



Mahindra

TRACTORS

Mid PTO Attachment Set-Up Instructions

'16' Series

3616 CABIN



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ABOUT THIS MANUAL

This Manual has been prepared to assist you in following the correct procedure for break-in, operation and maintenance of your new Mahindra tractor.

Your tractor has been designed and built to give maximum performance, with good fuel economy and ease of operation under a wide variety of operating conditions. Prior to delivery, the tractor was carefully inspected, both at the factory and by your Mahindra dealer, to ensure that it reaches you in optimum condition. To maintain this condition and ensure trouble free performance, it is important that the routine services, as specified in this manual, are carried out at the recommended intervals.

We have enclosed a page on new tractor inspection sheets. The first sheet is the dealer's copy and should be removed by the dealer after the inspection has been carried out. The second sheet is your copy of the service performed. Ensure that you & the dealer sign both copies.

Read this manual carefully and keep it in a convenient place for future reference. If at any time you require advice concerning your tractor, do not hesitate to contact your authorised Mahindra dealer. He has trained personnel, genuine Mahindra parts and necessary equipments to undertake all your service requirements.

Mahindra USA Inc's. policy is one of continuous improvement, and the right to change prices, specifications or equipments at any time without notice is reserved.

All data given in this book is subject to production variations. Dimensions & weight are approximate only and the illustrations do not necessarily show tractors in standard condition. For exact information about any particular tractor, please consult your Mahindra dealer.

SAFETY



THIS SAFETY ALERT SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY OR DEATH.

IMPORTANT: *To prevent personal injury, follow the safety messages in this manual. Follow the instructions carefully*

The procedures recommended and shown in this manual are good, effective service methods. However, all possible procedures and service hazards may not be covered. Therefore, if you use a tool or procedure not recommended, you must make sure that the method you select is a safe method.



WARNING: Read operators manual to familiarize yourself with control lever functions.



WARNING: Operate tractor and equipment controls from the seat position only. Any other method could result in serious injury.



WARNING: Unauthorized modifications to this machine can cause injury or death. Do not make unauthorized modifications to this machine.



WARNING: Missing shields, guards or access panels can cause injury or death. Before you start the tractor engine and move this machine, always install all shields, guards or access panels correctly.



CAUTION: To prevent personal injuries when working with machinery, use safety shoes, a hard hat, safety glasses or goggles and tight fitting clothing. Use a brass or bronze hammer or driver when positioning hardened steel parts.



CAUTION: Use a clip on air chuck, extension hose with gauge and stand away from the tire while inflating to prevent the possibility of personal injury due to a tire and rim separation, etc.



WARNING: Hydraulic oil or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure, before disconnecting lines. Be for applying pressure, make sure all connections are tight and components are in good condition. Never use your hand to tighten for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. If injured by leaking fluid, see your doctor immediately.



WARNING: Never operate the engine in a closed building. Proper ventilation is required under all circumstances.

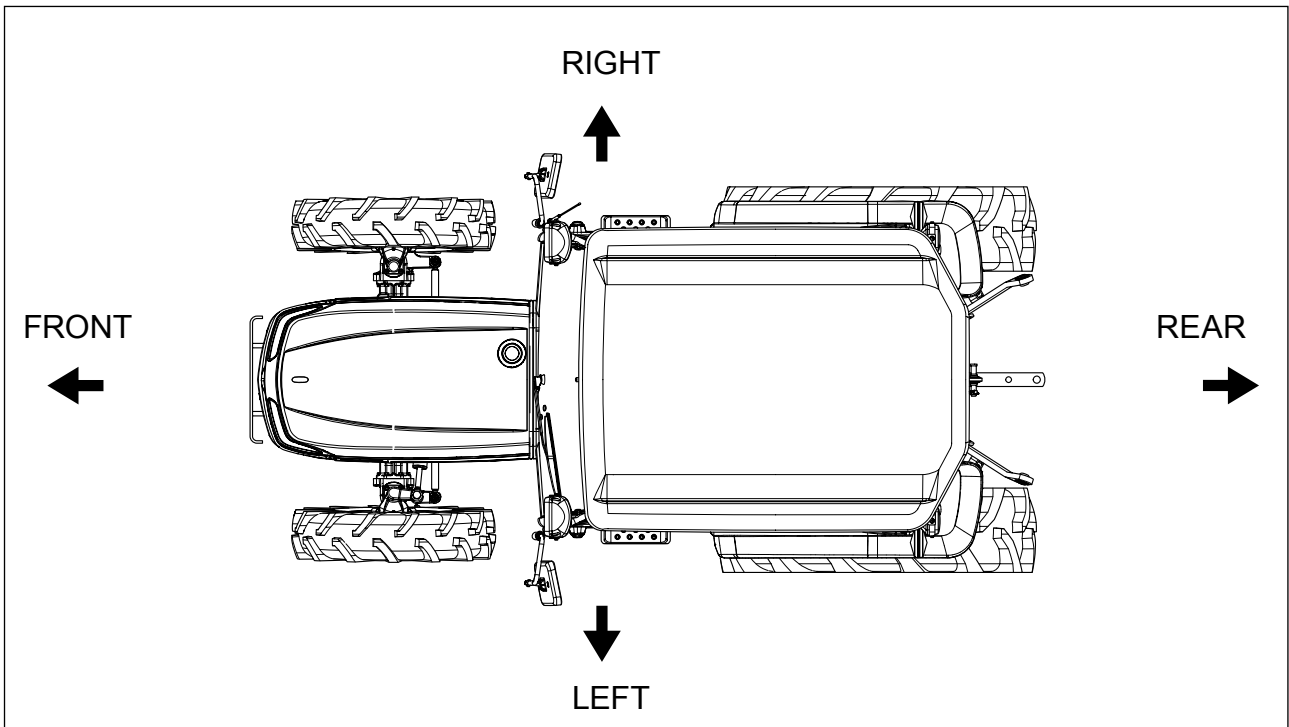
INTRODUCTION

This manual covers the instructions for the assembly of the Mid PTO attachment. Read the entire manual before you start.

