TOWABLE TRIPLE FLAIL

OPERATOR'S MANUAL

Diamond MOWERS™

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800.658.5561 • 605.977.3300
WWW.DIAMONDMOWERS.COM

PARTS 888.960.0361
WARRANTY + SERVICE 888.960.0364

PRODUCT INFORMATION

Record the model and serial number of your unit here. When calling for warranty, service, or parts, you may be asked to provide this information, in order to ensure fast, accurate service.

MODEL: Towable Triple Flail **SIZE:** 222"(5639mm) 252"(6401mm) 282"(7163mm) (circle one)

SERIAL NUMBER: _____

Any failure to read, understand and follow the instructions found in this operator's manual could lead to serious injury. Operators who choose to operate this equipment without following instructions, or who choose to operate this equipment in a manner inconsistent with the recommendations set forth in this manual, do so at their own risk and assume the risk of injury. Diamond Mowers will not be liable for an owner or operator's loss, damage, or injury due to the misuse of the equipment, failure to understand the inherent risks, or inability to properly operate the equipment.

Provisional Patents: 62/484,363

WELCOME!

Thank you for choosing Diamond Mowers, and welcome to your Towable Triple Flail. Before you begin operating, we encourage you to look through this manual to review the proper maintenance and operating techniques that will keep you, and your equipment, safe – while ensuring you the most productive Triple Flail in the market.

We have nothing but respect and admiration for you. Our job at Diamond is to provide you with the toughest, most reliable and safest equipment that will allow you to do your job better. That also means being there when you need us.

CONTACT US:

Parts: 888.960.0361 | parts@diamondmowers.com
Warranty / Service: 888.960.0364 | warranty@diamondmowers.com
Main Office: 800.658.5561 | 605.977.3300
Website: www.diamondmowers.com | **Email**: info@diamondmowers.com

Your time is important to us.
We guarantee that Genuine Diamond Parts will ship within 72-hours of the order being placed or the parts and shipping are free.

Your satisfaction is guaranteed.
If you are not completely satisfied with your new Diamond in the first 30-days, we will buy it back. No questions asked.

Thanks again for choosing Diamond.
If at any time your needs are not being met by our team, please feel free to call me direct.

Tim Kubista
VP Sales & Marketing
651.955.6665

OWNER REGISTRATION

In your welcome packet you should have received a warranty registration form. Complete and return this form to our main office.

If you'd rather complete this info online, go to:
http://info.diamondmowers.com/register-my-product

Returning your registration information to Diamond will help us process any warranty claims quickly and efficiently – so you can get back to work, fast.

TRANSFERRED OWNERSHIP

If you have acquired this Towable Triple Flail from a previous owner, we encourage you to register your equipment online. By registering your Diamond Mowers unit, you'll stay informed on product advancements, offers and service alerts.

Register by going to: http://info.diamondmowers.com/register-my-product

We honor our equipment's warranty from the date it was put into service, no matter who's in charge of running it.

For any questions, contact our Warranty / Service team at:
888.960.0364 or 605.977.3300
warranty@diamondmowers.com

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INTENDED USE

This attachment is designed to be used for mowing and light brush management applications.

This includes:

- Cutting grass.
- Mulching light brush.
- Cutting a maximum of 2" (51mm) material continuously.

This attachment should only be used in an area free of obstructions and bystanders. Any use on non-vegetative material, or in an area that is not clear of persons and property, is strictly prohibited. Any use outside of the aforementioned application is considered contrary to its intended use. Any damage that may occur as a result of misuse will void warranty as stated in Diamond Mowers' warranty policy.

NOTICE

Do not operate this unit without first reading the safety precautions and operating instructions in this manual.

TAKE A LOOK AROUND

Let's get started by doing a quick walk around of the Towable Triple Flail.

TOUCHSCREEN

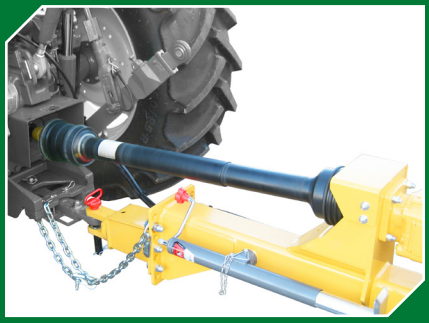
State of the art touchscreen controls and automation, with auto-operate capabilities and other advanced functions.

FLAIL KNIVES

Each cutting shaft is equipped with multiple pairs of high efficiency grass and brush cutting knives, easily accessible and replaceable.

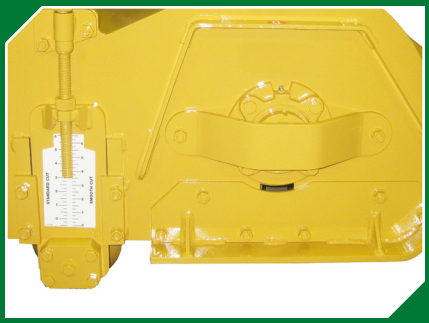
HYDRAULIC SYSTEM

The tractor's PTO drive powers the attachment's hydraulic system, completely eliminating the need for gear boxes, belts, and other high wear items.



DRAWBAR TOWED; PTO DRIVEN

The attachment is towed with the tractor's drawbar, and powered via a PTO drive shaft.



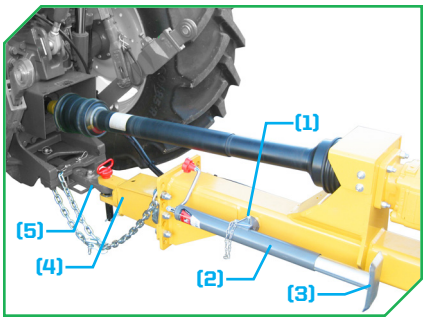
BEARINGS

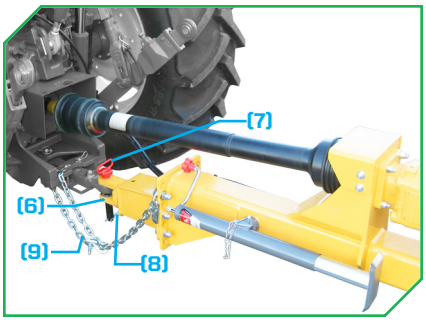
For ultimate long life and reliability, our flail cutting shafts and ground rollers are equipped with the best bearings in the industry.

GETTING STARTED

MACHINE REQUIREMENTS

Diamond's Towable Triple Flail must be used on a tractor that has a drawbar capable of handling a minimum tongue weight of 1250lbs (567kg), and is equipped with a 1000RPM PTO drive. The tractor must be rated at a minimum of 80hp (59kW), with 100hp (74kW) preferred.





HITCHING THE ATTACHMENT TO THE TRACTOR

To hitch the attachment to the tractor:

- Remove lock pin(1), rotate the jack stand(2) with foot pad(3) facing down.
  - Replace the lock pin(1).
- Raise or lower jack stand(2) and tongue(4) to center the tractor drawbar(5) to the hitch(6).
- Back the tractor up until drawbar(5) inserts into the hitch(6), and secure with the hitch pin(7).
- Place the cotter key(8) into the hitch pin(7).
- Raise the jack stand foot pad(3) back into the jack stand body(2).
  - Remove lock pin(1), rotate jack stand(2) until foot pad(3) faces rearward.
  - Replace the lock pin(1).
- Wrap attachment safety chain(9) from around the drawbar reinforcement and hook it back onto itself.
  - NOTE: Make sure there is enough slack to allow for tractor turning and maneuvering.

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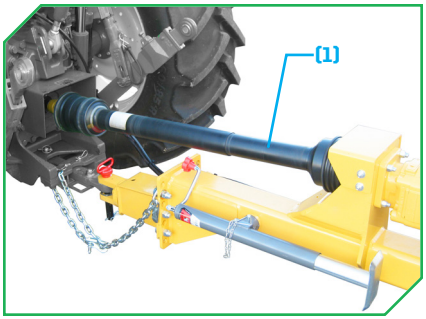

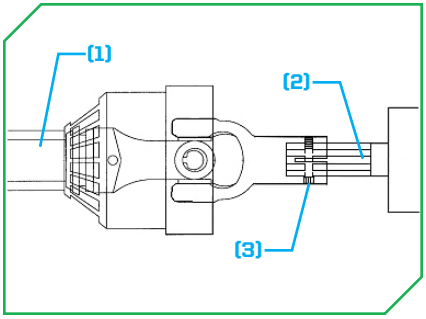

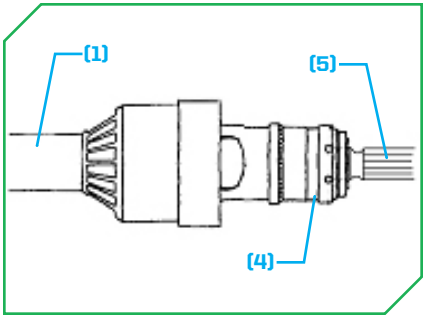

CONNECTING THE PTO DRIVE SHAFT

To connect the PTO drive shaft(1) to the tractor and the attachment:

- Apply Loctite 243 to the splined shaft(2) of the attachment's pump.
- Slide the PTO drive shaft(1) onto the splined shaft(2) of the pump.
  - Secure it with the clamp bolt(3) torqued to 168in-lbs (19Nm).
- Pull back the locking collar(4) and slide the PTO drive shaft onto the tractor's PTO drive(5).
  - Slide the PTO drive shaft(1) forward until the locking collar(4) snaps forward onto the locking groove on the tractor's PTO drive splined shaft(5).

⚠WARNING

Always test a PTO drive shaft connection by giving it a hard tug in an attempt to disengage it. Do not use a PTO drive shaft that fails to stay locked to a splined shaft! Serious damage, injury or death can occur!

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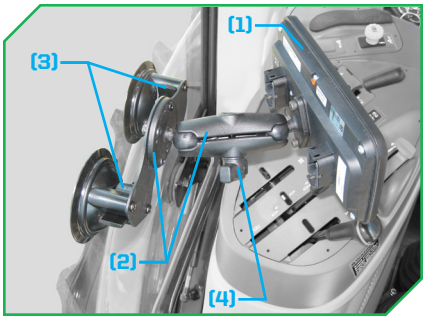
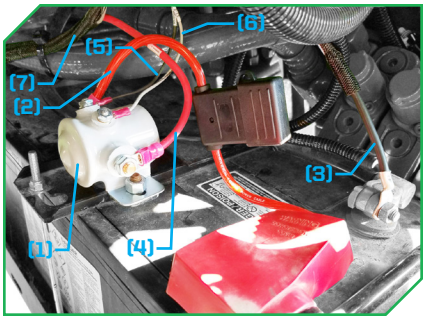


MOUNTING THE TOUCHSCREEN

To mount the touchscreen controls(1) to the tractor:

- Assemble the suction cup mount sections(2) to each other.
- Assemble the suction cup mount(2) to the touchscreen control(1) with its hardware.
- Mount the touchscreen control and suction cup assembly(1)(2) to the door or window of the tractor cab on the operator's right side when seated and facing the front of the tractor.
  - Lock the suction mount to the door or window by rotating the lock levers(3) from "OFF" to "ON".
  - Loosen the thumbscrew(4) to adjust the position of the touchscreen control. Retighten to lock it into position.



MOUNTING THE SOLENOID

To mount the solenoid(1) to the tractor:

- Mount the solenoid close to the tractor battery with its hardware.
- Connect red wire(2) with 40A fuse to the solenoid(1) and positive terminal.
- Connect the tractor harness to the battery and solenoid:
  - large black wire(3) to the battery negative terminal.
  - large red wire(4) to the solenoid.
  - small black(5) and white(6) wires to the solenoid.
  - NOTE: orientation of solenoid and its post(s) used when wiring it.
- Route the tractor harness(7) to the rear of the tractor.
  - Secure with cable ties, etc.

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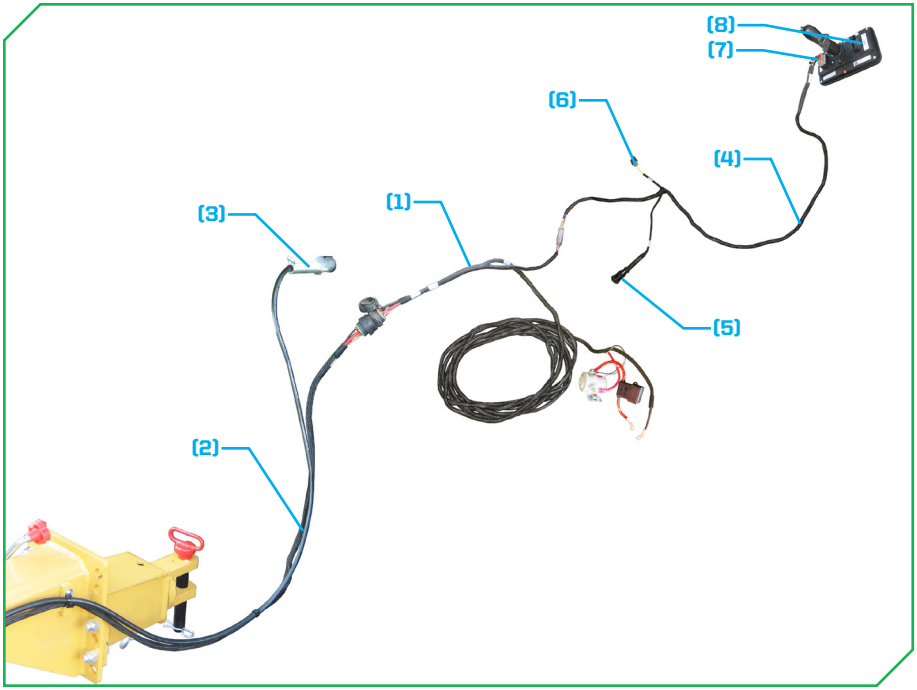
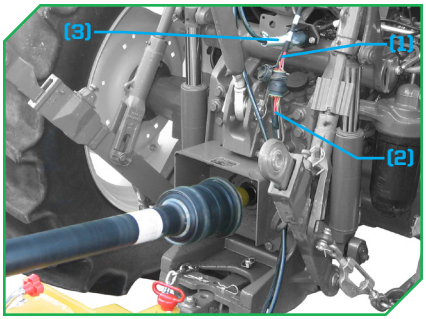
HARNESS CONNECTIONS

Connecting the tractor harness from the solenoid and tractor battery to the attachment, touchscreen, and trailer harness:





- Reference the illustration above throughout this section for additional clarification.
- Connect the tractor harness(1) to the trailer harness(2).
  - Tractor harness(1) is routed from the front of the tractor where it is connected to the solenoid and tractor battery.
- Connect the trailer light harness(3) to the trailer harness port on the tractor.

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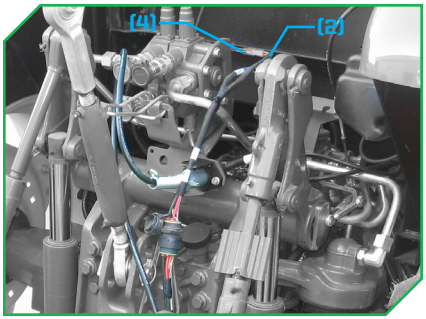
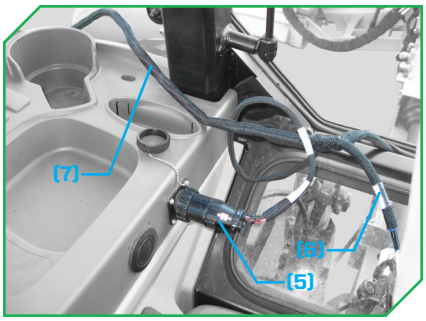
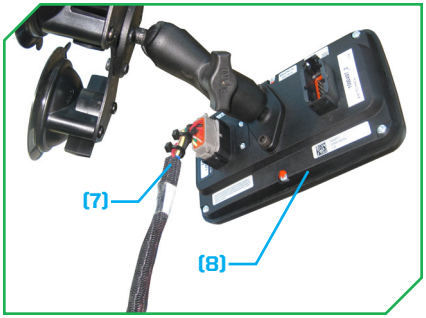






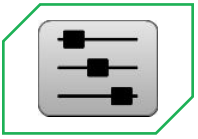
- Connect the second leg of the tractor harness(2) to the cab harness(4).
- Route the other three legs(5)(6)(7) of the cab harness(4) into the tractor cab.
- Connect the power plug(5) of the cab harness(4) to the auxiliary power port in the tractor cab.
- The diagnostic plug(6) on one of the legs of the cab harness(4) will not be connected; it is only used for diagnostic purposes.
- Route the last leg(7) of the cab harness(4) over to the touchscreen control(8).
  - Connect the last leg(7) of the cab harness(4) to the left port on the rear of the touchscreen control(8).
- Tie up and secure all loose cables, harnesses, etc.

TOUCHSCREEN

Display Hard Key Buttons F1-F8:

Display Soft Key Buttons (Touchscreen Only):

System Disable (navigation, disables outputs)



Settings Screen (navigation)

Maintenance Screen (navigation)

Auto Control Screen (navigation)

Home Screen (navigation)

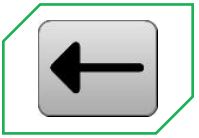
Show Coil Current (home screen only)

Show Pressure (home screen only)

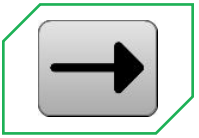
Manual Control Screen (navigation)

Contact Information Screen (navigation)

System Information Screen (navigation)



Previous Screen (navigation)



Next Screen (navigation)

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Display Soft Key Buttons (Touchscreen Only):

Left Draft Beam DOWN (manual control screen only-valve control)

Left Head DOWN (manual control screen only-valve control)

Center Head DOWN (manual control screen only-valve control)

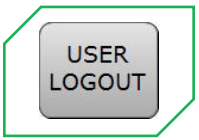
Right Head DOWN (manual control screen only-valve control)

Right Draft Beam DOWN (manual control screen only-valve control)

All Mower Start (manual control screen only)

Filter Reset (maintenance screen only)

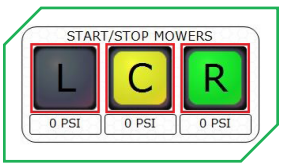
User Login (maintenance screen only)



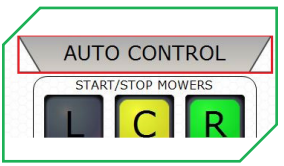
User Logout (maintenance screen only)

Invisible Display Soft Key Buttons (Touchscreen Only - Auto/Manual Screens Only):

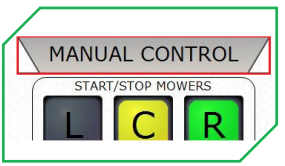
- Use the invisible soft key buttons by tapping the touchscreen within any area designated by a red box illustrated below (no red boxes are visible on the actual touchscreen).
  - NOTE: L-C-R mower buttons are only visible under certain conditions as noted further on in this section.



Left Mower Start/ Stop | Center Mower Start/ Stop | Right Mower Start/ Stop



Pressure/Coil Current Feedback Show/Hide



Pressure/Coil Current Feedback Show/Hide

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Display Controls - By Screen:

Boot Screen

- The display and electronic control module (ECM) will turn on automatically with the tractor ignition. When the ignition is turned on, the display will go through a boot/startup process to load the operating system, runtime system, and the custom software application. During the entire boot/startup process, the backlighting of each hard key (F1-F8) will flash on and off at approximately 2Hz.
- The "Boot" screen image showing the Diamond Mowers logo appears approximately 5 seconds after the display turns on and begins its boot/startup process. This image will remain on the screen until the entire boot/startup process of the display has finished.
- There are no operable controls during the boot process, which typically lasts 20-30 seconds.

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Display Controls - By Screen:

Start Screen

- After the display has completed its boot/startup process, the display will automatically transition to this "Start" screen. This screen represents the disabled state of the control system.
  - If this screen is showing, all controller outputs are disabled and there is no accumulation of time against the total system hours. The electric fan on the oil cooler unit is disabled if the "Start" screen is showing on the display. All hard keys are also disabled when the "Start" screen is showing.
- To exit this screen and enable the control system, the operator must press anywhere on the touchscreen. This will navigate the display to the "Home" screen.
- Enabling the control system switches on the continuous-duty solenoid. This provides power for the controller outputs and the electric cooling fan.
  - When the control system is disabled, the continuous-duty solenoid is switched off and no power is supplied to the controller outputs or electric cooling fan.

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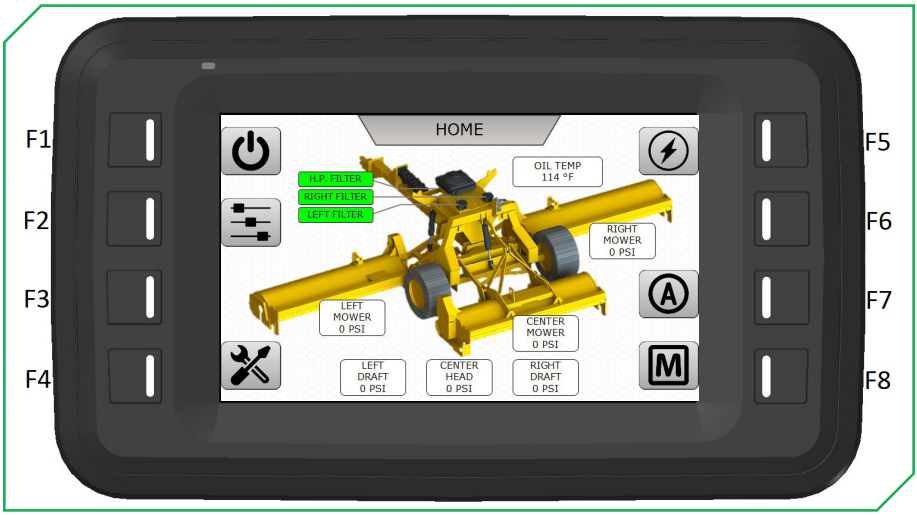
Display Controls - By Screen:

Home Screen



- The "Home" screen of the display serves as the primary navigational screen. Live feedback can be seen for each pressure sensor, filter switch, and oil temperature sensor. Current feedback from each hydraulic valve coil can be shown instead of pressure.
- Controls:
  - F1 hard key or "System Disable" soft key: Disables any active controller output and navigates to the "Start" screen.
  - F2 hard key or "Settings Screen" soft key: Navigates to the "Settings" screen.
  - F3 hard key: N/A.
  - F4 hard key or "Maintenance Screen" soft key: Navigates to the "Maintenance" screen.
  - F5 hard key or "Show Coil Current" soft key (while pressure is shown on home screen): Shows coil current feedback.
  - F5 hard key or "Show Pressure" soft key (while coil current feedback is shown on home screen): Shows pressures.
  - F6 hard key: N/A.
  - F7 hard key or "Auto Control Screen" soft key: Navigates to the "Auto Control" screen.

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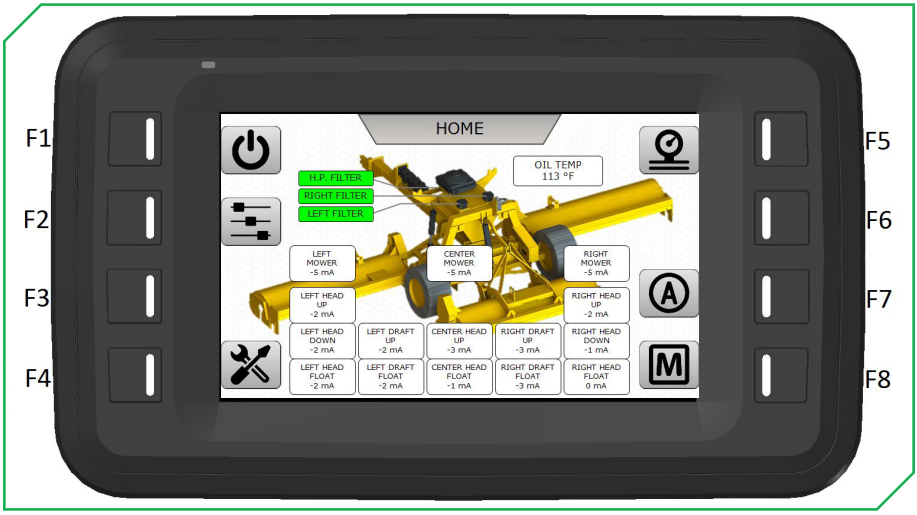
Display Controls - By Screen:

Home Screen

- F8 hard key or "Manual Control Screen" soft key: Navigates to the "Manual Control" screen.

- Feedback (see illustration below):
  - Hydraulic Pressures (PSI).
  - Oil Temperature (°F).
  - Valve Coil Currents (mA).
  - High Pressure (H.P) Filter State.
  - Left Side Return Filter State.
  - Right Side Return Filter State.



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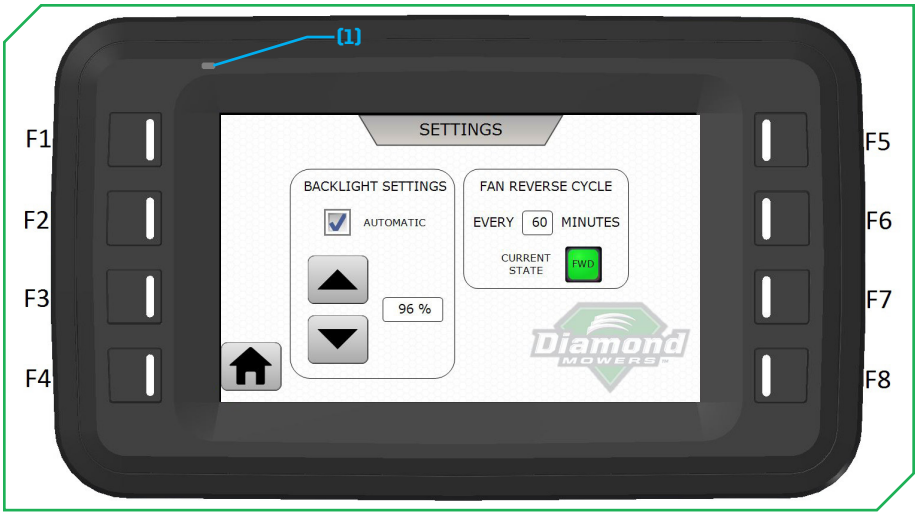
Display Controls - By Screen:

Settings Screen



- The "Settings" screen is where the operator can switch between automatic/manual backlight settings and adjust the amount of time between reversing operations of the cooling fan.
- The automatic backlight setting can be toggled on or off by pressing the checkbox in the "Backlight Settings" section of the "Settings" screen. When the box is checked, the backlight level adjusts automatically based on the signal from the integrated ambient light sensor(1). When the box is unchecked, the display brightness level can be adjusted manually by pressing the UP or DOWN arrows. The current brightness level is shown to the right of the UP/DOWN arrows as a percentage (%) of maximum brightness.
- The "Fan Reverse Cycle" section of the "Settings" screen allows the operator to adjust how often the cooling fan performs a reversing operation. To adjust the amount of time for each cycle, press directly on the numerical value in the small box. This will bring up a value entry window where the operator can type in a new value.
  - The reversing operation briefly changes the direction of the cooling fan to clear out debris that may have been pulled into the radiator. Once the reversing operation has completed, the fan will switch back to its normal direction for the remainder of the cycle.

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Display Controls - By Screen:

Settings Screen

- The cooling fan will be active as long as the control system is enabled (see "Start" screen) and the oil temperature has exceeded 100°F. If the oil temperature drops below 85°F the cooling fan will shut off and not resume until the oil temperature once again exceeds 100°F. If the temperature sensor fails or its signal wire is broken/severed, the cooling fan will be active regardless of the oil temperature.
  - If at any point the cooling fan is disabled or shuts off due to a low temperature and is then activated again, it will always begin with a new cycle.
- The current state of the cooling fan is shown with a small lamp in the "Fan Reverse Cycle" section of the "Settings" screen:
  - Black/unlit = Fan is OFF.
  - Red = Fan is in REVERSE direction.
  - Green = Fan is in FORWARD direction.
- Standard cooling fan operation using 60 minute cycle time:
  - 0s-15s: Fan OFF.
  - 15s-45s: Fan REVERSE.
  - 45s-60s: Fan OFF.
  - 60s-60m: Fan FORWARD.
    - **NOTE:** This cycle will repeat indefinitely as long as the control system is enabled and the above temperature conditions are met.
- Controls:
  - F4 hard key or "Home Screen" soft key: Navigates to "Home" screen.

