This version of install instructions are for kits purchased on or after December 1, 2022. If you purchased a kit before this date, please contact us for the correct install instructions.

AFW CUMMINS SWAP KIT WELDED & DIY INSTALL INSTRUCTIONS

This kit is made to adapt a 1989-2002 12 & 24 valve Cummins 6BT engine into a 1973-1987 4wd pickup trucks and 1973-1991 4wd Blazers, Suburbans, and Crew Cabs. This kit is made from CNC laser cut 1/4" steel. DIY kit requires you do a small amount of prep welding along with assembling the parts to be welded. 4 inch minimum suspension lift required to for front axle clearance. This kit does not require a body lift but may or may not require slight transmission tunnel modification based on what transmission/ transfer case combo you use. At this time, we do not offer any transmission crossmembers. Engine fan clearances are based on what radiator/ intercooler combo you use. Exhaust down pipe clearance is based on what exhaust manifold/ tubro combo you use. Will require a high mount AC bracket if you wish to run an air conditioning pump. ***Will not*** *fit 2wd model trucks and 1988-1991 4wd IFS models. Please review attached install instructions to help answer any questions you might have.*

Items Included In Welded Kit

- Engine Crossmember (1)
- Motor Mount, frame driver (1)
- Motor Mount, frame passenger (1)
- Motor Mount, engine block driver (1)
- Motor Mount, engine block passenger (1)
- Motor Mount, frame spacer driver (1)
- Motor Mount, frame spacer passenger (1)
- Front Frame Brace/Notch Plate (1)
- Motor Mount Bushing Kits (2)
- Hardware Kit (1)

Items Included In DIY Kit

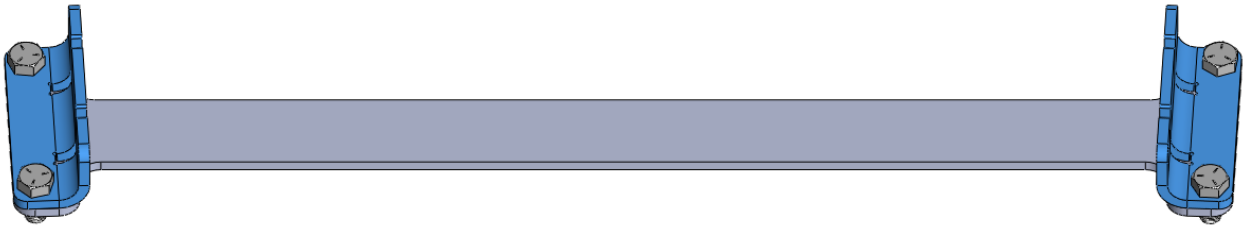
- Engine Crossmember Jig (1)
- Front Frame Brace/Notch Plate (1)
- Engine Crossmember, main front plate (1)
- Engine Crossmember, main rear plate (1)
- Engine Crossmember, bridge plate center (1)
- Engine Crossmember, bridge plate side (2)
- Engine Crossmember, bridge plate top side (2)
- Engine Crossmember, frame plate (2)
- Motor Mount, engine block plate, driver (1)
- Motor Mount, engine block plate, passenger (1)
- Motor Mount, frame, bushing sleeve kit (2)
- Weld Shim (1)
- Jig Hardware (1)
- Hardware Kit (1)
- Motor Mount, engine block plate tab (short) driver (2)
- Motor Mount, engine block plate tab (long) passenger (2)
- Motor Mount, engine block plate tab bridge (2)
- Motor Mount, frame plate bushing tab (4)
- Motor Mount, frame plate, driver (1)
- Motor Mount, frame plate, passenger (1)
- Motor Mount, frame spacer, driver (1)
- Motor Mount, frame spacer, passenger (1)

1. If you purchased a “Welded” kit skip ahead to step number 12.

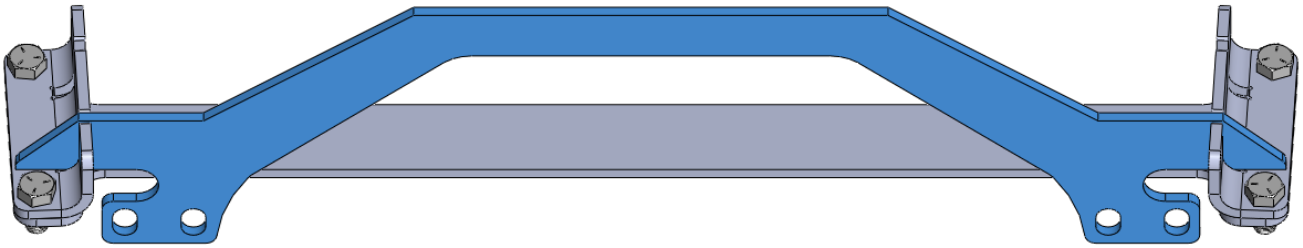
2. Before you get started make sure there are no missing parts in the kit.

