



OPERATION AND MAINTENANCE MANUAL
LO VOLUME MANUAL BURST TEST SYSTEM

2015

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The purpose of this manual is to supplement, **BUT NOT TO REPLACE** the services of qualified personnel to start up and adjust this equipment.

Persons without previous experience with this equipment should not attempt the initial adjustment and check-out procedures required until this installation is considered ready for operation, by a qualified operator.

Each cabinet carries an individual serial number on the nameplate mounted on the cabinet. Please refer to this number when ordering replacement parts or when requesting any further information.

A copy of the complete bill of material applicable to each cabinet and a wiring diagram are shipped with each piece of equipment.

SAFETY PRECAUTIONS

This manual contains important information that **ALL** users should know and understand before using the equipment

This information relates to **USER SAFETY** and **PREVENTING EQUIPMENT PROBLEMS**.

To help you recognize this information, we use the following terms to draw your attention to certain equipment labels and portions of this manual.

Please pay special attention to any label or information that is highlighted by one of these terms:

===== **WARNING** =====
OR
===== **CAUTION** =====

Important information that tells how to **PREVENT DAMAGE** to equipment, and or how to avoid a situation that may cause **PERSONAL** injury.

===== **NOTE** =====

Information that you should pay special attention to whenever you are using or operating this equipment.

3.0

SET UP

3.1 Remove the shipping crate and packing material carefully from the BURST SUPPLY CABINET. Do not discard the packing material until all the items on the packing list items have been accounted for.

3.2 Use a fork lift to remove the Burst Supply Cabinet from the shipping pallet and position the cabinet in the desired location and level the cabinet. Be sure to allow adequate floor space for maintenance.

NOTE: Testing Area requires floor drains.

When transferring the burst supply cabinet from the shipping pallet or from location to location, use moving blankets between the cabinet and the moving machinery and follow accepted practices to avoid damage to the equipment.

4.0

DESCRIPTION

This Pressure Supply System is primarily designed for the BURST TESTING of plastic pipe with a low expansion rate.

The air powered water pump provides and an accumulator provides the volume capacity necessary. (3-5000 PSI pressure depending on your rating)

The accumulators can vary from 1 gallon to two 10 gallon units or larger depending upon the volume needed for the individual testing requirements.

The motorized regulator controls the rate of pressurization until the bursting occurs.

A pressure switch automatically controls the time recorder to record elapsed time till failure occurs.

A pressure gauge with a max pressure pointer or digital display shows the maximum specimen pressure.

The water filter on the supply system protects the system from dirt particles to help keep maintenance to a minimum.

5.0

CONTROLS

5.1 Main Power switch controls all of the electrical power to the burst test cabinet. It is located on the side of the cabinet. The Electrical cord from the Burst must be plugged into a Ground Fault Receptacle.

5.2 Elapse Time Recorder and Red Timer Light are activated by a pressure switch to indicate time until the specimen bursts or the elapse time in a static test. A pressure on-off switch controls the electrical power to them. Press the button on the time recorder to reset the elapse time recorder to zero.

5.3 The Pressure Switch is located inside the cabinet and mounted next to the pressure gauge. This switch controls the elapsed time recorder and the red timer light once the starting pressure is initiated. This starting pressure is usually 75 PSI.

===== **CAUTION** =====
**CONSULT THE FACTORY BEFORE MAKING ANY
ADJUSTMENTS TO THE PRESSURE SWITCH SETTINGS.**

This pressure switch can be adjusted by the turning the knurled ring if a different starting pressure is desired. Shut off the electrical power before making any adjustments.

5.4 Motorized Pressure Regulator Controls

On-Off Switch - Controls power to the motorized pressure regulator.

Direction (Pressurize/Retract) Switch- Controls the motor direction operating the pressure regulator.

Pressurize Position - increases the pressure to the specimen.

Center Position - holds pressure at the desired level.

Retract Position - returns the regulator to the closed position.

Pressure Rate Control - Allows adjustment of the pressurization rate as desired to perform the burst test. Start with the setting at mid range and adjust as required.

Full Pressure Indicator Light - Indicates when the motor drive has stopped after driving the pressure regulator to the full output limit. (Max. Pressure).

Pressurizing Indicator Light - Indicates that the motor drive is increasing the pressure to the specimen.

