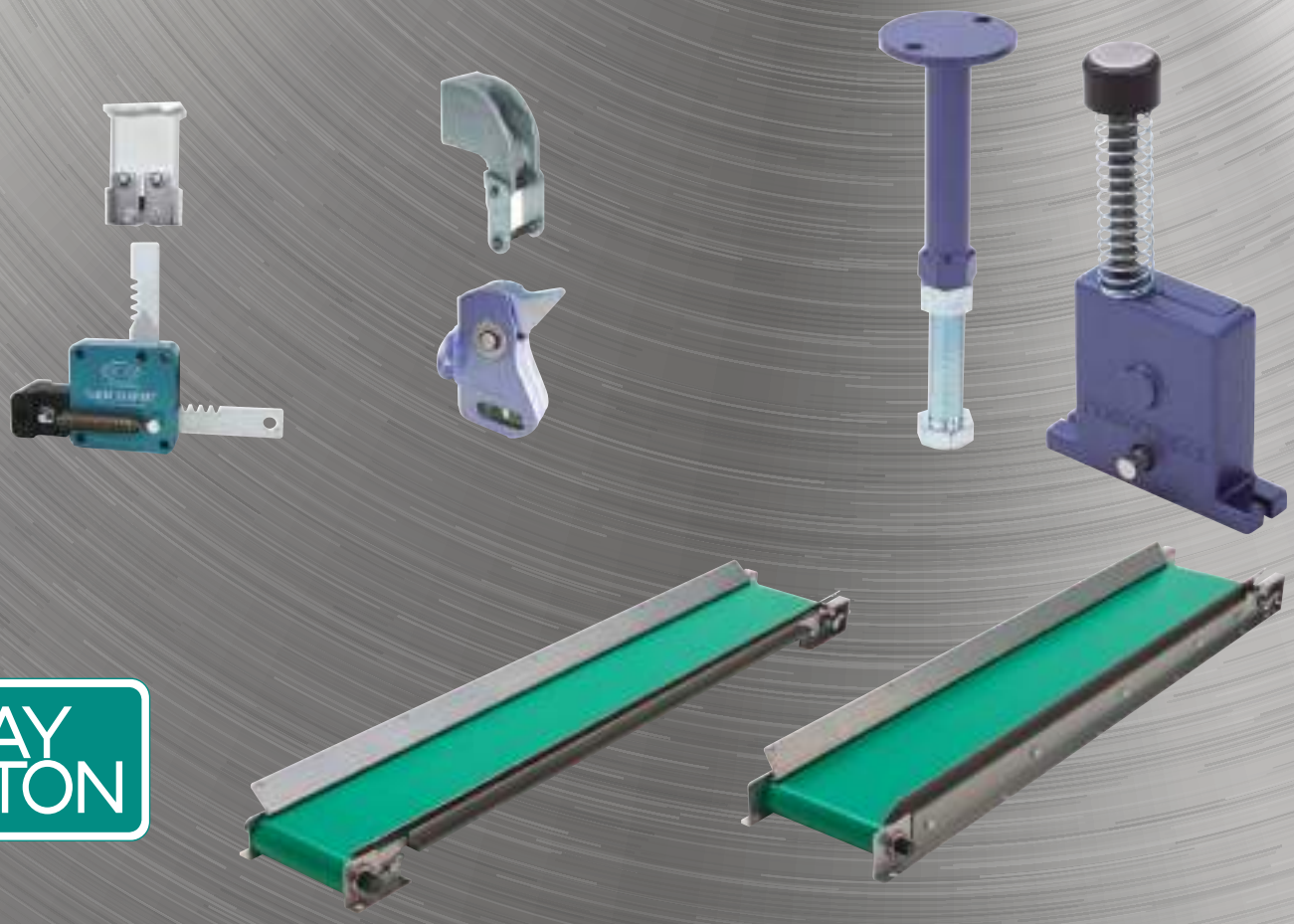
PRESS DIE COMPONENTS BY DAYTON PROGRESS

MiSUMi

PICSY

FOR DISCHARGING SCRAP AND MANUFACTURED PARTS



DAYTON®

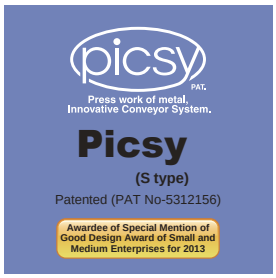
a MISUMI Group Company

■ About Picsy

Picsy is a novelty on the European market. The abbreviation stands for P(ress work of metal) I(nnovation) C(onveyor) SY(stem). It is used where either scrap or manufactured parts need to be removed.

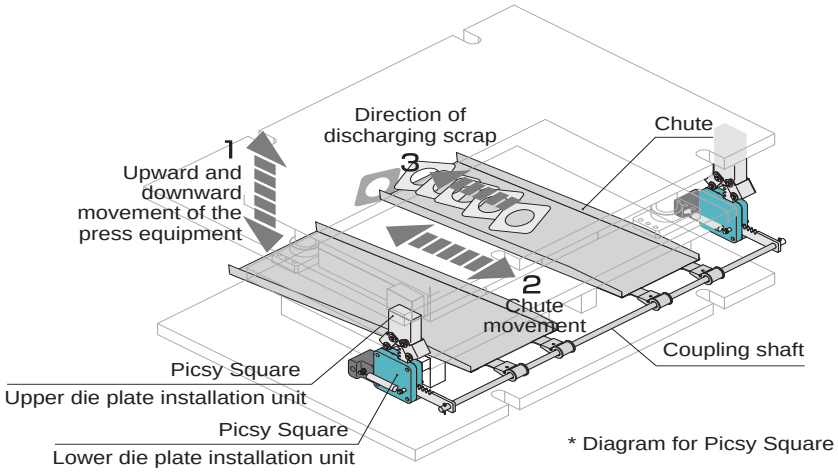
(For medium and large-sized scrap)

(For small-sized scrap)

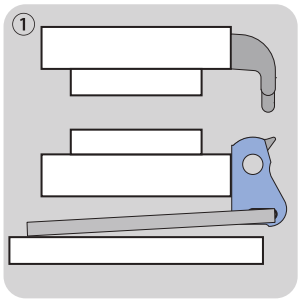


■ Basic structure and discharge mechanism of 'Picsy' series

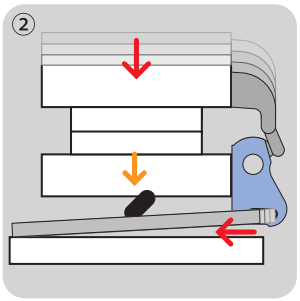
Picsy discharges scrap/manufactured parts with a chute and a unit that converts the up-down movement of press to horizontal movement. It moves scrap/manufactured parts by using self-inertial motion in one direction on the chute. Discharge is possible even if the die has insufficient gradient.



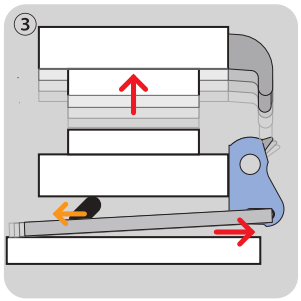
* Diagram for Picsy Square



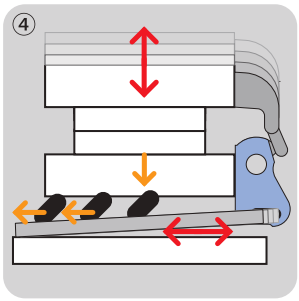
Install the Picsy unit on the upper and Lower die plates.



Change/transmit the upward and downward movement of the die to horizontal operation of the chute.



As the chute operates effectively, the scrap moves in one direction.



The chute moves synchronously with the press speed to discharge the scrap.

■Scrap discharge problem

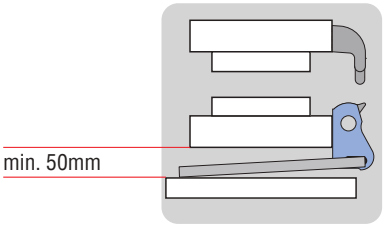
One of the permanent problems a press factory faces is how to transport scrap/manufactured parts. Sometimes conveyors and air blow is used for this procedure although these installations cause several problems (see next page). Picsy is a revolutionary product which solves these problems.

■ Comparison: Air blow vs. Picsy

Problem	Air blow	Picsy
Discharge situation	Scrap scatters in all directions	Scrap does not scatter
Effect on quality	Dents due to scrap blowup	Significant reduction in dents
Operation environment	Loud Oil scatters in the air	Silent No scattering of oil
Time for setup	Piping and chute setup takes significant time	Instant setup
Large-sized scrap	Discharge is not possible	Discharge is possible
Running cost	Additional cost for energy	No additional costs

■ Criteria for usage

- SPM must be equal or less than 80 strokes
- Discharged parts must be flatter than the scrap chamber
- Not usable with a high amount of oil as parts could stick on the chute
- The scrap chamber should be minimum 50mm high
- The weight of one unit including chute and scrap/manufactured parts should not be higher than 6 kg



Version				
Pictures of units used		 Photograph of L type		 Photograph of horizontal installation type
Stroke		70 mm	40 mm	23 mm
Seize of discharged parts		150 mm or more 	less than 150 mm 	less than 50 mm 
Version	L Type	◄———	———	———►
	M Type		◄———	———►
	S Type			◄———

Chute gradient of 5° and above is recommended. Discharge status differs depending on various conditions such as scrap and oil adhesion. Confirm smooth discharge and then only use this equipment. Do not use it if a fault is detected.

