

Operator's Manual

30-inch Hydraulic Tiller Attachment

For FastAttach™ Compatible Garden Tractors

Model

OEM-190-825

NOTE: OEM-190-824 Sleeve Hitch with Electric Lift (available separately) is **required** for use of this attachment.

MTD PRODUCTS INC. P.O. BOX 368022 CLEVELAND, OHIO 44136-9722

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FINDING MODEL NUMBER

This Operator's Manual is an important part of your new tiller attachment. It will help you assemble, prepare and maintain the unit for best performance. Please read and understand what it says.



Before you start assembling your new equipment, please locate the model plate on the front, left portion of the tiller frame and copy the information from it in the space provided below. The information on the model plate is very important if you need help from our Customer Support Department or an authorized dealer.

(Model Number)	(Serial Number)
 MTD PRODUCTS INC CLEVELAND, OHIO 44136	

Copy the model number here: _____

Copy the serial number here: _____

CALLING CUSTOMER SUPPORT

If you have difficulty assembling this product or have any questions regarding the controls, operation or maintenance of this unit, please call the Customer Support Department.



Call **1- (330) 220-4MTD** (4683) or **1- (800)-800-7310** to reach a Customer Support representative. Please have your unit's model number and serial number ready when you call. See previous section to locate this information. You will be asked to enter the serial number in order to process your call.

SECTION 1: IMPORTANT SAFE OPERATION PRACTICES



WARNING: This symbol points out important safety instructions which, if not followed, could endanger the personal safety and/or property of yourself and others. Read and follow all instructions in this manual before attempting to operate this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol—**heed its warning**.

DANGER: This machine was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

General Operation

- Read this operator's manual carefully in its entirety before attempting to assemble this machine. Read, understand, and follow all instructions on the machine and in the manual(s) before operation. Be completely familiar with the controls and the proper use of this machine before operating it. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
- This machine is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times. Your unit has been designed to perform one job: to till soil. Do not use it for any other purpose.
- Never allow children under 14 years old to operate this machine. Children 14 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent. Only responsible individuals who are familiar with these rules of safe operation should be allowed to use your machine.
- Thoroughly inspect the area where the equipment is to be used. Remove all stones, sticks, wire, bones, toys and other foreign objects which could be picked up and thrown by the tiller tines in any direction which could cause serious personal injury to the operator or any others allowed in the area. Plan your tilling pattern to avoid discharge of material toward roads, sidewalks, bystanders and the like. To help avoid tine contact or a thrown object injury, keep children, bystanders and helpers at least 75 feet from the tiller attachment while it is in operation. Stop tiller if anyone enters the area.
- Always wear safety glasses or safety goggles during operation or while performing an adjustment or repair to protect eyes from foreign objects that may be thrown from the machine in any direction.
- Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Shirts and pants that cover the arms and legs and steel-toed shoes are recommended. Loose fitting clothes and jewelry can be caught in movable parts. Never operate a unit in bare feet, sandals, slippery or light weight (e.g. canvas) shoes.
- Do not put hands or feet near or under rotating parts. Keep clear of the tiller tines at all times as the rotating tines can cause injury.
- Never operate the tiller without the rear deflector in its proper place.
- Disengage the PTO and raise the tiller attachment when crossing gravel drives, walks, or roads.
- Watch for traffic when operating near or crossing roadways. This machine is not intended for use on any public roadway.
- Do not operate while under the influence of alcohol or drugs.
- Use tiller attachment in daylight or in good artificial light only.
- NEVER carry passengers.
- Slow down before turning. Operate the machine smoothly. Avoid erratic operation and excessive speed.
- Use a slow ground speed when tilling soil for the first time. Fast speeds may cause you to lose control and may also damage the machine.
- Disengage the PTO and raise the tiller attachment before shifting into reverse and backing up. Always look down and behind before and while backing up to avoid a back-over accident.
- Disengage the PTO and raise the tiller attachment before making sharp turns. Leaving the tiller lowered and engaged may adversely affect the steering and control of the tractor.
- Use extra caution when making turns, especially in tight areas or around obstacles. The tiller attachment extends beyond the back of the tractor and could strike an adjacent object (e.g. tree, fence, bystander etc.) which could damage the machine or cause personal injury.
- Check overhead clearances carefully before driving under power lines, wires, bridges, low hanging tree branches, before entering or exiting buildings, or any other situation where the operator may be struck or pulled from the unit, which could result in serious personal injury.
- Disengage the PTO and raise the tiller attachment when not in use.
- Never leave a running machine unattended. Always disengage PTO, place transmission in neutral, set parking brake, turn engine off and remove key before dismounting.

- Disengage the PTO, stop the engine and wait until the tiller comes to a complete stop before making any repairs, adjustments, or removing any rocks or debris.
- Use extra caution when loading or unloading the machine into a trailer or truck. A tractor with a tiller attachment should not be driven up or down a ramp onto a trailer or truck under power, the unit could tip over causing serious personal injury. The unit must be pushed manually to load or unload properly.
- Follow all manufacturer's recommendations for use of counterweights to improve machine stability.
- If situations occur which are not covered in this manual, use care and good judgment. Contact your dealer for assistance. Telephone 1-800-800-7310 for the name of your nearest authorized service dealer.

Slope Operation

Slopes are a major factor related to loss of control and tip-over accidents which can result in severe injury or death. Operation on slopes requires extra caution. If you cannot back up the slope or if you feel uneasy on it, do not till it. For your safety, use the slope gauge included as part of this manual to measure slopes before operating this unit on a sloped or hilly area. If the slope is greater than 10 degrees as shown on the slope gauge, do not operate this unit on that area or serious injury could result.

Do:

- Till up and down slopes, not across. Exercise extreme caution when changing direction on slopes.
- Watch for holes, ruts, bumps, and hidden objects (e.g. rocks etc.) which can be under the soil. Uneven terrain could overturn the machine which may cause personal injury.
- Use slow speed. Choose a low enough speed setting so that you will not have to stop or shift while on the slope. Always keep the machine in gear when going down slopes to take advantage of the engine braking action.
- Keep all movements on slopes slow and gradual. Do not make sudden changes in speed or direction. Rapid engagement or braking could cause the front of the machine to lift and rapidly flip over backwards which could cause serious personal injury.
- Avoid starting and stopping on a slope. If tires lose traction, Disengage the PTO and proceed slowly straight down the slope.
- Use extra care with the tiller attachment as it can change the stability of the machine.
- Follow all manufacturer's recommendations for wheel weights or counterweights to improve the stability of the machine.

Do Not:

- Do not turn on slopes unless necessary; then, turn slowly and gradually downhill, if possible.

- Do not till near drop-offs, ditches or embankments. The machine could suddenly overturn if a wheel or the attachment is over the edge, or if the edge caves in.
- Do not operate machine on wet grass. Reduced traction could cause sliding and loss of control of the machine.
- Do not try to stabilize the machine by putting your foot on the ground.
- Do not till slopes greater than 10 degrees as shown on the slope gauge.

Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the tilling activity. They do not understand the dangers. Never assume that children will remain where you last saw them.

- Keep children out of the tilling area and under the watchful care of a responsible adult other than the operator.
- Be alert and turn the machine off if a child enters the area.
- Before and while moving backwards, look behind and down for small children.
- Use extreme care when approaching blind corners, doorways, shrubs, trees, or other objects that may obscure your vision of a child who may run into the machine.
- NEVER carry children, even with the attachment disengaged. They may fall off and be seriously injured or interfere with safe machine operation.
- Keep children away from hot or running engines. They can suffer burns from a hot muffler.
- Remove key when machine is unattended to prevent unauthorized operation.

Never allow children under 14 years old to operate a power mower. Children 14 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent.

Service

Safe Handling of Gasoline:

To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on yourself or your clothes which can ignite. Wash your skin and change clothes immediately.


- Use only an approved gasoline container.
- Extinguish all cigarettes, cigars, pipes and other sources of ignition.
- Never fuel machine indoors because flammable vapors will accumulate in the area.

- Never remove gas cap or add fuel while the engine is hot or running. Allow engine to cool at least two minutes before refueling.
 - Never over fill fuel tank. Fill tank to no more than ½ inch below bottom of filler neck to provide space for fuel expansion.
 - Replace gasoline cap and tighten securely.
 - If gasoline is spilled, wipe it off the engine and equipment. Move unit to another area. Wait 5 minutes before starting the engine.
 - Never store the machine or fuel container inside where there is an open flame, spark or pilot light as on a water heater, space heater, furnace, clothes dryer or other gas appliances.
 - To reduce fire hazard, keep machine free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage and remove any fuel soaked debris.
 - Allow machine to cool at least 5 minutes before storing.
- General Service:**
- Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
 - Before cleaning, repairing, or inspecting, make certain the tines and all moving parts have stopped. Disconnect the spark plug wire and ground against the engine to prevent unintended starting.
 - Never attempt to make adjustments or repairs to the machine while the engine is running.
 - Never check for leaks in the hydraulic lines with your hands. Hot, high pressure fluid can escape through a pin hole leak and cause serious injury by puncturing the skin and causing blood poisoning.
 - Observe proper disposal laws and regulations. Improper disposal of fluids and materials can harm the environment.
- Muffler, engine and belt guards become hot during normal operation and can cause a burn. Hydraulic hoses, fittings and fluid also become hot during normal operation. Allow the machine, tiller attachment, and its related hardware time to cool before cleaning, repairing, or inspecting.
 - Check the tine mounting bolts at frequent intervals for proper tightness. Also, visually inspect tines for damage (e.g., bent, cracked, worn etc.) Replace tines with the original equipment manufacturer's (O.E.M.) tines only, listed in this manual. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
 - Tiller tines are sharp and can cause serious injury. Wrap the tines or wear gloves, and use extra caution when servicing them.
 - Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
 - Never tamper with safety devices. Check their proper operation regularly. Use all guards as instructed in this manual.
 - After striking a foreign object, stop the engine, disconnect the spark plug wire and ground against the engine. Thoroughly inspect the machine for any damage. Repair the damage before starting and operating.
 - Check brake operation frequently as it is subjected to wear during normal operation. Adjust and service as required.
 - If the tractor or tiller attachment should begin to vibrate abnormally, stop the engine and check over the equipment immediately for the cause. Abnormal vibration is a warning of a problem.
 - Do not change the engine governor setting or overspeed the engine.
 - Maintain or replace safety and instruction labels, as necessary.

