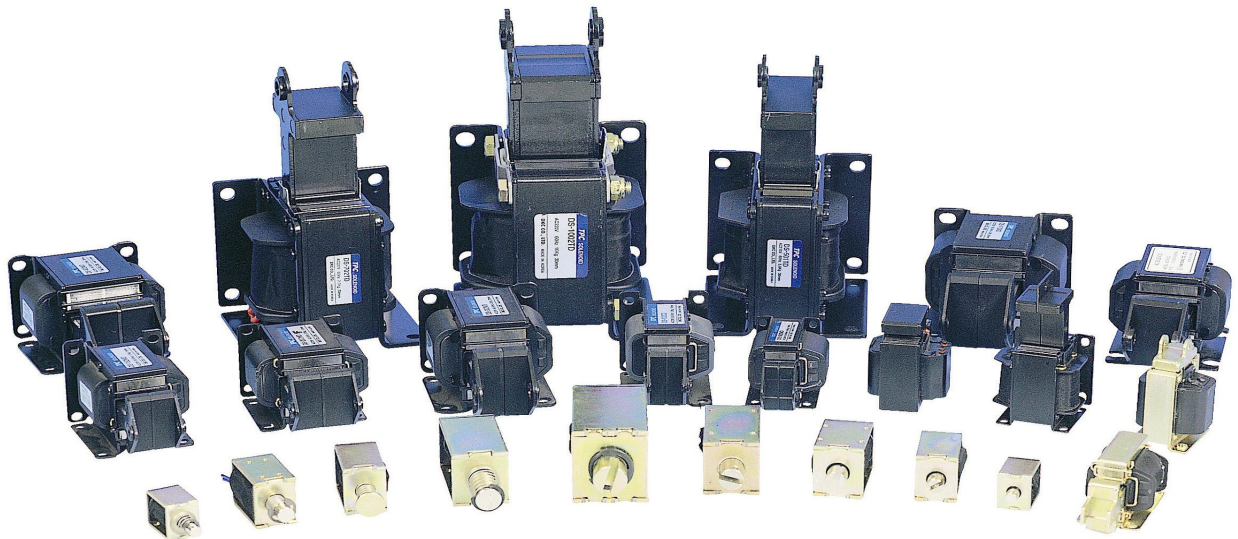


# **The Leader In Solenoid Technology**

## **Products Guide Catalogue**

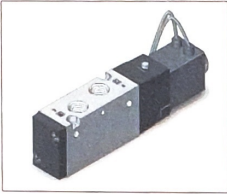
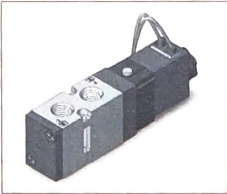
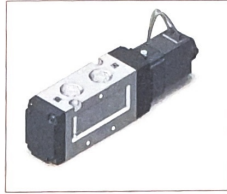
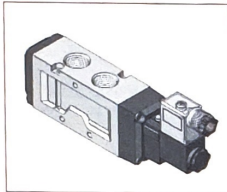
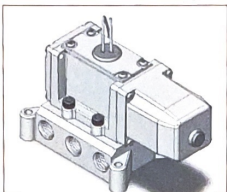
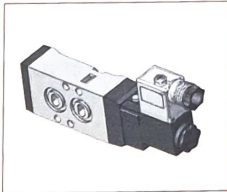
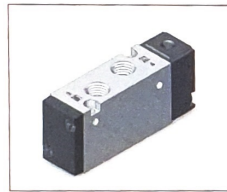
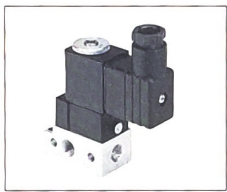
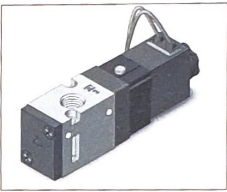
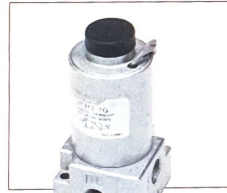
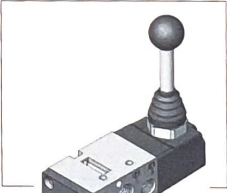


**JINSAN DKC Co.,Ltd.**



# Solenoid Valve

## ■ Products Item List

|                 | Port Size<br>PAGE                                                                    |                    | Port Size<br>PAGE |                                                                                      | Port Size<br>PAGE |
|-----------------|--------------------------------------------------------------------------------------|--------------------|-------------------|--------------------------------------------------------------------------------------|-------------------|
| ■ DSF280        |     | PT1/8<br>7P        | ■ DSF350          |     | PT1/4<br>9P       |
| ■ DSF450        |    | PT3/8"<br>11P      | ■ DSF510          |    | PT1/2"<br>13P     |
| ■ DSF550        |    | PT3/8"~1/2"<br>15P | ■ DSN350          |   | PT1/4<br>17P      |
| ■ AF280,350,450 |   | PT1/8"~3/8"<br>19P | ■ ST2000          |   | PT1/8<br>25P      |
| ■ ST350         |  | PT1/8<br>27P       | ■ VT3000          |   | PT1/4<br>29P      |
| ■ MF280         |   | PT1/8<br>31P       | ■ DMF350          |  | PT1/4<br>33P      |
| ■ SD2000        |   | PT1/8"~1/4<br>35P  |                   |                                                                                      |                   |



## ■ Matters that demand special attention before using the goods

**注意**

The item that can hurt the users physically and give the material loss to them when using the goods carelessly.

**警告**

The item that can be badly serious wounded by handling the goods carelessly.

**危険**

The item that can be seriously wounded or take the lives in the emergent situation.

### ● IN RELATION TO USING PNEUMATIC VALVES

**警告**

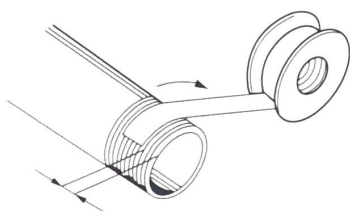
#### ■ IN SELECTING AND HANDLING PNEUMATIC VALVES

- It is necessary for the experienced expert to select the kind of the pneumatic valves and handle it.
- It can be very dangerous to handle the pneumatic valves awkwardly.  
It is necessary for the experienced person to maintain and repair the pneumatic valves.
- It is needful for you to operate the valves after checking the safety device.  
Please disassemble the valves after checking the first condition of the valve and the complete exhaustion of the air in the valves.  
When you repair the valves under the condition of not-exhausted compressed air, you can badly hurt by the wrong operation.
- If you intend to use the other harmful gases to the body or a kind of fluid instead of the compressed air into the valves, you need to contact us and consult with the company.

**警告**

#### ■ BEFORE USING PNEUMATIC VALVES.

- Confirm whether the valve you have bought is appropriate to the purpose of it.  
Check the specification of the valve again.
- When using Teflon tape, wind it with 1.5~2screw threads left.



- When using the center-closed type valve, be careful not to have the leakage of the compressed air in the pipes between the valve and the cylinder, which can bring about the malfunction of the valve by the very slight leakage of the air.  
In case that you want to have the precise momentary stop of the valve, contact us and consult with our company.
- Do not tighten with excessive power when connecting the pipes.  
In case you don't tighten the fitting parts with proper torque, you can be harmed by improper operation. Please connect the pipes with proper torque as follows.

| Joint screw | Optimum Torque kgf · cm (N · m) |
|-------------|---------------------------------|
| M5          | 15~20 (1.5~2)                   |
| PT 1/8"     | 70~90 (7~9)                     |
| PT 1/4"     | 120~140 (12~14)                 |
| PT 3/8"     | 220~240 (22~24)                 |
| PT 1/2"     | 280~300 (28~30)                 |
| PT 3/4"     | 330~350 (33~35)                 |
| PT 1"       | 380~400 (38~40)                 |

**注意**

#### ■ IN RELATION TO THE CONDITION OF USING FLUID

- Install the valve with the filter which can filter over  $5\mu\text{m}$ .
- Pay heed to the much drainage of the fluid at the first use, which can bring about the malfunction of the valve and the pollution of the surroundings.  
When there is difficulties in managing the drainage of the fluid, it is helpful to attach auto-draining filter to the valve.
- In case that there can be much tar, which can be made in the compressor and attached in the valve and lead to the malfunction, make use of the compressor that generates less carbon tar.
- Concerning other conditions of using fluid in the valve, refer to the purification system of the compressed air of the other pneumatic valve makers.

**注意**

#### ■ OIL Feeding

- Oil supply is not required because it is lubricated in its first stage.
- Supply turbine oil(ISO VG32) for the valve if necessary. And supply oil for the valve continually at a time, on the other hand it can lead to the malfunction of the valve due to the loss of the first lubricating oil if you stop supplying oil in the middle.  
More than anything else, don't make use of spindle oil.

## ■ Matters that demand special attention before using the goods



### ■ THE MOMENT TRANSMISSION OF APPLYING.

- Set the time of the moment transmission of electric power into over 0.1 sec. when using double-type valves by means of the moment transmission.



### ■ THE ENVIRONMENT OF VALVES

- Avoid the places where are subject to corrosive gas, chemical, salt, rain drop, and steam in the air.
- Take measures to the valves such as covering them when installing the valves temporarily in the damp and oily place.
- When there's much dust in the air, install the filter to the exhaustion port lest the dust in the air should enter the port.
- Never use the valve in the environment where there is the possibility of explosion.
- Avoid the direct rays of the sun.
- Cut off the radiant heat.
- Avoid the place with high vibration and impact. Refer to the specification of the valve necessarily.



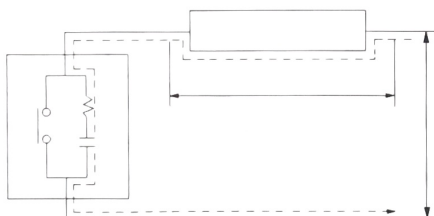
### ■ ABOUT USING IN LOW TEMPERATURE

- The valves are allowed to use in low temperature, to the degree of  $-10^{\circ}\text{C}$ . Mind so that the drain or water drop may not be frozen in low temperature.
- Install the valve with the air drier near it, when it is possible that the valve is frozen in low temperature.



### ■ IN REGARD TO THE LEAK OF VOLTAGE

- When the supply of electricity is cut off, reduce the voltage, which is left at the end of both sides by the leak of voltage, up to less than 3%.
- In using C-R device so as to protect the connection point, the amount of leak voltage can increase by the leak current flowing into the C-R device.



- Pay attention to the fact that Non-connection relay has a built-in protective circuit.

DSF280 ■

# DSF280 Series.

Solenoid Valve

- AC220V/110V/DC24 5-PORT, Pilot Type
- Body Width 18.0mm
- Cv 0.6

PT1/8

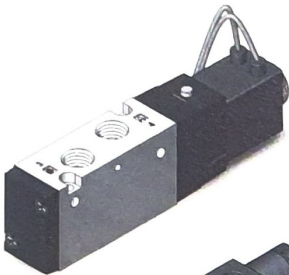
## PROPERTY

- Lubrication not required, excellent durability
- Fluid Flux, 700 L/Min. (5bar)
- Manual operation possible, Pull/Lock function .
- Various options of the coil part, Various length of the lead wire.

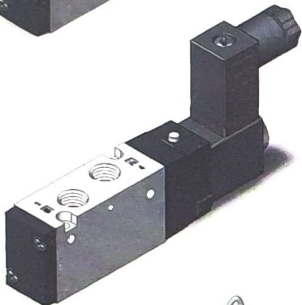
## SPECIFICATION

| Item \ Type                   | Type | Single                                         | Double | Closed Center            | Exhaust Center | Pressure Center          |
|-------------------------------|------|------------------------------------------------|--------|--------------------------|----------------|--------------------------|
| Port Size                     |      | PT 1/8 (G1/4, NPT1/4)                          |        |                          |                |                          |
| Fluids                        |      | Compressed Air and Inert gases                 |        |                          |                |                          |
| Pressure (bar)                |      | 1.5~10.0                                       |        | 2.0~10.0                 |                |                          |
| Flux L / Min. (5bar)          |      | 700                                            |        | 490                      | 490            | 490                      |
| Eff. Sectional Area (CV)      |      | 12.7mm <sup>2</sup> (0.6)                      |        | 8.8mm <sup>2</sup> (0.4) |                | 8.8mm <sup>2</sup> (0.4) |
| Air & fluid Temp.             |      | 5~60℃                                          |        |                          |                |                          |
| Response Time (5bar)          |      | 25ms and less                                  |        | 35ms and less            |                |                          |
| Max. working Frequency        |      | 5 cycle/sec                                    |        | 3 cycle/sec              |                |                          |
| Lubrication                   |      | Not required. (Use ISO VG32 # if necessary)    |        |                          |                |                          |
| Manual operator               |      | Push Button (Normal), Revolving Lever (Option) |        |                          |                |                          |
| Coil Regular Voltage          |      | AC220V, AC110, AC24 (50~60Hz)/DC24V, DC12V     |        |                          |                |                          |
| Permissible Voltage Variation |      | ± 10% of the regular voltage                   |        |                          |                |                          |
| Coil Insulation Class         |      | F-class                                        |        |                          |                |                          |
| Electric Power                | AC   | 3.5VA(60Hz)                                    |        |                          |                |                          |
| Consumption                   | DC   | 2.5W                                           |        |                          |                |                          |

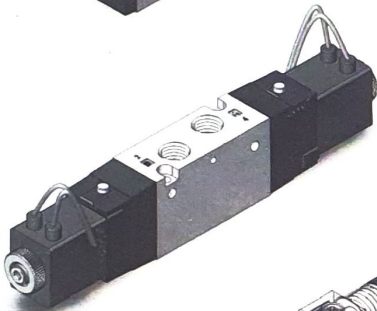
\* The specification as above can be changed to improve the capacity of the valve.



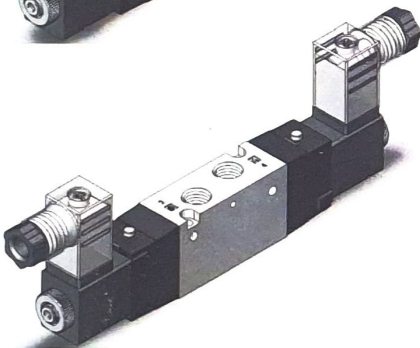
DSF281S-□GP



DSF281S-□DP



DSF281D-□GP



DSF281H-□DP



C18G



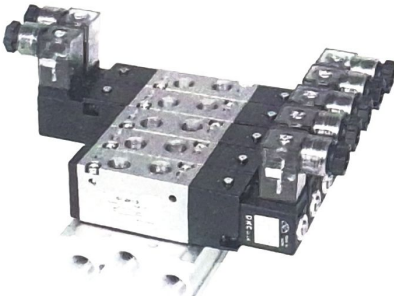
C18D



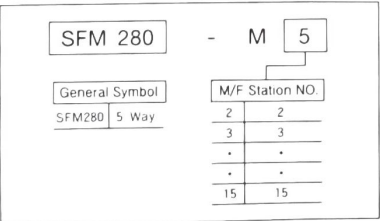
C18DL

D S F 28 1 S - 2 G L P

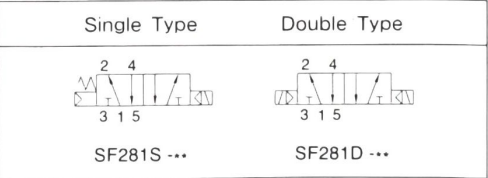
| Port Size |       | Type |                 | Voltage |                | Wire Connection |               | Lamp |                 | Manual operator |        |
|-----------|-------|------|-----------------|---------|----------------|-----------------|---------------|------|-----------------|-----------------|--------|
| 1         | PT1/8 | S    | Single          | 1       | AC110V 50/60Hz | G               | Lead Wire     | L    | LED Signal Lamp | P               | Button |
|           |       | D    | Double          | 2       | AC220V 50/60Hz | D               | Din Connector |      | Signal Lamp     | L               | Lever  |
|           |       | H    | Closed Center   | 3       | DC24V          |                 |               | Z    | surge circuit   |                 |        |
|           |       | I    | Pressure Center | 4       | DC12V          |                 |               |      |                 |                 |        |
|           |       | J    | Exhaust Center  |         |                |                 |               |      |                 |                 |        |



MANIFOLD Order Code



Valve Symbol



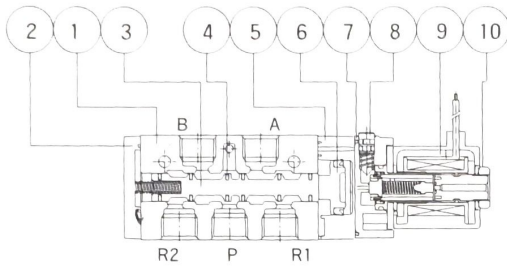
\* ISO Marking : P-1, B-2, R2-3, A-4, R1-5



# 5-PORT SOLENOID VALVE

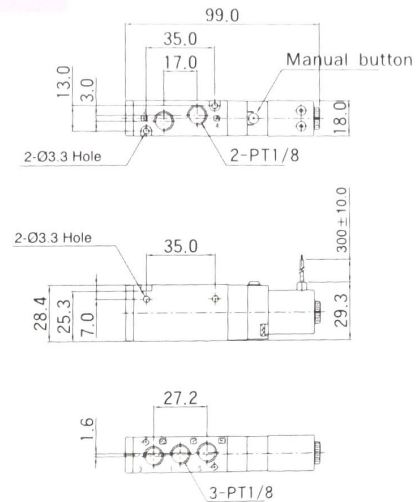
## PT1/8

### DSF281S Interior Structure

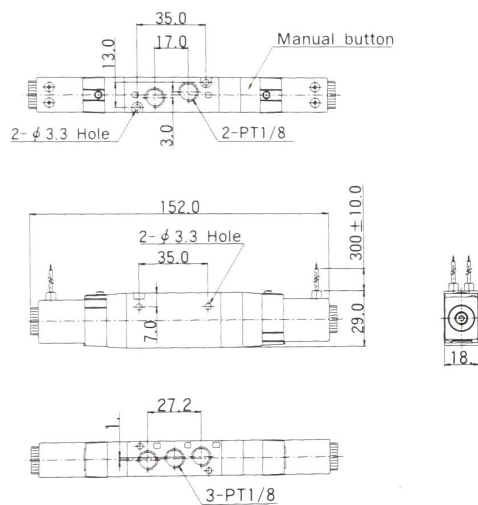


| No. | Part          | Material | No. | Part       | Material |
|-----|---------------|----------|-----|------------|----------|
| 1   | BODY          | ALDC     | 6   | PISTON     | POM      |
| 2   | COVER         | ZnDC     | 7   | SEAT       | POM      |
| 3   | SPOOL         | AL       | 8   | BUTTON     | Cu       |
| 4   | SPOOL PACKING | NBR      | 9   | COIL ASS'Y |          |
| 5   | PILOT         | PPS      | 10  | LOCK NUT   | PBT      |

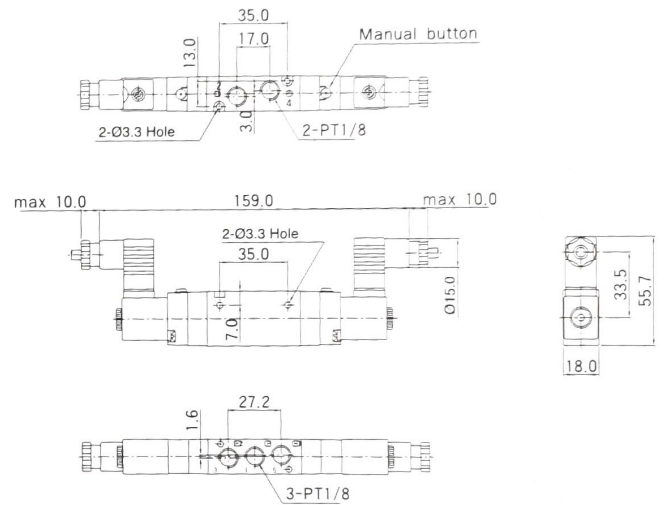
### DSF281S - □GP



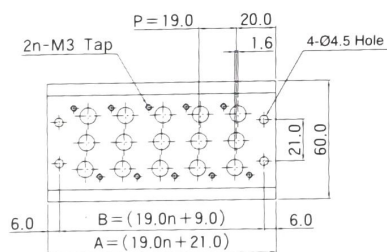
### DSF281H- □GP



### DSF281D - □ZP

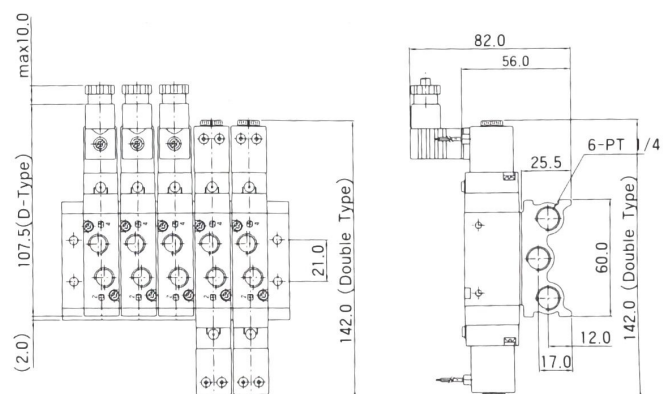


### SFM280 MANIFOLD BLOCK



| Station No. | 2    | 3    | 4    | 5     | 6     | 7     | 8     | 9     | 10    |
|-------------|------|------|------|-------|-------|-------|-------|-------|-------|
| Length      |      |      |      |       |       |       |       |       |       |
| A           | 59.0 | 78.0 | 97.0 | 116.0 | 135.0 | 154.0 | 173.0 | 192.0 | 211.0 |
| B           | 47.0 | 66.0 | 85.0 | 104.0 | 123.0 | 142.0 | 161.0 | 180.0 | 199.0 |

### VALVE ASS'Y





# DSF350 Series.

Solenoid Valve

- AC220V/110V/DC24
- Body Width 26.0mm
- Cv 1.0

5-PORT, Pilot Type  
**PT1/4**

## PROPERTY

- Lubrication not required, Excellent Durability.
- $\phi 30 \sim \phi 80$  Cylinder available.
- Manual Operation Possible, Pull/Lock function.
- Various Option of the Coil part, Various Length of Lead Wire.

## SPECIFICATION

| Item                          | Type | Single                                                | Double | Closed Center              | Exhaust Center | Pressure Center           |
|-------------------------------|------|-------------------------------------------------------|--------|----------------------------|----------------|---------------------------|
| Port Size                     |      | PT 1/4 (G1/4, NPT1/4)                                 |        |                            |                |                           |
| Fluids                        |      | Compressed Air and Inert gases                        |        |                            |                |                           |
| Pressure (bar)                |      | 1.5~9.0                                               |        | 2.0~9.0                    |                |                           |
| Flux L / Min. (5bar)          |      | 1,000                                                 |        | 760                        | 760            | 800                       |
| Eff. Sectional Area (CV)      |      | 19.0mm <sup>2</sup> (1.0)                             |        | 14.0mm <sup>2</sup> (0.76) |                | 15.0mm <sup>2</sup> (0.8) |
| Air & fluid Temp.             |      | 5~60℃                                                 |        |                            |                |                           |
| Response Time (5bar)          |      | 25ms and less                                         |        | 35ms and less              |                |                           |
| Max. working Frequency        |      | 5 cycle/sec                                           |        | 3 cycle/sec                |                |                           |
| Lubrication                   |      | Not Required ( Use Turbine Oil 1st-grade ISO VG32 # ) |        |                            |                |                           |
| Manual operator               |      | Push Button (Normal), Revolving Lever (Option)        |        |                            |                |                           |
| Coil Regular Voltage          |      | AC220V, AC110, AC24 (50~60Hz)/DC24V, DC12V            |        |                            |                |                           |
| Permissible Voltage Variation |      | ± 10% of the regular voltage                          |        |                            |                |                           |
| Coil Insulation Class         |      | F-class                                               |        |                            |                |                           |
| Electric Power                | AC   | 4.5VA(60Hz)                                           |        |                            |                |                           |
| Consumption                   | DC   | 2.5W                                                  |        |                            |                |                           |

\* The specification as above can be changed to improve the capacity of the valve.

Plug Order Code.

▼ Plug



JP400 - Length : 400mm  
JP600 - Length : 600mm  
JP1000 - Length : 1000mm  
JP1500 - Length : 1500mm

C22G

C22M

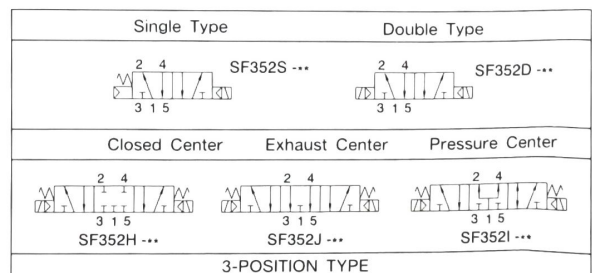
C22L

C22D

D S F 35 2 S - 2 G L P

| Port Size | Type              | Voltage          | Wire Connection       | Lamp                      | Manual operator |
|-----------|-------------------|------------------|-----------------------|---------------------------|-----------------|
| 2 PT1/4   | D Double          | 1 AC110V 50/60Hz | G Lead Wire           | L LED Signal Lamp         | P Button        |
|           | S Single          | 2 AC220V 50/60Hz | D Din Connector       | Signal Lamp surge circuit | L Lever         |
|           | H Closed Center   | 3 DC24V          | M 180° Plug Connector |                           |                 |
|           | I Pressure Center | 4 DC12V          | L 90° Plug Connector  |                           |                 |
|           | J Exhaust Center  |                  |                       |                           |                 |

## Valve Symbol



\* ISO Marking : P-1, B-2, R2-3, A-4, R1-5

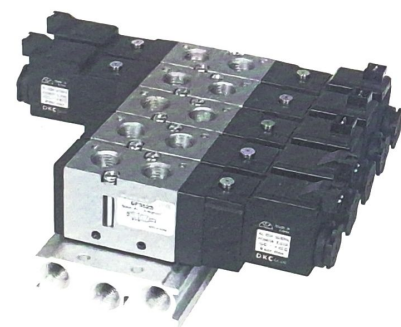
## MANIFOLD Order Code

SFM 350 - M 5

General Symbol SFM350 5 Way

M/F Station NO.

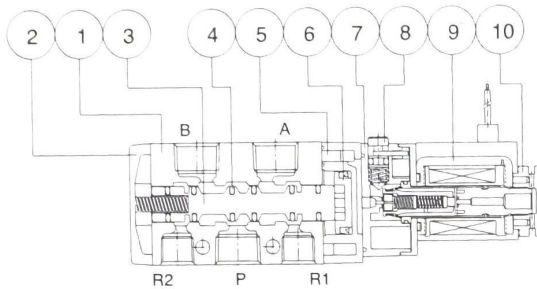
|    |    |
|----|----|
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| 3  | 3  |
| .  | .  |
| .  | .  |
| 15 | 15 |



# 5-PORT SOLENOID VALVE

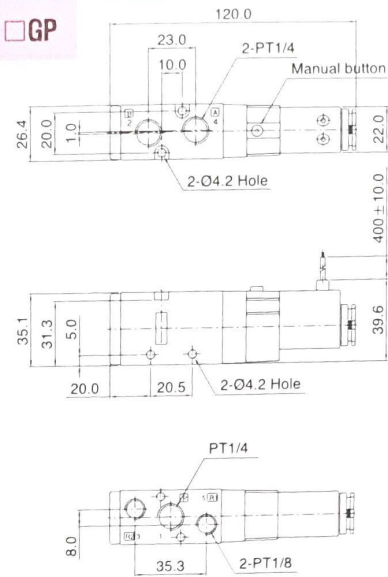
## PT1/4

### DSF352S Interior Structure

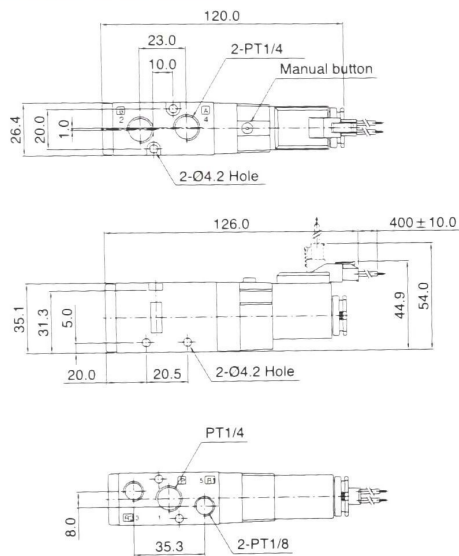


| No. | Part          | Material | No. | Part       | Material |
|-----|---------------|----------|-----|------------|----------|
| 1   | BODY          | ALDC     | 6   | PISTON     | POM      |
| 2   | COVER         | ZnDC     | 7   | SEAT       | POM      |
| 3   | SPOOL         | AL       | 8   | BUTTON     | Cu       |
| 4   | SPOOL PACKING | NBR      | 9   | COIL ASS'Y |          |
| 5   | PILOT         | PPS      | 10  | LOCK NUT   | PBT      |

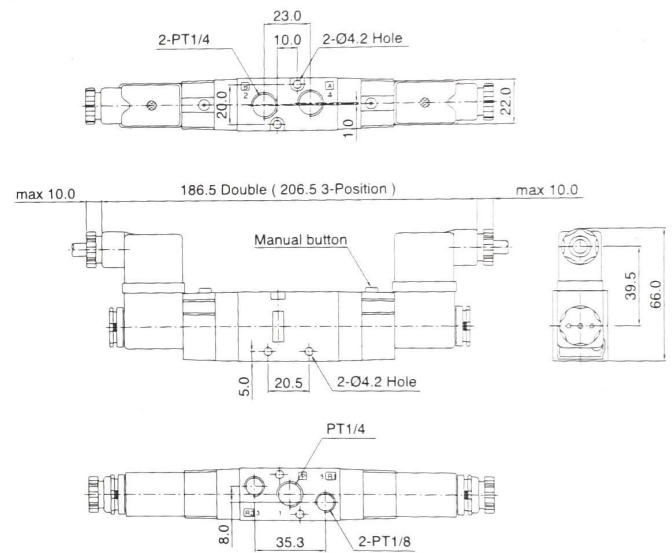
### DSF352S - □GP



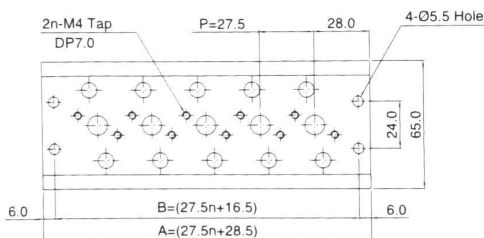
### DSF352S - □ML (SF352 - □LL)



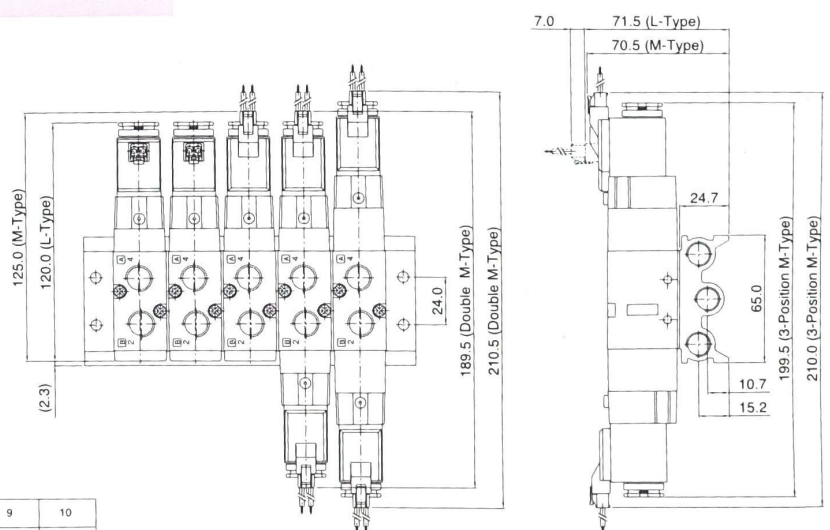
### DSF352D - □DZP



### SFM350 MANIFOLD BLOCK



### VALVE ASS'Y



| Station No | 2    | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Length     |      |       |       |       |       |       |       |       |       |
| B          | 71.5 | 99.0  | 126.5 | 154.0 | 181.5 | 209.0 | 236.5 | 264.0 | 291.5 |
| A          | 83.5 | 111.0 | 138.5 | 166.0 | 193.5 | 221.0 | 248.5 | 276.0 | 303.5 |



# DSF450 Series.

Solenoid Valve

- AC220V/110V/DC24
- Body Width 32.0mm
- Cv 2.0

5-PORT, Pilot Type

**PT3/8**

## PROPERTY

- Lubrication not required, high durability
- High Capacity,  $\phi 80 \sim \phi 150$  Cylinder available.
- Manual Operation Possible, Pull/Lock function.
- Various Option of the Coil part, Various Length of Lead Wire.

## SPECIFICATION

| Type                          |    | Single                                                | Double | Closed Center             | Exhaust Center | Pressure Center |
|-------------------------------|----|-------------------------------------------------------|--------|---------------------------|----------------|-----------------|
| Item                          |    |                                                       |        |                           |                |                 |
| Port Size                     |    | PT 3/8 (G3/8, NPT3/8)                                 |        |                           |                |                 |
| Fluids                        |    | Compressed Air and Inert gases                        |        |                           |                |                 |
| Pressure (bar)                |    | 1.5~9.0                                               |        | 2.0~9.0                   |                |                 |
| Flux L / Min. (5bar)          |    | 2,400                                                 |        | 2,100                     |                |                 |
| Eff. Sectional Area (CV)      |    | 43.0mm <sup>2</sup> (2.3)                             |        | 38.0mm <sup>2</sup> (2.1) |                |                 |
| Air & fluid Temp.             |    | 5~60℃                                                 |        |                           |                |                 |
| Response Time (5bar)          |    | 25ms and less                                         |        | 35ms and less             |                |                 |
| Max. working Frequency        |    | 5 cycle/sec                                           |        | 3 cycle/sec               |                |                 |
| Lubrication                   |    | Not Required ( Use Turbine Oil 1st-grade ISO VG32 ≦ ) |        |                           |                |                 |
| Manual operator               |    | Push Button (Normal), Revolving Lever (Option)        |        |                           |                |                 |
| Coil Regular Voltage          |    | AC220V, AC110, AC24 (50~60Hz)/DC24V, DC12V            |        |                           |                |                 |
| Permissible Voltage Variation |    | ± 10% of the regular voltage                          |        |                           |                |                 |
| Coil Insulation Class         |    | F-class                                               |        |                           |                |                 |
| Electric Power                | AC | 4.5VA(60Hz)                                           |        |                           |                |                 |
|                               | DC | 2.5W                                                  |        |                           |                |                 |

\* The specification as above can be changed to improve the capacity of the valve.

Plug Order Code.

Plug

- JP400 - Length : 400mm
- JP600 - Length : 600mm
- JP1000 - Length : 1000mm
- JP1500 - Length : 1500mm



**D S F 45 3 S - 2 G L P**

| Port Size | Type              | Voltage          | Wire Connection       | Lamp                        | Manual operator |
|-----------|-------------------|------------------|-----------------------|-----------------------------|-----------------|
| 3 PT3/8   | S Single          | 1 AC110V 50/60Hz | G Lead Wire           | L LED Signal Lamp           | P Button        |
|           | D Double          | 2 AC220V 50/60Hz | D Din Connector       | Z Signal Lamp surge circuit | L Lever         |
|           | H Closed Center   | 3 DC24V          | M 180° Plug Connector |                             |                 |
|           | I Pressure Center | 4 DC12V          | L 90° Plug Connector  |                             |                 |
|           | J Exhaust Center  |                  |                       |                             |                 |

## MANIFOLD Order Code

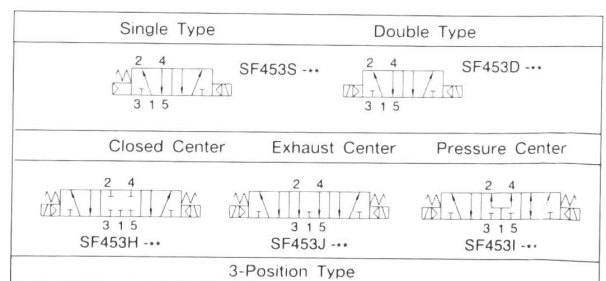
SFM 450 - M 5

General Symbol SFM450 5 Way

M/F Station NO.

|    |    |
|----|----|
| 2  | 2  |
| 3  | 3  |
| •  | •  |
| 15 | 15 |

## Valve Symbol



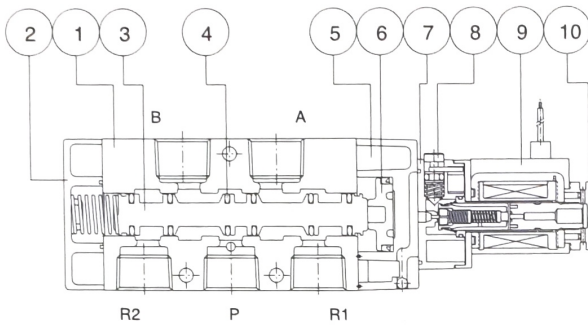
\* ISO Marking : P-1, B-2, R2-3, A-4, R1-5



## 5-PORT SOLENOID VALVE

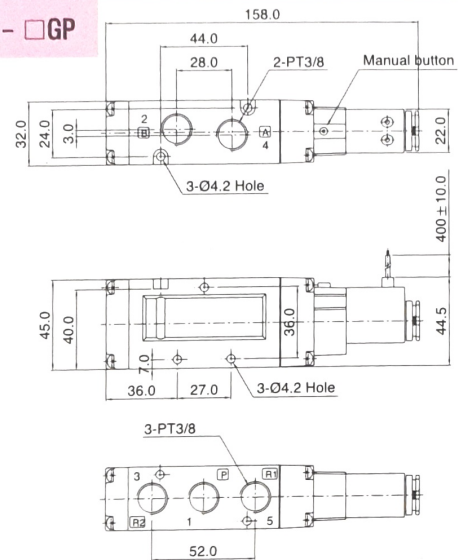
PT3/8

## DSF453S Interior Structure

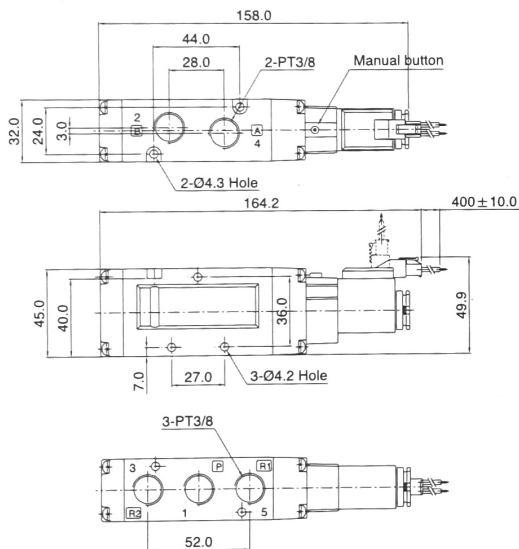


| No. | Part          | Material | No. | Part       | Material |
|-----|---------------|----------|-----|------------|----------|
| 1   | BODY          | ALDC     | 6   | PISTON     | POM      |
| 2   | COVER         | ZnDC     | 7   | SEAT       | POM      |
| 3   | SPOOL         | AL       | 8   | BUTTON     | Cu       |
| 4   | SPOOL PACKING | NBR      | 9   | COIL ASS'Y |          |
| 5   | PILOT         | PPS      | 10  | LOCK NUT   | PBT      |

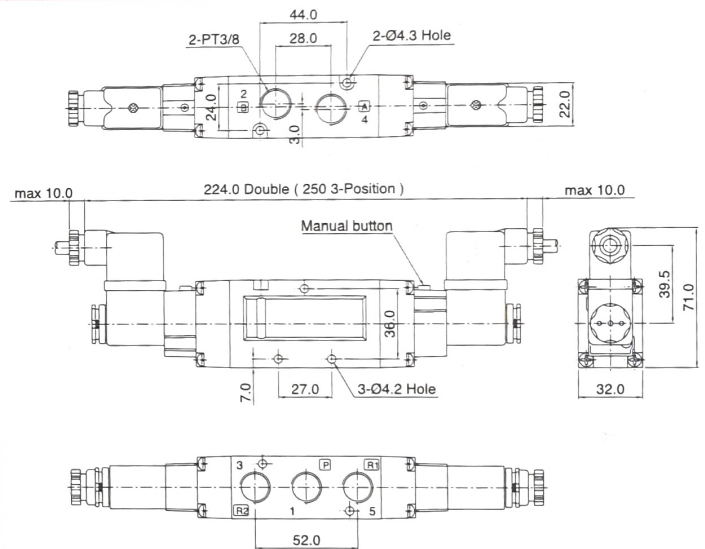
## DSF453S - □GP



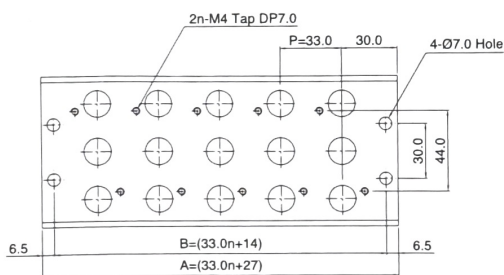
## DSF453S - □ML (SF453S - □LL)



## DSF453D - □DZP

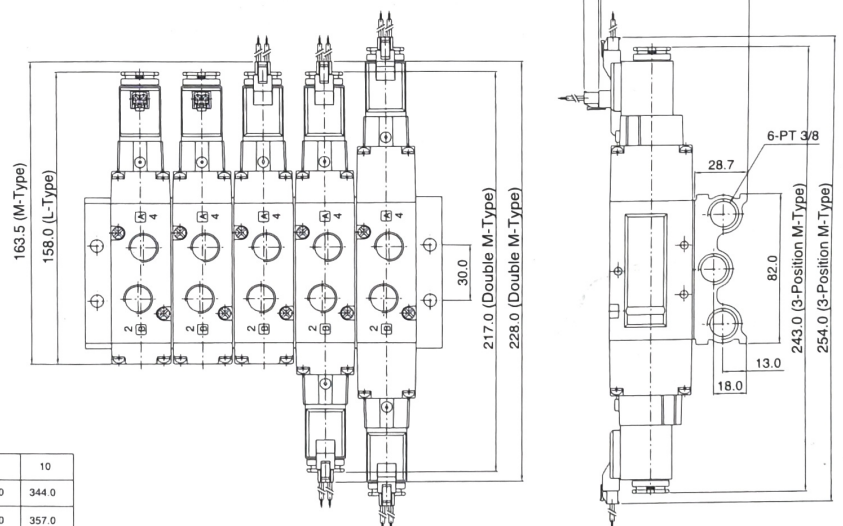


## SFM450 MANIFOLD BLOCK



| Station No. | 2    | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|-------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Length      |      |       |       |       |       |       |       |       |       |
| B           | 80.0 | 113.0 | 146.0 | 179.0 | 212.0 | 245.0 | 278.0 | 311.0 | 344.0 |
| A           | 93.0 | 126.0 | 159.0 | 192.0 | 225.0 | 258.0 | 291.0 | 324.0 | 357.0 |

## VALVE ASS'Y



# DSF510 Series.

Solenoid Valve

● AC220V/110V/DC24

5-PORT, Pilot Type

● Body Width 36.0mm

**PT1/2**

● Cv 3.5

## PROPERTY

- Lubrication not required, high durability.
- High Capacity Valve,  $\phi 80 \sim \phi 250$  Cylinder available.
- Manual Operation Possible, Pull/Lock function.
- Various Option of the Coil part, Various Length of Lead Wire.

