# RDS3000 Series

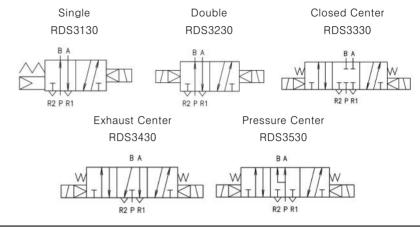
# Rubber Seal 3port Pilot Type



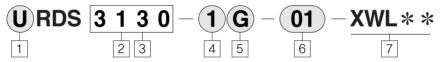


- Upgraded performance and quality
- RoHs Compliant with Eco-friendly materials.
- Lamp turn-on for Identification of operation status
- Made with environment friendly materials
- White color design
- Easy to replace coil

## Symbol



# **HOW TO ORDER**



- □ RDS3000 Series Blank: Metric Rc(PT) U: NPT
- 2 Type of Actuation
  - 1 : Single
  - 2 : Double
  - 3: Closed Center
  - 4 : Exhust Center
  - 5: Pressure Center

- 3 Manifold specifications
  - 0: Base mounted
  - 3: Body Ported
- 4 Coil Voltage
  - 1: AC110V, 50/60HZ
  - 2: AC220V, 50/60HZ
  - 3: AC120V, 50/60HZ
  - 4: AC240V, 50/60HZ
  - 5: DC24V
  - 6: DC12V 8: AC24V, 50/60HZ
  - 9: DC100V

#### 5 Electrical Entry

- G : Grommet(Lead wire length 300mm)
- D : DIN Connector
- DZ: DIN Connector(Lamp Surge voltage protecting circuit attached)
- : DIN type (connector not included)

## 6 Port Size(sup cyl')

01: Rc(PT)1/8 02: Rc(PT)1/4

# 7 Length of Lead wire

Blank: 300mm XWL **01**: 100mm XWL 02 : 200mm

XWL 02: 2000mm

\* Integrated push & lock type is standard option for manual operation.

# **RDC Series**





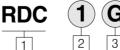
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### 2 Coil Voltage

- 1: AC110V, 50/60HZ
- 2: AC220V, 50/60HZ
- 3: AC120V, 50/60HZ 4: AC240V, 50/60HZ
- 5: DC24V
- 6: DC12V



# **HOW TO ORDER**











4

## 4 Length of Lead wire

Blank: 300mm XWL01: 100mm XWL02: 200mm

XWL20: 2000mm

#### 3 Electrical Entry

9: DC100V

- G : Grommet (Lead wire length 300mm)
- D : DIN Connector

8: AC24V, 50/60HZ

- DZ: DIN Connector(Lamp Surge voltage protecting circuit attached)
- N : DIN type(connector not included)

# DIN TERMINAL BOX Order form



# TVF3130-61-2005 - Additional Symbol



# 1 Additional Symbol

Additional Symbol	Rated Voltage
0	AC110V, 50/60Hz
2	AC220V, 50/60Hz
8	AC120V, 50/60HZ
4	AC240V, 50/60HZ
6	DC24V
6	DC12V
8	AC24V, 50/60HZ
9	DC100V

# Notice

Please fully understand the safety notice before operating this item.

# Specifications

	Туре	Specifications			
	Fluid	Air			
Operating Pressure	2 Position Single, 3 Position	0.15 ~ 1.0 MPa [0.2~1.0kgf/cm²]			
Range(MPS)	2 Position Double	0.1 ~ 1.0MPa			
Ambient and	d Fluid temperature	5~50℃			
Response	2 Position Single, Double	under 40ms			
time(ms)	3 Position	under 50ms			
Max. Operating	2 Position Single, Double	5 c/s			
Frequency(Hz)	3 Position	3 c/s			
L	amp(LED)	Standard			
Man	ual operation	PUSH & LOCK			
Elec	ctrical Entry	Grommet. DIN terminal			
Li	ubrication	Not Required			
Coil rated	AC(50/60)Hz	110V, 220V			
Voltage	DC	24V			
Apparent	Apparent power(AC)	5.0VA(50Hz), 4.0VA(60Hz)			
power	Power consumption(DC)	3.0 / 3.2W(with LED)			

