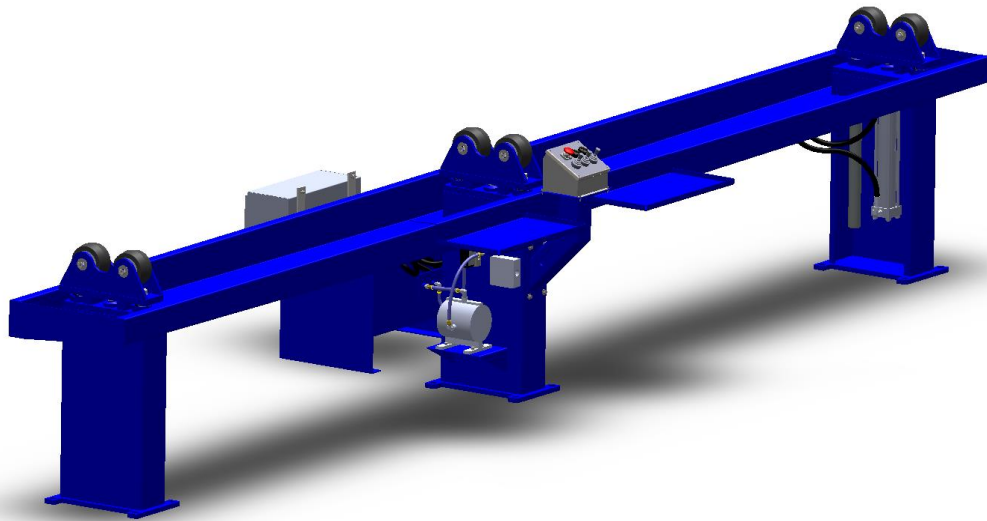


HUB CITY
IRON WORKS

Jar Tilt Unit

Operation and Maintenance Manual



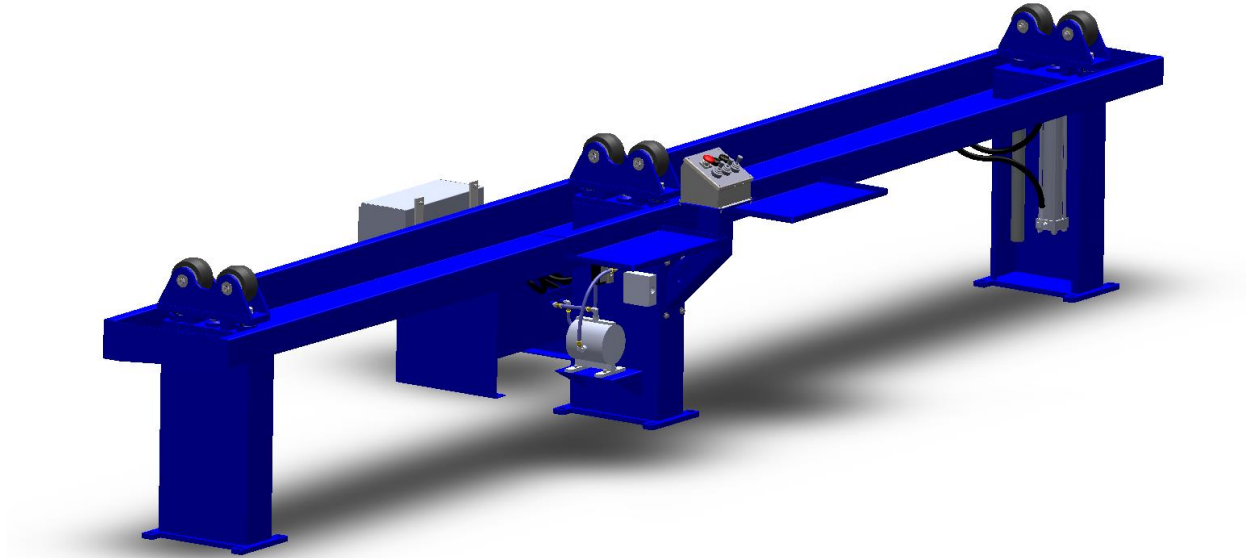
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Introduction

Hub City Iron Works' Jar Tilt Unit safely manipulates a tool so that it can be filled with fluid and allowing air to exit completely. Hydraulic cylinders are controlled from a central location with joysticks. Also included, is an air diaphragm pump to pump excessive oil back to storage tanks. Convenient movable work shelves allow for a clean work space.



