Honeywell

Comfort Control Systems

MP918A & B PNEUMATIC DAMPER OPERATORS

Service Data

GENERAL

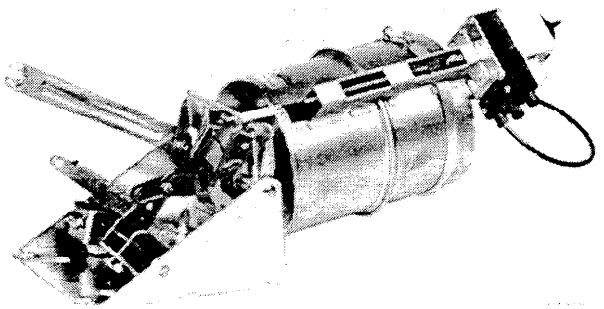
DESCRIPTION

The MP918A & B are rolling diaphragm, piston-type pneumatic damper operators. The MP9 18A is equipped with a positive positioner.

The MP918 operators are functional replacements for the MP904 Pneumatic Damper Operators, and for the MP909C Pneumatic Damper Operator where room allows. The MP918 is a larger operator than the MP909C .

APPLICATION

These pneumatic damper operators perform proportional control of variable-volume terminal units, mixing boxes, and medium- to large-size dampers in HVAC systems. They may be mounted in any position and installed either outside or within the ductwork. Figure 1 shows an MP918A used with a direct-acting controller to control dampers in sequence. Figure 2 shows the MP918B slaved to an MP918A for large damper installations.



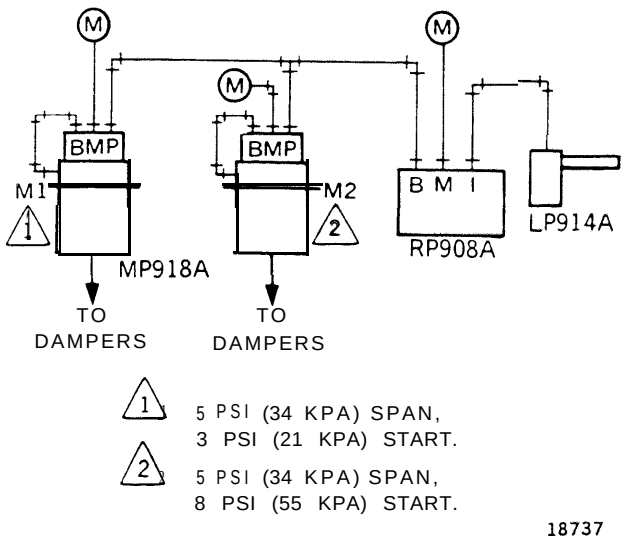
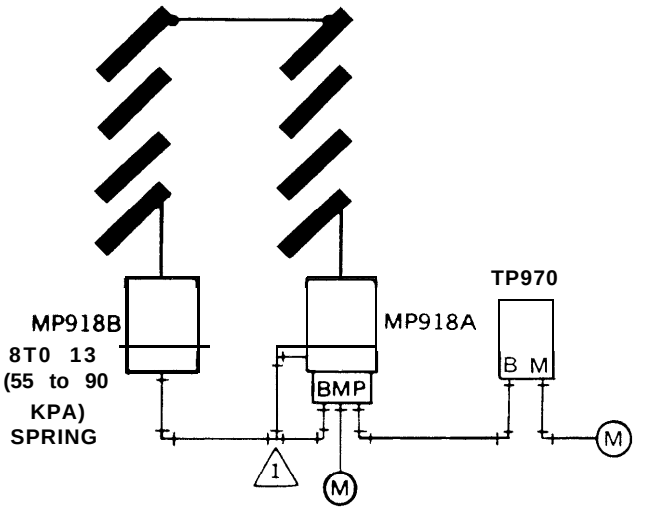


Fig. 1 . MP918A Used with Direct-Acting Controller to Control Dampers in Sequence.

SECTIONS OF A LARGE DAMPER REQUIRING MORE THAN ONE OPERATOR SHOULD BE PHYSICALLY LINKED WITH SLAVING OPERATORS



1 **BRANCH LINE FROM POSITIVE POSITIONER TO OPERATOR MUST BE CUT, A 1/4-INCH (6 MM) TEE INSERTED, AND A LINE RUN TO SLAVE OPERATORS.**

18738

Fig. 2. MP918B Slaved to MP918A for Large Damper Installations.

SPECIFICATIONS

MAXIMUM SAFE AIR PRESSURE:
MP918A: 25 psi (172 kPa).
MP918B: 29 psi (200 kPa).

START POINT PRESSURE (MP918A): Adjustable from 1.5 to 13 psi (10 to 90 kPa).

OPERATING RANGE (MP918A): 3, 5, or **10** psi (21, 34, or 69 kPa), depending on feedback spring used.

AMBIENT TEMPERATURE RANGE:
MP918A: -20 to + 158 F (-29 to + 70 C).
MP918B: -40 to + 158 F(-40to + 70C).