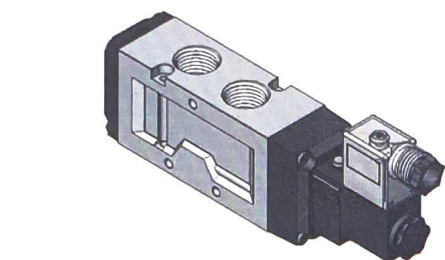
## SPECIFICATION

| Item \ Type                   |    | Single                                               | Double | Closed Center           | Exhaust Center | Pressure Center |
|-------------------------------|----|------------------------------------------------------|--------|-------------------------|----------------|-----------------|
| Port Size                     |    | PT 1/2 (G3/8, NPT3/8)                                |        |                         |                |                 |
| Fluids                        |    | Compressed Air and Inert gases                       |        |                         |                |                 |
| Pressure (bar)                |    | 1.5~9.0                                              |        | 2.0~9.0                 |                |                 |
| Flux L / Min. (5bar)          |    | 3,500                                                |        | 2,700                   |                |                 |
| Eff. Sectional Area (CV)      |    | 65mm <sup>2</sup> (3.5)                              |        | 50mm <sup>2</sup> (2.8) |                |                 |
| Air & fluid Temp.             |    | 5~60℃                                                |        |                         |                |                 |
| Response Time (5bar)          |    | 30ms and less                                        |        | 40ms and less           |                |                 |
| Max. working Frequency        |    | 2 cycle/sec                                          |        | 1 cycle/sec             |                |                 |
| Lubrication                   |    | Not Required ( Use Tubine Oil 1st-grade ISO VG32 # ) |        |                         |                |                 |
| Manual operator               |    | Push Button (Normal), Revolving Lever (Option)       |        |                         |                |                 |
| Coil Regular Voltage          |    | AC220V, AC110, AC24 (50~60Hz)/DC24V, DC12V           |        |                         |                |                 |
| Permissible Voltage Variation |    | ± 10% of the regular voltage                         |        |                         |                |                 |
| Coil Insulation Class         |    | F-class                                              |        |                         |                |                 |
| Electric Power                | AC | 4.5VA(60Hz)                                          |        |                         |                |                 |
| Consumption                   | DC | 2.5W                                                 |        |                         |                |                 |

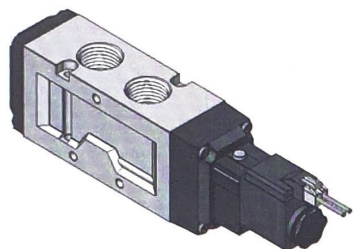
\* The specification as above can be changed to improve the capacity of the valve.

Plug Order Code.

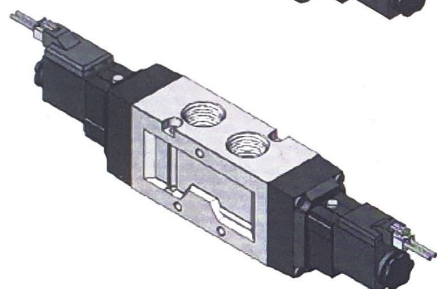
| Plug                     |  |
|--------------------------|--|
| JP400 - Length : 400mm   |  |
| JP600 - Length : 600mm   |  |
| JP1000 - Length : 1000mm |  |
| JP1500 - Length : 1500mm |  |



DSF514S-DLP



DSF514S-MLP



DSF514D-2MLP



C22G



C22M



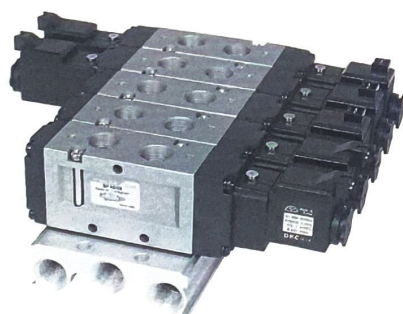
C22L



C22D

D S F 51 4 S - 2 G L P

| Port Size | Type              | Voltage          | Wire Connection       | Lamp                        | Manual operator |
|-----------|-------------------|------------------|-----------------------|-----------------------------|-----------------|
| 4 PT1/2"  | S Single          | 1 AC110V 50/60Hz | G Lead Wire           | L LED Signal Lamp           | P Button        |
|           | D Double          | 2 AC220V 50/60Hz | D Din Connector       | Z Signal Lamp surge circuit | L Lever         |
|           | H Closed Center   | 3 DC24V          | M 180° Plug Connector |                             |                 |
|           | I Pressure Center | 4 DC12V          | L 90° Plug Connector  |                             |                 |
|           | J Exhaust Center  |                  |                       |                             |                 |



## MANIFOLD Order Code

|                |                 |    |   |
|----------------|-----------------|----|---|
| SFM 510        | -               | M  | 5 |
| General Symbol | M/F Station NO. |    |   |
| SFM510 5 Way   | 2               | 2  |   |
|                | 3               | 3  |   |
|                | .               | .  |   |
|                | .               | .  |   |
|                | 15              | 15 |   |

## Valve Symbol

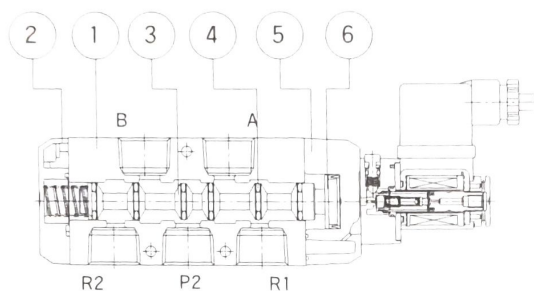
| Single Type     | Double Type    |                 |         |
|-----------------|----------------|-----------------|---------|
| DSF510S         | DSF510S        | DSF510D         | DSF510D |
| Closed Center   | Exhaust Center | Pressure Center |         |
| DSF510H         | DSF510J        | DSF510I         | DSF510I |
| 3-POSITION TYPE |                |                 |         |

\* ISO Marking : P-1, B-2, R2-3, A-4, R1-5

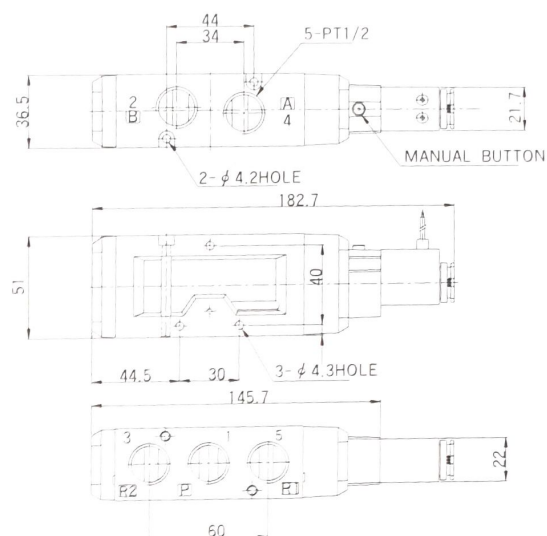
# 5-PORT SOLENOID VALVE

## PT1/2

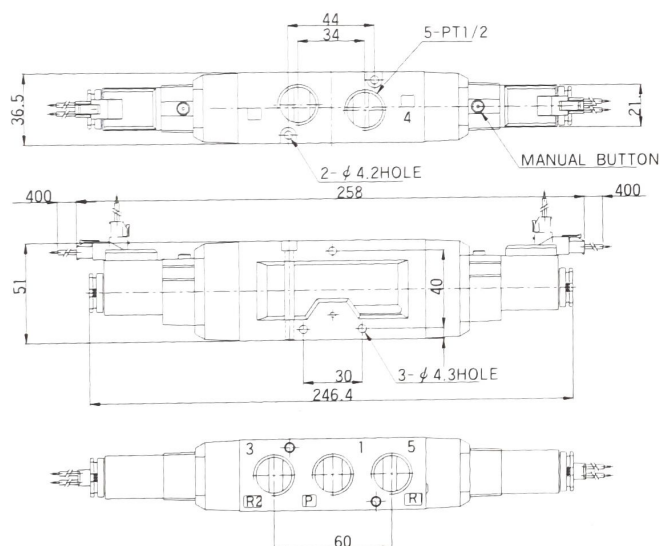
### DSF514S Interior Structure



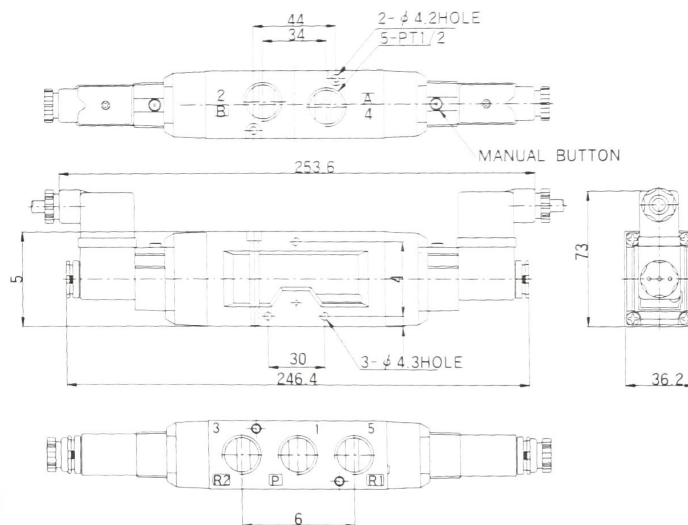
| No. | Part  | Material | No. | Part          | Material |
|-----|-------|----------|-----|---------------|----------|
| 1   | BODY  | ALDC     | 4   | SPOOL PACKING | NB       |
| 2   | COVER | PP       | 5   | PILOT         | PP       |
| 3   | SPOOL | AL       | 6   | PISTON        | PO       |



### DSF514D -2MLP (SF514H-2LLP)



### DSF514D-2DZP (SF514H-2DZP)





# DSF550 Series.

Solenoid Valve

5-Port, Metal Seal System  
Directly actuated.

PT1/2

- AC220V/110V/DC24
- Metal Seal System,  
Directly Operated by  
Sol. valve.
- Exact operation even  
in bad condition,  
being direct actuated

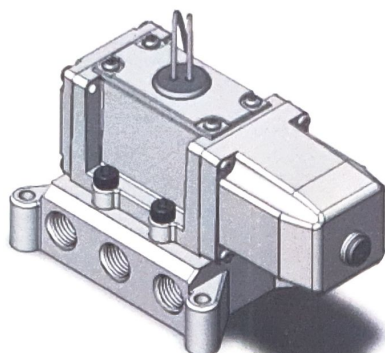
## PROPERTY

- High Capacity Valve, Suitable for Large-sized System.
- Excellent Working in bad conditions, such as the gases and the dust by the advantage of the Metal Seal System.
- Correct and precise Movement in bad condition Because powered directly by Sol. valve.

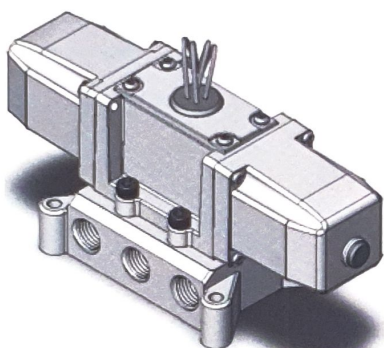
## SPECIFICATION

| Item                          | Type | Single                                                | Double |
|-------------------------------|------|-------------------------------------------------------|--------|
|                               |      |                                                       |        |
| Port Size                     |      | PT3/8, PT1/2 (G, NPT 3/8, 1/2)                        |        |
| Fluids                        |      | Compressed Air and Inert gases                        |        |
| Pressure (bar)                |      | 0~9.0                                                 |        |
| Flux L / Min. (5bar)          |      | 2,400                                                 |        |
| Eff. Sectional Area (CV)      |      | 43mm <sup>2</sup> (2.4)                               |        |
| Air & fluid Temp.             |      | 5~60℃                                                 |        |
| Response Time (5bar)          |      | 50ms and less                                         |        |
| Max. working Frequency        |      | 2 cycle/sec                                           |        |
| Lubrication                   |      | Not Required ( Use Turbine Oil 1st-grade ISO VG32 ± ) |        |
| Coil Regular Voltage          |      | AC220V, AC110, DC24 (50~60Hz)/DC24V, DC12V            |        |
| Permissible Voltage Variation |      | ±10% of the regular voltage                           |        |
| Coil Insulation Class         |      | F-class                                               |        |
| Electric Power                | AC   | 14VA(60Hz)                                            |        |
| Consumption                   | DC   | 13.2W                                                 |        |

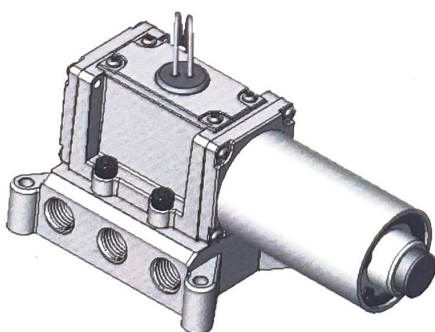
★ The specification as above can be changed to improve the capacity of the valve.



DSF55□S-□G



DSF55□D-□G



DSF55□S-3G

## Valve Symbol

| Single Type | Double Type |
|-------------|-------------|
|             |             |
| SF554S-G    | SF554D-G    |

\* ISO Marking : P-1, B-2, R2-3, A-4, R1-5

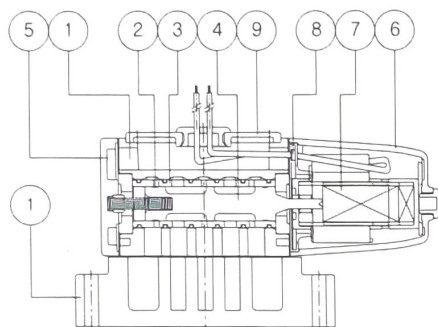
D S F 55 4 S - 2 G

| Port Size |       | Type |        | Voltage |                | Wire Connection |           |
|-----------|-------|------|--------|---------|----------------|-----------------|-----------|
| 3         | PT3/8 | S    | Single | 1       | AC110V 50/60Hz | G               | Lead Wire |
| 4         | PT1/2 | D    | Double | 2       | AC220V 50/60Hz | D               | Connector |
|           |       |      |        | 3       | DC24V          |                 |           |

## 5-PORT SOLENOID VALVE

PT1/2

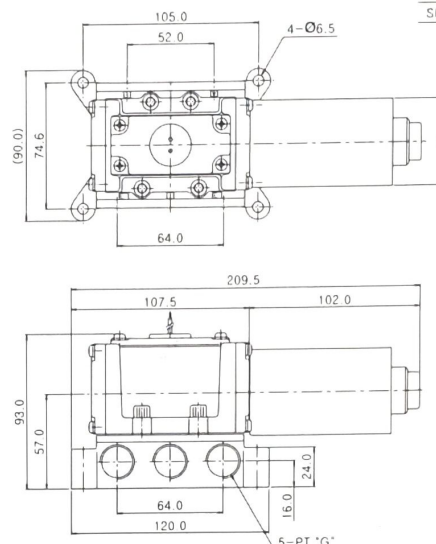
## DSF554S Interior Structure



| No. | Part           | Material | No. | Part           | Material |
|-----|----------------|----------|-----|----------------|----------|
| 1   | BODY           | ALDC     | 6   | SOLENOID COVER | ALDC     |
| 2   | SLEEVE         | SUS      | 7   | SOLENOID ASS'Y |          |
| 3   | SLEEVE PACKING | NBR      | 8   | SLEEVE HOLDER  | SCP-1    |
| 4   | SPOOL          | SUS      | 9   | UPPER COVER    | ALDC     |
| 5   | SIDE COVER     | ALDC     | 10  | SUB PLATE      | ALDC     |

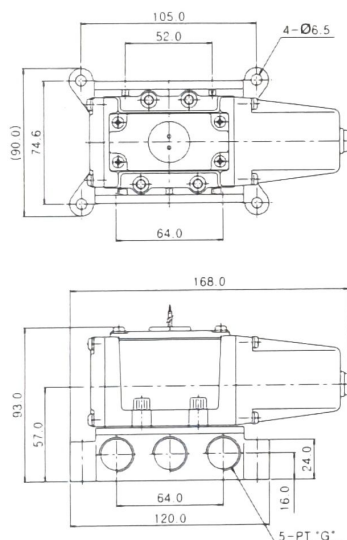
## DSF55□S - 3G

| MODEL    | Port Size |
|----------|-----------|
| SF553• - | PT 3/8    |
| SF554• - | PT 1/2    |



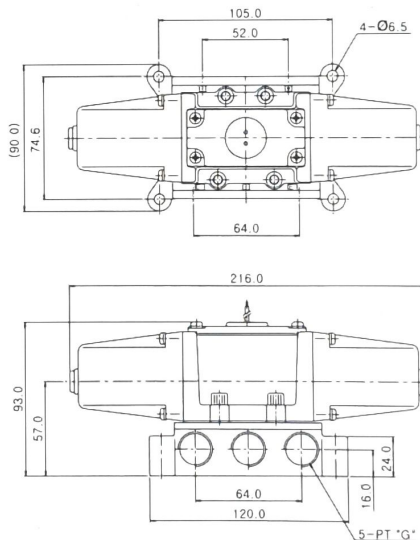
## DSF55□S - □G

| MODEL    | Port Size |
|----------|-----------|
| SF553• - | PT 3/8    |
| SF554• - | PT 1/2    |



## DSF55□D - □G

| MODEL    | Port Size |
|----------|-----------|
| SF553• - | PT 3/8    |
| SF554• - | PT 1/2    |



# DSN350 Series.

SOLENOID Valve

● AC220V/110V/DC24

5-PORT, PILOT TYPE

● NAMUR TYPE

**PT1/4**

● Cv 2.0

## PROPERTY

- Lubrication not required, Excellent endurance.
- High Capacity, Minimum size in the same class, 26.5mm Body size.
- Revolving Lever basically applied to the manual operator.
- Various Coil Option, Cool Appearance, Excellent Endurance.

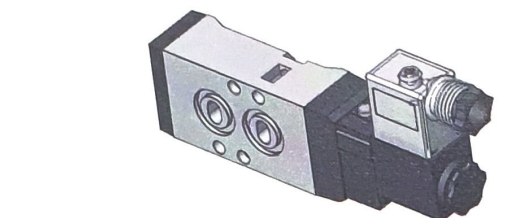
## SPECIFICATION

| Item                          | Type                                                |             |
|-------------------------------|-----------------------------------------------------|-------------|
|                               | Single / Double                                     |             |
| Port Size                     | PT 1/4 (G1/4, NPT1/4)                               |             |
| Fluids                        | Compressed Air and Inert gases                      |             |
| Pressure (bar)                | 1.5~10.0                                            |             |
| Flux L / Min. (5bar)          | 2,000                                               |             |
| Eff. Sectional Area (CV)      | 37.0mm <sup>2</sup> (2.0)                           |             |
| Air & fluid Temp.             | 5~60℃                                               |             |
| Response Time (5bar)          | 50ms and less                                       |             |
| Max. working Frequency        | 5 cycle/sec                                         |             |
| Lubrication                   | Not Required (Use Turbine Oil 1st-grade ISO VG32 #) |             |
| Manual operator               | Push Button (Option), Revolving Lever (Standard)    |             |
| Coil Regular Voltage          | AC220V, AC110, AC24 (50~60Hz)/DC24V, DC12V          |             |
| Permissible Voltage Variation | ± 10% of the regular voltage                        |             |
| Coil Insulation Class         | F-class                                             |             |
| Electric Power                | AC                                                  | 4.5VA(60Hz) |
| Consumption                   | DC                                                  | 2.5W        |

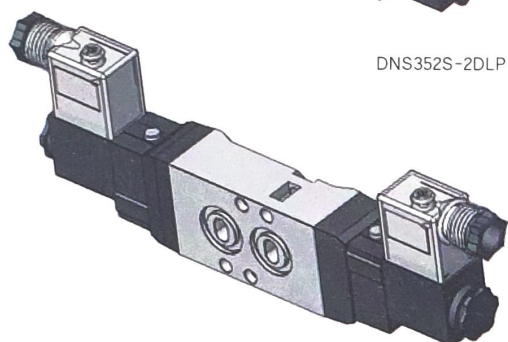
\* The specification as above can be changed to improve the capacity of the valve.

Plug Order Code.

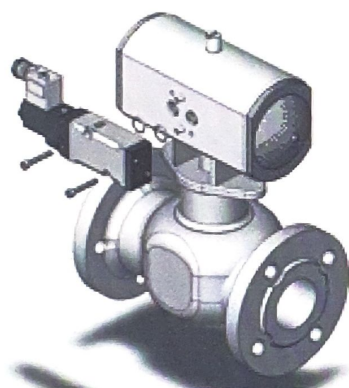
| Plug                     |  |
|--------------------------|--|
| JP400 - Length : 400mm   |  |
| JP600 - Length : 600mm   |  |
| JP1000 - Length : 1000mm |  |
| JP1500 - Length : 1500mm |  |



DSN352S-2DLP



DSN352D-2DZP



C22G



C22M



C22L



C22D

## Valve Symbol

| Single Type         | Double Type         |
|---------------------|---------------------|
| <p>DSN352S-2DLP</p> | <p>DSN352D-2DZP</p> |

\* ISO Marking : P-1, B-2, R2-3, A-4, R1-5

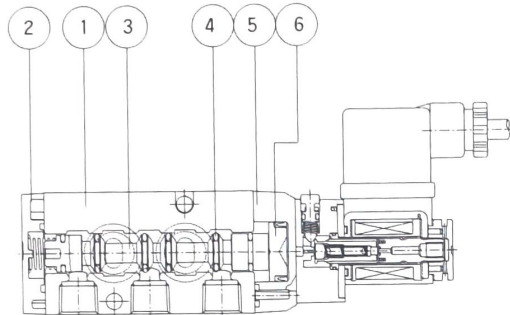
**DSN 35 2 S - 2 D L P**

| Port Size |       | Type |        | Voltage |                | Wire Connection |                     | Lamp |                           | Manual operator |        |
|-----------|-------|------|--------|---------|----------------|-----------------|---------------------|------|---------------------------|-----------------|--------|
| 2         | PT1/4 | S    | Single | 1       | AC110V 50/60Hz | G               | Lead Wire           | L    | LED Signal Lamp           | P               | Button |
|           |       | D    | Double | 2       | AC220V 50/60Hz | D               | Din Connector       | Z    | Signal Lamp surge circuit | L               | Lever  |
|           |       |      |        | 3       | DC24V          | M               | 180° Plug Connector |      |                           |                 |        |
|           |       |      |        | 4       | DC12V          | L               | 90° Plug Connector  |      |                           |                 |        |



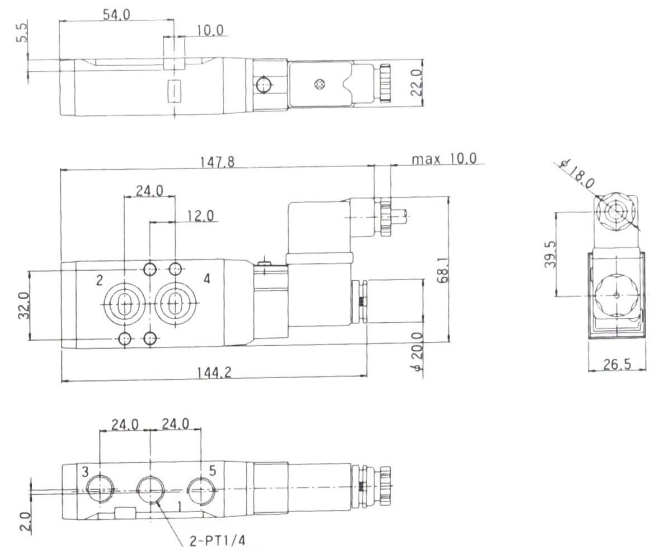
## 5-PORT SOLENOID VALVE

## DSN352S Interior Structure

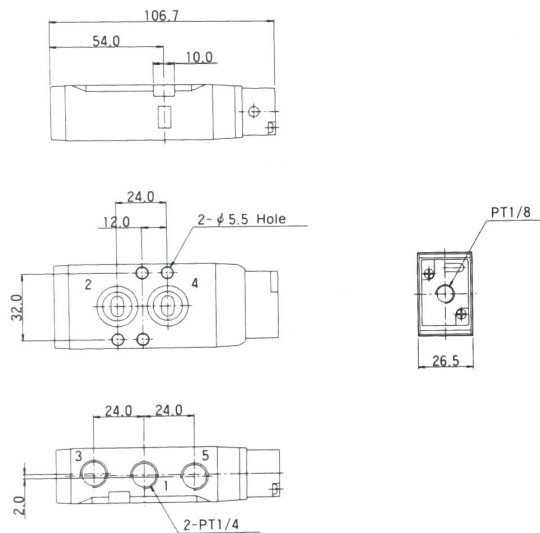


| No. | Part  | Material | No. | Part          | Material |
|-----|-------|----------|-----|---------------|----------|
| 1   | BODY  | ALDC     | 4   | SPOOL PACKING | NBR      |
| 2   | COVER | PPS      | 5   | PILOT         | PPS      |
| 3   | SPOOL | AL       | 6   | PISTON        | POM      |

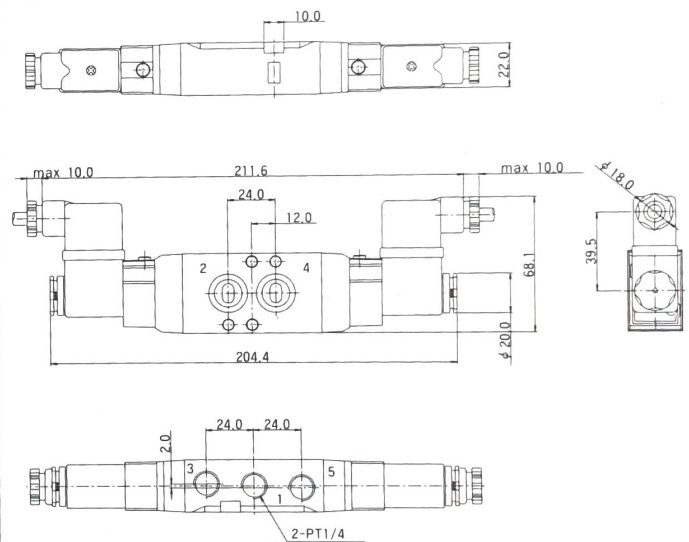
## DSN352S



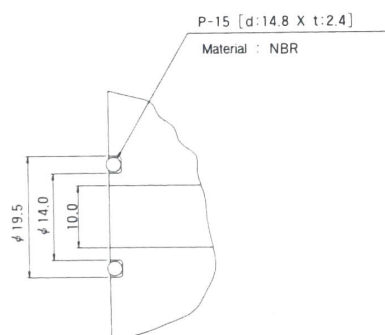
## DSN352S (Pneumatic Type)



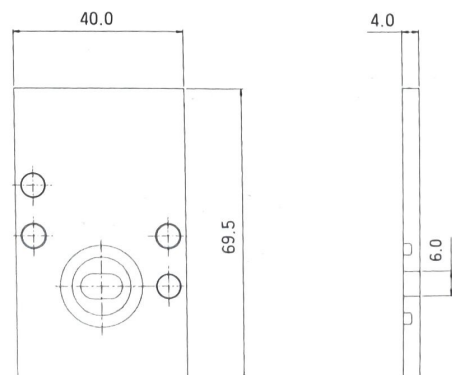
## DSN352D



## Standard O-RING Dimension



## 3-Port Bracket



# AF280 Series.

Pneumatics Valve

● Built-in Button

5-PORT, Pneumatics Type

● Body Width 18.0mm

**PT1/8**

● Cv 0.6

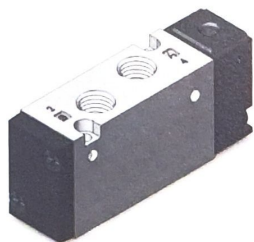
## PROPERTY

- Lubrication not Required.
- $\phi 30$  and less Cylinder Available.

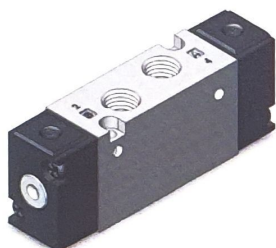
## SPECIFICATION

| Item                     | Type | Single                                             | Double |
|--------------------------|------|----------------------------------------------------|--------|
| Port Size                |      | PT1/8, (G1/8, NPT1/8)                              |        |
| Fluids                   |      | Compressed Air and Inert gases                     |        |
| Pressure (bar)           |      | 1.5~9.0                                            |        |
| Flux L / Min. (5bar)     |      | 700                                                |        |
| Eff. Sectional Area (CV) |      | 12.7mm <sup>2</sup> (0.6)                          |        |
| Air & fluid Temp.        |      | 5~60℃                                              |        |
| Max. working Frequency   |      | 5 cycle/sec                                        |        |
| Lubrication              |      | Not Required ( Use Tubine Oil 1st-grade ISO VG32 ) |        |
| Manual operator          |      | Push Button (Normal)                               |        |

\* The specification as above can be changed to improve the capacity of the valve.



AF281S



AF281D

## Valve Symbol

| Single Type   | Double Type   |
|---------------|---------------|
| <p>AF281S</p> | <p>AF281D</p> |

\* ISO Marking : P-1, B-2, R2-3, A-4, R1-5

## MANIFOLD Order Code

|                |   |                 |    |
|----------------|---|-----------------|----|
| SFM 280        | - | M               | 5  |
| General Symbol |   | M/F Station NO. |    |
| SFM280 5 Way   |   | 2               | 2  |
|                |   | 3               | 3  |
|                |   | *               | *  |
|                |   | *               | *  |
|                |   | 15              | 15 |

A F 28

1

S

### Port Size

1 PT1/8

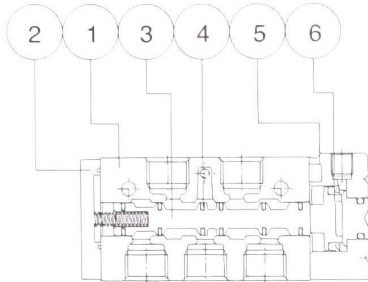
### Type

|   |                 |
|---|-----------------|
| S | Single          |
| D | Double          |
| H | Closed Center   |
| J | Exhaust Center  |
| I | Pressure Center |

# 5-PORT Pneumatics VALVE

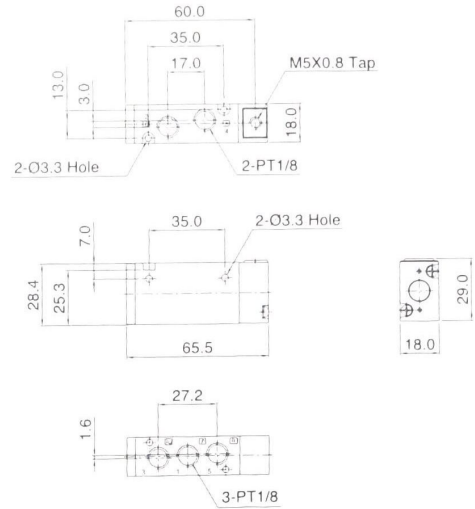
## PT1/8

### AF281S Interior Structure

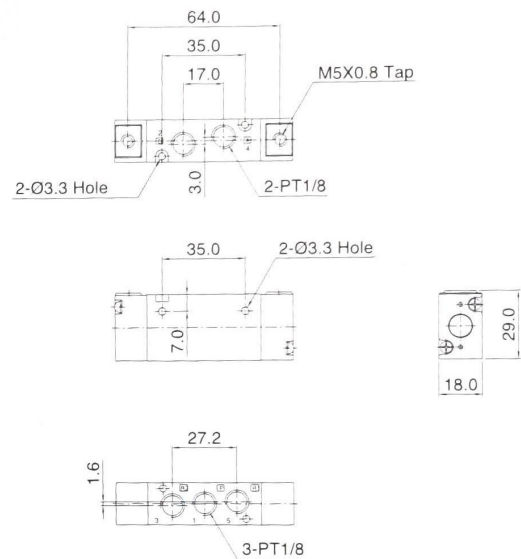


| No. | Part  | Material | No. | Part          | Material |
|-----|-------|----------|-----|---------------|----------|
| 1   | BODY  | ALDC     | 4   | SPOOL PACKING | NBR      |
| 2   | COVER | ZnDC     | 5   | PILOT         | PPS      |
| 3   | SPOOL | AL       | 6   | PISTON        | POM      |

### AF281S

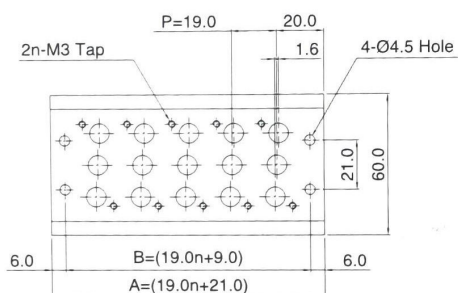


### AF281D

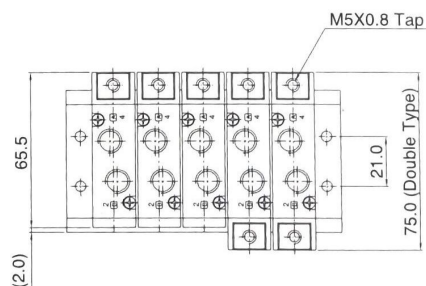


### SFM280 MANIFOLD BLOCK

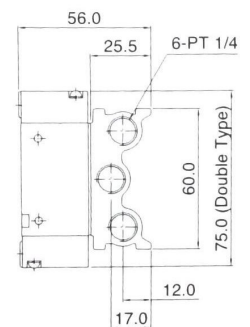
#### AFM281-M05



| Station No. | 2    | 3    | 4    | 5     | 6     | 7     | 8     | 9     | 10    |
|-------------|------|------|------|-------|-------|-------|-------|-------|-------|
| Length A    | 59.0 | 78.0 | 97.0 | 116.0 | 135.0 | 154.0 | 173.0 | 192.0 | 211.0 |
| Length B    | 47.0 | 66.0 | 85.0 | 104.0 | 123.0 | 142.0 | 161.0 | 180.0 | 199.0 |



### VALVE ASS'Y





# AF350 Series.

Pneumatics Valve

● Body Width 26.0mm

5-PORT, Pneumatics Type

● Cv 1.0

## PT1/4

### PROPERTY

- Lubrication not Required.
- $\phi 30 \sim \phi 80$  Cylinder Available.

### SPECIFICATION

| Item \ Type              | Single                                                | Double |
|--------------------------|-------------------------------------------------------|--------|
| Port Size                | PT1/4, (G1/4, NPT1/4)                                 |        |
| Fluids                   | Compressed Air and Inert gases                        |        |
| Pressure (bar)           | 1.5~9.0                                               |        |
| Flux L / Min. (5bar)     | 1,000                                                 |        |
| Eff. Sectional Area (CV) | 19.0mm <sup>2</sup> (1.0)                             |        |
| Air & fluid Temp.        | 5~60℃                                                 |        |
| Response Time            | 25ms and less                                         |        |
| Max. working Frequency   | 5 cycle/sec                                           |        |
| Lubrication              | Not Required ( Use Turbine Oil 1st-grade ISO VG32 # ) |        |

\* The specification as above can be changed to improve the capacity of the valve.