Safety

- Hub City has provided operating procedures and other information on labels to ensure the safety of both the operator, and equipment. This entire operating manual is filled with important safety information - please read it thoroughly.

Safety Features Include:

- Mechanically active components are painted a high visibility yellow.
- Low voltage operator interface (24vdc).
- Equipment safety labels.

Machine Specifications

Standard Features

- Hydraulic Cylinder
- Low voltage central control station
- Diaphragm air pump for removing oil overflow with filter
- Movable work shelves

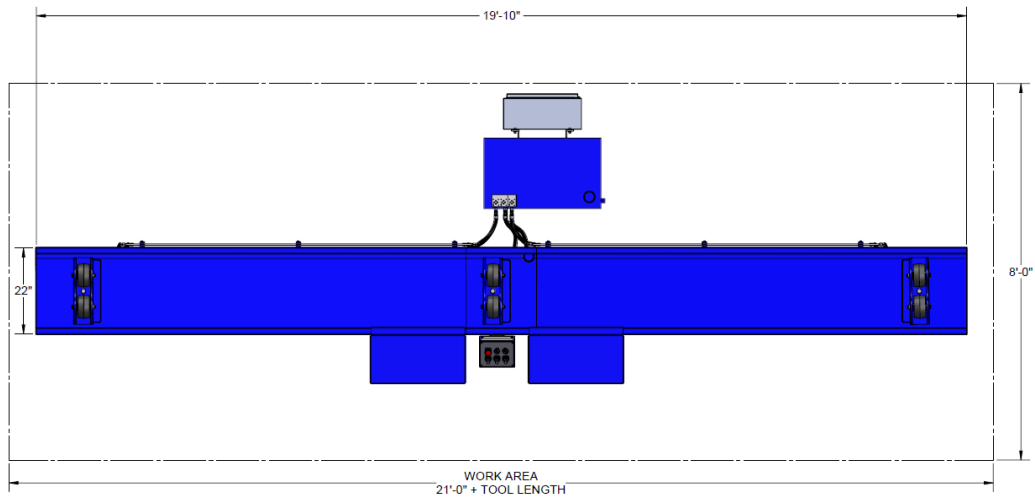
Plant Requirements

- Electrical 480V, 3 Phase, 60 Hz, 60 amps (Others by request)
- Footprint Unit - 20' x 3' x 4' Hyd Pwr Supply – 3' x 3' x 3'
- Pneumatic 100psi @ 30 CFM

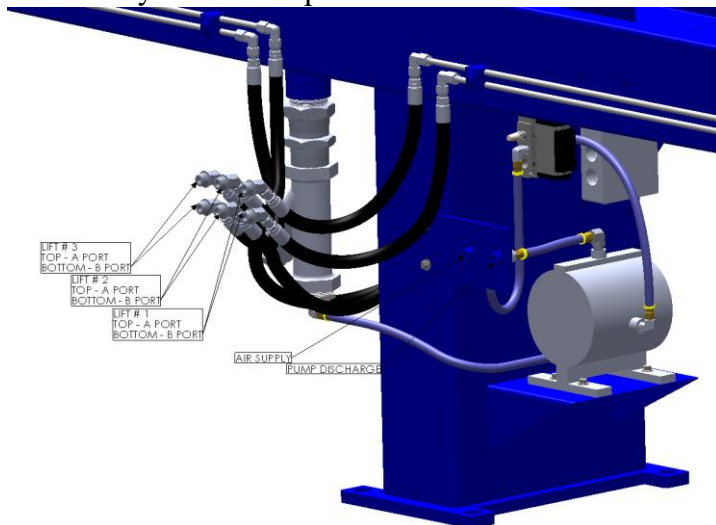
Machine Setup

For proper operation, the machine must be installed as per the instructions below.

