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Home of TOGGLE-AIRE Products

AUTOMATED INDUSTRIAL MACHINE, INC

TOGGLE-AIRE® DIVISION

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Installation, Operation and Maintenance

3 & 5 Ton, 1030 & 1530 Series Bench Presses

IMPORTANT

It is the responsibility of the employer/purchaser to provide his or her employees with proper point of operation guards, and to ensure that this equipment is used in accordance with the manufacturer's recommendations as well as any OSHA, federal, or state regulations that are applicable to such equipment. Because it is impossible to anticipate the conditions under which our equipment will be operated, additional safety devices and methods may be required to insure operator safety. Besides conforming to all federal, state, and local codes, the buyer should consider the safety of the entire operation involving any press, and see that any additional guarding, training, and maintenance deemed necessary is developed and enforced to protect the wellbeing of the operator.

THINK SAFETY . . .
. . WORK SAFELY

TOGGLE-AIRE MODEL 1030 & 1530 SERIES PRESSES
INSTALLATION, OPERATION, AND MAINTENANCE

Section I: Installation

1. Carefully remove the press from the crate, taking note of separately packed items such as the "Quick Exhaust Unit" and "Synchro- Sig" Actuator.

2. **Attach "Quick Exhaust Unit"**
   (See photos 1.1 and 1.2)

   A. Screw brass nipple into top port of the main cylinder located at the rear of the press. Once tight, orient the assembly as shown in photo 1.1 with the muffler facing downwards.

   B. Locate the poly-flo tubing that runs from the main valve assembly on the left side of the press. Connect this tube to the elbow in the inlet port of the "Quick Exhaust Unit" (photo 1.2).

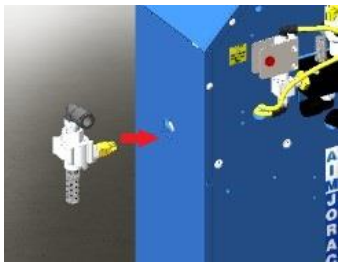


Photo 1.1

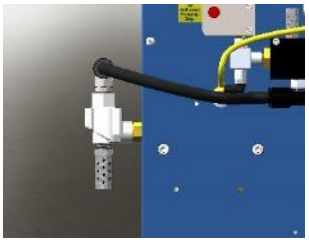


Photo 1.2

3. **Attach "Synchro-Sig" Actuator**
   (See photos 1.3 and 1.4)

   A. Locate the 1/4" yellow tubing found under the press platen. Connect the tubing to the appropriate fittings on the actuator. See markings on the tubing. DO NOT OVERTIGHTEN. Normally, 1/2 turn past finger tight is sufficient for an airtight connection.

   B. Using the 1/4-20 hex head bolts supplied, mount the "Synchro-Sig" to the press as shown in photo 1.3.

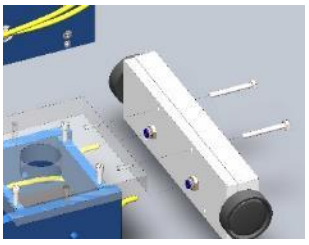


Photo 1.3

NOTE: **To ensure operator safety some applications may require that you locate the "Synchro-Sig" actuator further away from your tooling.**

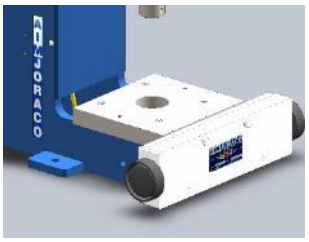


Photo 1.4

4. **Mount the press to your stand or workbench**
   (See photo 1.5)
   A. Select a bench of suitable size and strength.
   B. Bolt the press to the bench using the holes located in the feet of the press frame below the platen area. **DO NOT** operate the press unless it is securely mounted on a bench or stand.


Photo 1.5

CAUTION: WHENEVER CONNECTING THE AIR SUPPLY TO THE PRESS BE CERTAIN TO FOLLOW SAFE OPERATING PROCEDURES AND KEEP ALL PARTS OF YOUR BODY AWAY FROM THE MOVING PARTS OF THE PRESS!

5. **Connect air supply**
   (See photos 1.6, 1.7, 1.8)
   A. The air supply must be clean and conditioned. Preferably, a Filter, Regulator, Lubricator Unit, (Joraco Part No. FRL-1030) should be located within 6 feet of the press. For optimum results all air lines, fittings, and hoses used to supply the press should be the equivalent of **1/2" NPT minimum.**


Photo 1.6

   B. The minimum air pressure for operation is 50 PSI. The maximum is 125 PSI. The **optimum operating range is 80 to 100 PSI.** If your application consistently requires substantially more than 100 PSI it may indicate the need for a stronger press.
   C. Connect the air supply to the press at the inlet port on Part No. G-1030, 3-way, On-Off Valve (photo 1.7 & 1.8).