SPRING RANGE:
MP918A: 8 to 13 psi (55 to 90 kPa).
MP918B: 3 to 7, 3 to 13, 5 to 10, or 8 to 13 psi (21 to 48, 21 to 90, 34 to 69, or 55 to 90 kPa).

AIR CONNECTIONS:
MP918A: 5/32-inch (4 mm) push-on barb (pilot), l/4-inch (6 mm) push-on barb (main).
MP918B: l/4-inch (6 mm) push-on barb.

DAMPER RATING: Refer to Tables I and II for maximum MP918 damper rating. Damper ratings for Honeywell Moduflow dampers are calculated by totaling the "B" dimension (Fig. 3) of all damper sections controlled by the operator.
EXAMPLE:
Damper Type: D640.
Duct Dimensions: 108 inches (A) by 36 inches (B).
Operator: MP918B.
Operating Range: 3 to 13 psi (21 to 90 kPa).
Type of Operation: Modulating Service.
Branch Pressure: 18 psi (124 kPa).

The 108-inch "A" dimension requires three damper sections. Multiply three times 36 (total "B" dimension) to get 108 inches. Table II shows one MP918B will operate up to 123 inches of "B" dimension. Therefore, one MP918B operator is sufficient for this example.

Table I. MP9 18A Maximum Damper Rating for **'B"** Dimension in Inches.

Damper Model No.	Modulating Service		2-Position Service	
	18 psi (124 kPa)	20 psi (138 kPa)	18 psi (124 kPa)	20 psi (138 kPa)
D640, D641	205	287	20.5	287
D642, D643 D644, D645	169	236	169	236

Table II. MP918B Maximum Damper Rating for ''B'' Dimension in Inches.

Damper Model No.	Spring Range in psi (kPa)	Modulating Service		2-Position Service
		13 psi (90 kPa)	18 psi (124 kPa)	18 psi (124 kPa)
D640, D641	**3 to 7 (21 to 48)**	123	123	123
	3 to 13 (21 to 90)	N/A	123	123
	5 to 10 (34 to 69)	123	123	205
	8 to 13 (55 to 90)	N/A	123	205
D642, D643, D644, D64.5	3 to 7 (21 to 48)	101	101	101
	3 to 13 (21 to 90)	N/A	101	101
	5 to 10 (34 to 69)	101	101	169
	8to 13 (55 to 90)	N/A	101	169

N/A = Not Applicable.

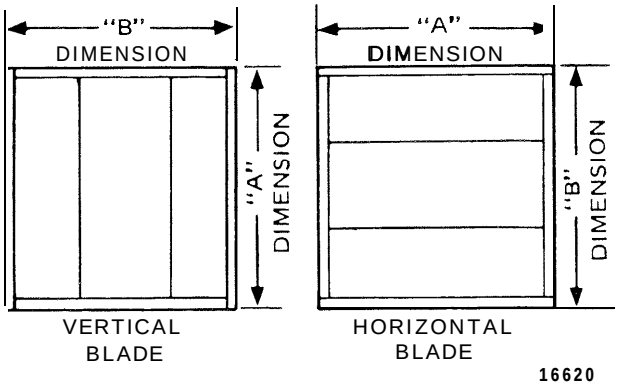


Fig. **3.** Honeywell Moduflow Damper Dimensions.

OPERATION

When using the MP918A with a direct-acting controller to control dampers in sequence (Fig. l), an increase in temperature at the sensor causes an increase in branch line pressure to damper operators Ml and M2. Damper operator Ml strokes completely before M2 starts operating. Full main air pressure is available to the oeprators at all times, providing positive damper positions correspond to controller branch line pressure for all load conditions .

When slaving an MP918B and an MP918A together (Fig. 2), increased capacity is provided to operate large damper installations. The MP918A receives a pilot signal from the thermostat which applies appropriate branch line pressure to the operators to position the dampers proportionately. The MP9 18B damper operators must have an 8 to 13 psi (55 to 90 kPa) spring to match the 8 to 13 psi spring in the MP918A.

MAINTENANCE

EQUIPMENT REQUIRED

Air pressure gage, 0 to 30 psi (0 to 270 kPa).

CLEANING

Brush off any accumulation of dust and dirt, and visually check condition of air piping and connections, and linkages.

OPERATIONAL CHECK

MP918A

1. If none exists, install a gage in controller branch line.

2. Set start point on positive positioner dial to lowest value.

3. Reduce branch line pressure to zero by adjusting setpoint of controller. Observe dampers to be sure they are in their normal position and that normally closed dampers are completely closed.

4. Increase the branch line pressure to full main pressure slowly and observe the damper, checking for smooth operation through the complete stroke and for proper final position.

5. If dampers are being operated in sequence, determine the branch line pressure where the damper is supposed to start moving and adjust the branch line pressure just above that point. The first damper should just start to move. Increase the pressure to the point where the operator should finish its stroke or the point the next damper in sequence should begin to operate, whichever comes first. Continue increasing pressure until all dampers in sequence are at maximum position. Check for smooth operation and proper final position.

