Craftsmen of RJP XTREME Products

Precision Fabrication Plus, Inc.

209-588-1000

www.precisionfabricationplus.com

LB7 or LLY Intercooler & Radiator Conversion

'81-'91 GM R & V Series

Revision 00 (08/06/18)

Notice

On the '81-'91 GM R or V Series Trucks, Blazers or Suburbans you will need to make sure you keep your upper radiator brackets (shown below). If you do not have these brackets, you should have luck acquiring a pair online or at a local salvage yard. In order to retain the OEM Duramax Coolant tank, we recommend '01-'05 LB7 / LLY radiator. It is a direct replacement for the 454 CID or 6.2 liter Diesel radiator and does not require any modifications to install it.

LB7 or LLY Radiator

1. *If you are using a '01-'04 LB7 or '05 LLY Duramax Diesel engine then you will use the OEM upper hose, lower hose and coolant tank assembly from that same application.*
2. *If you are using a '06-'07 LBZ or '08-'10 LMM Duramax Diesel engine then you will use the OEM upper hose, lower hose and coolant tank assembly from that same application. The upper radiator hose is a direct fit, however the '01-'05 LB7 or LLY upper radiator hose can be used if you have one. The lower radiator hose will need to be slightly modified by cutting off the plastic coupler that connects the hose to the radiator. Use the edge of the plastic coupler as a guide and carefully cut it off. Once the coupler is removed the hose is the correct size and will fit the '01-'04 LB7 or '05 LLY radiator. You will need a stainless steel worm drive clamp to secure the hose to the lower radiator output.*

3. *If you are using a'11-'16 LML Duramax Diesel engine then you will use the OEM upper hose, lower hose and coolant tank assembly from that same application. The upper radiator hose is a direct fit. The lower radiator hose will need to be slightly modified by cutting off the plastic coupler that connects the hose to the radiator. Use the edge of the plastic coupler as a guide and carefully cut it off. Once the coupler is removed the hose is the correct size and will fit the '01-'04 LB7 or '05 LLY radiator. You will need a stainless steel worm drive clamp to secure the hose to the lower radiator output.*

LB7 or LLY Intercooler

In order to install the LB7 or LLY Intercooler into the '81-'91 GM core support there are a few slight necessary modifications. By choosing this option you will utilize an entire OEM LBY or LLY intercooler and radiator. This will make it much easier for future replacement parts, especially if you are on a cross country road trip.

