



Industrial Spring Loaded PTO



HD1300XT



HD1300

FOLEY ENGINES

1-800-233-6539

OWNERS MANUAL

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GENERAL INFORMATION

The AUTO Mfg. Inc. clutch and PTO is a spring-loaded automotive style clutch assembly capable of providing full engine horsepower from the PTO output shaft. Designed for use on both gasoline and diesel engines, the main components for each engine are the same.

Two models of the clutch and PTO are available:

HD1300

The **HD1300** provides a 1 3/4" output shaft for use on gasoline and diesel engines. This assembly incorporates 3 heavy-duty ball bearings (1 at the front and 2 at the rear of the housing), 1 3/8" splined shaft, with hardened spline and bearing journals.

The 13" clutch disc with 1 3/8" splined hub and ceramic metallic pads is designed for medium to heavy-duty industrial applications up to 120hp.

The industrial style pressure plate incorporates 12 springs providing a clamping force of 1860 lbs.

HD1300XT

The **HD1300XT** provides a 2 1/4" output shaft with hardened spline and journals for use on diesel engines up to 150hp. The assembly utilizes 2 heavy-duty roller bearings 1 each at the front and rear of the PTO housing.

The 13" clutch disc with 1 1/2" splined hub and ceramic metallic pads is designed for heavy-duty industrial applications up to 150 hp.

The Industrial style pressure plate incorporates 16 springs providing a clamping force of 2425 lbs.

The PTO output shaft in both models is centered into a pilot bearing located in the engine flywheel.

The PTO and clutch assemblies are designed for use on either in-line or belt driven applications. A drive shaft utilizing universal joints must be used with in-line installations to compensate for engine and driven unit mal-alignment.



CLUTCH OPERATION

WARNING:

ROTATING SHAFTS, PULLEYS, AND MOVING BELTS CAN CAUSE SEVERE INJURY OR CAN BE FATAL.

THE ENGINE AND DRIVEN UNIT MUST BE COMPLETELY STOPPED BEFORE ANY ADJUSTMENTS OR WORK IS ATTEMPTED TO THE ENGINE, DRIVEN UNIT, OR THE PTO CLUTCH ITSELF.

Operation of the AUTO Clutch is very simple

FIG. 1

The AUTO clutch is disengaged with the handle in the 'down' or 'horizontal' position. It is recommended that the engine be started with the clutch disengaged.

If the engine is being started for the first time during the workday, allow the engine to WARM UP for a few minutes before engaging the clutch.

FIG. 2

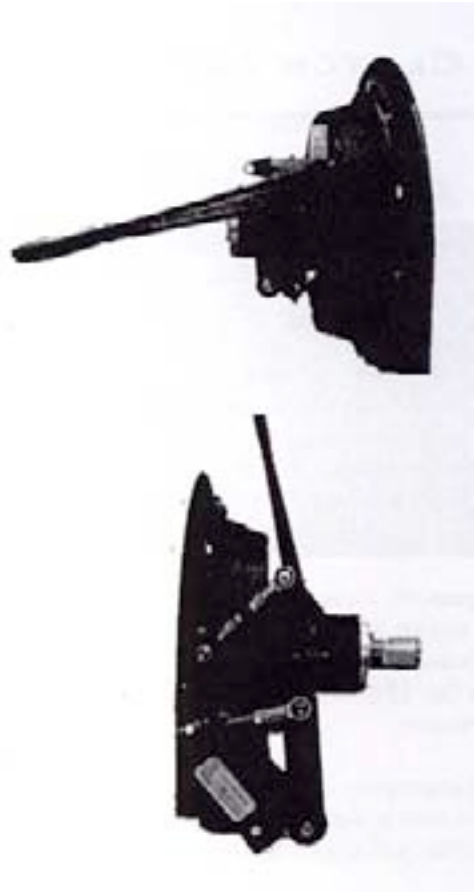
For mechanical throttle actuated engines, increase the engine rpm to approximately 1000 to 1200 rpm. Engage the clutch by moving the clutch handle to the 'up' or 'vertical' position slowly enough to prevent stalling the engine

For electronic throttle controlled engines, engage the clutch with the throttle control in the slow idle position. Use caution when engaging the clutch, not to allow excessive slippage of the disc prior to full engagement.

CAUTION:

Excessive slippage during engagement will cause premature failure of the clutch disc. This type of failure is not covered under the clutch warranty.

When the driven equipment is running at the same rpm as the engine allow the clutch to engage fully.



With the clutch handle in the vertical position and the clutch fully engaged, you can now move the engine throttle to the preferred engine operating position. The PTO output shaft is now rotating at engine rpm.

CAUTION

Engaging the clutch at maximum engine RPM will cause the disc and pressure plate to overheat and result in premature failure of the disc pads (disintegration) and pressure plate. This type of failure is not covered under the clutch warranty.

CLUTCH ADJUSTMENT

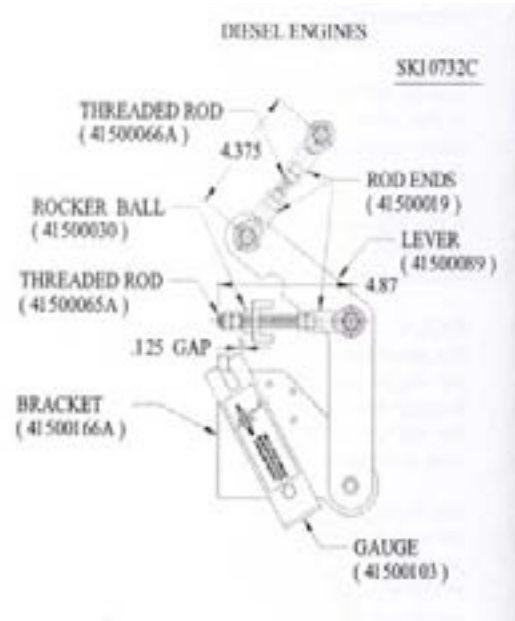


A properly adjusted clutch will provide many hours of service life. Therefore it is important that the adjustment of the clutch linkage be checked after the first 15 hours of operation and every 250 hours thereafter.

An improperly adjusted clutch can result in premature wear to the clutch disc, pressure plate, throw-out bearing, and engine flywheel.