### Valve Symbol

| Single Type     | Double Type    |                 |
|-----------------|----------------|-----------------|
|                 |                |                 |
| AF352S          | AF352D         |                 |
| Closed Center   | Exhaust Center | Pressure Center |
|                 |                |                 |
| AF352H          | AF352J         | AF352I          |
| 3-POSITION TYPE |                |                 |

\* ISO Marking : P-1, B-2, R2-3, A-4, R1-5

### MANIFOLD Order Code

|                |                 |    |   |
|----------------|-----------------|----|---|
| SFM 350        | -               | M  | 5 |
| General Symbol | M/F Station NO. |    |   |
| SFM350 5 Way   | 2               | 2  |   |
|                | 3               | 3  |   |
|                | *               | *  |   |
|                | 15              | 15 |   |

A F 35 2 S

#### Port Size

|   |       |
|---|-------|
| 2 | PT1/4 |
|---|-------|

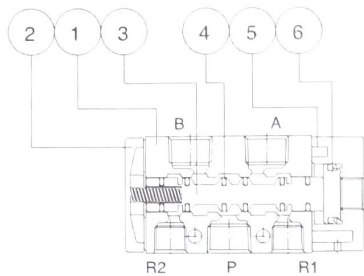
#### Type

|   |                 |
|---|-----------------|
| S | Single          |
| D | Double          |
| H | Closed Center   |
| J | Exhaust Center  |
| I | Pressure Center |

5-PORT Pneumatics VALVE

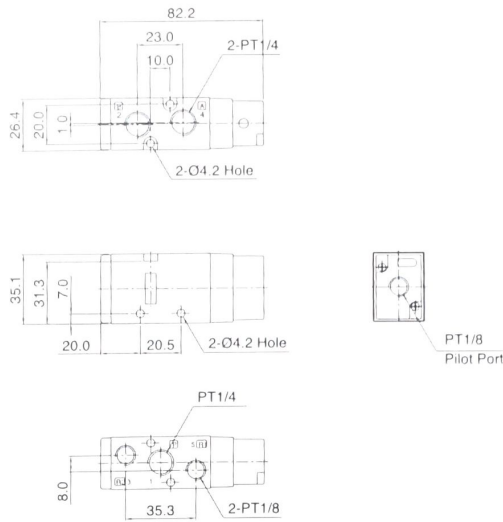
PT1/4

AF352S Interior Structure

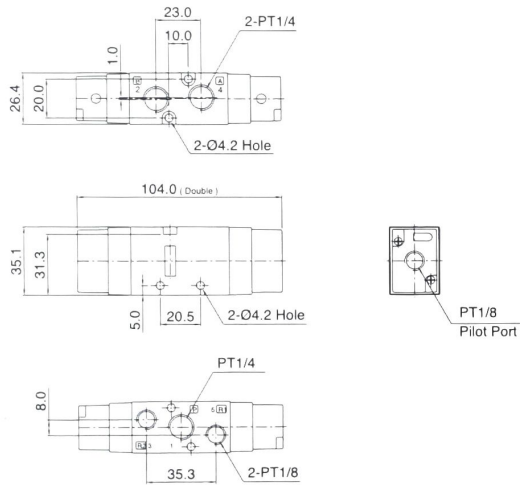


| No. | Part  | Material | No. | Part          | Material |
|-----|-------|----------|-----|---------------|----------|
| 1   | BODY  | ALDC     | 4   | SPOOL PACKING | NBR      |
| 2   | COVER | ZnDC     | 5   | PILOT         | PPS      |
| 3   | SPOOL | AL       | 6   | PISTON        | POM      |

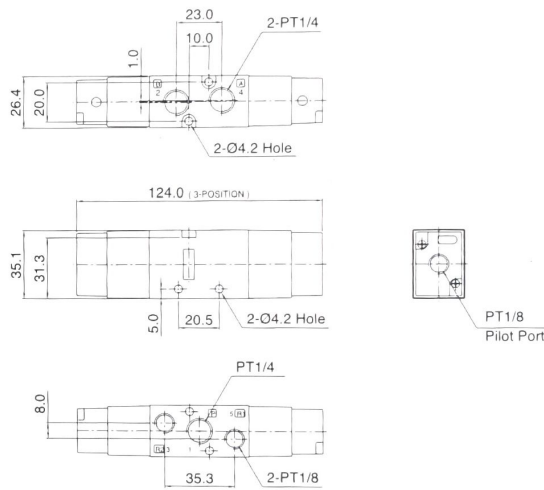
AF352S



AF352D

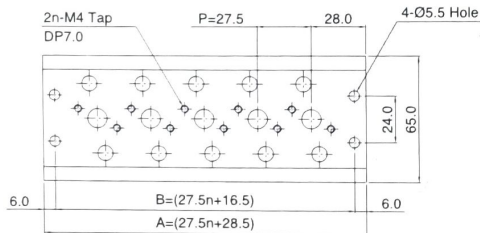


AF352H, AF352I, AF352J

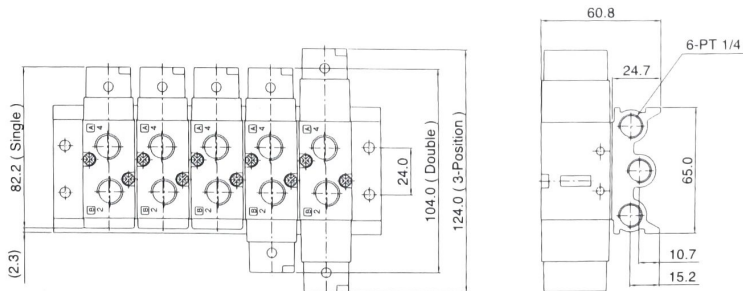


SFM350 MANIFOLD BLOCK

SFM350-05



VALVE ASS'Y



| Station No. | 2    | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|-------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Length      |      |       |       |       |       |       |       |       |       |
| B           | 71.5 | 99.0  | 126.5 | 154.0 | 181.5 | 209.0 | 236.5 | 264.0 | 291.5 |
| A           | 83.5 | 111.0 | 138.5 | 166.0 | 193.5 | 221.0 | 248.5 | 276.0 | 303.5 |

# AF450 Series.

Pneumatics Valve

● Body Width 32.0mm

5-PORT, Pneumatics Type

● Cv 2.3

## PT3/8

### PROPERTY

- Lubrication not Required.
- High Capacity  $\phi 80 \sim \phi 150$  Cylinder Available.

### SPECIFICATION

| Item                     | Type | Single                                                    | Double |
|--------------------------|------|-----------------------------------------------------------|--------|
| Port Size                |      | PT3/8, (G3/8, NPT3/8)                                     |        |
| Fluids                   |      | Compressed Air and Inert gases                            |        |
| Pressure (bar)           |      | 1.5~9.0                                                   |        |
| Flux L / Min. (5bar)     |      | 2,400                                                     |        |
| Eff. Sectional Area (CV) |      | 43.0mm <sup>2</sup> (2.3)                                 |        |
| Air & fluid Temp.        |      | 5~60℃                                                     |        |
| Response Time            |      | 30ms and less                                             |        |
| Max. working Frequency   |      | 5 cycle/sec                                               |        |
| Lubrication              |      | Not Required ( Use Turbine Oil 1st-grade ISO VG32 $\pm$ ) |        |

\* The specification as above can be changed to improve the capacity of the valve.

### Valve Symbol

| Single Type     | Double Type    |                 |
|-----------------|----------------|-----------------|
| <br>AF453S      | <br>AF453D     |                 |
| Closed Center   | Exhaust Center | Pressure Center |
| <br>AF453H      | <br>AF453J     | <br>AF453I      |
| 3-POSITION TYPE |                |                 |

\* ISO Marking : P-1, B-2, R2-3, A-4, R1-5

### MANIFOLD Order Code

|                |   |                 |    |
|----------------|---|-----------------|----|
| SFM 450        | - | M               | 5  |
| General Symbol |   | M/F Station NO. |    |
| SFM450 5 Way   |   | 2               | 2  |
|                |   | 3               | 3  |
|                |   | •               | •  |
|                |   | 15              | 15 |

# A F 45

# 3

# S

**Port Size**

3 PT3/8

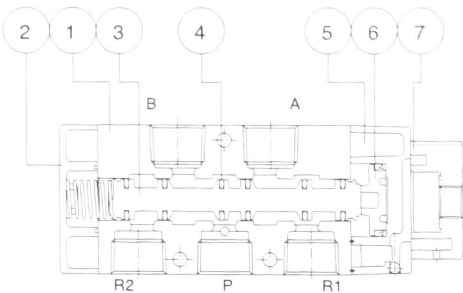
**Type**

|   |                 |
|---|-----------------|
| S | Single          |
| D | Double          |
| H | Closed Center   |
| J | Exhaust Center  |
| I | Pressure Center |



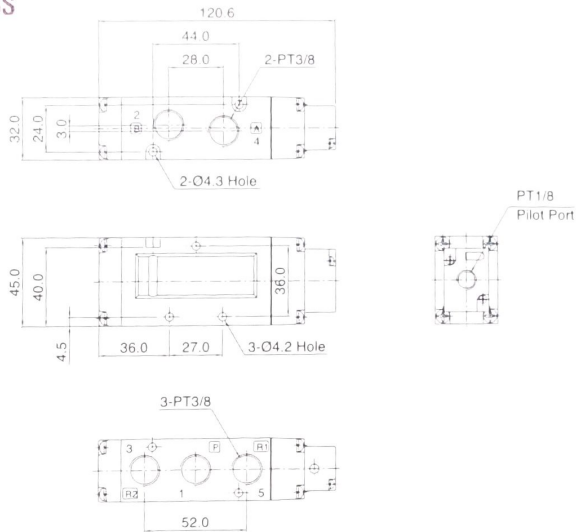
5-PORT Pneumatics VALVE

AF453S Interior Structure

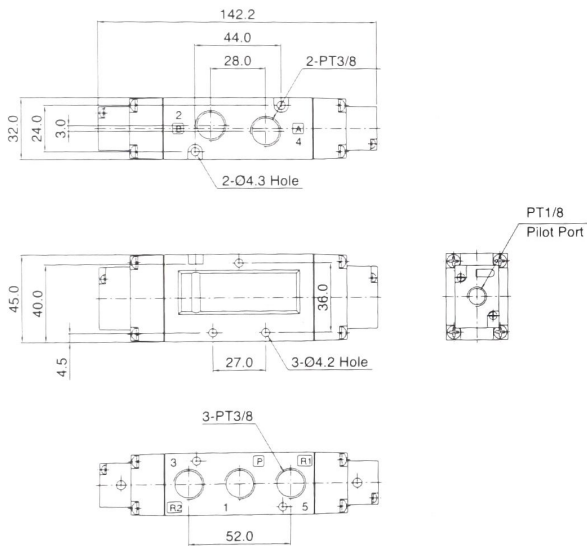


| No. | Part          | Material |
|-----|---------------|----------|
| 1   | BODY          | ALDC     |
| 2   | COVER         | ZnDC     |
| 3   | SPOOL         | AL       |
| 4   | SPOOL PACKING | NBR      |
| 5   | PILOT         | ZnDC     |
| 6   | PISTON        | POM      |
| 7   | SEAT          | ZnDC     |

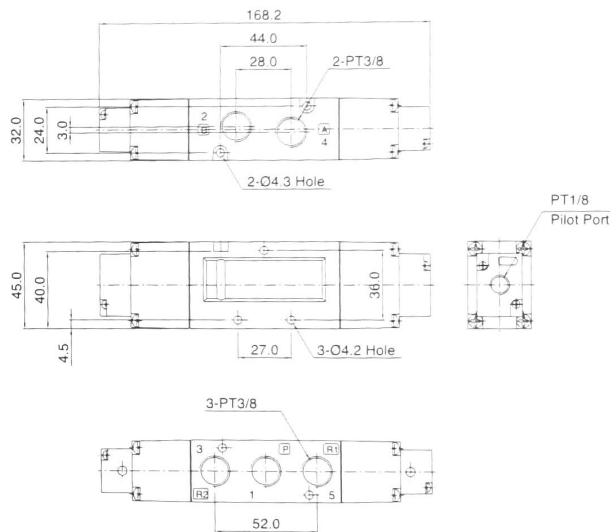
AF453S



AF453D



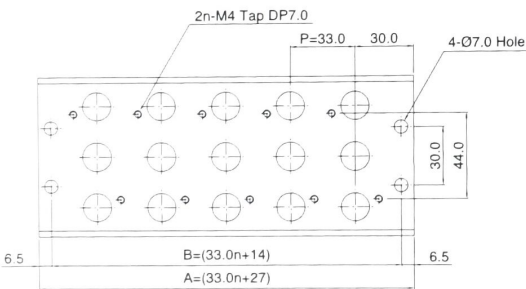
AF453H, AF453I, AF453J



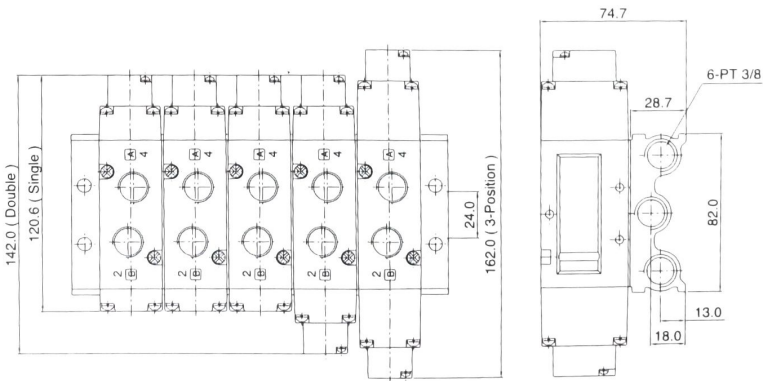
SFM450 MANIFOLD BLOCK

VALVE ASS'Y

SFM450-M05



| Station No | 2    | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Length     |      |       |       |       |       |       |       |       |       |
| B          | 80.0 | 113.0 | 146.0 | 179.0 | 212.0 | 245.0 | 278.0 | 311.0 | 344.0 |
| A          | 93.0 | 126.0 | 159.0 | 192.0 | 225.0 | 258.0 | 291.0 | 324.0 | 357.0 |



# ST2000 Series.

Solenoid Valve

3-PORT, Direct Type

PT1/8

● AC220V/110V/DC24

● Orifice  $\phi$  1.5

## PROPERTY

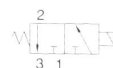
- Cool Appearance, Light Weight.
- Possible the valves are combined without Manifolds.
- Various option of the coil part.  
Push/Lock function of the manual operator  
Various length of the Lead Wires.

## SPECIFICATION

| Type                          |    | ST2001(N.C)                                         | ST2101(N.C) |
|-------------------------------|----|-----------------------------------------------------|-------------|
| Item                          |    |                                                     |             |
| Port Size                     |    | P=PT 1/8 N.C (G. NPT1/8), P= M5 N.O                 |             |
| Fluids                        |    | Compressed Air and Inert gases                      |             |
| Pressure (bar)                |    | 0~8.0                                               |             |
| Flux L / Min. (5bar)          |    | 60 l / min                                          |             |
| Eff. Sectional Area (CV)      |    | 1.1mm(0.06)                                         |             |
| Ambient air & fluid Temp.     |    | 5~60℃                                               |             |
| Response Time (5bar)          |    | 20ms                                                |             |
| Lubrication                   |    | Not Required ( Use Turbine Oil 1st-grade ISO VG32 ) |             |
| Manual operator               |    | Push Button (Normal), Revolving Lever (Option)      |             |
| Coil Regular Voltage          |    | AC220V, AC110, DC24 (50~60Hz)/DC24V, DC12V          |             |
| Permissible Voltage Variation |    | ± 10% of the regular voltage                        |             |
| Coil Insulation Class         |    | F-class                                             |             |
| Power                         | AC | 4.5VA(60Hz)                                         |             |
| Consumption                   | DC | 2.5W                                                |             |

\* The specification as above can be changed to improve the capacity of the valve.

## Valve Symbol

| Normal Open                                                                                              | Normal Close                                                                                             |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|  <p>ST2101(N.O)</p> |  <p>ST2001(N.C)</p> |

\* ISO Marking : P-1, A-2, R-3

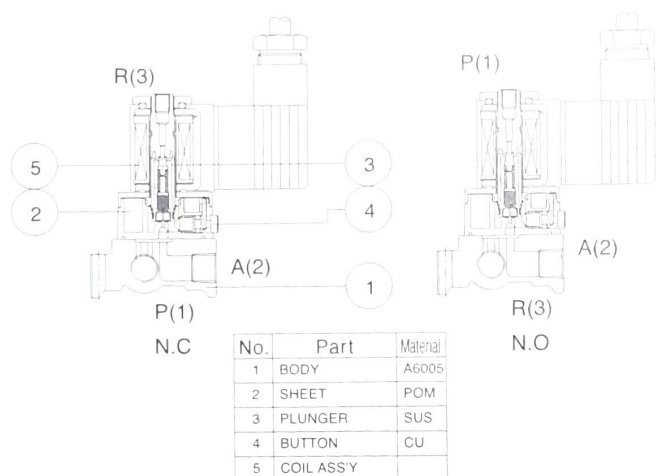
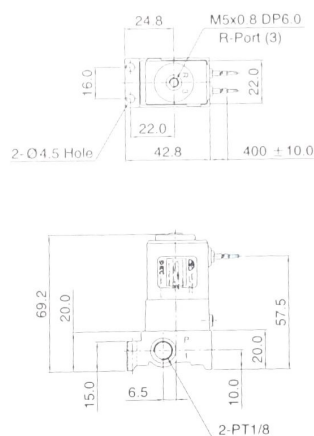
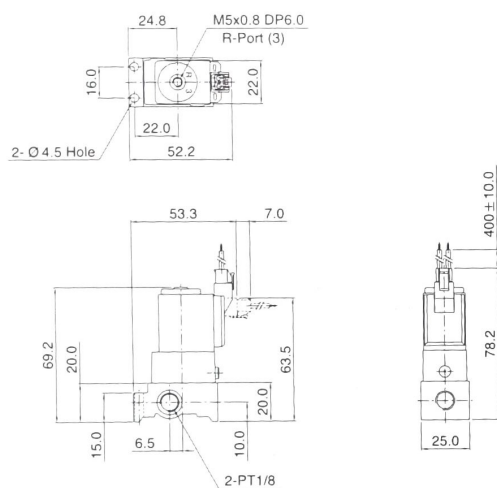
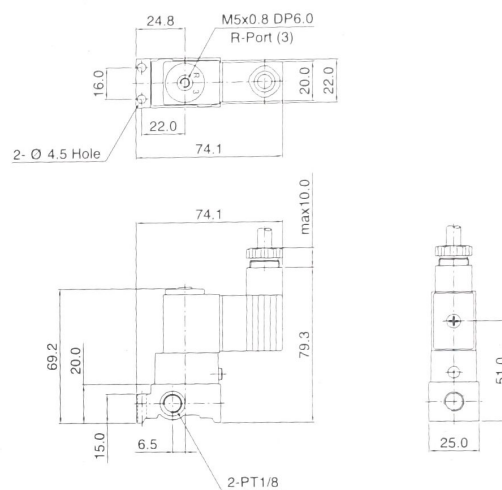
S T 20 01 - 15 D N - 2 D - M 05

| Valve Symbol |     | Port Size |       | Orifice Size |            | Packing Material |         | Regular Voltage |                | Wire Connection |                                            | M/F Order Coode |    |
|--------------|-----|-----------|-------|--------------|------------|------------------|---------|-----------------|----------------|-----------------|--------------------------------------------|-----------------|----|
| 20           | N/C | 01        | PT1/8 | 09           | $\phi$ 0.9 | N                | NBR     | 1               | AC110V 50/60Hz | G               | Lead Wire                                  | M03             | 3  |
| 21           | N/O |           |       | 15           | $\phi$ 1.5 | V                | (VITON) | 2               | AC220V 50/60Hz | D               | Din Connector                              | M04             | 4  |
|              |     |           |       |              |            |                  |         | 3               | DC24V          | DL              | LED Indicating lamp Connector              | M09             | 9  |
|              |     |           |       |              |            |                  |         | 4               | DC12V          | DZ              | LED Indicating lamp Surge killer Connector | M10             | 10 |
|              |     |           |       |              |            |                  |         |                 |                | L               | 180° Plug Connector(Built-in Lamp)         |                 |    |
|              |     |           |       |              |            |                  |         |                 |                | M               | 90° Plug Connector(Built-in Lamp)          |                 |    |

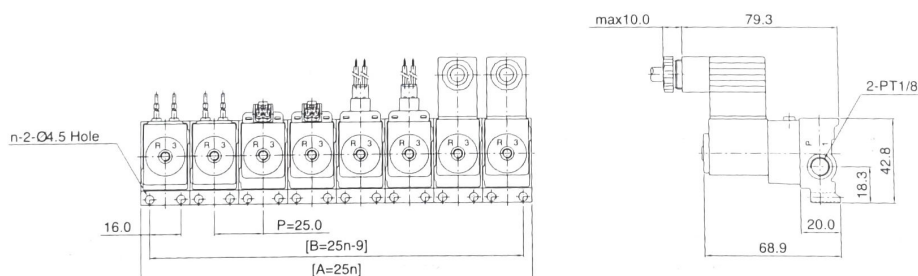
# 3-PORT SOLENOID VALVE

## PT1/8

ST2001-15DN-□D (N.C, N.O Interior Structure)

ST2001-15DN-□G (N.C)  
ST2101-15DN-□G (N.O)ST2001-15DN-□M(L) (N.C)  
ST2101-15DN-□M(L) (N.O)ST2001-15DN-□DZ (N.C)  
ST2101-15DN-□DZ (N.O)

### ST2000 Dimension In Combination



### VALVE ASS'Y

| Length | Station No. | 2    | 3    | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    |
|--------|-------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| B      |             | 41.0 | 66.0 | 91.0  | 116.0 | 141.0 | 166.0 | 191.0 | 216.0 | 241.0 | 266.0 | 291.0 | 316.0 | 341.0 | 366.0 |
| A      |             | 50.0 | 75.0 | 100.0 | 125.0 | 150.0 | 175.0 | 200.0 | 225.0 | 250.0 | 275.0 | 300.0 | 325.0 | 350.0 | 375.0 |



# ST350 Series.

Solenoid Valve

● AC220V/110V/DC24

3-PORT, Pilot Type

● Body Width 26.0mm

PT1/4

● Cv 1.0

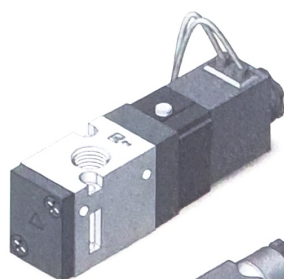
## PROPERTY

- Lubrication not required.
  - $\phi 30 \sim \phi 80$  cylinder available.
  - Push/Lock function of manual operator.
- Various option of the coil part.  
Various length of the lead wire

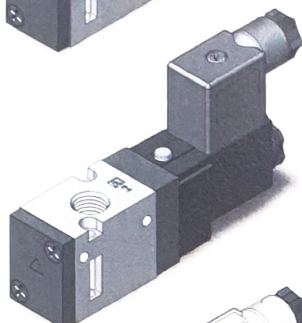
## SPECIFICATION

| Type                          |    | ST350S(N.C)                                               | ST360S(N.O) |
|-------------------------------|----|-----------------------------------------------------------|-------------|
| Item                          |    |                                                           |             |
| Port Size                     |    | PT 1/4 (G1/4, NPT1/4)                                     |             |
| Fluids                        |    | Compressed Air and Inert gases                            |             |
| Pressure (bar)                |    | 1.5~9                                                     |             |
| Flux L / Min. (5bar)          |    | 1,000                                                     |             |
| Eff. Sectional Area (CV)      |    | 19.0mm <sup>2</sup> (1.0)                                 |             |
| Response Time (5bar)          |    | 20ms and Less                                             |             |
| Max. working Frequency        |    | 5 cycle/sec                                               |             |
| Lubrication                   |    | Not Required ( Use Turbine Oil 1st-grade ISO VG32 $\pm$ ) |             |
| Manual operator               |    | Push Button (Normal), Revolving Lever (Option)            |             |
| Coil Regular Voltage          |    | AC220V, AC110, AC24 (50~60Hz)/DC24V, DC12V                |             |
| Permissible Voltage Variation |    | $\pm 10\%$ of the regular voltage                         |             |
| Coil Insulation Class         |    | F-class                                                   |             |
| Power                         | AC | 4.5VA(60Hz)                                               |             |
| Consumption                   | DC | 2.5W                                                      |             |

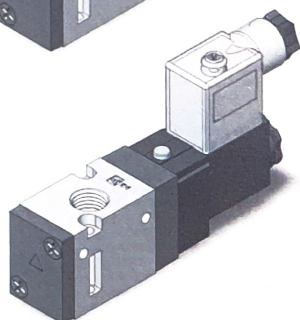
\* The specification as above can be changed to improve the capacity of the valve.



ST352S-□GP  
ST362S-□GP



ST352S-□DP  
ST362S-□DP



ST352S-□DZP  
ST362S-□DZP



C22G



C22M



C22L



C22D

### ▼ Plug Order Code.

#### Plug



JP400 - Length : 400mm    JP1000 - Length : 1000mm  
JP600 - Length : 600mm    JP1500 - Length : 1500mm

### MANIFOLD Order Code

STM 350 - M 5

General Symbol  
STM350 5 Way

M/F Station NO.

|    |    |
|----|----|
| 2  | 2  |
| 3  | 3  |
| •  | •  |
| •  | •  |
| 15 | 15 |

## Valve Symbol

| Normal Open | Normal Close |
|-------------|--------------|
| <br>ST362S  | <br>ST352S   |

\* ISO Marking : P-1, A-2, R-3

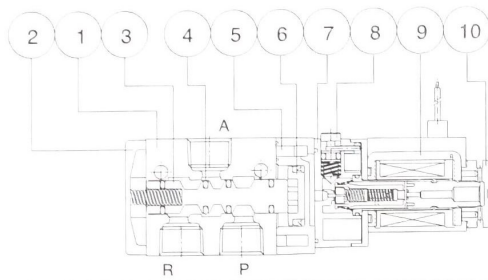
S T 3 5 2 S - 2 G L P

| Valve Symbol | Port Size | Type     | Voltage          | Wire Connection       | Lamp                        | Manual Operator |
|--------------|-----------|----------|------------------|-----------------------|-----------------------------|-----------------|
| 5 NC         | 2 PT1/4   | S Single | 1 AC110V 50/60Hz | G Lead Wire           | L LED Signal Lamp           | P Button        |
| 6 NO         |           | D Double | 2 AC220V 50/60Hz | D Din Connector       | z Signal Lamp surge circuit | L Lever         |
|              |           |          | 3 DC24V          | M 180° Plug Connector |                             |                 |
|              |           |          | 4 DC12V          | L 90° Plug Connector  |                             |                 |

## 3-PORT SOLENOID VALVE

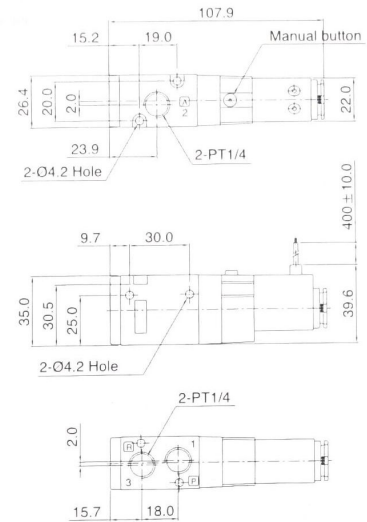
PT1/4

## ST352S Interior Structure

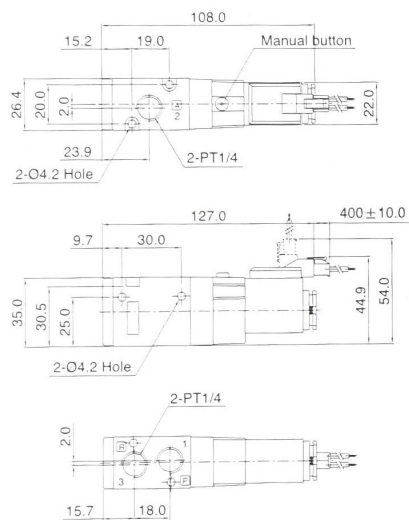


| No. | Part          | Material | No. | Part       | Material |
|-----|---------------|----------|-----|------------|----------|
| 1   | BODY          | ALDC     | 6   | PISTON     | POM      |
| 2   | COVER         | ZnDC     | 7   | SEAT       | POM      |
| 3   | SPOOL         | AL       | 8   | BUTTON     | Cu       |
| 4   | SPOOL PACKING | NBR      | 9   | COIL ASS'Y |          |
| 5   | PILOT         | PPS      | 10  | LOCK NUT   | PBT      |

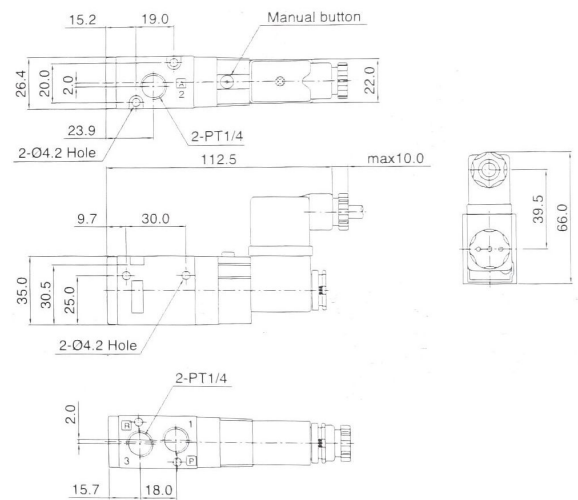
## ST352S - □GP



## ST352S - □MLP (ST352S - □LLP)

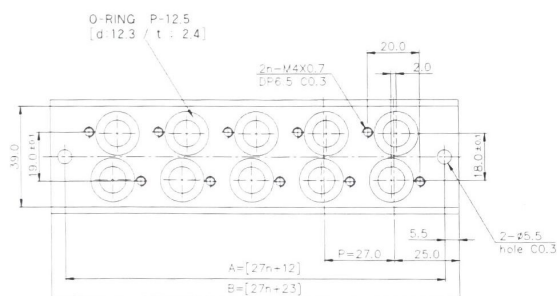


## ST352S - □DZP



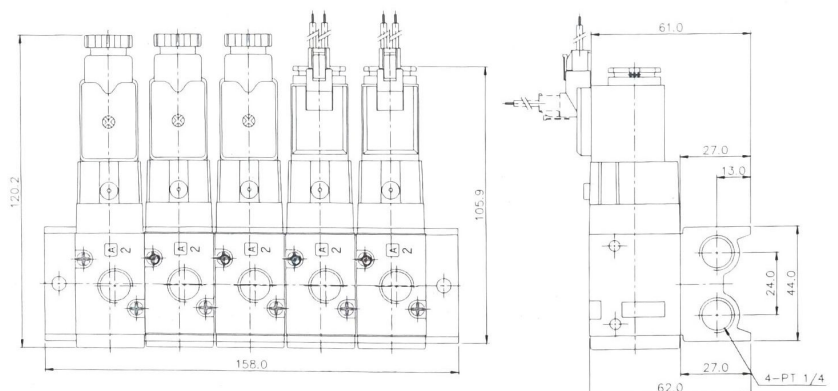
## STM350 MANIFOLD BLOCK

## STM350-M05



| Symbol No. | 2    | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| A          | 66.0 | 93.0  | 120.0 | 147.0 | 174.0 | 201.0 | 228.0 | 255.0 | 282.0 |
| B          | 77.0 | 104.0 | 131.0 | 158.0 | 185.0 | 212.0 | 239.0 | 266.0 | 293.0 |

## VALVE ASS/Y



# VT3000 Series.

Solenoid Valve

- AC220V/110V/DC24 3-PORT, Direct Type
- Prevention System against the adherence. **PT1/4**
- Cv 0.4

## PROPERTY

- Capable of working with high frequency.
- The structure of the valve is well designed never to be adhered between the parts.
- Able to be used in high vibration and pressure. Used in 2/3 ways at the same time, Universal valve.



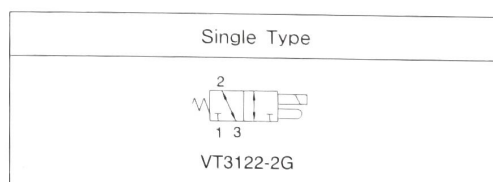
VT3122-□G

## SPECIFICATION

| Item                          |    | Type | Standard Spec.                             |
|-------------------------------|----|------|--------------------------------------------|
| Port Size                     |    |      | PT1/4 (G1/4, NPT1/4)                       |
| Fluids                        |    |      | Compressed Air and Inert gases             |
| Pressure (bar)                |    |      | 0~10.0                                     |
| Flux L / Min. (5bar)          |    |      | 400                                        |
| Eff. Sectional Area (CV)      |    |      | 7.2mm <sup>2</sup> (0.4)                   |
| Ambient air & fluid Temp.     |    |      | 5~50℃                                      |
| Response Time (5bar)          |    |      | 30ms and less                              |
| Max. working Frequency        |    |      | 5 cycle/sec                                |
| Coil Regular Voltage          |    |      | AC220V, AC110, AC24 (50~60Hz)/DC24V, DC12V |
| Permissible Voltage Variation |    |      | ± 10% of the regular voltage               |
| Coil Insulation Class         |    |      | F-class                                    |
| Power                         | AC |      | 22VA(60Hz)                                 |
| Consumption                   | DC |      | 13W                                        |

\* The specification as above can be changed to improve the capacity of the valve.

## Valve Symbol



\* ISO Marking : P-1, A-2, R-3

V T 31 2 2 - 2 G

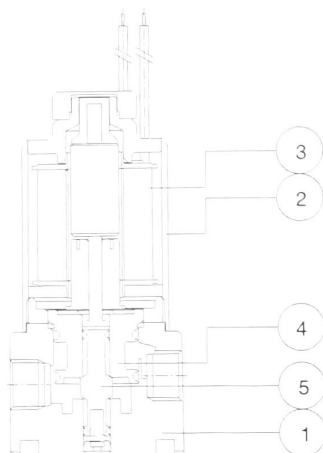
| Port No. | Port Size | Type                  | Voltage          | Wire Connection |
|----------|-----------|-----------------------|------------------|-----------------|
| D 2-Port | 2 PT1/4   | 2 Rubber Coating Type | 1 AC110V 50/60Hz | G Lead Wire     |
| T 3-Port |           |                       | 2 AC220V 50/60Hz |                 |
|          |           |                       | 3 DC24V          |                 |
|          |           |                       | 4 DC12V          |                 |



# 3-PORT SOLENOID VALVE

## PT1/4

### VT3000 Interior Structure

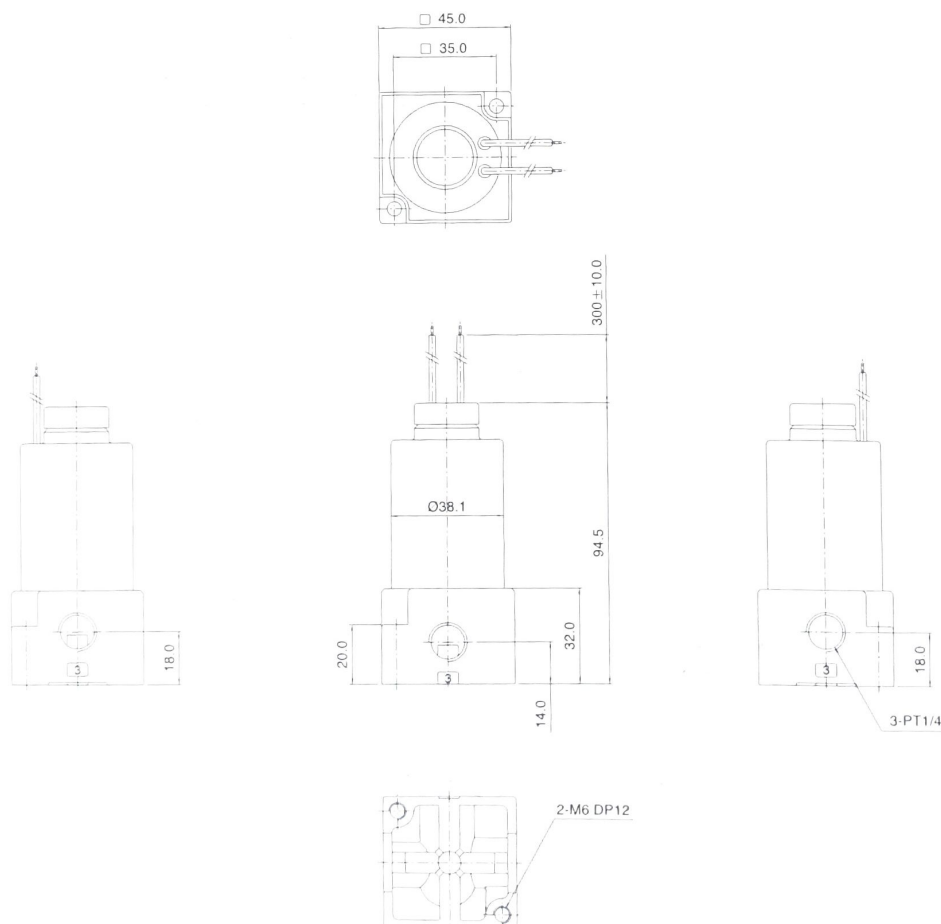


| No. | Part       | Material |
|-----|------------|----------|
| 1   | BODY       | ALDC     |
| 2   | COIL COVER | SCP      |
| 3   | COIL ASS'Y |          |
| 4   | SEAT       | Cu       |
| 5   | SPOOL      | AL       |

| VALVE Position | 3-Port Valve N.C | 3-Port Valve N.O | 3-Port Valve N.C |
|----------------|------------------|------------------|------------------|
| Solenoid OFF   |                  |                  |                  |
| Solenoid ON    |                  |                  |                  |

| VALVE Position | 2-Port N.O | Selector Valve | Divider Valve |
|----------------|------------|----------------|---------------|
| Solenoid OFF   |            |                |               |
| Solenoid ON    |            |                |               |

### VT3122 - □G



MF280 Series.

Mechanical Valve

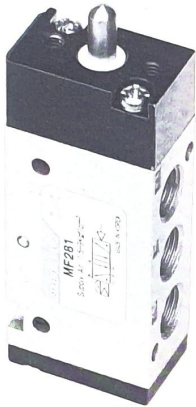
- Direct Actuated Valve
- Various Switch Applied
- Excellent Durability

Mechanical Valve

PT1/8

PROPERTY

- Lubrication not required.
- Various Switches are applied to the valve to be used for many purposes.

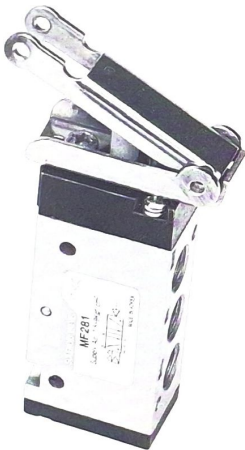


MF281-10

SPECIFICATION

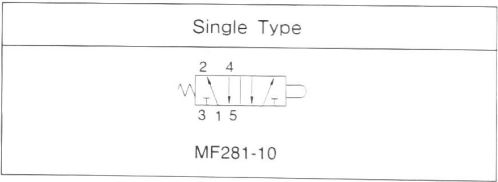
| Item                      | Type | Standard Spec.                                        |
|---------------------------|------|-------------------------------------------------------|
| Port Size                 |      | PT 1/8 (G. NPT1/8)                                    |
| Fluids                    |      | Compressed Air and Inert gases                        |
| Pressure (bar)            |      | 0~8.0                                                 |
| Eff. Sectional Area (CV)  |      | 12.6mm <sup>2</sup> (0.6)                             |
| Ambient air & fluid Temp. |      | 5℃~60℃                                                |
| Lubrication               |      | Not Required ( Use Turbine Oil 1st-grade ISO VG32 ≒ ) |

\* The specification as above can be changed to improve the capacity of the valve.



