# Automation

Gantry Loader/Compact Loader/Shaft Loader/Stocker/HAKO-BEI Automation General Catalog



## **GR-SERIES**

Nakamura-Tome Original Automatic Transfer System

#### **Easy Operation**

Easy setup by teaching the moving points from the NT NURSE screen. The GR program can be executed with only one line command.

#### Abundant Configurations

Lineup of stocker left placement, right placement, and passage type. Various configurations are possible according to the layout of your factory.



Easy setup/

replacement(re-setup)

### **Built-in Gantry**

Built-in type for loading and unloading parts. The machine footprint is small and we have succeeded in saving space.

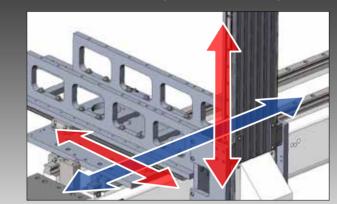
Smooth resumption of machining from mid-machining

Simple programming

Display of part status of chuck and GR hand



#### Easy position teaching with 3-axis configuration



\* Only GR-201 High-Speed has 2 axes.

#### Transport time reduced by 27%

Shorter transport time due to increased signal transmission speed



ローディング
アンローディング
WS売品
WS素材

# **High-Speed**

Wolrd's fastest transport speed! Improve productivity by reducing time





## Gantry Loader 1

## GR-210 High-Speed 3axes



SC-300II + GR-210 High-Speed



WT-300 + GR-210 NEW + WS-445W

		GR-210 H	ligh-Speed	GR-210 NEW			
*1		Unit	10kg	20kg (op.)	10kg	20kg (op.)	
Speed							
Loading/Unloading	g time **2	sec	6.0/6.0	10.5/10.5	10.5/	10.5	
Hand							
Workpiece	Flange	mm	Φ20~	Φ220	Φ20~	Φ220	
diameter	Shaft		Φ20~	Ф100	Φ20~	Φ100	
Workpiece length	Flange	mm	20~	100	20~	100	
workpiece tength	Shaft		50~	200	50~	200	
Hand turning	Flange		0.75sec/180°	3.0sec/180°	1.8sec/180°	3.0sec/180°	
	Shaft	-	1.8sec	z/180°	1.8sec	z/180°	
Hand back turning					-		
Workpiece weight	Flange	- kg	10×2	20×1	10×2	20×1	
workpiece weight	Shaft	۸g	10/2	20/1	10/2	2041	
Jaw stroke	Flange	mm	Ф40	Ф32	Φ40	Ф32	
Jaw stroke	Shaft		Φ	30	Φ3	0	
Work Stocker List	:						
		WS-221	-	-	-	-	
Multi-layer work st	ocker	WS-231	-	-		-	
		WS-442W	0	0	0	0	
		WS-445W	0	0	0	0	
		WS-121	-	-	-	-	
Single-layer work s	tocker	WS-122	-	-	-	-	
		WS-124	-	-	-	-	
		WS-132	-	-	-	-	
HAKO-BEI Rail extension is requ	ired when B ty	pe is selected.	-	-	-	-	

GR-203 High-Speed 3 axes



NTY<sup>3</sup>-150 + GR-203 High-Speed

			GR-203 H	igh-Speed	GR-2	20311			
*1		Unit	3kg	5kg (op.)	3kg	5kg (op.)			
Speed					,				
Loading/Unloading	time <sup> ⊛2</sup>	sec	4.7/4.6	6.7/6.7	7.8/7.8	8.1/8.1			
Hand									
Workpiece	Flange	mm	Φ20~	Ф130	Φ20~ Φ130				
diameter	Shaft		Φ15~	Ф30	Φ15~ Φ30				
Workpiece length	Flange	mm	20~	-110	20~	110			
Workpiece teligtii	Shaft		35~	200	35~	200			
Hand turning	Flange		0.9~1.1sec/90*		1.4~1.6sec/90°				
	Shaft	-	1.2sec	:/180°	1.2sec/180°				
Hand back turning	_			-	-				
Workpiece weight	Flange	- kg	3.0×2	5.0×2	3.0×2	5.0×2			
workpiece weight	Shaft	۸g	1.0	×2	1.0×2				
Jaw stroke	Flange	mm	Φ	16	Ф16				
Jaw Sticke	Shaft		Φź	25	Φ25				
Work Stocker List									
		WS-221	0	0	0	0			
Multi-layer work st	ocker	WS-231	0	0	0	0			
	o enci	WS-442W	-	-					
		WS-445W	-	-					
		WS-121	0	0	0	0			
Single-layer work s	tocker	WS-122	0	0	0	0			
- angle layer works	to enter	WS-124	0	0	0	0			
		WS-132	0	0	0	0			
HAKO-BEI Rail extension is requi	ired when B ty	pe is selected.	0	0	0	0			

\* 1 Specifications may differ for each model to be installed.
\* 2 Loading/unloading time are approximate. It varies for each model to be installed.



