



ProPass 180 Top Dresser

Operator's Manual



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All information, illustrations, and specifications in this manual are based on the latest information at the time of publication. We reserve the right to make changes at any time without notice.



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Product Identification

Model Name and Serial Number

The model number and serial number of each ProPass product are located on an identification plate (Figure 1), along with the date of manufacture and the product's gross weight. The identification plate is mounted near the front of the conveyor belt on the ProPass body (Figure 2). When you contact an authorized TYCROP dealer for service or parts, the dealer will ask for the ProPass model name and serial number.

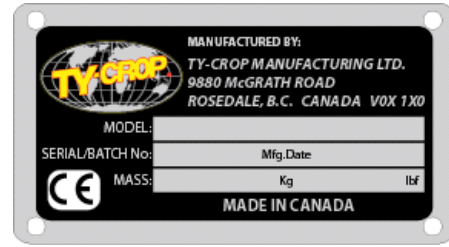


Figure 1: Identification plate

ProPass 180 Base Model

ProPass Twin Spinner

ProPass Vortex Brush

ProPass PowerPack



Figure 2: Identification plate on base model

Purchase Date and Dealer Information

Date of Purchase

Dealer Name

Dealer Phone



Specifications

IMPORTANT: These specifications are subject to change without notice. They are provided for reference purposes only. Contact an authorized TYCROP dealer for up-to-date or additional information.

General Specifications

Hopper capacity	0.59 m ³ (21 ft ³)
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Tow-Behind Configuration

Length	3.4 m (134 in)
Width	1.7 m (65 in)
Height	1.4 m (56 in)
Ground clearance	30 cm (12 in)
GVWR	1405 kg (3,100 lb)
Payload	905 kg (2,000 lb)

Truck-Mount Configuration

Length	1.98 m (78 in)
Width	1.7 m (65 in)
Height	1.4 m (56 in)
Tare	289 kg (636 lb)
Payload	Do not exceed vehicle ratings

Weights

Base Model	248 kg (546 lb)
Tow-behind chassis	218 kg (480 lb)
Twin Spinner	68 kg (150 lb)
Vortex Brush	28 kg (60 lb)
ProGator truck-mount	41 kg (90 lb)
Workman truck-mount	41 kg (90 lb)

Weights

Truck-mount storage stand	30 kg (65 lb)
11 HP – HYDRAULIC POWER PACK	100 kg (220 lb)

Tires

Size	24 x 13.00-12
Ply rating	4
Pressure	41–82 kPa (6–12 psi)

Electrical System

Voltage	12 V
Amperage draw	3.3 A
Fuse	15 A

Hydraulic System

Fluid type	Petro-Canada Duratran or equivalent
Fluid viscosity	60.09 cSt @ 40°C
Fluid capacity	2 L (0.53 gal)
Fluid capacity – 11HP Hydraulic Power Pack	32.9L (8.7 US gal)
Maximum pressure input	190 bar (2,800 psi)
Minimum pressure input	138 bar (2,000 psi)
Maximum flow input	37.9 L/m (10 U.S. gal/m)
Minimum flow input	22.7 L/m (6 U.S. gal/m)
11HP – Hydraulic Power Pack Engine Model Number	Honda GX340KQAE6
11HP – Hydraulic Power Pack Engine Owner's Manual Number	00X31-ZH9-6210



Noise

<p>Under normal operating conditions, the ProPass has an equivalent, continuous, 'A'-weighted sound level, no greater than 75 dB (decibels). When operated with the 11HP Hydraulic Power Pack the equivalent, continuous, 'A'-weighted sound level is 85dB(A).</p>
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<p>When operated by in conjunction with a tow vehicle, the sound level may exceed 85 dB. Use approved hearing protection.</p>

Vibration

<p>Under normal operating conditions, the ProPass does not produce vibrations over 2.0 m/s^2 (6.6 ft/s^2) to the operator's arms, or over 0.5 m/s^2 (1.6 ft/s^2) to the operator's body. (Note: values = weighted root mean square acceleration.)</p>



Introduction

Read this Operator's Manual carefully before operating the ProPass. Keep it in an accessible location.

To get a replacement manual, contact an authorized TYCROP dealer. This Operator's Manual is also available in other languages; contact your dealer to order one.

TYCROP Manufacturing Ltd. thanks you for choosing the ProPass 180 Top Dresser for your facility.

Using this Operator's Manual

Follow all safety precautions and operating recommendations to ensure safe and trouble-free operation of the ProPass 180 Top Dresser.

This Operator's Manual will help you and others avoid personal injury or damage to the machine. The information will provide the operator with the safest and most effective methods for operating the ProPass.

Throughout this Operator's Manual, the terms "left" and "right" are used. This means that when you stand behind the ProPass facing the front of it, your left side corresponds to the left side of the ProPass.

The ProPass shown in this Operator's Manual may differ slightly from your model. These differences are cosmetic and will not affect operation.

Message Boxes

This Operator's Manual contains message boxes that are labeled **Danger**, **Warning**, **Caution**, and **Important**. These message boxes indicate potential safety concerns or equipment damage, and operating and servicing information. Read these message boxes carefully to avoid injury and equipment damage.



DANGER: Indicates an extreme hazard that will cause serious injury or death if you do not follow the recommended precautions.



WARNING: Indicates a hazard that may cause serious injury or death if you do not follow the recommended precautions.



CAUTION: Indicates a hazard that may cause minor or moderate injury if you do not follow the recommended precautions.

IMPORTANT: Indicates special mechanical or servicing information.



About the ProPass 180 Top Dresser

Features and Benefits

The ProPass 180 Top Dresser is a lightweight, multi-purpose top dresser for the turf grass maintenance industry.

- It can spread various materials, including sand, top dress mix, screened and composted material, lime, and gypsum.
- It has the lightest footprint in the industry, resulting in less turf damage and lower maintenance costs.
- The easy-to-attach Twin Spinner attachment (no tools required) is ideally suited for light and frequent top dressing, with spread patterns up to 9.1 m (30 ft) wide in one pass.
- The easy-to-attach Vortex Brush attachment can spread a variety of materials in heavy applications between 1.2 m (4 ft) and 2.1 m (7 ft) wide.
- It features a seamless belt for enhanced durability.
- It features an easy-to-adjust rear gate.
- Without attachments installed, it can be used as a small capacity material mover.
- The tow-behind chassis features a four-wheel, walking beam suspension, which helps the ProPass navigate uneven terrain while maintaining a smooth ride, and an even weight transfer to the ground.
- The modular design allows the ProPass to be easily and inexpensively converted from a tow-behind configuration to a truck-mount configuration, or vice versa.
- The hand-held on/off pendant allows the ProPass and its attachments to be activated from the driver's position.

Components

Base Model

Because the ProPass is a modular system, the ProPass Base Model is built and sold separately from its attachments and other optional components.

The Base Model consists of a material hopper, a conveyor belt system, electro-hydraulic controls, a rear gate, and the belt cleaning scraper (Figure 3).

The Base Model is mounted on a chassis. Three different chassis types are available, depending on your operating requirements:

- TYCROP tow-behind chassis
- Toro Workman truck-mount chassis
- John Deere ProGator truck-mount chassis

Options and Attachments

For more information on the following options and attachments, contact an authorized TYCROP dealer.

Tow-Behind Chassis

TYCROP's tow-behind chassis is equipped with a unique four-wheel, walking beam suspension, which provides a smooth and stable ride.



Figure 3: Base Model mounted on tow-behind chassis

Toro or John Deere Truck-mount Chassis

The ProPass can also be mounted on John Deere ProGators (Figure 4) or Toro Workman trucks.

When the ProPass is not in use, it can be easily removed from its truck-mount to allow the truck to be used for other purposes.



Figure 4: John Deere ProGator truck-mount chassis

Truck-mount Storage Stand

The truck-mount storage stand allows the truck-mounted ProPass to be safely removed, stored, and re-installed (Figure 5).



Figure 5: Truck-mount storage stand

Twin Spinner Attachment

The Twin Spinner attachment can handle a variety of materials with spread widths of 4.6 m (15 ft) to 9.1 m (30 ft) for ultra-light and frequent top dressing (Figure 6).



Figure 6: Twin Spinner

Vortex Brush Attachment

The Vortex Brush attachment can spread a variety of materials in heavy applications between 1.2 m (4 ft) and 2.1 m (7 ft) wide (Figure 7).



Figure 7: Vortex Brush



11HP – Hydraulic Power Pack

The 11HP Hydraulic Power Pack consists of an 11HP gasoline engine driven, self contained, hydraulic power system attached to the front hitch of the ProPass with a remote hydraulic reservoir attached to the rear chassis wall.

The power pack can be used when your tow vehicle has insufficient hydraulic capacity to power the ProPass.

