BOWIE INDUSTRIES, INC

Bowie Aero-Mulcher
SG50S/SG50L/LD90T

Operators Manual

Serial No.:_____

Table of Contents

Forward

Bowie Industries, Inc. wishes to thank you for your purchase of the **Bowie Aero-Mulcher**. It has been manufactured after many years of research and development. We are confident that your new **Bowie Aero-Mulcher** will give you unfaltering service for many years making you a proud and satisfied owner. In order for this to happen we strongly recommend that you read this manual very thoroughly and see that your **Bowie Aero-Mulcher** is used and maintained in a proper way.

If you have any further questions regarding your **Bowie Aero-Mulcher** contact your dealer. When contacting your dealer be sure to have the following information available:

1.) Unit Model Number
2.) Unit Serial Number
3.) Engine Serial Number
4.) Engine Spec. Number

These numbers are located on your machine in the following places:

SG50S and **SG50T**

On the engine mounting plate and main frame.

LD90T

On the tool box lid and the main frame

Our company is the leader in the erosion control and landscaping industry. To serve your needs a score of national and international distributors are there to assist you in the sale and service of Bowie Erosion Control and Landscaping Equipment.

Bowie Industries, Inc

www.bowieindustries.com

Owen Meyer, President
Gary Meyer, VP/Engineer
Bob Jones, Sales Manager
Jimmy Terry, Parts Manager

Use this manual to familiarize yourself with the features of your new equipment

Introduction

By following the operating instructions and doing proper maintenance of your **Bowie Aero-Mulcher**, it will give you years of reliable and dependable service. So be sure that you read and carefully follow the instructions given in this manual. This manual provides information to models SG50S, SG50T, and LD90T **Bowie Aero-Mulcher**

Bowie Industries, Inc.

RESERVES THE RIGHT TO MAKE CHANGES IN DESIGN AND SPECIFICATIONS WITHOUT NOTICE.

READ CAREFULLY ALL THE INSTRUCTIONS

1.1 Unpacking

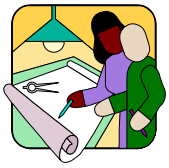
Your new **Bowie Aero-Mulcher** is shipped fully assembled, except that the battery will be disconnected. However make sure that prior to starting that all packaging materials are removed.

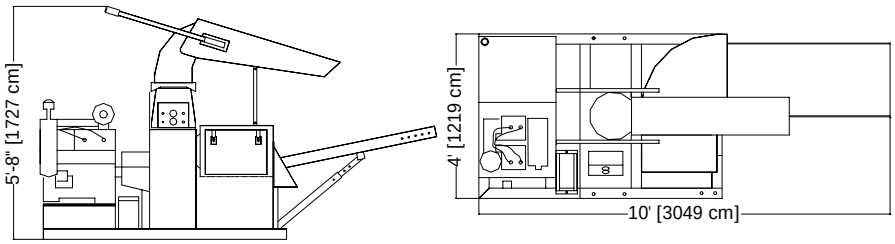
1.2 Getting Started

Perform the following operations:

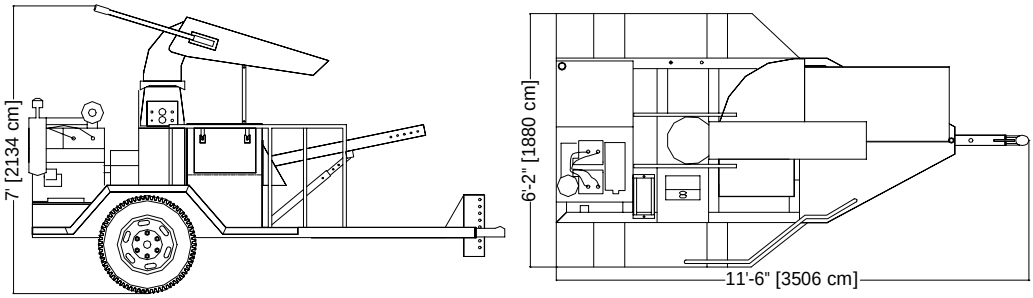
- 1. *Read* Operation Manual
- 2. Check engine oil level
- 3. Fill fuel tank
- 4. Trailer models tighten wheel lug nuts
- 5. Install and connect the battery

Specifications
Section 1

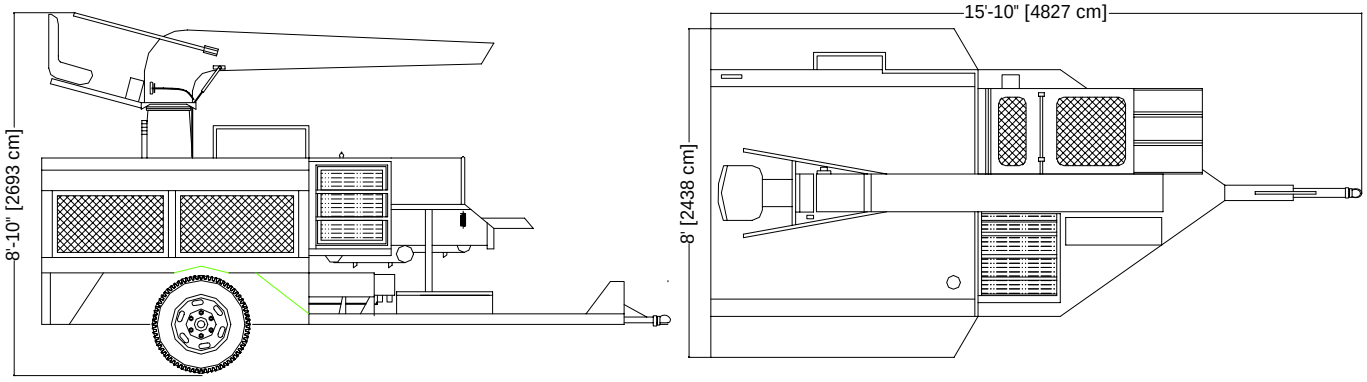




SG50S



SG50T



LD90T

Descriptions
Section 2

2.1 Feed System

Models SG50S and SG50T are equipped with a feed chute which require manual effort to push straw or hay into the beater chamber.
Model LD90T is equipped with a hydraulic powered feed assembly for feeding the beater chamber

REF. NO	DESCRIPTION	PART NO.
1	TENSION ADJUSTING	ECS25-1A
2	PILLOW BLOCK BEARINGS	ECS25-3
3	DRAG TEETH	ECS25-8
4	CHAIN FRONT/REAR	ECS25-4/ECS25-9
5	CROSSOVER RELIEF VALVE	ECS25-7A
6	HYDRAULIC MOTOR	ECS25-11
7	HYDRAULIC OIL FILTER	ECS45-3
8	HYDRAULIC OIL RESEVOIR	ECS45-1
9	HYDRAULIC PUMP	ECS45-4

