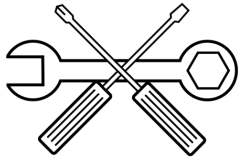
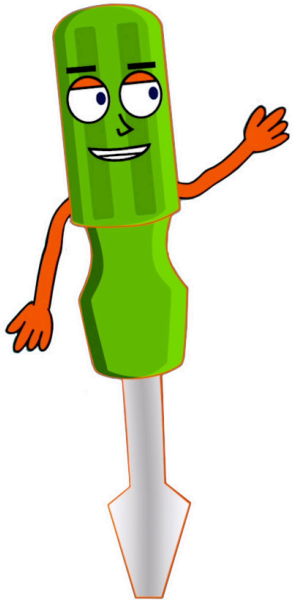


Preventative Maintenance

Cimline M-Series Melters Scheduled Maintenance



Preventative Maintenance



Cimeline M-
Series
Scheduled
Maintenance
Video Support
Available

Video #

Video Title

UNDER CONSTRUCTION

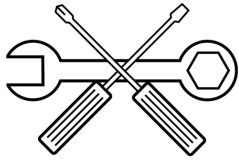
V-CMS-070-0000 Daily and 100 Hour User Recommended Service

V-CMS-070-0000 200 Hour Dealer Recommended Service

V-CMS-070-0000 500 Hour Dealer Recommended Service



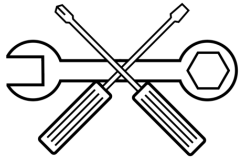
**Preventative Maintenance
Service Academy Video Support**



Preventative Maintenance

Maintenance Schedule / Operation	Every Day	Every 25 Hrs.	Every 100 Hrs.	Every 200 Hrs.	Every 500 Hrs. or Yearly	Manual Page Number
Check engine fuel level (add if low)	X					
Check engine oil and heat transfer oil (add if low)	X					
Check hydraulic oil (add if low)	X					
Check engine air cleaner	X					
Inspect and clean engine air pre-cleaner		X				
Clean out sealant material system		X				
Inspect sealing hose connections			X			
Inspect and clean engine cooling system/radiator			X			
Inspect sealant material pump packing (adjust if leaking is excessive)			X			
Service engine air cleaner element/gaskets	PN 111111			X		
Inspect sealant material flow plumbing				X		
Inspect tank burner nozzle, electrode & head position (clean/adjust if necessary)				X		
Change engine oil and oil filter	PN 111337			X		
Grease agitator bearing block (load adapter)				X		
Replace engine fuel filter	PN 111457			X		
Inspect diesel tank burner electric eye (clean if dirty)	PN 152105				X	
Grease trailer wheel bearings					X	
Inspect tank burner chamber lining insulation (replace if excessive cracking or visible damage)	PN 403400				X	
Inspect engine starting motor					X	
Replace hydraulic oil *					X	
Replace hydraulic return filter	PN 170407				X	
Replace hydraulic suction strainer *	PN 172186				X	
Replace tank burner nozzle	M1 152305, M2 152204, M4 153445				X	
Change heat transfer oil	PN 403910 (or bulk stock)				X	
Change diesel tank fuel filter	PN 170169				X	
Flush engine radiator and replace fluid *					X	

* - Not Necessary On First 500 Hr. Service, But Inspection Is Still Recommended.



