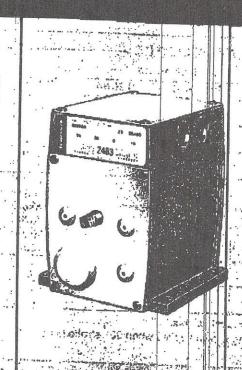
@410-901-1418

Honeywell

M944 MODUTROL MOTORS ARE RE-VERSING, PROPORTIONAL MOTORS USED TO OPERATE DAMPERS OR VALVES IN ELECTRONIC (SERIES 70) OR ELECTRIC (SERIES 90) MODULATING CIRCUITS.

- ☐ M944A-E are low voltage and M944G,S are line voltage motors.
- M944C,D,E,S stroke is field adjustable to 90 or 160°; on other models stroke is fixed at 90 or 160°.
- ☐ M944A,C,D have electronic drive circuit eliminating balance relay contacts.
- ☐ M944D,E,Shave 2 internal, gam-adjusted auxiliary switches.
- Die-cast aluminum housing.
- ☐ Direct drive feedback potentiometer.
- ☐ Rated for ambient temperatures of -40 F to 130 F [-40 C to 54 C].
- ☐ Interchangeable with other proportioning motors. Use existing accessories.
- ☐ Available accessories include weatherproofing kit and internal transformer.

MODUTROL. MOTOR



· ...

M944A-E, G, S

G.P. REV. 12-83= Form Number 60-2292—7

Phoneywell Inc. 1983

SPECIFICATIONS

TRADELINE MODELS -

TRADELINE models are selected and packaged to provide ease of stocking, ease of handling, and maximum replacement value. TRADELINE model specifications are the same as those of standard models except as noted

MODELS: M944 Modulrol Motor. For additional model characteristics, refer to the table below.

MODEL	VOLTAGE (V al 50/60 Hz)	MOTOR TIMING (180)	STRO (degrees r		AUXILIARY SWITCH
M944A	24	80	Fixed,		HONILIAM SWITCH
M944B	24	80	**************************************	The state of the s	_
M944D	24	OU	Fixed.	60	-
THE RESERVE OF THE PERSON NAMED IN	29	30 or 60a	Qual. 90	r 160	2
M944E	24	30 or 608	Dual, 90		2 spdi

aShorter timing applies when 90 degree stroke is selected.

ADDITIONAL FEATURES: TRADELINE pack with cross reference label and special instruction sheet

STANDARD MODELS .

MODELS: M944 Modutrol Motors.

MODEL	VOLTAGE (V @ 50/60 Hz.)	INTERNAL BALANCING CIRCUIT	STROKE (degrees rotation)	MOTOR : TIMING (sec)	AUXILIARY SWITCHES
M944A	24	yes	90 160	30	AUNICIANT SWITCHES
M944B	24	no	160	60 : (or 4 min)	
M944C	24	yes	90 or 1608	15b (or 2 min)	
M944D	24	yes	90 or 160a	30	2
M944E	24	no	90 or 160s	306	2
M944G	120	no	90 160	30 60	THE REAL PROPERTY AND ADDRESS OF THE PERTY ADDRESS OF THE PERTY AND ADDRESS OF THE PERTY AD
M9445	120	no	90 or 160s	30b :	2

^aStroke is field adjustable.

(continued on page

ORDERING INFORMATION

WHEN PURCHASING REPLACEMENT AND MODERNIZATION PRODUCTS FROM YOUR TRADELINE WHOLESALER OR YOUR DISTRIBUTOR, REFER TO THE TRADELINE CATALOG OR PRICE SHEETS FOR COMPLEYE ORDERING NUMBER, OR SPECIFY-

- 1. Order number, TRADELINE is desired.
- 2. Motor stroke and timing.
- 3. Motor voltage.

- 4. Auxillary switches, if dealred. 5. Accessories, if dealred.

IF YOU HAVE ADDITIONAL QUESTIONS, NEED FURTHER INFORMATION, OF WOULD LIKE TO COMMENT ON OUR PRODUCTS OR SERVICES, PLEASE WRITE OR PHONE:

- 1. YOUR LOCAL HONEYWELL RESIDENTIAL BALES OFFICE (CHECK WHITE FAGES OF YOUR PHONE DIRECTORY). 2. RESIDENTIAL DIVISION CUSTOMER SERVICE
 - HONEYWELL INC., 1885 DOUGLAS DRIVE NORTH MINNEAPOLIS, MINNESOTA 55422-4386 (512) 542-7500

(IN CANADA—HONEYWELL LIMITED/HONEYWELL LIMITEE. 740 ELLESMERE ROAD, SCARBOROUGH ONTARIO M1P 2V9) INTERNATIONAL SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD.

bMotor timing shown applies when 90° stroke is used; timing doubles when \$60° stroke is selected.

