



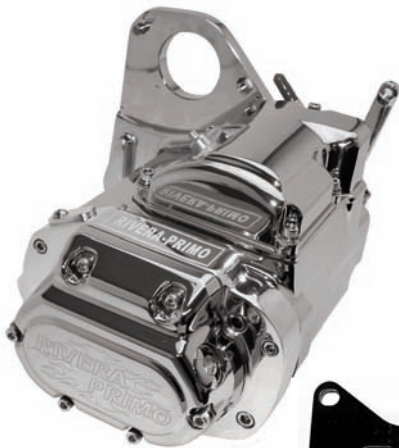
INSTALLATION INSTRUCTIONS for **4-to 6-Speed Conversion Drive Line Kit** (Fits Alternator 4 Spd. Swingarm & Rigid Frames 1970-1984)

IMPORTANT SAFETY NOTE....

When performing any motorcycle work such as installing a belt drive it should be securely fastened in an upright position with easy access to the primary drive. If you are working with a lift, fasten the motorcycle securely to prevent it from falling. Always remove the battery to prevent accidental start-up.

**** Open belt drives should be used with a Belt Guard !**

PARTS INCLUDED IN THE COMPLETE KIT :



**POWERDRIVE™ POLISHED
6-SPEED TRANSMISSION**

**1214-0010 . . . TRANSMISSION
ASSY / 6-SPEED**
POLISHED 6-SPD LEFT SIDE
DRIVE POWERDRIVE™ TRANSMIS-
SION MODIFIED TO FIT FX-STYLE
SWINGARM FRAMES. INCLUDES
32-TOOTH FINAL DRIVE PULLEY.



BRUTE IV EXTREME™ 3" OPEN BELT DRIVE KIT

2016-0101 . . . BRUTE IV EXTREME™ BELT DRIVE KIT
POLISHED 3" OPEN ELECTRIC START BRUTE IV EXTREME™
BELT DRIVE KIT COMPLETE WITH STD. OFFSET. INCLUDES 3"
BELT, PRO-CLUTCH™ & BILLET OUTER GUARD ASSEMBLY.



1217-0020 . . . TRANSMISSION PLATE

TRANS PLATE ADAPTS A 5 OR 6-SPEED TRANSMISSION TO A 4-SPD
SOFTAIL™ OR RIGID FRAME. WILL WORK ON 4-SPEED SWINGARM FRAMES
WITH 1214-0010 TRANSMISSION.

SUPPORT PLATE / SPACERS / HARDWARE (USED ONLY WITH SWING ARM FRAME)



- A. **2100-0047 . . . BOLT, SHCS / 5/16-18 x 1" / FOR MOUNTING
MOTOR PLATE TO ADAPTER PLATE.**
- B. **1217-0026 . . . SUPPORT PLATE, TRANSMISSION MOUNT**
BILLET ALUMINUM SUPPORT PLATE. FITS BETWEEN BRUTE IV EXTREME™
& 6-SPEED TRANSMISSION.
- C. **1217-0025 . . . SPACER, TRANS MOUNT / REQUIRES QTY 2**
BILLET ALUMINUM SPACER FOR B/ DRIVE TO SUPPORT PLATE (1217-0026).
- D. **2100-0113 . . . BOLT, SOCKET CAP / REQUIRES QTY 4**
1/4-20 x 1.00" ALLOY SOCKET HEAD CAP.
- E. **1100-0119 . . . BOLTS, ALLEN / REQUIRES QTY 2**
5/16-18 x 2" FOR MOUNTING STARTER MOTOR.



**MONSTER-TORQUE™
1.4kw STARTER MOTOR**

1184-0003 . . . STARTER MOTOR
1.4KW MONSTER TORQUE™
STARTER MOTOR. FITS 4-SPEED
CONVERSION KIT.

