Crack Pro Heated Hose
125, 200, 260 & 400
& Double Pumper
260 & 400

OWNERS MANUAL

SealMaster®

Pavement Products & Equipment

PO Box 2277 • Sandusky, Ohio 44870 • 419-626-4375

sealmaster.net

CRACK PRO HEATED HOSE

Owner's Manual

Version 3.7

Issue Date: January 2024

Effective Date: May 2019

Version	Date	Changes	Approval
1.0		Original Issue	
2.0	8/19	New Format and Updates	DS
2.1	8/20	Added Tank Chart	JG
2.2	6/21	Control Box – Metal	JG
2.3	10/21	Motors & Agitation	JG
2.4	11/21	Material Pump	JG
2.5	12/21	Wiring Diagram & Oil Cooler	JG
2.6	1/22	Change Engine Oil – Note	JG
2.7	4/22	Added Paint Page	JG
2.8	5/22	Breakaway Kit & DP Valve	JG
2.9	7/22	Bleed Burner Fuel Pump	JG
3.0	8/22	Heater Hose 19'& 23'	JG
3.1	11/22	Burner Box Items	JG
3.2	4/23	Control Box Items	JG
3.3	6/23	Added Dip Sticks Items	JG
3.4	7/23	Added Material Tank Buildup Note & Hyd. Pump	JG
3.5	10/23	Added P74000K008	JG
3.6	12/23	New Cover Art and added items	JG
3.7	1/24	Updated Beckett parts list	JG

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ThorWorks Industries, Inc.

Purchased by _____ Model NO. _____

Company Name _____ Serial NO. _____

Address _____ Acceptance Date _____

City _____ State_____ Zip _____

CORRESPONDENCE

All Correspondence regarding this equipment, as well as general correspondence should be addressed to:

ThorWorks Industries, Inc.

PO Box 2277

Sandusky, OH 44870

In referring to the equipment, kindly state the Model Number, Serial Number and any part number involved

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SealMaster® LIMITED WARRANTY

SealMaster warrants that its products are of quality material and workmanship. SealMaster agrees to replace, within a period of one (1) year from date of delivery, or at its option, repair, without charge, any part of their manufacture which proved defective. The repair or replacement will be free of charge F.O.B. Sandusky, Ohio, providing the damaged part or parts are returned, freight prepaid, to SealMaster and investigation shows such repair or replacement is made necessary by an inherent defect of material or workmanship.

It is hereby understood that engines, motors, pumps, or other components purchased by SealMaster for use on its equipment are not warranted by SealMaster and are sold only with the standard warranty of the manufacturer of that component.

SealMaster will make no allowances for repairs or alterations completed by outside sources unless authorization is in writing and approved by an authorized SealMaster representative.

Any claims for defective material or workmanship must be made prior to the expiration of thirty (30) days from the date failure occurs, and in all cases prior to the expiration of the warranty period of one (1) year. It is the intent of this paragraph to limit SealMaster's liability solely to the cost of replacement parts, F.O.B. factory, or at the option of SealMaster to repair the defective part or parts. No allowances for damages, lost time, or any other claim will be recognized.

This warranty is null and void if other than genuine SealMaster parts are used.

SealMaster is constantly striving to improve their products. Changes in design and improvement will be made whenever the manufacturer believes the efficiency of the product will be improved, without incurring any obligation to incorporate such improvements in any machines which have been shipped or are in service.

In an effort to continue to improve product quality, SealMaster reserves the right to change specifications without notice.

Any modification or alteration of this machine without prior approval of the manufacturer may void this warranty.

CRACK PRO® HEATED HOSE MACHINE

APPLIES TO ALL DIESEL FUEL BURNER

INTRODUCTION

CRACK PRO® HEATED HOSE

Congratulations on the purchase of your new **CRACK PRO® HEATED HOSE** joint sealing machine. This machine is manufactured with the commitment of quality the **CRACK PRO®** is known for. It is manufactured for high-speed melting of joint sealing material and the shortest melting time for all hot pour materials.

This manual will assist you in the maintenance and operation of your joint sealing machine for many years.

This manual covers the oil jacketed **CRACK PRO®** models 125, 200, 260 & 400 – gallons.

Also, the oil jacketed Double Pumper **CRACK PRO®** models 260 & 400- gallons.

SAFETY PRECAUTIONS AND CAUTIONS

PRECAUTIONS

- **Always** wear **eye** and **ear** protection, **long sleeve shirt, face shield** and **gloves**.

- Be aware of all **CAUTION, WARNING, and DANGER** signs on the unit.
- The high operating temperatures of your joint sealing machine and materials require special training and maintenance of your equipment.
- Read and follow these operating instructions to every detail.
- Make sure the operator is familiar with the units' operation.

CAUTIONS

- Keep hands, feet, and clothing away from moving parts.
- Do not operate the machine without all guards in place.
- Never fill the fuel tank with a lit burner.

- **WARNING!** When checking oil levels, **never check when HOT!**

- **WARNING!** When the burner is on DO NOT exceed 10 mph while towing, or damage to the burner or machine may occur.

SAFETY PRECAUTIONS AND CAUTIONS

FIRST AID

FIRST AID FOR MOLTEN ASPHALT CEMENT BURNS

In the event of a MOLTEN ASPHALT CEMENT BURN:

COOL the asphalt cement and affected parts of the body immediately.

Methods of cooling (in order of preference):
1. **Completely submerge affected area in ice water;**
2. **Completely submerge affected area in tap water;**
3. **Place affected area under running water.**

DO NOT DELAY

Use any available water, cooler than body temperature, while arranging for better cooling.

CAUTION: DO NOT apply ice directly to affected area.

LEAVE cooled asphalt cement on affected area.

Proceed with the following:

MINOR ASPHALT CEMENT BURNS—at first opportunity get victim to physician.

Includes:
Injury to small areas of fairly insensitive flesh involving a small quantity of asphalt cement.

SERIOUS ASPHALT CEMENT BURNS—as soon as possible get victim to:

Hospital
Clinic
Physician's Office

Includes:
Injury to the head, face, or extremities;
Injury when large amounts of asphalt cement are involved;
Evidence of nausea or faintness.

TREATMENT FOR SHOCK

In the event shock occurs, do the following:
1. Keep victim lying down and quiet.
2. Keep victim covered with a blanket or something similar to keep body temperature at normal, 98°F (37°C).
3. Keep victim's head lower than feet to promote blood supply to head and chest.

DO NOT ATTEMPT TO REMOVE THE ASPHALT CEMENT
with products containing solvents or ammonia.
Natural separation will occur in about 48-72 hours.
If necessary, for early removal, soak bandage in mineral oil and place over affected area for 2 to 3 hours.

NATIONAL ASPHALT PAVEMENT ASSOCIATION
5100 Forbes Boulevard, Lanham, MD 20706-4407
Phone: (301)731-4748 ● Toll-free: 888-468-6499 ● Fax: (301)731-4621
www.hotmix.org

SAFETY PRECAUTIONS AND CAUTIONS

CHECK IT OUT

Know what protective devices your machine is equipped with and see that each item is securely in place and in operating condition.
For example:

1. Warning Decals
2. Guards
3. Material hose connections and protective sleeve
4. Grounding wires

KNOW YOUR MACHINE

Have all of the repairs been made that you reported? The most minor malfunction could be the result of more serious trouble.

FIRE PREVENTION

Avoid fire hazards such as:

1. Always stop the engine when refueling, do not refuel while smoking or when near an open flame or sparks.
2. Always wipe up any spills immediately.
3. Batteries produce explosive gases, keep open flame or sparks away.
4. Remove all trash or debris from the machine, make sure that oily rags or other flammable materials are not stored in or on the machine.
5. Check for fuel, engine oil, and hydraulic leaks, replace worn or damaged hoses.
6. Inspect electrical wiring for worn or damaged insulation, replace as needed.

WARNING: LETHAL FUMES!

Engine and burner exhaust gases contain carbon monoxide. Carbon monoxide is odorless, colorless and can cause death if inhaled. Avoid inhaling exhaust fumes, and never run the burner or engine in an enclosed building or confined area. Symptoms of poisoning are:

1. Dizziness
2. Headache
3. Weakness, Sleepiness and Vomiting

SAFETY PRECAUTIONS AND CAUTIONS

DRESS FOR SAFETY

When operating your Crack Pro equipment always wear the following:

1. Long pants
2. Long sleeved shirt
3. Heat resistant gloves
4. Eye protection (face shield is preferred)
5. Work shoes
6. Safety Vest

WARNING: MOVING PARTS

- Keep hands, feet, hair, and clothing away from all moving parts.
- Never operate the machine with covers, shrouds, or guards removed.
- Do not wear loose or dangling clothing or jewelry near the equipment. It could become caught and possibly cause serious injury or death.

LEARN TO BE SAFE

1. **STUDY THE OPERATORS MANUAL** and other pertinent information furnished with the equipment. Learn your machines operating and maintenance characteristics, capacities, and limitations.
2. Learn the location and function of all controls, indicators, and warning devices.
3. Be familiar with the safety devices on your machine.
4. Learn to recognize the machines warning and safety signals, they will alert you to conditions that may make it hazardous to continue operating.
5. Carefully read and follow all safety signs and instructions on the machine.
6. Keep safety signs and instructions in good condition, replace missing or damaged signs immediately.
7. Do not open the tank lid and put your head directly over the opening. Besides not being good to breathe, there may be enough oxygen introduced into the tank to cause the sealant to self-ignite.

SAFETY PRECAUTIONS AND CAUTIONS

WALK AROUND INSPECTION

Before each day, walk around the machine and inspect for leaks, loose or missing parts, damaged parts, or parts out of adjustment. Perform all recommended daily maintenance.

TRAFFIC CONTROL

Proper traffic control is your responsibility. Never place sealant in an uncontrolled area. Protect vehicles and pedestrians from the workplace until the sealant has thoroughly cooled (100°F or the pavement surface temperature)

REMEMBER:

ONLY YOU CAN PREVENT INJURY TO YOURSELF AND OTHERS!

SAFETY IS YOUR RESPONSIBILITY!

CRACK PRO® HEATED HOSE MACHINE

PRE-OPERATION INSTRUCTIONS

CHECK LIST

THE ENTIRE UNIT SHOULD BE CHECKED

Even though your Crack Pro joint sealing machine is ready for operation when you receive it, certain items should be checked before putting it to use.

If you have any questions on the operation of this machine discontinue operation of the machine and call the factory immediately. (419-626-4375)

Most important items to check are listed below:

- Check nuts, set screws, and bolts to assure that no loosening occurred doing shipment.
- Check tightness of all heat transfer oil HTO hoses. (steel braided hoses)
- Check to be sure the HTO vent pipe is clear and open for venting, located on the HTO expansion tank.
- Check wheel lug nuts after first 100 miles of travel.
- Never operate machine unattended.
- Never exceed heat transfer oil limit of 500°F when operating.
- Do not expose material hose to direct flame.
- Close tank lid before transporting.

CRACK PRO® HEATED HOSE MACHINE

PRE-OPERATION INSTRUCTIONS

CAUTIONS

Caution should be used when loading blocks to prevent possible splash of hot material. Set material block (one at a time) on the lid. Close lid allowing the block to drop into the material tank.

- Do not breathe joint sealing material fumes.
- Do not load more than four boxes of material into the machine at one time.
- Do not exceed 10 mph when towing with the burner on.
- Do not operate the machine in the rain.
- Do not pressure wash the burner area in front of the machine.
- Do not work on the machine while it is in operation.
- Do not work on the machine when heat transfer oil has been heated over 90°F.

Never expose material tank to an open flame.

CLOTHING

Proper clothing should be worn at **all** times.

- long sleeve shirt
- face shield
- high-temperature gloves
- long pants

CRACK PRO® HEATED HOSE MACHINE

PRE-OPERATION INSTRUCTIONS

THINGS TO KNOW

The heated hose on this machine operates at 90 - 110 volts ac. Every caution has been taken to ensure a safe operating the machine.

The information listed here needs to be told to anybody who uses or works on this machine.

- Never operate when conditions are wet. Allow the machine to dry completely before using.
- The digital temperature control box houses both 120 volts ac and 12 volts dc.
- While they are separated, anybody doing diagnostic testing needs to be made aware of the dual voltages.

DO NOT MOVE THE HOSE WHEN IT IS COLD!

Doing so may kink the inner tube resulting in a hose that will be destroyed, and will have to be replaced. It will not be covered by the machines standard warranty.

Should the protective sleeve become cut or damaged in any way, do not use. Electrical wires are wound around the inner hose, any exposed wires are an electrocution hazard. Replace the hose immediately.

CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS

FLUID SPECIFICATIONS

Diesel engine crankcase oil:
The break-in oil should be changed after the first 50 hours of operation.

Oil change intervals:

Temperature	**Oil type**	Interval
Above 77°F	SAE 30 or 10w-30	with filter 100 hours
Between 32°F to 77°F	SAE 20 or 10w-30	with filter 100 hours
32°F or below	SAE 10 or 10w-30	with filter 100 hours

Hydraulic oil:

- The hydraulic system should be drained, cleaned, and refilled every two years.
- If the oil becomes contaminated at any time, flush the system immediately. The oil filter should be changed yearly.
- System capacity is 30 gallons.

Change the hydraulic oil filter after the first 20 hours of operation.

The factory installed oil meets the following specifications:

Grade 68

Viscosity @ 100°F SUS 306
Approximate SAE grade 20W

Factory installed oil: COMMERCIAL AW Hydraulic Oil

See enclosed MSDS

CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS

FLUID SPECIFICATIONS

Heat Transfer Oil:
Heat transfer oil is specially formulated to withstand high temperature and many heating and cooling cycles. The normal life cycle is one to two years, depending on how much the machine is used.

Never leave the oil in the machine for more than two years.
The procedure for checking the oil level is to **ALWAYS CHECK IT COLD.**
Located on the expansion tank is an oil level dip stick, there is a mark on the dip stick to designate the full point. When adding oil, it is necessary to remove the oil thermometer from the top rear curbside corner. Install a funnel here, and check with the dip stick.

Heat Transfer Oil Gallons per Tank:

Tank Size	Gallons
125	25
200	28
260	30
400	45

DO NOT OVERFILL, OVER FILLING WILL CAUSE OIL TO COME OUT THE OVERFLOW VENT PIPE AND ONTO THE GROUND WHEN THE MACHINE IS BEING HEATED
Oil coming out of the vent pipe means one of two reasons, overfilling or moisture is present in the oil jacket.
Immediately shut off the burner if this happens. Let the machine cool completely.
Water in the oil is extremely dangerous. Never heat the machine if water is present. Drain and replace.

The factory installed oil meets the following specifications:

Name	**Industrial turbine oil**
Flashpoint	**>390°F**
Auto-ignition temp.	**>500°F**
Factory installed oil: Turbine XL 68	**See enclosed MSDS**

CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS BEFORE 2017

SERVICE TIP FOR ENGINE START PUSHBUTTON

A. ENGINE START-UP

Red pushbutton on panel must be held in the depressed position while starting engine until running oil pressure is established to open **SWICHGAGE** contacts. NBMNBNB

(1) 518-APH pushbutton should remain in the depressed position during normal running.

If pushbutton fails to remain in the depressed position:

(A) Visually check wiring for loose connections, frayed wiring, etc., on all terminals and switch loop circuit.

(B) Check 14amp fuse connected to "B" terminal.

(C) Check for good ground on "G" terminal.

(D) Disconnect switch loop circuit from SW1 and SW2 terminals. Place temporary jumper between SW1 and SW2 and restart engine. If pushbutton stays in with engine running, 518-APH switch is not the problem. This indicates either an open circuit, unwanted ground, or too high resistance in switch loop circuit wiring, between SW1 and SW2.

(E) Continuity checks power removed from "B" terminal.

(1) With ohmmeter or continuity light, check for good continuity through switch loop circuit. If good continuity is indicated, proceed to step (2).

(2) Unwanted ground in loop circuit. With **SWICHGAGE** contact adjusted away from pointer, check continuity between one end of loop circuit and ground. Good continuity" indicates an unwanted ground in loop circuit such as a terminal rotated against mounting panel. Remove ground, restore loop circuit connections to SW1 and SW2, power to (B), restart engine.

(3) Too high resistance in switch wiring

With ohmmeter, check resistance between one end of the loop circuit to the other. Resistance should exceed 25 ohms. If resistance is too high, recheck for loose connections in loop circuit. Otherwise select larger size wire for loop circuit.

B. ENGINE SHUT DOWN

(A) Engine fails to shut down when contacts close on one wire to ground **SWICHGAGE** controls.

(1) With engine running, jumper SW1 to "G" terminal. If switch trips and engine shuts down, trouble is failure of **SWICHGAGE** contacts to make contact or lack of good case ground on **SWICHGAGE**. Adjust contacts back and forth to give a wiping and cleaning action on contacts. Check switch mounting for good ground.

CRACK PRO® HEATED HOSE MACHINE

MACHINE MAINTENANCE

TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSES/SOLUTIONS
MATERIAL PUMP LEAKING	LEAKING AROUND **SHAFT** / TIGHTEN & REPLACE PACKING
HOSE NO PRESSURE	**PUMP GEARS** WORN / REPLACE PUMP GEARS
	HYDRAULIC MOTOR WORN / REPLACE HYDRAULIC MOTOR
	PUMP SHAFT NOT TURNING / CHECK WIRING - FUSE
DIESEL BURNER HAS LOW OPERATING PSI	**PUMP** WORN / CHECK AND REPLACE
	FUEL LINE PLUGGED / CLEAN OR REPLACE
	PUMP COUPLER BROKEN / REPLACE COUPLER
	BURNER MOTOR WORN / REPLACE MOTOR
BURNER DOES NOT LIGHT	AIR IN **PUMP** / **BLEED** THE BURNER FUEL PUMP- SEE BURNER PAGE
	ELECTRODES WORN AT TIPS / REPLACE ELECTRODES
	ELECTRODES SPACING INCORRECT/ RESET SPACING
	CAD CELL DIRTY / CLEAN GLASS LENS
	WATER IN **FUEL** / REPLACE FUEL & FILTER
	BURNER IN LOCKOUT / REMOVE NEGATIVE CABLE & REATTACH
	FUEL NOZZLE PLUGGED / REFER TO OWNER'S MANUAL
	AIR SHUTTER MOVED / REFER TO OWNER'S MANUAL
	FUEL FILTER PLUGGED / CLEAN AS NEEDED
	TRANSFORMER WORN / REPLACE TRANSFORMER
	PRIMARY CONTROL FAILED / REPLACE PRIMARY CONTROL
	FUEL SOLENOID FAILED / REPLACE SOLENOID
	NO POWER FROM **CONTROLLER** / TRACE WIRES
	HI-TEMP LIGHT IS ON / PUSH RESET

See oil burner trouble shooting guide for step by step instructions

CRACK PRO® HEATED HOSE MACHINE

MACHINE MAINTENANCE

TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSES/SOLUTIONS
ENGINE * ISSUES	**OIL** SPECIFICATIONS / REFER TO OWNER'S MANUAL
	OPERATING INSTRUCTIONS / REFER TO OWNER'S MANUAL
	DEAD **BATTERY** / REPLACE BATTERY
	LOW ON **FUEL** / FILL FUEL TANK
	PLUGGED **FUEL** LINE / CLEAN FUEL SYSTEM
	PLUGGED **FILTER** / CHANGE FILTER
(HTO) HEATED TRANSFER OIL COMING OUT OF VENT PIPE	OVER HEATED **HTO** / CHECK TEMPERATURE CONTROL
	MOISTURE IN **HTO** TANK / DRAIN AND REPLACE
	HTO PAST OPERATING LIFE / DRAIN AND REPLACE
HYDRAULIC SYSTEM NOT WORKING	LOW **OIL** LEVEL / CHECK LEVEL AND FILL
	HYDRAULIC PUMP WORN / REPLACE PUMP
	FILTER PLUGGED / REPLACE FILTER
	TANK VALVE CLOSED / OPEN VALVE
	KINKED **HOSE** / REPLACE HOSE
AGITATOR DOES NOT ROTATE	NO POWER AT **12V VDC COIL** / CHECK WIRING & FUSE
	BROKEN **DRIVE COUPLER** / REPLACE COUPLER
	BROKEN **DRIVE MOTOR** / REPLACE MOTOR
	NOT WORKING **LID SWITCH** / CHECK LID SWITCH
	HYDRAULIC CARTRIDGE / REPAIR OR REPLACE

ENGINE* – NOTE: ENGINE SERIAL NUMBER WILL BE NEEDED TO RESOLVE ANY ISSUES

CRACK PRO® HEATED HOSE MACHINE

MACHINE MAINTENANCE

MAINTENANCE SCHEDULE

Follow maintenance procedures listed on the **engine** and **burner** manuals.

MAINTAIN	8 HRS	1 WEEK	1 MONTH	6 MONTHS	1 YEAR	2 YEARS
CHECK **ENGINE OIL** LEVELS	✓					
CHECK **HYDRAULIC OIL** LEVELS	✓					
CHECK **DIESEL FUEL** LEVELS	✓					
CHECK **HTO FUEL** LEVELS		✓				
CHECK **IGNITORS**						✓
CHECK **HITCH BOLTS**				✓		
CHECK **BRAKES**						✓
CHECK **LUG NUTS**				✓		
CHANGE **HTO OIL**					✓	
CHANGE **HYDRAULIC OIL** *						✓
CHANGE HYDRAULIC OIL **FILTER**					✓	
CHANGE DIESEL **FILTER**					✓	
CHANGE **PRIMARY CONTROL**					✓	
CHANGE **SOLENOID**					✓	
CHANGE **NOZZLE**					✓	
CHANGE **ENGINE OIL***						
DRAIN WATER FROM **DIESEL FILTER**			✓			
CHECK **BREAKAWAY BOX** BATTERY	✓					
CHECK **TIRE** PRESSURE				✓		
TIGHTEN **PUMP FLANGES**			✓			
PACK **WHEEL BEARINGS**						✓
INSPECT ALL **HOSES**	✓					

* Use a good quality AW68 hydraulic oil with a rating of 352 SUS @100 F. Do not use a 150 rated hydraulic oil as it is too light.

ENGINE – NOTE: ENGINE SERIAL NUMBER WILL BE NEEDED TO RESOLVE ANY ISSUES.

