

ENGINE WORKS

2019



LS PARTS



LS SERIES CAMSHAFTS

Our performance LS Series camshafts are a great choice when you're looking to add horsepower. These precision-engineered, extensively-tested camshafts allow you to choose the best cam for your LS application.



PART NO.	STYLE	RPM RANGE	DURATION @ .050" LIFT	VALVE LIFT W/ FACTORY ROCKER ARM RATIO	LOBE SEPARATION	TYPE	GM PART NO.
158770HR	Hyd. Roller Tappet	2,000 - 6,000	226 / 236	0.525 / 0.525	110°	3-Bolt	88958770
158773HR	Hyd. Roller Tappet	2,000 - 6,000	233 / 276	0.595 / 0.595	107°	3-Bolt	88958773
156972HR	Hyd. Roller Tappet	2,000 - 6,500	236 / 246	0.648 / 0.648	110°	3-Bolt	19166972

LS CAMSHAFT RETAINER PLATES

Camshaft retainer plates are designed to fit behind the front cover and act as a seal for the front oil passages that feed oil to the lifters, cam, and main bearings.



PART NO.	DESCRIPTION	GM PART NO.
589016	LS Camshaft Thrust Plate w/ Seal	12589016

GM LS LIFTER GUIDES

These units are the newer design LS2 trays used in all current LS builds except for the active cylinder management engines. This guide features increase support in the design.



PART NO.	DESCRIPTION	GM PART NO.
595365-4	LS Lifter Guide - Fits all LS engines not using active cylinder management - 4 Pack	12595365
551163-4	Lifter Guide Retaining Bolt - Use 1 per lifter guide, 4 per engine - 4 Pack	12551163

GENUINE LS DELPHI HYDRAULIC ROLLER LIFTERS

Performance LS-Series Hydraulic Roller Lifters are available as original equipment manufacturer (OEM) production replacement lifters for your everyday driver/street machine or racing lifters developed by GM Racing and Powertrain division to withstand the rigors of sustained high rpm usage.



PART NO.	DESCRIPTION	GM PART NO.	DELPHI PART NO.
ML9225H-16	All LS applications using GM lifter guides, LS7 Type - Set of 16	12499225	25341990



LS 3-BOLT CAM CONVERSION KIT

Kit includes ARP™ MB Cam Bolts, Melling™ LS Timing Chain Damper, and 3-bolt 4-pole Cam Sprocket.

PART NO.	DESCRIPTION	GM PART NO.
586481	LS 3-Bolt Cam Conversion Kit	12586481

LS PUSHRODS

- Laser Etched
- Heat-Treated
- .080" Wall
- 5/16" Dia.

PART NO.	DESCRIPTION
3007325-8	7.325"
3007375-8	7.375"
300740-8	7.400"
3007425-8	7.425"
3007475-8	7.475"



LS VALVE STEM SEALS

The valve stem seal allows a carefully defined amount of engine oil from the cylinder head into the combustion chamber allowing a necessary lubrication of the rotating valve stem in the valve guide.



PART NO.	DESCRIPTION	SPECS
131900-16	OE w/ Beehive - '01 & Up - 16 Pack	.313 x .286 x .492 x .887 x .791 x 1.187
131805-16	Metal Clad Viton - OE Heads & Guides - 16 Pack	.502" Guide x .315" Stem ID
131806-16	Metal Clad Viton - OE or Aftermarket - 16 Pack	.560" Guide x .315" Stem OD

LS VALVE LOCKS

These Performance valve locks are manufactured from durable steel. Suitable for both production and racing engines. Sold in packages of 16.



PART NO.	GROOVE	DEGREE	VALVE SIZE	INSTALL HEIGHT	LASH CAP	TYPE
278-16	Radial Bead	7°	8mm	Stock	No	Stamped
279-16	Radial Bead	7°	8mm	Stock	No	Machined

LS VALVE SPRING RETAINERS

Our Engine Works retainers are precision-machined from 4140 chromoly steel and finished in black oxide. These retainers are made to maintain high strength and have a lightweight design. Sold in packages of 16.



