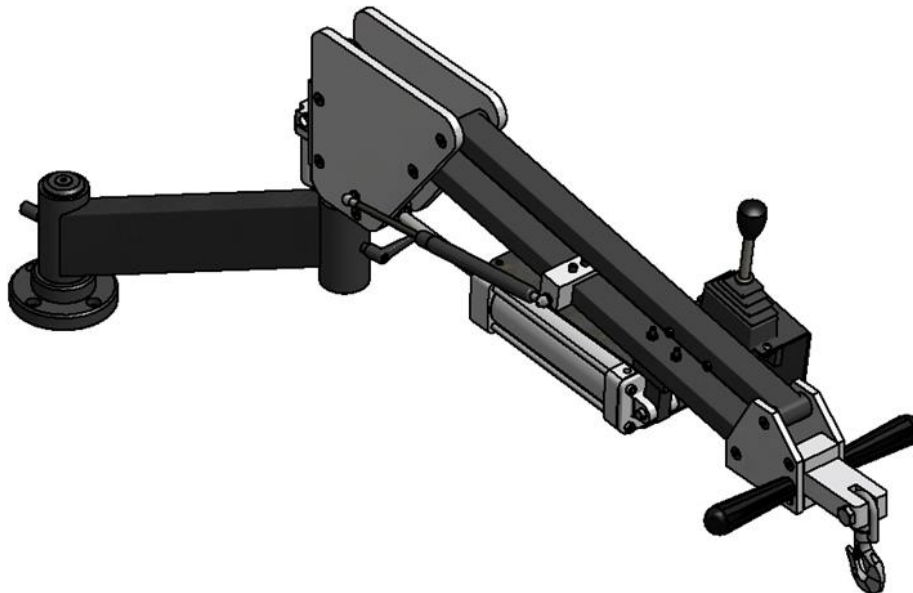


# INSTALLATION & OPERATIONS MANUAL

## PART MANIPULATOR MODEL# PM-RNR



Midwest Specialties, Inc. 851 Industrial Drive Wapakoneta, Ohio 45895

**Distributed by Ergonomic Partners**

[Sales@ErgonomicPartners.com](mailto:Sales@ErgonomicPartners.com)

[www.ErgonomicPartners.com](http://www.ErgonomicPartners.com)

Tel: (314) 884-8884



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# SAFE OPERATION: READ THIS FIRST

- Read the entire unit manual before operating the Part Manipulator.
- Wear eye protection when operating this machine.
- Do not wear jewelry when operating this machine. Tie hair back when using this machine.
- Do not wear gloves when operating this machine.
- Do not use damaged, frayed or deteriorated air hoses and fittings.
- Remove any weight from the arm and disconnect the air supply before making any adjustments to the arm or performing any maintenance.
- Keep hands clear of pinch points on the unit when operating the Part Manipulator.
- Do not alter or modify the Part Manipulator Arm.
- Periodically inspect for damage, loose hardware or anything irregular on the Part Manipulator.
- Read the Midwest Specialties, Inc. Limited Warranty before performing any maintenance or repairs.

IT IS IMPERATIVE THAT THE TABLE OR MOUNTING SURFACE BE LAGGED TO THE FLOOR AND SECURE BEFORE INSTALLING THE PART MANIPULATOR. Failure to secure the table or mounting surface could result in serious injury to the operator as well as the Part Manipulator.

- Midwest Specialties, Inc. is not responsible for accident or injury resulting from the misuse of this machine or for use other than originally designed and intended.
- The Part Manipulator has both air restrictions and weight restrictions depending on the model. See the specifications page of this manual for these restrictions.
- The optional magnet has material, finish, size, shape and weight restrictions. See the specifications page of this manual for these restrictions.

# Part Manipulator Limited Warranty

A new Part Manipulator has a 3-year limited warranty on parts and labor. This warranty does not apply to a Part Manipulator determined to have been misused or abused, improperly maintained, or having defects attributed to the use of non-genuine repair parts.

