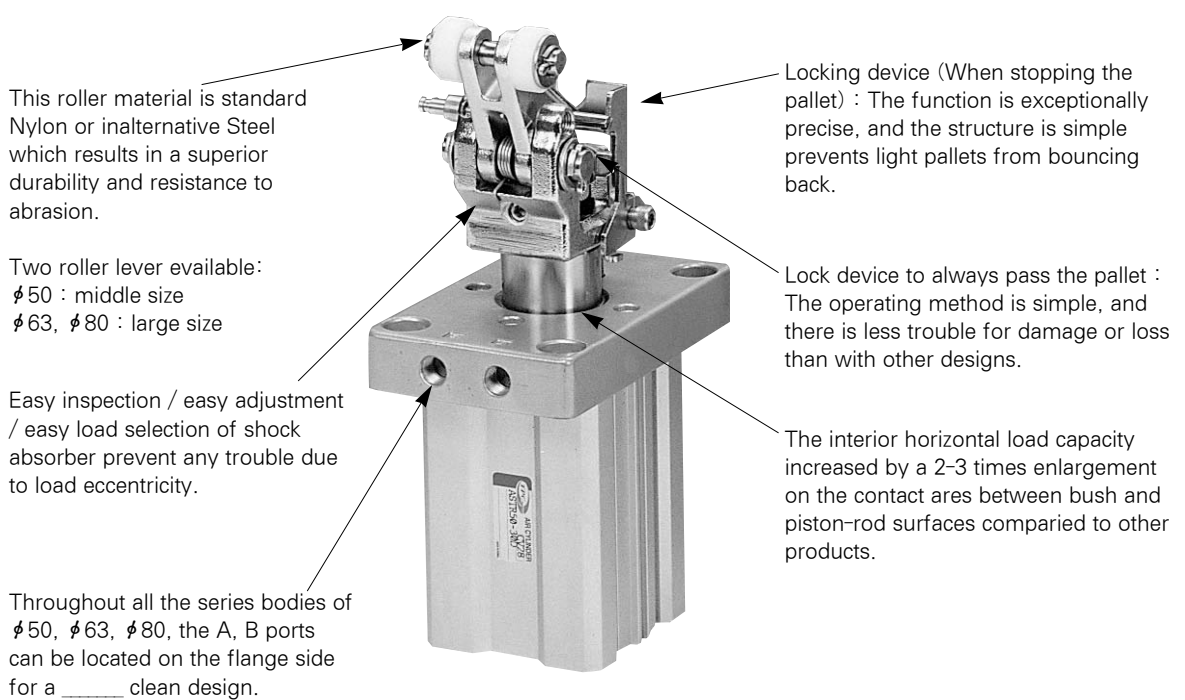


Stopper Cylinder for transfer control on the automatic transfer system conveyor.

Stopper Cylinder

This cylinder is lever type designed for automatic conveyors and product transfer lines to help control the released each individual pallet.



Notes)

Piston magnets are installed (standard)

In case of a V/V attachment, a 5 port V/V is standard.

Therefore it is easy to move both single acting cylinder or double acting cylinder.

ACP

UACP

APM

AX

AS

AM2

AM

AL
ALX

ARD

AQ

AQ2

AJ

AG

AGX
GX

NDM

ADR

AMR

NST

AST

NLCD

NLCS

NF

NR

ASL

Series NzT

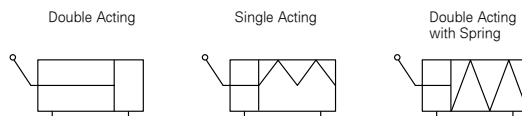
Stopper Cylinder

Bore size(mm) : $\phi 50$, $\phi 63$, $\phi 80$

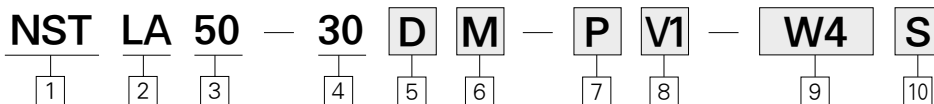


- IT IS POSSIBLE TO CHANGE THE ROTATION OF THE ACTUATOR BY 360 DEGREES WITH STEPS OF 90°
- SHOCK ABSORBER PRE-INSTALLED FOR EASY SETUP
- AUTO SWITCH CAPABLE
- SINGLE ACTION, DOUBLE ACTION, DOUBLE ACTION WITH SPRING EXTEND AVAILABLE

Symbol



How to Order



1 NST: New Challenge Stopper Cylinder

2 TA : Lever / Standard
LB : Lever / Roof Cover slim Type
LC : Lever / Roof Cover quadrable Type(only 50)

3 Bore Size(mm)

50 : $\phi 50$
63 : $\phi 63$
80 : $\phi 80$

4 Standard Stroke(mm)

$\phi 50$: 20, 25, 30, 40
 $\phi 63$: 30, 40
 $\phi 80$: 30, 40

5 Action

Blank : Single Acting
D : Double Acting
Z : Double Acting with Spring

6 Roller

Blank : MC Nylon
M : Rolled steel(SPA material)

7 Lever Lock

Blank : Without
S : Pallet Stop
P : Pallet Pass
SP : Pallet Stop, Pass

8 Valve

Blank : None
V1 : AC 100
V2 : AC 220
V5 : DC 24

9 Type of Auto Switch

Blank : Without Auto Switch
W4 : Plug Point Reed Auto Switch
W8H/W8V : Plug Point round auto switch (horizontal Type/vertical Type)

Caution :

1. According to the lead line direction of the existing plug point or non plug point auto switch, it is separated into horizontal/vertical types.
2. When the lead line length is 3m add an L to the end number of the product.
ex) W8H:W8HL
3. W4, W8H(V):Multiple use of DC24V, AC110V/
Multiple use of W9H(V):DC24V

10 Auto Switch

Blank : 2pcs.
S : 1pc.

Specifications	
Acting	Double Acting, Single Acting, Double Acting with Spring
Fluid	Air
Proof pressure	1.5MPa(213psi)
Max. operating pressure	1MPa(142psi)
Min. operating pressure	Double Acting : MPa
	Single Acting : MPa
Ambient and fluid temperature	-5~70°C
Lubrication	Not Required
Cushion	Rubber Cushion
Stroke Length Tolerance	$^{+1.4}_0$
Mounting type	Thru hole (standard), Both ends tapped
Auto Switch	Attachable

Specifications	
Bore Size	Standard Stroke(mm)
φ 50	25, 30, 40
φ 63, φ 80	30, 40

Specifications	
Tube Bore Size(mm)	ROD Size(mm)
φ 50	32
φ 63	40
φ 80	50

Specifications							
Bore Size(mm) \ Pressure(Kgf/cm ²)	Pressure(Kgf/cm ²)						
	1.2	2	3	4	5	6	7
φ 50	5	30	40	70	95	120	150
φ 63	15	40	75	120	150	180	225
φ 80	20	60	110	160	200	240	280

Weight			
Bore Size(mm)	Stroke(mm)		
	25	30	40
50(Standard)	2,135	2,178	2,263
50(slim)	2,151	2,194	-
63	-	3,998	4,134
80	-	5,528	5,808

