

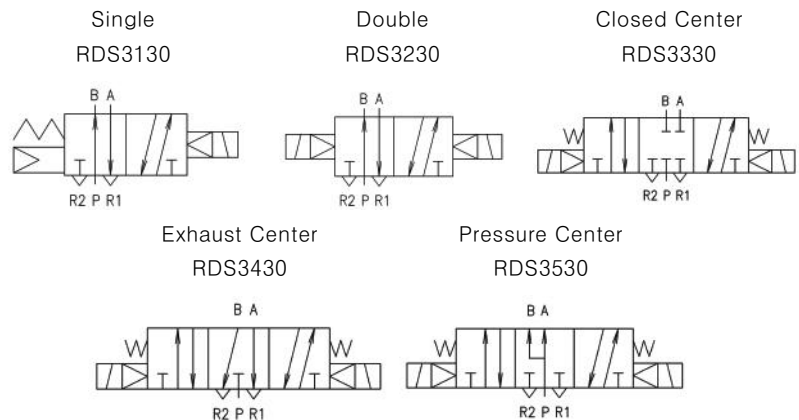
# RDS3000 Series

## 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

**U** RDS **3 1 3 0** - **1 G** - **01** - **XWL \* \***

**1** RDS3000 Series  
Blank : Metric Rc(PT)  
U : NPT

**2** Type of Actuation  
1 : Single  
2 : Double  
3 : Closed Center  
4 : Exhaust 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)  
N : 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 03 : 2000mm  
※ Integrated push & lock type is standard option for manual operation.

# RDC Series



## HOW TO ORDER

**RDC** **1 G** - **XWL \* \***

**1** RDC Series

**2** 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

**3** Electrical Entry  
G : Grommet(Lead wire length 300mm)  
D : DIN Connector  
DZ : DIN Connector(Lamp • Surge voltage protecting circuit attached)  
N : DIN type(connector not included)

**4** Length of Lead wire  
Blank : 300mm  
XWL01: 100mm  
XWL02: 200mm  
XWL20: 2000mm

## DIN TERMINAL BOX Order form



**TVF3130-61-2005**

Additional  
Symbol

1

### 1 Additional Symbol

Additional Symbol	Rated 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

### ■ Notice

Please fully understand the safety notice before operating this item.

## Specifications

Type		Specifications
Fluid		Air
Operating Pressure Range(MPa)	2 Position Single, 3 Position	0.15 ~ 1.0 MPa [0.2~1.0kgf/cm <sup>2</sup> ]
	2 Position Double	0.1 ~ 1.0MPa
Ambient and Fluid temperature		5~50℃
Response time(ms)	2 Position Single, Double	under 40ms
	3 Position	under 50ms
Max. Operating Frequency(Hz)	2 Position Single, Double	5 c/s
	3 Position	3 c/s
Lamp(LED)		Standard
Manual operation		PUSH & LOCK
Electrical Entry		Grommet. DIN terminal
Lubrication		Not Required
Coil rated Voltage	AC(50/60)Hz	110V, 220V
	DC	24V
Apparent power	Apparent power(AC)	5.0VA(50Hz), 4.0VA(60Hz)
	Power consumption(DC)	3.0 / 3.2W(with LED)

## Option

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

## Type

Piping	Type	Type of actuation	<sup>(1)</sup> PORT SIZE (SUP,CYL.)	<sup>(2)</sup> Effective Orifice mm <sup>2</sup> (Cv)		Weight (kgf)
				Rc(PT)1/8	Rc(PT)1/4	
Body Ported	RDS3130-○○- <sup>01</sup> / <sub>02</sub>	2 Position Single	Rc(PT)1/8 · Rc(PT)1/4	14.4(0.8)	18(1.0)	0.21
	RDS3230-○○- <sup>01</sup> / <sub>02</sub>	2 Position Double		14.4(0.8)	18(1.0)	0.32
	RDS3330-○○- <sup>01</sup> / <sub>02</sub>	3 Position Closed Center		11.7(0.65)	14.4(0.8)	0.33
	RDS3430-○○- <sup>01</sup> / <sub>02</sub>	3 Position Exhaust Center		14.4(0.8)	18(1.0)	0.33
	RDS3530-○○- <sup>01</sup> / <sub>02</sub>	3 Position Pressure Center		18(1.0)	21(1.2)	0.33

