

A new idea for rotational and
linear motions

It's *PDU*

Pingear **D**rive **U**nits

◀ Application guide ▶



TSUBAKI Pin Gear Drive Unit

Pin Gear Drive Unit

A drive unit for linear and rotational drives with various features

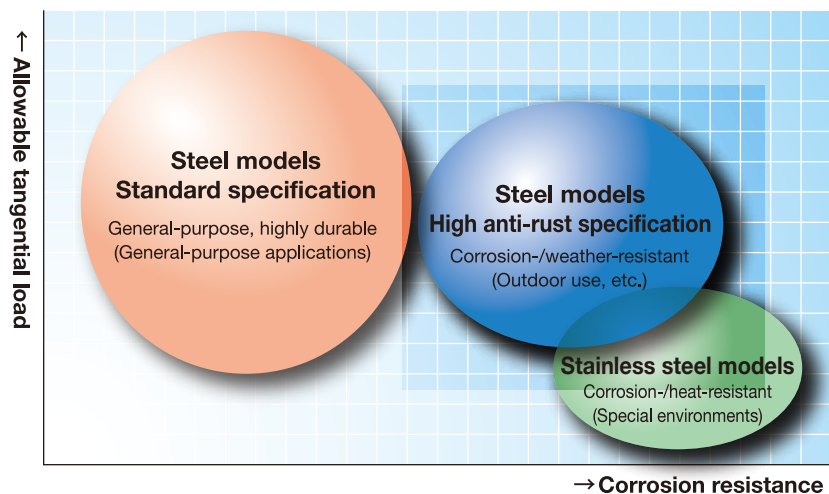
Tsubaki's Pin Gear Drive Unit replaces racks and gears.

Features

1

Extensive lineup

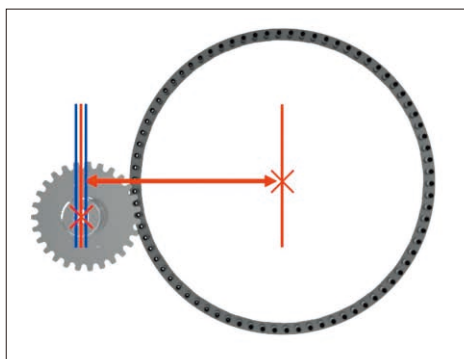
- Allowable tangential loads up to 525 kN and pitches from 20 to 240 mm
- Lineup includes high anti-rust models with surface treatment and stainless steel models



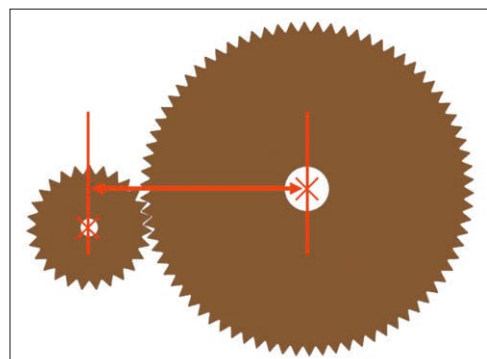
2

Easy to install and absorbs rattling

- Segmented structure ensures easy installation and replacement
- Rough mounting accuracy is made possible by utilizing backlash (approx. 10 times that of gears)
- Easy to transfer between racks
- Resists rattling and disengagement



Pin Gear Drive Unit



Gear

3

Wide variety of layouts

- Segmented structure allows for a wide range of sizes
- Can be used in various layouts including linear, curve, or composite forms

Shapes available



Linear (min. 160 mm)



Circle or arc (min. $\phi 380$ mm)

