# OPERATING MANUAL

# FOR

# BELL MIGHTY AIR TRAP

# MODEL:AE8

MIYAWAKI INC.

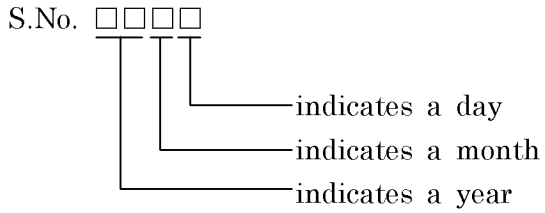
# SAFETY INSTRUCTION

Prior to using AE8 series, read this manual thoroughly to understand the correct handling and operating procedure.

Observe the WARNING and CAUTIONS given by this manual, without failure, for safe operation of the AE8 series.

S No. on the name plate of our product indicates a manufacturing date.

Indicating method of S No.




Example of indicating a year

05 → 2005　　15 → 2015

Method of indicating a month

| Mark | Month | Mark | Month | Mark | Month | Mark | Month |
|---|---|---|---|---|---|---|---|
| 1 | January | 4 | April | 7 | July | X | October |
| 2 | February | 5 | May | 8 | August | Y | November |
| 3 | March | 6 | June | 9 | September | Z | December |

Method of indicating a day

| Mark | Day | Mark | Day | Mark | Day | Mark | Day |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 9 | 9 | H | 17 | Q | 25 |
| 2 | 2 | A | 10 | J | 18 | R | 26 |
| 3 | 3 | B | 11 | K | 19 | S | 27 |
| 4 | 4 | C | 12 | L | 20 | T | 28 |
| 5 | 5 | D | 13 | M | 21 | U | 29 |
| 6 | 6 | E | 14 | N | 22 | V | 30 |
| 7 | 7 | F | 15 | O | 23 | W | 31 |
| 8 | 8 | G | 16 | P | 24 | | |

(Example)

In case that S.No. is 0516, the manufacturing date is January 6, 2005

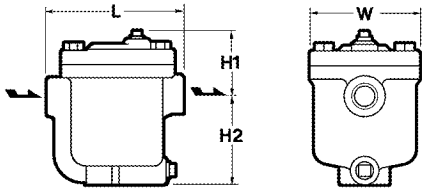
In case that S.No. is 15XM, the manufacturing date is October 21, 2015

CONTENTS

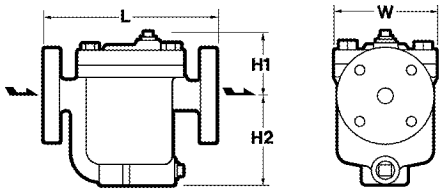
1. Introduction

"Bell Mighty" Air Trap Model AE8 Series are mechanical type air traps using the "MIYAWAKI"SCCV(Self Closing and Centering Valve)none wear valve making the durability very large. We are sure that the trap will better the utilization of your air using machineries.

2. Dimensions and Specifications




Model AE8 (Screwed)




Model AE8F (Flanged)

| Model No. | Connections | Size mm (inch) | Operating Pressure (MPa) | Maximum Temperature ℃( °F) | Material of Body | Dimensions (mm) | | | | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | L | H1 | H2 | W | |
| AE8-2 | Screwed | 15(1/2) | 0.01 to 0.2 | 350 (662) | Ductile Cast Iron (FCD450) | 130 | 73 | 90 | 100 | 3.7 |
| | | 20(3/4) | | | | | | | | |
| | | 25(1) | | | | 135 | | | | 3.9 |
| AE8-9 | | 15(1/2) | 0.1 to 0.97 | | | 130 | 73 | 90 | 100 | 3.7 |
| | | 20(3/4) | | | | | | | | |
| | | 25(1) | | | | 135 | | | | 3.9 |
| AE8F-2 | Flanged | 15(1/2) | 0.01 to 0.2 | 350 (662) | Ductile Cast Iron (FCD450) | 175 | 73 | 90 | 100 | 5.3 |
| | | 20(3/4) | | | | 195 | 68 | 95 | | 5.7 |
| | | 25(1) | | | | 215 | | | | 6.8 |
| AE8F-9 | | 15(1/2) | 0.1 to 0.97 | | | 175 | 73 | 90 | 100 | 5.3 |
| | | 20(3/4) | | | | 195 | 68 | 95 | | 5.7 |
| | | 25(1) | | | | 215 | | | | 6.8 |