NOTE: RUBBER BOOT SUPPLIED
MUST BE USED

PARTS YOU'LL NEED TO GET :

- * CLUTCH CABLE
- * SHIFT LINKAGE
- * OFFSET SPROCKET (IF USING REAR CHAIN w/OEM TIRE SIZE)
(see note on bottom of last page)
- * KICKSTAND STOP (2019-0502)
- * SOME OEM HARDWARE MUST BE REUSED

The following pages will guide you thru the installation procedure for this driveline conversion. Remember, it is important to retain the other instructional materials (particularly the Brute IV Extreme™ instructions) that are included with the separate components, as they further detail installation & clutch set-up.

STEP 1

FOLLOW THE OE SERVICE MANUAL FOR THE REMOVAL OF STOCK PARTS AS FOLLOWS:

- | | |
|--|---|
| <ol style="list-style-type: none">1. <u>Remove the battery from bike</u>2. Drain the oil tank and primary3. Remove the oil tank and battery box, making sure you mark the oil lines for re-installing4. Remove the starter motor5. Remove the outer primary cover6. Remove the primary drive | <ol style="list-style-type: none">7. Remove the inner primary cover8. Remove the rear drive chain or belt9. Remove the 4-speed transmission10. Remove the transmission mounting plate11. Save the bolts, nuts and washers you removed in STEP #8 and #9 above12. Clean the frame |
|--|---|
-

STEP 2

Install the new transmission mounting plate into the frame, leaving the bolts loose at this time. Note the scribed letter "X" on the trans plate. If you're sitting on the bike it should be at the "front" of the trans, "left side" & "facing up".

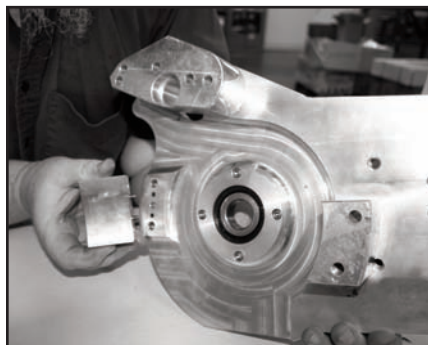
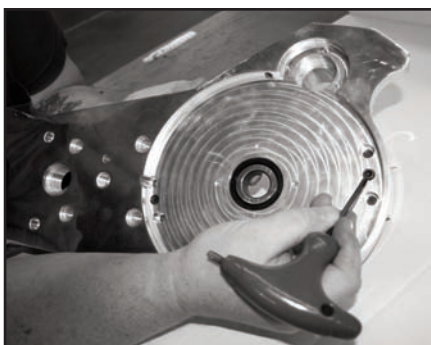
STEP 3

Install the transmission into the frame. Leave the 4 transmission mounting bolts loose.

STEP 4

Remove the rear mounting block with the locating pins from the Brute IV Extreme™ motor plate.

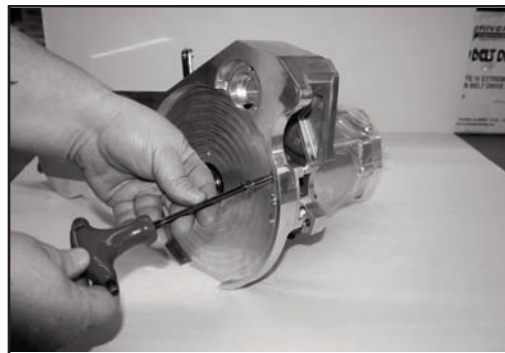
NOTE: Step 4, 10 & 11 will only be done when the installation is on a swing-arm frame.



STEP 5

Install the Brute IV Extreme™ motor plate onto the motor and transmission using the supplied hardware (see the Brute IV Extreme™ installation guide included).

Tighten all motor plate bolts, which will align the motor and the transmission.



STEP 6

Tighten the (5) transmission nuts to O.E. specs.

STEP 7

Tighten the (4) transmission mounting plate bolts to the frame.

STEP 8

Now remove the motor plate bolts you installed in STEP 5 and remove the motor plate from the motor & transmission, knowing that the engine & transmission are square to each other.