1. With the clutch handle in the engaged position, adjust the nut against the 'rocker ball' until a 1/8" gap is obtained between the nut and the 'rocker ball'.
2. Use the 1/8" gauge tool (41500103) to slip between the nut and the rocker ball with a slight amount of pressure.
3. Tighten the lock nut to the adjusting nut.
4. Place the handle in the disengaged position (horizontal). Check to make sure that the PTO output shaft turns freely.

HD1300



1. With the clutch handle in the engaged position, adjust the nut against the 'rocker ball' until a 1/8" gap is obtained between the nut and the 'rocker ball'
2. Use the 1/8" gauge tool (41500103) to slip between the nut and the rocker ball with a slight amount of pressure.
3. Tighten the lock nut to the adjusting nut.
4. Place the handle in the disengaged position (horizontal). Check to make sure that the PTO output shaft turns freely.

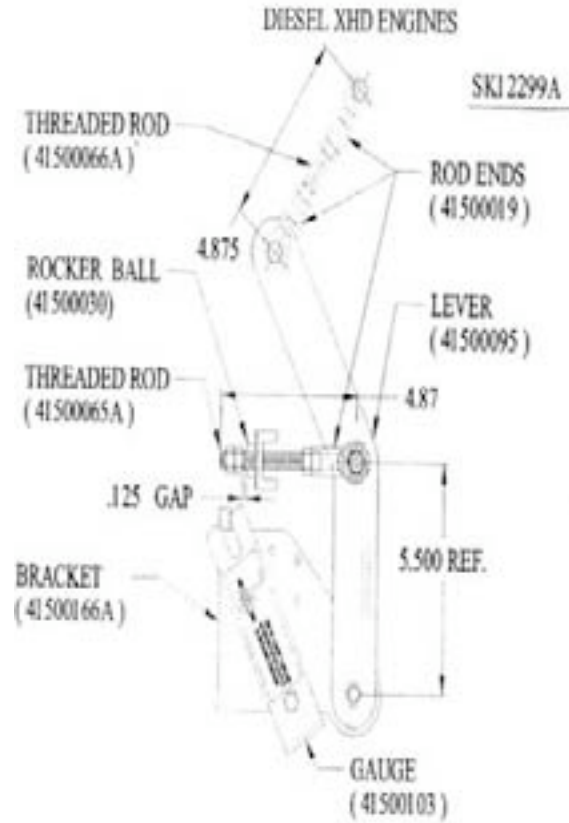
Lubrication

The PTO assembly on both the HD 1300 and HD1300XT are equipped with sealed for life bearings. No greasing of the PTO assembly is required.

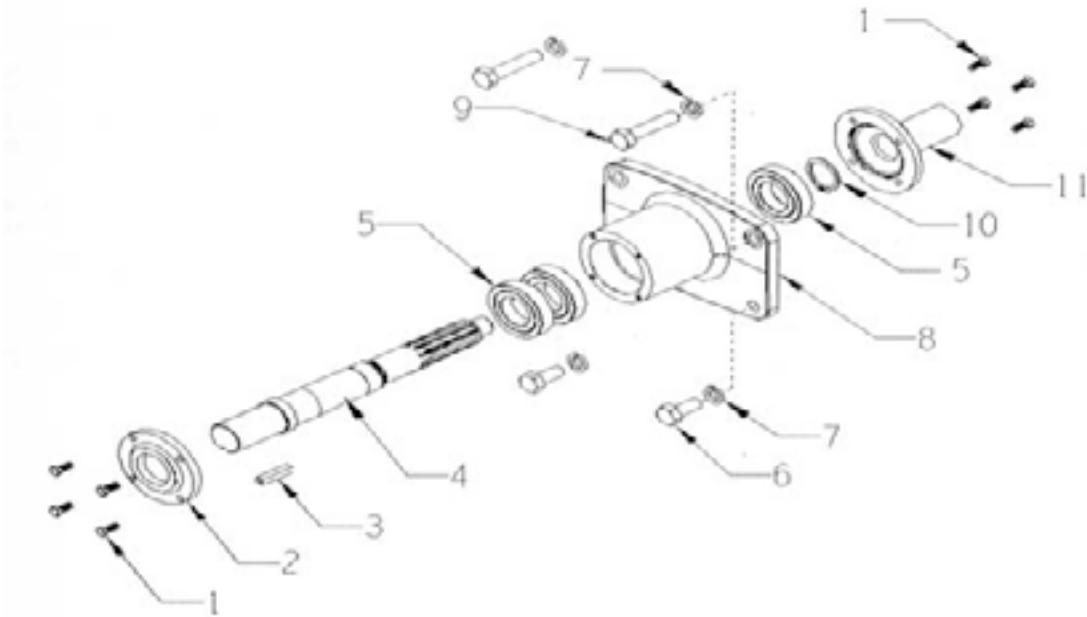
The clutch lever crossover shaft should be lubricated with a high temperature lithium base #2 lubricant at 250-hour intervals.

The bore of the throw-out bearing must be lubricated with a moly-based grease if disassembled for service reasons.

