	112	246
NCD172004M	NCD172004K	NCD172004D	111	244	20	NCD202004M	NCD202004K	NCD202004D	113	249
NCD172504M	NCD172504K	NCD172504D	110	242	25	NCD202504M	NCD202504K	NCD202504D	112	246
NCD173004M	NCD173004K	NCD173004D	113	249	30	NCD203004M	NCD203004K	NCD203004D	115	253
With Mechanical Spring and Kaller Gas Spring Kit	With Mechanical Spring & Dadco Gas Spring Kit	With Double steel wearplates & Dadco Gas Spring Kit	kg	Lbs.		With Mechanical Spring and Kaller Gas Spring Kit	With Mechanical Spring & Dadco Gas Spring Kit	With Double steel wearplates & Dadco Gas Spring Kit	kg	Lbs.
NCD170004MK	NCD170004MD	NCD170044	126	277	0	NCD200004MK	NCD200004MD	NCD200044	128	282
NCD170504MK	NCD170504MD	NCD170544	117	257	5	NCD200504MK	NCD200504MD	NCD200544	119	262
NCD171004MK	NCD171004MD	NCD171044	115	253	10	NCD201004MK	NCD201004MD	NCD201044	117	257
NCD171504MK	NCD171504MD	NCD171544	110	242	15	NCD201504MK	NCD201504MD	NCD201544	112	246
NCD172004MK	NCD172004MD	NCD172044	111	244	20	NCD202004MK	NCD202004MD	NCD202044	113	249
NCD172504MK	NCD172504MD	NCD172544	110	242	25	NCD202504MK	NCD202504MD	NCD202544	112	246
NCD173004MK	NCD173004MD	NCD173044	113	249	30	NCD203004MK	NCD203004MD	NCD203044	115	253

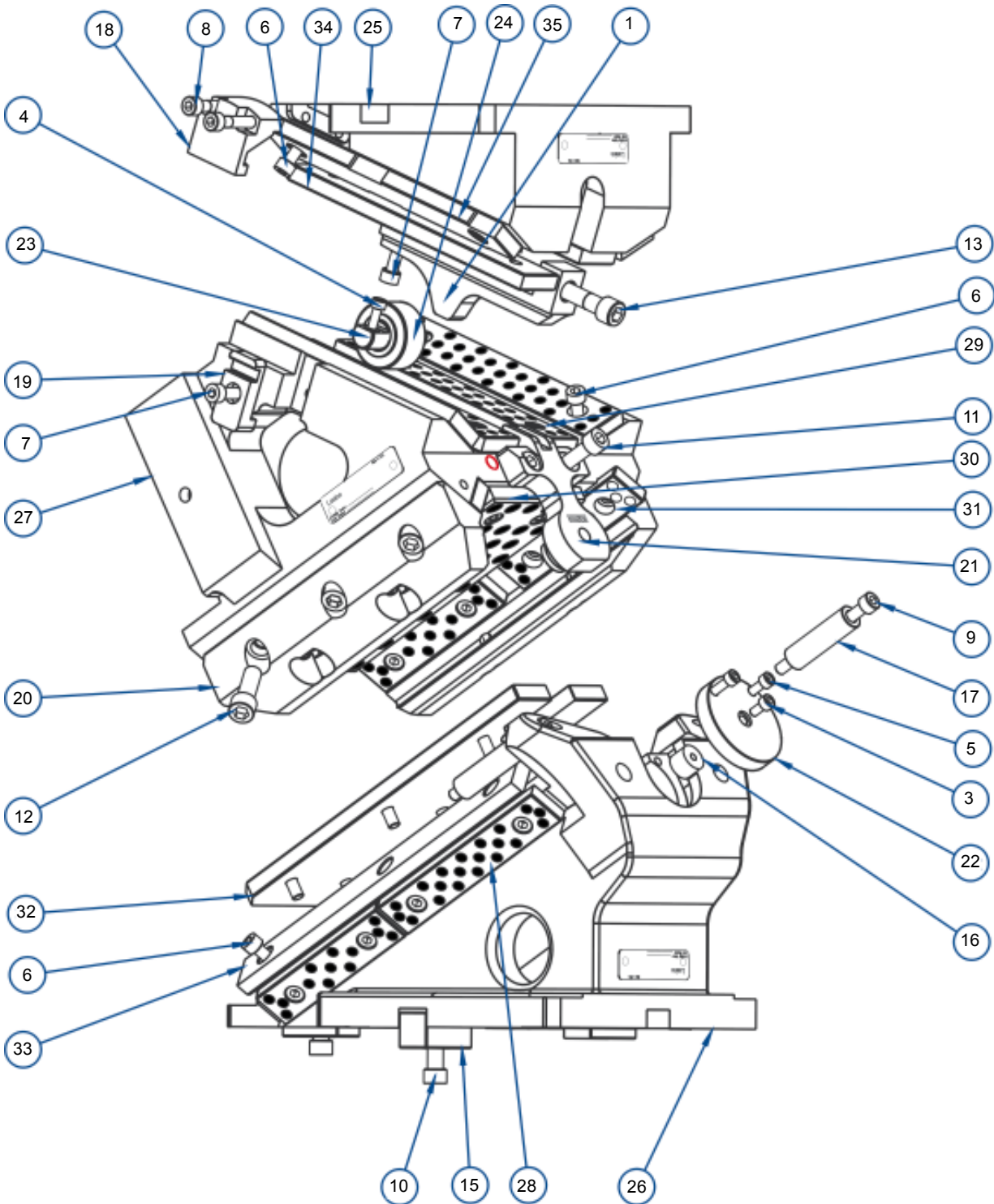
DIEMOUNT CAM DIMENSIONS 175 & 200 SERIES											
ANGLE	X1 CL of KEY	X2	X3	X3*	X4 Base to Driver Datum	X5	X6 (NAAMS E)	X7 (NAAMS C)	X8	Z1	Z2
0	154.50	108.0	398	358	-20.0	223	337.0	170.0	222.0	200.0	3
5	154.46	115.0	405	365	-6.4	228	347.0	180.0	170.0	190.0	2.7
10	156.83	110.0	400	365	22.1	223	359.3	190.0	160.0	175.0	0.4
15	148.08	100.0	390	350	32.4	229	360.6	200.0	170.0	165.0	0
20	150.89	103.0	393	360	35.4	254	373.4	210.0	170.0	155.0	-1.6
25	115.07	65.0	355	320	34.2	226	337.6	210.0	170.0	150.0	-0.20
30	127.15	65.0	355	320	63.7	222	349.7	210.0	170.0	140.0	-2.90