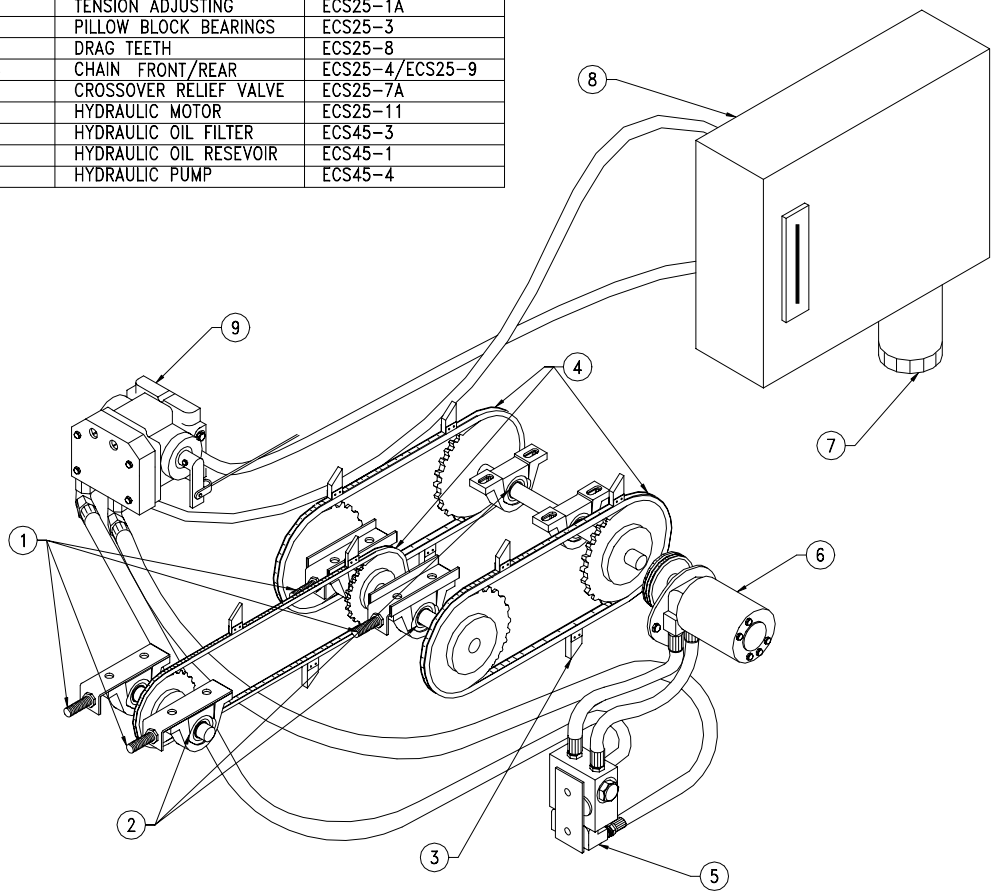


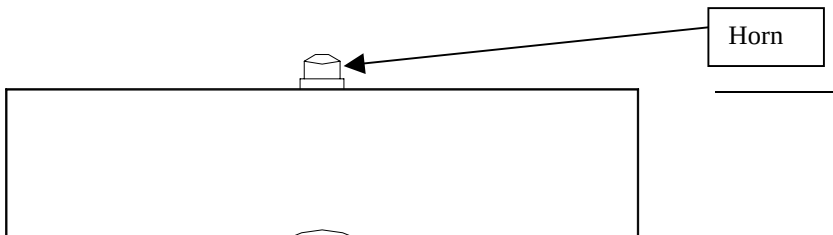
Fig 2.1 Hydraulic Feed Assembly

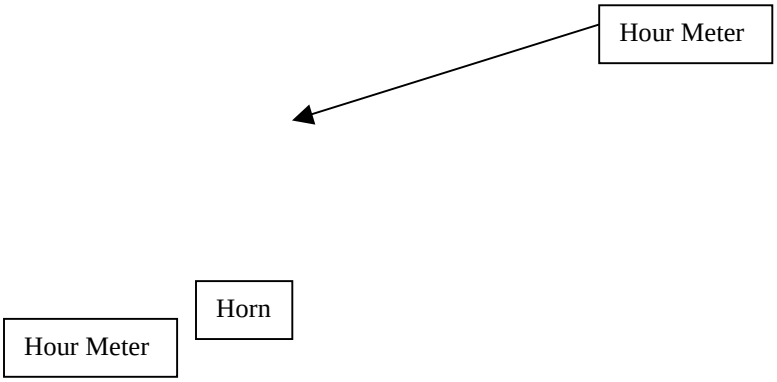
2.2 Engine and Power Take-Off

Models SG50S and SG50T are powered by an air cooled, W-4, 35 HP. gasoline engine directly coupled to the shredder system.
Model LD90T is powered by a John Deere Model 4045T water cooled, 115 HP. diesel engine. The engine drives the system through a power take-off.

2.3 Controls

Models SG50S and SG50T controls are; throttle, choke, starter switch and ignition switch
Model LD90T controls are; throttle, choke, starter switch and ignition switch. In addition to these controls there are controls for the automatic feed and the power take-off clutch. Both of these controls are located within easy reach of the operator when seated.

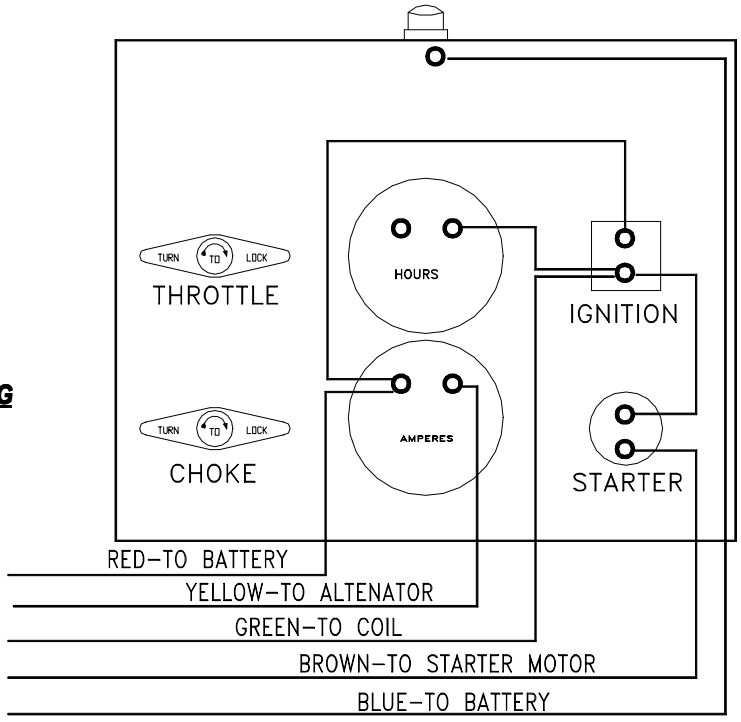


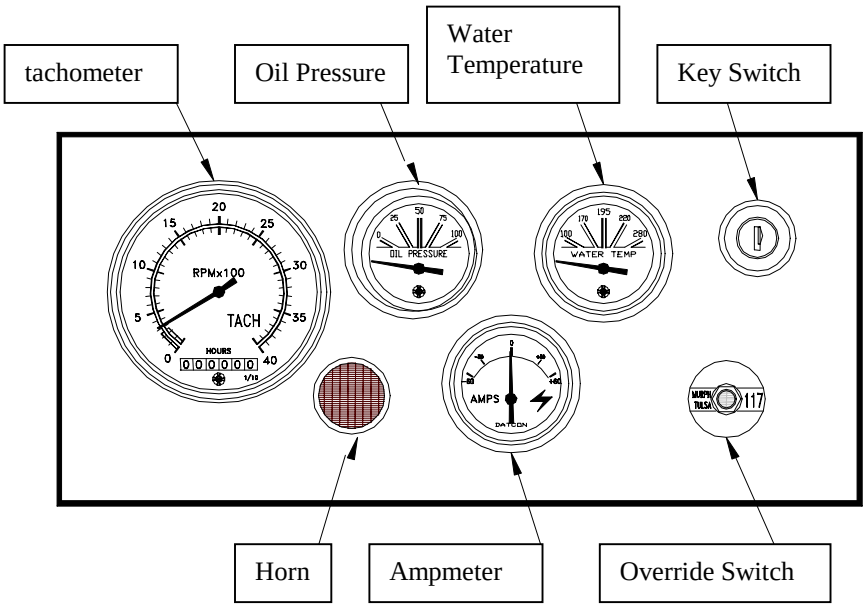


SG50S/SSG50T CONTROL PANEL

SG50S/SG50T CONTROL PANEL WIRING

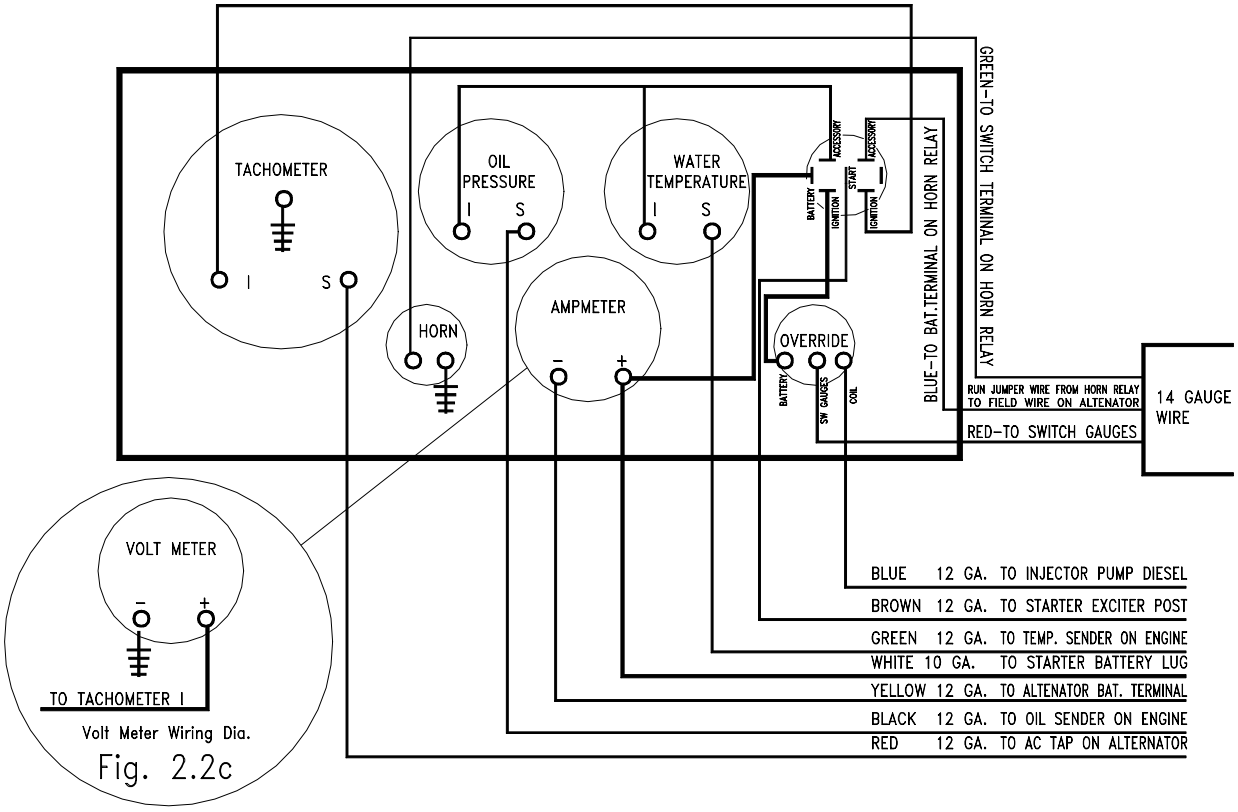
Fig 2.3a





LD90T CONTROL PANEL

Fig. 2.3b



LD90T CONTROL PANEL WIRING

2.4 Hydraulic System

Model LD90T is equipped with a hydraulic system to power the feed assembly. It consists of a belt driven manually controlled pump, reservoir, drive motor, and necessary connections.