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Display Controls - By Screen:

Maintenance Screen (no user logged in)

- The "Maintenance" screen is the primary screen for access to information about the machine. From this screen the operator can access contact information and general machine information, as well as view live feedback for oil temperature, filter states, and system hours.
- The "Maintenance" screen is also where a Diamond Mowers employee (DIAMOND user) or dealer/service technician (SERVICE user) can login/logout of the device. The small box next to either user name will turn green when that user is logged in. Depending on what user is logged in determines what information and parameters can be edited.
- Controls:
  - F1 hard key or "Contact Info Screen" soft key: Navigates to "Contact" screen.
  - F2 hard key or "System Info Screen" soft key: Navigates to "Information" screen.
  - F4 hard key or "Home Screen" soft key: Navigates to "Home" screen.
  - "User Login" soft key: prompts user login popup window.
  - "User Logout" soft key: logs out any user that is currently logged in.

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Display Controls - By Screen:

Contact Information Screen (no user logged in)

- The "Contact" screen shows contact information for both Diamond Mowers and the dealer. Information shown for each includes the name, address, telephone numbers, and website.
- The dealer information section can be edited when logged in as either the DIAMOND user or the SERVICE user. New units will come as shown above without specific dealer information entered. This information will need to be entered by either a Diamond Mowers employee or by the dealer themselves.
- Controls:
  - F3 hard key or "Previous Screen" soft key: Navigates to "Maintenance" screen.
  - F4 hard key or "Home Screen" soft key: Navigates to "Home" screen.

CONTINUED ON NEXT PAGE

Display Controls - By Screen:

System Information Screen (no user logged in)

- The system "Information" screen shows information about the operator's specific machine. This includes the model number, serial numbers (main frame, left head, center head, and right head), oil type, oil volume, and grease type. At the bottom of this screen, the currently installed software revision is shown for both the display and the ECM.
- New units will come without model number or serial number information entered. The model number will read "DTF – 0 – C" and each of the four serial numbers will read "0". This information will need to be edited/ entered by a Diamond Mowers employee (using DIAMOND user login) during the assembly or testing process for each machine built. This process will be discussed later in this document.
- The DIAMOND user may edit the model number (number between dashes only) and all serial numbers. The SERVICE user may only edit the serial numbers of the left, center, or right mower heads in the event that one or more head is replaced.
- Controls:
  - F3 hard key or "Previous Screen" soft key: Navigates to "Maintenance" screen.
  - F4 hard key or "Home Screen" soft key: Navigates to "Home" screen.

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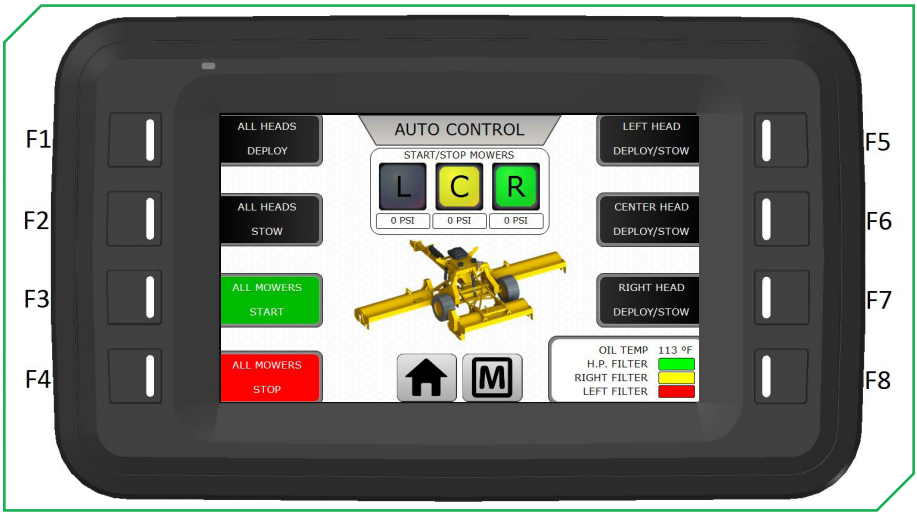
Display Controls - By Screen:

Auto Control Screen



- The "Auto Control" screen is where the operator will control the machine from the majority of the time. From this screen, all heads can be deployed/stowed simultaneously or individually. All mowers can be started/stopped simultaneously or individually from this screen as well. The bottom right corner of the screen shows the oil temperature and the state of each filter switch.
- The pressure at each mower is shown under its respective L (left), C (center), or R (right) lamp. The color of each L/C/R lamp indicates the status of that mower:
  - Black/unlit = mower is OFF, mower cannot be started in its current position.
  - Yellow = mower is OFF, mower can be started in its current position.
  - Green = mower is ON.
  - Flashing Red = mower torque/pressure warning is present.
- ALL MOWERS START
  - Pressing the F3 hard key will start all of the mowers that are currently in an acceptable position (L/C/R lamp/s are yellow). The mowers will always start up in a staggered sequence to prevent damage to the

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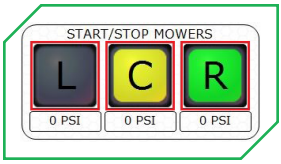
Display Controls - By Screen:

Auto Control Screen

- PTO/pump shaft and to prevent the tractor from stalling. The RIGHT mower will always start first, followed by the CENTER mower (ALL MOWERS START + 1500ms), followed by the LEFT mower (ALL MOWERS START + 3000ms). If any mower is not in an acceptable position during the sequence (has a black/unlit lamp), that mower will not start. This will not affect the order or timing of the starting sequence. Likewise, if a mower is already running, the order and timing of the starting sequence will not be affected. There will be a single beep from the display unit's buzzer when each mower starts.
  - Example: See previous image (L = black/unlit, C = yellow, R = green). If the ALL MOWER START hard key (F3) is pressed with the above configuration, there will be a 1500ms delay before the center mower starts. The right mower is already running and the left mower is not in an acceptable position to start.

- ALL MOWERS STOP
  - Pressing the F4 hard key will stop all mowers regardless of their current position. There will be a double beep from the display unit's buzzer when each mower stops. If all mowers are stopped at the same time using the F4 hard key, there is only one double beep.

- INDIVIDUAL MOWER START/STOP
  - Individual mowers can be started or stopped independently by using the invisible display soft key buttons located on each of the L/C/R mower lamps.. Like before, a mower can only be started if its lamp is YELLOW. There will be a single beep from the buzzer each time a mower is started and a double beep each time a mower is stopped.



Left Mower Start/ Stop | Center Mower Start/ Stop | Right Mower Start/ Stop

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Display Controls - By Screen:

Auto Control Screen

- MOWERS – GENERAL
  - Any mower that is currently running (indicated by its respective GREEN lamp) will continue to run until that mower is stopped via the "All Mowers Stop" option, the individual L/C/R mower start/stop option, or if that mower head is moved completely into its stowed position. If the left, center, and/or right mower has been stopped for any reason, it will require one of the above methods to restart the mower(s).
- MOWER HEAD DEPLOY/STOW - GENERAL
  - Head deployment and stowage from the "Auto Control" screen is done exclusively with the display hard key buttons. When a head is deployed from the "Auto Control" screen, it will automatically travel from its current position (stowed or otherwise) to the ground and enter "Float" mode. When a head is stowed from the "Auto Control" screen it will automatically travel from its current position to its fully stowed and transport-ready position.
- ALL HEADS DEPLOY
  - Pressing the F1 hard key will automatically move all mower heads from their current position (stowed or otherwise) to the ground and enter "Float" mode. The center mower head will always deploy first, followed immediately by the left and right mower heads deploying simultaneously. The deployment of the mower heads using the "All Heads Deploy" method can be paused by pressing the F2 hard key, "All Heads Stow". This will cancel the head deployment and stop all mower heads in their current position.
- ALL HEADS STOW
  - Pressing the F2 hard key will automatically move all mower heads from their current position to the fully stowed and transport-ready position. The center mower head will always stow first, followed immediately by the left and right mower heads stowing simultaneously. The stowage of the mower heads using the "All Heads Stow" method can be paused by pressing the F1 hard key, "All Heads Deploy". This will cancel the head stowage and stop all mower heads in their current position.

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Display Controls - By Screen:

Auto Control Screen

- LEFT HEAD DEPLOY/STOW
  - Pressing the F5 hard key while the left mower head is in the stowed position will automatically move that mower head to the ground and enter "Float" mode. Pressing the F5 hard key while the left mower head is in the deployed position (in Float mode) will automatically move that mower head to the fully stowed and transport-ready position.
  - The deployment or stowage of the left mower head can be paused by pressing the F5 hard key again. This will cancel the deploy/stow operation and stop the left mower head in its current position. Pressing the F5 hard key once again will start the opposite operation of what was just paused. This behavior is very much like a garage door opener (i.e. push to start deployment, push to pause, push to start stowage, push to pause, and so on). This allows an operator to lift the mower head to clear an obstacle, pause it at their desired position, and re-deploy the mower head to "Float" mode using the same button.
- CENTER HEAD DEPLOY/STOW
  - Pressing the F6 hard key while the center mower head is in the stowed position will automatically move that mower head to the ground and enter "Float" mode. Pressing the F6 hard key while the center mower head is in the deployed position (in Float mode) will automatically move that mower head to the fully stowed and transport-ready position.
  - The deployment or stowage of the center mower head can be paused by pressing the F6 hard key again. This will cancel the deploy/stow operation and stop the center mower head in its current position. Pressing the F6 hard key once again will start the opposite operation of what was just paused. This behavior is very much like a garage door opener (i.e. push to start deployment, push to pause, push to start stowage, push to pause, and so on). This allows an operator to lift the mower head to clear an obstacle, pause it at their desired position, and re-deploy the mower head to "Float" mode using the same button.

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Display Controls - By Screen:

Auto Control Screen

- RIGHT HEAD DEPLOY/STOW
  - Pressing the F7 hard key while the right mower head is in the stowed position will automatically move that mower head to the ground and enter "Float" mode. Pressing the F7 hard key while the right mower head is in the deployed position (in Float mode) will automatically move that mower head to the fully stowed and transport-ready position.
  - The deployment of stowage of the right mower head can be paused by pressing the F7 hard key again. This will cancel the deploy/stow operation and stop the right mower head in its current position. Pressing the F7 hard key once again will start the opposite operation of what was just paused. This behavior is very much like a garage door opener (i.e. push to start deployment, push to pause, push to start stowage, push to pause, and so on). This allows an operator to lift the mower head to clear an obstacle, pause it at their desired position, and re-deploy the mower head to "Float" mode using the same button.
- Other controls:
  - "Home Screen" soft key: Navigates to "Home" screen.
  - "Manual Control Screen" soft key: Navigates to "Manual Control" screen.
  - "Pressure/Coil Current Feedback Show/Hide" invisible soft key: Shows/hides coil current feedback and pressure feedback.

Pressure/Coil Current Feedback Show/Hide

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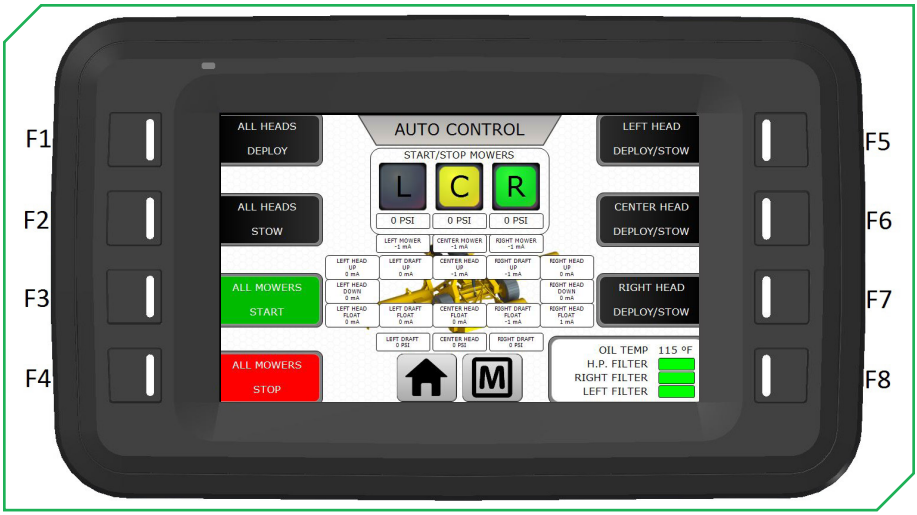
Display Controls - By Screen:

Auto Control Screen



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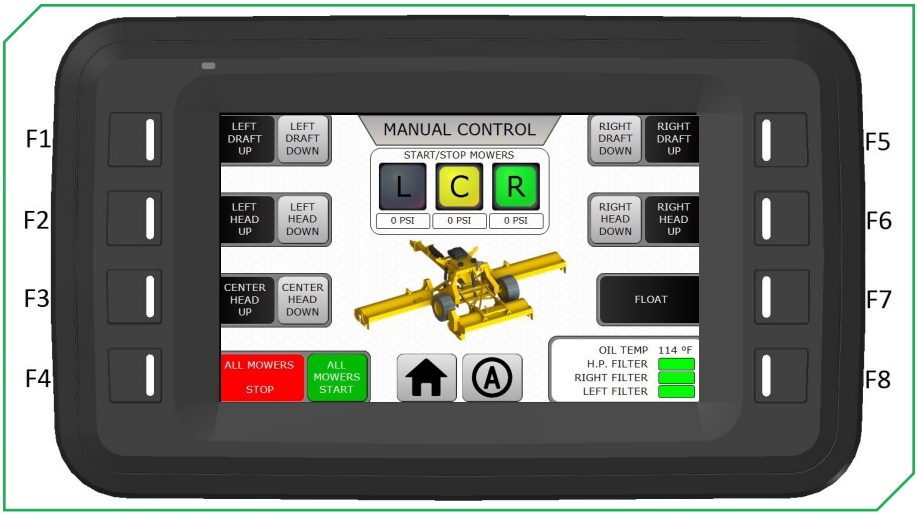
Display Controls - By Screen:

Manual Control Screen



- The "Manual Control" screen contains many of the same controls as the "Auto Control" screen, but as the title suggests, this screen allows manual control of each function instead of automated control. This allows the operator to position any of the mowers as they see fit. As with the "Auto Control" screen, certain conditions must be met before a mower can be started. Also, the operator must manually press the F7 hard key if they want any mower head(s) to enter "Float" mode.
- All mowers can be started/stopped simultaneously or individually from this screen. The bottom right corner of the screen shows the oil temperature and the state of each filter switch.
- ALL MOWERS START
  - Pressing the "All Mowers Start" soft key will start all of the mowers that are currently in an acceptable position (L/C/R lamp(s) are yellow). The mowers will always start up in a staggered sequence to prevent damage to the PTO/pump shaft and to prevent the tractor from stalling. The RIGHT mower will always start first, followed by the CENTER mower (ALL MOWERS START + 1500ms), followed by the LEFT mower (ALL MOWERS START + 3000ms). If any mower is not in an acceptable position during the sequence (has a black/unlit lamp), that mower will not start. This will not affect the order or timing of the

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Display Controls - By Screen:

Manual Control Screen

- starting sequence. Likewise, if a mower is already running, the order and timing of the starting sequence will not be affected. There will be a single beep from the display unit's buzzer when each mower starts.

- ALL MOWERS STOP
  - Pressing the F4 hard key will stop all mowers regardless of their current position. There will be a double beep from the display unit's buzzer when each mower stops. If all mowers are stopped at the same time using the F4 hard key, there is only one double beep.

- INDIVIDUAL MOWER START/STOP
  - Individual mowers can be started or stopped independently by using the invisible display soft key buttons located on each of the L/C/R mower lamps (see Display Buttons document). Like before, a mower can only be started if its lamp is YELLOW. There will be a single beep from the buzzer each time a mower is started and a double beep each time a mower is stopped.

Left Mower Start/ Stop | Center Mower Start/ Stop | Right Mower Start/ Stop

- MOWERS – GENERAL
  - Any mower that is currently running (indicated by its respective GREEN lamp) will continue to run until that mower is stopped via the "All Mowers Stop" option, the individual L/C/R mower start/stop option, or if that mower head is moved completely into its stowed position. If the left, center, and/or right mower has been stopped for any reason, it will require one of the above methods to restart the mower(s).

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Display Controls - By Screen:

Manual Control Screen

- MOWER HEAD CONTROL – GENERAL
  - On the "Manual Control" screen, all mower head functions are separate from each other and are controlled by either a hard key or soft key. Each function will be active only as long as the hard/soft key is held and will stop as soon as the hard/soft key is released. All "Up" functions use hard keys and all "Down" functions use soft keys.
- LEFT DRAFT UP
  - Pressing and holding the F1 hard key will move the left draft beam upwards. Movement will stop when released.
- LEFT DRAFT DOWN
  - Pressing and holding the "Left Draft Down" soft key will move the left draft beam downwards. Movement will stop when released.
- LEFT HEAD UP
  - Pressing and holding the F2 hard key will move the left head upwards. Movement will stop when released.
- LEFT HEAD DOWN
  - Pressing and holding the "Left Head Down" soft key will move the left head downwards. Movement will stop when released.
- CENTER HEAD UP
  - Pressing and holding the F3 hard key will move the center head upwards. Movement will stop when released.
- CENTER HEAD DOWN
  - Pressing and holding the "Center Head Down" soft key will move the center head downwards. Movement will stop when released.
- RIGHT DRAFT UP
  - Pressing and holding the F5 hard key will move the right draft beam upwards. Movement will stop when released.
- RIGHT DRAFT DOWN
  - Pressing and holding the "Right Draft Down" soft key will move the right draft beam downwards. Movement will stop when released.

CONTINUED ON NEXT PAGE

Display Controls - By Screen:

Manual Control Screen

- RIGHT HEAD UP
  - Pressing and holding the F6 hard key will move the right head upwards. Movement will stop when released.
- RIGHT HEAD DOWN
  - Pressing and holding the "Right Head Down" soft key will move the right head downwards. Movement will stop when released.
- FLOAT
  - Pressing the F7 hard key will enable "Float" mode for any mower head that is in an acceptable position. The acceptable position is the same for entering "Float" mode as it is to be able to start a particular mower (indicated by a yellow L/C/R lamp). Any mower head that is in a stowed or otherwise unacceptable position will not be affected and will remain in its current position.
- Other controls:
  - "Home Screen" soft key: Navigates to "Home" screen.
  - "Auto Control Screen" soft key: Navigates to "Auto Control" screen
  - "Pressure/Coil Current Feedback Show/Hide" invisible soft key: Shows/hides coil current feedback and pressure feedback.

Pressure/Coil Current Feedback Show/Hide

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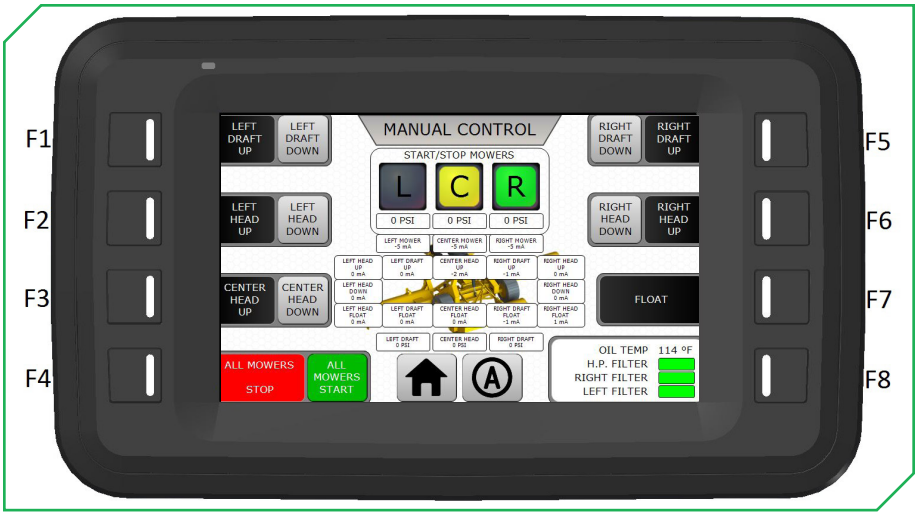
Display Controls - By Screen:

Manual Control Screen



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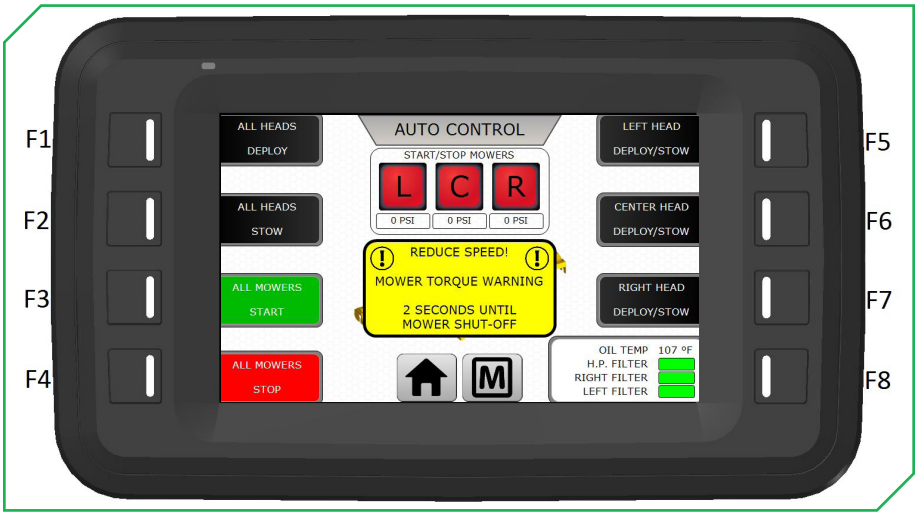
Display Controls - By Screen:

Torque/Pressure Warning



- During operation with one or more mowers running, there may be instances where the mowers encounter wet, heavy, or thick material. When such instances occur the pressure at each running mower will increase. To prevent damage to the hydraulic system and/or stalling the tractor, a warning will appear on the auto and manual control screens indicating that the combined pressure of all three mowers is greater than 7500psi (517bar).
- When this high pressure situation occurs, a yellow warning box will appear in the middle of the screen telling the operator to reduce their speed. A 10-second countdown will be shown in the warning box indicating that the mowers will shut off if the combined mower pressure does not decrease below 7500psi (517bar) within the shown time. While the yellow warning box is present, each of the L/C/R mower lamps will flash red at 1Hz and the display will beep at 1Hz.
- If the shut-off countdown in the yellow warning box gets to 0 seconds, all currently running mowers will shut off automatically. At this point the yellow warning box will disappear and the L/C/R mower lamps will return to their normal state. Each mower will need to be started again before mowing can continue.

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Display Controls - By Screen:

Torque/Pressure Warning

- If the operator slows down and the combined mower pressures become less than 7500psi (517bar), the yellow warning box will disappear and the L/C/R mower lamps will return to their normal state. As long as the countdown never reaches 0 seconds before the warning box disappears, the operator will be able to continue mowing as he was.

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Display Controls - By Screen:

Filter State/Oil Temperature Warning

Oil Temperature Warning

- The hydraulic oil temperature can be viewed at all times on four different screens of the display:
  - Home Screen.
  - Maintenance Screen.
  - Auto Control Screen.
  - Manual Control Screen.
- When the oil temperature is ≤ 180°F (82°C), the area in which the temperature is displayed will be WHITE in color. If the oil temperature is > 180°F (82°C), the area in which the temperature is displayed will flash between RED and WHITE at 1Hz.
- If the oil temperature exceeds 180°F (82°C), the operator should stop operating the machine and verify that the cooling fan is functional. The intended state of the cooling fan can be seen on the "Settings" screen.

Filter State Warning

- As the oil filters become contaminated, the flow becomes restricted and the pressure required to pass oil through the filters increases. When they become restricted badly enough, a N.C. (normally closed) pressure switch built into the filter will activate. These switches are wired into

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Display Controls - By Screen:

Filter State Warning

- the control system and the state of each filter can be determined by its respective switch.
- There are three hydraulic oil filter switches on the machine:
  - High Pressure Filter Switch – located just before the main valve manifold.
  - Left Return Filter Switch – located on top of the hydraulic oil reservoir, left side.
  - Right Return Filter Switch – located on top of the hydraulic oil reservoir, right side.
- The state of the three filters can be viewed at all times on four different screens of the display:
  - Home Screen
  - Maintenance Screen
  - Auto Control Screen
  - Manual Control Screen
- The state of each filter is indicated by color: GREEN, YELLOW, RED, RED/YELLOW flashing, and RED/GREEN flashing.
  - Solid GREEN indicates that the filter is in good condition.
  - Solid YELLOW indicates a "Filter Warning" and that the filter switch has been activated. This indicator will remain YELLOW for 15 minutes as long as the filter is continuously restricted. If the oil flow stops or the filter becomes unrestricted, the switch will deactivate and the indicator will change back to solid green.
  - Solid RED indicates a "Filter Alert" and that the filter switch has been activated continuously for at least 15 minutes. After 15 minutes of a "Filter Warning", the indicator will switch from YELLOW to RED and remain RED as long as the filter is continuously restricted for up to 30 minutes. If the oil flow stops or the filter becomes unrestricted, the switch will deactivate and the indicator will change back to solid green.

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Display Controls - By Screen:

Filter State Warning

- After 30 minutes of continuous restriction, the indicator will start to flash between RED and YELLOW, indicating that the filter needs to be serviced. This information is saved on the controller and the flashing RED indicator will remain present even if the flow stops, the filter switch becomes deactivated, or the machine is shut off and turned on again.
  - If the flashing RED indicator is present, but the filter switch is deactivated, the indicator will flash between RED and GREEN. This can mean two things:
    - The filter was restricted for more than 30 minutes, but there is now no pressure or flow of oil to activate the switch.
    - The filter has been serviced and is in good condition.
- When a filter state indicator is flashing between RED and GREEN, a blue "Filter Reset" soft key button will appear on the "Maintenance" screen adjacent to the filter restriction section. Pressing the button will clear out any saved filter alert data and will change the indicator back to solid GREEN. This "Filter Reset" soft key button will reset any filter indicator that is flashing between RED and GREEN. Once all possible filter indicators have been reset, the "Filter Reset" soft key button will disappear.

Filter Reset (maintenance screen only)

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Display Controls - By Screen:

Communication Timeout Warning

- Any damage to the touchscreen's electrical connections and harnesses will result in a communication timeout. If such a condition occurs, the ECM will automatically shut off all outputs and disable any control functions. The touchscreen display will show the above orange warning message indicating that a communication timeout has occurred. The display will sound an audible 5-second alarm to alert the operator of the communication timeout.
- This message will remain on the screen and prevent any operator input until proper electronic connection is reestablished. Once the connection is reestablished, the warning message will disappear and the operator will be able to enable the system using the touchscreen.
- Troubleshooting a communication timeout:
  - Verify that both terminating resistors are connected to the wire harnesses. Both terminating resistors should be connected to a branch of the harness labeled "DIAG". There is one terminating resistor in the operator cab near the auxiliary power connection (labeled "PWR"). The other terminating resistor is on the trailer harness near the in-line fuses and ECM.

CONTINUED ON NEXT PAGE

Display Controls - By Screen:

Communication Timeout Warning

- Verify that the electronic control module (ECM) is powered on and running. The ECM has 2 LED lights built into the housing near the ECM connector. During normal operation the LED closest to the connector should be solid green and the LED farthest from the connector should continuously cycle between red, amber, and green.
  - If the ECM LEDs are not turned on or are behaving differently than described above, check for blown fuses, low battery voltage, or broken/severed power supply wires.

- Investigate wire harness connection points for severed/broken wires or unseated pins/sockets. The YELLOW/GREEN harness wires run from the display to the ECM through all 3 sections of wire harness.
- Check continuity of the YELLOW/GREEN harness wires to determine if there is a broken wire inside of the harness braiding. To do this, first remove the two terminating resistor connectors; one in the cab and one on the trailer. Be sure to reconnect the terminating resistors when finished.
- If a communication timeout occurs and touchscreen operation cannot be reestablished in the field, the operator will need to use the manual override controls on the valve manifold to lift the mower heads back into the fully stowed and transport-ready position. Doing this will allow the operator to safely get the machine somewhere where Diamond Mowers Warranty and Service can be contacted, and further troubleshooting can be done.

OPERATING THE TOWABLE TRIPLE FLAIL

Before you operate, note that the primary responsibility for safety on this equipment falls to the operator. Only trained individuals who have read and understood this manual should operate this unit.

