

Airflo[®] MANUFACTURING CO., INC.

365 UPPER OAKWOOD AVE, ELMIRA HEIGHTS, NY 14903

PHONE: 607-722-8284 / FAX: 607-733-8397

**OPERATOR AND
PARTS MANUAL
PSV
PICK-UP SPREADER**

Airflo[®]

PSV PICK-UP SPREADER OPERATOR AND PARTS MANUAL

TABLE OF CONTENTS:

CHECKLIST.....	PAGE 2
GENERAL INFORMATION.....	PAGES 2-3
SAFETY AND WARNING INFORMATION:	
SAFETY PROCEDURES.....	PAGES 3-4
SAFETY DECALS.....	PAGE 4
SAFETY DECAL LOCATION.....	PAGE 4
INSTALLATION INSTRUCTIONS.....	PAGES 5-8
SPREADER OPERATION.....	PAGES 8-11
SPREADER MAINTENANCE.....	PAGES 11-12
PARTS LISTING.....	PAGES 13-24
WARRANTY.....	PAGE 25

PRE-USE CHECKLIST:

- ☐ Read this entire Owner's Manual before operating this spreader. This includes the Briggs and Stratton engine Owner's Manual.
- ☐ Before loading and operating and operating the sander, check the recommended maximum payload. **DO NOT OVERLOAD THE SANDER!**
- ☐ Read and understand all of the safety decals located on the spreader. (Ex. **CAUTION**, **WARNING**, and **DANGER** signs)
- ☐ Before starting your spreader, check and verify that the engine crankcase and associated gearbox are filled to the proper levels of lubricant. Verify that the lubricant viscosities meet your requirements.
- ☐ Verify that the engine cover is securely fastened to the spreader before operating.
- ☐ Verify that all personnel are clear of the spray area before starting or operating this spreader.
- ☐ Verify that the spreader is securely fastened to the vehicle in accordance with this manual.

GENERAL INFORMATION:

The purpose of this manual is to assist the owner/operator in maintaining and operating the Air-Flo PSV-8 Pick-Up Spreader. Read it carefully before attempting operation, maintenance, or repair

VEHICLE REQUIREMENTS:

$\frac{3}{4}$ or 1 ton pick-up above 8500 # GVWR

CAUTION! Do not overload vehicle beyond GVWR or GAWR. Check the vehicle's load rating certification sticker for maximum vehicle capacity.

SPREADER AND MATERIAL WEIGHTS:

MATERIAL	WEIGHT (POUNDS PER CUBIC YARD)
PSV-8	650 LBS.
#1 ROCK SALT	950 LBS.
#2 ROCK SALT	1,215 LBS.
COARSE SAND - DRY	2,565 LBS.
COARSE SAND - WET	3,240 LBS.

SAFETY:

WARNING! Observe the following Safety Precautions before, during, and after operating this spreader. By following these precautions and utilizing common sense; possible injury to personnel and potential damage to this machine may be avoided.

- 1.) Personnel who install, mount, operate, or service this equipment must be properly instructed and informed.
- 2.) Read operator manuals completely before operating equipment.
- 3.) Read decal instructions, cautions, and warnings prior to interacting with equipment
- 4.) Check spreader to ensure that all shields, safety guards, and grates are in place prior to operating
- 5.) Use care when mounting and dismounting
- 6.) The moving components (Ex. drive shafts, conveyers, spinner assemblies, etc.) transmit high amounts of power, are hazardous when in operation. All maintenance, inspections, or operator adjustments must be made when all power is off.
(Ex. cleaning, oiling, unclogging material jams, etc.)
- 7.) Keep spreader and surrounding area clear of personnel and property when operating.
- 8.) Keep spreader unit and components in proper working condition. Replace missing or damaged safety signs.
- 9.) Unauthorized modifications to the spreader and related components may impair the function and /or safety of the device.

- 10.) Keep all loose clothing, hair, jewelry, and limbs clear of the spreader before starting or operating this device.
- 11.) Do not climb on or in the spreader during operations. Do not ride on the spreader while the vehicle is in motion.
- 12.) Do not operate a spreader that is in need of maintenance and repair.

SAFETY DECALS AND LOCATIONS:



Sticker #1



Sticker #2



INSTALLATION INSTRUCTIONS:

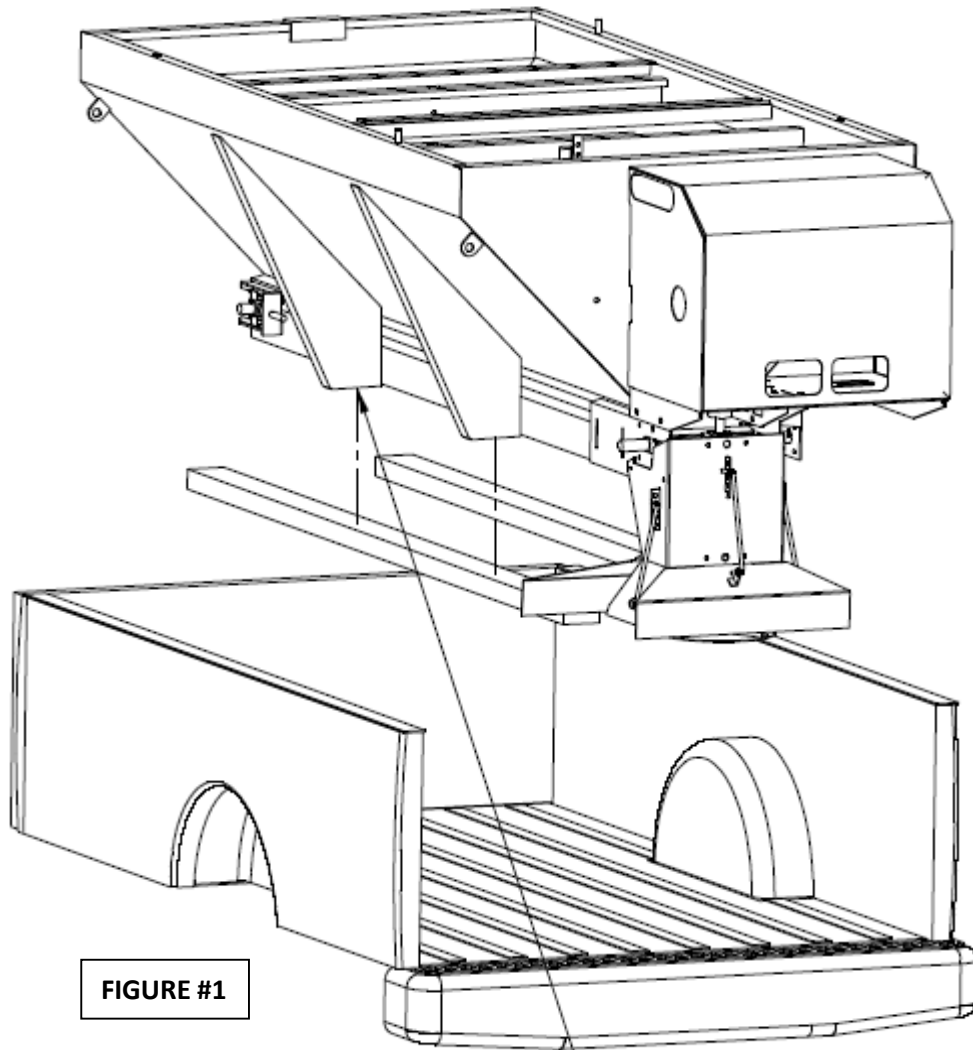


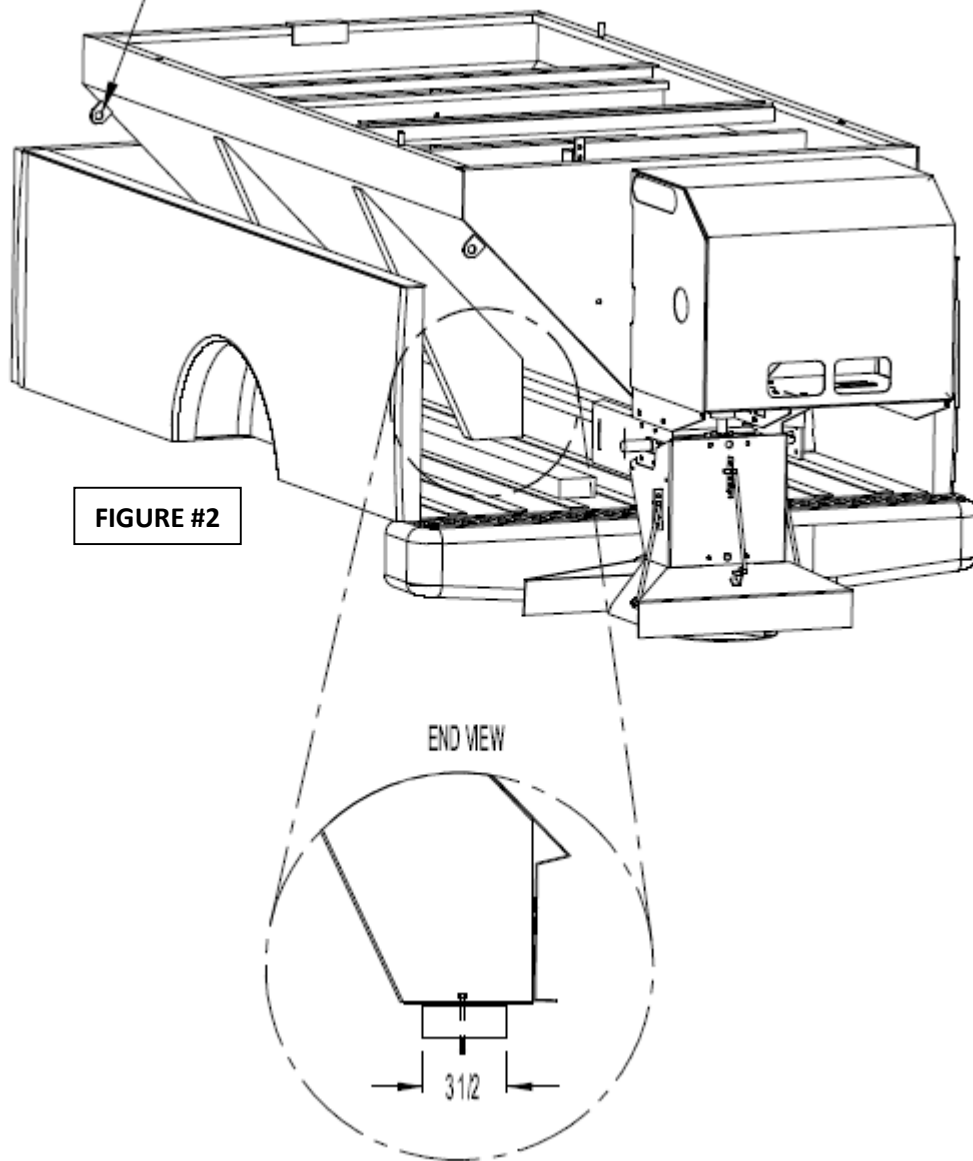
FIGURE #1

STEP 1:

BEFORE INSTALLING PSV,
BOLT (2) 2" X 4" BOARDS TO PRE-EXISTING
HOLES IN BOTTOM OF HOPPER SIDE
GUSSETS ON BOTH SIDES OF THE BODY

STEP 2:

USE THE (4) PRE-EXISTING TIE DOWN HOOKS TO
SECURE THE PSV TO THE TRUCK BED



INSTALLATION INSTRUCTIONS:

- 1.) Mounting the spreader onto the vehicle:
 - a.) Install inverted “v” in spreader with the bolts provided
 - b.) Remove the tailgate from the vehicle
 - c.) Lift the spreader by means of the square knock-out in the rear most hopper cross member. (toward the rear of the truck)

WARNING! The lifting device must be adequately rated to lift a payload equal to or greater than the spreader weight.

- d.) Elevate the spreader off the vehicle with lumber. Place lumber under the side gussets of the spreader. (This will help remove the excess material that accumulates under the spreader-refer to **Figure 1**)
- e.) Center the spreader on the vehicle with the ends of the rails 14” to the rear of the nearest vertical obstruction (bumper, trailer hitch, etc.). It is recommended that the spinner/chute assembly be loosely attached to the hopper. This should be done to avoid any interference between the vehicle and the spinner/chute assembly.
- f.) Bolt the spreader to the vehicle frame using the holes located in each corner of the (4) ratchet style tie down straps included with the spreader.
- g.) Secure the spreader to the vehicle using the four (4) tie-down eyes located at each corner of the spreader to the vehicle’s factory installed anchor points. (Using the four (4) ratchet style tie-down straps included with the spreader)

WARNING! The tie-down straps provided with the spreader are intended only to supplement the tie down of the spreader to the vehicle. The spreader must be securely fastened to the frame of the vehicle as well.

Notes:

Verify with the vehicle’s manufacturer that the factory installed anchor points are designed for this application

Periodically check that the spreader mounting hardware is securely tightened

2.) Mounting the Spinner/Chute Assembly

- a.) Attach the spinner/chute assembly to the spreader using the four (4) 3/8-16 X 5/8" hex head bolts, lock washers, and nuts. The head of the bolt is to be placed on the inside of the chute assembly. Push the chute assembly towards the cab of the vehicle. Loosely attach the hardware, but do not tighten at this time.
- b.) Install the roller chain between the sprocket mounted to the spinner/chute assembly and the gearbox sprocket. Make sure both sprockets are in line with one another. Tighten the gearbox sprocket set screw. Install the roller chain master link.
- c.) To adjust the roller chain tension, loosen the spinner shaft bearing bolts and slide the shaft away from the gearbox sprocket. Be sure to maintain the vertical alignment of the spinner shaft and the bearings before tightening the hardware. The correct chain tension should allow for a 5/16" deflection midway between both chain sprockets.

CAUTION! Do not over-tighten the chain tension. This can cause damage to the chain, bearings, and gearbox.

- d.) Install the chain guard using the three (3) 1/4-20 X 3/4" hex head bolts, lock washers, and nuts
- e.) Tighten all hardware to the recommended torque specifications as shown in this manual.

SPREADER OPERATION:

NOTE: Before starting engine, follow all safety precautions.

1.) Control Panel Description:

- a.) The clutch switch is a three position switch with the following functions:
 1. "OFF" Position: While this switch is in this position and the engine is running, the spreader feed chain and the spinner disk will remain non-operational. (Meaning the ice control material will not be dispensed)
 2. "ON" Position: While this switch is in this position and the engine is running, the spreader feed chain and the spinner disk will dispense the ice control material at the normal regulated rate.