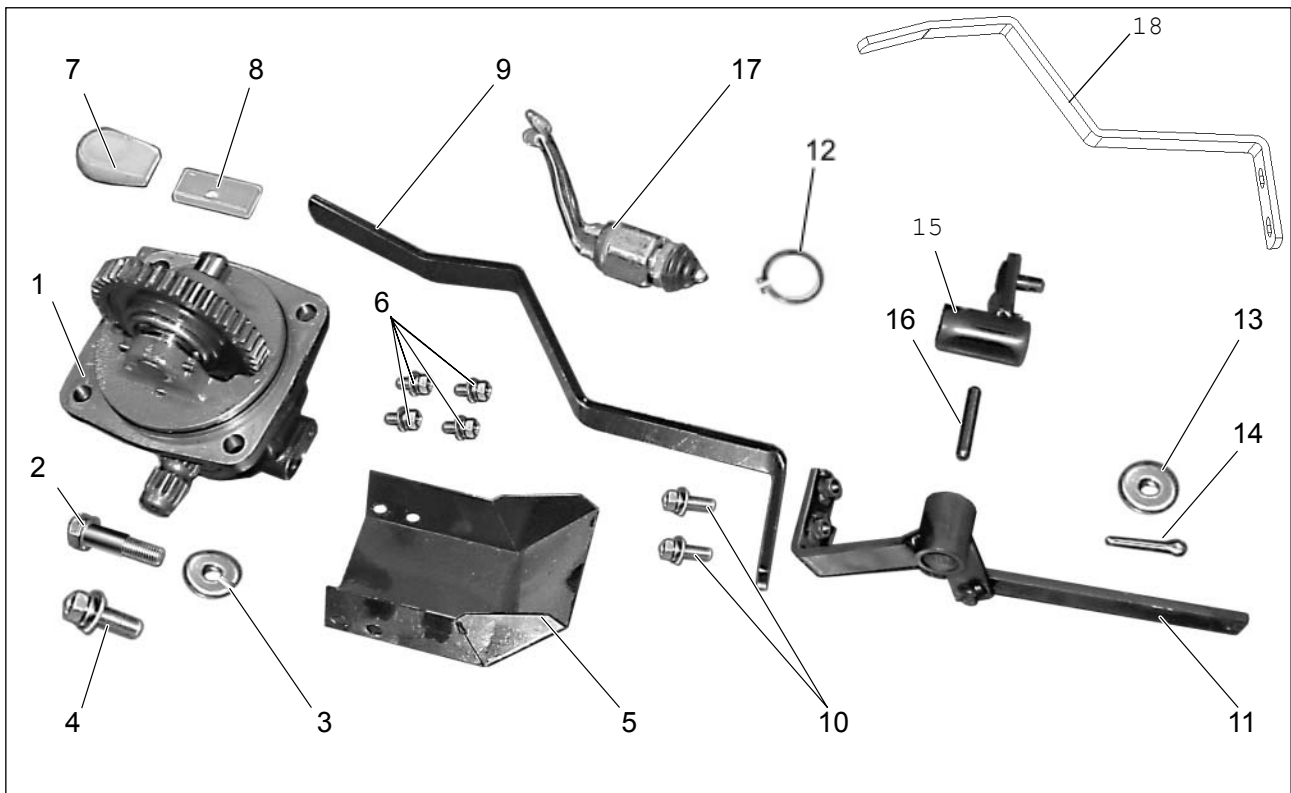
Read and understand the safety messages beginning on page 3.

RIGHT HAND AND LEFT HAND SIDES OF THE TRACTOR

NOTE: When you are in the tractor seat looking forward, the right hand and left hand of the tractor are the same as your right hand and left hand.



CONTENTS OF MID PTO PACKAGE



Ref. No.	PARTS NAME	Q'TY	REMARKS
1	MID PTO Gear Box	1	
2	Dowel Bolt	1	M12×35mm
3	Lock Washer	1	
4	Bolt w/Lock Washer	1	M12×35mm
5	MID PTO Cover	1	
6	Bolt w/Lock Washer	4	M8×16mm
7	Grip	2	
8	Tube	2	
9	MID PTO Lever	1	
10	Bolt W/Lock Washer	2	M8×25mm
11	MID Arm	1	
12	Snap Ring	1	SPARE
13	Flat Washer	1	
14	Cotter Pin	1	
15	MID Link	1	
16	Spring Pin	1	
17	Switch	1	
18	Rear PTO Lever	1	

TORQUE SPECIFICATION

Use the following torques unless otherwise specified.

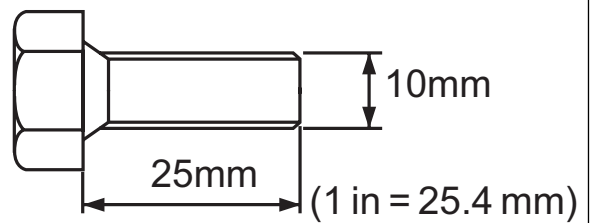
Nominal size	Pound Feet	Newton Meters
6mm	7-9	10-12
8mm	18-22	25-29
10mm	29-33	39-44
12mm	61-69	83-93
14mm	87-98	118-132
16mm	112-127	152-172

NOTE: The bolts and nuts used are "Metric" sizes, be sure to use metric tools.

