CONTRACT WELDING
& FABRICATING, INC.

Apartment Style Compactor Service Manual

Serial Number: _____

Power Unit Number: _____

Date of Purchase: _____

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385 Sumpter Road ● Belleville, MI 48111
http://www.contractwelding.com

⚠ WARNING!

Before operating, performing maintenance, or servicing:

- Read and understand the contents of this entire manual
- Ensure that all appropriate OSHA regulations are observed
- Reference all applicable ANSI Z245 Standards and ensure that all parties involved with the machine are familiar with the standard(s)

Current versions of the ANSI Z245 standards for compactors can be obtained by contacting:

American National Standards Institute

Washington D.C. Headquarters

1819 L Street
NW 6th Floor
Washington, DC 20036

Tel: 202-293-8020
Fax: 202-293-9287

New York City Office Operations

25 West 43rd Street
4th Floor
New York, NY 10036

Tel: 212-642-4900
Fax: 212-398-0023

WASTEC

Washington D.C. Headquarters

4301 Connecticut Avenue
NW, Suite 300
Washington, DC 20008

Tel: 202-244-4700
Fax: 202-966-4824

It is the owner's responsibility to ensure that this manual is updated with the most current version of these standards as they are subject to continuous revision by their respective boards.

⚠ DANGER!

Proper maintenance and service are critical to safe operation of this compactor! Only authorized & certified technicians should service the compactor. Modifying, changing, or replacing any component with other components or in a manner not compliant with those specified by manufacturer will **void warranty** and may result in unsafe conditions that can lead to injury or death!

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Compactor Operation Safety Rules

WARNING!

IF INCORRECTLY USED THIS EQUIPMENT CAN CAUSE SEVERE INJURY AND EVEN DEATH! THE COMPACTOR IS TO BE OPERATED ONLY BY AUTHORIZED, FULLY TRAINED & QUALIFIED PERSONNEL 18 YEARS OF AGE OR OLDER WHO ARE AWARE OF THE DANGER AND FOLLOW THESE SAFETY RULES.

- All Safety Guards and covers must be in place prior to start up or operation of the compaction equipment.
- Ensure the container is properly positioned and latched securely to the compactor before starting the compactor.
- Maintain dock ramp(s), point of operation, and all surrounding areas of the stationary compactor: Keep clear of refuse, grease, oil, and/or water.
- DO NOT PUT FLAMMABLE, EXPLOSIVE OR HAZARDOUS MATERIALS IN MACHINE!
- Be familiar with all controls of the machine. Know the location, function, and operation of all controls.
- Do not operate or touch the controls with wet hands or in a damp environment. In freezing weather make sure controls are free of ice before operating.
- BEFORE OPERATING COMPACTOR BE CERTAIN THAT ALL INDIVIDUALS ARE CLEAR OF THE CHARGING CHAMBER, HOPPER, AND PINCH-POINT AREAS!
- Wear safety glasses or goggles while operating compactor.
- NEVER REACH INTO OR ENTER THE CHARGING CHAMBER UNLESS THE PRESCRIBED LOCKOUT MEASURES HAVE BEEN TAKEN TO PREVENT ACCIDENTAL START UP!
- To prevent operation of the compactor by unauthorized persons, remove key from control panel key switch.
- Fully retract packer ram before unlocking container.
- Stand clear of tailgate swing area when container is being removed.
- Report any damage or malfunctions of the stationary compaction equipment to the appropriate parties. DO NOT CONTINUE OPERATION OF THE COMPACTOR IF THE DAMAGE OR MALFUNCTION INHIBITS SAFE OPERATION. BE SURE ALL SAFETY DEVICES ARE OPERATING CORRECTLY.
- Before any maintenance or service work is started, follow the prescribed lockout procedures.
- NEVER ENTER AREA BEHIND PACKER RAM OR CHARGING CHAMBER WITH POWER SWITCHED ON.
- The power unit operates on HIGH VOLTAGE. Refer all servicing to qualified personnel.
- The hydraulic system which powers the compactor is HIGHLY PRESSURIZED. NEVER CHECK FOR LEAKS USING YOUR HANDS. If injured by hydraulic fluid under pressure SEEK MEDICAL ATTENTION IMMEDIATELY!
- Before disconnecting hydraulic lines relieve the hydraulic pressure by backing off the cylinder or actuator until the external load is relieved. When connecting the hydraulic lines be certain that all connections are tight.
- DO NOT EXCEED HYDRAULIC PRESSURE SETTINGS.

- If equipped with side or end tipper: STAY CLEAR OF ANY MOVING PARTS OR POTENTIAL PINCH-POINTS WHILE UNIT IS IN OPERATION.
- In the event of a fire in the container:
    - Call Fire Department
    - Run packer ram forward to close opening into box
    - Close any chute doors
    - Turn of power at master disconnect switch
    - Be prepared to aid the Fire Department in removing the container

Power Lockout Procedure

The following describes the **MINIMUM** requirements for establishing Power Lockout procedures.

DANGER!

A WRITTEN POWER LOCKOUT PROCEDURE MUST BE PROVIDED BY THOSE RESPONSIBLE FOR ON SITE OPERATION. ALL NECESSARY EMPLOYEES MUST BE INSTRUCTED ON THIS PROCEDURE PRIOR TO ANY SERVICE, MAINTENANCE, OR REPAIRS! ALL EMPLOYEES ARE REQUIRED TO COMPLY WITH THE RESTRICTIONS IMPOSED UPON THEM DURING THE USE OF THE LOCKOUT. THE AUTHORIZED EMPLOYEES ARE REQUIRED TO PERFORM THE LOCKOUT ACCORDANCE WITH THIS PROCEDURE.

ATTENTION!

THE FOLLOWING PROCEDURE IS ONLY A SAMPLE OF WHAT A COMPANY MUST ESTABLISH AS A MINIMUM FOR POWER LOCKOUT PROCEDURES. ALL PROCEDURES MUST BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ORDINANCES INCLUDING (BUT NOT LIMITED TO) THOSE SET FORTH BY OSHA AND OTHER SUCH GOVERNING BODIES. REFERENCE ALL LOCAL, STATE, AND FEDERAL GUIDELINES FOR POWER LOCKOUT PROCEDURES WITH RESPECT TO YOUR SPECIFIC APPLICATION(S).

1. Notify all affected employees that the machine is being shutdown, power is being disconnected and locked out for maintenance or service operations.

2. The authorized employee shall refer to the company procedure to identify the type and magnitude of the energy the machine utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.

3. If machine is operating, shut it down by the normal stopping procedures.

4. All power sources must be disconnected and locked out by use of assigned individual padlocks(s). No one other than the authorized person(s) placing the padlock(s) shall remove padlock(s) and restore power.

5. All stored or residual energy sources shall be relieved (such as that in capacitors, springs, elevated machine members, rotating fly wheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) by appropriate methods (grounding, restraining, bleeding, etc.).

Note: If a hydraulic problem exists, follow the Hydraulic Power Lockout Procedure first!

6. Before work is started, ensure equipment is disconnected from the energy source by first checking that no personnel are exposed, and then verify that power is disconnected by checking the voltage at the machine with a Volt Meter. An additional test may include operating the normal operating controls or testing to make certain the equipment will not

operate. Return the operating controls to the neutral or off position after verifying the isolation of the equipment.

7. Any equipment component that requires blocking to prevent its movement by gravity or other means must be blocked.

The machine or equipment is now locked out, and ready for hydraulic lockout procedures and/or blocking procedures as applicable.

Hydraulic Lockout Procedure

The following describes the **MINIMUM** requirements for establishing Hydraulic Lockout procedures.

DANGER!

A WRITTEN POWER LOCKOUT PROCEDURE MUST BE PROVIDED BY THOSE RESPONSIBLE FOR ON SITE OPERATION. ALL NECESSARY EMPLOYEES MUST BE INSTRUCTED ON THIS PROCEDURE PRIOR TO ANY SERVICE, MAINTENANCE, OR REPAIRS! ALL EMPLOYEES ARE REQUIRED TO COMPLY WITH THE RESTRICTIONS IMPOSED UPON THEM DURING THE USE OF THE LOCKOUT. THE AUTHORIZED EMPLOYEES ARE REQUIRED TO PERFORM THE LOCKOUT ACCORDANCE WITH THIS PROCEDURE.

ATTENTION!

THE FOLLOWING PROCEDURE IS ONLY A SAMPLE OF WHAT A COMPANY MUST ESTABLISH AS A MINIMUM FOR HYDRAULIC LOCKOUT PROCEDURES. ALL PROCEDURES MUST BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ORDINANCES INCLUDING (BUT NOT LIMITED TO) THOSE SET FORTH BY OSHA AND OTHER SUCH GOVERNING BODIES. REFERENCE ALL LOCAL, STATE, AND FEDERAL GUIDELINES FOR HYDRAULIC LOCKOUT PROCEDURES WITH RESPECT TO YOUR SPECIFIC APPLICATION(S).

Before You Begin
Review all existing policies and procedures as set forth by your company for proper lockout procedures and safety protocols as applicable to servicing the compactor.

Before starting the Hydraulic Lockout Procedure familiarize yourself with the location and operation of the pilot valve and solenoid override pins located on the power unit.

Tools Required for Hydraulic Lockout:

- A 7/32” or smaller Allen wrench

Hydraulic Lockout Procedure

1. Cycle the compactor and stop the ram in the lowest position.

2. Disconnect and Lockout the main power at the disconnect according to protocol for your facility.

3. After locking out the main power at the disconnect, any stored hydraulic energy can be released by manually depressing the solenoid override pin on the pilot valve. (The Pilot Valve is located above the main control valve).
    - A 7/32” or smaller Allen wrench can be used to perform this operation. Expect approximately ¼” movement in the pin with some resistance.

4. This procedure must be performed for both ‘A’ and ‘B’ ports with corresponding solenoid override pins.

Having successfully COMPLETED Power Lockout procedures, and with the above procedure followed properly, the hydraulic pressure should be released and the machine or equipment ready for service or maintenance.

Operational Requirements

Employer Responsibilities for Stationary Compactors:

- Provide a properly maintained Compactor.
- Provide instructions and training prior to assigning employees for operation, cleaning, service and/or maintenance.
- Maintain records of all employees' names and training dates.
- Establish and follow a Stationary Compactor Inspection Program that includes documentation of all malfunctions, inspections, and work performed.
- Repair any problem that may affect the safe operation of the compactor.
    - This includes all safety interlock devices such as safety switches on gates, doors, etc. that may have been bypassed by an employee.
- Ensure a Power Lockout procedure has been established.
- Ensure that authorized personnel follow the prescribed lockout procedure for all service and maintenance performed, and that the work is performed only by those individuals authorized.
- Ensure all surrounding areas are free from obstructions, accumulation of waste matter, grease, oil, and water.
- Ensure that only authorized and qualified employees of at least 18 years of age operate, inspect and/or maintain the equipment.

Start Up Instructions

CAUTION!

EMPLOYER SHOULD ALLOW ONLY AUTHORIZED PERSONNEL TO OPERATE COMPACTOR.

Check the following parameters prior to operation.

1. Verify that the Electrical Disconnect is within direct line of site, and within 50-feet of the power unit of the machine.

2. Verify that the correct input line voltage is supplied to control panel.
    a. Input line voltage should match the selected voltage of the transformer.
    b. The input voltage should remain within 10% between no load and full load conditions.

3. Verify that the oil level is at the proper level with all cylinders retracted.
    a. The power unit is factory filled using a premium AW-32 Hydraulic Oil.

4. The Compactor has been factory tested for leaks and proper operation prior to shipping. Pressure is pre-set in factory and SHOULD NOT BE CHANGED OR FIRST YEAR WARRANTY WILL BE VOID.

5. Authorized operator(s) must ensure that all individuals are clear of all points of operation before activating the compactor.

6. The unit must be properly connected to a lockable fused disconnect switch. Upon completion of connection to disconnect the motor must be checked for proper rotation direction.
    a. If the rotation is correct the Compactor should be ready for operation.
    b. If the rotation direction is not correct, reverse two of the three power line in connections.

7. The Outstroke Time has been factory set. Confirm proper operation and adjust as needed. (See '*Cylinder Outstroke Adjustment Procedure'* for details).

Apartment Style Compactor Operation

The following describes the operating procedures and indicators for the Apartment Style Compactor.

WARNING!

IF INCORRECTLY USED THIS EQUIPMENT CAN CAUSE SEVERE INJURY AND EVEN DEATH! THE COMPACTOR IS TO BE OPERATED ONLY BY AUTHORIZED, FULLY TRAINED & QUALIFIED PERSONNEL 18 YEARS OLD OR OLDER WHO ARE AWARE OF THE DANGER AND FOLLOW ALL SAFETY RULES.

Apartment Style Compactor Normal Operation

Normal Operation is Automatic!

As long as the Emergency Stop Button is pulled out and the door is latched, the compactor *will automatically cycle* when the rubbish level is sufficient to trigger the photo-eye sensor!

1. Rubbish will normally enter the chamber through the trash chute.
2. When the Photo-Eye is blocked (beam is broken) by trash, the cycle will begin.
3. The cycle is started by sounding an audible alarm (buzzer) and starting a visual indicator (panel mounted strobe light).
4. The audio and visual alarms will continue for 20 seconds *prior* to the actual compaction cycle starting as mandated by ANSI Z245-2.

Attention!

The audible alarm (buzzer) must be set to a minimum of 10 dBA above ambient noise levels as per ANSI Z245-2. (Reference all current applicable ANSI standards for additional information).

Note: This compactor is programmed to automatically shut down after 30 minutes of continuous operation. In the event this situation occurs determine the cause of continuous cycling before restarting compactor. Refer to Troubleshooting.

To Manually Load (Ground Level Loading):

1. Unpin and rotate the Chute Blocker Door handle to the closed position, and pin handle into place. (This will close the chute door and prevent debris from entering the chamber from the trash chute while loading from the side door).

2. Open the Chamber Door by rotating the deadbolt handle 90-degrees and slide the handle past the stop to the open position.

   Note: Any end-user locks (i.e. padlock) must also be removed prior to releasing the dead bolt.

3. Place rubbish into hopper through the chamber door.

Safety!

AT NO TIME SHOULD HANDS OR ANY OTHER BODY PART ENTER THE COMPACTION CHAMBER!

4. Close the chamber door completely and secure dead bolt handle into the locked position.

   Note: Any end-user locks may also be replaced.

5. Return the Chute Blocker Door handle to its original position (closed) and pin into place.

To manually Cycle Compactor:

1. Turn the keyed 'START SWITCH' to the 'ON' position (switch will spring return to 'OFF' position).

2. The compactor will start and complete a full cycle.

3. For subsequent manual compactor cycles repeat procedure 1 above.

Apartment Style Compactor Indicators

80% Full Light Indicator
This apartment style compactor unit is equipped with 80% & 100% full light indicators.
The '80% FULL' light indicator will turn on when the trash container is approximately 80% full, or when the compactors overall system pressure reaches 80% of maximum pressure. The indicator acts as an advance warning to the operator and ***will remain on***!

