



# SQ-1 ROLSPLICER

Operators Manual

Maintenance Manual and  
Parts List

## **FOREWORD**

**This manual explains the proper maintenance of Square 1 Design Rolsplicer as well as the daily lubrication and periodic inspection procedures.** Please read this manual thoroughly even though you may already be familiar with other Square 1 Design equipment, because it contains the most current information about the Square 1 Design Rolsplicer. This manual has been based on the standard Square 1 Design Rolsplicer. If you have any questions on modifications to your equipment, please contact Square 1 Design., or your sales representative. Square 1 Design reserves the right to make any changes or modifications to this manual or its Rolsplicer without giving notice and without incurring obligation.

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## **BEFORE INITIAL OPERATION**

- **Please read this manual thoroughly.** This will give you a complete understanding of a Square 1 Design Rolsplicer and permit you to operate it correctly and safely.
- **Identify and inform ALL employees who will operate or be near the Square 1 Design equipment of ALL safety concerns in this manual and on the production floor.** It is very important from the employees, employers, and manufacturers standpoint that employee's safety comes above all else. The employer should make sure any employee who either operates or works near the equipment has been properly trained and given written notice of any and all safety concerns on the production floor.
- **Always perform pre-operation check and periodic maintenance.** This will help prevent sudden malfunctions (due to poorly maintained equipment), improve work efficiency, and help insure safe working conditions

## **GENERAL DESCRIPTION**

- The Square 1 Design Rolsplicer is designed to produce chord splices with 2x3, 2x4 and 2x6 lumber. Continuous splicing without clamping, in seconds rather than minutes is possible with this technically advanced machine. The unique double roll consistently produces the tightest possible splices.
- Although the Rolsplicer has a rugged yet simple design, the following prescribed operational and maintenance procedures will assure optimum production over the lifetime of the machine. These procedures are outlined in this manual.
- Appropriate Safety Guards and Switches are provided for the protection of the operator. Nevertheless, it is necessary for all operating procedures to be followed exactly as specified.
- This manual is a guide for operating, cleaning, lubricating, inspecting and adjusting the SQ-1 Rolsplicer. Strict adherence to these procedures will ensure an efficient operation and optimum utilization of the machine.

The model # and serial #'s are located on the Inside of the Electrical Panel of the Square 1 Design Rolsplicer. This information will be needed when contacting Square 1 Design & Manufacture Inc. for service information. Any information that is needed can be obtained by contacting your sales representative or:

## **SQUARE 1 DESIGN & MANUFACTURE, INC.**

**1 Clark Road**

**Shelbyville, IN 46176**

**Phone: +1-866-647-7771**

**Fax: +1-866-646-5771**

**[Sales@Square1Design.com](mailto:Sales@Square1Design.com)**

## **OPERATION OF THE ROLSPLICER**

The Square 1 Design Rolsplicer is very simple to operate and maintain. Square 1 Design suggests that operation of the Square 1 Design equipment proceed in the following manner:

1. Everyone near the machine read the manual so general safety guidelines can be identified.
2. Everyone near the machine identify the safety devices and how they operate.
3. Perform daily, weekly and monthly safety and maintenance analysis.
4. Correct any problems before operation of the equipment.
5. Check the area before beginning to be certain no employees or obstacles are near the machine.
6. Once the machine is started check the safety device operation.

## **SAFETY AND MAINTENANCE**

- Employee safety is a key concern at Square 1 Design manufacturing and should also be at your production facility. It is important to stress safety concerns around any type of production equipment because serious injury can occur without the proper training and supervision.
- Square 1 Design suggests that any employee who will operate or work around this equipment be given the opportunity to read this manual and receive training from qualified personnel at your facility.
- With proper maintenance, the equipment and work area become safer. So, in accordance with common safety practices, proper maintenance is just as important. Square 1 Design has the following list of general safety and maintenance guidelines that should accompany any safety standards your company has established.

## **SAFETY GUIDELINES**

**1. Cleanliness:** The area surrounding the Square 1 Design Rolsplicer must be checked daily for any obstructions such as loose lumber or plates that could affect the normal operation of the machine.

**2. Operate new equipment with special caution:** People are sometimes overconfident that new equipment will work just like old equipment. This is not always true; a special caution should be taken around the Square 1 Design Rolsplicer.

**3. Proper equipment use:** The proper equipment should be worn by individuals working on or near the Square 1 Design Rolsplicer to prevent injury. Loose fitting clothing that can be caught in the machine or on a splice itself should **NOT** be worn. Safety glasses must be worn for the protection of the employees. Employees without the proper equipment should not be allowed near the Square 1 Design Finish Roller. It is management's responsibility to enforce these guidelines. It also becomes the employee's responsibility to make sure these guidelines are enforced.

