SETUP INSTRUCTIONS

PW7 Pick-Ups
Rake-Up    SwathMaster
Stand-Alone Units
The Safety Alert Symbol is used to alert the reader to important safety messages in this manual. When observed carefully read the message that follows and be alert to the possibility of death or serious injury.

**SAFETY ALERT SYMBOL**

- **ATTENTION!**
- **BECOME ALERT!**
- **YOUR SAFETY IS INVOLVED!**

**THIS SYMBOL MEANS**

**DANGER:** Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

**WARNING:** Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

**CAUTION:** Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

**ATTENTION:** Indicates a potentially hazardous situation that, if not avoided, could result in machine damage.

***IMPORTANT***

Before any person uses this product he/she should take sufficient time learning all necessary precautions and procedures. Each operator should:

- Ensure all people, pets and tools are clear.
- Reads and fully understands all procedures/precautions in the Operators Manual.
- Be instructed and experienced in safe and proper use of the unit.

If additional information is required that is not covered in this manual, contact your local dealer.
INTRODUCTION

In order to ensure that the pickup will operate smoothly and efficiently, it is important that it be correctly set up.

Contained in these instructions are safety precautions, set up procedures, and adjustment procedures for the MacDon PW7 family of combine pickups.

The following pickup models are covered in this manual:

<table>
<thead>
<tr>
<th>Rake Up</th>
<th>SwathMaster</th>
</tr>
</thead>
<tbody>
<tr>
<td>12’ Small Seed</td>
<td>12’ Small Seed</td>
</tr>
<tr>
<td>14’</td>
<td>14’</td>
</tr>
<tr>
<td>16’</td>
<td>16’</td>
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Note: Left and right hand are referenced from the operator’s seat and looking forward and that the illustrations may not match your exact machine.

We welcome your suggestions, questions or comments regarding the installation, operation or maintenance of the pickup.

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# TABLE OF CONTENTS

## SECTION 1 SAFETY

1.1 General Safety Practices ................................................................. 1

1.2 Safety During Combine Header Installation ........................................ 1

1.3 Safety During Servicing
   A) Tire Safety .................................................................................. 2
   B) Holddown Safety Locks ................................................................. 2
   C) Feeder House Safety Locks .............................................................. 3

## SECTION 2 SETUP

2.1 Handling Vertical Units
   A) Lifting The Pickup ........................................................................ 4
   B) Lowering The Pickup .................................................................... 5

2.2 Rotating Spring Wires Out of Shipping Position .................................. 5

2.3 Positioning Pickup On Header ............................................................ 7

2.4 Disengaging Storage Braces and Locks .............................................. 9

2.5 Hydraulic System
   A) Hose Routing and Clamping ......................................................... 10
   B) Testing Hydraulics ................................................................. 11
   C) Hydraulic Holddown Troubleshooting ........................................ 11
   D) Bleeding The Hydraulics ............................................................ 12

## SECTION 3 ADJUSTMENTS

3.1 General Adjustments ....................................................................... 13

3.2 Tooth Height Adjustment .................................................................. 13

3.3 Suspension Adjustment .................................................................... 14

3.4 Tire Pressure and Wheel Torque ..................................................... 15

3.5 Draper Belt Tensioning .................................................................... 15

3.6 Fiberglass Rod/Spring Wire Orientation .......................................... 17

3.7 Pickup Drive Belt Tension ................................................................. 17
1.1 GENERAL SAFETY PRACTICES

- Familiarize yourself with all definitions of the safety alert symbol, which is located on the back of the front cover page.

- All operators are to be instructed in the safe and proper use of this machine and must understand and follow all safety decals as well as instructions in this and combine manual.

- Carefully read all safety messages in this manual and on your machine.

- Keep all safety signs in good condition. Replace when necessary.

- Find a spacious, clear, and level surface to perform any maintenance or adjustments.

- Never work around running machinery.

- Never remove obstructions from running machinery.

- DO NOT operate machinery without all shields in place.

- NEVER engage pickup drive with people near machine.

- DO NOT ride on pickup or header.

- Any damage/deterioration on any parts should be repaired/replaced immediately by authorized personnel.

