Specialist in Municipal, Contractor and Industrial Equipment

CONCORD

ROAD EQUIPMENT MFG., INC.

CRE-250AH-TR and CRE-400AH-TR

Trailer Mounted Heated Asphalt Haulers

Operating, Parts, and Maintenance Manual

P.O. Box 772 – Painesville, Ohio 44077 * Phone (440) 357-5344 * 800-942-ROAD
www.concordroadequipment.com

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Warranty Registration Record

Please complete the
Warranty Registration Form for your records.

Model Purchased: _____Serial #_____

In Service Date: _____

Owners Complete Mailing Address:

_____

_____

_____

_____

_____

Telephone #:_____

Fax #:_____

I have read, understand, and will apply the
contents of the Concord warranty, safety,
operation and maintenance manual.

_____
Owners Signature

_____
Owners Name Printed

CONCORD ROAD EQUIPMENT MFG., INC.
PAINESVILLE, OHIO

WARRANTY

Concord Road Equipment Mfg., Inc. warranties all new CRE products manufactured by this company according to the terms as set forth below, BUT EXCLUDES ANY IMPLIED WARRANTY OF MERCHANTABILITY and there are no warranties which extend beyond the description of the face of this warranty.

Should any Concord Road Equipment product prove defective in material or workmanship, under normal service and use, within a period of one year from date of shipping to the original purchaser, CRE shall repair or replace if the following conditions have been met: the equipment was properly set up, adjusted, used and operated by a trained person. Which on inspection by CRE appears to have been defective in workmanship or material, but the cost of labor in replacement of these parts will be paid by the purchaser and transportation of the equipment to the company's facility will also be the responsibility of the purchaser. This warranty will be effective only if CRE receives written notice of the equipments defect or failure to perform within thirty (30) days of the expiration of the (1) one year warranty period. This warranty does not cover and will not be effective in the event that any defect or failure to perform occurs as a result of a defect in a part accessory sold by this company but produced by another manufacturer. Such merchandise is warranted only through the manufacturer of the part or accessory. This warranty shall be void where equipment has been subject to misuse, neglect, alteration, accident, or when repaired with parts other than genuine CRE Mfg. Inc.

Concord Road Equipment's Mfg., Inc. obligations under this warranty shall be suspended during any period in which it is prevented from fulfilling its responsibilities by forces beyond our control such as lack of supplies, labor disputes, acts of God and transportation inadequacies. Damages for breach of this warranty shall be limited to replacement of the defective parts as set out herein and shall not include consequential damage for injuries to persons, property or loss of profits occasioned by such defects. No representative or other person is authorized or permitted to make any warranty or assume for this company any liability not strictly in accordance with the foregoing.

This warranty shall extend only to the original purchaser of the equipment from Concord Road Equipment Mfg., Inc.

CONCORD ROAD EQUIPMENT MFG., INC.
250AH AND 400AH SERIES ASPHALT HEATER/HAULERS

GENERAL

This asphalt heater/hauler has been designed to, when properly maintained, give you years of reliable and dependable service. As with all equipment, you must familiarize yourself with the operation of the machine BEFORE it is put into service. It is the responsibility of the owner of this machine to make sure that the person or persons operating the machine read and understand all safety, operation and maintenance instructions in this manual. Above all, always use good common sense when using your machine.

SAFETY INSTRUCTION:

1) Observe and follow all safety precautions to avoid personal injury and/or damage to this machine.

2) Read and follow all safety, operation and maintenance instructions in this manual before operating this machine.

3) Do not stand, sit or ride on any part of this machine.

4) Keep all body parts, clothing, etc., away from moving parts.

5) All drive covers, shields and guards should be in their proper locations and in good working condition before operating this machine.

6) When towing this machine make sure it is securely attached to tow vehicle.

7) Always turn off hydraulic power source before performing maintenance. Never disconnect pressurized hydraulic lines. Failure to compile with this warning may result in property damage, serious injury or death.

8) Wear OSHA approved protective clothing at all times when operating machinery:

   a. Hard hats.

   b. Safety face shields and/or eyewear.

   c. Long sleeves shirts with button cuffs.

   d. Gloves with elastic tops that are heat/flame resistant.

   e. High top shoes with thick rubber or composition soles.

9) Melted material is extremely hot and can cause serious burns. Use extreme caution when handling material.

10) Keep working fire extinguisher of appropriate type and size on hand at all times.

11) **DO NOT** overheat material. Check with material manufacturer for maximum or safe operating temperature of material being heated. **NEVER** exceed this temperature or serious personal injury and/or damage to machine will occur.

12) **NEVER** leave operating unit unattended.

13) **DO NOT** over fill material hopper. Allow sufficient space for material to expand when heated to material manufacturer suggested operating temperature.

14) **DO NOT** heat unit without material in hopper.

TOWING ASPHALT HAULER

This unit, as a portable unit, has been designed for simple and safe attachment to the tow vehicle. All connections MUST be carefully checked and the following precautions must be taken before trailering the unit.

1. Towing vehicle must have the proper towing capacity for unit being towed.

2. Check your maintenance schedule and be sure you are up-to-date.

3. Check hitch. Is it showing wear? Is it properly lubricated? Inspect towing hookup for secure attachment. Check to see that no binding or restrictions exist.

4. The jack leg has been raised and properly secured.

5. The safety chains are properly attached to towing vehicle.

6. The lights and braking systems (if so equipped) are properly functioning. Units supplied with electric brakes require that the towing vehicle have a properly functioning brake controller within easy reach of towing vehicle's operator and breakaway cable properly attached to vehicle.

7. Check the fuel tanks and/or LPG bottles are securely attached to unit.

8. The tires are inflated to the proper PSI as indicated on sidewall of each tire. (See Chart on page 20)

9. Check wheel mounting nuts/bolts with a torque wrench. Torque in proper sequence, to the levels specified in this manual. (See page 20)

10. Check that all tools, doors, lids, covers and accessories are properly secured prior to towing.

11. NEVER TOW VEHICLE WHILE BURNER OR BURNERS ARE IN OPERATION. LID/DOOR(S) MUST BE FASTENED DOWN DURING TOWING.

LOADING

1. Unit must be parked and on a level stable surface, wheels should be chocked if not attached to towing vehicle.

2. While standing on a stable surface, unlock catch pins on top loading door retractable handle. Slide retractable handle outward until reaching the positive handle stops, pin in place.

3. While handles are fully extended outward and locked in place, slowly pull handles downward which in turn will pivot open top loading door.

4. While top loading doors are in the full open position, fill inner sloped heated hopper being careful **NOT TO OVERLOAD UNIT**. Note that the unit GVWR (Maximum Gross Vehicle Weight Rating) is located on placard on trailer tongue.

MODEL MAXIMUM HOPPER PAYLOADS

250AH — 5000 LBS

400AH — 8000 LBS

5. When filling is completed, slowly lower top loading door(s) to their closed position Slide retractable handle assemblies to their closed position and reinstall retaining pins, relock rear latch.

NEVER ENTER INSIDE OF HOPPER

UNLOADING:

1. Pull out rear door lower spring loaded latch to allow door to be raised to the open position.

2. In the open position, the rear door assembly can remain open while in use by using the top spring loaded latch.

3. Note that while doors are in the open position material being heated may begin to cool.

TEMPERTURE CONTROL(S) STANDARD DIGITAL CONTROLLER

All units (LPG or diesel fueled) are thermostatically controlled with auto ignite burners and are supplied with a standard dual reading digital scale that indicates both the set temperature to be maintained and actual temperature of material as it cools.

NEVER SET TEMPERATURE CONTROL AT A HIGHER TEMPERATURE THAN WHAT IS THE RECOMMENDED BY THE MATERIAL MANUFACTURER

There is a separate controller for each burner that will be operated, i.e.; main hopper/material storage bin burner(s), and if so equipped optional sealant and tack tanks burner(s). Digital type temperature controller(s) are located within sealed NEMA enclosure located on the side of material storage bin. To maintain the set desired temperature follow these instructions.

1. Open NEMA enclosure hinged cover.
2. Turn on Key Switch and Toggle Switches.
3. Digital Controller will read actual temperature of hopper to set temperature:
   A) Press and hold * key.
   B) Press up and down arrow keys to increase or decrease temperature
   C) Set control to desired temperature.
   D) Let go of * key and temperature is set.
4. After setting desired temperature, close and secure NEMA enclosure hinged cover.
5. See pages 8-10 for detailed programming and set-up guide for Digital Temperature Control – Omega CN-132-12V Controllers.
6. See following pages for BURNER(S) OPERATION for proper initial start-up for the type of heating burner(s) system installed on unit i.e. LPG propane burners (page 11-12) or diesel oil burners (page 12-13).

NEVER ENTER INSIDE OF HOPPER

DIGITAL TEMPERATURE CONTROL PROGRAMMING AND SETUP GUIDE: Omega CN-132-12v Controllers

A) MAIN PROGRAM UNLOCK: Use only if program has been locked.

Press and hold both the arrow up and the arrow down key for 5 seconds.
This will enter the controller into programming mode.
The display should read **"tunE".**
Press the arrow down key once. The display should read **"LEVL" & "1"**.
Hold down on the **"*"** key and then press the arrow up key twice.
The display should read **"LEVL" & "3"**.
Press the arrow up key eleven times until screen reads **"VEr"**.
Press and hold up and down arrow key 10 seconds until screen reads: **"nonE"**, **"LEV.3"**, **"LEV.2"**, or **"ALL"**.
Press "*" key and the arrow up key until screen reads **"nonE"**.
(This unlocks all functions.)
Press and hold both the arrow up key and the arrow down key for 5 seconds.
This will enter into memory the above programmed parameters.

B) RESET THE CONTROL PROGRAM CONFIGURATION (controller must be re-programmed afterward)

Press and hold both the arrow up key and the arrow down key for 5 seconds.
This will enter the controller into programming mode.
The display should read **"tunE"**.
Press the arrow down key once. The display should read **"LEVL"** & **"1"**.
Hold down on the "*" key and then press the arrow up key twice.
The display should read **"LEVL"** & **"3"**.
Press the arrow up key twelve times. The display should read "**rSEt"**.
Hold down on the **"*"** key and then press the arrow up key once.
The display should read **"rSEt"** & **"ALL"**.
Press and hold both the arrow up and the arrow down key for 5 seconds. This will reset the memory of the controller. You must then go to Section C.

C) FIRST TIME POWER-UP (for factory & field replacements)

Verify all wiring is correct and proper voltage is applied to controller.
Display should be cycling between **"inPt"** and **"none"**. (if not, go to Section A)
Hold down on the **"*"** key and then press the arrow up key until **"tcJ"** is displayed.
Release both the **"*"** key and the arrow up key.
Press the arrow up key once. The display should read **"unit"** and **"nonE"**.
Hold down the **"*"** key and then press the arrow up key until **"F"** is displayed.
Release both the **"*"** key and the arrow up key.
Press the arrow up key once. The display should read **"SPI.d"** and **"nonE"**.
Hold down the **"*"** key and then press the arrow up key until **"rLy"** is displayed.
Release both the **"*"** key and the arrow up key.
Press and hold both the arrow up and the arrow down key for 5 seconds.
This will enter into memory the above programmed parameters.
Proceed to Section D.

D) MAIN PROGRAM CONFIGURATION

Press and hold both the arrow up and the arrow down key for 5 seconds.
This will enter the controller into programming mode.
The display should read **"tunE"**.
Press the arrow up key once. The display should read **"bAnd"**.
Hold down on the **"*"** key and then press the arrow up key on the arrow down key until:
"20" is displayed.
Release both the **"*"** and the arrow up key.
Press the arrow up key once. The display should read **"intt"**.
Hold down on the **"*"** key and then press the arrow down key until **"oFF"** is displayed.
Release both the **"*"** key and the arrow up key.
Press the arrow up key once. The display should read **"dErt"**.
Hold down on the **"*"** key and then press the arrow down key until **"oFF"** is displayed.
Release the arrow up key twice. The display should read **"CyCt"**.
Hold down on the **"*"** key and then press the arrow down key until: **"on.oF"** is displayed.
Release both the **"*"** key and the arrow up key.
Press and hold both the arrow up key and the arrow down key for 5 seconds.
This will enter into memory the above programmed parameters.
Proceed to Section E.

E) CHANGE HIGH SET POINT

Press and hold both the arrow up and the arrow down key for 5 seconds.
This will enter the controller into programming mode.
The display should read **"tunE"**.
Press the arrow down key once. The display should read **"LEVL"** & **"1"**.
Hold down on the "*" key and then press the arrow up key once.
The display should read **"LEVL"** & **"2"**.
Press the arrow up key eight times until screen reads **"hi.SC"**
Press **"*"** key and up or down key until display reads **"400"**
Press and hold both the arrow up key and the arrow down key for 5 seconds.
This will enter into memory the above programmed parameters.
Proceed to Section F.

F) MAIN PROGRAM LOCK-OUT

Press and hold both the arrow up and the arrow down key for 5 seconds.
This will enter the controller into programming mode.
The display should read **"tunE"**.
Press the arrow down key once. The display should read **"LEVL"** & **"1"**.
Hold down on the **"*"** key and then press the arrow up key twice.
The display should read **"LEVL"** & **"3"**.
Press the arrow up key eleven times until screen reads **"VEr"**
Press and hold up and down arrow key 10 seconds until screen reads: **"nonE"**,
"LEV.3", **"LEV.2"**, or **"ALL"**.
Press **"*"** key and the arrow up key until screen reads **"ALL"**.
(This locks all functions except **"LEVL"**, **"dAtA"**, and set point lock **"SK.LY"**.)
Press and hold both the arrow up key and the arrow down key for 5 seconds.
This will enter into memory the above programmed parameters.
Proceed to Section G.

G) SET OPERATING TEMPERATURE

Hold the **"*"** key use the arrow up or arrow down key until screen reads proper operating temperature for the material being used. The proper operating temperature can be obtained from the material manufacturer or from the vendor where the material was purchased.

***Optional Procedure: To Lock Out Adjustment of the Operating Temperature**

H) SET POINT LOCK-OUT

Press and hold both the arrow up and the arrow down key for 5 seconds.
This will enter the controller into programming mode.
The display should read **"tunE"**.
Press the arrow up key until the display reads **"SP.LY"**.
Press and hold **"*"** key push arrow key until screen reads **"on"**
Press and hold both the arrow up key and the arrow down key for 5 seconds.
This will enter into memory the above programmed parameters.

***Procedure To Unlock Adjustment of the Operating Temperature**

I) SET POINT UNLOCK

Press and hold both the arrow up and the arrow down key for 5 seconds.
This will enter the controller into programming mode.
The display should read **"tunE"**.
Press the arrow up key until the display reads **"SP.LY"**.
Press and hold **"*"** key push arrow key until screen reads **"oFF"** to unlock
Press and hold both the arrow up key and the arrow down key for 5 seconds.
This will enter into memory the above programmed parameters.
To lock out adjustment follow steps in Section H.