ACP

UACP

APM

AX

AS

AM2

AM

AL
ALX

ARD

AQ

AQ2

AJ

AG

AGX
GX

NDM

ADR

AMR

NST

AST

NLCD

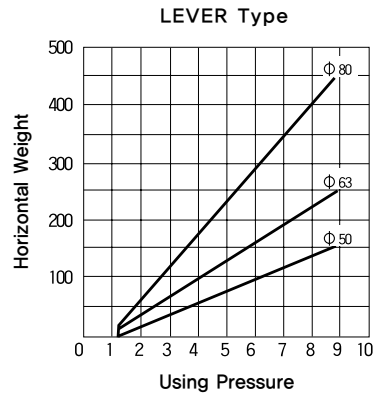
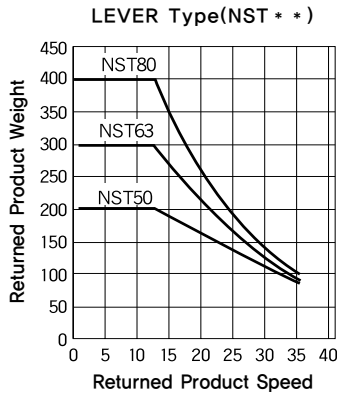
NLCS

NF

NR

ASL

Stopper Cylinder Selection Process



⚠️ Precaution

Please be fully aware before using
Please read the notice(Page 36) for safety.

Selection

- When lever standing up position, do not make collision with pallet.
- when lever standing up position in shock absorber's inner lever type, in case pallet collides with it, energy is absorbed to the cylinder body, therefore, don't make collision happen.
- Please make sure no scratch of Connection parts.
- piston rod is not hardened, so damage can be occurred if connection part of pallet is sharp. In case of this, do not use. It causes non-function.

- When stopping temporarily loay which is be absorbed to cylinder in Stopper cylinder.
- Within the range of usage of CAT. Just use when stopping the pallet. In case of stopping the stopper cylinder, if the cylinder impellent force becomes horizontally lowered, please contact us.

Mounting

- Do not give the rotation torque to cylinder rod.
- Contact area of cylinder should be parallel to contact area of pallet in order not to occur rotation torque on the cylinder rod.

Operation

- Do not make outside force after lever locking when attaching a lever type lock device.
- When adjusting conveyor, move after pull down the cylinder.
- Do not use the oil at the connection area of piston rod.
- Oil causes non-function.
- Please be careful of your hand during operation.

Repair and inspection

When replace the shock absorber, please fix the shock absorber well with fixing bolt.

STOPPER CYLINDER Selection Process

1. From the crossing point of the maximum weight of the returned product and speed we select the size of the cylinder and damper model.
2. Through the friction calculation of the conveyor roller and pallet we bring out the constant horizontal weight.
(Constant horizontal weight = Returned product weight × Friction calculation)
3. Set up the user pressure and select the cylinder size.

Application example

※ Condition used = Conveyor speed : 14m/min, Returned product total weight : 230kgf, Pressure used : 5kgf/cm², Friction calculation number : 0.1

※ Selection method

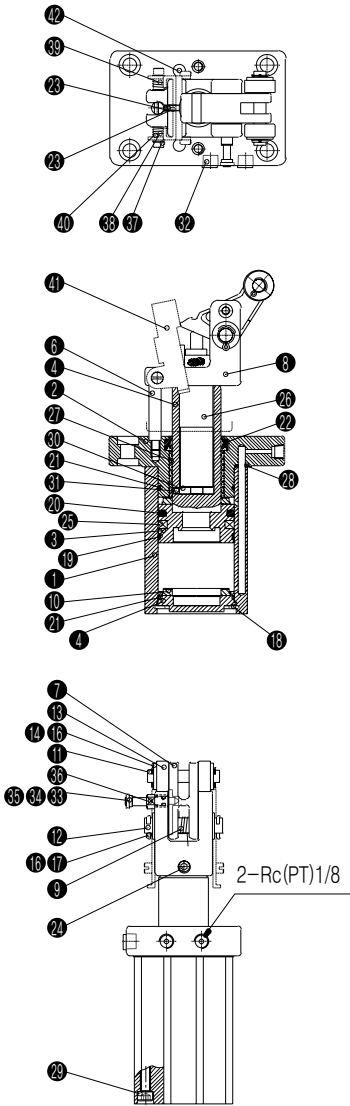
- Select the damper model and cylinder size
LB(strong type) damper, 50 size cylinder
- Find the constant horizontal weight

Returned product weight × Friction calculation number = 230kgf×0.1=23(kgf)

The 50size cylinder is selected on the crossing point of the pressure used at 5kgf/cm², and at the constant horizontal weight of 23kgf

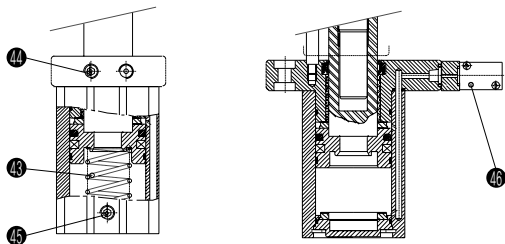
Basic Type : Construction/Parts List

AMRBL φ50, 63



■Single Acting : ※T
 ■Single Acting : ※Z
 /Built-in spring

■V/V Type : ※Z-V※



No.	Description	Material		Note
1	Tube	Aluminum alloy	1	
2	Rod Cover	Aluminum alloy	1	
3	Piston	Aluminum alloy	1	
4	Piston Rod	Carbon Steel	1	
5	Head Cover	Aluminum alloy	1	
6	Guide Rod	Carbon Steel	1	
7	Lever	Carbon Steel	1	
8	Holder	Carbon Steel	1	
9	Lever Spring	Spring Steel	1	
10	Bumper	NBR	2	Head, Rod
11	Roller Pin	Carbon Steel	1	
12	Lever Pin	Carbon Steel	1	
13	Roller	Mc Nylon	2	
14	Washer	Rolled Steel	2	
15	Washer	Rolled Steel	2	
16	Split pin	Wrought Steel	4	
17	C Snap Ring	Spring Steel	1	
18	Wearing	Resin	1	
19	Piston Packing	NBR	1	
20	Gasket	NBR	2	
21	Rod Packing	NBR	1	
22	Dust Wiper	NBR	1	
23	Six angles hole stop Screw	Carbon Steel	2	
24	Six angles hole stop Screw	Carbon Steel	1	
25	Magnet Ring	NBR	1	
26	Shock Absorber	-	1	
27	Du Bush	Lead Bronze	1	
28	O-Ring	NBR	2	
29	Six Angles hole Bolt	Carbon Steel	4	
30	Damper	Carbon Steel	1	
31	Six Angles stop Screw	Carbon Steel	1	
32	Stopper Blook	Carbon Steel	1	
33	Six Angles hole Bolt	Carbon Steel	2	
34	Pass Ring	Carbon Steel	(1)	Option
35	O-Ring	NBR	(1)	Option
36	Look Bar	Carbon Steel	(1)	Option
37	Look Jig	Carbon Steel	(1)	Option
38	Fixing Bolt	Carbon Steel	(2)	Option
39	Look Spring(left)	Stcuinless Steel	(1)	Option
40	Look Spring(Rigot)	Stcuinless Steel	(1)	Option
41	Collar Spacer	Resin	(2)	Option
42	Look Bracket	Rolled Steel	(1)	Option
43	Stopper	Alloy steel	(2)	Option
44	Return Spring	Swp-b	1	
45	Plug boff	Alloy Steel	1	Siage Acting
46	Solenoid V/V	-	1	DS2000 Serles

