



**NEW**  
PRODUCT

# *Pneumatic & Hydraulic Swing Clamps*

## **FML & FHL Series**





**Specifications 100 psi max.**

**How to Order**

Series	FML	FMLD	FMLT	FMLDT
Action type	Single side	Double sides	Thread body & Single side	Thread body & Double sides
Bore size (mm)	ø25, ø32, ø40, ø50, ø63			
Operating media	Compressed air			
Min. operating pressure	0.3Mpa(3kgf/cm <sup>2</sup> ) 43psi			
Max. operating pressure	0.7Mpa(7kgf/cm <sup>2</sup> )100psi			
Temperature range	0°C(32°F) ~ + 80°C(176°F)			
Swing angle	90° ± 2°			
Rotation direction	L= counter-clockwise; R = clockwise			
Lubrication	None required or use ISO VG32			
Stroke action	See page 4			

**FML**

Series

FML Single side	FMLD Double sides
FMLT Thread body & Single side	FMLDT Thread body & Double sides

ø25 not available  
ø63 not available

**25 X 90**

Bore Swivel Angle

ø25	90°
ø32	
ø40	
ø50	
ø63	

**R**

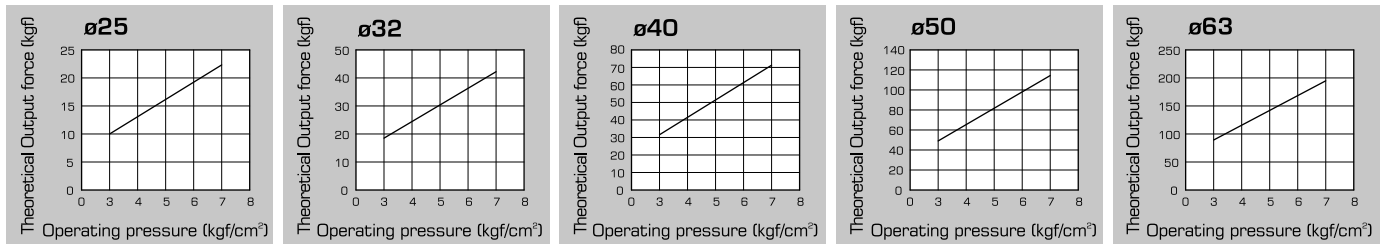
Rotating\* direction

R	clockwise
L	counter clockwise

\*During the retract stroke

**See prices on page 3**

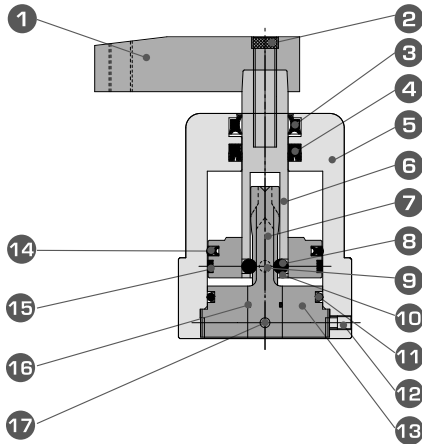
**Theoretical Output**



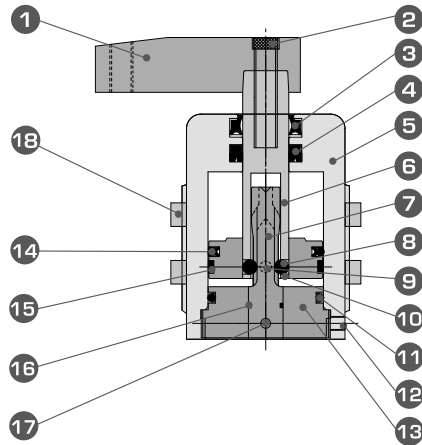
Bore	Piston rod	Effective area (in <sup>2</sup> )	Theoretical retract force (lbf)				
			43 psi	57 psi	71 psi	85 psi	100 psi
ø25	ø14	0.52	22.5	30	37	45	52
ø32	ø16	0.93	39.6	53	66	79	92
ø40	ø16	1.63	69.4	92	115	139	162
ø50	ø20	2.56	109	145	182	218	254
ø63	ø20	4.34	185	247	308	370	432

