



INSTALLATION INSTRUCTIONS

Lakewood Safety Bellhousing

Oldsmobile, Buick and Pontiac Applications

#15100 and #15120

NOTICE: This safety bellhousing meets S.F.I. (Safety Foundation Institute) specification 6.1 when used with the enclosed engine block plate and maximum containment fasteners supplied. It is highly recommended that an S.F.I. approved flywheel and clutch assembly be used in conjunction with this bellhousing for additional safety precautions.

WORK SAFELY!

Installation of this safety bellhousing requires working underneath vehicle. USE EXTREME CAUTION WHEN WORKING UNDERNEATH THE VEHICLE. Never get near or underneath the vehicle until you are confident that it is safely supported and will not move or fall from its raised position. DO NOT USE A BUMPER JACK!

PREPARATION FOR INSTALLATION

1. Place the vehicle on a solid, level surface such as a garage floor to ensure safe installation.
2. Raise the vehicle using appropriate lifting device and support it using automotive approved support stands having adequate load capacity.
3. Disconnect the negative (-) cable from the battery.

CAUTION: DO NOT BEGIN THIS INSTALLATION UNTIL YOU ARE CONFIDENT THAT THE VEHICLE IS SECURE AND SAFELY SUPPORTED!

Installation Instructions

1. Remove driveshaft, starter motor, transmission and stock bellhousing.
2. Remove pressure plate and clutch disc from flywheel.
3. At this point, we recommend that you check your Lakewood Safety Bellhousing for proper alignment with the crankshaft. This is not a difficult procedure. Detailed instructions outlining the necessary steps along with recommendations for correcting any misalignment are included in these instructions.
4. After checking and correcting bellhousing alignment, remove flywheel and install blockplate. Use blockplate as is (the round hole in the blockplate will correctly locate the starter nose assuring proper alignment). Install blockplate over the crankshaft flange and place over dowel pins in the block.

IMPORTANT: In order to comply and meet S.F.I. bellhousing specification 6.1, it is mandatory that the safety blockplate be installed with this bellhousing and all containment fasteners supplied be used in their correct location (see illustration).

5. Reinstall flywheel and clutch assembly. Be sure to tighten fasteners using manufacturers recommended torque specifications.

Note: We recommend the use of Mr. Gasket Ultra-Seal premium fasteners for clutch and flywheel installation.

| | |
|----------------------|-----------------|
| Flywheel bolts | Mr. Gasket #912 |
| Pressure plate bolts | Mr. Gasket #910 |

IMPORTANT: Do not reuse the factory cast iron flywheel! A high performance quality billet flywheel that meets S.F.I. specifications is recommended for safety purposes. Hays offers a complete line of high performance clutches and flywheels to meet safety requirements.

6. Remove clutch release bearing fork and pivot ball from stock bellhousing. Reinstall the pivot ball into the Lakewood bellhousing and attach fork clip onto the pivot ball. **Note:** It is recommended to use Lakewood #15501 Adjustable Pivot Ball in order to obtain the proper fork geometry. A Heavy-Duty Clutch Fork #15500 is also available to fit most applications.

