

Wagner-Smith

OPERATOR'S AND PARTS MANUAL
FOR
THE WAGNER-SMITH EQUIPMENT COMPANY
MODEL T-1DP-1140
TRAILER MOUNTED SINGLE DRUM PULLER
SERIAL #
CONTROL #



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SECTION D..... Description of Individual Functions

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SECTION “A” SAFETY

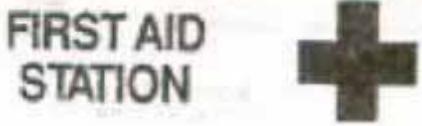
FIG	DESCRIPTION	PAGE #
	<p>ATTENTION:</p> <p>This manual is intended to give operational, parts, and maintenance information for the unit referenced on the front cover. It is not intended to replace safe operating practice or serve as a tension/ stringing operation procedures manual. This piece of equipment is designed for use in tension/ stringing operations within its specification only. Any use other than this that is not authorized by Wagner-Smith Equipment Co., is potentially dangerous, and could result in severe injury or death. Additionally, this equipment should only be operated by trained personnel who are fully aware of the proper operating procedures and potential safety hazards encountered during tension/ stringing operations.</p>	
	<p>SAFETY</p> <p>WARNINGS</p>	<p>A – 2.5</p> <p>A – 6.7</p>

SECTION "A"

SAFETY

<p>RECOGNIZE SAFETY INFORMATION</p> <p>This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.</p> <p>Follow recommended precautions and safe operating practices.</p>	
<p>"DANGER" – Is used to indicate a hazardous situation which has a high probability of death or severe injury. Danger should not be considered for property damage accidents unless personal injury risk is present.</p>	
<p>"WARNING" – Is used to indicate a hazardous situation which has some probability of death or serious injury. Warning should not be considered for property damage accidents unless personal injury risk is present.</p>	
<p>"CAUTION" – Is used to indicate a hazardous situation which may result in minor or moderate injury. However, caution should not be used when there is a possibility of death or serious injury. Caution should not be considered for property damage accidents unless personal injury risk is present.</p>	
<p>FOLLOW SAFETY INSTRUCTIONS</p> <p>Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs.</p> <p>Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.</p> <p>Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.</p> <p>If you do not understand any part of this manual and need assistance, contact Wagner-Smith Equipment Company.</p>	

SECTION “A” SAFETY

<p>PREPARE FOR EMERGENCIES</p> <p>Be prepared if a fire or accident occurs. Keep a first aid kit and fire extinguisher handy. Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.</p>	
<p>PROTECT AGAINST NOISE</p> <p>Prolonged exposure to loud noise can cause impairment or loss of hearing.</p> <p>Wear a suitable hearing protective device such as earmuffs or earplugs to protect against uncomfortable loud noises.</p>	
<p>STAY CLEAR OF ROTATING SPINDLES AND CHAIN DRIVES</p> <p>Entanglement in rotating reel spindle and reel spindle drive can cause serious injury or death.</p> <p>Keep all guards in place at all times.</p> <p>Wear close fitting clothing. Stop the engine and be sure the drives are completely stopped before performing any type of service on the equipment.</p>	
<p>PRACTICE SAFE MAINTENANCE</p> <p>Understand service procedure before doing work. Keep area clean and dry. Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing from power driven parts. Disengage all power and operate controls to relieve pressure. Stop the engine. Remove the key. Allow machine to cool.</p>	<p>Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove all buildup of grease, oil, or debris.</p> <p>Disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.</p>

SECTION "A"

SAFETY

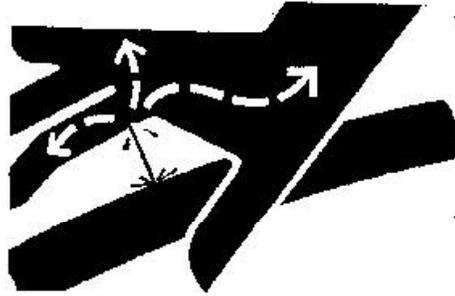
AVOID HIGH -PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately.



REMOVE PAINT BEFORE WELDING OR HEATING

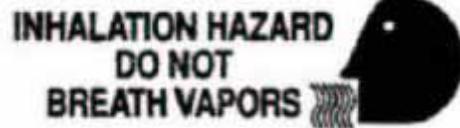
Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

Remove paint before welding or heating:

- If you use sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper container and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



SERVICE COOLING SYSTEM SAFELY

Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.



SECTION "A"

SAFETY

FILLING FUEL TANK



CAUTION: Handle fuel carefully. Do not fill the fuel tank when engine is running.

DO NOT smoke while filling fuel tank or servicing fuel system.

IMPORTANT: The fuel tank is vented through the filler cap. If a new filler cap is required, always replace it with an original vented cap.

Fill fuel tank at the end of each day's operation to prevent condensation in tank as moist air cools and freezing during cold weather.



**SECTION "A"
SAFETY**

WARNING

**ELECTROCUTION
HAZARD**

**DO NOT OPERATE THIS
MACHINE WITHOUT
PROPER GROUNDING**

**SECTION “A”
SAFETY**

WARNING

**THIS MACHINE IS A HIGHLY
SPECIALIZED PIECE OF
EQUIPMENT THAT SHOULD BE
OPERATED ONLY BY
QUALIFIED PERSONNEL**

SECTION "B"

INTRODUCTION

FIG	DESCRIPTION	PAGE #
	INTRODUCTION	B - 2

SECTION “B” INTRODUCTION



The Wagner-Smith Company Model T-1DP-1140 is as a single drum puller. The unit will be equipped with a pulling reel and wire rope in the transmission mode. The hydrostatic reel drive system is pressure-compensated, a feature, which enable the operator to preset the maximum line-pull.

The purpose of this manual is to acquaint the operator with the unit and its operation and maintenance. Each of its components will be described so that the operator may understand its function.

The manufacturer's manuals for the majority of this unit's components are included in this manual to facilitate repairs, should they become necessary.

SECTION "C" SPECIFICATIONS

FIG	DESCRIPTION	PAGE #
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SECTION "C"

SPECIFICATIONS

WAGNER-SMITH MODEL T-1DP-1140

SINGLE DRUM
PULLER
TRAILER MOUNTED

Specification No. 401140-10
Date 7/28/2013, Page 1 of 3

UNIT PERFORMANCE

Continuous Torque Rating	<ul style="list-style-type: none">• 1,140,000 in. lb. or 95,000 ft. lb.
Line Speed	<ul style="list-style-type: none">• 0 – 4 mph
Line Pull (per speed)	<ul style="list-style-type: none">• 30,000 lbs (3 mph)

STANDARD PULLING DRUMS

Diameter	<ul style="list-style-type: none">• 81 inches
Core Diameter	<ul style="list-style-type: none">• 42 inches
Width Inside	<ul style="list-style-type: none">• 50 inches
Approximate Capacity	<ul style="list-style-type: none">• 25,000 ft of 3/4" wire rope

LEVELWIND

- Hydraulic rail type. Automatic with manual override.

SECTION "C"

SPECIFICATIONS

WAGNER-SMITH MODEL T-1DP-1140

SINGLE DRUM
PULLER
TRAILER MOUNTED

Specification No. 401140-10
Date 7/28/2013, Page 2 of 3

DRIVE TRAIN

Engine

- John Deere 400HP Turbocharged w/air-cooled

Fuel

- Diesel

Capacity

- 100 gallon

Transmission

- Closed loop hydrostatic system; 150 gallon hydraulic reservoir with oil level and temperature site gauge and oil cooler; chain reduction final drive; reel disconnect for free wheeling with drum brake; spring applied-hydraulic release emergency brake.

