



HTN Ride-On Trowel

MULTIQUIP® Clutch Retrofit Kit Installation Instructions

The following instructions are intended to assist the user in the installation of a Hilliard centrifugal clutch system. The Hilliard clutch system replaces the Comet CVT system. Please read all assembly instructions before installing the kit.

REQUIRED TOOLS

- Torque Wrench
- 3/8 Ratchet
- 3/8, 7/16, 1/2, 3/4, 9/16, 5/8, 15/16, 13mm Sockets
- 3/16 and 1/4 Allen sockets
- Open/box-end wrenches
- Misc. Pry-Bars
- CV Joint Grease
- Grease Gun w/Multi-purpose grease
- 2x4 wood block
- Forklift/Hoist
- Clutch Puller
- Heavy Duty Jack Stands

PARTS

Verify that all parts are accounted for. See Figure 1 and Table 1.

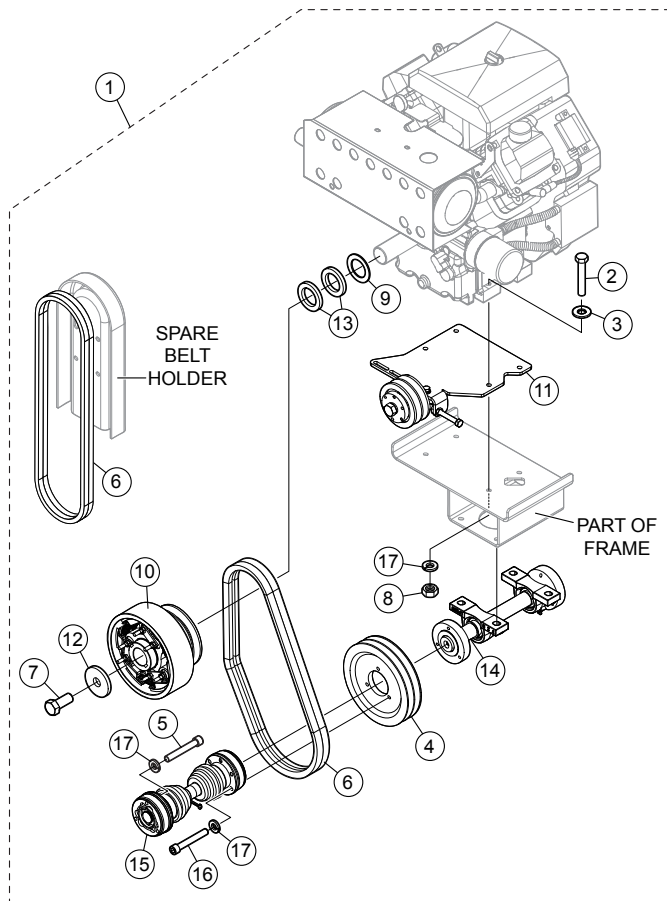


Figure 1. Clutch Retrofit Kit

Table 1. HTN CVT Kit Parts

Item	Qty.	Part No.	Description	Remarks
1	1	22604	Kit, Clutch Upgrade, 125 RPM	Includes items with @
1	1	22603	Kit, Clutch Upgrade, 145 RPM	Includes items w %
2@%	4	0300 A	Screw, HHC 5/16-18 X 2	
3@%	4	0300 B	Washer, Flat SAE 5/16	
4@	1	2054	Pulley "B" 7 3/4 OD 120 RPM	
4%	1	11171	Pulley, Drive Rider 2V Ø6.500 HTO/HTN	
5@%	3	2186	Screw, SHC 5/16-18 X2-1/4 PLTD	
6@	4	2422	V-Belt B41	
6%	4	11048	Belt, B39 Gates HP II	
7@%	1	4005	Screw, HHC 5/8-18 X 1 1/2 Zinc	
8@%	4	5283	Nut, Nyloc 5/16-18	
9@%	1	21489	Spacer, Flat 2.13 X 1.44 X 0.060	
10@%	1	22265	Clutch, Centrifugal Twin B Belt Ø1.4375	
11@%	1	22590	HTN Retro Belt Tensioner Assy	
12@%	1	22597	Clutch Retainer Plate	
13@%	2	22598	Clutch Spacer	
14@%	1	22600	Cross Shaft Assy, HTN Centrifugal	
15@%	1	22601	Shaft, Drive CV Joint Assy 10.25	
16@%	3	923264	Screw, SHC 5/16-18 x 2-3/4	
17@%	10	0161 C	Washer, Lock 5/16 Med	

WORK SAFELY!

Only a **qualified service technician** with proper training should perform this installation. Follow all shop safety rules when performing this installation.

LIFTING THE TROWEL

1. Send a lifting strap or chain through the lift points on each side of the trowel. Attach the ends of the lifting straps or chains to the lifting device (Figure 2).

