

MAYO



Swivel Planter Filler

Operators Manual

MAYO MANUFACTURING, INC. LIMITED WARRANTY

THE FOLLOWING WARRANTIES FOR MACHINERY, EQUIPMENT OR PARTS SOLD BY MAYO MANUFACTURING, INC. ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, OR THOSE WARRANTIES IMPOSED BY STATUE, INCLUDING, BUT NOT LIMITED TO ANY AND ALL IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND OF ANY AND ALL OTHER WARRANTY OBLIGATIONS ON THE PART OF MAYO MANUFACTURING, INC. (The Company).

The Company warrants the machinery, equipment or parts delivered against faulty workmanship or the use of parts delivered against faulty workmanship or the use of defective materials for a period of one (1) year from the date of shipment.

The Company's warranties set forth above are the only warranties made by the Company and shall not be enlarged, diminished or affected by, and no obligation or liability shall arise out of the Company's rendering technical or other advice or service in connection with the machinery, equipment or parts.

Parts or components furnished to the Company by third persons are guaranteed only to the extent of the original manufacturer's guarantee to the Company, a copy of which will be supplied to the Purchaser upon written request to the Company.

LIABILITY

THE COMPANY'S SOLE AND EXCLUSIVE MAXIMUM LIABILITY, AND PURCHASER'S SOLE AND EXCLUSIVE REMEDY under the above warranty shall be, at the Company's option, the repair, or replacement of the machine, equipment or part which is found to be defective due to faulty workmanship or defective materials, and is returned by the Purchaser to the Company within the warranty period. Shipment both ways and in transit damage shall be at the purchaser's risk and expense. If the Company elects to repair or replace the machine, equipment, or part, the Company will have a reasonable time within which to do so.

The remedies set forth above are available upon the following conditions:

1. Purchaser has promptly notified Company upon discovery that the machinery, equipment, or parts are defective due to faulty workmanship or defective materials; and
2. Purchaser provides Company with a detailed description of the deficiencies; and
3. Company's examination discloses that the alleged deficiencies exist and were not caused by accident, fire, misuse, neglect, alteration, or any other hazard or by Purchaser's improper installation, use or maintenance.

Such repair or replacement shall constitute fulfilment of all Company's liability to Purchaser, whether based on contract or tort.

This warranty does not apply to any machine that has been altered outside the factory in any way so as, in the judgement of Mayo, to affect its operation, reliability or safety, or which has been subject to misuse, neglect or accident.

In the event the Company breach any other provisions of the Purchase Agreement, the Company's EXCLUSIVE MAXIMUM LIABILITY AND PURCHASER'S EXCLUSIVE REMEDY, whether in contract or tort, otherwise shall not in any event exceed the contract price for the particular machine, piece of equipment or parts involved.

IN NO EVENT SHALL COMPANY BE LIABLE TO ANYONE FOR SPECIAL, COLLATERAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY PROVISIONS OF THIS CONTRACT OR WARRANTY. SUCH EXCLUDE DAMAGES INCLUDE, BUT ARE NOT LIMITED TO, costs of REMOVAL AND REINSTALLATION OF ITEMS, Loss of GOODWILL, LOSS OF PROFITS, LOSS OF USE OR INTERRUPTION OF BUSINESS.

WARRANTY VOID IF NOT REGISTERED

MAYO
PIVOTING PLANTER FILLER Model 645

WARRANTY REGISTRATION FORM & INSPECTION REPORT

WARRANTY REGISTRATION (please print)

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

| | |
|----------------------------------|----------------------------------|
| Customer's Name _____ | Dealer Name _____ |
| Address _____ | Address _____ |
| City, State/Province, Code _____ | City, State/Province, Code _____ |
| Phone Number (____) _____ | Phone Number (____) _____ |
| Contact Name _____ | |
| Model _____ | |
| Serial Number _____ | |
| Delivery Date _____ | |

DEALER INSPECTION REPORT

____ Inspect Hydraulic System Components
____ Machine Lubricated
____ Conveying Belt Tensioned and Aligned
____ Hydraulic Reservoir Oil Level Checked
____ Lubricate Machine
____ Check Engine Fluid Levels

SAFETY

____ Guards and Shields Installed and Secured
____ Review Operating and Safety Instructions
____ All Decals Installed
____ Safety Chain on Hitch
____ All Required Lights and Reflectors Installed,
Cleaned and Working

I have thoroughly instructed the buyer on the above described equipment which review included the Operator's Manual content, equipment care, adjustments, safe operation and applicable warranty policy.

Date _____ Dealer's Rep. Signature _____

The above equipment and Operator's Manual have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date _____ Owner's Signature _____

| | | |
|----------------|--------|----------|
| WHITE | YELLOW | PINK |
| MAYO MFG., INC | DEALER | CUSTOMER |

SERIAL NUMBER LOCATION

Always give your dealer the serial number of your Mayo Manufacturing Pivoting Planter Filler when ordering parts or requesting service or other information.

The serial number plate is located where indicated. Please mark the number in the space provided for easy reference.



SERIAL NUMBER LOCATION

Model 645

Serial Number _____

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1 INTRODUCTION

Congratulations on your choice of a Mayo Model 465 Pivoting Planter Filler and welcome to Mayo's quality line of potato handling equipment. This equipment is designed and manufactured to meet the needs of a discriminating buyer in the agricultural industry for the conveying of seed potatoes into a planter.

Safe, efficient and trouble free operation of your new 465 Pivoting Planter Filler requires that you, and anyone else who will be operating or maintaining the Pivoting Planter Filler, read, understand and practice ALL of the Safety, Operation, Maintenance and Trouble Shooting recommendations contained within this Operator's Manual.



This manual applies to Model 465 Pivoting Planter Filler manufactured by Mayo. Certain options may be available to specifically tailor the Pivoting Planter Filler to your operation and may not be included in this manual. Please contact the manufacturer regarding additional information about these options. Use the Table of Contents and Index as a guide to find specific information.

Keep this manual handy for frequent reference and so that it will be passed on to new operators or owners. Call your Mayo dealer if you need assistance, information or additional copies of this manual.

MACHINE ORIENTATION - The hitch end of the Pivoting Planter Filler is the front. The controls are mounted on the left side.

2 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on your Mayo Pivoting Planter Filler and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost You Money
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

DANGER - Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

WARNING - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION - Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or Mayo, P.O. Box 497, Bus Highway 2, East Grand Forks, Minnesota, 56721. (Telephone) 218-773-1234, (FAX) 218-773-6693 or toll free at 1-800-223-5873.

SAFETY

YOU are responsible for the **SAFE** operation and maintenance of your Mayo Pivoting Planter Filler. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Pivoting Planter Filler be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices while operating the Pivoting Planter Filler.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but, also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this machine is familiar with the procedures recommended and follows safety precautions. Remember, most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Read and understand the Operator's Manual and all safety signs before starting engine, operating, maintaining or adjusting the Pivoting Planter Filler.
- The most important safety device on this equipment is a **SAFE** operator. It is the operator's responsibility to read and understand **ALL** Safety and Operating instructions in the manual and to follow these. Most accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate this machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

2.1 GENERAL SAFETY

1. Read and understand the Operator's Manual and all & safety signs before supplying power, operating, maintaining or adjusting Pivoting Planter Filler.

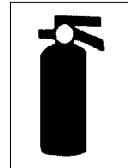


2. Only trained, competent persons shall operate the Pivoting Planter Filler. An untrained operator is not qualified to operate this machine.

3. Provide a first-aid kit for use in case of an accident. Store in a highly visible place.



4. Provide a fire extinguisher for use in case of an accident. Store in a highly visible place.



5. Install and properly secure all guards and shields before operating.

6. Wear appropriate protective gear. This list includes but is not limited to:

- Protective shoes with slip resistant soles
- Protective glasses or goggles
- Heavy gloves
- Hearing protection




7. Turn engine OFF, place controls in their OFF position, relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining, repairing or cleaning.
8. Know the emergency medical center number for your area.
9. Review safety related items with all operators annually.

2.2 EQUIPMENT SAFETY GUIDELINES

1. Safety of the operator and bystanders is one of the main concerns in designing and developing a machine. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you, or for you, follow them.
2. In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.
3. Replace any safety sign or instruction sign that is not readable or is missing. Location of such safety signs is indicated in this manual.
4. Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.
5. **Under no circumstances should young children be allowed to work with this equipment. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works. Review the safety instructions with all users annually.**
6. This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with farm machinery and trained in this equipment's operations. If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.
7. Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - **DON'T TRY IT.**
8. Do not modify the equipment in any way. Unauthorized modification result in serious injury or death and may impair the function and life of the equipment.
9. In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the auxiliary equipment and machine Manuals. Pay close attention to the Safety Signs affixed to the auxiliary equipment and the machine.

2.3 SAFETY TRAINING

1. Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander.
2. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of this equipment.
3. It has been said, "The best safety feature is an informed, careful operator." We ask you to be that kind of an operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Most accidents can be avoided.
4. **Working with unfamiliar equipment can lead to careless injuries. Read this manual, and the manual for your auxiliary equipment, before assembly or operating, to acquaint yourself with the machines. If this machine is used by any person other than yourself. It is the machine owner's responsibility to make certain that the operator, prior to operating:**
 - a. **Reads and understands the operator's manuals.**
 - b. **Is instructed in safe and proper use.**
5. Know your controls and how to stop auxiliary conveyors and any other auxiliary equipment quickly in an emergency. Read this manual and the one provided with your other equipment.
6. Train all new personnel and review instructions frequently with existing workers. Be certain only a properly trained and physically able person will operate the machinery. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death. If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.

2.4 SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs displayed in Section 3 each have a part number in the lower right hand corner. Use this part number when ordering replacement parts.
5. Safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50° F (10° C).
- Determine exact position before you remove the backing paper. (See Section 3).
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

2.5 PREPARATION

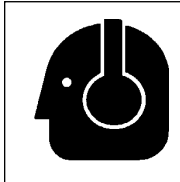
1. Never operate the Pivoting Planter Filler and auxiliary equipment until you have read and completely understand this manual, the auxiliary equipment Operator's Manual, and each of the Safety Messages found on the safety signs on the Pivoting Planter Filler and auxiliary equipment.

2. Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving the implement. Do not allow long hair, loose fitting clothing or jewelry to be around equipment.



3. **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**

Motors or equipment attached can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80 db. Noise over 85 db on a long-term basis can cause severe hearing loss. Noise over 90 db adjacent to the Operator over a long-term basis may cause permanent, total hearing loss. **NOTE:** Hearing loss from loud noise (from tractors, chain saws, radios, and other such sources close to the ear) is cumulative over a lifetime without hope of natural recovery.



4. Clear working area of debris, trash or hidden obstacles that might be hooked or snagged, causing injury, damage or tripping.