Be careful to use bolts and nuts of correct sizes and thread pitches when assembling this tractor.

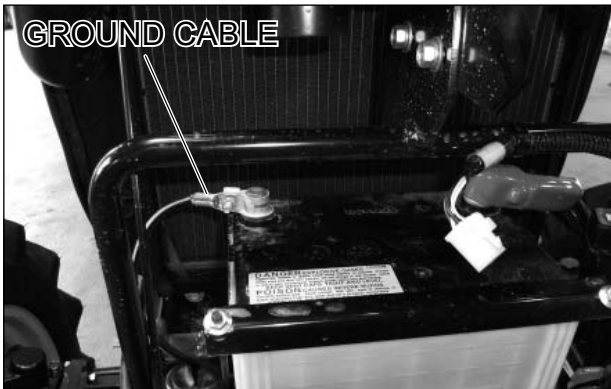
NOTE: Nominal size is shown in the "size" column.

(Example) M10x25mm Bolt

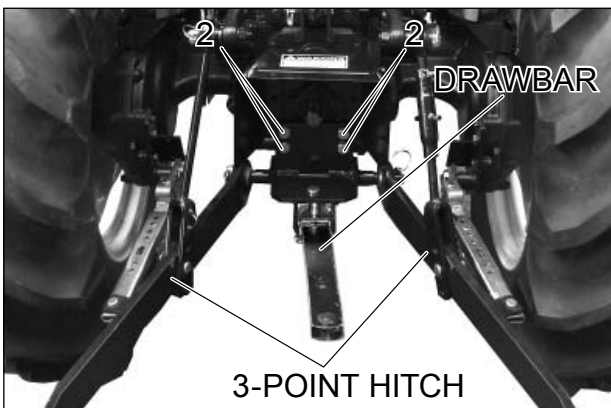


DISASSEMBLING 3-POINT HITCH, DRAWBAR AND BRACKET

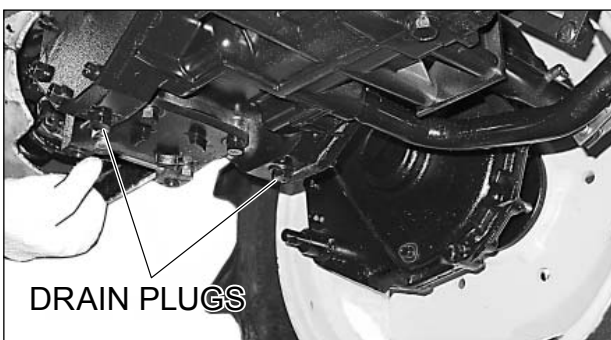
1. Place the tractor on level and hard ground, put the range shift lever in L position, apply the park brakes and stop the engine. Put blocks in front of and behind of the front wheels.
2. Disconnection the ground cable from the battery.



3. Remove the 3-point hitch and drawbar.

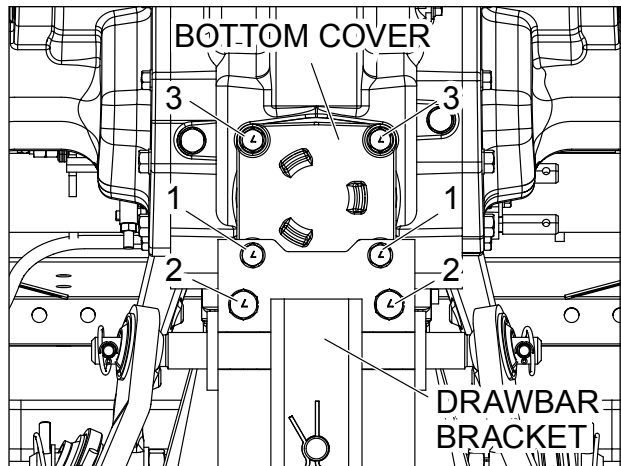


4. Remove two drain plugs under transmission and drain the transmission oil.



Tighten two drain plugs to 33-39 Lbf-ft (44-54 N·m).

5. Remove the bottom cover and drawbar bracket.

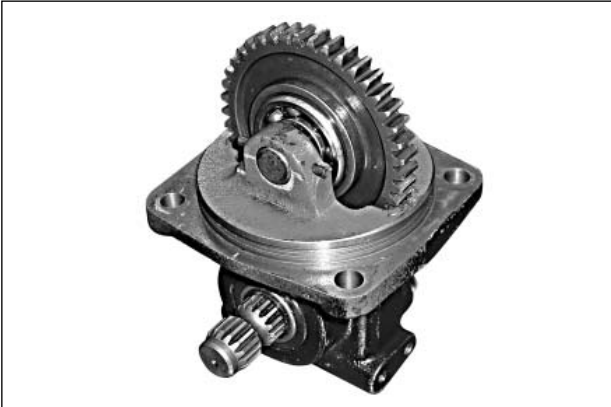


6. Loosen the bolts 1 and 2 and 3 to remove the bottom cover and drawbar bracket.

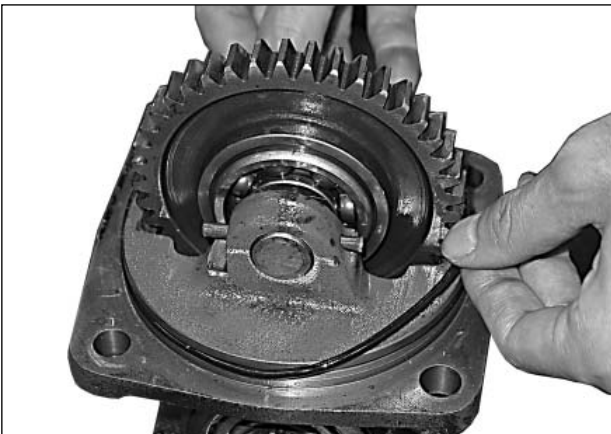
- 1 Two bolts (M12×40 mm)
- 2 Six bolts (M14×35 mm)
- 3 Two bolts (M12×35 mm)