- Always lower header and pickup to ground or engage feeder safety locks, shut off combine, remove key and wait until all moving parts have stopped before servicing.

1.2 SAFETY DURING COMBINE HEADER INSTALLATION

- Clear the area of other persons.

- Make certain that all installation procedures are understood clearly. If not, refer to applicable section for reference.

- Find a spacious, clear, and flat work area.

- Check for obstructions on combine, header, and in work area before starting.

- Make sure feeder house safety lock is engaged, or the feeder house is entirely lowered, and the key is removed before working around header.

- Take extreme care when working around hydraulic lines. Hydraulic fluid under high pressure can penetrate the skin and cause serious tissue damage. Seek immediate medical attention if skin penetration occurs.

- At all times keep all body parts away from underneath the pickup.
1.3 SAFETY DURING SERVICING

- Any servicing to machinery must only be done after the header is lowered to the ground or feeder house locked, is shut off, the key is removed and all moving parts have stopped.

- Take extreme caution around escaping hydraulic fluid. Release all pressure in the system before servicing or inspecting leaking lines. Hydraulic fluid under high pressure can penetrate the skin and cause serious injury. Never use your hands to inspect lines. Seek immediate medical attention if fluid is injected into the skin.

- Familiarize yourself with proper servicing procedures in this manual.

- Wear protective clothing and personal safety devices when required.

A) Tire Safety

- A tire that explodes could cause serious injury. Have a qualified service technician service the tires.

- When inflating tires take extreme care. An over inflated tire can explode.

- Recommended pressure is 8-10 psi.

- Replace rim if overly rusted or cracks are noticed.

- Stand clear from tire when inflating. Use a clip-on air chuck, and extension hose.

B) Holddown Safety Locks

**WARNING: OVERHEAD OBJECT HAZARD** Always activate safety locks before working under raised holddown.

- a) Raise holddown all the way up.
- b) Engage holddown safety locks.
- c) Complete work underneath holddown.
- d) Disengage safety locks.
C) Feeder House Safety Locks  
(Safety Locks Will Vary According to Combine)

**WARNING:** At no time is any service procedure to be performed without the header lowered to the ground or the feeder house locks engaged.

a) Raise feeder house up completely.

b) Engage feeder house lock.

c) Complete work underneath header/pickup.

d) Disengage feeder house lock.
WARNING: **DO NOT** perform any service procedure until the combine; is lowered to the ground or the feeder house locks are engaged, combine is shut off, the key is removed and all moving parts have stopped.

NOTE: Extra hardware shipped with units can be found attached to the square holddown tubing.

### 2.1 HANDLING VERTICAL UNITS

**A) Lifting The Pickup**

In order to move the unit without damaging it, the following handling instructions must be closely followed.

**WARNING:** Be sure all persons/pets are standing clear when moving the pickup/header. Take care when lowering or raising the unit to prevent the bottom from sliding out.

NOTE: The red tag shown below in “Strapping The Pickup” is attached to the holddown plate. The tag provides instructions on pickup handling.

a) Locate a clear and flat work area to place the pickups.

b) Attach straps or spreader bar as instructed on tag and shown in following photos. Be sure to follow the tag instructions carefully to prevent damage to the unit.

c) Using a lift truck, slowly hoist the pickup off of the transport vehicle and place in the desired storage area.
B) Lowering The Pickup

After the straps have been attached, (as above in “Strapping/Raising of Pickup”) move the pickup to the assembly area. A flat, spacious area facilitates installation.

**WARNING:** Stand clear when unit is being moved.

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**Shipping Stands**

2.2 ROTATING SPRING WIRES OUT OF SHIPPING POSITION

**ATTENTION:** Spring Wire Tube must be rotated to operating position before operating the pickup.

The spring wire tube is set in the shipping position when shipped from the factory (See “Spring Wires In Shipping Position”). Before operating the pickup, ensure the spring wire tube has been rotated to field position (See “Spring Wires In Field Position”).

a) Remove the 1/2-inch x 1 1/2 inch clevis pin and hitch pin.

b) Ensure each spring wire tab is aligned between the legs of its corresponding spring wire so that it can rotate freely.

c) Rotate the spring wire tube handle just over a full turn, so that the tab begins to engage the spring wire (as shown in “Spring Wires In Field Position”).

d) Secure with the 1/2-inch x 1 1/2 inch clevis pin and hitch pin.
2.3 POSITIONING PICKUP ON HEADER

(a) Support the pickup with the rear roller at approximately 14 inches (356mm) above the ground with wooden blocks located under the shock tubes (See Following Illustrations).