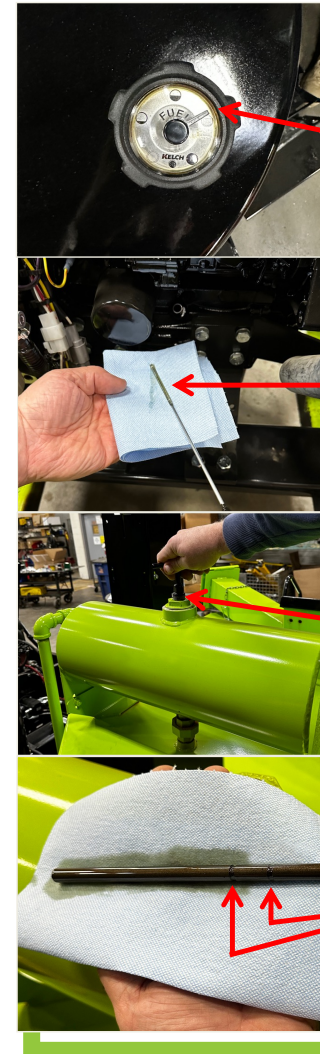
User Preventative Maintenance

M-Series Maintenance Schedule

Maintenance Schedule / Operation	Every Day	Every 25 Hrs.	Every 100 Hrs.	Every 200 Hrs.	Every 500 Hrs. or Yearly
Check engine fuel level (add if low)	X				
Check engine oil and heat transfer oil (add if low)	X				
Check hydraulic oil (add if low)	X				
Check engine air cleaner	X				
Inspect and clean engine air pre-cleaner		X			
Clean out sealant material system		X			
Inspect sealing hose connections			X		
Inspect and clean engine cooling system/radiator			X		
Inspect sealant material pump packing (adjust if leaking is excessive)			X		

Machine User Daily Preventative Maintenance

It should be obvious that some basic daily maintenance items should be checked before a crew leaves for the job site and the Maintenance Schedule is a good reminder of the things a competent crew should be looking at before attempting work with a Cimline melter unit. Checking the fuel tank level, engine oil status, heat transfer oil status and cleaning out the air filter are all things that need looked at to keep the melter running as it should.



Check Fuel Level Before Leaving For The Job Site

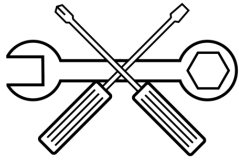
Check Engine Oil Level And Quality (Add if Low)

Check Heat Transfer Oil Level And Quality

Heat Transfer Oil Level Indicator For M1 (150 Gallon) and M2 (250 Gallon) Units Between These Two Cut Lines

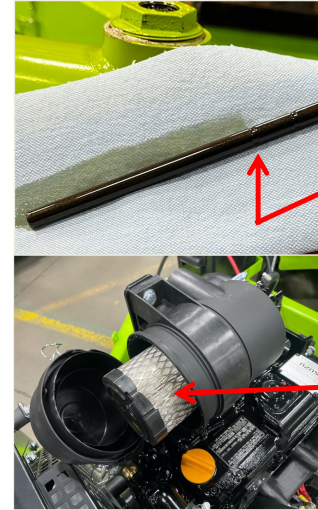


Preventative Maintenance M-Series User Serviced Daily Maintenance Schedule



User Preventative Maintenance

M-Series Maintenance Schedule					
Maintenance Schedule / Operation	Every Day	Every 25 Hrs.	Every 100 Hrs.	Every 200 Hrs.	Every 500 Hrs. or Yearly
Check engine fuel level (add if low)	X				
Check engine oil and heat transfer oil (add if low)	X				
Check hydraulic oil (add if low)	X				
Check engine air cleaner	X				
Inspect and clean engine air pre-cleaner		X			
Clean out sealant material system		X			
Inspect sealing hose connections			X		
Inspect and clean engine cooling system/radiator			X		
Inspect sealant material pump packing (adjust if leaking is excessive)			X		



Heat Transfer Oil Level Indicator For M4 (410 Gallon) Unit At Or Just Above The Lower Cut Line

Check Engine Air Filter

Machine User Daily Preventative Maintenance

When checking the Heat Transfer Oil, always make sure the tank has cooled sufficiently to not be dangerous, when the unit is at operating temperature the heat oil can be more than 500°F and could cause serious burns to an operator. Always look at the condition of the engine oil and heat transfer oil. If the oil is dark black in color or has a pungent odor, then it is time to change the oil to keep the unit running as it should. The engine oil should be changed at 200 hours and heat oil at 500 hours.

IMPORTANT TIP:

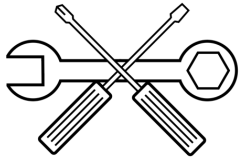
Take care not to over fill the heat transfer oil when adding in new oil. Over filling the oil can cause the system to overflow out of the expansion tank and leak onto the pavement below the machine.

IMPORTANT TIP:

The air filter element is designed so that it can be blown out daily. Because of the dusty work environment inherent in pavement maintenance work, it is recommended this be done every day.