# Option

Description	Part number	Port Size
Silencer	SN110-01	Rc(PT)1/8

# Type

Dining	T. 110.0	Time of actuation	(1)PORT SIZE	(2) Effective Ori	Weight	
Piping	Type	Type of actuation	(SUP,CYL.)	Rc(PT)1/8	Rc(PT)1/4	(kgf)
	RDS3130-00-01	2 Position Single		14.4(0.8)	18(1.0)	0.21
	RDS3230-\(\cap-\frac{01}{02}\)	2 Position Double	Rc(PT)1/8	14.4(0.8)	18(1.0)	0.32
Body Ported	RDS3330-\(\cap-\frac{01}{02}\)	3 Position Closed Center	D (DT)4/4	11.7(0.65)	14.4(0.8)	0.33
	RDS3430-\(\cap-\frac{01}{02}\)	3 Position Exhaust Center	Rc(PT)1/4	14.4(0.8)	18(1.0)	0.33
	RDS3530-00-01	3 Position Pressure Center		18(1.0)	21(1.2)	0.33

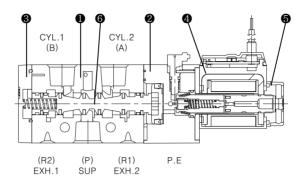
# Manifold Type

Type	Manifold Type						
Туре	Ту	ре	EXH Method	A,B(CYL)Port piping			
RDS3030-00-01	B mount	30 Type	Common	Valve			

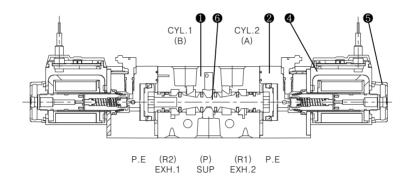
<sup>(1)</sup> Exhaust port(R1, R2) is Rc(PT)1/8"
(2) Exhaust effective sectional area is relatively different from supply sectional area. Moreover, it shows possibly speed difference owing to exhaust features of RDS3230 and RDS3430.

