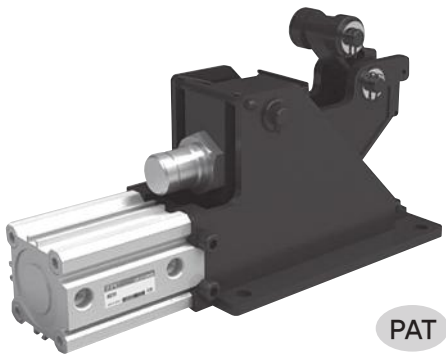
Series ASTH

Horizontal Stopper Cylinder

Bore Size : Ø32, Ø50



PAT

- AS THE LATERAL LOAD DOES NOT DIRECTLY APPLY ON THE CYLINDER, IT IS VERY RESISTANT TO LATERAL LOAD.
- AS THE JOINTING PLATE DOES NOT NEED HOLES TO INSERT CYLINDER TUBES, IT SAVES INSTALLATION COST.
- AS THE CYLINDER IS HORIZONTALLY LEVELED, IT IS SUITABLE FOR LOW CONVEYORS OR OTHER NARROW SPACES.
- IT SHOWS EXCELLENT PERFORMANCES COMPARED TO HORIZONTAL STOPPERS.
- ERGONOMIC STRUCTURE FOR CONVENIENCE AND DURABILITY

How to Order

A(D)ST	H	32	—	L	M	P	—	W4	S	—	BK	H
1	2	3		4	5	6		7	8		9	10

[1] Horizontal Type Stopper Cylinder
- * ADS if includes magnet (auto switch)
- D : With auto switch

[2] Attachment Type
- : Horizontal

[3] Inner Diameter of Tube (Fixed Stroke)
- 32 : Ø32
- 50 : Ø50

[4] Cylinder Pipe Port Location
- Blank : Right
- L : Left
- * Refer to Dimension Drawing

[5] Stop Roller Material
- Blank : Resin (MC Nylon)
- M : Compressed Steel
- * Refer to Recommened Selection Table

[6] Installation of Pass Pin
- Blank : None
- P : Installed

[7] Lever Ascend & Descend Sensor
- Blank : None
- W4 : Angled Point Auto Switch
- W8H/W8V : Rounded Point Auto Switch
- W9H/W9V : Rounded No-Point Auto Switch
- W2P : Magnetic Auto Switch (Not applied to Model 32)
- BK : Adjacent Sensor Bracket (Only for 50, Refer to Dimension Drawing)

[8] Number of Auto Switches
- Blank : 2 pcs
- S : 1 pc
- N : N pcs

[9] Applicable Proximity Sensor
- BK : Basic
- BK1 : Up
- BK2 : Down
- BK3 : Up+Down

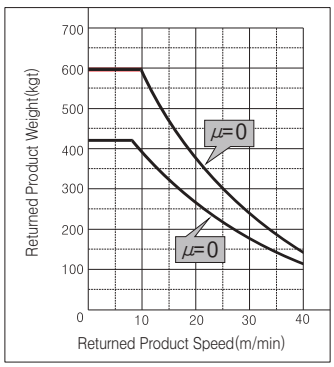
[10] Shock Absorber
- None for ϕ32 : M20
- None for ϕ50 : M36
- H for ϕ50 : M42
- L for ϕ50 : M25

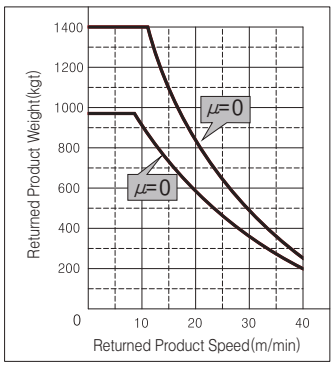
Specifications

▼ **Specifications**

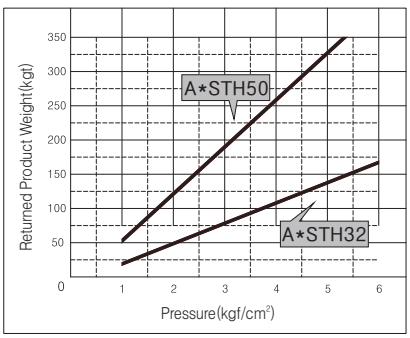
Items	Bore Size		Note
	Ø32	Ø50	
Fluid	Air		
Action	Double Acting		
Mounting	Horizontal(Bottom Frame) Mounting		
Proof Pressure	1.5MPa(15Kgf/㎠)		
Max. Operating Pressure	1.0MPa(10Kgf/㎠)		
Min. Operating Pressure	0.1MPa(1.0Kgf/㎠)		
Ambient and Fluid Temperaturre	−5~70℃(Without Freezing)		
Lubrication	Not Required		
Piston Speed	50~500mm/sec.		
Auto Switch	W4 W8H(V) W9H(V) AUTO Switch	W4 W8H(V) W9H(V) W2P	
Up & Down cylinder bore size X Stroke	Φ32X40mm	Φ50X40mm	Fixed Stroke
Allowable Load	5~600Kgf	10~1,400Kgf	Different regarding conveyor speed
Cushion	Rubber Cushion	Rubber Cushion	
Weight	2.5Kgf	9.5Kgf	Without Option Parts
▼ **Applying Shock Absorber Spec**			
Part No.	SB2015-B	SB3625-B	Adjustable Type
Port Size	M20X1.5	M36×1.5	
Stroke	15mm	50×40mm	
Effective Weight	1.3~285N	17~2,450N	
Impact Force	1,160M	6,000M	
Return Force	8~15N	Rubber Cushion	
Weight	150g	680g	