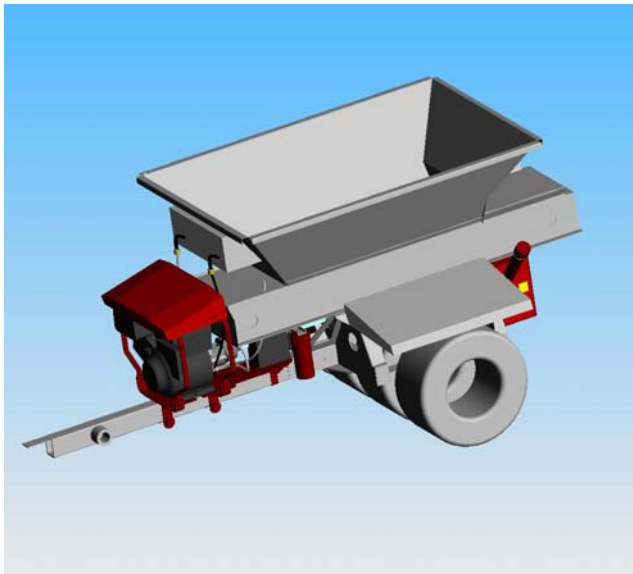
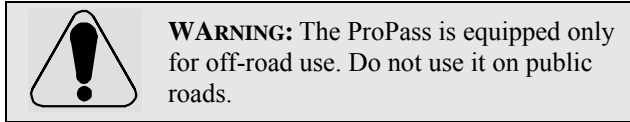


Figure 8: 11HP – Hydraulic Power Pack



Safety Instructions

Read this Operator's Manual carefully. Follow all safety precautions and operating recommendations to ensure the safe and trouble-free operation of the ProPass 180 Top Dresser.



Safe Operating Practices

- The ProPass has different balance, weight, and handling characteristics compared to some other types of pulled equipment. Before using the ProPass, take the time to become familiar with it.
- Observe all safety laws and regulations applicable to your area.
- Replace any safety decal that becomes damaged or illegible. The safety decals are listed in the Parts Catalog; order them from an authorized TYCROP dealer.
- Any modification to the ProPass that is not performed by, or under the guidance of an authorized TYCROP dealer could affect the safety, performance, or durability of the ProPass. If problems result, this may violate local regulations, or service may not be covered under the warranty.
- To ensure safe and trouble-free operation, always purchase genuine TYCROP replacement parts from an authorized TYCROP dealer. Using replacement parts from other sources may void your warranty.

Supervisor's Responsibilities

- Ensure that all operators have read this Operator's Manual, and understand all the safety decals on the ProPass.
- Prevent accidents by training operators to operate the ProPass. Continuously supervise its operation.

Do the Following

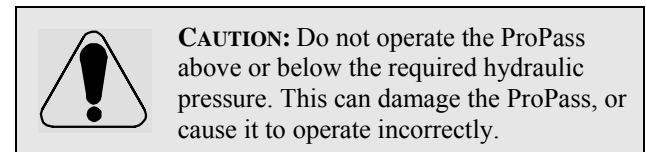
- Read and understand this Operator's Manual completely before operating the ProPass.
- Walk around the ProPass and inspect it. Check all decals, guards, shields, and other hardware. Also check the jack stand, hitch clevis, and attachment clamps.
- If any parts are broken or missing, repair or replace them before operating the ProPass.
- Ensure that qualified personnel have made all recommended maintenance and adjustments to the ProPass before you operate it. Notify your supervisor about any adjustments made to the ProPass.
- Wear approved hearing and eye protection when operating the ProPass.

Never Do the Following

- Do not allow untrained people or persons under 16 years of age to operate the ProPass.
- Do not operate the ProPass if you have any doubts about any aspect of its operation.
- Do not carry passengers on the ProPass.
- Do not operate the ProPass while under the influence of drugs or alcohol.
- Do not leave the ProPass unattended while it is running.
- Do not operate the ProPass when other people (or animals) are in the work area.

Hydraulic Safety

Tow Vehicle Requirements



The tow vehicle must meet the following hydraulic pressure requirements.



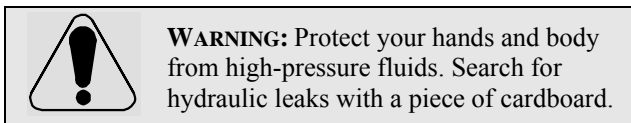
Hydraulic Pressure	
Minimum	22.7 L/m (6 U.S. gal/m) 138 bar (2,000 psi)
Maximum	37.9 L/m (10 U.S. gal/m) 193 bar (2,800 psi)

Hoses and Lines

Hydraulic hoses and lines can fail because of physical damage, kinks, age, and exposure. Check the hoses and lines regularly and replace them if necessary.

Fluid connections can loosen because of physical damage and vibration. Check and tighten the connections regularly.

Fluid that escapes under high pressure can cause serious injury. Disconnect the hydraulic or other lines to relieve the pressure. Tighten the connections before applying pressure.



If an accident occurs, see a doctor immediately. Any fluid that penetrates the skin must be removed by a doctor within a few hours.

Engine Safety

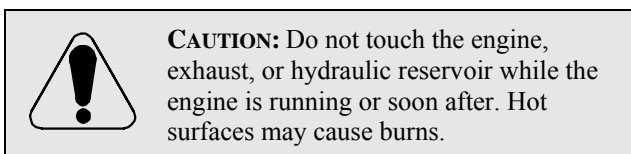
Gasoline is highly flammable—handle it carefully. Use an approved non-metal, portable fuel container. Static discharge may ignite gasoline vapors in an ungrounded fuel container.

Do not remove the fuel cap when the engine is hot or running.

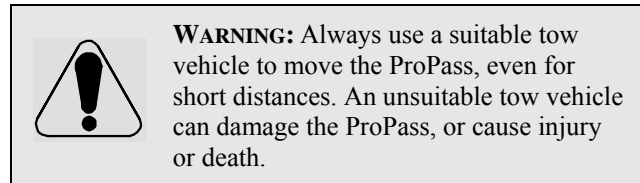
Do not smoke while handling gasoline.

Do not overfill the fuel tank. Fill to 25 mm (1 in) below the top of the tank.

Stop the engine before doing maintenance work.



Tow Vehicle Safety

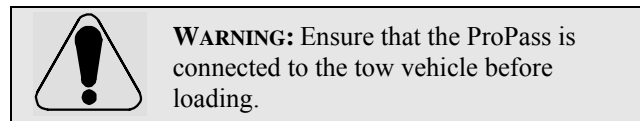


A suitable tow vehicle must have a minimum towing capacity of 1,405 kg (3,100 lb) or 1,530 kg (3320 lb) if ProPass 11HP – Hydraulic Power Pack is fitted.

The maximum carrying load for the ProPass is 907 kg (2,000 lb), with a resulting tongue weight of 113 kg (250 lb). The tare weight (no load) is 499 kg (1,100 lb), with a resulting tongue weight of 23 kg (50 lb).

The resulting tongue weight of the ProPass fitted with the 11HP – Hydraulic Power Pack when operating with a full load is 145 kg (320 lb). The resulting no load tongue weight is 48 kg (105 lb). The tare weight (no load) is 599 kg (1,320 lb).

Loading



Do not carry loads that exceed the load limits of the ProPass, or the tow vehicle or truck-mount vehicle (see Specifications).

The stability of loads can vary—for example, high loads will have a higher center of gravity. Reduce the maximum load limits to ensure better stability, if necessary.

To avoid causing the ProPass to tip over (see safety decal TY-411 on page 16):

- Carefully monitor the height and weight of the load. Higher and heavier loads can increase the risk of tipping.
- Distribute the load evenly, front to back and side to side.
- Be careful when turning and avoid unsafe maneuvers.



IMPORTANT: Do not put large or heavy objects into the hopper. Material that is larger than the rear gate opening may damage the belt and rear gate assembly. Also ensure that the load has a uniform texture. Small rocks in sand can become projectiles.



WARNING: Do not carry passengers in the hopper.

Unloading

Do not stand behind the ProPass when unloading or spreading. The Twin Spinner and the Vortex Brush attachments eject particles and dust at a high speed.

Do not unload the ProPass while it is on a slope.



WARNING: Ensure that the ProPass is connected to the tow vehicle before unloading. Otherwise, the load may shift and the ProPass may tip over.

Traveling

The ProPass is designed only for off-road use. The maximum recommended speed without a load is 24 km/h (15 mi/h).

Maintain safe control of the ProPass. Do not attempt sharp turns, abrupt manoeuvres, or other unsafe driving actions.

Slow down before turning, especially on wet, sandy, and slippery surfaces. Turning clearances are limited if you have an attachment mounted on the ProPass.



CAUTION: Be aware of your surroundings when turning or backing up. Ensure that the area is clear and keep all bystanders away. Proceed slowly.

Turn off the attachment when approaching people, vehicles, vehicle crossings, or pedestrian crossings.

Note: Heavy loads and wet or rough surfaces increase the time it takes to stop, and reduce the ability to turn quickly and safely.

Hills



WARNING: Do not drive the ProPass on slopes over 12 degrees. Use extreme caution when traveling on hills with slopes under 12 degrees, especially when turning.

Always travel straight up and down hills—do not travel sideways or on a diagonal. Stopping distance increases when traveling down a hill.

Reduce the weight of the load when traveling on hills. Avoid piling the load high—a higher center of gravity increases the risk of the ProPass tipping over on hills.

If you have an attachment on the ProPass, be aware of the ground clearance when traveling on hills. When the ProPass begins to travel up a slope, the ground clearance decreases.

Parking

Always park the ProPass on a firm, horizontal, and level surface. Place blocks on two tires at the front and back.



WARNING: Do not disconnect the ProPass from the tow vehicle on a slope. Ensure that the front jack is in the support position.

To rotate the jack stand (located on the hitch tube; see Figure 9) from a down support position to a traveling horizontal position, pull out the jack stand support pin and swivel the jack. Ensure that the jack stand is attached to the ProPass and in the correct position during operation.



Figure 9: Jack stand

Safety Decals

Important safety decals on your ProPass indicate potential safety hazards. These decals are located near areas of potential danger. Replace any decal that is damaged or lost.