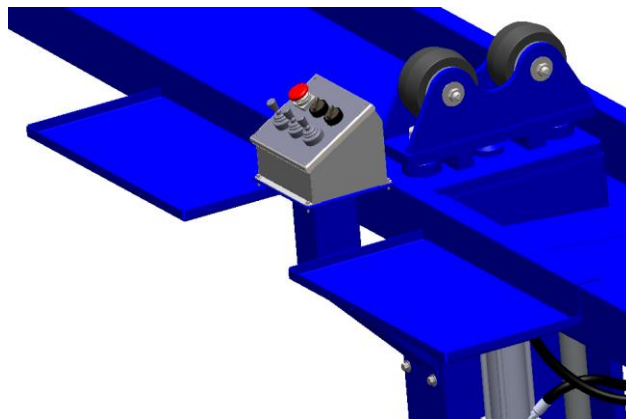
1. Set unit according to layout below unit. Unit must be installed on a flat, level concrete surface. Level unit to within $\pm \frac{1}{2}$ ".



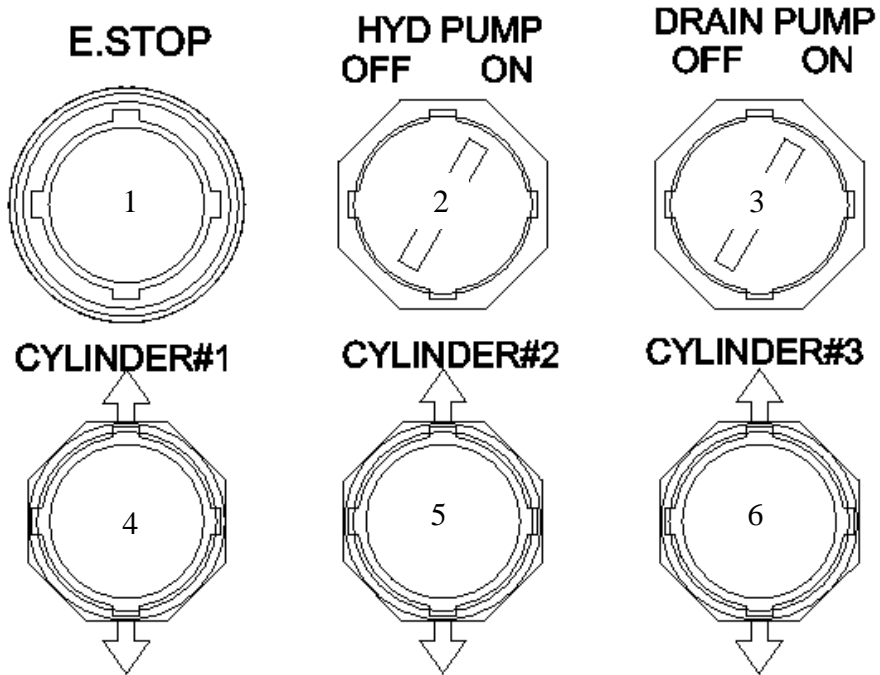
2. Connect hydraulic and pneumatic hoses as below and as indicated on page 13



3. Hook up electrical system as indicated on page 12
4. Attach adjustable work shelves.



Controls Layout



	<u>Function</u>
1	Emergency Stop
2	Hydraulic Pump Off/On
3	Drain Pump Off/On
4	Cylinder #1 Up/Down
5	Cylinder #2 Up/Down
6	Cylinder #3 Up/Down

Operation

Reference control panel layout for button numbering

Startup/Operation

1. Ensure that it is safe to operate machinery and all personnel are clear.
2. Perform daily maintenance.
3. Load tool centered on unit between pop up cylinders
 - a. Always use the widest set of pop ups
4. Turn the Hydraulic Pump on (#1)
5. Turn Drain Pump on
6. Lift the cylinder as desired to fill tool

Troubleshooting

- Unit does not drain
 - No air pressure/flow to pump
 - Debris in drain/strainer
- Hydraulic System does not come on
 - No power to unit
 - Oil is below nominal level

Preventative Maintenance

Lockout / Tag out machine before performing any maintenance.