CHANGE **ENGINE OIL*** 602 & 902 Kubota Recommends 50hrs Initial Start / every 100hrs After

1505 Kubota Recommends 50hrs Initial Start / every 200hrs After

Indol® and Indol® (Ultra Clean*)

Anti-Wear Hydraulic Oil

Typical Application/ Recommendations

- Denison HF-0, HF-1, HF-2
- Cincinnati Lamb P-68, P-69, P-70
- Eaton Vickers I-286-S, M2950-S (35VQ25)
- Rexroth, Parker Hannifin
- Marzocchi, Racine S
- DIN 51524-2, GM LS-2, AFNOR 48-603
- U.S. Steel 126, 127, 136
- ASTM D-665, Rust Test A&B: Pass
- ASTM D-943 Oxidation Test: 6,000+Hrs

Typical Customer

Owners and operators of:

- Mobile/Industrial Hydraulic Systems
- Electric Utility Maintenance Equipment
- Enclosed Gear Sets
- Circulating Systems
- Air Compressors and Vacuum Pumps
- Injection Molding Machines
- General Lubrication

Typical Properties

ISO Viscosity Grade	MV-32	22	32	46	68	100	150	220	460
Approximate SAE Grade	(5W-20)	(5W)	(10W)	(20W)	(20)	(30)	(40)	(50)	--
Viscosity @ 100°C, cSt	6.6	4.4	5.5	6.9	8.8	11.4	15.6	19.3	30.5
SUS	46.5	40.6	44.3	48.5	55.1	63.2	76.4	93.0	145
@ 40°C, cSt	33.3	22.1	32.4	46.5	69.0	101.1	152.3	220.2	461.3
SUS	156	106	150	215	313	456	686	992	2136
Viscosity Index	158	108	106	104	100	99	105	99	95
Pour Point, °C / °F	-48/-54	-42/-44	-42/-44	-39/-38	-36/-33	-27/-17	-30 /-22	-21/-6	-3/27
API Gravity / lbs./gal.	32.3/7.19	33.4/7.15	32.1 /7.2	31.2/7.24	30.6/7.27	30.1/7.2	29.5/7.32	28.8/7.35	25.7/7.5
Flash Point, °F	400	400	420	440	460	480	500	540	560
Dielectric Strength, KV	40*	40*	40*	40*	40*				
Indol (Ultra Clean) series	Yes*	Yes*	Yes*	Yes*	Yes*				

*This Dielectric Strength and Ultra clean specification are only found in the above products that are in new sealed drums, totes, and 2½-gallon containers from CHS Lube manufacturing plants. The drums and totes will have the ultra clean logo on them.

The typical properties listed reflect the general characteristics of the product, and are not manufacturing specifications. Normal batch-to-batch variations should be expected.

Health & Safety

A complete safety data sheet is available by calling 1-651-355-8438 or visit www.cenex.com.

Indol® and Indol® (Ultra Clean*)

Anti-Wear Hydraulic Oil

General Description

Indol® Premium Anti-wear Hydraulic Oil is exceptional quality zinc containing anti-wear hydraulic oil designed to exceed the performance requirements of major pump manufacturers.

Indol oils are specially formulated with the highest quality HCG-2 base oils having outstanding stability. The addition of a uniquely balanced additive system provides total anti-wear, oxidation, thermal, hydrolytic stability, anti-rust, demulsibitlity, and anti-foam performance.

The zinc anti-wear agent used in Indol oils helps minimize wear in high speed, high pressure vane and gear pumps while meeting the lubrication and requirements of the axial piston pumps having bronze and steel metallurgy. Indol oils are highly stable under thermal or oxidative stress and are exceptionally stable when in the presence of moisture.

Indol® (Ultra Clean*) series goes through a special fine filtering process during the manufacturing of selected ISO grades. This ensures an ultra clean oil to prevent excess wear under high pressure and close manufacturing tolerances.

Indol® MV is a multi-viscosity oil formulated with an extremely shear stable viscosity modifier. It provides exceptional low temperature properties enabling performance over a wide range of start-up and operating temperatures.

Features and Benefits

- **Oxidation Control:** Excellent oxidation and thermal stability reduces sludge and varnish providing protection of critical components while extending oil and equipment life.
- **Wear Protection:** The premium anti-wear technology provides protection that passes major hydraulic equipment manufacturers pump tests resulting in longer life.
- **Filterability:** Superior hydrolytic stability with quick water separation provides protection against filter plugging and deposits.
- **Rust and Corrosion Protection:** Reduced maintenance due to outstanding rust and corrosion prevention capabilities when moisture is present.
- **Foam Control:** A special anti-foam agent promotes the rapid break up of foam and reduces air entertainment.
- **High Viscosity Index:** The shear stability of Indol MV provides exceptional viscosity stability, resulting in consistent operation throughout wide temperature ranges and drain intervals.
- **Ultra Clean:** Indol (Ultra Clean*) series only. Additional filtering provides ultra clean oils in selected viscosity grades for maximum system protection.
- **Reserve Quality:** Indol Premium AW hydraulic oils have the ability to maintain their high level of performance under the toughest operating and extended drain conditions.

SAFETY DATA SHEET

Section 1. Identification

CHS Inc.
P.O. Box 64089
Mail station 525
St. Paul, MN 55164-0089

Transportation Emergency (CHEMTREC) : 1-800-424-9300
Technical Information : 1-651-355-8443
SDS Information : 1-651-355-8445

Product name	: Turbine XL 22, 32, 46, 68, 100	**SDS no.**	: 0190-093809
Common name	: Industrial turbine oil	**Revision date**	: 05/07/2015
Chemical name	: Lubricating oil.	**Chemical formula**	: Mixture
Chemical family	: Hydrocarbon.		

Relevant identified uses of the substance or mixture and uses advised against

Lubricant.

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Hazards not otherwise classified (HNOC) : None known.

Hazardous Material Information System (U.S.A.)	**Health :**	0	**Flammability :**	1	**Physical hazards :**	0	
National Fire Protection Association (U.S.A.)	**Health :**	0	**Flammability :**	1	**Instability :**	0	

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Chemical name : Lubricating oil.

Other means of identification : Industrial turbine oil

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	:	If material comes in contact with the eyes, immediately wash the eyes with large amounts of water for 15 minutes, occasionally lifting the lower and upper lids. Get medical attention.
Inhalation	:	If person breathes in large amounts of material, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the person warm and at rest. Get medical attention as soon as possible.
Skin contact	:	If the material comes in contact with the skin, wash the contaminated skin with soap and water promptly. If the material penetrates through clothing, remove the clothing and wash the skin with soap and water promptly. If irritation persists after washing, get medical attention immediately.
Ingestion	:	If material has been swallowed, do not induce vomiting. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	No known significant effects or critical hazards.
Inhalation	:	No known significant effects or critical hazards.
Skin contact	:	No known significant effects or critical hazards.
Ingestion	:	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	Adverse symptoms may include the following: pain or irritation, watering, redness.
Inhalation	:	Adverse symptoms may include the following: respiratory tract irritation, coughing.
Skin contact	:	Adverse symptoms may include the following: irritation, redness.
Ingestion	:	No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	:	No specific treatment.
Protection of first-aiders	:	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	Use water spray to cool fire exposed surfaces and to protect personnel. Foam, dry chemical or water spray (fog) to extinguish fire.
Unsuitable extinguishing media	:	None known.
Specific hazards arising from the chemical	:	Toxic fumes gases or vapors may evolve on burning.
Hazardous thermal decomposition products	:	No specific data.
Special protective actions for fire-fighters	:	When fighting fires wear full turnout gear and self contained breathing apparatus. Water may cause splattering. Material floats on water.
Special protective equipment for fire-fighters	:	Not applicable.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	Keep unnecessary and unprotected personnel from entering. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Methods and materials for containment and cleaning up

Spill	:	Contain with dikes or absorbent to prevent migration to sewers/streams. Take up small spill with dry chemical absorbent; large spills may require pump or vacuum prior to absorbent. May require excavation of severely contaminated soil.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 113°C (235.4°F). Odorous and toxic fumes may form from the decomposition of this product if stored at excessive temperatures for extended periods of time. Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Appropriate engineering controls : Use only with adequate ventilation.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Recommended: Splash goggles and a face shield, where splash hazard exists.

Skin protection

Hand protection : 4 - 8 hours (breakthrough time): Nitrile gloves.

Body protection : Recommended: Long sleeved coveralls.

Other skin protection : Recommended: Impervious boots.

Respiratory protection : If ventilation is inadequate, use a NIOSH-certified respirator with an organic vapor cartridge and P95 particulate filter.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Amber.

Odor : Mild.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : Not available.

Flash point : Closed cup: >200°C (>392°F)

Flammability : Not available.

Lower and upper explosive (flammable) limits : Not available.

Relative density : 0.86 to 0.88

Evaporation rate : <1 (Butyl acetate = 1)

Solubility : Insoluble in the following materials: cold water and hot water.

Solubility in water : Insoluble

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : >260°C (>500°F)

Decomposition temperature : Not available.

SADT : Not available.

Viscosity : Not available.

Vapor pressure : <0.13 kPa (<1 mm Hg) (68°F)

Vapor density : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

There is no data available.

Irritation/Corrosion

Skin	:	There is no data available.
Eyes	:	There is no data available.
Respiratory	:	There is no data available.

Sensitization

Skin	:	There is no data available.
Respiratory	:	There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Bioaccumulative potential

There is no data available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Section 14. Transport information

DOT IDENTIFICATION NUMBER Not applicable. **DOT proper shipping name** Not applicable.

DOT Hazard Class(es) Not applicable. **PG** Not applicable. **DOT EMER. RESPONSE GUIDE NO.** Not applicable

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 4(a) final test rules**: 2-Butenedioic acid (E)-, di-C8-18-alkyl esters
TSCA 8(a) PAIR: 2-Butenedioic acid (E)-, di-C8-18-alkyl esters; Diphenylamine
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 311: Vinyl acetate

Clean Air Act Section 602 Class I Substances : Not listed
Clean Air Act Section 602 Class II Substances : Not listed
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed
DEA List I Chemicals (Precursor Chemicals) : Not listed
DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Vinyl acetate	0 - 0.1	Yes.	1000	129	5000	644.8

SARA 304 RQ : 1111111111.1 lbs / 504444444.4 kg [153172556.3 gal / 579821200.5 L]

SARA 311/312

Hazard classifications : Not applicable.

Composition/information on ingredients

No products were found.

SARA 313 : This product (does/not) contain toxic chemicals subject to the reporting requirements of SARA Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

Product name	CAS number	%
Not applicable.		

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : None of the components are listed.
New York : None of the components are listed.
New Jersey : The following components are listed: Distillates (petroleum), hydrotreated heavy paraffinic
Pennsylvania : None of the components are listed.
California Prop. 65 : **WARNING:** This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Vinyl acetate	Yes.	No.	No.	No.
Ethyl acrylate	Yes.	No.	No.	No.

Section 16. Other information

Revision date	: 05/07/2015	**Supersedes**	: 11/15/2013
Revised Section(s)	: 1, 2, 16.	**Prepared by**	: KMK Regulatory Services Inc.

Notice to reader

THE INFORMATION CONTAINED IN THIS SDS RELATES ONLY TO THE SPECIFIC MATERIAL IDENTIFIED. IT DOES NOT COVER USE OF THAT MATERIAL IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY PARTICULAR PROCESS. IN COMPLIANCE WITH 29 C.F.R. 1910.1200(g), CHS HAS PREPARED THIS SDS IN SEGMENTS, WITH THE INTENT THAT THOSE SEGMENTS BE READ TOGETHER AS A WHOLE WITHOUT TEXTUAL OMISSIONS OR ALTERATIONS. CHS BELIEVES THE INFORMATION CONTAINED HEREIN TO BE ACCURATE, BUT MAKES NO REPRESENTATION, GUARANTEE, OR WARRANTY, EXPRESS OR IMPLIED, ABOUT THE ACCURACY, RELIABILITY, OR COMPLETENESS OF THE INFORMATION OR ABOUT THE FITNESS OF CONTENTS HEREIN FOR EITHER GENERAL OR PARTICULAR PURPOSES. PERSONS REVIEWING THIS SDS SHOULD MAKE THEIR OWN DETERMINATION AS TO THE MATERIAL'S SUITABILITY AND COMPLETENESS FOR USE IN THEIR PARTICULAR APPLICATIONS.

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CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS - DIESEL FUEL BURNER

STARTUP

CHECK LIST

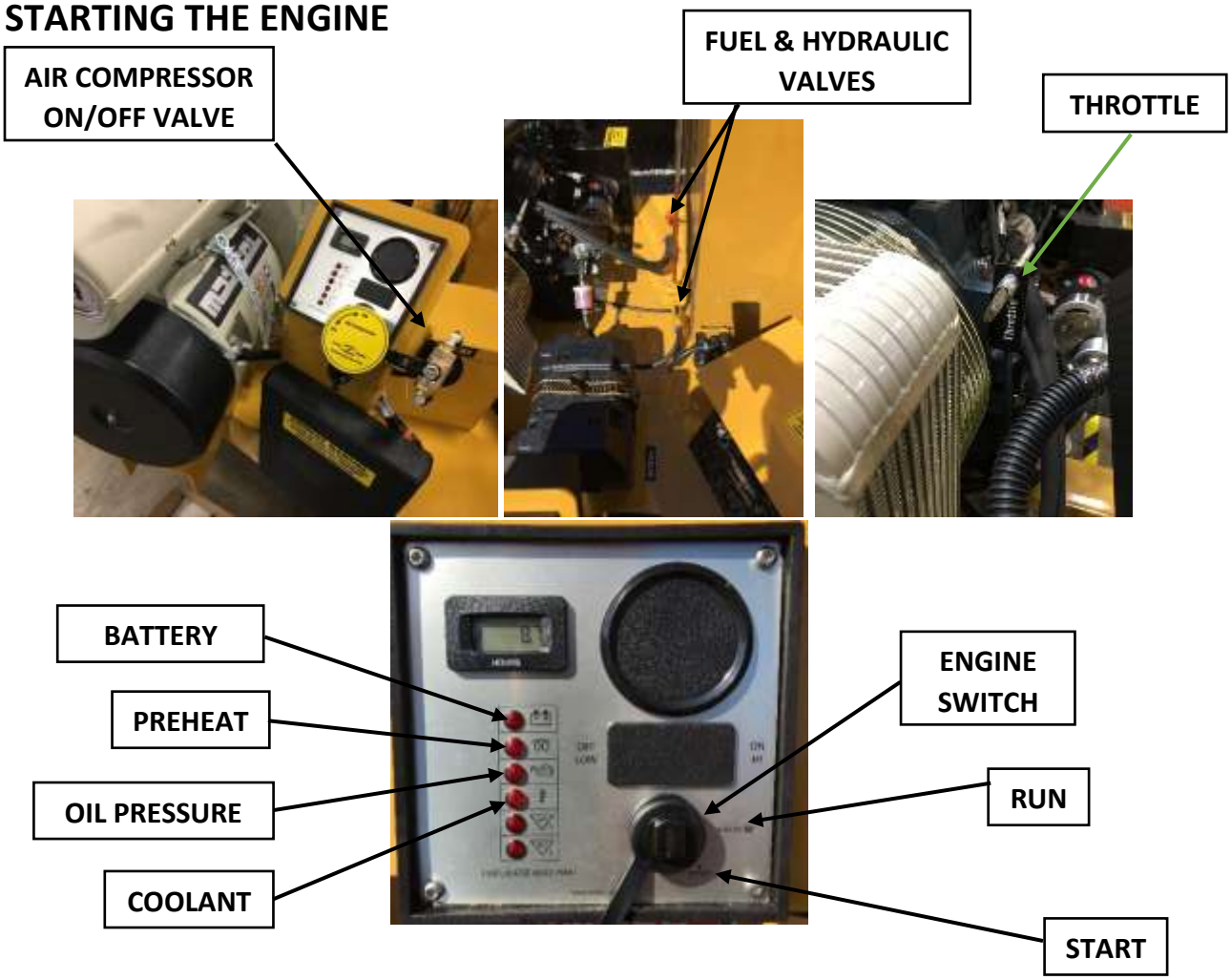
1. Check engine oil level. Follow manufacturers' guidelines as to type and frequency of changes.
2. Check hydraulic oil level. Use grade AW68 hydraulic oil.
3. Check heat transfer oil level with oil dipstick **#25.** Use a good quality grade 68 turbine oil or heat transfer oil. The heat transfer oil level must always be checked when it is **COLD**. Never attempt to check when the oil is hot, or severe injury could occur. **NEVER CHECK WHEN HOT!**
4. Fill burner fuel tank with diesel.
5. Check heated hose. The heated hose is an electrical device. Extreme care must be taken in how it is used and treated. It must be inspected daily for damage to the outer cover.
6. Completely read and understand all owner's manuals before trying to operate this machine.

CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS - DIESEL FUEL BURNER

STARTUP

STARTING THE ENGINE



- Set the diesel **fuel** & motor **hydraulic** valves to the **on** position.
- Set the throttle lever at ½ open. Air unit only.
- Turn the **engine switch** key to **run**, 3 indicator lights will come on:
- Battery --- Preheat ---- Oil Pressure
- Wait until the preheat plug is ready, indicator light will turn **off**, then turn **engine** switch key to **start** up position.
- **NOTE:** It is important that when you are running the engine at an extended amount of time, turn **on** the compressor for 15 minutes

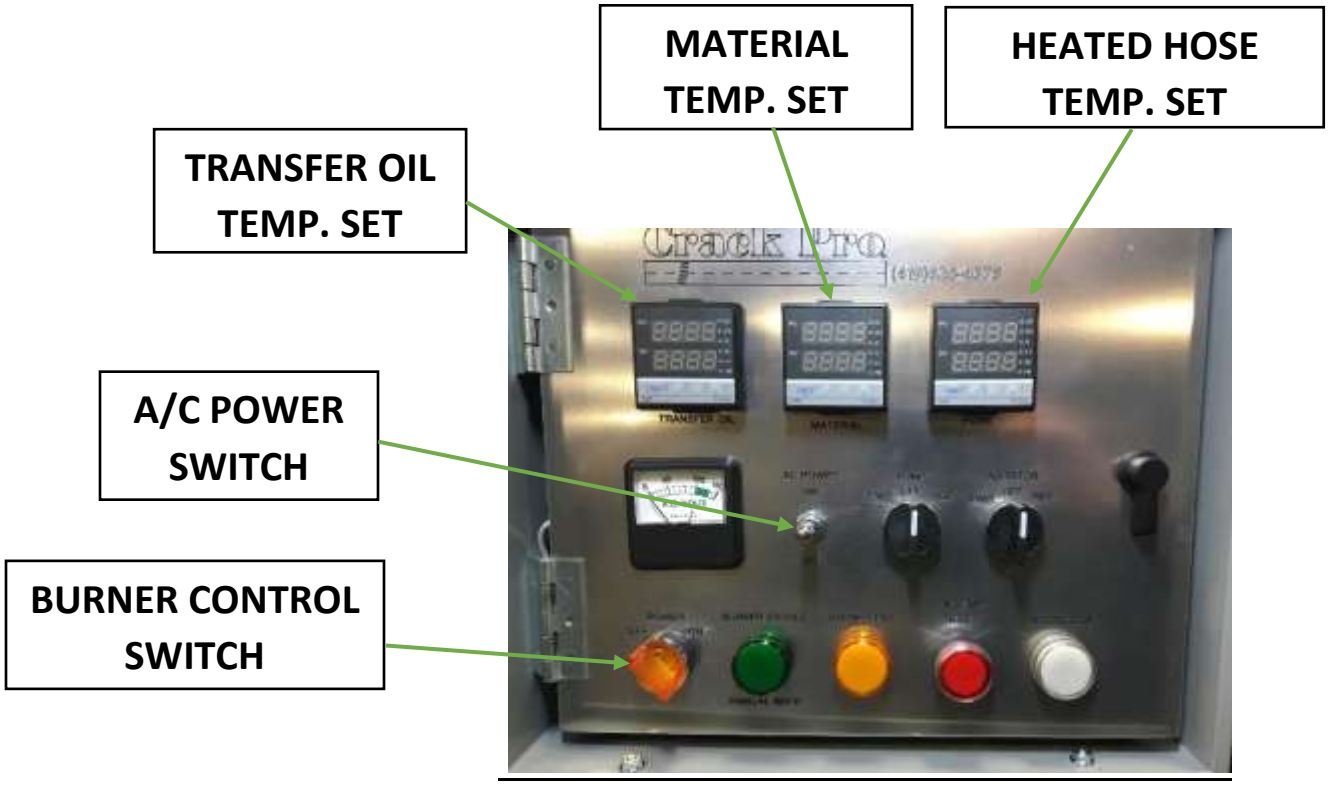
CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS - DIESEL FUEL BURNER

THE TEMPERATURE CONTROL

After starting the engine:

1. Turn **on** the burner with power on-off switch located on the front of the digital temperature controller. The digital controllers monitor the heat transfer oil temperature, and the material temperature, along with the heated hose.
2. Turn **on** the a/c power switch. The controller will cycle the burner off and on as the temperature of the heat transfer oil increases and decreases. The heat from the transfer oil will be absorbed by the material in the tank.



CRACK PRO® HEATED HOSE MACHINE

APPLIES TO ALL DIESEL FUEL BURNER

OPERATING INSTRUCTIONS - DIESEL FUEL BURNER

ADDING MATERIAL

3. Open the material tank lid and place inside three boxes of material. Caution should be used when loading blocks to prevent possible splash of hot material. Set material block (one at a time) on the lid. Close lid allowing the block to drop into the material tank.
4. For first time use or an empty tank, lay as many blocks as possible on the tank floor. Put the blocks in with the widest part touching the floor. This promotes faster melt times.

MATERIAL TEMPERATURE

5. On the top rear curbside corner are two thermometers. One is for the heat transfer oil on the right and the other is for the material tank on the left. Both thermometers will correspond with the digital readouts on the control box.
6. If the material temperature starts to climb over the recommended pouring temperature, open the lid and add more blocks. Leaving the lid open will also help drop the temperature, or lower the temperature setting on the oil controller.

CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS

AUTOMATIC SAFETY INTERLOCKS

There are automatic safety interlocks that control the heated hose, material pump, and agitation systems. The agitator and pump will not work until the material has reached a pre-programmed temperature on the respective digital controllers. The heated hose must also be up to temperature before the pump can operate.

Once the 3 controllers reach the programmed temperature settings the white interlock light comes on, then the agitator will automatically start turning. Opening the lid turns off the agitator.

When adding material, open the lid and place a single block on and push it closed. Do not add more than 4 boxes of material at a time.