ACP

UACP

APM

AX

AS

AM2

AM

AL
ALX

ARD

AQ

AQ2

AJ

AG

AGX
GX

NDM

ADR

AMR

NST

AST

NLCD

NLCS

NF

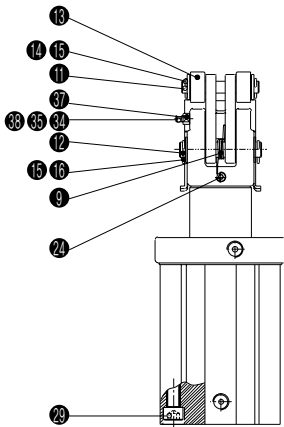
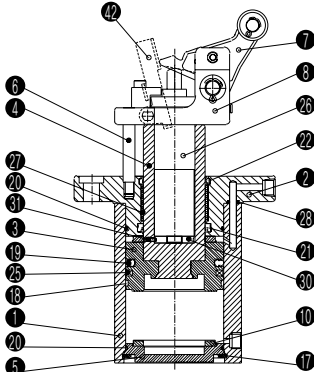
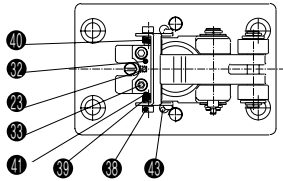
NR

ASL

Series NST

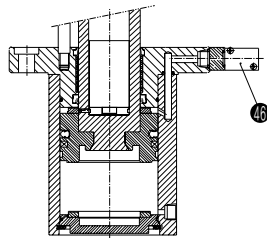
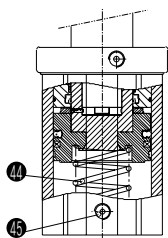
Construction / Part List

AMRBL φ80



■ Single Acting : ※T
 ■ Double Spring : ※Z
 /Built-in spring

■ V/V Type : ※Z-V※

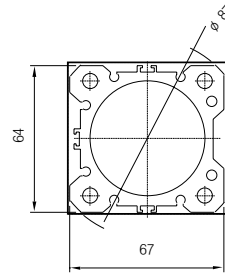
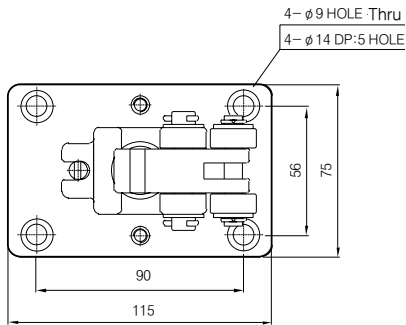


Part List

No.	Description	Material		Note
1	Tube	Aluminum alloy	1	
2	Rod Cover	Aluminum alloy	1	
3	Piston	Aluminum alloy	1	
4	Piston Rod	Carbon Steel	1	
5	Head Cover	Aluminum alloy	1	
6	Guide Rod	Carbon Steel	1	
7	Lever	Carbon Steel	1	
8	Holder	Carbon Steel	1	
9	Lever Spring	Spring Steel	1	
10	Bumper	NBR	2	Head, Rod
11	Roller Pin	Carbon Steel	1	
12	Lever Pin	Carbon Steel	1	
13	Roller	Mc Nylon	2	
14	Washer	Rolled Steel	2	
15	Washer	Rolled Steel	2	
16	Split pin	Wrought Steel	2	
17	Split pin	Wrought Steel	2	
18	C Snap Ring	Spring Steel	1	
19	Wearing	Resin	1	
20	Piston Packing	NBR	1	
21	Gasket	NBR	2	
22	Aod Packing	NBR	1	
23	Six angles hole stop Screw	Carbon Steel	2	
24	Six angles hole stop Screw	Carbon Steel	1	
25	Magnet Ring	NBR	1	
26	Shock Absorber	-	1	
27	Du Bush	Lead Bronze	1	
28	O-Ring	NBR	2	
29	Six angles hole Bolt	Carbon Steel	4	
30	Damper	Carbon Steel	1	
31	Six angles hole stop Screw	Carbon Steel	1	
32	Port Plug	Stainless Steel	2	
33	Pass Ring	Carbon Steel	(1)	Option
34	O-Ring	NBR	(1)	Option
35	Look Bar	Carbon Steel	(1)	Option
36	Look Jig	Carbon Steel	(1)	Option
37	Fixing Bolt	Carbon Steel	(2)	Option
38	Look Spring(left)	Stcuinless Steel	(1)	Option
39	Look Spring(Rigot)	Stcuinless Steel	(1)	Option
40	Collar Spacer	Resin	(2)	Option
41	Look Bracket	Rolled Steel	(1)	Option
42	Stopper	Alloy steel	(2)	Option
43	Return Spring	Swp-b	1	
44	Plug boff	Alloy Steel	1	Siage Acting
45	Plug boff	Alloy Steel	1	Siage Acting
46	Solenoid V/V	-	1	DS2000 Series

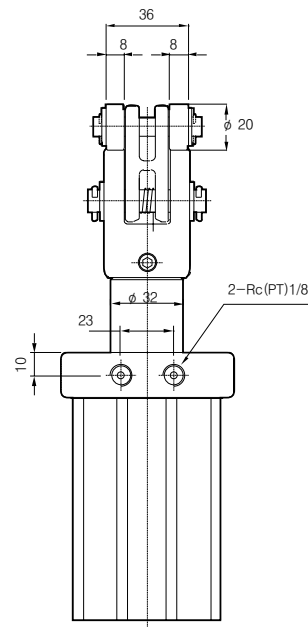
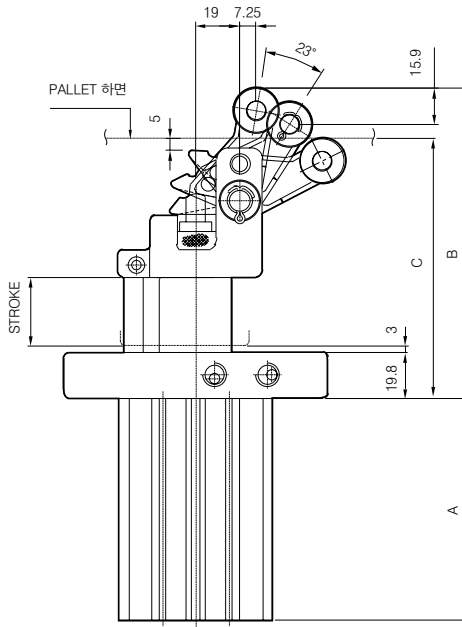
Dimensions

NSTLA50 (Standard)



TUBE Cutting

Caution : Mounting □ 66×69



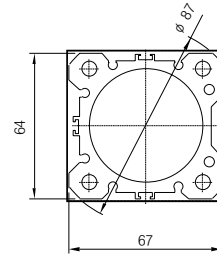
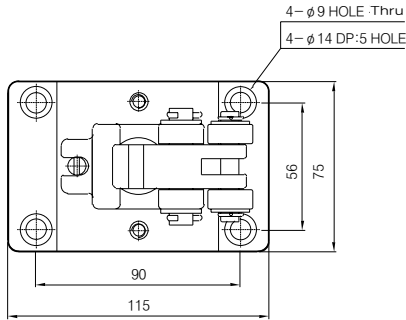
(Unit : mm)