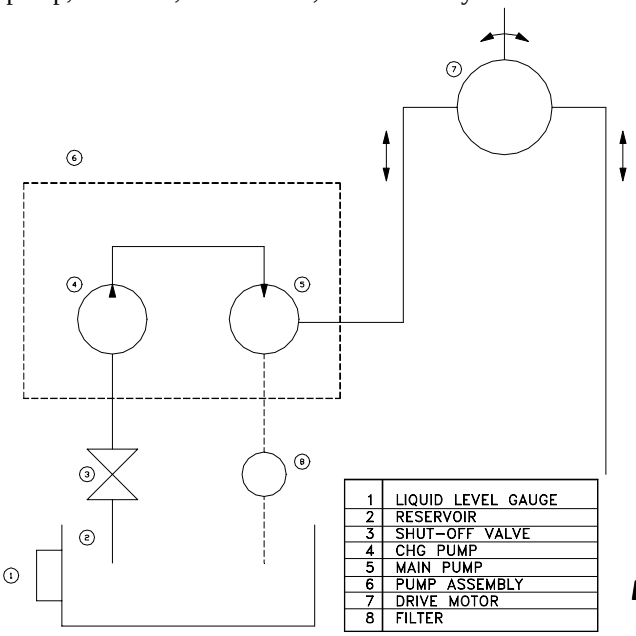


Fig. 2.4

2.5 Electrical System

Engine ignition and gauges (Fig. 2.3a, Fig. 2.3b)

Trailer mounted systems the running lights

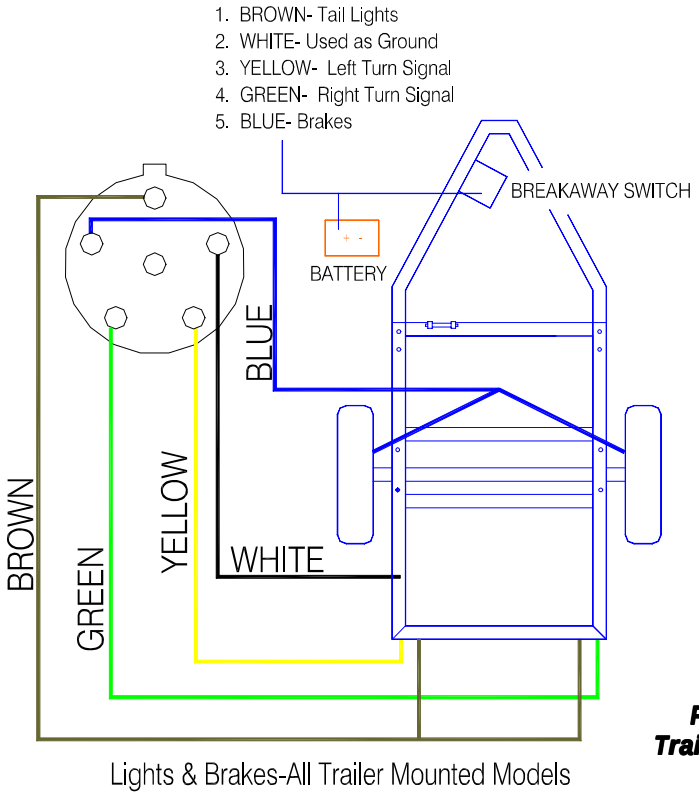
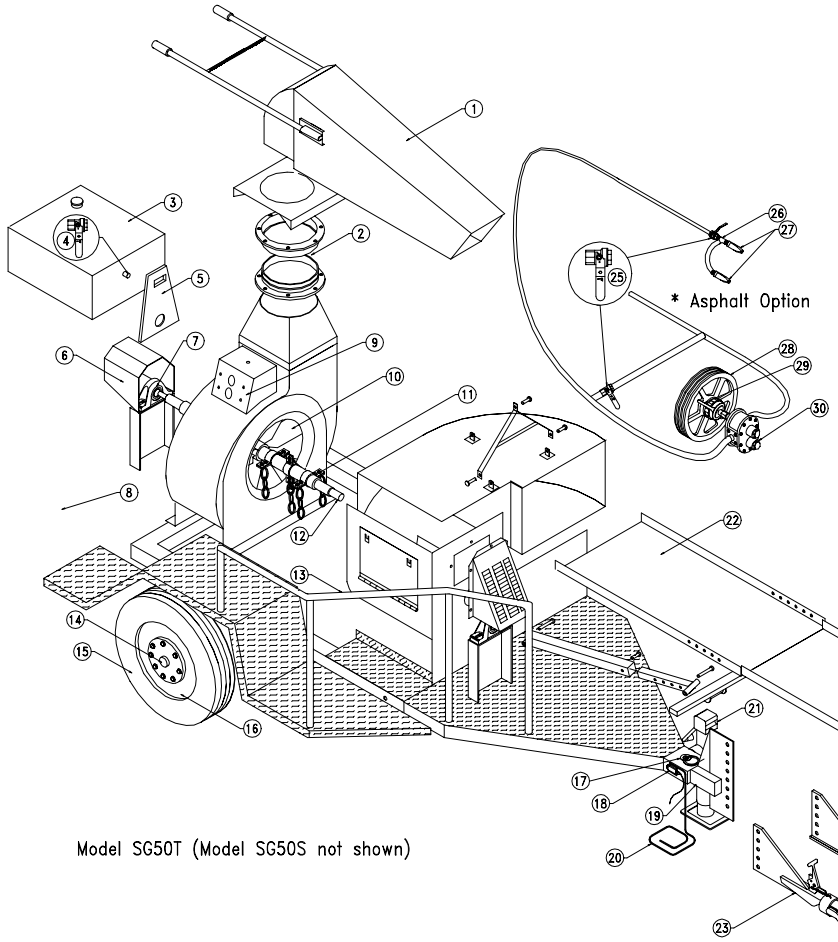


Fig. 2.5
Trailer Wiring

2.6 Fan and Beater

The fan and beater assemblies consists of a large fan and shaft (Fig. 2.6, ref. 7,10,11,12) to which hay and straw beater sets are attached. Models SG50S and SG50T are equipped with three sets of beaters. The fan and shredder assemblies on these models are direct coupled to the engine. Model LD90T is equipped with four sets of beaters. This model is equipped with a large pulley, which is belt driven from a power take-off.



REF. NO.	DESCRIPTION	PART NO.	REF. PAGE
1	NOZZLE ASSEMBLY	ECA204	
2	TURRET BEARING ASSEMBLY	ECA250	
3	FUEL TANK	ECA218	
4	BALL VALVE	ECA219	
5	LIFTING LUG	ECA203	
6	COUPLING COVER (Coupling Not Shown)	ECA202	
7	PILLOW BLOCK W/BEARING	ECA302	
8	ENGINE, Model W41770 Wisconsin gas	ECA201	
9	CONTROL PANEL ASSEMBLY	ECA206	
10	FAN ASSEMBLY	ECA303	
11	BEATER ASSEMBLY	ECS30-8	
12	SHAFT	ECA301	
13	GUARD RAIL	ECA207	
14	HUB/DRUM ASSEMBLY	ECA212	
15	TIRE	ECS349	
16	WHEEL	ECS350	
17	PIN/RETAINER, Hitch	ECA342	
18	SWITCH, Safety Breakaway	ECA345	
19	HITCH, Telescoping	DCA344	
20	WIRING CABLE, Lights & Brake Lights	ECA346	
21	JACK ASSEMBLY	ECA341	
22	FEED CHUTE	ECA208	
23	STANDARD TOUNGE HITCH ASSEMBLY	ECA383-1	
24	LUNETTE EYE TOUNG ASSEMBLY *Option	ECA209	
25	BALL VALVE *Asphalt Option	ECS65-1	
26	TEE *Asphalt Option	ECS65-2	
27	NOZZLE *Asphalt Option	ECS65-3	
28	SHEAVE *Asphalt Option	ECS65-6	
29	CLUTCH *Asphalt Option	ECS65-4	
30	BOWIE PUMP *Asphalt Option	ECS65-7	