A squealing noise indicates the blocks of material are not melted enough to agitate. Turn off the agitator control switch, wait 15 minutes and try again.

NOTE:

- Due to the fact that there is not a valve on the end of the hose, the material may continue to flow out even with the applicator switch not engaged.
- Place the applicator up in its holder for extended periods of non-use.
- For momentary non-use, the pump switch on the controller box can be placed in the reverse position.

CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS

APPLICATION OF MATERIAL

DO NOT MOVE THE HOSE UNTIL IT IS AT APPLICATION TEMPERATURE

7. Once the material in the tank is completely melted and the desired application temperature is reached, it is time to fill cracks.
8. Detach the hose from its storage holder, swing the boom into position. Under no circumstances must the hose be bent or kinked; this will destroy the hose.
9. Check to see that the pump switch located on the temperature control box is in the forward position, place the wand applicator head over the crack, and press the pump activation switch on the wand. If no material comes out after 10 seconds, possibly the end of the applicator is plugged and may need cleaning.
10. Depress the pump activation switch for as long as necessary to keep the applicator full without overflowing it. With some experience you will know how far the material in the applicator head will go.
11. The speed of both the agitator and material pump motors can be fine-tuned by adjusting the speed control knobs on the electro-hydraulic solenoid valve block.
12. The oil temperature controller should be set for 475°F.
13. The material temperature controller should be set for 380°F a mid-range of the recommended pouring temperature on your products container.
14. The hose temperature controller should be set for 350°F.
15. Keep the voltmeter at 90-100 volts while operating the hose. **This is achieved by the engine throttle, on the air unit only.**
16. On an extremely cold and or windy day, all of the temperature settings may have to be increased to make up for heat losses.

See the temperature control page for instructions on how to set the controllers.

CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS

STARTUP

SETTING TEMPERATURE CONTROL

- The top scale is the **ambient temperature** of the heat transfer oil.
- The bottom scale is the **set temperature** that you want the oil to be heated to.
- The burner shuts off when your setting is exceeded by 10°.
- It comes back on when the oil drops to 10° under your setting.
- The sequence for setting **475°** temperature is:

1) Press the left arrow 4 times, then up or down for the **4**.
2) Press the left arrow again, then up or down for the **7**.
3) Press the left arrow again, then up or down for the **5**.
4) Press **SET**.

CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS - DIESEL FUEL BURNER

POURING MATERIAL

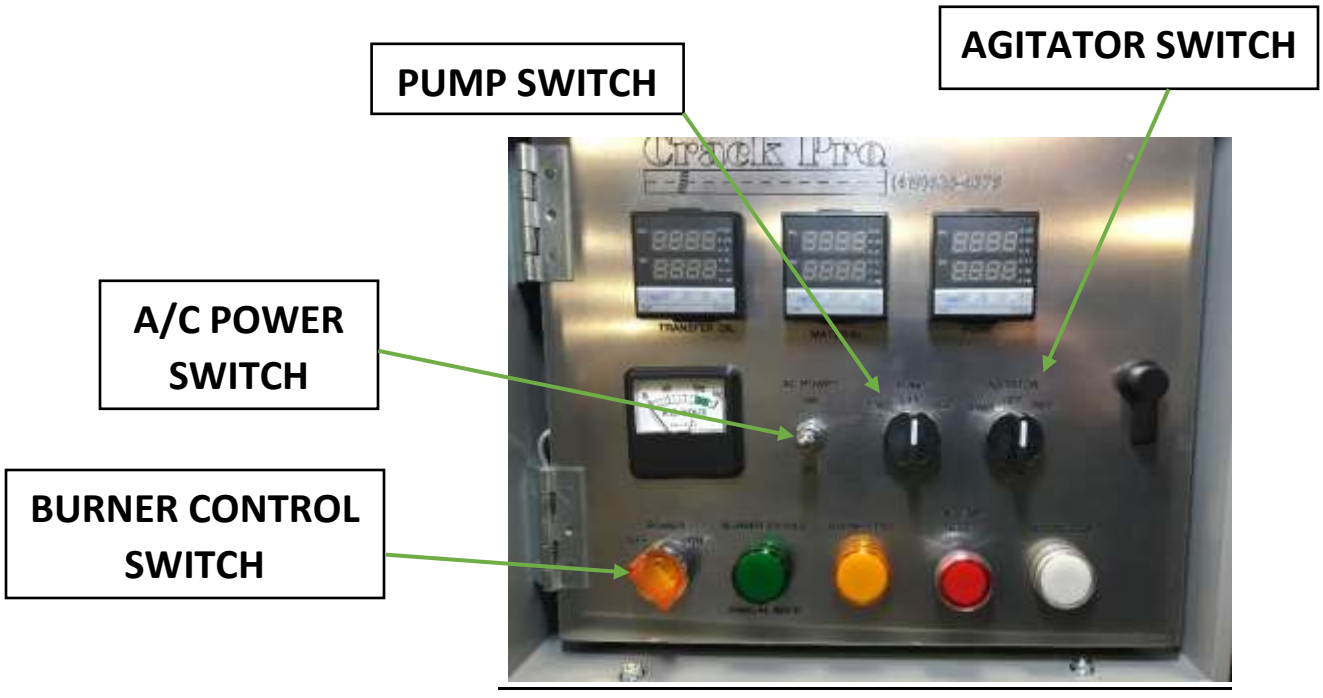
17. Set pour pot or applicator under the material discharge valve **#30** and raise the handle to open.

CAUTION: ALWAYS WEAR LONG SLEEVE SHIRT, GLOVES, AND A FACE SHIELD WHEN PERFORMING THIS OPERATION!

18. Fill the crack filler pour pot to the desired level and pour into cracks. Follow with a V-shaped squeegee if desired.

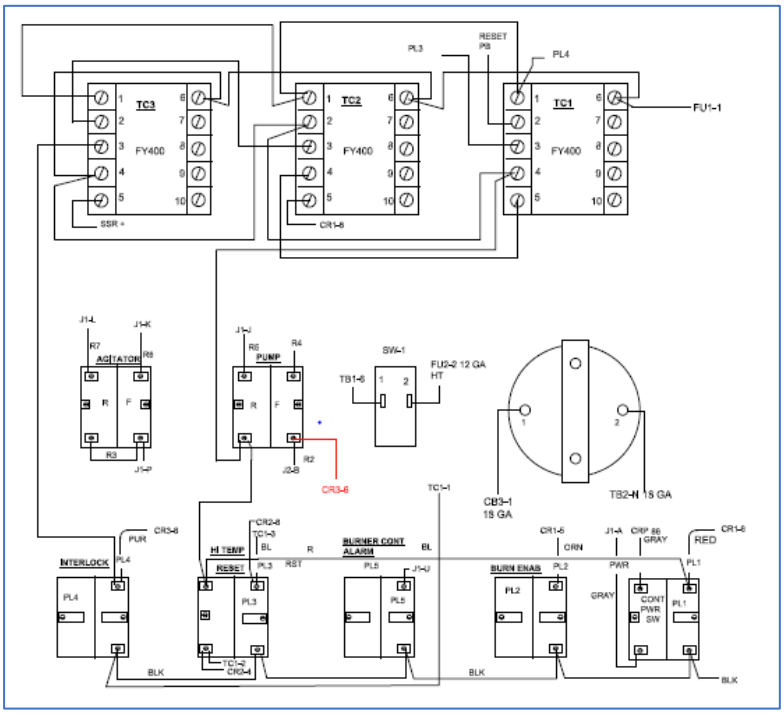
19. To stop for the day, perform the following steps:

- Turn the a/c power switch to the **off** position.
- Turn the pump switch to reverse for 30 seconds, then turn to the **off** position.
- Leave the agitator switch on the forward position.
- Turn the burner control switch to the **off** position.
- Shut off the engine.



WIRING DIAGRAMS

TEMPERATURE CONTROL BOX



TERMINALS:

U – YELLOW 14 GA. TO BURNER

P1 – RED 10 GA. TO MOTOR

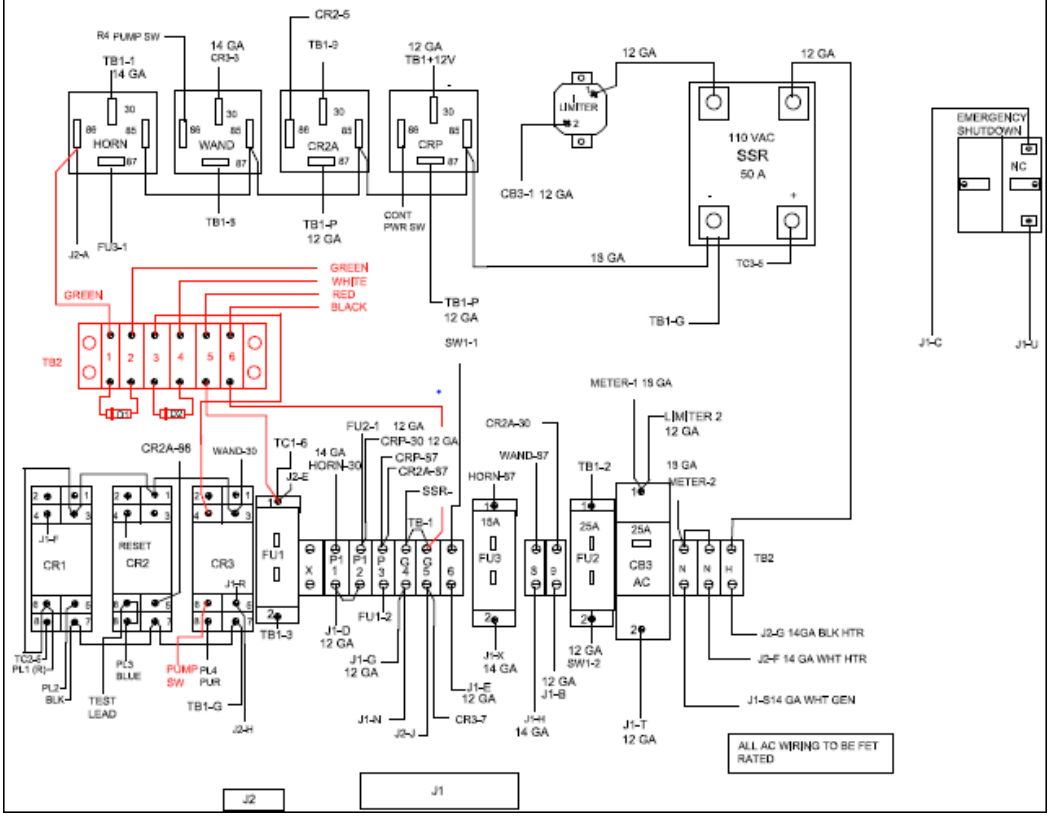
N – BLACK 10 GA. TO MOTOR

G – BLACK 12 GA. TO BURNER

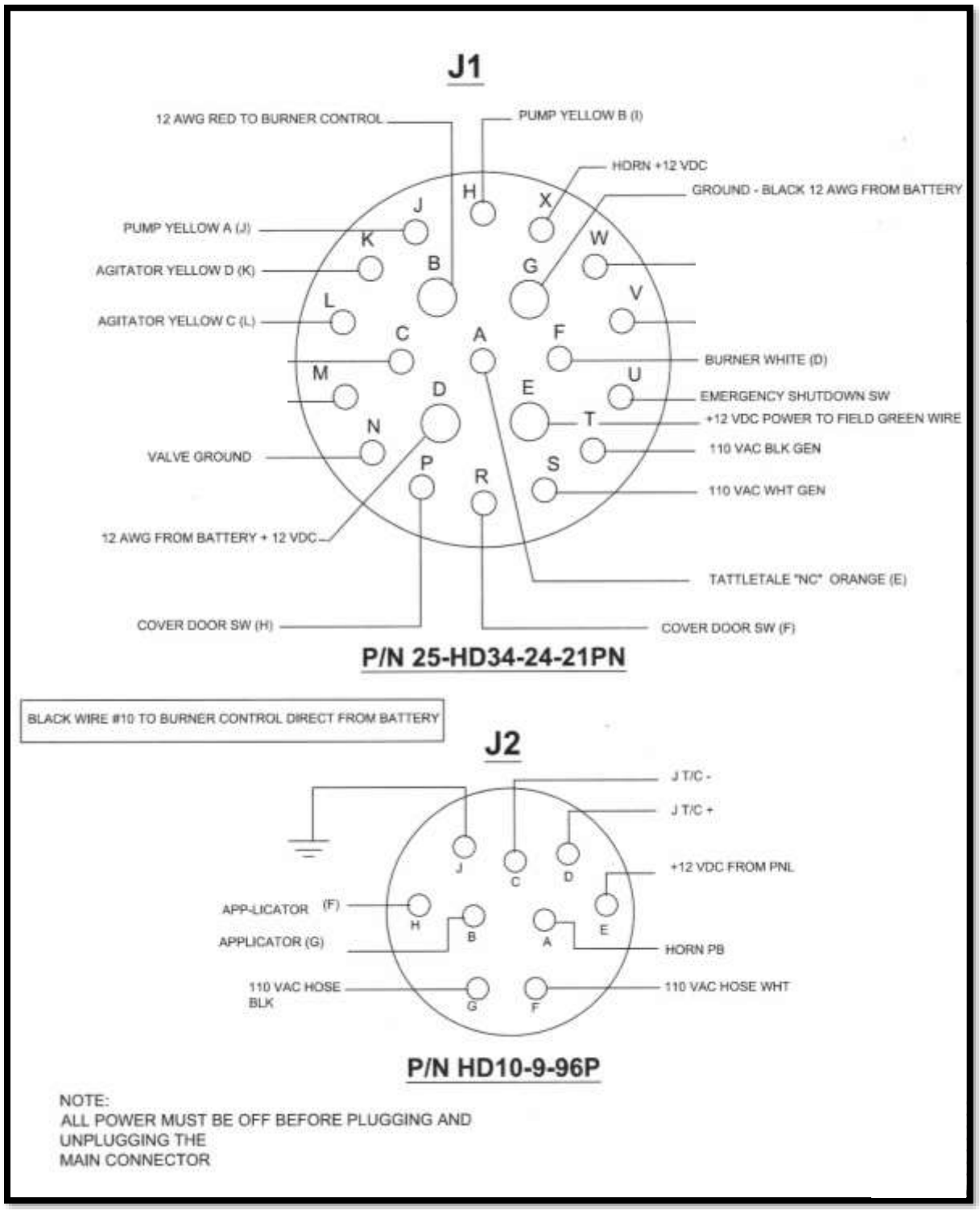
B – RED 12 GA. TO BURNER

D – WHITE 14 GA. TO BURNER

NOTE: RUN BATTERY – DIRECTLY TO BURNER

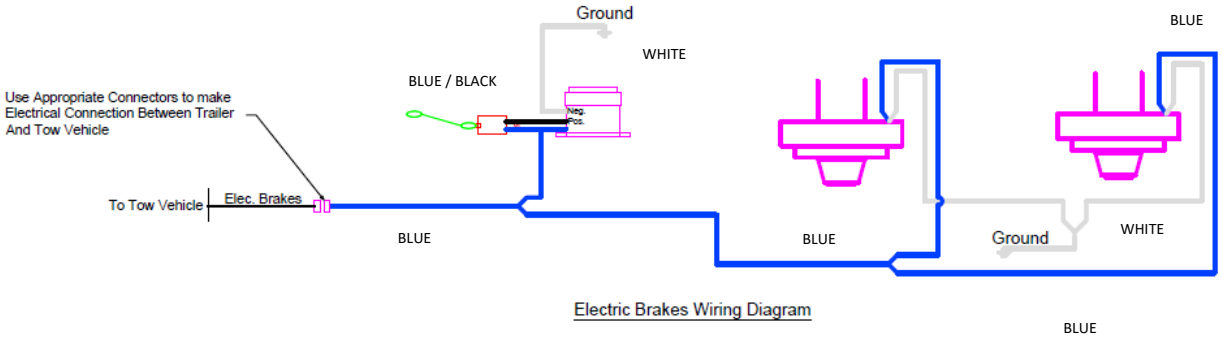


HEATED HOSE MAIN CONNECTOR J1 AND HEATED HOSE J2

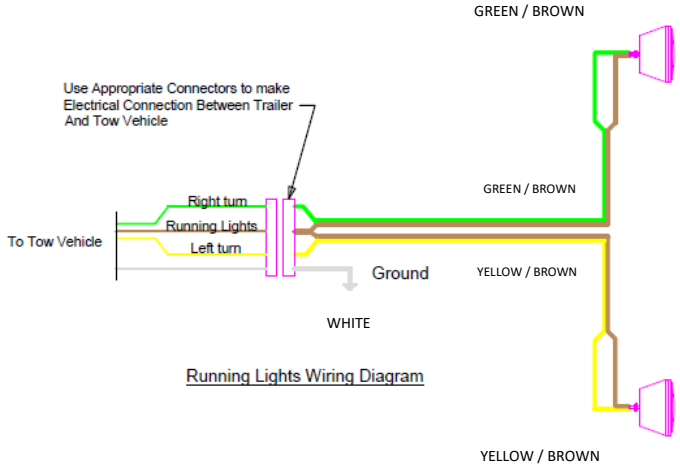


WIRING DIAGRAMS

ELECTRIC BRAKES AND RUNNING LIGHTS



Electric Brakes Wiring Diagram



Running Lights Wiring Diagram

TANK CAPACITY CHART

GALLONS ARE APPROXIMATE AND MAY VARY SLIGHTLY TANK TO TANK

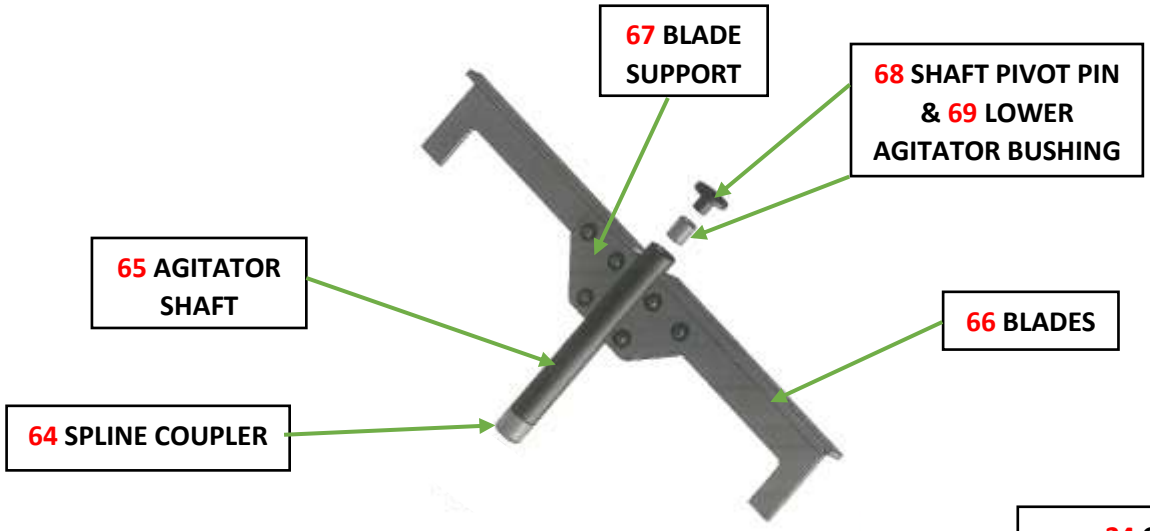
MATERIAL DEPTH AND GALLON VOLUME

MATERIAL DEPTH	400 GALLONS 60"x34"	260 GALLONS 60"x21"	200 GALLONS 46"x30"	125 GALLONS 46"x19"	60 GALLONS 33"x17"
INCHES	GALLONS	GALLONS	GALLONS	GALLONS	GALLONS
1	12	12	7	7	4
2	24	24	14	14	7
3	37	37	22	22	11
4	49	49	29	29	15
5	61	61	36	36	19
6	73	73	43	43	22
7	86	86	50	50	26
8	98	98	58	58	30
9	110	110	65	65	33
10	122	122	72	72	37
11	135	135	79	79	41
12	147	147	86	86	44
13	159	159	94	94	48
14	171	171	101	101	52
15	184	184	108	108	56
16	196	196	115	115	59
17	208	208	122	122	63
18	220	220	129	129	
19	233	233	137	137	
20	245	245	144		
21	257	257	151		
22	269		158		
23	282		165		
24	294		173		
25	306		180		
26	318		187		
27	330		194		
28	343		201		
29	355		209		
30	367		216		
31	379				
32	392				
33	404				
34	416				

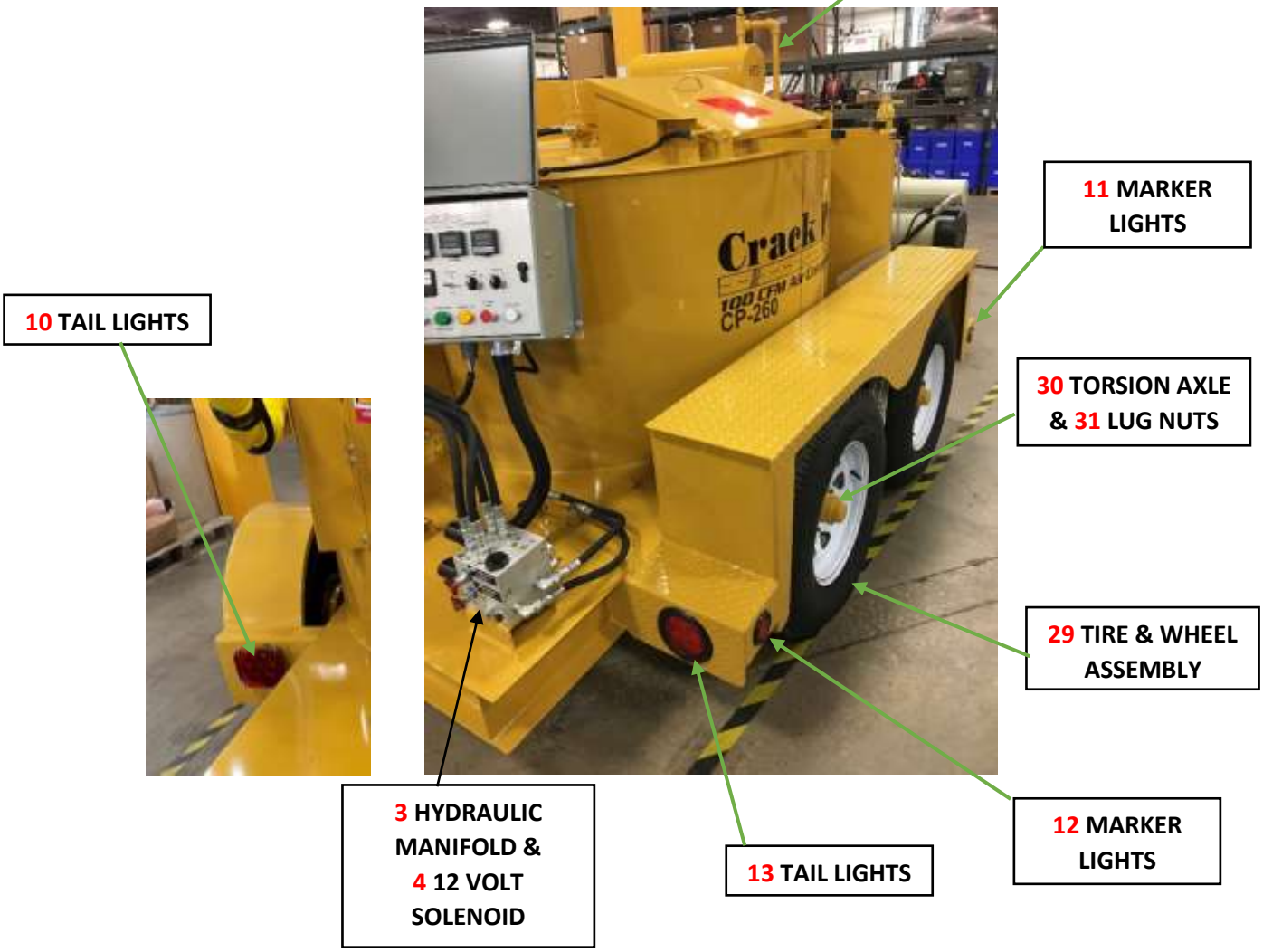
Note: To see how much material is in the tank, reverse the inch amount.