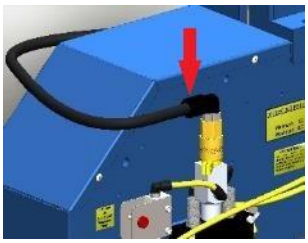


Photo 1.7

NOTE: A three way Shut Off Valve like the one supplied must always be used to insure complete bleeding of the press circuits when air supply is off.


Photo 1.8

6. **Turn on air supply**
(See photos 1.9, 1.10)
   A. Remove the yellow lock out device found on the On-Off Valve (photo 1.9). To turn the air on simply move the gold colored sleeve downward until it stops. Slide the sleeve upward to the stop to shut the supply off. With the supply on, check for air leaks and be sure all connections are secure and air tight. If air leaks from inside the "Synchro-Sig" actuator, then the connections are incorrect. Correctly reconnect the tubing, taking note of the labels.

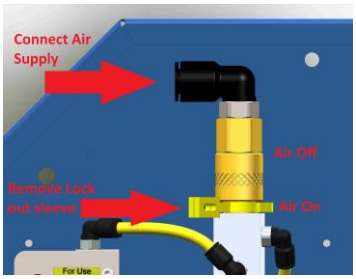


Photo 1.9


Photo 1.10

NOTE: **When the press is not in use, being serviced or maintained, always SHUT OFF the air supply and replace the lockout device. Secure with a padlock, etc. to prevent unauthorized use of the press.**

CAUTION: **BEFORE PROCEEDING, CLEAR THE PRESS TABLE AND WORK AREA OF ALL TOOLS, FOREIGN OBJECTS, AND BODY PARTS.**

7. **Test the installation**
(See photos 1.11, 1.12)
   A. Test the "Synchro-Sig" Two Hand Actuator by simultaneously depressing the buttons on the Model SS-PB or by simultaneously placing a finger in each sensing "button" on the Model SS-OT. If the buttons are continuously held down the press should cycle once, return to the top of stroke and await another signal from the actuator (CSR G2 mode only).

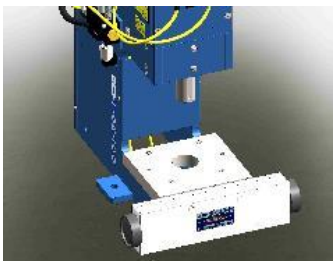


Photo 1.11

NOTE: **If press does not return to top of stroke when buttons are continuously held down then depth must be adjusted (See pg. 6)**

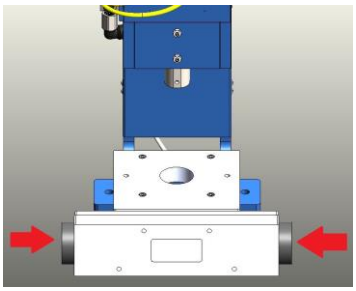


Photo 1.12

(See photos 1.13, 1.14, 1.15, 1.16)

B. Test the "Set-Up" Valve.
The press is equipped with a "Set-Up" valve which allows tool setters or maintenance personnel to lock the ram in the down position to facilitate tool depth adjustment. Check the function of this valve. To actuate this valve, back out the red locking screw from the valve guard (photo 1.14). Move the valve lever to the down position (photo 1.15). The press ram will immediately descend to the bottom of the stroke and stay in that position. Once the ram depth has been set, (see Section II, Paragraph 2) return the valve lever to the up position. The ram will immediately return to the top of the stroke.


Photo 1.13

Photo 1.14

Photo 1.15

NOTE: **After using the "Set-Up" valve, always lock the valve in the up position using the red locking screw.**

CAUTION: **THIS VALVE IS NOT DESIGNED FOR USE IN PRODUCTION AND SHOULD ONLY BE USED BY AUTHORIZED AND QUALIFIED PERSONNEL.**

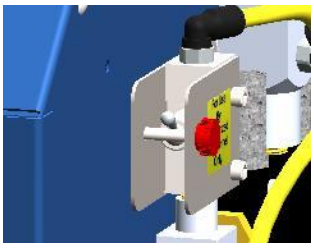


Photo 1.16

(See photo 1.17)

C. Ram Speed Adjustment.
(*Optional on 1030 & 1530 Series Presses*)
The ram speed on the down stroke can be adjusted to suit your application. Locate the adjustable flo-contol muffler, (see page 10, letter "H"). Unlock the adjusting screw and screw it in to slow the ram down, back it out to increase ram speed. Lock the adj. screw when speed has been set.