Full Retract Indicator Light - Indicates that the motor drive has returned the regulator to the starting (closed or full retract) position.

5.5 Pressure Gage - Indicates the pressure on the specimen as adjusted by the pressure regulator. This gage is active in both burst testing and static testing. The Max pointer (Red Needle mounted through the gage lens) rises with the Black pressure needle as the pressure increases. After the specimen bursts, the Max Pointer remains at the burst pressure.

5.6 Pressure Gage (Supply) - Indicates the pressure available in the accumulator.

5.7 High Pressure Shut-Off - Controls the high pressure water from the pumping system to the burst test controls.

5.9 Fill Valve - Allows the burst supply system to fill the test specimen before pressurizing. Open the fill valve to fill the specimen. Open the specimen's purge valve to bleed the air from the system. Close the fill valve when water flows from the purge valve. Then close the purge valve. A check valve prevents high pressure feed back to the water inlet of the pump should the fill valve be left open after filling the specimens.

5.10 High Pressure Pump - Is an air operated high volume water pump, which provides the high pressure water supply for the burst system. Refer to the manufactures instructions for more specific information about the pump.

5.11 High Pressure Relief Valve - Limits the maximum pressure at the pump. The relief valve discharges the water into the drain outlet to control the maximum pressure.

===== **WARNING** =====

Immediate attention is needed if this valve starts relieving high pressure. Shut off the air to the system and bleed off the high pressure by slowly opening the High Pressure Drain valve on the side the cabinet. Check system thoroughly before returning to service.

===== **NOTE** =====

Avoid running the pump without the water supply turned on.

Operate the pump only when testing the specimens.

TO STOP THE PUMP, TURN OFF THE COMPRESSED AIR SUPPLY TO THE PUMP.

6.0

INSTALLATION

6.1 Connect the water supply line into the "WATER SUPPLY" inlet port on the side of the cabinet, from the customer provided shut off hand valve. It is recommended that additional water filters be added as required to provide clean water to the system.

===== **WARNING** =====

ALWAYS CONNECT THE WATER SUPPLY FIRST, before applying the compressed air to the system. The pumping system will start as soon as air pressure is supplied to the pump. Damage to the pump may result if the pump is run dry. 40 PSI is the recommended supply water pressure.

Use minimum 1/2" I.D. fittings. Using smaller size fittings could reduce the capacity of the pump.

6.2 Connect the high pressure supply outlet and return to the burst fixture. Use only suitable high pressure hose, tubing and fittings, made for water service.

6.3 Start the supply of water into the unit. Open the Fill Valve and High Pressure Shut-Off Valve to purge any air that may be inside the controls.

6.4 Connect the compressed air supply line to the inlet of the air regulator. Connect the outlet side to the "AIR SUPPLY" port on the side of the cabinet. Air pressure is 50/1 ratio . If you want 2500psi high pressure water, the regulated air should be around 50psi.

===== **WARNING** =====

NEVER SET PRESSURE AND WALK AWAY. THIS SETTING MUST BE DONE OVER A COUPLE HOURS. BRING THE PRESSURE UP SLOWLY. HGI TRAINED TECHNICIANS WILL SET THIS UPON INSTALLATION.

6.5 Plug in the electrical power cable to the customer's power outlet.

6.6 Normal electrical requirements are 120 Volt,60 Hertz,1 Phase

OPERATION

7.0 BURST TESTING OF A SPECIMEN

- A. Turn power ON. Full retract light should be on.
- B. INSURE that the High Pressure Shut-off Valve is OFF, the MOTOR ON-OFF Toggle Switch is OFF and the Fill Valve is OFF.
- C. TO FILL the SPECIMEN with water:
 - 1. Hook up the sample in the burst fixture.
 - 2. OPEN the customer supplied BLEED-OFF VALVE.
 - 3. OPEN the FILL VALVE on front panel.
 - 4. When all the air has been displaced by water in the sample, CLOSE the FILL VALVE.
 - 5. CLOSE the BLEED-OFF VALVE.
 - 6. Be sure enclosure lid or fixture door is closed.
- D. TO BURST TEST the SPECIMEN: (ie: blow it up)
 - 1. Reset the Elapse Time Recorder to Zero.
 - 2. Reset the Peak Pressure to Zero.
 - 3. Set the Pressure Rate Control. (This will be determined by customer based on size, material and wall thickness to allow sample to yield within 60-70 seconds)
 - 4. Turn the HIGH PRESSURE VALVE ON,
 - 5. Turn the MOTOR TOGGLE SWITCH ON
 - 6. Turn the DIRECTION SWITCH to PRESSURIZE.