3. For the DIY kit, we recommend removing the grey scale from the cutting edge wherever a weld will be needed. This can be done with a flap disc on a grinder or heavy grit sandpaper on a sander. (wear safety glasses!!)

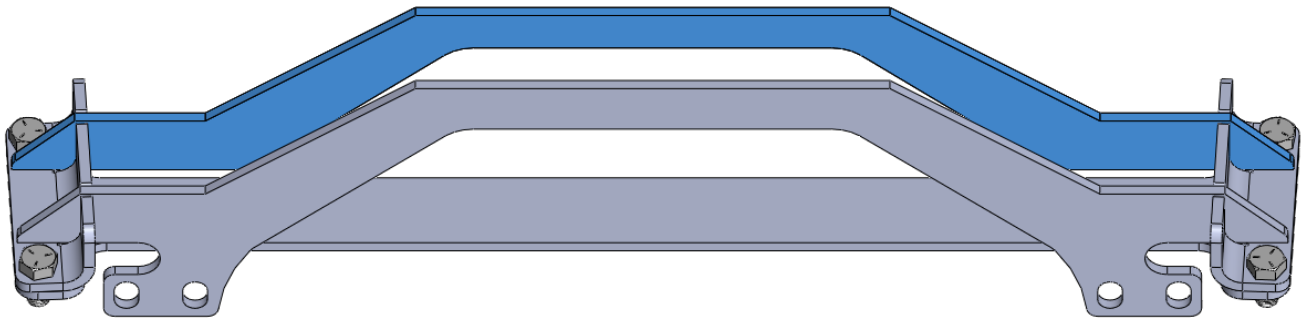
4. Start by locating the engine crossmember jig and bolting the engine crossmember frame plates (in blue) on the ends using the supplied 1/2"x 1” bolts and nuts.



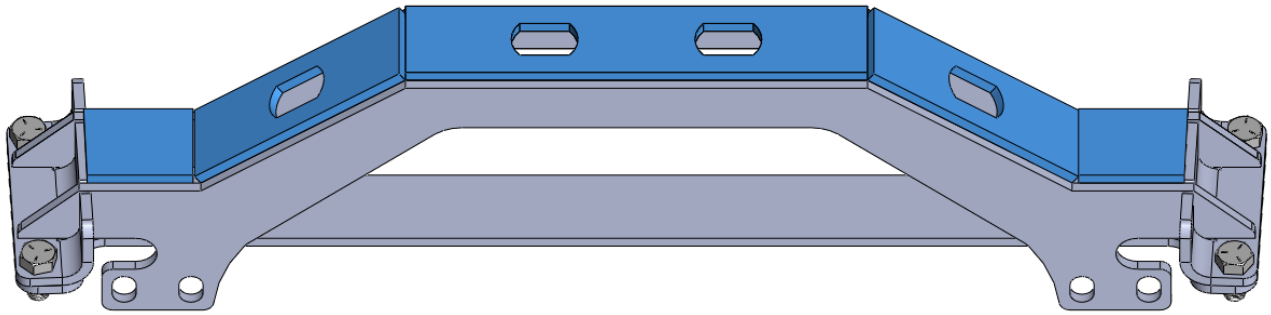
5. Locate the front main engine crossmember plate (has the “ears” on it) and install in place (see image below). Make sure to install on the narrower side of the jig.



6. Repeat the same steps for the rear main engine crossmember plate installing on the wider side of the jig. Square both plates up and down, side to side and tack weld to frame plates on the ends (see image below).