MF281-11

Valve Symbol



\* ISO Marking : P-1, B-2, R2-3, A-4, R1-5

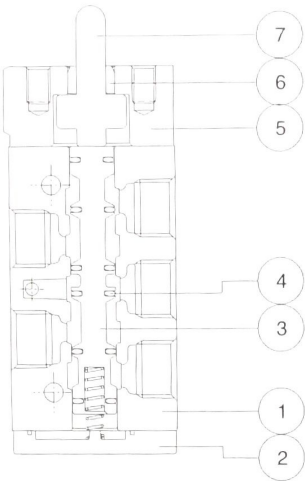
M F 28 1 - 10

| Port No. |        | Port Size |        | Type |                         |
|----------|--------|-----------|--------|------|-------------------------|
| T        | 3-Port | 1         | PT 1/8 | 10   | Basic                   |
| F        | 5-Port |           |        | 11   | (Roller Plastic Type)   |
|          |        |           |        | 12   | (Roller Baring Type)    |
|          |        |           |        | 11S  | (2 Roller Plastic Type) |
|          |        |           |        | 12S  | (2 Roller Baring Type)  |
|          |        |           |        | 13   | Emergency Button        |
|          |        |           |        | 13E  | Emergency Push Lock     |
|          |        |           |        | 14   | Push Button Type        |
|          |        |           |        | 15   | Selector Type           |

5-PORT MECHANICAL VALVE

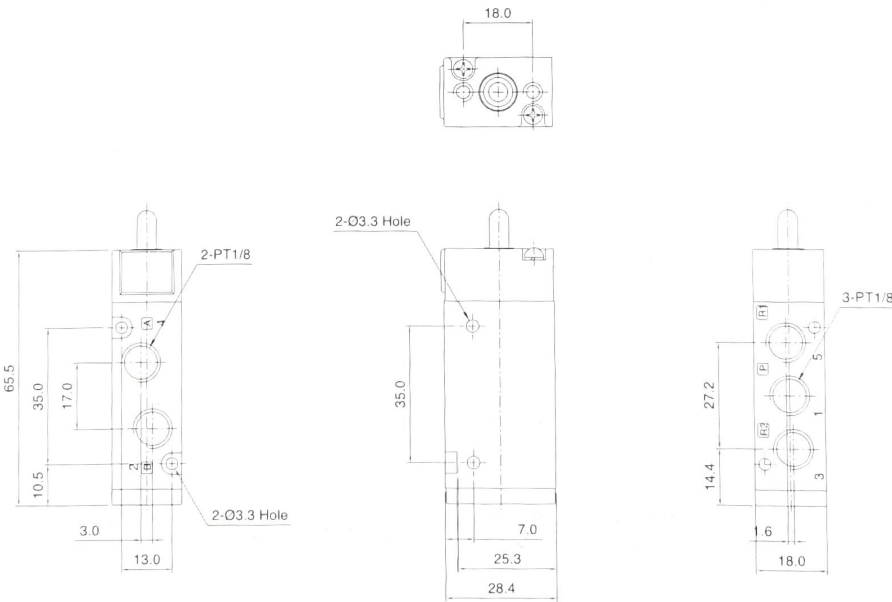
PT1/8

MF280 Interior Structure



| No. | Part          | Material |
|-----|---------------|----------|
| 1   | BODY          | ALDC     |
| 2   | COVER         | ZnDC     |
| 3   | SPOOL         | AL       |
| 4   | SPOOL PACKING | NBR      |
| 5   | BLOCK         | ZnDC     |
| 6   | BUSH          | POM      |
| 7   | BUTTON        | CU       |

MF281-10





# DMF350 Series.

Mechanical Valve

- Body Width 26.0mm
- Cv 1.0

5-PORT DIRECT Type

PT1/4

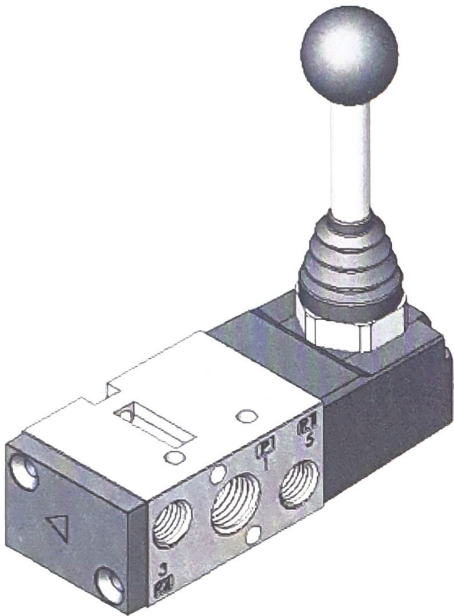
### PROPERTY

- Lubrication not required, Excellent Durability.
- High Capacity,  $\phi 30\sim 80$  cylinder available.

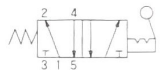
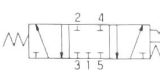
### SPECIFICATION

| Item                      | Type | Single                         | Double |
|---------------------------|------|--------------------------------|--------|
|                           |      |                                |        |
| Port Size                 |      | PT1/4 (G1/4, NPT1/4)           |        |
| Fluids                    |      | Compressed Air and Inert gases |        |
| Pressure (bar)            |      | 1.5~9.0                        |        |
| Flux L / Min. (5bar)      |      | 1,000                          |        |
| Eff. Sectional Area (CV)  |      | 19.0mm <sup>2</sup> (1.0)      |        |
| Ambient air & fluid Temp. |      | 5~60℃                          |        |
| Lubrication               |      | Not necessary                  |        |

\* The specification as above can be changed to improve the capacity of the valve.



### Valve Symbol

| Single Type                                                                           |  | Double Type                                                                           |  |
|---------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|--|
|   |  |  |  |
| DMF352S                                                                               |  | DMF352D                                                                               |  |
| Closed Center                                                                         |  | Exhaust Center                                                                        |  |
|   |  |  |  |
| DMF352H                                                                               |  | DMF352I                                                                               |  |
| Pressure Center                                                                       |  | Exhaust Center                                                                        |  |
|  |  |  |  |
| DMF352J                                                                               |  | DMF352J                                                                               |  |

\* ISO Marking : P-1, B-2, R2-3, A-4, R1-5

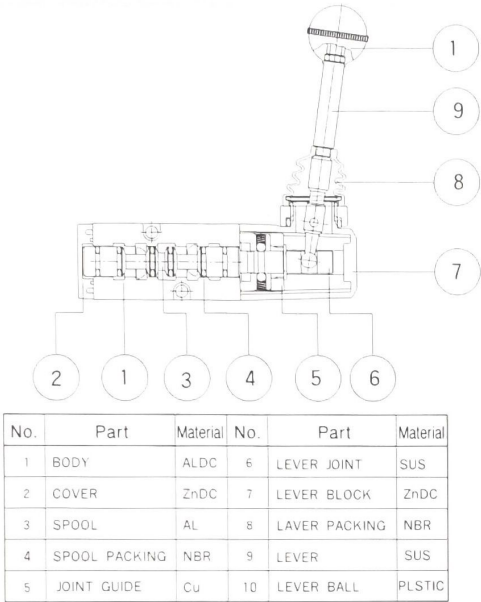
DMF 3 5 2 S

| Port Size             |        | Type |                 |
|-----------------------|--------|------|-----------------|
| 2                     | PT1/4" | S    | Single          |
| Exhaust Port : PT1/8" |        | D    | Double          |
|                       |        | S    | Closed Center   |
|                       |        | S    | Pressure Center |
|                       |        | S    | Exhaust Center  |

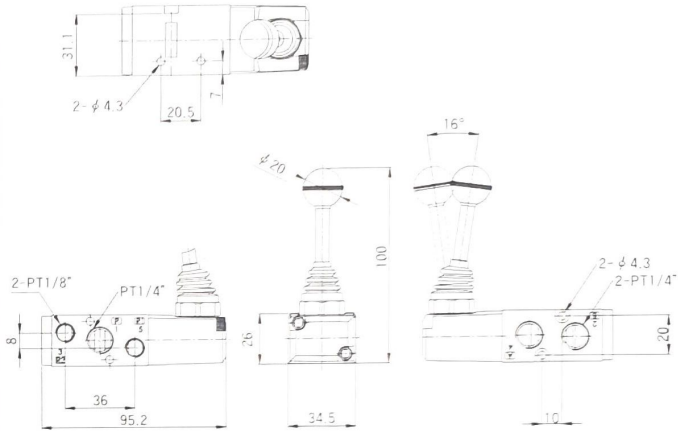
5-PORT MECHANICAL VALVE

PT1/4

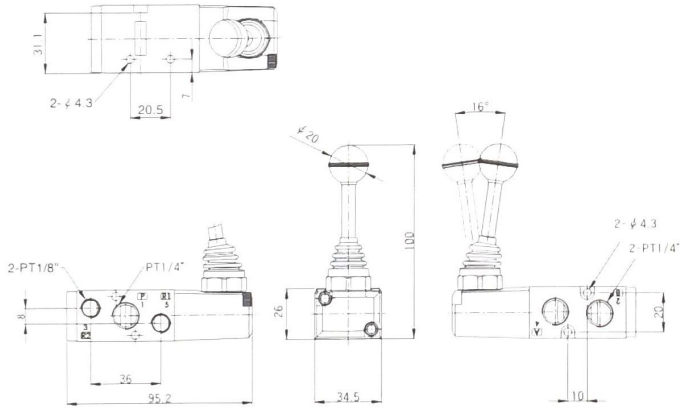
DMF352S Interior Structure



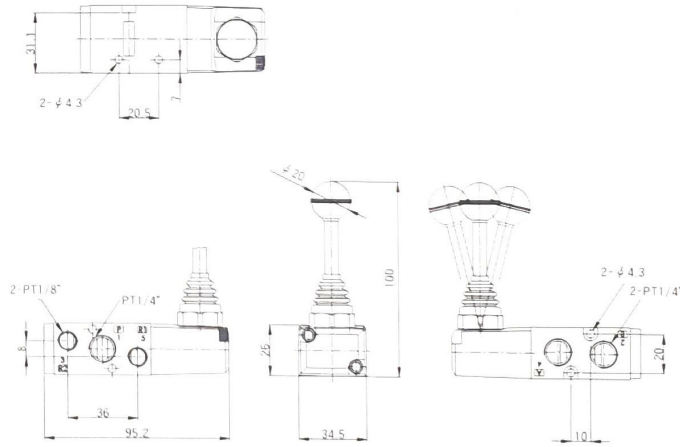
DMF352S



DMF352D



DMF352H (DMF352 I, DMF352J )



DMF350

# SD2000 Series.

Solenoid Valve

● AC220V/110V/DC24

2-PORT, Direct Type

● Control many kinds of fluids.

**PT1/4**

● Various Orifice.

## PROPERTY

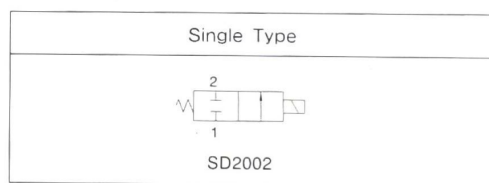
- Small sized, Light weight
- control many kinds of fluids.
- control wide range of fluid pressure.

## SPECIFICATION

| Item                          | Type | Standard Spec.                                    |
|-------------------------------|------|---------------------------------------------------|
| Port Size                     |      | PT1/4 (G1/4, NPT1/4)                              |
| Fluids                        |      | Air, Inert Gas, Water, Oil(Oil 150 cost and less) |
| Pressure (bar)                |      | 0~9.0                                             |
| Flux L / Min. (5bar)          |      | 300 (orifice $\phi$ 3.0)                          |
| Eff. Sectional Area (CV)      |      | 5.5mm <sup>2</sup> (orifice $\phi$ 3.0)           |
| Ambient air & fluid Temp.     |      | 5~60℃                                             |
| Response Time (5bar)          |      | 30ms and Less                                     |
| Max. working Frequency        |      | 5 c/s                                             |
| Coil Regular Voltage          |      | AC220V, AC110, AC24 (50~60Hz)/DC24V, DC12V        |
| Permissible Voltage Variation |      | ± 10% of the regular voltage                      |
| Coil Insulation Class         |      | F-class                                           |
| Power                         | AC   | 9VA                                               |
| Consumption                   | DC   | 7W                                                |

\* The specification as above can be changed to improve the capacity of the valve.

## Valve Symbol



\* ISO Marking : P-1, A-2

| Item<br><br>Model | Port Size | Orifice (mm) | CV   | Eff. Sectional Area | Max. Pressure |    |                 |    | Reg. Voltage                        | Regular Elec. Power(VA) |      |          |      | Power Consumption |    |
|-------------------|-----------|--------------|------|---------------------|---------------|----|-----------------|----|-------------------------------------|-------------------------|------|----------|------|-------------------|----|
|                   |           |              |      |                     | Air           |    | Water, Kerosene |    |                                     | In operation            |      | At start |      | Consumption       |    |
|                   |           |              |      |                     | AC            | DC | AC              | DC |                                     | 50Hz                    | 60Hz | 50Hz     | 60Hz | AC                | DC |
|                   |           |              |      |                     |               |    |                 |    |                                     |                         |      |          |      |                   |    |
| SD2002-15DN       | Rc1/4     | 1.5          | 0.1  | 1.8                 | 15            | 10 | 15              | 10 | AC 110V, AC220V<br>50/60Hz<br>DC24V | 11                      | 9    | 15.4     | 12.6 | 5.5/<br>50Hz      | 7  |
| SD2002-02DN       |           | 2            | 0.15 | 2.7                 | 9             | 6  | 9               | 6  |                                     |                         |      |          |      |                   |    |
| SD2002-03DN       |           | 3            | 0.3  | 5.5                 | 7             | 2  | 4               | 2  |                                     |                         |      |          |      |                   |    |
| SD2002-04DN       |           | 4            | 0.4  | 7.4                 | 4             | 1  | 2               | 1  |                                     |                         |      |          |      | 4.2/<br>60Hz      |    |

S D 20 01 - 02 D N - 20

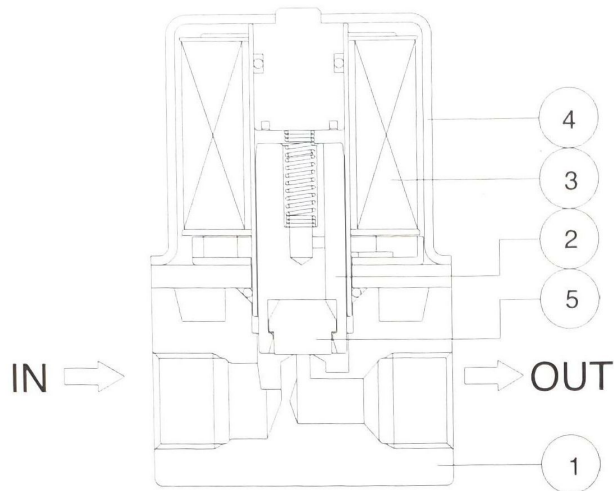
| Port Size  | Orifice Size  | Packing Material | Voltage           |
|------------|---------------|------------------|-------------------|
| 01 (Rc1/8) | 15 $\phi$ 1.5 | N NBR            | 02 DC24V          |
| 02 Rc1/4   | 02 $\phi$ 2.0 | V ( Viton )      | 10 AC110V 50/60Hz |
|            | 03 $\phi$ 3.0 |                  | 20 AC220V 50/60Hz |
|            | 04 $\phi$ 4.0 |                  | ( ) Option        |



# 2-PORT SOLENOID VALVE

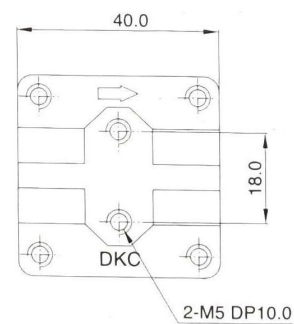
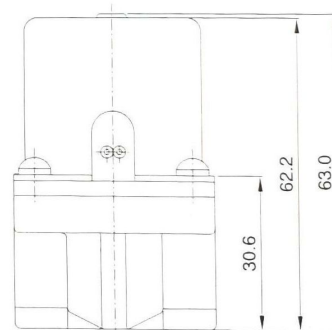
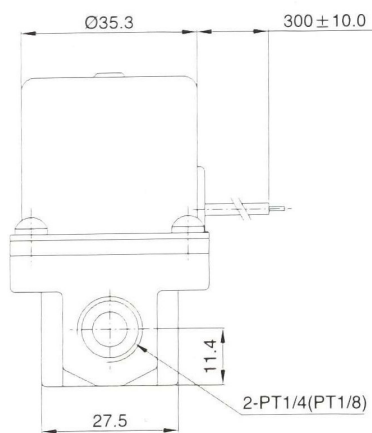
## PT1/4

### SD2000 Interior Structure

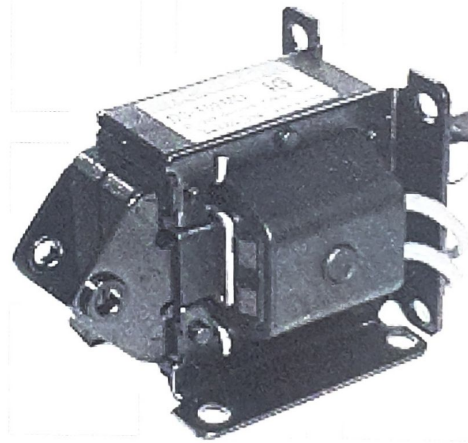


| No. | Part       | Material   |
|-----|------------|------------|
| 1   | BODY       | CU(SUS)    |
| 2   | PLUNGER    | SUS        |
| 3   | COIL ASS'Y |            |
| 4   | COVER      | SCP        |
| 5   | PACKING    | NBR(VITON) |

SD2002 - □DN - □



# Solenoid Solenoid

[illegible]

# Solenoid

## ■ Products Item List

### AC SOLENOID

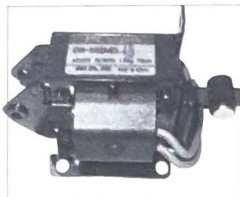
■ DS-062



Attraction  
power  
PAGE

0.6Kg  
51P

■ DS-102



Attraction  
power  
PAGE

1.0Kg  
52P

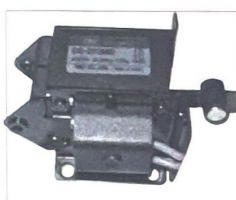
■ DS-152



Attraction  
power  
PAGE

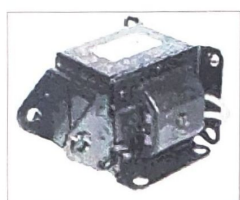
1.5Kg  
53P

■ DS-202



2.0Kg  
54P

■ DS-302



3.0Kg  
55P

■ DS-402



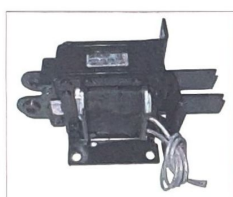
4.0Kg  
56P

■ DS-412



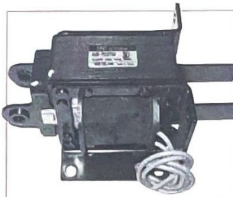
4.0Kg  
57P

■ DS-502



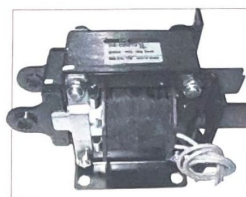
5.0Kg  
58P

■ DS-702



7.0Kg  
59P

■ DS-1002



10.0Kg  
60P

### DC SOLENOID

■ DSD-06A



Standard  
stroke  
PAGE

5mm  
61P

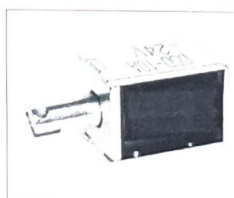
■ DSD-08A



Standard  
stroke  
PAGE

6mm  
62P

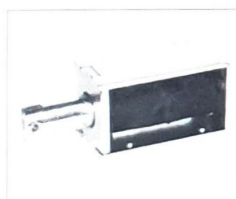
■ DSD-10A



Standard  
stroke  
PAGE

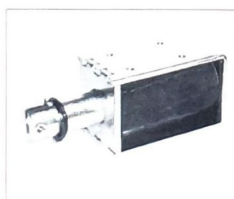
8mm  
63P

■ DSD-12E



10mm  
64P

■ DSD-16A



15mm  
65P

■ DSD-18



20mm  
66P



## ■ SOLENOID.....

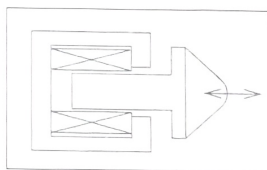
- Solenoid is a converter, which changes electric energy into mechanical energy of straight motion. There are two kinds of solenoids, AC and DC that allow the power to flow into the Stopper Plates and make the plunger plates in it to move. They are low price functional products that perform various economical motions simply such as drawing, pressing, stopping, hitting and bending etc.

Therefore they are widely used for office supplies, electric appliance, and vending machine including industrial machines.

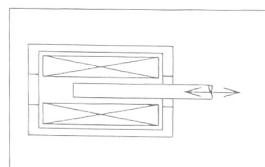
### ● AC, DC SOLENOID

- AC SOLENOID uses AC as power source, and plunger plates as Plunger. The plunger plates are piled in layers, and pressed with rivets. The coil is processed against impact, heat and wearing.

DC SOLENOID uses DC as power source, and iron stick as a plunger.



Plunger Style



Frame Style

## ■ SOLENOID TERMS

### ■ SOLENOID

SOLENOID is a plunger-style electromagnet, which is powered in the AC or DC coil and changes electric energy into mechanical motion by the plunger.

### ■ REGULAR STROKE

Guaranteed movement distance of the plunger.

### ■ REGULAR POWER CONSUMPTION

Power consumed by coil resistance in a position that the plunger is closely attached to the stopper with regular voltage on.

### ■ MAINTENANCE POWER

Max. loading which is not separated in the position that the plunger is closely attached to the stopper with regular voltage on.

### ■ MAINTENANCE CURRENT

The current in the state that the plunger is closely attached to the stopper with regular voltage on.

### ■ STARTING CURRENT

The current in the position that the plunger is in the regular stroke with regular voltage on.

### ■ STOPPER PLATE

The part which the plates are piled and fixed in layers, forming magnetic circuit.

### ■ PLUNGER PLATE

The part moving into and out of the stopper plate, called as plunger.

### ■ CONSECUTIVE REGULARITY

When used consecutively under the fixed condition, the regularity not getting out of the limits of the fixed temperature rise and so on.

### ■ SHORT-TIME REGULARITY

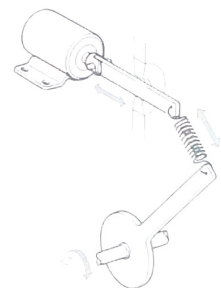
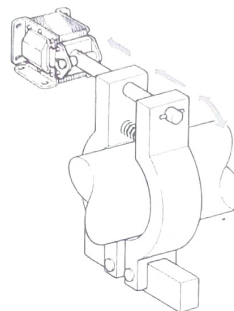
When used in a cool state of the sol. under the fixed condition for a short time, the regularity not exceeding the limits of the fixed temperature rise.

### ■ DUTY

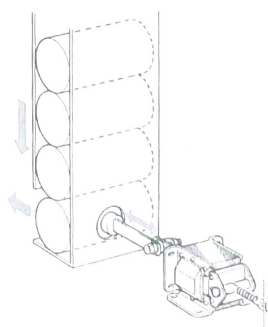
Duty is operation time divided by operation time plus pause time.

### ● BRAKE APPLICATION

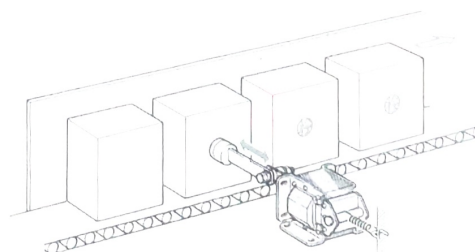
### ● STRAIGHT MOTION INTO REVOLVING MOTION



### ● CONVEYER



### ● PUNCH



## ■ SOLENOID.....

### ■ HIGH DURABILITY

Solenoid determines the performing capability of important mechanical devices.  
We are trying our best to improve the quality and durability of solenoid.

### ■ NO WEARING AWAY, GUIDELESS STRUCTURE

Coil bobbin made of nylon resin plays a role as the plunger guide.  
It is reinforced in mechanical and electric property.

### ■ EXCELLENT INSULATION

By peculiar method, the coil molding insulation method, Coil is good at the insulation.  
Resin injection (B-class Ins.) and Glass taping (A-class Ins.),  
Excellent in the resistance against heat, water, oil and impact.

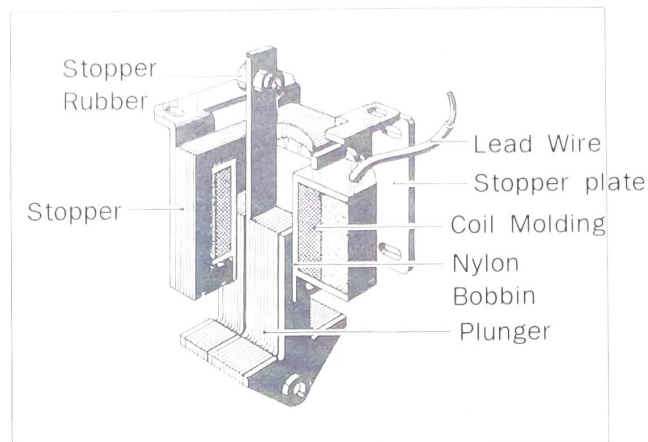
### ■ VARIOUS MODEL, WIDE-RANGE USE

Attraction power 4.9N(0.5kgf) to 98N(10kgf), variously used in the auto system.

### ■ EASY INSTALLATION

Horizontal, vertical or both-sided installation according to the position of the stopper holes.

### ● AC SOLENOID STRUCTURE

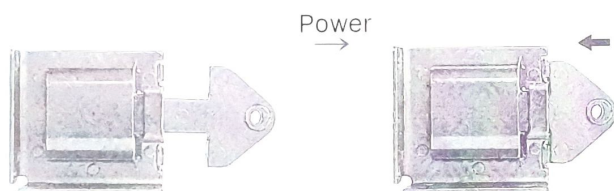


The picture above is a typical plunger-style of our company.  
The stopper has a coil in it, which makes the plunger in its inner side pass through. When the coil is supplied with power, magnetism is generated in the center of the coil and at the moment the plunger is pulled into the stopper closely and very fast, to do mechanical work. This is the attraction power.  
The mechanism to take advantage of this attraction power is the very source of automatic system.

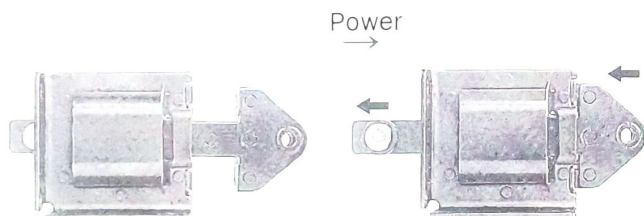
Solenoid

## ■ 2-TYPE IN USES.

### ■ PULL TYPE

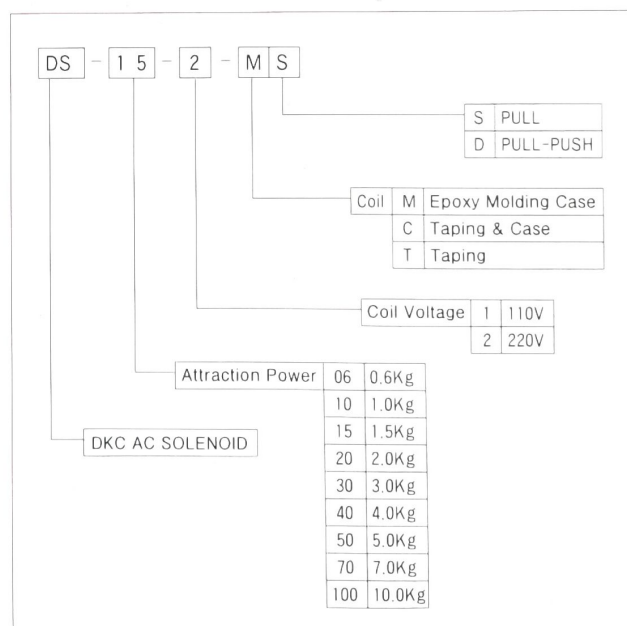


### ■ PUSH + PULL TYPE



The moment that power is on, the plunger is pulled and at the same time gains the pushing power by the stopper rubber on the opposite side.

### ● SYMBOL



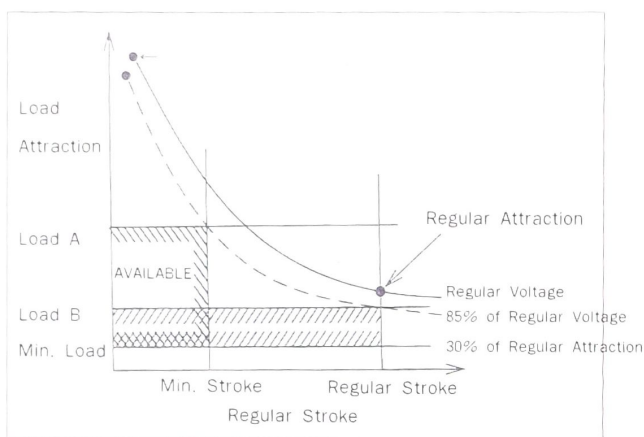
## ■ AC SOLENOID

### ● CAUTION & TIPS

Use in appropriate load.

### ■ ATTRACTION POWER OF SOLENOID

1. High attraction power above the load.
2. Consider the voltage variation.(figure1)



Possibility to do damage to the coil if the plunger is not completely attracted due to too huge stroke or small attraction. Do not use the goods out of the regular stroke. Select the kind of solenoid, the goods within 85% of regular voltage. Possible to early damage to the goods, if used in 30% less than regular voltage.

In load B in the picture 1, the attraction in 85% of regular voltage, which is above the regular stroke, can be used in all strokes. The load A, heavier than the load B, can be used in only smaller stroke than regular stroke.

### ● INSTALLATION

Both vertical and horizontal installation possible. The movement is very large and fast. It generates very powerful impact and works repeatedly. So install the goods very tightly. If not, much noise.

### ■ STOPPER INSTALLATION

1. Use bolts and screws suitable to the joint hole.
2. Fix it well, using nuts and screw washers against loosening.
3. Install it for the plunger to be closely attached necessarily.  
If not, the coil can be damaged due to much current flowing into it.

### ■ PLUNGER INSTALLATION

Follow the tips below.

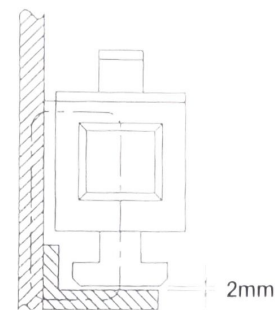
1. Load must be done in the center axle of the plunger. So the plunger moves in and out of the stopper smoothly. If the plunger moves out of the normal way, it makes the durability short.
2. Check the close contact state of each other when the plunger is attracted by the stopper.
3. Use proper joint pins between the load and the plunger hole.

### ■ INSULATING OUTSIDE MAGNETISM

When power is given to the coil, the coil forms a magnetic circuit around it, which makes the plunger work.

So, No magnetic substances around all connection parts because outside magnetic substances generate a magnetic circuit and make the attraction power reduce.

Over 2mm empty space necessary, like in the picture.



### ■ REPAIR

Check the state of the solenoid now and then. Remove dust and impurities.

If dust and impurities are adhered to the contact side of the plunger and the stopper, that makes noises. If oil or grease etc. is adhered to the contact side, it is sometimes the cause of impossible return of the plunger.

Sometimes check the state of the contact side if the goods has some noise or no plunger return.

### ■ PROTECTION AGAINST OVERCURRENT

If the plunger and the stopper are not closely touched due to the load rise and the dust in the contact side etc., the coil can be damaged because of overcurrent.

To prevent this phenomenon, use the protector device against overcurrent.

### ■ PERMISSIBLE LOAD IN PROPORTION TO USE FREQUENCY

| MODEL   | REGULAR<br>ATTRACT | REGULAR<br>STROKE | PERMISSIBLE LOAD IN PROPORTION TO USE<br>FREQUENCY(UNIT/KG) |                 |                 |                 |                 |                 |
|---------|--------------------|-------------------|-------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|         |                    |                   | 10TIMES<br>/MIN                                             | 20TIMES<br>/MIN | 30TIMES<br>/MIN | 40TIMES<br>/MIN | 60TIMES<br>/MIN | 80TIMES<br>/MIN |
| DS-052  | 0.5Kg(4.9N)        | 10mm              | 0.40                                                        | 0.35            |                 | 0.30            | 0.25            | 0.20            |
| DS-062  | 0.6Kg(5.8N)        | 10mm              | 0.50                                                        | 0.40            |                 | 0.35            | 0.30            | 0.25            |
| DS-082  | 0.8Kg(7.8N)        | 10mm              | 0.70                                                        | 0.60            |                 | 0.50            | 0.45            | 0.40            |
| DS-102  | 1.0Kg(9.8N)        | 15mm              | 0.80                                                        | 0.70            |                 | 0.60            | 0.50            |                 |
| DS-152  | 1.5Kg(14.7N)       | 15mm              | 1.20                                                        | 1.05            |                 | 0.90            | 0.75            |                 |
| DS-202  | 2.0Kg(19.6N)       | 15mm              | 1.60                                                        | 1.40            |                 | 1.20            | 1.00            |                 |
| DS-302  | 3.0Kg(29.4N)       | 20mm              | 2.00                                                        | 1.80            | 1.30            | 0.90            |                 |                 |
| DS-402  | 4.0Kg(39.2N)       | 20mm              | 3.60                                                        | 3.30            | 3.00            | 2.30            |                 |                 |
| DS-502  | 5.0Kg(49N)         | 30mm              | 4.00                                                        | 3.20            | 2.00            |                 |                 |                 |
| DS-702  | 7.0Kg(68.6N)       | 30mm              | 5.00                                                        | 4.00            | 2.50            |                 |                 |                 |
| DS-1002 | 10.0Kg(98N)        | 30mm              | 9.00                                                        | 7.00            |                 |                 |                 |                 |



| MALFUNCTION           |                       |                       |                       |                       |                       | Cause                                  | Repair                                                                                                          |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Bad Attr.             | Coil Damage           | Bad Return            | Install. Part Damage  | Load Joint Damage     | Noise                 |                                        |                                                                                                                 |
| <input type="radio"/> | <input type="radio"/> |                       |                       |                       | <input type="radio"/> | Over Load                              | Reduce the load amount. Adjust the load to the regular attraction power.                                        |
|                       |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       | Extreme Light Load                     | After the plunger are attached to the stopper, the load must be over 30% of the regular attraction.             |
| <input type="radio"/> | <input type="radio"/> |                       |                       |                       |                       | Voltage Reduction                      | Consider permissible voltage variation. Set the goods to operate by the lowest voltage.                         |
|                       | <input type="radio"/> |                       |                       | <input type="radio"/> |                       | Excessive Voltage                      | No 110% more than regular voltage                                                                               |
| <input type="radio"/> | <input type="radio"/> |                       |                       |                       |                       | Different Coil Regular Voltage         | Before using,, check the regular voltage and circuit voltage of the coil.                                       |
|                       |                       | <input type="radio"/> |                       |                       |                       | Control Relay                          | Select durable switches and relays                                                                              |
| <input type="radio"/> | <input type="radio"/> |                       |                       |                       | <input type="radio"/> | Deviated Plunger                       | Set moving direction of the plunger and the load in a line                                                      |
|                       |                       | <input type="radio"/> |                       |                       | <input type="radio"/> | Loosened Joint Screw                   | At least 4 screws necessary. Fasten the screws tightly.                                                         |
| <input type="radio"/> | <input type="radio"/> |                       |                       |                       |                       | Out of Regular Stroke                  | Install it not to be out of regular stroke. Firm attachment of the stopper. Using it within the regular stroke. |
| <input type="radio"/> | <input type="radio"/> |                       |                       |                       |                       | Temperature Rise Due to High Frequency | Use it in as short stroke as [possible].<br>Use it in proper frequency of the load.                             |
| <input type="radio"/> | <input type="radio"/> |                       |                       |                       |                       | Affection from Ambient Temp.           | Optimum temp. 0~40 ° C .<br>Lower the relay frequency in over 40 ° C temp.                                      |
|                       |                       |                       |                       |                       |                       | Oil or water on Contact Side           | Keep it clean ,using the case to cut off oil and water.                                                         |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |                       | <input type="radio"/> | Dust, Impurities on Contact Side       | Cover it for impurities not to get into.                                                                        |
|                       |                       |                       |                       | <input type="radio"/> |                       | Improper Joint With the Load           | Use the proper pin in the connection part between the load and the plunger.                                     |
|                       |                       |                       | <input type="radio"/> |                       | <input type="radio"/> | Bad Horizontal Installation Side.      | Keep solenoid and attachment side horizontal.                                                                   |

### ● FOR SAFETY

Keep the tips for safety in mind when using solenoid.

### ● WARNING MARK

The symbols below are for the safe handling.  
You had better check and keep the symbols.

| SYMBOL                                                                                             | WHEN NEGLECTED                              |
|----------------------------------------------------------------------------------------------------|---------------------------------------------|
|  <b>WARNING</b> | Bad handling, Heavy Injury                  |
|  <b>CAUTION</b> | Bad handling, Physical and material damage. |

### <CAUTIONS IN HANDLING AC SOLENOID>


**WARNING**

Keep the follows in mind

1. Use it within regular voltage.
2. Do not spray water on it or do not dip it in the water.
3. Do not use outdoors.

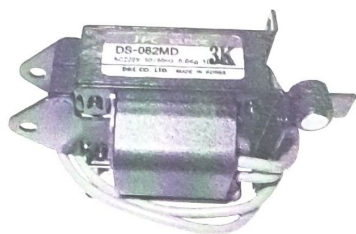

**CAUTION**

1. Keep the contact side of the plunger and the stopper perfect close.  
No power supply without the plunger in the stopper.
2. Always Keep the contact side clean.
3. No wrong wire connection of the three lead wires of solenoid.
4. Be careful for fingers not to get into the plunger with power on.

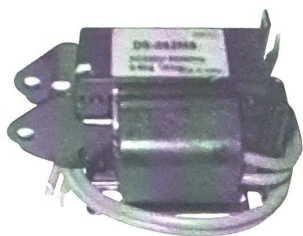


# DS-062MD TYPE

AC SOLENOID



DS-062MD



DS-062MS

- AC220V / AC110V Pull / push-pull type
- 50/60HZ BOTH ATTRACTION 0.6 kg
- STANDARD STROKE : 10 mm

## PROPERTY

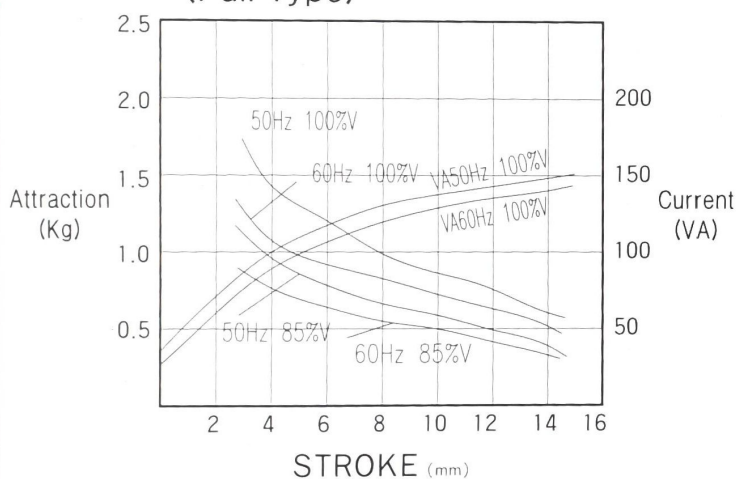
- Excellent heat-resistance, water-resistance, oil-resistance and impact-resistance. Epoxy insertion by the rail case technology.
- Improved safety through the case tape type because the rail case protects the coil from outside impacts.
- Improved mechanical and electric property. Nylon resin coil bobbin is formed to match the plunger guide.