### Construction

#### FML Standard type



#### FMLT Threaded type



### Parts List

Item	Part name	Material	Qty
1	Clamp arm	Carbon steel	1
2	SHCS	Carbon steel	1
3	Dust seal	NBR	1
4	Rod seal	NBR	1
5	Body	Hard anodized aluminum alloy	1
6	Rod	Hard chrome plate carbon steel	1
7	Pilot pin	Hard chrome plate carbon steel	1
8	Steel ball	Carbon steel	3
9	Retaining pin	Carbon steel	1
10	Holding ring	Carbon steel	1
11	Cover O-ring	NBR	1
12	SHCS	Carbon steel	2
13	Head cover	Carbon steel	1
14	Piston seal	NBR	1
15	Wear ring	PU	1
16	O-ring	NBR	1
17	Pilot pin	Carbon steel	1
18	Mounting nut	High strength steel	2

### Seal kits

Bore	Complete Seal kits	Price
ø25	FML25-SK	\$ 9.05
ø32	FML32-SK	9.05
ø40	FML40-SK	11.40
ø50	FML50-SK	13.10
ø63	FML63-SK	15.30

### Price List

Single Side	Price	Double Side	Price	Thread Body Single Side	Price	Thread Body Double Sides	Price
FML25x90R/L	\$161.00	-	-	FMLT25x90R/L	\$259.00	-	-
FML32x90R/L	189.00	FMLD32x90R/L	\$210.00	FMLT32x90R/L	291.00	FMLDT32x90R/L	\$305.00
FML40x90R/L	210.00	FMLD40x90R/L	228.00	FMLT40x90R/L	308.00	FMLDT40x90R/L	319.00
FML50x90R/L	259.00	FMLD50x90R/L	284.00	FMLT50x90R/L	350.00	FMLDT50x90R/L	364.00
FML63x90R/L	301.00	FMLD63x90R/L	322.00	-	-	-	-

# FML Series PNEUMATIC SWING CLAMP CYLINDER

## Dimensions (mm)

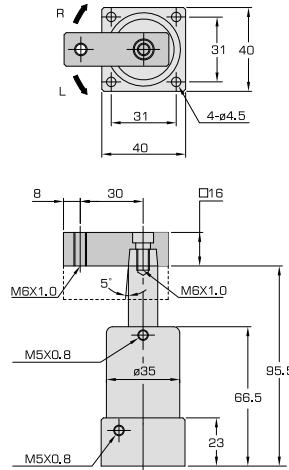
### Stroke Action



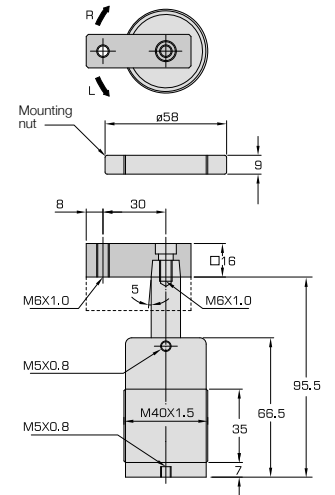
Stroke Action (mm) for FML Series

Bore	Swing	Straight	Total
ø25	12	14	26
ø32	12	14	26
ø40	12	15	27
ø50	14	15	29
ø63	14	15	29

