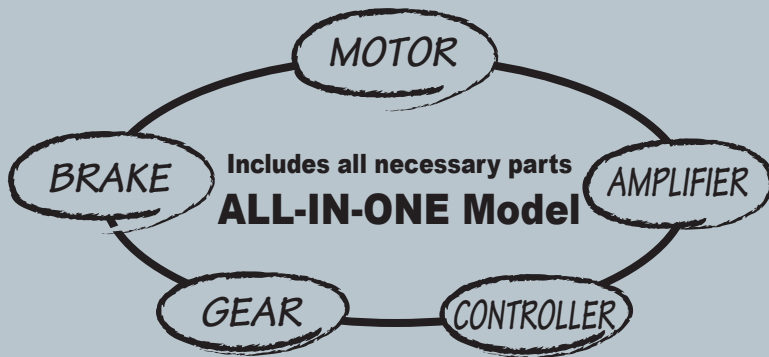


Precision Positioning Control Servo System

VIGO SERVO[®] AR SERIES





AC Servo Drive Units

AR/ARH/RT SERIES

High torque type

High speed type

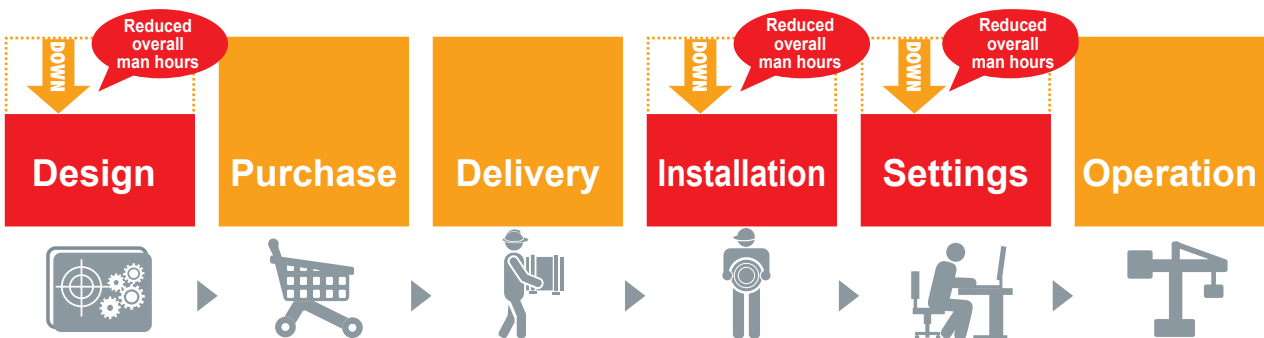
Super-high reduction type

AC servo actuators that integrate high precision original AC servo motor

■ Reduced overall costs!

Lower design cost,
lower assembly cost

This compact actuator already incorporates RV reduction gears, a special motor, special lubricant, and a brake, making installation in most any equipment simple and easy.



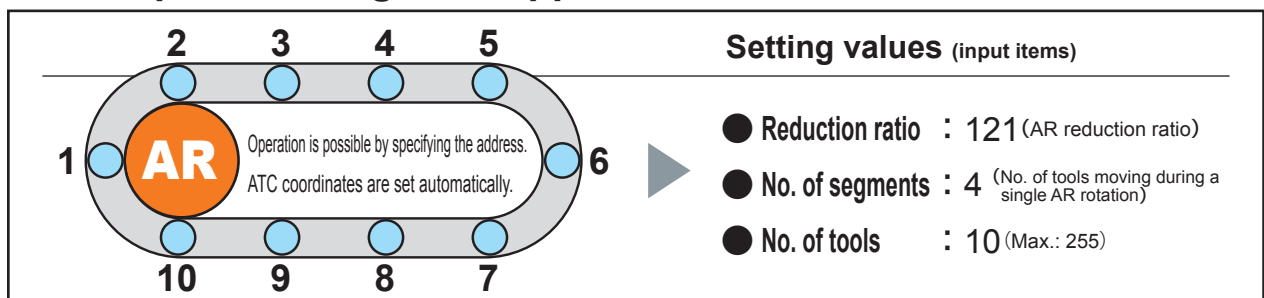
■ Improved usability!

