

Lingenfelter LSA Idler Pulley Relocation Bracket Installation Instructions



PN: L220636509

Lingenfelter Performance Engineering
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Parts List

#	Description	Part number
1	Aluminum relocation bracket, black anodized	XX03873-0009
3	Stainless socket head cap screw, M8 x 1.25 x 35mm	47546
1	Stainless socket head cap screw, M8 x 1.25 x 35mm	47544
1	Lingenfelter decal	L920010000
1	Instructions	N/A

Tools & Materials Required

- | | |
|---|---|
| <ul style="list-style-type: none"> • Torque wrench • Socket wrench • 13mm socket | <ul style="list-style-type: none"> • 15mm socket • 8mm Allen socket • 6mm Allen socket |
|---|---|

Optional Items

#	Description	Part number
1	LSA damper kit (SC pulley required)	L220050709
1	Stock diameter LSA pulley for LPE LSA damper, 8 rib, 7.87"	L220646509
1	6% OD LSA pulley, 8.25", for LSA damper kit	L220060709
1	11% OD LSA pulley, 8.66", for LSA damper kit	L220070709
1	18% overdrive LSA damper pulley, 9.17" OD	L220170709
1	23% overdrive LSA damper pulley, 9.55" OD	L220290709
1	28% overdrive LSA damper pulley, 10" OD	L220380709
1	LSA supercharger 9.73" 10 rib overdrive pulley	L220450709
1	LSA Idler Pulley Relocation Bracket Kit	L220636509
1	LPE LSA 2.38" 8 rib 10 bolt pulley	L220310709
1	LPE LSA 2.55" 8 rib 10 bolt pulley	L220300709
1	LPE 10 bolt supercharger pulley hub kit	L250150309
1	2.55" 8 rib pulley, press-on	L220030709
1	Lingenfelter 76mm idler pulley kit	L250120309
1	Lingenfelter 90mm idler pulley kit	L250260090
1	Lingenfelter 100mm idler pulley kit	L250130309
1	0.200" idler pulley spacer (required for a 76mm lower idler pulley)	ATI915992
1	0.350" idler pulley spacer (required for 76mm, 90mm, or 100mm upper idler pulleys)	ATI915993
1	LSA 160 degree thermostat	L310065307
1	LSA 174 degree thermostat	L310155307

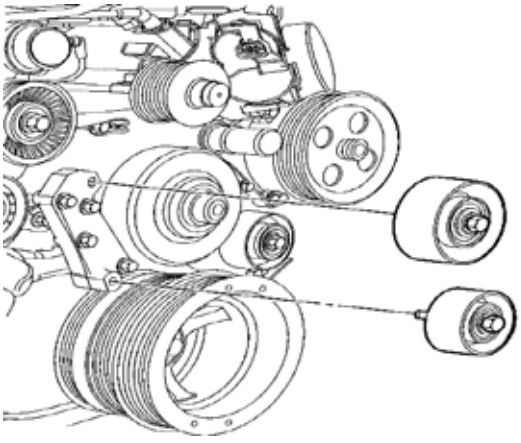
Thank you for purchasing the Lingenfelter Performance Engineering (LPE) LSA idler pulley relocation kit. This kit provides the required additional clearance between the lower idler pulley and a larger aftermarket supercharger drive crank pulley. Refer to Table 1 on page 5 for a list of different Lingenfelter belt and pulley combinations. As shown in the table, installing a LPE supercharger drive crank pulley with a diameter of 9.17" or larger will require the LPE LSA idler pulley relocation kit. LPE does not recommend using idler pulleys less than 70mm in diameter to achieve the needed clearance because this increases the speed of the pulleys significantly resulting in bearing failure of the idler pulley.

Read the entire instruction manual before beginning installation. Some stock parts may be used in reassembly.