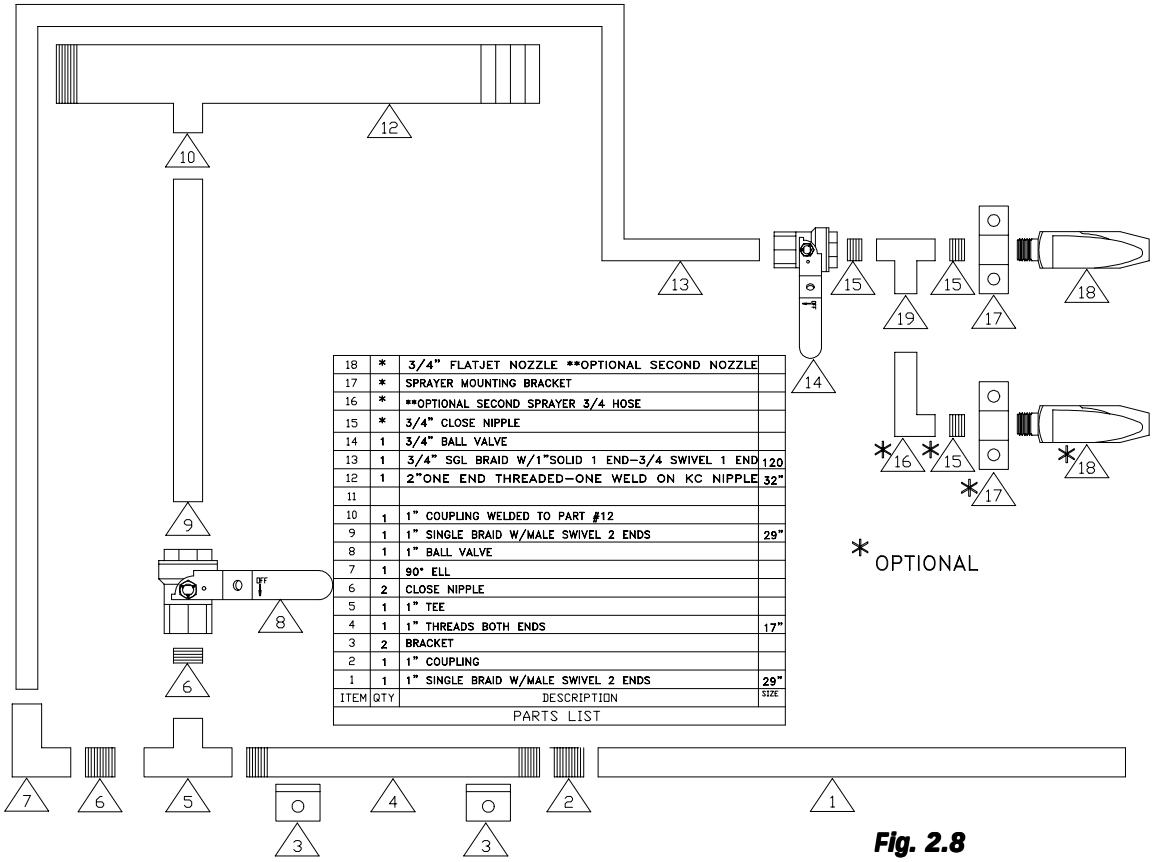
Fig. 2.6

2.7 Discharge

The discharge spraying chute rotates (Fig. 2.6, ref. 1, 2) in a full circle and can be elevated up to 65 degrees. Model LD90T includes a seat with safety belt for the spraying operator.

2.8 Asphalt Option

This option has a belt driven pump which will move asphalt from a separate supply, such as an adjacent vehicle through a large gate valve, the pump, and a ball control valve through either one or two nozzles at the end of the discharge spraying chute



ITEM	QTY	DESCRIPTION	SIZE
18	*	3/4" FLATJET NOZZLE **OPTIONAL SECOND NOZZLE	
17	*	SPRAYER MOUNTING BRACKET	
16	*	**OPTIONAL SECOND SPRAYER 3/4 HOSE	
15	*	3/4" CLOSE NIPPLE	
14	1	3/4" BALL VALVE	
13	1	3/4" SGL BRAID W/1"SOLID 1 END-3/4 SWIVEL 1 END	120
12	1	2"ONE END THREADED-ONE WELD ON KC NIPPLE	32"
11			
10	1	1" COUPLING WELDED TO PART #12	
9	1	1" SINGLE BRAID W/MALE SWIVEL 2 ENDS	29"
8	1	1" BALL VALVE	
7	1	90° ELL	
6	2	CLOSE NIPPLE	
5	1	1" TEE	
4	1	1" THREADS BOTH ENDS	17"
3	2	BRACKET	
2	1	1" COUPLING	
1	1	1" SINGLE BRAID W/MALE SWIVEL 2 ENDS	29"

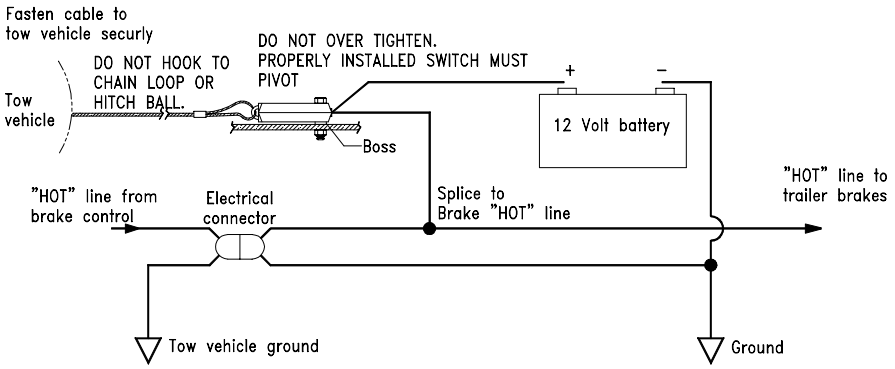
PARTS LIST

* OPTIONAL

Fig. 2.8

2.9 Trailer

Trailer mounted units are on a single axle trailer with pneumatic tires and D.O.T. specified running lights. Low profile suspension and heavy-duty hubs equipped with grease packed tapered roller bearings.
Breakaway safety switch.



Breakaway Switch

Fig. 2.9

Operating Instructions
Section 3

3.1 General

Locate all controls, gauges, the feed chute, and/or feed mechanism (Fig. 2.3a, Fig. 2.3b, Fig 2.6). Perform the required maintenance (see section 5). Check to be sure that the fan chamber is clear of foreign objects, such as parts boxes that may have been stored during shipment

3.2 Starting Engine

Models SG50S and SG50T have an ignition switch and a starter switch (Fig. 2.3a). Pull out ignition switch, set choke and throttle then press the starter switch. After starting adjust throttle and choke settings.

Model LD90T has a key start ignition switch (Fig. 2.3b) as well as a low oil/high temperature shut off protection switch. To start set the throttle and choke, press in override switch button and hold while turning the key start. Continue to press in override button approximately 5 to 10 seconds until oil pressure rises. Allow engine to warm up at a fast idle. Set engine speed at 2500 RPM for normal operations.

3.3 Operating Tips

3.3a Manpower

Two persons (excluding vehicle driver) can operate the Bowie Aero-Mulcher. A greater degree of efficiency can be achieved using more than two people' i.e. an operator, bale placement on chute, cutting and removal of wire or twine from bales.

3.3b Safety

Everyone with the exception of the operator should be located in front of the **Bowie Aero-Mulcher**.

3.3c Towing

The standard unit is equipped with a 2-5/16" ball hitch. Some units are equipped with an optional lunette eye with a pintle hook.

WARNING!

⇒ *Always secure close coupler on ball*
⇒ *Always secure hitch pin and retainer*
⇒ *Never tow over 30 MPH with tongue extended*
⇒ *Always connect safety chain to towing vehicle & breakaway switch*
⇒ *Use only Class IV 2-15/16" ball manufactured by Hammerblow or Bulldog*

Mulching
Section 4

4.1 Mulching

Models SG50S and SG50T have a manual feed system.

Model LD90T is equipped with an automatic power feed system. Before beginning mulching operations unlock the discharge extension support and deploy the feed ramp extension support and deploy the feed ramp extension. Then proceed as follows:

1. Set bale of material on ramp. Cut wires or twine and remove from bale

2. Model LD90T engage engine clutch. Engage automatic feed system by moving control handle forward located on the left-hand side of the operator. The further forward the handle is moved the faster the feed will operate. Reverse by pulling control handle to the rear.

3. Move material bale forward toward beater chamber. Maintain constant flow of material to chamber for optimum efficiency.

4
. Direct discharge-spraying chute toward area to be treated applying with an up down, side to side motion.

4.2 Preparation for Storage & Winterization

Short Term Storage (periods of less than a month)

1. Park and chock wheels to prevent inadvertent movement.
2. Disconnect battery cables. Model LD90T remove key.
3. In cold weather remove battery and store in warm dry place.

Long Term Storage (periods greater than one month)

1. Fill fuel tank and mix fuel with a fuel stabilizer
2. Remove battery
3. Cover machine in enclosure or with a tarp

Winterization

1. Change engine oil to proper weight and grade
2. Drain and fill radiator with proper mixture of ethylene and glycol and water.

