For New Technology Network

NTN®

NTN corporation

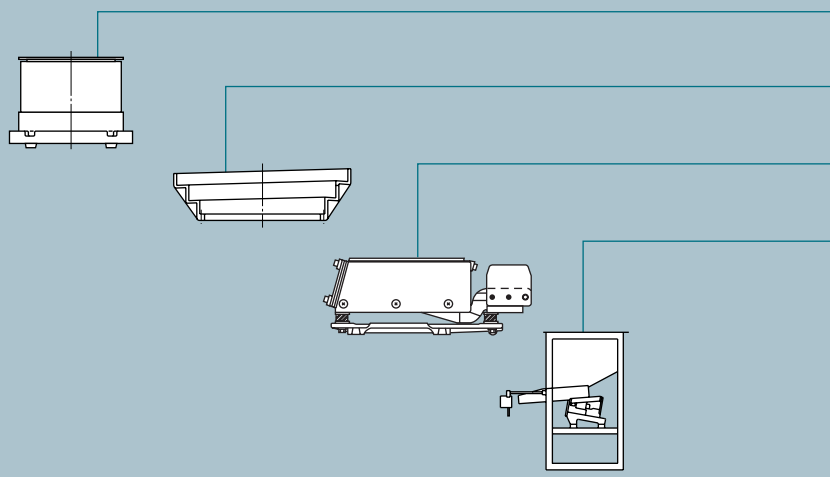
PARTS FEEDER

CAT. No. 7018-Ⅸ／E

CONTENTS

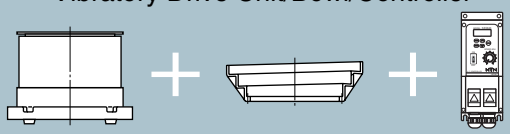
Outline and Features

Standard Series Dimensions and Specifications

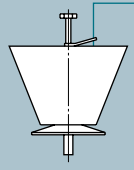


Standard Series Combination Table

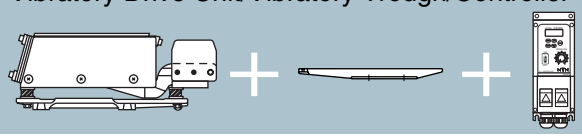
Vibratory Drive Unit/Bowl/Controller



Parts Feeders for Special Applications



Vibratory Drive Unit/Vibratory Trough/Controller



Warranty

NTN warrants, to the original purchaser only, that the delivered product which is the subject of this sale (a) will conform to drawings and specifications mutually established in writing as applicable to the contract, and (b) be free from defects in material or fabrication. The duration of this warranty is one year from date of delivery. If the buyer discovers within this period a failure of the product to conform to drawings or specifications, or a defect in material or fabrication, it must promptly notify **NTN** in writing. In no event shall such notification be received by **NTN** later than 13 months from the date of delivery. Within a reasonable time after such notification, **NTN** will, at its option, (a) correct any failure of the product to conform to drawings, specifications or any defect in material or workmanship, with either replacement or repair of the product, or (b) refund, in part or in whole, the purchase price. Such replacement and repair, excluding charges for labor, is at **NTN**'s expense. All warranty service will be performed at service centers designated by **NTN**. These remedies are the purchaser's exclusive remedies for breach of warranty.

NTN does not warrant (a) any product, components or parts not manufactured by **NTN**, (b) defects caused by failure to provide a suitable installation environment for the product, (c) damage caused by use of the product for purposes other than those for which it was designed, (d) damage caused by disasters such as fire, flood, wind, and lightning, (e) damage caused by unauthorized attachments or modification, (f) damage during shipment, or (g) any other abuse or misuse by the purchaser.

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In no case shall **NTN** be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict tort, or any other legal theory,and in no case shall total liability of **NTN** exceed the purchase price of the part upon which such liability is based. Such damages include, but are not limited to, loss of profits, loss of savings or revenue, loss of use of the product or any associated equipment, cost of capital, cost of any substitute equipment, facilities or services, downtime, the claims of third parties including customers, and injury to property. Some states do not allow limits on warranties, or on remedies for breach in certain transactions. In such states, the limits in this paragraph and in paragraph (2) shall apply to the extent allowable under case law and statutes in such states.

Any action for breach of warranty or any other legal theory must be commenced within 15 months following delivery of the goods.

Unless modified in a writing signed by both parties, this agreement is understood to be the complete and exclusive agreement between the parties, superceding all prior agreements, oral or written, and all other communications between the parties relating to the subject matter of this agreement. No employee of **NTN** or any other party is authorized to make any warranty in addition to those made in this agreement.

This agreement allocates the risks of product failure between **NTN** and the purchaser. This allocation is recognized by both parties and is reflected in the price of the goods. The purchaser acknowledges that it has read this agreement, understands it, and is bound by its terms.

NTN

PARTS FEEDER

NTN Parts Feeders

From precision machine parts to foods...

Four series of drive units for a broad range of applications, for anything from miniature parts to large billets

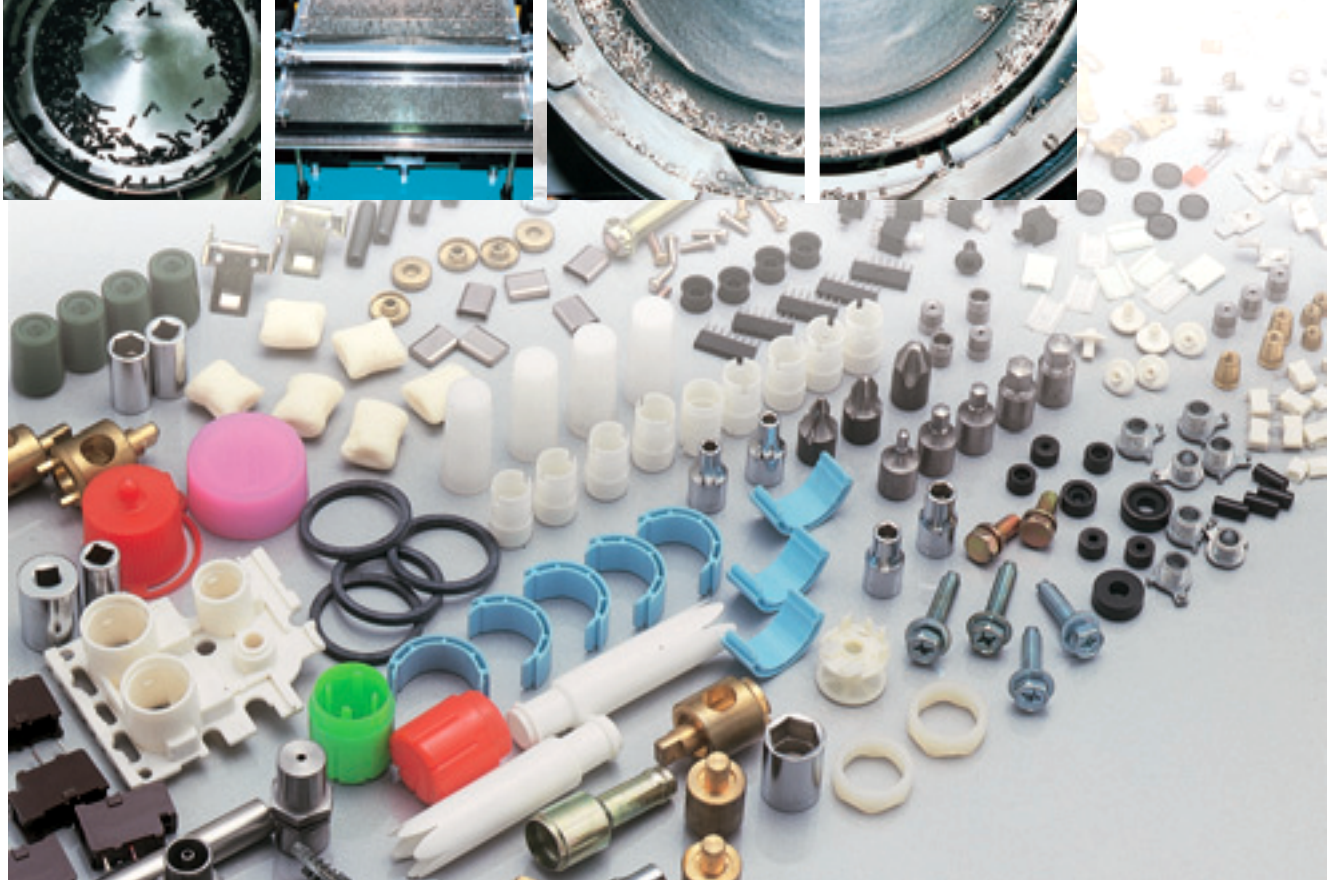
NTN Parts Feeders can automatically align a wide variety of components (machine parts, electronic parts, plastic parts, chemicals, pharmaceuticals, foods, miscellaneous goods, etc., as illustrated below), and feed them via a vibratory trough for processing in automated production machines.
Parts feeders are simple devices comprised of leaf springs, electromagnets, the vibratory vessel and various other parts. Their main functions are to align and feed parts in manufacturing and assembly processes–critical tasks in today's increasingly diversified and technologically complex production systems. For improved production efficiency, parts feeders must be both faster and more reliable.
To meet these demands, **NTN** has developed the following four series of vibratory drive units, each of which is designed for different applications, depending on the size and material of work pieces.

- **HF-series**, high-frequency drive, for miniature electronic parts and low profile parts.
- **K-series**, simple, high-performance feeders, for small parts from 1 mm to approx. 10 mm.
- **N-series**, the best-selling traditional horizontal vibration feeder, with an isolated bottom, for general medium-size parts.
- **G-series**, fitted with a powerful W spring, for larger parts.

With these four series to choose from, you can always select the optimum drive unit for your parts. To fully utilize the performance potential of these highly stable vibratory drive units, a variety of tooling units are available, including bowls (vibratory vessels) and controllers (control devices). Using the combinations lists (pages 52 to 63), anyone can quickly, and easily find the ideal combination of equipment for the job at hand. In addition, many other accessories, including the standard stay assembly parts, which are required for setting linear feeders and vibratory troughs, are also available.
We are confident that **NTN** Parts Feeders can satisfy your demands for higher levels of automation and labor savings.

Excellent tooling technology through long years of experience

Attachments of various shapes which are fitted either inside or outside the bowls to aid in aligning the parts are also available.
The attachments used for particular types of work pieces greatly affect the performance of parts feeders. **NTN**'s tooling technology, which spans everything from design and production through to fine tuning attachments, has been developed out of many years of experience, and handles the automatic alignment and feeding of many kinds of traditionally difficult parts. **NTN** products are peerless in their workmanship and finish.



Standard series

Bowl feeder series

(Refer to page 6)

HF-series

K-series

N-series

G-series

Bowl series

(Refer to page 7)

Precision machined bowl

Cascade bowl

Stainless steel cascade bowl

Straight wall bowl

Cone bowl

Dish bowl

Linear feeder series

(Refer to page 8)

HS-series

S-series

L-series

Hopper series

(Refer to page 8)

Detached hopper

Space-saving hopper

Automatic auxiliary hopper

Rotary hopper

Controller series

(Refer to page 9)

Variable frequency controller

SMD controller

Constant voltage controller

Constant amplitude controller

Timer unit

I/O controller unit

Bowl feeder series

Numbers in shaded area indicate reference pages.

HF-series

11

HF-series bowl feeders can smoothly feed miniature and low profile parts at high speed through an F-series horizontal drive running at high-frequency via a variable frequency controller.
Use in conjunction with HS-series.

(1) High-speed, stable feeding
(2) Highly rigid isolating vibration
(3) Height adjustment mechanism

K-series

12・13

K-series bowl feeders are intended for small parts, including electronic components.
Simple, open construction and well thought out spring mechanism design allow precise and stable vibration for long periods of time.

(1) Precise full wave drive
(2) Height adjustment mechanism
(3) Attractive coverless construction

N-series (See exploded view below.)

14 to 19

The N-series are **NTN**'s most representative bowl feeders featuring stable operation and high durability by incorporating a traditional isolated bottom and horizontal drive. The new N32 model has been added to expand the N-series range.

(1) Low noise
(2) No adjustment required
(3) High-speed, stable feeding
(4) Auxiliary hopper can be fitted.
(5) Fastening base plate fitted as standard.

Isolated bottom construction

Since the bottom is isolated from the bowl, it does not vibrate. Only the tracks around the bowl are vibrated during operation. This design generates less noise, and keeps the vibrating mass unchanged. Thus, feed speed is always constant. In addition, an auxiliary hopper can be installed in the bowl.

Vibration system

Unlike conventional vertical drive feeders, which have high-capacity electromagnets, a horizontal drive is employed in N-series bowl feeders by evenly distributing several weaker electromagnets around the circumference so that force is distributed evenly and smoothly in the direction of vibration. Good balance in vibrational amplitude allows high-speed feeding without the need for frequent adjustments.

Exploded view of N25 type

G-series

20・21

G-series are powerful bowl feeders for large and heavy work pieces. This series of feeders includes the G50 and the more powerful G63.

(1) Powerful leaf spring
(2) Enhanced drive system
(3) Reduced vibration transmission
(4) Isolated bottom can be installed.

Bowl series

Numbers in shaded area indicate reference pages.

Precision machined bowl

22 · 29

Suitable for aligning and feeding minute parts

(1) Precision machined tracks
(2) Selection of bowl shapes for different applications
(3) NC tooling is possible
(4) Machined inside surface

Cascade bowl

22 · 23

For general applications (all-purpose)

(1) A virtually non-stick bowl
(2) Light weight (aluminum alloy casting)
(3) Cost-effective (mass-produced by precision casting)
(4) Inside surface is protected with a black polyurethane coating.

Stainless steel sheet cascade bowl

24 · 25

Suitable for foods and medicine

(1) All tracks surfaces can be smooth-finished for complete discharge of minute components.
(2) A virtually non-stick bowl
(3) Unfinished stainless steel surface inside the bowl

Straight wall bowl

26 · 27

Suitable for special applications

(1) Uniform circumference permits easy installation of attachments.
(2) Longer, more complex attachments than for cascade bowl can be used.
(3) Easy incorporation of recycling tracks (smooth recycling is possible by returning work pieces to the bottom of the bowl and guiding them to below the first tracks)
(4) Untreated, as-rolled stainless steel surface inside the bowl

Cone bowl

28

For general applications

(1) A virtually non-stick bowl
(2) Uniform circumference permits easy installation of attachments.
(3) Easier incorporation of recycling tracks than the cascade bowl
(4) Unfinished, stainless steel surface inside

Dish bowl

29

For high-speed feeding of low-profile parts.

(1) Low-profile parts can be easily fed at high speed via narrow tracks without special reworking for attachments.
(2) Unfinished, stainless steel surface inside

Linear feeder series

Numbers in shaded area indicate reference pages.

S-series 30 · 31

S-series feeders connect **NTN** bowl feeders with automated production equipment near-horizontally and near-linearly.

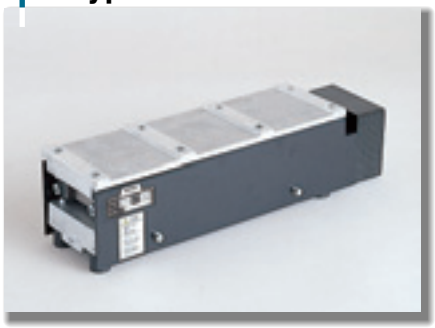
(1) Constant feed speed
(2) Stable operation for long periods
(3) Easy installation and adjustment

HS-series 32

HS-series feeders feed miniature parts, including chips and other electronic components at high speed.
Use in conjunction with HF-series.

(1) Built-in height adjustment mechanism
(2) Stable positioning

L-type 32



L-type feeders can be operated after a simple adjustment, and are also applicable for low profile parts.

(1) Easy design of vibratory troughs
(2) Smooth, high-speed feeding

Hopper series

Numbers in shaded area indicate reference pages.

Detached hopper 34

The detached hopper has a specially designed storage tank to allow the automatic supply of a large number of parts for a long time.
Eleven models are available.
The level switch and controller which control hopper operation according to the quantity of parts in the bowl are standard equipment.

(1) Low noise
(2) Stable discharge of work

Space-saving hopper 35

The space-saving hopper is compact for maximum utilization of available space.
The tank and vibratory trough are supported by a round bar, so that the whole hopper unit can be installed directly above the bowl feeder.
A compact, highly sensitive level switch is also provided.

(1) Space-saving
(2) Easy inspection and maintenance
(3) Stable discharge of work

Automatic auxiliary hopper 36

The range of applications is expanded by the automatic up/down movement of the auxiliary hopper in the bow.

(1) Suitable for light-weight, complicated work pieces
(2) Fully pneumatic level control eliminates need for electrical installations.
(3) Space-saving

Rotary hopper 36

This detached storage hopper feeds work ranging from fine powder to minute parts.

(1) Stable discharge of minute parts
(2) No vibration, no noise
(3) Reliable regardless of shape and material of work

Controller series

Numbers in shaded area indicate reference pages.

Variable frequency controller

38・39

Simple to set up, the variable frequency controller reliably controls parts feeders regardless of the power frequency.

(1) No adjustment of the leaf spring is needed.
(2) Simple digital setup.
(3) Capable of controlling a larger parts feeder.

SMD controller

40・41

The SMD controller supplies stable power tooptimally drive the SMD feeder.

(1) One twin-type controller unit is capable of controlling both a bowl feeder and a linear feeder.
(2) The arrangement of the digital switch allows the user to read the settings directly.
(3) Wider variable frequency range.
(4) The highly functional type features built-in I/O control for selection, overflow and other factors.

Constant voltage controller

42～44

The constant voltage controller features standard controller functions as well as a constant voltage function to compensate for variations in the supply voltage.

(1) Automatically corrects the variation in supply voltage.
(2) Capable of controlling a larger parts feeder.
(3) One twin-type controller unit is capable of controlling both a bowl feeder and a linear feeder.

Constant amplitude controller

45

The constant amplitude controller features a powerful constant amplitude to provide stable power with higher accuracy.

(1) Automatically corrects variations in the load with higher accuracy.
(2) Capable of controlling a larger parts feeder.
(3) Wider range of functions.

I/O controller unit

48

To control the parts feeder system with the I/O controller unit, the operator need only enter a program number and define the timer setting.

(1) The controller unit is ready to operate once the operator has entered a program number and timer setting.
(2) Space requirements for installation are greatly reduced.
(3) Low cost and short lead time

Optional unit

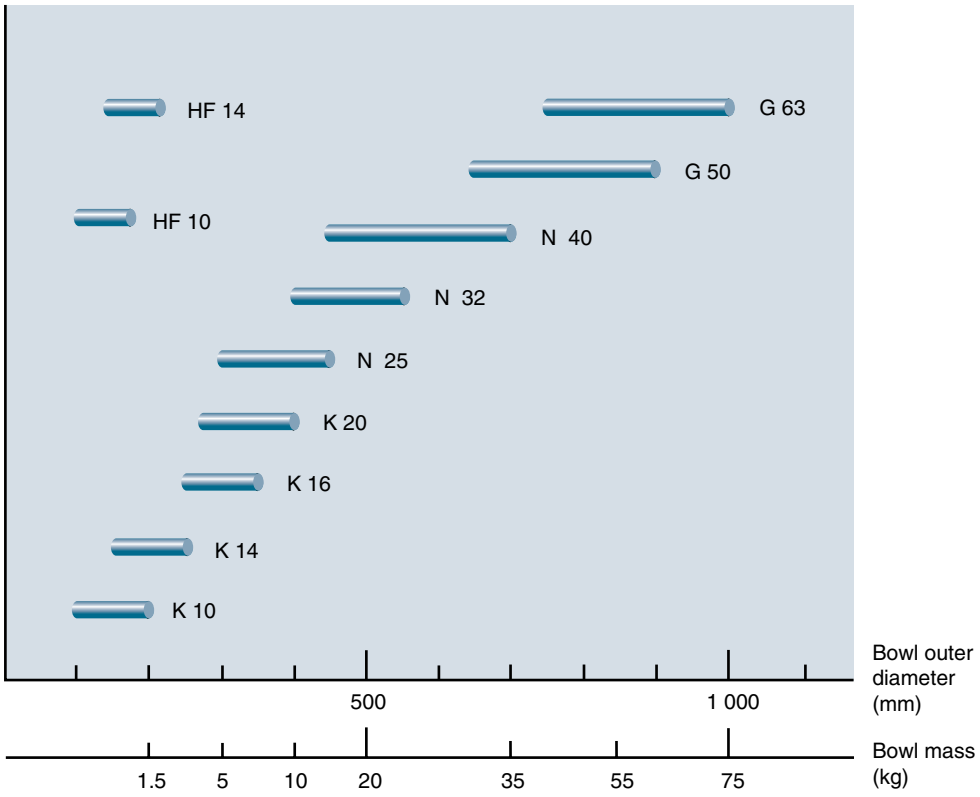
47

Optional units enhance the functionality and applicability of various controllers while expanding the variety of applicable sensors.

(1) Additional functions and applications are available through retrofitting.
(2) A wide variety of applicable sensors.

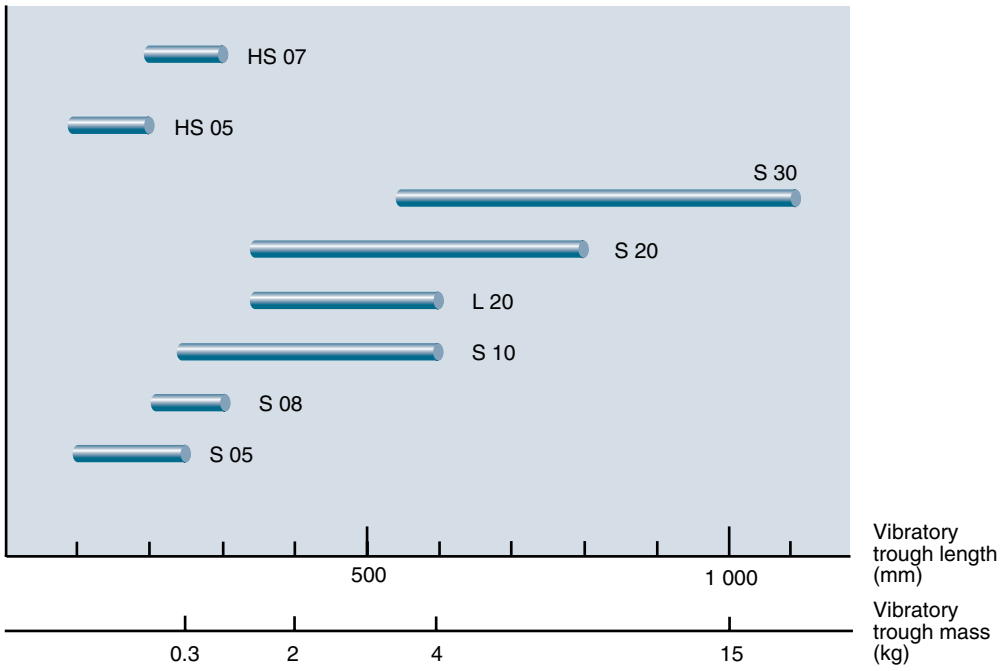
Once the outer diameter of the bowl and vibratory trough length are determined, suitable vibratory drives can be selected from the graphs below.
For details, refer to pages 6 and 7 in the "Parts Feeder Guide Book" (CAT.No.7019/E).

Appropriate bowl sizes for bowl feeders



Bowl outer diameter and mass figures include attachments.

Appropriate vibratory trough sizes for linear feeders



NTN parts feeder

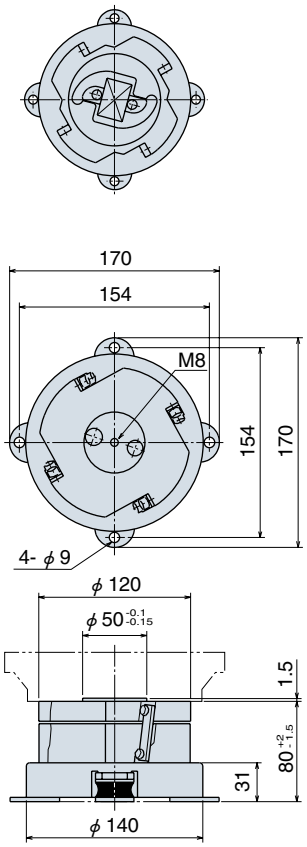
HF series

(High-frequency bowl feeder)

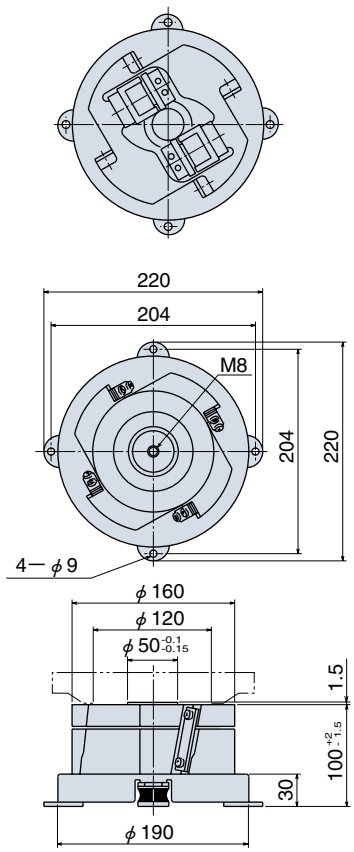
K- HF 14 R 2 1

- Voltage and drive system
- Design revision code
- Supply direction (R: clockwise, L: counterclockwise)
- Size
- Model

K-HF10$^{R}_{L}$21



K-HF14$^{R}_{L}$21



Model and size	Part number	Rated voltage (V)	Rated current (A)	Applicable controller ❶	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Mass (kg)	Remarks
HF10	K-HF10$^{R}_{L}$21	100	0.2	K-ET818	K-PLS2-35×12	12°	200 ~300	4.5	w/ height adjustment mechanism
HF14	K-HF14$^{R}_{L}$21		0.9		K-PLS2-50×20			10.9	

❶ The applicable controllers in the list above are typical ones. For other applicable controllers, refer to the standard series combination table on page 52.

K10,14

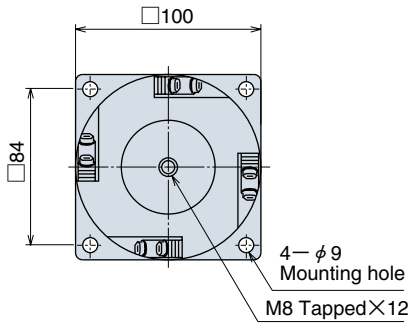
NTN parts feeder

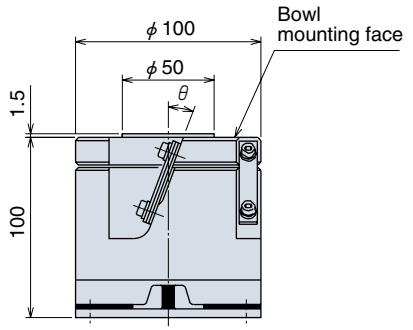
K series

K- K 10 R □ 1

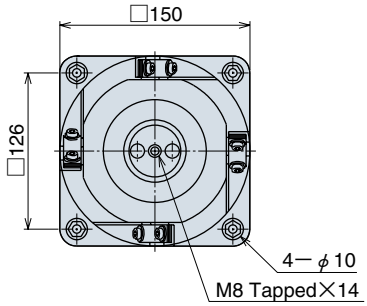
- Voltage and drive system
- Design revision code
- Supply direction (R: clockwise, L: counterclockwise)
- Size
- Model

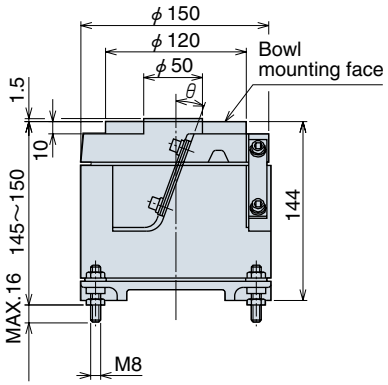
K-K10 R1 L2





K-K14 R1 L2





Model and size	Part number	Rated voltage (V)	Rated current (A)	Applicable controller ❶	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Mass (kg)	Remarks
K10	K-K10□1	100	0.3	K-EG177 K-ECA46 ❷	K-PLS2-35×5	20°	※1 100/120	3.6	
	K-K10□2	200	0.15						
K14	K-K14□1	100	0.7		K-PLS2-50×9			10.0	w/ height adjusting mechanism
	K-K14□2	200	0.35						

❶ The applicable controllers in the list above are typical ones. For other applicable controllers, refer to the standard series combination table in page 53.
❷ Part No. K-ECA46 accommodates vibratory driving units rated at 200 V.

※1 Relation between voltage/drive system and vibration frequency

Voltage and drive system		50 Hz area	60 Hz area
1:100V 2:200V	Full wave	6000 cycles/min	7200 cycles/min

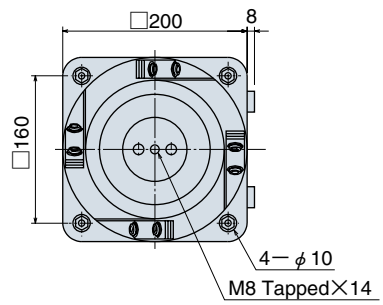
NTN parts feeder

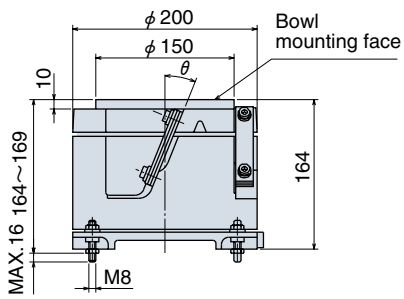
K series

K- K 16 R 3 1

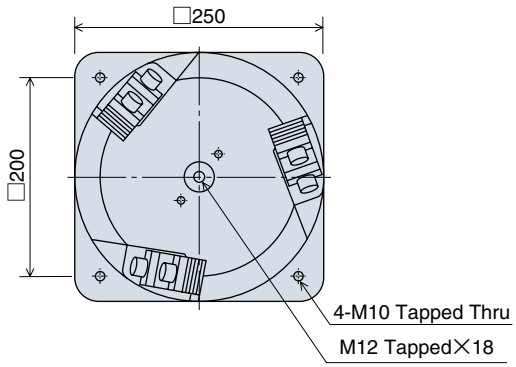
- Voltage and drive system
- Design revision code
- Supply direction (R: clockwise, L: counterclockwise)
- Size
- Model

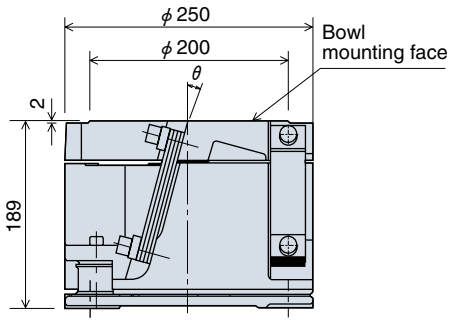
K-K16 R/L 3 1/2





K-K20 R/L 1, 2 — K-K20 R/L 3, 4





Model and size	Part number	Rated voltage (V)	Rated current (A)	Applicable controller ❶	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Mass (kg)	Remarks
K16	K-K16 R/L 31	100	1.8	K-EG177 K-ECA46 ❷	K-PLS2-67×12-1	20°	※1 100/120 or 50/60	20	w/ height adjusting mechanism
	K-K16 R/L 32	200	0.3						
K20	K-K20 R/L 1	100	2.5		K-PLS2-116×35-1	15°		35	Full wave
	K-K20 R/L 2	200	1.5						
	K-K20 R/L 3	100	2.0		K-PLS2-116×20-2	25°			Half wave
	K-K20 R/L 4	200	1.0						

❶ The applicable controllers in the list above are typical ones. For other applicable controllers, refer to the standard series combination table in page 53.
❷ Part No. K-ECA46 accommodates vibratory driving units rated at 200 V.

※1 Relation between voltage/drive system and vibration frequency

Voltage and drive system		50 Hz area	60 Hz area
1:100V 2:200V	Full wave	6000 cycles/min	7200 cycles/min
3:100V 4:200V	Half wave	3000 cycles/min	3600 cycles/min

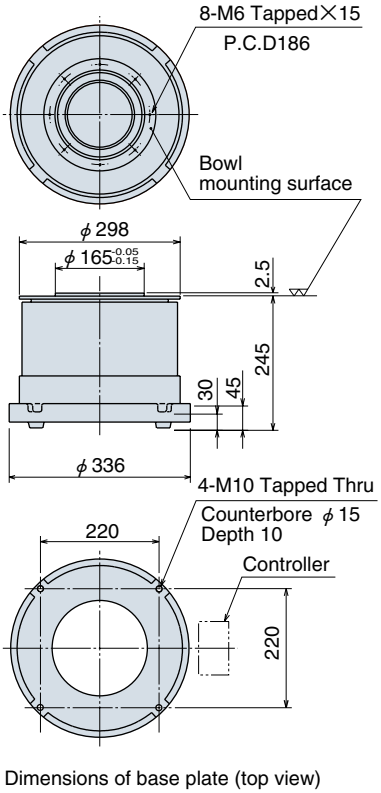
N25

NTN parts feeder

N series

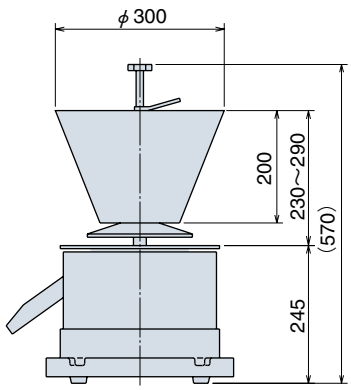
K- N 25 R A M 2
- Voltage and drive system
- Bowl mounting type
- Design revision code
- Supplying direction (R: clockwise, L: counterclockwise)
- Size
- Model

K-N25$^{R}_{L}$M$^{1}_{2}$

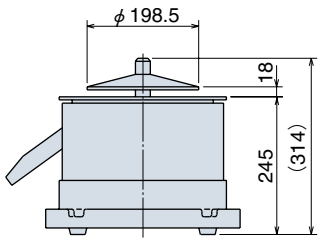


Dimensions of base plate (top view)

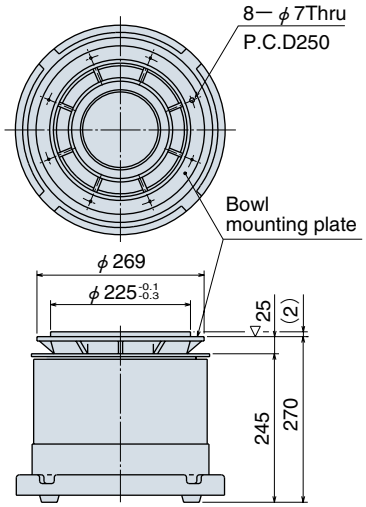
K-N25$^{R}_{L}$H$^{1}_{2}$



K-N25$^{R}_{L}$T$^{1}_{2}$



K-N25$^{R}_{L}$F$^{1}_{2}$



Model and size	Part number	Rated voltage (V)	Rated current (A)	Applicable ❶ controller	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency cycles/min	Mass (kg)	Remarks
N25	K-N25$^{R}_{L}$M1	100	3.6	K-EG177 K-ECA46 ❷	K-PLS2-86×20	15°	※1 100/120	48	Basic type
	K-N25$^{R}_{L}$M2	200	1.8						
	K-N25$^{R}_{L}$H1	100	3.6					52	w/ aux. hopper in the bowl
	K-N25$^{R}_{L}$H2	200	1.8						
	K-N25$^{R}_{L}$T1	100	3.6					49	w/ isolated bottom
	K-N25$^{R}_{L}$T2	200	1.8						
	K-N25$^{R}_{L}$F1	100	3.6					49	w/ bowl mounting flange
	K-N25$^{R}_{L}$F2	200	1.8						

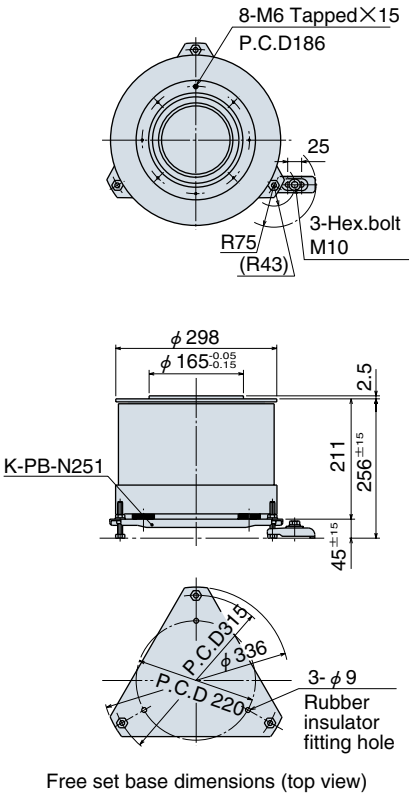
❶The applicable controllers in the list above are typical ones. For other applicable controllers, refer to the standard series combination table in page 54.
❷ Part No. K-ECA46 accommodates vibratory driving units rated at 200 V.

