

V-Twin MFG.
BDL 3" BELT DRIVE W/MOTOR PLATE
FITS 1990-UP FXST; ELECTRIC START
VT Part No. 20-0601

This is a custom application and should only be installed by a knowledgeable and trained motorcycle technician

V-Twin Mfg. accepts no responsibility for improper installation

1. Be sure to read the Warranty, Introduction, belt tracking and starter gear problems, alignment procedure and **disconnect battery**.

2. Installation on 1986-89 models requires the use of a 1990-up starter and modifications to starter mounting hole on transmission will be necessary. You must open the mounting hole up to 2-1/8 inches.

3. Remove inner primary, refer to alignment procedures, then install motor plate (Softail only). Be sure to use stock spacer behind front pulley.

4. Remove stock starter pinion gear and complete starter gear assembly from starter. Bolt starter into back side of motor plate.

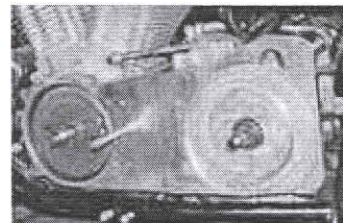
5. Install front and rear pulleys and check for proper fit.. At this time you should determine if the front pulley will need shimming or not depending on how the pulleys align with each other. Remove pulleys and make any modifications necessary.

6. Re-install belt drive placing front pulley, rear pulley and belt on at the same time.

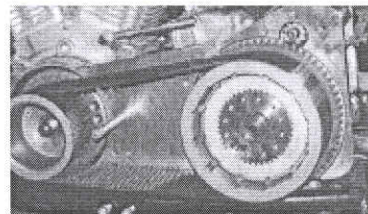
Install and tighten to HD specifications, mainshaft hub nut. We supply a special hub nut with seal for all spline shaft models 1990 and later.

Engine shaft spline should not protrude from pulley.

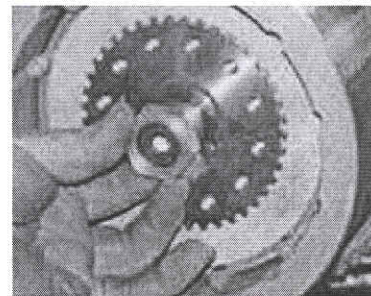
Be sure to red loctite front engine nut and torque to HD specifications. (Electric impact is preferred). For 1986-89 taper shaft models, you must use the stock hub nut and seal kit included.



Install motor plate and check for proper fit

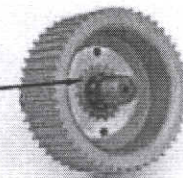


Install belt drive, both pulleys and belt at the same time



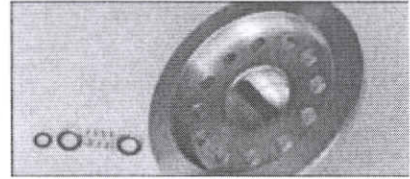
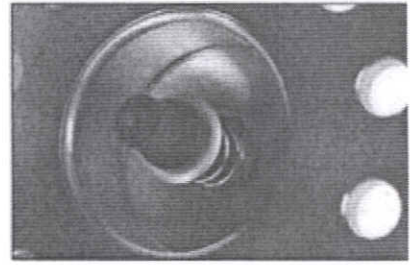
Tighten sealed mainshaft nut, supplied with 1990-up kits only. 1986-89 models must use stock hub nut and seal kit supplied.

If engine shaft spline protrudes as pictured, a washer is needed to compensate for protrusion of spline before washer and nut is installed.

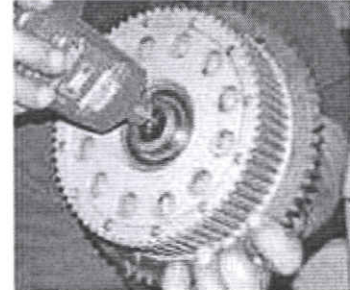


When using any of BDL's inserts with special nut, please note that the nut is counter-bored to cover the splines should they protrude.
COVERING THE SPLINE IS VERY IMPORTANT

Pictured right is the seal kit installation which is supplied with all 1986-89 belt drives only. A sealed hub nut is supplied with all kits 1990- up. A stock HD hub nut with seal must be used with all 1983 and earlier kits.



6a. For spline mainshaft models, 1990-up, apply red loctite into the back side of our hub inside of the spline and let the loctite flow onto the mainshaft when sliding the rear basket assembly on. (Pict. 4 Pg.12) This procedure is necessary so that the hub and mainshaft will fit together properly and will not let the mainshaft spin inside of our hub. (This procedure is not necessary on taper shaft models 1986-89).