ELECTRICAL RATINGS: (M944A,C,D)

Without Transformer	VOLTAGE (V @ 50/60 Hz)	CURRENT DRAW (A)	POWER CONSUMPTION (W)
With Isternal Transformer	24	0.8	1 118
With Internal Transformer	120	0.24	23
,	209	0.138	23
	240	0.12	1 23

ELECTRICAL RATINGS: (M944B,E,G,S)

Without Tened	VOLTAGE (V @ 50/60 Hz)	CURRENT DRAW (A)	POWER CONSUMPTION (W)
Without Transformer	24	0.69	115
With Internal Transformer	120	0.21	1 20
	208	0.12	20
	240	0.11	20

CONTROLLER TYPE: 135 ohm potentiometer.

AUXILIARY SWITCH RATINGS (amperes): M944D,E,S have 2 spdt, V3 snap switches.

ONE CONTACTE	120 V	240 V
Full Load	7.2	3.6
Locked Rotor	43.2	21.6

⁸40 VA pilot duty, 120/240 Vac on opposite contact.

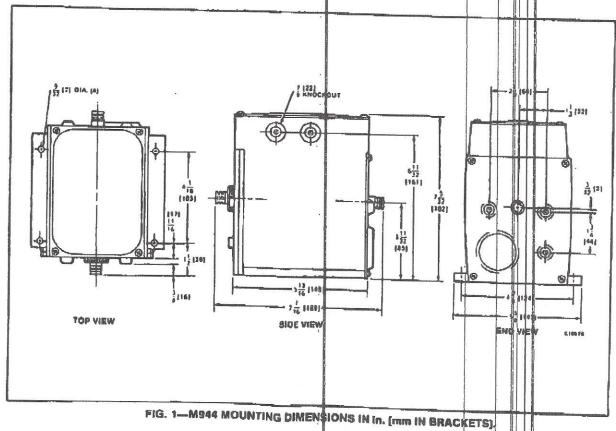
DEAD WEIGHT LOAD ON SHAFT:

Power End—200 lb. [90.8 kg] maximum,
Auxiliary End—100 lb. [45.4 kg] maximum,
AMBIENT TEMPERATURE RATINGS,
Maximum—130 F [64 C] @ 25% duty cycle.
Minimum—minus 35 F [-37 C].

CRANKSHAFT: Double-ended, 3/8 in. [95 mm] square.

DIMENSIONS: See Fig. 1.

UNDERWRITERS LABORATORIES INC. LISTED (M944A,D,E,G,S only): File No. 6433, Vol. 4 dated 5-27-69; Guide No. XAPX.



CANADIAN STANDARDS ASSOCIATION CERTIFIED (M944D.E.G only): General Listing File No. LR1620, Guide 400-E-O.

TORQUE in lb.-in. [N-m In brackets]:

TIMING			
90 DEGREE STROKE MOTORS	160 DEGREE STROKE MOTORS	NORMAL RUNNING TORQUE	BREAKAWAY TORQUE®
15 sec	30 sec	75 [8.5]	150 [17.0]
30 sec 1,2 min	1,2,4 min	150 (17.0)	300 (34.0)

aBreakaway torque is the maximum torque available to overcome occasional large loads such as a seized damper or valve. MOTOR MUST NOT BE USED CONTINUOUSLY AT THIS RATING.

ACCESSORIES:

DHE-94 Explosion-proof Housing-encloses motor for use in explosive atmospheres. Not for use with Q601 and Q455 Linkages. Order separately from Crouse-Hinds Co. Requires Honeywell 7617DM Coupling.

Q607 Auxillary Switch-controls auxillary equipment as a function of motor position.

Q605 Darhper Linkage—connects motor to damper. INCLUDES MOTOR CRANK ARM.

Q818 Linkage—connects Modutrol motor to water or steam valve. Q801 Linkage—connects Modutrol motor to water or

steam valve.

O100 Linkage—connects Modulrol motor to be

0209 Palentiometer—limits minimum position motor,

Q68 Dual Control Potentiometer—controls I through 9 additional motors.