HD1300XT

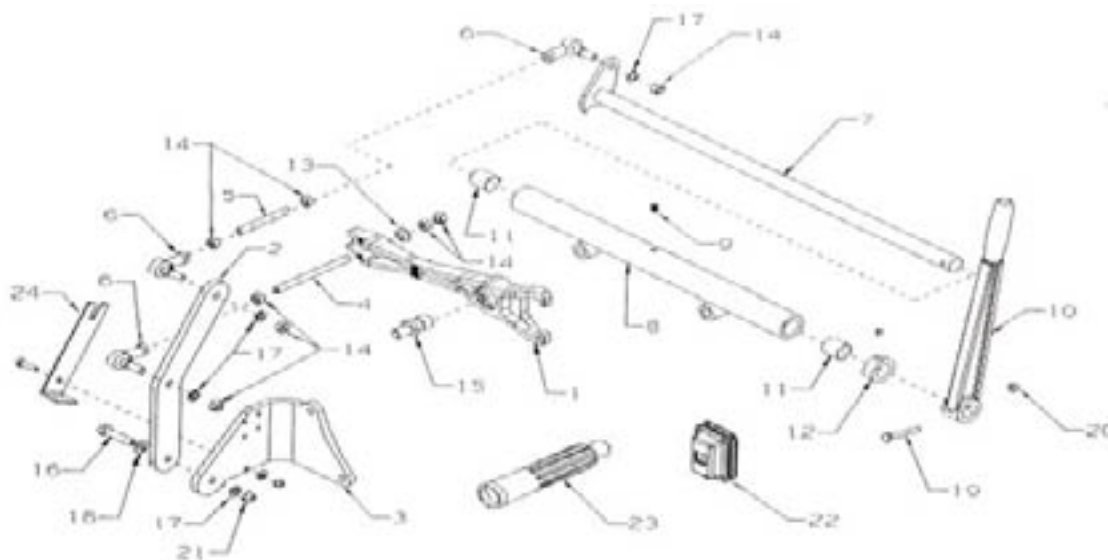


Service Parts HD1300, 1 3/4" Shaft PTO Assembly



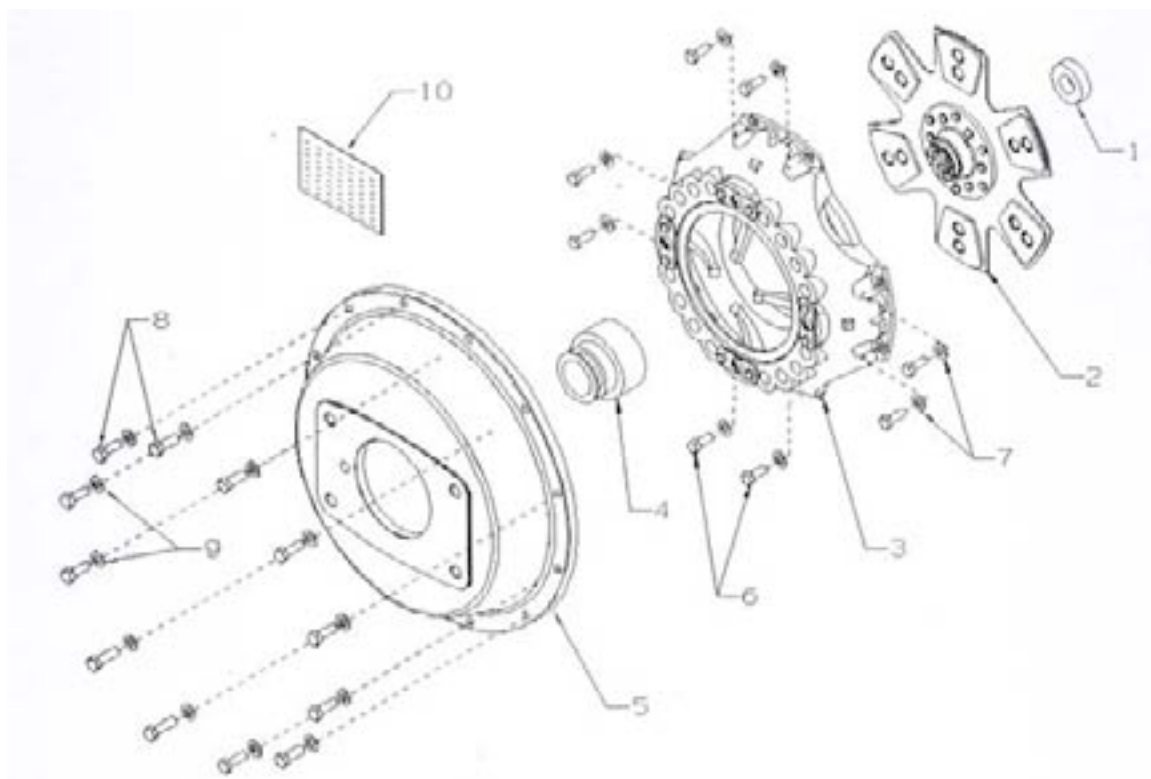
| Ref. No. | Part Number | Qty. | Description |
|----------|-------------|------|---|
| 1 | 45000030 | 8 | Bolt, 5/16-18x1", Grade 5 |
| 2 | 41500057 | 1 | Cover. Bearing Retainer |
| 3 | 41500190 | 1 | Key |
| 4 | 41500195 | 1 | Shaft, PTO |
| 5 | 41500125 | 3 | Bearing, PTO |
| 6 | 45000177 | 2 | Bolt, 9/16-12x1 3/4", Grade 5 |
| 7 | 45000103 | 4 | Lock Washer, 9x16" |
| 8 | 41500188 | 1 | Housing, PTO |
| 10 | 41500154 | 1 | Ring, Snap 1 11/16" |
| 11 | 41500198 | 1 | Housing, Support Throw-out Bearing |
| | 41500194 | 1 | Assembly, PTO Shaft & Housing (Includes 1,2,3,4,5,8,10 & 11) |

