

# LSx & GEN V LT1



Callies has developed a wide range of part numbers for the continually evolving and popular LS family of engines. You will find our selection of components to be the industry's most comprehensive offering.



## LS Ultra Billet UB

### Available Options:

- Stroke range of 2.720" to 4.750"
- LS1, LS7, LT1, LT2 posts are available
- 6, 8, or 9 bolt pattern flange options
- Rod Sizes: 1.850", 1.888", 2.000", 2.100", (2.200" w/sbc width) 2.200"
- Main Journal Sizes: Standard LS, Ford Cleveland 351
- No drill balance optional
- Aero efficient Ultra-Shed counterweight profiling is standard
- Aeroshed super finishing included with all Ultra billets
- All Ultra LS billets are produced from TimkenSteel 4330 alloy steel

Contact Callies for a full list of part numbers and options.

## LS/Gen V LT1 8 Counterweight Magnum

Average weight: 50-55 lbs.

### LS1 Gen III - IV Standard Features

- Stroke range of 2.7ummm00" to 4.625"
- Fully counterweighted
- Counterweight prepped for a minimum 1850g bob weight
- Dual post keyways
- Gun drilled mains & lightened rods
- Heat Treatment = Perma Case Deep Nitride
- 1.825", 1.850", 1.888", 2.000", 2.100" rod journal diameters
- LS, LS7, or LT posts configurations
- Chevy 283 and Ford 351 mains available as custom



Contact Callies for a full list of part numbers and options.

Stroke:	Main:	Pin:	Cammed for Rod Length	Part #:
3.625	2.559	2.100	6.100 LT Dry Sump	5UH-31V-MG
4.000	2.559	2.100	6.125	APO-31V-MG
4.000	2.559	2.100	6.125 LS7 Dry Sump	AWO-31V-MG
4.000	2.559	2.100	6.125 LT Dry Sump	5UO-31V-MG
4.000	2.559	2.100	6.125 LSA	5PO-31V-MG

Stroke:	Main:	Pin:	Cammed for Rod Length	Part #:
4.000	2.750	2.100	6.125	APO-71V-MG
4.125	2.559	2.100	6.125	APU-31V-MG
4.125	2.750	2.100	6.125	APU-71V-MG
4.250	2.559	2.100	6.350	APP-31V-MG
4.250	2.750	2.100	6.350	APP-71V-MG



## LS Ultra UD - Forged & Billet

### Standard Features

- Stroke range of 2.720" to 4.250"
- Fully counterweighted
- Counterweight prepped for 1850g bob weight
- Gun drilled mains & lightened rods
- Scalloped flange
- Available as a forging or a billet

Contact Callies for a full list of part numbers and options.

**Forged:**

Stroke:	Main:	Pin:	Cammed for Rod Length	Part #:
3.625	2.559	2.000	6.125	APH-34V-UD
4.000	2.559	1.888	6.125	APO-39V-UD
4.000	2.559	2.000	6.125 LS7 Post	AWO-34V-UD
4.125	2.559	2.000	6.125	AWU-34V-UD

**Billet:**

Stroke:	Main:	Pin:	Cammed for Rod Length	Part #:
3.625	2.559	1.888	6.125	APH-39@-UD
3.900	2.559	2.000	6.125	APC-34@-UD
4.000	2.559	2.000	6.125	APO-34@-UD
4.100	2.559	2.000	6.125	AP&-34@-UD

# LSx & GEN V LT1



We understand that not everyone has the need or budget for a Magnum or billet crankshaft, but still may want a product with more to offer than our Compstar line. This middle-ground has needed an option for several years, so Callies went to work for a solution. This has culminated in the creation of the Apex Series of crankshaft by Callies. Apex crankshafts are made on the same forgings that we use to make our Magnum Series, but are machined by the supplier that makes the Compstar line. Like Compstar, all Apex crankshafts are finish sized and fully inspected in-house. This results are the best bang-for-your-buck crankshaft on the market.

