

operation & maintenance instruction

#8 VENT VALVE, Part No. 584951

AUGUST, 1990

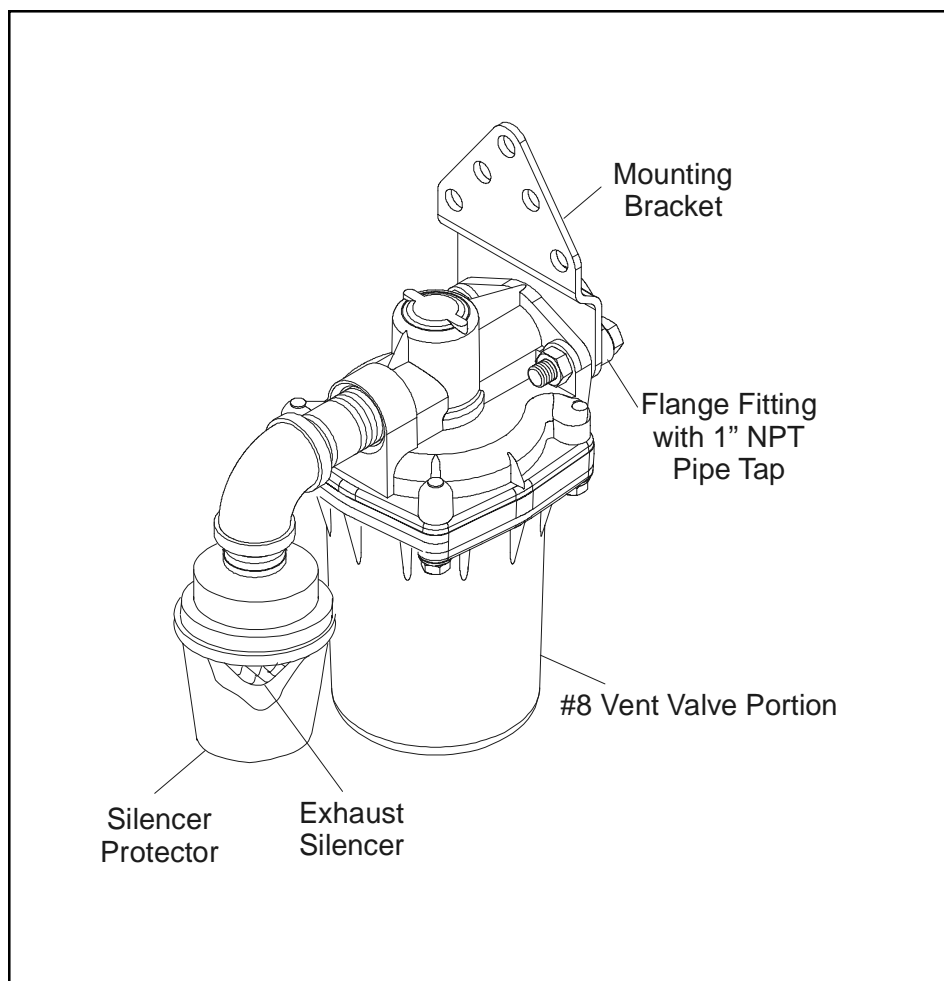
Supersedes issue dated December, 1984

NOTE: The following description and operation is based on this device and its components being new or this device and its components having been repaired, tested, installed and maintained in accordance with instructions issued by this and any other applicable Wabtec Corporation publications.

⚠ WARNING: At the time any part is replaced in this device, the operation of the complete device must pass a series of tests prescribed in the latest issue of the applicable Wabtec Test Specification. At the time this device is applied to the brake equipment arrangement, a stationary vehicle test must be made to insure that this device functions properly in the total brake equipment arrangement. (Consult your local Wabtec Representative for identity of the test specification, with latest revision date, that covers this device.)

IMPORTANT: Only Wabtec supplied parts are to be used in the repair of this device in order to obtain satisfactory operation. Commercially available non-O.E.M. parts are unacceptable.

NOTE: The part numbers and their associated descriptions are the property of Wabtec Corporation and may not be replicated in any manner or form without the prior sole written consent of an Officer of Wabtec Corporation.





operation & maintenance instruction

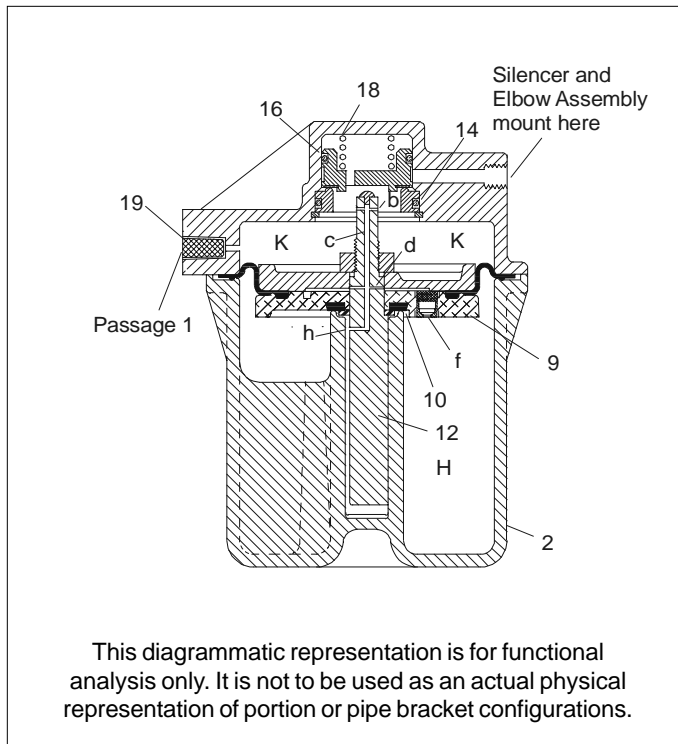


Figure 1 - Diagrammatic View

1.0 DESCRIPTION

This #8 Vent Valve, which may be used in equipment arrangements where the air pressure does not exceed 150 psig, is comprised of three major components: a #8 Vent Valve Portion, Part No. 588246; a Mounting Bracket, Part No. 582086; and a Flange Fitting with a 1" pipe tap, Part No. 563434.