BURNERS OPERATION

LPG FIRED UNITS

1. Follow all safety procedures and checks prior to operation of this unit. This burner is intended for outdoor use only.
    a. If you smell gas shut off all gas supplies, extinguish all open flames and contact a qualified gas service technician for assistance.
    b. Do not use this burner in any area containing flammable vapors such as gasoline, paint thinner, degreaser, etc.
    c. Do not use this burner near flammable material such as dead & dry weeds, pine needles, sawdust, paper, etc.
2. Check LPG bottles, regulators, valves, hoses, burners and all connections for leaks. Inspect all connections for breaks or damage. Bottle types must match burner types i.e.: vapor withdrawal or liquid withdrawal.
    - *Vapor withdrawal burners – draws from top of LPG bottle, burner has no preheat coils*
    - *Liquid withdrawal burners – draws from bottom of bottle, burner will have preheat coils*
    - *Infrared burners – Low pressure vapor withdrawal type bottle only*
3. Set temperature controller for desired temperature required for the material you will be heating. Always use the temperature recommended by the material manufacturer.
    - *On units with multiple burners i.e.; main hopper burner, optional sealant tanks burners, etc. there are separate identified temperature controllers and ON/OFF switches for each burner assembly.*
4. If so equipped, fully open all hinged exhaust stack cover(s) and make sure that they are free of any obstructions.
5. Adjust regulator(s) to desired PSI setting, recommended setting is 15 to 25 PSI. **DO NOT EXCEED 30 PSI**.
6. Turn Master System Key Switch to the “ON” position (located on NEMA enclosure)
7. Toggle the ON/OFF switch (located on NEMA enclosure) to the “ON” position for the burner that is to be fired.
    - *When equipped with multiple burners, i.e.; sealant tanks, tack tanks, etc., do not fire burners at the same time. A fully charged, in good condition, 12 volt DC power source is required for proper operation of burner control system.*
    - *Standard units are shipped <u>less any power supply</u> and are designed to be wired to a 12 volt DC power source provided by the towing vehicle. The optional 12 volt DC deep cycle battery is recommended for safe and reliable operation of this unit.*
    - *Units are supplied with the <u>optional</u> self-contained Battery/Battery Trickle Charger system (recommended) and can be plugged into a standard 120 volt DC outlet to recharge or maintain battery voltage.*

8. Burner will automatically ignite within 15-20 seconds if material temperature is lower than the desired setting as indicated on the temperature controller(s). A “sparking sound” of the igniter in front of the burner should be heard and burner should ignite when operating properly. If burner does not ignite, cycle through 2 to 3 times. If burner still will not ignite, contact your local service technician.

9. When not in use, the toggle switch for each burner and master key switch should be in the “OFF” position.

DO NOT ATTEMPT TO LIGHT OR OPERATE THIS BURNER IF THERE IS ANY EVIDENCE OF A GAS LEAK, OR YOU SMELL GAS.

DO NOT LET UNBURNED FUEL BUILD UP IN HEATING CHAMBER, ALWAYS ALLOW ENOUGH TIME FOR GASES TO VENT TO ATMOSPHERE PRIOR TO IGNITION OF ANY BURNER.

See LPG - Liquid Burner Section page 22 for specifications. See LPG - Vapor Burner Section page 23 for specifications. See LPG – Vapor Torch page 25 for specifications.

DIESEL FIRED UNITS

1. Follow all safety procedures/precautions and checks prior to operation of this unit.

2. Inspect fuel tank, valves, lines, fuel pump and all connections for any leaks, breaks or damages, repair as necessary.

3. Check and top off fuel level in fuel tank. (See page 27 for fuel requirements)**.**

4. Set temperature controller for desired temperature required for the material you will be heating. Always use the temperature recommended by the material manufacturer.

    - On units with multiple burners, i.e.; main hopper burner, optional sealant tanks burners, optional tack tanks burners, etc. there are separate identified temperature controllers and ON/OFF switches for each burner assembly.

5. If so equipped, fully open all hinged exhaust stack cover(s) and make sure that it is free of any obstructions.

6. Turn Master System Key Switch to the “ON” position (located on NEMA enclosure)

7. Toggle the ON/OFF switch (located on NEMA enclosure) to the “ON” position for the burner that is to be fired.

    - *When equipped with multiple burners, i.e.; sealant tanks, tack tanks, etc. do not intentionally fire burners at the same time. A fully charged, in good condition 12 volt DC power source is required for proper operation of burner control system.*
        - *Standard units are shipped <u>less any power supply</u> and are designed to be wired to a 12 volt DC power source provided by the towing vehicle. The optional 12 volt DC deep cycle battery is recommended for safe and reliable operation of this unit.*
    - *Units supplied with the <u>optional</u> self-contained Battery/Battery Trickle Charger system can be plugged into a standard 120 volt DC outlet to recharge or maintain battery voltage.*

8. Burner will automatically ignite within 15-30 seconds if material temperature is lower than the desired setting as indicated on the temperature controller(s). If burner does not ignite, cycle through 2 to 3 more times. If burner still will not ignite contact your local service technician.

9. When not in use the toggle switch for each burner and master key switch should be in the “OFF” position.

DO NOT LET UNBURNED FUEL BUILD UP IN HEATING CHAMBER; ALWAYS ALLOW ENOUGH TIME FOR FUEL VAPORS TO VENT TO ATMOSPHERE PRIOR TO IGNITION OF ANY BURNER.

See Diesel Oil Burner Section page 26-35 for operational instructions, service and maintenance, replacement part numbers, troubleshooting and nozzle flow rate chart.

POWER SPRAY ATTACHMENT - OPTIONAL ENGINE DRIVEN EQUIPMENT

Read and understand ALL of the following safety precautions and operating instructions before using power spray system. Failure to do so can result in personal injury and/or damage to machine.

SAFETY PRECAUTIONS:

1. Always check with the manufacturer of the material that you are going to use to make sure that it is safe to use in your kettle and power spray system.

2. Follow all safety precautions supplied by manufacturer of material you are using, i.e.: minimum flow temperature, maximum temperature, flash point, curing time, etc.

3. Always wear proper clothing (safety glasses, face shields, safety gloves, etc.) when using power spray system.

4. Make sure that the unit is securely attached to tow vehicle.

5. **ALWAYS OPERATE AND HANDLE ENGINE DRIVEN POWER SPRAY UNIT IN A CAUTIOUS AND SAFE MANNER**.

PREPARATION:

1. Check all fuel and oils level before each use.

2. Make sure that spray wand valve is in the “OFF” position.

3. Make sure the hydraulic flow valve is set at zero.

4. Make sure the hydraulic control valve in is the neutral (centered) position.

5. Make sure that the material selector valve is set to draw material from the appropriate source.

OPERATION:

1. After material being heated is at application temperature, with hydraulic valve in neutral position, turn on hydraulic source. On self contained hydraulic systems, start the engine. After the engine has been given enough warm up time, raise engine RPM to approximately full throttle.

2. With ON/OFF valve handle on spray wand still in the “OFF” position. Shift the hydraulic valve into spray position, the valve is detente in this direction.

3. Open the ON/OFF valve on the spray wand and increase the hydraulic flow valve setting to achieve desired material application rate. ***CAUTION: material will begin to spray***

4. As the material begins to cool it may become difficult to spray. Recirculation is required to re-heat material in the hose and pump. Open the top lid of the material vat, point nozzle into vat and open spray wand ball valve completely; **CAUTION: be sure to shield yourself from possible hot spatter.** Raise hydraulic flow as necessary to draw hot material back to the pump and power spray hose. When material is back at spraying temperature, resume normal operation.

5. Do not leave system full of material during times of inactivity. It may cool down and destroy your power spray components.

SYSTEM DRAW-BACK

1. When material spraying is complete and to minimize material loss, shift the hydraulic valve into the neutral position.

2. When the pump stops completely, shift the hydraulic valve into the opposite direction to draw back the material into the hose and wand to the material vat.

   NOTE: During this procedure (system draw-back) the ON/OFF valve located on spray wand handle must **ALWAYS** be in the “ON” or open position.

SYSTEM WASH OUT

1. With the hydraulic valve in the neutral position, turn the 3-way valve to the clean out position. In this position, the valve will be closed to the kettle and open to the line from the wash out tank.

2. With spray wand ON/OFF valve handle in the “ON” (open) position insert spray wand nozzle into a waste collection container.

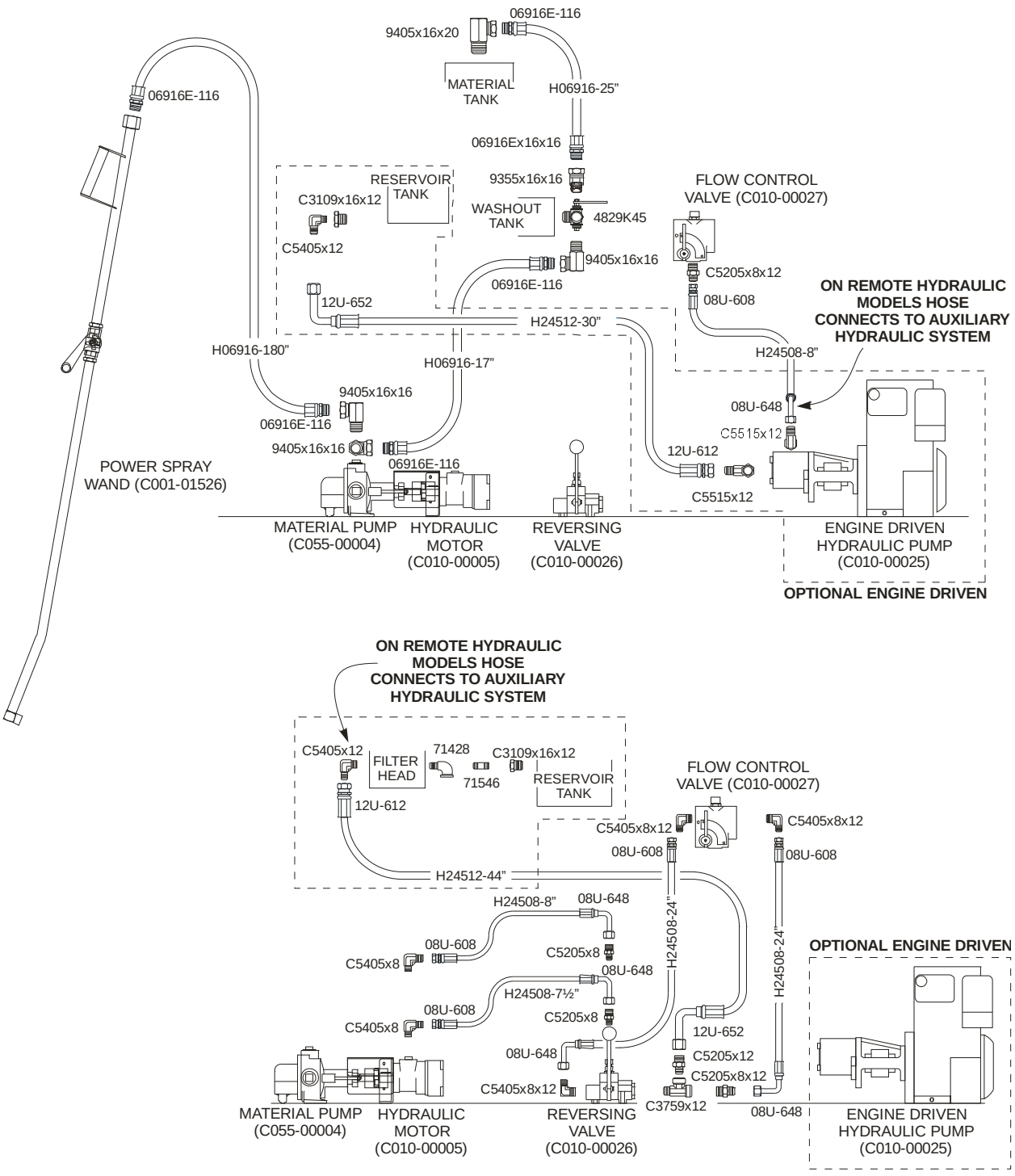
3. Shift the hydraulic valve to the spray position. Cleaning solution will be drawn into suction side of asphalt pump and out the power spray hose and wand assembly.

4. While cleaning the system, momentarily close the ON/OFF valve on spray wand handle to allow clean solution to pass through the pumps internal relief valve.

5. After clean out procedure is complete, shut off the engine (if equipped) turn all valves to OFF positions and properly dispose of used cleaning solution.

TROUBLE SHOOTING AND ADJUSTING POWER SPRAY SYSTEM

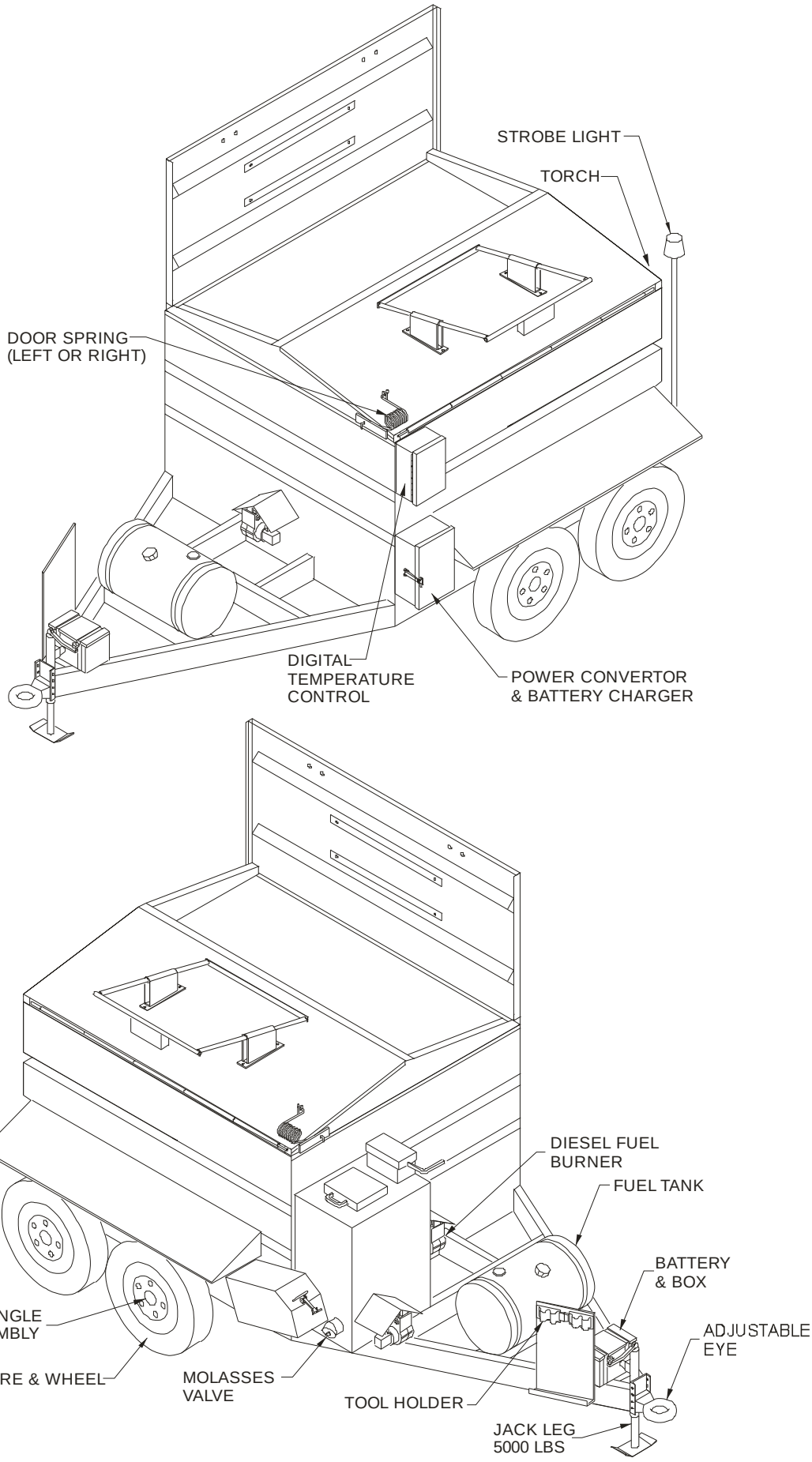
Symptom	Possible Cause Additional Information/Procedure
Leaking Valves	Most valves in the system are of the tapered seat style. To stop severe leakage tighten large nut on bottom of valve. DO NOT over tighten or valve spool will not turn in valve body.
Too Little/Much Material Pressure	Material pressure at the nozzle is based off of material flow. Adjust the hydraulic flow (and engine RPM if equipped) to your desired needs. If increasing hydraulic flow does not increase the output, the system must be inspected for blockage.