7. When the test begins, the Red Test Light will LIGHT, the Elapse Time recorder will start and the pressure to the specimen will build until the burst occurs or highest pressure the system can deliver is reached.

===== CAUTION =====

8. IMMEDIATELY AFTER THE SPECIMEN BURSTS or the highest pressure is reached, turn the HIGH PRESSURE VALVE OFF.

- 9. Move the Direction Switch to RETRACT, set the Pressure Rate Control to 100%.
- 10. If the specimen burst, read where the MAX POINTER is on the test gauge, record this PRESSURE and the TIME, then RESET the needle to zero.

===== CAUTION =====

**DO NOT REMOVE SAMPLE
UNTIL TEST PRESSURE READS ZERO**

11. If specimen DID NOT burst. Relieve pressure from the specimen by opening the bleed valve. When the RED FULL RETRACT light comes on, open then close the HIGH PRESSURE VALVE. Record the PRESSURE and the TIME to zero display. Remove specimen.

8.0

MAINTENANCE

REFER TO THE DRAWINGS AND BILLS OF MATERIAL FOR THE PART NAMES, NUMBERS, AND MANUFACTURER'S INFORMATION THAT IS SUPPLIED FOR THE MAJOR COMPONENTS.

- 8.1 OILING - The MaxPro pumps do not need any oil.
- 8.2 WATER SUPPLY FILTER - Inspect water filter monthly and replace as needed.
- 8.3 PUMP - Maintain in accord with the manufacturer's required maintenance recommendations.
- 8.4 PRESSURE REGULATOR DRIVE GEAR—grease jack annually
- 8.5 SERVICE OF THE REMAINING COMPONENTS - Pressure regulators, Control valves. These components do not require routine maintenance and should only be serviced if they are not working properly.
- 8.6 PRESSURE GAGES - Check and calibrate pressure gages or transducers annually. This Service is available from THE HENSEL GROUP INC. Call for current pricing.
- 8.7 TEST the Ground Fault Circuit Breaker by pushing the red "PUSH TO TEST" and insure proper disconnect status. Keep a record of these tests.
- 8.8 Check the system yearly for signs of wear, corrosion, leaks of air or water. This service is available from THE HENSEL GROUP INC. please contact the factory for current rates and service contract availability.
- 8.9 Replacement parts, installation and emergency service is available directly from:

THE HENSEL GROUP INC
www.henselgroup.com

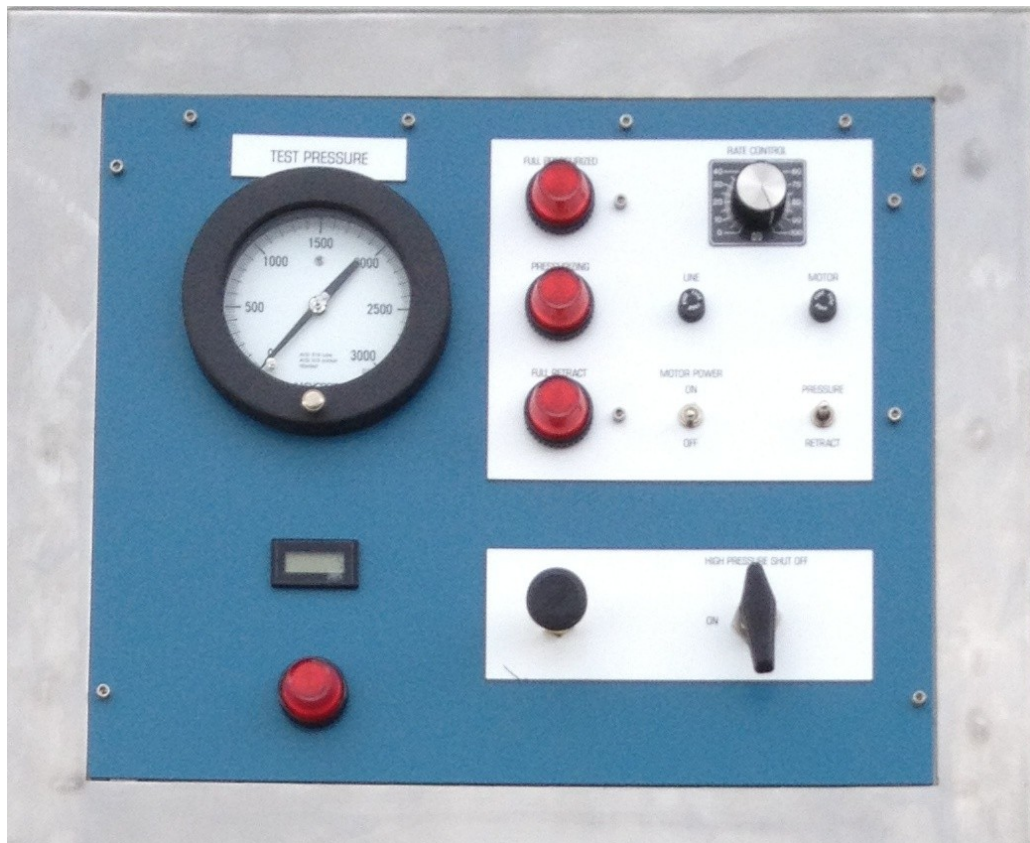