5. Operate only in daylight or good artificial light.
6. Be sure machine is properly anchored, adjusted and in good operating condition.
7. Ensure that all safety shielding and safety signs are properly installed and in good condition.
8. Before starting, give the machine a "once over" for any loose bolts, worn parts, cracks, leaks, loose belts and make necessary repairs. Always follow maintenance instructions.

2.6 INSTALLATION SAFETY

1. Remove all transport devices that would hinder or prohibit the normal functioning of the machine upon start up. Serious damage to the machine and/or personal injury to the operator and bystanders may result from attempting to operate the machines while transport locking devices are still in place.
2. Position the machines on firm, level ground before operating.
3. Have at least one extra person available to assist when elevating, moving or connecting to other equipment.
4. If using Pivoting Planter Filler as part of material handling system, anchor securely to other conveying equipment before starting.

2.7 OPERATING SAFETY

1. Make sure that anyone who will be operating the Pivoting Planter Filler or working on or around the unit reads and understands all the operating, maintenance and safety information in the operator's manual. Also read and follow the instructions in the manuals of other equipment in the system.
2. **Turn engine OFF, place controls in their OFF position, relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining, repairing or cleaning.**
3. Establish a lock-out tag-out policy for the work site. Be sure all personnel are trained in and follow all procedures. Lock-out tag-out all power sources before servicing the unit or working around loading/unloading equipment.
4. Keep working area clean and free of debris to prevent slipping or tripping.
5. Stay away from overhead power lines when operating. Electrocutation can occur without direct contact.
6. Keep hands, feet, hair and clothing away from rotating and moving parts. Keep others away.
7. Install and secure all guards before starting.
8. Review safety related items annually with all personnel who will be operating, using or maintaining the Pivoting Planter Filler.

2.8 TRANSPORT SAFETY

1. Make certain that you are in compliance with local, state/provincial and federal regulations regarding transporting agricultural equipment on public roadways. Mount an optional lighting bar to provide lights when travelling on a public road.
2. Make certain that all wheels and tires are in good repair and that tires are inflated to proper pressure. Do not underinflate or overinflate.
3. Make certain that all wheel bolts/lug nuts are tightened to proper torque specifications (refer to specification chart in Section 7.2).
4. Make certain that all mechanical locks and integral anchor chains are safely and positively connected before loading or transporting.
5. Raise and secure all jack stands and outriggers.
6. Be sure that any necessary SMV (slow moving vehicle) signs, reflectors and lights required by law are in proper place and are clearly visible to oncoming and overtaking traffic.
7. Be sure that the Pivoting Planter Filler is positively hitched to the towing vehicle. Use a proper safety chain to assure a safe hitch hook-up when transporting.
8. Adhere to local regulations regarding maximum weight, width and length.
9. Do not exceed 15 mph (25 Km/H). Reduce speed when transporting with a tractor on rough roads and surfaces.
10. Do not allow anyone to ride on the Pivoting Planter Filler or towing vehicle during transport.
11. Always use hazard flashers on the towing vehicle when transporting.

2.9 MAINTENANCE SAFETY

1. Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.

2. Follow good shop practices:

- Keep service area clean and dry.
- Be sure electrical outlets and tools are properly grounded.
- Use adequate light for the job at hand.

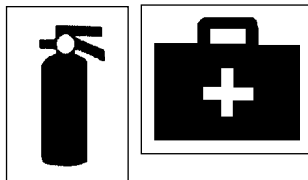


3. **Turn engine OFF, place controls in their OFF position, relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining, repairing or cleaning.**

4. Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance.

5. Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.

6. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.



7. Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.

8. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

2.10 LOCK-OUT TAG-OUT SAFETY

1. Establish a formal Lock-Out Tag-Out program for your operation.
2. Train all operators and service personnel before allowing them to work around the loading system.
3. Provide tags on the machine and a sign-up sheet to record tag out details.

2.11 STORAGE SAFETY

1. Store the Pivoting Planter Filler on a firm, level surface.
2. If required, make sure the unit is solidly blocked up.
3. Make certain all mechanical locks are safely and positively installed and connected before storing.
4. Store away from areas of human activity.
5. Do not permit children to play on or around the stored machine.
6. Remove ignition key from engine and store in a secure location during storage.

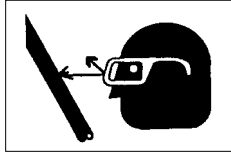
2.12 TIRE SAFETY

1. Inflate tires to proper pressure as specified on the side wall of each tire. Do not over-inflate or under-inflate.
2. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
3. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
4. Have a qualified tire dealer or repair service perform required tire maintenance.

2.13 HYDRAULIC SAFETY

1. Make sure that all the components in the hydraulic system are kept in good condition and are clean.
2. Before applying pressure to the system, make sure all components are tight, and that lines, hoses and couplings are not damaged.
3. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tapes, clamps or cements. The hydraulic system operates under extremely high pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.

4. Wear proper hand and eye protection when searching for a high pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.



5. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
6. Relieve pressure on hydraulic system before maintaining or working on system.

2.14 REFUELING SAFETY

1. Handle fuel with care. It is highly flammable.
2. Allow engine to cool for 5 minutes before refuelling. Clean up spilled fuel before restarting engine.
3. Do not refuel the machine while smoking or when near open flame or sparks.
4. Fill fuel tank outdoors.
5. Prevent fires by keeping machine clean of accumulated trash, grease and debris.



2.15 BATTERY SAFETY

1. Keep all sparks and flames away from batteries, as gas given off by electrolyte is explosive.
2. Avoid contact with battery electrolyte: wash off an spilled electrolyte immediately.
3. Wear safety glasses when working near batteries.
4. Do not tip batteries more than 45°, to avoid electrolyte loss.
5. To avoid injury from spark or short circuit, disconnect battery ground cable before servicing any part of the electrical system.

2.16 GAS MOTOR SAFETY

BEFORE STARTING ENGINE, READ AND UNDERSTAND THE OPERATING AND MAINTENANCE INSTRUCTIONS THAT CAME WITH YOUR ENGINE.

WARNING: DO NOT

1. DO NOT run engine in an enclosed area. Exhaust gases contain carbon monoxide, an odourless and deadly poison.
2. DO NOT place hands or feet near moving or rotating parts.
3. DO NOT store, spill, or use gasoline near an open flame, or devices such as a stove, furnace, or water heater which use a pilot light or devices which can create a spark.
4. DO NOT refuel indoors where area is not well ventilated. Outdoor refuelling is preferred.
5. DO NOT refuel while engine is running. Allow engine to cool for 5 minutes before refuelling. Store fuel in approved safety containers.
6. DO NOT remove fuel tank cap while engine is running.
7. DO NOT operate engine if gasoline is spilled. Move machine away from the spill and avoid creating any ignition until gasoline has evaporated.
8. DO NOT smoke while filling fuel tank.
9. DO NOT choke carburetor to stop engine. Whenever possible, gradually reduce engine speed before stopping.
10. DO NOT run engine above rated speeds. This may result in injury.
11. DO NOT tamper with governor springs, governor links or other parts which may increase the governed speed.
12. DO NOT tamper with the engine speed selected by the original equipment manufacturer.
13. DO NOT check for spark with spark plug or spark plug wire removed.
14. DO NOT crank engine with spark plug removed. If engine is flooded, crank until engine starts.
15. DO NOT strike flywheel with a hard object or metal tool as this may cause flywheel to shatter in operation. Use proper tools to service engine.
16. DO NOT operate engine without a muffler. Inspect periodically and replace, if necessary. If engine is equipped with a muffler deflector, inspect periodically and replace, if necessary with correct deflector.
17. DO NOT operate engine with an accumulation of grass, leaves, dirt or other combustible materials in the muffler area.
18. DO NOT use this engine on any forest covered, brush covered, or grass covered unimproved land unless a spark arrester is installed on the muffler. The arrester must be maintained in effective working order by the operator. In the state of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal land.
19. DO NOT touch hot muffler, cylinder or fins because contact may cause burns.
20. DO NOT run engine with air Pivoting Planter Filler or air Pivoting Planter Filler cover removed.

WARNING: DO

1. ALWAYS DO remove the wire from the spark plug when servicing the engine or equipment to prevent accidental starting. Disconnect the negative wire from the battery terminal if equipped with a 12 volt starting system.
2. DO keep cylinder fins and governor parts free of grass and other debris which can affect engine speed.
3. DO examine muffler periodically to be sure it is functioning effectively. A worn or leaking muffler should be repaired or replaced as necessary.
4. DO use fresh gasoline. Stale fuel can gum carburetor and cause leakage.
5. DO check fuel lines and fittings frequently for cracks or leaks. Replace if necessary.

2.17 EMPLOYEE SIGN-OFF FORM

Mayo Manufacturing, Inc. follows the general Safety Standards specified by the American Society of Agricultural Engineers (ASAE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining a Mayo built machine must read and clearly understand ALL Safety, Operating and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. Annually review this information before the season start-up.

Make these periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment. We feel that an untrained operator is unqualified to operate this machine.

A sign-off sheet is provided for your record keeping to show that all personnel who will be working with the equipment have read and understand the information in the Operator's Manual and have been instructed in the operation of the equipment.

SIGN-OFF FORM

[illegible]


3 SAFETY SIGN LOCATIONS

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

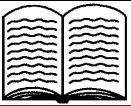
- Think SAFETY! Work SAFELY!




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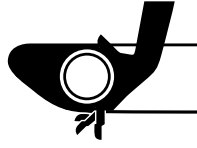
 **CAUTION**

- Read Operator's Manual before starting. Review safety instructions annually.
- Turn engine OFF, place controls in their OFF position, remove ignition key, relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining, repairing or cleaning.
- Keep all hydraulic components tight and in good condition without leaks.
- Replace all worn or failed components immediately.
- Install and secure all guards before operating.
- Keep hands, feet, hair and clothing away from moving parts.
- Install safety locks on boom and pivot, retract jacks and fold outriggers before transporting.
- Add lights and use pilot vehicles when transporting.
- Lock-out tag-out machine when servicing or maintaining.
- Do not stand or climb on machine when operating. Keep others off.
- Keep away from overhead power lines when operating. Electrocution can occur without direct contact.



B

 **WARNING**



MOVING PART HAZARD
To prevent serious injury or death from falling:

1. Do not stand or climb on machine when operating. Keep others off.
2. Keep hands away from moving parts.
3. Wear tight clothing and safety gear.