# Constuction/Parts List

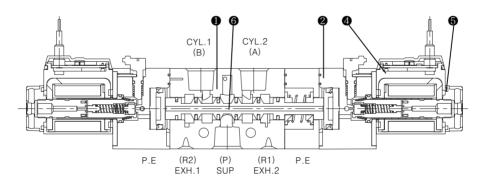
# Single Solenoid



# Double Solenoid

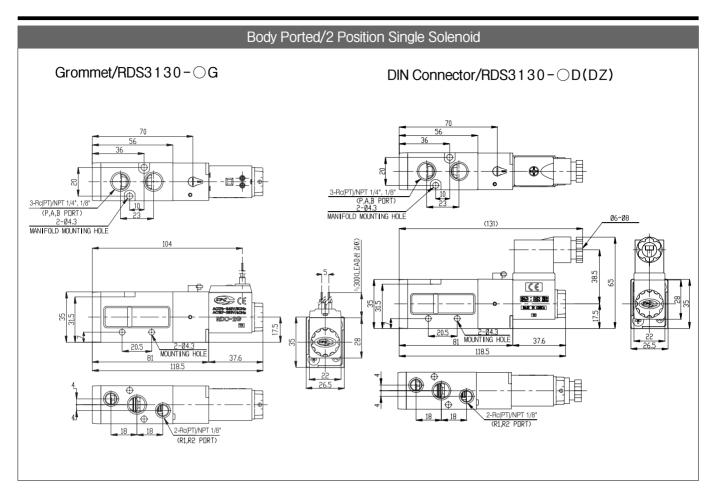


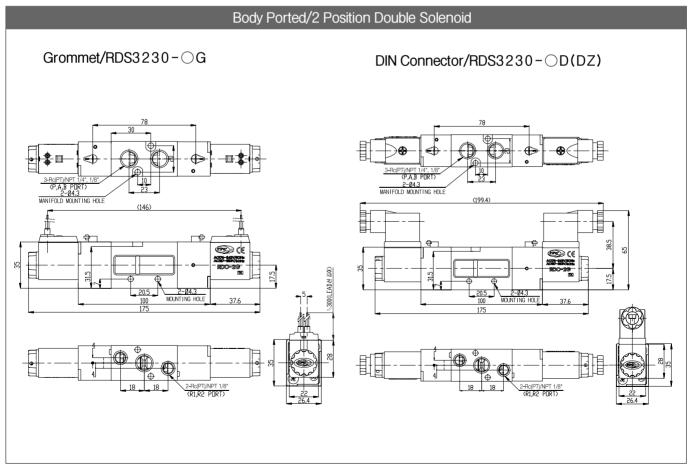
# 3 Position Solenoid

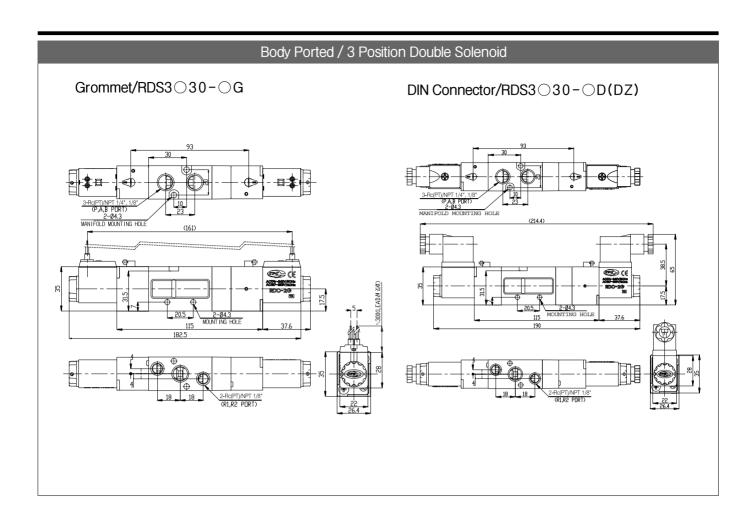


# Main Parts

NO.	Description	Material	Remarks
0	Body	Aluminum die casting	White paint
2	Adapter Plate A	Resin	
8	End Cover	Resin	
4	Coil Ass' y	_	
6	Core Fixed Nut	Resin	
6	Spool	Aluminum	







# Manifold



#### TVV5F3-30

# Types · Specifications

Manifold Type	B Mount(Single Base type)					
EXHAUST Port Type	Common	Single				
(1) Maximum valve connection number	20 Stations					

For more than 8 stations of B mounting type, pressurized at both ends of P(SUP) port and exhausted by both R(EXH) ports.

# Types · Specifications

Type	Manifold	(1)R(EXH)	Piping Dire	ction/Conne	ct Location	PORT	Applied Valve			
Турс	Base type	Туре	P(SUP)	R(EXH)	A,B(CYL)	P(SUP)	R(EXH)	A,B(CYL)	Type	
В	TVV5F3-30	Common	Transverse	Transverse	Upper	1/4	1/4	1/8	RDS3()30	
Mount	144313 30	Common	Base	Base	Valve	1/4	1/4	1/4	L µD99⊖30	

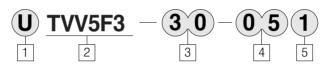
<sup>(1)</sup> The type of P port is common.

# Blank Plate

# TVF3130-83A

(Gasket and bolt included)

# Manifold Base Order form



■ Manifold Blank : Metric(PT) U : NPT

2 RDS3000 Series Manifold

#### 3 Manifold Specification

Symbol: 30

A,B(CYL) port piping position: Valve Port size : Rc(PT)1/4 Applied Valve : RDS3 30 4 Stations

02: 2 Stations

20 : 20 Stations

#### **5** Componet Symbol

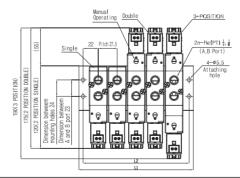
Symbol: 1

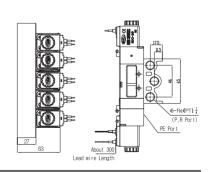
Passage Specification P(SUP) : Common R(EXH): Common Piping Specification A, B(CYL): Upper(Transverse)

Remark : 30 Type

# B Mount Type/TVV5F3 - 30

## Common EXH/TVV5F3 - 30 - $\bigcirc$ 1





# L:Dimension Sheet

(n	stations)	
ΛП	Stations	

L	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	83.5	111	138.5	166	193.5	221	248.5	276	303.5	331	358.5	386	413.5	441	468.5	496	523.5	551	578.5
L2	71.5	99	126.5	154	181.5	209	236.5	264	291.5	319	346.5	374	401.5	429	456.5	484	511.5	539	566.5

# **Notices for Handling**

#### Notice

Please fully understand the safety notice before operating this item.

## Indicator Light / Surge Voltage Suppressor

Rated Voltage	AC, DC
Less than 24V	o DZ
Less than 200V	Neon lamp

(Note1) No lamp attaching type for Grommet (G) type (Note2) ZNR is called as Varistor. which is surge voltage protection circuit.

## In Case of Using 3-Port Valve (in case of 5-port)

With closing one direction of cylinder port (A and B), it is applied as 3-port valve of normal closed (N.C) or Normal Open (N.O). It is covenient if 3-port valve is necessary. But, do not apply for special purposes such as Non Leak Valve. Moreover, please use with opened condition for exhaust port.