## USE

- Inter-Lock : Banding Machine, Game machine, Conveyer etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Wrapping machine,

## SPECIFICATION

### ● ATTRACTION & CURRENT (Pull Type)

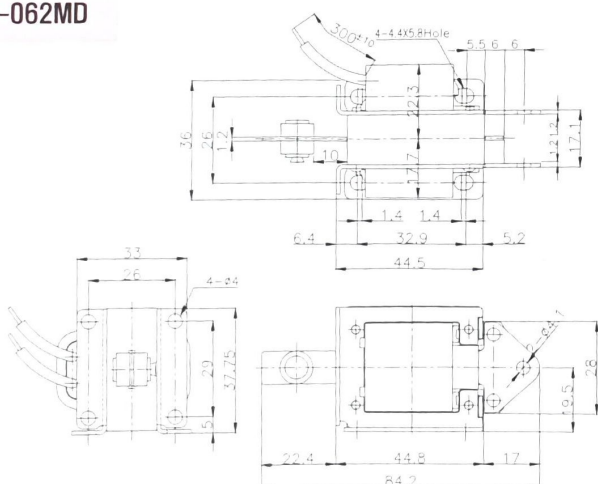


- Regular Stroke : 10mm
- Attraction : 0.6kg and more
- Voltage available : AC 110V, 220V 50/60HZ
- Current :

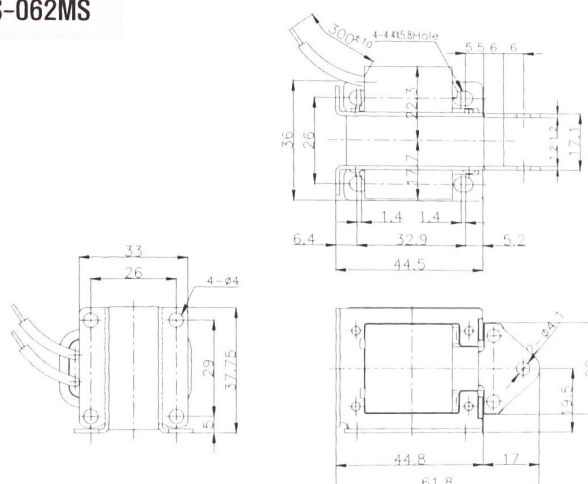
|      | Current in operation |        | Current at start |        |
|------|----------------------|--------|------------------|--------|
|      | AC110V               | AC220V | AC110V           | AC220V |
| 50Hz | 265mA                | 135mA  | 1.6A             | 0.8A   |
| 60Hz | 200mA                | 100mA  | 1.5A             | 0.75A  |

- Temp. Rise : 85°C and less
- Frequency : 80 times/min. -----Load 0.2kg  
60 times/min. -----Load 0.3kg  
40 times/min. -----Load 0.35kg  
20 times/min. -----Load 0.4kg

### DS-062MD

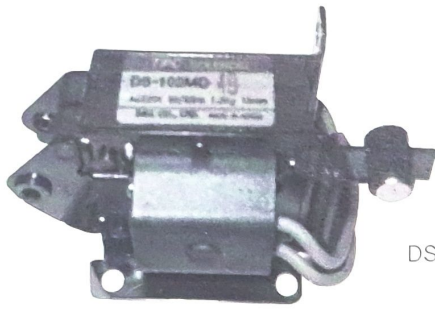


### DS-062MS

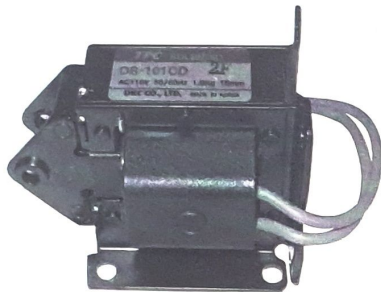


# DS-102MD TYPE

AC SOLENOID



DS-102MD



DS-102MS

- AC220V / AC110V Pull / push-pull type
- 50/60HZ BOTH ATTRACTION 1.0 kg
- STANDARD STROKE : 15 mm

## PROPERTY

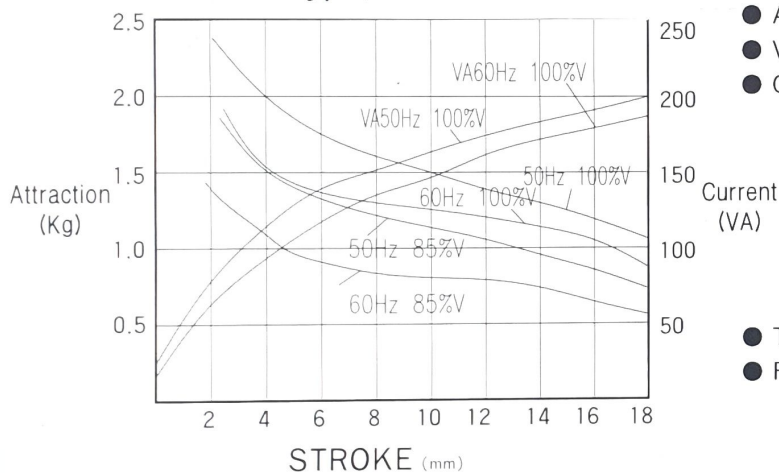
- Excellent heat-resistant, water-resistant, oil-resistant and impact-resistant. Epoxy insertion by the rail case technology.
- Improved safety property through the case tape type because the rail case protects the coil from outside impacts.
- Improved mechanical and electric property. Nylon resin coil bobbin is formed to match the plunger guide.

## USE

- Inter-Lock : Banding Machine, Game machine, Conveyor etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packing machine,

## SPECIFICATION

### ● ATTRACTION & CURRENT (Pull Type)

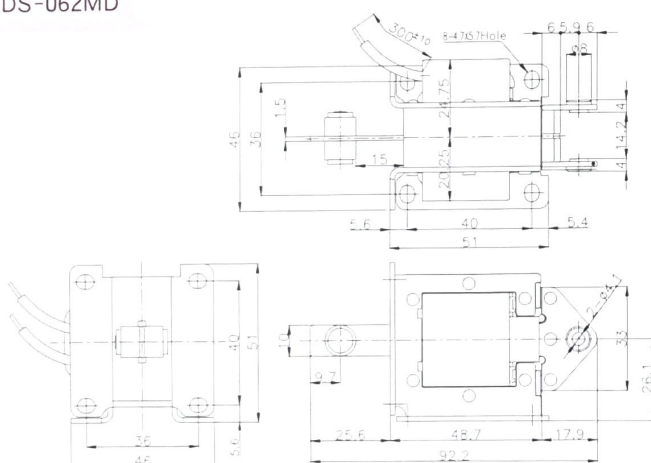


- Regular Stroke : 15mm
- Attraction : 1.0kg and more
- Voltage available : AC 110V, 220V 50/60HZ
- Current :

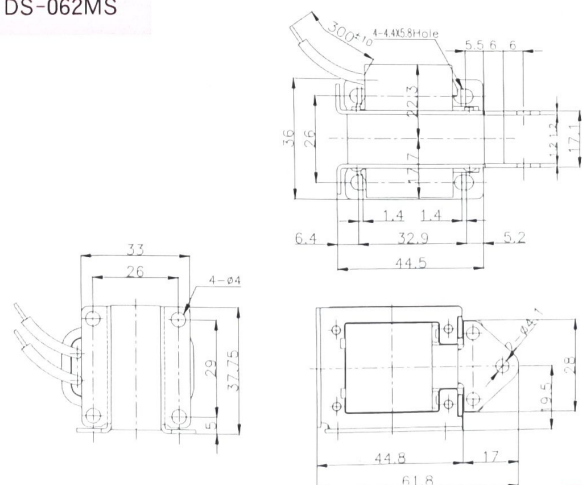
|      | Current in operation |        | Current at start |        |
|------|----------------------|--------|------------------|--------|
|      | AC110V               | AC220V | AC110V           | AC220V |
| 50Hz | 242mA                | 121mA  | 2.45A            | 1.21A  |
| 60Hz | 198mA                | 100mA  | 2.2A             | 1.1A   |

- Temp. Rise : 85°C and less
- Frequency : 60 times/min. -----Load 0.5kg  
40 times/min. -----Load 0.6kg  
20 times/min. -----Load 0.7kg  
10 times/min. -----Load 0.8kg

DS-062MD



DS-062MS



# DS-152MD TYPE

AC SOLENOID

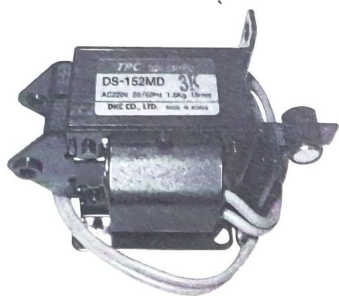
● AC220V / AC110V

Pull / push-pull type

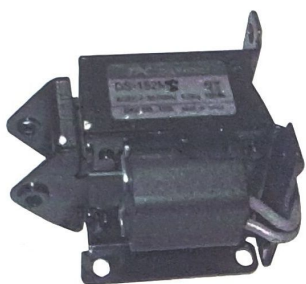
● 50/60HZ BOTH

ATTRACTION 1.5kg

● STANDARD STROKE : 15mm



DS-152MD



DS-152MS

## PROPERTY

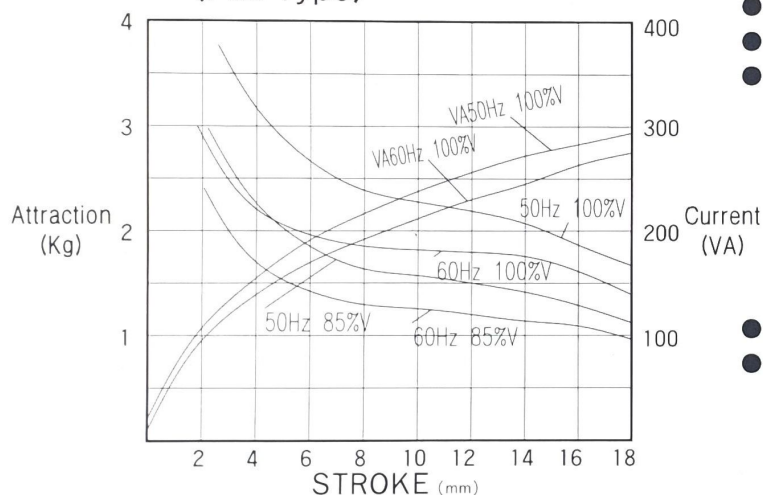
- Excellent heat-resistant, water-resistant, oil-resistant and impact-resistant. Epoxy insertion by the rail case technology.
- Improved safety property through the case tape type because the rail case protects the coil from outside impacts.
- Improved mechanical and electric property. Nylon resin coil bobbin is formed to match the plunger guide.

## USE

- Inter-Lock : Banding Machine, Game machine, Conveyer etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packing machine,

## SPECIFICATION

### ● ATTRACTION & CURRENT (Pull Type)



● Regular Stroke : 15mm

● Attraction : 1.5kg and more

● Voltage available : AC 110V, 220V 50/60HZ

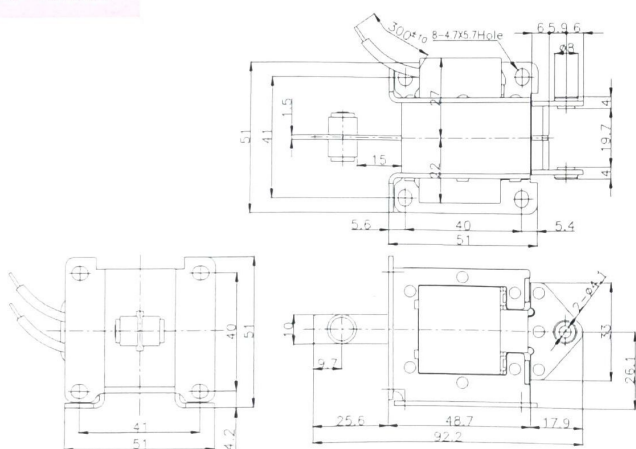
● Current :

|      | Current in operation |        | Current at start |        |
|------|----------------------|--------|------------------|--------|
|      | AC110V               | AC220V | AC110V           | AC220V |
| 50Hz | 308mA                | 154mA  | 3.3A             | 1.65A  |
| 60Hz | 242mA                | 121mA  | 3.1A             | 1.54A  |

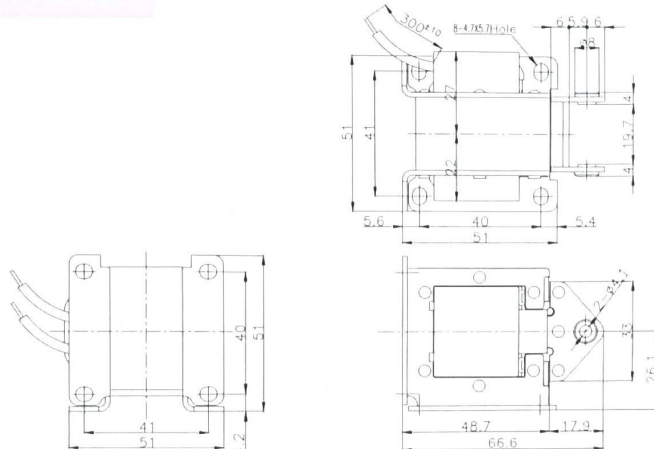
● Temp. Rise : 85°C and less

- Frequency : 60 times/min. -----Load 0.6kg  
40 times/min. -----Load 0.8kg  
20 times/min. -----Load 1.0kg  
10 times/min. -----Load 1.1kg

### DS-152MD



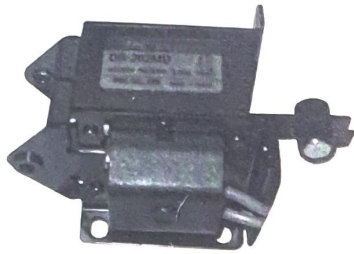
### DS-152MS





# DS-202MD TYPE

AC SOLENOID



DS-202MD



DS-202MS

● AC220V / AC110V

Pull / push-pull type

● 50/60HZ BOTH

ATTRACTION 2.0kg

● STANDARD STROKE : 15mm

## PROPERTY

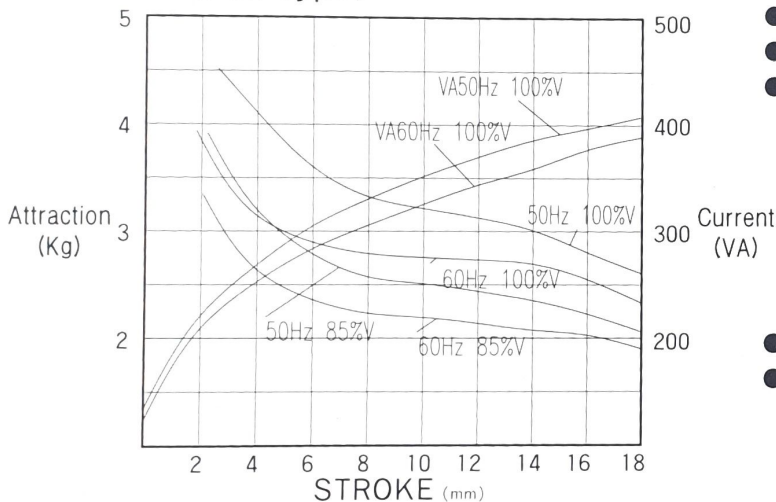
- Excellent heat-resistant, water-resistant, oil-resistant and impact-resistant.
- Epoxy insertion by the rail case technology.
- Improved safety property through the case tape type because the rail case protects the coil from outside impacts.
- Improved mechanical and electric property.
- Nylon resin coil bobbin is formed to match the plunger guide.

## USE

- Inter-Lock : Banding Machine, Game machine, Conveyer etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packing machine,

## SPECIFICATION

### ● ATTRACTION & CURRENT (Pull Type)



● Regular Stroke : 15mm

● Attraction : 2.0kg and more

● Voltage available : AC 110V, 220V 50/60HZ

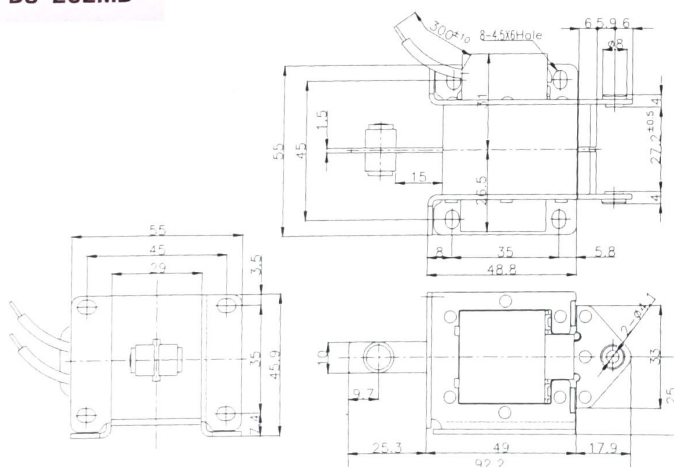
● Current :

|      | Current in operation |        | Current at start |        |
|------|----------------------|--------|------------------|--------|
|      | AC110V               | AC220V | AC110V           | AC220V |
| 50Hz | 440mA                | 220mA  | 4.4A             | 2.2A   |
| 60Hz | 346mA                | 173mA  | 4.1A             | 2.1A   |

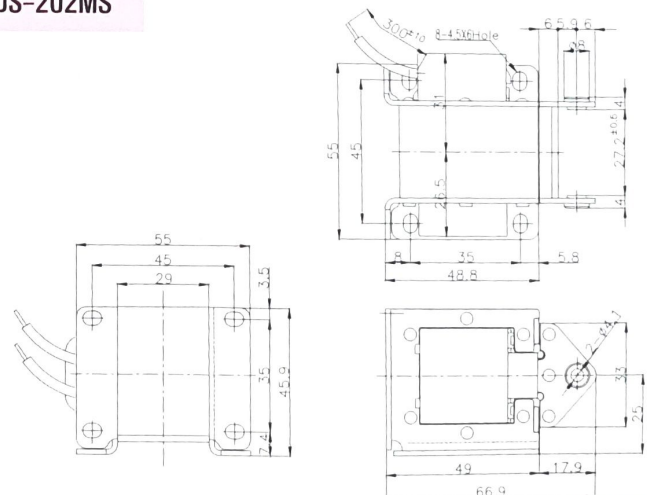
● Temp. Rise : 85°C and less

● Frequency : 60 times/min. -----Load 1.0kg  
40 times/min. -----Load 1.2kg  
20 times/min. -----Load 1.4kg  
10 times/min. -----Load 1.6kg

### DS-202MD



### DS-202MS



# DS-302MD TYPE

AC SOLENOID

● AC220V / AC110V

Pull / push-pull type

● 50/60HZ BOTH

ATTRACTION 3.0kg

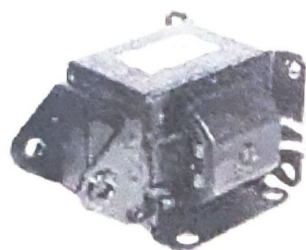
● STANDARD STROKE : 20mm

## PROPERTY

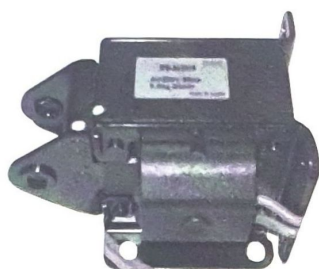
- Excellent heat-resistant, water-resistant, oil-resistant and impact-resistant. Epoxy insertion by the rail case technology.
- Improved safety property through the case tape type because the rail case protects the coil from outside impacts.
- Improved mechanical and electric property. Nylon resin coil bobbin is formed to match the plunger guide.

## USE

- Inter-Lock : Banding Machine, Game machine, Conveyer etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packing machine,



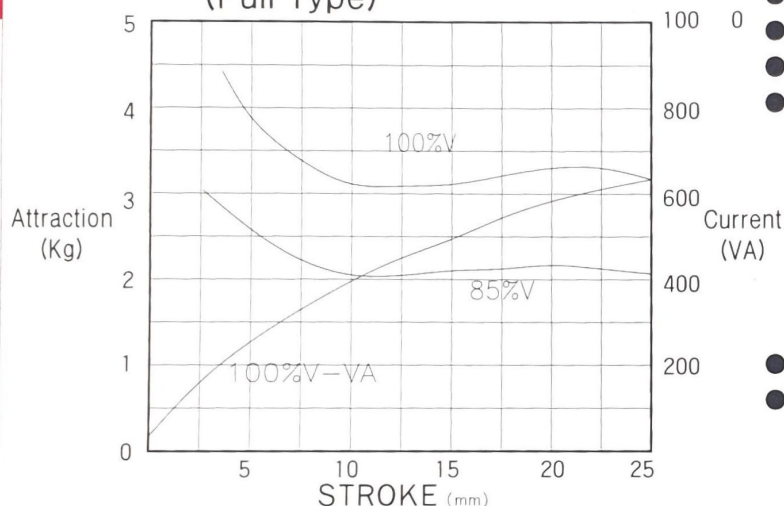
DS-302MD



DS-302MS

## SPECIFICATION

### ● ATTRACTION & CURRENT (Pull Type)



● Regular Stroke : 20mm

● Attraction : 3.0kg and more

● Voltage available : AC 110V, 220V 50/60HZ

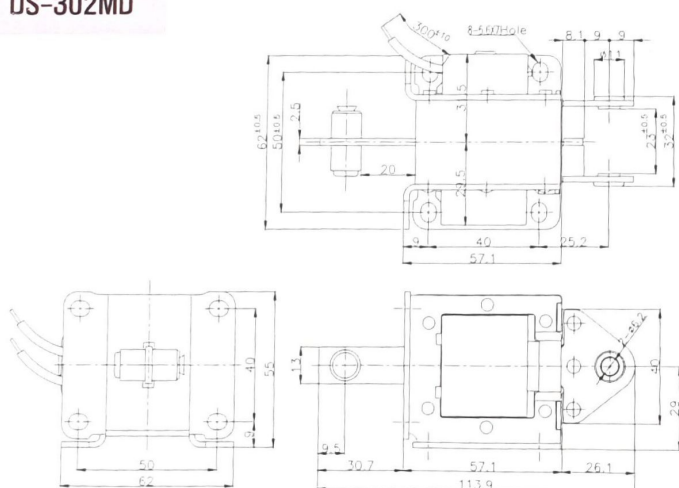
● Current :

|      | Current in operation |        | Current at start |        |
|------|----------------------|--------|------------------|--------|
|      | AC110V               | AC220V | AC110V           | AC220V |
| 50Hz | 0.55A                | 275mA  | 6.4A             | 3.2A   |
| 60Hz | 0.572A               | 286mA  | 6.6A             | 3.3A   |

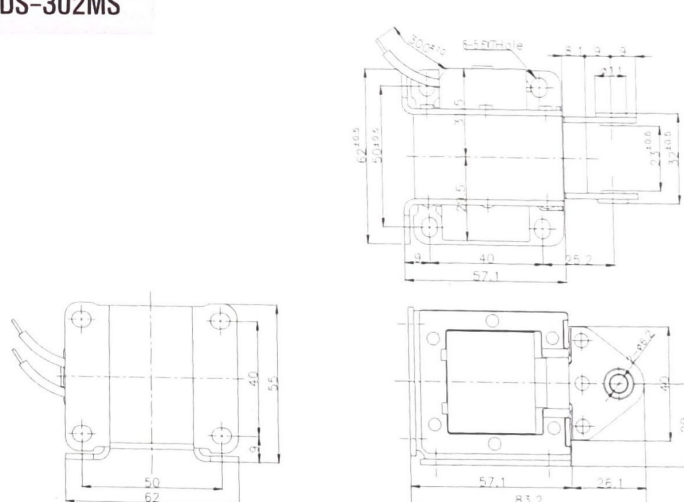
● Temp. Rise : 85°C and less

- Frequency : 40 times/min. -----Load 0.9kg
- 30 times/min. -----Load 1.3kg
- 20 times/min. -----Load 1.8kg
- 10 times/min. -----Load 2.0kg

### DS-302MD

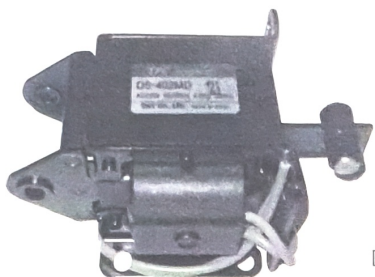


### DS-302MS

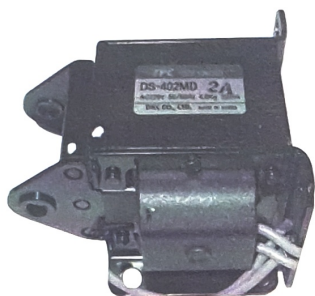


# DS-402MD TYPE

AC SOLENOID



DS-402MD



DS-402MS

● AC220V / AC110V

Pull / push-pull type

● 50/60HZ BOTH

ATTRACTION 4.0kg

● STANDARD STROKE : 20mm

## PROPERTY

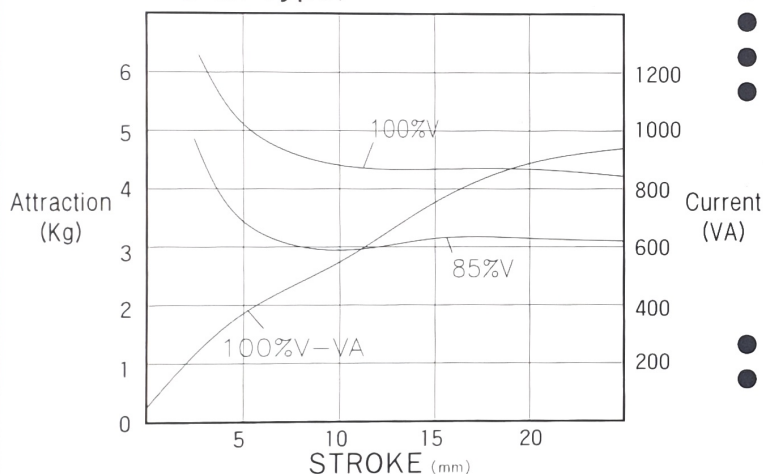
- Excellent heat-resistant, water-resistant, oil-resistant and impact-resistant. Epoxy insertion by the rail case technology.
- Improved safety property through the case tape type because the rail case protects the coil from outside impacts.
- Improved mechanical and electric property. Nylon resin coil bobbin is formed to match the plunger guide.

## USE

- Inter-Lock : Banding Machine, Game machine, Conveyer etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packing machine,

## SPECIFICATION

### ● ATTRACTION & CURRENT (Pull Type)



● Regular Stroke : 20mm

● Attraction : 4.0kg and more

● Voltage available : AC 110V, 220V 50/60HZ

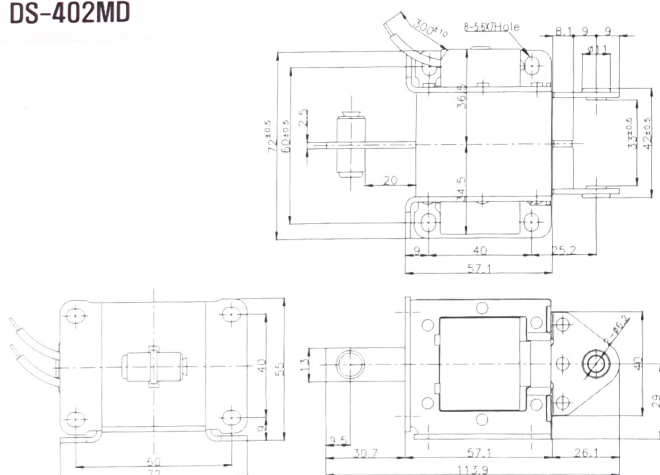
● Current :

|      | Current in operation |        | Current at start |        |
|------|----------------------|--------|------------------|--------|
|      | AC110V               | AC220V | AC110V           | AC220V |
| 50Hz | 0.682A               | 341mA  | 9.3A             | 4.7A   |
| 60Hz | 0.726A               | 363mA  | 9.9A             | 5.0A   |

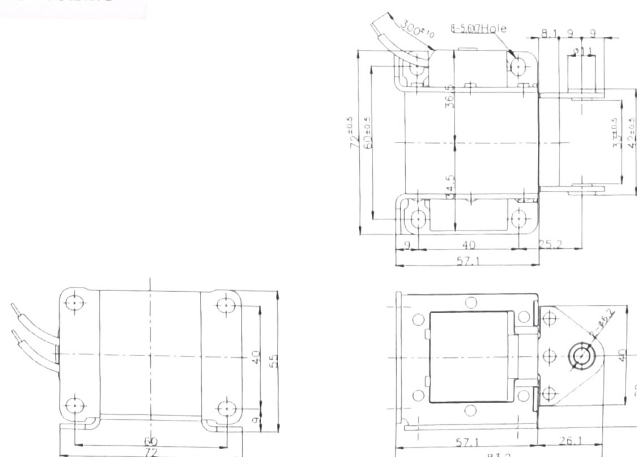
● Temp. Rise : 85°C and less

● Frequency : 40 times/min. -----Load 2.3kg  
30 times/min. -----Load 3.0kg  
20 times/min. -----Load 3.3kg  
10 times/min. -----Load 3.6kg

### DS-402MD



### DS-402MS





## DS-412MD ■

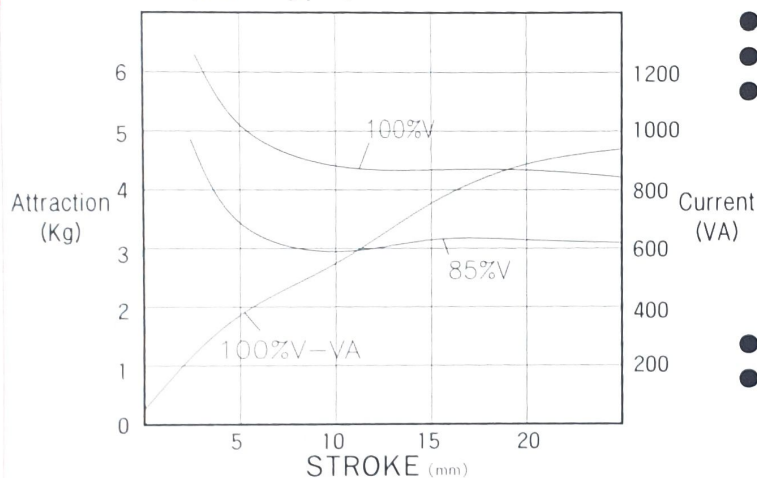
● STANDARD STROKE : 20mm



- Excellent heat-resistant, water-resistant, oil-resistant and impact-resistant. Epoxy insertion by the rail case technology.
- Improved safety property through the case tape type because the rail case protects the coil from outside impacts.
- Improved mechanical and electric property. Nylon resin coil bobbin is formed to match the plunger guide.

- Inter-Lock : Banding Machine, Game machine, Conveyer etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packing machine.

- **ATTRACTION & CURRENT**  
(Pull Type)



- Regular Stroke : 20mm
- Attraction : 4.0kg and more
- Voltage available : AC 110V, 220V 50/60HZ
- Current : 

|  |                      |                  |
|--|----------------------|------------------|
|  | Current in operation | Current at start |
|--|----------------------|------------------|

|      | Current in operation |        | Current at start |        |
|------|----------------------|--------|------------------|--------|
|      | AC110V               | AC220V | AC110V           | AC220V |
| 50Hz | 880mA                | 440mA  | 10.6A            | 5.0A   |
| 60Hz | 933mA                | 467mA  | 11.3A            | 5.4A   |

- Temp. Rise : 85°C and less
- Frequency : 40 times/min. -----Load 2.3kg  
 30 times/min. -----Load 3.0kg  
 20 times/min. -----Load 3.3kg  
 10 times/min. -----Load 3.6kg

Technical drawing of the S-412MD showing three views: front, top, and side. The front view shows a rectangular unit with a central circular feature and a handle on the right. The top view shows the unit from above, highlighting the handle's position and the central feature. The side view shows the unit's profile, including the handle's height and the unit's depth. Dimensions are provided in millimeters.

# DS-502TD TYPE

AC SOLENOID

● AC220V / AC110V

Pull / push-pull type

● 50/60HZ BOTH

ATTRACTION 5.0kg

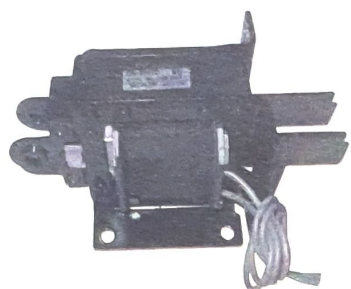
● STANDARD STROKE : 30mm

## PROPERTY

- Excellent heat-resistant, water-resistant, oil-resistant and impact-resistant. Epoxy insertion by the rail case technology.
- Improved safety property through the case tape type because the rail case protects the coil from outside impacts.
- Improved mechanical and electric property. Nylon resin coil bobbin is formed to match the plunger guide.

## USE

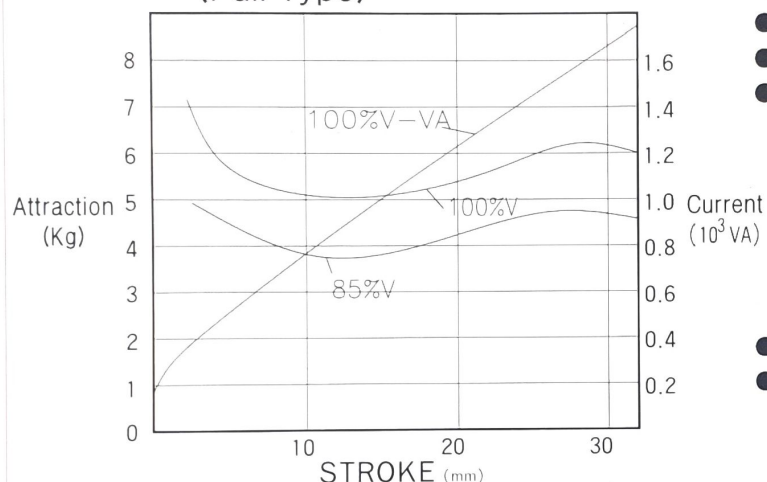
- Inter-Lock : Banding Machine, Game machine, Conveyer etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packing machine,



DS-502TD

## SPECIFICATION

### ● ATTRACTION & CURRENT (Pull Type)



● Regular Stroke : 30mm

● Attraction : 5.0kg and more

● Voltage available : AC 110V, 220V 50/60HZ

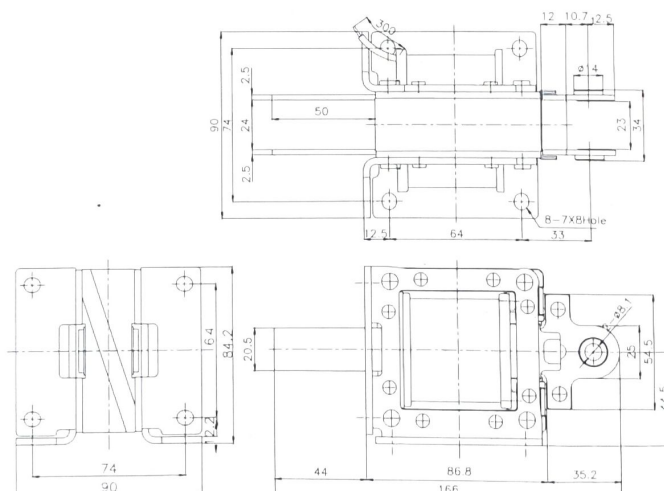
● Current :

|      | Current in operation |        | Current at start |        |
|------|----------------------|--------|------------------|--------|
|      | AC110V               | AC220V | AC110V           | AC220V |
| 50Hz | 1.32A                | 0.66A  | 20.9A            | 10.5A  |
| 60Hz | 1.54A                | 0.77A  | 24.5A            | 12.5A  |

● Temp. Rise : 85°C and less

● Frequency : 30 times/min. -----Load 2.0kg  
20 times/min. -----Load 3.2kg  
10 times/min. -----Load 4.0kg

### DS-502TD



# DS-702TD TYPE

AC SOLENOID

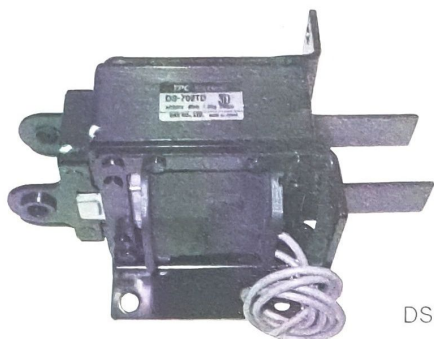
● AC220V / AC110V

Pull / push-pull type

● 50/60HZ BOTH

ATTRACTION 7.0kg

● STANDARD STROKE : 30mm



DS-702TD

## PROPERTY

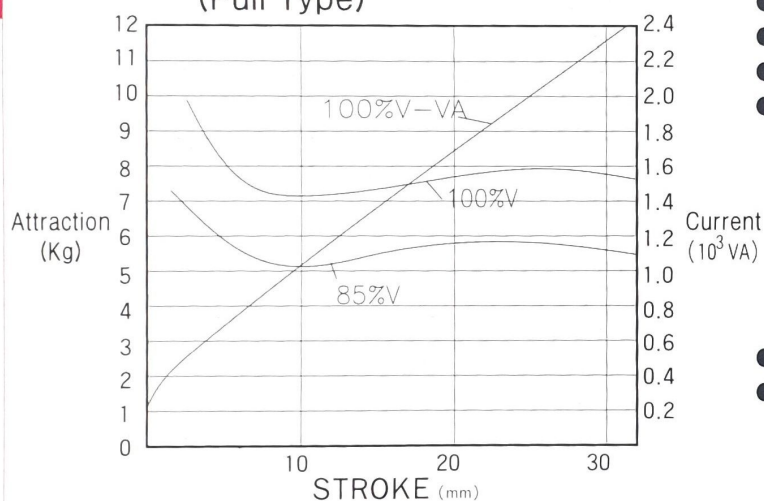
- Excellent heat-resistant, water-resistant, oil-resistant and impact-resistant. Epoxy insertion by the rail case technology.
- Improved safety property through the case tape type because the rail case protects the coil from outside impacts.
- Improved mechanical and electric property. Nylon resin coil bobbin is formed to match the plunger guide.

## USE

- Inter-Lock : Banding Machine, Game machine, Conveyer etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packing machine,

## SPECIFICATION

### ● ATTRACTION & CURRENT (Pull Type)



● Regular Stroke : 30mm

● Attraction : 7.0kg and more

● Voltage available : AC 110V, 220V 50/60HZ

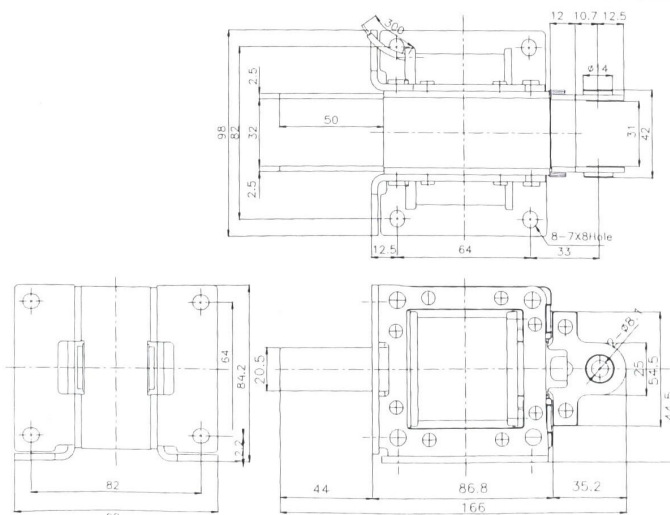
● Current :

|      | Current in operation |        | Current at start |        |
|------|----------------------|--------|------------------|--------|
|      | AC110V               | AC220V | AC110V           | AC220V |
| 50Hz | 1.43A                | 0.715A | 26.5A            | 13.3A  |
| 60Hz | 1.65A                | 0.825A | 31A              | 15.5A  |

● Temp. Rise : 85°C and less

● Frequency : 30 times/min. -----Load 2.5kg  
20 times/min. -----Load 4.0kg  
10 times/min. -----Load 5.0kg

### DS-702TD





# DS-1002TD TYPE

AC SOLENOID

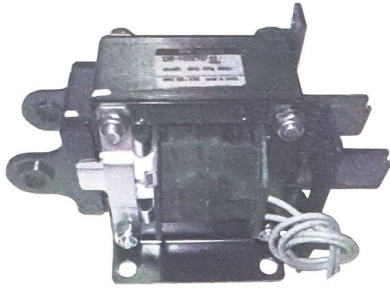
● AC220V / AC110V

Pull / push-pull type

● 50/60HZ BOTH

ATTRACTION 10.0kg

● STANDARD STROKE : 30mm



DS-1002TD

## PROPERTY

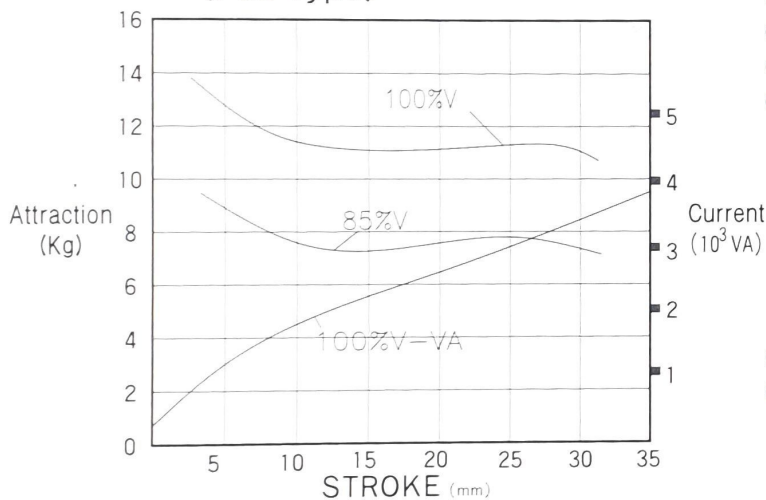
- Excellent heat-resistant, water-resistant, oil-resistant and impact-resistant. Epoxy insertion by the rail case technology.
- Improved safety property through the case tape type because the rail case protects the coil from outside impacts.
- Improved mechanical and electric property. Nylon resin coil bobbin is formed to match the plunger guide.