REMEMBER - If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



C

| ! WARNING | |
|---|--|
| | |
| HIGH-PRESSURE FLUID HAZARD To prevent serious injury or death from high-pressure fluid: <ul style="list-style-type: none"> • Relieve pressure on system before repairing, adjusting or disconnecting. • Wear proper hand and eye protections when searching for leaks. Use wood or cardboard instead of hands. • Keep all components in good repair. | |

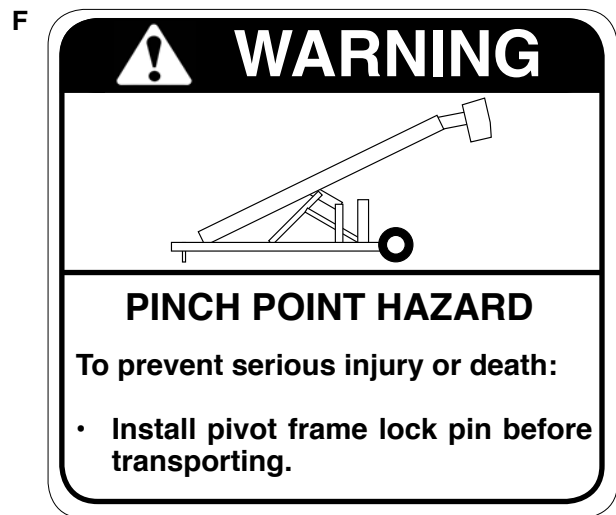
D

| ! WARNING |
|--|
| |
| PINCH POINT HAZARD To prevent serious injury or death: <ul style="list-style-type: none"> • Keep away from frame when moving components. • Keep others away. |

REMEMBER - If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!

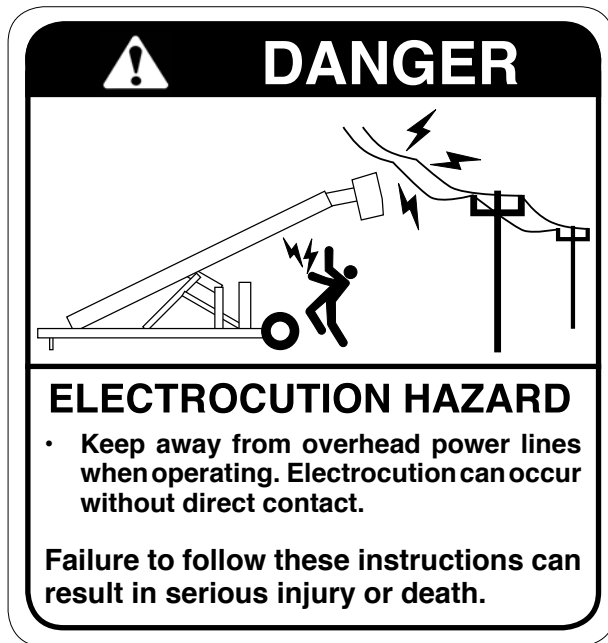


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- Think SAFETY! Work SAFELY!

G



REMEMBER - If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

4 OPERATION



OPERATING SAFETY

- Turn engine OFF, place controls in their OFF position, remove ignition key, relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining, repairing or cleaning.
- Keep all hydraulic components tight and in good condition without leaks.
- Replace all worn or failed components immediately.
- Install and secure all guards before operating.
- Keep hands, feet, hair and clothing away from moving parts.
- Install safety locks on boom and pivot, retract jacks and fold outriggers before transporting.
- Add lights and use pilot vehicles when transporting.
- Lock-out tag-out machine when servicing or maintaining.
- Do not stand or climb on machine when operating. Keep others off.
- Keep away from overhead power lines when operating. Electrocutation can occur without direct contact.

4.1 TO THE NEW OPERATOR OR OWNER

The Mayo Manufacturing Pivoting Planter Filler is designed to convey product from a transporting vehicle into a planter. Be familiar with the machine before starting.

It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, and prudence of personnel involved in the operation, transport, maintenance and storage of equipment or in the use of facilities.

Follow all safety Instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the worksite. Untrained operators are not qualified to operate the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum efficiency. By following the operating instructions in conjunction with a good maintenance program, your Pivoting Planter Filler will provide many years of trouble-free service.

4.2 MACHINE COMPONENTS

The Mayo Manufacturing Pivoting Planter Filler is designed to convey seed potatoes from transport vehicle into a planter. The boom raises and lowers as required to match the height of the planter. An extendable dogleg and chute are used to match the discharge position to the planter. In addition, the boom frame pivots to discharge the material along the length of the planter.

Outriggers at the middle of the frame plus mechanical and hydraulic jacks on the front provide the stabilizing feature for the machine as it pivots from side to side.

A gas engine and hydraulic system mounted on the frame provide a self-contained power pac to operate the machine. The power pac provides hydraulic power to drive the conveyor and all the hydraulic cylinders. All hydraulic controls are located on the left side of the frame.

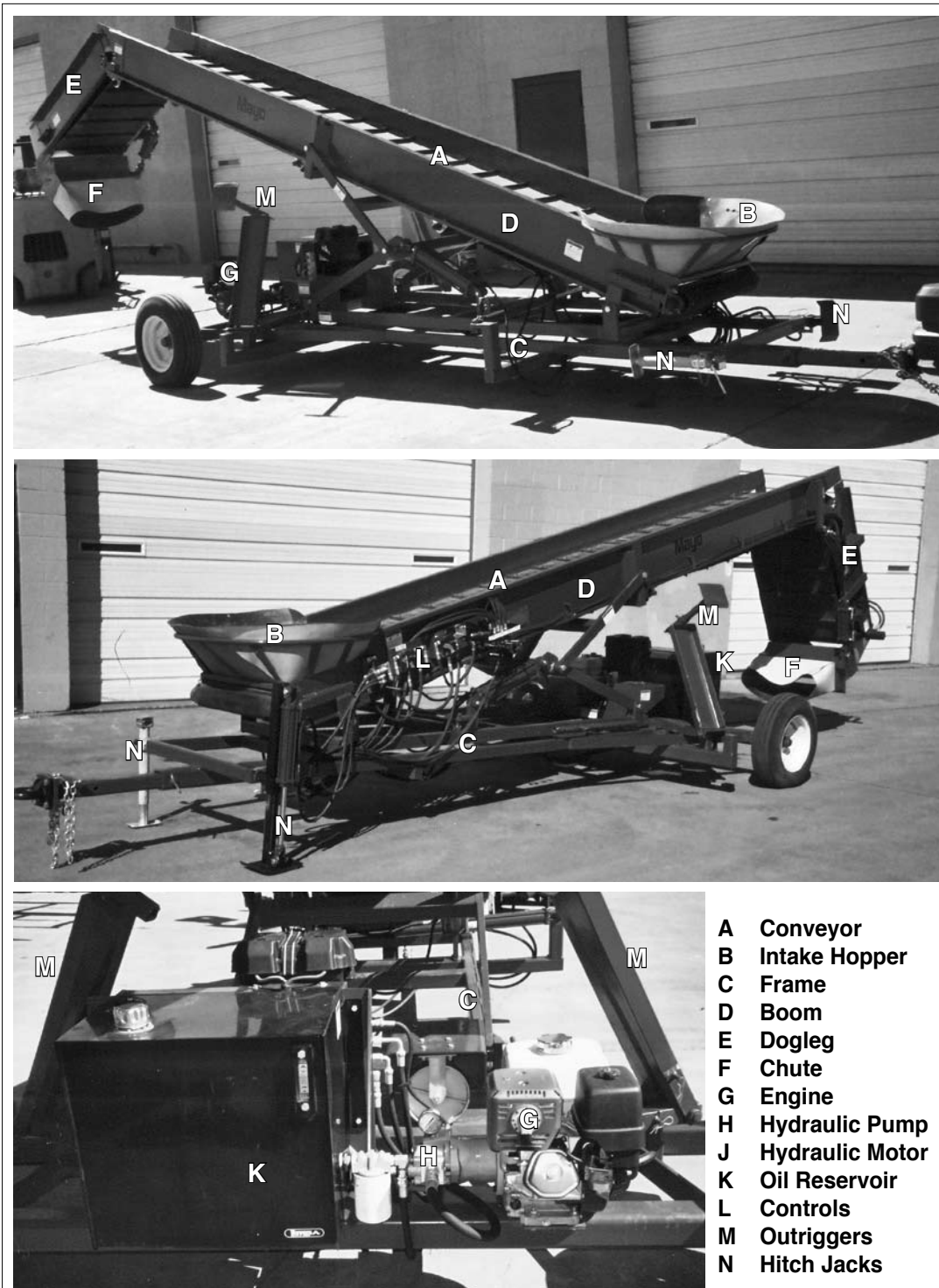


Fig. 1 MACHINE COMPONENTS

4.3 GENERAL OPERATION THEORY

The Pivoting Planter Filler is used to convey seed potatoes from a transport vehicle into a planter. It pivots to distribute the potatoes along the width of the planter. A boom and chute extend and retract to allow the Filler to place the seed potatoes in the planter where required.

The pivoting Planter Filler is moved up to the planter and unhooked. The truck or trailer is positioned at the hopper. All stabilizers and jacks must be lowered before starting. Once the engine is started, the conveyor can be run to fill the planter.



Fig. 2 POSITIONED (TYPICAL)

4.4 MACHINE BREAK-IN

Although there are no operational restrictions on the Pivoting Planter Filler when used for the first time, it is recommended that the following mechanical items be checked:

A. Read Pivoting Planter Filler and auxiliary equipment manuals before starting.

B. **After operating for 1/2 hour:**

1. Re-torque all other fasteners and hardware.
2. Check that all hydraulic fittings are tight and hoses are routed out of the way or protected.
3. Check the alignment and tension of the conveying belt. Realign or tighten as required.
4. Check oil level in the hydraulic reservoir. Top up as required.
5. Lubricate all grease fittings.

C. **After 2, 5 and 10 hours of operation:**

1. Re-torque all fasteners and hardware.
2. Check that all hydraulic fittings are tight and hoses are routed out of the way or protected.
3. Check the alignment and tension of the conveying belt. Realign or tighten as required.
4. Check oil level in the hydraulic reservoir. Top up as required.
5. Check engine fluid levels. Top up as required.
6. Then go to the regular servicing and maintenance schedule as defined in the Maintenance Section.

4.5 PRE-OPERATION CHECKLIST

Safe and efficient operation of your new Pivoting Planter Filler requires that each operator reads and follows all safety precautions and operating procedures contained in this section. Performing the following pre-operation checklist is important for personal safety as well as for continued mechanical soundness and longevity of your new Mayo Pivoting Planter Filler. The checklist should be performed before operating the machine and prior to each operation thereafter.

1. Lubricate the machine according to the schedule prescribed in the "Maintenance Section".
2. Insure that proper protective gear is in good repair and available for use by each operator. Make certain that each operator uses the protective gear. Protective gear includes but, is not limited to:

- Leather gloves
- Safety glasses or face shield
- Full length protective clothing
- Steel toed boots with slip resistant soles.



3. Insure that all safety guards and shields are in good repair and securely in place.
4. Check that the conveyor belt is properly tensioned and aligned. Adjust if required.
5. Check that all bearings turn freely. Replace any that are rough or singed.
6. Check for and remove all entangled material.
7. Make sure that all hydraulic controls are in the OFF position before starting engine.
8. Check that all hydraulic fittings are tight and hoses are routed out of the way or protected.
9. Be sure the working area is clean, uncluttered and dry to prevent tripping or slipping.