POWER SPRAY SYSTEM (optional)- HOSES AND FITTINGS

REPLACEMENT PART NUMBERS

Adjustable Eye	C060-00067
Axle Assembly w/ 12 x 2 Electric Brakes:	
AH250	C070-00003
AH400	C070-00001
Axle Assembly w/ 12 x 2 Hydraulic Brakes:	
AH250	C070-00004
AH400	C070-00002
Battery	C030-00034
Battery Box	C030-00035
Compression Nut	C055-00016
Diesel Fuel Cap	C055-00017
Diesel Oil Burner (Beckett Model ADC) - 105 BTU/H	C055-00018
75 BTU/H	C055-00019
Digital Temperature Control-single	C055-00020
dual	C055-00021
Door Spring (Left)	C060-00010
Door Spring (Right)	C060-00011
Gasoline Powered Engine (Briggs & Stratton)	C055-00001
Fire Extinguisher	C060-00068
Fuel Tank (Complete)	C055-00002
Jack Leg - 5000 lbs.	C060-00069
Key (Digital Temperature Control System)	C055-00027
LPG Liquid Burner - 100,000 BTU @ 25psi	C055-00022
75,000 KBTU @ 25psi	C055-00025
LPG Vapor Burner – 100,000 BTU @ 25psi	C055-00023
75,000 BTU @ 25psi	C055-00024
Marker Lights (Amber)	C030-00036
Marker Lights (Red)	C030-00037
Molasses Valve 1-1/2”	C060-00070
Power Convertor & Battery Charger	C030-00038
Power Spray System (Optional)	
3 Way Steam Valve	C060-00071
Coupler	C060-00072
Coupler	C060-00073
Flow Control Valve	C010-00027
Handle	C060-00074
Hydraulic Motor	C010-00005
Hydraulic Pump	C055-00025
Material Pump	C055-00004
Nylon Coupler Sleeve	C060-00075
Power Spray Wand (Complete)	C001-01526
Ball Valve (Nibco)	C055-00008
Nozzle	C055-00007
Reversing Valve	C010-00026
Spider Coupler	C060-00076
Shovel/Tool Holder	C060-00077
Slip Hook – ½”	C060-00078
Slow Moving Vehicle Sign	C090-00092
Strobe Light (360)	C030-00039
Strobe Toggle Switch (Waterproof)	C030-00040
Waterproof Boot	C030-00041
Tire (ST235/85R16)	C070-00013
Torch Assembly (Complete kit)	C055-00025
Wheel	C070-00011


STROBE LIGHT
TORCH
DOOR SPRING
(LEFT OR RIGHT)
DIGITAL
TEMPERATURE
CONTROL
POWER CONVERTOR
& BATTERY CHARGER
DIESEL FUEL
BURNER
FUEL TANK
BATTERY
& BOX
ADJUSTABLE
EYE
DUEL OR SINGLE
AXLE ASSEMBLY
TIRE & WHEEL
MOLASSES
VALVE
TOOL HOLDER
JACK LEG
5000 LBS

TRAILER MAINTENANCE SCHEDULE

TRAILER	DESCRIPTION OF INSPECTION – MAINTENANCE OPERATION	INTERVAL
Tire Inspection/Inflation	-Check tires for proper inflation as recommended by tire manufacturer. Recommended inflation is located on side wall of tire.	Daily - prior to operation
	-Check tires for abnormal wear, cuts, bulging, tread depth, etc. Replace tire(s) as necessary. (See page 51)	Daily - prior to operation
Wheel Lug Nuts	-Check wheel nuts and studs for condition and torque. Torque to 110 to 120 lb-ft.	After first initial 50 miles then every 40 hours there after
Wheel Bearings	-Check wheel bearing nut torque. Torque 50 lb-ft. -Inspect for corrosion or wear and leakage around seal. -Clean and repack wheel bearings with high quality commercial wheel bearing grease and replace wheel bearing seals.	After first initial 50 miles Once yearly thereafter
Trailer Brakes	-Test that brakes are operational.	Daily - prior to operation
	-Adjust to proper operating clearance.	3000 miles or every 3 months
	Electrical: -Inspect brake magnets for wear and current draw. -Check brake controller for correct amperage and modulation. -Inspect brake wiring for bare spots, fraying, etc.	6000 miles or every 6 months
	Hydraulic: -Check brake cylinders for leaks, and sticking. -Inspect brake lines for cracks, leaks and kinks	After first initial 150 miles and once yearly there after
	-Inspect hub/drum for abnormal wear or scoring. -Inspect brake linings for wear or contamination. -Adjust, repair or replace as necessary.	
Lights, Reflectors and FMVSS Components	-Check for proper operation and condition. -Repair or replace as necessary	Daily - prior to operation
Trailer Hitch/ Pintle Hook	-Check for proper height adjustment. Trailer to be level when connected to towing vehicle.	Daily - prior to operation
	-Check trailer hitch and mounting for good condition i.e. properly torque fasteners, safety chains and hooks in good condition, etc. Repair as necessary.	Daily - prior to operation
Rubber Torsional Type Axle	-Check condition: fasteners for tightness (torque to 125 to 155 lb-ft) and wear, axle to trailer frame welds and general suspension component condition. Repair or replace as necessary.	After first initial 50 miles and every 6 months there after

FIRE EXTINGUISHER INSPECTION AND MAINTENANCE

INSPECTION

An inspection is a “quick check” to assurance that a fire extinguisher is available, fully charged and operable. The frequency of inspection will vary from hourly to monthly, based on need. Inspections should always be conducted when extinguishers are initially placed in service and thereafter at approximately 30-day intervals.

MAINTENANCE

Maintenance is a “thorough check” of the extinguisher. Fire extinguishers should be maintained at regular intervals (at least once a year), or when specifically indicated by an inspection. It includes a thorough examination and any necessary repair, recharging or replacement.

You must ensure that:

- The extinguisher is not blocked by equipment, or other objects that could interfere with access in an emergency.
- The pressure is at the recommended level. On extinguishers equipped with a gauge (such as that shown on the right), the needle should be in the green zone - not too high and not too low.
- The nozzle or other parts are not hindered in any way.
- The pin and tamper seal (if it has one) are intact.
- There are no dents, leaks, rust, chemical deposits and/or other signs of abuse/wear. Wipe off any corrosive chemicals, oil, gunk etc. that may have deposited on the extinguisher.

Fire extinguishers should be pressure tested (a process called hydrostatic testing) after a number of years to ensure that the cylinder is safe to use. Consult your owner's manual, extinguisher label or the manufacturer to see when yours may need such testing.

! WARNING !

If the extinguisher is damaged or needs recharging, replace it immediately! Recharge all extinguishers immediately after use regardless of how much they were used.

7430 SERIES POWER CONVERTER AND BATTERY CHARGER

The Parallax 7430 Series switch mode power converter and battery charger has been designed to provide many years of trouble free operation. The converter charger comes from the factory set at a normal 13.8 volts output for battery charging. Your converter charger is virtually maintenance free. If the 12 volt load exceeds the converter output rating the output voltage will drop to prevent any further increase in current. Turn off or reduce the power demand on the converter charger and the output voltage will restore itself. For extended periods of inactive use or storage disconnect the battery following the battery manufacturer's recommendation.

If the converter charger isn't working properly check the following:

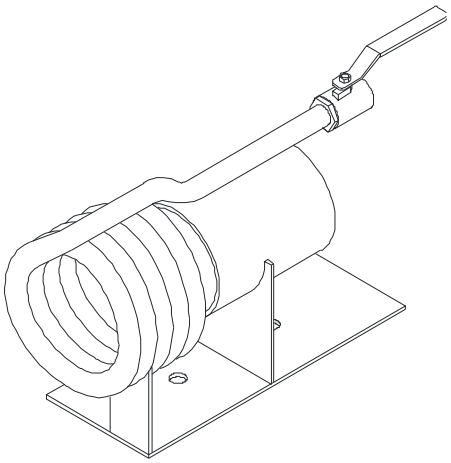
1. Check to see if the power cord is connected to a live circuit.
2. Check for loose wires or bad connections in the fuse panel and at the battery. Replace any blown fuses with a fuse of the same ampere rating.
3. Check to see that the converters air circulation is not blocked and the fan's intake and exhaust is adequately ventilated.
4. Check the battery for charge, on a non-maintenance free battery check water level often. Do not allow the battery cell plates to become exposed to the air. Poor battery performance will result.
5. The 7430 Series power converter battery charger has no adjustments or serviceable parts and must be returned for repairs.

CAUTION: When installing a new battery always observe polarity. Connecting a battery with reverse polarity will open the two 30 ampere power converter output fuses.

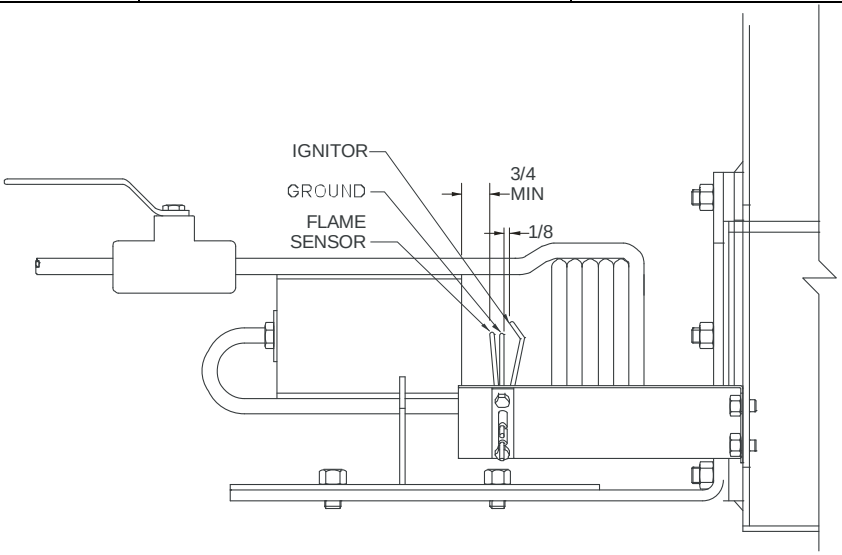
7430 SERIES SPECIFICATION								
Description	**AC Input Volts**	**AC Input Watts**	**DC Output Volts**	**DC Output Amps**	**Height**	**Width**	**Length**	**Weight**
30 Amp Converter Battery Charger	105-130 60Hz	490	13.85 max @ no load 13.2 min @ full load	30	4-1/8"	7"	12-3/8"	7.5 lbs

LPG – LIQUID BURNERS

The coil style burner incorporates an on-board, liquid vaporizer. This allows you to fuel the burner directly with liquid L.P. Gas (liquid withdrawal propane). The use of liquid L.P. Gas requires the use of special system components and a hydrostatic pressure relief valve. Please refer to NFPA-58 and your local municipal governing agency.

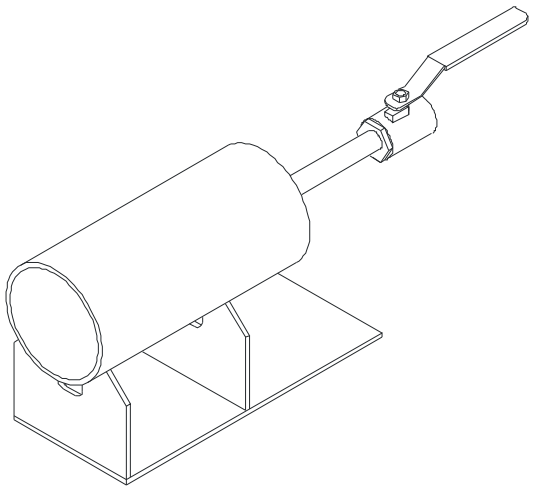


SPECIFICATIONS		
	MODEL FL-7-S (Main Hopper)	**MODEL FL-7-S (Auxiliary Tank)**
BTU RATING	100,000 @ 25 PSI	75,000 @ 25 PSI
FUEL	Liquid L.P. Gas (propane)	Liquid L.P. Gas (propane)
FUEL CONNECTION	9/16”-18 LH (ball seat)	9/16”-18 LH (ball seat)
SLEEVE—DIAMETER	3-1/2”	3-1/2”
GAS PIPE—MATERIAL	1/8” Mild Steel Pipe	1/8” Mild Steel Pipe
LENGTH	10”	10”
HEIGHT	6½”	6½”
BASE	3-1/2” x 8”	3-1/2” x 8”
WEIGHT	5 lbs	5 lbs
COLOR	Blue	Blue

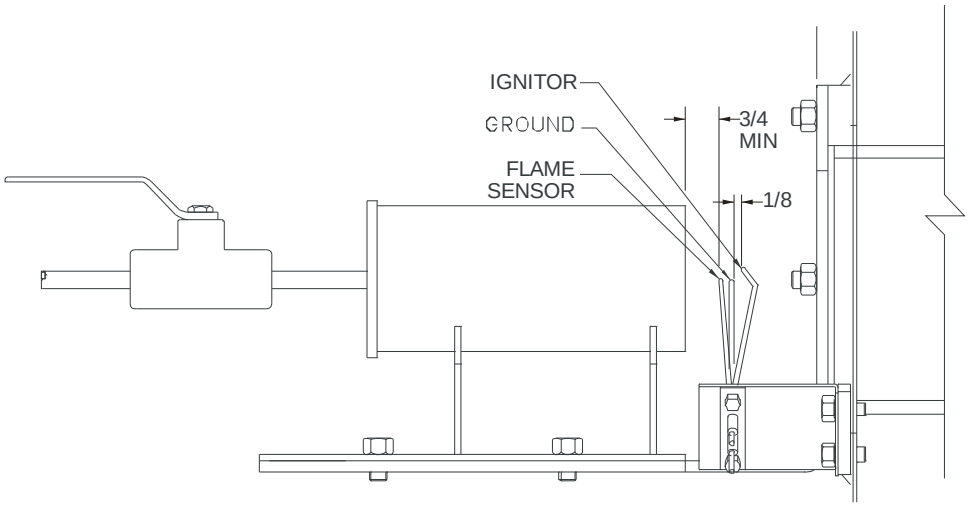


LIQUID PROPANE BURNER

LPG – VAPOR BURNERS



SPECIFICATIONS		
	MODEL FV-90 (Main Hopper)	**MODEL FV-90 (Auxiliary Tank)**
BTU RATING	100,000 @ 25 PSI	75,000 @ 25 PSI
FUEL	Vapor L.P. Gas (propane)	Vapor L.P. Gas (propane)
FUEL CONNECTION	9/16”-18 LH (ball seat)	9/16”-18 LH (ball seat)
SLEEVE—DIAMETER	1-7/8”	1-7/8”
GAS PIPE—MATERIAL	1/4” Mild Steel Pipe	1/4” Mild Steel Pipe
LENGTH	11”	11”
HEIGHT	4½”	4½”
BASE	3-1/2” x 8”	3-1/2” x 8”
WEIGHT	3 lbs	3 lbs
COLOR	Grey	Grey

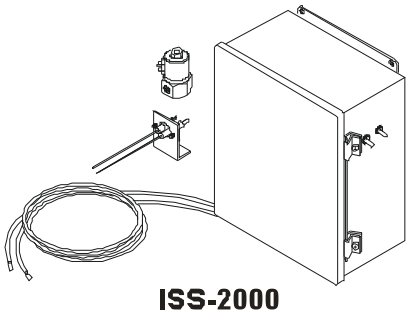


VAPOR PROPANE BURNER

AUTOMATIC IGNITION & SAFETY CONTROL SYSTEMS

Automatic ignition & flame monitoring control packages use the Fenwal solid-state ignition control module for reliable flame management. Features include direct spark ignition & flame rectification monitoring, high temperature wiring and protective sleeves, pre-assemble wiring harnesses with quick connect ends and easy configuration.