3. Installations

| | |
|---|---|
| ⚠ CAUTIONS | ●Before installing the trap always blow off the slugges, scales, etc. from the piping.<br>●This trap can be installed horizontally. |

1) By the operational function of this trap small amount of air will discharged with the drain. Please install on a normal air line.
2) Install trap according to the direction of the arrow on the body.
3) Install the lowest point than the air using equipment. (Refer to the figures below.)
4) No need of equalizing line.
5) At start up if the drain in the line is small amount and causes blow through, pour about 200cc of prime water through the Injection Plug(part No.22)

Fig.1 Air Main Line

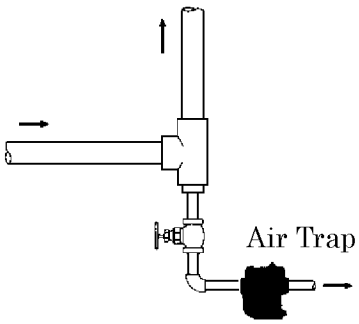



Fig.2 After Cooler

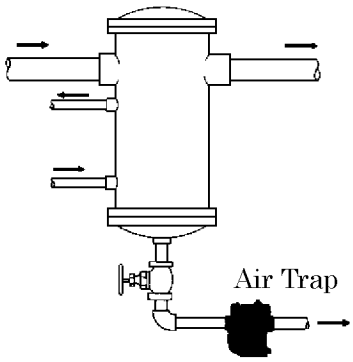
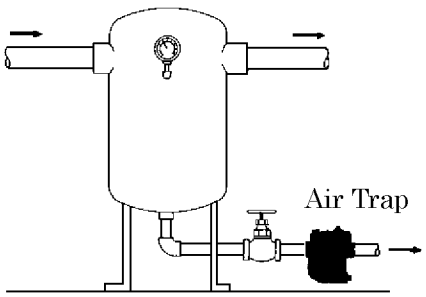



Fig.3 Receiver Tank



4. Trouble Shooting

| Symptom | Causes | Remedy |
|---|---|---|
| Water Clogging | 1.Air Pressure is too high. | 1.Lower the air pressure, or change the trap. |
| | 2.Lack of Capacity | 2.Select an another trap with larger. |
| | 3.Some scales clogged in the Valve Seat. | 3.Clean the hole of the Valve Seat(5). |
| | 4.Some scales clogged in the Air Vent. | 4.Clean the hole of the Air Vent. (hole in the Bucket(9)) |
| | 5.The Bucket is out of place with the valve closed. | 5.Disassemble the trap and put the Bucket(9) in the correct place. |
| | 6.Clogging of the strainer screen. | 6.Clearn the strainer Screen(17). |
| Blow Through | 7.The Bucket loses its buoyancy by lack of water inside the body. | 7.Pour about 200cc(One Cup)of prime water inside the trap through the Injection Plug(22). |
| | 8.Some scales lodged in the orifice. | 8.Clean the Valve(6) and the Valve Seat(5). |
| | 9.Wear of the Valve and the Valve Seat. | 9.Replace the Valve(6) and the Valve Seat(5). |
| | 10.The Bucket is out of place with valve opened. | 10.Disassemble the trap and put the Bucket(9)in the correct place. |

5. Maintenance, Disassembling and Assembling

| ⚠ WARNING | When disassembling a hot trap, be sure to release the pressure inside to atmospheric pressure, and cool the trap before the work. |
|---|---|

1. Disassemble Body Plug(3) take out the Screen(17) check and clean.
2. Disassemble Cover Bolt(20) take off the Cover(2),the internals (Valve Seat(5), Valve(6), Valve Holder(7), Pin(8), Bucket(9), Eyebolt(10), Eyebolt Pin(12), Lever(13), Bracket(14), Pin(15), Set Bolt(16)) will come together as the Fig.4.

