



Installation Instructions

KIT
PC. Nos. 106002
& 106004

NABCO E-6 HP-1 BASIC DUAL CIRCUIT BRAKE VALVE

MINOR KIT #106002			MAJOR KIT #106004		
QUANTITY	DESCRIPTION	KEY	QUANTITY	DESCRIPTION	KEY
1	Boot	1*	1	Minor Repair Kit	
1	O-Ring (2.359" O.D.)	2	1	Lock Nut	8
1	Relay Piston Spring	3	1	Sleeve	17
1	O-Ring (.386" O.D.)	4	1	Retaining Ring	18
2	Piston Return Spring	5	1	Special Washer	19
1	E-Ring Retainer	6	1	Spring Seat	20
1	Stem Spring	7	1	Spring Guide	21
1	O-Ring (2.109" O.D.)	9	1	Spring Washer	22
1	Rubber Spring	10	1	Primary Piston	23
1	Inlet / Exhaust Valve Assy.	11	1	Stem	24
1	Exhaust Diaphragm	12	1	Relay Piston	25
1	Diaphragm Washer	13	1	Exhaust Cover	26
1	Diaphragm Screw	14			
1	Inlet / Exhaust Valve Assy.	15			
1	O-Ring (2.614" O.D.)	16			
1	Lubricant				

*Not Illustrated

IMPORTANT!

These kits are designed for use in E-6 Brake Valves manufactured by NABCO (Nippon Air Brake Company Ltd.) under license from Bendix. They cannot be installed in other E-6 valves. NABCO manufactured E-6 Brake Valves can be identified by the letters "NABCO" cast into the valve body.

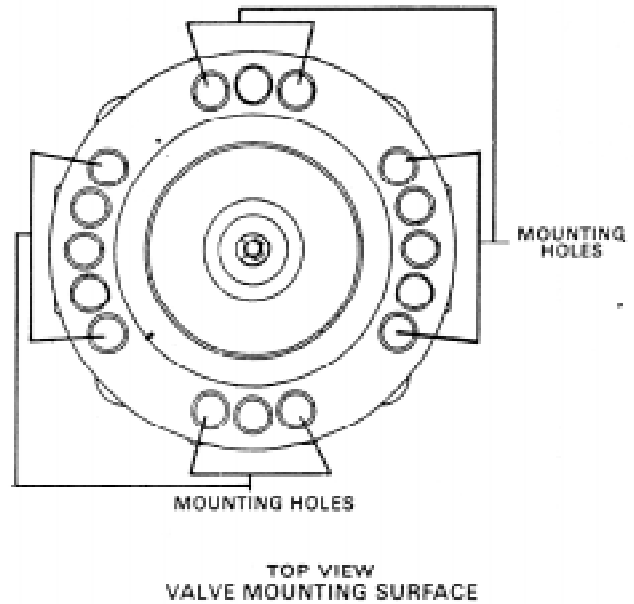
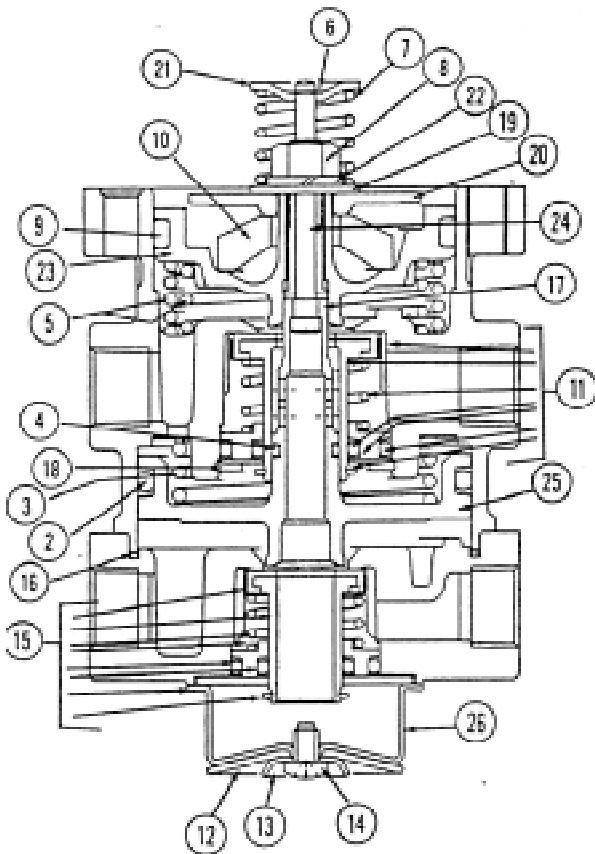
Figure 1 This kit consists of the parts listed above.

IMPORTANT! PLEASE READ AND FOLLOW THESE INSTRUCTIONS TO AVOID PERSONAL INJURY OR DEATH:

When working on or around a vehicle, the following general precautions should be observed at all times.

1. Park the vehicle on a level surface, apply the parking brakes, and always block the wheels.
2. Stop the engine when working around the vehicle.
3. If the vehicle is equipped with air brakes, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle.
4. Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in manner that removes all electrical power from the vehicle.
5. When working in the engine compartment the engine should be shut off. Where circumstances require that the engine be in operation, EXTREME CAUTION should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated, or electrically charged components.