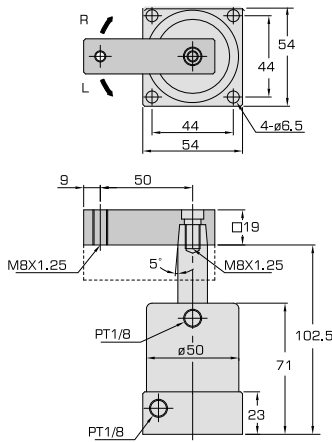
### FML25



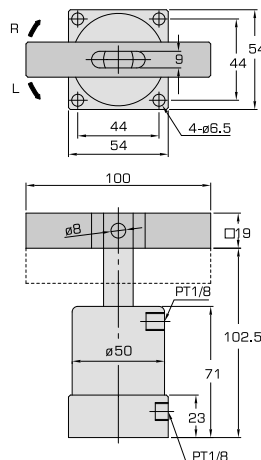
### FMLT25



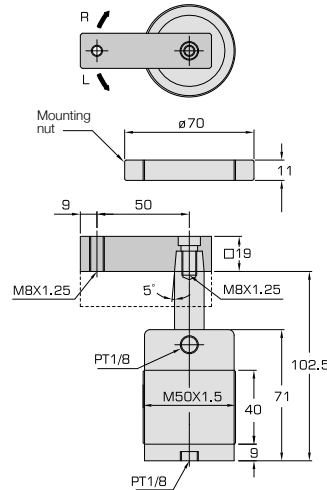
### FML32



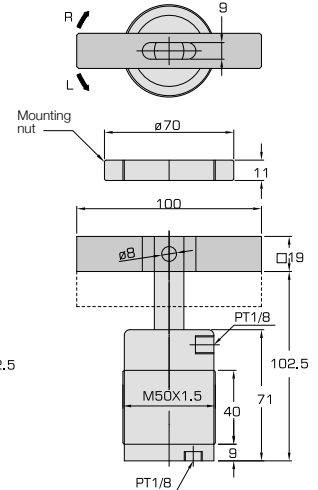
### FMLD32



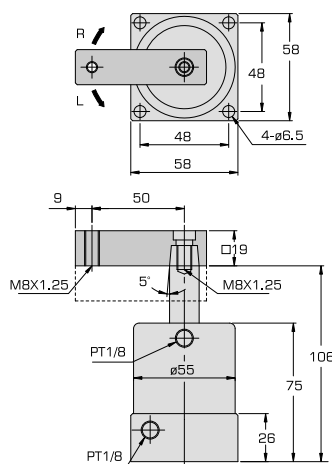
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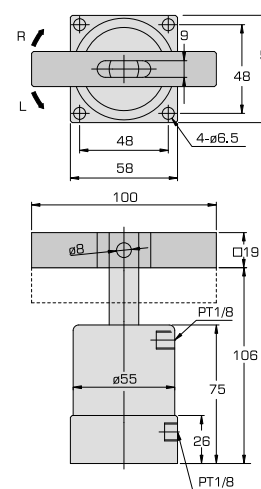
### FMLDT32