**4. Emergency Stop should be identified and proven to be in proper working order:** All employees who will be working on or near the Square 1 Design Rolsplicer should know how the safety features work. Each employee should also confirm the machine is operating properly. If any employee notices the equipment may be malfunctioning in any way, a supervisor is to be notified immediately. The power to the equipment is to be locked down until the problem can be rectified.

**5. Disconnect and lock out all power sources before any maintenance or repair is to take place:** It is important for the equipment's power to be disconnected and locked out to prevent an accidental start up, whether by another employee or workers error.

**6. Never stand between a Square 1 Design Finish Roller and a SPLICE!** This can result in injury or death. Be smart do not stand between the machine and the object it is getting ready to press.

**7. Follow the safety checklist every day:** The following checklist should be followed every day to ensure employee safety and a safe working environment.

## **SAFETY CHECKLIST**

### **Daily:**

- A. Check to make sure the machine stops properly when the Emergency Stop is activated.
- B. Check for unusual noise, overheating, oil leaks or other unusual characteristics.
- C. Check the area surrounding the Square 1 Design Rolsplicer for cleanliness.
- D. Perform daily maintenance
- E. Be sure area is clear of people when starting the machine.
- F. Check to be sure everyone around the Square 1 Design Rolsplicer is wearing the proper equipment.

### **Weekly:**

- A. Check the bearings for wear.
- B. Visually inspect motors and gearboxes for excessive dirt, heat, or dust.
- C. Check ventilation openings to assure they are not clogged by dirt or dust
- D. Check all bolts, nuts, and screws and tighten as needed.
- E. Check drive chain tension and tighten as required.
- F. Check oil level in the drive unit and add proper amount if necessary.
- G. Use compressed air to remove sawdust and dirt build-up on the system and around the bearings. \*

**\* Wear eye protection when using the compressed air.**

## **MAINTENANCE**

As mentioned earlier, keeping the Square 1 Design Rolsplicer well maintained makes the work environment safer and allows reliable production for many years. Maintenance on the Square 1 Design Rolsplicer consists of lubricating the machine and chain, and tightening all nuts and bolts. The following maintenance schedule MUST be followed.

### **Motors:**

The bearings require no additional lubricant throughout the life of the motor.

### **Drive Unit:**

During the oil change process, the magnetic drain plug should be thoroughly cleaned and reinstalled to prevent leakage.

### **Chain:**

Non-detergent petroleum base oil should be used weekly.

### **Grease Fittings:**

The SQ-1 Rolsplicer uses sealed bearing and do not require additional grease.

### **Nuts & Bolts:**

All nuts and bolts must be checked and tightened before operation on the Square 1 Design Rolsplicer.

## **Rolsplicer Description**

- A 3 HP gear motor, installed in a horizontal position, provides power. The motor nameplate includes wiring data. In any case, local electrical codes provide guidelines for hook-up of electrical equipment.
- Compressed air is used to operate the lumber hold down lid and splice plate clamps. Four inserts with wheels pressing on the lumber are part of the lid. They can be adjusted to accommodate the three lumber sizes for which the machine was designed.
- Our mechanically driven, synchronized half rollers in two sets run simultaneously. These connect to a chain and sprocket system mounted at the opposite ends of four shafts. The sprockets are mounted in bushings, while the rollers are mounted in flanged bearings.
- Heavy steel plate sides are secured with screws on all four sides of the welded solid steel frame. Safety covers on each side of the top protect the operator from possible injury. Operating buttons are located on the side on the operator's side. Adjustment wheels for controlling roller pressure are positioned on the side cover where the operator stands.

## **Operating Instructions**

### **General**

- All individuals assigned as operators for the Rolsplicer should read this manual prior to training. This will enable operators to familiarize themselves with the machine quickly and thus become proficient with its operation in the minimum time.
- Operating Controls Before attempting to operate the Rolsplicer, operators must know the location and function of each control.
- Operating Rolsplicer for the First Time Prior to any production, the following must be done:
  1. Connect incoming power to the exterior control box.
  2. Place power disconnect in the ON Position
  3. Plug compressed air supply into the rear of the machine. Although operating pressure should be approximately 100 PSI, it may be necessary to adjust so the hold down lid operates without excess shock.