6. Never connect or disconnect a hose or line containing pressure; it may whip. Never remove a component or plug unless you are certain all system pressure has been depleted.
7. Never exceed recommended pressures and always wear safety glasses.
8. Do not attempt to install, remove, disassemble or assemble a component until you have read and thoroughly understand the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.
9. Use only genuine Bendix replacement parts, components, and kits. Replacement hardware, tubing, hose, fittings, etc. should be of equivalent size, type, and strength as original equipment and be designed specifically for such applications and systems.
10. Components with stripped threads or damaged parts should be replaced rather than repaired. Repairs requiring machining or welding should not be attempted unless specifically approved and stated by the vehicle or component manufacturer.
11. Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.



REMOVAL

Block wheels or hold vehicle by means other than air brakes and exhaust air from reservoirs supplying the E-6 valve.

1. Identify the supply and delivery lines to their respective ports and disconnect from valve.
2. Remove the mounting screws which secure the treadle plate to the floor board and remove the complete treadle and valve assembly.
3. Remove the treadle from the treadle plate and then the three cap screws securing the treadle plate to the valve body. Remove the treadle plate.
4. Remove the Phillips head screw (item 14) securing the exhaust diaphragm (item 12) and washer (item 13) to the exhaust cover.
5. Remove the four screws that secure the exhaust cover to the lower body.
6. Remove the No. 2 inlet and exhaust valve assembly from the lower body (item 15).
7. Remove the four hex head cap screws securing the lower body to the upper body and separate the body halves.
8. Remove the rubber seal ring (item 16) from the lower body.
9. Place a Phillips screwdriver in a vise and place the upper body so that the tip of the screwdriver touches the head of the stem in the exhaust passage. Hold down the spring guide and remove the E-ring (item 6). CAUTION: When removing the E-ring, care must be taken since it is spring loaded. It is recommended that

the piston be manually or mechanically contained while the E-ring and stem are being removed.

10. Remove the relay piston (item 25), relay piston spring (item 3), No. 1 piston (item 23), No. 1 piston return springs (item 5).
11. Disassemble the No. 1 piston by removing the nut (item 8). Separate the nut, spring seat (item 20), rubber spring (item 10), spring washer (item 22), special washer (item 19), sleeve (item 17), and remove the piston O-ring (item 9).
12. Remove the large (item 2) and small (item 4) O-rings from the relay piston.
13. Remove the retaining ring (item 18) securing the No. 1 inlet and exhaust valve assembly in the upper body and remove the valve assembly (item 11).

ASSEMBLY

Note: Before assembly, lubricate all O-ring bores and mating surfaces with silicone grease. NO LUBRICANT on rubber spring.

Assembly procedure is the same for minor repair kit 106002 or major kit 106004; however, items 8 and 17 thru 26 are not included in the minor kit and will have to be reused.

1. Install the No. 1 inlet and exhaust assembly (item 11) in the upper body and replace the retaining ring (item 18) to secure it. Be sure the retaining ring is seated completely in its groove.
2. Install the large (item 2) and small (item 4) O-rings on the relay piston (item 25).
3. Replace the No. 1 piston O-ring (item 9) in the piston O-ring groove.
4. Install the rubber spring (item 10) concave side down in the No. 1 piston and place the spring seat (item 20) flat side up, special washer (item 19), and spring washer (item 22).
5. Insert the sleeve into the No. 1 piston, place the nut (item 8) and torque to 60-80 kg.cm (52-69 in.lbs).

6. Place the relay piston return spring (item 3) in the upper body and place the relay piston (item 25) over the spring, so that the concave side of the piston is against the spring.
7. Insert the stem (item 24) into the relay piston. Place the upper body so that the tip of the screwdriver touches the head of the stem in the exhaust passage.
8. Insert the No. 1 piston return springs (item 5), No. 1 piston, stem spring (item 7), spring guide (item 21), and E-ring (item 6) into the upper body. SEE THE CAUTIONARY NOTE UNDER STEP NUMBER 9 IN THE DISASSEMBLY SECTION OF THIS MANUAL.
9. Install the No. 2 inlet and exhaust valve assembly (item 15) in the lower body.
10. Place the exhaust cover (item 26) on the lower body and install the four machine screws with lock washers, to secure it to the body.
11. Install the exhaust diaphragm (item 12) and diaphragm washer (item 13) to the exhaust cover (item 26) using the Phillips head screw and lock washer.
12. Install the seal ring (item 16) in the lower body and secure the lower body to the upper body using the for hex head cap screws and lock washers. Torque to 35-60 inch pounds (40-70 kg.cm).
13. Install the treadle assembly to the basic brake valve using the three cap screws and lock washers and torque to 80-120 inch pounds (90-140 kg.cm).

OPERATING CHECK

Check the delivery pressure of both No. 1 and No. 2 circuits using test gauges known to be accurate. Depress the treadle to several positions between the fully released and fully applied positions, and check the delivered pressure on the test gauges to see that it varies equally and proportionately with the movement of the brake pedal. After a full application is released, the reading on the test gauges should fall off to zero promptly. It should be noted that the No. 1 circuit delivery pressure will be slightly greater than the No. 2 circuit delivery pressure with both supply reservoirs at the same pressure. This is normal for this valve

LEAKAGE CHECK

Make and hold a high pressure application. Coat the exhaust port and body of the brake valve with a soap solution. Slight leakage is permitted at the exhaust port. No leakage between the body halves or the valve body and mounting plate is permitted. If unacceptable leakage is noted, the entire valve assembly should be replaced.