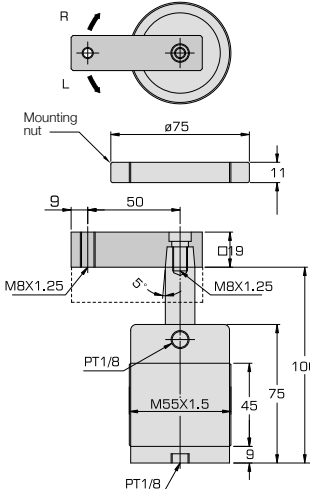
### FML40



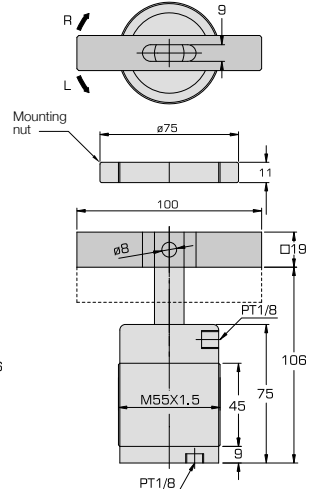
### FMLD40



### FMLT40



### FMLDT40

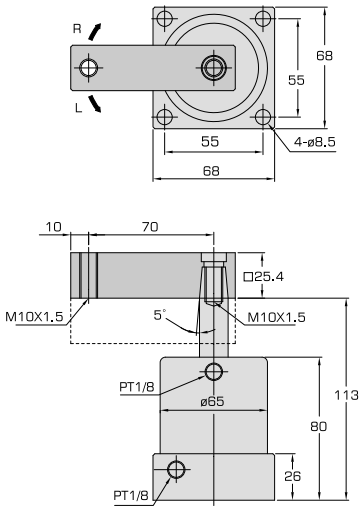


# FML Series

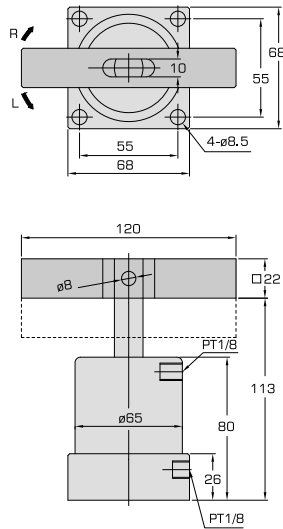
## PNEUMATIC SWING CLAMP CYLINDER

### Dimensions (mm)

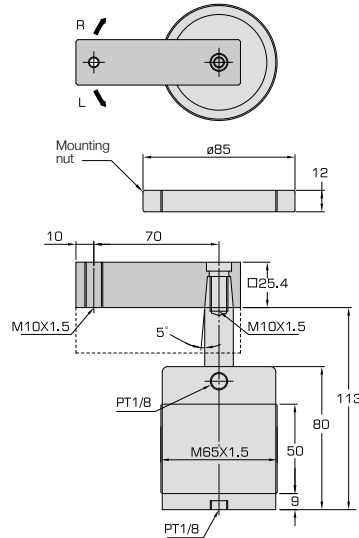
#### FML50



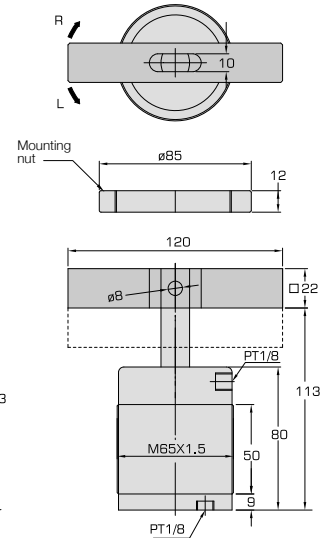
#### FMLD50



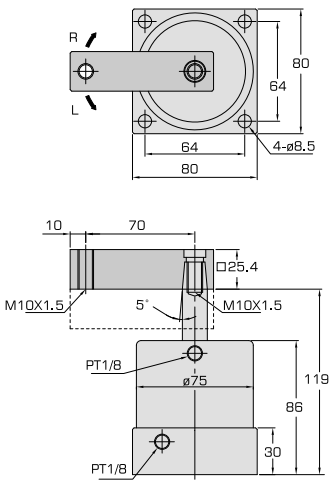
#### FMLT50



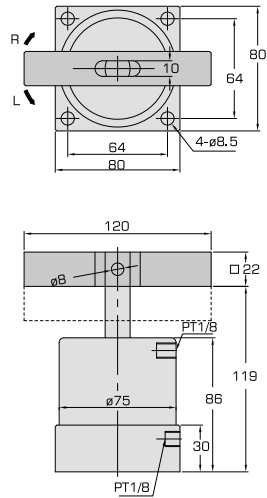
#### FMLDT50



#### FML63



#### FMLD63





## Specifications 1000 psi max.

Series	FHL	FHLD	FHLT	FHLDT
<b>Action type</b>	Single side	Double sides	Thread body & Single side	Thread body & Double sides
<b>Bore size (mm)</b>	ø25, ø32, ø40, ø50, ø63			
<b>Operating media</b>	Petroleum based hydraulic fluid			
<b>Min. operating pressure</b>	2Mpa(20kgf/cm <sup>2</sup> )285psi			
<b>Max. operating pressure</b>	7Mpa(70kgf/cm <sup>2</sup> ) 1000psi			
<b>Temperature range</b>	0°C(32°F) ~ + 80°C(176°F)			
<b>Swing angle</b>	90° ± 2°			
<b>Rotation direction</b>	L= counter-clockwise; R = clockwise			
<b>Lubrication</b>	None required			
<b>Stroke action</b>	See page 8			

