

**BLACK & WEBSTER
AIR PRESS**

MODEL AP400

INSTALLATION, OPERATING,
& MAINTENANCE INSTRUCTIONS

air-hydraulics
INCORPORATED

Black & Webster Assembly Equipment Division

545 Hupp Ave. • P.O. Box 831 • Jackson, Michigan 49204

Phone: (517) 787-9444 • Fax: (517) 787-7585

FORM REV. 199704

TABLE OF CONTENTS

Installation and set up.....	1
Maintenance and disassembly.....	2
Troubleshooting guide.....	3
Pneumatic circuit.....	4
Parts list.....	5
Parts drawing.....	6

MACHINE GUARDING

Machine guarding is the responsibility of the user. Provisions must be made to protect the operator and other employees from injury as a result of contact with work in progress, moving parts, mechanical motions of the press, etc. Air-Hydraulics cannot provide "standard" guards for its products due to the variety of tooling used by its owners. However, Air-Hydraulics will be happy to install guards and similar safety devices for operator protection. These safety devices must be produced at the request of, and with design approval of purchaser.

WARRANTY

We warrant to the original user that all products of our manufacture will be free from defects in material and workmanship and will possess the characteristics represented in writing by us. Claim for breach of the above warranty must be made within a period of one (1) year from date of delivery to the user. Upon satisfactory proof of claim, we will make any necessary repairs or corrections, or, at our option, replace defective parts at the factory, transportation charges prepaid. Charges for correcting defects will not be allowed, nor can we accept goods returned for credit unless we are notified in writing and the return correction is authorized by us in writing. THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION OF THE PRODUCT. This paragraph sets forth the extent of our liability for breach of any warranty in connection with the sale or use of our products. It is understood we will not be liable for consequential damages such as loss of profit, delays, or expense, whether based on tort or contract.

INSTALLATION

1. Place press on rigid bench or table at a convenient height for operator. Bolt securely to bench.
2. Connect 100 P.S.I. filtered shop air supply (40 micron min) to 3/8 N.P.T. inlet port of pressure regulator.

SET UP AND OPERATION

1. Loosen locknut and adjust pressure regulator until pressure gage reads desired pressure (100 P.S.I. max). CAUTION: Do not operate at pressure greater than 125 P.S.I.
2. Adjust speed control valve to slow decent of shaft by turning outer hex sleeve.
3. Check to be sure safety sleeve assembly is in correct position on the press before operating.
4. Keeping hands clear of shaft, actuate press by depressing hand valve pedal(s).
5. Release pedal(s), shaft should return to fully retracted position.
6. Remove safety sleeve from press.
7. Loosen locking nut and adjust stop nut to obtain desired stroke. Distance between bottom of stop nut and top surface of stop cap or frame is the stroke of the shaft. CAUTION: Do not back off locking nut beyond top of threaded shaft. Doing so may damage packings.
8. Replace safety sleeve and re-actuate press.
9. If necessary, re-adjust stop nut, speed control and pressure regulator to obtain desired setting. CAUTION: Never operate press unless safety sleeve is in place and hands are clear of shaft.
10. Install tooling into hole provided in shaft, securing with set screw.
11. Install dies, nests or anvils onto base using tapped holes provided.
12. Make any final stroke, speed and pressure adjustments to obtain desired workpiece configuration with tooling in place.

MAINTENANCE

Lubrication:

Air-Hydraulics presses are lubricated at the factory and should require no additional lubrication. However, if a press is disassembled for service or replacement of parts, all internal surfaces should be coated with a light bearing grease such as Lubriko M6 (Master Chemical Co.) or equivalent.

Press disassembly:

Should press disassembly become necessary, use extreme CAUTION. This press has a heavily compressed return spring under the piston. When removing cylinder end cap, the cap should be securely held in position until retaining screws are removed and then raised very slowly until spring compression is fully released. Failure to do so will result in various parts separating abruptly, possibly causing injury to personnel. Re-assembly should be approached in the same cautious manner.