Selection of Horizontal Stopper Cylinder and Applicable Pressure





Stop Capacity Graph for Pallet Return Force



Cylinder Pressure Graph for Lateral Load on Lever

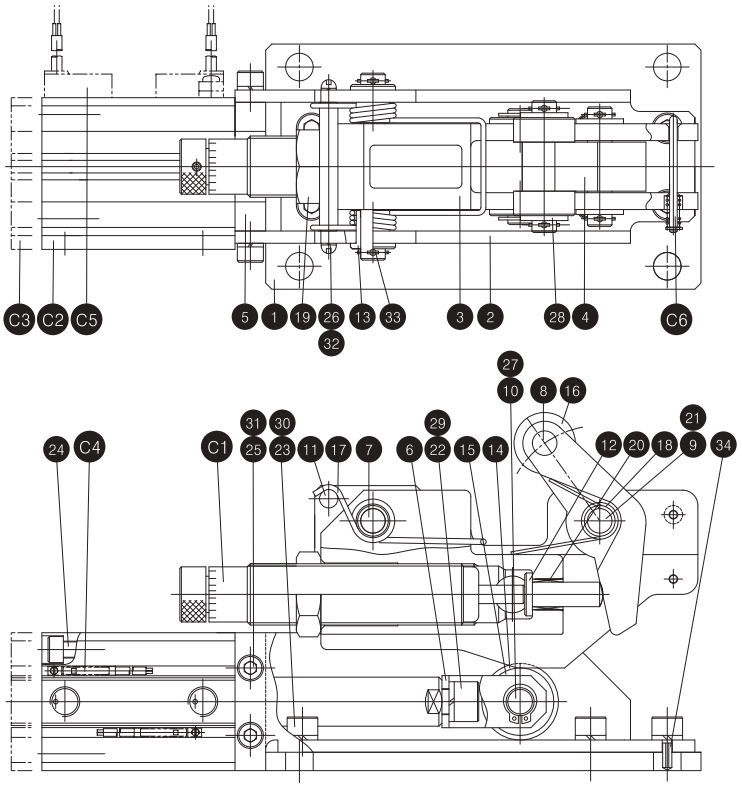
▶ Example Selection of Model and Pressure

- When stopping occurs when the pallet on a conveyor with 0.1 of friction force with cylinder is transported at 250kgf of weight and 20m/min speed and when two pallets are sometimes transported simultaneously
- ASTH50 model is selected based on Stop Capacity Graph for Pallet Return Force. As the actual lateral load on lever is about 50Kgf, refer to Cylinder Pressure Graph to select 1.5Kgf/㎠ or higher cylinder.

  * Lateral Load (50Kgf)=Pallets (2)*Friction Force (0.1)*Weight (250Kgf)

Structure/Parts LIST

A*STH32



Parts LIST

NO	Parts	Materials	Count	Remarks
❶	BASE PLATE	Compressed Steel	1	Silver Nitrate
❷	SIDE PLATE	Compressed Steel	1	Silver Nitrate
❸	HOUSING	Cast Steel	1	Silver Nitrate
❹	LEVER	Cast Steel	1	Chrome Plating
❺	CYLNDER PLATE	Compressed Steel	1	Silver Nitrate
❻	CYLINDER ROD JOINT	Compressed Steel	1	Silver Nitrate
❼	LEVER HINGEPIN	Chromium Molybdenum Steel	1	Nickel Plating
❽	STOP ROUER PIN	Chromium Molybdenum Steel	1	Nickel Plating
❾	LEVER PIN	Chromium Molybdenum Steel	1	Nickel Plating
❿	CYLNDER ROLLER PIN	Chromium Molybdenum Steel	1	Nickel Plating
⓫	SIDE SHAFT	Chromium Molybdenum Steel	1	Nickel Plating
⓬	SHOCK ABSORBER	Chromium Molybdenum Steel	1	Nickel Plating
⓭	BUSHING	Chromium Molybdenum Steel	2	Nickel Plating
⓮	CYLINDER ROLLER-A	Chromium Molybdenum Steel	1	Silver Nitrate
⓯	CYLINDER ROLLER-B	Chromium Molybdenum Steel	2	Silver Nitrate
⓰	STOP ROLLER	Chromium Molybdenum Steel MC NYLON	2	(Refer to Model Selection Table)
⓱	HINGE SPRING	Spring Steel	1	Silver Nitrate
⓲	LEVER SPRING	Spring Steel	1	Silver Nitrate
⓳	LOCKNUT	Carbon Steel	1	Silver Nitrate
⓴	GUIDE BUSH	Cast Bronze	1	
㉑	GUIDE BUSH	Cast Bronze	2	
㉒	HEXAGONAL BOLT	Chromium Molybdenum Steel	1	Silver Nitrate
㉓	HEXAGONAL BOLT	Chromium Molybdenum Steel	6	Silver Nitrate

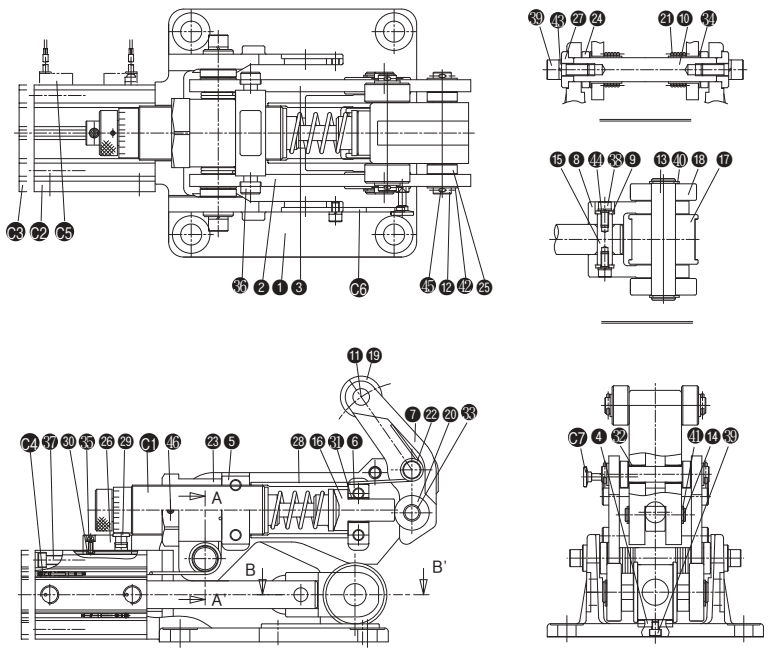
NO	Parts	Materials	Count	Remarks
㉔	Hexagonal Bolt	Chromium Molybdenum Steel	4	Silver Nitral
㉕	Hexagonal Bolt	Chromium Molybdenum Steel	4	Silver Nitral
㉖	Small "+" Nail	Chromium Molybdenum Steel	2	Nickel Platir
㉗	C Stop Ring	Spring Steel	2	Silver Nitral
㉘	Flat Washer	Compressed Steel	4	Zinc Plating
㉙	Spring Washer	Spring Steel	1	Silver Nitral
㉚	Spring Washer	Spring Steel	6	Silver Nitral
㉛	Spring Washer	Spring Steel	4	Silver Nitral
㉜	Spring Washer	Spring Steel	2	Nickel Platir
㉝	Divide Pin	Flexible Steel	6	Zinc Plating
㉞	Spring Pin	Spring Steel	2	Silver Nitral

Packing LIST

NO	Model	Model No.	Count	Remarks
C6	PASS PIN ASS'Y	ASTH32-60A-A3455-1	1	Includes Spring, E Stop Ring, Flat Washer
C5	Auto Switch	D-A73K",D-173TN(P)"	1(2)	(Refer to Model No. and Auto Switch Catalog)
C4		WB", WB""		
C3	AIR CYLINDER	ADD2832-40DC-AA3455-1	1	With Auto Switch
C2		AD2832-40DC-AA3455-1		Without Auto Switch
C1	SHOCKABSORBER	BB2015-B	1	1 Lock Nut