WT-150II + GR-203II + WS-231

#### Option

## Gantry Loader 2



Unit

GR-201 High-Speed

Φ15~ Φ30

35~200

1.8sec/270°

3kg (op.)

6.0/6.5

Φ20~ Φ80

20~75

1kg

3.2/4.0

Φ20~Φ60

20~50

SC-100 + GR-201 High-Speed

%1

Speed

Hand



GR-201 +WS-221

GR-201

Φ15~ Φ30

35~200

1sec/90°

3kg (op.)

8.0/8.0

Φ20~Φ80

20~75

3kg

1kg

6.0/6.0

Ф20~Ф60

20~50



GR-103 Tilt SC-250 +GR-103 +WS-121



GR-103

5kg (op.)

8.5/8.5

Φ20~Φ130

Φ15~ Φ30

20~100

35~200

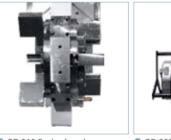
MATA-BEI(op.)

Φ20~Φ80

20~60

1.2sec/180°

Gantry Loader Installation table	GR-210 High-Speed	GR-203 High-Speed	GR-201 High-Speed	GR-210 NEW	GR-203 11	GR-203	GR-201	GR-103
SC-100			0					
SC-20011		0						
SC-200L								0
SC-250				0				0
SC-300ll	0							
TW-8						0		
WT-100							0	
WT-150ll		0						
WT-250ll				0	0			
WT-300	0							
WY-100ll		0						
WY-150		0						
WY-250L				0	0			
NTY3-100		0						
NTY3-150		0						
NTY3-250				0	0			
JX-250	0							







GR-210 Series hand

GR-203 Series hand

#### Gantry loader loading/unloading type

Standard, Left side, RIght side, Left extension, Right extension, Passing. \* However, there are restrictions depending on the machine model and specifications.



1.2sec/180° \* Varies depending on specifications. 1.2sec/180° 1.5sec/180° 1.0×2 3.0×2 1.0×2 3.0×2 3.0×2 5.0×2 3.0×2 1.0×2 1.0×2 1.0×2 Ф12 Φ15 Φ15 Φ25 Φ25 Φ25 Work Stocker List 0

\* 1 Specifications may differ for each model to be installed.

\* 2 Loading/unloading time are approximate. It varies for each model to be installed.



GR-103 Hand(5kg SPEC.)



GR-103 Hand(MATA-BEI SPEC.)



type.

## **Compact Loader**



WY-150	
+Compact Loader+HAKO	-BEI

					WY-100II / NTY <sup>3</sup> -100					WY	-150	
			MX-100				Travel axis by 150m		Standard		Travel axis extended by 150mm (op.)	
		Unit	Hand 1 Material	Hand 2 Finish	Hand 1 Material	Hand 2 Finish	Hand 1 Material	Hand 2 Finish	Hand 1 Material	Hand 2 Finish	Hand 1 Material	Hand 2 Finish
	Diameter	mm	<i>φ</i> 20~	φ130		φ32~	φ100			φ32~	φ100	
Workpiece Size	Length	mm	20~	110	20~		-100			20~	-100	
	Weight	kg	3.0	×2	3.0		)×2			3.0	)×2	
	Drive	-	Servoi	motor	Servo		motor			Servo	motor	
Z-axis Travel	Stroke	mm	2,6	00	1,955		2,1	05	2,1	05	2,2	55
nuvet	Rapid speed	m/sec	2	2		:	2		2			
Arm	Drive	-	-			Air cylinder			Air cylinder			
Advance/	Stroke	deg.	-		50			50				
Retract	Speed	sec./st.	-	-	1.7			1.7				
	Drive	-	Air cy	linder	Air cylinder			Air cylinder				
Hand Up/ Down	Stroke	mm	40	00	150			150				
	Speed	sec./st.	3.	.0	1.8			1.8				
	Drive	-	Air cy	linder		Air cylinder		Air cylinder				
Hand Swing	Stroke	•	90	)°	90°			90°				
e e e e e e e e e e e e e e e e e e e	Speed	sec./90°	2	2		1.7		1.7				
	Drive	-	Air cy	linder		Air cy	linder		Air cylinder			
	Stroke	mm	20 (:	±10)		15 (	±7.5)		15 (±7.5)			
	Speed	sec./st.	0.	3		0	.3		0.3			
Operating Ti		sec	6.	8		6.5				6.5		
Transport Device	Loading/ unloading	-	Conveyor	/Transfer	Conveyor/ Transfer	Conveyor/ Chute/ Transfer	-	-	Conveyor/ Transfer	Conveyor/ Chute/ Transfer	-	

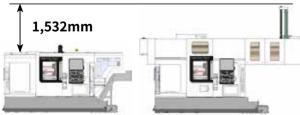
\* The combination of transfer devices is limited to IN conveyor/OUT conveyor, IN conveyor/OUT chute, and transfer device (material/finished part).