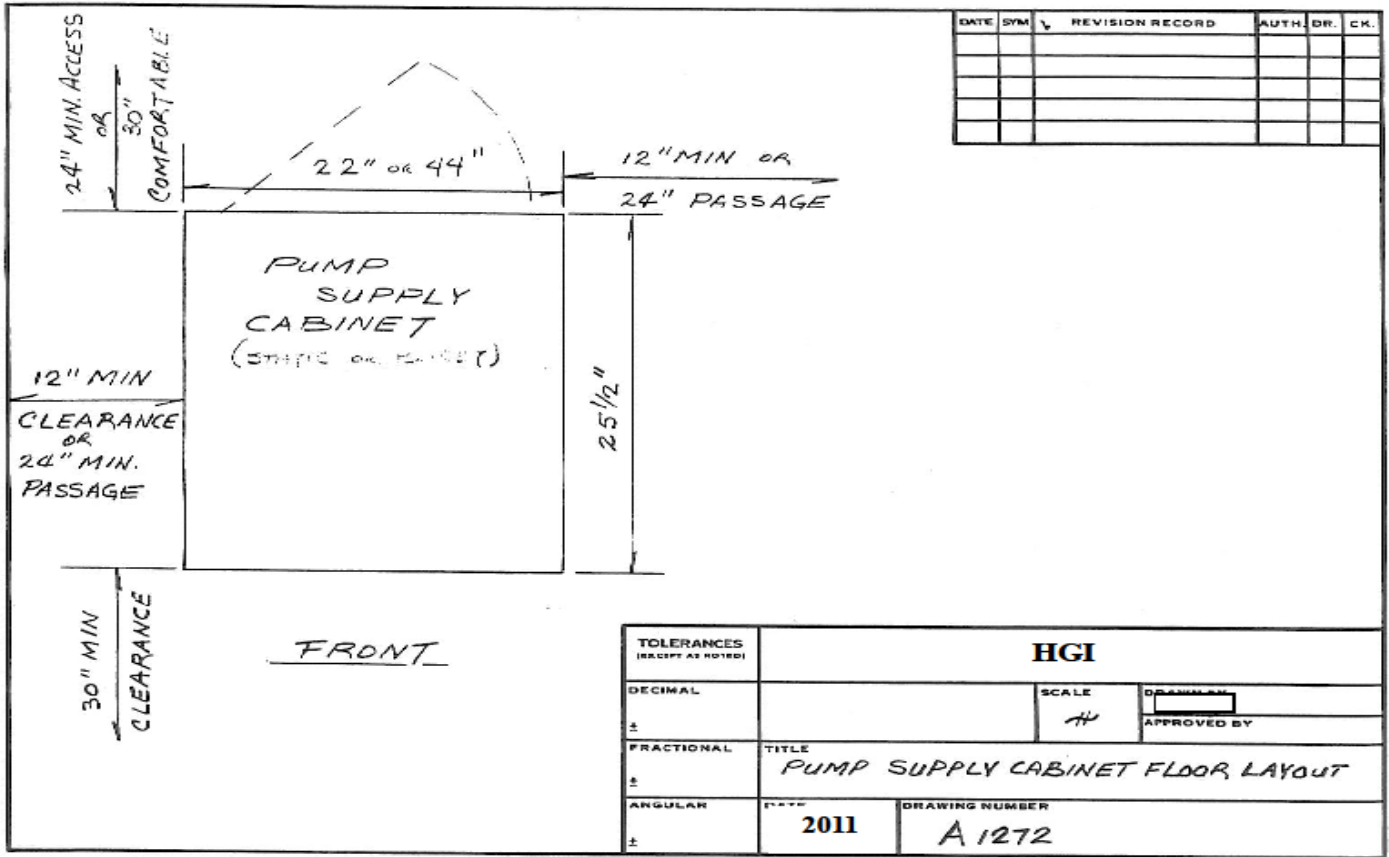
9.0 SYSTEM DRAINAGE FOR LONG TERM STORAGE