TY-414: Consult Operator's Manual



TY-395: Lift point

Safety Attire

Every time you operate the ProPass:


- Wear safety glasses or safety goggles with side shields.
- Wear hearing protection.
- Wear sturdy footwear that fully covers your feet.
- Avoid loose clothing or jewellery that may get caught in moving parts.



TY-396: No maintenance while machine is in use



TY-397: Do not operate with guards removed



WARNING: Avoid serious injury by keeping your hands, body, and clothing away from moving parts.



TY-401: Two people required to lift



TY-409: Consult maintenance section of Operator's Manual



TY-400: No passengers



TY-415: Do not lift machine when loaded



TY-406: Crush hazard—avoid rotating conveyor belt



TY-406: Shear hazard—avoid chain and gears



TY-416: Do not step here



TY-408: Shear hazard—avoid rotating spinner disks



TY-413: Abrasion and entanglement hazard—avoid rotating vortex brush



TY-398: High-pressure fluid hazard—avoid high-pressure hydraulic lines



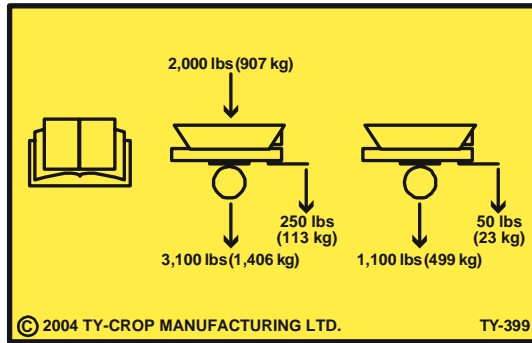
TY-405: Shear hazard—avoid rotating shaft



TY-402: Projectile hazard—stay a safe distance from the machine



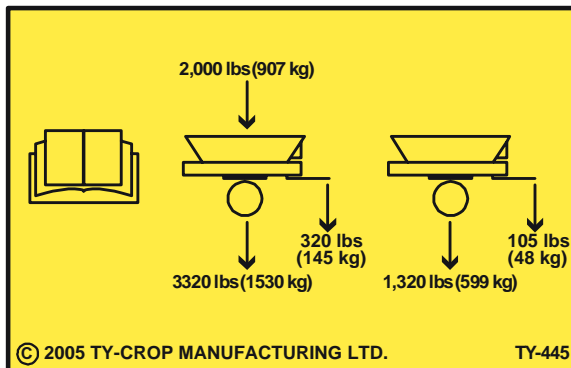
TY-430: Burn Hazard – Avoid contact with hot surface



TY-399: Consult Operator's Manual

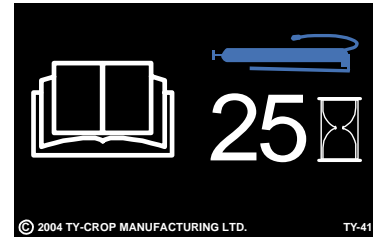
(Left) Maximum carrying load is 907 kg (2,000 lb), with a resulting maximum tongue weight of 113 kg (250 lb); GVWR is 1,406 kg (3,100 lb)

(Right) Tare weight (no load) is 499 kg (1,100 lb), with a resulting tongue weight of 23 kg (50 lb)

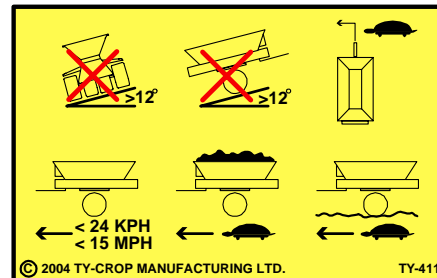


TY-445: Machine Weights with 11HP Hydraulic Power Pack. Consult Operator's Manual. (Left) Maximum carrying load is 907 kg (2,000 lb), with a resulting maximum tongue weight of 145 kg (320 lb); GVWR is 1,530 kg (3,320 lb)

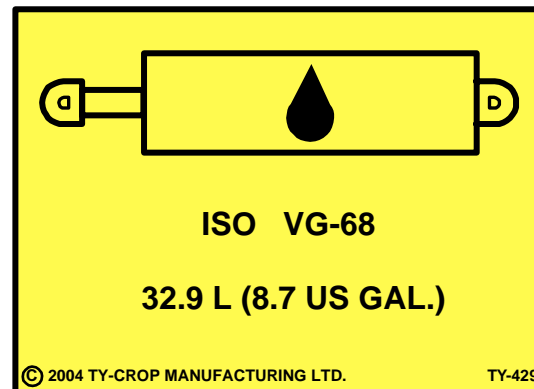
(Right) Tare weight (no load) is 599 kg (1,320 lb), with a resulting tongue weight of 48 kg (105 lb)



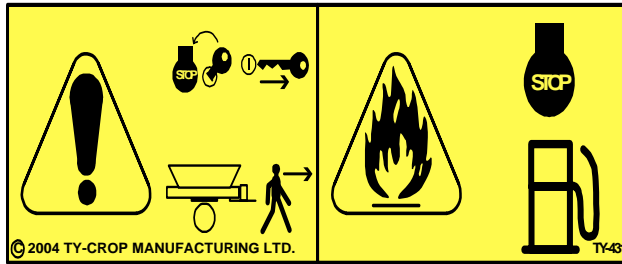
TY-410: Grease every 25 hours—consult Operator's Manual



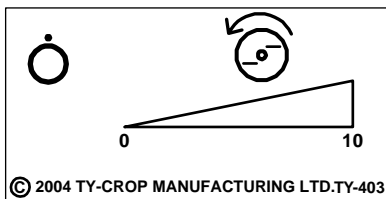
TY-411: (Clockwise) Tip over hazards—do not drive the ProPass on slopes over 12 degrees
Slow down and turn gradually
Do not exceed 24 km/h (15 mi/h)
Drive slowly over rough surfaces or when carrying a full or heavy load



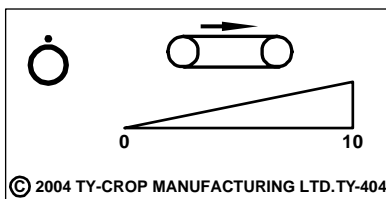
Ty-429: Hydraulic Fluid Capacity – 32.9L (8.7 U.S. gal)
Use ISO VG-68 hydraulic fluid



**TY-431: Warning – Stop the engine and remove ignition key before leaving ProPass.
Fire hazard – Stop the engine before refuelling**



TY-403: Attachment control



TY-404: Floor/conveyor control



TY-417: Floor on/off toggle; attachment on/off toggle

Setup Instructions

An authorized TYCROP dealer normally sets up the ProPass 180 Top Dresser at the time of purchase. See the Setup Manual for details.

This section covers only how to install the Twin Spinner attachment or the Vortex Brush attachment onto the ProPass.

Installing the Attachments

1. Remove the holding straps from the attachment.
2. To lift the attachment:
 - Lift the Twin Spinner using the support handles on each side (Figure 10).
 - Lift the Vortex Brush using the support handle on the right side, and the guard arm on the left side (Figure 11).



CAUTION: For safety, use two people to lift the Twin Spinner. It weighs 68 kg (150 lb).

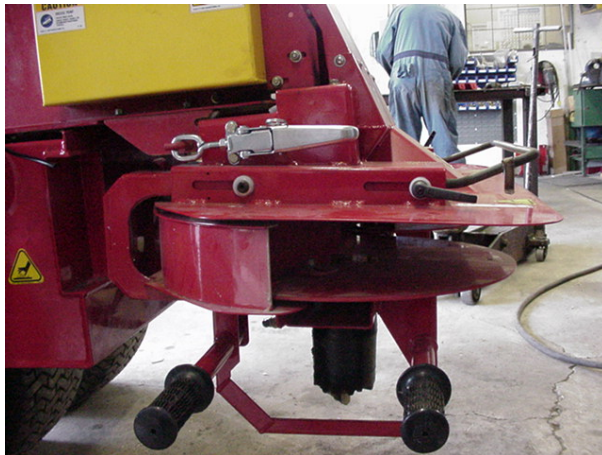


Figure 10: Twin Spinner



Figure 11: Vortex Brush

3. Slide the attachment onto the flanges of the side rails (at the rear of the ProPass), lining up the mounting guides on each side.
4. Lock the attachment into place with the locking clamps on each side.
5. Adjust the locking clamps until the clamps are just firm when closing (See Figure 12 and Figure 13).

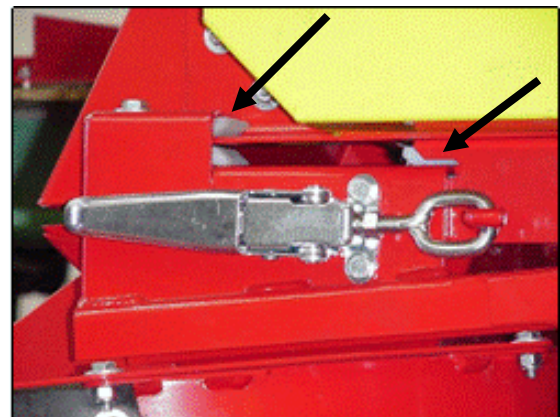


Figure 12: Locking clamps for Twin Spinner

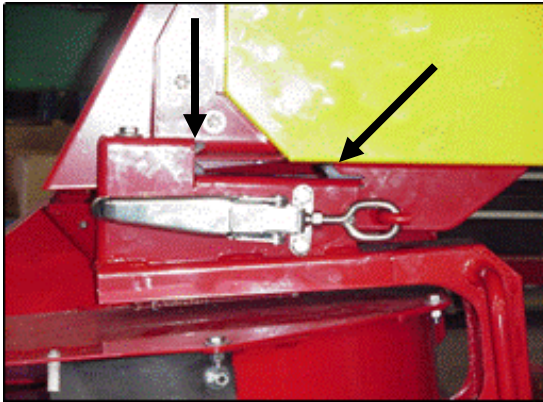


Figure 13: Locking clamps for Vortex Brush

6. Install the safety pins on the Twin Spinner attachment.
7. Connect the attachment's hydraulic couplers to the ProPass hydraulic couplers.