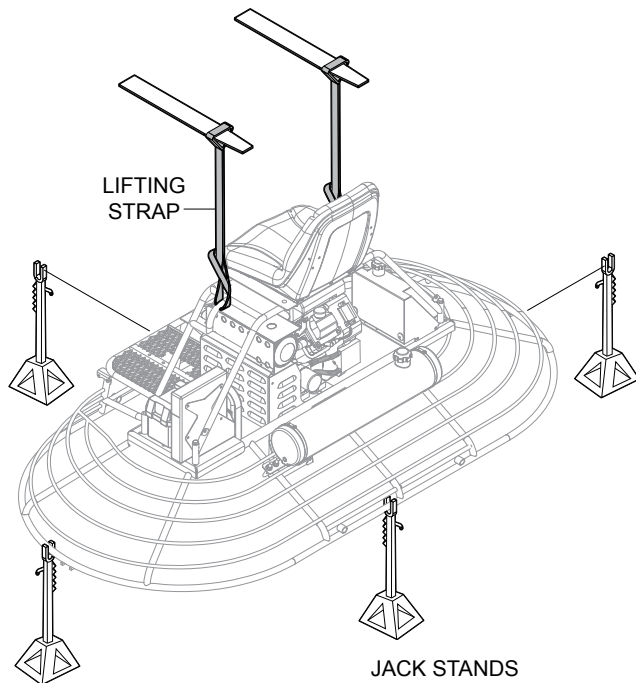


Figure 2. Lifting the Trowel

2. Next, place the trowel on heavy duty jack stands.

CAUTION

Trowel blades are sharp. Keep clear of blades while performing procedure. It is recommended that trowel blades are removed to prevent injury.

BATTERY REMOVAL

See Figure 3.

1. Remove battery cover and disconnect battery cables.
2. Remove battery. Set aside in a clean, safe place.

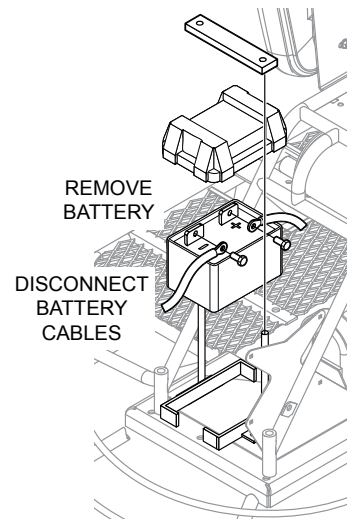


Figure 3. Battery Removal

PANEL AND GUARD REMOVAL

See Figure 4

1. Rotate the seat forward.
2. Use a 3/8" socket and a 1/2" socket to remove the control panel mounting hardware. Set aside for later use.
3. Slide control panel out of the way enough to gain access to the front of the engine.

NOTICE

Choke cable and electrical connections may need to be disconnected to allow movement of control panel.

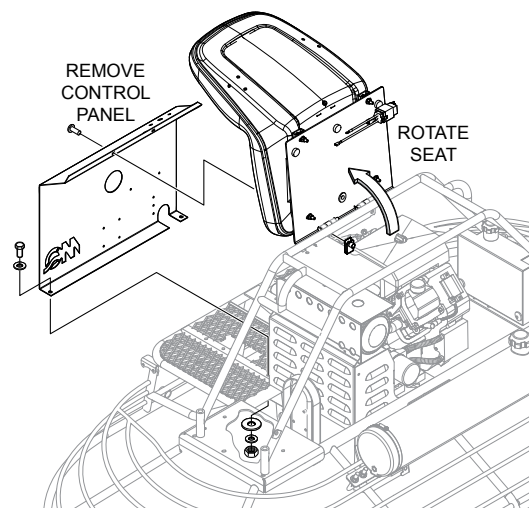


Figure 4. Remove Control Panel

4. Use a 3/8" socket to remove the 6 mounting bolts that secure the belt guards (Figure 5) to the engine. Set aside for later use.
5. Remove belt guards. Set aside in a clean, safe place.