## **Roller Adjustment**

1. Bring the press and push rollers into position by means of the jog button at the side of the machine. This starting will move the rollers into position independently of the normal cycle sequence.
2. With the lumber hold down lid open, place a representative piece of lumber in position between the rollers.
3. Loosen the two locknuts on the hand wheel shafts at the front of the machine.
4. Adjust the rollers by turning the hand wheels. Tightness should be as follows:
  - (a) Plate press rollers set for slip fit.
  - (b) Push rollers must be very tight to drive the lumber forward during the operating cycle.
5. Tighten the locknuts on the hand wheel shafts. Push the jog button again to move the rollers into the beginning position so the machine is again in normal sequence and ready for production.
6. Repeat the above procedure if additional adjustment is necessary.
7. Adjust mounting bracket weldment arm to provide from .030 to .050 tolerance with mini-valve cut-off switch.
8. To set up for 2 x 6 lumber, turn the adjustment nuts clockwise on top of the four lumber hold down wheel assemblies until the nut stops. Do not force these adjusters past their stopping point.

## **Automatic Lid Speed Adjustment**

1. Opening and closing speeds of the lid are pre-set at the factory for safe operation. However, some adjustment may be necessary or desirable
2. Two airflow control valves are located on the lid-driving cylinder. One each for opening and closing speed. To adjust these speeds, loosen the tiny locknut on the appropriate valve. Turn clockwise for slower operation or counter-clockwise for faster operation. Be sure to TIGHTEN LOCKNUT after adjustment, since increasing lid operation speed can create a safety hazard. Adjustment is manual, according to the numbers stamped on the top.

## **Splicing Sequence**

1. Place the two chords to be spliced in the machine, centering the trailing edge of the first piece in the connector holding brackets. Position the second piece against the front piece, although they can be separated by as much as ½ inch.
2. Insert the connector plates into the connecting plate holding brackets, one on each side of the joint.
3. With both hands, Push both buttons on the Two Hand No Tie-down simultaneously to actuate the machine.
4. Push rollers will move trailing 2 x ? to end of leading 2 x ? with connector plates in position.
5. As lumber (chords) passes between press rollers, connector plates are embedded, and splice is complete. Lumber hold down lid will open and completed splice is in view. Remove from machine and Rolsplicer is ready for the next splice.

NOTE: Although one person can operate the Rolsplicer for many chord lengths, long chords require two persons to handle more easily. Connector plates not designed for roller application are unsuitable for use with this machine.

## **Cleaning, Lubrication and Inspection**

- Regular maintenance should be provided on a routine, scheduled basis by shop personnel. Major items of concern include the following:
  1. Cleaning to remove build-up dirt or other debris, which may cause jamming and/or binding of moving parts, chains and sprockets.
  2. Lubrication to keep moving parts operating smoothly and reduce wear.
  3. Inspection to detect problems of wear and breakdown before becoming major problems, which would prevent operation.
- A recommended schedule for cleaning, checking and lubrication is shown as Table I.
- While cleaning and lubricating, look for signs for cracking, extreme wear, bending or breakage of chains, sprockets, bearings and basic structure.

**Table I**  
**Cleaning, Lubrication and Inspection**

<b>Frequency</b>	<b>Procedure</b>	<b>Materials /Equipment</b>
Daily	Clean and Remove all debris from under the machine	
Daily	Drain water in air hose	
Daily	Air Pressure Adjustment to 100 PSI	Adjustment knob on Air Regulator
Weekly	Grease Idler Sprocket	General purpose grease
Weekly	Adjust chain to 35 lbs. Torque	Torque Wrench
Quarterly	Tighten All loose fittings, nuts, bolts etc.	

## Trouble Shooting and Repair

- Although the intent has been to design a low maintenance machine, breakdowns may occur. A systematic approach should be used to isolate the cause(s) and make repairs when a malfunction takes place.
- Table II outlines symptoms, possible causes and repair procedures. Following these recommendations should solve most problems.

**Table II**  
**Trouble Shooting**

<b>Symptom</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
Machine won't work	Electrical	Check fuses and replace if necessary
Motor won't start		Release Emergency Stop
Machine won't work	Faulty Air Valve	Jog Rollers into correct position
		Push two hand tiedown
Motor will start		If machine doesn't work, then replace two hand no tie-down
Rollers continue to rotate after two hand tiedown is released	Cam Valve is out of adjustment with the timing sequence.	Adjust Cam Valve into tolerance with timing.
Irregularly placed Plates	Clamping Cylinder may be broken on the end	Replace
	Machine may be out of time	Re-Time (see below)
	Clamping Cylinder may have slipped	Readjust clamp and retighten
Gap in splice between lumber	Chain loose, or machine out of time	Re-time as Follows:
		<ol style="list-style-type: none"> <li>1. Loosen Idler</li> <li>2. Jump chain back into position.</li> <li>3. Put chain back on sprockets to the point where push rollers are (1") ahead of press rollers.</li> <li>4. Tighten Idler to 35 lbs. Torque.</li> </ol>