(b) With the header mounted on the combine, position the header cutter bar into position on the pickup-mounting bracket. See illustration below for orientation of your pickup.

(c) Position the header such that the left and right hand channel uprights on the pickup frame are equal distances from the sides of the header. (See Following Illustration).
NOTE: On 14ft & 16ft pickups, the channel uprights are outside the header.

**d)** Bolt the mounting brackets to the cutter bar using the 7/16-inch x 1 1/2 inch carriage bolts, flat washers, lock washers and nuts provided. There are three bolts for each side of the pickup. The clearance between the cutter bar and rear roller can be increased, if desired, by positioning the shim between the cutter bar and 14ft mount bracket.

**NOTE:** It may be necessary to shift the pickup slightly off center to align the mounting bracket and the cutterbar with the holes or it may be necessary to drill new holes in the combine to match the holes in the pickup.

**e)** Make sure mounting bracket is secure and flush to cutter bar. Lift the header and remove the wooden blocks.

**f)** With the rear roller shaft at 14” above the ground check the position of the channel upright as shown in “Installation of Rake UP” and “Installation of SwathMaster” illustrations above. If required, shim between the channel upright and mount bracket to get into the range shown. See illustrations below.

**g)** Pick-up to header braces are shipped connected to pickup channel uprights.

**NOTE:** Depending on the header and the size of the pickup to be mounted, it may be more convenient to use a different set of holes on the side of the channel upright and bolt the brace to the side of the combine header.

**ATTENTION:** Do not lift the pickup and header without header braces properly installed. Failure to follow this caution can damage the pickup or header. Parts damaged due to improper handling are not covered by warranty.
h) If appropriate holes exist in the header, they may be used for connecting the other end of the header braces. If not, drill a 1/2-inch hole and attach the braces.

NOTE: In some cases the braces must be bent to fit properly. Use a vice to bend the braces. All bends should be localized (sharp bends). Do not curve the entire brace to make it fit.

**2.4 DISENGAGING STORAGE BRACES AND LOCKS**

**ATTENTION:** Always disengage storage braces prior to field use. Lowering header to the ground with braces engaged may cause damage to the unit.

**Storage Brace Disengagement**

There are storage braces located on each end of the pickup.

a) Lower pickup to the ground to relieve the weight on pickup storage braces.

b) Remove 1/8-inch hitch pins and 1/2-inch clevis pins.

c) Remove the lock pin in the storage brace holder. Rotate the storage braces upward and secure into storage brace holders.

**Cylinder Brace**

There are cylinder braces located at each end of the pickup.

a) Remove the two hitch pins and washers securing the brace.
b) Remove the brace and reinstall the washers and hitch pins.

\[\text{Cylinder Brace (For Shipping Purposes Only)}\]

**2.5 HYDRAULIC SYSTEM**

**ATTENTION**: On some combine models, hydraulically driven after-market chaff spreaders are connected to the pickup drive hydraulic pump. When the pickup is sharing the drive with a chaff spreader, the pickup performance can be adversely affected or damage may occur to the hydraulic system. If the hydraulic motor on the pickup is mounted in series in front of the chaff spreader, backpressure from the chaff spreader may cause damage to the pickup motor. The pickup motor warranty is voided under these conditions.

A) Hose Routing and Clamping

Your dealer provides hoses and fittings, to connect the hydraulic motor and holddown cylinder to the combine.