Simple settings

This servo amplifier with controller includes operation modes specific to each application. For example, there are special operation modes for ATC magazines, for rack & pinion drives, and for indexing tables, and setting for each of these is simple through the input of just 3 or 4 parameters.

Positioning control is also possible using just a control I/O signal.

■ Example ATC magazine application



EASY TO USE

The ALL-IN-ONE model incorporates the industry's leading RV™ reduction gears, servo motor, brakes, servo amplifier and controller.

Enjoy precision control immediately after installation, and with a single unit.

and high rigidity RV™ reduction gears with an

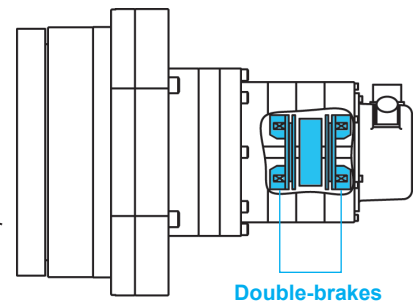
The RT super-high reduction gear added to the lineup!

One more RV reduction gear has been added to the AR series to deliver super-high reduction. (Reduction ratio: 5000 or greater)

■ World-class in compact size and high reduction ratio

RT gears are one of the most compact sizes in the world in comparison to other units in the same class.

This makes it possible to install them in locations that were previously impossible, resulting in further improved work efficiency.



■ The industry's only double-brake specs also focus on safety

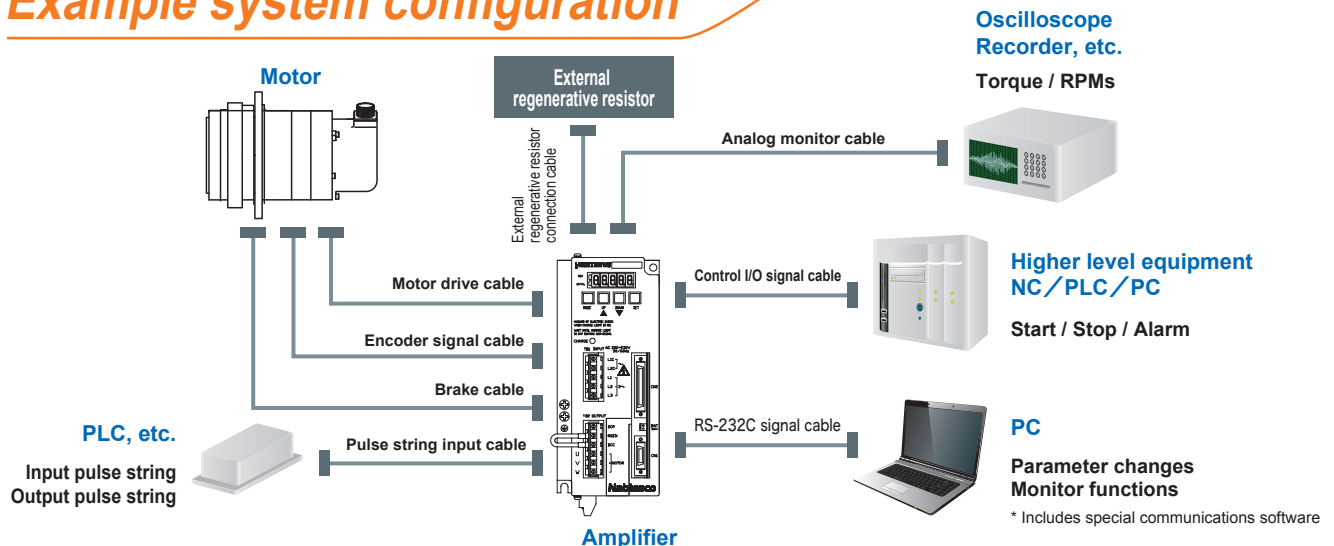
Includes built-in double brakes that increase safety over the conventional single brake standard. In addition to improved safety, this eliminates the extra cost of post-installation addition.