All cable lead lengths are 6 feet and come complete with universal ignition & flame rod assemblies that requires simple bending to adapt to your installation.



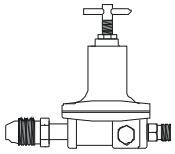
ISS-2000
12VDC

SPECIFICATIONS	
MODEL NUMBER	ISS-2000-DT
BURNER CONTROL	SINGLE
ELECTRICAL	12VDC
TEMPERATURE CONTROL	32-1472°F (elec.)
SOLENOID	(1) 1/4" npt (500,000 btu @25)

FILTERS & PRESSURE RELIEFS

For use with liquid & vapor propane gas: #155 Filter (¼" fpt in x ¼" mpt out)
(1.0 mil btu/h cap. on liquid)

REGULATORS



VAPOR PROPANE
- 597FC-510: 5 - 45 psi w/ gauge 1.2 mil btu/h

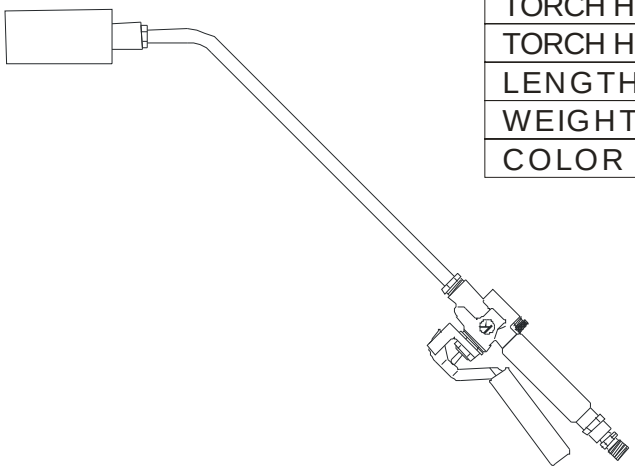
LIQUID PROPANE
- 597FB-555: 3 - 30 psi w/ gauge 2.0 mil btu/h

IGNITOR & FLAME RODS

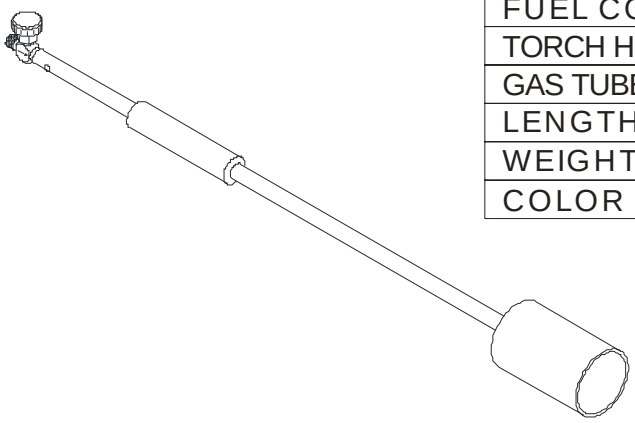
#593 Fenwal Ignitor/Flame Rod Assy

LPG – VAPOR TORCH

SPECIFICATIONS	
	MODEL FV-15
BTU RATING	520,000@50 psi
FUEL	Vapor L.P. Gas (propane)
FUEL CONNECTION	9/16”-18 LH (ball seat)
TORCH HEAD-DIAMETER	2”
TORCH HEAD-MATERIAL	Mild Steel & Brass
LENGTH	32”
WEIGHT	2½”
COLOR	Blue & Black



SPECIFICATIONS	
	MODEL FV-11
BTU RATING	400,000
FUEL	Vapor L.P. Gas (propane)
FUEL CONNECTION	9/16”-18 LH (ball seat)
TORCH HEAD-DIAMETER	2-7/8”
GAS TUBE-MATERIAL	3/8” Mild Steel Pipe
LENGTH	32”
WEIGHT	3 lbs
COLOR	Blue



FV-11-K: For a complete kit (FV-11 Torch, 10 Foot Hose, Tank Connector & Flint Striker)

DIESEL OIL BURNER - BECKETT MODEL ADC

On the standard burner configuration, the motor and igniter operate continuously while the valve that controls oil flow is cycled by the switches on the power washer. The motor is used to drive the blower and pump. The rotational speed of the motor is determined by the voltage supplied and the load placed on the motor. Pump pressure and air settings are the main factors affecting the motor load. The igniter converts battery DC voltage into a high voltage spark to ignite the oil. The igniter is capable of running continuously as long as the blower wheel is circulating air across the igniter base. The pump and solenoid valve are used to control the flow of oil from the reservoir to the nozzle. The diesel oil burner, with proper care and regular maintenance, will provide years of trouble-free service. Please read this section carefully.

Have your equipment inspected at regular intervals by a qualified service agency to assure continued proper operation. The burner should be adjusted using dedicated combustion testing equipment. Failure to properly set the burner could potentially cause severe personal injury, death or substantial property damage.

! WARNING !

The following could result in fire hazard, severe personal injury, death or substantial property damage. Read carefully:

1. Never attempt to use gasoline, crankcase oil, waste oil or material other than the approved fuel oils (See specifications) in this burner.
2. Never store or use gasoline or other combustible materials near this burner.
3. Never attempt to light the burner by throwing burning material into the fire chamber.
4. Never restrict the air inlet openings to the burner or combustion air ventilation. Burners can’t consume fuel properly without an adequate air supply.
5. A low or erratic power supply could result in impaired burner operation, delayed ignition or an explosion inside the heat exchanger resulting in burn and/or asphyxiation hazards. The burner requires a continuous supply of 11 to 16 volts DC at 25 amps measured at the burner during operation.
6. Always ensure proper ventilation to exhaust all fumes. Smoke, carbon monoxide and any fumes produced by the materials that are being heated can impair burner operation and produce an asphyxiation hazard.
7. Make certain the correct nozzle is selected for the actual pump pressure.
8. **DO NOT** start the burner when excess oil and/or vapors have accumulated in the combustion chamber.
9. **DO NOT** attempt to re-establish flame with the burner running if the flame becomes extinguished during start-up, venting or adjustment.

SPECIFICATIONS	
Capacity	"F" heads Firing rate…….....0.75 – 2.50 GPH Input……..105,000 – 350,000 Btu/h
Fuels	U.S……..…No. 1 or N0. 2 diesel fuel or ……...No. 1 or No. 2 kerosene heating oil (ASTM D396)
Electrical	Power Supply……..13.5 VDC Operating Load ……..15 Amps w/ Igniter ON, 8-10 Amps w/ ……...Igniter Turned OFF Motor…….13.5 VDC, 1/6 hp, 3450 rpm, 10 Amps (max.), …..…NEMA "M" flange, rotation CCW when facing shaft end Ignition Secondary……...20KVpk 30mA ….Interrupted duty OR Optional continuous duty
Pump	Outlet pressure……140 PSI
Air Tube	ATC code……..See Air Tube Combination Table Below
Dimensions	Height (maximum)……..…….11-1/2" Width (maximum)……..14-3/8" Depth (chassis only)…….6-9/16" Air Tube Diameter……..4"
Temperature	150° Maximum Air Temperature

SERVICE AND MAINTENANCE

This equipment should be serviced only by a qualified service agency (notify your service provider if your burner is not operating properly). The appropriate testing instruments must be used at all times. Failure to do so could result in burner or equipment failure and could potentially cause severe personal injury, death or substantial property damage. Please take care of your equipment by following the warnings provided and by doing the following:

DAILY MAINTENANCE

Check the area around your burner to make sure:

a. Nothing is blocking the burner inlet air openings.
b. Air ventilation openings are clean and unobstructed and the exhaust is not crusted.
c. No combustible materials are stored near the burner.
d. There are no signs of oil or water leakage around the burner.

REGULAR SERVICE/MAINTENANCE

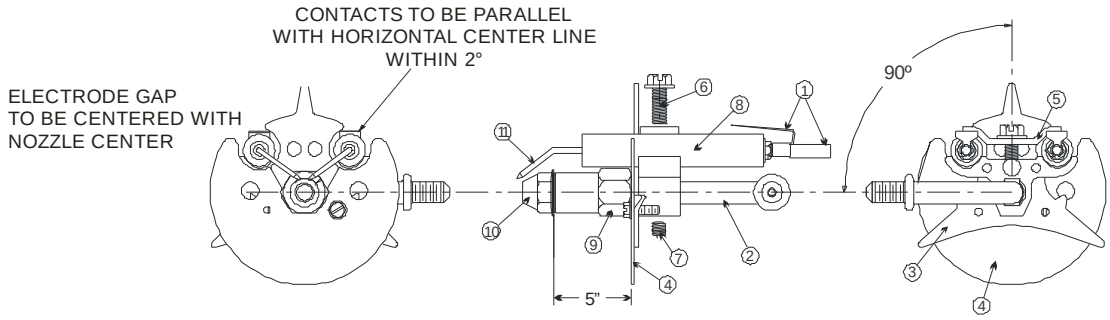
Have your burner serviced annually by your qualified service agency. The following components/assemblies should be checked on a regular basis. Refer to the Replacement Parts exploded view for part locations on page 34.

- Replace the oil supply line filter. The filter cartridge must be replaced to avoid contamination of the pump and nozzle.
- Inspect the oil supply system. All fittings should be leak-tight. The supply lines should be free of water, sludge and other restrictions.
- Remove and clean the pump strainer.
- Verify the nozzle is the one originally specified by Concord Road Equipment and replace the nozzle with one having the exact specifications from the same manufacturer.
- Clean and inspect the electrodes for damage, replacing any that are cracked, or chipped.
- Check electrode tip settings. Replace electrode if tips are rounded.
- Inspect the igniter spring contacts. Clean or replace if corroded.
- Clean the cad cell, use a soft clean dry cloth to wipe dirt off photo cell.
- Make sure Low Firing Rate Baffle is in place. Omitting the baffle can result in unacceptable burner combustion.
- Inspect all gaskets including the igniter base plate gasket. Replace any that are damaged, missing or showing signs of deterioration.
- Clean the blower wheel, air inlet, air guide, retention head and static plate of any dirt, asphalt or other material.
- Check motor current. The amp draw should not exceed the nameplate rating. Check all wiring for loose connections or damaged insulation.
- Check the pump pressure and cutoff function.
- Check primary control safety lockout timing if applicable. (See page 10)
- Check ignition system for proper operation.
- Inspect the exhaust system for soot accumulation or other restriction.
- Clean the equipment thoroughly.
- Check the burner performance using test instruments. (See TROUBLESHOOTING page 35-36)
- It is good practice to make a record of the services performed and the combustion test results.

NOZZLE ASSEMBLY MAINTENANCE

!WARNING!

Incorrect nozzles and flow rates could result in impaired combustion, under firing, over-firing, sooting, puff-back of hot gases, smoke and potential fire or asphyxiation hazards.

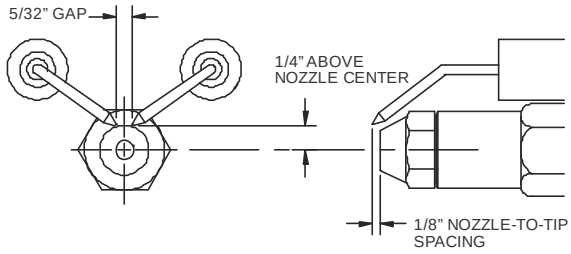


Nozzle, Line & Electrode Assembly

Item#	Description	Item#	Description
1	Electrode Contact (3" ATC or extension over 3")	7	Nozzle Line Set Screw
2	Nozzle Line	8	Electrode Insulator
3	Spider Spacer Assembly	9	Nozzle Adapter
4	Static Plate	10	Nozzle Tip
5	Electrode Clamp	11	Electrode Tip
6	Electrode Clamp Retaining Screws		

NOZZLE FLOW RATE BY SIZE

Nozzle flow rate U. S. gallons per hour of No. 2 fuel oil when pump pressure (psig) is:					
Nozzle Size (rated at 100 psig)	**125 psi**	**140 psi**	**150 psi**	**175 psi**	**200 psi**
0.65	0.73	0.77	0.80	0.86	0.92
0.75	0.84	0.89	0.92	0.99	1.06
0.85	0.95	1.01	1.04	1.13	1.20



Electrode Tip Setting

CHECK/ADJUST ELECTRODES

Check and adjust if necessary to comply with the dimensions shown. To adjust, loosen the electrode clamp screw and slide/rotate electrodes as necessary. Securely tighten the clamp screw when finished.

IGNITER MAINTENANCE

The igniter assembly does not require adjustments beyond making sure the springs and the burner electrode rods make solid contact when the igniter is in the closed position. Replace the ignition base plate gasket at the first sign of damage or deterioration. Clean any dirt or residue from the porcelain bushings, springs and base plate. Check the igniter operation by supplying voltage to the input and checking either by looking or listening to see whether there is an arc across the electrodes while the burner is running and the igniter is energized.

FUEL SUPPLY

Never use gasoline, crankcase oil or any oil containing gasoline in the fuel tank. See Specifications on page 28 for the recommended fuels to be used in the burner. Insure that the pressure limiting device is installed. The oil inlet pressure to the burner cannot exceed 3 psig. A shutoff valve is located in the oil supply line. The supply lines should be free of water and sludge. Inspect fuel supply lines for leaks and/or restrictions. When repairing fuel supply lines use only oil resistant pipe sealant compounds.

MOTOR REPLACEMENT

The motor will require replacement if the proper voltage is measured at the motor input, and the motor will either not run or the current draw with a free running pump exceeds 10% of the rated current.

PUMP MAINTENANCE

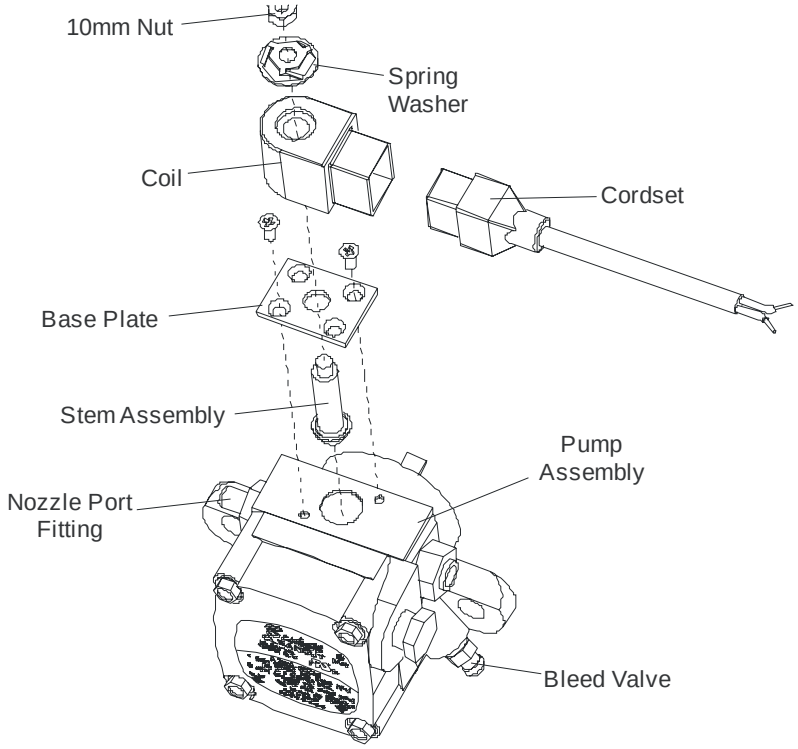
Long or oversized inlet lines may require the pump to operate dry during initial bleeding period. The priming may be assisted by injecting fuel oil in the pump gear set. Under lift conditions, lines and fittings must be air tight. To assure this, thread sealant should be applies to both the used and unused inlet and return fittings.