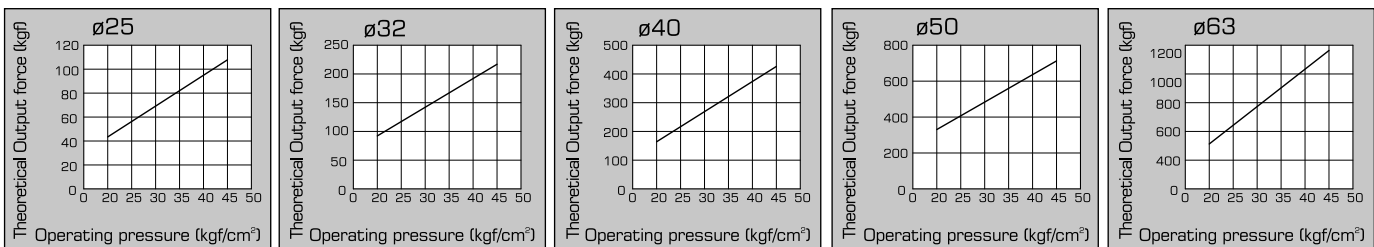
## How to order

<b>FHL</b>	<b>25</b> X <b>90</b>	<b>R</b>
<b>Series</b>	<b>Bore</b>	<b>Swivel Angle</b>
FHL Single side	ø25	90°
FHLD Double sides	ø32	
	ø40	
	ø50	
	ø63	
		<b>Rotating* direction</b>
		R clockwise
		L counter clockwise

\*During the retract stroke

**See prices on page 7**

## Theoretical Output



Bore Size (mm)	Piston rod	Effective area (in <sup>2</sup> )	Theoretical retract force (lbf)										
			285 psi	355 psi	427 psi	498 psi	569 psi	640 psi	710 psi	782 psi	853 psi	924 psi	1000 psi
Ø25	ø18	0.37	105	132	158	185	211	236	263	289	315	342	370
Ø32	ø20	0.76	216	270	324	378	432	485	539	594	648	702	760
Ø40	ø20	1.46	414	518	621	725	828	932	1036	1141	1245	1349	1460
Ø50	ø20	2.56	727	909	1091	1273	1455	1636	1817	2001	2183	2365	2560
Ø63	ø25	4.07	1159	1449	1739	2029	2319	2609	2889	3182	3471	3760	4070