The hydraulic hoses are routed from the pickup over the header. Precautions are required ensuring that the hoses will not rub on the shock absorbers or suspension springs.

\[\begin{itemize}
\item The hoses that come from the hydraulic motor and cylinder and run to the header also require proper clamping and orientation. For the hydraulic holddown hose that runs along the header, sufficient hose slack is required to prevent hose damage.
\end{itemize}\]

\[\text{Properly Routed Holddown Hose}\]

\[\text{Cylinder/Header Hose Routing}\]

\[\begin{itemize}
\item The hoses are then routed along the top of the header to an approximate hookup location. Attach couplers to the ends of the hoses and ensure that there is sufficient line length for connection to the combine supply and return lines
\end{itemize}\]
SECTION 2 – SET UP

B) Testing Hydraulics

In all cases before the unit is ready for field use, the hydraulic operation of the holddown should be tested. A properly performing holddown will operate as described below.

NOTE: All testing should be performed with the header/pickup lowered so that the wheels are on the ground and the distance from the ground to the center of the rear roller is about 14” (356mm). This is the standard operating height to be described later in manual.

TEST

a) The holddown is controlled using the reel lift control located in the combine cab. Activate the control to lift the holddown. The cylinders should begin lifting evenly at the same time.

b) Lift the holddown completely to the top. Continue to force the cylinders up for one to two seconds to ensure the cylinders re-phase. Both cylinders should be fully raised.

c) Lower the holddown. The cylinders should lower at the same time and at the same rate. It should take from 12 to 18 seconds for the holddown to fully lower from the highest point.

d) Completely lower the holddown. The cylinders should stop at the same time. It is acceptable for the slave cylinder to remain from 0 to 1/2” (13mm) extended when the master cylinder is fully retracted.

Should the hydraulics not perform as above then perform the following.

C) Hydraulic Holddown Troubleshooting

If your holddown is operating unevenly, follow the troubleshooting instructions in this section.

Prior to beginning to troubleshoot the hydraulics, certain service items should be obtained. The list below indicates much of what may be required to perform adjustments as needed.

Problem 1: Slave Cylinder Remains Extended More Than 1/2 inches (13mm) When the Holddown is Fully Lowered.

Probable Solution: Bleed Hydraulics

a) Bleed the hydraulics as described in the “Bleeding of Hydraulics”.

b) Re-try the holddown.

c) Check for improvement.

d) Repeat two or three times as necessary.
Problem 2: Master Cylinder Lags Behind Slave Cylinder on Descent and Jumps Ahead of Slave When Lifting.

Probable Solution(s):
- Bleed Hydraulics.
- Install Larger Orifice in Bottom of Master Cylinder.

Service Parts:
- 1/16 inch Orifice (Part # 01-10922-01)
- 3/64 inch Orifice (Part # 01-10922-03)

a) Bleed the hydraulics as described in the “Bleeding of Hydraulics”.
b) Re-try the holddown.
c) Check for improvement.
d) Repeat two times if required.
   If this does not work, then replacing the orifice in the master cylinder may fix the problem.

a) Loosen and remove the hose at the bottom of the master cylinder. Keep rags handy to clean up leaking hydraulic oil.
b) Loosen and remove the elbow from the bottom of the master cylinder.
c) Using a large bladed flat screwdriver, loosen and remove the orifice from inside the bottom port of the cylinder.
d) Install the 1/16-inch orifice in the bottom port. Do not over tighten.
e) Replace the elbow and the hose.
f) Bleed the hydraulics as described in the Bleeding the Hydraulics.
g) Repeat two or three times as needed.
h) Check the overall operation of the holddown.

Installing the 1/16-inch diameter hole orifice will likely prevent the master cylinder from lagging. However in some instances it may cause the slave to remain up as in Problem 1. If this is the case, repeat steps a) to f) with the 3/64 inch diameter hole orifice.

Orifice Installation

D) Bleeding the Hydraulics

In order for the hydraulics to perform properly, all or most of the air must be removed from the system. The hydraulics should be bled after initial installation, if the unit has sat for a significant period of time, and if adjustments are needed to the hydraulics.