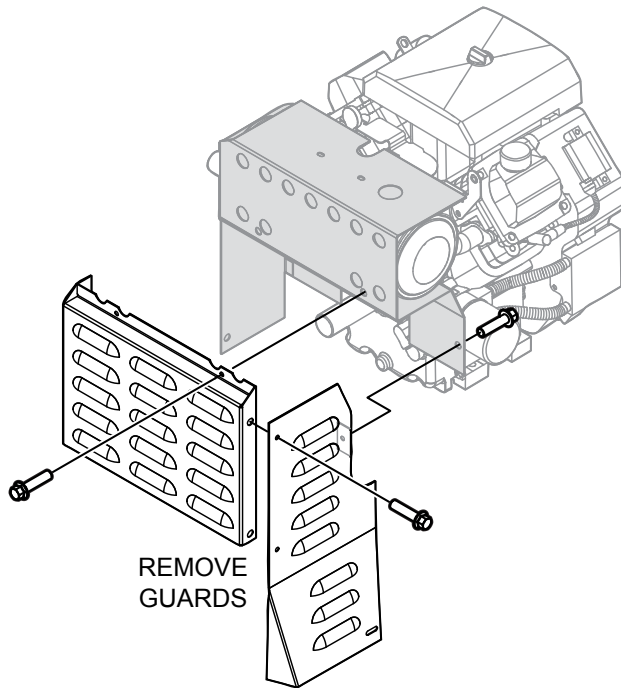


Figure 5. Remove Belt and Muffler Guards

DRIVE ASSEMBLY REMOVAL

CV Axle Assembly (Left-Side) Removal

Refer to Figure 7.

NOTICE

Spider assemblies must be locked to the frame with a chain in order to prevent clutch rotation.

1. Starting at the left-side gearbox, use a 1/4" allen wrench to remove the 3 bolts that secure the CV axle to the left-side gearbox.
2. Next, use a 1/4" allen wrench to remove the 3 bolts that secure the CV axle to the lower drive pulley coupler.
3. Remove and discard CV axle assembly and mounting hardware.

Disconnect/Remove CV Axle Assembly (Right-Side)

NOTICE

Disconnecting the right-side CV axle assembly from the gearbox is optional. Inspect rubber boots for damage or dirt. If CV Axle is in good condition, it is not necessary to remove it from the gearbox. **Removal of the bolts securing CV axle to the cross shaft coupler is mandatory.**

Refer to Figure 7.

1. Remove the 3 bolts that secure the CV axle to the right-side gearbox (optional).
2. Remove the 3 bolts that secure the CV axle to the cross shaft coupler.

NOTICE

Note that the 3 bolts securing the CV axle to the coupler are shorter than those securing the CV axle to the gearbox. Remember bolt orientation for reassembly.

3. Remove CV axle assembly (optional). Set CV axle assembly and mounting hardware aside in a clean safe place.

SPARE BELT REMOVAL

Reference Figure 6.

4. Remove spare belt holder and mounting hardware from the back of the battery and document box bracket. Set aside in a clean, safe place.
5. Remove and discard the spare belt.