# FHL Series

## HYDRAULIC SWING CLAMP CYLINDER

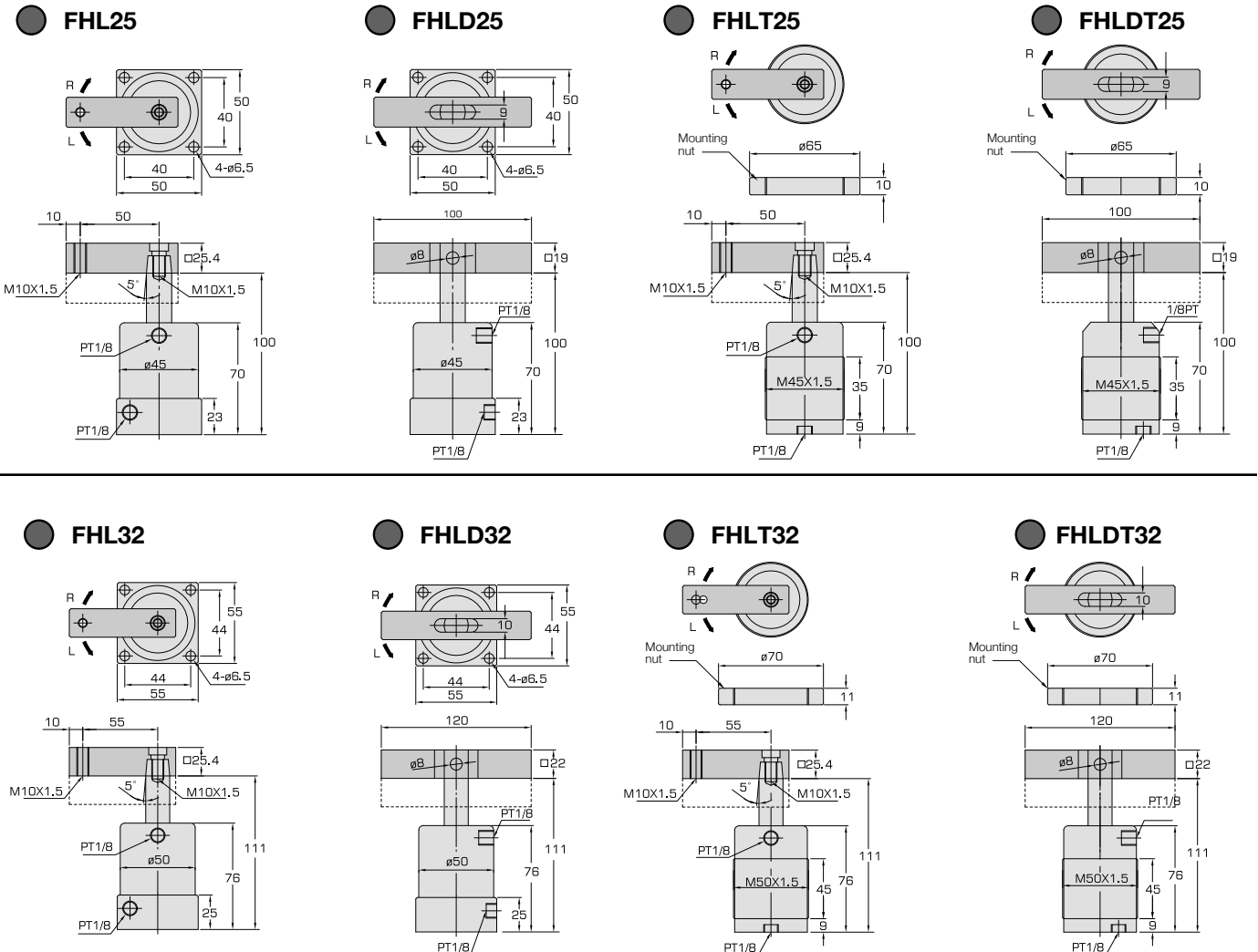
**Seal kits**

Bore	Complete Seal kits	Price
ø25	FHL25-SK	\$ 10.05
ø32	FHL32-SK	10.05
ø40	FHL40-SK	12.40
ø50	FHL50-SK	14.10
ø63	FHL63-SK	16.30

**Price List**

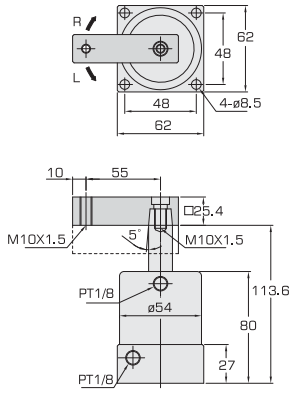
Single Side	Price	Double Sides	Price	Thread Body Single Side	Price	Thread Body Double Sides	Price
FHL25x90R/L	\$224.00	FHLD25x90R/L	\$245.00	FHLT25x90R/L	\$280.00	FHLDT25x90R/L	\$300.00
FHL32x90R/L	238.00	FHLD32x90R/L	238.00	FHLT32x90R/L	315.00	FHLDT32x90R/L	322.00
FHL40x90R/L	259.00	FHLD40x90R/L	259.00	FHLT40x90R/L	332.00	FHLDT40x90R/L	350.00
FHL50x90R/L	308.00	FHLD50x90R/L	329.00	FHLT50x90R/L	350.00	FHLDT50x90R/L	364.00
FHL63x90R/L	434.00	FHLD63x90R/L	462.00	-	-	-	-

