



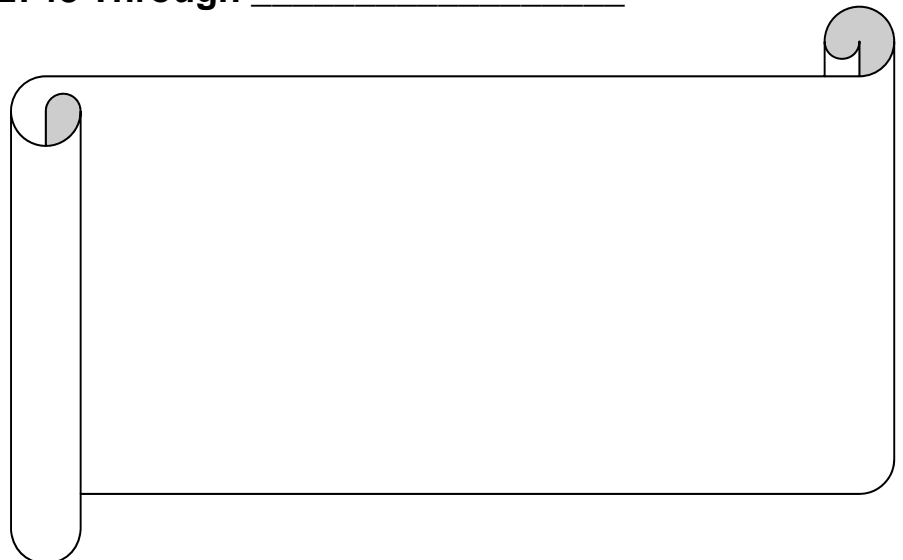
PARTS MANUAL

MODEL MU-1000

Covers Serial Number Range:

748-L-P1-KO-Y-*02748 Through _____

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Operation of a MU1000 Asphalt Distributor

I. Description of Operation:

This machine is designed to apply liquid asphalt to the road surface prior to chip spreading, fog sealing, paving, etc.

Operators are able to run the machine from two locations: from the cab control panel, and from the rear control panel. The "Pump Control" switch must be indicated to the desired location of operation.

Description of a typical Start up and Set up:

This section will describe for you a step by step method to safely start up operate and clean out the asphalt distributor.

II. Engine Start up:

Follow the engine manufactures start up procedures and safety instructions

Push Murphy engine protect button while starting the engine

After engine is running and vehicle is parked on flat surface with the brakes securely locked follow the following procedures.

III. Machine Operation:

Master – Master on/off switch. Turn on when ready to use.

Pump Control – Select between the front and rear control panels which to operate the unit.

Pump Speed – One turn potentiometer which dictates the GPM and direction of the pump. When the dial is fully turned clock wise the pump will be set to full speed forward, fluid goes from tank towards the spray bar. When the dial is turned counterclockwise the pump will be in full speed reverse, fluid goes from spray bar towards tank.

Pump Select - Using the 11 position selector switch, in the "Master Control" located at the rear of the unit, the operator can select between the following modes; "Off", "Tank Circulate", "Load", "Transfer", "Hand spray", "Rev. Suc.", "Cab Cont.", "Clean out #1", "Clean out #2", "Clean out #3".

Off - All Functions are off.

Tank Circulate – This mode is used to circulate material in the tank, the operator must select pump direction forward and set speed.

Load - ****NOTICE**** This is the ONLY mode to use when loading material on to the Mauldin MU1000 Unit. ****** This mode is used to load material from storage tank or vessel to the trailer, the operator must select pump direction forward and set speed accordingly.

Transfer – ****CAUTION**** This mode is only to be used when transferring material between two third party storage containers or vessels. ****** This mode is used to transfer material from one storage container to another. The operator must open the hand transfer valve then select direction forward and set speed.

Hand spray / Unload - This mode allows an operator to use the remote spray wand to apply liquid. Operator must select speed and direction forward.

