AUDIO & VISUAL SYSTEM

TORQUE SPECIFICATION

031HB–01

Part Tightened	N·m	kgf·cm	ft·lbf
Amplifier antenna assy x Body	7.0	71	62 in.·lbf
Antenna cord sub–assy x Body	7.0	71	62 in.·lbf
Antenna cord sub–assy No.3 x Body	7.0	71	62 in.·lbf

AUTOMATIC TRANSMISSION / TRANSAXLE

030A9–10

SERVICE DATA

U341E (RHD)		
Line pressure (Wheel locked)		
	Engine idling	
	D range	370 – 410 kPa (3.8 – 4.2 kgf·cm^2, 54 – 60 psi)
	R range	540 – 640 kPa (5.5 – 6.5 kgf·cm^2, 78 – 92 psi)
	AT stall (Throttle valve fully opened)	
	D range	1,110 – 1,230 kPa (11.3 – 12.5 kgf·cm^2, 161 – 178 psi)
	R range	1,700 – 1,810 kPa (17.3 – 18.5 kgf·cm^2, 246 – 263 psi)
Engine stall revolution	D and R range	2,400 ± 150 rpm
Time lag	N → D range	Less than 1.2 seconds
	N → R range	Less than 1.5 seconds
Engine idle speed (A/C OFF)	N range	650 ± 50 rpm
Drive plate runout	Max.	0.20 mm (0.0079 in.)
Torque converter clutch runout	Max.	0.30 mm (0.0118 in.)
Differential oil seal drive in depth	LH side	2.7 ± 0.5 mm (0.106 ± 0.020 in.)
	RH side	0 ± 0.5 mm (0 ± 0.020 in.)
Shift schedule		
D range		
(Throttle valve fully opened)	1 → 2	53 – 59 km/h (33 – 37 mph)
	2 → 3	100 – 108 km/h (62 – 67 mph)
	3 → 4	156 – 165 km/h (97 – 103 mph)
	4 → 3	151 – 159 km/h (94 – 99 mph)
	3 → 2	91 – 99 km/h (57 – 62 mph)
	2 → 1	43 – 47 km/h (27 – 29 mph)
(Throttle valve fully closed)	3 → 4	36 – 40 km/h (22 – 25 mph)
	4 → 3	31 – 35 km/h (19 – 22 mph)
2 range		
(Throttle valve fully opened)	1 → 2	53 – 59 km/h (33 – 37 mph)
	3 → 2	96 – 103 km/h (60 – 64 mph)
	2 → 1	43 – 47 km/h (27 – 29 mph)
L range		
(Throttle valve fully opened)	3 → 2	96 – 103 km/h (60 – 64 mph)
	2 → 1	48 – 52 km/h (30 – 32 mph)
Lock–up point	Throttle valve opening 5 %	
O/D gear	Lock–up ON	67 – 71 km/h (42 – 44 mph)
	Lock–up OFF	61 – 66 km/h (38 – 41 mph)
3rd gear (3 position only)	Lock–up ON	114 – 123 km/h (71 – 76 mph)
	Lock–up OFF	109 – 117 km/h (67 – 73 mph)
U341E (LHD)		
Line pressure (Wheel locked)		
	Engine idling	
	D range	370 – 410 kPa (3.8 – 4.2 kgf·cm^2, 54 – 60 psi)
	R range	540 – 640 kPa (5.5 – 6.5 kgf·cm^2, 78 – 92 psi)
	AT stall (Throttle valve fully opened)	
	D range	1,110 – 1,230 kPa (11.3 – 12.5 kgf·cm^2, 161 – 178 psi)
	R range	1,700 – 1,810 kPa (17.3 – 18.5 kgf·cm^2, 246 – 263 psi)
Engine stall revolution	D and R range	2,400 ± 150 rpm
Time lag	N → D range	Less than 1.2 seconds
	N → R range	Less than 1.5 seconds
Engine idle speed (A/C OFF)	N range	650 ± 50 rpm
Drive plate runout	Max.	0.20 mm (0.0079 in.)
Torque converter clutch runout	Max.	0.30 mm (0.0118 in.)
Differential oil seal drive in depth	LH side	2.7 ± 0.5 mm (0.106 ± 0.020 in.)
	RH side	0 ± 0.5 mm (0 ± 0.020 in.)

Shift schedule		
D range		
(Throttle valve fully opened)	1 → 2	53 – 59 km/h (33 – 37 mph)
	2 → 3	100 – 108 km/h (62 – 67 mph)
	3 → 4	156 – 165 km/h (97 – 103 mph)
	4 → 3	119 – 127 km/h (74 – 79 mph)
	3 → 2	70 – 74 km/h (43 – 46 mph)
	2 → 1	9 – 12 km/h (6 – 7 mph)
(Throttle valve fully closed)	3 → 4	36 – 40 km/h (22 – 25 mph)
	4 → 3	31 – 35 km/h (19 – 22 mph)
2 range		
(Throttle valve fully opened)	1 → 2	53 – 59 km/h (33 – 37 mph)
	3 → 2	96 – 103 km/h (60 – 64 mph)
	2 → 1	9 – 12 km/h (6 – 7 mph)
L range		
(Throttle valve fully opened)	3 → 2	96 – 103 km/h (60 – 64 mph)
	2 → 1	48 – 52 km/h (30 – 32 mph)
Lock–up point	Throttle valve opening 5 %	
O/D gear	Lock–up ON	67 – 71 km/h (42 – 44 mph)
	Lock–up OFF	61 – 66 km/h (38 – 41 mph)
3rd gear (3 position only)	Lock–up ON	114 – 123 km/h (71 – 76 mph)
	Lock–up OFF	109 – 117 km/h (67 – 73 mph)
Shift schedule(When kick down switch turns ON)		
D range		
(Throttle valve fully opened)	1 → 2	53 – 59 km/h (33 – 37 mph)
	2 → 3	100 – 108 km/h (62 – 67 mph)
	3 → 4	156 – 165 km/h (97 – 103 mph)
	4 → 3	151 – 159 km/h (94 – 99 mph)
	3 → 2	91 – 99 km/h (57 – 62 mph)
	2 → 1	43 – 47 km/h (27 – 29 mph)
(Throttle valve fully closed)	3 → 4	36 – 40 km/h (22 – 25 mph)
	4 → 3	31 – 35 km/h (19 – 22 mph)
2 range		
(Throttle valve fully opened)	1 → 2	53 – 59 km/h (33 – 37 mph)
	3 → 2	96 – 104 km/h (60 – 65 mph)
	2 → 1	43 – 47 km/h (27 – 29 mph)
L range		
(Throttle valve fully opened)	3 → 2	96 – 104 km/h (60 – 65 mph)
	2 → 1	48 – 52 km/h (30 – 32 mph)
Lock–up point	Throttle valve opening 5 %	
O/D gear	Lock–up ON	67 – 71 km/h (42 – 44 mph)
	Lock–up OFF	61 – 66 km/h (38 – 41 mph)
3rd gear (3 position only)	Lock–up ON	114 – 123 km/h (71 – 76 mph)
	Lock–up OFF	109 – 117 km/h (67 – 73 mph)
U241E (1AZ–FSE) (RHD)		
Line pressure (Wheel locked)		
	Engine idling	
	D range	372 – 412 kPa (3.8 – 4.2 kgf·cm^2, 53 – 60 psi)
	R range	672 – 742 kPa (6.9 – 7.6 kgf·cm^2, 97 – 108 psi)
	AT stall (Throttle valve fully opened)	
	D range	931 – 1,031 kPa (9.5 – 10.5 kgf·cm^2, 135 – 150 psi)
	R range	1,768 – 1,968 kPa (18.0 – 20.1 kgf·cm^2, 256 – 285 psi)
Engine stall revolution	D and R range	2,550 ± 150 rpm
Time lag	N → D range	Less than 1.2 seconds
	N → R range	Less than 1.5 seconds
Engine idle speed		
(A/C OFF)	N range	650 ± 50 rpm
Drive plate runout	Max.	0 20 mm (0.0079 in.)
Torque converter clutch runout	Max.	0 30 mm (0.0118 in.)
Differential oil seal drive in depth	LH side	0 ± 0.5 mm (0 ± 0.020 in.)
	RH side	0 ± 0.5 mm (0 ± 0.020 in.)

