

# DRAIN SEPARATOR

## Type DS-1, DS-2



DS-1



DS-2

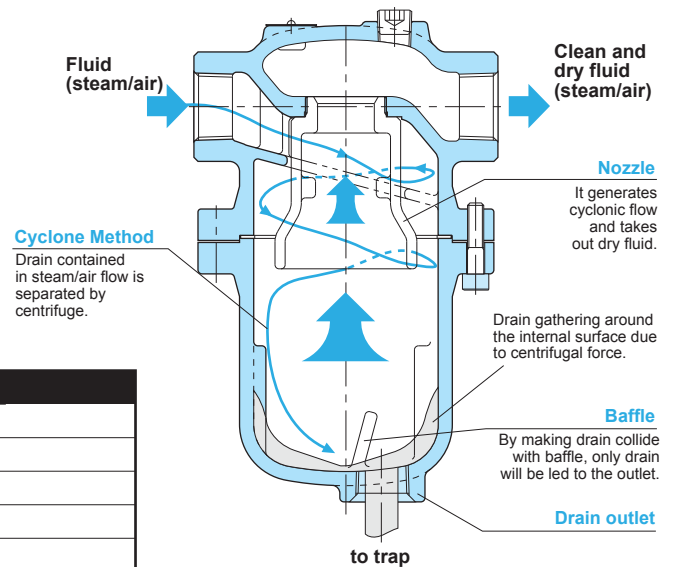
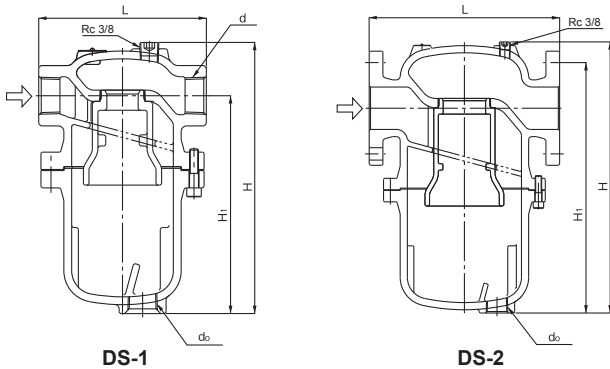
Drain (condensate) in steam and air piping causes a decline in thermal efficiency, water hammer, corrosion of devices, valves, and pipes, and many other problems. The DS-1 and DS-2 drain separators are capable of efficiently separating condensate from steam and air with the aid of centrifugal force generated from the configuration of the passage. In normal condition, use a separator of the same size as piping for both steam and compressed air systems.

### FEATURES

1. High efficient drain separation due to cyclone type.
2. Extremely low pressure loss.
3. Trouble-free by minimizing the number of moving parts.

### STRUCTURE AND PRINCIPAL OF DRAIN SEPARATOR

There is no movable part. The capacity will not change almost permanently, since the design itself has made this performance possible.



### SPECIFICATIONS

| Model               |          | DS-1                      | DS-2                                |
|---------------------|----------|---------------------------|-------------------------------------|
| Application         |          | Steam, Air                |                                     |
| Maximum pressure    |          | 2.0 MPa (1.0 MPa for air) |                                     |
| Maximum temperature |          | 220°C                     |                                     |
| Material            | Body     | Ductile cast iron         |                                     |
|                     | Nozzle   | Cast iron                 |                                     |
|                     | Receiver | Ductile cast iron         |                                     |
| Connection          |          | JIS Rc screwed            | JIS 10K/20K FF Flanged Flanged PN16 |

### DIMENSIONS (MM) AND WEIGHTS (KG)

| Model | Nominal size | d        | L          |            |              | H   | H <sub>1</sub> | do          | Weight     |            |              |
|-------|--------------|----------|------------|------------|--------------|-----|----------------|-------------|------------|------------|--------------|
| DS-1  | 15A          | Rc 1/2   | 150        |            |              | 243 | 193            | Rc 3/4      | 7.1        |            |              |
|       | 20A          | Rc 3/4   | 150        |            |              | 243 | 193            | Rc 3/4      | 7.1        |            |              |
|       | 25A          | Rc 1     | 150        |            |              | 243 | 193            | Rc 3/4      | 7.3        |            |              |
|       | 32A          | Rc 1-1/4 | 190        |            |              | 282 | 213            | Rc 1        | 12.5       |            |              |
|       | 40A          | Rc 1-1/2 | 190        |            |              | 282 | 213            | Rc 1        | 12.5       |            |              |
| 50A   | Rc 2         | 219      |            |            | 342          | 260 | Rc 1           | 20.5        |            |            |              |
| DS-2  | Nominal size | d        | L          |            |              | H   | H <sub>1</sub> | do          | Weight     |            |              |
|       |              |          | JIS 10K FF | JIS 20K FF | Flanged PN16 |     |                |             | JIS 10K FF | JIS 20K FF | Flanged PN16 |
|       | 15A          | -        | 174        | 178        | 178          | 243 | 193            | BSPT/Rc 3/4 | 8.5        | 8.7        | 8.7          |
|       | 20A          | -        | 204        | 208        | 208          | 243 | 193            | BSPT/Rc 3/4 | 9.6        | 9.8        | 9.8          |
|       | 25A          | -        | 204        | 208        | 208          | 243 | 193            | BSPT/Rc 3/4 | 10.1       | 10.5       | 10.5         |
|       | 32A          | -        | 222        | 226        | 226          | 282 | 213            | BSPT/Rc 1   | 15.6       | 16.0       | 16.0         |
|       | 40A          | -        | 242        | 246        | 248          | 282 | 213            | BSPT/Rc 1   | 16.3       | 16.7       | 16.7         |
|       | 50A          | -        | 246        | 250        | 252          | 342 | 260            | BSPT/Rc 1   | 24.7       | 24.9       | 24.9         |
|       | 65A          | -        | 288        | 292        | 300          | 418 | 314            | BSPT/Rc 1   | 40.0       | 40.0       | 40.0         |
| 80A   | -            | 335      | 343        | 351        | 484          | 361 | BSPT/Rc 1 1/4  | 54.0        | 56.0       | 56.0       |              |
| 100A  | -            | 390      | 402        | 410        | 594          | 445 | BSPT/Rc 1 1/4  | 96.0        | 100.0      | 100.0      |              |



