Pneumatic Receivers Class 8A and 8B

Bailey Babcock & Wilcox

WARNING

DO NOT INSTALL MAINTAIN OR OPERATE THIS EQUIPMENT WITHOUT READING UNDERSTANDING AND FOLLOWING PROPER Bailey Babcock & Wilcox INSTRUCTIONS AND MANUALS OTHERWISE INJURY OR DAMAGE MAY RESULT

INDEX

CROSS REFERENCE

Instrument or Equipment	Instruction Section
Type KM55 or WM55 Recorder and KM53 or WM53 Indicator	E12-3

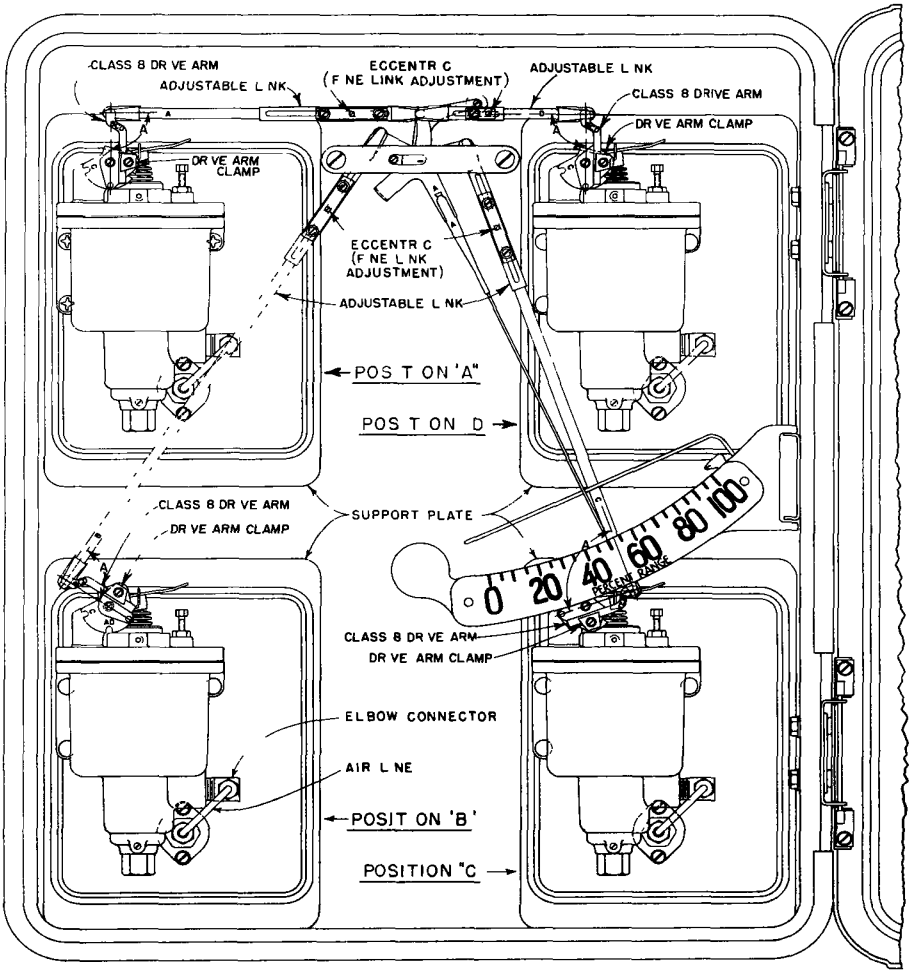

FIGURE 1 - Type KM55 Recorder with Four Class 8 Pneumatic Receivers

EXPLANATION OF NOMENCLATURE

The nomenclature for the Class 8 Receiver indicates the air input pressure range for which the Receiver is designed

An "X" in any nomenclature position indicates that the instrument includes a special feature not covered by nomenclature

RECEIVER	RANGE
CLASS 8A	3-27 PSIG
CLASS 8B	3 15 PSIG

INSTALLATION

The adjustable links shown in Figure 1 transmit motion of the drive arm to the recording pen or indicating pointer yoke The Receiver requires a different link for each Recorder or Indicator case position Each link is stamped with the letter (A, B, C, or D) of the case position in which it is located

If the Class 8 Receiver is received already installed in Recorder or Indicator case