Original pressure cylinders have a 3 year limited warranty from the date of purchase. When replacing one of the pressure cylinders, make sure not to scratch, mar, or nick the shaft or tube on either the old cylinder being replaced or the new cylinder being installed. All warranty cylinders must be returned to Midwest Specialties, Inc. for evaluation. The warranty is void if the cylinder to be evaluated shows signs of scratches or nicks on the cylinder shaft or tube. Damaged cylinders cannot be returned to the manufacturer for warranty claims. **Replacement cylinders carry a limited 1-year warranty from the date of purchase.**

Midwest Specialties, Inc. is not responsible for a customer's air quality. We supply the basic tools and offer a coalescent filter option for those who have experienced excessive moisture and water. The responsibility for clean, dry air falls upon the customer.

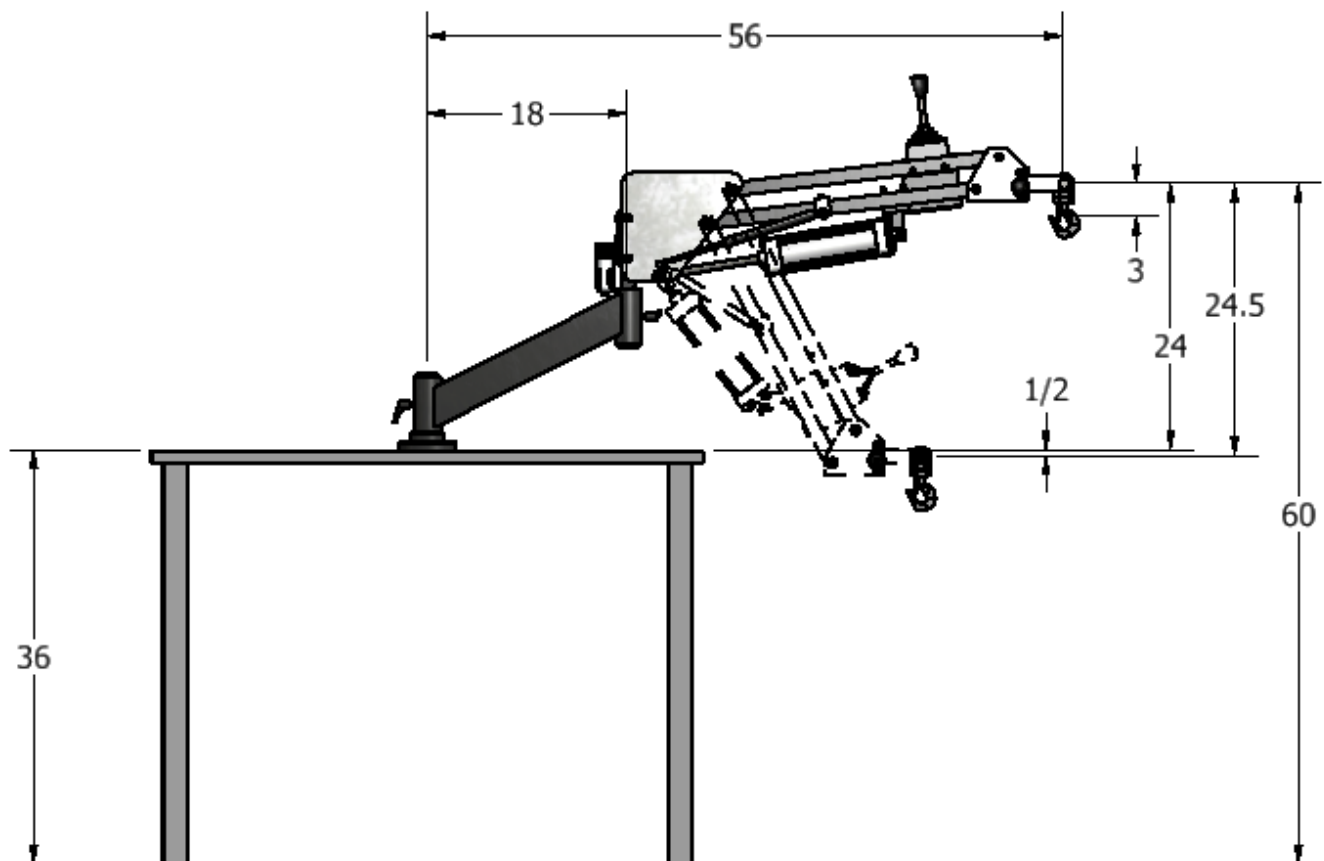
The warranty is void if changes to the Part Manipulator, or attempts to repair it or its components are made without the expressed authorization of Midwest Specialties, Inc. The warranty is based on normal usage which would be the equivalent of a 40-hour work week.