St.	Dim	A	B	C	
				Min	Max
25		91.7	130	108	111
30		96.7	135	113	116
40		106.7	145	123	126

Series NST

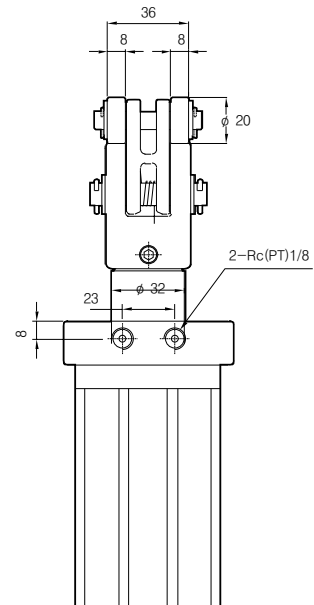
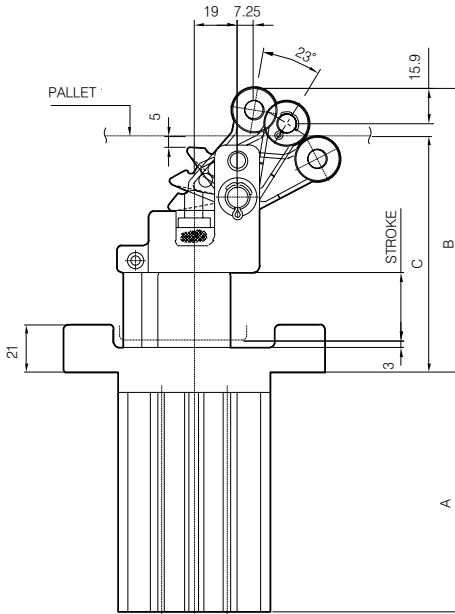
Dimensions

NSTLB50 (Rod Cover Slim Type)



TUBE Cutting

Caution : Mounting \square 66 \times 69

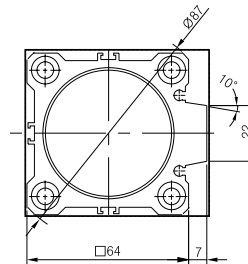
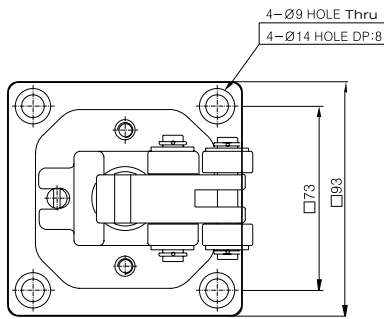


(Unit : mm)

St.	Dim	A	B	C	
				Min	Max
25(Rod Cover Slim Type)		100.5	120	99	102
30(Rod Cover Slim Type)		105.5	125	104	107

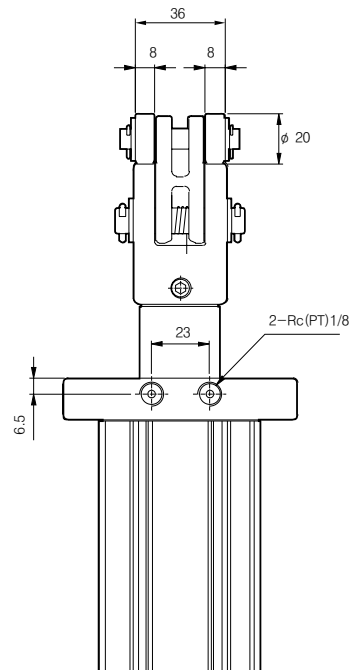
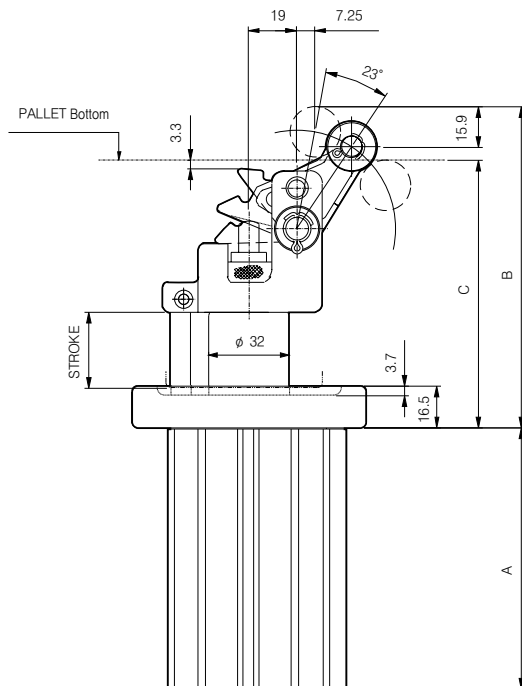
Dimensions

NSTLC50 (Square)



TUBE Cutting

Caution : Mounting □ 66×73



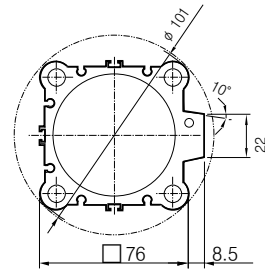
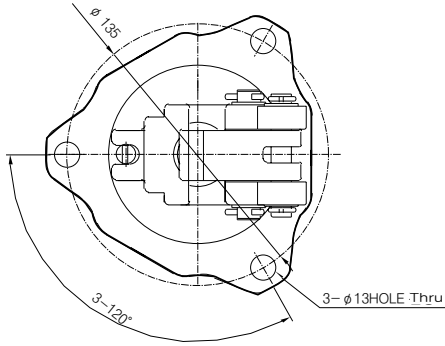
(Unit : mm)

Dim	A	B	C	
			Min	Max
30(Square)	103.7	127.2	106	109

Series NST

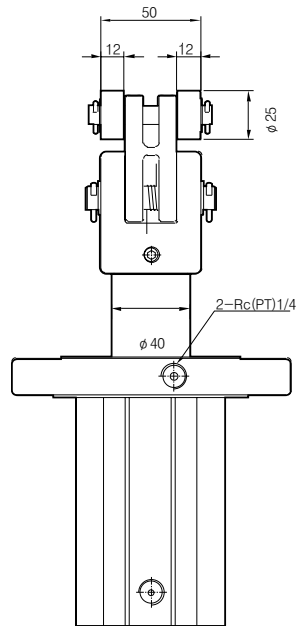
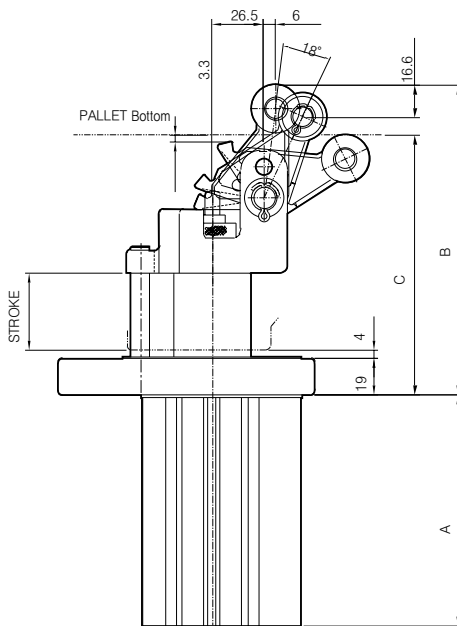
Dimensions

