



Specifications

Item		Specification
Master cylinder	Type	Tandem
	Cylinder I.D.	20.64 mm (0.813 in)
	Piston stroke	36±1 mm (1.42±0.039 in)
	Fluid level switch	Provided
Brake booster	Type	9" Single
	Boosting ratio	7 : 1
Front Disc brake	Type	Ventilated disc
	Disc O.D.	256 mm (10.08 in)
	Disc thickness	22 mm (0.87 in)
	Caliper piston	Single
	Cylinder I.D.	Ø 54mm(2.13 in)
Rear Disc brake	Type	Solid disc
	Disc O.D.	262 mm (10.31 in)
	Disc thickness	10 mm (0.39 in)
	Caliper piston	Single
	Cylinder I.D.	Ø 34 mm(1.34 in)
Rear brake (Drum)	Type	Leading trailing
	Drum I.D	203.2 mm (8 in)
	Brake lining thickness	4.5 mm (0.18 in)
	Clearance adjustment	Automatic
Parking brake (Disc)	Type	BIR (Ball-in-Ramp)
	actuation	Lever

NOTE

O.D.: Outer Diameter

I.D: Inner Diameter

Specification (ABS)

Part	Item	Standard value	Remark
HECU	System	4 Channel 4 Sensor (Solenoid)	
	Type	Motor, valve relay intergrated type	
	Operating Voltage	10 ~ 16 V	
	Operating Temperature	-40 ~ 120 °C (-40 ~ 248°F)	
	Motor power	270 W	

Active Wheel speed sensor (ABS)	Supply voltage	DC 4.5 ~ 20 V	
	Output current low	5.9 ~ 8.4 mA	
	Output current high	11.8 ~ 16.8 mA	
	Output range	1 ~ 2500 Hz	
	Tone wheel	48 teeth	
	Air gap	0.4 ~ 1.0 mm	

Specification (ESP)

Part	Item	Standard value	Remark
HECU	System	4 Channel 4 Sensor (Solenoid)	Total control
	Type	Motor, valve relay intergrated type	(ABS, EBD, TCS, ESP)
	Operating Voltage	10 ~ 16 V	
	Operating Temperature	-40 ~ 120 °C (-40 ~ 248°F)	
	Motor power	270 W	
Active Wheel speed sensor	Supply voltage	DC 4.5 ~ 20 V	
	Output current low	5.9 ~ 8.4 mA	
	Output current high	11.8~ 16.8 mA	
	Output range	1 ~ 2500 Hz	
	Tone wheel	48 teeth	
	Air gap	0.4 ~ 1.0 mm	
Yaw rate& Lateral G sensor (CAN TYPE)	Operating Voltage	7 ~ 18 V	
	Current Consumption	Max. 150 mA	
	Yaw rate sensor measurement range	-75 ~ +75 °/sec	
	Lateral G sensor measurement range	-14.715 ~ 14.715 m/s ²	

Service Standard

Items	Standard value
Brake pedal height	173 mm (6.81 in)
Brake pedal Full stroke	108 mm (4.25 in)
Stop lamp clearance	1.5 ~ 2.0 mm (0.06 ~ 0.08 in)
Brake pedal free play	3 ~ 8 mm (0.12 ~ 0.31 in)
Front brake disc thickness	22 mm (0.87 in)
Front brake disc pad thickness	11 mm (0.43 in)
Rear brake disc thickness	10 mm (0.39 in)
Rear brake disc pad thickness	10 mm (0.39 in)

Tightening Torques

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Items	N.m	kgf.m	lb-ft
Hub nut	88.3 ~ 107.9	9.0 ~ 11.0	65.1 ~ 79.6
Master cylinder to brake booster	12.7 ~ 16.7	1.3 ~ 1.7	9.4 ~ 12.3
Brake booster mounting nuts	12.7 ~ 15.7	1.3 ~ 1.6	9.4 ~ 11.6
Air bleeding screw	6.9 ~ 12.7	0.7 ~ 1.3	5.1 ~ 9.4
Brake tube flare nuts	12.7 ~ 16.7	1.3 ~ 1.7	9.4 ~ 12.3
Front caliper guide rod bolts	21.6 ~ 31.4	2.2 ~ 3.2	15.9 ~ 23.1
Rear caliper guide rod bolts	21.6 ~ 31.4	2.2 ~ 3.2	15.9 ~ 23.1
Front caliper assembly to knuckle	78.5 ~ 98.1	8.0 ~ 10.0	57.9 ~ 72.3
Rear caliper assembly to knuckle	49.0 ~ 58.8	5.0 ~ 6.0	36.2 ~ 43.4
Brake hose to caliper	24.5 ~ 29.4	2.5 ~ 3.0	18.1 ~ 21.7
Brake pedal member bracket bolts	16.7 ~ 25.5	1.7 ~ 2.6	12.3 ~ 18.8
Brake pedal shaft nut	24.5 ~ 34.3	2.5 ~ 3.5	18.0 ~ 25.3
Stop lamp switch lock nut	11.8 ~ 14.7	1.2 ~ 1.5	8.7 ~ 10.8
Wheel speed sensor mounting bolt	6.9 ~ 10.8	0.7 ~ 1.1	5.0 ~ 8.0
HECU bracket mounting nut	16.7 ~ 25.5	1.7 ~ 2.6	12.3 ~ 18.8

Lubricants

Items	Recommended	Quantity
Brake fluid	DOT 3 or DOT 4	As required
Brake pedal bushing and bolt	Chassis grease	As required
Parking brake shoe and backing plate contacting surface	Heat resistance grease	As required
Front caliper guide rod and boot	AI-11P	1.2 ~ 1.7 g, 1.0 ~ 1.5 g
Rear caliper guide rod and boot	AI-11P	0.8 ~ 1.3 g