

HS-E Series Horizontal articulated robot

Robot Specifications

(1) HS-E Series Robot Unit (Floor-mount type)

Item		Specifications		
Model name of robot set (Note 1)		HS-4535*E (Standard) HS-4535*E-W (Dust-proof, splash-proof) HS-4535*E-P (Cleanroom)	HS-4545*E (Standard) HS-4545*E-W (Dust-proof, splash-proof) HS-4545*E-P (Cleanroom)	HS-4555*E (Standard) HS-4555*E-W (Dust-proof, splash-proof) HS-4555*E-P (Cleanroom)
Model name of robot unit		HS-4535*EM (Standard) HS-4535*EM-W (Dust-proof, splash-proof) HS-4535*EM-P (Cleanroom)	HS-4545*EM (Standard) HS-4545*EM-W (Dust-proof, splash-proof) HS-4545*EM-P (Cleanroom)	HS-4555*EM (Standard) HS-4555*EM-W (Dust-proof, splash-proof) HS-4555*EM-P (Cleanroom)
Overall arm length		125 (J1: 1st axis) + 225 (J2: 2nd axis) = 350 mm	225 (J1: 1st axis) + 225 (J2: 2nd axis) = 450 mm	325 (J1: 1st axis) + 225 (J2: 2nd axis) = 550 mm
Z-axis (3rd axis) vertical stroke*		200 mm if * = 2, 320 mm if * = 3		
Wrist rotation angle		T (4th axis): $\pm 360^\circ$		
Motion angle and stroke		J1 (1st axis): $\pm 155^\circ$, J2 (2nd axis): $\pm 145^\circ$, Z (3rd axis): 200 mm if * = 2, 320 mm if * = 3, T (4th axis): $\pm 360^\circ$		
Axis combination		J1 (1st axis) + J2 (2nd axis) + Z (3rd axis) + T (4th axis)		
Maximum payload		5 kg		
Composite speed	At the center of the hand mounting flange	7,200 mm/s	6,300 mm/s	7,100 mm/s
	Z and T	Z (3rd axis): 2,000 mm/s, T (4th axis): 2400°/s		
Position repeatability (Note 2)	J1 + J2	± 0.015 mm	± 0.02 mm	± 0.02 mm
	Z	± 0.01 mm		
	T	$\pm 0.005^\circ$		
Maximum force-fit		98N (one second or less)		
Maximum allowable moment of inertia around T axis		0.1 kgm ² (with 5 kg payload)		
Position detection		Absolute encoder		
Drive motor and brake		AC servomotors for all axes, Brakes for Z axis (3rd axis) and T axis		
User air piping		4 systems ($\phi 4 \times 2$, $\phi 6 \times 2$)		
User signal lines		19 (for proximity sensor signals, etc.)		
Air source	Operating pressure	0.05 to 0.35 MPa		
	Max. allowable pressure	0.59 MPa		
Degree of protection for dust-proof, splash-proof type		IP65		
Clean class for cleanroom type		Class 10 (0.1 μ) at use points		
Weight		Approx. 20 kg		

(Note 1) The model name of robot set refers to the model of a complete set including a robot unit and robot controller. An asterisk (*) in model names denotes the Z-axis stroke.

(Note 2) Value at the constant ambient temperature.

(2) HSS-E Series Robot Unit (Overhead-mount type)