The success of RV™ reduction gears

RV gears support both greater strength and more precise operation for industrial robots. Praised for delivering high precision and high rigidity right along with their compact size and light weight, these gears have been adopted by industrial robot manufacturers worldwide since their introduction in 1985.

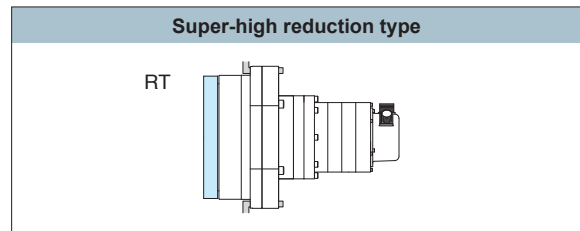
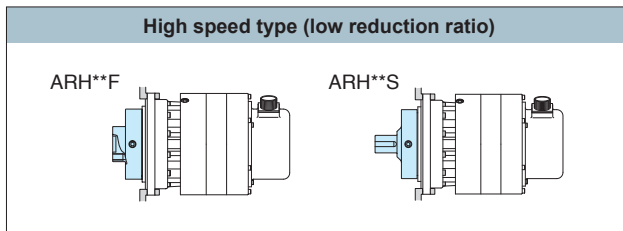
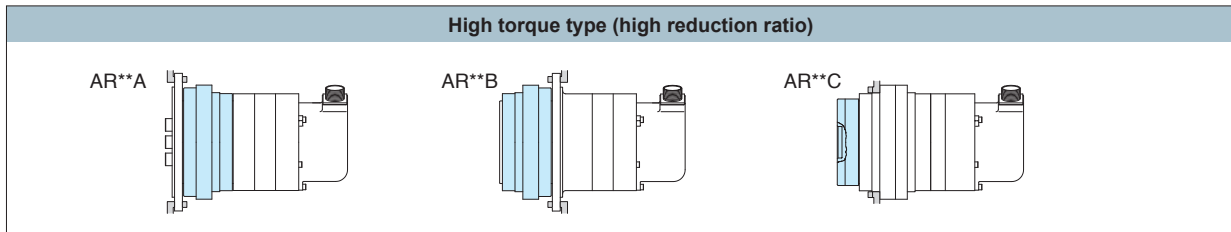
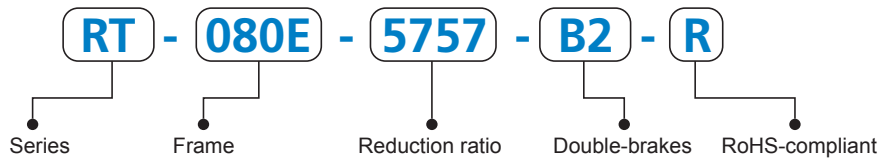
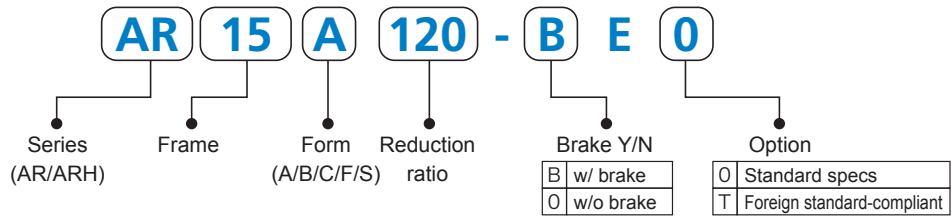


Example system configuration



Model Number Designations

Servo actuator

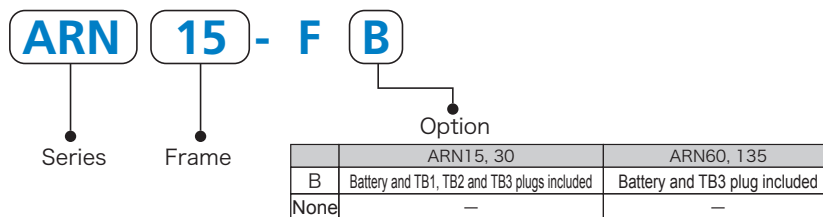


Indicates the rotating section.