PART NO.	MATERIAL	HEIGHT	SPRING SIZE	DEGREE	STEM SIZE	DIMENSIONS	FITS PAC SPRINGS
550-16	Steel	Beehive	STD	7°	8mm	1.03" x .640"	1215, 1218, 1219 & X
551-16	Steel	Stock	STD	7°	8mm	1.24" x .945" x .690"	1204, 1205, 1206, 1207, 1208, 1209, 1904, 1905

PAC SPRINGS

PART NO.	SPRING TYPE	SPRING DIAMETERS			SPRING LOADS		SPRING RATE	MAX COIL BIND	MAX LIFT
		OD OUTER	ID OUTER	ID INNER	INSTALLED HEIGHT	OPEN LOAD			
PAC-1204X	RPM - Dual	1.290	0.950	0.694	145 @ 1.800	385 @ 1.150	369	1.000	0.700
PAC-1205X	RPM - Dual	1.304	0.950	0.694	155 @ 1.800	410 @ 1.150	392	1.000	0.700
PAC-1218	Ovate - Beehive*	Lg End - 1.290 / 0.885	Sm End - 1.055 / 0.650		130 @ 1.800	318 @ 1.200	313	1.140	0.600
PAC-1219	Ovate - Beehive*	Lg End - 1.307 / 0.885	Sm End - 1.072 / 0.650		135 @ 1.800	348 @ 1.175	340	1.100	0.625
PAC-1904	HotRod - Dual	1.290	0.950	0.694	150 @ 1.800	400 @ 1.125	370	1.010	0.625
PAC-1905	HotRod - Dual	1.304	0.950	0.694	160 @ 1.800	425 @ 1.125	392	1.020	0.650

*Ovate Beehive Springs specs show Large End OD/ID & Small End OD/ID

LS VALVE SPRING LOCATORS

As with all other areas in the valvetrain, the area where the spring sits also takes a beating. The old standard shims and/or seats simply will not hold up to the extreme pressures and high rpm found in today's performance engines. Engine Works valve spring locators solve this problem and eliminate failures. Sold in packages of 16.



PART NO.	SPRING O.D.	O.D.	LD.	SHOULDER O.D.	GM PART NO.
250-16	1.300"	1.29"	.505"	0.650"	—
251-16	1.300"	1.29"	.565"	0.650"	—

LS BELLHOUSING DOWEL PINS

Performance bellhousing dowel pins allow you to easily align your transmission into the block.



PART NO.	DESCRIPTION	GM PART NO.
453658	1.190" Length x .621" dia. - Set of 2	1453658

LS CYLINDER HEAD DOWEL PINS

Performance cylinder head pins offer accurate alignment.



PART NO.	DESCRIPTION	GM PART NO.
570326	LS Block to Head Dowel Pins - 4 Pack	12570326

LS ENGINE BRASS COOLANT PIPE & PLUG

This coolant plug for the GM LS-Family of engines allows you to plug the coolant path on the right bank of cylinders (Driver's Side) when deleting the factory oil cooler on the 2010+ Chevy Camaro and other Gen IV LS engines equipped with a factory water-to-oil cooler.



PART NO.	DESCRIPTION	GM PART NO.
561663	28mm x 1.25" - Internal Allen	12561663

LS ENGINE COOLANT PLUG FASTENER

Performance engine coolant pipe and plug bolts are designed to work with your factory engine components.



PART NO.	DESCRIPTION	GM PART NO.
588714	6mm x 1.0 Thread - Hex Head	11588714

LS TOP END & BOTTOM END KITS

TOP END KIT INCLUDES:

- (4) Cam Retainer Bolts
- (1) Barbell Oil Plug
- (20) Medium Head Bolts
- (3) Cam Bolts
- (10) Front Cover Bolts
- (4) Oil Pump Bolts
- (10) Short Head Bolts
- (4) Lifter Guide Bolts
- (1) Harmonic Balancer Bolt
- (1) Camshaft Thrust Plate
- (4) Coolant Pipe Seal



BOTTOM END KIT INCLUDES:

- (10) Main Cap Bolts
- (1) Coolant Plug, Large
- (10) Side Main Cap Bolts
- (3) Cam Bolts
- (12) Rear Cover Bolts
- (10) Main Cap Bolts
- (1) Front Oil Galley Press-In Plug
- (3) Coolant / Oil Plugs
- (13) Oil Pan Bolts
- (8) Front Cover Bolts
- (4) Oil Pump Bolts
- (2) Bellhousing Dowels
- (2) Oil Pan to Rear Cover Bolts
- (2) Coolant Air Bleed Bolts

PART NO.	DESCRIPTION
469001	LS Top End Kit
469901	LS Bottom End Kit

LS HEAD BOLT KITS

Our Engine Works performance cylinder head bolts are designed for use with your GM heads. Everything is included to properly complete your cylinder head installation. Services 2 heads.