## **WARRANTY**

Square 1 Design & Manufacture, Inc. warrants the equipment manufactured by it, to be free from defects in materials or workmanship for one (1) year from the date of delivery to the original purchaser. This is provided the equipment had been properly installed, operated, used, cared for, adjusted, cleaned and lubricated by the owner. All equipment claimed to be defective shall be returned to Square 1 Design & Manufacture, Inc. charges prepaid. All collect shipments will be refused. If upon inspection Square 1 Design & Manufacture Inc. determines to its satisfaction, that any part of the equipment is defective, Square 1 Design & Manufacture, Inc, at its option, correct the defect by repair or replacement. This warranty shall not apply if the original equipment had been altered or modified by any person other than Square 1 Design & Manufacture Inc. This Warranty shall not apply to starters, motors, gear reducers, or microswitches that are component parts of the equipment. Those separate component parts are governed by separate warranties of the respective component manufacturers, which warranties of the respective component manufacturers which warranties may be shorter than or longer than the one (1) year warranty granted by Square 1 Design & Manufacture, Inc. upon request by the owner. Any repairs are available from Square 1 Design & Manufacture Inc. upon request by owner. Any repair or replacement of such component parts shall be governed solely by manufacturer, and it shall be owner's responsibility to enforce any warranty claims directly with such component part manufacturer.

**EXCEPTION FOR THIS WARRANTY AS EXPRESSLY STATED, SQUARE 1 DESIGN & MANUFACTURE, INC. MAKES NO OTHER WARRANT EXPRESSED OR IMPLIED. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS HEREBY DISCLAIMED.**

Square 1 Design & Manufacture Inc. shall not be liable for damages, direct, consequential, or incidental, or for delays, if such occur as a result of defects in material or workmanship.

## **SQUARE 1 DESIGN & MANUFACTURE INC.**

**PURCHASE DATE:** \_\_\_\_\_

**MODEL NUMBER:** \_\_\_\_\_

**SERIAL NUMBER:** \_\_\_\_\_

## **ORDERING REPLACEMENT PARTS:**

Replacement parts can be ordered by calling, emailing, or faxing:

**Square 1 Design & Manufacture Inc.**

**1 Clark Road**

**Shelbyville, IN 46176**

**Phone: +1-866-647-7771**

**Fax: +1-866-646-5771**

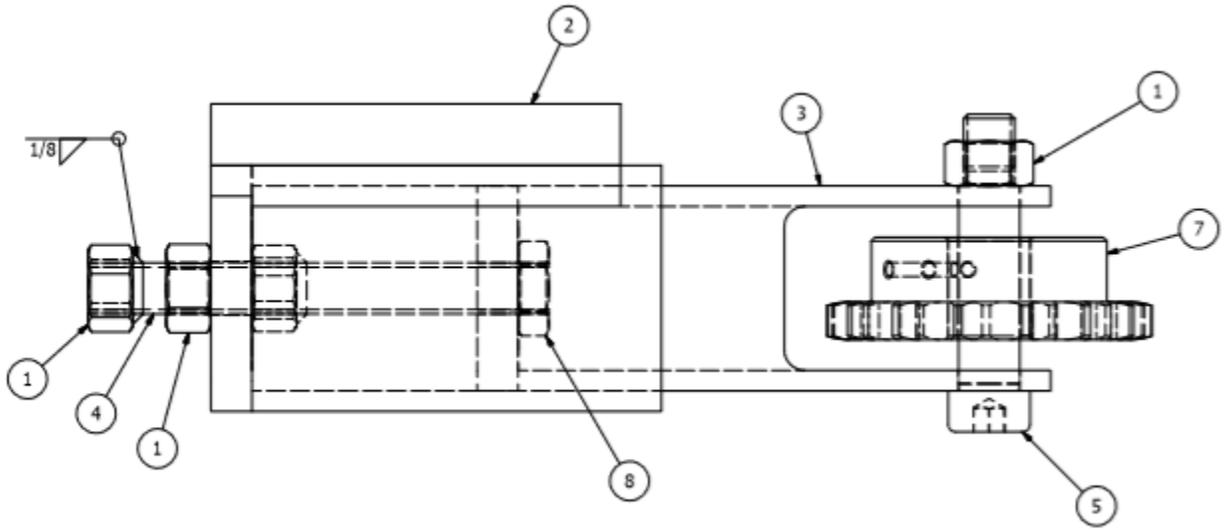
**www.Square1Design.com**

**[Sales@square1design.com](mailto:Sales@square1design.com)**

When ordering parts, you must include the serial and model #'s of your Square 1 Design Intelligent Stacking System.