W859 Economizer Control Package—provides

controls needed for outdoor and return air damper

system 0181 Auxiliary Potentiometer—controls 1 or 2 additional motors.

7640JS Weatherproofing Kit—weatherproofs like M944 Modulrol Motor.
7616BR Notor Crank Arm—Included with 0695 but

not with motor.

Transformers-mounted internally, include mounting screws and barrier.

7840PK-120 Vac; 50/60 Hz. 7640PL-220 Vac; 50/60 Hz.

764 PN-120/208/240 Vac; 50/60 Hz.

7640PP Screw Terminal Adapter—use to compet quick-connect terminals to screw terminals!

WHEN INSTALLING THIS PRODUCT . .

- 1. Read these instructions carefully. Fellure to follow them could damage the product or cause a hazardous condition.
- Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
- 3. Installer must be a trained, experienced service technician.
- 4. After installation is complete, check out product operation as provided in these instructions.

CAUTION

- 1. Disconnect power supply before beginning installation to prevent electrical shock and equipment damage.
- 2. Do not attempt to turn the motor shaft by hand or with a wrench-damage to the gear train may
- 3. Always conduct a thorough checkout when installation is complete.

LOCATION

install the Modultol motor in any location except where acid fumes or other deteriorating vapors might attack the metal parts, or in atmospheres of escaping gas or other explosive vapors. Motors are rated for ambient temperatures between -40 F and 130 F [-40 C and 54 C]. If located outdoors, use weatherproofing kit: see Accessories section.

Allow enough clearance for installing accessories and servicing the motor when selecting a location. See Fig. 1.

MOUNTING

Always install the motor with the crankshell horizontal. Mounting liarges extending from the bottom of the motor housing are dilled for 1/4 in. (6.4 mm) machine screws

All M944 meters are shipped from the factory in closed position; ile., at the limit of counterclode wise rolation as viewed from the power end bit motor (Fig. 2)

LINKAGES:

The motor domes without a crank arm. The motor a is included in the Q605 linkage or may be ordered

separately (see Accessories).
For detailed instructions on the assembly of specific linkages, refet to the instruction sheet packed with ea

in general, however, check the following goldits

operation when installing a motor and linkage.

1. Unkages for valves and louver type dampers should be adjusted to that the damper or valve moves through only the maximum required distance when the motor moves through its full stroke.

2. With modulating control, maximum damper ppenip should be no more than 60°. Little additional airflow provided beyond this point.

3. The motor must be stopped at the end of its stroke by the limit switch and must not be stalled by the damper of valve. The molor will be damaged if it is not permitted to complete its fell stroke.

4. Do not exceed the motor ratings in any installation 5. Do not turn motor shaft manually or with a wrench damage to the gear train may result.



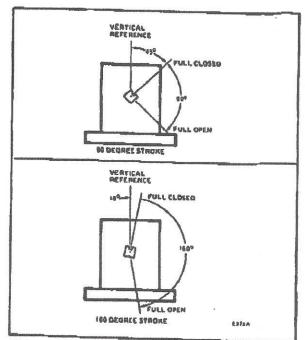


FIG. 2-MOTOR SHAFT POSITIONS AT LIMITS OF STROKE-VIEWED FROM POWER END.

WIRING

Disconnect power supply before wiring to prevent electrical shock or equipment damage. All wiring must agree with applicable codes, ordinances, and regulations.

Make sure that the voltage and frequency stamped on the motor correspond to the characteristics of the power

Figs. 3-7 show Internal schematics for the M944 motors, and Figs. 8-13 show typical system connections.

The motor terminals are quick-connects located on top of the printed circuit board shown in Figs. 3.4. Access to the wiring compartment is gained by removing the 4 screws in the top of the motor and litting off the cover.

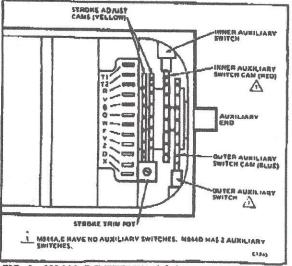


FIG. 3-M944A,C,D TERMINALS AND ADJUSTMENTS.

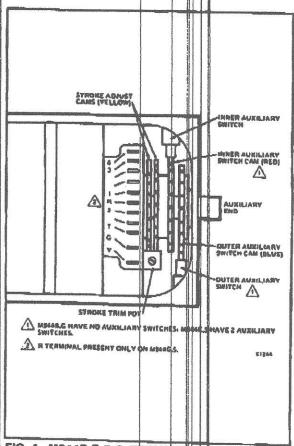


FIG. 4-M944B,E,G,S TERMINALS AND ADJUST-MENTS.