Maintenance Instructions
Section 5

5.1 General

Following the maintenance schedule and procedures outlined herein along with periodic inspections your **Bowie Aero-Mulcher** will give you trouble free operations. This section of your manual includes:

5.2 Maintenance Instructions

5.2a Cleaning

It is necessary to keep the unit clean. Washing as needed. Frequently changing the engine oil and oil filters, air filters, and hydraulic filters when under dusty conditions. Keep the engine area free from straw, hay or other debris.

5.2b Wheel torque requirements

It is extremely important to apply and maintain proper wheel mounting torque on your trailer axle. Torque is a measure of the amount of tightening applied to a fastener (nut or bolt) and is expressed as length times force. A force of 90 pounds applied at the end of a wrench one-foot long will yield 90 lb-ft of torque. Torque wrenches are the best method to assure that the proper amount of torque is being applied to the fastener.

Note: Wheel nuts or bolts must be applied and maintained at the proper torque levels to prevent loose wheels, broken studs, and possible dangerous separation of wheels from your axle.

Be sure to use only the fasteners matched to the cone angle of your wheel (usually 60^{o} or 90^{o}). The proper procedure for attaching your wheels is as follows:

1. Start all bolts or nuts by hand to prevent cross threading.
2. Tighten bolts or nuts in the sequence illustrated in Fig. 5.2
3. The tightening of the fasteners should be done in stages. Following the recommended sequence:
    1.) Tighten all the fasteners to 20-25 lb-ft,
    2.) Then to 50-60 lb-ft, and finally to 85-95 lb-ft.
4. Wheel nut/bolts should be torqued before first road use and after each wheel removal. Check and re-torque after the first 25 miles and again at 75 miles. Check periodically thereafter.

WARNING: DO NOT ATTEMPT TO REPAIR OR MODIFY A WHEEL. EVEN MINOR MODIFICATIONS CAN HAVE A GREAT EFFECT. DO NOT INSTALL A TUBE TO CORRECT A LEAK THROUGH THE RIM. IF THE RIM IS CRACKED. THE AIR PRESSURE IN THE TUBE MAY CAUSE THE PIECES OF THE RIM TO EXPLODE WITH GREAT FORCE AND CAN CAUSE SERIOUS INJURY OR DEATH

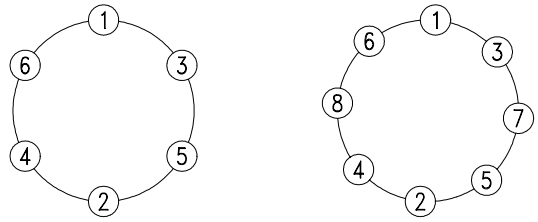


Fig. 5.2

5.2c Tires

Before mounting tires onto wheels make certain that the rim size and contour is approved for the tire as shown in the Tire and Rim Association Yearbook or the tire manufactures catalog. Also make sure that the tire will carry the rate load.

5.4 Maintenance Schedule

Maintenance/Inspection Schedule	Daily	Monthly	Semi-Annual
Air Cleaner/Filter Check Change			
Battery and Connections			
Beater Chains			
Belt Tension			
Breakaway, Trailer (inspect)			
Chassis (inspect)			
Control Cable Linkage (adjust)			
Engine * (maintenance as specified in engine mfg. manual)			
Engine Belt Tension			
Engine Coolant (LD90T) Check Change			
Engine Mounts (inspect)			
Engine Oil and Oil Filter Check Change			
Feed Chain			
Fuel Check			
Fuel Filter Drain Water Change			
Grease All Fittings			
Hitch, Trailer (inspect)			
Hydraulic Oil (LD90T) Check Change			
Hydraulic Oil Filter Change			
Hydraulic System (inspect)			
Lights, Trailer (inspect)			
P.T.O. Power Take-Off * (maintenance in mfg. manual)			
Tires Inflation/Damage			
Wheel Bearings Re-pack			
Wheel Lugs Torque (inspect)			

- **These manuals are provided by the manufacture. The specifications and instructions in these manuals are to be follower for the specific parts. A failure to do so could result in voiding the manufactures warranty**

Trouble Shooting
Section 6

TROUBLE	PROBABLE CAUSE	CHECKOUT PROCEDURE AND REMEDIAL ACTION
6.1 ENGINE		
1. Engine will not crank	low battery	check battery charge or replace
	faulty starter switch	check and replace if needed
	faulty starter switch	check and replace if needed
	faulty started solenoid	check and replace if needed
	faulty starter motor	check and replace if needed
2. Engine cranks but won't start	improper throttle or choke settings	Adjust settings per engine starting instructions
	low pressure override button not depressed	Keep button depressed 5 to 10 seconds until oil pressure rises
	no fuel to engine	check fuel supply- clogged fuel filter or line, replace or flush
	no spark to engine	check for fouled spark plug, clean & reset gap or replace. Check distributor wires to plugs, repair or replace faulty wires
3. Engine runs rough or cuts out intermittently	fuel supply	clogged filter or lines, replace or flush as needed
	dirty or faulty carburetor	clean and/or adjust or replace
	dirty air cleaner	clean or replace element
	faulty spark plug or plug wires	check plugs, clean and reset gap or replace; faulty wires replace
	intermittent short in ignition wiring	perform continuity check of wiring, repair or replace defects
	faulty engine valve or cylinder ring	see manufactures engine manual
4. Battery will not maintain a charge	dead cell or short across cells	check and replace if needed
	faulty alternator or voltage regulator	check and replace if needed
6.2 DISCHARGE CHUTE		
1. Lacking volume or velocity (range)	too slow bale feed rate	improve feed rate
	beater chains faulty	replace
	fan drive belt slipping	adjust belt tension
	fan drive key sheared	replace with *genuine Bowie* part
2. Stiff rotation of spraying chute	turret bearings dragging	lubricate bearings
	turret bearings faulty	replace
6.3 FEED ASSEMBLY LD90T		
1. Feed system will not start	control lever linkage	adjust linkage
	broken chain or sheared sprocket drive key	check and replace faulty part with *genuine Bowie* component
2. Slow feed rate	control lever linkage	adjust linkage
	low motor RPM	pump belt drive slipping, adjust
		hose or fitting leaking, tighten or replace
		internal pump leakage, replace pump
		internal motor leakage, replace motor
3.. Noisy fees	loose or worn chain and/or drag teeth	adjust chain tension or replace tighten or replace drag teeth
6.4 ASPHALT SYSTEM (OPTION)		
1. Asphalt will not flow	control linkage	adjust linkage
	clogged lines	check and clean out
2. Asphalt flow range or volume low	supply valve partially open	fully open valve
	line from supply clogged	check and clean out
	pump drive clutch slipping	adjust or replace
	control valve clogged or partially open	check and clean out, open fully
	pump pressure or volume not adequate	check out, repair or replace

Repairs & Adjustments
Section 7

WARNING!

Turn off engine and disconnect the battery before working on the fan or beater

7.1 Feed Chute - Models SG50S and SG50T

Repair of the feed chute consists of merely replacing of the pivot pins for the extension, removing dents which prevents smooth movement of the bales into the fan and beater chamber, and paint touch up for the prevention of corrosion. The shredder assembly does not require assembly

7.2 Feed Assembly - Model LD90T (Fig. 2.1)

The feed assembly is a hydraulic powered chain drive. The four adjusting bolt assemblies (ref. 1) may adjust tension

Replacement of the chains (ref. 5) may be necessary when the chain is worn or stretches so that it no longer stays on the sprockets.

All sprockets are keyed to their respective shafts. If a key shears, be sure that the replacement is a *genuine Bowie* part. It must fit snug into both the shaft and the sprocket.

Replacement of drag teeth (ref. 3) is necessary from time to time. A small inventory of spares should be maintained

Pillow block bearings (ref. 2) are long lasting if properly maintained. When necessary replacements should be made.

7.2a Hydraulic Installation

The hydraulic installation provides power for the feed assembly

Setting tension of pump drive belt is by way of adjustment of the idler pulley. Replace the belt if worn, frayed, or split. A small inventory of spares should be maintained.

Replace filter (ref. 7) according to Maintenance/Inspection Schedule.

Service the reservoir (ref. 8) with hydraulic oil having the viscosity of 200 SSU @ 100^{o} F or better.

Remove and replace hose assemblies whenever an inspection indicated damage or fraying.

The pump (ref. 9) and the motor (ref. 6) should require no maintenance unless the speed of the feed is noticeably slower. This may indicate that internal leakage is being experienced. In such a case the defective component needs to be repaired or replaced.

The crossover relief valve (ref. 5) is factory preset for proper pressure and should not be adjusted. If a significant shock is noticed when feed is reversed it may be that one of the valve poppets has become stuck. Remove the valve and clean it or replace it.

Note: When draining the reservoir, drain all hoses as well and replace the filter element.

WARNING!

Turn off engine and disconnect the battery before working on the fan or beater

7.3 Fan and Beater Assembly (Fig. 2.6, ref. 10,11)

The fan and beater assemblies are similar on all models of the **Bowie Aero-Mulcher**. Models SG50S and SG50T are driven directly from the engine through a flexible coupling. Model LD90T is by a belt driven pulley assembly by the power take-off.