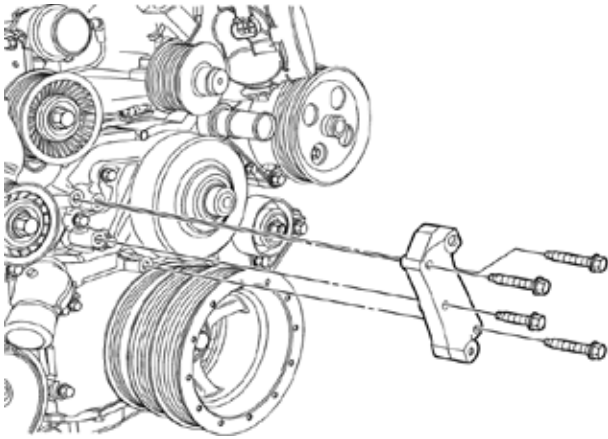
These instructions assume that you have already removed the components necessary to remove the stock idler pulley bracket.

When referencing the side of the vehicle, the driver side of the vehicle is considered the left side and the passenger side of the vehicle is considered the right side of the vehicle.

Torque value warning - the torque values for the fasteners are provided in metric (Nm) and then imperial units. For the imperial units some are referenced in lb-ft and others in lb-in. Make sure you make note of the difference and set your torque wrench correctly.



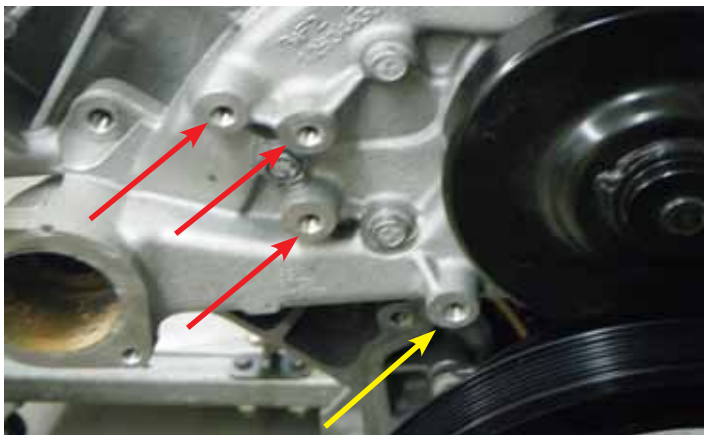
1. Using a 15mm socket, remove the upper and lower idler pulleys from the idler pulley bracket.



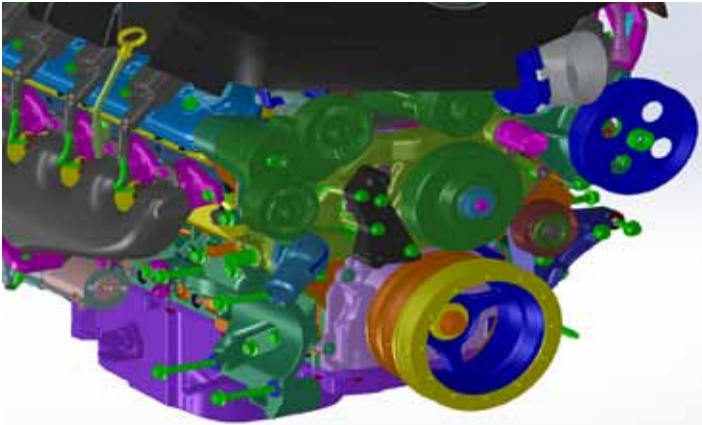
2. Using a 13mm socket, remove the four (4) bolts that secure the idler pulley bracket to the engine block. If you want to reuse the stock bolts instead of the LPE-supplied socket head cap screws, be sure to save the stock bolts for reinstallation.



3. Remove the stock idler pulley bracket.



4. Install the LPE-supplied socket head cap screws (or the stock idler bracket bolts if desired) into the LPE-supplied idler pulley relocation bracket. The adjacent illustration shows the proper location for the M8x1.25x35mm socket head cap screws (PN: 47546, shown by the red arrows) and the M8x1.25x25mm socket head cap screw (PN: 47544, shown by the yellow arrow).