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST



PICTURE-1



CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

PARTS LIST PICTURE-1

ITEM #	PART#	QTY.	DESCRIPTION
3	P693A010	1	HYDRAULIC MANIFOLD
4	P694A006	4	12 VOLT SOLENOID
11	P467A016	2/4	2" LED MARKER AMBER CP-125 CP-260 CP-400
12	P467A017	2	2" LED MARKER – RED CP-260 CP-400
13	P467A020	2	4" ROUND LIGHT – RED CP-260 CP-400
10	P516A025	1	TAIL LIGHT – LEFT CP-125
	P516A024	1	TAIL LIGHT – RIGHT CP-125
24	P75000B006	1	OIL OVERFLOW PIPE
29	P514A017	2	TIRE & WHEEL ASSEMBLY CP-125
	P514A017	4	TIRE & WHEEL ASSEMBLY CP-260 / CP-400
30	P511A032	1	TORSION AXLE CP-125
	P511A017	2	TORSION AXLE CP-260 CP-400
31	P579A003	12/24	LUG NUT
64	P630A043	1	SPLINE COUPLER CP-125
	P630A047	1	SPLINE COUPLER CP-260 CP-400
65	P74000D062-001	1	AGITATOR SHAFT CP-125
	P74000H062-001	1	AGITATOR SHAFT CP-260
	P74000G062-001	1	AGITATOR SHAFT CP-400
66	P74000B008B	2	BLADE CP-125
	P74000B013-001	2/4	BLADE CP-260 / CP-400
67	P74000B014	2/4	BLADE SUPPORT CP-125 CP-260 CP-400
68	P74000B015	1	SHAFT PIVOT PIN
69	P439A004	1	LOWER AGITATOR BUSHING
	P74000Q062	1	REPLACEMENT AGITATION SHAFT ASSEMBLY BEFORE 10/2021 CP-125/260
	P74000P062	1	REPLACEMENT AGITATION SHAFT ASSEMBLY BEFORE 10/2021 CP-400

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

PICTURE-2

23 OIL EXPANSION TANK

22 AGITATOR DRIVE MOTOR

90 PROPANE TANK HOLDER

25 OIL DIP STICK

106 AGITATOR DRIVE MOTOR MOUNT

91 TANK LATCH

PROPANE TANK NOT INCLUDED

51 HYDRAULIC PUMP

54 TRAILER JACK

45 SAFETY BREAKAWAY KIT & WAND HORN

50 PLUG

49 SAFETY CHAIN

48 HOOK

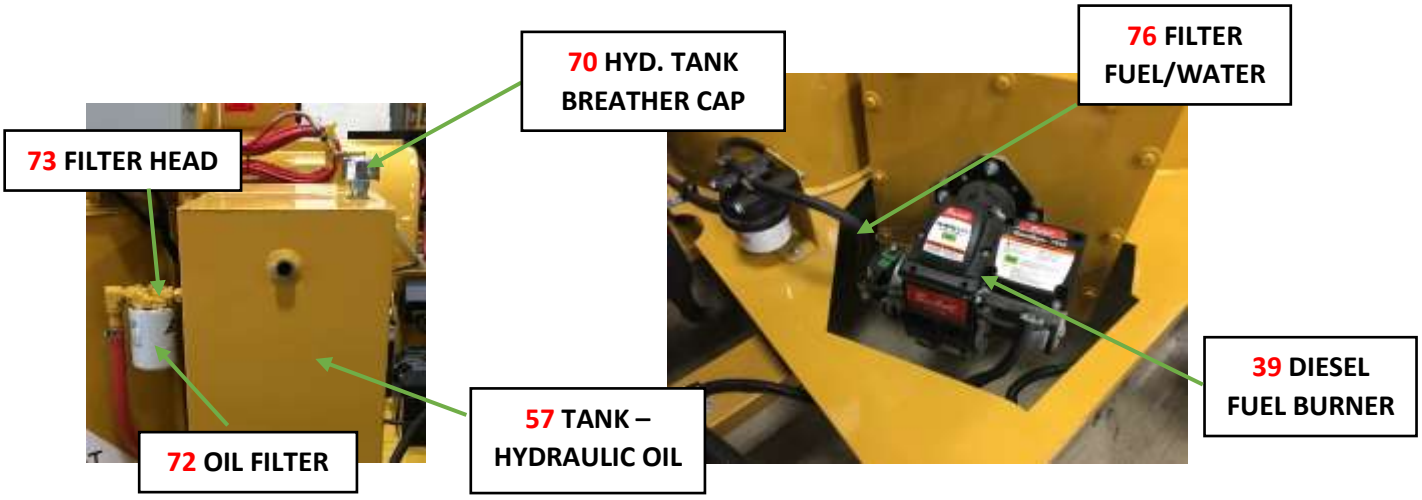
46 PINTLE EYE COUPLER OR 47 BALL COUPLER OPTIONAL

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

PARTS LIST PICTURE-2

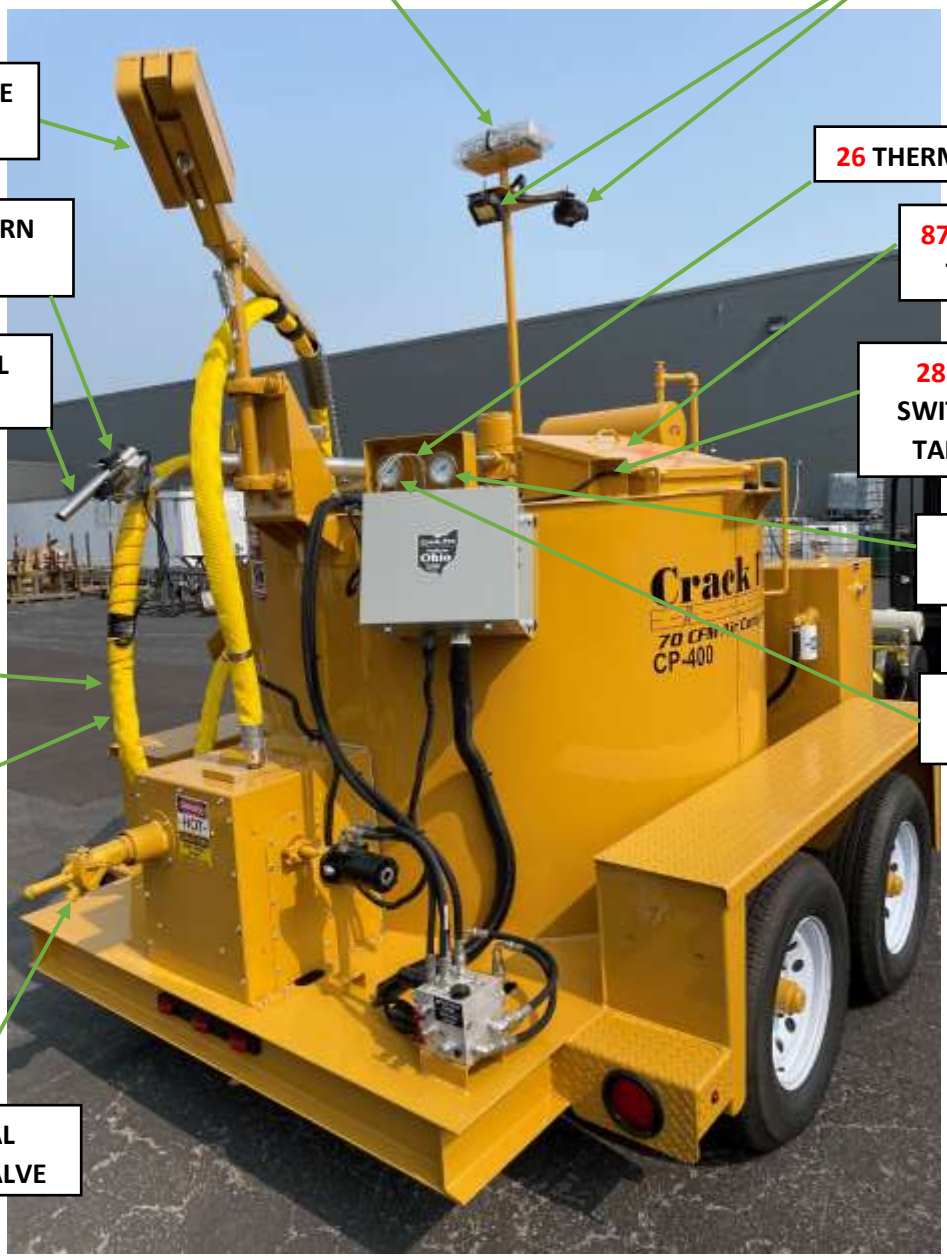
ITEM #	PART#	QTY.	DESCRIPTION
22	P474A037	1	AGITATOR DRIVE MOTOR CP-125
	P474A049	1	AGITATOR DRIVE MOTOR CP-260 CP-400
106	P74000C420	1	AGITATOR DRIVE MOTOR MOUNT
23	P74000B017	1	OIL EXPANSION TANK CP-125/260 CP-400
25	P74000G019	1	OIL DIPSTICK CP-60
	P74000B019	1	OIL DIPSTICK CP-125
	P74000F019	1	OIL DIPSTICK CP-260 CP-400
39	P662A009	1	DIESEL FUEL BURNER
45	P518A008	1	BREAKAWAY KIT-4 BOLT
	P518A009	1	BREAKAWAY KIT- REPLACEMENT PIN & CABLE OPTIONAL
	P448A003	1	HORN
46	P646A003	1	PINTLE EYE COUPLER
47	P553A008	1	2-5/16” BALL COUPLER - OPTIONAL
48	P517A002	2	HOOK (PART OF SAFETY CHAIN)
49	P531A004	2	SAFETY CHAIN
50	P519A007	1	TRAILER PLUG
51	P601A053	1	HYDRAULIC PUMP - AIR
	P601A042	1	HYDRAULIC PUMP – NON AIR
54	P551A008	1	TRAILER JACK
57	P74000G005	1	TANK - HYDRAULIC OIL
70	P1050A006	1	HYDRAULIC TANK BREATHER/CAP
72	P908A003	1	FILTER – OIL
73	P909A002	1	FILTER HEAD (SMALL)
76	P458B254	1	FILTER - FUEL/WATER
90	P74002	1	PROPANE TANK STAND - OPTIONAL
91	P422A002	1	PROPANE TANK LATCH - OPTIONAL



CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

PICTURE-3



89 STROBE LIGHT OPTIONAL

89 LED LIGHTS OPTIONAL

60 COUNTER BALANCE HOSE BOOM

26 THERMOCOUPLES

81 PUMP/HORN SWITCH

87 MATERIAL TANK LID

80 MATERIAL WAND

28 LIMIT SWITCH ON TANK LID

20 OIL THERMOMETER

8 HEATED HOSE 19' LONG

20 MATERIAL THERMOMETER

93 HEATED HOSE 23' LONG OPTIONAL

86 MATERIAL DISCHARGE VALVE

89 ARROW BOARD OPTIONAL

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

PARTS LIST PICTURE-3

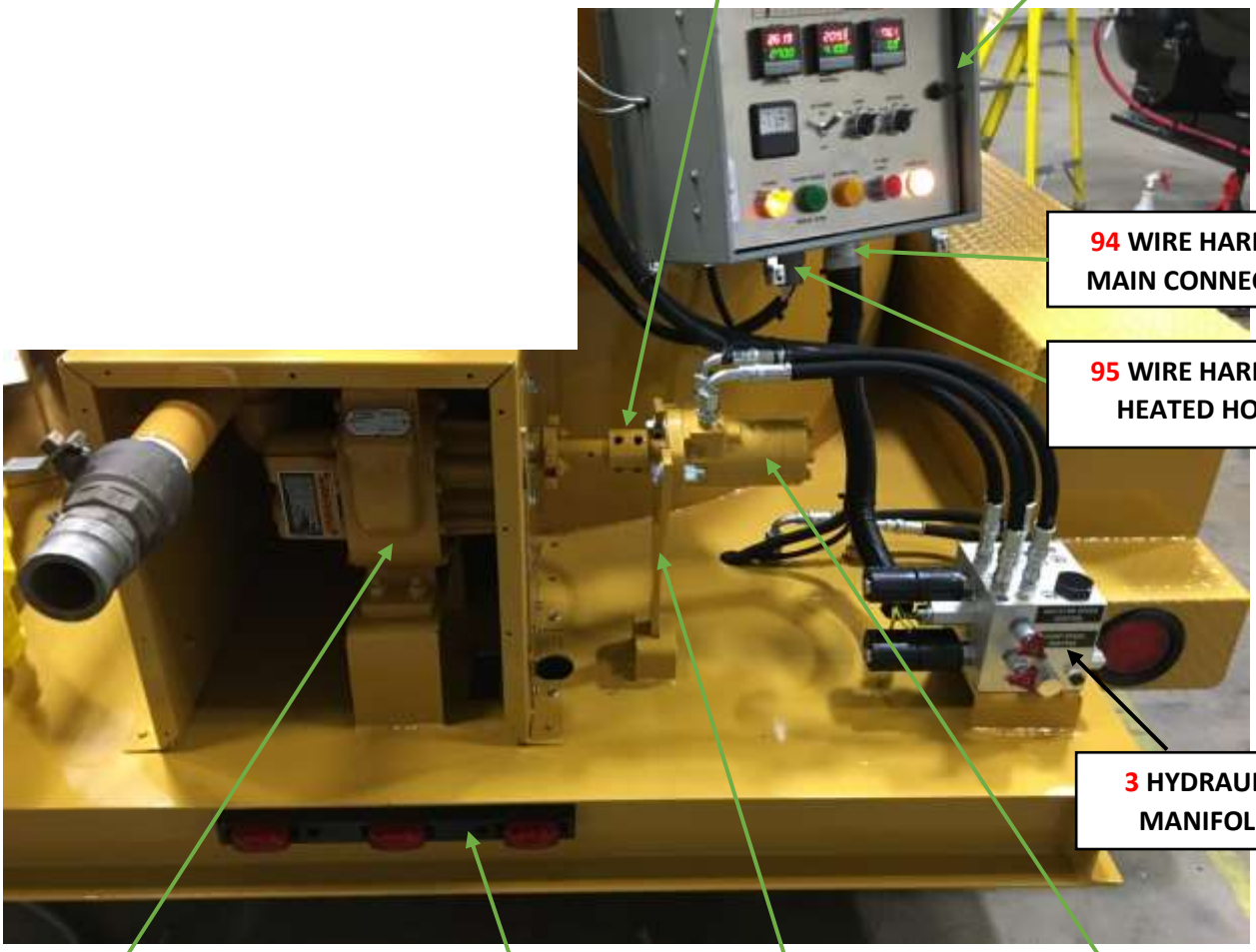
ITEM #	PART#	QTY.	DESCRIPTION
8	P17582B019	1	HEATED HOSE 19' (After 8/22*)
20	P659A009	1	MATERIAL / OIL THERMOMETER 18" CP-125
	P659A008	1	MATERIAL / OIL THERMOMETER 24" CP-260
	P659A008	1	OIL THERMOMETER 24" CP-400
	P659A005	1	MATERIAL THERMOMETER 36" CP-400
26	P679A008	2	THERMOCOUPLE 18" CP-125
	P679A014	1	OIL THERMOCOUPLE 24" CP-260 CP-400
	P679A017	1	MATERIAL THERMOCOUPLE 23" CP-260 CP-400
28	P442A010	1	LIMIT SWITCH - LID
60	P74000J007	1	COUNTER BALANCE HOSE BOOM
80	P74000C000	1	MATERIAL WAND
81	P443A009	2	PUMP/HORN SWITCH
	P443B008	2	SWITCH HOUSING
86	P585B000	1	MATERIAL DISCHARGE VALVE
87	P74000C226	1	MATERIAL TANK LID CP-125/260 CP-400
89	P516A033	1	ARROW BOARD - OPTIONAL
	P516A035	1	LIGHT – STROBE - OPTIONAL
	P516A032	2	LED LIGHTS - OPTIONAL
92	P443B001	1	WIRELESS WAND - OPTIONAL
	P519B003	1	WAND WIRE HARNESS - OPTIONAL
93	P17582B023	1	HEATED HOSE 23'- OPTIONAL
	P17582B023	1	HEATED HOSE 23'- CP-400 (After 8/22*)
	P17582K	1	CP125 HEATED HOSE CONVERSION KIT
	P17582K2	1	CP260/400 HEATED HOSE CONVERSION KIT

*MACHINES MADE BEFORE 8/22 WILL NEED CONVERSION KIT WITH NEW HOSE

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

PICTURE-4



2 SPLIT COUPLING

27 TEMPERATURE CONTROLLER PANEL

94 WIRE HARNESS MAIN CONNECTOR

95 WIRE HARNESS HEATED HOSE

3 HYDRAULIC MANIFOLD

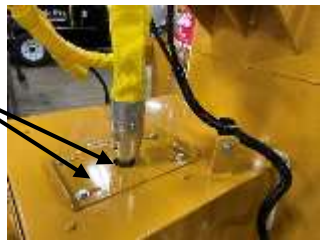
7 MATERIAL PUMP

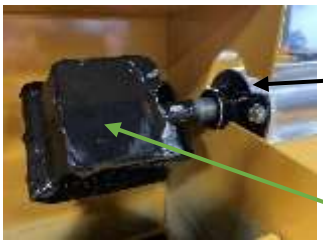
14 LIGHT BAR

108 YOKE

1 MOTOR FOR MATERIAL PUMP

6 PUMP BOX CAP & BUSHING REDUCER





107 WAND SHOE SWIVEL

82 APPLICATION WAND SHOE

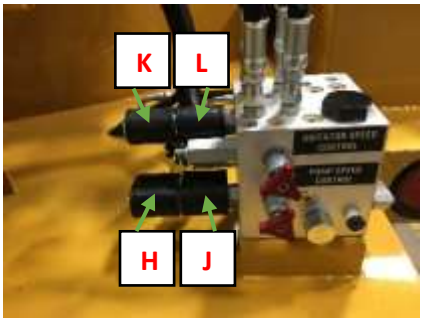
CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

PICTURE-4

43 ENGINE COVER

62 TOOL BOX



4 12 VOLT ELECTRIC COILS

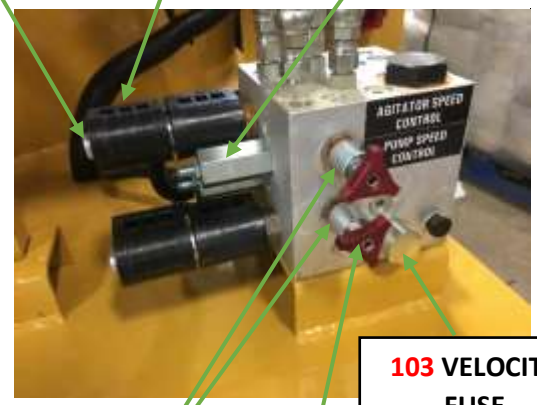
97 REGULATOR

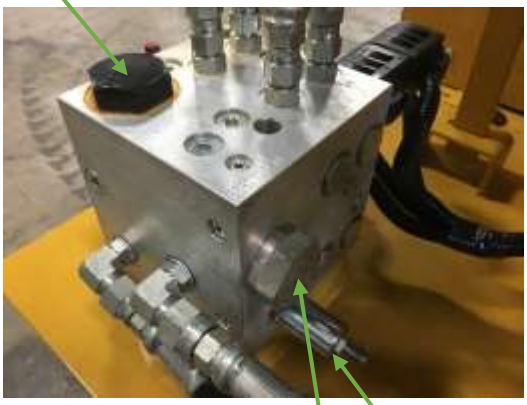
SHOWING WIRE LOCATIONS TO J1 MAIN HARNESS
NOTE: ONE WIRE FROM EACH COIL TO N FOR GROUND