## USE

- Inter-Lock : Banding Machine, Game machine, Conveyor etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packing machine,

## SPECIFICATION

### ● ATTRACTION & CURRENT (Pull Type)



● Regular Stroke : 30mm

● Attraction : 10.0kg and more

● Voltage available : AC 110V, 220V 50/60HZ

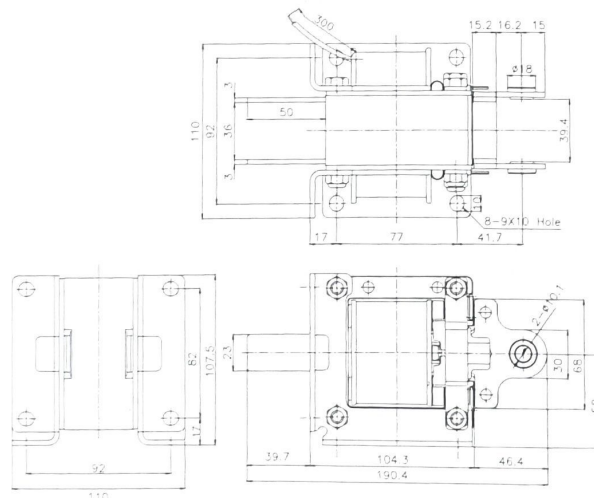
● Current :

|      | Current in operation |        | Current at start |        |
|------|----------------------|--------|------------------|--------|
|      | AC110V               | AC220V | AC110V           | AC220V |
| 50Hz | 2.0A                 | 1.0mA  | 37.5A            | 18.8A  |
| 60Hz | 2.2A                 | 1.2A   | 40A              | 20A    |

● Temp. Rise : 85°C and less

● Frequency : 20 times/min. -----Load 7.0kg  
10 times/min. -----Load 9.0kg

### DS-1002TD



# DS-06A TYPE

DC SOLENOID

● Push type / pull type

● Push-Pull type

DC12V/DC24V

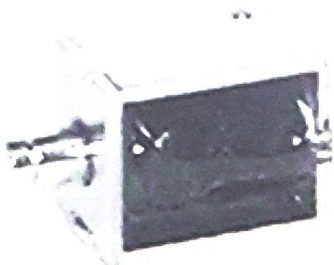
● STANDARD STROKE : 5mm

## PROPERTY

- Various Attraction suitable to various purposes.
- Small-sized & Lightweight, high attraction power.
- Low impact and noise in operation.
- Simple and easy Connection with the load.
- High Durability.
- Even if the plunger stops operating, the coil is not damaged because the current supply doesn't increase.
- Simple structure & economical design.

## USE

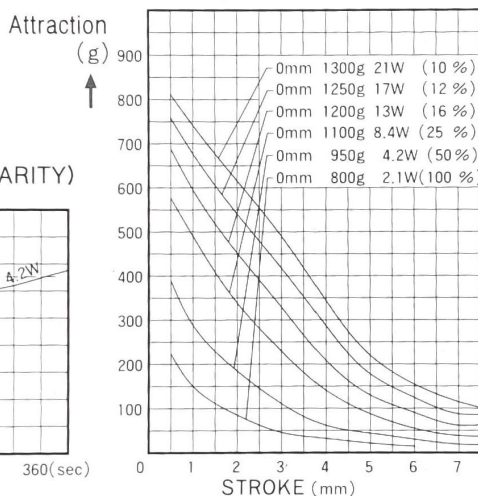
- Inter-Lock : Banding Machine, Game machine, Conveyer etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packaging.



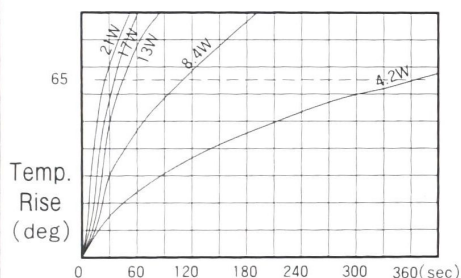
DSD-06A

## SPECIFICATION

### ● STROKE & ATTRACTION



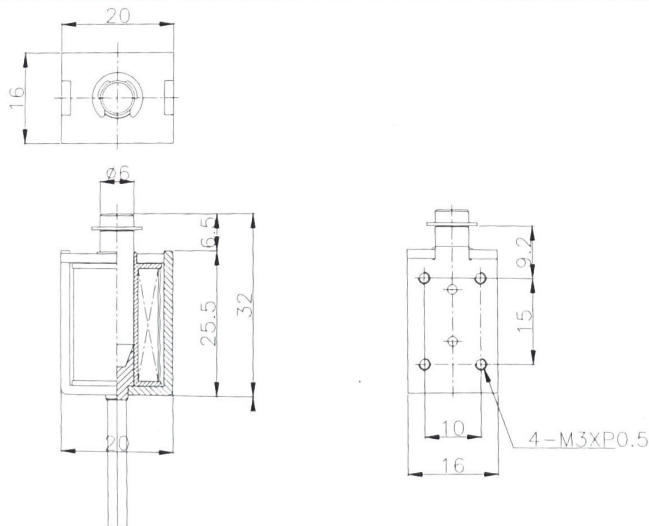
### ● TEMP. RISE (CONSECUTIVE REGULARITY)



### ● GENERAL PROPERTY

- (1) Temp. Rise : 65°C and less in 2.1W (consecutive)
- (2) Insulation : 100MΩ and more in DC 500V
- (3) Voltage Endurance : 1 sec. in AC1800V
- (4) Insulation Class : A-Class
- (5) Weight : 40g

DSD-06A



# DSD-08A TYPE

DC SOLENOID

● Push type / Pull type

● Push-Pull type

DC12V/DC24V

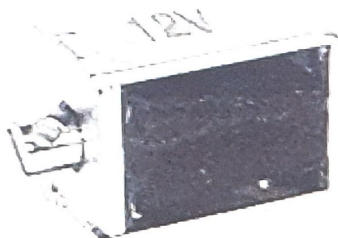
● STANDARD STROKE : 6mm

## PROPERTY

- Various Attraction suitable to various purposes.
- Small-sized & Lightweight, high attraction power.
- Low impact and noise in operation.
- Simple and easy Connection with the load.
- High Durability.
- Even if the plunger stops operating, the coil is not damaged because the current supply doesn't increase.
- Simple structure & economical design.

## USE

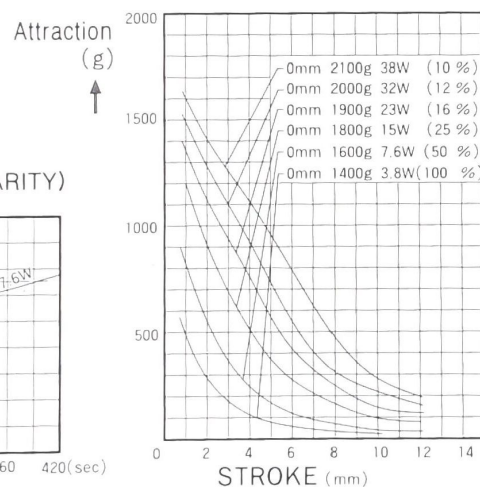
- Inter-Lock : Banding Machine, Game machine, Conveyor etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packaging.



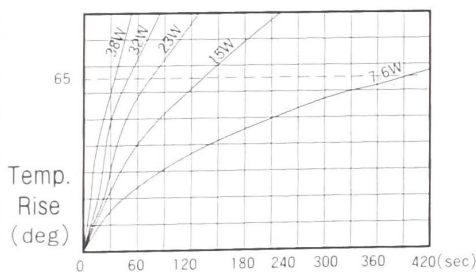
DSD-08A

## SPECIFICATION

### ● STROKE & ATTRACTION



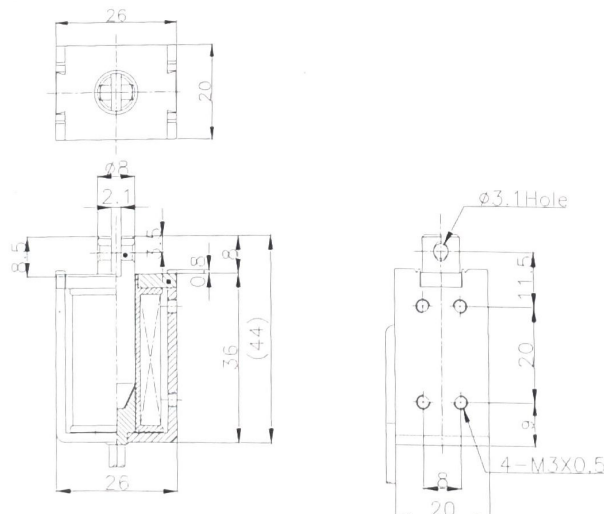
### ● TEMP. RISE (CONSECUTIVE REGULARITY)



### ● GENERAL PROPERTY

- (1) Temp. Rise : 65°C and less in 4.0W (consecutive)
- (2) Insulation : 100MΩ and more in DC 500V
- (3) Voltage Endurance : 1 sec. in AC1800V
- (4) Insulation Class : A-Class
- (5) Weight : 90g

DSD-08A





# DSD-10A TYPE

DC SOLENOID

● Push type / Pull type

● Push-Pull type

DC12V/DC24V

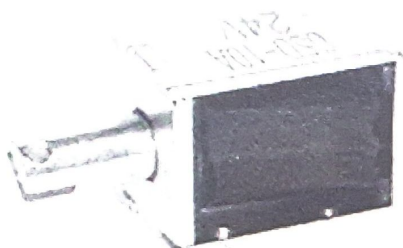
● STANDARD STROKE : 8mm

## PROPERTY

- Various Attraction suitable to various purposes.
- Small-sized & Lightweight, high attraction power.
- Low impact and noise in operation.
- Simple and easy Connection with the load.
- High Durability.
- Even if the plunger stops operating, the coil is not damaged because the current supply doesn't increase.
- Simple structure & economical design.

## USE

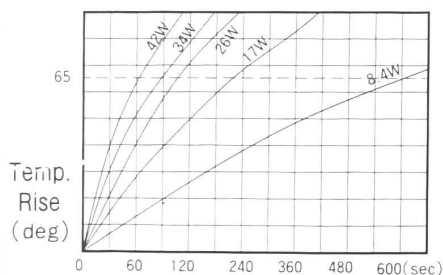
- Inter-Lock : Banding Machine, Game machine, Conveyer etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packaging.



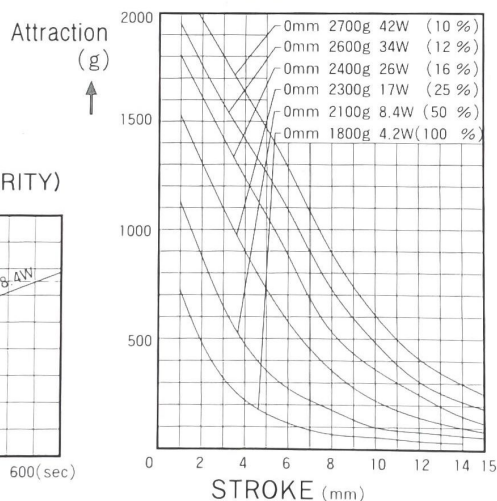
DSD-10A

## SPECIFICATION

### ● TEMP. RISE (CONSECUTIVE REGULARITY)



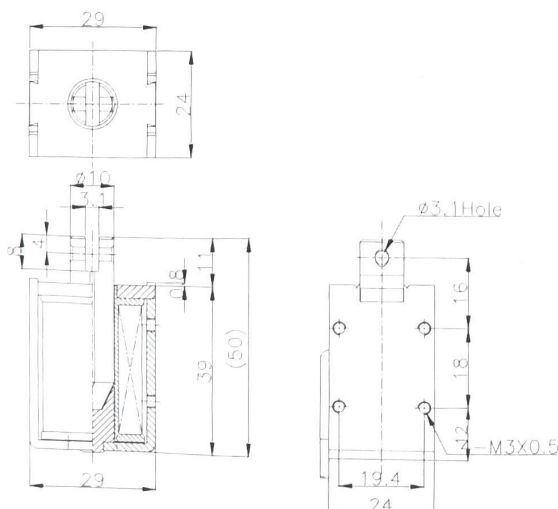
### ● STROKE & ATTRACTION



### ● GENERAL PROPERTY

- (1) Temp. Rise : 65°C and less in 4.2W (consecutive)
- (2) Insulation : 100MΩ and more in DC 500V
- (3) Voltage Endurance : 1 sec. in AC1800V
- (4) Insulation Class : A-Class
- (5) Weight : 122g

DSD-10A



# DSD-12E TYPE

DC SOLENOID

● Push type / Pull type

● Push-Pull type

DC12V/DC24V

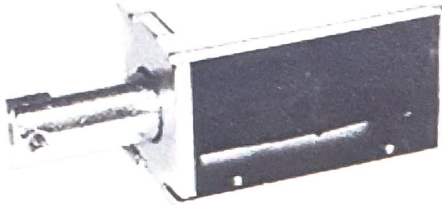
● STANDARD STROKE : 10mm

## PROPERTY

- Various Attraction suitable to various purposes.
- Small-sized & Lightweight, high attraction power.
- Low impact and noise in operation.
- Simple and easy Connection with the load.
- High Durability.
- Even if the plunger stops operating, the coil is not damaged because the current supply doesn't increase.
- Simple structure & economical design.

## USE

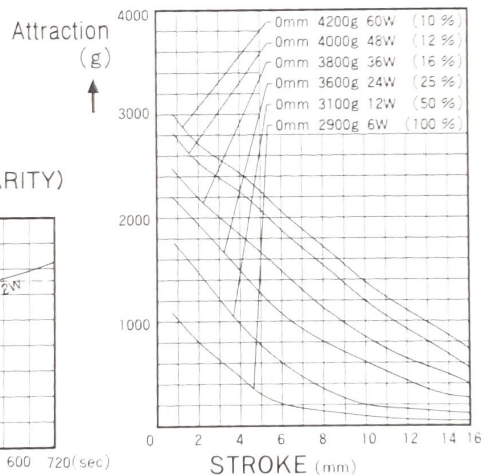
- Inter-Lock : Banding Machine, Game machine, Conveyer etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packaging.



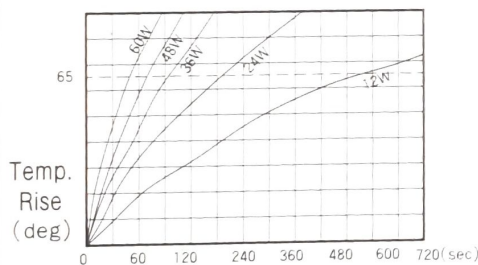
DSD-12E

## SPECIFICATION

### ● STROKE & ATTRACTION



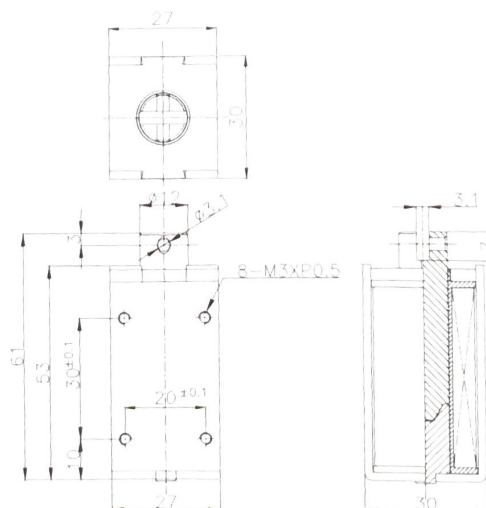
### ● TEMP. RISE (CONSECUTIVE REGULARITY)



### ● GENERAL PROPERTY

- (1) Temp. Rise : 65°C and less in 6.0W (consecutive)
- (2) Insulation : 100MΩ and more in DC 500V
- (3) Voltage Endurance : 1 sec. in AC1800V
- (4) Insulation Class : A-Class
- (5) Weight : 210g

### DSD-12E



# DSD-16A TYPE

DC SOLENOID

● Push type / Pull type

● Push-Pull type

DC12V/DC24V

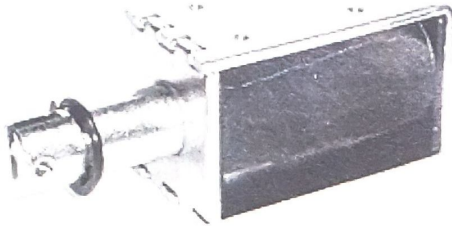
● STANDARD STROKE : 15mm

## PROPERTY

- Various Attraction suitable to various purposes.
- Small-sized & Lightweight, high attraction power.
- Low impact and noise in operation.
- Simple and easy Connection with the load.
- High Durability.
- Even if the plunger stops operating, the coil is not damaged because the current supply doesn't increase.
- Simple structure & economical design.

## USE

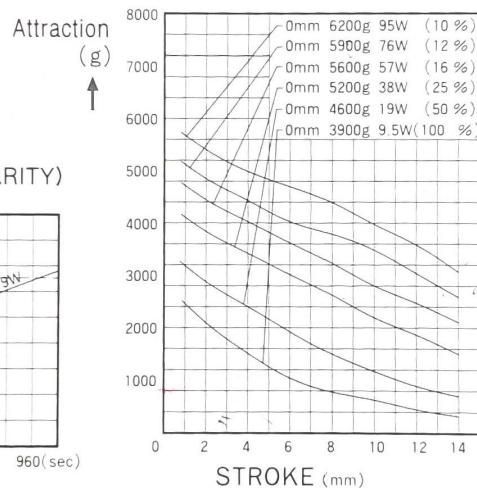
- Inter-Lock : Banding Machine, Game machine, Conveyor etc.
- Automatic Fruit Separator using solenoid.
- Brake : NC Machine, Lift, Hoist, Milling etc.
- Clutch : Safety Device, Cutoff, NC Machine
- Lever : Auto-machine, Industrial Counter, Machine Division Controller
- Punch, Press : Riveting Machine, Punching, Automatic Stamp
- Supplier : Air Cleaner, Refrigerator, Packaging.



DSD-16A

## SPECIFICATION

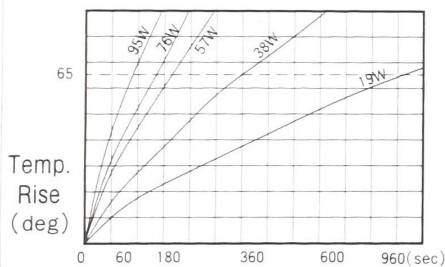
### ● STROKE & ATTRACTION



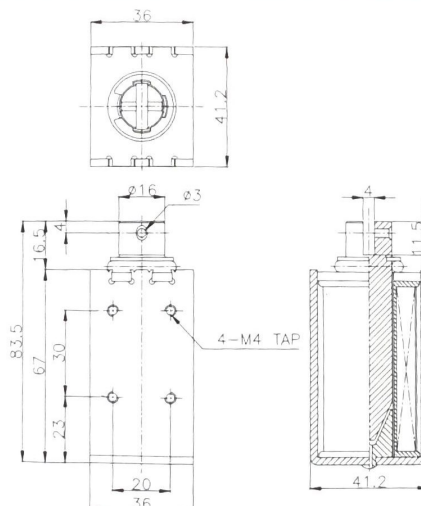
### ● GENERAL PROPERTY

- (1) Temp. Rise : 65°C and less in 10W (consecutive)
- (2) Insulation : 100MΩ and more in DC 500V
- (3) Voltage Endurance : 1 sec. in AC1800V
- (4) Insulation Class : A-Class
- (5) Weight : 430g

### ● TEMP. RISE (CONSECUTIVE REGULARITY)



### DSD-16A

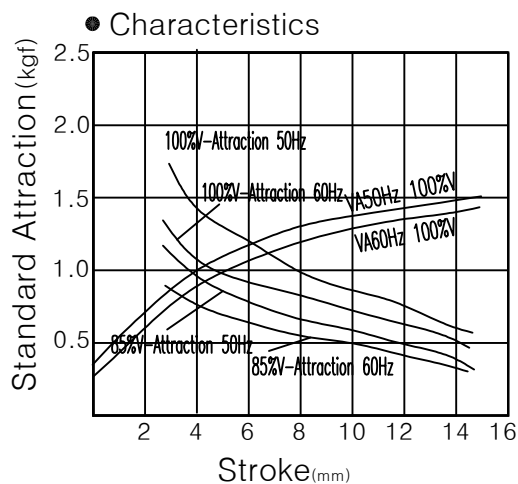




# DS-062MD TYPE

## AC Solenoid(Push-Pull Type)

### Specification



- Standard Stroke : 10mm
- Standard Attraction : 0.6Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 265mA           | 135mA  | 1.6A           | 0.8A   |
| 60Hz | 200mA           | 100mA  | 1.5A           | 0.75A  |

- Temp. Rise : 85deg or Below

### Solenoid Use

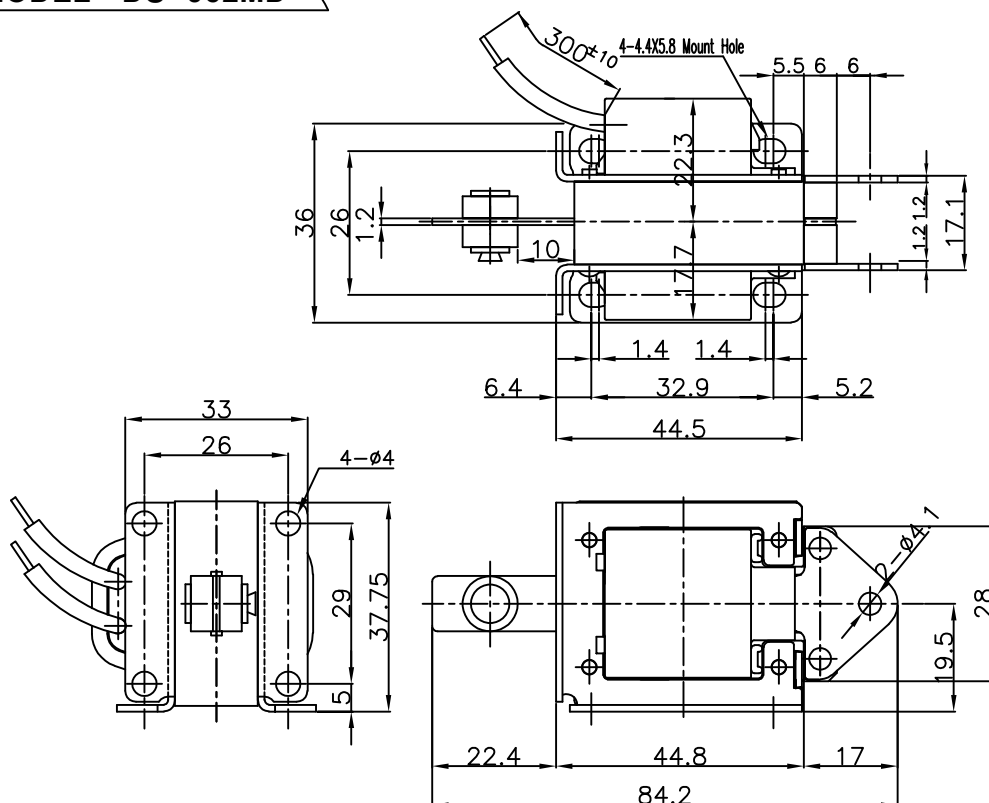
1. Inter-Lock : Vending machine, Game machine, Conveyor, Etc.
2. Automatic Selection Equipment for Conveyor.
3. Bracke : Nc machine, Lifter, Hoist, Etc.
4. Clutch : Safty device, Shutter, Emergency equipment, Nc machine.
5. Lever : OA machine, Counter., Controller for mechanical device.
6. Punch, Press machine : Electric riveting machine, Punch, Numbering machine.
7. Shutter : Air Condition, Refrigerator, Packing machine, Heating machine.

### MODEL CODE

1. DS-062MD: AC220V, MOLDING, Push-Pull.
2. DS-061MD: AC110V, MOLDING, Push-Pull.
3. DS-062CD: AC220V, TAPE CASE, Push-Pull.
4. DS-061CD: AC110V, TAPE CASE, Push-Pull.

### Dimensions

MODEL : DS-062MD

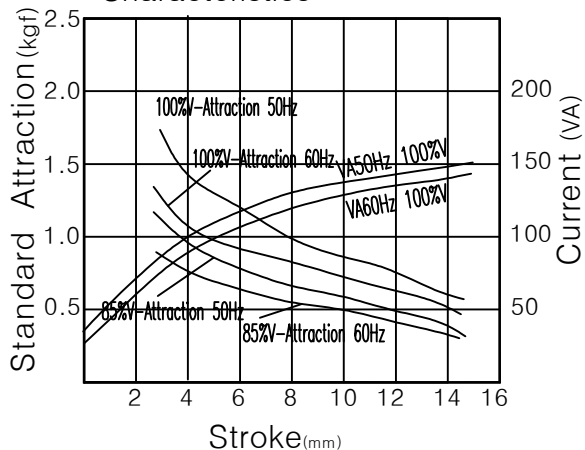


# DS-062MS TYPE

## AC Solenoid(Pull Type)

### Specification

#### ● Characteristics



- Standard Stroke : 10mm
- Standard Attraction : 0.6Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 265mA           | 135mA  | 1.6A           | 0.8A   |
| 60Hz | 200mA           | 100mA  | 1.5A           | 0.75A  |

- Temp.Rise : 85deg or Below

### Solenoid Use

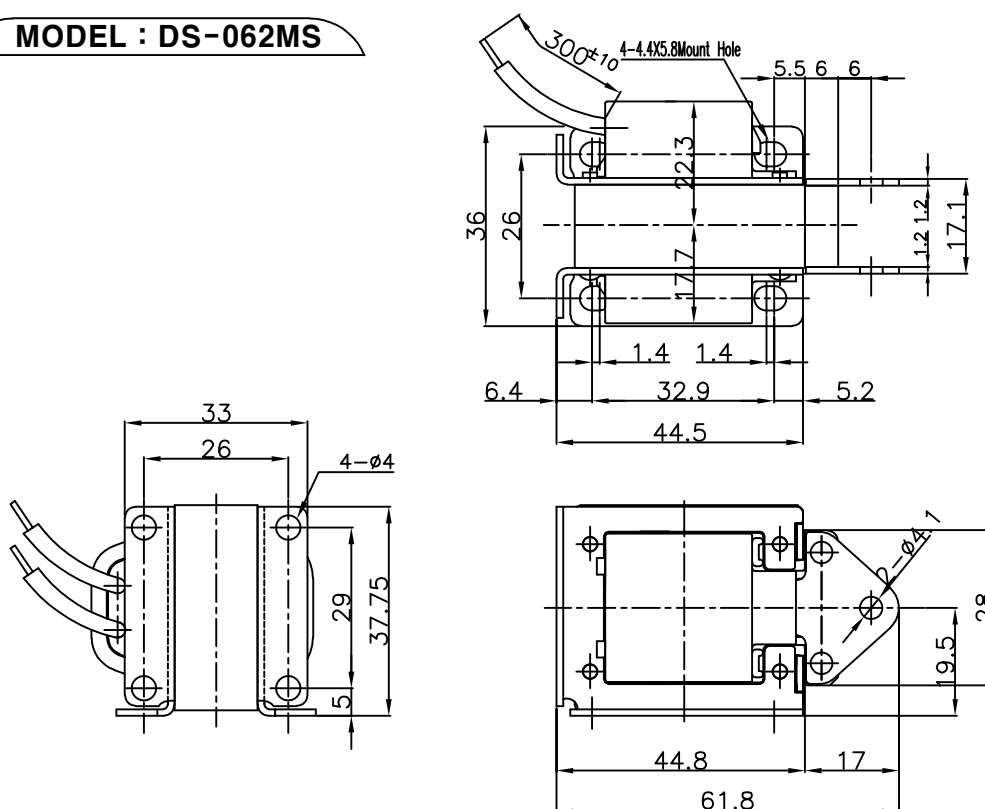
- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for mechanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.
- 7.Shutter : Air Condition, Refrigerator,Packing machine,Heating machine.

#### MODEL CODE

1. DS-062MS: AC220V,MOLDING,Pull.
2. DS-061MS: AC110V,MOLDING,Pull.
3. DS-062CS: AC220V,TAPE CASE,Pull.
4. DS-061CS: AC110V,TAPE CASE,Pull.

### Dimensions

MODEL : DS-062MS

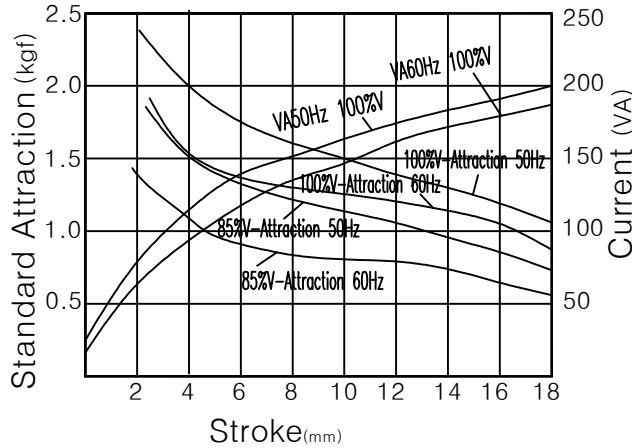


# DS-102MD TYPE

## AC Solenoid(Push-Pull Type)

### Specification

#### ● Characteristics



- Standard Stroke : 15mm
- Standard Attraction : 1.0Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 242mA           | 121mA  | 2.45A          | 1.21A  |
| 60Hz | 198mA           | 100mA  | 2.2A           | 1.1A   |

- Temp.Rise : 85deg or Below

### Solenoid Use

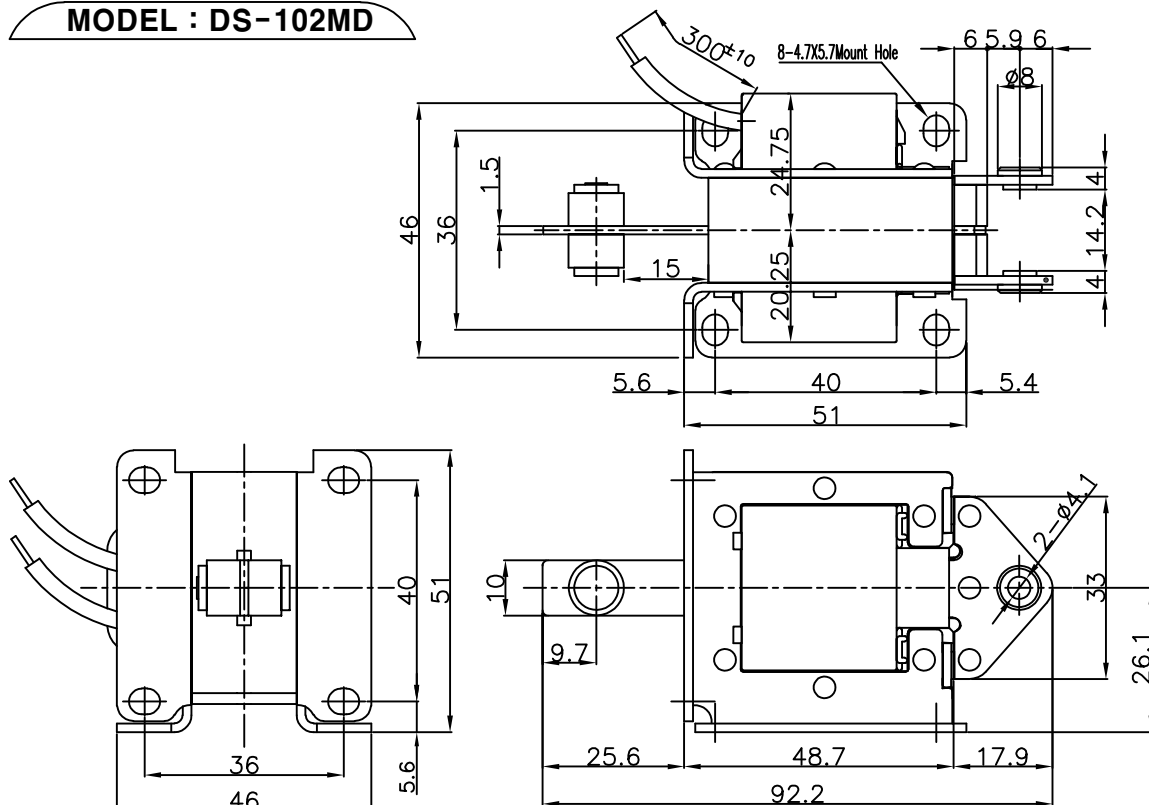
- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for mechanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.

#### MODEL CODE

- 1.DS-102MD:AC220V,MOLDING,Push-Pull.
- 2.DS-101MD:AC110V,MOLDING,Push-Pull.
- 3.DS-102CD:AC220V,TAPE CASE,Push-Pull.
- 4.DS-101CD:AC110V,TAPE CASE,Push-Pull.

### Dimensions

MODEL : DS-102MD



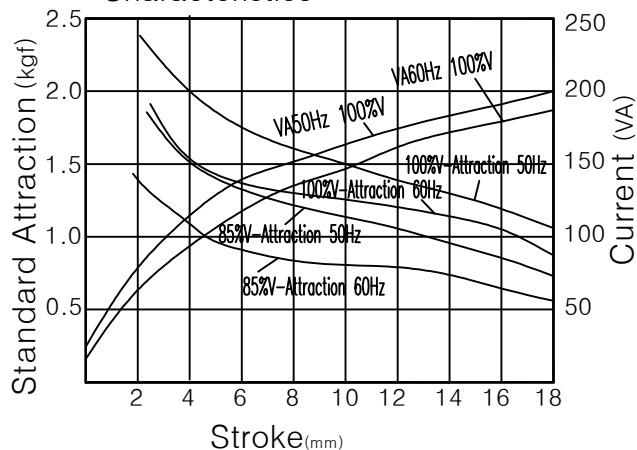


# DS-102MS TYPE

## AC Solenoid(Pull Type)

### Specification

#### • Characteristics



- Standard Stroke : 15mm
- Standard Attraction : 1.0Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 242mA           | 121mA  | 2.45A          | 1.21A  |
| 60Hz | 198mA           | 100mA  | 2.2A           | 1.1A   |

- Temp.Rise : 85deg or Below

### Solenoid Use

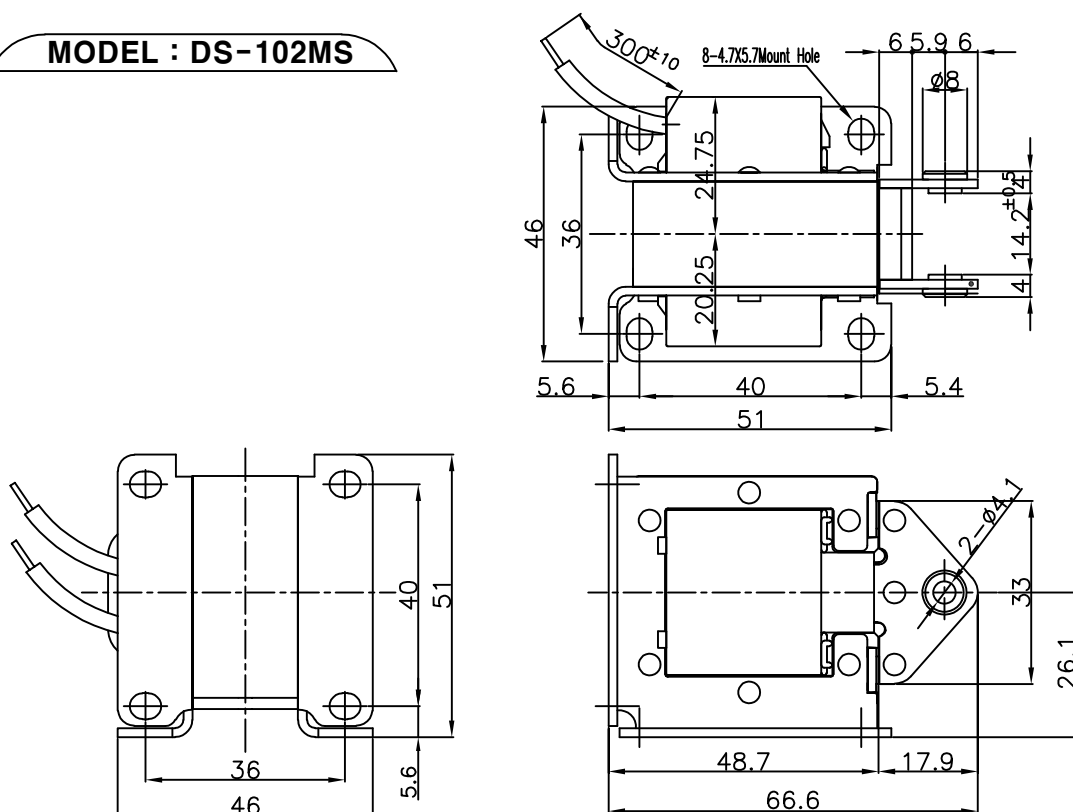
- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for mechanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.

#### MODEL CODE

- 1.DS-102MS: AC220V,MOLDING,Pull Type.
- 2.DS-101MS: AC110V,MOLDING,Pull Type.
- 3.DS-102CS: AC220V,TAPE CASE,Pull Type.
- 4.DS-101CS: AC110V,TAPE CASE,Pull Type.