STEP 9

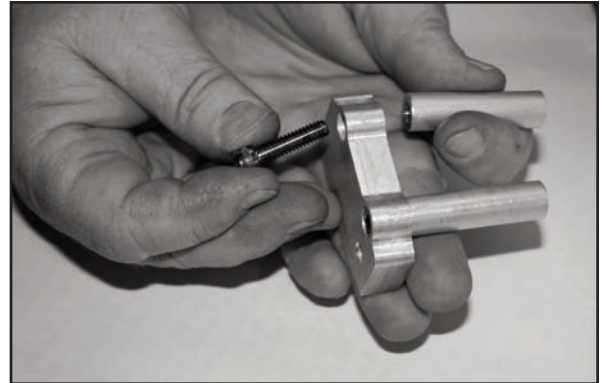
Re-install the rear belt or drive chain. If you are retaining the rear drive chain, replace the belt pulley on the trans with a chain sprocket having a 1/2" offset. Use optional 23-tooth chain sprocket part # 3183-0029 or 24-tooth part # 3183-0031. Install either one along with the lock plate, using loctite on the two fasteners. Remember, that the mainshaft nut has a left-hand thread.

STEP 10

Install the 2 aluminum .500" O.D. spacers to the adapter plate (make certain that the "turned-down end" of each spacer faces the transmission).

Square the end of the spacers to the adapter plate using the (2) 1/4-20 x 1.000" socket head cap screws and torque each of them to 12 FOOT POUNDS.

NOTE: Step 4, 10 & 11 will only be done when the installation is on a swing-arm frame.

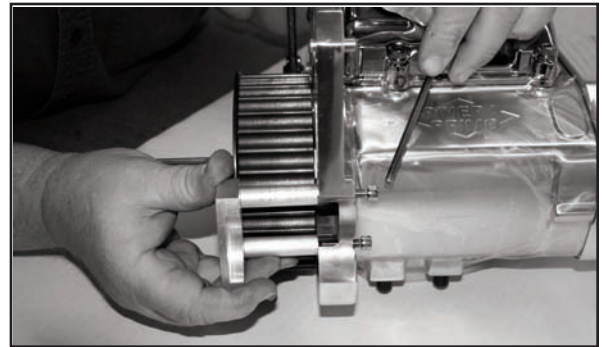


STEP 11

Install the aluminum adapter plate with spacers onto the transmission using (2) 1/4-20 x 1.000" socket head cap screws.

Torque these to 12 FOOT POUNDS.

(Note that the top hole on the adapter plate is used to bolt the adapter plate to the motor plate)



STEP 12

Install the Brute IV Extreme™ motor plate per the instructions provided with the belt drive. Make certain you remove the locating pins on the motor plate before installation. Torque the mounting bolts to 29 FOOT POUNDS.

STEP 13

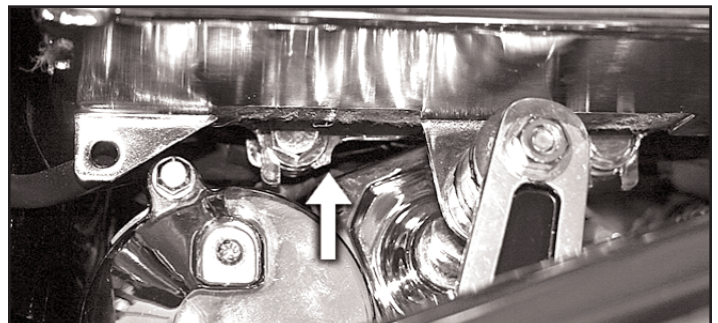
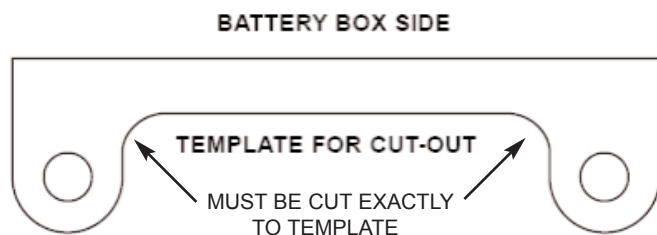
Install the Monster Torque™ starter motor with (2) 5/16-18 x 2" SHCS provided.