ST = 40

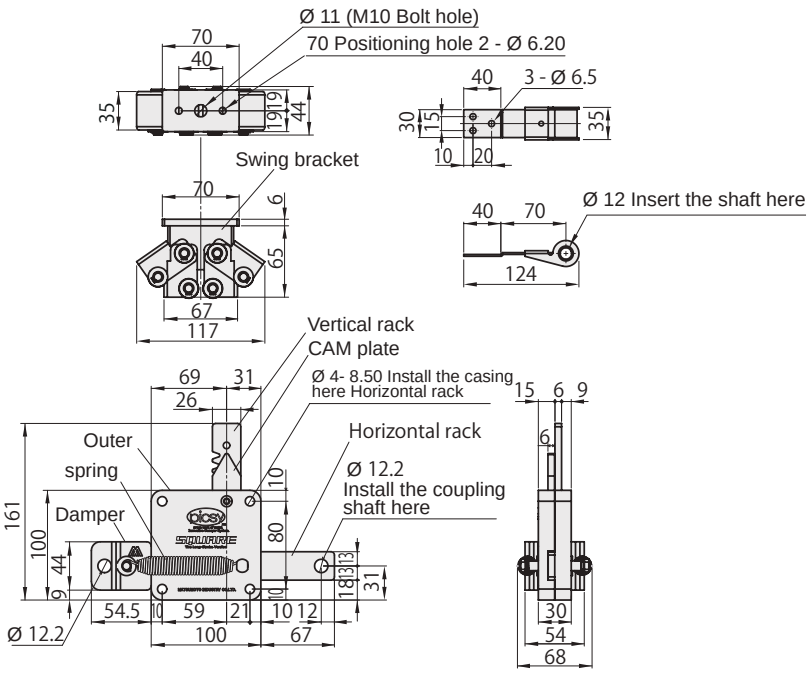
RoHS

②

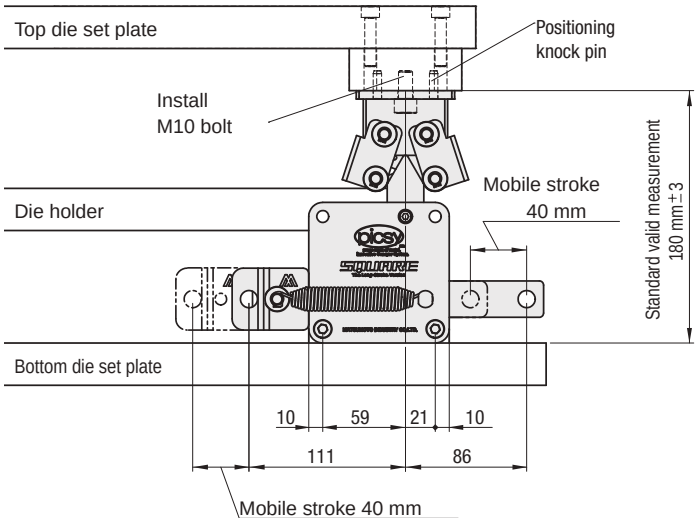
①

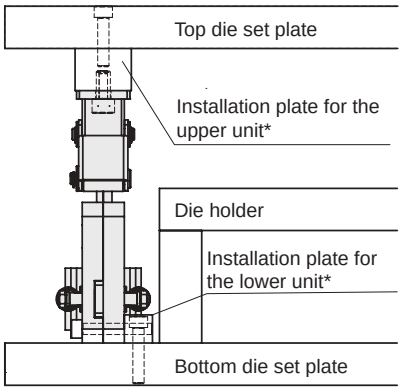
③

PCSQ-M40



■ Standard installation diagram





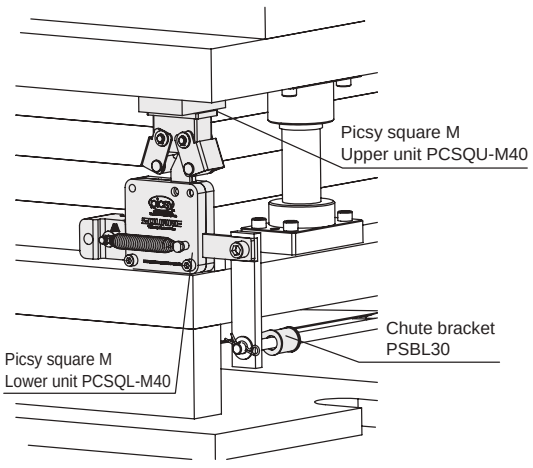
- Always install a plate underneath the lower unit
- * To be arranged by the customer
- The weight of one unit including chute and scrap/manufactured parts should not be higher than 6 kg.

Parts name	Version	Accessories
Picsy square M Set of upper and lower units (①②, and③)	PCSQ-M40	One hex bolt (M10 - 15) Two knock pins (Ø 6 - 20) Two plain washers (for M8) Two spring washers (for M8) Two hex bolts (M8 - 50)
Picsy square M Upper unit (②)	PCSQU-M40	One hex bolt (M10 - 15) Two knock pins (Ø 6 - 20)
Picsy square M Lower unit (①)	PCSQL-M40	Two plain washers (for M8) Two spring washers (for M8) Two hex bolts (M8 - 50)
Chute bracket (③)	PSBL30	—

Order amount = 1

- Two chute brackets (③) are sold when in a set, and one chute bracket is sold when sold separately.

Example



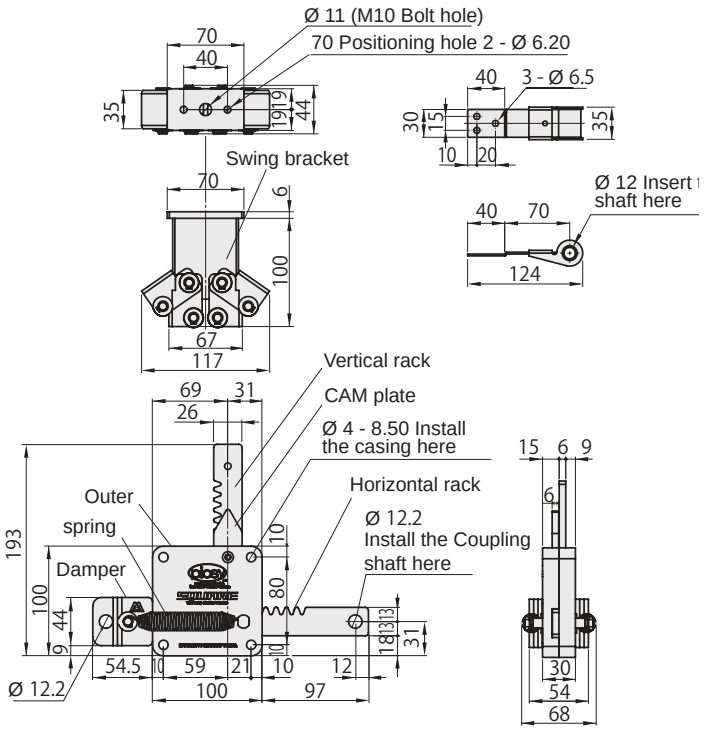
Catalog No.

PCSQ-M40

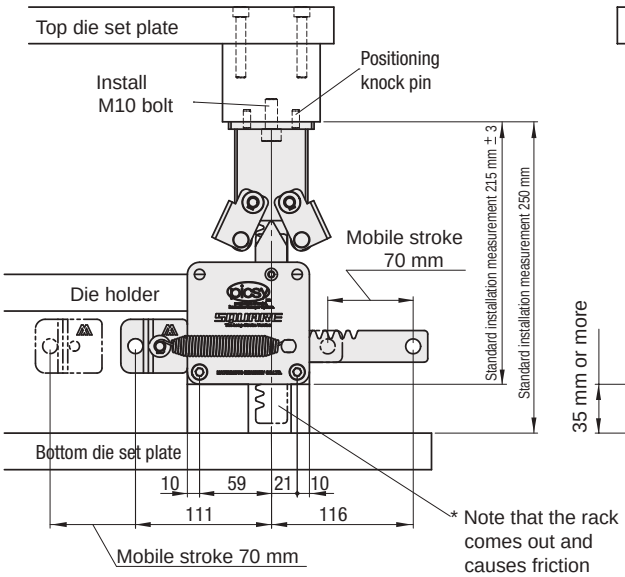
ST = 70

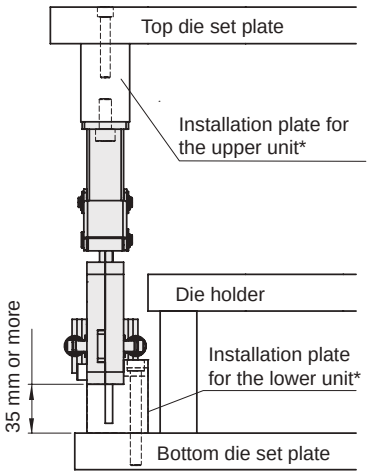
RoHS

PCSQ-L70



■ Standard installation diagram





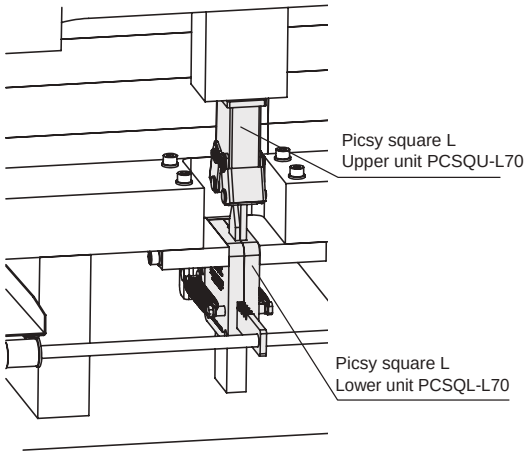
- Always install a plate underneath the lower unit
- *To be arranged by the customer
- The weight of one unit including chute and scrap/ manufactured parts should not be higher than 6 kg.

Parts name	Version	Accessories
Picsy square L Set of upper and lower units (①②, and③)	PCSQ-L70	One hex bolt (M10 - 15) Two knock pins (Ø 6 - 20) Two plain washers (for M8) Two spring washers (for M8) Two hex bolts (M8 - 50)
Picsy square L Upper unit (②)	PCSQU-L70	One hex bolt (M10 - 15) Two knock pins (Ø 6 - 20)
Picsy squareL Lower unit (①)	PCSQL-L70	Two plain washers (for M8) Two spring washers (for M8) Two hex bolts (M8 - 50)
Chute bracket (③)	PSBL30	—

Order amount = 1

Two chute brackets (③) are sold when in a set, and one chute bracket is sold when sold separately.

Example



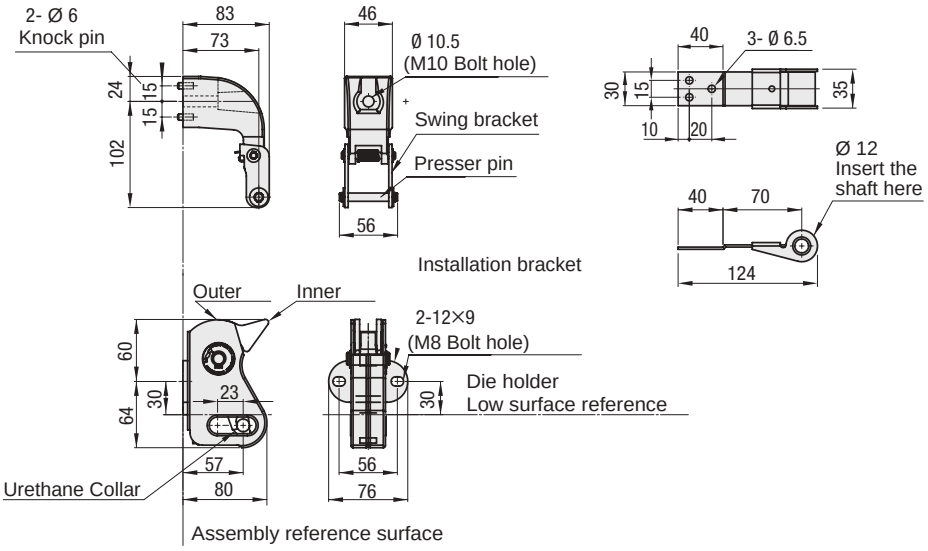
Catalog No.