NOTE: **When operating the press with slow ram speed, special guarding and control considerations apply.**

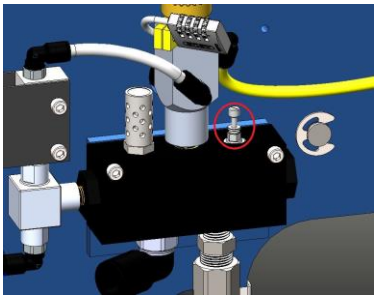


Photo 1.17

Section II: Set Up and Operation

(See photos 2.1, 2.2)

NOTE: **Prior to installing any tooling in the press, proper point of operation guarding, specifically designed for your tooling, must be built and mounted on or around your tooling.**

Photo 2.1

CAUTION: **NEVER OPERATE, SERVICE, OR ADJUST THIS MACHINE WITHOUT PROPER INSTRUCTION.**

NEVER SERVICE THIS MACHINE WITHOUT FIRST SHUTTING OFF AIR SUPPLY.

NEVER OPERATE THIS MACHINE WITH SAFETY GUARDS REMOVED.

Photo 2.2

1. **Mount your tooling**
   (See photos 2.3, 2.4)
   A. Using the tapped holes in the press platen (photo 2.3), mount the lower portion of your tooling to the press. The platen is machinable and can be drilled and tapped as necessary. The standard bore in the press ram is .8125" with a depth of 1.5". Precisely fit your shank to the bore of the ram and lock the shank in with the 5/16-18 hardened lock screw located on the face of the ram. The end of the ram should bear against the upper portion of your tooling.

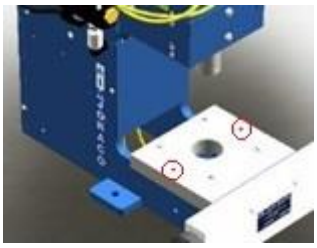


Photo 2.3

NOTE: **If your tool incorporates guide pins, etc. be sure the tooling easily moves along the full length of travel with no binding or misalignment. Correct any problems found in the tool before placing tooling into production.**

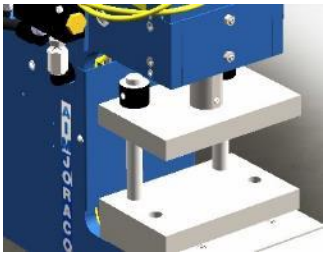


Photo 2.4

2. **Adjust the depth setting (end of stroke)**
   (See photos 2.5, 2.6, 2.7, 2.8, 2.9)

   A. Use the "Set-Up" valve to bring the ram to bottom of stroke under power. (See Section I, Paragraph 7B)

   B. Alternatively, the ram can be lowered manually to allow for alignment of tooling, etc. To lower the ram manually:
      1. SHUT OFF AIR SUPPLY.
      2. Remove the top guard.
      3. Place an appropriate steel bar between the ram yoke (JP-7) and the pivot of the lever (JO-1).
      4. Pull the bar towards the front of the press to lower the ram.

CAUTION: RAM WILL RETURN UP WHEN AIR SUPPLY IS RESTORED.

   C. Adjust the final depth of the press by loosening the Lock Nut (JP-33) on the Ram Adjusting Screw (JP-11) located at the top of the press.
      1. Rotate the screw up or down to the desired position. Remember, if your press has the **Standard Ram Adjustment Screw**, one revolution of the screw is **.100"** of adjustment. If your press was ordered with the **Fine Ram Adjusting Screw**, one revolution of the adjusting screw provides **.0625"** of adjustment.

NOTE: In some cases, when the ram is in the down position and the air supply is on, it may not be possible to adjust the ram up. To adjust up, shut off the air supply before adjusting.