Daily

1. Inspect drain/strainer for debris.

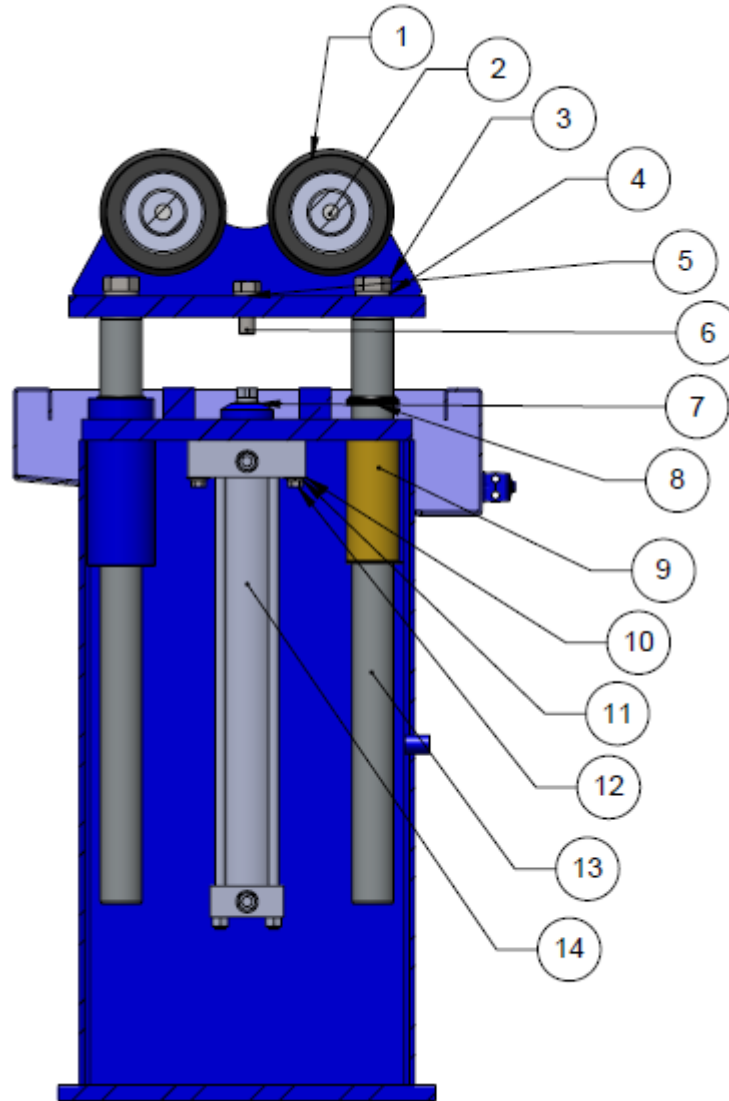
Weekly

1. Check wheels for damage

Annual Maintenance (Every 2,000 hrs)

