AIR TECHNICAL INDUSTRIES

Making the job easier.

Jib Master Forklift Truck Crane



Operation & Maintenance Manual

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Model # : JB-4
JB4-R

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Responsibilities of Owners/Users

Deflection

It is the responsibility of the user/purchaser to advise the manufacturer where deflection may be critical to the application.

Inspection and Maintenance

The crane shall be inspected and maintained in proper working order in accordance with the manufacturer's operating/maintenance manual and safe operating practices.

Only trained personnel and authorized personnel shall be permitted to perform maintenance/service operations on the crane.

Maintenance/service personnel shall have:

- Read and/or have explained and understood, the manufacturer's operating/maintenance manual, and all safety rules and labels, prior to performing any maintenance/service operations on the equipment.
- Full time unlimited access to the manufacturer's operating/maintenance manual.

Removal from Service

Any crane not in safe operating condition such as, but not limited to, excessive leakage, missing rollers, pins, or fasteners, any bent or cracked structural members, cut or frayed electric, hydraulic, or air lines, damaged or malfunctioning controls or safety devices, etc. shall be removed from service until it is repaired to he original manufacturer's standards.

Repairs

All repairs shall be made by qualified personnel in conformance with the manufacturer's instructions.

Operators

Only trained personnel and authorized personnel shall be permitted to operate the crane.

Before Operation

Before using the crane, the operator shall have:

- Read and/or have explained, and understood, the manufacturer's operating instructions and safety rules.
- Inspected the crane for proper operation and condition. Any suspect item shall be carefully examined and a determination made by a qualified person as to whether it constitutes a hazard. All items not in conformance with the manufacturer's specification shall be corrected before further use of the crane.

During Operation

The crane shall only be used in accordance with the manufacturer's operating/maintenance manual.

- Do not overload the crane.
- Ensure that all safety devices are operational and in place.

Modifications or Alterations

Modifications or alterations of equipment shall be made only with written permission from the original manufacturer. These changes shall be in conformance with all applicable provisions of applicable standards and shall be as safe as the equipment was before modification. These changes shall also satisfy all safety recommendations of the original equipment manufacturer for the particular application of the crane.

Special Warnings, Cautions & Restrictions

Inspection

Upon receipt of the equipment, inspect thoroughly for damage sustained in transit. Make note of any noticeable or potential damage on the bill of lading. After un-packaging, inspect for any concealed damage and report immediately to the freight carrier.

Safe Operation

WARNING LABELS







General Information

You are now the proud owner/user of an Air Technical Industries, hydraulic-operated crane.

Consult with your forklift manufacturer prior to using the Jib-Master Forklift Crane on a forklift for the first time.

The Jib Master Forklift Crane (JB) is designed for heavy duty lifting, loading and positioning; it is engineered for maximum safety and stability. This ruggedly constructed crane will give dependable, long lasting performance. The heavy duty hydraulic lifting and boom extension cylinders on the JB-4 are powered by a 12V DC self-contained power pack with push button pendant control. Battery chargers and wireless remote control options are available.

A maximum capacity of 3000 lbs is allowed when the boom is retracted, with up to 146 inches of reach. The JB-4R model offers the same capabilities as the JB-4 with the addition of 150 degree rotation.

Capacity ratings are structural for the boom itself and do not take into account stability, which is based on the capacity of the forklift. It is recommended to use the Jib-Master on a minimum 10,000 pounds capacity forklift to achieve maximum capacity.

Installation and Start-Up

This equipment has been delivered fully assembled and ready for operation.

Inspection

Upon receipt of the equipment, inspect thoroughly for damage sustained in transit. Make note of any noticeable or potential damage on the bill of lading. After un-packaging, inspect for any concealed damage and report immediately to the freight carrier.

Operation

Install the Jib-Master on the forks centered on the carriage and as far back against the carriage as possible.

Fasten the retaining chain across the back of the carriage. The purpose of the chain is not to provide any structural capacity, but to retain the Jib-Master on the forks and preventing it from sliding off.

NOTE: The capacity is reduced when the boom is extended, consult load chart.

Rigging Accessories

The JB-4 and JB-4R come standard with a swivel hook. Other lifting options include an electric winch operated cable lift and personnel baskets.

OPERATING INSTRUCTIONS

The hydraulic system, contained in the base of the unit, consists of a direct-coupled motor/pump combination, oil reservoir (tank), solenoid operating valve, and all the necessary plumbing. The hydraulic is a positive displacement design and operates at a normal working pressure of 1200 to 1500 PSI (pounds per square inch). A mesh screen is provided for the protection of the pump. A pre-adjusted, built in relief valve protects the pump discharge pressure from the effects of overloading. The operating principle provides that the pump is operated to lift the boom and the pump is stopped when the boom attains the desired height. A check valve between the pump and cylinder holds the unit at the raised height.

ELECTRIC OR BATTERY OPERATION

Before operating the unit:

1. visually inspect the bolts, wires, and hoses. tighten any loose fittings or bolts prior to operation.
2. ensure the unit is connected to the appropriate power source.
3. if this unit is equipped with a 12v dc operated hydraulic system, verify that the battery has been properly recharged from the previous use.
4. periodically inspect the hydraulic fluid level. this is accomplished by removing the vent filler plug at the top of the reservoir and using a clean dipstick.
   - DO NOT use hydraulic fluids that contain additives that may swell or dissolve certain packing materials normally used in systems designed for petroleum oils. For special fluids please consult the factory.
   - Overfilling the hydraulic fluid reservoir will cause an overflow when the unit is lowered.
5. PERIODICALLY SCHEDULED GREASING OF THE LIFT PROVIDES THE OPPORTUNITY FOR GENERAL INSPECTION, ENSURING THE PROPER MAINTENANCE AND OPERATION OF THE EQUIPMENT.

- TO RAISE THE BOOM:
  Depress the “UP” button. The unit will continue to rise until the button is released.
  CAUTION – DO NOT OPERATE BEYOND A 45 DEGREE ANGLE
  (SEE SPECIFICATION SHEET)

- TO LOWER THE BOOM:
  Depress the “DOWN” button. The unit will continue to lower until the button is released.

- TO TELESCOPE BOOM OUT:
  Depress the “OUT” button. The boom will telescope out until the button is released.
  CAUTION – DO NOT EXCEED THE RATED CAPACITY WHEN BOOM IS COMPLETELY EXTENDED (SEE SPECIFICATION SHEET)

- TO TELESCOPE BOOM IN:
  Depress the “IN” button. The boom will retract until the button is released.

- TO ROTATE MAST TO THE LEFT:
  Depress the “LEFT” button. The unit will continue to rotate to the left until the button is released.

- TO ROTATE MAST TO THE RIGHT:
  Depress the “RIGHT” button. The unit will continue to rotate to the right until the button is released.

CAUTION – THE JB-4R WILL ROTATE ONLY 150 DEGREES WHEN MOUNTED ON A FORKLIFT TRUCK. ROTATION OF 360 DEGREES OCCURRS ONLY WHEN THE UNIT IS FLOOR OR TRUCK MOUNTED.

TROUBLE SHOOTING SERVICE SUGGESTIONS

***** LIFT WILL NOT RAISE**:

- Check the power supply and electrical circuit.
- Pump motor starter (if provided).
- On new installation of 3 phase motors, if the lift does not start raising in approximately 10 seconds, reverse line leads.

(WARNING - DO NOT RUN THE PUMP BACKWARDS OR WITHOUT HYDRAULIC OIL DAMAGE MAY OCCUR).

- Check oil level.
- With lift in full up position, oil level should be 1 to 2 Inches above bottom of the tank

(WARNING - DO NOT OVERFILL TANK)

- Test directional valve for operation.
- Check voltage at coil

***** LIFT RAISES SLOWER THAN SPECIFIED RATE OR WILL RAISE ONLY PARTIAL LOAD:**

- Check line voltage under load condition.
- Low voltage affects speed and capacity.
- Inspect check valve.
- Remove cap, spring and ball and inspect for foreign matter
- Flush directional valve by operating up and down controls simultaneously. This should be done with no load
- Disassemble directional valve
- Look for foreign material under valve seat

SUCTION LINE LEAK

- Tighten fittings

RELIEF VALVE LEAK

- Remove foreign matter from valve and adjust to ¼ turn beyond what is required to lift load

INSPECT DIRECTIONAL VALVE

- Disassemble valve and look for foreign material under valve seat
- Check filter in tank, look for foreign material.

***** LIFT WILL NOT LOWER:**

- Test directional valve for operation.
- Check voltage at coil
- Adjust flow control valve for lowering speed
- Check velocity fuses, follow flow adjustment instructions below

***** LIFT WILL NOT RAISE FULL VERTICAL TRAVEL:**

- Check for low oil level.
- Check if foam is visible in tank oil.
- Check for leaks in suction line between pump and tank.

***** LIFT WILL NOT MAINTAIN HEIGHT AND LOWERS SLOWLY WHEN DOWN BUTTON IS NOT DEPRESSED:**

- Check the pressure relief valve, due to an overload on the lift, the relief valve may have activated. Debris can be entrapped not allowing the valve to close. Take the relief valve apart and clean it completely. Reassemble and adjust to ¼ turn beyond what is required to lift load.
- The check valve may need cleaning or a replacement purchased.
- Clean the strainer in the tank for foreign matter.
- Check and clean the directional valve for debris.

***** LIFT DOES NOT LOWER SMOOTHLY**:

- Run lift up and down under load to purge air from hydraulic system

***** HYDRAULIC CYLINDER APPEARS TO BE LEAKING THROUGH TOP AIR VENT HOLE:**

- Raise and lower lift check for leakage.
- Raise and lower the lift (under load) to maximum, if oil is still leaking through vent hole-check cylinder packing.

BASIC ADJUSTMENT INSTRUCTIONS FOR VELOCITY FUSES

Load lift to desired capacity-raise unit to **two thirds (2/3)** of the raised height. Lower lift-if lowering speed is too fast, the velocity fuses will lock up. If the velocity fuses do lock up, raise the table to height and adjust lowering valve to limit flow of oil back to reservoir. Repeat these steps until the lift lowers to collapsed height.

LIFT WILL NOT LIFT LOAD:

Increase pump pressure, turn the hydraulic pressure bypass adjustment clockwise. This bypass adjustment is located on the side of the hydraulic pump.

WARNING - Before attempting to work on the lift always place blocks to support the boom or support unit to prevent downward movement. This provides protection for the worker.

LUBRICATION AND MAINTENANCE INSTRUCTIONS

We recommend that lubrication and preventative maintenance work should be conducted on a regular schedule that is established through experience gained during the first few months of operation. The need for lubrication and inspection is largely proportional to actual service duty, environment and application.

We recommend that the lift should be lubricated and completely inspected at least once a week during the first month of regular operation. Inspection should include a careful examination of all fastenings, fulcrum pins, rolling surfaces and rollers, hydraulic connections, electrical systems and general functions. The lift should be cleaned and clear of accumulation of debris, water, etc. Consideration must be given to a means for the prevention of such conditions.

Maintain oil level with lift fully raised. Oil level should be approximately 1 to 2 inches from the bottom of the tank.