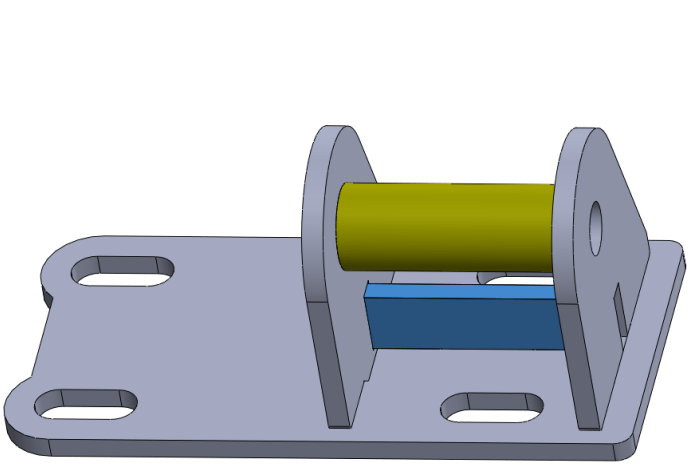


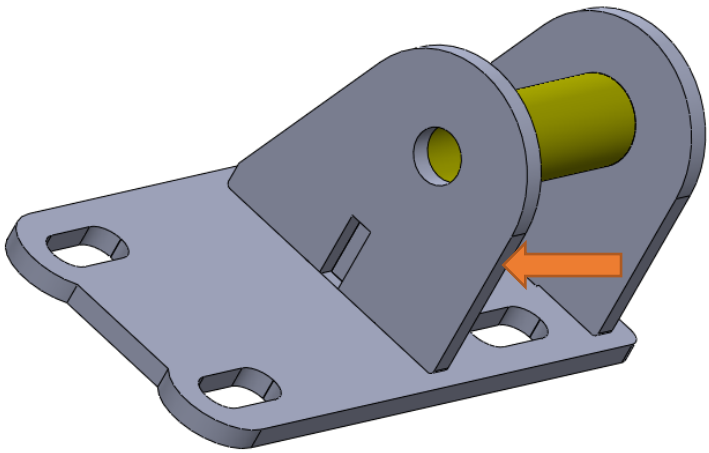
7. Place the center bridge plate, side bridge plates, and top side bridge plates (in blue) on the main crossmember plates, square them, then tack weld them in place. Do not weld crossmember yet!



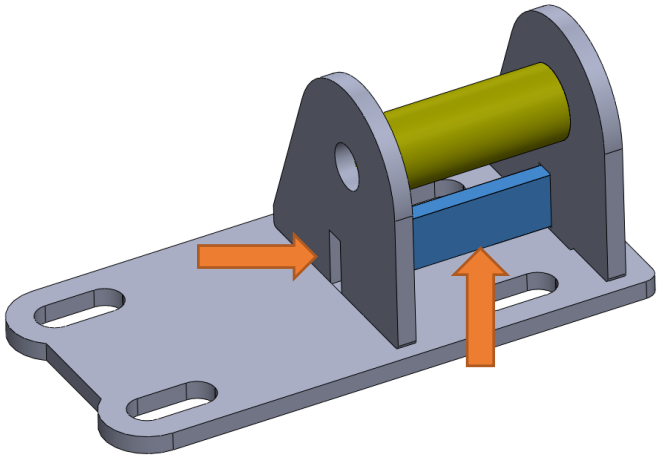
8. At this time we would recommend leaving the crossmember tack welded only so you can test fit it in your truck frame on step number 17 .Once you confirmed the crossmember fit properly, bolt it back up to the jig and clamp the jig and crossmember to a welding table. Fully weld crossmember taking your time not letting the crossmember get to hot. Let cool before unbolting from jig and unclamping from table. It is common for the crossmember to move around from welding.

9. Now you can move on to the engine block motor mounts. Each motor mount plate will have a “D” for driver side or “P” for passenger side etched into them (the etch may be hard to see but its there). **The motor mount plate with the “D” etched into it requires using the shorter tabs. The motor mount plate with the “P” etched into it requires using the longer tabs. Also note the flat edge of the tab needs to be facing the bottom side of the motor mount (orange arrow).** Once you have placed the correct motor mount tabs with the correct motor mount plate, use the supplied metal shim (only one supplied in kit for this step) along with the zinc coated bushing bolt sleeve as a weld spacer and one of the supplied 9/16”x 4-1/2” bolts and the regular 9/16” hex nut (only one supplied in kit for this step) and bolt the spacers in-between the tabs. Place the tabs in the slots on the motor mount plate, with the bridge plate in between in the bottom (in blue), square them, and tack weld in place.