※1 Relation between voltage/drive system and vibration frequency

Voltage and drive system		50 Hz area	60 Hz area
1:100V 2:200V	Full wave	6000 cycles/min	7200 cycles/min

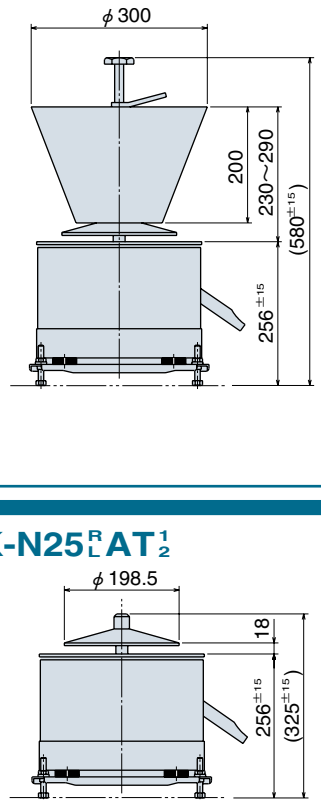
N25·A

K-N25 R/L AM 1/2



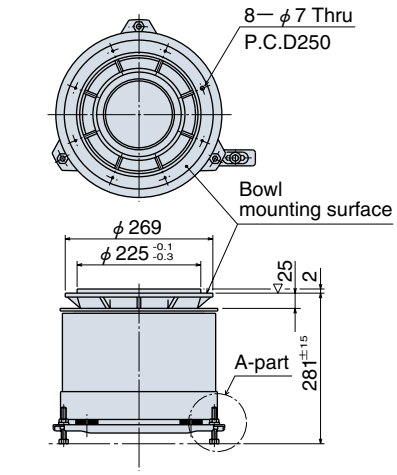
Free set base dimensions (top view)

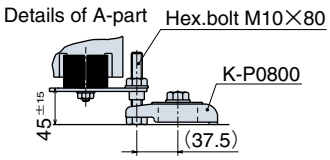
K-N25 R/L AH 1/2



K-N25 R/L AT 1/2

K-N25 R/L AF 1/2





Model and size	Part number	Rated voltage (V)	Rated current (A)	Applicable ❶ controller	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency cycles/min	Mass (kg)	Remarks	
N25·A ❷	K-N25 R/L AM1	100	3.6	K-EG177 K-ECA46 ❸	K-PLS2-86×20	15°	※1 100/120	44	w/ free set base	basic type
	K-N25 R/L AM2	200	1.8							
	K-N25 R/L AH1	100	3.6					48		w/ aux. hopper in the bowl
	K-N25 R/L AH2	200	1.8							
	K-N25 R/L AT1	100	3.6					45		w/ isolated bottom
	K-N25 R/L AT2	200	1.8							
	K-N25 R/L AF1	100	3.6					45		w/ bowl mounting flange
	K-N25 R/L AF2	200	1.8							

❶ The applicable controllers in the list above are typical ones.
For other applicable controllers, refer to the standard series combination table in page 54.
❷ 25.A will be supplied with three height adjusting bolts (M10×80) and three clamps (K-P0800).
❸ Part No. K-ECA46 accommodates vibratory driving units rated at 200 V.

※1 Relation between voltage/drive system and vibration frequency

Voltage and drive system		50 Hz area	60 Hz area
1:100V 2:200V	Full wave	6000 cycles/min	7200 cycles/min

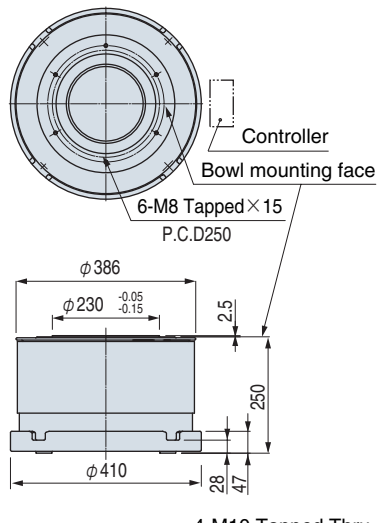
NTN parts feeder

N series

K- N 32 R 2 M 2

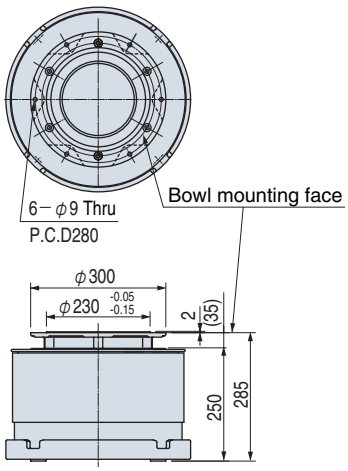
- Voltage and drive system
- Bowl mounting type
- Design revision code
- Supplying direction (R: clockwise, L: counterclockwise)
- Size
- Model

K-N32 R/L 2M 2/4

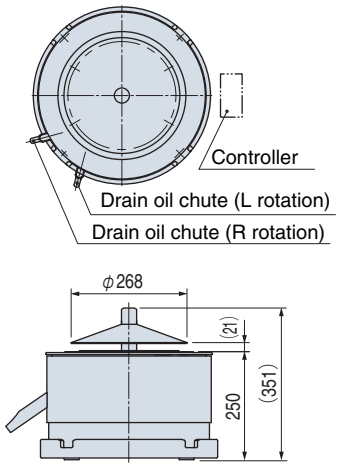


Base plate dimensions (top view)

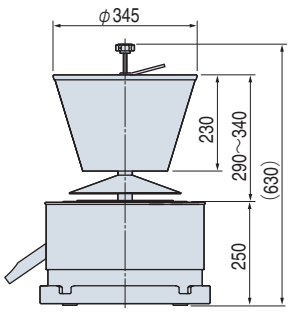
K-N32 R/L 2F 2/4



K-N32 R/L 2T 2/4



K-N32 R/L 2H 2/4



Model and size	Part number	Rated voltage (V)	Rated current (A)	Applicable controller ❶	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Mass (kg)	Remarks
N32 · 2	K-N32 R/L 2M2	200	2.8	K-ECA46	K-PLS2-116×40	15°	※1 100/120 or 50/60	68	basic type
	K-N32 R/L 2M4		3.5		K-PLS2-116×20				
	K-N32 R/L 2H2		2.8		K-PLS2-116×40			76	w/ aux. hopper in the bowl
	K-N32 R/L 2H4		3.5		K-PLS2-116×20				
	K-N32 R/L 2T2		2.8		K-PLS2-116×40			72	w/ isolated bottom
	K-N32 R/L 2T4		3.5		K-PLS2-116×20				
	K-N32 R/L 2F2		2.8		K-PLS2-116×40			69	w/ bowl mounting flange
	K-N32 R/L 2F4		3.5		K-PLS2-116×20				

❶ The applicable controllers in the list above are typical ones. For other applicable controllers, refer to the standard series combination table in page 55 to 56.

※1 Relation between voltage/drive system and vibration frequency

Voltage and drive system		50 Hz area	60 Hz area
2:200V	Full wave	6000 cycles/min	7200 cycles/min
4:200V	Half wave	3000 cycles/min	3600 cycles/min

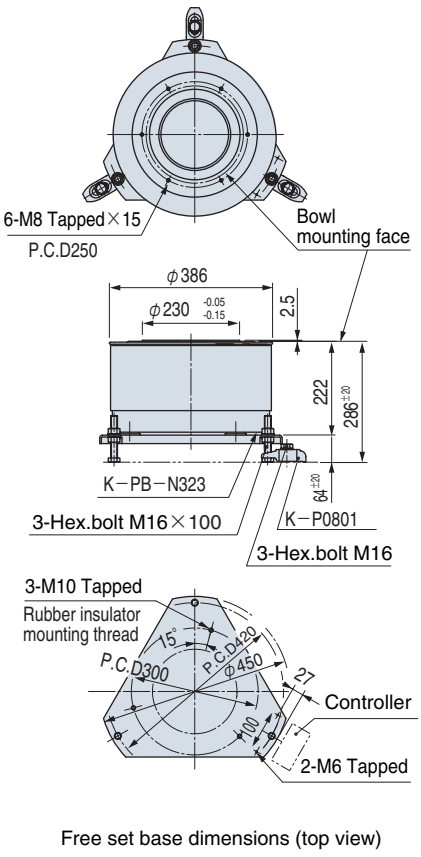
NTN parts feeder

N series

K- N 32 R AM 2

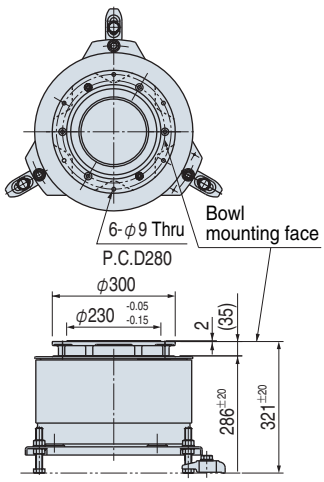
- Voltage and drive system
- Bowl mounting type
- Design revision code
- Supplying direction (R: clockwise, L: counterclockwise)
- Size
- Model

K-N32[R/L]AM[2/4]

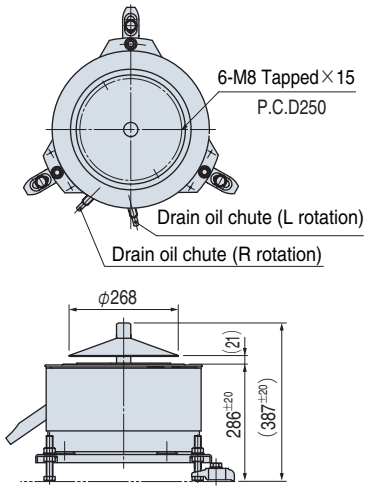


Free set base dimensions (top view)

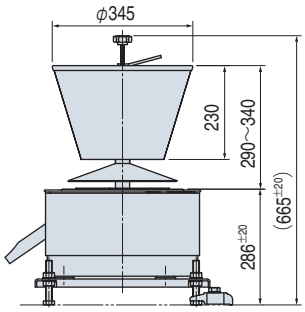
K-N32[R/L]AF[2/4]



K-N32[R/L]AT[2/4]



K-N32[R/L]AH[2/4]



Model and size	Part number	Rated voltage (V)	Rated current (A)	Applicable controller ❶	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Mass (kg)	Remarks	
N32・A ❷	K-N32[R/L]AM2	200	2.8	K-ECA46	K-PLS2-116×40	15°	※1 100/120 or 50/60	64	w/ free set base	basic type
	K-N32[R/L]AM4		3.5		K-PLS2-116×20					
	K-N32[R/L]AH2		2.8		K-PLS2-116×40			72		w/ aux. hopper in the bowl
	K-N32[R/L]AH4		3.5		K-PLS2-116×20					
	K-N32[R/L]AT2		2.8		K-PLS2-116×40			68		w/ isolated bottom
	K-N32[R/L]AT4		3.5		K-PLS2-116×20					
	K-N32[R/L]AF2		2.8		K-PLS2-116×40			65		w/ bowl mounting flange
	K-N32[R/L]AF4		3.5		K-PLS2-116×20					

❶ The applicable controllers in the list above are typical ones. For other applicable controllers, refer to the standard series combination table in page 55 to 56.
❷ N32.A will be supplied with three height adjusting bolts (M16×100) and three clamps (K-P0801).

※1 Relation between voltage/drive system and vibration frequency

Voltage and drive system		50 Hz area	60 Hz area
2:200V	Full wave	6000 cycles/min	7200 cycles/min
4:200V	Half wave	3000 cycles/min	3600 cycles/min

N40

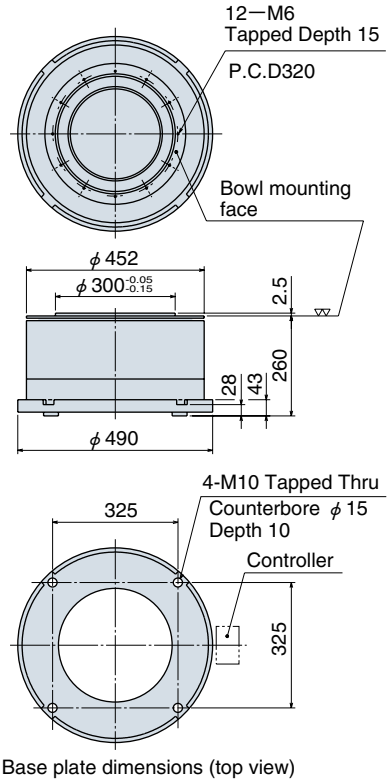
NTN parts feeder

N series

K- N 40 R 1 M 2

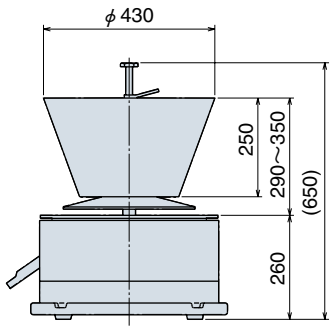
- Voltage and drive system
- Bowl mounting type
- Design revision code
- Supplying direction (R: clockwise, L: counterclockwise)
- Size
- Model

K-N40$^{R}_{L}$M$^{2}_{4}$

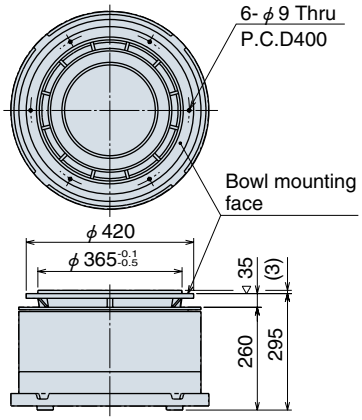


Base plate dimensions (top view)

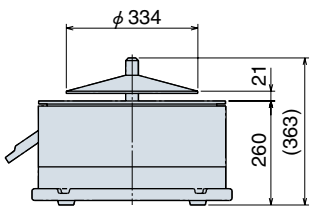
K-N40$^{R}_{L}$H$^{2}_{4}$



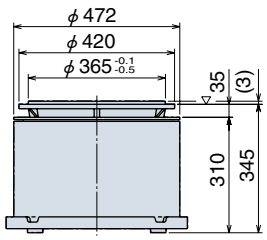
K-N40$^{R}_{L}$F4



K-N40$^{R}_{L}$T$^{2}_{4}$



K-N40$^{R}_{L}$1F4



Model and size	Part number	Rated voltage (V)	Rated current (A)	Applicable controller ❶	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Mass (kg)	Remarks
N40	K-N40$^{R}_{L}$M2	200	2.8	K-ECA46	K-PLS2-86×20	15°	※1	90	basic type
	K-N40$^{R}_{L}$M4		3.5		K-PLS2-116×20				
	K-N40$^{R}_{L}$H2		2.8		K-PLS2-86×20			98	w/ aux. hopper in the bowl
	K-N40$^{R}_{L}$H4		3.5		K-PLS2-116×20				
	K-N40$^{R}_{L}$T2		2.8		K-PLS2-86×20		100/120 or 50/60	94	w/ isolated bottom
	K-N40$^{R}_{L}$T4		3.5		K-PLS2-116×20				
	K-N40$^{R}_{L}$F4							93	w/ bowl mounting flange
N40·1	K-N40$^{R}_{L}$1M4	200	3.5		K-PLS2-150×30			110	basic type
	K-N40$^{R}_{L}$1H4							118	w/ aux. hopper in the bowl
	K-N40$^{R}_{L}$1T4							114	w/ isolated bottom
	K-N40$^{R}_{L}$1F4							113	w/ bowl mounting flange

N40 wide amplitude

❶ The applicable controllers in the list above are typical ones.
For other applicable controllers, refer to the standard series combination table in page 57 to 59.

※1 Relation between voltage/drive system and vibration frequency

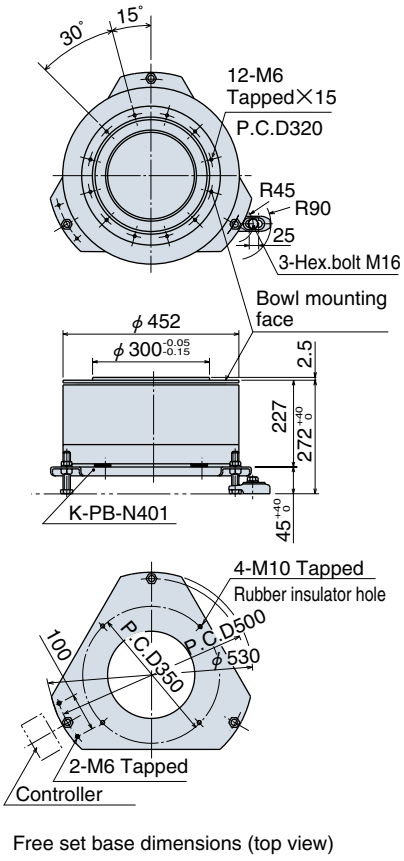
Voltage and drive system		50 Hz area	60 Hz area
2:200V	Full wave	6000 cycles/min	7200 cycles/min
4:200V	Half wave	3000 cycles/min	3600 cycles/min

NTN parts feeder

N series

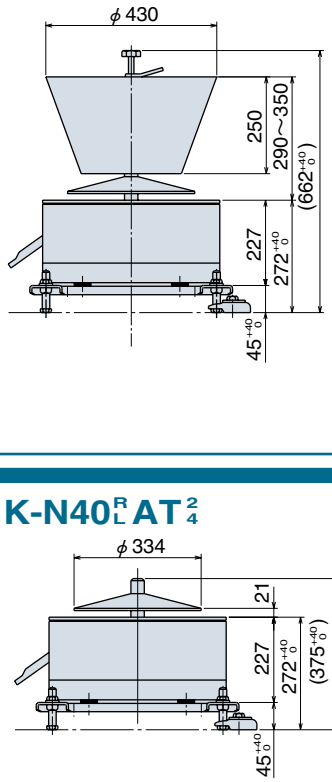
K - N 40 R A M 2
- Voltage and drive system
- Bowl mounting type
- Design revision code
- Supplying direction (R: clockwise, L: counterclockwise)
- Size
- Model

K-N40$^{R}_{L}$AM$^{2}_{4}$



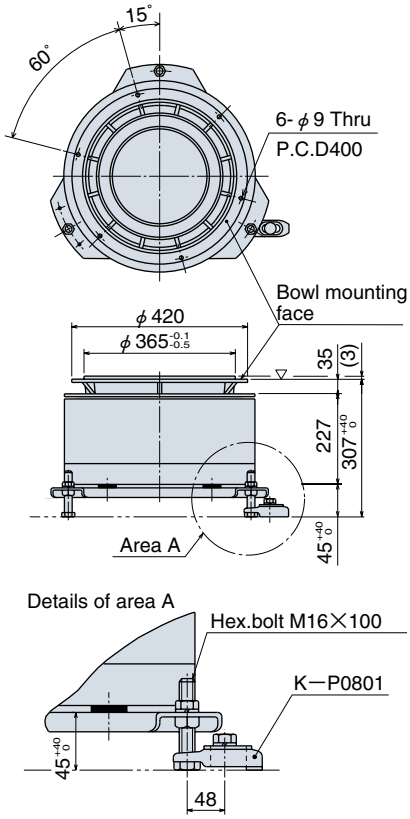
Free set base dimensions (top view)

K-N40$^{R}_{L}$AH$^{2}_{4}$



K-N40$^{R}_{L}$AT$^{2}_{4}$

K-N40$^{R}_{L}$AF4



Model and size	Part number	Rated voltage (V)	Rated current (A)	Applicable controller ❶	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Mass (kg)	Remarks	
N40·A ❷	K-N40$^{R}_{L}$AM2	200	2.8	K-ECA46	K-PLS2-86×20	15°	※1 100/120 or 50/60	88	w/ free set base	basic type
	K-N40$^{R}_{L}$AM4		3.5		K-PLS2-116×20					
	K-N40$^{R}_{L}$AH2		2.8		K-PLS2-86×20			96		w/ aux. hopper in the bowl
	K-N40$^{R}_{L}$AH4		3.5		K-PLS2-116×20					
	K-N40$^{R}_{L}$AT2		2.8		K-PLS2-86×20			92		w/ isolated bottom
	K-N40$^{R}_{L}$AT4		3.5		K-PLS2-116×20					
	K-N40$^{R}_{L}$AF4							91		w/ bowl mounting flange

❶ The applicable controllers in the list above are typical ones.
For other applicable controllers, refer to the standard series combination table in page 57 to 58.

❷ 40.A will be supplied with three height adjusting bolts (M16×100) and three clamps (K-P0801).

※1 Relation between voltage/drive system and vibration frequency

Voltage and drive system		50 Hz area	60 Hz area
2:200V	Full wave	6000 cycles/min	7200 cycles/min
4:200V	Half wave	3000 cycles/min	3600 cycles/min

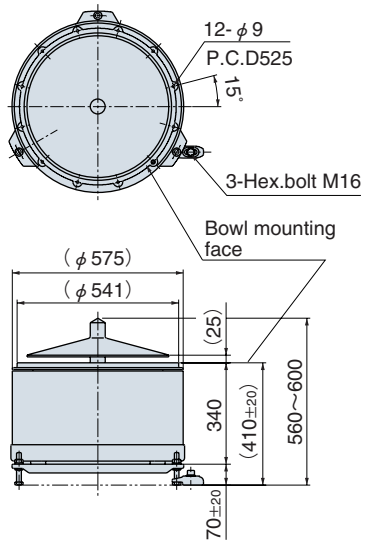
NTN parts feeder

G series

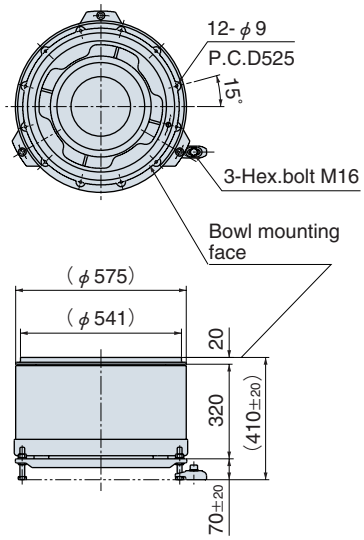
K- G 50 R 1 T 4

- Voltage and drive system
- Bowl mounting type
- Design revision code
- Supplying direction (R: clockwise, L: counterclockwise)
- Size
- Model

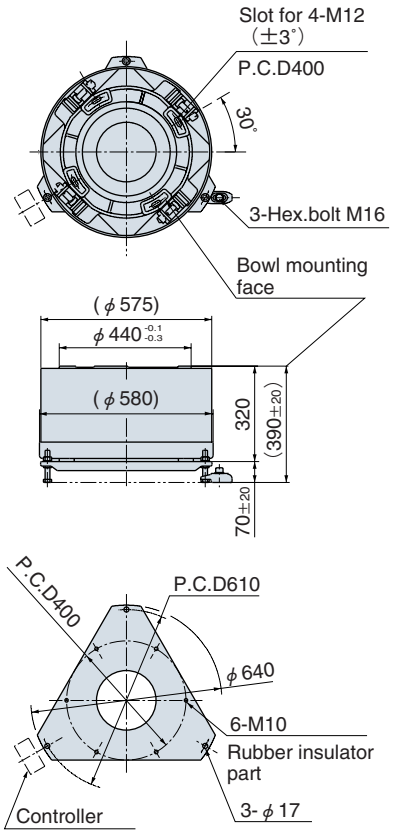
K-G50$^{R}_{L}$1T4



K-G50$^{R}_{L}$1G4



K-G50$^{R}_{L}$1M4



Free set base dimensions (top view)

Model and size	Part number	Rated voltage (V)	Rated current (A)	Applicable controller ❶	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Mass (kg)	Remarks
G50 ❷	K-G50$^{R}_{L}$1T4	200	4	K-ECA46	K-PLS2-180×40	20°	※1 50/60	220	w/ isolated bottom and drain oil chute
	K-G50$^{R}_{L}$1G4							190	w/ mounting adapter
	K-G50$^{R}_{L}$1M4							185	basic type (w/o isolated bottom and adapter)

❶ The applicable controllers in the list above are typical ones.
For other applicable controllers, refer to the standard series combination table in page 60.

❷ G50 will be supplied with three height adjusting bolts (M16×100) and three clamps (K-P0801).

※1 Relation between voltage/drive system and vibration frequency

Voltage and drive system		50 Hz area	60 Hz area
4:200V	Half wave	3000 cycles/min	3600 cycles/min

G63

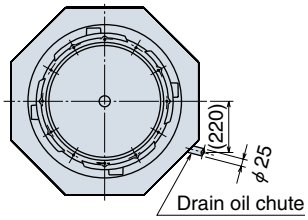
NTN parts feeder

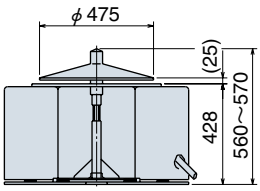
G series

K- G 63 R 2 T 4

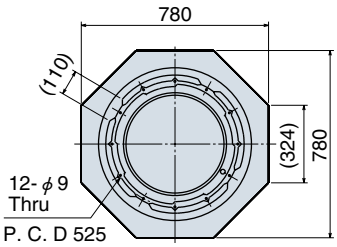
- Voltage and drive system
- Bowl mounting type
- Design revision code
- Supplying direction (R: clockwise, L: counterclockwise)
- Size
- Model

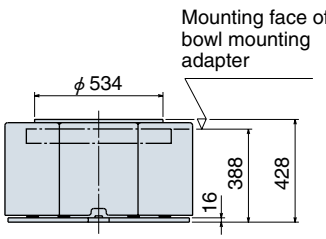
K-G63$^{R}_{L}$2T4



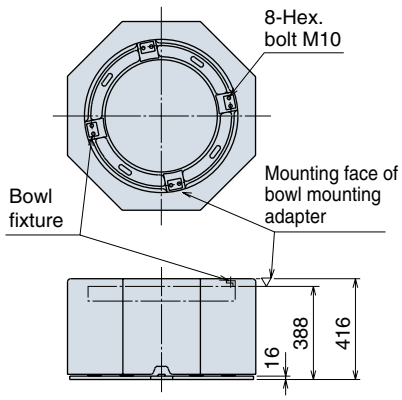


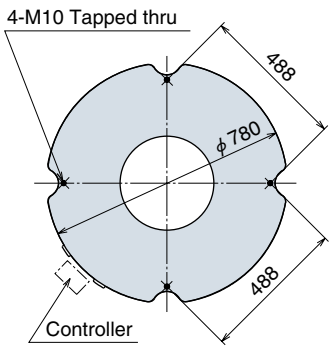
K-G63$^{R}_{L}$2G4





K-G63$^{R}_{L}$2M4





Baseplate dimensions (top view)

Model and size	Part number	Rated voltage (V)	Rated current (A)	Applicable controller ❶	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Mass (kg)	Remarks
G63·2	K-G63$^{R}_{L}$2T4	200	10	K-ECB96	K-PLS2-250×70	20°	※1 50/60	400	w/ isolated bottom and drain oil chute
	K-G63$^{R}_{L}$2G4							370	w/ mounting adapter
	K-G63$^{R}_{L}$2M4							360	basic type (w/o isolated bottom and adapter)

❶ The applicable controllers in the list above are typical ones. For other applicable controllers, refer to the standard series combination table in page 61.

※1 Relation between voltage/drive system and vibration frequency

Voltage and drive system		50 Hz area	60 Hz area
4:200V	Half wave	3000 cycles/min	3600 cycles/min

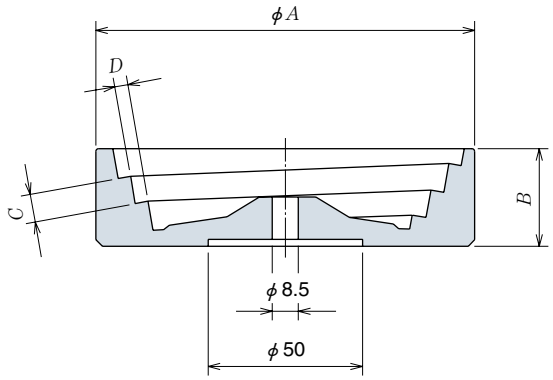
NTN parts feeder

Cascade bowl (1)

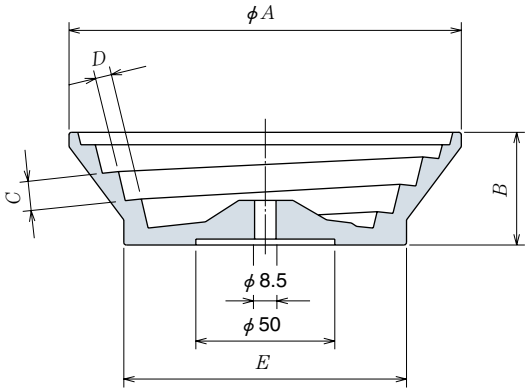
K- B 10 R C 14 01

- 01: Bowl suffix
- 14: Bowl outer dia.
- C: Bowl type (C: cascade, D: dish, Z: straight wall, K: cone)
- R: Supply direction (R: clockwise, L: counterclockwise)
- 10: Size
- B: Bowl type code

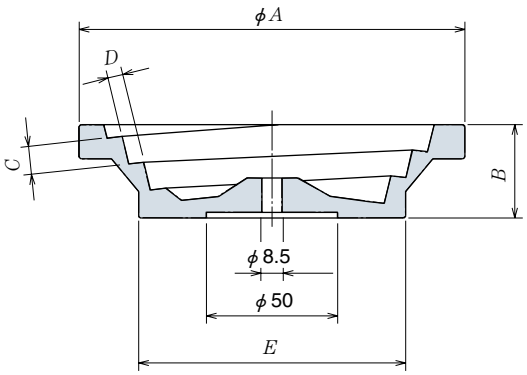
K-B10$^{R}_{L}$C1201



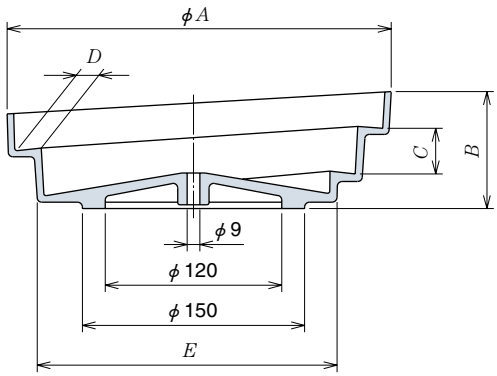
K-B10$^{R}_{L}$C1401



K-B10$^{R}_{L}$C1403,1501,1502,1701
K-B14$^{R}_{L}$C1801,2001



K-B16RC2101
K-B16$^{R}_{L}$C2601



Specifications / Part number	Dimensions (mm) A	B	C	D	E	Turns	Material	Mass (kg)	Standard capacity (ℓ)	Applicable unit, remarks	
K-B10$^{R}_{L}$C1201 ❶	120	30	8.8	4.0	120	3.0	Aℓ alloy	0.47	0.07	K10	
K-B10$^{R}_{L}$C1401 ❶❷	140	40	11.0	6.0	100	3.0	Aℓ alloy	0.38	0.10		
K-B10$^{R}_{L}$C1403 ❶❷	145	35	11.0	6.0	100	3.0	Aℓ alloy	0.48	0.10		w/ outer apron
K-B10$^{R}_{L}$C1501 ❶	150	34	9.3	4.3	116	3.0	Aℓ alloy	0.55	0.09		
K-B10$^{R}_{L}$C1502 ❶❷	150	34	9.2	3.2	116	3.0	Aℓ alloy	0.52	0.09		2-tracks
K-B10$^{R}_{L}$C1701 ❶❷	175	40	13.6	7.8	138	2.3	Aℓ alloy	1.00	0.12		For conventional Part No. K10-A
K-B14$^{R}_{L}$C1801 ❶	188	32	12.0	6.0	120	1.5	Aℓ alloy	1.20	0.15	HF14	For high-frequency
K-B14$^{R}_{L}$C2001 ❶	200	65	18.0	10.0	120	3.0	Aℓ alloy	1.80	0.22	K14	
K-B16RC2101	225	56	18.0	4.3	170	2.0	Aℓ casting	1.10	0.22	K16	2-tracks
K-B16$^{R}_{L}$C2601	260	77	30.0	19.0	202	1.5	Aℓ casting	1.70	0.40		

❶ The Al alloy bowl is precision machined.
❷ Part Nos. C1401, C1403, C1502, C1701 and C2101 are manufactured on special order.

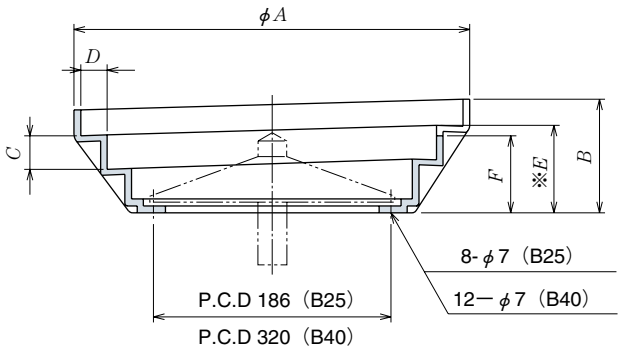
NTN parts feeder

Cascade bowl (2)

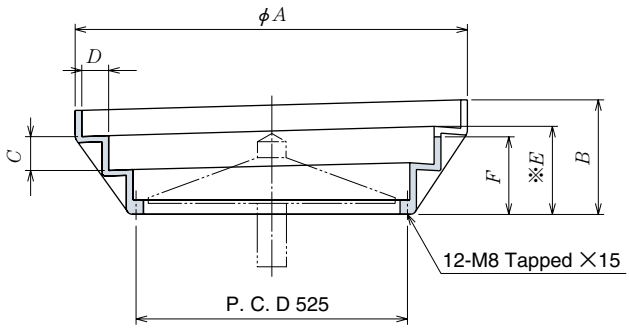
K- B 25 R C D 39 1

- 1 — Design revision code
- 39 — Bowl outer dia. (rounded off to cm)
- D — Bowl bottom type (D: no-bottom(isolated bottom type), F: integrated bottom, B: w/ fixed bottom)
- C — Bowl type (C: cascade, D: dish, Z: straight wall, K: cone)
- R — Supply direction (R: clockwise, L: counterclockwise)
- 25 — Size
- B — Bowl unit code

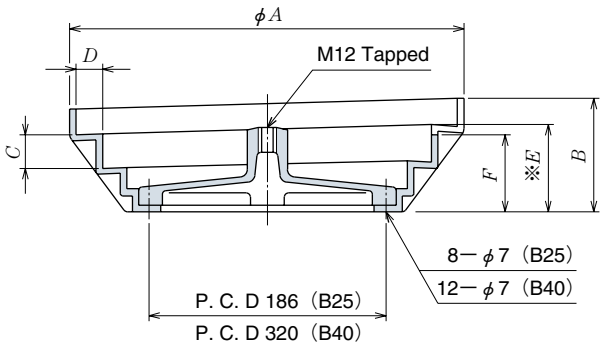
K-B25$^{R}_{L}$CD···
K-B40$^{R}_{L}$CD···



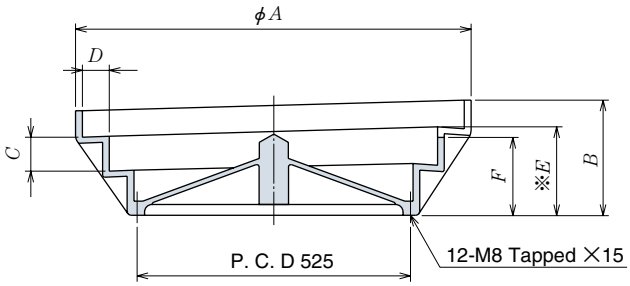
K-B63$^{R}_{L}$CD83



K-B25$^{R}_{L}$CB···
K-B40$^{R}_{L}$CB···



K-B63$^{R}_{L}$CB83



※Height of outlet

Part number \ Specifications	Dimensions（mm） A	B	C	D	E	F	Turns	Material	Mass（kg）	Approx. capacity up to the first step（ℓ）	Applicable unit, remarks	
K-B25$^{R}_{L}$C$^{D}_{B}$33	330	105	32	20	82	73	2.0	Al casting	1.6	1.5	N25	
K-B25$^{R}_{L}$C$^{D}_{B}$39	396	129	40	32	98	89	2.0	Al casting	2.5	2.5		
K-B25$^{R}_{L}$C$^{D}_{B}$391	396	151	40 | 67❶	32	121	92	2.0	Al casting	2.5	2.5		Steep steps
K-B40$^{R}_{L}$C$^{D}_{B}$54	540	162	50	32	120	111	2.0	Al casting	4.5	5	N40	
K-B40$^{R}_{L}$C$^{D}_{B}$58	588	210	60 | 87❶	40	160	130	2.0	Al casting	8.0	7		Steep steps
K-B40$^{R}_{L}$C$^{D}_{B}$64	640	203	64	50	148	139	2.0	Al casting	10.0	9		
K-B40$^{R}_{L}$C$^{D}_{B}$641	640	241	64 | 112❶	50	186	141	2.0	Al casting	10.0	9		Steep steps
K-B63$^{R}_{L}$C$^{D}_{B}$83	830	230	90	68	160	140	1.5	Al casting	22.0	20	G50・1, G63・2	

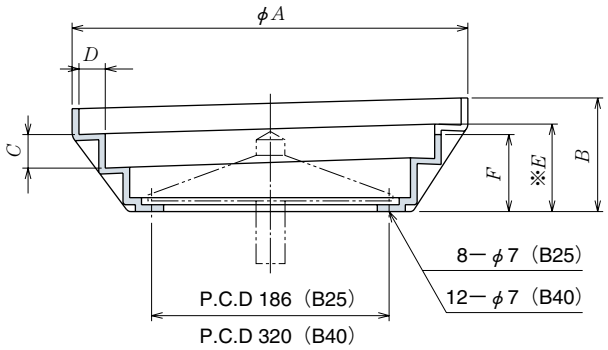
❶ The lead of the last turn of the track.