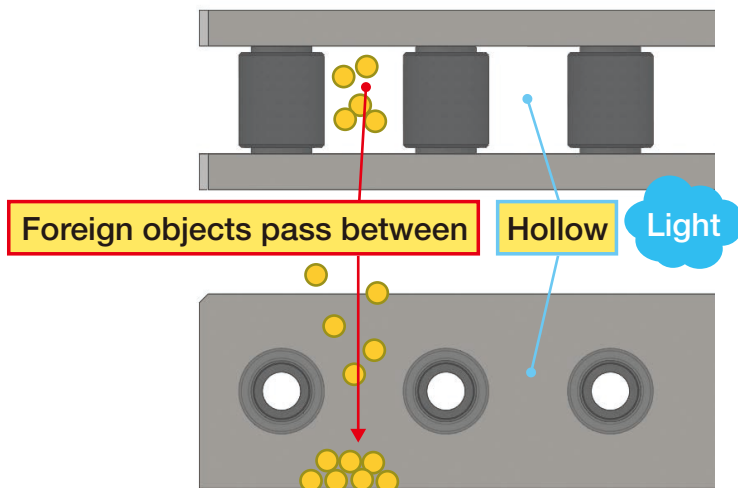


Track (linear and curve)

4

Structure with clearance

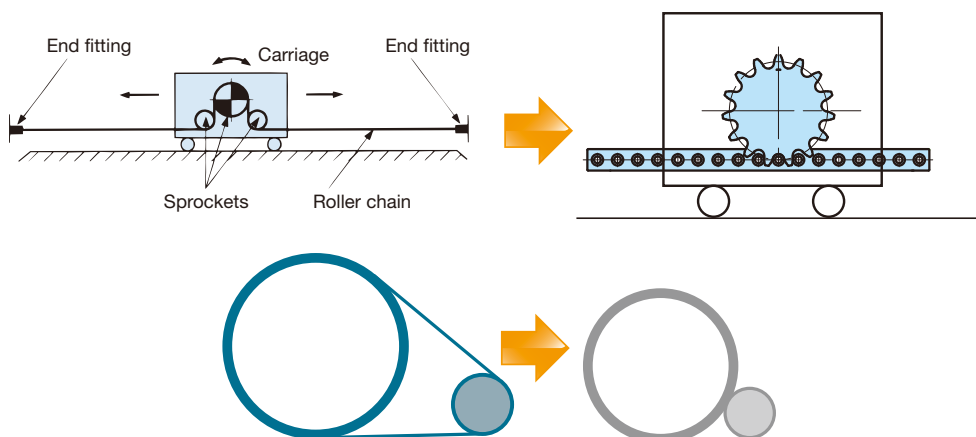
- Reduces biting of foreign objects and risk of emergency stoppage.
- Lighter than systems with racks, gears, or other components for reduced equipment weight and improved workability.