PART NO.	DESCRIPTION	GM PART NO.
800568	2004 & Up - Kit has (10) 45mm / 1.770" bolts & (20) 100mm / 3.930" bolts - TTY	17800568
17118HP	Pre 2004 - Kit has (16) M11 x 2.0 that are 155mm long, (4) M11 x 2.0 bolts that are 100mm long, & (10) M8 x 1.25" bolts that are 45mm long - TTY	12498545

LS HARMONIC BALANCER BOLTS

Performance harmonic balancer bolts are made of high-quality steel and are heat-treated for extra strength. Our harmonic balancer bolts feature a hex head to prevent socket slippage.



PART NO.	DESCRIPTION	GM PART NO.
557840	LS1, LS2, LS3, LS6 - Short - 4.055" Length - 16mm x 2.0 - TTY	12557840
570163	LS7 - Long - 5.75" Length - 16mm x 2.5 - TTY	11570163

LS FRONT COVER / OIL PAN BOLTS

The front cover bolts feature a built-in washer face with case-hardened serrations. The washer face and hex head design easily permit the use of a socket wrench for quick and accurate installation.

- 8 Bolt are required for the timing cover.
- 12 Bolts (13 for LS7/LS9) are required for the oil pan.
- 4 Bolts are required to mount the oil pump to the block.



PART NO.	DESCRIPTION	GM PART NO.
515758-8	M8 x 30mm - (48) Needed Per Engine - 8 Pack	11515758

LS FLYWHEEL BOLTS

PART NO.	DESCRIPTION	GM PART NO.
569956-6	Short - 11mm x 1.5 Thread - 0.800" UHL - 6 Pack	11588714
257940-6	Long - 11mm x 1.5 Thread - 1.000" UHL - 6 Pack	19257940

LS TIMING COVERS

Engine Works timing covers are built to the highest quality standards to ensure an excellent fit and leak-free seal.

PART NO.	DESCRIPTION	GM PART NO.
556623	Timing Cover WITHOUT Sensor Hole - Does have front seal installed	12556623
633906	Front Timing Cover - Comes with sensor, sensor pigtail and bracket, and seal	12633906
633906B	Front Timing Cover - Comes with sensor hole provision & seal (No sensor or sensor bracket)	12633906B



LS PRO-BILLET SERIES TIMING CHAINS

- Heat-treated crank gears
- Torrington Bearings
- Surpasses OE design for strength & accuracy
- 9-Keyway crank sprocket
- Pre-stretched double roller 0.250" chain (ROLON)
- Performance engineered teeth - Provides stable timing in High-RPM applications



PART NO.	DESCRIPTION
19335	LS1 - 1997-2006
19435	LS2 - 2003-2007
19535	LS2/LS3 - 2007-2014, 6.0L - 6.2L; 1-Bolt
29635	LS3 - 2006-2007, 6.0L - 6.2L; 3-Bolt
19775	LS7 - 2006-2010, 7.0L

LS REAR MAIN SEAL HOUSINGS

Manufactured from durable aluminum and are ideal for replacing damaged housings or building from scratch.



PART NO.	DESCRIPTION	GM PART NO.
639250	LS Rear Main Seal Cover w/ gaskets, seal, and bolts WILL NOT FIT LSX BLOCKS	12639250

LS FLEXPLATE SPACER / ADAPTER

High-quality steel adapter is designed to achieve optimum spacing when you're installing a Non-LS transmission to a LS based engine.



PART NO.	DESCRIPTION	GM PART NO.
563532	LS to Pre-1997 non-LS for use with TH350, 400, 700R4, and 200M Transmissions - Use with bolt #257940-6	12563532

LS VALLEY PLATE COVERS & SCREWS



PART NO.	DESCRIPTION
625179	LS1 / LS2 / LS6 - Steel - w/ 17616-11 screws
625180	LS3 / LS7 / LSX - Steel - w/ 17616-11 screws
625181	LS1 / LS2 / LS6 - Aluminum - w/ 17616-11 screws
625181BK	LS1 / LS2 / LS6 - Black Aluminum - w/ 17616-11 screws
17616-11	LS All - Valley Cover Attaching Screws - Low Profile, Button Head - Stainless - Pack of 11