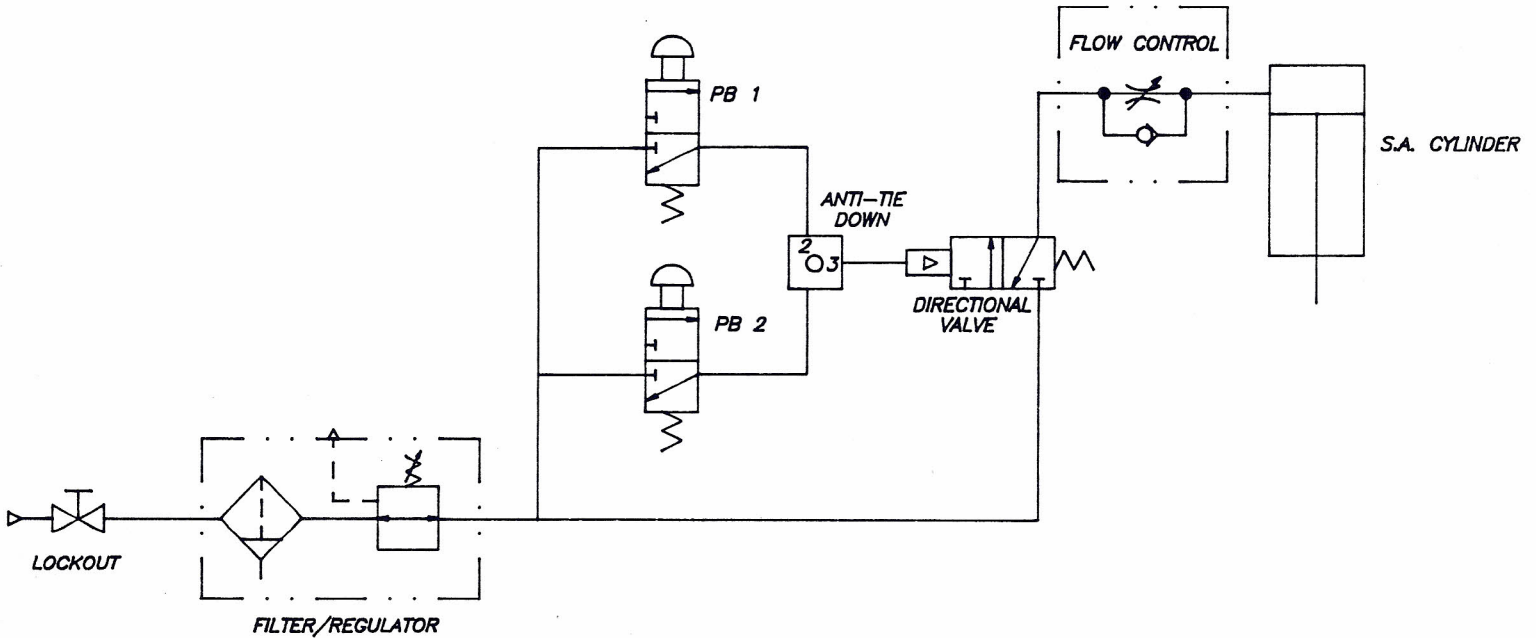
Air-Hydraulics, Inc. maintains complete facilities, at all times, for repair of presses. If qualified maintenance personnel are not available at a customer's facility, the press may be returned to the factory for service.

TROUBLESHOOTING GUIDE

<u>Problem</u>	<u>Possible Cause</u>	<u>Solution</u>
A. Shaft fails to extend after hand valve actuates, or fails to return to rest position.	1. Insufficient air pressure.	1. Check air supply, adjust or clean regulator
	2. Speed control valve closed or clogged.	2. Open speed control valve or clean valve of dirt.
	3. Power valve not shifted.	3. Check for adequate pilot air from hand valve, and for jammed spools.
	4. Hand valve clogged.	4. Clean hand valve.
	5. Shaft bent.	5. Replace shaft.
	6. Anti-rotation key jammed.	6. Disassemble key, check for wear or damage, replace if necessary.
	7. Return spring jammed or broken.	7. Free spring or replace.
B. Ram moves erratically.	1. Insufficient lubrication.	1. Re-lubricate press (see maintenance section).
	2. Air leaking past packings.	2. Replace packings.
	3. One or more valves clogged or leaking.	3. Clean or repair valves.
C. Excess shaft rotation.	1. Anti-rotation key worn.	1. Inspect key, replace if required.
D. Reduced force at a given pressure.	1. Air leaking past packings.	1. Replace packings.

PNEUMATIC DIAGRAM

SINGLE ACTING CYLINDER WITH DUAL PALMS & ANTI-TIE DOWN



AP 400

Length of stroke	0-2" adjustable
Throat depth	5.00"
Opening of ram to base	5.00"
Tool hole in ram56 dia. x 1.50 dp.
Force at 100 p.s.i.	Up to 400 lbs.
Ram style.	Keyed
Net weight (less controls)	48 lbs.
Controls (optional).	Flow control valve Pressure regulator Pressure gauge Exhaust air muffler

AP400 PARTS LIST

<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty</u>
1	203210	Base	1
2	203211	Frame	1
3	203212	Cylinder	1
4	203231	Shaft	1
5	20321402	Stop Cap	1
6	203224	Cap Washer	1
7	203226	Bottom Cup Washer	1
8	203230	Key	1
9	203221	Shaft Seal	1
10	203225	Packing	1
11	203007	Retaining Ring	1
12	203222	O-Ring	1
13	203228	Spring	1
14	203279	Safety Sleeve Assy	1
15		Set Screw	1
16		Set Screw	1
17*		S. H. C. S.	4
18		Lock Washer	1
19*		Hex Head Bolt	2
20		Locking Nut	1
21	203215	Flange Nut	1
22	203222	Self Locking Nut	1
23	203240	Repair Kit	1

* NOT SHOWN