Structure/Parts List

A*STH50



Part LIST

NO	Parts	Materials	Count	Remarks
❶	BASE PLATE	Castiron	1	Silver Plating
❷	SIDE PLATE-R	Compressed Steel	1	Silver Nitrate
❸	SIDE PLATE-L	Compressed Steel	1	Silver Nitrate
❹	ROLLER GUIDE PLATE	Compressed Steel	1	Silver Nitrate
❺	SHOCK ABSORBER HOLDER	Compressed Steel	1	Silver Nitrate
❻	ADAPTER HOLDER	Compressed Steel	1	Silver Nitrate
❼	LEVER	Cast Steel	1	Black Plating
❽	CYLNDER ROD JOINT	Cast Steel	1	Black Plating
❾	JOING APACER	Carbon Steel	1	Silver Nitrate
❿	LEVER HINGE PIN	Chromium molybdenum Steel	1	Silver Nitrate
⓫	STOP ROLLER PIN	Chromium molybdenum Steel	1	Silver Nitrate
⓬	LEVER PIN	Chromium molybdenum Steel	1	Silver Nitrate
⓭	CYLNDER ROLLER PIN	Chromium molybdenum Steel	1	Silver Nitrate
⓮	LEVER ROLLER PIN	Chromium molybdenum Steel	1	Silver Nitrate
⓯	ROD JOINT PIN	Chromium molybdenum Steel	1	Silver Nitrate
⓰	SHOCK ABSORBER ADAPTEA	Chromium molybdenum Steel	1	Silver Nitrate
⓱	CYLNDER FOLLER-A	Chromium molybdenum Steel	1	Silver Nitrate
⓲	CYLNDER FOLLER-B	Chromium molybdenum Steel	2	Silver Nitrate
⓳	STOP ROLLER	Chromium molybdenum Steel / MC Nylon	2	Refer to Model & Selection Table)
⓴	LEVER ROLLER	Chromium molybdenum Steel	1	Silver Nitrate
㉑	HINGE SPRING	Spring Steel	1	Silver Nitrate
㉒	LEVER SPRING	Spring Steel	1	Silver Nitrate
㉓	LOCK HNT	Carbon Steel	1	Silver Nitrate
㉔	SIDE PLATE SPACER		2	
㉕	LEVER SPACER		2	
㉖	UPPER PLATE	Aluminum Alloy	1	Black Alumilite
㉗	T-WASHER	Carbon Steel	1	Silver Nitrate
㉘	SHOCK ABSORBER COVER	Acryl	1	
㉙	BUMPER	Urethane	1	
㉚	BUMPER PLATE MOUNTING HUT	Compressed Steel	1	Nickel Plating

NO	Parts	Materials	Count	Remarks
㉛	GUIDE BUSH	Cast Bronze	1	
㉜	GUIDE BUSH	Cast Bronze	2	
㉝	GUIDE BUSH	Cast Bronze	1	
㉞	FLANGE BUSH	Cast Bronze	2	
㉟	SCREN ASS'Y	Carbon Steel	1	Nickel Platir
㊱	HEXAGONAL BOLT	Chromium molybdenum Steel	2	Silver Nitral
㊲	HEXAGONAL BOLT	Chromium molybdenum Steel	3	Silver Nitral
㊳	HEXAGONAL BOLT	Chromium molybdenum Steel	4	Silver Nitral
㊴	HEXAGONAL BOLT	Chromium molybdenum Steel	2	Nickel Platir
㊵	C Stop Ring	Spring Steel	2	Silver Nitral
㊶	C Stop Ring	Spring Steel	2	Silver Nitral
㊷	FLAT WASHER	Compressed Steel	4	Zinc Plating
㊸	SPRING WASHER	Spring Steel	2	Silver Nitral
㊹	SPRING WASHER	Spring Steel	2	Silver Nitral
㊺	DIVIDE PIN	Flexible Steel	4	Zinc Plating
㊻	SET SCREW	Chromium molybdenum Steel	2	Silver Nitral