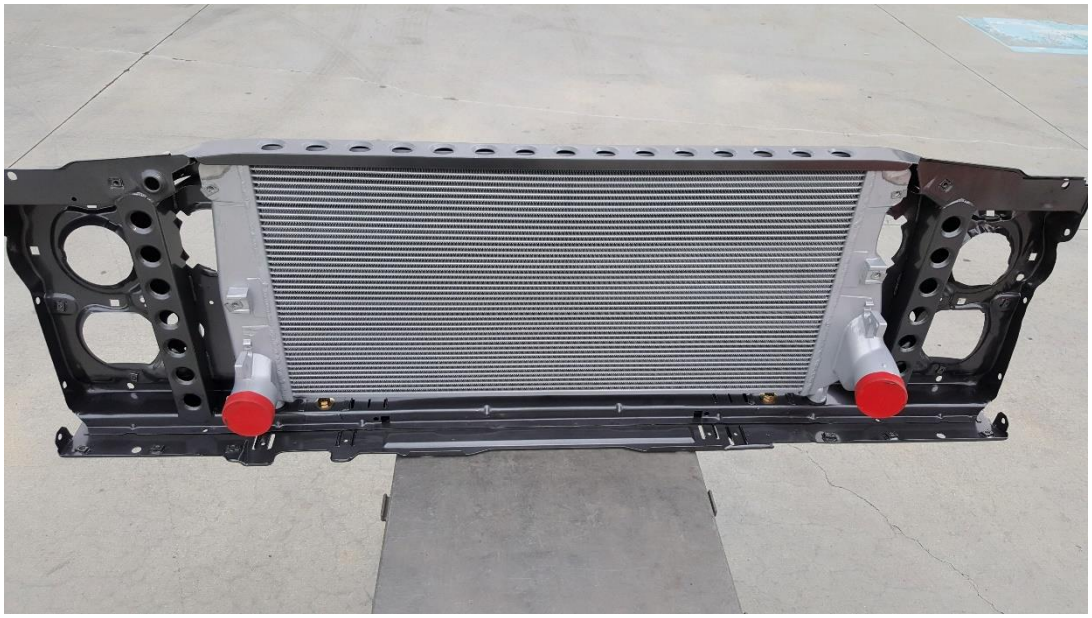
Tools Required

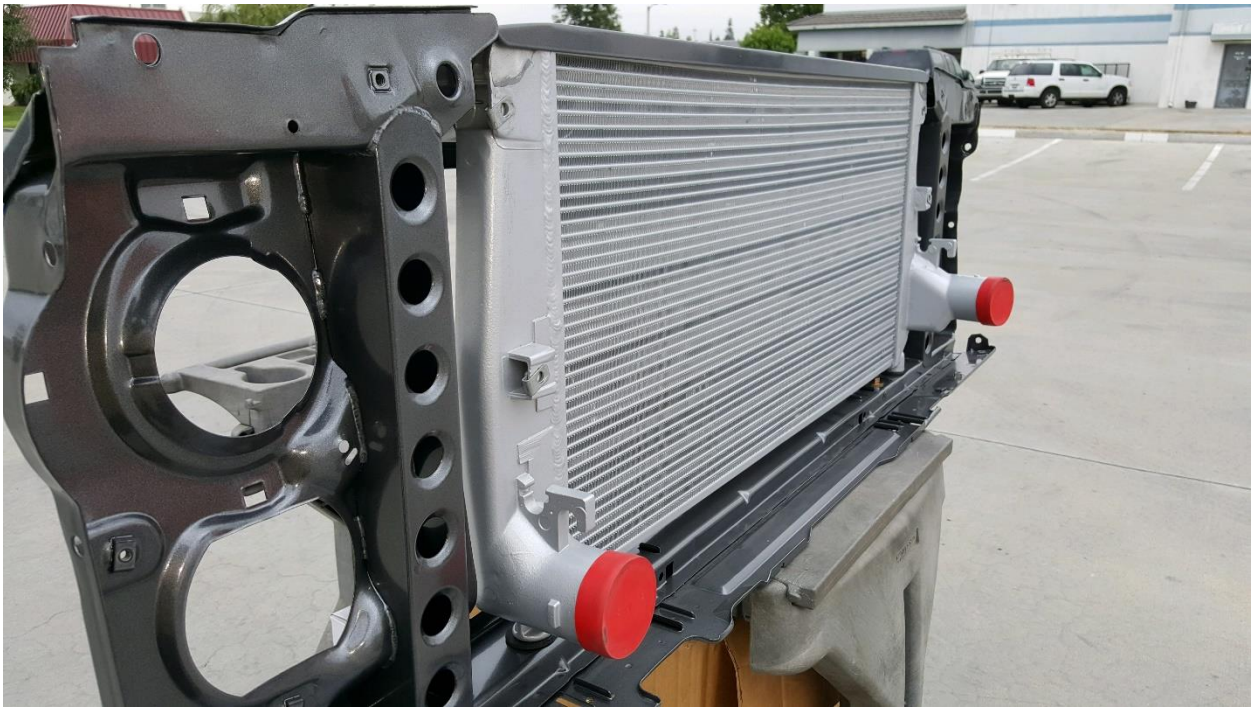
1. *¼" spot weld drill bit*
2. *1 3/8" step drill bit*
3. *3/8"-1/2" corded or cordless drill*
4. *Sawzall*
5. *Sawzall metal cutting blades*
6. *Air compressor & air hose*
7. *Air nozzle*
8. *¼" straight die grinder*
9. *¼" 90 degree die grinder*
10. *¼" cut-off wheel mandrel*
11. *¼" abrasive cut-off wheels*
12. *2" disc sander mandrel*
13. *2" 60 grit sanding discs*
14. *2" red Scotch-Brite pads*
15. *Safety glasses*
16. *Duct or masking tape*
17. *Tape measure*
18. *Straight edge*
19. *Square*
20. *Black Sharpie*
21. *Silver Sharpie*
22. *110-220 volt MIG or TIG welder*
23. *Welding gloves, coat & helmet*