#### Space-saving, Multifunctional Automated System

"Compact Loader" developed with an emphasis on "Space saving" is a transfer device that performs loading/unloading inside the machine.

The machine height is the same as that of standard machines, which has the advantage of being less subject to factory height restrictions.

#### Compact Loader Height Comparison(WY-150)



Compact Loader

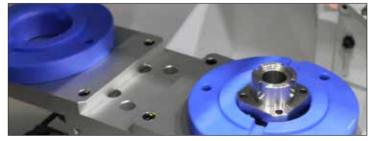


#### "Compact Loader" Internal conveyor system



Transport Device

Transfer/Conveyor/Chute type is selectable.



## Shaft Loader/Unloader

Loading and Unloading of shaft work is fully automated by installing a set of ZEN-BEI and HAI-BEI. Our original automation equipment contributes to the improvement of customers' work efficiency.

Shaft Loader	7EN DEI
Slidit Loduer	ZEIN-DEI

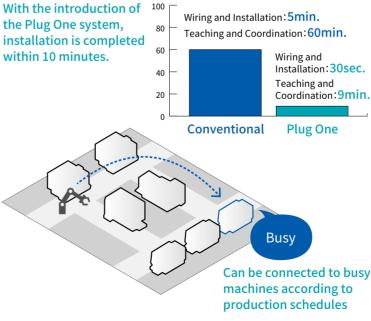
				_
	Unit	SL08W-800	SL10W-1000	
Push rod stroke	mm	1,730	1,730	
Workpiece diameter(φ)×Length	mm	φ10~φ34×100~800	φ10~φ42×100~1,000	1
Push rod bar, A size workpiece length	mm	100~500	100~400	
Push rod bar, B size workpiece length	mm	500~800	400~700	1
Push rod bar, C size workpiece length	mm	-	700~1,000	
Number of workpiece stock capacity		23	23	
Loading time	sec	7	7	ĺ
Machine Dimensions (L×W×H)	mm	2,135×879×1,151	2,135×879×1,176	

#### Shaft Unloader HAI-BEI

	Unit	SU08W-800	SU10W-1000	SU20W-1000
Pull out bar stroke	mm	1,830	1,830	1,950
Workpiece diameter(φ)×Length	mm	φ12~φ34×100~800	φ15~φ42×100~1,000	φ15~φ51×100~1,000
Pull out bar, A size workpiece length	mm	100~500	100~400	100~400
Pull out bar, B size workpiece length	mm	500~800	400~700	400~700
Pull out bar, C size workpiece length	mm	-	700~1,000	700~1,000
Number of workpiece stock capacity	本	20	20	20
Max. workpiece weight	kg	8	8	8
Unloading time	sec	7	7	7
Machine Dimensions (L×W×H)	mm	2,529×680×1,178	2,529×680×1,203	2,649×680×1,296

## Plug One

One-touch connection system for one-touch connection and disconnection of machines and robot, robot and work stocker. This is a new style of automation proposed by Nakamura-Tome to solve these problems: "The installed automation system is not operating well due to fluctuating demand." "Robotic systems require safety fences, and the systems are large and take up a lot of space."





SL20W-1000 1,790 φ10~φ51×100~1,000 100~400 400~700 700~1,000 23 2,235×879×1,269





One-touch



Equipped with a connection unit that used, so safety fences layout of the machine consolidates electrical are not required. and air wiring.