PCSQ-L70

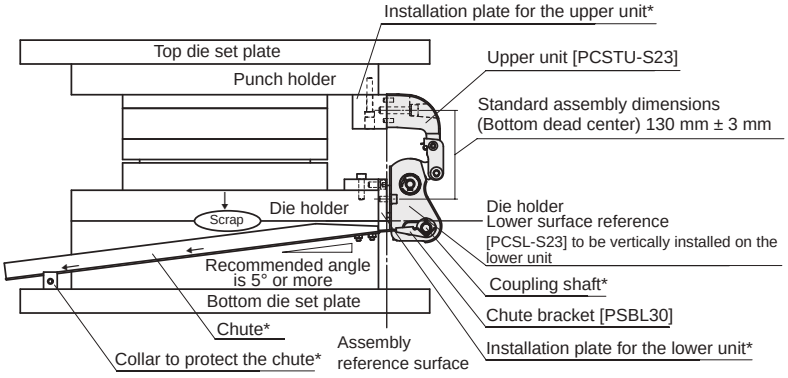
Vertical installation type
(ST = 23)

RoHS

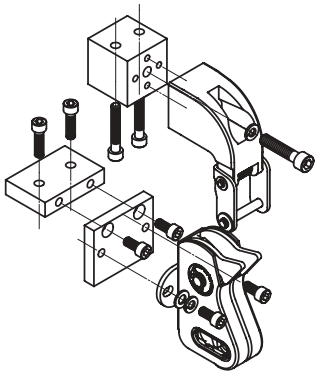
PCS-S23



■ Standard installation diagram



Installation structure

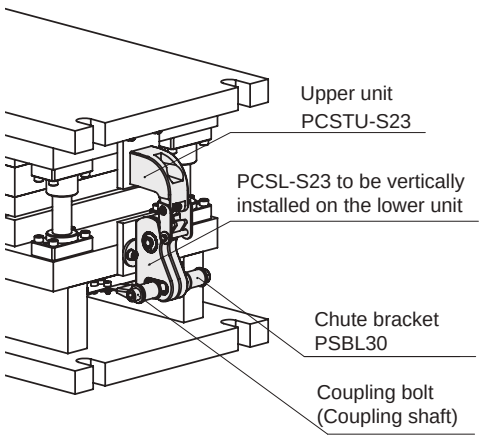


* To be arranged by the customer
A rod can be used to support the chute; however, it is recommended that you use a rotating part such as collar to reduce the friction
The weight of one unit including chute and scrap/manufactured parts should not be higher than 6 kg.

Parts name	Version	Accessories
Vertical installation type Set of upper and lower units (①,②, and ③)	PCS-S23	One spring washer (for M10) One hex bolt (M10-50) Two plain washers (for M8) Two spring washers (for M8) Two hex bolts (M8-18)
Vertical installation type Upper unit (②)	PCSTU-S23	One spring washer (for M10) One hex bolt (M10-50)
Vertical installation type Lower unit (①)	PCSL-S23	Two plain washers (for M8) Two spring washers (for M8) Two hex bolts (M8-18)
Chute bracket (③)	PSBL30	—

Order amount = 1
Two chute brackets (③) are sold when in a set, and one chute bracket is sold when sold separately.

Example



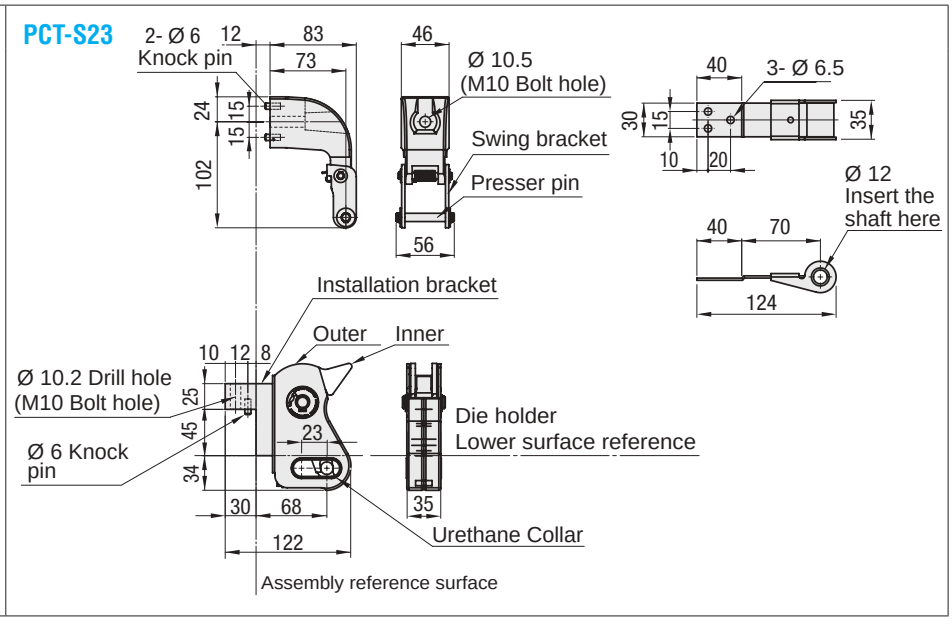
Catalog No.

PCS - S23

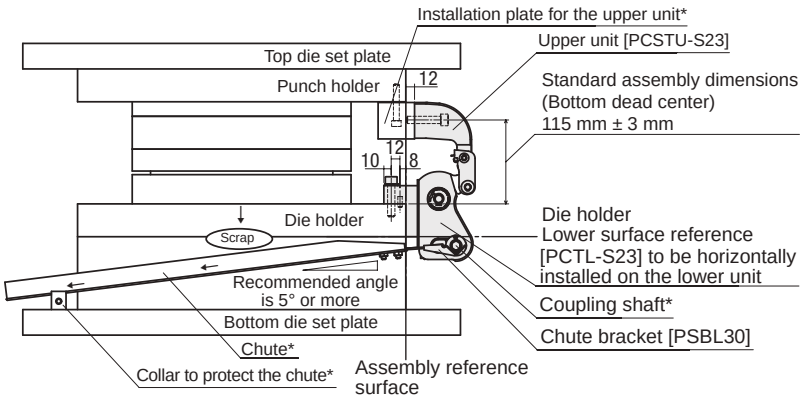
Horizontal installation type
(ST = 23)

RoHS

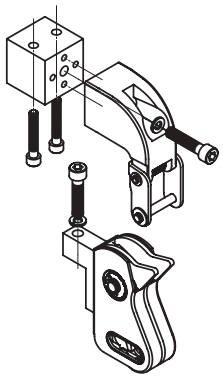
PCT-S23



■ Standard installation diagram



Installation structure



* To be arranged by the customer
A rod can be used to support the chute; however, it is recommended that you use a rotating part such as collar to reduce the friction

The weight of one unit including chute and scrap/manufactured parts should not be higher than 6 kg.

Parts name	Version	Accessories
Horizontal inallation type Set of upper and lower units (①, ②, and ③)	PCT-S23	One spring washer (for M10) One hex bolt (M10 - 50) One spring washer (for M10) One hex bolt (M10 - 45)
Horizontal installation type Upper unit (②)	PCSTU-S23	One spring washer (for M10) One hex bolt (M10 - 50)
Horizontal installation type Lower unit (①)	PCTL-S23	One spring washer (for M10) One hex bolt (M10 - 45)
Chute bracket (③)	PSBL30	—

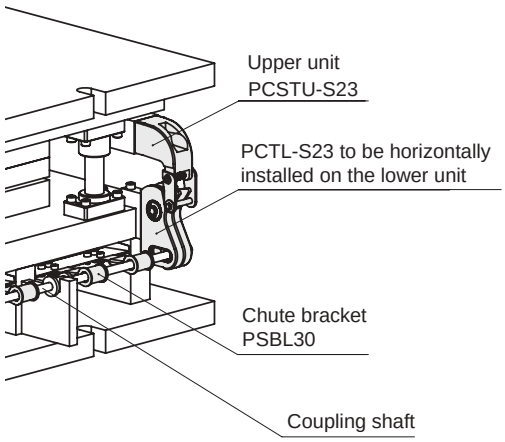
Order amount = 1

Two chute brackets (③) are sold when in a set, and one chute bracket is sold when sold separately.

Catalog No.

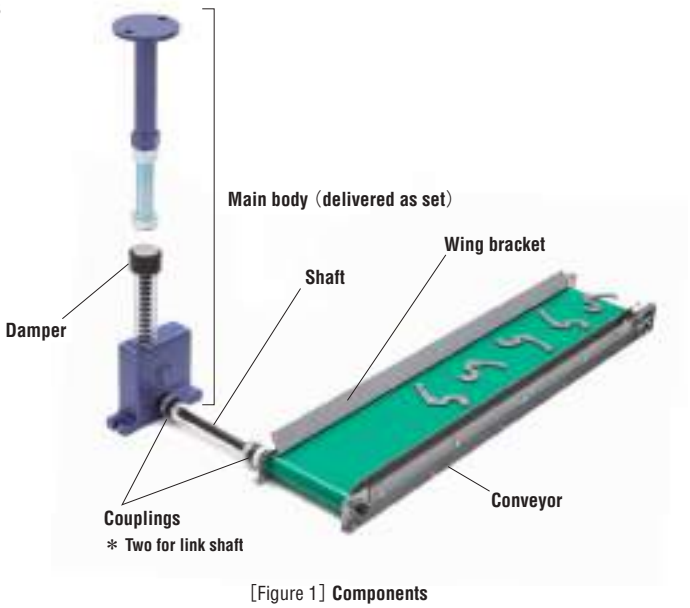
PCT - S23

Example



■ Product Guide

- This product uses the vertical motion of the press machine to operate the belt conveyor.
- It can be used for conveyance of press products, such as ejecting scrap outside the die.

