

# 466 Series - Single POWER BRAKE VALVE

## Service Instructions

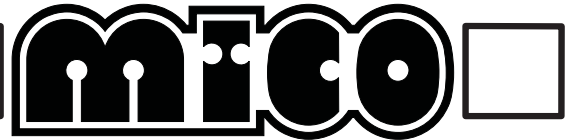


TABLE 1 (Specifications)

Model Number	Repair Kit	Brake Pressure Setting		Model Number	Repair Kit	Brake Pressure Setting	
		bar	(psi)			bar	(psi)
03-466-102	06-400-148	103 ± 3.5	(1500 ± 50)	06-466-138	06-400-154	84 ± 1.7	(1225 ± 25)
03-466-104	06-400-148	81 ± 1.7	(1175 ± 25)	06-466-140	06-400-148	55 ± 3.5	(800 ± 50)
03-466-106	06-400-148	121 ± 3.5	(1750 ± 50)	06-466-142	06-400-148	28 ± 1.7	(400 ± 25)
06-466-100	06-400-148	83 ± 3.5	(1200 ± 50)	06-466-144	06-400-148	76 ± 3.5	(1100 ± 50)
06-466-102	06-400-148	62 ± 3.5	(900 ± 50)	06-466-146	06-400-148	62 ± 3.5	(900 ± 50)
06-466-106	06-400-148	103 ± 3.5	(1500 ± 50)	06-466-148	06-400-148	29 ± 1.7	(425 ± 25)
06-466-108	06-400-148	138 ± 3.5	(2000 ± 50)	06-466-150	06-400-148	34 ± 1.7	(490 ± 25)
06-466-110	06-400-148	38 ± 3.5	(550 ± 50)	06-466-152	06-400-154	42 ± 1.7	(605 ± 25)
06-466-112	06-400-148	66 ± 1.7	(950 ± 25)	06-466-154	06-400-148	121 ± 3.5	(1750 ± 50)
06-466-114	06-400-148	55 ± 3.5	(800 ± 50)	06-466-158	06-400-148	45 ± 3.5	(650 ± 50)
06-466-116	06-400-148	159 ± 5.2	(2300 ± 75)	06-466-160	06-400-148	28 ± 1.7	(400 ± 25)
06-466-118	06-400-148	55 ± 3.5	(800 ± 50)	06-466-164	06-400-148	207 ± 3.5	(3000 ± 50)
06-466-120	06-400-148	69 ± 3.5	(1000 ± 50)	06-466-166	06-400-154	60 ± 3.5	(870 ± 50)
06-466-122	06-400-148	103 ± 3.5	(1500 ± 50)	06-466-170	06-400-148	55 ± 3.5	(800 ± 50)
06-466-124	06-400-148	28 ± 1.7	(400 ± 25)	06-466-180	06-400-148	79 ± 3.5	(1150 ± 50)
06-466-126	06-400-148	76 ± 3.5	(1100 ± 50)	06-466-182	06-400-154	84 ± 1.7	(1225 ± 25)
06-466-128	06-400-148	52 ± 3.5	(750 ± 50)	06-466-186	06-400-148	69 ± 3.5	(1000 ± 50)
06-466-130	06-400-148	103 ± 3.5	(1500 ± 50)	06-466-902	06-400-148	100 ± 3.5	(1450 ± 50)
06-466-132	06-400-148	93 ± 3.5	(1350 ± 50)	06-466-904	06-400-154	76 ± 3.5	(1100 ± 50)
06-466-134	06-400-148	25 ± 2.4	(365 ± 35)	06-466-910	06-400-148	112 ± 6.9	(1625 ± 100)
06-466-136	06-400-148	103 ± 3.5	(1500 ± 50)	06-466-912	06-400-148	28 ± 1.7	(400 ± 25)