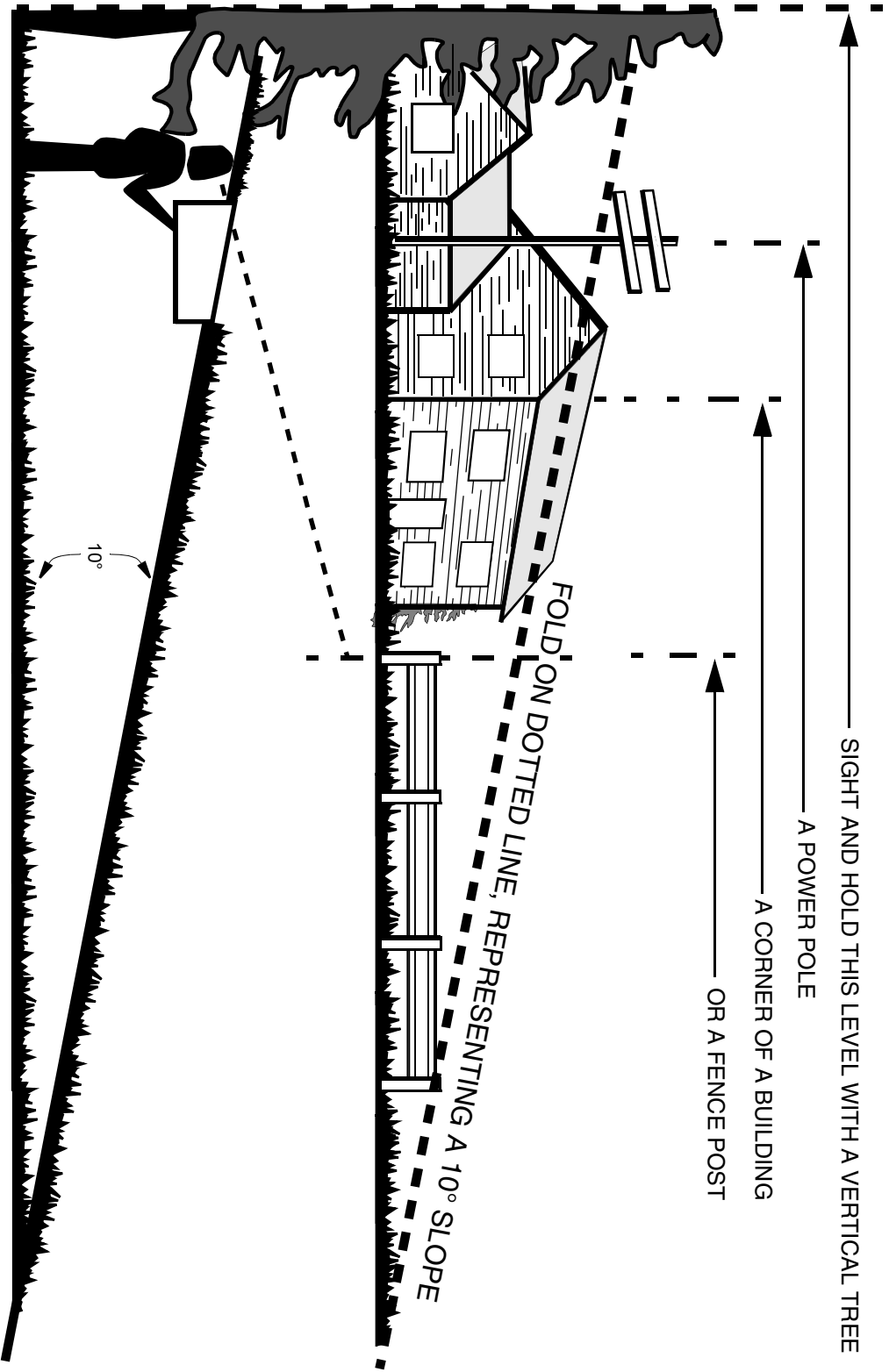
Your Responsibility



Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine. **The safety label on the equipment is reproduced below.** Take a moment to study the label before operating the unit. Always maintain safety while operating or servicing the equipment.

<p>⚠ WARNING</p> <p>TO AVOID SERIOUS INJURY</p> <ul style="list-style-type: none"> ● READ THE OPERATOR'S MANUAL. ● KNOW LOCATION AND FUNCTIONS OF ALL CONTROLS. ● KEEP ALL SAFETY DEVICES AND SHIELDS IN PLACE AND WORKING. ● NEVER ALLOW CHILDREN OR UNINSTRUCTED ADULTS TO OPERATE TILLER. ● SHUT OFF ENGINE BEFORE UNCLOGGING TINES OR MAKING REPAIRS. ● KEEP BYSTANDERS AWAY FROM MACHINE. ● KEEP AWAY FROM ROTATING PARTS. ● HOT, HIGH PRESSURE FLUID CAN ESCAPE THROUGH A PIN HOLE LEAK AND CAUSE SERIOUS INJURY BY PUNCTURING THE SKIN AND CAUSING BLOOD POISONING. ● NEVER CHECK FOR LEAKS WITH YOUR HANDS. <p style="text-align: right;">S30043</p>	<p>⚠ WARNING</p>  <p>KEEP AWAY FROM ROTATING TINES. ROTATING TINES WILL CAUSE INJURY.</p>
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SECTION 2: SLOPE GAUGE



Do not use the tiller attachment and tractor on inclines with a slope in excess of 10 degrees (a rise of approximately 2 feet every 10 feet). A riding mower could overturn and cause serious injury. Operate RIDING mowers up and down slopes, never across the face of slopes.

SECTION 3: TO THE OWNER

Model OEM-190-825 hydraulic tiller attachment is designed for use on FastAttach™ compatible **Garden Tractors** only. It will NOT fit nor operate properly or safely on ANY other tractor. **It will NOT fit nor operate properly or safely on FastAttach™ compatible Lawn Tractors.** The use of OEM-190-825 hydraulic tiller attachment on FastAttach™ compatible **Lawn Tractors** will void the tractor's warranty as to resulting damages.

The use of Model OEM-190-824 Electric Sleeve Hitch (NOT included with OEM-190-825 hydraulic tiller attachment) is **required** for the proper operation of this tiller attachment. The use of the front weights (included with OEM-190-825 hydraulic tiller attachment) is also **required** for the safe and proper operation of this tiller attachment.

The instructions in this manual are divided into sections. Carefully read all sections and study the illustrations to ensure proper installation and usage of this attachment. Read and observe all **WARNING** statements. They are included to provide for the protection of the equipment installer and operator, and to ensure the prolonged service life of the equipment.

References to LEFT and RIGHT indicate the left and right sides of the tractor and tiller attachment when facing forward in the operator's position. Reference to the FRONT indicates the grille end of the tractor and reference to the REAR indicates the drawbar end where the tiller attaches.

SECTION 4: CONTENTS OF CARTON

The carton contents of OEM-190-825 hydraulic tiller attachment are listed below and shown in Figure 1. Remove all loose parts from the carton before discarding it. Refer to Figure 1 throughout the following sections of the manual to identify the parts, noting that these parts will be referred to again.

- One Tiller Assembly
- One Undercarriage Assembly w/ Hydraulic Pump
- One Front Weight Bracket w/ Three 45 lb. Weights
- Two Hydraulic Hoses
- Two Hydraulic Hoses
- One V-belt (754-0490) for Electric PTO Tractors
- One V-belt (754-0341) for Manual PTO Tractors

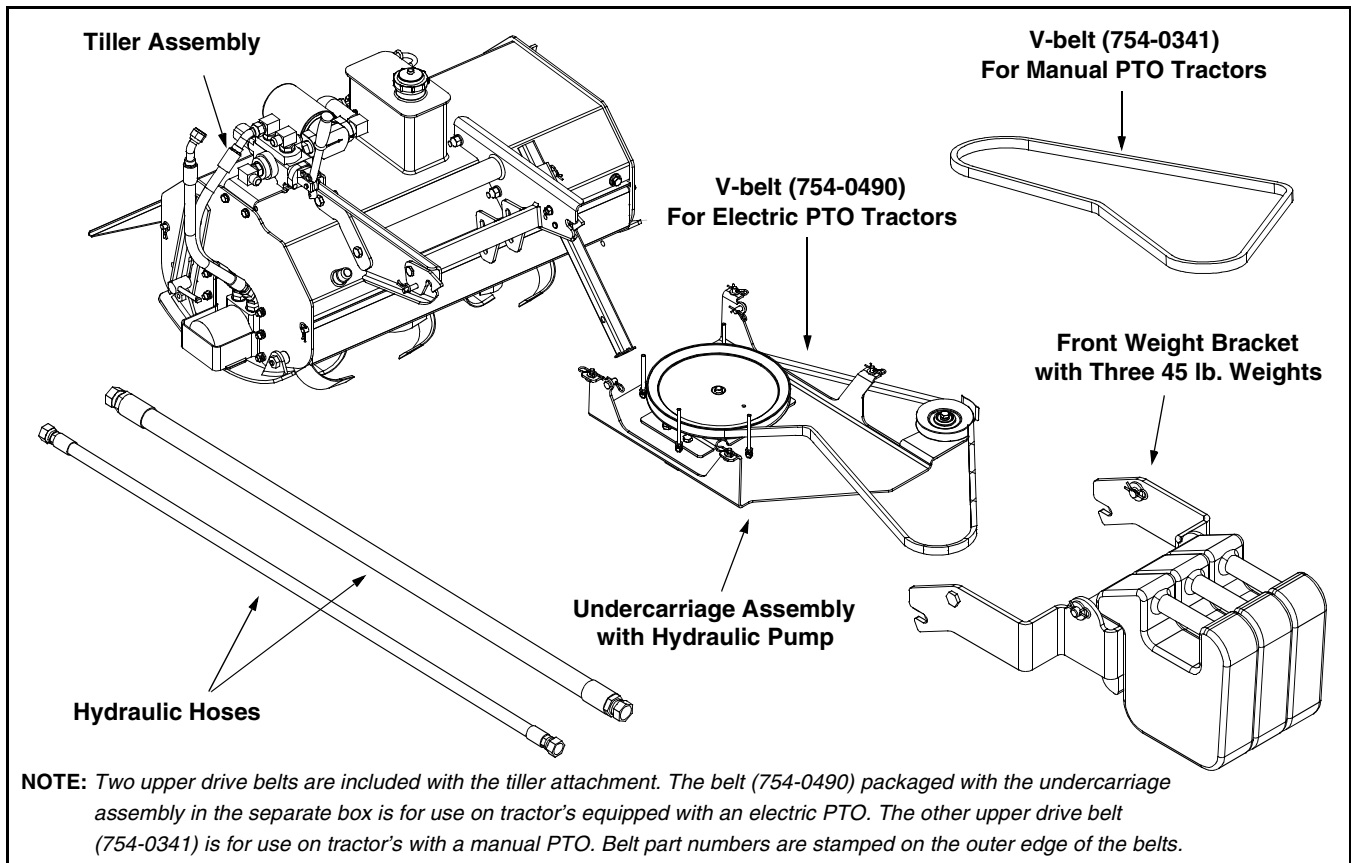


Figure 1

SECTION 5: ASSEMBLING THE TILLER

Attaching the Hydraulic Hoses

Two hydraulic hoses are packaged separately in the carton. Both hoses have female connectors on either end and will attach to male connectors on both the hydraulic pump assembly (found on the underside of the undercarriage assembly) and the tiller assembly itself.

To connect the hydraulic hoses to the hydraulic pump assembly, proceed as follows:

- Locate the two male hydraulic fittings on the rear of the hydraulic pump found on the underside of the undercarriage assembly. Note that one fitting has a noticeably larger diameter than the other.
- Hand tighten the end of the smaller diameter hose onto the smaller male fitting of the hydraulic pump.

IMPORTANT: Make **certain** not to cross thread the connectors when attaching the hoses to the hydraulic pump.

- Repeat the previous step for the large diameter hydraulic hose.
- Use two wrenches (one wrench to prevent the hose from spinning while tightening, and the other to tighten the connectors together) to securely fasten the hoses to the hydraulic pump.

The tiller comes shipped as an assembly. The tiller does not, however, get shipped with the hydraulic fluid that is required to drive the tiller. Before adding any fluid, the two hydraulic hoses that are attached to the hydraulic pump assembly need to be secured to the tiller.

To connect the hydraulic hoses to the tiller assembly, proceed as follows:

- Locate the two male hydraulic fittings on the front of the tiller assembly. Note that one fitting has a noticeably larger diameter than the other. See Figure 2.
- Attach the hoses to the tiller in the same fashion as they were attached to the hydraulic pump in previous steps.

To connect the hydraulic hose leading from the hydraulic motor to the hydraulic valve on the right side of the tiller assembly, proceed as follows:

- Thread the hose end labeled “A” in Figure 2 to the 90° adapter labeled “A” in Figure 2. Tighten securely.