● The servo actuator complies with the following standards.

UL standard	cUL standard	European safety standards	RoHS Directive
UL1004	CSA C22.2 No.100-95	EN50178	2002/95/EC

Servo amplifier



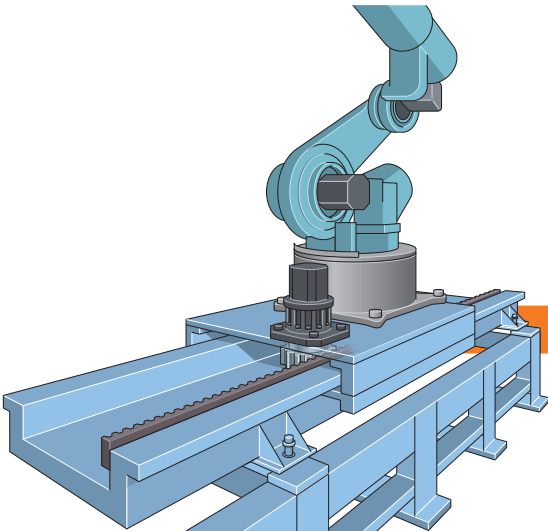
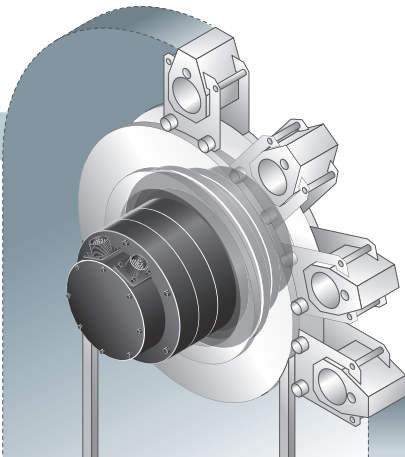
● The servo amplifier complies with the following standards.

	UL standard	cUL standard	European safety standards	RoHS Directive
ARN15, 30	UL508C	CSA C22.2 No.14	EN50178	2002/95/EC
ARN60, 135	—	—	EN50178	2002/95/EC

Example Applications

Magazine: Indexing device

AR**A / AR**B

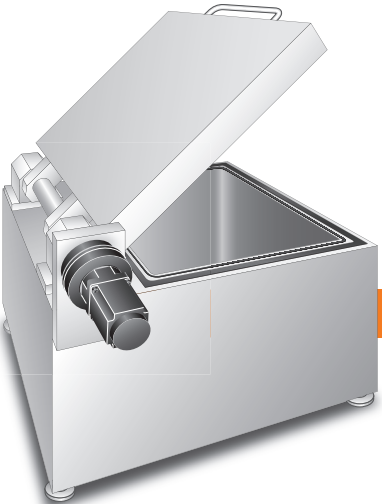
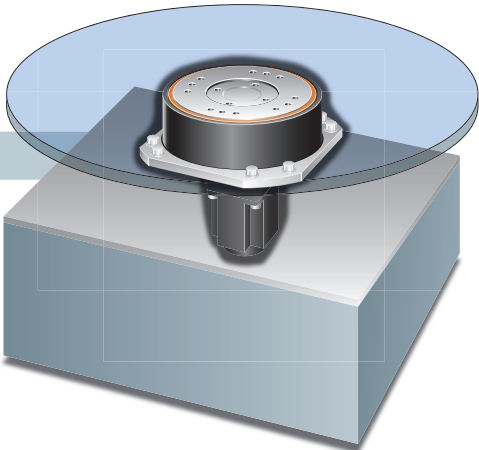


