

Technical Specifications HS-035/045/055A1

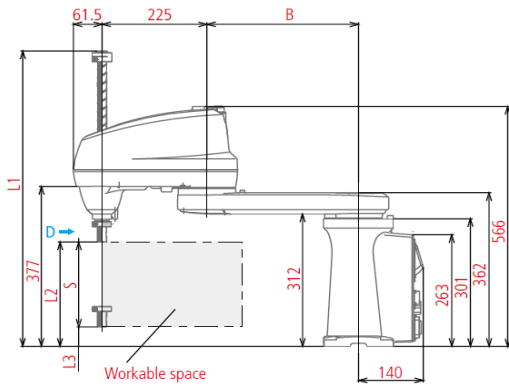
Item		Specifications		
Model 1		HS035A1-N/*	HS045A1-N/*	HS055A1-N/*
Axes		4		
Position detection		Absolute encoder		
Drive motor and brake		All-axis servo motor / Z- and T-axis brake		
Total arm length (No. 1 arm + No. 2 arm)		350(125+225)mm	450(225+225)mm	550(325+225)mm
Motion range and stroke	J1 (No.1 axis)	±155°		
	J2 (No.2 axis)	±145°		
	Z (No.3 axis)	*=10 : 100mm, *=15 : 150mm, *=20 : 200mm, *=32 : 320mm,		
	T (No.4 axis)	±360°		
Axis combination		J1 (1st-Axis) + J2 (2nd-Axis) + Z (3rd-Axis) + T (4th-Axis)		
Maximum payload		5kg		
Maximum composite speed (at the center of an end-effector mounting face)	Arm end	7,200mm/sec	6,300mm/sec	7,100mm/sec
	T	2,400°/sec		
Cycle time 2		0.29sec		
Position repeatability (center of end-effector mounting face) 3	J1+J2	±0.015mm	±0.02mm	
	Z	±0.01mm		
	T	±0.005°		
Maximum pressure input (downward, for up to 1 s)		98N		
Maximum allowable moment of inertia		0.1kgm ²		
User air piping		4 systems(φ4×2, φ6×2)		
User signal line		19(for proximity sensor signals, etc.)		
Position detection		Absolute encoder		
Air source	Operating pressure	0.05 - 0.35MPa		
	Maximum allowable pressure	0.59MPa		
Airborne noise (equivalent continuous A-weighted sound pressure level)		80 dB or less		
Brake releasing	Models except UL-Listed ones	Press the brake release switch in the direct teaching mode. Enter a brake release command with the teach pendant or mini-pendant.		
	UL-Listed models	Press the brake release switch when the controller power is ON. The teach pendant or mini-pendant cannot release the brakes.		
Degree of protection		Dust & splash proof type : IP65 (option) Cleanroom type ISO class 3 (option)		
Weight		Approx. 25kg		

1 An asterisk [] in a model name indicates Z-axis stroke.

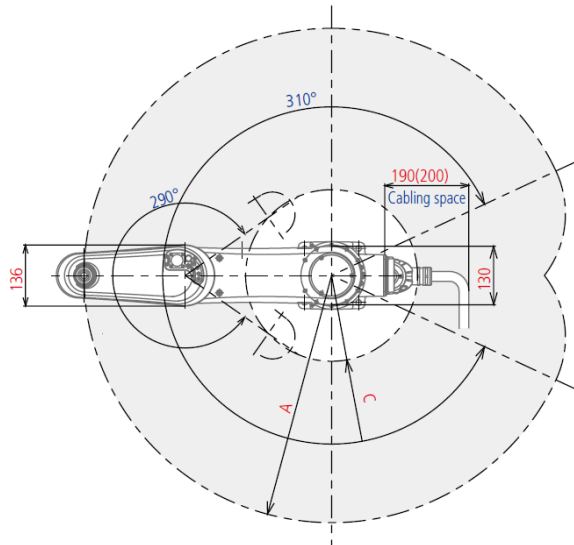
*2 Time required for a robot to move a 2 kg payload between two points 300 mm apart at a height of 25 mm.

*3 Position repeatability is the precision at constant ambient temperature.

External Dimensions for Standard Type Unit: mm



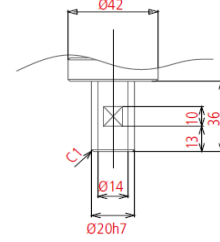
Model	A	B	C
HS035*	350	125	143
HS045*	450	225	136
HS055*	550	325	191



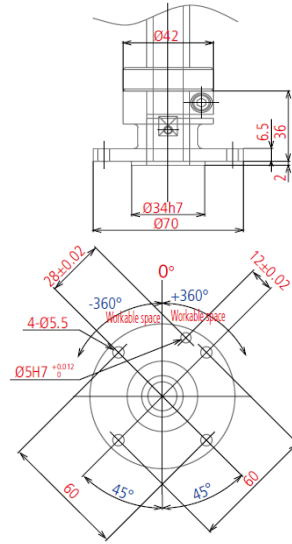
Z-axis stroke : ST(mm)	L1	L2	L3
* =10 : 100	597	246	146
* =15 : 150	647	246	96
* =20 : 200	697	246	46
* =32 : 320	817	246	-74 Note 1

Note 1: Please note that if the Z axis stroke is 320 mm., since when fully lowered, the Z-axis will reach a position lower than the base mounting face, care should be taken to avoid interference with peripheral devices.

Detailed drawing of end-effector mounting face (View D)



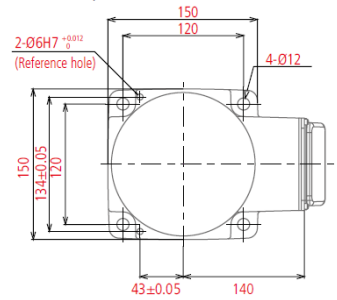
Flange (option)



Detailed flange drawing (Option) (s=1:1)

The values in parentheses () are of the dust & splash proof type

Detailed drawing of base mounting face (Top view)



Legend

HS A1 - - - N N N N N - N N N N

Model : HS: 4-axis robots	Total arm length : Q35: 350mm Q45: 450mm Q55: 550mm	Mechanical type: A1: Arm length 350mm, 450mm, 550mm	Mounting orientation : N: Standard S: Ceiling	Z-Axis stroke : 10: 100mm 15: 150mm 20: 200mm 32: 320mm	Protected : NN: Standard type W5: Dust & splash proof type (IP65) C3: Cleanroom type (ISO class 3) JN: Bellows type	Compliant standard: N: Standard specification U: UL specification	Paint / Surface finish : N: DENSO standard colors
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