CAUTION: High-pressure hydraulic oil can cause serious injuries such as burns, cuts, and tissue damage! Always take precautions when working with hydraulic oil. Wear safety goggles, gloves and thick clothing. Seek immediate medical attention if cut or burnt.

a) The holddown is controlled using the reel lift control located in the combine cab. Fully raise the holddown.
b) Engage the holddown safety locks. Ensure that the lock is fully rotated over center so that it will not slip forward.
c) Lower the holddown so that it comes to rest on the safety locks. (This serves to relieve the hydraulic pressure in the lines).

d) Hold a plastic pail so the lip of the pail is underneath the bleed plug and so that a stream of oil shooting out of the plug will go into the pail.

e) Loosen the small bleed screw on the end of the bleed plug with a 1/4-inch wrench.

f) Have someone activate the hydraulics. The holddown may lift slightly and a stream of oil will come from the bleed screw.

g) Run oil from the bleed screw until it is a steady clear stream. Have the operator stop activating the hydraulics and tighten the 1/4-inch bleed screw.

h) Fully raise the holddown again.

i) Disengage the safety locks.

j) Lower the holddown.
3.1 GENERAL ADJUSTMENTS

- Read and follow all safety measures.
- Adjust the tooth height such that the clearance between the teeth at their lowest point and a flat surface is 12mm. Use the cogged plate adjustment as described in “Teeth Height Adjustment”.
- Adjust suspension as per “Suspension Adjustment”.
- Check that the draper belts have not been over tightened. Tight belts wear quickly and are not covered by warranty. Tight belts also perform poorly. Relax belt tension if necessary as specified in “Draper Belt Tensioning”.
- Check that the tips of the spring wires protrude through the fiberglass rods as shown in the “Spring Wire and Fiberglass Rod Adjustment” in the Operators manual. This will prevent premature wear of the fiberglass rods due to contact with the sharp ends of the spring wires.
- SwathMaster belt tension is to be checked after the first 10 hours of use and every 50 hours there after.

3.2 TEETH HEIGHT ADJUSTMENT

The proper height adjustment should be checked to ensure the set-up of the pickup is correct. A clearance of 1/2 inch (12mm) between the teeth and the ground is recommended as an initial setting. This clearance is achieved when the 6th cog from the bottom on the pick up frame wheel plate lines up with the adjustment cog on the wheel spindle plate. See following.

To Adjust Teeth Height:

1. Check to see tire pressure is in desired range. (8-10 psi.)
2. Position the pickup so the rear roller is 14“ above ground (350mm). Check tooth height at this time. If an alternative height is desired, proceed with steps 3 to 8.
3. Raise the pick-up until the center of the rear roller is approximately 20” above the ground.
4. Using a 3/4” wrench, loosen the clamping/adjustment bolt on one side of the pickup.
5. Using two 3/4” wrenches, move the adjustment nut to the desired clearance.
6. Tighten the clamping bolt to lock into place.
7. Repeat steps 4 to 6 for the other side. Match the LH and RH wheel height using the cogs on the wheel plates.

8. Adjust suspension.

NOTE: When wheel height/teeth height is changed, suspension should be adjusted as well.

3.3 SUSPENSION ADJUSTMENT

a) Adjust tooth/wheel height. See previous page.

b) Lower header until wheels just touch the ground. [Rear roller approximately 20 inches (508 mm) above the ground.]

c) Tighten the spring bolt (2) evenly on both sides until the wheels begin to lift off the ground. Turn the spring bolt clockwise to lift the wheels and counter clockwise to lower the wheels.

NOTE: The friction in the gas shock absorbers must be compensated for by lifting the wheels during tightening and allowing them to fall to their normal resting position. The height of the wheels should be checked in this manner after every 1/2 inch (12mm) of spring adjustment.

d) Tighten the spring bolt-locking nut (3) against the spring casting to prevent loosening.

e) Raise header so wheels are approximately 6 inches (150 mm) off the ground.

f) Lower storage brace into engaged (float lockout) position and insert clevis pin (see Section 2.4). If pin does not go in, adjust lifter adjustment bolt (1) so clevis pin can be easily installed and removed.

g) Jam the lifter adjustment bolt-locking nut (4) against the lifter bracket (6).

Note: If ground speed is above 7 mph (11 km/h) it may be necessary to back off the float to prevent the header from bouncing excessively.