100% Full Light Indicator
When the '100% FULL' light turns on the compactor ram will stop in the fully extended position and the compactor will stop. The compactor ***will not restart*** until the 100% full condition/light is reset.

> **Note:** After the '100% FULL' light turns on and the compactor shuts down, the operator can continue to operate the compactor *on a limited basis* by following the reset procedure after each cycle.

100% Full Reset
To reset the '100% FULL' light/condition, perform the following:
Push in and pull out on the "EMERGENCY STOP' button.
This will turn off both indicator lights and reset power to allow normal operation.

Multi-stroke Adjustment Procedure

Tools Required for Multi-Stroke Adjustment:

- 1/8” or smaller Flat Blade Screw Driver

Before You Begin

Before starting the Multi-stroke Adjustment Procedure familiarize yourself with the location and operation of the dip switches and Reset Button on the Horizontal Compactor II Board.

Multi-stroke Adjustment Procedure

1. Locate **Dip Switch 1** in the upper left on the Horizontal Computer II Board.

2. Set switches 7 & 8 according to Table 1 below to correspond to the correct number of strokes per cycle.

   Note: The up position corresponds to “ON” and the down position corresponds to “OFF”.

3. **Press the reset button** located at the top (just right of center) on the Horizontal Compactor II Board.

Table 1 Multi-stroke Settings Chart

Multi-stroke Adjustment Table		
Dip Switch		Number of Strokes
7	8	
OFF	OFF	1
ON	OFF	2
OFF	ON	4
ON	ON	10

Cylinder Outstroke Adjustment Procedure

Tools Required for Outstroke Adjustment:

- 1/8" or smaller Flat Blade Screw Driver
- Stop Watch or Watch with Second Hand

Before You Begin

Before starting the Outstroke Adjustment Procedure familiarize yourself with the location and operation of the dip switches, Rotary Switch, and Reset Button on the Horizontal Computer Board.

Note: Anytime you change the dip switch or Rotary Switch settings you **must press the reset button** for the changes to take effect! Failure to reset the system after adjusting either of the switch settings will result in the outstroke setting being unrecognized by the system!

Outstroke Adjustment Procedure

1. Ensure that the Ram and Container areas are free from all debris. (Any debris left in the compactor or container will affect the cycle time).

2. Locate the **Dip Switch 1** located at the top left on the Horizontal Compactor II Board and set switches 4, 5 & 6 to the up (on) position. Press the reset button located at the top (just right of center) on the Horizontal Compactor II Board.

3. With stop watch in hand, start the compactor. Allow the Ram to *retract first*! As soon as the Ram starts forward, start the stop watch. Once the Ram extends forward completely and reaches the end of its stroke, stop the stop watch and record the resulting time for reference.

4. Reference the *Course Outstroke Time Chart* below in Table 1 and compare the time you recorded to the times listed in the chart.

5. Set the **Dip Switch 1** switches to the appropriate setting for the corresponding time recorded.
   Example: The recorded time was 27 seconds; therefore, the dip switch setting for the 25-30 second range obtained from the chart should be used.
   Press the reset button located at the top (just right of center) on the Horizontal Compactor II Board.

6. To fine tune the Outstroke time, locate the Rotary Switch positioned at the top left corner of the Compactor II Board. Turn the Rotary switch using the 1/8" flat blade screw driver to the zero position. Press the reset button located at the top (just right of center) of the Compactor II Board.

7. With stop watch in hand, start the compactor. Allow the Ram to *retract first*! As soon as the Ram starts to extend forward, start the stop watch. When the Ram changes direction, stop the stop watch. Record the resulting time for reference.

8. Compare the time recorded from the stop watch with the fully extended time. The time should now be approximately 25 seconds.
   Example: The recorded time was 27 seconds, and after first setting change should read approximately 25 seconds.

9. Reference the *Rotary Outstroke Fine Adjustment Chart* below in Table 2. Each digit on the Rotary Switch represents 0.5 seconds. To avoid allowing the ram to hit the end of stroke position every time, turn the Rotary Switch to 0.5 seconds less than the Full Out Stroke Time.
   Example: The Full Extend Time was recorded at 27 seconds, and the dip switch setting was set for the 25-30 second range. Therefore, the Rotary Switch Setting should be set to position 3.

   Press the reset button located at the top (just right of center) of the Compactor II Board.

10. Start the Compactor and allow the Ram to cycle. Take note of the Ram's full extension and power unit. If you hear the power unit building pressure, you should reduce the Rotary Switch time/setting. Press the reset button located at the top (just right of center) of the Compactor II Board. Cycle the compactor checking the Ram's fully extended position and power unit.

Table 2 Course Outstroke Time Chart

Course Outstroke Timer Adjustment Table			
Dip Switch			Time (Sec)
4	5	6	
OFF	OFF	OFF	10 - 15
ON	OFF	OFF	15 - 20
OFF	ON	OFF	20 - 25
ON	ON	OFF	25 - 30
OFF	OFF	ON	30 - 35
ON	OFF	ON	35 - 40
OFF	ON	ON	40 - 45
ON	ON	ON	45 - 50

Table 3 Rotary Fine Outstroke Time Chart

Rotary Outstroke Fine Adjustment Table	
Rotary Switch Position	Time (Sec)
0	0.0
1	0.5
2	1.0
3	1.5
4	2.0
5	2.5
6	3.0
7	3.5
8	4.0
9	4.5

Pressure Setting Procedure

The pressure switch is adjusted to customer specifications at the factory.

CHANGING THE PRESSURE SETTING, UNLESS EXPLICITLY AUTHORIZED BY CONTRACT WELDING & FABRICATING, INC., WILL VOID THE WARRANTY!

Tools Required for Pressure Adjustment:

- 11/16" Wrench
- 3/16" Allen Wrench
- Flat Blade Screw Driver

Before you Begin
Read all instructions prior to beginning the procedure and be familiar with the location of all components involved.

Before starting the Pressure Adjustment Procedure locate the Dip Switches located at the top left on the Horizontal Compactor II Board. Take note of and record the positions of switches 4, 5 & 6 on **Dip Switch 1**. You will need to return these switches to their original position upon completion of the pressure setting procedure.

To Adjust Pressure Setting

Note: The emergency stop button must be pulled out for the machine to operate.

1. After recording the initial **Dip Switch 1** positions, move switches 4, 5, & 6 to the "ON" or "UP" position. (This will increase the outstroke time causing the ram to "bottom out" in the forward position). Press the reset button located in the center of the Horizontal Computer Board after setting the Dip Switches to the "ON" position.
2. Locate the Relief Valve Adjustment mounted below the Direction Valve on the hydraulic power unit (for most power units). Use the 11/16" Wrench to loosen the outer lock nut. (Note this nut need only be broken loose, not removed). Once the lock nut is loosened, use the 3/16" Allen Wrench and turn the adjustment screw counter-clockwise one full turn. This will lower the system pressure.
3. Locate the Barksdale Pressure switch. Use the Flat Blade Screw Driver to remove the Adjustment Screw Cover. Using the same Flat Blade Screw Driver, turn both the #1 & #2 Circuit Adjustment Screws counter-clockwise 3 to 4 complete turns. This will allow the power unit to build pressure without any forward movement of the ram.

   Note: If ram shifts forward let the ram cycle completely, then turn Circuit #2 Adjustment Screw counter-clockwise an additional 3 to 4 turns.

WARNING!

BEFORE STARTING MACHINE, BE SURE ALL START-UP PROCEDURE INSTRUCTIONS HAVE BEEN FOLLOWED.

4. Start the compactor. The ram should be in the retracted position, and system pressure at the lowered setting. (The lower pressure setting can be verified by reading the power unit pressure gauge).

5. While observing the pressure gauge, turn the Relief Valve clockwise until the desired 80% full pressure is reached. (Factory default setting is 1200 PSI).

6. Locate the left-hand side Pressure Switch Adjustment Screws (Circuit #1 which corresponds to the 80% Full setting). Slowly turn the Adjustment Screw clockwise until the Input LED #5 (located on the Horizontal Computer Board) turns on and lights up steadily.
   The 80% Full Pressure setting is now set.

7. With the ram "bottomed out", observe the pressure gauge while turning the Relief Valve Adjustment Screw (with the Allen Wrench) until the desire 100% full pressure is reached. (Factor default setting is 1500 PSI).

8. Locate the right-hand side Pressure Switch Adjustment Screws (Circuit #2 which corresponds to the 100% Full setting). Slowly turn the Adjustment Screw clockwise until the Input LED #6 (located on the Horizontal Computer Board) turns on and lights up steadily. Approximately 5 seconds after the LED turns on, the machine will shut off.

   The following procedure must be completed in this 5 second window between the ram "bottoming out" and the machine shutting down.

9. The System Bypass Pressure must be set approximately 250 PSI *above* the 100% full pressure. This is accomplished by turning the Relief Valve an additional ¼ turn clockwise immediately after the ram "bottoms out".

   If the pressure is not increased by 250 PSI (1/4 turn) during the 5 second window, repeat the procedure as necessary.

   The 100% Full Pressure setting is now set.

10. When the setting is complete, the LEDs will be off, and the compactor will be ready to start once again.

To check operation of the lights, start machine. With **Dip Switch 1** switches 4, 5, & 6 still in the ON position the ram will fully extend. At the end of the stroke the ram will reach full pressure and turn both the 80% and 100% Full lights on. The ram will return to mid position and shut off.

11. Return the **Dip Switch 1** switches 4, 5 & 6 on the Horizontal Compactor II Board to their original positions, and press the Reset Button. Cycle the machine and check for normal operation.

12. Once normal operation has been established, replace the Pressure Switch Cover and tighten the Relief Valve lock nut.

Recommended Compactor Preventative Maintenance Schedule

DANGER!

BEFORE ANY MAINTENANCE OR SERVICE IS PERFORMED ALL POWER MUST BE TURNED OFF AT DISCONNECT AND LOCKED OUT. FOLLOW YOUR COMPANY'S ESTABLISHED LOCKOUT PROCEDURES.

The following is the recommended preventative maintenance schedule for the compactor *under normal use*. The frequency may need to be adjusted to accommodate usage of the compactor.

Daily:

- Keep all areas surrounding compactor free from all debris
- All safety interlocks & barriers must be functioning & properly adjusted
- Make sure all access covers are in place & securely fastened
- Check compactor control keyed start & stop button before work shift begins
- Be sure all applicable safety placards are in place

Weekly:

- Lubricate all marked grease fittings on side of machine
    - One pump from standard grease gun per fitting
- Remove any debris that accumulates under midway of compactor
- Check all exposed hoses for any signs of wear
- Lubricate ratchet binder screws & latch mechanisms
- Blow off dust or debris from power unit
- Check all fittings for leaks

Monthly:

- Check machine anchors

Yearly:

- Change oil filter (if applicable)
- Change oil (frequency may vary based on operating conditions)
- Check Ram Wear Pads/Guides (located at rear of ram) - if applicable
    - Replace when worn beyond 1/8" from new

Compactor Preventative Maintenance Checklist

Location: _____ Date: _____

_____ Compactor Size, Style & Serial No.

_____ _____

Approved	Remarks/Comments
❑ Compactor Area Free of All Debris	_____
❑ Proper Fuse Size	_____
❑ Proper Heater Overload Setting	_____
❑ Limit Switches	_____
❑ Start/Stop Buttons	_____
❑ Key Switches	_____
❑ Full Lights	_____
❑ Safety Switches	_____
❑ Electric Cords & Connections	_____
❑ Oil Fittings & Filters	_____
❑ Cylinder Packing	_____
❑ Hydraulic Hoses & Connections	_____
❑ Oil Level	_____
❑ Pressure Settings & Pressure Settings	_____
❑ Grease Motor, 1 Pump per Year	_____
❑ Motor – Pump Coupler	_____
❑ Compactor Mounting Secure	_____
❑ Hopper/Deck Area	_____
❑ Container	_____
❑ Container Guides	_____

Comments: _____

_____

_____

Technician: _____

Compactor Troubleshooting Guide

Unit Will Not Start			
Possible Cause	**Check**	**Solution**	**Verification**
Emergency Start Button Pushed In	Input #8 LED	Pull Out Emergency Stop Button	Input #8 LED Should be On
Hopper Door Open	Input #2 LED	Close Hopper Door	Input #2 LED Should be On
Main Power Off	LEDs Blinking On Computer Board	Turn On Main Power to Machine	Computer Board LEDs should be On
Container Full	Inputs #6 & #17 LEDs On	Empty Container	Inputs #6 & #17 LEDs should be Off
Overload Tripped	Reset Button	Reset Motor Starter Overload	Rest Button
Fuses Blown	Check Continuity with Meter	Replace Fuses	Fuses should have Continuity

Pump Making Abnormal Noise			
Possible Cause	**Check**	**Solution**	**Verification**
Oil Level Low	Sight Gauge	Add Oil	Oil Gauge should read Full
Pump to Motor Coupling Adjusted Incorrectly	Check Coupling	Adjust Coupling	Coupling Tight with Pump & Motor
Pump Malfunctioning	Check for Excessive Heat	Requires Service - Contact Factory	

Pump Getting Abnormally Hot			
Possible Cause	**Check**	**Solution**	**Verification**
Oil Level Low	Sight Gauge	Add Oil	Oil Gauge should read Full
Pump Malfunctioning	Check for Excessive Noise	Requires Service - Contact Factory	