NSTLA63 (Standard)



TUBE Cutting

Caution : Mounting $\phi 103$

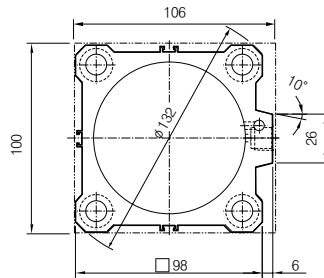
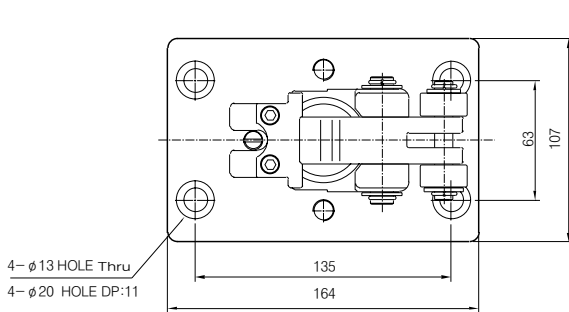


(Unit : mm)

St.	Dim	A	B	C	
				Min	Max
30		109	150	124	130
40		119	160	134	140

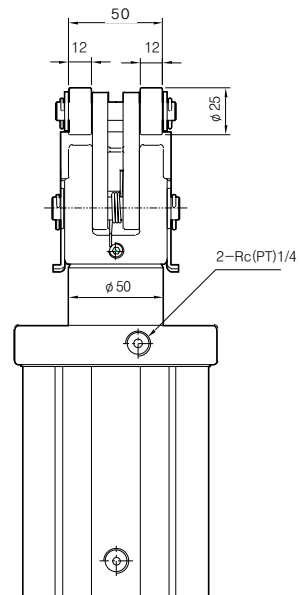
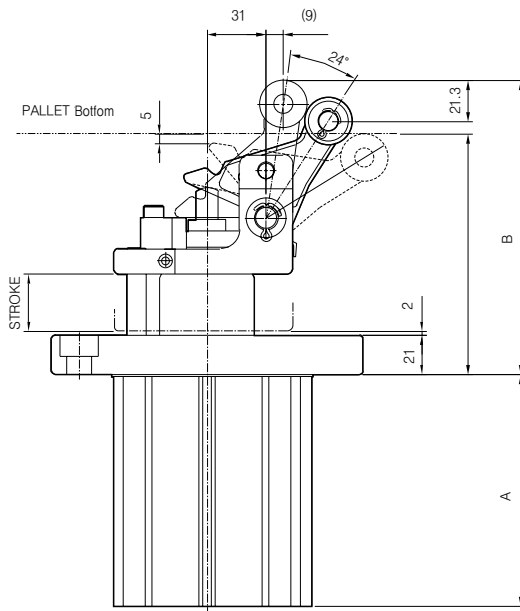
Dimensions

NSTLA80 (Standard)



TUBE Cutting

Caution : Mounting \square 100×106



(Unit : mm)

Dim St.	A	B	C	
			Min	Max
30	122	155	127	130
40	132	165	137	140

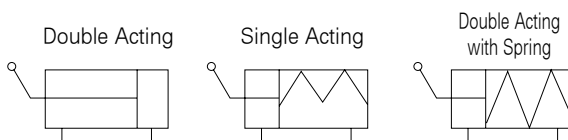
Series **AST**

Stopper Cylinder

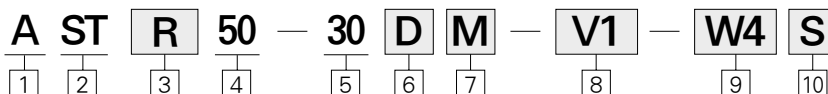
Bore Size : $\phi 50$, $\phi 63$, $\phi 80$



- IT IS POSSIBLE TO CHANGE THE ROTATION OF THE ACTUATOR BY 360 DEGREES WITH STEPS OF 90°
- AUTO SWITCH CAPABLE
- SINGLE ACTION, DOUBLE ACTION, DOUBLE ACTION WITH SPRING EXTEND AVAILABLE



How to Order



1 Actuator

2 Shock Capacity

3 Model Type

Roller : **R**
Direct : **D**

4 Bore Type

50 : 50mm
63 : 63mm
80 : 80mm

5 Standard Stroke

$\phi 50$: 30
 $\phi 63$: 40
 $\phi 80$: 40

6 Action

Blank : Single Acting
D : Double Acting
Z : Double Acting with Spring

7 Roller

Blank : MC Nylon
M : Rolled steel (SPA material)

8 Valve

Blank : None
V1 : AC 110
V2 : AC 220
V5 : DC 24

9 Type of Auto Switch

Blank : Without Auto Switch
W4 : Plug Point Reed Auto Switch
W8H/W8V : Plug Point round auto switch (horizontal Type / vertical Type)
W9H/W9V : N324on Plug Point round auto switch (horizontal Type / vertical Type)

Caution :

- According to the lead line direction of the existing plug point or non plug point auto switch, it is separated into horizontal/vertical types.
- When the lead line length is 3m add an L to the end number of the product.
ex) W8H: W8HL
- W4, W8H(V): Multiple use of DC24V, AC110V / Multiple use of W9H(V): DC24V

10 Auto Switch

Blank : 2pcs.
S : 1pc.



DIRECT TYPE



ROLLER TYPE

Specifications

Acting	Double Acting, Single Acting, Double Acting with Spring
Fluid	Air
Proof pressure	1.5MPa(213psi)
Max. Operating Pressure	1MPa(142psi)
Min. Operating Pressure	Double Acting:0.1MPa
	Single Acting:0.1MPa
Ambient and Fluid Temperature	-5℃ ~ 70℃
Lubrication	Not Required
Cushion	Rubber Cushion
Stroke Length Tolerance	$^{+1.4}_0$
Mounting type	Thru hole (standard), Both ends tapped
Auto Switch	Attachable
Type	Roller Type, Direct Type

Standard Stroke

Bore Size	Standard Stroke(mm)
φ 50	30
φ 63, φ 80	40

Rod High Rigid

Tube Bore Size(mm)	ROD Size(mm)
φ 50	32
φ 63	40
φ 80	50

Traverse Load and Operating Pressure

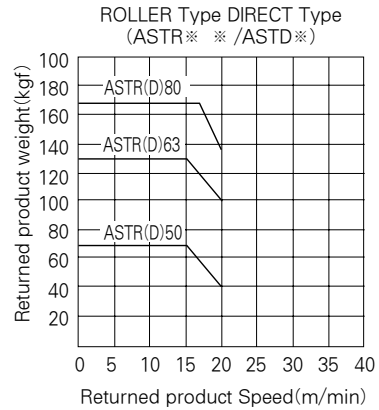
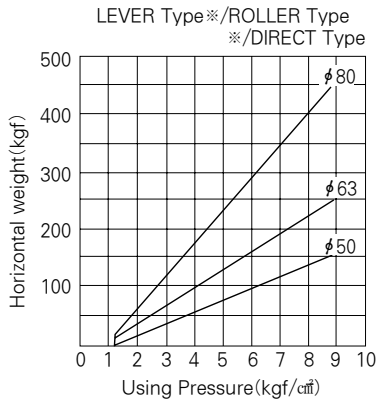
Bore Size((mm)	Pressure(kgf/cm ²)						
	1.2	2	3	4	5	6	7
φ 50	5	30	40	70	95	120	150
φ 63	15	40	75	120	150	180	225
φ 80	20	60	110	160	200	240	280

Weight

(unit : kgf)

Bore Size	Type	
	Roller Type	Direct Type
50-30st	2,170	2,200
63-40st	3,584	3,704
80-40st	5,656	5,792

Stopper Cylinder Selection Process



⚠ Precautions

Please be fully aware before using Please read the notice(Page 36) for safety.