Preventative Maintenance M-Series User Serviced Daily Maintenance Schedule



User Preventative Maintenance

M-Series Maintenance Schedule

Maintenance Schedule / Operation	Every Day	Every 25 Hrs.	Every 100 Hrs.	Every 200 Hrs.	Every 500 Hrs. or Yearly
Check engine fuel level (add if low)	X				
Check engine oil and heat transfer oil (add if low)	X				
Check hydraulic oil (add if low)	X				
Check engine air cleaner	X				
Inspect and clean engine air pre-cleaner		X			
Clean out sealant material system		X			
Inspect sealing hose connections			X		
Inspect and clean engine cooling system/radiator			X		
Inspect sealant material pump packing (adjust if leaking is excessive)			X		

Machine User 25 Hrs. Preventative Maintenance

At 25 hours, which can be only a few days of continuous crew operation, the list is simple and short, but necessary. Make sure the engine air pre-filter (not available on all units) on the exterior engine shroud intake is clear of any debris. Make sure the hose and internal plumbing has been properly cleaned out by running the pump in reverse (CLEAN OUT) while the unit is fully up to temperature. Inspect the wand valve and sealing tip to make sure those parts are clean and clear of any sealant buildup impeding their operation.

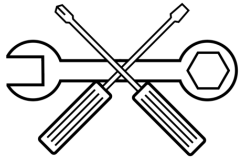


Check Engine Air Intake Pre-Filter (If Applicable)

Clean Out Sealant Material System / Suck Back Hose And Wand Thoroughly

Clean Out Sealant Material System / Inspect Wand Components (Ball Valve)

Clean Out Sealant Material System / Inspect Wand And Components (Sealing Shoe)



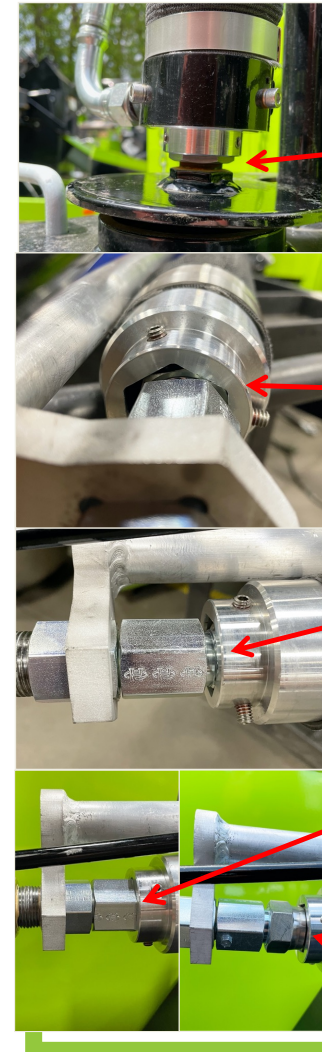
User Preventative Maintenance

M-Series Maintenance Schedule

Maintenance Schedule / Operation	Every Day	Every 25 Hrs.	Every 100 Hrs.	Every 200 Hrs.	Every 500 Hrs. or Yearly
Check engine fuel level (add if low)	X				
Check engine oil and heat transfer oil (add if low)	X				
Check hydraulic oil (add if low)	X				
Check engine air cleaner	X				
Inspect and clean engine air pre-cleaner		X			
Clean out sealant material system		X			
Inspect sealing hose connections			X		
Inspect and clean engine cooling system/radiator			X		
Inspect sealant material pump packing (adjust if leaking is excessive)			X		

Machine User 100 Hrs. Preventative Maintenance

The items at the 100 hour mark are inspection items only, but they are very important items that need to be evaluated regularly. For most crews this is carried out once or twice a month while in season. The first item is inspecting the sealant hose connections to confirm they are properly tight, there are no visible leaks, and that the hose end caps are secured over the coupling nuts correctly and are not coming loose. If the end cap comes loose, the internal wiring can become damaged and the hose will need replaced.