6. Check all dampers in the system in this manner. Start and finish points of the operating range should be within 1 psi (7 kPa) of the settings. Adjust positive positioner start point if necessary.

7. Return the setpoint adjustments of the controller and/or positioning switch to the proper settings.

MP918B

1. If none exists, install a gage in controller (or positioner, for slaved or sequenced installations) branch line.

2. Adjust controller (positioner) setpoint to produce a branch line pressure slightly higher than the lowest point of the operating range of the MP918B. The damper should just start to move.

3. Increase the branch line pressure through the high point of the operating range, observing the damper for smooth operation and proper final position.

4. Return the setpoint of the controller (positioner) to desired setting.

ADJUSTMENTS

OPERATING RANGE ADJUSTMENT - MP918A

The operating range may be adjusted by changing the feedback spring. Refer to PARTS LIST in PARTS AND ACCESSORIES section for feedback spring kit number and REPAIR section for changing procedure.

START POINT CALIBRATION - MP918A

Special application may require fine tuning the start point. Each click of the start point knob dial will adjust the start point 1/4 psi (1.7 kPa). Set start point knob dial to 7 psi (48 kPa). With 18 psi (124 kPa) MLP and 8 psi (55 kPa) pilot pressure, adjust calibration screw on top of positioner knob to obtain a 3/4-inch (19 mm) stroke.

STROKE ADJUSTMENT - MP918B

Start stroke position may be adjusted by using 3/8-16 UNC nuts on the operator shaft for up to (13 mm) start adjustment. Adjusting the operator stroke changes both start and range.

TROUBLESHOOTING

Refer to Figures 4 and 5 for troubleshooting.

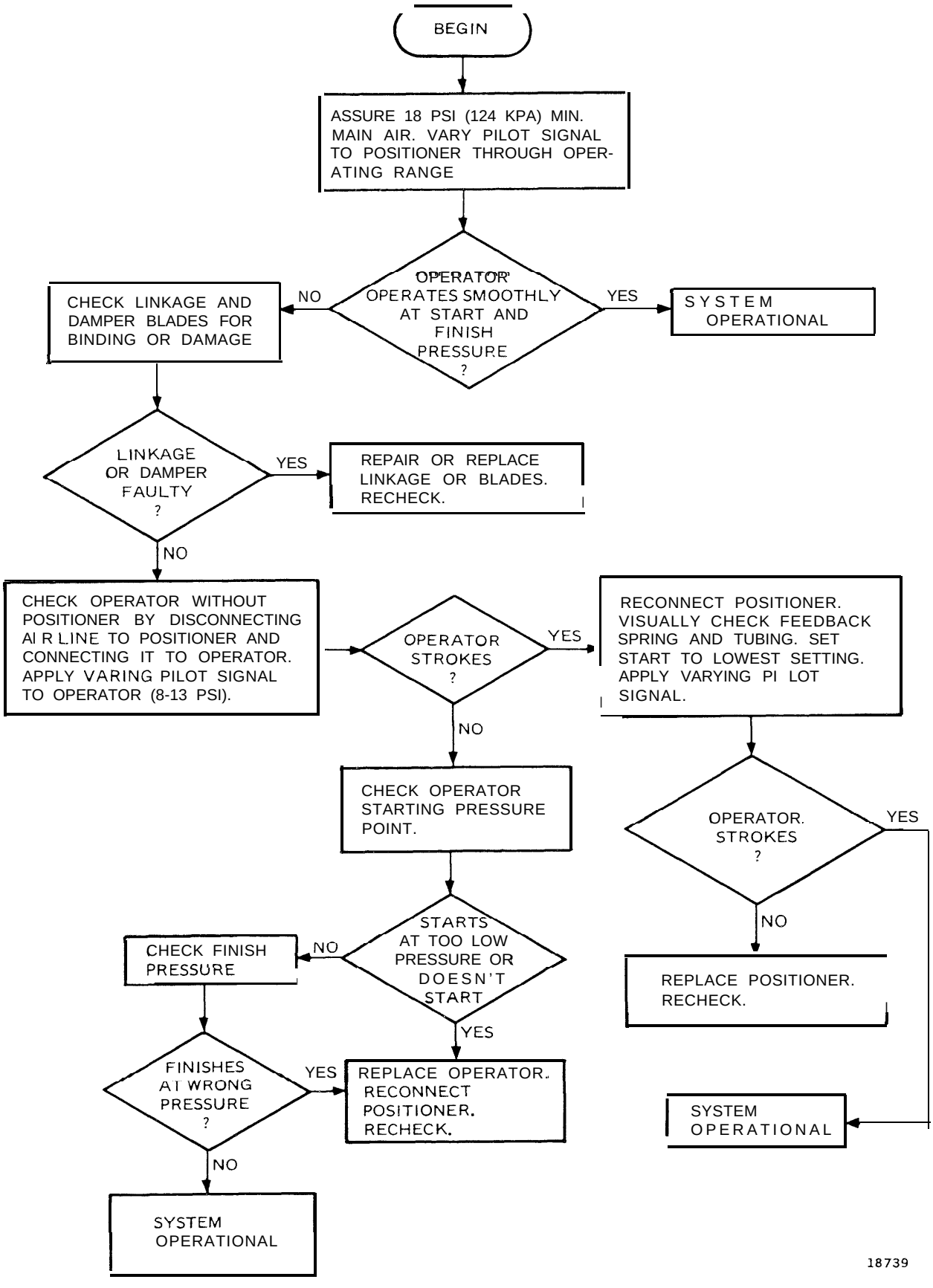


Fig. 4. MP9 18A Troubleshooting Flowchart.