**Dimensions (mm)**

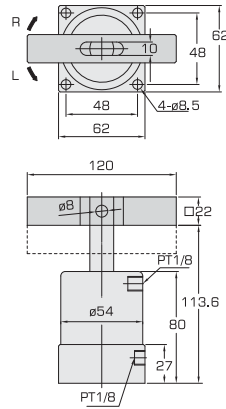


**Dimensions (mm)**

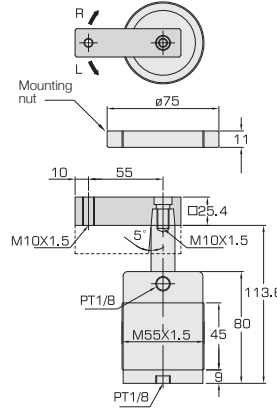
**FHL40**



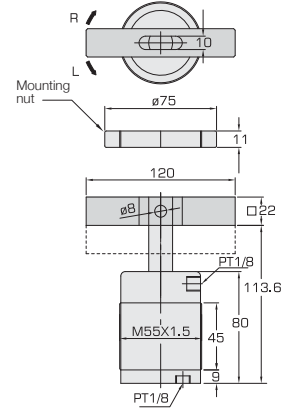
**FHLD40**



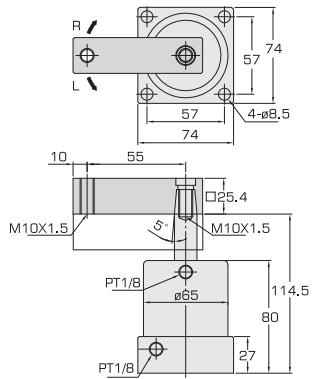
**FHLT40**



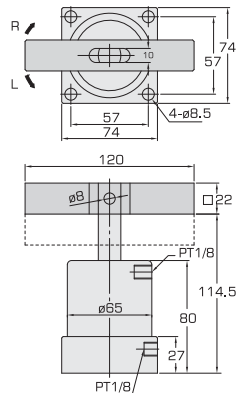
**FHLDT40**



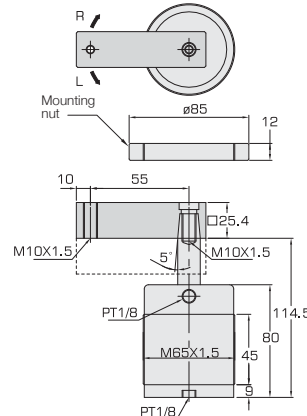
**FHL50**



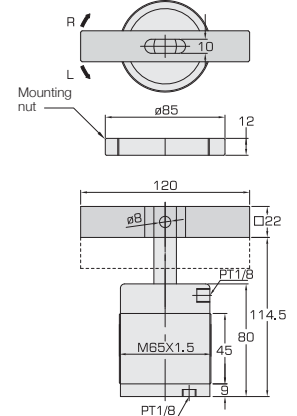
**FHLD50**



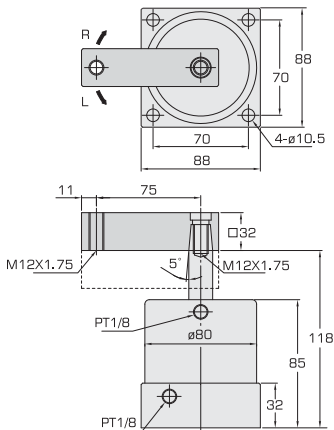
**FHLT50**



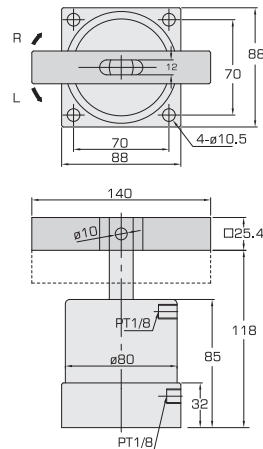
**FHLDT50**



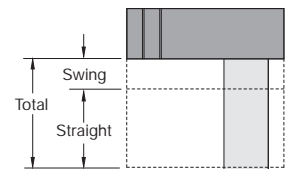
**FHL63**



**FHLD63**



**Stroke Action**



**Stroke Action (mm) for FHL Series**

Bore	Swing	Straight	Total
ø25	12	14	26
ø32	14	15	29
ø40	14	15	29
ø50	14	15	29
ø63	14	15	29

Specifications and prices subject to change without notice or incurring obligation.