Check out this newest member of the Anchor Lamina LamCam™ family.

The first true 50mm wide cam with real strength and durability.

COMPONENT PARTS for 175–200 Series Diemount Cams



SHOCK ABSORBERS – OPTIONAL		
Qty	PART NUMBER	DESCRIPTION
2	MSC100028	Shock Absorber Assemblies
Shock absorber location noted in red on drawing		

Refer to 175–200 Series Specifications Table for Return Spring Options. See page 3 for more information.

COMPONENT PARTS FOR 175-200 SERIES DIEMOUNT CAMS

ITEM NO	QTY	Description	PART NUMBER	ITEM NO	QTY	Description	PART NUMBER	
			NCDXXXX04				NCDXXXX04	NCDXXXX44*
1	1	Accelerator Block (See Note 1)	14A1230@@R	22	1	Disk Plate	NCM200008	
3	1	Soc. Hd. Cap Screw M6x1.0x12	F010608	23	1	Roller Shaft	NCM300011	
4	2	Soc. Hd. Cap Screw M6x1.0x16	F010609	24	1	Roller/Liner Assembly	NCM300014	
5	2	Soc. Hd. Cap Screw M6x1.0x20	F010610	25	1	Driver (See Note 1)	NMA17@@24	
6	50	Soc. Hd. Cap Screw M8x1.25x16	F010809	26	1	Base (See Note 1)	NMD17@@13	
7	3	Soc. Hd. Cap Screw M8x1.25x20	F010810	27	1	Slide (0° – 30°)	NMD205034	
8	4	Soc. Hd. Cap Screw M8x1.25x40	F010814	28	2	Bronze S/L Wearplate 12x30x160mm	WCC120006	
9	2	Soc. Hd. Cap Screw M8x1.25x90	F010823	28	2	Steel S/L Wearplate 12x30x160mm		WCT120006
10	3	Soc. Hd. Cap Screw M10x1.5x25	F011011	29	4	Bronze S/L Wearplate 12x38x200mm	WCC120007	
11	2	Soc. Hd. Cap Screw M10x1.5x30	F011012	29	4	Steel S/L Wearplate 12x38x200mm		WCT120007
12	6	Soc. Hd. Cap Screw M12x1.75x35	F011213	30	1	Bronze S/L Wearplate 12x100x240mm	WCC120008	
13	1	Soc. Hd. Cap Screw M12x1.75x45	F011215	30	1	Steel S/L Wearplate 12x100x240mm		WCT120008
15	3	NAAMS Key 25x25x50mm	M082505	31	6	Bronze S/L Wearplate 12x30x125mm	WCC120009	
16	1	Rubber Bumpers	MSC100003	31	6	Steel S/L Wearplate 12x30x125mm		WCT120009
17	2	Lockout Spacer	NCM070008	32	1	Steel Wearplate 12x100x290mm	WCS120006	
18	2	Positive Return Bracket	NCM150008	33	2	Steel Wearplate 12x30x285m	WCS120008	
19	2	Positive Return Guideway	NCM150009	34	4	Steel Wearplate 12x38x225mm	WCS120009	
20	2	Keeper Plate	NCM150010	34	2	Steel Wearplate 12x38x225mm(Notch)	WCS120014	
21	1	Spring Return Bracket	NCM200001					