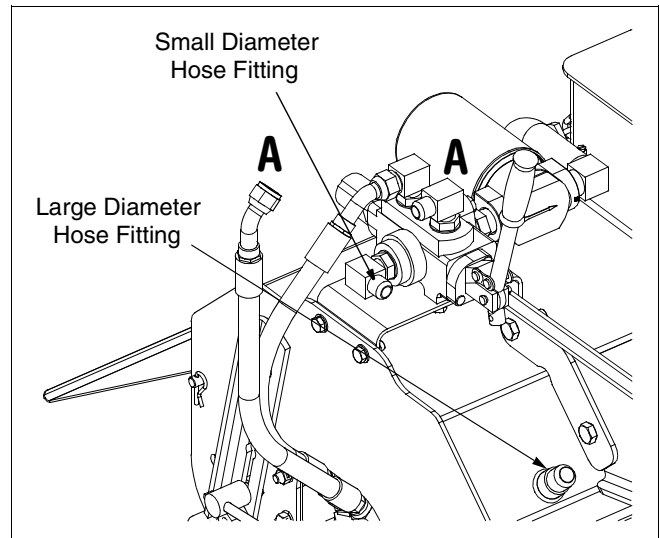


Figure 2

IMPORTANT: Make **certain** that the hose connectors are tightly secured to the fittings on both the hydraulic pump AND the tiller assembly before proceeding on to **Filling the Hydraulic Reservoir.**

Filling the Hydraulic Reservoir

The tiller attachment operates using hydraulic fluid. Add the fluid **ONLY** after all the hydraulic hoses are connected. The following list includes fluids that are approved for use in this tiller:

- *Mobile 424*
- *Texaco TDH*
- *Shell Donax*
- *Farmland TF*
- *Citgo TF*
- *Sun Tractor Fluid*
- *Amoco 1000*
- *Shell TTF*

To properly fill the hydraulic reservoir on the tiller assembly, proceed as follows:

- Remove the hydraulic tank dipstick/cap from the top of the tiller assembly.
- Carefully pour 4-½ gallons of hydraulic fluid into the opening.
- Replace the dipstick.

IMPORTANT: Be certain to recheck the hydraulic fluid level after the tiller has been mounted on the tractor and the hydraulic pump has been engaged.

NOTE: Refer to the **MAINTENANCE** section of this manual for detailed instructions regarding checking the fluid level & changing the hydraulic fluid and filter.

SECTION 6: PREPARING THE TRACTOR



WARNING: Before beginning installation, place the tractor on a firm and level surface. Place the PTO in the disengaged (OFF) position, stop the tractor engine and set the parking brake.

Your tractor's cutting deck, PTO belt and front deck stabilizer bracket must be removed prior to mounting the tiller attachment. Refer to your tractor's Operator's Manual for detailed instructions. If your tractor is equipped with any front-end accessory (i.e. front bumper kit), it must also be removed.

NOTE: References to *LEFT* and *RIGHT* indicate the left and right sides of the tractor and/or the tiller attachment from the operator's position in the tractor's seat.

IMPORTANT: The use of this tiller attachment **requires** the use of the weight bracket and three 45 lb. weights (included with this tiller attachment) mounted on the front of the tractor.



WARNING: Never operate your tractor with the tiller attachment mounted without the three 45 lb. weights in place. Doing so presents a tip-over hazard which could result in serious injury to the operator.

SECTION 7: MOUNTING THE TILLER ATTACHMENT

Weight Bracket & Weights

A front weight bracket with three 45 lb. weights is packaged separately in the carton. The **tractor should NEVER be operated with the tiller attachment mounted without the weight bracket and three 45 lb. weights in place.**

To connect the weight bracket to the tractor's front-end, proceed as follows:

- Remove the clevis pins, flat washers and hairpin clips found on both sides of the weight bracket. Save this hardware, as it will be reinserted in the following steps.
- Position the slotted portions of the weight bracket over the shoulder bolts found on the left and right sides of the tractor's front pivot support brackets. See Figure 3.

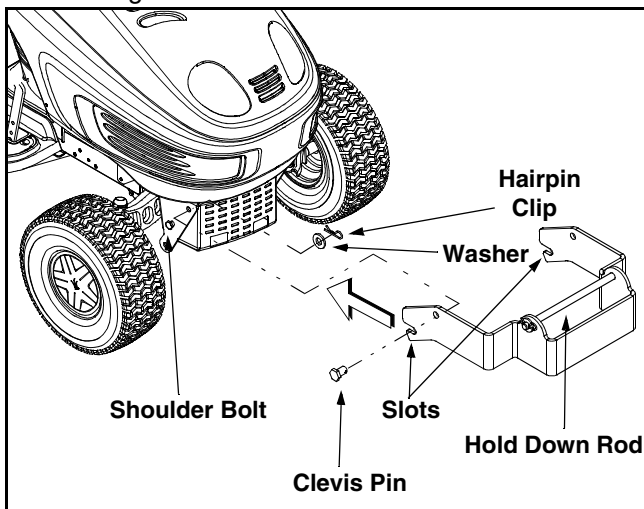


Figure 3

- Reinsert the clevis pins through the aligning holes in both the weight bracket and the tractor's front pivot support brackets.
- Secure the weight bracket by reattaching the washers and hairpin clips removed earlier. See Figure 3.
- Remove the hairpin clip and washer from one end of the hold down rod on the weight bracket and slide the rod out the opposite side. See Figure 3.
- Carefully place the weights onto the bracket one at a time. See Figure 4.



WARNING: Weights are heavy. Exercise caution when lifting the weights and placing them onto the front weight bracket. Do NOT overexert yourself.

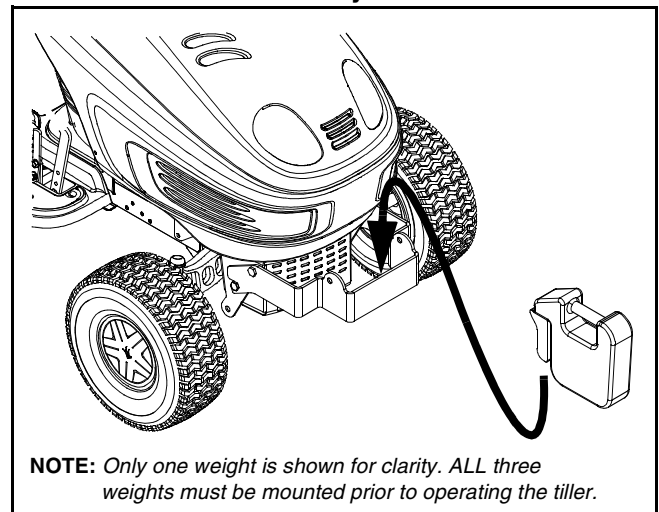


Figure 4

- After all three weights are mounted, reinsert the hold down rod into the weight bracket and secure it by reattaching the hairpin clip and washer removed earlier.

Tiller

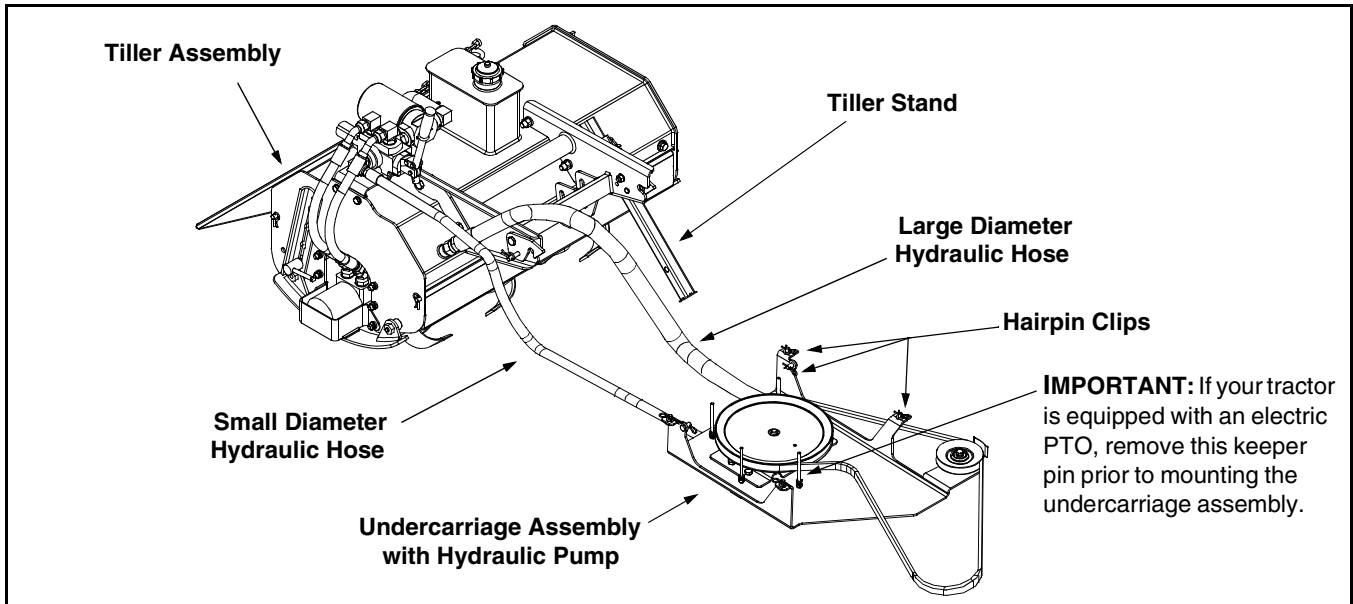


Figure 5

Undercarriage Assembly

- With the tiller stand lowered to support the weight of the tiller assembly, position the undercarriage assembly and tiller assembly (with the hoses attached) as shown in Figure 5 on a cleared, flat surface.
- Remove the two hairpin clips (and the clevis pins they're securing) from the rear of the undercarriage assembly. See Figure 6. Also remove the four hairpin clips and flat washers from the four weld pins found on the top side of the undercarriage assembly. Save this hardware, as it will be reinserted in the following steps.
- If your tractor is equipped with an electric PTO, remove the front, right keeper pin from the undercarriage assembly. See Figure 5.

IMPORTANT: If the sleeve hitch (OEM-190-824) has not been mounted to the tractor at this point of the assembly, do so before proceeding on to the next step.

- Carefully position (by pushing, NOT driving) the tractor over the undercarriage assembly.

IMPORTANT: Be very careful NOT to roll one of the tractor's rear tires over the hydraulic hoses.

- Set the tractor's parking brake to keep the tractor from rolling.
- Move the tractor's lift lever into the lowest notch on the right fender allowing the lift arms located beneath the tractor to drop.
- Reinsert the clevis pin removed earlier from the right side of the undercarriage assembly into aligning holes in both the undercarriage assembly and the tractor's right lift arm. See Figure 6.
- Repeat the previous step on the left side of the undercarriage assembly.

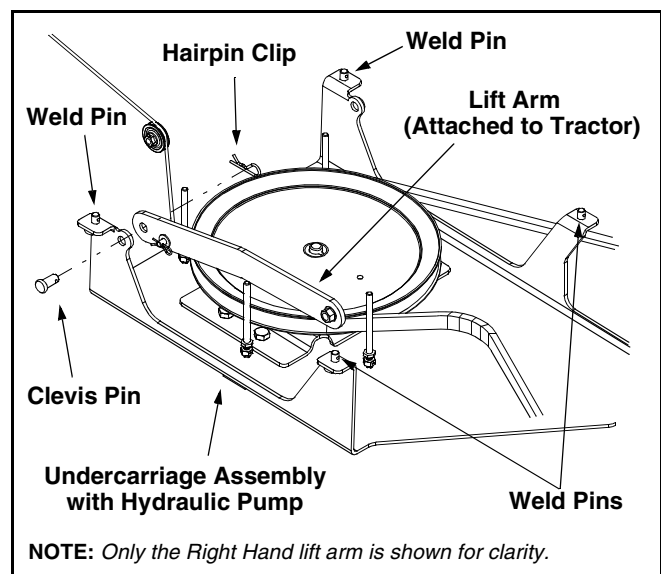


Figure 6

- Carefully move the tractor's lift lever into the highest notch on the right fender allowing the lift arms, with the rear portion of the undercarriage assembly fastened to it to rise.
- Pivot the front portion of the undercarriage assembly upward so that the weld pins (Refer to Figure 6) located on the top side of the undercarriage align with the holes found in both the left frame rail and the right frame rail of the tractor.