The mounting bracket, when properly installed, is semi-permanently attached to the body of the vehicle, and the flange fitting with 1" pipe tap, when properly installed, is semi-permanently attached to the piping of the vehicle. These two components are utilized to mount the #8 Vent Valve Portion on the vehicle and to connect it to the vehicle piping. Consult your Wabtec Corporation Representative for specific piping and installation information pertaining to a specific application.

The #8 Vent Valve Portion is a diaphragm operated type valve which, when properly installed and maintained, functions to deplete brake pipe air locally at a rapid rate to assist in propagating an emergency brake application whenever the main line of brake pipe pressure is reduced at an emergency rate. Operation of the #8 Vent Valve Portion at one location aids in producing an emergency rate of brake pipe pressure reduction at the next vehicle and action of the Vent Valve Portion(s) on each succeeding vehicle of a

train consist. This action assists in a fast transmission of an emergency brake signal through an open, continuous line brake pipe.

The #8 Vent Valve Portion is designed so that it can be readily removed from the vehicle for maintenance or repair without disturbing the piping of the vehicle.

NOTE: If it is necessary to have any obstructions in line with the Vent Valve Portion's Silencer-Protector Assembly, which are located less than 5" from it when the #8 Vent Valve Portion is mounted on the vehicle, the obstruction **MUST BE** provided with a minimum 3.5" diameter opening. This 3.5" opening is to be adequately protected on all sides to prevent any possible build up of any restrictive elements such as an accumulation of ice, snow, mud or other elements which could slow or block the emergency rate of exhausting air pressure.

2.0 OPERATION (Figure 2)

2.1 CHARGING

Brake pipe (B.P.) air, directed into passage 1, flows from passage 1 to charge chamber K. Piston 9 moves into release position permitting the force of spring 18 to seat the vent valve exhaust valve 16. Brake pipe air flows through cross-section passage b, passage c, d, and f to charge the vent valve chamber H.

Flow of air through passage h is cut off at seal 10 due to the pressure in chamber K forcing the piston 9 toward the lower pressure in chamber H.

2.2 SERVICE

When air pressure is gradually reduced out of passage 1, the vent valve volume H reduces in pressure an amount corresponding to this pressure drop in order to maintain this valve in a stabilized position. When the pressure in chamber K is reduced, air from chamber H bleeds down through passages c, d, f, h, and b, stabilizing the vent valve piston 9 against movement to emergency position during service brake applications.

2.3 RELEASE & RECHARGE - AFTER A SERVICE APPLICATION

During pressure reduction in passage 1, the vent valve volume H reduces in order to follow the brake pipe pressure reduction. The vent valve portion is recharged as previously described under "charging".

2.4 EMERGENCY

When an emergency rate of brake pipe reduction is effec-



operation & maintenance instruction

tive in passage 1, air in chamber H of the vent valve portion cannot flow through passages h, f, d, c, and b at the same rate as chamber K is being evacuated. This differential of pressure across piston 9 moves the piston stem 12 to contact and unseat exhaust valve 16. A large and direct passage is provided for brake pipe air in passage 1 to flow through chamber K to atmosphere. This local rapid venting of brake pipe air accelerates the emergency reduction of brake pipe pressure serially and rapidly through the train by assisting in the prompt movement of similar valves on other vehicles into an emergency position.

2.5 RELEASE AFTER EMERGENCY

A predetermined reset delay time is designed into the valve by the established exhaust rate of chamber H. Once the spring 18 returns the exhaust valve 16 to its seat 14 and the diaphragm assembly to its normal position. The #8 Vent Valve Portion can then be recharged as previously described under "charging".

3.0 MAINTENANCE SCHEDULE

IMPORTANT: The #8 Vent Valve Portion is to be removed from the equipment arrangement and taken to the shop, be completely disassembled, the parts cleaned, inspected, lubricated and then reassembled using NEW Wabtec Corporation rubber parts and other NEW Wabtec Corporation parts as specified in accordance with the following vehicle application schedule, or more frequently, if service conditions so indicate. The assembled Portion is then to be tested for correct operation.

RECOMMENDED TYPE OF APPLICATION	FREQUENCY - AT LEAST ONCE EVERY
Freight cars	144 Months
Locomotives	12 Months
Passenger (Interstate)	36 Months
Transit	24 Months

4.0 PARTS CATALOG AND REPLACEMENT PARTS INFORMATION

4.1 PARTS CATALOGS

4.1.1 **IMPORTANT:** When ordering replacement parts for the #8 Vent Valve, Part No. 584951, or any of its Component Portions, refer to the current issue of the Wabtec Corporation Parts Catalog 3211-4, S.15.

4.1.2 **NOTE:** The reference numbers used in this publication and those used in the Parts Catalog may differ. Check the descriptive part name and part number to be sure that the desired part is ordered.

4.2 REPLACEMENT PARTS

IMPORTANT: To obtain satisfactory operation and reliability of the #8 Vent Valve and/or its Component Portions, **ONLY** Wabtec Corporation replacement parts are to be used in the maintenance of this Device and/or its Component Portions.

5.0 SAFETY PROCEDURES AND WARNINGS

Regular Owner-Operating Property and Shop Safety Procedures **MUST BE** followed when performing any work on the #8 Vent Valve or its Component Portions.

The work area is to be clean.

WARNINGS

The following statements of warning apply all or in part whenever the symbol appears in the maintenance procedures. Failure to observe these precautions may result in serious injury to those performing the work and/or bystanders.