5

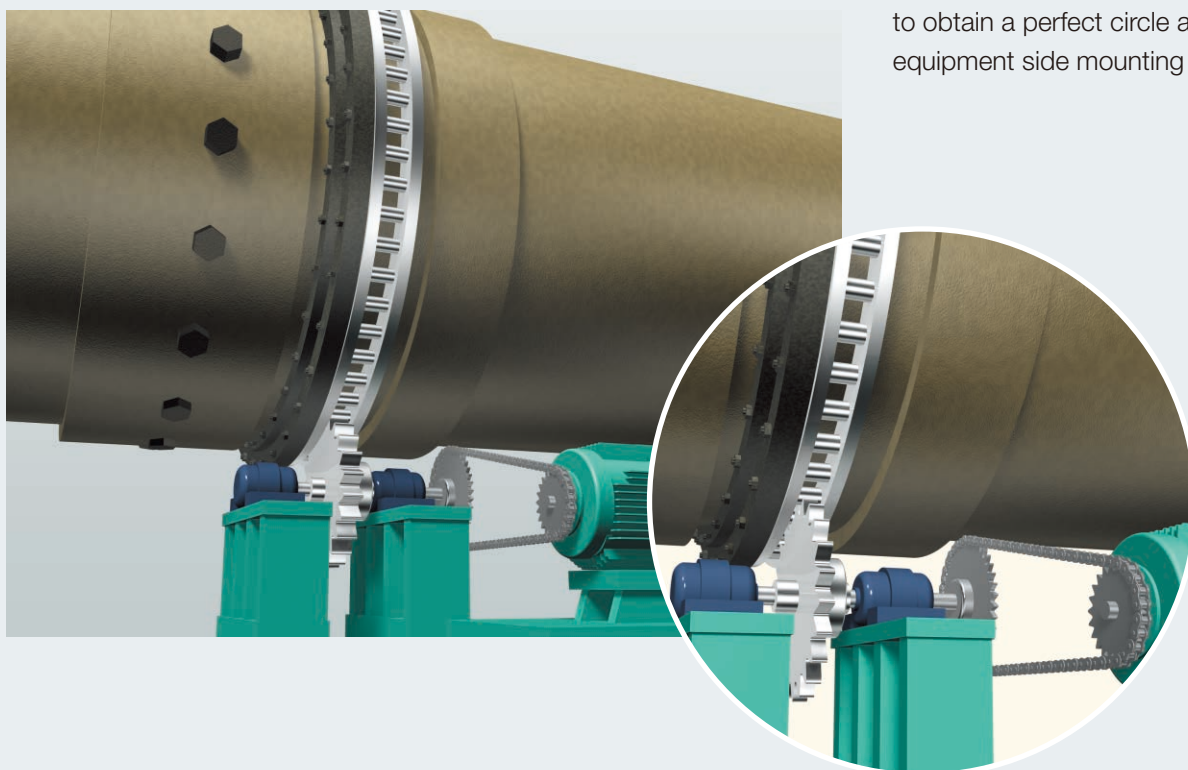
Space-saving

- Greater space savings than roller chain and sprocket systems
- Helps reduce part count



Key selling point

1 Allows rough mounting accuracy

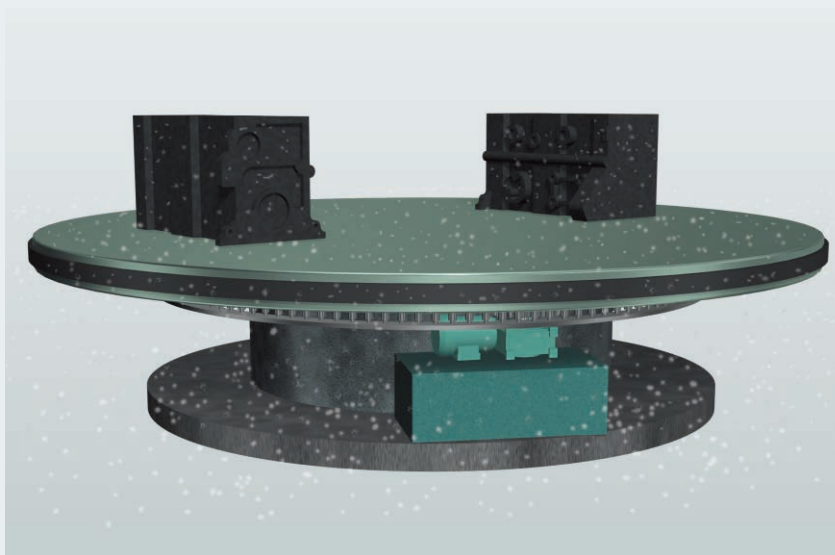


This is useful when it is difficult to obtain a perfect circle at the equipment side mounting point.

Clearance in the width direction can be increased.