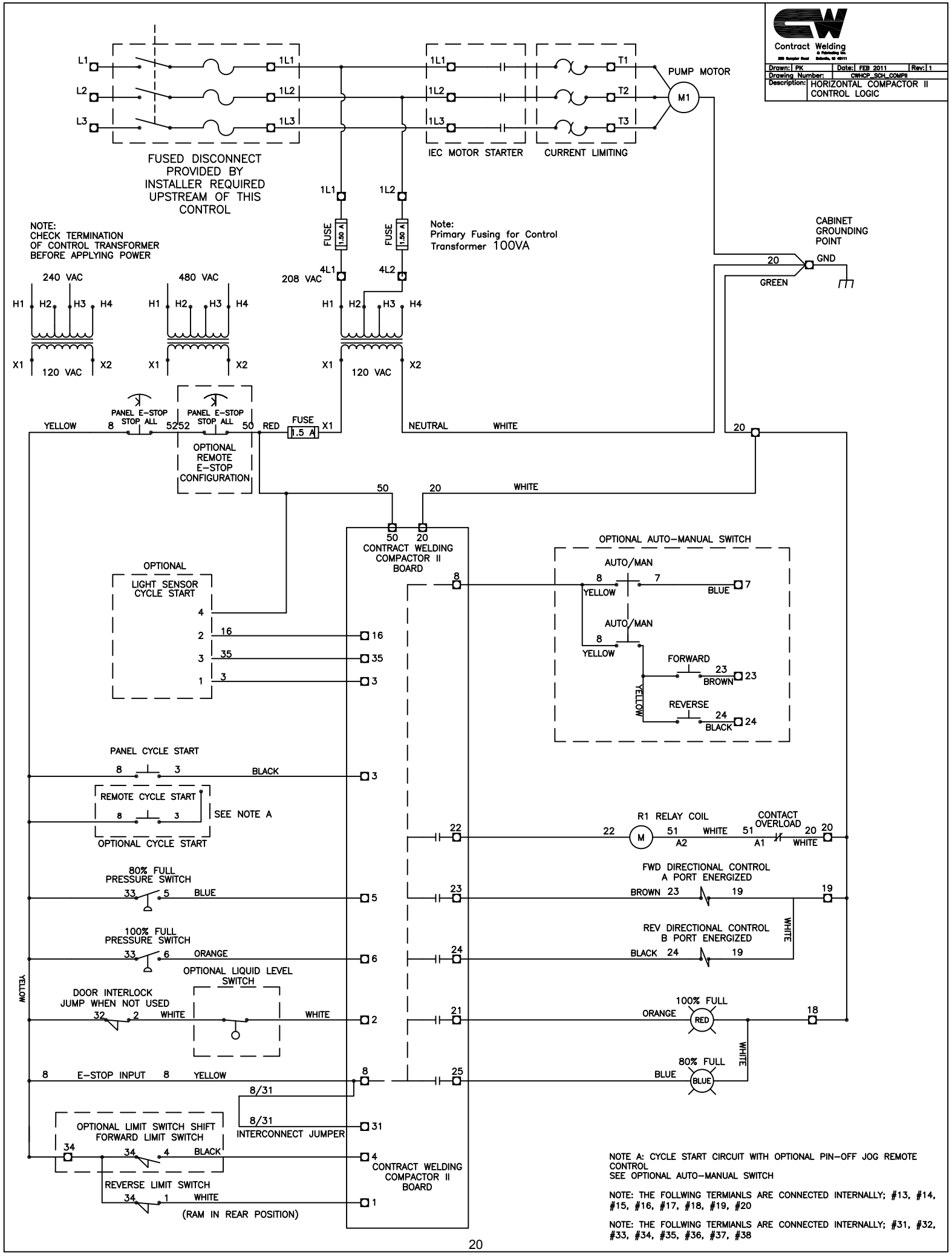
Unit Starts But Does Not Cycle			
Possible Cause	**Check**	**Solution**	**Verification**
100% Full Setting Incorrect	Inputs #5 & #6	Reset Pressure Settings via Manual	
Pressure Set Incorrectly	Pressure Gauge	Reset Pressure Settings via Manual	
Malfunctioning Solenoid on Valve	Output #19 & #20 on Computer Board		

100% Full Light Doesn't Come On & Machine Doesn't Shut Off			
Possible Cause	**Check**	**Solution**	**Verification**
Light Bulb Burned Out	100% Full Bulb	Replace Bulb	Light On
Board Not Receiving 100% Full Signal	110 V on Input #6	Test Pressure Switch & Wiring	
Board Not Sending 100% Full Signal	110 V on Output #17	Test Wiring & Board	
System Pressure Set Incorrectly	Pressure Gauge	Adjust System Pressure	
Pressure Switch Set Incorrectly	Input #6 & Pressure Gauge	Adjust Pressure Switch	

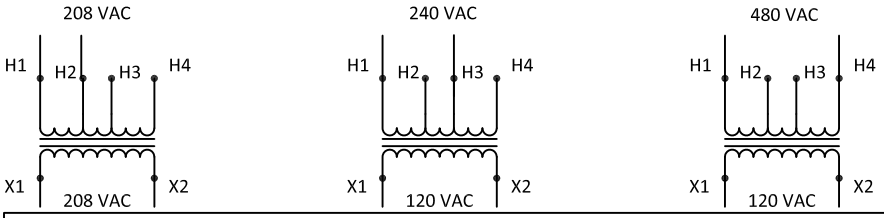
Unit Shuts Off Prematurely			
Possible Cause	**Check**	**Solution**	**Verification**
Door Open	Input #2 LED	Close Hopper Door	Input #2 LED Should be On
Door Proximity Switch Not Functioning	Input #2 LED	Close Hopper Door	Input #2 LED Should be On
Overload Tripped	Reset button on Overload	Reset Overload	
Full Light Coming On	Output #17		
Transformer not Wired for Correct Voltage	Check Transformer Wiring	Rewire for Proper Incoming Voltage	

Compactor Troubleshooting Guide

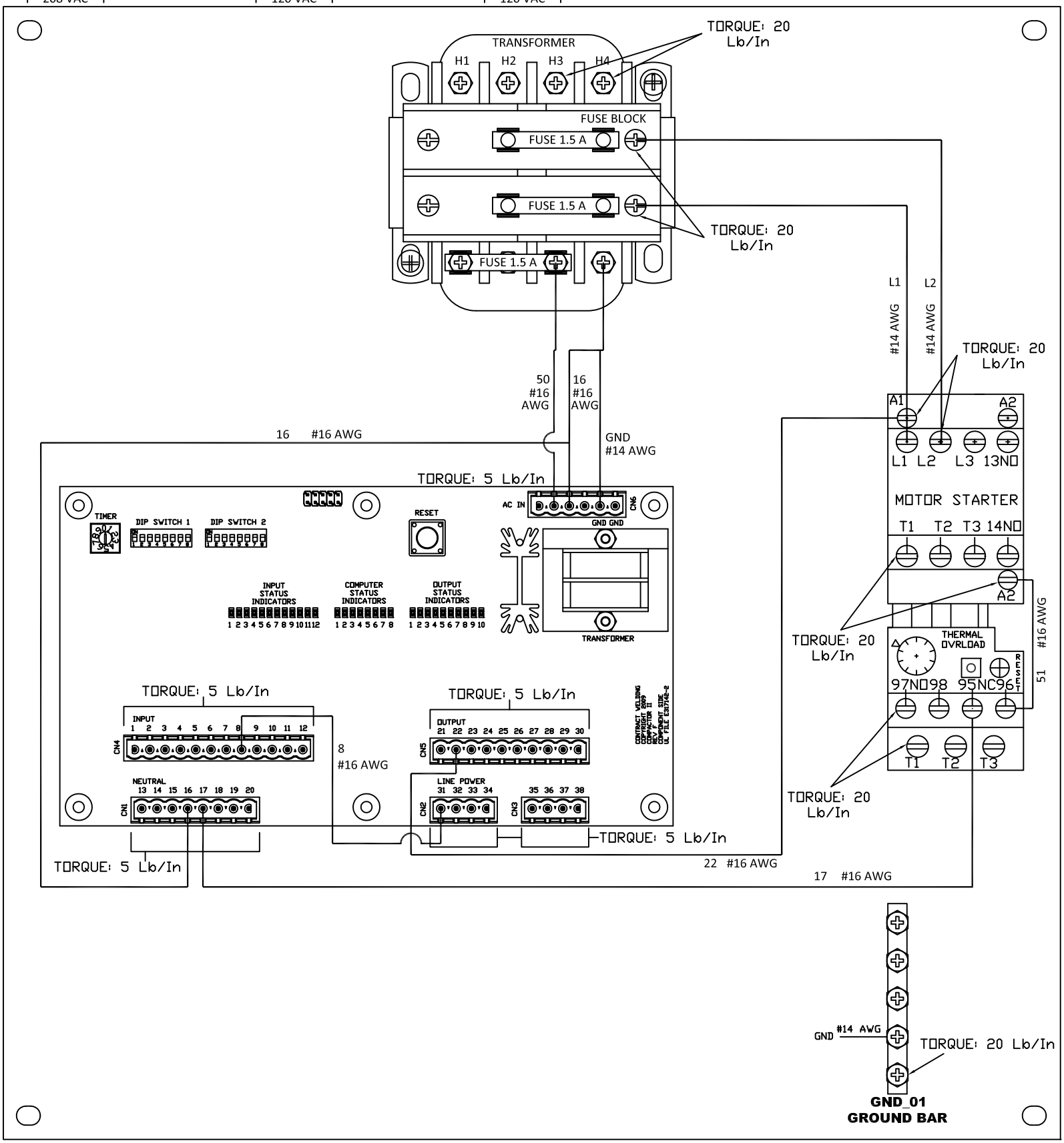
Ram Doesn't Go Out Far Enough / Ram Move Abnormally			
Possible Cause	**Check**	**Solution**	**Verification**
Stroke Timer Set Incorrectly	Dip Switches 4, 5 & 6	Follow Procedure for Stroke Timer Adjustment	
Air in System		Cycle Machine Approximately 6 Times	
Oil Level Low	Sight Gauge	Add Oil	Oil Gauge should read Full
Cylinder Leak	Oil Seepage around Cylinder	Requires Service - Contact Factory	
Pump Malfunctioning	Check for Excessive Heat	Requires Service - Contact Factory	


Contract Welding
Drawn: PK
Date: FEB 2011
Rev: 1
Drawing Number: CWHCP_SCH_COMPII
Description: HORIZONTAL COMPACTOR II CONTROL LOGIC
L1
L2
L3
1L1
1L2
1L3
FUSED DISCONNECT PROVIDED BY INSTALLER REQUIRED UPSTREAM OF THIS CONTROL
IEC MOTOR STARTER
CURRENT LIMITING
T1
T2
T3
PUMP MOTOR
M1
NOTE:
CHECK TERMINATION OF CONTROL TRANSFORMER BEFORE APPLYING POWER
FUSE 1.50 A
Note:
Primary Fusing for Control Transformer 100VA
4L1
4L2
CABINET GROUNDING POINT
GND
GREEN
20
240 VAC
480 VAC
208 VAC
H1 H2 H3 H4
X1 X2
120 VAC
PANEL E-STOP
STOP ALL
YELLOW
RED
FUSE 1.5 A
NEUTRAL
WHITE
OPTIONAL REMOTE E-STOP CONFIGURATION
50
CONTRACT WELDING COMPACTOR II BOARD
OPTIONAL AUTO-MANUAL SWITCH
AUTO/MAN
BLUE
FORWARD
BROWN
REVERSE
BLACK
OPTIONAL LIGHT SENSOR CYCLE START
PANEL CYCLE START
REMOTE CYCLE START
SEE NOTE A
OPTIONAL CYCLE START
R1 RELAY COIL
CONTACT OVERLOAD
80% FULL PRESSURE SWITCH
FWD DIRECTIONAL CONTROL A PORT ENERGIZED
100% FULL PRESSURE SWITCH
REV DIRECTIONAL CONTROL B PORT ENERGIZED
ORANGE
OPTIONAL LIQUID LEVEL SWITCH
DOOR INTERLOCK JUMP WHEN NOT USED
E-STOP INPUT
8/31
INTERCONNECT JUMPER
OPTIONAL LIMIT SWITCH SHIFT FORWARD LIMIT SWITCH
REVERSE LIMIT SWITCH
(RAM IN REAR POSITION)
NOTE A: CYCLE START CIRCUIT WITH OPTIONAL PIN-OFF JOG REMOTE CONTROL
SEE OPTIONAL AUTO-MANUAL SWITCH
NOTE: THE FOLLWING TERMIANLS ARE CONNECTED INTERNALLY; #13, #14, #15, #16, #17, #18, #19, #20
NOTE: THE FOLLWING TERMIANLS ARE CONNECTED INTERNALLY; #31, #32, #33, #34, #35, #36, #37, #38

TRANSFORMER

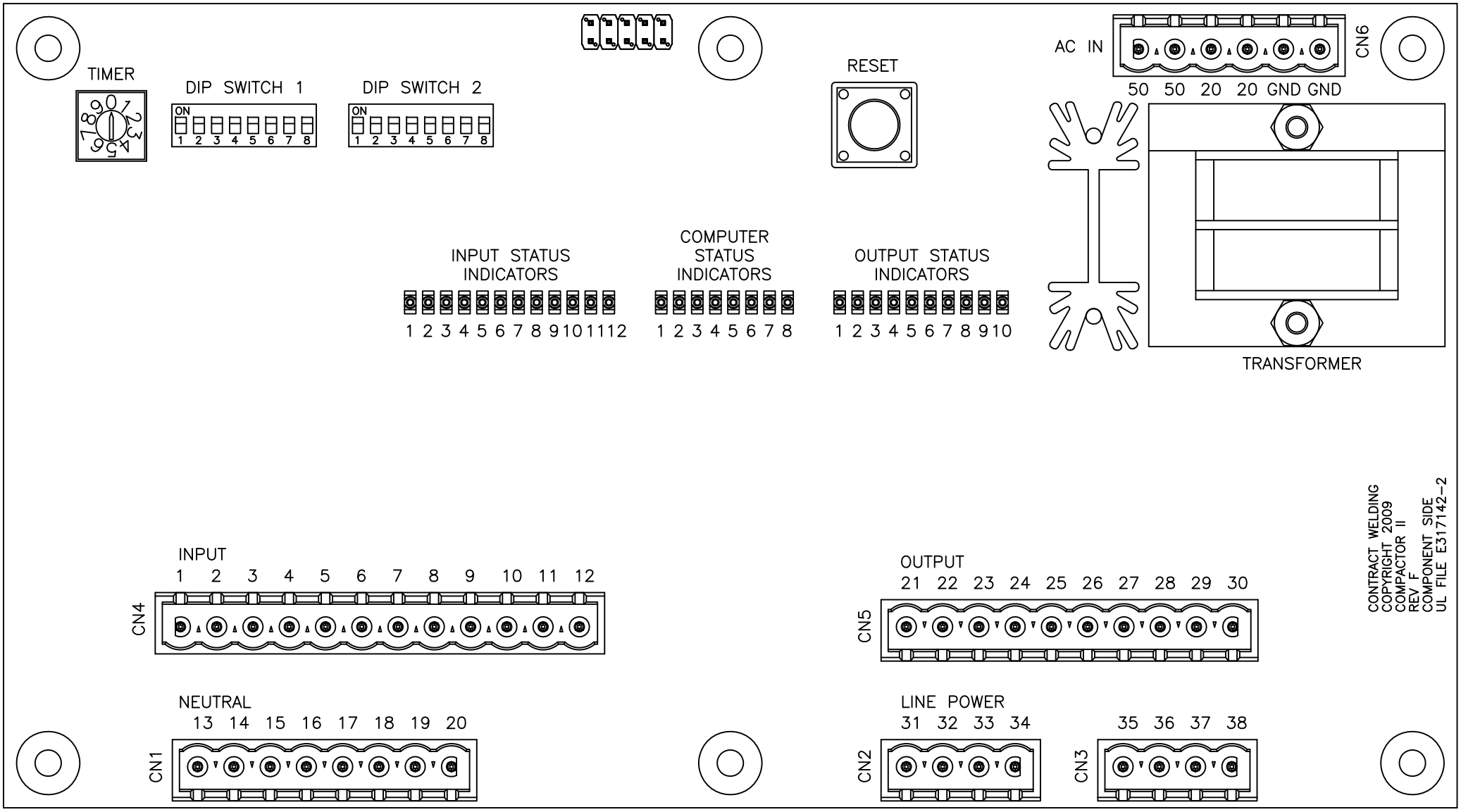


	Fuse Table					
	Motor Size	5 HP	10 HP	20 HP	30 HP	60 HP
System Voltage	120 V	80	-	-	-	-
	208 V	25	50	90	125	250
	240 V	25	40	80	100	200
	480 V	15	20	40	60	100



