

# SUPER SHOPS

## Oil Pan Instruction Sheet

These instructions must be read and fully understood before beginning installation. Failure to follow these instructions may result in poor performance, vehicle damage, personal injury, or death. If these instructions are not fully understood, installation should not be attempted.



SS11004



SS11005



SS11012

### APPLICATION NOTES:

- These oil pans provide OEM fitment and oil filter mounting provisions.
- These oil pans are not intended to be used with engines that originally utilized a dry sump system.
- **SS11004, SS11005 & SS11012** are designed to use a GM full-length windage tray. Depending on which full-length windage tray is used, some modification to the tray may be required.
- **SS11004, SS11005 & SS11012** are designed to use a GM "F-body" windage tray, GM# 12558253. A modification to the windage tray is required to provide clearance to the pick-up tube. A full-length windage tray may be used if the front quarter of the tray is removed. See the instructions showing the windage tray modifications required.
- **SS11004, SS11005 & SS11012** may not be used on LS7 engines or engines with a stroke longer than 3.62". The internal rotating assembly to oil pan clearance provided in the front half of the oil pan is patterned after a GM 98-02 LS1 oil pan.

The LS Swap oil pans are designed to work with an LS3 dipstick and tube (if desired). Below are the part numbers:

- LS Dipstick & Tube Kit – Holley P/N **302-15**
- LS Dipstick – GM P/N **12634547**
- LS Tube – GM P/N **12625031**

**NOTE:** There are LS engine applications that have a plug installed in the dipstick hole location to be used with this oil pan. This plug will need to be removed before the oil pan is installed on the engine to allow the installation of the proper dipstick tube.

#### **PAN CAPACITIES:**

SS11004, SS11005 & SS11012: Sump oil capacity 5.5 quarts – Total oil capacity w/ stock oil filter 6 quarts.

#### **PARTS NEEDED:**

- High Quality RTV sealer
- Oil (7-Quarts)
- Oil Filter (AC Delco® **PF48** or **PF48E**, Mobil **M1-113**, Wix **57060**, K&N **HP-1017**, or equivalent)

#### **REMOVAL:**

1. Drain the engine oil. Remove oil filter.
2. Remove the starter motor.
3. Disconnect the oil level sensor electrical connector (if equipped).
4. Remove the oil level sensor from the oil pan and set aside.
5. Remove the RH transmission cover and bolt.
6. Remove the LH transmission cover and bolt.
7. Remove the bottom two transmission bell housing bolts.
8. Remove the oil pan bolts.
9. Rotate the oil pan until it can be removed from around the oil pump pickup screen. Removal of the oil pan may not be possible with the engine in the vehicle).

**NOTE:** We do not recommend or condone the use of the old pan gasket. A new gasket is highly recommended.

**WARNING!** Use extreme care when drilling the oil pan rivets to not gouge, score, or damage the oil pan gasket.

10. If reusing the oil pan gasket, carefully drill out the oil pan gasket rivets (x2) if necessary (**Figure 1**).



**Figure 1**

11. Remove oil pan gasket.
12. Remove the oil pump pickup screen retaining bolt and nut.
13. Remove the oil pump pickup screen and O-ring, discard O-ring and set the pickup aside as it will not be re-used.
14. While the oil pan is removed, check the dipstick hole on the right side of the engine below cylinder #6 to assure that there is no plug installed and that the dipstick tube will fit in the hole.

**IMPORTANT:** All gasket surfaces should be free of oil or other foreign material during assembly. Inspect the engine block oil gallery passages to make sure they are free from any debris or restrictions.

**IMPORTANT:** The oil pan on LS engines is a structural member. The alignment of the pan is critical to provide the proper mounting points for the transmission bellhousing. The rear of the oil pan must never protrude from the rear of the block. The rear of the block and oil pan are to be flush (Figure 2).

**IMPORTANT:** Ensure that a helicoil has been installed in your pan by installing the drain plug.

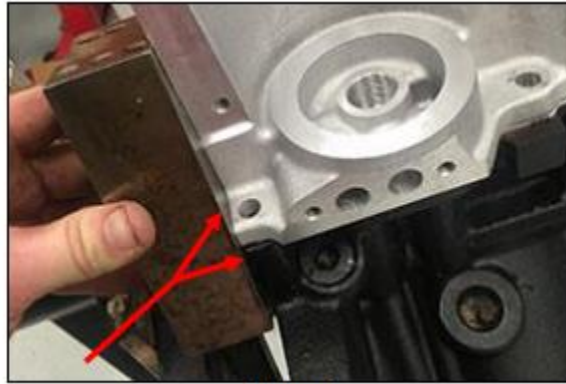


Figure 2

**IMPORTANT:** It is advisable to wash all of the new parts well before installing to remove any dirt or debris from the packing and shipping process.

**IMPORTANT:** It is advisable to test-fit the oil pan to the engine before installation to ensure that the crankshaft and connecting rods clear the windage tray, oil pump pick-up screen, and the oil pan, making a full revolution of the rotating assembly by hand.

**IMPORTANT:** It is advisable to mock up the engine and oil pan in the intended vehicle to ensure there is no contact of the pan to the frame or cross-members.

## INSTALLATION:

1. Remove the new oil pan, parts kit, pickup screen and baffle from the box.

**IMPORTANT:** Ensure that a helicoil has been installed in your pan by installing the drain plug.

2. Install the supplied O-ring onto the oil pump pickup screen assembly and lubricate with clean engine oil (**Figure 3**).