Item		Specifications	
Model name of robot set (Note 1)		HSS-4545*E (Standard) HSS-4545*E-W (Dust-proof, splash-proof)	HSS-4555*E (Standard) HS-4555*E-W (Dust-proof, splash-proof)
Model name of robot unit		HSS-4545*EM (Standard) HSS-4545*EM-W (Dust-proof, splash-proof)	HSS-4555*EM (Standard) HSS-4555*EM-W (Dust-proof, splash-proof)
Overall arm length		225 (J1: 1st axis) + 225 (J2: 2nd axis) = 450 mm	325 (J1: 1st axis) + 225 (J2: 2nd axis) = 550 mm
Z-axis (3rd axis) vertical stroke*		150 mm if * = 1, 200 mm if * = 2, 320 mm if * = 3	
Wrist rotation angle		T (4th axis): $\pm 360^\circ$	
Motion angle and stroke		J1 (1st axis): $\pm 152^\circ$, J2 (2nd axis): $\pm 141^\circ$, Z (3rd axis): 150 mm if * = 1, 200 mm if * = 2, 320 mm if * = 3, T (4th axis): $\pm 360^\circ$	J1 (1st axis): $\pm 155^\circ$, J2 (2nd axis): $\pm 145^\circ$, Z (3rd axis): 150 mm if * = 1, 200 mm if * = 2, 320 mm if * = 3, T (4th axis): $\pm 360^\circ$
Axis combination		J1 (1st axis) + J2 (2nd axis) + Z (3rd axis) + T (4th axis)	