No safety fence



Cooperative robots are Flexible change the

Flexible



to respond to demand fluctuations

## Work Stocker

Image: Standard S	-layer work stocker	【GR-201	High-Speed】 [GR-201	.] [GR-103]	【GR-210 H	igh-Speed】 【GR-210	)NEW]
Number of palets       10         Max. loading weight       18g, fPalet         Max. loading weight       18g, fPalet         Max. loading weight       18g, fPalet         Max. loading weight       100         Max. loading weight       100         Max. loading weight       200         Max. loading weight	Part of the second second	WS-221	Туре	Multi-layer Pallet	WS-442W	Туре	Multi-layer Pallet
Stack height Max. loading weight       Bisg/Pallet Max. loading weight       Stack height Max. loading weight Max. loading weight       Stack height Max. loading we		*1			*2		
Max. Loading weight       Bkg/Pallet         Wis-231       Wype and Multi-layer Pallet         Wis-45W       Workpiece diameter         Stack height       300mm         Max. Loading weight       Alkg/Pallet         Wis-45W       Type and Multi-layer Pallet         Wis-45W       Workpiece diameter         Max. Loading weight       Alkg/Pallet         Wis-45W       Type and Multi-layer Pallet         Wis-45W       Max. Loading weight         Max. Loading weight       Alkg/Pallet         Wis-45W       Type and Multi-layer Pallet         Max. Loading weight       Alkg/Pallet         Wis-12E       Type and Single-layer Pallet         Max. Loading weight       Kg/Pallet         Wis-12E       Type and Single-layer Pallet         Max. Loading weight       Kg/Pallet         Wis-12E       Type and Single-layer Pallet         Max. Loading weight       Kg/Pallet         Max. Loading weight       Kg/Pallet         Mix. Loading weight       Kg/Pallet         Mix. Loading weight       Kg/Pallet         Mix. Loading weight       Kg/Pallet         Mix. Loading weight       Light and the sparate estimate will be and the sparate estimate will be and the sparate estimate will be and the sparate estimat	Ro Des			-			-
WS-231       Ype       Multi-layer Pallet         W1       Workpiece diameter       4209150mm         Max. loading weight       32kg/Pallet         W2       Workpiece diameter       420920mm         Max. loading weight       32kg/Pallet       Workpiece diameter       420920mm         Max. loading weight       32kg/Pallet       Workpiece diameter       420920mm         Max. loading weight       32kg/Pallet       Workpiece diameter       420920mm         Max. loading weight       1/2 kg/Pallet       Multi-layer Pallet       1/2 kg/Pallet         Workpiece diameter       420920mm       Multi-layer Pallet       1/2 kg/Pallet         Workpiece diameter       420920mm       Multi-layer Pallet       1/2 kg/Pallet         W5-122       Ype       Single-layer Pallet       1/2 kg/Pallet       1/2 kg/Pallet         W5-122       Ype       Single-layer Pallet       1/2 kg/Pallet       1/2 kg/Pallet       1/2 kg/Pallet       1/2 kg/Pallet         KbCcker       Must-loading weight       2kg/Pallet       1/2 kg/Pallet			0	•			
*1       Workpiece diameter Stack height Stack height Stack Sta	USA	1				wax. toading weight	40kg/Fallet
Number of pallets       10         Stack height       300mm         Max. loading weight       32kg/Fallet         Number of pallets       14         Stack height       40kg/Fallet         Resources       [GR-203 High-Speed] [GR-2031] [GR-201] [GR-103]         Winder of pallets       200-d80mm Number of pallets         Winder of pallets       10         Number of pallets       10         Workpiece diameter       220-d80mm Number of pallets         Number of pallets       10         Number of pallets       10         Max. loading weight       2kg/Pallet         Number of pallets       10         Number of pall		WS-231	Туре	Multi-layer Pallet	WS-445W	Туре	Multi-layer Pallet
Stack height Max. loading weight       300mm Max. loading weight       Stack height Max. loading weight       Stack		*1			*2	•	
Max. Loading weight       32kg/Pallet       Max. Loading weight       40kg/Pallet         Rev Work stocker       IGR-203 High-Speed] [GR-2031] [GR-2011 [GR-103]       IGR-203 High-Speed] [GR-2031] [GR-203 High-Speed] [GR-203 High-Speed] [GR-203 High-Speed] [GR-203 High-Speed] [GR-203 High-Speed] [GR-203 High-Speed] [GR-203 High-Speed] [GR-203 High-Speed] [GR-203 High-Speed] [GR-204 High-Speed] [GR-204	10			-			•
Image: Standard Structures       Image: Standard Structures       Image: Standard Structures         Image: Standard Structures       Image: Standard Structures       Image: Standard Structures       Image: Standard Structures         Image: Standard Structures       Image: Standard Structures       Image: Standard Structures       Image: Standard Structures       Image: Standard Structures         Image: Standard Structures	Y		-	•			-
Image: Service Certer       Image: Service Ce	WT-150+GR-203+WS-221 真のコンベアはオプションです。		Max. loading weight	52kg/Pallet		Max. toauting weight	40kg/rallet
Image: Service Certer       Image: Service Ce	vorwork stockor	【GR-203	High-Speed】 【GR-203	811]	【GR-203 H	ligh-Speed】【GR-203	811]