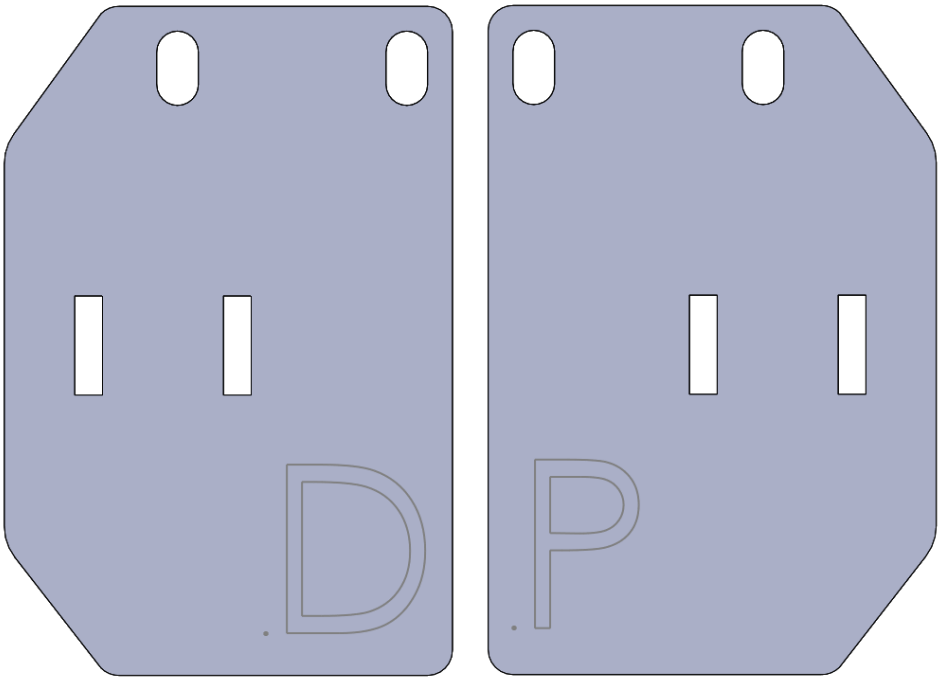




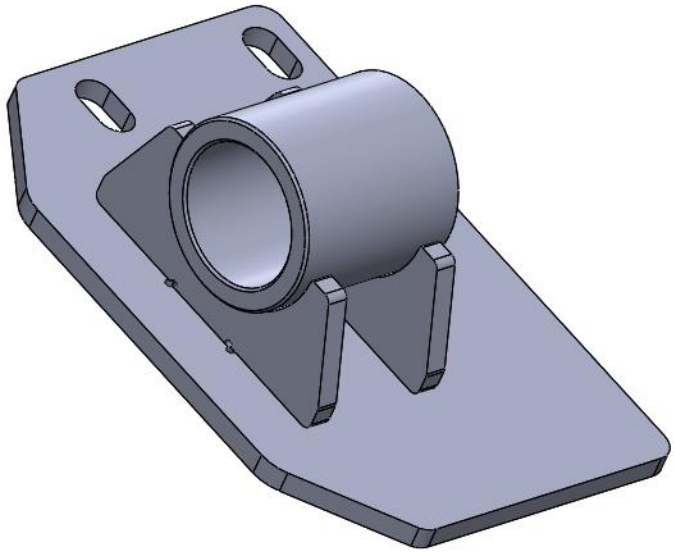
10. At this time we recommend leaving the motor mounts tack welded and making sure you correctly assembled them and along with test fitting them in place. Once you confirmed they fit properly, we recommend clamping the motor mount plate to a welding table and only welding about 1” on the center of the inside bridge plate (in blue) and through the slots from the outside of the tabs then weld the full length on the outside of the tabs. Let cool before unclamping from table. It is common for these motor mount brackets to warp from welding, but they will flatten back out when you bolt them to the engine block.



11. For the frame motor mounts, they will also have a “D” for driver side or “P” for passenger side etched into them. Place them on the table so the letters are facing up like image below.



12. Locate the bushing sleeve and bushing sleeve tabs and assemble the motor mounts like image below. The bushing sleeve tabs will index into slots on the motor mount plates. The bushing sleeve will sit evenly spaced side to side on top of the tabs. Square them up, tack weld them, double check them, weld them.