Key selling point

2 Structure with clearance



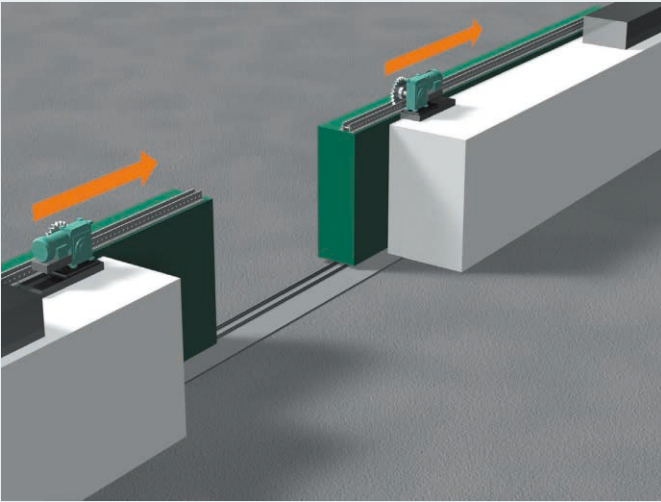
The clearance structure of the Pin Gear Drive Unit is helpful in dusty environments.

Table swiveling

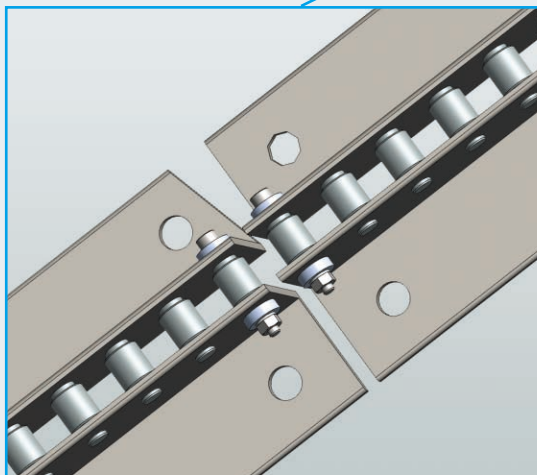
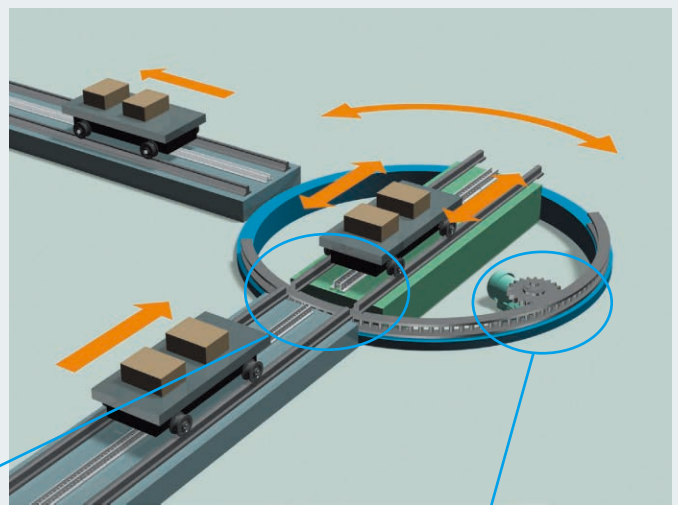
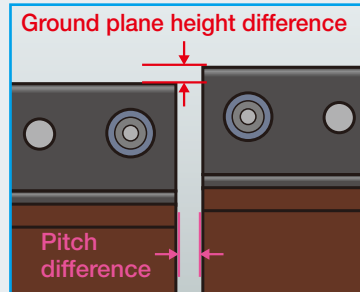
Key selling point

Resists rattling and disengagement

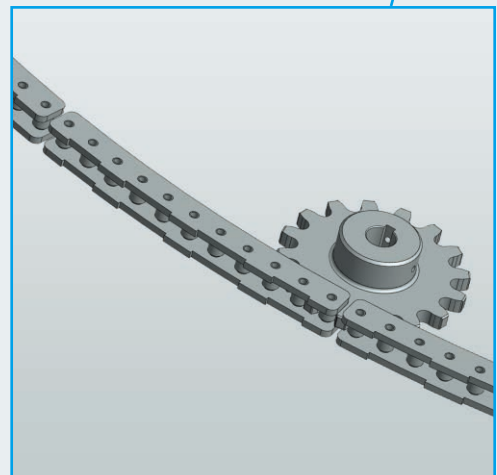
Movement between pin racks is smooth thanks to rough engagement.