AP-030 BOARD CONNECTION SUMMARY	
INPUTS	**OUTPUTS**
#1 NOT USED	#21 100% FULL INDICATOR
#2 DOOR ENTRY PROX SWITCH	#22 R1 RELAY COIL (MOTOR CONTROL)
#3 PHOTO-EYE START	#23 FORWARD DIRECTION CONTROL
#4 NOT USED	#24 REVERSE DIRECTION CONTROL
#5 80% FULL PRESSURE SWITCH	#25 80% FULL INDICATOR
#6 100% FULL PRESSURE SWITCH	#26 OPTIONAL SYSTEM READY INDICATOR
#7 AUTO MANUAL INPUT SWITCH	#27 STROBE & HORN
#8 EMERGENCY STOP SWITCH	#28 OPTIONAL AC OUTPUT
#9 CYCLE START KEY SWITCH	#29 OPTIONAL AC OUTPUT
#10 OPTIONAL KEYLESS ACCESS CYCLE START	#30 OPTIONAL AC OUTPUT
#11 OPTIONAL INPUT	
#12 OPTIONAL INPUT	
#13 NEUTRAL RETURN FOR OUTPUTS	#31 LINE INPUT POWER FOR OUTPUTS
#14 NEUTRAL RETURN FOR OUTPUTS	#32 LINE VOLTAGE FOR INPUTS
#15 NEUTRAL RETURN FOR OUTPUTS	#33 LINE VOLTAGE FOR INPUTS
#16 NEUTRAL RETURN FOR OUTPUTS	#34 LINE VOLTAGE FOR INPUTS
#17 NEUTRAL RETURN FOR OUTPUTS	#35 LINE VOLTAGE FOR INPUTS
#18 NEUTRAL RETURN FOR OUTPUTS	#36 OPTIONAL LINE VOLTAGE
#19 NEUTRAL RETURN FOR OUTPUTS	#37 OPTIONAL LINE VOLTAGE
#20 NEUTRAL RETURN FOR OUTPUTS	#38 OPTIONAL LINE VOLTAGE

COMPACTOR II CONTROL BOARD LAYOUT



Compactor II Control Board Dip Switch & Rotory Settings

Dip Switch 1

CP-2 & SC-XX COMPACTOR CONTROL BOARD DIP SWITCH 1 SETTINGS

STATUS LIGHTS			RAM STOP POSITION		COURSE OUT STROKE TIMER ADJUSTMENT				NUMBER OF STROKES ADJUSTMENT		
1	2	OUTPUT	3	POSITION	4	5	6	TIME	7	8	STROKES
OFF	OFF	BLINKING LIGHTS	OFF	BACK	OFF	OFF	OFF	15 -20	OFF	OFF	1
ON	OFF	CUSTOMER INPUTS	ON	FORWARD	ON	OFF	OFF	20 - 25	ON	OFF	2
OFF	OFF	CUSTOMER OUTPUTS			OFF	ON	OFF	25 - 30	OFF	ON	4
ON	ON	CYCLE COUNTER			ON	ON	OFF	30 - 35	ON	ON	10
					OFF	OFF	ON	35 - 40			
					ON	OFF	ON	40 - 45			
					OFF	ON	ON	45 - 50			

AP-030 COMPACTOR CONTROL BOARD DIP SWITCH 1 SETTINGS

STATUS LIGHTS			RAM STOP POSITION		COURSE OUT STROKE TIMER ADJUSTMENT				NUMBER OF STROKES ADJUSTMENT		
1	2	OUTPUT	3	POSITION	4	5	6	TIME	7	8	STROKES
OFF	OFF	BLINKING LIGHTS	OFF	BACK	OFF	OFF	OFF	5 - 10	OFF	OFF	1
ON	OFF	CUSTOMER INPUTS	ON	FORWARD	ON	OFF	OFF	10 - 15	ON	OFF	2
OFF	OFF	CUSTOMER OUTPUTS			OFF	ON	OFF	15 - 20	OFF	ON	4
ON	ON	CYCLE COUNTER			ON	ON	OFF	20 - 25	ON	ON	10
					OFF	OFF	ON	25 - 30			
					ON	OFF	ON	30 - 35			
					OFF	ON	ON	35 - 40			

STATIONARY COMPACTOR WITH LIMIT SWITCH CONTROL BOARD DIP SWITCH 1 SETTINGS

STATUS LIGHTS			RAM STOP POSITION		Unused				NUMBER OF STROKES ADJUSTMENT		
1	2	OUTPUT	3	POSITION	4	5	6	NA	7	8	STROKES
OFF	OFF	BLINKING LIGHTS	OFF	BACK	OFF	OFF	OFF		OFF	OFF	1
ON	OFF	CUSTOMER INPUTS	ON	FORWARD					ON	OFF	2
OFF	OFF	CUSTOMER OUTPUTS							OFF	ON	4
ON	ON	CYCLE COUNTER							ON	ON	10

VERTICAL COMPACTOR CONTROL BOARD DIP SWITCH 1 SETTINGS

STATUS LIGHTS			Unused		COURSE OUT STROKE TIMER ADJUSTMENT				Unused	
1	2	OUTPUT	3	NA	4	5	6	TIME	7	8	NA
OFF	OFF	BLINKING LIGHTS	OFF		OFF	OFF	OFF	15 -20			
ON	OFF	CUSTOMER INPUTS			ON	OFF	OFF	20 - 25			
OFF	OFF	CUSTOMER OUTPUTS			OFF	ON	OFF	25 - 30			
ON	ON	CYCLE COUNTER			ON	ON	OFF	30 - 35			
					OFF	OFF	ON	35 - 40			
					ON	OFF	ON	40 - 45			
					OFF	ON	ON	45 - 50			

HORIZONTAL PRE-CRUSHER COMPACTOR CONTROL BOARD DIP SWITCH 1 SETTINGS

STATUS LIGHTS			RAM STOP POSITION		Unused				NUMBER OF STROKES ADJUSTMENT		
1	2	OUTPUT	3	POSITION	4	5	6	NA	7	8	STROKES
OFF	OFF	BLINKING LIGHTS	OFF	BACK	Off	Off	Off		OFF	OFF	1
ON	OFF	CUSTOMER INPUTS	ON	FORWARD					ON	OFF	2
OFF	OFF	CUSTOMER OUTPUTS							OFF	ON	4
ON	ON	CYCLE COUNTER							ON	ON	10

Dip Switch 2

CP-2 & SC-XX COMPACTOR CONTROL BOARD DIP SWITCH 2 SETTINGS

Short Stroke		Limit Shift		Max Timer		Delay Start for Photo Eye		Unused	Type Selection			
1	Timer	2	Type	3	State	4	State	5	6	7	8	Type
OFF	15 Sec	OFF	Pressure	ON	Max Timer On	OFF	Delay Start Off	OFF	OFF	OFF	OFF	Horiz

AP-030 COMPACTOR CONTROL BOARD DIP SWITCH 2 SETTINGS

Short Stroke		Limit Shift		Max Timer		Delay Start for Photo Eye		Unused	Type Selection			
1	Timer	2	Type	3	State	4	State	5	6	7	8	Type
ON	5 Sec	OFF	Pressure	ON	Max Timer On	ON	Delay Start On	OFF	OFF	OFF	OFF	Horiz

STATIONARY COMPACTOR WITH LIMIT SWITCH CONTROL BOARD DIP SWITCH 2 SETTINGS

Short Stroke		Limit Shift		Max Timer		Delay Start for Photo Eye		Unused	Type Selection			
1	NA	2	Type	3	State	4	State	5	6	7	8	Type
OFF		ON	Limit	ON	Max Timer On	OFF	Delay Start Off	OFF	OFF	OFF	OFF	Horiz

VERTICAL COMPACTOR CONTROL BOARD DIP SWITCH 2 SETTINGS

Short Stroke		Limit Shift		Max Timer		Delay Start for Photo Eye		Unused	Type Selection			
1	Timer	2	Type	3	State	4	State	5	6	7	8	Type
OFF	15 Sec	OFF	Pressure	ON	Max Timer On	OFF	Delay Start Off	OFF	ON	ON	OFF	Vertical

HORIZONTAL PRE-CRUSHER COMPACTOR CONTROL BOARD DIP SWITCH 2 SETTINGS

Short Stroke		Limit Shift		Max Timer		Delay Start for Photo Eye		Unused	Type Selection			
1	NA	2	Type	3	State	4	State	5	6	7	8	Type
OFF		OFF	Pressure	ON	Max Timer On	OFF	Delay Start Off	OFF	ON	OFF	OFF	PreCrush

ROTARY OUT STROKE FINE ADJUSTMENT

POSITION	0	1	2	3	4	5	6	7	8	9
TIME	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5

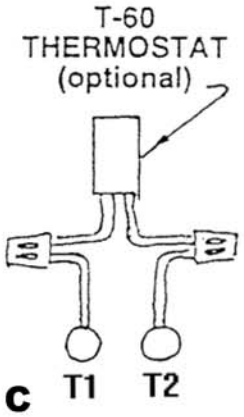
INSTALLATION AND WIRING INSTRUCTIONS FOR ET HYDRAULIC OIL HEATERS

1. MUST BE IMMERSED AT ALL TIMES
2. MOUNT HORIZONTALLY ONLY
3. OPERATE ON RATED VOLTAGE
   HEATERS ARE NOT DUAL VOLTAGE
4. USE ON A.C. ONLY
5. LEAD WIRES ARE COLOR CODED
   HEATER LEADS ARE RED
   THERMOSTAT LEADS ARE BLACK
6. T-60 AMBIENT AIR THERMOSTAT (OPTIONAL) SET TO CLOSE AT 40°F TO BE WIRED INTO CIRCUIT AT POINTS T_1 AND T_2 - SEE DIAGRAM D
7. ABOVE 10 AMP DRAW OR 480V OR 3 PHASE USE A RELAY - SEE DIAGRAM B OR C
8. TO CALCULATE AMPERAGE DRAW:

SINGLE PHASE	THREE PHASE
$\text{AMPS} = \frac{\text{WATTAGE}}{\text{VOLTS}}$	$\text{AMPS} = \frac{\text{WATTAGE}}{\text{VOLTS} \times 1.73}$

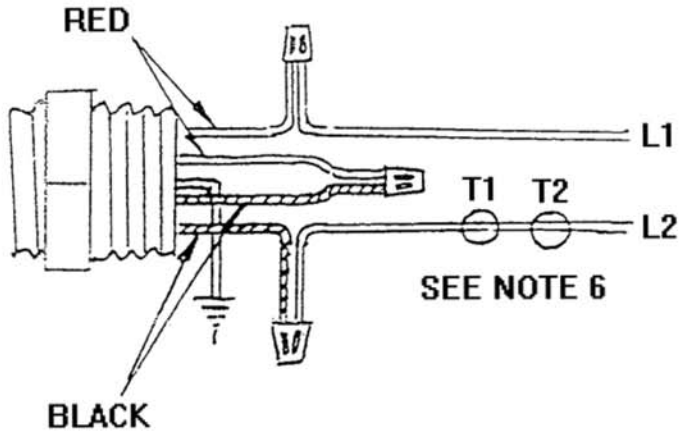
ETS EQUIPMENT CO.
408 PLAINFIELD RD.
DARIEN, IL 60561
1-800-822-8892
FAX 630-655-1527