(1) Exhaust port(R1, R2) is Rc(PT) 1/8"

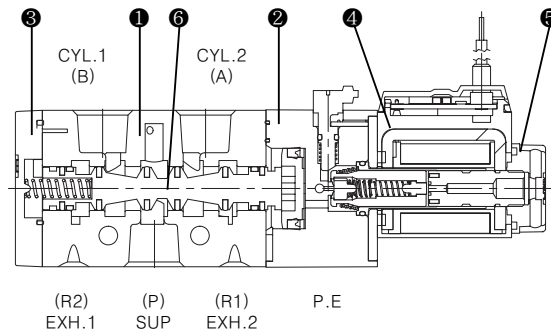
(2) Exhaust effective sectional area is relatively different from supply sectional area. Moreover, it shows possibly speed difference owing to exhaust features of RDS3230 and RDS3430.

## Manifold Type

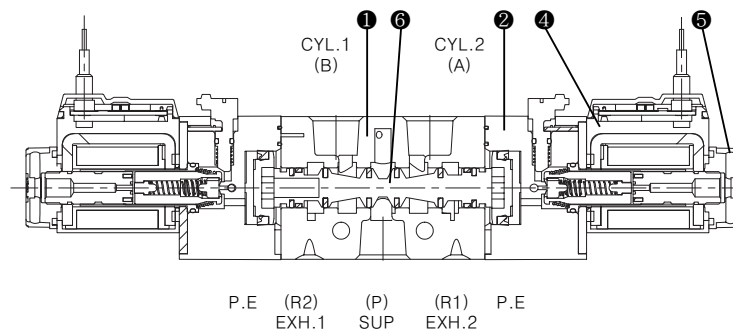
Type	Manifold Type			
	Type		EXH Method	A,B(CYL)Port piping
RDS3○30-○○- <sup>01</sup> / <sub>02</sub>	B mount	30 Type	Common	Valve