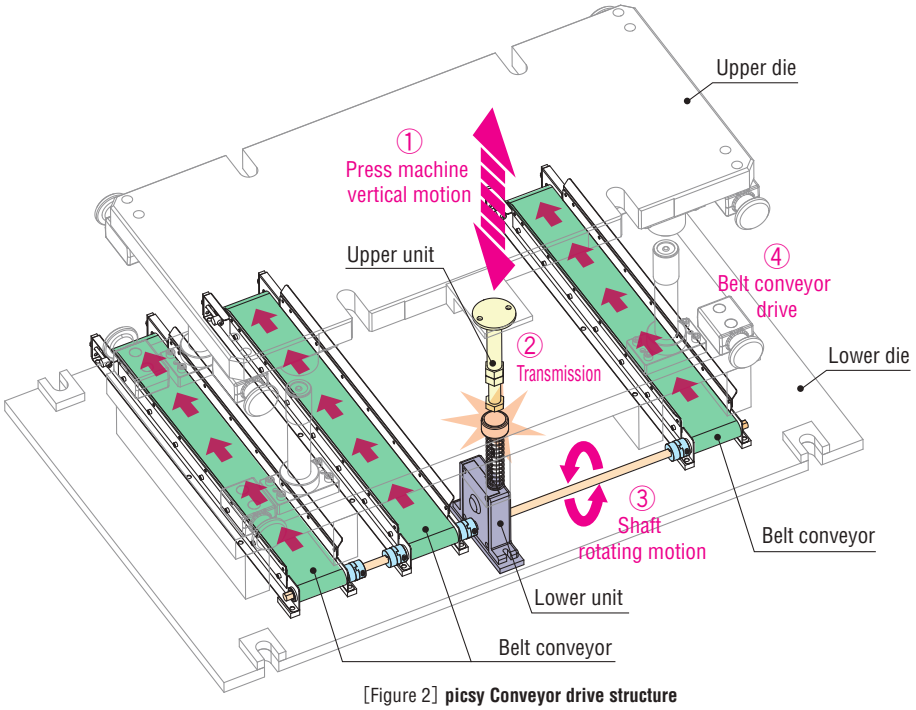


[Figure 1] **Components**

■ Drive Structure

- The vertical motion of the press machine is transmitted to the lower unit via the upper unit mounted to the die (upper die).
- The lower unit converts vertical motion to rotating motion, driving the belt conveyor linked to the shaft.

① **Press machine vertical motion** → ② **Transmitted to lower unit** → ③ **Converted to shaft rotating motion** → ④ **Belt conveyor operated**



[Figure 2] **picsy Conveyor drive structure**

■ Functions/Benefits of Installation

No power supply required	• Uses the vertical motion of the press machine to drive the belt conveyor, helping to reduce power costs. • Helps to prevent careless mistakes, such as forgetting to turn the compressor or motorized conveyor on or off. • No issues with voltage differences or the like when used overseas.
Reduces belt breakage Eliminates product dents/ scratches and die damage	• The conveyor is stopped when the press reaches the bottom dead center, greatly reducing damage to the belt. • Products are transported by conveyor, preventing scrap from scattering, entering the press surface, or denting/scratching products. • With scrap chutes, the gradient cannot be ensured and dies could be damaged by scrap clogging. However, the use of a conveyor solves these problems.
Reduces setup work	• Spare yourself the trouble of the compressor/air piping and wiring required for air blowers. Can be used just by installing the main body and conveyor in the die/press machine. • A flexible shaft is used in the linkage area (**PRODUCT DATA** ③ [Fig. 5]) for more flexible conveyor positioning. Linking is possible even if there is a difference in level in the positions of the main body and conveyor. • Multiple conveyors can be linked to a single main body.
Prevents scrap pull-in	• Wing brackets (**PRODUCT DATA** ① [Fig. 1]) are equipped as standard on both sides of the conveyor to prevent scrap from being pulled into the belt. This can also reduce malfunctions such as belt snapping.
Slim design	• Conveyor area has a slim design (minimum thickness 12 mm). (thin type)
Improves work environments	• Prevents oil adhered to scrap from splattering in the work environment, keeping floors and air clean. Overturning prevention helps to keep workers safe. • Eliminating the loud noise of air blowing is also an effective environmental measure for workplaces. • Reduced CO_2 emissions also contribute to promoting ISO environmental measures.

■ Main Body

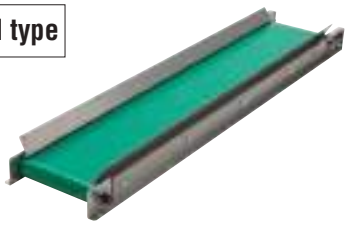
• The upper unit and lower unit form a set.

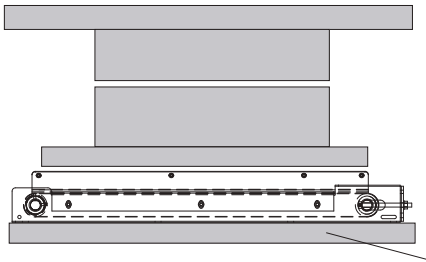
Maximum stroke length: 70 mm
＊ Always use at 70 mm or lower.

■ Conveyors

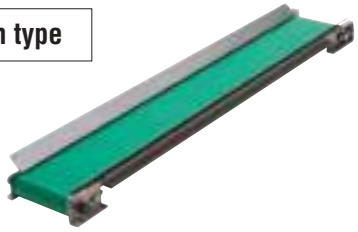
• Two types are available: standard type (45 mm thick) and thin type (12 mm thick).

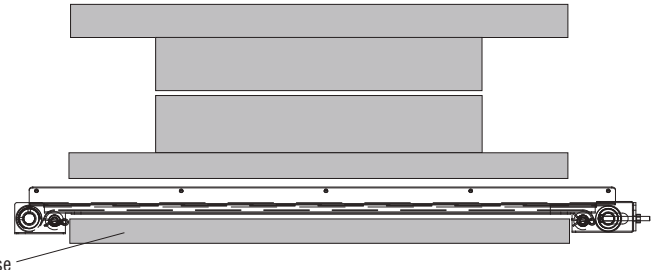
Standard type





Thin type





Base

■ Belts

• Three types are available: urethane (standard), urethane (rippled), and Kevlar (glass fiber).

Photo	Material	Features				Main uses
		Oil resistance	Slip resistance	Cut resistance	Wear resistance	
	H Urethane (standard)	◎	△	○	○	Product conveyance in press machine areas Steel sheets, automotive parts, scrap, etc.
	T Urethane (rippled)	◎	◎	○	○	Conveyance of thin sheets, light objects, etc. Conveyance on reverse gradient is also possible
	K Kevlar (glass fiber)	◎	○	◎	◎	Conveyance of high-tensile materials and heavy scrap

■ Shafts/Couplings

• Use either a link shaft or flexible shaft for linking.
• The flexible shaft includes integrated couplings. If using a link shaft, two separate couplings are required.

Link shaft
(MISUMI standard part)
SFMR

Flexible shaft
(for picsy Conveyor only)
FLSFT

Coupling
(MISUMI standard part)
XGS-34CS-15-15

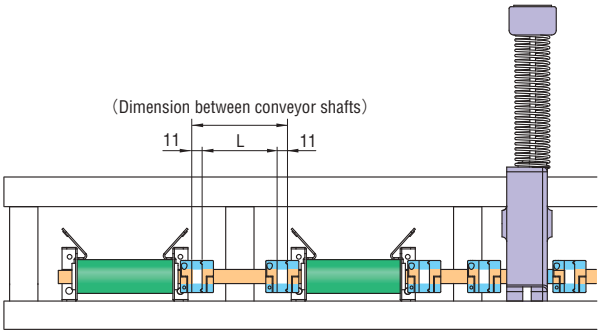
■ How to Select Parts

- When installing the picsy Conveyor, determine the positioning of the main body/conveyor and the shaft type (link or flexible).
- Next, follow the procedure to determine the dimensions and quantity (couplings) for each part (conveyor and shaft).

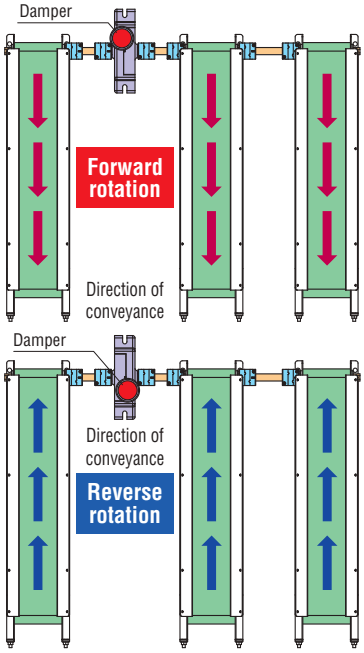
1) If the main body (lower unit) and conveyor can be positioned on the same axis

- Use a link shaft. During use, prepare two couplings for each link shaft. [Fig. 3]
- The product supports both forward and reverse rotation, so confirm the damper position of the lower unit when linked.
- Multiple units can be linked. As a guideline, use three units per main body unit. [Fig. 4]

Link shafts and couplings are not included. Order separately.



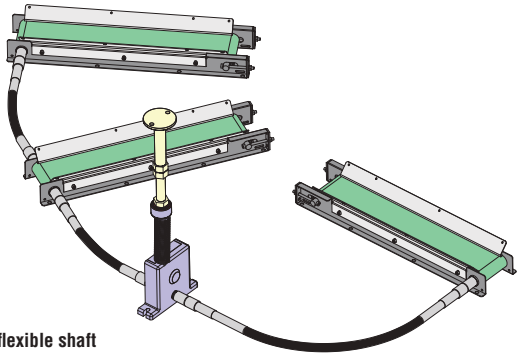
[Fig. 3] **Linked with link shaft**



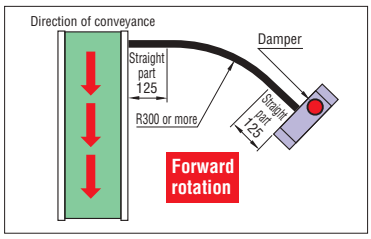
[Fig. 4] **Multiple units linked**

2) If the main body (lower unit) and conveyor cannot be positioned on the same axis

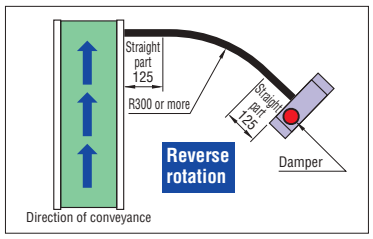
- Use a flexible shaft.
- This includes integrated couplings, so separate couplings are not required. [Fig. 5]
- Note the following if using a flexible shaft.
  - The areas within 125 mm of the left and right ends cannot be bent.
  - Specify a length at which R300 or greater can be maintained when linking.