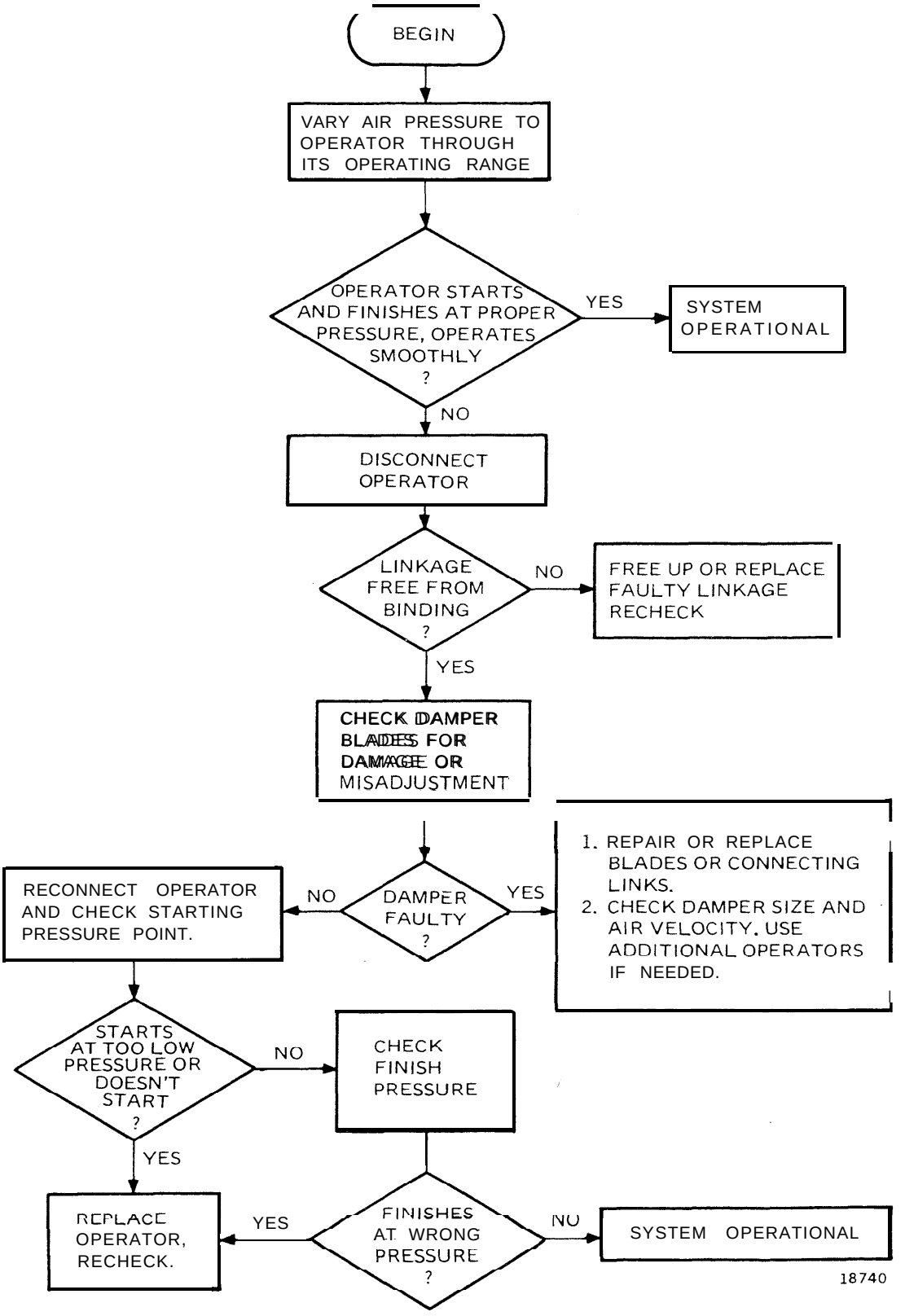


Fig. 5. MP918B Troubleshooting Flowchart.

REPAIR

The only repair available for the MP918 sealed operator is replacement of the positive position and bracket assembly, operator bracket assemblies, hardware, and feedback springs. There is a feedback spring kit available including a spring for each range. Refer to PARTS LIST in the PARTS AND ACCESSORIES section for feedback spring kit part number.