## Constuction/Parts List

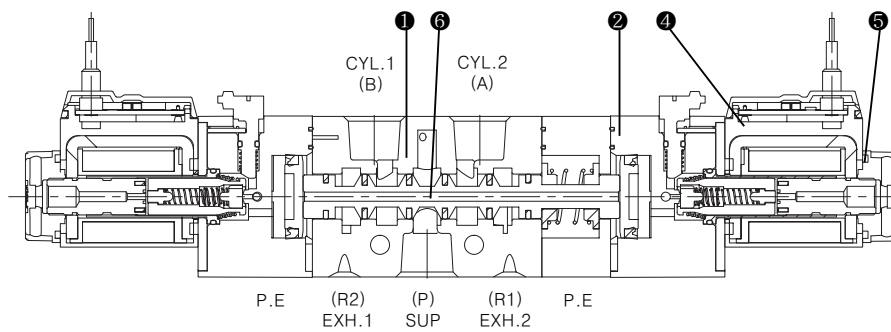
### Single Solenoid



### Double Solenoid



### 3 Position Solenoid

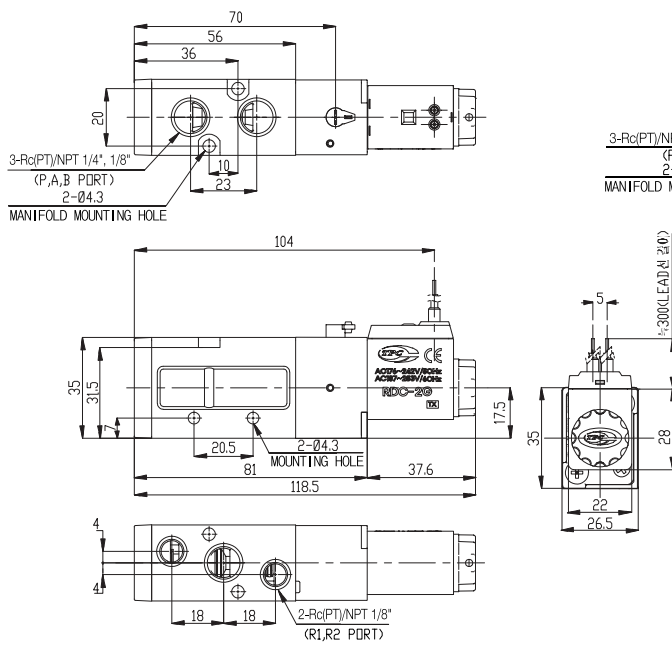


### Main Parts

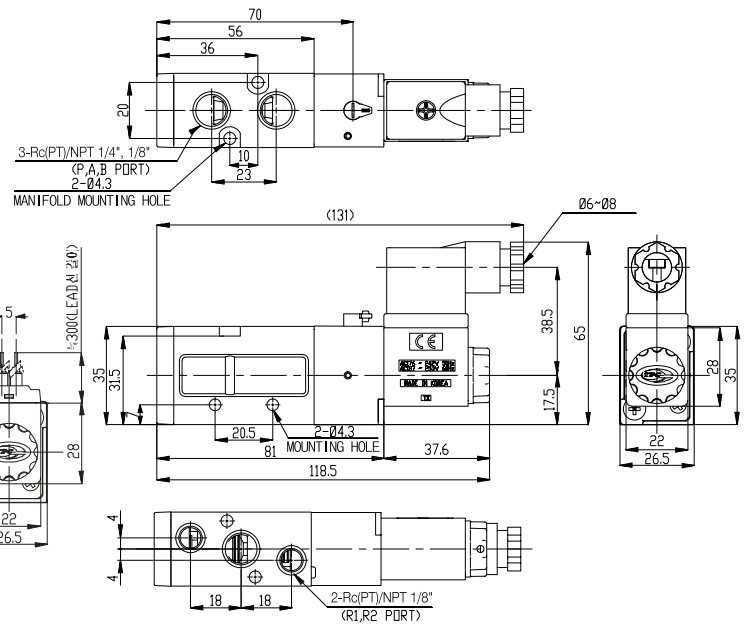
NO.	Description	Material	Remarks
①	Body	Aluminum die casting	White paint
②	Adapter Plate A	Resin	
③	End Cover	Resin	
④	Coil Ass'y	—	
⑤	Core Fixed Nut	Resin	
⑥	Spool	Aluminum	

## Body Ported/2 Position Single Solenoid

Grommet/RDS3130-○G

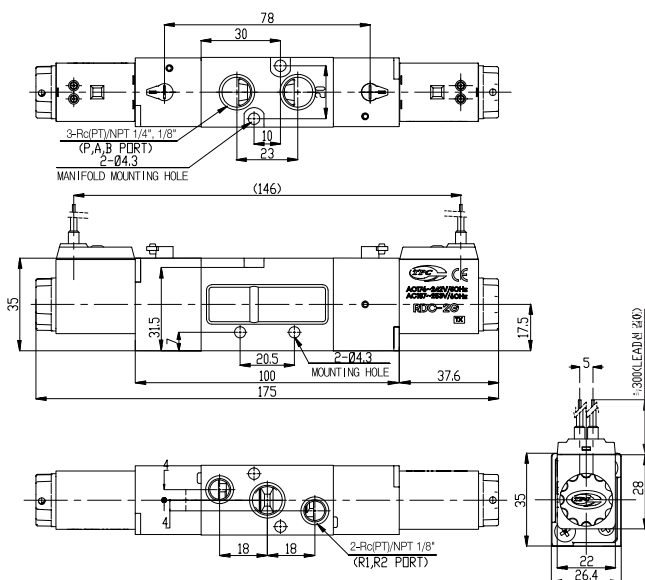


DIN Connector/RDS3130-○D(DZ)