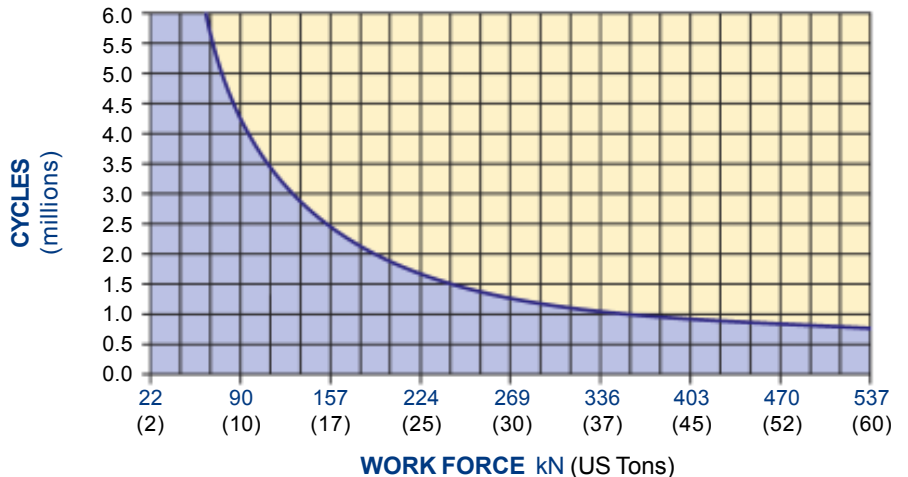
Note1: For @@ in part numbers insert: (50 for 0°); (45 for 5°); (40 for 10°); (35 for 15°); (30 for 20°); (25 for 25°) and (20 for 30°).

RETURN SPRING KIT OPTIONS		175 - 200 Series Specifications			
Recognizing that different cam applications have different requirements, Lamina offers three Return Spring Kit Options:		Spring Kit Option	Spring Kit Part #	Pre-Load kg (lbs.) -f	Final Load kg (lbs.) -f
		1 Mechanical - Employs a conventional ISO Die Spring - used in cam applications where additional stripping force is not required.	Mechanical	SKC170001	64 (141)
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 pre- load, keeping the forces low, while providing high final loads from the nitrogen spring for stripping.	Combination - Mech./Nitrogen (Kaller) PreCharge to 110 Bar (1595 PSI)	SKC170002	51.3 (113)	458 (1010)
		Combination - Mech./Nitrogen (Dadco) PreCharge to 110 Bar (1595 PSI)	SKC170012	51.3 (113)	458 (1010)
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).	Nitrogen (Kaller) PreCharge to 86 Bar (1250 PSI)	SKC170003	276 (609) (a)	373 (822)
		Nitrogen (Dadco) PreCharge to 69 Bar (1250 PSI)	SKC170013	276 (609) (a)	348 (767)
		Tooling Allowance		Protrusion - mm	175
				Weight - kg (lbs)	32 (70)
		Rated Capacity (b)	241.8 kN : 24.2 M-Tons : 26.6 US Tons		