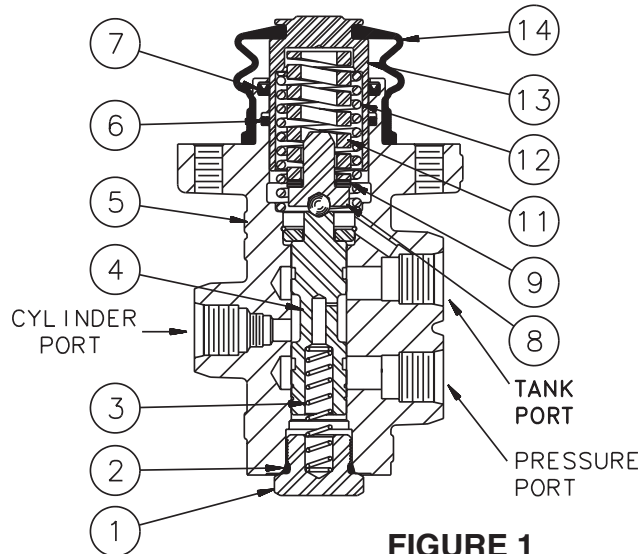


FIGURE 1

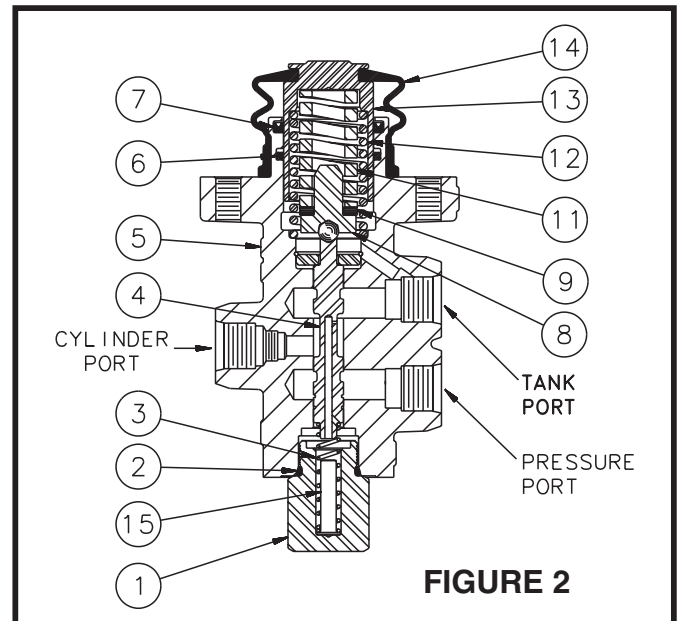


FIGURE 2

### ⚠ WARNING

Installation and test note: Piston (13) must be retained mechanically. This will prevent it from blowing out at high velocity if an incorrect connection occurs from power source to tank ports. **Be sure the tank ports are connected directly to tank.** Failure to do this could result in serious injury or death.

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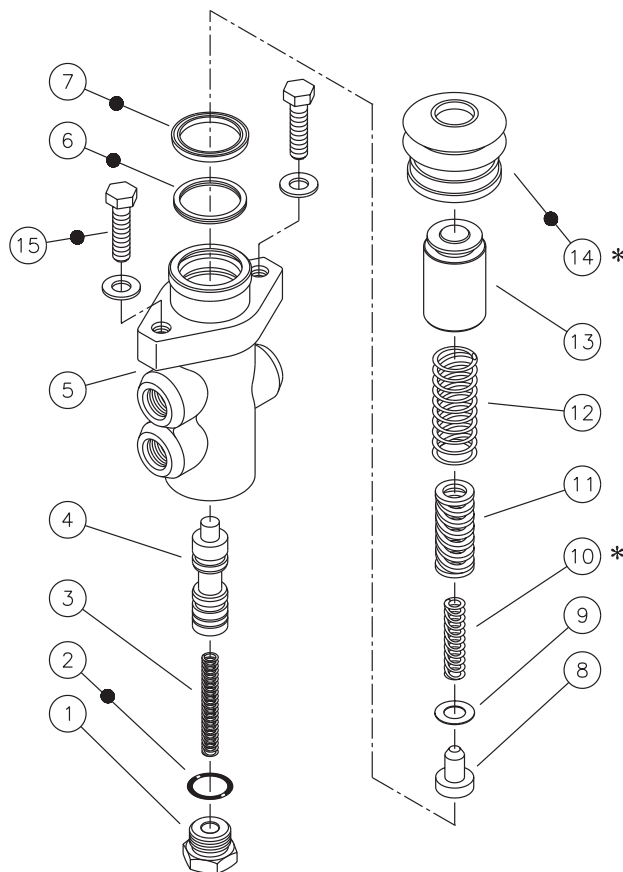


## Models:

03-466-102	06-466-136
06-466-100	06-466-138
06-466-102	06-466-140
06-466-106	06-466-142
06-466-110	06-466-144
06-466-112	06-466-146
06-466-114	06-466-148
06-466-118	06-466-150
06-466-120	06-466-160
06-466-124	06-466-166
06-466-126	06-466-170
06-466-128	06-466-180
06-466-130	06-466-182
06-466-132	06-466-186
06-466-134	06-466-912

## ● Items included in Repair Kit

## \* Not all models use these parts



**FIGURE 3**

## DISASSEMBLY

(Refer to Figures 1 & 3)

### NOTE

Housing (5) and the spool (4) are manufactured as a matched set. This set (Housing & Spool) should not be intermixed with other parts.

