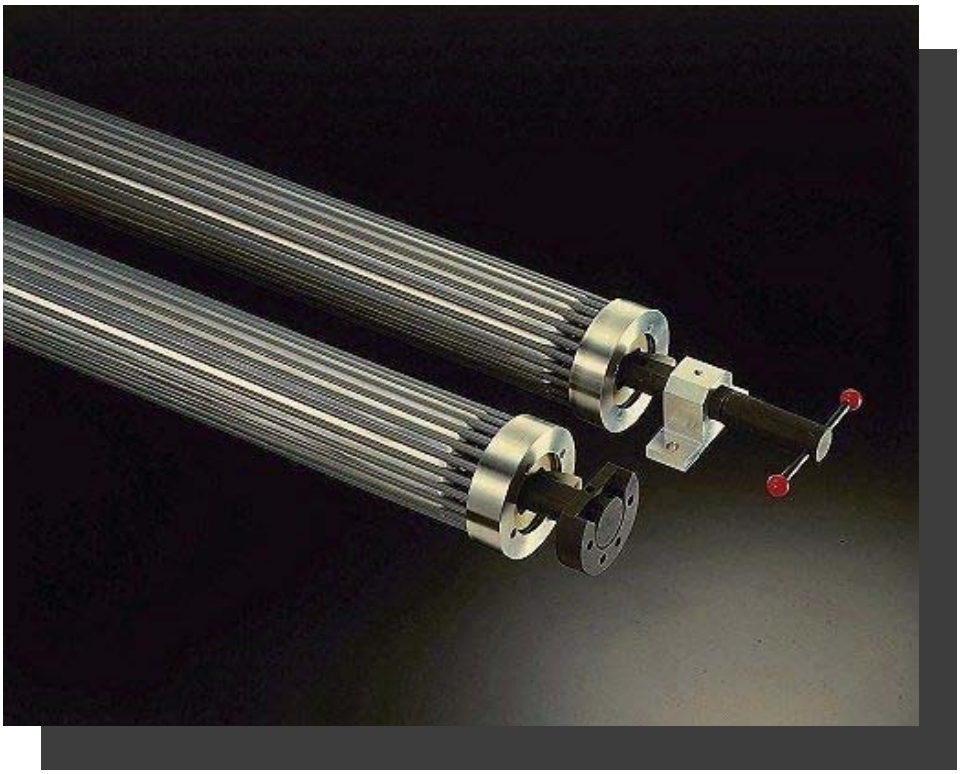
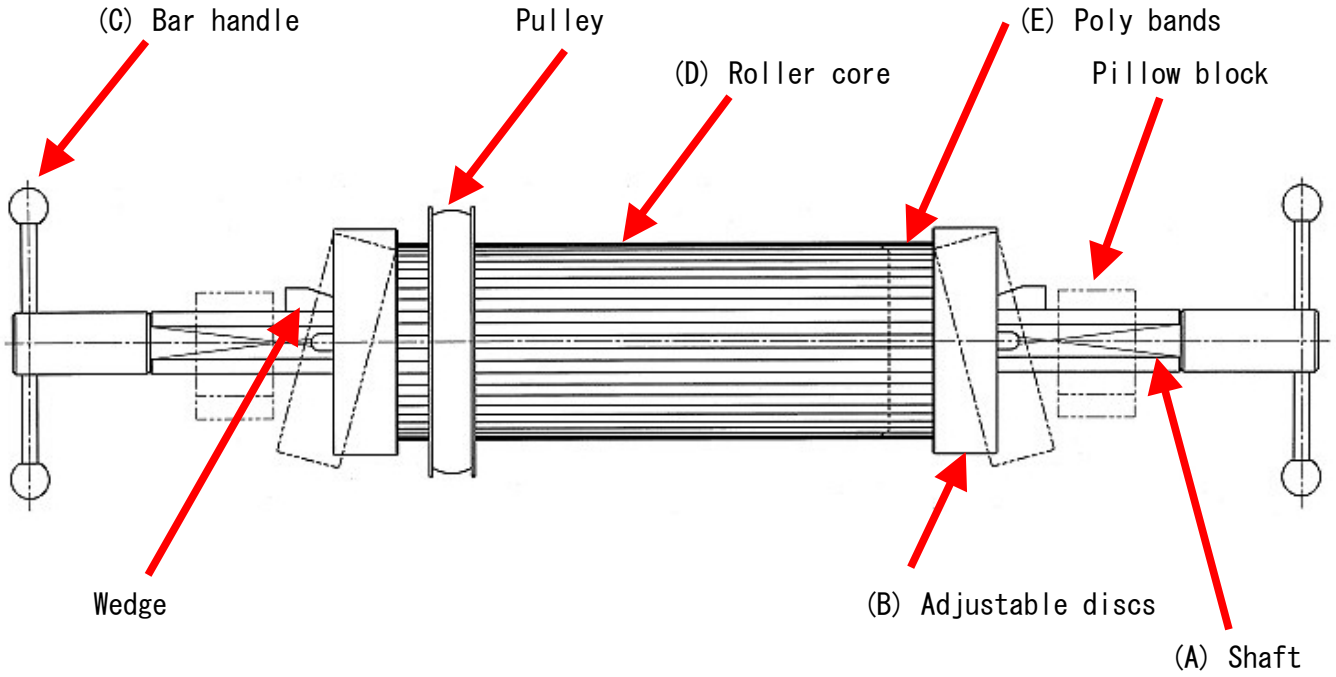
PN - Expander Roll Manual