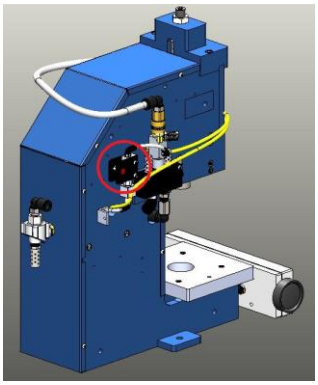


Photo 2.5

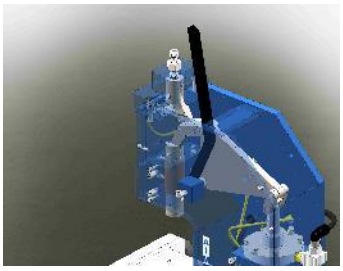


Photo 2.6

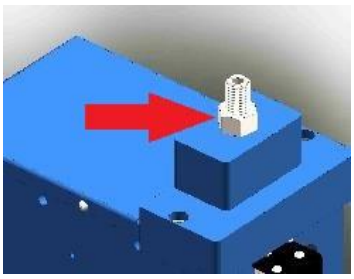


Photo 2.7

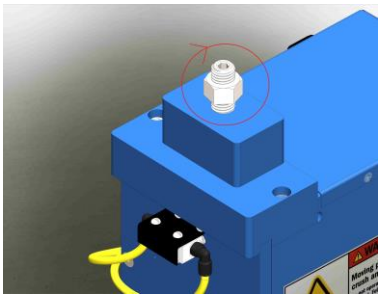


Photo 2.8

2. Final adjustments should always be made by screwing the **ram down to the desired point.**
3. Lock the ram adjusting screw in place with the lock nut.

NOTE: **Once tools have been set, always replace all press guards before proceeding.**

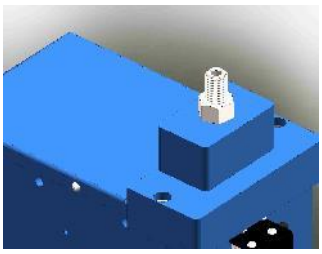


Photo 2.9

3. **Important principles of set up and operation**
(See photos 2.10, 2.11, 2.12)
When setting up and operating it is important to keep in mind that the press is a pneumatically powered **TOGGLE press.** The key element in the machine is the TOGGLE or KNUCKLE JOINT. A toggle is a simple machine in and of itself. It is a great multiplier of force. The press takes the output of the cylinder, couples it to a lever, which drives the toggle. As the toggle straightens it drives the press ram downward, creating a powerful squeeze at the end of the stroke. The moment that the toggle hits end of stroke, the upper toggle link encounters a stop block. The press is then reversed when the impulse pin is driven out through the front plate, which in turn actuates the return valve(A-1530). When controlled in this manner the press is very accurate, with a repeatability of plus or minus .001". It is crucial that you recognize this relationship. **Your tooling should be built with a shut height that falls within the shut height range of the press. In standard 1030 presses this is approx. 5.25" maximum to 4.50" minimum and in standard 1530 presses this is approx. 5.25" maximum to 4.50" minimum**. Your tooling must be built to allow the toggle to straighten out and hit the stop block. If the tooling is too high, or if you set the depth too deep, the press will not be able to complete the stroke and stall.

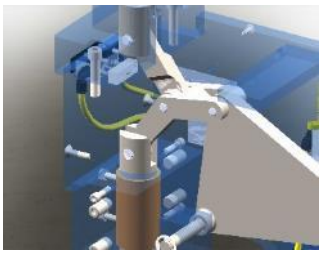


Photo 2.10

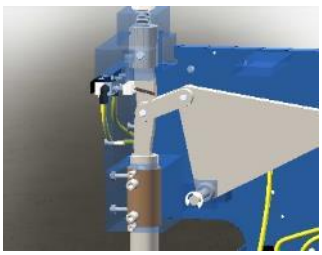


Photo 2.11

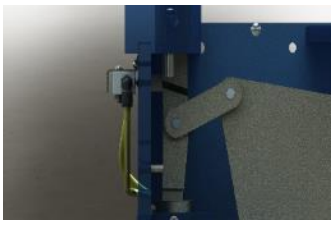


Photo 2.12

(Important principles, continued)

In BEM valve configuration if you stall the press during set up, you can either shut off the air supply and manually move the press or manually actuate the return valve, A-1530. (See photo 2.14) This will send the ram back to the up position. Re-adjust the depth setting so the toggle can straighten.

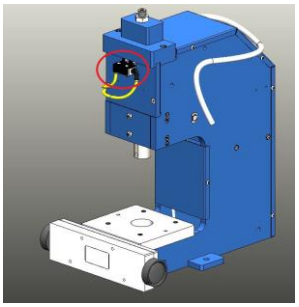


Photo 2.14

Do not confuse the nature of the force curve in the ram with the Ram Adjusting Screw or depth adjustment. The ram force developed by the press is not affected by the Ram Adjusting Screw or where you are set in terms of ram depth. **The only thing that affects ram force is the air pressure used to power the press.** The Ram Adjusting Screw is simply an end of stroke adjustment, much like the adjusting collar found on full revolution, mechanical power presses.

In fabrication jobs like punching, piercing, and blanking, the punch should be set only as deep as necessary to clear your blank, etc. Always set up so that **the press is doing the work as close to the end of stroke as possible**, where the toggle is close to straight and the rated strength of the press is developed.