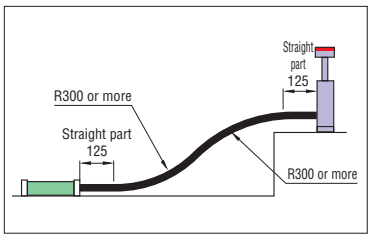
[Fig. 5] **Linked with flexible shaft**



Example ①: Forward rotation and level mounting



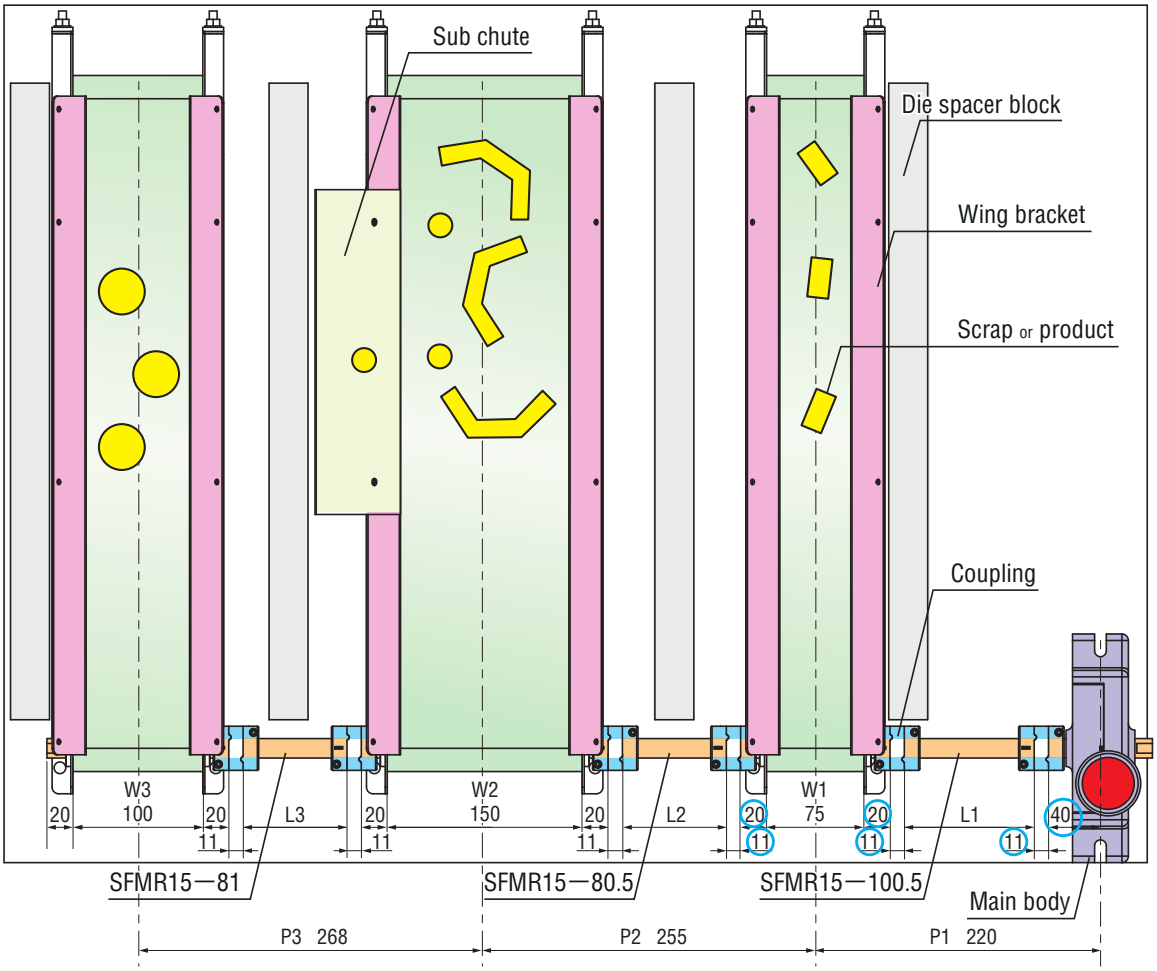
Example ②: Reverse rotation and level mounting



Example ③: Height difference at mounting position

■ When Installed to Steel Die

• Refer to the plane figure below, and follow the procedure to determine the dimensions and quantity (couplings) for each part (conveyor and shaft).

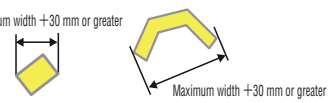


① Determine the conveyor width (W)

Determine the conveyor width based on the size of the transported parts and the drop position.

• We recommend selecting a generous width.
(At the very least, ensure a width 30 mm larger than the maximum width of the products and scrap.)

Example:
Maximum width +30 mm or greater



② Determine the conveyor pitch (P)

Determine the main body and conveyor positions, and then measure as shown below.

P1: Pitch between main body and nearest conveyor
P2. P3: Pitch between conveyors

③ Determine the shaft length (L)

Calculate using the following equations.

For the sample figure:

L1=P1−W1/2+82*
220−(75/2)+82=100.5 mm
[Shaft model: SFMR15−100.5]

L2=P2−(W1+W2)/2−62*
255−(75+150)/2−62=80.5 mm
[Shaft model: SFMR15−80.5]

L3=P3−(W2+W3)/2−62*
268−(150+100)/2−62=81 mm
[Shaft model: SFMR15−81]

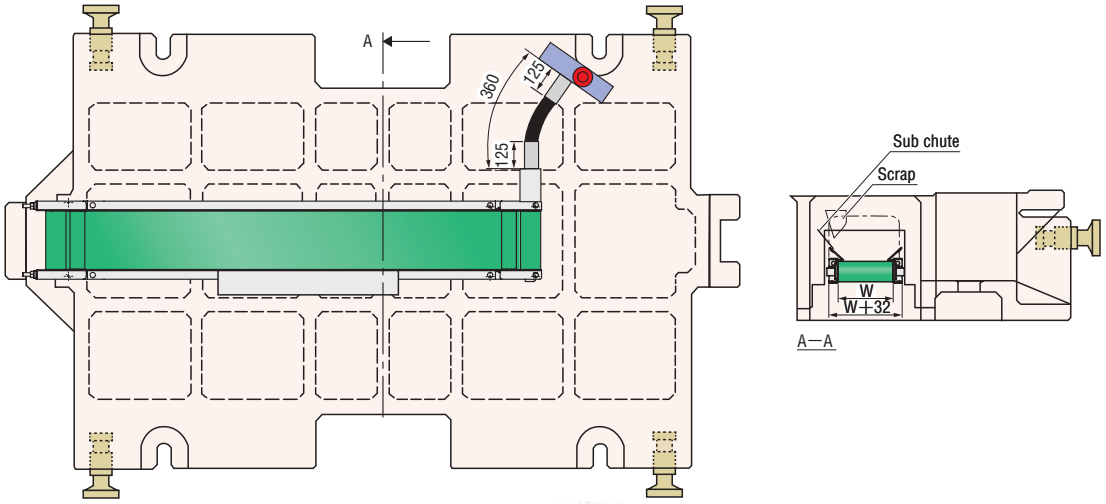
④ Coupling quantity

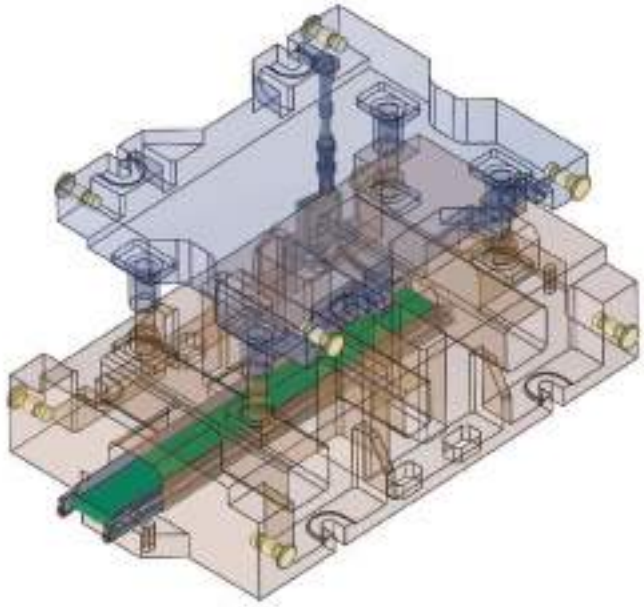
Conveyor quantity×2
For the sample figure:
3×2=6

* The 82 and 62 values in the equations are rough totals of each measurement encircled with ○ in the figure.
82 (between main body and conveyor)
62 (between conveyors)

■ When Installed to Casting Die

• Refer to the plane figure below, and follow the procedure to determine the dimensions for each part (conveyor and flexible shaft).



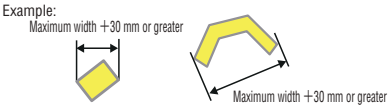


① Determine the conveyor width (W)

Determine the conveyor width based on the size of the transported parts and the drop position.

• We recommend selecting a generous width.
(At the very least, ensure a width 30 mm larger than the maximum width of the products and scrap.)

Example:



The maximum width of the conveyor main body will be W+32 mm. Check for interference with the mounting space.

② Determine the main body mounting position

Determine the mounting position after confirming interference with the rib.

③ Determine the flexible shaft length (L)

The areas within 125 mm of the ends of the conveyor flexible shaft cannot be bent. Keep this in mind, and specify a length at which R300 or greater can be maintained.

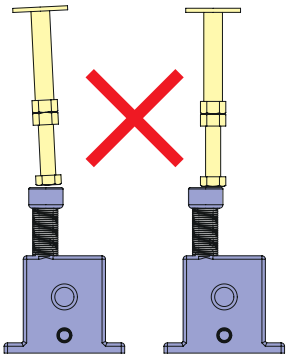
For the sample figure: FLSFT—360

■ Main Body Mounting Precautions

1) Check for inclination/centering deviation

- Install the upper unit so that there is no inclination.
  Install the upper and lower units so that there is no centering deviation.
  [Fig. 6]

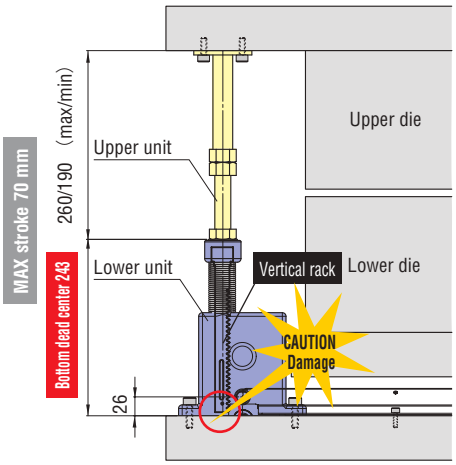
- Never allow upper unit inclination
- Never allow upper/lower unit centering deviation



[Fig. 6] **Inclination and deviation confirmation**

2) Confirm the stroke length

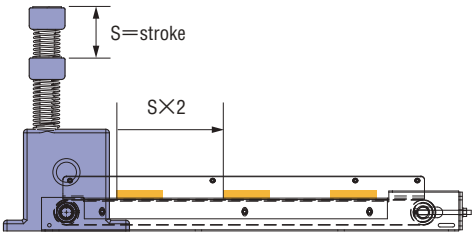
- The maximum stroke is 70 mm.
- If exceeding 70 mm, the vertical rack (lower unit) will be damaged.
  [Fig. 7]
- Make sure that the bottom dead center is not below the total length of the main body unit, 243 mm.