1. Tighten all hardware
2. Clean all electrical boxes

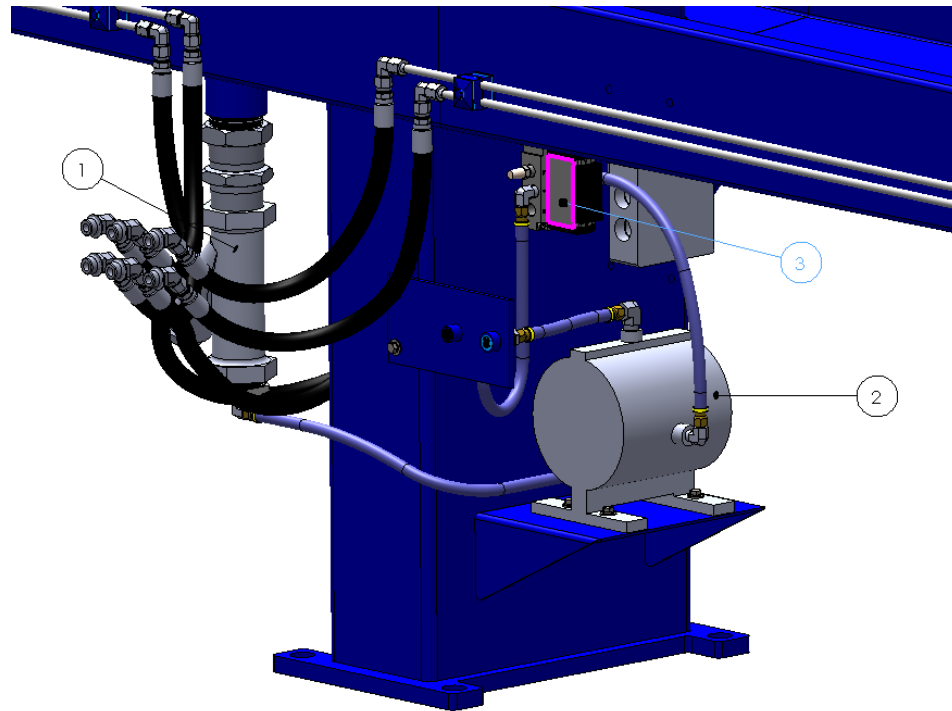
Parts List
LIFT ASSEMBLY



Item #	Part #	Description	Quantity
1	26357	WHEEL	2
2	26328	3/4" SHOULDER BOLT	2
3	14401	HHCS	2
4	15676	WASHER, LOCK	2
5	14133	WASHER, LOCK	1
6	14402	HHCS	1
7	17730	HYDRAULIC CYLINDER SEAL	1
8	26329	STABILIZER SHAFT SEAL	2
9	603-100-022-XXX	STABILIZER SHAFT BUSHING	2
10	17668	WASHER, LOCK	4
11	17654	WASHER, FLAT	4
12	26579	HHCS	4
13	603-100-025	STABILIZER SHAFT	2
14	26312	HYDRAULIC CYLINDER	

