SYNERGY MFG. 870 INDUSTRIAL WAY, SAN LUIS OBISPO, CA (805) 242-0397

# PPM-5710 JK HEAVY DUTY SKID PLATE ASSEMBLY

Version 2.0

GENERAL NOTES:

- These instructions are also available on our website; *www.synergymfg.com*. Check the website before you begin for any updated instructions and additional photos for your reference.
- The installation of this skid plate assembly requires minor cutting, drilling and tapping of threaded holes.
- You have the option to use the factory hex head bolts in the factory skid plate holes or to drill and tap them and use the supplied flat head allen head bolts.
- You will need a 29/64 drill bit and 1/2-20 UNF tap, a grinder with a cutoff wheel or sawzall, and a 7/16" drill bit.
- This skid plate assembly is designed to be used as a complete assembly using none of the factory skid plates or cross member.
- Note – Engine skid bracket assembly will contact the OEM front driveshaft at full bump if no front bump stop spacer is used. A minimum of 1.0" bumpstop spacer is recommended if retaining the OEM front driveshaft. No bumpstop spacing is required if using a typical 1310 or 1350 aftermarket front shaft.

## HARDWARE LIST

| Qty | **5710-01 TRANS SKID HARDWARE** |
|---|---|
| 2 | FLAT HEAD SOCKET CAP SCREW, 3/8 UNC X 1" L |
| 4 | FLAT HEAD SOCKET CAP SCREW 1/2-20 UNF X 1" |
| 2 | HEX HEAD SERRATED FLANGE NUT UNC 3/8" |

| Qty | **5710-02 T-CASE HARDWARE** |
|---|---|
| 5 | FLAT HEAD SOCKET CAP SCREW, 1/2-20 UNF X 1" L |
| 5 | FLANGE NUT, SERRATED, 1/2-20 UNF |
| | |

| Qty | **5710-03 / 5710-04 OIL PAN HARDWARE** |
|---|---|
| 2 | FLAT HEAD SOCKET CAP SCREW, 1/2-20 UNF X 1" L |
| 3 | FLANGE NUT, SERRATED, 1/2-20 UNF |
| 1 | HEX HEAD BOLT, GR 8, 1/2-20 X 1" L |
| 1 | 1/2" FLAT WASHER |
| 7 | HEX HEAD BOLT, UNC, GR 8, 3/8 X 1" |
| 1 | SERRATED FLANGE NUT, 3/8-16 |
| 7 | 3/8" SPLIT LOCK WASHER |
| 7 | 3/8" FLAT WASHER |
| | |

1. Remove the skid plates, one covering the transfer case and one covering the automatic transmission if equipped.
2. Using a grinder with a cut off wheel or sawzall, cut 3” off of the front of the gas tank skid plate where it attached to the stock cross member. The line in the photo below is where to cut.

3. Remove the 3 nuts securing the transmission mount to the transmission cross member.
4. Jack up the transfer case to take any load off the transmission mount and support with a jack stand.
5. Remove the (2) horizontal thru bolts on each side of the transmission cross member and remove the crossmember.
6. Install the new cross member skid plate using the original thru bolts in the sides. Orient the bolts so the bolt heads are towards the front of the vehicle and the nuts are towards the rear. Make sure the transmission mounting studs are aligned in the corresponding holes in the crossmember skid plate and the gas tank skid plate is on top of the crossmember skid plate. Reposition the jack to the center of the skid plate to push the skid plate up against the bottom of the frame. Do not tighten these bolts yet.

7. At this time, mark and drill the holes for the countersunk bolts. There are 4 total for the transmission skid.

8. Drill using a 29/64 drill bit and tap the holes with a ½-20 UNF hand tap. Drilling and tapping can be done with the transmission skid in position, however if powder coat damage is a concern, we suggest removing the skid plate prior to drilling.
9. Install the supplied flat head allen bolts. You may need to use an alignment bar to align the skid plate holes with the frame holes. Tighten these bolts to 35 ft-lbs. We recommend using anti-seize on all of the flat head allen bolts for easy future removal.