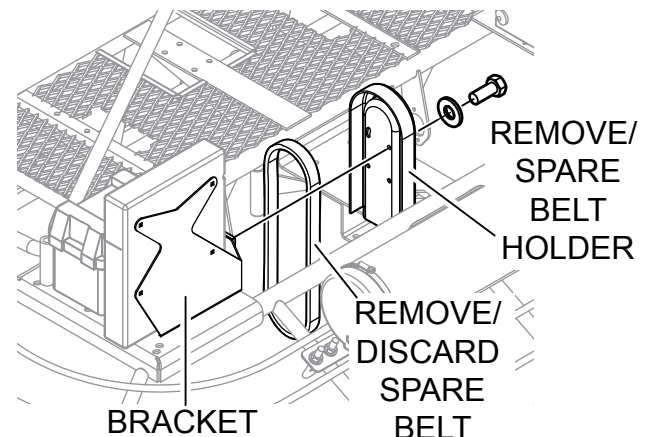


Figure 6. Spare Belt Removal

CVT Belt Removal

1. Walk belt off of upper CVT pulley and lower pulley. Discard belt. See Figure 7.

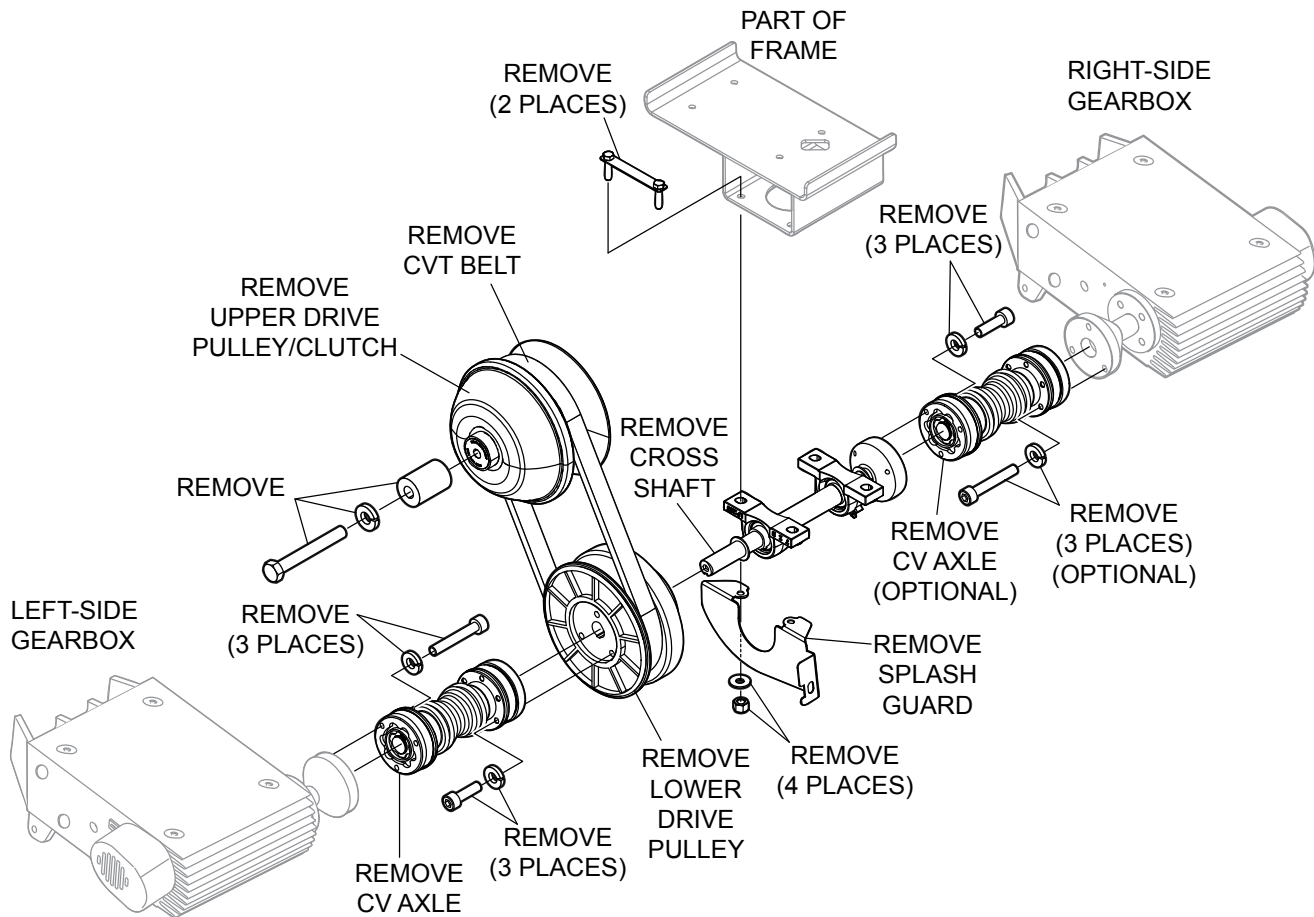


Figure 7. Drive Assembly Removal

Upper CVT Pulley Removal

Refer to Figure 7.

1. Using a 15/16" socket, remove the center bolt, washer and spacer that secure the existing upper Comet clutch assembly to the engine shaft
2. Pull clutch assembly off engine shaft. Puller may be required to remove clutch.
3. Discard Comet clutch. This item will not be used in the reassembly.

Cross Shaft/Lower Pulley Removal

See Figure 7.

1. Using a 9/16" socket, remove the 4 nuts and washers that secure the cross shaft bearing blocks to the splash guard and frame. Set mounting hardware aside for later use.
2. Remove splash guard. Set aside in a clean, safe place.
3. Remove and discard cross shaft and lower pulley assemblies. These items will not be used in the reassembly.

BELT TENSIONER INSTALLATION

1. Remove and discard existing engine mounting bolts, washers and nuts (4 places). See Figure 8.

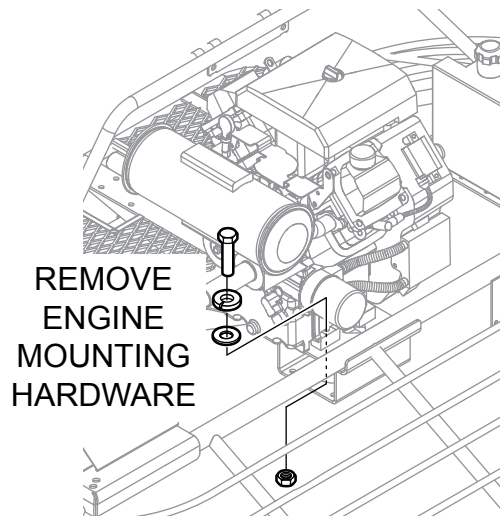


Figure 8. Remove Engine Mounting Hardware

- Temporarily remove tensioner bolt from belt tensioner assembly (P/N 22590). See Figure 9.