Reverse Suction - This mode is used to reclaim material from spray bar into the tank. The operator must select reverse pump direction and set speed.

Cab control (Bar Circulate)- Upon entering this mode or anytime the OFF/SPRAY switch is clicked to OFF; the controller will be in Bar-Circulate mode pumping at the GPM selected. Select 50 RPM while not spraying. Upon entering this mode or anytime the OFF/SPRAY switch is clicked to ON, the controller will be in Spray mode pumping at the GPM selected. GPM should be set to match application rate needed.

Clean out #1, #2, and #3 - Operator will use these modes to clean out the spray nozzles and bar after the job is complete. Refer to section IX for instructions.

IV. Tank Top Loading:

1. Move Trailer to a flat position in close proximity of storage tanks or transfer vehicle.
2. If top loading, make sure master control is OFF.
3. Open manhole cover at top of tank and lower load line at least 24" below the top of opening and secure the load line to the tank so load line cannot lift out of tank during loading procedure.
4. Transfer material into tank, make sure you do not leave the unit unattended and keep close attention to contents gage so loading can be stopped in ample time to prevent a spill, or overflow.
5. After the desired amount of material is loaded, remove load line and close manhole cover, and make sure it is closed and latch is secured.

V. Tank Transfer Loading:

1. Move the trailer to a flat position in close proximity of storage tanks or transfer vehicle.
2. Set vehicle park brakes and set engine throttle to approximately half.
3. At rear turn the "Master" on and make sure the rotary function switch is in the off position.
4. Connect load hose to the storage or transport tank, and to the Trailer load line.
5. Open the valve on the storage or transport tank.
6. Move rotary function switch to the load position.
7. Turn the pump speed knob slowly to the right (clock wise) forward until desired loading speed is reached. (Note if some emulsions are loaded too fast they have a tendency to foam.)
8. Watch contents gauge and turn pump speed knob back to zero when desired contents is achieved.
9. Close tank valve on transport or storage unit.
10. Turn pump speed knob (clock wise) to about 2 to 3, disconnect load hose from transport or storage tank allow pump to suck any material in hose back to the tank.
11. Disconnect load hose from Trailer, and replace load line plug and secure.
12. Turn pump speed knob back to 0, and turn rotary selector switch to off.

VI. Heating Materials:

1. Asphalt products need to be sprayed at proper application temperatures. To achieve the proper material temperatures follow this procedure.
2. With the unit running and engine at approximately half throttle.
3. Turn the rear Master control ON, turn rotary function switch to OFF.
4. Flip the burner blower controls to the on position.
5. Turn the Thermostat dial to the desired spray temperature.
6. Flip the burner fuel switches to the on position and the burners will light.
7. After burners start to warm the material the rotary function switch should be put in the tank circulate position and the pump speed knob should be turned (clock wise) to 2 –4 to allow materials to circulate as they are being heated.
8. When set temperature is reached the burners will turn off, and the material is ready to spray. The burner will turn back on if the material drops below the desired temperature.
9. For proper flue and flue liner life it is important to remember to run a cooling period for the burner and flue assemblies by leaving the blower switches on and turning off the fuel supply switch.(approximately 5 minutes)
10. Operator shall **NEVER** leave the rear of the trailer while operating the burner assemblies.