- The use of an air jet, which must be less than 30 p.s.i.g., to blow parts clean or to blow them dry after being cleaned with a solvent will cause particles of dirt and/or droplets of the cleaning solvent to be airborne. Wire brushing may also cause particles of dirt, rust, and scale to become airborne. These conditions may cause skin and/or eye irritation.
- When using an air jet, do not direct it toward another person. Improper use of air jet could result in bodily injury.
- Personal eye protection must be worn when performing any work on this device or its components parts to avoid any possible injury to the eyes.
- The use of solvents as cleaning agents and the use of lubricants can involve health and/or safety hazards. The manufacturers of the solvents and lubricants should be contacted for safety data (such as OSHA Form OSHA-20 or its equivalent). The recommended precautions and procedures of the manufacturers should be followed.
- When performing any test or work on devices or equipment while they are on the vehicle (on car test, etc.) special precautions must be taken to insure that vehicle movement will not occur which could result in injury to personnel and/or damage to equipment.



operation & maintenance instruction

- **Assembly may be under a spring load. Exercise caution during disassembly so that no parts “Fly Out” and cause bodily injury.**
- **All air supply and/or electric current to this device and/or to any components part must be cut-off before this device and/or any component part is removed from the equipment arrangement.**
- **“Bottled” up air under pressure (even though air supply is cut-off) may cause gaskets and/or particles of dirt to become airborne and an increase in sound level when this device and/or any component part is removed from the equipment arrangement.**
- **Personal eye and ear protection must be worn and care taken to avoid possible injury when performing any work on this device and/or component part.**
- **An adequate support or lifting device must be available to support the Device and/or Valve Portion(s) during removal, installation and maintenance procedures.**

6.0 CLEANING SOLVENT & LUBRICANTS

6.1 The solvent used for cleaning the reusable parts of the #8 Vent Valve Portion **MUST BE** an aliphatic, organic solution, such as mineral spirits or naphtha, that will dissolve oil and grease and that will permit all parts to be cleaned without abrasion.

6.2 The following lubricants **MUST BE** available:

6.2.1 Number 2 Silicone Grease, Wabtec Corporation Specification M-7680-2, such as Dow Corning Corporation Dow Corning 55M (formerly Molykote 55M), is required for the lubrication of o-rings, o-ring grooves, and the bearing surfaces of the bushings into which o-ring assemblies are installed.

6.2.2 Triple Valve Oil, Wabtec Corporation Specification M-7611-20, such as General Motors Dexron or Dexron II Automatic Transmission Fluid; or Ford Motor Company ESW-M2C33F Automatic Transmission Fluid, as supplied by Standard Oil of California (Gulf Oil Corp.); Texaco Inc.; Union Oil Company of California; Getty Oil Company or Shell Oil Company, is required for the lubrication of the Vent Valve Portion piston stem guide.

6.2.3 A compound consisting of one part graphite, Wabtec Corporation Specification M-7695-2 (AAR Specification M-913), such as Superior Flake Graphite Co. - Superflake Number 597; J. Dixon Crucible Co. - Microfyne Graphite; National Carbon Co. - Number 38 or Number 39 Graphite, and two parts of oil (SAE-20) by weight is required for the

lubrication of the piston choke plug prior to the assembly of the choke plug in the piston.

6.2.4 Pipe Sealant with Teflon, Wabtec Corporation Specification M-7499-15, such as Loctite Corporation Pipe Sealant with Teflon, is required for application to the threads of the pipe nipple, elbow, and filter silencer before these parts are installed.

7.0 SPECIAL TOOLS

7.1 In addition to the regular shop tools, the following **MUST BE** available:

7.1.1 No. 3 TRUARC Retaining Ring Pliers.

7.1.2 An $1\frac{1}{16}$ " open end wrench.

7.1.3 A perfectly flat cast iron lapping plate.

7.1.4 Float emery.

7.1.5 Piece of $1\frac{1}{16}$ " diameter drill rod.

7.1.6 SNAP-ON TOOL, Part-GA-311A.

8.0 MAINTENANCE PROCEDURES - “ON-CAR”

IMPORTANT: “On-Car” maintenance is to be limited to the removal and replacement of the #8 Vent Valve Portion. No “On-Car” repairs to the Portion are permitted.

8.1 PARTS REQUIRED

8.1.1 A **NEW** #8 Vent Valve Portion, Part No. 588246, with Vent Protector Silencer or a **NEW** #8 Vent Valve Portion, Part No. 588246, with Vent Protector Silencer that has been overhauled and tested.

IMPORTANT: The #8 Vent Valve Portion, Part No. 588246, includes the 1" Flange Fitting Gasket, Part No. 93986. Be sure this gasket is included with the #8 Vent Valve Portion. If it is not with the Portion, either obtain a **NEW** 1" Flange Fitting Gasket, Part No. 93986, from stores and install it in place or return the #8 Vent Valve Portion to stores and obtain one equipped with the gasket.