For technical assistance or questions concerning the proper care and maintenance of the Part Manipulator unit, please contact **Midwest Specialties, Inc. at 851 Industrial Drive, Wapakoneta, OH 45895.**

# SPECIFICATIONS

- The standard unit comes with Base, Angle, Arms, Pneumatic Cylinder Package, Pressure Cylinders, Joystick Control, Mount Block with Pivot Hook and Air Filter.
- Air pressure requirements are 90psi minimum to 120psi maximum.
- The lifting height is dependent on the load and air pressure.

Load (lbs)	Pressure (psi)
85	120
75	100
65	90



# OPTIONAL MAGNET SPECIFICATIONS

- Maximum Lifting Loads
  - Flat Plate Mild Steel = 220 lbs (minimum thickness of .59 inches)
  - Round Mild Steel = 99 lbs (maximum diameter of 5.9 inches)
- Maximum Length = 40 inches
- Maximum Diameter = 5.9 inches

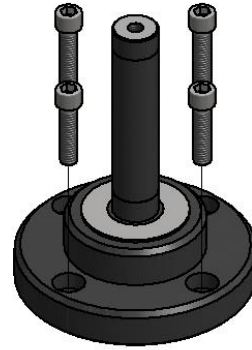
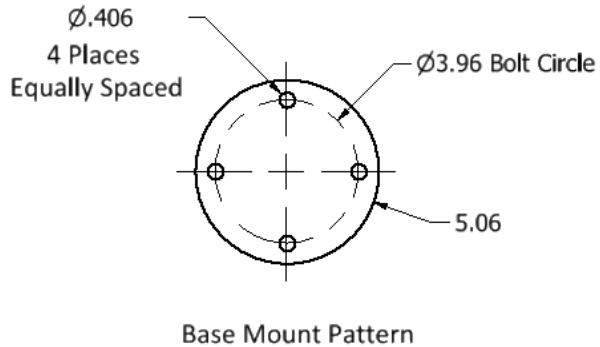
Lifting Power Chart	
Material Thickness	Lifting Power
0.59 + in.	100%
0.39 in.	70%
0.20 in.	40%



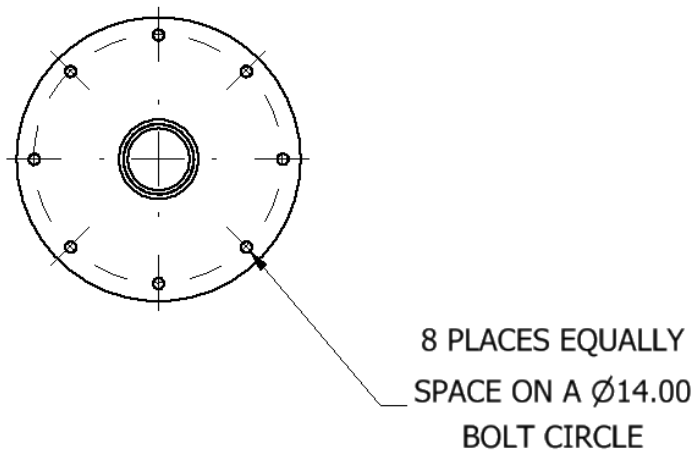
# INSTALLATION

**IT IS IMPERATIVE THAT THE TABLE OR MOUNTING SURFACE BE LAGGED TO THE FLOOR AND SECURE BEFORE OPERATING THE PART MANIPULATOR.**

- 1) Drill and tap (4) 3/8-16 bolt holes on a flat, smooth table or work bench. (see Base Mount diagram below)