Asphalt Cements	Spray Temp	Flash Point F	Emulsions Cont.	Spray Temp	Flash Point
AC-5	280+	350	HFMS-2S	70-160	-
AC-10	280+	425	SS-1	70-160	-
AC-20	295+	450	SS-1H	70-160	-
AC-40	300+	450	CRS-1	125-185	-
AR-1000	275+	400	CRS-2	125-185	-
AR-2000	285+	425	CMS-2	70-160	-
AR-4000	290+	440	CMS-2H	70-160	-
AR-8000	290+	450	CSS-1	70-160	-
PEN40-50	300+	450	CSS-1H	70-160	-
PEN60-70	295+	450	Cutbacks		
PEN85-100	280+	450	MC-30	80+	100
PEN120-150	270+	425	MC-70	120+	100
PEN200-300	270+	350	MC-250	165+	150
Emulsions			MC-800	200+	150
RS-1	70-140	-	MC-3000	230+	150
RS-2	125-185	-	RC-70	120+	-
HFRS-2	125-185	-	RC-250	165+	80
MS-1	70-160	-	RC-800	200+	80
MS-2	70-160	-	RC-3000	230+	80
MS-2H	70-160	-	SC-70	120+	150
HFMS-1	70-160	-	SC-250	165+	175
HFMS-2	70-160	-	SC-800	200+	200

VII. Setting up to Spray Asphalt:

1. At rear control, turn rotary function switch to “Cab Cont.” this will set the machine to spray bar circulate and allow control to be handled from the unit cab control.
2. Toggle switch to “Front Enabled.” This activates cab box for use.
3. While observing the cab control panel turn pump speed knob clockwise to the desired GPM (gallons per minute).

VIII. Spraying Asphalt:

1. Position unit so spray bar is at the beginning of area to be sprayed.
2. Remember that for proper coverage the nozzle should be set at a 20 degree angle on the bar. The nozzle wrench supplied with the unit can ensure this.
3. Turn on the bar activation switches for the bar segments you wish to use.
4. Start unit moving and simultaneously flip “Spray” and the unit will start to spray.
5. The spray will stop and go into bar circulate mode when you turn spray switch to off.
6. You can adjust GPM (gallons per minute) while spraying to reach your desired application.

IX. Clean out Process

1. To initiate the clean out process first turn engine on and set engine throttle to half.
2. For the first step turn the selector switches to “CLEAN OUT #1” run in Clean out #1 mode for 1 minute.
 - a. Select clean out #1 mode which will open the main tank supply and select reverse rotation of the pump resulting in pulling the material back into the tank. Pulse the cleanout pulse switch 10 times.
3. Next turn the selector switch to “CLEAN OUT #2”, run in #2 for 3 minutes. Select forward pump direction.
 - a. Clean out mode #2 will begin to circulate wash down material (diesel fuel) through the pump.
4. Lastly turn the selector valve to “CLEAN OUT #3” run this stage for 1 minute. Select reverse pump direction.
5. During the 1 minute run time of “CLEAN OUT #3” pulse the “CLEANOUT BAR PULSE” intermittently every 20 seconds.
 - a. The third and final clean out will return the wash down fluid back to the wash down tank.



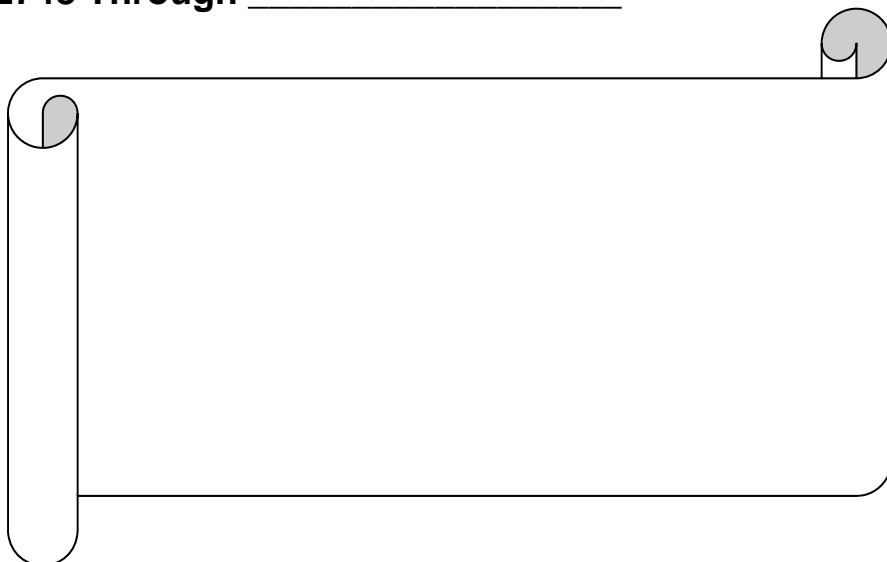
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MODEL MU-1000