3. “BLAST” Position: While this switch is in this position and the engine is running, the spreader feed chain and the spinner disk will dispense the ice control material at a higher rate. (**note: in order to use this option, the switch must be held in this position. It cannot be toggled like the “ON” or “OFF” options**)
- b.) The ignition switch is a three position switch with the following functions:
 1. “OFF” Position: While in this position, 12 VDC power is shut off to the spreader. (**Note: to turn off the spreader, toggle switch to “OFF” position.**)
 2. “ON” Position: While in this position, 12 VDC power is turned on to the spreader.
 3. “START” Position: While in this position, the spreader’s engine starter is activated.
- c.) The throttle switch is a two position switch with the following functions:
 1. “CHOKE/FAST” Position: While in this position, the engine speed will increase
 2. “IDLE” Position: While in this position, the engine speed will decrease
- 2.) Starting the Engine:
 - a.) Verify that the clutch switch and ignition switch on the cab control panel are in the “OFF” position.
 - b.) Turn the spreader ignition switch to the “ON” position
 - c.) Move the throttle switch on the cab control panel to the “IDLE” position, and hold for approximately two seconds.
 - d.) Turn the ignition switch to the “START” position
 - e.) While the engine is cranking, move the throttle switch to the “CHOKE/FAST” position
 - f.) Release the throttle switch when the engine starts to fire
 - g.) Release the ignition switch when the engine starts
 - h.) After the engine starts, move the throttle switch to the “IDLE” position to release the choke (hold switch for 1/2 - 1 second)
- 3.) Stopping the Engine:
 - a.) To stop the engine, push the toggle switch to the “OFF” position

- 4.) Clutch Operation:
 - a.) Start the engine and adjust the speed to slightly above idle
 - b.) Move the clutch switch into the "ON" position
 - c.) Increase the engine RPM by moving the throttle switch
 - d.) It is recommended that the clutch only be engaged at the lowest possible speed without stopping the engine. This practice will prevent premature spinner chain failure and chain tension loss.
- 5.) Spinner/Chute Assembly Operation:
 - a.) The spread pattern and the amount of material dispensed depends on the following:
 1. Engine RPM
 2. Feed Gate Position
 3. Baffle Settings
 - b.) Keep the following rules in mind:
 1. Decreasing engine RPM will decrease the amount of material transporting to the spinner.
 2. Increasing engine RPM will increase the amount of material transporting to the spinner
 3. Size of the feed gate opening will increase or decrease the amount of material transporting to the spinner in relation to the position of the gate.
- 6.) Precautions:

CAUTION! Always follow the spreader precautions in order to limit any damage done to the spreader.

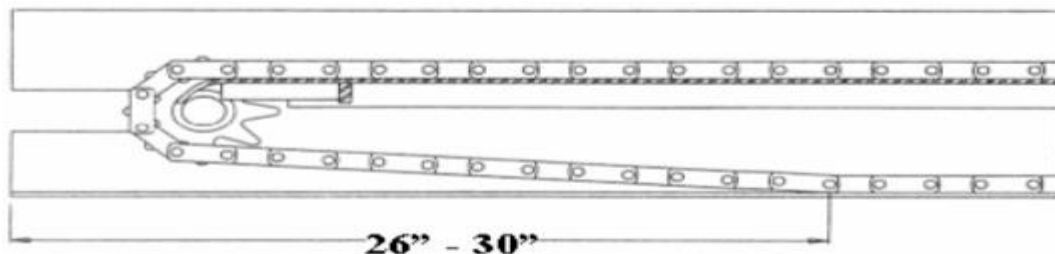
- a.) If the feed chain does not move because of dense material or jams, remove all material from the hopper and free the chain.
- b.) If the material in the hopper freezes, move the spreader into a warm area to thaw.
- c.) To prevent the feed chain from freezing, do not store material in the spreader.
- d.) The gear case is designed to only accept torque from the input shaft. Therefore, **DO NOT ATTEMPT TO FREE THE FEED CHAIN BY USING A PIPE OR SIMILAR TOOL TO MOVE OR DISLODGE THE CHAIN.** If the feed chain is moved, the gears within the gear case will strip. This action will void the warranty.

- e.) Check and maintain the correct oil level for both the engine crankcase and the gearbox. The engine crankcase is filled with 1 quart of SAE 5W-30 motor oil at the factory. The gearbox is filled with SAE 90 gear lubricant at the factory.

WARNING! The engine crankcase and gearbox must be filled and maintained with oil. The engine crankcase oil must be the correct viscosity for the intended spreader operating conditions. Refer to the Briggs and Stratton owner manual to determine the correct viscosity. Operating the engine or gearbox without a sufficient amount of oil can cause permanent damage to the engine or crankcase.

SPREADER MAINTENANCE:

- 1.) Use dielectric grease on all electrical connections before an electrical connection is made or after a connector is disconnected.
- 2.) Grease the following:
 - a.) Idler Shaft Bushings (2)
 - b.) Drive Shaft Bushings (2)
 - c.) Spinner Shaft Bushings (2)
 - d.) Flanged Bearing located between gearbox and clutch
 - e.) Gearbox input shaft bearing. (Do not over-grease. As this can cause seal damage)
- 3.) Fill the gear case to the oil level plug with SAE 90 gear-type lubricant. Check the level periodically and maintain the oil level.
- 4.) Fill the engine crankcase with recommended oil until the level reaches the fill line. Read the Briggs and Stratton owner's manual for the recommended oil viscosity for your operating conditions. Check the oil level periodically and maintain the oil level.
- 5.) Check the feed chain tension periodically. Check the chain tension by measuring the distance between the end of the rear rail and the point where the chain contacts the lower flange on the rail. The correct distance between these two points is 26" – 30".
(Note: see the diagram below for clarification.)



6.) Maintain the correct tension on the following roller chains:

- a.) Engine to gearbox input sprocket
- b.) Spinner shaft to gearbox input sprocket

The correct chain tension allows for a 5/16" deflection between respective sprockets. Oil both roller chains often, and at the end of each season.

To loosen or tighten Chain A, loosen four (4) 3/8" – 16 X 1" carriage bolts that fasten the motor mount weldment to the drive base and slide the engine mount stand.

To loosen or tighten Chain B, loosen the spinner bearing mounting hardware and slide the spinner shaft. Verify that the spinner shaft is vertical after any adjustments.

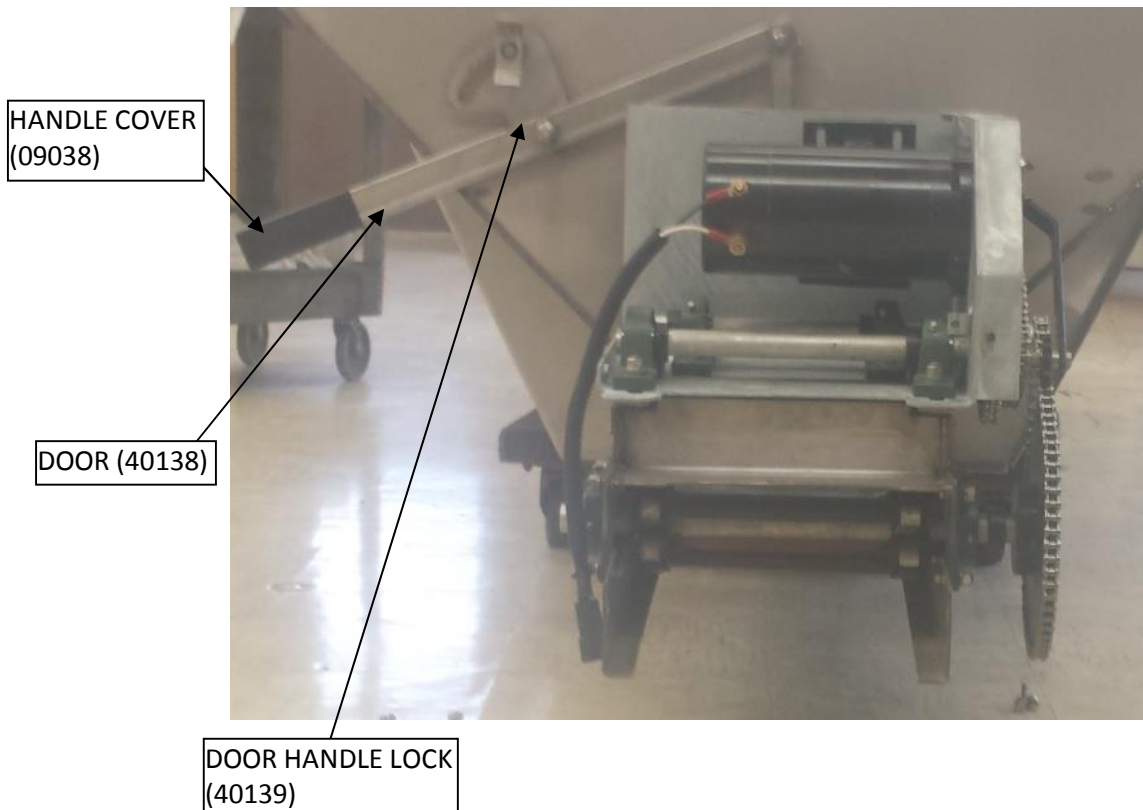
CAUTION! Do not over-tighten either of the roller chains. Over-tightening can cause damage to the bearings, roller chains, sprockets, or to the engine.