Maximum payload		5 kg	
Composite speed	At the center of the hand mounting flange	6,300 mm/s	7,100 mm/s
	Z and T	Z (3rd axis): 2,000 mm/s, T (4th axis): 2400°/s	
Position repeatability (Note 2)	J1 + J2	± 0.02 mm	± 0.02 mm
	Z	± 0.01 mm	
	T	$\pm 0.005^\circ$	
Maximum force-fit		98N (one second or less)	
Maximum allowable moment of inertia around T axis		0.1 kgm ² (with 5 kg payload)	
Position detection		Absolute encoder	
Drive motor and brake		AC servomotors for all axes Brakes for Z axis (3rd axis) and T axis	
User air piping		4 systems ($\phi 4 \times 2$, $\phi 6 \times 2$)	
User signal lines		19 (for proximity sensor signals, etc.)	
Air source	Operating pressure	0.05 to 0.35 MPa	
	Maximum allowable pressure	0.59 MPa	
Degree of protection for dust-proof, splash-proof type		IP65	
Weight		Approx. 20 kg	

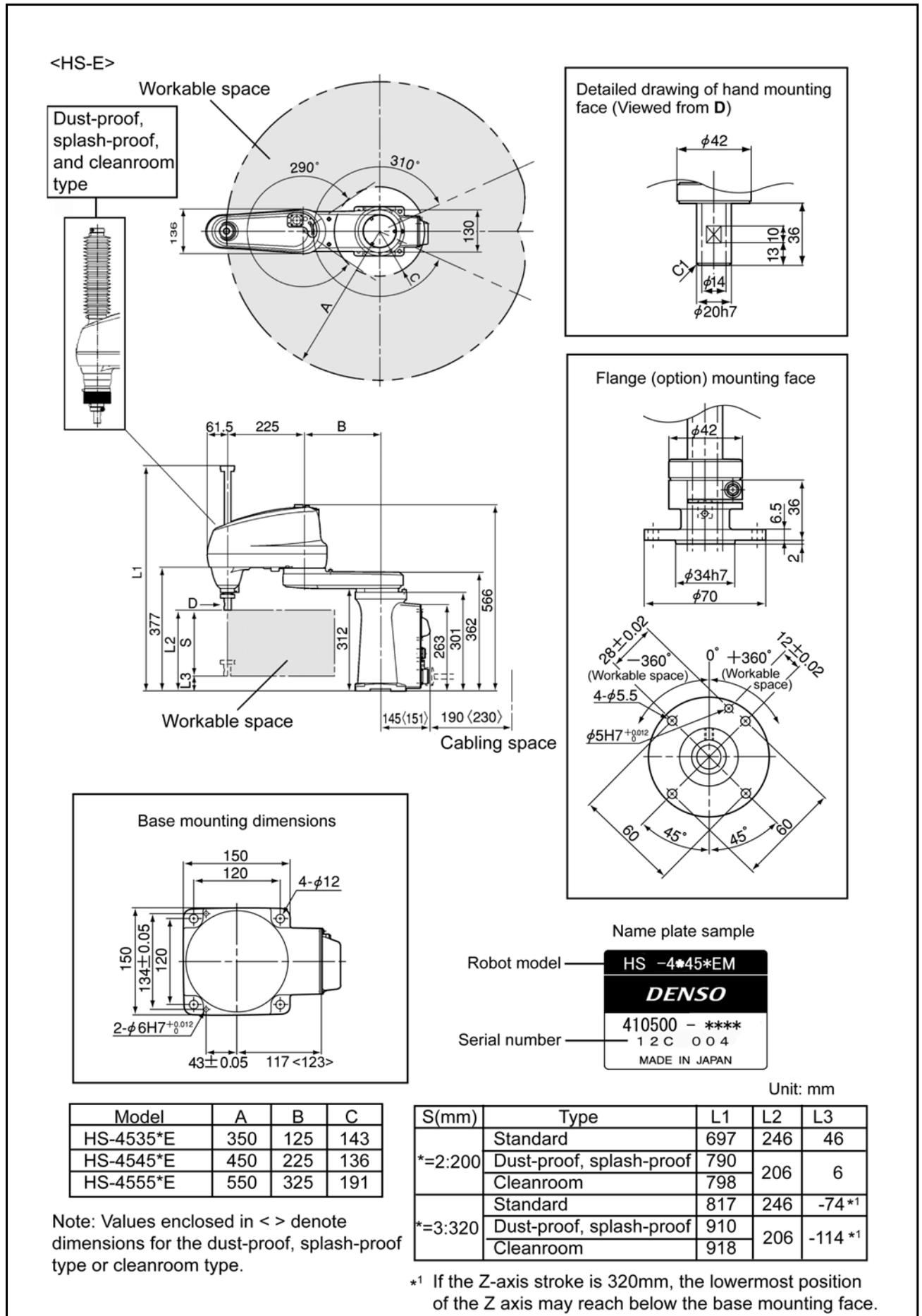
(Note 1) The model name of robot set refers to the model of a complete set including a robot unit and robot controller. An asterisk (*) in model names denotes the Z-axis stroke.