### Dimensions

MODEL : DS-102MS



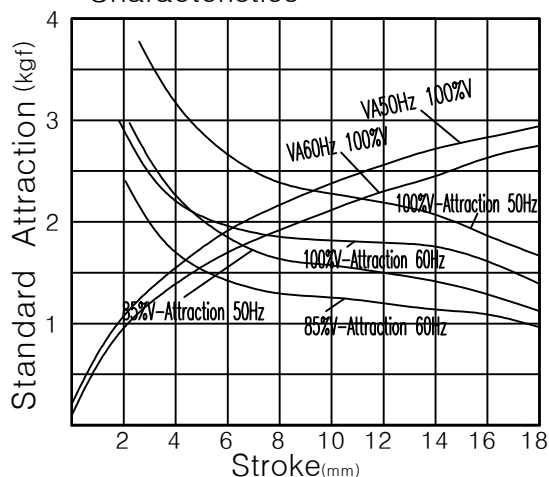
# DS-152MD TYPE

## AC Solenoid(Push-Pull Type)



### Specification

#### ● Characteristics



- Standard Stroke : 15mm
- Standard Attraction : 1.5Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 308mA           | 154mA  | 3.3A           | 1.65A  |
| 60Hz | 242mA           | 121mA  | 3.1A           | 1.54A  |

- Temp.Rise : 85deg or Below

### Solenoid Use

- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for mechanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.
- 7.Shutter : Air Condition, Refrigerator,Packing machine,Heating machine.

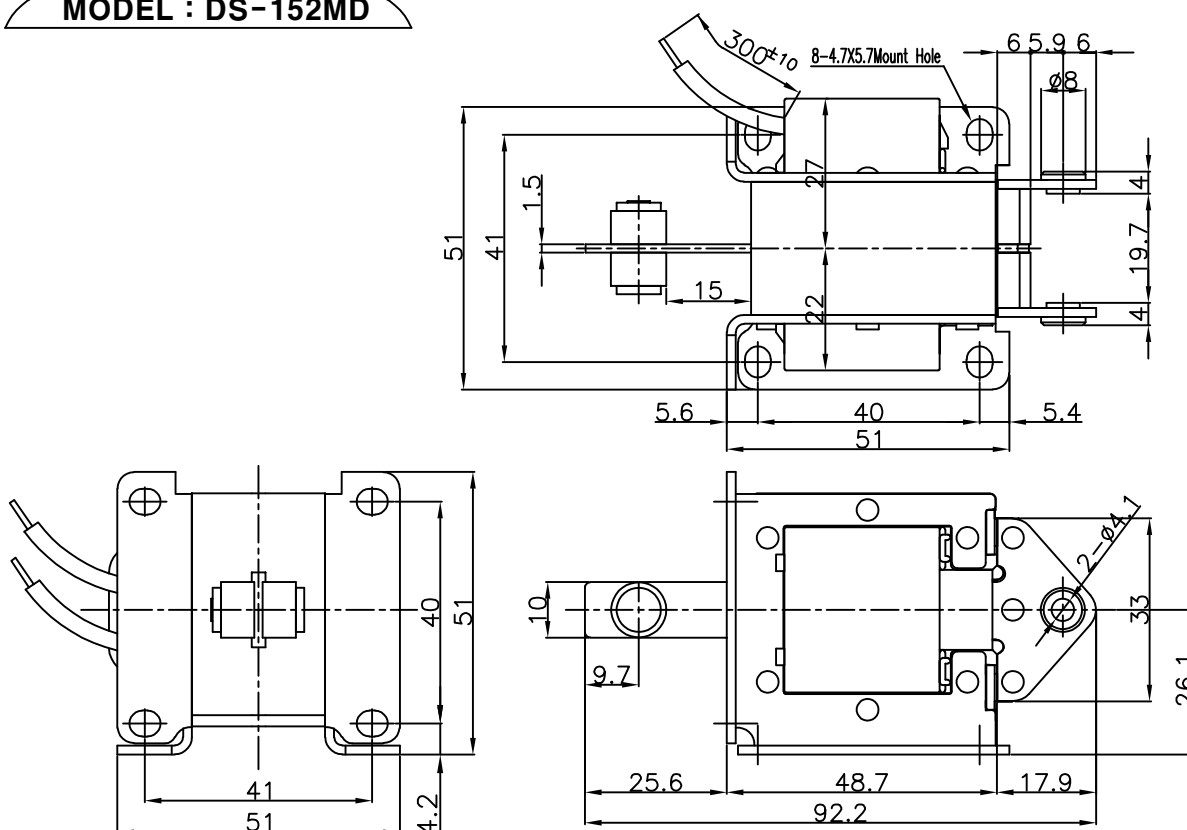
#### MODEL CODE

1. DS-152MD: AC220V,MOLDING,Push-Pull.
2. DS-151MD: AC110V,MOLDING,Push-Pull.
3. DS-152CD: AC220V,TAPE CASE,Push-Pull.
4. DS-151CD: AC110V,TAPE CASE,Push-Pull.



### Dimensions

MODEL : DS-152MD

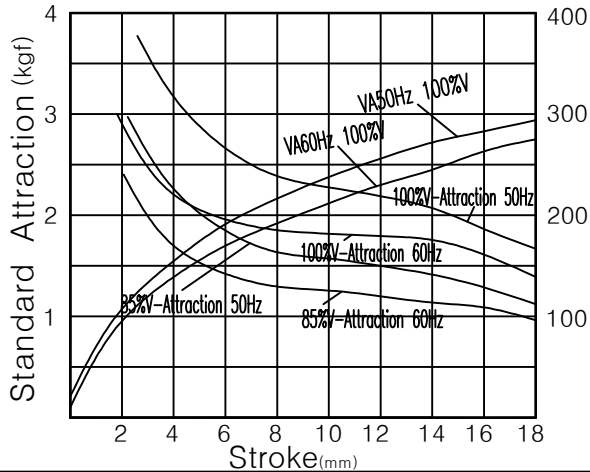


# DS-152MS TYPE

## AC Solenoid(Pull Type)

### Specification

#### ● Characteristics



- Standard Stroke : 15mm
- Standard Attraction : 1.5Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 308mA           | 154mA  | 3.3A           | 1.65A  |
| 60Hz | 242mA           | 121mA  | 3.1A           | 1.54A  |

- Temp.Rise : 85deg or Below

### Solenoid Use

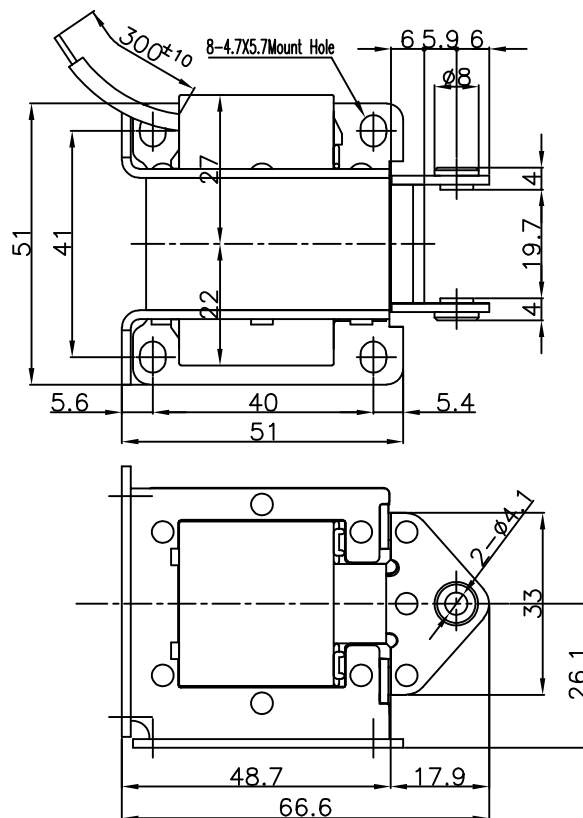
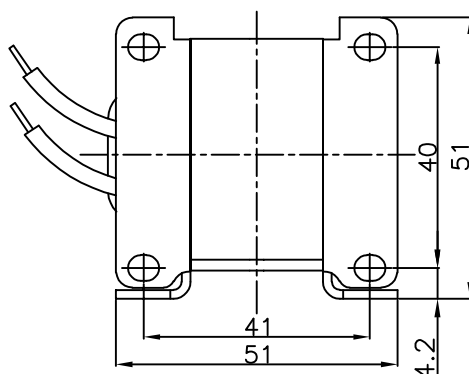
- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for mechanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.
- 7.Shutter : Air Condition, Refrigerator,Packing machine,Heating machine.

### MODEL CODE

1. DS-152MS: AC220V,MOLDING,Pull.
2. DS-151MS: AC110V,MOLDING,Pull.
3. DS-152CS: AC220V,TAPE CASE,Pull.
4. DS-151CS: AC110V,TAPE CASE,Pull.

### Dimensions

MODEL : DS-152MS







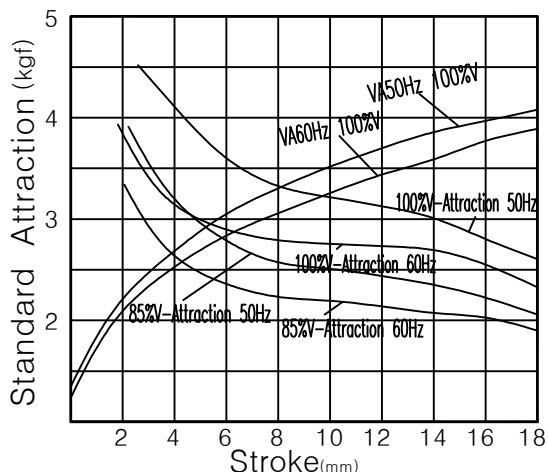
# DS-202MS TYPE

## AC Solenoid(Pull Type)



### Specification

#### ● Characteristics



- Standard Stroke : 15mm
- Standard Attraction : 2.0Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 440mA           | 220mA  | 4.4A           | 2.2A   |
| 60Hz | 346mA           | 173mA  | 4.1A           | 2.1A   |

- Temp.Rise : 85deg or Below

### Solenoid Use

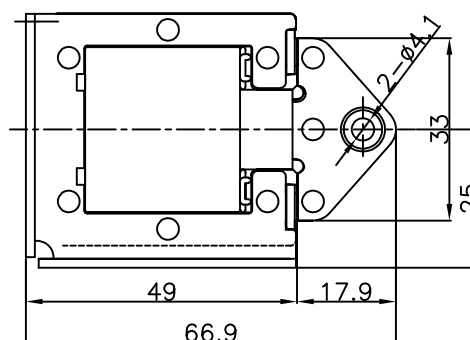
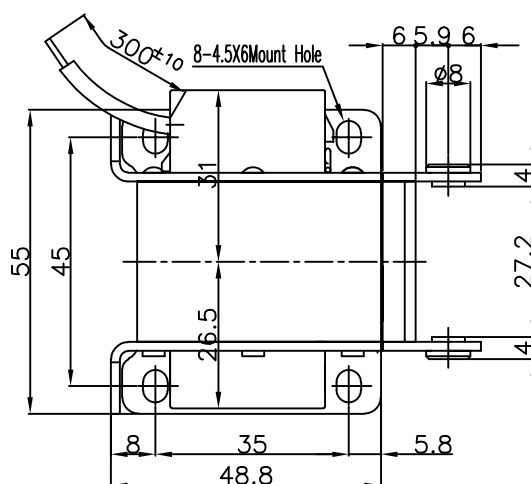
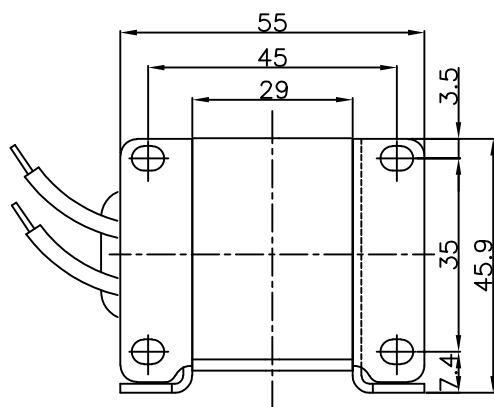
1. Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
2. Automatic Selection Equipment for Conveyer.
3. Bracke : Nc machine,Lifter,Hoist,Etc.
4. Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
5. Lever : OA machine,Counter., Controller for mechanical device.
6. Punch,Press machine : Electric riveting machine,Punch, Numbering machine.
7. Shutter : Air Condition, Refrigerator,Packing machine,Heating machine.

#### MODEL CODE

1. DS-202MS: AC220V,MOLDING,Pull.
2. DS-201MS: AC110V,MOLDING,Pull.
3. DS-202CS: AC220V,TAPE CASE,Pull.
4. DS-201CS: AC110V,TAPE CASE,Pull.



MODEL : DS-202MS

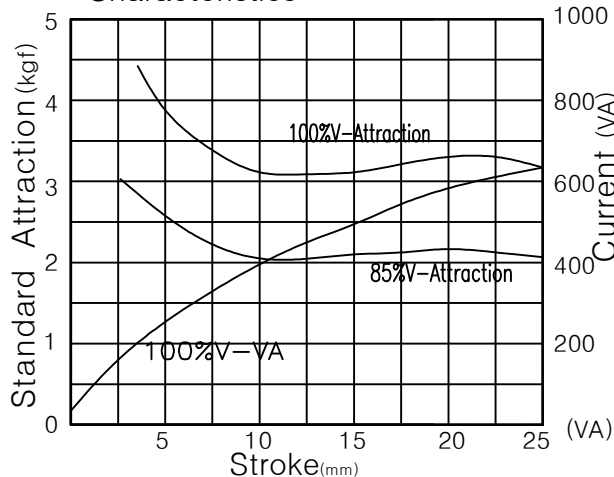


# DS-302MD TYPE

## AC Solenoid(Push-Pull Type)

### Specification

#### ● Characteristics



- Standard Stroke : 20mm
- Standard Attraction : 3.0Kg Min
- Rated Voltage: AC110V, 220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 550mA           | 275mA  | 6.4A           | 3.2A   |
| 60Hz | 572mA           | 286mA  | 6.6A           | 3.3A   |

- Temp. Rise : 85deg or Below

### Solenoid Use

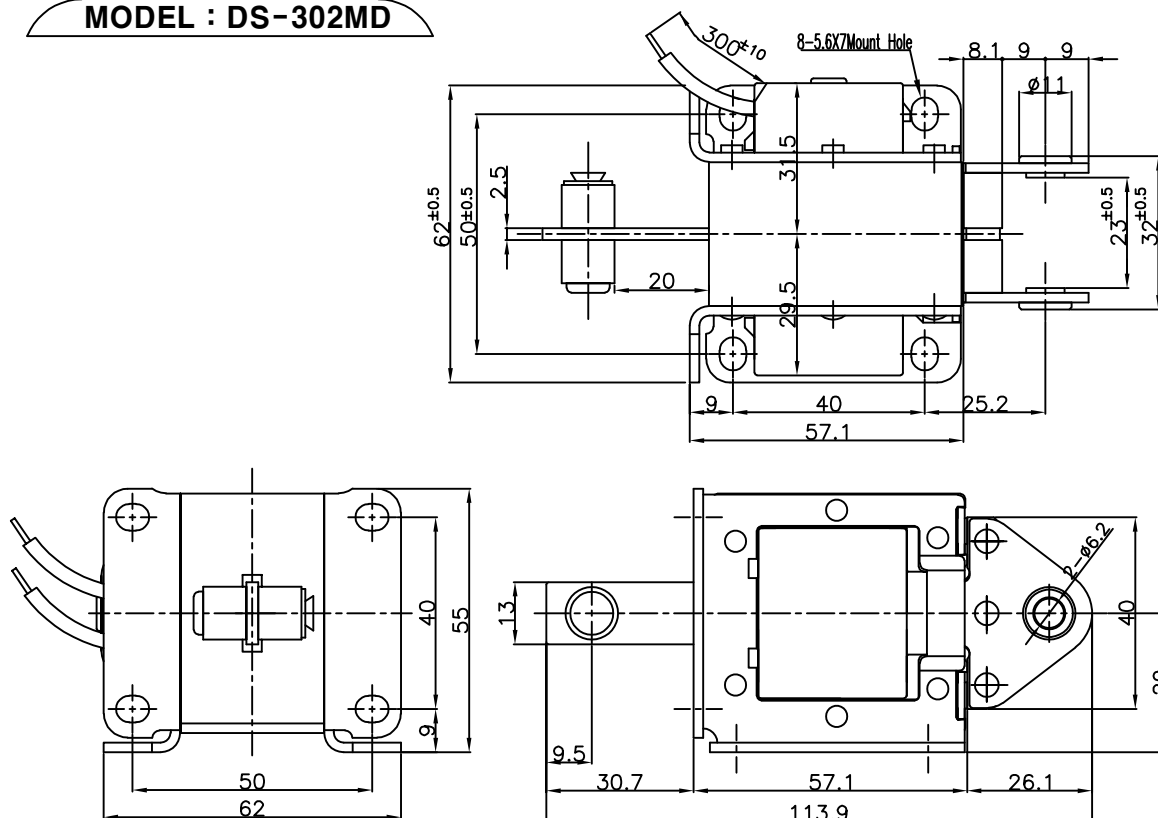
1. Inter-Lock : Vending machine, Game machine, Conveyor, Etc.
2. Automatic Selection Equipment for Conveyor.
3. Bracke : Nc machine, Lifter, Hoist, Etc.
4. Clutch : Safty device, Shutter, Emergency equipment, Nc machine.
5. Lever : OA machine, Counter., Controller for mechanical device.
6. Punch, Press machine : Electric riveting machine, Punch, Numbering machine.
7. Shutter : Air Condition, Refrigerator, Packing machine, Heating machine.

#### MODEL CODE

1. DS-302MD : AC220V, MOLDING, Push-Pull.
2. DS-301MD : AC110V, MOLDING, Push-Pull.
3. DS-302CD : AC220V, TAPE CASE, Push-Pull.
4. DS-301CD : AC110V, TAPE CASE, Push-Pull.

### Dimensions

MODEL : DS-302MD

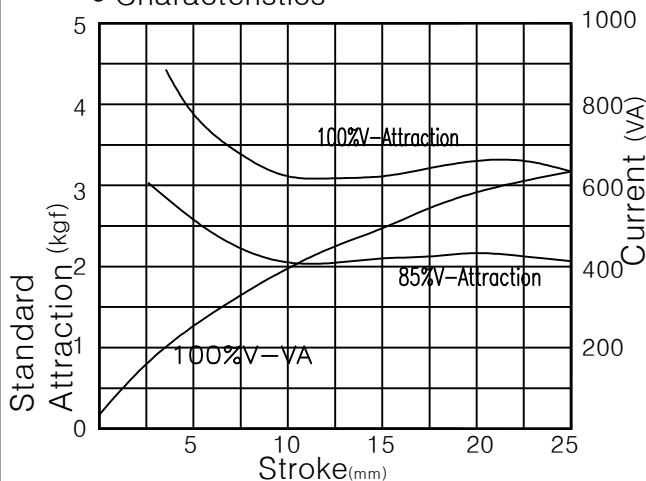


# DS-302MS TYPE

## AC Solenoid(Pull Type)

### Specification

#### Characteristics



- Standard Stroke : 20mm
- Standard Attraction : 3.0Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 550mA           | 275mA  | 6.4A           | 3.2A   |
| 60Hz | 572mA           | 286mA  | 6.6A           | 3.3A   |

- Temp.Rise : 85deg or Below

### Solenoid Use

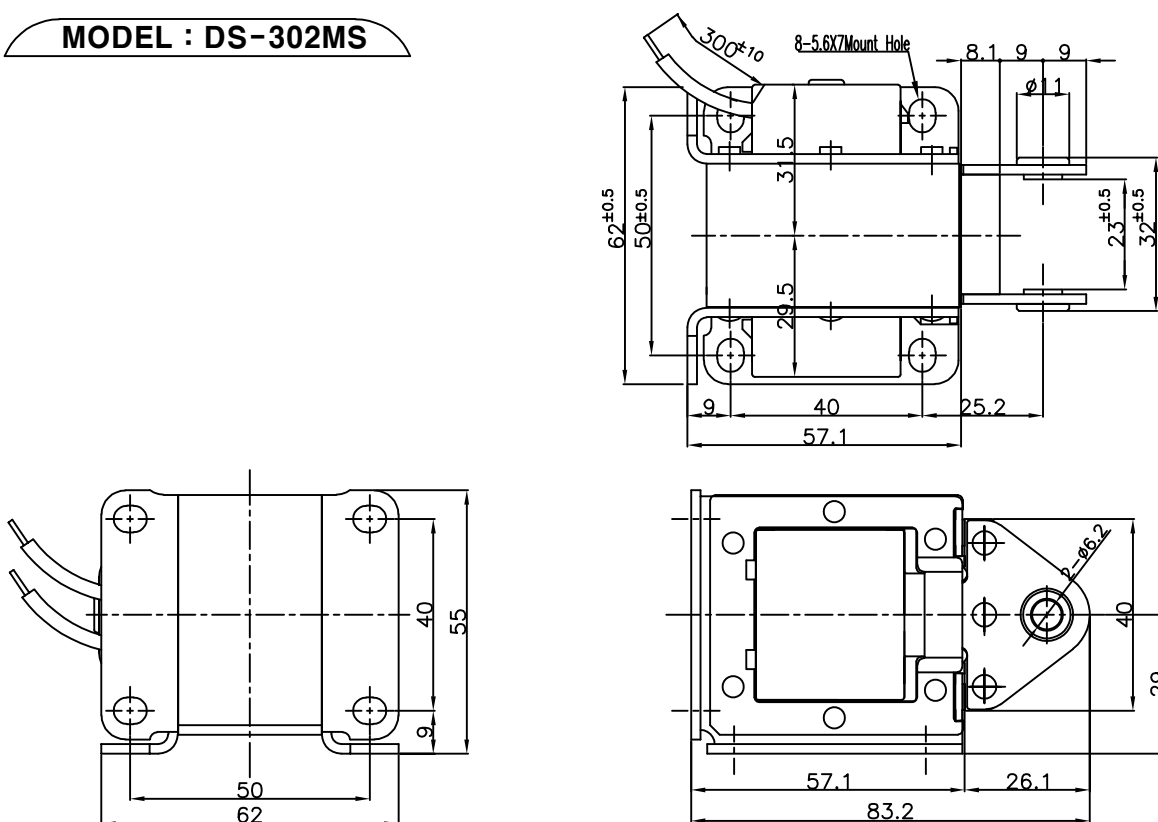
1. Inter-Lock : Vending machine, Game machine, Conveyor, Etc.
2. Automatic Selection Equipment for Conveyor.
3. Bracke : Nc machine, Lifter, Hoist, Etc.
4. Clutch : Safty device, Shutter, Emergency equipment, Nc machine.
5. Lever : OA machine, Counter., Controller for mechanical device.
6. Punch, Press machine : Electric riveting machine, Punch, Numbering machine.
7. Shutter : Air Condition, Refrigerator, Packing machine, Heating machine.

#### MODEL CODE

1. DS-302MS: AC220V, MOLDING, Pull.
2. DS-301MS: AC110V, MOLDING, Pull.
3. DS-302CS: AC220V, TAPE CASE, Pull.
4. DS-301CS: AC110V, TAPE CASE, Pull.

### Dimensions

MODEL : DS-302MS



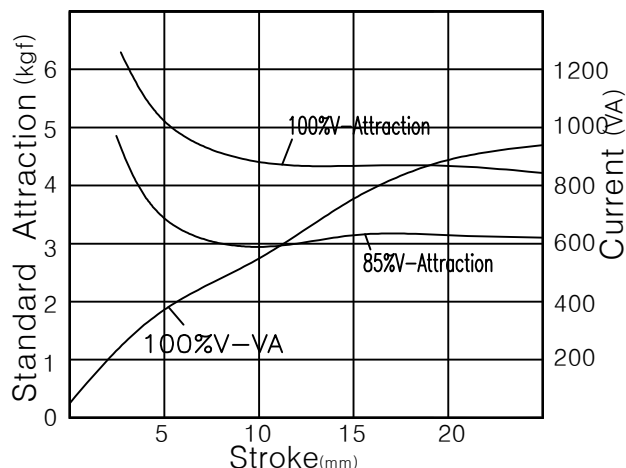


# DS-402MD TYPE

## AC Solenoid(Push-Pull Type)

### Specification

#### Characteristics



- Standard Stroke : 20mm
- Standard Attraction : 4.0Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 682mA           | 341mA  | 9.3A           | 4.7A   |
| 60Hz | 726mA           | 363mA  | 9.9A           | 5.0A   |

- Temp.Rise : 85deg or Below

### Solenoid Use

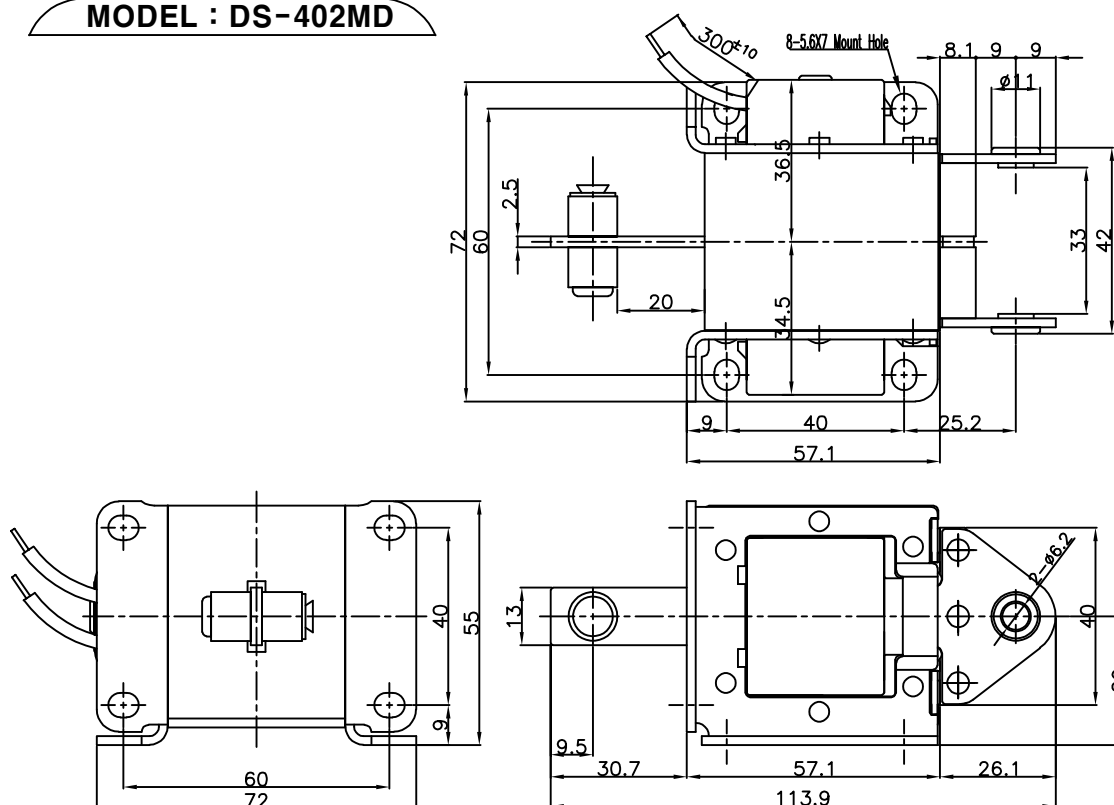
- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for mechanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.
- 7.Shutter : Air Condition, Refrigerator,Packing machine,Heating machine.

#### MODEL CODE

- 1.DS-402MD:AC220V,MOLDING,Push-Pull.
- 2.DS-401MD:AC110V,MOLDING,Push-Pull.
- 3.DS-402CD:AC220V,TAPE CASE,Push-Pull.
- 4.DS-401CD:AC110V,TAPE CASE,Push-Pull.

### Dimensions

#### MODEL : DS-402MD



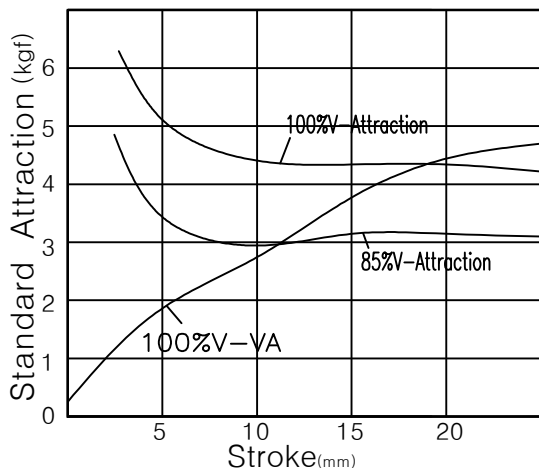
# DS-402MS TYPE

## AC Solenoid(Pull Type)



### Specification

#### ● Characteristics



- Standard Stroke : 20mm
- Standard Attraction : 4.0Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 682mA           | 341mA  | 9.3A           | 4.7A   |
| 60Hz | 726mA           | 363mA  | 9.9A           | 5.0A   |

- Temp.Rise : 85deg or Below

### Solenoid Use

1. Inter-Lock : Vending machine, Game machine, Conveyor, Etc.
2. Automatic Selection Equipment for Conveyor.
3. Bracke : Nc machine, Lifter, Hoist, Etc.
4. Clutch : Safty device, Shutter, Emergency equipment, Nc machine.
5. Lever : OA machine, Counter., Controller for mechanical device.
6. Punch, Press machine : Electric riveting machine, Punch, Numbering machine.
7. Shutter : Air Condition, Refrigerator, Packing machine, Heating machine.

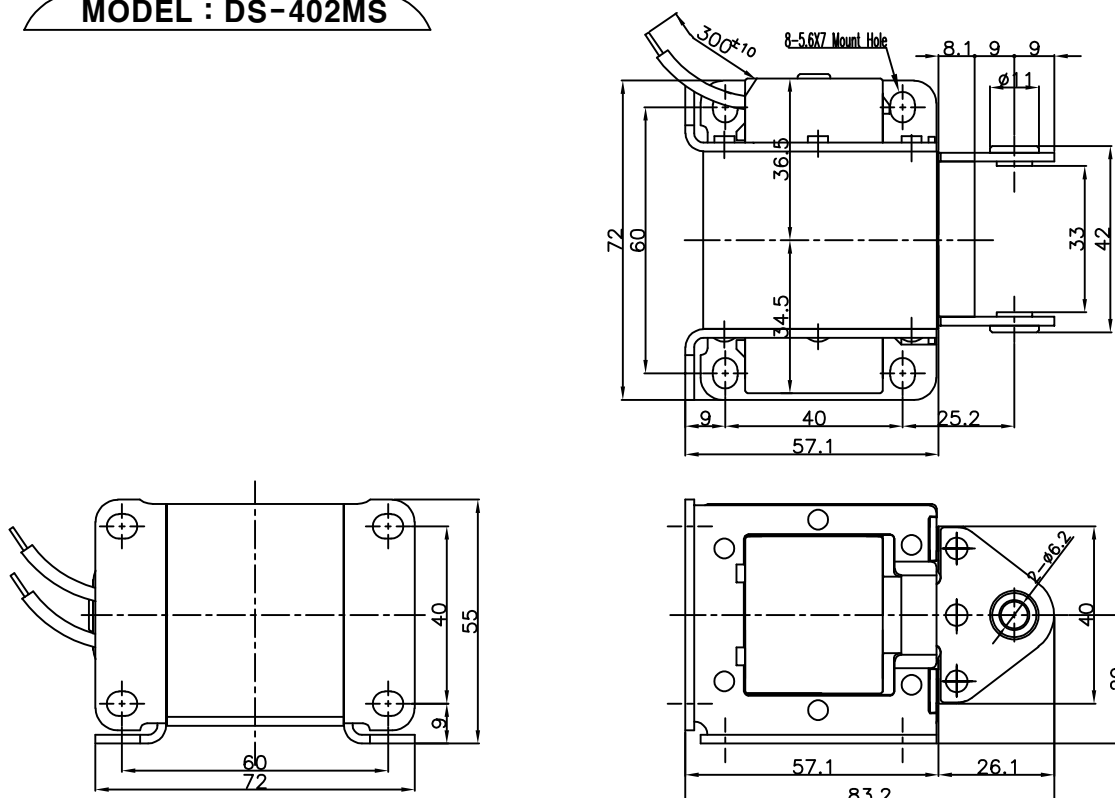
#### MODEL CODE

1. DS-402MS: AC220V, MOLDING, Pull.
2. DS-401MS: AC110V, MOLDING, Pull.
3. DS-402CS: AC220V, TAPE CASE, Pull.
4. DS-401CS: AC110V, TAPE CASE, Pull.



### Dimensions

MODEL : DS-402MS



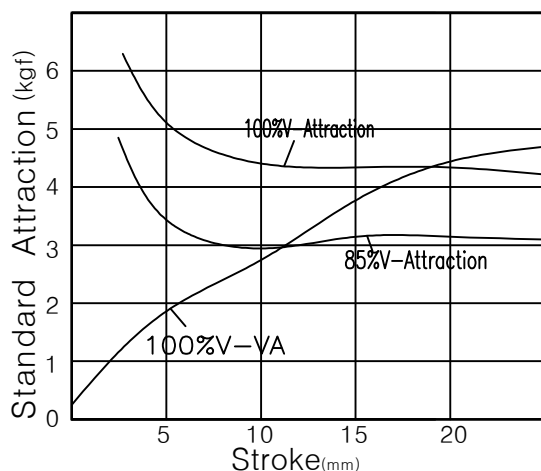
# DS-412MD TYPE

## AC Solenoid(Push-Pull Type)



### Specification

#### • Characteristics



- Standard Stroke : 20mm
- Standard Attraction : 4.0Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 880mA           | 440mA  | 10.6A          | 5.0A   |
| 60Hz | 933mA           | 467mA  | 11.3A          | 5.4A   |

- Temp.Rise : 85deg or Below

### Solenoid Use

1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.

2Automatic Selection Equipment for Conveyer.

3.Bracke : Nc machine,Lifter,Hoist,Etc.

4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.

5.Lever : OA machine,Counter., Controller for mechanical device.

6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.

7.Shutter : Air Condition, Refrigerator,Packing machine,Heating machine.

#### MODEL CODE

1. DS-412MD: AC220V,MOLDING,Push-Pull.

2. DS-411MD: AC110V,MOLDING,Push-Pull.

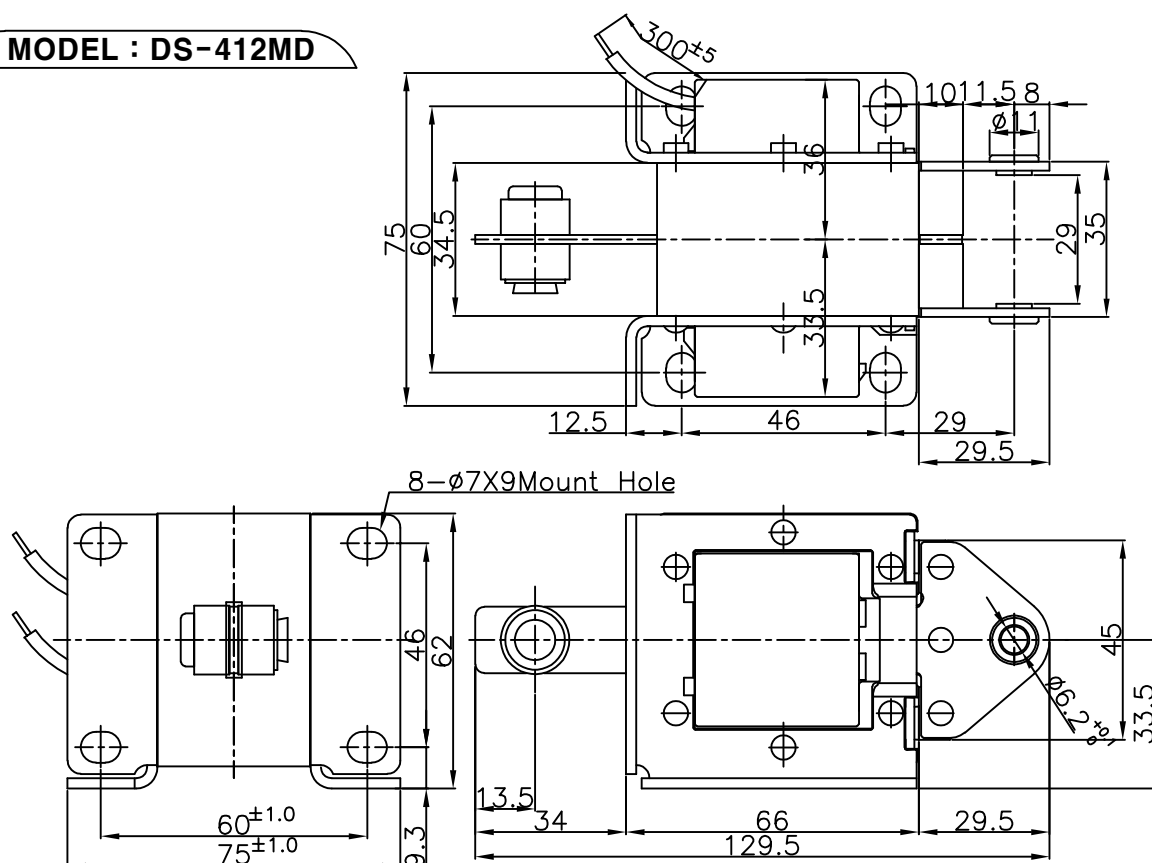
3. DS-412CD: AC220V,TAPE CASE,Push-Pull.

4. DS-411CD: AC110V,TAPE CASE,Push-Pull.



### Dimensions

MODEL : DS-412MD



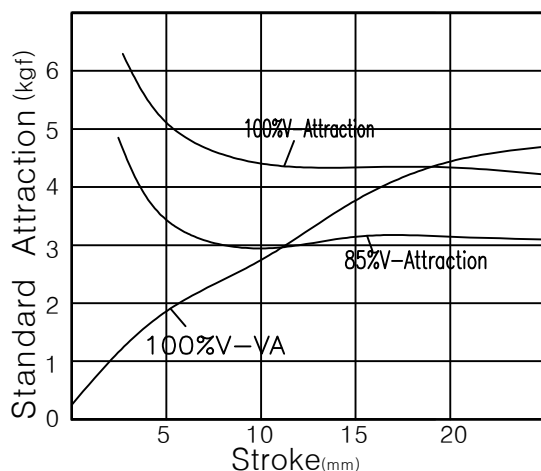
# DS-412MS TYPE

## AC Solenoid(Pull Type)



### Specification

#### • Characteristics



- Standard Stroke : 20mm
- Standard Attraction : 4.0Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 880mA           | 440mA  | 10.6A          | 5.0A   |
| 60Hz | 933mA           | 467mA  | 11.3A          | 5.4A   |

- Temp.Rise : 85deg or Below

### Solenoid Use

- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for mechanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.
- 7.Shutter : Air Condition, Refrigerator,Packing machine,Heating machine.