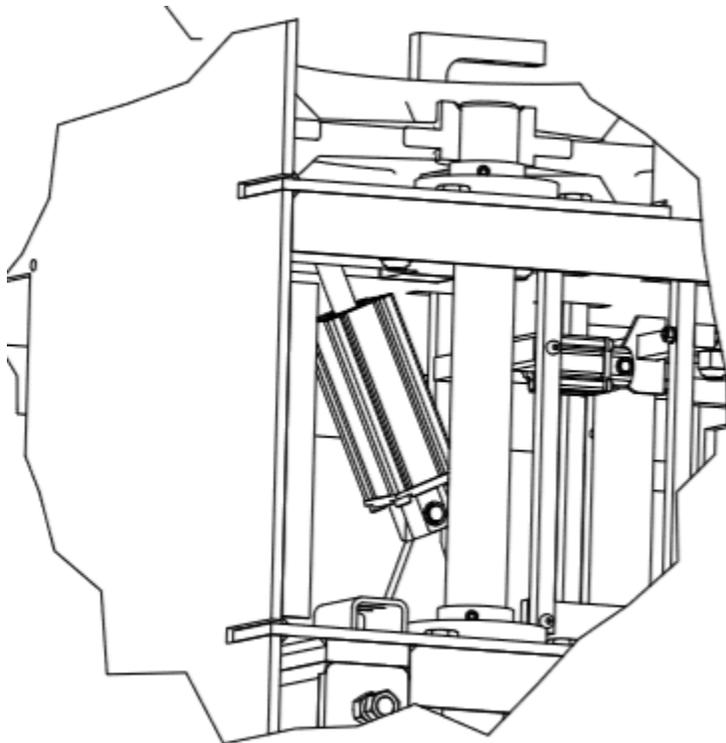
**ALWAYS DISCONNECT AND LOCK OUT ANY POWER SOURCES WHEN ADJUSTING OR REPAIRING ANY EQUIPMENT.**