Shift schedule		
D range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	2 → 3	102 – 111 km/h (63 – 69 mph)
	3 → 4	158 – 173 km/h (98 – 108 mph)
	4 → 3	150 – 165 km/h (93 – 102 mph)
	3 → 2	94 – 103 km/h (58 – 64 mph)
	2 → 1	46 – 53 km/h (29 – 33 mph)
(Throttle valve fully closed)	3 → 4	36 – 43 km/h (22 – 27 mph)
	4 → 3	16 – 22 km/h (10 – 13 mph)
2 range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	3 → 2	102 – 111 km/h (63 – 69 mph)
	2 → 1	46 – 53 km/h (29 – 33 mph)
L range		
(Throttle valve fully opened)	2 → 1	50 – 57 km/h (31 – 35 mph)
Lock–up point	Throttle valve opening 5 %	
O/D gear	Lock–up ON	59 – 67 km/h (37 – 42 mph)
	Lock–up OFF	55 – 63 km/h (34 – 39 mph)
U241E (1AZ–FSE) (LHD)		
Line pressure (Wheel locked)		
	Engine idling	
	D range	382 – 422 kPa (3.9 – 4.3 kgf·cm^2, 55 – 61 psi)
	R range	647 – 760 kPa (6.6 – 7.8 kgf·cm^2, 94 – 111 psi)
	AT stall (Throttle valve fully opened)	
	D range	931 – 1,031 kPa (9.5 – 10.5 kgf·cm^2, 135 – 150 psi)
	R range	1,768 – 1,968 kPa (18.0 – 20.1 kgf·cm^2, 256 – 285 psi)
Engine stall revolution	D and R range	2,550 ± 150 rpm
Time lag	N → D range	Less than 1.2 seconds
	N → R range	Less than 1.5 seconds
Engine idle speed		
(A/C OFF)	N range	650 ± 50 rpm
Drive plate runout	Max.	0.20 mm (0.0079 in.)
Torque converter clutch runout	Max.	0.30 mm (0.0118 in.)
Differential oil seal drive in depth	LH side	0 ± 0.5 mm (0 ± 0.020 in.)
	RH side	0 ± 0.5 mm (0 ± 0.020 in.)
Shift schedule		
D range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	2 → 3	102 – 111 km/h (63 – 69 mph)
	3 → 4	158 – 173 km/h (98 – 108 mph)
	4 → 3	119 – 133 km/h (74 – 82 mph)
	3 → 2	69 – 77 km/h (43 – 48 mph)
	2 → 1	8 – 14 km/h (5 – 9 mph)
(Throttle valve fully closed)	3 → 4	36 – 43 km/h (22 – 27 mph)
	4 → 3	16 – 22 km/h (10 – 14 mph)
2 range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	3 → 2	102 – 111 km/h (63 – 69 mph)
	2 → 1	8 – 14 km/h (5 – 9 mph)
L range		
(Throttle valve fully opened)	2 → 1	50 – 57 km/h (31 – 35 mph)

Shift schedule(When kick down switch turns ON)		
D range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	2 → 3	102 – 111 km/h (63 – 69 mph)
	3 → 4	158 – 173 km/h (98 – 108 mph)
	4 → 3	150 – 165 km/h (93 – 103 mph)
	3 → 2	94 – 103 km/h (58 – 64 mph)
	2 → 1	46 – 53 km/h (29 – 33 mph)
(Throttle valve fully closed)	3 → 4	36 – 43 km/h (22 – 27 mph)
	4 → 3	16 – 22 km/h (10 – 14 mph)
2 range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	3 → 2	102 – 111 km/h (63 – 69 mph)
	2 → 1	46 – 53 km/h (29 – 33 mph)
L range		
(Throttle valve fully opened)	2 → 1	50 – 57 km/h (31 – 35 mph)
Lock–up point	Throttle valve opening 5 %	
O/D gear	Lock–up ON	59 – 67 km/h (37 – 42 mph)
	Lock–up OFF	55 – 63 km/h (34 – 39 mph)
U241E (1AZ–FE) (RHD)		
Line pressure (Wheel locked)		
	Engine idling	
	D range	372 – 412 kPa (3.8 – 4.2 kgf·cm^2, 53 – 60 psi)
	R range	672 – 742 kPa (6.9 – 7.6 kgf·cm^2, 97 – 108 psi)
	AT stall (Throttle valve fully opened)	
	D range	931 – 1,031 kPa (9.5 – 10.5 kgf·cm^2, 135 – 150 psi)
	R range	1,768 – 1,968 kPa (18.0 – 20.1 kgf·cm^2, 256 – 285 psi)
Engine stall revolution	D and R range	2,550 ± 150 rpm
Time lag	N → D range	Less than 1.2 seconds
	N → R range	Less than 1.5 seconds
Engine idle speed		
(A/C OFF)	N range	650 ± 50 rpm
Drive plate runout	Max.	0 20 mm (0.0079 in.)
Torque converter clutch runout	Max.	0 30 mm (0.0118 in.)
Differential oil seal drive in depth	LH side	0 ± 0.5 mm (0 ± 0.020 in.)
	RH side	0 ± 0.5 mm (0 ± 0.020 in.)
Shift schedule		
D range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	2 → 3	102 – 111 km/h (63 – 69 mph)
	3 → 4	158 – 173 km/h (98 – 108 mph)
	4 → 3	150 – 165 km/h (93 – 102 mph)
	3 → 2	94 – 103 km/h (58 – 64 mph)
	2 → 1	46 – 53 km/h (29 – 33 mph)
(Throttle valve fully closed)	3 → 4	36 – 43 km/h (22 – 27 mph)
	4 → 3	16 – 22 km/h (10 – 13 mph)
2 range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	3 → 2	102 – 111 km/h (63 – 69 mph)
	2 → 1	46 – 53 km/h (29 – 33 mph)
L range		
(Throttle valve fully opened)	2 → 1	50 – 57 km/h (31 – 35 mph)
Lock–up point	Throttle valve opening 5 %	
O/D gear	Lock–up ON	59 – 67 km/h (37 – 42 mph)
	Lock–up OFF	55 – 63 km/h (34 – 39 mph)