After the valve or damper linkage is connected to the motor, it may be necessary to interchange the blue and yellow connections at the indice terminals to obtain the proper action of the valve or damper on a temperature increase or secretal. controller.

If a motor operates in a direction opposite to the rotation desired, the rotation can be reversed by switching wires at either the motor or it e panel. On the M944A,C,D motors, reverse wires at the B and W terminals. On M944B,E,G,S motors, reverse the wires at the 1 and 2 terminals and the Y and G terminals.

NOTE: In most applications a single 135 ohm potentiometer in the limit controller provides 50% operation of a valve or damper. For those applications where the limit controller must be able to operate the valve or damper to 100% of its capacity, it must have either one 270 ohm potentiometer of two series—connected potentiometers with combined total resistance up to 280 ohms. If a 2-potentiometer limit controller is used, it should be wired into the circuit so control varies over the entire resistance. the entire resistance.

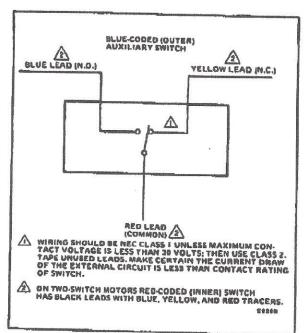


FIG. 5-AUXILIARY SWITCH SCHEMATIC.

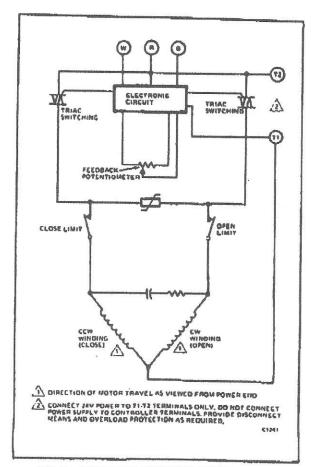
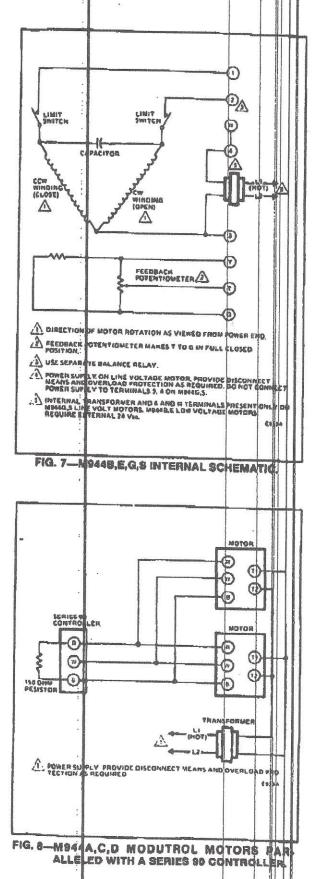


FIG. 6-M944A,C,D INTERNAL SCHEMATIC.



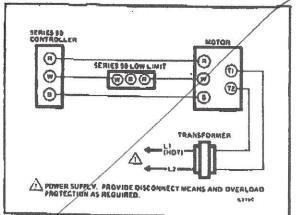


FIG. 9 M944A,C,D USED WITH MODULATING LOW LIMIT TO PREVENT DISCHARGE AIR FROM GOING BELOW DESIRED MINIMUM TEMPERATURE (maximum authority—50% with 135 ohm controller or 100% with 270 ohm controller).

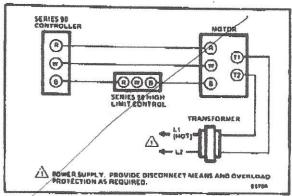


FIG. 10-M944A,C,D MOTOR USED WITH A SERIES 90 CONTROLLER AND A SERIES 90 HIGH LIMIT; OFTEN USED ON CENTRAL FAN HEATING SYSTEMS TO LIMIT THE DISCHARGE AIR TEMPERATURE.

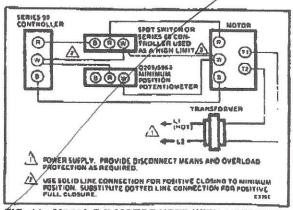


FIG. 11—M944A,C,D MOTOR USED WITH A SERIES 90
CONTROLLER, A MANUAL MINIMUM
POSITION POTENTIOMETER, AND AN SPOT
SWITCH FOR 2-POSITION HIGH LIMIT
CONTROL.