NTN parts feeder

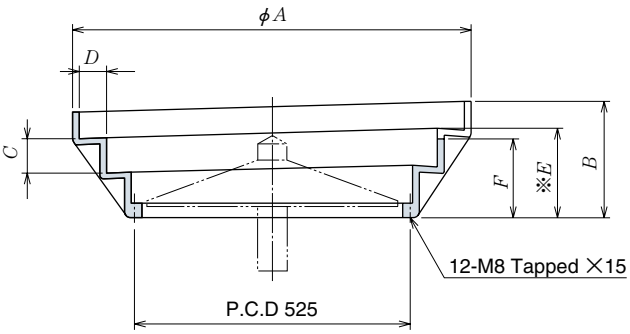
Cascade bowl (3)

K- B 25 R S D 39 1
- 1 — Design revision code
- 39 — Bowl outer dia. (to nearest cm)
- D — Bowl bottom type (D: no-bottom (isolated bottom), F: integrated bottom, B: w/ fixed bottom)
- S — Bowl type (C: cascade, D: dish, Z: straight wall, K: cone, S: stainless steel cascade)
- R — Supply direction (R: clockwise, L: counterclockwise)
- 25 — Size
- B — Bowl Code

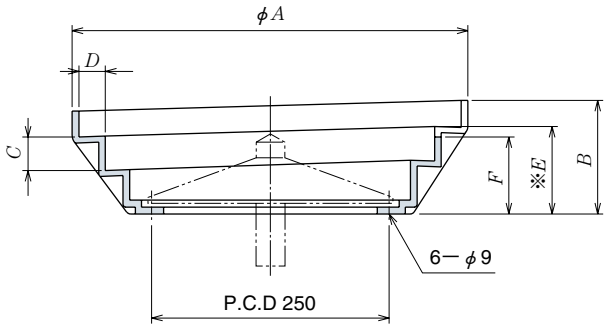
K-B25$^{R}_{L}$SD···
K-B40$^{R}_{L}$SD···



K-B63$^{R}_{L}$SD83



K-B32$^{R}_{L}$SD491



※Height of outlet

Specifications / Part number	Dimensions (mm) A	B	C	D	E	F	Turns	Material	Mass (kg)	Approx. capacity up to the first step (ℓ)	Applicable unit, remarks	
K-B25$^{R}_{L}$SD39	390	137	40	32	99	—	2.0	SUS	4.3	2.5	N25	
K-B25$^{R}_{L}$SD391	390	157	40 | 67❶	32	119	97	2.0	SUS	4.4	2.5		Steep steps
K-B32$^{R}_{L}$SD491	496	182	55	36	136	127	2.0	SUS	10.2	3.7	N32	
K-B40$^{R}_{L}$SD54	538	168	50	32	121	—	2.0	SUS	10.0	5	N40	
K-B40$^{R}_{L}$SD58	582	217	60 | 87❶	40	161	137	2.0	SUS	12.0	7		Steep steps
K-B40$^{R}_{L}$SD64	636	210	64	50	149	—	2.0	SUS	14.0	9		
K-B40$^{R}_{L}$SD641❷	636	246	64 | 112❶	50	185	146	2.0	SUS	15.2	9		Steep steps
K-B63$^{R}_{L}$SD83❷	828	227	90	68	160	—	1.5	SUS	30.1	20	G63・2	

❶ The lead of the last turn of the track.
❷ Part Nos. SD641 and SD83 are manufactured on special order.

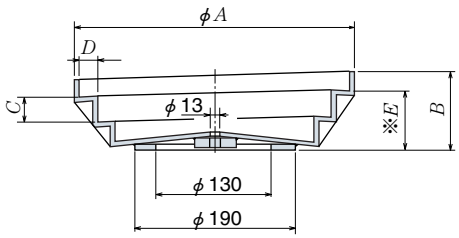
NTN parts feeder

Cascade bowl (4)

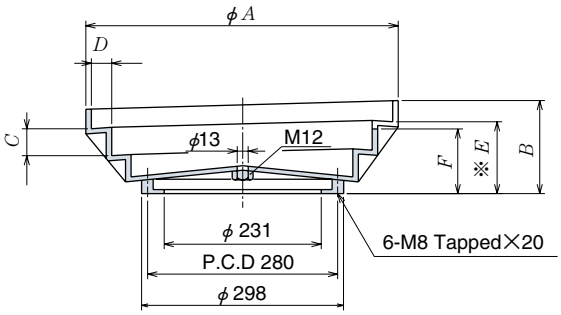
K- B 25 R S F 39 1

- 1 — Design revision code
- 39 — Bowl outer dia. (to nearest cm)
- F — Bowl bottom type (D: no-bottom (isolated bottom type), F: integrated bottom, B: w/ fixed bottom)
- S — Bowl type (C: cascade, D: dish, Z: straight wall, K: cone, S: stainless steel cascade)
- R — Supply direction (R: clockwise, L: counterclockwise)
- 25 — Size
- B — Bowl code

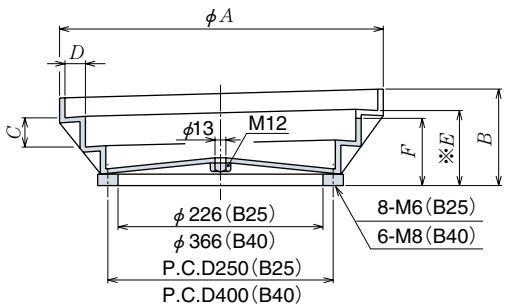
K-B20$^{R}_{L}$S3201



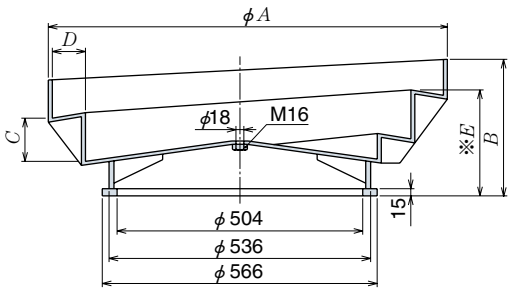
K-B32$^{R}_{L}$SF49



K-B25$^{R}_{L}$SF···
K-B40$^{R}_{L}$SF···



K-B63$^{R}_{L}$SF83



※Height of outlet

Specifications / Part number	Dimensions (mm) A	B	C	D	E	F	Turns	Material	Mass (kg)	Approx. capacity up to the first step (ℓ)	Applicable unit, remarks	
K-B20$^{R}_{L}$S3201	320	108	34	25	73	—	2.0	SUS	3.1	1.3	K20	
K-B25$^{R}_{L}$SF39	390	131	40	32	93	—	2.0	SUS	4.7	2.5	N25	
K-B25$^{R}_{L}$SF391	390	151	40 | 67❶	32	113	91	2.0	SUS	4.8	2.5	N25	Steep steps
K-B32$^{R}_{L}$SF49	496	182	55	36	136	127	2.0	SUS	13.2	3.7	N32	
K-B40$^{R}_{L}$SF54	538	165	50	32	118	—	2.0	SUS	12.5	5	N40	
K-B40$^{R}_{L}$SF58	582	212	60 | 87❶	40	156	132	2.0	SUS	14.5	7	N40	Steep steps
K-B40$^{R}_{L}$SF64	636	207	64	50	146	—	2.0	SUS	16.0	9	N40	
K-B40$^{R}_{L}$SF641	636	243	64 | 112❶	50	182	135	2.0	SUS	17.0	9	N40	Steep steps
K-B63$^{R}_{L}$SF83	828	277	90	68	210	—	1.5	SUS	42.1	20	G63·2	

❶ The lead of the last turn of the track.
❷ Part Nos. SF641 and SF83 are manufactured on special order.

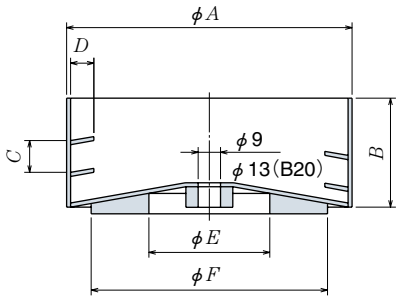
NTN parts feeder

Straight wall bowl (1)

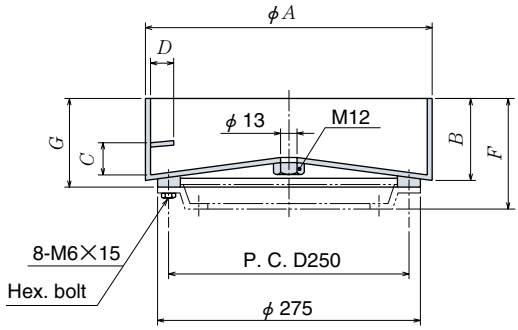
K- B 25 R Z F 30 1

- 1 — Design revision code
- 30 — Bowl outer dia. (to nearest cm)
- F — Bowl bottom (D: no-bottom (isolated bottom type), F: integrated bottom, B: w/ fixed bottom)
- Z — Bowl type (C: cascade, D: dish, Z: straight wall, K: cone)
- R — Supply direction (R: clockwise, L: counter-clockwise)
- 25 — Size
- B — Bowl size code

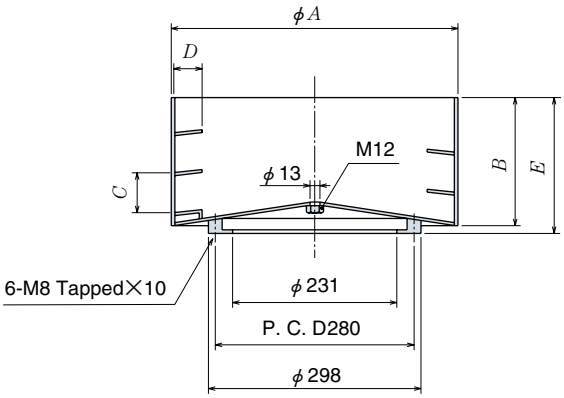
K-B10$^{R}_{L}$Z1201
K-B14$^{R}_{L}$Z2001
K-B16$^{R}_{L}$Z···
K-B20$^{R}_{L}$Z···



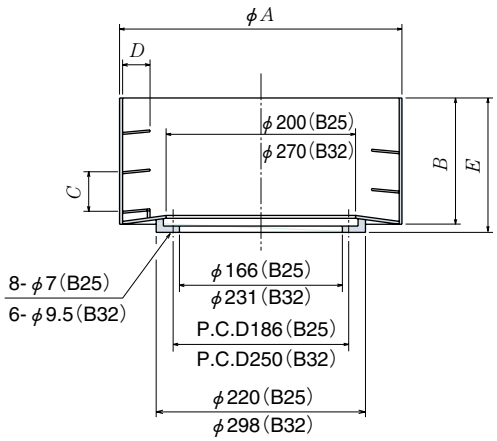
K-B25$^{R}_{L}$ZF···



K-B32$^{R}_{L}$ZF401



K-B25$^{R}_{L}$ZD···
K-B32$^{R}_{L}$ZD401



Specifications / Part number	Dimensions (mm) A	B	C	D	E	F	G	Turns	Material	Mass (kg)	Standard capacity (ℓ)	Applicable unit, remarks
K-B10$^{R}_{L}$Z1201	120	45	13	10	50	100	—	2.0	SUS	(0.7)	0.07	K10
K-B14$^{R}_{L}$Z2001	200	55	23	20	80	130	—	1.5	SUS	1.6	0.35	K14
K-B16$^{R}_{L}$Z2301	234	65	28	20	80	150	—	1.5	SUS	2.2	0.45	K16
K-B16$^{R}_{L}$Z2302❶	234	55	20	15	80	150	—	2.0	SUS	2.0	0.40	K16
K-B16$^{R}_{L}$Z2501	250	65	30	20	80	150	—	1.5	SUS	2.3	0.60	K16
K-B20$^{R}_{L}$Z2801	280	75	33	25	130	190	—	1.5	SUS	3.1	1.20	K20
K-B20$^{R}_{L}$Z3003	300	85	36	25	130	200	—	1.5	SUS	3.9	1.70	K20
K-B25$^{R}_{L}$Z$^{D}_{F}$30❶	304	85	36	25	95	116	91	1.5	SUS	4.8	1.80	N25
K-B25$^{R}_{L}$Z$^{D}_{F}$301❶	304	85	30	20	95	116	91	2.0	SUS	4.9	1.60	N25 Low lead, 2-tracks
K-B25$^{R}_{L}$Z$^{D}_{F}$302❶	304	110	36	25	120	141	116	2.0	SUS	5.4	1.80	N25 Standard lead, 2-tracks
K-B25$^{R}_{L}$Z$^{D}_{F}$35	354	100	42	30	106	128	103	1.5	SUS	6.0	2.80	N25
K-B25$^{R}_{L}$Z$^{D}_{F}$351❶	354	100	35	30	106	128	103	2.0	SUS	6.1	2.20	N25 Low lead, 2-tracks
K-B25$^{R}_{L}$Z$^{D}_{F}$352	354	125	42	30	131	153	128	2.0	SUS	6.7	2.80	N25 Standard lead, 2-tracks
K-B25$^{R}_{L}$ZD354❶	354	135	42	30	141	—	—	2.5	SUS	6.2	2.80	N25 Standard lead, 2.5-tracks
K-B32$^{R}_{L}$ZD401	400	140	48	40	148	—	—	2.0	SUS	10.0	4.00	N32
K-B32$^{R}_{L}$ZF401					143							N32

❶ Part Nos. Z2302, Z$^{D}_{F}$30, Z$^{D}_{F}$301, Z$^{D}_{F}$302, Z$^{D}_{F}$351 and ZD354 are manufactured on special order.

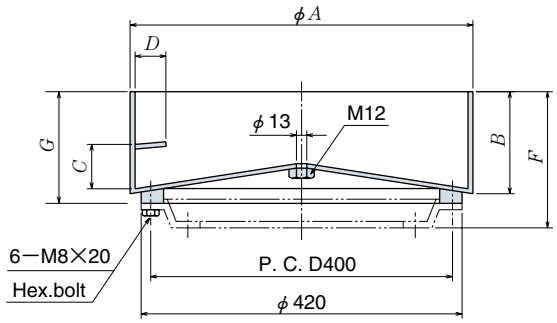
NTN parts feeder

Straight wall bowl (2)

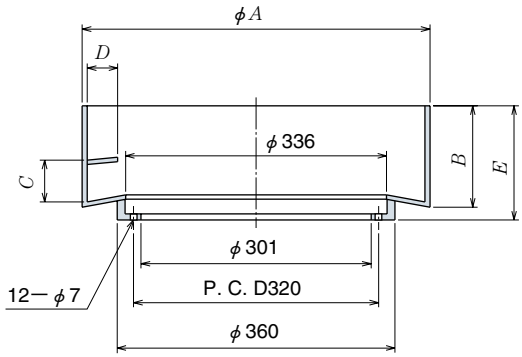
K- B 40 R Z F 45 2

- Design revision code
- Bowl outer dia. (to nearest cm)
- Bowl bottom (D: no-bottom (isolated bottom type), F: integrated bottom, B: w/fixed bottom)
- Bowl type (C: cascade, D: dish, Z: straight wall, K: cone)
- Supply direction (R: clockwise, L: counterclockwise)
- Size
- Bowl code

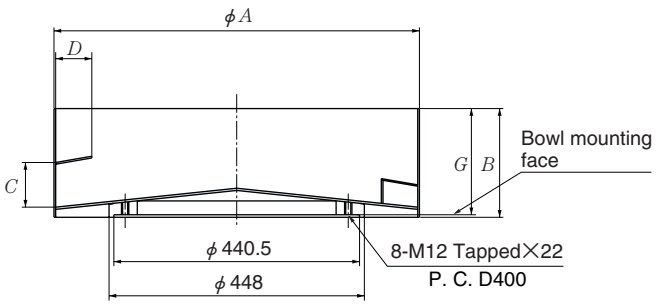
K-B40$^{R}_{L}$ZF···



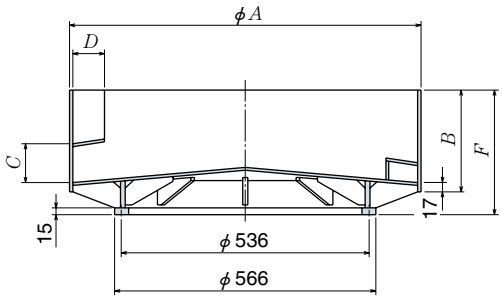
K-B40$^{R}_{L}$ZD···



K-B50$^{R}_{L}$ZF651



K-B63$^{R}_{L}$ZF75



Specifications / Part number	Dimensions (mm) A	B	C	D	E	F	G	Turns	Material	Mass (kg)	Standard capacity (ℓ)	Applicable unit, remarks	
K-B40$^{R}_{L}$ZP45	454	130	56	40	139	175	140	1.5	SUS	12.0	5.0	N40	
K-B40$^{R}_{L}$ZF451❶	454	130	46	40	—	175	140	2.0	SUS	12.2	4.0		Low lead, 2-tracks
K-B40$^{R}_{L}$ZF452❶	454	160	56	40	—	205	170	2.0	SUS	13.0	5.0		Standard lead, 2-tracks
K-B40$^{R}_{L}$ZP50	504	140	62	45	145	182	147	1.5	SUS	13.0	7.0		
K-B40$^{R}_{L}$ZF501❶	504	140	52	45	—	182	147	2.0	SUS	13.2	6.0		Low lead, 2-tracks
K-B40$^{R}_{L}$ZF502❶	504	175	62	45	—	217	182	2.0	SUS	14.0	7.0		Standard lead, 2-tracks
K-B40$^{R}_{L}$ZD503❶	504	195	62	45	200	—	—	2.5	SUS	13.0	7.0		Standard lead, 2.5-tracks
K-B40$^{R}_{L}$ZF55	554	150	68	50	—	188	153	1.5	SUS	14.0	10.0		
K-B40$^{R}_{L}$ZF60❶	604	170	74	55	—	204	169	1.5	SUS	16.0	13.0		
K-B50$^{R}_{L}$ZF651❶	655	193	80	65	—	—	190	1.5	SUS	30.0	17.0	G50·1	
K-B63$^{R}_{L}$ZF75❶	755	220	85	70	—	270	—	1.5	SUS	48.0	25.0	G63·2	

❶ Part Nos. ZF451, ZF452, ZF501, ZF502, ZD503, ZF60, ZF651 and ZF75 are manufactured on special order.

NTN parts feeder

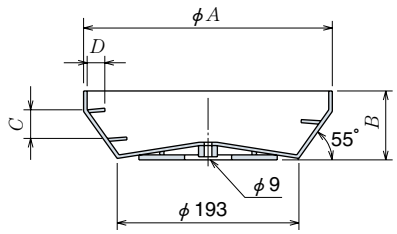
Cone bowl

Manufactured only on special order.

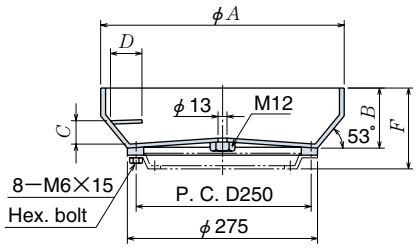
K- B 25 R K D 35

- Bowl outer dia. (to nearest cm)
- Bowl bottom (D: no-bottom (isolated bottom type), F: integrated bottom, B: w/ fixed bottom)
- Bowl type (C: cascade, D: dish, Z: straight wall, K: cone)
- Supply direction (R: clockwise, L: counterclockwise)
- Size
- Bowl code

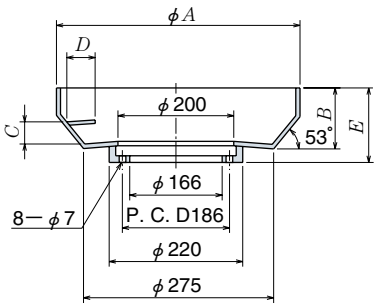
K-B16$^{R}_{L}$K2601



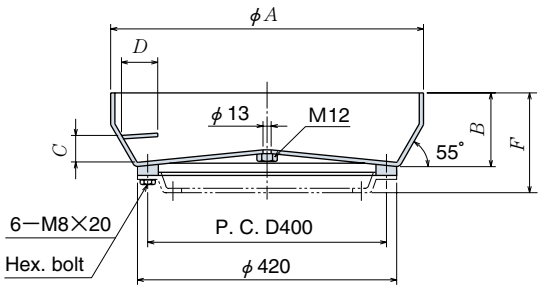
K-B25$^{R}_{L}$KF35



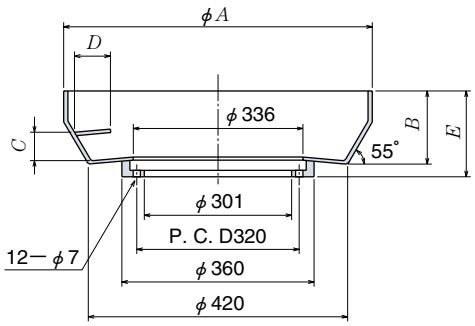
K-B25$^{R}_{L}$KD35



K-B40$^{R}_{L}$KF55



K-B40$^{R}_{L}$KD55



Specifications / Part number	Dimensions (mm) A	B	C	D	E	F	Turns	Material	Mass (kg)	Standard capacity (R)	Applicable unit, remarks
K-B16$^{R}_{L}$K2601❶	260	75	30	20	—	—	1.5	SUS	2.0	0.6	K16
K-B25$^{R}_{L}$KF35❶	355	90	40	30	—	123	1.5	SUS	4.5	1.5	N25・F
K-B25$^{R}_{L}$KD35❶	355	90	40	30	102	—	1.5	SUS	2.5	1.5	N25
K-B40$^{R}_{L}$KF55❶	555	135	50	35	—	182	1.5	SUS	10.0	5.0	N40・F
K-B40$^{R}_{L}$KD55❶	555	135	50	35	146	—	1.5	SUS	7.0	5.0	N40

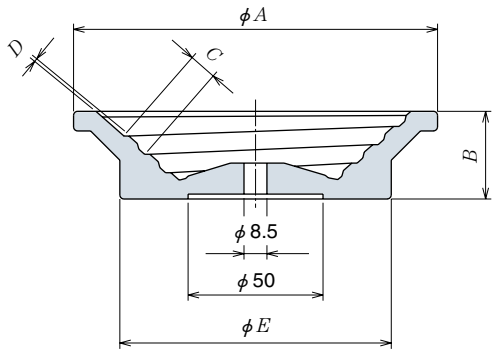
❶ Manufactured only on special order.

NTN parts feeder

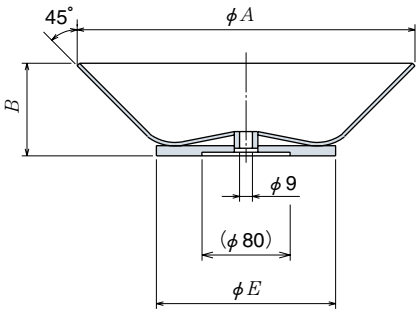
Dish bowl

K- B 40 □ D F 64 1
- Design revision code
- Bowl outer dia. (to nearest cm)
- Bowl bottom (D: no-bottom (isolated bottom type), F: integrated bottom, B: w/ fixed bottom)
- Bowl type (C: cascade, D: dish, Z: straight wall, K: cone)
- Supply direction (R: clockwise, L: counterclockwise)
- Size
- Bowl code

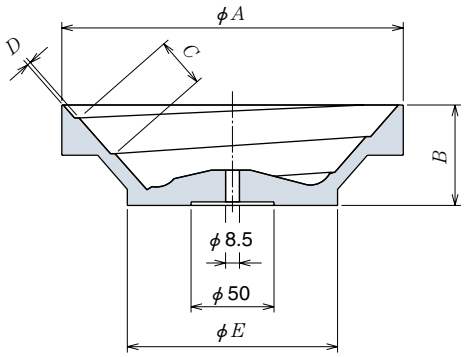
K-B10 R/L D1301,1402,1701



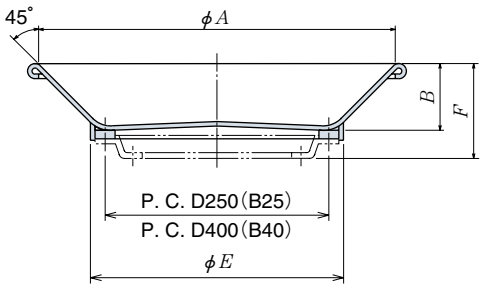
K-B16D2801



K-B10 R/L D2001
K-B14 R/L D2002



K-B25DF42
K-B40DF64,641



Part number \ Specifications	Dimensions (mm) A	B	C	D	E	F	Turns	Material	Mass (kg)	Standard capacity (R)	Applicable unit, remarks	
K-B10 R/L D1301 ❶	134	32	10	1.0	100	—	3.0	Aℓ alloy	0.44	0.06	K10	
K-B10 R/L D1402 ❶❷	148	38	12	1.0	110	—	2.7	Aℓ alloy	0.49	0.08		w/ overhang
K-B10 R/L D1701 ❶❷	178	60	14	3.7	100	—	5.0	Aℓ alloy	0.84	0.20		For K-10·A
K-B10 R/L D2001 ❶❷	204	60	30	1.5	124	—	2.1	Aℓ alloy	1.3	0.20		
K-B14 R/L D2002 ❶	204	60	31	1.5	127	—	2.0	Aℓ alloy	1.5	0.20	K14	
K-B16D2801	280	71	—	—	150	—	—	SUS	1.7	0.35	K16	
K-B25DF42 ❷	420	80	—	—	281	113	—	SUS	4.0	1.20	N25·F	
K-B40DF64 ❷	640	97	—	—	446	142	—	SUS	13.0	3.50	N40·F	
K-B40DF641 ❷	640	150	—	—	466	195	—	SUS	18.0	5.00		

❶ Aluminum alloy bowl is precision machined.
Since the standard stainless steel dish bowl does not have any tracks, the R/L code is not required.
❷ Part Nos. D1402, D1701, D2001, DF42 , DF64 and DF641 are manufactured on special order.

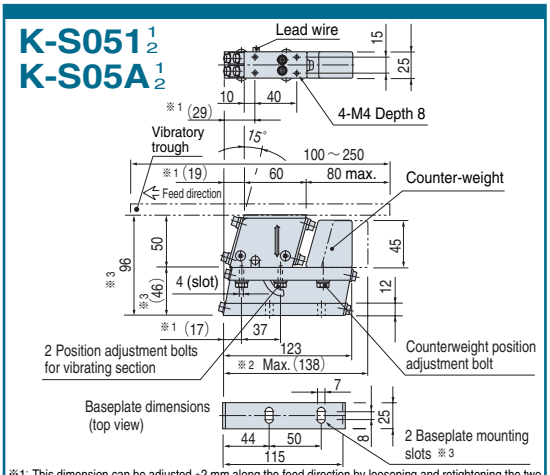
S05,08,10

NTN parts feeder

S series

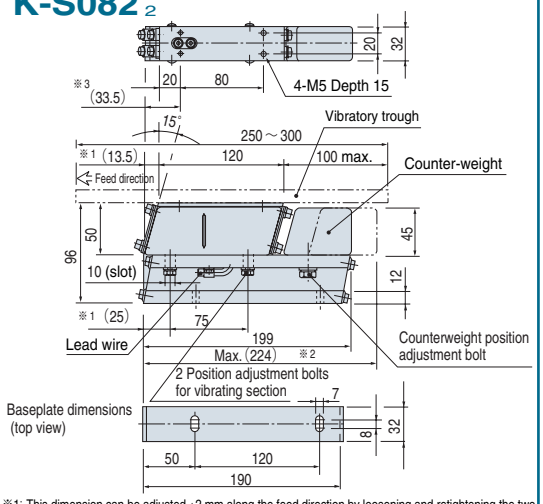
K- S 10 B 1
- Voltage and drive system
- Design revision code
- Size
- Model

K-S051 1/2, K-S05A 1/2



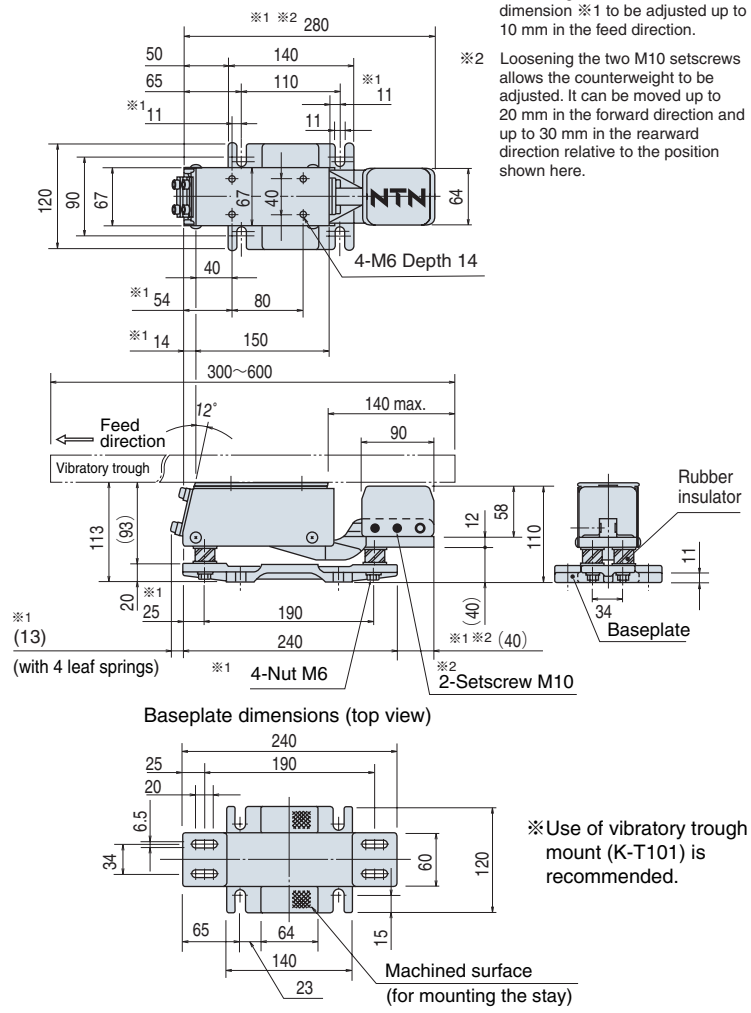
※1: This dimension can be adjusted ±2 mm along the feed direction by loosening and retightening the two position adjustment bolts securing the vibrating section.
※2: This dimension can be adjusted with the counterweight position adjustment bolt.
※3: The height of the new design is 4 mm less than that of the conventional optional insulated mount (K-UH001). Regarding the two baseplate mounting slots, the position of the downstream slot relative to the chute mounting screws (4-M4) remains unchanged while the position of the upstream side slot in the new design differs from that of the conventional mount (K-UH001).

K-S082 1/2



※1: This dimension can be adjusted ±2 mm along the feed direction by loosening and retightening the two position adjustment bolts securing the vibrating section.
※2: This dimension can be adjusted with the counterweight position adjustment bolt.

K-S10B 1/2, S10C 1/2



※1 Loosening the four M6 nuts allows dimension ※1 to be adjusted up to 10 mm in the feed direction.

※2 Loosening the two M10 setscrews allows the counterweight to be adjusted. It can be moved up to 20 mm in the forward direction and up to 30 mm in the rearward direction relative to the position shown here.

Baseplate dimensions (top view)

※Use of vibratory trough mount (K-T101) is recommended.

Model, size	Part number	Rated voltage (V)	Rated current (A)	Applicable ❶ controller	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Vibratory trough Length (mm)	Vibratory trough Mass (kg)	Mass (kg)	Remarks
S05	K-S0511	100	0.10	K-EG117 K-ECA46 ❷	K-PLS2-35×5	15°	※1 100/120	250	0.4	1.3	Insulated type
	K-S0512	200	0.05								
	K-S05A1	100	0.10							0.4	Fixed type
	K-S05A2	200	0.05								
S08	K-S0821	100	0.20					300	1.2	2.4	Insulated type
	K-S0822	200	0.10								
S10	K-S10B1	100	0.40	K-EG177 K-ECA46 ❷	K-PLS4-40×6	12°		600	2.5:50Hz 2.0:60Hz	7	w/ baseplate
	K-S10B2	200	0.20								
	K-S10C1	100	0.40							5.5	w/o baseplate
	K-S10C2	200	0.20								

❶ The applicable controllers in the list above are typical ones. For other applicable controllers, refer to the standard series combination list.
❷ Part No. K-ECA46 accommodates vibratory driving units rated at 200 V.