(a) Actual "preload" = 0, this force is at initial contact with nitrogen spring

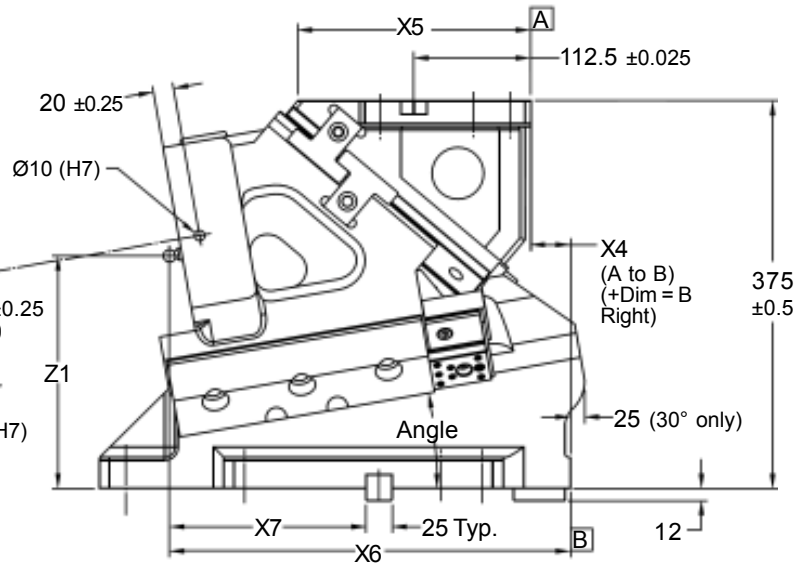
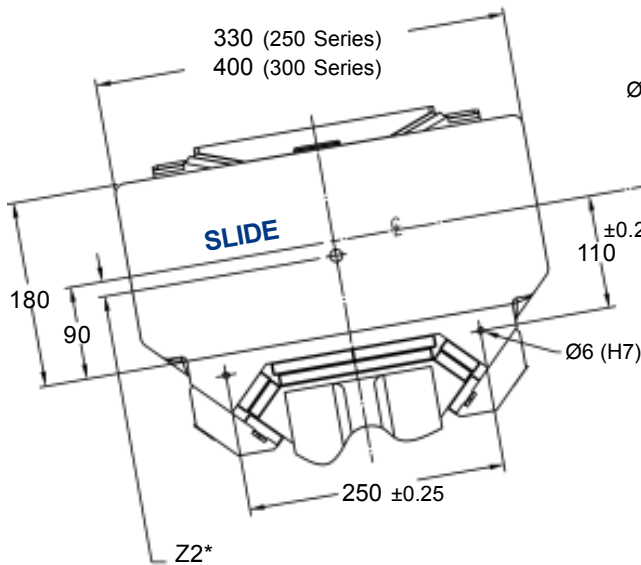
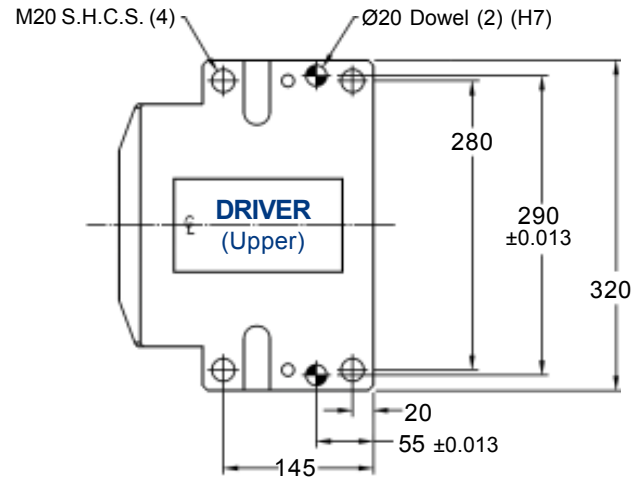
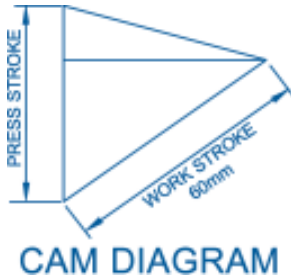
(b) @1.6 million cycles and 0.04mm wear

175-200 SERIES PERFORMANCE GRAPH
(Based on .04mm wear on bronze)

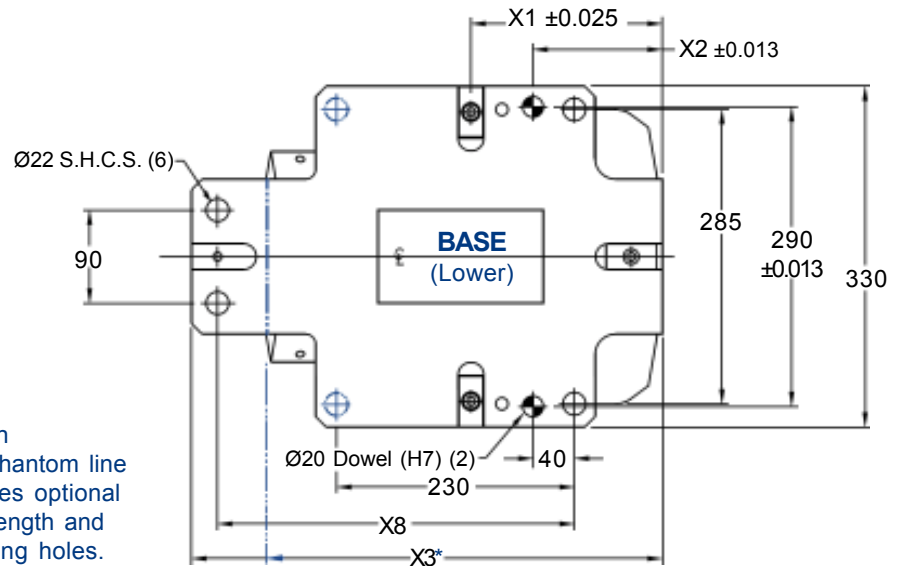


DIEMOUNT CAM 250 - 300 Series

AUTOMOTIVE METRIC
NAAMS STANDARD



* Tooling Ball offset from center.
(-Dim = T.B. below center)
Note: T.B. (NAAMS M011222) is
for reference only; part and
mounting provision not included.