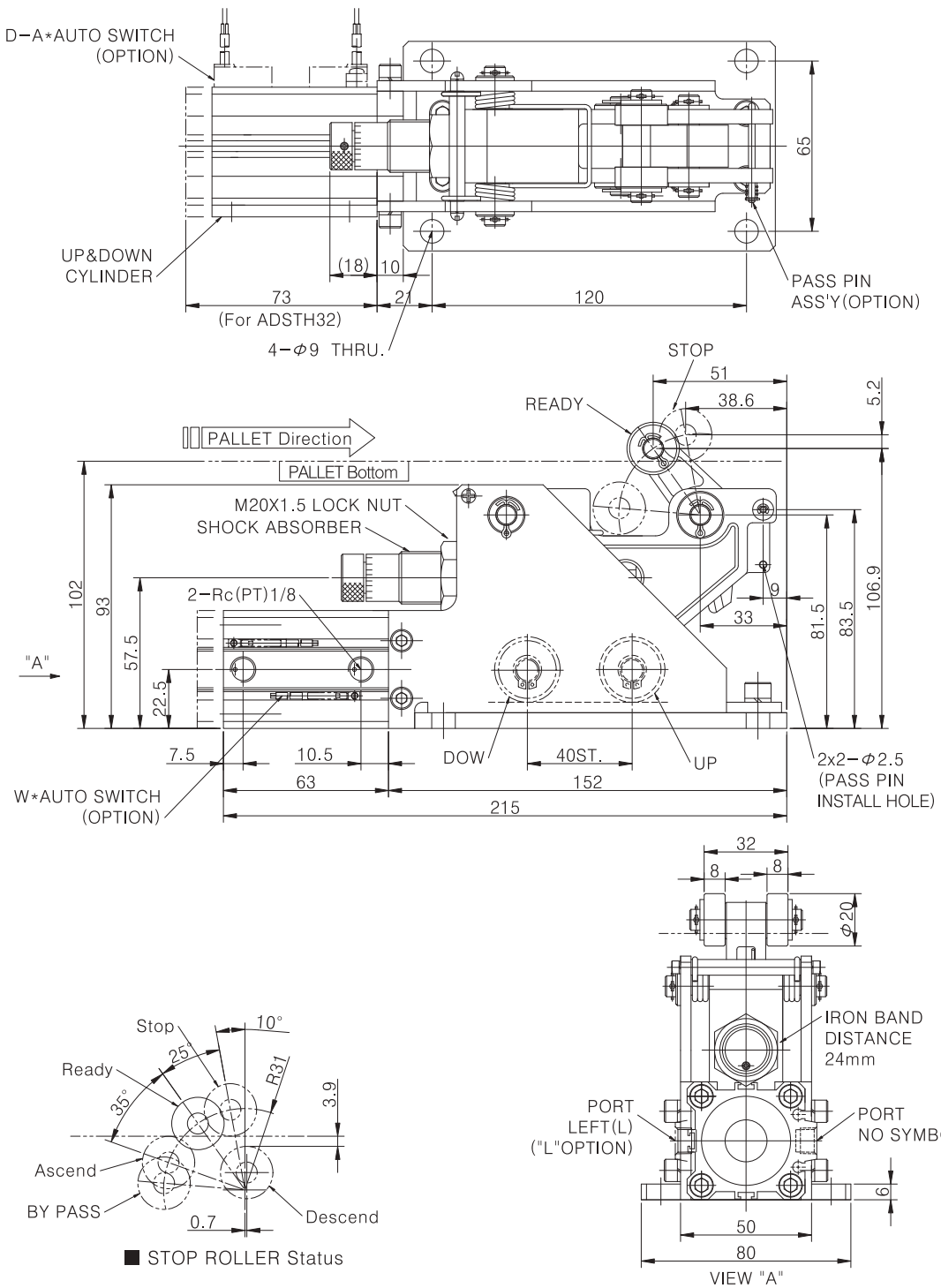
Packing LIST

NO	Model	Model No.	Count	Remarks
㊼	PASS PIN ASS'Y	ASTH32-60A-A3455	1	
㊽	SENSOR BRACKET ASS'Y	ASTH32-60A-A3455	1	(2 Bolts with M5)
㊾	AUTO SWITCH	D-A73K",D-173TN(P)" WB", WB""	(2)	(Refer to Model No. and Auto Switch Catalog)
㊿	AIR CYLINDER	ADD2832-40DC-AA3455-1	1	With Auto Switch Without Auto Switch
㊿		AD2832-40DC-AA3455-1		
㊿	SHOCK ABSORBER	BB2015-B	1	

Outside Dimensions

(Unit: mm)