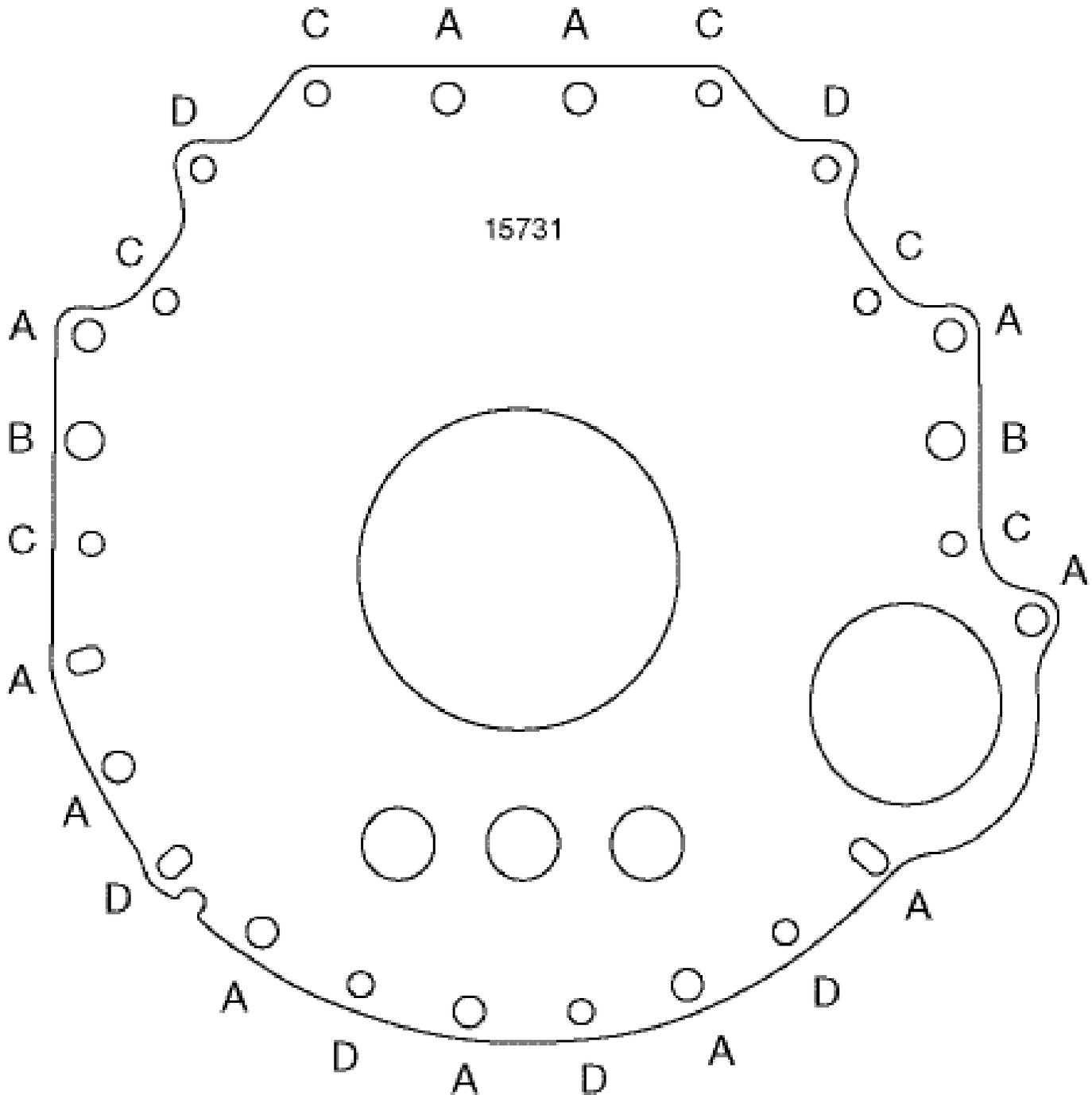
7. Position your Lakewood Bellhousing over the flywheel/clutch assembly and slide onto dowel pins in engine block. Fasten the bellhousing to the engine block using the 3/8"-16 x 1" (35 ft lbs of torque) and 1/2" bolts (100-110 ft lbs) grade 8 bolts supplied. Secure the blockplate to the bellhousing using the supplied grade 8 fasteners installed in the order shown on the illustration.

IMPORTANT: All fasteners must be used in their proper location for the bellhousing to meet S.F.I. specification 6.1

8. Replace starter motor, transmission and driveshaft. Attach clutch linkage and check for proper adjustment.
9. Reconnect battery cable.

LAKWOOD 15120 SERIES FASTENER REQUIREMENT BUICK 400-455 V8 AND ALL NON CABLE OPERATED RWD V6

For this product to meet SFI specification 6.1 the fasteners listed below must be used.



- A = 1/2-13 X 1" GRADE 8 BOLTS, WASHERS AND NUTS**
- B = BELLHOUSING LOCATING PINS (NOT INCLUDED)**
- C = 3/8-16 X 1" GRADE BOLTS AND WASHERS**
- D = 3/8-16 X 1" GRADE 8 BOLTS WASHERS AND NUTS**

LAKWOOD BELLHOUSING

Alignment Procedure

Due to manufacturers' machining tolerances of engine blocks in relationship to dowel pin location, it is quite possible for the crankshaft centerline and bellhousing bore to be misaligned. With the transmission installed in a misaligned condition, several problems can occur, such as pilot bearing and main shaft bearing wear, difficulty in shifting, and in extreme cases breakage of transmission gears and cases. While most housings will fall within the allowable limits, it is good insurance to check for register bore runout whenever any housing or engine block is installed. Most factory service manuals will outline the checking procedure, but will not give correctional measures necessary to ensure trouble-free standard transmission operation, short of trial and error with switching of various O.E. housings.

Offset dowel pins are available from Lakewood Industries to ensure correct adapter housing installation. For checking, you will need a dial indicator (preferably with a magnetic base), a few simple tools and close attention to detail to give you accurate installation results.