High anti-rust models and stainless steel models can be used outdoors.



This unit reduces the risk of interference between pin racks, including when installed on a turntable.



Segments can be provided with clearance to avoid accumulated pitch errors.

* A video introducing the features of the Pin Gear Drive Unit is also available. Please view it for more information.

<https://www.youtube.com/watch?v=8xHAMISP0nk>



The site is designed to facilitate product selection and selection calculation, including drawings available for download in the drawing library.



HOME > Sizing > Sprocket / Pin gear drive > Pin gear drive unit

The screenshot shows the website's navigation menu with options like HOME, Product info, Applications, Selection Guide, Technical Data, Sizing, Maintenance/handling, Substitute third-party model no., Search previous model No., Download, and Customer Support. A sidebar lists various products including Drive chain, Small size conveyor chain, Large size conveyor chain, Plastic modular chain, Top chain, Plastic block chain, Sprocket / Pin gear drive, Cable Carriers (CABLE ENVIOR), Synchronous belt / Belt sprocket, Reducers, Linear actuator, High-speed lifters, Locking Device, Coupling, Clutches, Electrical controllers, and Mechanical protectors. Three drive types are highlighted: Linear drive, Table drive, and Drum drive.

This section includes a 'Specifications' table with options for Steel Type (Steel, Advanced Rust Protection Series, Stainless Steel Type) and Pin rack shape (Horizontal Installation, Perpendicular Installation). It lists operating conditions such as Running angle of inclination (β = 5°), Total weight of travel part (M = 1500 kg), Running speed (V = 15 m/min), and Coefficient of bearing friction of wheel (μ_B = 0.25). A graph shows Speed vs. Time with a trapezoidal profile. There are also radio buttons for 'Operation type' (Uniform load, Load with minor impacts, Load with major impacts) and 'Hours operated daily' (Less than 3 hours, less than 12 hours, More than 12 hours).

This section shows the 'Designated type' with a Pin gear no. of teeth (NT₁ = 20) and Total required pin rack length (5000 mm). It lists the Hub type (B or C) and provides a table of specifications for the selected models: PDU035-SGB020T and PDU035-SPF143P. The table includes Pin rack model no., Pin gear outer diameter (Do = 250 mm), Pin gear pitch diameter (Da = 225.82 mm), Pitch (P = 35 mm), Total pin rack length (La2 = 5005 mm), Pin gear rotational speed (n₁ = 21.43 r/min), and Pin gear load power (Pw = 2.4 kW). A button for 'Output PDF' and a 'Drawing Library' link are also present.

The screenshot shows a product selection form with the following fields: Pin gear (selected), Hub type (radio buttons for B type and C type), No. of teeth (13~24 and 20), Total pin rack length (5005 [mm]), Model no., Pin rack model no. (PDU035-SPF143P), and Pin gear model no. (PDU035-SGB020T). There are buttons for 'Display model number' and 'Show drawing'.

The technical drawing shows two views of the pin rack: ① Pin rack 22P and ② Pin rack 11P. It includes detailed dimensions for the pin rack segments and the pin gear. A section view shows the pin gear meshing with the pin rack, with dimensions for the pin gear outer diameter (Do), pitch diameter (Da), and pin gear load power (Pw). A table at the bottom provides a description of the drawing and a list of specifications for the pin gear drive unit.

Pin gear no. of teeth	20	4	Customer name	Product name
No. of pin rack rollers	143	1	Quotation no.	Pin gear drive unit
Alternate length (mm)	19.58h	2	No./sets	Model no.
Backlash	0.33~0.88mm	1	Agree Inspection Design Date	PDU035-SPF143P
Min. number of mounting sets per segment	-	1	M.Nakaji Y.Nomura H.Takasu	2014/06/01
			Part name	Material
				Weight
				No./sets



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