POSITIVE POSITIONER REPLACEMENT

1. Cut air lines to main, pilot, and branch (Fig. 6). Plug or cap main during replacement procedure.
2. Remove feedback spring by unhooking at both ends.
3. Remove positioner by unscrewing positioner bracket. Replace with new positioner, screwing positioner bracket securely.
4. Hook up feedback spring.
5. Reconnect pilot, branch, and main lines, using coupling where needed.
6. Recalibrate start point.

FEEDBACK SPRING REPLACEMENT

1. Cut air lines to main, pilot, and branch. Plug or cap main during replacement procedure.
2. Remove feedback spring by unhooking at both ends.
3. Hook up new feedback spring for desired range.
4. Reconnect pilot, branch, and main lines, using coupling where needed.
5. Recalibrate start point.

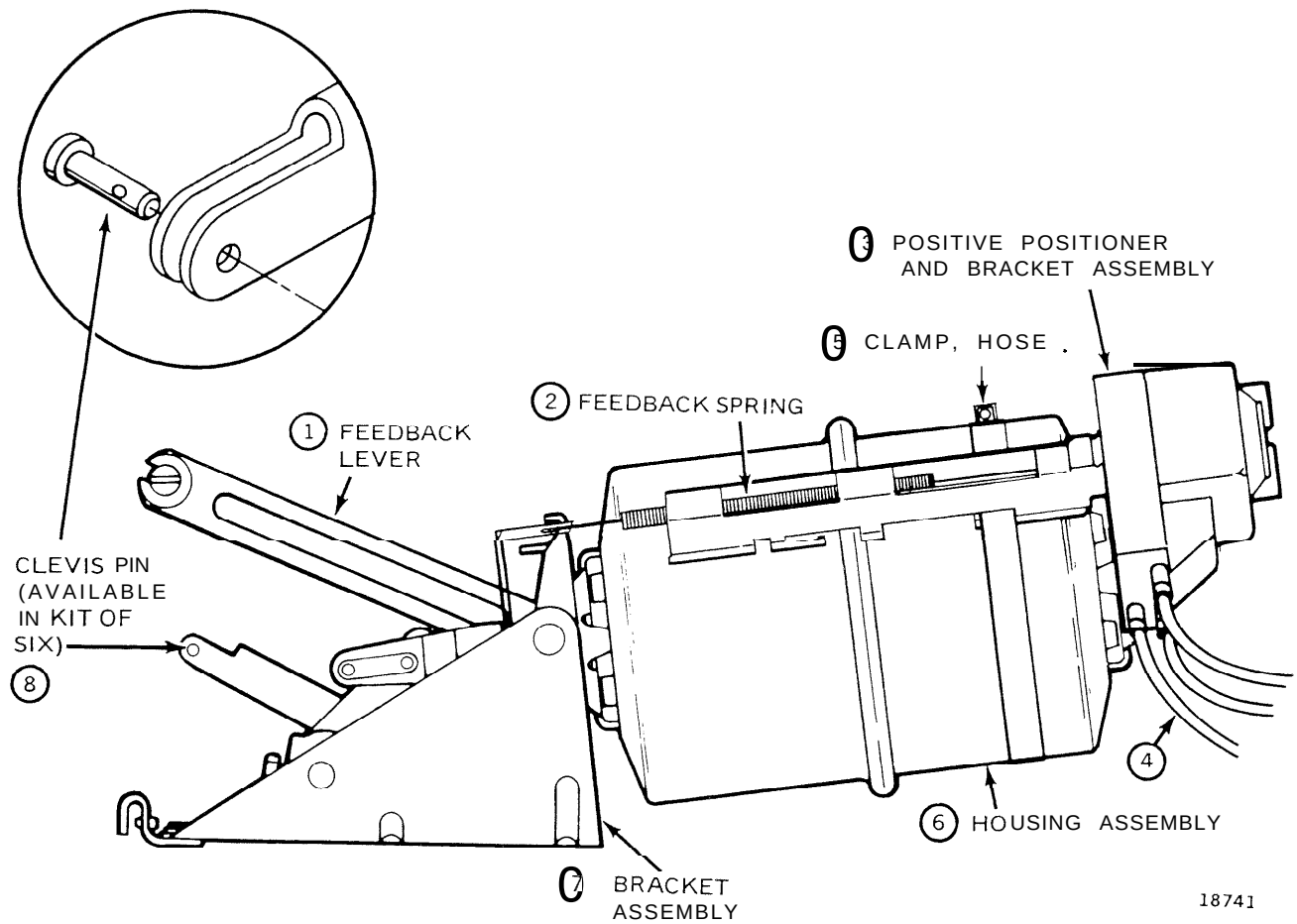


Fig. 6. MP918A Showing Repair Parts.

PARTS AND ACCESSORIES

PARTS LIST

Refer to Figure 6 in REPAIR section and Table III for available repair parts .