5. Install the LPE-supplied idler pulley relocation bracket onto the water pump at the same location where the stock idler pulley bracket once was. Torque the fasteners to 37 ft-lb (50 N·m).



6. Install the lower idler pulley. If you are reinstalling the stock 70mm lower idler pulley, the stock bolt can be reinstalled using a 13mm socket. Installing an aftermarket idler pulley will require the use of a pulley spacer. If you are installing a LPE 76mm idler pulley, install the .200" spacer (PN: ATI915992) and M10x1.5x60mm socket head cap screw (PN: 47559) that is supplied in the LPE idler pulley kit. Use an 8mm Allen socket to tighten the socket head cap screw. Torque the bolt to 37 ft-lbs (50 N·m).



7. Install the upper idler pulley. If you are reinstalling the stock 90mm upper idler pulley, the stock bolt can be reinstalled using a 13mm socket. Installing an aftermarket idler pulley will require the use of a pulley spacer. If you are installing a LPE 76mm, 90mm, or 100mm idler pulley, install a .350" spacer (PN: ATI915993), which is available for purchase through LPE. Use an 8mm Allen socket to tighten the M10x1.5x60mm socket head cap screw. Torque the bolt to 37 ft-lbs (50 N·m).



8. Reinstall all other components removed to provide the necessary clearance for the bracket installation.

Installation of the LPE LSA idler pulley relocation bracket is now complete.

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Table 1 - belt length and idler pulley diameters required for different LSA supercharger pulley and damper pulley combinations.