Selection

⚠ Caution

- Do not make scratch on the connection area of piston. piston rod is not hardened, so damage can be occurred if connection part of pallet is sharp. In case of this, do not use. It causes non-function.
- When stopping temporarily load which is be absorbed to cylinder in Stopper cylinder.
Within the range of usage of CAT. Just use when stopping the pallet. In case of stopping the stopper cylinder, if the cylinder impellent force becomes horizontally lowered, please contact us.

Mounting

- Do not give the rotation torque to cylinder rod. Contact area of cylinder should be parallel to contact area of pallet in order not to occur rotation torque on the cylinder rod.

Operation

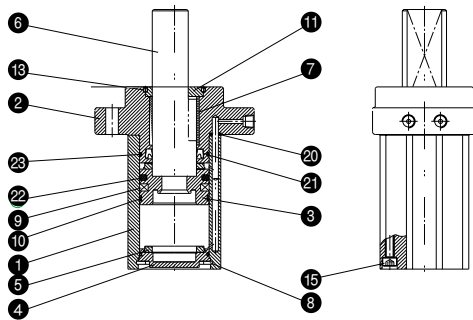
- Do not use the oil at the connection area of piston rod.
Oil causes non-function.

Repair and maintance

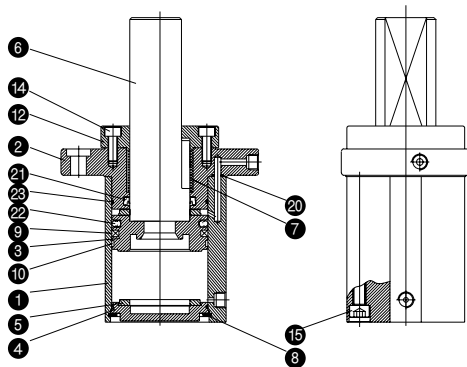
- When changing the direction for preventing rotation, release the two pieces of fixing bolt on the tube cover and rod cover and change the position and then tighten the bolts again.

Construction / Parts List

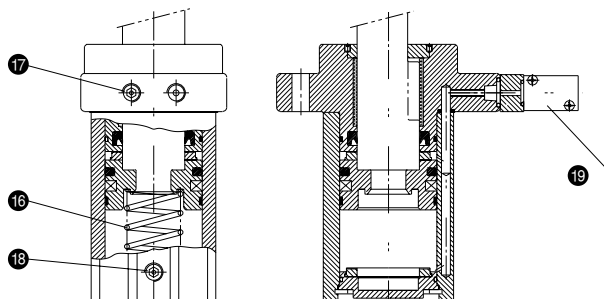
φ 50(Double Acting: ※D)



φ 63, φ 80(Double Acting: ※D)



- Single Acting: ※T
 - Double Acting: ※Z
 - V/V Type: ※Z-V※
- Built-in Spring



Parts List

NO.	Description	Material	Qty	Note
1	Tube	Aluminum alloy	1	Hard Alumite
2	Rod Cover	Aluminum alloy	1	
3	Piston	Aluminum alloy	1	Chromate
4	Head Cover	Aluminum alloy	1	White Alumite
5	Bumper	Urethane	2	HEAD, ROD
6	Piston Rod	Carbon Steel	1	Hard Chrome Plated
7	Bush	Lead bronze	1	
8	C Snap ring	Spring Steel	1	
9	Magnet Ring	NBR	1	
10	Wear ring	Resin	1	
11	Guide		1	
12	Cover	Aluminum alloy	1	
13	Bolt	alloy steel	1	
14	Bolt	Chrome-molybdenum Steel	4	
15	Bolt	Chrome-molybdenum Steel	4	
16	Return Spring	Spring Steel	1	
17	Plug bolt	alloy steel	1	For single Acting φ50
18	Plug bolt	alloy steel	1	For single Acting φ63, 80
19	Solenoid V/V	-	1	DS2000 Series

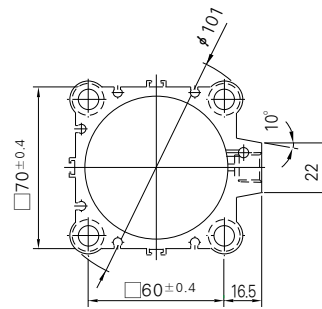
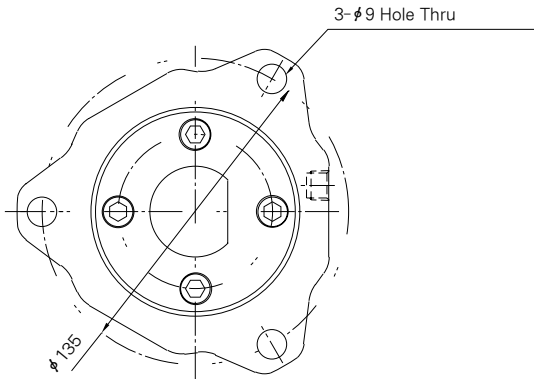
Packing List

NO.	Description	Material	Qty	Bore Size			Note
				φ 50	φ 63	φ 80	
20	O-ring	NBR	2	P5	P5	P6	
21	Rod Packing	NBR	1	PNY-32	PNY-40	PNY-50	
22	Piston Packing	NBR	1	PSD-50	PSD-63	PSD-80	
23	Gasket	NBR	2	C-46	C-60	C-75	ROD, HEAD