(Note 2) Value at the constant ambient temperature.

HS-E Series Horizontal articulated robot

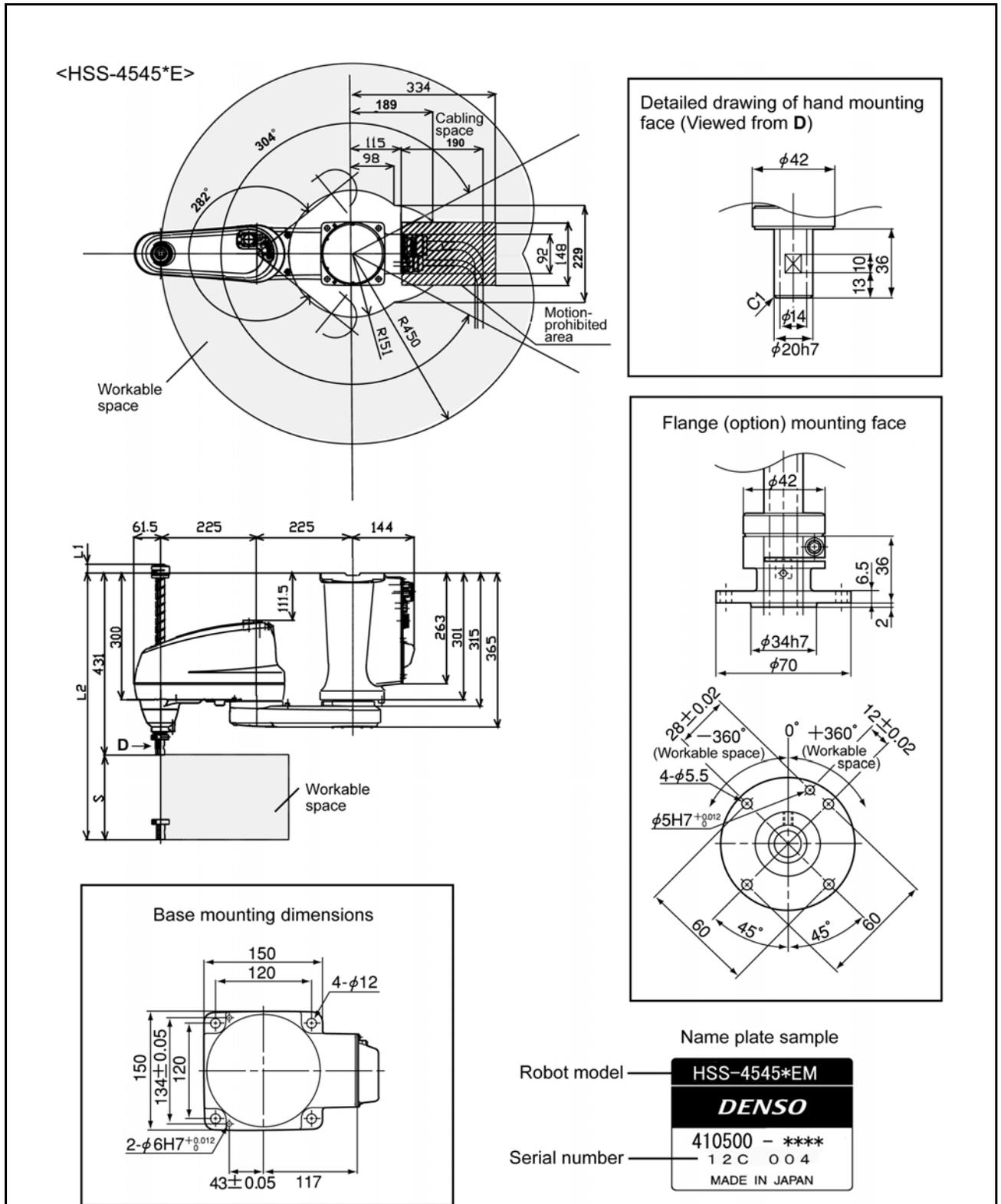
Outer Dimensions and Workable Space

(1) Outer dimensions and workable space (HS-E series, Floor-mount)





(2) Outer dimensions and workable space
 (HSS-4545*E, Arm length 450 mm, Overhead-mount, Standard type)



NOTE: Dimensions that differ according to Z-axis stroke (S)