Finally, once the tools have been set and locked in place, using the regulator on the Filter, Regulator, Lubricator Unit, **adjust the air pressure to 5 to 10 PSI above the minimum required to do the job**. Any additional line pressure is wasted, and causes unneeded "wear and tear" on the machine, etc.

Consult the factory if your application requires shorter strokes, additional shut height, etc.

Section III: Maintenance

1. LUBRICATION.
   A. Press components.
   (See Photos 3.1, 3.2)
      1. Manual lubrication.
      Use any general-purpose machine lubricating oil of approx. **20 wt**. Lubricate the press daily or prior to each shift if running multiple shifts. Lubricate at the points indicated.

      2. One Shot Lubrication Systems.
      If your press is equipped with the L-2-P One Shot Lube System (photo 3.2), fill the reservoir with **20 wt**. general purpose machine lubricating oil. With the press ram in the up position, pull up on the plunger and release. The pump will meter the oil to the various points of lubrication. Upon filling the reservoir for the first time, it may take several pumps to purge the system of air. Generally, one pull of the plunger per shift is adequate.

   B. Air Supply
   (See Photo 3.3, 3.4, 3.5)
      1. Follow the instructions provided by the manufacturer of the Filter, Regulator, Lubricator Unit you are using. (See Section I, Paragraph 5A). Fill the reservoir with Joraco Air Tool Oil, Pt. No. JO- FRL. Adjust the drip rate to approx. one drop per 50 strokes of the press. **Only use oil specifically formulated for use in pneumatic equipment.**