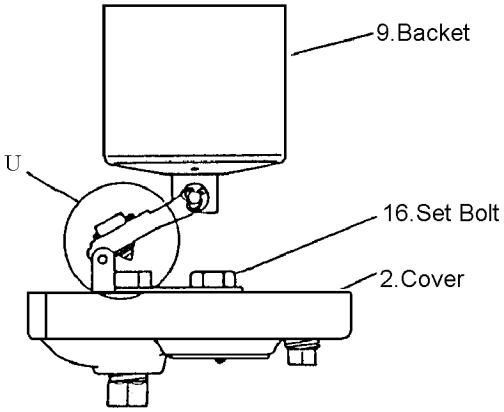



Fig.4

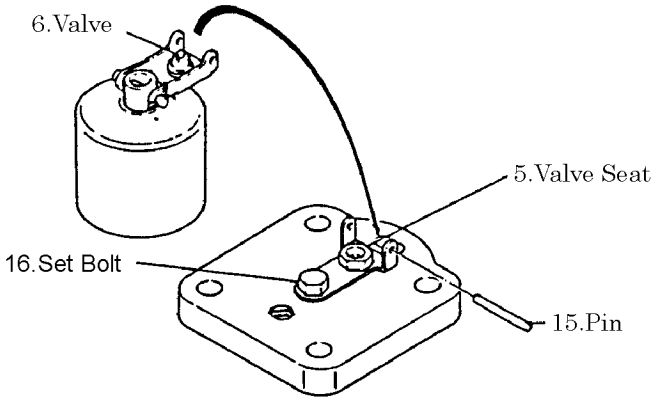
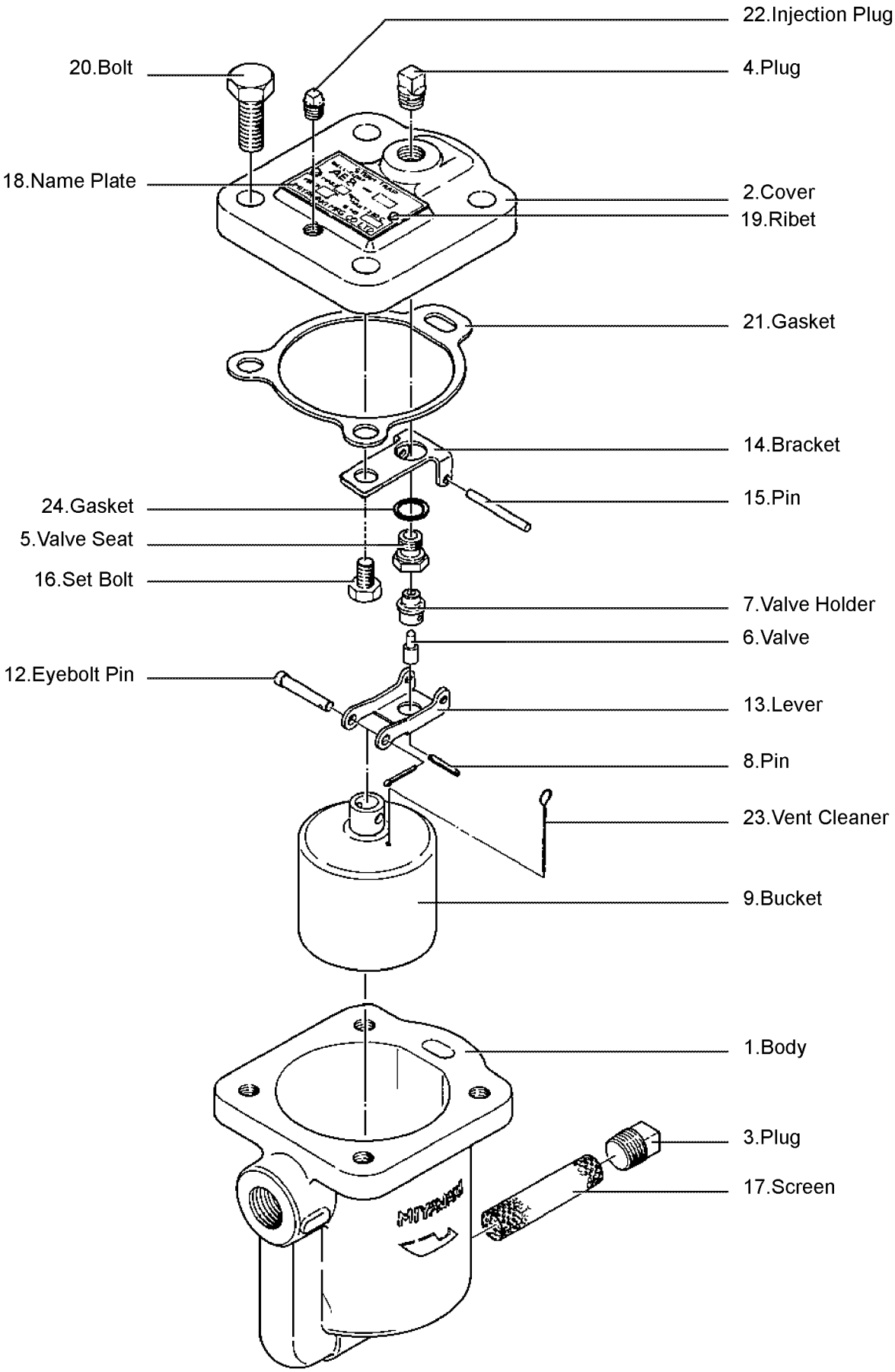