Core Support Modifications

1. *Carefully inspect core support and mark using a silver Sharpie the spot welds that are holding the vertical support bracing on the rear side of the core support just inward of the headlight assemblies.*
2. *Using the ¼" spot weld drill bit and drill motor, drill each spot weld until weld is removed. If you are not familiar with a spot weld drill, they do not drill a through hole. This makes this process much easier with a better end result.*
3. *Once all of the spot welds are removed, use a flat narrow chisel and carefully pry the vertical support bracing flanges to loosen them from the core support. Remove the vertical support flanges and discard. Using the ¼" 90 degree die grinder and 60 grit sanding disc sand all spot welds and burrs flush. If you would like you can smooth out the grinding marks using the 2" Scotch-Brite discs, they work fantastic!*
4. *Next using a tape measure, duct or masking tape and black Sharpie layout the centerline of the core support on the lower radiator support flange.*
5. *Once completed you will layout the cut lines on the lower radiator flange. You will notice that the radiator rests on a flange that is 1" below second layer or step-up in the sheet metal bracing. Measure 23" from the centerline of the core support to the cut line and mark a line using a square and silver sharpie.*
6. *Carefully inspect core support and mark using a silver Sharpie the spot welds in the 46" area that is holding the lower radiator support flange bracing in place.*
7. *Using the ¼" spot weld drill bit and drill motor, drill each spot weld until weld is removed.*
8. *Once all of the spot welds are removed, use a flat narrow chisel and carefully pry the lower sheet metal support bracing flange from the core support. Remove the lower radiator support sheet metal bracing and discard. Using the ¼" 90 degree die grinder and 60 grit sanding disc sand all spot welds and burrs flush. If you would like you can smooth out the grinding marks using the 2" Scotch-Brite discs.*
9. *Using a combination of the ¼" straight and 90 degree die grinders, cut directly on the 23" cut lines only through the 1st layer of bracing.*

10. *Next you will cut across the core support and connect the two cuts you previously made. Remove the center section of the lower radiator support sheet metal bracing and discard. Using the ¼" 90 degree die grinder and 60 grit sanding disc sand all spot welds and burrs flush. If you would like you can smooth out the grinding marks using the 2" Scotch-Brite discs.*
11. *Using a tape measure, duct or masking tape and black Sharpie measure 20 3/8" from the core support center line each direction and mark using a silver Sharpie. These will be the holes that the lower intercooler mounting posts will rest in.*
12. *Next measure 1 7/8" inward from the forward flange and mark using a square and silver Sharpie. This will now show you the hole locations for the lower intercooler mounting posts.*
13. *Using the 1 3/8" step drill bit and drill motor, drill a 1 3/8" hole through the lower radiator support flange.*
14. *Rest the intercooler on a solid work surface and locate the OEM upper mounting tabs. These are cast on the left and right hand tanks. Using the Sawzall, carefully cut these mounting tabs off the tank. Make sure you leave a bit of material above the surface of the tank. You don't want to make a mistake and cut into the tank.*
15. *Using the ¼" 90 degree die grinder and 60 grit sanding disc, sand the remainder of the mounting tab bosses flush with the tank.*
16. *Now that the core support and intercooler has been modified you can clean the modified core support and all surrounding areas with a wax & grease remover.*
17. *Prime & paint bare metal surfaces.*
18. *Allow to cool*
19. *Install the OEM LB7 or LLY lower intercooler rubber mounting grommets into the 1 3/8" holes you drilled in the lower radiator support flange.*
20. *Install the lower intercooler mounting posts into the rubber grommets and tilt intercooler into position.*





21. Inspect the (4) four OEM radiator mounting grommets. If they show signs of damage or wear you should replace them now. If you do not have these they are available for purchase in our online store.

22. *Install radiator into OEM large capacity mounting hole location and clamp using the OEM radiator brackets.*
23. *Use the OEM LB7 or LLY radiator to intercooler mounting hardware to fasten the radiator to the intercooler through the OEM rubber mounting grommets. If you do not have this hardware they are available for purchase in our online store.*
24. *Lastly since you have retained the OEM core support you have the ability to utilize the '89-'91 GM 454 CID or 6.2 liter fan shroud. All of the mounting locations are still in-tact and will directly bolt on. If you do not have one of these fan shrouds they are available for purchase in our online store.*

We are working on a custom built intercooler and charge tubes for this application and will be a bolt-in affair. This will maintain the OEM core support and overall look without any major modifications. Once these products are completed we will load them on to our online store and they will be available for purchase. If you are interested in this please contact us at (209) 588-1000