## INSTALLATION WITH PEDESTAL MOUNT



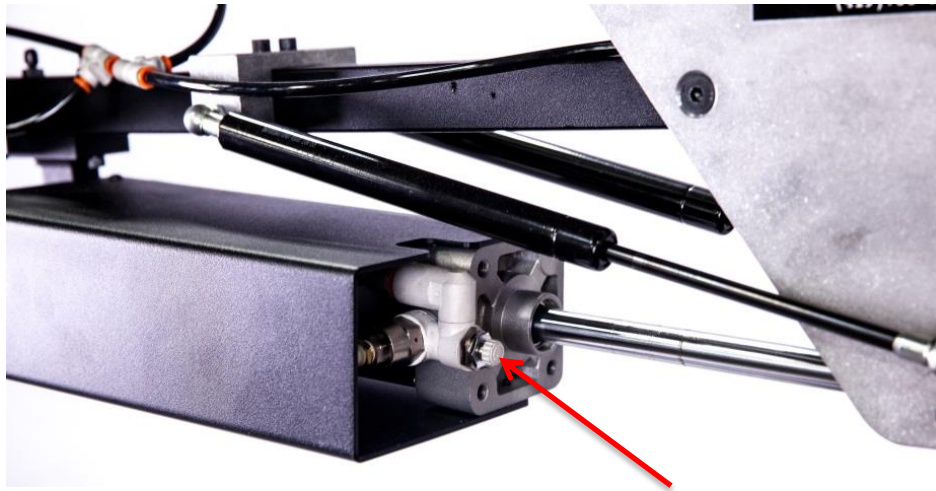
- 1) Secure the pedestal to the floor with (8) 1/2" diameter wedge anchor bolts drilled a minimum of 3-3/4" into the concrete
- 2) Secure the base of the part manipulator to the pedestal with (4) 3/8" bolts





# OPERATING INSTRUCTIONS

- 1) Set the air pressure for the Part Manipulator to 90-120psi.
- 2) Using the flow control valves located on each end of the pneumatic cylinder (shown below), fine tune the extension and retraction speed for the cylinder stroke. Opening the valves (counter clockwise) will allow more airflow and increase the speed. Closing the valves (clockwise) will restrict the air flow and slow the stroke speed. It may be necessary to trial and error the flow control valves to reach the desired settings for a specific application.