96 CARTRIDGE

101 FILTER HEAD
102 FILTER CARTRIDGE

NOTE: SEE HEATED HOSE MAIN CONNECTOR J1 AND HEATED HOSE J2 DIAGRAM





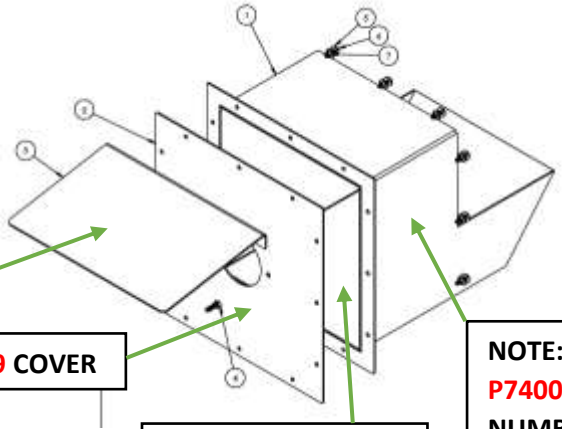
103 VELOCITY FUSE

99 FLOW CONTROL CARTRIDGE VALVE

104 RELIEF VALVE

98 COMPENSATOR CARTRIDGE

100 KNOB



110 GUARD

109 COVER

NOTE: SHOWN IS ASSEMBLY P74000B030 WITH ITS OWN NUMBERS ON THE DRAWING. REFER TO BOXED DESCRIPTION'S

111 COMBUSTION CHAMBER

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

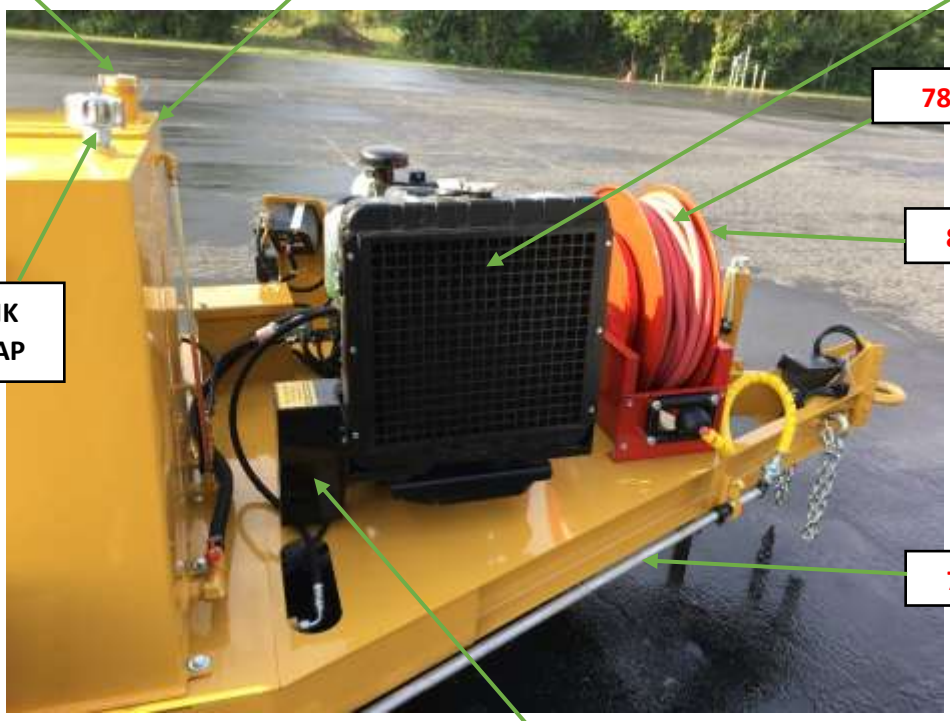
PARTS LIST PICTURE-4

ITEM #	PART#	QTY.	DESCRIPTION
1	P474A089	1	MOTOR FOR MATERIAL PUMP
2	P498A002	1	SPLIT COUPLER
3	P693A010	1	HYDRAULIC MANIFOLD
4	P694A006	4	12 VOLT ELECTRIC COILS
6	P74000B331	2	PUMP BOX CAP
	P1010A017	1	BUSHING REDUCER
7	P640A067	1	MATERIAL PUMP ROPER 2”
14	P467A019	1	LIGHT BAR 3 PC. / TRAILER CP-260 CP-400
27	P735A061	1	TEMPERATURE CONTROLLER PANEL
43	P74000D231	1	ENGINE COVER - OPTIONAL AIR
	P74000B231	1	ENGINE COVER - OPTIONAL NON AIR
62	P74000B004	1	TOOL BOX - OPTIONAL
94	P519C004	1	WIRE HARNESS - MAIN CONNECTOR
95	P519C002	1	WIRE HARNESS - HEATED HOSE
96	P693A020	4	CARTRIDGE
97	P693A021	2	VALVE - REGULATOR
98	P693A022	1	COMPENSATOR CARTRIDGE
99	P693A024	2	FLOW CONTROL CARTRIDGE VALVE
100	P693A025	2	KNOB
101	P693A026	1	FILTER HEAD
102	P693A027	1	FILTER CARTRIDGE
103	P693A028	1	VELOCITY FUSE
104	P693A029	1	RELIEF VALVE
82	P163A012	1	APPLICATION WAND SHOE
107	P470C005	1	WAND SHOE SWIVEL ASSEMBLY
108	P72000G027	1	YOKE CP-125
	P72000M027	1	YOKE CP-260
	P72000H027	1	YOKE CP-400
109	P74000B030D	1	COVER – BURNER BOX
110	P74000B030E	1	GUARD – BURNER BOX
111	P671A000	1	COMBUSTION CHAMBER

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

PICTURE-5



36 AIR COMPRESSOR & T-HANDLE THROTTLE

51 HYDRAULIC PUMP

84 V-BELT

83 GENERATOR

41 ENGINE KEYS & IGNITION SWITCH & ON/OFF VALVE

42 VIBRATION ISOLATION MOUNTS

71 DIESEL TANK CAP

32 FUEL TANK DIESEL

41 ENGINE

78 AIR HOSE

85 HOSE REEL

70 HYD. TANK BREATHER CAP

79 AIR WAND

105 GENERATOR GUARD

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

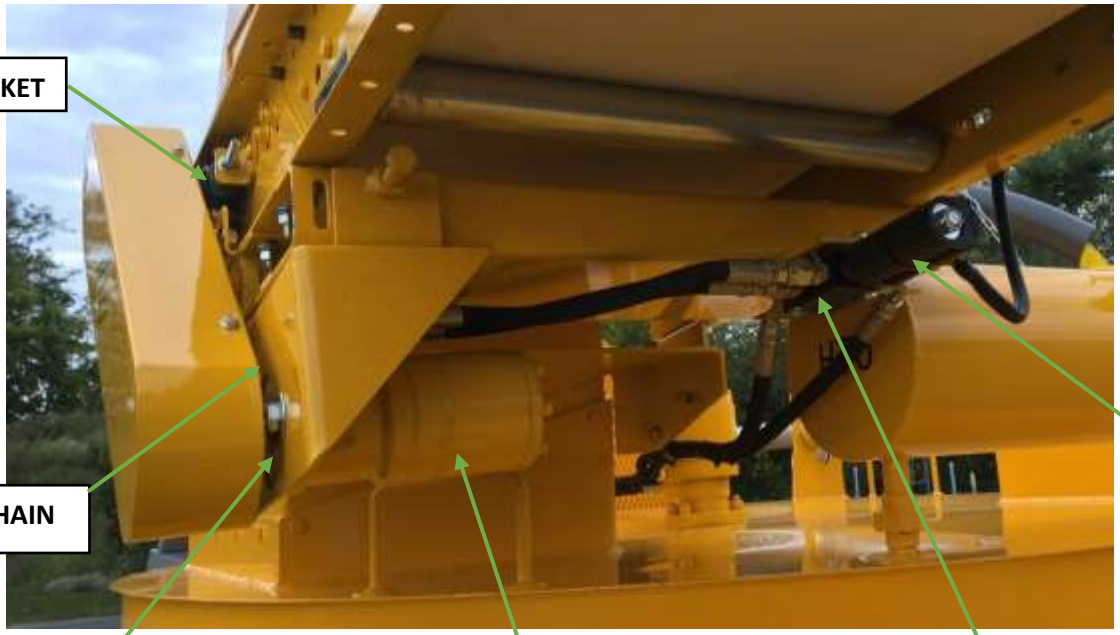
PARTS LIST PICTURE-5

ITEM #	PART#	QTY.	DESCRIPTION
32	P74000G016	1	FUEL TANK DIESEL
36	P458A083	1	AIR COMPRESSOR
	P488TA	1	T-HANDLE LOCKING THROTTLE
41	P458A053	1	DIESEL ENGINE – 602
	P458A054	1	DIESEL ENGINE – 902
	P458A081	1	DIESEL ENGINE – 1505
	P458B303	1	ENGINE CONTROL PANEL
	P458B354	1	IGNITION SWITCH-LOFA
	P458B311	2	ENGINE KEYS
	P74000E170	1	AIR COMPRESSOR ON/OFF VALVE
42	P458B153	4	VIBRATION ISOLATION MOUNT 602
	P458B151	4	VIBRATION ISOLATION MOUNT 902
	P458B150	4	VIBRATION ISOLATION MOUNT 1505
51	P601A042	1	HYDRAULIC PUMP – NON-AIR
	P601A053	1	HYDRAULIC PUMP - AIR
70	P1050A006	1	HYDRAULIC TANK BREATHER/CAP
71	P464A003	1	DIESEL TANK CAP
78	P717A007	1	5/8” X 100’ AIR HOSE
79	P632D000	1	AIR WAND
83	P695A005	1	GENERATOR
84	P660A041	2	V-BELT - GENERATOR NON-AIR 602 & 902
	P660A049	2	V-BELT - GENERATOR AIR 1505
	P458B159	1	V-BELT - FAN NON-AIR 602 & 902
	P660A047	1	V-BELT - FAN AIR 1505
85	P901A056	1	HOSE REEL
85	P901B056	1	HOSE REEL KIT CONSISTS OF BRACKETS & NUTS
	P901B042	2	RETROFIT BRACKET
	P1021A043	8	1/2 -13 RIVET NUT
105	P74000B169	1	GENERATOR GUARD W/AIR
	P74000C169	1	GENERATOR GUARD

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

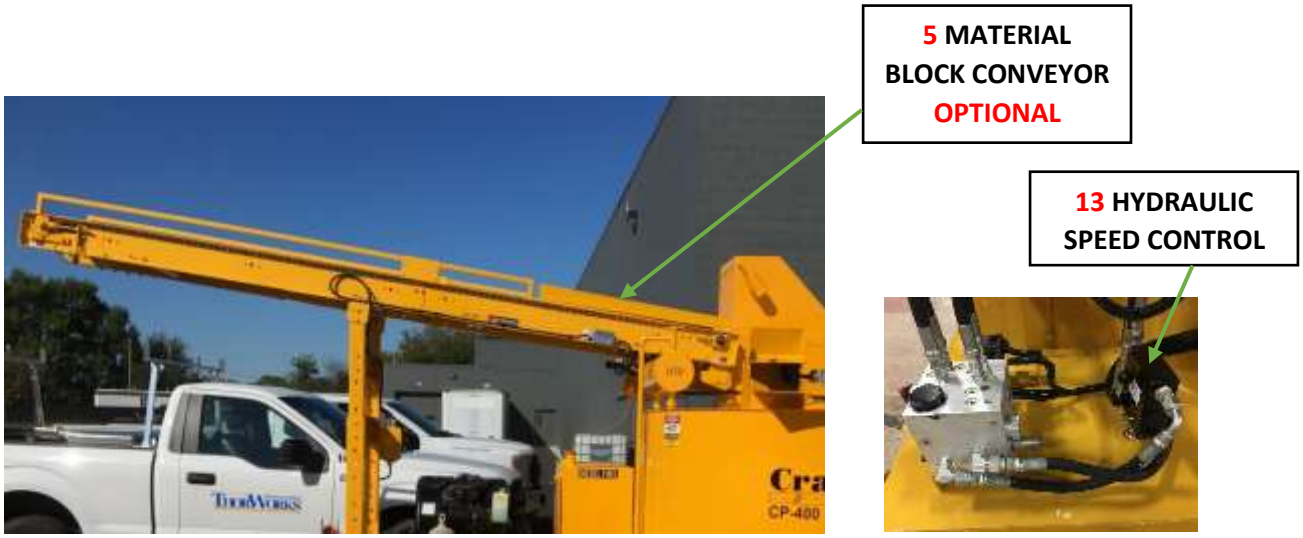
CONVEYOR ASSEMBLY OPTIONAL



CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

CONVEYOR ASSEMBLY OPTIONAL



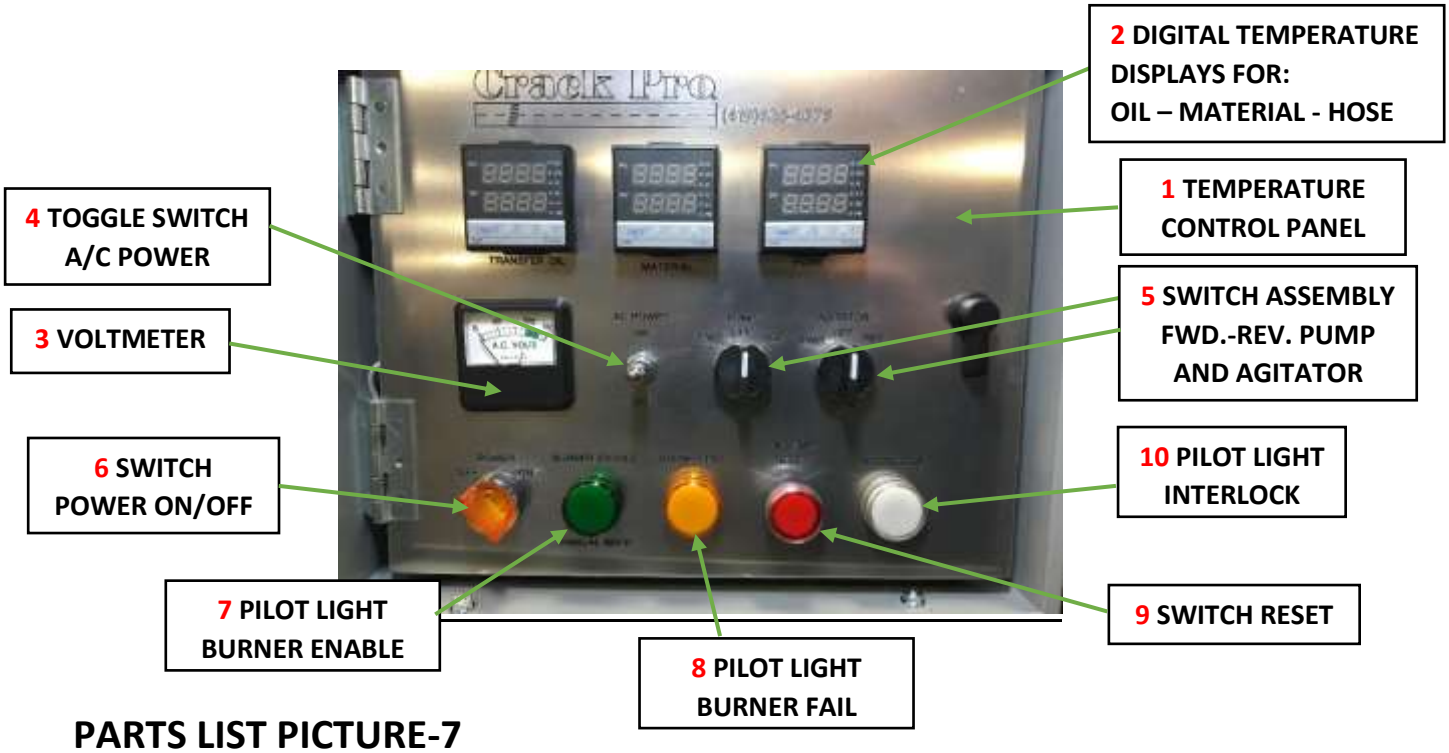
PARTS LIST PICTURE-6

ITEM #	PART#	QTY.	DESCRIPTION
	P552A001	1	MATERIAL BLOCK CONVEYOR - OPTIONAL
1	P443A005	1	EMERGENCY STOP SWITCH
2	P443A006	2	MOMENTARY ON SWITCH
3	P941A012	4	ELECTRICAL BOX
4	P443A007	1	FORWARD / REVERSE SELECTOR
5	P552A001	1	MATERIAL BLOCK CONVEYOR ASSEMBLY
6	P552A002	1	CONVEYOR BELT
7	P474A088	1	HYDRAULIC MOTOR
8	P427A001	1	SPROCKET
9	P1039A000	1	ROLLER CHAIN 44.5” LONG SOLD BY THE FOOT
10	P427A013	1	SPROCKET
11	P694A005	1	ELECTRIC MANIFOLD ASSEMBLY
12	P694A006	1	COIL ONLY
13	P472A003	1	HYDRAULIC SPEED CONTROL VALVE

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

PARTS LIST FOR TEMPERATURE CONTROL BOX



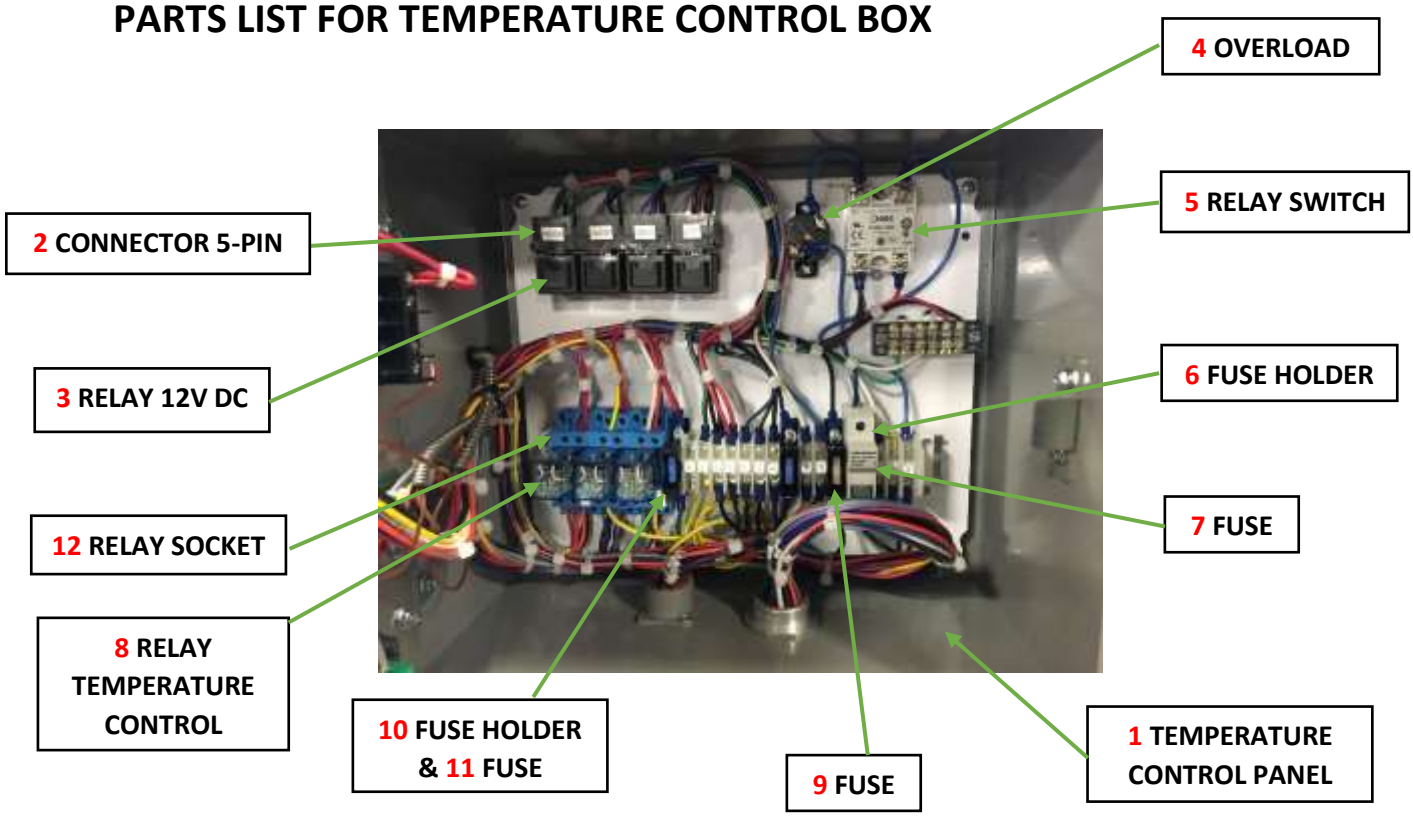
PARTS LIST PICTURE-7

ITEM #	PART#	QTY.	DESCRIPTION
1	P735A061	1	TEMPERATURE CONTROL PANEL
2	P735O018	1	DIGITAL TEMPERATURE DISPLAY - OIL
	P735M018	1	DIGITAL TEMPERATURE DISPLAY - MATERIAL
	P735H018	1	DIGITAL TEMPERATURE DISPLAY - HOSE
3	P440A002	1	VOLTMETER 0-150
4	P443A011	1	SWITCH – TOGGLE
5	P735B021	2	SWITCH – ASSEMBLY
	P735B022	4	CONTACT BLOCK-GREEN
6	P735B013	1	SWITCH – ASSEMBLY AMBER
	P735B022	1	CONTACT BLOCK-GREEN
7	P735B012	1	PILOT LIGHT- GREEN
8	P735B073	1	PILOT LIGHT- YELLOW
9	P735B072	1	SWITCH – RED
	P735B023	1	CONTACT BLOCK-RED
10	P735B025	1	PILOT LIGHT – WHITE