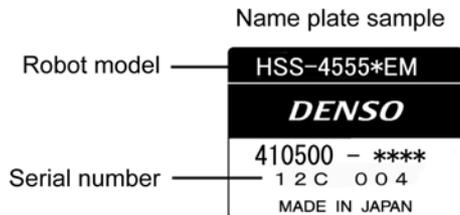
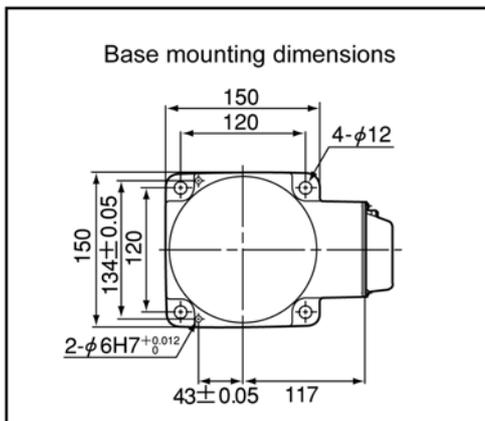
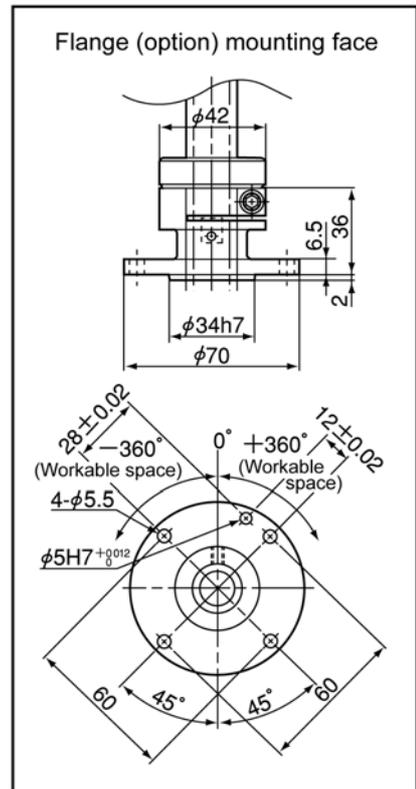
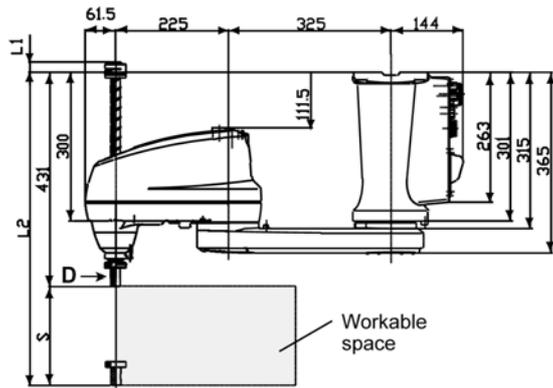
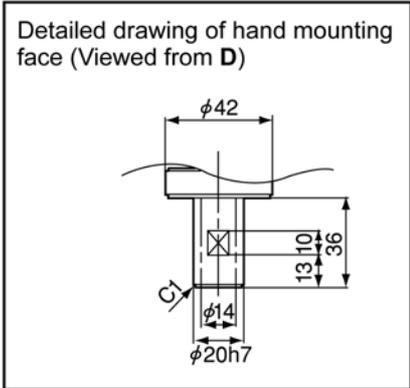
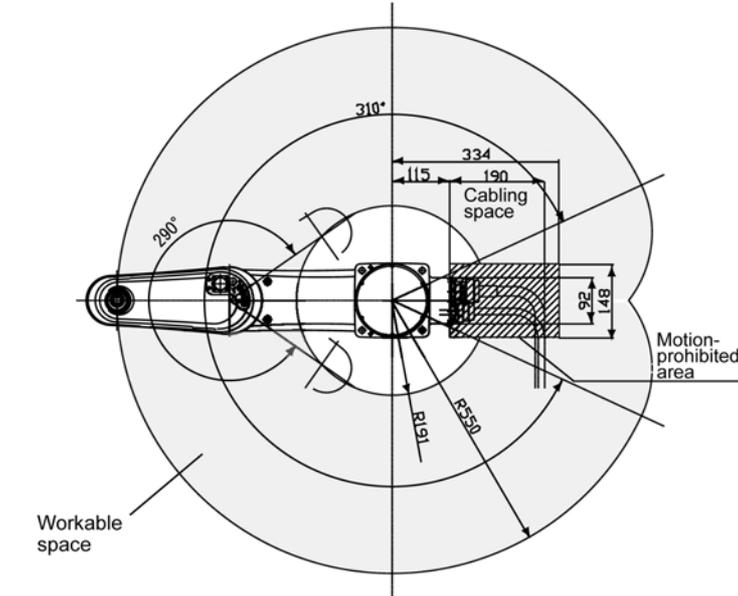
Model	S	L1	L2
HSS-45451E	150	-30	581
HSS-45452E	200	20	631
HSS-45453E	320	140	751

NOTE: In the case of the overhead-mount type, the uppermost end of the Z axis may reach higher position than the base mounting face. Be careful with the interference with surrounding facilities.

Unit: mm

(3) Outer dimensions and workable space
 (HSS-4555*E, Arm length 550 mm, Overhead-mount, Standard type)