If any portion of this manual is not understood, contact Diamond Mowers' Service/Warranty at 888.960.0364 or 605.977.3300.

SAFETY TIPS

Be sure to read all warnings carefully. They are included for your safety, and for the safety of others working with you.

NOTICE

Indicates a property damage hazard *ONLY*, no *PERSONAL* injury.

⚠ CAUTION

Indicates where *MINOR* injury *COULD* result if instructions are not followed.

⚠ WARNING

Indicates where *SERIOUS* injury or death *COULD* result if instructions are not followed.

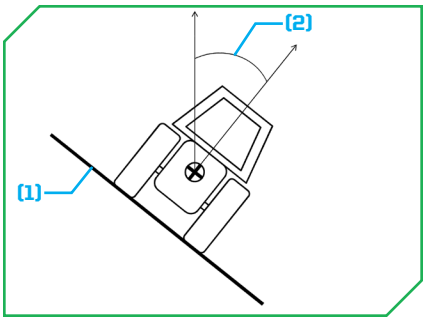
⚠ DANGER

Indicates where *SERIOUS* injury or death *WILL* result if instructions are not followed.

- Always wear proper safety glasses, goggles, or a face shield when operating.
- Operate only from the operator's station.
- Block off work area from bystanders, livestock, etc.
- Bystanders must keep a distance of 300ft/100m from the unit when operating.
- Knives are always sharp and can cause injury, even when not in motion.

CONTINUED ON NEXT PAGE

- **DO NOT** use extremities to dislodge debris from the cutting shaft or knives.
- Hydraulic fluid is hot and will heat any exposed steel, hoses, or motors in its proximity.
- Be certain the cutting shafts have come to a complete stop and all motion is ceased before exiting the cab.



- **EXTREME CAUTION** should be used when operating on slopes(1) greater than 25°(2). It is the operator's responsibility to properly counter-balance the vehicle and machine to prevent rollover .

STOWED POSITION

When transporting Diamond's Towable Triple Flail between operations, make sure to protect it from collisions and accidental damages by placing it in the stowed position.
Failure to place the machine in its stowed position could result in structural damage.

⚠ DANGER

Contact with the cutting shaft or knives while the shaft is in motion will cause serious injury or death. The cutting shafts spin at a very high speed and can take several minutes to stop. Be sure all personnel are clear of the machine before engaging the mower.

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OPERATING TECHNIQUES

GRASS & BRUSH CUT

Use to cut grass or brush.

- Start the tractor and bring the tractor to approximately 1200RPM.
  - Engage the tractor's PTO drive.
- Place the touchscreen control into automatic mode.
  - Lower the flail heads to their cutting positions with ground rollers resting on the ground (only 1 or 2 flails may be lowered if desired).
    - Flail heads should not be under power (cutting shafts rotating).
- Use the touchscreen control to power up the flail heads.
  - Open up the vehicle throttle until up to approximately 2100RPM.
  - 3MPH (5KMH) maximum.
  - Mow slowly enough to allow knives to mulch as well as cut.
- When finished, use the touchscreen to lift the flail heads to the stowed postion, and repeat this process for the next mow path.
  - NOTE: Never drop the mower straight down on heavy brush. Severe damage will incur. **NO PANCAKING!**

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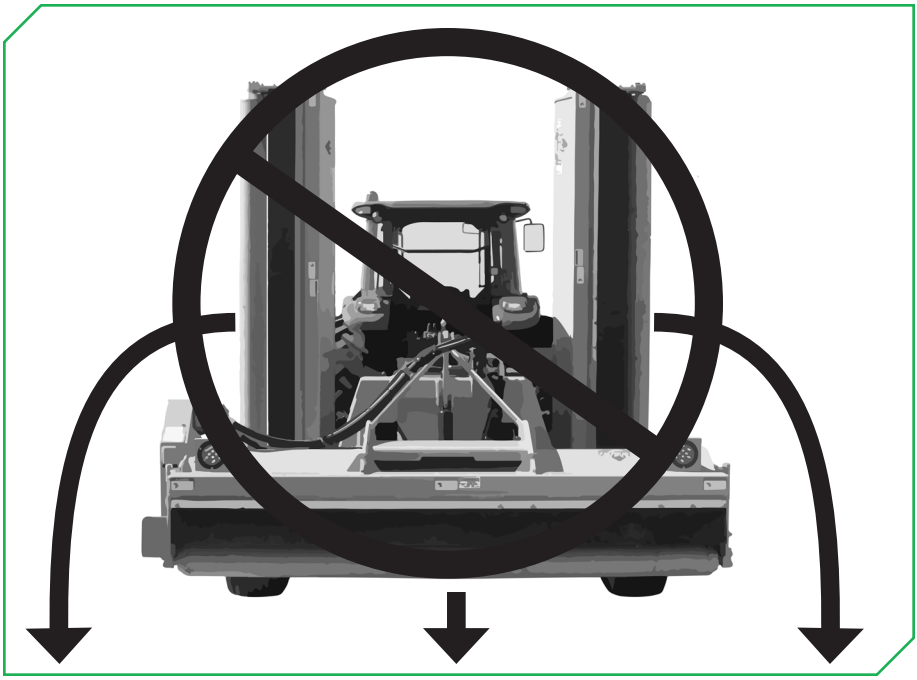
OPERATING TECHNIQUES



NO PANCAKING

DO NOT pancake.

- This machine is not built to drop on top of heavy brush for cutting or mulching. Damage will incur to the cutting shafts and knives as a result of dropping down (pancaking) on top of the material.

NOTICE

Dropping the flail heads straight down (pancaking) on heavy vegetation can cause severe damage to the cutting shaft and spindle.

For more tips, visit us online at www.DiamondMowers.com

MAINTENANCE INTERVALS

Regular maintenance will make certain your unit stays productive and retains a long, operating life. The following chart represents the minimum intervals recommended for inspection and maintenance.

PROCEDURE	10 HOURS/ DAILY	50 HOURS/ WEEKLY	500 HOURS/ ANNUALLY	AS NEEDED
Belts & Pulleys				Adjust
Casters		Inspect	Grease	
Cutting Shaft	Grease	Inspect		
Discharge Flap		Inspect		
Draft Beams	Grease			
Electronic Control Module		Inspect		
Ground Roller			Oil	
Hitch	Inspect			
Hydraulic Fittings	Inspect			
Hydraulic In-Line Filter			Oil	Inspect
Hydraulic Oil Cooler	Inspect			Clean
Hydraulic Oil Reservoir	Inspect		Oil	
Knives	Inspect			
Lift Valves				Inspect
Proximity Sensors		Inspect		
PTO Drive Shaft		Grease		
Pump Unloading Valves	Inspect			Clean
Skid Shoes		Inspect		
Touchscreen Controls				Clean

When replacing parts, use Genuine Diamond Parts. Guaranteed to ship within 72-hours of your order being placed, or the parts and shipping are free.

Call: 888-960-0361 or 605.977.3300 | **Email:** parts@diamondmowers.com
Order online: www.diamondmowers.com

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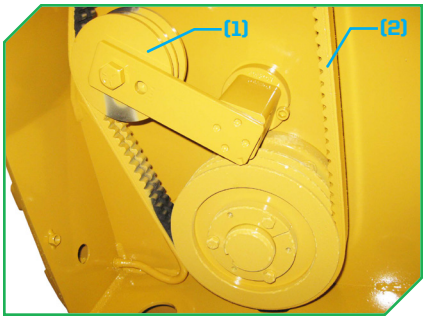

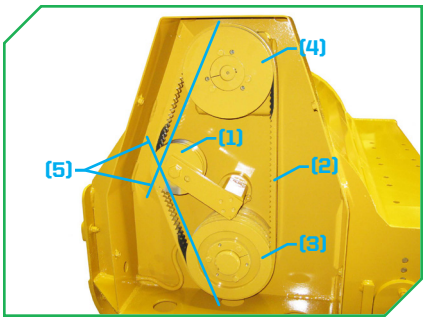

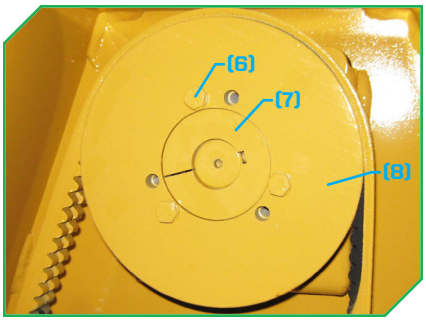

BELTS AND PULLEYS

Belt Replacement:

- Remove the access cover.
- Push the idler pulley(1) away from the belt(2) with a wrench, pry bar, or similar tool to relieve pressure on the belt.
  - **DO NOT** damage the idler pulley or other components when relieving pressure on the belt.
- Remove the belt from the pulleys.
- Reverse the above instructions to install the new belt(2).
- Replace the access cover.

Pulley Alignment:

- Use a straight edge(5) to confirm the cutting shaft(3) and motor(4) pulleys are in the same plane as the idler pulley(1).
- If pulley misalignment is found, correct as follows:
  - Loosen the bolts(6) holding the tapered collar(7) to the out-of-alignment pulley(8).
  - With a padded mallet, tap the pulley(8) backwards or forwards on its shaft to align it with the idler pulley(1).
  - With the pulley(8) aligned, tighten the bolts(6) holding the tapered collar(7) to the pulley.
  - NOTE: This process may be easier without the belt installed.
- Replace the access cover.

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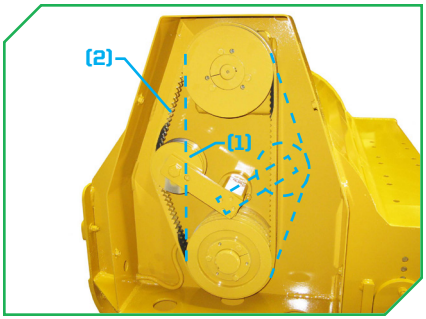

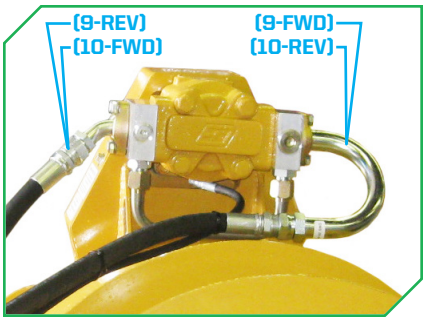

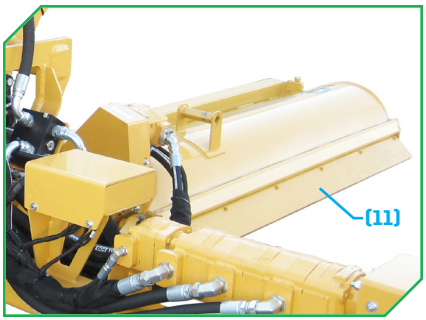

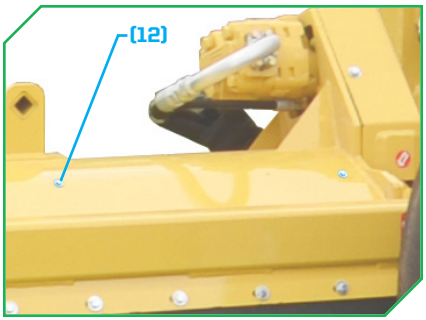

BELTS AND PULLEYS

Reversing Cutting Shaft Rotation:

NOTE: ***"Forward rotation" is defined as blade rotation the same as the tractor tires when driving forward. "Reverse rotation" is the opposite.***

- Remove access cover and belt(2) from the pulleys as described on the previous page.
- Remove the idler pulley(1) stop bolt and main center bolt.
- Reposition the idler pulley(1) as illustrated (dashed outline).
  - A second location for the idler position stop bolt will be exposed.
  - Re-attach the main center bolt to lock it into position.
- Replace the belt(2) as illustrated (dashed outline) and access cover.
- Shut off the ball valve(s) as described in the **HYDRAULIC OIL RESERVOIR** section of this manual.
- Disconnect the pressure(9) and return(10) hoses from the motor.
  - Clean off dirt and debris prior.
- Swap the pressure(9) and return(10) hose connections.
- Open up the ball valves as described in the **HYDRAULIC OIL RESERVOIR** section of this manual.
- Install the front shield(11) for reverse rotation, or remove it for forward rotation.
- Install the baffle with bolts(12) for forward rotation, or remove it for reverse rotation.
  - Reference the parts pages for additional information.

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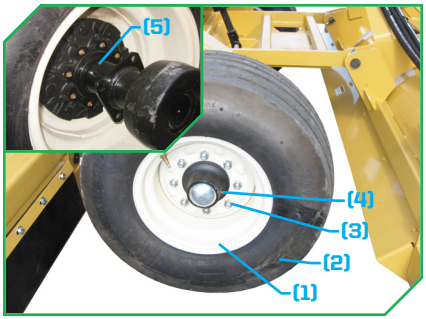

CASTERS

- Inspect the rims(1) and tires(2) every 500 hours or 3000 miles for:
  - Cracks, dents, or distortion.
  - Wear, cuts, bulging, or other damage.
- Grease the hub zerk(3) with #2 lithium based grease every 500 hours or 3000 miles until grease appears around the anchors and pivot boss ends.
- Inspect and tighten the lug bolts(4) every 50 hours or weekly.
- Tires(2) should be checked for proper inflation every 50 hours or weekly, or whenever air loss is obvious. Inflate tires to 90PSI (cold).
- Once Annually or 12000 miles, remove the hubs(5) and repack the bearings with #2 lithium based grease.

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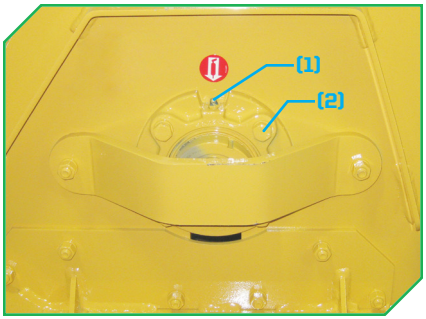
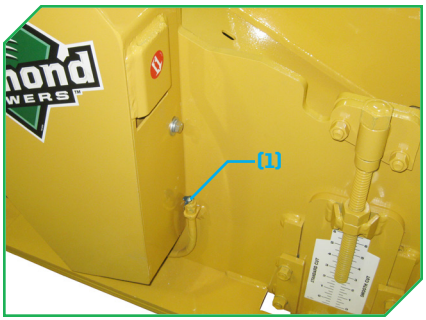
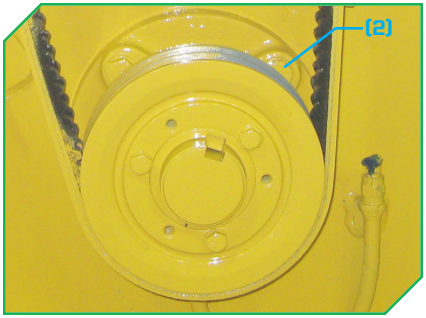
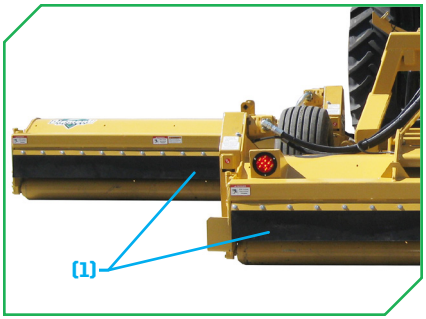






CUTTING SHAFT

- Grease the cutting shaft bearing zerks(1) (1 on each side of the flail) every 10 hours or daily with #2 lithium based grease from a hand grease gun until grease purges from the bearing seals.
- Torque the cutting shaft bearing bolts(2) to 90ft-lbs (122Nm) on each side of the flail every 50 hours or weekly.
  - NOTE: The access covers covering the pulleys and belt must be removed to gain access to the cutting shaft bearing bolts located underneath the bottom pulley of the flail.



DISCHARGE FLAP

- Inspect each flail head's rear discharge flap(1) every 50 hours or weekly:
  - Excessive wear
  - Cuts, gouges, excessive damage.
- Replace as needed.

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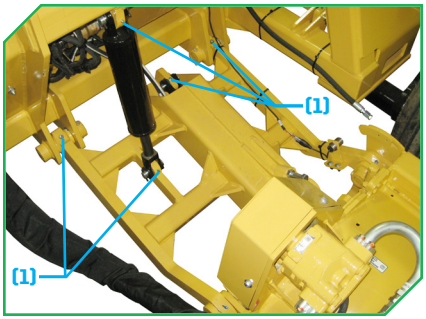

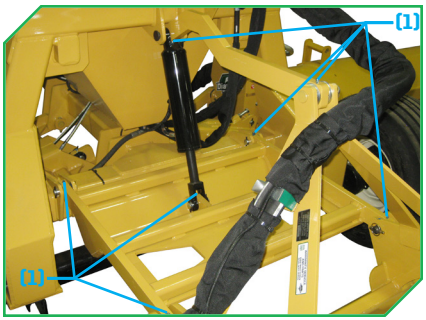

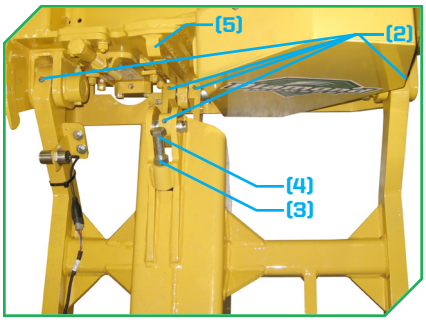

DRAFT BEAMS

- Grease the zerks(1) on the side and rear draft beams every 10 hours or daily with #2 lithium based grease until grease appears around the pivot boss, clevis, and anchor ends.
- Grease the zerks(2) on the side flail head to draftbeam connections every 10 hours or daily with #2 lithium based grease until grease appears around the pivot and linkage bosses.

Deck Stop Adjustment:

The deck stops are preset at the factory, and normally do not require adjustment.

- Loosen the locking nut(3) on the deck stop bolt(4), and thread the bolt in most of the way.
- While in manual mode, raise the draft beams up to their highest position.
  - Raise the side flails up until the catch bars(6) contact the travel catches(7) in the circled area(8), but not FULLY inserted (illustrated on next page).
- Thread the deck stop bolt(4) out until it is in tight contact with the deck stop(5) on the flail mower. Tighten the locking nut(3) on the deck stop bolt(4).

NOTICE

Once the flail deck is past 90° and leaning towards the unit, proceed slowly to prevent damage!

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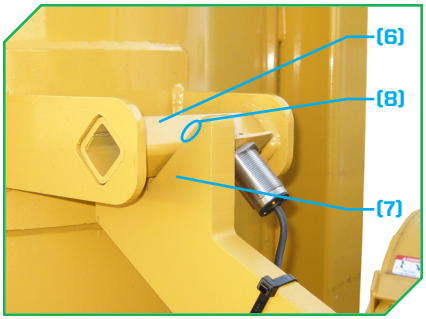

DRAFT BEAMS

Deck Stop Adjustment:

- Test the adjustment by raising and lowering the flail head between its transport and mowing positions in automatic mode; make adjustments to the deck stop bolts(3) as needed.
  - NOTE: The deck stop bolts(3) should not be adjusted so that the deck exceeds 90° (leaning towards the machine).

⚠WARNING

Do not stand or work underneath the raised deck while adjustments are being made to the deck stop bolt. The deck is extremely heavy and can cause serious injury or death if it falls!

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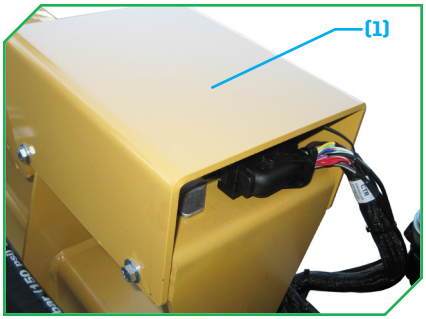

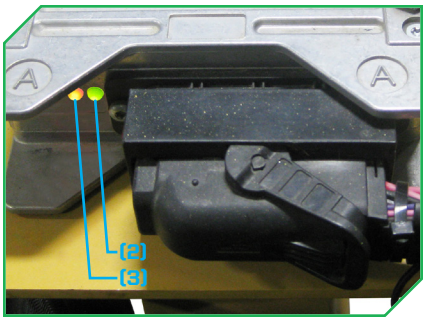

ELECTRONIC CONTROL MODULE (ECM)

- Inspect the cavity under the ECM cover(1) every 50 hours or weekly for debris collected around the ECM.
  - Remove debris from under the ECM cover(1) with pressurized air.
- Clean the the LED's with a damp cloth every 50 hours or weekly.

LED status codes for the ECM:

If the ECM LED's are indicating an error code, contact Diamond Mowers Warranty and Service for assistance.

- "Power/On" LED(2) is constant green, "User" LED(3) cycles between red, amber, and green continuously
  - All systems are normal.
- "Power/On" LED(2) is constant red, "User" LED(3) is not lit.
  - Flash ROM error; system is halted.
- "Power/On" LED(2) is flashing red, "User" LED(3) is not lit.
  - EEPROM error; possible fix using function x ssv init.
- "Power/On" LED(2) flashes red (3x), then green for 300ms.
  "User" LED(3) is not lit.
  - UE error; value of UE is below the value u8_UEmin configured with x ssv init.
- "Power/On" LED(2) flashes red (2x), then green for 500ms.
  "User" LED(3) is not lit.
  - USYS error; function x(s)_sys_init initializes the system voltages.

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ELECTRONIC CONTROL MODULE (ECM)

LED status codes for the ECM:

- "Power/On" LED(2) flashes red (1x), then green for 700ms.
  "User" LED(3) is not lit.
  - Watchdog error; the watchdog wasn't retriggered in time.

NOTICE

Do not use water or chemical cleaners to clean the ECM!

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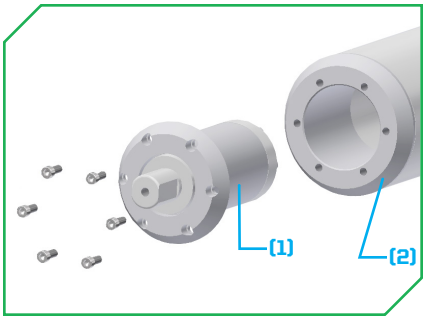

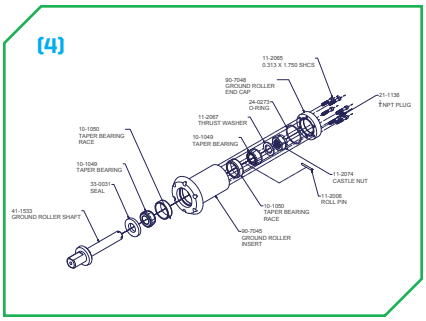

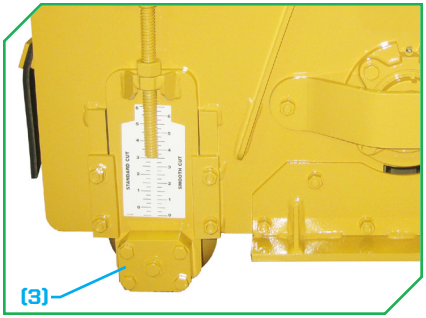

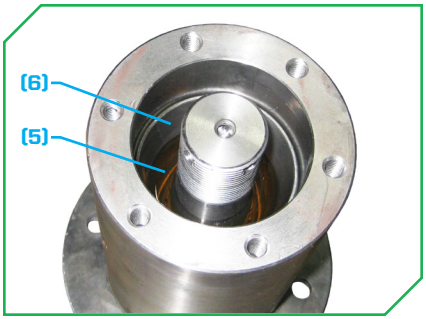

GROUND ROLLER

Bearing Maintenance:

- Each bearing(1) must have the oil and O-ring replaced once annually with 7-8oz of synthetic 75-90W oil and a new O-ring.
- Rest the ground roller(1) on the ground.
  Block it from moving.
- Unbolt the bearing blocks(3) from each side of the flail and ground roller.
  - **DO NOT** reassemble the bearing block hardware from one side of the flail on the other.
- Lift the flail head for access to the ground roller.
- Remove the cap screws securing the bearings(1) to the ground roller(2) on each side.
- Disassemble each bearing(4) (Reference page 37):
  - Remove the cap screws, 1/8" NPT plug, and end cap.
  - Discard the old O-ring.
- Remove the roll pin and castle nut(4).
- Pour out the old oil from the insert(4).
  - Catch and retrieve the thrust washer and taper bearing.
  - Examine the taper bearing its race for damage or wear.
    - No wear; proceed with the following steps.
    - Wear detected; contact **Diamond Mowers** for a rebuild kit with instruction.
- Pour synthetic SAE 75-90W oil(5) into the ground roller insert(4) until it just touches the taper bearing race(6).

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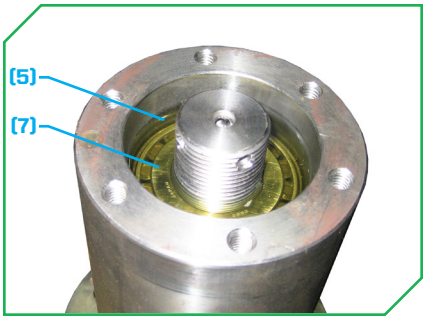

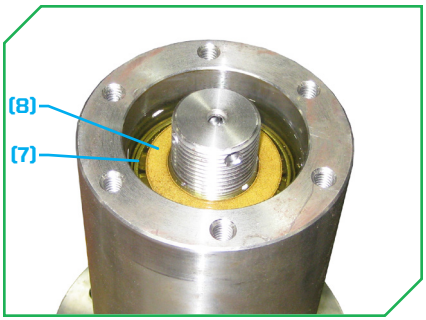

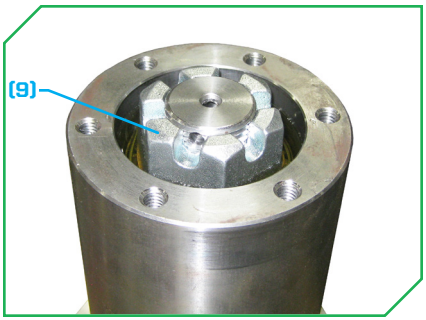

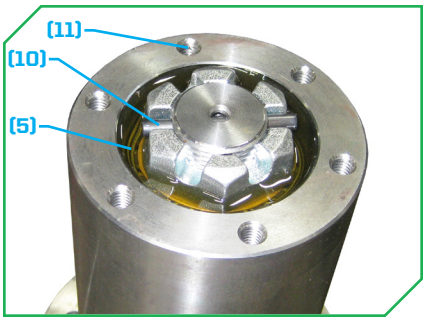

GROUND ROLLER

Bearing Maintenance:

- Place the taper bearing(7) over the ground roller shaft and into the taper bearing race.
- Add more synthetic SAE 75-90W oil(5) until approximately 1/8" (3mm) above the taper bearing.
- Place a thrust washer(8) over the ground roller shaft and on top of the taper bearing race(7).
- Thread the castle nut(9) onto the ground roller shaft until it just contacts the thrust washer(8).
  - Find the roll pin hole; if covered, slightly tighten or loosen the castle nut (whichever exposes the hole first) until the hole is fully exposed.
- Lift the ground roller insert, and pull down on the ground roller shaft to check for end-play(4).
  - No end-play; proceed to the next step.
  - End-play detected; tighten the castle nut(9) to expose the roll pin hole in the next notch on the castle nut(9).
  - Re-check the end-play again and correct as needed.
- Tap the roll pin(10) into the ground roller shaft hole until centered.
- Fill the insert to the brim with synthetic SAE 75-90W oil(5).
  - 7-8oz of oil should have been used at this point.
- Thread a cap screw into EACH of the cap screw hole(11) locations to force out any oil that may be in there.