1. Remove boot (14) from piston (13) and housing (5). Not all models use boot (14).
2. Remove piston (13), springs (12, 11 & 10), shim(s) (9) and retainer assembly (8) from housing (5). Not all models use spring (10). **NOTE: Be aware of the number of shim(s) being removed from housing.**
3. Carefully remove cup (7) and seal (6) from housing (5) bore. **NOTE: Care must be taken so as not to scratch or mar housing bore.**
4. Remove end plug (1) and spring (3) from housing (5). Remove o-ring (2) from end plug (1).
5. Carefully remove spool (4) from end plug (1) end of housing (5). **NOTE: Care must be taken so as not to damage spool or housing bore.**

## ASSEMBLY

(Refer to Figures 1 & 3)

LUBRICATE ALL RUBBER COMPONENTS FROM REPAIR KIT WITH CLEAN TYPE FLUID USED IN THE SYSTEM.

1. Clean all parts thoroughly before assembling.
2. Lubricate spool (4) with clean system fluid and carefully slide into plug (1) end of housing (5) bore. Note direction of spool (4). **NOTE: Spool must slide freely into bore. If either part is damaged, a new spool/housing assembly may be required.**
3. Install new o-ring (2) on end plug (1).

### NOTE

Only model 06-466-124 uses the larger of the two o-rings in Repair Kit to replace item (2).

4. Install spring (3) and end plug (1) into housing (5). Torque 47.5-54.2 N-m (35-40 lb-ft).
5. Carefully install new cup (7) and new seal (6) into housing (5) bore. Note direction and order of cup and

seal. **NOTE: Care must be taken so as not to scratch or mar housing bore.**

6. Assemble springs (10, 11 & 12), shim(s) (9) and retainer assembly (8) in piston (13). Not all models use spring (10).
7. Carefully install piston (13) assembly into housing (5) bore.
8. Install new boot (14) on housing (5) and piston (13).
9. When reinstalling pedal actuated valve use new hex cap screws (15), 5/16-18 grade 8. Torque cap screws 24.4-29.8 N-m (18-22 lb-ft).

### NOTE

After service, the valve must develop the pressure indicated in the specifications, TABLE 1. Shim(s) (9) may be added or removed to obtain the correct pressure setting.

03-466-104	06-466-154
03-166-106	06-466-158
06-466-108	06-466-164
06-466-116	06-466-902
06-466-122	06-466-904
06-466-152	06-466-910

This exploded view diagram illustrates the assembly of a hydraulic valve. The components are numbered as follows:

- 1:** Valve body (main casting)
- 2:** O-ring
- 3:** Spring
- 4:** Piston rod
- 5:** Piston
- 6:** O-ring
- 7:** O-ring
- 8:** Piston rod
- 9:** Spring
- 10:** Spring
- 11:** Spring
- 12:** Spring
- 13:** Piston
- 14:** O-ring
- 15:** Piston rod
- 16:** Piston rod

The diagram shows the assembly of the valve body (1) with the piston (5) and piston rod (4). The piston rod (4) is inserted into the piston (5) and secured with a nut (16). The piston rod (4) is then inserted into the valve body (1) and secured with a nut (16). The piston rod (4) is then inserted into the valve body (1) and secured with a nut (16). The piston rod (4) is then inserted into the valve body (1) and secured with a nut (16).

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## BLEEDING

Brakelines should be bled very carefully as soon as the valve is installed in the machine. Air in the system will not allow the brakes to release properly and may severely damage them.

1. Start engine and allow accumulator to reach full charge. Shut down engine, then slowly apply and release brakes, waiting one minute between applications until brakes will not apply. Repeat this step three times.
2. Operate engine to maintain accumulator pressure within working limits throughout the bleeding procedure.
3. Open bleeder screw at wheel closest to brake valve and apply brakes cautiously until all air is bled out of line. Then close bleeder screw. Repeat this step at each wheel, moving to the next farthest wheel from the brake valve each time, as follows:
  - a. Left front
  - b. Right front
  - c. Right rear
  - d. Left rear

4. Release brake pressure for at least one (1) minute.
5. Apply brakes, holding pedal down 10 seconds; then release pressure for one (1) minute. Repeat this step two more times.
6. Repeat step 3.
7. Check for system leaks and be sure of proper brake operation.