Service Parts Lever Assembly and Linkage



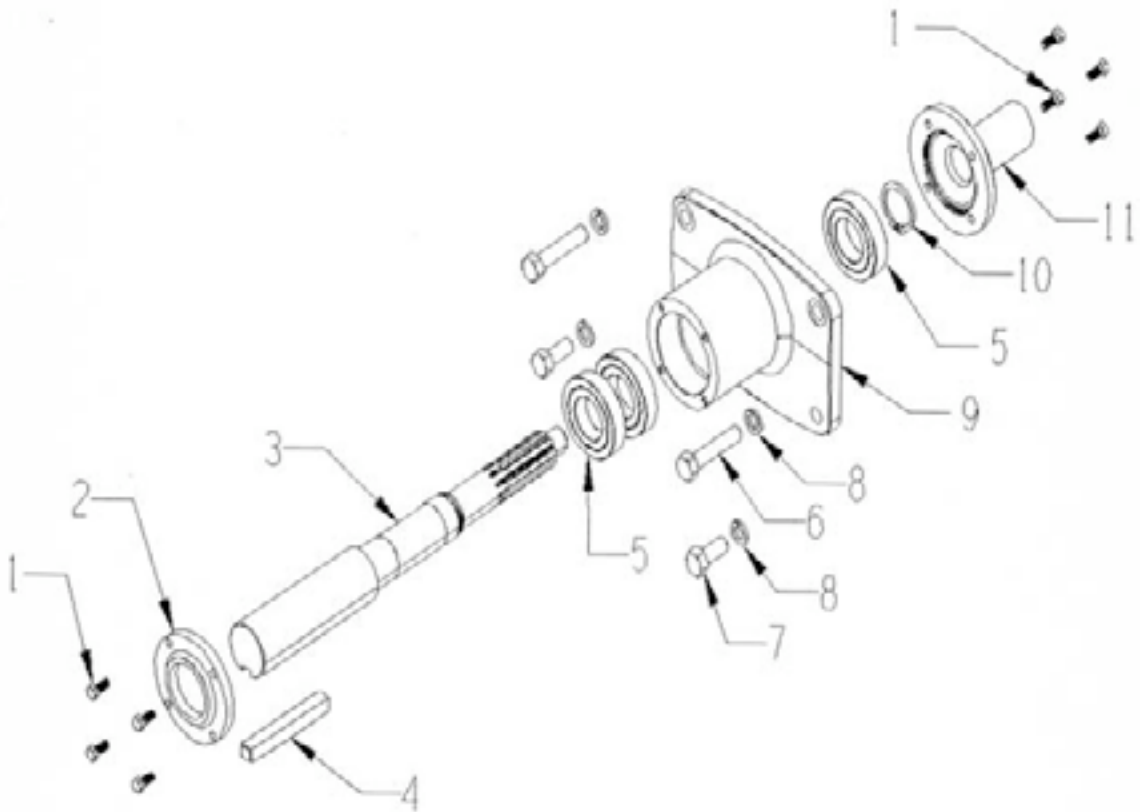
| Ref. No. | Part Number | Qty. | Description |
|-----------|-------------|------|------------------------------------|
| 1 | 41500063 | 1 | Fork |
| Not Shown | 41500174 | 1 | Retainer, Clutch Fork |
| 2 | 41500089 | 1 | Linkage, Lever (Diesel) |
| | 41500018 | 1 | Linkage, Lever (GM) |
| 3 | 41500166 | 1 | Bracket, Linkage (Diesel) |
| | 41500015 | 1 | Bracket, Linkage (GM) |
| 4 | 41500067 | 1 | Rod, Linkage (Diesel) |
| | 41500065 | 1 | Rod, Linkage (GM) |
| 5 | 41500066 | 1 | Rod, Linkage (Diesel) |
| | 41500100 | 1 | Rod, linkage (GM) |
| 6 | 41500019 | 3 | Rod End |
| 7 | 41500101 | 1 | Shaft, Lever |
| 8 | 41500042 | 1 | Housing, Shaft (GM) |
| | 41500111 | 1 | Housing, Shaft (Diesel) |
| 9 | 41500043 | 1 | Zerk, Grease |
| 10 | 41500044 | 1 | Handle |
| 11 | 41500045 | 2 | Bushing, Shaft |
| 12 | 41500046 | 2 | Collar |
| 13 | 41500030 | 1 | Ball, Rocker |
| 14 | 45000050 | 8 | Nut, $\frac{3}{8}$ -24 |
| 15 | 41500001 | 1 | Ball, Pivot (Diesel) |
| | 41500064 | 1 | Ball, Pivot (GM) |
| 16 | 45000177 | 1 | Bolt, $\frac{3}{8}$ -16x1" Grade 5 |
| 17 | 45000063 | 4 | Lock Washer, $\frac{3}{8}$ " |
| 18 | 45000064 | 1 | Flat Washer, $\frac{3}{8}$ " |
| 19 | 45000012 | 1 | Bolt, $\frac{1}{4}$ -28x2" |
| 20 | 45000015 | 1 | Lock Nut, $\frac{1}{4}$ -28 |
| 21 | 45000051 | 1 | Lock nut, $\frac{3}{8}$ -16 |
| 22 | 41500175 | 1 | Boot |
| 23 | 41500040 | 1 | Tool, Alignment |
| 24 | 41500103 | 1 | Tool, Adjustment |

Service Parts Diesel Engine Clutch and Housing



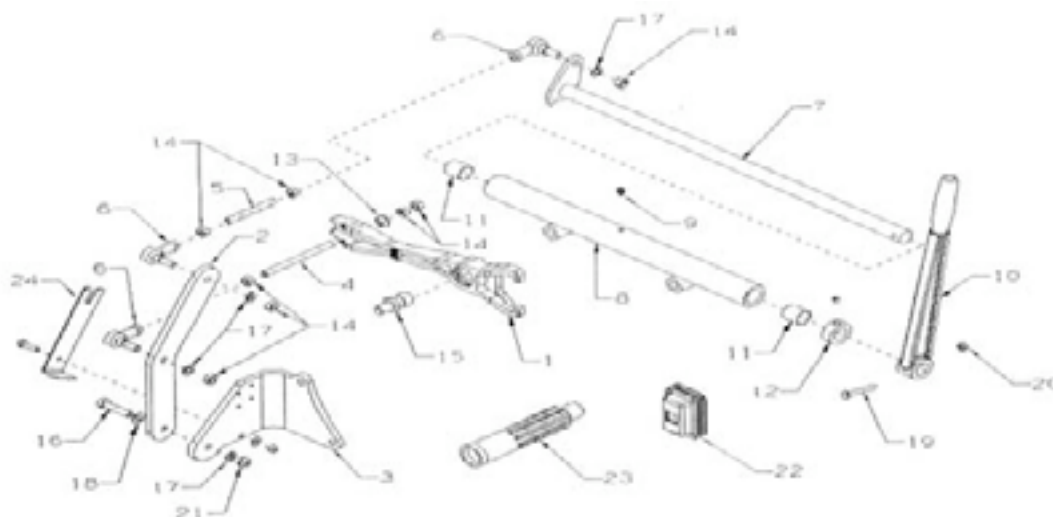
| Ref. No. | Part Number | Qty. | Description |
|----------|------------------------|------|--|
| 1 | 41500059 (41500218) | 1 | Pilot Bearing (Perkins, Cummins) |
| | 41500007 (41500217) | 1 | Pilot Bearing (John Deere) |
| 2 | 41500149 | 1 | Disc, Clutch |
| 3 | 41500060 | 1 | Plate, Clutch Pressure |
| 4 | 41500003 | 1 | Bearing, Throw Out |
| 5 | 41500172 | 1 | Housing, Adapter |
| 6 | 45000224 | 8 | Bolt, $\frac{3}{8}$ "-24x1" Grade 5 (Perkins, Cummins) |
| | 45000054 | 8 | Bolt, $\frac{3}{8}$ "-16x1" Grade 5 (John Deere) |
| 7 | 45000063 | 8 | Lock Washer, $\frac{3}{8}$ " |
| 8 | 45000043 | 10 | Bolt, M10-1.5x30mm |
| | 45000003 | 2 | Bolt, M10-1.5x45mm (John Deere) |
| | 45000226 | 2 | Bolt, M10-1.5x35mm (Perkins) |
| 9 | 45000046 | 12 | Lock Waster, M10 |
| 10 | 41500009 | 1 | Decal, Diesel Clutch |