Pillow & Flange type



Pneumatic Industries Co.,Ltd.

PN - Expander Roller pillow type Manual



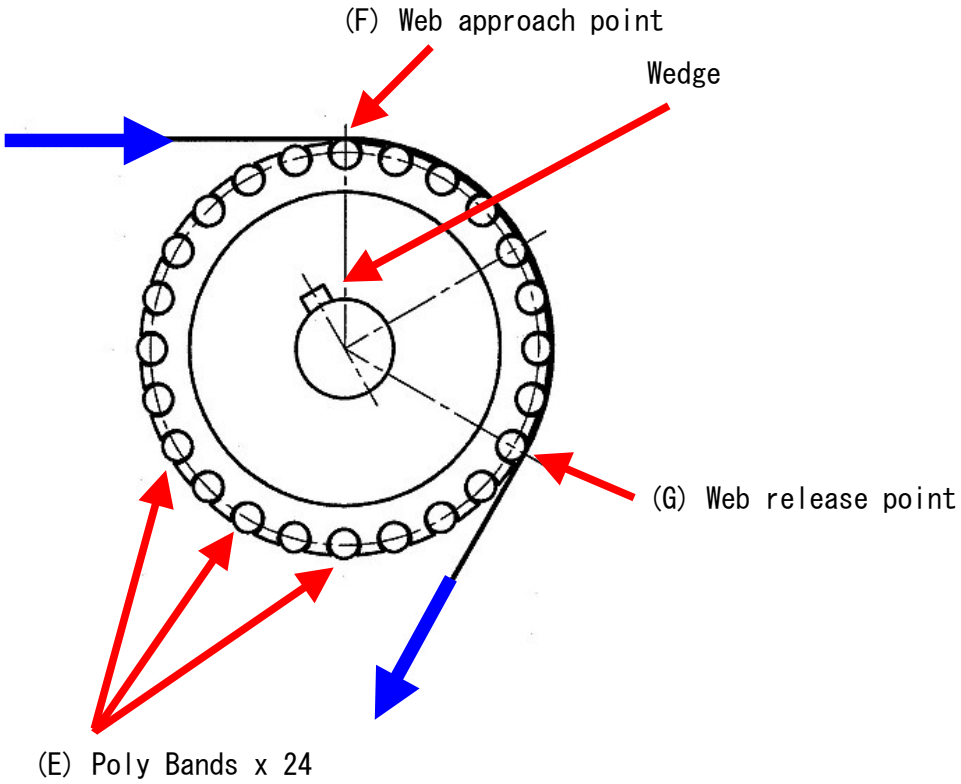
Operation

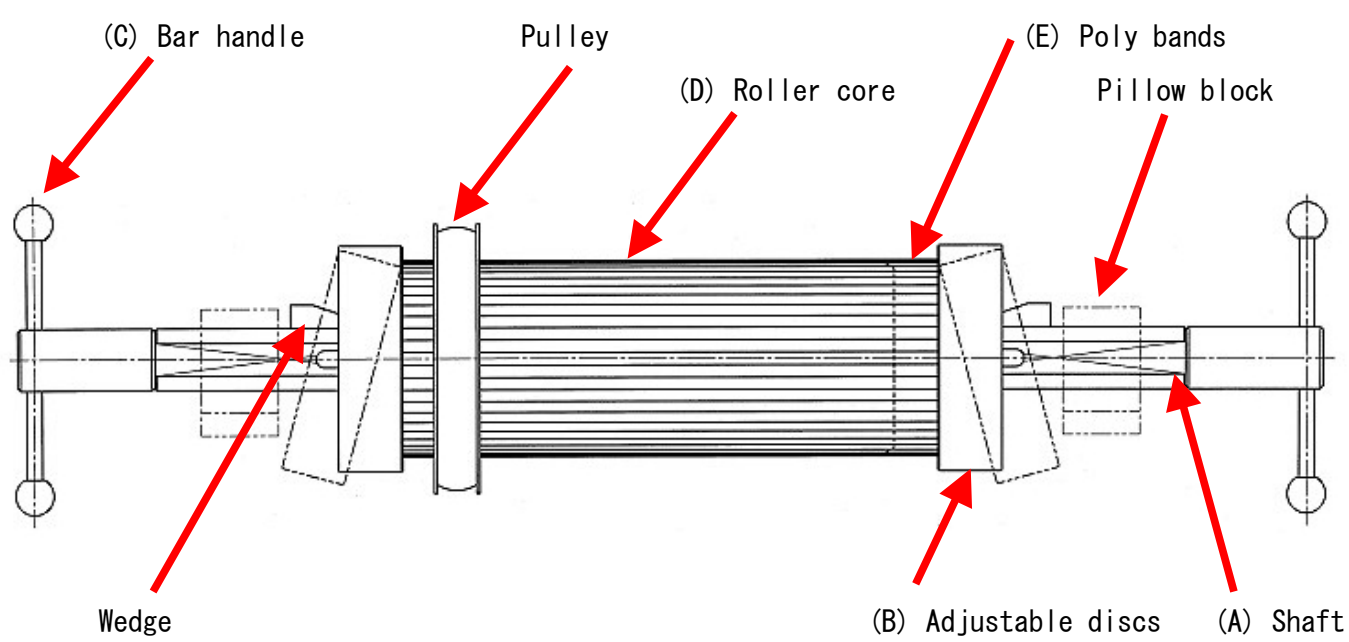
Crease and wrinkle-free web expanding is effected by the elastic poly bands.

The entering web contacts the surface of the poly band at the relaxed point and exits at the maximum stretched point.

The amount of web stretching depends on the tilting angle of the adjustable discs (B) at both roller sides.

As the expander roller has a uniform diameter and surface the stretching will be done flatly.





Operating

For adjustment of both adjustable discs (B) both outer bar handles (C) - or other operating elements - are to be turned.

When turning bar handle (C) in clockwise direction the stretching effect will be increased, when turning opposite the stretching effect will be decreased down to zero.

Because of symmetric reasons normally both discs (B) should be adjusted by same angle.

In special cases (especially when there are wrinkles at outside part of web) different adjustments of discs (B) could be necessary.

When PN - Expander Roller is not in use it is recommended to tilt discs (B) in zero-position to prevent poly bands from overstretching.

Maintenance

PN - Expander Roller is designed maintenance-free, all bearings are long-life lubricated.

In case of exchange of poly bands (E) because of ageing or mechanical damaging both end caps on discs (B) are to be loosened via screws.

The poly bands (E) are clamped via screws in discs (B).