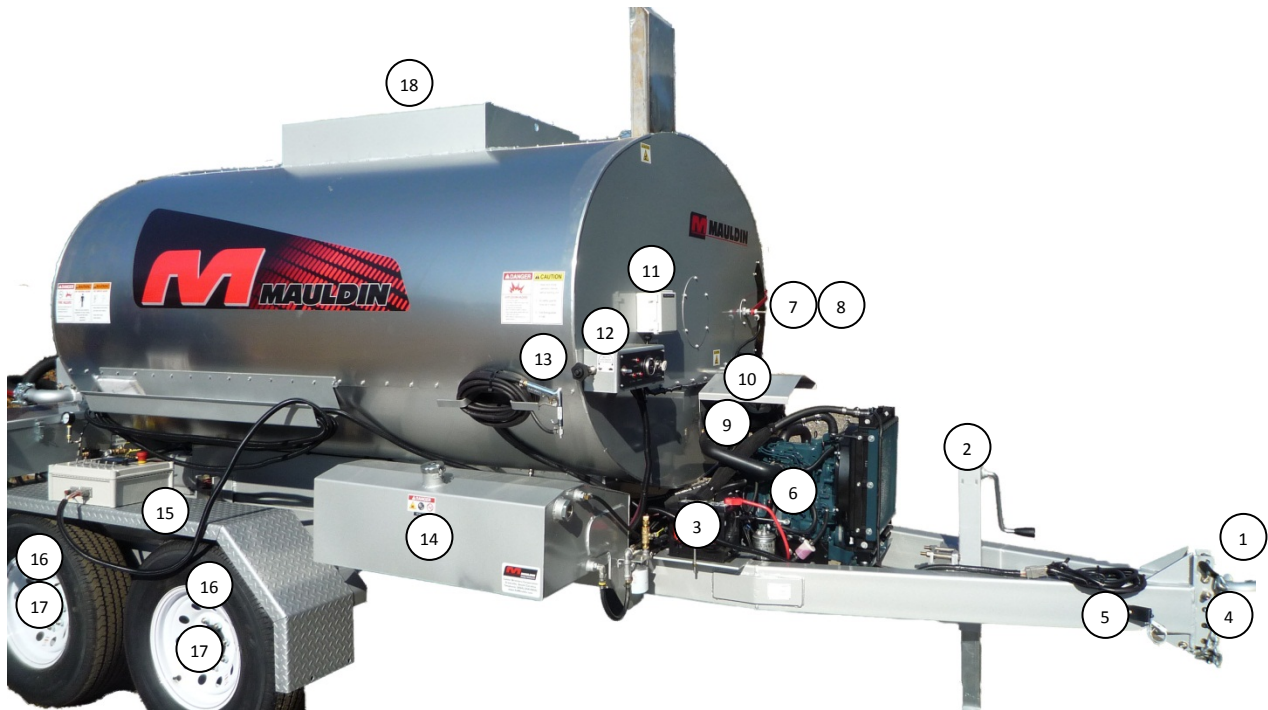
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