Service Parts HD1300, 2 1/4" Shaft PTO Assembly



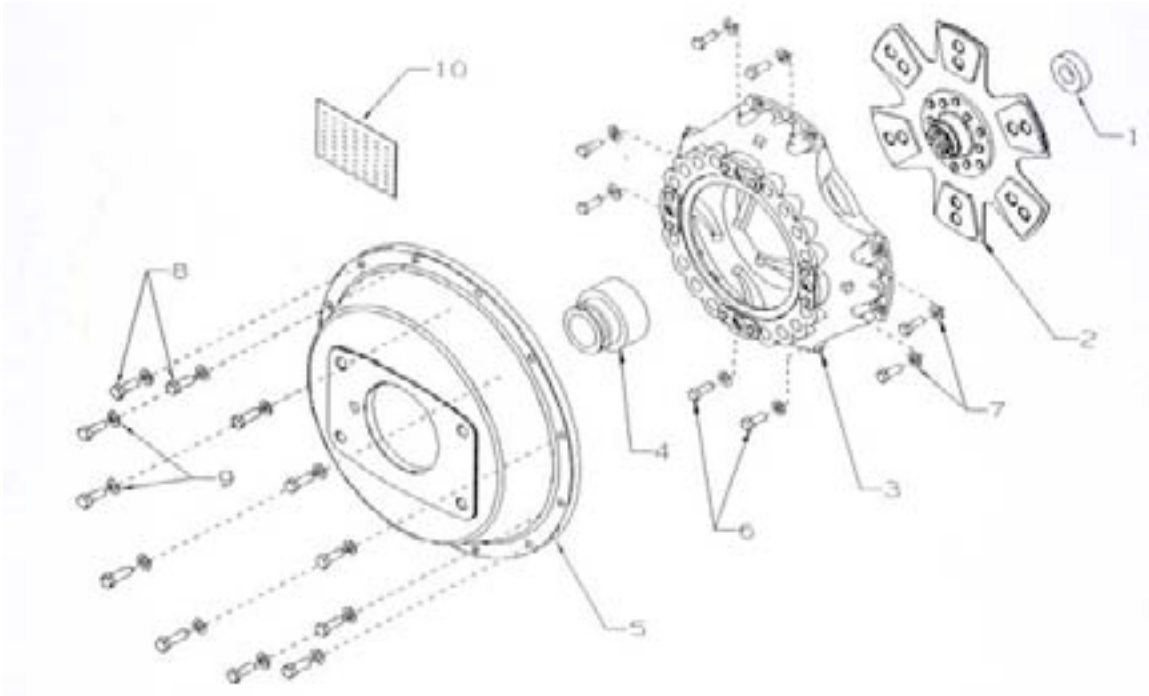
| Ref. No. | Part Number | Qty. | Description |
|----------|-------------|------|--|
| 1 | 45000030 | 8 | Bolt, 5/16-18x1", Grade 5 |
| 2 | 41500123 | 1 | Cover, Bearing |
| 3 | 41500197 | 1 | Shaft, PTO |
| 4 | 41500126 | 1 | Key |
| 5 | 41500125 | 3 | Bearing, PTO |
| 6 | 45000105 | 2 | Bolt, 9/16-12x3, Grade 5 |
| 7 | 45000177 | 2 | Bolt, 9/16-12x1 3/4", Grade 5 |
| 8 | 45000103 | 4 | Lock Washer, 9/16" |
| 9 | 41500188 | 1 | Housing, PTO |
| 10 | 41500154 | 1 | Ring, Snap 1 11/16 |
| 11 | 41500198 | 1 | Housing, Support, Throw-out Bearing |
| | 41500196 | 1 | Assembly, PTO Shaft & Housing (Includes 1,2,3,4,5,9,10,11) |