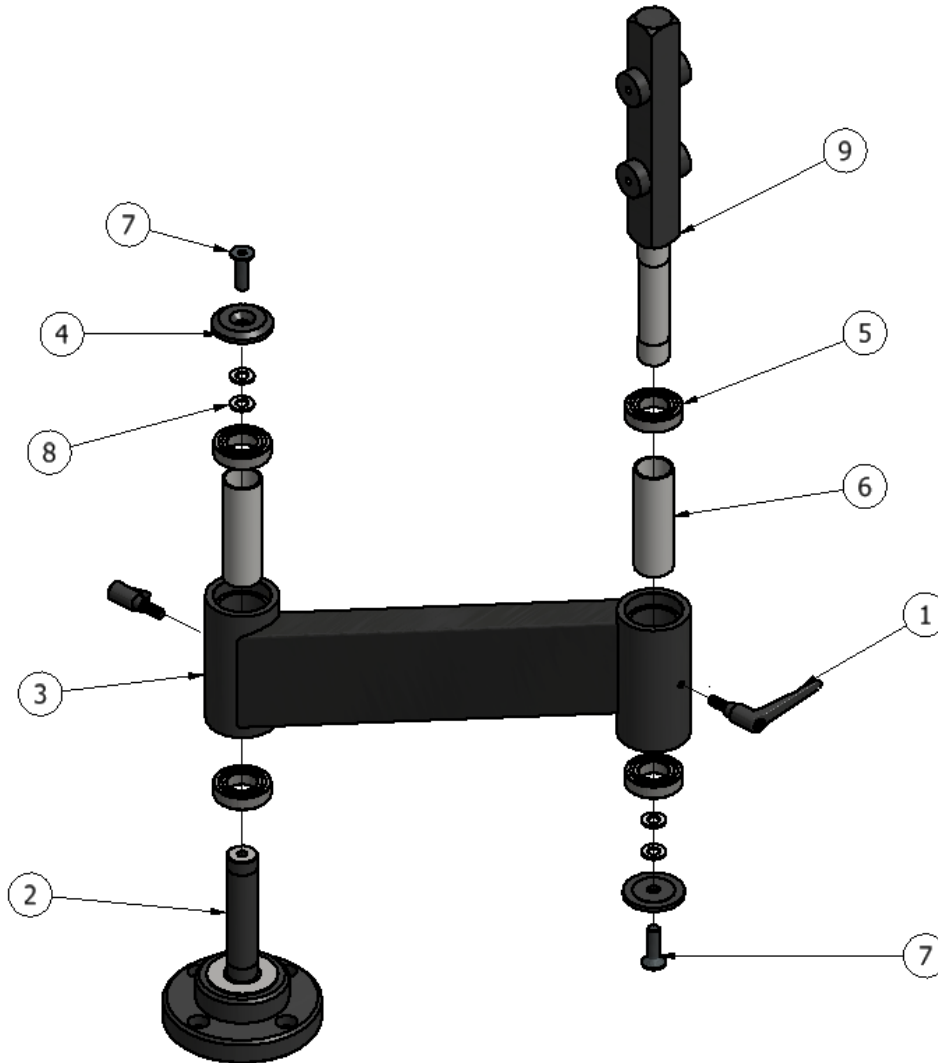


## OPERATING INSTRUCTIONS CONTINUED

- 3) The joystick control will give an output pressure that is proportional to the handle movement. Small joystick movement results in a small lifting movement, keep this in mind when fine tuning the flow control valves to the desired setting.
- 4) Pulling the joystick control lever toward the front of the Part Manipulator causes the arms to articulate downward. Pushing the joystick control lever toward the rear of the Part Manipulator causes the arms to articulate upward.
- 5) To remove the air cylinder first remove any weight from the front arms. Then raise the arms completely upward to the neutral position. At this point the air supply can be disconnected. Disconnect the air cylinder starting with the rod end that is attached to the arm.
- 6) When the Part Manipulator is not being used, the arms should be placed in the most upright position. This is the neutral position for the cylinders and will extend the cylinder life.
- 7) Always wear safety glasses, safety shoes, and use proper safety precautions when operating this unit.

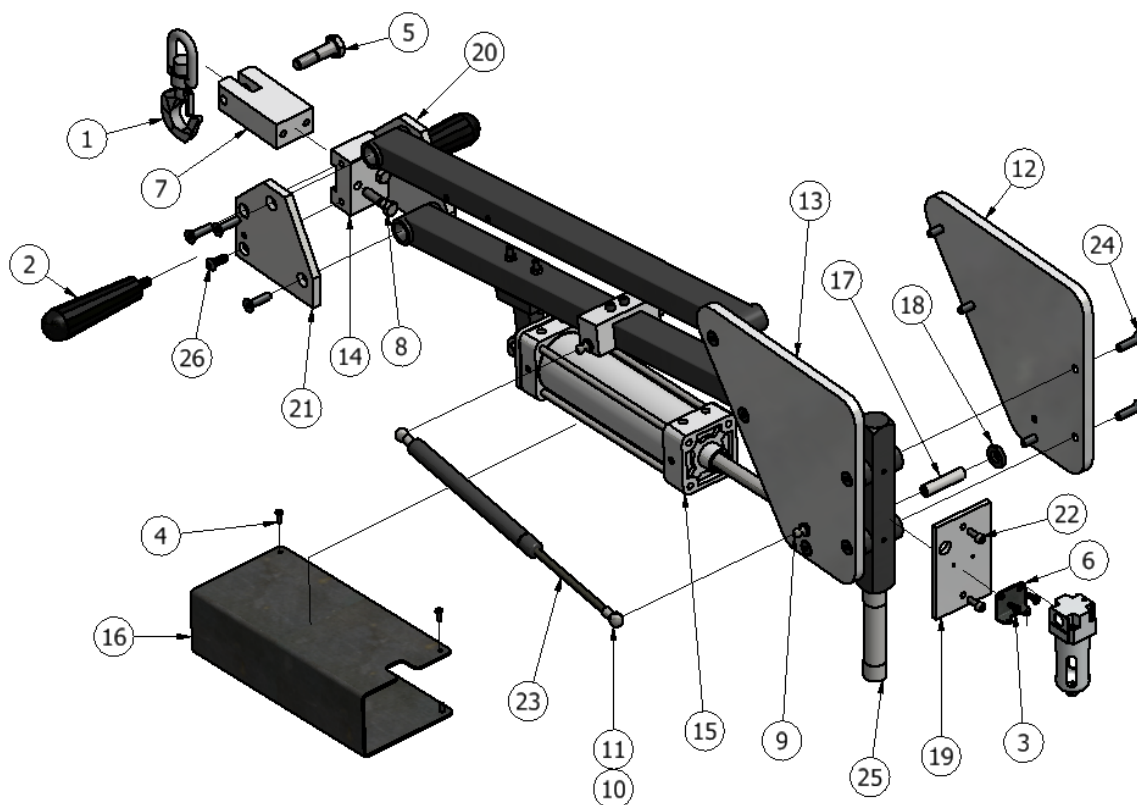
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# PM-RNR BASE MOUNT ASSEMBLY