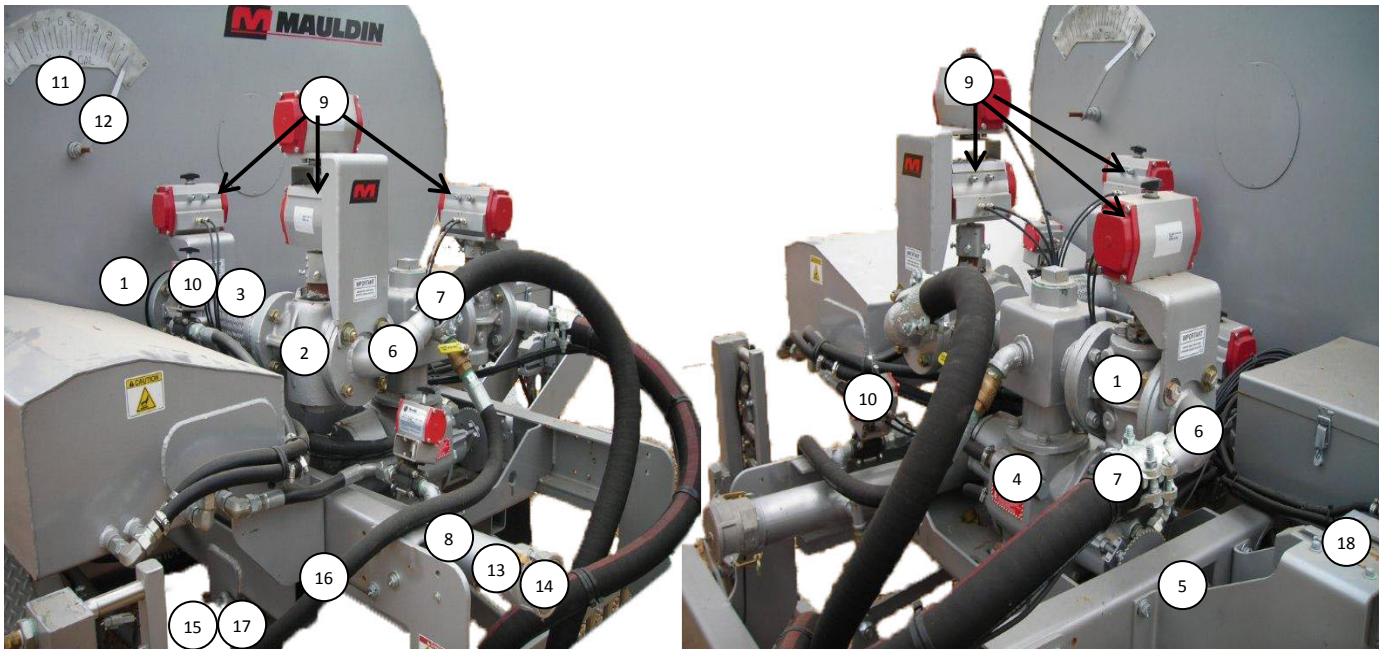