A*STH32

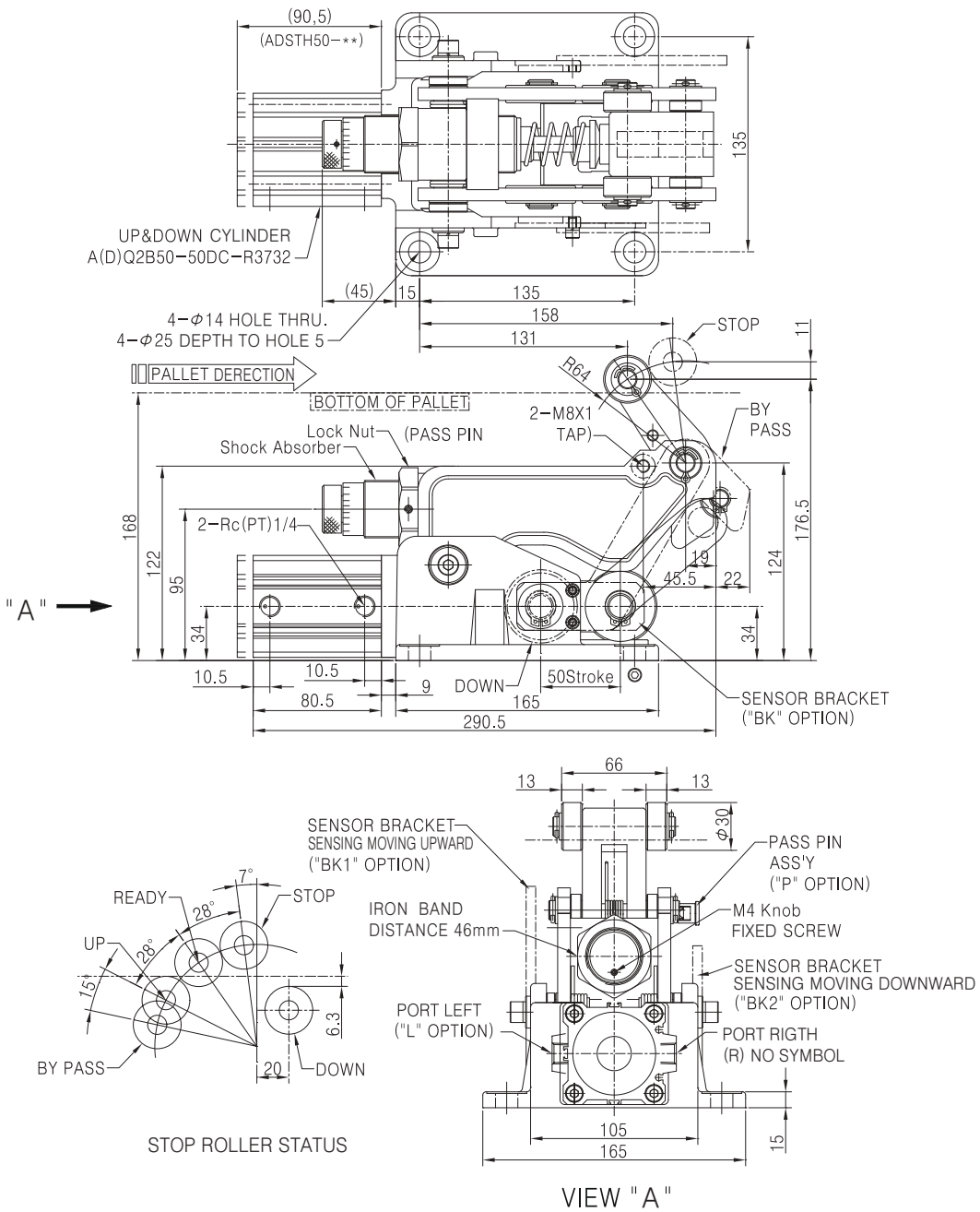


■ STOP ROLLER Status

Outside Dimensions

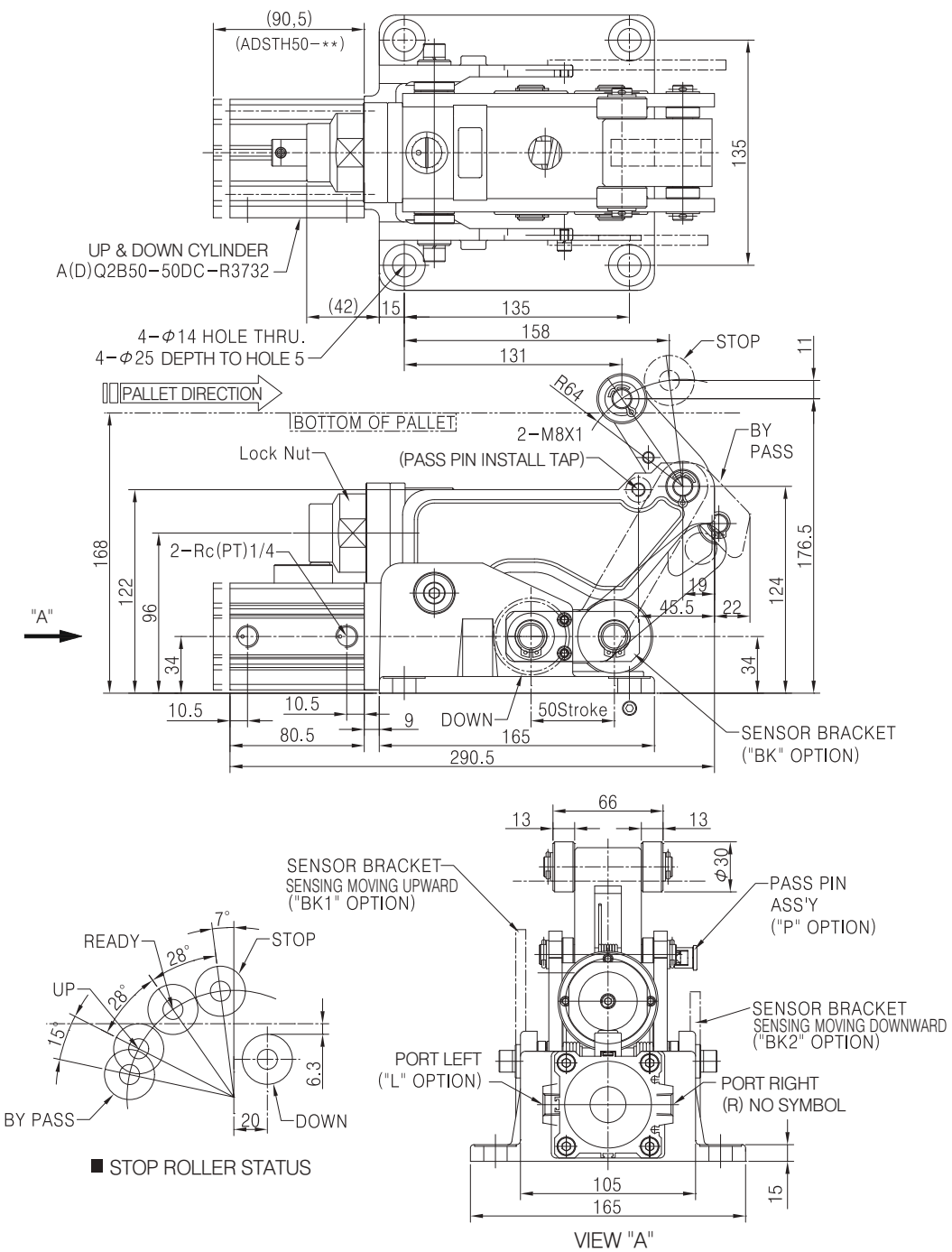
(Unit: mm)

A*STH50



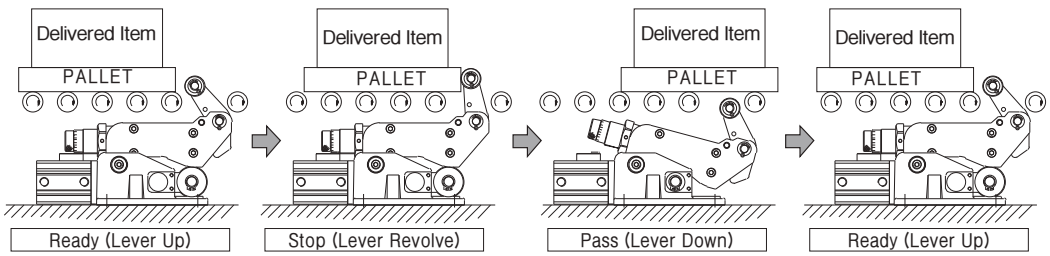
Outside Dimensions

A*STH50-**-H

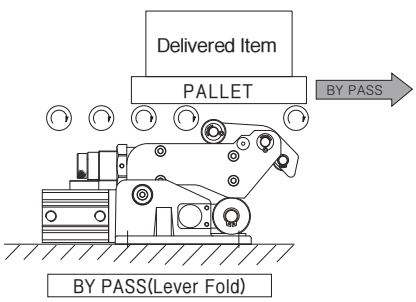


Horizontal Stopper Cylinder Level Operation Status

▣ Horizontal Stopper Cylinder Pallet at Stop
Horizontal Stopper Cylinder's lever repetitively undergoes the following process to control pallet transportation.



▣ BY PASS Status
When lever does not control pallet transportation.
For further information, please refer to Manual.



How to Use Horizontal Stopper Cylinder

● Thoroughly read the following material:
– For other uses, please refer to TCQ2 Cylinder or Shock Absorber (SD**) Catalogs.

● Selecting Stop Roller Materials
– Refer to the following table to select stop roller materials.

▶ Recommended Stop Roller Material Selection

Delivered Item (Kg)	Weight Resin	PALLET Aluminum	Material Compressed Steel	Remarks
300 and below	N	N	N	
300 or above	M	M	M	

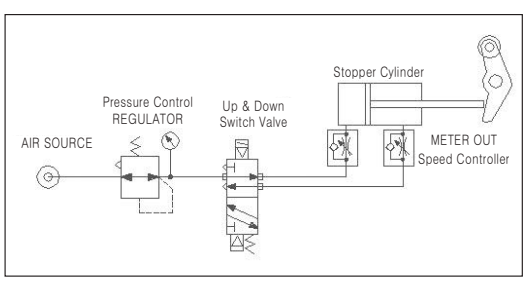
Abbrev) M=Compressed Steel, N=Nylon
Note) If you need other materials or need to change sizes, please contact the company.

● Recommended Air Pressure for Cylinder Indicated below:
– Install air pressure circuit for operation as indicated below:

▶ Speed : Control ascending/descending speed using a meter-out speed controller on the front and back of the cylinder.

▶ Pressure : Install a regulator before the switching valve to prevent excessive pressure on the cylinder.

▶ Switch Valve : Single valve is recommended so the lever does not ascend to pass pallets even when the valve is out.

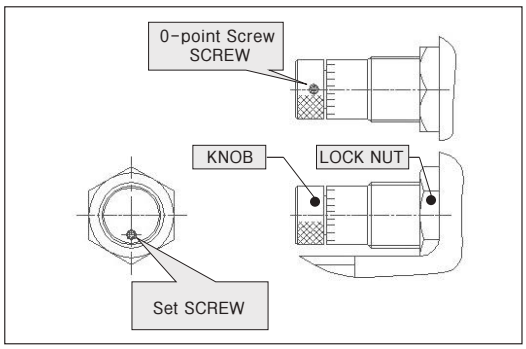


● Controlling Impact on Shock Absorber
– After installing the cylinder, rotate the knob on shock absorber in the picture to adjust the maximum shock absorption according to weight and speed of transportation
– How to Control
: Rotate the knob and the 0-point screw on top to increase the shock absorption calibration to reach the highest point. Drop the calibration one by one and fix it on the location where the pallet will lay on the stop roller.
When fixing is complete, fasten the set screw so that the knob does not rotate in vibration or impact.