4.6 CONTROLS

Before starting to work, all operators should familiarize themselves with the location and function of the controls. Some machines may vary slightly due to custom features but they are similar and all controls are labelled.

1. Gas Engine:

A small Honda gas engine is used with the unit. Always read the engine Operator's manual supplied with the machine for the detailed operating procedures.

a Ignition Switch:

This key operated switch controls the electrical power to start the engine.

OFF - Turn the key fully counterclockwise to stop the fuel flow and turn the engine off.

RUN - Turn clockwise to detent on the run position. This is the position where the engine will continue to run.

START - Turn fully clockwise to the last spring-loaded detent position to engage the starter solenoid and start the engine. Release the key when the engine starts and it will return to the RUN position.

b. Fuel Shut-Off Valve:

Each engine is equipped with a valve between the fuel tank and carburetor. Slide the fuel valve toward the block to turn ON and away for OFF. Turn the fuel OFF when not in use or before transporting.

c. Choke:

This lever controls the position of the choke. Move the lever rearward to close the choke for starting when the engine is cold. Move the lever forward to open the choke as the engine warms. Always move the lever fully forward when operating the machine.

d. Throttle :

This lever, through a push-pull cable, sets the throttle position. Move the lever forward to set the engine speed at maximum RPM. Move the lever rearward to set the engine speed at low idle.

e. Starting Rope:

This retracting rope and T bar is used to turn the engine over for starting. Grasp the T bar firmly and pull the rope sharply to start the engine.



Fig. 3 ENGINE CONTROLS



Fig. 4 HYDRAULIC VALVE BANK

2. Hydraulic Valve Bank:

The hydraulic valve bank is located on the left side of the frame for easy and convenient access for the operator. Review prior to starting engine.

a. Chute Position:

This 3-position spring-loaded-to-neutral-center hydraulic valve controls the position of the chute on the end of the boom. Move the lever up and hold to raise the chute. Move the lever down and hold to lower the chute. Release the lever and it will return to its centered, neutral position. The chute movement will stop and the chute will remain in its last position.

b. Dogleg Position:

This 3-position spring-loaded-to-neutral-center hydraulic valve controls the position of the dogleg on the end of the boom. Move the lever up and hold to raise the dogleg. Move the lever down and hold to lower the dogleg. Release the lever and it will return to its centered, neutral position. The dogleg movement will stop and the dogleg will remain in its last position.

c. Boom Position:

This 3-position spring-loaded-to-neutral-center hydraulic valve controls the position of the boom. Move the lever up and hold to raise the boom. Move the lever down and hold to lower the boom. Release the lever and it will return to its centered, neutral position. The boom movement will stop and the boom will remain in its last position.

d. Boom Swing:

This 3-position spring-loaded-to-neutral-center hydraulic valve controls the position of the boom. Move the lever up and hold to swing the boom to the left. Move the lever down and hold to swing the boom to the right. Release the lever and it will return to its centered, neutral position. The boom swing movement will stop and the boom will remain in its last position.

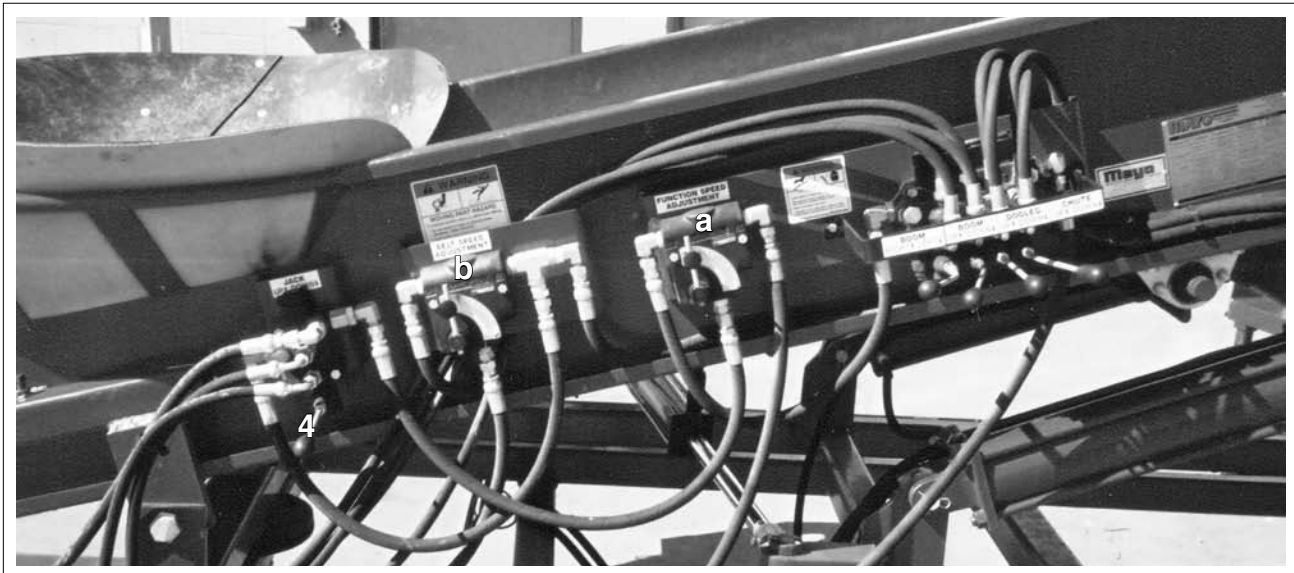


Fig. 5 FLOW CONTROL VALVES

3. Flow Controls:

2 flow control valves are mounted on the left side of the frame providing convenient access for the operator. Review prior to starting engine.

a. Function Speed Adjustment:

This infinitely variable flow control is used to control and set the speed the hydraulic cylinders extend and retract. The valve can be set to provide zero or no movement up to full speed motion. 0 is no movement and 10 is fast movement. Set the speed appropriate for your application. Normally a speed of 3 to 4 works well for most operations.

b. Belt Speed Adjustment:

This infinitely variable flow control is used to control and set the speed of the conveying belt. The valve can be set to provide zero or stop up to full speed. 0 is stop and 10 is full speed. Set the speed appropriate for your application. Normally a speed of 3 to 4 works well for most operations. Use this control as the conveyor belt START and STOP.

4. Hydraulic Valve:

This 3-position spring-loaded-to-neutral-center hydraulic valve controls the position of the hydraulic jack on the front of the frame. Move the lever up and hold to raise the frame. Move the lever down and hold to lower the frame. Release the lever and it will return to its centered, neutral position. The frame movement will stop and the frame will remain in its last position.

5. **Needle Valves:**

This frame pivot cylinder is equipped with a needle valve in the line to each port on the cylinder. Turn the knob clockwise to close valves and counter-clockwise to open. Turn only a small amount when adjusting the cylinder extend/retract speed. A small adjustment can result in a large change in speed.

Set both valves to the same speed to minimize circuit back-pressure and heat build-up.



Fig. 6 NEEDLE VALVES

6. **Pressure Gauge:**

This gauge displays the pressure in the hydraulic circuit. The circuit relief pressure is set to 1800 psi. Have a service technician check the system if the pressure exceeds 1800 psi or if it drops down and can't power the conveyor.

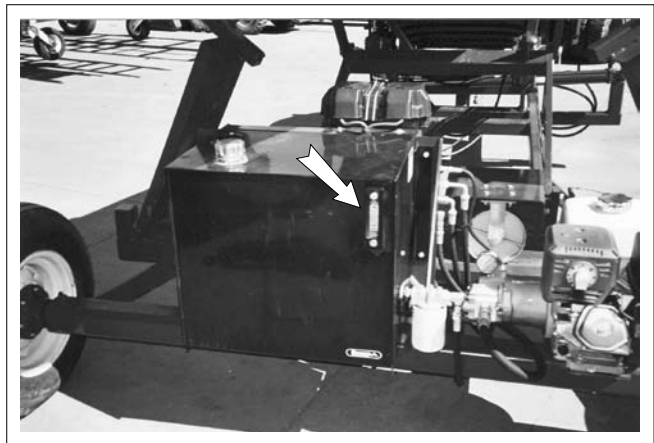


Fig. 7 PRESSURE GAUGE

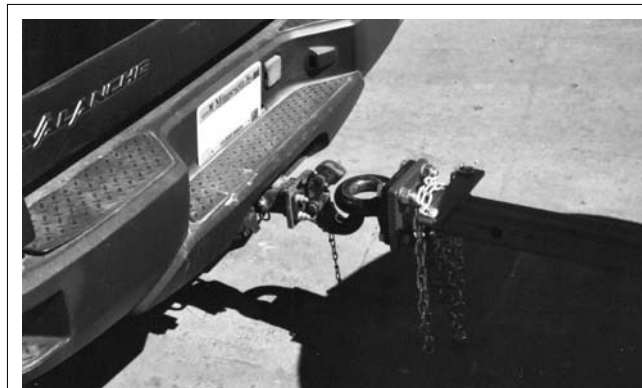
4.7 ATTACHING / UNHOOKING

Follow this procedure when attaching the Pivoting Planter Filler to a truck:.

1. Make sure that all bystanders, especially small children, are clear of the working area.
2. Make sure there is enough room and clearance to safely back up to the machine.
3. Use the manual and hydraulic jacks to lift the hitch as required to align with towing vehicle.
4. Extend the hitch into transport configuration and pin to secure. Install retainer on pin.
5. Slowly back the truck until the pintle and hitch are aligned.
6. Lift the latch on the end of the pintle.
7. Back the truck up until the ring is centered over the pintle.
8. Use the mechanical and hydraulic jacks on the front corners of the frame to lower the ring on the hitch.
9. Lower the latch to close the pintle.
10. Install retainer to secure the hitch.