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

PARTS LIST FOR TEMPERATURE CONTROL BOX



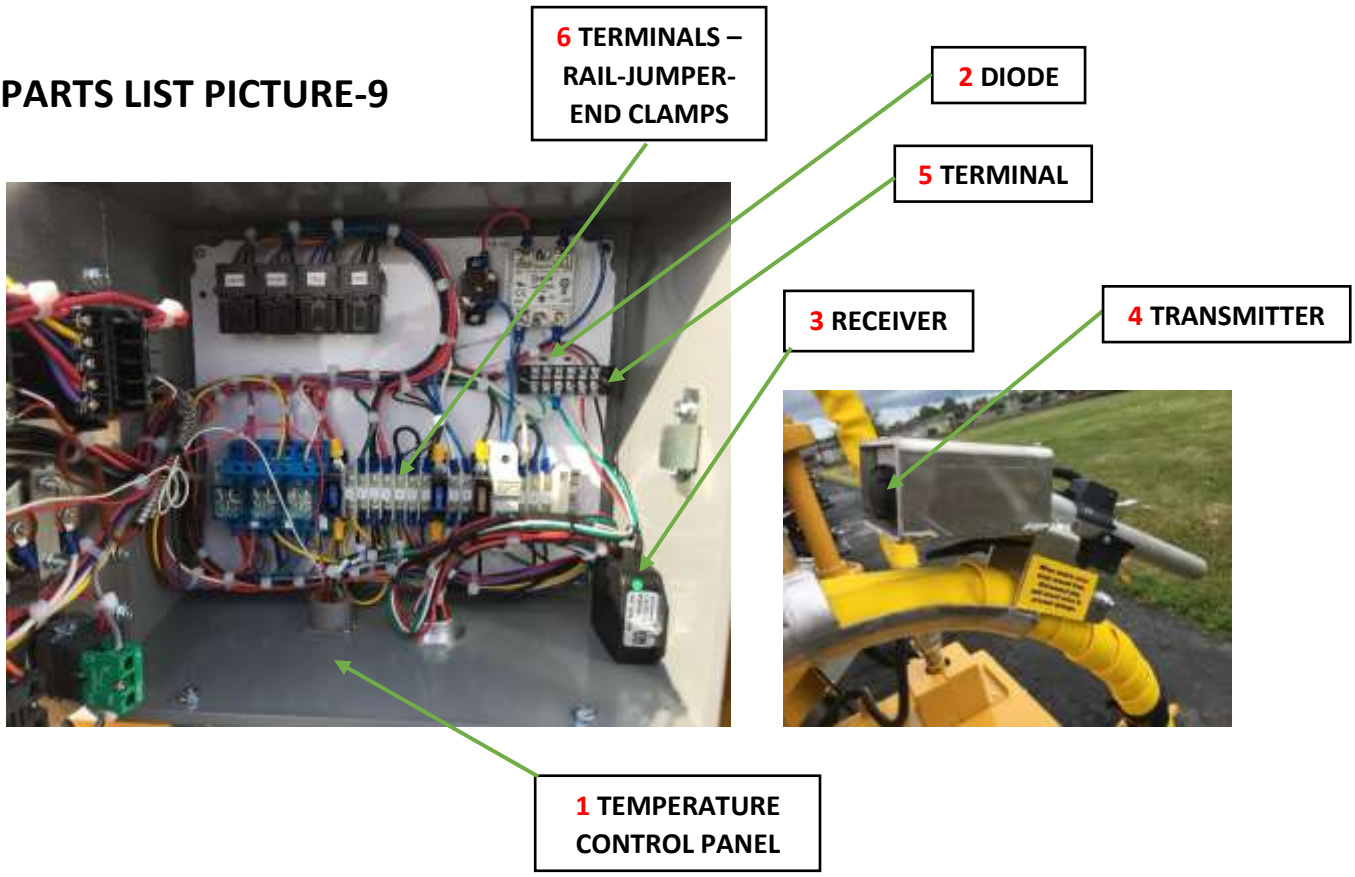
PARTS LIST PICTURE-8

ITEM #	PART#	QTY.	DESCRIPTION
1	P735A061	1	TEMPERATURE CONTROL PANEL
2	P735B075	4	CONNECTOR 5-PIN
3	P735B015	4	RELAY – 12V DC 40AMP
4	P695B002	1	OVERLOAD
5	P735B020	1	RELAY – SWITCH 50AMP
6	P735B084	1	FUSE HOLDER
7	P595A023	1	FUSE 20-AMP
8	P735B009	3	RELAY- TEMPERATURE CONTROL
9	P595A017	1	FUSE 25AMP
10	P735B036	3	FUSE HOLDER
11	P595A012	2	FUSE 15-AMP
12	P735B010	3	RELAY SOCKETS

CRACK PRO® HEATED HOSE MACHINE

WIRELESS WAND CONTROL BOX OPTIONAL

PARTS LIST PICTURE-9



PARTS LIST PICTURE-9

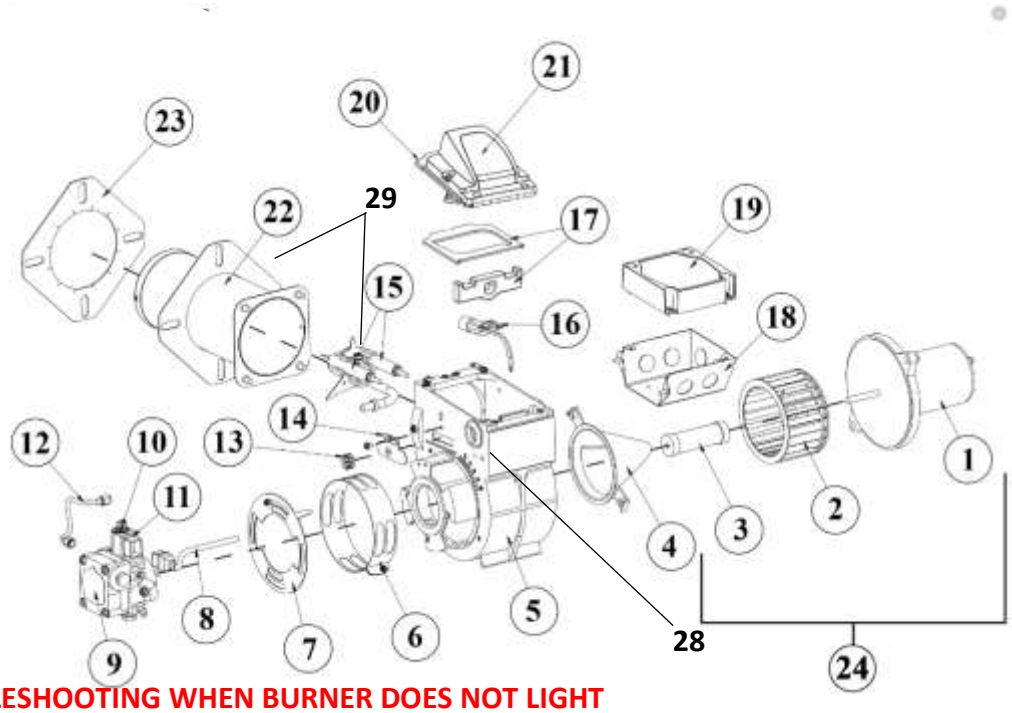
ITEM #	PART#	QTY.	DESCRIPTION
1	P735A061	1	TEMPERATURE CONTROL PANEL
	P443B001		WIRELESS WAND PUMP SWITCH ASSEMBLY
2	P443A014	2	DIODE
3	P450A002	1	RECEIVER
4	P450A001	1	TRANSMITTER
5	P735B080	1	TERMINAL - STRIP-SIX CIRCUIT
6	P735B054	1	JUMPER – 6 POLE
	P735B027	2	END CLAMPS
	P735B062	1	DIN RAIL 35MM
	P735B079	12	TERMINAL BLOCKS

CRACK PRO® HEATED HOSE MACHINE

APPLIES TO ALL DIESEL FUEL BURNERS

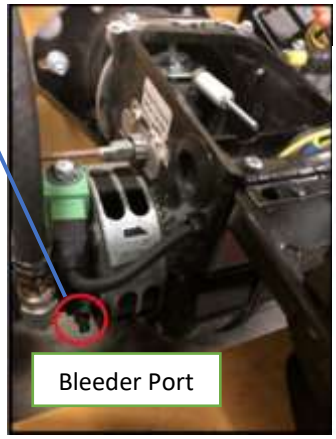
PARTS LIST

PICTURE – DIESEL BURNER



NOTE FOR TROUBLESHOOTING WHEN BURNER DOES NOT LIGHT

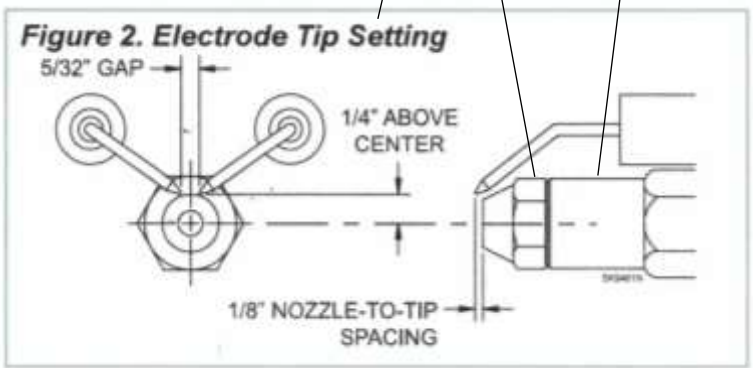
Using a 3/8” wrench, loosen the bleeder valve slightly until fuel comes out without air mixed in. Then tighten the bleeder valve.



27 USE TOOL Z-GUAGE

25 NOZZLE

25 HEAD



CAUTION: DO NOT TOUCH NOZZLE

CRACK PRO® HEATED HOSE MACHINE

APPLIES TO ALL DIESEL FUEL BURNERS

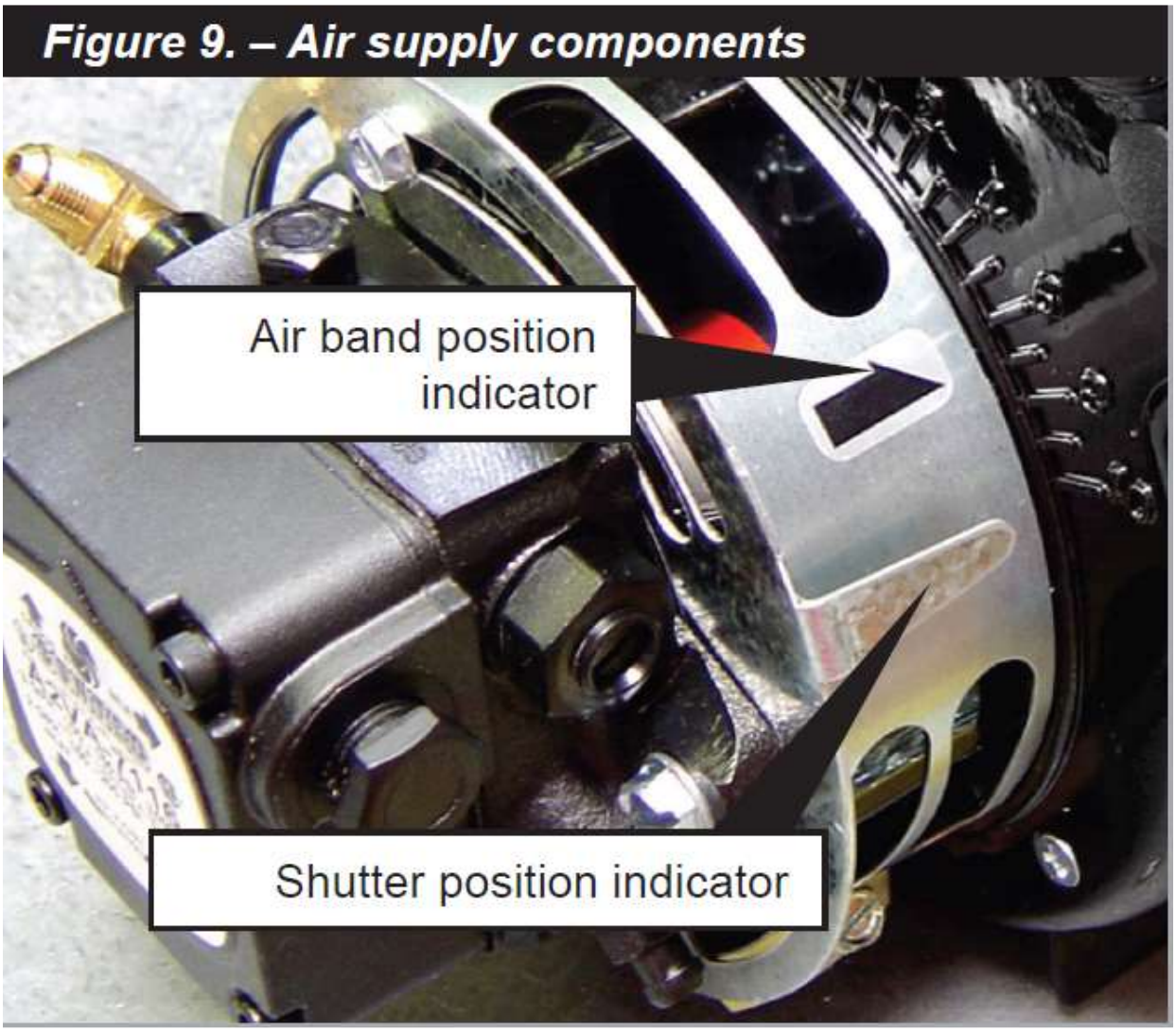
PARTS LIST

PARTS LIST FOR DIESEL BURNER

ITEM #	PART#	QTY.	DESCRIPTION
	P662A009	1	COMPLETE BURNER
1		1	SEE ITEM 24
2	P662A046	1	BLOWER WHEEL
3	P662A016	1	COUPLING
4	P662A022	1	AIR GUIDE
5	P662A048	1	BURNER HOUSING
6	P662A047	1	AIR BAND
7	P662A049	1	AIR SHUTTER – 8 SLOTS
8	P662A050	1	CORD SET
9	P662A051	1	BURNER PUMP
10	P662A052	1	VALVE STEM
11	P662A043	1	12 VOLT COIL
12	P662A019	1	8” COPPER TUBING
13	P662A053	1	SPINE NUT
14	P662A054	1	PLATE
15	P662A018	1	ELECTRODE KIT / AIR TUBE COMBINATION
16	P662A014	1	CAD CELL DETECTOR
17	P662A056	1	IGNITER GASKET KIT
18			N/A
19	P662A010	1	BURNER PRIMARY CONTROL
20	P662A015	1	IGNITOR TRANSFORMER ASSEMBLY
21	P662A066	1	IGNITER ONLY
22	P662A021	1	FLANGE MOUNTING GASKET – FOR AIR TUBE
23	P662A037	1	FLANGE MOUNTING GASKET
24	P662A044	1	MOTOR KIT W/BLOWER WHEEL & COUPLING
25	P662A017	1	NOZZLE FOR BURNER – (STD) SEE BURNER CHART
	P662A024	1	HEAD FOR NOZZLE – (STD) SEE BURNER CHART
27	P662A078	1	Z-GAUGE
28	P662A057	1	PLUG – FOR BURNER HOUSING
29	P662A055	1	AIR TUBE COMBO W/WELDED FLANGE AND GASKETS

CRACK PRO® HEATED HOSE MACHINE

BURNER INFORMATION CHART



BECKETT BURNER INFORMATION CHART

MACHINE UNIT	HEAD TYPE	GPH	NOZZLE SIZE	NOZZLE # HEAD #	AIR BAND POSITION	SHUTTER POSITION
CP125HH	F220	2.25	90B	P662A017 / 024	5	7
CP200HH	F220	2.25	90B	P662A017 / 024	5	7
CP260HH	F220	2.25	90B	P662A017 / 024	5	7
CP400HH	F220	2.25	90B	P662A017 / 024	5	7
CP260DP	F220	2.25	90B	P662A017 / 024	5	7
CP400DP	F220	2.25	90B	P662A017 / 024	5	7

CRACK PRO® HEATED HOSE MACHINE

AIR COMPRESSOR PARTS LIST

PARTS LIST FOR AIR COMPRESSOR

ITEM #	PART#	QTY.	DESCRIPTION
1	**P458A083**	1	**AIR COMPRESSOR**
	P458E009		**OIL** 1 GAL. CONTAINER COMPRESSOR
	P458E011		**FILTER** - AIR
	P458E014		**COVER**-PLASTIC BLACK
	P458E020		**REBUILD KIT**
	P458E029		**KIT "A"** 2500 HOURS- **INCLUDES:** AIR FILTER, OIL RETURN VALVES, O-RINGS AND SEALS
	P458E038		**KIT "B"** 5000 HOURS - **INCLUDES:** OIL FILTER, THERMO BULB, O-RINGS AND SEALS
	P458E031		**KIT "C"** 10000 HOURS- **INCLUDES:** SEPARATOR, OIL RETURN VALVES, O-RINGS AND SEALS
	P458E032		**FILTER** - OIL
	P458E035		**THERMOSTAT -** 110 DEG. C
	P458E037		**N/O SWITCH –**TEMP. NORMAL
	P458E001		**BANJO FITTING**
	P458E002		**WASHER**
	P458E003		**SCREEN**

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

ROPER 2” PUMP 3611 HFZ

PARTS LIST FOR ROPER 2” PUMP

ITEM	DESCRIPTION	S/M PART #	QTY.
	PUMP - ROPER 2”	**P640A067**	**1**
1	WASH. HD. CAP SCREW	P904A013	4
2	HEX HD. CAP SCREW	P904A014	16
6	BACK PLATE ASSEMBLY	P905A001	1
	BEARING LONG BRONZE	P904A003	1
	BEARING SHORT BRONZE	P904A012	1
7	GASKET, CASE - ALUMINUM	P904A004	2
8	DOWEL PIN, HOLLOW	P904A016	4
9	LOCK NUT	P904A017	2
10	CLIP, PACKING GLAND	P905A005	2
11	PACKING GLAND	P904A002	1
12	SQ. HEAD BOLT	P904A018	2
13	CLIP, SPRING	P906A018	1
14	PACKING SET – GRAPHITE / TEFLON	P906A001	1
	EXTEND LIFE PACKING – **OPTIONAL**	P906A005	1
15	WASHER – PACKING	P905A008	1
22	PIPE PLUG	P904A020	4
24	HEX HD. CAP SCREW	P905A021	8
25-1	FLANGE	P905A020	1
25-2	FLANGE	P74000M174	1
26	FLANGE GASKET	P905A019	2
28	CASE	P905A025	1
29	IDLER SHAFT	P904A007	1
30	KEY	P904A021	3
31	DRIVE SHAFT	P905A011	1
32	GEAR LEFT HAND	P905A013	1
33	GEAR RIGHT HAND	P904A009	1
34	FACEPLATE ASSEMBLY	P905A015	1
	BEARING LONG BRONZE	P904A003	2

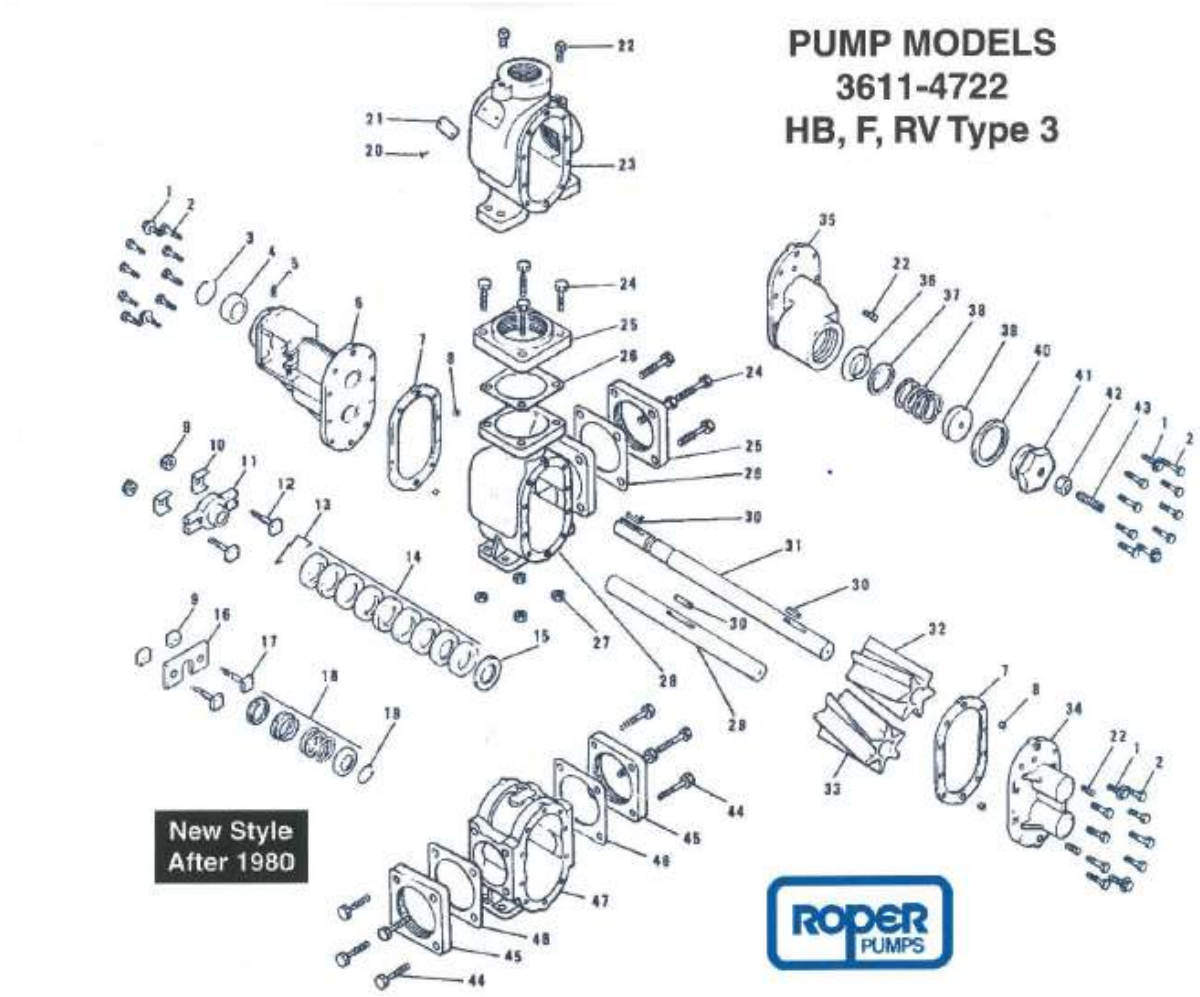
WEARABLE PARTS –HIGHLIGHTED IN YELLOW

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

ROPER 2” PUMP 3611 HFZ

PUMP DIAGRAM



CRACK PRO® HEATED HOSE MACHINE

DIESEL ENGINE PARTS LIST

PARTS LIST FOR 1505 DIESEL ENGINE

ITEM #	PART#	QTY.	DESCRIPTION
1	**P458A081**	1	**KUBOTA 1505 DIESEL ENGINE**
	P458B178		**RADIATOR**
	P458B032		**FILTER**-OIL
	P458B034		**FILTER**-AIR
	P458B033		**FILTER**-FUEL
	P458B264		**FILTER** – WATER SEPARATOR ELEMENT
	P458B203		**FILTER**-FUEL IN LINE
	P458B254		FUEL / WATER **FILTER ASSY.**
	P458B206		**MUFFLER**
	P458B215		**ALTERNATOR**
	P458B132		**FUEL PUMP**
	P458B230		**SWITCH** -TEMPERATURE
	P458B216		**STARTER**
	P458B343		AIR **FILTER** COMPLETE
	P458B041		**SENSOR** -TEMPERATURE
	P660A049		**BELT**- GENERATOR AIR
	P458B082		**SWITCH** - OIL PRESSURE
	P458B133		**SOLENOID – STOP**
	P660A047		**V-BELT** AIR
	P458B179		**FAN**