UNDERCARRIAGE

Tires

- 285/75R24.5 load range "L"

Axles

- Triple 60,000 lb total capacity

Suspension

- Leaf spring

Brakes

- Air axle with ABS

GVWR

- 99,675 lb. (with 25 ft of $\frac{3}{4}$ swaged wire rope)

Axle Weight

- 60,000 lb

SECTION "C"

SPECIFICATIONS

WAGNER-SMITH MODEL T-1DP-1140

SINGLE DRUM
PULLER
TRAILER MOUNTED

Specification No. 401140-10
Date 7/28/2013, Page 3 of 3

FEATURES

Front Hitch	• Fifth Wheel Hitch
Lighting	• D.O.T. Regulation
Jacks	• Hydraulic landing gear
Operators Console w/Safety Screen	• Standard
Permanently engraved control panel	• Standard
Operators Seat	• Standard

DIMENSIONS

Unit Length	• 48 feet, 0 inches
Unit Width	• 8 feet, 0 inches
Unit Height	• 13 feet, 2 inches

OPTIONS AVAILABLE

- Solar (trickle) Battery Charger
- Wheel chocks with holders
- Vandalism package

SECTION "D"

DESCRIPTION OF INDIVIDUAL FUNCTIONS

FIG	DESCRIPTION	PAGE #
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	HYDRAULIC FLUID RESERVOIR AND FILTER	D - 3
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SECTION “D”

DESCRIPTION OF INDIVIDUAL FUNCTIONS

HYDRAULIC REEL DRIVE

The hydraulic reel drive consists of a John Deere diesel engine (Fig. 1A), which drives two variable displacement, pressure-compensated, hydraulic pumps (Fig.1B), hydraulic motor (Fig. 1C), a high efficiency planetary gearbox (Fig. 1D), and a final reel drive is through a jaw clutch and chain reduction is powered by each pump.

The brake (Fig. 1E) is part of planetary gear reducer (Fig. 1D) and is controlled manually from the operator's panel (Fig. 2). The brakes are automatically applied in the event of a hydraulic system failure.

Figure 1: Engine and Hydraulic Reel Drive

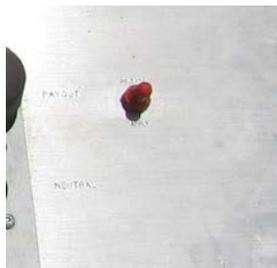
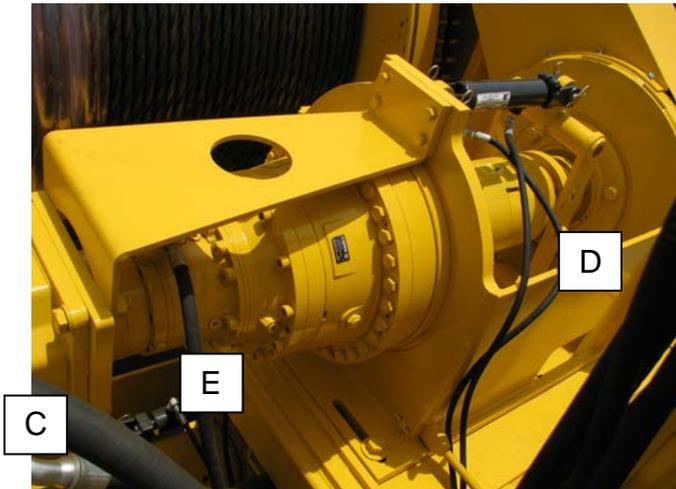
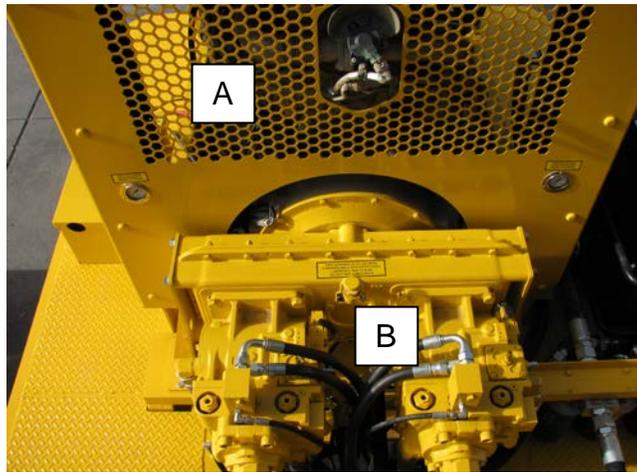


Figure 2: Brake control

SECTION “D”

DESCRIPTION OF INDIVIDUAL FUNCTIONS

HYDROSTATIC PUMP

The variable volume, pressure-compensated pumps (Fig. 3A) are driven by the John Deere diesel engine (Fig. 3B) and are connected to fixed displacement motors (Fig. 1C) in a closed loop configuration. The displacement of the pumps is automatically reduced to zero should the line pull increase to the maximum pre-set pressure causing the pulling reel to stop. During normal operation the displacement is controlled by the directional control lever (Fig. 4) located on the control panel. The engine should be operated at max RPM's and the line speed is controlled by the directional control lever.

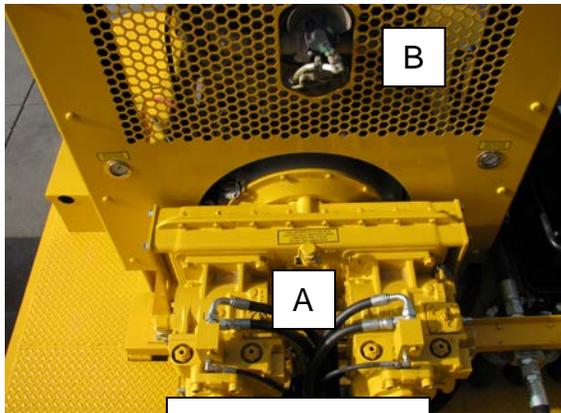


Figure 3:
Hydrostatic Pump

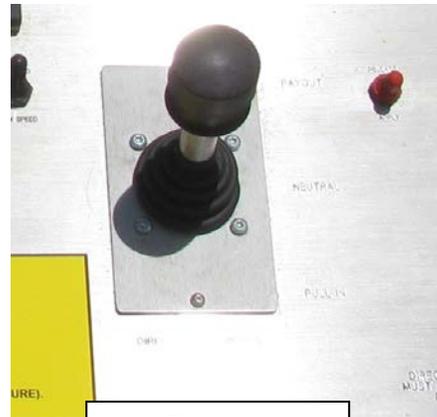


Figure 4:
Directional Control

HYDRAULIC FLUID RESERVOIR AND FILTER

The purpose of the hydraulic oil reservoir (Fig. 5A) is to provide hydraulic fluid to the pump; it also serves as a means of cooling the oil. The purpose of the hydraulic filter (Fig. 5B & 5C) is to clean the hydraulic oil as it circulates through the system.

It is imperative that the hydraulic reservoir and filter be service at the recommended intervals. Cleanliness is the life of a hydraulic system.