To prevent sediment build up - or - Freezing.

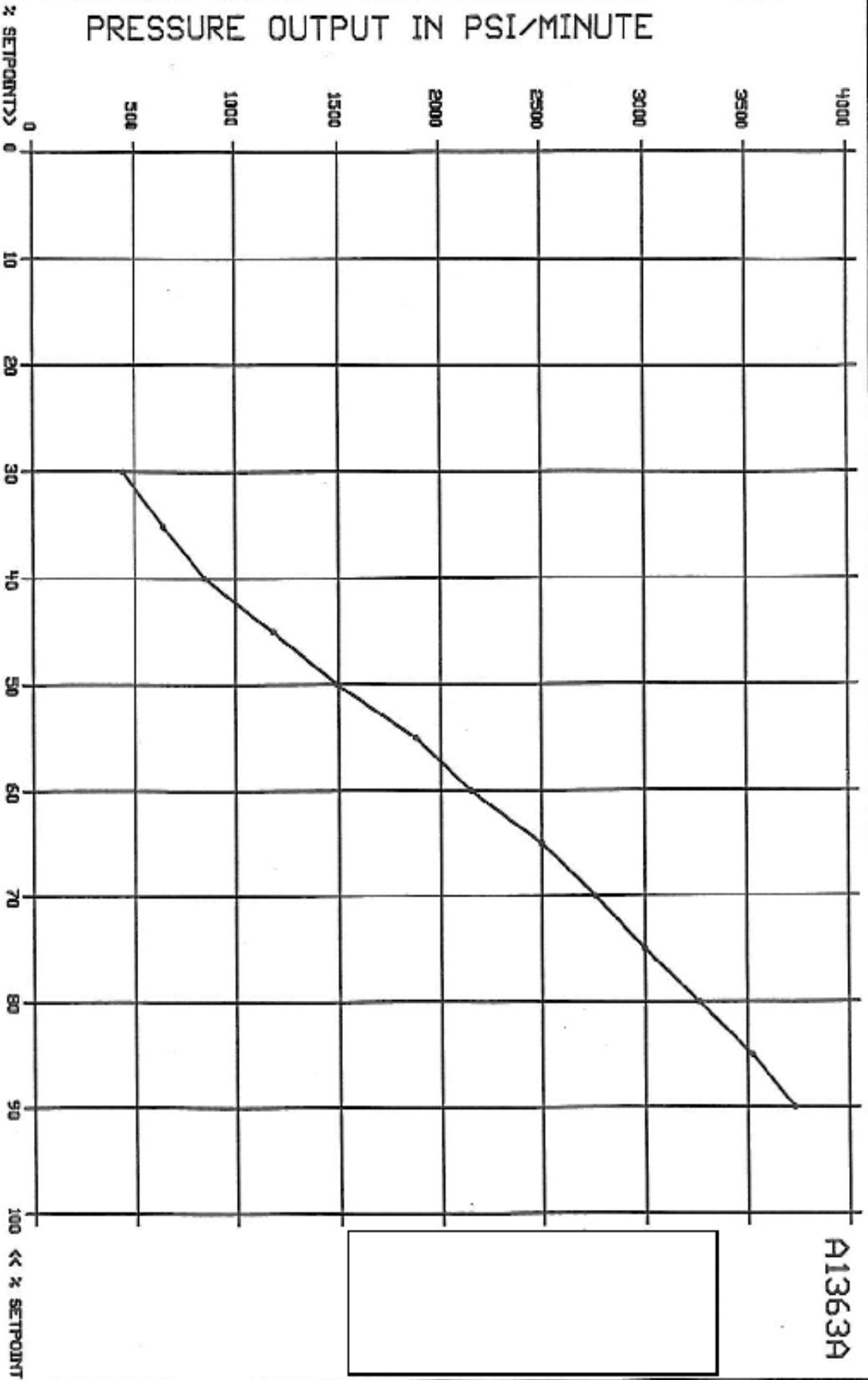
- A. DISCONNECT THE AIR SUPPLY FIRST.
- B. SHUT OFF THE WATER SUPPLY. REMOVE THE WATER FILTER ELEMENT AND DRAIN THE CANISTER.
- C. BLEED OFF THE PRESSURE BY SLOWLY OPENING THE HIGH PRESSURE DRAIN VALVE OR RUN THE MOTOR TO A PRESSURIZING POSITION AND OPEN THE HIGH PRESSURE SHUT OFF VALVE UNTIL SUPPLY PRESSURE IS ZERO.
- D. CLOSE THE HIGH PRESSURE SHUT OFF VALVE AND BLEED VALVE.
- E. CONNECT AN AIR SUPPLY (100PSI MAX) TO THE WATER SUPPLY PORT THEN TURN ON THE AIR SUPPLY.
- F. ALTERNATELY OPEN THE HIGH PRESSURE SHUT OFF VALVE AND THE HIGH PRESSURE DRAIN VALVE AND BLOW THE WATER FROM THE SYSTEM. SHUT OFF THE AIR WHEN ALL THE WATER IS OUT OF THE SYSTEM.