Recommended hydraulic oils (non-foaming)

NORMAL CONDITIONS:

CHEVRON EP-9	STANDARD OIL
DURO AWS-150	ATLANTIC RICHFIELD
TELI US #32	SHELL OIL
DTE #24	MOBILE OIL

HIGH TEMPERATURE:

CHEVRON EP-15	STANDARD OIL

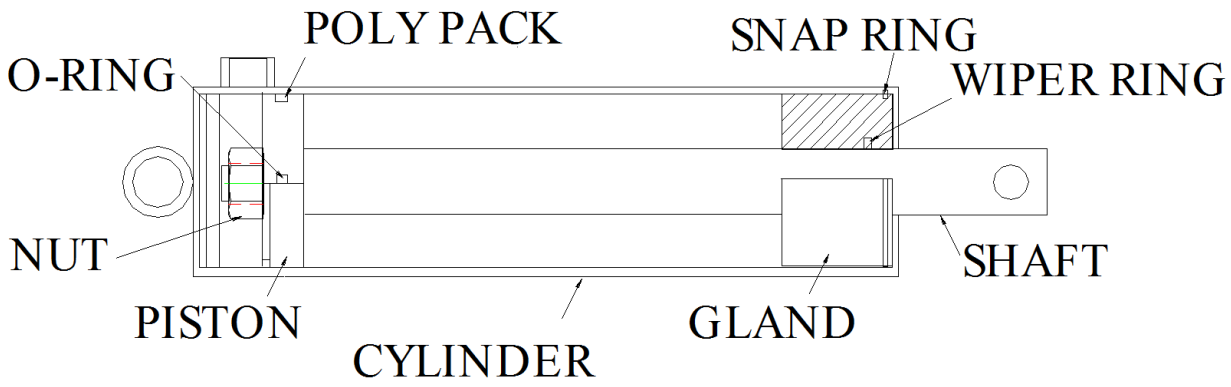
The use of multi-grade motor oils with SAE 510-10W-20W/20 or SAE 10W-20W-30 non-detergent is permissible where the above oils are not readily available.

Periodically scheduled greasing of the lift provides the opportunity for general inspection, insuring the proper maintenance of the equipment.

NOTE: Do not use hydraulic fluids which contain additives that may swell or dissolve certain packing materials normally used in systems designed for petroleum oils. For special fluids consult the factory.

CAUTION: Over-filling the hydraulic tank will cause overflow when the boom is lowered.

HYDRAULIC CYLINDER



PHYSICAL SIGNS OF INTERNAL PROBLEMS

- Hydraulic fluid leaking out of breather hole. (Single acting cylinder only)

The poly pack needs to be replaced.

- Double acting cylinder operates slow or does not operate.

The poly pack needs to be replaced.

- Visible oil leakage around the top of gland.

The “O” ring needs to be replaced.

- Rubbing noise or squeal (except new cylinders).

The poly pack needs to be replaced.

- Jerking motion of shaft.

Air in hydraulic system purge air by running the cylinder in and out.

PHYSICAL SIGNS OF EXTERNAL PROBLEMS

- Visible leakage near ports at bottom near end, and on cylinder-tube wall.

Replace cylinder.

- Bent rod/shaft.

Straighten or replace

- Binding cylinder.

Check pivot points.

- Scored or rusty shaft.

Replace wiper ring and if necessary the shaft

- Defective and worn parts should be replaced. We suggest a cylinder repair kit to replace all worn poly packs, “O” rings and wipers. Rebuild the cylinder provided there has been no physical damage to the cylinder or any vital components.
- For a smoother “break-in” period on new or rebuilt cylinders, we recommend to add STP or equal to the cylinder walls and shafts.

NOTE: To prevent any accidents when performing maintenance of the hydraulic cylinders, lower the lift.

REPAIR PARTS

- Repair kits are available from the factory. When ordering parts, specify the cylinder bore and whether it is single acting or double acting.

DISASSEMBLY PROCEDURE

- A repair kit should always be on hand before disassembly since parts can become damaged when the piston is withdrawn and passes over the snap ring groove on the cylinder wall. Discard any such damaged parts and replace with new. Disassemble as follows:
  1. Push the gland back into the cylinder until snap ring is free.
  2. Remove the snap ring and pull out shaft, gland and piston assembly.
  3. To replace poly pack, “O” rings and wipers, it is only necessary to spring the parts out of the grooves and remove them length-wise over the lands of the piston and glands.

ASSEMBLY PROCEDURE

1. Clean piston and cylinder and remove any scratches or burrs that might damage sealing parts or prevent proper sealing function.
2. Lubricate lands and grooves and install new parts.
3. Reassemble piston/rod assembly, gland and snap ring in the reverse order of disassembly.

PUMPS

ADJUSTMENTS

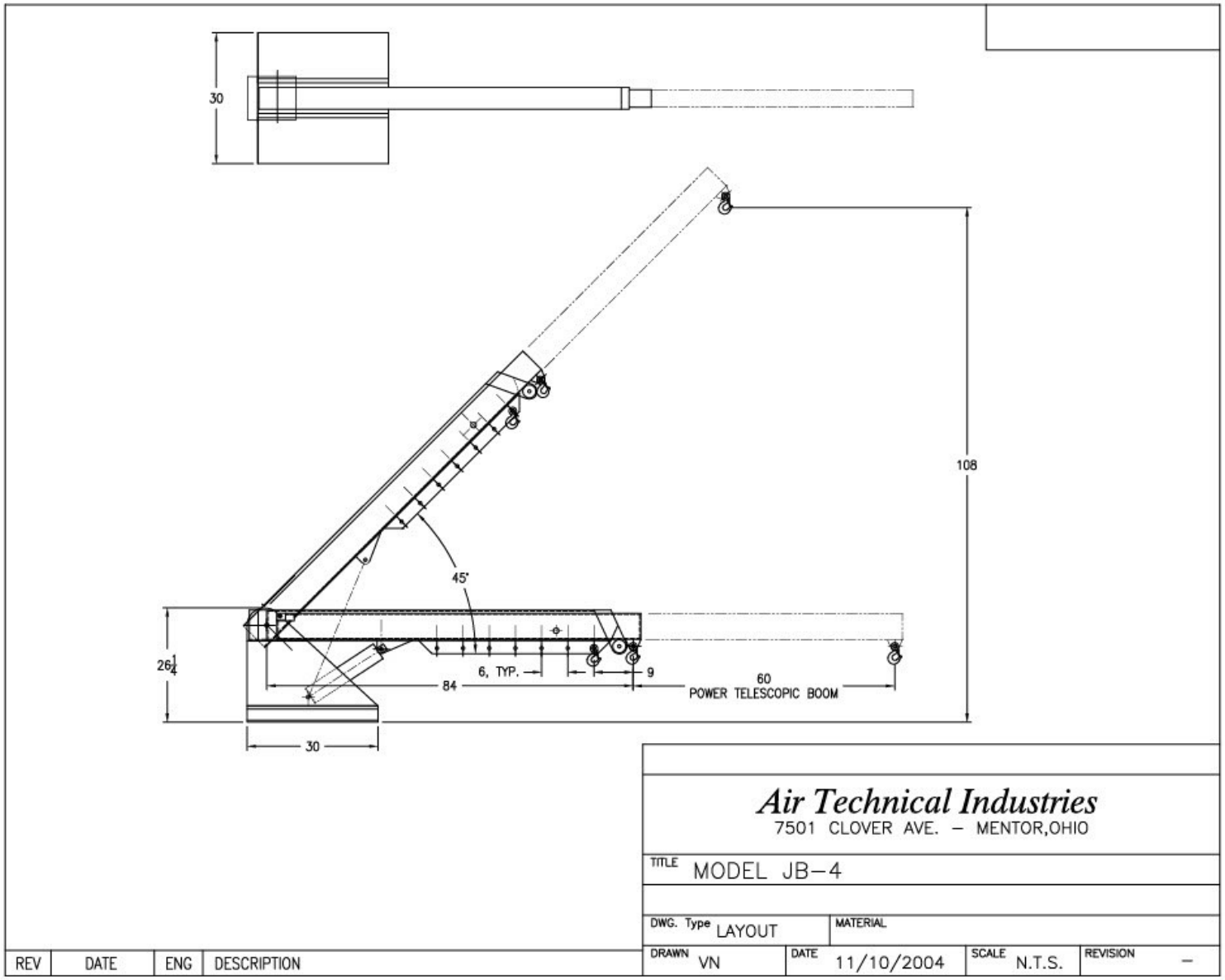
- The built-in relief valve is set at 2000 PSI at factory. Do not readjust to exceed this setting, as full load working pressure is 1700 PSI.

SERVICE

- Do not attempt to replace gears, bearings, shafts or other major parts of the pump. Order a replacement pump head identified by the nameplate data, stamped on pump body and plate. When assembling pump on motor, be sure the intermediate coupling slot aligns with motor shaft tang.

CAUTION

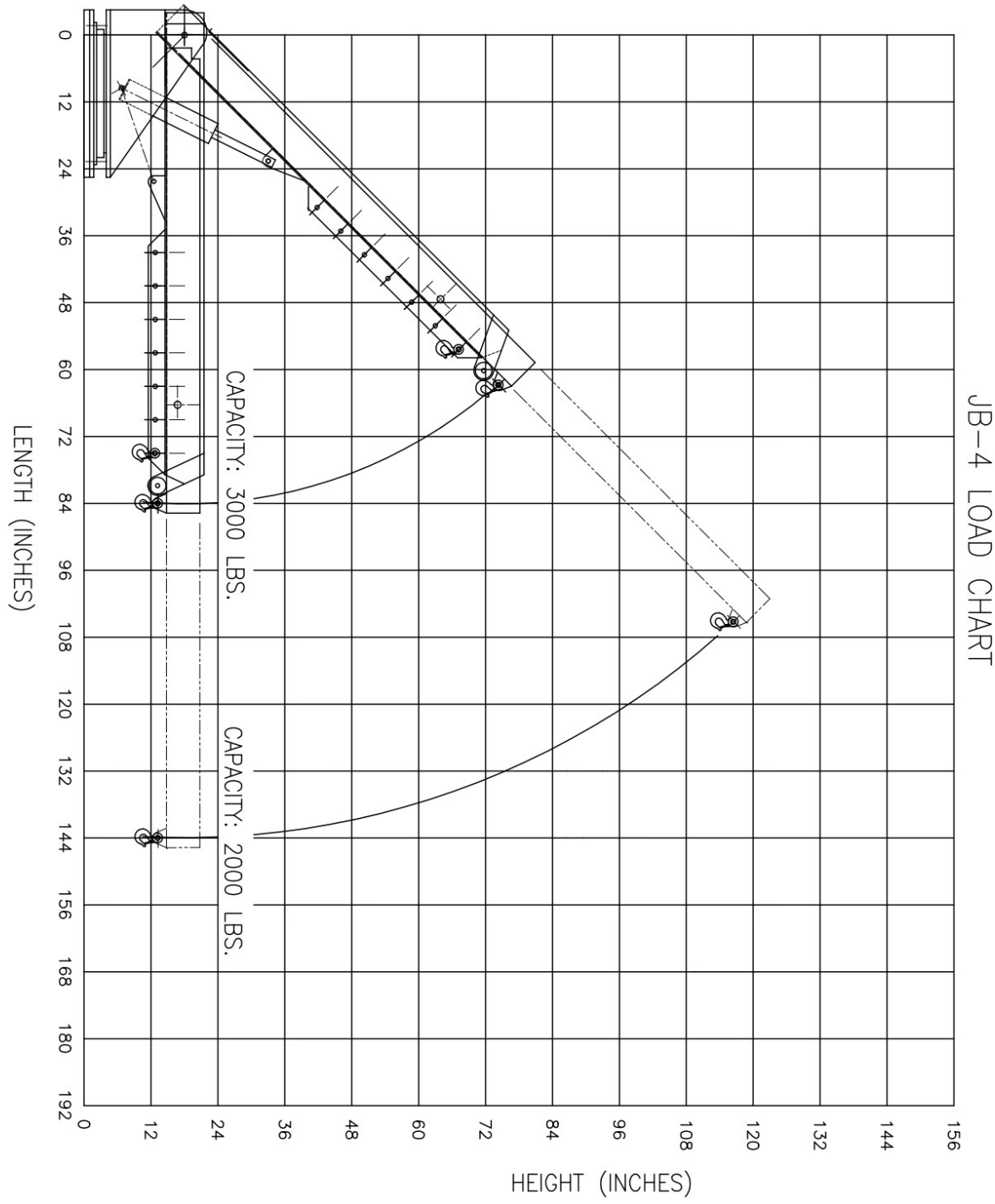
- **Do not operate this pump against the relief valve by overloading or in the extreme raised position any period greater than five seconds. When “Automatic Return” controls are used provision must be made to stop the pump immediately upon reaching the raised position.**
- **Do not run the standard pumping unit continuously or use on applications requiring more than five starts per minute in continuous service. A special pump unit, externally mounted, equipped with a continuous duty motor and normally open by-pass valve can be furnished for high frequency starts.**