Operating Instructions

The ProPass 180 Top Dresser has balance, weight, and handling characteristics that may be different than other types of pulled equipment. Read this Operator's Manual carefully.

With an attachment mounted, be aware of the ground clearance when traveling on hills. For a ProPass mounted on a tow-behind chassis, the ground clearance is 33 cm (13 in) unloaded.

IMPORTANT: Before loading the ProPass on and off a trailer, remove the attachment to avoid damaging it.

Connecting the ProPass to the Tow Vehicle



WARNING: Do not stand between the ProPass and the tow vehicle during coupling.

1. Adjust the hitch height by turning the jack stand handle to keep the ProPass level.

IMPORTANT: The hitch pin must be high-strength and approved for tow vehicles.

2. Connect the clevis-style hitch of the ProPass to the tow vehicle using a 18 mm (0.75 in) diameter hitch pin and safety clip. Install the hitch pin through the ProPass hitch and the tow vehicle's draw bar.
3. Lower the hitch using the jack stand.
4. When the full weight of the ProPass has been transferred to the tow vehicle's draw bar from the jack stand, pull the pin holding the jack stand in place.
5. Turn the jack stand 90 degrees counter-clockwise until the bottom of the jack stand points to the rear of the ProPass. This is the traveling position.



CAUTION: Raise the front jack into the traveling position before towing the ProPass.

6. Attach the pressure hose and the return hose to the correct hydraulic outputs on the tow vehicle. The return hose has an inline check valve. If the hoses are reversed, some ProPass functions may run backwards or not work at all. Test the hydraulics before operating the ProPass for the first time.

IMPORTANT: The hydraulic lines, the power cable, and the on/off pendant cables must not drag on the ground during operation. Avoid locations where they could become pinched or cut.

7. Plug the four-prong electrical cord into the tow vehicle.
8. Place the on/off pendant within reach of the driver's seat. Ensure that both switches are off.
9. Check the hydraulic oil level in the tank and add more to fill it, if necessary. (See the tow vehicle's owner's manual).

Disconnecting the ProPass from the Tow Vehicle

1. Park the tow vehicle and the ProPass on dry, level ground.
2. Set the parking brake on the tow vehicle, shut off the engine, and remove the key.
3. Place blocks under two wheels of the ProPass (front and back).
4. Relieve the pressure from the hydraulic system.
5. Disconnect the hydraulic hoses and the four-prong power cord from the tow vehicle. Coil and store them on the front of the ProPass.
6. Turn the jack stand 90 degrees (clockwise) to the down position to support the ProPass.
7. Lift the ProPass with the jack until the weight is off the tow vehicle's draw bar. Pull out the hitch pin.
8. Ensure that there is no further connection between the ProPass and the tow vehicle.

Installing the ProPass onto a Tow Vehicle from the Storage Stand

1. With the vehicle in neutral gear and the parking brake set, start the tow vehicle's engine.
2. Release the parking brake, look over your left shoulder, and slowly reverse the tow vehicle towards the ProPass truck-mount on the storage stand (Figure 14).



Figure 14: Installing the ProPass onto the tow vehicle (or uninstalling it onto the storage stand)

3. Stop when the left rear mounting bracket on the frame rail of the tow vehicle is located directly under and between the mounting bracket arms at the left rear of the ProPass (Figure 15).



Figure 15: Mounting brackets at ProPass rear

4. Turn off the engine and set the parking brake.
5. Lower each of the two rear storage jack stands until the holes in the mounting bracket align with the holes in the tow vehicle's frame rail.
6. Insert the mounting pin and the safety pin, first at one rear corner, then the other. If necessary, move the storage stand legs to correctly align with the rear mounting bracket holes.
7. Lower the rear storage jack stands. Remove and store them.



CAUTION: Do not operate the ProPass with the storage stand installed.

8. With one hand, lift and position the lift cylinder. With the other hand, insert the existing locking pin. (If necessary, start the tow vehicle, then gently raise or lower the lift cylinder until the hole in the connecting arm of the cylinder aligns with the hole in the ProPass mounting bracket.)



CAUTION: Keep your hands and feet away from the engine when it is running.

9. With the tow vehicle in neutral gear and the parking brake set, start the engine.
10. Using the tow vehicle's lift cylinder, raise the front of the ProPass until the front storage stand legs are off the ground.
11. Remove the two front storage stand legs and store them.
12. Lower the front of the ProPass onto the frame rails of the tow vehicle.
13. Turn off the engine.
14. Connect the electrical power connection to the tow vehicle (Figure 16).



Figure 16: Electrical connection on tow vehicle

15. Connect the ProPass hydraulic lines to the tow vehicle's hydraulic connections (at the rear; see Figure 17). The line with the one-way flow check valve connects to the return connection on the tow vehicle.

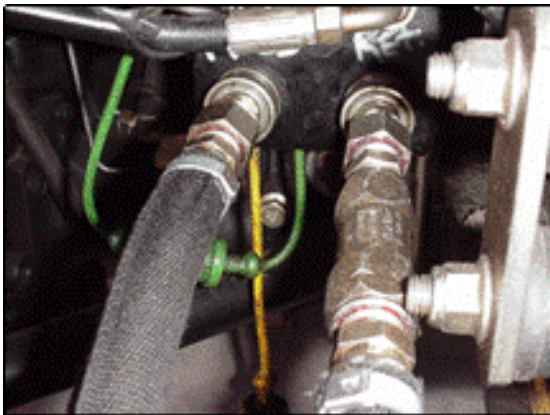


Figure 17: Hydraulic connections

16. Connect the on/off pendant and place it in the cab of the tow vehicle. Ensure that both switches are off.

Removing the ProPass from a Tow Vehicle onto the Storage Stand

1. Park the tow vehicle in the storage spot for the ProPass.
2. Disconnect the electrical connection from the tow vehicle (Figure 16).
3. Disconnect the ProPass hydraulic lines from the tow vehicle (Figure 17).

4. Remove and store the on/off pendant.
5. With the tow vehicle in neutral gear, set the parking brake and start the engine.
6. Using the vehicle lift cylinder, raise the front of the ProPass high enough for the front storage stand legs.
7. Turn off the engine.
8. Insert the front and rear storage stand legs and secure them with locking pins.
9. With the tow vehicle in neutral gear, set the parking brake and start the engine.
10. Using the vehicle lift cylinder, lower the front of the ProPass until the front storage stand legs begin to touch the ground.
11. Turn off the engine.
12. Raise the two rear storage jack stands until the pressure is off the rear mounting pins.
13. Remove the rear mounting pins. (If necessary, wiggle the ProPass.)
14. With one hand, hold the lift cylinder. With the other hand, remove the lift cylinder's locking pin. (If necessary, wiggle the lift cylinder control.)
15. Rest the lift cylinder in the appropriate location on the tow vehicle's frame.
16. Walk around the ProPass. Ensure that it is clear of the tow vehicle's frame and secured within each of the four storage stand legs.
17. With the tow vehicle in neutral gear, set the parking brake and start the engine.
18. Release the parking brake and slowly drive the tow vehicle forward, away from the ProPass truck-mount on the storage stand (Figure 14).



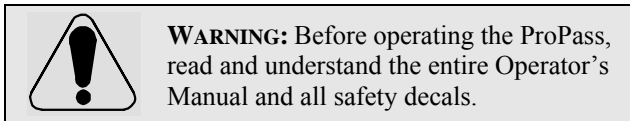
WARNING: Do not climb under or perform work on the ProPass while it is on the storage stand.

How to Load the ProPass

Load the ProPass with a front-end loader, or use a larger material handler designed to load material into the ProPass hopper.

If sacks of material are being used, empty the sacks into the loader's bucket before loading the material into the hopper. To ensure stability, distribute the load evenly, front to back and side to side.

How to Operate the Controls and Attachments

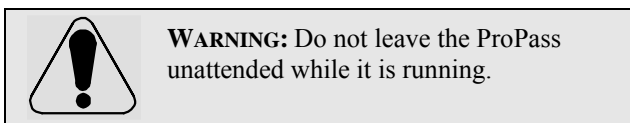


Flow Control Valve for Conveyor Belt

A hydraulic flow control valve controls the speed of the conveyor belt. To unload the ProPass quickly, set the flow control valve to the highest setting of 10. To stop the conveyor belt, set it to the lowest setting.

Flow Control Valve for Attachment

A hydraulic flow control valve controls the speed of the attachment (Vortex Brush or Twin Spinner). The highest speed setting is 10. Use a lower setting for applications that require slower speeds.



On/Off Pendant

Use the two switches on the on/off pendant to run the conveyor belt or the attachment (Figure 18). The on/off pendant is kept within reach of the operator.