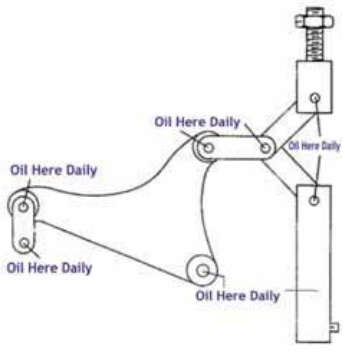


Photo 3.1

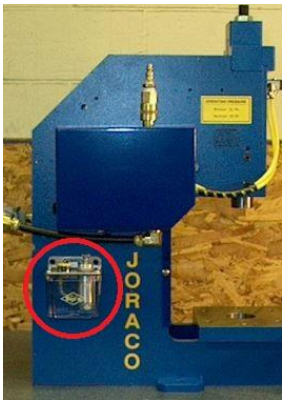


Photo 3.2

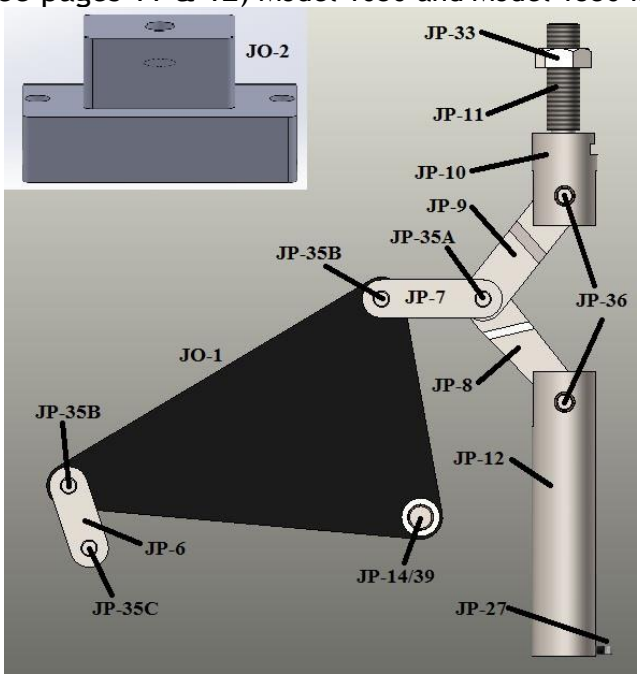

Photo 3.3


Photo 3.4

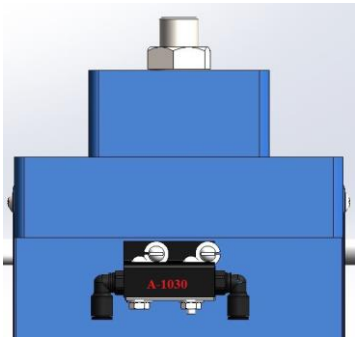

Photo 3.5

Section IV: Parts Identification Drawings

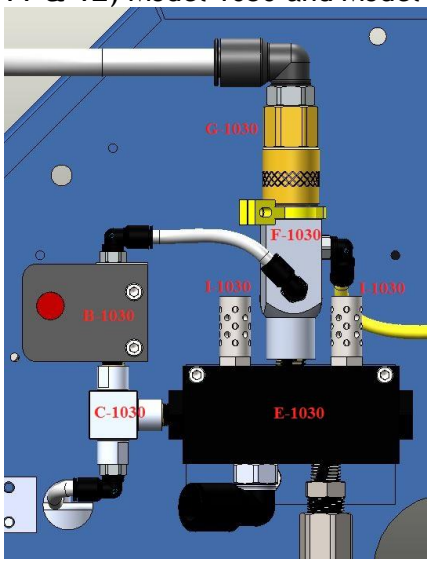
1. Linkage Parts (See pages 11 & 12) Model 1030 and Model 1530 Interchangeable.



2. Valving Parts (See pages 11 & 12) Model 1030 and Model 1530 Interchangeable.



FRONT



LEFT

BACK

TOGGLE-AIRE MODEL 1530 SERIES PRESSES
INSTALLATION, OPERATION, AND MAINTENANCE

Section V: Replacement Parts List

Linkage Parts:

NOTE: As of Jan. 1, 2000, all 1530 Series 5 Ton Presses shipped have our Heavy-Duty Toggle Links installed as standard. The Heavy-Duty Links can be retrofitted to earlier 1530 and 1030 Series Presses.

JO-1	Lever, Standard
JO-1-ST	Lever, Heavy Duty Steel
JO-2	Cap, Standard Adjusting Screw
JO-2FRA	Cap, Fine Adjusting Screw (use with JP-11FRA and JP-33FRA)
JP-6	Cylinder Yoke
JP-7	Ram Yoke, Standard
JP-7HD	Ram Yoke for use with Heavy Duty Links, JP-8HD and JP-9HD
JP-8	Bottom Toggle Link, Standard
JP-8HD	Bottom Toggle Link, Heavy Duty (use w/ JP-7HD & JP-9HD)
JP-9	Top Toggle Link, Standard
JP-9HD	Top Toggle Link, Heavy Duty (use w/ JP-7HD & JP-8HD)
JP-10	Ram Adjusting Block
JP-11	Ram Adjusting Screw, Standard
JP-11FRA	Ram Adjusting Screw, Fine (use with JO-2FRA & JP-33FRA)
JP-12	Press Ram
JP-13W/15	Front Plate Assembly w/ Stop Block
JP-14W/39	Main Pivot Pin with Retaining Rings
JP-17W	Gib
JP-27	Ram Screw
JP-33	Ram Adjusting Screw Lock Nut, Standard
JP-33FRA	Ram Adjusting Screw Lock Nut, Fine Thread
JP-35A	Pivot Pin
JP-35B	Pivot Pin
JP-35C	Pivot Pin
JP-36	Pivot Pin
JP-35/36K	Pivot Pin Kit includes all .375" dia. pins in linkage

Cylinder Parts:

1530MC/1030MC	Main Cylinder, Complete
JP-4-1530/1030	Replacement Cylinder Tube, Std. Stroke
JP-4-1530/1020SPC	Replacement Cylinder Tube, Special Lng. Stroke
JP-1/5-1530/1030	Piston Rod Assembly
JP-26	Cylinder Screw w/ lock washer (set of 4)
JP-32	Cylinder Hold Down Screw (set of 2)
SK-1530/1030	Cylinder Seal Kit

Section V: Replacement Parts List, Continued

Control Parts:

1530MVA	Main Power Valve Assembly
A-1530	Return Valve
1026B	Return Valve Bracket
IP-1530	Return Valve Impulse Pin
B-1530	Set Up Valve Assembly
C-1530	Shuttle Valve
D-1530	Quick Exhaust Valve
CSR-G2M	CSR-G2 Stroke Completion Module
SK-D, Type I	Quick Exhaust Seal Kit, Old style valves
SK-D, Type II	Quick Exhaust Seal Kit, New style valves
E-1530	4-way Power Valve
F-1530	Aluminum Manifold
G-1530	On-Off Valve w/ Lock Out
KOS-1030	Key Operated Air Supply Shut Off
H-1530	Muffler, Adjustable
I-1530	Muffler, Steel
SS-PB	Std. Two Hand Actuator w/ screws
GK-SS-DM	Replacement Aluminum Guard for SS-DM
SS-PB-24	24" Two Hand Actuator w/ screws
GK-SS-DM-24	Replacement Aluminum Guard for SS-DM-24
SS-OT	Optical Touch Two Hand Actuator w/ Power Supply
PS-SSOT	Replacement Power Supply for SS-OT Actuator
PK-1530	Plumbing Kit (includes all tubing & fittings in std. control pkg.)