INSTRUCTIONS

1. Remove clutch assembly from flywheel and install bellhousing on engine block. (It is easier when you leave the clutch assembly off the flywheel.)
2. Install dial indicator base on the flywheel and adjust plunger to contact the register bore of the housing. (See photo.)
3. Rotate the flywheel and note indicator reading. Misalignment is one-half of the indicator reading (maximum allowable is .005").
4. To correct off-center condition, select the offset dowel pin pair that is closest to one-half of the indicator reading. (i.e., if reading is .016", $1/2R=.008"$ use .007" dowels. If reading is .024", $1/2R=.012"$ use .014" dowels).
5. Remove stock dowel pins by driving from back side or pulling with gripper pliers.
6. Clean engine block dowel holes and coat lightly with lubricant.
7. Lubricate dowel pins and install in block. The slot in the dowel pins indicates the direction of maximum offset. They should be installed parallel to one another, and in pairs (both .007" or both .014" and .021").
8. Install and tighten bellhousing securely. Remount the dial indicator and recheck the register bore runout (Repeat step 3).
9. To make small corrections or adjustments to the alignment, you will need to remove the bellhousing and drive the offset dowels out of the block.

Reposition the dowels using the slot as a reference point and re-install. Re-check register bore run-out. Repeat this procedure until the register bore is within limits.

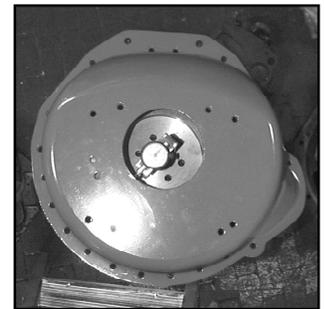
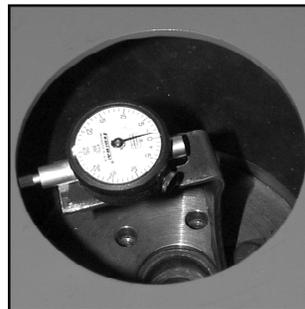
NOTE: Always be careful when removing bellhousing from engine block so that offset dowel pins do not move or change position.

OFFSET DOWEL PIN CHART

| Total Indicator Reading | One-Half Total Indicator Reading | Size Dowel To Be Used | Lakewood Offset Dowel Part Number | |
|-------------------------|----------------------------------|-----------------------|-----------------------------------|------------|
| | | | GM | Ford/Mopar |
| .012" to .020" | .006" to .010" | .007" | #15920 | #15950 |
| .022" to .034" | .011" to .017" | .014" | #15930 | #15960 |
| .036" to .052" | .018" to .026" | .021" | #15940 | #15970 |

WELD-ON DOWEL LOCATING KIT

Designed for use on race cars that are frequently dis-assembled, this kit eliminates the need to "dial-in" the bellhousing after each removal. For Ford or Mopar vehicles with .500" dowel holes use #15980. For GM vehicles with .622" dowel holes use #15981. Welding is required.



Clean paint inside bore.

RECOMMENDED OPTIONAL LAKEWOOD & HAYS PRODUCTS

- **Adjustable Clutch Fork Pivot Ball.** This handy item allows adjustment of the clutch fork height when clutch assemblies are changed.
Lakewood Part #15501
- **Safety Block Plates.** These plates are exact replacements for those provided in our Lakewood Bellhousing kits. A must for block protection. These plates are required to meet S.F.I. requirements for racing.
Please see your Lakewood catalog for one of our many Block Plate part numbers.
- **Offset Dowel Pins.** Adjustable dowel pins correct for improper alignment of bellhousing to engine block. A must when accurately dialing in your bellhousing. *Please see your Lakewood catalog for one of our many Offset Dowel Pin part numbers.*
- **Bellhousing Locating Kit.** This kit is used to dial in a misaligned register bore which could cause a missed shift or premature pilot bearing failure. (Welding required.)
Lakewood Part #15981
- **Self-Aligning Throwout Bearing.** Designed specifically for installations with clutch to transmission misalignment resulting in noise and vibration. The Hays bearing minimizes these conditions by finding the center line.
Please see your HAYS catalog for one of our many Throwout Bearing part numbers.
- **Street/Strip Clutch Kits for GM.** Designed for high performance and drag racing. This kit features a pressure plate with heavier springs and centrifugal assist to reduce slippage. The disc features an aggressive friction material with a high burst strength lining.
Please see your HAYS catalog for one of our many Clutch Kit part numbers.
- **Steel & Aluminum Flywheels.** All flywheels meet or exceed S.F.I. specifications. Flywheels are available in a variety of weights, sizes, applications and bolt patterns.
Please see your HAYS catalog for part numbers.

RETAIN THIS INSTRUCTION SHEET FOR FUTURE REFERENCE.



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