LS SWAP OIL PAN

- Fabricated
- 6 QT.
- 6" Deep
- Rear Sump
- 4.125" Max Stroke
- Clear Zinc
- Includes IOAN Oil Line Adapter



PART NO.	DESCRIPTION
26731Z	LS Swap Oil Pan - 6" Deep - 6 QT.
267131	LS Oil Pickup for #26731Z



612350



630223



551933



166346



162346



633904



163346



637683



585673

558178



PREMIUM OE QUALITY GASKETS

PART NO.	DESCRIPTION	GM PART NO.
612350	LS Oil Pan Gasket - 1-Piece - 1997-Present, Does not fit LS7 & LS9	12612350
630223	LS Water Pump Gasket - Fits all LS engines 1997-Present - Rubber/Steel (Requires 2 per engine)	12630223
637683	LS Valve Cover Gaskets - Fits all LS engines 1997-Present - Rubber - Pair	12637683
633904	LS Front Cover Gasket	12633904
585673	LS Front Cover Seal	12585673
166346	LS Rear Main Cover Gasket & Seal - Fits 1997-2002 LS1	12639429
162346	LS Intake Gasket Set - 1997-2004 LS1 - 1.16"x 3.38" (Fel-Pro #1312-3) - Pair	---
163346	LS Exhaust Gasket Set - 1997-2004 LS1 - 1.75"x 1.75" - Round Port Laminate - Pair	---
551933	LS Coolant Air Bleed Pipe Seal - Rubber / Steel - Pair	12551933
558178	LS Valley Cover Gasket - LS1 / LS6	12558178

PREMIUM OE QUALITY GASKET SETS - MLS HEAD GASKETS



PART NO.	DESCRIPTION
503175	LS1 / LS6 - Small Bore MLS Head Gaskets - Complete Set
503176	6.0L & Up - Small Bore MLS Head Gaskets - Complete Set

HIGH-PERFORMANCE LS STARTER

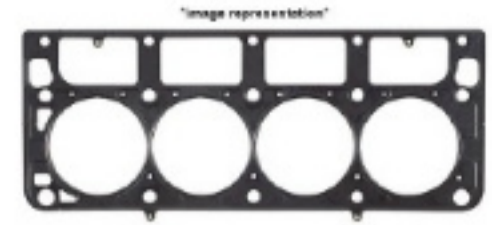
- 3 HP Motor
- All ball bearing construction
- High-quality drive & solenoid



PART NO.	DESCRIPTION
13502LS	3 HP - High Performance LS Starter

LS MLS HEAD GASKETS

- Black Coated
- .050" Thickness



PART NO.	DESCRIPTION
111346MLS	Small Bore 3.985"
111376MLS	Large Bore 4.100"

LS STARTER HEAT SHIELD WRAP



PART NO.	DESCRIPTION
13517	LS Starter Heat Shield Wrap - 7" x 24" can be cut to length

LS IGNITION COIL PACK

Engine Works ignition coil packs feature advanced bobbin technology, a specialized magnetic steel core, and optimum windings. This results in higher energy and voltage outputs plus arc duration. Installation is easy with the direct bolt / plug-in units.

- **11% Higher Volume**
- **19% More mJ energy than OEM**
- **Perfect for Pro Charged, Supercharged, Nitrous or E85**
- **Great for crate engine builds**

573190



574510H



574580



PART NO.	DESCRIPTION	GM PART NO.
573190	LS Coil - Delphi, Round - Fits LS3 & LS7 (AC Delco #D514-A)	12573190
574580	LS Coil - Fits LS Gen III LS1 / LS6 (AC Delco #D580)	12558948
574510H	LS Coil - Fits LS Gen IV LS2 / LS3 / LS4 / LS7 / LS9 (AC Delco #D510C)	12611424

LS FIRE BOOTS

- 8" Long
- No Ring
- 8-Pack
- Up to 1200°F



PART NO.	DESCRIPTION
16201NR	Natural - LS Fire Boots - 8-Pack
16202NR	Black - LS Fire Boots - 8-Pack
16203NR	Red - LS Fire Boots - 8-Pack

LS VOLCANO BOOTS

Manufactured from crushed lava rock filament fiber; making them stronger and more flexible, while operating at it's designed service temp of 1800°F continuous and 2500°F intermittent of radiant heat.