IMPORTANT: Make certain that the belt is routed to the OUTSIDE of the front left weld pin as illustrated in Figure 6 before proceeding on to the next step.

- Insert the weld pins into the frame rail holes and secure them by reattaching the washers and hairpin clips removed earlier.

- Repeat the previous step on the rear of the undercarriage assembly.

Tiller Assembly

Note how the electric sleeve hitch cylinder shaft is attached to the sleeve hitch U-bracket (refer to Figure 7 & Figure 8) before proceeding on to the first step below. Upon completing the following steps, the tiller assembly will be attached to the sleeve hitch cylinder shaft in the exact same manner.

Remove the sleeve hitch U-bracket from the sleeve hitch assembly as follows:

- Remove the two hairpin clips securing the hitch rod to the sleeve hitch U-bracket. Do NOT, however, remove the hitch rod yet. This will be done in following steps. See Figure 7.
- Remove the two washers and two hairpin clips (Not visible in Figure 7, Refer to Figure 8) securing the lower cylinder support rod to the sleeve hitch assembly.
- Remove the lower cylinder support rod. This will allow the sleeve hitch U-bracket to pivot downward.

IMPORTANT: Be careful not to lose the two spacers (Refer to Figure 8) found on the lower cylinder support rod.

- Remove the hitch rod, freeing the sleeve hitch U-bracket entirely.

NOTE: Store the sleeve hitch U-bracket in a safe place. It is NOT needed to mount and operate this tiller attachment, but *is* required for use with other tractor rear-end attachments.

- Reinsert the hitch rod back into the holes in the sleeve hitch bracket and secure it with the hairpin clips removed earlier. See Figure 8. Do NOT reinsert the lower cylinder support rod yet. This will be done in later steps.
- Remove the two clevis pins from the hitch latches found on both sides of the tiller assembly by first removing the two hairpin clips which secure them in place. See Figure 9.

IMPORTANT: If it's not already raised, use the toggle switch from OEM-190-824 to place the electric lift cylinder shaft into the fully raised position before proceeding on to the next step.

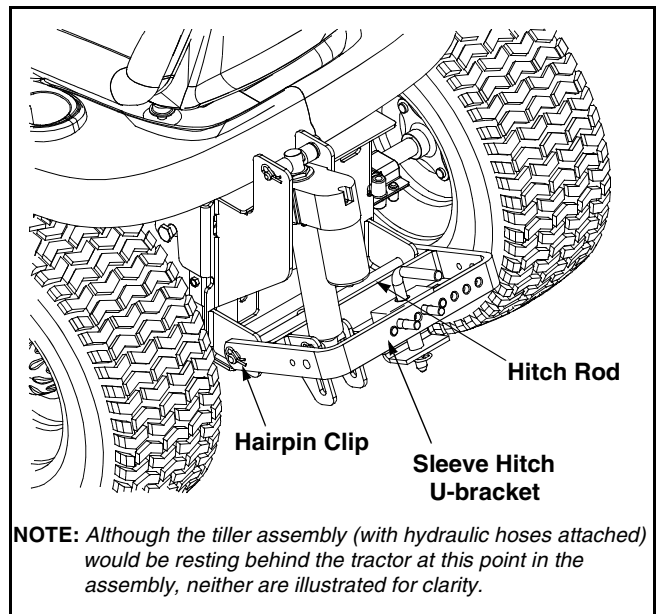


Figure 7

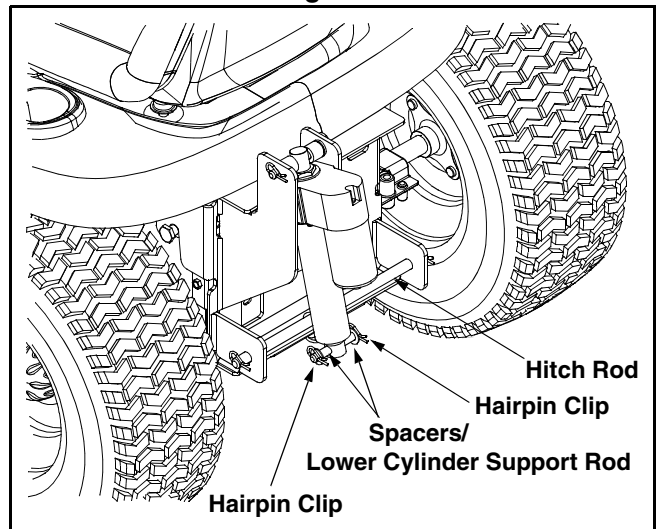


Figure 8

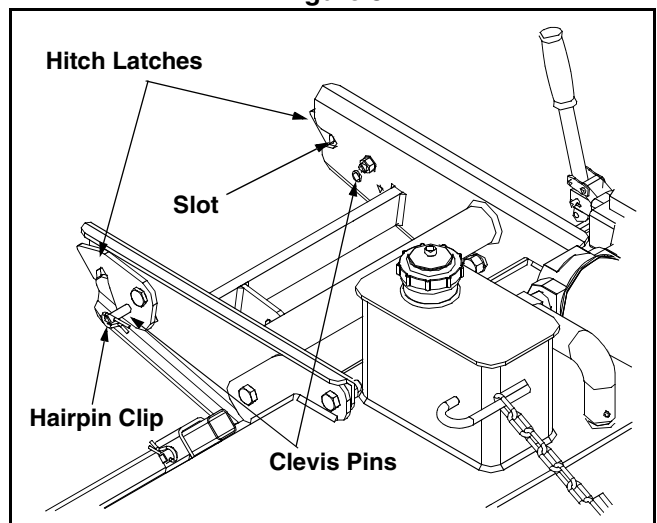


Figure 9

IMPORTANT: Before proceeding to the next step, make certain that both the large diameter hose and the small diameter hose are routed to the **INSIDE** of both hitch latches as illustrated in Figure 10 & Figure 11. Failure to properly route the hoses may cause the tractor tire coming in constant contact with a hydraulic hose, resulting in premature wear.

- Position the slotted portions on the front of the tiller assembly (found to the **INSIDE** of the hitch latches, refer to Figure 9) onto the hitch rod of the sleeve hitch. The hitch latches will then fall into place over the hitch rod.
- Reinsert the clevis pins into the aligning holes in both the tiller assembly and the hitch latches and secure them with the hairpin clips removed earlier. Refer to Figure 10.

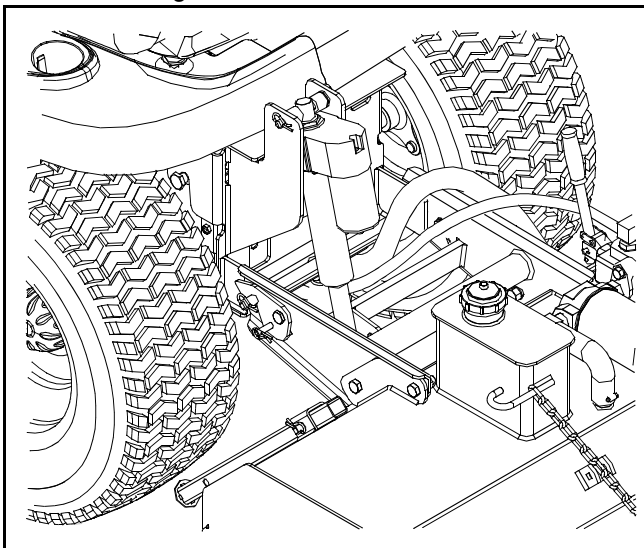


Figure 10

- Be certain that the hoses are routed as illustrated in Figure 11 before proceeding on to the next step.

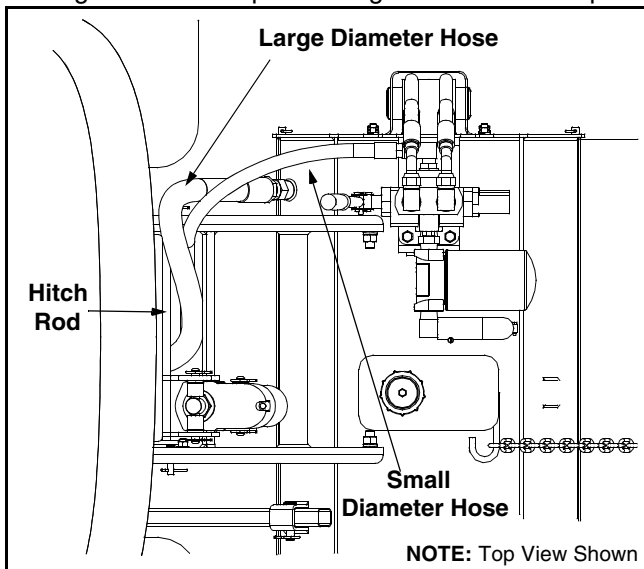


Figure 11

- Insert the lower cylinder support rod through the two spacers removed earlier, the sleeve hitch cylinder shaft and both slots found in the tiller assembly as illustrated in Figure 12.

NOTE: The sleeve hitch cylinder shaft will have to be lowered using the toggle switch on the tractor's dash to properly secure the lower cylinder support rod to the tiller assembly.

- Secure the lower cylinder support rod in place with the washers and hairpin clips removed earlier. See Figure 12.

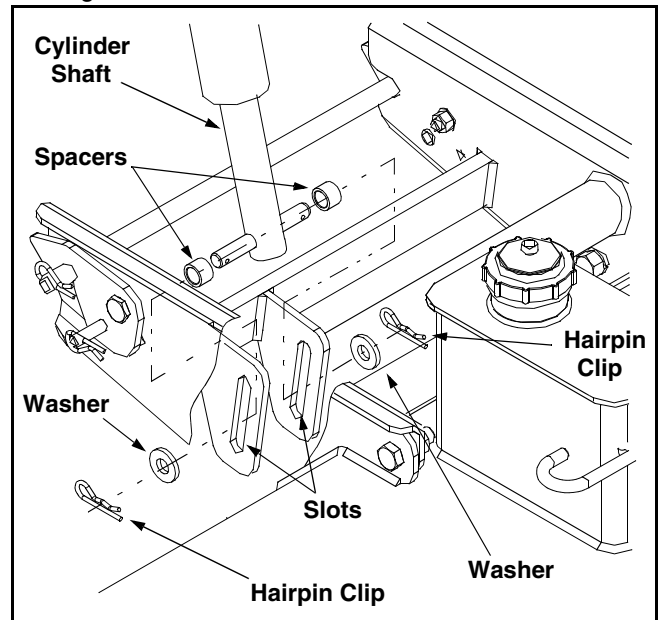


Figure 12

Routing The Tiller Drive Belt

IMPORTANT: Make certain that the correct belt is in place on the undercarriage assembly prior to attempting to route the belt on the tractor's PTO. Refer to the **NOTE** in Figure 1 on page 7.

Route the tiller drive belt in the same manner that the tractor's cutting deck PTO belt was routed. Refer to the **MAINTENANCE** section of your tractor's Operator's Manual.

IMPORTANT: Make certain that the belt is routed to the **INSIDE** of all four keeper pins surrounding the large pulley on the top side of the undercarriage assembly and the **INSIDE** of the idler pulley belt guard found on the front left portion of the undercarriage assembly before operating the tiller.