1 Install KM or WM Recorder or Indicator case as outlined in Instruction Section E12 3

2 Remove adjustable link (stamped with applicable case position) taped inside Recorder or Indicator case

3 Install adjustable link Then place pens in service as outlined under 'Placing Pens in Service" in Instruction Section E12-3

4 Perform "Calibration Check' on page 7

5 Make air input connections from Transmitter or Receiver at rear of Recorder or Indicator case (Figure 2) and place Recorder in service

If the Class 8 Receiver is being added to a Type KM5 or WM5 Recorder or Indicator, follow the instructions on the Special Installation Sheet accompanying the Receiver.

If the Class 8 Receiver is being changed from one component position to another:

1. Remove blank cover from desired Recorder or Indicator case position or remove any other component mounted in that position.

2 Disconnect pen or pointer linkage from Class 8 drive arm. Then disconnect input connection from Class 8 Receiver (see Figure 2).

Remove Class 8 Receiver and attached support plate from case.

3 Insert Receiver in new component position (Figure 1) Secure support plate to case with four mounting screws.

4 Remove screw attaching drive arm support to lever assembly (Figure 3) Remove support and reassemble with support pin in notch of lever marked with letter of new case position.

5 Install adjustable link (stamped with applicable case position) and additional pens or pointers (if required) as outlined under "Installation of Additional Components" in Instruction Section E12-3 Place pens in service as outlined under "Placing Pens in Service" in Instruction Section E12 3

6 Perform "Calibration Check", page 7

7 Make air loading connections from Transmitter to Recorder (Figure 2) and place Receiver in service

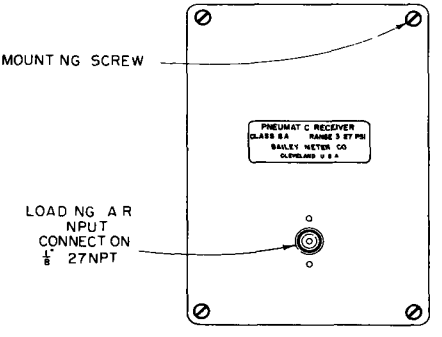

FIGURE 2 - Back of Support Plate

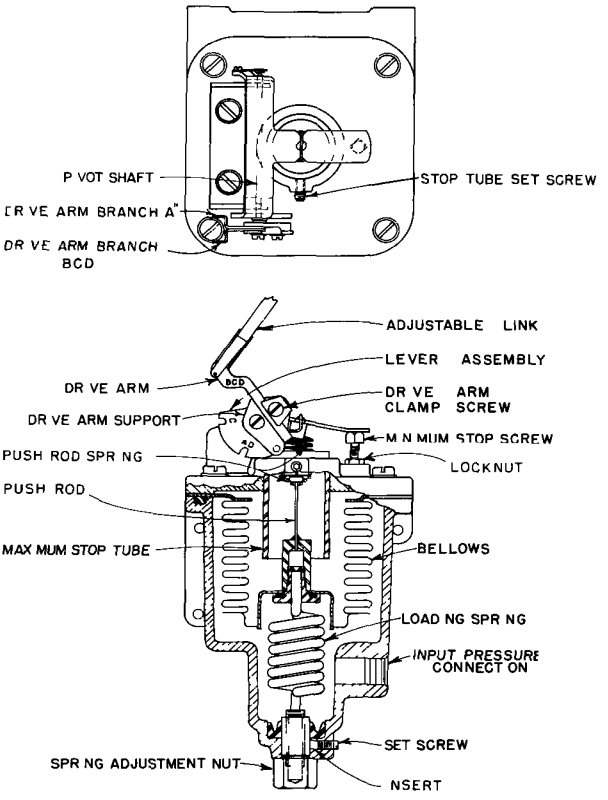

FIGURE 3 Class 8□ Pneumatic Receiver

DESCRIPTION OF OPERATION

Refer to Figure 3 The Class 8 Pneumatic Receiver consists of a spring loaded bellows connected to a drive arm by a push rod and lever assembly The inside of the bellows is open to atmosphere Input pressure applied to the outside of the bellows acts against spring tension An increase or decrease in applied pressure causes the bellows to con tract or expand Motion of the bellows is transmitted thru the drive arm and connecting linkage to produce proportional movement of the recording pen or indicating pointer