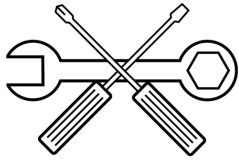
**Inspect Sealing Hose Connections At The Hose Base
1-1/4" Nut And Set Screws**

**Inspect Sealing Hose Connections At The Hose - Wand
1-1/4" Nut And Set Screws**

CORRECT, Approx. 1/8" Gap Between Hose End Cap And Wand Swivel

INCORRECT Not Enough Gap Between Hose End Cap And Wand Swivel

INCORRECT Hose End Cap Not Covering 1-1/4" Hose End Nut



User Preventative Maintenance

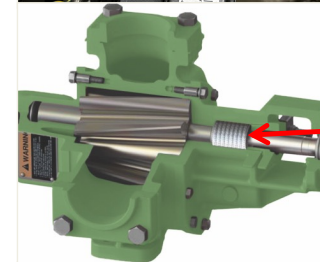
M-Series Maintenance Schedule					
Maintenance Schedule / Operation	Every Day	Every 25 Hrs.	Every 100 Hrs.	Every 200 Hrs.	Every 500 Hrs. or Yearly
Check engine fuel level (add if low)	X				
Check engine oil and heat transfer oil (add if low)	X				
Check hydraulic oil (add if low)	X				
Check engine air cleaner	X				
Inspect and clean engine air pre-cleaner		X			
Clean out sealant material system		X			
Inspect sealing hose connections			X		
Inspect and clean engine cooling system/radiator			X		
Inspect sealant material pump packing (adjust if leaking is excessive)			X		

Machine User 100 Hrs. Preventative Maintenance

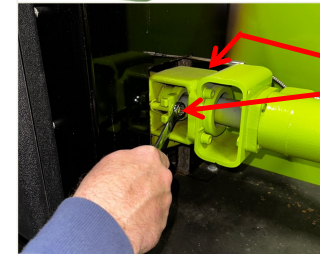
The radiator and engine coolant needs to be inspected for proper level and fluid quality. The radiator grill and fins need to be checked and cleaned if there is excessive debris that could restrict air flow. Inspect the sealant material pump packing (at the motor input shaft). It is normal to see a small amount of sealant material leaking on the axle. At the end of a normal shift there can be a small puddle of sealant about 5-8" in diameter. If there is more than that, or continuous leaking that is dripping off the end of the trailer frame the packing needs to be adjusted.



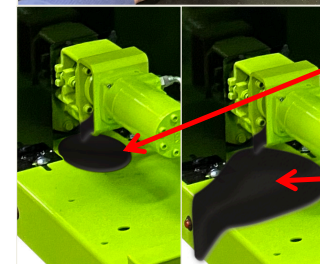
Inspect Radiator Grill For Debris And Check Coolant Level And Quality



Inspect Sealant Material Pump Packing And Adjust/Tighten If Needed



Material Pump Packing Nuts – Tighten ONLY 1/4 to 1/2 Rotation To Restrict Leaking At Shaft Gland

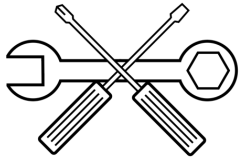


Acceptable Amount Of Leaking After 8 Hrs. Shift

Too Much Leaking, Packing Needs To Be Tightened Slightly



Preventative Maintenance M-Series User Serviced 100 Hour Maintenance



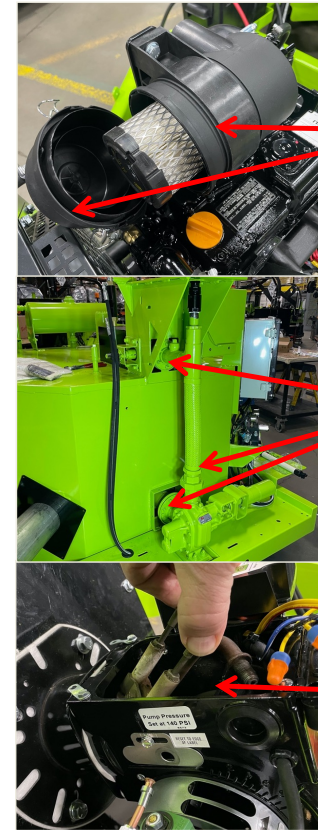
Dealer Preventative Maintenance

M-Series Maintenance Schedule

Maintenance Schedule / Operation	Every Day	Every 25 Hrs.	Every 100 Hrs.	Every 200 Hrs.	Every 500 Hrs. or Yearly
Service engine air cleaner element/gaskets				X	
Inspect sealant material flow plumbing				X	
Inspect tank burner nozzle, electrode & head position (adjust if necessary)				X	
Change engine oil and oil filter				X	
Grease agitator bearing block (load adapter)				X	
Replace engine fuel filter				X	