▶ Size of Wrench Used to Fix Knob

Φ32	1.5mm
Φ50	2mm

How to use Horizontal Stopper Cylinder



● How to Replace Shock Absorber

- If a wrong shock absorber is selected or the shock absorber needs to be replaced, follow the steps below:
- How to replace
  : When replacing shock absorber, refer to the dimension and structure drawings.

▶ Use the correct size wrench to unfasten the lock nut that is fixing the shock absorber. Disassemble it by turning it counterclockwise.

❗ Caution: For the 50 Model, disassemble the set screw before turning the lock nut.

▶ Grab the knob and turn it clockwise to disassemble the shock absorber. The set screw must be fastened.

▶ Turn the new shock absorber clockwise to set it in place and fix it by fastening the lock nut.

Caution: After assembling the shock absorber, fasten the lever and secure additional strokes. Otherwise, it may cause a breakdown.

▶ Upon completing the replacement, pull the lever 2–3 times and check whether the adapter proceeds and recedes with no obstacles.

Caution: We do not guarantee the quality of shock absorbers of other brands.

● How to Change Cylinder Pipe Port Location

- To change the cylinder pipe port location, follow the steps below:
- How to change

▶ Turn the set screw on bumper block on top of the cylinder counterclockwise and take it off for ϕ50 only

▶ Completely unfasten four bolts counterclockwise, pull the cylinder about 2–5mm apart from the frame, and rotate it 180° so the port is placed on the opposite side.

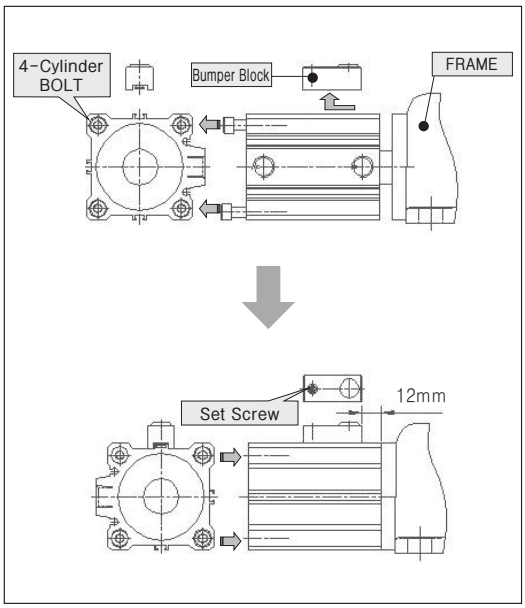
▶ Bolt Sizes

Model	No Switch	With Switch	Remarks
ϕ32	M5×65L	M5×65L	(4mm Wrench)
ϕ50	M6×80L	M6×90L	(5mm Wrench)

▶ Turn four bolts clockwise for temporary assembly and fix the bumper block (50 Model) as shown below.

▶ Operate the cylinder 2–3 times and completely fasten the four bolts.

Caution: If you omit the temporary assembly process, the cylinder might be stuck and not work well.



● How to Replace Cylinder

- To replace the cylinder, follow the steps below:
- How to Replace
  : Refer to the Structure Drawing.

▶ Unfasten the Rod Joint at the end of the cylinder rod.

▶ Disassemble the cylinder from frame as described under "How to Change Cylinder Pipe Port Location."

▶ Reverse the disassembly steps to reassemble.

Caution: We do not guarantee the quality of performance if you disassemble cylinder in a random manner.

● Pass Pin Feature

User's Manual and Installation Instruction

- Description
  : If you do not need the spare part or long-term stop function, push cylinder lever toward shock absorber and fix it for the pallet to pass without any stop.
- How to Use

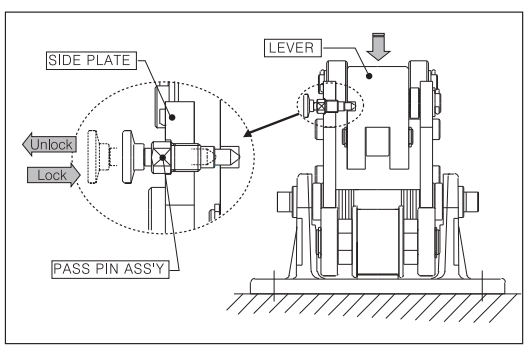
▶ The 50 Model
: As shown in the drawing, push cylinder lever toward shock absorber and push the Pass Pin into the Pass Pin Hanging Pin Hole on the Lever.

How to use Horizontal Stopper Cylinder

To disassemble, slightly push the lever and pull the hook on the Pass Pin. Put the lever to ready to use.
Caution : When it is not set to By Pass, always pull the pin so it recedes. If pin is set to proceed, it might be damaged by the lever.

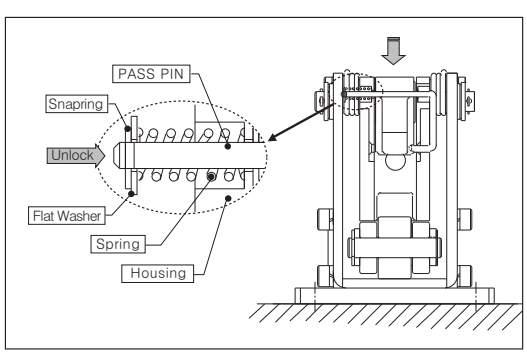
▶ The 32 Model
: As shown in the drawing, push the lever toward the shock absorber to set it to By Pass and push the pin to release it.

• How to Install (Left or Right)
▶ The 50 Model
: Use a wrench to fix the Pass Pin Assembly onto M8X1 Screw Thread on the side plate.
Caution: When assembling, cover the screw thread with lock tight fabric or seal tape to prevent unfastening in vibration.



▲ Installation of the 50 Model

▶ The 32 Model
: Insert the "ㄷ"-shaped pass pin into the 2.5 hole on the housing and assemble spring-flat washer-and snap ring.
Caution : Reassembling the snap ring more than twice would cause it to lose elasticity and loosen in vibration. Therefore, replace loosened snap ring.