- 7.) Empty the spreader of all snow control material when not in use to prevent a frozen feed chain.
- 8.) Wash out the spreader when it is not in use. At the end of the season wash out the spreader to remove all snow control materials. Thoroughly dry all metal surfaces. Paint and oil all bare carbon steel surfaces to help protect against rust build-up. Properly store spreader during the off-seasons.
- 9.) To minimize problems and extend the life of the electric clutch, the following procedures are recommended:
 - a.) At the end of the season, remove and clean the clutch.
 - b.) After cleaning, coat both of the mating surfaces with oil or light grease.
 - c.) Remove oil and grease prior to using clutch again.
- 10.) Engine repair – maintain the spreader engine according to the Engine Owner's Manual. This manual is shipped with the spreader. The engine warranty is covered by Briggs and Stratton. If service is required, contact an authorized Briggs and Stratton Service Center.



SCREEN HOLD DOWN PINS
(40121)

INVERTED "V" FOR PSV – 8E (40134)
INVERTED "V" FOR PSV – 8L (40187)



HANDLE COVER
(09038)

DOOR (40138)

DOOR HANDLE LOCK
(40139)



8 SCREENS (34039)
6.5 SCREENS (34015)



ENGINE HOOD (40259)

HOOD LATCH
(28002)

10.5 BRIGGS AND STRATTON ENGINE (30011)
OPTION HONDA MOTOR (30020)
OPTION HYDRAULIC MOTOR (12034)

LOCK COLLAR
(40042)

40848 SPROCKET
(06020)

ELECTRIC CLUTCH
(40032)

PILLOW BLOCK
BEARING
(05001)

ENGINE TABLE
(40183)

1-1/8" FLANGE BEARING
(05008)

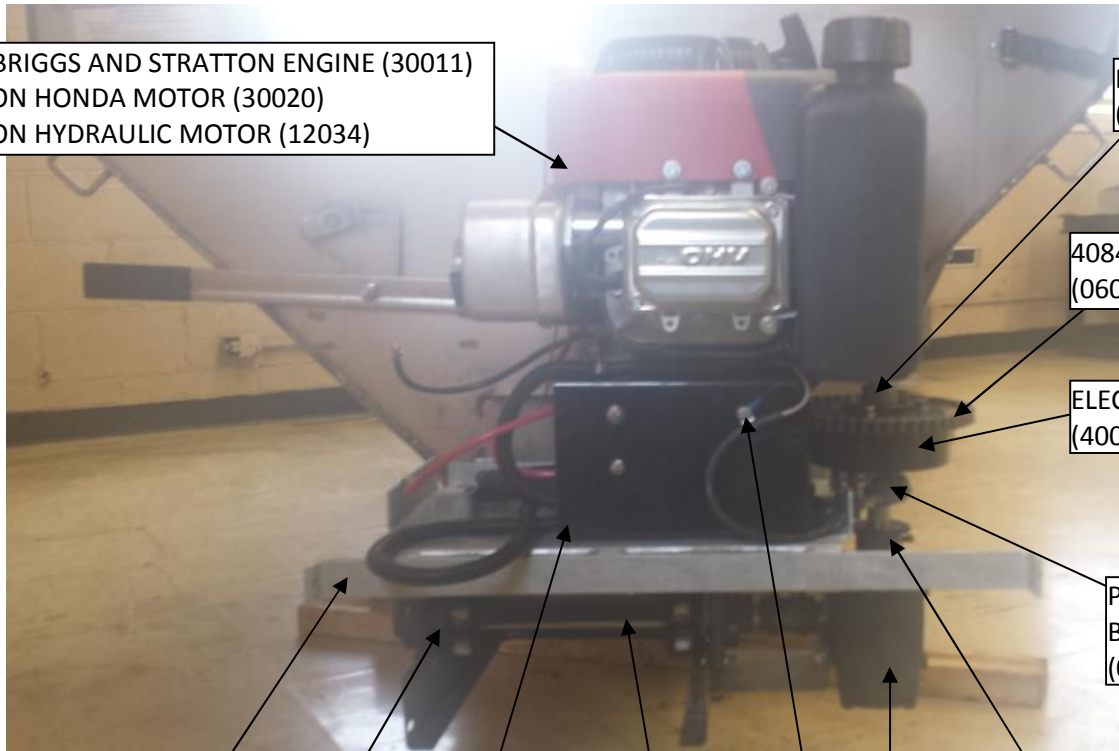
MOTOR MOUNT
(40182)

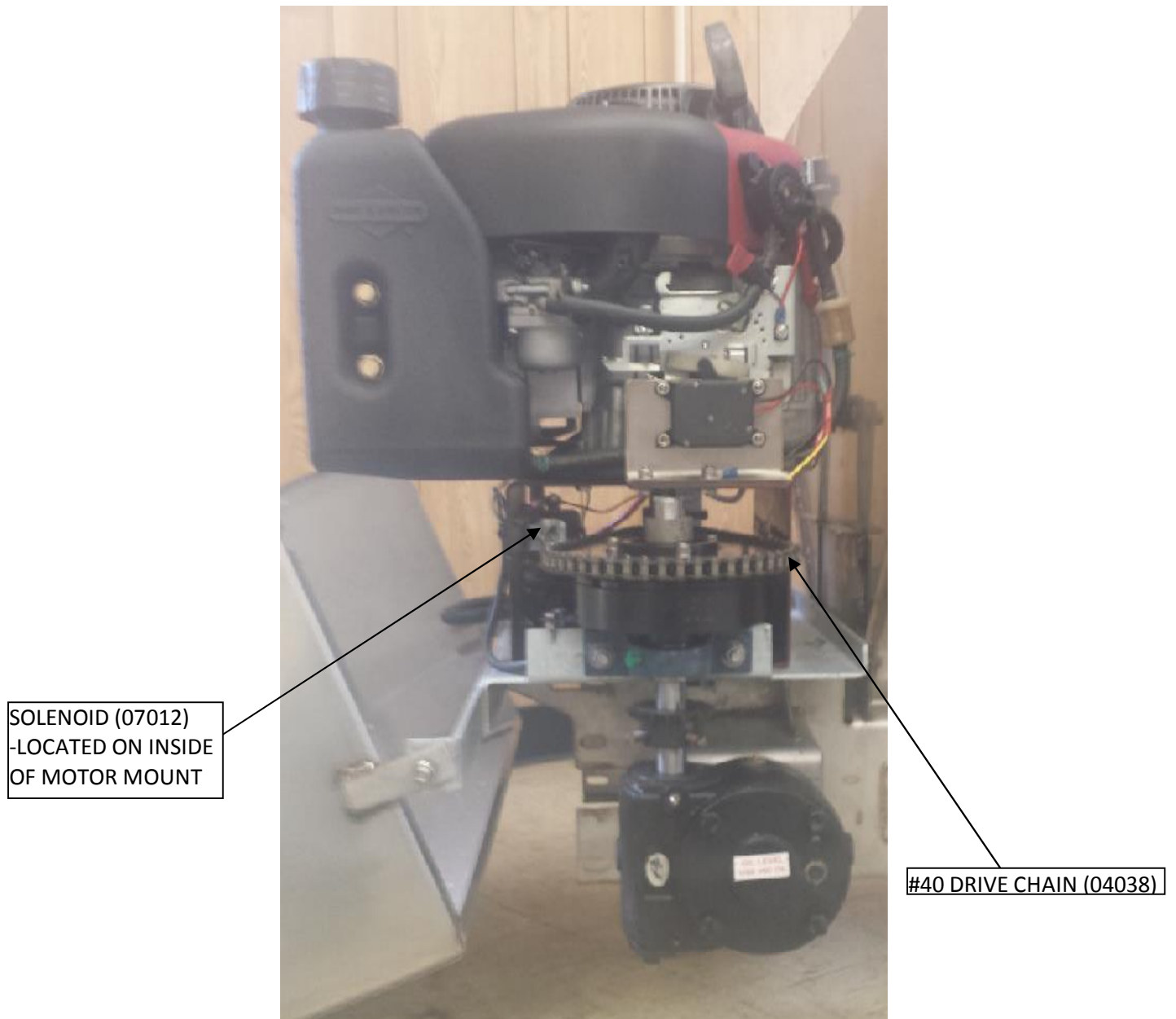
HOSE CLAMP
(07207)