Figure 3 – pickup tube

## WINDAGE TRAY INSTALLATION AND MODIFICATIONS:

### SS11004, SS11005 & SS11012 OIL PANS:

The SS11004, SS11005 & SS11012 oil pans are designed to use a GM LS "F-Body" windage tray, GM #12558253. Due to the design of the oil pump pickup screen, a modification to the windage tray must be made. A cut to provide clearance to the oil pick-up tube must be made as shown in **Figure 6**. The cut-out below may be used as a template for the cut.

A full-length windage tray may be used if it is modified to remove the front quarter of the tray and the required cut is made to provide clearance to the pick-up tube (**Figure 6**). A very careful check should be made to ensure that the oil pick-up tube has clearance to the windage tray and that the oil pick-up tube mounting bracket seats down properly on the mounting stud and windage tray without interference.

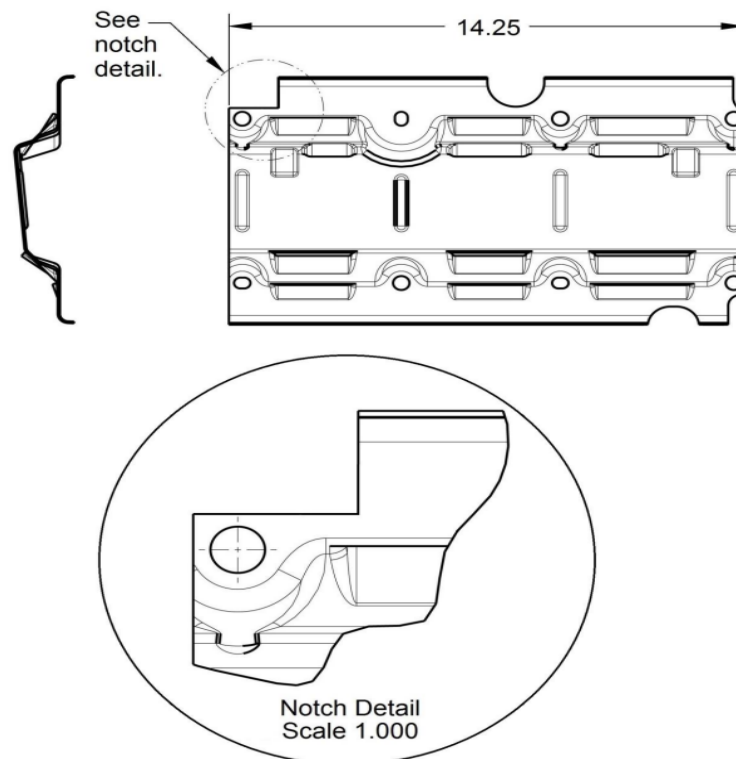


Figure 6

3. Install the new oil pump pickup assembly ensuring that oil pump pickup tube is pushed completely into the oil pump before tightening the bolt. Do not allow the bolt to pull the tube into the pump. Ensure the O-ring has not been pinched during installation.
4. Rotate the crankshaft by hand to ensure there is adequate clearance between the pickup tube brace, oil deflector, and the crankshaft counterweights.
5. Install the oil pump screen nut and bolt(s). You may need to slightly bend the tab to provide precise alignment of the hole in the tab to the mounting stud.

**NOTE:** The oil pump screen/pick-up tube features a two bolt oil pump mounting flange. There are two M6 x 16mm long flanged socket head caps crews included in the installation parts kit. Use these two caps crews when installing the oil pump pick-up screen.

6. Tighten the oil pump pickup screen bolt(s) to 106 in. lbs. and the nut to 18 ft. lbs.
7. Pre-assemble the oil pan.
8. Apply a drop of blue Loctite® to the threads of the (x4) supplied 1/4-20 x 1/2 long cap screws and use them to install the bae into the oil pan. Torque the (x4) bae bolts to 8-10 ft./lbs.
9. Install the supplied oil passage cover, gasket and M6 x 1.0 x 30mm long bolts to the oil pan just above the oil filter. Tighten the oil passage cover bolts to 106 in./lbs.

10. Install the new oil pan gasket to the oil pan and install the oil pan bolts to the pan through the gasket. The gasket is designed to hold the bolts in place.
11. Apply a 5mm bead of RTV sealant 20mm long to the engine block (**Figure 8**) directly onto the tabs of the front cover gasket that protrude into the oil pan surface.



**Figure 8**



**Figure 9**

12. Apply a 5mm bead of RTV sealant 20mm long to the engine block (**Figure 9**) directly onto the tabs of the rear cover gasket that protrude into the oil pan surface.
13. Install the oil pan assembly to the engine block.
14. Snug all the oil pan bolts by hand (do not overtighten).
15. Install the two lower transmission bellhousing bolts until snug (do not overtighten).
16. Tighten the oil pan to block and oil pan to front cover bolts to 18 ft./lbs. (work from the center out).
17. Tighten the oil pan to rear cover bolts to 106 in./lbs.
18. Tighten the two transmission bellhousing-to-oil pan bolts to 37 ft./lbs. for either a manual or an automatic transmission.
19. Install the LH side transmission cover and bolt. Torque to 106 in./lbs. Install the RH side transmission cover and bolt. Torque to 106 in./lbs.
20. Install the supplied oil pan drain plug and tighten to 18 ft./lbs.
21. Install the supplied oil filter adapter and tighten to 40 ft./lbs.
22. Before installing the new oil filter, apply a thin film of oil to the filter gasket. Install the new engine oil filter and follow the manufacturer's recommendation for tightening procedures.
23. Fill the crankcase with the proper quantity and grade of oil.
24. Be careful not to overfill with oil.
25. Start the vehicle and check for leaks and adequate oil pressure. Use the original dipstick to verify the oil level. This should read full after 6 quarts of oil with a new filter.

**Date: 1-15-20**