ELECTRIC HEAT TO INDUSTRY SINCE 1959



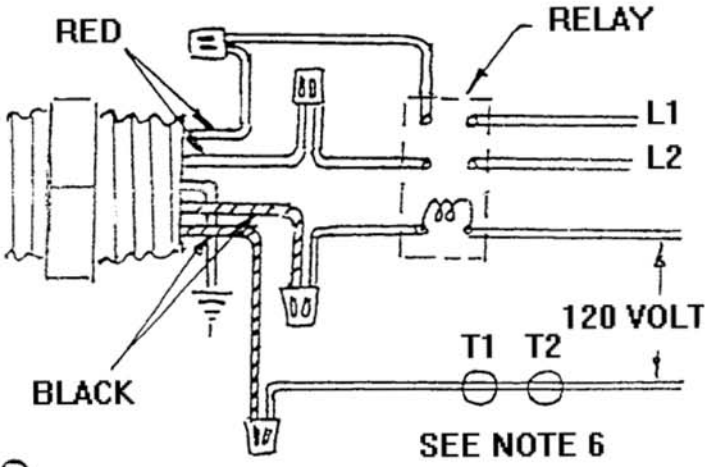
C

120 or 240 VOLT
SINGLE PHASE



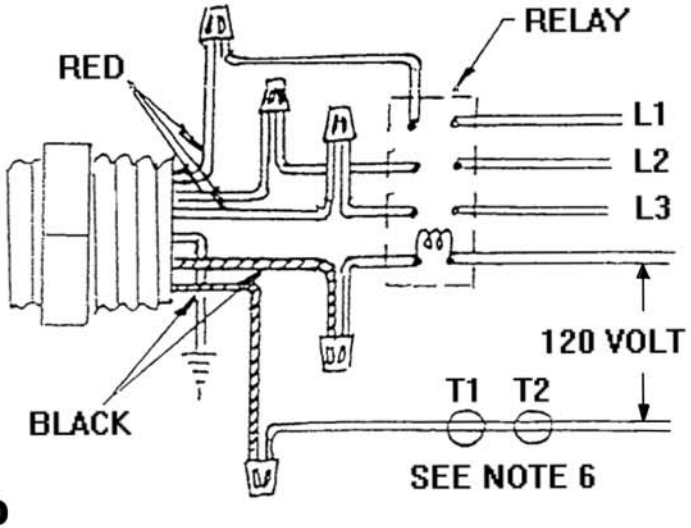
A

120 or 240 VOLT (Above 10 AMPS) 1 PHASE
-OR- 480 VOLT 1 PHASE

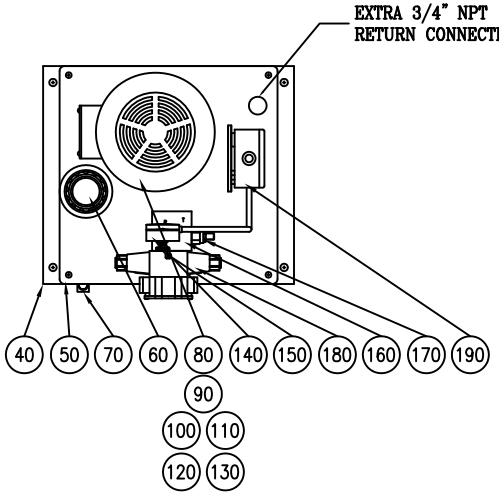


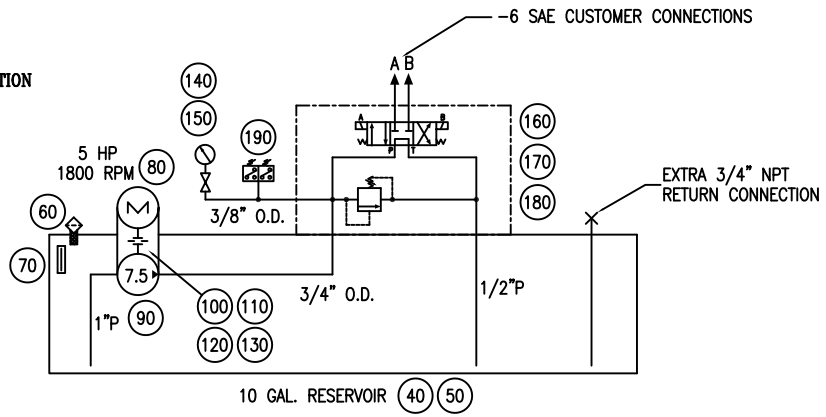
B

240 or 480 VOLT 3 PHASE



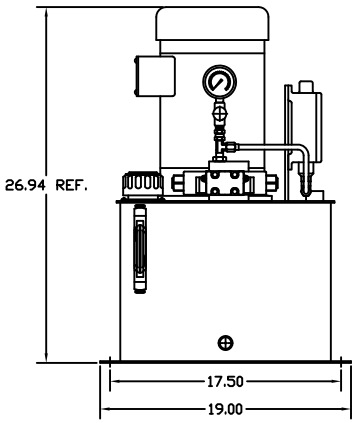
D

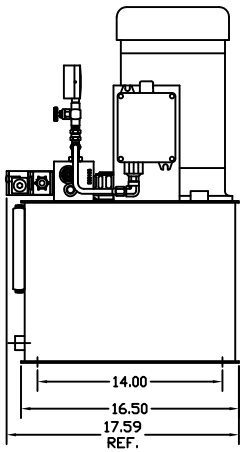




HYDRAULIC SCHEMATIC

ITEM	QTY.	PART NUMBER	DESCRIPTION	PURCH.
40	1	500009-01	JDT 10 GAL. TANK	FSI
50	1	TP-04A	TOP PLATE	FSI
60	1	FB-3	FILLER BREATHER	HYDRO CRAFT
70	1	TLLG-5	SIGHT GAGE	LENZ
80	1	CM3615T	MTR 5HP,1800RPM,FR184TC	BALDOR
90	1	ALP2A-D-22	GEAR PUMP	MARZOCCI
100	1	M182502A	MOTOR-PUMP-ADAPTER	MAGNALOY
110	1	M200 1-1/8B X 1/4K	COUPLING	MAGNALOY
120	1	M200 5/8B X 5/32K	COUPLING	MAGNALOY
130	1	M270U	URETHANE INSERT	MAGNALOY
140	1	PG2000	0-2000 PSI GAGE	H.S.I
150	1	N400S	SHUTOFF	PARKER
160	1	500166	D03 SUB-PLATE	DAMAN
170	1	RAH101S20	P.O.RELIEF CARTRIDGE VALVE	PARKER
180	1	DSG-01-3C60-A120	D03 VALVE	YUKEN
190	1	B2T-H32SS	PRESSURE SWITCH	BARKSDALE





NOTE:
MASKING MUST BE ON UNIT BEFORE SHIPPING
PANIT-GRAY PRIMER

REF.: CONTRACT WELDING

SHEET 1 OF 1

HYDRAULIC SYSTEMS INC.
1505 E. High Street
Jackson, Michigan 49203
(517) 787-7818

UNLESS OTHERWISE SPECIFIED TOLERANCES WILL BE
MACHINED DIMS. ± .015
ANGLES ± .0° 30'

SCALE 1/8"= 1"
DO NOT SCALE DRAWING

DISTRIBUTOR

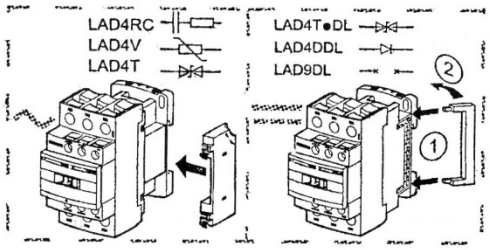
DRN DRF | DATE 10/13/09 | CKD | DATE

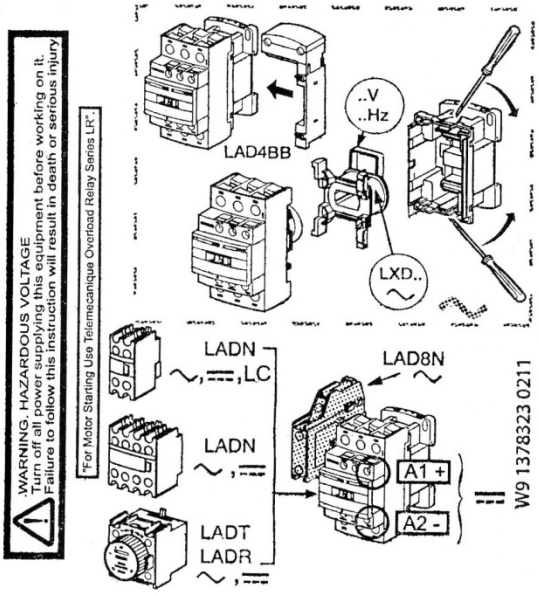
PART NAME 5HP MOTOR / 10 GAL RESERVOIR

DWG NO. T10-5HP-VERTICAL | REV. .

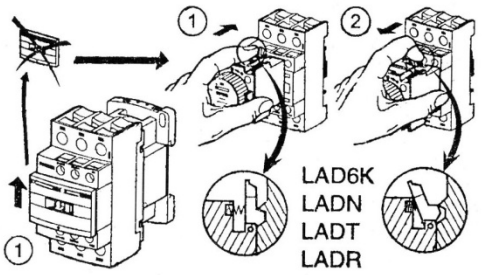
Motor Starter & Over Load

Motor Starter
Telemecanique LC1D32

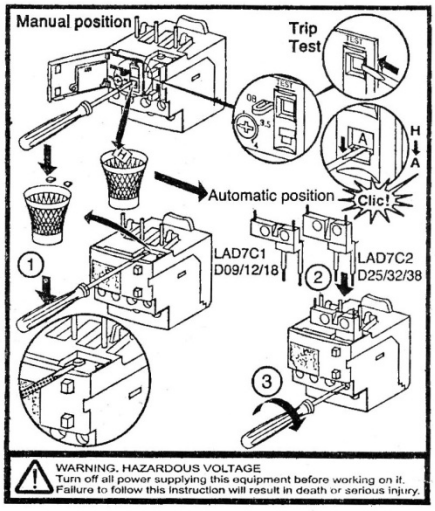


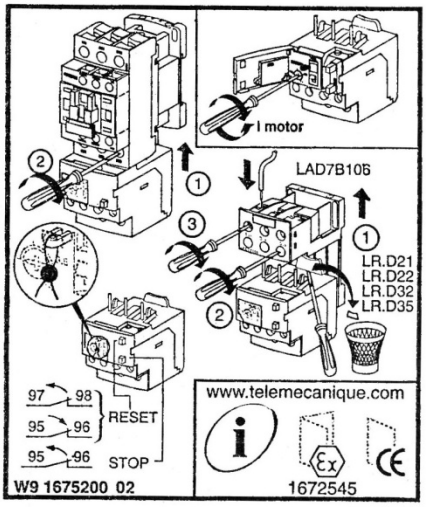


Suitable for use on a circuit capable of delivering not more than 5000 rms sym. amps. 600 v max. when protected by NTD class fuses, or when protected by a circuit breaker having a interrupting rating not less than 5000 rms sym; amps. 600 v max.



Over Load
Telemecanique LRD32





HORSEPOWER	VOLTAGE	STARTER	OVERLOAD	REPLACES OLD STYLE
5 HP	240V	LC1D18G7	LRD21	LC1D1810G6/LR2D1321
	480V	LC1D09G7	LRD12	LC1D0910G6/LR2D1312
10 HP	240V	LC1D32G7	LRD32	LC1D3210G6/LR2D2353
	480V	LC1D18G7	LRD21	LC1D1810G6/LR2D1321
20 HP	240V	LC1D65G7	LRD3359	LC1D6511G6/LR2D3359
	480V	LC1D32G7	LRD32	LC1D3210G6/LR2D2353
30 HP	240V	LC1D80G7	LRD3363	LC1D8011G6/LR2D3363
	480V	LC1D50G7	LRD3355	LC1D5011G6/LR2D3355

XUE-F10031 / F080319 / F010315 / H10753 / H017535

Telemecanique

Environnement / *Environment*

Température ambiante / *Ambient temperature*	Opération / *Operation* : -25 --> +70 °C Stockage / *Storage* : -40 --> +80 °C
Tenue aux vibrations / *Vibration resistance*	7 g (F : 42 --> 150 Hz) (IEC 68-2-6) ± 0,6 mm (F : 10 --> 55 Hz)
Tenue aux chocs / *Shock resistance*	30 g, 11 ms (IEC 68-2-27)
Degré de protection / *Degree of protection*	IP 67 (IEC 529)
Matériaux / *Materials*	Boîtier / *Enclosure* : ABS Lentilles / *Lenses* : PMMA

Caractéristiques électriques / *Electrical characteristics*

XUE	F... / T...	H...
Type de détecteur / *Type of detector*	AC / DC, 5 fils, relais *AC / DC, 5 wires type, relay*	DC, 3 fils, statique *DC, 3 wires, solid state* PNP + NPN
Limites de tension / *Voltage limits*	20 --> 264 V ⎓ 20 --> 264 V ∿ Ondulation comprise / *Ripple included*	10 --> 58 V ⎓ Ondulation comprise / *Ripple included*
Courant commuté / *Switching capacity*	cos φ = 1 --> 2A cos φ = 0,4 --> 0,5A	200 mA protégé court-circuit
Courant consommé sans charge / *Current consumption no-load*	≤ 35 mA	≤ 40 mA
Retards / *Delays* à la disponibilité / *first up* à l'action / *response* au relâchement / *recovery*	 ≤ 60 ms ≤ 16 ms ≤ 16 ms	 15 ms 1,5 ms 1,5 ms
Fréquence maxi de commutation / *Maximum switching frequency*	30 Hz	300 Hz
Tension maxi sur les contacts du relais / *Max voltage on relay's contact*	250 V AC ∿	

Mise en œuvre / *Setting up procedure*

Tableau de fonctionnement / *Function table*

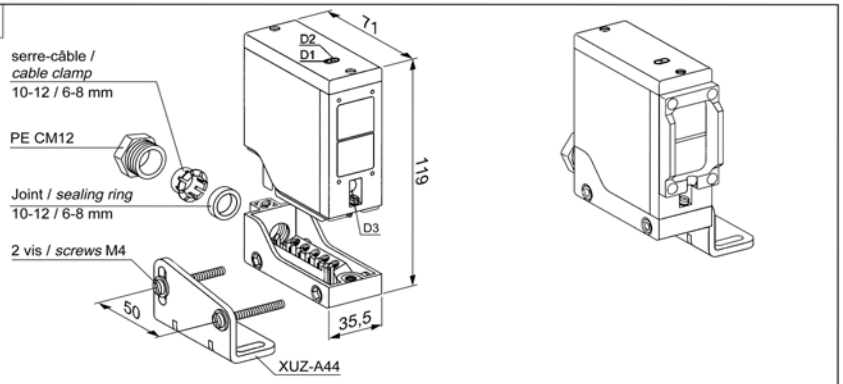
Système de proximité / *Diffuse system*

	Absence d'objet dans le faisceau / *Object absent within the beam*		Présence d'objet dans le faisceau / *Object present within the beam*	
	DEL jaune *Yellow LED*	Etat de la sortie *Output state*	DEL jaune *Yellow LED*	Etat de la sortie *Output state*
Fonction claire / *Light-on switching*	○	_⌐‾	☼	‾‾‾
Fonction sombre / *Dark-on switching*	☼	‾⌐_	○	_⌐‾

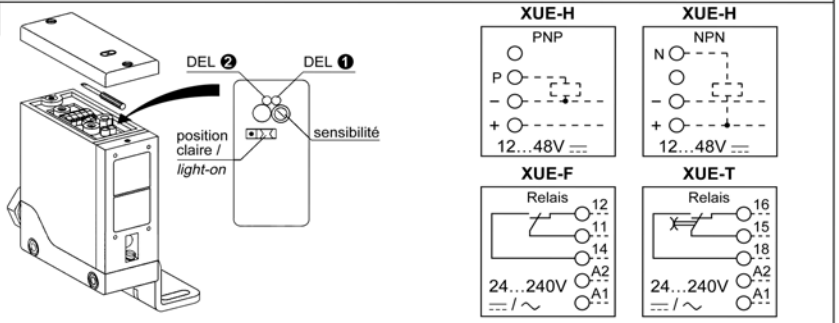
Système reflex / *Reflex system*

	Absence d'objet dans le faisceau / *Object absent within the beam*		Présence d'objet dans le faisceau / *Object present within the beam*	
	DEL jaune *Yellow LED*	Etat de la sortie *Output state*	DEL jaune *Yellow LED*	Etat de la sortie *Output state*
Fonction claire / *Light-on switching*	☼	‾⌐_	○	_⌐‾
Fonction sombre / *Dark-on switching*	○	_⌐‾	☼	‾‾‾

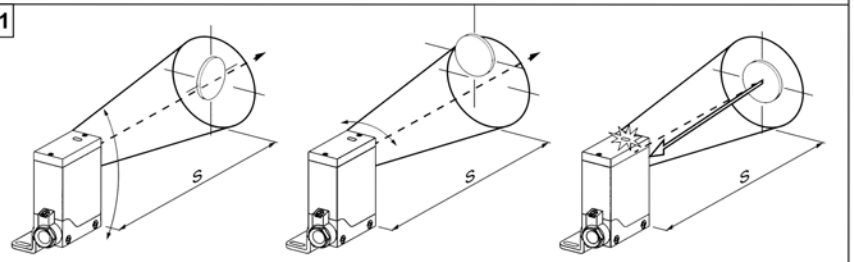
A



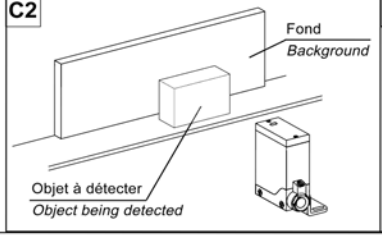
B



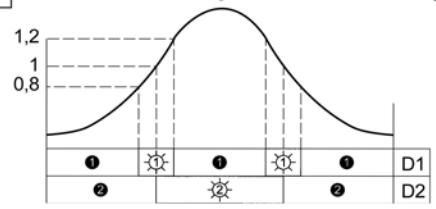
C1



C2



D **Intensité du faisceau reçu / *Received beam strenght***



English

Photo-electric detectors: reflex system, polarised reflex system, diffuse system

A **Mounting**

Fixing	Horizontal
Direct	Ø4 + standard nut
On bracket	Ø6 + standard nut

B **Connections**

- Before making any connections, check that the detector is compatible with the supply (AC or DC) and that the rated voltage indicted on the detector label is adhered to. Also, check the load current characteristics.
- Programme the switch for light-on or dark-on switching using the selector beneath the cover on top of the switch.