Travel axis

ARH**F / ARH**S

Indexing table

AR**C / AR**B

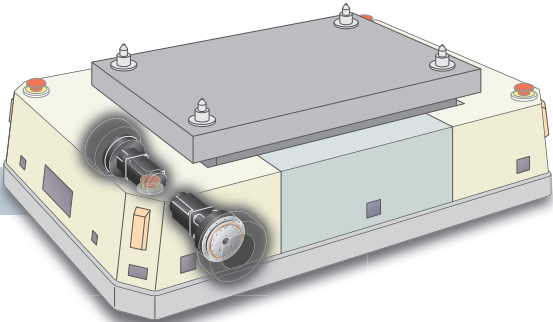


Lid opening/closing

AR**B / RT

AGV

ARH**F / ARH**S



Specifications

■ AR high torque type

Servo actuator frame No.	AR15					AR30					AR60					AR135					
	High torque type																				
Motor output (kW)	0.4					0.8					1.5					2.5					
Reduction gear frame No.	RV-15AII					RV-40E					RV-80E					RV-160E					
Reduction ratio	56	80	104	120	140	56	80	104	120	152	65	80	100	120	152	80	100	128	144	170	
Rated torque (Nm)	66	94	122	141	167	132	188	245	282	363	304	376	470	564	715	753	941	1204	1352	1599	
Max. torque (Nm)	263	274	274	274	274	461	659	856	988	1029	1019	1254	1568	1882	1960	2258	2822	3613	3920	3920	
Max. speed (rpm)	54	38	29	25	21	54	38	29	25	20	46	38	30	25	20	31	25	20	17	15	
Backlash (arc min)	1																				
Allowable thrust load (N)	2597					5194					7840					14700					
Allowable moment (Nm)	608					1666					1735					3920					
Braking torque (Nm)	86	115	143	162	186	212	282	353	400	494	451	539	657	774	962	1051	1286	1615	1803	2019	
Encoder resolution	Absolute value: 8192p/rev																				
Actuator weight (kg)	12.5					27					37.5					73.5					
Compatible servo amplifier model	ARN15					ARN30					ARN60					ARN135					
Power source	3-phase AC200 to 230V +10% -15% 50/60Hz																				
Dimensions L/D (mm)	AR**A	235 / 175					263 / 230					285 / 260					336 / 325				
	AR**B	239 / 175					268 / 230					292 / 260					342 / 325				
	AR**C	240 / 145					270 / 190					291 / 222					344 / 280				

■ ARH high speed type

Servo actuator frame No.	ARH7			ARH17			ARH24			
	High speed type									
Motor output (kW)	0.8			1.5			2.5			
Reduction gear frame No.	GH7			GH17			GH24			
Reduction ratio	461/41	21	153/5	11	21	31	11	21	31	
Rated torque (Nm)	26	49	73	52	99	146	103	198	292	
Max. torque (Nm)	91	173	206	172	329	486	310	593	696	
Max. speed (rpm)	267	143	97	270	143	97	227	119	81	
Backlash (arc min)	6									
Allowable thrust load (N)	1470			1960			2940			
Allowable moment (Nm)	461			804			843			
Braking torque (Nm)	60	89	119	81	157	225	167	314	461	
Encoder resolution	Absolute value: 8192p/rev									
Actuator weight (kg)	19			33			51			
Compatible servo amplifier model	ARN30			ARN60			ARN135			
Power source	3-phase AC200 to 230V +10% -15% 50/60Hz									
Dimensions L/D (mm)	ARH**F	278 / 160			307 / 190			336 / 240		
	ARH**S	300 / 160			350 / 190			395 / 240		