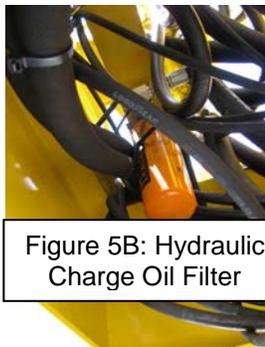


Figure 5B: Hydraulic
Charge Oil Filter

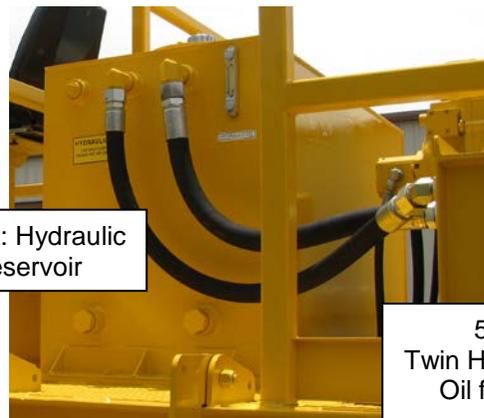


Figure 5A: Hydraulic
Oil Reservoir

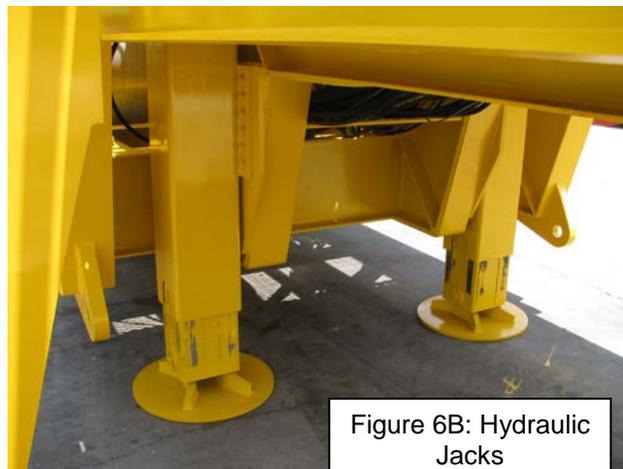
5C
Twin Hydraulic
Oil filters

SECTION “D”

DESCRIPTION OF INDIVIDUAL FUNCTIONS

HYDRAULIC JACKS

Hydraulic Jack controls (Fig 6A) are used for the purpose of stabilizing the trailer. There is a curb side control and street side control (Fig 6A). Pushing the lever up will raises the jacks (Fig 6B). Pushing lever down will lower the jacks (Fig 6B).



SECTION “D”

DESCRIPTION OF INDIVIDUAL FUNCTIONS

LEVELWIND

The pulling drum on the Wagner-Smith T-1DP-1140 is designed to levelwind the wire rope without the assistance of the hydraulic Levelwind. The dual cylinder levelwind is intended to be used as a back-up mechanism only. As stated above, the wire rope on the pulling drum should wrap automatically. Should the wire rope fail to wrap properly, the Levelwind should be used to get the unit back on track.

CAUTION: UNIT MUST BE LINED UP WITH THE PHASE BEING PULLED TO ENSURE PROPER SPOOLING OF THE CABLE

Once the rope begins winding properly, use of the dual cylinder levelwind can be discontinued unless the rope starts winding incorrectly again.

Levelwinding of the wire rope onto the drum is controlled by the operator via a valve (Fig. 7) in the operator’s control panel which operates the cylinders (Fig. 8) controlling the levelwind (Fig. 9).



Figure 7:
Levelwind Control



Figure 8: Fairlead
Cylinder



Figure 9: Fairlead
(Levelwind)

SECTION “D”

DESCRIPTION OF INDIVIDUAL FUNCTIONS

FREEWHEELING PAY-OUT FEATURE

Each reel drive line has a mechanical hydraulic motor disengaged (Fig. 10) to allow for freewheeling payout of pulling line. The disengagement is controlled by the hydraulic cylinder with a control valve (Fig. 11) located on the operator stands and payout tension is regulated via a band brake controlled by the hand pump (Fig. 12A) and flow control valve (Fig. 12B).

NOTE: The engine must be running to properly freewheel the unit. If not, the Levelwind will not track properly and the wire rope could be damaged.



Figure 10: Hydraulic Motor



Figure 11: Shifter Handle

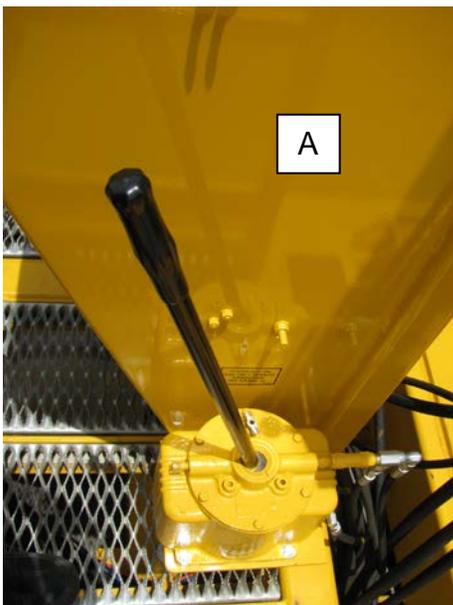
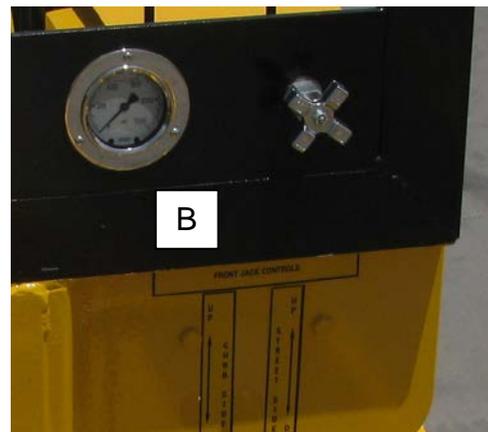


Figure 12: Band Brake Control



SECTION “D”

DESCRIPTION OF INDIVIDUAL FUNCTIONS

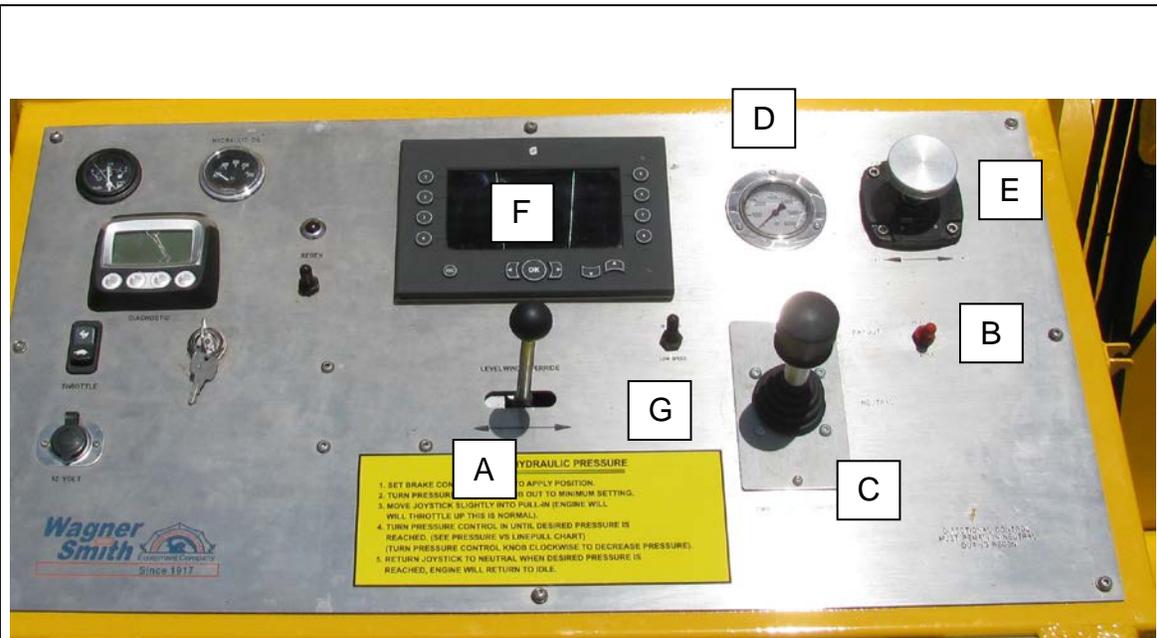


Figure 13: Control Panel

Console Control Functions:

- A. **Level wind Directional Control:** Manually controls the direction and speed of the level wind to either the right or left.
- B. **Brake Controls:** The “Brake toggle” functions are; to be applied during the hydraulic system pressure setting, to be applied after the pull-in or pay-out mode is stopped as a safety measure so the reel will not turn accidentally. In case of emergency **ONLY**, this brake can be applied during pull-in or pay-out operations. **NOTE:** Continual use of this practice can and will cause damage and possible failure of the fail-safe brake.
- C. **Directional Control:** This controls the direction and speed either in the pull-in or pay-out mode. The further the handle is from neutral in either direction the faster the reel turns.
- D. **Hydraulic Pressure Gauges:** These gauges indicate system pressure and are used in conjunction with the pressure control to set pulling pressure.
- E. **Hydraulic Pressure Controls:** These controls are to set and adjust the hydraulic pressure during the pull-in mode of the conductor. To increase the hydraulic pressure turn clockwise and to decrease turn counterclockwise.
- F. **Graphic Display:** Displays pump displacement, drum speed & distance pulled
- G. **Hi Speed/ Lo Speed:** enables Lo torque at high speeds and a higher torque at lower speeds.