10.0 CAUTIONS

- 10.1 Do not connect the air supply to the pumping system without first turning ON the water supply.
- 10.2 Check the thrust capacity of the test fixture, specimen and the enclosures before pressurizing your specimen.
- 10.3 Do not pressurize specimens without adequate shielding to stop the flying debris should the specimen fail and burst.
- 10.4 Be sure all trapped air is bled from the system and specimens before starting the tests.
- 10.5 Shut off the electrical power before servicing or making any adjustments inside the cabinet.
- 10.6 Do not adjust the pump pressure above it's rating. Refer to order specifications.
- 10.7 Do not store system where it may be subjected to below freezing temperatures without proper draining. (SEE SECTION 9.0)



PRESSURE OUTPUT IN PSI/MINUTE



A1363A

JYCE JACK M/T242-6-INW-13-KEYED-LESS PT
1:1 PULLEY RATIO
96 TURNS PER INCH
42132C DAYTON IRQUE

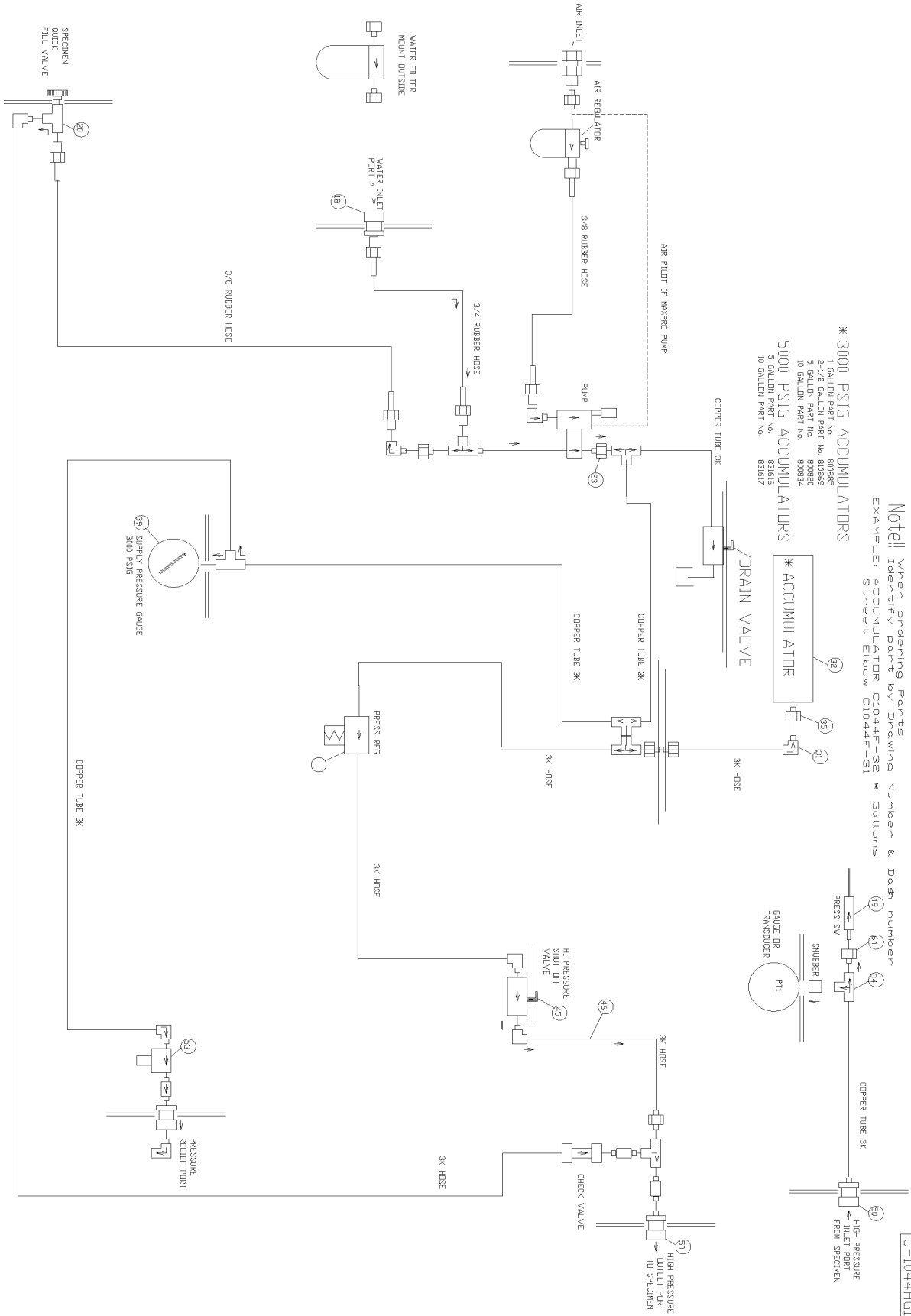
DISK : D05

TITLE PRESSURE RAMP CURVE
DATE
DRAWING NO. A1363A
REV.