SECTION 8: KNOW THE TILLER

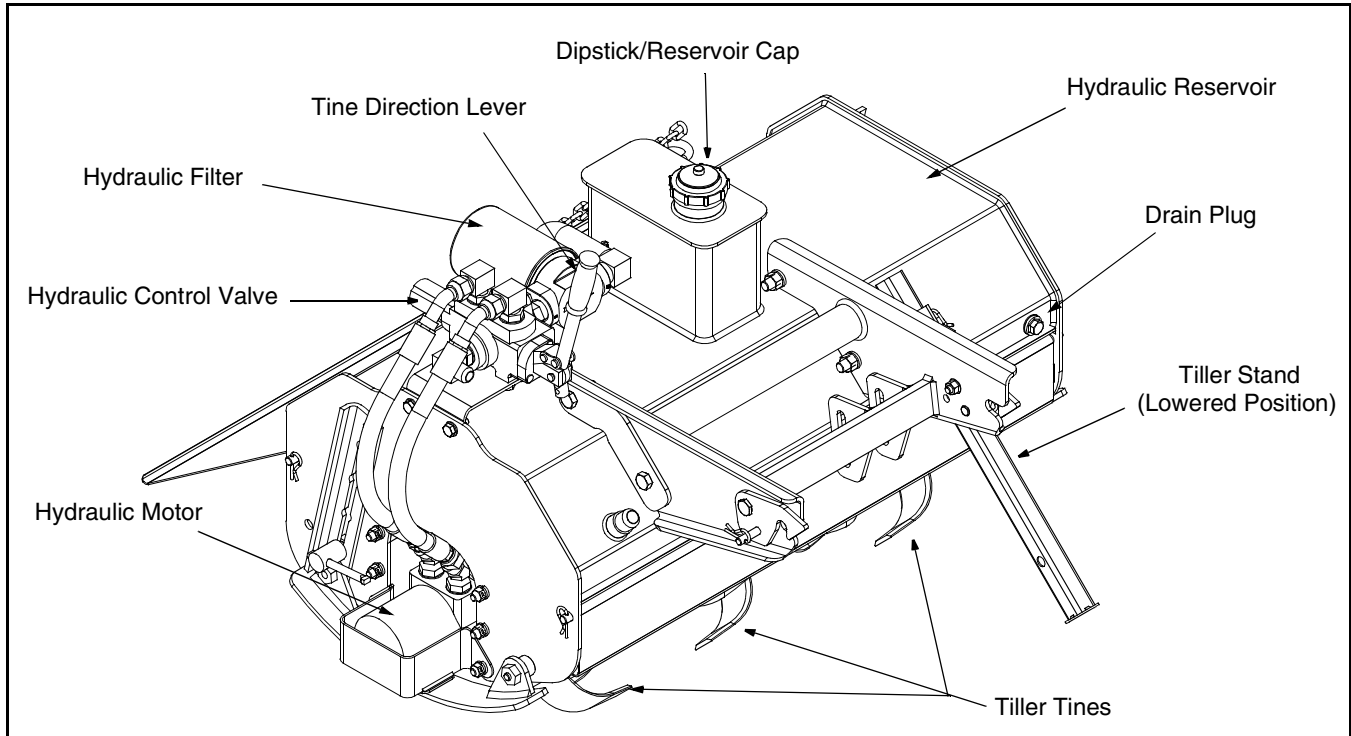


Figure 13

Tine Direction Lever

The tine direction lever is located on the top of the tiller attachment on the right side of the unit. See Figure 13. This lever is used to control which direction the tines turn.

IMPORTANT: Always place the tractor's PTO in the disengaged (OFF) position before changing the direction of the tines. Failure to do so WILL result in serious damage to the tiller's hydraulic motor.

Tiller Tines

The tiller's tines are located under the frame of the tiller. The tines cultivate the soil when placed in contact with the ground with the tractor in motion.

The tines are replaceable and wear should be expected. The rate of wear will vary with application.



WARNING: Tiller tines are sharp and can cause serious injury. Always wear heavy gloves when servicing the tines.

Hydraulic Filter

The hydraulic system on the tiller attachment has a filter that is located directly to the left of the hydraulic control valve. The filter (Part No. 723-0405) keeps the hydraulic fluid free from impurities and should be changed according to manufacturer's data as listed in the MAINTENANCE section of this manual.

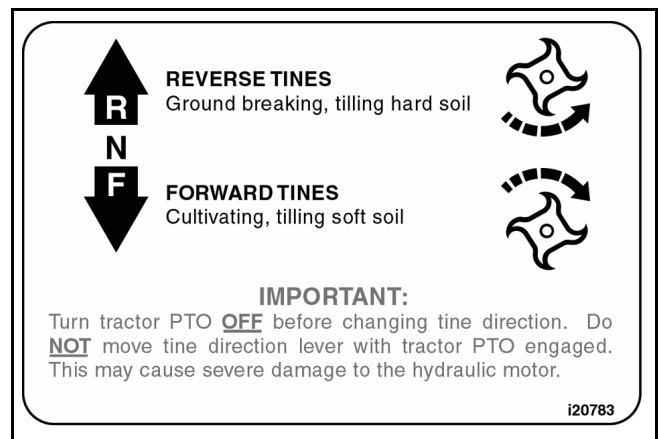


Figure 14

Hydraulic Pump

Located on the underside of the undercarriage assembly, the hydraulic pump is driven by a belt engaged and disengaged with the tractor's PTO. The hydraulic pump moves fluid through hydraulic hoses to and from the hydraulic motor found on the tiller.

NOTE: The PTO on the tractor will not function while the tractor is traveling in reverse. Use the tiller only while traveling forward. See SAFETY INTERLOCK SWITCHES in the OPERATION section of your tractor's Operator's Manual for more detailed information.

Hydraulic Reservoir

The hydraulic reservoir is a part of the tiller frame and can be filled by removing the dipstick/reservoir cap located directly on top of the tiller in the center. The dipstick/reservoir cap is vented to allow for expansion of the hydraulic fluid as it heats up during normal use.

IMPORTANT: Always maintain the correct level of fluid in the reservoir. Failure to do so could result in serious damage to the hydraulic motor.



WARNING: Hydraulic hoses, fittings, and fluid become hot during normal usage. Allow the machine to cool down before checking fluid level or performing any maintenance.

Tiller Stand

The tiller attachment is equipped with a stand located on the front, left portion of the tiller which allows the assembly to balance on its own when it is not attached to the tractor. To apply the tiller stand, proceed as follows:

- Pull the hairpin clip which secures the clevis pin to the tiller stand. See Figure 15.

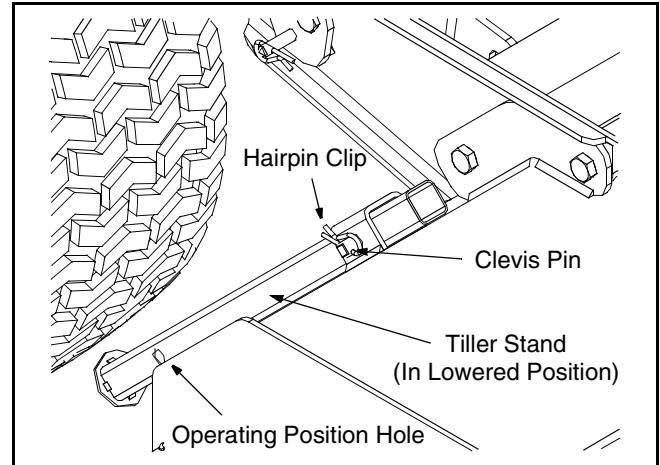


Figure 15

- Remove the clevis pin before positioning the tiller stand in either the operating position or the lowered position.
- Reinsert the clevis pin and secure with the hairpin clip removed earlier.

SECTION 9: OPERATING THE TILLER

IMPORTANT: The use of this tiller attachment **requires** the use of the weight bracket and three 45 lb. weights (included with this tiller attachment).



WARNING: Never operate your tractor with the tiller attachment mounted without the three 45 lb. weights in place.

Fluid Level

IMPORTANT: Check the tiller's hydraulic fluid level as instructed in the ASSEMBLY section of this manual before using the unit. **Read instructions carefully.**



WARNING: Never check the hydraulic oil level immediately after using the tiller. Hydraulic oil reaches high temperatures during normal usage and may build pressure in the system. Allow the tiller to cool before checking the fluid level.

Engaging the Tines

The tiller attachment's tine direction lever can be placed in one of the three following positions:

F is the forward tilling position. Pulling the tine direction lever toward the front of the tractor engages the tines into a forward tilling motion (Refer to Figure 13). Forward tilling should be used for cultivating or tilling soft soil.

N is the neutral position. When the lever is in this position, the tiller tines are not in motion. Place the tine direction lever in neutral whenever transporting the unit.

R is the reverse (counter-rotating) tilling position. Pushing the tine direction lever toward the rear of the tiller, or away from the operator, engages the tines into a counter-rotating tilling motion (Refer to Figure 13). Reverse direction tilling is used for breaking ground or tilling hard soil.

The tiller attachment's tines are engaged in the same manner as the blades on a cutting deck attachment, by placing the tractor's PTO in the engaged (ON) position. Always place the tine direction lever in either **F** or **R** BEFORE engaging the tractor's PTO.

IMPORTANT: Always turn the tractor's PTO into the disengaged (OFF) position before changing tine direction. Do not move the tine direction lever with the PTO engaged. Doing so will result in serious damage to the hydraulic motor.



WARNING: Before engaging the tiller tines, place the tractor's PTO in the disengaged (OFF) position, and set the parking brake.

Lower the tiller attachment into the ground only after carrying out the following steps in the order listed:

- Set the height of both tiller skids for your tilling application. Refer to **Tilling Depth** on the following page for detailed instructions.

- Apply the tractor's parking brake to stabilize your position.
- Make certain the tiller stand is in the fully raised (Operating) position. See Figure 13 and Figure 15.
- Place the tractor's throttle in the FAST (Rabbit) position)
- Place the tiller attachment's tine direction lever in either the Forward or Reverse position.
- Place the tractor's PTO in the engaged (ON) position.

NOTE: *Be alert! It is normal for the operator to experience tractor and tiller vibration as the tiller penetrates the ground initially.*

Tilling Ground Speed

Tilling ground speed is the speed at which the tractor is traveling with the tiller engaged and lowered into the ground. Correct ground speed is determined by the soil conditions and the depth of cut.

IMPORTANT: Regardless of soil conditions, the tiller attachment should ALWAYS be operated with the tractor's throttle in the FAST (Rabbit) position.

IMPORTANT: NEVER attempt to operate the tiller attachment while traveling in the Reverse direction. The PTO on the tractor will not function while the tractor is traveling in reverse. Use the tiller only while traveling forward.

Hard Soil

Maintain a ground speed of approximately 30% of the top speed of the tractor. If the engine is continually "bogging down" or the tractor and/or tiller is vibrating or shaking, the ground speed should be slowed.

Soft or Previously Tilled Soil

Maintain a ground speed of approximately 50% of the top speed of the tractor. If a noticeable vibration or shaking of the tiller attachment should occur, the ground speed should be slowed.

Wet Soil

Tilling soil that is wet is NOT recommended. Doing so will usually result in the formation of large clumps of soil that will dry solid and need to be tilled again.

The potential to get the tractor stuck while tilling is increased substantially while tilling wet soil. If the tractor's tires begin to spin as a result of lost traction, place the tractor's PTO in the disengaged (OFF) position, raise the tiller out of the ground, and attempt to drive out of the area.

NOTE: *Under any ground conditions, a slow and consistent ground speed while tilling will produce the finest tilled soil.*

Tilling Depth

The tilling depth is established by a combination of two different methods: Adjusting the height of the tiller attachment's skids and using the toggle switch installed as part of OEM-190-824 to raise and lower the tiller attachment.

Tiller Skids

The depth of tilling is determined in part by the position at which the skids are set. To adjust the tiller skids, proceed as follows:

- Rotate the adjustment crank found on the right side of the tiller attachment six to eight turns counter-clockwise. See Figure 16.