WS-121       Type       Single-layer Pallet         Workpiece diameter       2/0@80m         Number of pallets       30         Max. loading weight       2/2/-@80m         Number of pallets       30         Max. loading weight       2/2/-@80m         Number of pallets       10         Max. loading weight       2/2/-@80m         Number of pallets       60         Max. loading weight       2/2/-@80m         Number of pallets       60         Max. loading weight       2/2/-@80m         Number of pallets       60         Max. loading weight       2/2/-@80m         Number of pallets       10         Max. loading weight       2/2/-@80m         Number of pallets       120         Mox. loading weight       2/2/-@80m         Number of pallets       120         Max. loading weight       2/2/-@80m         Number of pallets       120 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td></td>						0	
Number of palets       30 Max. loading weight       2kg/Pallet         WS-122       Type       Single-layer Pallet         With the of palets       60 Max. loading weight       2kg/Pallet         WS-122       Type       Single-layer Pallet         Workpiece diameter       60 Max. loading weight       2kg/Pallet         WS-124       Type       Single-layer Pallet         Workpiece diameter       60 Max. loading weight       2kg/Pallet         WS-124       Type       Single-layer Pallet         Workpiece diameter       620 - Ø80mm         Number of pallets       120 Max. loading weight       2kg/Pallet         With the of pallets       120 Max. loading weight       2kg/Pallet         With the of pallets       120 Max. loading weight       2kg/Pallet         With the of pallets       120 Max. loading weight       12kg/Pallet         With the of pallets       120 Max. loading stations       If GR-201 is only available with WS-221.         With the of pallets       120 Max. loading stations       If GR-201 is only available with WS-221.         With the of pallets       120 Max. loading stations       If GR-201 is only available with WS-221.         With the of pallets       120 Max. loading stations       If GR-201 is only available with WS-221.         With t	10AR 0400 0	WS-121	Туре	Single-layer Pallet	WS-132	Туре	Single-layer Pallet
Max. loading weight       Zkg/Pallet       Max. loading weight       10kg/Pallet         WS-122       Type       Single-layer Pallet	E AF			•			
W5-122       Yppe diameter 20-q80mm Aumber of pallets 60 Max. loading weight 2kg/Pallet       '1 GR-201 is only available with WS-21.         W5-124       Type diameter 20-q80mm Aumber of pallets 120 Max. loading weight 2kg/Pallet       '1 GR-201 is only available with WS-21.         W5-124       Type diameter 20-q80mm Aumber of pallets 120 Max. loading weight 2kg/Pallet       '1 GR-201 is only available with WS-21.         With X-120       Type diameter 20-q80mm Aumber of pallets 120 Max. loading weight 2kg/Pallet       '1 GR-201 is only available with WS-21.         ** Stocker       Max. loading weight 2kg/Pallet       '1 GR-201 is only available with WS-22.         ** Kstocker       '1 GR-201 is only available with WS-22.         Workpiece diameter 20-q80mm Aumber of pallets 120 Max. loading weight 2kg/Pallet       '1 GR-201 is only available with WS-22.         ** Kstocker       '1 GR-201 is only available with WS-22.         Workpiece diameter 20-q80mm Aumoer of pallets 120 Max. loading weight 2kg/Pallet       '1 GR-201 is only available with WS-22.         ** Kstocker       '1 GR-201 is only available with WS-22.       '1 GR-201 is only available with WS-22.         ** Kstocker       '1 GR-201 is only available with WS-22.       '1 GR-201 is only available with WS-22.         ** Kstocker       '1 GR-201 is only available with WS-22.       '1 GR-201 is only available with WS-22.         ** Kstocker       '1 GR-201 is only available with WS-22.       '1 GR-201 is only availabl							
<ul> <li>Workpiece diameter <u>420-\$480mm</u> Number of pallets <u>60</u> Max. loading weight <u>2kg/Pallet</u></li> <li>W5.124 <u>Type Single-layer Pallet</u> <u>Workpiece diameter <u>420-\$480mm</u> Number of pallets <u>120</u> Max. loading weight <u>2kg/Pallet</u></u></li> <li>There are 2 loading stations to shorten outboard service time.</li> <li>If igs are required, a meeting and a separate estimate will be required.</li> <li>Stocker AKO-BEI'</li> <li>With <u>125 Type <u>120 + 800m</u> Number of pallets <u>120</u> Max. loading weight <u>2kg/Pallet</u></u></li> <li>If igs are required, a meeting and a separate estimate will be required.</li> <li>If igs are required, a meeting and a separate estimate will be required.</li> <li>If igs are required, a meeting and a separate estimate will be required.</li> <li>If issue the the the the required is the the required.</li> <li>If issue the the the the the the required is the the required.</li> <li>If issue the the the the the the required is the the required.</li> <li>If issue the the the the the the the the the th</li></ul>	1-8-5-		Max. loading weight	2kg/Pallet		Max. loading weight	10kg/Pallet