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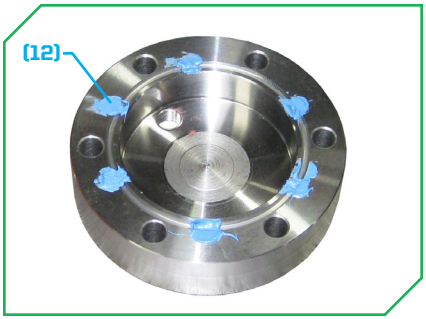

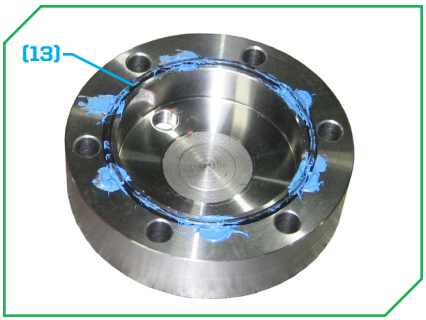

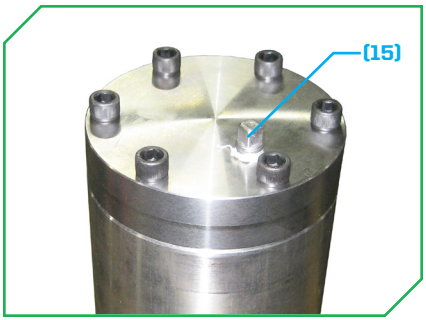

GROUND ROLLER

Bearing Maintenance:

- Clean any oil or debris off the surface of the insert where the end cap will mate(4).
- Remove the cap screws.
  - NOTE: Failure to remove excess oil from the holes may result in a cracked insert when the end cap is secured to the insert.
- Place the end cap upside down on the work surface and clean any oil or debris off of the grooved surface where the insert will mate to(4).
  - Place a dot of RTV silicone sealant(12) on the groove between each hole.
  - Place the O-ring(13) into the groove on the end cap.
- Place the end cap onto the ground insert without dislodging the O-ring from its groove(14).
- Secure the end cap to the insert with the cap screws(14).
  - Tighten the cap screws evenly in a criss-cross pattern.
  - Torque the cap screws to 29ft-lbs (39Nm).
  - Make sure the plug hole is not blocked to allow air to escape.
- Wrap the 1/8" NPT plug(15) with teflon tape and thread it into the plug hole on the end cap.
  - Tighten until snug.

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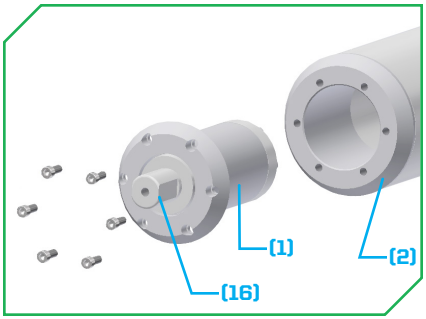

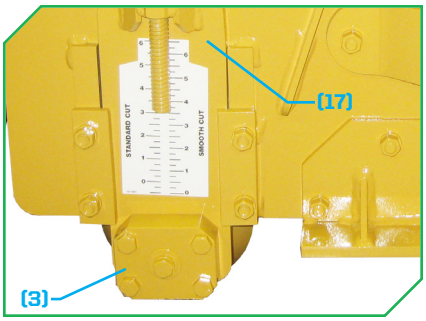

GROUND ROLLER

Bearing Maintenance:

- Reassemble the bearings(1) into the ground roller(2) with their cap screws.
  - Torque the hardware to 51ft-lbs (69Nm).
- Lower the flail back onto the ground roller, allowing the bearing shafts to slide back into their slots on the roller brackets.
- Place the bearing blocks(3) onto the ground roller shafts.
  - Align the "flat" of the block(3) opening to the "flat" of the bearing shaft(16).
- Mount the bearing blocks(3) to the roller brackets(17) of the flail.
  - Use loctite 262 with primer 7649 on the hardware.
  - Torque the hardware to 75ft-lbs (102Nm).
- Secure the ground roller(2) to the bearing blocks(3) with the original hardware from that side of the flail.
  - Bearing block bolt WITH the shoulder using loctite 243 on the belt side of the flail.
  - Bearing block bolt WITHOUT the shoulder, along with a flat washer and lock washer, using loctite 243 on the non-belt side of the flail.
  - Torque each bearing block bolt to 75ft-lbs (102Nm).

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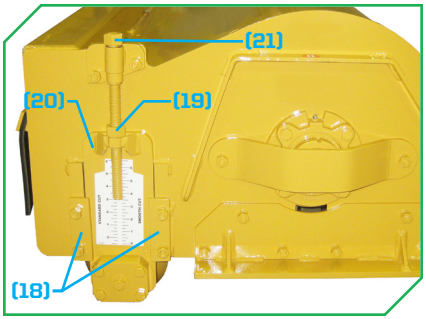
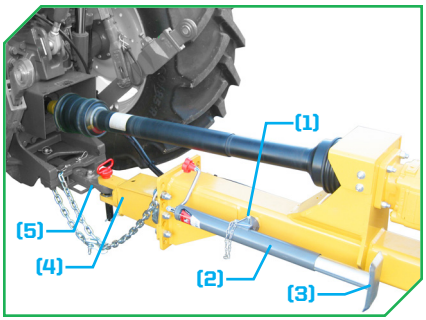
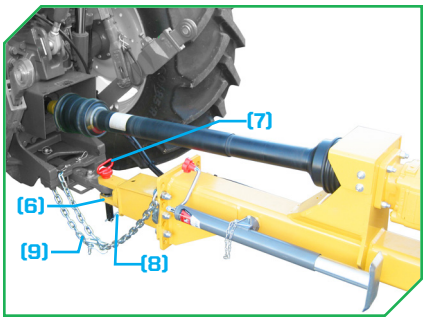


GROUND ROLLER

Cutting Height Adjustment:

- Loosen the retaining plates(18) and lock nuts(19) on both sides of the flail.
- Adjust the ground roller brackets(20) up or down by turning the adjustment nuts(21).
- Tighten the lock nuts(18) and retaining plate hardware.
  - Torque the hardware to 75ft-lbs (102Nm).





HITCH (DRAWBAR)

- Inspect all hitch components every 10 hours or daily.
  - Safety chain(9) is connected and secured.
  - Hitch pin(7) is in good repair and cotter key(8) is present.
  - Tractor drawbar(5) and flail hitch(6) are in good repair.
  - Tongue hardware(4) is tight.
  - Lock pin(1) is securing the jack stand(2) in place.
  - Foot pad(3) is fully retracted into the jack stand(2) when the jack stand is not in use.

CONTINUED ON NEXT PAGE

HYDRAULIC FITTINGS

- Hydraulic hoses and fittings should be inspected every 10 hours or daily.

  What to look for:

  - Hydraulic fitting clamps and threaded connections for any hydraulic fluid.
    - If any leaks are observed, stop immediately to prevent damage to your machine.
  - Hoses for any abrasions or cuts. Replace damaged or worn hoses.
  - Attach hose wrap around critical points where hoses are likely pinched or rubbed.

⚠ CAUTION

DO NOT check for hydraulic leaks with your hands or any part of your body. Use a heavy piece of paper or cardboard to check areas that are not readily visible. Pressurized hydraulic fluid can penetrate the skin and lead to serious health risks.

⚠ CAUTION

Severe bodily injury from the expulsion of oil, as well as severe damage to the machine can occur if the ball valves are not open when the machine is started!

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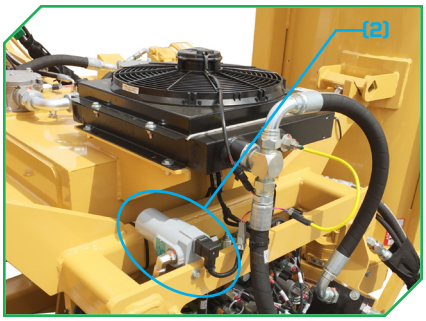

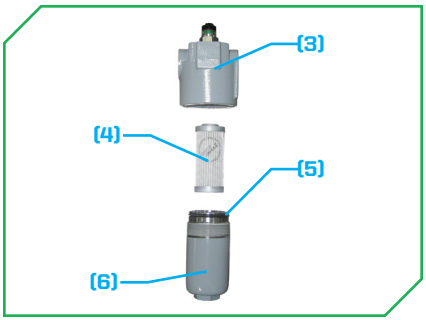

HYDRAULIC IN-LINE FILTER

- Replace the filter element after the first 50 hours of operation, and every 500 hours or annually.
- The filter element and hydraulic fluid should be changed together.
- The hydraulic filter uses an electronic sensor to detect flow rate restriction.
  - If the filter is clogged, a warning will appear on your touchscreen control panel(1).
- Follow the steps below to replace the filter element:
  - Shut off the tractor's PTO drive; the hydraulic system MUST NOT be under power or pressurized.
  - Place a pan or similar underneath the filter(2) to catch used oil.
  - Loosen the filter element bowl(6) from the filter housing(3) with a crescent wrench; unthread it from the filter housing(3).
  - Pour out the used oil and clean out any debris in the filter element bowl(6).
  - Make sure the O-ring(5) is in place on the filter element bowl(6) and in good repair; replace as needed.
  - Replace the old filter element(4) with a new filter (10 micron).
  - Re-assemble the filter element bowl(6) to the filter housing(3).

NOTICE

Damage may occur to the implement if it continues to run with a clogged or restricted filter; shut down and replace the filter.

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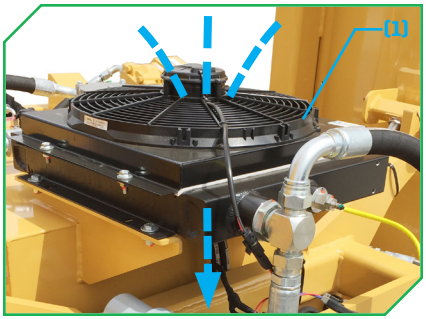

HYDRAULIC OIL COOLER

- Inspect the hydraulic oil cooler(1) for dirt and debris lodged in the cooling fins every 10 hours or daily, or as needed for dirty conditions.
  - Clean the hydraulic oil cooler(1) cooling fins with compressed air.
  - **DO NOT** physically touch the cooling fins or bend them.
  - Normal air flow is as indicated in the illustration; the fan will momentarily cycle and reverse direction for a short time when operating to assist in keeping the cooling fins clean.
  - The hydraulic oil cooler(1) will power up as soon as power is supplied to the machine when connected to a tractor.

NOTICE

Do not use pressurized water to clean the hydraulic oil cooler or the cooling fins may be damaged.

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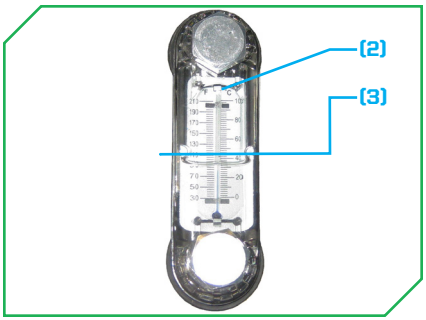

HYDRAULIC OIL RESERVOIR

- Hydraulic oil must be replaced after the first 50 hours of operation, and every 500 hours or annually.
- Ball valves(1) should be inspected every 10 hours or daily.
  - Place in the "OFF" position whenever a hydraulic hose needs replacing, etc.
  - Inspect for function and damage.
  - Confirm ball valves are in the "ON" positions prior to starting the machine.
- The oil fill level and temperature gauge(2) should be monitored every few hours while operating; more often in hot environments.
  - The fill level(3) should be at the level indicated when the oil is COLD.
  - Remove the breather cap(4) and add fluid as necessary.
    - Hydraulic fluid must meet ISO grade A/W 46.
  - The oil temperature should NOT be continuously running at 180°F (82°C) or above.
    - Shut down immediately if it reaches 200°F (93°C) until it cools.
- The breather cap(4) should be inspected and cleaned every 500 hours or as needed.
  - Remove as needed when adding hydraulic fluid.
  - Replace the breather cap becomes excessively dirty or clogged.

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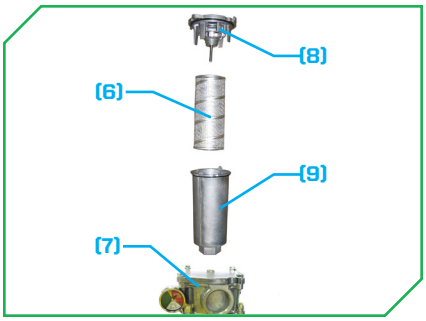

HYDRAULIC OIL RESERVOIR

- The drain plug(5) only requires inspection if oil is present or on the ground, or if the oil fill level gauge(2) indicates oil loss.
  - The drain plug(5) is on a hose on the hydraulic reservoir bottom.
- The hydraulic reservoir filter must have the filter element(6) replaced after the first 50 hours of operation, and every 500 hours or annually.
  - Loosen the (4) bolts on the top of the filter housing(7).
  - Push down and turn the top cover(8) counter-clockwise until it is free of the bolts, lift up, and remove.
  - Remove the filter element(6) and the filter element bowl(9).
  - Clean out any debris in the filter element bowl(9), and place back into the filter housing(7).
  - Replace the old filter element(6) with a new one and re-assemble in reverse order.
    - filter must be 10 micron and metal wrapped.

NOTICE

Damage will occur if the machine is ran when the oil temperature readings are excessive.

⚠ CAUTION

Severe bodily injury from the expulsion of oil, as well as severe damage to the machine can occur if the ball valves are not open when the machine is started!

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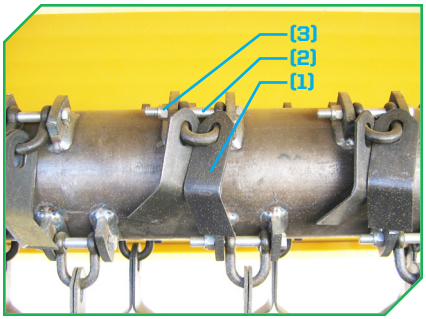

KNIVES

- Inspect the flail knives(1) for excessive wear or damage every 10 hours or daily.
  - Replace them as needed.
  - Replace knives(1) in pairs opposite of each other to maintain balance of the cutting shaft.
- Inspect the knife mounting bolts(2) and nylock nuts(3) for damage every 10 hours or daily.
  - Replace damaged components as needed.
  - Tighten nylock nuts(3) snug against the cutting shaft brackets.
    - NOTE: Knife bolts(2) and nuts(3) must be reassembled in the same orientation as they came from the factory.

NOTICE

Do not attempt to weld, or otherwise repair a damaged or worn flail knife. Replace knives evenly around the cutting shaft.

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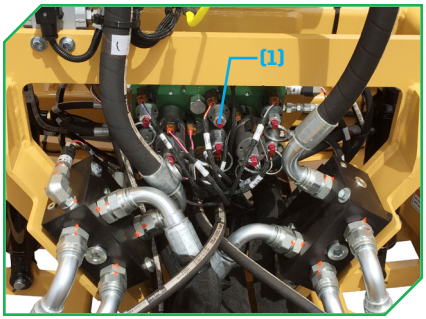
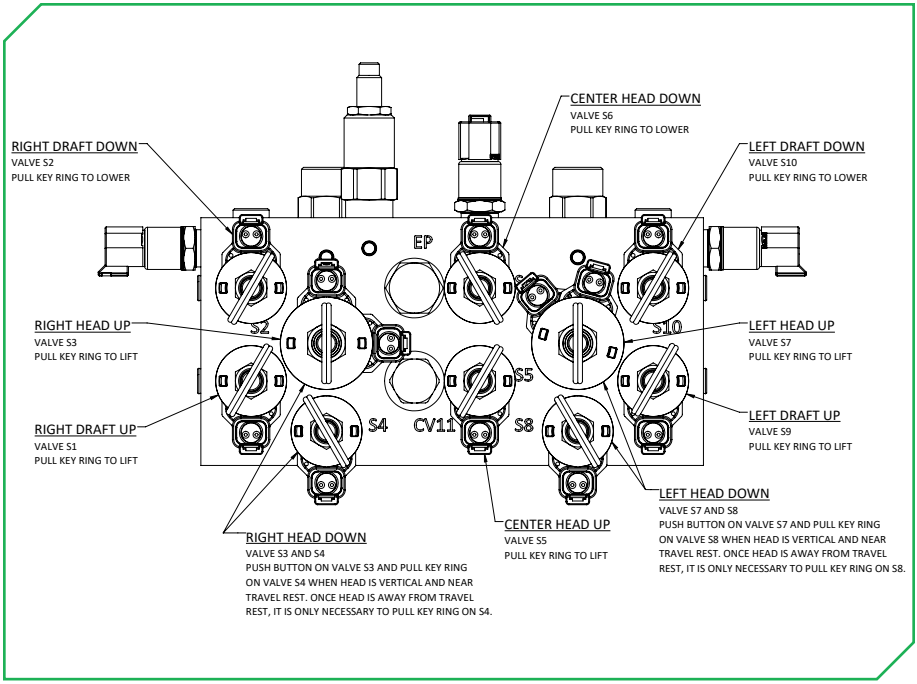


LIFT VALVES

- Pull or push the red spool knobs to manually operate the lift cylinders for the flail heads in lieu of the electronic touchscreen controls.
  - Reference the schematic below for specific information on spool operation / head function.



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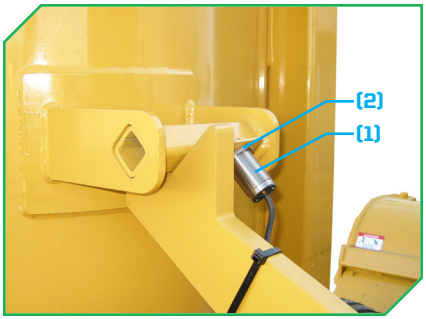

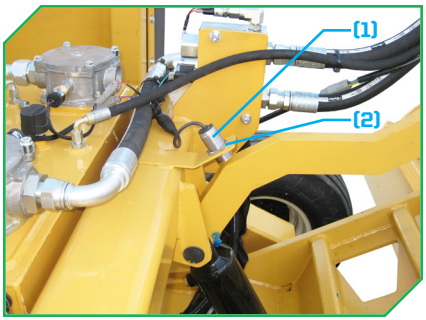

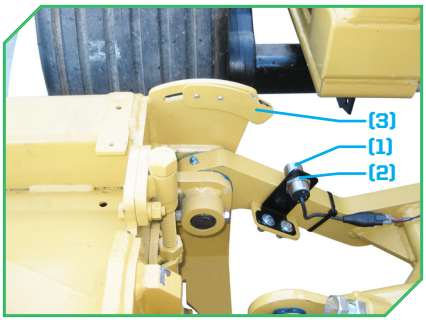

PROXIMITY SENSORS

- Clean the proximity sensors(1) and inspect the indicator lights on the back of the sensors for function every 50 hours or weekly.
  - Inspect the face of the sensors for debris or damage.
  - Malfunction symptoms can manifest as:
    - Cutting shafts fail to shut off in their stowed positions.
    - Side flails not fully inserted into their travel catches, etc.
  - Clean the face of the proximity sensors(1) with a damp, soft cloth.
    - Pay particular attention to remove any metal shavings or filings; they can interfere with the function of the sensors.
  - Replace a damaged sensor(1) and adjust it as described below.
- Adjusting the proximity sensors:
  - Place the flails in their stowed positions and turn on electrical power to the machine.
  - Loosen the jam nuts(2) securing the sensor's(1) position within its bracket, and adjust it in or out until the indicator remains consistently lit.
    - Optimum sensor(1) face to metal surface distance is approximately ¼-½" (6-12mm).
  - Secure the sensor(1) in place with its jam nuts(2).
    - If indicator light will not light, or sensor(1) has to be adjusted closer than ⅛" (3mm), replace the sensor(1).

CONTINUED ON NEXT PAGE

PROXIMITY SENSORS

- Side flails are equipped with adjustable trigger plates(3).
  - When a proximity sensor(1) detects a trigger plate(3), it will shut off the motor to that flail.
  - Trigger plates(3) are factory adjusted to shut off the motors when side flails are raised approximately 35° up from cutting positions.
  - Trigger plates(3) are adjustable to shut off the motors sooner or later as needed.

NOTICE

Do not use harsh chemicals or abrasives when cleaning the face of the proximity sensor(s), or damage may occur to the sensor face.

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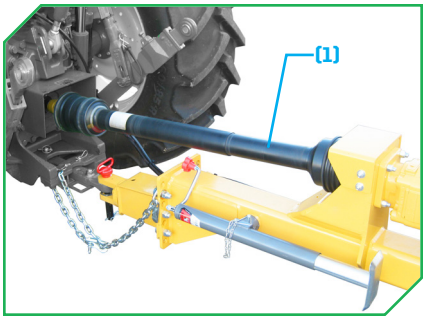

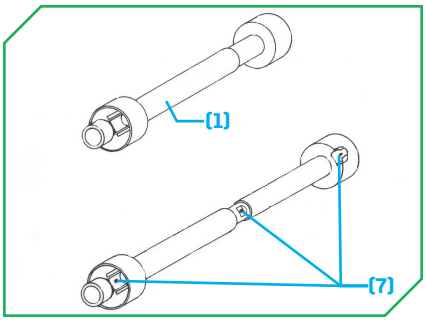

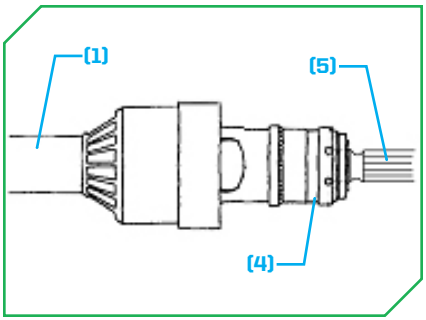

PTO DRIVE SHAFT

- Grease the PTO drive shaft(1) every 50 hours or weekly.
  - Disconnect the PTO drive shaft(1) from the tractor PTO drive.
    - Pull back the locking collar(4) and slide the PTO drive shaft(1) off of the tractor PTO drive(5).
    - **DO NOT** remove the PTO drive shaft(1) from the pump side unless impossible to pull apart for greasing.
  - Pull apart the PTO drive shaft(1) to expose any grease zerks(7).
  - Grease with #2 lithium based grease until it purges around the U-joints and shaft connections.
  - Slide the PTO drive shaft(1) back together.
  - Pull back the locking collar(4) and slide the PTO drive shaft onto the tractor PTO drive(5).
    - Slide the PTO drive shaft(1) forward until the locking collar(4) snaps forward onto the locking groove on the tractor's PTO drive splined shaft(5).

⚠WARNING

Always test a PTO drive shaft connection by giving it a hard tug in an attempt to disengage it. Do not use a PTO drive shaft that fails to stay locked to a splined shaft! Serious damage, injury or death can occur!

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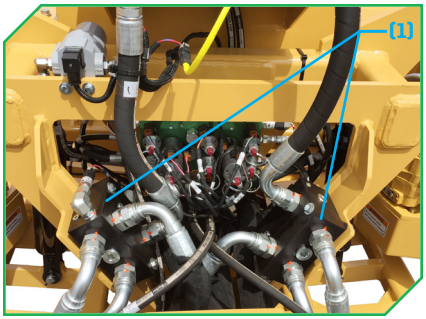
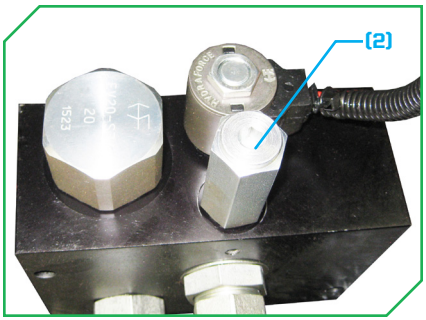




PUMP UNLOADING VALVES (PUV)

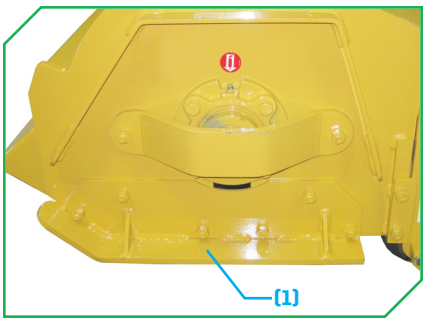
- Pump unloading valves (PUV)(1) should be inspected for leaks every 10 hours or daily. The pressure relief(2) should only be cleaned or replaced as needed.
  - Shut down the machine and tractor.
  - Close the ball valves as described in the **HYDRAULIC OIL RESERVOIR** section.
  - Unscrew the pressure relief(2) from the PUV(1)
    - Some hydraulic fluid leakage will occur.
  - Replace the cleaned or new pressure relief(2), and tighten.
  - Open the ball valves as described in the **HYDRAULIC OIL RESERVOIR** section.

NOTICE

CLOSE the ball valves on the hydraulic reservoir before removing a pressure relief from a PUV to prevent massive hydraulic oil loss!

⚠ CAUTION

Severe bodily injury from the expulsion of oil, as well as severe damage to the machine can occur if the ball valves are not open when the machine is started!



SKID SHOES

- Inspect the skid shoes(1) for excessive wear or damage every 50 hours or weekly.
  - Replace as needed.

TOUCHSCREEN CONTROLS

Cleaning

- If the touchscreen display unit needs to be cleaned, use a lightly dampened (with water) microfiber cloth to remove dirt/debris, and then use a clean microfiber cloth to wipe clean and dry.
- **NEVER** use alkaline or other chemical cleaners, high-pressure air, high-pressure water, or steam to clean the display or damage will occur.
- A small amount of isopropyl alcohol can be applied to a microfiber cloth to remove harsh stains.

General

- Never cover the display with clothing or other items while it is powered on.
  - Doing so can prevent proper heat dissipation. If the display becomes too hot it can operate at limited speeds or become damaged.
  - Avoid pointing hot air vents directly at the display.
- Avoid contact of the touchscreen from any hard and/or sharp objects.
  - Resistive type touchscreens are more prone to scratches than capacitive-touch or non-touch models.

NOTICE

Failure to inspect and replace hardware at recommended intervals will cause damage to the machine and/or mower.

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TROUBLESHOOTING

PROBLEMS	POTENTIAL CAUSE	SOLUTION
Excessive Vibration	Loose hardware	Check and torque all hardware.
	Cutting assembly unbalanced and/or is damaged	Check for damaged knives, cutting shaft, etc. Check for wire & other debris entangled in the the cutting assembly.
	Loose belt(s)	Belt is stretched or badly worn; replace as needed. Flail mowers are equipped with automatic self-tensioners; call Diamond Mowers for assistance.
	Misaligned pulleys	Correct pulley alignment.
PROBLEMS	**POTENTIAL CAUSE**	**SOLUTION**
Mower Will Not Lift	Oil reservoir fluid is low	Check and refill oil.
	Hydraulic hoses & fittings are damaged and/or is leaking.	Tighten or replace hoses and/or fittings.
	Touchscreen control panel	Check all electrical connections. Enter correct command to lift the flail heads.
	Faulty cylinder	Inspect, repair or replace cylinder.

CONTINUED ON NEXT PAGE

PROBLEMS	POTENTIAL CAUSE	SOLUTION
Mower Will Not Start or Run	No power to solenoid	Check all electrical connections.
	Faulty solenoid	Check solenoid: ● Without tractor running, turn on power to the flail head(s). An audible click should be heard if solenoid(s) are engaging. ○ If click is not heard, leave power on, and with a small steel object, touch the nut on the end of the solenoid(s). ○ If the steel object is not attracted, replace the solenoid(s).
	Faulty solenoid valve	Check solenoid: ● Remove the solenoid/valve assembly from the valve body. **DO NOT** damage the filter (if equipped) and O-rings. ● Clean filter (if equipped) and reassemble. ● Remove the nut fastening the solenoid to the valve assembly. ● Remove spring and spool from the valve body. ● Check the valve body and spool for contaminants and scratches. ○ Clean parts and replace if scratched. ○ Insert spool and test for free sliding of spool in valve body. ● Reassemble.
	Ball valves in the "OFF" position	Check to make sure ball valves on hydraulic reservoir tank are in the "OPEN" position.
	Oil reservoir fluid low	Check and refill oil.
	No PTO power to the Towable Triple Flail attachment	Reference the vehicle's operator manual for instructions on how to operate the vehicle PTO drive.
	No hydraulic flow to the motor(s)	Hydraulic hoses are connected incorrectly, not connected, etc. Check for leaks in hoses, fittings, etc.

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PROBLEMS	POTENTIAL CAUSE	SOLUTION
Motor Runs, but Will Not Cut	Loose belt(s)	Belt is stretched or badly worn; replace as needed. Flail mowers are equipped with automatic self-tensioners; call Diamond Mowers for assistance.
	Excessive wear on internal parts	Diassemble and repair motor. Contact Diamond Mowers for a replacement.
	Broken belt	Belt is broken; replace. Flail mowers are equipped with automatic self-tensioners; call Diamond Mowers for assistance.
	Misaligned pulleys	Correct pulley alignment.
PROBLEMS	**POTENTIAL CAUSE**	**SOLUTION**
Motor/Cutting Shaft Turns Slowly or Not at All	Faulty solenoid	Check solenoid: ● Without tractor running, turn on power to the flail head(s). An audible click should be heard if solenoid(s) are engaging. ○ If click is not heard, leave power on, and with a small steel object, touch the nut on the end of the solenoid(s). ○ If the steel object is not attracted, replace the solenoid(s).
	Excessive wear on internal parts	Diassemble and repair motor. Contact Diamond Mowers for a replacement.
	Oil reservoir fluid low	Check and refill oil.