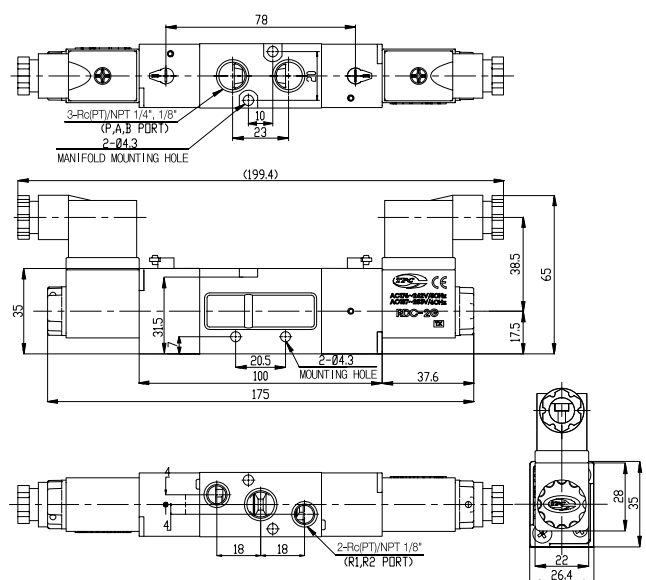


## Body Ported/2 Position Double Solenoid

Grommet/RDS3230-○G

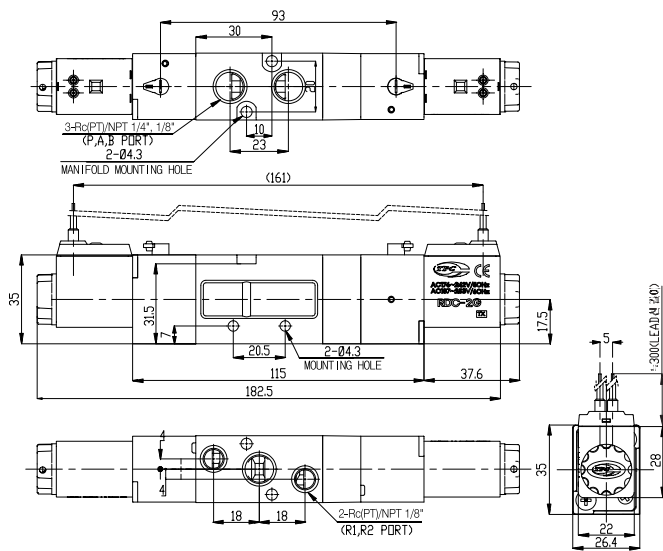


DIN Connector/RDS3230-○D(DZ)

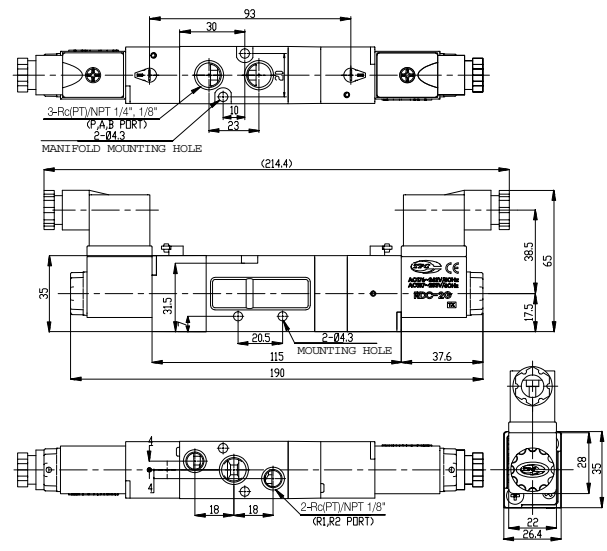


## Body Ported / 3 Position Double Solenoid

Grommet/RDS3○30-○G



DIN Connector/RDS3○30-○D(DZ)



## Manifold



TVV5F3-30

### Types · Specifications

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

(1) 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 Base type	<sup>(1)</sup> R(EXH) Type	Piping Direction/Connect Location			PORT SIZE Rc(PT)			Applied Valve Type
			P(SUP)	R(EXH)	A,B(CYL)	P(SUP)	R(EXH)	A,B(CYL)	
B Mount	TVV5F3-30	Common	Transverse	Transverse	Upper	1/4	1/4	1/8 1/4	RDS3○30
			Base	Base	Valve				

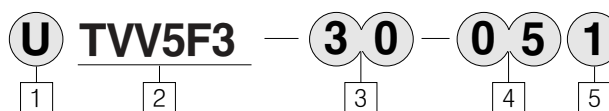
(1) The type of P port is common.