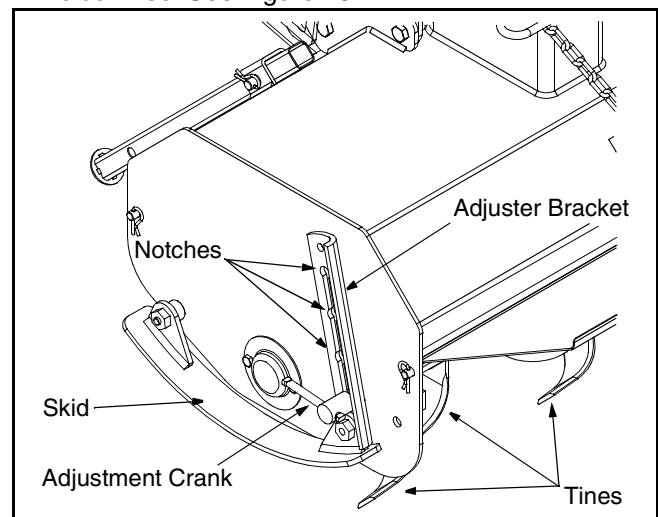


Figure 16

- Position the skid up or down before tightening the adjuster crank into one of the four notches found on the skid adjuster bracket. See Figure 16.
- Repeat the previous steps on the left side of the tiller attachment.

NOTE: *Tightening the adjuster crank into a higher notch will **decrease** tilling depth. Tightening the adjuster crank into a lower notch will **increase** tilling depth. Always position the cranks on both sides of the tiller attachment into the same notches for level tilling.*

Depending on the height of the tiller skids, the tines have an approximate tilling depth ranging between 1" and 6-1/2".



WARNING: NEVER set the tiller depth while the tractor is in motion.

IMPORTANT: ALWAYS bring the tractor to a complete stop before raising or lowering the tiller attachment.

When tilling hard ground or when tilling an area for the first time, do not till more than 2" at a time. To increase the tilling depth, lower the tiller on successive passes over the area.

Operating Tips

For best results while tilling, always till the area at least twice. Till the second pass over an area at a right angle from the first pass (criss-cross pattern).

Turning

The tiller attachment was intended to be used in a straight line only. Very slight turns while tilling can be achieved by traveling at a slower ground speed, but sharp turns during tilling will put excess stress on the frame of the tiller and tractor and will cause the equipment to shake and vibrate excessively.

Always raise the tiller attachment out of the ground before executing a sharp turn.

Clearance

The left hand side of the tiller attachment lines up evenly with the left hand tires of the tractor. To get nearest to an object while tilling, line the object up just to the left side of the tractor.

The tiller attachment makes the tractor noticeably longer. Be careful in turns! Watch the rear end clearance of the tiller attachment. In a tight turn, the tiller sticks out and may strike an object that the tractor itself normally would not come near.

Foreign Object in Tines

If a large rock or foreign object gets caught in the spinning tines, a squealing sound will occur from the hydraulic motor area of the tiller attachment and the tines will stop spinning. If this occurs, proceed as follows:

- Immediately place the tractor's PTO in the disengaged (OFF) position.

- Stop the tractor's forward motion.
- Raise the tiller out of the ground using the toggle switch installed as part of OEM-190-824.
- Place the tine direction lever in position so that the tines will spin in the opposite direction that they were spinning when the tilling motion stopped (i.e. If the tiller was in the forward (**F**) position when it stopped, shift into the reverse (**R**) position).
- Place the tractor's PTO in the engaged (ON) position.

The foreign object should be expelled from the tines.

If the object does not dislodge using this method and the hydraulic motor begins to make a "whining" sound again, proceed as follows:

- Immediately place the PTO in the disengaged (OFF) position.
- Drive the tractor to a firm and level surface.
- Shift the tine direction lever to neutral (**N**) and raise the tiller to its highest position using the toggle switch installed as part of OEM-190-824.
- **Stop the tractor engine and set the parking brake.**
- Pivot the rear tine shield upward, if necessary, and locate the object that is binding the tines.
- Using a broom handle or heavy stick, dislodge the object from between the tines and the tiller housing.

IMPORTANT: If it is absolutely necessary to reach into the tine area with your hand to remove an object, use caution around the tines which may be sharp.



WARNING: Tiller tines are sharp and can cause serious injury. Wear heavy gloves and use extra caution servicing tines.

SECTION 10: MAINTENANCE



WARNING: Before performing any maintenance, place the tractor on a firm and level surface. Place the PTO in the disengaged (OFF) position, stop the tractor engine and set the parking brake.



WARNING: If working on the tiller tines, raise the tiller to its highest point and place blocks under the edges of the tiller frame to stabilize it. Always wear gloves.

Cleaning

It is important to clean the tiller, especially the area around the tines, after every use with a hose or pressure washer.

IMPORTANT: Do NOT apply direct water pressure on or near the electric lift cylinder. Also, avoid direct water contact with the dipstick/reservoir cap on top of the hydraulic reservoir.

After washing the underside of the tiller, start the tiller tines in motion for a couple minutes to help disperse any standing water that may be near the bearings and tine shaft areas.

IMPORTANT: Always wipe up any standing water in the area around the dipstick/reservoir cap with a dry rag to avoid possible water contamination while checking the hydraulic fluid.

IMPORTANT: Always dry the tiller attachment and electric sleeve hitch attachments well with either an air hose or towel after cleaning.

Lubrication

There are several lubrication points on the tiller attachment. Using a **lithium** based lubricant such as white lithium spray (do NOT use *WD-40*), coat all the points where the tiller pivots when raising and lowering. Such points include:

- The entire area around both the hitch latches.
- The entire area around both the upper support rod and lower support rod on the electric lift cylinder.
- All clevis pins and hairpin clips on both the tiller attachment and the electric sleeve hitch attachment.

Lubricating should be done after at least every **10 hours** of operation on the tiller to prevent corrosion and maintain free movement.

Hydraulic Filter and Fluid



WARNING: Hydraulic hoses, fittings, and fluid become hot during normal usage. Allow the machine and its related hardware to cool down before checking fluid level or performing maintenance.

Changing the Hydraulic Filter

The hydraulic filter should be changed after every **50 hours** of operation on the tiller. To change the filter, proceed as follows:

- Place a pan (with a height less than 1-½") under the oil filter to collect any residual oil from the filter.
- Using an oil filter wrench, turn the filter counter-clockwise to unthread the filter from the filter head. The residual oil will drain into the pan.
- After first moistening the O-ring on the new filter with hydraulic oil, thread the new filter (Part No. 723-0405) onto the filter head.

IMPORTANT: Once the filter O-ring makes contact with the filter head, tighten it an additional ¼ turn.

After installing the new filter, operate the tiller (in the raised position, NOT in the ground) for about one minute in order to circulate the oil.

IMPORTANT: After changing the hydraulic filter, always check the hydraulic level prior to operating the tiller attachment for an extended period.

Checking the Hydraulic Fluid Level

It is very important that the proper amount of hydraulic fluid is in the hydraulic reservoir to operate the tiller attachment. Failure to maintain the proper fluid level WILL result in serious damage to the hydraulic pump and motor.

Check the hydraulic fluid level before every use (when fluid is **cold**) as follows:

- Turn off the tiller attachment as instructed in earlier sections of this manual, stop the tractor engine and set the parking brake.
- Lower the tiller using the toggle switch installed as part of OEM-190-824 until the top flat surface of the tiller attachment is **parallel with the ground**.
- Remove the dipstick/reservoir cap and wipe it clean of any hydraulic fluid present.

- Thread the dipstick/reservoir cap back onto the hydraulic reservoir before removing it again to check the level of the fluid level on the dipstick. Add hydraulic fluid as necessary. See Figure 17.

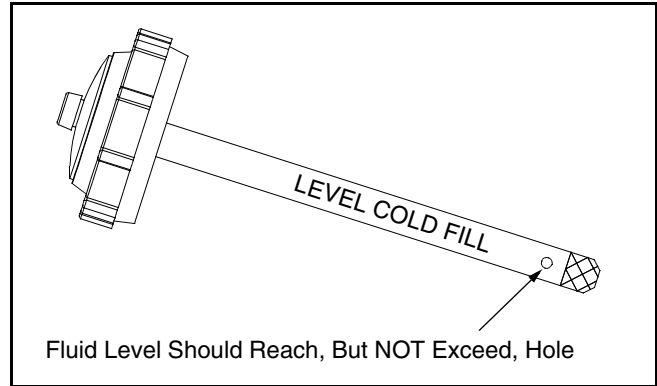


Figure 17

Changing the Hydraulic Fluid

The hydraulic fluid in the tiller attachment should be changed after every **100 hours** of operation. To change the fluid, proceed as follows:

- Remove the tiller attachment (but NOT the electric sleeve hitch attachment) from the tractor.
- With the tiller stand fully raised in the operating position, carefully pivot the tiller forward allowing it to rest on the tines and lift latches.
- Locate the drain plug on the front left side of the tiller. See Figure 18.

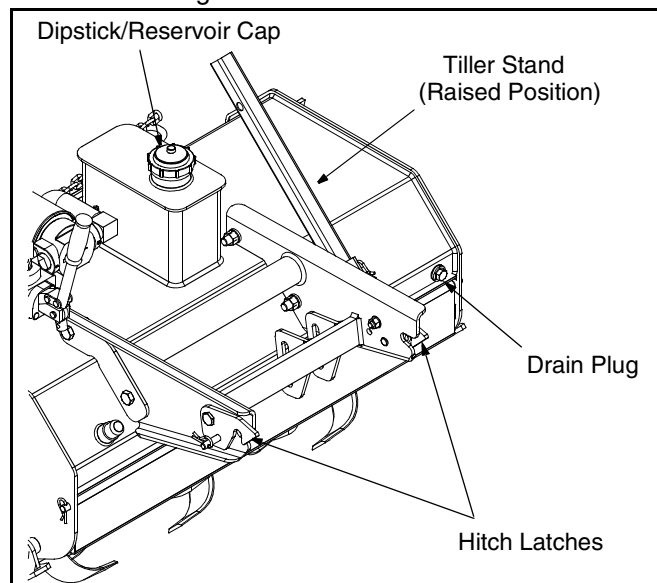


Figure 18

- Place an oil collection pan with a capacity of at least five gallons under the drain plug.
- Using a 5/8" wrench, remove the drain plug and allow the fluid to drain completely.
- Examine the drain plug closely before reinstalling it. If its gasket shows any signs of cracks or tearing, replace it before reinstalling the drain plug.

- Reinstall the drain plug and tighten securely.
- Place the tiller attachment back to a level position and lower the tiller stand to support it.
- Remove the dipstick/reservoir cap from the hydraulic fluid reservoir and carefully pour in four gallons of hydraulic fluid.

The following list includes fluids that are approved for use in this tiller:

- Mobile 424
- Texaco TDH
- Shell Donax
- Farmland TF
- Citgo TF
- Sun Tractor Fluid
- Amoco 1000
- Shell TTF

NOTE: The hydraulic reservoir has a capacity of 4-½ gallons. In most cases, however, it is NOT possible to drain ALL of the fluid when changing it and residual oil will result. After adding the initial four gallons as instructed above, check the dipstick. Add fluid as necessary.

Replacing the Tines



WARNING: Tiller tines are sharp. Wear heavy gloves and use extra caution when servicing the tines.

The tiller attachment is equipped with twenty tines which will need to be replaced over time. When a tine is new, it measures 1-½ inches across. When the width of **any one** of the twenty tines nears a width of 1" across, *all the tines need to be replaced.*

To properly replace a tine, begin working on the right side of the tine shaft assembly and work your way left. Replace only one tine at a time. Proceed as follows:

- Use two wrenches (one 9/16" wrench to prevent the hex nut from spinning, and one 3/4" wrench to loosen the inner shoulder bolt) to remove the inner shoulder bolt. See Figure 19.
- Repeat the previous step on the outer shoulder bolt. See Figure 19.



WARNING: Never operate the tiller attachment when the width of any of the twenty tines measures less than one inch.

- Place the replacement tine in position on the tine shaft assembly and fasten in the same manner the original tine was secured with the inner shoulder bolt and outer shoulder bolts removed earlier. Refer to Figure 19.