SECTION “D”

DESCRIPTION OF INDIVIDUAL FUNCTIONS

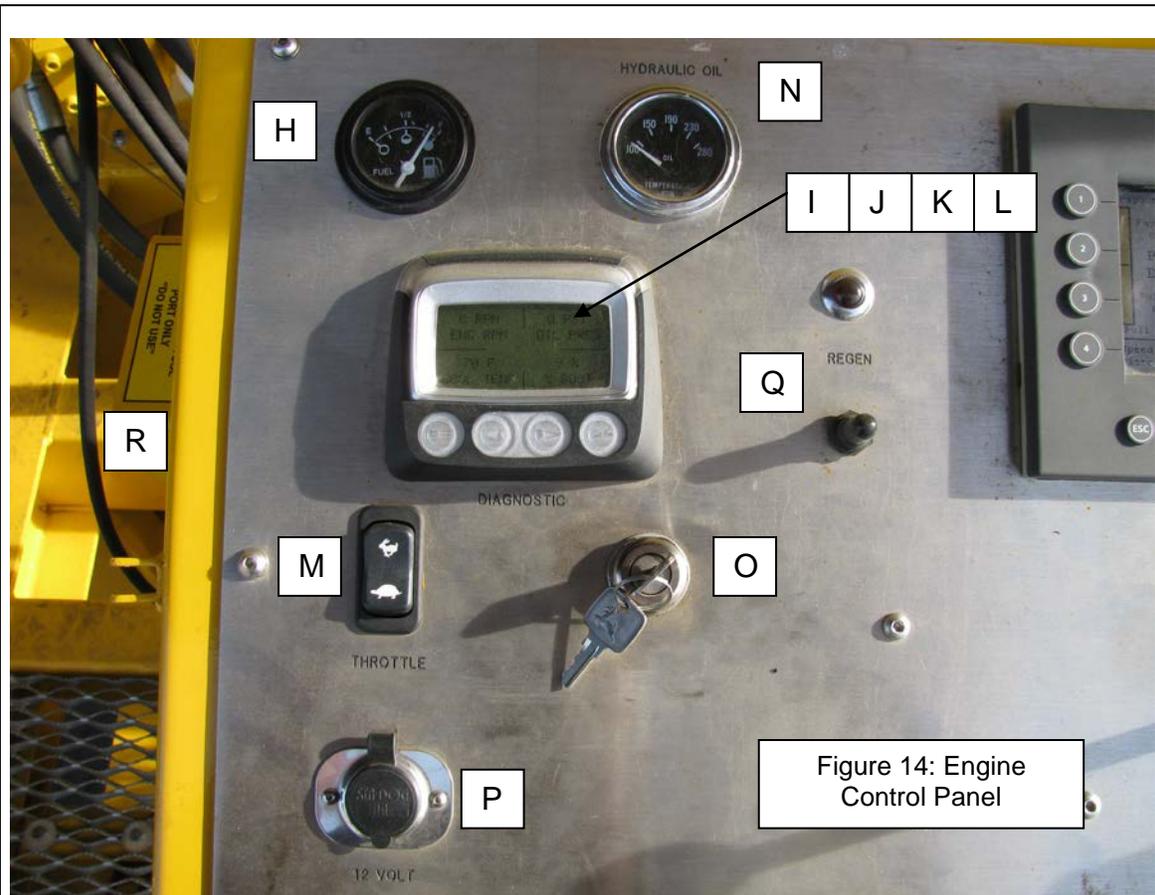


Figure 14: Engine Control Panel

Engine Control Gauges:

- H. **Fuel Gauge:** Indicates amount of fuel in the tank
- I. **Ammeter:** Indicates if the alternator is charging the battery or electrical system.
- J. **Oil Pressure Gauge:** Indicates engine oil pressure with low oil shut down.
- K. **Coolant Temperature Gauge:** Indicates engine coolant temperature with low coolant – high temperature shut downs.
- L. **Tachometer/Hour meter:** Indicates engine rpm’s and hours while operating.
- M. **Throttle:** This control can be used to increase or decrease the engine’s RPM (speed). Push to rabbit to increase speed and the turtle to decrease RPM.
- N. **Hydraulic Oil Temp Gauge:** Monitor oil temperature in system oil reservoir.
- O. **Key Switch:** An ignition switch that has a to the far left position, “Off” position is next, then “On” is the position that the key stays in while the engine is running, “Start” position is far to the right.

CAUTION: Ensure the shutters on the heat exchanger are open when unit is operating.

- P. **12 Volt Auxiliary Power Connector:** Can be used to plug in 12 volt DC auxiliary devices.
- Q. **Regen light/ switch:** Light indicates Regen is in use. Press switch to start Regen.
- R. **Plus+1 Service Port:** Do not use for service of Plus+1 only.

SECTION "E" OPERATIONS

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	PERFORM DAILY PREVENTATIVE MAINTENANCE	E - 4
	HYDRAULIC PAYOUT OF PULLING LINE	E - 4
	FREEWHEELING PAY-OUT OF PULLING LINE	E -- 5
	PULLING	E - 6-8

SECTION “E” OPERATIONS

TOWING THE TRAILER

Towing Procedures:

Use a properly equipped and sized vehicle when towing this equipment. Always check to see that the hitch is secure and locked, air lines attached, and lighting/brake are connected to tow vehicle. Jacks are in the retracted position and locked. Any loose equipment or objects must be removed, tie down, or placed in a storage box, so not to become a hazard while the unit is being transported. Before leaving the yard, check brakes, running, turn, and brake lights on trailer. Tires should be inflated while cold for maximum payload capacity; tire pressure varies with tire sizes. **Note:** Sticker for tire pressure located near wheel wells.

Towing checklist:

- 1) Fifth Wheel Hitch secure and locked (Figure 1-C)
- 2) Air hoses attached (Figure 1-F)
- 3) Lighting and brake Pigtail attached (Figure 1-D)
- 4) Jacks in up and locked position (Figure 1-A)
- 5) Any loose objects removed from unit
- 6) Check operation of brakes
- 7) Check lighting (turning, running, and brakes) (Figure 1-E)
- 8) Tires and tires air pressure (Figure 1-B)

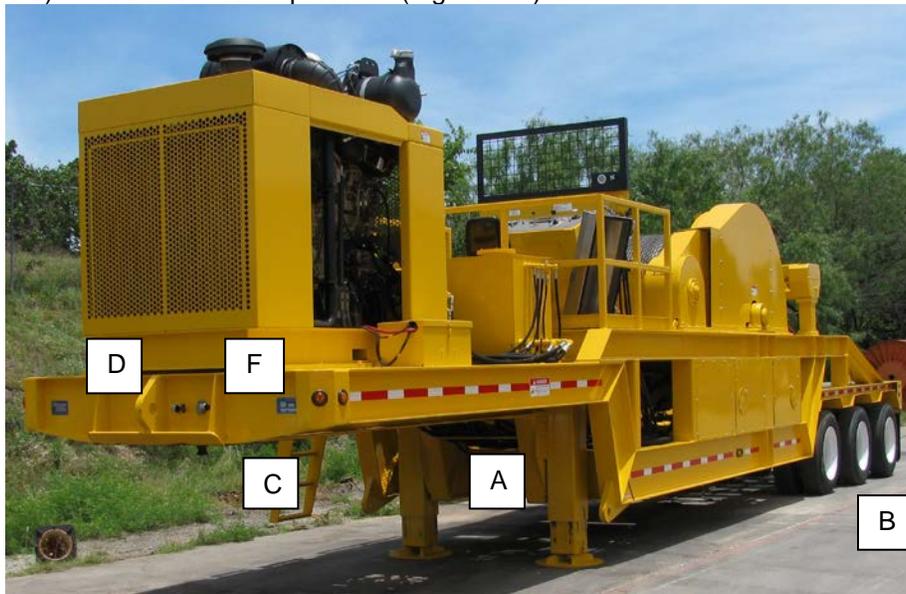


Figure 1: T-1DP-1140

SECTION "E"