To bleed the pump, attach a clear plastic hose over the vent fitting. Loosen the fitting and catch the oil in an empty container. Tighten the fitting when all air has been purged from the supply system. Note: If the burner stops after a flame is established, the unit probably requires additional bleeding. Continue to bleed the system until the pump is primed and a flame is established when the bleed valve is closed.

To check vacuum pressure a vacuum gauge may be installed in either of the ¼" NPT inlet ports.

Check the operating pressure by removing the copper tubing from the nozzle line and installing a pressure gauge in the line. With the motor running and coil energized, check the gauge. The pressure should read 140 psig unless otherwise stated.

To check the cutoff function, deadhead the pressure gauge onto the copper connector tube attached to the nozzle port. Run the burner for a short period of time. Shut the burner off; the pressure should drop and hold. Pressurized or gravity feed installations must not exceed 3 psi on inlet line or return line at the pump. A pressure greater than 10 psi may cause damage to the shaft seal.



Pump and Valve Assemblies

COMBUSTION SET-UP

!WARNING!

DO NOT attempt to start the burner when excess oil has accumulated in the combustion chamber, the chamber is full of vapor, or when the chamber is very hot.

DO NOT attempt to re-establish flame with the burner running if the flame becomes extinguished during start-up, venting or adjustment. Allow the unit to cool off and all vapors to dissipate before attempting another start.

For oil flooded unit, shut off the electrical power and the oil supply to the burner and then clear all accumulated oil before continuing. If the condition still appears unsafe, contact the Fire Department and carefully follow their directions. Keep a working fire extinguisher nearby and ready for use.

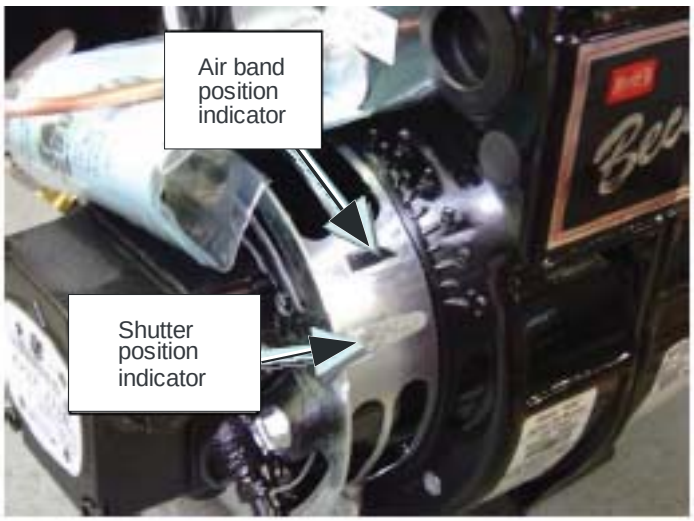
As soon as burner motor starts rotating bleed all the air from the pump (required with single-pipe systems). To bleed the pump, see pump maintenance on previous page.

SET COMBUSTION WITH INSTRUMENTS

Allow the burner to run for approximately 5 to 10 minutes. Follow these four steps to properly adjust the burner:

1. Adjust the air until a trace smoke level is achieved.
2. At the trace of smoke level, measure the CO_2 (or O_2). This is the vital reference point for further adjustments.
3. Increase the air to reduce CO_2 by 1% (O_2 will be increased by approximately 1.4%).
4. Recheck the smoke level. It should be zero.

This procedure provides a margin of reserve air to accommodate variable conditions. Once the combustion level is set, tighten the fasteners on the air band and air shutter. Start and stop the burner several times to ensure satisfactory operation. Test the equipment safety controls to verify that they function according to the manufacturer's specifications.



Air Supply Components

REPLACEMENT PARTS FOR BECKETT MODEL ADC OIL BURNER

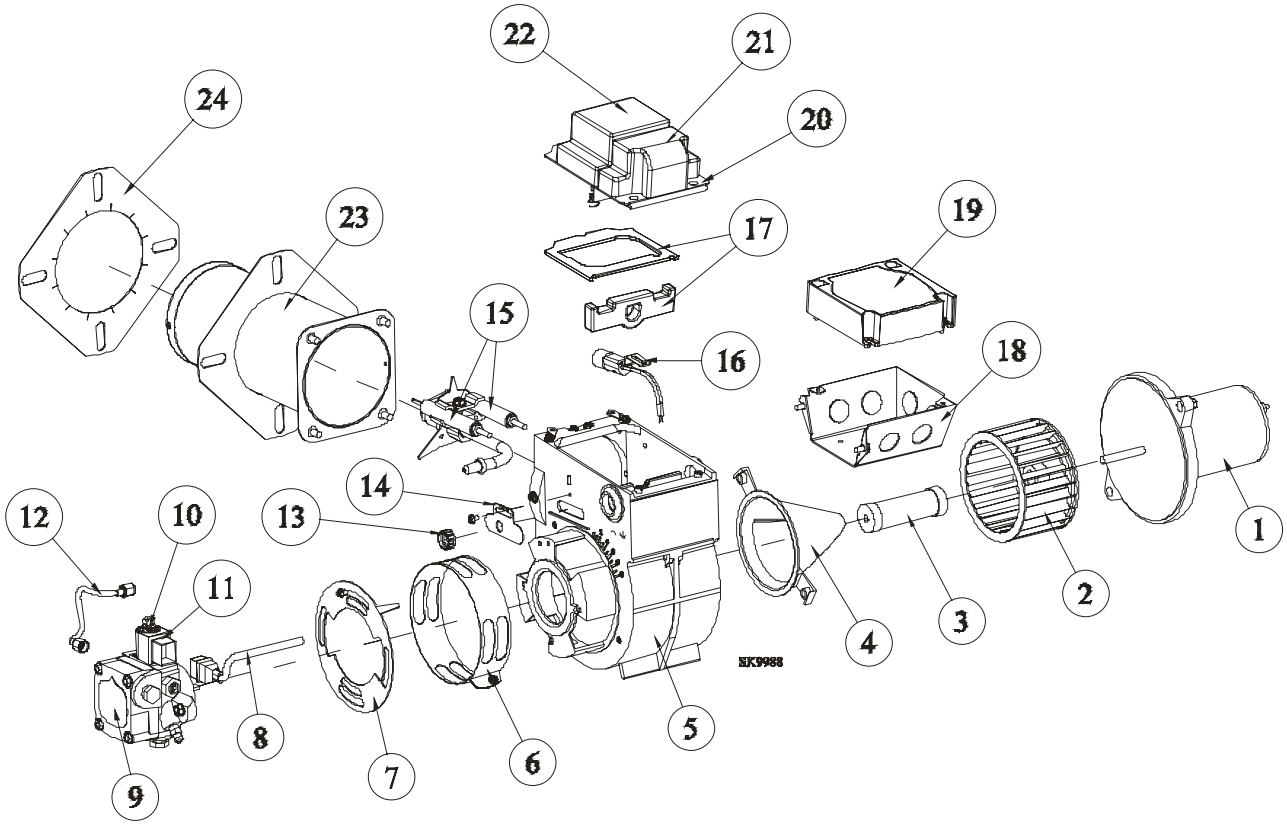


Illustration #	Description	Part#
1	DC Motor	21699UF
2	Blower Wheel	21404U
3	Coupling	21405
4	Air Guide	31231U
5	Burner Housing - Black	55874BKU
6	Air Band	5151501
7	Air Shutter - 4 Slot Air Shutter - 8 Slot	3709 3494
8	Cord set	21807
9	Pump (CleanCut)	2184402U
10	Tube Assembly	21877U
11	12 volt Coil	21754U
12	8" Copper Tubing	5394
13	Escutcheon Plate Spline Nut	3666

Illustration #	Description	Part#
14	Escutcheon Plate	3493
15	Electrode Kit over 3-5/8"	570731
16	Cad Cell Detector	7492/7006U
17	Ignitor Gasket Kit	51411
18	4X4 Wiring Box Kit	5770
19	Control Kit	7556x-xxxxU*
20	Ignitor Ass'y w ICB Ignitor w/o ICB	51776TU 51777TU
21	ICB Kit	51663
22	Ignitor only	7435U
23	Air Tube Ass'y	Specify
24	Flange Mounting Gasket	Specify
Not Shown	Tune-up Kit for 30 & 35 Air Tube Lengths	578730

TROUBLESHOOTING FOR DIESEL OIL BURNER - BECKETT MODEL ADC

Beckett oil burners have been designed to take extreme temperatures, vibrations and rough handling. When performing the following troubleshooting steps, we assume that the oil burner motor and ignition transformer operate continuously and the oil solenoid valve, which controls oil flow, is cycled by the trigger in the wand. We also assume that there is power to the burner and fuel in the tank.

In addition to normal mechanics tools, it is recommended to have the following equipment on hand.

- Meter capable of measuring volts, ohms and amps
- Ignition transformer tester
- Smoke pump tester
- Combustion analyzer and 0 to 200 psi pressure gauge

Symptom	Possible Cause Additional Information/Procedure
Oil Not Igniting	If the burner is not igniting, the burner motor, drive coupling, and oil pump are operating and oil is flowing to the nozzle through the solenoid valve, check the following possibilities. 1) Check the air shutter adjustment. If the air shutter is opened too far, the flow of air may prevent the arc from reaching the oil spray. This may appear as a white vapor exhaust from the heater. 2) The ignition system may have failed to supply an adequate arc to ignite the oil. Check the battery and charging system to insure a continuous supply of 11 to 16 volts DC (15 amps) Check the electrodes for wear and damage. Insure that the electrodes are adjusted properly.
No Flame	If there is no flame, the burner motor and igniter operate continuously and the oil solenoid valve is functional, check the following possibilities. 1) Check for a plugged oil nozzle. 2) If the coil on the solenoid valve is actuating, insure that the valve is opening or closing properly. 3) Check for sufficient fuel pressure. Pressure is 140 psig with valve energized, unless otherwise noted. 4) Check the pump pressure. Check for air in fuel lines. 5) Check burner for broken motor coupling. If the coupling is broken check pump rotation prior to replacing the coupling. 6) Check for contaminated fuel and/or partially plugged fuel filter.

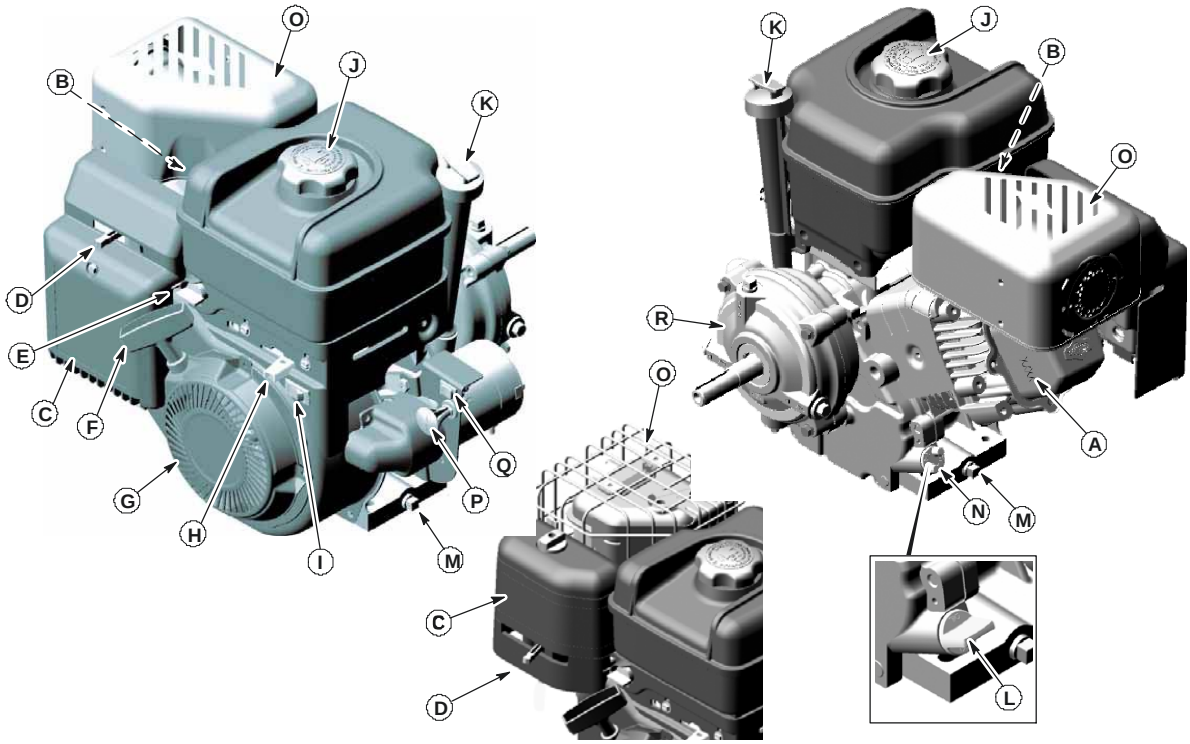
Symptom	Possible Cause Additional Information/Procedure
Motor Not Operating	If the blower motor is not operating, check the following possibilities. 1) Check voltage at the motor to insure that switches and relays, in line with the motor, are operating properly. 2) Check pump and motor shaft operation. They should work freely without binding.
No Oil Spray	If the blower motor is operating, there is fuel in the tank, but oil does not spray out the end of the nozzle, check the following possibilities. 1) Check for a broken or stripped coupling between the pump and the motor. 2) Check the pump output for oil. 3) Check operation of the oil valve. 4) Check for a plugged nozzle 5) Check for air in the oil line 6) Check for fuel contamination or plugged filter
Fluctuating or No Pump Pressure	If the pump pressure, as determined by a pressure gauge, is erratic or does not exist, check the following possibilities. 1) Check motor rotational speed. Low rpm can cause erratic or no pump pressure. 2) Check for a broken or worn motor coupling 3) Check that the pump turns freely 4) Check for air leaks in the lines 5) Check for oil froth at the bleed point 6) Check voltage at the motor 7) Check for fuel contamination or partially plugged filter
Slow Motor Rotation	If the blower motor is not operating at the rpm's listed on the nameplate, check the following. 1) Check the supply voltage to the motor. 2) Check for free operation of the motor shaft and pump assembly.

GASOLINE POWERED ENGINE (BRIGGS & STRATTON)

Compare the illustration on this page with your engine to familiarize yourself with the location of various features and controls.

Engine identification (located on illustration below)

A. Spark Plug
B. Air Cleaner (flat or oval)
C. Choke Control
D. Fuel Shut-off Valve (optional)
E. Starter Cord Handle
F. Finger Guard
G. Throttle Control (optional)
H. Stop Switch (optional)
I. Fuel Tank and Cap
J. Extended Dipstick (optional)
K. Short Dipstick (optional)
L. Oil Drain Plug
M. Oil Fill
N. Muffle, Muffle Guard (optional) and Spark Arrester (optional)
O. Safety Key (electric start models)
P. Gear Reduction Unit (optional)



OPERATOR SAFETY

The operation this equipment could result in fire hazard, severe personal injury, death or substantial property damage. Read carefully:

! WARNING !