Fig. 8 HITCH EXTENDED



Aligning



Closing



Retainer

Fig. 9 PINTLE HITCH

11. Raise the mechanical jack. Pull out pin, rotate 90° and place jack in stowed position. Replace pin.

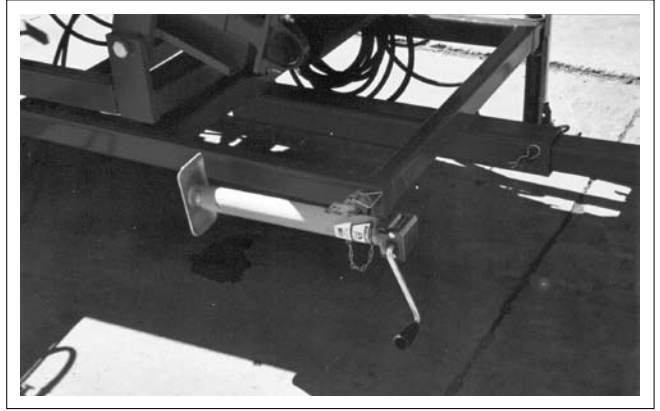
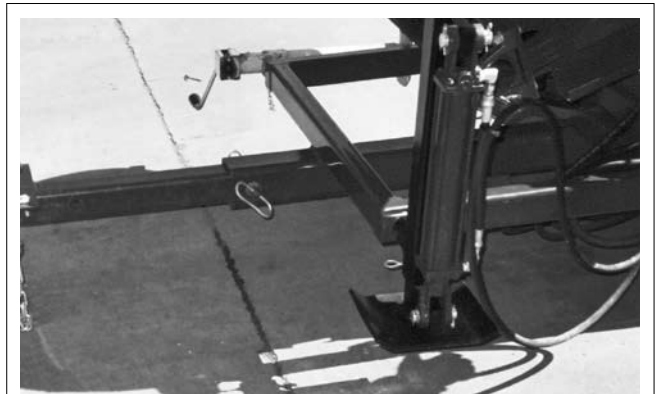
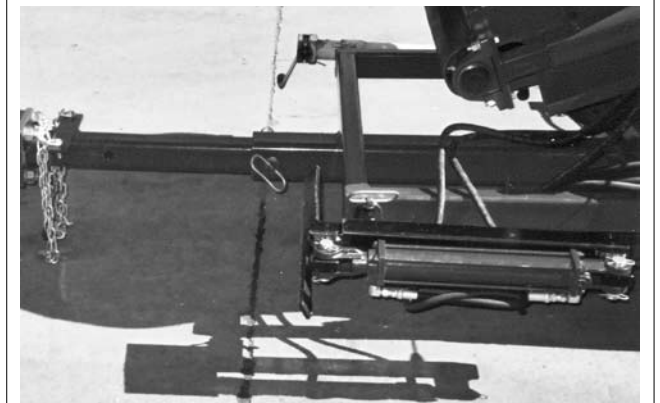


Fig. 10 MECHANICAL JACK

12. Raise the hydraulic jack. Pull out anchor pin, rotate 90° and place jack in its stowed position. Replace anchor pin.



Retracted



Stowed

Fig. 11 HYDRAULIC JACK

13. Attach the safety chain under the truck frame to prevent unexpected separation. Be sure to cross the chains under the hitch.



Fig. 12 SAFETY CHAIN

4.8 OPERATING



OPERATING SAFETY

- Read Operator's Manual before starting. Review safety instructions annually.
- Turn engine OFF, place controls in their OFF position, remove ignition key, relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining, repairing or cleaning.
- Keep all hydraulic components tight and in good condition without leaks.
- Replace all worn or failed components immediately.
- Install and secure all guards before operating.
- Keep hands, feet, hair and clothing away from moving parts.
- Install safety locks on boom and pivot, retract jacks and fold outriggers before transporting.
- Add lights and use pilot vehicles when transporting.
- Lock-out tag-out machine when servicing or maintaining.
- Do not stand or climb on machine when operating. Keep others off.
- Keep away from overhead power lines when operating. Electrocutation can occur without direct contact.

Follow this procedure when using the Pivoting Planter Filler:

1. Review and follow the pre-operation checklist (See Section 4.5).
2. Review the location and function of all controls (See Section 4.6).
3. Position the machine at the worksite with sufficient space to allow trucks or trailers to bring seed potatoes to the machine.
4. Unhook tow vehicle and support the front frame with the mechanical and hydraulic jacks.



Fig. 13 POSITIONED

4. Prepare the Pivoting Planter Filler:
 - a. Retract the hitch and secure with the pin and retainer.



Hitch

- b. Remove the swing lock pin.



Swing Lock

- c. Remove the boom support transport pole.
 - d. Fold down both outriggers.



Boom Support / Outriggers

Fig. 14 PREPARATION

4. **Starting Machine:**

- a. Clear the area of bystanders. Know where everyone is before starting.
- b. Place all controls in the OFF position.

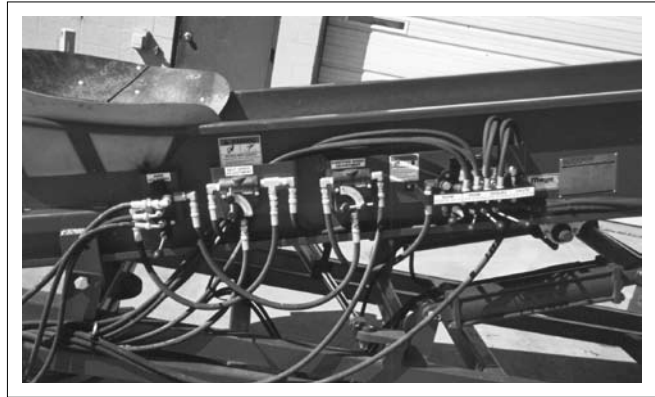


Fig. 15 HYDRAULIC CONTROLS

- c. Close the choke if the engine is cold.
- d. Move the throttle to its 1/2 throttle position.
- e. Use ignition key to start engine.
- f. Run the engine for a few minutes to allow it to warm.
- g. Gradually open the choke.
- h. Increase throttle setting to maximum speed for operation.
- i. Use the belt speed adjustment control to turn the conveyor ON.
- j. Load seed potatoes into the intake hopper.



Fig. 16 ENGINE

5. **Stopping Machine:**

- a. Stop loading seed potatoes into conveyor hopper.
- b. Wait until the seed potatoes have moved out of the chute and into the planter bin.
- c. Turn the conveyor OFF.
- d. Slow engine speed to low idle.
- e. Turn the engine OFF.



Fig. 17 FILLING

6. **Emergency Stop:**

If an emergency occurs, turn the ignition key OFF to stop the machine. Correct the condition before resuming work.

7. **Leveling:**

The Pivoting Planter Filler is designed with a mechanical and hydraulic jack on the front corners of the machine. Use the jacks to level and stabilize the front of the frame during operation.



Fig. 18 LEVELING

8. **Boom Position:**

The boom position can be raised and lowered to accommodate the height of any transport truck and planter bin.



Low



Mid



High

Fig. 19 BOOM POSITION

9. **Pivot Position:**

The boom position can be moved to the left and right as required to fill the full length of the planter bin. Use the pivot and raise functions in conjunction with the dogleg and chute to place the seed potatoes exactly where required.



Left



Center



Right

Fig. 20 PIVOT POSITION

10. **Dogleg Position:**

The dogleg can be raised and lowered to accommodate the full length of the planter bin. Use in conjunction with the other Filler conveyor frame functions to place the seed potatoes where required.



Low



Medium



High

Fig. 21 DOGLEG POSITION

11. Chute Position:

The chute can be extended or retracted to allow the Filler to place seed potatoes in the planter bin where required. Use all the Filler frame position functions in conjunction to place the seed potatoes where required.



Retracted

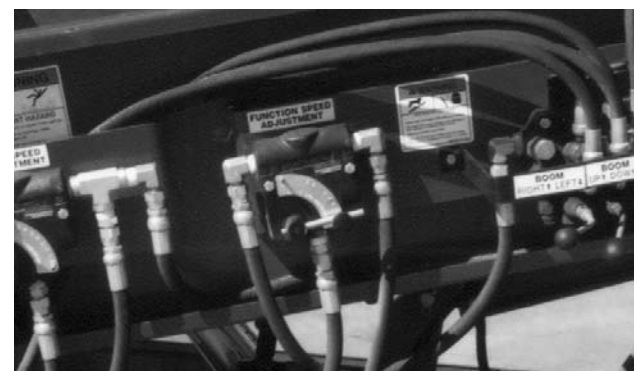


Extended

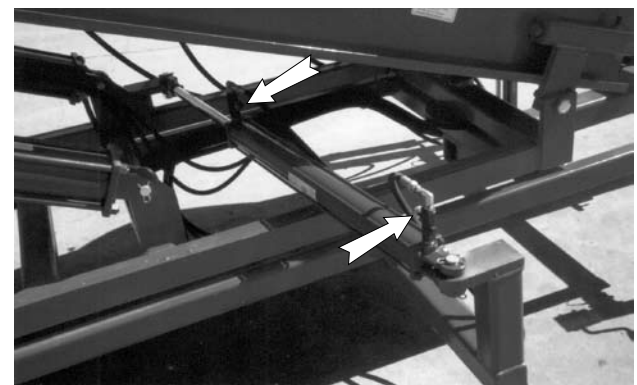
Fig. 22 CHUTE POSITION

12. Pivot Speed:

The boom pivot speed is controlled by the master function speed adjustment flow control on the left side of the frame plus the cylinder that pivots the frame is designed with a needle valve in the line to each port to set the speed. Use the function speed control to set the speed of the other functions and the needle valves for the pivot speed. Adjust the needle valves in small increments as a small adjustment can cause a large change in speed.



Function Speed Adjustment Control



Needle Valves

Fig. 23 PIVOT SPEED

13. Equipment Placement:

The best results are obtained when the Filler is centered relative to the planter bin at the start. This allows the height, pivot, dogleg and chute position adjustments to work together to place the seed potatoes where required in the planter bin.



Fig. 24 FILLER PLACEMENT

14. Transport Position:

Back the transport truck up to the hopper to unload. Use the mechanical and hydraulic jacks on the front frame to match the hopper height with the truck discharge height.

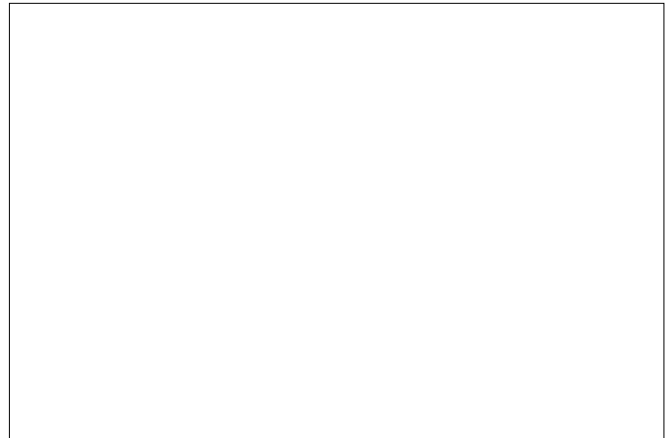


Fig. 25 TRANSPORT POSITION

15. Operating Hints:

- a. Be sure that all workers and operators are supplied with and use the required safety gear.
- b. Keep the working area clean and as dry as possible to prevent slipping and tripping.
- c. Train all operators before starting. An untrained operator is not qualified to operate this machine and can expose himself and others to needless hazards.
- d. Always set the engine speed at maximum RPM to insure the engine has sufficient torque to provide high-pressure oil during all operating conditions.



Fig. 26 ENGINE

- e. Always lower both outriggers to the ground to provide machine stability before starting to work.



Fig. 27 OUTRIGGERS

- f. Use all machine parameters; height, pivot, dogleg and chute to adjust the machine to place the seed potatoes where required in the planter bin.