Figure 18: On/off pendant

How to Operate the ProPass

1. Fill the ProPass hopper with the material to be spread.
2. Adjust the gate height to the preferred setting. (See the ProPass Factory-Recommended Settings Guide on page 25).
3. Adjust both flow control valves to the preferred setting. (See the ProPass Factory-Recommended Settings Guide on page 25).
4. Park the tow vehicle 3 m (10 ft) in front of the area required for top dressing.
5. Ensure that the on/off pendant switches are both off.
6. Ensure that the tow vehicle's engine is at a low r/min (revolutions per minute). Engage the tow vehicle's hydraulics.
7. Turn the attachment on, using the on/off pendant.
8. Drive forward to the area that requires top dressing, raising the r/min of the tow vehicle to the optimal operating range.
9. When the ProPass attachment is directly over the beginning of the top dressing area, use the on/off pendant to turn on the conveyor belt.
10. Travel in a straight line and spread the material at a constant speed until the spread reaches the edge of the top dressing area.
11. Turn off the conveyor belt, turn the ProPass around, and position it for the next pass.
12. Before making the next pass, check the spread pattern on the ground. Adjust the ProPass settings if necessary.
13. Continue steps 8 to 11 until the entire area requiring top dressing has been completed, or the hopper is empty.
14. Turn off the conveyor belt and the attachment, lower the tow vehicle's r/min, and disengage the hydraulics.

IMPORTANT: Never leave the on/off pendant on when the ProPass is not in use. Otherwise, the tow vehicle's battery may discharge.



How to Operate the ProPass with the 11HP Hydraulic Power Pack

The Honda engine for your ProPass conforms to all U.S. Environmental Protection Agency regulations relating to non-road engines under the *Clean Air Act*.

Before starting the Honda engine, read the engine owner's manual.

1. Check that the oil drain port is tight and completely fill the hydraulic tank with ISO VG-68 hydraulic fluid—about 32.9 L (8.7 U.S. gal). See the chart on page 32 for recommended hydraulic fluids.

IMPORTANT: The hydraulic system will not completely fill with fluid until the system is powered up. The hydraulic fluid must therefore be checked and topped up after initial running.

2. Connect the clevis hitch of the ProPass to the tow vehicle. Use a high-strength hitch pin approved for tow vehicles.
3. Check the engine's oil level and fill if required. See the engine owner's manual.
4. Put gas in the tank. Use unleaded fuel with an octane rating no less than 87.



CAUTION: Ensure that the on/off pendant is in the off position

5. Turn on the fuel valve, place the throttle lever in the choke position, and start the engine.
6. Test the ProPass operation. Ensure that there are no hydraulic leaks and make any adjustments needed.
7. Install the attachment (Twin Spinner or Vortex Brush).
8. After testing the hydraulic system, check the hydraulic fluid and add more if required.

9. Place the on/off pendant within reach of the driver's seat.
10. Refer to "How to Operate the ProPass".

IMPORTANT: Ensure that the on/off pendant does not drag on the ground during operation.



ProPass Factory-Recommended Settings Guide

ProPass	Settings for Best Performance	Additional Performance
Hitch position	Level	Use the multi-position hitch to raise or lower the ProPass for maximum performance.
Twin Spinner settings	Paddle position: factory setting	Test the spread pattern in a neutral area, then make very small adjustments.
On/off pendant	Twin Spinner: Leave on during top dressing. Conveyor belt: Turn on and off for each pass.	At the start of each new load, it takes 1 to 3 seconds for material to reach the Twin Spinner and begin discharging.
Tow vehicle r/min	Full throttle	An engine at full r/min provides the maximum hydraulic flow. Always warm up the engine and the hydraulic system before use.
Ground speed	4 to 5 mi/h	Travel at about the speed of a fast walk

ProPass Twin Spinner Suggested Spreading Application Guide

Application	Twin Spinner	Floor Control	Rear Gate	Base and Disk Settings	Comments
Ultra Light	10	7	10 mm (3/8")	Wide	No dragging or no watering in
Light	10	10	10 mm (3/8")	Wide	Water in
Medium Light	10	10	25 mm (1")	Wide	Water in
Medium	3-3.5	10	50 mm (1.5")	Medium	Drag or water in
Heavy	2.5-3	10	79 mm (3.13")	Narrow	After quarantining or aerification

Maximum pressure input	190 bar (2,800 psi)
Minimum pressure input	138 bar (2,000 psi)
Maximum flow input	37.9 L/m (10 U.S. gal/m)
Minimum flow input	22.7 L/m (6 U.S. gal/m)

Note: Different materials vary in the size of their particles, causing variations in the spread pattern. Before top dressing the required area, test new materials by spreading them in an open area away from bystanders.

Figure 19: Handle Operations





ProPass Twin Spinner Suggested Spreading Application Guide

Application	Application Percentage	Twin Spinner	Floor Control	Rear Gate	Disk Settings	Base Settings	Approximate Spread Width
Ultra Light	12%	10	7	10 mm (3/8")	B	1	9.1m (30')
Light	17%	10	10	10 mm (3/8")	B	1	9.1m (30')
Medium Light	51%	10	10	25 mm (1")	B or A	1	7.9m (26')
Medium	100%	3-3.5	10	50 mm (1.5")	A	2	6.1m (20')
Heavy	347%	2.5-3	10	79 mm (3.13")	A	3	3.7m (12')

Note: For Base Settings (See Figure 21): To operate the adjustment handle, first pull out the handle to position it, and then rotate to loosen or tighten (See Figure 19). Then adjust the base position by way of the slide handle.