## SERVICE CHECKS FOR 466 SERIES SINGLE PEDAL VALVES

### BRAKES SLOW TO APPLY

1. No or improper gas charge in accumulator
  1. **Check gas charge**
2. Brakes not properly adjusted
  2. **Adjust brakes**
3. Inoperative brakes
  3. **Check brakes**
4. Hydraulic lines or fittings leaking
  4. **Check for leaks and repair**
5. Inoperative automatic adjuster (Goodrich Hi-torque Brakes only)
  5. **Check adjuster operation**
6. Damaged hydraulic brake lines
  6. **Check lines for dents that restrict flow of oil**

4. Brake line damaged
  4. **Check lines and replace**
5. Inoperative automatic adjusters
  5. **Check operation of adjusters**
6. No or improper gas charge in accumulator
  6. **Check gas charge**
7. Inoperative brakes
  7. **Check brakes**
8. Brake valve inoperative
  8. **Replace valve**

### EXCESSIVE BRAKING

1. Inoperative brakes
  1. **Check brakes**
2. Inoperative brake valve
  2. **Replace brake valve**

### BRAKES WILL NOT RELEASE COMPLETELY

1. Brakes not properly adjusted
  1. **Adjust brakes**
2. Inoperative brakes
  2. **Check brakes**
3. Pedal angle out of adjustment
  3. **Adjust pedal angle**
4. Inoperative wheel cylinders
  4. **Replace wheel cylinders**
5. Inoperative automatic adjuster
  5. **Check operation of adjusters**
6. Air in brakes (when automatic adjusters used Goodrich Hi-torque Brakes only)
  6. **Bleed brakes**

7. Inoperative brake valve
  7. **Replace brake valve**
8. Back pressure on return line too high
  8. **Remove restriction**

### NO BRAKES

1. No oil in hydraulic system
  1. **Check oil level in tank**
2. Broken or damaged brake line
  2. **Check lines for breaks or damaged condition**
3. Brakes not properly adjusted
  3. **Adjust brakes**
4. Inoperative system relief valve
  4. **Check pressure in pressure line to valve**
5. Worn pump
  5. **Check pressure in pressure line to valve**
6. Inoperative automatic adjuster
  6. **Check brake line pressure**
7. Inoperative or worn brakes
  7. **Check brakes**
8. Inoperative brake valve
  8. **Replace brake valve**

### PEDAL KICKBACK WHEN BRAKES ARE APPLIED

1. Air in brakes
  1. **Bleed brakes**

### BRAKES WILL NOT RELEASE

1. Pedal angle out of adjustment
  1. **Check for proper pedal angle**
2. Inoperative brakes
  2. **Check brakes**
3. Inoperative automatic adjusters
  3. **Check operation of adjusters**
4. Inoperative brake valve
  4. **Replace brake valve**

### INSUFFICIENT BRAKES

1. No oil or low oil level in tank
  1. **Check oil level in tank**
2. Brakes not properly adjusted
  2. **Check brake adjustment**
3. Oil or grease on brake lining
  3. **Clean or install new linings**

## SERVICE DIAGNOSIS

All item numbers discussed here refer to Figures 1 thru 4.

### BRAKES WILL NOT RELEASE COMPLETELY

1. Piston (13) binding
2. Pedal angle out of adjustment
3. Spring (3) broken

### BRAKES WILL NOT RELEASE

1. Binding spool (4)
2. Piston (13) binding

### NO BRAKES

1. Piston (13) binding
2. Broken spring (11)

### EXCESSIVE BRAKING

1. Too many shims (9) installed in valve

### EXCESSIVE ACCUMULATOR LEAKAGE WHEN BRAKES ARE APPLIED

1. Damaged spool (4)

### EXCESSIVE ACCUMULATOR LEAKAGE WHEN BRAKES ARE NOT BEING USED

1. Damaged spool (4)
2. Spring (bottom) (3) broken

### INSUFFICIENT BRAKES

1. Broken pressure regulating spring (11)
2. Pedal travel is inhibited

MICO could not possibly know of and give advice with respect to all conceivable applications in which this product may be used and the possible hazards and/or results of each application. MICO has not undertaken any such wide evaluation. Therefore, anyone who uses an application which is not recommended by the manufacturer, first must completely satisfy himself that a danger will not be created by the application selected, or by the particular model of our product that is selected for the application.

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