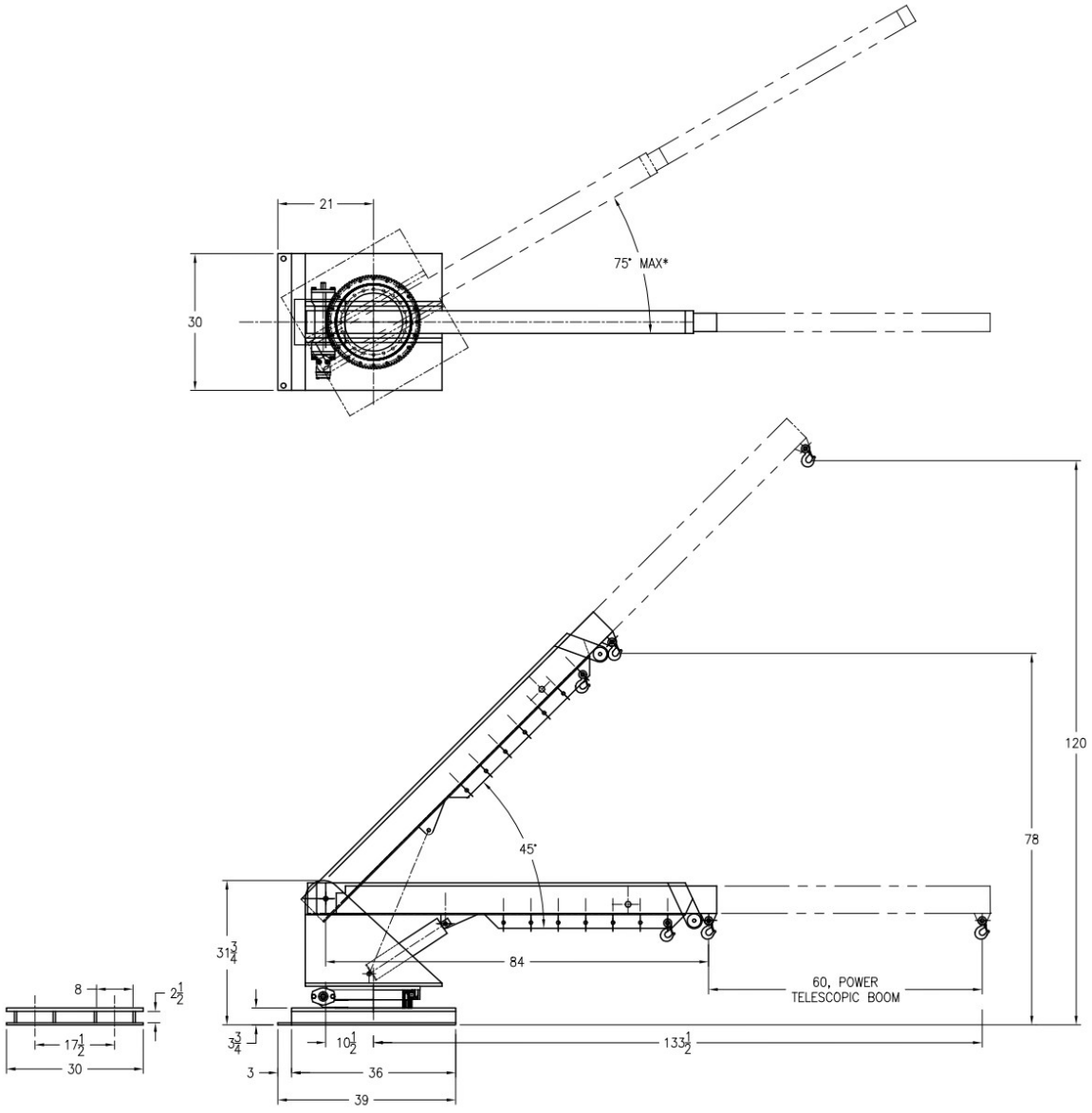
Air Technical Industries
7501 CLOVER AVE. – MENTOR,OHIO

TITLE	MODEL JB–4
DWG. Type	LAYOUT
MATERIAL	
DRAWN	VN
DATE	11/10/2004
SCALE	N.T.S.
REVISION	–

REV	DATE	ENG	DESCRIPTION


JB-4 LOAD CHART
HEIGHT (INCHES)
0
12
24
36
48
60
72
84
96
108
120
132
144
156
LENGTH (INCHES)
0
12
24
36
48
60
72
84
96
108
120
132
144
156
168
180
192
CAPACITY: 3000 LBS.
CAPACITY: 2000 LBS.

REV	DATE	ENG	DESCRIPTION



NOTES:
- CAPACITY:
  BOOM RETRACTED: 3000 LBS
  BOOM EXTENDED: 2000 LBS
- ROTATED CAPACITY MAY DE-RATE BASED ON FORKLIFT CAPACITY/STABILITY
- 12V DC POWERPACK WITH PUSH BUTTON CONTROL
- OPTIONAL BATTERY CHARGER
- RECOMMENDED FOR USE ON MINIMUM 10,000 POUNDS CAPACITY FORK TRUCK FOR MAXIMUM CAPACITY

Air Technical Industries
7501 CLOVER AVE. – MENTOR,OHIO

TITLE: ROTATING JIB–MASTER FORKLIFT CRANE			
JB–4R			
DWG. Type: LAYOUT	MATERIAL:		
DRAWN: VN	DATE: 5/18/2015	SCALE: N.T.S.	REVISION: –

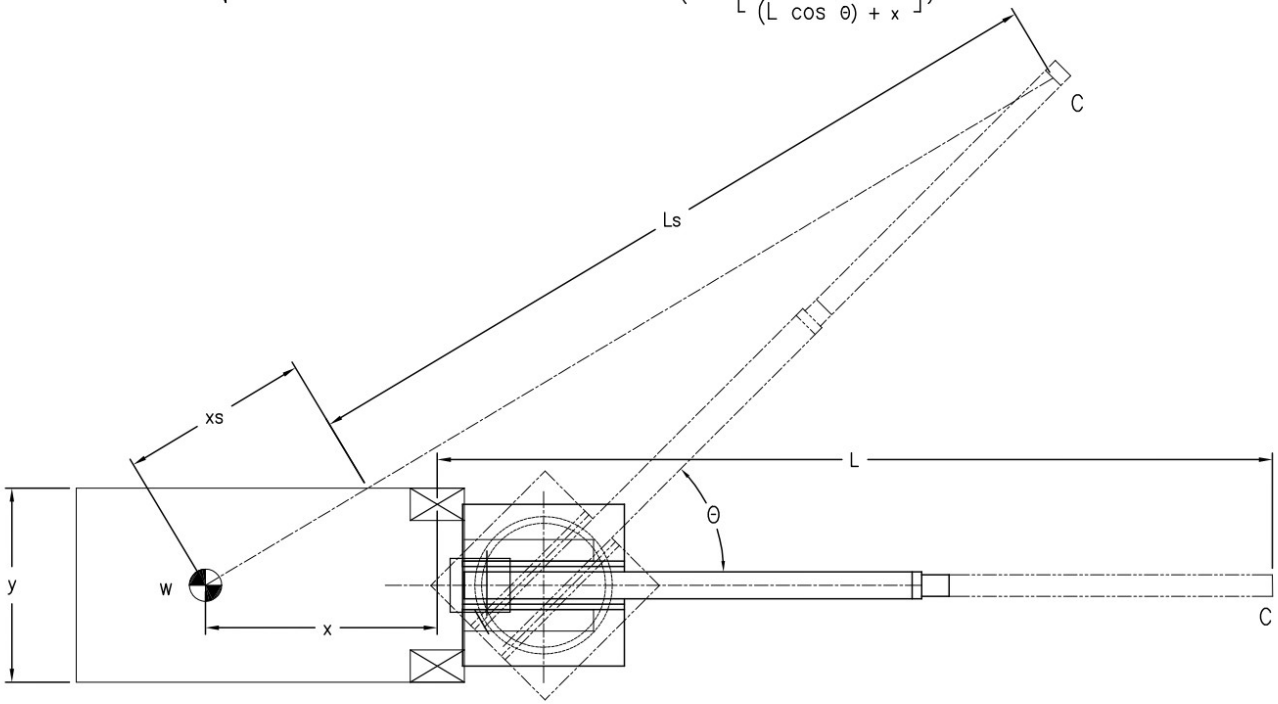
GENERIC CAPACITY CHART JB–4R

C = CAPACITY
w = FORK TRUCK WEIGHT
L = OVERALL BOOM LENGTH
x = DISTANCE TO C.G. OF FORK TRUCK
Ls = DIST. BEYOND FORK TRUCK FROM C.G. TO END OF BOOM (ROTATED)
xs = DIST. INSIDE FORK TRUCK FROM C.G. TO END OF BOOM (ROTATE)