U241E (1AZ–FE) (LHD)		
Line pressure (Wheel locked)		
	Engine idling	
	D range	372 – 412 kPa (3.8 – 4.2 kgf·cm^2, 53 – 60 psi)
	R range	672 – 742 kPa (6.9 – 7.6 kgf·cm^2, 97 – 108 psi)
	AT stall (Throttle valve fully opened)	
	D range	931 – 1,031 kPa (9.5 – 10.5 kgf·cm^2, 135 – 150 psi)
	R range	1,768 – 1,968 kPa (18.0 – 20.1 kgf·cm^2, 256 – 285 psi)
Engine stall revolution	D and R range	2,550 ± 150 rpm
Time lag	N → D range	Less than 1.2 seconds
	N → R range	Less than 1.5 seconds
Engine idle speed (A/C OFF)	N range	650 ± 50 rpm
Drive plate runout	Max.	0 20 mm (0.0079 in.)
Torque converter clutch runout	Max.	0 30 mm (0.0118 in.)
Differential oil seal drive in depth	LH side	0 ± 0.5 mm (0 ± 0.020 in.)
	RH side	0 ± 0.5 mm (0 ± 0.020 in.)
Shift schedule		
D range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	2 → 3	102 – 111 km/h (63 – 69 mph)
	3 → 4	158 – 173 km/h (98 – 108 mph)
	4 → 3	119 – 133 km/h (74 – 83 mph)
	3 → 2	83 – 92 km/h (52 – 57 mph)
	2 → 1	46 – 53 km/h (29 – 33 mph)
(Throttle valve fully closed)	3 → 4	36 – 43 km/h (22 – 27 mph)
	4 → 3	16 – 22 km/h (10 – 13 mph)
2 range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	3 → 2	102 – 111 km/h (63 – 69 mph)
	2 → 1	46 – 53 km/h (29 – 33 mph)
L range		
(Throttle valve fully opened)	2 → 1	50 – 57 km/h (31 – 35 mph)
Shift schedule(When kick down switch turns ON)		
D range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	2 → 3	102 – 111 km/h (63 – 69 mph)
	3 → 4	158 – 173 km/h (98 – 108 mph)
	4 → 3	150 – 165 km/h (93 – 102 mph)
	3 → 2	94 – 103 km/h (58 – 64 mph)
	2 → 1	46 – 53 km/h (29 – 33 mph)
(Throttle valve fully closed)	3 → 4	36 – 43 km/h (22 – 27 mph)
	4 → 3	16 – 22 km/h (10 – 13 mph)
2 range		
(Throttle valve fully opened)	1 → 2	53 – 62 km/h (33 – 39 mph)
	3 → 2	102 – 111 km/h (63 – 69 mph)
	2 → 1	46 – 53 km/h (29 – 33 mph)
L range		
(Throttle valve fully opened)	2 → 1	50 – 57 km/h (31 – 35 mph)
Lock–up point	Throttle valve opening 5 %	
O/D gear	Lock–up ON	59 – 67 km/h (37 – 42 mph)
	Lock–up OFF	55 – 63 km/h (34 – 39 mph)

030AA–10

TORQUE SPECIFICATION

U341E				
Part Tightened		N·m	kgf·cm	ft·lbf
Park/neutral position switch x Transaxle	Bolt	5.4	55	48 in.·lbf
	Nut	6.9	70	61 in.·lbf
Control shaft lever x Park/neutral position switch		13	130	9
Battery carrier x Body		13	132	10
Engine hanger x Engine		38	387	28
Drain plug x Oil pan		49	500	36
Transaxle x Engine	Bolt A:	64	650	47
	Bolt B:	46	470	34
	Bolt C:	23	235	17
Torque converter clutch x Drive plate		28	285	20
Engine mounting bracket RR x Transaxle		64	653	47
Engine mounting bracket FR x Transaxle		64	653	47
Center member x Body	Bolt A:	45	459	33
Center member x Suspension member	Bolt B:	96	979	71
	BoltC:	52	530	38
Engine mounting insulator RR x Engine mounting bracket RR		87	887	64
Engine mounting insulator RR x Suspension member		52	530	38
Engine mounting insulator FR x Engine mounting bracket FR		52	530	38
Engine mounting bracket LH x Transaxle		64	653	47
Engine mounting insulator LH x Body	Bolt A:	52	530	38
	Nut B:	80	815	59
Starter x Transaxle		37	377	27
Starter wire x Starter		9.8	100	87 in.·lbf
Froor panel brace x Body		30	302	22
Oil filler tube x Transaxle	Bolt A:	12	122	9
Oil cooler tube clamp x Oil filler tube	Bolt B:	5.5	56	49 in.·lbf
Oil cooler outlet tube x Transaxle		35	357	25
Oil cooler inlet tube x Transaxle		35	357	25
Wire harness clamp bracket x Transaxle		12	122	9
Wire harness x Transaxle	Bolt A:	5	51	44 in.·lbf
	Bolt B:	26	265	19
Control cable bracket x Transaxle		12	122	9
Control cable support x Transaxle		12	122	9
Air cleaner assy x Body		7.0	71	62 in.·lbf
Cylinder head cover No. 2 x Engine		7.0	71	62 in.·lbf
Speed sensor x Transaxle		5.4	55	48 in.·lbf
Transmission wire x Transaxle		5.4	55	48
Solenoid valve x Valve body	Bolt A:	11	110	8
	Bolt B:	11	110	8
Valve body x Transaxle		11	110	8
ATF temperature sensor x Valve body		11	110	8
Oil strainer x Valve body		11	110	8
Oil pan x Transaxle		7.8	80	69 in.·lbf
Floor shift assembly x Body		12	122	9
Control cable x Control shaft lever		12	122	9

U241E				
Part Tightened		N·m	kgf·cm	ft·lbf
Park/neutral position switch x Transaxle	Bolt	5.4	55	48 in.·lbf
	Nut	6.9	70	61 in.·lbf
Control shaft lever x Park/neutral position switch		13	130	9
Battery carrier x Body		13	132	10
Engine hanger x Engine		38	387	28
Drain plug x Oil pan		49	500	36
Transaxle x Engine	Bolt A:	64	650	47
	Bolt B:	46	470	34
	Bolt C:	44	449	32
Torque converter clutch x Drive plate		41	420	30
Engine mounting bracket RR x Transaxle		64	652	47
Engine mounting bracket FR x Transaxle		64	652	47
Center member x Body		45	459	33
Center member x Suspension member	Bolt B:	96	979	71
	Boltc:	52	530	38
Engine mounting insulator RR x Engine mounting bracket RR		87	887	64
Engine mounting insulator RR x Suspension member		52	530	38
Engine mounting insulator FR x Engine mounting bracket FR		52	530	38
Engine mounting bracket LH x Transaxle		64	653	47
Engine mounting insulator LH x Body	Bolt A:	52	530	38
	Nut B:	80	816	59
Starter x Transaxle		37	377	27
Starter wire x Starter		9.8	100	87 in.·lbf
Oil filler tube x Transaxle		5.5	56	49 in.·lbf
Oil cooler tube clamp x Oil filler tube		5.4	55	47 in.·lbf
Oil cooler outlet tube x Transaxle		34	347	25
Oil cooler inlet tube x Transaxle		34	347	25
Wire harness clamp bracket x Transaxle		13	132	10
Wire harness x Transaxle	Bolt A:	5.0	51	44 in.·lbf
	Bolt B:	8.4	86	74 in.·lbf
Control cable bracket x Transaxle		12	122	8
Control cable clamp x Transaxle		12	122	9
Air cleaner assy x Body		5.0	50	49 in.·lbf
Cylinder head cover sub–assy No. 1 x Engine		9.0	92	80 in.·lbf
Transmission wire x Transaxle		5.4	55	48 in.·lbf
Solenoid valve x Valve body	Bolt A:	6.6	67	58 in.·lbf
	Bolt B:	11	110	8
Valve body x Transaxle		11	110	8
Manual detent spring x Valve body		11	110	8
Oil strainer x Valve body		11	110	8
Oil pan x Transaxle		7.8	80	69 in.·lbf
Floor shift assy x Body		12	122	9
Control cable x Control shaft lever		12	122	9
Control cable x Body	Bolt	5.0	50	43 in.·lbf
	Nut	5.0	50	43 in.·lbf
Speed sensor x Transaxle		12	122	9
Drive shaft bearing cace x Bearing bracket		64	650	47

BRAKE

SERVICE DATA

030MU–02

Brake pedal height (from asphalt sheet)	RHD: LHD: M/T A/T	142.5 – 152.5 mm (5.610 – 6.004 in.) 148.1 – 158.1 mm (5.831 – 6.224 in.) 149.9 – 159.9 mm (5.902 – 6.295 in.)
Brake Pedal free play		1 – 6 mm (0.04 – 0.24 in.)
Stop light switch clearance		0.5 – 2.6 mm (0.020 – 0.102 in.)
Pedal reserve distance from asphalt sheet at 490 N (50 kgf, 110.2 lbf)		More than 60 mm (2.36 in.)
Brake booster push rod to piston clearance (w/ SST)		0 mm (0 in.)
Front disc brake pad thickness	Standard Minimum	12.5 mm (0.492 in.) 2.0 mm (0.079 in.)
Front brake disc thickness	Standard Minimum	26.0 mm (1.024 in.) 24.0 mm (0.945 in.)
Front disc runout	Maximum	0.05 mm (0.0020 in.)
Rear disc brake pad thickness	Standard Minimum	10.0 mm (0.394 in.) 2.0 mm (0.079 in.)
Rear disc thickness	Standard Minimum	10.0 mm (0.394 in.) 8.0 mm (0.315 in.)
Rear disc runout	Maximum	0.05 mm (0.0020 in.)