40816 SPROCKET
(06001)

20:1 GEARBOX
(03001)

DRIVE SHAFT WITH
WELDED SPROCKETS
(40148)



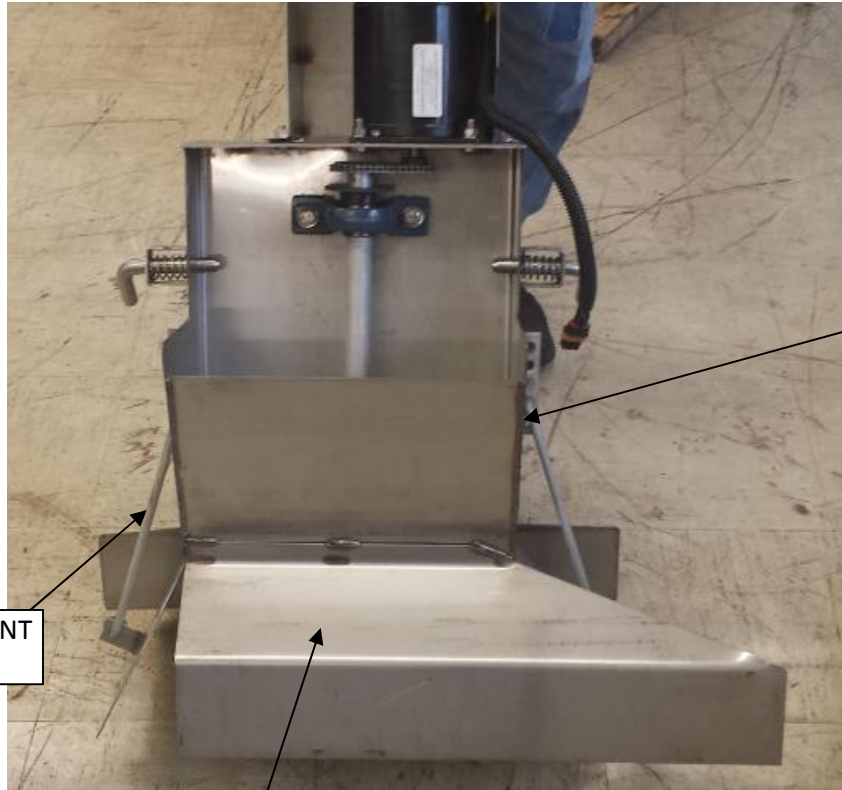


NOTE: MISCELLANIOUS PARTS NOT SHOWN ABOVE INCLUDE THE FOLLOWING:

KEY STOCK (19002)

KEYSTOCK (19010)

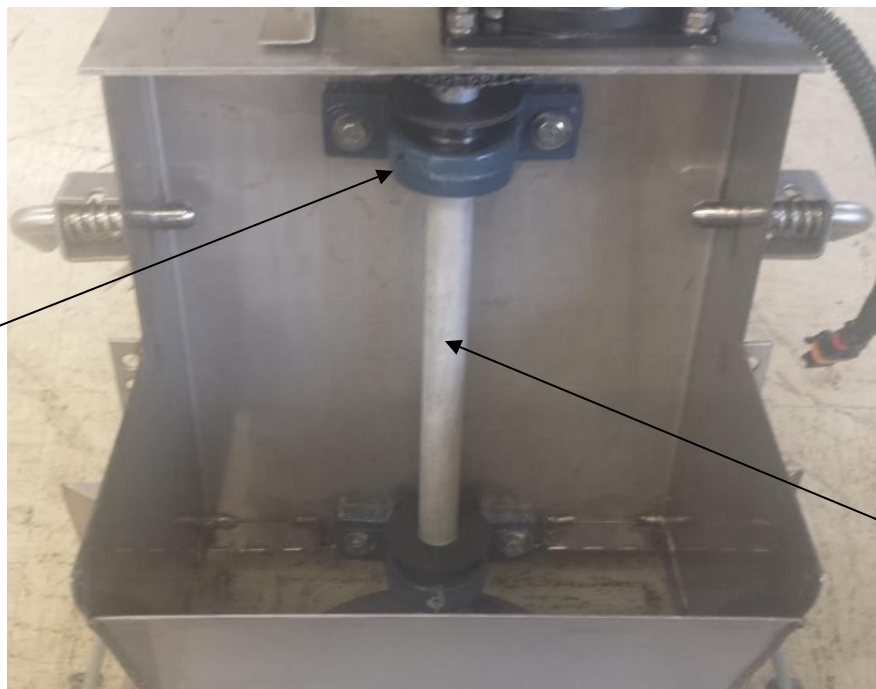
40812 SPROCKET (06012)



HAIRPIN COTTER
PIN (21006)

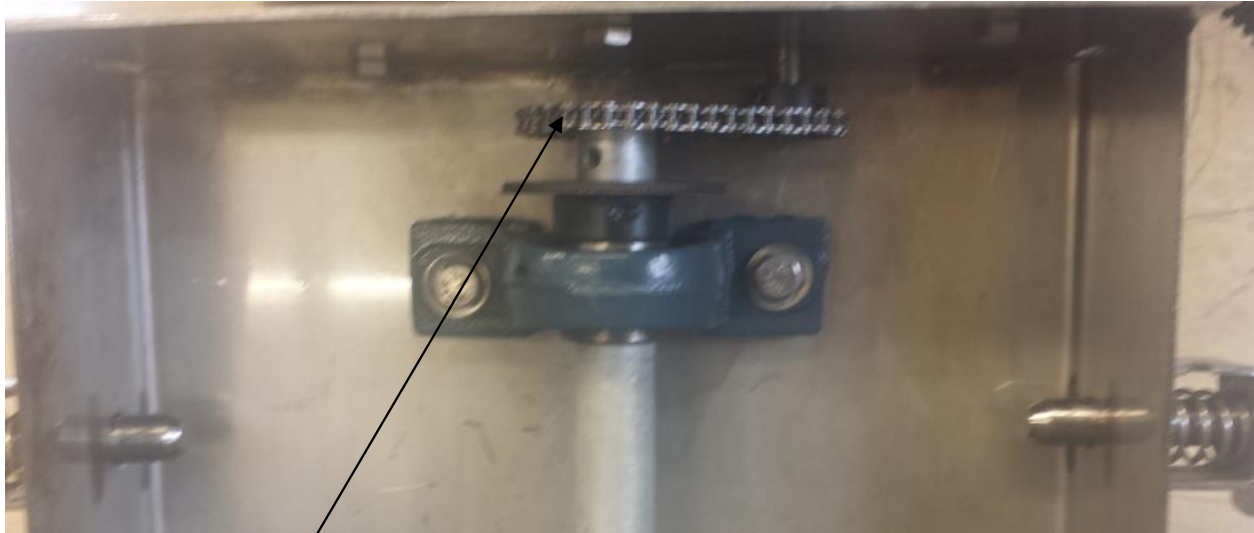
DEFLECTOR ADJUSTMENT
ROD (40048)