Disk Settings

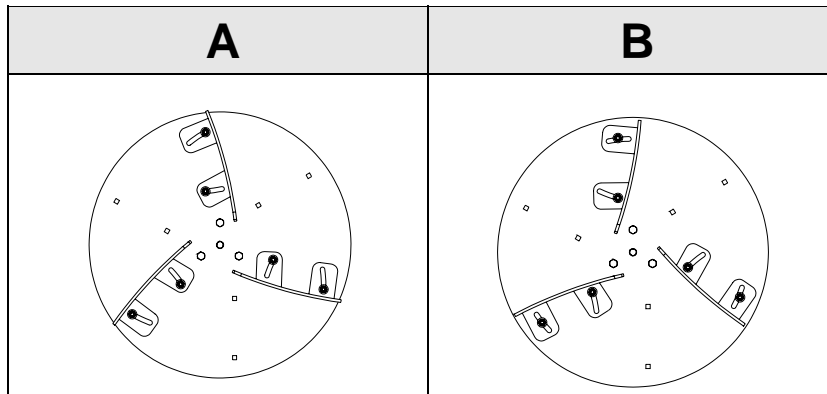


Figure 20: Twin Spinner disk settings

Base Settings

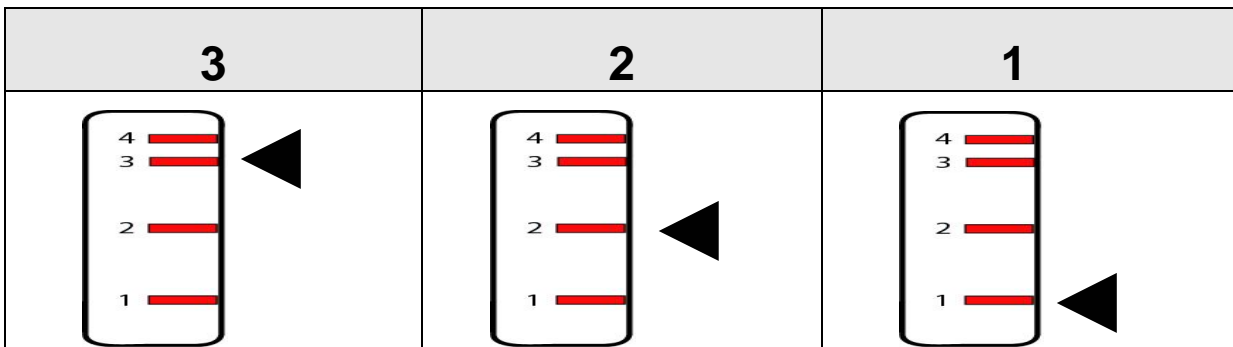


Figure 21: Twin Spinner base settings

ProPass Twin Spinner Movement Handles

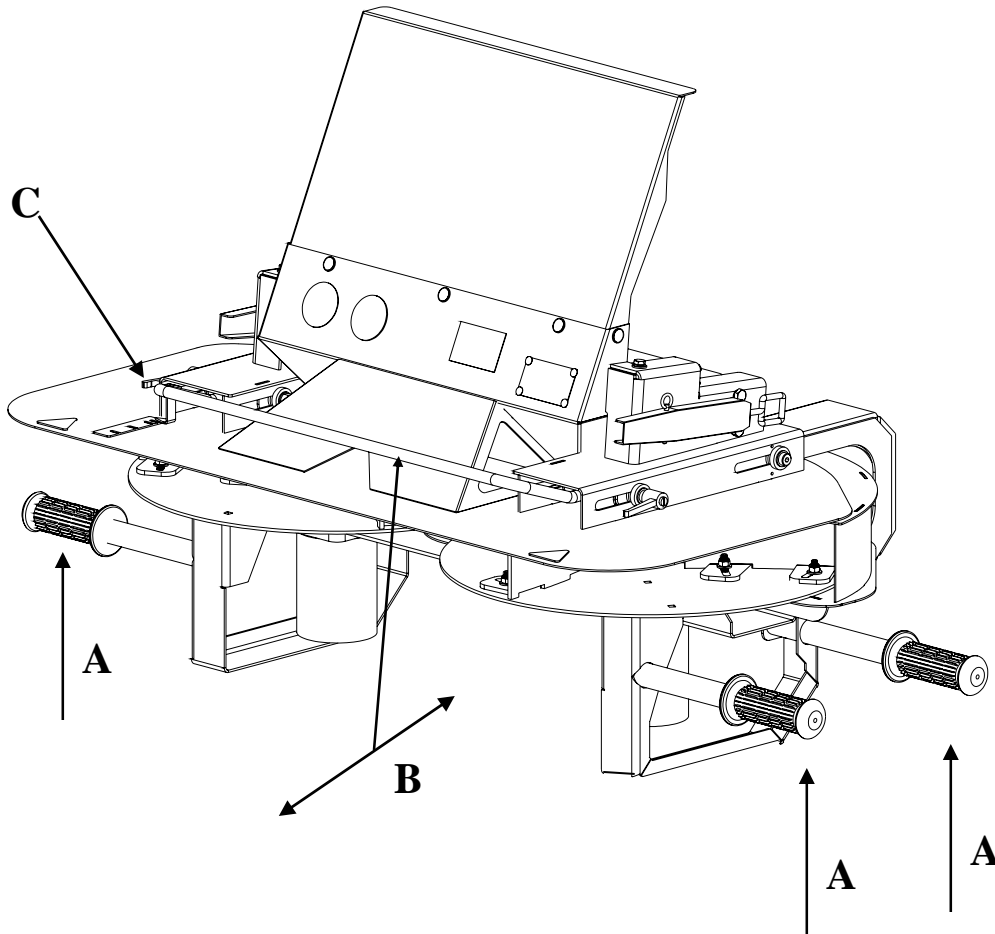


Figure 22: Twin Spinner Movement Handles

A: Lift Handles – To lift the Twin Spinner to the ProPass for attachment.

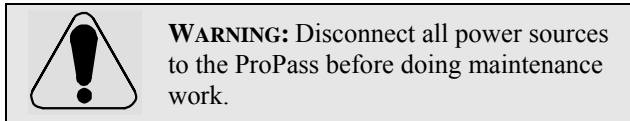
B: Slide Handle – To alter the Twin Spinners base position.

C: Adjustment Handle – To lock Twin Spinner hopper assembly to base.



Maintenance Instructions

When it comes to maintenance, an authorized TYCROP dealer knows the ProPass 180 Top Dresser best. The dealer can help you, on how to use the ProPass, to improve the quality of your turf maintenance.



Warranty

The warranty and registration is supplied as a separate form. Ensure that you complete this form and return it to an authorized TYCROP dealer within 30 days of purchase.

Safety Checks

At the start of each day, complete these safety checks before operating the ProPass. Report any safety problems to an authorized TYCROP dealer and your supervisor. See the Safety Instructions on page 11 for details.

Note: Photocopy these pages and use them as a regular safety checklist.

Tires and Wheels

- The recommended tire pressure is 10 psi, or as recommended by the tire manufacturer.)
- Check for excessive wear or visible damage.
- Check that the wheel bolts are tight and none are missing.

Rear Gate

- Check that the adjustable section of the rear gate opens and closes without sticking.

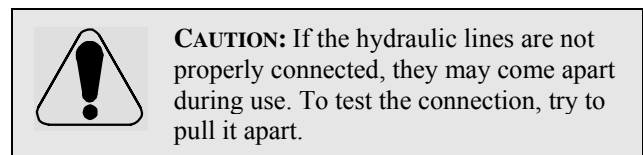
Hitch

- Safely stow the hitch jack stand in the up position before traveling.
- Check that the hitch pin and jack stand are not damaged, and the safety pin is in place. (Replace safety pins if missing or damaged.)

- Check that the hitch connections are not loose. (If so, install a spacer between the hitch connections.)

Hydraulic System

- Check the hydraulic system for oil leaks. If you find a leak, tighten the fitting, or replace or repair the damaged part.
- Check the hydraulic hoses for wear or visible damage.
- Check the hydraulic oil level. Fill up if necessary.



Conveyor Belt and Rollers

- Check that the conveyor belt is tracking straight on the rollers and does not slip. Make adjustments if necessary. See the Conveyor Belt Tracking Procedure on page 30.
- Check the front and rear roller bearings every two months for wear or visible damage.
- Check the condition and tension of the drive chain and the sprockets.
- Check for trapped spreading material between the conveyor belt, the bed, and the rollers. See How to Wash the ProPass on page 36.

Belt and Rear Gate Seals

- Check all rubber seals for wear or damage. Replace or repair the seals if any leakage occurs.
- Check and adjust the conveyor belt cleaning scraper. Ensure the scraper is in full contact with the belt across its length.

Attachments

- Check the blades on the Twin Spinner discs for wear. Replace when they wear thin.
- Check the Twin Spinner housing for signs of cracking or corrosion.

- Check the Vortex Brush bristles for wear and damage.

Safety Decals

- Check that the safety decals are undamaged and legible. Otherwise, replace them.

How to Maintain the Conveyor Belt System

Conveyor Belt Tensioning Procedure

Perform the tensioning procedure only if the belt is slipping, if it has been replaced, or if it has been loosened to replace other parts.

1. Place the belt's V-guide in the guides of the front and rear rollers.
2. Tighten the two belt adjustment nuts evenly until the belt is snug. (If necessary, remove the front idler roller cover and the rear chute cover.)
3. Fully load the ProPass with the heaviest material you expect to use.
4. With two wrenches, hold the end of the tensioner rod stationary, then loosen the locking nut, which is the nut closest to the end of the rod (Figure 23).

Locking Nut

Adjuster Nut

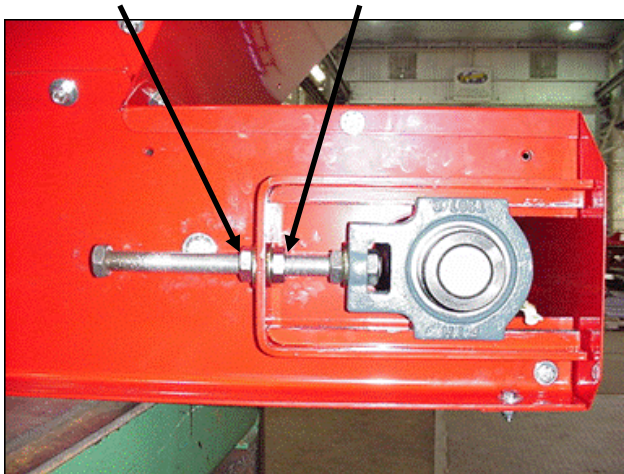


Figure 23: Tensioner rod and locking nuts

5. Turn the conveyor belt on (with the on/off pendant) and check if the belt is slipping.

6. If so, stop the belt and tighten both adjuster nuts half a turn. Do not over-tension.
7. Repeat steps 5 and 6 until the conveyor belt stops slipping.
8. Tighten the locking nuts and install the yellow safety covers.

Conveyor Belt Tracking Procedure

The conveyor belt system is self-tracking. Both the front and rear rollers have a groove in the middle for the belt's V-guide to run in. Sometimes, the belt may track outside the grooves. To track the belt:

1. Determine which side the belt is tracking towards.
2. Remove the yellow safety covers from both front corners.
3. On the side the belt is tracking towards, hold the end of the tensioner rod stationary, then loosen the locking nut and tighten the adjuster nut by two flats of the nut. See Figure 23.
4. Tighten both locking nuts and turn on the conveyor belt.
5. Check the tracking movement. Repeat the above steps until the belt tracks back to the correct position.

IMPORTANT: Be patient! Do not over-tension the belt.

6. Install both of the yellow safety covers.

How to Lubricate the ProPass

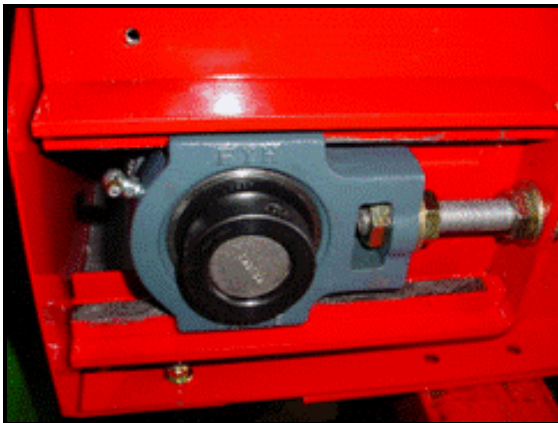
Lubrication Schedule

- Use an automotive, all-purpose grease.
- Lubricate regularly, after 25 hours of normal operation.
- Lubricate daily when operating in extremely dusty and dirty conditions.
- Lubricate all bearings, bushings, and chains.

Lubrication Procedure

Several grease fittings are located on the ProPass and the tow-behind chassis, and one on the Vortex Brush attachment. Look for the universal grease point decals (TY-410); also see Figures 24 to 27.