030MV–02

TORQUE SPECIFICATION

Part Tightened		N·m	kgf·cm	ft·lbf
Wheel nut		103	1,050	76
Brake line union nut	10 mm	15	155	11
	14 mm	29	296	21
Brake booster clevis lock nut		19	194	14
Brake master cylinder sub–assy x Brake booster assy		20	204	15
Charcoal canister bracket x Body		5.4	55	48 in.·lbf
Brake booster assy x Body		13	130	9
Brake pedal support x Instrument panel reinforcement		24	241	17
Brake pedale support x Brake pedal		37	375	27
Brake pedale support x Body		13	130	9
Brake tube clamp x body		5.4	55	48 in.·lbf
Vacuum pump x Engine		21	214	15
Vacuum pump union nut		14	140	10
Vacuum pump check valve sub–assy x End cover		74	214	54
Vacuum pump end cover x vacuum pump housing		7.8	80	69 in.·lbf
Front disc brake bleeder plug		10	102	7
Front brake cylinder mounting x Steering knuckle		102	1,040	75
Front disc brake cylinder x Front disc brake cylinder mounting		30	306	22
Front disc brake caliper x Flexible hose		29	296	21
Rear disc brake bleeder plug		10	102	7
Rear disc brake cylinder mounting x Steering knuckle		47	475	34
Rear disc brake cylinder x Rear disc brake cylinder mounting		30	306	22
Rear disc brake caliper x Flexible hose		29	296	21
Brake actuator x Brake actuator bracket	w/o VSC:	7.0	71	62 in.·lbf
	w/ VSC:	4.7	48	42 in.·lbf
Front speed sensor wire harness clamp x shock absorber		29	296	21
Brake actuator bracket x Body		19	195	14
Front speed sensor x Steering knuckle		8.0	82	71 in.·lbf
Yawrate sensor bracket set bolt		21	214	15
Yawrate sensor x Yawrate sensor bracket		6	61	53 in.·lbf
Yawrate sensor bracket x Body		21	214	15

CLUTCH

SERVICE DATA

030L1–03

Pedal height from asphalt sheet LHD steering position type		
	1CD–FTV engine type w/ intercooler	154.0 – 164.0 mm (6.063 – 6.457 in.)
	Others	139.6 – 149.6 mm (5.496 – 5.890 in.)
Pedal height from asphalt sheet RHD steering position type		
	1CD–FTV engine type w/ intercooler	158.4 – 168.4 mm (6.236 – 6.630 in.)
	Others	148.4 – 158.4 mm (5.843 – 6.236 in.)
Clutch pedal free play		5.0 – 15.0 mm (0.197 – 0591 in.)
Clutch pedal push rod play at pedal top		1.0 – 5.0 mm (0.039 – 0.197 in.)
Slotted spring pin protrusion		1.5 – 3.5 mm (0.059 – 0.138 in.)
Clutch release point from pedal full stroke end position		25 mm (0.98 in.) or more
Clutch disc rivet head depth	Maximum	0.3 mm (0.012 in.)
Clutch disc assy runout	Minimum	0.8 mm (0.031 in.)
Diaphragm spring finger wear	Maximum depth:	0.5 mm (0.020 in.)
	Maximum width:	6.0 mm (0.236 in.)
Flywheel sub–assy runout	Maximum	0.1 mm (0.004 in.)
Diaphragm tip alignment	Maximum	0.5 mm (0.020 in.)

030L2–04

TORQUE SPECIFICATION

Part Tightened	N·m	kgf·cm	ft·lbf
Clutch pedal support x Stopper bolt	25	250	18
Clutch pedal sub–assy x Clutch pedal support	37	375	27
Clutch pedal support x Body	19	195	14
Clutch pedal support x Clutch start switch assy	16	160	12
Clutch master cylinder push rod clevis lock nut	12	120	9
Clutch master cylinder x Flexible hose tube	15	155	11
Clutch master cylinder x Body	12	120	9
Clutch release cylinder bleeder plug	8.4	85	74 in.·lbf
Clutch release cylinder x Transaxle housing 1CD–FTV/1AZ–FSE/1AZ–FE engine type	12	120	9
Clutch release cylinder x Transaxle housing 1ZZ–FE/3ZZ–FE engine type	14	141	10
Clutch release cylinder x Flexible hose tube bracket 1ZZ–FE/3ZZ–FE engine type	5.0	51	44 in.·lbf
Clutch release cylinder x Clutch line clamp 1AZ–FSE/1AZ–FE engine type	12	122	9
Clutch release cylinder x Flexible hose tube	15	155	11
Clutch release cylinder x Clutch accumulator assy 1CD–FTV engine type	12	120	9
Clutch accumulator assy x Flexible hose tube 1CD–FTV engine type	15	155	11
Clutch cover assy x Flywheel sub–assy	19	195	14
Release fork support x Transaxle assy 1AZ–FSE/1AZ–FE engine type 1ZZ–FE/3ZZ–FE/1CD–FTV engine type	48 37	480 375	35 27

COMMUNICATION SYSTEM

TORQUE SPECIFICATION

031HJ–01

Part Tightened	N·m	kgf·cm	ft·lbf
HIGH PITCHED HORN ASSY			
High pitched horn assy x Body	20	199	15
LOW PITCHED HORN ASSY			
Low pitched horn assy x Body	20	199	15

COOLING

031H3–01

SERVICE DATA

1ZZ–FE/3ZZ–FE:

Thermostat		
Valve opening temperature		86 to 90°C (187 to 198°F)
Valve lift	at 95°C (203°F)	10 mm (0.394 in.) or more
Radiator cap sub–assy		
Standard opening pressure		74 to 103 kPa (0.75 to 1.05 kgf/cm2, 10.7 to 14.9 psi)
Minimum opening pressure		59 kPa (0.6 kgf/cm2, 8.6 psi)
Cooling fan		
Standard amperage	at 20°C (68°F)	8 to 12 A
Cooling fan relay		
Specified condition	Between terminals 1 and 2	Continuity
	Between terminals 3 and 5	No continuity
		Continuity (Apply battery voltage terminals 1 and 2)
Cooling fan relay No.2		
Specified condition	Between terminals 1 and 2	Continuity
	Between terminals 3 and 4	Continuity
	Between terminals 3 and 5	No continuity
		Continuity (Apply battery voltage terminals 1 and 2)

1AZ–FE:

Thermostat		
Valve opening temperature		80 to 84°C (176 to 183°F)
Valve lift	at 95°C (203°F)	10 mm (0.394 in.) or more
Radiator cap sub–assy		
Standard opening pressure		93 – 122 kPa (0.95 – 1.25 kgf/cm2, 13.4 – 17.6 psi)
Minimum opening pressure		78 kPa (0.8 kgf/cm2, 11.2 psi)
Cooling fan		
Standard amperage	at 20°C (68°F)	5.2 to 8.2 A (M/T) 8.3 to 11.3 (A/T)
Standard amperage (No.2 (With Air Conditioner))	at 20°C (68°F)	5.2 to 8.2 A (M/T) 8.3 to 11.3 (A/T)
Cooling fan relay		
Specified condition	Between terminals 1 and 2	Continuity
	Between terminals 3 and 5	No continuity
		Continuity (Apply battery voltage terminals 1 and 2)
Cooling fan relay No.2		
Specified condition	Between terminals 1 and 2	Continuity
	Between terminals 3 and 4	Continuity
	Between terminals 3 and 5	No continuity
		Continuity (Apply battery voltage terminals 1 and 2)
Cooling fan relay No.3		
Specified condition	Between terminals 1 and 2	Continuity
	Between terminals 3 and 5	No continuity
		Continuity (Apply battery voltage terminals 1 and 2)