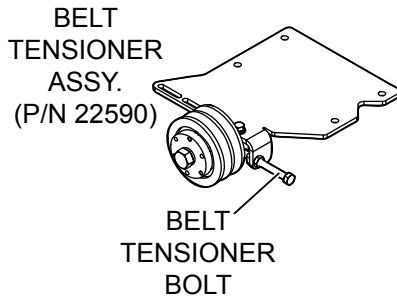


Figure 9. Belt Tensioner Bolt Removal

- Tip engine forward slightly to allow enough clearance for belt tensioner to slide between engine and frame. See Figure 10.

NOTICE

Belt tensioner orientation is such that the tensioner bolt is accessible from the rear of the trowel.

- Once belt tensioner is in place below the engine, reinstall belt tensioner bolt.
- Secure belt tensioner and engine with new screws (P/N 0300 A), flat washers (P/N 0300 B), lock washers (P/N 0161 C), and nuts (P/N 5283) in 4 places. Leave hardware loose until belt alignment. See Figure 10.

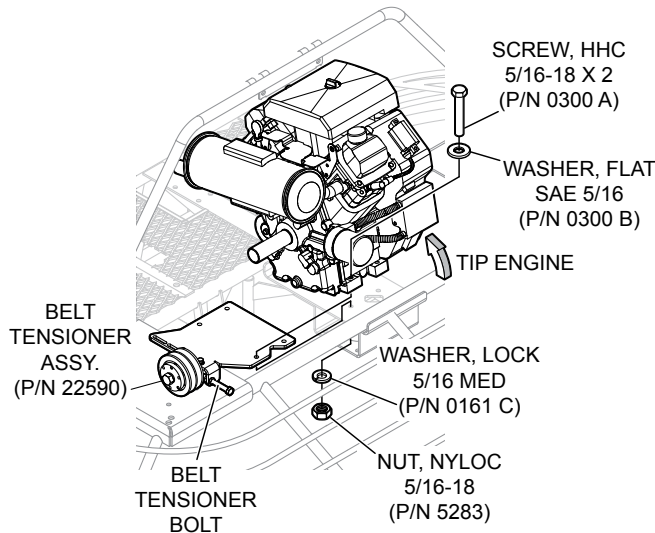


Figure 10. Belt Tensioner Installation

NEW CROSS SHAFT INSTALLATION

- Remove dust cap located on top of new cross shaft bearing (Figure 11).
- Using a grease gun, grease both bearings. Use multi-purpose grade grease.
- Reinstall dust cap to prevent contamination of the bearing.

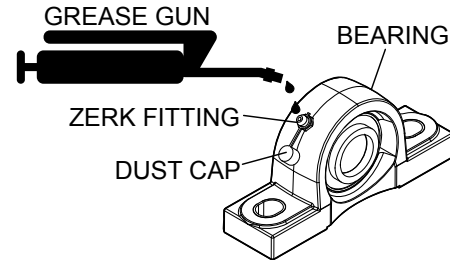


Figure 11. Bearing Lubrication

- Using a 9/16" socket, install splash guard and **new** cross shaft (Figure 12), P/N 22600, with existing screws, washers and nuts.

NOTICE

Cross shaft orientation is such that the shaft extension is facing the left gearbox.

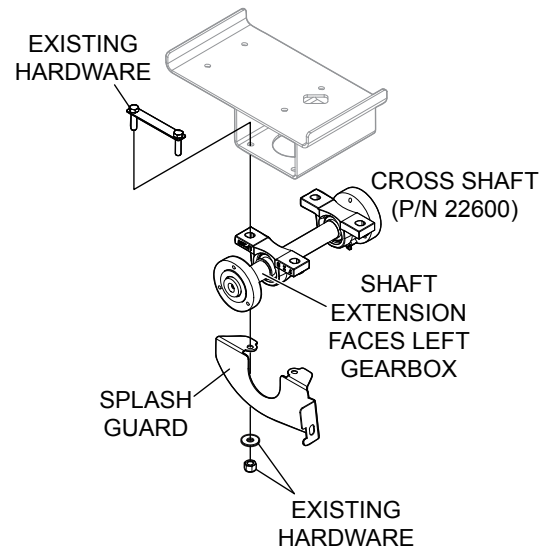


Figure 12. Cross Shaft Installation

RIGHT-SIDE CV AXLE REINSTALLATION / RECONNECTION

Before installing the right-side CV axle assembly (if previously removed), ensure rubber boots are not cracked or worn (Figure 13). If boots are damaged, replace immediately. If CV axle assembly is dirty or covered with debris, clean with a mild soap or solvent. If necessary, grease CV axle as required.