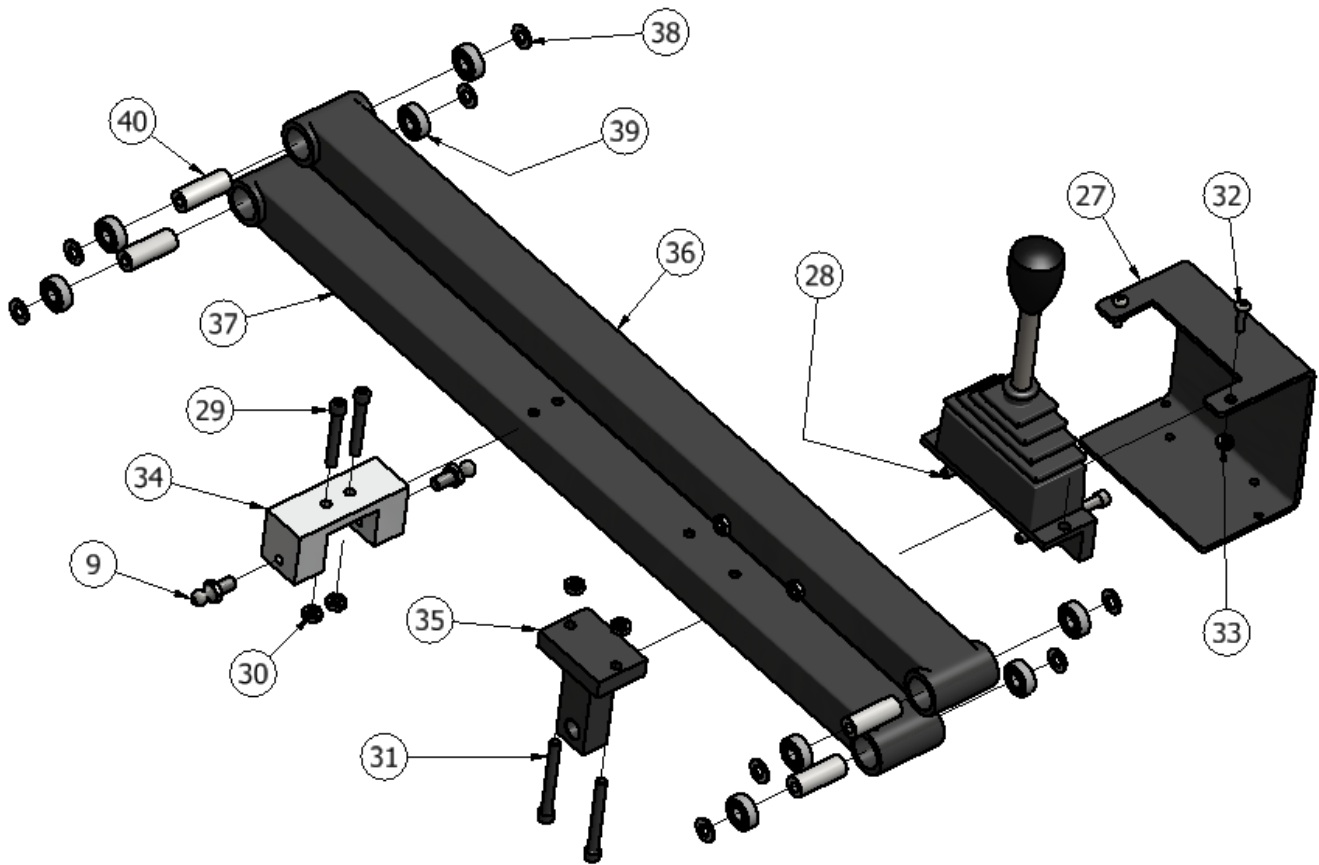
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	360315	LEVER 5/16-18 X .75 LG.
2	1	360489	BASE MOUNT - PMRNR
3	1	360490	ANGLE MOUNT - PMRNR
4	2	G30-0034	WASHER FOR REAR PIN
5	4	G30-0055	BEARING FOR RNR/G30
6	2	G30-0056	BEARING SPACER
7	2	G45-0127	M10 FHSS X 35MM LG.
8	4	G45-0523	M10 Washer
9	1	RNR 023	REAR PIN