Fig.5

3. Take off the Pin(15), Valve(6), then Valve Holder(7), Pin(8), Bucket(9), Eyebolt(10), Eyebolt Pin(12) and Lever(13) come apart together from the Cover(2) as the Fig.5.
4. Unscrew the Set Bolt(16) also unscrew the Valve Seat(5) with a wrench.
5. Take off the Pin(8), the Valve(6) and Valve Holder(7) comes apart from the Lever(13).
6. Take off the split pin and Eyebolt Pin(12) the Bucket(9) will come apart.
7. Clean and check the parts accordingly if all the parts are in normal condition install in the opposite of disassembling. If parts are worn or defected please replace.
   Please thoroughly check the Valve(6), Valve Seat(5) and Valve Holder(7).
   When replacing the Valve(6) and Valve Seat(5) always replace the two together as they are lapped together in the factory.

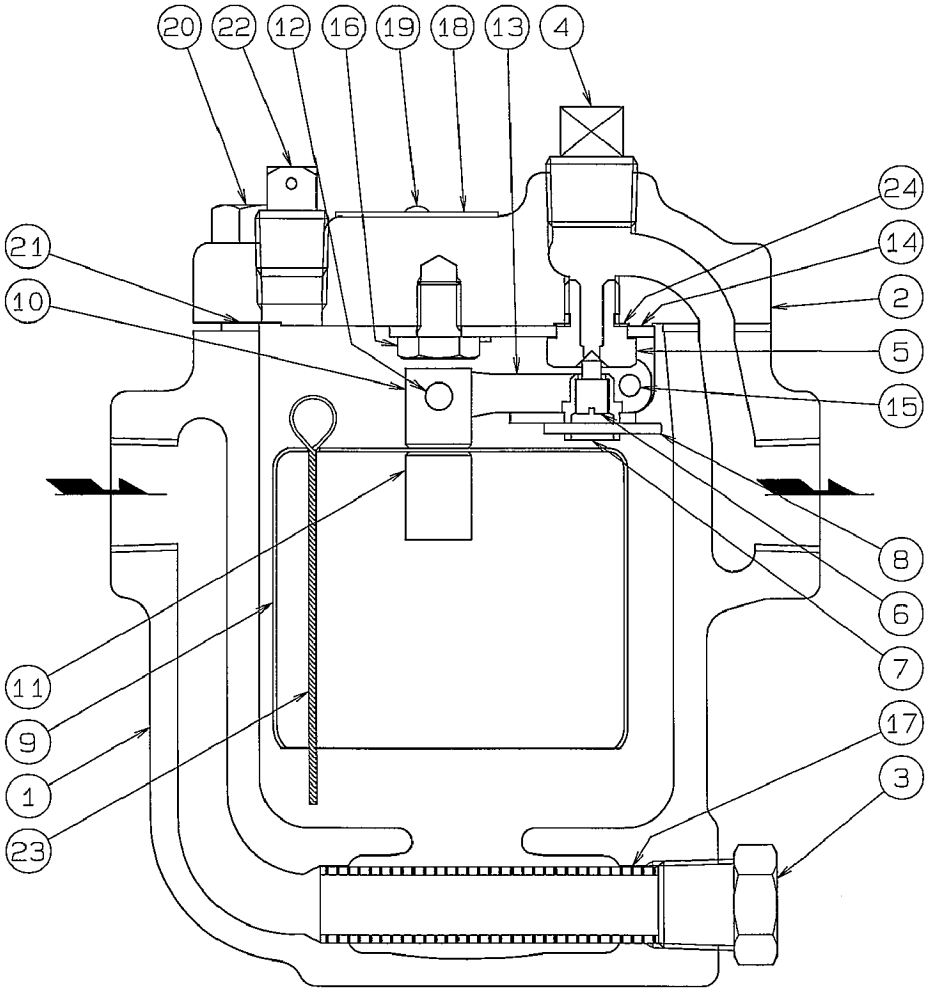
| ⚠ CAUTIONS | ●When reassembling always replace the Gasket(21),(24) to new ones.<br>●Also Bolt(20) should be tightened evenly. |
|---|---|

| No. | Parts | Size | Shape | Clamp Torque | Tools |
|---|---|---|---|---|---|
| 5 | Valve Seat | 14mm | Hexagon | 18N·m (180kgf·cm) | Wrench |
| 16 | Set Bolt | 13mm | Hexagon | 11N·m (110kgf·cm) | Wrench |
| 20 | Bolt | 17mm | Hexagon | 21N·m (210kgf·cm) | Wrench |


22.Injection Plug
20.Bolt
4.Plug
18.Name Plate
2.Cover
19.Ribet
21.Gasket
14.Bracket
24.Gasket
15.Pin
5.Valve Seat
16.Set Bolt
7.Valve Holder
6.Valve
12.Eyebolt Pin
13.Lever
8.Pin
23.Vent Cleaner
9.Bucket
1.Body
3.Plug
17.Screen