CONTINUED ON NEXT PAGE

PROBLEMS	POTENTIAL CAUSE	SOLUTION
Oil Temperature Rises above 200°F(93°C)	Oil reservoir fluid low	Check and refill oil.
	Kinked or blocked hydraulic hoses	Inspect, repair and/or replace.
	Worn pump or motor	Diassemble and repair motor. Contact Diamond Mowers for a replacement.
	Relief valve is stuck open	Listen for "hissing" sound and/or highly localized heat from lift and PUV valves; clean or replace the relief valve as required.
	Oil cooling fan is not working	Clean debris from fan. Check for power to cooling fan. Make sure fan is grounded. Replace fan.

For any questions, contact our Warranty / Service team at
888.960.0364 or 605.977.3300

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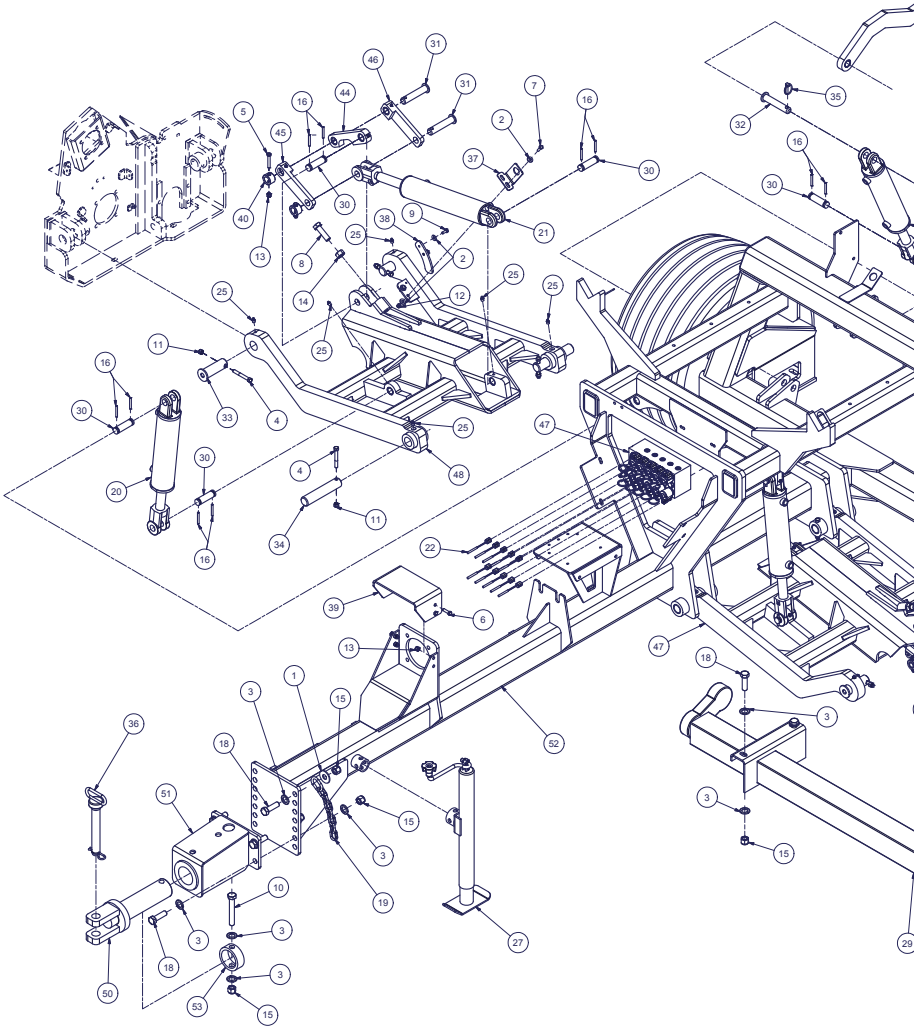
Diamond MOWERS™

TOWABLE TRIPLE FLAIL

PARTS BOOK

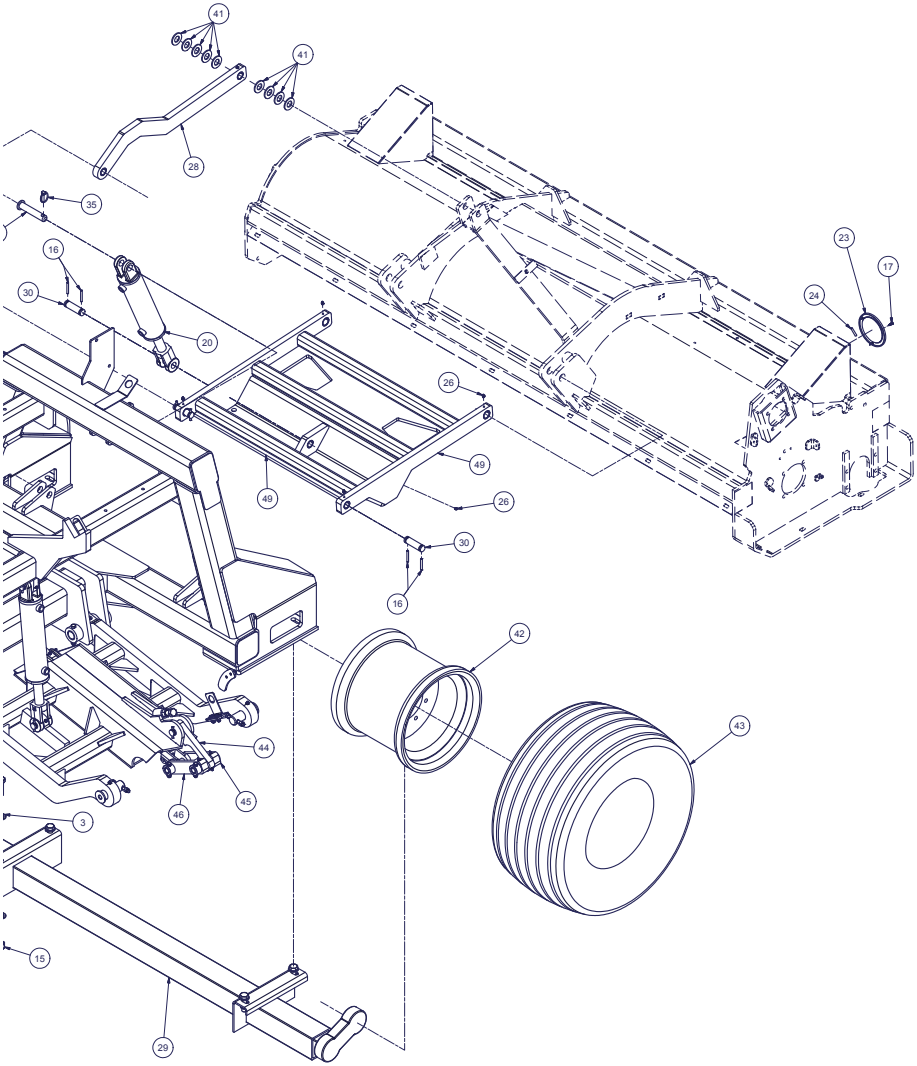
MAINFRAME, ASSEMBLY

45-2453



MAINFRAME, ASSEMBLY

45-2453



MAINFRAME, ASSEMBLY

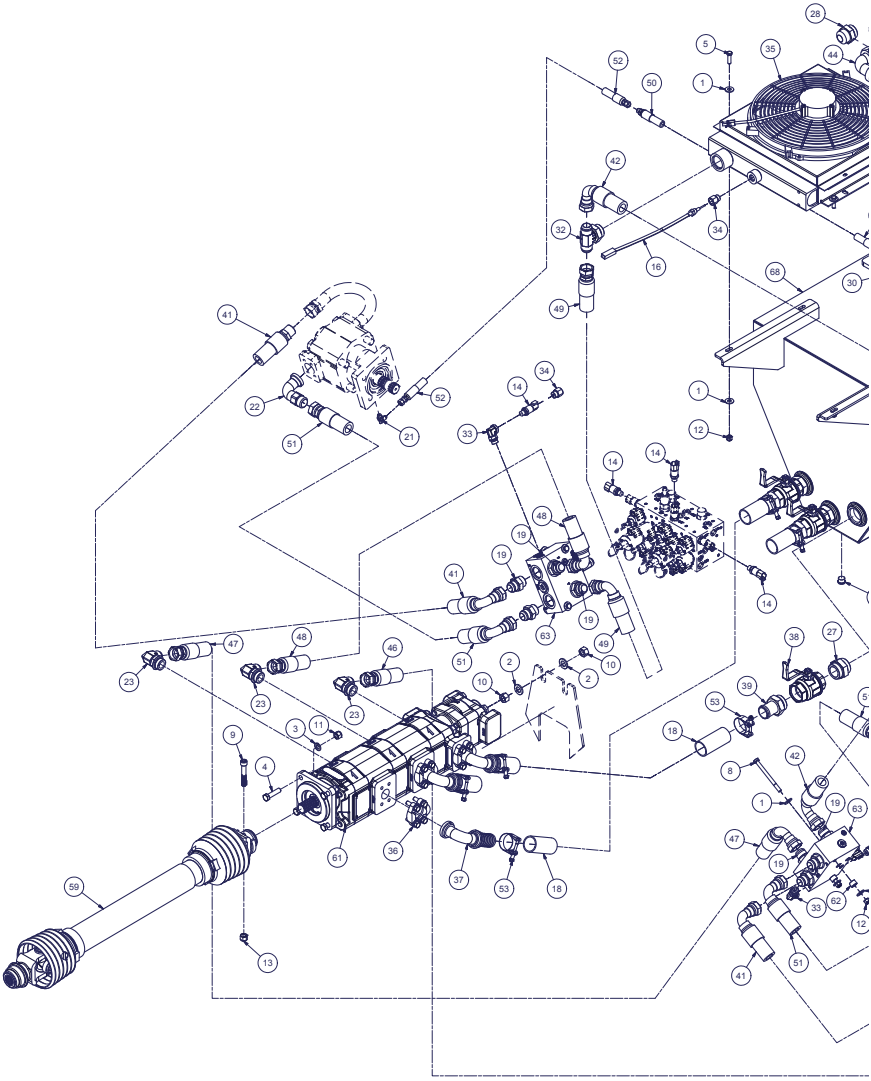
45-2453

REF#	PARTS DESCRIPTION	REQ	PART#	TORQUE (ft-lbs)	TORQUE (Nm)
1	3/4 FLAT WASHER GR 5	1	11-0010		
2	5/16 FLAT WASHER GR 5	12	11-0015		
3	3/4 SAE FLAT WASHER GR 8	19	11-0039		
4	7/16 X 3-1/4 NC HEX CAP GR 5	8	11-0510	49.4	67.0
5	3/8 X 2-1/4 NC HEX CAP GR 5	4	11-0513	30.9	41.9
6	3/8 X 1-1/4 NC HEX CAPSCREW	4	11-0533	30.9	41.9
7	5/16 X 1 NC HEX CAP	4	11-0543	17.4	23.6
8	3/4 X 2-1/2 NC HEX CAPSCREW	2	11-0563	267.0	362.0
9	5/16 X 3/4 NC HEX CAP	4	11-0596	17.4	23.6
10	3/4 X 5 NC HEX CAP GR 8	1	11-0889	376.0	509.8
11	7/16 NC NYLOCK NUT	8	11-1003		
12	5/16 NC NYLOCK NUT	4	11-1023		
13	3/8 NC NYLOCK NUT	8	11-1024		
14	3/4 NC HEX NUT	2	11-1033		
15	3/4 NC NYLOCK NUT, GR. 8	10	11-1081		
16	1/4" ROLL PIN X 2"	22	11-2005		
17	#10 X 3/4 PHILLIPS HEAD SELF TAPPING SCREW	6	11-2101		
18	3/4 X 2-1/2 NC HEX CAP GR 8	9	11-2102	376.0	509.8
19	FLEX WING SAFETY CHAIN ASSEMBLY	1	12-0053		
20	3 X 10 WELDED CYLINDER	3	14-0001		
21	3 X 12 WELDED CYLINDER, SLUGGED	2	14-0004		
22	HARNESS, TRAILER, PULL BEHIND TRIPLE	10	16-0223		
23	LED TRAILER LIGHT	2	16-0229		
24	HARNESS, TRAILER LIGHTS	1	16-0247		
25	GREASE ZERK 1/8" STRAIGHT	12	23-0003		
26	GREASE ZERK 1/4" STRAIGHT	7	23-0004		
27	15" JACK - TOP WIND	1	24-0038		
28	THIRD LINK ARM	1	24-0268		
29	AXLE, PULL BEHIND TRIPLE, #13AG, 8000LB	1	24-0272		
30	CYLINDER PIN, 3-1/2"	11	27-0004		
31	LINKAGE PIN	4	27-0009		
32	TV140 TILT LINK FLAIL PIN	1	27-0018		
33	PIN 1-1/2 X 4-1/2 CAP	4	27-0509		
34	PIN, 1-1/2 X 7-3/8 HT & PLATED	4	27-0510		
35	LYNCH PIN, 5/16 X 1-9/16	1	27-1028		
36	DRAWBAR PIN, 1-1/4 X 8-1/2	1	27-1032		
37	PROXIMITY SWITCH BRACKET, SIDE	2	31-0588		
38	CAM, PROX SWITCH	2	31-0590		
39	PTO GUARD, PULL BEHIND TRIPLE	1	31-0595		
40	LINKAGE BOSS	4	34-0002		
41	BUSHING, HD 1"ID X 2"OD X 0.177"	9	34-0334		
42	WHEEL, PULL BEHIND TRIPLE	2	38-0012		
43	TIRE, 31/13.50-15, PULL BEHIND TRIPLE	2	38-0013		
44	PIVOT LINKAGE	2	41-0025		
45	LINKAGE ARM LEFT COMBO DRAFT BEAM	2	41-0026		
46	LINKAGE ARM RIGHT COMBO DRAFT BEAM	2	41-0027		
47	REAR TWIN FLAIL, LEFT DRAFT BEAM	1	41-1184		
48	REAR TWIN FLAIL, RIGHT DRAFT BEAM	1	41-1185		
49	3 POINT LIFT ASSEMBLY	1	41-1482		
50	HITCH PIVOT, PULL BEHIND TRIPLE	1	41-1489		
51	HITCH PIVOT MOUNT, PULL BEHIND TRIPLE	1	41-1490		
52	PULL BEHIND TRIPLE FRAME	1	41-5448		
53	HITCH PIVOT RETENTION RING	1	90-7041		

MAINFRAME, DECK FEED

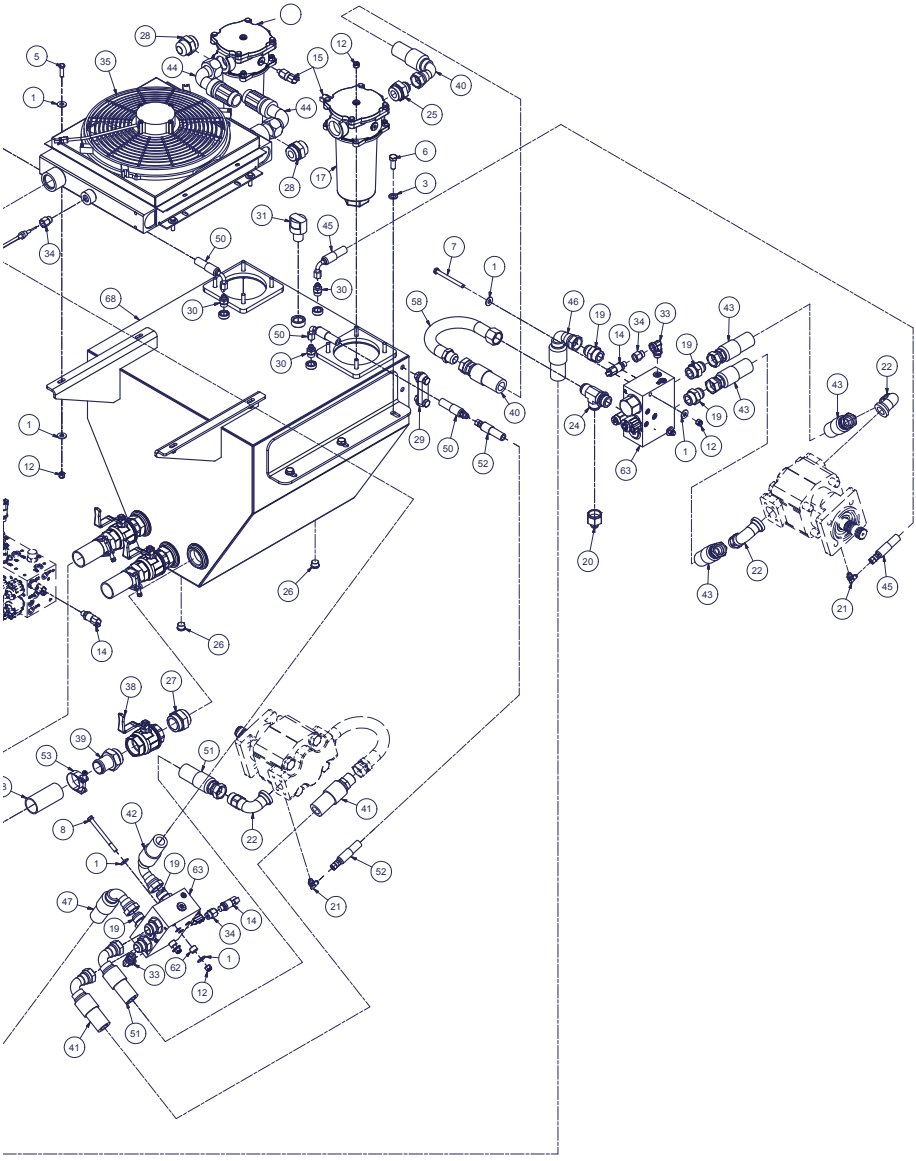
45-3802

45-



MAINFRAME, DECK FEED

45-3802



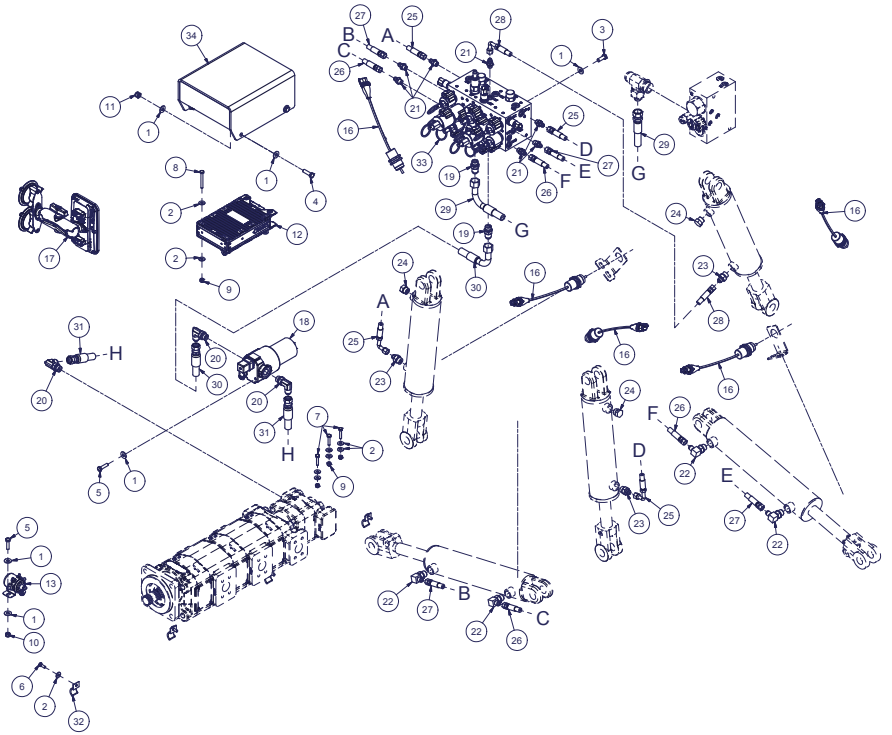
MAINFRAME, DECK FEED

45-3802

REF#	PARTS DESCRIPTION	REQ	PART#	TORQUE (ft-lbs)	TORQUE (Nm)
1	3/8 FLAT WASHER GR 5	20	11-0009		
2	5/8 SAE FLAT WASHER GR 8	4	11-0012		
3	1/2 SAE FLAT WASHER GR 8	10	11-0042		
4	1/2 X 2 NC HEX CAP GR5	4	11-0522	75.4	102.2
5	3/8 X 1-1/4 NC HEX CAPSCREW	4	11-0533	30.9	41.9
6	1/2 X 1-1/4 NC HEX CAP	6	11-0570	75.4	102.2
7	3/8 X 4 NC HEX CAP	2	11-0581	30.9	22.8
8	3/8 X 4-1/2 HEX HEAD BOLT	4	11-0680	30.9	22.8
9	1/2 -20 X 3" SHCS	1	11-0929	140.0	189.8
10	5/8 NC HEX NUT	4	11-1004		
11	1/2 NC NYLOCK NUT	4	11-1018		
12	3/8 NC NYLOCK NUT	18	11-1024		
13	1/2 NF NYLOCK NUT	1	11-1028		
14	PRESSURE TRANSDUCER, PULL BEHIND TRIPLE	6	16-0209		
15	PRESSURE SWITCH, FILTER HOUSING	2	16-0227		
16	TEMPERATURE SENSOR	1	16-0231		
17	FILTER ASSEMBLY, SAE O-RING	2	17-0014		
18	HOSE 1-1/2" SUCTION BULK	6	21-0001		
19	1MOR X 1MJIC, ADAPTER	11	21-1005		
20	1FJIC X 5/8MJIC REDUCER	1	21-1009		
21	1/4MJIC X 1/4MORB 90DEG, ADAPTER	3	21-1264		
22	#16 FLG X 1MJIC 90DEG ADAPTER	4	21-1274		
23	1MJIC X 1MORB-ADJ-90DEG	3	21-1284		
24	1MJ X 1MJ X 1MORB, TEE	1	21-1311		
25	1MJIC X 1-1/4MORB, ADAPTER	1	21-1477		
26	#8 MORB HOLLOW HEX PLUG	2	21-1478		
27	1-1/2 MORB X 1-1/2 MORB ADJ ADAPTER	3	21-1508		
28	1-1/4MJIC X 1-1/4MORB, ADAPT	2	21-1527		
29	SIGHT GLASS WITH TEMP GAUGE	1	21-1584		
30	ADAPTER, 3/8MJIC X 1/2MOR	3	21-1585		
31	BREATHER, HYDAC	1	21-1613		
32	TEE, 1MJIC X 1MJIC X 1-1/4MORB-ADJ	1	21-1614		
33	1/2MOR-ADJ X 1/2FORB 90	3	21-1635		
34	1/2MOR X 3/8FORB	4	21-1636		
35	OIL COOLER AND FAN ASSEMBLY, 60,000 BTU/HOUR, TRAILER TRIPLE	1	21-1671		
36	#20 FLANGE KIT	6	21-2105		
37	#20FLG-90DEG X 1-1/2 KING NIPPLE	3	21-2109		
38	1-1/2" SAE BALL VALVE	3	21-2182		
39	1-1/2" SAE KING NIPPLE LONG	3	21-2183		
40	HOSE 1 X 22 (1FJIC-90DEG X 1FJIC)	2	21-3647		
41	HOSE 1 X 66 (1FJIC-90DEG X 1MP)	4	21-3702		
42	HOSE 1 X 29 (1FJIC-90DEG X 1FJIC)	2	21-3723		
43	HOSE 1 X 96 (1FJIC X 1FJIC)	4	21-4327		
44	HOSE, 1-1/4 X 13-1/2 (1-1/4FJIC-90 X 1-1/4FJIC 90 OPPOSITE)	2	21-4417		
45	HOSE, 3/8 X 120 (1/4FJIC X 3/8FJIC-90DEG)	2	21-4420		
46	HOSE, 1 X 108 (1FJIC-90 X 1FJIC)	2	21-4471		
47	HOSE, 1 X 53 (1FJIC-90 X 1FJIC)	2	21-4472		
48	HOSE, 1 X 47 (1FJIC-90 X 1FJIC)	2	21-4473		
49	HOSE, 1 X 18 (1FJIC-90 X 1FJIC)	2	21-4474		
50	HOSE, 3/8 X 63 (3/8FJIC-90 X 3/8MJIC)	4	21-4475		
51	HOSE, 1 X 58 (1FJIC-90 X 1FJIC)	4	21-4476		
52	HOSE, 3/8 X 67 (3/8FJIC X 1/4FJIC)	4	21-4477		
53	BANDIT CLAMP	6	24-0014		
54	90 SIDE FLAIL, LEFT, PULL BEHIND TRIPLE	1	25-0216		
55	90 SIDE FLAIL, RIGHT, PULL BEHIND TRIPLE	1	25-0217		
56	102 REAR FLAIL, CENTER, HYD DRIVE	1	25-0219		
58	PREFORMED TUBE, 180, MJIC X FJIC	1	28-0085		
59	DRIVELINE, PULL BEHIND TRIPLE, 1000RPM CV JOINT, 1-1/4" 14 SPLINE	1	29-0182		
61	QUAD PUMP, 4 SECTION TANDEM, PTO DRIVE	1	30-0539		
62	1/2" BV SPACER	4	34-0096		
63	PUMP UNLOADING VALVE	3	39-0106		
65	REAR TWIN FLAIL, LEFT DRAFT BEAM	1	41-1184		
66	REAR TWIN FLAIL, RIGHT DRAFT BEAM	1	41-1185		
67	PULL BEHIND TRIPLE FRAME	1	41-5448		
68	TANK, PULL BEHIND TRIPLE	1	47-0105		

MAINFRAME, LIFT FEED

45-4784

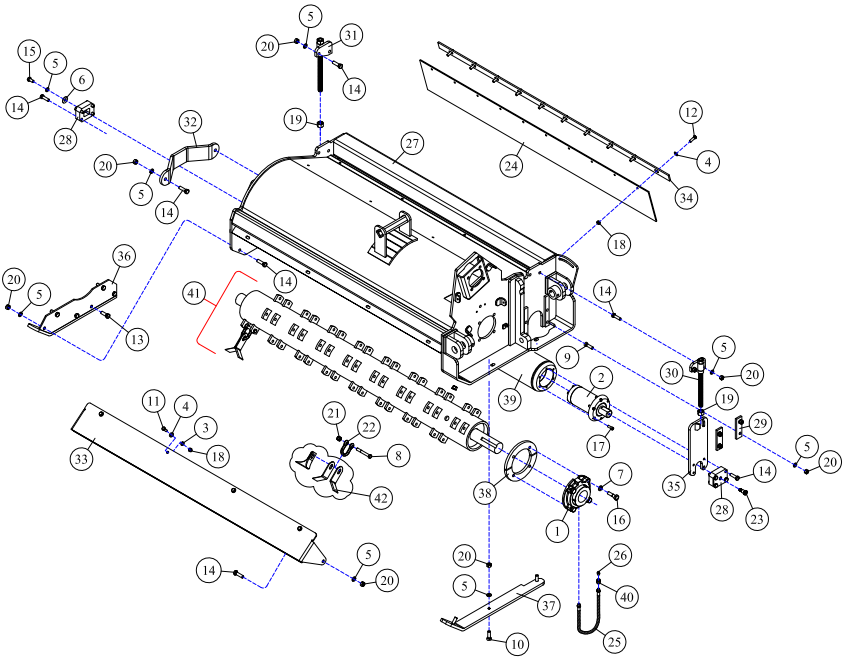


REF#	PARTS DESCRIPTION	REQ	PART#	TORQUE (ft-lbs)	TORQUE (Nm)
1	5/16 FLAT WASHER GR 5	18	11-0015		
2	1/4 FLAT WASHER GR 5	18	11-0023		
3	3/8 X 1 NC HEX CAP	4	11-0532	30.9	41.9
4	3/8 X 1-1/4 NC HEX CAPSCREW	4	11-0533	30.9	41.9
5	5/16 X 1-1/4 NC HEX CAP	4	11-0539	17.4	23.6
6	1/4 X 3/4 NC HEX CAP	4	11-0588	8.5	11.5
7	1/4 X 1-1/4 NC HEX CAP	3	11-0702	8.5	11.5
8	1/4 X 2-1/4 NC HEX BOLT	4	11-0777	8.5	11.5
9	1/4 NC NYLOCK NUT	7	11-1022		
10	5/16 NC NYLOCK NUT	2	11-1023		
11	3/8 NC NYLOCK NUT	4	11-1024		
12	ELECTRONIC CONTROL UNIT	1	16-0206		
13	SOLENOID	1	16-0210		
14	HARNESS, TRACTOR, (NOT SHOWN)	1	16-0224		
15	HARNESS, CAB, (NOT SHOWN)	1	16-0225		
16	PROXIMITY SWITCH, INDUCTIVE SENSOR	5	16-0226		
17	DISPLAY/RAM MOUNT KIT	1	16-0232		