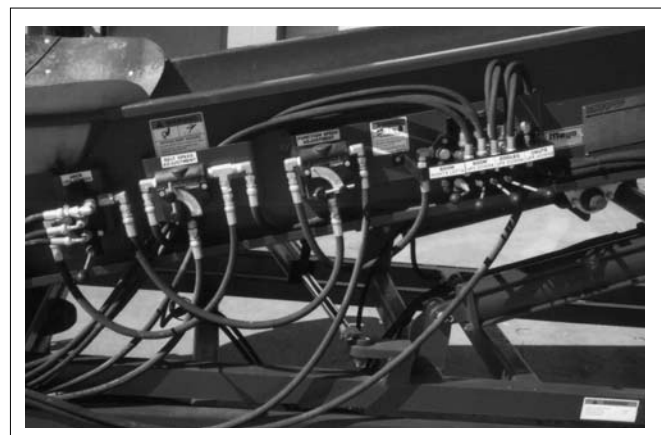


Fig. 28 CONTROLS

4.9 STORAGE



STORAGE SAFETY

- Store the Pivoting Planter Filler on a firm, level surface.
- If required, make sure the unit is solidly blocked up.
- Make certain all mechanical locks are safely and positively installed and connected before storing.
- Store away from areas of human activity.
- Do not permit children to play on or around the stored machine.
- Remove ignition key from engine and store in a secure location during storage.

4.9.1 PLACING IN STORAGE

At the end of the season, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the beginning of the next season. Follow this procedure:

1. Check all rotating parts for entangled material. Remove.
2. Thoroughly wash the machine using a pressure washer to remove all dirt, mud, debris or residue.
3. Make sure all the water drains out of all areas of the machine.
4. Lubricate all grease fittings. Make sure all grease cavities have been filled with grease to remove any water residue from the washing.
5. Inspect all the hydraulic components. Tighten any loose fittings. Replace any hose that is badly cut, nicked or abraded. Replace any damaged components.
6. Inspect the conveyor. Check the condition of the rollers. Replace any if badly worn. Check the alignment of the conveyor. Align if required. Properly tension the conveyor belt.

7. Touch up all paint nicks and scratches to prevent rusting.
8. Select a storage area that is dry, level and free of debris.
9. Cover with a weather-proof tarpaulin and tie down if stored outside.



Fig. 29 STORED (Typical)

4.9.2 REMOVING FROM STORAGE

When preparing to use the machine at the start of the season, follow this procedure:

1. Remove the tarpaulin if covered.
2. Move to the working area if appropriate.
3. Check:
 - a. Hydraulic system and components.
 - b. All drive systems.
 - c. All hardware. Tighten as required.
4. Replace any defective components.
5. Go through the pre-operation checklist (Section 4.5) before starting.

4.10 TRANSPORT



TRANSPORT SAFETY

- Make certain that you are in compliance with local, state/provincial and federal regulations regarding transporting agricultural equipment on public roadways. Mount an optional lighting bar to provide lights when travelling on a public road.
- Make certain that all wheels and tires are in good repair and that tires are inflated to proper pressure. Do not underinflate or overinflate.
- Make certain that all wheel bolts/lug nuts are tightened to proper torque specifications (refer to specification chart in Section 7.2).
- Make certain that all mechanical locks and integral anchor chains are safely and positively connected before loading or transporting.
- Raise and secure all jack stands and outriggers.
- Be sure that any necessary SMV (slow moving vehicle) signs, reflectors and lights required by law are in proper place and are clearly visible to oncoming and overtaking traffic.
- Be sure that the Pivoting Planter Filler is positively hitched to the towing vehicle. Use a proper safety chain to assure a safe hitch hook-up when transporting.
- Adhere to local regulations regarding maximum weight, width and length.
- Do not exceed 15 mph (25 Km/H). Reduce speed when transporting with a tractor on rough roads and surfaces.
- Do not allow anyone to ride on the Pivoting Planter Filler or towing vehicle during transport.
- Always use hazard flashers on the towing vehicle when transporting.

Mayo Pivoting Planter Fillers are designed to be easily and conveniently moved from location to location. Transporting is used to describe when the machine is being towed by a truck. When transporting, follow this procedure:

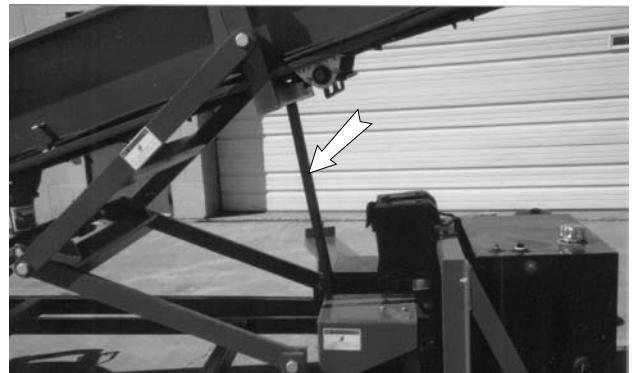
1. Pull the planter and all auxiliary equipment away from the machine.
2. Extend tow hitch and secure with anchor pin and retainer.
3. Start engine, lower and center frame, retract dogleg and chute, attach to truck and stow jacks. Secure pintle hitch with lock pin and retainer (refer to section 4.7).
4. Place all controls in the OFF position.
5. Stop engine and remove ignition key.



Fig. 30 TOW HITCH

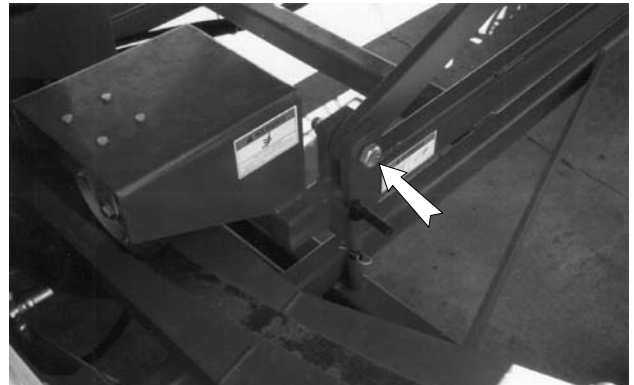
6. Install the transport locks:

a. Boom support pole.



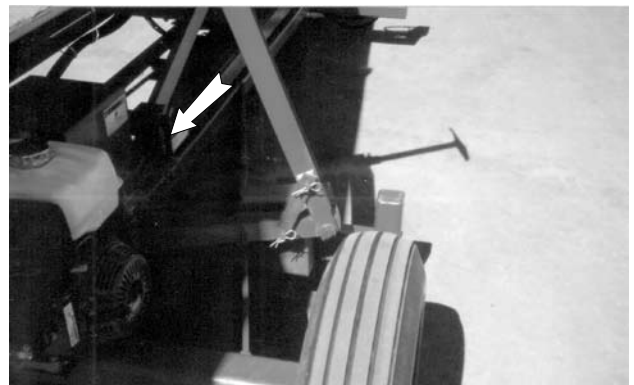
Boom Support Pole

b. Frame pivot lock pin.



Pivot Lock Pin

c. Outrigger lock brackets.



Outrigger Lock Brackets

7. Install an optional lighting package on the rear of the frame if not equipped with lights.

8. Use pilot vehicles and install extra lights on the machine when transporting during times of limited visibility.

9. Clean all the reflectors.

10. Be sure all bystanders are clear of the machine.

11. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.

12. Make sure all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.

13. Do not exceed a safe travel speed. Slow down for rough terrain and corners.

14. Do not allow riders on the machine.

Fig. 31 TRANSPORT LOCKS



Fig. 32 TRANSPORTING

5 SERVICE AND MAINTENANCE



MAINTENANCE SAFETY

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Follow good shop practices:
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
- **Turn engine OFF, place controls in their OFF position, relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining, repairing or cleaning.**
- Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.
- When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

5.1 SERVICE

5.1.1 FLUIDS AND LUBRICANTS

1. Grease

Use an SAE multi-purpose high temperature grease with extreme pressure (EP) performance meeting or exceeding the NLGI #2 rating for all requirements.

2. Engine Oil:

Use an SAE 10W30 synthetic oil meeting the American Petroleum Institute (API) classification of SF or SG for normal operating temperatures. Consult the engine manual for unusual operating conditions. Do not mix oil types or viscosities.

Crankcase Capacity: 1 US qt.

3. Gasoline:

Use a unleaded gasoline for all operating conditions. Do not use gasoline with an ethanol blend.

Fuel Tank Capacity: 1 US gal.

4. Hydraulic Oil:

Use an Armory 32 type oil or any equivalent hydraulic oil.

Reservoir: 20 US gal.

5.1.2 GREASING

Refer to Section 5.1.1 for recommended grease. Use the Maintenance Checklist provided to keep a record of all scheduled maintenance.

1. Use only a hand-held grease gun for all greasing. Air powered greasing systems can damage the seals on bearings and lead to early bearing failure.
2. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If a fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.
5. **Storing Lubricants:**
Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

5.1.3 SERVICING INTERVALS

10 Hours or Daily

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent servicing.

1. Check engine fluid levels.
 - a. Gas tank.
 - b. Crankcase oil.

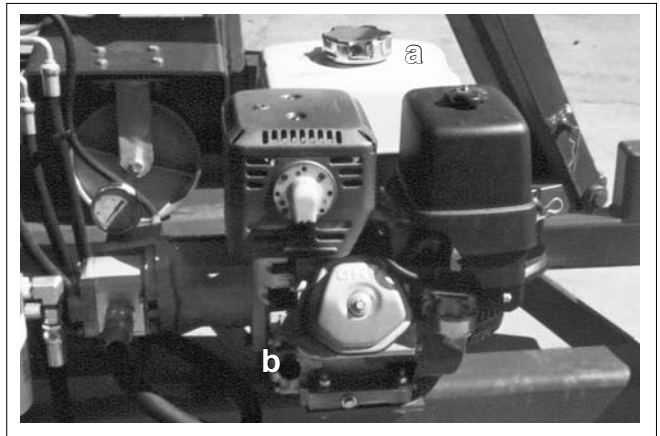


Fig. 33 ENGINE FLUID LEVELS

50 Hours or Weekly

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent servicing.

1. Grease the conveyor roller bearings with 1 shot of grease.
 - a. Idler shaft.
 - b. Drive shaft.

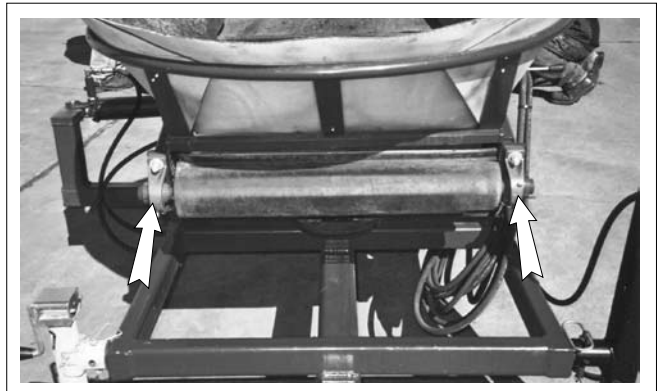


Fig. 34 IDLER SHAFT

IMPORTANT

Only sealed bearings are used on the conveyor bearings. Sealed bearings should never be greased more often than weekly or every 50 hours. Do not over grease. Do not give bearing more than 1 shot of grease each time it is greased. Once the bearing seal is broken, the bearing must be greased each day or the bearing will fail.