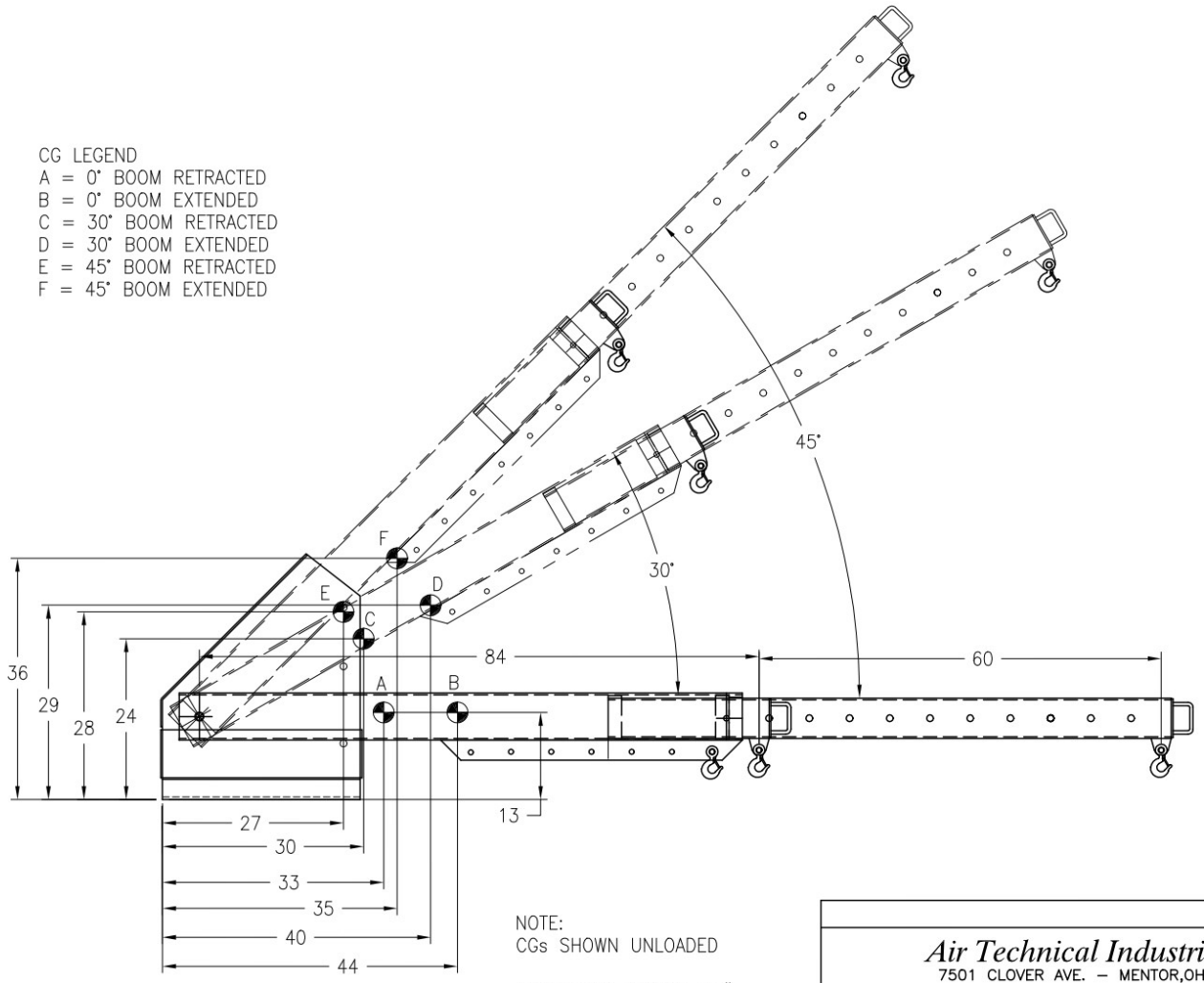
STRAIGHT: $C = 0.67\left(\frac{xw}{L}\right)$ ROTATED: $C = 0.67\left[\frac{(xs)w}{Ls}\right]$

ROTATED:
(in terms of L, x, y, θ):

$$C = 0.67\left[\frac{\left(\frac{y/2}{\sin\left(\tan^{-1}\left[\frac{(L\sin\theta)}{(L\cos\theta)+x}\right]\right)}\right)w}{\sqrt{[(L\cos\theta)+x]^2+(L\sin\theta)^2}-\left(\frac{y/2}{\sin\left(\tan^{-1}\left[\frac{(L\sin\theta)}{(L\cos\theta)+x}\right]\right)}\right)}\right]$$



CG LEGEND
A = 0° BOOM RETRACTED
B = 0° BOOM EXTENDED
C = 30° BOOM RETRACTED
D = 30° BOOM EXTENDED
E = 45° BOOM RETRACTED
F = 45° BOOM EXTENDED



NOTE:
CGs SHOWN UNLOADED

LOST LOAD CENTER: 51"

TOTAL APPROX UNIT WEIGHTS:
JB-2: 650 POUNDS
JB-4: 900 POUNDS
JB-4R: 1100 POUNDS

CAPACITY:
- BOOM RETRACTED: 3000 POUNDS
- BOOM EXTENDED: 2000 POUNDS

Air Technical Industries
7501 CLOVER AVE. - MENTOR,OHIO

TITLE: CG DIAGRAM JIB-MASTER FORKLIFT CRANE		
PART No. JB		MATERIAL
DRAWN VN	DATE 7/21/2010	SCALE N.T.S.
APPROVED		

Parts List

Mechanical Components

Item #	QTY	Part #	Description
W1	1	M5MW3032230R	ROTATION BASE WELDMENT (JB-4R ONLY)
W1	1	M5MW30322300	BASE WELDMENT (JB-4 ONLY)
W2	1	M5OB05078400	BOOM WELDMENT
W3	1	M5IB04068400	EXTENSION BOOM WELDMENT
W4	1	M5TANK050002	HYDRAULIC TANK WELDMENT
W5	1	M5COV153012L	COVER WELDMENT - LEFT
W6	1	M5COV153012R	COVER WELDMENT - RIGHT
W7	1	M5BWJB4R0000	FORK BASE WELDMENT (JB-4R ONLY)
W8	1	M5BATTTRAY16	12V DC BATTERY TRAY
1	2	PTB202820	NEEDLE BEARING 1-1/4” ID X 1-3/4” OD X 1-1/4” LG
2	2	PTBIR1602	NEEDLE RACE 1-1/4” OD X 1” ID X 1-1/4” LG
3	1	PTRTKS17K	HYDRAULIC WORM SLEW DRIVE (JB-4R ONLY)
4	1	PF1608485HHC	1”-8 UNC X 12” LG GRADE 5 HHCS
5	1	PF1608365HHC	1”-8 UNC X 9” LG GRADE 5 HHCS
6	1	PF1210485HHC	3/4”-10 UNC X 12” LG GRADE 5 HHCS
7	1	PF1210265HHC	3/4”-10 UNC X 6-1/2” LG GRADE 5 HHCS
8	2	PF1210165HHC	3/4”-10 UNC X 4” LG GRADE 5 HHCS
9	22	PF0420022HHC	1/4”-20 UNC X 1/2” LG GRADE 5 HHCS
10	2	PFNI16080	1”-8 UNC LOCKNUT
11	4	PFNI12100	3/4”-10 UNC LOCKNUT
12	4	PFUSSFW16	1” ID FLAT WASHER
13	4	PFUSSFW12	3/4” ID FLAT WASHER
14	22	PFUSSFW04	1/4” ID FLAT WASHER
15	40	PF0161580SHC	M16 X 1.5 SHCS X 80MM LG (JB-4R ONLY)
16	40	PF016LW00	16MM LOCKWASHER (JB-4R ONLY)
17	2	PTB162412	1-1/2” OD X 1” ID X 3/4” LG ROLLER BEARINGS
18	2	PTBIR1212	1” OD X 3/4” ID X 3/4” LG ROLLER RACE
19	1	PCSH2000A	1 TON SWIVEL HOOK WITH LATCH KIT

20	1	PCSH4000A	2 TON SWIVEL HOOK WITH LATCH KIT
21	1	CONSULT FACTORY	FRONT CYLINDER PIN
22	2		REAR ROLLER
23	1		REAR CYLINDER PIN
24	1		BOOM ROLLER
25	2		SHACKLE WITH SCREW PIN
26	1		3/8” TRADE SIZE CHAIN

Powerpack Components

Item #	QTY	Part #	Description
27	1	PHPP12VH0	12V DC HYDRAULIC PUMP AND MOTOR
28	2*	PHV4W1201	12V DC HYDRAULIC 4-WAY BOX CONNECTOR *(2 FOR JB-4 AND 3 FOR JB-4R)
29	2*	PHSP02D03	HYDRAULIC VALVE SUB-PLATE *(2 FOR JB-4 AND 3 FOR JB-4R)
30	1	PHMPRRV10	HYDRAULIC PRESSURE RELIEF VALVE (JB-4R ONLY)
31	2	PH02MFCV0	HYDRAULIC FLOW CONTROL VALVE
32	2	PEADJRLS0	ADJUSTABLE ROLLER LIMIT SWITCHES (JB-4R ONLY)
33	1	PE6STAPB0	6-STATION PUSH BUTTON PENDANT (JB-4R ONLY)
33	1	PE4STAPB0	4-STATION PUSH BUTTON PENDANT (JB-4 ONLY)
34	1	PE12V16TF	12V DC BATTERY
35	1	PETBHVY00	TERMINAL STRIP
36	1	PH03VENT0	3/8” VENT PLUG
37	1	PH0403STR	1/2” X 3/8” TANK STRAINER
38	-	PEPC2X400	2” X 4” HANDY BOX LID
39	-	PE224HB00	2” X 2” X 4” HANDY BOX
40	-	PEPC4X400	4” X 4” HANDY BOX LID
41	-	PE441HB00	4” X 4” X 2” HANDY BOX

Cylinder Components

Item #	Model	QTY	Part #	SA/DA	Size
42	LIFT	1	M5YCD1161606	SA	3.5" X 14.5" ST X 20.25" CC
43	TELESCOPIC	1	M5YDC4805287	DA	2.5" X 60" ST X 66" CC

Item #	Part #	Description
44	M5REPKITDDA0	3.5" BORE CYLINDER REPAIR KIT
45	M5REPKITCDA0	2.5" BORE CYLINDER REPAIR KIT
46	M1PISTONDDS1	3.5" DIA CYLINDER PISTON
47	M1PISTONDCS1	2.5" DIA CYLINDER PISTON
48	PFISRD001	3.5" DIA SNAP RINGS
49	PFISRC001	2.5" DIA SNAP RINGS
50	PFJN16148	1" X 14 CYLINDER NUTS
51	M1GLANDDD0S1	3.5" CYLINDER GLAND
52	M1GLANDCC0S1	2.5" CYLINDER GLAND

Hydraulic Hoses / Fittings

Item #	Part #	Description
53	M2HOSE020100	1/4” HYDRAULIC HOSE WITH M/F ENDS, 10” LONG
54	M2HOSE020120	1/4” HYDRAULIC HOSE WITH M/F ENDS, 12” LONG
55	M2HOSE020160	1/4” HYDRAULIC HOSE WITH M/F ENDS, 16” LONG
56	M2HOSE020180	1/4” HYDRAULIC HOSE WITH M/F ENDS, 18” LONG
57	M2HOSE020240	1/4” HYDRAULIC HOSE WITH M/F ENDS, 24” LONG
58	M2HOSE020360	1/4” HYDRAULIC HOSE WITH M/F ENDS, 36” LONG
59	M2HOSE020480	1/4” HYDRAULIC HOSE WITH M/F ENDS, 48” LONG
60	M2HOSE020600	1/4” HYDRAULIC HOSE WITH M/F ENDS, 60” LONG
61	M2HOSE020720	1/4” HYDRAULIC HOSE WITH M/F ENDS, 72” LONG
62	M2HOSE020840	1/4” HYDRAULIC HOSE WITH M/F ENDS, 84” LONG
63	M2HOSE020960	1/4” HYDRAULIC HOSE WITH M/F ENDS, 96” LONG
64	M2HOSE030120	3/8” HYDRAULIC HOSE WITH M/F ENDS, 12” LONG
65	M2HOSE030160	3/8” HYDRAULIC HOSE WITH M/F ENDS, 16” LONG
66	M2HOSE030180	3/8” HYDRAULIC HOSE WITH M/F ENDS, 18” LONG