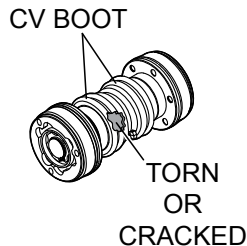


Figure 13. CV Boot Inspection

1. Apply a thin coat of RTV silicone (Figure 14) to mating surfaces of CV axle assembly

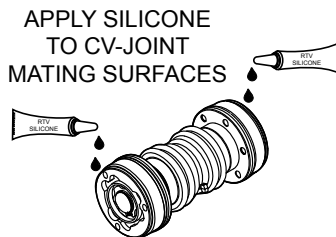


Figure 14. Applying RTV Silicone

2. Use existing mounting hardware to connect right-side CV axle assembly to right-side gearbox coupler (if applicable) and cross shaft coupler. See Figure 16.
3. Torque all coupler mounting hardware to 12 ft-lbs.

SPARE BELT HOLDER INSTALLATION

1. Reinstall spare belt holder with existing mounting hardware and 2 new spare belts (P/N 2242 or 11048). See Figure 6.

LOWER PULLEY / LEFT CV AXLE INSTALLATION

1. Mount new lower pulley (P/N 2054 or 11171) between cross shaft and new left-side CV Axle assembly (P/N 22601). See Figure 16. Apply a thin coat of RVT silicone to mating surfaces of pulley and CV Axle assembly.

NOTICE

Lower pulley orientation is such that the deeper indentation faces the cross shaft. See Figure 15.

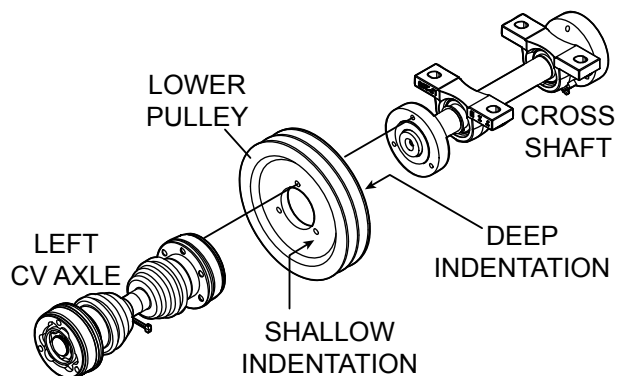


Figure 15. Lower Pulley Orientation

2. Use new mounting screws (P/N 923264) and lock washers (P/N 0161 C) in 3 places. See Figure 16.
3. Place new belts (P/N 2242 or 11048) onto lower pulley. Let belt hang freely.
4. Secure new left-side CV Axle to left-side gearbox coupler with new mounting screws (P/N 2186) and lock washers (P/N 0161 C). See Figure 16.