10. Tighten the factory cross member mounting bolts to 35 ft-lbs.  Tighten the transmission mounting bolts to 35 ft-lbs
11. Note, some models will require two 7/16” holes to be drilled in the factory gas tank skid for attachment.  If needed use a 7/16 drill bit to drill the gas tank skid plate for the two countersunk mounting bolts in the cross member skid plate, install the two 3/8 flat head allen bolts with the flange bolts and tighten to 20 ft-lbs

REAR T-CASE SKID PLATE

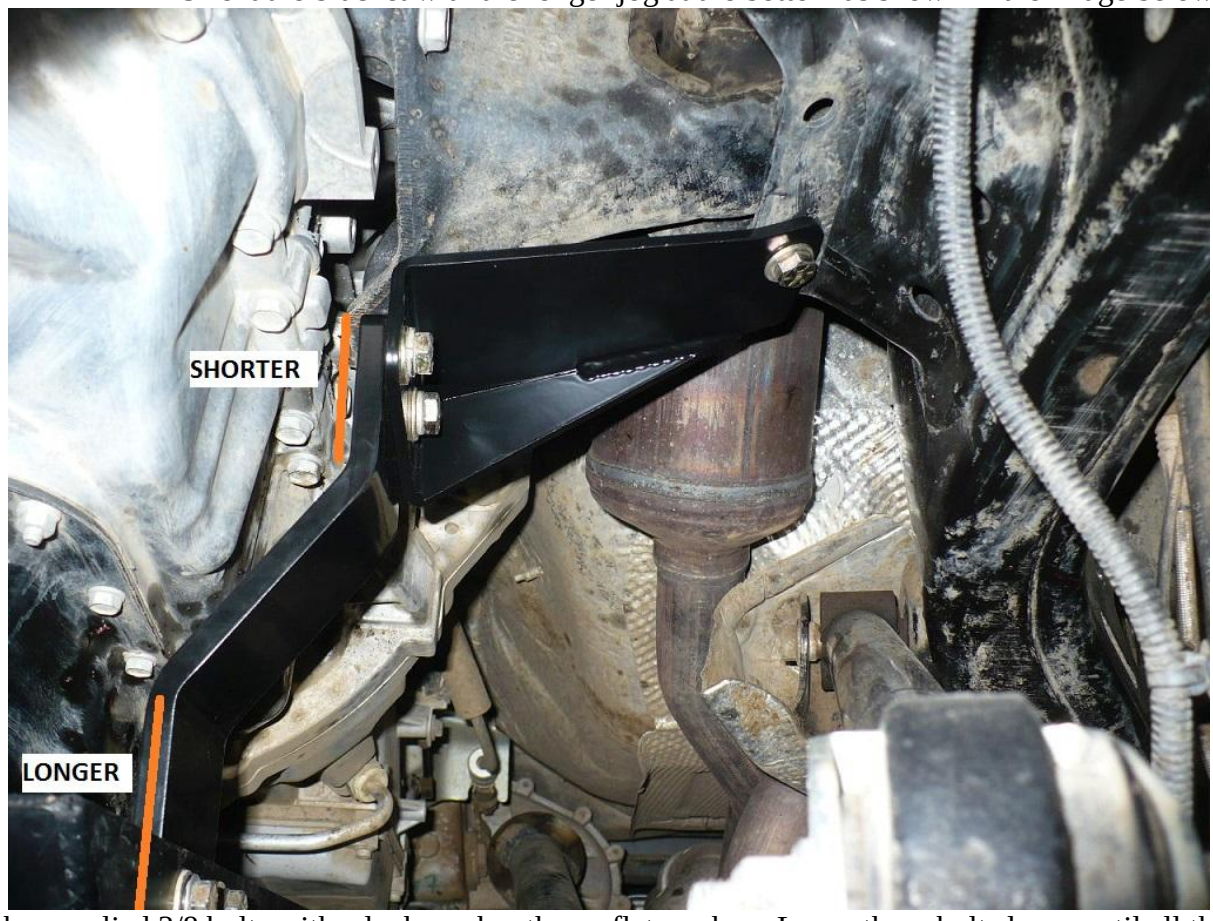
12. You can now install the rear transfer case skid plate. Install the skid plate on top of the crossmember skid plate. If desired, drill and tap the gas tank and rear frame hole to ½-20 and use the supplied flat head allen bolts. If not use the original bolts and tighten to 35 ft-lbs.