OPERATIONS

FIELD SETUP

Position the trailer in line with the first pole and at least one and a half (1-1/2) times the distance from the pole or tower, as it is high (Example: If the utility pole or tower is 45 feet above the ground. The trailer should be positioned approximately 65 – 75 feet from the base of the pole.). This will give a good fleet angle from the stringing block to the puller or tensioner and will help decrease the line pull. After you position the trailer, leave the unit either attached to the tow vehicle or anchor it securely. Lower the jacks to stabilize and level the unit. **Ground the unit** properly to prevent the unit from becoming electrically energized and cause operator injury. Each unit has grounding bars already welded to the trailer for proper additional grounding attachments. Unit should be grounded to IEEE or your company's standard procedures.

FIELD SET-UP CHECKLIST:

- Locate the unit on as level ground as possible. Line it up with the conductor to be pulled.
- Distance from utility pole or tower should be a minimum of 1½ times the height.
- Level the unit as follows:
 - 1) Lower the tongue of the trailer
 - 2) Raise the jacks until the trailer is level (Figure 1-A).
 - 3) Anchor the trailer securely.
 - 4) **"Ground the unit"** to prevent operator injury should the unit become electrically energized.

SECTION “E” OPERATIONS

PERFORM DAILY PREVENTATIVE MAINTENANCE

- Before starting the engine check:
 - a. Engine oil level
 - b. Engine fuel level
 - c. Hydraulic system oil level
 - d. The hydraulic oil shutoff valve is open, turned fully clockwise
 - e. Hydraulic oil system pressure gauge reads zero
- After starting the engine check:
 - a. Hydraulic charge pressure gauge reads 350 PSI with directional control lever in the neutral position.
 - b. Check for any fluid leaks.
 - c. If there are any unusual noises, shut down engine immediately.
- After engine shutdown check:
 - a. For any fluid leaks
 - b. Loose nuts and bolts
 - c. Hydraulic oil reservoir filler cap in place and secure.

HYDRAULIC PAYOUT MODE

To start the hydraulic payout mode make sure the entire field set-up procedure has been completed. Be sure that the reel drive clutches are in the engaged position, if not use the engine driven hydraulics to spin the clutches until they are aligned. Apply the toggle brake and allow enough time for both the engine and hydraulic system oil to warm to operating temperature. Increase the engine RPM and release the toggle brake. Move the directional control handles slightly into the payout position to start paying out the pulling rope. The directional control handles control speed for payout.

Summary of Hydraulic payout

- 1) Engage reel drive clutches
- 2) Apply toggle brake
- 3) Start engine
- 4) Increase engine RPM
- 5) release toggle switch brakes
- 6) Move directional control handles into the payout position slowly.

SECTION "E" OPERATIONS

FREEWHEELING PAY OUT OF PULLING LINE

The freewheeling mode of the **PULLER** is to help pullout and install the pulling rope through the stringing blocks.

NOTE: THE ENGINE MUST BE RUNNING TO OPERATE THE MACHINE IN FREEWHEEL MODE. FAILURE TO FOLLOW THIS INSTRUCTION WILL RESULT IN INPROPER LEVELWIND OPERATION AND POSSIBLE CABLE DAMAGE.

To freewheel, the reel drum for payout of line, tighten the overspin drum brake using the hand pump on the control panel. Next, disengage the jaw clutches (Fig. 3) with their individual handles (Fig. 4). Now control the payout tension by using the hand pump (Fig. 5A) and flow control valve (Fig. 5B). Turn the T-handle clockwise to close the flow and counter-clockwise to open the flow.

Summary of Freewheeling Mode

- 1) Start Engine
- 2) Apply over-spin brake
- 3) Disengage jaw clutches
- 4) Pull the pulling rope off the reel



Figure 3 Reel
Drive Jaw Clutch



Figure 4
Control Valve
Handles

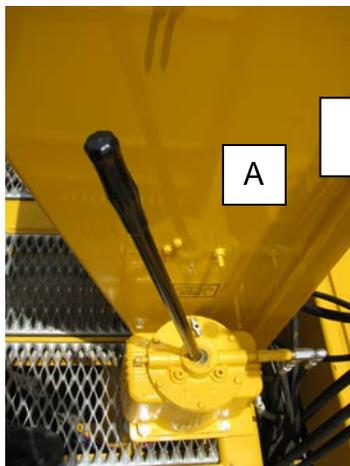
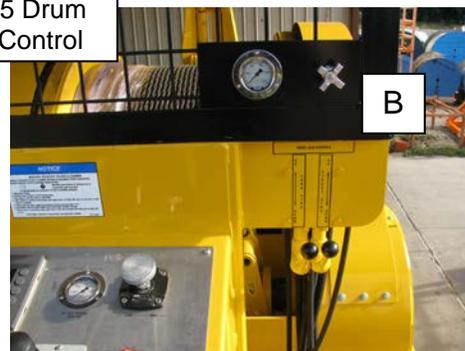
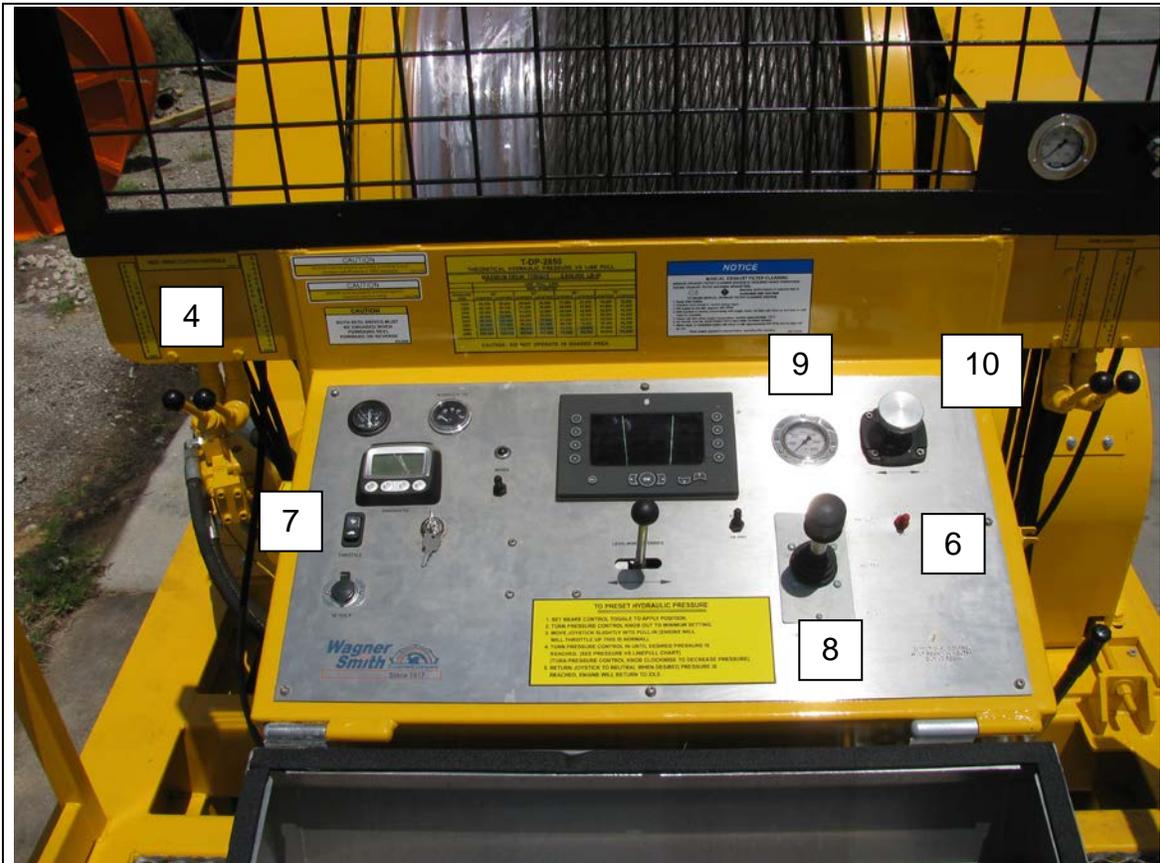