**Detail A**



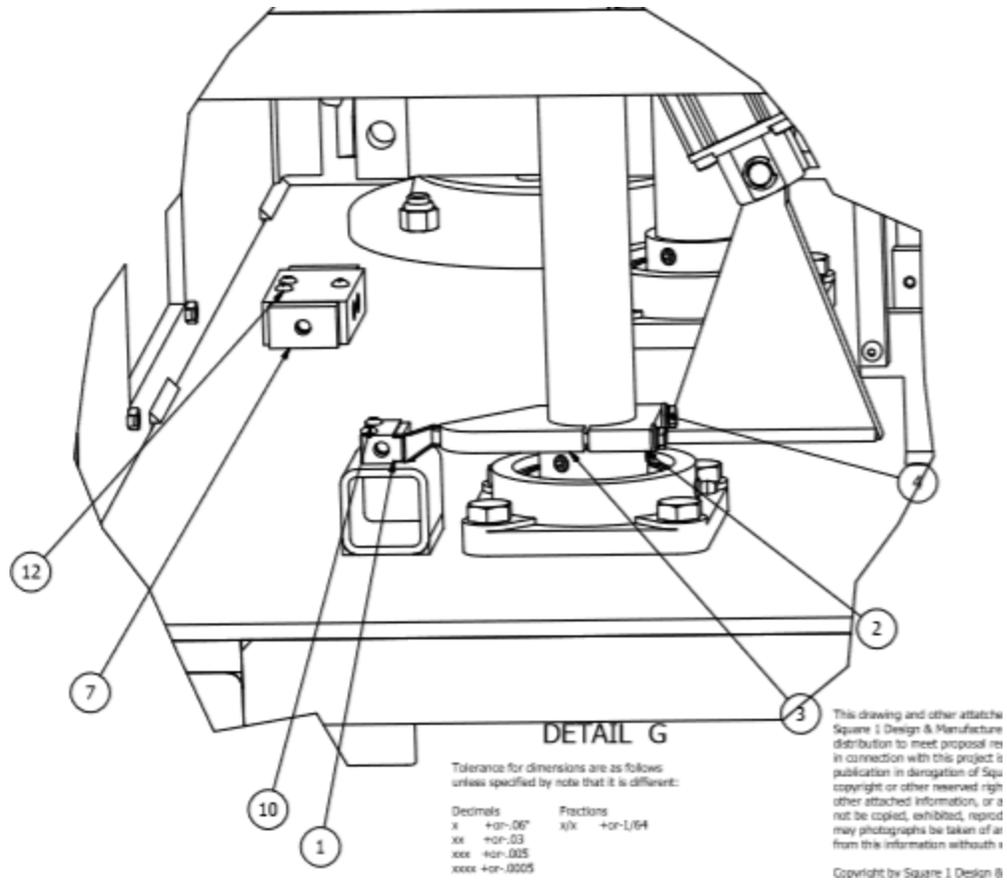
**Idler Assembly**

**Detail B**



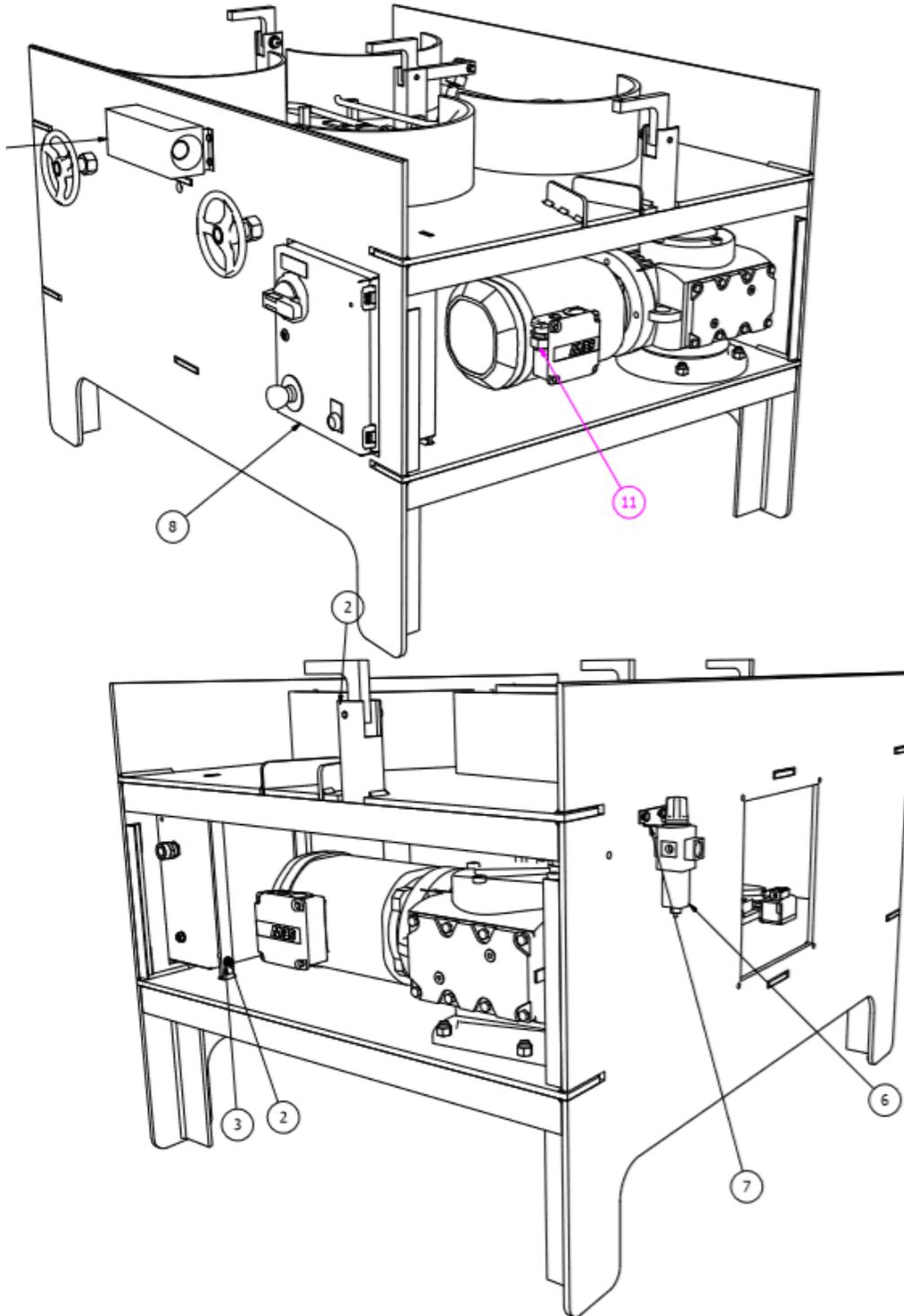
**Clamping and Lid Cylinder**

**ALWAYS DISCONNECT AND LOCK OUT ANY