The belt tension on Model LD90T is set by adjustment of the idler pulley located between the power take-off and the fan shaft mounted pulley.

Replace the beater sets whenever discharge appears to less than normal. An inventory of spare beater sets should be maintained.

Pillow blocks (Fig. 2.6, ref. 7) are long lasting if properly maintained. When necessary replacements should be made. We recommend that spares should be kept on hand.

If the fan (Fig. 2.6, ref. 10) becomes loose on the shaft or fails to turn at all. Replace the drive key with a *genuine Bowie* part. Be sure that it fits snug in both the shaft and the fan.

7.4 Discharge Spraying Chute (Fig. 2.6, ref. 1)

The discharge-spraying chute functions in the same manner on all units. Model LD90T is equipped with a seat for the operator, most controls and the control panel is located on the assembly.

Other than an occasional control cable linkage adjustment on Model LD90T and lubrication of the turret bearing assembly (Fig. 2.6, ref. 2) no other maintenance should be necessary.

Control panel schematic and control locations (Fig. 2.3b)

7.5a Trailer Running Gear

All trailer mounted systems of the **Bowie Aero-Mulcher** incorporate conventional trailer hubs, electric brakes, electric breakaway switch, tires and wheels.

Use a good grade of axle grease when re-packing the hubs. If bearings need replacement see replacement parts under Section 9 of this manual.

Replacing tires use only the correct specified size.

See Maintenance/Inspection schedule in Section 5 of this manual for further instructions regarding the running gear.

7.5b Trailer Wiring (Fig. 2.3)

All trailer mounted systems of the **Bowie Aero-Mulcher** incorporate a conventional wiring system for taillights, turn signals, stop lights, brakes and breakaway switch.

Replace defective lights

Repair or replace cut or damaged wiring, connectors, and/or faulty breakaway switches (Fig. 2.5, Fig. 2.9)

7.6a Ignition System

Model SG50S and SG50T have a very reliable ignition system of which need no adjustments. Repair procedure consists primarily of removal and replacement of the defective part. Removal and replacement repair the battery, ignition switch, and starter button.

Model LD90T ignition systems incorporate a 'Murphy' switch (Fig. 2.3b, ref. 7). This switch shuts off the engine when conditions such as low oil pressure or high engine temperatures exist. This ignition system is conventional and reliable. No adjustments are necessary, as repair is limited to the removal and replacement of the defective part.

NOTE: The starter motor, alternator, voltage regulator, and spark plugs are covered in the engine manufacturer manual

7.6b Engines

Model SG50S and SG50T use a Wisconsin Model W4-1770 air-cooled engine. Repairs and adjustments are to be made following the engine manufacturers manual and instructions. Service the engine following the manufacturer instructions and the maintenance/inspection schedule in this manual.

Model LD90T uses a John Deere water-cooled, diesel engine. Repairs and adjustments are to be made following the engine manufacturers manual and instructions. Service the engine following the manufacturer instructions and the maintenance/inspection schedule in this manual.

7.6c Fuel System

All models incorporated a tank, ball valve, fuel line, fuel pump, and fuel filter. Use clean containers for fuel. Replace fuel filter as set forth in the maintenance/inspection schedule located in section 5 of this manual.

7.6d Power Take-Off

Model LD90T is equipped with a power take-off assembly. Repairs and adjustments are to be made following the manufacturers manual and recommendations. Service the power take-off assembly as set forth in the maintenance/inspection schedule located in section 5 of this manual.

7.6e Alternator

All models have an alternator mounted to the engine. Should it malfunction, replace with a new or rebuilt unit.

7.6f Battery

The battery is an automotive type. If the **Bowie Aero-Mulcher** is to be idle for a period of time then disconnect. When a replacement is needed replace with an equal CCA rating.

7.6g Starter Motor

Should the starter motor malfunction, replace with a new or rebuilt unit.

Maintenance Log
Section 8

8.1 Daily Inspection Check List

INSPECT DAILY	AIR FILTER /CLEANER	BEATER CHAINS	BELT TENSION	CONTROL LINKAGE	ENGINE BELT TENSION
Date					
Hours					

INSPECT DAILY	ENGINE OIL AND FILTER	FUEL CHECK	FUEL FILTER DRAIN WATER	GREASE AND LUBRICATION	HYDRAULIC OIL CHECK	TRAILER BREAKAWAY
Date						
Hours						

INSPECT DAILY	INSPECT TRAILER HITCH	INSPECT TRAILER LIGHTS	INSPECT TIRE INFLATION DAMAGE	INSPECT WHEEL LUGS
Date				
Hours				

8.2 Monthly Inspection Check List

INSPECT MONTHLY	ADJUST FEED CHAIN TENSION	AIR FILTER/ CLEANER CHANGE	BATTERY & CONNECTIONS	ENGINE OIL & FILTER CHANGE	FUEL FILTER CHANGE
Date					
Hours					

INSPECT MONTHLY	HYDRAULIC * OIL CHANGE	HYDRAULIC * OIL FILTER CHANGE	INSPECT TRAILER BREAKAWAY	INSPECT TRAILER LIGHTS	TIRES INFLATION/DAMAGE
Date					
Hours					

8.3 Semi-Annual Check List

SEMI-ANNUAL INSPECTION	INSPECT CHASSIS	CHANGE ENGINE COOLANT *	INSPECT ENGINE MOUNTS	INSPECT HYDRAULIC SYSTEM *	HYDRAULIC OIL FILTER CHANGE *	HYDRAULIC OIL CHANGE *	WHEEL BEARINGS REPACK
Date							
Hours							

***Model LD90T only**

Parts List
Section 9

9.1 Parts for Models SG50S & SG50T 12/18/00

LOCATION	DESCRIPTION	PART REFERENCE
CONTROL PANEL	AMP METER	EC A355
	STARTER SWITCH	WISC YC10C/ ECA356
	DECAL SET	EC A1800C
	HORN	EC1006
	HORN BUTTON	W/P EC1990A
	INSTRUMENT PANEL COMPLETE ASSEMBLY	EC A206
	SWITCH, IGNITION PUSH-PULL	EC1989/ ECA353
	CHOKE, CABLE	EC A354
	THROTTLE CABLE	EC A351-30
	HOUR METER	EC A352/EC4049
	INSTRUMENT PANEL GAUGE	EC A2061
DISCHARGE SPRAY	HANDLE, RIGHT HAND	EC A204-3
	HANDLE, LEFT HAND	EC A204-3A
	NUT, TURNBUCKLE	EC S35-4A
	TURNBUCKLE	EC A204-4
	DISCHARGE NOZZLE ASSEMBLY	EC A204
	1-1/4" YELLOW HANDLE GRIP	EC S35-3B
*** DISCHARGE EXTENSION OPTION:**	2'	EC S352
	3'	EC S353
	4'	EC S355
ENGINE	* ALL PARTS (W4-1770 IN MFG'RS PART BOOK)	
	DRY AIR CLEANER	WE L0115A
	ENGINE WIRING HARNESS	EC A357W
	FUEL STRAINER, WISCONSIN	WE LP43
	GUARD, COUPLING COVER	EC A202
	OIL FILTER (WISCONSIN RV52)	_
	MUFFLER	WE WD72
	PLUG	WE PF144
	PRE CLEANER	WE L0176
	PUMP, WISCONSIN ELECTRIC FUEL	WE LP63
	ROTATING SCREEN	WE SE204D
	RUBBER COATED WASHER 9/32	WE PH442
	SCREW ¼-20-3/4 (ROTATING SCREEN)	WE XA104