The pre-stretching is recommended at 10% of poly band length using standard bands and 3% using special high-duty bands.

For exchanging screws are to be driven out and poly bands (E) are just pulled out of longitudinal grooves.

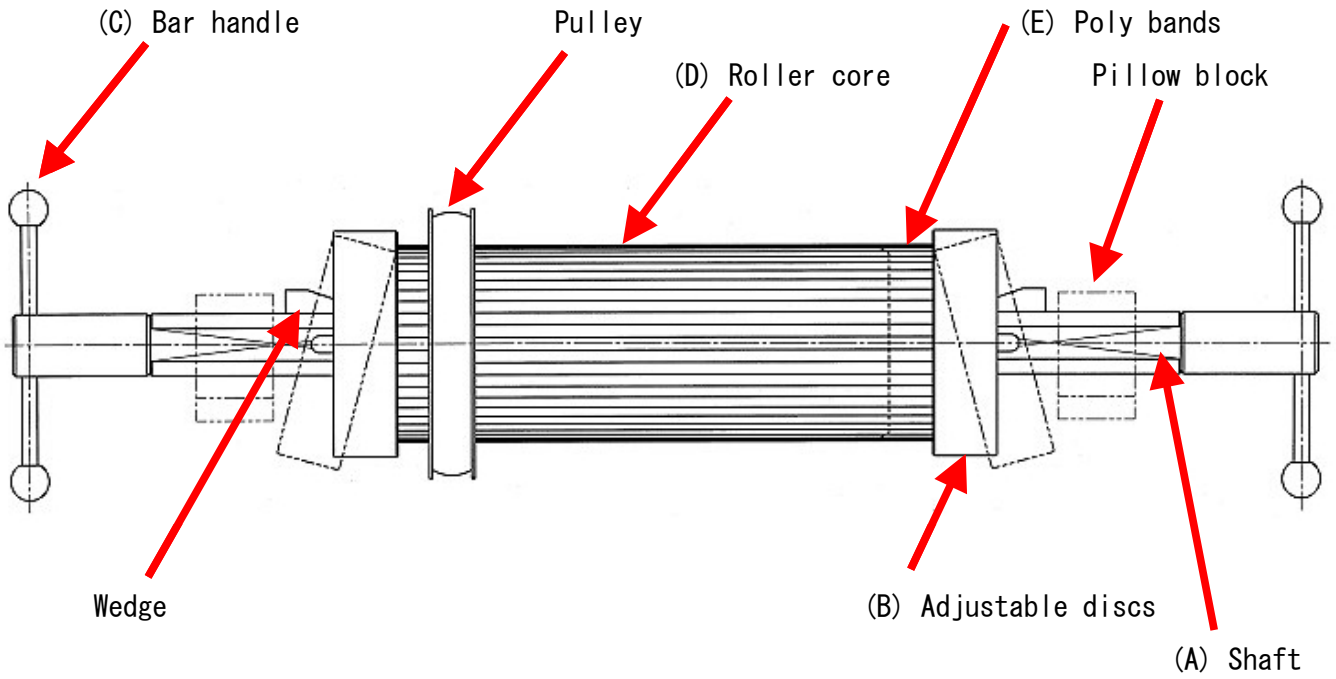
For assembly of new poly bands screws can be driven in up to 2/3 of screw length and then all poly bands are pulled from one side via disc/roller core/disc and clamped by an additional screw at another side.

Afterwards the pre-assembled screw has to be tightened, too.

After exchange of poly bands both end caps are to be assembled and screws to be tightened.

Operating fields

PN - Expander Roller is always used where very delicate materials such as low density films, paper and non wovens are to be treated crease- and wrinkle-free.



Design

PN - Expander Roller consist of duralumin roller core (D) with lengthwise inserted and equally spaced poly bands.

They are clamped in tiltable discs(B) at both sides of expander roller.

The axle (A) is non-rotating and will be assembled in machine frame.

For adjustment bar handles (C) are located outside of bearings.

Assembly

The assembly is to be done in rectangular direction to web.