Misc:

VC-1030	Replacement Valve Cover
GK-1000	Rear Guard Kit
PC-1030	Pneumatic/Electronic Stroke Counter
L-2-P-1030	One Shot Lube System Retrofit Kit
L-2-P-1CC	Pump Assembly Only, One Shot Lube System
DT-1030	Bottom of Stroke Dwell Timer
FRL-1530	Filter, Regulator, Lubricator Unit
JO-FRL	Pneumatic Tool Lubricating Oil for use in FRL Units, 1 Qt.

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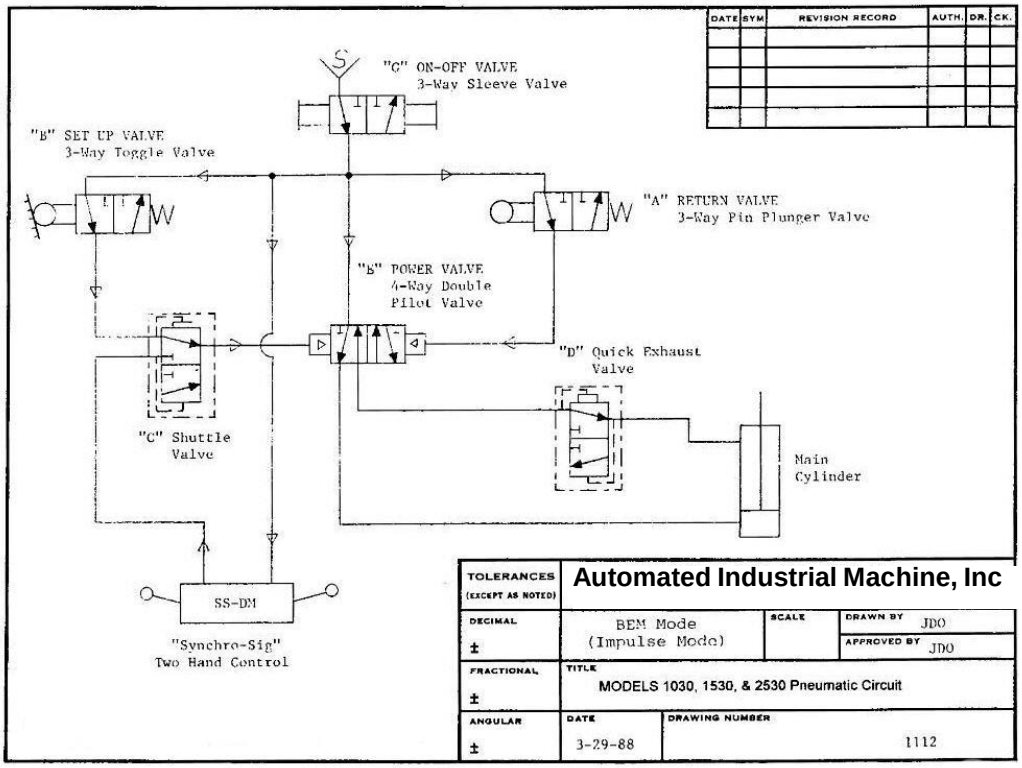
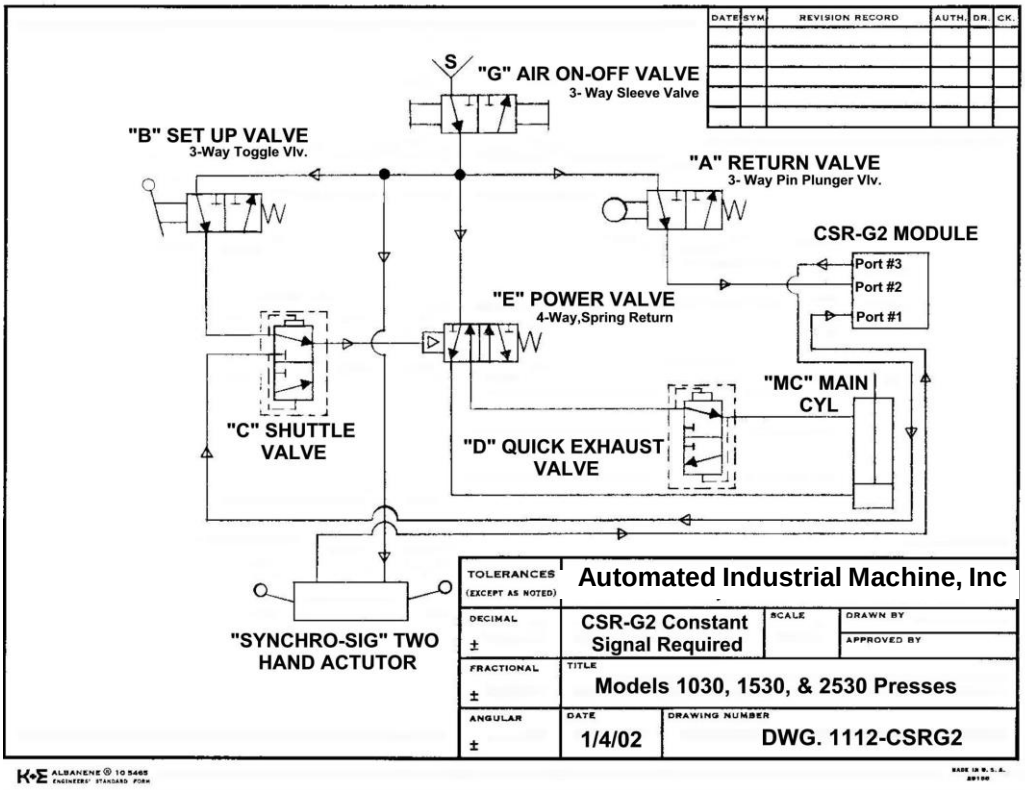
Call for current pricing