▲ Installation of the 32 Model

● How to Install Adjacent Sensor (only for 50 Model)

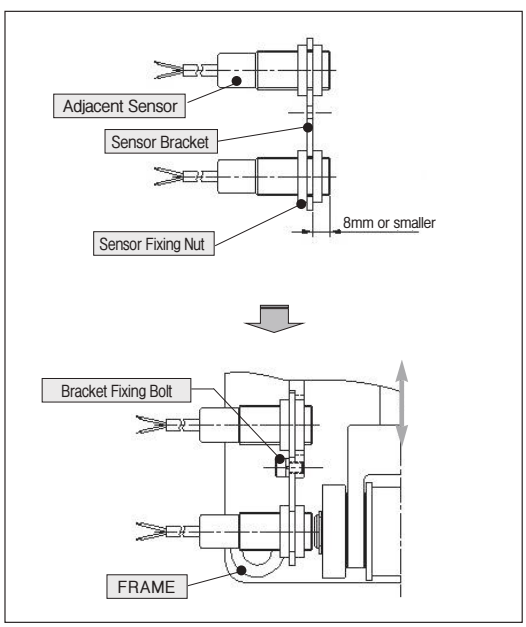
• Use the adjacent sensor to monitor whether the cylinder lever is up (ready/stop) or down (pass) using the location of Joint Pin at the end of the Cylinder Rod and whether the operation is on or off.
Caution: Lever rotation and By Pass cannot be monitored.

• How to Install
▶ As shown below, use two nuts to fix the adjacent sensor onto the sensor bracket and insert it to the fixing hole on the frame, and use two fixing bolts (M5X8L, including spring washer) to install it.

▶ Select an adjacent sensor (sold separately) that satisfies the following:

※ Adjacent Sensor

SIZE	Adjacent Distance
M18	5~10mm



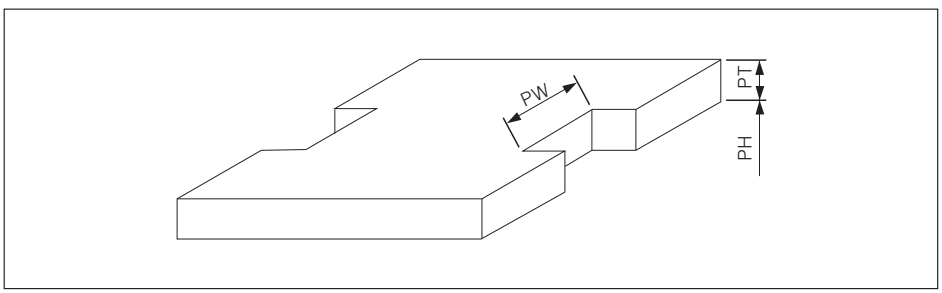
● Refer to our ADQ2** Cylinder Catalog for the installation and use of cylinder Auto Switch.

Safety Suggestions

- Thoroughly read the following before using the device.
  – For other safety suggestions, refer to the Vertical Stopper Cylinder (NST**)Catalog.

- For the convenient stopping of the cylinder lever, refer to the following dimensions for the height from cylinder plate to the bottom of pallet (PH), thickness of pallet (PT), and lever touch width (PW).
  – Recommended Dimensions

Model	Height of Bottom of Pallet(PH)		Minimum Thickness of Pallet(PT)	Minimum Width of Lever Touch(PW)
	Height	Error Allowance		
Φ32	102	±3	15	45
Φ50	168	±5	25	80



- Because horizontal stopper cylinder is longer towards the pallet direction, secure a certain width of space so the roller conveyor is free from obstacles when operating the cylinder.

- When using one cylinder, install accordingly so the two stop rollers meet each other and stop in the center of pallet. If the delivered item's center of load on the pallet is not set to maintain balance, place two cylinders symmetrically. If installing two cylinders is impossible, fasten the pallet to minimize vibration and move the cylinder to the center of delivered item.
  – If repeated stopping leaves excessive moment load onto the side of the lever's stop roller, it may damage surrounding parts.

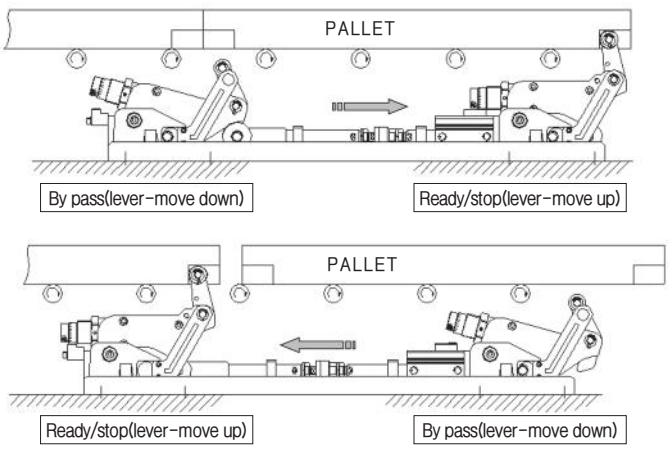
Series ASTH

Applications / Double Lever Type

Bore Size(mm) : Ø32, Ø50

▣ Stop postion of horizontal stopper cylinder with double lever

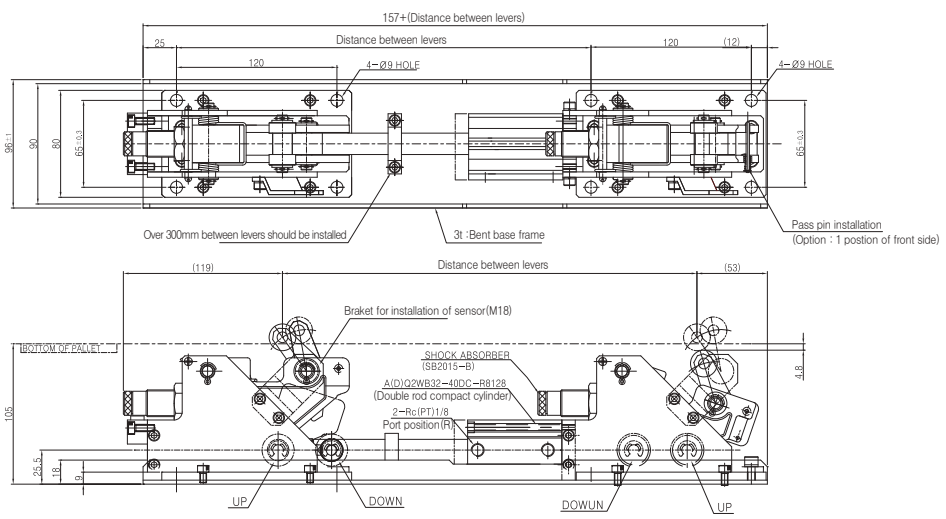
As seen in the below drawing, the cylinders cross-move up and down to control moving pallets.
The working status of lever such as ready or by pass is the same as basic type(single lever type).