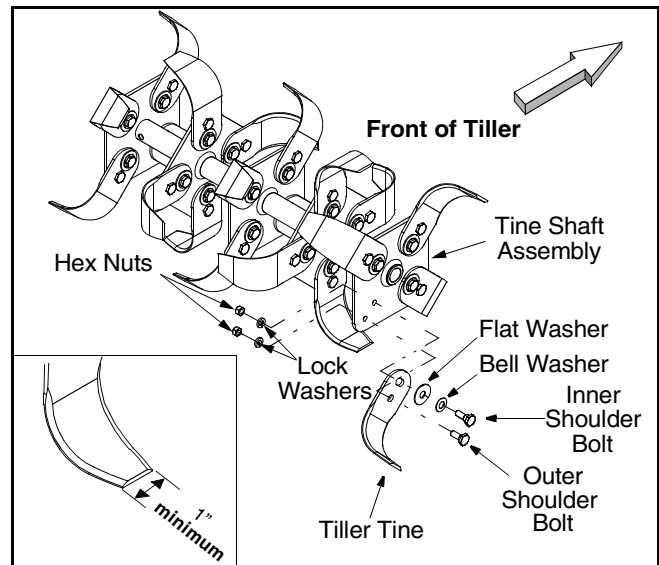


Figure 19

NOTE: When installing the new tine, be certain that the longer shoulder bolt is in the INNER hole toward the center of the tine assembly.

IMPORTANT: Make certain that the cupped side of the bell washer is facing INWARD before tightening the inner shoulder bolt. Failure to do so could result in the tine failing to remain securely fastened to the tine shaft assembly.

- Tighten both the inner shoulder bolt and the outer shoulder bolt securely.

Hydraulic Hoses & Fittings



WARNING: Hydraulic hoses, fittings, and fluid become hot during normal usage. Allow the machine and its related hardware to cool down before performing maintenance.

Examine the hydraulic hoses for cracks or leaks before each use.

IMPORTANT: Replace any hose that shows signs of cracking or leaking.

Regularly check the hydraulic fittings on both the tiller attachment as well as the hydraulic pump for leaks or damage.

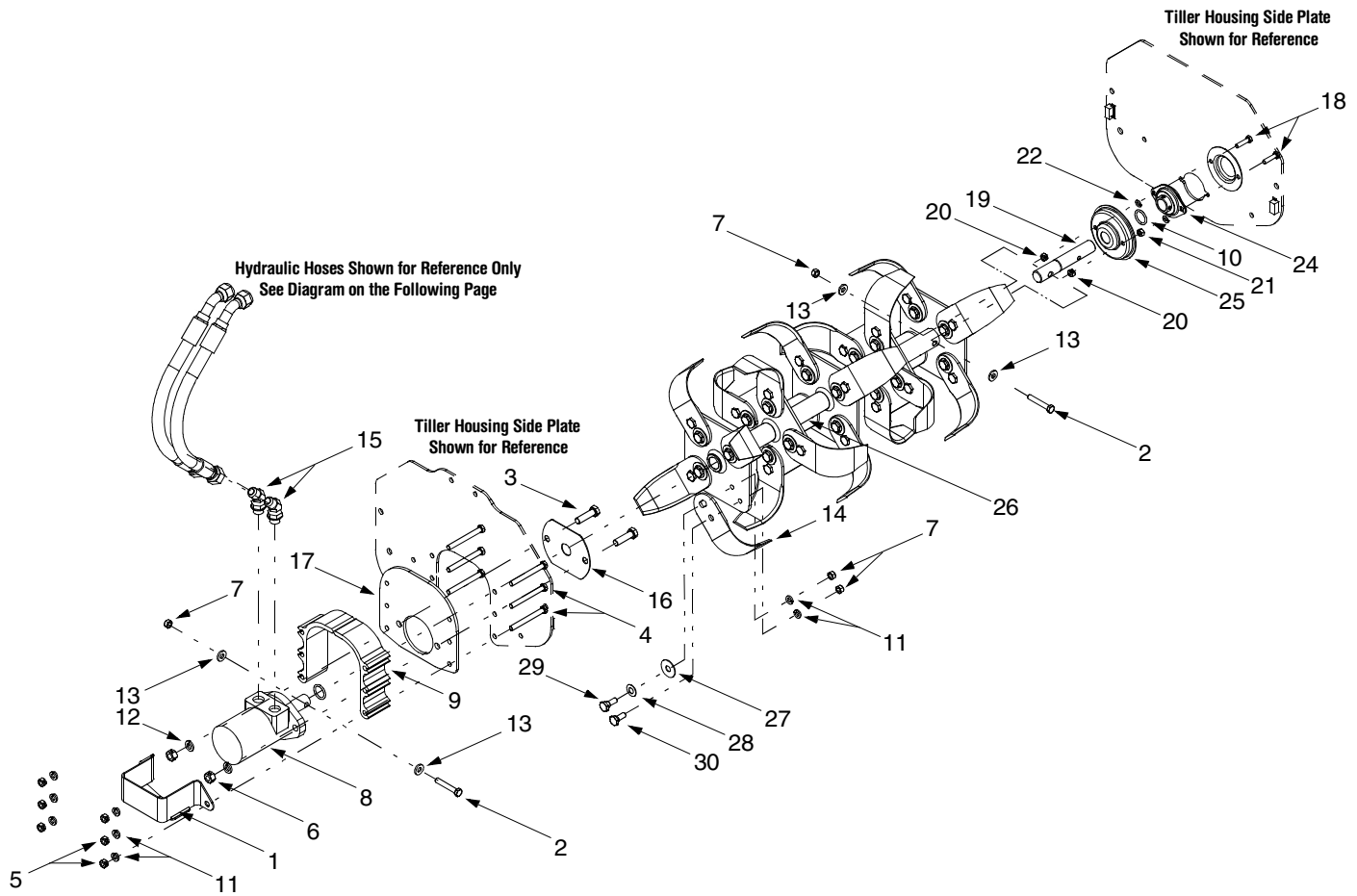
If a leaky hydraulic fitting is discovered, first check to assure that it is securely tightened. If leaking persists, however, the fitting or the hose should be replaced.

IMPORTANT: Always check the hydraulic reservoir's fluid level after performing any maintenance. Add fluid as necessary prior to operating the tiller attachment.

SECTION 11: PARTS LIST

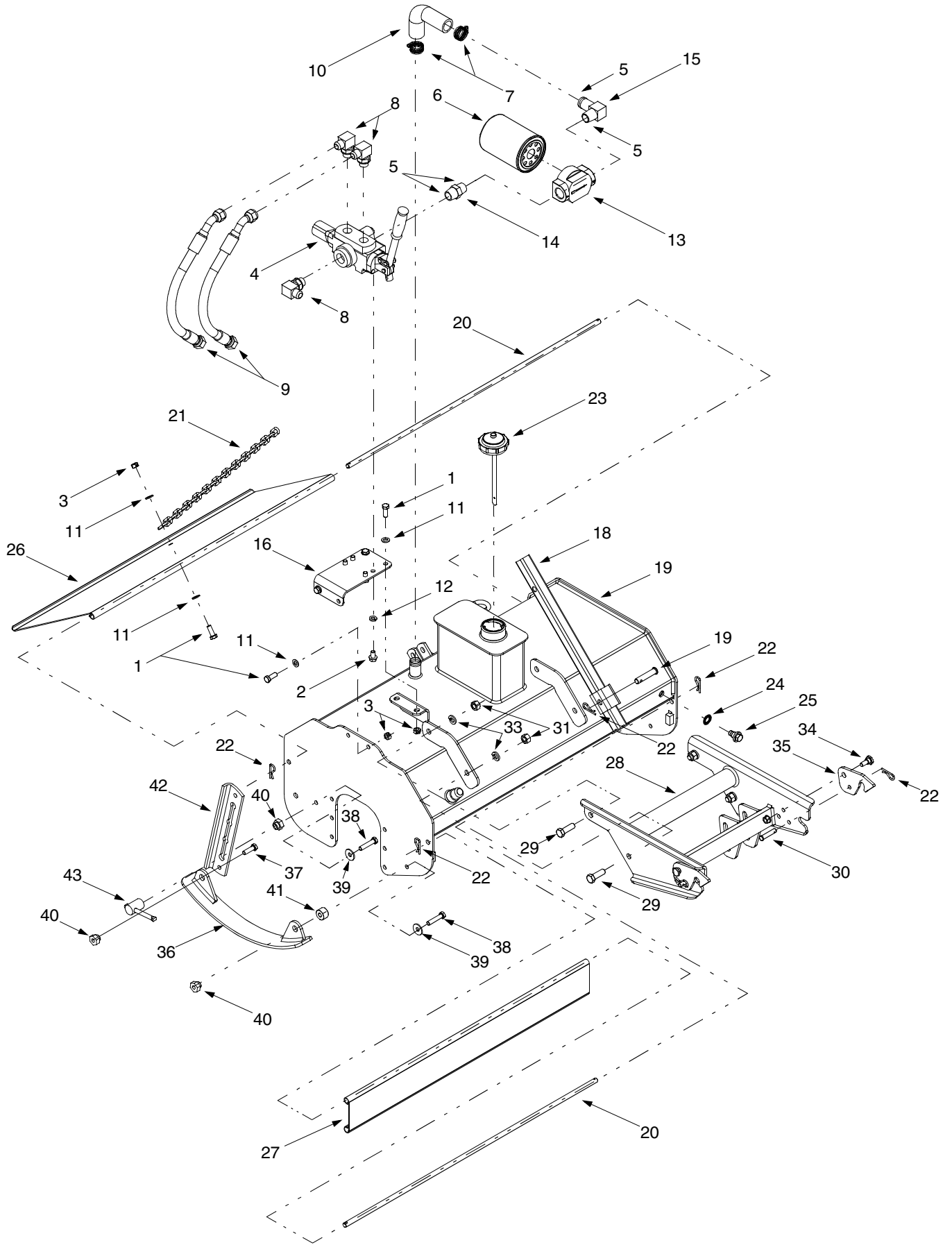
Model 825

Hydraulic Motor and Tine Assembly



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1.	686-0123	Hydraulic Motor Guard	16.	786-0241	Hydraulic Motor Cover
2.	710-1254	Hex Cap Screw, 3/8-24 x 2.25	17.	786-0291	Hydraulic Motor Mounting Plate
3.	710-3067	Hex Cap Screw, 1/2-13 x 1.75	18.	710-0528	Hex Cap Screw, 5/16-18 x 1.25
4.	710-3085	Hex Cap Screw, 3/8-16 x 3.5	19.	711-1418	Tine Shaft
5.	712-3000	Hex Lock Nut, 3/8-16	20.	712-3009	Hex Lock Nut, 5/16-18
6.	712-3022	Hex Lock Nut, 1/2-13	21.	712-3010	Hex Nut, 5/16-18
7.	712-3054	Hex Lock Nut, 3/8-24	22.	736-0119	Lock Washer, 5/16
8.	718-0659	<i>Eaton</i> Hydraulic Motor	23.	741-0723	Flange Bearing, 1.0
9.	719-0552	Hydraulic Motor Mounting Spacer	24.	786-0242	Dust Cap Cover
10.	721-0513	O Ring Seal	25.	786-0262	Bearing Cover
11.	736-0217	Lock Washer, 3/8	26.	686-0148	Tine Adapter Assembly
12.	736-0921	Lock Washer, 1/2	27.	736-0208	Flat Washer, .51 x 1.5 x .07
13.	736-3004	Flat Washer, .406 x .875 x .105	28.	736-0253	Belleville Washer
14.	786-0290	Articulating Tine	29.	738-1138	Shoulder Screw, .49 x .21, 3/8-24
15.	737-0342	45° Hydraulic Adapter, 7/8	30.	738-1139	Shoulder Screw, .49 x .34, 3/8-24