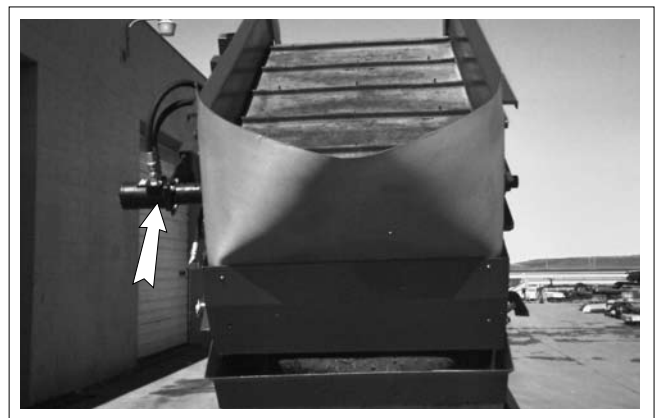


Fig. 35 DRIVE SHAFT

2. Check oil level in hydraulic reservoir.



Fig. 36 SIGHT GLASS

3. Clean engine air cleaner.



Fig. 37 AIR CLEANER

4. Check conveyor alignment.



Intake

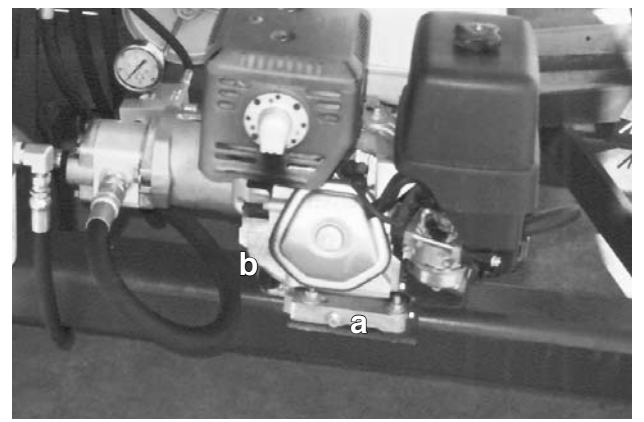


Discharge

Fig. 38 CONVEYOR ALIGNMENT

100 Hours or 3 Months

1. Change engine oil.
 - a. Drain Plug.
 - b. Fill plug.
2. Change hydraulic system oil filter.



Engine



Hydraulic Oil Filter

Fig. 39 REAR FRAME

3. Check tire pressure.



Fig. 40 TIRES

200 Hours or Annually

1. Grease pivot plate.



Front



Rear

Fig. 41 PIVOT PLATE

2. Check conveyor tension.

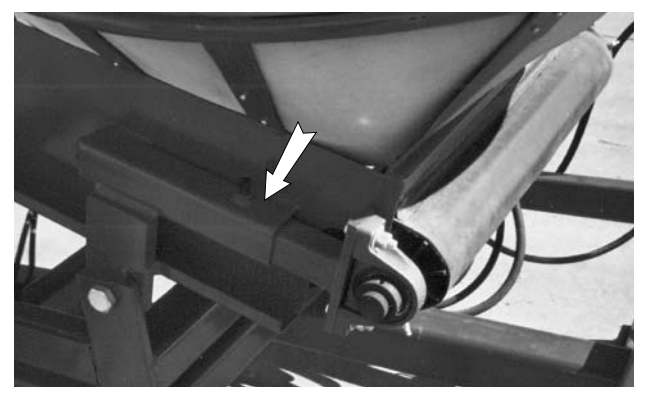


Fig. 42 CONVEYOR ADJUSTERS (Typical)

3. Wash machine.



Fig. 43 MACHINE

Bi-Annually

1. Change oil in hydraulic system.

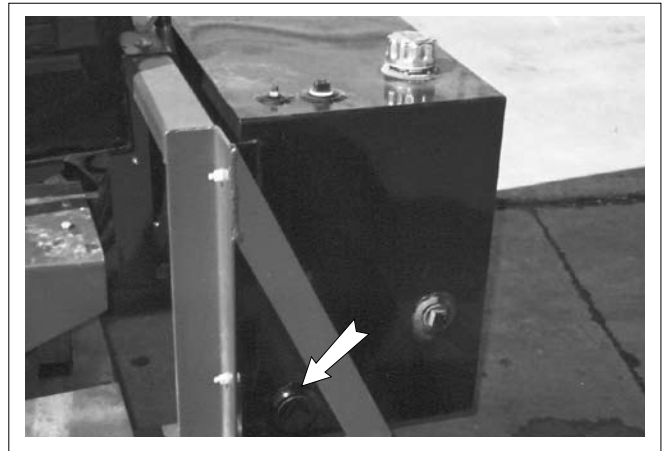


Fig. 44 DRAIN PLUG

5.1.4 SERVICE RECORD

See Lubrication and Maintenance sections for details of service. Copy this page to continue record.

ACTION CODE: CK CHECK CH CHANGE CL CLEAN
 G GREASE RE RE-PACK

| <div style="text-align: right;">HOURS</div> <div style="text-align: center;">SERVICED BY</div> <div style="text-align: left;">MAINTENANCE</div> | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | |
| 10 HOURS OR DAILY | | | | | | | | | | | | | | | | | | | |
| CK Engine Fluid Levels | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| 50 HOURS OR WEEKLY | | | | | | | | | | | | | | | | | | | |
| G Conveyor Roller Bearings | | | | | | | | | | | | | | | | | | | |
| CK Hydraulic Oil Level | | | | | | | | | | | | | | | | | | | |
| CL Engine Air Cleaner | | | | | | | | | | | | | | | | | | | |
| CK Conveyor Alignment | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| 100 HOURS OR 3 MONTHS | | | | | | | | | | | | | | | | | | | |
| CH Engine Oil | | | | | | | | | | | | | | | | | | | |
| CH Hydraulic Oil Filter | | | | | | | | | | | | | | | | | | | |
| CK Tire Pressure | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| 200 HOURS OR ANNUALLY | | | | | | | | | | | | | | | | | | | |
| G Pivot Plate | | | | | | | | | | | | | | | | | | | |
| CK Conveyor Belt Tension | | | | | | | | | | | | | | | | | | | |
| CL Machine | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| BI-ANNUALLY | | | | | | | | | | | | | | | | | | | |
| CH Hydraulic Oil | | | | | | | | | | | | | | | | | | | |

5.2 MAINTENANCE

By following a careful service and maintenance program on your machine, you will enjoy many years of trouble-free use.

5.2.1 CLEANING AIR CLEANER

1. Review the Operator's Manual for the engine.
2. Place all controls in neutral, stop engine and remove ignition key before maintaining.
3. Remove the cover over the air cleaner.
4. Remove the foam from the engine.
5. Use an air hose to blow the dust and debris out of the foam.
6. Install foam.
7. Install and secure the cover.

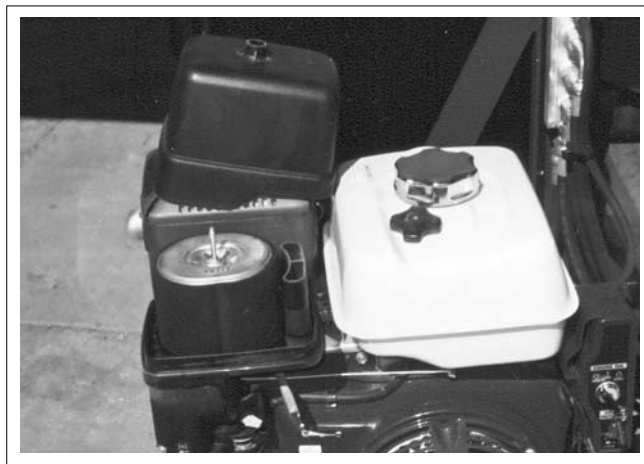


Fig. 45 AIR CLEANER

5.2.2 CHANGING ENGINE OIL AND FILTER

1. Review the Operator's Manual for the engine.
2. Place all controls in neutral, stop engine and remove ignition key before maintaining.
3. Allow the engine to cool before changing the oil. Hot oil can cause burns if it contacts exposed skin. It is best to change oil while the engine is warm to keep the contaminants in suspension.
4. Place a pan under the drain plug.
5. Remove the drain and allow the oil to drain for 10 minutes.
6. Install and tighten the drain plug.
7. Dispose of the used oil in an approved container.
8. Remove engine oil filter.
9. Apply a light coat of oil to the O ring and install the replacement filter. Snug up by hand and then tighten another 1/2 turn.
10. Fill the crankcase with specified oil.
11. Run the engine for 1-2 minutes and check for oil leaks.
12. If leaks are found around the drain plug or filter, tighten slightly. Repeat step 9.
13. Check engine oil level. Top up as required.

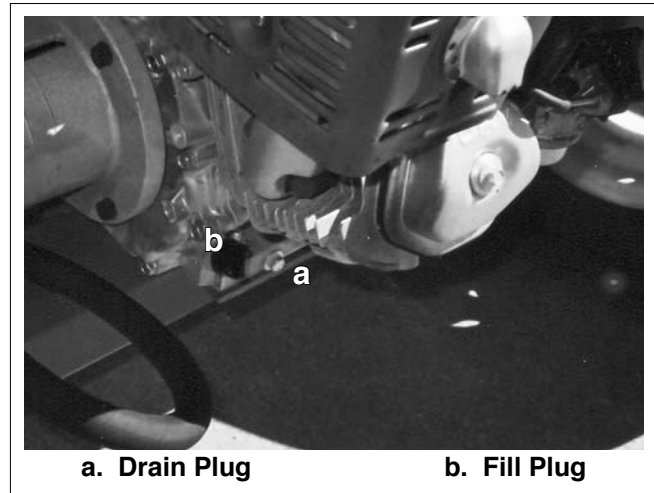


Fig. 46 ENGINE

5.2.3 CHANGING HYDRAULIC OIL AND FILTER

1. Review the Operator's Manual for the engine.
2. Place all controls in neutral, stop engine, turn off ignition and wait for all moving parts to stop before changing oil and filter.
3. Allow the engine to cool before changing the oil. Hot oil can cause burns if it contacts exposed skin. It is best to change oil while the engine is warm to keep the contaminants in suspension.
4. Place a pan under the drain plug.
5. Remove the drain and allow the oil to drain for 10 minutes.
6. Install and tighten the drain plug.
7. Dispose of the used oil in an approved container.
8. Remove hydraulic oil filter.
9. Apply a light coat of oil to the O ring and install the replacement filter. Snug up by hand and then tighten another 1/2 turn.
10. Fill the hydraulic oil reservoir with specified oil.
11. Run the engine for 1 to 2 minutes and check the hydraulic system for oil leaks.
12. If leaks are found around the drain plug or filter, tighten slightly. Repeat step 11.
13. Check oil level in reservoir. Top up as required.