POWER SOURCES WHEN ADJUSTING OR REPAIRING ANY EQUIPMENT.**



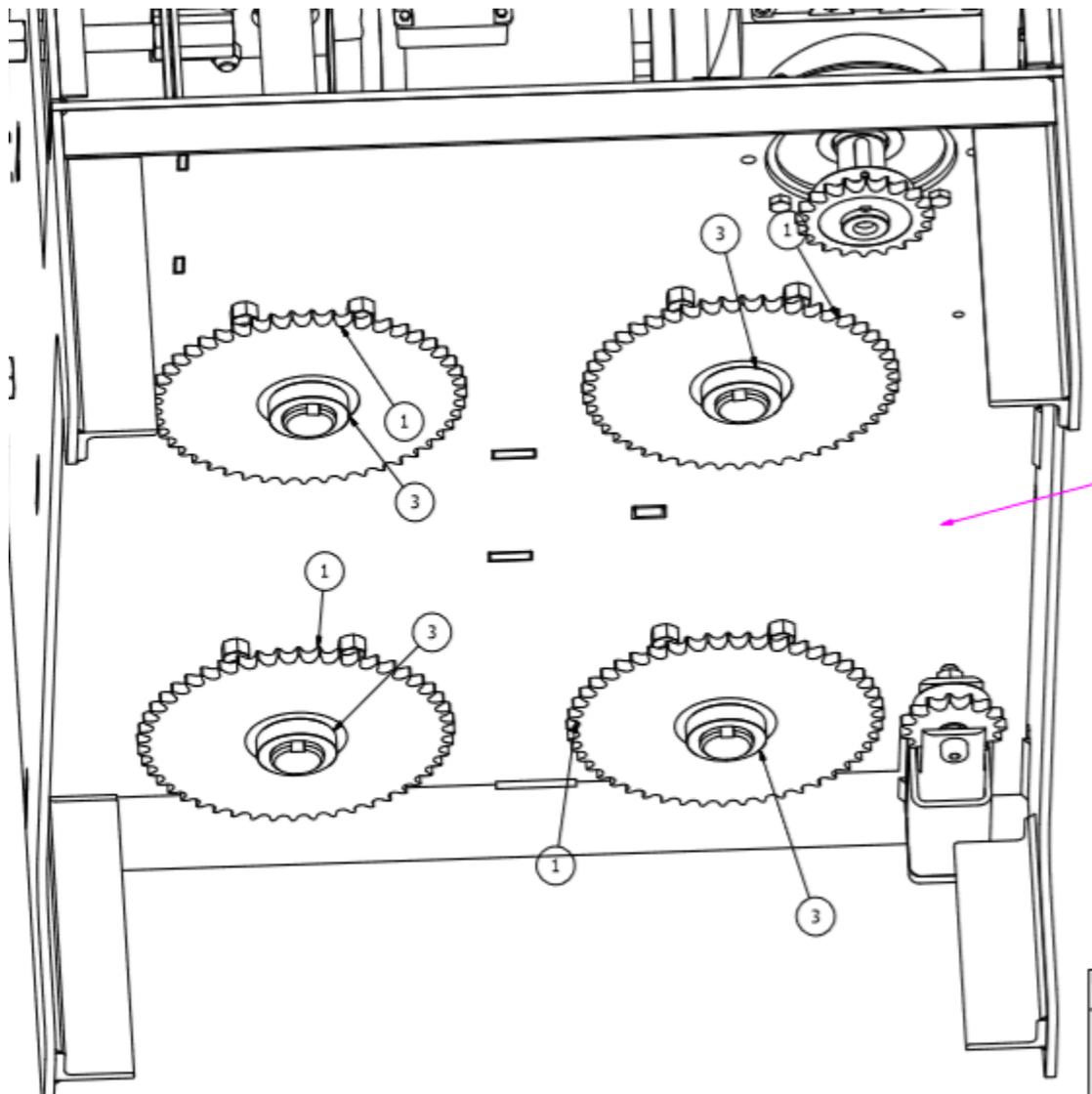
**ALWAYS DISCONNECT AND LOCK OUT ANY POWER SOURCES WHEN ADJUSTING OR REPAIRING ANY EQUIPMENT.**