The Receiver is equipped with adjustable minimum and maximum stops to prevent over-travel The minimum stop screw limits down ward motion of the lever assembly The max imum stop tube, located inside the bellows, limits bellows contraction

ADJUSTMENT AND CALIBRATION

The Class 8 Pneumatic Receiver is factory calibrated when shipped and should require no further adjustment However, before placing in service, check calibration as outlined below If Receiver has been disassembled for repair, refer to "Spring Tension Adjustment", page 8 before proceeding

Calibration Check

The instructions below apply specifically to instruments with standard calibration, that is, where full scale pen or pointer motion is produced by full range variation in pressure If calibration is non-standard (where partial pen or pointer motion is produced by full range variation in pressure), modify the standard pressures or chart or scale readings as necessary

1 Connect Receiver to a controlled source of air pressure Refer to ' Explanation of Nomenclature , page 5, for instrument air input pressure range

2. Apply midrange input pressure (9 psig for 3-15 range or 15 psig for 3-27 range) to Receiver input connection. Pen or pointer should read 50% chart or scale. If not, adjust the adjustable link as follows (see Figure 1)·

a Coarse Adjustment Loosen two screws of adjustable link and extend or retract linkage until pen or pointer reads approximately 50% scale. Tighten screws.

b. Fine Adjustment Loosen two screws of adjustable link and turn eccentric to adjust linkage. Tighten screws A maximum adjustment of ±1/32 inch is possible.

3 Apply minimum and maximum input pressure and note pen or pointer readings If pen or pointer has not moved to zero and 100% chart or scale, respectively, adjust as follows (see Figure 3)

a If pen or pointer motion is linear (pen or pointer motion equally divided both above and below 50% chart or scale), loosen drive arm clamp screw and lengthen Class 8 drive arm to increase range or shorten drive arm to decrease range Then tighten clamp screw.

CAUTION· The drive arm adjustment should not be moved more than 1/8-inch maximum to adjust range. Then recalibrate at 0% and 100% scale.

b If pen or pointer motion is non linear (pen or pointer motion not equally divided above and below 50% chart or scale), loosen spring adjustment nut set screw and turn adjustment nut as follows

(1) turn adjustment nut clockwise (as viewed from below) if pen or pointer motion is greater below 50% chart or scale than above.

(2) turn adjustment nut counterclockwise if pen or pointer motion is greater above 50% chart or scale than below.

(3) retighten set screw to lock adjustment nut in place

4 Repeat steps 2 and 3 until correct readings are obtained If a spring tension adjustment was required, reset minimum and maximum stops as outlined below

Minimum and Maximum Stop Adjustment

1. To set minimum stop

a. apply 0.1 psi less than minimum input pressure (2.9 psig for 3-15 and 3-27 ranges) to Receiver input connection.

b loosen minimum stop screw locknut (Figure 3) and adjust minimum stop screw so it just touches lever assembly.

c tighten locknut

2 To adjust maximum stop tube

a. Apply 0.2 psi more than maximum input pressure (15.2 psig for 3 15 range, and 27.2 psig for 3 27 range) to Receiver input connection,

b loosen stop tube set screw (Figure 3) and adjust stop tube so it just touches bellows.

c tighten set screw

Spring Tension Adjustment

The spring tension adjustment should be made only if the Receiver must be completely recalibrated

1. Apply midrange input pressure (9 psig for 3-15 range or 15 psig for 3 27 range) to Receiver input.

2 Angle "A" between Class 8 drive arm and adjustable link (Figure 1) should be about 90° If not, loosen set screw holding spring adjustment nut (Figure 3) and turn spring adjustment nut to set angle at about 90° Then tighten set screw

3 Check calibration of Receiver as out lined on page 7

MAINTENANCE

The Class 8 Pneumatic Receiver requires no routine maintenance If the Receiver operates incorrectly, check for leakage with a soap suds solution at pressure connections, top cover, and spring adjustment nut If Receiver must be disassembled for service, follow the procedure outlined below Refer to Figure 3

Disassembly

1 Disconnect linkage from pen or pointer yoke and air connections from Receiver Remove four mounting screws from back of case and remove Receiver and attached support plate

2 Disconnect push rod spring from lever assembly and remove top cover

3 Loosen set screw and remove spring adjustment nut to release loading spring (do not lose insert under set screw).

4 Remove push rod, bellows, and loading spring assembly To disassemble loading spring assembly, unscrew loading spring from push rod.