### Blank Plate

## TVF3130-83A

(Gasket and bolt included)

### Manifold Base Order form



1 Manifold  
Blank : Metric(PT)  
U : NPT

2 RDS3000 Series Manifold

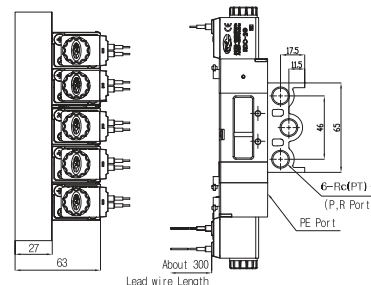
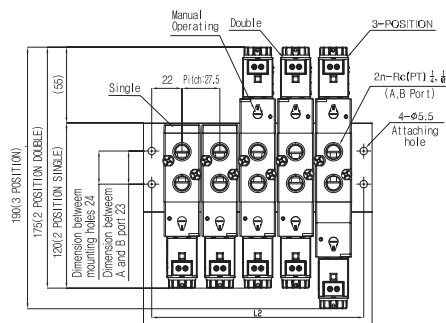
3 Manifold Specification  
Symbol : 30  
A,B(CYL) port piping position : Valve  
Port size : Rc(PT)1/4  
Applied Valve : RDS3○30

4 Stations  
02 : 2 Stations  
20 : 20 Stations

5 Component 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 - ○○1



### L:Dimension Sheet

(n:stations)

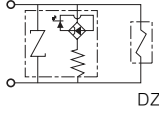
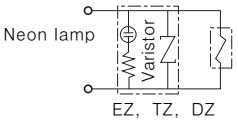
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	83.5	111	138.5	166	193.5	221	248.5	276	303.5	331	358.5	386	413.5	441	468.5	496	523.5	551	578.5
L2	71.5	99	126.5	154	181.5	209	236.5	264	291.5	319	346.5	374	401.5	429	456.5	484	511.5	539	566.5

## Notices for Handling

### ■ Notice

Please fully understand the safety notice before operating this item.

### Indicator Light / Surge Voltage Suppressor

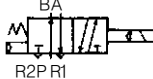
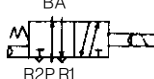
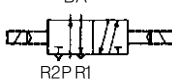

Rated Voltage	AC, DC
Less than 24V	
Less than 200V	

(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 convenient 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.

Plug Location		BPort (CYL.1Port)	APort (CYL.2Port)
Switching Method		N.C	N.O
Solenoid Number	Single	(X)Plug 	(X)Plug 
	Double	(X)Plug 	(X)Plug 

### For the Quality of Fluid Applied

- ① 5 $\mu$ m filter 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.

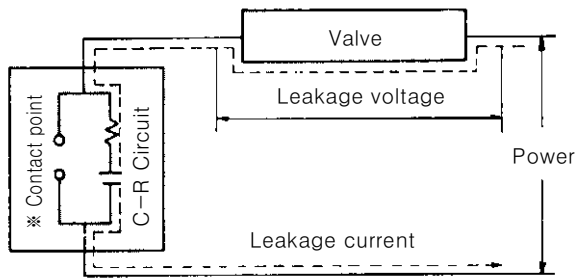
### For Piping

- 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
M3	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  $-10^{\circ}\text{C}$ , 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  $P_2 + 1.033 \leq P_1 + 1.033 \leq 1.89(P_2 + 1.033)$

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

- ① In case of  $1.89(P_2 + 1.033) < P_1 + 1.033$

$$Q = 11.1S(P_1 + 1.033) \cdot \frac{1}{\sqrt{G}} \cdot \sqrt{\frac{273}{273 + \theta}}$$

Q : Flux in Conventional Condition (N l /min)

$P_1$  : 1st Side Pressure (Gauge Pressure) (kgf/cm<sup>2</sup>)

$P_2$  : 2st Side Pressure (Gauge Pressure) (kgf/cm<sup>2</sup>)

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

S : Effective Orifice (mm<sup>2</sup>)

G : Specific Gravity (Air=1)

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

## 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)		
	S:P(SUP)	