REF#	PARTS DESCRIPTION	REQ	PART#	TORQUE (ft-lbs)	TORQUE (Nm)
18	HIGH PRESSURE FILTER	1	17-0037		
19	1/2MJ X 1/2OR, ADAPTER	2	21-1180		
20	1/2MJIC X 1/2MORB-90DEG ADAPTER	3	21-1277		
21	ADAPTER 3/8 MJIC X 3/8 MOR	7	21-1401		
22	3/8MJIC X 1/2MORB-90DEG	4	21-1403		
23	ADAPTER, 3/8MJIC X 1/2MOR	3	21-1585		
24	BREATHER 1/2 0-RING	3	21-2116		
25	HOSE, 1/4 X 23 (3/8FJIC-90 X 3/8FJIC)	4	21-4478		
26	HOSE, 1/4 X 40 (3/8FJIC X 3/8FJIC)	4	21-4479		
27	HOSE, 1/4 X 54 (3/8FJIC X 3/8FJIC)	4	21-4480		
28	HOSE, 1/4 X 79 (3/8FJIC-90 X 3/8FJIC)	2	21-4481		
29	HOSE, 1/2 X 98 (1/2FJIC-90 X 5/8FJIC)	2	21-4482		
30	HOSE, 1/2 X 22 (1/2FJIC-90 X 1/2FJIC)	2	21-4483		
31	HOSE, 1/2 X 48 (1/2FJIC X 1/2FJIC)	2	21-4484		
32	HALF CLIP CABLE CLAMP, 5/8"	4	24-0284		
33	MANIFOLD, PULL BEHIND TRIPLE FLAIL	1	39-0107		
34	ECU COVER	1	41-1565		

60"(1524mm) CUTTER ASSEMBLY, RIGHT SIDE

25-1620



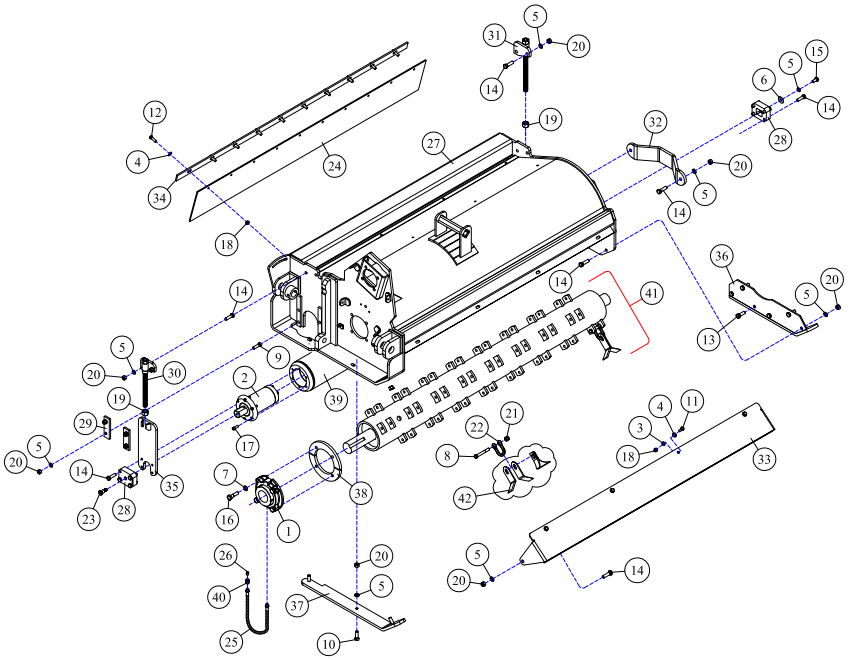
REF#	PARTS DESCRIPTION	REQ	PART #
1	CUTTERSHAFT BEARING	2	10-0006
2	GROUND ROLLER BEARING ASSY	2	10-1051
3	3/8 LOCK WASHER	4	11-0005
4	3/8 FLAT WASHER	14	11-0009
5	1/2 LOCK WASHER	25	11-0011
6	1/2 FLAT WASHER GR 5	1	11-0018
7	1/2 H.S. LOCK WASHER	8	11-0036
8	KNIFE MOUNTING BOLT	32	11-0506
9	1/2 X 2 NC PLOW BOLT	8	11-0515
10	1/2 X 1-3/4 NC PLOW BOLT	3	11-0530
11	3/8 X 1 NC HEX CAPSCREW	4	11-0532
12	3/8 X 1-1/4 NC HEX CAPSCREW	10	11-0533
13	1/2 X 1-1/2 NC HEX CAPSCREW	5	11-0534
14	1/2 X 1-3/4 NC HEX CAPSCREW	16	11-0535
15	1/2 X 1 NC HEX CAP	1	11-0569
16	1/2 X 2 H.S. NF HEX CAPSCREW	8	11-0633
17	3/8 X 1 H.S. NC SKT HEAD	12	11-0752
18	3/8 NC HEX NUT	14	11-1001
19	3/4 - 6 ACME HEX NUT	2	11-1012
20	1/2 NC HEX NUT	24	11-1016
21	7/16 NYLOCK JAM NUT	32	11-1146
22	CLEVIS	32	11-1501
23	SHOULDER BOLT	1	11-2086
24	60" FLAP	1	18-0026
25	GREASE ZERK HOSE	1	21-0002
26	1/8" GREASE ZERK	2	23-0003
27	60" RIGHT FLAIL BONNET (TTF)	1	25-0228
28	GROUND ROLLER BLOCK	2	31-0563

REF#	PARTS DESCRIPTION	REQ	PART #
29	LOCK PLATE	4	41-0003
30	ADJUSTMENT ROD INSIDE	1	41-0005
31	ADJUSTMENT ROD OUSIDE	1	41-0006
32	CUTTERSHAFT GUARD	1	41-0097
33	60" TRASH GUARD	1	41-0193
34	60" FLAP BAR	1	41-0194
35	GROUND ROLLER BRACKET	2	41-1501
36	OUTER SKID SHOE	1	42-0010
37	INNER SKID SHOE	1	42-0013
38	BEARING GUARD	4	46-0018
39	60" GROUND ROLLER	1	46-0050
40	1/8" BRASS COUPLER	1	9996
41	****CUTTER SHAFTS COMPLETE****		
	60" CUTTER SHAFT, SMOOTH CUT KNIVES	Opt.	46-1012
	60" CUTTER SHAFT, 3/16" HD KNIVES	1	46-1022
42	****FLAIL KNIVES****		
	SMOOTH CUT FLAIL KNIFE	32	22-1006
	3/6" HD FLAIL KNIFE	64	22-1016
43	**BLADE KITS**		
	SIDE FLAIL ONLY		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0262
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0241
	TRIPLE FLAIL (60" sides, 102" rear)		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0266
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0248

Asy: 25-1620 DSF 60 CUTTER, R

60"(1524mm) CUTTER ASSEMBLY, LEFT SIDE

25-1619



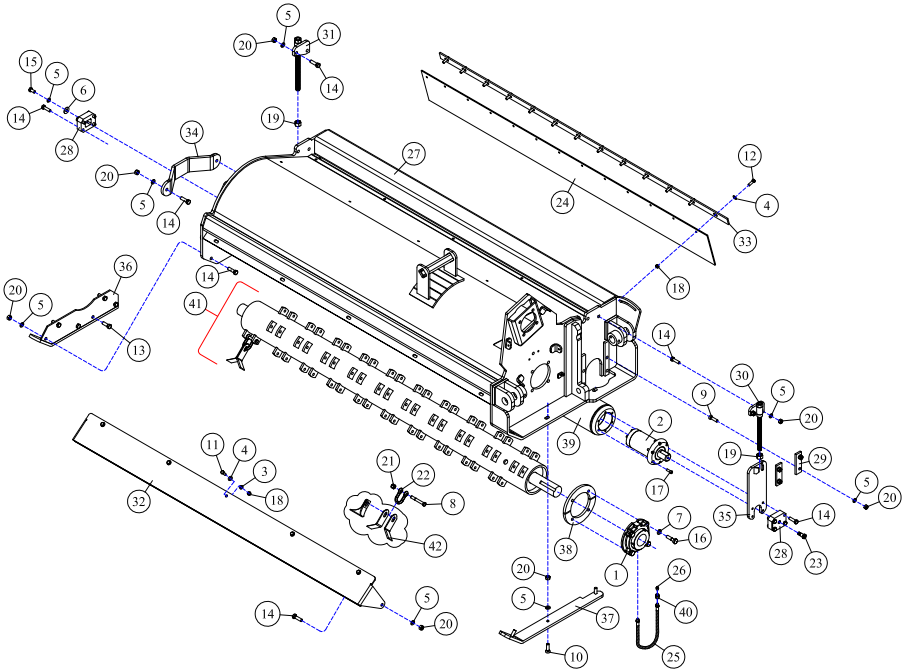
REF#	PARTS DESCRIPTION	REQ	PART #
1	CUTTERSHAFT BEARING	2	10-0006
2	GROUND ROLLER BEARING ASSY	2	10-1051
3	3/8 LOCK WASHER	4	11-0005
4	3/8 FLAT WASHER	14	11-0009
5	1/2 LOCK WASHER	25	11-0011
6	1/2 FLAT WASHER GR 5	1	11-0018
7	1/2 H.S. LOCK WASHER	8	11-0036
8	KNIFE MOUNTING BOLT	32	11-0506
9	1/2 X 2 NC PLOW BOLT	8	11-0515
10	1/2 X 1-3/4 NC PLOW BOLT	3	11-0530
11	3/8 X 1 NC HEX CAPSCREW	4	11-0532
12	3/8 X 1-1/4 NC HEX CAPSCREW	10	11-0533
13	1/2 X 1-1/2 NC HEX CAPSCREW	5	11-0534
14	1/2 X 1-3/4 NC HEX CAPSCREW	16	11-0535
15	1/2 X 1 NC HEX CAP	1	11-0569
16	1/2 X 2 H.S. NF HEX CAPSCREW	8	11-0633
17	3/8 X 1 H.S. NC SKT HEAD	12	11-0752
18	3/8 NC HEX NUT	14	11-1001
19	3/4 - 6 ACME HEX NUT	2	11-1012
20	1/2 NC HEX NUT	24	11-1016
21	7/16 NYLOCK JAM NUT	32	11-1146
22	CLEVIS	32	11-1501
23	SHOULDER BOLT	1	11-2086
24	60" FLAP	1	18-0026
25	GREASE ZERK HOSE	1	21-0002
26	1/8" GREASE ZERK	2	23-0003
27	60" LEFT FLAIL BONNET (TTF)	1	25-0227
28	GROUND ROLLER BLOCK	2	31-0563

REF#	PARTS DESCRIPTION	REQ	PART #
29	LOCK PLATE	4	41-0003
30	ADJUSTMENT ROD INSIDE	1	41-0005
31	ADJUSTMENT ROD OUSIDE	1	41-0006
32	CUTTERSHAFT GUARD	1	41-0097
33	60" TRASH GUARD	1	41-0193
34	60" FLAP BAR	1	41-0194
35	GROUND ROLLER BRACKET	2	41-1501
36	OUTER SKID SHOE	1	42-0018
37	INNER SKID SHOE	1	42-0019
38	BEARING GUARD	4	46-0018
39	60" GROUND ROLLER	1	46-0050
40	1/8" BRASS COUPLER	1	9996
41	****CUTTER SHAFTS COMPLETE****		
	60" CUTTER SHAFT, SMOOTH CUT KNIVES	Opt.	46-1012
	60" CUTTER SHAFT, 3/16" HD KNIVES	1	46-1022
42	****FLAIL KNIVES****		
	SMOOTH CUT FLAIL KNIFE	32	22-1006
	3/6" HD FLAIL KNIFE	64	22-1016
43	**BLADE KITS**		
	SIDE FLAIL ONLY		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0262
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0241
	TRIPLE FLAIL (60" sides, 102" rear)		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0266
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0248

Asy: 25-1619 DSF 60 CUTTER, L

75"(1905mm) CUTTER ASSEMBLY, RIGHT SIDE

25-1618



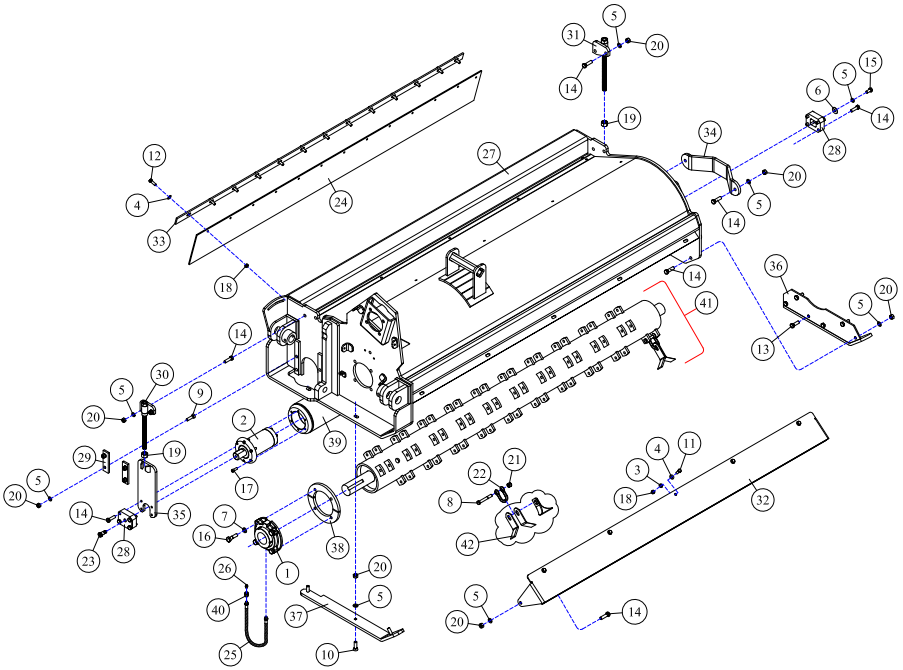
REF#	PARTS DESCRIPTION	REQ	PART #
1	CUTTERSHAFT BEARING	2	10-0006
2	GROUND ROLLER BEARING ASSY	2	10-1051
3	3/8 LOCK WASHER	5	11-0005
4	3/8 FLAT WASHER	18	11-0009
5	1/2 LOCK WASHER	25	11-0011
6	1/2 FLAT WASHER GR 5	1	11-0018
7	1/2 H.S. LOCK WASHER	8	11-0036
8	KNIFE MOUNTING BOLT	40	11-0506
9	1/2 X 2 NC PLOW BOLT	8	11-0515
10	1/2 X 1-3/4 NC PLOW BOLT	3	11-0530
11	3/8 X 1 NC HEX CAPSCREW	5	11-0532
12	3/8 X 1-1/4 NC HEX CAPSCREW	13	11-0533
13	1/2 X 1-1/2 NC HEX CAPSCREW	5	11-0534
14	1/2 X 1-3/4 NC HEX CAPSCREW	16	11-0535
15	1/2 X 1 NC HEX CAP	1	11-0569
16	1/2 X 2 H.S. NF HEX CAPSCREW	8	11-0633
17	3/8 X 1 H.S. NC SKT HEAD	12	11-0752
18	3/8 NC HEX NUT	18	11-1001
19	3/4 - 6 ACME HEX NUT	2	11-1012
20	1/2 NC HEX NUT	24	11-1016
21	7/16 NYLOCK JAM NUT	40	11-1146
22	CLEVIS	40	11-1501
23	SHOULDER BOLT	1	11-2086
24	75" FLAP	1	18-0011
25	GREASE ZERK HOSE	1	21-0002
26	1/8" GREASE ZERK	2	23-0003
27	75" RIGHT FLAIL BONNET (TTF)	1	25-0226
28	GROUND ROLLER BLOCK	2	31-0563

REF#	PARTS DESCRIPTION	REQ	PART #
29	LOCK PLATE	4	41-0003
30	ADJUSTMENT ROD INSIDE	1	41-0005
31	ADJUSTMENT ROD OUTSIDE	1	41-0006
32	75" TRASH GUARD	1	41-0036
33	75" FLAP BAR	1	41-0068
34	CUTTERSHAFT GUARD	1	41-0097
35	GROUND ROLLER BRACKET	2	41-1501
36	OUTER SKID SHOE	1	42-0010
37	INNER SKID SHOE	1	42-0013
38	BEARING GUARD	4	46-0018
39	75" GROUND ROLLER	1	46-0051
40	1/8" BRASS COUPLER	1	9996
41	****CUTTER SHAFTS COMPLETE****		
	75" CUTTER SHAFT, SMOOTH CUT KNIVES	Opt.	46-1018
	75" CUTTER SHAFT, 3/16" HD KNIVES	1	46-1010
42	****FLAIL KNIVES****		
	SMOOTH CUT FLAIL KNIFE	40	22-1006
	3/6" HD FLAIL KNIFE	80	22-1016
43	BLADE KITS		
	SIDE FLAIL ONLY		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0263
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0242
	TRIPLE FLAIL (75" sides, 102" rear)		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0265
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0249

Asy: 25-1618 DSF 75 CUTTER, R

75"(1905mm) CUTTER ASSEMBLY, LEFT SIDE

25-1617



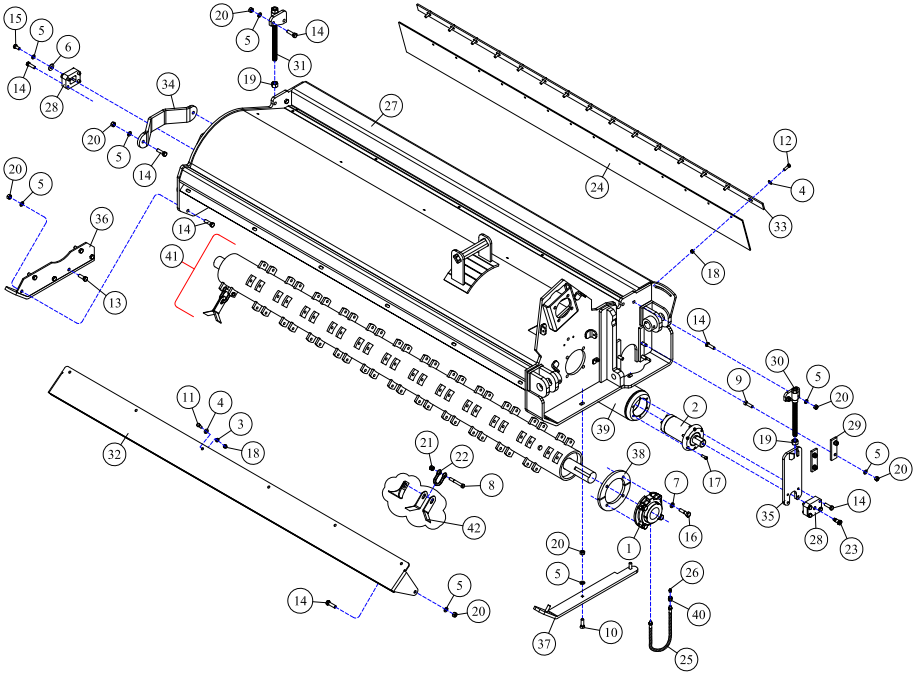
REF#	PARTS DESCRIPTION	REQ	PART #
1	CUTTERSHAFT BEARING	2	10-0006
2	GROUND ROLLER BEARING ASSY	2	10-1051
3	3/8 LOCK WASHER	5	11-0005
4	3/8 FLAT WASHER	18	11-0009
5	1/2 LOCK WASHER	25	11-0011
6	1/2 FLAT WASHER GR 5	1	11-0018
7	1/2 H.S. LOCK WASHER	8	11-0036
8	KNIFE MOUNTING BOLT	40	11-0506
9	1/2 X 2 NC PLOW BOLT	8	11-0515
10	1/2 X 1-3/4 NC PLOW BOLT	3	11-0530
11	3/8 X 1 NC HEX CAPSCREW	5	11-0532
12	3/8 X 1-1/4 NC HEX CAPSCREW	13	11-0533
13	1/2 X 1-1/2 NC HEX CAPSCREW	5	11-0534
14	1/2 X 1-3/4 NC HEX CAPSCREW	16	11-0535
15	1/2 X 1 NC HEX CAP	1	11-0569
16	1/2 X 2 H.S. NF HEX CAPSCREW	8	11-0633
17	3/8 X 1 H.S. NC SKT HEAD	12	11-0752
18	3/8 NC HEX NUT	18	11-1001
19	3/4 - 6 ACME HEX NUT	2	11-1012
20	1/2 NC HEX NUT	24	11-1016
21	7/16 NYLOCK JAM NUT	40	11-1146
22	CLEVIS	40	11-1501
23	SHOULDER BOLT	1	11-2086
24	75" FLAP	1	18-0011
25	GREASE ZERK HOSE	1	21-0002
26	1/8" GREASE ZERK	2	23-0003
27	75" LEFT FLAIL BONNET (TTF)	1	25-0225
28	GROUND ROLLER BLOCK	2	31-0563

REF#	PARTS DESCRIPTION	REQ	PART #
29	LOCK PLATE	4	41-0003
30	ADJUSTMENT ROD INSIDE	1	41-0005
31	ADJUSTMENT ROD OUTSIDE	1	41-0006
32	75" TRASH GUARD	1	41-0036
33	75" FLAP BAR	1	41-0068
34	CUTTERSHAFT GUARD	1	41-0097
35	GROUND ROLLER BRACKET	2	41-1501
36	OUTER SKID SHOE	1	42-0018
37	INNER SKID SHOE	1	42-0019
38	BEARING GUARD	4	46-0018
39	75" GROUND ROLLER	1	46-0051
40	1/8" BRASS COUPLER	1	9996
41	****CUTTER SHAFTS COMPLETE****		
	75" CUTTER SHAFT, SMOOTH CUT KNIVES	Opt.	46-1018
	75" CUTTER SHAFT, 3/16" HD KNIVES	1	46-1010
42	****FLAIL KNIVES****		
	SMOOTH CUT FLAIL KNIFE	40	22-1006
	3/6" HD FLAIL KNIFE	80	22-1016
43	**BLADE KITS**		
	SIDE FLAIL ONLY		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0263
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0242
	TRIPLE FLAIL (75" sides, 102" rear)		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0265
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0249

Asy: 25-1617 DSF 75 CUTTER, L

90"(2286mm) CUTTER ASSEMBLY, RIGHT SIDE

25-1559

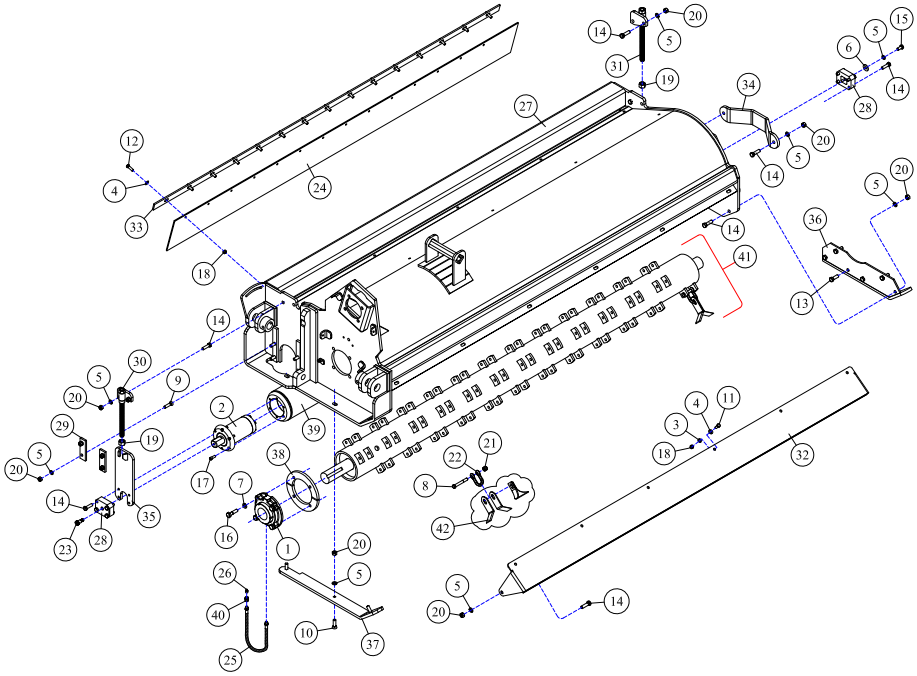


REF#	PARTS DESCRIPTION	REQ	PART #
1	CUTTERSHAFT BEARING	2	10-0006
2	GROUND ROLLER BEARING ASSY	2	10-1051
3	3/8 LOCK WASHER	6	11-0005
4	3/8 FLAT WASHER	21	11-0009
5	1/2 LOCK WASHER	25	11-0011
6	1/2 FLAT WASHER GR 5	1	11-0018
7	1/2 H.S. LOCK WASHER	8	11-0036
8	KNIFE MOUNTING BOLT	48	11-0506
9	1/2 X 2 NC PLOW BOLT	8	11-0515
10	1/2 X 1-3/4 NC PLOW BOLT	3	11-0530
11	3/8 X 1 NC HEX CAPSCREW	6	11-0532
12	3/8 X 1-1/4 NC HEX CAPSCREW	15	11-0533
13	1/2 X 1-1/2 NC HEX CAPSCREW	5	11-0534
14	1/2 X 1-3/4 NC HEX CAPSCREW	16	11-0535
15	1/2 X 1 NC HEX CAP	1	11-0569
16	1/2 X 2 H.S. NF HEX CAPSCREW	8	11-0633
17	3/8 X 1 H.S. NC SKT HEAD	12	11-0752
18	3/8 NC HEX NUT	21	11-1001
19	3/4 - 6 ACME HEX NUT	2	11-1012
20	1/2 NC HEX NUT	24	11-1016
21	7/16 NYLOCK JAM NUT	48	11-1146
22	CLEVIS	48	11-1501
23	SHOULDER BOLT	1	11-2086
24	90" FLAP	1	18-0014
25	GREASE ZERK HOSE	1	21-0002
26	1/8" GREASE ZERK	2	23-0003
27	90" RIGHT FLAIL BONNET (TTF)	1	25-0217
28	GROUND ROLLER BLOCK	2	31-0563

REF#	PARTS DESCRIPTION	REQ	PART #
29	LOCK PLATE	4	41-0003
30	ADJUSTMENT ROD INSIDE	1	41-0005
31	ADJUSTMENT ROD OUTSIDE	1	41-0006
32	90" TRASH GUARD	1	41-0190
33	90" FLAP BAR	1	41-0185
34	CUTTERSHAFT GUARD	1	41-0097
35	GROUND ROLLER BRACKET	2	41-1501
36	OUTER SKID SHOE	1	42-0010
37	INNER SKID SHOE	1	42-0013
38	BEARING GUARD	4	46-0018
39	90" GROUND ROLLER	1	46-0049
40	1/8" BRASS COUPLER	1	9996
41	****CUTTER SHAFTS COMPLETE****		
	90" CUTTER SHAFT, 1/8" STD KNIVES	Opt.	46-1000
	90" CUTTER SHAFT, SMOOTH CUT KNIVES	Opt.	46-1013
	90" CUTTER SHAFT, 3/16" HD KNIVES	1	46-1011
42	****FLAIL KNIVES****		
	1/8" STD FLAIL KNIFE	96	22-1003
	SMOOTH CUT FLAIL KNIFE	48	22-1006
	3/6" HD FLAIL KNIFE	96	22-1016
43	**BLADE KITS**		
	SIDE FLAIL ONLY		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0260
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0243
	TRIPLE FLAIL (90" sides, 102" rear)		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0264
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0250