CHUTE BODY STD. (40152)
CHUTE BODY + 12" EXT. (40153)



1" PILLOW BLOCK
BEARINGS (05001)

SPINNER SHAFT
WITH SPROCKET STD.
(14002)

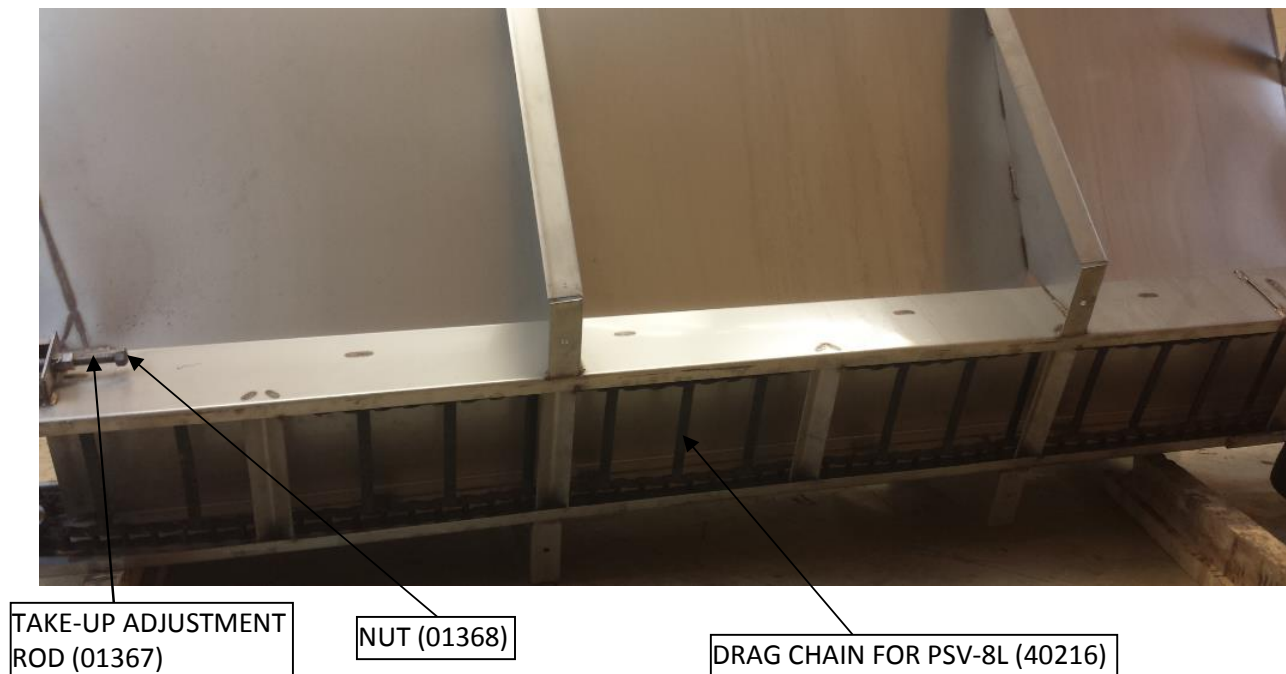
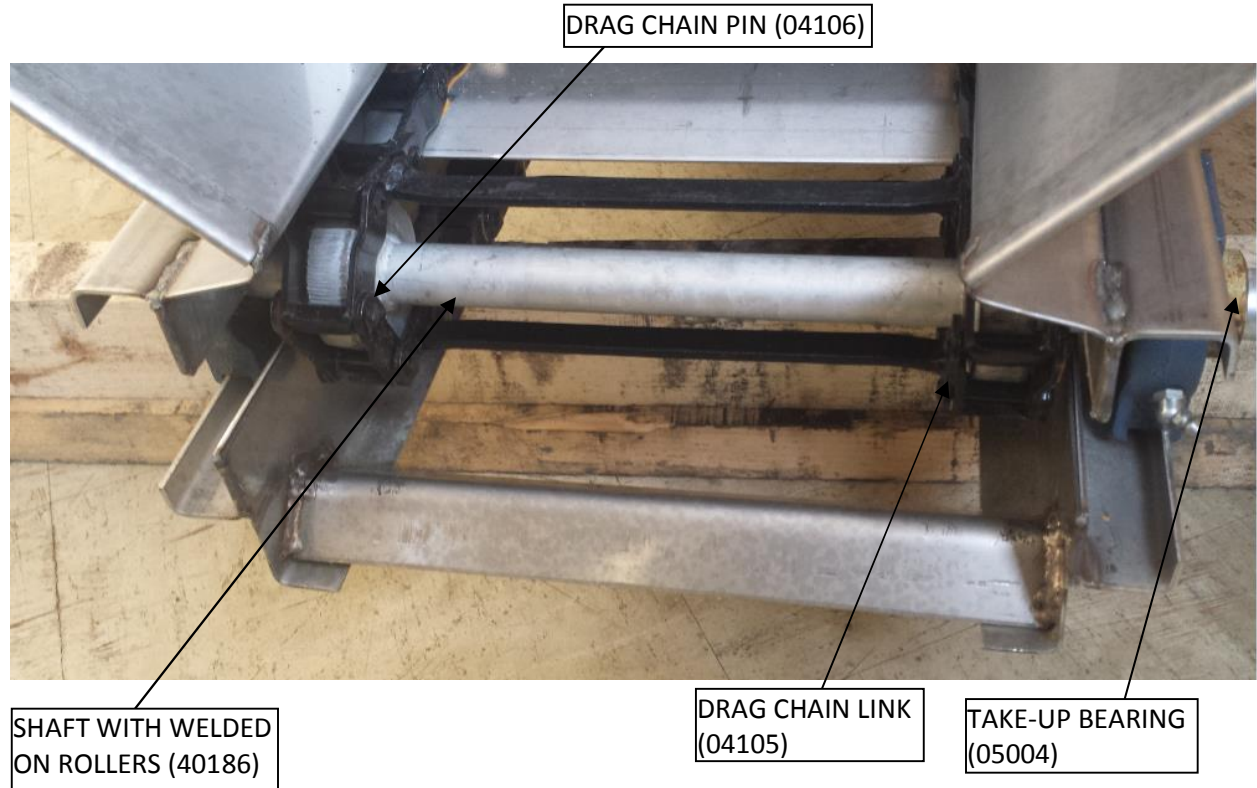


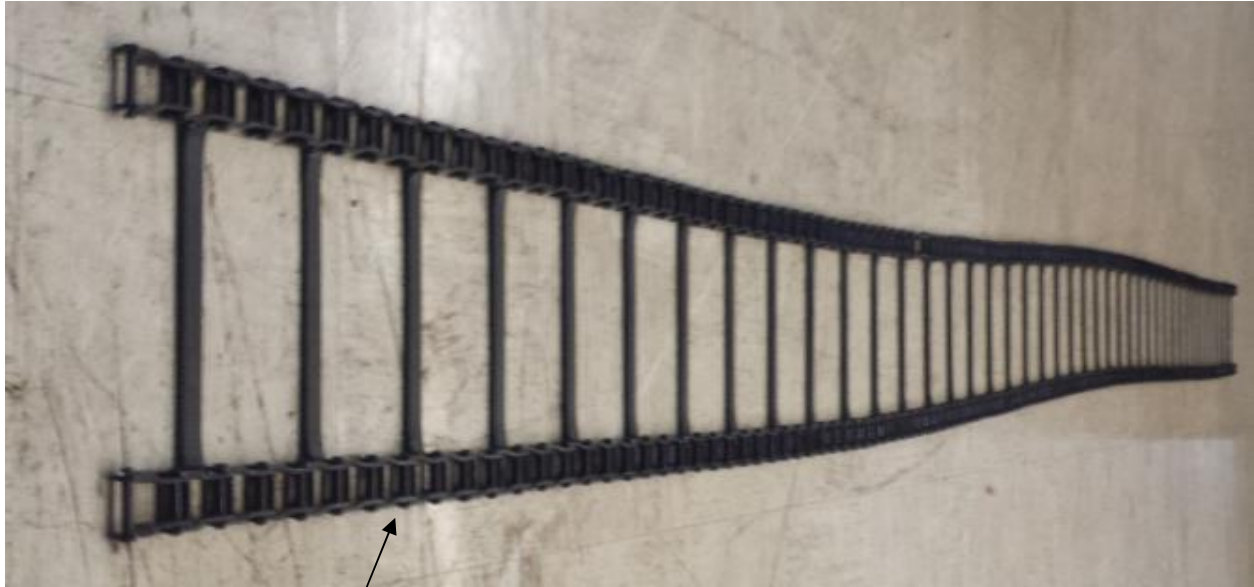
SPINNER CHAIN (04039)