<HSS-4555*E>



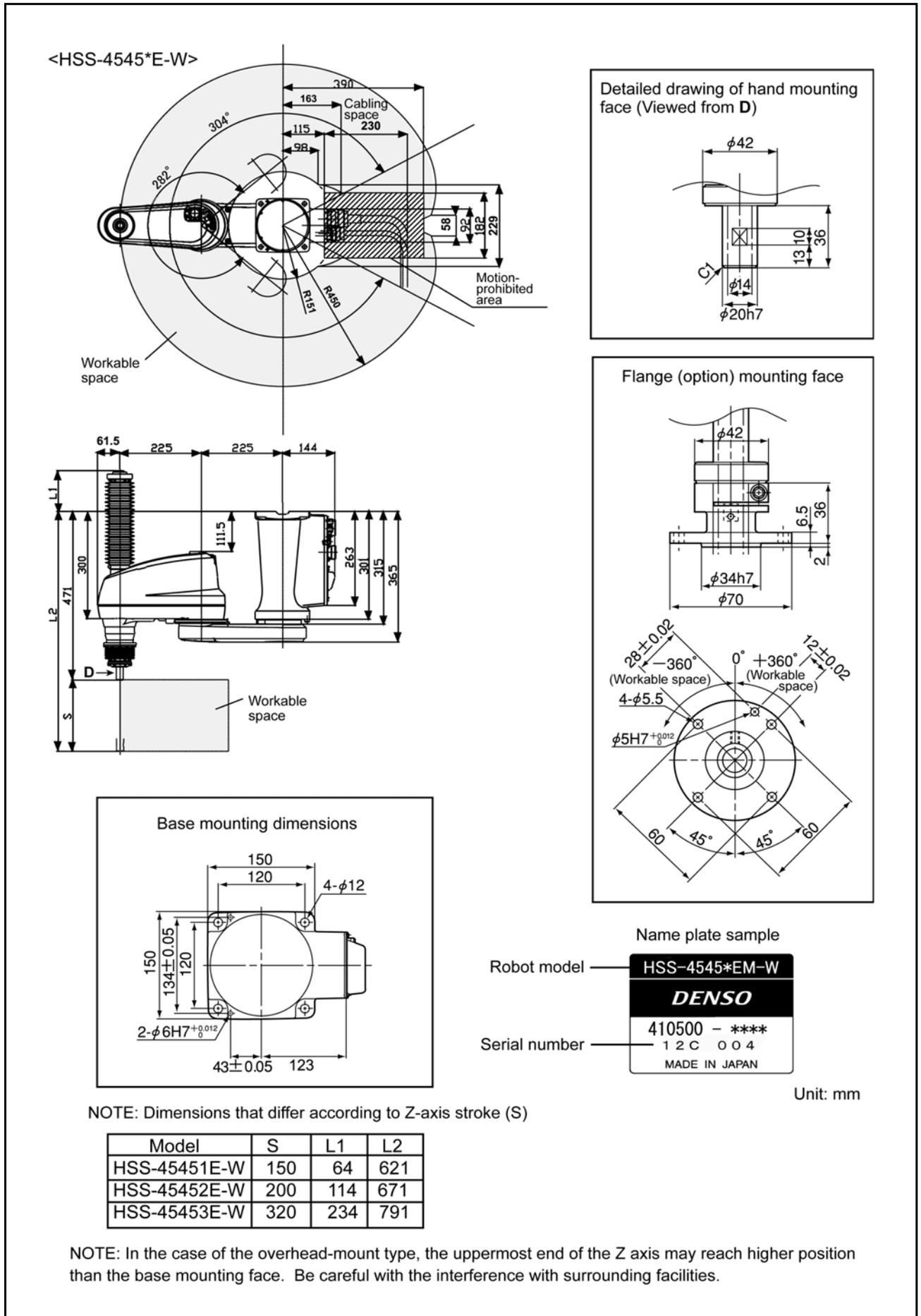
Unit: mm

NOTE: Dimensions that differ according to Z-axis stroke (S)

Model	S	L1	L2
HSS-45551E	150	-30	581
HSS-45552E	200	20	631
HSS-45553E	320	140	751