USED ON MODELS:

CP-125 DA WITH AIR E2747 HH

CP-260 DA WITH AIR E2765 HH

CRACK PRO® HEATED HOSE MACHINE

DIESEL ENGINE PARTS LIST

PARTS LIST FOR 902 DIESEL ENGINE

1	**P458A054**	1	**KUBOTA 902 DIESEL ENGINE**
	P458B244		**RADIATOR**
	P458B147		**FILTER**-OIL
	P458B148		**FILTER**-AIR
	P458B358		**FILTER**-FUEL -INSIDE
	P458B240		**FILTER**-FUEL ASSEMBLY COMP.
	P458B264		**FILTER** – WATER SEPARATOR ELEMENT
	P458B203		FUEL **FILTER**-IN LINE
	P458B254		FUEL / WATER **FILTER ASSY.**
	P458B168		**MUFFLER**
	P902A022		**MUFFLER**- AFTER 2015
	P458B288		**ALTERNATOR**
	P458B351		**FUEL PUMP**
	P458B230		**SWITCH** -TEMPERATURE
	P458B224		**STARTER** SOLENOID
	P458B356		AIR **FILTER** COMPLETE
	P458B041		**SENSOR** -TEMPERATURE
	P660A041		**BELT**- GENERATOR NON-AIR
	P458B082		**SWITCH** - OIL PRESSURE
	P458B228		**SOLENOID – STOP … "NEW" 3 WIRE**
	P458B263		**SOLENOID – STOP …** "OLD" 1 WIRE
	P458B159		FAN **V-BELT** NON-AIR
	P458B245		**FAN**
	P458B336		**STARTER**

USED ON MODELS:

CP-260 D <u>WITH-OUT</u> AIR E2755 HH

CP-260 DP <u>DOUBLE PUMPER</u> E2755 DPH

CP-400 DP <u>DOUBLE PUMPER</u> E2770 DPH

CRACK PRO® HEATED HOSE MACHINE

KUBOTA DIESEL ENGINE PARTS LIST

PARTS LIST FOR 602 DIESEL ENGINE

ITEM #	PART#	QTY.	DESCRIPTION
1	**P458A053**	1	**KUBOTA 602 DIESEL ENGINE**
	P458B244		**RADIATOR**
	P458B147		**FILTER**-OIL
	P458B148		**FILTER**-AIR
	P458B358		**FILTER**-FUEL
	P458B264		**FILTER** – WATER SEPARATOR ELEMENT
	P458B203		FUEL **FILTER** -IN LINE
	P458B254		FUEL / WATER **FILTER ASSEMBLY**
	P458B232		**MUFFLER**
	P902A022		**MUFFLER**- AFTER 2015
	P458B288		**ALTERNATOR**
	P458B351		**FUEL PUMP**
	P458B230		**SWITCH** -TEMPERATURE
	P458B224		**STARTER** SOLENOID
	P458B356		AIR **FILTER** COMPLETE
	P458B041		**SENSOR** -TEMPERATURE
	P660A041		**BELT**- GENERATOR NON-AIR
	P458B082		**SWITCH** - OIL PRESSURE
	P458B228		**SOLENOID – STOP … "NEW" 3 WIRE**
	P458B263		**SOLENOID – STOP … "**OLD" 1 WIRE
	P458B159		FAN **V-BELT** NON-AIR
	P458B245		**FAN**
	P458B336		**STARTER**

USED ON MODEL:

CP-125 D <u>WITH-OUT</u> AIR E2745 HH

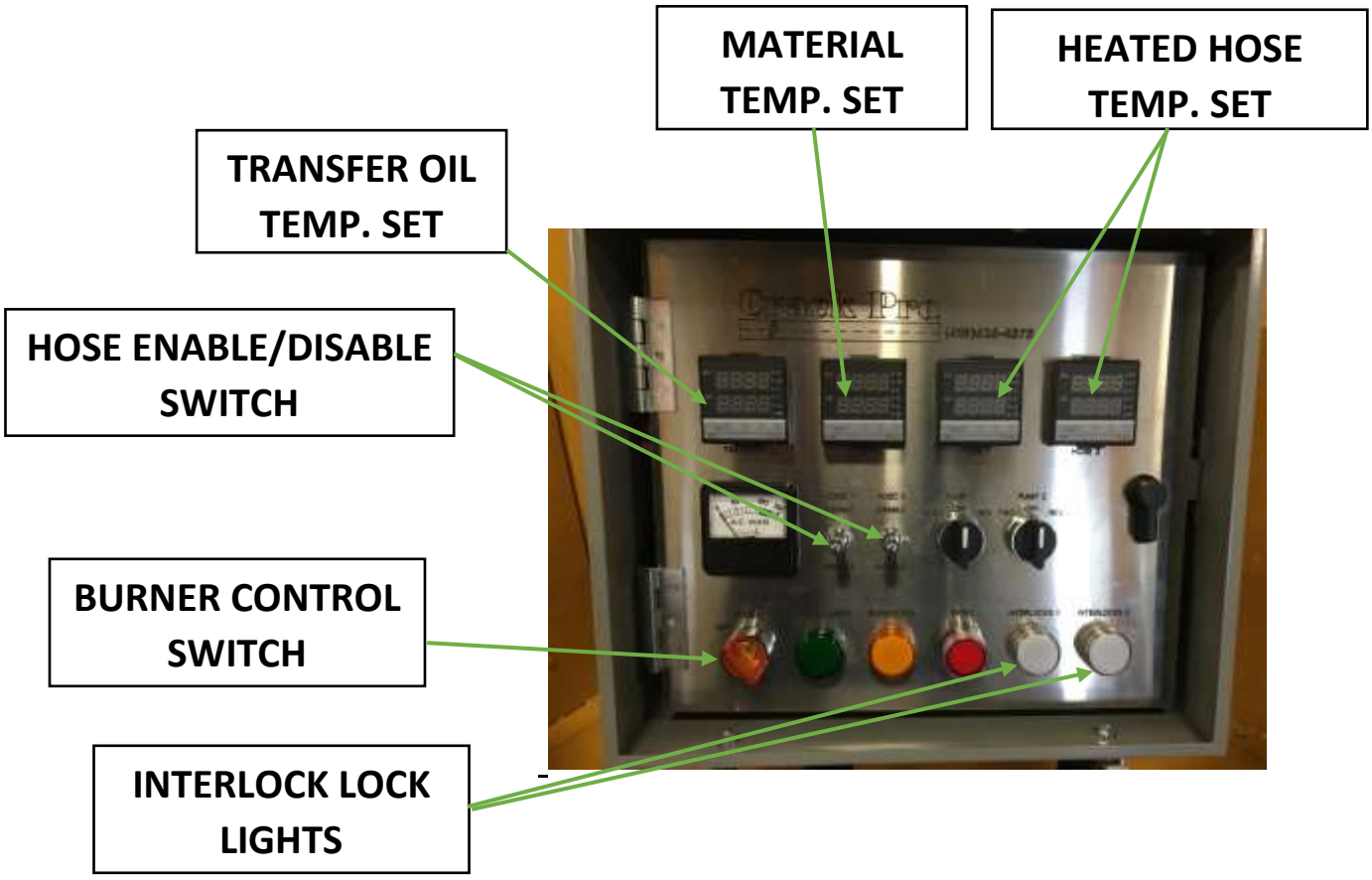
CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS – DOUBLE PUMPER

TEMPERATURE CONTROL

After starting the engine:

1. Turn **on** the burner with power **on-off** switch located on the front of the digital temperature controller. The digital controllers monitor the heat transfer oil temperature, and the material temperature, along with the heated hoses.
2. Turn **on** the hose enable/disable switch(s). The controller will cycle the burner off and on as the temperature of the heat transfer oil increases and decreases. The heat from the transfer oil will be absorbed by the material in the tank.
3. Once interlock lights turn **on**, then turn **on** the manual agitator control valve.

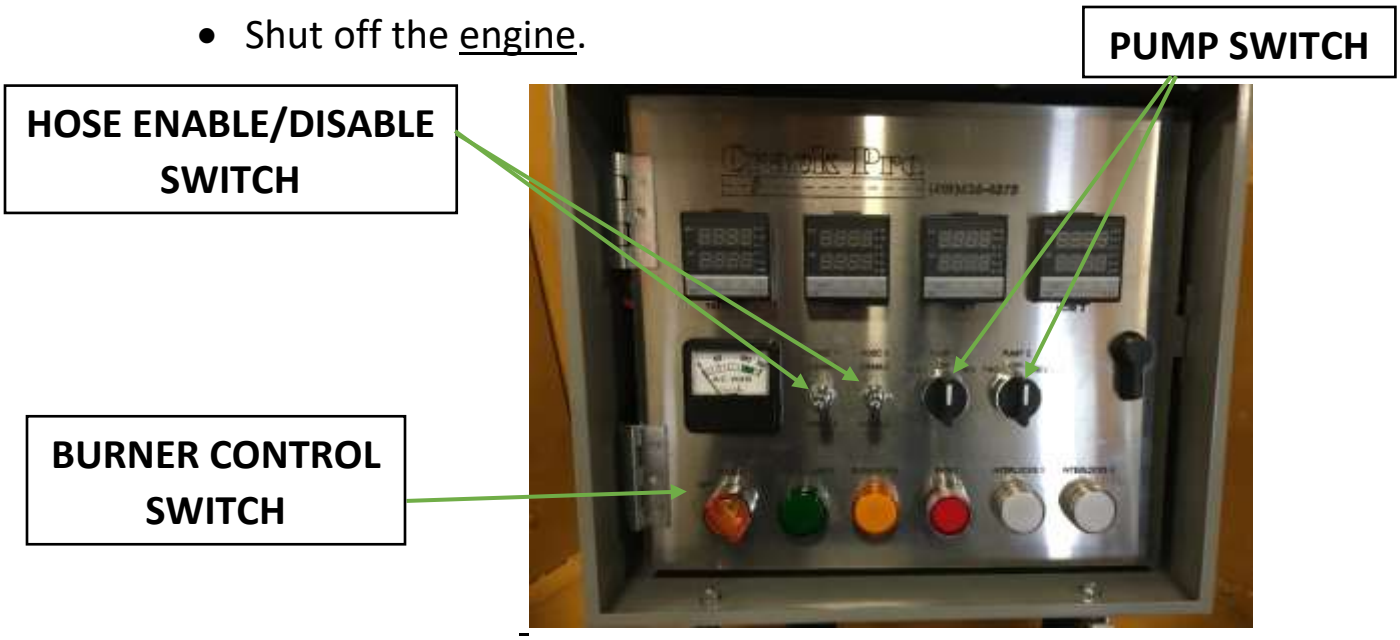


CRACK PRO® HEATED HOSE MACHINE

OPERATING INSTRUCTIONS – DOUBLE PUMPER

THE TEMPERATURE CONTROL

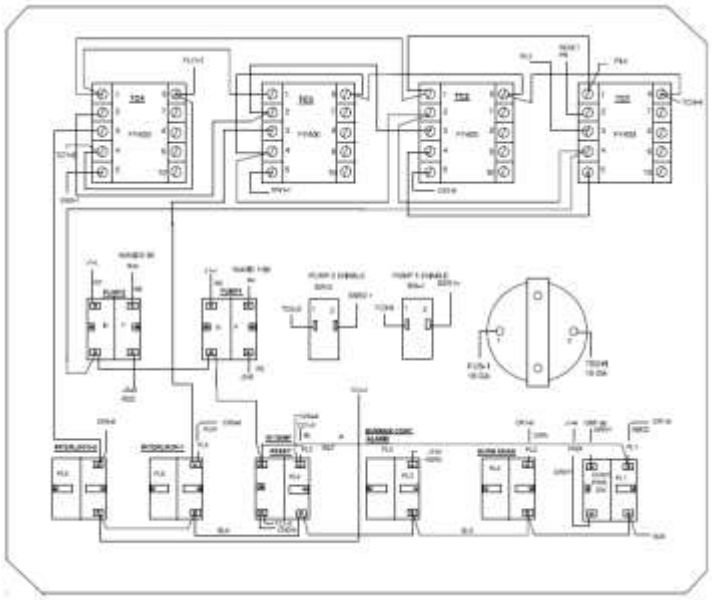
4. To stop for the day, perform the following steps:
    - Shut off the agitator control valve.
    - Set the hose enable/disable switch(s) to the **disable** position.
    - Turn the pump switch(s) to reverse for 30 seconds, then turn to the **off** position.
    - Turn the burner control switch to the **off** position.
    - Shut off the engine.



AUTOMATIC SAFETY INTERLOCKS: There are automatic safety interlocks that control the heated hose, material pump, and agitation systems. The agitator and pump **will not** work until the material has reached a pre-programmed temperature on the respective digital controllers. The heated hose must also be up to temperature before the pump can operate.

Once the 3 controllers reach the programmed temperature settings the white interlock light comes on, **the agitator control valve will need to be started manually.**

WIRING DIAGRAM DOUBLE PUMPE



TERMINALS:

U – YELLOW 14 GA. TO BURNER

P1 – RED 10 GA. TO MOTOR

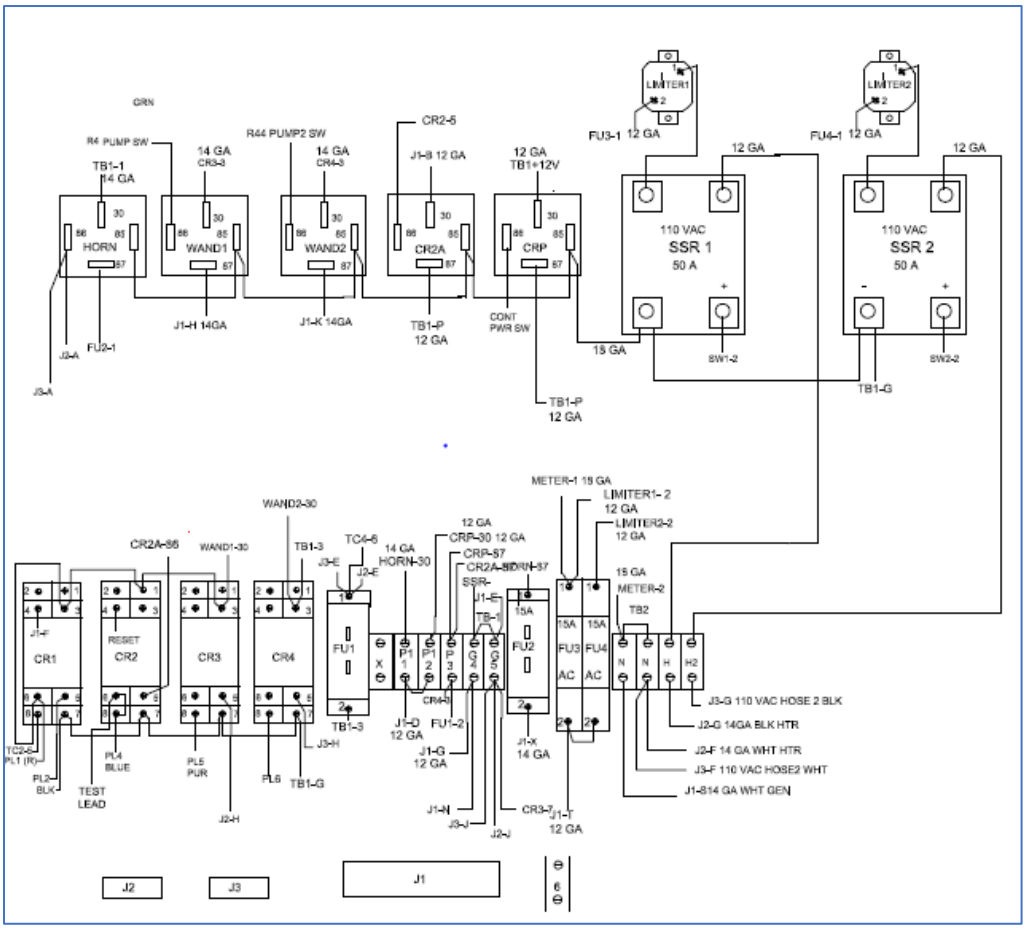
N – BLACK 10 GA. TO MOTOR

G – BLACK 12 GA. TO BURNER

B – RED 12 GA. TO BURNER

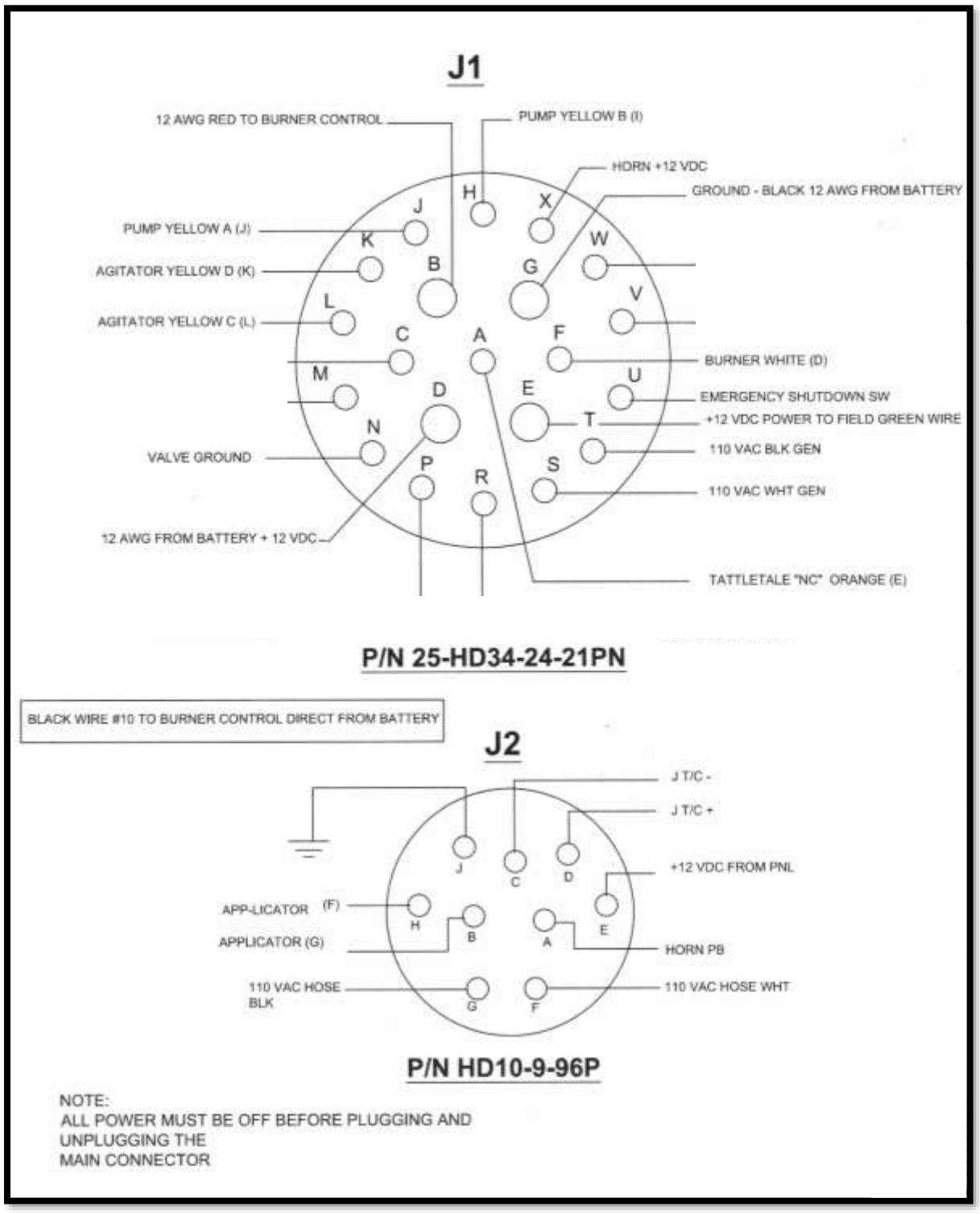
D – WHITE 14 GA. TO BURNER

NOTE: RUN BATTERY – DIRECTLY TO BURNER



HEATED HOSE MAIN CONNECTOR J1 AND HEATED HOSE (J2-TIMES 2)