*Option
Blue phantom line
indicates optional
base length and
mounting holes.

STROKE		
ANGLE	PRESS STROKE	WORK STROKE
0	71.5	60
5	65.0	60
10	60.0	60
15	56.1	60
20	53.1	60
25	50.7	60
30	48.9	60

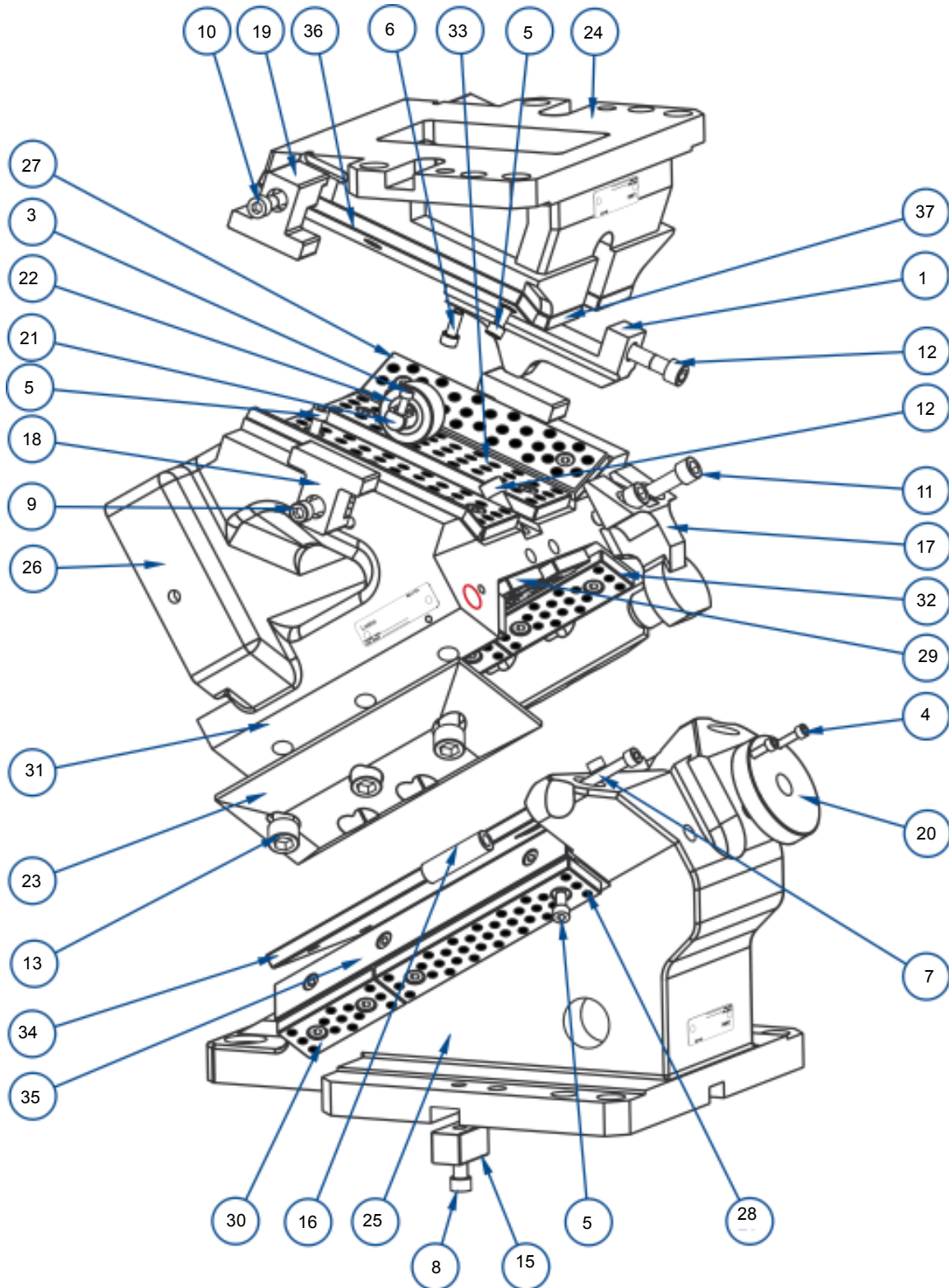
DIEMOUNT CAM PART NUMBERS & WEIGHTS										
250 SERIES					A N G L E	300 SERIES				
PART NUMBERS			WEIGHT			PART NUMBERS			WEIGHT	
With Mechanical Spring Kit	With Kaller Gas Spring Kit	With Dadco Gas Spring Kit	kg	Lbs.		With Mechanical Spring Kit	With Kaller Gas Spring Kit	With Dadco Gas Spring Kit	kg	Lbs.
NCD250004M	NCD250004K	NCD250004D	214	472	0	NCD300004M	NCD300004K	NCD300004D	222	488
NCD250504M	NCD250504K	NCD250504D	197	433	5	NCD300504M	NCD300504K	NCD300504D	205	451
NCD251004M	NCD251004K	NCD251004D	195	429	10	NCD301004M	NCD301004K	NCD301004D	203	447
NCD251504M	NCD251504K	NCD251504D	193	425	15	NCD301504M	NCD301504K	NCD301504D	201	442
NCD252004M	NCD252004K	NCD252004D	194	427	20	NCD302004M	NCD302004K	NCD302004D	202	444
NCD252504M	NCD252504K	NCD252504D	193	425	25	NCD302504M	NCD302504K	NCD302504D	201	442
NCD253004M	NCD253004K	NCD253004D	194	427	30	NCD303004M	NCD303004K	NCD303004D	202	444
With Mechanical Spring and Kaller Gas Spring Kit	With Mechanical Spring & Dadco Gas Spring Kit	With Double steel wearplates & Dadco Gas Spring Kit	kg	Lbs.		With Mechanical Spring and Kaller Gas Spring Kit	With Mechanical Spring & Dadco Gas Spring Kit	With Double steel wearplates & Dadco Gas Spring Kit	kg	Lbs.
NCD250004MK	NCD250004MD	NCD250044	214	472	0	NCD300004MK	NCD300004MD	NCD300044	222	488
NCD250504MK	NCD250504MD	NCD250544	197	433	5	NCD300504MK	NCD300504MD	NCD300544	205	451
NCD251004MK	NCD251004MD	NCD251044	195	429	10	NCD301004MK	NCD301004MD	NCD301044	203	447
NCD251504MK	NCD251504MD	NCD251544	193	425	15	NCD301504MK	NCD301504MD	NCD301544	201	442
NCD252004MK	NCD252004MD	NCD252044	194	427	20	NCD302004MK	NCD302004MD	NCD302044	202	444
NCD252504MK	NCD252504MD	NCD252544	193	425	25	NCD302504MK	NCD302504MD	NCD302544	201	442
NCD253004MK	NCD253004MD	NCD253044	194	427	30	NCD303004MK	NCD303004MD	NCD303044	202	444

