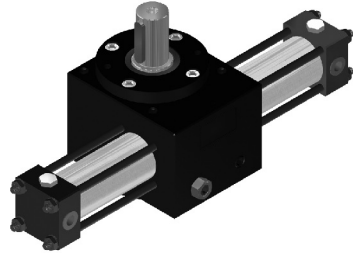


## 3.5Mpa(35Kgf/cm<sup>2</sup>) Hydraulic rotary actuators

### RPH

Male Pivot Gear (Standard Type)

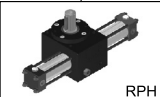



- The body is manufactured in anodized aluminium alloy, and has been designed looking at the harmonious aesthetic development.
- Pinion and rack produced form carbon steel reduces backlash within the mechanism.
- Rotation adjustment screw.

### Specification

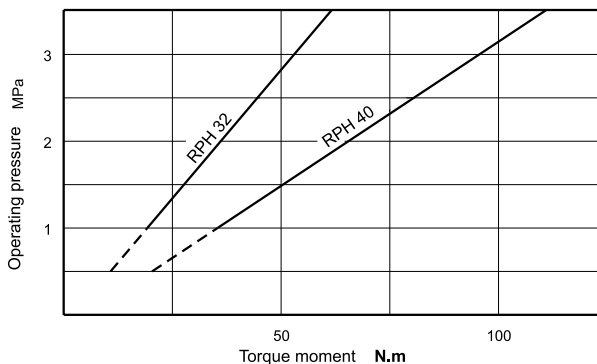
Type	RPH	
Bore sizes (mm)	φ 32	φ 40
Standard rotation	90±5° , 180±5°	
Rotating shaft dia. (mm)	φ 24	φ 28
Initial position of slot (mm)	See dimensional feature	
Power fluid	Filtered oil	
The range of pressure (MPa)	3.5 (35Kgf/cm <sup>2</sup> )	
The range of temperature (°C)	-10~+60	
Max. allowable axial thrust (kg)	12	20
Cushion angle	39°	32°

### How to order

<b>RPH</b>	<b>40</b> / <b>90</b>	<b>LN01P</b> × <b>2</b>
Type	Bore	Rotation
	32—φ32mm 40—φ40mm	90—90° 180—180°
		Sensor switch
		
		Quantity
		1: 1pc 2: 2pcs

Note:  
1.Can choose NPN or PNP type (3-Wire type, 24VDC).  
2.Can choose plug-in cable.  
3.For details see page 4-1.4.

### Output torque table



### Oil volume per Unit:ml

Standard rotation	90°	180°
φ 32	29	54
φ 40	52	100

### Kind of fluid

Petroleum - Based fluid	Water - Glycol fluid	Phosphate - Ester fluid	W/O Water in oil fluid	O/W Oil in water fluid
○	×	×	△	△

Note: ○ allowable × unallowable △ consult us

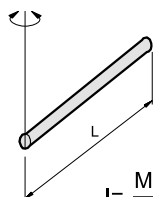
Kinetic Energy Of Rotation motion:  $E = \frac{1}{2} I \omega^2$

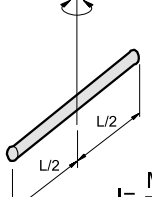
E=Kinetic Energy (J)

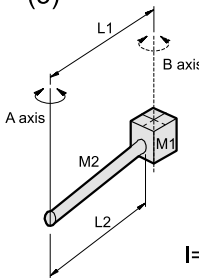
I=Moment Of Inertia (Kg · m<sup>2</sup>)

ω=Angle Speed (rad/s)