ACCESSORIES

Damper jackshaft kits are available for multisection damper installation. The following kits must be ordered separately:

-End Kit (one for each application)-Part No. 15753693-001.
— Modular Kit (one for each vertical bank)-Part No. 15753692-001.
— Operator Kit (one for each operator)-Part No. 15753694-001.
NOTE: Order Linkage Assembly Part No. 14004236-001 with the Operator Kit.

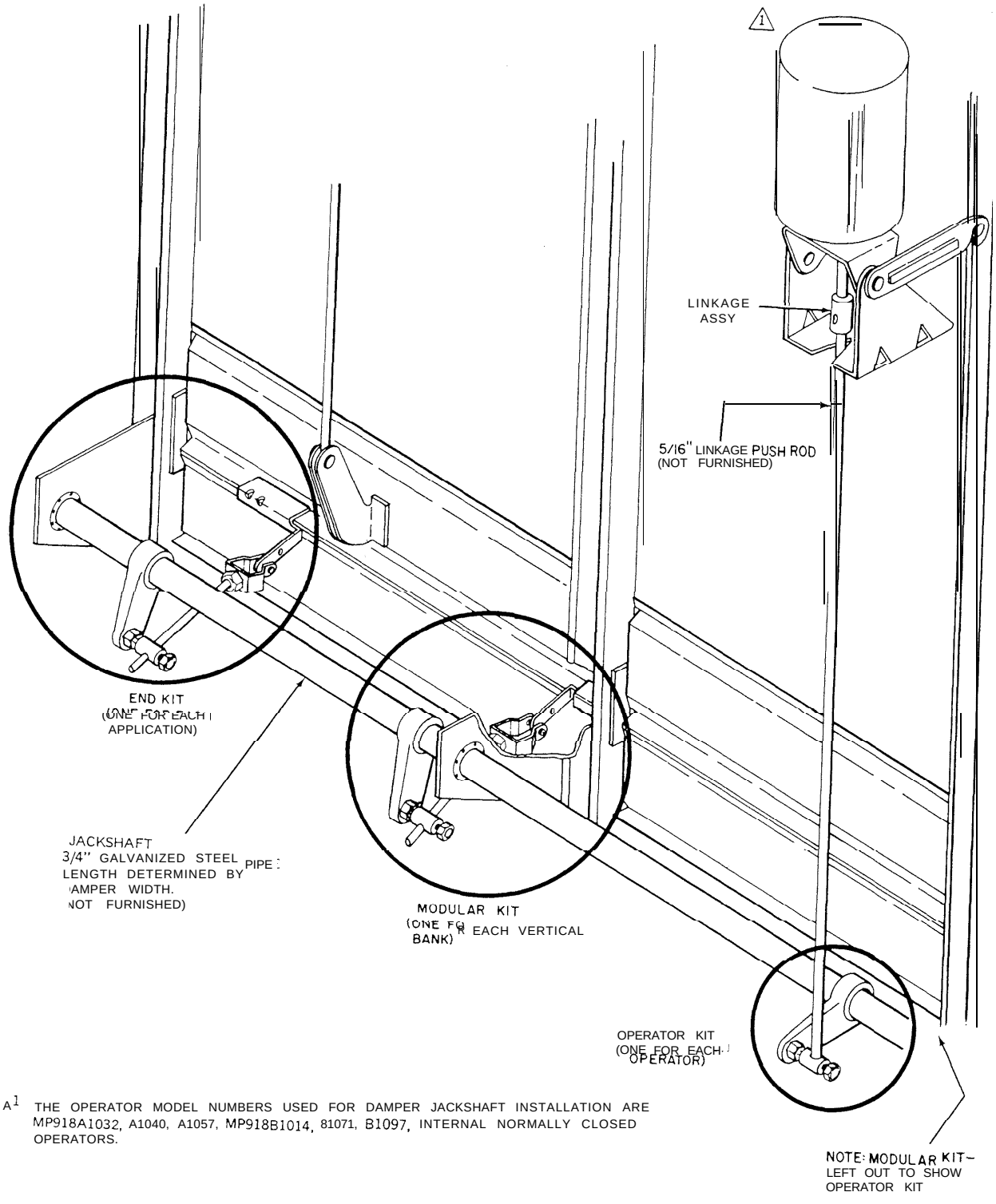
Drive blades of adjacent damper sections should not be joined through their axles, but should be independently driven from the jackshaft.

The jackshaft should be located at the bottom, or lower section of two-section damper installations. On installations which are three or more sections high, the shaft should be located near the middle.

Refer to Figure 7 for a typical jackshaft installation.