**Detail C**



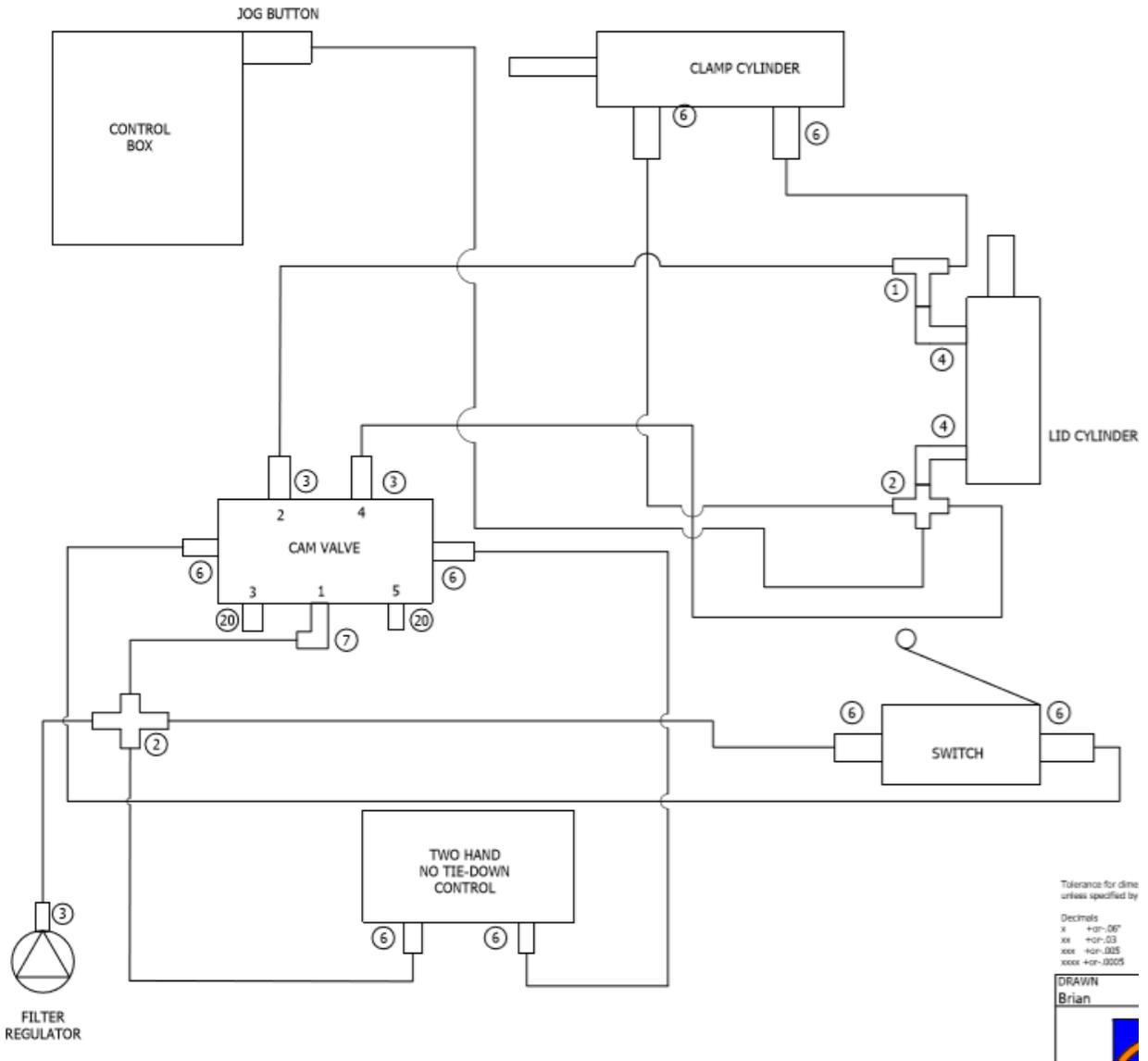
**Pressure Regulator and Two hand Tiedown**

**Detail D**



**Drive Sprocket Assembly**

**Detail E**



**Air Diagram for Two Hand No Tie-Down**

**ALWAYS DISCONNECT AND LOCK OUT ANY POWER SOURCES WHEN ADJUSTING OR REPAIRING ANY EQUIPMENT.**

**Detail F**



**Rolsplicer Wheel Home Position (As set to a right to left)**

## Replacement Parts List for SQ-1 Rolsplicer

<b>Part Number</b>	<b>Description</b>	<b>Location</b>
SPRO-0001	Sprocket on Idler	Detail A; Number 7
CYL-0013	Clamping Cylinder for Lid	Detail B
CYL-0003	Clamping Cylinder for Clamping Bars	Detail B
AIR-0014	Cam Position Valve	Detail G; Number 1
AIR-0011	Pneumatic Valve; 3/2 Port (Blue)	Detail G; Number 7
BEAR-0002A	Bearing, Sealed, 4 Bolt Flange	Detail G; Number 2
AIR-0009	Pressure Regulator	Detail C; Number 6
AIR-0010	Pressure Regulator Bracket	Detail C; Number 7
AIR-0019	Two Hand No Tie-down	Detail C
SPRO-0002	Drive Sprocket	Detail D; Number 1
SHCO-0001	Locking Collar for Drive Sprocket	Detail D; Number 3
SPRO-0007	Sprocket for Motor	Detail D
RS-AW-0012	Press Wheel Assembly	Push Side (Thicker)
RS-AW-0013	Press Wheel Assembly	Press Side (Thinner)
RS-08-0001-SF	Internal Spring for Lid Pushdown	Lid Pushdown
WHE-0014	Wheel	Lid Pushdown
CHAIN-0001	Chain	Under Machine
	Master Link for Chain	Under Machine
CHAIN-0015	Off Set Link for Chain	Under Machine
<b>*Parts are Available for the Klaisler Rolsplicer</b>		