## Apex LS/LT

### Standard Features

- Made on Callies proprietary Magnum forging
- Ultra-pure, premium 4340 material
- Machined by our vetted and reliable Compstar supplier
- Nitrided for optimal hardness and wear resistance
- Every crankshaft is finished and inspected in-house at Callies
- Limited stroke and pin size combinations



### Apex - LS Wet and Dry Sump Post:

Stroke:	Main:	Pin:	Cammed for Rod Length	Part #:
3.625	2.559	2.100	6.100	APH-31V-AS
4.000	2.559	2.100	6.125	APO-31V-AS
4.000	2.559	2.100	6.125 Dry Sump Post	AWO-31V-AS
4.125	2.559	2.100	6.125	APU-31V-AS
4.250	2.559	2.100	6.125	APP-31V-AS

### Apex - LT Wet and Dry Sump Post:

Stroke:	Main:	Pin:	Cammed for Rod Length	Part #:
3.625	2.559	2.100	6.100 Dry Sump Post	5UH-31V-AS
3.625	2.559	2.100	6.100 Wet Sump Post	5TH-31V-AS
4.000	2.559	2.100	6.125 Dry Sump Post	5UO-31V-AS
4.000	2.559	2.100	6.125 Wet Sump Post	5TO-31V-AS



## Compstar LSx 8 Counterweight

Stroke:	Main:	Pin:	Cammed for Rod Length	Part #:
<b>LS Wet Sump Post</b>				
3.625	2.559	2.100	6.098	APH-31Q-CS
3.900	2.559	2.100	6.125	APC-31Q-CS
4.000	2.559	2.100	6.125	APO-31Q-CS
4.100	2.559	2.100	6.125	AP&-31Q-CS
4.125	2.559	2.100	6.125	APU-31Q-CS
<b>LS Dry Sump</b>				
3.625	2.559	2.100	6.100	AWH-31Q-CS
4.000	2.559	2.100	6.125	AWO-31Q-CS
4.125	2.559	2.100	6.125	AWU-31Q-CS

## Compstar LT2

Stroke:	Main:	Pin:	Cammed for Rod Length	Part #:
3.625	2.559	2.100	6.125	5SH-31Q-CS
3.750	2.559	2.100	6.125	5SJ-31Q-CS

## Compstar LSx

Average weight: 55 lbs.

### Standard Features

- Typical weight for a 4.000" stroke, 2.100" journal = 51 lbs.
- 2.100" or 2.000" rod journals
- Standard LS main diameters only
- 3.625", 4.000", 4.100", 4.125" strokes available
- All Compstar LS cranks are counterweight prepped to 1850 gram bob weight
- OEM 58 tooth reluctor or billet 24 tooth reluctors available

## Compstar LT 8 Counterweight

Stroke:	Main:	Pin:	Cammed for Rod Length	Part #:
<b>LT Wet Sump Post</b>				
3.625	2.559	2.100	6.100	5TH-31Q-CS
3.750	2.559	2.100	6.125	5TJ-31Q-CS
4.000	2.559	2.100	6.125	5TO-31Q-CS
<b>LT Dry Sump Post</b>				
3.625	2.559	2.100	6.100	5UH-31Q-CS
3.750	2.559	2.100	6.125	5UJ-31Q-CS
4.000	2.559	2.100	6.125	5UO-31Q-CS

Stroke:	Main:	Pin:	Cammed for Rod Length	Part #:
3.850	2.559	2.100	6.125	5S5-31Q-CS
4.000	2.559	2.100	6.125	5SO-31Q-CS

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\* Pistons, Bearings and Finish Ground Cams also available.

## Callies Connecting Rods

### LS Ultra Enforcer I-Beam - Rated for 2,400 HP

Length:	Journal:	Typical Wt:	Part #:
6.125	2.100	662g.	U17175
6.125	2.100	710g.	U17175-CA

### LS Ultra H-Beam - Rated for 1,600 HP

Length:	Journal:	Typical Wt:	Part #:	
6.100-LW	2.100	617g.	U16290	
6.125	2.100	660g.	U16300	
6.125	2.000	645g.	U16310	
6.125	2.100	618g.	U16400	.866 pin
6.200-LW	2.100	625g.	U16303	
6.250	2.100	624g.	U16450	.866 pin
6.350	2.100	658g.	U16302	
6.460	2.100	661g.	U16301	
6.560	2.100	678g.	U16304	

### LS Ultra UD (Dirt Style) H-Beam - Rated for 1,200 HP

Length:	Journal:	Typical Wt:	Part #:	
6.200	2.000	616g.	U16346	
6.485	2.000	641g.	U16347	
6.485	2.000	637g	U16367	.905 wide