FAN & BEATER ASSEMBLY	1/2 X 3 SAE (#602 HEAD) BOLT	EC 305-4
	1/2 X 2 SAE GR8 BOLT	EC S30-2
	1/2 SAE LOCK NUT	EC 305-5
	10-24 NYLON INSERT LOCK NUT	EC S30-2A
	12" GREASE LINE	EC 1021
	BEATER CHAIN (4 LINK)	EC S30-1
	BEATER CHAIN ASSEMBLY (6 PER SET)	EC S30-8
	BEATER BRACKET	EC S30-3
	BOLTS	EC A305-4
	COMPLETE ASSEMBLY	EC A215
	COUPLING, COMPLETE MORFLEX	EC A305C
	FAN, 22-5/8"	EC A303
	FLEXIBLE SECTION OF COUPLING	EC A305-3
	HUB, FAN SHAFT COUPLING HALF	EC A305-1
	HUB, COUPLING HALF ENGINE SHAFT	EC A305-2 *
	HUB, MORFLEX	EC A305-2 *
	KEY, FAN	EC A303-1
	LUG, LIFTING	EC A203
	PILLOW BLOCK W/BEARING TYPE E 1-3/4"	EC A302
	PIN (1/2 ROD 1/2 LONG)	EC S30-3A
	SCREW, SET	EC A303-2
	SHAFT, FAN	EC A301
FUEL	1/4 BALL VALVE	EC A219
	LINE, FUEL	EC A220
	PUMP BRACKET	EC L63B
	TANK CAP	EC 1888
	TANK	EC A218
TRAILER	12X2 ELECTRIC BRAKE ASSEMBLY	EC 3120/ECA378
	16X6 -8 HOLE WHEEL	EC A213
	7.50-16 10 PLY TIRE (NOT FOR RESALE)	
	BRAKE PLATE BACK ASSEMBLY	EC A378*
	BREAKAWAY SWITCH	EC A345/EC1993
	CABLE ASSEMBLY, LIGHTS & BRAKES	EC A346
	CHAIN, SAFETY 10' HIGH TEST W/HOOK	EC A343
	COMBINATION STOP/TAIL LIGHT	EC 1839
	FENDER, RIGHT	EC A210R
	FENDER, LEFT	EC A210L
	HITCH, BALL TYPE TELESCOPING	EC A209
	HITCH, PINTLE TYPE TELESCOPING	EC A344
	HITCH, PIN & RETAINER (SET)	EC A342
	HUB, BEARING CONE INNER BEARING	EC A326
	HUB, DRUM CONE OUTER BEARING	EC A327
	HUB, DRUM COTTER PIN 1/8X2	EC A324
	HUB, DRUM DUST CAP E-Z PLUG TYPE	EC S387
	HUB, DRUM OUTER BEARING	EC A329
	HUB, DRUM 1" SPINDLE NUT	EC A318
	HUB, DRUM COMPLETE ASSEMBLY	EC A212
	HUB, DRUM 1" SPINDLE WASHER	EC A319
	HUB, DRUM INNER BEARING	EC A328
	HUB, DRUM GREASE SEAL	EC A330
	JACK ASSEMBLY	EC A341
	LENS, STOP/TAIL LIGHT	EC 1839A
	LICENSE PLATE BRACKET	EC 1846
	LUG BOLT 1/2X1-7/8	EC A332A
	LUG BOLT 1/2X2-3/4	EC AS381A
	LUG NUT 1/2	EC S386
	STUD & LUG NUT SET (8)	EC A332
TURRET BEARING ASSEMBLY	BEARINGS (SET)	EC A253
	COMPLETE ASSEMBLY	EC A250
	FITTING, LUBRICATION	EC A255
	RACE, LOWER	EC A252
	RACE, UPPER	EC A251
	SEAL, O'RING	EC A254

*** Asphalt option parts list see 9.3**

9.2 Parts for LD90T 12/18/00

LOCATION	DESCRIPTION	PART REFERENCE
CONTROL PANEL	AMP METER	EC S50-4
	HORN	EC S50-15
	HORN BUTTON	EC S50-5
	KEY, SWITCH	EC S50-6
	OIL PRESSURE	EC S50-2
	OVERRIDE (MURPHY) SWITCH	EC S50-7
	PANEL	EC S390
	TACHOMETER	EC S50-1
	WATER TEMPERATURE	EC S50-3
DISCHARGE SPRAY	BRACKET, PIN & KEY	EC S35-9
	BRACKET, DISCHARGE STOWING	EC S35-10
	COUNTERBALANCE	EC S35-12
	DISCHARGE SPRAYING ASSEMBLY	EC S35
	DISCHARGE EXTENSION, HINGE	EC S35-2
	DISCHARGE, EXTENSION	EC S35-1
	DISCHARGE, ELBOW	EC S35-6
	HANDLE, RIGHT HAND	EC S35-3
	HANDLE, LEFT HAND	EC S35-3
	SEAL, ELBOW SIDE	EC S35-6B
	SEAL, LOWER ELBOW	EC S35-6A
	SEAT	EC S35-5
	SEAT BELT ASSEMBLY	EC S35-5B
	SEAT, ADJUSTMENT SLIDE	EC S35-5A
	TURNBUCKLE	EC S35-4
	TURNBUCKLE, NUT	EC S35-4A
ENGINE	1700 SCREEN-O-MATIC	EC S30-11
	20"X4 EXHAUST PIPE	
	38' X4 FLEX STEEL PIPE	
	4" MUFFLER CLAMPS	EC S10-54CP
	4/5VX1060 BANDED BELT	EC S30-6MD
	5 FIN RADIATOR	EC S40-8
	ALTERNATOR	EC S50-8
	CLUTCH PLATE	EC S90-15
	INJECTOR PUMP	EC S50-14
	JOHN DEERE TWISTLOCK THROTTLE CABLE	EC S35-A
	JOHN DEERE DIESEL W/O AUX. DRIVE	
	MURPHY OIL GAUGE	EC S50-11
	MURPHY TEMPERATURE GAUGE	EC S50-12
	OIL PRESSURE SENDER	EC S50-10
	POWER TAKE-OFF	EC S90-14
	SHEAVE 4/5V10.9 (FAN SHAFT)	EC S30-6C
	SHEAVE, 4/5V9.75 (MOTOR)	EC S39-C
	STARTER	EC S50-9
	TEMPERATURE SENDING UNIT	EC S50-13
	2 ¼" HUB	EC S30-6
FAN & BEATER ASSEMBLY	1/2 SAE GR 8 NYLON INSERT LOCK NUT	EC S30-2A
	1/2 SAE GR 8 BOLT	EC S30-2
	10-24 NYLON INSERT LOCK NUT	EC S30-2A
	17-61 IND-OT-20-CW-SW-STL, 2-7/16 BORE	EC S30-5
	5/8 X 6 STD BOLT (FAN SHAFT BOLTS)	EC S30-5B
	5/8 STD NUT (FAN SHAFT NUTS)	
	BEATER BRACKETS-SET COMPLETE	EC S30-8
	BEATER PIN	EC S30-3A
	BEATER CHAIN 4 LINK	EC S30-1
	BEATER CHAIN 5 LINK	EC S30-1B
	BEATER CHAIN 6 LINK	EC S30-1C
	E2-3/16" PILLOW BLOCK BEARING	EC S30-7
	FAN & BEATER ASSEMBLY	EC S30
	FAN COVER	EC S30-10
	FAN BOLT	EC S-5B
	FAN SHAFT	EC S30-4
	FAN	EC S30-5
	FAN KEY	EC S30-5A
	SUPPORT MEMBER	EC S30-9

FEED ASSEMBLY	#161S SWIVEL GEAR BOX (JACK)	EC S34167
	#60-M2 W/C CONNECTING LINK (CHAIN)	EC S25-7
	1" PILLOW BLOCK BEARING	EC S25-3
	10-24 X 1-1/4" SOCKET HEAD CAP SCREW	EC S25-7A
	10-24 NL LOCK NUT	EC S25-7B
	ADJUSTING BOLT	EC S25-1A
	BOLT	EC S-3A
	BRACKET, 'L' ADJUSTING	EC S25-1
	CHAIN, REAR DRAG	EC S25-A
	CHAIN, COUPLING	EC S25-11
	CHAIN, FRONT DRAG	EC S25-4
	CONTROL CABLE	EC S35-1B
	COUPLING KEY	EC S25-11B
	E1-7/16" PILLOW BLOCK BEARING	EC S39-B
	4/5V9.75	EC S39-C
	E1-7/16" HUB	EC S39-D
	FEEDER PIVOT PIN	EC S25-12
	IDLER ASSEMBLY TENSION FOR BELT	EC S39-C
	IDLER SPROCKET	EC S25-5
	LEVER ASSEMBLY	EC S35-8
	PILLOW BLOCK W/BEARING	EC S25-3
	RACK & POST (JACK COMPONENT)	EC S34110
	SHAFT, DRAG	EC S25-11C
	SHAFT, CENTER DRAG IDLER SPROCKET	EC S25-6
	SHAFT, FRONT DRAG IDLER SPROCKET	EC S25-2A
	SPROCKET KEY	EC S25-6C
	SPROCKET COUPLING	EC S25-11A
	SPROCKET, IDLER	EC S25-5
	SPROCKET, DRAG	EC S25-6A
	SPROCKET, FRONT DRIVE	EC S25-6B
	SPROCKET, FRONT DRAG IDLER	EC S25-2
	TEETH, DRAG (6 EACH FOR SPARE)	EC S25-8
FUEL	1/4 X 5/16 BRASS HOSE FITTING	
	1/4 X 4 STD BLACK NIPPLE	
	1/4" BALL VALVE	EC S219
	BRASS GAS CAP W/GASKET	EC1005
	FUEL LINE	EC S376
	PUMP	EC S40-16
	TANK	EC S377
HYDRAULIC ASSEMBLY	3/4" MAGNETIC DRAIN PLUG	EC S45-1E
	3/4-2 WIRE HYDRAULIC HOSE W/FITTINGS	EC S45-A
	BALL VALVE	EC S45-2
	BELT, DRIVE	EC S45-6B
	CABLE ASSEMBLY	EC S35-7
	CLEVIS	EC S35-7A
	GRENSEN CROSSOVER RELIEF VALVE	EC S45-7
	GRENSON 10 MICRON FILTER ASSEMBLY	EC S-3
	HCSM-120 SIDE MOUNT FILLER BREATHER	EC S45-1A
	HOSE ASSEMBLY	EC S45-B
	HOSE, SUCTION	EC S45-D
	HOSE, PRESSURE	EC S45-A
	HOSE, PRESSURE	EC S45-B
	HOSE, CASE DRAIN	EC S45-C
	HYDRAULICS DRIVELINE ASSEMBLY	EC S45-1031A
	LENEL TEMPERATURE GAUGE	EC S45-1D
	MOTOR, ROSS HYDRAULIC	EC S45-6
	PULLEY	EC S45-6A
	PUMP, VARIABLE VOLUME 15 SERIES	EC S45-4
	RESERVOIR ASSEMBLY	EC S45-1
HYDRAULIC DRIVE LINE	BEARING KIT 004-5-153X	EC S45-153
	FLANGE 004-2-479	EC S45-479
	SLIPYOKE 004-2-3-128KT	EC S45-128
	SPICER YOKE (LONGHORN) 2-4-433	EC S45-433
	TUBE YOKE 004-2-28-357	EC S45-357
	TUBING (2X.083)17" 004-16-30-62	EC S45-62
	SLIP STUB SHAFT 004-2-40-1031	EC S45-1031