S20,30

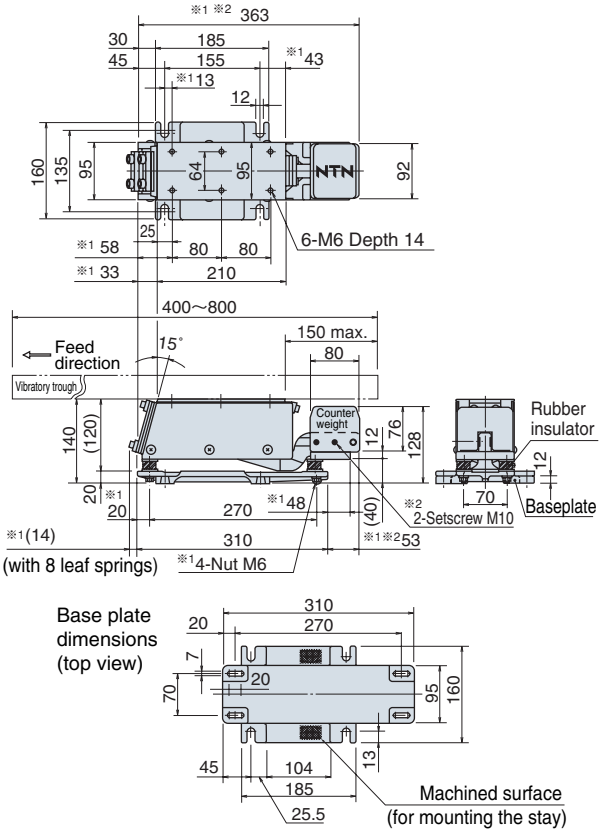
NTN parts feeder

S series

K- S 20 C 2

- Voltage and drive system
- Design revision code
- Size
- Model

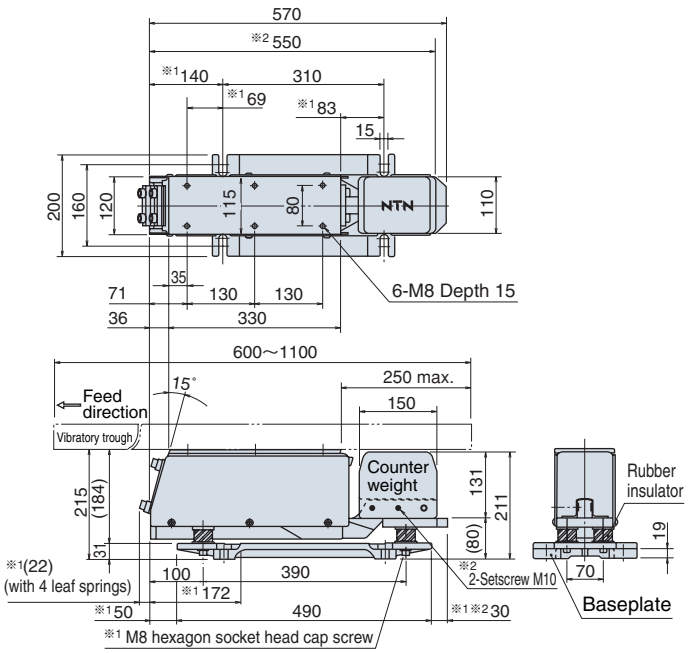
K-S20B$^{1}_{2}$,S20C$^{1}_{2}$

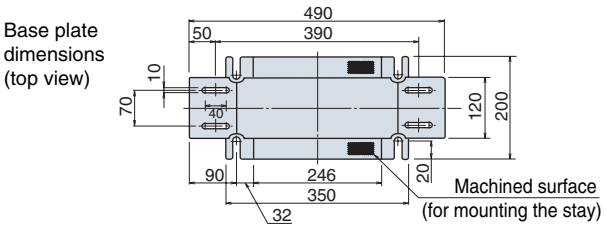


※1 Loosening the four M6 nuts allows dimension ※1 to be adjusted up to 10 mm in the feed direction.

※2 Loosening the two M10 setscrews allows the counterweight to be adjusted. It can be moved up to 10 mm in the forward direction and up to 30 mm in the rearward direction relative to the position shown here.

K-S30B4,S30C4





※1 Loosening the four M8 nuts allows dimension ※1 to be adjusted up to 20 mm in the feed direction.

※2 Loosening the two M10 setscrews allows the counterweight to be adjusted. It can be moved up to 10 mm in the forward direction and up to 65 mm in the rearward direction relative to the position shown here.

※Use of a vibratory trough mount (K-T201…for S20, K-T301…for S30) is recommended.

Model, size	Part number	Rated voltage (V)	Rated current (A)	Applicable controller ❶	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Vibratory trough Length (mm)	Vibratory trough Mass (kg)	Mass (kg)	Remarks
S20	K-S20B1	100	1.0	K-EG117 K-ECA46 ❷	K-PLS4-70×12	15°	※1 100/120	800	5.0:(50Hz) 3.5:(60Hz)	14	w/ baseplate
	K-S20B2	200	0.5								
	K-S20C1	100	1.0							11.5	w/o baseplate
	K-S20C2	200	0.5								
S30	K-S30B4	200	0.9		K-PLS4-86×15		50/60	1100	15:(60Hz)	41	w/ baseplate
	K-S30C4									33	w/o baseplate

❶ The applicable controllers in the list above are typical ones. For other applicable controllers, refer to the standard series combination list.
❷ Part No. K-ECA46 accommodates vibratory driving units rated at 200 V.

※1 Relation between voltage/drive system and vibration frequency

Voltage and drive system		50 Hz area	60 Hz area
1:100V 2:200V	Full wave	6000 cycles/min	7200 cycles/min
4:200V	Half wave	3000 cycles/min	3600 cycles/min

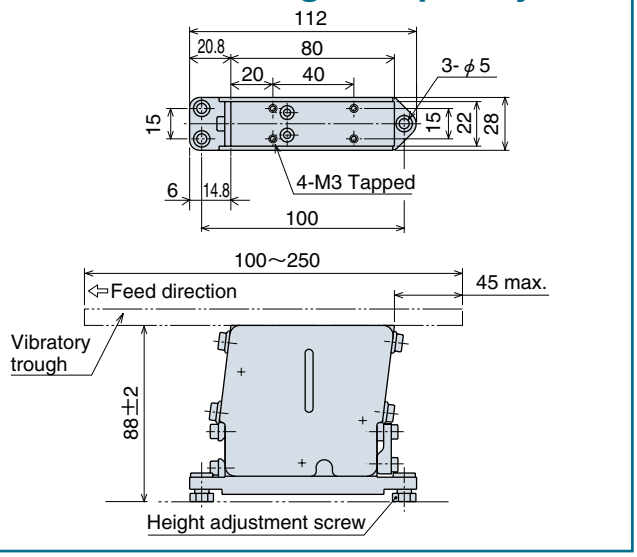
HS05,07,L20

NTN parts feeder

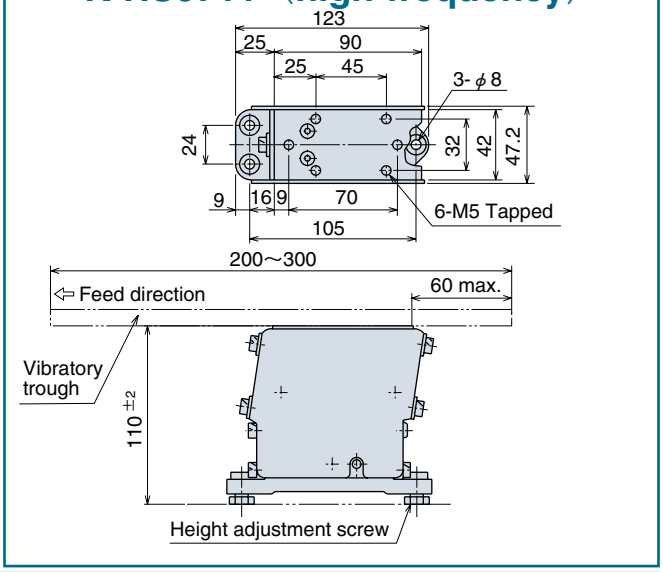
HS series L type

K- HS 05 2 1
- Voltage and drive system
- Design revision code
- Size
- Model

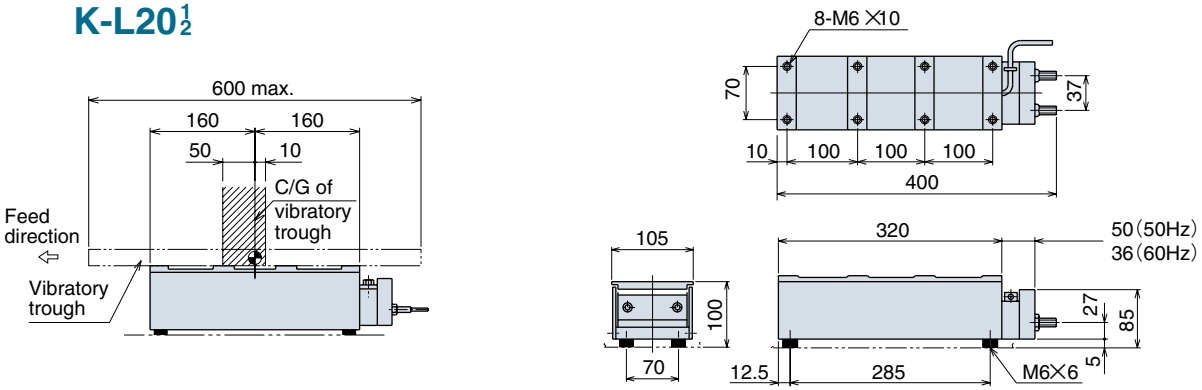
K-HS0521 (high-frequency)



K-HS0711 (high-frequency)



K-L20$\frac{1}{2}$



Model, size	Part number	Rated voltage (V)	Rated current (A)	Applicable ❶ controller	Applicable leaf spring	Leaf spring angle (θ°)	Vibration frequency (Hz)	Vibratory trough		Mass (kg)	Remarks
								Length (mm)	Mass (kg)		
HS05	K-HS0521	100	0.16	K-EC118	K-PLS2-35×9	—	200 ～300	250	0.3	1.1	w/ isolation mount using leaf springs
HS07	K-HS0711	100	0.5		K-PLS4-40×6	10°		300	0.6	2.5	
L20	K-L201	100	1.0	K-EG177	K-PLS2-67×15	0°	※1	600	5.0:(50Hz) 4.0:(60Hz)	8.0	Rubber insulator
	K-L202	200	0.5								

❶ The applicable controllers in the list above are typical examples. For other applicable controllers, refer to the standard series combination table.

※1 Relation between voltage/drive system and vibration frequency

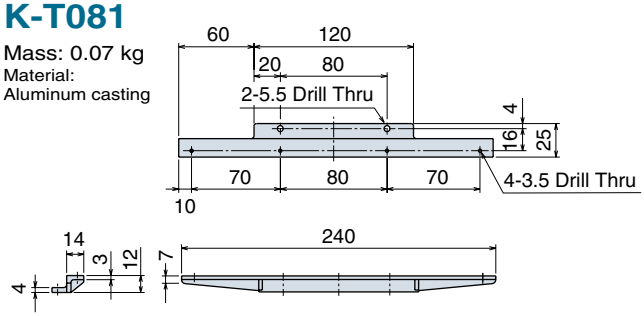
Voltage and drive system		50 Hz area	60 Hz area
1:100V 2:200V	Full wave	6000 cycles/min	7200 cycles/min

Vibratory trough mount

K- T 10 1
- Vibratory trough code
- Size
- Type code

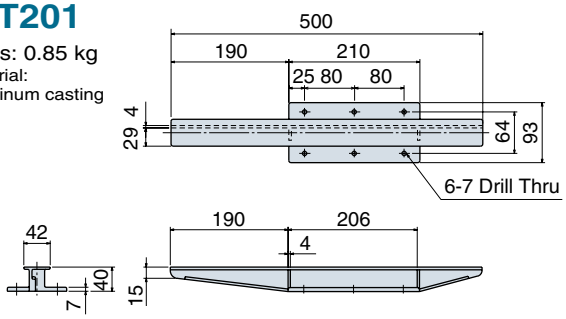
K-T081

Mass: 0.07 kg
Material: Aluminum casting



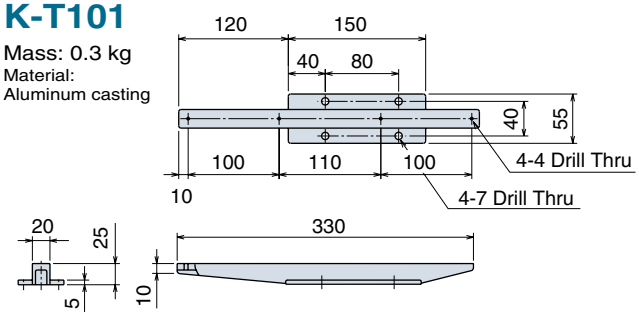
K-T201

Mass: 0.85 kg
Material: Aluminum casting



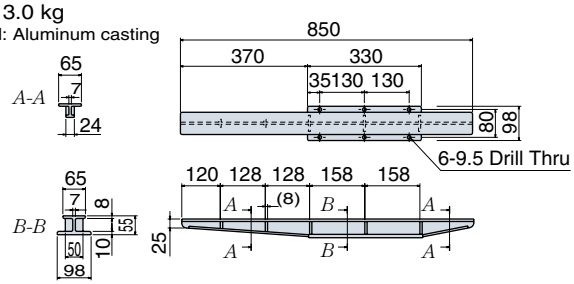
K-T101

Mass: 0.3 kg
Material: Aluminum casting



K-T301

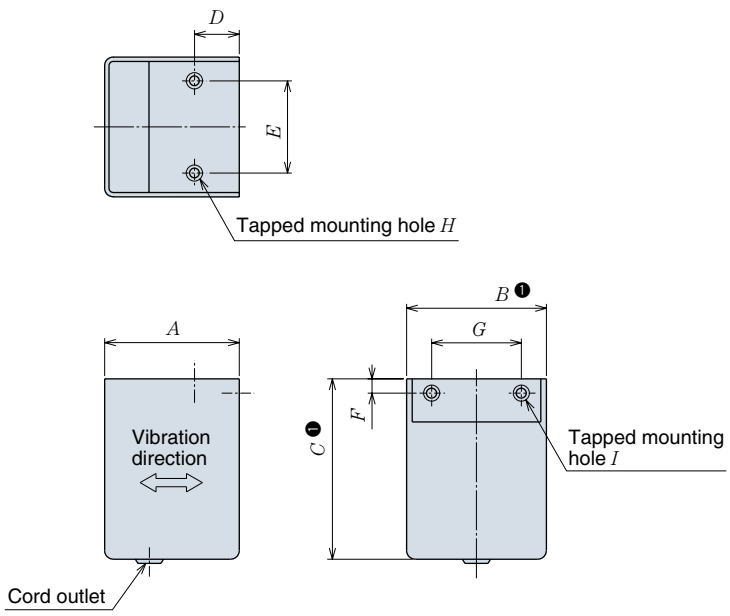
Mass: 3.0 kg
Material: Aluminum casting



Auxiliary vibrator

K- M 05 1 / M1 3
- Control capacity
- Control function (including shape)
- Voltage/drive system
- Size
- Type code

An auxiliary vibrator, to be installed on the back of the vibratory trough, generates minute vibrations to help those pieces that are prone to jam on the vibratory trough to feed smoothly. The auxiliary vibrator is also handy for various other vibration applications.



Specifications / Part number	Dimensions (mm) A	B ❶	C ❶	D	E	F	G	H	I	Approx. mass of vibratory trough (kg)	Approx. mass of controller (kg)	Rated voltage (V)	Rated current (A)
K-M05½/M13	72	68	93	27	22	—	—	2-M6×10	—	1.2	0.8	200	0.2 (0.4)
K-M10½/M13	90	92	120	30	60	9	60	2-M8×15	2-M8×15	3.7	0.8	(100)	0.5 (1.0)

❶ Does not include dimensions of cover mounting screws.

V7,V01～12

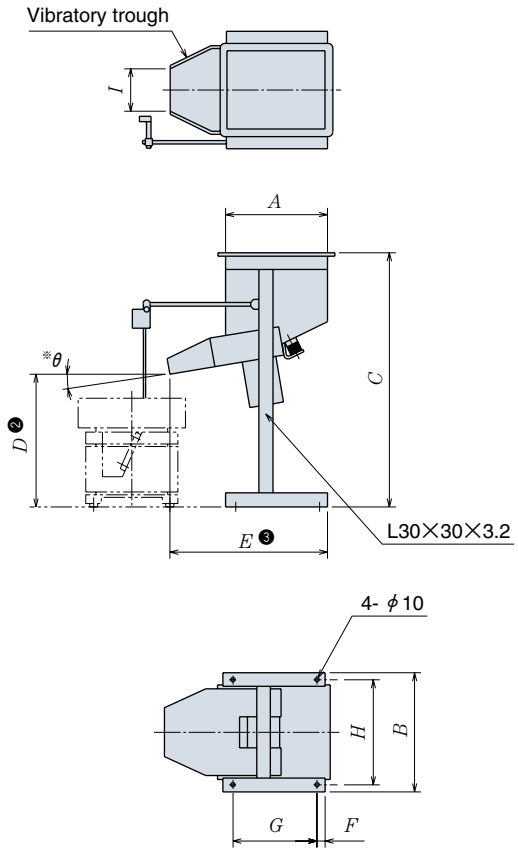
NTN parts feeder

Detached hopper

K- V 01 S 4/ G1 7

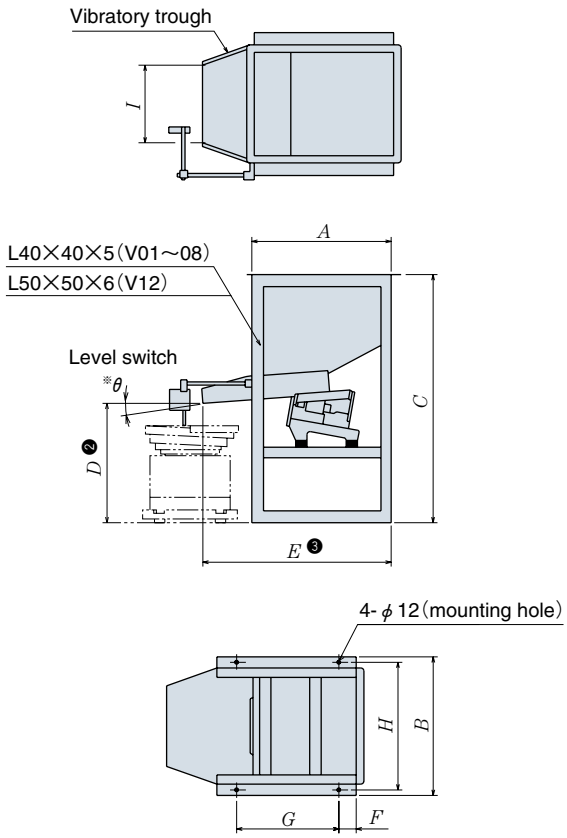
- 7 — Control capacity
- G1 — Control function (including shape)
- 4 — Voltage and drive system ❶
- S — Tank material (S: stainless steel)
- 01 — Storage capacity
- V — Type code

K-V7S2¾



※The tilt angle of the vibratory trough is adjustable within the range 0˚-10˚.

K-V01S¾～V12S4



※The tilt angle of the vibratory trough is adjustable within the range 0˚-10˚ (V03, 04, 06, 08) or 5˚-15˚ (V01, 12).

Specifications / Part number	Dimensions (mm) A	B	C	D ❷	E ❸	F	G	H	I	Tank capacity (ℓ)	Max.work input mass (kg)	Approx. mass (kg)	Rated voltage (V)	Rated current (A)	Tank material	Vibratory trough material
K-V7S2¾/G17	220	260	514	286	333	20	180	240	100	7	20	12	200 (100)	0.2(0.4)	SUS ❹	SUS
K-V01S¾/G17	350	385	735	435	542	40	270	350	185	15	50	55		1.0 (3.2)		Aℓ ❺ casting (as cast)
K-V03S¾/G17	400	435	735	418	570	50	300	400	225	30	100	65				
K-V03S1¾/G17	400	435	735	417	670	50	300	400	225	30	100	70				
K-V04S¾/G17 ❺	400	435	860	418	570	50	300	400	225	45	100	68				
K-V04S1¾/G17 ❺	400	435	860	417	670	50	300	400	225	45	100	73				
K-V06S¾/G17	500	505	1 017	574	721	50	400	470	270	60	120	80				
K-V06S1¾/G17	500	505	1 017	574	771	50	400	470	270	60	120	85				
K-V08S¾/G17 ❺	500	505	1 127	574	721	50	400	470	270	80	120	84				
K-V08S1¾/G17 ❺	500	505	1 127	574	771	50	400	470	270	80	120	90				
K-V12S4/G17 ❺	640	635	1 186	596	852	70	500	590	380	120	120	200	200	2.0		

❶ The code "4" of the voltage/drive system in the part number means 200 V, full wave, and "3" means 100 V, half wave. The 100 V variants of V03 through V08 are available by special order.
❷ The dimension D is corresponds to the vibratory trough set to horizontal position.
❸ The dimension E will vary according to the adjusted angle of the vibratory trough. The quoted dimension is the minimum value.
❹ Polyurethane-coated tanks and vibratory troughs are available upon request.
❺ Part Nos. V04, V08 and V12 are manufactured on special order.

SV1,3,01,03,06

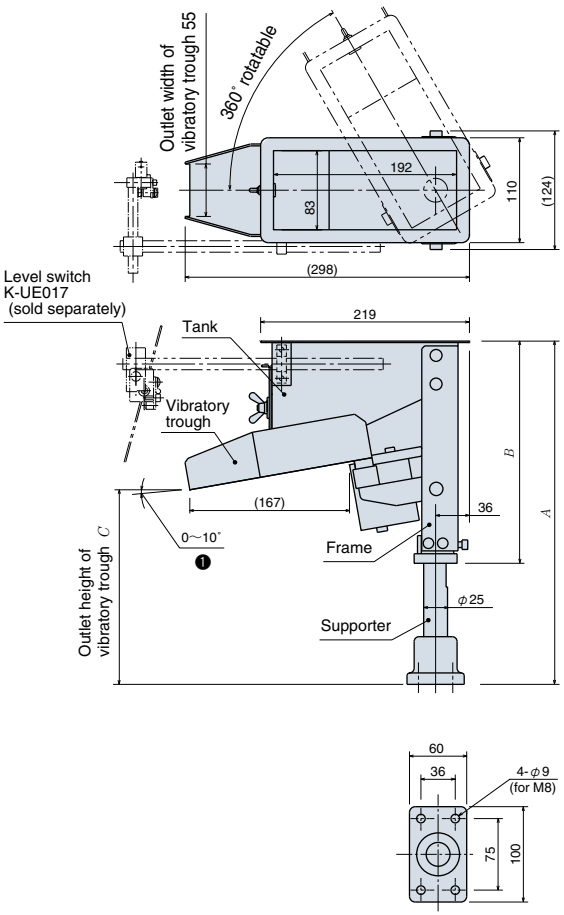
NTN parts feeder

Space-saving hopper

K- SV 01 S 4/ G1 7 ❹

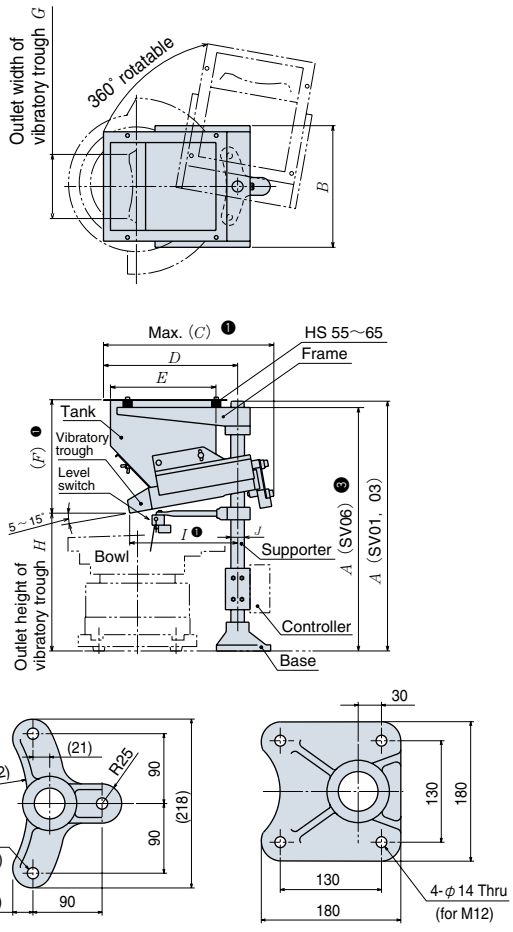
- Control capacity
- Control function (including shape)
- Voltage/drive system ※1
- Tank material (S: stainless steel)
- Storage capacity
- Type code

K-SV1S4, SV3S4



Base part dimensions (top view)

K-SV01S3/4～SV06S4



K−SV01, SV03
Base part dimensions (top view)

K−SV06
Base part dimensions (top view)

Part number	Dimensions (mm)			Tank capacity (ℓ)	Max.work input mass (kg)	Mass (kg)	Rated voltage (V)	Rated current (mA)	Tank material	Vibratory trough material	Applicable controller (variable frequency)
	A	B	C ❶								
K-SV1S4	310～400	233	155～245	1.5	6	5.6	200	80	SUS❷	SUS❷	K-ECA46❹
K-SV3S4	400～490	323		3	8	6.5					

Part number	寸 法 (mm)										Tank capacity (ℓ)	Max.work input mass (kg)	Mass (kg)	Rated voltage (V)	Rated current (A)	Tank material	Vibratory trough material
	A	B	C ❶	D	E	F ❶	G	H ❶	I ❶	J							
K-SV01S3/G17	760	340	500	380	300	315	180	335～465	305	ϕ40	15	40	34	100	1.7	SUS❷	SUS❷
K-SV01S4/G17														200	0.9		
K-SV03S3/G17	810	390	600	480	400	365	218		315		30	80	40	100	1.7		
K-SV03S4/G17														200	0.9		
K-SV06S4/G17	905~975	510	720	585	480	430	270	520~590	445	ϕ50	60	160	68	200	1.5		

❶ The dimensions in the diagram correspond to a vibratory trough tilt angle of 10°.
❷ Polyurethane-coated tanks and vibratory troughs are available upon request.
❸ The stay of Model SV06 does not protrude from the top of the frame.
❹ The applicable controller (K-ECA46) cannot be mounted to the stay.

※1 Relationship between voltage/drive system and vibration frequency

Voltage and drive system		50 Hz area	60 Hz area
3 :100V 4 :200V	Half wave	3000 cycles/min	3600 cycles/min

NTN parts feeder

Automatic auxiliary hopper

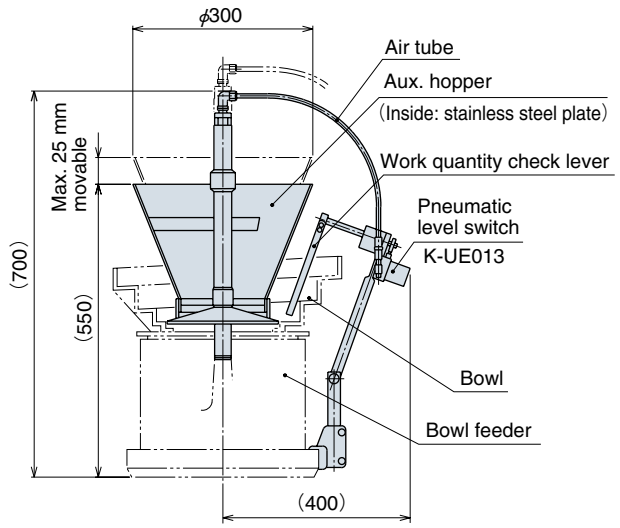


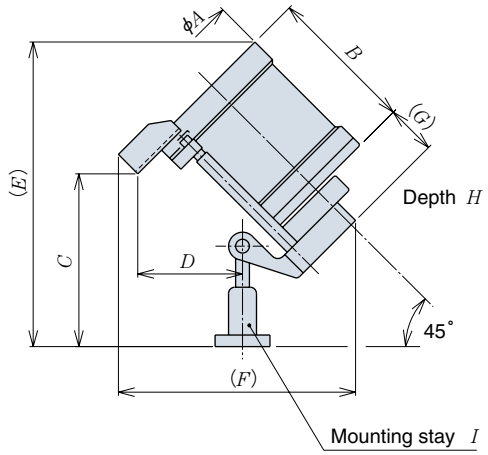
Diagram shows K-UV021.

Part number	K-UV021	K-UV022	K-UV023 ❶
Applicable unit	N25		
Hopper capacity (ℓ)	7		
Max. load (kg)	3～9 (air pressure 0.3 to 0.5 MPa.)		
Air pressure (MPa)	0.3～0.5 (3～5kgf/cm²)		
Applicable unit part number	K-N25□M½	K-N25□AM½	K-N25□H½T½ K-N25□AH½T½
Remarks	When used with round base standard units.	When used with freely settable base standard units.	When using in place of auxiliary hoppers in the bowl or units with isolated bottoms.

● All bowls are isolated bottom type.
❶ Automatic auxiliary hoppers can not be retrofitted to your **NTN** parts feeder. If considering retrofitting, consult **NTN** Engineering.

NTN parts feeder

Rotary hopper



■ Dimensions

Part number		K-UV001	K-UV002	K-UV003	K-UV004
Dimensions (mm)	A	118	150	182	222
	B	130	172	214	264
	C	170	250		
	D	75	100	150	180
	E	290	400	430	470
	F	220	320	400	520
	G	55	92	115	145
	H	118	174	208	252
Mounting stay I		K-PZ0509	K-PZ0505		K-PZ0090

■ Specifications

Part number		K-UV001	K-UV002 ❶	K-UV003 ❶	K-UV004 ❶
Max. drum capacity (P)		300	600	1200	2400
Max. load (kg)		1	2	4	8
Drum speed (rpm)	50Hz	6.7	8	7.5	8.3
	60Hz	8	9.6	9	10
Rated voltage (V)		100			
Power consumption (W)	50Hz	3	5.3	5.5	6
	60Hz	3	5.3	7	6
Discharge rate (P/min) ❷		2～3	10～15	12～18	15～20
Max. allowable work piece size (mm)		5	7	8	10
Material (as machined)		A2024	AC4CH	A2024	AC4CH

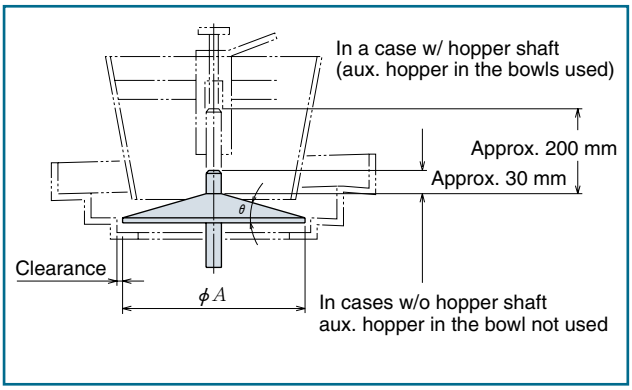
❶ The K-UV002 through UV004 (600 - 2,400mℓ) are available upon a special order.
❷ Discharge rate values in the list above are measured by discharging river sand at a drum angle of 45°. Some parts cannot be discharged, depending on shape.
Remark 1) Using a level switch (K-UE010) (optional) that can be operated by a slight pressure together with a proximity switch enables more effective control.
Remark 2) Sensor for detecting residual work pieces in the bowl (optional) can be also installed in place of K-UV001.

Isolated bottom

K- PS - 25 L
- L: Length of shaft ❶
- 25: Size
- PS: Isolated bottom code

An isolated bottom means a bottom that is vibrationally isolated forming the central, bottom section of the cascade bowl. Although these bottoms rotate as pieces in the bowl are rotated, they have a vibration-free construction. As a result, noise is kept very low, the rate of damaged parts fed is reduced, and feed speed is more stable. The adoption of various damping materials, such as laminated damping steel sheet, has resulted in a dramatic drop in noise level for hoppers loaded with parts.

If a hopper with a particularly narrow clearance is required, please consult **NTN** Engineering.



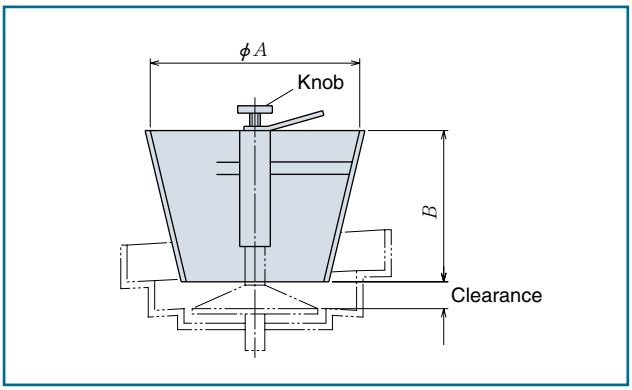
Specifications / Part number	A (mm)	Bottom angle θ°	Standard clearance (mm)	Applicable unit	Standard material
K-PS-25 S/L	198.5	15°	1.6	N25	Stainless steel w/ damping material
K-PS-32 S/L	268	20°	2.0	N32	
K-PS-40 S/L	334	15°	2.0	N40	Mild steel w/ stainless steel lamination
K-PS-63S	476		4.0	G50/G63	Al casting

❶ S : short shaft, L: long shaft (for aux. hopper in the bowl)

Auxiliary hopper in the bowl

K- H 25
- 25: Size
- H: Aux. hopper code

An auxiliary hopper in the bowl is a small hopper for storing parts for feeding; it can be fitted in the bowl using the shaft of the isolated bottom.
This helps to make the feeding system more compact, since extra bench or floor space is not required, unlike conventional separate hoppers.
The run-off of parts fed can be adjusted by turning the upper knob to adjust the lower clearance.
Note that the auxiliary hopper is not suitable for parts that can be easily tangled or that do not slide well.
For such work pieces, use the **NTN** hopper series.

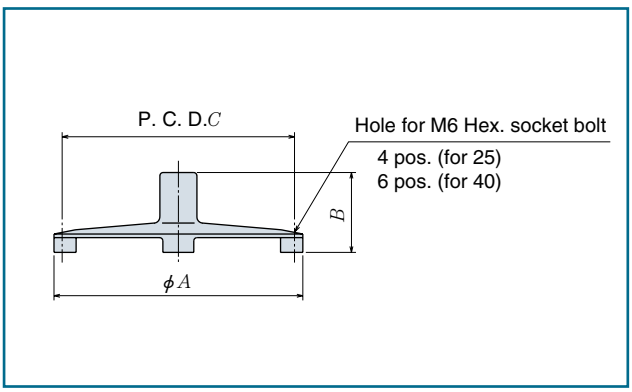


Specifications / Part number	Dimensions (mm) A	Dimensions (mm) B	Applicable unit	Standard material	Approx. capacity (ℓ)
K-H25	300	200	N25	Mild steel, stainless steel skin inside	7
K-H32	340	230	N32	Stainless steel	12
K-H40	430	250	N40	Mild steel, inside stainless steel skin	20

Fixed bottom

K- PBB - 25
- 25: Size
- PBB: Fixed bottom code

If an isolated bottom cannot be used together with a bottomless bowl, use a fixed bottom. The handling quality of the fixed bottom is the same as that of integrated bottom bowls.



Specifications / Part number	Dimensions (mm) A	B	C	Applicable unit	Standard material
K-PBB-25	200	64	186	N25	Polyurethane-coated Al casting
K-PBB-40	336	74	320	N40	

NTN parts feeder

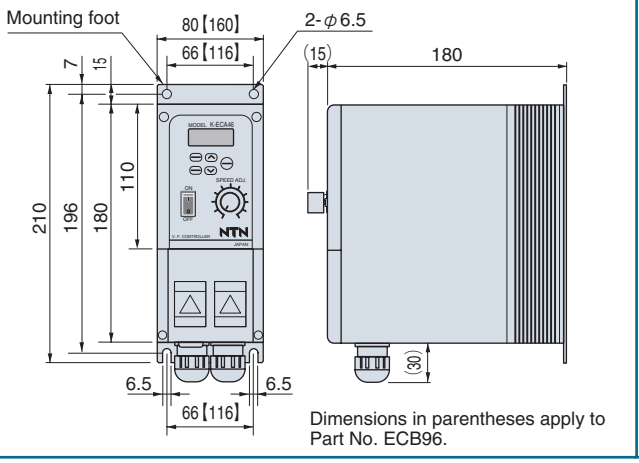
Variable frequency controller

K- E CA 4 6

- 6 — Voltage and drive system
- 4 — Control capacity
- CA — Control function (application)
- E — Controller code

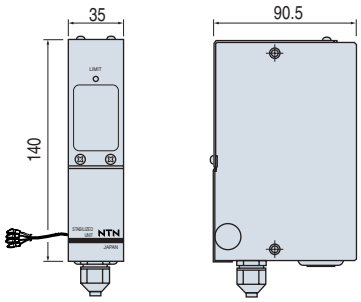
Standard type

K-ECA46, 49, K-ECB96



Dimensions in parentheses apply to Part No. ECB96.