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Rear of machine	Page 3
Spray bar wing	Page 4
Spray nozzle	Page 5
Control boxes	Page 6

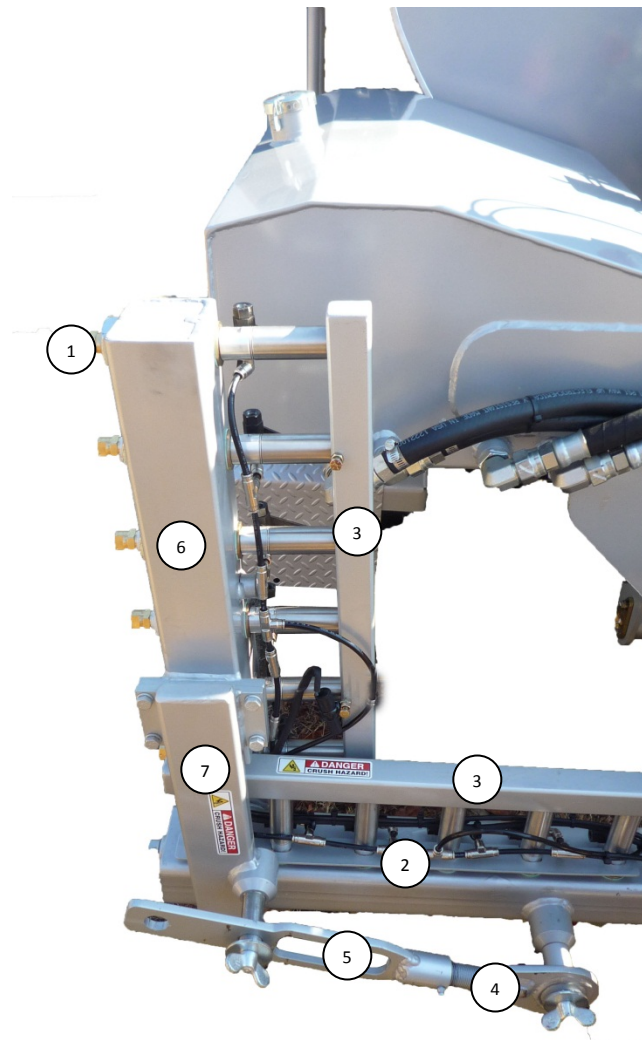


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|---|--------------|
| 1. Hitch | 050-0248 |
| 2. Trailer jack stand | 050-0756 |
| 3. Battery | 020-0019 |
| • Positive battery cable | 020-0333 |
| • Ground battery cable | 020-0361 |
| • Battery tie down | 093-0046 |
| 4. Safety hook | 030-0384 |
| • Rubber keeper | 030-0385 |
| 5. Trailer break away emergency brake | 020-0559 |
| 6. Engine | 010-0213 |
| • Engine oil filter | 021-0132 |
| • Engine fuel filter | 021-0078 |
| • Engine inline fuel filter | 021-0068 |
| • Engine fan belt | 010-0407 |
| • Engine air filter element | 021-0195 |
| 7. Contents gauge (standard) | 123-310378 |
| 8. Contents needle | 122-123377 |
| 9. Diesel burner | 130320 |
| 10. Diesel burner shield | 123-310910 |
| 11. Burner control box | see page # 7 |
| 12. Engine instrument panel | see page # 6 |
| 13. Hand held wash down sprayer | 123930 |
| 14. Diesel fuel tank weldment | 122-308130 |
| • Fuel cap | 050-0522 |

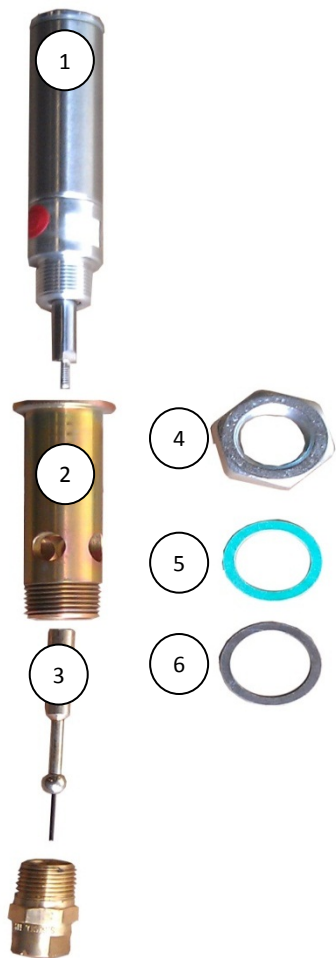
• Sight window	060-0066
15. Fender	122-310460
16. Rim & tire	050-0754
17. Axle	050-0754A
18. Man hole cover	123305
19. Ladder assembly (not shown)	122-310472
20. Hydraulic tank (not shown)	122-310140
• Cap	060-0069
• Sight window	060-0066
• Hyd. Oil filter head	021-0192
• Hyd. Oil filter	021-0169
21. Wash down tank (not shown)	122-310120
• Cap	050-0522
• Sight window	060-0066