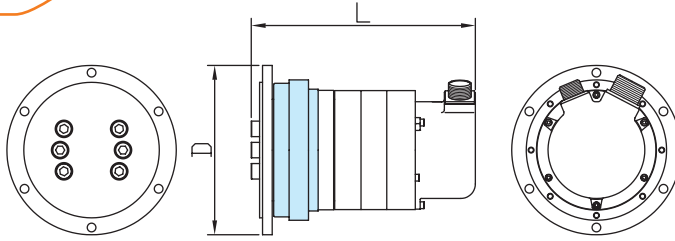
■ RT super-high reduction type

Servo actuator frame No.	RT-080E			RT-160E			RT-320E			RT-450E		
	Super-high reduction type											
Motor output (kW)	0.4			0.4			0.8			0.8		
Reduction gear frame No.	RV-15AII + RV-80E			RV-15AII + RV-160E			RV-40E + RV-320E			RV-40E + RV-450E		
Reduction ratio	5757			6561			5757			5757		
Rated torque (Nm)	3920			6173			10832			10832		
Max. torque (Nm)	3920			7840			15680			22050		
Max. speed (rpm)	0.521			0.457			0.521			0.521		
Backlash (arc min)	1											
Allowable thrust load (N)	7840			14700			19600			24500		
Allowable moment (Nm)	2156			3920			7056			8820		
Braking torque (Nm)	21588			24604			53960			59360		
Encoder resolution	Absolute value: 8192p/rev											
Actuator weight (kg)	40			45			100			150		
Compatible servo amplifier model	ARN15			ARN15			ARN30			ARN30		
Power source	3-phase AC200 to 230V +10% -15% 50/60Hz											
Dimensions L/D (mm)	389 / 222			412 / 280			447 / 325			464 / 370		

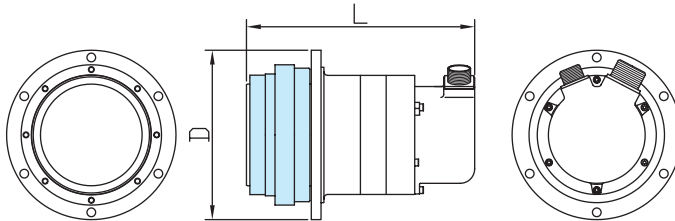
Note: The braking torque indicates the torque for two brakes.