Dealer Recommended 200 Hrs. Maintenance

At 200 hours the air filter element PN 111111 needs to be changed and the gaskets that seal the filter canister need to be inspected and cleaned. The internal material plumbing from the tank through the pump and up to the top of the tank should be inspected for any leaking and the pipe flange bolts torque should be checked. The M-Series Owners Operators Manual has a page dedicated to this item and it should not be overlooked. The tank burner nozzle assembly will need to be removed and inspected, cleaned, and the head position needs to be confirmed at this time.



Service Engine Air Cleaner Element And Gaskets
Air Filter PN 111111

Inspect Sealant Material Flow Plumbing, Including Checking All Flange Bolts For Proper Torque And Any Leakage

Inspect Tank Burner Nozzle, Electrode And Head Position (Adjust If Necessary)

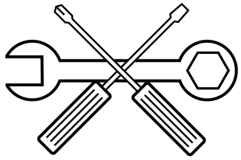
IMPORTANT TIP:

It is common for the burner nozzle assembly to get fouled due to dust and road dirt going through the burner intake. Keep the burner nozzle assembly clean or the burner will not operate as expected.



Preventative Maintenance

M-Series Dealer Serviced 200 Hour Maintenance



Dealer Preventative Maintenance

M-Series Maintenance Schedule

Maintenance Schedule / Operation	Every Day	Every 25 Hrs.	Every 100 Hrs.	Every 200 Hrs.	Every 500 Hrs. or Yearly
Service engine air cleaner element/gaskets				X	
Inspect sealant material flow plumbing				X	
Inspect tank burner nozzle, electrode & head position (adjust if necessary)				X	
Change engine oil and oil filter				X	
Grease agitator bearing block (load adapter)				X	
Replace engine fuel filter				X	



**Change Engine Oil
And Oil Filter PN
111337**

**Grease Agitator
Bearing Block (Load
Adapter)**

**Replace Engine Fuel
Filter PN 111457**

Dealer Recommended 200 Hrs. Maintenance

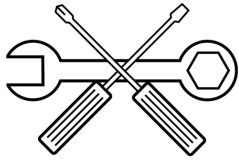
The engine oil and filter are due to be changed at the 200 hour mark. The oil filter is PN 111337 and a recommended oil can be found in the Isuzu engine owners manual that was delivered with the unit in the document box. The agitator gear block will need to be greased at 200 hours and is important to the life of this part, running this unit dry will greatly shorten the life of the agitator. Replace the engine fuel filter with PN 111457. This is a simple process that takes only a minute or two to complete.

IMPORTANT TIP:

Oil Capacity 3.1 qt
Oil Filter (Spin-on Type) PN 111337
Oil Dipstick Upper Limit 3.1 qt
Oil Dipstick Lower Limit 1.7 qt



Preventative Maintenance M-Series Dealer Serviced 200 Hour Maintenance



Dealer Preventative Maintenance

M-Series Maintenance Schedule					
Maintenance Schedule / Operation	Every Day	Every 25 Hrs.	Every 100 Hrs.	Every 200 Hrs.	Every 500 Hrs. or Yearly
Inspect diesel tank burner electric eye (clean if dirty)					X
Grease trailer wheel bearings					X
Inspect tank burner chamber lining insulation (replace if excessive cracking)					X
Inspect engine starting motor					X
Replace hydraulic oil					X
Replace hydraulic return filter					X
Replace hydraulic suction strainer					X
Replace tank burner nozzle					X
Change heat transfer oil					X
Change diesel tank fuel filter					X
Flush engine radiator and replace fluid					X

Dealer Recommended 500 Hr/Annual Maintenance

The 500 hour service is also recommended as an annual service as most users operate in a seasonal capacity with colder months seeing the unit idle and available to be taken out of service for a larger service event. Inspect the burner CAD eye (electric eye) sensor and clean if needed. Grease all wheel axle bearings and check the wheel lug nuts for proper torque. Inspect the burner chamber insulation for any damage or excessive cracking. Inspect the starter motor and its wiring for corrosion or excessive wear.