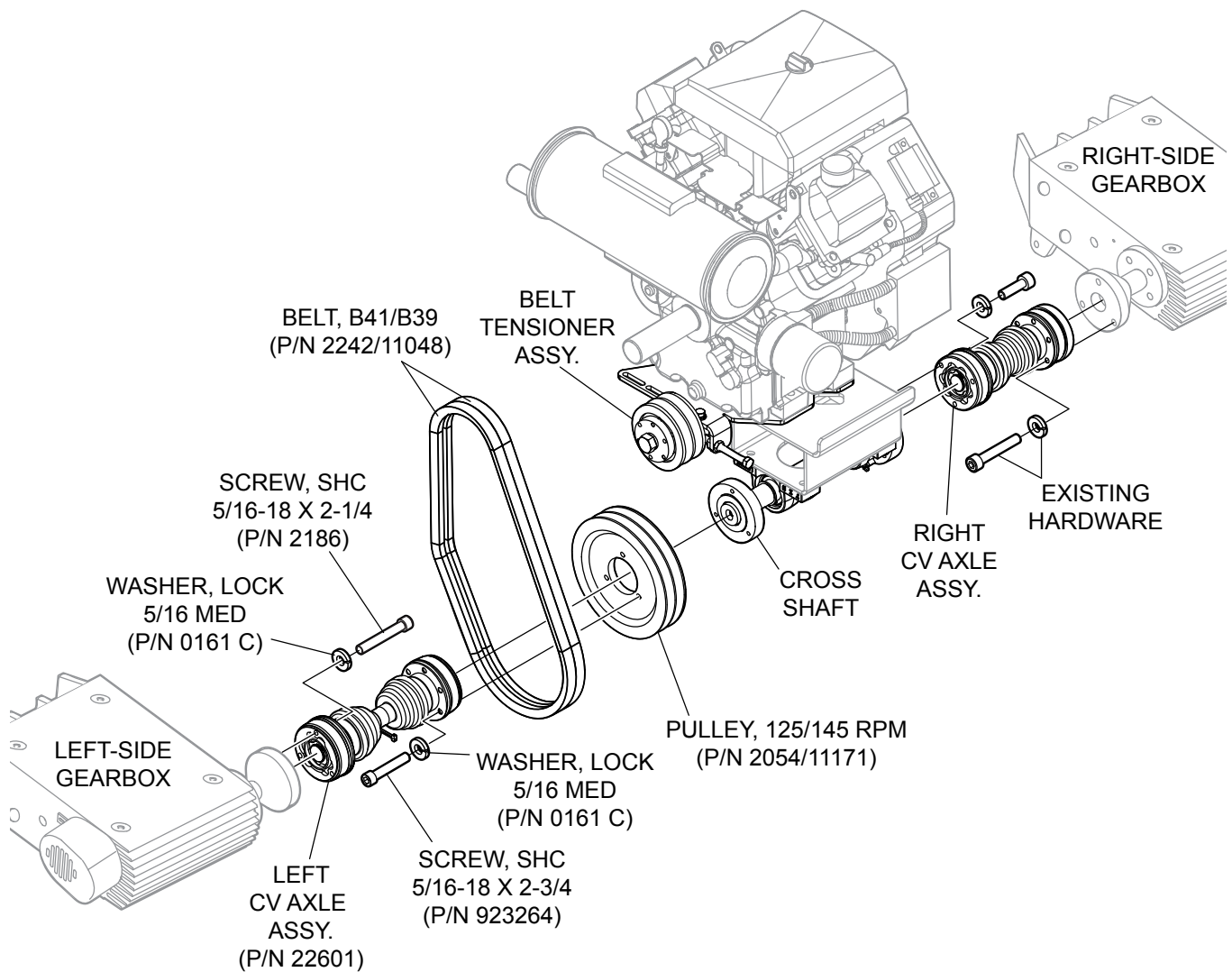


Figure 16. Lower Pulley/CV Axle Installation

BELT/CLUTCH INSTALLATION

1. Mount clutch assembly and spacers (P/N 22598 and 21489) onto engine shaft using 5/8-18 X 1-1/2" clutch retaining screw (P/N 4005) and clutch retainer plate (P/N 22597). See Figure 17.

NOTICE

Wedge a 2x4 block of wood between flywheel and trowel frame to prevent flywheel rotation so clutch retaining screw can be fully tightened.

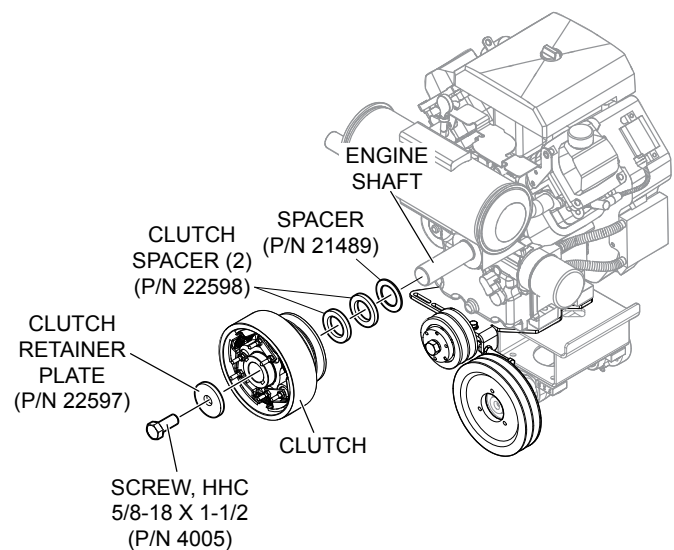


Figure 17. Clutch Assembly Installation

- Free belts from lower pulley and place around clutch pulley grooves.
- With belts placed over upper clutch pulley, walk belts onto lower pulley and belt tensioner pulley grooves. See Figure 18.

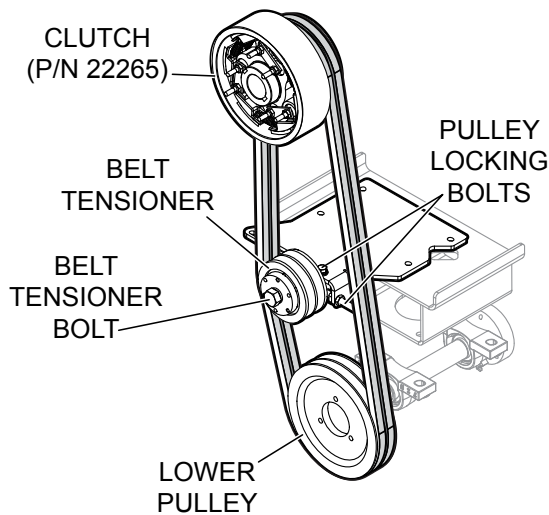


Figure 18. Belt Installation

- Align pulleys with a straight edge. See Figure 19.