Figure 5 Drum
Brake Control



SECTION “E” OPERATIONS



PULLING

When operated as a puller the unit is to pull the conductor against the resistance of a tensioner at the opposite end of the set-up. The **PULLER** handles the speed and pull of the conductor. The **TENSIONER** on the other end is in control of the amount of sag or tension on the conductor. This is accomplished by increasing or decreasing brake or hydraulic pressure on the bullwheels or drum. The tensioner can slow down or stall out a properly adjusted puller at any time during a pull.

Before starting the engine, please read the engine manual – Description of Individual Functions. A thorough understanding of each individual function of this unit will be of great value, and particularly so to the inexperienced operator. Due to the Wagner-Smith hydraulic drive system, the unit is simple to operate and has been engineered to provide the utmost in both safety and operating convenience.

- a. **DO NOT** allow contamination of any kind (dirt, water, etc.) to enter the hydraulic fluid reservoir.
- b. **DO NOT** operate the unit without adequate grounding. Grounding lugs are provided for this purpose.
- c. When starting the engine, the reel drive directional control lever should be in the neutral position, and the system brake should be set.

To prepare for pulling, perform the procedures outlined in the field set up paragraph (page E-3). Apply the toggle brake (Fig. 6) before starting the engine. To engage the reel drive jaw clutch(s) (Fig. 3), start the engine and pull the directional control lever(s) (Fig. 8) slightly into the pull-in position to properly align the clutch jaws and engage with the shifter control lever (Fig. 4) until fully engaged and locked. Allow the system adequate time to warm up.

- a. Bring the engine RPM up to the governed speed (Fig. 7).
- b. Pull the directional control lever(s) (Fig. 8) slightly into the pull-in position.

SECTION “E” OPERATIONS

- c. Check the hydraulic pressure as indicated by the system pressure gauge (Fig. 9).
- d. First raise pressure to the maximum allowable, then adjust the pressure to 500/700 PSI (to raise pressure rotate the pressure control knob (Fig. 10) clockwise; to lower the pressure rotate the pressure control counter-clockwise). This will be the starting line pull pressure. Refer to the on-machine pressure vs. line pull chart to determine actual theoretical pulling force.
- e. Return the directional control lever(s) (Fig. 8) to the neutral position.

NOTE: When pulling or tensioning with the machine, ensure both jaw couplers are engaged and the street side and curb side pressures are set as close together as possible.

NOTE: Always refer, and set, to the operating pressure vs line pull chart before starting and operating. This allows the puller to stall out before damaging or over-stressing the conductor or utility poles if the pulling rope or conductor gets hung up.

NOTE: Before completing the next step, verify the system brake is set to avoid accidental drum rotation and injury while inserting the pulling rope into the levelwind.

Center your levelwind, by using the levelwind directional control on the console, and open the top fairlead roller and insert the pulling rope. Close and secure the fairlead, and position the levelwind to where the pulling rope is coming off the reel. Use the Levelwind Directional Control on the console to control the levelwind (if needed) during the pull-in mode. The levelwind helps wind the pulling rope onto the pulling reel in an even manner. Return the directional control handle into the neutral position.

When ready to pull, signal the tensioner, release the system brakes (Fig. 6) and pull the directional control levers (Fig. 8) slightly into the pull-in position. The reel will start to rotate and take up the slack in the line. It is recommended that you pull slowly until the conductor is through the first set of blocks and then signal or radio the tensioner to see if everything is OK before increasing the line speed. If the hydraulic pressure is not high enough, the unit will stall. If this happens, increase the pressure settings (rotate pressure control (Fig. 10) clockwise) until the reel starts to rotate, then increase the pressure setting $\frac{3}{4}$ to 1 additional turn. This will allow the puller to stall before damaging a tower or over stressing the conductor in case the line becomes fouled. The line speed is directly proportional to the distance the directional control levers (Fig. 8) are moved toward the pull-in position.

As the reel fills with rope and the weight of the conductor increases, the hydraulic pressure will increase and the line speed will begin to slow down. When this happens, increase the pressure setting enough to maintain pulling speed, the preset pressure can be monitored at anytime during a pull by rotating the pressure control counter-clockwise until the reel starts to slow down, then increase, rotate pressure control $\frac{3}{4}$ to 1 turn clockwise. This will allow a safety margin between the actual pressure required for the pull and the maximum allowable system pressure.

If the unit is stopped during a pull, it may be necessary to increase the pressure slightly to re-start the pull. Always operate near the minimum pressure required to make the pull.

As the pulling rope and conductor comes to the last span and/or last stringing block, signal or radio the tensioner that you are slowing down and stopping. Once stopped apply the palm brakes (Figure 6). The **TENSIONER** will increase the pressure on the brakes so the bullwheels will not rotate or pay-out any more conductors.

The Wagner-Smith 1DP-1140 is also equipped with an auxiliary hydraulically powered heat exchanger to cool the hydraulic oil. It is necessary to maintain the oil temperature between 140 and 180 degrees Fahrenheit. This temperature is controlled by the fan speed which can be adjusted on the control panel (Figure 11)

SECTION "E"

OPERATIONS

Summary for Puller

- 1) Verify field set-up has been properly completed
- 2) Engage reel drive clutches
- 3) Apply palm brakes
- 4) Start engine
- 5) Set the System Hydraulic Pressure
 - a) Increase the engine rpm's to operation speed
 - b) Move directional control handles slightly into the pull-in position
 - c) Check Maximum system pressure by turning the pressure control knobs clockwise and increase pressure to a maximum of 5500 psi.
 - d) Decrease system pressure to 800- 1,000 psi by turning the control knobs counter-clockwise.
 - e) Return directional controls to neutral position
- 6) Signal or radio the tensioner that the pull is starting
- 7) Release the palm brakes
- 8) Move the directional controls slightly into the pull-in position
- 9) Adjust hydraulic system pressure if the unit stalls or slow down accordingly.
- 10) As the pull ends, slow down by slowly pushing directional controls toward the neutral position. After the reel stops apply the palm brake.
- 11) Tensioner is to tighten down the brakes on the bullwheels or apply the toggle brakes.
- 12) Once conductor sag has been achieved, stop the reel and apply the toggle brakes. The directional control handles then can be positioned into neutral.
- 13) Conductor is to be terminated

SECTION "F"

ROUTINE MAINTENANCE

FIG	DESCRIPTION	PAGE #
	BEFORE STARTING ENGINE CHECK	F – 3...5
	AFTER STARTING ENGINE CHECK	F – 5...8
	DAILY INSPECTION	F – 8
	EACH 50 HOUR INSPECTION	F – 8
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SECTION "F"

ROUTINE MAINTENANCE



INTRODUCTION

The Wagner-Smith Company Model T-1DP-1140 is a self-contained trailer mounted drum type puller. This unit must be given regular care, and operated in accordance with instructions.