DIEMOUNT CAM DIMENSIONS 250 & 300 SERIES												
ANGLE	X1 CL of KEY	X2	X3	X3* Option	X4 Base to Driver Datum	X5	X6 (NAAMS E)	X7 (NAAMS C)	X8	Z1	Z2 Ref (@180 ht)	Z2 Ref (@NAAMS 160 ht)
0	181.50	135.0	455.0	380.0	-3.7	220.0	364.0	170.0	335.0	260.0	5.0	15
5	183.98	126.0	460.0	390.0	3.9	225.0	376.5	180.0	349.0	235.0	-1	9
10	184.93	125.0	455.0	385.0	38.7	225.0	387.4	190.0	345.0	225.0	-14	-4
15	191.21	125.0	479.0	395.0	61.9	225.0	403.7	200.0	370.0	210.0	-7	3
20	190.45	120.0	474.0	395.0	73.2	242.5	412.9	210.0	370.0	195.0	-18	-8
25	197.45	120.0	474.0	400.0	97.3	250.0	429.9	220.0	370.0	190.0	-15	N/A
30	154.87	60.0	414.0	349.0	68.7	248.0	387.3	220.0	370.0	185.0	-13	N/A

In the near future Anchor Lamina will be introducing yet another innovative quality cam...

...keep watching!

COMPONENT PARTS for 250–300 Series DiemountCams



SHOCK ABSORBERS – OPTIONAL		
Qty	PART NUMBER	DESCRIPTION
4	MSC100029	Shock Absorber Assemblies
Shock absorber locations noted in red on drawing		

Refer to 250–300 Series Specifications Table for ReturnSpring Options. See page 3 for more information.