13. Install the 3 center ½" flat head allen bolts with the flange nuts and tighten to 35 ft-lbs.

FRONT ENGINE SKID PLATE

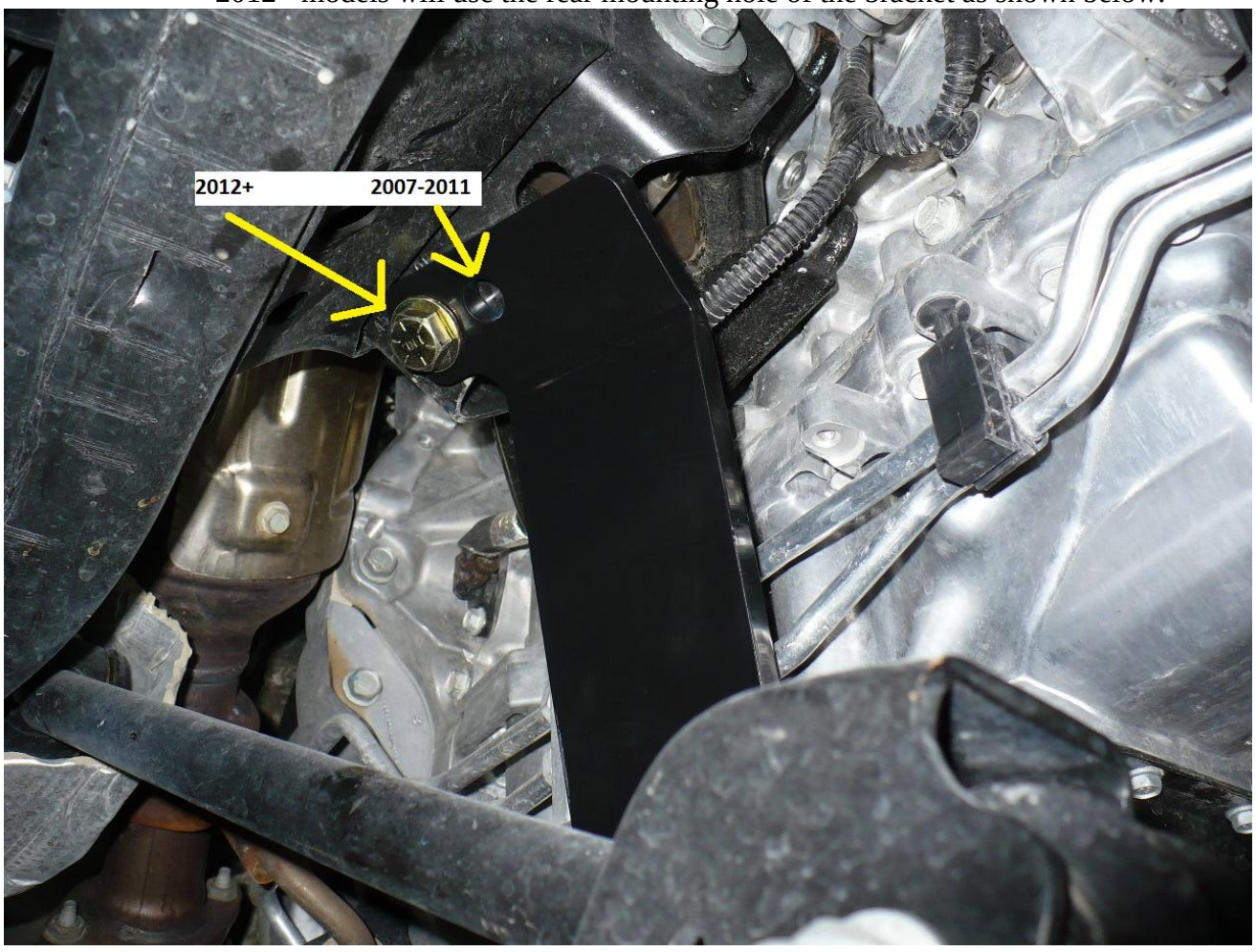
14. Loosen the driver side engine mounting bolt and tap rearward with a hammer. Slide the engine mount frame bracket under the bolt as shown. Attach the bottom of the bracket with a 3/8" bolt, washer, and flange nut. Do not tighten at this time.

15. Install the driver side frame brace to the frame bracket. The driver side is the shorter of the two.
    - 2007-2011 models include a symmetrical bracket that has no top or bottom.
    - 2012+ models include an asymmetrical bracket which has one jog longer than the other. Orient the bracket with the longer jog at the bottom as shown in the image below.