Since this unit has an advanced designed hydraulic system it is extremely important that the hydraulic system be kept clean. It is suggested that a good periodic preventative maintenance schedule be followed in maintaining this unit.

When receiving this unit, it should be checked for damage from shipping. Also the following checks should be made:

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ROUTINE MAINTENANCE

BEFORE STARTING ENGINE CHECK

1. All mounting bolts and nuts for tightness.
2. Check the engine oil level.
3. Do the following **BEFORE STARTING THE ENGINE** for the first time each day:
 - a) Check engine oil level on dipstick. Do not operate engine when oil level is below the ADD mark on dipstick. Add oil at filler cap as required, using seasonal viscosity grade oil. (See ENGINE OIL in Fuels, Lubrications, and Coolant Section for oil specification in engine manual in Section “J” of this manual.)

IMPORTANT: DO NOT add makeup oil until the oil level is BELOW the add mark.

NOTE: Always keep oil level within the crosshatch pattern on dipstick when operating engine. Oil levels anywhere within crosshatch are considered full.

4. Check coolant system level.
 - a) Check the coolant level when the engine is cold. Coolant level should be at bottom of filler neck. Fill the radiator with proper coolant solution if the level is low. (See RECOMMENDED ENGINE COOLANT in Fuels, Lubricants, and Coolant Section in engine manual in Section “J” of this manual).

CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns. Only remove the filler cap when the engine is cold or when cool enough to touch with bare hands. Slowly loosen the cap to first stop to relieve pressure before removing completely.

5. Check overall cooling system for leaks.
6. Check Fuel Filter
 - a) Periodically drain to remove water or debris and bleed the fuel system (See REPLACE FUEL FILTER ELEMENT, in Lubrication and Maintenance/600 hour/1 Year Section in engine manual in Section “J” of this manual.)
 - b) Refer to engine service manual for proper fuel system bleeding technique.
 - c) If the fuel system needs further bleeding of air, see BLEED FUEL SYSTEM in Service As Required Section, in engine manual in Section “J” of this manual.

IMPORTANT: Drain water into a suitable container and dispose of properly.

7. Check engine compartment.
 - a) Make a thorough inspection of the engine compartment. Look for oil or coolant leaks, worn fan and accessory drive belts, loose connections and trash buildup, and have repairs made as needed if leaks are found.
8. Inspect:
 - a) Radiator for leaks and trash buildup.
 - b) Air intake system hoses and connections for cracks and loose clamps.
 - c) Fan, alternator, and accessory drive belts for cracks, breaks, or other damage.
 - d) Water pump for coolant leaks.

NOTE: Wipe all fittings, caps, and plugs before performing any maintenance to reduce the chance of system contamination.

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ROUTINE MAINTENANCE

9. Check Hydraulic System Oil Level (Fig. 1).
 - a) Oil level must be on full mark before daily startup.
 - b) Operating oil temperature should range in the following:
 - i. 40° F Intermittent, cold start
 - ii. 220° F Continuous
 - iii. 240° F Intermittent



Figure 1 Hyd. Oil Level Gauge W/Temp Indicator



Figure 2 Oil Reservoir Shutoff Valve

10. Hydraulic Reservoir Shutoff Valves are Open (Fig. 2)
 - a) The shutoff valves (Fig. 2) are located in the suction line of the pump, between the reservoir and filter. Turn the valve handles clockwise until fully opened. When the system needs service turn the valve handles counter-clockwise until fully closed.
11. Check Fuel Gauge (Fig. 3)

Figure 3 Fuel Gauge



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ROUTINE MAINTENANCE

12. Hydraulic System Gauges Should Read Zero (Fig. 4)

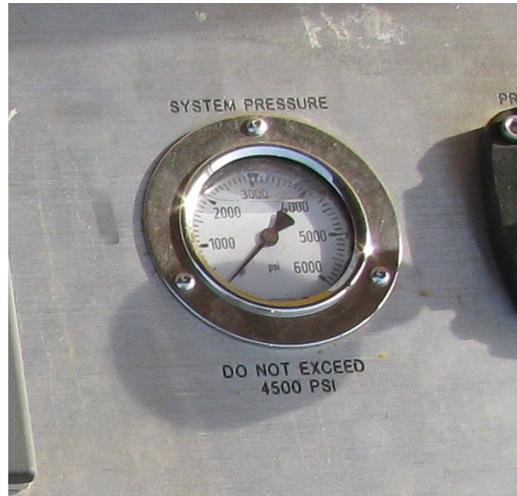


Figure 4 System Pressure Gauges

AFTER STARTING ENGINE CHECK

1. For any fuel leaks.
2. For any hydraulic oil leaks.
3. Hydraulic system gauge.
 - a) Hydraulic system pressure gauges (Fig. 4) should read at about 290 PSI with directional control lever (Fig. 5) in the neutral position.



Figure 5 Directional Control Lever in the Neutral Position

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ROUTINE MAINTENANCE

- b) Hydraulic system pressure gauges (Fig. 4) should read at about 1000 PSI with directional control lever (Fig. 6) in the payout position and the brakes set (Fig. 7).



Figure 6 Directional Control Lever in the Payout Position



Figure 7 Brake Control

- c) With the brakes set (Fig. 7) and the directional control lever (Fig. 8) in the pull-in position, and using the pressure controls (Fig. 9) to change the pressure, it should be adjustable from 500 – 5,500 PSI.



Figure 8 Directional Control Lever in the Pull-in Position

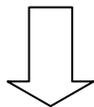


Figure 9 Hyd. Pressure Control

- d) With the brakes released (Fig. 7), place the directional control lever (Fig. 8) slightly to the pull-in position, the reel drive will rotate toward the pull-in direction slowly. Move the directional control lever further into the pull-in position the speed of the reel drive will increase. Returning the directional control lever (Fig. 5) to the neutral position will stop the reel drive from rotating. Place the directional control lever (Fig. 6) into the pay-out position, the reel drive will rotate in the opposite direction. In the event that the reel will not completely stop when the levers are returned to the neutral position see Sauer Danfoss Service Manual (520L0560) in Section "J" of this manual for adjusting instructions.
- e) With pumps in full pull-in, verify the pressure after the filter gauges (Fig. 10). When pressure drops to 250 PSI, the filter must be serviced.

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ROUTINE MAINTENANCE



Figure 10
Filter Gauge

4. Check Drive Chain and Sprockets.
5. Chain tension.
 - a) Chains should be installed fairly tight with only a small amount of slack. After the first several weeks of operation it is advisable to adjust the centers. After this adjustment, with proper care and lubrication, the roller chain will give long service without undue elongation or wear.
 - b) The chain should be lubricated with a **Synthetic lubricant with molybdenum disulfide anti-wear additive.**
6. Sprockets in alignment (Fig. 11).
 - a) Sprockets must be aligned accurately. This can best be accomplished by checking with a straight edge along the finished sides of the sprockets.



Figure 11 Drive
Sprocket and Chain

SECTION "F"

ROUTINE MAINTENANCE

A DAILY INSPECTION SHOULD BE MADE EACH DAY THE UNIT IS IN USE

1. Before starting the engine check:
 - a. Engine oil level
 - b. Engine fuel level.
 - c. Hydraulic system oil level (Fig. 1).
 - d. The hydraulic oil shutoff valves are open, turned fully clockwise (Fig. 2).
 - e. Hydraulic oil system pressure gauges read zero (Fig. 4).
2. After starting the engine check:
 - a. Hydraulic system pressure gauges (Fig. 4) read 290 PSI with directional control levers (Fig. 5) in the neutral position.
 - b. Check for any fluid leaks.
 - c. If there are any unusual noises, shut down engine immediately.
3. After engine shutdown check:
 - a. For any fluid leaks.
 - b. Loose nuts and bolts.
 - c. Hydraulic oil reservoir filler cap in place and secure.