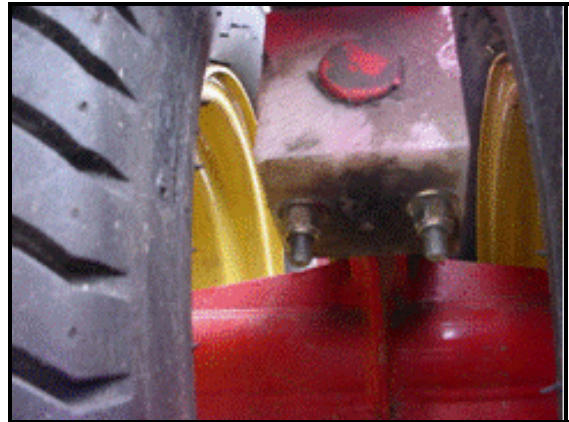
1. Clean the grease fittings.
2. Pump the grease into the bearings and the bushings.
3. Clean off the excess grease.
4. Clean and repack the wheel bearings every year or every 300 hours of operation.



**Figure 24: Grease fitting on base model
(one at left front, one at right front)**



**Figure 25: Grease fitting on base model
(one at left rear, one at right rear)**



**Figure 26: Grease fitting on tow-behind chassis
(front and rear, left and right). Grease once per year.**

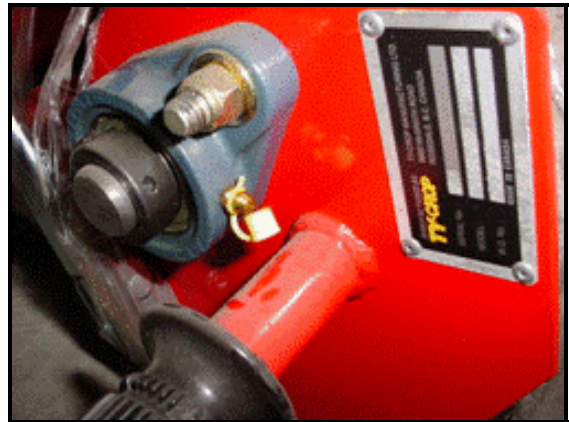


Figure 27: Grease fitting on Vortex Brush



How to Maintain the Hydraulic System

Company	Recommended Hydraulic Fluid
PetroCanada	Duratran Winter (or equivalent brand)
Exxon	Hydraul 50
Texaco	TDH Oil W
Shell	—
Mobile	—
Chevron	—
John Deere	—

IMPORTANT: TYCROP recommends that the fluid used in the hydraulic components be maintained at ISO Cleanliness Code 18/13 per SAE J1165. This code allows a maximum of 2,500 p/ml greater than 5 µm and a maximum of 80 p/ml greater than 15 µm.

IMPORTANT: Duratran oils and equivalents are compatible with transmissions. The small quantity used in the ProPass will allow it to be hooked up to tow vehicles using ARG oils without changing the oil.

Note: TYCROP recommends Duratran Winter fluid, the oil used during ProPass manufacturing and testing. The ProPass will take longer to reach maximum efficiency with other oils, due to higher viscosity.

In case of a hydraulic oil spill, use an appropriate spill treatment product and procedure.

Bolt Torque Chart				
Size	Basic Major Diameter	Stress Area H-28	SAE Grade 5 Torque (ft-lb)	SAE Grade 8 Torque (ft-lb)
1/4-20	.2500	.0318	6.3	9
5/16-18	.3125	.0524	13	18
3/8-15	.3750	.0775	23	35
7/16-14	.4375	.1063	35	55
1/2-13	.5000	.1419	55	80
9/16-12	.5625	.1820	80	110
5/8-11	.6250	.2260	110	170
5/8-18	.6250	.2560	130	180
3/4-10	.7500	.3400	200	280
7/8-9	.8750	.4620	320	460
1-8	1.000	.6060	480	680
1-12	1.000	.6638	530	740

Hydraulic Schematic

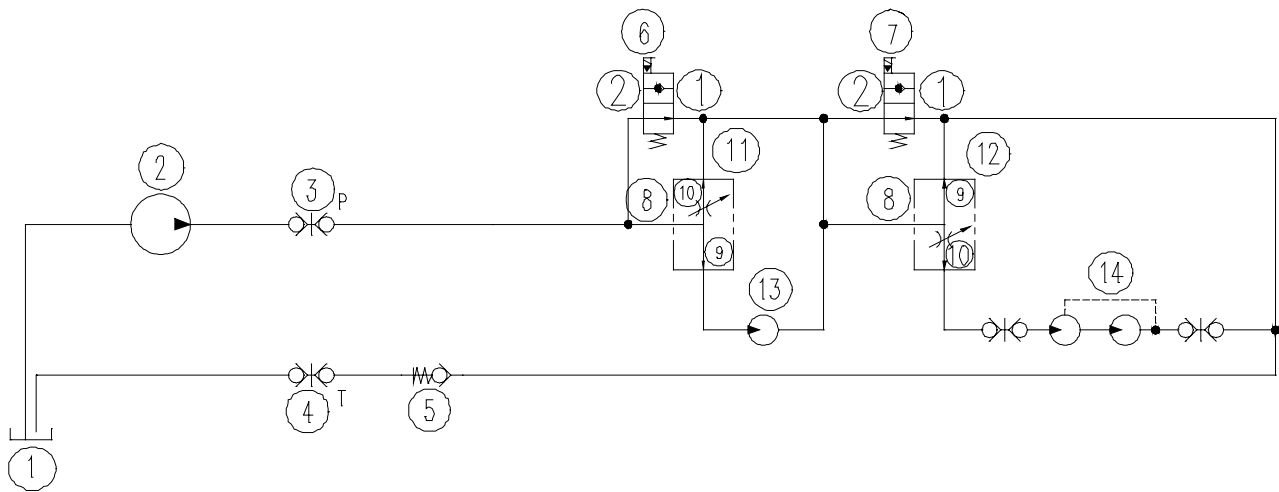


Figure 28: Hydraulic Schematic

1. Tow vehicle reservoir
2. Tow vehicle pump
3. Quick disconnect coupler (pump)
4. Quick disconnect coupler (tow vehicle)
5. Check valve
6. SV1
7. SV2
8. In
9. EX
10. CF
11. FC51RP – ½"
12. FC51 – ½"
13. Conveyor belt motor
14. Attachment motors (Twin Spinner shown)

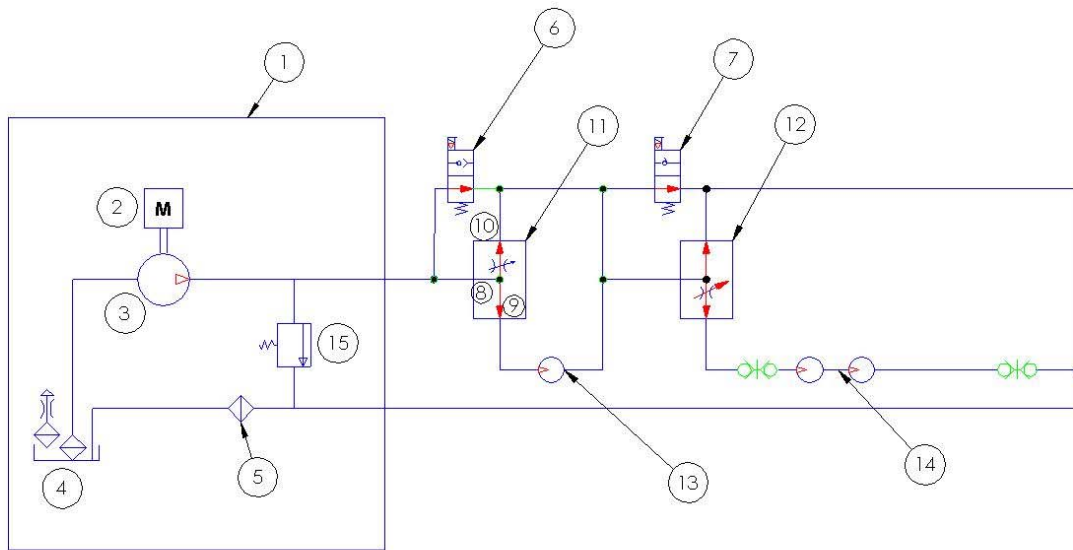


Figure 29: Hydraulic Schematic, ProPass - 11HP Hydraulic Power Pack

1. 11HP Hydraulic Power Pack
2. Gasoline Engine
3. Hydraulic Pump
4. Hydraulic Reservoir
5. Filter
6. SV1
7. SV2
8. In
9. EX
10. CF
11. FC51RP – ½"
12. FC51 – ½"
13. Conveyor belt motor
14. Attachment motors (Twin Spinner shown)
15. Relief Valve