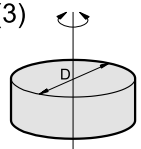
### Equation Table moment of inertia

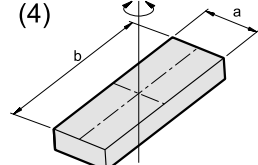
(1)   $I = \frac{M L^2}{3}$

(2)   $I = \frac{M L^2}{12}$

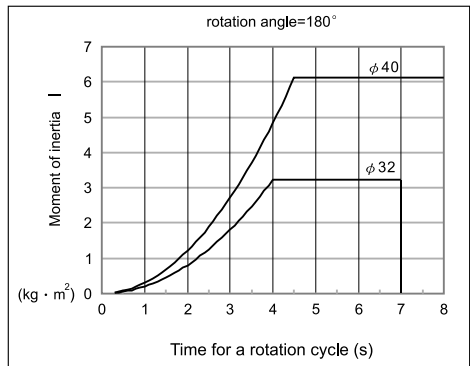
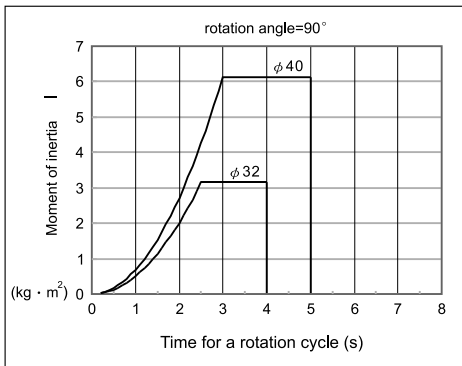
(5)   $I = I_1 + M_1 L_1^2 + \frac{M_2 L_2^2}{3}$

$I_1$ =Obtain the center of gravity of the load(M<sub>1</sub>) as I<sub>1</sub>, a provisional shaft(B).

(3)   $I = \frac{M D^2}{8}$

(4)   $I = \frac{M}{12} (a^2 + b^2)$

$I(I_1)$ =Moment Of Inertia (Kg · m<sup>2</sup>)  
M(M<sub>1</sub>, M<sub>2</sub>)=Load mass (Kg)  
L, a, b=Side Length (m)  
D=Diameter (m)



TC

TS

RP

HC

HC\_M

HCK

TH

DO

DX  
DW

DM

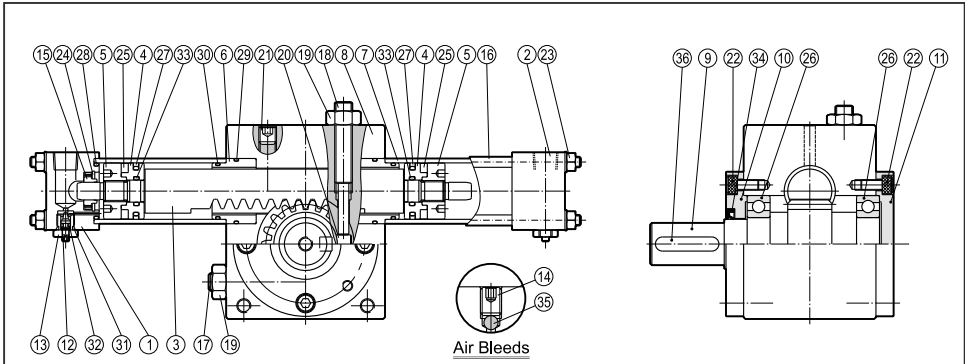
DH

DK

## How to order the seal kit

RPHSK

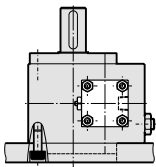
Bore	Seal kit
32	RPHSK32 - Including No.27,28,29,30,31,32,33,34
40	RPHSK40 - Including No.27,28,29,30,31,32,33,34



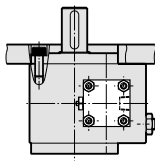
## Parts List

No.	Part name	Quantity	No.	Part name	Quantity	No.	Part name	Quantity
1	End cap	1	13	Cushion plug	2	25	Magnet	2
2	End cap	1	14	Set screws	2	26	Ball bearing	2
3	Rack	1	15	Floating cushion bushing	2	27	Piston packing	2
4	Piston	2	16	Tie bolt	8	28	Cylinder gasket	2
5	Magnet holder	2	17	Adjusting screw	1	29	O-ring	2
6	Rod bush	2	18	Adjusting screw	1	30	O-ring	2
7	Cylinder tube	2	19	Lock nut	2	31	O-ring	2
8	Housing	1	20	Stopper pin	1	32	O-ring	2
9	Pinion shaft	1	21	Set screw	1	33	Piston gasket	2
10	End cover	1	22	Hexagon socket head screw	8	34	Rod packing	1
11	End cover	1	23	Nut & Spring washer	8	35	Steel ball	2
12	Cushion needle	2	24	Retaining rings(Internal)	2	36	Key	1