8.1.2 Two New $\frac{1}{2}$ " self-locking hex nuts, Part No. 569385.

8.1.3 A **NEW** 1" Flange Fitting Gasket, Part No. 93986, for use in the flange fitting with pipe tap.

⚠ 8.2 REMOVAL AND REPLACEMENT OF THE #8 VENT VALVE PORTION

8.2.1 IMPORTANT: ALL owner-operating property

operation & maintenance instruction

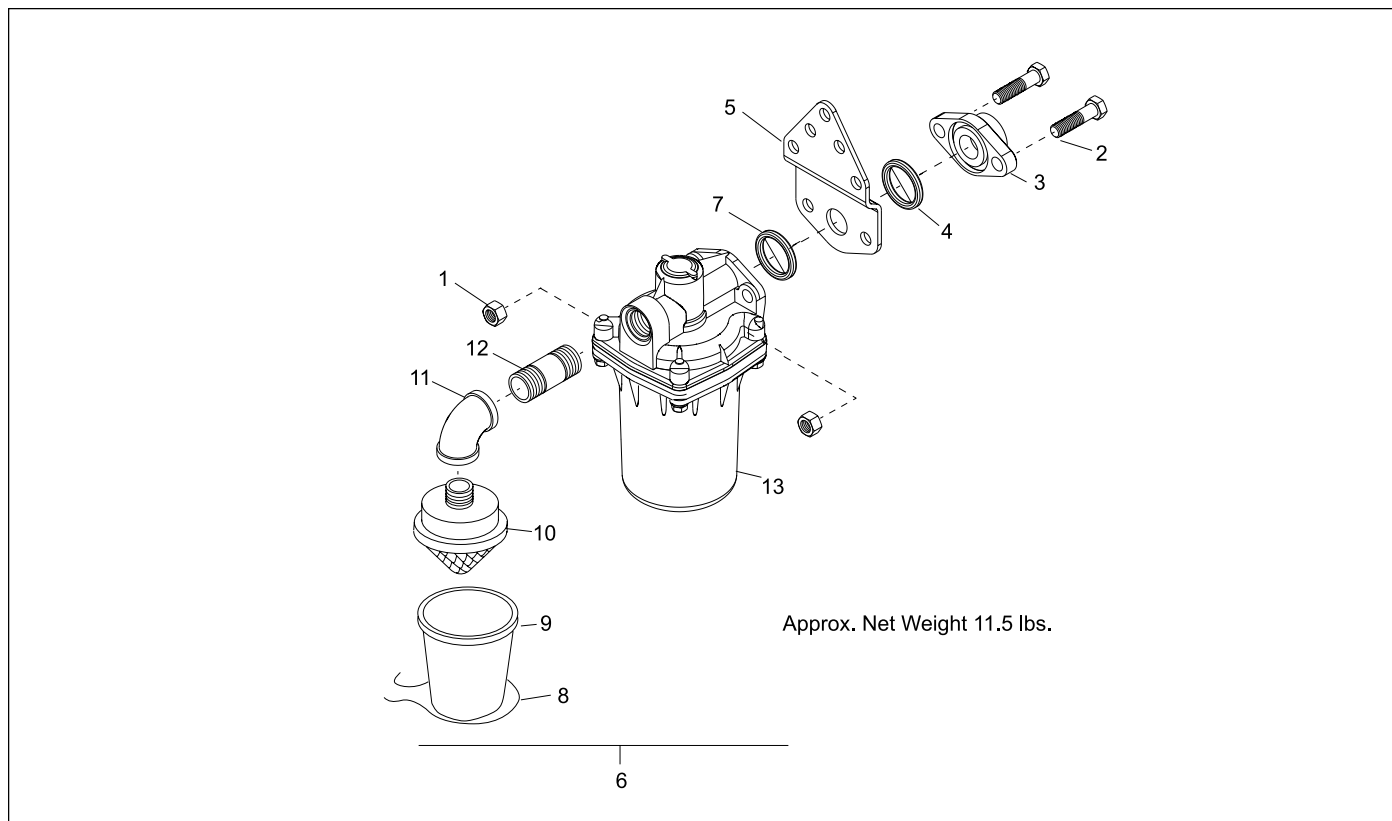


Figure 3 - Exploded View - #8 Vent Valve Portion

safety procedures and the safety procedures and warnings as listed in Section 5.0 of this publication MUST BE adhered to.

8.2.2 IMPORTANT: Chock the wheels of the vehicle and apply hand brake(s) to prevent any unintentional vehicle movement.

Place suitable warning placards indicating that work is being performed on and about the vehicle.

Cut-off ALL air supply to the #8 Vent Valve.

8.2.3 Remove **ALL** free dirt from the exterior surfaces of the #8 Vent Valve by wiping with a clean, dry, lint-free cloth. A low pressure jet of clean, dry air may be used to blow the surfaces clean.

8.2.4 Provide adequate support to hold the #8 Vent Valve Portion.

(Figure 3)

8.2.5 Remove the Vent Valve Portion (6) from the mounting plate (5) by removing the two 1/2" self-locking hex. nuts (1) and 1/2" x 2" hex head screws (2). **SCRAP** the self-

locking nuts.

8.2.6 Remove and **SCRAP** the 1" flange fitting gasket (4) from the mounting face of the flange fitting (3).

8.2.7 Visually inspect the mounting plate (5) and flange fitting (3). They do not have to be removed from the equipment arrangement unless they are damaged.

8.2.8 Install a **NEW** 1" flange fitting gasket (4) in place in its groove in the flange fitting (3).

8.2.9 Remove all protective material from the **NEW** or repaired and tested #8 Vent Valve Portion. Be sure that the strainer and 1" flange fitting gasket are in place in the mounting face in the vent valve portion body. The gasket and strainer are a part of the #8 Vent Valve Portion.

8.2.10 Place the #8 Vent Valve Portion (6) on the mounting plate (5) and secure it and the flange fitting (3) with gasket (4) in position by installing the two 1/2" x 2" hex head screws (2) and **NEW** 1/2" self-locking nuts (1). Equally tighten the nuts.