<ul> <li>Workpiece diameter <u>200-\$AB0mm</u> Number of pallets <u>60</u> Max. loading weight <u>2kg/Pallet</u></li> <li>W5.124 <u>Type Single-layer Pallet</u> Workpiece diameter <u>2020-\$B0mm</u> Number of pallets <u>120</u> Max. loading weight <u>2kg/Pallet</u></li> <li>There are 2 loading stations to shorten outboard service time.</li> <li>If igs are required, a meeting and a separate estimate will be required.</li> <li>Stocker AKO-BEI'</li> <li>With W5.125 <u>120</u> Max. loading weight <u>2kg/Pallet</u></li> <li>If igs are required, a meeting and a separate estimate will be required.</li> <li>If igs are required, a meeting and a separate estimate will be required.</li> <li>If igs are required, a meeting and a separate estimate will be required.</li> <li>If igs are required, a meeting and a separate estimate will be required.</li> <li>If igs are required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required, a meeting and a separate estimate will be required.</li> <li>If issue required,</li></ul>		WS-122	Type	Single-laver Pallet			
Max. loading weight       2kg/Pallet       service time.         WS-124       Type       Single-Layer Pallet       I jgs are required, a meeting and a separate estimate will be required.         Max. loading weight       2kg/Pallet       I jgs are required, a meeting and a separate estimate will be required.         rk Stocker AKO-BEI'       Max. loading weight       2kg/Pallet       I jgs are required, a meeting and a separate estimate will be required.         rk Stocker AKO-BEI'       Max. loading weight       2kg/Pallet       I jgs are required, a meeting and a separate estimate will be required.         rk Stocker AKO-BEI'       Image: separate setimate will be set set set set set set set set set se		110 122			*1 GR-201	1 is only available with	WS-221.
Image: Note: Notating weight       Zkg/r talket         WS-124       Type       Single-layer Pallet         Workpiece diameter       420 - 480mm         Max. loading weight       2kg/Pallet         Image: Notation of the state o	AND I STREET,		Number of pallets	60			s to shorten outboard
Workpiece diameter Number of pallets       120 120 Max. loading weight       220~ø80mm 220/ø80mm       required.         *k Stocker AkO-BEI"       Workpiece diameter Number of pallets       120 Max. loading weight       2kg/Pallet         Workpiece Journalistic Stocker AkO-BEI"       Workpiece diameter Number of pallets       120 Nax. loading weight       Image: Stocker Number of pallets         Workpiece Journalistic Stocker AkO-BEI"       Workpiece Journalistic Stocker Number of pallets       Image: Stocker Number of pallets       Image: Stocker Number of pallets         Machine dimensions       mm       1.385×1.020×1.342       1.385×1.155×1.630       1.466×1.250×1.523       1.673×1.152×1.675         Tray exchange method       -       -       Pass-through type       100       150         Loading capacity on tray       kg       150       150       200       150         Workpiece Loading height mm       -       -       -       -         Buil(Lin)       -       AC servomotor </td <td>Y</td> <td></td> <td>Max. loading weight</td> <td>2kg/Pallet</td> <td>service</td> <td>e time.</td> <td></td>	Y		Max. loading weight	2kg/Pallet	service	e time.	
Workpiece diameter Number of pallets       20 ~ ø80mm 120 Max. loading weight       required.         required.       Trequired.       required.         required.       Max. loading weight       2kg/Pallet         rk Stocker AKO-BEI"       Image: Stocker and the stocker and		WS 124	Туре	Single-laver Pallet	If jigs are r	equired, a meeting and a	separate estimate will be
Number of pallets       120         Max. Loading weight       2kg/Pallet         KS tocker AKO-BEI"       Image: Constraint of the second of the		WS-124		- · ·			
Visit B2 Type         Visit B2 Type       C 2 TYpe       HAKO-BEI Link       O Type         Machine dimensions       mm       1,385×1,020×1,342       1,385×1,215.5×1,630       1,466×1,750×1,523       1,673×1,152×1,675         Tray exchange method       Pass-through type         Loading capacity on tray       kg       150       100         Workpiece loading height       mm       Storight type (Heavy duty specification: 15-20)         Vision tray       kg       150       100         Workpiece loading height       mm       Story duty specification: 15-20         Tray Uinit weight       kg       15 (Heavy duty specification: 15-20)       20       15 (Heavy duty specification: 15-20)         Ki few y duty specification: 15-20)       20       15 (Heavy duty specification: 15-20)         Ki few y duty specification: 15-20)       20       15 (Heavy duty specification: 15-20)         Ki few y duty specification: 15-20)       20       15 (Heavy duty specification: 15-20) </td <td></td> <td></td> <td>······</td> <td>•••••</td> <td></td> <td></td> <td></td>			······	•••••			
MKO-BEI"       Image: Constraint of the synthematic of the synthemat			Max. loading weight	2kg/Pallet			
Machine dimensions         mm         1,385×1,020×1,342         1,385×1,215.5×1,630         1,466×1,750×1,523         1,673×1,152×1,675           Tray exchange method         -         Pass-through type         Pass-through type           Loading capacity on tray         kg         150         200         150           Total weight         kg         200         215         215         100           Workpiece loading height         mm         960 from the floor level         400× D440× H79           werenal external ensions         9 tier         mm         W600× D440× H79         15 (Heavy duty specification: 15-20)         20         15 (Heavy duty specification: 15-20)           Unit weight         kg         15 (Heavy duty specification: 15-20)         20         15 (Heavy duty specification: 15-20)           Drive         -         AC servomotor         AC servomotor         Special feed control           Stroke         mm         500         Free conter         Special feed control	ork Stocker IAKO-BEI"						