5 Remove and inspect O rings and packing (see Figure 5). If packing must be replaced, lubricate inner surface of new packing with pet rolatum so spring adjustment nut can be turned easily Insert packing in Receiver housing and replace spring adjustment nut. With nut in place, make certain packing seats properly

6 To reassemble, reverse steps 1 thru 4 above

REPLACEMENT PARTS

Spare Parts Kit

The Spare Parts Kit shown in Figure 5 should be carried in stock. Specify the Spare Parts Kit part number to order a complete kit.

Ordering Individual Parts

Figures 4 and 5 are Parts Drawings of the Class 8 Pneumatic Receiver Normally these drawings apply to the instrument furnished However, there may be individual differences in specific Receivers because of·

1. design changes made since the printing of this Instruction Section, or

2 special design of equipment furnished to make it suitable for specific application

Therefore, when ordering parts, assure receipt of correct replacements by specifying on the order·

a. complete nomenclature and serial number (stamped on instrument nameplate) of equipment for which parts are desired, and

b the Parts Drawing on which each part is illustrated (the Parts Drawing Number is given in the Figure caption)

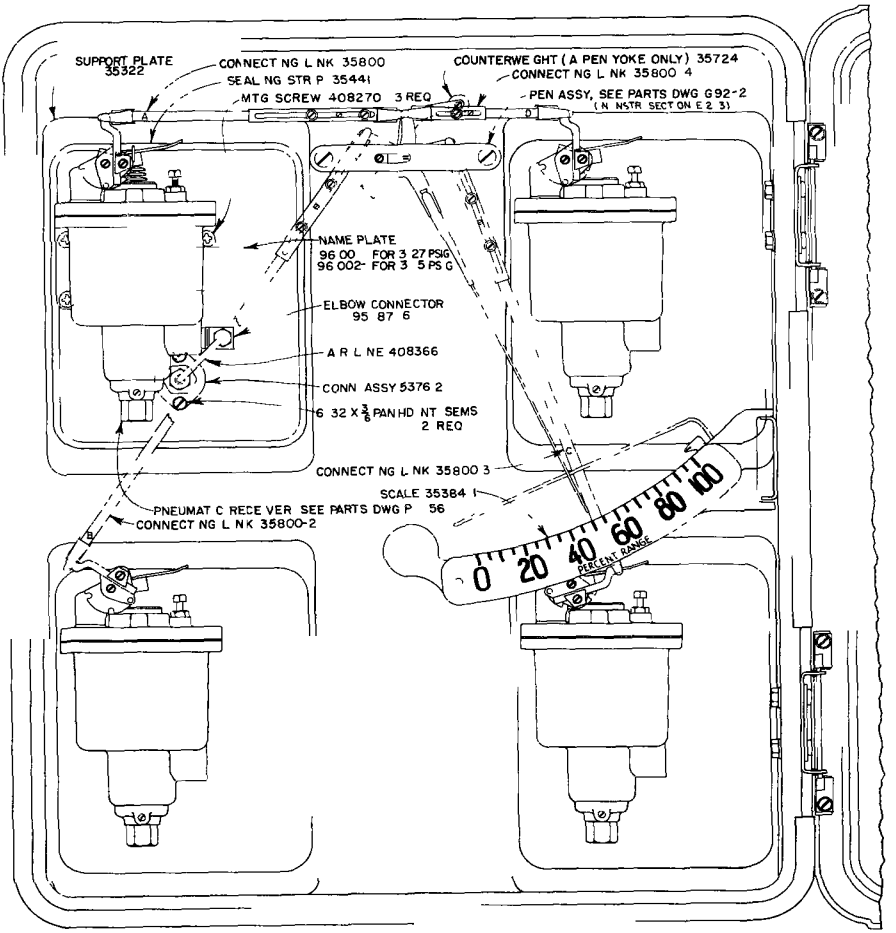

FIGURE 4 - Parts Drawing P11-5, Class 8 Receiver Accessories and Linkage

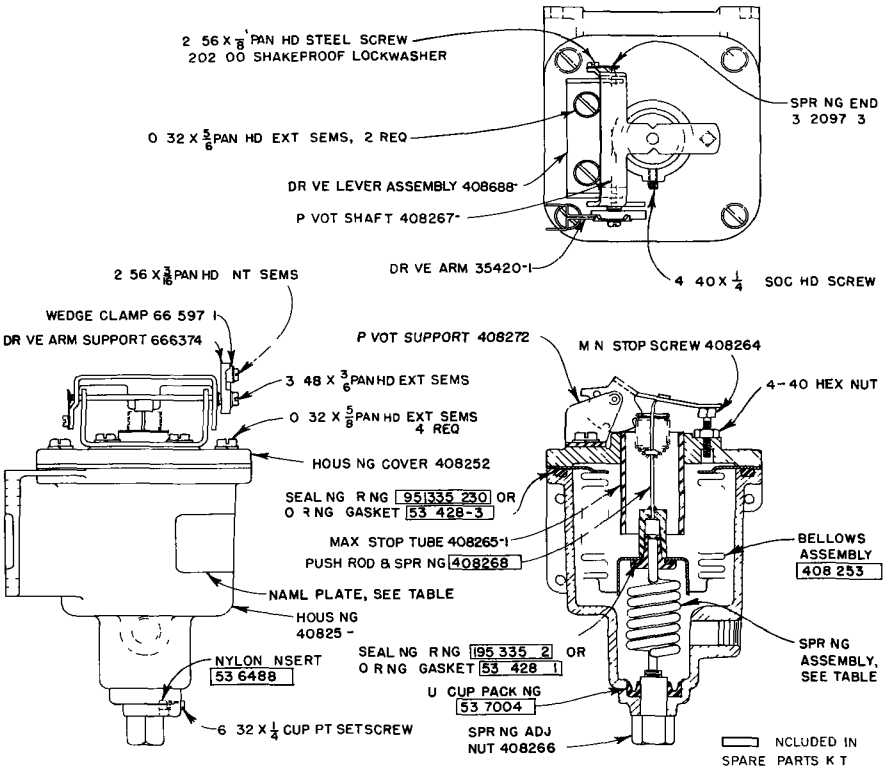

TABLE					
CLASS	RANGE	PART NO.	SPR NG ASSY	NAMEPLATE	TEST PRESSURE
8A	3 TO 27 PS G	408 250	408 259 1	96 00	35 PS G
8B	3 TO 5 PS G	408 250 2	408 259 2	96 002	20 PS G

SPARE PARTS K T	
K T PART NUMBER	256008
CONTA NS EACH OF PT NO. S	95 335 2 OR 53 428 95 335 230 OR 53 428-3 408253 , 408268 53 6488 , 53 7004

FIGURE 5 Parts Drawing P11 56, Class 8 Pneumatic Receiver

Product Warranty