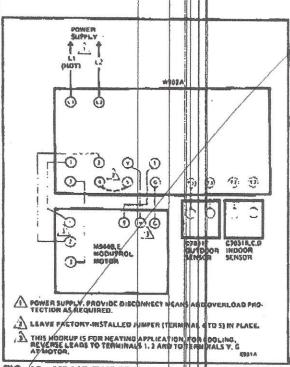


FIG. 12—M944B,E USED WITH W992 RESET CONTROL IN HEATING OR COOLING APPLICATION.

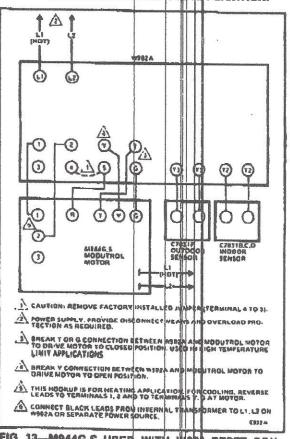


FIG. 13-M944G,S USED WITH WED RESET CONTROL IN HEATING OR COOLING

7

SETTINGS AND ADJUSTMENTS

STROKE SETTING

On MB44C,D,E,S motors, stroke is field selectable and can be set for 90° (as shipped) or 160°. In order to set stroke, both mechanical and electrical adjustments are required. The mechanical adjustments (cams) establish the full open and full closed positions of the motor shaft. The electrical adjustment (trim pot) provides sufficlent total stroke angle to ensure that cams will actuate both limit switches.

STROKE SETTING PROCEDURE— M944C,D (Fig. 14)

CAUTION

Detach linkage from motor before adjusting stroke.

BEFORE SETTING STROKE:

- 1. Remove top cover from motor.
- 2. Disconnect controller from motor.
- 3. Connect R.B.W terminals on 135 ohm pot to matching terminals on motor.

SETTING 160° STROKE

- 1. Turn trim pot fully clockwise.
- 2. Drive motor to mid-position, using 135 ohm pot.
- 3. Insert 1/8 in. screwdriver blade into slot on inner yellow cam and MOVE TOP OF SCREWDRIVER as far as possible counterclockwise . Repeat in successive cam slots until inner cam is against counterclockwise stop.

IMPORTANT-

Set cams by moving top of acrewdriver only. Pressing screwdriver against sides of cam slots could cause damage to motor end switches.

4. Insert 1/8 in. screwdriver blade into slot on outer yellow cam and MOVE TOP OF SCREWDRIVER as far as possible clockwise . Repeat in successive cam slots until outer cam is against clockwise stop.

NOTE: Excessive force will damage end switch.

- 5. Check motor stroke before connecting linkage.
- 6. Disconnect 135 ohm pot, reconnect controller. replace top cover and attach linkage to motor.

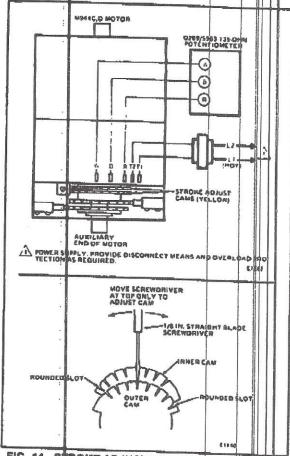


FIG. 14-STROKE ADJUSTMENT SETUP-M941C.D

SETTING 90° STROKE

- 1. Turn trien pot fully counterclockwise.
- 2. Drive imptor to mid-position, using 135 onm pot
- 3. Insert 1/8 in. screwdriver blade into stot or inner yellow cam and MOVE TOP OF SCREWDRIVER as lar as possible clockwise . Repeat in successive can slots until inder cam is against clockwise stop.

IMPORTANT-

Set came by moving top of screwdriver only Pressing perewdriver against sides of cam signs could cause damage to motor end switches

4. Insert 1/8 In. screwdriver blade into stot on other yellow camend MOVE TOP OF SCREWDRIVER as as as possible counterclockwise Repeat in successive cam slots until outer cam is against counterclockwise Repeat in successive cam slots until outer cam is against counterclockwise stop.

NOTE: Excelaive force will damage and switch.

- 6. Check hotor stroke before connecting linkage
- 6. Disconnect 135 ohm pot, reconnect controller. replace moler top cover and attach linkage to moler

STROKE SETTING PROCEDURE— M944E,S (Figs. 15, 16)

CAUTION

Detach linkage from motor before adjusting stroke.