[Fig. 7] **Maximum stroke**

3) Conveyor travel amount guideline

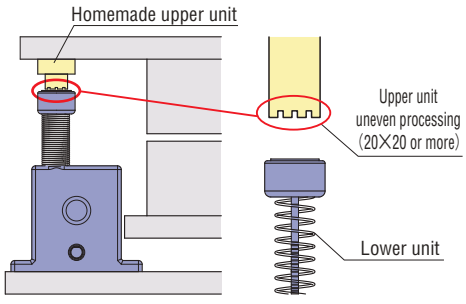
- The conveyor travel amount should be the main body stroke amount (S) × 2. [Fig. 8]
- The travel amount may vary due to factors such as slipping caused by oil, depending on the workpiece (scrap or product).



[Fig. 8] **Travel amount guideline**

4) Adjust/confirm the stroke

- If the die height is not compatible with the provided upper unit, you will need to prepare a component.
- We recommend using a component that will result in a contact area of 20 mm × 20 mm or more.
- Be sure to provide uneven processing in the contact area.
  Oil could cause the damper (oil resistant rubber: Component ④ (**picsy Conveyor Related Components**)) to cling and lift the attached rack, causing it to detach. [Fig. 9]



[Fig. 9] **Upper unit (customer part) contact area alteration**

■ Conveyor Usage Precautions

1) Confirm total payload

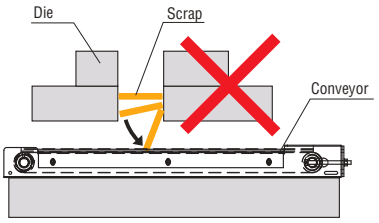
- Make sure that the total weight of the objects transported on the conveyor does not exceed the permissible range.
- The total permissible weight is the weight for all units when linked (i.e. the total weight of three units if three units are linked). Note that it is not the value for a single unit. [Table at right]
- As a guideline, use three units per single main body unit when linking conveyors.

Press speed (SPM)	Total permissible weight (kg)	
	Link shaft	Flexible shaft
50	30	15
60	25	10
70	20	8
80	15	5
100	8	3

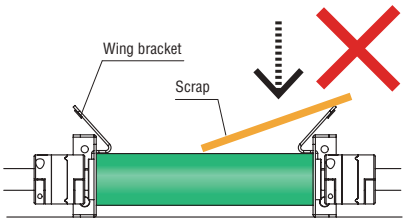
[Table] **Guidelines for press speed and payload**

2) Confirm the condition of the scrap and product when dropped

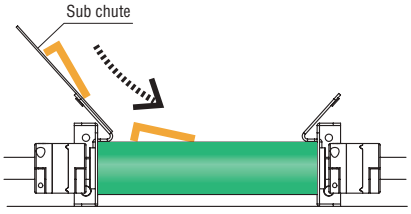
- Do not use if the following situations could occur when driving the conveyor. Otherwise, malfunction or damage could result. [Fig. 10]
  - Dropping impact could deform the metal plate part of the conveyor
  - Scrap/products could turn vertically when dropping
- Do not allow scrap or products to ride up on the wing brackets. [Fig. 11]
- If the scrap or part drop position must be in a location not above the conveyor, install a sub chute to the wing bracket. Prepare the sub chute on your end. [Fig. 12]



[Figure 10] **Scrap and product drop condition**

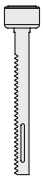


[Figure 11] **Scrap and product drop condition**



[Fig. 12] **Drop position outside conveyor**

3) Prevent foreign substances from adhering to the rack



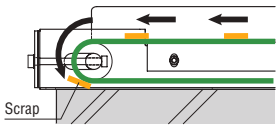
- Make sure that foreign substances do not adhere to the rack.
- Operating with such substances adhered could cause rack galling and main body malfunction.

4) Apply grease/oil

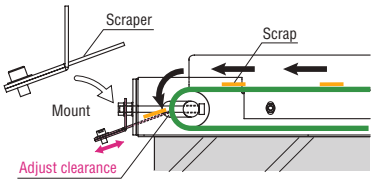
- Periodically apply gear grease to the rack section of the main body.
- Use oil without extreme-pressure additives.

5) Check and prevent scrap from being pulled in

- Oil due to pressing could cause small pieces of scrap to adhere to the belt. This scrap could be pulled into the machine from beneath the conveyor. [Fig. 13]
- Installing a scraper near the curved area at the end of the conveyor can prevent scrap from being pulled in.
- Appropriately adjust the clearance between the scraper and conveyor belt. [Fig. 14]



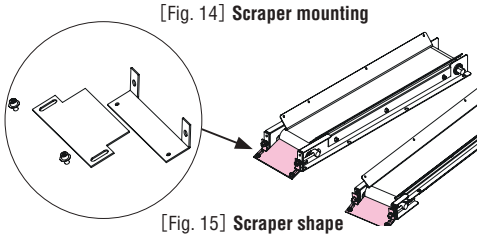
[Fig. 13] **Scrap pull-in**



[Fig. 14] **Scraper mounting**

(Reference) Scraper shape

Refer to the drawing at the following site for the mounting position. [Fig. 15]
Site currently being prepared. June launch scheduled.
Prepare the scraper on your end. It cannot be ordered as a standard part.



[Fig. 15] **Scraper shape**

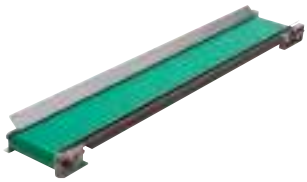
■ Installation Example ①

■ **Press machine: Single-shot press (150 t)**
■ **Press speed: SPM10**
＊ Previously used scrap box (manual disposal)

Recommended parts

Main body: 1
PCCV—S

Conveyor: 1
PSCNT—H (thin type)



Shaft: 1
FLSFT (flexible shaft)

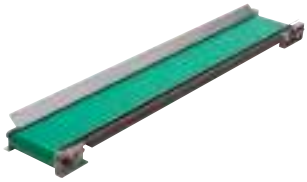
■ Installation Example ②

■ **Press machine: Progressive press (300 t)**
■ **Press speed: SPM50**
＊ Previously used scrap chute and air cylinder

Recommended parts

Main body: 1
PCCV—S

Conveyor: 1
PSCNT—H (thin type)



Shaft: 1
SFMR (link shaft)

Couplings: 2
XGS-34CS-15-15

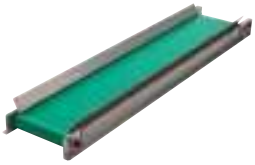
■ Installation Example ③

■ **Press machine: Servo press (110 t) automated line**
■ **Press speed: SPM42**
＊ Previously used air blow

Recommended parts

Main body: 1
PCCV—S

Conveyor: 1
PSCN—H (standard type)



Shaft: 1
SFMR (link shaft)

Couplings: 2
XGS-34CS-15-15

■ Company S（Automotive Parts Press Manufacturer）

- Company S began its efforts to dramatically reduce expenses as a result of the global financial crisis in September 2008. They discovered that the power consumed by their scrap ejection air blow accounted for a large portion of expenses in their press plant.
- They attempted to revise the compressor specification and the nozzle diameter of the air blow in an attempt to improve the situation, but the benefits did not repay the expended time and effort.
- The picsy Conveyor requires no power source, so installing this product allowed them to eliminate the power that the air blow had consumed, reducing expenses by roughly JPY 2.2 million per year. They are also contributing to the environment, as reducing power consumption is directly connected with reducing CO_2 emissions. They are now looking into further implementation.

■ Before/After Comparison（press machines: two 300 t transfer presses, SPM20）

Before

■ Ejection method: Scrap chute and eight air blow locations
■ Issues: Air left on（wasted）, noise, oil splattering

After

■ Ejection Method: picsy Conveyor（one main body, three linked conveyors）
■ Resolved Issues: Air blow eliminated, no noise, no oil splattering

[Assumptions] Operated eight hours/day,
150,000 pieces produced in 25 days

■ Air Usage

ϕ4（1.056 L/sec.）8 units × 60 sec. × 8 hours × 25 days
= 101,376 m^3/month

■ Power Usage

101,376 m^3/10 m^3/kWh（*）= 10,138 kWh/month

＊ 10 m^3/kWh figure taken from compressor manufacturer catalog

■ Effects of Decreasing Power Bill

10,138 kWh × JPY 18.05/kWh（*）× 12 months
= JPY 2,195,890/year

＊ JPY 18.05/kWh = power usage + basic rate proportional division
Varies based on power company

■ Effects of Decreasing CO_2 Emissions

10,138 kWh × 0.000387（*）× 12 months = 47 tons/year

＊ CO_2 emission coefficient: kg−CO_2/kWh
（indicator used to estimate carbon dioxide emissions,
when a power company generates a certain amount of power）

Yearly reduction
（preliminary calculation by company S）

Power bill: JPY 2,195,890
CO_2 emissions: 47 tons

QR code

A video is available for this actual equipment installation example.
Currently being prepared.
June launch scheduled.

PICSY Conveyor
- Comparison by Ejection Method -

■ Cost/Properties Comparison by Scrap Ejection Method (at MISUMI partner plant)

Comparison items \ Scrap ejection method and overview		Air blow	Motorized conveyor	Conveyor without power supply
		Requires metal plate chute and piping installation. Nozzles blow air toward the scrap drop position.	A conveyor is placed inside the die to eject scrap. The motor section protrudes, so mounting space is somewhat restricted.	Uses a dedicated conveyor and is mounted on a dedicated unit. Uses the vertical drive of the press to operate without a power supply.
Initial costs (JPY 10,000)		10 ～ 14	20 ～ 25	20
Running costs (JPY 10,000/month)	Power costs	70 ～ 80	2 ～ 3	0 (100% reduction)
	Setup costs	30 ～ 40	80 ～ 100	0
Product dents/scratches and die damage		Scrap scattering/contamination	◎	◎ (quality improved)
Work environment		Noise, oil splattering, scattering	Workers forget to turn power ON/OFF	◎ (work environment improved)
Setup work		Piping	Wiring	◎ (setup reduced)
Ejection issues		Scattering/clogging	◎	◎ (no noise/oil splattering)
Mounting space		Complicated compressor piping	△ (cannot be installed if spacer block is low)	◎ (can also be installed in die)
CO_2 emissions		17 t/year	0.07 t/year	0 (100% reduction)

[Basic Information]

- 300 t class progressive die. Scrap chutes installed in three locations.
- Operates for eight hours/day, 25 days/month.
- Hourly charge calculated as JPY 4,000.