1AZ–FSE:

Thermostat		
Valve opening temperature		86 to 90°C (187 to 198°F)
Valve lift	at 95°C (203°F)	10 mm (0.394 in.) or more
Radiator cap sub–assy		
Standard opening pressure		74 to 103 kPa (0.75 to 1.05 kgf/cm2, 10.7 to 14.9 psi)
Minimum opening pressure		59 kPa (0.6 kgf/cm2, 8.5 psi)

Cooling fan		
Standard amperage	at 20°C (68°F)	5.2 to 8.2 A (M/T) 8.3 to 11.3 (A/T)
Standard amperage (No.2 (With Air Conditioner))	at 20°C (68°F)	5.2 to 8.2 A (M/T) 8.3 to 11.3 (A/T)
Cooling fan relay		
Specified condition	Between terminals 1 and 2	Continuity
	Between terminals 3 and 5	No continuity
		Continuity (Apply battery voltage terminals 1 and 2)
Cooling fan relay No.2		
Specified condition	Between terminals 1 and 2	Continuity
	Between terminals 3 and 4	Continuity
	Between terminals 3 and 5	No continuity
		Continuity (Apply battery voltage terminals 1 and 2)
Cooling fan relay No.3		
Specified condition	Between terminals 1 and 2	Continuity
	Between terminals 3 and 5	No continuity
		Continuity (Apply battery voltage terminals 1 and 2)

1CD–FTV:

Thermostat		
Valve opening temperature		80 – 84°C (176 – 183°F)
Valve lift	at 95°C (203°F)	8.5 mm (0.33 in.) or more
Radiator cap sub–assy		
Standard opening pressure		93 – 122 kPa (0.95 – 1.25 kgf/cm2, 13.4 – 17.6 psi)
Minimum opening pressure		78 kPa (0.8 kgf/cm2, 11.4 psi)
Cooling fan		
Standard amperage	at 20°C (68°F)	13.2 A
Cooling fan relay		
Specified condition	Between terminals 1 and 2	Continuity
	Between terminals 3 and 5	No continuity
		Continuity (Apply battery voltage terminals 1 and 2)
Cooling fan relay No.2		
Specified condition	Between terminals 1 and 2	Continuity
	Between terminals 3 and 4	Continuity
	Between terminals 3 and 5	No continuity
		Continuity (Apply battery voltage terminals 1 and 2)
Cooling fan relay No.3		
Specified condition	Between terminals 1 and 2	Continuity
	Between terminals 3 and 5	No continuity
		Continuity (Apply battery voltage terminals 1 and 2)

031H4–01

TORQUE SPECIFICATION

1ZZ–FE/3ZZ–FE:

Part Tightened		N·m	kgf·cm	ft·lbf
Radiator drain plug		13	130	9
Water pump x Cylinder block	Bolt A	9.0	92	8.0 in.lbf
	Bolt B	11	113	8
Water inlet x Cylinder block sub–assy		11	112	8
Radiator x Radiator support upper		19	194	14

1AZ–FE:

Part Tightened	N·m	kgf·cm	ft·lbf
Water pump x Cylinder block	9.0	92	80 in.·lbf
Water pump x Water pump pulley	26	265	19
Water inlet x Cylinder block	9.0	92	80 in.·lbf
Radiator support upper x body	19	194	14

1AZ–FSE:

Part Tightened	N·m	kgf·cm	ft·lbf
Water pump x Cylinder block	9.0	92	80 in.·lbf
Water pump x Water pump pulley	26	265	19
Water inlet x Cylinder block	9.0	92	80 in.·lbf
Radiator support upper x body	19	194	14

1CD–FTV:

Part Tightened	N·m	kgf·cm	ft·lbf
Drain plug	13	133	10
Water pump x Cylinder block	31	320	23
Fuel inlet pipe sub–assy x Common rail assy			
Used pipe using SST	42	428	31
Used pipe not using SST	46	469	34
New pipe using SST	31	316	23
New pipe not using SST	34	347	25
Fuel inlet pipe sub–assy x Injection pump			
Used pipe using SST	42	428	31
Used pipe not using SST	46	469	34
New pipe using SST	31	316	23
New pipe not using SST	34	347	25
Engine cover No. 1 x Cylinder head cover sub–assy	8.0	82	71 in.·lbf
Engine cover No. 1 x Intake manifold	8.0	82	71 in.·lbf
Timing belt idler Sub–assy No.1 x Cylinder block	35	357	26
Water inlet x Cylinder block	8.8	90	78 in.·lbf
Radiator reserve tank assy x Radiator assy	6.0	61	53 in.·lbf
Fan assy w/ motor x Fan shroud assy	7.5	76	66 in.·lbf
Upper support x Body	19	194	14
Relay box x Radiator assy	5.3	54	47 in.·lbf
Front wheel	103	1,050	76

DRIVE SHAFT / PROPELLER SHAFT / AXLE

030KB–05

SERVICE DATA

Front axle hub bearing	Backlash	Maximum: 0.05 mm (0.0020 in.)
Front axle hub sub–assy	Deviation	Maximum: 0.05 mm (0.0020 in.)
Rear axle hub & bearing assy	Backlash	Maximum: 0.05 mm (0.0020 in.)
	Deviation	Maximum: 0.07 mm (0.0028 in.)

030KC–06

TORQUE SPECIFICATION

Part Tightened		N·m	kgf·cm	ft·lbf
Front wheel set nut		103	1,050	76
Rear wheel set nut		103	1,050	76
Manual transaxle oil drain plug	C50/C250:	39	400	29
	E354/E357:	49	500	36
Lower ball joint assy front x Suspension arm sub–assy lower No.1		89	908	66
Tie rod end sub–assy x Steering knuckle		49	500	36
Flexible hose and speed sensor front x Shock absorber assy front		19	194	14
Speed sensor front x Steering knuckle		8.0	82	71 in.·lbf
Front stabilizer link assy x Shock absorber assy front		74	755	55
Front axle hub nut		216	2,200	159
Disc brake dust cover front x Steering knuckle		8.3	85	73 in.·lbf
Lower ball joint assy front x Steering knuckle		103	1,050	76
Front axle assy x Shock absorber assy front		220	2,243	162
Front disc brake caliper assy x Steering knuckle		102	1,040	75
Automatic transaxle fluid drain plug		49	500	36
Drive shaft bearing case x Bearing bracket		64	650	47
Rear axle hub & bearing assy x Rear axle carrier sub–assy		56	571	41
Rear axle carrier sub–assy x Back plate assy		140	1,428	103
Rear axle carrier sub–assy x Skid control sensor wire		5.0	51	44 in.·lbf
Rear disk brake caliper assy x Rear axle carrier sub–assy		47	475	34
Rear axle carrier sub–assy x Upper control arm assy		74	755	55
Rear axle carrier sub–assy x Lower control arm assy	ball joint side:	60	612	44
	member side:	105	1,071	77
Rear axle carrier sub–assy x Rear suspension arm assy	ball joint side:	105	1,071	77
	member side:	74	755	55

EMISSION CONTROL

031FP–01

SERVICE DATA

1ZZ–FE/3ZZ–FE:

Heated oxygen sensor		
Resistance	Bank 1 sensor 1	
	1 (HT1A) – 2 (+B)	5 to 10 Ω at 20°C (68°F)
	1 (HT1A) – 4 (E1)	No continuity
Heated oxygen sensor		
Resistance	Bank 1 sensor 2	
	1 (HT1A) – 2 (+B)	5 to 10 Ω at 20°C (68°F)
	1 (HT1A) – 4 (E1)	No continuity
Vacuum switching valve		
Resistance	at 20°C (68°F)	26 to 30 Ω

1AZ–FE:

Vacuum switching valve assy No. 1		
Resistance	at 20°C (68°F)	26 to 30 Ω
Heated oxygen sensor		
Resistance	1 (HT) – 2 (+B)	11 to 16 Ω at 20°C (68°F)
Resistance	1 (HT) – 4 (E1)	No continuity
Air fuel ratio sensor		
Resistance	1 (HT) – 2 (+B)	1.8 to 3.4 Ω at 20°C (68°F)
	1 (HT) – 2 (+B)	5.0 to 7.5 Ω at 500°C (932°F)
	1 (HT) – 4 (E1)	No continuity

1AZ–FSE:

Vacuum switching valve assy No. 1		
Resistance	at 20°C (68°F)	26 to 30 Ω
Heated oxygen sensor		
Resistance	1 (HT) – 2 (+B)	11 to 16 Ω at 20°C (68°F)
Resistance	1 (HT) – 4 (E1)	No continuity

1CD–FTV:

EGR valve assy		
Resistance	+B1 – EGR1	19.6 ± 1.4 Ω at 20°C (68°F)
	+B1 – EGR2	19.6 ± 1.4 Ω at 20°C (68°F)
	+B1 – EGR3	19.6 ± 1.4 Ω at 20°C (68°F)
	+B1 – EGR4	19.6 ± 1.4 Ω at 20°C (68°F)
Vacuum switching valve assy		
Resistance	at 20°C (68°F)	10 to 14 Ω

ENGINE CONTROL SYSTEM

031DY–01

SERVICE DATA

1ZZ–FE/3ZZ–FE:

Power steering oil pressure switch		
Voltage	EMPS – E2	
	Not spin the steering wheel at engine idling	8 to 14 V
	Spin the steering wheel at engine idling	0 to 1.5 V
Idle air control valve		
Movement	Ignition switch ON	Half open → fully close → fully open → half open
Mass air flow meter		
Resistance	4 (THA) – 5 (E2)	
	at –20°C (–4°F)	13.6 to 18.4 kΩ
	at 20°C (68°F)	2.21 to .69 kΩ
	at 60°C (140°F)	0.49 to 0.67 kΩ
Camshaft timing oil control valve assy		
Resistance	at 20°C (68°F)	6.9 to 7.9 Ω
Throttle position sensor		
Resistance	VC – E2	2.5 to 6.0 kΩ
E.F.I. Engine coolant temperature sensor		
Resistance	Approx. 20°C (68°F)	2.32 to 2.59 kΩ
	Approx. 80°C (176°F)	0.310 to 0.326 kΩ
Knock control sensor		
Resistance	Approx. 20°C (68°F)	120 to 280 kΩ

1AZ–FE/1AZ–FSE:

Power steering oil pressure switch		
Voltage	PSW – E2	
	Not spin the steering wheel at engine idling	9 to 14 V
	Spin the steering wheel at engine idling	0 to 3 V
Idle air control valve		
Movement	Ignition switch ON	Half open → fully close → fully open → half open
Throttle body assy (1AZ–FSE)		
Throttle valve opening percentage		60 % or more
Idle speed		700 ± 50 rpm
Accelerator pedal position sensor (1AZ–FSE)		
Voltage	ACCEL POS Released	0.5 to 1.1 V
	Depress	2.6 to 4.5 V
	ACCEL POS #2 Released	1.2 to 2.0 V
	Depress	3.4 to 5.3 V
Mass air flow meter		
Resistance	4 (THA) – 5 (E2)	
	at –20°C (–4°F)	13.6 to 18.4 kΩ
	at 20°C (68°F)	2.21 to .69 kΩ
	at 60°C (140°F)	0.49 to 0.67 kΩ
Camshaft timing oil control valve assy		
Resistance	at 20°C (68°F)	6.9 to 7.9 Ω
Throttle position sensor (1AZ–FE)		
Resistance	VC – E2	2.5 to 5.0 kΩ
Throttle body assy (1AZ–FSE)		
Resistance	2 (M+) – 1 (M–)	0.3 to 100 Ω at 20°C (68°F)
E.F.I. Engine coolant temperature sensor		
Resistance	Approx. 20°C (68°F)	2.32 to 2.59 kΩ
	Approx. 80°C (176°F)	0.310 to 0.326 kΩ
Knock control sensor		
Resistance	Approx. 20°C (68°F)	120 to 280 kΩ

1CD–FTV:

Mass air flow meter		
Resistance	2 (THA) – 1 (E2)	
	at –20°C (–4°F)	12.5 to 16.9 kΩ
	at 20°C (68°F)	2.19 to 2.67 kΩ
	at 60°C (140°F)	0.50 to 0.68 kΩ
Intake shutter assy		
Resistance	at 20°C (68°F)	
	2 – 1, 3	18 to 22 Ω
	5 – 4, 6	18 to 22 Ω
Accelerator pedal assy (See page 10–56)		
Resistance	VPA1 – EP1	5.0 kΩ or less
	VPA2 – EP2	5.0 kΩ or less
	VCP1 – EP1	1.5 to 6.0 kΩ
	VCP2 – EP2	1.5 to 6.0 kΩ
Diesel turbo inlet air temperature sensor		
Resistance	Approx. 20°C (68°F)	2.21 to 2.65 kΩ
Crankshaft position sensor		
Resistance	at cold	1630 to 2740 Ω
	at hot	2065 to 3225 Ω
Camshaft position sensor		
Resistance	at cold	1630 to 2740 Ω
	at hot	2065 to 3225 Ω
Diesel engine engine coolant temperature sensor		
Resistance	Approx. 20°C (68°F)	2.32 to 2.59 kΩ
	Approx. 80°C (176°F)	0.310 to 0.326 kΩ
Injection or supply pump assy		
Resistance	THF – E2	
	Approx. 20°C (68°F)	2.21 to 2.69 kΩ
	Approx. 80°C (176°F)	0.287 to 0.349 kΩ

031DZ–02

TORQUE SPECIFICATION

1ZZ–FE/3ZZ–FE:

Part Tightened	N·m	kgf·cm	ft·lbf
Throttle position sensor x Throttle body assy	2.0	20	18 in.·lbf
ISC valve x Throttle body assy	3.7	38	33 in.·lbf
Accelerator control cable bracket x Throttle body assy	13	133	10
Throttle body assy x Intake manifold	30	306	22
Throttle body bracket x Cylinder block sub–assy (1ZZ–FE)	30	306	22
Manifold stay No. 2 x Throttle body assy (M/T)	13	133	10
Accelerator control cable assy x Accelerator control cable bracket	13	129	9
Air cleaner hose No. 1 x Throttle body assy	1.5	15	13 in.·lbf
Cylinder head cover No. 2 x Cylinder head cover sub–assy	7.0	71	62 in.·lbf
Knock sensor x Cylinder block sub–assy	20	204	15

1AZ–FE:

Part Tightened	N·m	kgf·cm	ft·lbf
Throttle body assy x Intake manifold	30	306	22
Accelerator control cable assy x Throttle body assy	13	129	9
Engine cover sub–assy No. 1 x Cylinder head cover sub–assy	7.0	71	62 in.·lbf
Knock sensor x Cylinder block sub–assy	20	204	15
Intake manifold x Cylinder head sub–assy	30	306	22
Variable resister x Body (Leaded gasoline (Steering position LHD))	5.0	51	44 in.·lbf

1AZ–FSE:

Part Tightened	N·m	kgf·cm	ft·lbf
Throttle body assy x Intake manifold	9.0	92	80 in.·lbf
Throttle body bracket x Throttle body assy	21	210	15
Throttle body bracket x Cylinder head sub–assy	21	210	15
Ground terminal x Throttle body bracket	8.4	86	74 in.·lbf
Wire harness protector x Throttle body bracket	8.4	86	74 in.·lbf
Air cleaner hose No. 1 x Throttle body assy	1.5	15	13 in.·lbf
Engine cover sub–assy No. 1 x Cylinder head cover sub–assy	7.0	71	62 in.·lbf
Accelerator pedal x Body	5.4	55	48 in.·lbf
Knock control sensor x Cylinder block	20	204	15
Engine cover bracket x Cylinder head	38	388	28