INSTALLING MID PTO GEARBOX

1. MID PTO Gearbox

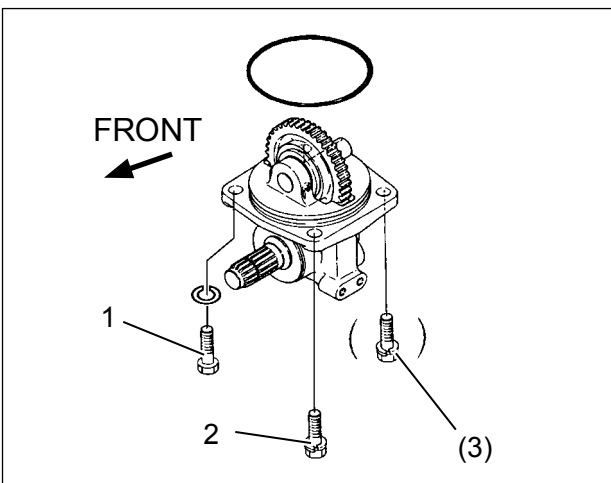


2. Fit the O-ring in the groove of the Mid PTO Gearbox and apply the grease to the O-ring.



3. Install the Mid PTO gearbox and drawbar bracket to the bottom of the differential housing.

NOTE: A dowel bolt to be installed in position as show below.



• Tighten the bolts to the following torque.

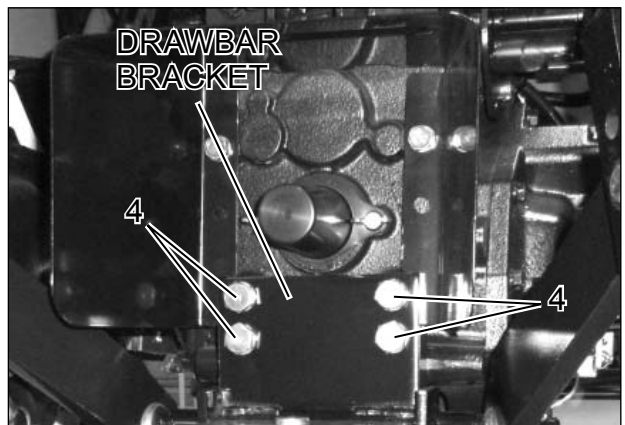
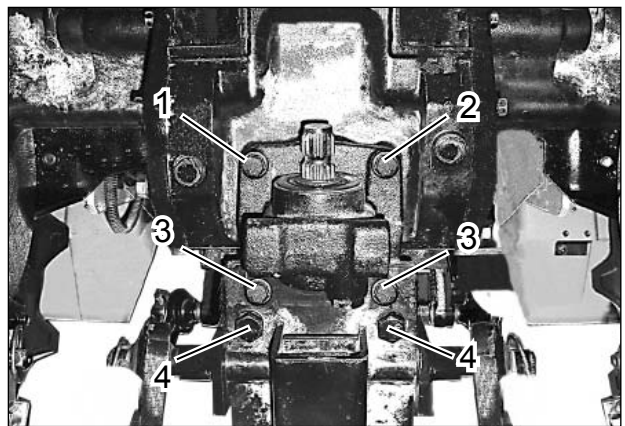
1 Dowel bolt M12×35 mm ; 61–69 Lbf-ft
(One pc) (83–93 N·m)