## Compstar Connecting Rods

### LS Compstar H-Beam - Rated for 1,000 HP

Length:	Journal:	Typical Wt:	Part #:
6.100	2.100	611g.	CSC6100DS2A2AH
6.100	2.100	612g. .943 pin	CSC6100DS6A2AH
6.125	2.000	595g.	CSC6125CS2A2AH
6.125	2.100	618g.	CSC6125DS2A2AH
6.440	2.000	639g.	CSC6440CS2A2AH
6.560	2.100	655g.	CSC6560DS2A2AH

### Compstar LS Xtreme

Length	Journal	Pin	Typ. Wt.	Part #
6.125	2.100	.927	648g.	CSC6125DS2A2AX



\* All Ultra Rods can be upgraded to Custom Age Bolts -CA

## Head Studs

Part #:	Description:	Material:
10413P	SBC LS Studs - 2004 & Later - All In One Length	Patriot Grade
11086	LT Loose Stud Assy - 4" x 7/16-14 x 7/16-20"	TorqueMaster
11087	LT Loose Stud Assy - 5" x 7/16-14 x 7/16-20"	TorqueMaster
10620	LSR Loose Stud Assy - 7" Head Stud - LSR 1/2"	TorqueMaster
10372	LSR Loose Stud Assy - 12pt. Heavy Nuts .825" collar .515" height	TorqueMaster
10257	LSR Loose Stud Assy - Washer - Diameter .875"x1225" thick	TorqueMaster

## Main Studs

Part #:	Description:	Material:
10593	Chevrolet LS - Gen III LS Cast Iron	Patriot Grade
10790	Point Nut 7/16-20 12 point nut, .825 collar, 9/16 wrench .475 oah	
10383	Washer 7/16 - 0.4375 ID 0.875 OD 0.125 thick - non-chamfer	

OptiTorque	Material Grade	OptiTorque Tensile Strength
Patriot	8740 Chrome Moly	180-220 ksi
TorqueMaster	HSLA 6304	190-240 ksi



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## Reluctors

Single piece billet reluctor wheels machined to OEM specification with either 24x or 58x notch patterns. Callies reluctor wheels for all LS and LT engines are final bored with a .007" undersize bore insuring installation security in the harshest of applications. All surfaces on Callies reluctor wheels are machine milled not laser cut to ensure smooth, strong signal.



## LS Post Spacer

Allows for use of dry sump crank in wet sump application. Must be modified to be used with aftermarket balancer.

Part #CPP-0551



## Timing Drives



Jesel : KBD-31666

RCD : 253500-055

Innovator's West : 5202

## Callies Finish Ground Cams

Callies fully finished camshafts are machined and heat treated entirely in house. This continuity of manufacturing allows Callies to deliver high quality camshafts on schedule. Our finished cams are ground with the latest Landis CNC technology. They are ADCOLE and Jenoptik inspected for accuracy, making them the most consistent cams on the market today. If required, your cams can be finished with inverted flank lobe profiles and complex VVT oil channels and drillings.



Callies offers cams to serve a wide variety of applications for many popular engine platforms.

Callies cams are available in multiple types of aircraft quality materials. Less aggressive profiles fit nicely within our induction hardened 1050 or 4150 materials. 8620 carburized material works well for many racing applications. Tool steel is available for the most extreme applications.

Keeping the valvetrain under control is vital to a successful engine program. Our lobe profiles are designed to produce excellent power without sacrificing durability. They are precision ground in our Landis CNC grinders, with event timing and lobe profile tolerances verified in our Adcole inspection gages. With a long history of superior quality grinding experience, Callies is the right choice for all of your camshaft needs.

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## Callies Finish Ground Cam List - LS1 3-Bolt