Note: During field operation, the rear roller shaft should be at 14 inches (350 mm) above the ground.
### 3.4 TIRE PRESSURE AND WHEEL TORQUE

**WARNING:** An over inflated tire could explode and cause serious injury or death. Read tire safety section before continuing.

a) Tire inflation: 8 to 10 PSI (55-69kPa)
b) Wheel bolt torque: 60 lb-ft

### 3.5 DRAPER BELT TENSIONING

The pickup draper belts are installed and set at the factory, however the draper belt tension should be checked before operating.

**A) Adjustment:**

- Loosen 1/2-inch carrier bracket bolts shown in Pickup Belt Tensioner and Carrier Bracket Bolts.
- The belts are tensioned using 1/2 inch set screw. See “Set Screws”.
- Tension the belts until there is approximately 1 1/2 inches on conventional pickups and 2 inch on grass seed pickups of slack in each belt when lifting midway between rollers. This adjustment is shown in the “Draper Belt Adjustment For Conventional/Grass Seed Pickups”.
- Tighten 1/2-inch carrier bracket bolts.

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- Draper Belt Adjustment For Conventional Pickups & SwathMaster Grass Seeds
- Draper Belt Adjustment For Rake-Up Grass Seed Pickups
NOTE:

1. When the pickup is mounted on the combine, there should be visible sag in the bottom side of the draper belt(s).

2. Some draper belts, when new, are very tacky. Talcum or baby powder rubbed into the belts may reduce the tackiness. In addition, for the first few hours of break-in, the belts may need to be run looser than normal.

**DO NOT OVER-TIGHTEN THE BELTS!**
This can cause a number of problems:

1. Joining bolts can pull out of draper belts.

2. The center belts will slip.

3. The belts will crawl over the dividers.

4. The rollers or bearings could be damaged.

Any belts that fail from being over tightened will not be covered under warranty!

B) Alignment – SwathMaster Small Seed Pickups

SwathMaster small seed belts may track to one side. Tighten draper on the side it is tracking to and loosen opposite side. Make small adjustments and run for 60 seconds before making further adjustments.

C) Alignment – Rake-Up Grass Seed Pickups

In order to keep the solid draper belt from crawling sideways, the draper rollers are fitted with special guide pulleys on either end of each roller. The drapers have V-belt like guides on their outer edges. These V-belt guides are meant to run in the guide pulleys.

If you are having trouble with the belts moving sideways out of the pulleys and wearing the belt edges, the following procedure should be followed:

(a) First, check draper belt tension. An over tensioned draper belt will tend to crawl sideways more. If you are not sure, try loosening the belt very slightly and then re-evaluating.

(b) Check that each side of the draper is tightened evenly. If the drapers are not tightened evenly, the belt will crawl one way. Sometimes diagonal ripples will appear running across the belt. Generally, loosen the side that the ripples are moving away from at the rear roller.

NOTE: The pulleys can be moved by loosening the two setscrews located on the hub of each pulley. Once the setscrews are loose the pulleys should slide one way or the other provided there is room available.

(c) Check the pulley alignment and spacing. Check to see if the front and rear pulleys are in line on each side and that the pulleys on each end of the roller are not closer or farther apart than the belt width allows.

(d) Check that all four pulleys are not shifted one way too far. If a shift is required, try to shift away from the drive end. This is where the worst wear points are for the belt.
### 3.6 FIBERGLASS ROD/SPRING WIRE ORIENTATION

The orientation of the spring wires and the fiberglass rods must be adjusted for different crop conditions.

a) Adjust the spring wire tube so that the spring wires protrude up through the fiberglass rods as illustrated. This will protect the fiberglass rods from becoming damaged by the spring wire edges. Secure with the clevis pins.

### 3.7 PICKUP DRIVE BELT TENSION

Both Rake-Up and SwathMaster models come equipped with self-tightening v-belts. SwathMaster units have an additional method to increase tension if required.

SwathMaster adjustment is as follows:

1. Remove drive shields. (See Service-Section 7 in the Operator’s Manual)
2. Eliminate v-belt tension. (See Service-Section 7 in the Operator’s Manual)
3. Remove tension spring and reposition so the extension is outside the mount bracket.

4. Tighten the tension spring hardware and put v-belt back on sheaves.