Bailey Meter Company warrants the products manufactured by it to be free from defects in material and workmanship and will repair or replace, at its option, free of charge, f o b its factory, such part or parts which prove defective within one year from date of shipment In respect to any products which are not an integral part of a product manufactured by the Company, the warranty given by the manufacturer thereof shall apply

Shipping Damage

We strongly recommend that you inspect and test your instrument as soon as you receive it If the instrument is damaged or operates improperly, not fy the carrier for inspection of the shipment The carrier's claim agent will prepare a report of damage, a copy of which should be forwarded to your nearest Bailey District Office (see back cover for location) The District Office will then tell you how to have the instrument repaired or replaced

Service

The Bailey Meter Company is vitally concerned that your Bailey instrument provides continued, fine performance This instruction manual is designed to fully describe the correct installation operation, and maintenance of your instrument under recommended conditions If the need arises, factory trained Service Engineers are on call for prompt, in plant maintenance Telephone or wire your nearby Bailey D strict Office to make arrangements for this service.

Replacement Parts and Supplies

Complete parts drawings and recommended spare parts kit information are included in this instruction manual When replacement parts or supplies are required for ma ntenance of your Bailey instrument contact your nearest Bailey District Office (see back cover for location) Always specify complete data on the instrument nameplate on your inquiry or order for parts Common parts are available for shipment within 48 hours on a speed order basis

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