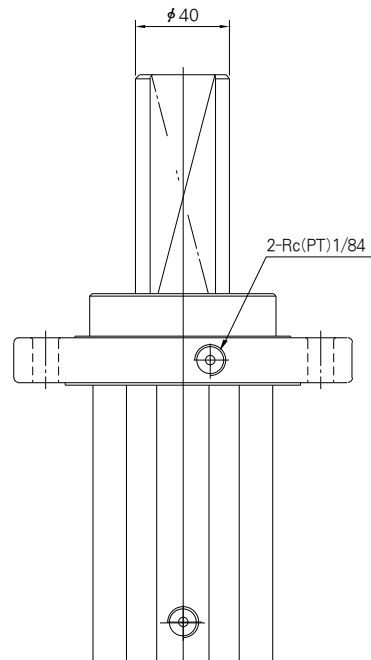
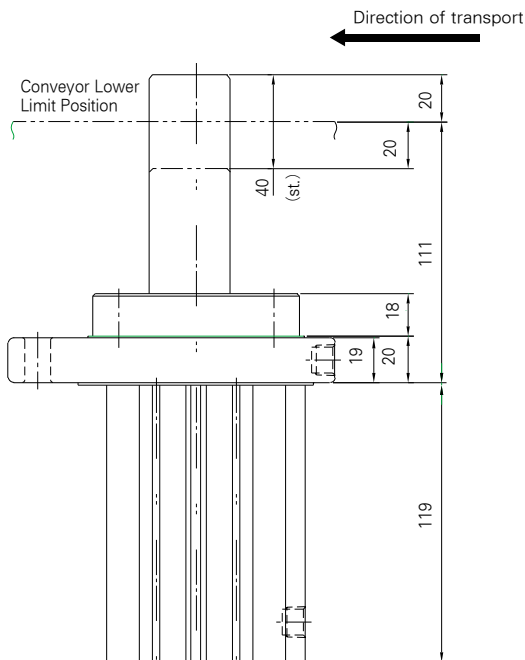
Dimensions / Direct Type

ASTD63-40D

(Unit:mm)



Tube Cutting



ACP

UACP

APM

AX

AS

AM2

AM

AL
ALX

ARD

AQ

AQ2

AJ

AG

AGX
GX

NDM

ADR

AMR

NST

AST

NLCD

NLCS

NF

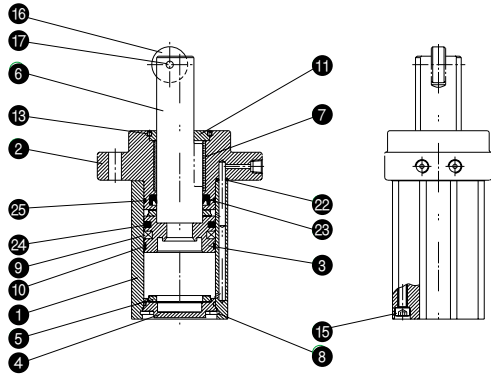
NR

ASL

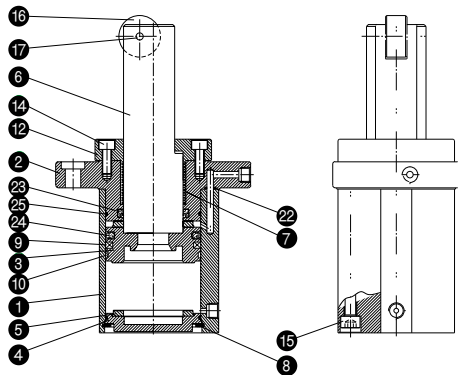
Series AST

Dimensions / Direct Type

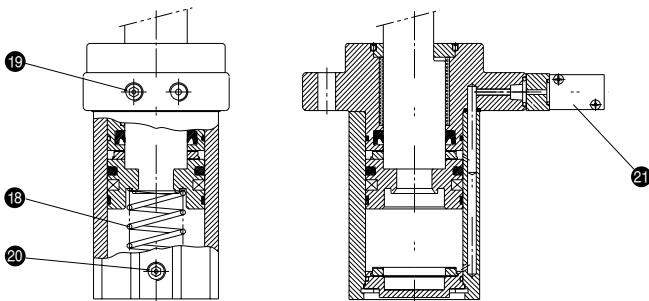
φ 50 (Double Acting: ※D)



φ 63, φ 80 (Double Acting: ※D)



- Single Acting: ※T
 - Double Acting: ※Z
 - V/V Type: ※Z-V※
- Built-in spring



Parts List

NO.	Description	Material		Note
1	Tube	Aluminum alloy	1	Hard Alumite
2	Rod Cover	Aluminum alloy	1	
3	Piston	Aluminum alloy	1	Chromate
4	Head Cover	Aluminum alloy	1	White Alumite
5	Bumper	Urethane	2	Head, Rod
6	Piston Rod	Carbon steel	1	Hard Chrome Plated
7	Bush	Lead bronze	1	
8	C SNAPRING	Spring steel	1	
9	Magnet Ring	NBR	1	
10	Wear ring	Resin	1	
11	Guide		1	
12	Cover	Aluminum alloy	1	
13	Bolt	Alloy steel	4	
14	Bolt	Chrome-molybdenum steel	4	
15	Bolt	Chrome-molybdenum steel	1	
16	Roller	(MC-NYLON)	1	
17	Spring pin	Spring steel	1	
18	Return Spring	Spring steel	1	
19	plug bolt	Alloy steel	1	For single Acting φ 50
20	plug bolt	Alloy steel	1	For single Acting φ 63, 80
21	Solenoid V/V	-	1	DS2000 Series

Packing List

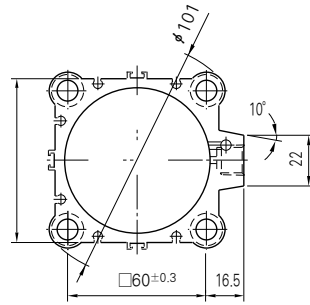
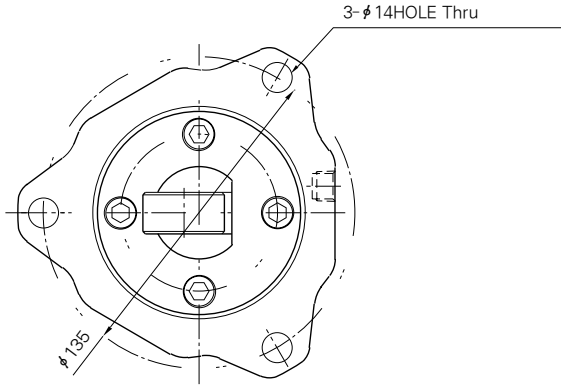
NO.	Description	Material	Qty	Bore Size (mm)			Note.
				φ 50	φ 63	φ 80	
22	O-ring	NBR	2	P5	P5	P6	
23	Rod Packing	NBR	1	PNY-32	PNY-40	PNY-50	
24	Piston Packing	NBR	1	PSD-50	PSD-63	PSD-80	
25	Gasket	NBR	2	C-46	C-60	C-75C	ROD, HEAD