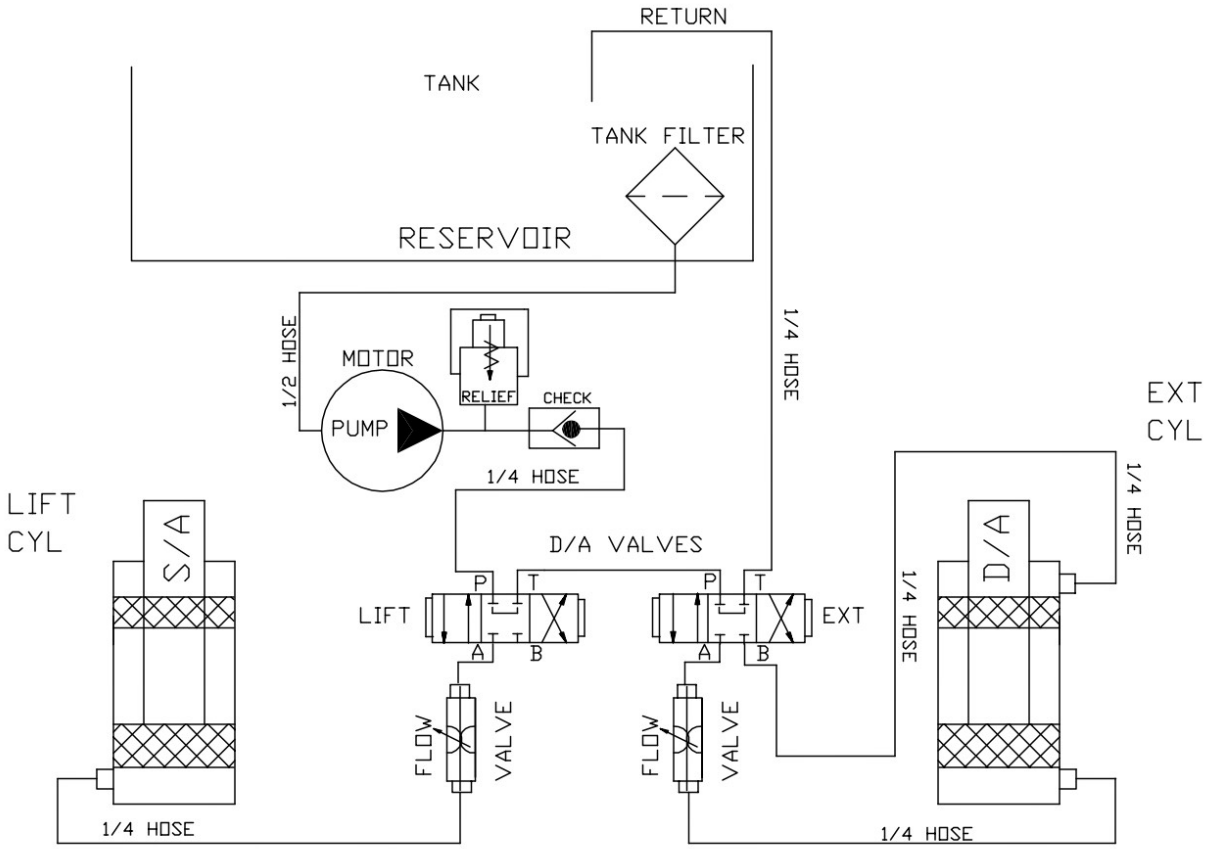
67	M2HOSE030240	3/8” HYDRAULIC HOSE WITH M/F ENDS, 24” LONG
68	M2HOSE030360	3/8” HYDRAULIC HOSE WITH M/F ENDS, 36” LONG
69	M2HOSE030480	3/8” HYDRAULIC HOSE WITH M/F ENDS, 48” LONG
70	M2HOSE030600	3/8” HYDRAULIC HOSE WITH M/F ENDS, 60” LONG
71	M2HOSE030720	3/8” HYDRAULIC HOSE WITH M/F ENDS, 72” LONG
72	M2HOSE030840	3/8” HYDRAULIC HOSE WITH M/F ENDS, 84” LONG
73	M2HOSE030960	3/8” HYDRAULIC HOSE WITH M/F ENDS, 96” LONG
74	PH6405060400	3/8” X 1/4” O-RING ADAPTER
75	PH2605060406	3/8” FLARE X 1/4” NPT M RN-T
76	PH5502040400	1/4” NPT M X 1/4” F 90 DEGREE ELBOW
77	PH5404N04CLS	1/4” CLOSE NIPPLE
78	PH6801060600	3/8” FLARE X 3/8” O-RING 90 DEGREE ELBOW
79	PH5502060400	3/8” NPT M X 1/4” NPT F 90 DEGREE ELBOW
80	PH5605060606	3/8” NPT F TEE-FITTING

Options / Accessories

Item #	QTY	Part #	Option	Description
81	1	PE12V20IS	BC	12V 20A BATTERY CHARGER
82	6	PERL12VDC	WC	DPDT CUBE RELAY WITH 12V DC COIL VOLTAGE
83	6	PERLYBS8P	WC	SOCKET FOR CUBE RELAY
84	3	PEAPSML00	EW	ANDERSON PLUG
85	1	PED2JK250	EW	250A DISCONNECT SWITCH
86	1	PCPW3000D	EW	12V WINCH, 2500# CAPACITY
87	2	PTB202820	EW	NEEDLE BEARING 1-1/4” ID X 1-3/4” OD X 1-1/4” LG
88	2	PTBIR1602	EW	1-1/4” OD X 1” ID X 1-1/4” LG RACE

Key

BC	Battery Charger
WC	Wireless Controller
EW	Electric Winch



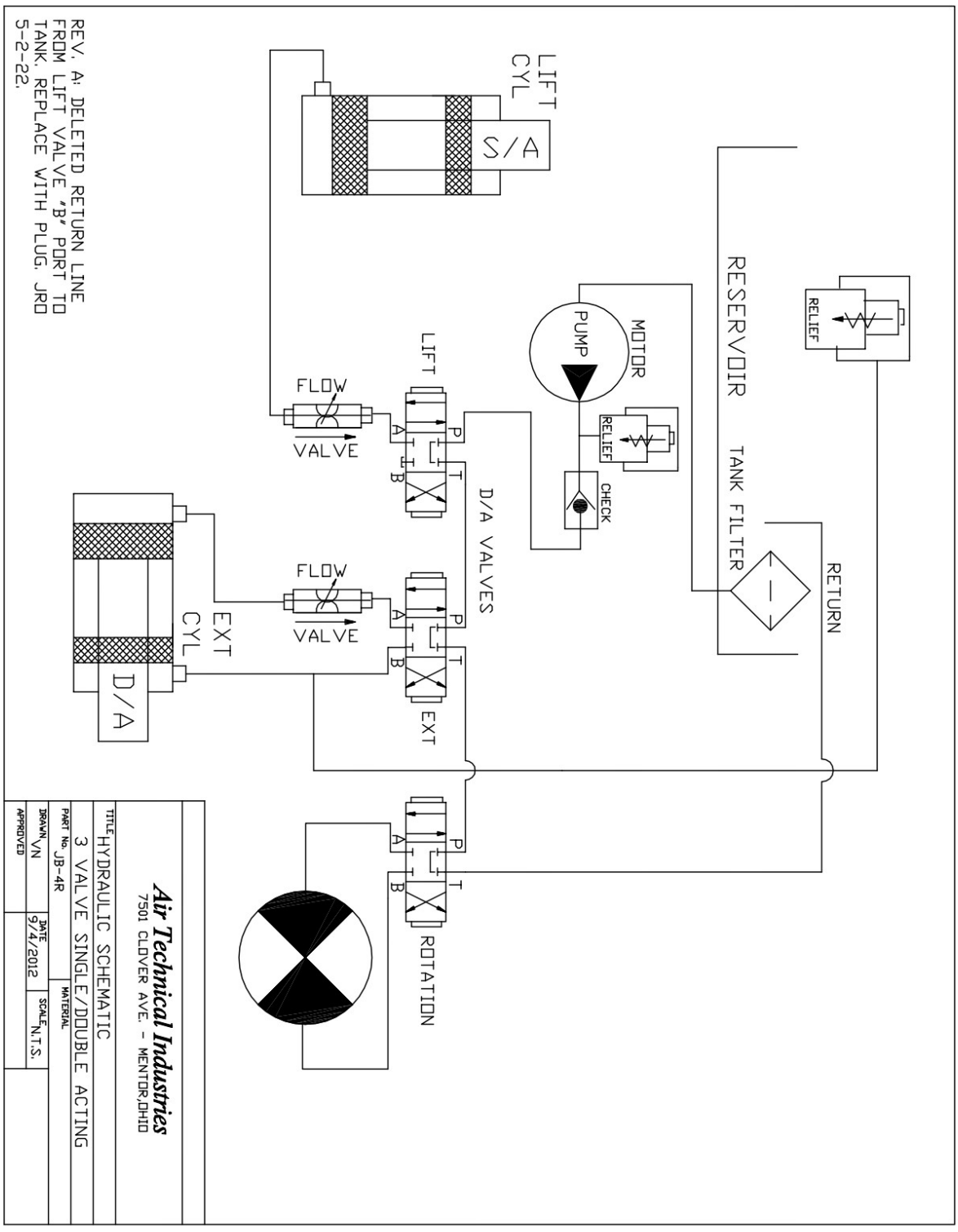
10/16/2017 REV. A S.M.O.

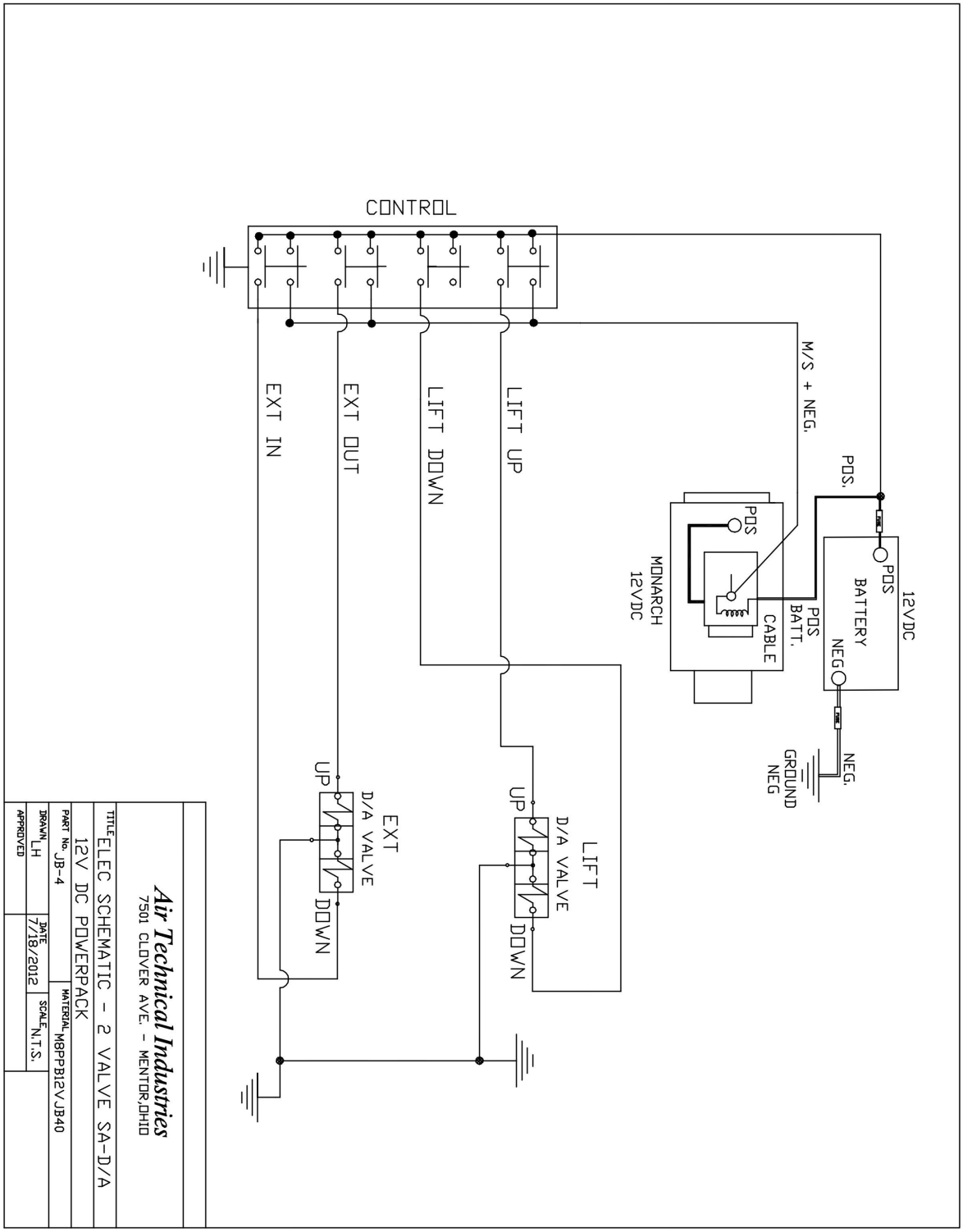
8/20/2018 REV. B CMC

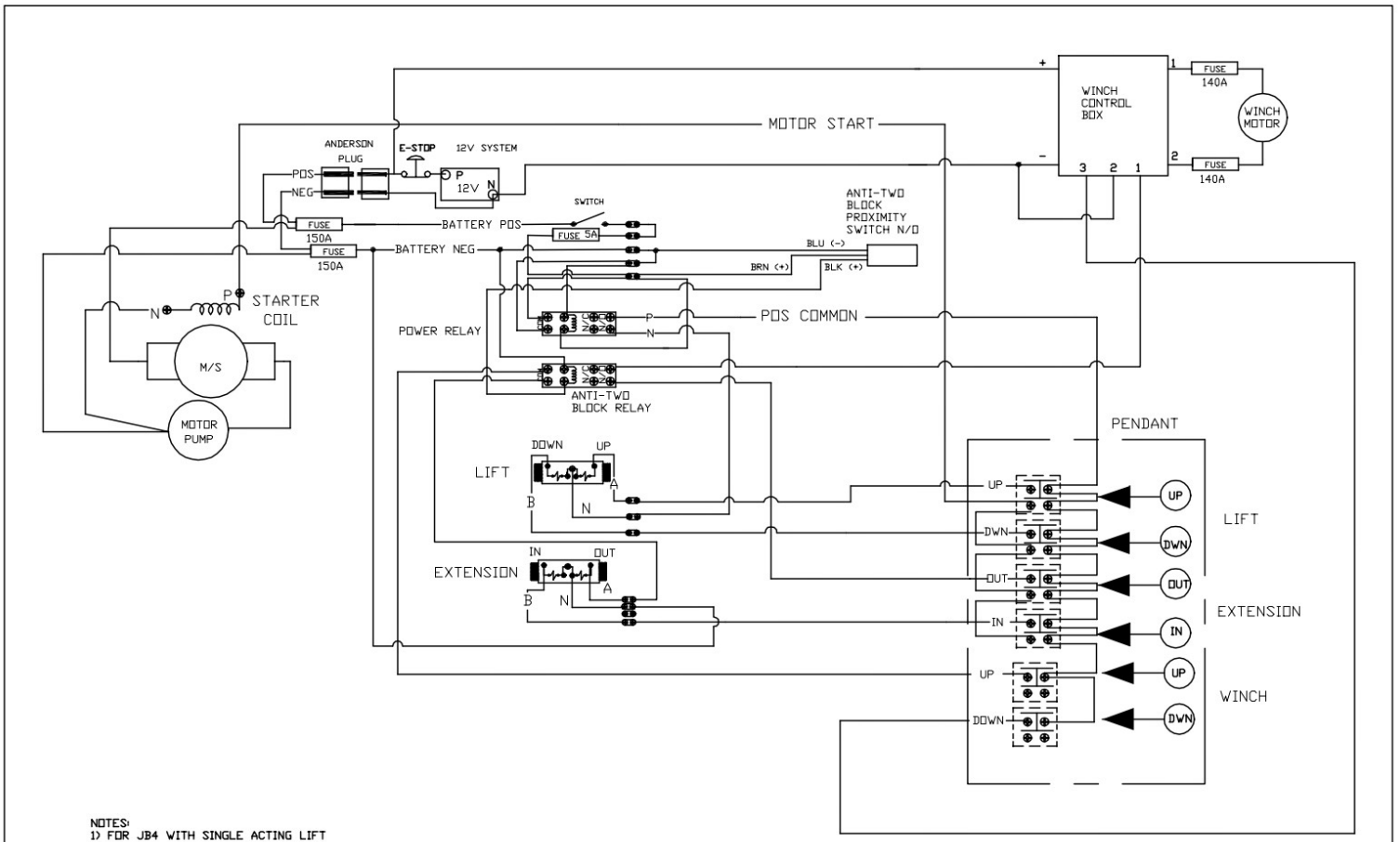
REV. C: CORRECTED "B" SIDE PLUMBING ON EXTENSION CYLINDER. JRO 3-30-2023.

Air Technical Industries
7501 CLOVER AVE. - MENTOR,OHIO

TITLE	HYDRAULIC SCHEMATIC		
	TWO VALVE SINGLE/DOUBLE ACTING		
PART No.	JB-4	MATERIAL	M8PPB12VJB40
DRAWN	LH	DATE 7/18/2012	SCALE N.T.S.
APPROVED			


RELIEF
RESERVOIR
TANK FILTER
RETURN
MOTOR
PUMP
RELIEF
CHECK
LIFT CYL
S/A
FLOW
VALVE
LIFT
D/A VALVES
EXT
FLOW
VALVE
EXT CYL
D/A
ROTATION
P
T
A
B
REV. A: DELETED RETURN LINE FROM LIFT VALVE "B" PORT TO TANK. REPLACE WITH PLUG. JRD 5-2-22.
Air Technical Industries
7501 CLOVER AVE. - MENTOR,OHIO
TITLE HYDRAULIC SCHEMATIC
3 VALVE SINGLE/DOUBLE ACTING
PART No JB-4R
MATERIAL
DRAWN VN
DATE 9/4/2012
APPROVED
SCALE N.T.S.


CONTROL
M/S + NEG.
POS.
POS
BATTERY
NEG
12VDC
NEG.
GROUND
NEG
POS
POS
BATT.
CABLE
MONARCH
12VDC
EXT IN
EXT OUT
LIFT DOWN
LIFT UP
LIFT
D/A VALVE
UP
DOWN
EXT
D/A VALVE
UP
DOWN
Air Technical Industries
7501 CLOVER AVE. - MENTOR,OHIO
TITLE ELEC. SCHEMATIC - 2 VALVE SA-D/A
12V DC POWERPACK
PART No. JB-4
MATERIAL M8PPB12VJB40
DRAWN LH
DATE 7/18/2012
SCALE N.T.S.
APPROVED



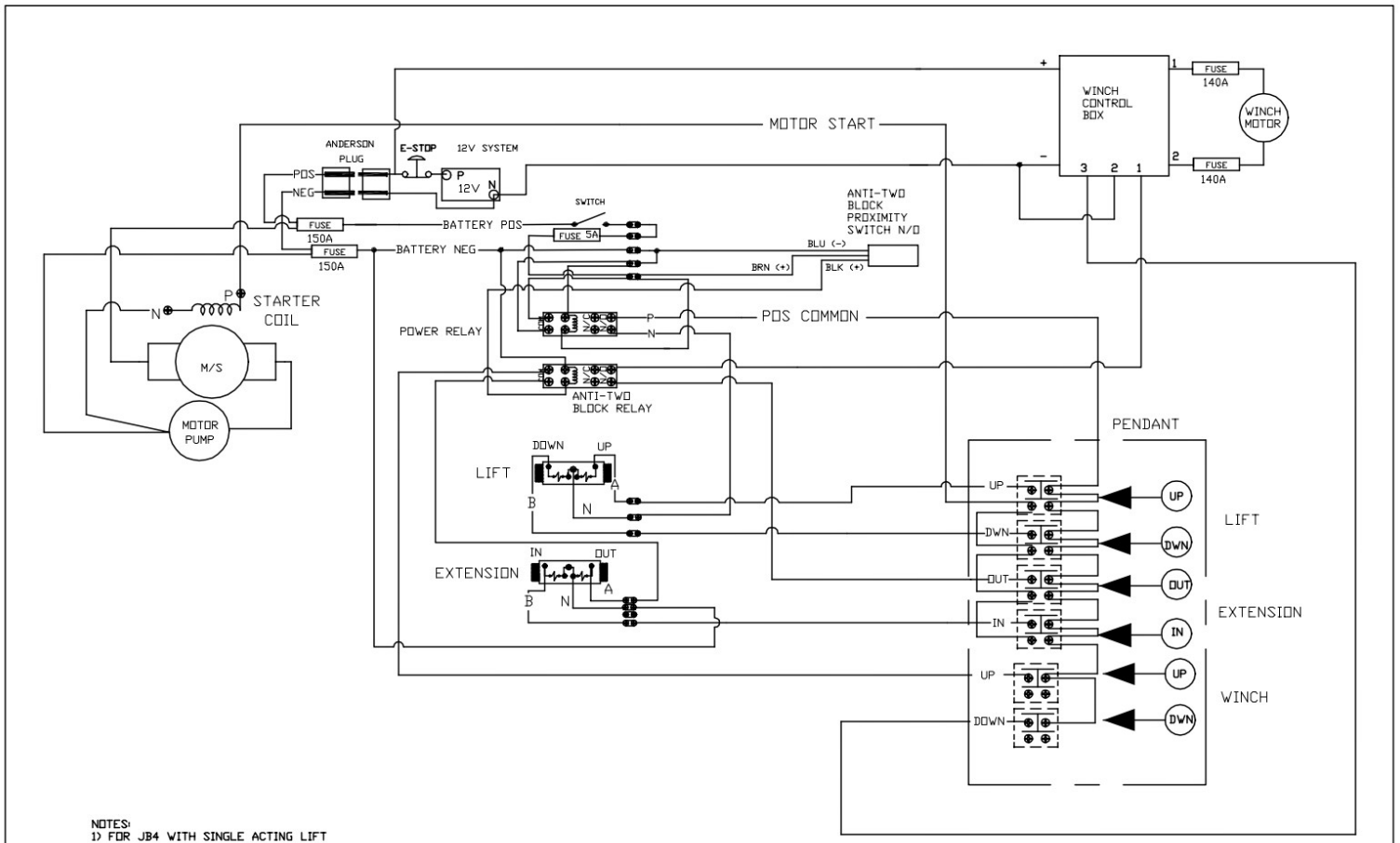
NOTES:
1) FOR JB4 WITH SINGLE ACTING LIFT CYLINDER, OMIT JUMPER WIRE FOR MOTOR START FROM 'DOWN' BUTTON.

REV. B - ADDED WINCH CONTROL PACK. JRD 9-17-20.

REV. A. 9/27/2017 S.M.D.

Air Technical Industries
7501 CLOVER AVE. - MENTOR,OHIO

TITLE: WIRING DIAGRAM - PERM. MAGNET WINCH 2 VALVE 12V DC WITH DC WINCH			
PART No.: RBC/HM/SM/JB4		MATERIAL:	
DRAWN: VN	DATE: 9/22/2012	SCALE: N.T.S.	
APPROVED:			



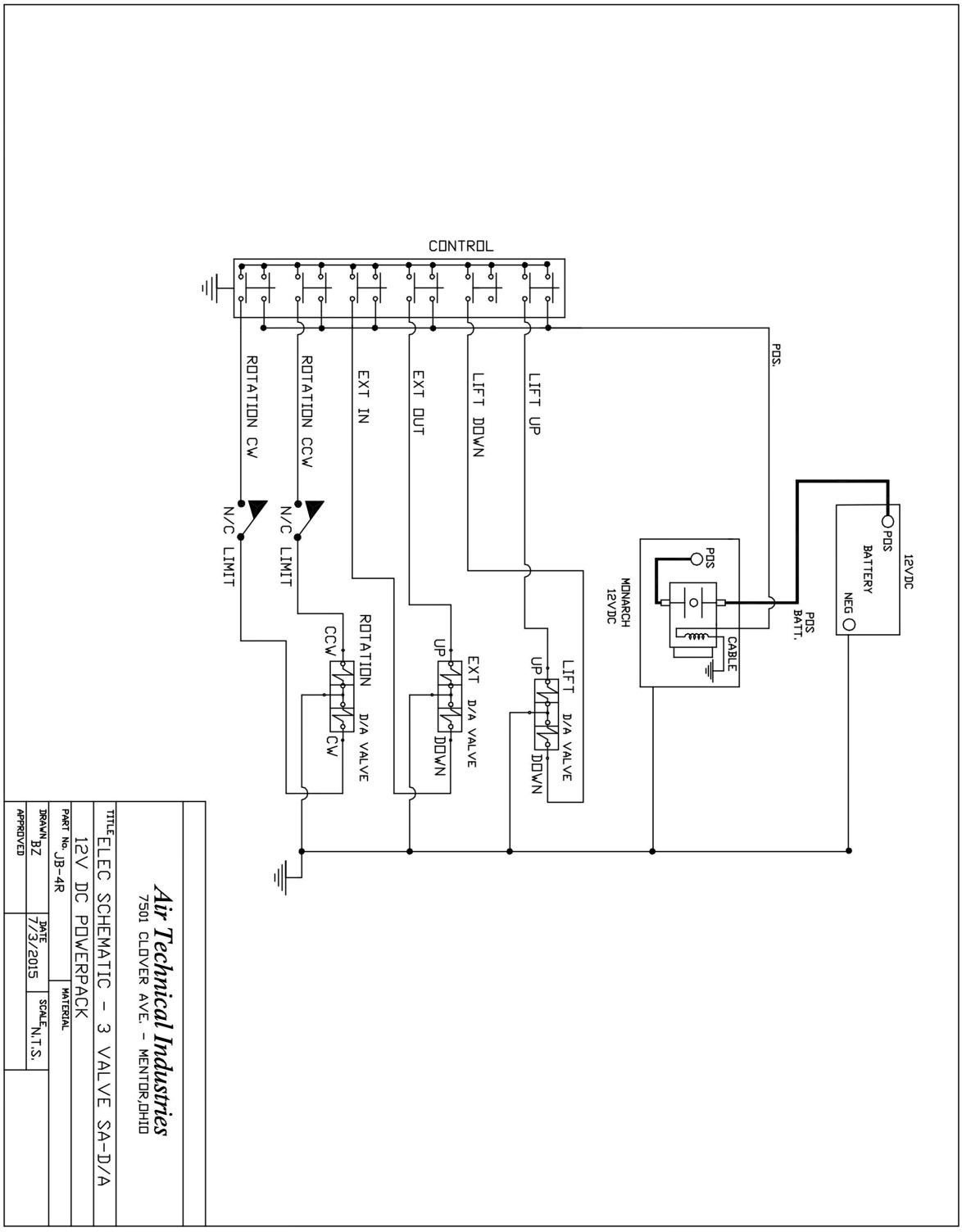
NOTES:
1) FOR JB4 WITH SINGLE ACTING LIFT CYLINDER, OMIT JUMPER WIRE FOR MOTOR START FROM 'DOWN' BUTTON.

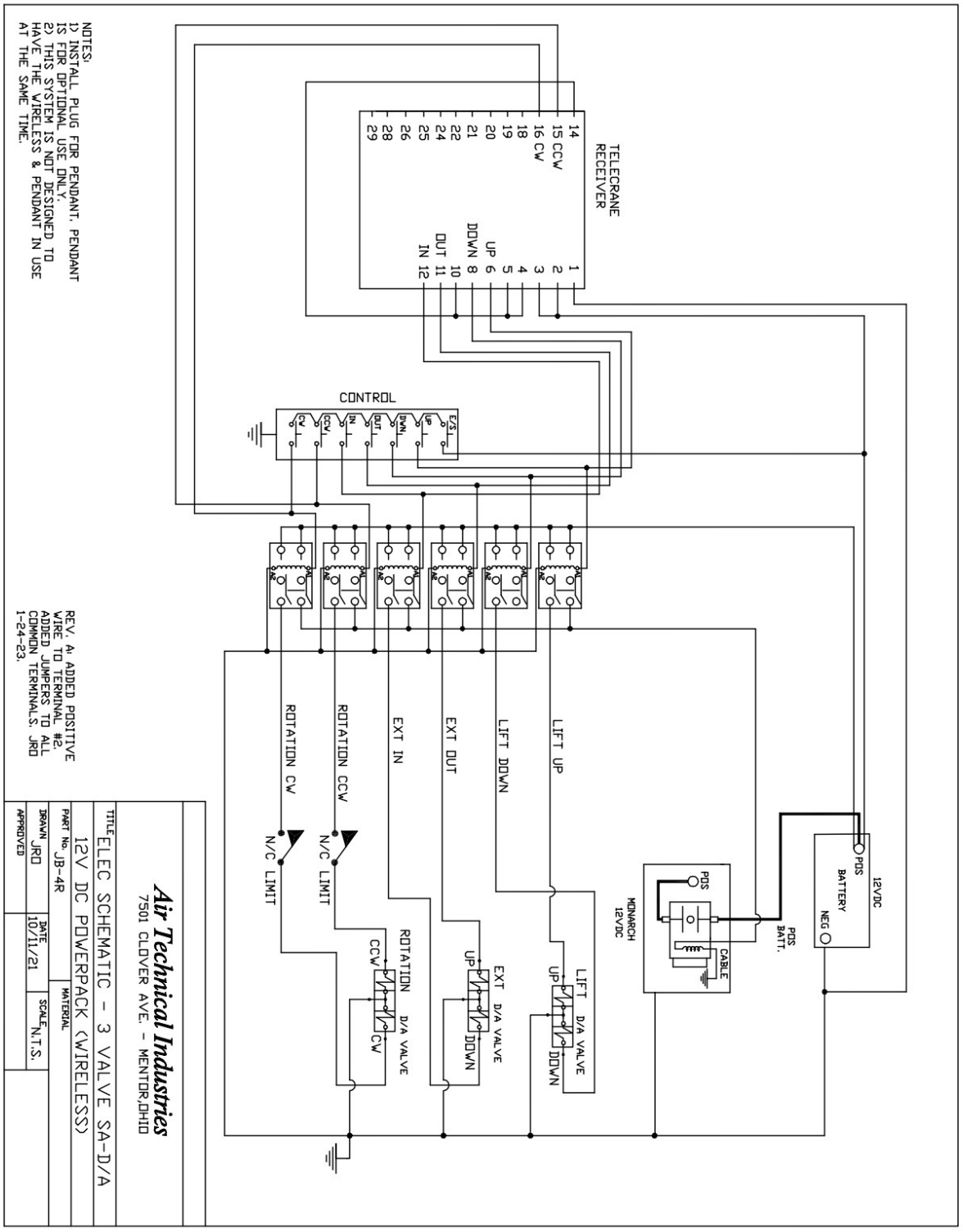
Air Technical Industries
7501 CLOVER AVE. - MENTOR,OHIO

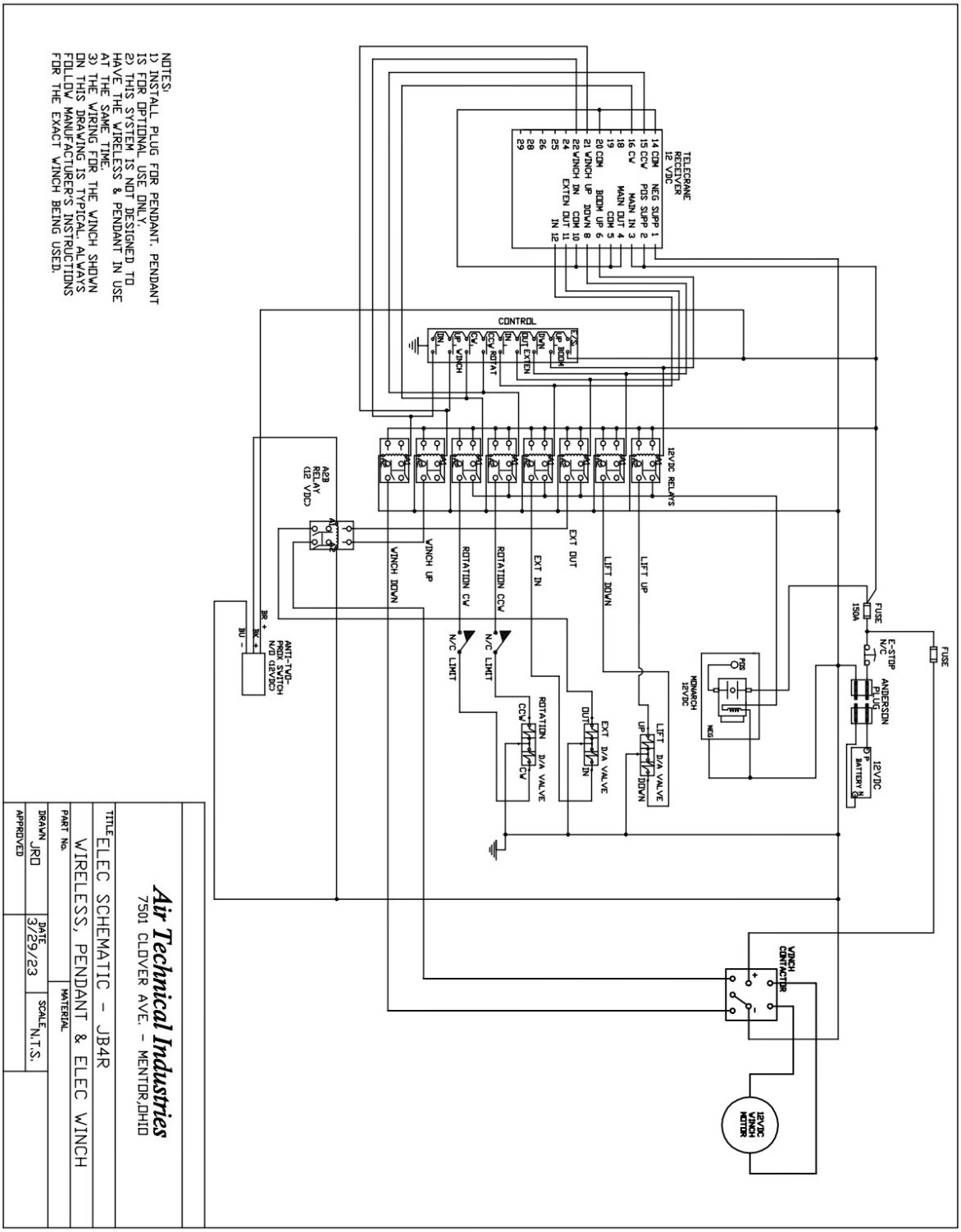
TITLE: WIRING DIAGRAM - PERM. MAGNET WINCH 2 VALVE 12V DC WITH DC WINCH		
PART No.: RBC/HM/SM/JB4	MATERIAL:	
DRAWN: VN	DATE: 9/22/2012	SCALE: N.T.S.
APPROVED:		

REV. B - ADDED WINCH CONTROL PACK. JRD 9-17-20.