Valving Schematic BEM (Impulse) Mode (Optional)



Valving Schematic CSR-G2 (Constant Signal Required) Mode **(Standard)**



Automated Industrial Machine, Inc. Joraco Div.

347 Farnum Pike, Smithfield, RI, USA, 02917 Phone 401-232-1710

About Control Systems . . .

Unless otherwise specified, your TOGGLE-AIRE press has been shipped complete with all valving necessary for two hand, single stroke operation, including one of our SYNCHRO-SIG series two hand, anti-tie down actuators. The actuators provide "state of the art", anti-tie down control. The two buttons (on the SS-PB series) or the two photo optic "sensors" (on the SS-OT series) must be simultaneously activated to provide a down signal to the press. When one or both are released, the down signal is terminated. Both buttons or "sensors" must be totally released before the units will allow another down signal. The units cannot be locked or tied down to allow single hand operation.

Standard presses are valved to operate in the CSR-G2 mode. That is, the operator must give the controller a constant signal for the ram to descend to the bottom of the stroke. If given a constant signal, the ram will not reverse until it has reached maximum strength and travel. However, the ram will reverse at any point the signal is broken.

In some applications you may desire for the ram to not reverse when the signal is broken. This is **BEM "impulse" Mode.** Once the press has been activated the ram will descend to the bottom of stroke without requiring a constant signal. Repeatability in this mode is plus or minus .001". If purchased in this mode the press can be easily converted to CSR-G2 mode by purchasing the CSR-G2 Conversion Kit, Part No. CSR-G2-CON-1530. Existing valving, including the SYNCHRO-SIG unit, remains intact and is utilized. Conversion requires approximately 15 minutes and is easily accomplished.

Please contact our engineering department to discuss any questions you may have about control systems, modifications, and your applications. We are glad to supply our presses built to your specifications should you require other than our standard systems.

Factory Support . . .

Our 40 year reputation for providing quality *TOGGLE-AIRE* presses that meet a wide range of special requirements and our 60 years of service and support experience are all available to you with one phone call. It's your biggest advantage in dealing directly with our factory. Make use of it. Please call with any and all questions you may have regarding your applications and our equipment.

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WARRANTY

AIM, Inc. (hereafter referred to as the manufacturer) warrants that all TOGGLE-AIRE products will be free from defects in material and workmanship for a period of 180 days from the date of shipment to the original purchaser. Any claim made against this LIMITED WARRANTY must be made by contacting the customer service department of the manufacturer. At its option, AIM will repair or replace any product it deems defective under the terms of this warranty. If factory service is required, transportation costs to and from the factory are to be paid by the purchaser. This warranty does not apply to equipment that has been subject to abuse, misapplication, negligence, improper maintenance, alteration, or failure to follow manufacturer's instructions.

AIM's SOLE OBLIGATION UNDER THIS WARRANTY IS STATED ABOVE. THIS WARRANTY IS IN LIEU OF ALL OTHERS, EXPRESSED OR IMPLIED, AND UNDER NO CIRCUMSTANCES WILL JORACO, INCORPORATED BE LIABLE FOR ANY CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF TOGGLE-AIRE PRODUCTS

THINK SAFETY . . . WORK SAFELY . . .