▣ Working application of horizontal stopper cylinder with double lever

Structure

Ø32 Bore



- The size and options are the same as basic type(single lever type)
- The distance between levers 250~500mm is available for this base plate attached type.
  ※ The distance between levers is from the ready(stop) position of front lever to the ready(stop) postion of back lever.
- The horizontal stopper cylinder with double lever is an order made item, so please contact us for the lead time or any questions.

How to Order

AST32 - (Distance Between Levers) L M P - BK - R8128

① ② ③④⑤ ⑥ ⑦

NO.	Options	NO.	Options
1	Stopper Cylinder	5	Pass Pin
2	Distance Between Levers		Blank : None
3	Position of Port(L, R)		P : 1 Pin in Front Side
4	Material of Stopper Roller	6	Sensor Bracket
	Blank : Resin(MC Nylon)	7	Order made number
	M: Rolled Steel		

Series ASTH

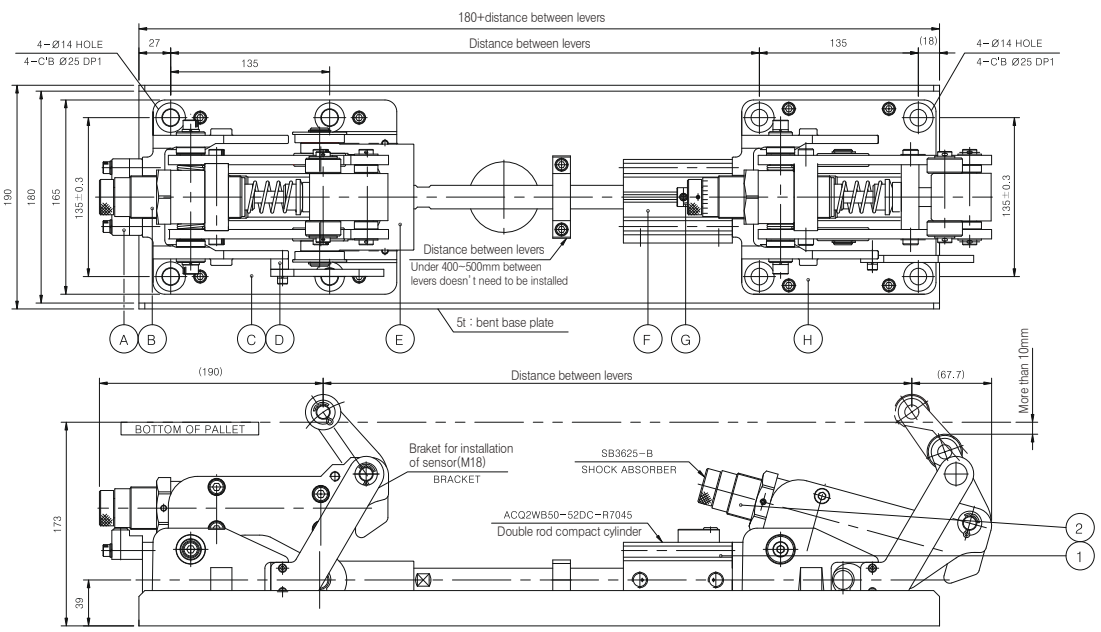
Applications / Double Lever Type

Bore Size(mm) : Ø32, Ø50

▣ Working application of horizontal stopper cylinder with double lever 1

Structure

Ø50 Bore



- The size and options are the same as basic type(single lever type).
- The distance between levers 400~599mm is available for this base attached type.
  ※ The distance between levers is from the ready(stop) position of front lever to the ready(stop) postion of back lever)
- The horizontal stopper cylinder with double lever is an order made item, so please contact us for the lead time or any questions.
- Order number : AST50-500(distance between levers)LMP-R7045-3(silver nitrate tinted, sensor bracket included)
  ※ Please ask us for the change of metal finishing or M45 shock absober or limit switch etc.

Series ASTH

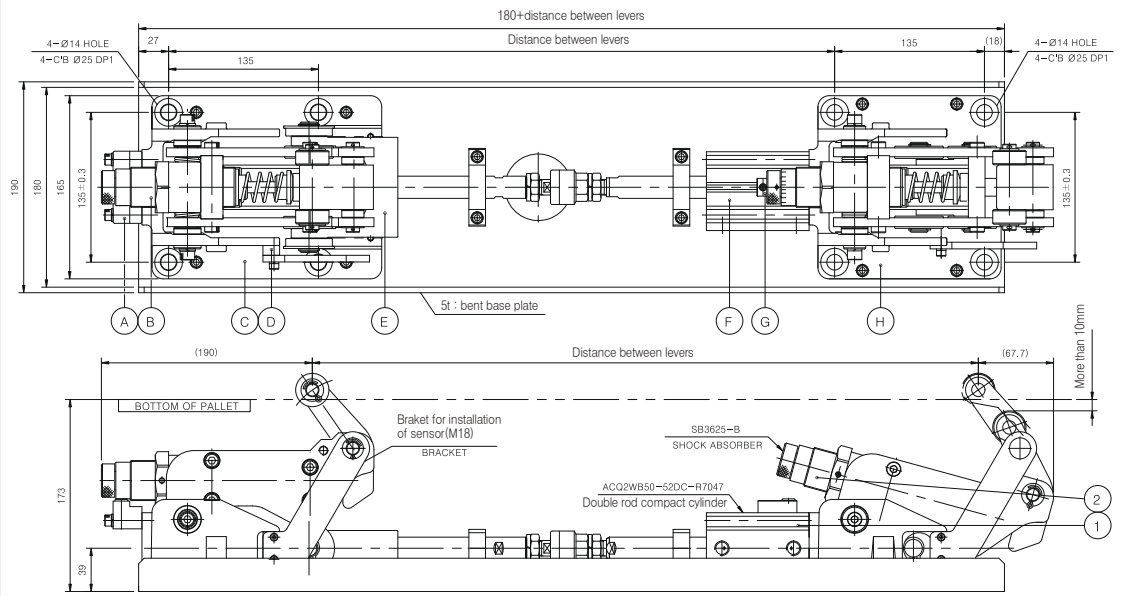
Applications / Double Lever Type

Bore Size(mm) : Ø32, Ø50

▣ Working application of horizontal stopper cylinder with double lever 2

Structure

Ø50 Bore with Connecting Shaft Type



- The size and options are the same as basic type(single lever type)
- The distance between lever 600~2,000mm is available for this connecting shaft type.
  ※The distance between levers(P) is from the ready(stop) position of front lever to the ready(stop) postion of back lever.
- The horizontal stopper cylinder with double lever is an order made item, so please contact us for the lead time or any questions.
- Order number : AST50-1000(distance between levers)LMP-R7047-5(silver nitrate tinted, sensor bracket included)
  ※ Please ask us for the change of metal finishing or M45 shock absober or limit switch etc.