Service Parts Lever Assembly and Linkage



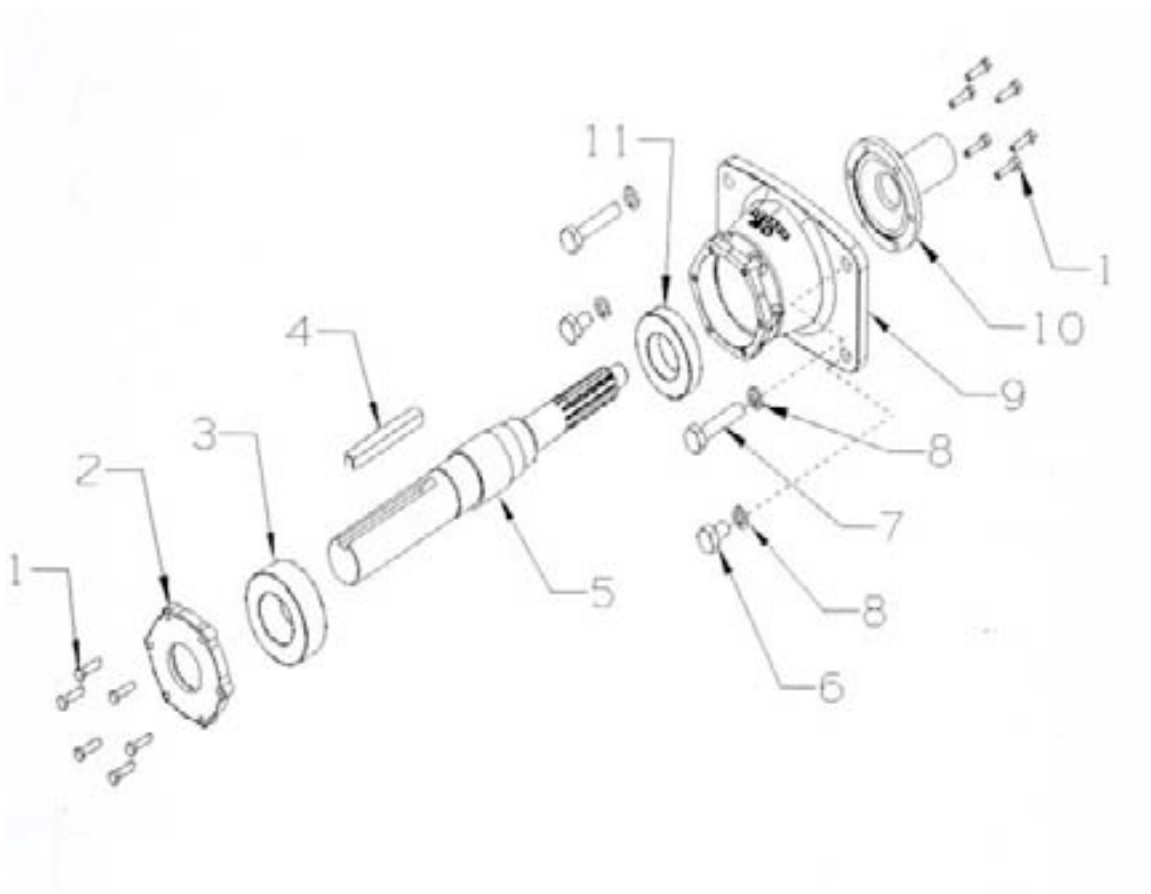
| Ref. No. | Part Number | Qty. | Description |
|-----------|-------------|------|---------------------------|
| 1 | 41500063 | 1 | Fork |
| Not Shown | 41500174 | 1 | Retainer, Clutch Fork |
| 2 | 41500089 | 1 | Linkage, Lever (Diesel) |
| | 41500018 | 1 | Linkage, Lever (GM) |
| 3 | 41500166 | 1 | Bracket, Linkage (Diesel) |
| | 41500015 | 1 | Bracket, Linkage (GM) |
| 4 | 41500067 | 1 | Rod, Linkage (Diesel) |
| | 41500065 | 1 | Rod, Linkage (GM) |
| 5 | 41500066 | 1 | Rod, Linkage (Diesel) |
| | 41500100 | 1 | Rod, Linkage (GM) |
| 6 | 41500019 | 3 | Rod End |
| 7 | 41500101 | 1 | Shaft, Lever |
| 8 | 41500042 | 1 | Housing, Shaft (GM) |
| | 41500111 | 1 | Housing, Shaft (Diesel) |
| 9 | 41500043 | 1 | Zerk, Grease |
| 10 | 41500044 | 1 | Handle |
| 11 | 41500045 | 2 | Bushing, Shaft |
| 12 | 41500046 | 2 | Collar |
| 13 | 41500030 | 1 | Ball, Rocker |
| 14 | 45000050 | 8 | Nut, 3/8-24 |
| 15 | 41500001 | 1 | Ball, Pivot (Diesel) |
| | 41500064 | 1 | Ball, Pivot (GM) |
| 16 | 45000177 | 1 | Bolt, 3/8-16x1" Grade 5 |
| 17 | 45000063 | 4 | Lock Washer, 3/8" |
| 18 | 45000064 | 1 | Flat Washer, 3/8" |
| 19 | 45000012 | 1 | Bolt, 1/4-28 |
| 20 | 45000015 | 1 | Lock Nut, 1/4-28 |
| 21 | 45000051 | 1 | Lock Nut, 3/8-16 |
| 22 | 41500175 | 1 | Boot |
| 23 | 41500040 | 1 | Tool, Alignment |
| 24 | 41500103 | 1 | Tool, Adjustment |

Service Parts
Diesel Engine Clutch and Housing



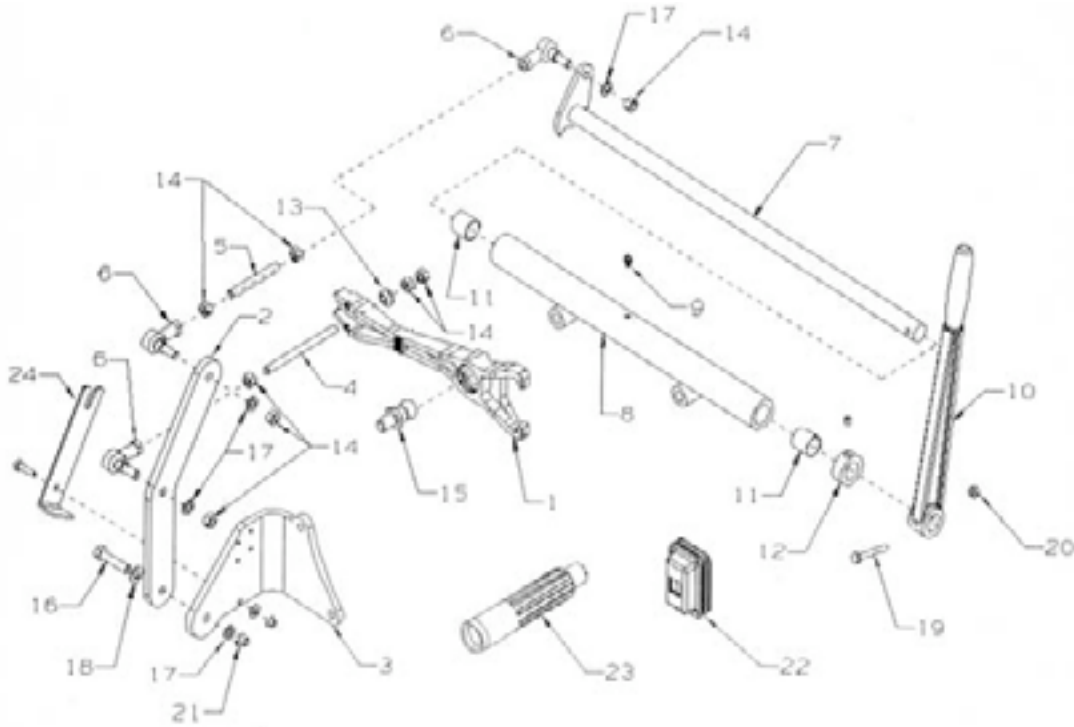
| Ref. No. | Part Number | Qty. | Description |
|----------|------------------------|------|---|
| 1 | 41500059 (41500218) | 1 | Pilot Bearing (Perkins, Cummins) |
| | 41500007 (41500217) | 1 | Pilot Bearing (John Deere) |
| 2 | 41500149 | 1 | Disc, Clutch |
| 3 | 41500060 | 1 | Plate, Clutch Pressure |
| 4 | 41500003 | 1 | Bearing, Throw Out |
| 5 | 41500172 | 1 | Housing, Adapter |
| 6 | 45000224 | 8 | Bolt, 3/8" – 24x1" Grade 5 (Perkins, Cummins) |
| | 45000054 | 8 | Bolt, 3/8" – 16x1" Grade 5 (John Deere) |
| 7 | 45000063 | 8 | Lock Washer, 3/8" |
| 8 | 45000043 | 10 | Bolt, M10-1.5x30mm |
| | 45000003 | 2 | Bolt, M10-1.5x45mm (John Deere) |
| | 45000226 | 2 | Bolt, M10-1.5x35mm (Perkins) |
| 9 | 45000046 | 12 | Lock Washer, M10 |
| 10 | 41500009 | 1 | Decal, Diesel Clutch |