BEFORE SETTING STROKE:

- 1. Remove top cover from motor.
- 2. Disconnect controller from motor.
- 3. Connect M944E as shown in Fig. 15; connect M944S as shown in Fig. 16.

SETTING 160° STROKE

- Turn trim pot fully clockwise.
 Drive motor to mid-position as follows:

M944E-Connect 24 Vac to motor terminals 2 and 3 to drive motor open, or to terminals 1 and 3 to drive motor closed (Fig. 15).

M9449—Connect jumper from R to 2 to drive motor open, or from terminals R to 1 to drive motor closed (Fig. 16).

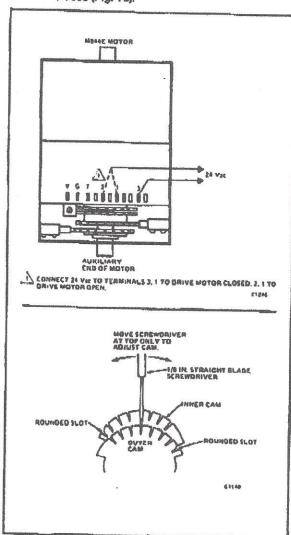


FIG. 15—STROKE ADJUSTMENT SETUP FOR M944E.

3. Insert 1/8 in. screwdriver blade into slot on inner yellow cam and MOVE TOP OF SCREWDRIVER as far as possible counterclockwise . Repeat in successive cam alots until inner cam is against counterclockwise stop.

Set cams by moving top of screwdriver only.
Pressing screwdriver against sides of cam slots could cause damage to motor end switches.

- 4. Insert 1/8 in. acrewdriver blade into slot on outer yellow cam and MOVE TOP OF SCREWURIVER as far as possible clockwise Repeat in successive cam slots until outer cam is against clockwise stop.
 - 5. Check motor stroke before connecting linkage.
- 6. Reconnect controller, replace good top cover and attach linkage to motor.

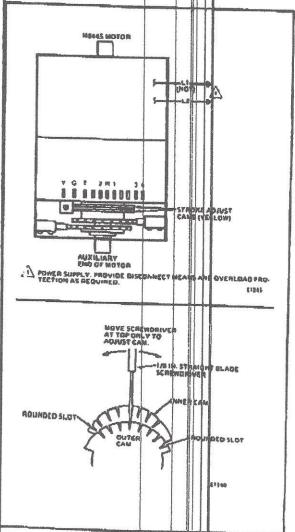


FIG. 18—STROKE ADJUSTMENT SETUP FOR M8448.

SETTING 90° STROKE (Motor factory set at 90°)

1. Turn trim pot fully counterclockwise.

2. Drive motor to mid-position as follows:

M944E—Connect 24 Vac to motor terminals 2 and 3 to drive motor open, or to terminals 1 and 3 to drive motor closed (Fig. 16).

M944S—Connect jumper from R to 2 to drive motor open, or from terminals R to 1 to drive motor closed (Fig. 16).

3. Insert 1/8 in. scrawdriver blade into slot on inner yellow cam and MOVE TOP OF SCREWDRIVER as far as possible clockwise . Repeat in successive cam slots until outer cam is against clockwise stop.

4. Insert 1/8 in. screwdriver blade into slot on outer yellow cam and MOVETOP OF SCREWDRIVER as far as possible counterclookwise . Repeat in successive cam slots until outer cam is against counterclockwise stop.

NOTE: Excessive force will damage and switch.

5. Check motor stroke before connecting linkage.

Reconnect controller, replace motor top cover and attach linkage to motor.

AUXILIARY SWITCHES

The auxiliary switches in M944D,E,S motors are actuated by adjustable cams. These cams can be set to actuate the switches at any angle within the stroke of the motor. Also, switch differentials of 1° or 10° can be selected.

Motors are shipped in the closed position with auxiliary cams set to actuate switches 30° from the closed position, and to provide 1° differential. With motor in closed position, auxiliary switch breaks R-B (Fig. 5).