90"(2286mm) CUTTER ASSEMBLY, LEFT SIDE

25-1560

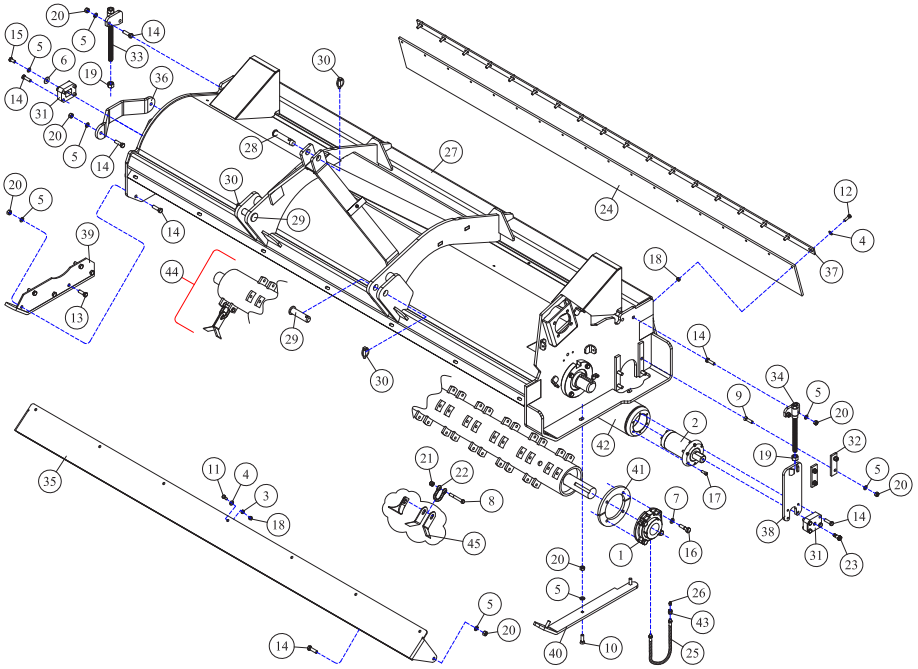


REF#	PARTS DESCRIPTION	REQ	PART #
1	CUTTERSHAFT BEARING	2	10-0006
2	GROUND ROLLER BEARING ASSY	2	10-1051
3	3/8 LOCK WASHER	6	11-0005
4	3/8 FLAT WASHER	21	11-0009
5	1/2 LOCK WASHER	25	11-0011
6	1/2 FLAT WASHER GR 5	1	11-0018
7	1/2 H.S. LOCK WASHER	8	11-0036
8	KNIFE MOUNTING BOLT	48	11-0506
9	1/2 X 2 NC PLOW BOLT	8	11-0515
10	1/2 X 1-3/4 NC PLOW BOLT	3	11-0530
11	3/8 X 1 NC HEX CAPSCREW	6	11-0532
12	3/8 X 1-1/4 NC HEX CAPSCREW	15	11-0533
13	1/2 X 1-1/2 NC HEX CAPSCREW	5	11-0534
14	1/2 X 1-3/4 NC HEX CAPSCREW	16	11-0535
15	1/2 X 1 NC HEX CAP	1	11-0569
16	1/2 X 2 H.S. NF HEX CAPSCREW	8	11-0633
17	3/8 X 1 H.S. NC SKT HEAD	12	11-0752
18	3/8 NC HEX NUT	21	11-1001
19	3/4 - 6 ACME HEX NUT	2	11-1012
20	1/2 NC HEX NUT	24	11-1016
21	7/16 NYLOCK JAM NUT	48	11-1146
22	CLEVIS	48	11-1501
23	SHOULDER BOLT	1	11-2086
24	90" FLAP	1	18-0014
25	GREASE ZERK HOSE	1	21-0002
26	1/8" GREASE ZERK	2	23-0003
27	90" LEFT FLAIL BONNET (TTF)	1	25-0216
28	GROUND ROLLER BLOCK	2	31-0563

REF#	PARTS DESCRIPTION	REQ	PART #
29	LOCK PLATE	4	41-0003
30	ADJUSTMENT ROD INSIDE	1	41-0005
31	ADJUSTMENT ROD OUTSIDE	1	41-0006
32	90" TRASH GUARD	1	41-0190
33	90" FLAP BAR	1	41-0185
34	CUTTERSHAFT GUARD	1	41-0097
35	GROUND ROLLER BRACKET	2	41-1501
36	OUTER SKID SHOE	1	42-0018
37	INNER SKID SHOE	1	42-0019
38	BEARING GUARD	4	46-0018
39	90" GROUND ROLLER	1	46-0049
40	1/8" BRASS COUPLER	1	9996
41	****CUTTER SHAFTS COMPLETE****		
	90" CUTTER SHAFT, 1/8" STD KNIVES	Opt.	46-1000
	90" CUTTER SHAFT, SMOOTH CUT KNIVES	Opt.	46-1013
	90" CUTTER SHAFT, 3/16" HD KNIVES	1	46-1011
42	****FLAIL KNIVES****		
	1/8" STD FLAIL KNIFE	96	22-1003
	SMOOTH CUT FLAIL KNIFE	48	22-1006
	3/6" HD FLAIL KNIFE	96	22-1016
43	**BLADE KITS**		
	SIDE FLAIL ONLY		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0260
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0243
	TRIPLE FLAIL (90" sides, 102" rear)		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0264
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0250

102"(2591mm) CUTTER ASSEMBLY, REAR

25-1611

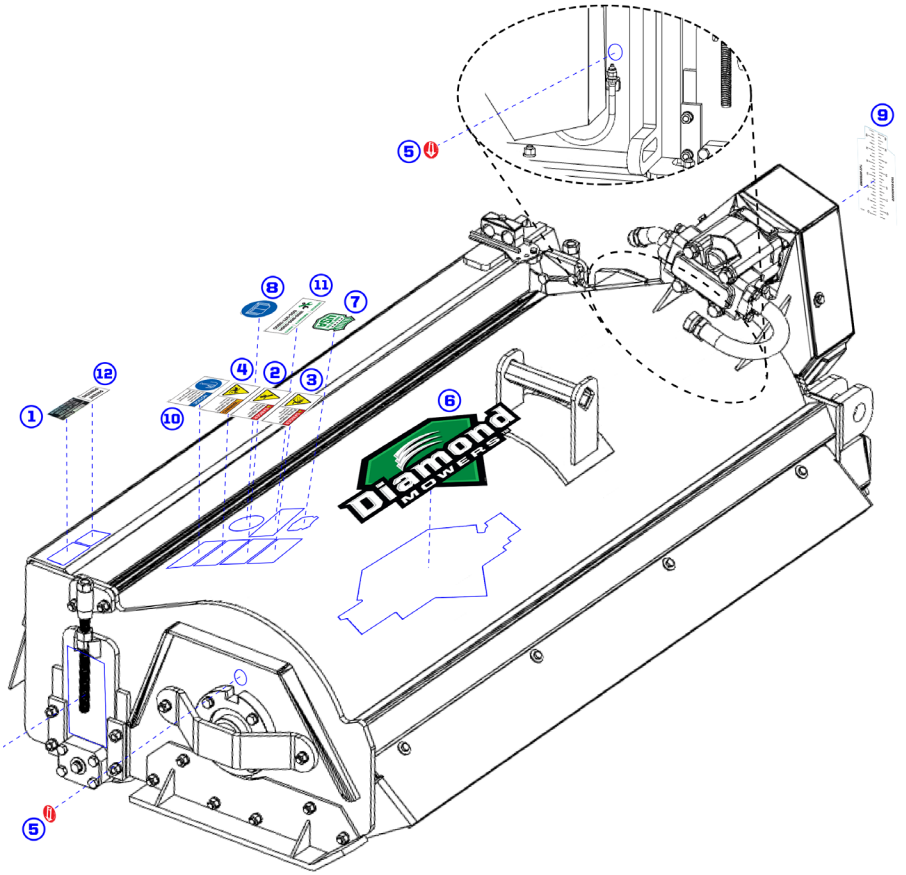


REF#	PARTS DESCRIPTION	REQ	PART #
1	CUTTERSHAFT BEARING	2	10-0006
2	GROUND ROLLER BEARING ASSY	2	10-1051
3	3/8 LOCK WASHER	7	11-0005
4	3/8 FLAT WASHER	25	11-0009
5	1/2 LOCK WASHER	25	11-0011
6	1/2 FLAT WASHER GR 5	1	11-0018
7	1/2 H.S. LOCK WASHER	8	11-0036
8	KNIFE MOUNTING BOLT	54	11-0506
9	1/2 X 2 NC PLOW BOLT	8	11-0515
10	1/2 X 1-3/4 NC PLOW BOLT	3	11-0530
11	3/8 X 1 NC HEX CAPSCREW	7	11-0532
12	3/8 X 1-1/4 NC HEX CAPSCREW	18	11-0533
13	1/2 X 1-1/2 NC HEX CAPSCREW	5	11-0534
14	1/2 X 1-3/4 NC HEX CAPSCREW	16	11-0535
15	1/2 X 1 NC HEX CAP	1	11-0569
16	1/2 X 2 H.S. NF HEX CAPSCREW	8	11-0633
17	3/8 X 1 H.S. NC SKT HEAD	12	11-0752
18	3/8 NC HEX NUT	25	11-1001
19	3/4 - 6 ACME HEX NUT	2	11-1012
20	1/2 NC HEX NUT	24	11-1016
21	7/16 NYLOCK JAM NUT	54	11-1146
22	CLEVIS	54	11-1501
23	SHOULDER BOLT	1	11-2086
24	102" FLAP	1	18-0012
25	GREASE ZERK HOSE	1	21-0002
26	1/8" GREASE ZERK	2	23-0003
27	102" REAR FLAIL, CENTER MNT, HYD DRV	1	25-0219
28	TOP 3-PT PIN	1	27-0007
29	BOTTOM 3-PT PIN	2	27-0016

REF#	PARTS DESCRIPTION	REQ	PART #
30	LYNCH PIN	3	27-1005
31	GROUND ROLLER BLOCK	2	31-0563
32	LOCK PLATE	4	41-0003
33	ADJUSTMENT ROD RIGHT	1	41-0005
34	ADJUSTMENT ROD LEFT	1	41-0006
35	102" TRASH GUARD	1	41-0031
36	CUTTERSHAFT GUARD	1	41-0097
37	102" FLAP BAR	1	41-0127
38	GROUND ROLLER BRACKET	2	41-1501
39	OUTER SKID SHOE	1	42-0010
40	INNER SKID SHOE	1	42-0013
41	BEARING GUARD	4	46-0018
42	102" GROUND ROLLER	1	46-0052
43	1/8" BRASS COUPLER	1	9996
44	******CUTTER SHAFTS COMPLETE******		
	102" CUTTER SHAFT, 1/8" STD KNIVES	Opt.	46-1007
	102" CUTTER SHAFT, SMOOTH CUT KNIVES	Opt.	46-1014
	102" CUTTER SHAFT, 3/16" STD KNIVES	1	46-1016
45	******FLAIL KNIVES******		
	1/8" STD FLAIL KNIFE	Avail.	22-1003
	SMOOTH CUT FLAIL KNIFE	Avail.	22-1006
	3/6" HD FLAIL KNIFE	Avail.	22-1016
46	**BLADE KITS**		
	SIDE FLAIL ONLY		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0260
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0243
	TRIPLE FLAIL (90" sides, 102" rear)		
	Includes 11-0506, 11-1146, & 22-1006 (smooth)	1	44-0264
	Includes 11-0506, 11-1146, & 22-1016 (HD)	1	44-0250

DECAL IDENTIFICATION

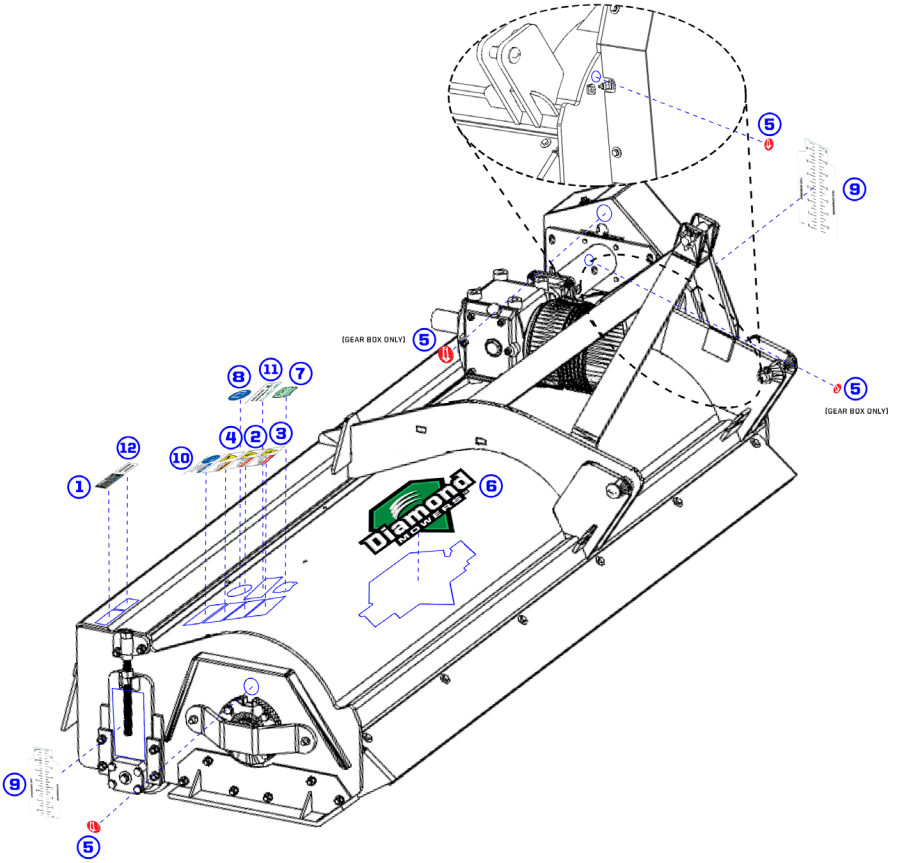
Side Flail Heads



1. **SERIAL NUMBER LABEL** - (not included in kit) - QTY 1
2. **PART #15-0001** - Sharp Objects Danger - QTY 1
3. **PART #15-0002** - Flying Objects Danger - QTY 1
4. **PART #15-0003** - Belt Cover Warning - QTY 1
5. **PART #15-0005** - Grease Here - QTY 2
6. **PART #15-0054** - Diamond Logo 15" - QTY 1
7. **PART #15-0055** - Made In USA - QTY 1
8. **PART #15-0058** - Read Manual - QTY 1
9. **PART #15-1001** - Ruler - QTY 2
10. **PART #15-1003** - Hand Grease Gun Only - QTY 1
11. **PART #15-1016** - Warranty - QTY 1
12. **PART #15-0067** - Patent Pending - QTY 1

DECAL IDENTIFICATION

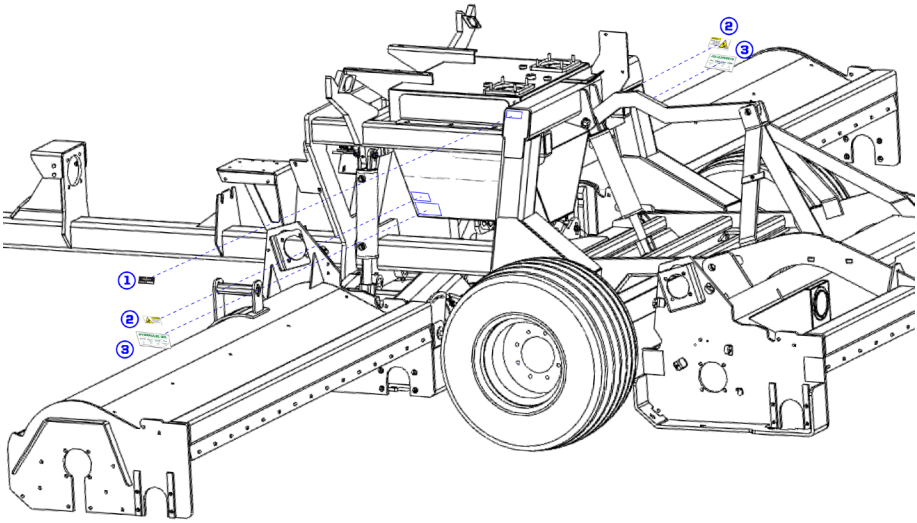
Rear Flail Head



1. **SERIAL NUMBER LABEL** - (not included in kit) - QTY 1
2. **PART #15-0001** - Sharp Objects Danger - QTY 1
3. **PART #15-0002** - Flying Objects Danger - QTY 1
4. **PART #15-0003** - Belt Cover Warning - QTY 1
5. **PART #15-0005** - Grease Here - QTY 4
6. **PART #15-0054** - Diamond Logo 15" - QTY 1
7. **PART #15-0055** - Made In USA - QTY 1
8. **PART #15-0058** - Read Manual - QTY 1
9. **PART #15-1001** - Ruler - QTY 2
10. **PART #15-1003** - Hand Grease Gun Only - QTY 1
11. **PART #15-1016** - Warranty - QTY 1
12. **PART #15-0067** - Patent Pending - QTY 1

DECAL IDENTIFICATION

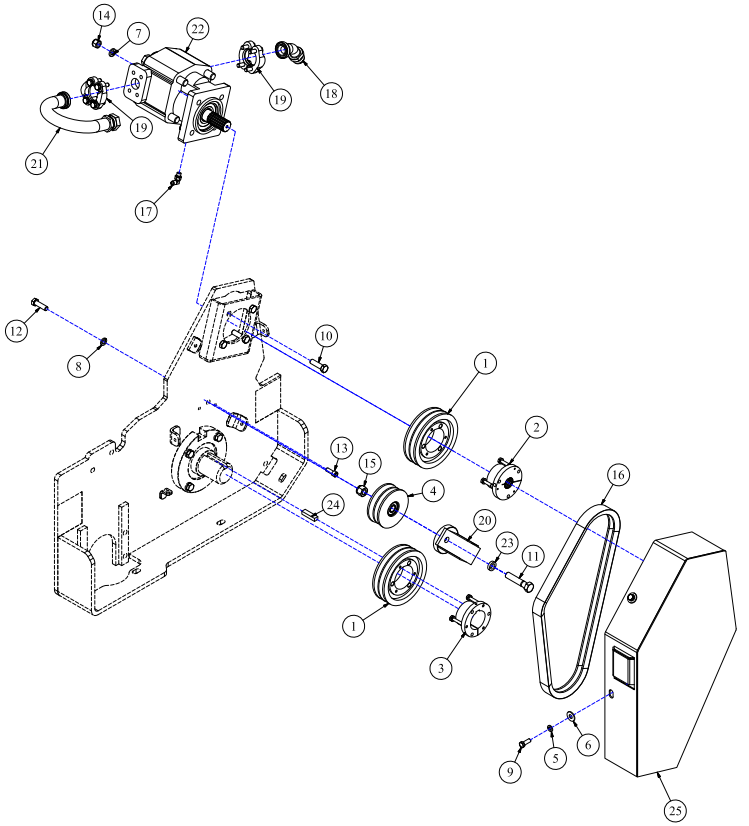
Mainframe



1. **SERIAL NUMBER LABEL** - (not included in kit) - QTY 1
2. **PART #15-0010** - Valve Closed - QTY 2
3. **PART #15-1060** - Oil ISO AW46 - QTY 2

DRIVE ASSEMBLY, LEFT SIDE

25-1560

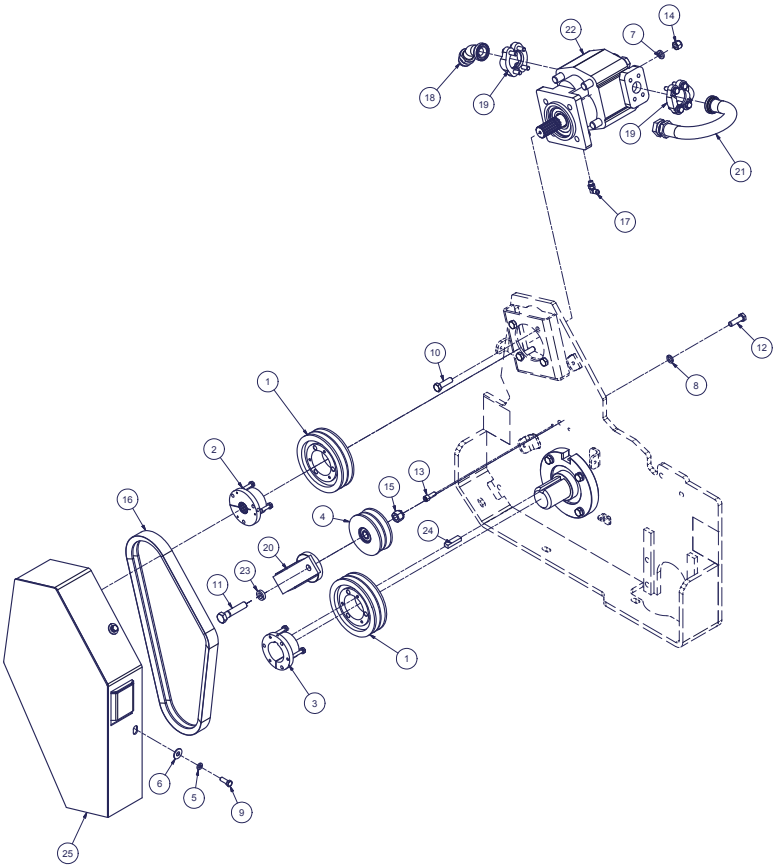


REF#	PARTS DESCRIPTION	REQ	PART#	TORQUE (ft-lbs)	TORQUE (Nm)
1	SHEAVE 6.3	2	10-1007		
2	BUSHING TAPERLOCK 1-1/4 14 SPLINED	1	10-1010		
3	BUSHING TAPERLOCK 2-3/16	1	10-1012		
4	SHEAVE, IDLER ASSY	1	10-1016		
5	3/8 LOCK WASHER GR 5	4	11-0005		
6	3/8 FLAT WASHER GR 5	4	11-0009		
7	1/2 LOCK WASHER GR 5	4	11-0011		
8	12MM LOCK WASHER GR 10.9	1	11-0031		
9	3/8 X 1 NC HEX CAP	4	11-0532	30.9	41.9
10	1/2 X 1-3/4 NC HEX CAP, GR 5	4	11-0535	75.4	102.2
11	5/8 X 3 NC HEX CAP	1	11-0558	150.1	203.5
12	12MM X 40MM X 1.75 HEX CAP	1	11-0672	64.9	88.0
13	3/8 X 1 H.S. NC SKT HEAD	1	11-0752	50.9	69.0
14	1/2 NC NYLOCK NUT	4	11-1018		
15	5/8 NC NYLOCK NUT	1	11-1025		

REF#	PARTS DESCRIPTION	REQ	PART#	TORQUE (ft-lbs)	TORQUE (Nm)
16	DOUBLE 530 V BELT	1	12-0007		
17	1/4MJIC X 1/4MORB 90DEG. ADAPTER	1	21-1264		
18	1MJIC X #16 FLANGE 45 DEG ADAPTER	1	21-1280		
19	#16 FLANGE KIT	4	21-2145		
20	SE27 ROSTA TENSIONER 5/8" HOLE	1	24-0081		
21	TUBE PREFORMED D3F FLAIL #16FLG X 180 DEG.	1	28-0016		
22	MOTOR M350 1" GEAR	1	30-0511		
23	SPACER, IDLER ARM	1	34-0033		
24	CUTTERSHAFT KEY 1/2 X 3/8 X 1-3/4	1	37-0021		
25	COVER ASSEMBLY	1	41-0430		

DRIVE ASSEMBLY, RIGHT SIDE

25-1559

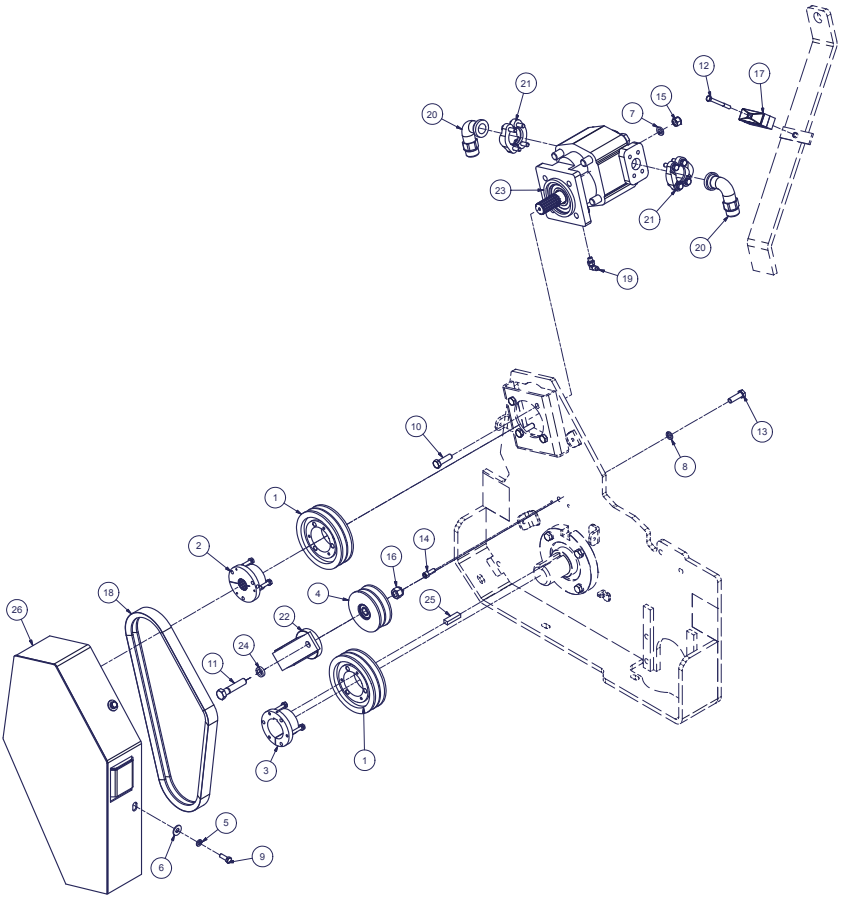


REF#	PARTS DESCRIPTION	REQ	PART#	TORQUE (ft-lbs)	TORQUE (Nm)
1	SHEAVE 6.3	2	10-1007		
2	BUSHING TAPERLOCK 1-1/4 14 SPLINED	1	10-1010		
3	BUSHING TAPERLOCK 2-3/16	1	10-1012		
4	SHEAVE, IDLER ASSY	1	10-1016		
5	3/8 LOCK WASHER GR 5	4	11-0005		
6	3/8 FLAT WASHER GR 5	4	11-0009		
7	1/2 LOCK WASHER GR 5	4	11-0011		
8	12MM LOCK WASHER GR 10.9	1	11-0031		
9	3/8 X 1 NC HEX CAP	4	11-0532	30.9	41.9
10	1/2 X 1-3/4 NC HEX CAP, GR 5	4	11-0535	75.4	102.2

REF#	PARTS DESCRIPTION	REQ	PART#	TORQUE (ft-lbs)	TORQUE (Nm)
11	5/8 X 3 NC HEX CAP	1	11-0558	150.1	203.5
12	12MM X 40MM X 1.75 HEX CAP	1	11-0672	64.9	88.0
13	3/8 X 1 H.S. NC SKT HEAD	1	11-0752	50.9	69.0
14	1/2 NC NYLOCK NUT	4	11-1018		
15	5/8 NC NYLOCK NUT	1	11-1025		
16	DOUBLE 530 V BELT	1	12-0007		
17	1/4MJIC X 1/4MORB 90DEG, ADAPTER	1	21-1264		
18	1MJIC X #16 FLANGE 45 DEG ADAPTER	1	21-1280		
19	#16 FLANGE KIT	4	21-2145		
20	SE27 ROSTA TENSIONER 5/8" HOLE	1	24-0081		
21	TUBE PREFORMED D3F FLAIL #16FLG X 180 DEG.	1	28-0016		
22	MOTOR M350 1" GEAR	1	30-0511		
23	SPACER, IDLER ARM	1	34-0033		
24	CUTTERSHAFT KEY 1/2 X 3/8 X 1-3/4	1	37-0021		
25	COVER ASSEMBLY	1	41-0430		

