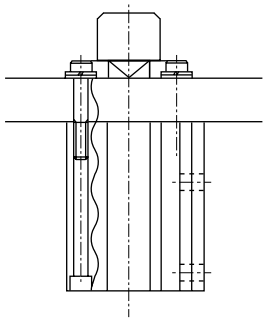
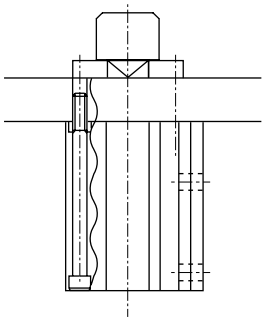
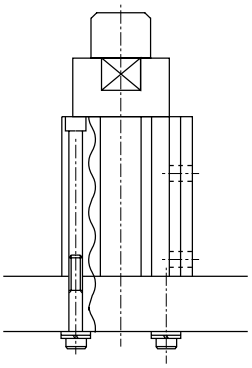
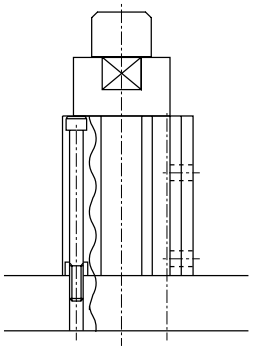
Stopper cylinder selection guide

Depending on the mounting method, the allowable absorbed energy varies. Check whether the mounting is A or B type in the figure below to select the cylinder.

A. Rod side installation		B. Head end installation	
Screw-in installation	Through bolt installation	Screw-in installation	Through bolt installation
			

1. Method of selecting specified range

Select the model using transport weight (m) and transport speed (V) so that the model is within the allowable absorbed energy in the graph in the right .

Formula for kinetic energy calculation

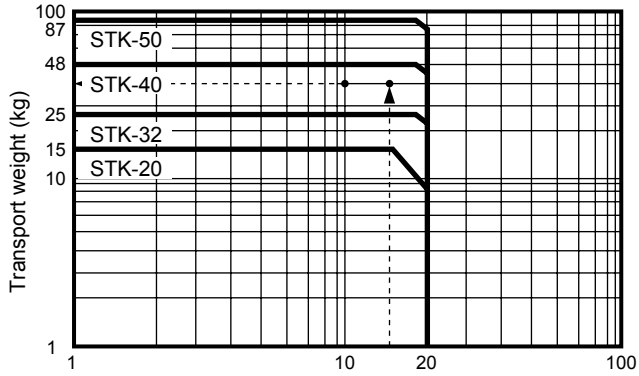
$E=\frac{1}{2}mV^2$ E: Kinetic energy J
m: Transport weight kg
V: Transport speed m/s

(Example) Transport speed 15 m/min, transport weight 40 kg
A. For rod side installation

[How to look at the graph]
For the selection method of the specifications above, obtain the intersection point of the speed 15 m/min on the horizontal axis and the weight 40 kg on the vertical axis of Graph 1, and then select STK-40 within the allowable absorbed energy range.

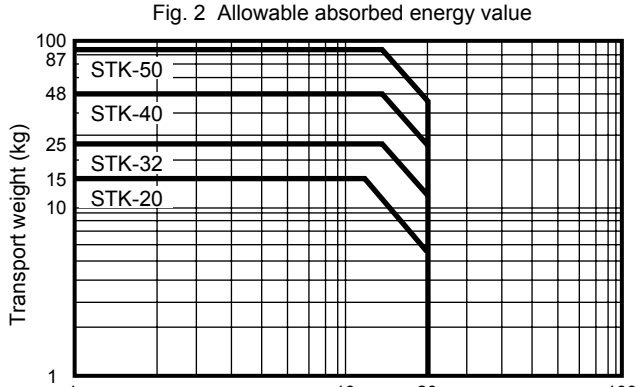
A. Rod side installation

Fig. 1 Allowable absorbed energy value



B. Head end installation

Fig. 2 Allowable absorbed energy value



(Note) Rod end form: Compatible with all round rod types/chamfered types/roller.

Lateral load and working pressure

Depending on the degree of the lateral load applied to the rod end, the working pressure varies when the cylinder is pulled. Therefore, calculate the required working pressure by the steps below.

1. Calculate the lateral load (F) applied to the rod end.

$F = 10 \cdot m \cdot n \cdot \mu_1$

F : Lateral load (N)

m : Transport weight(kg)

n : Number of transported objects

μ_1 : Coefficient of friction between transport pallet and conveyor

2. Obtain the thrust (P) required when the cylinder is pulled.

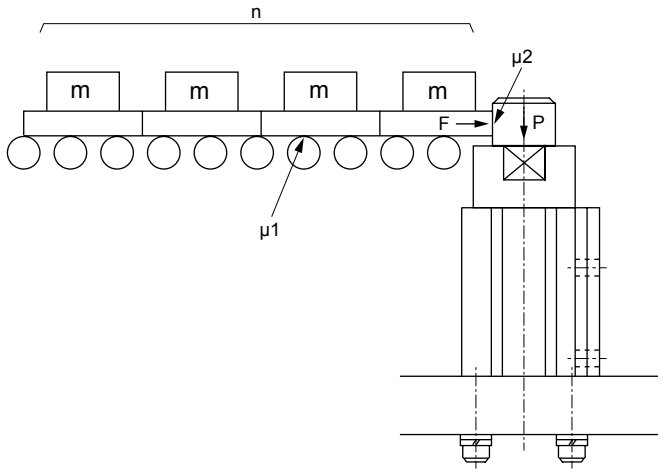
$P = F \cdot \mu_2$

P : Required thrust (N)

μ_2 : Coefficient of friction between transported object and rod

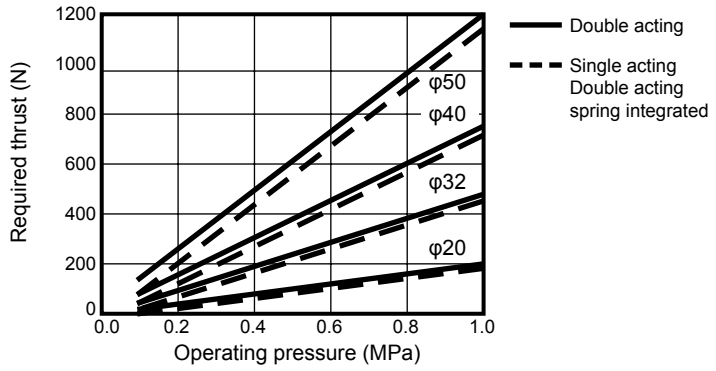
(Note) As the coefficient of friction varies depending on the material of the transported object, refer to the coefficient in the table below.

Material of transported object	Steel	Aluminum	Urethane
μ_2	0.5	0.8	2.0



3. Obtain the working pressure from the required thrust (P) using Fig. 3.

Fig. 3 Required thrust force



Allowable lateral load (Unit: N)

Bore size	Stroke length				
	10	15	20	25	30
φ20	106.5	99.4	93.2	-	-
φ32	272.8	254.6	238.7	-	-
φ40	-	-	371.3	352.1	334.8
φ50	-	-	582.8	552.8	525.8