Both shafts (A) are clamped in pillow blocks or in special adapters at machine frame.

The design of the adapters must secure that both shafts (A) can be turned by using a wrench for adjustment of point (F) where the web approaches the expander roller and release point (G) where the web leaves the expander roller.

After adjustment both shafts have to be clamped by screws etc.

The free approach length at point (F) should be approx. 300 - 500 mm (when operating large webs a little bit more).

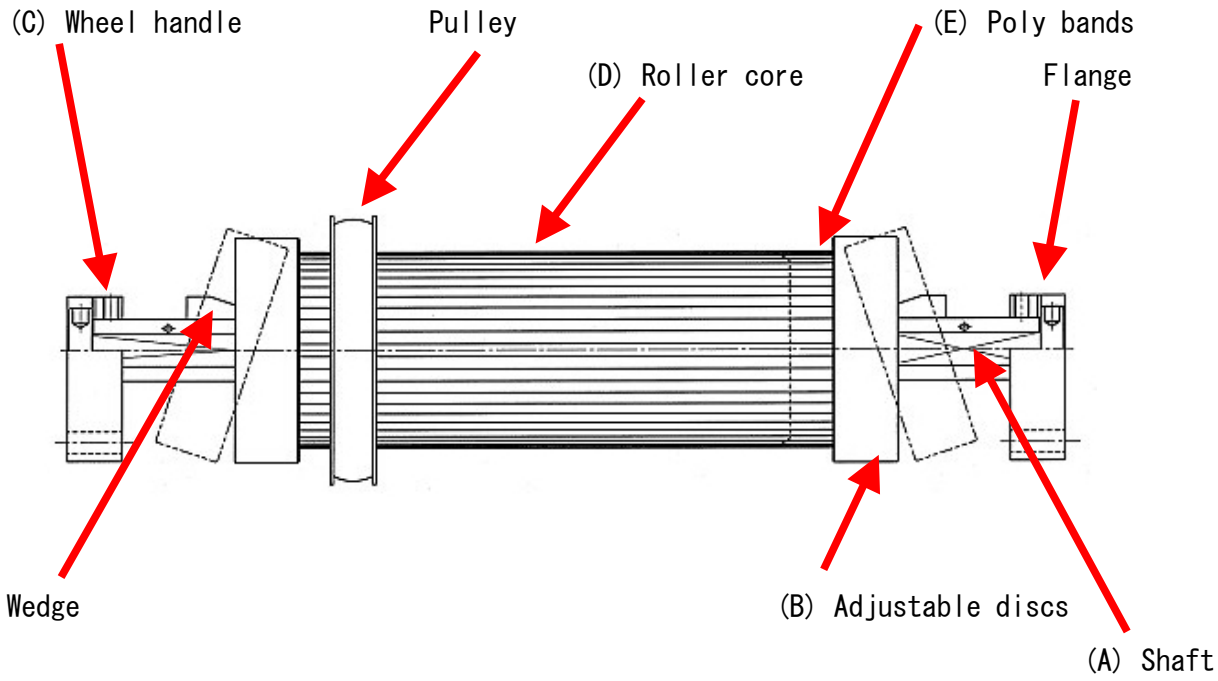
The free release length at point (G) should be as less as possible according to design possibilities.

The recommended warp angle of web is in a range of 40° and 160° , the maximum angle should be always below 180° .

When operating very delicate webs such as low density films, it is recommended to drive PN - Expander Roller synchronously with web.

This operation prevent the web from shrinking because of the required torque.