# PM-RNR ASSEMBLY



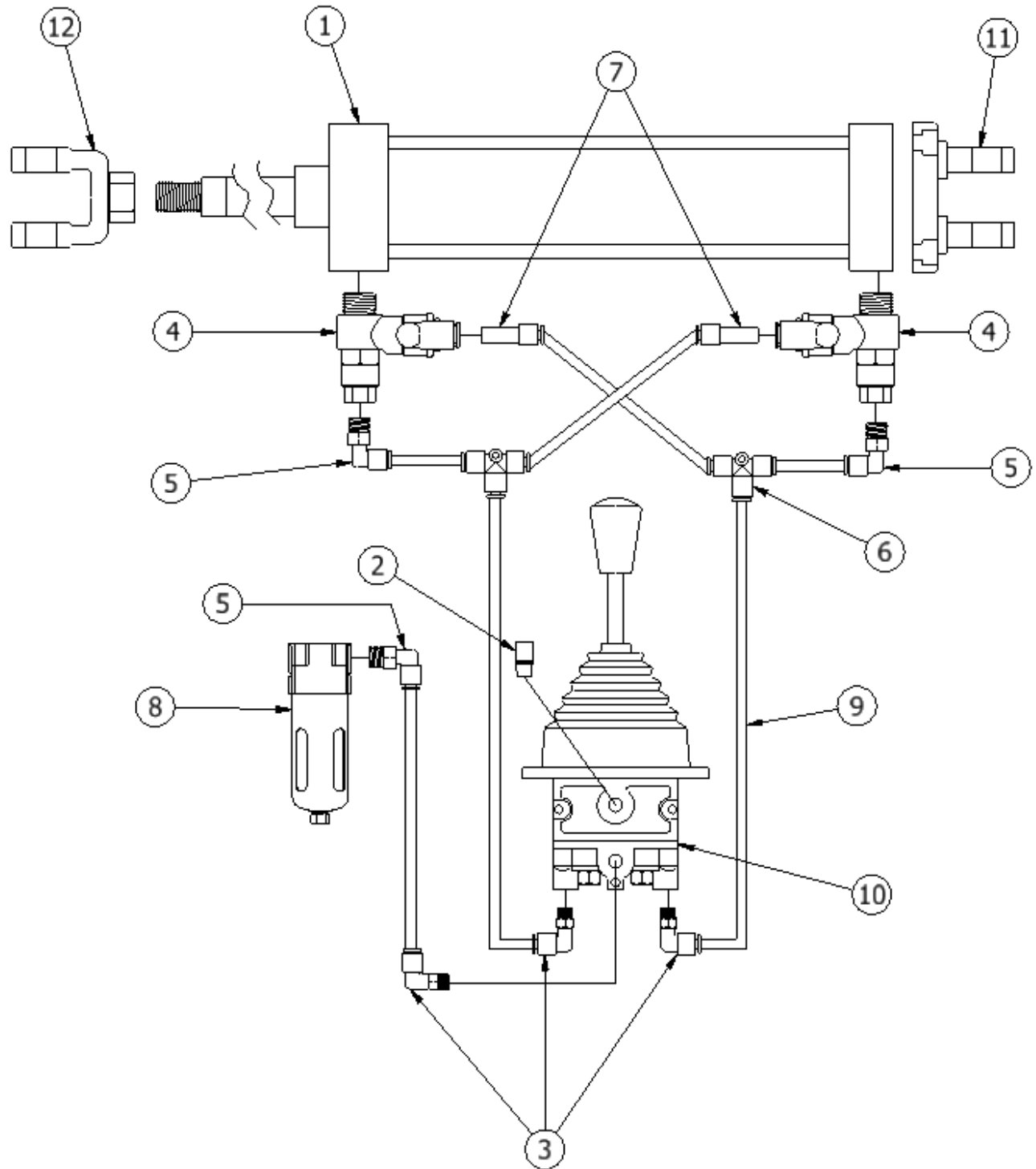
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	0020P	LIFTING HOOK
2	2	0052M	HANDLE FOR A-32 & RNR D.H.
3	2	0369M	10-32 SHCS X 3/8" LG.
4	4	0628M	8-32 BHSS X 1/2" LG.
5	1	360046	1/2-13 X 1" HEX HEAD BOLT
6	1	360063	AIR FILTER MOUNT BRACKET
7	1	360067	HOOK BLOCK
8	2	360130	3/8-16 X 1-1/2" HEX HEAD BOLT
9	4	360471	BALL STUD 10MM X 5/16-18
10	4	360472	KEEPER CLIP FOR 10MM BALL
11	4	360473	FEMALE SOCKET FOR 10MM BALL
12	1	360483	LEFT REAR PLATE - PM-RNR
13	1	360484	RIGHT REAR PLATE - PM-RNR
14	1	360486	FRONT BLOCK PM RNR
15	1	360487	AIR CYL. PACKAGE RNR
16	1	360488	AIR CYL. COVER PM-RNR
17	1	360513	AIR CYLINDER PIN PM-RNR
18	2	360514	WASHER 1/2" ID X 1" OD PM-RNR
19	1	360530	REAR PLATE
20	1	360533	RNR FRONT PLATE - LEFT
21	1	360534	RNR FRONT PLATE - RIGHT
22	2	360535	M6 SHCS X 16MM LG.
23	2	C16-09804	135# LONG CYL.
24	16	G30-0001	M8 FHSS X 30MM LG.
25	1	RNR 023	REAR PIN
26	2	RNR 039	M8 BHSS X 20MM LG.