C **Adjustments**

• The switch incorporates 3 LEDs : 1 yellow ③ for output state, 1 red ① and 1 green ② for assisting alignment (fig. 3 and 4).

• ① and ② indicate 4 levels of received beam strength :

❶ + ❷	☼ + ❷	① + ②	❶ + ②
(both off) No beam received	on / off Weak beam received	(both on) Beam unstable	off / on Correct srength

OBTAINING OPTIMUM ALIGNMENT

C1 **Setting-up : reflex and polarised reflex systems**

Recommended reflector distances :

Reflex system : **XUE-F10031 / XUE-H10753**
+ XUZ-C80 --> 0.5 < S < 15 m
+ XUZ-C50 --> 0.05 < S < 15 m
+ XUZ-C24 --> 0.05 < S < 8 m

Polarised reflex system : **XUE-F080319**
+ XUZ-C80 --> 0.5 < S < 10 m
+ XUZ-C50 --> 0.05 < S < 10 m
+ XUZ-C24 --> 0.05 < S < 5 m

- Mount the reflector on the optical axis of the switch.
- Obtain optimal alignment either by adjusting the detector or reflector angles.
- To obtain the maximum operational reliability, rigidly mount both detector and reflector at the central point of the detection zone.

C2 **Setting-up : diffuse system**

Recommended distance :

XUE-F010315 / XUE-H017535 : --> 0 < S < 2 m (white 90%)
--> 0 < S < 1 m (grey 18%)

- Mount the detector on the same axis as the target object.
- In order to reduce background interference, adjust the sensitivity potentiometer beneath the cover on top of the switch.
- Rigidly mount the detector and its associated support.

Operating precautions

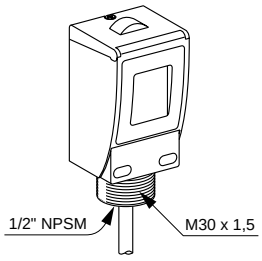
- All fixing supports must be rigid.
- The lenses must be kept clean. Correct operation of any optical system is subject to the cleanliness of the environment in which it is situated. The sensing distance of the detector will be considerably affected by mist, smoke, dust, etc.
- Cleaning the lenses : **NEVER USE** base products, aromatics, hydrocarbons or solvents.
- It is recommended that power and control circuit cabling are kept separate.

Osiris XUC-•ARCT•••

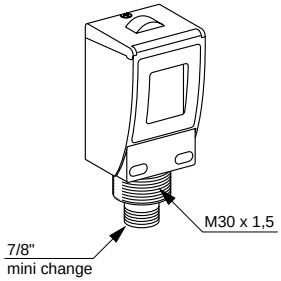
Telemecanique

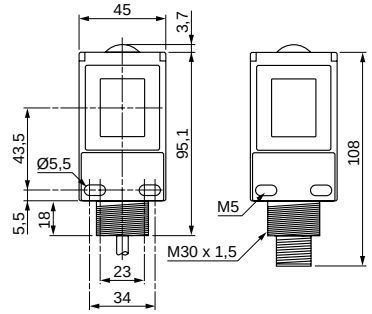
Photo-electric sensor with 1 C/O output relay and timer / Détecteur photoélectrique à sortie relais temporisé 1 OF / Photoelektronischer Sensor mit einstellbarer Zeitverzögerung 1 O.F / Detector fotoélectrico con salida relé temporizada 1 «NANC» / Sensori potoelettrici, uscita a relé con Temporizazione 1 contatto in deviazione / Detector fotoélectrico com saída por relé temporizado 1 NA/NF

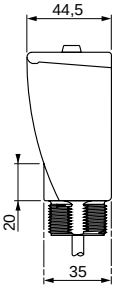
XUC-●ARCT●

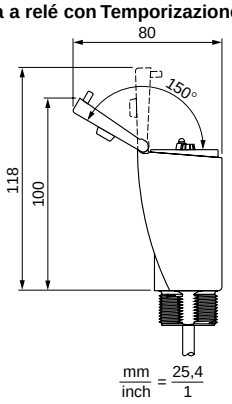


XUC-●ARCTU78



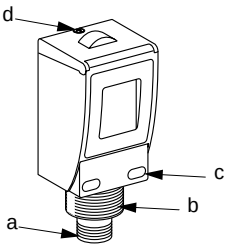


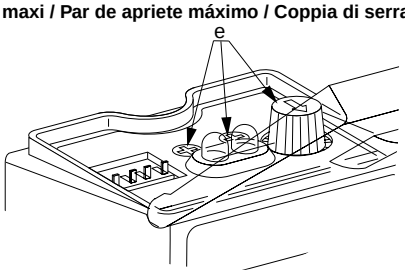




$\frac{mm}{inch} = \frac{25,4}{1}$

Tightening torque / Couple de serrage / Anzugsmoment maxi / Par de apriete máximo / Coppia di serraggio massima / Binário máximo de aperto

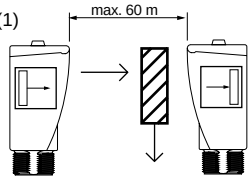




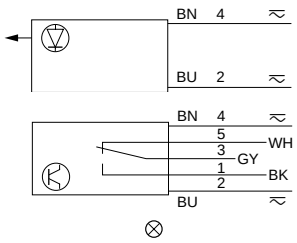
0,3 Nm (2,6 Lb.in) < a < 3 Nm (26,4 Lb.in)
b < 25 Nm (220 Lb.in)
c < 1,8 Nm (15,9 Lb.in)
0,1 Nm (0,9 Lb.in) < d < 0,3 Nm (2,6 Lb.in)
e < 0,05 Nm (0,44 Lb.in)

Electrical installation / Mise en oeuvre électrique / Elektrische Installation / Instalación eléctrica / Messa in opera elettrica / Instalação eléctrica

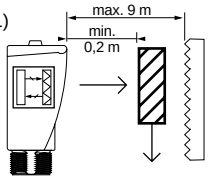
Light on (1) — max. 60 m



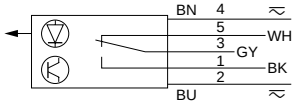
XUC-2ARCTL●



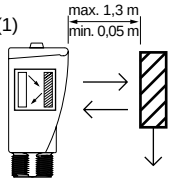
Light on (1) — max. 9 m, min. 0,2 m



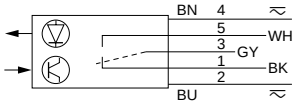
XUC-9ARCTL●



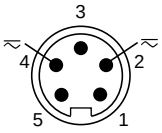
Light on (1) — max. 1,3 m, min. 0,05 m



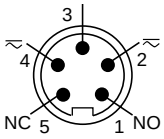
XUC-8ARCTL●



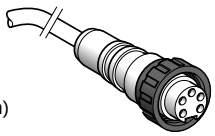
XUC-2ARCTU78T

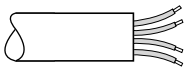


XUC-●ARCTU78



XZCP1764L2 (2 m)
XZCP1764L5 (5 m)
XZCP1764L10 (10 m)

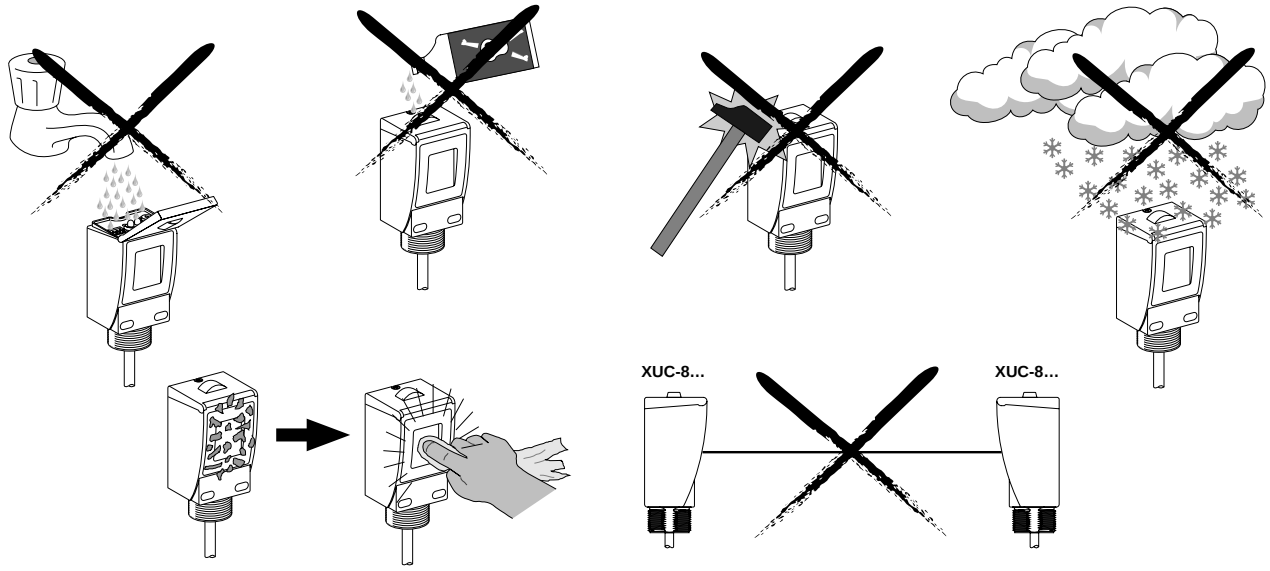




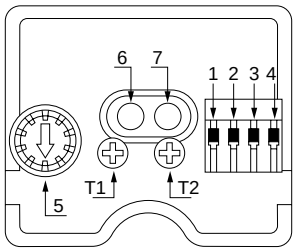
BN	Brown	Brun	Brau	Marrón	Marrone	Castanho
BU	Blue	Bleu	Blau	Azul	Blu	Azul
BK	Black	Noir	Schwarz	Negro	Nero	Preto
WH	White	Blanc	Weiß	Blanco	Bianco	Branco
GY	Grey	Gris	Grau	Gris	Grigio	Cinzento

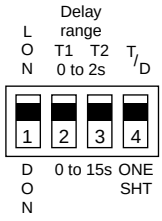
Voltage limit / limites de tension / Betriebsspannung / Límites de tensión / Limiti di rensione / Limite de tensão	20 ... 264 V ≂
Switching capacity / Courant commuté / Schaltstrom / Intensidad conmutada / Corrente commutata / Corrente comutada	3 A
Power consumption / Puissance consommée / Leistung / Potencias consumida / Potenza consumata / Potencia consumida	2 W
Relay contact : max. voltage rating / Tension maxi sur les contacts du relais / Maximale Spannung an den Hilfskontakten des relais / Tensión máxima en los contactos del relé. / Tensione massima sui contatti del relé.	250 V
Delays / Retards / Verzögerungszeiten / Retardos / Ritardo / Atrasos	
Response / A l'action / Einschaltzeit / Al accionamiento / All'eccitazione / á acção	< 25 ms
Recovery / Au relachement / Ausschaltzeit / Al desaccionamiento / Alla diseccitazione / Ao repouso	< 25 ms
First up / A la disponibilité / Bereitschaftsverzögerung / Ala disponibilidad / All' alimentazione / A disponibilidade	< 60 ms
Max. switching frequency / Fréquence maxi. de commutation / Schaltfrequenz / Frecuencia máxima de conmutación / Frequenza a di intervento/ Frequência maxima de comutação	< 20 Hz
Ambient air temperature / Température de l'air ambiant / Umgebungstemperatur / Temperatura ambiente / Temperatura ambiente / Temperatura ambiente	°F = °C x 1,8 + 32
Operation / Pour fonctionnement / Betrieb / Para funcionamiento / Utilizzabile / Para funcionamento	- 25...+ 55°C
Storage / Pour stockage / Lagerung / Para almacenamiento / Di conservazione / Para armazenamento	- 40...+ 70°C
Degree of protection / Degré de protection / Schutzart / Grado de protecc6n / Grado di protezione / Índice de protecção	NEMA 3,4,4X,6,6P,12,13
Cover close / Couvercle fermé / Deckel geschlossen / Con tapa de protección cerrada / Coperchio chiuso/ Tampa fechada	IP 67 (IEC 60529)
Cover open / Couvercle ouvert / Deckel offen / Con tapa de protección abierta / Coperchio apperto / Tampa aberta	IP 30 (IEC 60529)

Installation précautions / Précautions de mise en oeuvre / Vorsicht bei der inbetriebnahme / Precauciones para la instalación / Consigli di messa in opera / Precauçaõ de instalaçaõ



Programming / Programmation / Programmierung / Programación / Selezione / Programação





1 - Light-on - Dark-on / Fonction claire - Fonction sombre / Hellschaltung - Dunkelschaltung / Función luz - Función sombra / Luce-on / Buio-on / Comutação clara - Comutação sombra

2 - 3

T1	T2
2 : 0 ... 2s	3 : 0 ... 2s
2 : 0 ... 15s	3 : 0 ... 15s

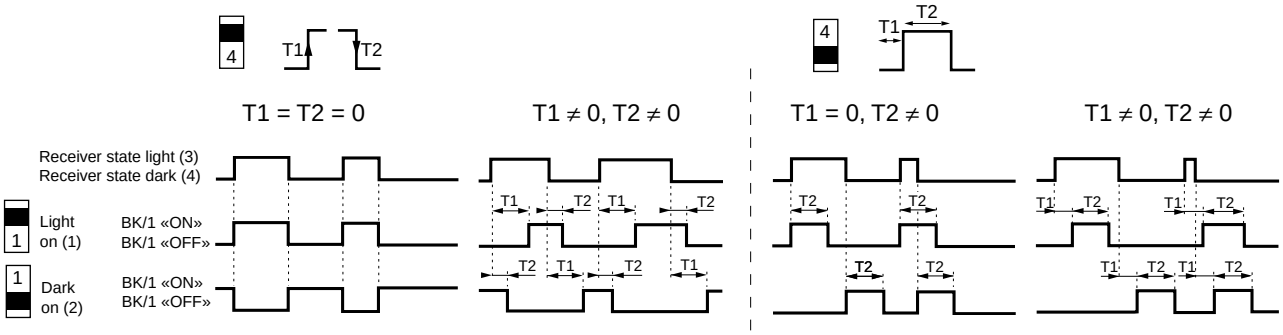
4 - T1 T2 / T1 T2

5 - Sensitivity adjustment / réglage de la portée / Einstellung des Nutzschaltabstand / Reglaje del alcance de detección / Regolazione della distanza / Regulação do alcance

6 - Yellow LED : output on / DEL jaune de sortie / Schaltzustandsanzeige LED gelb / LED amarillo de estado de la salida / LED giallo uscita / LED amarelo da saída

7 - Red LED : unstable signal / DEL rouge d'instabilité / Stabilitätsanzeige LED rot / LED rojo de inestabilidad / LED rosso rilevamento stabile / LED vermelho de instabilidade

Time delay / Temporisation / Verzögerungszeiten / Temporización / Temporizzazione / Temporização



⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

These photoelectric presence sensors do NOT include self-checking redudant circuitry. A sensor malfunction can result in either an energized or a de-energized sensor output condition.