### Mounting type

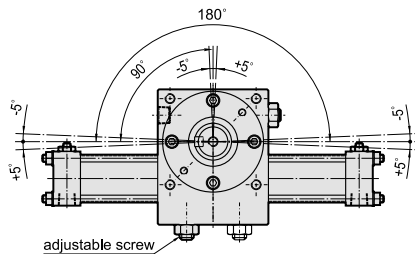


Bottom mounting

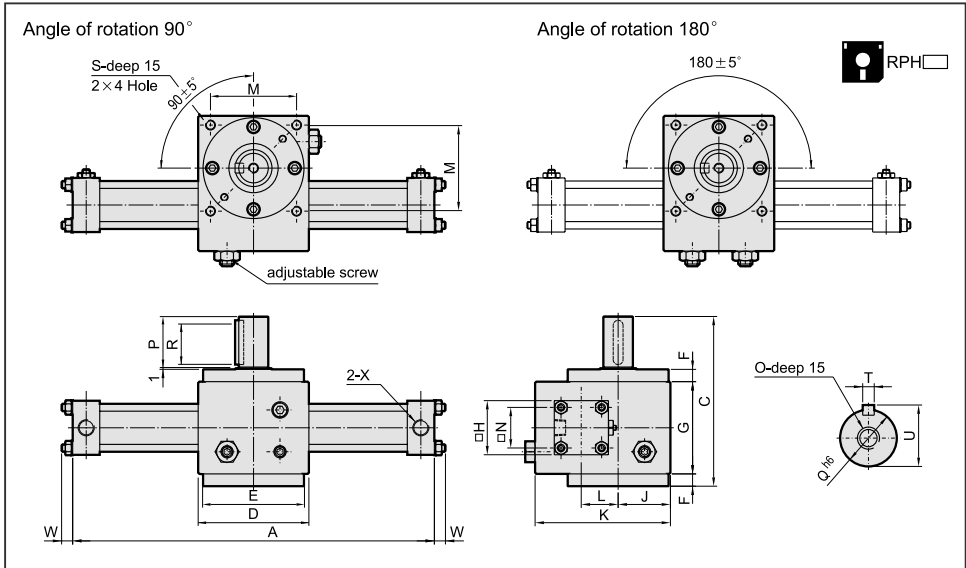


Top mounting

### Rotating direction and adjustable angle



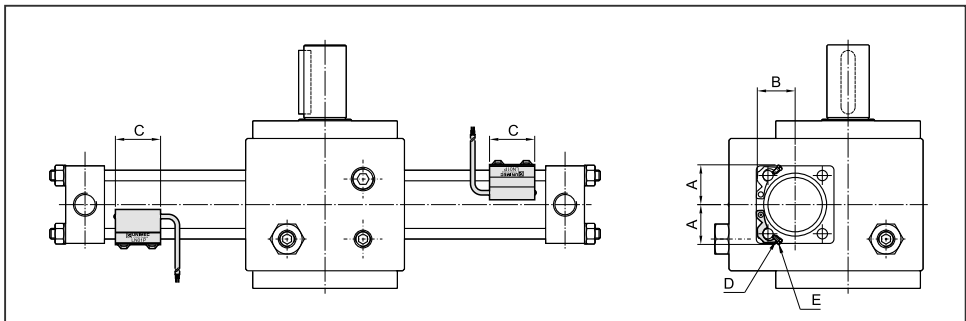
## Dimensional features



## Dimensional Table

Type	A		C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	W	X	
	90°	180°																					
RPH32	286	357	138	90	82	10	75	44.4	42.5	110	30	70	33	M8	42	24	36	M8	8	27	9	9	PT 1/4
RPH40	315	400	170	105	96	12	95	50	51.5	135	36	82	37	M8	50	28	45	M10	8	31	9	9	PT 3/8

## Installation of sensor switches



## Dimensional Table

Bore	Sensor switch	A	B	C	D	E
φ 32	LN01P	25	29	32	M4 × 16L	M4
φ 40	LN01P	27	30	32	M4 × 16L	M4

TC

TS

RP

HC

HC\_M

HCK

TH

DO

DX  
DW

DM

DH

DK