SPINNER DISK (40151)

SPINNER HUB PIN (19007)





DRAG CHAIN FOR PSV-8E (40155)
DRAG CHAIN FOR PSV-6.5E (40218)
DRAG CHAIN FOR PSV-6.5L (40217)

SPINNER SHAFT
WITH SPROCKET
+ 12" EXT.
(14003)



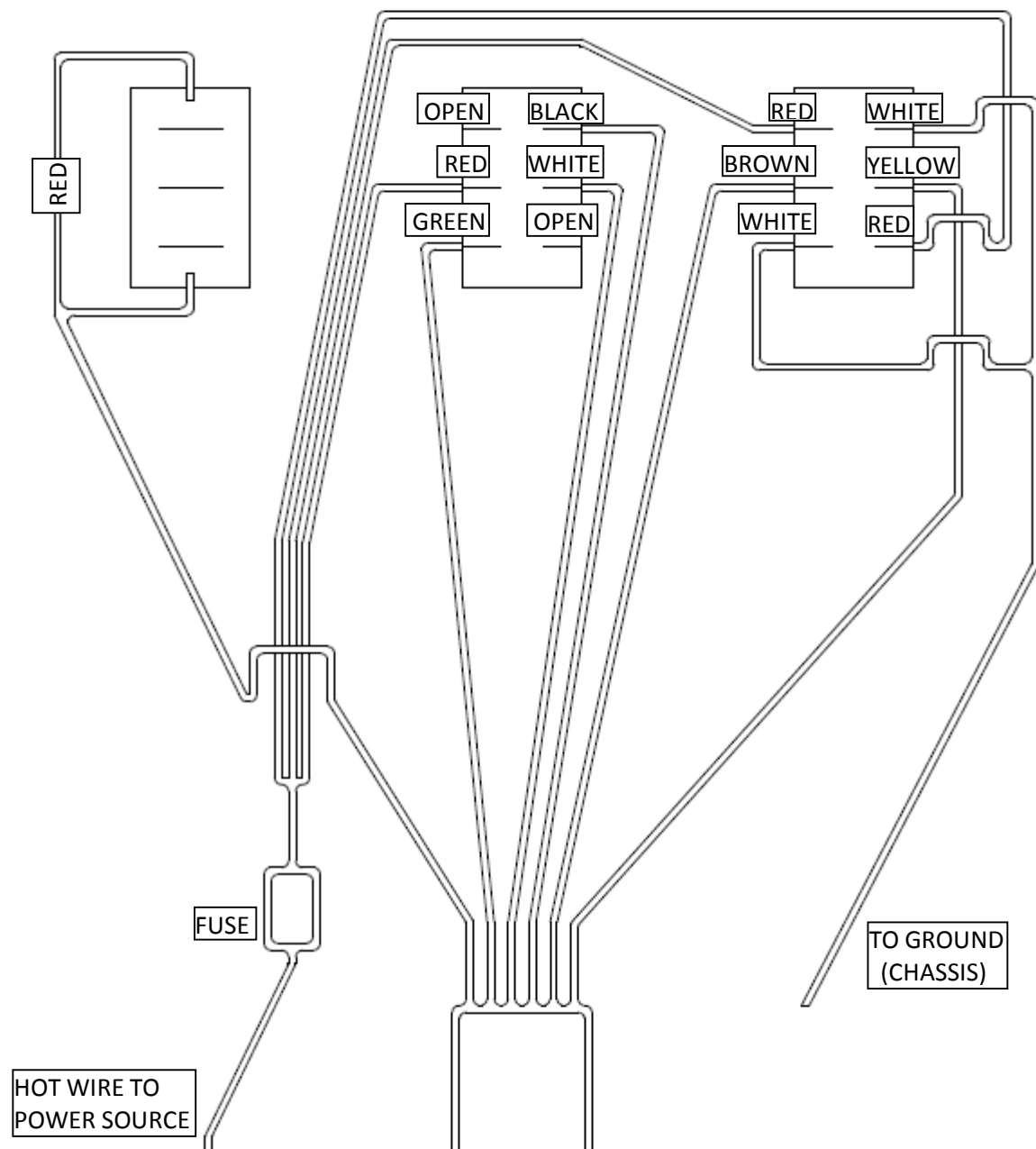
ELECTRIC
SPINNER SHAFT
STD. (14025)



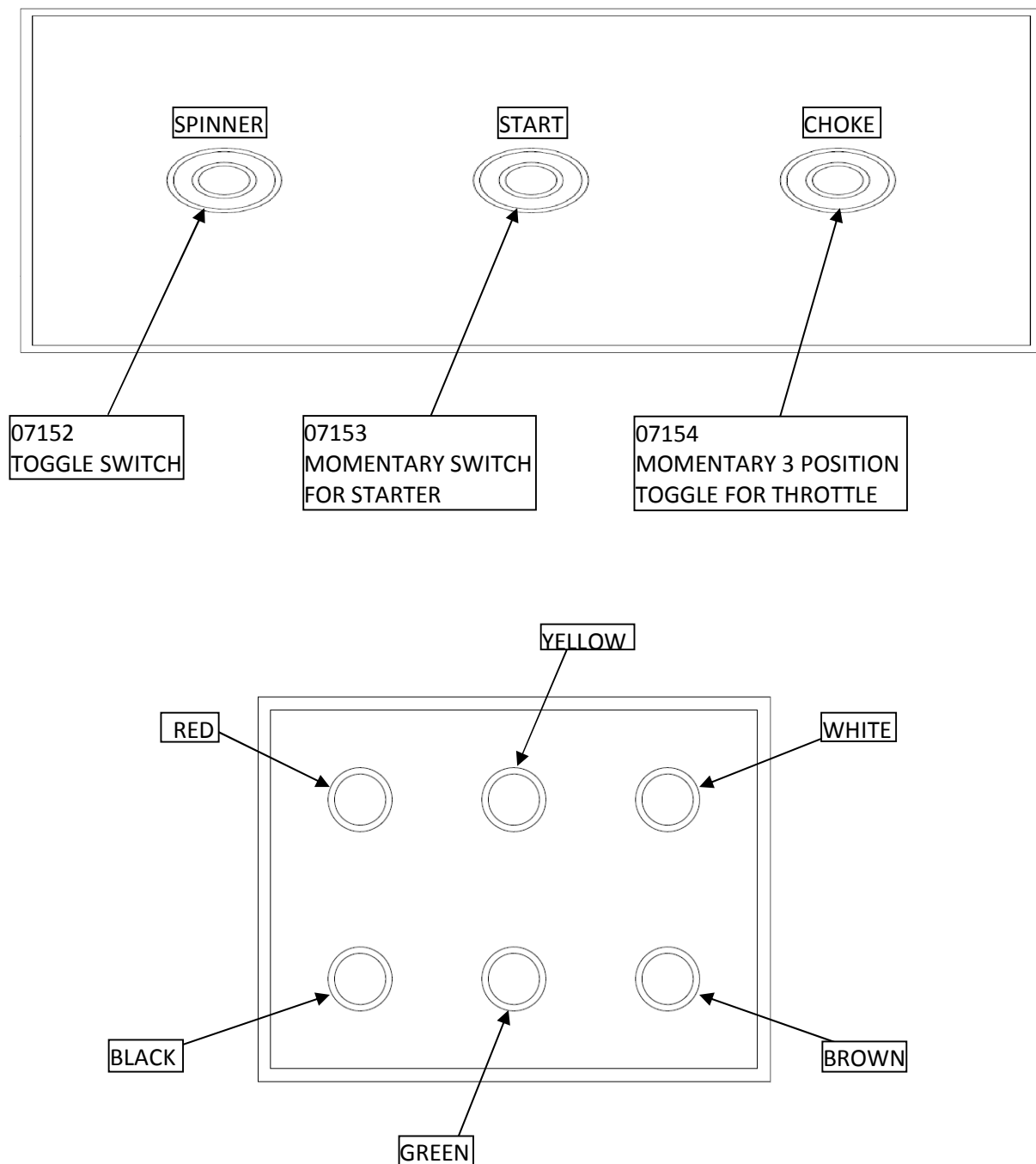
ELECTRIC
SPINNER
SHAFT + 12"
EXT. (14024)