2 Bolt M12×35 mm ; 61–69 Lbf-ft
(One pc) (83–93 N·m)

3 Bolt M12×40 mm
(two pcs)

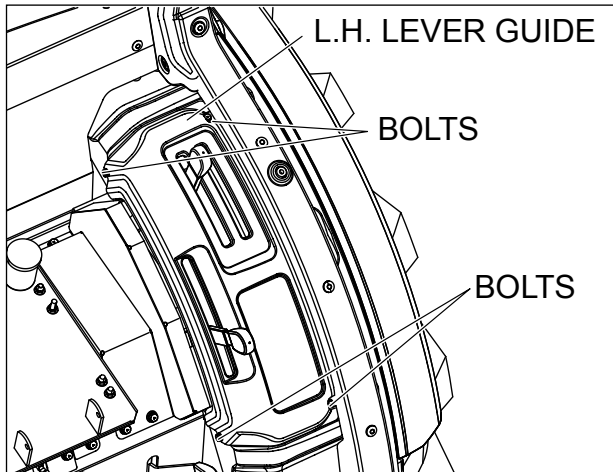
Using fix DRAWBAR BRACKET

4 Bolt M14×35 mm ; 87–97 Lbf-ft
(six pcs) (118–132 N·m)



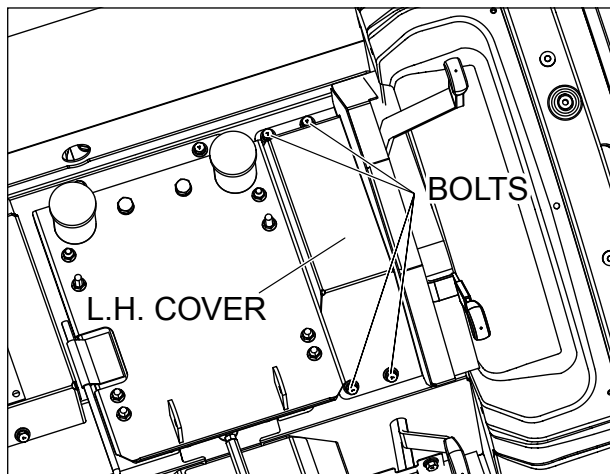
REMOVING L.H. LEVER GUIDE

1. Remove the L.H. lever guide.
Four bolts (M6×16 mm)
One nut (M6)



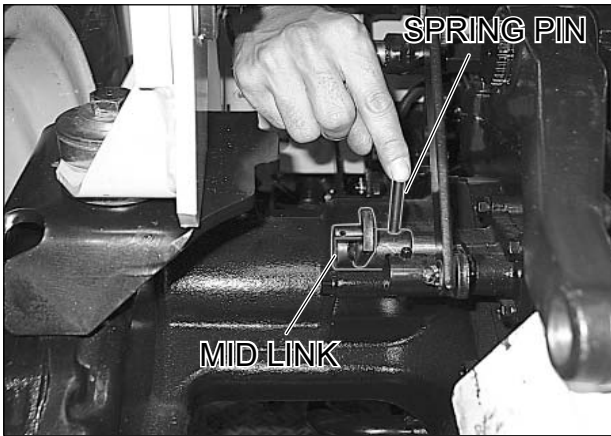
REMOVING L.H. COVER

1. Remove the L.H. cover.
Four bolts (M8×20 mm)

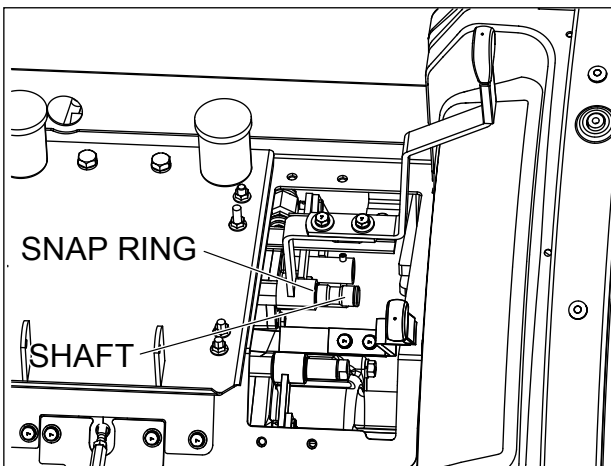


INSTALLING MID PTO LEVER AND LINKAGE

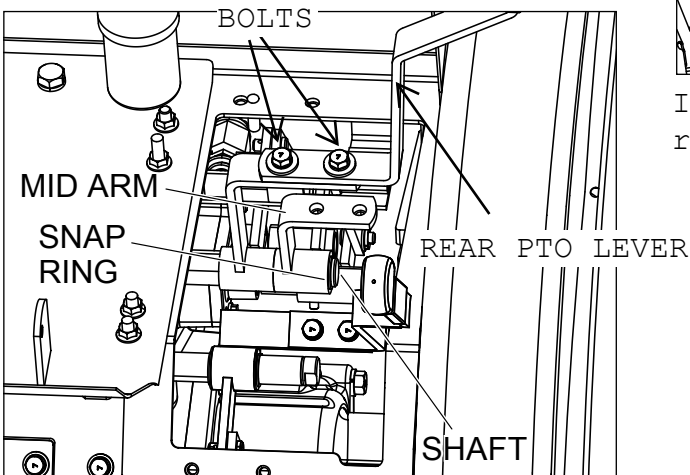
1. Install Mid Link, and fix it with a new spring pin.



2. Remove the snap ring from the shaft.

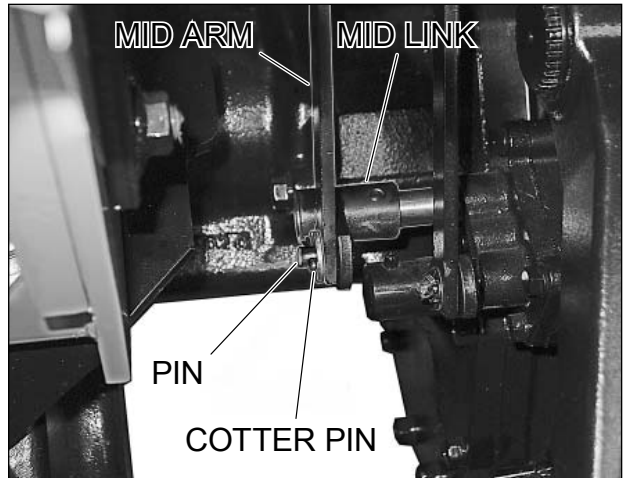


3. Filling grease to the shaft. Install Mid Arm to the shaft and fix it with a new snap ring.

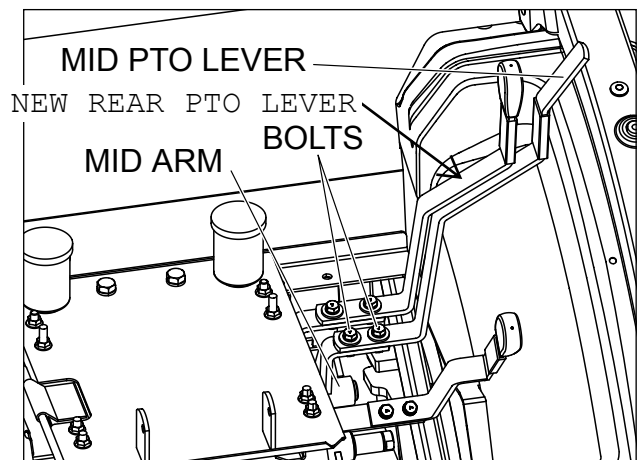


Remove two bolts (M8x25mm with lock washer) to replace Rear PTO LEVER.