EACH 50 HOUR INSPECTION

1. Check for water in hydraulic oil (water will cause the oil to look milky).
2. Gear oil level in gear reducers and pump drive box.

EACH 100 HOUR INSPECTION

1. Perform 50 hour inspection.
2. Refer to engine manual for break-in service in Section "J" of this manual.
3. Refer to engine manual interval chart in Section "J" of this manual.
4. Check battery fluid level (Fig. 12).



Figure 12
Battery

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ROUTINE MAINTENANCE

- Because the battery is the heart of the electrical system, periodic checks are necessary to keep it functioning properly. Keep the battery fluid level to the bottom of the filler neck with distilled water. If water is added during freezing weather, run the engine 20 to 30 minutes before shutting it off. This mixes the added water with the electrolyte and will prevent it from freezing and damaging the battery. Have the battery charge checked regularly during extreme cold weather.
- Keep battery clean by wiping it with a damp cloth. Keep all connections clean and tight. Remove any corrosion, and wash terminals with a solution of 1 part baking soda and 4 parts water. Tighten all connections securely.
- Coat the battery terminals and connectors with a mixture of petroleum jelly and baking soda to slow corrosion.

CAUTION: Keep fire away from the top of open battery cells. Combustible gas is always present.



Figure 13 Reel
Shaft Bearings



Figure 14 Reel
Shaft Bearings

EACH 200 HOUR INSPECTION

1. Perform 100 hour inspection.
2. Grease Reel Shaft Bearings (Fig. 13 & 14).

The amount of grease that the bearing will take for a particular application can only be determined by experience. If excess grease is applied to the bearing it will cause overheating. It will be necessary to remove the grease fitting to permit excess grease to escape. When establishing a lubrication schedule, note that a small amount of grease at frequent intervals is preferable to a large amount at infrequent intervals. **Use a No. 2 Lithium base grease or equivalent.**

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ROUTINE MAINTENANCE

EACH 250 HOUR INSPECTION

3. Change Engine Oil and Replace Filter (See John Deere engine manual for proper oil change procedure)

NOTE: Change engine oil and filter for the first time after 100 hours maximum of initial operation, then every 250 hours thereafter.

IMPORTANT: Filtration of oils is critical to proper lubrication. Always change the filter regularly. Use a filter meeting the John Deere performance specifications. (John Deere Part Number T19044).

Use the correct John Deere engine oil. (See DIESEL ENGINE OIL in Fuels, Lubricants, and Coolant section in engine manual in Section “J” of this manual.

4. To determine the correct oil fill quantity for your engine, see ENGINE CRANKCASE OIL FILL QUANTITIES in the Specification section in the engine manual in Section “J” of this manual.

NOTE: Crankcase oil capacity may vary slightly. ALWAYS fill crankcase to full mark on dipstick. DO NOT overfill.

IMPORTANT: Immediately after completing any oil change, crank the engine for 30 seconds without permitting the engine to start. This will help insure adequate lubrication to engine components before the engine starts.

EACH 600 HOUR/1-YEAR INSPECTION

1. Clean the crankcase vent tube.
 - a. Remove and clean crankcase vent tube
 - b. If you operate the engine in dusty conditions, clean the tube at shorter intervals.
 - c. Install the vent tube. Be sure the O-ring fits correctly in the rocker arm cover for the elbow adapter. Tighten the hose clamp securely.
2. Check Air Intake System.

IMPORTANT: The air intake system must not leak. Any leak, no matter how small, may result in engine failure due to abrasive dirt and dust entering the intake system.

- a. Inspect all intake hoses (piping) for cracks. Replace as necessary.
- b. Check clamps on piping which connect the air cleaner to the engine. Tighten the clamps as necessary. This will help prevent dirt from entering the air intake system through loose connections causing internal engine damage.
- c. Replace Air Cleaner Element.

IMPORTANT: ALWAYS replace air cleaner element when it is visibly dirty or torn.

3. Replace Fuel Filter Element.
 - a. Thoroughly clean fuel filter assembly and the surrounding area.

See John Deere Engine Manual for proper service instructions

NOTE: For further service intervals see page 41 for LUBRICATION AND MAINTENANCE SERVICE INTERVAL CHART in engine manual in Section “J” of this manual.

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ROUTINE MAINTENANCE

HYDRAULIC SYSTEM

4. Fluid and Filter Maintenance.
 - a. Change Hydraulic Fluid Filter (Fig. 15).
 - b. It may be necessary to change the fluid more frequently than the above intervals if the fluid becomes contaminated with foreign matter (dirt, water, grease, etc.) or if the fluid has been subjected to temperature levels greater than the recommended maximum. Never reuse fluid.

It is recommended that the fluid and filter be changed every 2,000 hours.

- c. No shutoff is required with this type of filter. However, a pan should be placed under the filter to catch any drips when servicing the filter.
- d. The filter should be changed whenever the fluid is changed or whenever the filter indicator shows that it is necessary to change the filter.

Hydraulic fluid for all Wagner-Smith hydraulic systems is **Chevron HDZ-46**.

Consult Wagner-Smith before using any other hydraulic fluids. **CAUTION: DO NOT Mix Hydraulic Fluids.**



Figure 15 Hyd.
Oil Filter

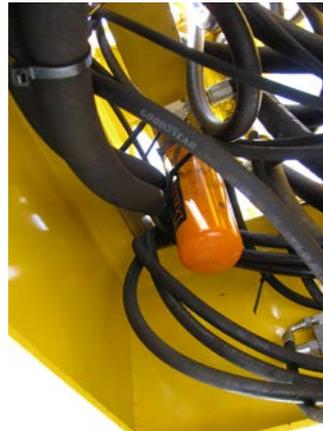


Figure 16 Hyd.
Charge Oil Filter

PUMPS AND MOTORS SERVICING

For servicing the Sundstrand Pump and Motor see Sauer Danfoss Service Manual (520L0560 Rev. A) in section “J” of this manual.

WARRANTY

MANUFACTURED PRODUCTS

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Manufacturer's Warranty Against Defective Materials or Workmanship

The manufacturer warrants each new piece of equipment (including original equipment placed thereon by the manufacturer), and all parts manufactured by it to be free from defects in material or workmanship under normal use and service, its obligation under this warranty to be limited to making good at its factory any part or parts thereof which shall, within 180 days after the equipment is put in service or 1 year after the date of sale, whichever is first to occur, be returned, with transportation charges prepaid and which its examination shall disclose to its satisfaction to have been thus defective. **THIS WARRANTY BEING EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS, AND ALL OTHER OBLIGATIONS OR LIABILITIES ON ITS PART, AND IT NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR ITS ANY OTHER LIABILITIES IN CONNECTION WITH THE SALE OF ITS EQUIPMENT.** This warranty shall not apply to any equipment which shall have been repaired or altered by any other than an authorized **WAGNER-SMITH EQUIPMENT COMPANY** service representative in any way so as in the judgment of the manufacturer, to affect its stability and reliability, or which has been to misuse, negligence, or accident.

The manufacturer agrees to furnish to the purchaser any part or parts found so defective without expense to the owner of such equipment and will install said parts free of cost to the owner, at the manufacturer's plant in Burleson, Texas, or such other place closer to the location of the equipment, as may be designated by the manufacturer.

LIMITATION OF LIABILITY

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No representative of the manufacturer has authority to change this warranty on this contract in any manner whatsoever, and no attempt to repair or promise to repair or improve the equipment covered by this contract by any representative of the manufacturer shall waive any consideration of the contract, change, or extend this warranty in any manner whatsoever.

The warranty hereinabove is effective only if the purchaser reasonably maintains the equipment and it is kept lubricated and otherwise used according to the manufacturer's instructions.

THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESSED OR IMPLIED WARRANTIES OF THE MANUFACTURER, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.