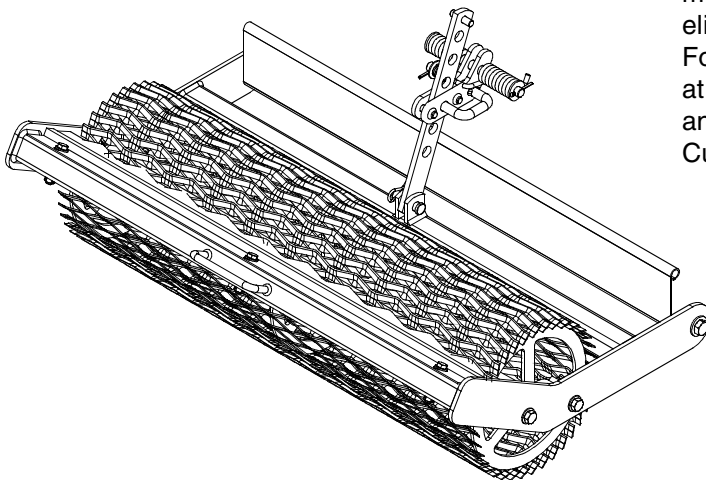
Model 825



Hydraulic Valve and Tiller Housing Assembly

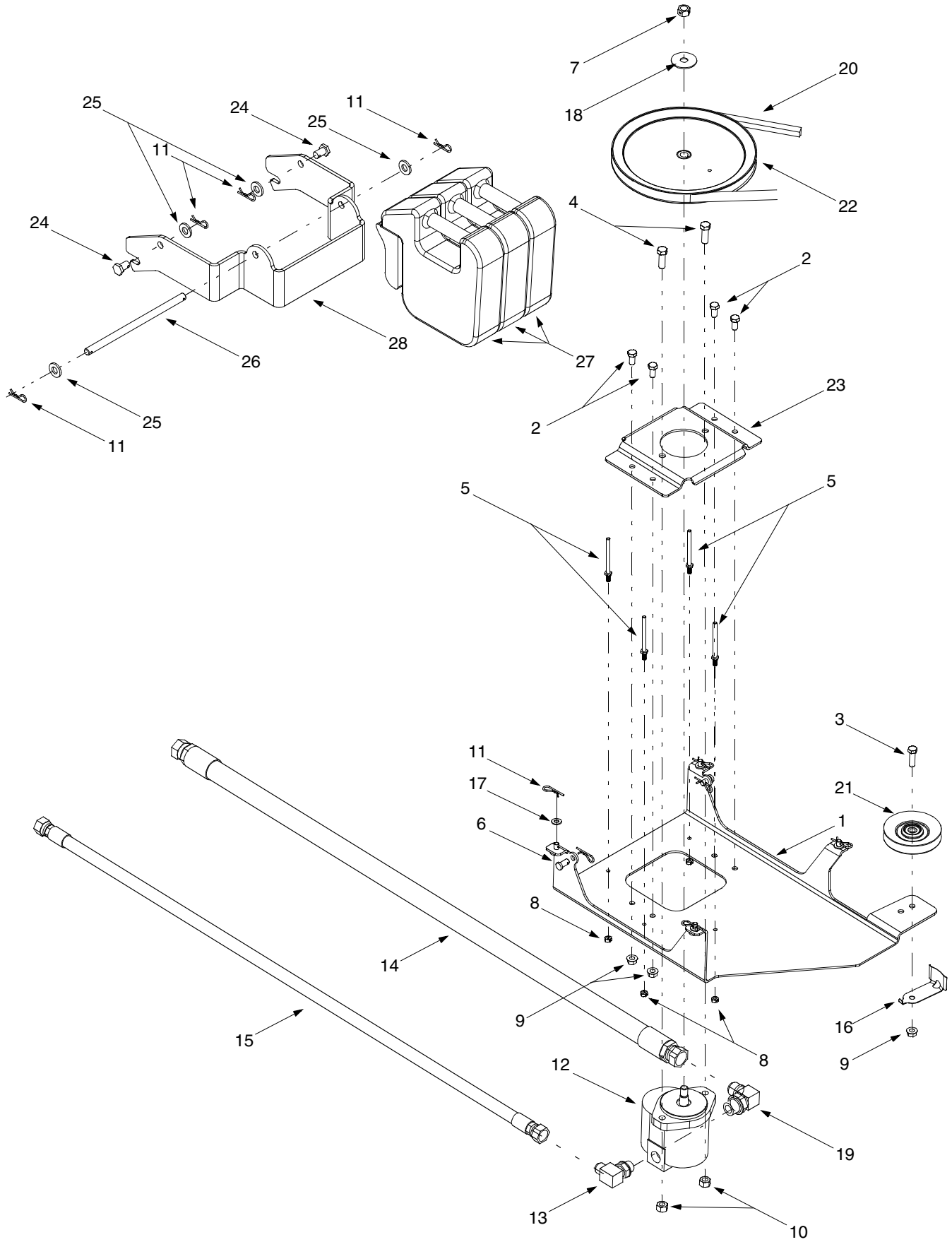
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1.	710-0514	Hex Cap Screw, 3/8-16 x 1.0	23.	720-0315	Vented Tank Cap
2.	710-0870	Shoulder Screw, 3/8-16 x .625	24.	721-0223	<i>Stat-O-Seal</i> /O Ring
3.	712-3000	Hex Lock Nut, 3/8-16	25.	738-0940	Drain Plug
4.	718-0673	<i>Energy</i> Hydraulic Valve	26.	786-0252	Rear Tine Shield, 30"
5.	721-0297	<i>Locktite</i> Hydraulic Sealant	27.	786-0274	Front Tine Shield, 30"
6.	723-0405	Oil Filter	28.	686-0142	Hitch Link Assembly
7.	726-0132	Adjustable Hose Clamp	29.	710-3181	Hex Cap Screw, 1/2-13 x 1.5
8.	727-0220	90° Hydraulic Adapter, 7/8	30.	711-0415	Clevis Pin, 3/8 x 1.75
9.	727-0520	Hydraulic Hose, 7/8-14	31.	712-0206	Hex Nut, 1/2-13
10.	727-0625	90° Hydraulic Hose, 1.37 x 1.0	32.	712-0431	Flange Lock Nut, 3/8-16
11.	736-0185	Flat Washer, .375 x .738 x .063	33.	736-0921	Lock Washer, 1/2
12.	736-0217	Lock Washer, 3/8	34.	738-0380	Shoulder Screw, .50 x .27, 3/8-16
13.	737-0306	Filter Housing	35.	786-0281	Hitch Latch
14.	737-0338	Hydraulic Adapter, 3/4 x 3/4	36.	686-0154	Skid Bracket Assembly
15.	737-0341	90° Hydraulic Adapter, 3/4 x 1.0	37.	710-1039	Hex Cap Screw, 3/8-24 x 1.0
16.	786-0265	Valve Mounting Bracket	38.	710-1810	Hex Cap Screw, 3/8-24 x 1.75
17.	686-0143	Frame Assembly	39.	736-0452	Bell Washer, .396 x 1.14 x .095
18.	686-0155	Tiller Stand	40.	738-1144	Shoulder Nut, 3/8-24
19.	711-0510	Clevis Pin, .50 x 2.0	41.	750-0706	Spacer, 1.0 x .380 x .64
20.	711-1380	Shield Pivot Rod	42.	786-0302	Skid Adjuster Bracket
21.	713-0490	Chain, 24.37"	43.	786-0308	Adjuster Crank
22.	714-0419B	Internal Cotter Pin			

OEM-190-007 Soil Grade Roller



OEM-190-007 is a rear-end accessory available for OEM-190-825 hydraulic tiller attachment. When mounted to OEM-190-825, the soil grade roller helps eliminate the need for post-till raking and leveling. For availability and price information, contact the retailer at which the hydraulic tiller attachment was purchased, an authorized MTD service dealer, or call the MTD Customer Support Department at (800) 800-7310.

Model 825



Hydraulic Pump and Undercarriage Assembly

Ref. No.	Part No.	Description
1.	683-0309	Hydraulic Pump Bracket Ass'y
2.	710-0216	Hex Cap Screw, 3/8-16 x .75
3.	710-3005	Hex Cap Screw, 3/8-16 x 1.25
4.	710-3029	Hex Cap Screw, 7/16-20 x 1.25
5.	711-1000	Belt Keeper Pin
6.	711-1421	Clevis Pin, 3/8 x .75
7.	712-0239	Hex Lock Nut, 1/2-20
8.	712-0291	Hex Lock Nut, 1/4-20
9.	712-0431	Hex Lock Nut, 3/8-16
10.	712-3067	Hex Lock Nut, 7/16-20
11.	714-0145	Click Pin, .092 x 1.64
12.	718-0545	<i>Eaton</i> Hydraulic Pump
13.	727-0220	90° Hydraulic Adapter, 7/8
14.	727-0628	Hydraulic Hose, 1.0625-12 x 54
15.	727-0629	Hydraulic Hose, .875-14 x 49
16.	732-0990	Belt Guard
17.	736-0275	Flat Washer, .344 x .688 x .065
18.	736-3027	Flat Washer, .531 x 1.75 x .090
19.	737-0309	90° Hydraulic Adapter, 1-1/16
20.	754-0341	V-belt (For Manual PTO Tractors)
	754-0490	V-belt (For Electric PTO Tractors)
21.	756-0478	Idler Pulley, 5/8 x 4.0
22.	756-1178	Drive Pulley, 10.0
23.	786-0283	Pump Mounting Bracket
24.	711-0332	Clevis Pin, .5 x .78
25.	736-3019	Flat Washer, .531 x 1.062 x .134
26.	747-1186	Weight Guard Rod
27.	759-3389	45 lb. Suitcase Weight
28.	783-0870	Weight Bracket

MANUFACTURER'S LIMITED WARRANTY

The limited warranty set forth below is given by MTD PRODUCTS INC ("MTD") with respect to new merchandise purchased and used in the United States, its possessions and territories.

MTD warrants this product against defects in material and workmanship for a period of two (2) years commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in material or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water or damage because of other peril or natural disaster. Damage resulting from the installation or use of any accessory or attachment not approved by MTD Products Inc. for use with the product(s) covered by this manual will void your warranty as to any resulting damages.

Normal wear parts or components thereof are subject to separate terms as follows: All normal wear part or component failures will be covered on the product for a period of 90 days regardless of cause. After 90 days, but within the two year period, normal wear part failures will be covered ONLY IF caused by defects in material or workmanship of OTHER component parts. Normal wear parts and components include, but are not limited to, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates and tires. Batteries are covered by a 90-day limited replacement warranty.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE THROUGH YOUR LOCAL AUTHORIZED SERVICE DEALER. To locate the dealer in your area, please check for a listing in the Yellow Pages or contact the Customer Service Department of MTD PRODUCTS INC by calling 1-800-800-7310 or writing to P.O. Box 368022, Cleveland, Ohio 44136-9722.

This limited warranty does not provide coverage in the following cases:

- a. The engine or component parts thereof. These items carry a separate manufacturer's warranty. Please refer to the applicable manufacturer's warranty on these items.
- b. Log splitter pumps, valves and cylinders have a separate one year warranty.

- c. Routine maintenance items such as lubricants, filters, blade sharpening and tune-ups, or adjustments such as brake adjustments, clutch adjustments or deck adjustments; and normal deterioration of the exterior finish due to use or exposure.
- d. MTD does not extend any warranty for products sold or exported outside of the United States of America, its possessions and territories, except those sold through MTD's authorized channels of export distribution.

No implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty or guaranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product shall bind MTD. During the period of the Warranty, the exclusive remedy is repair or replacement of the product as set forth above. (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

The provisions as set forth in this Warranty provide the sole and exclusive remedy arising from the sales. MTD shall not be liable for incidental or consequential loss or damages including, without limitation, expenses incurred for substitute or replacement lawn care services, for transportation or for related expenses, or for rental expenses to temporarily replace a warranted product. (Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.)

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. Alteration of the safety features of the product shall void this Warranty. You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the use or misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser, original lessee or the person for whom it was purchased as a gift.

How State Law Relates to this Warranty: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.