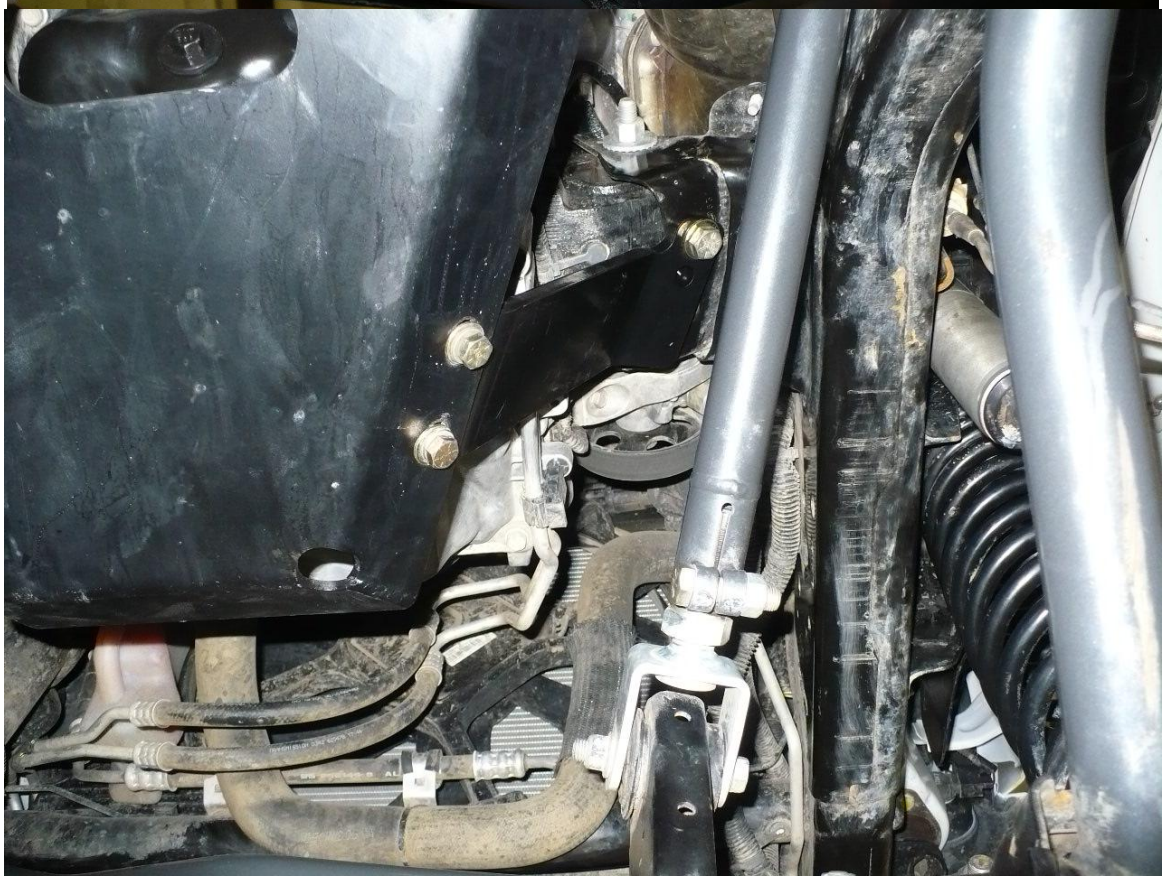



16. Use the supplied 3/8 bolts with a lock washer then a flat washer. Leave these bolts loose until all the other pieces are installed.

17. Next, install the passenger engine mount bracket. Use the ½-20 UNF hex head bolt and flange nut provided in the kit. Be sure to use a washer under the head of the bolt as shown. Do not tighten at this time.
    - 2007-2011 will use the forward mounting hole of the bracket.
    - 2012+ models will use the rear mounting hole of the bracket as shown below.



18. Install the engine skid plate at this time. All hardware should still be loose at this point. Install the skid plate by bolting it to the motor mount brackets using the supplied 3/8" hardware in the kit. Again use a lock washer followed by a flat washer on all attachment bolts. Do not tighten at this time.



19. Once all 3/8” bolts have been started, install the ½” flat head countersunk bolts which attach the engine skid to the transmission skid plate. Do not fully tighten at this time.
20. Adjust the side to side position of the front engine skid and tighten all the mounting bolts. Tighten the 3/8” bolts to 20 ft-lbs and the ½” bolts to 35 ft-lbs. Tighten in the order listed below for proper alignment of skid plate.
    - 3/8” bolt / flange nut on driver side to motor mount.
    - Motor mount bolt – torque to 45 ft-lbs
    - Driver side upper 3/8” bolts to bracket
    - Driver side lower 3/8” bolts to skid
    - Passenger side lower 3/8” bolts to skid
    - ½” bolt / flange nut on passenger side to motor mount.
    - ½” flat head countersunk bolts to trans skid.

21. Installation is Complete.