Do not use these products as sensing devices for personnel protection.

The use of these sensors as safety devices can result in death or serious injury.

(1) Fonction claire / Hellschaltung / Función luz / Luce-on / Comutação clara

(2) Fonction sombre / Dunkelschaltung / Función sombra / Buio-on / Comutação sombra

(3) Etat du récepteur éclairé / Zustand des Ausgangs bei durchgesteuertem Sensor / Estado del receptor iluminado / Stato del ricevitore entrata luce / Estado do receptor iluminado

(4) Etat du récepteur non éclairé / Zustand des Ausgangs bei nicht durchgesteuertem Sensor / Estado del receptor no iluminado / Stato del ricevitore luce blocata / Estado do receptor não iluminado

W91560181011 A06 2/2

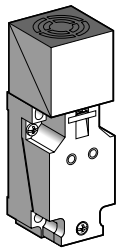
08-2003

XS7-C / XS8-C

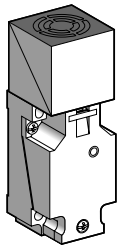
Telemecanique

Inductive proximity sensors / Détecteurs de proximité inductifs
Induktive Näherungsschalter / Detectores de proximidad inductivos
Interruttori di prossimità induttivi / Detectores de proximidade indutivos

XS7/8-C40•C44•



XS7/8-C40•P2••



⚠ DANGER / PELIGRO / DANGER

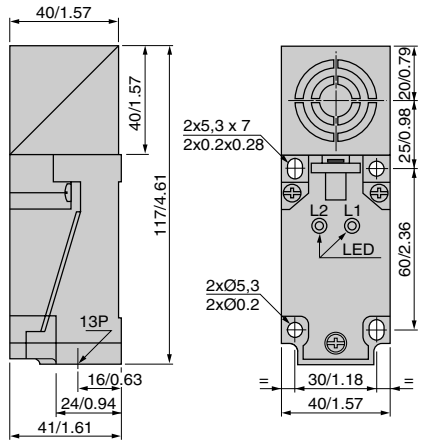
HAZARDOUS VOLTAGE Disconnect all power before servicing equipment. **Electric shock will result in death or serious injury.**	**TENSION PELIGROSA** Desenergice el equipo antes de realizarle servico. **Una descarga eléctrica podrá causar la muerte o lesiones serias.**	**TENSION DANGEREUSE** Couper l'alimentation avant de travailler sur cet appareil. **Une électrocution entrainera la mort ou des blessures graves.**

(UL) Listing and (CSA) Certification :
Applicable on proximity switches bearing the UL and CSA marks only.
Enclosure : Type 12, 4X indoor use only

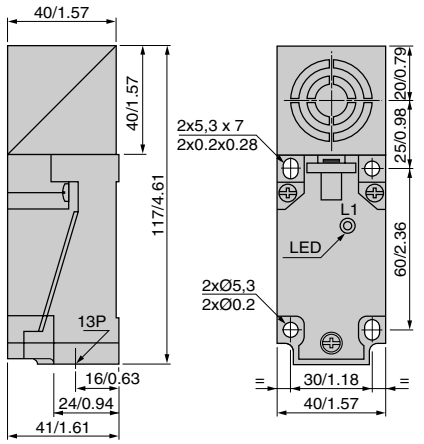
Mechanical installation
Mise en œuvre mécanique
Mechanische Installation
Instalación mecánica
Messa in opera meccanica
Instalação mecânica

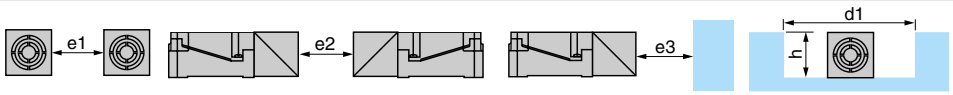
mm / in

XS7/8-C40•C44•



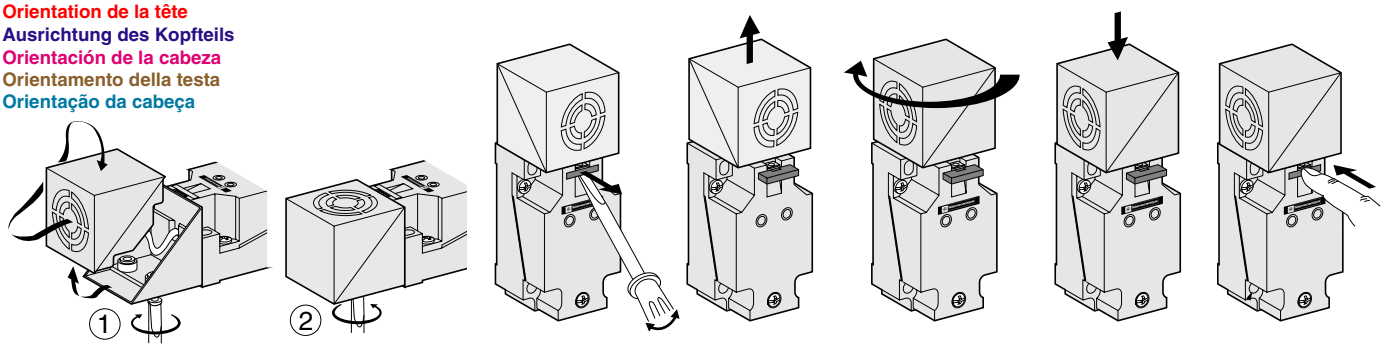
XS7/8-C40•P2••



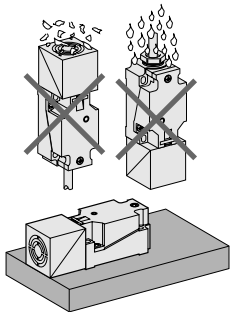


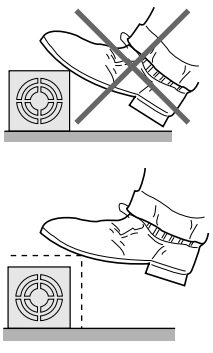
	Sn	e1 ≥	e2 ≥	e3 ≥	d1 ≥, h ≤
XS7-C40	15 / 0.59	40 / 1.57	80 / 3.15	45 / 1.77	40 / 1.57, 40 / 1.57
XS7-C40••••9	20 / 0.79	120 / 4.72	240/ 9.45	60/ 2.36	40 / 1.57, 40 / 1.57
XS8-C40	20 / 0.79	80 / 3.15	160 / 6.30	60 / 2.36	200 / 7.87, 40 / 1.57
XS8-C40••••9	40 / 1.57	160 / 6.30	320 / 12.60	120/ 4.72	200 / 7.87, 40 / 1.57

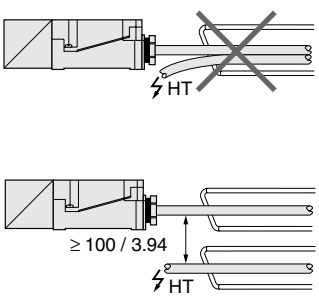
Head orientation
Orientation de la tête
Ausrichtung des Kopfteils
Orientación de la cabeza
Orientamento della testa
Orientação da cabeça



Installation precautions
Précautions de mise en œuvre
Vorsicht bei der Inbetriebnhame
Precautión de instalatión
Consigli di messa in opera
Precaução de instalação

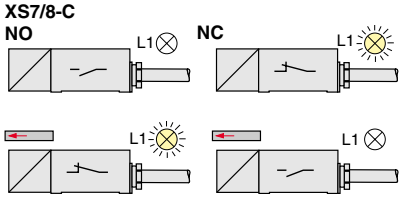




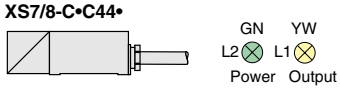


Indication, Signalisation
Funktionsanzeige, Señalización
Segnalazione, Sinalização

XS7/8-C



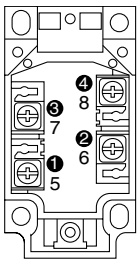
XS7/8-C•C44•



	YW/L1	Yellow	Jaune	Gerb	Amarillo	Giallo	Amarelo
	GN/L2	Green	Vert	Grün	Verde	Verde	Verde

W91411918011 1 A08 1/2

Electrical installation
Mise en œuvre électrique
Elektrische Installation
Instalación eléctrica
Messa in opera elettrica
Instalação elétrica



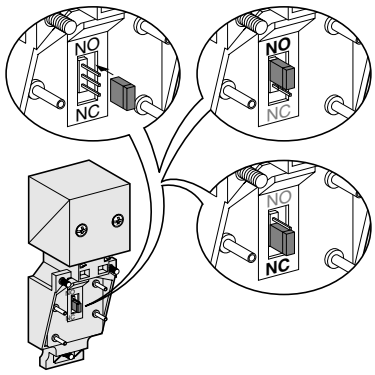
2 x 1,5 mm² Max.

	XS7/8-C40PC440/449 **XS7/8-C40NC440/449**	**XS7-C40KPM40**	**XS7/8-C40D•210**	**XS7/8-C40MP230 (*)**	**XS7/8-C40FP260 (*)**
Voltage limits **(1)**	⎓ 10...58 V	⎓ 10...38 V	⎓ 10...58 V	≂ 20...264 V	∿ 20...264 V
Load switching capacity **(2)**	0...200 mA	0...200 mA	1,5...100 mA	⎓ 5...200 mA, ∿ 5...300 mA	5...500 mA
Voltage drop **(3)**	≤ 2 V	≤ 2,6 V	≤ 4 V	≤ 5,5 V	≤ 5,5V
Leakage current **(4)**	–	–	≤ 0,5 mA	≤ 0,8 mA / 24 V, ≤ 1,5 mA / 120 V	≤ 1,5 mA
Current consumption **(5)**	≤ 10 mA	≤ 15 mA	–	–	–
Operating temperature Température de fonctionnement Betriebstemperatur Temperatura de funcionamiento Temperatura di funzionamento Temperatura de funcionamento	**- 25 ... + 70 °C / - 13 ... + 158 °F**	**0 ... + 50 °C / - 32 ... + 122 °F**	**- 25 ... + 70 °C / - 13 ... + 158 °F**		

(1) Limite de tension / Betriebsspannung / Límites de tensión / Limiti di tensione / Limites de tensão
(2) Courant commuté / Schaltstrom / Intensidad conmutada / Corrente commuta / Corrente comutada
(3) Tension de déchet / Spannungsfall (Ausgang durchgesteuert) / Tensión residual / Caduta di tensione / Tensão de defeito
(4) Courant résiduel / Reststrom (Ausgang gesperrt) / Intensidad residual / Corrente residual / Corrente residual
(5) Courant consommé / Leerlaufstrom / Intensidad consumida / Corrente consumata / Corrente consumida

(*) Without short circuit protection
Non protégés court-circuit
Ohne Kurzschlußschutz
No proteción cortocircuito
Non protetto corto-circuito
Não protecção curto-circuito

Programmable NO / NC
Programmation NO / NC
Programmierbar NO / NC
Programable NO / NC
Programmabile NO / NC
Programáveis NO / NC



RTE Series — Analog Timers

Key features of the RTE series include:

- **20 time ranges and 10 timing functions**
- **Time delays up to 600 hours**
- **Space-saving package**
- **High repeat accuracy of ± 0.2%**
- **ON and timing OUT LED indicators**
- **Standard 8- or 11-pin and 11-blade termination**
- **2 form C delayed output contacts**
- **10A Contact Rating**

TÜV PRODUCT SERVICE Cert. No. E9950913332316 (EMC, RTE)
cert. No. BL960813332355 (LVD, RTE)

c UL us UL Listed
File No. E66043

CE

General Specifications

Operation System		Solid state CMOS Circuit	
Operation Type		Multi-Mode	
Time Range		0.1sec to 600 hours	
Pollution Degree		2 (IE60664-1)	
Over voltage category		III (IE60664-1)	
Rated Operational Voltage	AF20	100-240V AC(50/60Hz)	
	AD24	24V AC(50/60Hz)/24V DC	
	D12	12V DC	
Voltage Tolerance	AF20	85-264V AC(50/60Hz)	
	AD24	20.4-26.4V AC(50/60Hz)/21.6-26.4V DC	
	D12	10.8-13.2V DC	
Input off Voltage		Rated Voltage x10% minimum	
Ambient Operating Temperature		-20 to +65ºC (without freezing)	
Ambient Storage and Transport Temperature		-30 to +75ºC (without freezing)	
Relative Humidity		35 to 85%RH (without condensation)	
Atmospheric Pressure		80kPa to 110kPa (Operating), 70kPa to 110kPa (Transport)	
Reset Time		100msec maximum	
Repeat Error		±0.2%, ±20msec*	
Voltage Error		±0.2%, ±20msec*	
Temperature Error		±0.5%, ±20msec*	
Setting Error		±10% maximum	
Insulation Resistance		100MΩ minimum (500V DC)	
Dielectric Strength		Between power and output terminals: 2000V AC, 1 minute Between contacts of different poles: 2000V AC, 1 minute Between contacts of the same pole:1000V AC, 1 minute	
Vibration Resistance		10 to 55Hz amplitude 0.5mm2 hours in each of 3 axes	
Shock Resistance		Operating extremes: 98m/sec^2 (10G) Damage limits: 490m/sec^2 (50G) 3 times in each of 3 axes	
Degree of Protection		IP40 (enclosure) (IEC60529)	
Power Consumption (Approx.)	TYPE	RTE-P1, -B1	RTE-P2, -B2
	AF20 120V AC/60Hz	6.5VA	6.6VA
	AF20 240V AC/60Hz	11.6VA	11.6VA
	24V AC 60Hz/DC	3.4VA/1.7W	3.5VA/1.7W
	D12	1.6W	1.6W
Mounting Position		Free	
Dimensions	RTE-P1, P2	40Hx 36W x 77.9D mm	
	RTE-B1, B2	40Hx 36W x 74.9D mm	