*QUANTITIES BASED ON ONE LIFTING ASSEMBLY

PUMP/STRAINER

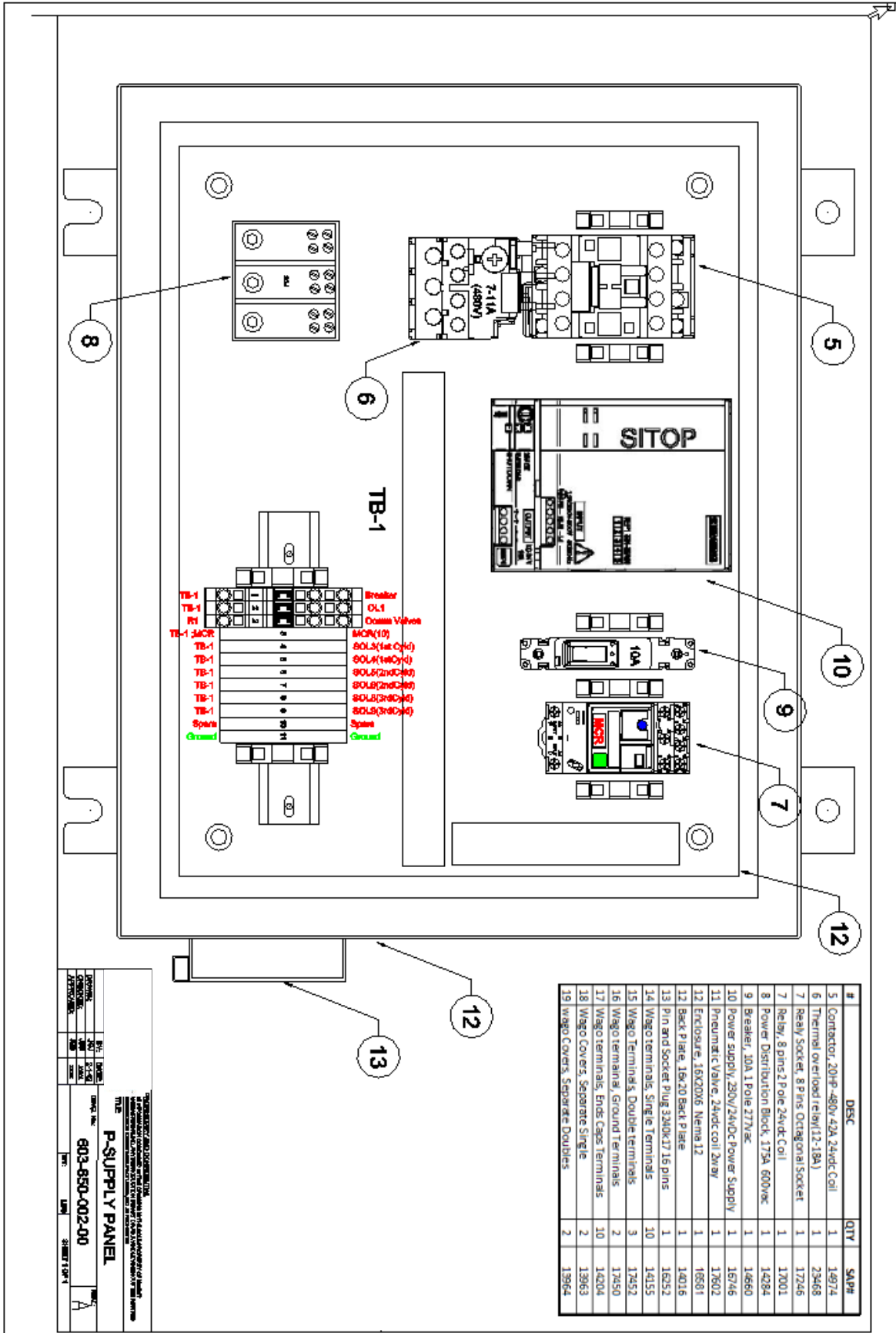


Item #	Part	Description	Quantity
1	26326	STRAINER	1
2	26327	DIAPHRAM PUMP	1
3	17602	AIR VALVE	1

Recommended Spare Parts

Part #	Description	Quantity
26329	STABALIZER ROD SEAL	2
17730	HYDRAULIC CYLINDER SEAL	2
26327	PUMP	1
17602	AIR VALVE	1