8.2.11 Transport the removed #8 Vent Valve Portion to the shop area for maintenance or repair. Provide adequate

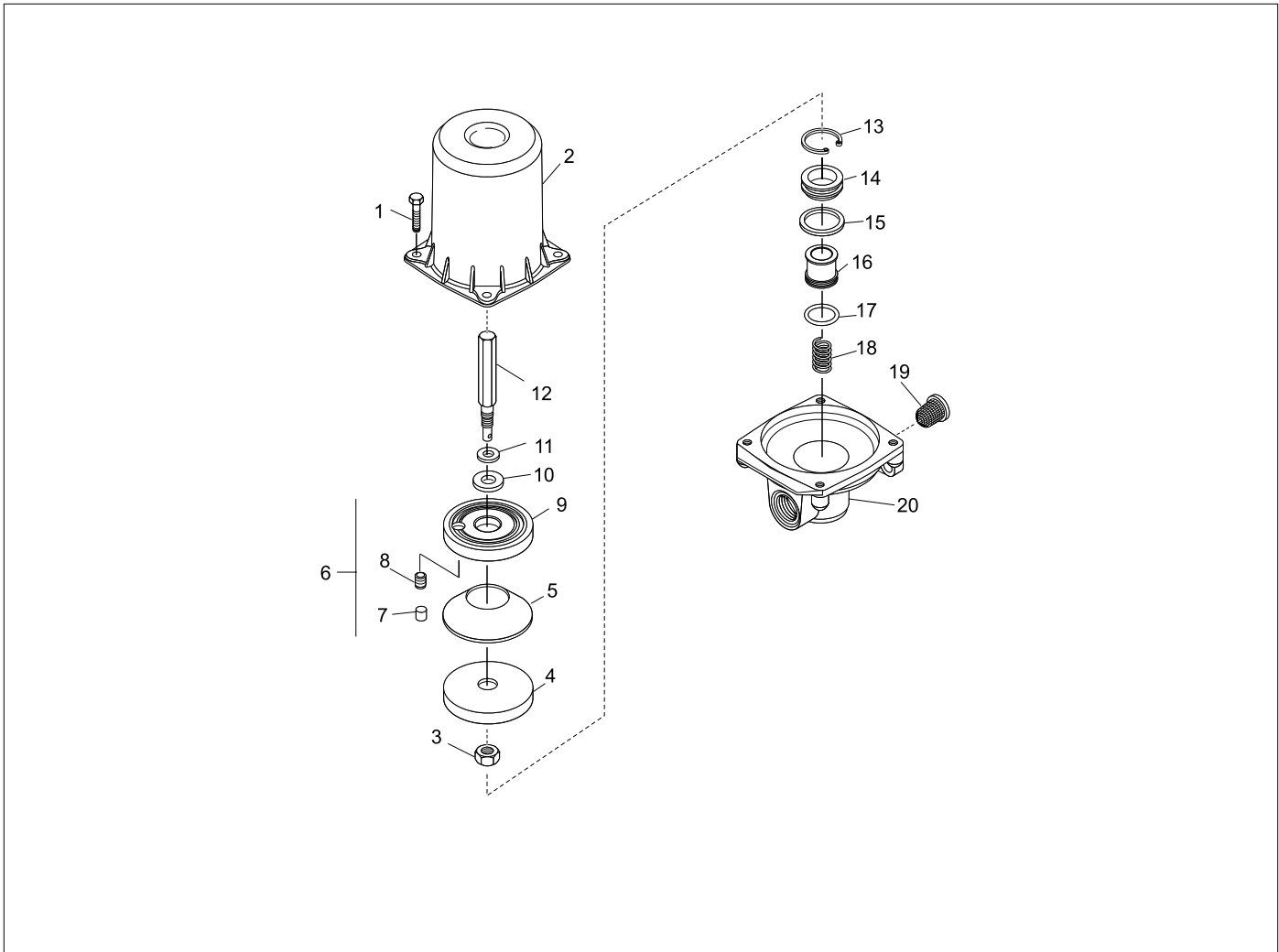


Figure 4 - #8 Vent Valve Portion - Exploded View

protection to keep dirt and/or moisture from entering the Portion.

8.2.12 IMPORTANT: When any Portion or component part of the #8 Vent Valve is removed from an equipment arrangement for any reason, and it is replaced with a NEW or repaired and tested Portion or component part, a stationary vehicle test MUST BE made to be sure that the Portion functions properly in the total brake equipment arrangement.

8.2.13 Open the air line which directs air flow to the #8 Vent Valve. Charge the B.P. Remove ALL WARNING placards and the wheel chocks before attempting to move the vehicle.

9.0 #8 VENT VALVE PORTION - MAINTENANCE PROCEDURES - "IN-SHOP"

IMPORTANT: To obtain satisfactory operation and reli-

ability of this device, only replacement parts supplied by the Wabtec Corporation are to be used in the maintenance of this device.

IMPORTANT: When performing the procedures which follow, DO NOT use sharp or hard metal tools to remove o-rings, gaskets, seals, or the rubber diaphragm. Exercise care so that NO damage is done to metal parts.

⚠ 9.1 DISASSEMBLY (Figure 3)

9.1.1 Cut and remove the steel sealing wire (8) which secures the silencer protector (9) to the silencer (10). Remove the silencer protector (9) from the silencer (10). SCRAP the wire.

9.1.2 Remove the silencer (10) from the elbow (11), the elbow (11) from the pipe nipple (12) and the nipple (12) from the Vent Valve Portion (13). (Figure 4)



operation & maintenance instruction

NOTE: The #8 Vent Valve Portion less silencer and associated detail parts is Part No. 574313.

9.1.3 Visually inspect the mounting flange of the #8 Vent Valve Portion body (20). If the 1" flange fitting gasket is still in its groove, the gasket is to be removed and **SCRAPPED**. This gasket **IS NOT** a part of the #8 Vent Valve Portion, Part No. 574313, **BUT IS** a part of the #8 Vent Valve Portion, Part No. 588246.

9.1.4 Remove the four $\frac{3}{8}$ " x 1" hex head cap screws (1) that secure the diaphragm housing (2) to the body (20).

9.1.5 Remove the diaphragm housing with the diaphragm piston assembly (2 to 12) as a unit from the body (20).

9.1.6 Remove the diaphragm piston assembly (3 to 12) from the diaphragm housing (2).

9.1.7 Disassemble the diaphragm piston assembly as follows:

9.1.7.1 Hold the piston stem (12) with an $\frac{11}{16}$ " open end wrench and remove the $\frac{1}{2}$ " lock nut (3) from the piston stem (20). **SCRAP** the lock nut (20).

9.1.7.2 Remove the diaphragm follower (4), diaphragm (5), piston assembly with seal and felt filter (6 to 9 and 10) and washer (11) from the piston stem (12).

9.1.7.3 Remove the felt filter (7) and rubber seal (10) from the piston assembly (8, 9).

9.1.7.4 **SCRAP** the seal (10), the diaphragm (5) and the felt filter (7).

⚠ WARNING: During the procedure which follows, spring (18) will be placed under compression. Exercise care so that **NO part is inadvertently expelled from the assembly. Inadvertently expelled parts could possibly cause bodily injury and/or damage to equipment.**

9.1.8 **CAREFULLY** depress and hold the exhaust valve seat (14), valve (16), and spring (18) into the body (20), then, using the No. 3 TRUARC Retaining Ring Pliers, remove the retaining ring (13) from the body (20). Slowly release the hold on the exhaust valve seat (14), allowing the spring (18) to expand its full travel.

9.1.9 Remove the exhaust valve seat with o-ring (13, 14), exhaust valve with o-ring (16, 17) and spring (18) from the body (20).