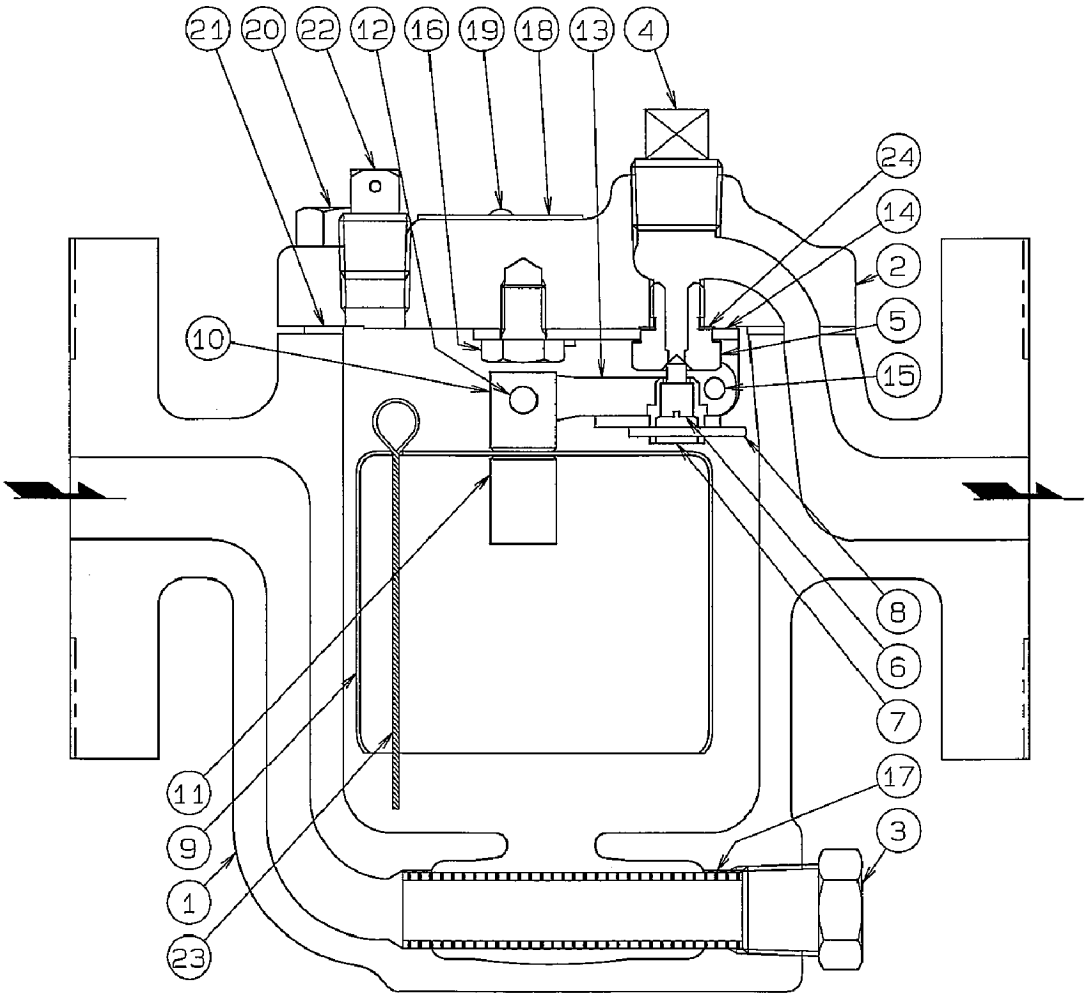
6. Construction

Model AE8 (Screwed)




1. Body
2. Cover
3. Plug
4. Plug
5. Valve Seat
6. Valve
7. Valve Holder
8. Pin
9. Bucket
10. Eyebolt
11. Weight
12. Eyebolt Pin
13. Lever
14. Bracket
15. Pin
16. Set Bolt
17. Screen
18. Name Plate
19. Rivet
20. Bolt
21. Gasket
22. Injection Plug
23. Vent Cleaner
24. Gasket

Model AE8F (Flanged)




1. Body
2. Cover
3. Plug
4. Plug
5. Valve Seat
6. Valve
7. Valve Holder
8. Pin
9. Bucket
10. Eyebolt
11. Weight
12. Eyebolt Pin
13. Lever
14. Bracket
15. Pin
16. Set Bolt
17. Screen
18. Name Plate
19. Rivet
20. Bolt
21. Gasket
22. Injection Plug
23. Vent Cleaner
24. Gasket