1. 3" valve 2 way	123485
2. 3" valve 3 way	123486
3. Flex pipe	122-310220
4. Asphalt pump.....	123477-P
5. Pump drive motor.....	124404
6. Elbow nipple hose connection.....	122-127413
7. Hose clamp.....	123566
8. Strainer box weldment	122-127401
9. Air actuated controller large.....	123465
10. Air actuated controller small	123711
• Actuator mount 2 way valve bar feed/return valve	122-123654
• Actuator mount 3 way valve.....	122-124420
• Actuator mount tank supply	122-123625
11. Contents gauge	123-310378
12. Contents gauge needle	122-123377
13. Cam lock coupler.....	124438-1
14. Cam lock plug.....	124439-1
15. Spray bar lift weldment	122-310350
16. Spray bar lift cylinder	012-0071
17. Spray bar lift cam support arm	122-310356
18. Hydraulic valve.....	130102-3



- | | |
|---|--------------|
| 1. Spray nozzle assembly | see page # 5 |
| 2. Nozzle retaining bar "comb" | 123-123516 |
| 3. Nozzle spacing block | 122-124714 |
| 4. Spray bar wing adjustment threaded rod..... | 122-310324 |
| 5. Spray bar wing adjustment handle/nut | 122-310320 |
| 6. Spray bar wing | 122-129365 |
| 7. Spray bar wing retaining bar..... | 122-129358 |
| 8. Spray bar wing lift cylinder (not shown) | 012-0071 |
| 9. Wing mount o-ring (not shown) | 022-0123 |



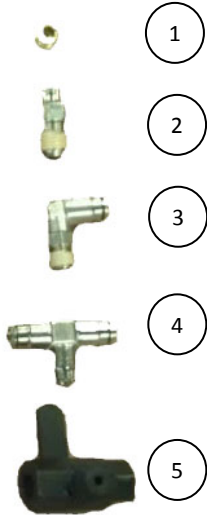
- 1. Air cylinder 124400
- 2. Body sleeve 123581
- 3. Poppet 123582
- 4. Nut..... 123555
- 5. Gasket..... 123494
- 6. Washer 123492

Nozzle guide

Size	Stamped Marking	Gallon per min**	GAL/SQ YD	Part #
00	15/95	1.2	.03-.08	123484-1
0	30/95	3	.05-.20	123484-0
1	50/95	4	.10-.30	123484
1.5	60/95	6	.15-.40	123484-15
2	80/95	8.5	.25-.55	123484-2

**based on pressure of 35psi

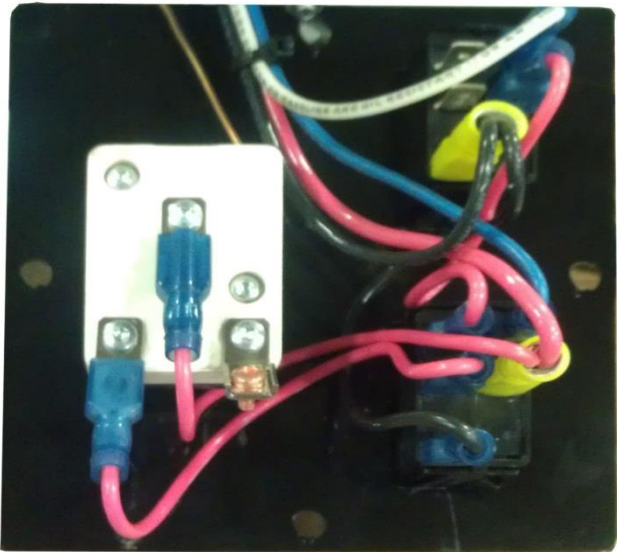
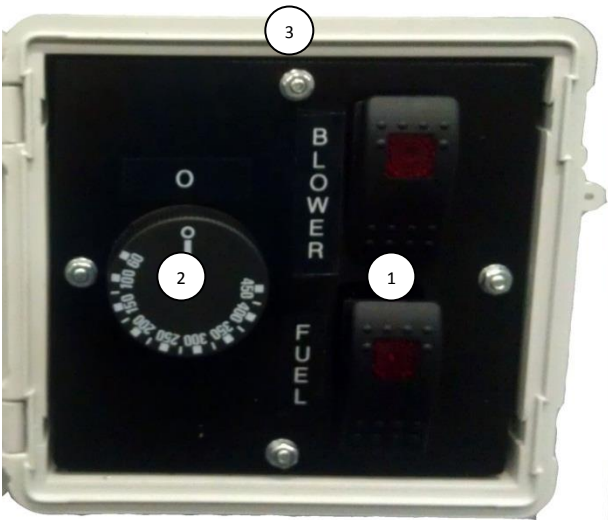
- 1. 1/8 npt plug 019-0012
- 2. Str. ¼ x ¼ npt..... 014-0439
- 3. 90° ¼ x 1/8 npt..... 014-0606
- 4. T ¼ x ¼ x ¼ 014-0607
- 5. Ball valve 123490
- 6. ¼ in tubing 014-0440