Callies Part #	Solid or Hyd	Duration @ .050		Advertised Duration		Cam Lift		Valve Lift		LSA + Advance	Lobe Ctr.		Lift @ TDC		Specific Remarks
		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust		Intake	Exhaust	Intake	Exhaust	
<b>LS1 3-Bolt 55mm Hydraulic Roller</b>															<b>Stock Bottom End</b>
180-009	HR	210	218	261	266	0.325	0.325	0.553	0.553	108 + 3	105	111	0.085	0.075	Cathedral Port - SBE
180-010	HR	214	222	265	270	0.325	0.325	0.553	0.553	110 + 3	107	113	0.085	0.075	Cathedral Port - SBE
180-011	HR	218	226	269	274	0.325	0.325	0.553	0.553	112 + 3	109	115	0.085	0.075	Cathedral Port - SBE
180-012	HR	222	230	273	278	0.325	0.325	0.553	0.553	114 + 3	111	117	0.085	0.075	Cathedral Port - SBE
180-019	HR	216	228	267	277	0.368	0.368	0.626	0.626	108 + 2	106	110	0.092	0.102	Rectangular Port - SBE
180-020	HR	220	232	271	281	0.368	0.368	0.626	0.626	110 + 2	108	112	0.092	0.102	Rectangular Port - SBE
180-021	HR	224	236	275	285	0.368	0.368	0.626	0.626	112 + 2	110	114	0.092	0.102	Rectangular Port - SBE
180-022	HR	228	240	279	289	0.368	0.368	0.626	0.626	114 + 2	112	116	0.092	0.102	Rectangular Port - SBE
Callies Part #	Solid or Hyd	Duration @ .050		Advertised Duration (@ .006)		Cam Lift		Valve Lift w/1.7 Rocker		LSA + Advance	Lobe Ctr.		Lift @ TDC		Specific Remarks
<b>LS1 3-Bolt 55mm Hydraulic Roller</b>		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust		Intake	Exhaust	Intake	Exhaust	
180-001	HR	212	218	265	271	0.325	0.325	0.553	0.553	113 + 2	111	115	0.037	0.035	
180-038	HR	212	222	268	278	0.325	0.325	0.553	0.553	116 + 3	113	119	0.033	0.032	
180-023	HR	214	222	270	278	0.353	0.353	0.600	0.600	111 + 3	108	114	0.047	0.043	
180-052	HR	216	226	272	282	0.325	0.325	0.553	0.553	116 + 5	111	121	0.042	0.032	
180-040	HR	217	234	293	310	0.341	0.341	0.580	0.580	120 + 4	116	124	0.034	0.036	
180-002	HR	218	224	271	277	0.325	0.325	0.553	0.553	113 + 3	110	116	0.047	0.039	
180-057	HR	218	226	269	274	0.325	0.325	0.553	0.553	108 + 3	105	111	0.062	0.055	
180-024	HR	218	230	274	286	0.353	0.353	0.600	0.600	111 + 4	107	115	0.056	0.050	
180-042	HR	220	226	296	282	0.353	0.353	0.600	0.600	115 + 4	111	119	0.048	0.036	
180-041	HR	220	234	276	290	0.350	0.345	0.595	0.587	118 + 4	114	122	0.040	0.038	
180-025	HR	222	234	278	290	0.353	0.353	0.600	0.600	112 + 2	110	114	0.053	0.058	
180-014	HR	222	238	273	287	0.368	0.368	0.626	0.626	109 + 4	105	113	0.069	0.069	
180-003	HR	224	230	277	283	0.325	0.325	0.553	0.553	111 + 2	109	113	0.059	0.056	
180-043	HR	226	232	282	310	0.353	0.353	0.600	0.600	115 + 4	111	119	0.058	0.043	
180-015	HR	226	242	277	291	0.368	0.368	0.626	0.626	111 + 4	107	115	0.069	0.069	
180-029	HR	226	246	282	320	0.353	0.360	0.600	0.612	116 + 6	110	122	0.058	0.053	
180-044	HR	227	237	285	295	0.365	0.355	0.621	0.604	113 + 4	109	117	0.062	0.054	
180-055	HR	230	242	286	309	0.353	0.355	0.600	0.604	111 + 5	106	116	0.077	0.061	
180-016	HR	230	246	281	295	0.368	0.368	0.626	0.626	113 + 4	109	117	0.069	0.069	