Table III. MP918 Parts List

Figure 6 Reference	Figure 6	Description
6	Housing Assembly, 8 to 13 psi (55 to 90 kPa): All MP918As, MP918B1089, B1097, Bl105, B1113	14004069-004
6	Housing Assembly, 3 to 13 psi (21 to 90 kPa): MP918B1006, B1014, B1022, B1030	14004069-00 1
6	Housing Assembly, 5 to 10 psi (34 to 69 kPa): MP918Bl048	14004069-002
6	Housing Assembly, 3 to 7 psi (21 to 34 kPa): MP918B1063, B1071	14004069-003
3	Positive Positioner and Bracket Assembly MP918A	14004074-001
	Positioner only	14003977-001
4	Tube MP9 18A	14000735-010
5	Clamp MP918A	14004245-001
1	Feedback Lever MP9 18A	14004095-00 1
2	Feedback Spring Kit, includes the following springs: 3 psi (21 kPa), orange 5 psi (34 kPa), yellow 10 psi (69 kPa), blue	14004210-001
7	Bracket Assembly, External: MP918A1008, A1016, A1024, B1006, B1048, B1063, B1089	14004062-001
7	Bracket Assembly, Internal, N.C.: MP918A1032, A1040, A1057, B1014, B1071, B1097	14004062-002
7	Bracket Assembly, Internal, N.O. (reversing linkage): MP918A1065 , A1073, A1081, B1022, B1105	14004062-003
8	Clevis Pin Kit (6 pins)	14004241-001



[1] THE OPERATOR MODEL NUMBERS USED FOR DAMPER JACKSHAFT INSTALLATION ARE MP918A1032, A1040, A1057, MP918B1014, 81071, B1097, INTERNAL NORMALLY CLOSED OPERATORS.

Fig. 7. Typical Damper Jackshaft Installation.

SALES AND SERVICE

ALABAMA
Birmingham, AL
(205) 323.2431
Mobile, AL
(800) 633-I 644

ALASKA
Anchorage, AK
19071 274-0551

ARIZONA
Phoenix, AZ
(602) 861-4512
Tucson, AZ
(602) 795.4209

ARKANSAS
Little Rock, AR
(501) 664-0070

CALIFORNIA
Irvine, CA
(714) 557-6392
Los Angeles, CA
(213) 726.6161
Sacramento, CA
(916) 485.2221
San Diego, CA
(714) 292-5311
San Jose, CA
(415) 957.2674
San Francisco, CA
(415) 957.2674

COLORADO
Denver, CO
(303) 779-6295

CONNECTICUT
Hartford, CT
(203) 549-3800

DELAWARE
Wilmington, DE
(302) 762.3100

DISTRICT OF COLUMBIA
Washington DC
(703) 827.3705

FLORIDA
Jacksonville, FL
(904) 396-6971
Miami, FL
(305) 592-8140
Orlando, FL
(305) 894.3131
Tampa, FL
(813) 877-6426

GEORGIA
Atlanta, GA
(404) 982.2495

HAWAII
Honolulu, HI
(808) 537.5514

ILLINOIS
Chicago North, IL
1312) 478.9266
Chicago South (Lansing), IL
(312) 5684200
Elgin, IL
(312) 697.7880
Peoria. IL
(309) 692.0610

INDIANA
Fort Wayne, IN
(219) 482.9654
Indianapolis, IN
(317) 243.0831

IOWA
Davenport, IA
(319) 359.3441
Des Moines, IA
(515) 288-3601

KENTUCKY
Louisville, KY
(502) 459.5970

LOUISIANA
Baton Rouge, LA
(504) 924-8626
New Orleans, LA
(504) 456.7232
Shreveport, LA
(214) 387.5467

MAINE
Portland, ME
(207) 775.3501

MARYLAND
Baltimore, MD
(301) 828.0900

MASSACHUSETTS
Boston, MA
(617) 962.0250

MICHIGAN
Detroit, MI
(313) 478.1600
Grand Rapids, MI
(616) 247.4811
Saginaw, MI
(517) 792.8707

MINNESOTA
Duluth, MN
(6121 770-8557
Minneapolis, MN
(612) 830.3880
St. Paul, MN
(6121 770.8557

MISSISSIPPI
Jackson, MS
(601) *982.2090*

MISSOURI
Kansas City, MO
(816) 358.4200
St Louis, MO
(314) 576.2635

NEBRASKA
Omaha, NE
(402) 331.3200

NEW HAMPSHIRE
Bedford, NH
(603) 625-6502

NEW JERSEY
Mt. Laurel, NJ
(609) 234.2224
Parsippany, NJ
(201) 263.2225
Westfield, NJ
(201) *233.9200*

NEW MEXICO
Albuquerque, NM
(505) 884.1070

NEW YORK
Albany, NY
(518) 456-7000
Buffalo, NY
(716) 6890200
Brooklyn, NY
(212) 392-4300
Manhattan, NY
(212) 3924300
Rochester, NY
(716) 424.2700
Syracuse, NY
(315) 451-4000
White Plains, NY
(914) 948.7511
Woodbury, NY
(516) 931.1506

NORTH CAROLINA
Charlotte, NC
(704) 364-4770
Greensboro, NC
(919) 292-1556

NORTH DAKOTA
Fargo, ND
(701) 235-4221

OHIO
Akron, OH
(216) 733.2244
Cincinnati, OH
(513) 745.7151
Cleveland. OH
(2 161 459.6057
Columbus. OH
(614) 486-5971
Dayton, OH
(513) 2374035
Toledo, OH
(419) 473.9721