Use loctite on spline hubs to ensure proper fit on mainshaft

FAILURE TO LOCTITE THE SPLINED HUB PROPERLY WILL CAUSE THE SPLINES TO WASH OUT

(The belt drive was designed with the use of stock HD frames. The shaft to shaft dimensions on a stock Softail is 12.825" and on an FXR it is 11.325". The number of teeth on the pulleys and the number of teeth on the belt was engineered to exact fit using the above dimensions. If aftermarket frames, engines or transmissions are used then these dimensions may vary slightly, you may have to address this problem so that the kit will fit properly. We will not be able to help you with this problem, this is an issue to be addressed by the manufacturer of the after market parts that you may be using.)

7. Rotate the motor using a socket wrench, the belt should track straight and away from the motor plate but not so that it may come in contact with the outside pulley flanges. Be sure that the belt drive is not making contact with the motor plate

8. Grease starter shaft and install our starter pinion gear onto starter shaft, apply red loctite to starter bolt and tighten to HD specifications.

(We supply 2 starter bolts with the kit, one is a 1/4-20 x 2-1/2" for 1990-93 starters the other is a 10-32 x 2-1/2" for 1994 and up starters. Be sure not to tighten starter bolt too tight as this may interfere with proper engagement of the starter pinion gear.)

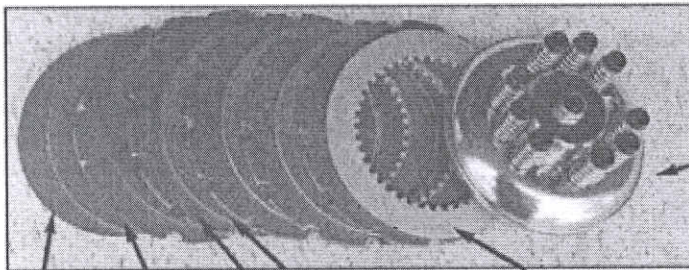


Install starter pinion, supplied with kit. There are 2 bolts supplied, one for 1990-93 and one for 1994-up

9. Install clutch pack, refer to schematic (below) spline steel first, 1/2 sided friction plate with fiber facing out, then alternate steel and two sided fiber plates ending with the other 1/2 sided friction plate with fiber facing in. If your kit contains the new Quiet clutch then refer to the lower diagram. Install pressure plate, springs and shoulder bolts.

To install shoulder bolts apply red loctite to a bolt and install it one turn, go on to the next bolt with same procedure until all 6 bolts are in place, then tighten them all the way down until they bottom out. There is no adjustment to the spring pressure, this is all pre-determined with the length of the

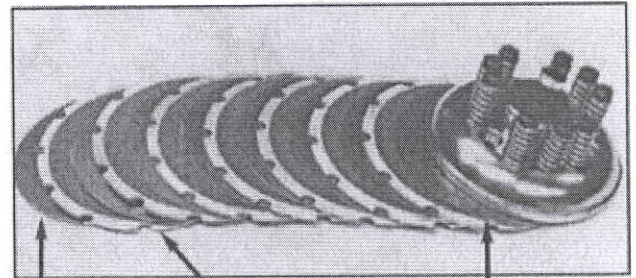
shoulder bolt and exact dimensions of our pressure plate.



Spline Steel EDP-200 1 each
 5 steels alternately ERDS-100 with 4-2 sided fictions ECP-200
 First 1/2 fiber facing out ECP-100
 Last 1/2 fiber facing in ECP-100

Our pressure plate, EPP-100, is supplied with 9 springs, ECS-100 and 9 bolts, ESB-100. It is not necessary to use more than 6 springs for a stock application, for larger motors it may be necessary to use 8 or 9 springs.

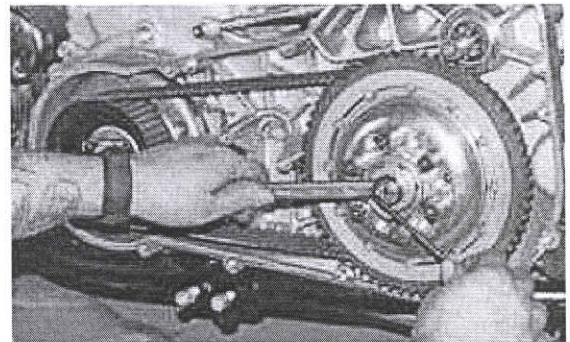
Proper clutch stack for the New Quiet Clutch. Thick splined steel first, then alternate fiber and .078 thick steels ending with a steel under the pressure plate.



Thick steel 1 each EDP-200
 Quiet clutch fibers 7 each ERCP-100
 Quiet clutch steels 7 each .078 thick ERCS-100

10 Install the 4 hexagon extensions into motor plate and mount side guard with the 4 buttonhead allen bolts.

11. Clutch screw adjustment. should be **approximately 1/4** turn loose from lightly seated. (Note when clutch is hot the adjustment screw should not be seated).. Tighten rod nut when adjustment is complete. (We supply a clutch adjusting rod and nut for all models 1990-up only).



Install clutch adjusting rod supplied with kit 1986-up. and adjust clutch.