PN - Expander Roller flange type Manual



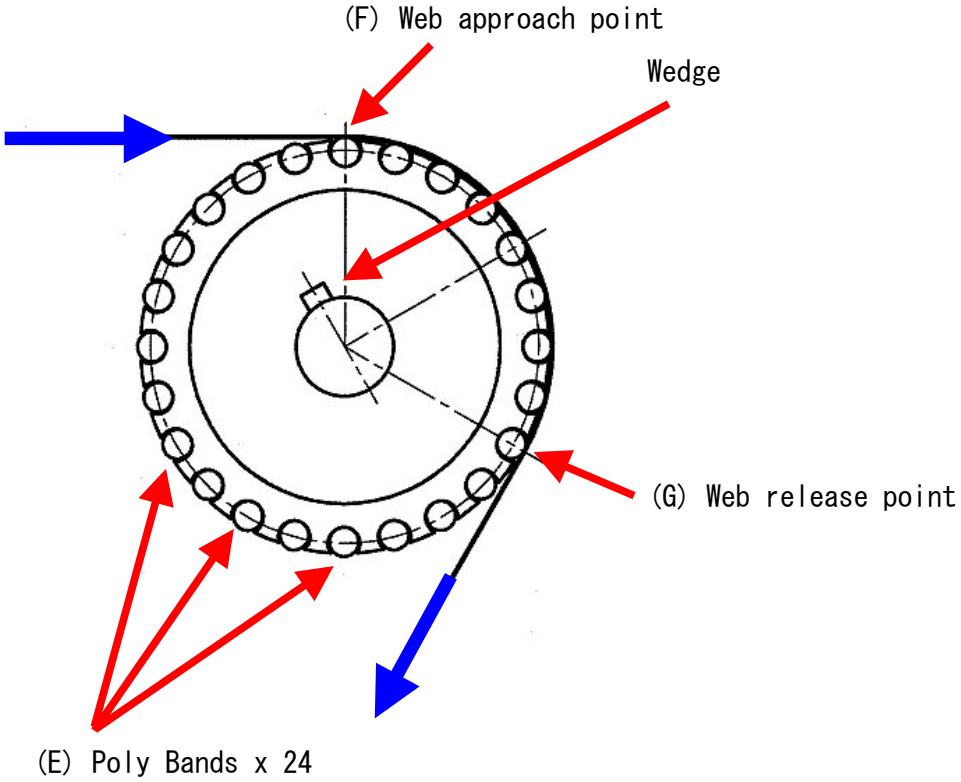
Operation

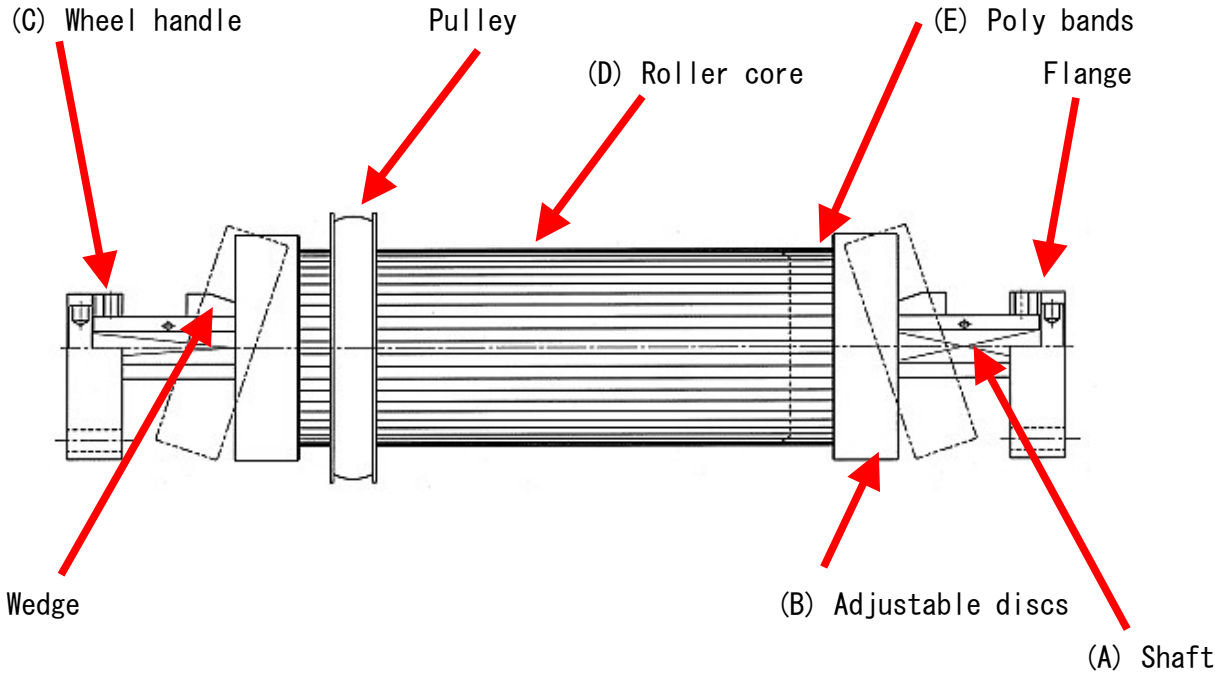
Crease and wrinkle-free web expanding is effected by the elastic poly bands.