Electrical Schematic

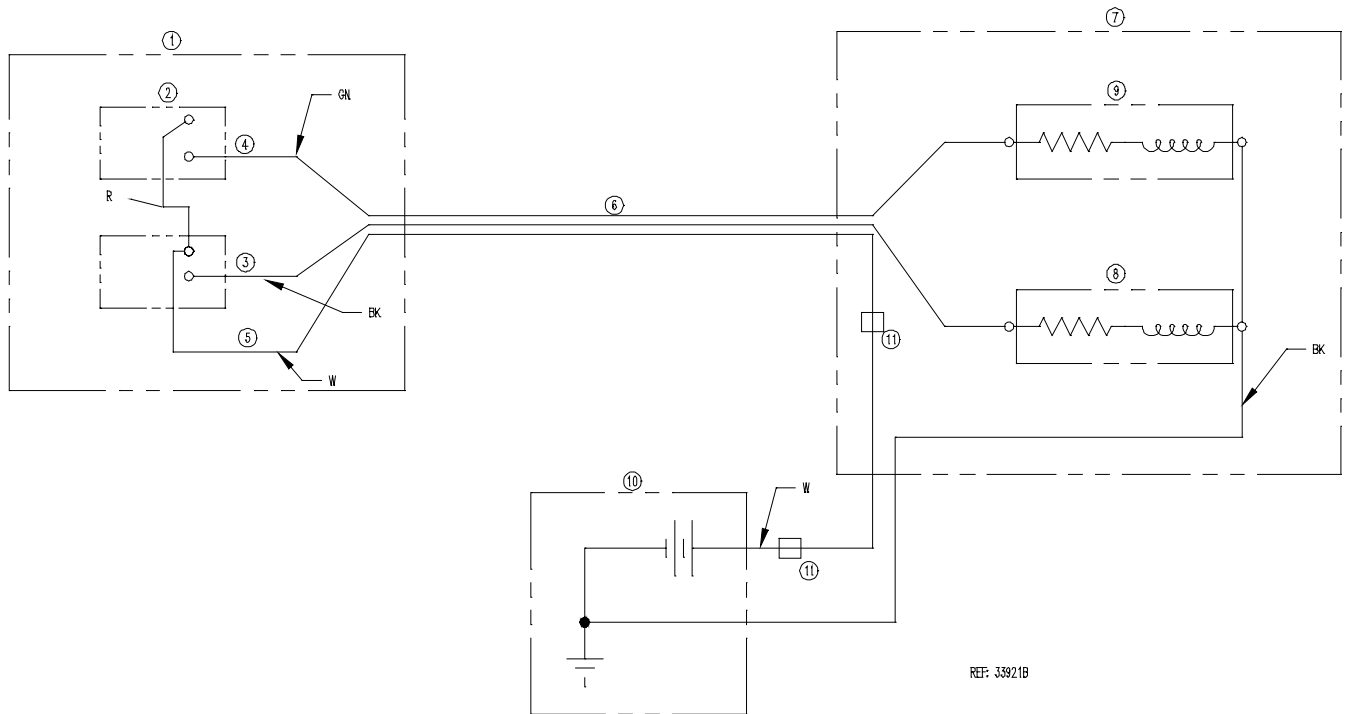


Figure 30: Electrical Schematic

1. Pendant assembly
2. Toggle switch (SPST)
3. Attachment
4. Conveyor belt
5. Power
6. Pendant cable
7. ProPass 180 Top Dresser
8. Attachment solenoid valve (SV2) — On valve actuates and closes flow path. Off valve opens flow path.
9. Conveyor belt solenoid valve (SV1) — On valve actuates and closes flow path. Off valve opens flow path.
10. 12 V electrical power supply
11. 15 A fuse

Key to Wire Colors:

R = Red BK = Black W = White GN = Green

How to Wash the ProPass

Salts, road tar, tree sap, fertilizers, or chemicals may damage the painted finish of the ProPass. Wash off these deposits as soon as possible with detergent and water. Additional cleaners or solvents may be needed, but ensure that they are safe for painted surfaces.



WARNING: Do not use flammable fluids or cleaners with toxic vapors. Follow the manufacturer's recommendations.

IMPORTANT: Do not use a high-pressure washer. This can remove paint, safety decals, and grease, and can also damage components.

1. Remove the attachment before cleaning and wash it separately.
2. Wash the body of the ProPass with warm water and a mild detergent.
3. Completely rinse off the detergent residue with clean water before it dries.
4. Remove the belt cleaning scraper assembly from the rear of the ProPass.



Figure 31: Belt cleaning scraper assembly

5. Raise the front of the ProPass as high as necessary.
6. If you have a truck-mounted ProPass, use the lift cylinder on the tow vehicle. (See the tow vehicle's owner's manual.)

7. If you have a tow-behind chassis, use the jack stand on the chassis.
8. Fully open the rear gate and spray water inside the hopper assembly and the rear gate area. Inspect the side seals and replace if necessary.
9. At the rear of the ProPass, spray small amounts of water (2 to 3 seconds at a time) between the belt and the bottom guard towards the front of the ProPass. Let the water drain down the bottom guard and onto the ground. Repeat until clean.
10. Inspect the hopper, bottom guard, conveyor belt, bed, and rollers to ensure that all trapped material is gone.
11. Lower the ProPass back into the normal operating position.
12. Re-install the belt cleaning scraper assembly. Push the scraper mount bar onto the belt. Ensure that the scraper is as vertical as possible, but still in contact with the belt.

Long-term Storage of the ProPass

Before storing the ProPass for the season:

1. Thoroughly clean the ProPass. Remove parts if necessary.
2. Pay special attention to the suspension and tires, and the area between the belt and the cartridge.
3. Check all fasteners and tighten if necessary.
4. Grease all fittings and pivot points. Wipe off any excess lubricant.
5. Apply a "never seize" product to the idler roller and the drive roller shafts.
6. Lightly sand any painted areas that are scratched, chipped, or rusted, and apply touch-up paint.
7. Store the ProPass indoors if possible.



Troubleshooting

ProPass Troubleshooting Guide

If the problem is still occurring after all the checks listed below have been completed, contact an authorized TYCROP dealer for service.

Problem	Check
Conveyor belt will not turn	The hydraulic hose lines are connected to the tow vehicle.
	The setting on the conveyor belt's flow control valve is over #5-6.
	The conveyor belt switch on the on/off pendant is on.
	There is enough hydraulic pressure from the tow vehicle or Hydraulic Power Pack (as indicated by the pressure gauge on the ProPass). See Specifications.
	The vehicle's hydraulic reservoir tank has enough oil.
	The four-prong power supply cord from the ProPass is connected to the tow vehicle during operation.
	The conveyor belt's solenoid has 12 V; and check fuses.
	The 15 A fuse behind the front hydraulic valve panel is good.
	The wiring harness is fully connected (if there is no power to the solenoid).
	The quick disconnect couplers are connected properly and in the right order at the tow vehicle and at the attachment.
Attachment will not operate	The quick couplers on the attachment cable are connected properly.
	The attachment switch on the on/off pendant is on.
	The setting on the attachment's flow control valve is above #5.
	The four-prong power cord from the ProPass is connected to the tow vehicle during operation.
	There is enough hydraulic pressure from the tow vehicle (as indicated by the pressure gauge on the ProPass). See Specifications.
	The vehicle's hydraulic reservoir tank has enough oil.
	The attachment's solenoid has 12 V; and check fuses.
	The wiring harness is fully connected (if there is no power to the solenoid).
Conveyor belt is jerking	The tow vehicle has full r/min during operation
	The hydraulic pressure is constant (as indicated by the pressure gauge on the ProPass). See Specifications.
	The vehicle's hydraulic reservoir tank has enough oil.
	The setting on the conveyor belt's flow control valve is over #5-6.
	The rear drive roller on the conveyor belt is not slipping (adjust tension).

Twin Spinner Spread Pattern Troubleshooting Guide

If you are having problems with the ProPass spread pattern:

1. Adjust the ProPass and the Twin Spinner attachment to the factory recommended settings (See Page 26)
2. Replace all worn spinner disks or paddles.
3. Test the spread pattern.
4. Use the following troubleshooting guide to make small adjustments and refine the spread pattern.
5. If you are still having problems with the spread pattern, contact an authorized TYCROP distributor.

Spread Pattern	Adjustment	Next Step
Heavy in the middle	Slowing the Twin Spinner speed may help throw the spread pattern more to the outside. Loosen the adjustment handle and slide the base of the twin spinner towards the ProPass 3 to 6.5 mm (1/8 to 1/4 inch). Test the spread pattern.	Keep repeating this step until the spread pattern is acceptable. If the spread pattern is still not acceptable, contact an authorized TYCROP distributor for additional adjustment procedures.
Heavy to the outside	Loosen the adjustment handle and slide the base of the twin spinner away from the ProPass 3 to 6.5 mm (1/8 to 1/4 inch). Test the spread pattern.	Keep repeating this step until the spread pattern is acceptable. If the spread pattern is still not acceptable, contact an authorized TYCROP distributor for additional adjustment procedures.

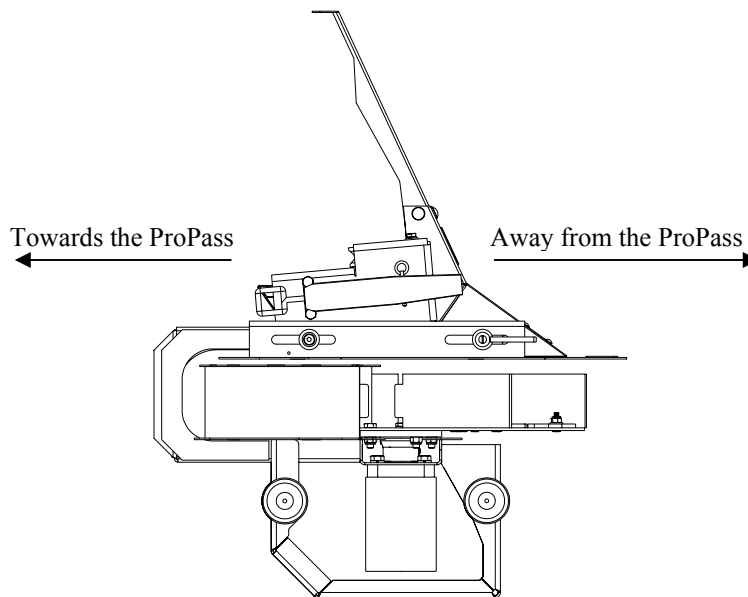


Figure 32: Medium Spread settings (arrows indicate direction of travel to change the spread pattern)