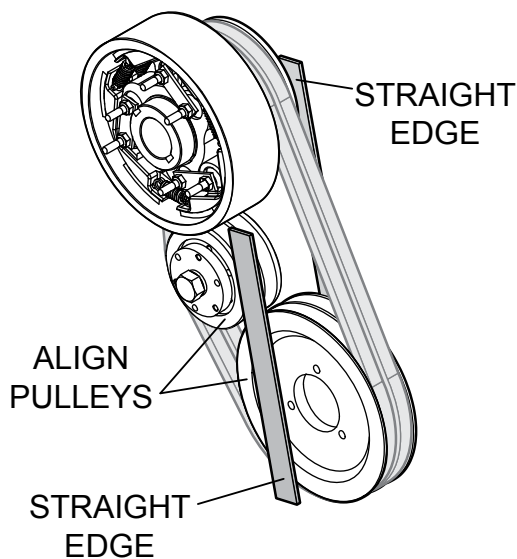


Figure 19. Pulley Alignment

- Tighten engine mounting bolts (Figure 10).

- Tighten belts with tensioner bolt (Figure 18).

NOTICE

To obtain the correct amount of tension, Multiquip recommends applying a force of 19 ft-lbs (25.8 N·m) using a belt tensioner gauge at the center span of the longest section of the belt to achieve a deflection of 5/8 in. (15.9 mm). Readjust tensioner bolt until deflection of 5/8 in. (15.9 mm) is obtained.

- Tighten the 2 pulley locking bolts to secure the belt tensioner.

8. PRE-TEST ASSEMBLY

NOTICE

DO NOT fully reassemble trowel until testing is complete.

- Reinstall belt guards. See Figure 5.
- Reinstall control panel and rotate seat back to operating position. See Figure 4.
- Lower trowel onto the ground. Follow all heavy lifting safety precautions.
- Unlock spider assemblies.
- Reconnect battery and battery cables.

STARTING THE TROWEL/TESTING

- While sitting in the operator's position, start the trowel as referenced in the Operator's Manual. Be sure to check the engine oil level prior to starting the engine.

CAUTION

The engine's exhaust contains harmful emissions. **ALWAYS** have adequate ventilation when operating. Direct exhaust away from nearby personnel.

WARNING

DO NOT stand in rotation plane of clutch system. Possibility exists of flying objects which could strike personnel and cause injury.

- Run machine, bringing throttle up so clutch engages. Cycle the engine from idle to full throttle twice, and shut off engine. Remove key.

HTN CLUTCH RETROFIT KIT INSTALLATION INSTRUCTIONS

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL
NUMBER ON-HAND WHEN CALLING

UNITED STATES

Multiquip Corporate Office

18910 Wilmington Ave.
Carson, CA 90746
Contact: mq@multiquip.com

Tel. (800) 421-1244
Fax (800) 537-3927

Service Department

800-421-1244
310-537-3700

Fax: 310-537-4259

Technical Assistance

800-478-1244

Fax: 310-943-2238

MQ Parts Department

800-427-1244
310-537-3700

Fax: 800-672-7877
Fax: 310-637-3284

Warranty Department

800-421-1244
310-537-3700

Fax: 310-537-1173

MEXICO

MQ Cipsa

Carr. Fed. Mexico-Puebla KM 126.5
Momoxpan, Cholula, Puebla 72760 Mexico
Contact: pmastretta@cipsa.com.mx

Tel: (52) 222-225-9900
Fax: (52) 222-285-0420

CANADA

Multiquip

4110 Industriel Boul.
Laval, Quebec, Canada H7L 6V3
Contact: jmartin@multiquip.com

Tel: (450) 625-2244
Tel: (877) 963-4411
Fax: (450) 625-8664

UNITED KINGDOM

Multiquip (UK) Limited Head Office

Unit 2, Northpoint Industrial Estate,
Globe Lane,
Dukinfield, Cheshire SK16 4UJ
Contact: sales@multiquip.co.uk

Tel: 0161 339 2223
Fax: 0161 339 3226

© COPYRIGHT 2011, MULTIQUIP INC.

Multiquip Inc and the MQ logo are registered trademarks of Multiquip Inc. and may not be used, reproduced, or altered without written permission. All other trademarks are the property of their respective owners and used with permission.

This manual **MUST** accompany the equipment at all times. This manual is considered a permanent part of the equipment and should remain with the unit if resold.

The information and specifications included in this publication were in effect at the time of approval for printing. Illustrations, descriptions, references and technical data contained in this manual are for guidance only and may not be considered as binding. Multiquip Inc. reserves the right to discontinue or change specifications, design or the information published in this publication at any time without notice and without incurring any obligations.

Your Local Dealer is:

