



OPERATION & MAINTENANCE MANUAL FOR THE BOX SPRING DISMANTLER



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HOW TO USE THIS MANUAL

ARRANGEMENT

This manual is arranged in six primary sections. Pages, paragraphs, figures, and tables are numbered sequentially.

Section 1 – Safety

This section contains critical information essential to safe operation of the machine.

Section 2 – Equipment Overview, Installation, and Moving

This section contains the purpose of the machine, a description of the equipment, optional equipment, what to expect when the machine is running optimally, installation instructions, and how to move the machine.

Section 3 – Machine Controls

This section identifies and describes the machine controls.

Section 4 – Operation and Adjustment

This section contains pre-operational checks, starting and stopping, operation, operator troubleshooting, and a list of frequently asked questions.

Section 5 – Maintenance

This section contains procedures for performing preventative and corrective maintenance on machine components, and a list of recommended as well as available spare parts.

Section 6 – Drawings & Schematics

This section contains the Industrial Resources drawings and schematics for the electrical and hydraulic systems.

Purpose Statement

The purpose of this manual is to provide an overview of the safety, operational, and maintenance features of this product. The content assumes the reader is a trained, qualified maintenance technician, has a maintenance responsibility for the equipment, and requires additional information beyond their common mechanical or electrical skills.

Note:

The dimensions, tolerances, parameters, and measurements contained in this document are subject to change at any time. No certification or representation is made as to the accuracy or adequacy of these values over time.

SECTION ONE - SAFETY

1-1 General

Operation of the Box Spring Dismantling machine involves high voltage electrical energy and a hydraulic system. Safety awareness is essential. You can help prevent accidents that may cause injury to yourself and others or damage to the equipment by observing all the standard shop safety rules enforced at the workplace and by taking these additional precautions. Follow all safety-warnings throughout this instruction manual and labels on the equipment. These instructions are for everyone's safety.

1-2 Explanations of Symbols



WARNING

REFERS TO A PRACTICE OR CONDITION THAT IS POTENTIALLY HAZARDOUS TO THE OPERATOR OR MAINTENANCE PERSONNEL AND COULD RESULT IN INJURY OR DEATH.



CAUTION

REFERS TO A PRACTICE OR CONDITION THAT COULD POTENTIALLY RESULT IN DAMAGE TO THE EQUIPMENT OR MACHINERY.

NOTE

REFERS TO A PRACTICE OR CONDITION THAT REQUIRES EMPHASIS OR PROVIDES SUPPLEMENTAL CLARIFICATIONS, HELPFUL HINTS, OR INFORMATION OF PARTICULAR IMPORTANCE TO THE OPERATOR OR MAINTENANCE PERSONNEL.

1-3 Machinery Precautions

- Follow all safety warnings throughout this instruction manual, all labels on the equipment, as well as all standard shop procedures.
- DO NOT operate the machine if there are obstructions in the way of moving machine parts. Keep the work area clean by removing all scraps, bottles, etc. that could cause accidents.
- Never operate the machine without all guards in place. Approach moving parts with caution.
- Wear safety glasses to deflect flying fragments, leather gloves for handling rough pallets, and wear hearing protection at all times when saw is running.
- Understand the location and function of all machine controls, especially the STOP button.
- Know and respect the machinery. Always be attentive for machine malfunctions or unusual noises. These can indicate problems requiring immediate attention. Notify the supervisor immediately in such instances.
- Maintain system pressure within specified limits to prevent damage to the system.
- KEEP THE DOOR TO THE ELECTRICAL CABINET CLOSED!
- Use extreme caution when performing maintenance or troubleshooting procedures for this machine. Follow all shop procedures. ONLY QUALIFIED MAINTENANCE PERSONNEL SHOULD PERFORM MAINTENANCE OR TROUBLESHOOTING OPERATIONS.
- Before each use, inspect hose, tubes, tanks, etc., for signs of damage, deterioration, weakness, or leakage. Repair or replace defective items before using.
- Disconnect power from the system before attempting to install, service, relocate, or perform any maintenance.
- Do not operate the machinery while intoxicated or under the influence of any drugs. The Box Spring Dismantler is for one-man operation only.



WARNING: ALL ENERGY SYSTEMS MUST BE DISABLED AND LOCKED-OUT PRIOR TO HANDLING ANY MACHINE COMPONENTS OR PERFORMING ANY MAINTENANCE. FAILURE TO SYSTEMS COULD CAUSE SERIOUS INJURY!

SECTION TWO – OVERVIEW, INSTALLATION, & MOVING

2 – 1 Machine Overview



2 – 2 Description of Features

Forklift Tubes - All Industrial Resources equipment comes standard with forklift pockets to move the machine easily and without structural damage.

Blades - The blades act shears to separate springs from the box spring frame, they do not actually cut the wood or metal.

Table - The box spring rests on the table where it is pushed into the blades. It is painted orange to indicate it is a moving part.

2 – 3 Machine Expectations and Specifications

Features / Benefits

- Removes springs from a box spring in a single pass
- Fast 3.2 second cycle time
- One person operation
- Can dismantler up to 400 box springs per shift
- Self contained hydraulic system
- Ergonomic, quiet, low strain operation

Specifications

- Machine Size: 15' long x 7' wide
- Power Unit: 7.5 hp, 12 GPM @ 750 PSI, 230/480, 3 phase
- Cycle Time (in and out): 7 seconds
- Valving: Manual variable speed
- Machine Weight: 3,800 pounds
- Cylinder Size: 2" bore x 62" stroke

2 – 5 Moving the Machine

1. Disconnect all electricity and unbolt the machine from the floor.

Caution: Only pick up the machine using a forklift and the built-in forklift tubes on the machine. Moving the machine any other way will torque the machine and damage the structural integrity and the body of the machine.

2 – 6 Installation Instructions

1. Remove all packaging and banding material
2. The machine must be level in order for it to operate properly. Place a level on the frame (as shown in fig 5) and shim under the pads to the proper height.
3. Anchor the machine to the floor with ½” to ¾” anchor bolts in the four pads.

2 – 7 Electrical Power Installation



1. **Caution:** Before any electrical service is connected to the machine, retighten all screw connections inside the electrical panel. Not tightening all screws can result in serious damage to the machine. They become loose due to vibration during shipment.



2. **Warning:** The machine must be wired by a certified electrician. Serious injury can occur as well as complete destruction of the machine if the machine is improperly hooked up to electrical power.

3. Make sure that the pass one is wired for the voltage that is labeled on the electrical box.



Caution: Run a separate ground wire to the Box Spring Dismantler. Do not depend on the conduit to establish a ground circuit to the shop wiring.

4. Connect power to L1, L2, and L3 in the electrical box.

2 – 8 Sequence of Operation

1. After thoroughly reading this manual, the operator loads a box spring onto the table.
2. When the operator pulls the handle back, the table pushes the box spring into the blades on the arm assembly. The blades slice against the springs, cutting them, and freeing the frame.
3. Pushing the handle forward reverses the table, withdrawing the box spring from the blades.
4. If no there is no action on the handle, the table will not move.

SECTION THREE – MACHINE CONTROLS

3 – 1 Machine Controls

Fig. 6



Main on/off Switch

Stop & Start

Drive Levers

Main on/off Switch: This is the main machine-mounted shut off for the machine. This is the switch that needs to be turned off during any machine maintenance.



Warning: All wires upstream of the machine-mounted main on/off switch are still live.

Stop & Start: These are the common on and off switches. These are to be used during normal operation by the operator.



Warning: These switches are not sufficient shut off to perform maintenance. Turn the main on/off switch to the off position and perform lockout procedures. Failure to disconnect main power and perform proper lockout procedures may result in serious injury or death.

Drive Lever: This is the lever that the operator uses to activate the table which pushes the box spring into the blades.

SECTION FOUR – OPERATION & ADJUSTMENT

4 – 1 Daily Start Up and Operation

1. Walk around the machine both looking for signs of active maintenance and also removing all debris.
2. Observe all standard shop safety procedures and practices, as noted in section one of this manual
2. Place the box spring on the table pulling the handle backward to start cutting.
3. Push the handle to return to starting position
4. If necessary, line up the next stringer and repeat the process.

4 – 3 Checking the Machine

A. Checking Motor Rotation

1. The motor shaft should turn counter-clockwise when viewed from the shaft end of the motor. Check the rotation by very briefly running the pump/motor and observing the shaft coupling rotation through the small window on the side of the pump/motor C-face adapter located between the pump and motor. Proper motor rotation is very important and must be corrected to match the arrow on the pump.



2. **Warning: Always disconnect and lock out power supply before attempting any service work.**

3. Contact your certified electrician for service if the motor rotation is incorrect.

C. Checking Oil Level



Caution: Maintain hydraulic oil in the tank to the proper level; otherwise, serious damage to machine will occur. The tank capacity is 20 gallons and the oil level is visible in the sight gauge on the tank.

Maintain oil level within 2" of the top of the tank. Operating the machine with a low oil level will allow the pump to take in air, corrode, and ultimately self-destruct. Overfilling the tank will result in excess pressure and damage to the machine's hydraulic components.

D. Checking Hydraulic Oil Pressure

1. The hydraulic pressure gauge measures the pressure of the oil pumped to the table cylinder. Use the chart below to find the correct pressure settings for your installation. The pressure is set at the factory and may not require adjusting when you first get the machine.

Table 1: Hydraulic Oil Pressure Chart

480V 3 phase	240V 3 phase	208V 3 phase	220V 1 phase
850 PSI	750 PSI	750 PSI	700 PSI

2. Use the following procedure to be sure that your operating pressure matches the correct setting in the chart.
 - a. Turn all power to the machine on.
 - b. Pressure gauge should read "0."
 - c. Move the Table Operating Lever and observe pressure gauge reading.

3. Make adjustments to the hydraulic pressure by using the pressure relief valve. Loosen jam nut to adjust screw. Turning screw in will increase pressure, turning screw out will decrease pressure. Lock jam nut to keep the screw from turning as shown in figure 9.



4 – 4 Machine Adjustment

A. Arm Adjustment

1. The arm is operated by a hydraulic cylinder mounted at the rear of the machine. Rotating the clevis will slightly raise or lower the position of the arm assembly relative to the table. Adjust the arm so the blades are approximately $\frac{3}{8}$ to $\frac{1}{2}$ inch above the table. See fig 10.

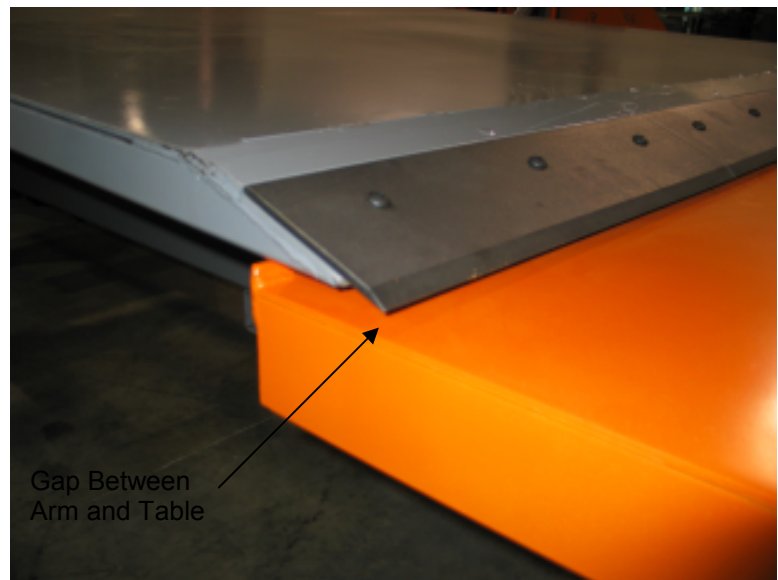


Fig. 10

4 – 5 Trouble Shooting

Motor will not start

- power is not connected or is turned off at one of the shut off locations
- overload tripped
- loose wire/bad connection in control circuit
- faulty button/worn contacts in control circuit
- control voltage transformer burned out
- motor starter coil burned out
- motor burned out

Motor stalling at end of cylinder

- pressure relief valve not set properly

Motor runs but does not provide adequate power.

- incorrect motor rotation
- incorrect voltage being supplied to machine
- valve pressure relief not set properly
- low hydraulic fluid level
- motor is single phasing, and it is a 3 phase machine
- worn or damaged pump
- clogged oil filter
- worn or damaged cylinder piston seals
- worn seals in valve
- pump/motor coupling loose
- kink in hydraulic hose

Table will not retract

- valve pressure relief not set properly
- worn cylinder rod end bearing
- cylinder support is missing or improperly set
- components jammed with debris

Table travel is jerky

- table bearing worn or damaged
- pump is cogitating
- debris in bearing path

Pump produces whining or screeching sounds

- low hydraulic fluid level
- damaged pump
- pump/motor coupling is loose

Excessive hydraulic fluid temperature (over 160 F)

- low hydraulic fluid level
- operator “dead heading” at end of stroke
- repeated motor stalling

4 – 6 Frequently Asked Questions




Table 2: Frequently Asked Questions

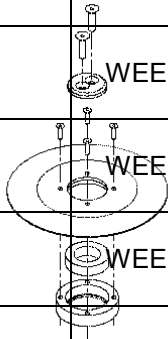
Question #1	Do I need to hire a qualified and licensed electrician to hook up my new saw to power?
Answer	Yes. Only qualified and licensed electricians should hook up a saw to power. Unqualified personnel attempting to apply power to a saw run the risk of causing major irreparable damage to motor and electrical components.
Question #2	How often do I need to change hydraulic oil?
Answer	Change hydraulic fluid at least once per year or more often under harsh conditions. Change the filter every 250 hours. Failure to conduct routine oil changes will cause adverse changes in the oil, making it unable to lubricate components efficiently. Contaminants build up and clog critical components (pump, valves, lines, filter) creating narrower passages through which the fluid can flow. These choke points create friction and heat as fluid squirts past at higher and higher pressures. The heat transfers throughout the system and eventually will cause key components to fail.
Question #3	How far should I fill the hydraulic oil tank?
Answer	When filling the fluid reservoir, do not fill past the plastic debris screen. Also, use the sight level gauge to check fluid level. Overfilling the tank causes the fluid to expand inside the hydraulic system with nowhere to go. Heat and pressure builds to the point where it bursts through the pump or valve seals causing heavy damage.
Question #4	Can I safely operate my dismantler with a loose or missing blade?
Answer	Do not operate a rotary head dismantler with a loose or missing screw in the blades. Check all blade screws daily before powering up machine by running your hand over the part. When replacing bolts use Loctite 242. Operating a dismantler with loose or missing blade screws places undo stress on these parts and can lead to damage.
Question #5	Can I attempt repair of a warranted item such as a pump, a motor, or a transformer?
Answer	Do not attempt to repair warranted items. Attempted repairs of factory-warranted components by non-factory certified personnel will invalidate future warranty claims.

SECTION FIVE – MAINTENANCE

5 – 1 Preventative Maintenance

Table 3: Preventative Maintenance Schedule

-CLEAN UNDER ARM, REMOVING ALL DEBRIS AS DESCRIBED BELOW IN SECTION 5 – 2 A.	DAILY
-CHECK FOR LOOSE OR MISSING BLADE BOLTS	DAILY
-OIL FILTER ELEMENT	EVERY 250 HOURS
 -CHECK HYDRAULIC FITTINGS FOR TIGHTNESS	WEEKLY
 - VISIBLE CHECK BOLTS AND NUTS FOR TIGHTNESS	WEEKLY
- CHECK HYDRAULIC OIL LEVEL (20 Gallons)	WEEKLY
-OIL CHANGE Rycon 46 “Amoco” or equivalent	ANNUALLY Fig. 12
-RETIGHTEN  ALL SCREWS ON MACHINE	ANNUALLY



5 – 2 Corrective Maintenance

A. Replacing Blades

Warning: Disconnect the power to the Box Spring Dismantler. Lock it out during any work on the blades.

Warning: Whenever performing work on the springs, block the arms securely to prevent injury due to the arms falling.

1. We highly recommend replacing the screws when replacing the blades. This minimizes unplanned downtime since they both normally need changing around the same time.
2. Remove the blade by removing the three our socket head cap screws.
3. Remove the blade by lightly tapping the outer edge of the blade with a hammer.

Warning: USE PROPER PROTECTIVE EYE WEAR.

4. Fasten new blade using the three socket head cap screws and applying “Loc Tite 242” to the clean threads. Tighten the screws to 6 ft-lb. Use only grade 8 screws.

B. Replacement of Table Roller Bearings

1. Run the table all the way to the front, toward the operators end.



Warning: Disconnect the power and lock it out during any work on the machine.

3. Raise the arm to the highest position. For help see section 4 – 3 B.
4. Remove the connecting pin from the rod end of the cylinder. Roll the table off its rails **onto hi-lo forks**. Once the carriage is removed, the rollers can be replaced.
5. Reinstall the carriage and attach the cylinder. Then reinstall the table.

5 – 3 Recommended Spare Parts

5 – 4 Available Spare Parts

Table 4: Pass One Replacement Parts List

ITEM #	QTY.	DESCRIPTION	PART #
1	1	Motor	See Electrical Table
2	1	Adapter, Pump/Motor	MJ190102
3	1	Hub, 2 x 3/4 kw 3/16	MJ100102
4	1	Hub, 2 x 1 3/8 kw 5/16	MJ100106
5	1	Insert, Neoprene	MJ200101
7	1	Gauge	MG200104
8	1	Cover, Valve, Left	MV200104
9	1	Cover, Valve, Right	MV200103
10a	1	Work Section, Valve, Center	MV200106
11a	1	Assembly Kit (Upper Arm Lift)	MV290101
11b	1	Assembly Kit (Upper Arm Lift)	MV290103

Table 5: Electrical Table

Item Number	7 1/2 HP 220 Single Phase	10 HP 208/3/60	7 1/2 HP 230/3/60	7 1/2 HP 460/3/60	7 1/2 HP 575/3/60
1	LM100107	LM100109	LM100106	LM100106	LM100108
	LM190103	-	-	-	-
75	EE100103	EE100103	EE100103	EE100103	EE100103
76	EE190104	EE190104	EE190104	EE190104	EE190104
77	EC200107	EC200106	EC200105	EC200105	EC200101
78	EO200110	EO200109	EO200108	EO200107	EO200104
79	ET100103	ET100103	ET100103	ET100103	ET100104
80	EO190103	EO190103	EO190103	EO190103	EO190103
81	EO100103	EO100103	EO100103	EO100103	EO100103
82	ES300101	ES300101	ES300101	ES300101	ES300101
83	EP400101	EP400101	EP400101	EP400101	EP400101

5-5 WARRANTY INFORMATION

Industrial Resources provides a 1-year product warranty on new product purchases. This warranty covers materials and workmanship for all non-wear items, and includes a 90-day labor warranty. Warranty excludes normal wear items such as fuses, lamps, belts, bearings, saw blades, tires, cutting blades, chains, filters, and fluids. Damage due to abuse, lack of proper maintenance, faulty air supply, water, storms, lightening, fire, electrical surges or static discharge is not covered.

To obtain warranty consideration, contact Industrial Resources. Place an order for a replacement part and explain the failure. Ask for warranty consideration. If requested, ship the defective part to Industrial Resources. You will receive a return authorization for the shipment. Send the part to Industrial Resources freight prepaid. (Warranty does not include return shipping costs.) Industrial Resources will evaluate the part, and if covered, issue a credit to your account for the amount of the replacement part purchased plus freight. Failure to return the part within 30 days of failure for warranty consideration voids the warranty.

To obtain warranty service, contact Industrial Resources technical services.

5-6 CONTACTING INDUSTRIAL RESOURCES

For Technical Support, to order Replacement Parts, or to ask questions about our products, call:

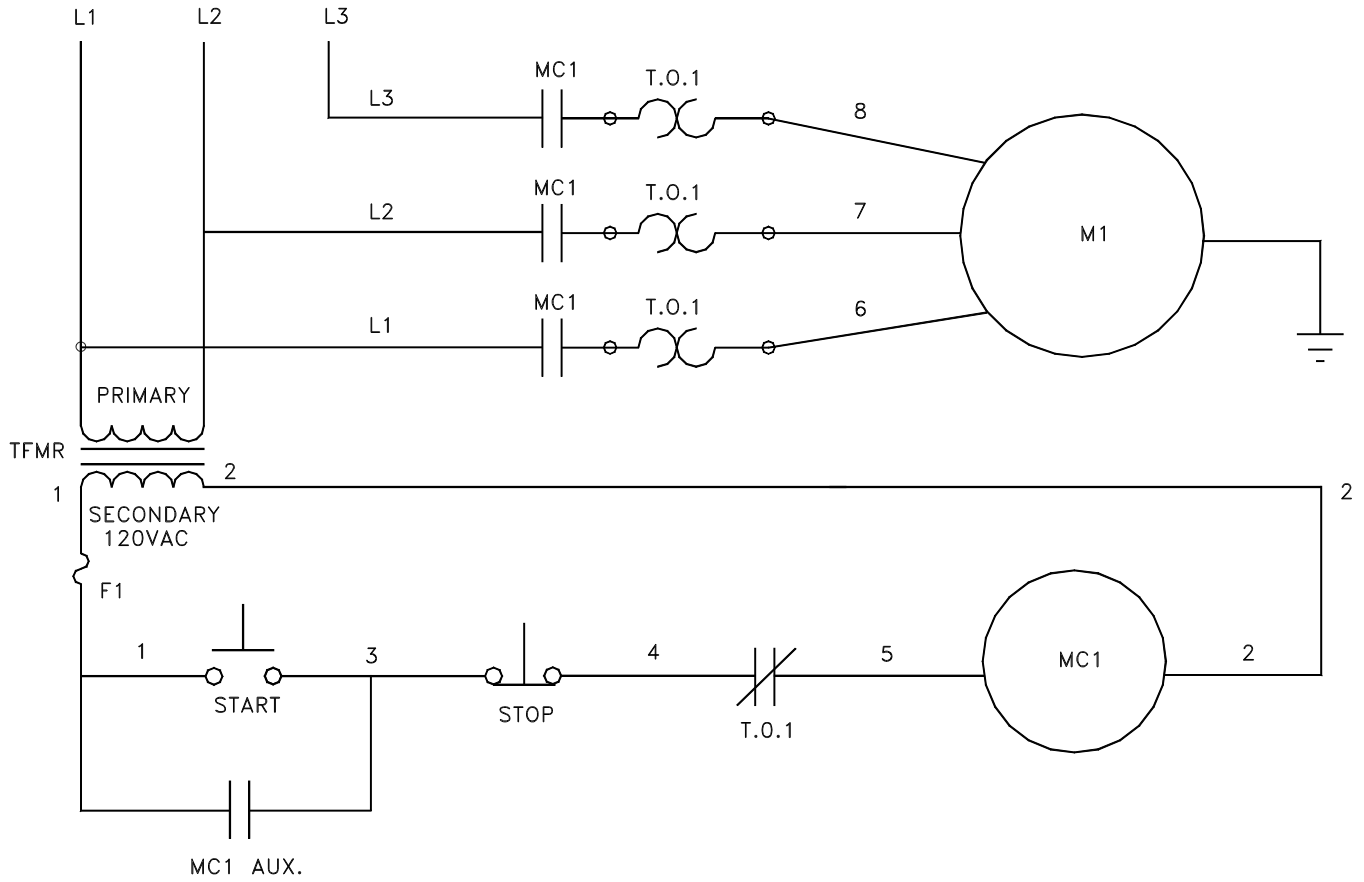
(800)748-0306	Toll Free (US and Canada)
(616) 791-7500	Worldwide
(616)791-7501	Fax
www.irinc.us	Website

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Section Six – Drawings and Schematics

6 – 1 Electrical Schematic

Fig. 13



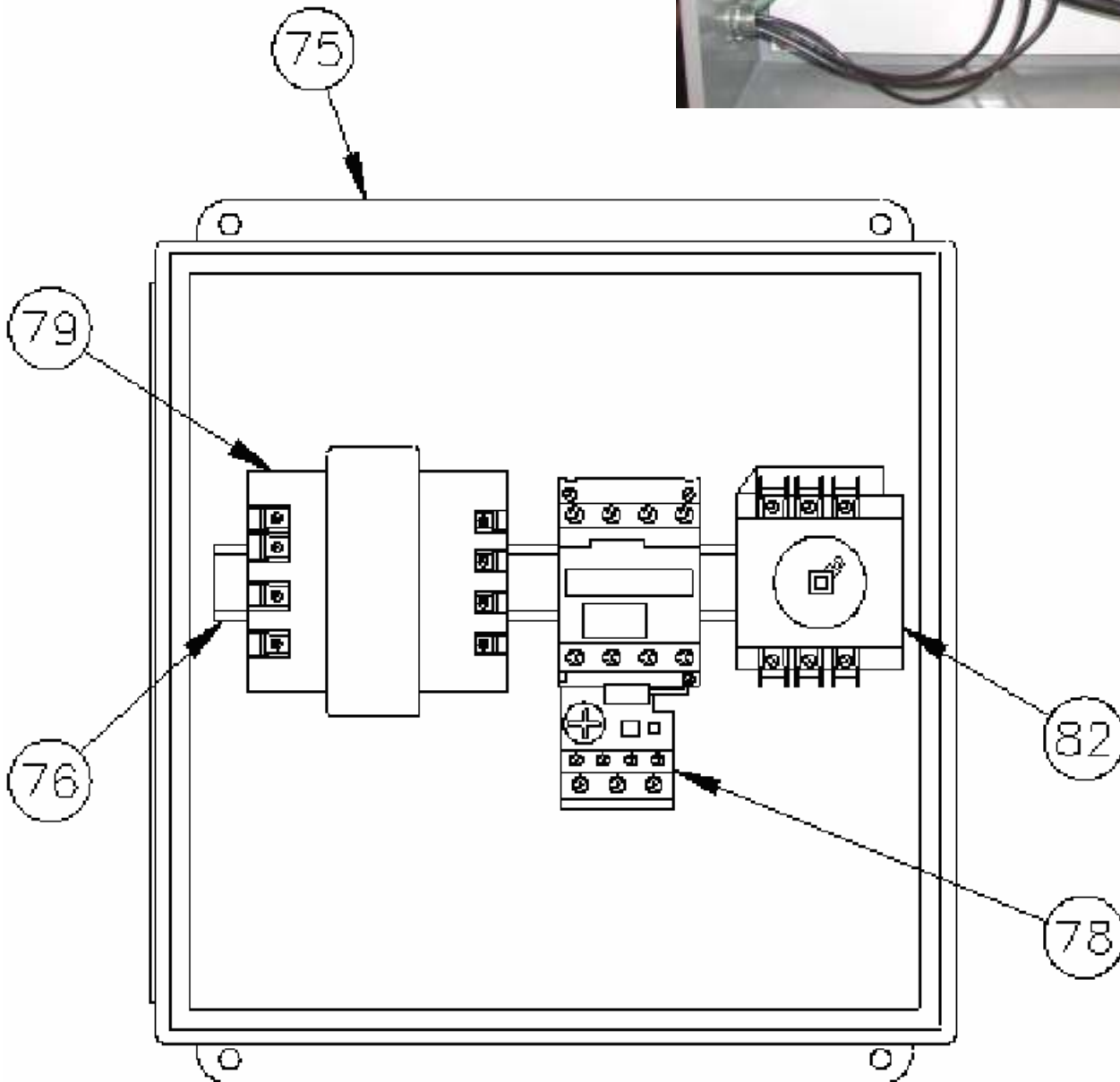
6 – 2 Electrical Box Components

Table 6: Electrical Box Components

#	Part Name	Part Number
75	Enclosure	See Electrical Table
76	Mounting Panel	See Electrical Table
78	Over Load	See Electrical Table
79	Transformer	See Electrical Table
82	Disconnect Switch	See Electrical Table



Fig 14

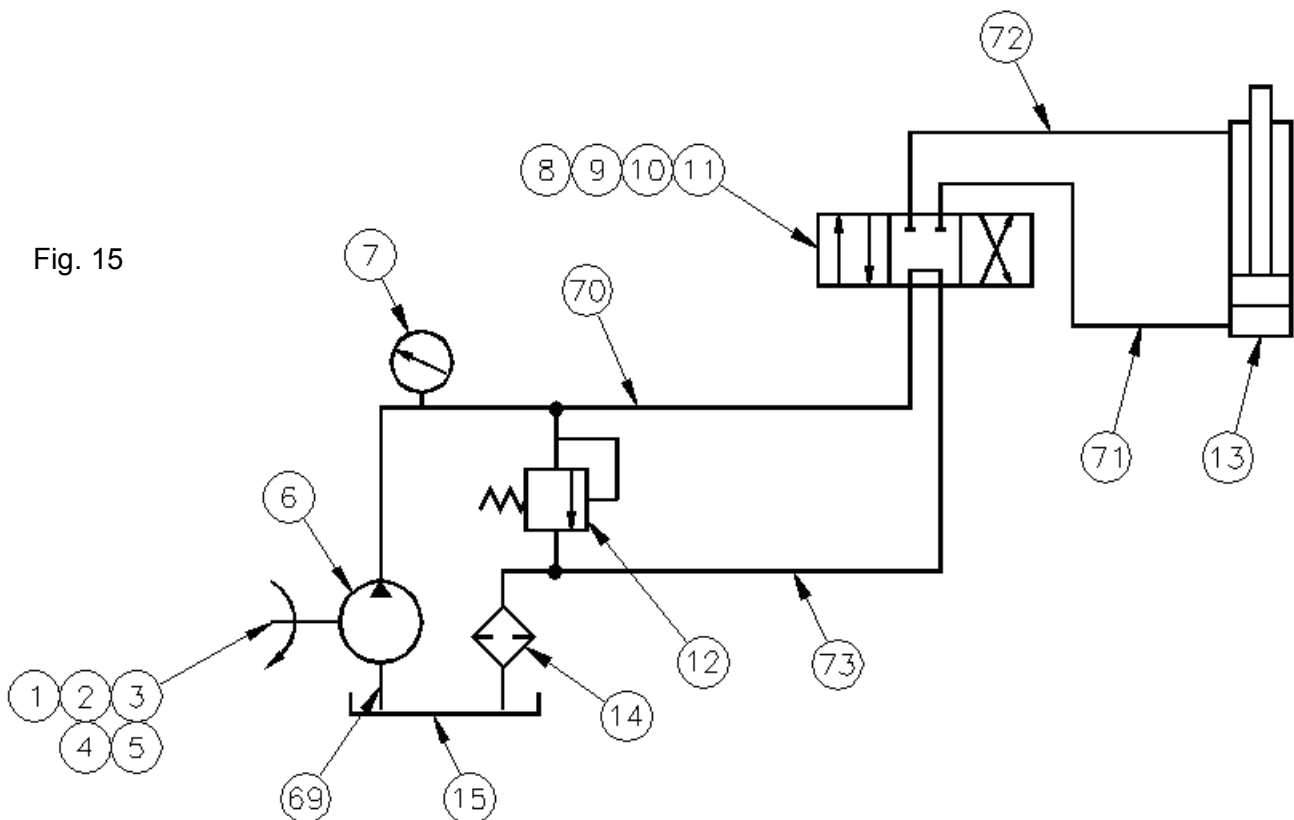


6 – 3 Hydraulic Schematic

Table 7: Hydraulic Schematic Components

#	Part Name	Part Number
1	Motor	See Electrical Table
2	Pump/Motor Adapter	MJ190102
3	Hub 2 x 3/4 kw 3/16	MJ100102
4	Hub 2 x 1 3/8 kw 5/16	MJ100106
5	Insert, Neoprene	MJ200101
6	Pump	MM100127
7	Gauge	MG200104
8	Cover, Left	MV200104
9	Cover, Right	MV200103
10	Work Section, Valve, Center	MV200106
11	Assembly Kit (Upper Arm Lift)	MV290103
12	Pressure Relief	MV290102
13	Cylinder, Table	IR120014
14	Filter	PL200103
15	Reservoir	IR330005
69	Assembly, Table Cyl. Retract Hose	IR400111
70	Assembly, Return Hose	IR400111
71	Assembly, Arm Lift Extend Hose	IR400113
72	Assembly, Arm Lift Retract Hose	IR400113
73	Filler Breather	PL100101

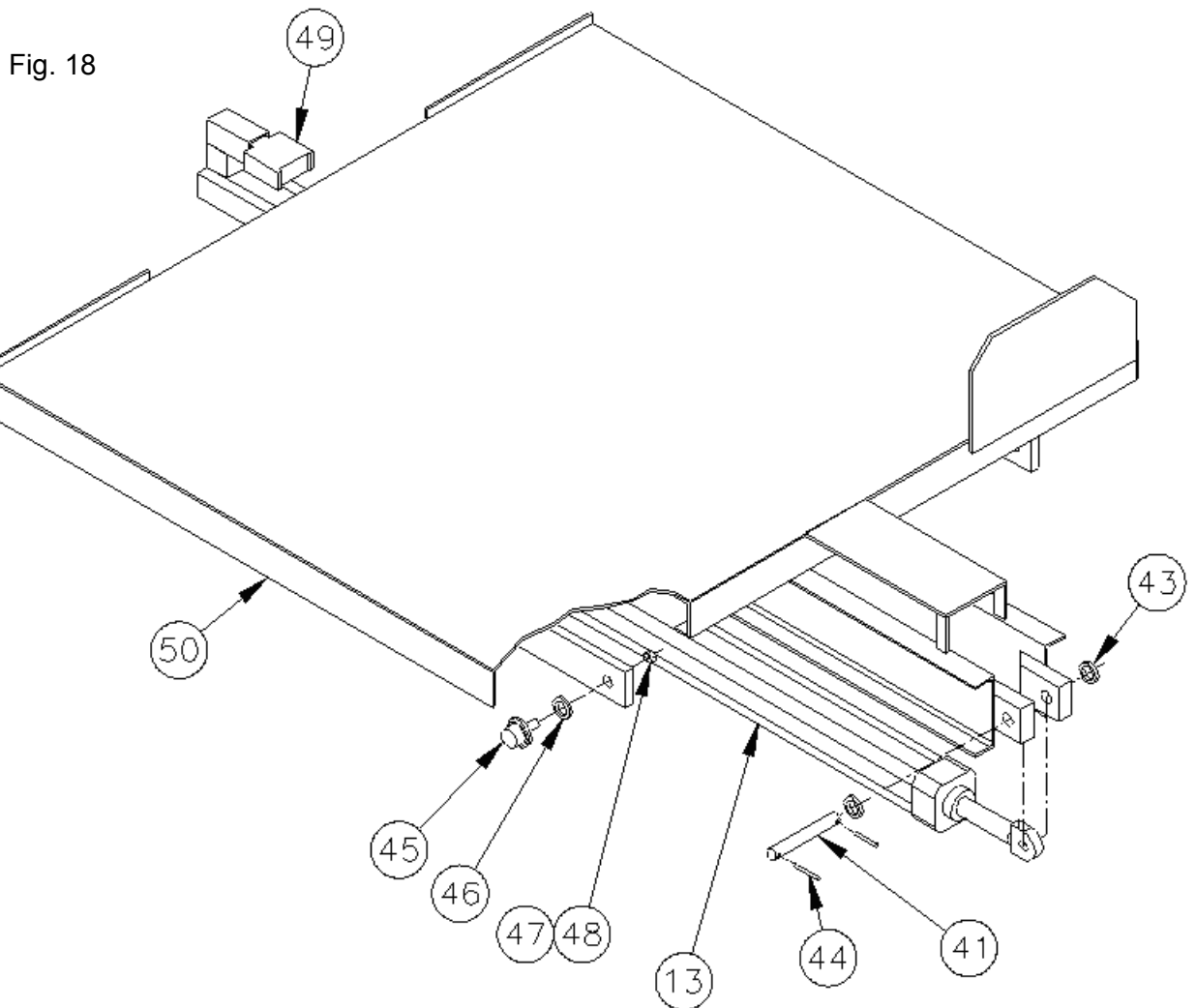
Fig. 15



6 – 6 Table Assembly

Table 8: Table Components

#	Part Name	Part Number
13	Cylinder, Table	IR120014
41	Pin, Cylinder Rod End	IR190073
43	Washer, Flat 1"	FW200102
44	Roll Pin 1/4"	FP100101
45	Idler, Flanged	MB100109
46	Shim	HM100101
47	Washer, Lock	FW100101
48	Nut, Hex	FN100101
49	NOT USED	
50	Assembly, Table	50024-03





EQUIPMENT STOP SHEET AND REPAIR RECORD

Equipment Name:	
Serial Number:	
Location:	
Start Date:	
End Date:	

Type of Stop	FIRST SHIFT	SECOND SHIFT

Type of Repair	Date	Technician