Optional unit K-UE092



Part number	Control functions ❶	Control capacity (A)	Supply voltage (V)	Applicable drive unit
K-ECA46	External control + ON/OFF control with sensor + operation instructions	4	200	K-series, S-series, N-series, G50·1
K-ECA49			100 ❷	
K-ECB96		12	200	G63・2

❶ For details of control functions, refer to page 49. For details, contact **NTN** Engineering.

❷**The supply voltage is 100 VAC; however, the output voltage is 200 VAC. Therefore, use only feeders rated at 200 VAC.**

Model		K-ECA49	K-ECA46	K-ECB96
Power supply	Rated voltage	Single-phase 100V AC to 115V AC ±10%	Single-phase 200V AC to 230V AC ±10%	
	Frequency	50/60 Hz common		
Output	Voltage	Single phase 0 to 200V AC (in 1-volt increments)		
	Frequency	20~150Hz (in 0.1-Hz increments)	15~125Hz (in 0.1-Hz increments)	
	Rated current	4A (effective value)	12A (effective value)	
	Drive system	Sine wave PWM type		
	Service power supply	DC24V, 50mA	DC24V, 80mA	
Control		Microprocessor		
Control input		Run/stop, sensor input		
Software start / stop		Yes		
Constant voltage function		Output voltage remains within 5% in the event of a ±10% variation in supply voltage. ❶		
Constant amplitude function		—		
Control output		Run signal × 2		
Operating temperature range		0~40˚C		
Protection		Short-circuits, ground-faults, overloads, voltage drops		
Mass		About 2 kg	About 5 kg	

❶ When output voltage setting is 170 V or lower.

■Features

- The digital display offers voltage and frequency values, allowing the user to readily set up and reproduce an optimal amplitude.
- Provides a full line of safety features including overload protection and ground fault protection (short-circuit to ground).

■Optional unit

Model	K-UE092
Powersupply	DC24V±5% Supplied from controller
Applicable controller	K-ECA46, K-ECA49, K-ECB96
Constant amplitude function	Inhibits the variation in amplitude that results from the variation in load, ensuring stable feed of work pieces. An amplitude variation of -10% is limited to within 3%. ❶
Mass	Approx. 0.5 kg (excluding accessories)
Accessories	Vibration sensor K-P1395 Unit mounting screws Screwdriver for adjustment

❶ The data in this table are typical values obtained through **NTN** tests at output voltages in the range of 100–170 V. The above constant amplitude performance value is not guaranteed, as constant amplitude performance can vary with adjustments to the parts feeder spring.

NTN parts feeder

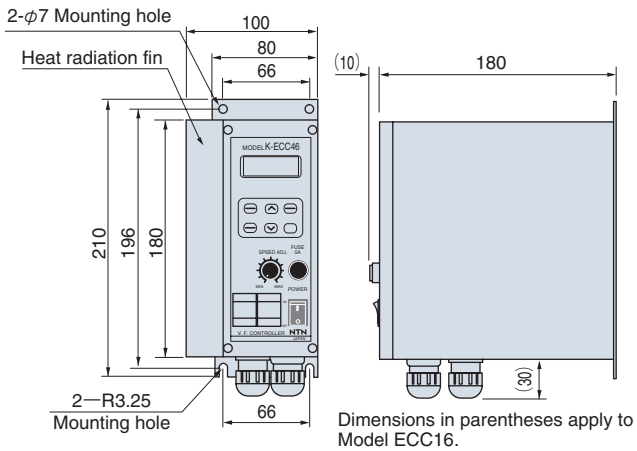
Variable frequency controller

K- E CC 4 6

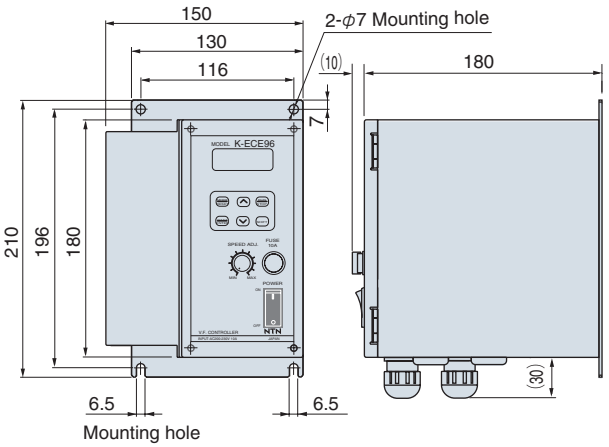
- 6: Voltage and drive system
- 4: Control capacity
- CC: Control function (application)
- E: Controller code

Multifunction types

K-ECC46



K-ECE96



Part number	Control functions❶	Control capacity (A)	Supply voltage (V)	Applicable drive unit
K-ECC46	External control + ON/OFF control with sensor + operation instructions + constant amplitude control	4	200	S30, K20, N25, N32, N40, G50·1
K-ECE96		10		G63·2

❶ For details of control functions, refer to page 49. For details, contact **NTN** Engineering.

Part number		K-ECC46	K-ECE96
Power supply	Rated voltage	Single-phase200V AC to 230V AC ±10%	
	Frequency	50/60 Hz common	
Output	Voltage	Single phase 0 to 200V AC (in 1-volt increments)	
	Frequency	15～150Hz (in 0.1-Hz increments)	15～70Hz (in 0.1-Hz increments)
	Rated current	4A (effective value)	10A (effective value)
	Drive system	Sine wave PWM type	
	Service power supply	DC24V，80mA	DC24V，100mA
Control		Microcomputer-based constant amplitude control without sensor	
Control input		Run/stop, sensor input, speed selection	
Software start / stop		Yes	
Constant voltage function		Output voltage remains within 5% in the event of a ±10% variation in supply voltage.❶	
Constant amplitude function		Under a ±10% variation in supply voltage or work piece mass, amplitude variation is limited to within 3%.❷	
Control output		Run signal, valve control, alarm signal, fault signal	
Operating temperature range		0～40˚C	
Protection		Short-circuits, ground-faults, overloads, voltage drops	
Mass		About 3 kg	About 4.5 kg

❶ When output voltage setting is 170 V or lower.
❷ The data in this table are typical values obtained by **NTN** tests at output voltages in the range of 100–170 V. The above-mentioned constant amplitude performance value is not guaranteed, as constant amplitude performance can vary with adjustments to the parts feeder spring.

■Features

- The constant amplitude function requires no vibration sensor.
- The resonance point auto tracing function automatically maintains the frequency at the resonance point.
- Driving the unit at the resonance point contributes to highly energy-efficient operation.
- A full line of safety features is provided, including overload protection and ground fault protection (short-circuit to ground).

The products introduced on this page are manufactured under license from an international manufacturer. Their use in countries other than Japan might be restricted. Before ordering any of these products, contact NTN Engineering.

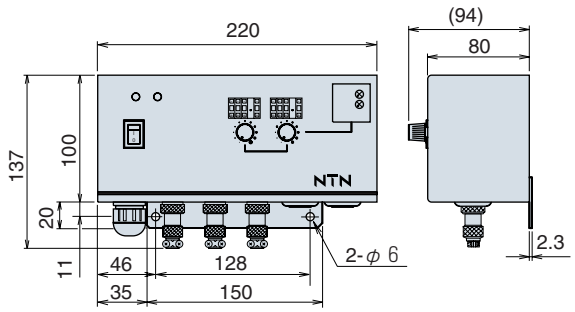
NTN parts feeder

SMD controller

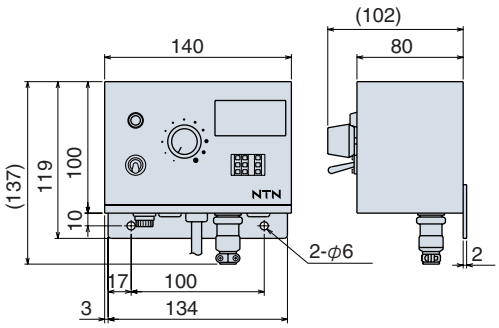
K- E T9 1 8

- Voltage and drive system
- Control capacity
- Control function (application)
- Controller code

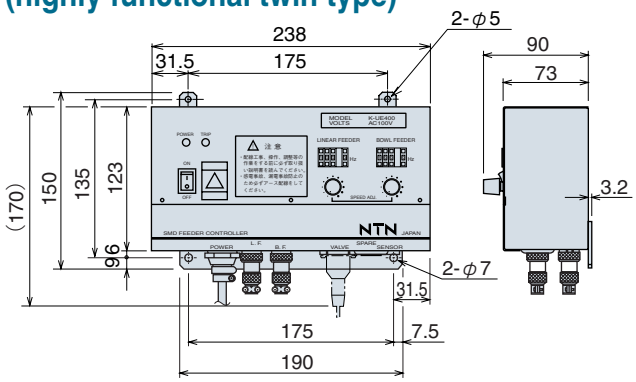
K-ET918
(standard twin type, with metal connectors)



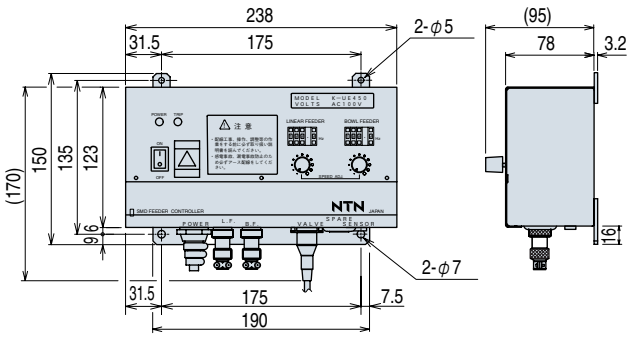
K-EC118



K-UE410
(highly functional twin type)



K-UE450



Part number	Control functions ❶	Control capacity (A)	Supply voltage (V)	Applicable drive unit
K-ET918	External control + ON/OFF control with sensor + operation instructions	0.5	100	HS05, HS07, S05, S08, S10
		1.8		HF10, HF14, K-series
K-UE410 K-UE450	External control + sequence control (For head/tail orientation of chip resistors)	0.5	100	HS05, HS07
		1.0		HF10, HF14
K-EC118	External control	1.5	100/200	HF10, HF14, HS05, HS07

❶ For details of control functions, refer to page 49.

Model		K-ET918	K-UE410	K-UE450	K-EC118
Power supply	Rated voltage	AC 100V～115V ±10%			AC 100V/200V (selectable) ±10%
	Frequency	50/60 Hz common			
Output	Voltage	0～95V ❶			0～100V/0～200V
	Voltage stability	Maximum output voltage varies within 3% in the event of a ±10% variation in supply voltage when the output voltage is 85 V or lower.			±Within 2%, provided that output voltage does not exceed 85 V (100 V type) or 170 V (200 V type)
	Frequency ❸	20.0～199.9Hz		100.0～199.9Hz	
	Frequency stability	Maximum frequency varies within 0.2% in the event of a ±10% variation in supply voltage.			
	Frequency setting accuracy	±1% of the max. frequency			
	Max. allowable current	1.8 A for bowl feeder, 0.5 A for linear feeder	1.0 A for bowl feeder,	0.5 A for linear feeder	1.5A
	Service power supply	DC 12V 80mA	DC 24V	250mA	———
	Drive system	PWM			
Control		Analog system			
Control input (S1-S2)		Open-collector connectable (Run at close, and stop when opened)			
Control input (S3-S4)		Open-collector connectable (Switch-selectable between linear feeder input and “unused.”)	———		———
Control input (for timer)		Open-collector connectable (2-wire sensor connectable) (polarity reversible)	———		———
Sequence input		———	4 points (Requirements are the same as those for control inputs [S1, S2].) ❷	9 points (Requirements are the same as those for control inputs [S1, S2].) ❷	———
Timer setting		ON 0.1 - 10 sec OFF 0.1 - 10 sec.	Timer settings are predetermined by the internal program.❷		———
Control output		1 point: No-voltage relay output (synchronous with bowl feeder)	2 points: Open-collector transistor output (run, bowl feeder synchronization)		———
Valve control output		1 point: 100 VAC solenoid valve (synchronized with bowl feeder) ❹	3 points, 24 VDC solenoid valve ❷	6 points, 24 VDC solenoid valve ❷	———
Software start		Variable 0.2 - 2.0 sec			0.4 sec., fixed
Operating temperature range		0～40˚C			
Wiring of connection system to vibratory driving unit		Connections with metal connector (Connections with terminal block)			
Mass		2.8kg	2.9kg		1.5kg

❶ Depending on the measuring instrument used, the output voltage may exceed the 0–95 V range. Also, the maximum output voltage can vary depending on the frequency setting.
❷ With a special programming tool, you can vary the timer constant and the number of inputs and outputs used. The maximum numbers of controllable inputs and outputs are seven inputs and five outputs for Model K-UE400 and 10 inputs and eight outputs for Model K-UE450.
❸ This is the driving frequency. The frequency of the parts feeder is approximately twice as high and within the range of 40.0–399.8 Hz.
❹ The supply voltage is applied to the solenoid valve.
❺ Do not use the controller in the presence of corrosive gas or in a very dusty environment; or where substances capable of damaging the electrical components, resins, or sheet metal can contact the controller.

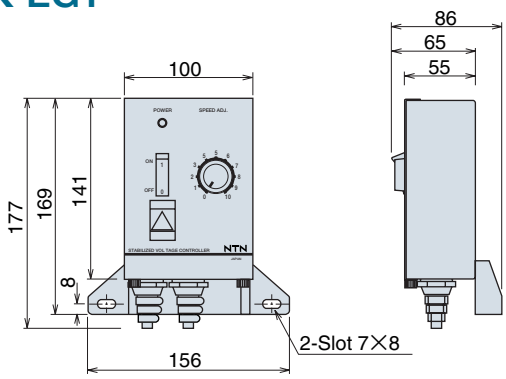
NTN parts feeder

Constant voltage controller

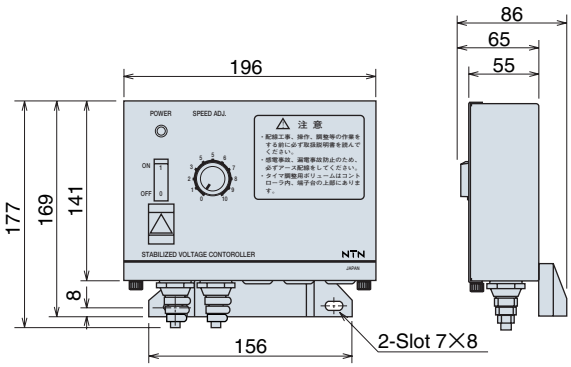
K- E G1 7 7

- 1st 7: Voltage, drive system
- 2nd 7: Control capacity
- G1: Control function (application)
- E: Controller code

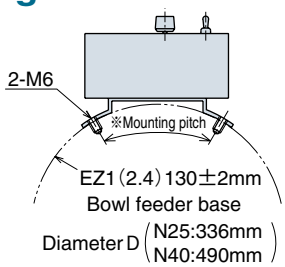
K-EG1



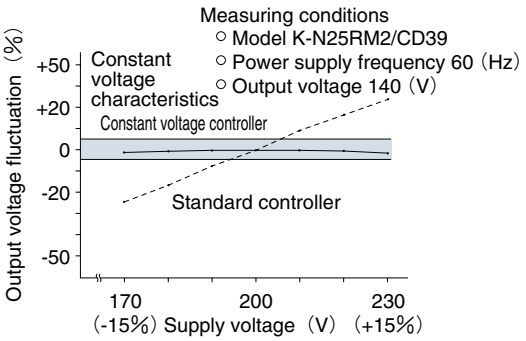
K-EG2(4)



Mounting dimensions



※When mounting on a flat surface, flatten the stay.
Mounting pitch will be 130 mm respectively.



Note 1) The constant voltage characteristics above are based on an output voltage set from 30 V to 85 V (for 100 V) or from 60 V to 170 V (for 200 V).
Note 2) In certain cases, errors may occur in measured values depending on measuring instruments, because output voltage is adjusted via a phase control technique.

Model	K-EG11	K-EG17	K-EG27, -EG47
Supply voltage	Single-phase, 100～115/200～230V AC (switch-selectable), ±10%		
Supply frequency	50 Hz/60 Hz switch-selectable		
Drive system	Full wave	Full wave / half wave switch-selectable	
Max. allowable current	0.3A	7A	
Constant voltage characteristics	±3% or less of output voltage fluctuation against ±10% of supply voltage fluctuation		
Software start	Possible (variable in eight increments of 0.1 to 1 second)		
Valve operation control	———		Solenoid valve is controlled according to the load.
Mass	Approx. 1.2 kg		Approx. 2.5 kg

❶ A voltage output. Prepare a solenoid valve whose rated voltage is the same as that of the power supply.
Note 1) Do not use the controller in the presence of corrosive gas or in a very dusty environment; or where substances capable of damaging the electrical components, resins, or sheet metal can contact the controller.

Part number	Control function ❶	Control capacity (A)	Applicable unit
K-EG117	External control+ON/OFF control with level switch	0.3	S05, S08
K-EG177		7	K10～G50, S10～30, L20, V7～12, SV01～06
K-EG277	External control+ON/OFF control with sensor +operation instruction		K10～G50
K-EG477	External control+ON/OFF control with sensor +no-work alarm+operation instruction		

❶ For details of control functions, refer to page 49.

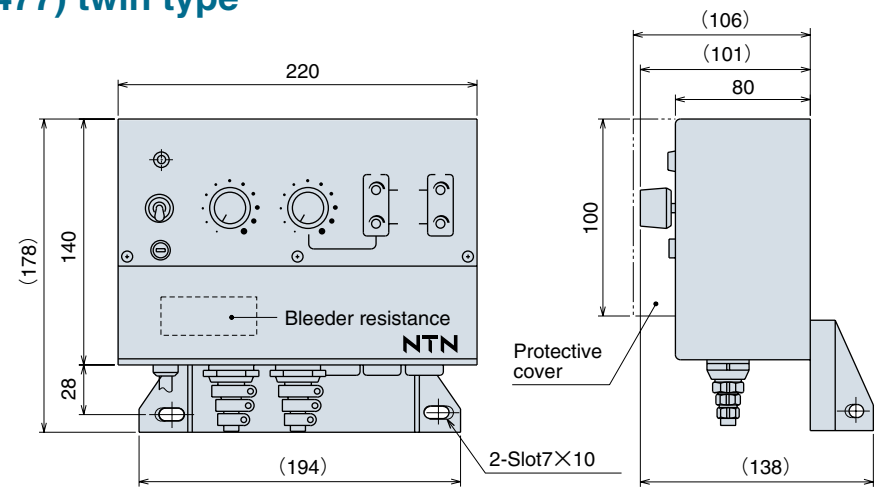
NTN parts feeder

Constant voltage twin controller

K- E T2 7 7

- Voltage, drive system
- Control capacity
- Control function (application)
- Controller code

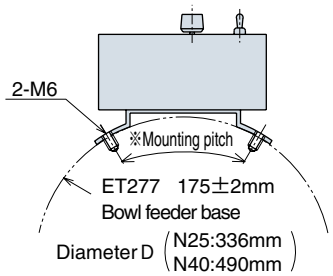
K-ET277 (477) twin type



Type	K-ET277(477)
Rated voltage	Single phase AC100～115/200～230V
Rated frequency	50/60Hz
Drive system	Full wave/half wave (separately switchable)
Max. allowable current	3A (for linear feeders)＋7A (for bowl feeders)
Constant voltage characteristics	±3% or less of output voltage fluctuation against ±10% of supply voltage fluctuation
Software start	Possible
Valve operation control	Possible (synchronous with bowl feeder)
Mass	Approx. 2.5 kg

Note 1) The constant voltage characteristics above are based on an output voltage set from 30V to 85V (for 100V) or from 60V to 170V (for 200 V).
Note 2) In certain cases, errors may occur in measured values depending on measuring instruments, because output voltage is adjusted via a phase control technique.
Note 3) Do not use the controller in the presence of corrosive gas or in a very dusty environment; or where substances capable of damaging the electrical components, resins, or sheet metal can contact the controller.
❶ A voltage output. Prepare a solenoid valve whose rated voltage is the same as that of the power supply.

Mounting dimensions



※When mounting on a flat surface, flatten the stay.
The mounting pitch will be 180 mm.

Part number	Control function	Control capacity (A)	Applicable unit
K-ET277	External control＋ON/OFF control with sensor ＋operation instruction	For linear feeders (3A)	S05 ❶, S08 ❶, S10, S20, S30, L20 (V71, V01, V03, V04, V06, V08, V12, SV01, SV03, SV06) ❷
K-ET477	External control＋ON/OFF control with sensor ＋no-work alarm+operation instruction	For bowl feeders (7A)	K-series, N-series, G50

❶ Bleeder resistance is needed.
❷ Level switch can be connected by adjusting the internal jumper pins, and hoppers can be used in place of linear feeders.

Options

Part number	Description	Applications
K-PZ0460	Protective cover	Hinged cover for protecting the operation panel. Easily opened/closed.
K-PZ0461	Bleeder resister	Need to use K-S052 and K-S082.

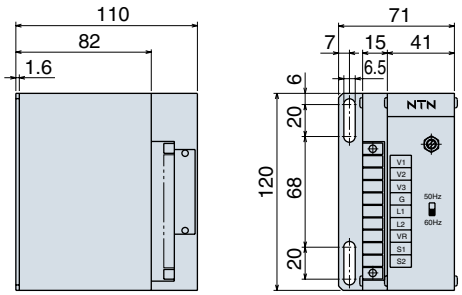
NTN parts feeder

Constant voltage controller

K- E J1 1 2

- Voltage, drive system
- Control capacity
- Control function (application)
- Controller code

K-EJ1（inside cabinet）



Model	K-EJ11	K-EJ17
Supply voltage	Specific to 100 VAC or 200 VAC	
Supply frequency	50 Hz/60 Hz switch-selectable	
Drive system	Full wave	Specific to full wave/half wave
Max. allowable current	0.3A	7A
Constant voltage characteristics	±5% or less of output voltage fluctuation against ±15% of supply voltage fluctuation	
Mass	Approx. 0.75 kg	

Part number❷	Control function ❶	Control capacity (A)	Supply voltage (V)	Drive system	Applicable drive unit
K-EJ11½	External control	0.3	100 200	Full wave	S05, S08
K-EJ17½		7			K-series, S10, S20, L20, N25, ※(N32, N40)
K-EJ174			200	Half wave	S30, N32, N40, N40･1, G50

Applicable units marked with ※ are for 200 V only.
❶ For details of control functions, refer to page 49.
❷ The K-EJ1 (for mounting in the cabinet) cannot be ordered with a combination part number that includes the part feeder.

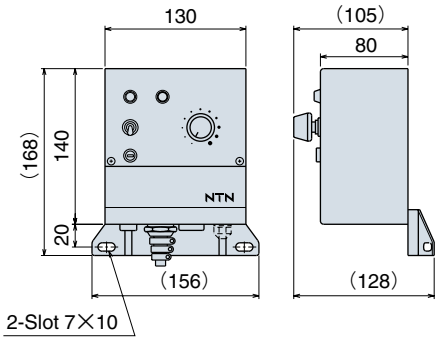
NTN parts feeder

Constant amplitude controller

K- E B7 7 7

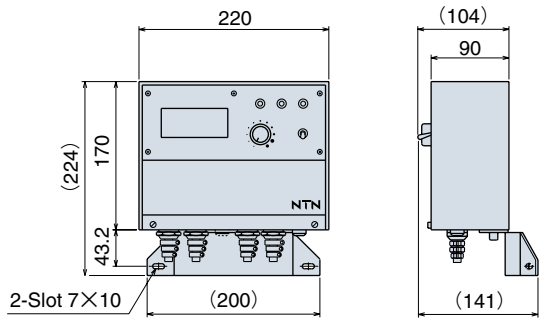
- Voltage, drive system
- Control capacity
- Control function (application)
- Controller code

K-EB177



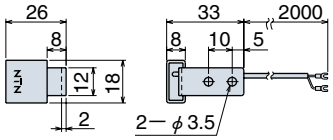
●Mounting dimensions to parts feeders are dentical to those for EG controllers.

K-EB777（477, 577）
K-EB297

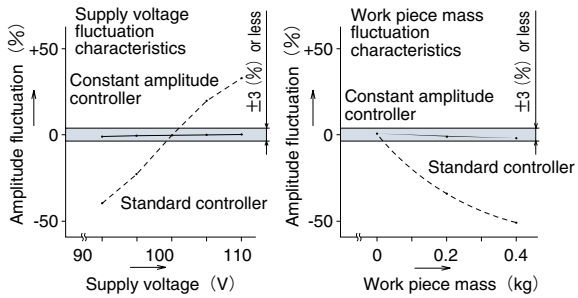


●Mounting dimensions to parts feeders are identical to those for ET277 controllers.

Vibration sensor K-P1395 （standard accessory）



- Vibration sensor K-P1395 is included in the controller proper.
- If extending the leads, use a shielded cable.



NOTE 1) The constant amplitude characteristics plotted above were obtained with the controller together with the operating **NTN** parts feeder K-K10R1/C1501.

Note 2) In certain cases, errors may occur in measured values depending on the measuring instruments used, since output voltage is adjusted via a phase control technique.

Model	K-EB177, K-EB777 (477, 577)	K-EB297
Rated voltage	100VAC or 200 VAC (switch-selectable) allowable fluctuation range ±10%	
Supply frequency	50 Hz/60 Hz switch-selectable	
Drive system	Full wave/half wave switch-selectable	
Max. allowable current	7A	10A
Amplitude detector	Vibration sensor K-P1395	
Mass	Approx. 3.2 kg (K-EB177 is approx. 1.6 kg)	

Controllers can be factory-set to be fully compatible with your **NTN** parts feeders.
Make sure to specify your parts feeder model when placing orders to **NTN**.
Note 1) Do not use the controller in the presence of corrosive gas or in a very dusty environment; or where substances capable of damaging the electrical components, resins, or sheet metal can contact the controller.

Part number	Control function ❶	Control capacity (A)	Supply voltage (V)	Drive system	Applicable unit
K-EB177	External control	7	100/200	Full wave / half wave	K-series, N25, ※(N32, N40, N40・1, G50)
K-EB777	External control+ON/OFF control with sensor +operation control				
K-EB577	External control+ON/OFF control AND logic circuit with 2 sensors+operation instruction				
K-EB477	External control+ON/OFF control with sensor +no-work alarm+operation instruction				
K-EB297	External control+ON/OFF control with sensor +operation instruction	10			※G63・2

Applicable units marked with ※ are for 200 V only.
❶ For details on control functions, refer to page 49.

NTN parts feeder

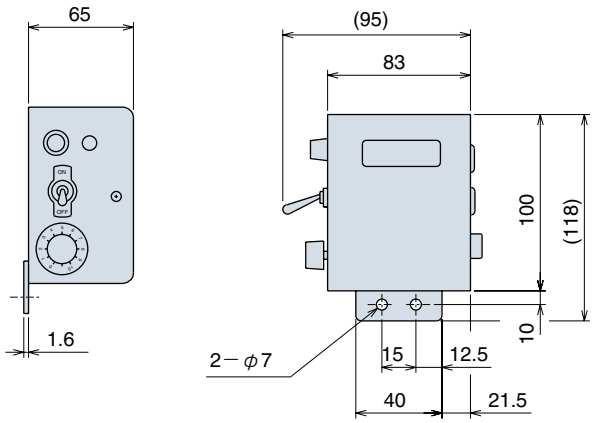
Standard controller

K- E M13 1

- Voltage, drive system
- Control capacity
- Control function (application)
- Controller code

Model	K-EM
Supply voltage	Specific to 100 VAC or 200 VAC
Supply frequency	50 Hz/60 Hz selectable with jumpers
Drive system	Specific to full wave

K-EM1



Model	Control functions ❶	Control capacity (A)	Supply voltage (V)	Drive system	Mass (kg)	Applicable unit
K-EM13 1/2	External control	3	100 200	Full wave	0.9	M05, M10

❶ Applicable sensors are voltage output type (for K-EE23) and OMRON E3C-series only.

NTN parts feeder

Optional unit

K - U E 0 8 2

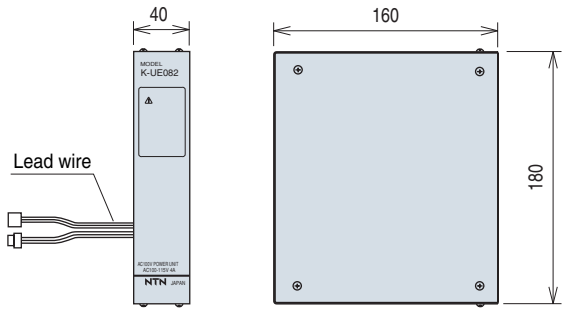
- Unit number
- Unit code
- Semi-standard unit

■100 VAC power unit
A dedicated unit for the Model K-ECC46 high-functional controller

Part number		K-UE082
Power supply	Rated voltage	Single-phase 100V AC to 115V AC ±10%
	Frequency	50/60 Hz common
Output	Voltage	DC280V
	Rated current	4A (effective value)
Operating temperature range		0～40˚C
Functions		This unit steps up the supply voltage, enabling the Model K-ECC46 variable frequency controller (high-function type) to operate on a 100 VAC power supply. Use only with 200 V vibratory driving units.
Mass		Approx. 1.2 kg

This unit steps up the voltage from 100 VAC to 200 VAC. Use only with a high-function controller.

Optinal unit
K-UE082 (100 VAC power unit)



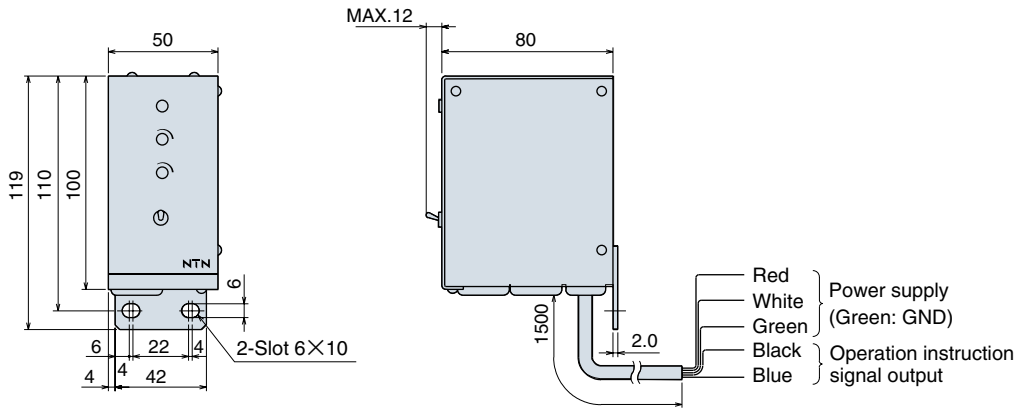
NTN parts feeder

Optional unit

K- U E 200

- 200 — Unit number
- E — Unit code
- U — Semi-standard unit

K-UE100(200), K-UE101(201) Timer unit



※ Standard mounting pitch should be 28 mm or 30 mm.

Part number		K-UE100	K-UE200	K-UE101	K-UE201
Rated current ❶		AC100V	AC200V	AC100V	AC200V
Supply frequency		50/60Hz			
Power consumption		2VA			
Input	Connectable sensor	① DC NPN transistor voltage output ② DC NPN O/C output ③ DC 2-wire system NPN output ④ Contact output ＊Built-in signal input selector (NO, NC) switch. } Sensors of these types are available (select with built-in switch).			
	External control (S1-S2)	No-voltage contact or O/C signal (Should be able to open/close at 10 VDC, 5 mA)			
Output	Service power supply	Max. 12 VDC±10% 50 mA (w/ short-circuit protective function)			
	Operation instruction signal	No-voltage contact output 1a×2 Contact capacity AC200V 0.25A(COS ϕ =1)		No-voltage contact output 1a×1 Contact capacity AC200V 0.25A(COS ϕ =1)	
	Valve control signal	———		Voltage contact output 1a×1	
				Load of 100 VAC, 20 VA or lower is connectable	Load of 200 VAC, 20 VA or lower is connectable
	Output circuit	Ry — Black, Blue Ry — C, NO		Ry — Black, Blue AC100/200V — Ry — 1, 2	
ON/OFF delay function		ON delay variable 0.1 to 10 sec. OFF delay variable 0.1 to 10 sec.			
Mass		Approx. 0.7 kg			

❶ For all ratings, the allowable voltage fluctuation range is ±10%.

NTN parts feeder

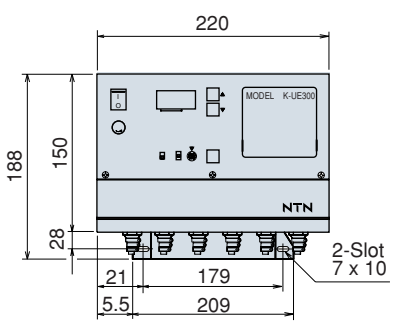
I/O controller unit

K-UE300

- Unit number
- Unit code
- Semi-standard unit

The I/O control unit contains a program package that enables parts sorting and multi-lane parts feed in the bowl by means of sensors. It also controls the sorting mechanism at the exit. Thus, even an inexperienced operator can control the feeder system by specifying only a program number and defining a timer setting.

K-UE300

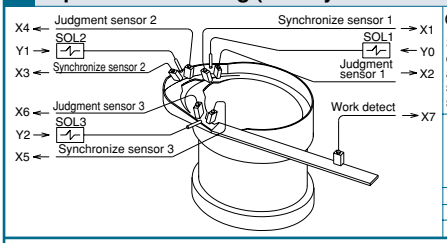


Part number		K-UE300
Power supply	Power supply voltage	AC 100～115V/200～230V
	Frequency	50/60Hz
Input	Number of points	8 points
	Input current	4.8 mA max. (per point)
Output	Service power supply	DC24V 500mA
	Number of points	Transistor output 7 points (for DC) Photo MOS relay output 3 points (common to AC and DC) Total 10 points (Because the same signal is redundantly fed at 2 points of the above 10 points.)
	Output current	Transistor, 0.2A/point Photo MOS relay, 0.1A/point
	Rated voltage	Transistor, 24V DC Photo MOS relay, 230V AC/DC
Timer	Number of allowable settings	10 settings (per program)
	Duration of setting	0.1 - 99.9 sec.
Allowable number of settings		Resident programs, 10 Free programs, 9 ❶
Operating temperature range		0～40˚C
Mass		2.5kg

❶ A "free program" is a programmable area in which a user can freely create a parts feed program. Note, however, that the user must purchase an optional programming tool for this purpose.

■Program examples

A 3-point work sorting (with synchronize sensor)



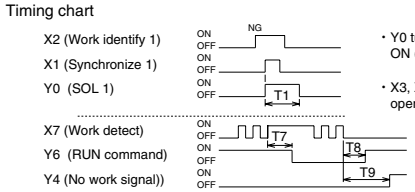
Outline of function

Sorting of work pieces is controlled at up to three points according to the signals from a synchronize sensor + judgment sensor.

Basic functions ○ : standard feature △ : possible with additional wiring × : not permitted

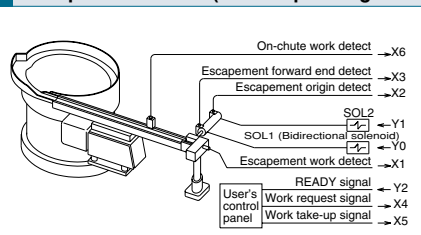
Overflow function	○
In-run airblow	△
No work alarm	○

Timing chart



- Y0 turns ON when both X2 and X1 turn ON (to eject a reject).
- X3, X4, Y1, T2, and X5, X6, Y2 and T3 operate in a manner identical to Y0.

B Escapement control (work request signal + work take-up signal)



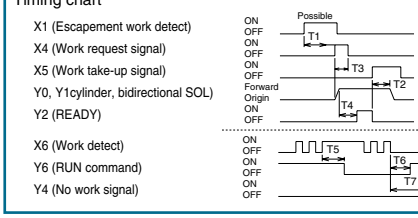
Outline of function

The escapement is triggered according to a work request signal. The escapement is reset when a work take-up signal is detected.