REV. A. 9/27/2017 S.M.D.


CONTROL
ROTATION CW
ROTATION CCW
EXT IN
EXT OUT
LIFT DOWN
LIFT UP
POS.
N/C LIMIT
N/C LIMIT
ROTATION D/A VALVE
CCW
CW
EXT D/A VALVE
UP
DOWN
LIFT D/A VALVE
UP
DOWN
MONARCH 12VDC
POS
CABLE
POS BATT.
12VDC
POS
BATTERY
NEG
Air Technical Industries
7501 CLOVER AVE. - MENTOR,OHIO
TITLE ELEC SCHEMATIC - 3 VALVE SA-D/A
12V DC POWERPACK
PART No. JB-4R
MATERIAL
DRAWN BZ
DATE 7/31/2015
SCALE N.T.S.
APPROVED


NOTES.
1) INSTALL PLUG FOR PENDANT. PENDANT IS FOR OPTIONAL USE ONLY.
2) THIS SYSTEM IS NOT DESIGNED TO HAVE THE WIRELESS & PENDANT IN USE AT THE SAME TIME.
REV. A: ADDED POSITIVE WIRE TO TERMINAL #2. ADDED JUMPERS TO ALL COMMON TERMINALS. JRD 1-24-23.
TELECRANE RECEIVER
14
15 CCW
16 CW
18
19
20
21
22
24
25
26
28
29
1
2
3
4
5
6
UP
8
DOWN
10
11
12
OUT
IN
CONTROL
CW
CCW
IN
OUT
DWN
UP
EXT
12VDC
BATTERY
NEG
PDS
PDS BATT.
MONARCH 12VDC
CABLE
LIFT UP
LIFT DOWN
EXT OUT
EXT IN
ROTATION CCW
ROTATION CW
LIFT D/A VALVE
UP
DOWN
EXT D/A VALVE
ROTATION D/A VALVE
CW
N/C LIMIT
Air Technical Industries
7501 CLOVER AVE. - MENTOR,OHIO
TITLE ELEC SCHEMATIC - 3 VALVE SA-D/A
12V DC POWERPACK (WIRELESS)
PART No. JB-4R
MATERIAL
DRAWN JRD
DATE 10/11/21
APPROVED
SCALE N.T.S.


NOTES:
1) INSTALL PLUG FOR PENDANT. PENDANT IS FOR OPTIONAL USE ONLY.
2) THIS SYSTEM IS NOT DESIGNED TO HAVE THE WIRELESS & PENDANT IN USE AT THE SAME TIME.
3) THE WIRING FOR THE WINCH SHOWN ON THIS DRAWING IS TYPICAL. ALWAYS FOLLOW MANUFACTURER'S INSTRUCTIONS FOR THE EXACT WINCH BEING USED.
TELECRANE RECEIVER 12 VDC
CONTROL
12VDC RELAYS
A2B RELAY (12 VDC)
ANTI-TWIST PROX SWITCH (12VDC)
VINCH UP
VINCH DOWN
ROTATION CW
ROTATION CCW
EXT IN
EXT OUT
LIFT DOWN
LIFT UP
N/C LIMIT
ROTATION D/A VALVE
EXT D/A VALVE
LIFT D/A VALVE
E-STOP N/C
FUSE 150A
ANDERSON
12VDC BATTERY
MONARCH 12VDC
VINCH CONTACTOR
12VDC VINCH MOTOR
Air Technical Industries
7501 CLOVER AVE. - MENTOR,OHIO
TITLE ELEC SCHEMATIC - JB4R
WIRELESS, PENDANT & ELEC WINCH
PART No.
MATERIAL
DRAWN JRO
DATE 3/29/23
SCALE N.T.S.
APPROVED

Warranty

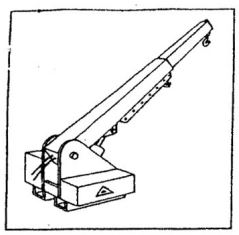
Air Technical Industries warrants that its products shall be free from defects in material and workmanship under normal and ordinary usage when owned by the original purchaser for a period of twelve months from the date the products are shipped from Air Technical Industries. Hydraulic and electrical components are warranted for 90 days. The customer must cease use of the product pending Air Technical Industries' substantiation of any warranty claim. In the event that a product defect shall occur during the warranty period, Air Technical Industries shall provide replacement parts free of charge. Any unauthorized repairs on said products will render the warranty null and void. Labor to replace defective components is not included in the warranty; nor is any downtime or rental charges. By accepting product delivery, purchaser agrees to the terms of this warranty. Unless otherwise agreed upon in writing, Air Technical Industries makes no other warranties expressed or implied, which extends beyond the description of the goods. Due to their unique design and construction, Air Technical Industries' products are not crated. Contact us for specific crating charges.
It is Air Technical Industries' policy that any and all returns must have a return goods authorization on file before any return will be accepted or credit will be issued. A return goods authorization form may be obtained by calling our customer service department. Any parts or products must be returned and inspected to validate any warranty or defect claim prior to any credit being issued. Any items returned without authorization on file will not be issued a credit as no claim has been established.

To establish a valid claim the customer must use the following procedure:

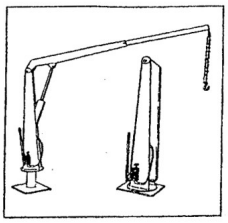
- Call Air Technical Industries customer service department for a Return Goods Authorization form
- Sign and return by fax a copy for Air Technical Industries file.
- Use this form as a packing slip for return shipment
- Return all parts or products for inspection to validate claim.

RETURN AND CREDIT POLICY

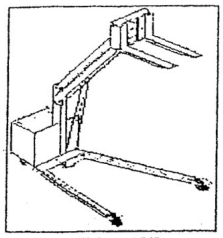
It is Air Technical Industries' policy that any and all returns or warranty claims once established to our satisfaction as a valid claim will be issued a <u>CREDIT</u> on the customer's account. This credit can be used within 1 year from the date of Credit Memo towards the purchase of new products, replacement parts, and/or service. <u>At no time will a cash refund be issued</u>. If a credit is issued under special circumstances, that credit can only be used as specified in a written agreement made between Air Technical Industries and the customer. This agreement must be made at the time the claim is established.



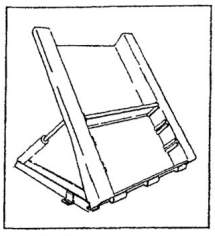
JibMaster



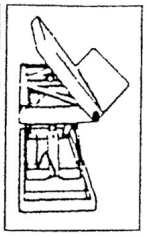
Truck mounted Foldable Crane



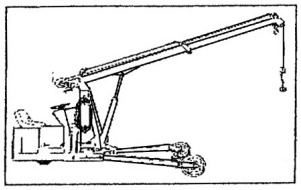
Universal Lift



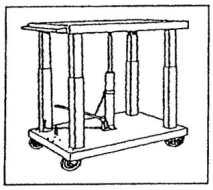
Zero-Low Crate Positioners



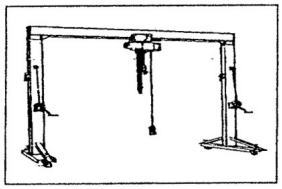
Lift & Tilt Tables



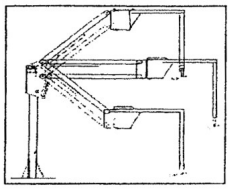
Port-O-Giant



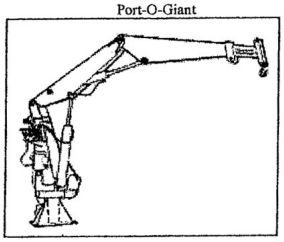
Post Tables



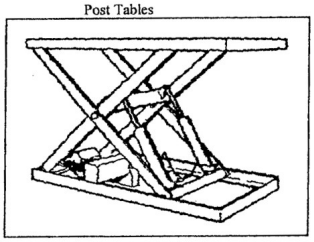
Gantry Cranes



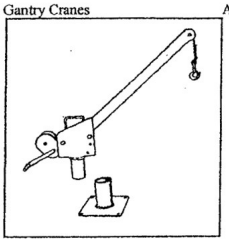
Articularm Manipulator



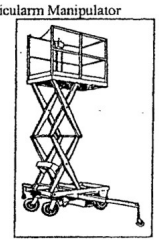
Knuckle Cranes



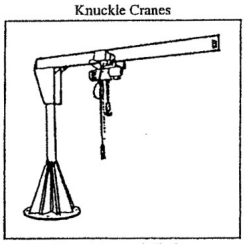
Scissor Lift Tables



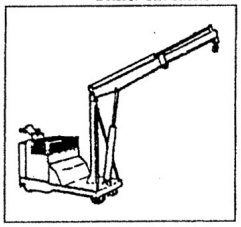
Truck Mounted Pick-Up Crane



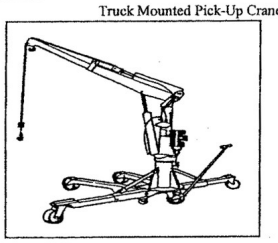
Maintenance Lifts



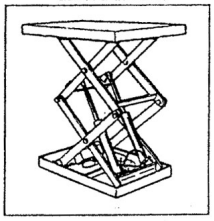
Floor Mounted Jib Cranes



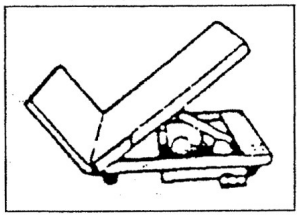
Reversible Boom Crane



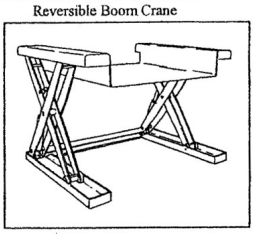
Super Master



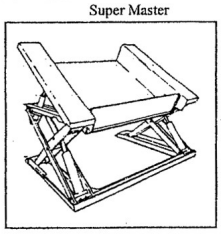
Double Scissor Lift Table



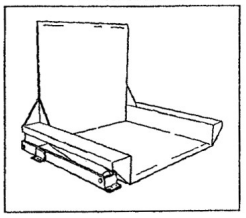
Crate Positioner



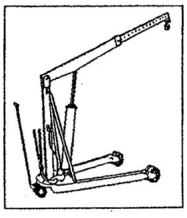
Zero-Low Lift Table



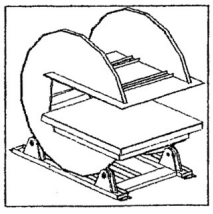
Zero-Low Lift & Tilt



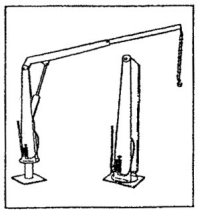
Zero-Low Up-Ender/Positioner



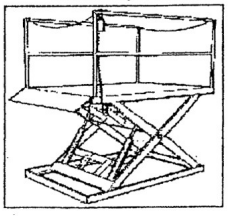
Husky Master



Upender-Inverter



Truck Mounted Foldable Crane



Magic Dock Scissor Lift