Note: Modifications to the rear fender may be necessary for proper starter fitment.

STEP 14

The oil tank and battery box must be trimmed at this time so that they'll clear the starter motor.

Use the template supplied. Place the template between the mounts on the oil tank and battery box. Trim away any excess material extending beyond the template.



STEP 15

Re-install the oil tank and the battery box.

STEP 16

Install the clutch cable.

Any late 5-speed clutch cable will work, but you'll have to measure the length for your particular motorcycle.
(Note: On 1980 & earlier models, the clutch cable perch may need modification)

STEP 17

Install the shifter linkage.

STEP 18

Install the Brute IV Extreme™ Belt Drive per the instructions provided. Please pay particular attention to checking the air gap between the back side of the starter ring gear and the front face of the pinion gear.

Recommended gap should be .080" to .125".

Use a feeler gauge to measure between the back side of the ring gear & the front face of the pinion gear.

If there's too much gap, shim the jackshaft assembly to reduce the gap to the spec above (order #1185-0501 shim kit).

If the gap is under .080" you must either machine the shaft or the coupler to provide the necessary clearance required.

STEP 19

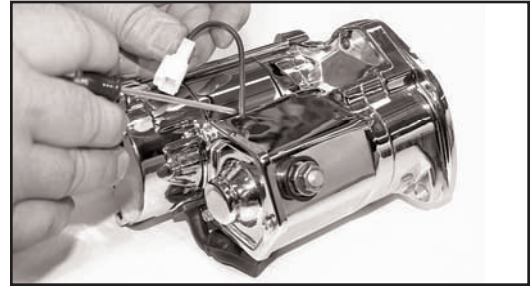
Fill the transmission with 24 ounces of lubricant. We recommend using Belray 85-140 gear lube or equivalent.

STEP 20

Re-install the starter solenoid wire from the relay.

If using a square-style starter relay, the solenoid wire from the starter will go to the # 30 post on the relay.

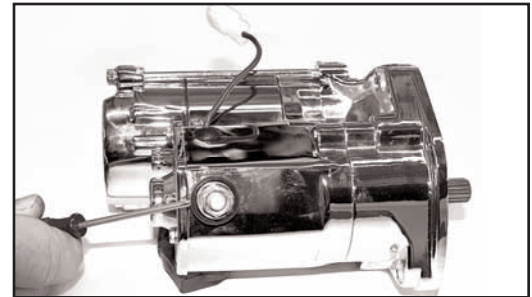
If using a round-style starter relay, the solenoid wire from the starter will go to the small post on the relay.



STEP 21

Install the positive battery cable onto the brass terminal on the starter.

Connect the other end of the cable onto the positive (+) post on the battery.



STEP 22

Fill the oil tank and re-install the battery.

When you initially start the motorcycle, check to make sure the oil system is working properly. Test ride the bike prior to finishing the install.

The Powerdrive™ 6 transmission is delivered with a final drive pulley for a rear belt. However, if you want to run a rear drive chain with an OEM width rear tire please follow the following procedure:

1. Remove lock plate & 32-tooth final drive pulley from the transmission (note the mainshaft nut has left-hand threads).
2. Measure the seal spacer that was behind the pulley. It will be either .600" thick or .850" thick.
3. If you have a .850" thick main seal spacer you'll need a sprocket with a 1/4" offset.
Part #1223-0020 / 22-tooth, #1223-0021 / 23-tooth, #1223-0022 / 24-tooth.
4. If you have a .600" thick main seal spacer* you'll need a sprocket with a 1/2" offset.
Part #3183-0027 / 22-tooth, #3183-0028 / 23-tooth, #3183-0031 / 24-tooth.
5. Install the offset chain sprocket up against the seal spacer & re-install the the lock plate using loctite on the fasteners.

*All Powerdrive 6 transmissions purchased during 2007 & later will have a .600 main seal spacer.