TRAILER	12 X 2 ELECTRIC BRAKE ASSEMBLY	EC 3120
	16 X 6-8 HOLE WHEEL	EC S350
	750-16 TIRE 10 PLY (NOT FOR RESALE)	EC S349
	CABLE ASSEMBLY, LIGHTS & BRAKE	EC S347
	HAND BRAKE CONTROLLER	EC 3121
	HUB/DRUM ASSEMBLY	EC S382
	HUB/DRUM, COTTER PIN	EC S324
	HUB/DRUM, SPINDLE WASHER	EC S385
	HUB/DRUM, OUTER BEARING CONE	EC S384
	HUB/DRUM, DUST CAP	EC S387
	HUB/DRUM, PLUG	155400 RUBBER CAP
	HUB/DRUM, SEAL	EC S364
	HUB/DRUM, SPINDLE NUT	EC S386
	HUB/DRUM, INNER BEARING	EC S363
	JACK 198250SWL198	EC S351
	LICENSE PLATE BRACKET	EC 1846
	STOP/TAIL LIGHT COMBINATION CURB SIDE	EC 1834
	STOP/TAIL LIGHT COMBINATION ROAD SIDE	EC 1839
	TORFLEX AXLE ASSEMBLE	EC S365
	TONGUE ASSEMBLY, TELESCOPING HITCH	EC S360
	TONGUE ASSEMBLY, BALL TYPE	EC S383-1
	TONGUE ASSEMBLY, PIN & RETAINER HITCH	EC S342
	(SET)	EC S345
	TONGUE ASSEMBLY, BREAKAWAY SWITCH	EC S383-2
	TONGUE ASSEMBLY, LUNETTE EYE OPTION	EC S343
	TONGUE ASSEMBLY, SAFETY CHAIN	EC 1025
	CHAIN HOOK	EC 1024
TURRET BEARING ASSEMBLY	BEARINGS (SET)	EC S35-13B
	COMPLETE ASSEMBLY	EC S389
	FITTING, LUBRICATION	EC S35-13C
	RACE, LOWER	EC S35-13
	RACE, UPPER	EC S35-13A
	SEAL, O'RING	EC S388

9.3 Asphalt Option Parts

LOCATION	DESCRIPTION	PART REFERENCE
ASPHALT SYSTEM	3/3v14.0 SHEAVE (PUMP) 7/8" HUB	EC S65-6B
	3/3v3.65 SHEAVE (SHAFT)	EC S65-6
	3/3x560 BANDED BELT	EC S65-5
	3/4" BALL VALVE	EC S65-1
	3/4" BRASS FLATJET SPRAYING NOZZLE	EC S65-3
	ASSEMBLY OPTION	EC S65
	BUSHING, 1-1/2" X 3/4"	EC S65-1E
	CLUTCH	EC S65-4
	COLLAR, 1-1/2"	EC S65-1D
	ELBOW, 1-1/2" STREET	EC S-1C
	ELBOW, 3/4" STREET	EC S65-1A
	NIPPLE, 1-1/2" X 6	EC S-1B
	TEE, 3/4"	EC S65-2

Asphalt System (Option)
Section 10

10.1 Asphalt Option Instructions

To operate asphalt system:

1. Hook up suction line to gate valve at rear of machine.
2. Open valve

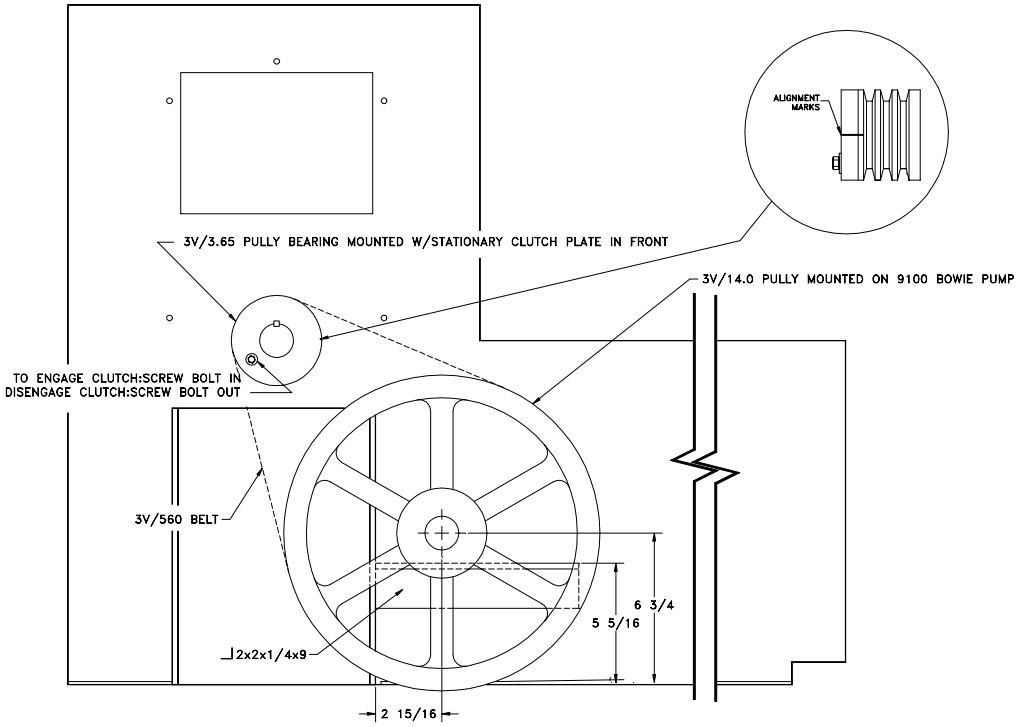
To engage asphalt pump:

1. To engage pump open cover on pump sheave guard.
2. Locate bolt in clutch hub (Fig. 9.3)
3. Line up reference marks (Fig. 9.3) through hole in side of guard

   Marks are on outside edge of sheave and hub.
4. Tighten bolt in hub
5. To regulate pump pressure use ball valve located under beater chamber on the inside of

   working platform.
6. Asphalt flow shut-off valve is located on top of nozzle (Fig. 2.6, ref. 25)

PUMP SHOULD ALWAYS BE DISENGAGED WHEN ASPHALT SYSTEM IS NOT IN USE.



ASPHALT SYSTEM

Fig. 9.3

Limited Warranty

To effect warranty the warranty registration card must be filled out and returned **Bowie Industries, Inc.** within thirty days of purchase. No warranty is in effect without this card being returned to **Bowie Industries, Inc.**

New equipment warranty applies to original purchasers for a period of twelve months from date of purchase. Such equipment is warranted free from defects in materials and workmanship. Warranty does not extend to any equipment that had been damaged in accident or shipment, misuse, abuse, or modified by anyone other than **Bowie Industries, Inc.**

Your sole remedies under this warranty is limited to repairing or replacement of any part that is returned to **Bowie Industries, Inc.** or to a **Bowie Industries, Inc.** authorized dealer, freight prepaid. Returns for warranty needs to be accompanied with a return authorization number. Such repair or replacement to be made provided that defect is covered by warranty as determined by **Bowie Industries, Inc.**

Warranty exclusions: (1) normal maintenance and/or adjustments, (2) altered equipment, (3) engines, engine clutches, batteries, tires or other accessories that are subject to respective manufacturers warranties.

Except as expressly set forth above, no other warranties, either expressed or implied, are made with respect said equipment. **Bowie Industries, Inc.** expressly disclaims all warranties not stated herein. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

Bowie Industries, Inc. reserves the right to make changes in design and specifications without notice.

- Wear safety glasses
- Keep clear from beater chamber hands, feet, and clothing
- Don't operate equipment without safety guards in place
- Avoid obstacles when moving while unit is in operation
- Avoid driving on slopes
- **Always turn engine off and disconnect battery prior to servicing** beater chamber, feed chute, cleaning, lubricating or making adjustments to equipment
- Never direct discharge at people, buildings, power lines or equipment