■ Conditions in Air Blow Area

■ Air Blow Piping

- Takes time to position, set up, and adjust piping.

■ Scrap Chute Used

- The force of air causes scrap to spill out from the chute and on the bolster.

■ Scrap Box Used

- The force of air scatters scrap outside of the box and on the bolster.

■ Example of Air Blow Improvement

Although it is possible to reduce air blow power consumption through skillfully using the compressor, there is little benefit compared with the amount of effort and time required, and it accounts for a large amount of the power used.

<Comparison of improvement results> picsy Conveyor implementation ＞ air blow improvement

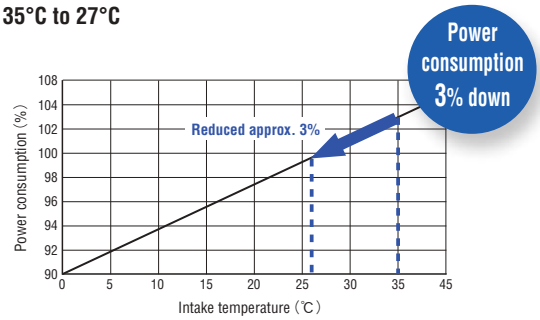
■ Preliminary Calculation Conditions

- Compressor rated capacity: 37 kW
- Daily operation time: 8 hours
- Power unit: JPY 18.05/kWh
- Operating ratio: 80%
- Annual operating days: 250

[Improvement ①] **Compressor intake temperature reduced from 35°C to 27°C**
⇒ Power consumption reduction ratio: 3%

■ Reduction Effects

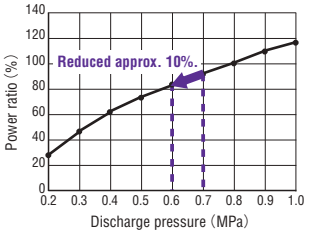
Power savings	=	37 kW × 80% × 8 hours × 250 days × 3%
	=	1,776 kWh/year
Cost savings	=	1,776 kWh/year × JPY 18.05/kWh = JPY 32,057/year
CO_2 reduction	=	1,776 kWh/year × 0.000387 t CO_2/kWh ≈ 0.7 t CO_2/year
Reduction converted into crude oil	=	1,776 kWh/year × 0.00997 GJ/kWh × 0.0258 kL/GJ
	≈	0.5 kL/year



[Improvement ②] **Compressor discharge pressure reduced from 0.7 MPa to 0.6 MPa**
⇒ Power consumption reduction ratio: 10%

■ Reduction Effects

Power savings	=	37 kW × 80% × 8 hours × 250 days × 10%
	=	5,920 kWh/year
Cost savings	=	5,920 kWh/year × JPY 18.05/kWh = JPY 106,856/year
CO_2 reduction	=	5,920 kWh/year × 0.000387 t CO_2/kWh ≈ 2.3 t CO_2/year
Reduction converted into crude oil	=	5,920 kWh/year × 0.00997 GJ/kWh × 0.0258 kL/GJ
	≈	1.5 kL/year



Power consumption 10% down

[Conditions]
Intake air temperature: 20°C
Intake air humidity: 60%
Intake pressure: −50 mmAq
Compression levels: 1
Flow rate: Constant

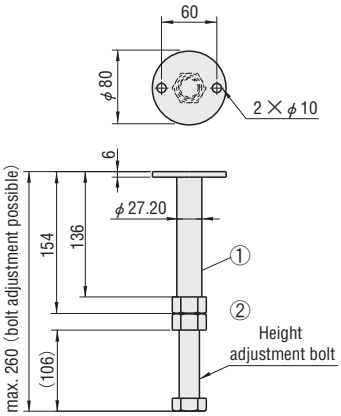
Patent pending

■ Main Body (Upper Unit + Lower Unit)

RoHS

PCCV—S

(upper unit)



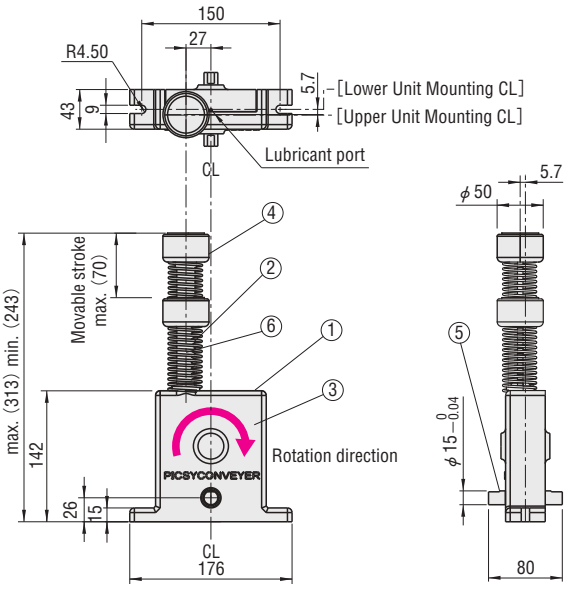
■ Components (upper unit)

No.	Name	Quantity	Remarks
①	Strut pipe	1	SS400
②	Bolt	1	M22 × 120

■ Components (lower unit)

No.	Name	Quantity	Remarks
①	Outer	1	Ductile cast iron
②	Rack	1	S45C
③	Gear	1	S45C
④	Damper	1	Oil resistant rubber (SS400 plate attached)
⑤	Link shaft	1	S45C equivalent
⑥	Spring	1	φ33.7 (inner radius) × 153

(lower unit)



Catalog No. / Type	Belt travel distance	Weight (kg)
PCCV—S	140mm or less	4.6

The upper unit is delivered as a set with the lower unit.

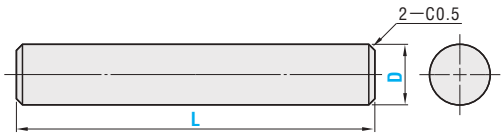
Order

Catalog No.
PCCV—S

■ Link shaft

RoHS

SFMR



M S45C equivalent

Use if the main body and conveyor can be linked on the same axis. ⇒ Mounting example **PRODUCT DATA** ③ [Fig. 3]
Use as a set with two couplings.

Catalog No. Type	Dg6		L 0.1mm increments
SFMR	15	0 —0.043	25.0～800.0

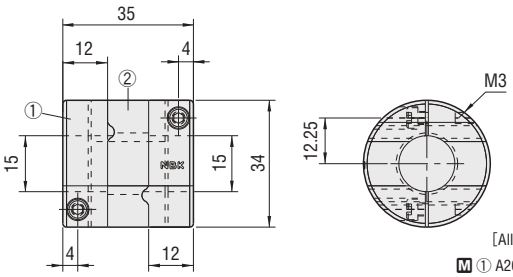
Order

Catalog No.	—	L
SFMR15	—	250

■ Coupling

RoHS

XGS—34CS—15—15



[Allowable Torque] Within 1.5 Nm

M ① A2017
② HNBR (high-damping rubber)
A Hexagon socket head cap screws (2)

Couplings are not required if using a flexible shaft.
Use as a set with the link shaft. Two are required for each link shaft.

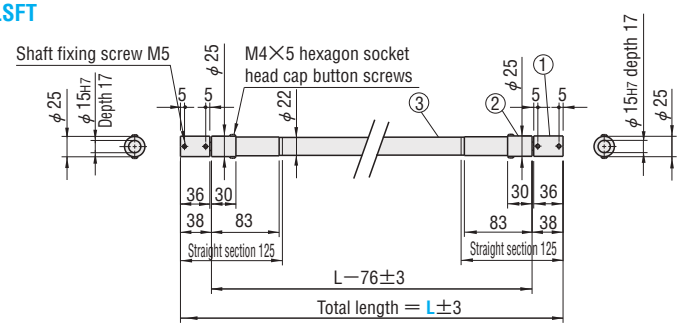
Order

Catalog No.
XGS—34CS—15—15

■ Flexible shaft with couplings

RoHS

FLSFT



This flexible shaft is for use only with the No Power Supply Conveyor.

[Allowable Torque] Within 3 Nm

Use this if linking on the same axis is impossible (for example, if there is a difference in level in the positions of the main body and conveyor).
Includes couplings. Connect directly to the link shaft on the main body and shaft section of the conveyor. ⇒ Mounting example **PRODUCT DATA** ③ [Fig. 5]
The areas within 125 mm of the ends cannot be bent. Take care when selecting the total length.
Use at R300 or greater.
Supports both forward rotation and reverse rotation. ⇒ Mounting example **PRODUCT DATA** ③ [Fig. 5]

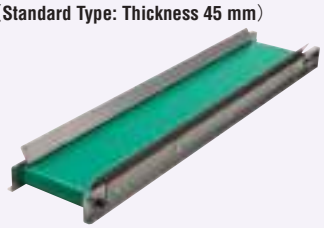
Catalog No. Type	L 10mm increments
FLSFT	300～2000