Basic functions ○ : standard feature △ : possible with additional wiring × : not permitted

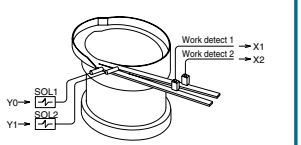
Overflow function	○
In-run airblow	△
No work alarm	○

Timing chart

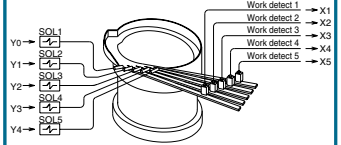


- The cylinder (bidirectional SOL) starts a forward motion after [T1] seconds have elapsed after X1 is urned ON and the X4 turns ON.
- The cylinder returns to its origin [T2] seconds after the X5 turns ON.

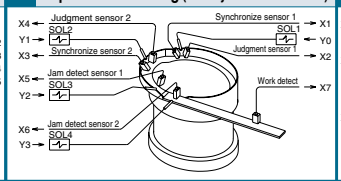
C 2-lane air-overflow control



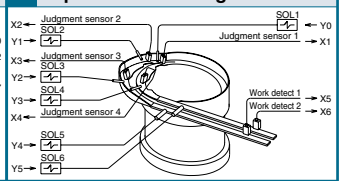
D 5-lane air-overflow control



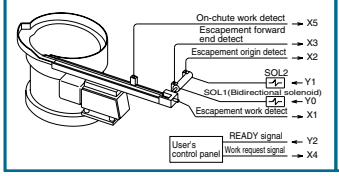
E 2-point work sorting (with synchronize sensor)



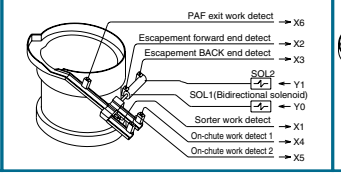
F 4-point work sorting



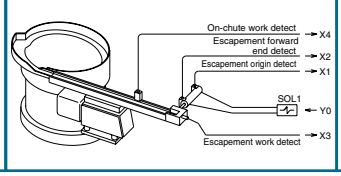
G Escapement control (work request signal)



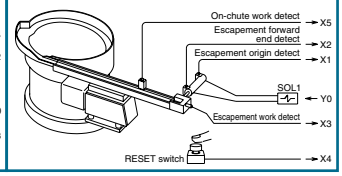
H Escapement control (2-lane sorting)



J Escapement control for test (continuous RUN)



K Escapement control for test (manual reset)

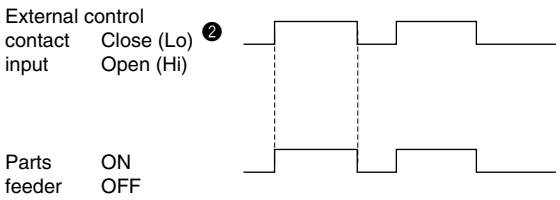


※*For detailed information about control, contact **NTN** Engineering.

Control functions and timing chart

External control

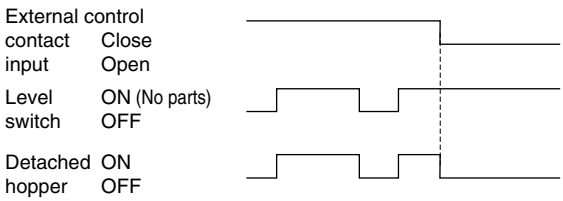
Timing chart



●The parts feeder is turned ON/OFF with an external signal.

External control+ON/OFF control with level switch

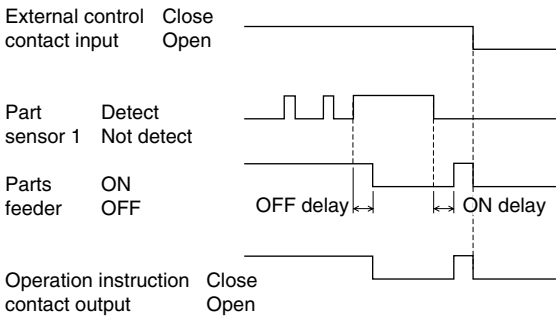
Timing chart



●Detached hopper is automatically turned ON/OFF by the level switch which detects the quantity of any pieces in the parts feeder bowl.

External control+ON/OFF control with sensor +operation instruction

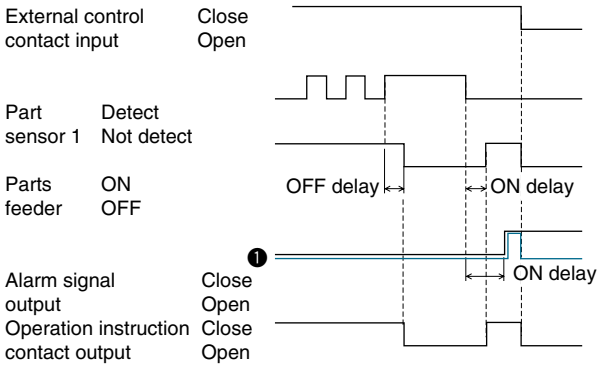
Timing chart



●Parts feeder is turned OFF if the sensor does not detect any pieces during a predetermined time period .
(Built-in ON/OFF delay timer)

External control+ON/OFF control with sensor +no-work alarm+operation instruction

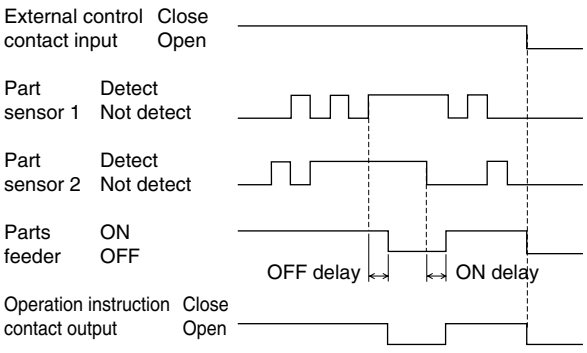
Timing chart



●If the sensor has failed to detect any parts for a predetermined duration (max. 60 sec.), the contact signal is output for alarm.

External control+ON/OFF control+logic circuit with 2 sensors+operation instruction

Timing chart



●Parts feeder is turned OFF if neither sensors detect any pieces, or when either sensor no longer detects any pieces.
(Built-in ON/OFF delay timer)

❶ The blue line represents high-function controllers.
❷ Use a relay contact to open the external control input for the EG1, EJ1 and EM1. Use an open collector transistor to control other controllers. The input logic can be reversed on the standard type and high-function type of variable frequency controllers.
● Note: If you are considering the use of a relay contact, choose a relay whose minimum applicable load does not exceed 1 V and 1 mA and whose minimum permissible contact voltage is 250 V.
❸ The standard setting for whether a controller is turned ON with a Low signal or High signal varies depending on the controller.
❹ The necessary supply voltage for parts sensors 1 and 2 varies depending on the controller. For details, refer to the section of the controller service power supply. The supply voltage for controller models that accept sensor connections whose applicable power supply is not specified is 12 VDC. Use an NPN open collector sensor. The input logic for the sensor signal can be reversed at the controller side.
❺ The run instruction output is a signal for controlling standalone hoppers. It can also be used as a run signal for controllers.
❻ When using an external transformer, calculate its capacity using the formula below.

Full wave: $\left(\begin{array}{c}\text{parts feeder}\\ \text{supply voltage}\end{array}\right)\times\left(\begin{array}{c}\text{parts feeder}\\ \text{rated current}\end{array}\right)\leqq$ transformer capacity

Half wave: $\left(\begin{array}{c}\text{parts feeder}\\ \text{supply voltage}\end{array}\right)\times\left(\begin{array}{c}\text{parts feeder}\\ \text{rated current}\end{array}\right)\times 2\leqq$ transformer capacity

Note: For details, refer to the controller manual or contact **NTN** Engineering.

Ordering parts feeders

Part number categories and notation

■Part number categories

NTN parts feeders can be designated and ordered using any of the three part number categories given below.

1) Unit part number: Units, such as vibratory drive units, bowls, and controllers (pages 11 through 48), and special-purpose parts feeders (pages 64 through 73).

2) Combination part numbers: Combinations of units as described in the standard series combination lists (pages 52 through 63).

3) Component part numbers: Specific parts such as leaf springs, mounting brackets, and optional parts (pages 75 through 80).

■Part number notation

1) Unit part number notation
- Simply write the unit part number of the vibratory driving unit, bowl, or controller, etc. that you wish to order.

2) Combination item number notation
- As shown in the standard series combination lists (pages 52 to 63):
  - □Specify a part number (blue characters in the table) after K-, and connect them with slash marks (/) in the order of K-Ⅰ (vibratory drive unit) /Ⅱ (bowls) / Ⅲ (controllers).
  - □Possible combinations are: K-Ⅰ/Ⅱ/Ⅲ, K-Ⅰ/Ⅱ, K-Ⅰ/Ⅲ only.
  - □Combination such as K-Ⅱ/Ⅱ, K-Ⅱ/Ⅲ are not acceptable. If such a combination is required, itemize the unit part numbers.
- You cannot custom order a variable-frequency controller (basic type and high-function type) by combining item numbers. Please specify an existing unit part No.
- An optional part cannot be included in a combination part number. Instead, order separately specifying its component number.

3) Component part number notation
- When ordering a component, such as a spring or stay mounting part, order by component number (pages 75 through 80).

Notes for ordering parts feeders

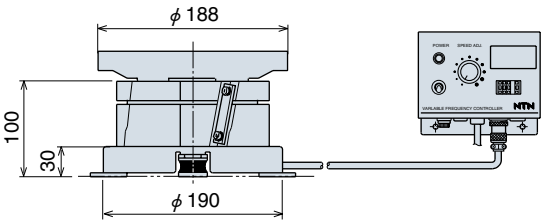
- **NTN** parts feeder series can be optimized for a specific application by combining various units. The combination of the three standard unit types—the vibratory drive units, bowls (vibratory trough mount), and controllers—provides for many different variations, allowing users to select the optimum configuration for aligning and feeding.
- Functions can be further expanded by incorporating peripheral accessories, such as auxiliary weights.
- Refer to the standard series combination lists on pages 52 through 63. Any combination of units identified by blue lines is possible. To order, specify your configuration by separating selected units with slash marks (/).
- Any combination of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for guidance. To purchase such a combination, units must be ordered individually. Remember however, that **NTN** cannot guarantee the performance and proper functioning of such combinations.

Standard Series Combination Table

HF10,14

(High-frequency bowl feeder)

- Any combinations of units identified by blue lines are available for order.
- Any combinations of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for technical advice. To purchase such a combination, units must be ordered individually. Remember however that **NTN** cannot guarantee the performance and proper functioning of such a combination.



Examples of combination part numbers

	Ⅰ Vibratory drive unit					Ⅱ Bowl			Ⅲ Controller	
K-	HF	14	R	2	1	/ C	18	01	/ T9	1
	Drive unit model	Unit size	Supply direction	Design revision code	Voltage and drive system	Bowl type	Bowl outer dia.	Bowl suffix	Control function (including form)	Control capacity

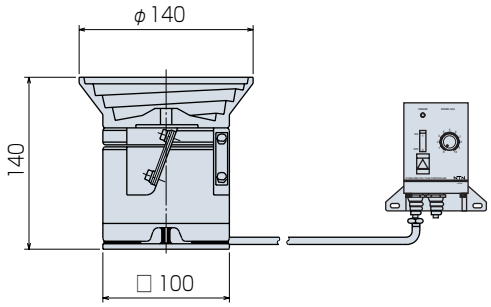
Model, size	Ⅰ Vibratory drive unit	Ⅱ Bowl	Ⅲ Controller
HF 10	K-HF10R21 / K-HF10L21	C1201 C1403 ❶ C1501 C1701 ❶ Cascade Z1201 Straight wall bowl D1301 D1402 ❶ Dish	C11 SMD T91 SMD twin
HF 14	K-HF14R21 / K-HF14L21	C1801 Cascade	C11 SMD T91 SMD twin

❶ Manufactured only on special order.

Standard Series Combination Table

K10,14,16,20

- You may combine any units interlinked with blue lines in the combination table. However, note that Model K-ECA46 and Model K-ECC46 variable-frequency controllers can be combined only with a vibratory driving unit rated at 200 V.
- Any combinations of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for technical advice. To purchase such a combination, units must be ordered individually. Remember however that **NTN** cannot guarantee the performance and proper functioning of such a combination.



Examples of combination part number

	I Vibratory drive unit					II Bowl			III Controller	
K-	K	10	R	□	1	/ C	14	01	/ G1	7
	Drive unit model	Unit size	Supply direction	Design revision code	Voltage and drive type	Bowl type	Bowl outer dia.	Bowl suffix	Control function (including form)	Control capacity

Model, size	I Vibratory drive unit	II Bowl	III Controller
K 10	K-K10 R1 L2 (Standard)	C1201, C1401❶, C1501, C1502❶ — Cascade Z1201 — Straight wall D1301, D1402❶ — Dish	G17, G27, G47, T27, T47 — Constant voltage B17, B47, B57, B77 — Constant amplitude K-ECA46 — Variable frequency
K 14	K-K14 R 1 L 2	C2001 — Cascade Z2001 — Straight wall D2002 — Dish	
K 16	K-K16 R 3 L 2 1	C2601 — Cascade Z2301, Z2302❶, Z2501 — Straight wall K2601❶ — Cone D2801 — Dish	G17, G27, G47, T27, T47 — Constant voltage B17, B47, B57, B77 — Variable frequency K-ECA46, K-ECC46 — Variable frequency
K 20	K-K20 R 1 L 2 K-K20 R 3 L 4	S3201 — Cascade Z2801, Z3003 — Straight wall	

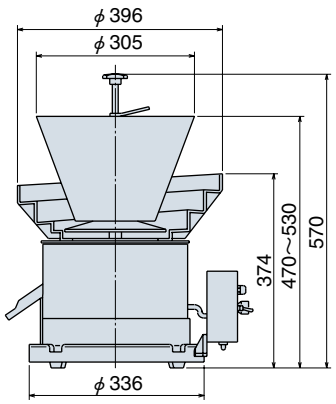
You cannot custom order a variable-frequency controller (basic type and high-function type) by combining item numbers. Please specify an existing unit part No.

❶ Manufactured only on special order.

Standard Series Combination Table

N25

- You may combine any units interlinked with blue lines in the combination table. However, note that Model K-ECA46 and Model K-ECC46 variable-frequency controllers can be combined only with a vibratory driving unit rated at 200 V.
- Any combinations of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for technical advice. To purchase such a combination, units must be ordered individually. Remember however that **NTN** cannot guarantee the performance and proper functioning of such a combination.



Examples of combination part number

	Ⅰ Vibratory drive unit						/	Ⅱ Bowl				/	Ⅲ Controller	
K-	N	25	R	A	H	2	/	C	D	39	⬚	/	G1	7
	Drive unit model	Unit size	Supply direction	Design revision code※	Bowl mounting type	Voltage and drive system		Bowl type	Bowl bottom type	Bowl outer dia.	Design revision code		Control function (including form)	Control capacity

※Designs revision code A means free set base.

Model, size	Ⅰ Vibratory drive unit	Ⅱ Bowl	Ⅲ Controller
N25·H	K-N25RLH½ K-N25RLAH½ w/ Aux. hopper in the bowl	CD33, CD39, CD391 — Cascade SD39, SD391 — Stainless steel cascade ZD30❶, ZD301❶, ZD302❶, ZD35, ZD351❶, ZD352 — Straight wall KD35 — Cone	G17 G27, G47 — Standard T27, T47
N25·T	K-N25RLT½ K-N25RLAT½ w/ Isolated bottom		
N25·F	K-N25RLF½ K-N25RLAF½ w/ Flange	SF39, SF391 — Stainless steel cascade Integrated bottom ZF30❶, ZF301❶, ZF302❶, ZF35, ZF351❶, ZF352 — Straight wall KF35❶ — Cone DF42 — Dish	B17 B47, B57, B77 — Constant amplitude
N25·M	K-N25RLM½ K-N25RLAM½ Basic type	CB33, CB39, CB391 — w/ Fixed bottom Cascade	K-ECA46, K-ECC46 — Variable frequency

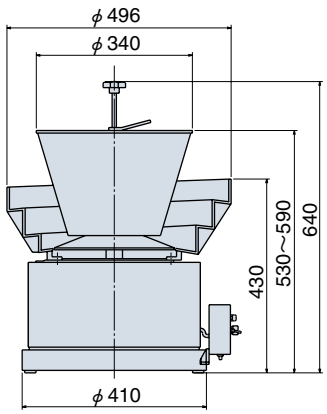
You cannot custom order a variable-frequency controller (basic type and high-function type) by combining item numbers. Please specify an existing unit part No.

❶ Manufactured only on special order.

Standard Series Combination Table

N32 (Full wave)

- Any combinations of units identified by blue lines are available for order.
- Any combinations of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for technical advice. To purchase such a combination, units must be ordered individually. Remember however that **NTN** cannot guarantee the performance and proper functioning of such a combination.



Examples of combination part numbers

	I Vibratory drive unit							II Bowl					III Controller	
K-	N	32	R	2	H	2	/	S	D	49	1	/	G1	7
	Drive unit model	Unit size	Supply direction	Design revision code	Bowl mounting type	Voltage and drive system		Bowl type	Bowl bottom type	Bowl outer dia.	Design revision code		Control function (including form)	Control capacity

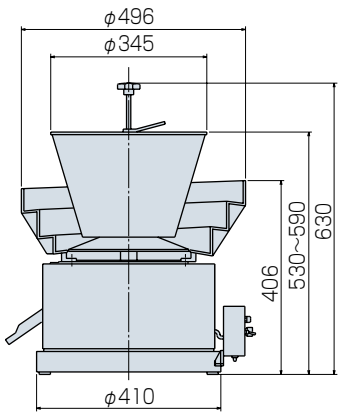
Model, size	I Vibratory drive unit	II Bowl	III Controller
N32 (Full wave)·H	K-N32R2H2 K-N32RAH2 w/ Aux. hopper in the bowl	SD491 Stainless steel cascade ZD401 Straight wall	G17 G27 G47 Constant voltage T27 T47 B17 B47 B57 B77 Constant amplitude K-ECA46 K-ECC46 Variable frequency
N32 (Full wave)·T	K-N32R2T2 K-N32RAT2 w/ Isolated bottom		
N32 (Full wave)·F	K-N32R2F2 K-N32RAF2 w/ Flange	SF491 Stainless steel cascade Integrated bottom ZF401 Straight wall Integrated bottom	
N32 (Full wave)·M	K-N32R2M2 K-N32RAM2 Basic type		

You cannot custom order a variable-frequency controller (basic type and high-function type) by combining item numbers. Please specify an existing unit part No.

Standard Series Combination Table

N32 (Half wave)

- Any combinations of units identified by blue lines are available for order.
- Any combinations of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for technical advice. To purchase such a combination, units must be ordered individually. Remember however that **NTN** cannot guarantee the performance and proper functioning of such a combination.



Examples of combination part numbers

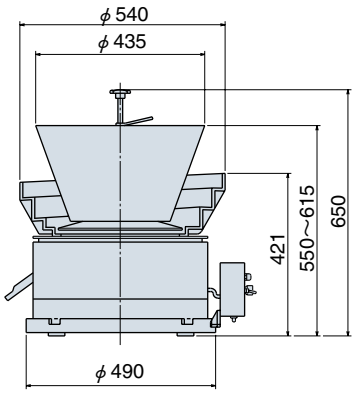
	I Vibratory drive unit						/	II Bowl				/	III Controller	
K-	N	32	R	2	H	4	/	S	D	49	1	/	G1	7
	Drive unit model	Unit size	Supply direction	Design revision code	Bowl mounting type	Voltage and drive system		Bowl type	Bowl bottom type	Bowl outer dia.	Design revision code		Control function (including form)	Control capacity

Model, size	I Vibratory drive unit	II Bowl	III Controller
N32 (Half wave)·H	K-N32$^{R}_{L}$2H4 K-N32$^{R}_{L}$AH4 w/ Aux. hopper in the bowl	SD491 Stainless steel cascade ZD401 Straight wall	G17 G27 G47 Constant voltage T27 T47 B17 B47 B57 B77 Constant amplitude
N32 (Half wave)·T	K-N32$^{R}_{L}$2T4 K-N32$^{R}_{L}$AT4 w/ Isolated bottom		
N32 (Half wave)·F	K-N32$^{R}_{L}$2F4 K-N32$^{R}_{L}$AF4 w/ Flange	SF491 Stainless steel cascade Integrated bottom ZF401 Straight wall Integrated bottom	
N32 (Half wave)·M	K-N32$^{R}_{L}$2M4 K-N32$^{R}_{L}$AM4 Basic type		K-ECA46 K-ECC46 Variable frequency You cannot custom order a variable-frequency controller (basic type and high-function type) by combining item numbers. Please specify an existing unit part No.

Standard Series Combination Table

N40 (Full wave)

- Any combinations of units identified by blue lines are available for order.
- Any combinations of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for technical advice. To purchase such a combination, units must be ordered individually. Remember however that **NTN** cannot guarantee the performance and proper functioning of such a combination.



Examples of combination part numbers

	Ⅰ Vibratory drive unit							Ⅱ Bowl				Ⅲ Controller	
K-	N	40	R	□	H	2	/	C	D	54	□	G1	7
	Drive unit model	Unit size	Supply direction※	Design revision code	Bowl mounting type	Voltage and drive system		Bowl type	Bowl bottom type	Bowl outer dia.	Design revision code	Control function (including form)	Control capacity

※Design revision code A means free set base.

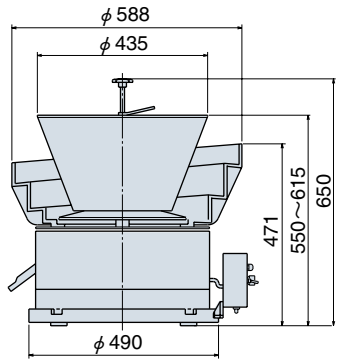
Model, size	Ⅰ Vibratory drive unit	Ⅱ Bowl	Ⅲ Controller
N40 (Full wave)・H	K-N40□H2 K-N40□AH2 w/ Aux. hopper in the bowl	CD54 Cascade SD54 Stainless steel cascade	G17 G27 G47 Constant voltage T27 T47 B17 B47 B57 B77 Constant amplitude K-ECA46 K-ECC46 Variable frequency
N40 (Full wave)・T	K-N40□T2 K-N40□AT2 w/ Isolated bottom		
N40 (Full wave)・M	K-N40□M2 K-N40□AM2 Basic type	CB54 w/ Fixed bottom Cascade	

You cannot custom order a variable-frequency controller (basic type and high-function type) by combining item numbers. Please specify an existing unit part No.

Standard Series Combination Table

N40 (Half wave)

- Any combinations of units identified by blue lines are available for order.
- Any combinations of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for technical advice. To purchase such a combination, units must be ordered individually. Remember however that **NTN** cannot guarantee the performance and proper functioning of such a combination.



Examples of combination part numbers

	Ⅰ Vibratory drive unit						/	Ⅱ Bowl				/	Ⅲ Controller	
K-	N	40	R	☐	H	4	/	C	D	58	☐	/	G1	7
	Drive unit model	Unit size	Supply direction	Design revision code※	Bowl mounting type	Voltage and drive system		Bowl type	Bowl bottom type	Bowl outer dia.	Design revision code		Control function (including form)	Control capacity

※Design revision code A means free set base.

Model, size	Ⅰ Vibratory drive unit	Ⅱ Bowl	Ⅲ Controller
N40 (Half wave) ·H	K-N40R/LH4 K-N40R/LAH4 w/ Aux. hopper in the bowl	CD54 CD58 CD64 CD641 — Cascade SD54 SD58 SD64 SD641 — Stainless steel cascade ZD45 ZD50 — Straight wall KD55❶ — Cone	G17 G27 G47 — Constant voltage T27 T47
N40 (Half wave) ·T	K-N40R/LT4 K-N40R/LAT4 w/ Isolated bottom		
N40 (Half wave) ·F	K-N40R/LF4 K-N40R/LAF4 w/ Flange	SF54 SF58 SF64 SF641 — Stainless steel cascade Integrated bottom ZF45 ZF451❶ ZF50 ZF501❶ ZF502❶ ZF55 ZF60❶ — Straight wall KF55❶ — Cone DF64 DF641 — Dish	B17 B47 B57 B77 — Constant amplitude
N40 (Half wave) ·M	K-N40R/LM4 K-N40R/LAM4 Basic type	CB54 CB58 CB64 CB641 — w/ Fixed bottom Cascade	K-ECA46 K-ECC46 — Variable frequency You cannot custom order a variable-frequency controller (basic type and high-function type) by combining item numbers. Please specify an existing unit part No.

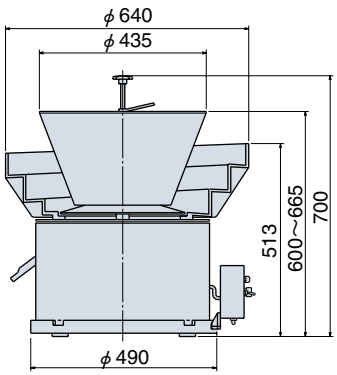
❶ Manufactured only on special order.

Standard Series Combination Table

N40 • 1

N40 type applicable to large amplitude

- Any combinations of units identified by blue lines are available for order.
- Any combinations of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for technical advice. To purchase such a combination, units must be ordered individually. Remember however that **NTN** cannot guarantee the performance and proper functioning of such a combination.



Examples of combination part numbers

	I Vibratory drive unit						/	II Bowl				/	III Controller	
K-	N	40	R	1	H	4	/	C	D	64	☐	/	G1	7
	Drive unit model	Unit size	Supplying direction	Design revision code	Bowl mounting type	Voltage and drive system		Bowl type	Bowl bottom type	Bowl outer dia.	Design revision code		Control function (including form)	Control capacity

Model, size	I Vibratory drive unit	II Bowl	III Controller
N40·1H	K-N40$^{R}_{L}$1H4 w/ Aux. hopper in the bowl	CD54, CD58, CD64, CD641 — Cascade SD54, SD58, SD64, SD641 — Stainless steel cascade ZD45, ZD50 — Straight wall KD55❶ — Cone	G17 G27, G47 — Constant voltage T27, T47 B17 B47, B57, B77 — Constant amplitude K-ECA46, K-ECC46 — Variable frequency
N40·1T	K-N40$^{R}_{L}$1T4 w/ Isolated bottom		
N40·1F	K-N40$^{R}_{L}$1F4 w/ Flange	SF54, SF58, SF64, SF641 — Stainless steel cascade Integrated bottom ZF45, ZF451❶, ZF50, ZF501❶, ZF502❶, ZF55, ZF60❶ — Straight wall KF55❶ — Cone DF64, DF641 — Dish	
N40·1M	K-N40$^{R}_{L}$1M4 Basic type	CB54, CB58, CB64, CB641 — w/ Fixed bottom Cascade	

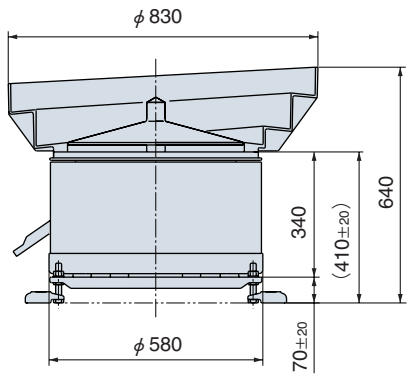
You cannot custom order a variable-frequency controller (basic type and high-function type) by combining item numbers. Please specify an existing unit part No.

❶ Manufactured only on special order.

Standard Series Combination Table

G50

- Any combinations of units identified by blue lines are available for order.
- Any combinations of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for technical advice. To purchase such a combination, units must be ordered individually. Remember however that **NTN** cannot guarantee the performance and proper functioning of such a combination.



Examples of combination part numbers

	I Vibratory drive unit							II Bowl					III Controller	
K-	G	50	R	1	T	4	/	C	D	83	☐	/	G1	7
	Drive unit model	Unit size	Supply direction	Design revision code	Bowl mounting type	Voltage and drive system		Bowl type	Bowl bottom type	Bowl outer dia.	Design revision code		Control function (including form)	Control capacity

Model, size	I Vibratory drive unit	II Bowl	III Controller
G 50 · T	K-G50R1T4 w/ Isolated bottom	CD83 Cascade	G17, G27, G47, T27, T47 — Constant voltage
G 50 · G	K-G50R1G4 w/ Adapter	CB83 w/ Fixed bottom Cascade	B17, B47, B57, B77 — Constant amplitude
G 50 · M	K-G50R1M4 Basic type	ZF651❶ Straight wall	K-ECA46, K-ECC46 — Variable frequency

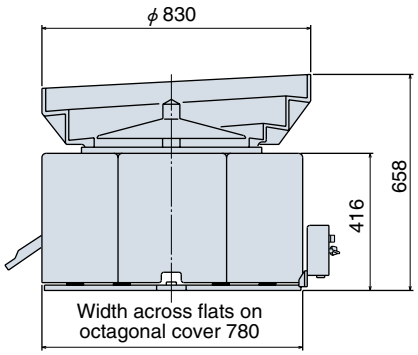
You cannot custom order a variable-frequency controller (basic type and high-function type) by combining item numbers. Please specify an existing unit part No.

❶ Manufactured only on special order.

Standard Series Combination Table

G63

- Any combinations of units identified by blue lines are available for order.
- Any combinations of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for technical advice. To purchase such a combination, units must be ordered individually. Remember however that **NTN** cannot guarantee the performance and proper functioning of such a combination.



Examples of combination part numbers

	I Vibratory drive unit							II Bowl				III Controller	
K-	G	63	R	2	T	4	/	C	D	83		B2	9
	Drive unit model	Unit size	Supply direction	Design revision code	Bowl mounting type	Voltage and drive system		Bowl type	Bowl bottom type	Bowl outer dia.	Design revision code	Control function (including form)	Control capacity

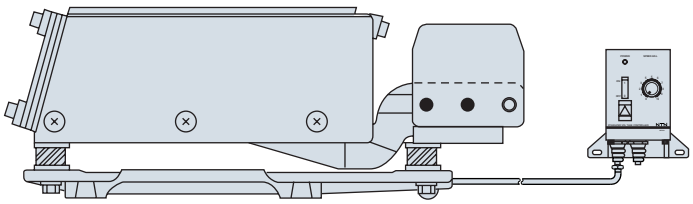
Model, size	I Vibratory drive unit	II Bowl	III Controller
G63·T	K-G63 R/L 2T4 w/ Isolated bottom	CD83 Cascade SD83 Stainless steel cascade	B29 Constant amplitude
G63·G	K-G63 R/L 2G4 w/ Adapter	CB83 w/ Fixed bottom Cascade	K-ECB96 K-ECE96 Variable frequency You cannot custom order a variable-frequency controller (basic type and high-function type) by combining item numbers. Please specify an existing unit part No.
G63·M	K-G63 R/L 2M4 Basic type	ZF75❶ Straight wall SF83 Stainless steel cascade Integrated bottom	

❶ Manufactured only on special order.

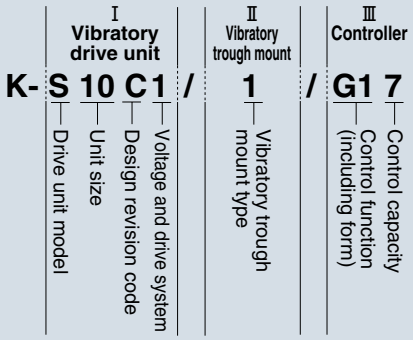
Standard Series Combination Table

S05,S08,S10 S20,S30,L20

- You may combine any units interlinked with blue lines in the combination table. However, note that Model K-ECA46 and Model K-ECC46 variable-frequency controllers can be combined only with a vibratory driving unit rated at 200 V.
- Any combinations of units not identified by blue lines may pose certain technical problems. If such a combination is required, consult **NTN** Engineering for technical advice. To purchase such a combination, units must be ordered individually. Remember however that **NTN** cannot guarantee the performance and proper functioning of such a combination.



Examples of combination part numbers



※Design revision code A means no base plate.

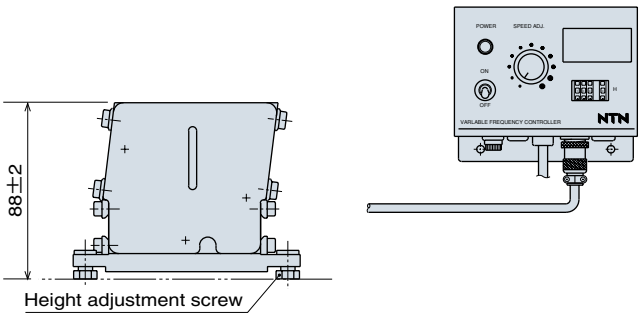
Model, size	I Vibratory drive unit	II Vibratory through mount	III Controller
S 05	K-S051½ K-S05A½	1	G11 Constant voltage K-ECA46 Variable frequency
S 08	K-S082½	1	G11 Constant voltage K-ECA46 Variable frequency
S 10	K-S10B½ K-S10C½	1	G17 Constant voltage K-ECA46 Variable frequency
S 20	K-S20B½ K-S20C½	1	G17 Constant voltage K-ECA46 Variable frequency
S 30	K-S30B4 K-S30C4	1	G17 Constant voltage K-ECA46 K-ECC46 Variable frequency
L 20	K-L20½		G17 Constant voltage

You cannot custom order a variable-frequency controller (basic type and high-function type) by combining item numbers. Please specify an existing unit part No.

Standard Series Combination Table

HS05,07

(High-frequency linear feeder)



Examples of combination part numbers

	Ⅰ Vibratory drive unit					Ⅲ Controller	
K-	HS	05	2	1	/	C1	1
	Drive unit type	Unit size	Design revision code	Voltage and drive system		Control function (including form)	Control capacity

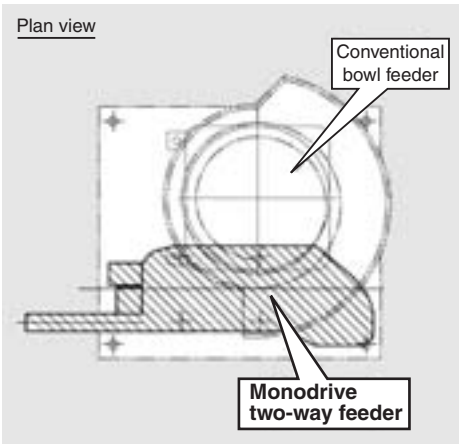
Model, size	Ⅰ Vibratory drive unit	Ⅲ Controller	
HS05	K-HS0521	C11	SMD
HS07	K-HS0711		

Monodrive 2-Way Feeder™

This revolutionary two-way feeder comprises only one linear feeder. It is capable of storing, aligning/orienting, and feeding parts.

Features

1. **One linear feeder drives two chutes in different directions — one for the aligning/orienting side and one for the returning side.**
   This novel return feeder comprises a conventional linear feeder and an innovative leaf spring unit mounted above the linear feeder. The linear feeder and leaf spring unit generate mutually counteracting vibrations in two different planes in order to align/orient and feed parts. (Patent pending)
2. **Compact, light and energy-efficient**
   Compared to bowl feeder designs, this liner aligning/orienting parts feeder is simpler, more compact, and requires roughly half the installation space. Furthermore, since one linear feeder can store, align/orient and feed parts, the entire production system can be made lighter and more energy-efficient.
3. **This simplified design is the ideal choice for multi-product, small-lot production.**
   The simplified construction ensures easier maintenance. This unique feeder handles a diversity of parts types and can be fitted with a chute suitable for a particular part type.



Note: NTN does not market the main body of this product separately. This product is available only in combination with its tooling, etc. For details, contact NTN Engineering.

Applications and compatible work pieces

- Handles a diversity of parts types ranging from miniature to medium-sized.
- Accommodates machine parts, electronic components, plastic parts, and the like.