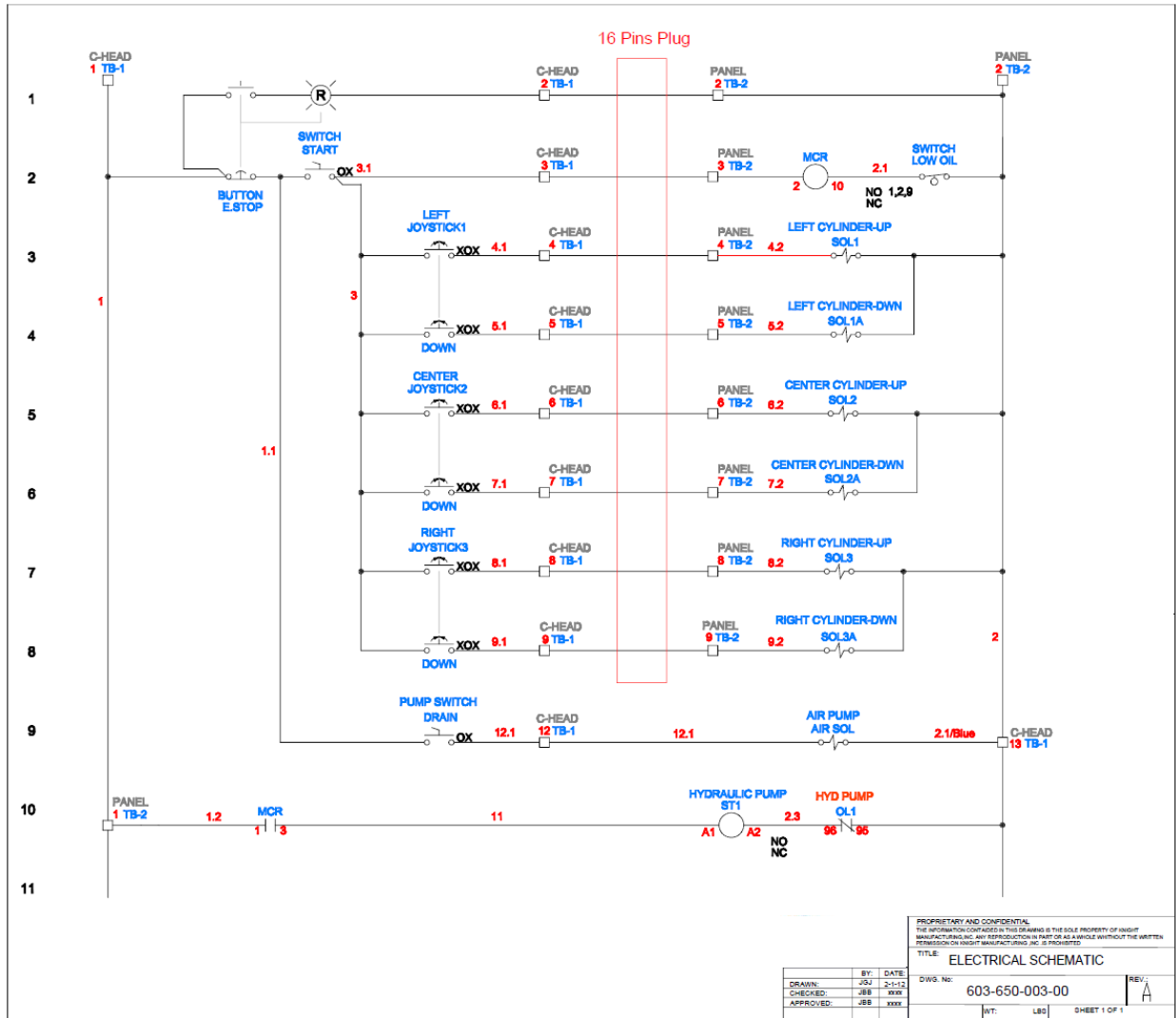
Electrical Schematic



#	DESC	QTY	SAPH
5	Contractor, 20HP-480V-42A 24vdc Coil	1	14974
6	Thermal overload relay(12-18A)	1	23468
7	Relay Socket, 8 pins Octagonal Socket	1	17246
7	Relay, 8 pins 2 Pole 24vdc Coil	1	17001
8	Power Distribution Block, 175A 600vkc	1	14284
9	Breaker, 10A 1 Pole 277vkc	1	14660
10	Power supply, 280V/24VDC Power Supply	1	16746
11	Pneumatic Valve, 24vdc coil 2way	1	17602
12	Enclosure, 16X20X6 Nema12	1	18601
12	Back Plate, 16x20 Back Plate	1	14016
13	Pin and Socket Plug 320K/17.16 pins	1	14552
14	Wago Terminal, Single Terminals	10	14155
15	Wago Terminal 5, Double Terminals	3	17452
16	Wago Terminal, Ground Terminals	2	17450
17	Wago Terminal, Ends Caps Terminals	10	14004
18	Wago Covers, Separate Single	2	13963
19	Wago Covers, Separate Doubles	2	13964

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Electrical Schematic



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WT: LBS SHEET 1 OF 1

Hydraulic/Pneumatic Schematic