Order

Catalog No.	—	L
FLSFT	—	830

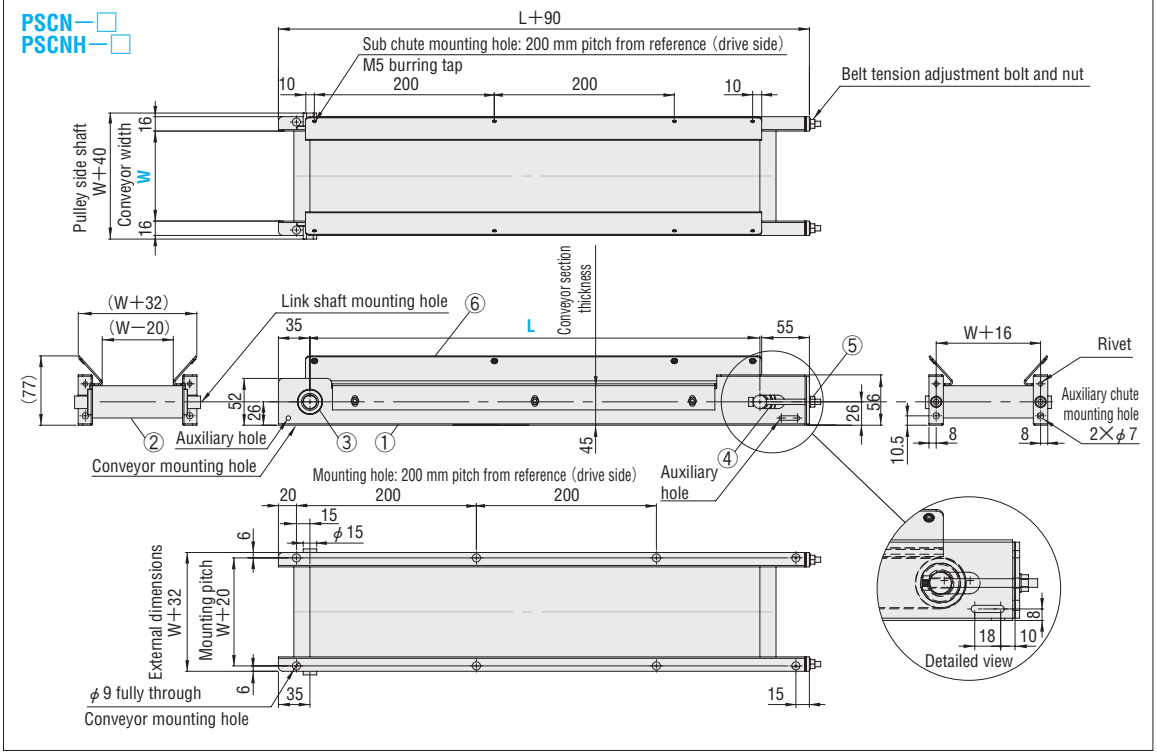
■ Conveyor (Standard Type: Thickness 45 mm)

RoHS



■ Components (conveyor)

No.	Name	Quantity	Remarks
①	Main body	1	ZAM steel sheet (plated)
②	Flat belt	1	Urethane/rippled/Kevlar (select one)
③	Pulley	1	Aluminum
④	Idler	1	Aluminum
⑤	Bolts	2	M 6×70
⑥	Wing brackets	2	ZAM steel sheet (plated steel sheet)



■ Conveyor W dimension, L dimension selection type

Maximum width	Catalog No. Type	Catalog No. Belt material	W	L	Wing bracket
W+32	Standard type PSCN—H (standard) PSCN—T (rippled) PSCN—K (Kevlar)		75 100 125 150 200 250	400* 450 500 550 600 650 700 750 800 900 1000 1100 1200 1300 1400 1500	N (only when not required)

■ Conveyor W dimension, L dimension specification type

Maximum width	Catalog No. Type	Catalog No. Belt material	W 5mm increments	L 5mm increments	Wing bracket
W+32	Standard type PSCNH—H (standard) PSCNH—T (rippled) PSCNH—K (Kevlar)		50～75 80～250 255～400 405～500	300～1800 405～1800 505～1800 605～1800	N (only when not required)

Selection type L400 applies only for W75/100.
The W dimension is the actual width of the belt. The effective width will be 20 mm narrower with the wing brackets attached. Use caution.

Order

Catalog No.	—	W	—	L	—	Wing bracket not required
PSCN—H	—	250	—	900	—	N
PSCNH—K	—	355	—	1545		

Wing brackets are equipped as standard. Specify "N" if not required.

■ Guidelines for Press Speed and Payload

Press speed (SPM)	Total permissible weight (kg) Link shaft	Flexible shaft
50	30	15
60	25	10
70	20	8
80	15	5
100	8	3

■ Belt Features/Purposes

Photo	Material	Features/purposes
	H Urethane (standard)	This polyester filament belt offers many excellent properties making it suitable for conveyors, such as durability, impact resistance, chemical resistance, and oil resistance. It can be used to transport a range of products around press machines. (Steel sheets, automotive parts, electrical appliance parts, press scrap, etc.)
	T Urethane (rippled)	This standard belt features a rippled surface to prevent transported objects from easily slipping. It is ideal for carrying thin sheets, light objects, oil, and other slippery products over a slanted surface.
	K Kevlar (glass fiber)	Made from glass fiber, this belt is resistant to wear caused by the edges of steel products and offers excellent cutting resistance, wear resistance, and durability. It is suited for conveyance under extreme conditions, such as conveyance of high-tensile materials, blanking lines, and heavy scrap.

■ Belt (single unit) W dimension, L dimension selection type

Catalog No. Type	W	L
Standard type PSCN—BLTH (urethane) PSCN—BLTT (rippled) PSCN—BLTK (Kevlar)	75 100 125 150 200 250	400* 450 500 550 600 650 700 750 800 900 1000 1100 1200 1300 1400 1500

■ Belt (single unit) W dimension, L dimension specification type

Catalog No. Type	W 5mm increments	L 5mm increments
Standard type PSCNH—BLTH (urethane) PSCNH—BLTT (rippled) PSCNH—BLTK (Kevlar)	50～75	300～1800
	80～250	405～1800
	255～400	505～1800
	405～500	605～1800

Selection type L400 applies only for W75/100.
For maintenance use, indicate the same W and L dimensions as indicated when the conveyor was ordered.

Order

Catalog No.	W	L
PSCNH—BLTK	200	1250

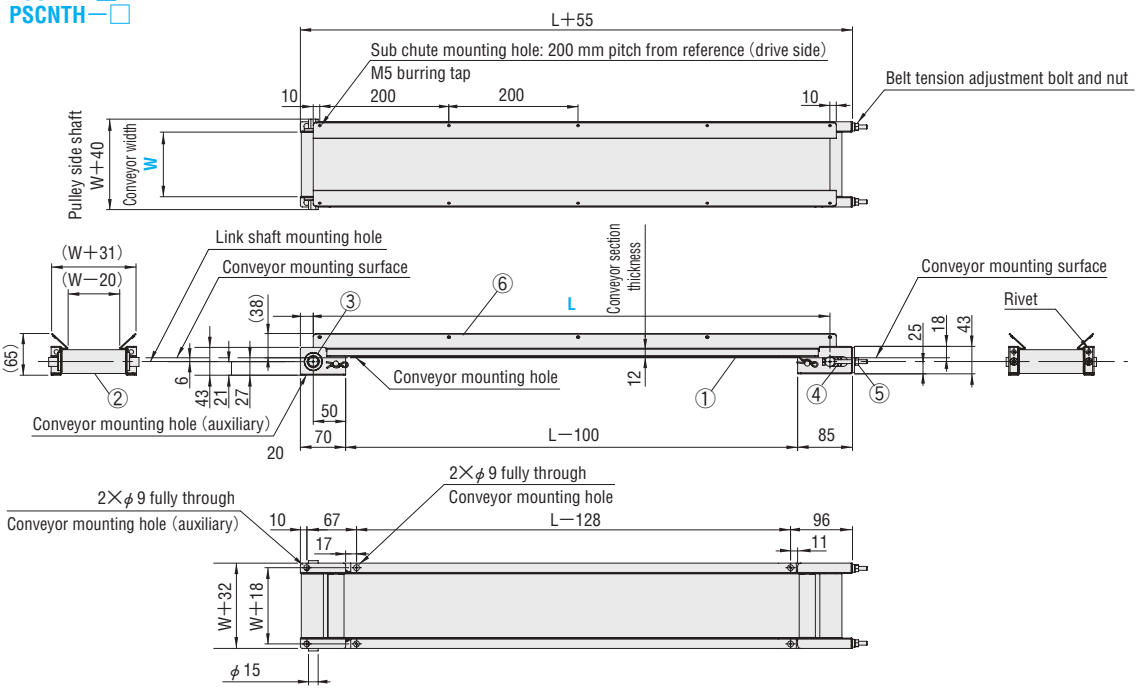
■ Conveyor (Thin Type: Thickness 12 mm)

RoHS

■ Components (conveyor)

No.	Name	Quantity	Remarks
①	Main body	1	ZAM steel sheet (plated)
②	Flat belt	1	Urethane/rippled/Kevlar (select one)
③	Pulley	1	Aluminum
④	Idler	1	Aluminum
⑤	Bolts	2	M 6×55
⑥	Wing brackets	2	ZAM steel sheet (plated steel sheet)

PSCNT—□
PSCNTH—□



■ Conveyor W dimension, L dimension selection type

Maximum width	Catalog No. Type	Catalog No. Belt material	W	L	Wing bracket
W+32	Thin type PSCNT—H (standard) PSCNT—T (rippled) PSCNT—K (Kevlar)		75 100 125 150 200 250	400* 450 500 550 600 650 700 750 800 900 1000 1100 1200 1300 1400 1500	N (only when not required)

■ Conveyor W dimension, L dimension specification type

Maximum width	Catalog No. Type	Catalog No. Belt material	W 5mm increments	L 5mm increments	Wing bracket
W+32	Thin type PSCNTH—H (standard) PSCNTH—T (rippled) PSCNTH—K (Kevlar)		50～75 80～250 255～400 405～500	300～1800 405～1800 505～1800 605～1800	N (only when not required)

Selection type L400 applies only for W75/100.
The W dimension is the actual width of the belt. The effective width will be 20 mm narrower with the wing brackets attached. Use caution.

Order

Catalog No.	—	W	—	L	—	Wing bracket not required
PSCNT—H	—	250	—	900	—	N
PSCNTH—K	—	355	—	1545		

Wing brackets are equipped as standard. Specify "N" if not required.

■ Guidelines for Press Speed and Payload

Press speed (SPM)	Total permissible weight (kg) Link shaft	Total permissible weight (kg) Flexible shaft
50	30	15
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70	20	8
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■ Belt Features/Purposes

Photo	Material	Features/purposes
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■ Belt (single unit) W dimension, L dimension selection type

Catalog No. Type	W	L
Thin type PSCNT—BLTH (urethane) PSCNT—BLTT (rippled) PSCNT—BLTK (Kevlar)	75 100 125 150 200 250	400* 450 500 550 600 650 700 750 800 900 1000 1100 1200 1300 1400 1500

■ Belt (single unit) W dimension, L dimension specification type

Catalog No. Type	W 5mm increments	L 5mm increments
Thin type PSCNTH—BLTH (urethane) PSCNTH—BLTT (rippled) PSCNTH—BLTK (Kevlar)	50～75	300～1800
	80～250	405～1800
	255～400	505～1800
	405～500	605～1800

Selection type L400 applies only for W75/100.
For maintenance use, indicate the same W and L dimensions as indicated when the conveyor was ordered.

Order

Catalog No.	—	W	—	L
PSCNTH—BLTK	—	200	—	1250

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