# DRAIN SEPARATOR

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YOSHITAKE

### SELECTING A NOMINAL SIZE

Keep the instruction described below in mind to enable the drain separator to operate most effectively and meet working conditions to the fullest extent possible.

- Selecting a drain separator nominal size  
Select the same nominal size as that of piping (nominal size of piping = nominal size of drain separator). Using a drain separator of a smaller nominal size may increase pressure loss, resulting in failure to keep the specified pressure at the outlet of a unit.

### GUIDELINES FOR DRAIN SEPARATOR

1. Check the following direction of the fluid and the inlet and outlet directions of the drain separator in advance, and properly install it.
2. When connecting it to piping, securely support the product and the piping with a lifting device.
3. When installing the product, secure the space of the dimension H3 shown in the figure below, which is required for maintenance and inspections.

\* When using model DS-1, 2 for steam application, it is recommended to replace the gasket after 2 years as a guide.

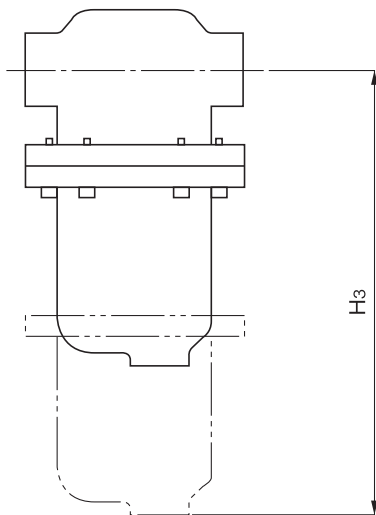


TABLE 1: WORKING FLOW VELOCITY

| Application | Flow velocity    |
|-------------|------------------|
| Steam       | 30 m/sec or less |
| Air         | 15 m/sec or less |

\* Keep the fluid below the specified flow velocity.

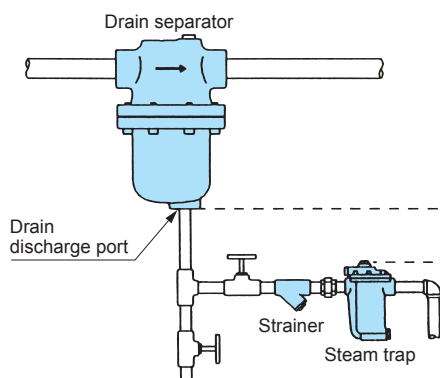
\* A higher flow velocity may cause drain separation to fail.

TABLE 2: MAINTENANCE REQUIRED DIMENSION

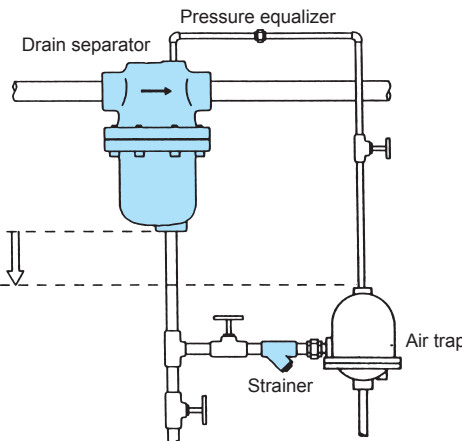
| Model        | Nominal size | H3  |
|--------------|--------------|-----|
| DS-1<br>DS-2 | 15A          | 210 |
|              | 20A          | 210 |
|              | 25A          | 210 |
|              | 32A          | 240 |
|              | 40A          | 240 |
|              | 50A          | 290 |
| DS-2         | 65A          | 350 |
|              | 80A          | 410 |
|              | 100A         | 550 |

### GUIDELINES FOR DRAIN SEPARATOR

<For steam>



<For air>



<For air>