1CD–FTV:

Part Tightened	N·m	kgf·cm	ft·lbf
Intake shutter assy x Intake air connector	21	214	15
Engine cover No. 1 x Cylinder head cover sub–assy	8.0	82	71 in.·lbf
Engine cover No. 1 x Intake manifold	8.0	82	71 in.·lbf
Air tube No. 2 x Transmission	25	255	18
Air tube No. 1 x Air tube No. 2	25	255	18
Camshaft position sensor x Camshaft oil seal retainer	8.8	90	79 in.·lbf
Return tube sub–assy x Engine hanger No. 1	9.0	92	80 in.·lbf
Crankshaft position sensor x Oil pump assy	8.8	90	79 in.·lbf
ECM x Body	5.5	56	49 in.·lbf

ENGINE HOOD/DOOR

TORQUE SPECIFICATION

031GG–01

Part Tightened	N·m	kgf·cm	ft·lbf
HOOD			
Hood hinge x Hood	13	133	10
Hood hinge x Body	5.5	56	49 in.·lbf
Hood lock x Hood	8.0	82	71 in.·lbf
FRONT DOOR			
Door check x Body	30	306	22
Door check x Door panel	5.5	56	46 in.·lbf
Door frame sub–assy rear lower x Door panel	8.0	82	71 in.·lbf
Door glass x Front door window regulator	5.5	56	49 in.·lbf
Door hinge x Body	26	265	19
Door hinge x Door panel	26	265	19
Door lock x Door panel	5.0	51	44 in.·lbf
Door lock striker x Body	23	235	17
Door outside handle cover x Door panel	7.0	71	62 in.·lbf
Door outside handle frame x Door panel	4.0	41	35 in.·lbf
Outer view mirror x Door panel	10	102	7
Window regulator x Door panel	8.0	82	71 in.·lbf
REAR DOOR			
Door check x Body	30	306	22
Door check x Door panel	5.5	56	49 in.·lbf
Door hinge x Body	26	265	19
Door hinge x Door panel	26	265	19
Door lock x Door panel	5.0	51	44 in.·lbf
Door lock striker x Body	23	235	17
Door outside handle cover x Door panel	4.0	41	35 in.·lbf
Door outside handle frame x Door panel	7.0	71	62 in.·lbf
Window division bar sub–assy x Door panel	5.5	56	49 in.·lbf
LAGGAGE COMPERTMENT DOOR			
Back door striker assy x Body	11.5	120	8.0
Luggage compertment door x Hinge	7.0	70	62 in.·lbf
Luggage lock assy x Luggage compertment door	5.0	51	44 in.·lbf
Luggage compertment outside garnish x Luggage compertment door	4.9	49	43 in.·lbf
BACK DOOR (LIFTBACK MODEL)			
Back door femaie stopper x Door panel	5.5	56	49 in.·lbf
Back door hinge assy x Body	19.5	200	14
Back door hinge assy x Door panel	19.5	200	14
Back door lock assy x Door panel	8.0	82	71 in.·lbf
Back door lock Striker x Body	11.5	120	8.0
Back door stay sub–assy x Body	7.0	71	62 in.·lbf
Back door stay sub–assy x Door panel	22	224	16
Center stop lamp assy x Door panel	5.5	56	49 in.·lbf
BACK DOOR (WAGON MODEL)			
Back door femaie stopper x Door panel	5.5	56	49 in.·lbf
Back door hinge assy x Body	19.5	200	14
Back door hinge assy x Door panel	19.5	200	14
Back door lock assy x Door panel	8.0	82	71 in.·lbf
Back door lock Striker x Body	11.5	120	8.0
Back door stay sub–assy x Body	7.0	71	62 in.·lbf

Part Tightened	N·m	kgf·cm	ft·lbf
Back door stay sub–assy x Door panel	22	224	16
Center stop lamp assy x Door panel	5.5	56	49 in.·lbf

ENGINE MECHANICAL

031H1–01

SERVICE DATA

1ZZ–FE/3ZZ–FE:

Ignition timing	w/ Terminal TC and CG of DLC3 connected	8 to 12° BTDC
	W/ Terminal TC and CG of DLC3 disconnected	10 to 18° BTDC (1ZZ–FE) 3.5 to 11.5° BTDC (3ZZ–FE)
Idle speed		600 to 700 rpm
Compression		
Compression pressure		1,300 kPa (13.3 kgf·cm^2, 189 psi)
Minimum pressure		1,000 kPa (10.2 kgf·cm^2, 145 psi)
Difference between each cylinder		100 kPa (1.0 kgf·cm^2, 14 psi)
Cylinder head set bolt Length	Standard	146.8 to 148.2 mm (5.780 to 5.835 in.)
	Maximum	148.5 mm (5.846 in.)
Valve clearance (Cold)		
No. 1 Cylinder TDC/Compression	Intake	0.15 to 0.25 mm (0.0059 to 0.0098 in.)
	Exhaust	0.25 to 0.35 mm (0.0098 to 0.0138 in.)
No. 4 Cylinder TDC/Compression	Intake	0.15 to 0.25 mm (0.0059 to 0.0098 in.)
	Exhaust	0.25 to 0.35 mm (0.0098 to 0.0138 in.)

1AZ–FE:

Battery specific gravity	at 20°C (68°F)	1.25 to 1.29
Ignition timing	w/ Terminals TC and CG of DLC3 connected	8 to 12° BTDC
	w/ Terminals TC and CG of DLC3 disconnected	5 to 15° BTDC
Idle speed		650 to 750 rpm
Compression		
	Compression pressure	1,300 kPa (13.3 kgf/cm^2, 189 psi)
	Minimum pressure	1,000 kPa (10.2 kgf/cm^2, 145 psi)
	Difference between each cylinder	100 kPa (1.0 kgf/cm^2, 14 psi)
Cylinder head set bolt		
Bolt length	Standard	161.3 to 162.3 mm (6.350 to 6.390 in.)
	Maximum	164.2 mm (6.465 in.)
Valve clearance		
Intake	(Cold)	0.19 to 0.29 mm (0.0075 to 0.0114 in.)
Exhaust		0.30 to 0.40 mm (0.0118 to 0.0157 in.)

1AZ–FSE:

Battery specific gravity	at 20°C (68°F)	1.25 to 1.29
Ignition timing	w/ Terminals TC and CG of DLC3 connected	8 to 12° BTDC
	w/ Terminals TC and CG of DLC3 disconnected	5 to 23° BTDC
Idle speed		625 to 725 rpm
Compression		
	Compression pressure	1,300 kPa (13.3 kgf/cm^2, 189 psi)
	Minimum pressure	1,000 kPa (10.2 kgf/cm^2, 145 psi)
	Difference between each cylinder	100 kPa (1.0 kgf/cm^2, 14 psi)
Cylinder head set bolt		
Bolt length	Standard	161.3 to 162.3 mm (6.350 to 6.390 in.)
	Maximum	164.2 mm (6.465 in.)
Valve clearance		
Intake	(Cold)	0.19 to 0.29 mm (0.0075 to 0.0114 in.)
Exhaust		0.30 to 0.40 mm (0.0118 to 0.0157 in.)