Engine gives off carbon monoxide, an odorless, colorless poisonous gas. Breathing carbon monoxide can cause nausea, fainting or death.

Start and run engine outdoors. Do not start or run engine in enclosed area, even if doors or windows are open.

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Gasoline and its vapors are extremely flammable and explosive. Fire or explosion can cause severe burns or death.

When Adding Fuel:

a. Turn engine off and let engine cool at least 2 minutes before removing the fuel cap

b. Fill fuel tank outdoors or in well-ventilated area.

c. Do not overfill fuel tank. To allow for expansion of the gasoline, do not fill above the bottom of the fuel tank neck.

d. Keep gasoline away from sparks, open flames, pilot lights, heat and other ignition sources.

e. Check fuel lines, tank, cap and fittings frequently for cracks or leaks. Replace if necessary.

f. If fuel spills, wait until it evaporates before starting engine.

When Starting Engine:

a. Ensure that spark plug, muffler, fuel cap and air cleaner (if equipped) are in place and secured.

b. Do not crank engine with spark plug removed.

c. If engine floods, set choke (if equipped) to OPEN/RUN position, move throttle to FAST (if equipped) position and crank until engine starts.

When Operating Equipment:

a. Do not tip engine or equipment at angle which causes gasoline to spill.

b. Do not choke the carburetor to stop engine.

c. Never start or run the engine with the air cleaner assembly (if equipped) or the air filter (if equipped) removed.

When Changing Oil:

a. If you drain the oil from the top oil fill tube, the fuel tank must be empty or fuel can leak out and result in a fire or explosion.

When Transporting Equipment

a. Transport with fuel tank EMPTY or with fuel shut off valve OFF.

When Storing Gasoline Or Equipment With Fuel In Tank:

a. Store away from furnaces, stoves, water heaters or other appliances that have pilot light or other ignition source because they can ignite gasoline vapors.

Starting engine creates sparking. Sparking can ignite nearby flammable gases. Explosion and fire could result.

If there is natural or LP gas leakage in area, do not start engine. Do not use pressurized starting fluids because vapors are flammable.

Rapid retraction of starter cord (kickback) will pull hand and arm toward engine faster than you can let go. Broken bones, fractures, bruises or sprains could result.

When starting engine, pull the starter cord slowly until resistance is felt and then pull rapidly to avoid kickback. To reduce starting load ensure hydraulic valve is in the neutral position.

Rotating parts can contact or entangle hands, feet, hair, clothing or accessories. Traumatic amputation or severe laceration can result.

Operate equipment with guards in place. Keep hands and feet away from rotation parts Tie up long hair and remove jewelry. Do not wear loose fitting clothing, dangling drawstrings or items that could become caught.

Running engines produce heat. Engine parts, especially muffler, become extremely hot. Severe thermal burns can occur on contact. Combustible debris, such as leaves, grass brush, etc. can catch fire.

Allow muffler, engine cylinder and fins to cool before touching. Remove accumulated debris from muffler area and cylinder area. It is a violation of California Public Resource Code, Section 44442. To use or operate the engine on any forest-covered, brush covered or grass covered land unless the exhaust system is equipped with a spark arrester.

Unintentional sparking can result in fire or electric shock. Unintentional start-up can result in entanglement, traumatic amputation or laceration. Fire Hazard!

Before Performing Adjustments Or Repairs:

a. Disconnect the spark plug wire and keep it away from the spark plug.

b. Use only correct tools.

c. Do not tamper with governor spring, links or other parts to increase engine speed.

d. Replacement parts must be the same and installed in the same position as the original parts.

e. Do not strike the flywheel with a hammer or hard object because the flywheel may later shatter during operation.

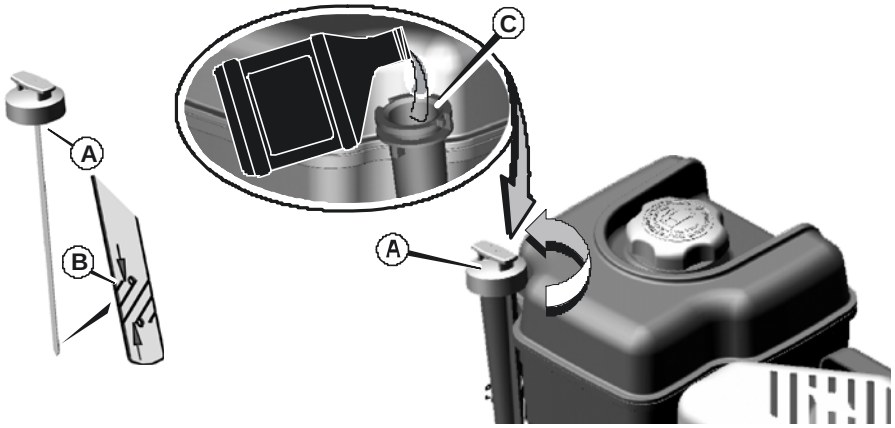
When Testing Spark Plug

a. Use approved spark plug tester.

b. Do not check for spark with spark plug removed.

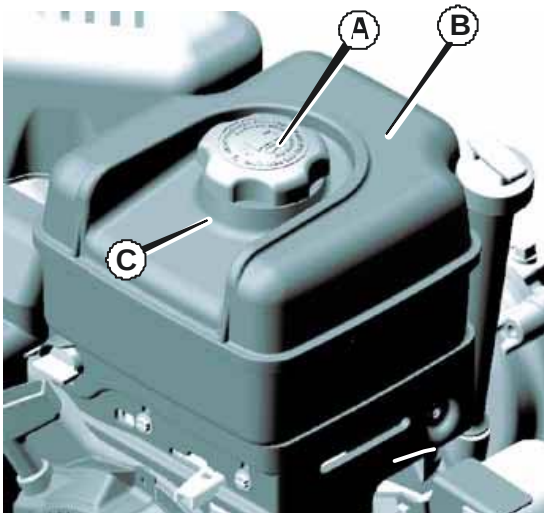
OIL RECOMMENDATIONS

It is recommended that high-quality detergent oil is used, do not use special additives. Use 10W-30 or Synthetic 5W-30 for best performance. Do not use SAE30 for temperatures over 40°F or SW30 for temperatures over 80° F. Before checking or adding oil place engine on a level surface and clean the oil fill area of any debris. Remove dipstick cap and pour the oil slowly into the engine, do not over fill. Wait one minute and check oil level. (See following illustration)



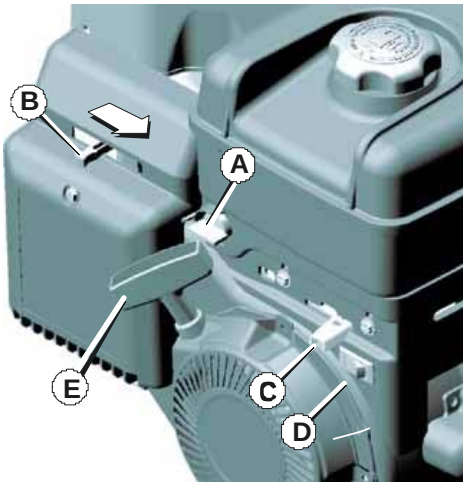
FUEL RECOMMENDATIONS

Use only clean fresh unleaded gasoline with a minimum 87 octane, gasoline with up to 10% ethanol or 15% MTBE is acceptable. Do not use E85 gasoline, mix oil in gasoline or modify the engine to run on alternate fuels. This will damage the engine components and void the warranty. To protect the fuel system from gum formation, mix a fuel stabilizer into the fuel. Before adding fuel turn off engine and let cool for at least 2 minutes then remove the fuel cap. Fill the tank outside or in a well ventilated area. Do not over fill fuel tank. To allow for expansion of the gasoline do not fill above the bottom of the fuel tank neck (**C**). Keep gasoline away from sparks, open flames, pilot lights, heat and other ignition sources. Check fuel lines, tank (**B**), cap (**A**) and fittings frequently for cracks or leaks. Replace parts if necessary. If fuel spills, wait until it evaporates before starting engine.



STARTING AND OPERATING ENGINE

Start and run engine outdoors. Do not start or run engine in an enclosed area, even if doors and windows are open. Check oil level before starting engine. Ensure that spark plug, muffler, fuel cap and air cleaner (if equipped) are in place and secured. Never start or run the engine without the air cleaner assembly or air filter in place. Do not crank engine with spark plug removed. Remove external loads before starting engine. Turn the fuel shut-off valve (**A**) to the on position. Move the choke control lever (**B**) to the choke position. Move the throttle control lever (**C**) to the fast position. On engine equipped with a stop switch (**D**), move the switch to the on position. Pull the starter cord (**E**) slowly until resistance is felt and then pull rapidly to avoid kickback. If engine floods, set choke to OPEN/RUN position, move throttle to FAST position and crank until engine starts. Operate the engine with the throttle control lever in the fast position. As the engine warms up, move the choke control to the run position.



! WARNING !

Rapid retraction of the starter cord (kickback) will pull your hand and arm toward the engine faster that you can let go. Broken bones, fractures, bruises or sprains could result. When starting the engine, pull the starter cord slowly until resistance is felt and then pull rapidly to avoid kickback.

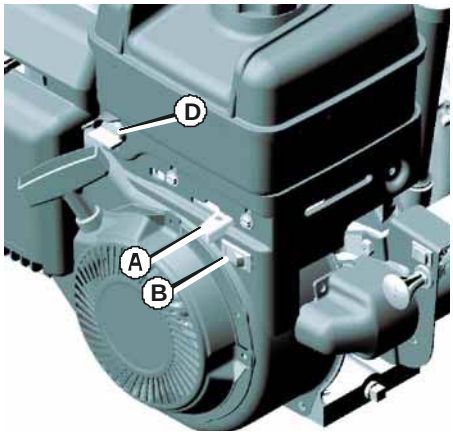
! WARNING !

Starting engine creates sparking and can ignite nearby flammable gases. Explosion and fire could result.

When operating engine do not tip equipment at an angle, this could cause gasoline to spill. Rotating parts can contact or entangle hands, feet, hair, clothing or accessories. Running engines will produce heat and can cause severe burns on contacts or debris such as leaves, grass, etc to catch fire. Allow muffler, engine cylinder and fins to cool before touching. Always operate equipment with guards in place. Do not choke carburetor to stop engine.

STOPPING ENGINE

On models equipped with throttle control lever (**A**), move the throttle control lever to slow and then to the stop position or move the stop switch (**B**) to the stop position. After the engine stops, turn the fuel shut-off valve (**D**) to the closed position.



SERVICE AND MAINTENANCE

We recommend that you see an authorized dealer for all maintenance and service of the engine and engine parts. Before performing adjustments or repairs:

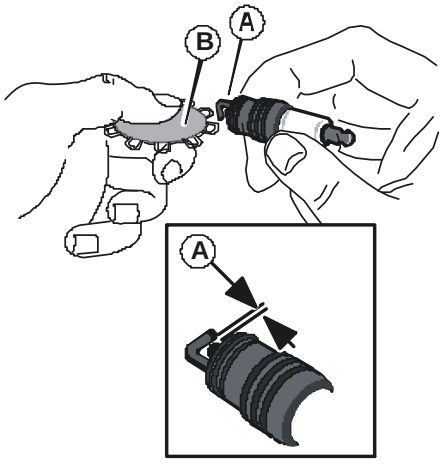
1. Disconnect the spark plug wire and keep it away from the spark plug.
2. Use only correct tools.
3. Do not tamper with governor spring, links or other parts to increase engine speed.
4. Replacement parts must be the same and installed in the same position as the original parts.
5. Do not strike the flywheel with a hammer or hard object because the flywheel may later shatter during operation.
6. When testing for spark, use approved spark plug tester. Do not check for spark with spark plug removed.

CARBURETOR ADJUSTMENTS

Never make adjustments to the carburetor. However, if adjustments are required, see an authorized dealer for service.

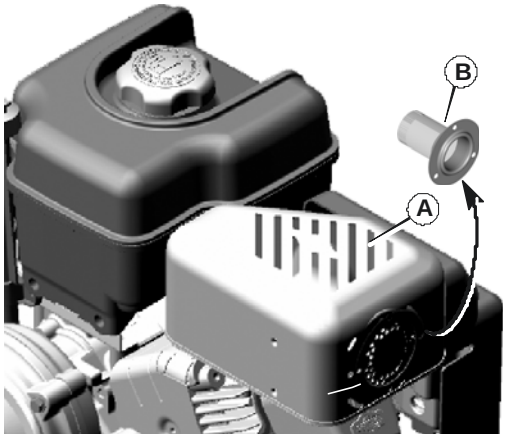
REPLACING THE SPARK PLUG

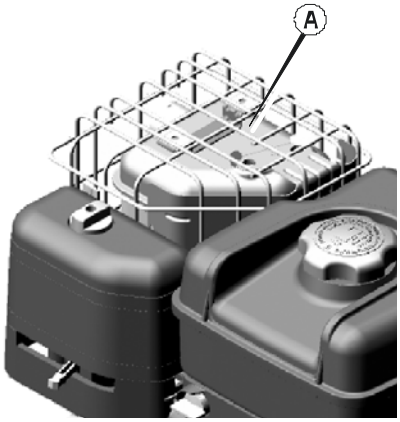
When checking or replacing the spark plug, reset the gap (**A**), install and tighten the spark plug to the recommended torque. If this engine was originally equipped with a resistor spark plug, use the same type for replacement. See the specifications for the gap setting and torque on page 38.



INSPECT MUFFLER AND SPARK ARRESTER

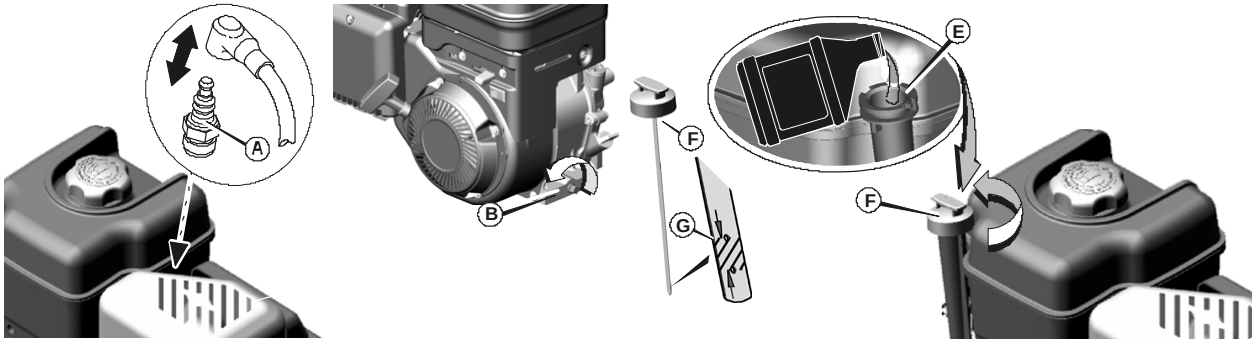
Inspect muffler (**A**) for cracks, corrosion or other damage. Remove spark arrester (**B**) (if equipped) and inspect for damage or carbon blockage. If replacement parts are required, make sure to use only original equipment replacement parts. (See following illustration)





CHANGING OIL

Change oil when engine is turned off but still warm. Disconnect the spark plug wire (**A**)and keep it away from the spark plug. Remove the oil drain plug (**B**) and drain the oil into an approved receptacle. Used oil is a hazardous waste product and must be disposed of properly. Do not discard with household waste. Check with your local authorities, service center or dealer for safe disposal/recycling facilities. After the oil has drained, install and tighten oil drain plug (**B**). Clean the oil fill area of any debris. With engine in a level position, remove the dipstick (**F**) then pour the oil slowly into the engine oil fill (**E**). **Do not over fill**. After adding oil wait one minute and then check the oil level. Remove the dipstick (**F**) and wipe with a clean cloth. Install and tighten the dipstick. Remove the dipstick and check the oil level. It should be at the top of the full (**G**) indicator on the dipstick. Install and tighten the dipstick. See the specifications for oil capacity.

