

## SHOVEL AND PAN CAMSHAFTS

Three cam grinds were redesigned in 2008 using newest cam design technology! Whether you want a good street cam for a stock motor, a big cam for a dragster or something in between, Andrews Products can supply it. All of our cams for Shovel and Pan engines are computer designed and

precision ground from alloy steel billets on Landis CNC cam grinders. *Installation of "S" cams requires machine work. "S" series cams are not made for early Shovel or Pan engines.*

*Rocker arm ratios: Shovel: 1.42, Pan: 1.5 and Knuckle: 1.00*

Part#	Year	Grind	Timing(*)	Duration		Valve Lift		Lift (**) TDC		Springs	Application
				.053	.020	Shovel	Pan				
STOCK (Front cyl)		H	-06/46 44/20	220 244	256 282	.390 .390	.412 .412	.051 .176		Stock	Stock H/D front cylinder timing listed for comparison. Later stock "S" grind cams have similar specs.
STOCK (Rear cyl)		H	14/38 44/20	232 244	274 282	.390 .390	.412 .412	.129 .176		Stock	Stock H/D rear cylinder timing listed for comparison. Later stock "S" grind cams have similar specs.
212011 (48-69)		J	21/41	242	292	.405	.425	.154		Stock	Mild street: Pans and Shovels, smooth idle, more power through RPM range. Bolts in with no head work. OK for stock heads.
212020 (70-77)			41/21	242	292	.405	.425	.154			
212030 (78-84)											
212260 (48-69)		A2	19/43	242	280	.450	.470	.156		Stock	<b>New in 2008!</b> Shovel bolt-in (except '80-'81) More mid-range - hi end power. Idle unaffected. (Head setup req'd on '80 & '81). (See note 1).
212263 (70-77)			50/18	248	290	.450	.470	.142			
212267 (78-84)											
212130 (48-69)		1	16/36	232	288	.427	.450	.136		Stock	Low compression piston version of an "A" grind cam for 74 - 80 engines with 7.5:1 pistons.
212140 (70-77)			36/16	232	288	.427	.450	.136			
212150 (78-84)											
212330 (48-69)		2	15/35	230	288	.490	.512	.133		Hi-lift	Low compression version of a "B" grind cam. More power thru RPM range for engines with 7.5 pistons.
212340 (70-77)			35/15	230	288	.490	.512	.133			
212350 (78-84)											
212351 (48-69)		B2	26/50	256	295	.485	.507	.187		Hi-lift	<b>New in 2008!</b> Street/drag: More mid and high end power, smooth idle. Best cam for modified 74s - 80s & small strokers. Spring spacing req'd.
212353 (70-77)			53/25	258	296	.485	.507	.176			
212358 (78-84)											
212420 (48-69)		BH	24/52	256	302	.450	.470	.156		Hi-lift	Hydraulic version of a "B" cam. Usually a bolt-in but spring spacing required on stock '80 - '81 Shovel heads.
212430 (70-77)			52/24	256	302	.450	.470	.156			
212440 (78-84)											
212533 (48-69)		7	29/53	262	303	.510	.535	.206		Hi-lift	<b>New in 2008!</b> Upgrade of original #6. Great street cam for 84/88 inch strokers. Maximum torque available from 2200 to 6500 RPM.
212536 (70-77)			59/27	266	325	.510	.535	.186			
212539 (78-84)											
212600 (48-69)		C	37/61	278	318	.525	.550	.234		Hi-lift	Best cam made for big street engines. strokers from 84 to 96 inches will really turn on with this cam. Broad torque band from 2000 - 7000+ rpm.
212610 (70-77)			61/37	278	318	.525	.550	.234			
212620 (78-84)											
212823 (70-77)		S82	32/60	272	306	.590	---	.237		Hi-lift	74-84 inch Shovels with 10.5+ C.R. New design technique for wide, strong power band. 6500+ RPM
212825 (78-84)			66/30	276	310	.590	---	.220		160 #	
212834 (70-77)		S84	32/64	276	310	.630	---	.241		Hi-lift	Shovels: 84-96 inches, 10.5+ C.R. and head flow work for max HP in big inch engines. 6500+RPM.
212836 (78-84)			70/30	280	314	.630	---	.223		160 #	
212855 (70-77)		S86	34/70	284	318	.660	---	.254		Hi-lift	100+ inch Shovels will benefit most from this quick ramp cam design. Broad power band to 6500+RPM
212857 (78-84)			76/32	288	322	.660	---	.235		160 #	

Note (1); 1980 and 1981 engines: The height of original stock H/D valve guides restricts spring travel (and valve lift) to .430 or less!

(\*) Timing listed at .053 cam lift.

(\*\*) TDC Shovel valve lift listed: TDC Pan valve lift will be 5% higher.

## CAMS FOR KNUCKLE ENGINES

Amazing, but there are still a lot of Knuckle engines going strong. They have been around for more than 65 years! How many other bikes can make this kind of a claim for long life and durability.

Part#	Grind	Timing(*)	Duration		Valve Lift	Lift @ TDC	Springs	Application
			.053	.020				
212965	N	13/41 44/16	234 240	270 276	.348 .348	.089 .105	Stock	Stock Knuckle replacement cam. For stock motors and restoring an older classic engine, this is the cam to use.
212970	S	27/55 55/27	262 262	308 308	.370 .370	.130 .130	Stock	Bolt-in Knuckle performance cam for stock motors, smooth idle, strong pull to 6000 rpm. This cam is the Knuckle equivalent of a "B" cam in a shovel motor.
212980	K	35/63 63/35	278 278	318 318	.368 .368	.156 .156	Stock	Knuckle perf cam for stroked motors; strong pull to 6000 rpm. This is the Knuckle equivalent of a "C" cam.

Knuckle cam bearings are ground to .8115 to fit stock bushings.

(\*) Timing listed at .053 cam lift.