HGI

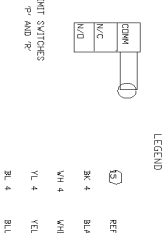
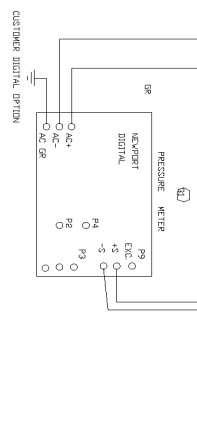
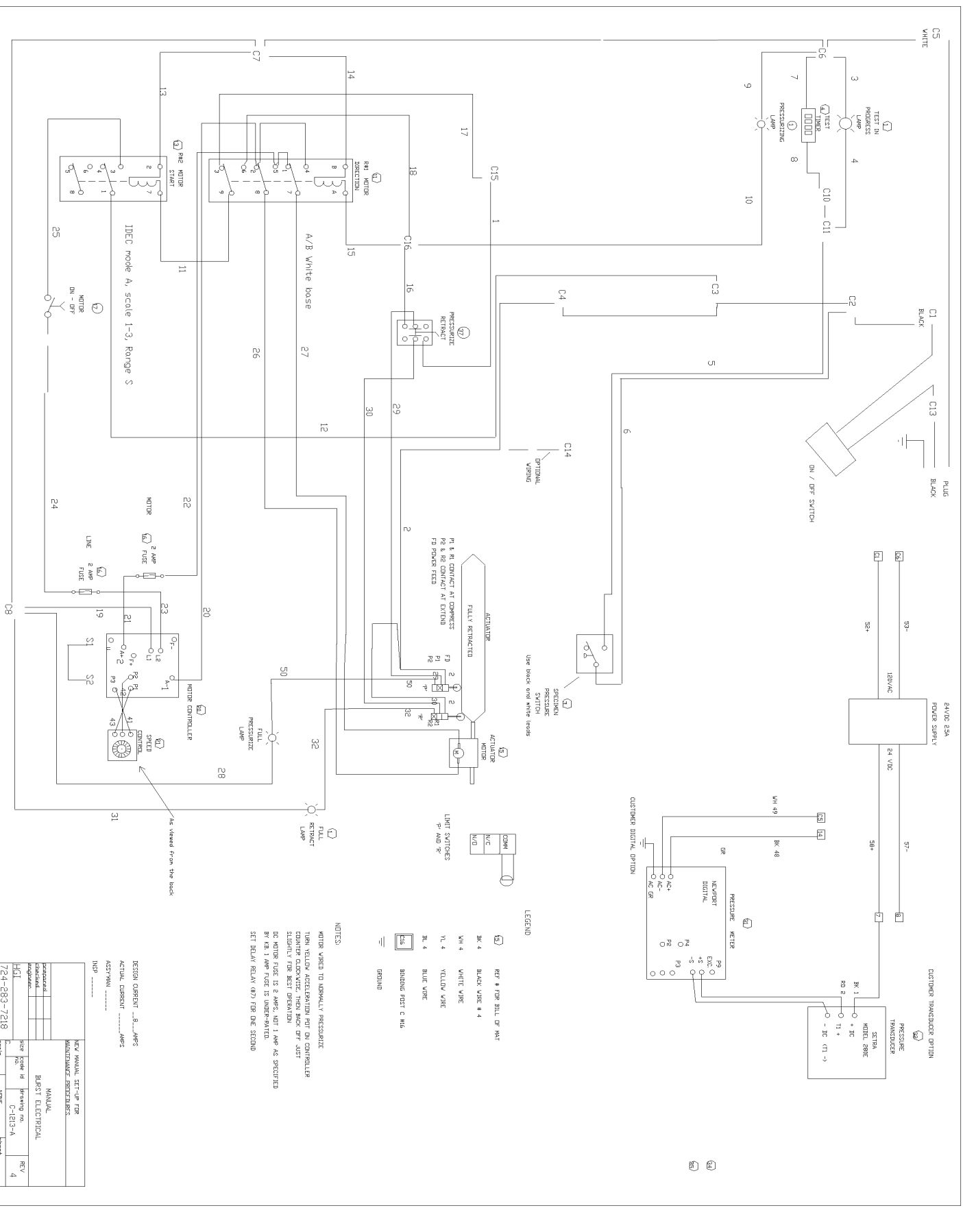
Note: When ordering Parts Identify Part by Drawing Number & Dash number
EXAMPLE: ACCUMULATOR C1044F-32 * Gallons
 Street Elbow C1044F-31

- * 3000 PSIG ACCUMULATORS
- 1 GALLON PART NO. 800855
- 5 - 1/2 GALLON PART NO. 800859
- 10 GALLON PART NO. 800834
- * 5000 PSIG ACCUMULATORS
- 5 GALLON PART NO. 838515
- 10 GALLON PART NO. 831817



HGI	
ORDER NO. STD	REV. NTH
APPROV	
TITLE BEST SUPPLY CABINET COMPONENTS	
DATE 5-18-15	REV. 0
DRAWING NO. C-1044HGI	
DISK	

SCALE: NTS



NOTES

MOTOR WOUND TO NORMALLY PRESSURIZED
TURN YELLOW ACCELERATION POT ON CONTROLLER
COUNTER CLOCKWISE, THEN BACK OFF JUST
SLIGHTLY FOR BEST OPERATION
DC MOTOR FUSE IS 2 AMPS, NOT 1 AMP AS SPECIFIED
BY K&B 1 AMP FUSE IS OVERHEATED.
SET DELAY RELAY (47) FOR ONE SECOND

DESIGN CURRENT	...8...AMPS
ACTUAL CURRENT	...AMPS
ASSEMBLY
NSP
NEW MANUAL SET-UP FOR MAINTENANCE ENGINEERS	MANUAL
BLPST ELECTRICAL	REV 4
724-2893-7218	Sheet