Tray exchange method     -     Pass-through type       Loading capacity on tray     kg     150     150     200     150       Total weight     kg     200     215     215     100       Workpiece loading height     mm     960 from the floor level       external nensions     9 tier     mm       Tray limit weight     kg     15 (Heavy duty specification: 15-20)     20     15 (Heavy duty specification: 15-20)       Built-in)     Drive     -     AC servomotor     AC servomotor     Special feed control							
Total weight kg         200         215         215         100           Workpiece loading height mm         960 from the floor level	Machine dimensio				630		
Workpiece loading height     mm     960 from the floor level       external nensions     9 tier     W600x D440x H79       4 tier     W600x D440x H150       Tray limit weight     kg     15 (Heavy duty specification: 15-20)     20     15 (Heavy duty specification: 15-20)       Built-in)     Drive     -     AC servomotor     AC servomotor     Special feed control		ons mm	1,385×1,020×1,342	1,385×1,215.5×1,		1,466×1,750×1,523 De	1,673×1,152×1,675
9 tier         mm         W600× D440× H79           tier         W600× D440× H150         W600× D440× H150           Tray limit weight         kg         15 (Heavy duty specification: 15-20)         20         15 (Heavy duty specification: 15-20)           Built-in)         Drive         -         AC servomotor         AC servomotor         Special feed control	Tray exchange meth Loading capacity on tr	ons mm od — ray kg	1,385×1,020×1,342 150	1,385×1,215.5×1,		1,466×1,750×1,523 De 200	1,673×1,152×1,675
Mm         W600× D440× H150           Tray limit weight         kg         15 (Heavy duty specification: 15-20)         20         15 (Heavy duty specification: 15-20)           Built-in)         Drive         -         AC servomotor         AC servomotor         AC servomotor           Stroke         mm         500         500         500	Tray exchange meth Loading capacity on tr Total weig	ons mm od – ray kg ght kg	1,385×1,020×1,342 150	1,385×1,215.5×1, 150 215	Pass-through typ	1,466×1,750×1,523 be 200 215	1,673×1,152×1,675
Drive         -         AC servomotor         AC servomotor         Special feed control           Built-in)         Stroke         mm         500         500	Tray exchange meth Loading capacity on tr Total weig Workpiece loading heig	ons mm od — ray kg ght kg ght mm ier	1,385×1,020×1,342 150	1,385×1,215.5×1, 150 215	Pass-through typ	1,466×1,750×1,523 pe 200 215 level	1,673×1,152×1,675
Built-in) Stroke mm 500	Tray exchange meth Loading capacity on tr Total weig Workpiece loading heig external 9 t tensions 4 t	ons mm or of the second	1,385×1,020×1,342 150 200	1,385×1,215.5×1, 150 215 g	Pass-through typ 960 from the floor W600× D440× H	1,466×1,750×1,523 pe 200 215 level 179 150	1,673×1,152×1,675
	Tray exchange meth Loading capacity on tr Total weig Workpiece loading heig external 9 t tensions 4 t Tray limit weig	ons mm or second mean of the sec	1,385×1,020×1,342 150 200 15 (Heavy duty	1,385×1,215.5×1, 150 215 9 specification: 15-20)	Pass-through typ 160 from the floor W600× D440× H W600× D440× H	1,466×1,750×1,523 pe 200 215 level 179 150 20	1.673×1.152×1.675 150 100 15 (Heavy duty specification: 15-20)
Ip/down Drive – Chain drive (reversible motor)	Tray exchange meth Loading capacity on tr Total weig Workpiece loading heig external 9 t tensions 4 t Tray limit weig Built in) Dri	ons mm od – ray kg ght kg ght mm ier mm ght kg ive –	1,385×1,020×1,342 150 200 15 (Heavy duty	1,385×1,215.5×1, 150 215 9 specification: 15-20)	Pass-through typ 160 from the floor W600× D440× H W600× D440× H r	1,466×1,750×1,523 pe 200 215 level 179 150 20	1.673×1.152×1.675 150 100 15 (Heavy duty specification: 15-20)
	Tray exchange meth Loading capacity on tr Total weig Workpiece loading heig external nensions 4 t Tray limit weig (Built-in) Dri	ns mm od – ray kg ght kg ier mm ier mm jht kg jht kg ive – ske mm	1,385×1,020×1,342 150 200 15 (Heavy duty	1.385×1.215.5×1, 150 215 specification: 15-20) AC servomoto	Pass-through typ 160 from the floor W600× D440× H W600× D440× H r	1,466×1,750×1,523 De 200 215 level 179 150 20 AC servomotor	1.673×1.152×1.675 150 100 15 (Heavy duty specification: 15-20)
Robot – – 1-axis (1-axis servo) 2-axis (2-axis servo) 2-axis (HAKO-ROBO)	Tray exchange meth Loading capacity on ta Total weig Workpiece loading heig ay external imensions 4 t Tray limit weig e (Built-in) y up/down Dr drive Stro	ns mm od – ray kg ght kg ght mm ier mm ght kg ght kg ray ray ray ray ray ray ray ray	1,385×1,020×1,342 150 200 15 (Heavy duty AC servomotor	1,385×1,215.5×1, 150 215 specification: 15-20) AC servomoto Cha	Pass-through typ 160 from the floor W600× D440× H W600× D440× H r 500 in drive (reversible 769	1,466×1,750×1,523 pe 200 215 level 179 150 20 AC servomotor e motor)	1.673×1.152×1.675 150 100 15 (Heavy duty specification: 15-20) Special feed control