13. Now you can move on to the rest of the steps for installing the kit into the truck!

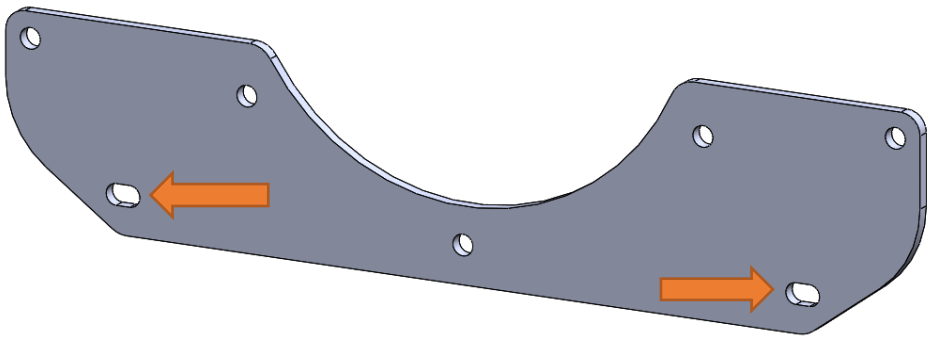
<u>WELDED KITS START HERE</u>

14. Before installing make sure there are no missing parts in the kit. <u>Do not</u> paint any parts in the kit until after you test fit them. These trucks are old which means in some cases the frame is tweaked which may require you do slight modifications to your parts, or having to contact us to make a special modification to a part to fit your needs.

15. Be sure to remove any fuel lines, brake lines, wiring, etc. from the frame to prevent any incidents. With the engine removed from the truck, remove the factory engine crossmember. It helps to cut the crossmember in half then removed the factory rivets (bolts in some cases) attaching it to the frame.

Leave the factory motor mount bracket bolted to the frame but inspect them and the hardware to make sure they are in good condition. Do not install the new engine crossmember at this time.

16. Next you will need to notch the factory front sway bar frame crossmember. Remove the bolts holding the brake proportioning valve in place if you already haven't. Using the notch/brace plate from the kit, hold it in front of the frame crossmember and locate the two factory rivets that line up the "oval" holes in the plate (see image on next page). Remove these rivets and using those holes bolt the notch/brace plate to the front of the frame crossmember using the supplied 3/8"x 1-1/4" bolts and hardware. With the plate in place trace where to notch the factory frame crossmember, remove plate and notch the crossmember. Bolt the plate back in place and drill out the remaining 5 bolt holes and install bolts.



(*NOTE: The factory brake lines and proportioning valve are mounted to the frame crossmember and are very close to the notch location. We do recommend removing them so you don't cut or nick any brake lines. It may be necessary to slightly tweak the brake lines to move the proportioning valve to clear the engines crank balancer. Because of this you will need to drill new mounting holes for the proportioning valve as we did not include them in the notch/brace plate.)*

17. Now it is time to install the motor mounts. If you plan on keeping the factory heat exchanger from the transmission you will need to modify the factory bracket or make a new one. Install both engine block motor mounts using the supplied M12-1.7 x 35 bolts and washer. Each motor mount will have a "D" for driver side or "P" for passenger side etched into them. Do not tighten the bolts all the way, allow the motor mount to still slide forwards and backwards. Repeat the same steps for the frame motor mounts using the supplied 3/8"x 1-1/4" bolts and hardware******If you notice there are only two holes in the frame motor mount brackets, once the engine is installed you will need to mark and drill the 3rd lower bolt hole.******Be sure to install the bushings and bolt sleeve in the frame motor mounts. *(NOTE: There are 2 supplied 1/8" thick frame motor mount shims. Do not install for the initial installation. After your engine is installed and you feel like your engine needs to sit a little higher to clear the engine crossmember you can install both shims. If your engine does not sit level side to side due to a tweaked frame, then install a shim on the low side.)*

18. Using proper safety measures install your engine using the supplied 9/16"x 4-1/2" bolts and hardware for the motor mounts. Be sure to bolt up the transmission you wish to use. With the engine installed, adjust your motor mounts accordingly to your liking. Be sure to level the engine side to side and if necessary, use the supplied shims. It may be necessary to dent the transmission tunnel to clear your bell housing bolts depending on what transmission you use. Couple of pointers in regards to engine

placement, the further back you set the engine the more likely you will need to dent the trans tunnel and have tighter exhaust clearances on the firewall, the further forward you go will help these potential issues but will make for tighter clearances on the engine and radiator. Everything comes down to what parts you use so this is why we have oval holes on the engine block motor mounts to help give some adjustment.

19. With the engine in place you can now install the engine crossmember. Start by using the supplied 7/16''x 1-1/2" bolts and hardware and bolt the "ears" of the engine crossmember to the front face of the factory motor mounts (see image on next page). With the crossmember in place drill holes in the bottom side of the frame rails for the engine crossmember. We found that some of the factory rivet holes from the factory engine crossmember may or may not line up with the engine crossmember mounting holes. We did not design them to line up as we found GM did not hold a consistent location with these holes therefor your results may vary. With the holes drilled install the remaining supplied 7/16''x 1-1/2" bolts and hardware.