Pli	ug	BPort	APort		
Loca	ation	(CYL.1Port)	(CYL.2Port)		
Switching Method		N.C	N.O		
		(X)Plug	(X)Plug		
Number	Single	BA R2P R1	BA R2P R1		
Solenoid Number	Double	(X)Plug  BA  R2PR1	(X)Plug  BA  ZD  R2PRI		

# For the Quality of Fluid Applied

- ①  $5\mu m$  fillter resolution is sufficient.
- 2 Large amount of drain may cause operation failure of pneumatic equipment which firstly uses valve and environmental contamination, so that special management is required. Moreover, if management of drain exhaust is difficult, it is recommended to use automatic exhaust attaching filter.
- 3 If large quantity of carbon powder is generated from compressor, it may cause operation failure owing to attaching on valve inside. It is recommended to use less carbon powder generating compressor or install coalescing filter.

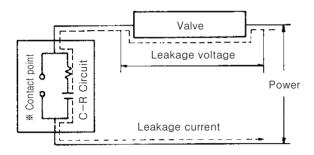
## For Piping

- ① Fully remove chip, cutting oil or dust in a pipe with air blow (flushing) or washing prior to piping.
- 2 When connecting fittings or piping, be careful to prevent chips or particles from getting inside. Do not wind seal tape on whole threads. Leave 1.5~2 threads unwound.
- 3 Check if silencer is attached to PE port of Manifold valve.
- 4 Connecting torque for piping.

Contact screw	Proper Tightening Torque kgf · cm(N · m)	Material of Tightening Part
М3	3.1~3.9(0.31~0.39)	Resin
	4.7~5.9(0.47~0.59)	Aluminum
M4	7.5~9.5(0.75~0.95)	Resin
	11.5~14.5(1.15~1.45)	Aluminum
M5	15~20(1.5~2)	Resin
PT 1/8	70~90(7~9)	Aluminum
PT 1/4	120~140(12~14)	

# For Leakage Voltage

- ① In case of power OFF, restrain residual leakage voltage in both ends of AC coil under 20% of rated voltage, and under 3% for DC coil.(Please measure AC coil with manually pressing metal pin.)
- ② In case of using C-R circuit for contact point protection, be cautious that leakage voltage possibly increases owing to leakage current through C-R circuit.



\* Be cautious that some of non-contact point relays have protection circuit built-in

### Operating Environment

- ① Do not attach around the place affected by corrosive gas, chemical liquid, sea water splash, rainwater and steam.
- ② Make a measure such as protection cover, etc, for attaching in the place affected by water drops, oil and splatter during welding process.
- ③ Prevent inflow of dust into valve with attaching silencer at exhaust port of valve.

## For Using in Low Temperature

It is available to use by  $-10^{\circ}$ C, however, full caution is needed for condensation of drain and moist. It is recommended to install drier for the case above.

#### For Sequential Power Supply

In case of sequential power supply, apply more than 0.1 second for power supply and 0.05 second for power OFF.

# In Case of Long Term Power Supply

In case of using for a long period with power supply, please ask for consultation to manufacturer.

# How to Find the Flow Rate

① In case of  $P_2+1.033 \le P_1+1.033 \le 1.89(P_2+1.033)$ 

Q=22.2S 
$$\sqrt{\frac{\triangle P(P_2+1.033)}{G}} \cdot \sqrt{\frac{273}{273+\theta}}$$

① In case of  $1.89(P_2+1.033) \langle P_1+1.033$ 

Q=11.1S(P<sub>1</sub>+1.033) 
$$\frac{1}{\sqrt{G}} \cdot \sqrt{\frac{273}{273+\theta}}$$

Q : Flux in Conventional Condition(N \( \ell \) /min)

P<sub>1</sub>: 1st Side Pressure (Gauge Pressure) (kgf/cm²)

P<sub>2</sub> : 2st Side Pressure (Gauge Pressure) (kgf/cm<sup>2</sup>)

 $\triangle P$ : Pressure Differential  $(P_1-P_2)$  (kgf/cm<sup>2</sup>)

S : Effective Orifice(mm²)
G : Specific Gravity(Air=1)

 $\theta$ : Temperature of Air Applied( $^{\circ}$ C)

## Lubrication

① Initially lubricated, possible to use with non-Lube.

② Please use turbine oil class 1(ISO VG32)

Moreover, if refueling is stopped, it may cause operation failure owing to loss of initial lubricant, so that refueling should be continued.

Please contact for turbine oil class 1 (ISO VG32)

## Port Indicating Symbol Sheet

Index	RDS300	RDS3000, RDS5000
Inlet	P(SUP)	
Outlet	A(CYL)	A(CYL.2) and B(CYL.1)
Exhaust hole	R(EXH)	R1 (EXH2) and R2(EXH1)
KS symbol (Single Solenoid)	A R P S:P(S	BA R2 P R1