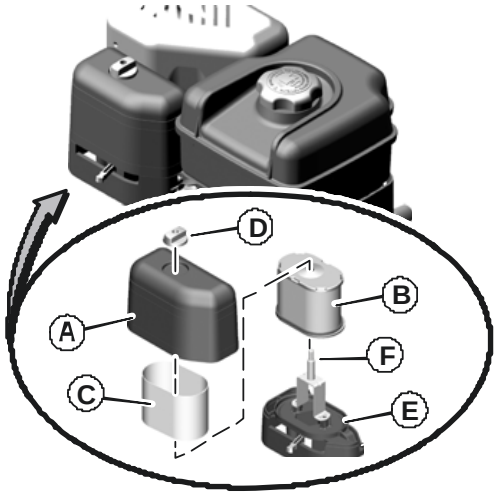


CHANGING AIR FILTER

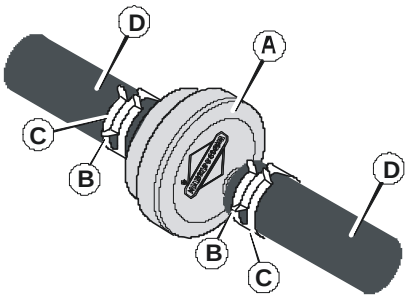
The air cleaner system uses a pleated filter with an optional pre-cleaner. The pre-cleaner can be washed and reused. Loosen the fastener (**D**) that holds the cover (**A**) in place. Open the cover and remove the pre-cleaner (**C**) and the filter (**B**). Remove the pre-cleaner (if equipped) from the filter. Gently tap the filter on a hard surface to loosen debris. If the filter is excessively dirty, replace with a new filter. Wash the pre-cleaner in liquid detergent and water. Then allow it to thoroughly air dry. Do not oil the pre-cleaner. Assemble the dry pre-cleaner to the filter. Install the filter and pre-cleaner into the base (**E**) and onto the stud (**F**). Make sure filter fits securely into base. Install air filter cover and secure with the fastener. Make sure the fastener is tight.

! WARNING !

Never start or run the engine with the air cleaner assembly (if equipped) or the air filter (if equipped) removed.

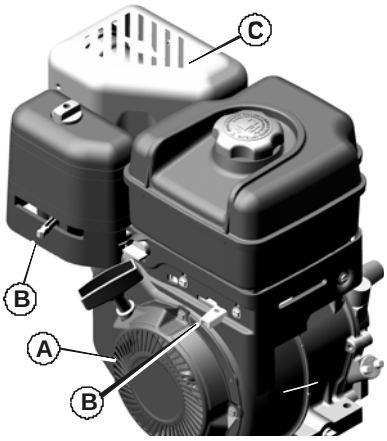


CHANGING FUEL FILTER



Before replacing the fuel filter (**A**) (if equipped) drain the fuel tank or close the fuel shut-off valve. Otherwise fuel can leak out and cause a fire or explosion. Use pliers to squeeze tabs (**B**) on the clamps (**C**), then slide the clamps away from the fuel filter. Twist and pull the fuel lines (**D**) off of the fuel filter. Check the fuel lines for cracks or leaks and replace if necessary. Replace the fuel filter with an original equipment replacement filter. Secure the fuel lines with the clamps.

CLEANING AIR COOLING SYSTEM



This is an air cooled engine, dirt or debris can restrict air flow and cause the engine to overheat, resulting in poor performance and reduced engine life. Use a brush or dry cloth to remove debris from the finger guard (**A**). Keep linkage, springs and controls (**B**) clean. Keep the area around and behind the muffler (**C**) free of any combustible debris.

! WARNING !

Replacement parts must be the same and installed in the same position as the original parts or fire could result.

MAINTENANCE CHART

FIRST 5 HOURS
• Change oil
EVERY 8 HOURS OR DAILY
• Check air filter • Clean area around muffler and controls • Clean finger guard
EVERY 25 HOURS OR ANNUALLY
• Clean air filter * • Clean pre-cleaner *
EVERY 50 HOURS OR ANNUALLY
• Change engine oil • Check muffler and spark arrester
EVERY 100 HOURS
• Change gear reduction oil (if equipped)
ANNUALLY
• Replace air filter • Replace pre-cleaner • Replace spark plug • Replace fuel filter • Clean air cooling system * • Check valve clearance

*(In dusty conditions or when airborne debris is present, clean more often)

SPECIFICATIONS

ENGINE SPECIFICATIONS	
Model 120000	
Displacement	12.48 ci (205cc)
Bore	2.688 (68.28 mm)
Stroke	2.200 in (55.88 in)
Oil Capacity	18-20 oz (0.54-0.59 L)
Gear Reduction Oil	80W-90

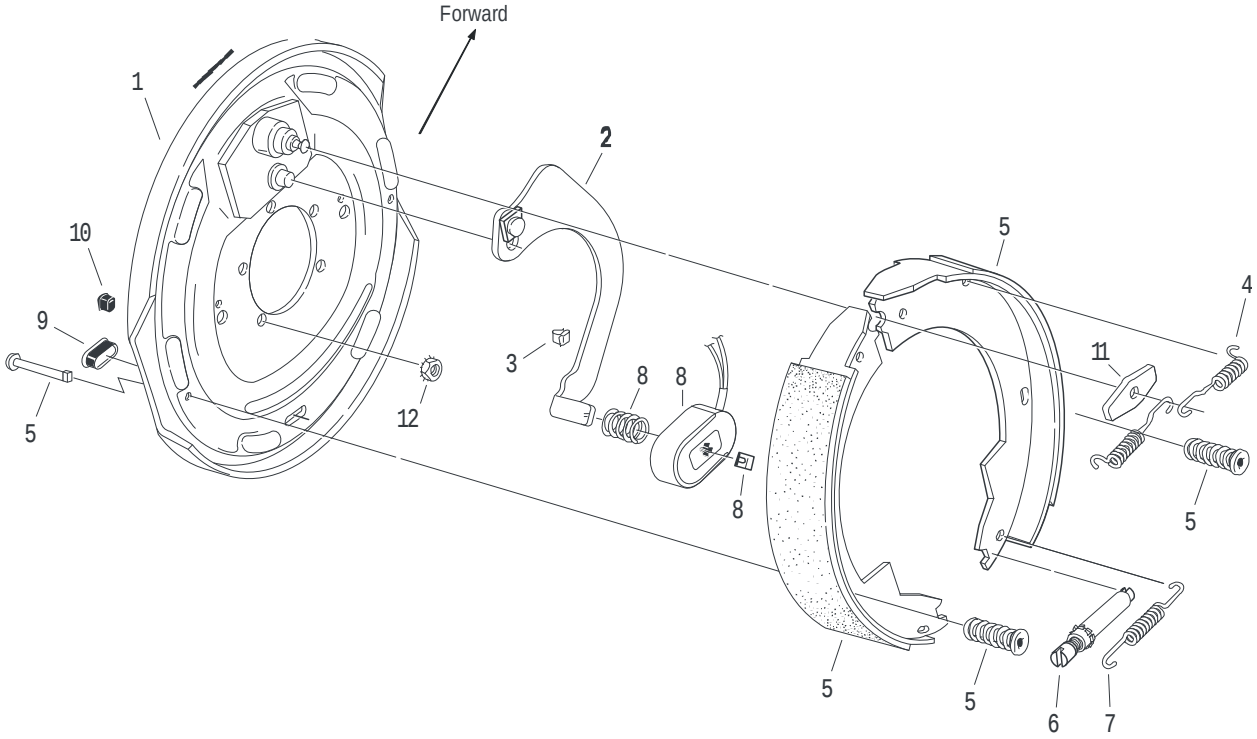
TUNE-UP SPECIFICATIONS	
Model 120000, 150000	
Spark Plug Gap	0.030 in (0.76 mm)
Spark Plug Torque	180 lb.-in (20 Nm)
Armature Air Gap	0.010-0.014 in (0.25-0.36 mm)
Intake Valve Clearance	0.004-0.006 in (0.10-0.15 mm)
Exhaust Valve Clearance	0.009-0.011 in (0.23-0.28 mm)

COMMON SERVICE PARTS

SERVICE PART	PN#	SERVICE PART	PN#
Flat Filter	491588, 5043	Fuel Additive	5041, 5058
Flat Filter Pre-Cleaner	493537, 5064	Resistor Spark Plug	491055
Oval Filter	697029, 5059	Long Life Platinum Spark Plug	5066
Oval Filter Pre-Cleaner	273356	Spark Plug Wrench	89838, 5023
Fuel Filter	694485	Spark Tester	19368

ELECTRIC BRAKES

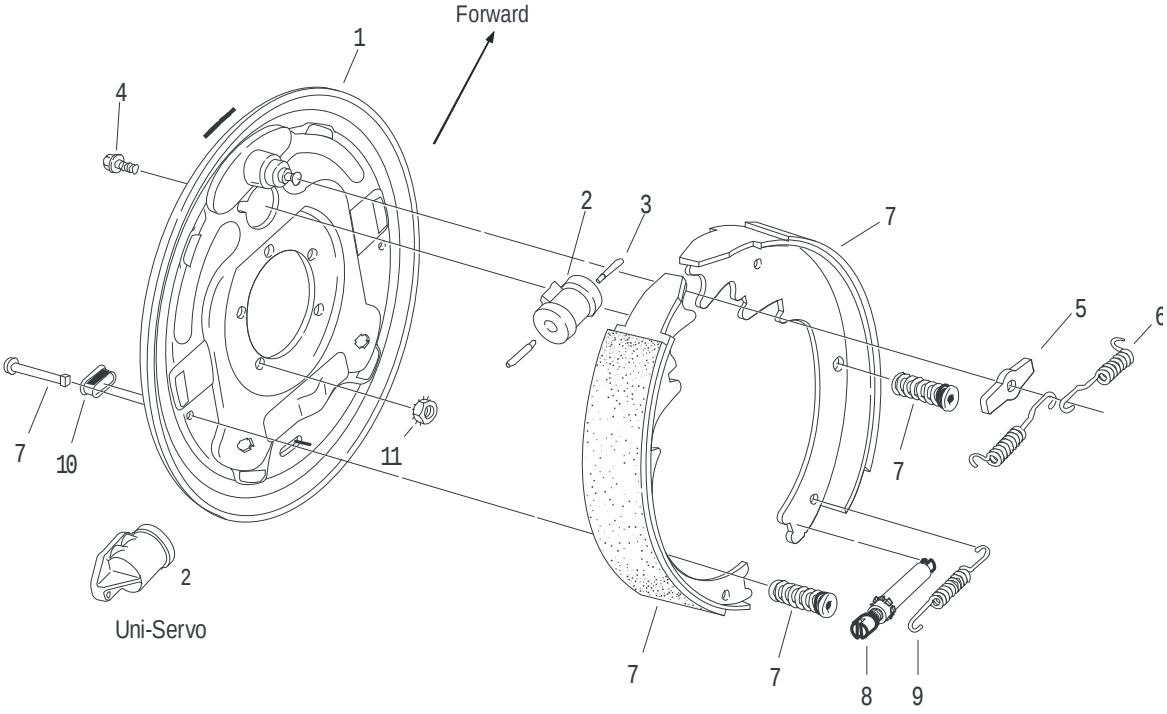
12 x 2” 7K Electric Brakes 5500 – 7000 LBS. Capacity



ELECTRIC BRAKE 7000#			
ITEM	PN#	QTY	DECRIPTION
0	023-180-00	1	LH Complete Brake Assembly
0	023-181-00	1	RH Complete Brake Assembly
1	036-089-05	1	Backing Plate Assembly
2	047-107-00	1	LH Actuating Lever Arm Assembly
2	047-108-00	1	RH Actuating Lever Arm Assembly
3	027-005-00	2	Wire Clip
4	046-009-00	2	Retractor Spring
5	K71-127-00	1	Shoe and Lining Kit Containing 1-#040-215-00 Primary S&L 1-#040-216-00 Secondary S&L 2-#049-011-00 Shoe Hold Down Pin #2 2-#049-077-00 Shoe Hold Down Spring & Cup
6	043-004-00	1	Adjuster Assembly
7	046-018-00	1	Adjusting Screw Spring
8	K71-125-00	1	Magnet Kit containing 1-#042-101-01 Magnet (white wire) 1-#027-009-00 Magnet Clip 1-#046-080-00 Magnet Spring
9	046-007-00	1	Adjuster Slot Plug
10	046-016-00	1	Wire Grommet
11	005-067-00	1	Anchor Post Washer
12	005-004-00	5	Lock Washer
13	006-010-00	5	Brake Mounting Nut

HYDRAULIC BRAKES

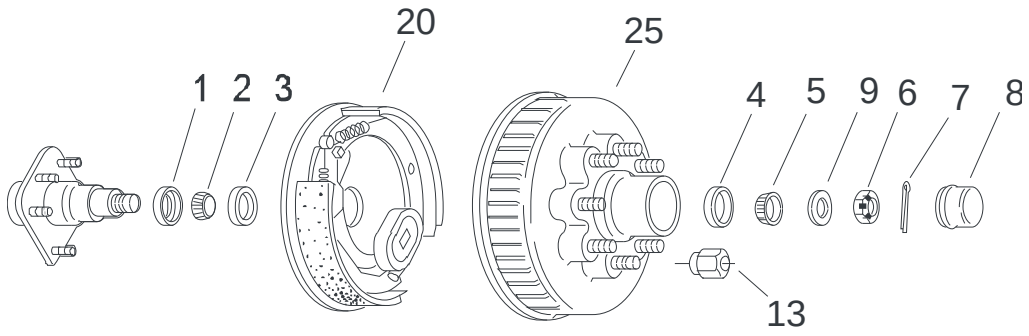
12 x 2" Hydraulic Brakes 5500 – 7000 LBS. Capacity



Note: Uni-servo brakes to be used with surge actuator

HYDRAULIC BRAKE 7000#			
ITEM	PN#	QTY	DECRIPTION
0	023-338-00	1	LH Brake Assembly Complete-US
0	023-339-00	1	RH Brake Assembly Complete-US
1	036-093-08	1	Backing Plate Assembly
2	054-064-00	1	LH Brake Cylinder Uni-Servo
2	054-065-00	1	RH Brake Cylinder Uni-Servo
3	054-060-00	1 / 2	Cylinder Push Rod US (1) DS (2)
4	087-001-00	2	Sems (Screw & Washer Assembly)
5	005-113-00	1	Anchor Post Washer
6	046-101-00	2	Retractor Spring
7	K71-269-00	1	LH Shoe & Lining Kit containing 1-#040-219-00 LH Primary S&L 1-#040-218-02 LH Secondary S&L 2-#046-077-00 Shoe Hold Down Spring & Cup 2-#049-012-00 Shoe Hold Pin #4
7	K71-270-00	1	RH Shoe & Lining Kit containing 1-#040-219-00 RH Primary S&L 1-#040-218-01 RH Secondary S&L 2-#046-077-00 Shoe Hold Down Spring & Cup 2-#049-012-00 Shoe Hold Pin #4
8	043-029-00	1	Adjuster Assembly
9	046-102-00	1	Adjusting Screw Spring
10	046-007-00	1	Adjuster Slot Plug
11	005-004-00	5	Lock Washer
12	006-010-00	5	Brake Mounting Nut

AXLE 865 HUB GROUP



GREASE LUBE PARTS			HUBS			
ITEM	PN#	DECRIPTION	ITEM	PN#	DECRIPTION	Bolt Circle
1	010-054-00	Grease Seal 2.25	Hubs and Drums			
2	031-030-02	25580 Inner Bearing Cone	25	008-219-13	Grease 9/16" Stud	8 on 6.50
3	031-030-01	25520 Inner Bearing Cone				
4	031-017-01	14276 Outer Bearing Cup				
5	031-017-02	14125A Outer Bearing Cone				
6	006-176-00	Spindle Nut				
7	019-002-00	Cotter Pin				
8	021-039-00	Grease Cap – 865 Hub				
9	005-057-00	Spindle Washer				
STUDS & WHEEL NUTS			**BRAKES**			
ITEM	PN#	DECRIPTION	ITEM	PN#	DECRIPTION	
ns	007-132-00	9/16-18 Press-in Stud	20	K23-180-00/023-181-00	LH/RH Electric – 7K	
13	006-053-00	9/16-18 60° Cone Nut	ns	K23-338-00/023-339-00	LH/RH Hyd. Uni-servo – 7K	

HUBS/DRUMS/BEARINGS MAINTENANCE

CAUTION

You must follow the maintenance procedures to prevent damage to important structural components. Damage to certain structural components such as wheel bearings can cause the wheel to come off of the axle. Loss of a wheel while the trailer is moving can cause you to lose control and lead to an accident, which can result in property damage, serious injury or death.