NOTE: If the exhaust valve sticks, use a piece of stiff wire or rod with the end bent and insert it through the drilled hole to hook the valve and pull it out of the body.

9.1.10 Remove and **SCRAP** the $\frac{13}{4}$ " O.D. o-ring (15) from the exhaust valve seat (14).

9.1.11 Remove and **SCRAP** the $\frac{1}{2}$ " O.D. o-ring (17) from the exhaust valve (16).

9.1.12 Remove the strainer (19) from the port in the mounting flange of the body (20).

⚠ 9.2 CLEANING AND INSPECTING

9.2.1 NON-REUSABLE PARTS

9.2.1.1 The felt filter (7) is to be **SCRAPPED** and replaced with a **NEW** Wabtec Corporation part.

9.2.1.2 **ALL** gaskets, o-rings, the diaphragm, lock nut and non-metal seals are to be replaced with **NEW** Wabtec Corporation parts.

IMPORTANT: A Rubber Parts Repair Kit, Part No. 589793, is available for the repair of the #8 Vent Valve Portion. Check the #8 Vent Valve Portion Parts Catalog for items in this kit.

9.2.2 PISTON

9.2.2.1 Visually inspect the piston assembly to be sure it is the current design, Part No. 660353. The current piston design is equipped with $\frac{1}{8}$ " choke plug, Part No. 585361. Previous piston design, Part No. 564807, was not equipped with a choke plug.

If the piston is of older design, not equipped with a choke plug, it is to be **SCRAPPED** and replaced with the **NEW** piston assembly, Part No. 660353, which includes a Piston, Part No. 660355, and a $\frac{1}{8}$ " Choke Plug with 0.0160" Drill, Part No. 585361; or modified following the procedure of Drawing BG-1055-0G, Figure 5.

9.2.2.2 If the piston assembly is of the current design, it **MUST BE** cleaned and inspected as follows:

9.2.2.2.1 Remove the $\frac{1}{8}$ " choke plug (8) from the piston (9) and place it in a bath of the prescribed cleaning solvent, as described in Section 6.1, to soak.

9.2.2.2.2 Clean the piston (9) by washing with the prescribed cleaning solvent, as described in Section 6.1.

9.2.2.2.3 After the piston has been cleaned, it **MUST BE** completely dried. Use a low pressure jet of clean, dry air to blow the piston dry.

9.2.2.2.4 Inspect the piston. Replace the piston if it is damaged in any way, or shows signs of excessive wear.



operation & maintenance instruction

NOTE: If the piston is damaged, it is recommended that a **NEW** Piston Assembly, Part No. 660353, be used. This assembly includes the piston, felt filter, and choke plug.

9.2.2.2.5 If the piston passes the inspection procedure, it may be reused.

9.2.2.2.6 Remove the choke plug (8) from the solvent bath and blow it completely dry using a low pressure jet of clean, dry air.

9.2.2.2.7 Inspect the choke plug for damage. Check to be sure that the size of the orifice, which **MUST BE** 0.0160" Drill, has not changed. **SCRAP** and replace the choke plug if it is damaged in any way, or if the size of the orifice has changed. **DO NOT USE HARD METAL TOOLS TO CLEAN THE CHOKE.**

9.2.2.2.8 Apply a light coating of the oil and graphite compound, as described in Section 6.2.3, to the threads of the choke plug. Install the lubricated choke plug in place in the piston. The choke plug **MUST BE** installed in the piston its full travel to permit for the installation of the felt filter. When properly installed, the lead end of the choke plug will be exposed on the flat side of the piston.

9.2.3 REMAINING PARTS

9.2.3.1 Wash ALL of the remaining parts in a bath of cleaning solvent as described in Section 6.1.

9.2.3.2 The spring may be wire brushed to assist in the removal of any dirt, rust or scale.

9.2.3.3 After the parts have been cleaned, they **MUST BE** completely dried. Use a low pressure jet of clean, dry air to blow the parts dry.

9.2.3.4 The choke in the piston and piston stem **MUST BE** checked for cleanliness and blown out with a low pressure jet of clean, dry air.

IMPORTANT: Metal tools MUST NOT BE used to clean the chokes.

9.2.3.5 Inspect the spring. Replace it if it is rusted, pitted, distorted or if it has taken a permanent set. Refer to Parts Catalog listed in Section 4.0 for spring identification and information.

9.2.3.6 Inspect the retaining ring (13). It **MUST** "snap" into its groove during assembly. Replace it if it is not elastic enough to hold securely.

9.2.3.7 Inspect the exhaust valve seat (14) to be sure that it is not scratched, scored or otherwise damaged. If the valve seat requires reconditioning, the following recommended procedure may be utilized:

9.2.3.7.1 Use a perfectly flat cast iron lapping plate. Apply float emery to the entire surface of the plate. Condition the