1. Key switch 020-0156
2. Throttle cable..... 050-0347
3. Hour meter..... 020-0173
4. Indicator light..... 020-0140
5. LCD screed rear control 130102-1
6. LCD screed cab control (not shown) 130102-2
7. Selector switch..... 124417-1
8. Emergency stop button 123714
 - E stop coupling..... 123714-1
 - E stop contact 123714-2
9. Fwd/rev dial 124420
10. Shut down swtich..... 020-0310

020-0395	020-0423	020-0356
Master	Cleanout bar	Pump ctl on/off
Spray on/off		
Left Wing		
Left mid		
Left center		
Right wing		
Right mid		
Right center		



- | | |
|-----------------------|--------|
| 1. Rocker switch..... | 124428 |
| 2. Thermostat | 123715 |
| 3. Box enclosure..... | 130112 |



CALDER BROTHERS CORPORATION

(LIMITED) PRODUCT WARRANTY

Calder Brothers Corporation warrants that the Paver, Roller, Tank or Grader under this program will be free from defects in material and workmanship for a period of (12) twelve months from the date of installation. Written notice of any claimed defect must be given to Calder Brothers Corporation within the warranty period and within (30) thirty days after such defect is discovered. Liability under this warranty is limited to replacing or repairing at Calder Brothers Corporation election, any part or parts deemed defective after examination by Calder Brothers Corporation or an Authorized Service Representative via prepaid transportation for which is found to be defective, will be repaired or replaced and returned to the customer via prepaid surface transportation within the United States. Should any part be found not defective, inspection and handling may be charged to the customer by Mauldin or an Authorized Service Representative.

EXCLUSIONS:

This warranty does not apply to routine wearable parts of the Mauldin machine such as seals, points, plugs, hoses or similar items. This warranty does not extend to any machine or part replaced or repaired under this warranty. This warranty does not cover any repair or replacement labor or any part of parts found defective after examination by Mauldin or an Authorized Service Representative. This warranty does not apply to defects caused by casualty or unreasonable use, including faulty repairs by others and failure to provide reasonable and necessary maintenance.

THIS WARRANTY SET FORTH HEREIN IS IN LIEU OF AND EXCLUDES ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND CUSTOMER WAIVES ANY OBLIGATION OF LIABILITY OF MAULDIN ARISING IN TORT OR STRICT LIABILITY IN TORT, OR FOR LOSS OR USE, REVENUE OR PROFIT WITH RESPECT TO MAULDIN MACHINE AND/OR PARTS FOR ANY LIABILITY OF CUSTOMER TO ANY THIRD PARTY, OR FOR OTHER DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

I have read and fully understand the warranty policy above.

Customer

CALDER BROTHERS CORPORATION

Witness



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