HUB REMOVAL – STANDARD BEARINGS

Whenever the hub equipment on your axle must be removed for inspection or maintenance the following procedure should be utilized:

1. Elevate and support the trailer. Remove the wheel.
2. Remove the grease cap by carefully prying progressively around the flange of the cap. If the hub is an oil lube type, then the cap can be removed by unscrewing it counterclockwise while holding the hub stationary.
3. Remove the cotter pin from the spindle nut.
4. Unscrew the spindle nut (counterclockwise) and remove the spindle washer.
5. Remove the hub from the spindle, being careful not to allow the outer bearing cone to fall out. The inner bearing cone will be retained by the seal.

BEARING INSPECTION

Wash grease and oil from the bearing cone using a suitable solvent. Dry with a clean, lint free cloth and inspect rollers completely. If any pitting, spalling or corrosion is present, then the bearing must be replace. Bearings must be replaced in sets of a cone and a cup.

BEARING LUBRICATION – GREASE

Proper lubrication is essential to proper function and reliability of the trailer axle. Bearings should be lubricated every 12 months or 12,000 miles.

1. Place a quantity of grease into the palm of your hand. Press a section of the widest end of the bearing into the outer edge of the grease pile closest to the thumb forcing grease into the interior of the bearing.
2. Repeat this while rotating the bearing from roller to roller. Continue this process until the entire bearing completely filled with grease.
3. Apply a light coat of grease on the bearing cup. Reinstall bearing.

BEARING LUBRICATION – OIL

If your axles are equipped with oil lubricated hubs, periodically check and refill the hub as necessary with a high quality of hypoid gear oil to the level indicated on the clear plastic oil cap. The oil can be filled from either the oil fill hole in the hub or through the rubber plug hole in the cap itself.

BRAKE DRUM IMSPECTION

There are two areas likely to wear and require periodic inspection. The drum surface where the brake shoes makes contact with drum and the armature surface where the magnet contacts (electric brakes only), If drum surface show excessive wear, heavy scoring, worn more than .020 oversized or out of round by more than .015 then the surface will need to be machined. If the scoring or wear is greater than .090 on the diameter, the drum must be replaced. If the armature surface is scored or worn unevenly it should be refaced. The magnets should be replaced whenever the armature surface is refaced and the armature should be refaced when the magnets are replaced. Always keep the wheel bearing bores and cavities clean and free of contaminants. Failure to do so will decrease the life of your wheel bearings and brakes.

TIRES

Trailer tires requirements are different than standard automotive tires. The trailer do not have driving torque applied to their axles. The only time trailer tires must have traction is during the applications of brakes. Tires with the ST (Special Trailer) rating have about a 10% more load capacity than light truck rated tire and 40% more than passenger rated tire. The ST tire is narrower than the LT and P tire and has a stiffer sidewall. This reduced flexibility helps the tire to track straighter and minimizes the risk of trailer sway. The load range or ply rating branded on the tire's side helps identify its strength and ability to contain air pressure. The further along the letter is in the alphabet the stronger the tire and greater amount of pressure it can withstand and load it can carry. The average life expectancy of a trailer tire is three to five years. After five years the tire is considered worn out and should be replaced.

AIR PRESSURE

Maintaining the proper tire inflation pressure is the most important safety procedures on any trailer owner checklist. Using the correct inflation pressure for the load means cooler-running, longer-lasting trailer tires. Proper inflation assures the best fuel and tire mileage and improved overall handling. It is recommended to check the tire pressure when the tires are cold. If the trailer needs to be moved to a source of compressed air, the distance traveled should be a mile or less to be considered the tires still cold. Allow tires to cool three or four hours after moving trailer before checking air pressure. Ambient temperatures will affect pressure levels; 10 degrees can increase/decrease the pressure of a tire by 1 psi. Sun light and shade will also affect the inflation level of the tire. Because environmental changes can affect the tire pressure, and tires naturally leak 1 to 3 psi a month, it's important to check tire inflation once a month. Weekly pressure checks are advisable during times of heavy use along with visual inspection every day.

DAMAGE

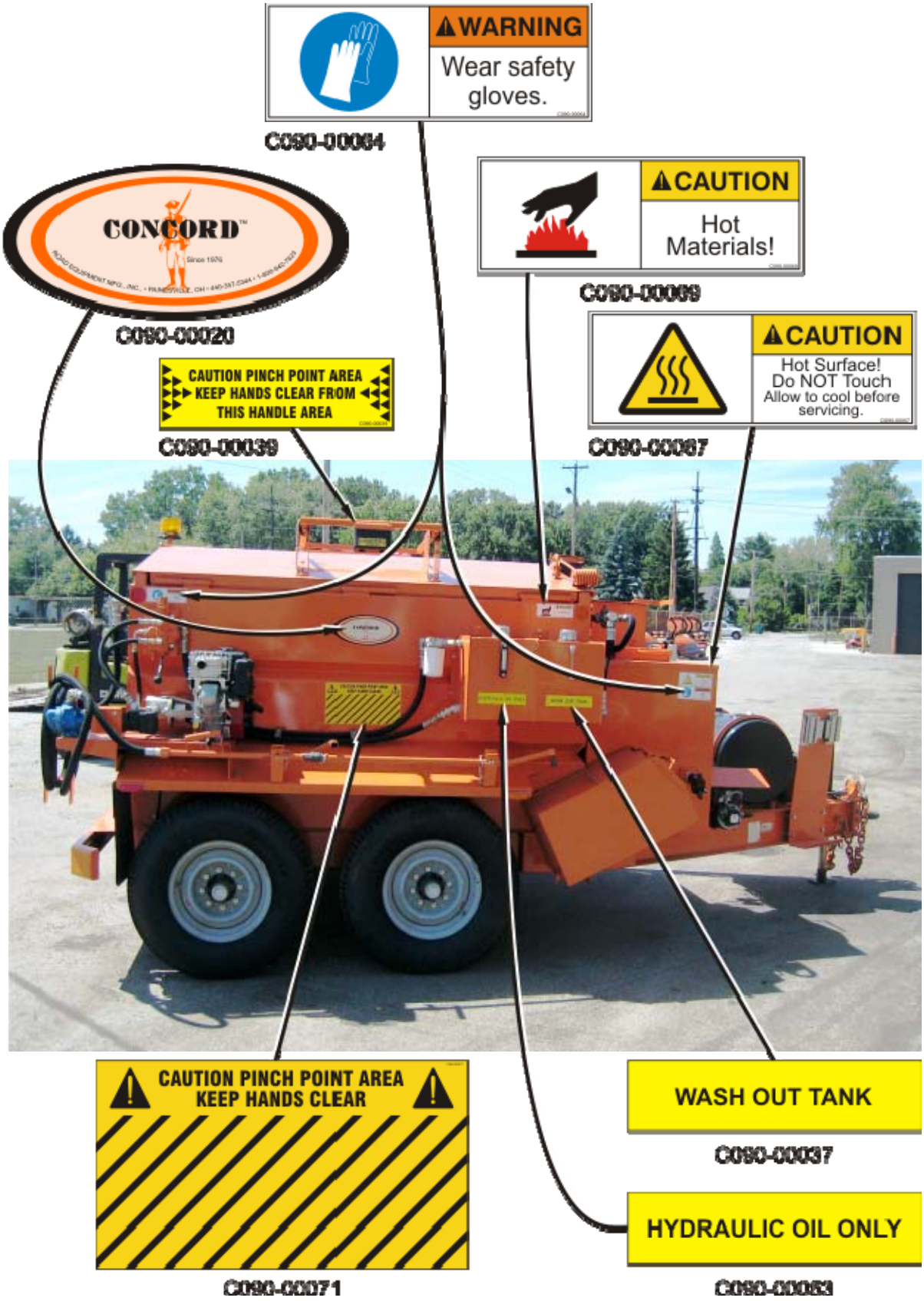
Trailer tires rarely wear out because of tread wear, generally the effects of sunlight, ozone and other environmental factures wear out tire first. A puncture or other damage means immediate need for repair or replacement. Tread punctures of ¼" or smaller diameter can be repaired by a tire professional. Sidewall punctures of any kind are fatal to a tire and no repairs are possible. Aerosol "flat-fixers" should only be used to take the trailer to a tire shop for permanent tire repairs. If bulges appear after a sidewall impact, replace the tire immediately. Damage to the internal structure has occurred. Bulges or high spots on the tread can mean tread separation which requires replacement. Under-inflation damage can show up as a bulge or rupture along the sidewall and ply separation. This is caused by the cords breaking under the excessive strain when air pressure in low. Such damage in fatal to the tire and needs to be replaced.

TIRE WEAR TROUBLESHOOTING

Wear Pattern		Cause	Action
	Center Wear	Over inflation	Adjust pressure to particular load per tire catalog
	Edge Wear	Under inflation	Adjust pressure to particular load per tire catalog
	Side Wear	Loss of camber or overloading	Make sure load doesn't exceed axle rating. Align at alignment shop
	Toe Wear	Incorrect toe-in	Align at alignment shop
	Cupping	Out-of-balance	Check bearing adjustment and balance tires
	Flat Spots	Wheel lockup & tire skidding	Avoid sudden stops when possible and adjust brakes

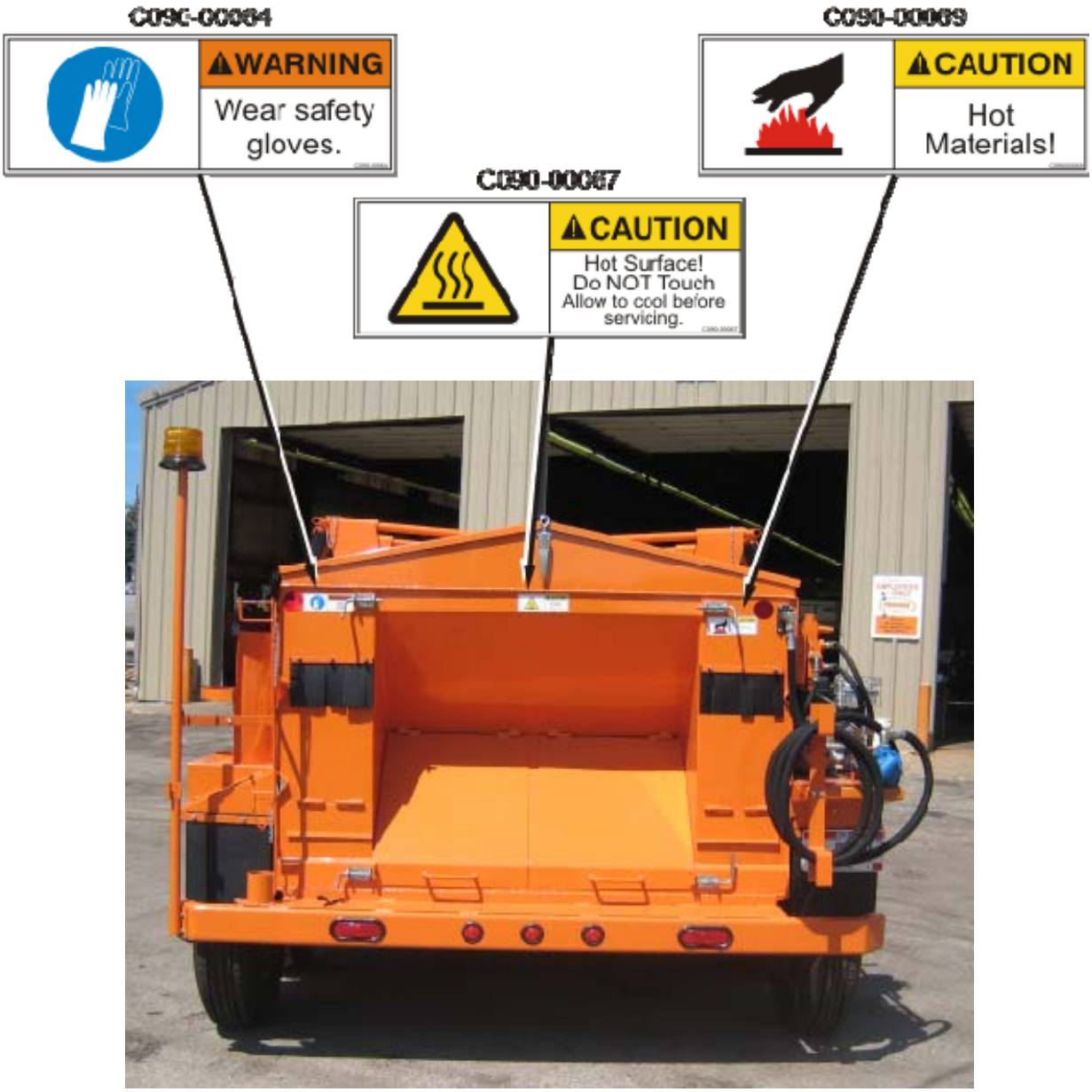
CAUTION:
Tire wear should be checked frequently because once a wear pattern becomes firmly established in a tire it is difficult to stop, even if the underlying cause is corrected.

	Description	PN#	Specifications
400 Series Asphalt Hauler	Axle w/Electric Brakes	C070-00001	Model 12 Torsion Axle with 7000 lb capacity, 89.25" hub face to hub face, 73" outside of bracket, starting angle 10° up
	Axle w/Hydraulic Brakes	C070-00002	
250 Series Asphalt Hauler	Axle w/Electric Brakes	C070-00003	Model 12 Torsion Axle with 7000 lb capacity, 69.25" hub face to hub face, 52.25" outside of bracket, starting angle 10° up
	Axle w/Hydraulic Brakes	C070-00004	
	Wheels	C070-00011	Steel Rim, 16 x 6k, 8 lugs on 6.5 inch bolt circle, 3750+ lbs rating
	Trailer Tire	C070-00013	ST235/85R16, 10 ply, load range E, 3700+ lb capacity, 80 psi cold



DECAL LAYOUT – CURB SIDE VIEW

DECAL LAYOUT - STREET SIDE VIEW



DECAL LAYOUT - REAR VIEW

DECAL LAYOUT – FRONT VIEW