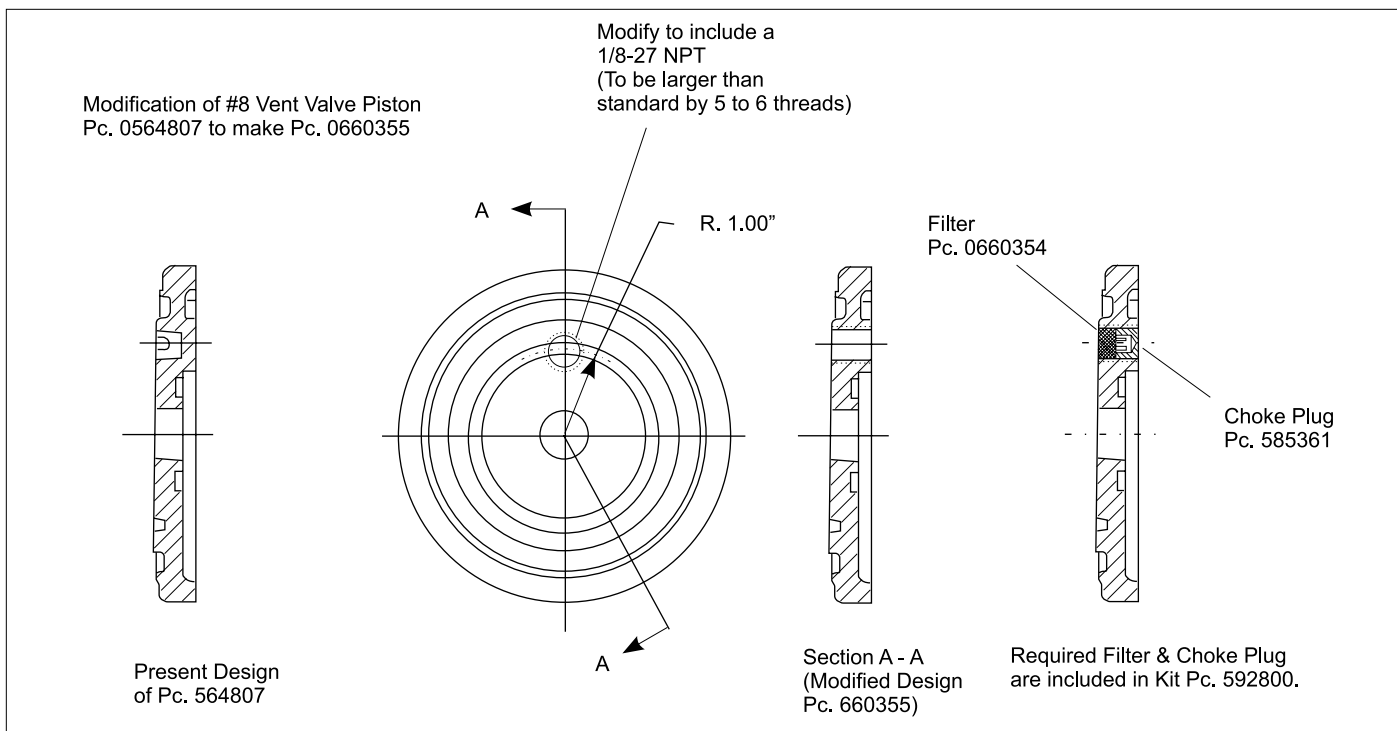


Figure 5 - Piston Modification (Drawing BG-1005-OG)

operation & maintenance instruction

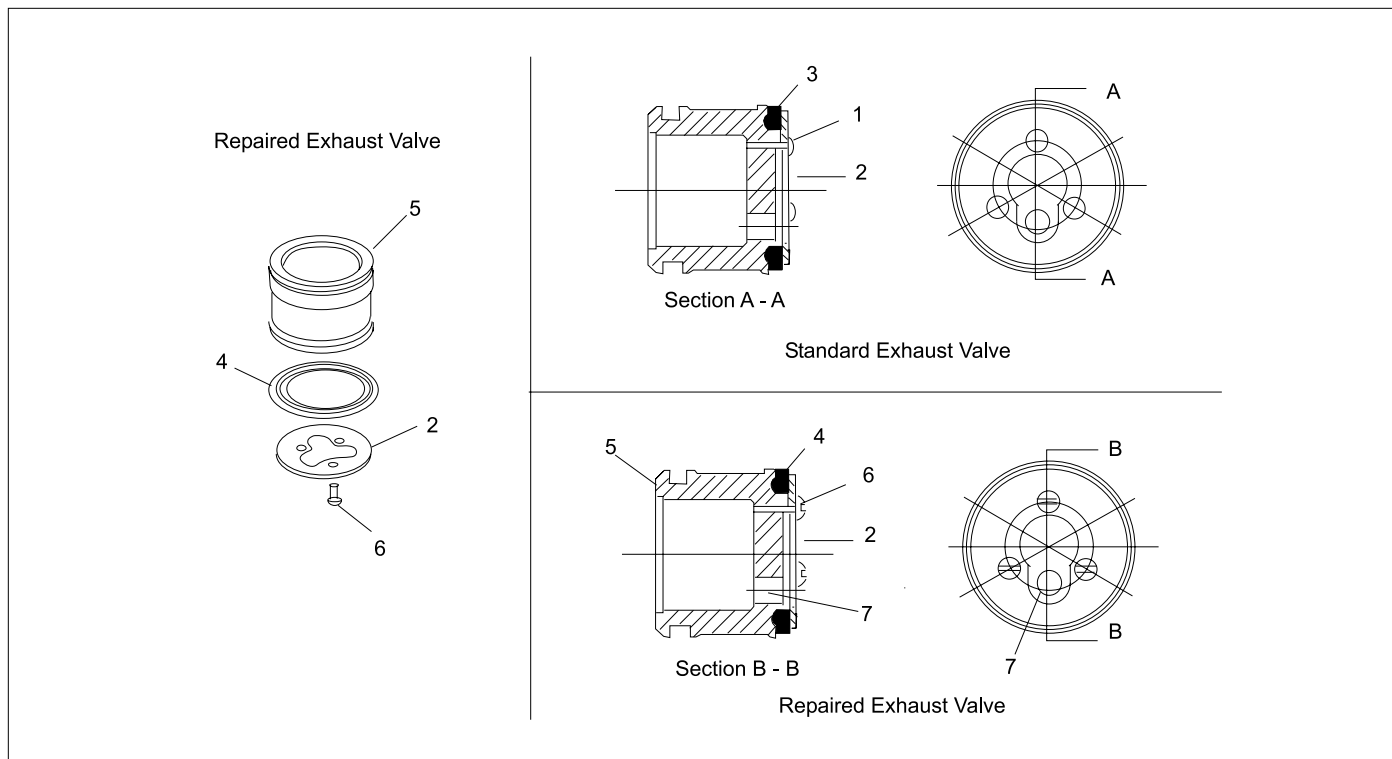


Figure 6 - Exhaust Valve Seal Replacement (Drawing G-100)

plate by rubbing in with a piece of flat brass such as a brass rotary valve which has a ground finished surface.

9.2.3.7.2 Lap the valve seat on the lapping plate by holding the valve flat and using a rotary motion.

IMPORTANT: No more than 0.010" may be removed from the original thickness. Original thickness is 0.469".