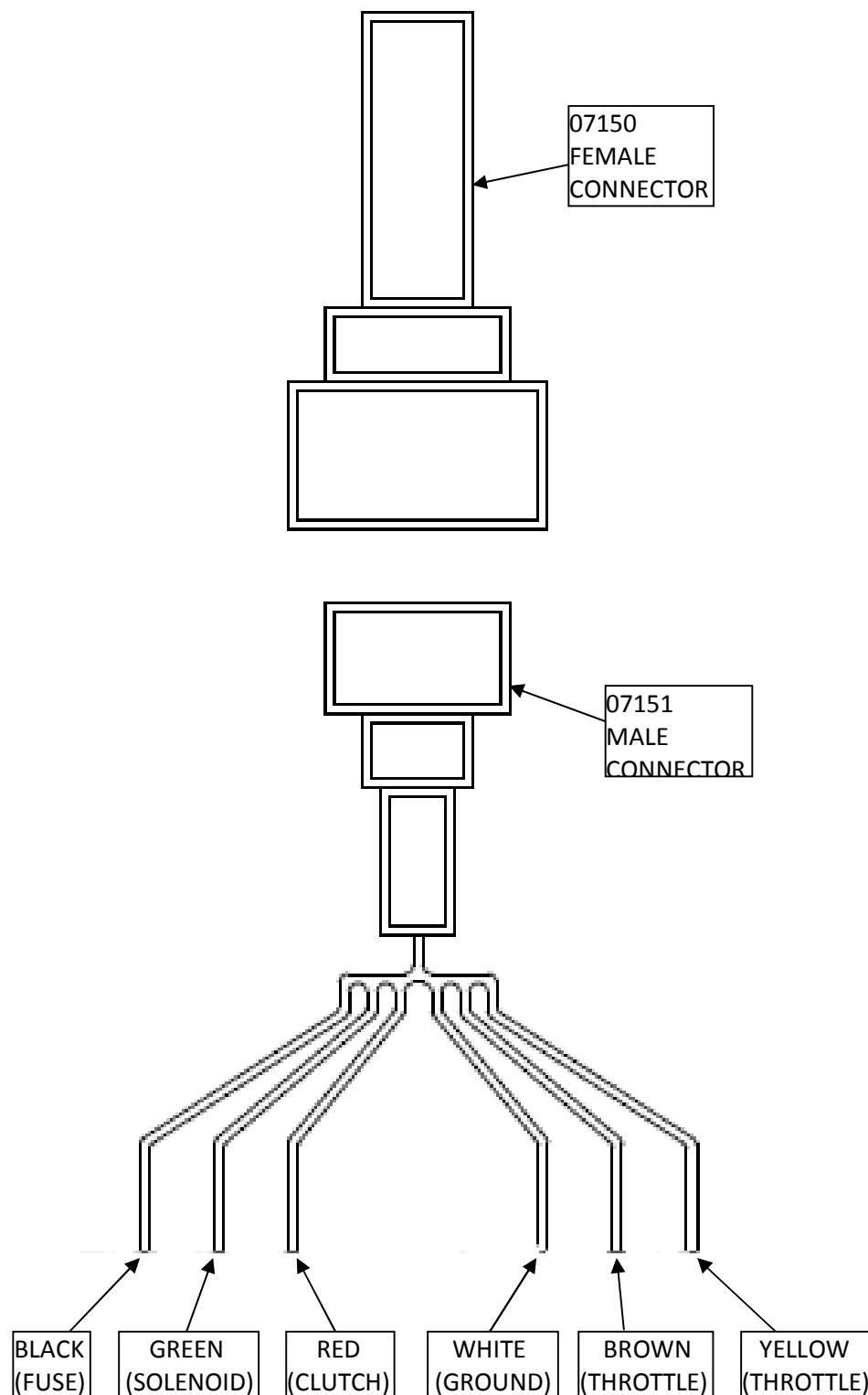


PSV GAS ENGINE WIRE DIAGRAM



PSV PICK-UP SPREADER CAB CONTROL PANEL (6 - WIRE)



PSV SPREADER SIDE WIRING HARNESS (#40044)

ADDITIONAL NOTES:**PSV-8L SPREADER MAINTENANCE:**

1. Oil all chains often, and at the end of each season
2. Tension for drive chains will be maintained with idler sprockets. Be sure that chain(s) do not become stretched and fall off. Shortening the chain(s) may be possible. In the event it is not, insert a half link. If unable to connect, replace chain(s).
3. To loosen or tighten spinner chain, loosen the spinner bearing mounting hardware and slide the spinner shaft. Verify that the spinner shaft is vertical after any adjustment. In the event that the chain is stretched and too loose, take out one link and insert a half link. If unable to connect, replace chain.

ELECTRIC BOX AND CONNECTOR MAINTENANCE:

1. Keep box clean and unexposed to moisture as much as possible
2. Keep electrical connections clean and lubricated with di-electric grease

MATERIAL SPREADER WARRANTY:

AIR-FLO MANUFACTURING CO., INC., hereinafter referred to as “Manufacturer,” warrants each new material spreader sold by the manufacturer to be free from defects in material and workmanship, under normal use and service, for a period of One (1) year after the date of delivery to the original retail purchaser, and Manufacturer will, at its option, replace or repair, at one of the Manufacturer’s Dealers, or at a point designated by the Manufacturer, any part or parts which shall appear to the satisfaction of the Manufacturer upon inspection at such point, to have been defective in material or workmanship. This warranty does not obligate the Manufacturer to bear any transportation charges in connection with the replacement or repair of defective parts.

This warranty shall not apply to any spreader which shall have been installed or operated in a manner not recommended by the Manufacturer; nor to any spreader which shall have been repaired, altered, neglected, or used in any way which, in the Manufacturer’s opinion, adversely affects its performance; nor to any spreader in which parts not manufactured by the Manufacturer, or supplied by the Manufacturer or by one of the Manufacturer’s distributors or service centers, have been used; nor any accessories installed on the spreader where the accessory manufacturer has its own warranty; nor to normal maintenance services or replacement of normal service items.

Manufacturer reserves the right to modify, alter, and improve any spreader or parts without incurring any obligation to replace any spreader or parts previously sold with such modified, altered, or improved spreader or part.

THIS WARRENTY, AND THE MANUFACTURER’S OBLIGATION HEREUNDER, IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICLUAR PURPOSE, and all other obligations or liabilities, including special or consequential damages or contingent liabilities arising out of failure of any spreader or part to operate properly. No person is authorized to give any other warranty or to assume any additional obligation on the Manufacturer’s behalf unless made in writing and signed by the Manufacturer.