Crank Pulley PN (Crank only OD%)	Supercharger Pulley	Supercharger Pulley PN	Belt length	Belt PN (imperial)	Belt PN (metric)	Upper Idler	Lower Idler	Idler Bracket (PN)	Pulley Ratio	Total OD%	SC Speed @ 6500 RPM Engine Speed
7.8" (L220646509) (0%)	stock 3.0"	*	stock 1680mm	12628026 (GM)		stock 90 mm	stock 70 mm	stock	2.6	N/A	16,900
	2.55" press-on	L220030709	1655mm/65.2"	K080653	8PK1655	stock 90 mm	stock 70 mm	stock	3.1	18%	19,900
	2.55" 10 bolt	L220300709	1643mm/64.5"	K080645	8PK1643	stock 90 mm	stock 70 mm	stock	3.3	26%	21,300
	2.38" 10 bolt	L220310709	stock 1680mm	12628026 (GM)		stock 90 mm	stock 70 mm	stock	2.8	6%	17,900
8.25" L220060709 (6%)	stock 3.0"	*	stock 1680mm	12628026 (GM)		LPE 100 mm, 0.350" spacer, M10x1.5x60mm cap head screw	stock 70 mm	stock	3.2	25%	21,000
	2.55" press-on	L220030709	66.0"	K080660	8PK1676	stock 90 mm	stock 70 mm	stock	3.5	34%	22,500
	2.55" 10 bolt	L220300709	stock 1680mm	12628026 (GM)		stock 90 mm	stock 70 mm	stock	2.9	11%	18,800
	2.38" 10 bolt	L220310709	67.5"	K080675	8PK1715	stock 90 mm	stock 70 mm	stock	3.4	31%	22,100
8.66" L220070709 (11%)	stock 3.0"	*	67.5"	K080675	8PK1715	stock 90 mm	stock 70 mm	stock	3.6	40%	23,700
	2.55" press-on	L220030709	67.0"	K080670	8PK1702	stock 90 mm	stock 70 mm	stock	3.1	18%	19,900
	2.55" 10 bolt	L220300709	67.5"	K080675	8PK1715	stock 90 mm	stock 70 mm	LPE (L220636509)	3.6	38%	23,400
	2.38" 10 bolt	L220310709	67.0"	K080670	8PK1702	stock 90 mm	stock 70 mm	LPE (L220636509)	3.9	48%	25,000
9.17" L220170709 (18%)	stock 3.0"	*	68.0"	K080680	8PK1727	stock 90 mm	stock 70 mm	LPE (L220636509)	3.2	23%	20,700
	2.55" press-on	L220030709	68.5"	K080685	8PK1742	stock 90 mm	stock 70 mm	LPE (L220636509)	3.8	44%	24,300
	2.55" 10 bolt	L220300709	68.0" (tight)	K080680	8PK1727	stock 90 mm	stock 70 mm	LPE (L220636509)	4.0	54%	26,000
	2.38" 10 bolt	L220310709	68.0"	K080680	8PK1727	stock 90 mm	stock 70 mm	LPE (L220636509)	3.3	28%	21,700
9.55" L220290709 (23%)	stock 3.0"	*	70.8" (tight)	K080708	8PK1797	stock 90 mm	stock 70 mm	LPE (L220636509)	3.9	51%	25,500
	2.55" press-on	L220030709	70.0" (tight)	K080700	8PK1775	stock 90 mm	stock 70 mm	LPE (L220636509)	4.2	62%	27,300
	2.55" 10 bolt	L220300709	69.6" (tight)	K080696	(-)	stock 90 mm	stock 70 mm	LPE (L220636509)	3.5	35%	22,800
	2.38" 10 bolt	L220310709	69.0" (tight)	K080690	8PK1753	stock 90 mm	stock 70 mm	LPE (L220636509)	3.1	N/A	20,100
10.0" L220380709 (28%)	stock 3.0"	*	70.8" (tight)	K080708	8PK1797	LPE 76 mm, 0.200 spacer, M10x1.5x60mm cap head screw	LPE 76 mm, 0.200 spacer, M10x1.5x60mm cap head screw	LPE (L220636509)	3.5	35%	22,800
	2.55" press-on	L220030709	69.6" (tight)	K080696	(-)	stock 90 mm	stock 70 mm	LPE (L220636509)	3.9	51%	25,500
	2.55" 10 bolt	L220300709	69.0" (tight)	K080690	8PK1753	stock 90 mm	stock 70 mm	LPE (L220636509)	4.2	62%	27,300
	2.38" 10 bolt	L220310709	69.0"	K080690	8PK1753	stock 90 mm	stock 70 mm	LPE (L220636509)	3.5	35%	22,800
9.73" 10 rib L220450709 (requires 10 rib tensioner pulley)	2.70" 10 rib	XX03873-0004 (tensioner pulley PN L220620709)	67.5"	K100675	10PK1715	stock 90 mm	stock 70 mm	LPE (L220636509)	3.1	N/A	20,100
	2.95" 8 rib	Included with Magnuson Heartbeat with LSA TVS2300 Heartbeat Kit	68.0"	K080680	8PK1727	stock 90 mm	stock 70 mm	LPE (L220636509)	3.1	N/A	20,100

Supercharger speeds above 23,000 RPM are not recommended. To calculate supercharger speed, multiply your maximum engine speed by the pulley ratio value listed above.

Pulley ratios above 35% should only be used in applications with proportionally lower maximum engine speeds (below 6500 RPM).

For applications where the crank pulley diameter is greater than or equal to 9.17", LPE idler relocation bracket (PN: L220636509) is required in order to provide enough clearance between the crank pulley and the lower idler pulley. For bearing durability reasons LPE does not recommend using idler pulleys smaller than 70mm.

An LPE idler pulley is required for these pulley/belt combinations.

*A stock diameter 10 bolt pulley is also available from LPE, PN L220600709

For additional product installation information and technical support, contact LPE or your LPE products distributor. You can also find technical support and usage discussions regarding this product and many other LPE products in our Internet forums:

<http://www.lingenfelter.com/LPEforumfiles>



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