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Callies Part #	Solid or Hyd	Duration @ .050		Advertised Duration		Cam Lift		Valve Lift		LSA + Advance	Lobe Ctr.		Lift @ TDC		Specific Remarks
180-045	HR	232	242	333	343	0.380	0.380	0.646	0.646	117 + 5	112	122	0.646	0.646	
180-056	HR	232	244	288	311	0.360	0.366	0.612	0.605	115 + 5	110	120	0.068	0.053	
180-046	HR	232	248	288	315	0.360	0.355	0.612	0.604	118 + 5	113	123	0.059	0.050	
180-007	HR	232	249	299	323	0.363	0.363	0.617	0.600	120 + 5	115	125	0.055	0.048	
180-047	HR	234	239	310	316	0.360	0.358	0.612	0.609	115 + 4	111	119	0.065	0.051	
180-026	HR	234	240	301	322	0.362	0.362	0.615	0.615	112 + 4	108	116	0.078	0.071	
180-017	HR	234	250	285	299	0.368	0.368	0.626	0.626	115 + 4	111	119	0.069	0.069	
180-048	HR	236	248	288	315	0.366	0.355	0.622	0.604	112 + 4	108	118	0.062	0.069	
180-030	HR	236	250	292	317	0.355	0.362	0.604	0.615	114 + 4	110	118	0.074	0.066	
180-031	HR	236	256	292	330	0.355	0.355	0.604	0.604	117 + 7	110	124	0.074	0.060	
180-018	HR	238	254	289	303	0.368	0.368	0.626	0.626	117 + 4	113	121	0.069	0.069	
180-032	HR	240	252	307	326	0.360	0.367	0.612	0.624	114 + 2	112	116	0.075	0.078	
180-033	HR	240	256	307	330	0.355	0.355	0.604	0.604	114 + 4	110	118	0.082	0.077	
180-027	HR	242	254	309	328	0.362	0.362	0.615	0.615	111 + 3	109	113	0.088	0.089	
180-049	HR	242	258	309	316	0.362	0.366	0.615	0.604	113 + 3	110	116	0.086	0.087	
180-034	HR	242	260	309	334	0.355	0.355	0.604	0.604	114 + 3	111	117	0.082	0.086	
180-050	HR	244	250	302	316	0.365	0.365	0.621	0.604	118 + 5	113	123	0.077	0.065	
180-035	HR	246	260	298	334	0.366	0.370	0.622	0.629	114 + 4	110	118	0.094	0.083	
180-059	HR	246	260	296	334	0.366	0.370	0.622	0.629	108 + 2	106	110	0.109	0.109	
180-036	HR	248	260	315	334	0.355	0.355	0.604	0.604	114 + 4	110	118	0.096	0.083	
180-028	HR	250	264	317	338	0.362	0.362	0.615	0.615	114 + 4	110	118	0.098	0.089	
180-037	HR	250	264	319	338	0.370	0.370	0.629	0.629	114 + 4	110	118	0.097	0.089	
180-060	HR	258	272	332	346	0.366	0.370	0.622	0.629	108 + 2	106	110	0.120	0.129	
180-051	HR	260	270	328	343	0.382	0.382	0.649	0.649	109 + 4	105	113	0.130	0.115	



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Callies Part #	Solid or Hyd	Duration @ .050		Advertised Duration (@ .020)		Cam Lift		Valve Lift w/1.7 Rocker		LSA + Advance	Lobe Ctr.		Lift @ TDC		Specific Remarks
		Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust		Intake	Exhaust	Intake	Exhaust	
<b>LS1 3-Bolt 55mm Solid Roller</b>															
180-062	SR	251	267	280	295	0.382	0.375	0.649	0.638	110 + 3.5	106.5	113.5	0.114	0.118	Procharger
180-013	SR	262	269	291	298	0.472	0.485	0.802	0.791	107 + 0	107	107	0.140	0.149	Dir Track
180-064	SR	270	282	305	315	0.454	0.464	0.772	0.772	116 + 2	114	118	0.114	0.119	Turbo Cam
180-063	SR	278	294	308	326	0.485	0.485	0.825	0.825	114.5 + 6.5	108	121	0.166	0.134	Procharger
<b>LS1 3-Bolt 60mm Solid Roller</b>															
180-004	SR	260	280	293	308	0.420	0.430	0.714	0.731	113 + 0	113	113	0.101	0.145	NA Drag Race Cam
180-005	SR	260	280	290	311	0.420	0.430	0.714	0.731	113 + 0	113	113	0.101	0.135	NA Drag Race Cam
180-008	SR	271	274	300	306	0.522	0.525	0.887	0.893	115.5 + .5	115	116	0.122	0.122	Turbo Cam
180-061	SR	278	284	311	317	0.500	0.525	0.850	0.893	117 + 0	117	117	0.128	0.138	Turbo Cam
180-006	SR	281	284	310	316	0.522	0.525	0.887	0.893	115.5 + .5	115	116	0.145	0.143	Turbo Cam
180-039	SR	285	316	314	348	0.550	0.565	0.935	0.944	120 + .4	116	124	0.150	0.177	Nitrous Cam
<b>LS1 3-Bolt 55mm CID LS-CR Head</b>															
182-001	SR	268	282	299	312	0.485	0.485	0.922	0.922	115 + 0	115	115	0.107	0.148	NA Drag Race Cam
182-003	SR	271	292	302	322	0.485	0.485	0.922	0.922	116.5 + 1.5	115	118	0.113	0.152	NA Drag Race Cam
182-002	SR	278	292	309	322	0.485	0.485	0.922	0.922	115 + 0	115	115	0.128	0.165	NA Drag Race Cam