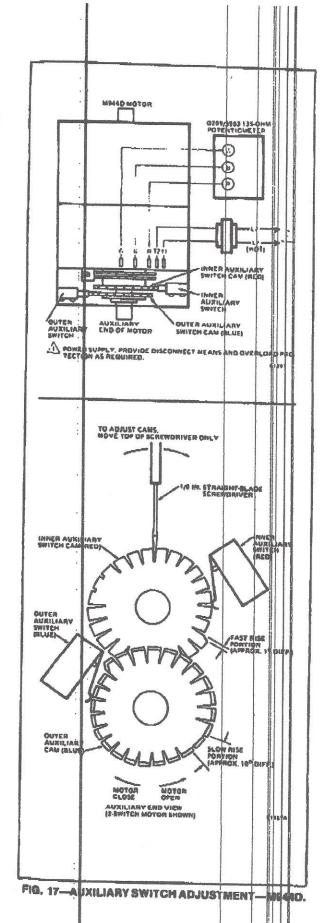
AUXILIARY SWITCH SETTING PROCEDURE— M944D (Fig. 17)

1. Remove top cover from motor to gain access to motor terminals and auxillary cams.

Disconnect controller from motor and connect 135 ohm manual potentiometer with R,W,B terminals on pot connected to corresponding terminals on motor,

Orive the motor to the desired position where auxiliary equipment is to be switched, by adjusting the 135 ohm pot.

- For switch differential of 1°, check continuity of auxiliary switch R-B contacts and rotate cam as follows:
 - il contacts are open, rotate cam counterclockwise until R-8 contacts close.
 - b. If contacts are closed, rotate cam clockwise until R-B contacts open.
- 5. For switch differential of 10°, check continuity of auxiliary switch R-B contacts and rotate cam as follows:
 - a. If contacts are open, rotate cam clockwise until R-B contacts close,
 - b. If contacts are closed, rotate cam counterclockwise until R-B contacts open.
- Check for proper differential and switching of auxiliary equipment by driving motor through full stroke (in both directions), using the 135 ohm pot if necessary, repeat differential adjustments.
- Disconnect 135 ohm pot, reconnect controller and replace top cover on motor.



AUXILIARY SWITCH SETTING PROCEDURE—M944E,S (Fig. 18)

- 1. Remove top cover from motor to gain access to motor terminals and auxillary cams.
 - 2. Disconnect controller from motor.
- Drive motor to the position where auxiliary equipment is to be switched as follows:
 - M944E—Connect 24 Vac to motor terminals 2 and 3 to drive motor open, or terminals 1 and 3 to drive motor closed.
 - M944S—Connect jumper from R to 2 to drive motor open, or from R to 1 to drive motor closed.
- For switch differential of 1°, check continuity of auxiliary switch R-B contacts and rotate cam as follows:
 - a. If contacts are open, rotate cam counterclockwise until R-B contacts close.
 - b. If contacts are closed, rotate cam clockwise until R-B contacts open.

- 5. For switch differential of 10°, check continuity of auxiliary switch R-8 contacts and rosate cam as follows:
 - Il contacts are open, rotate cambiockwise until
 R-8 contacts close,
 - b. If contacts are closed, rotate cam counterclockwise until R-B contacts open.
- 6. Check for proper differential and switching of auxiliary equipment by driving motor through full stroke in both directions.
- 7. Disconnect jumper, reconnect controller, replace top cover on motor.

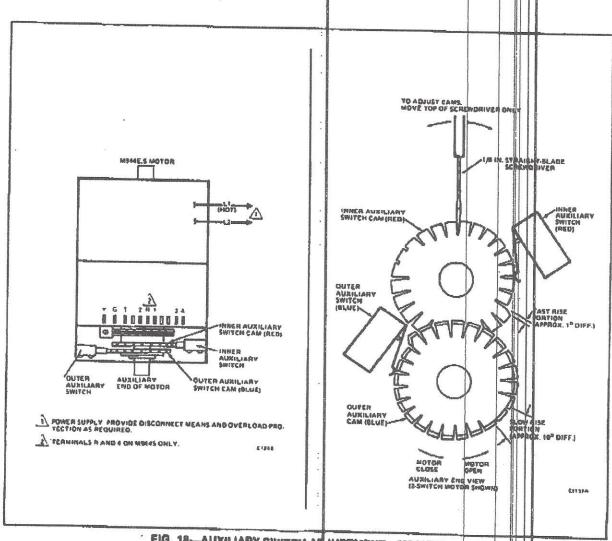


FIG. 18—AUXILIARY SWITCH ANJUSTMENT—M944E,S.

OPERATION

SERIES 90 CIRCUIT

MODULATING SERIES 90 CIRCUIT

The 2 potentiometers, one in the controller and one in the motor, along with resistor network, form a bridge circuit. As long as the value of the controlled medium remains at the controller set point, the circuit is balanced, and the motor does not drive.