AR

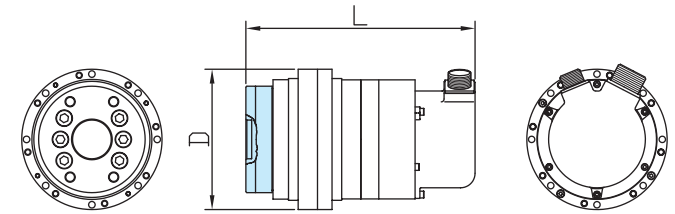
AR**A



AR**B

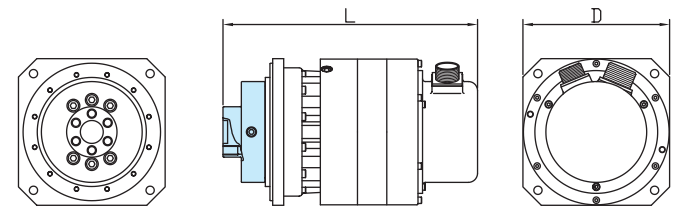


AR**C

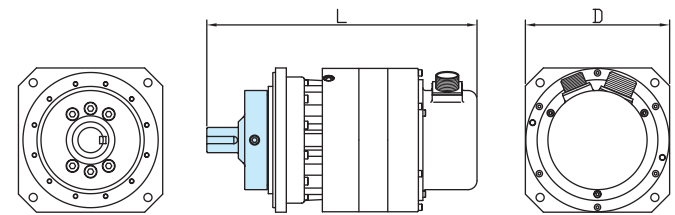


ARH

ARH**F

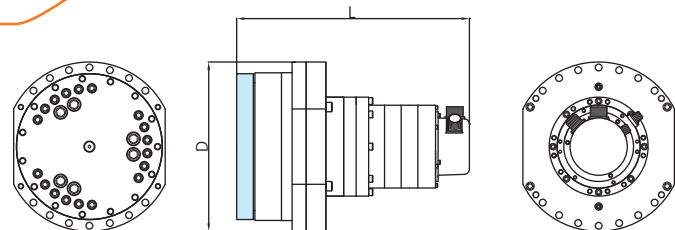


ARH**S



RT

RT

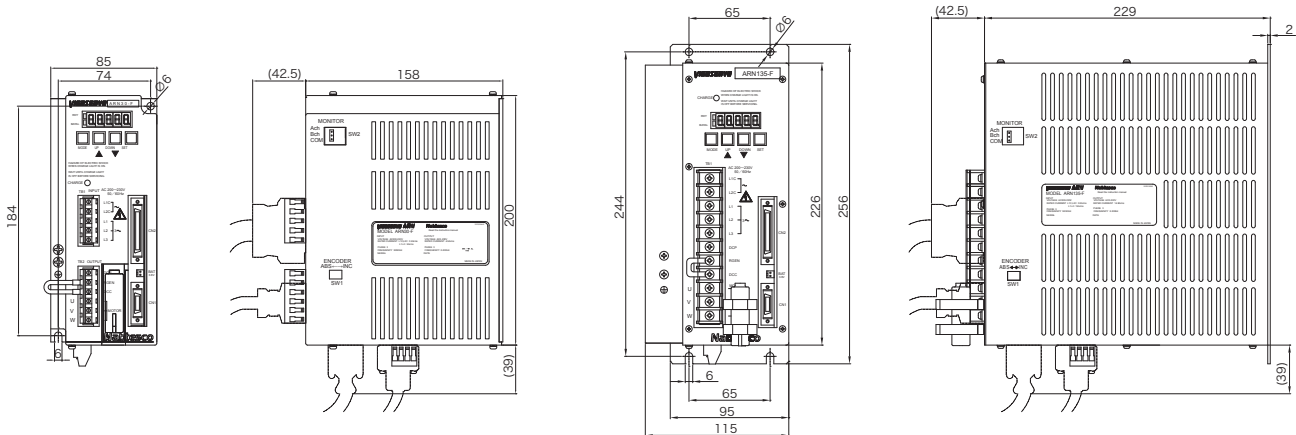


 Indicates the rotating section.

Servo amplifier external dimensions

ARN15, 30

ARN60, 135



Warranty

- In the case where Nabtesco confirms that a defect of the Product was caused due to Nabtesco's design or manufacture within the Warranty Period of the Product, Nabtesco shall repair or replace such defective Product at its cost. The Warranty Period shall be from the delivery of the Product by Nabtesco or its distributor to you ("Customer") until the end of one (1) year thereafter, or the end of two thousand (2,000) hours running of the Product installed into Customer's equipment, whichever comes earlier.
- Unless otherwise expressly agreed between the parties in writing, the warranty obligations for the Product shall be limited to the repair or replacement set forth herein. OTHER THAN AS PROVIDED HEREIN, THERE ARE NO WARRANTIES ON THE PRODUCT, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
- The warranty obligation under the Section 1 above shall not apply if:
 - the defect was caused due to the use of the Product deviated from the Specifications or the working conditions provided by Nabtesco;
 - the defect was caused due to exposure to foreign substances or contamination (dirt, sand etc.)
 - lubricant or spare part other than the ones recommended by Nabtesco was used in the Product;
 - the Product was used in an unusual environment (such as high temperature, high humidity, a lot of dust, corrosive/volatile/inflammable gas, pressurized/depressurized air, under water/liquid or others except for those expressly stated in the Specifications);
 - the Product was disassembled, re-assembled, repaired or modified by anyone other than Nabtesco;
 - the defect was caused due to the equipment into which the Product was installed;
 - the defect was caused due to an accident such as fire, earthquake, lightning, flood or others; or
 - the defect was due to any cause other than the design or manufacturing of the Product.
- The warranty period for the repaired/replaced Product/part under the Section 1 above shall be the rest of the initial Warranty Period of the defective Product subjected to such repair/replace.



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