Service Parts
 HD1300XT
 PTO Assembly, 2 1/4" Shaft



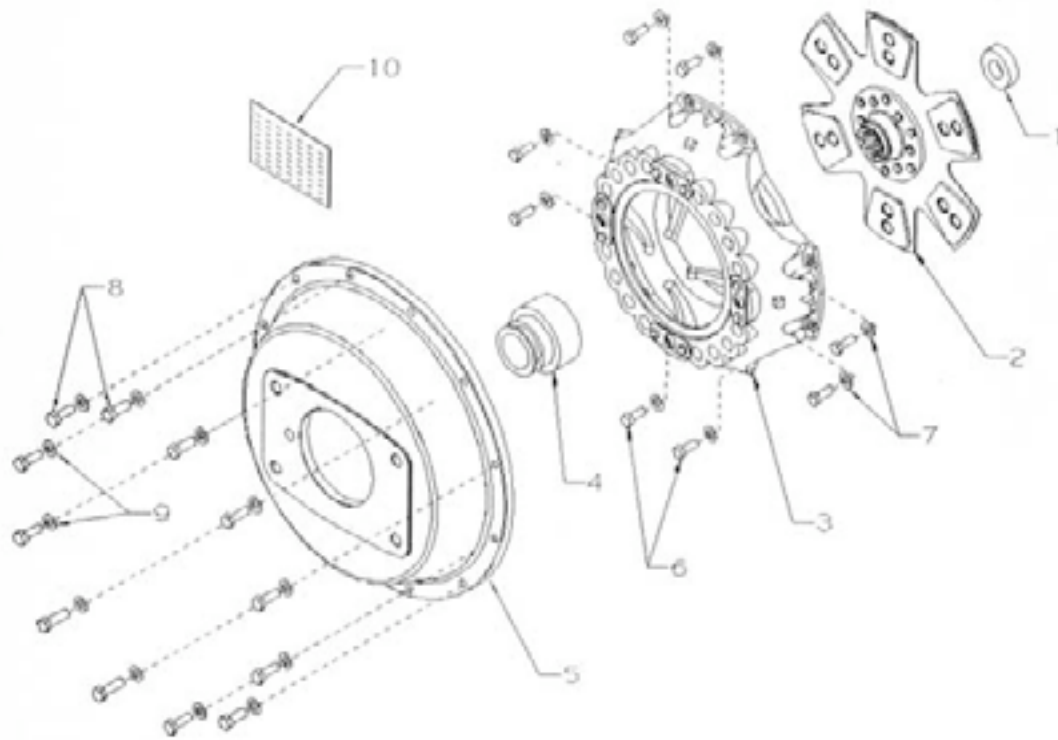
| Ref. No. | Part Number | Qty. | Description |
|----------|-------------|------|--|
| 1 | 45000212 | 12 | Bolt, 5/16-18x1 1/4" Grade 5 |
| 2 | 41500205 | 1 | Cover, Rear |
| 3 | 41500206 | 1 | Bearing, Rear |
| 4 | 41500126 | 1 | Key |
| 5 | 41500203 | 1 | Shaft, PTO |
| 6 | 45000104 | 2 | Bolt, 9/16-12x1 1/2" |
| 7 | 45000105 | 2 | Bolt, 9/16-12x3" |
| 8 | 45000103 | 4 | Washer, Lock 9/16" |
| 9 | 41500204 | 1 | Housing, PTO |
| 10 | 41500202 | 1 | Housing, Support |
| 11 | 41500207 | 1 | Bearing, Front |
| | 41500200 | 1 | Assembly, PTO Shaft & Housing (Includes 1,2,3,4,5,9,10,11) |