COMPONENT PARTS FOR 250-300 SERIES DIEMOUNT CAMS								
ITEM NO	QTY	Description	PART NUMBER	ITEM NO	QTY	Description	PART NUMBER	
			NCDXXXX04				NCDXXXX04	NCDXXXX44*
1	1	Accelerator Block (See Note 1)	14A1230@@@R	24	1	Driver (See Note 1)	NMA25@@@24	
3	2	Soc. Hd. Cap Screw M6x1.0x16	F010609	25	1	Base (See Note 1)	NMD25@@@13	
4	2	Soc. Hd. Cap Screw M6x1.0x30	F010612	26	1	Slide (0° – 30°)	NMD305034	
5	54	Soc. Hd. Cap Screw M8x1.25x16	F010809	27	2	Bronze S/L Wearplate 12x50x200mm	WCC120002	
6	1	Soc. Hd. Cap Screw M8x1.25x20	F010810	27	2	Steel S/L Wearplate 12x50x200mm		WCT120002
7	2	Soc. Hd. Cap Screw M8x1.25x90	F010823	28	2	Bronze S/L Wearplate 12x40x200mm	WCC120005	
8	3	Soc. Hd. Cap Screw M10x1.5x25	F011011	28	2	Steel S/L Wearplate 12x40x200mm		WCT120005
9	2	Soc. Hd. Cap Screw M10x1.75x35	F011013	29	2	Bronze S/L Wearplate 12x80x125mm	WCC120015	
10	2	Soc. Hd. Cap Screw M10x1.5x50	F011016	29	2	Steel S/L Wearplate 12x80x125mm		WCT120015
11	2	Soc. Hd. Cap Screw M12x1.75x35	F011213	30	2	Bronze S/L Wearplate 12x40x100mm	WCC120019	
12	2	Soc. Hd. Cap Screw M12x1.75x45	F011215	30	2	Steel S/L Wearplate 12x40x100mm		WCT120019
13	6	Soc. Hd. Cap Screw M16x2.0x55	F011617	31	2	Bronze S/L Wearplate 12x80x125mm	WCC120020	
15	3	NAAMS Key 25x25x50mm	M082505	31	2	Steel S/L Wearplate 12x80x125mm		WCT120020
16	2	Lockout Spacer	NCM070008	32	4	Bronze S/L Wearplate 12x40x125mm	WCC120021	
17	1	Spring Return Bracket	NCM300001	32	4	Steel S/L Wearplate 12x40x125mm		WCT120021
18	2	Positive Return Key-Slide	NCM300006	33	2	Bronze S/L Wearplate 12x60x200mm	WCC120022	
19	2	Driver Return Bracket	NCM300008	33	2	Steel S/L Wearplate 12x60x200mm		WCT120022
20	1	Disk Plate	NCM300010	34	1	Steel Wearplate 12x150x300mm	WCS120001	
21	1	Roller Shaft	NCM300011	35	2	Steel Wearplate 12x38x300mm	WCS120002	
22	1	Roller/Liner Assembly	NCM300014	36	2	Steel Wearplate 12x50x250mm	WCS120003	
23	2	Keeper Plate	NCM303004	37	2	Steel Wearplate 12x58x250mm	WCS120004	

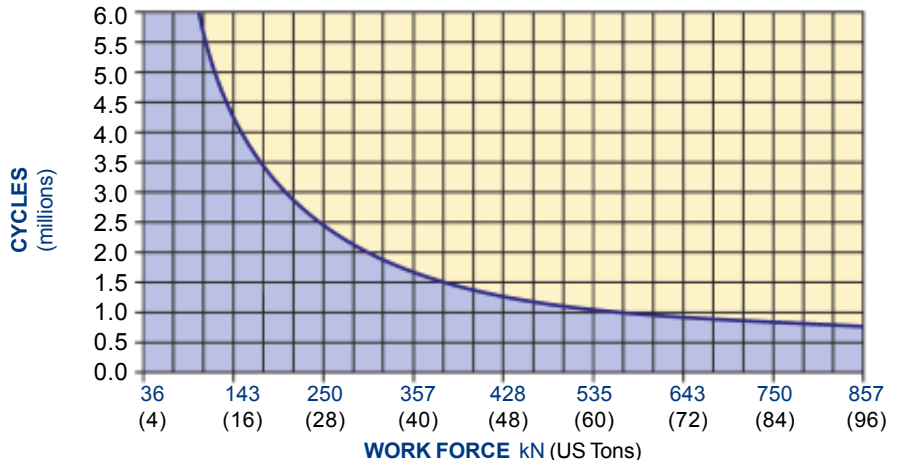
Note1: For @@ in part numbers insert: (50 for 0°); (45 for 5°); (40 for 10°); (35 for 15°); (30 for 20°); (25 for 25°) and (20 for 30°).

RETURN SPRING KIT OPTIONS		250 - 300 Series Specifications			
Recognizing that different cam applications have different requirements, Lamina offers three Return Spring Kit Options:		Spring Kit Option	Spring Kit Part #	Pre-Load kg (lbs.) -f	Final Load kg (lbs.) -f
1	Mechanical - Employs a conventional ISO Die Spring - used in cam applications where additional stripping force is not required.	Mechanical	IMD063305	132 (290)	528 (1162)
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 pre-load, keeping the forces low, while providing high final loads from the nitrogen spring for stripping.	Combination - Mech./Nitrogen (Kaller) PreCharge to 98 Bar (1425 PSI)	SKC250002	113 (249)	703 (1550)
		Combination - Mech./Nitrogen (Dadco) PreCharge to 98 Bar (1425 PSI)	SKC250012	113 (249)	703 (1550)
		Nitrogen (Kaller) PreCharge to 69 Bar (1000 PSI)	SKC250003	345 (760) (a)	507 (1117)
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).	Nitrogen (Dadco) PreCharge to 69 Bar (1000 PSI)	SKC250013	345 (760) (a)	483 (1064)
		Tooling Allowance	Protrusion - mm	200	
			Weight - kg (lbs)	65 (143)	
		Rated Capacity (b)	372 kN : 37.2 M-Tons : 41 US Tons		

(a) Actual "preload" = 0, this force is at initial contact with nitrogen spring

(b) @ 1.6 million cycles and 0.04mm wear

250-300 SERIES PERFORMANCE GRAPH
(Based on .04mm wear on bronze)



DIEMOUNT CAMS

Thank you for your purchase of a Lamina *NAAMS* type cam unit. This unit was manufactured with great care and pride as a simple solution to complex cam operations.

The following information will be helpful during installation and testing of the cam unit. Before installation, please read these instructions thoroughly and note all precautions presented. Keep these instructions with the cam unit until installation is complete and then file them for future reference.

INSTALLATION

CAUTION: When installing the cam unit while the die set is mounted in the press, ensure that safety blocks are in place.

1. Verify that the Return Spring Kit is not in the cam and that the Lockout Kits are installed. If the Spring Kit is installed in the cam:
 - a. Remove the disk plate, spring return bracket (behind disk plate) (caution: the spring return bracket has spring pre-load force pushing against it) and spring kit.
 - b. Install the lockout kits by placing the lockout spacer between the slide and the ears of the cam base; install the cap screws provided through the ears, lockout spacer and thread into back of slide. This lock-out position of the slide relates to the specified shut height of the cam assembly.
 - c. Remove the positive return guide from the slide and accelerator (where applicable) from the driver.
2. Secure the cam unit base/slide assembly onto lower die shoe using the print dimensions for location (locate within the indicated tolerance $\pm 0.5\text{mm}$ left/right and back/front).
 - a. Assemble/match upper and lower die shoes to prescribed shut height.
 - b. Fit cam driver assembly to cam slide by allowing it to nest laterally.
 - c. Do not tighten the driver mounting screws 100% at this point; tighten only after the driver is seated properly with slide cam assembly. After this, drill and ream for dowels.
3. Position the tooling components onto the slide face and transfer their mounting screw holes. Utilize established die steels or buttons to determine this location.

Drill and tap the slide face for the tooling components. Removing the slide from the cam unit base assembly may allow easier machining. To remove the slide:

 - a. Remove lockout kit.
 - b. Carefully remove the keeper plates by removing 3 screws from each keeper plate. The slide may be removed from the cam base.
 - c. After machining for tooling components, assemble the slide back into the cam base by reinstalling keeper plates (torque screws properly) and mount the tooling components to the slide face, fastening with mounting screws (do not fully tighten).
4. Position the tooling components into their final location by using the corresponding die steels/buttons and assuring for proper die clearances. When the location has been satisfied, tighten mounting screws to proper torque.
5. Drill and ream the slide face to dowel the tooling components to slide (refer to # 4 above. Use of pull dowels is recommended to locate tooling components.
6. Re-attach positive return guide to slide and accelerator to the driver. Determine if accelerator mounting surface must be ground or shimmed to allow smooth engagement of upper roller into lower accelerator (where applicable).
7. Thoroughly clean the cam unit; lubricate the wear plates with light to medium oil. Assemble the cam (if disassembled) and install in die set. This initial lubrication is very important to allow for proper break-in of the cam unit assembly.
8. Verify the free movement of all sliding components. When satisfied as to its function, install the return springs into the cam.
9. Torque all mounting screws to their specified torque ratings.

SEATING TORQUE TABLE					
Soc. Hd. Cap Screw Size	TORQUE N.m/In-Lbs	Soc. Hd. Cap Screw Size	TORQUE N.m/In-Lbs	Low Soc. Hd. Cap Screw Size	TORQUE N.m/In-Lbs
M6	16/140	M12	135/1,200	M6	14.5/130
M8	39/350	M16	330/2,900	M8	35/310
M10	77/680	N/A	N/A	M10	70/620