4. Install the end hole of Mid arm to the pin of Mid link, and fix it with cotter pin.

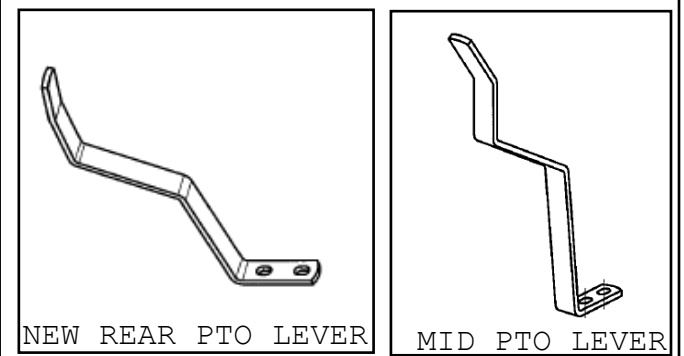


5. Install Mid PTO LEVER to the Mid Arm and fix it with two bolts (M8x25 mm) with lock washer. Tighten the bolts to the following torque M8x25 mm ; 18-22 Lbf-ft (25-29 N-m)



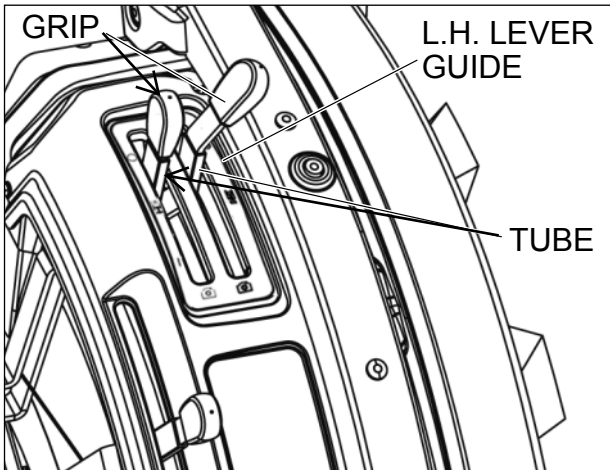
Install NEW Rear PTO LEVER with removed two bolts.

Shape of lever

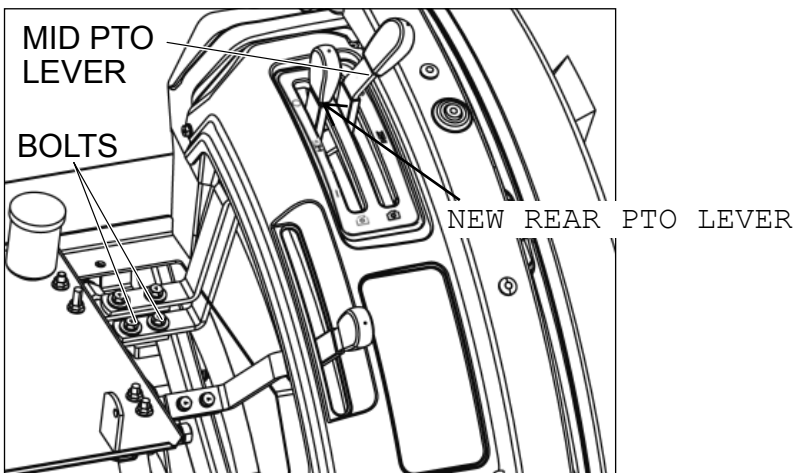


INSTALLING L.H. LEVER GUIDE

1. Install L.H. Lever Guide and fix it with four bolts (M6×16 mm) and one nut (M6).
Tighten the bolts to the following torque
M6×16 mm ; 7-9 Lbf-ft (10-12 N-m)
2. Install Tube and Grip to the Mid PTO Lever and NEW Rear PTO LEVER.
Apply a quick - drying glue to a Grip.



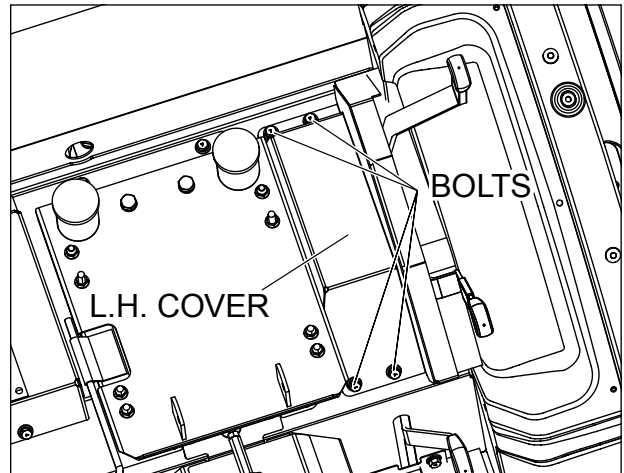
3. Adjustment of the right -and- left direction of two LEVERS.
Adjust the position of Mid PTO lever comes to center of slot by bolts.



Adjust the position of NEW Rear PTO lever comes to center of slot by bolts.