OKLAHOMA
Oklahoma City, OK
(405) 848.2811
Tulsa, OK
(918) 437.5934

OREGON
Eugene, OR
(503) 485-2251
Portland, OR
(503) 245.0731

PENNSYLVANIA
Harrisburg, PA
(717) 564.8000
Philadelphia, PA
(215) 666.8302
Pittsburgh, PA
(412) 928-4235
Wilkes-Barre, PA
(717) 654.2477

PUERTO RICO
San Juan, PR
(809) 792.7075

RHODE ISLAND
Providence, RI
(401) 438.6000

SOUTH CAROLINA
Columbia, SC
(803) 765.9426
Greenville, SC
(803) 232.2437

SOUTH DAKOTA
Sioux Falls, SD
(605) 336.0986

TENNESSEE
Memphis, TN
(901) 345.6222
Nashville, TN
(615) 385.3400

TEXAS
Dallas, 7-x
(214) 387.5467
El Paso, TX
(915) 533.9924
Houston, TX
(713) 780-6603
Lubbock, TX
(806) 762-5202
San Antonio, TX
(512) 3414691

UTAH
Salt Lake City, UT
(801) 4870681

VIRGINIA
Richmond, VA
(804) 285-8211
Roanoke, VA
(703) 989.5201
Virginia Beach, VA
(804) 461-0263

WASHINGTON
Seattle, WA
(206) 233-2150
Spokane, WA
(509) 534-5022

WEST VIRGINIA
Charleston, WV
(513) 745.7151
Clarksburg, WV
(3041 623.6551

WISCONSIN
Appleton, WI
(414) 733-4491
Madison, WI
(608) 222-3400
Milwaukee, WI
(414) 784-6260

WYOMING
Casper, WY
(307) 265-9374

CANADA — Honeywell Limited - Honeywell Limitée 740 Ellesmere Road - Scarborough. Ont

ALBERTA
Calgary
Edmonton

BRITISH COLUMBIA
Vacouver

MANITOBA
Winnipeg

NEW BRUNSWICK
Moncton

NEW FOUNDLAND
St John's

NOVA SCOTIA
Halifax

ONTARIO
Hamilton
London
Ottawa
Sudbury
Toronto
Windsor

QUEBEC
Montreal
Quebec

SASKATCHEWAN
Regina
Saskatoon

INTERNATIONAL

ARGENTINA
BUENOS AIRES

AUSTRALIA
WATERLOO, N SW
Adalaide
Brisbane
Canberra
Darwin
Hobart
Melbourne
Newcastle
Perth
Townsville

AUSTRIA
VIENNA
Graz
Innsbruck
Klagenfurt
Linz

BELGIUM
BRUSSELS
Gent
Liege/Grivegnee
Luxembourg

BRAZIL
SAO PAUL0
Rio de Janeiro

DENMARK
COPENHAGEN
Aarhus
Fredericia

DOMINICAN REPUBLIC
SANTO DOMINGO

FINLAND
ESPOO
Tampere

FRANCE
BOIS D'ARCY
Lyon
Marseille

GERMANY
OFFENBACH/Main
Dusseldorf
Echterdingen
Hamburg
Hannover-Langenhagen
Mannheim
Muenchen
Nuernberg

GREECE
ATHENS

HONG KONG

ITALY
MI LAN
Bologna
Firenze
Padova
Rome
Torino

JAPAN
TOKYO
Hiroshima
Kokura
Nagoya
Osaka

KUWAIT

MEXICO
MEXICO CITY, D
Monterrey, Nuevo Leon

NETHERLANDS
AMSTERDAM
Schiphol-Centrum

NEW ZEALAND
AUCKLAND
Christchurch
Dunedin
Wellington

NORWAY
OSLO
Bergen
Stavanger
Tromso
Trondheim

PUERTO RICO
San Juan

SAUDI ARABIA
DAMMAM (Dhahran)

SINGAPORE

SOUTH AFRICA
JOHANNESBURG (Transvall)
Cape Town
Durban
Port Elizabeth
Pretoria

SPAIN
MADRID
Barcelona
Gijon
Las Arenas (Bilbao)

SWEDEN
STOCKHOLM
Goteborg
Malmo
Sundsvall

SWITZERLAND
ZURICH
Basel
Bern
Geneva

TAIWAN
TAIPEI

UNITED ARAB EMIRATES
SHARJAH

UNITED KINGDOM
LONDON (BRACKNELL)
Aberdeen (Scotland)
Belfast (NIreland)
Cardiff(S Wales)
Cheadle Hulme,Chesire
Dublin (Ireland)
East Kilbride, Glasgow (Scotland)
Erdington, Birmingham
Maidenhead, Berkshire
Sheffield, Yorkshire
Stockton-on-Tees, Cleveland

VENEZUELA
CARACAS
Maracaibo
Puerto Ordaz
Valencia

HONEYWELL•Minneapolis, Minnesota 55408•Scarborough,Ontario•Subsidiaries and Affiliates Around the World.•Printed in U.S.A.