When the value of the controlled medium changes, the potentiometer wiper in the controller is moved, which unbalances the bridge circuit. This unbalance is amplified, and energizes Triac switching to drive the motor in the direction necessary to correct the change in

temperature or pressure. The motor turns the temperature potention ater to rebalance the circuit and stop the motor.

EXTERNAL SERIES 90 CIRCUIT

When the M944 is used with an electronic panel the operation is similar to that described above. In this application, however, the temperature is sensed by a resistance element. With a change in temperature the resistance of the element changes and unbalances a circuit that actuates the electronic relay. This is run, runs the meter, which moves the feedback potention eter and rebalances the circuit.

CHECKOUT

After installation and linkage adjustment, check the entire motor and control hookup to prove that—

- -the motor operates the damper or valve properly.
- -the motor responds properly to the controller.

Inspect the motor, linkage and valve or damper to see that all mechanical connections are correct and secure. In damper installations, the pushrod should not extend more than a few inches past the ball joints. Check to see that there is adequate clearance for the linkage to move through its stroke without binding or striking other objects.

M944 motors are shipped in the fully closed position (the limit of counterclockwise rotation as viewed from the power end of the motor).

To check operation of M944A,C,D motors, jumper R to W to close, or R to B to open, the motor. To check operation of M944B,E motors, connect 24 V to 1 and 3 to close, or to 2 and 3 to open the motor. To check operation of M944G S motors, jumper 1 to R to close, or 2 to R to open the motor. If the motor is used with an electronic relay, follow the instructions provided with the celay.

To reverse the direction of motor rotation, reverse the wires at terminats B and W on M944A,C,D, reverse terminate and 2 and terminate Y and G on M944B,E,G,S motors. The wires may be reversed either at the motor or at the panel.

To check system operation, adjust the set point of the controller above and helps the symblest units and aster-

To check system operation, adjust the set point of the controller above and below the ambient value and make sure the motor and valve or damper operate as desired. Return controller to desired setting before leaving job.

If questions arise regarding this product, contact your local distributor or Honeywell sales office.

HONEYWELL MINNEAPOLIS. MN 55408 INTERNATIONAL Sales Offices in ell principal cities of the world Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spoir, Telwan, United Kingdom, U.S.A.

ADDENDUM TO M944A-E,G,S SPEC SHEET, FORM 60-2292

CAUTION

DO NOT CONNECT THIS ACTUATOR DIRECTLY TO AN R927C, R9107A EXTERNAL BAL-ANCE RELAY. A Q181A AUXILIARY POTENTIOMETER IS REQUIRED IN APPLICATIONS WITH AN R927C OR R9107A. SEE THE WIRING DIAGRAM BELOW FOR DETAILS.

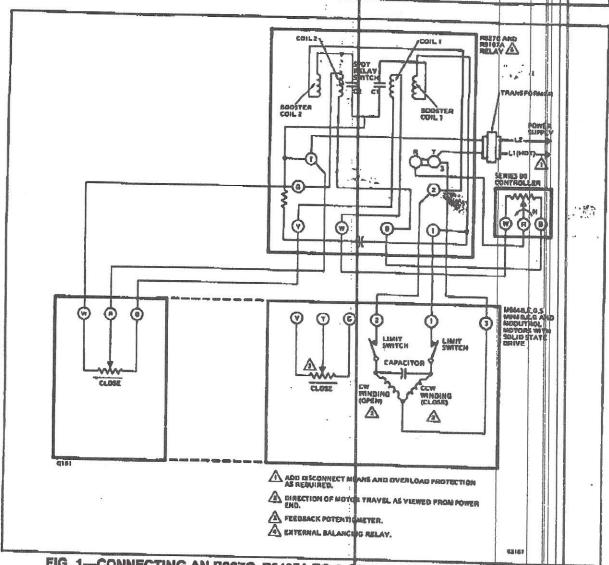


FIG. 1—CONNECTING AN R927C, R9107A TO A SERIES 6* MODUTROL MOTOR.

*Production Series 6 Modutrol motors can be identified by a bar code label with a number "6" following the model number. Example: "M944E1040 6."

SP 2-870

59-A2292 vel (pc. 1987 PHONEY

1865 Dougles Drive N. Golden Valley, MN 55422-4388

International Sales Offices in all principal chicapit the world. Manufacturing in Australia, Canada First France, Germany, Japan, Maxico, Wesherlandd, Spain, Talwan, United Kingdom, U.S.A.

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