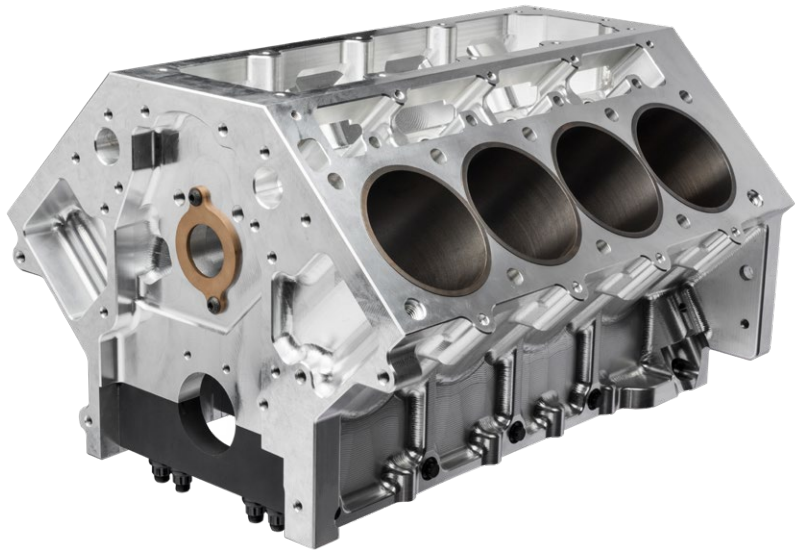
# ENERGY

## BILLET ALUMINUM LS ENGINE BLOCK

Energy Manufacturing billet blocks begin life as a 490 pound block of high grade forged 6061 aluminum. Featuring rolled thread tapped holes for extra strength and high strength cylinder liners, careful attention is given to fit and finish of the overall block. Each semi-finished block is thoroughly heat treated to T6 Standards and cryogenically stress relieved.

Deck	Cam Heights	Main Size	Part #
9.240"	+0.388	351C	100-908
9.750"	+0.388	351C	100-905
10.000"	+0.388	351C	100-909
10.200"	+0.388	351C	100-907

\*Alternate deck heights will require additional charge.



### LS Standard Features

- Deck Height(s): 9.240", 9.750", 10.000", 10.200"
- Cylinder Bore Spacing(s): Standard
- Cylinder Bore Sizes: 4.120"-4.165", customer specified
- Cylinder Sleeve Protrusion: 0 to +.008", customer specified
- Cylinder Head Fastening per Deck: (10) 1/2-13, (4) 3/8-16, (4) 3/8" shoe kit provisions. Standard Pattern. Alternate fastening and pattern available at additional charge.
- Cam Height(s): Raised 0.388"
- Cam Bore Sizes: 55mm Babbitt, 55mm Roller/60mm Babbitt, or 60mm Roller. Delivered finish honed.
- Lifter Bore Configuration(s): Standard. Alternate lifter configurations available at additional charge.
- Lifter Bore Size(s) & Style(s): .937 bushed keyway, .937 bushed standard, or 1.060 in Aluminum ready for bushing. Delivered finish honed. Alternate size/style available at additional charge.
- Crank Bore(s): 2.75" 351C. Delivered finish honed.
- Main Cap Material(s): Billet Aluminum
- Main Cap Fastening: (4) 1/2" Vertical Studs, (2) 7/16" side bolts, (2) 1/4" Locating dowels
- Stroke Clearance: 4.750" Max
- Timing Drive(s): Jesel Belt Drive, RCD Gear Drive, or Innovator's West Belt Drive.

**Additional Information:** Priority Main Oiling, Dry Only, Custom lifter and head bolt patterns available upon request.

**\*Certain options are only available in some configurations. Please call to verify the combination you require is available.**



## ENERGY MANUFACTURING, LTD.

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