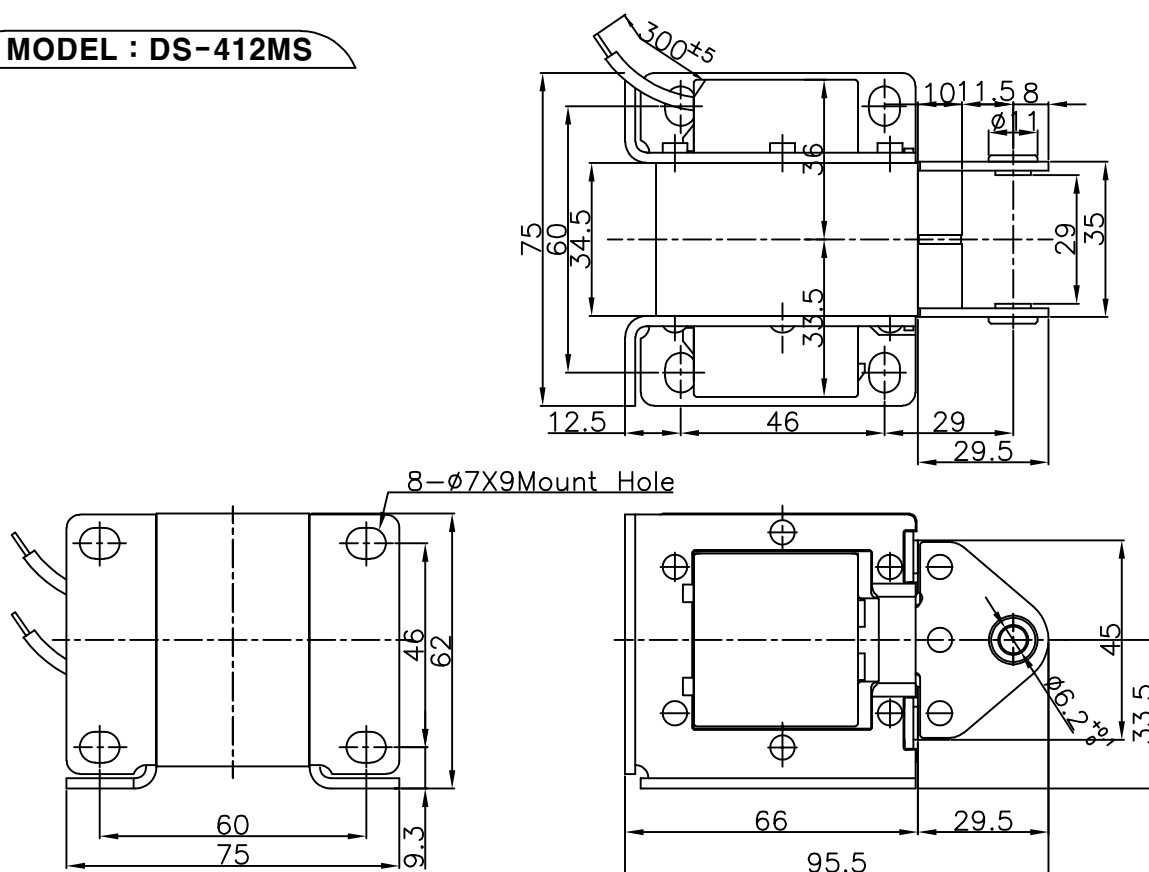
#### MODEL CODE

1. DS-412MS: AC220V,MOLDING,Pull.
2. DS-411MS: AC110V,MOLDING,Pull.
3. DS-412CS: AC220V,TAPE CASE,Pull.
4. DS-411CS: AC110V,TAPE CASE,Pull.



### Dimensions

MODEL : DS-412MS





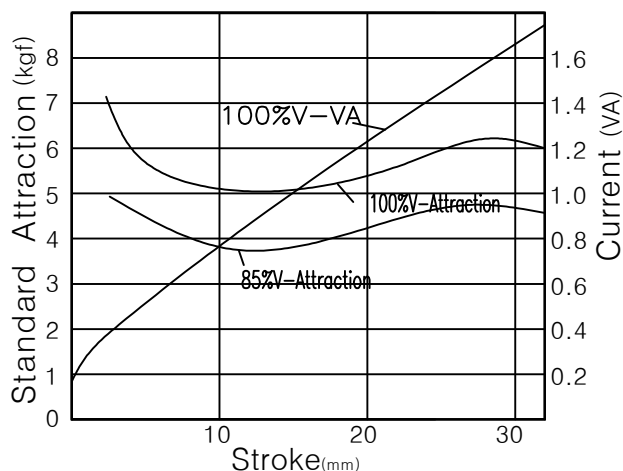
# DS-502TS TYPE

## AC Solenoid(Pull Type)



### Specification

#### Characteristics



- Standard Stroke : 30mm
- Standard Attraction : 5.0Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 1320mA          | 660mA  | 20.9A          | 10.5A  |
| 60Hz | 1540mA          | 770mA  | 24.5A          | 12.5A  |

- Temp.Rise : 85deg or Below

### Solenoid Use

- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for mechanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.
- 7.Shutter : Air Condition, Refrigerator,Packing machine,Heating machine.

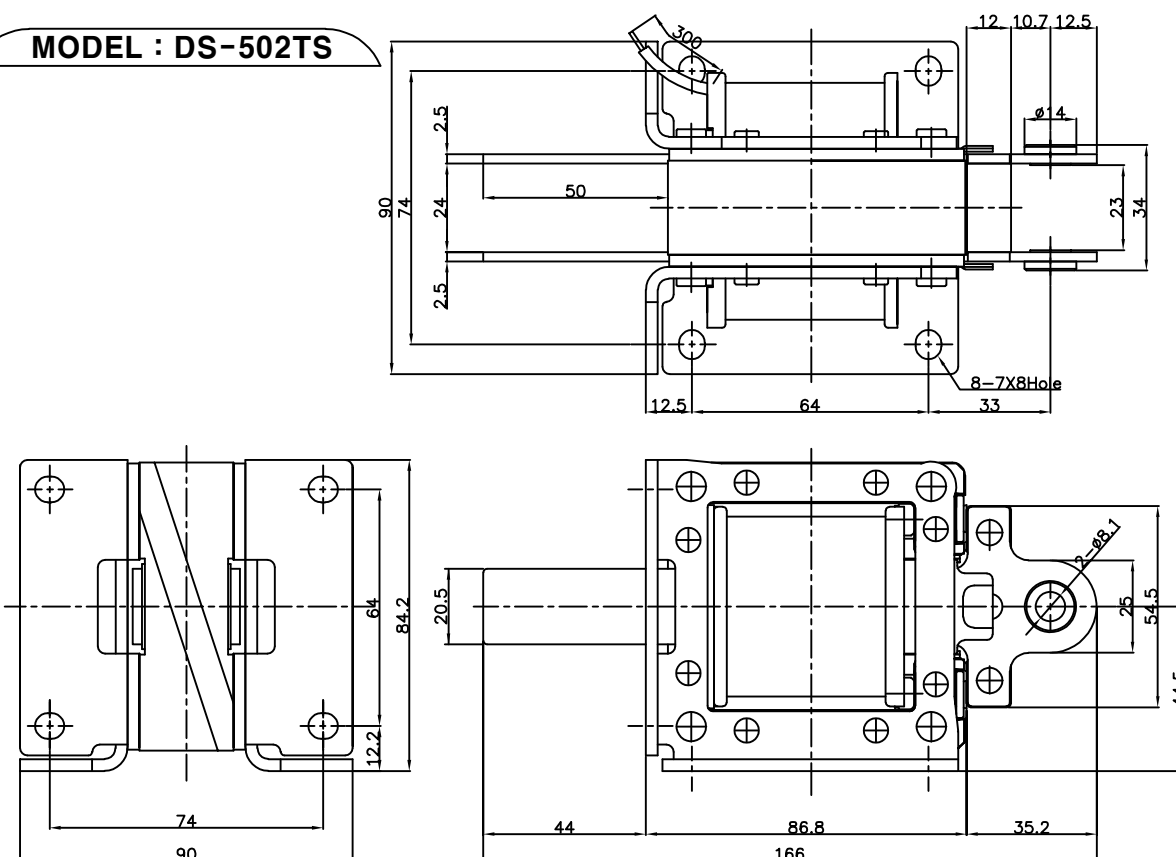
#### MODEL CODE

1. DS-502TS: AC220V,TAPE,Pull.
2. DS-501TS: AC110V,TAPE,Pull.



### Dimensions

MODEL : DS-502TS



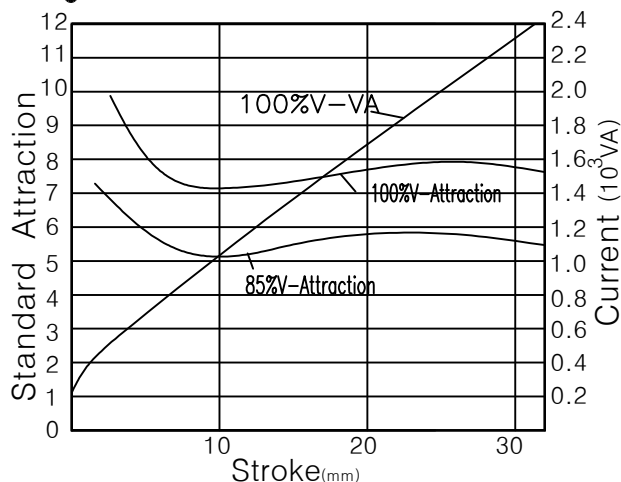
# DS-702TS TYPE

## AC Solenoid(Pull Type)



### Specification

#### Characteristics



- Standard Stroke : 30mm
- Standard Attraction : 7.0Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 1430mA          | 715mA  | 26.5A          | 13.3A  |
| 60Hz | 1650mA          | 825mA  | 31A            | 15.5A  |

- Temp.Rise : 85deg or Below

### Solenoid Use

1. Inter-Lock : Vending machine, Game machine, Conveyor, Etc.
2. Automatic Selection Equipment for Conveyor.
3. Bracket : Nc machine, Lifter, Hoist, Etc.
4. Clutch : Safety device, Shutter, Emergency equipment, Nc machine.
5. Lever : OA machine, Counter., Controller for mechanical device.
6. Punch, Press machine : Electric riveting machine, Punch, Numbering machine.
7. Shutter : Air Condition, Refrigerator, Packing machine, Heating machine.

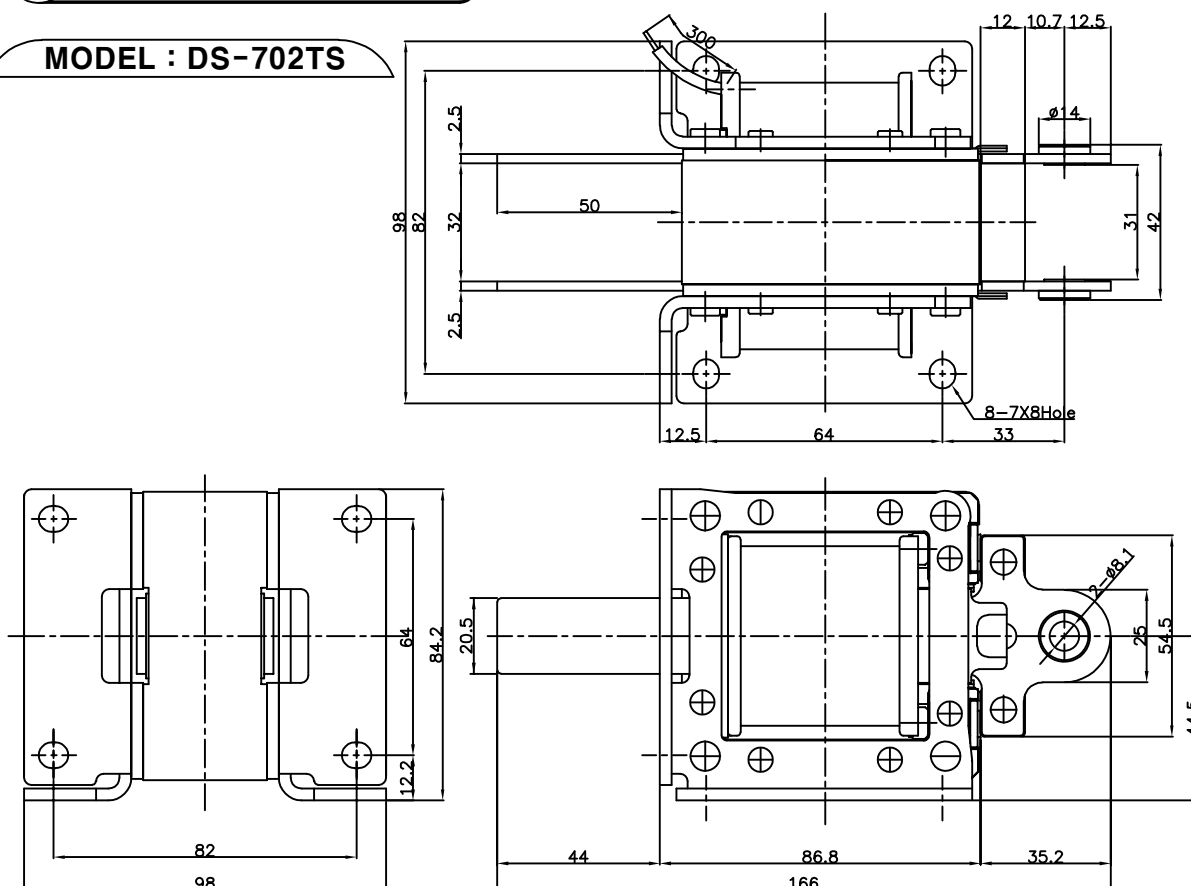
#### MODEL CODE

1. DS-702TS: AC220V, TAPE, Pull.
2. DS-701TS: AC110V, TAPE, Pull.



### Dimensions

MODEL : DS-702TS



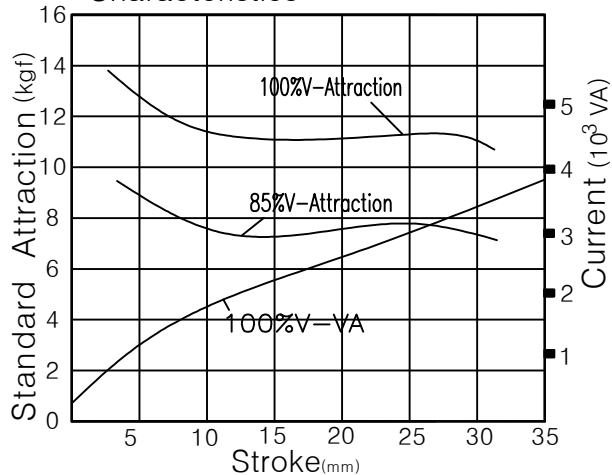
# DS-1002TS TYPE

## AC Solenoid(Pull Type)



### Specification

#### ● Characteristics



- Standard Stroke : 30mm
- Standard Attraction : 10.0Kg Min
- Rated Voltage: AC110V,220V, 50/60Hz
- Data:

|      | Holding Current |        | Inrush Current |        |
|------|-----------------|--------|----------------|--------|
|      | AC110V          | AC220V | AC110V         | AC220V |
| 50Hz | 2.0A            | 1.0mA  | 37.5A          | 18.8A  |
| 60Hz | 2.2A            | 1.2A   | 40A            | 20A    |

- Temp.Rise : 85deg or Below

### Solenoid Use

- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for machanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.
- 7.Shutter : Air Condition, Refrigerator,Packing machine,Heating machine.

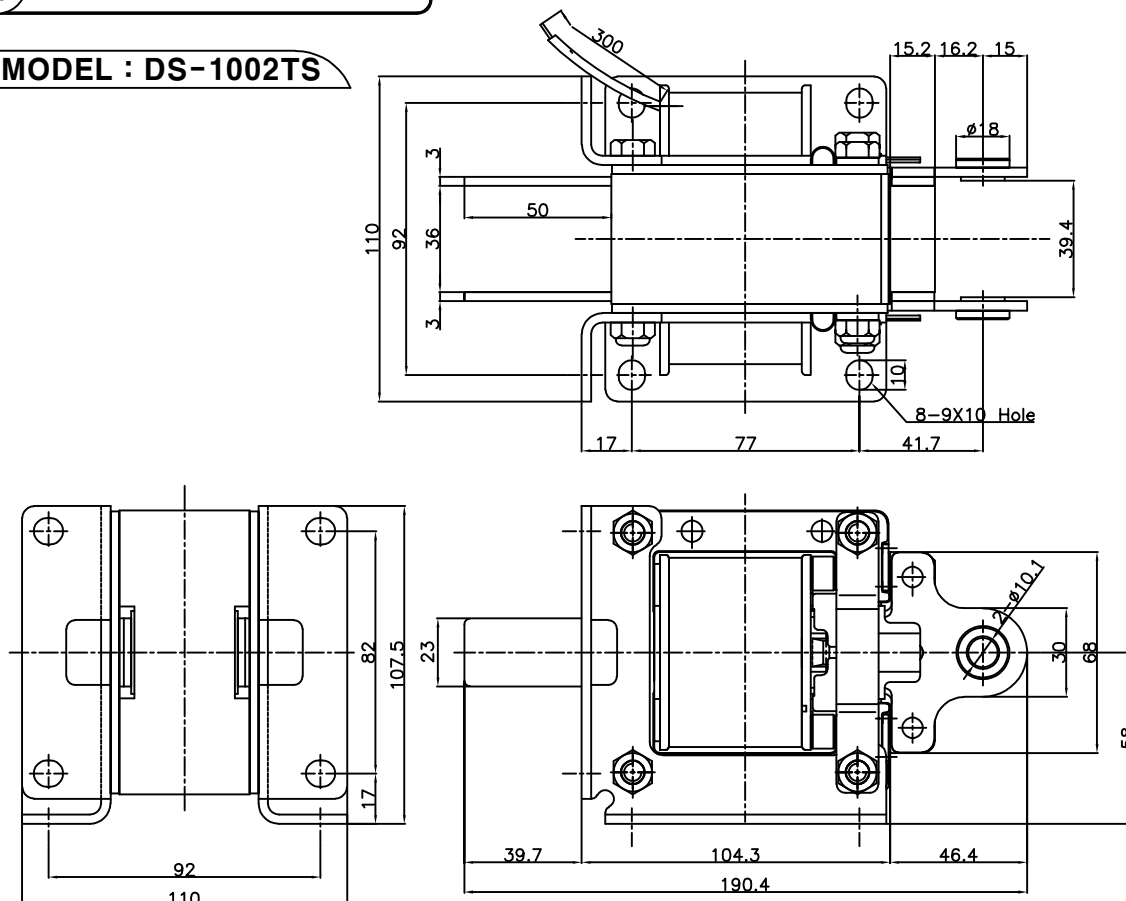
#### MODEL CODE

1. DS-1002TS: AC220V,TAPE,Pull.
2. DS-1001TS: AC110V,TAPE,Pull.

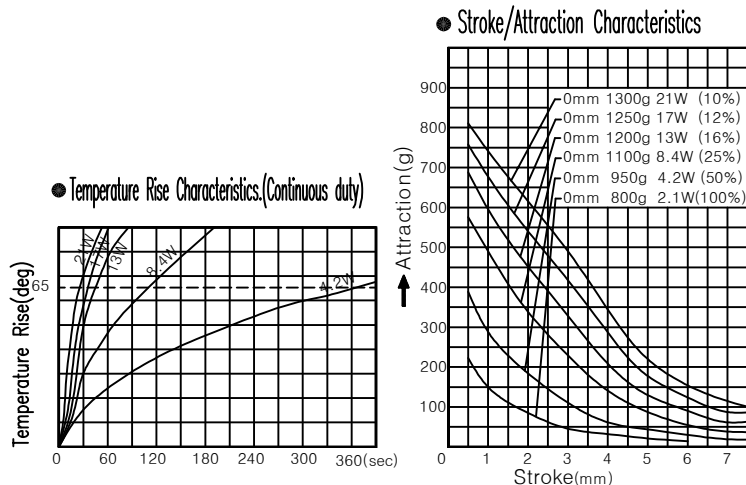


### Dimensions

MODEL : DS-1002TS



## Specification



## ● Characteristics

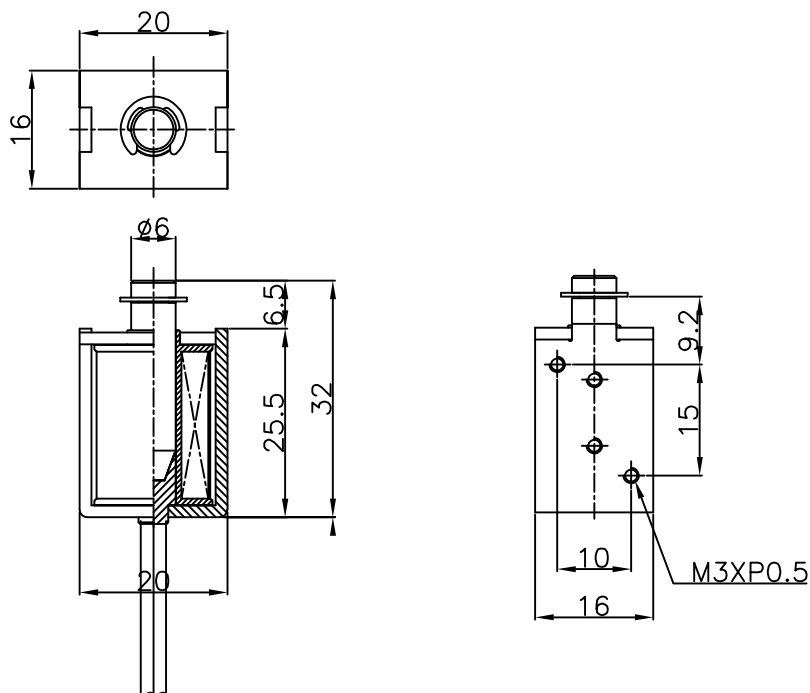
- 1.Temp.Rise:65degree or less at 2.5W.  
(Continuous duty)
2. Insulation Class : Class A  
(Other class are available upon request)
3. Lead Wire : UL 1007 AWG#22
4. Wight:40g

## Solenoid Use

1. Inter-Lock : Vending machine, Game machine, Conveyer, Etc.
2. Automatic Selection Equipment for Conveyer.
3. Bracke : Nc machine, Lifter, Hoist, Etc.
4. Clutch : Safty device, Shutter, Emergency equipment, Nc machine.
5. Lever : OA machine, Counter., Controller for machanical device.
6. Punch, Press machine : Electric riveting machine, Punch, Numbering machine.
7. Shutter : Air Condition, Refrigerator, Packing machine, Heating machine.

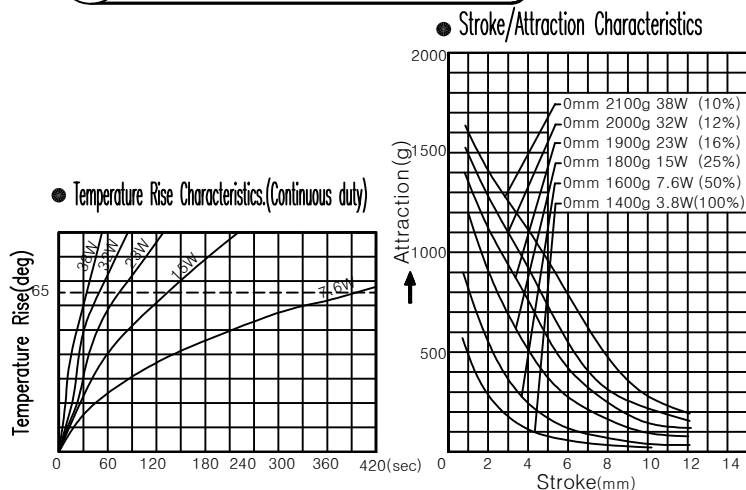
## Dimensions

MODEL : DSD-06A





### Specification



### ● Characteristics

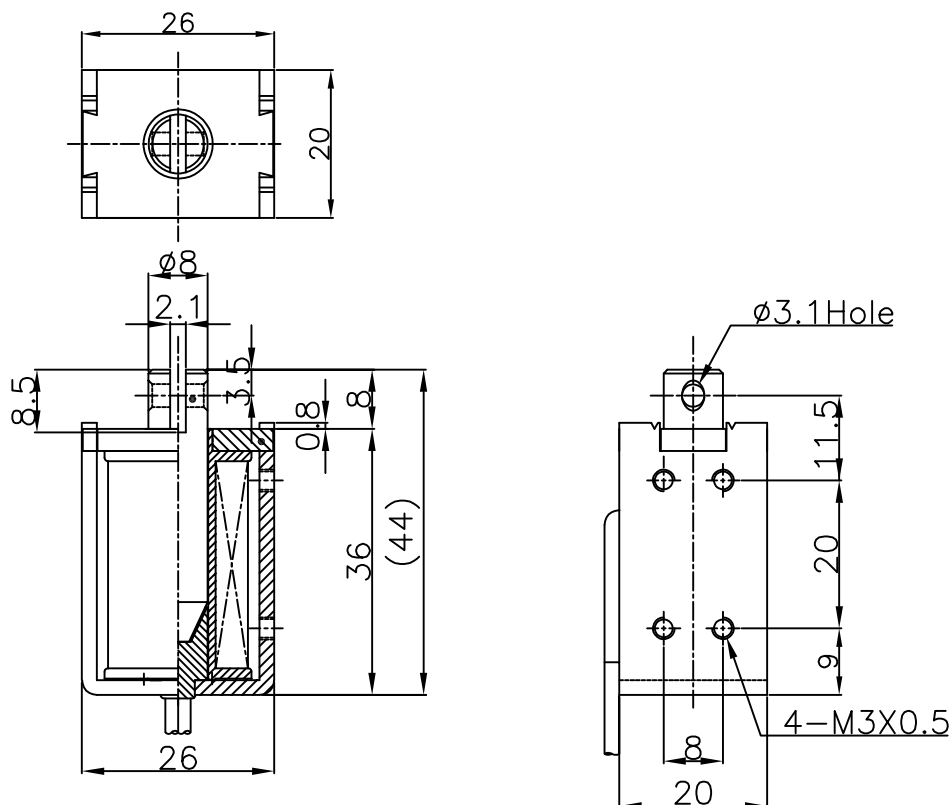
- 1.Temp.Rise:65degree or less at 4.0W.  
(Continuous duty)
- 2.Insulation Class : Class A  
(Other class are available upon request)
- 3.Lead Wire : UL 1007 AWG#22
- 4.Wight:90g

### Solenoid Use

- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for machanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.
- 7.Shutter : Air Condition, Refrigerator,Packing machine,Heating machine.

### Dimensions

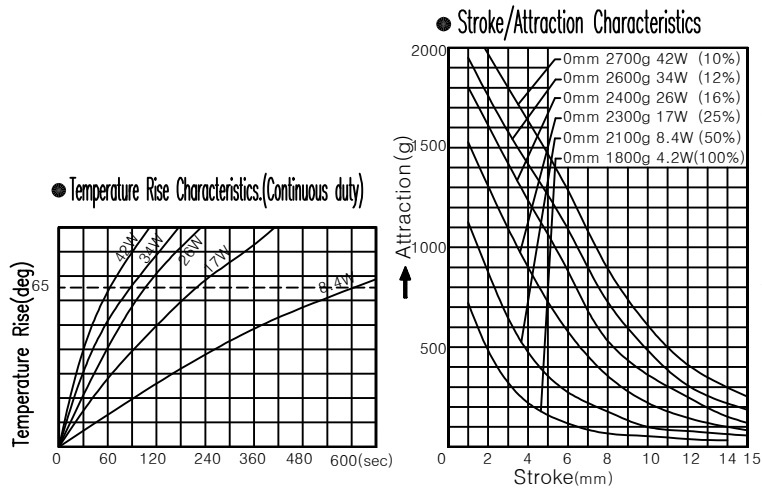
MODEL : DSD-08A



# DSD-10A(Standard Model)

## DC Solenoid

### Specification



### ● Characteristics

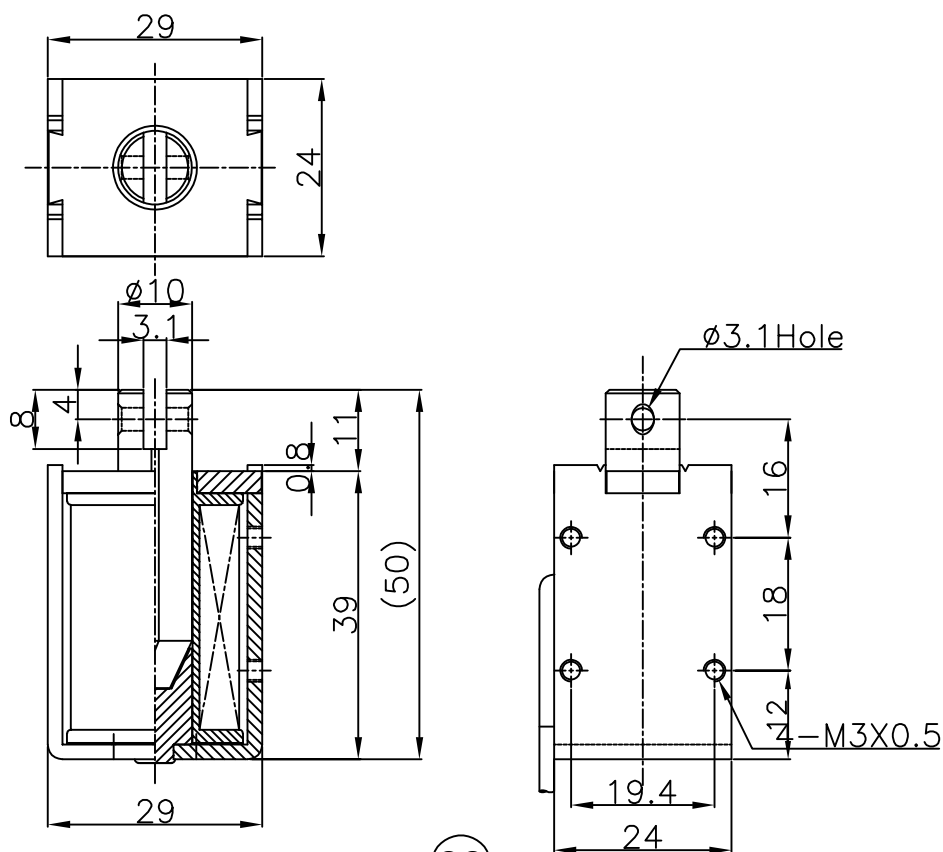
- 1.Temp.Rise:65degree or less at 4.2W.  
(Continuous duty)
- 2.Insulation Class : Class A  
(Other class are available upon request)
- 3.Lead Wire : UL 1007 AWG#22
- 4.Wight:122g

### Solenoid Use

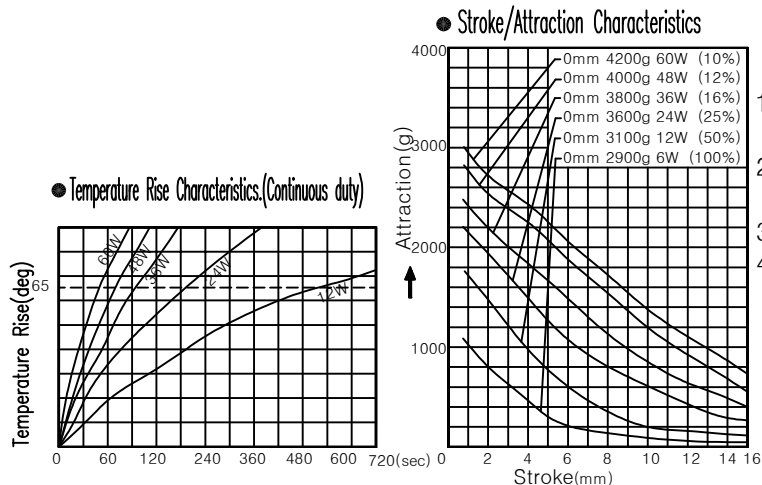
- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for machanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.
- 7.Shutter : Air Condition, Refrigerator,Packing machine,Heating machine.

### Dimensions

MODEL : DSD-10A



### Specification

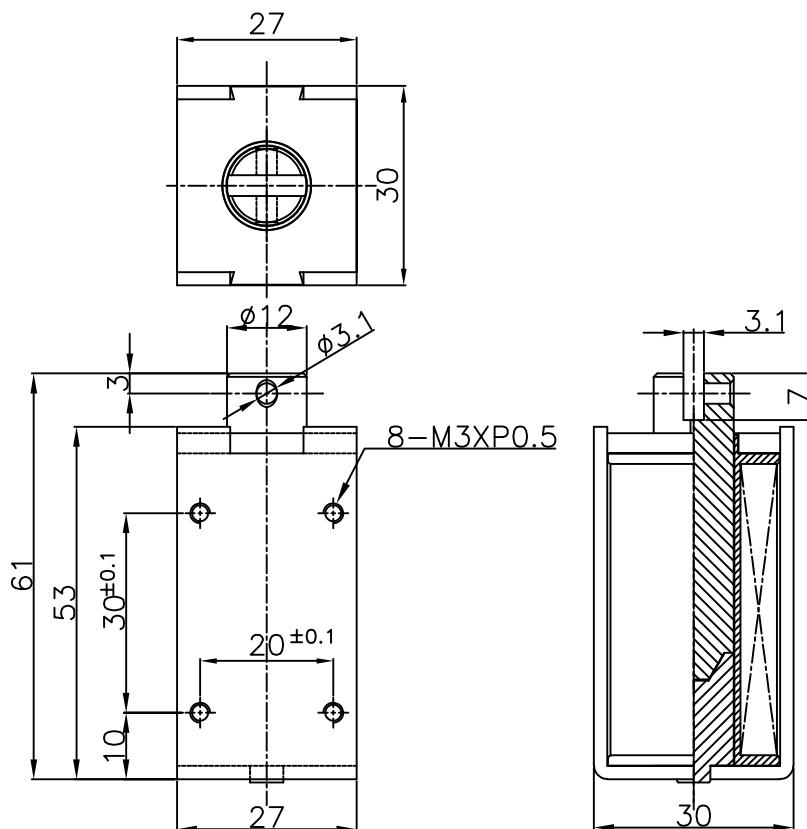


### Solenoid Use

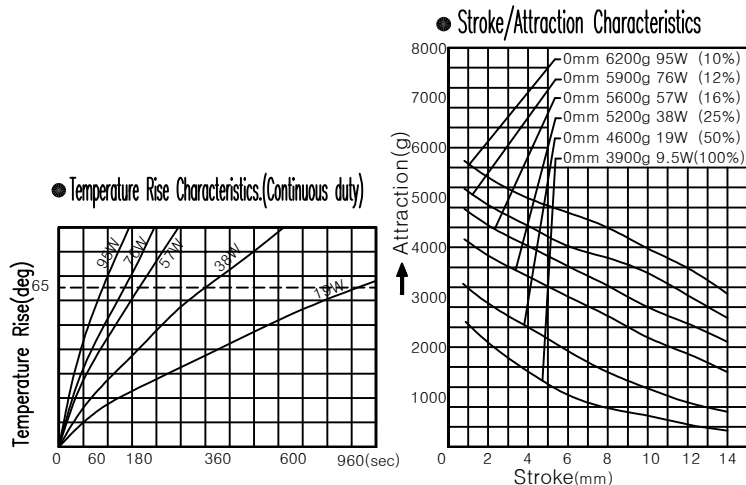
1. Inter-Lock : Vending machine, Game machine, Conveyor, Etc.
2. Automatic Selection Equipment for Conveyor.
3. Bracke : Nc machine, Lifter, Hoist, Etc.
4. Clutch : Safty device, Shutter, Emergency equipment, Nc machine.
5. Lever : OA machine, Counter., Controller for machanical device.
6. Punch, Press machine : Electric riveting machine, Punch, Numbering machine.
7. Shutter : Air Condition, Refrigerator, Packing machine, Heating machine.

### Dimensions

MODEL : DSD-12E



### Specification



### ● Characteristics

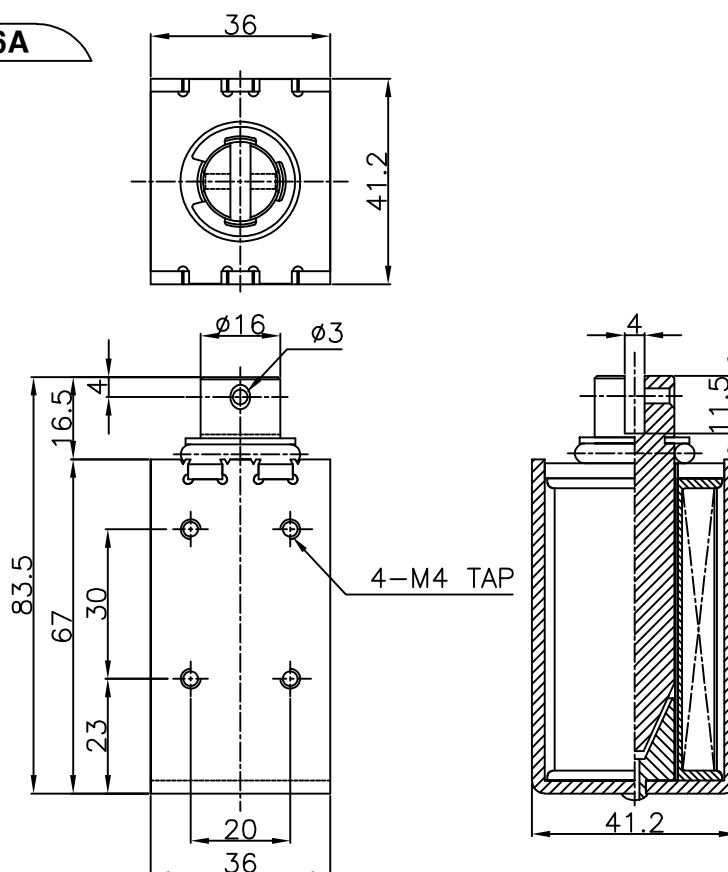
- 1.Temp.Rise:65degree or less at 10W.  
(Continuous duty)
- 2.Insulation Class : Class A  
(Other class are available upon request)
- 3.Lead Wire : UL 1007 AWG#22
- 4.Wight:430g

### Solenoid Use

- 1.Inter-Lock : Vending machine,Game machine,Conveyer,Etc.
- 2Automatic Selection Equipment for Conveyer.
- 3.Bracke : Nc machine,Lifter,Hoist,Etc.
- 4.Clutch : Safty device, Shutter,Emergency equipment,Nc machine.
- 5.Lever : OA machine,Counter., Controller for machanical device.
- 6.Punch,Press machine : Electric riveting machine,Punch, Numbering machine.

### Dimensions

MODEL : DSD-16A





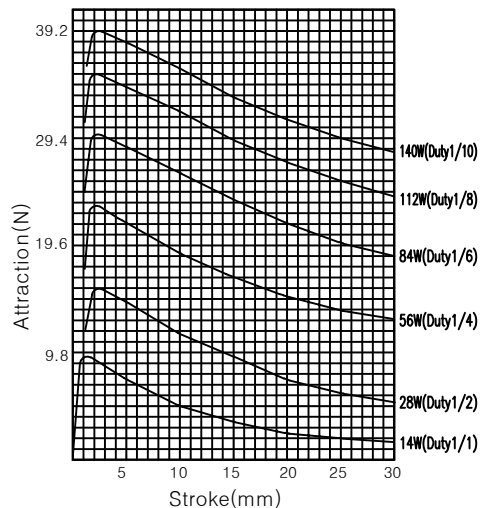
# DS-18 TYPE

## Silent Solenoid

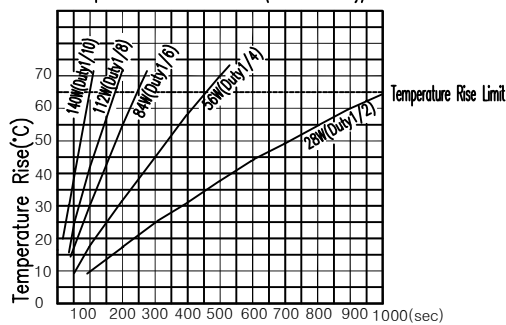


### Specification

#### ● Stroke/Attraction Characteristics



#### ● Temperature Rise Characteristics (Continuous duty)



- Standard Stroke : 25mm
- Standard Attraction : 2.0~3.0Kg
- Rated Current: Continuous Current
- Rated Voltage: AC110V, 200V, 220V, 50/60Hz  
DC220V, 100V, 24V, 12V
- Temp. Rise: 65deg or Below
- Insulation Classification : E-Type Insulation.

### Solenoid Use

1. Inter-Lock : Vending machine, Game machine, Conveyor, Etc.
2. Automatic Selection Equipment for Conveyor.
3. Bracke : Nc machine, Lifter, Hoist, Etc.
4. Clutch : Safty device, Shutter, Emergency equipment, Nc machine.
5. Lever : OA machine, Counter., Controller for mechanical device.
6. Punch, Press machine : Electric riveting machine, Punch, Numbering machine.
7. Shutter : Air Condition, Refrigerator, Packing machine, Heating machine.

### Model Code

1. DS-1812D: DC12V, Silent
2. DS-1824D: DC24V, Silent
3. DS-1810D: DC100V, Silent
4. DS-1822D: DC220V, Silent
5. DS-1811A: AC110V, Silent
6. DS-1822A: AC220V, Silent



### Dimensions

#### MODEL : DS-1824D