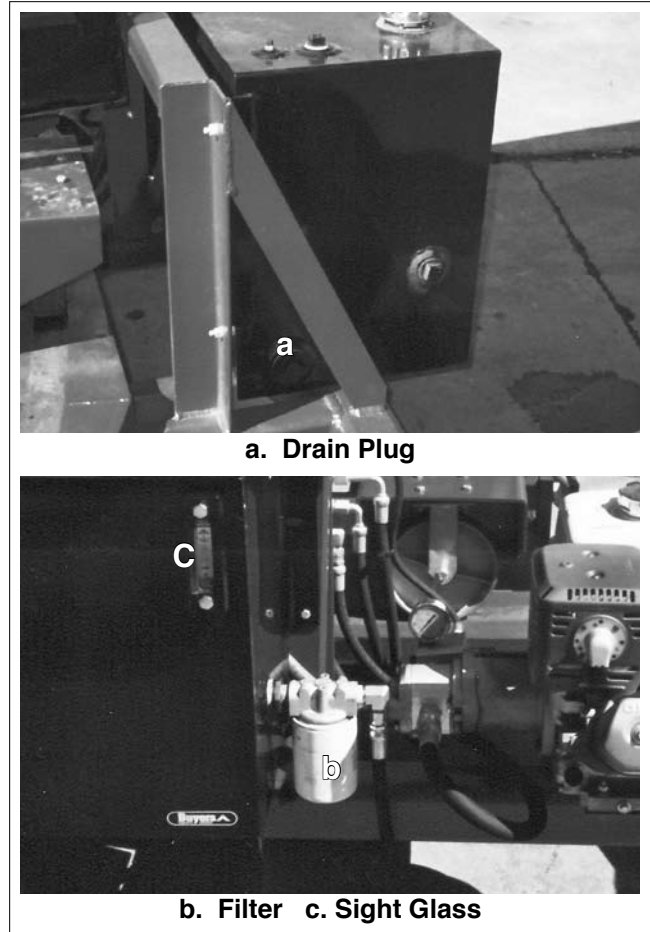


Fig. 47 HYDRAULIC SYSTEM

5.2.4 CONVEYOR BELT TENSION/ALIGNMENT OR REPLACEMENT

A conveyor belt is used to move seed potatoes into the machine. The tension and alignment of the conveyor should be checked weekly to insure proper function. Replace the conveyor belt when damaged or badly worn. To maintain conveyor belt, follow this procedure:

1. Place all controls in their OFF or neutral position.
2. Turn engine OFF, remove ignition key and lock-out tag-out.
3. **Tension:**
The belts are tensioned correctly when they do not sag below the frame. It should be carried by guide stars on the slack side and not be visible below the frame.



Fig. 34 GUIDE STARS



Fig. 49 TENSION ADJUSTING

4. **Alignment:**

The conveyor is properly aligned when the belt runs in the center of the frame panels and the shafts. Be sure to run the conveyor a full revolution to check the entire belt. The belt can move from side-to-side while it is turning as long as it doesn't contact the sides. If it contacts the sides, it must be aligned. Align by loosening the shaft bearing assembly on the tight side or tightening the bearing assembly on the loose side. Move the bearing assemblies on the driven shaft to align the conveyor but always maintain the proper tension.



Fig. 50 CONVEYOR BELT ALIGNMENT

5. **Replacement:**

- a. Move one or both of the shafts into their loosest position.
- b. Open the belt by removing the connecting rod on the belt.
- c. Attach the replacement belt to the end of the old belt.
- d. Slowly pull the old belt out of the machine and thread the new one into position.
- e. Disconnect the old belt and connect the ends of the new one together.
- f. Move the shaft into position to set the tension of the belt and secure the bearing assemblies.
- g. Check the tension and alignment of the belt frequently during the first 10 hours of operation and set as required. Then, go to the regular maintenance schedule. Normally a belt will seat itself during the first 10 hours of operation and then require less adjustment.



Fig. 51 BELT CONNECTOR

6 TROUBLESHOOTING

The Mayo Pivoting Planter Filler is a self-contained portable elevating conveyor that pivots and is used to load seed potatoes into a planter. It is a simple and reliable system that requires minimum maintenance.

In the following section, we have listed many of the problems, causes and solutions to the problems that you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this trouble shooting section, please contact your local Mayo dealer or the factory. Before you call, please have this Operator's Manual and the serial number from your machine ready.

| PROBLEM | CAUSE | SOLUTION |
|---|----------------------------|--|
| Conveyor won't run. | No power. | Start engine and set speed at maximum RPM. |
| | Speed set at OFF. | Adjust speed dial to a 3 - 4 setting. |
| | Loose conveying belt. | Tighten conveying belt. |
| <hr/> | | |
| Seed potatoes bunching at conveyor discharge. | Conveyor running too fast. | Reduce conveyor speed. |

7 SPECIFICATIONS

7.1 MECHANICAL

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

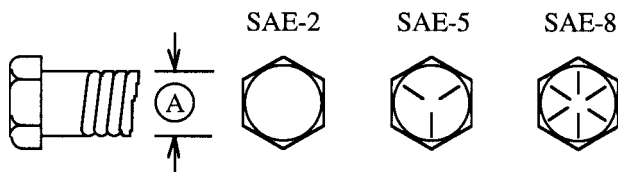
7.2 BOLT TORQUE

CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

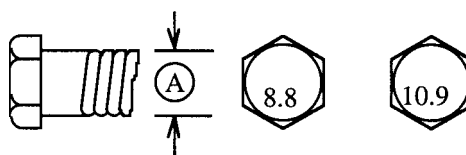
ENGLISH TORQUE SPECIFICATIONS

| Bolt Diameter "A" | Bolt Torque* | | | | | |
|-------------------------|------------------------|-----|------------------------|-----|------------------------|-----|
| | SAE 2 (N.m) (lb-ft) | | SAE 5 (N.m) (lb-ft) | | SAE 8 (N.m) (lb-ft) | |
| 1/4" | 8 | 6 | 12 | 9 | 17 | 12 |
| 5/16" | 13 | 10 | 25 | 19 | 36 | 27 |
| 3/8" | 27 | 20 | 45 | 33 | 63 | 45 |
| 7/16" | 41 | 30 | 72 | 53 | 100 | 75 |
| 1/2" | 61 | 45 | 110 | 80 | 155 | 115 |
| 9/16" | 95 | 60 | 155 | 115 | 220 | 165 |
| 5/8" | 128 | 95 | 215 | 160 | 305 | 220 |
| 3/4" | 225 | 165 | 390 | 290 | 540 | 400 |
| 7/8" | 230 | 170 | 570 | 420 | 880 | 650 |
| 1" | 345 | 225 | 850 | 630 | 1320 | 970 |



METRIC TORQUE SPECIFICATIONS

| Bolt Diameter "A" | Bolt Torque* | | | |
|-------------------------|----------------------|------|-----------------------|------|
| | 8.8 (N.m) (lb-ft) | | 10.9 (N.m) (lb-ft) | |
| M3 | .5 | .4 | 1.8 | 1.3 |
| M4 | 3 | 2.2 | 4.5 | 3.3 |
| M5 | 6 | 4 | 9 | 7 |
| M6 | 10 | 7 | 15 | 11 |
| M8 | 25 | 18 | 35 | 26 |
| M10 | 50 | 37 | 70 | 52 |
| M12 | 90 | 66 | 125 | 92 |
| M14 | 140 | 103 | 200 | 148 |
| M16 | 225 | 166 | 310 | 229 |
| M20 | 435 | 321 | 610 | 450 |
| M24 | 750 | 553 | 1050 | 774 |
| M30 | 1495 | 1103 | 575 | 1550 |
| M36 | 2600 | 1917 | 3675 | 2710 |



Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and capscrews are identified by their head markings.

7.3 LUBRICANT SPECIFICATIONS

| MAYO MFG. RECOMMENDS THE FOLLOWING MOBIL PRODUCTS OR THEIR EQUIVALENTS | | | | |
|--|-------------------------------|---|--------------------------------------|---|
| Lubricant Type | Component | Specification | Recommended Lubricant | Recommended Temperature/ Service Interval |
| Hydraulic Oil | Hydraulic Reservoir | ISO 32, Synthetic Food Grade , NSF-H1 | Mobil SHC Cibus 32 | All Temperatures/Oil sample guidance or 12 months |
| | Hydraulic Reservoir | ISO 32, Food Grade, NSF-H1 | Mobil DTE FM 32 | 10F to 140F/Oil sample guidance or 12 months |
| Grease | Greased Bearings/ Points | Food Grade | Mobilgrease FM 222 | All/Weekly or as needed |
| | Greased Bearings/ Points | Non-Food | Mobilgrease XHP 222 | |
| Gear Oil | Winsmith Worm Gear Reducer | Poly Alkylene Glycol (PAG) ISO 460 NSF H1 | Mobil Glygoyle 460 | All/See Manual Note: Do Not Substitute |
| | Browning Helical Gear Reducer | Synthetic, PAO Type ISO 220 NSF H1 | Mobil SHC 630 or Mobil SHC Cibus 220 | All/Change Every Two Years |
| | Auburn Planetary Wheel Drives | SAE GL-5 75w90 | Mobil Delvac Synthetic 75w90 | All/Change Every Two Years |
| **FOR SAFETY, ALWAYS LOCKOUT & TAGOUT** | | | | |

7.4 HYDRAULIC FITTING TORQUE

Tightening Flare Type Tube Fittings *

1. Check flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Lubricate connection and hand tighten swivel nut until snug.
4. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.

| Tube Size OD | Nut Size Across Flats | Torque Value• | | Recommended Turns To Tighten (After Finger Tightening) | |
|--------------------|-----------------------------|------------------|-----------|---|------------|
| | | (N.m) | (lb-ft) | (Flats) | (Turn) |
| 3/16 | 7/16 | 8 | 6 | 1 | 1/6 |
| 1/4 | 9/16 | 12 | 9 | 1 | 1/6 |
| 5/16 | 5/8 | 16 | 12 | 1 | 1/6 |
| 3/8 | 11/16 | 24 | 18 | 1 | 1/6 |
| 1/2 | 7/8 | 46 | 34 | 1 | 1/6 |
| 5/8 | 1 | 62 | 46 | 1 | 1/6 |
| 3/4 | 1-1/4 | 102 | 75 | 3/4 | 1/8 |
| 7/8 | 1-3/8 | 122 | 90 | 3/4 | 1/8 |

- The torque values shown are based on lubricated connections as in reassembly.

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