9.2.3.7.3 Wipe the valve seat clean with a clean, soft, lint-free cloth that has been saturated with the cleaning solvent described in Section 6.1.

9.2.3.7.4 Blow the valve seat dry and clean of all foreign matter with a low pressure jet of clean, dry air.

9.2.3.8 Inspect the seal on the exhaust valve (16). If it is cracked, cut, or worn excessively, it **MUST BE** replaced according to the following procedure:

(Figure 6)

9.2.3.8.1 If driven fasteners are installed, use a piece of $\frac{1}{16}$ " diameter rod to drive out the three fasteners (1). SCRAP the fasteners. If screws are installed, remove the three screws (6).

Remove the seal retainer (2) and seal (4). SCRAP the seal.

9.2.3.8.2 Place a NEW seal (4) Part No. 568992 on the exhaust valve (5) with the bead of the seal in the groove of the exhaust valve.

9.2.3.8.3 Position the retainer (2) Part No. 568995 in place on the seal (4).

⚠ WARNING: Make certain that the retainer does not cover the exhaust valve hole (7) in any way. If the hole is covered, improper valve operation could result, leading to possible injury to personnel and/or equipment.

9.2.3.8.4 Using three NEW #3 self tapping screws (6) Part No. 584117, secure the seal retainer (2) in place. Torque the screws to a maximum of 9.0 inch pounds.

9.2.3.9 Reject and replace any part that is cracked, cut, broken worn excessively, damaged in any way, or that is in such a condition that may result in unsatisfactory operation of the #8 Vent Valve Portion.

⚠ 9.3 ASSEMBLY (Refer to Figure 4)

9.3.1 Using Number 2 Silicone Grease, Wabtec Corpora-



operation & maintenance instruction

tion Specification M-7680-2, coat the surfaces of a NEW 1-1/2" O.D. o-ring (17) and a NEW 1-3/4" O.D. o-ring (15). Fill the o-ring grooves on the exhaust valve (16) and the exhaust valve seat (14) and lightly coat the bearing surfaces of the bushing in the body (20) with the lubricant.

9.3.2 Install the NEW lubricated 1 1/2" O.D. o-ring (17) into its groove on the exhaust valve (16). Install the lubricated 1-3/4" O.D. o-ring (15) into its groove on the exhaust valve seat (14). Remove any excess lubricant by wiping with a clean, dry, lint-free cloth.

9.3.3 Insert the exhaust valve spring (18), the exhaust valve (16) with o-ring (17) and the exhaust valve seat (14) with o-ring (15) into the body (20).

9.3.4 Exercising care so that no parts fly out and cause an injury, CAREFULLY secure the parts in place with the retaining ring (13).

NOTE: The retaining ring **MUST** "snap" tightly in its groove.

9.3.5 Assemble the diaphragm piston and stem assembly (3 to 12) as follows:

9.3.5.1 Install a NEW rubber seal (10) in the piston (9), then install a NEW felt filter (7) into the piston (9) over the choke plug (8).

9.3.5.2 Place the washer (11) and piston assembly (7 to 9) with seal (10) as a unit on the piston stem (12) with the felt filter (7) of the piston assembly toward the threaded end of the piston stem.

9.3.5.3 Place a NEW diaphragm (5) on the piston (9) with the bead of the diaphragm (5) in the groove of the piston (9).

9.3.5.4 Place the diaphragm follower (4) on the diaphragm (5) with the ribbed side of the follower toward the threaded end of the piston stem (12).

9.3.5.5 Secure the parts in place with a **NEW** 1/2" lock nut (3). Torque the lock nut to 30-35 foot pounds.

9.3.5.6 Lightly lubricate the guides of the piston stem (12) with Triple Valve Oil, Wabtec Corporation Specification M-7611-20. Install the diaphragm piston and stem assembly (3 to 12) into the diaphragm housing (2) positioning the bead of the diaphragm (5) in the groove in the diaphragm housing (2).

9.3.5.7 Place the body (20) in position on the diaphragm housing (2) and secure it in place by installing four 3/8" x 1" hex. head cap screws (1). Equally tighten the screws (1).

9.3.5.8 Install the strainer (19) into the port on the mounting face of the body (20), then install a NEW 1" flange fitting gasket (21) in its groove on the mounting face of the body (20). (Figure 3)

9.3.5.9 Apply a light coating of Pipe Sealant with Teflon, Wabtec Corporation Specification M-7499-15, to the threads of the 3" x 1" NPT pipe nipple (12), the threads of the 90° x 1" NPT elbow (11), and the threads of the silencer (10).

9.3.5.10 Install the pipe nipple (12) into the exhaust port of the body of the #8 Vent Valve Portion (13).

9.3.5.11 Install the 90° elbow (11) on the pipe nipple (12) and tighten. The elbow is to be installed so that when it is tightened the open end (tapped end) faces toward the diaphragm housing of the #8 Vent Valve Portion (13).

9.3.5.12 Install the silencer (10) into the elbow (11).

9.3.5.13 Install a NEW silencer protector (9) on the silencer and secure it in place by installing a NEW .041" diameter x 12" long steel wire (8). Use the SNAP-ON TOOL, Part-GA-311A to twist the wire to secure the assembly in place.

NOTE: After twisting the wire, cut off any excess and bend the "pigtail" back to prevent it from becoming a snag.

10.0 TESTING & ADDITIONAL INFORMATION

10.1 **IMPORTANT:** After the #8 Vent Valve Portion, Part No. 588246, is assembled, **BUT BEFORE** it is returned to service it **MUST PASS** a series of tests following the procedures of the current issue of the Wabtec Corporation Test Specification T-3597-O.

IMPORTANT: #8 Vent Valve Portion, Part No. 588246, is to be tested with the silencer and silencer protector assembled in place.

10.2 See Section 8.0 for installation of #8 Vent Valve Portion on vehicle.

10.3 Consult your Wabtec Corporation Representative if additional information is required.

WABCO Locomotive Products

1001 Air Brake Avenue • Wilmerding, PA 15148

(412) 825-1000 • Fax (412) 825-1019

www.wabtec.com