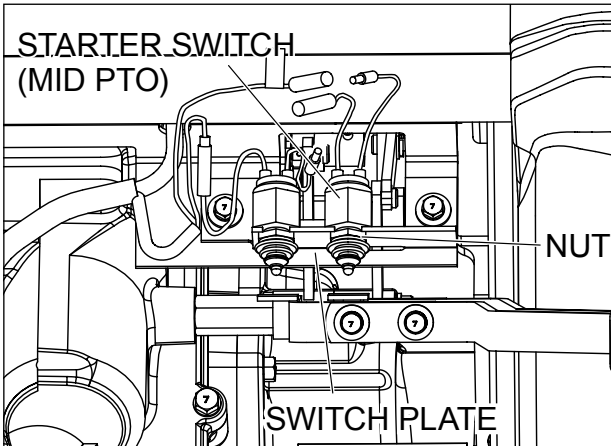
INSTALLING L.H. COVER

1. Installing the L.H. cover.
Four bolts (M8×20 mm)

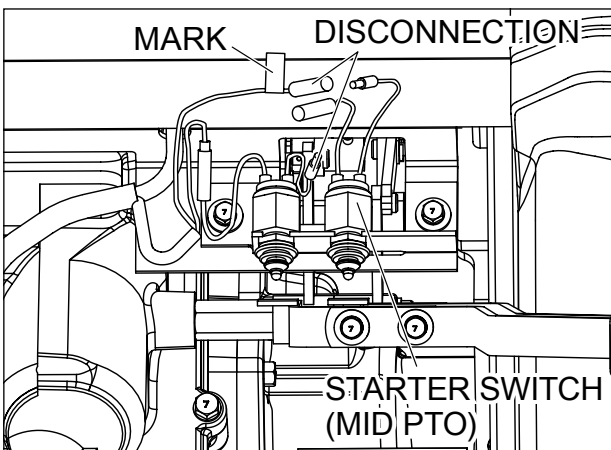


INSTALLING SWITCH

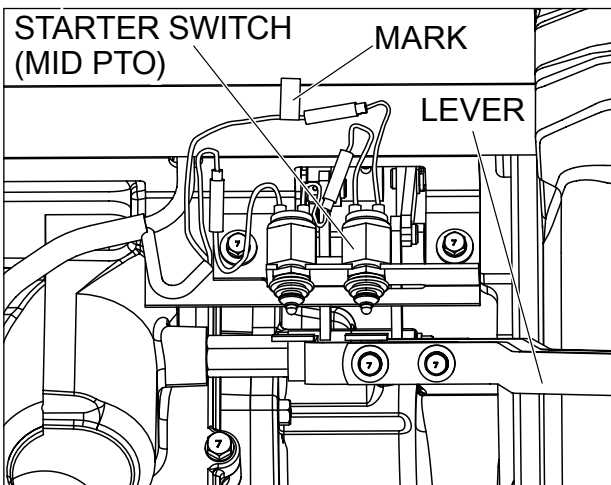
1. Install the starter switch (MID PTO) to the switch plate with a nut.



2. Disconnect connector where the mark of the wire has adhered.



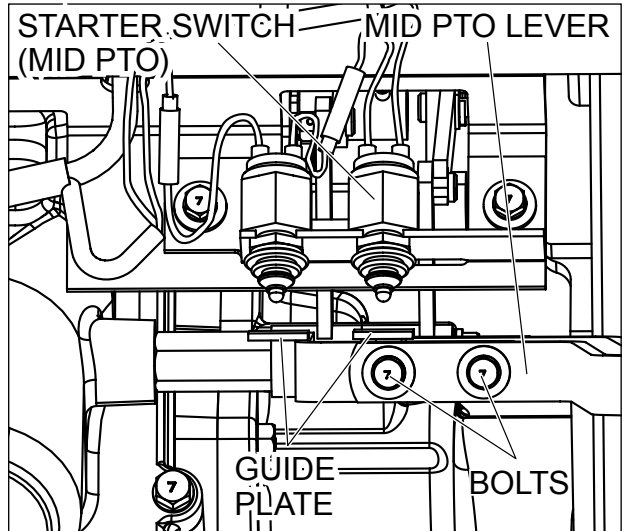
3. Connecting the wire as shown in figure.



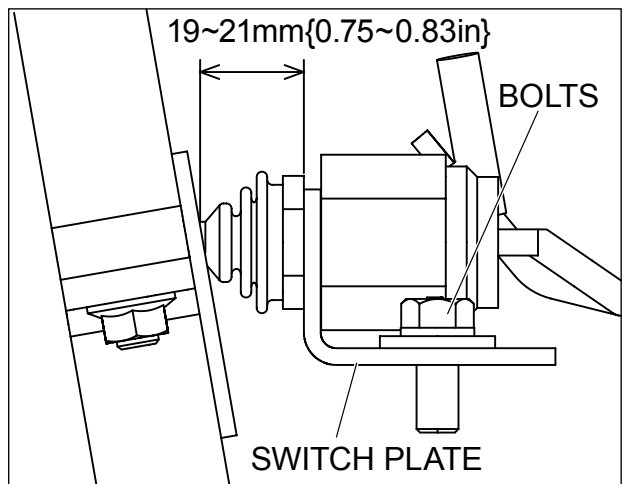
4. Move the Mid PTO Lever to "OFF" position.

Move the guide plate rearward so that the lever contacts with the front end of slot on the guide plate.

Tighten the bolts of the guide plate to 18-22Lbf·ft (25-29 N·m).