Service Parts
Lever Linkage Assembly



| Ref. No. | Part Number | Qty. | Description |
|-----------|-------------|------|------------------------------|
| 1 | 41500063 | 1 | Fork |
| Not Shown | 41500174 | 1 | Retainer, Clutch Fork |
| 2 | 41500095 | 1 | Linkage, Lever (Diesel) |
| 3 | 41500166 | 1 | Bracket, Linkage (Diesel) |
| 4 | 41500065 | 1 | Rod, Linkage |
| 5 | 41500066 | 1 | Rod, Linkage (Diesel) |
| 6 | 41500019 | 3 | Rod End |
| 7,8,11,12 | 41500096 | 1 | Shaft, Lever & Housing, Assy |
| 9 | 41500043 | 1 | Zerk, Grease |
| 10 | 41550044 | 1 | Handle |
| 13 | 41500030 | 1 | Ball, Rocker |
| 14 | 45000050 | 7 | Nut, 3/8-16x1" Grade 5 |
| 15 | 41500001 | 1 | Ball, Pivot (Diesel) |
| 16 | 45000177 | 1 | Bolt, 3/8-16x1" Grade 5 |
| 17 | 45000063 | 6 | Lock Washer, 3/8" |
| 18 | 45000064 | 1 | Flat Washer, 3/8" |
| 19 | 45000012 | 1 | Bolt, 1/4-28x2" Grade 5 |
| 20 | 45000015 | 1 | Lock Nut, 1/4-28 |
| 21 | 45000051 | 1 | Lock Nut, 3/8-16 |
| 22 | 41500175 | 1 | Boot |
| 23 | 41500164 | 1 | Tool, Alignment |
| 24 | 41500103 | 1 | Tool, Adjustment |

Service Parts
Diesel Engine Clutch & Housing



| Ref. No. | Part Number | Qty. | Description |
|----------|------------------------|------|---|
| 1 | 41500059 (41500218) | 1 | Pilot Bearing (Perkins, Cummins) |
| | 41500007 (41500217) | 1 | Pilot Bearing (John Deere) |
| 2 | 41500208 | 1 | Disc, Clutch |
| 3 | 41500209 | 1 | Plate, Clutch Pressure |
| 4 | 41500003 | 1 | Bearing, throw Out |
| 5 | 41500172 | 1 | Housing, Adapter |
| 6 | 45000224 | 8 | Bolt, 3/8"-24x1" Grade 5 (Perkins, Cummins) |
| | 45000054 | 8 | Bolt, 3/8"-16x1" Grade 5 (John Deere) |
| 7 | 45000063 | 8 | Lock Washer, 3/8" |
| 8 | 45000043 | 10 | Bolt, M10-1.5x30mm |
| | 45000003 | 2 | Bolt, M10-1.5x45mm (John Deere) |
| | 45000226 | 2 | Bolt, M10-1.5x35mm (Perkins) |
| 9 | 45000046 | 12 | Lock Washer, M10 |
| 10 | | 1 | Decal, Diesel Clutch |

Auto Clutch PTO
Two-Year Warranty Statement

AUTO Mfg. Inc. warrants the PTO assembly of which it controls the design and fabrication of to be free from defects in materials and workmanship for a period of **two years** from the date of sale to the original retail purchaser. This warranty is valid provided **AUTO Mfg. Inc.** is notified of the alleged defect within 10 days of its discovery.

If proven to our satisfaction that the product is defective as to material and workmanship, the necessary parts will be replaced and/or repaired by AUTO Mfg. Inc. Before starting repair on the PTO assembly, the owner or the service dealer must discuss the repair with AUTO Mfg. Inc. Once it is determined that a possible warranty failure has occurred, the Product Support Manager and the owner or servicing dealer must discuss the method and cost of repair. Replacement components will require the owner or the servicing dealer to purchase replacement parts from AUTO Mfg. Inc. The component or part in question must be returned to AUTO Mfg. Inc. via freight prepaid to be considered for warranty credit. AUTO Mfg. Inc. obligation under this warranty is limited to repair or replacement of AUTO Clutch products or parts only and does not obligate AUTO Mfg. Inc. to bear any other cost including economic loss, consequential, incidental or punitive damages. The sole and exclusive remedy under this warranty shall be the cost of repair or in the discretion of AUTO Mfg. Inc., the replacement of the defective item or items. Maximum allowable labor is 4 hours at \$50.00 per hour. No travel time will be considered.

Items manufactured by other suppliers and used by **AUTO Mfg. Inc.** to complete the packaged product are warranted, if at all only by the respective manufacturer. These items typically include, but are not limited to, pressure plate, clutch disc, throw out bearing, etc. If the owner or servicing dealer is of the opinion that a component should be considered for warranty, **AUTO Mfg. Inc.** Product Support will assist in presenting a warranty claim to the responsible manufacturer. Replacement of any of these components will require the owner or the servicing dealer to purchase the replacement part from **AUTO Mfg. Inc.** The component in question must then be returned to **AUTO Mfg. Inc.** via freight prepaid. The suspect component will then be reviewed by **AUTO Mfg. Inc.** with the responsible supplier for possible warranty credit. **If credit is obtained, a cash credit for the part only will be issued to an owner or a credit memo will be issued to a servicing dealer. The sole and exclusive remedy under this warranty will be the cost of the replacement part only. No labor or travel time will be considered.**

Clutch disc, clutch pressure plate, and engine flywheel will not be considered for warranty when failure is due in the judgment of AUTO Mfg. Inc. to premature wear out or damage caused by slippage or operator abuse or mis-adjustment.

THIS WARRANTY WILL APPLY ONLY IF THE FAILURE IS DETERMINED TO BE A
MANUFACTURING DEFECT, AND NOT CAUSED BY MIS-USE, MIS-ADJUSTMENT, SLIPPAGE,
OR OPERATOR ABUSE.

UNDER NO CIRCUMSTANCES WILL auto Mfg. Inc. or any servicing dealer be liable for incidental or consequential damages or injuries including, but not limited to, loss of profits, rental of substitute equipment, or other commercial loss, damage of equipment in which the clutch is installed or for damages suffered by a purchaser as a result of fundamental breaches of contract or breaches of fundamental terms.

The remedies set forth in this warranty are the purchaser's exclusive remedies in connection with the performance of, or any breach of guaranty, condition, or warranty in respect of AUTO Mfg. Inc. clutches.

AUTO Mfg. Inc. reserves the right to improve the product through changes in design or materials without being obligated to incorporate such changes in products of prior manufacturer. The customer **will not** use any such changes as evidence of insufficiency or inadequacy of prior designs or materials.

THE WARRANTY IN THIS STATEMENT BY AUTO MFG. INC. IS EXPRESSLY IN LIEU OF ALL
OTHER WARRANTIES EXPRESSED OR IMPLIED.

AUTOCLUTCHWARRANTY01312005



FOLEY ENGINES

1-800-233-6539