PART NO.	DESCRIPTION
16301NR	6" Volcano LS Fire Boot - Each
16304NR	6" Volcano LS Fire Boot - 4-Pack
16308NR	6" Volcano LS Fire Boot - 8-Pack
17301NR	8" Volcano LS Fire Boot - Each
17304NR	8" Volcano LS Fire Boot - 4-Pack
17308NR	8" Volcano LS Fire Boot - 8-Pack

LS 8.5MM PREMIUM SPARK PLUG WIRES - 250 OHMS

- Spark plug boots accept OEM heat shields
- Dual-silicone jackets are bonded together with fiberglass matting
- Built to handle extreme heat applications and to virtually eliminate terminal pull-off associated with the repeated removal and replacement at the track

PART NO.	LENGTH	BOOT	COLOR
16439	9.5"	135°	Red
16439BK	9.5"	135°	Black
16439BL	9.5"	135°	Blue
16443	10.5"	90°	Red
16443BK	10.5"	90°	Black
16443BL	10.5"	90°	Blue
16440	12"	135°	Red
16440BK	12"	135°	Black
16440BL	12"	135°	Blue



**ALL ENGINE WORKS
LS PLUG WIRES ACCEPT
OEM STYLE SPARK PLUG
BOOT HEAT SHIELDS**



OEM STYLE SPARK PLUG BOOT HEAT SHIELDS

Ground spring moves heat from the shield to the block. This in turn keeps the boot from "cooking". Dielectric barrier inside shield keeps electrical discharges from the boot from grounding to the block.

PART NO.	DESCRIPTION	GM PART NO.
329681-8	LS Plug Wire Heat Shield - Set of 8	19329681

LS 7MM SPARK PLUG WIRES

- Original OEM ferrite based core / 1220 OHM Packard wire set
- Built with the OEM ferrule for improved dielectric strength
- Improved spark plug boot to keep the wire away from the exhaust manifolds

PART NO.	LENGTH	BOOT	COLOR
16438BK	9.5"	180° / Straight	Black



GM LS ENGINE PLATFORM OVERVIEW



The GM LS engine platform has been offered in over 30 different versions or variances from '97 to current. As the performance aftermarket is concerned a lot of parts are interchangeable from version to version. The LS engine is based on the same push-rod V8 platform as the old Small Block Chevy, however it is all new and offers various improvements in design, strength, and output. Due to its size, availability, cost, and ease of modification it is rapidly becoming the go to power plant for all things old and new. The LS cam is now the #1 selling custom camshaft per Comp Cams.

GM LS Car Engines

- LS1** 97-04 Camaro, Corvette, Firebird, GTO. 5.7L, 305-350 HP. 3rd Gen. Small Block Chevy.
- LS2** 05-07 Corvette, Cadillac CTSV, GTO, SSR, Trailblazer SS. 6.0L, 400 HP. 4th Gen. Small Block Chevy.
- LS3** 08-14 Corvette, Camaro, G8 GXP. 6.2L, 430 HP. 4th Gen. Small Block Chevy.
- LS4** 06-08 Monte Carlo SS, Impala SS, Grand Prix GXP. Front wheel drive. 5.3L, 303 HP. 4th Gen. Small Block Chevy.
- LS6** 01-05 Corvette Z06, Cadillac CTSV. 5.7L, 385-405 HP. 3rd Gen. Small Block Chevy.
- LS7** 06+ Corvette Z06. 7.0L, 505 HP. 4th Gen. Small Block Chevy.
- LS9** 09+ Corvette ZR1. 6.2L, Supercharged 635 HP. 4th Gen Small Block Chevy.
- LSA** 09+ Cadillac CTSV. 6.2L, Supercharged 556 HP. 4th Gen Small Block Chevy.
- LSX** Released in 2007. Non-production GM performance.
- LT1** 14+ Corvette Stingray, 2016 Camaro. 6.2L, Direct injection, 460 HP.

GM LS (Vortec) Truck Engines

GM car engines have typically carried LS designations while truck engines of the same platform were referred to as Vortec. They were also produced from '97 to current with over 15 different "L" designations. They were offered in 4.8L, 5.3L, 6.0L, and 6.2L.



LS3 4th Gen. Small Block Chevy compared to 1st Gen. Small Block Chevy engine.