Weight (Approx.)	RTE-P1	RTE-P2	RTE-B1, -B2
	87g	89g	85g

**For the value of the error against a preset time, whichever the largest.*

Contact Ratings

Contact Configuration		2 Form C, DPDT (Delay output)
Allowable Voltage / Allowable Current		240V AC, 30V DC / 10A
Maximum Permissible Operating Frequency		1800 cycles per hour
Rated Load	Resistive	10A 240V AC, 30V DC
	Inductive	7A 240V AC, 30V DC
	Horse Power Rating	1/6 HP 120V AC, 1/3 HP 240V AC
Life	Electrical	500,000 op. minimum (Resistive)
	Mechanical	50,000,000 op. minimum

RTE Table of Contents

Part Numbering Guide

RTE series part numbers are composed of 4 part number codes. When ordering a RTE series part, select one code from each category.
Example: RTE-P1AF20

RTE	—	P	1	AF20
① Series		② Terminal Style	③ Function Group	④ Input Voltage

Part Numbers: RTE Series

	Description	Part Number Code	Remarks
① **Series**	RTE series	RTE	For internal circuits, see next page.
② **Terminal Style**	Pin	P	Select one only.
	Blade	B	
③ **Function Group**	ON-delay, interval, cycle OFF, cycle ON	1	Each function group has different timing functions. See page G-4.
	ON-delay, cycle OFF, cycle ON, signal ON/OFF delay, OFF-delay, one-shot	2	
④ **Input Voltage**	100 to 240V AC(50/60Hz)	AF20	
	24V AC(50/60Hz)/24V DC	AD24	
	12V DC	D12	

Part Number List

Part Numbers

	Power Triggered		Start Input Triggered	
Voltage	**8-Pin**	**Blade**	**11-Pin**	**Blade**
12V DC	RTE-P1D12	RTE-B1D12	RTE-P2D12	RTE-B2D12
24V AC/DC	RTE-P1AD24	RTE-B1AD24	RTE-P2AD24	RTE-B2AD24
100-240V AC	RTE-P1AF20	RTE-B1AF20	RTE-P2AF20	RTE-B2AF20

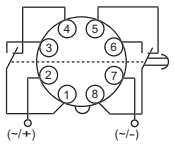
Time Range Table

Time Range Determined by Time Range Selector & Dial Selector

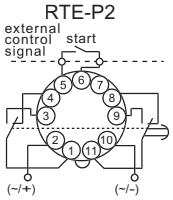
	Dial	0 - 1	0 - 3	0 - 10	0 - 30	0 - 60
Range	Second	0.1 sec - 1 sec	0.1 sec - 3 sec	0.2 sec - 10 sec	0.6 sec - 30 sec	1.2 sec - 60 sec
	Minute	1.2 sec - 1 min	3.6 sec - 3 min	12 sec - 10 min	36 sec - 30 min	1.2 min - 60 min
	Hour	1.2 min - 1 hr	3.6 min - 3 hr	12 min - 10 hr	36 min - 30 hr	1.2 hr - 60 hr
	10 Hours	12 min - 10 hr	36 min - 30 hr	2 hr - 100 hr	6 hr - 300 hr	12 hr - 600 hr

Timing Diagrams

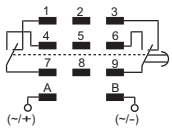
RTE-P1



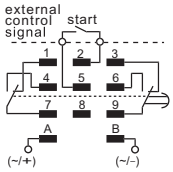
RTE-P2



RTE-B1



RTE-B2

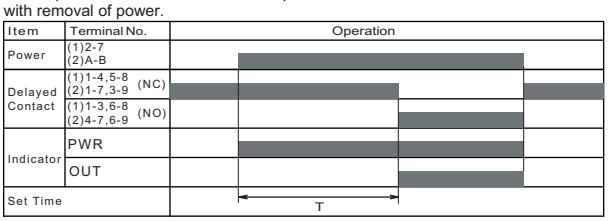


1. RTE-P2: Do not apply voltage to terminals #5, #6 & #7.
2. RTE-B1, -B2: Do not apply voltage to terminals #2, #5 & #8.
3. IDEC sockets are as follows: RTE-P1: SR2P-06 pin type socket, RTE-P2: SR3P-05* pin type socket, RTE-B1, -B2: SR3B-05* blade type socket, (*-may be followed by suffix letter A,B,C or U).*

RTE-P1, -B1

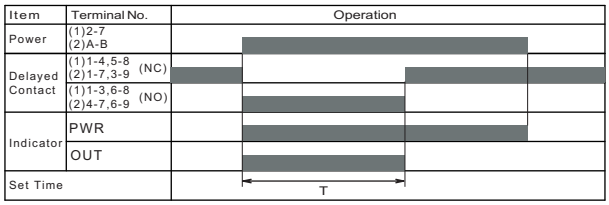
A: ON-Delay 1 (power start)

Set timer for desired delay, apply power to coil. Contacts transfer after preset time has elapsed, and remain in transferred position until timer is reset. Reset occurs with removal of power.



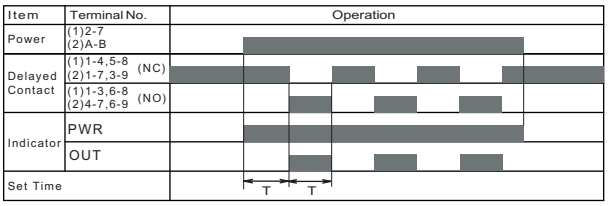
B: Interval (power start)

Set timer for desired delay, apply power to coil. Contacts transfer immediately, and return to original position after preset time has elapsed. Reset occurs with removal of power.



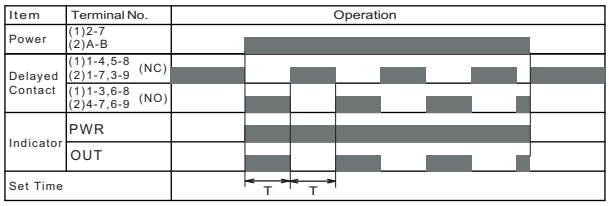
C: Cycle 1 (power start, OFF first)

Set timer for desired delay, apply power to coil. First transfer of contacts occurs after preset delay has elapsed, after the next elapse of preset delay contacts return to original position. The timer now cycles between on and off as long as power is applied (duty ratio 1:1).



D: Cycle 3 (power start, ON first)

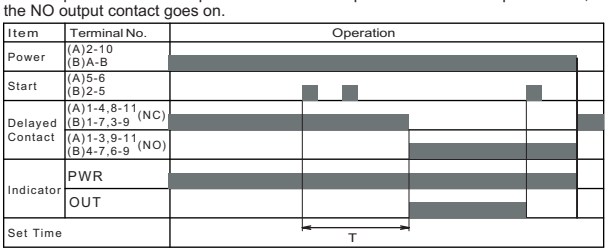
Functions in same manner as Mode C, with the exception that first transfer of contacts occurs as soon as power is applied. The ratio is 1:1. Time On = Time Off



RTE-P2, -B2

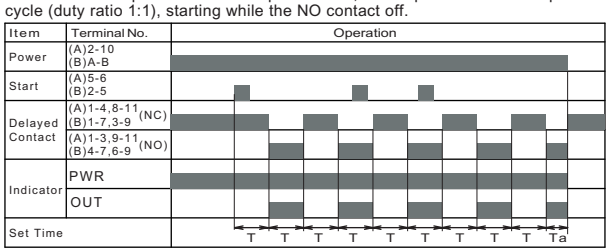
A: ON-Delay 2 (signal start)

When a preset time has elapsed after the start input turned on while power is on, the NO output contact goes on.



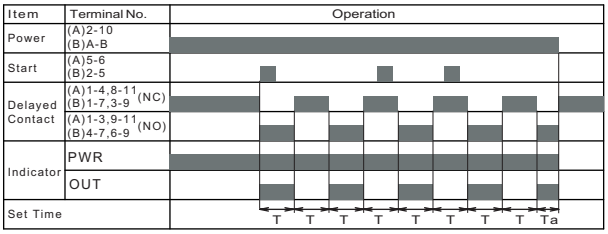
B: Cycle 2 (signal start, OFF first)

When the start input turns on while power is on, the output oscillates at a preset cycle (duty ratio 1:1), starting while the NO contact off.



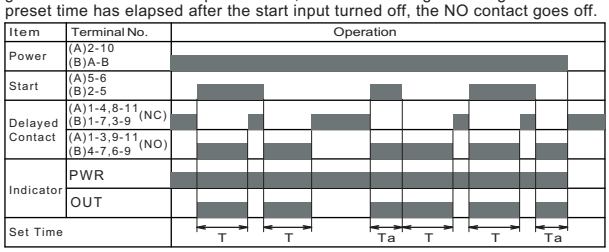
C: Cycle 4 (signal start, ON first)

When the start input turns on while power is on, the NO contact goes on. The output oscillates at a preset cycle (duty ratio 1:1).



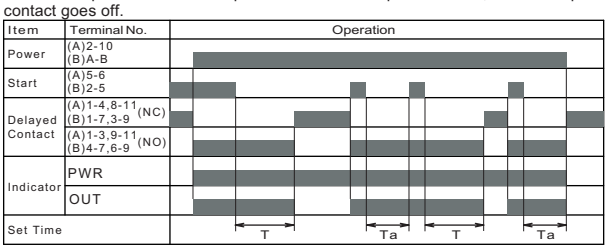
D: Signal ON/OFF-Delay

When the start input turns on while power is on, the NO output contact goes on. When a preset time has elapsed while the start input remains on, the output contact goes off. When the start input turns off, the NO contact goes on again. When a preset time has elapsed after the start input turned off, the NO contact goes off.



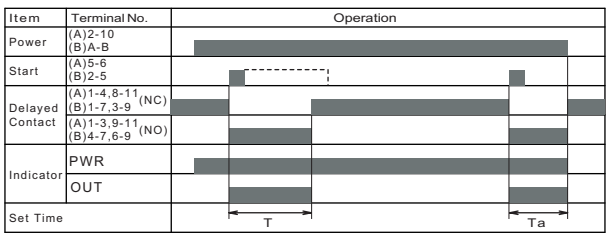
E: Signal OFF-Delay

When power is turned on while the start input is on, the NO output contact goes on. When a preset time has elapsed after the start input turned off, the NO output contact goes off.



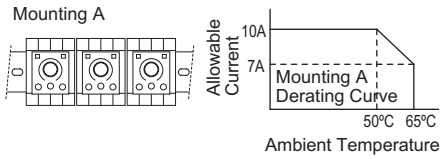
F: One-Shot (signal start)

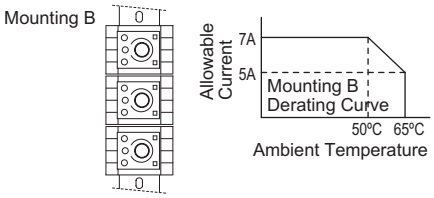
When the start input turns on while power is on, the NO output contact goes on. When a preset time has elapsed, the NO output contact goes off.



Note : T=Set Time, Ta=Shorter than set time, (1): RTE-P1, (2): RTE-B1, (A): RTE-P2, (B): RTE-B2

Temperature Derating Curves





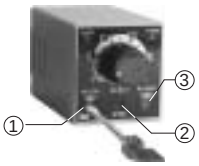
Instructions

Types

RTE-P1AF20

- Power Voltage: AF20: 100 to 240V AC(50/60Hz); AD24: 24V AC(50/60Hz)/24V DC; D12: 12V DC
- Connection type: P: Pin; B: Blade
- Operation Mode
  - 1: No Control Signal: A: ON-Delay 1; B: Interval; C: Cycle 1; D: Cycle 3
  - 2: Control Signal: A: ON-Delay 2; B: Cycle 2; C: Cycle 4; D: Signal ON/OFF-Delay; E: Signal OFF-Delay; F: One-Shot

Switch Settings

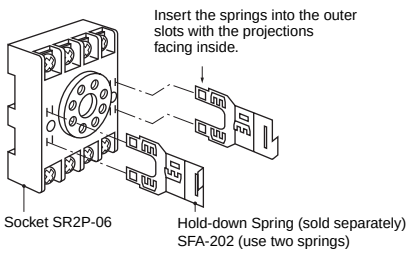


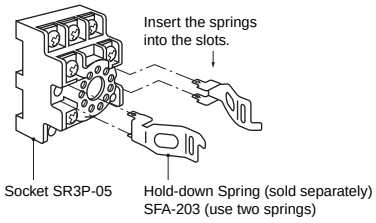
① Operation Mode Selector
② Scale Selector
③ Time Range Selector

1. Turn the selectors securely using a flat screwdriver 4mm wide (maximum). Note that incorrect setting may cause malfunction. Do not turn the selectors beyond their limits.
2. Since changing the setting during timer operation may cause malfunction, turn power off before changing.

Installation of Hold-Down Springs

DIN Rail Mount Socket





Safety Precautions

Special expertise is required to use Electronic Timers.

- All Electronic Timers are manufactured under IDEC's rigorous quality control system, but users must add a backup or fail safe provision to the control system when using the Electronic Timer in applications where heavy damage or personal injury may occur should the Electronic Timer fail.
- Install the Electronic Timer according to instructions described in this catalog.
- Make sure that the operating conditions are as described in the specifications. If you are uncertain about the specifications, contact IDEC in advance.
- In these directions, safety precautions are categorized in order of importance under Warning and Caution.

Warnings

Warning notices are used to emphasize that improper operation may cause severe personal injury or death.

- Turn power off to the Electronic timer before starting installation, removal, wiring, maintenance, and inspection on the Electronic Timer.
- Failure to turn power off may cause electrical shocks or fire hazard.
- Do not use the Electronic Timer for an **emergency stop circuit** or **interlocking circuit**. If the Electronic Timer should fail, a machine malfunction, breakdown, or accident may occur.

Caution

Caution notices are used where inattention might cause personal injury or damage to equipment.

- The Electronic Timer is designed for installation in equipment. Do not install the Electronic Timer outside equipment.
- Install the Electronic Timer in environments described in the specifications. If the Electronic Timer is used in places where it will be subjected to high-temperature, high-humidity, condensation, corrosive gases, excessive vibrations, or excessive shocks, then electrical shocks, fire hazard, or malfunction could result.
- Use an IEC60127-approved fuse and circuit breaker on the power and output line outside the Electronic Timer.
- Do not disassemble, repair, or modify the Electronic Timer.
- When disposing of the Electronic Timer, do so as industrial waste.