DRIVE ASSEMBLY, REAR

25-1611

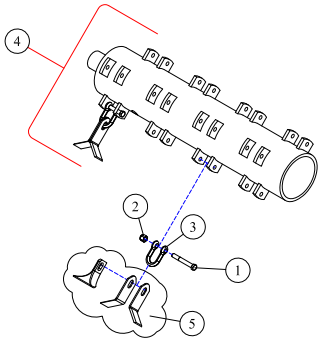


REF#	PARTS DESCRIPTION	REQ	PART#	TORQUE (ft-lbs)	TORQUE (Nm)
1	SHEAVE 6.3	2	10-1007		
2	BUSHING TAPERLOCK 1-1/4 14 SPLINED	1	10-1010		
3	BUSHING TAPERLOCK 2-3/16	1	10-1012		
4	SHEAVE, IDLER ASSY	1	10-1016		
5	3/8 LOCK WASHER GR 5	4	11-0005		
6	3/8 FLAT WASHER GR 5	4	11-0009		
7	1/2 LOCK WASHER GR 5	4	11-0011		
8	12MM LOCK WASHER GR 10.9	1	11-0031		
9	3/8 X 1 NC HEX CAP	4	11-0532	30.9	41.9
10	1/2 X 1-3/4 NC HEX CAP, GR 5	4	11-0535	75.4	102.2
11	5/8 X 3 NC HEX CAP	1	11-0558	150.1	203.5
12	5/16 X 3 NC HEX CAP	1	11-0578	17.4	23.6
13	12MM X 40MM X 1.75 HEX CAP	1	11-0672	64.9	88.0

REF#	PARTS DESCRIPTION	REQ	PART#	TORQUE (ft-lbs)	TORQUE (Nm)
14	3/8 X 1 H.S. NC SKT HEAD	1	11-0752	50.9	69.0
15	1/2 NC NYLOCK NUT	4	11-1018		
16	5/8 NC NYLOCK NUT	1	11-1025		
17	CLAMP DOUBLE TUBE 1" HOSES	1	11-2008		
18	DOUBLE 530 V BELT	1	12-0007		
19	1/4MJIC X 1/4MORB 90DEG, ADAPTER	1	21-1264		
20	#16 FLG X 1MJIC 90DEG ADAPTER	2	21-1274		
21	#16 FLANGE KIT	4	21-2145		
22	SE27 ROSTA TENSIONER 5/8" HOLE	1	24-0081		
23	MOTOR M350 1" GEAR	1	30-0511		
24	SPACER, IDLER ARM	1	34-0033		
25	CUTTERSHAFT KEY 1/2 X 3/8 X 1-3/4	1	37-0021		
26	COVER ASSEMBLY	1	41-0430		

KNIFE OPTIONS

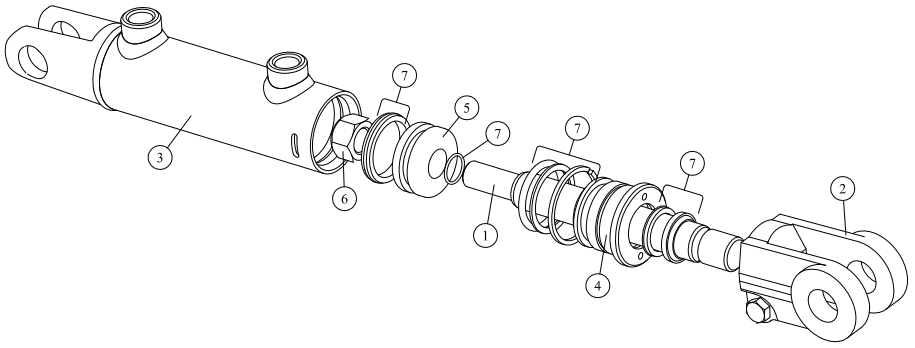
All Flail Assemblies



REF#	PARTS DESCRIPTION	REQ	PART #
	90" FLAIL		
1	KNIFE MOUNTING BOLT	48	11-0506
2	7/16 NYLOCK JAM NUT	48	11-1146
3	CLEVIS	48	11-1501
4	****CUTTER SHAFTS COMPLETE****		
	90" CUTTER SHAFT, 1/8" STD KNIVES	Opt.	46-1000
	90" CUTTER SHAFT, SMOOTH CUT KNIVES	Opt.	46-1013
	90" CUTTER SHAFT, 3/16" STD KNIVES	1	46-1011
5	****FLAIL KNIVES****		
	1/8" STD FLAIL KNIFE	Avail.	22-1003
	SMOOTH CUT FLAIL KNIFE	Avail.	22-1006
	3/16" HD FLAIL KNIFE	Avail.	22-1016
	102" FLAIL		
1	KNIFE MOUNTING BOLT	56	11-0506
2	7/16 NYLOCK JAM NUT	56	11-1146
3	CLEVIS	56	11-1501
4	****CUTTER SHAFTS COMPLETE****		
	102" CUTTER SHAFT, 1/8" STD KNIVES	Opt.	46-1007
	102" CUTTER SHAFT, SMOOTH CUT KNIVES	Opt.	46-1014
	102" CUTTER SHAFT, 3/16" STD KNIVES	1	46-1016
5	****FLAIL KNIVES****		
	1/8" STD FLAIL KNIFE	Avail.	22-1003
	SMOOTH CUT FLAIL KNIFE	Avail.	22-1006
	3/16" HD FLAIL KNIFE	Avail.	22-1016
	60" FLAIL		
1	KNIFE MOUNTING BOLT	32	11-0506
2	7/16 NYLOCK JAM NUT	32	11-1146
3	CLEVIS	32	11-1501
4	****CUTTER SHAFTS COMPLETE****		
	60" CUTTER SHAFT, 1/8" STD KNIVES	Opt.	46-1008
	60" CUTTER SHAFT, SMOOTH CUT KNIVES	Opt.	46-1012
	60" CUTTER SHAFT, 3/16" HD KNIVES	1	46-1022
5	****FLAIL KNIVES****		
	1/8" STD FLAIL KNIFE	Avail.	22-1003
	SMOOTH CUT FLAIL KNIFE	Avail.	22-1006
	3/6" HD FLAIL KNIFE	Avail.	22-1016
	75" FLAIL		
1	KNIFE MOUNTING BOLT	40	11-0506
2	7/16 NYLOCK JAM NUT	40	11-1146
3	CLEVIS	40	11-1501
4	****CUTTER SHAFTS COMPLETE****		
	75" CUTTER SHAFT, 1/8" STD KNIVES	Opt.	46-1005
	75" CUTTER SHAFT, SMOOTH CUT KNIVES	Opt.	46-1018
	75" CUTTER SHAFT, 3/16" HD KNIVES	1	46-1010
5	****FLAIL KNIVES****		
	1/8" STD FLAIL KNIFE	Avail.	22-1003
	SMOOTH CUT FLAIL KNIFE	Avail.	22-1006
	3/6" HD FLAIL KNIFE	Avail.	22-1016

CYLINDER ASSEMBLY 14-0001

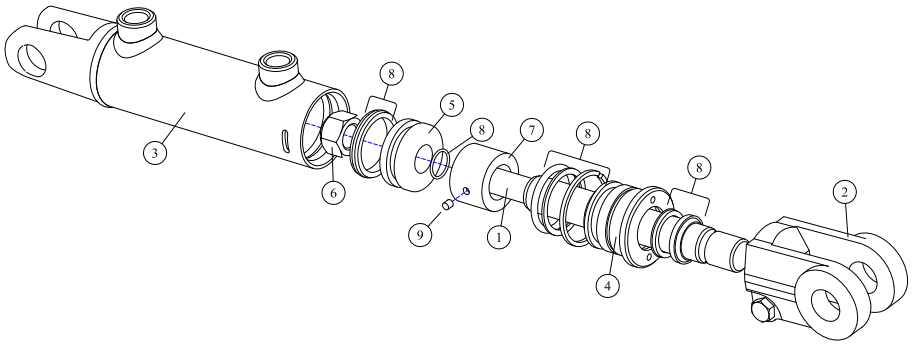
All Flail Assemblies



REF#	PARTS DESCRIPTION	REQ	PART #
1	PISTON ROD	1	14-1130
2	CLEVIS ASSEMBLY	1	14-1160
3	BUTT & TUBE ASSEMBLY	1	14-1140
4	GLAND	1	14-1155
5	PISTON	1	14-1150
6	LOCKNUT	1	14-1120
7	SEAL KIT	1	33-0038

CYLINDER ASSEMBLY 14-0004

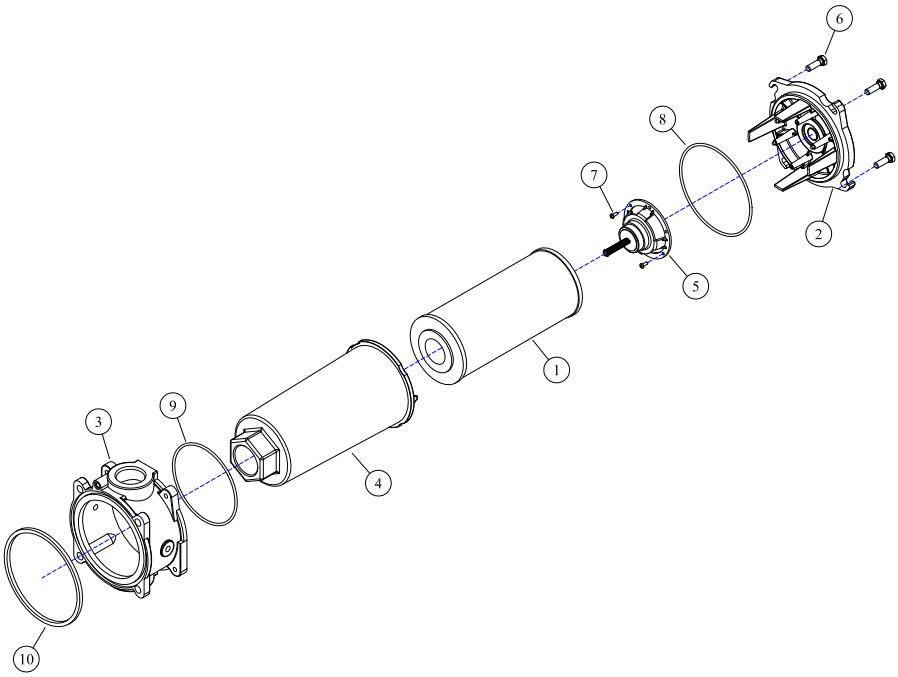
All Flail Assemblies



REF#	PARTS DESCRIPTION	REQ	PART #
1	PISTON ROD	1	14-1131
2	CLEVIS ASSEMBLY	1	14-1160
3	BUTT & TUBE ASSEMBLY	1	14-1141
4	GLAND	1	14-1155
5	PISTON	1	14-1150
6	LOCKNUT	1	14-1120
7	SLUG	1	14-1191
8	SEAL KIT	1	33-0038
9	SET SCREW	1	11-2007

FILTER ASSEMBLY 17-0014

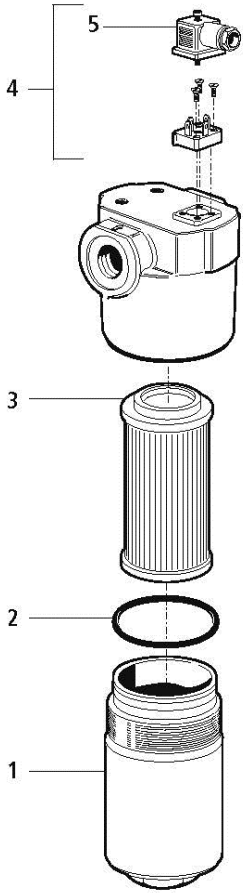
All Flail Assemblies



REF#	PARTS DESCRIPTION	REQ	PART #
1	FILTER ELEMENT	1	17-0001
2	COVER	1	17-0016
3	PORT CASTING	1	17-0017
4	ELEMENT HOUSING	1	17-0018
5	BY-PASS ASSEMBLY	1	17-0019
6	SCREW (COVER)	4	17-0020
7	SCREW (BY-PASS ASSEMBLY)	2	17-0021
8	O-RING, COVER/PORT CASTING	1	33-0005
9	O-RING, ELEMENT/PORT CASTING	1	33-0053
10	TETRA SEAL	1	33-0018

FILTER ASSEMBLY 17-0037

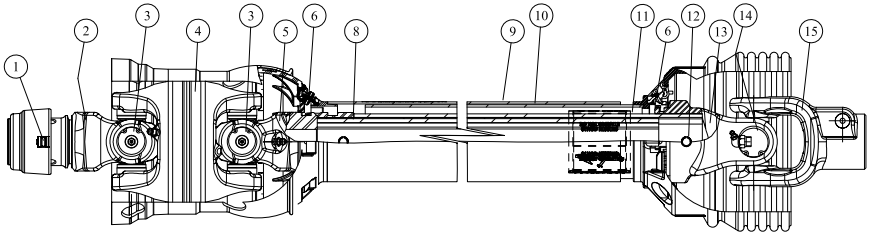
All Flail Assemblies



REF#	PARTS DESCRIPTION	REQ	PART #
1	FILTER BOWL HD 049	1	17-0038
2	LARGE O-RING	1	33-0086
3	HIGH PRESSURE FILTER ELEMENT, 10 MICRON	1	17-0036
4	REED SWITCH WITH SCREWS AND SOCKET	1	16-0239
5	SOCKET	1	16-0240

DRIVE ASSEMBLY 29-0182

All Flail Assemblies

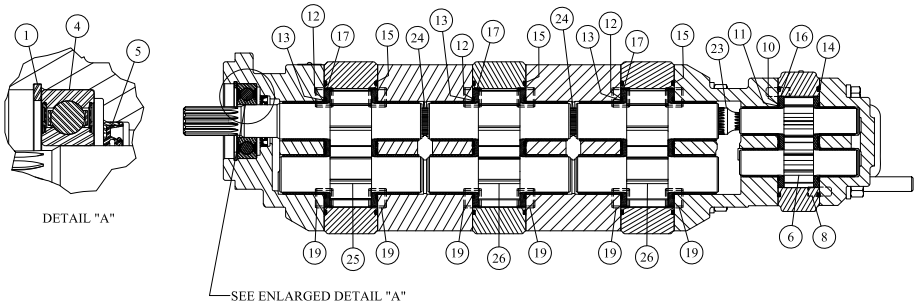


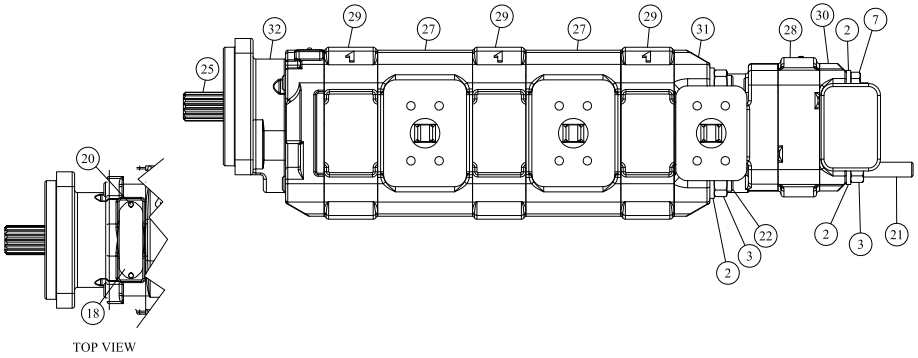
REF#	PARTS DESCRIPTION	REQ	PART #
1	REPAIR KIT, SSL/AUTO-LOK	1	29-0185
2	YOKE, FRONT	1	29-0186
3	CROSS KIT, AB 6/AW 22/480 PBL	2	29-0187
4	CENTER HOUSING	1	29-0188
5	YOKE AND TUBE, FRONT	1	29-0189
6	BEARING SET	2	29-0190
7	YOKE, CAT 4 80DEGREES, (NOT SHOWN)	1	29-0191
8	621-3905-100.ASM	1	29-0192

REF#	PARTS DESCRIPTION	REQ	PART #
9	OUTER GUARD	1	29-0194
10	INNER GUARD	1	29-0195
11	TUBE	1	29-0197
12	ROLL PIN	1	29-0198
13	YOKE AND TUBE, REAR	1	29-0199
14	CROSS KIT, AW35P, REPAIR	1	29-0200
15	YOKE, REAR	1	29-0201

PUMP ASSEMBLY 30-0539

All Flail Assemblies





*Complete seal kit can be purchased using item #9.

**Item #5 lip seal (also sold separately) included with complete seal kit.

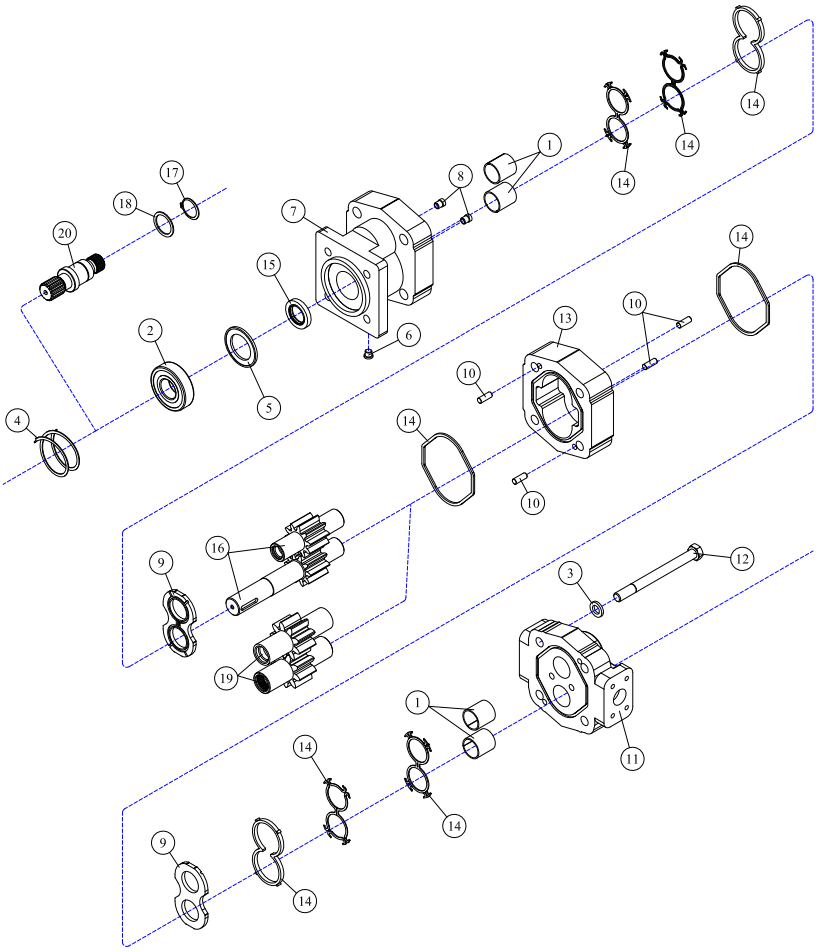
***Items #10-15 (not sold separately) included with complete seal kit.

REF#	PARTS DESCRIPTION	REQ	PART #
1	SNAP RING	1	30-1009
2	WASHER	8	30-1071
3	HEX NUT	6	30-1128
4	BALL BEARING	1	30-1173
5	**LIP SEAL	1	30-1181
6	GEAR SET, REAR	1	30-1191
7	CAPSCREW	2	30-1193
8	DOWEL PIN, REAR	4	30-1273
9	*SEAL KIT	1	30-1339
10	***CHANNEL SEAL, REAR	2	30-1340
11	***SEAL, BK-UP, REAR	2	30-1341
12	***CHANNEL SEAL	6	30-1342
13	***SEAL, BK-UP	6	30-1343
14	***SEAL, SQ-R, REAR	2	30-1344
15	***SEAL, SQ-R	6	30-1345
16	THRUST PLATE, REAR	2	30-1347

REF#	PARTS DESCRIPTION	REQ	PART #
17	THRUST PLATE	6	30-1348
18	NAME PLATE	1	30-1349
19	DOWEL PIN	24	30-1350
20	DRIVE SCREW	2	30-1351
21	STUD, REAR	2	30-1352
22	STUD	4	30-1353
23	CONNECTOR SHAFT, REAR	1	30-1354
24	CONNECTOR SHAFT	2	30-1355
25	GEAR SHAFT SET	1	30-1356
26	GEAR SET	2	30-1357
27	BEARING CARRIER HOUSING	2	30-1358
28	GEAR HOUSING, REAR	1	30-1359
29	GEAR HOUSING	3	30-1360
30	PEC HOUSING	1	30-1361
31	PIGGYBACK HOUSING	1	30-1362
32	SEC HOUSING	1	30-1363

MOTOR ASSEMBLY 30-0511

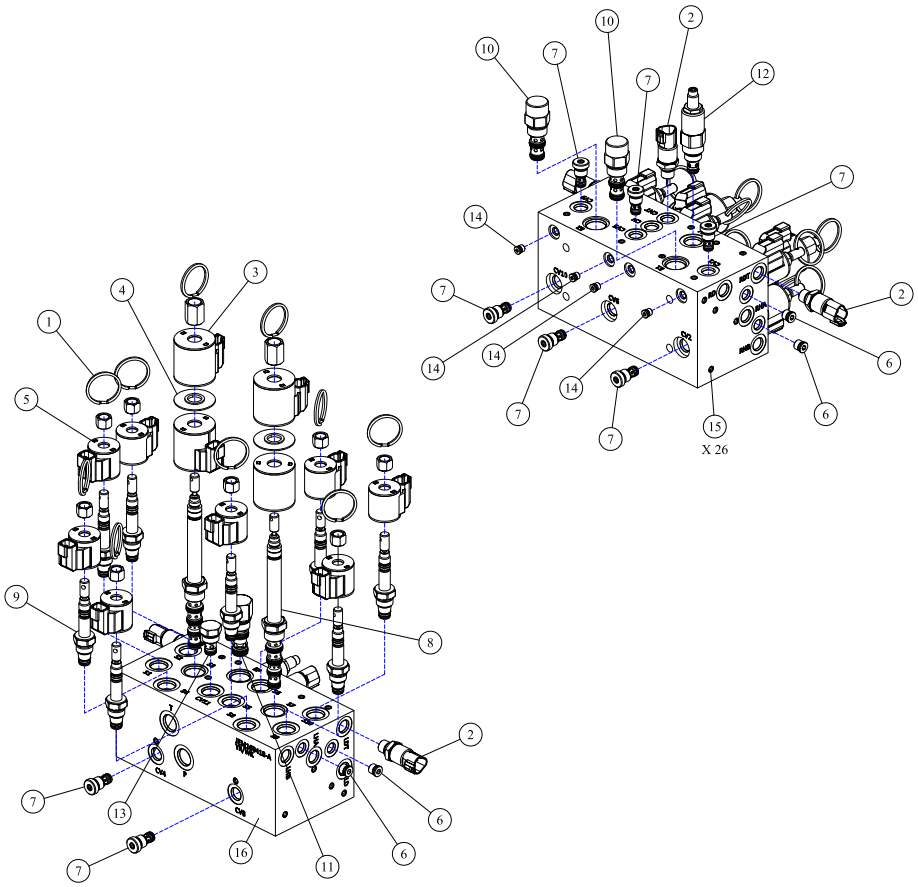
All Flail Assemblies



REF#	PARTS DESCRIPTION	REQ	PART #
1	BUSHING	4	30-1002
2	BALL BEARING	1	30-1044
3	WASHER	4	30-1071
4	SPIROLOCK	1	30-1094
5	RETAINING RING	1	30-1095
6	PLUG	1	30-1096
7	SHAFT END COVER	1	30-1097
8	CHECK ASSEMBLY	2	30-1098
9	THRUST PLATE	2	30-1100
10	DOWEL PIN	4	30-1102
11	PORT END COVER W/ BUSHINGS	1	30-1133
12	STUD	4	30-1134
13	GEAR HOUSING 1-3/4"	1	30-1208
14	**SEAL KIT**		
	SEAL KIT (integral shaft only) comes w/ 30-1162	1	30-1207
	SEAL KIT (continental shaft only)	1	30-1211
15	**SHAFT SEAL**		
	CONTINENTAL SHAFT ONLY:		
	300 PSI (included in M350 seal kit)	1	30-1209
	INTEGRAL SHAFT ONLY:		
	500 PSI	1	30-1036
*	SHAFT TOOL (not shown) (required for install)	1	30-1162
	GEAR SET OPTION A:		
16	INTEGRAL SHAFT AND GEAR 1-3/4"	1	30-1024
	GEAR SET OPTION B:		
17	RETAINING RING	1	30-1019
18	WASHER	1	30-1020
19	2-1/4" GEAR SET	1	30-1025
20	CONTINENTAL SHAFT, SPLINED	1	30-1144

LIFT VALVE 39-0107

All Flail Assemblies

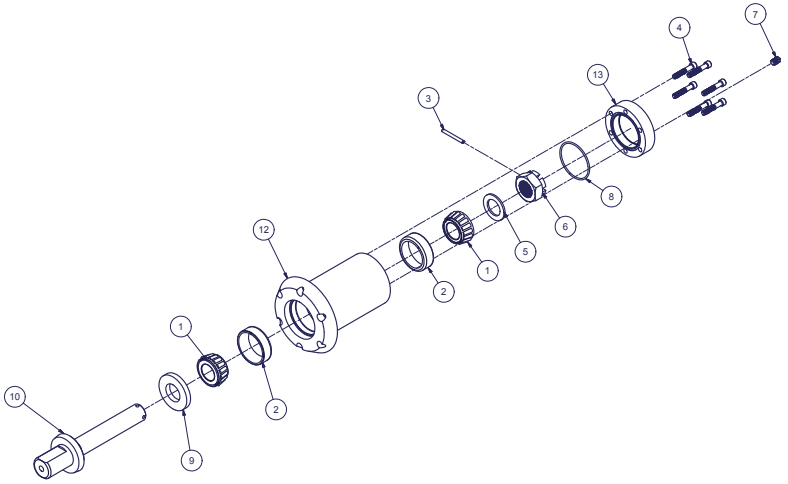


REF#	PARTS DESCRIPTION	REQ	PART #
1	KEY RING, SIZE 8, STEEL	10	11-2083
2	PRESSURE SENSOR	3	16-0209
3	12 VDC, -10 SIZE E-COIL, DEUTSCH	4	16-0214
4	-10 SIZE E-COIL SPACER	2	16-0215
5	12 VDC, -08 SIZE E-COIL, DEUTSCH	8	16-0216
6	ZERO-LEAK PLUG, SAE-04	4	39-1083
7	CHECK, POPPET TYPE, N.C.	8	39-1090
8	PROPORTIONAL VALVE	2	39-1114

REF#	PARTS DESCRIPTION	REQ	PART #
9	2/2 PROP SOLENOID VALVE WITH M/O	8	39-1115
10	FLOW REG., PRESS. COMP	2	39-1116
11	PRESSURE COMPENSATOR	1	39-1117
12	RELIEF VALVE, 2800 PSI	1	39-1118
13	CHECK VALVE, 4 PSI	1	39-1119
14	ZERO-LEAK PLUG, SAE-02	4	39-1120
15	EXPANDER PLUG, 7 MM	26	39-1121
16	JEM MANIFOLD BLOCK	1	39-1122

GROUND ROLLER BEARING 10-1051

All Flail Assemblies



REF#	PARTS DESCRIPTION	REQ	PART#	TORQUE (ft-lbs)	TORQUE (Nm)
1	TAPER BEARING	2	10-1049		
2	TAPER BEARING RACE	2	10-1050		
3	ROLL PIN	1	11-2006		
4	5/16 X 1-3/4 NC SHCS	6	11-2065	28.7	38.9
5	THRUST WASHER 2.00 OD X 1.26 ID	1	11-2067		
6	CASTLE NUT	1	11-2074		
7	1/8 NPT PLUG	1	21-1136		
8	O RING 2-7/8 OD	1	24-0273		
9	SEAL TCM 132713TC	1	33-0031		
10	ASSY GROUND ROLLER SHAFT	1	41-1533		
11	SERVICE KIT, GROUND ROLLER (NOT SHOWN)	1	44-0780		
12	GROUND ROLLER INSERT	1	90-7045		
13	GROUND ROLLER END CAP	1	90-7048		

10-1051	Rev 000

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