5. Adjustment of the switch plate by bolts. Set as shown in the figure.



INSTALLING 3-POINT HITCH

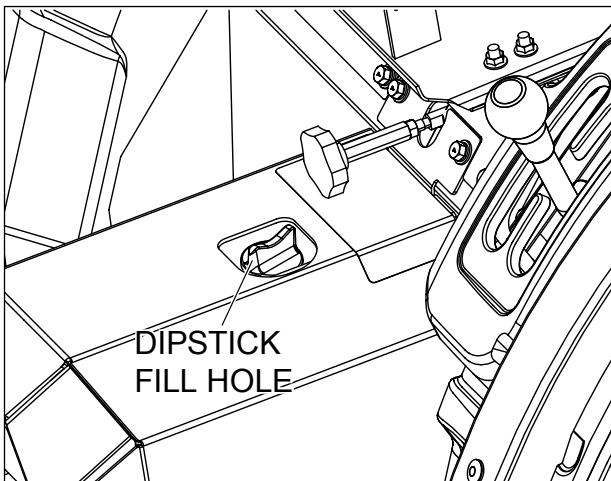
1. Install the 3-point hitch.



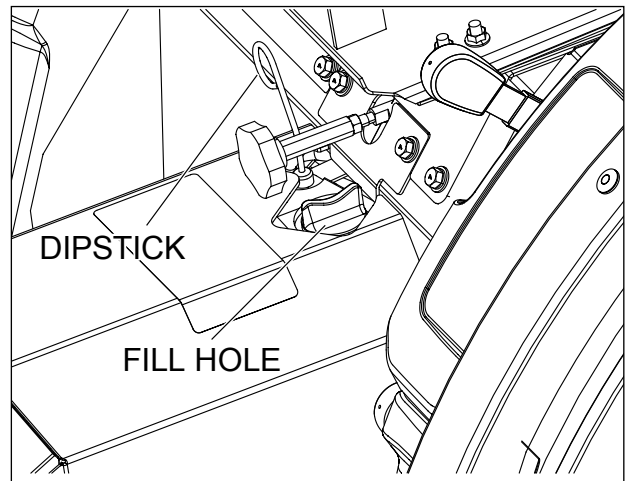
REFILLING THE TRANSMISSION OIL LEVEL

1. Refill oil to the transmission, and check the oil level with the dipstick.
Add Hydraulic Transmission fluid from the fill hole if necessary.

(Gear Drive)



(Hydrostatic Drive)



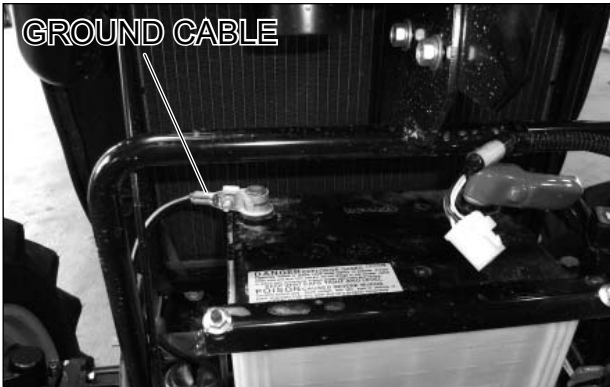
Transmission oil capacities.

Gear drive ; 35 QTS.

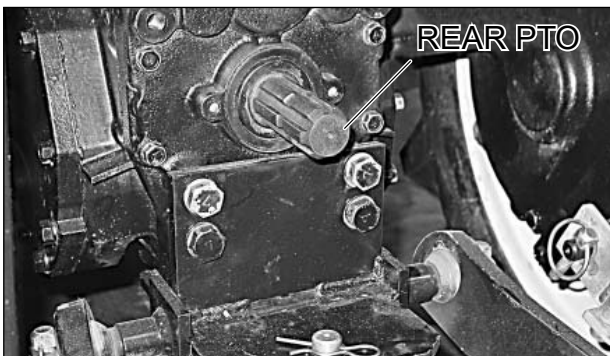
Hydrostatic drive ; 36.1 QTS.

CHECKING REAR/MID PTO OPERATION

1. Connect the ground cable to the battery.



2. Put the range shift lever and the both PTO control levers in the "N" and "OFF" positions, press the clutch pedal down and start the engine. Release the clutch pedal slowly and make sure both Rear and Mid PTO shafts un-rotate.



If either PTO shaft rotates, adjust the position of guide plate to be un-rotate the PTO shaft securely.

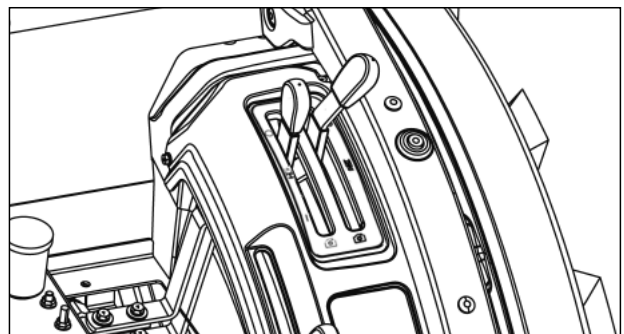
3. Install the Mid PTO Cover.

Tighten the bolts to the following torque.
Four bolts (M8×16 mm); 18–22 Lbf-ft
(25–29 N·m)



4. Start and run the engine for three to five minutes at 1500 RPM.
Check the level of transmission oil with dipstick again after stopping the engine.

OPERATION



Move the lever forward to engage the Mid PTO.

Move the lever rearward to disengage the Mid PTO.

NOTE: Be sure the Mid PTO control lever is in OFF slot when starting the engine.

NOTE:

1. The Rear and Mid PTO shaft can be operated at the same time.
2. When not using the Mid PTO shaft, cover the shaft with the Mid PTO cover.