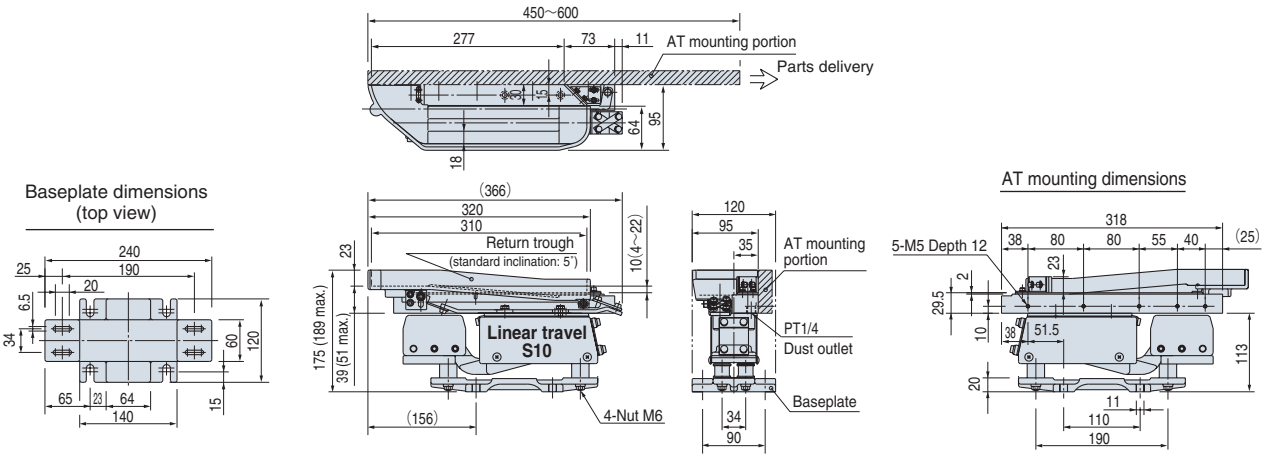
Specifications

Model	Part No. ❶	Power supply (V/A)	Applicable leaf spring	Inclination angle of return trough (possible range)	Mounted chute ❷		Maximum volume of work pieces loaded (ℓ)	Applicable controller	Mass (kg)
					Length (mm)	Mass (kg)			
MD10	K-MD10$^{R}_{L}$2	200/0.2	K-PLS4-40×6 K-PLS2-35×5	Standard: 5° (4～7.5°)	450～600	1.1 (3.0)	0.25	K-ECA46	9
	K-MD10$^{R}_{L}$A2								7.5
MD20	K-MD20$^{R}_{L}$2	200/0.5	K-PLS4-70×12 K-PLS2-35×5		550～800	2.0 (5.5)	0.6		17.5
	K-MD20$^{R}_{L}$A2								15
MD30	K-MD30$^{R}_{L}$4	200/0.9	K-PLS4-86×15 K-PLS2-50×7		850～1100	7 (15)	1.5		49
	K-MD30$^{R}_{L}$A4								41

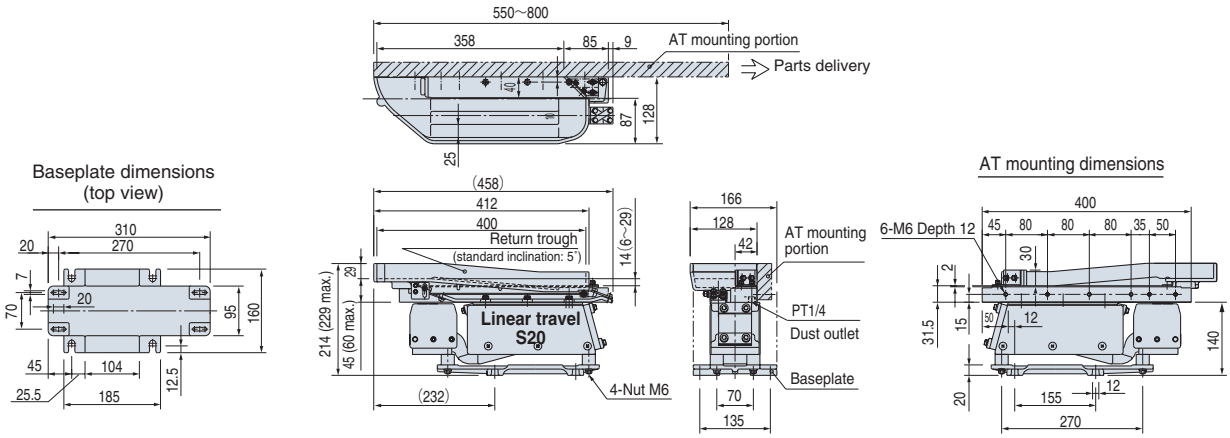
❶ Two main feeder body types are available: R (clockwise) and L (counterclockwise). Also, feeder models are available with a baseplate or without (identified by suffix A).
❷ The mass of the mounted chute is the mass value of a chute that can be added. The value in parentheses beneath the mass value of the mounted chute represents the maximum mass that can be mounted and includes the return trough, chute mount, and other parts.

Structure and dimensions

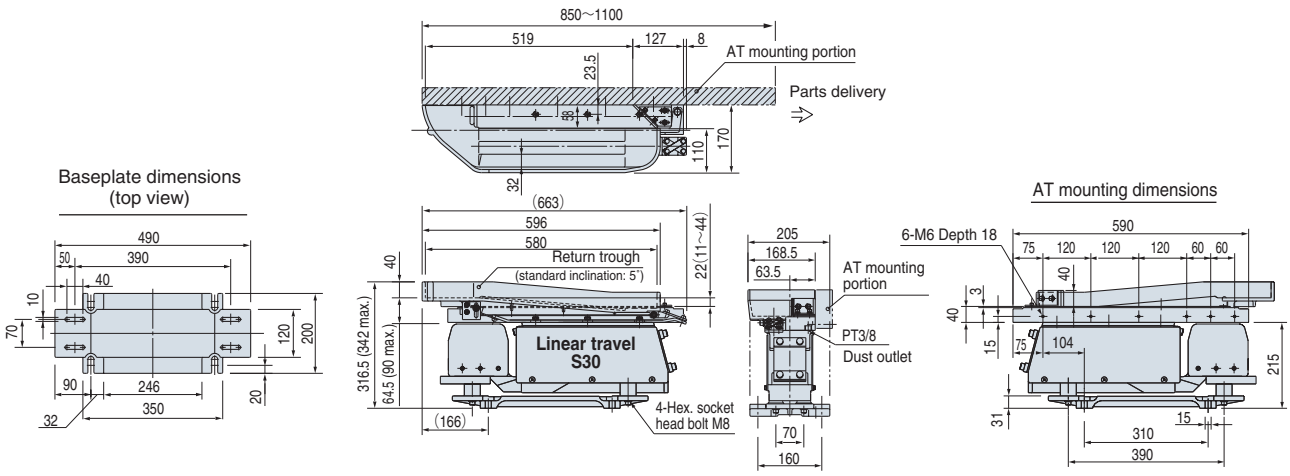
K-MD10$^{R}_{L}$2 (with baseplate)　K-MD10$^{R}_{L}$A2 (without baseplate)



K-MD20$^{R}_{L}$2 (with baseplate)　K-MD20$^{R}_{L}$A2 (without baseplate)



K-MD30$^{R}_{L}$4 (with baseplate)　K-MD30$^{R}_{L}$A4 (without baseplate)



For specific dimensions of a linear feeder, see the specifications/dimensions page in this catalog.

Non-slip composite feeder

This unique feeder combines a rotary disk with a vibratory bowl feeder. It offers the orientating/aligning capabilities of a vibratory bowl feeder as well as the feed stability to handle even oiled work pieces. What's more, it's designed for low noise operation.

Features

1. Stable parts feeding
The special rotary disk reliably delivers problem parts (oiled pins and bolts) that conventional vibrator systems cannot handle easily. Parts are delivered to the outer circumference of the bowl's vibratory section.

2. Low-noise operation
The vibratory section is limited to the circumferential portion of the bowl, which orients or aligns the parts. This design contributes to low-noise operation.

3. Versatility
Because the orientating/aligning section is a vibratory type, it can handle complex parts as easily as conventional parts feeders.

4. High-speed parts feeding
The speed of the rotary disk can be adjusted as desired to accommodate specific types of work pieces. What's more, the vibration angle of the vibratory section on the circumference can be adjusted to a near-horizontal orientation with the installation of an appropriate leaf spring. As a result, the work pieces can be oriented/aligned at higher speeds.

Applications and compatible work pieces

- Metal parts such as oiled pins and bolts
- General mechanical components (metal or plastic) and automotive components

◆Accommodates the same maximum allowable work piece size as the conventional Model N25.

◆Does not accommodate miniature work pieces (those measuring less than 4 mm in general) or thin work pieces (those measuring less than 3 mm in thickness in general)

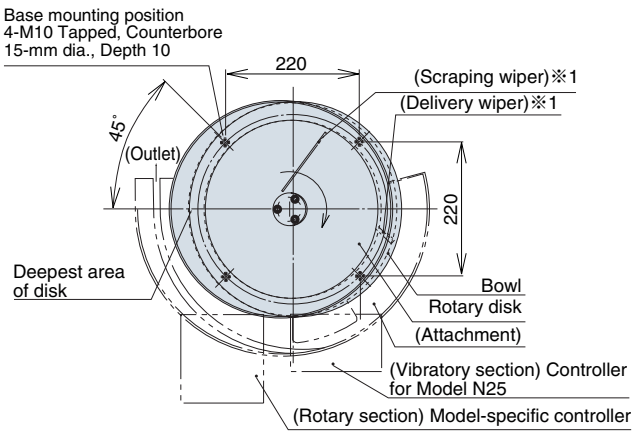
Specifications

Model		K-UP050	K-UP051	K-UP052	K-UP053
Power supply		AC100V / 4.5A		AC200V / 2.4A	
Direction of rotation		Clockwise	Counterclockwise	Clockwise	Counterclockwise
(Basic vibratory drive unit)		(K-N25RM1)	(K-N25LM1)	(K-N25RM2)	(K-N25LM2)
Vibration frequency		100Hz/120Hz ❶			
Disk rotation speed		1-20 rpm variable (common to both 50 and 60 Hz current)			
Mass (including bowl)		52kg			
Bowl mass		3kg			
Standard capacity of bowl		1.5L			
Applicable controller	Vibratory section	Controller for N25 (K-EG177, K-EC646❷, etc.)			
	Rotary section	K-UE250 (model-specific controller)		K-UE260 (model-specific controller)	
Protection		Motor overload protection and others			

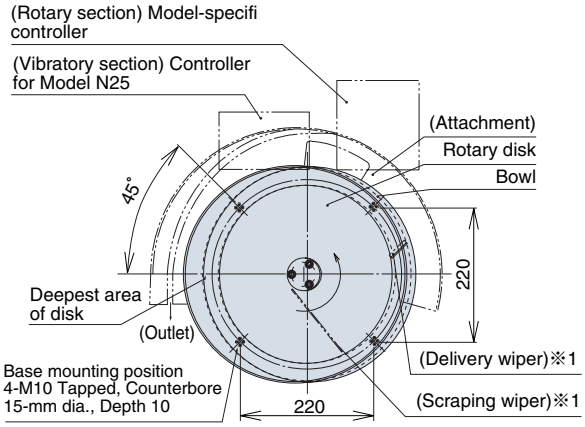
❶ Refer to page 15 in the section on "Bowl feeder dimensions and specifications."
❷ Model K-ECA46 is rated at 200 VAC. To operate the device with a 100 VAC power supply, use Model K-ECA49.

Structure and dimensions

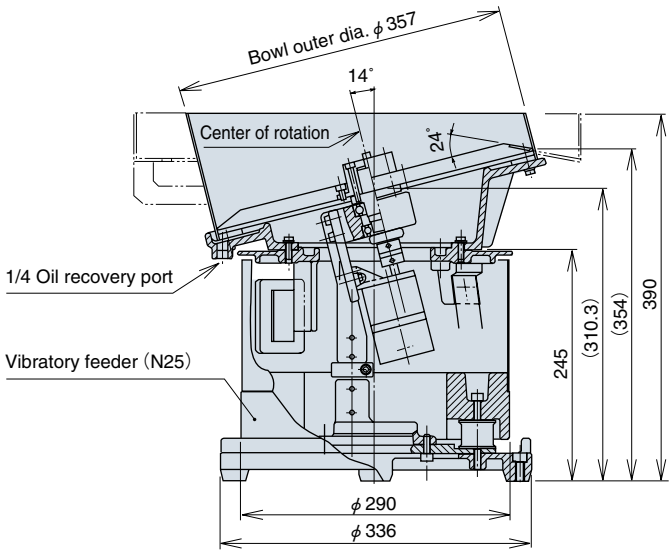
R (Clockwise) rotation【K-UP050, K-UP052】



L (Counterclockwise) rotation【K-UP051, K-UP053】

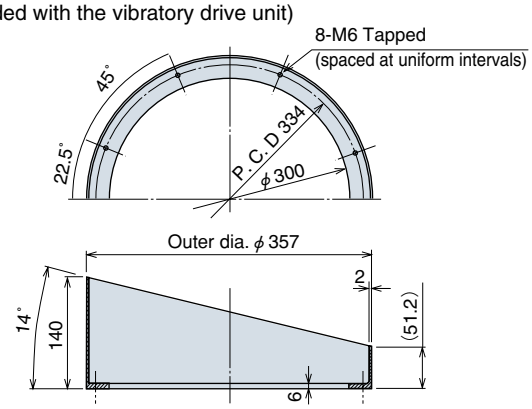


Note: An optional wiper mount unit (K-UP060) is available.



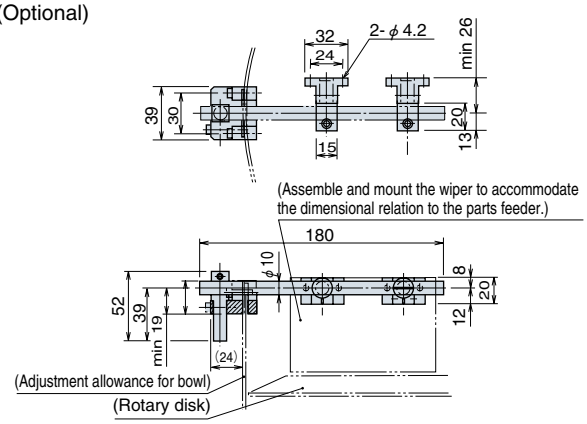
Bowl【K-P1510】

(Included with the vibratory drive unit)



Wiper mounting unit【K-UP060】

(Optional)



SMD feeder

Configured with an HF Series High-Frequency Bowl Feeder and an HS series Linear Feeder, the SMD Feeder rapidly orients/aligns standard chip components and feeds them to an inspection device, taping machine or the like.

The linear feeder section has been improved and now incorporates an innovative super-high-speed feeding device.

Features

1. A new design eliminates the possibility of work pieces jamming at the relay point between the bowl and the chute, significantly improving equipment availability.
2. Provides super-high-speed and high-precision parts feeding (up to 3,500 units of R1005 chips per minute, or 5,500 units of C0603 chips per minute).
3. More compact design - The floor space requirement is no more than 70% that of NTN's conventional equipment for feeding chip resistors.
4. The unique system for orienting/aligning parts does not use compressed air (for feeding chip capacitors), thus helping to prevent possible damage to chip components.

Typical applicable work pieces and specifications

	Chip resistor specifications	Chip capacitor specifications
Applicable work pieces	Chip resistor (involving head/tail orientation) R0603, R1005	Chip capacitor C0603, C1005 (not involving head/tail or front/back orientation) Chip inductor L0603, L1005 (not involving head/tail or front/back orientation)
Typical orientation/ alignment capabilities	Max. 3,000 chips/min (R0603) Max. 3,500 chips/min (R1005)	Max. 5,500 chips/min (C0603) Max. 5,000 chips/min (C1005)
Power supply	Single-phase 100 V, 50/60 Hz	
Compressed air supply	0.1MPa (1kg/cm^2)	————
Feeder dimensions	400mm×160mm×190mm	300mm×165mm×150mm

※The above data reflect typical applications.
The equipment is capable of feeding other miniature work pieces. For details, refer to CAT. Nos. 7020-Ⅱ/E.

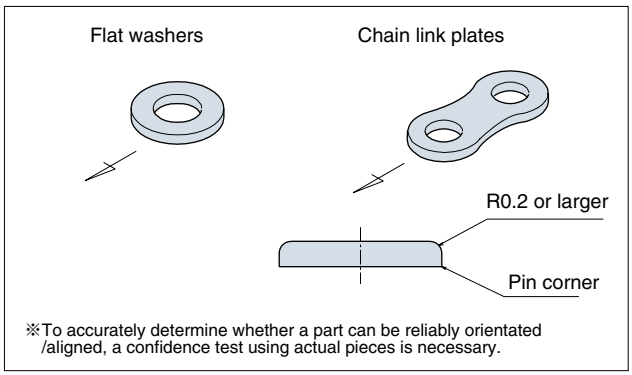
Micro-chamfered parts orientating / aligning unit

With a unique mechanical sorting mechanism, this unit can orient and align flat parts whose front and back sides are so similar that conventional vibratory parts feeders cannot differentiate between them.
The micro-chamfered parts orientating/aligning unit permits orientation and feeding of pieces, chamfered face upward, after the pieces are aligned in a single row and single layer by the bowl feeder.

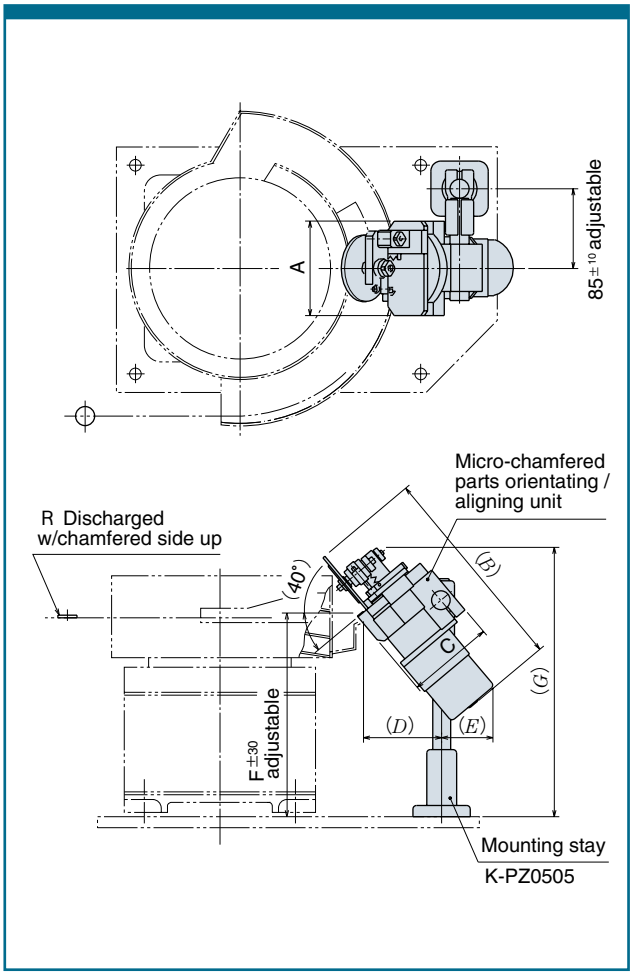
Features

1. **High-precision orientating / aligning unit**
   NTN's unique mechanical sorting mechanism enables this unit to continuously and very accurately orient and align flat parts whose front and back sides appear virtually identical.
2. **High reliability**
   The combination of simple orientating/aligning unit with a simple bowl attachment ensures very high reliability.
3. **Space-saving**
   By making the orientating/aligning unit compact and locating it as part of the tooling, major space savings are gained, compared to conventional mechanisms whose orientating/aligning device is located directly out of the parts feeders.

Examples of work pieces that can be orientated/aligned



※To accurately determine whether a part can be reliably orientated /aligned, a confidence test using actual pieces is necessary.

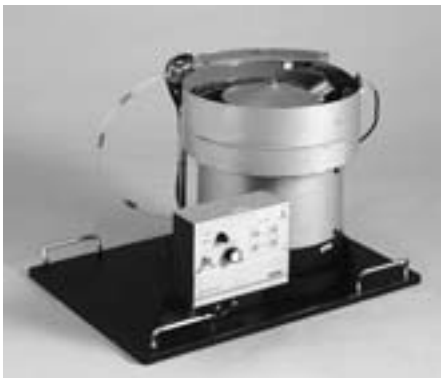


Specifications / Part number	Dimensions (mm) A	B	C	D ❶	E ❶	F	G ❶	Rated voltage (V)	Rated current (A)	Frequency (Hz)	Mass (kg)	Transporting disk dia. φ (mm)	Applicable work piece sizes (mm)	Applicable controller	Applicable unit ❷
K-UA105	100	233	90	81	65	215	293	100	0.15	50/60	4.0	φ80	Flat parts of 20×20 max.	K-EG277 ❹	K16 ❸ N25 (N32, N40)
K-UA106								200	0.08						
K-UA107	140	250	127	99	64	310	398	100	0.15		6.0	φ120	Flat parts of 30×30 max.		
K-UA108								200	0.08						

❶ Dimensions (D, E, G) are reference values for a unit tilt angle of 40°.
❷ For combination involving a bowl feeder other than (2), a separate special controller must be designed and fabricated.
❸ The applicable units (3) are only for 200 V, full wave drive type.
❹ A dedicated motor control unit is also required. For details, contact **NTN** Engineering.

Spring untangling feeder

The spring untangling feeder, compact and self-contained, can reliably feed springs, simultaneously untangling coil springs that often become entangled.



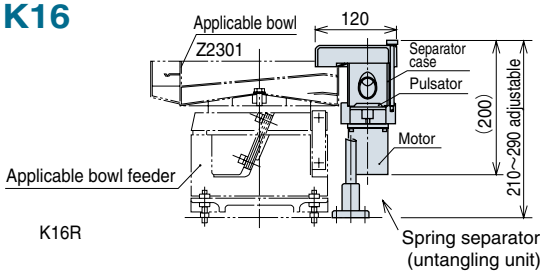
Features

1. Effective spring untangling
The mechanical actions of rotor blades (pulsator) allows simultaneous untangling of virtually any kind of springs.

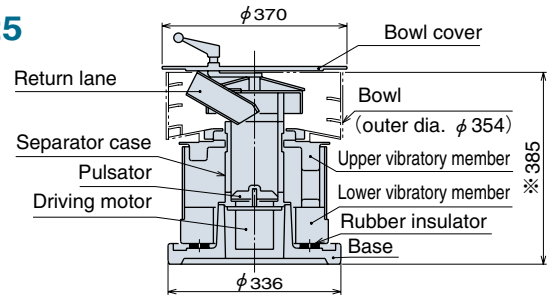
2. Compact construction
Since the spring untangling mechanism of equipment (N25, N40 type) is incorporated in the unit, the outer dimensions are almost the same as those of standard series feeders, which overcomes the space problems associated with similar feeders from other companies.

3. Highly cost-effective
By simplified manufacture and the use of fewer parts, a highly cost effective piece of equipment (N25, N40 type) has been developed, without sacrificing the performance of conventional feeders.

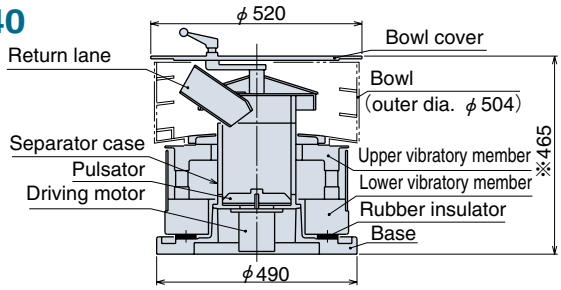
K16



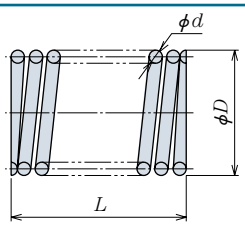
N25



N40



※The bowl cover (PVC) which prevents springs from jumping out is included as standard.
To determine the maximum height to the top plate, add approximately 80 mm to the respective heights of models N25 and N40 in the above diagram.



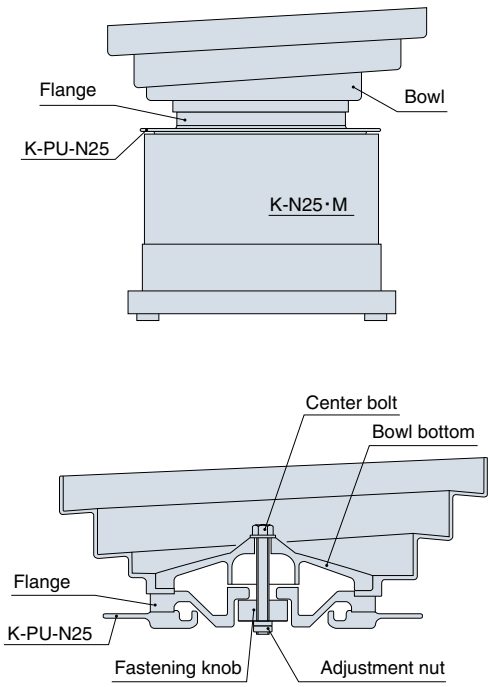
Model, size	Part number	Rated voltage (V)	Rated current (A)	Vibration speed ❶ (cycles/min)	Mass (kg)	Applicable bowl	Applicable controller	Applicable works (mm)		
								ϕD	ϕd	L (max.)
(K16)	K-UP500	100	0.2	100/120	2.5	K-B16 R L Z2301	K-EG277 ❷	2~5	0.15~0.5	18
	K-UP501	200	0.1							
N25	K-N25 R L CM1	100	4.2		65	K-B25 R L ZD354		3.0~12	0.3~1.5	30
	K-N25 R L CM2	200	2.2							
N40	K-N40 R L CM4	200	4.1	50/60	140	K-B40 R L ZD503		8.0~20	0.8~2.0	45

Remark 1) Bowl attachments are estimated separately. Remark 2) To accurately determine if particular springs can be reliably untangled, a confidence test using actual work pieces is necessary. Remark 3) The sorting function operates pneumatically except for certain types of work pieces.

❶ Refer to pages 13 through 19 in the section on "Bowl feeder dimensions and specifications."
❷ A dedicated motor control unit is also required. For details, contact **NTN** Engineering.

One-touch bowl clamp

With this bowl mounting adaptor, you can easily mount or detach a bowl simply by turning one center bolt two or three turns. When used in conjunction with a microcomputer-based variable frequency controller, this clamp greatly reduces bowl replacement time.



■Features

(1) The bowl can be quickly and easily replaced with two or three turns of the center bolt.

(2) Because the components of the clamp are lightweight, all necessary attachments can be mounted on the bowl.

(3) This device can be used on a variety of solid or isolated bottom bowls. (It is compatible with NTN's standard bowls.)

(4) The center bolt and fastening knob can be stowed in the rear of the bowl, allowing the bowl to be stored on a flatbed.

Part number	Applicable unit	Applicable bowl		
K-UT003 ❶	K-N25・M	Solid-bottom ❸ type for Model N25	K-B25R,LZF30, K-B25R,LZF301, K-B25R,LZF302,	Straight wall
K-UT006 ❷	———		K-B25R,LZF35, K-B25R,LZF351, K-B25R,LZF352,	
			K-B25R,LKF35	Cone
K-UT004 ❶	K-N25・M	solated-bottom type for Model N25	K-B25R,LCD33, K-B25R,LCD39, K-B25R,LCD391,	Cascade
K-UT007 ❷	———		K-B25R,LZD30, K-B25R,LZD35	Straight wall
			K-B25R,LKD35	Cone
K-UT005	K-N25・M	(Adaptor for vibratory drive unit: Part for installation on K-PU-N25)		

❶ This is a part number for a set of parts comprising a one-touch bowl clamp.
❷ When more than one bowl is to be used, each additional bowl requires one set of parts of this part number.
❸ The bowl must be provided with a hole for the center bolt (12.2-13.0 mm diameter drill).

Globalized parts feeder series

Features

1. Globalized products for use outside Japan

NTN strongly supports its clients' efforts to export to European and North American markets. Consequently, these products conform to European CE marking and have acquired NRTL certification from the U.S.A. (which also conforms to the corresponding Canadian certification through the U.S.A.-Canada reciprocal-certification system).

2. A diverse product line

NTN globalized products feature a wide-ranging product line encompassing bowl feeders, linear feeders and standalone auxiliary hoppers.

Table of globalized products (as of October 2003)

		Globalized product part No.	Part No. of product dedicated to Japanese market
Bowl feeder	K16	K-K16R (L) Y2	K-K16R (L) 32
	N25	K-N25R (L) ZM2	K-N25R (L) M2
		K-N25R (L) ZF2	K-N25R (L) F2
		K-N25R (L) ZT2	K-N25R (L) T2
		K-N25R (L) ZH2	K-N25R (L) H2
		K-N25R (L) YM2	K-N25R (L) AM2
		K-N25R (L) YF2	K-N25R (L) AF2
		K-N25R (L) YT2	K-N25R (L) AT2
		K-N25R (L) YH2	K-N25R (L) AH2
		K-N25R (L) WM4	K-N25R (L) M4
		K-N25R (L) WF4	K-N25R (L) F4
		K-N25R (L) WT4	K-N25R (L) T4
		K-N25R (L) WH4	K-N25R (L) H4
	N40	K-N40R (L) ZM2	K-N40R (L) M2
		K-N40R (L) ZT2	K-N40R (L) T2
		K-N40R (L) ZH2	K-N40R (L) H2
		K-N40R (L) ZM4	K-N40R (L) M4
		K-N40R (L) ZF4	K-N40R (L) F4
		K-N40R (L) ZT4	K-N40R (L) T4
		K-N40R (L) ZH4	K-N40R (L) H4
		K-N40R (L) YM2	K-N40R (L) AM2
		K-N40R (L) YT2	K-N40R (L) AT2
		K-N40R (L) YH2	K-N40R (L) AH2
		K-N40R (L) YM4	K-N40R (L) AM4
		K-N40R (L) YF4	K-N40R (L) AF4
		K-N40R (L) YT4	K-N40R (L) AT4
		K-N40R (L) YH4	K-N40R (L) AH4
Bowl feeder	N40·1	K-N40R (L) WM4	K-N40R (L) 1M4
		K-N40R (L) WF4	K-N40R (L) 1F4
		K-N40R (L) WT4	K-N40R (L) 1T4
		K-N40R (L) WH4	K-N40R (L) 1H4
	G50 · 1	K-G50R (L) ZM4	K-G50R (L) 1M4
		K-G50R (L) ZG4	K-G50R (L) 1G4
		K-G50R (L) ZT4	K-G50R (L) 1T4
Linear feeder	S10	K-S10Z2	K-S10B2
		K-S10Y2	K-S10C2
	S20	K-S20Z2	K-S20B2
		K-S20Y2	K-S20C2
		K-S20W4	K-S20B4
		K-S20V4	K-S20C4
	S30	K-S30Z4	K-S30B4
		K-S30Y4	K-S30C4
Hopper	V01	K-V01SZ4	K-V01S4
	V03	K-V03SZ4	K-V03S4
	V06	K-V06SZ4	K-V06S4

Notes

1. The specifications for vibratory driving units for globalized products (rated voltage, current, leaf spring, mass, external dimensions, mounting dimensions, etc.) are the same as those of units intended for the Japanese market. For the specifications of a particular globalized product, see the specifications for the part No. intended for the Japanese market.
2. For applicable controllers, see page 73.

Notes

1. The CE marking acquisition process for a particular product includes a review of the final product and requires the submission of a self-declaration of conformity. If the specifications or appearance of the **NTN** parts feeder differs from that of the original parts feeder shipped from NTN because the unit has been incorporated into a system or has been modified by tooling, the client who has modified or is intending to export the system that has incorporated the parts feeder must submit a self-declaration of conformity for the entire system to be exported.
2. Controllers and vibratory driving units are tested in combination as a set (particularly for the EMC test). Conformity with CE marking and NRTL certification becomes invalid if the **NTN** globalized product is combined with an **NTN** product intended for the Japanese market or with a product from another manufacturer.
3. Post-processed products including bowls, tooling (aligning/orienting mechanisms) and the like are outside the scope of NTN's responsibility. A client who intends to export such products is responsible for undertaking the review and submitting a self-declaration for these products.

Important: Conformity with CE marking and NRTL certification can be rendered invalid if the NTN globalized product is used in certain environments. For further information, contact NTN Engineering.
The products listed on this page do not conform to the RoHS Directives.

Globalized controllers

Features

1. Globalization
These products conform to European CE marking and have acquired NRTL certification from the U.S.A. (which also conforms to the corresponding Canadian certification through the U.S.A.-Canada reciprocal-certification system).

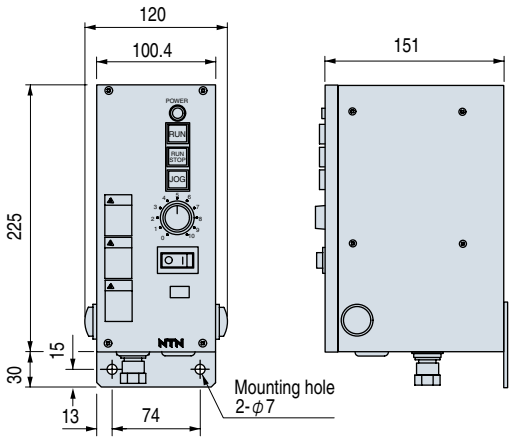
2. Jogging function
A jog button is provided so that work pieces can be fed manually and delivered with ease.

3. Constant voltage function (Model K-EUA77)
To ensure stable feeding of parts, the output voltage is maintained at a constant level even when the supply voltage fluctuates.

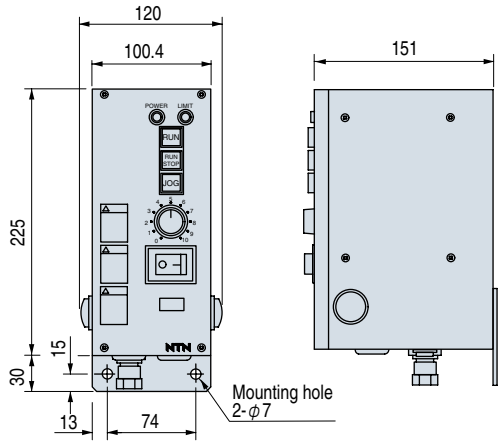
4. Constant amplitude function (Model K-EUB77)
A powerful constant amplitude function is provided to ensure stable feeding of parts with increased precision.

Globalized controllers

K-EUA77



K-EUB77 (Accessories: Vibration sensor, adjustment screwdriver)



Part No.	Control functions	Control capacity	Applicable parts feeders
K-EUA77	External control + synchronized operation	6.0A	All models of **NTN** globalized parts feeders (See page 72.)
K-EUB77 ❶	External control + synchronized operation + constant amplitude control		

❶ The included vibration sensor is Model K-P1396. The mounting system is the same as that for Model K-P1395 (page 45).
For details about control functions and applicable parts feeders, contact **NTN** Engineering.

Model	K-EUA77	K-EUB77
Supply voltage	Single-phase, 100–115 VAC/200–230 VAC ±10% (switch-selectable)	
Supply frequency	50/60 Hz (switch-selectable)	
Control-drive system	Phase control, full-wave/half-wave (switch-selectable)	
Control capacity	Max. 6 A (effective value)	
Soft start function	Available (fixed time setting)	
Constant voltage function	Output voltage remains within 5% in the event of a ±10% variation in supply voltage.❶	—
Constant amplitude function	—	Amplitude variation remains within 3% under a ±10% variation in supply voltage or work piece mass. ❷
External control input	The parts feeder can be started or stopped with an external signal (polarized). Control with a PNP transistor is also possible.	
Synchronized input/output	The controller has an I/O terminal that accepts a signal for switching between auto operation and individual operation.	
Auto operation signal	This signal is output to an external device to signal that auto operation is in progress.	
Mass	About 3 kg	

❶ This data is valid when the output voltage setting is 170 V or lower (or 85 V when the supply voltage is 100 V).
❷ This is a representative value obtained when the output voltage setting falls in the range of 100 to 170 V (or 50 to 85 V when the supply voltage is 100 V). Note that the constant amplitude performance can vary depending on the adjustment of the spring on the feeder.