# PM-RNR ASSEMBLY



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
27	1	00230	JOYSTICK COVER
28	2	0374M	1/4-20 SHCS X 2 1/2" LG.
29	2	0613M	1/4-20 SHCS X 1 3/4" LG.
30	6	360045	1/4-20 LOCK NUT
31	2	360129	1/4-20 SHCS x 2 1/4" LG.
32	2	360175	10-32 PHMS X 3/4 " LG.
33	2	360176	10-32 HEX NUT
34	1	360179	BRACKET - RNR DUAL
35	1	360485	AIR CYLINDER BRACKET RNR
36	1	360491	TOP ARM
37	1	360492	BOTTOM ARM
38	8	G30-0003	ARM WASHER
39	8	G30-0004	ARM BEARING
40	4	RNR 034	ARM PIN BEARING SPACER

# PLUMBING DIAGRAM AND AIR SYSTEM PARTS



# PLUMBING DIAGRAM AND AIR SYSTEM PARTS

Item No:	Part No:	Description:	QTY
	0010P	COMPLETE AIR SYSTEM KIT (INCLUDES ALL PARTS BELOW)	1
1	360052	AIR CYLINDER	1
2	360054	SILENCER FOR JOYSTICK	1
3	360055	ELBOW FITTING	3
4	360058	FLOW CONTROL AND CHECK COMBO	2
5	360059	ELBOW FITTING	3
6	360060	TEE FITTING	2
7	360061	REDUCER FITTING	2
8	360062	FILTER ASM WITH AUTO DRAIN	1
9	360065	1/4" TUBING (INCHES)	110
10	360066	JOYSTICK CONTROL WITH BOOT	1
11	360134	BASE FOR AIR CYLINDER	1
12	360135	YOKE FOR AIR CYLINDER	1
		<b>PARTS NOT SHOWN</b>	
	360053	PIPE PLUG	2
	360057	TUBE END CLEVIS KIT—INC. CLEVIS, PIN, AND 4 SHCS	1
	360063	MOUNTING BRACKET FOR FILTER ASM	1
	360064	CYLINDER SEAL KIT	1

**Note:** If air supply is cut or lost, the unit will maintain pressure preventing the Part Manipulator from falling.

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