AC servomotor

850

Air cylinder

175

0.3

8~20

AC servomotor

1,300

AC servomotor

200

8~20

#### Please select from the following specifications for bar feeders.

Shaft Unloader



Parts catcher

equipped.

Parts catcher

This is required when Parts catcher

A or B is equipped.

Parts ejector

and

Parts eject

checker

Weight vary from one model to another. (\*1) If anti-scratch measures are required for finished parts for quality, select Parts catcher type G or Turret Servo Gripper type that grasps the workpiece by hand or a Gantry Loader+HAKO-BEI instead of the Parts catcher type A, drop type. (\*2)

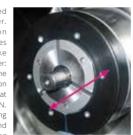
\*1 Custom orders outside the standard specifications may also be available. Please ask our distributors for details.

\*2 A workpiece discharge confirmation device is required for drop type unloaders.



### Pneumatic parts ejector (Recommended)

The finished parts are ejected with a pneumatic cylinde It includes parts ejection confirmation. Two limit switches are equipped on both stroke ends of the pneumatic cylinder one on the front end, and one on the back end. Part ejectio is confirmed when the switch a the forward end is turned ON An ejecting head correspondi to the workpiece diameter an shape is necessary. (Engineering



arrangement for each part is side spindle Air-blow through the right hand necessary).

Stocker type Parts eject checker is necessary when parts The finished parts are eject conveyor

stocked into a door is equipped. mounted box

Parts outlet Door pocket shape

AC servomotor

650

AC servomotor

500

Air cylinder

150

0.3

8~20

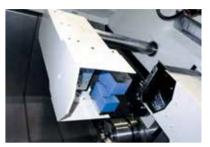


#### Parts catcher type A (Bucket type)

When a larger spindle's bar capacity is selected, a parts catcher with larger specifications is to be selected accordingly. (op.)

#### Part catcher type G (Gripper type)

It unloads the finished parts from R-side chuck. It is a one-gripper type parts catcher. The finished parts are pulled out by moving the R-spindle.



Turret Servo Gripper type

The milling motor can be used as a drive source to control the gripping force through torque control.



#### Parts ejector spring type

The finished parts are ejected by spring force. An ejecting head corresponding to the workpiece diameter and shape is necessary. (Engineering arrangement for each part is necessary) Ejecting heads with air blow holes are also available. In this case, air blow through the spindle (op.) is necessary.

#### Parts eject checker (necessary)

It prevents collision by mistake during workpiece transfer

We can offer two kinds of parts confirmation:

1. Check if there is a workpiece in the L-side chuck 2. Check if the finished part was ejected from the R-side chuck





1. Detect no workpiece 2. Workpiece eject detectio



The finished parts are unloaded through the door onto a conveyor or a bucket. To prevent scratching the finished parts during unloading, a conveyor is recommended. (op.)

To prevent scratching the finished parts during unloading, additional plastic plates on the chute can be specified.



## Line-up Multitasking Machine







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