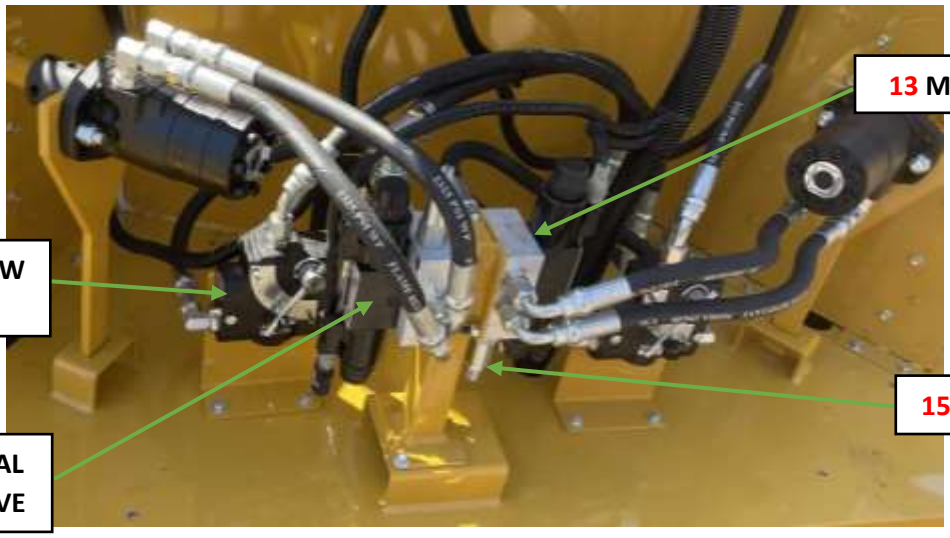
CP 260 DOUBLE PUMPER

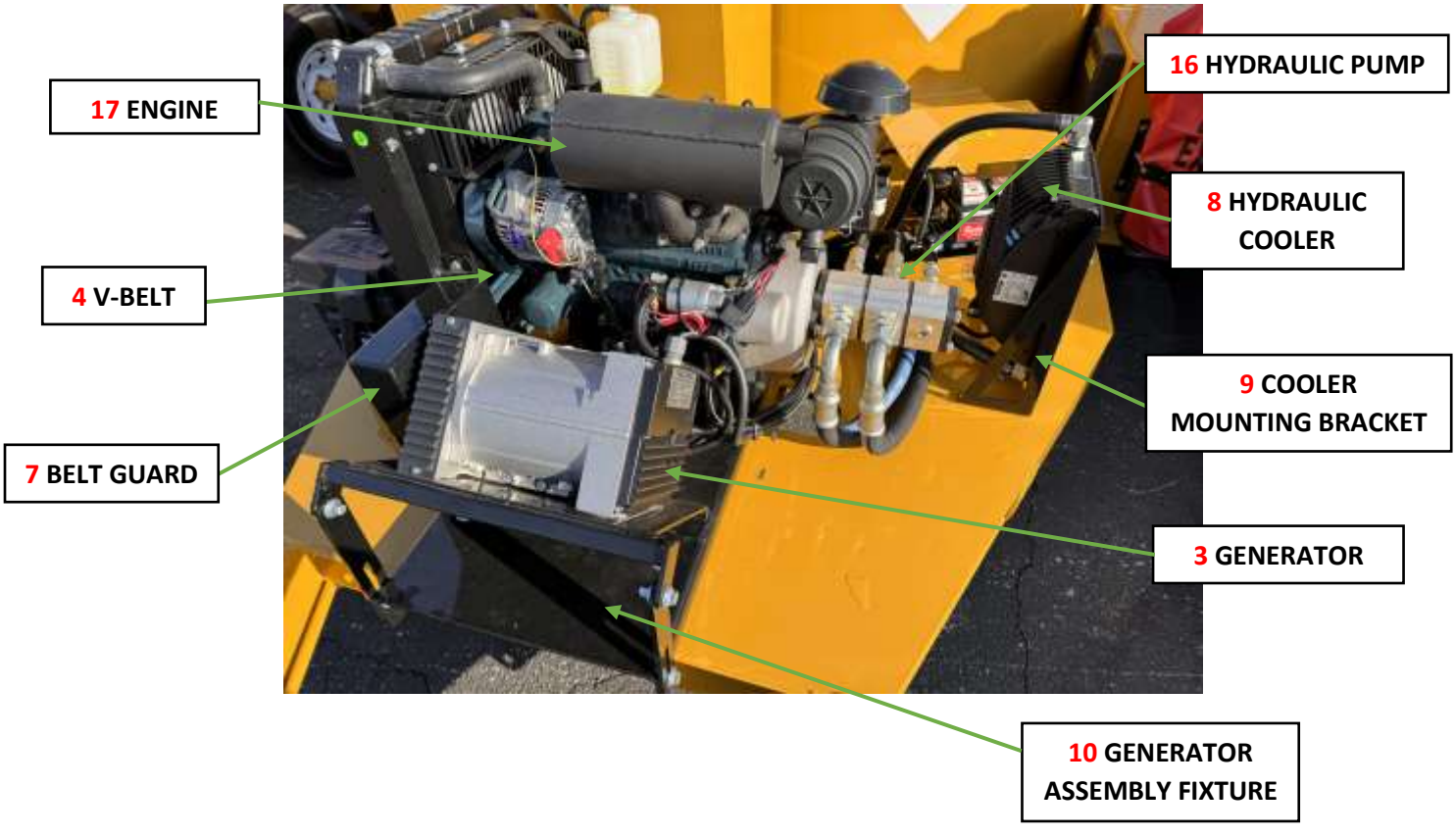


CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST DOUBLE PUMPER

PARTS LIST PICTURE-10

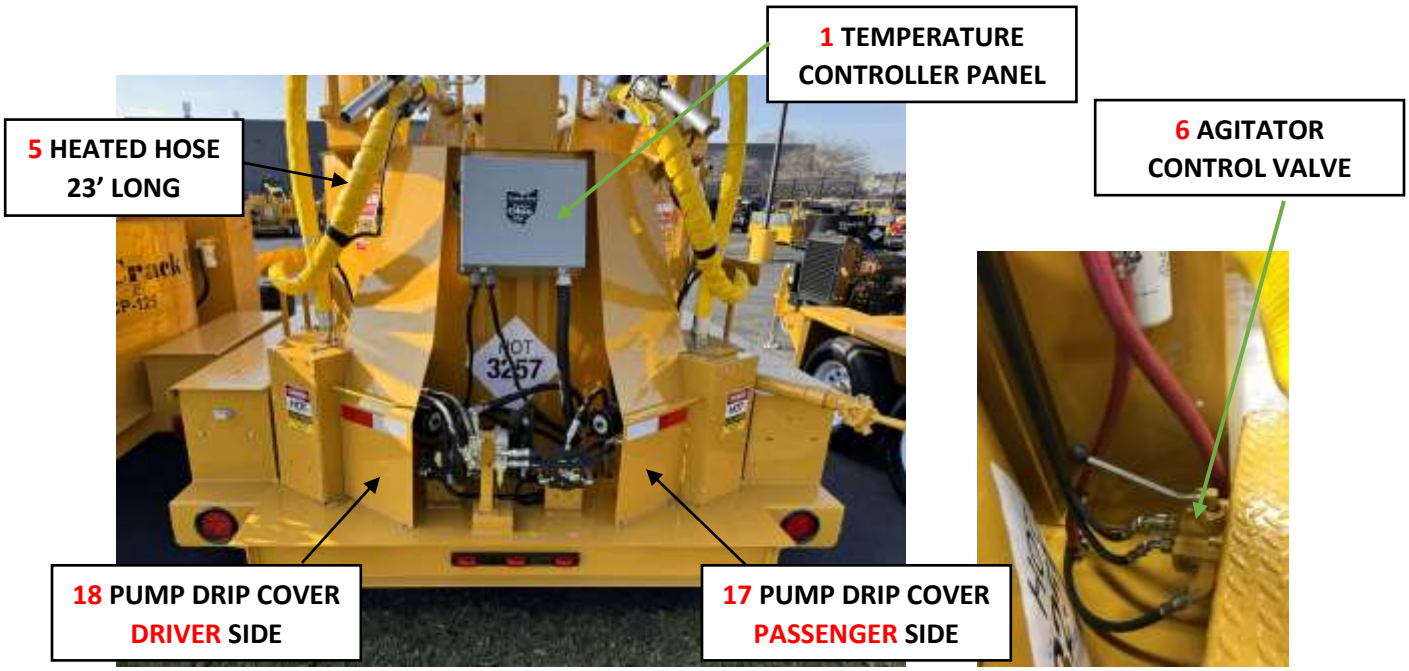




CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST DOUBLE PUMPER

PARTS LIST PICTURE-10



PARTS LIST PICTURE-10

ITEM #	PART#	QTY.	DESCRIPTION
1	P735A054	1	TEMPERATURE CONTROLLER PANEL
3	P695A006	1	GENERATOR WITH PULLEY - DP-260 / DP-400
	P695B009	1	40 UF CAPACITOR
4	P660A052	2	GENERATOR V-BELT - DP-260 / DP-400
5	P17582B023	1	HEATED HOSE 23'- DP-260 / DP-400
6	P472A028 *	1	AGITATOR CONTROL VALVE - DP-260 / DP-400
7	P74000B351	1	BELT GUARD
8	P716A005	1	HYDRAULIC COOLER WITH BYPASS
9	P95000A033	1	COOLER MOUNT BRACKET
10	P74000C350	1	GENERATOR ASSEMBLY FIXTURE
17	P74000B346A	1	PUMP DRIP COVER PASSENGER SIDE
18	P74000B346B	1	PUMP DRIP COVER DRIVER SIDE
11	P74000K008	1	DUAL PUMPER HYD. FLOW KIT
12	P472A031	2	VARIABLE FLOW CONTROL (SPEED CONTROL)
13	P693A039	2	MANIFOLD-ALUMINUM
14	P472A030	2	DIRECTIONAL CONTROL VALVE
15	P693A038	2	RELIEF VALVE-DIRECT ACTING
16	P601A060	1	HYDRAULIC PUMP - DP-260 / DP-400
17	P458A054	1	DIESEL ENGINE – 902

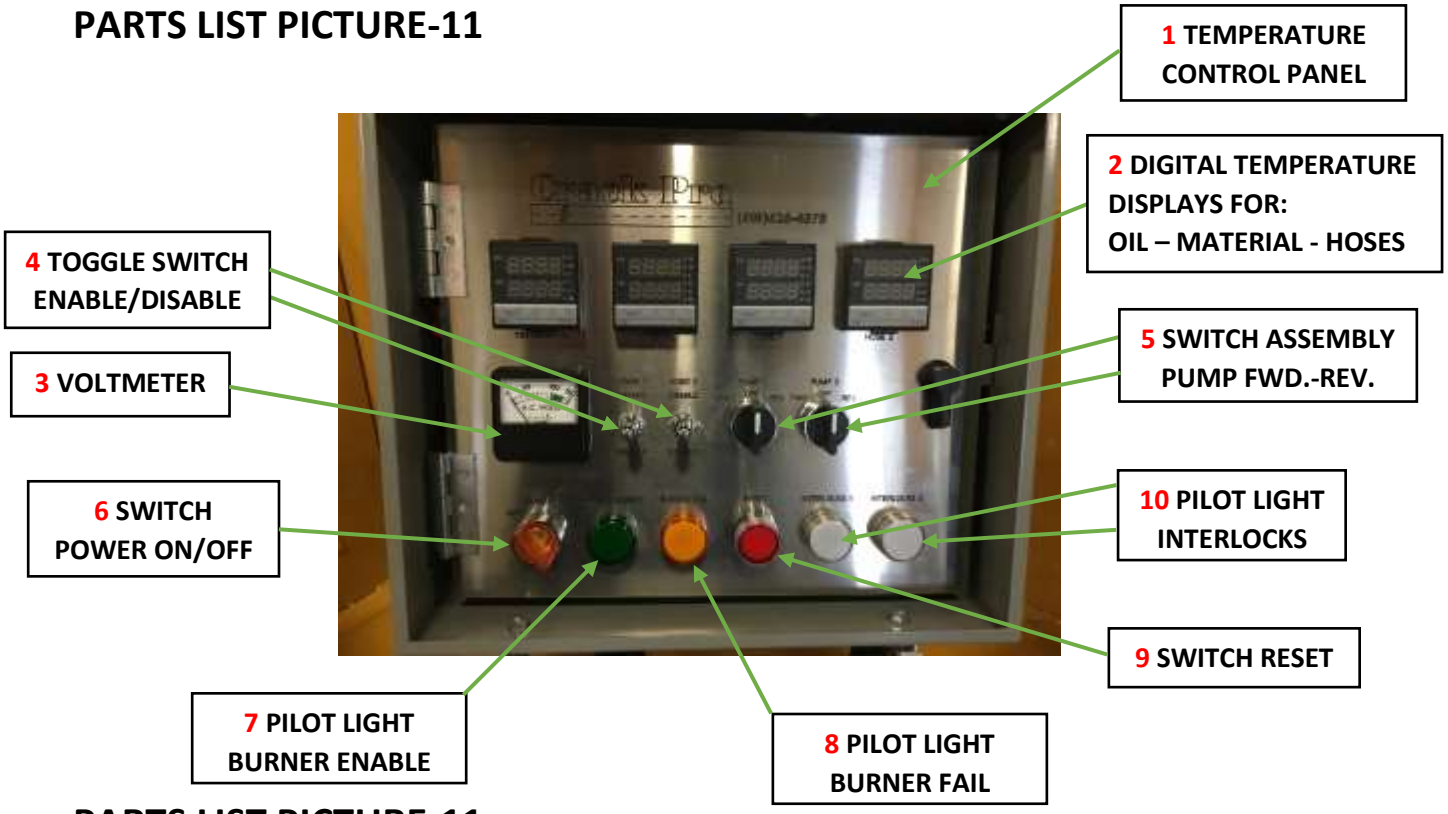
*** Agitator Control Valve to be engaged manually.**

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

DOUBLE PUMPER CONTROL BOX

PARTS LIST PICTURE-11



PARTS LIST PICTURE-11

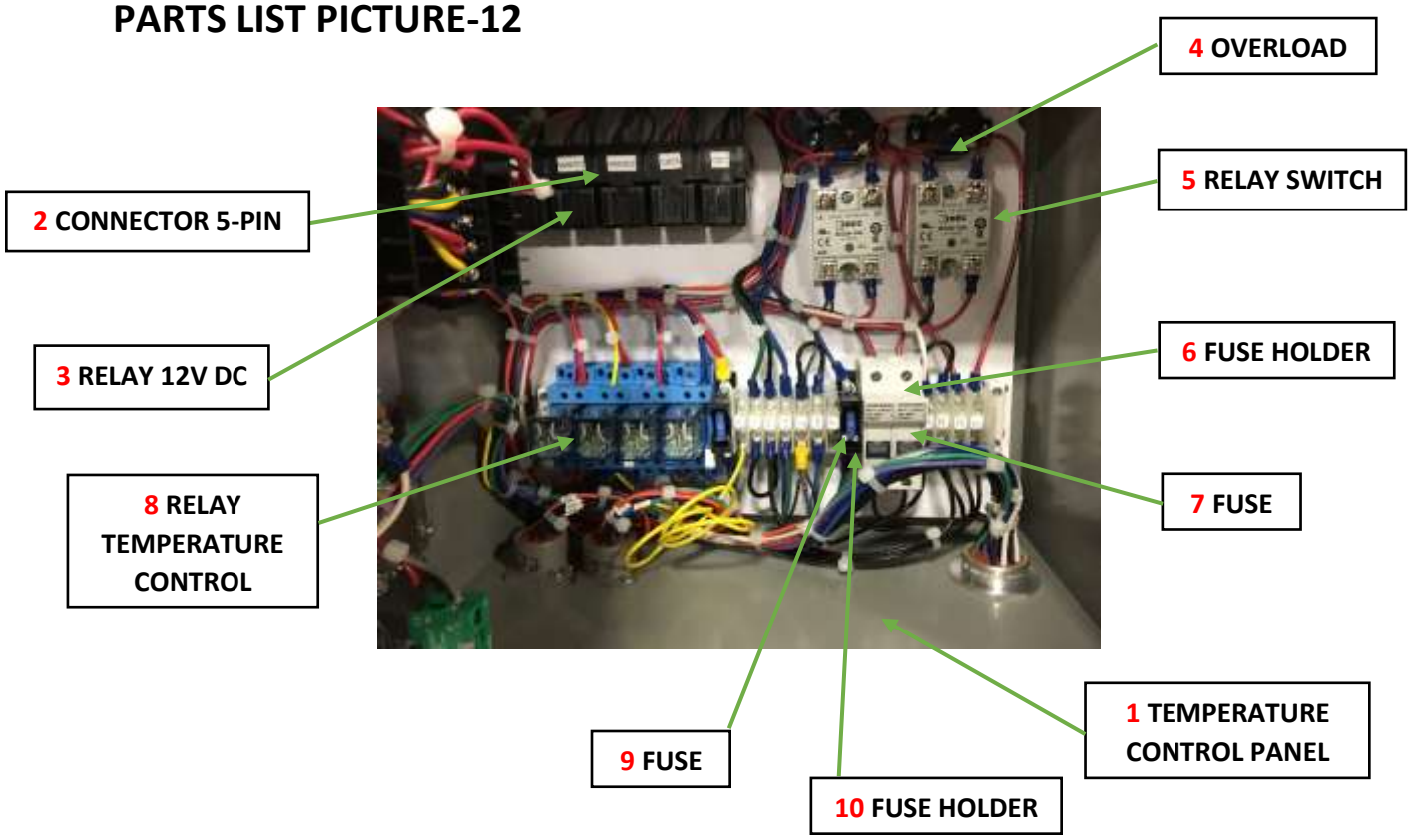
ITEM #	PART#	QTY.	DESCRIPTION
1	P735A054	1	TEMPERATURE CONTROL PANEL - DP-260
2	P735O018	1	DIGITAL TEMPERATURE DISPLAY - OIL
	P735M018	1	DIGITAL TEMPERATURE DISPLAY - MATERIAL
	P735H018	2	DIGITAL TEMPERATURE DISPLAY - HOSES
3	P440A002	1	VOLTMETER 0-150
4	P443A011	2	SWITCH – TOGGLE
5	P735B021	2	SWITCH – ASSEMBLY
6	P735B013	1	SWITCH – ASSEMBLY AMBER
7	P735B012	1	PILOT LIGHT- GREEN
8	P735B073	1	PILOT LIGHT- YELLOW
9	P735B072	1	SWITCH – RED
10	P735B025	2	PILOT LIGHT – WHITE

CRACK PRO® HEATED HOSE MACHINE

MACHINE PICTURES AND PARTS LIST

DOUBLE PUMPER CONTROL BOX

PARTS LIST PICTURE-12



PARTS LIST PICTURE-12

ITEM #	PART#	QTY.	DESCRIPTION
1	P735A054	1	TEMPERATURE CONTROL PANEL - DP-260
2	P735B075	5	CONNECTOR 5-PIN
3	P735B015	5	RELAY – 12V DC 40AMP
4	P695B002	2	OVERLOAD
5	P735B020	2	RELAY – SWITCH 50AMP
6	P735B084	2	FUSE HOLDER
7	P595A023	2	FUSE 20AMP
8	P735B009	4	RELAY- TEMPERATURE CONTROL
9	P595A012	2	FUSE 15AMP
10	P735B036	2	FUSE HOLDER

CRACK PRO® HEATED HOSE MACHINE

RECOMMENDED SPARE PARTS LIST

LIST FOR: DIESEL ENGINE

PART#	QTY.	DESCRIPTION
P458B147	1	**FILTER**-OIL - 602/902
P458B032	1	**FILTER**-OIL - 1505
P458B148	1	**FILTER**-AIR - 602/902
P458B034	1	**FILTER**-AIR - 1505
P458B264	1	**FILTER** – WATER SEPARATOR ELEMENT
P458B203	1	FUEL **FILTER** -IN LINE
P458B254	1	FUEL / WATER **FILTER ASSEMBLY**

LIST FOR: CRACK PRO HEATED HOSE

PART#	QTY.	DESCRIPTION
P74000K001		SPARE PARTS **KIT - 125**
P662A017	1	BURNER NOZZLE
P735B015	1	40 AMP RELAY
P662A016	1	BURNER COUPLER
P662A010	1	BURNER PRIMARY CONTROL
P443A009	2	PUMP/HORN SWITCH
P458B203	1	FUEL **FILTER** -IN LINE
P595A012	2	15 AMP ATC FUSE (FLAT)
P595A014	2	20 AMP ATC FUSE (FLAT)
P595A017	2	25 AMP ATC FUSE (FLAT)
P595A023	1	20 AMP TIME DELAY FUSE
P735B009	1	RELAY- TEMPERATURE CONTROL
P735M018	1	DIGITAL TEMPERATURE DISPLAY - MATERIAL
P693A022	1	PRESSURE COMPENSATOR
P662A014	1	CAD CELL DETECTOR
P679A008	1	18” THERMOCOUPLE **- 125**
P603A006	1	AMMO CAN **KIT**
P679A017	1	23” THERMOCOUPLE **- 260**
P163A012	1	APPLICATION WAND SHOE
P17582B019	1	HEATED HOSE 19’
P17582B023	1	HEATED HOSE 23’
P458E011	1	FILTER - AIR
P514A017	1	TIRE & WHEEL ASSEMBLY
P442A010	1	LIMIT SWITCH – LID
P448A003	1	HORN
P163A010	1	AIR WAND TIP
P735O018	1	DIGITAL TEMPERATURE DISPLAY - OIL
P735H018	1	DIGITAL TEMPERATURE DISPLAY - HOSE
P906A001	1	HIGH TEMPERATURE PACKING

MAINTENANCE AND STORAGE

MAINTENANCE

During the lubrication stop, inspect all operating parts. Should any damage or excessive wear be evident, replace parts immediately. Straighten any parts as soon as possible. Clean and re-paint all exposed parts using touch-up kit P3020B034 **yellow** paint or touch-up kit P3020B033 **black** paint.

STORAGE

Perform all required maintenance and lubrication procedures.
Coat all shafts with grease. Clean and re-paint all exposed parts using touch-up kit P3020B034 **yellow** paint or touch-up kit P3020B033 **black** paint.

Each touch-up kit includes:

1-pint paint can --- 1 pair of gloves --- 1 touch-up paintbrush

MAINTENANCE AND STORAGE

MAINTENANCE

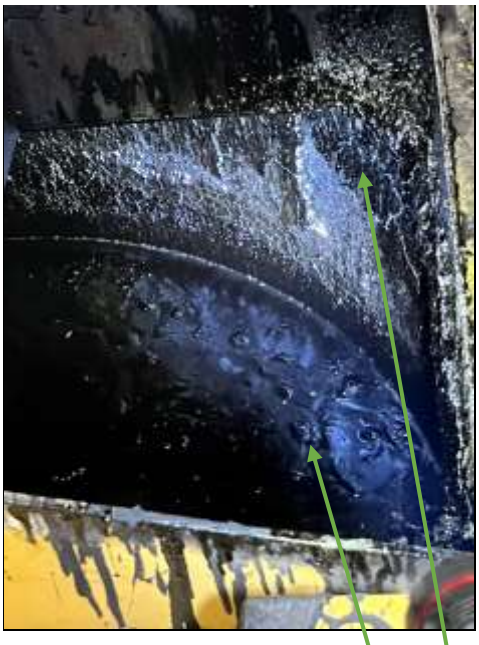
CRACK FILLING EQUIPMENT

Material Tank Buildup

Occasionally crack filling equipment will build up with burnt material around the walls and ceiling of the material tank. The buildup will be brittle and look shiny black.

If too much buildup occurs chunks can flake off and **clog your pump or hose** causing **downtime** and unnecessary **expenses.** This layer of burnt material also insulates the walls **slowing** the **heat-up time** on the material and **decreasing your production.**

The inside of all hot pour Crack filling tanks should be **inspected** while performing **yearly service**. If you have more than ¼" to ½" build-up of material on the walls or ceiling it should be chipped out with an air chisel. The best time for cleaning is the **coolest** time of year.



FLAKES IN MATERIAL FROM BUILDUP

CHIPPED OUT MATERIAL FROM BUILDUP