Important: Conformity with CE marking and NRTL certification can be rendered invalid if the NTN globalized product is used in certain environments. For further information, contact NTN Engineering.
The products listed on this page do not conform to the RoHS Directives.

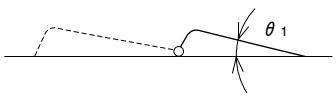
Flexible feeder

Adoption of the Z spring in place of the standard spring on **NTN** parts feeder can provide optimum vibratory characteristics that are ideally suited to the physical properties of specific product parts and further expanded applications.
The Z springs are fully compatible with the vibratory drive units in the list below. Thus, the standard springs in your parts feeder can be replaced with the Z springs without any change in spring setting dimensions.

To set the feeder for a high speed application, fit the spacer on the upper end of the Z spring fitting part, as shown in Fig.1.
When feeding oil-contaminated pieces, or when parts feeding is sluggish due to a steep track slope, reverse the Z springs, and fit the spacer at the lower end of the Z spring fitting part as shown in Fig.3.
In this manner, any of three kinds of vibratory angles including the standard angle can be selected.

● For high-speed feeding

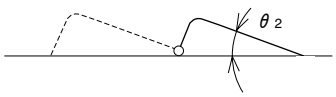
Feeding state



If the parts feeder can be adjusted to a lower spring setting angle, the jump stroke of the parts fed will be smaller, and consequently, feeding can be made smoother and faster.

● (Standard)

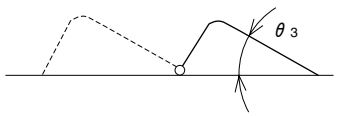
Feeding state



If the parts feeder is adjusted for a standard spring setting angle, its behavior will be intermediate between high-speed feeding and grade feeding. This setting will be suitable for virtually any standard product.

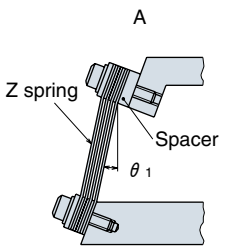
● For grade feeding

Feeding state



If the parts feeder is adjusted for a larger spring setting angle, the friction between the parts fed and the feeding surface will be greater. Consequently, grading will tend to be more stable, even at low speed.

Fig.1



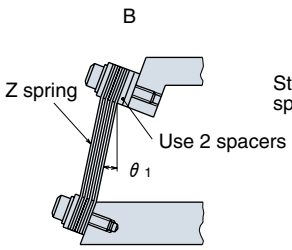


Fig.2

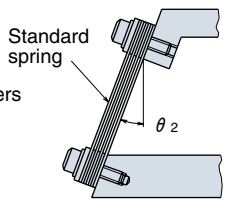
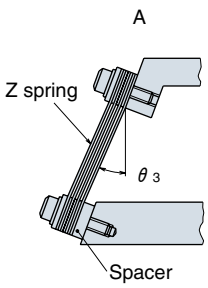
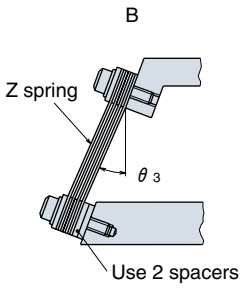


Fig.3





Model and size of parts feeder	Spring setting angle (°)			Part number of Z spring	Part number of spacer	Standard number per unit.	
	θ 1	(θ 2)	θ 3			Z spring (pcs.)	Spacer (pcs.)
K14	12	(20)	28	K-PLS2-50×9-1	K-P0430	20	4
K16	15	(22)	29	K-PLS2-67×12-2	K-P0427	20	4
N25	8	(15)	22	K-PLS2-86×20-1	K-P0426	18	3
N40(Full wave)	8	(15)	22	K-PLS2-86×20-1	K-P0426	24	4
K20(Half wave) ※2	※1	(15)	25	K-PLS2-116×20-2	K-P0408, K-P0426	9	3 Each
N40(Half wave) ※2	※1	(15)	25	K-PLS2-116×20-2	K-P0408, K-P0426	24	4 Each
G63 ※3	13	(20)	27	K-PLS2-250×70-1	K-P0423	16	16
S20	13	(20)	27	K-PLS4-70×12-1	K-P0411	16	2
S30	9	(15)	21	K-PLS4-86×15-1	K-P0431	10	2

※1 High-speed type (θ =5°) of K20(Half wave) and N40 (Half wave) are unavailable.
※2 For K20(Half wave) and N40 (Half wave), fit two spacers of different thickness on the Z spring fitting part shown in Fig.1B and 3B.
※3 For G63, fit two spacers of same thickness on the Z spring fitting as shown in Fig.1B and 3B.

NTN parts feeder

Leaf spring, vibration isolating leaf spring

K- PLS 2 - 86 × 20

- Thickness（mm×10）
- Spring hole pitch
- Number of spring holes
- Leaf spring code

Leaf spring

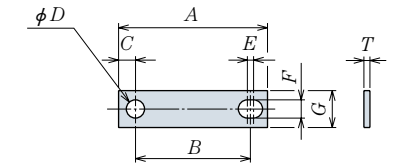


Fig.1

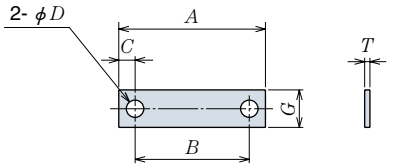


Fig.2

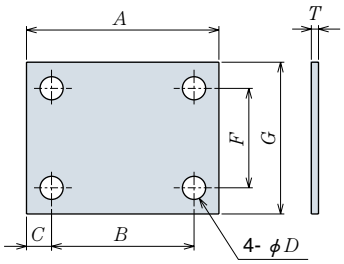
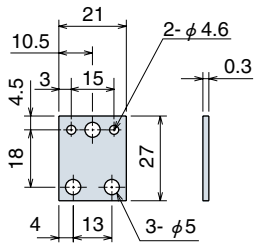


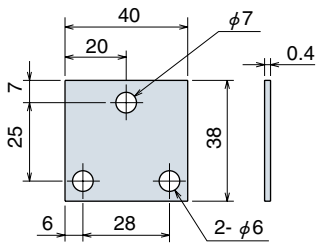
Fig.3

Vibration isolating leaf spring

For HS05
K-PLS5-18×3



For HS07
K-PLS3-25×4



Part number	Fig.	Dimensions（mm）								Applicable unit
		A	*B*	*C*	*D*	*E*	*F*	*G*	*T*	
K-PLS4-32×3.5	3	25	14	5.5	5.5	—	32	44	0.35	Rubber insulator for S051 and S082
K-PLS2-35×5	1	46	35	5	5.1	2	5.2	10	0.5	K10, S051, S05A, S082
K-PLS2-35×9									0.9	HS05
K-PLS2-35×12									1.2	HF10
K-PLS2-50×7	2	64	50	7	8	—	—	14	0.7	K14
K-PLS2-50×9									0.9	
K-PLS2-50×20		64	50	7	7	—	—	14	2.0	HF14
K-PLS2-67×12-1		87	67	10	10	—	—	20	1.2	K16
K-PLS2-67×15		87	67	10	9	—	—	20	1.5	L20
K-PLS2-86×15		106	86	10	12.2	—	—	35	1.5	V01, SV01, SV03
K-PLS2-86×20									2.0	N25, N40（Full wave）
K-PLS2-116×20		136	116	10	12.2	—	—	35	2.0	N32, N40（Half wave）
K-PLS2-116×35-1					13.5				3.5	K20（Full wave）
K-PLS2-116×40					12.2				4.0	N32（Full wave）
K-PLS2-150×25		174	150	12	14.2	—	—	40	2.5	N40・1
K-PLS2-150×30									3.0	
K-PLS2-180×40		215	180	17.5	19	—	—	50	4.0	G50・1
K-PLS2-250×60		300	250	25	21	—	—	50	6.0	G63
K-PLS2-250×70									7.0	
K-PLS4-40×6	3	54	40	7	7	—	28	42	0.6	S10, HS07
K-PLS4-70×9		88	70	9	7	—	35	50	0.9	V72
K-PLS4-70×12									1.2	S20, M05
K-PLS4-86×15		106	86	10	10.5	—	50	80	1.5	S30, M10, SV06
K-PLS4-85×16		115	85	15	13	—	120	150	1.6	V01, V03, V04
K-PLS4-85×16-1		115	85	15	13	—	240	270	1.6	V06, V08
K-PLS4-125×30		155	125	15	13	—	330	360	3.0	V12

NTN parts feeder

Magnet

K- PMG - 2 1 3

- Number of bundled pieces
- Voltage
- Magnet size
- Magnet code

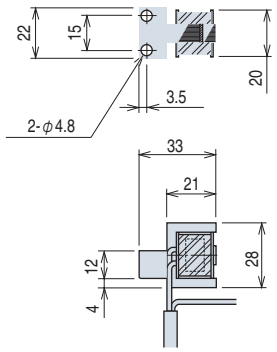


Fig.1

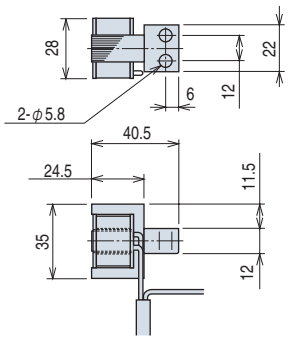


Fig.2

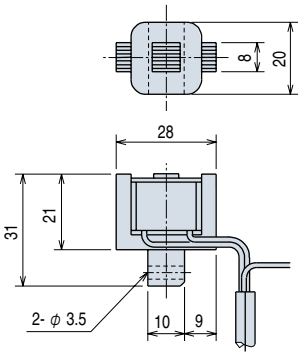


Fig.3

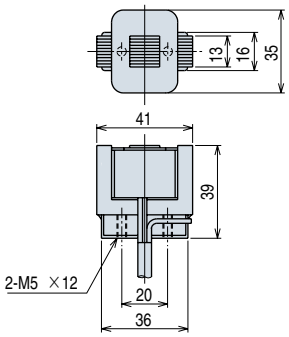


Fig.4

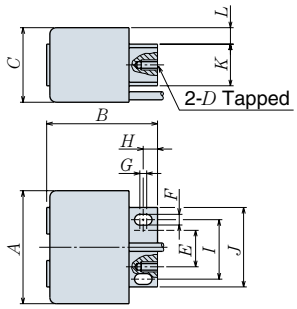


Fig.5

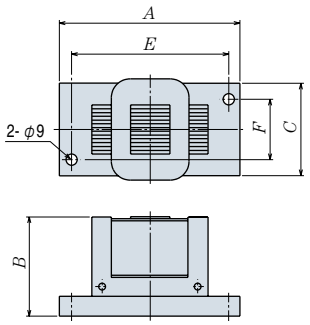


Fig.6

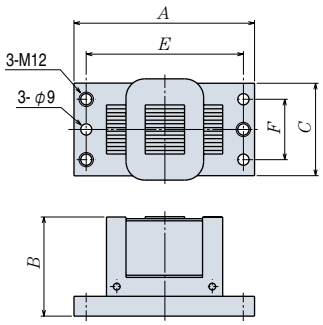


Fig.7

Part number	Fig.	Dimensions (mm) A	B	C	D	E	F	G	H	I	J	K	L	Applicable unit
K-PMG-011-5	1	—	—	—	—	—	—	—	—	—	—	—	—	S0511, S05A1
K-PMG-021-2		—	—	—	—	—	—	—	—	—	—	—	—	S0512, S05A2
K-PMG-017-3	2	—	—	—	—	—	—	—	—	—	—	—	—	S0821
K-PMG-027		—	—	—	—	—	—	—	—	—	—	—	—	S0822
K-PMG-011-3	3	—	—	—	—	—	—	—	—	—	—	—	—	HS05
K-PMG-017-1	4	—	—	—	—	—	—	—	—	—	—	—	—	HS07
K-PMG-017-2		—	—	—	—	—	—	—	—	—	—	—	—	HF14
K-PMG-1$\frac{1}{2}$1-1	5	58	50	43	—	—	6.5	0	6	24	36	16	12	K10, S10, M05, V71
K-PMG-2$\frac{1}{2}$1		78	75	48	—	—	7	4	10	37	54	22	10	S20, L20, M10, SV01, SV03
K-PMG-2$\frac{1}{2}$1-1		78	75	48	M6×12	22	7	4	10	37	54	22	10	K14
K-PMG-2$\frac{1}{2}$3		78	75	48	—	—	7	4	10	37	54	22	10	N25 3 pcs. bundled
K-PMG-311-1		90	87	60	—	—	8.5	5	11	44	66	33	11	V01～V08
K-PMG-321		90	87	60	—	—	8.5	5	11	44	66	33	11	S30, V01～V12, SV06
K-PMG-311-3		90	87	60	M6×13	28	8.5	5	11	44	66	33	11	K16
K-PMG-321-4		90	87	60	M6×13	28	8.5	5	11	44	66	33	11	K16
K-PMG-323		90	87	60	—	28	8.5	5	11	44	66	33	11	N32·2, half wave, 3 pcs. bundled
K-PMG-323-1		90	87	60	—	28	8.5	5	11	44	66	33	11	N32·2, full wave, 3 pcs. bundled
K-PMG-324		90	87	60	—	—	8.5	5	11	44	66	33	11	N40, N40・1 (4 pcs. bundled)
K-PMG-411-1	6	110	70	75	—	80	56	—	—	—	—	—	—	K20 100V全波
K-PMG-411-2														K20 100V半波
K-PMG-421-1														K20 200V全波
K-PMG-421-2														K20 200V半波
K-PMG-521	7	144	82	75	—	128	60	—	—	—	—	—	—	G63・2
K-PMG-521-1														G50・1

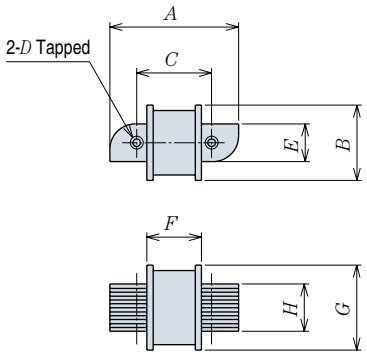
NTN parts feeder

F-shape magnet, rubber insulator, armature

K - PIR - 40

- Rubber insulator outer dia.
- Rubber insulator code

F-shape magnet



Rubber insulator

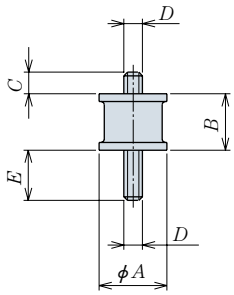


Fig.1

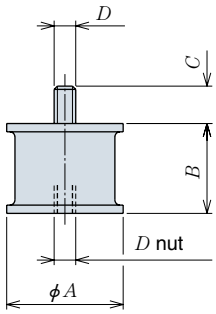


Fig.2

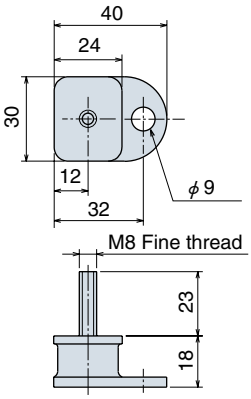


Fig.3

Part number	Dimensions (mm)								Applicable unit
	A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	
K-PMG-119-1	58	34	34	M4	16.6	24	39	22	HF10

Part number	Fig.	Dimensions (mm)					Applicable unit
		A	*B*	*C*	*D*	*E*	
K-PIR-15	1	15	15	15	M5	15	K14
K-PIR-25	1	25	20	8	M6	18	K16, S10, S20, V72, SV01, SV03
K-PIR-301	3	—	—	—	—	—	HF10, HF14
K-PIR-40	2	40	30	13	M8	—	N25, S30, V01～V08, K20
K-PIR-50	2	50	40	17	M10	—	N32, N40, N40•1, G50, G63・2, V12

Armature

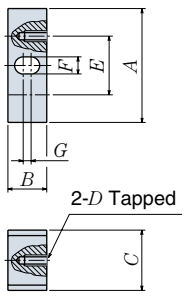


Fig.1

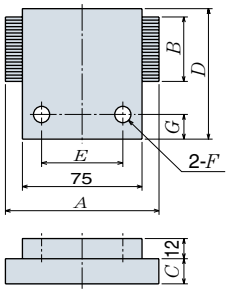


Fig.2

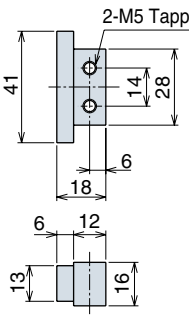


Fig.3

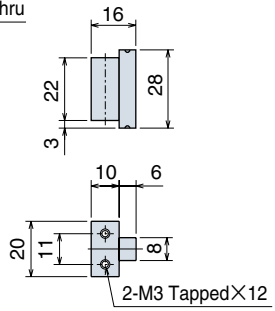


Fig.4

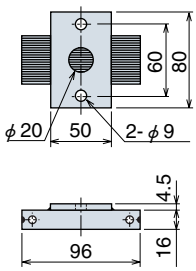


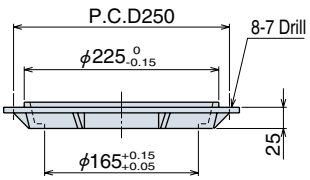
Fig.5

Part number	Fig.	Dimensions (mm)							Applicable magnet
		A	*B*	*C*	*D*	*E*	*F*	*G*	
K-P0300	1	36	16	16	—	—	6.5	4	K-PMG-1 1/2 1-1
K-P0301		54	20	22	—	—	7	4	K-PMG-2 11/23
K-P0302		66	22	33	—	—	8.5	5	K-PMG-311-1 K-PMG-321 K-PMG-32 3/4, K-PMG-323, K-PMG-323-1
K-P0303		54	20	22	M5×10	30	7	4	K-PMG-2 1/2 1-1
K-P0317		66	22	33	M6×13	34	8.5	5	K-PMG-311-3, K-PMG-321-4
K-P0310	2	105	60	17.5	100	40	ϕ12	15	K-PMG-521
K-P0311	3	—	—	—	—	—	—	—	K-PMG-017-1/2
K-P0315	4	—	—	—	—	—	—	—	K-PMG-011-3
K-P0314	2	105	60	17.5	70	40	M10	35	K-PMG-521-1
K-P0316	5	—	—	—	—	—	—	—	K-PMG-411-1/2, K-PMG-421-1/2

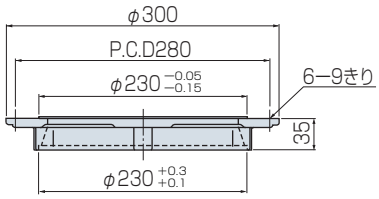
Dimensions of parts feeder peripherals

Bowl mounting flange

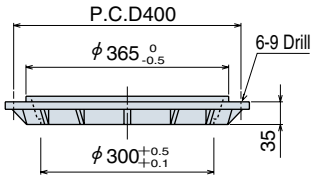
K-P0100 **For N25**
Material; Aluminum



K-P0129 **For N32**
Material; Aluminum

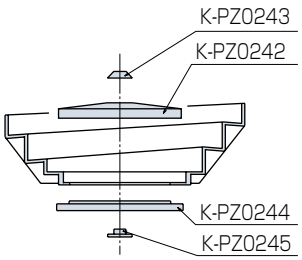


K-P0101 **For N40**
Material; Aluminum

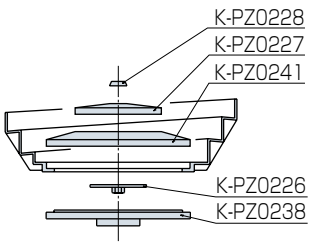


Bowl center fixture

K-UT001 **For B25**
Material; Aluminum
(SS400)
(SUS303)

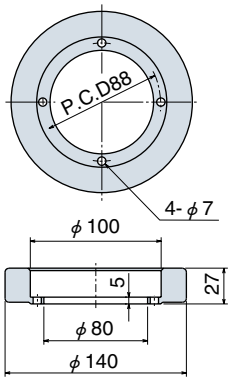


K-UT002 **For B40**
Material; Aluminum
(SS400)
(SUS303)



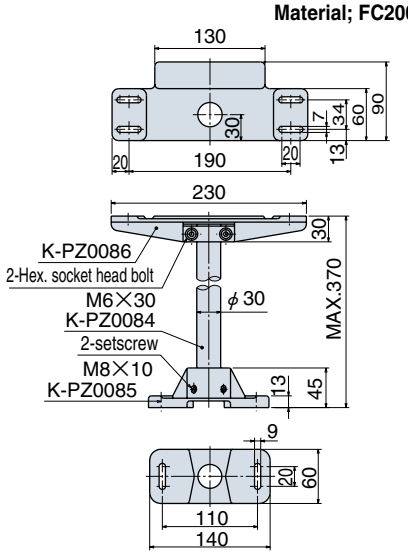
Aux. weight

K-P0220 **For K10**
Material; FC200

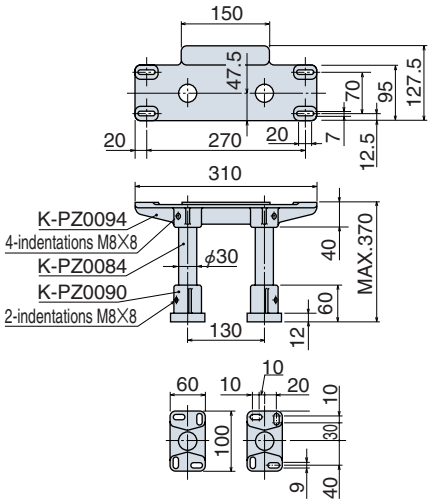


Narrow type mount

K-UH003 **For S10**
Material; FC200

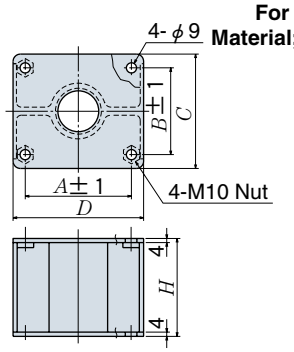


K-UH006 **For S20**
Material; FC200



Fixed type mount

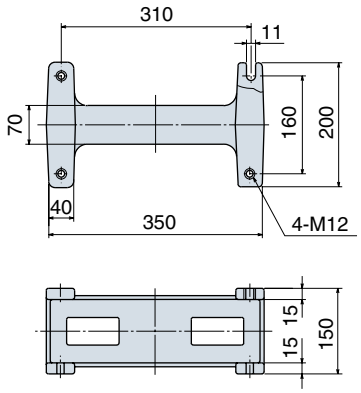
For S10, 20
Material; SS400



Unit（mm）

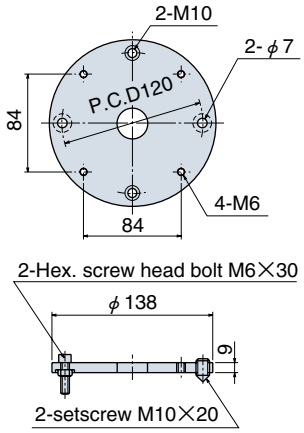
Component part number	H	A	B	C	D	Applicable to
K-PZ9513	100	110	90	120	140	S10
K-PZ9514	150	110	90	120	140	S10
K-PZ9515	200	110	90	120	140	S10
K-PZ9516	70	155	135	160	185	S20
K-PZ9517	110	155	135	160	185	S20
K-PZ9518	150	155	135	160	185	S20

K-PZ0530 **For S30**
Material; FC200



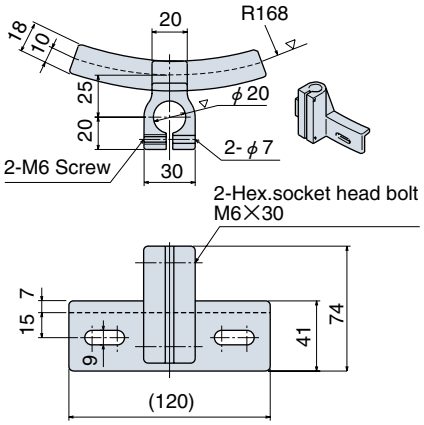
Height adjusting plate

K-PZ0087 **For K10**
Material; SS400

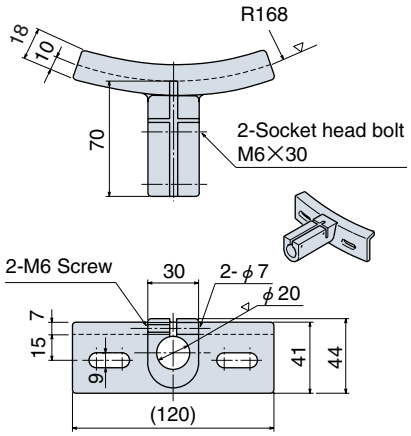


Stay mounting parts

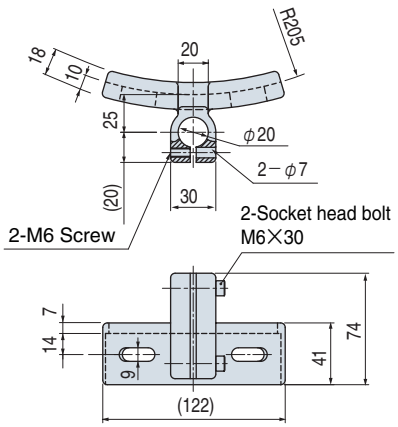
K-PZ0501 **For N25**
Material; FC200



K-PZ0502 **For N25**
Material; FC200

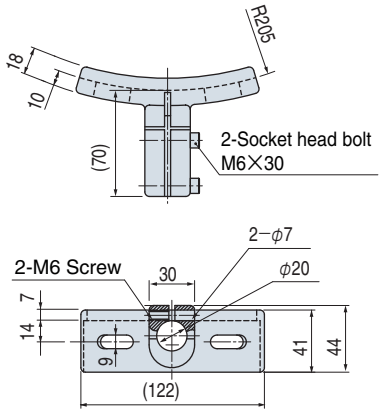


K-PZ0568 **For N32**
Material; FC200

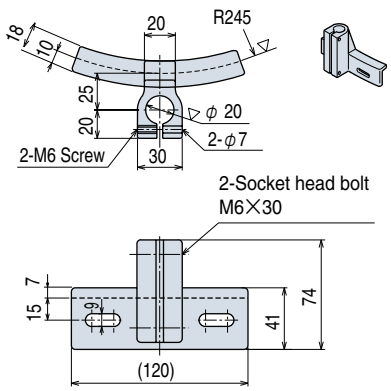


Stay mounting parts

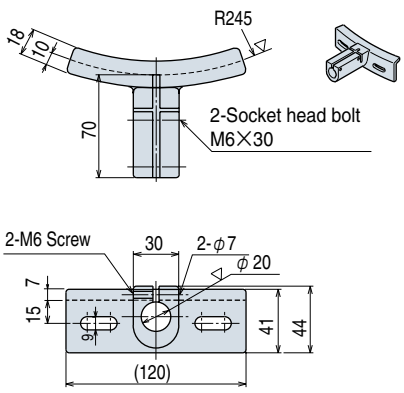
K-PZ0569 **For N32**
Material; FC200



K-PZ0511 **For N40**
Material; FC200

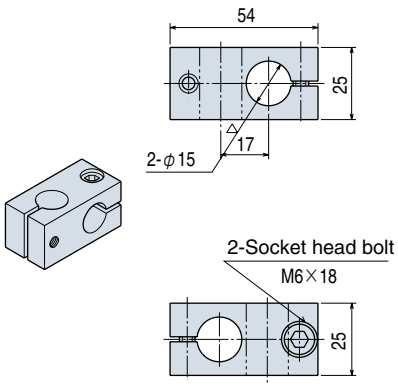


K-PZ0512 **For N40**
Material; FC200

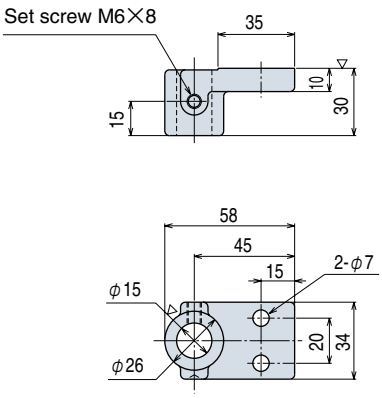


Stay mounting parts

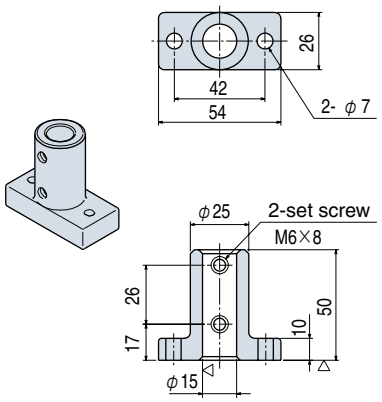
K-P1153 — **For ϕ15**, **Material; Aluminum**



K-P1152 — **For ϕ15**, **Material; FC200**

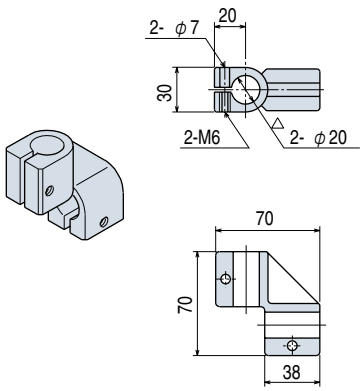


K-PZ0509 — **For ϕ15**, **Material; FC200**

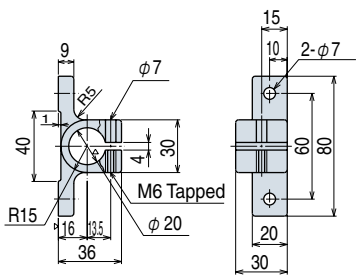


Stay mounting parts

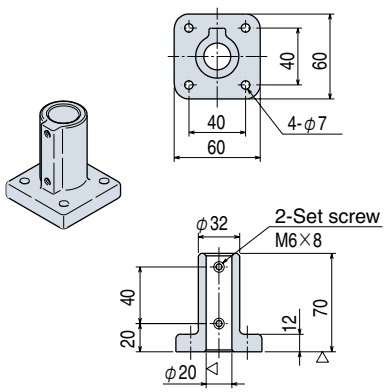
K-PZ0503 — **For ϕ20**, **Material; FC200**



K-PZ0504 — **For ϕ20**, **Material; FC200**

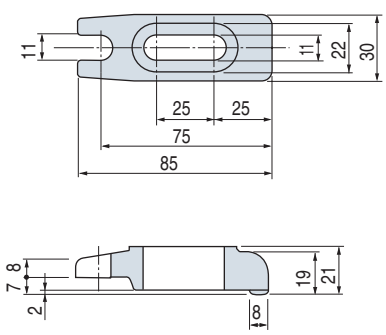


K-PZ0505 — **For ϕ20**, **Material; FC200**

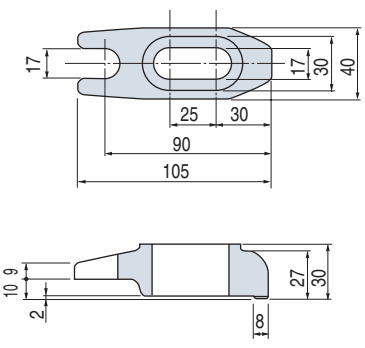


Clamps

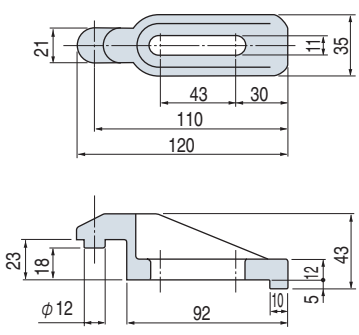
K-P0800 — **For N25**, **Material; FCD50**



K-P0801 — **For N32, N40, G50**, **Material; FCD50**



K-PZ0510 — **For standard round base**, **Material; FCD50**



NTN Parts Feeder Estimate Request Sheet

For correct design and estimates, please complete the bold outlined sections, and supply three or more specimens of the work pieces you intend to feed, along with associated drawings for reference.

Company Name			
Address	Postal code		
Person in charge	(Department)	Tel No.	
	(Name)	Fax No.	
End user			
Required quantity		**Requested delivery date**	Date Month Year / /

Estimation classification		
	1. Formal estimation	
	2. Rough estimation	
	3. Alignment judgment capability	
Requested reply date	/	

Receipt date	Date Month Year / /
Inquiry No.	
Job description	

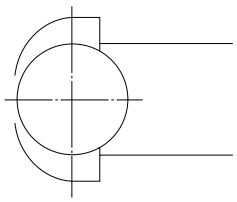
	Name	Code	Contact person	Code
Operation				
Customer				
End user				

Work	Description/Material	/	
	Weight/Burr Foreign matter/ Residual liquid	g/Yes・No	Water-base Oil-base Rust prevention oil Cutting fluid Rinsing liquid
		Yes・No( ) / Yes No	
Aligning requirements	Feed rate	Max. pcs./min/line	m/min/line
		Normal pcs./min/line	m/min/line
		Min pcs./min/line	m/min/line
	No. of Feeding lines	Lines	Success rate %
	Allowable noise level	dB(A scale)	
Power supply	Voltage	100V・200V・ V	
	Frequency	Your site 50・60Hz	User's site 50・60Hz
	Frequency conversion Yes・No	Work responsibility	You・User・**NTN**
		Work site	Your site・User's site・**NTN**
Connected machines	Types	Assembling machine ・Processing machine ( )	
	Work capacity	Cycle time sec.	pcs .m/min
	Atmosphere	(Dust, mist) present (temperature, humidity) high	

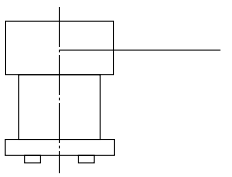
Part shape and alignment posture

(top view)
Aligning direction is commissioned to **NTN**

(CW)



(CCW)

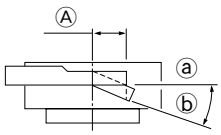


Up

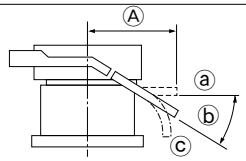
Down

(side view)

Parts feeder specifications

Intended unit type K—			Commissioned to **NTN**
Bowl	Type	Cascade・Straight wall・Cone・Dish・Commissioned to **NTN**	
	Supplying direction	CW・CCW・Decided later	
	Material	Al・Ss・Commissioned to **NTN**	
	Inside treatment	Polished・Urethane rubber coated・Commissioned to **NTN**	
Control of feeding over **NTN** Your company	System	ⓐControl in the bowl	
		ⓑPhotosensor or proximity sensor	
	Sensor	Purchase	Your company・**NTN**
		Installation	Your company・**NTN**
		Control	Your company・**NTN**
Attachment opening		ⓐHorizontal discharge ⓑDownward °discharge Ⓐ mm required	

Attachments, etc.

Connecting chute Required・Not required		ⓐ Horizontal top ⓑ Downward ____° required ⓒ Vertical fall Ⓐ ___mm required	
Linear feeder Required・Not required・Commissioned to **NTN**	Type	K—	Commissioned to **NTN**
	Vibratory trough length	mm	
Hopper Required・Not required・Commissioned to **NTN**	Type	Bowl inside type・Detached type・Commissioned to **NTN**	
	Tank material	Steel・SS・Commissioned to **NTN**	
	Input amount	pcs./time	hour/time
Escapement Required・Not required	Type	ⓐFeeding works w/ enough intervals	
		ⓑAbove requirement+ keeping a specific position	
	Control	Your company・**NTN** (Control VAC DC V)	
Compressed air		Available Unavailable	kg/cm² or more
Paint color	K-series	**NTN** standard	Particular color
	N-series	Silver and black	
	Base plate, etc.	Gray (Munsell N-6.0) Black	
Mount plate Required・Not required	Base plate		
	Rack	Works outlet height	mm
	Carrier	Slide handle	Required・Not required

Repeat order	Original inquiry No. (serial No.)
Similar item has been shipped	Yes (Inquiry No. —) No

〔Remarks〕

Projected budget	

NTN CORPORATION

(Send to:)

Head Office/3-17, 1-chome, Kyomachibori, Nishi-ku, Osaka, 550 Japan
Phone: 81-6-443-5001 Telex: J63750, **NTN** CORP.
Fax: 81-6-445-8581

Contact person