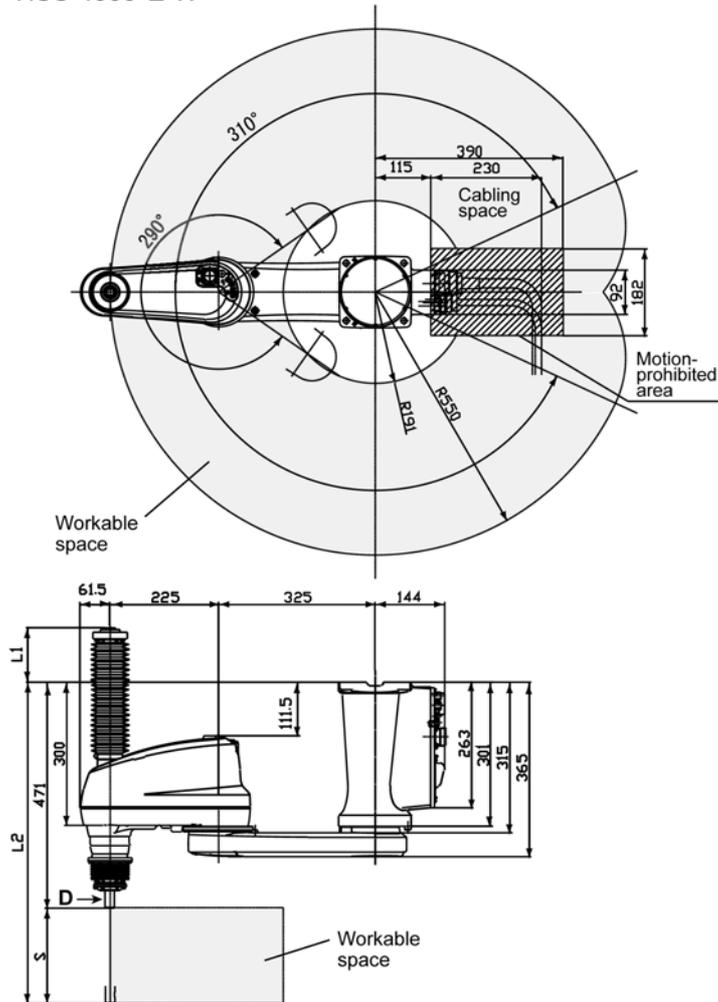
NOTE: In the case of the overhead-mount type, the uppermost end of the Z axis may reach higher position than the base mounting face. Be careful with the interference with surrounding facilities.

(4) Outer dimensions and workable space
 (HSS-4545*E-W, Arm length 450 mm, Overhead-mount, Dust-proof & splash-proof type)

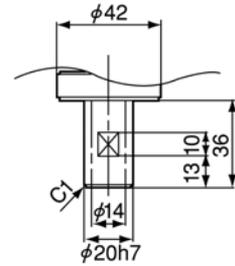


(5) Outer dimensions and workable space
 (HSS-4555*E-W, Arm length 550 mm, Overhead-mount, Dust-proof & splash-proof type)

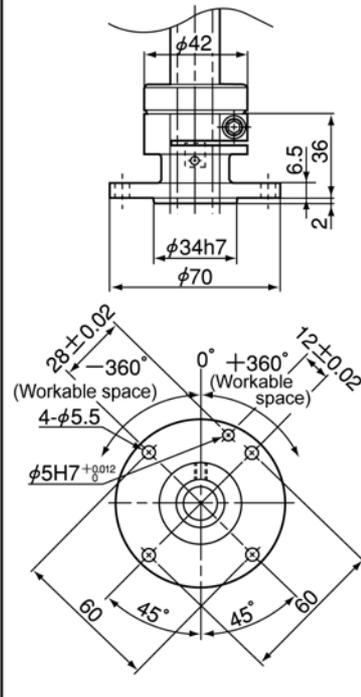
<HSS-4555*E-W>



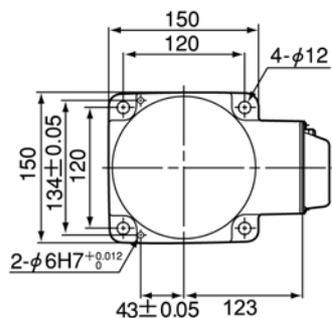
Detailed drawing of hand mounting face (Viewed from D)



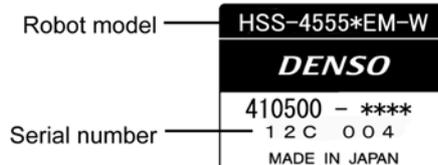
Flange (option) mounting face



Base mounting dimensions



Name plate sample



Unit: mm

NOTE: Dimensions that differ according to Z-axis stroke (S)

Model	S	L1	L2
HSS-45551E-W	150	64	621
HSS-45552E-W	200	114	671
HSS-45553E-W	320	234	791

NOTE: In the case of the overhead-mount type, the uppermost end of the Z axis may reach higher position than the base mounting face. Be careful with the interference with surrounding facilities.