**Inspect Tank Burner
CAD Eye Sensor
(Clean If Dirty)**

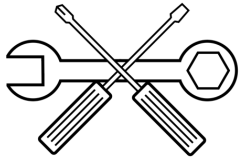
**Grease Trailer
Wheel Bearings And
Check Wheel
Lug Nut Torque**

**Tank Burner Chamber
Inspection Port For
Observing
Insulation/Flame**

**Inspect Engine
Starter Motor and
Wiring Connections**



Preventative Maintenance M-Series Dealer 500 Hour/Annual Maintenance



Dealer Preventative Maintenance

M-Series Maintenance Schedule					
Maintenance Schedule / Operation	Every Day	Every 25 Hrs.	Every 100 Hrs.	Every 200 Hrs.	Every 500 Hrs. or Yearly
Inspect diesel tank burner electric eye (clean if dirty)					X
Grease trailer wheel bearings					X
Inspect tank burner chamber lining insulation (replace if excessive cracking)					X
Inspect engine starting motor					X
Replace hydraulic oil					X
Replace hydraulic return filter					X
Replace hydraulic suction strainer					X
Replace tank burner nozzle					X
Change heat transfer oil					X
Change diesel tank fuel filter					X
Flush engine radiator and replace fluid					X

Dealer Recommended 500 Hr/Annual Maintenance

Drain the hydraulic oil, replace the recirculation filter PN 170407 on the top of the tank, remove the suction strainer from the bottom of the tank and inspect and clean the screens or replace if necessary with PN 172186. The burner nozzle assembly will need to be removed and the burner nozzle tip will need to be replaced. Each melter unit uses a specific burner nozzle and you will need to be careful to install the correct size tip or you can damage the melter unit.



**Replace Hydraulic Oil
Using MV32 Or
Equivalent**

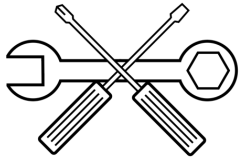
**Replace Hydraulic Oil
Tank Return Filter
Element
PN 170407**

**Clean/Replace
Hydraulic Oil Tank
Suction Strainer
PN 172186**

**Replace Tank Burner
Nozzle Tip
M1 PN 152305
M2 PN 152204
M4 PN 153445**



Preventative Maintenance M-Series Dealer 500 Hour/Annual Maintenance



Dealer Preventative Maintenance

M-Series Maintenance Schedule					
Maintenance Schedule / Operation	Every Day	Every 25 Hrs.	Every 100 Hrs.	Every 200 Hrs.	Every 500 Hrs. or Yearly
Inspect diesel tank burner electric eye (clean if dirty)					X
Grease trailer wheel bearings					X
Inspect tank burner chamber lining insulation (replace if excessive cracking)					X
Inspect engine starting motor					X
Replace hydraulic oil					X
Replace hydraulic return filter					X
Replace hydraulic suction strainer					X
Replace tank burner nozzle					X
Change heat transfer oil					X
Change diesel tank fuel filter					X
Flush engine radiator and replace fluid					X

Dealer Recommended 500 Hr/Annual Maintenance

Changing the heat transfer oil every 500 hours will keep the unit heating up properly. The oil can be drained from a 3/4" pipe under the tank and refilled with fresh ISO 68 Heat Application Oil Cimline PN 403910 sold in 5 gallon pails. The diesel spin on fuel filter PN 170169 needs to be replaced at this time and is used to keep debris in the fuel tank from clogging the burner fuel pump and nozzle tip. The engine coolant is due to be changed and that system will need to be inspected for any leaks or damage.



Change Heat Transfer Oil Using Cimline ISO 68 PN 403910

Change Diesel Tank Burner Fuel Filter

Flush Engine Radiator And Replace Engine Coolant

IMPORTANT TIP:

A machine that has more than 500 hours on it, that it is slow to heat up, or If your melter unit takes longer than one hour to reach application temp. You likely need to change the heat transfer oil.



Preventative Maintenance M-Series Dealer 500 Hour/Annual Maintenance