Series AST

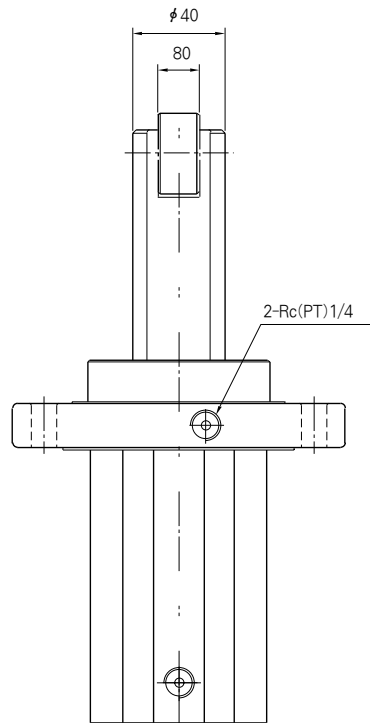
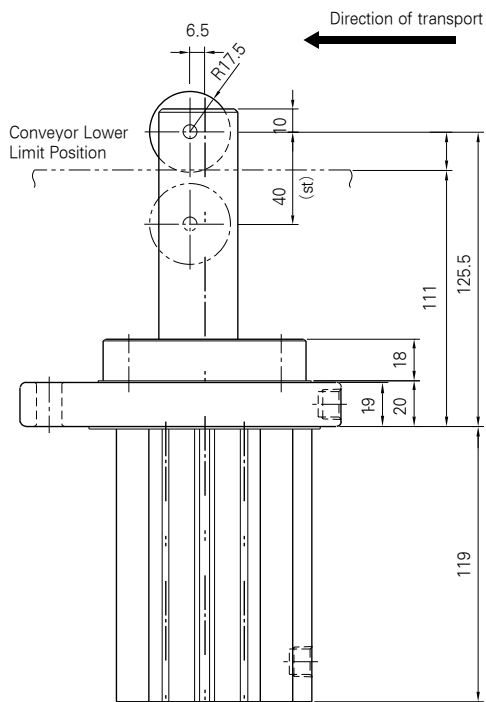
Dimensions / Roller Type

ASTR63-40D

(Unit: mm)



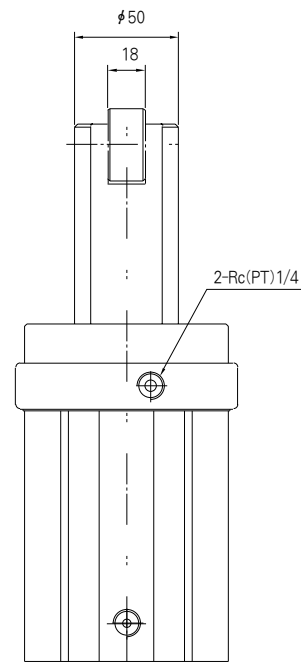
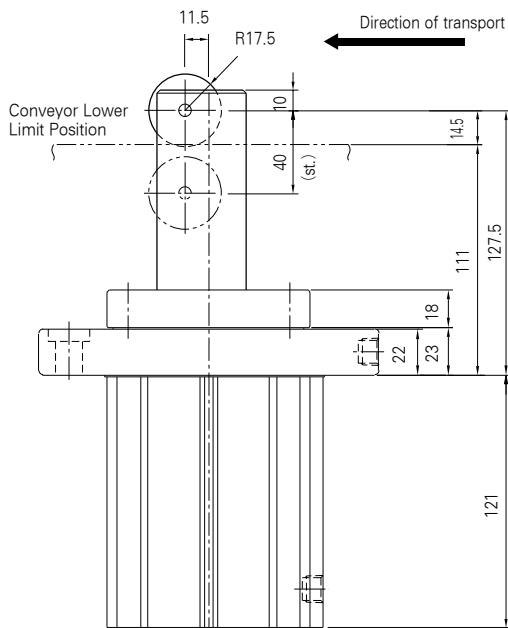
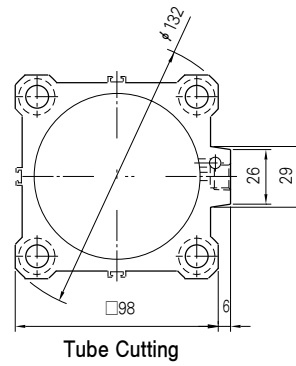
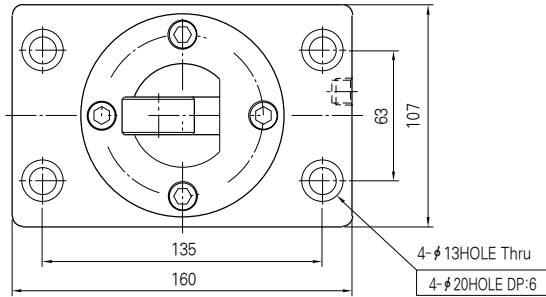
Tube Cutting



Dimensions / Roller Type

(Unit:mm)

ASTR80-40D



Series AST

Auto Switch



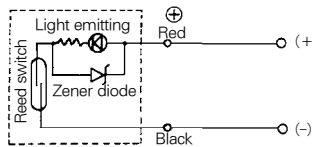
- Leakage current - None
 - Response time - 1.2ms
 - Lead Wire - Oil proof vinyl. $\phi 3.4$, 0.2mm², 2 wire (red, black), 0.5m
 - Impact Resistance - 30G
 - Insulation Resistance - 50M Ω or more under the test voltage DC500V (Between case and cable)
 - Withstand Voltage - 1500VAC 1min (between case and cable)
 - Ambient Temperature - 5~60 $^{\circ}$ C
 - Protection Structure - IEC spec IP67, Water-proof (JISCO920), oil-proof.
- * If 3m lead wire is required, L is put at end of model numbers.
(Example)W4L

Auto Switch Specifications

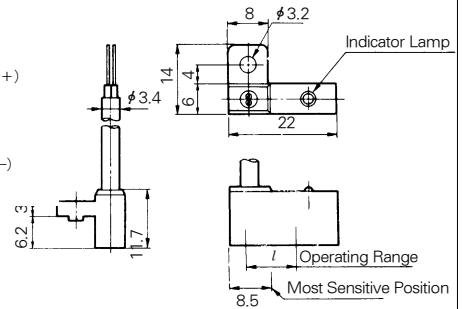
W4 (With Indicator Lamp)

Auto Switch Model	W4	
Application	Relay, Sequence Control	
Voltage	DC24V	AC110V
Range of Load Current	5~40mA	5~20mA
Protection Circuit for Contact Breaker point	None	
Internal Voltage Drop	2.4V or less	
Indicator Lamp	ON: Red light emitting diode	

Auto Switch/Internal Circuit



Auto Switch Dimensions



! Precautions

Selection

1. When the lever is in a standing up position do not allow it to collide with the pallet.
 - When the lever is standing up and it collides with the pallet, power is absorbed to the CYL body, so make sure no collision occurs.
2. Within the limits of the speed and weight of the product on the CAT, only use when stopping the pallet.
 - When stopping the stopper cylinder from the connected CAT, the cylinder driving force becomes horizontally lowered; if this occurs, please contact us.

Mounting

1. Make sure the rotation TORQUE does not get tangled in the CYL ROD.
 - To make sure the rotation TORQUE does not get tangled in the CYL ROD, mount it so that the CYLINDER ROD contact area is parallel to the pallet contact area.
2. Be careful that the PISTON ROD slide-way does not become damaged.
 - PACKING damages may be the reason for operational errors and AIR leakages.

Operation

1. When attaching a LEVER type Lock device, after LEVER LOCKING, make sure outside force from the opposite direction does not get tangled.
 - When moving the CONVEYOR or pallet, make sure to backup and pull down the CYLINDER.
2. When activating the pull up and pull down function of the cylinder, be careful of the narrow crack between the lever holder and the rod flange.
 - Make sure your hands or other instruments accidentally do not slip into the crack while operating.
3. Be careful that no cutting & grinding oil, water or dust wells up.
 - It will bring about damage to the shock-absorber.
4. Adjust the ROD of the shock-absorber to its maximum level to collide with the returned product.
 - When the returned product energy is larger than the shock-absorber suction force during a collision, the lever holder will absorb the load. (When output is in the maximum force stage)