The entering web contacts the surface of the poly band at the relaxed point and exits at the maximum stretched point.

The amount of web stretching depends on the tilting angle of the adjustable discs (B) at both roller sides.

As the expander roller has a uniform diameter and surface the stretching will be done flatly.





Operating

For adjustment of both adjustable discs (B) both outer wheel handles (C) - or other operating elements - are to be turned.

When turning wheel handle (C) in clockwise direction the stretching effect will be increased, when turning opposite the stretching effect will be decreased down to zero.

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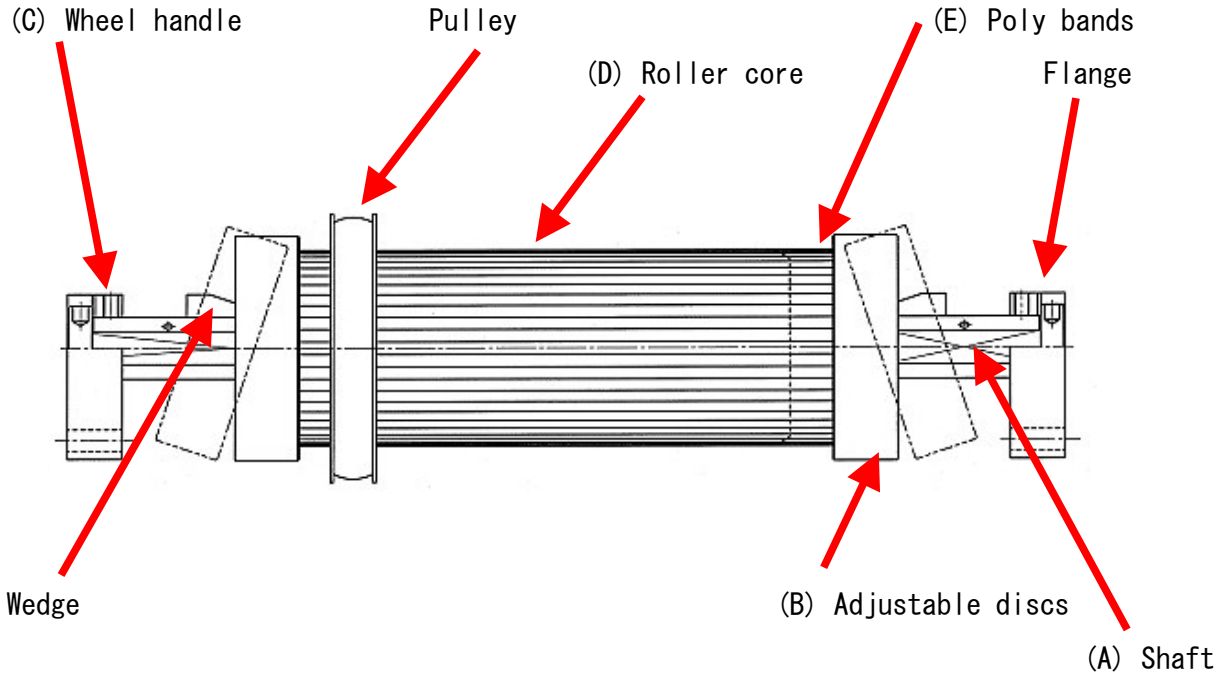

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