1CD–FTV:

New drive belt deflection	Pressing force: 98 N (10 kgf, 22 lbf)	
	For vane pump V belt (A/C equipped)	9.5 to 11.5 mm (0.37 to 0.45 in.)
	For vane pump V belt (A/C not equipped)	10 to 12 mm (0.39 to 0.47 in.)
Used drive belt deflection	Pressing force: 98 N (10 kgf, 22 lbf)	
	For vane pump V belt (A/C equipped)	12.5 to 15.5 mm (0.49 to 0.61 in.)
	For vane pump V belt (A/C not equipped)	14 to 17 mm (0.55 to 0.67 in.)
New drive belt tension		
	For vane pump V belt (A/C equipped)	519 to 755 N (53 to 77 kgf, 117 to 170 lbf)
	For vane pump V belt (A/C not equipped)	686 to 784 N (70 to 80 kgf, 154 to 176 lbf)
Used drive belt tension		
	For vane pump V belt (A/C equipped)	196 to 392 N (20 to 40 kgf, 44 to 88 lbf)
	For vane pump V belt (A/C not equipped)	294 to 441 N (30 to 45 kgf, 66 to 99 lbf)
Idle speed		750 to 850 rpm.
Maximum speed		5,100 to 5,250 rpm.
Compression pressure		
	at 250 rpm.	2,628 kPa (26.8 kgf/cm2, 381 psi) or more
	Minimum	2,157 kPa (22.0 kgf/cm2, 312 psi) or more
Difference between each cylinder		490 kPa (5.0 kgf/cm2, 71 psi) or less
Cylinder head set bolt		
Outside diameter	Standard	10.75 to 11.00 mm (0.4232 to 0.4331 in.)
	Minimum	10.40 mm (0.4904 in.)
Valve clearance		
Intake	(cold)	0.20 to 0.30 mm (0.008 to 0.012 in.)
Exhaust		0.35 to 0.45 mm (0.014 to 0.018 in.)
Adjusting shim thickness	Mark 2.500	2.500 mm (0.0984 in.)
	Mark 2.550	2.550 mm (0.1004 in.)
	Mark 2.600	2.600 mm (0.1024 in.)
	Mark 2.650	2.650 mm (0.1043 in.)
	Mark 2.700	2.700 mm (0.1063 in.)
	Mark 2.750	2.750 mm (0.1083 in.)
	Mark 2.800	2.800 mm (0.1102 in.)
	Mark 2.850	2.850 mm (0.1122 in.)
	Mark 2.900	2.900 mm (0.1142 in.)
	Mark 2.950	2.950 mm (0.1161 in.)
	Mark 3.000	3.000 mm (0.1181 in.)
	Mark 3.050	3.050 mm (0.1201 in.)
	Mark 3.100	3.100 mm (0.1220 in.)
	Mark 3.150	3.150 mm (0.1240 in.)
	Mark 3.200	3.200 mm (0.1260 in.)
	Mark 3.250	3.250 mm (0.1280 in.)
	Mark 3.300	3.300 mm (0.1299 in.)
Cylinder head set bolt		
Outside diameter	Standard	10.75 to 11.00 mm (0.4232 to 0.4331 in.)
	Minimum	10.40 mm (0.4904 in.)

031H2–01

TORQUE SPECIFICATION

1ZZ–FE/3ZZ–FE:

Part Tightened		N·m	kgf·cm	ft·lbf
Camshaft bearing cap No. 3 x Cylinder head sub–assy		13	133	10
Camshaft bearing cap No. 1 x Cylinder head sub–assy		23	235	17
Camshaft timing gear or sprocket x Camshaft No. 2		54	551	40
Chain tensioner assy No. 1 x Timing chain or belt cover sub–assy		9.0	92	80 in.·lbf
V–ribbed belt tensioner assy x Cylinder block sub–assy		69	704	51
V–ribbed belt tensioner assy x Cylinder head sub–assy		29	296	21
Engine mounting insulator RH x Body		52	530	38
Engine mounting insulator RH x Transverse engine engine mounting bracket		52	530	38
Cylinder head cover sub–assy x Cylinder head sub–assy	A B	11 9.0	112 92	8 80 in.·lbf
Cylinder head cover sub–assy x Timing chain or belt cover sub–assy		11	112	8
Ignition coil assy x Cylinder head cover sub–assy		9.0	92	80 in.·lbf
Engine wire x Cylinder head cover sub–assy		9.0	92	80 in.·lbf
Cylinder head cover No. 2 x Cylinder head cover sub–assy		7.0	71	62 in.·lbf
Engine hanger x Cylinder head sub–assy		38	387	28
Radio setting condenser x Cylinder head sub–assy		10	102	7
Engine coolant temperature sensor x Cylinder head sub–assy		20	204	15
Exhaust manifold x Cylinder head sub–assy		37	377	27
Exhaust manifold heat insulator No. 1 x Exhaust manifold	Bolt Nut	18 12	184 122	13 9
Manifold stay No. 2 x Exhaust manifold		49	500	36
Manifold stay No. 2 x Cylinder block sub–assy		49	500	36
Manifold stay x Exhaust manifold	A	49	500	36
Manifold stay x Cylinder block sub–assy	B	37	377	27
Transverse engine engine mounting bracket x Timing chain or belt cover sub–assy		47	479	35
V–ribbed idler assy No.1 x Cylinder block sub–assy		39.2	400	29
Knock sensor x Cylinder block sub–assy		20	204	15
Crankshaft position sensor x Timing chain or belt cover		9.0	92	80 in.·lbf
Camshaft position sensor x Cylinder head sub–assy		9.0	92	80 in.·lbf
Water inlet x Cylinder block sub–assy		11	112	8
Water by–pass pipe No. 1 x Cylinder block sub–assy		9.0	92	80 in.·lbf
Water by–pass pipe No. 1 x Cylinder head sub–assy		9.0	92	80 in.·lbf
Oil level gage guide x Water by–pass pipe No. 1		13	133	10
Intake manifold x Cylinder head sub–assy		30	306	22
Flywheel sub–assy x Crankshaft	1st 2nd	49 Turn 90°	500 Turn 90°	36 Turn 90°
Drive plate & ring gear sub–assy x Crankshaft		88	897	65
Transverse engine engine mounting bracket front x Transverse engine engine mounting insulator front		52	530	38
Transverse engine engine mounting bracket rear x Transverse engine engine mounting insulator rear		87	887	64
Transverse engine engine mounting bracket LH x Transverse engine engine mounting insulator LH		80	816	59
Transverse engine engine mounting bracket RH x Transverse engine engine mounting insulator RH		52	530	38
Front suspension crossmember sub–assy x Body	A B	45 133	459 1,356	33 98
Front suspension member brace x Body	Bolt A Bolt B	133 80	1,356 816	98 59

Part Tightened		N·m	kgf·cm	ft·lbf
Floor panel brace front x Body		30	306	22
Battery carrier x Body		12.8	131	9
Battery x Body		5.0	51	44 in.·lbf
Air cleaner case x Body		5.0	51	44 in.·lbf
Air cleaner case x Transverse engine engine mounting bracket LH		5.0	51	44 in.·lbf
Radiator support upper x Body		19	194	14
Front wheel RH & LH x Front axle hub sub–assy RH & LH		103	1,050	76
Camshaft timing gear assy x Camshaft		54	551	40
Chain tensioner slipper x Cylinder block sub–assy		19	194	14
Timing chain or belt cover sub–assy x Cylinder head sub–assy		13	133	10
Timing chain or belt cover sub–assy x Cylinder block sub–assy	M6 M8	13 19	133 194	10 14
Crankshaft pulley x Crankshaft		138	1,407	102
Cylinder head sub–assy x Cylinder block sub–assy	1st 2nd	49 Turn 90°	500 Turn 90°	36 Turn 90°
Camshaft timing oil control valve assy x Cylinder head sub–assy		9.0	92	80 in.·lbf
Chain vibration damper No. 1 x Cylinder head sub–assy		9.0	92	80 in.·lbf
Chain vibration damper No. 1 x Cylinder block sub–assy		9.0	92	80 in.·lbf

1AZ–FE:

Part Tightened		N·m	kgf·cm	ft·lbf
Front wheel RH		103	1,050	76
Drain plug (M/T)		49	500	36
Engine hanger No.1 x Cylinder head		38	387	28
Engine hanger No.2 x Cylinder head		38	387	28
Engine coolant temperature sensor x Cylinder head		20	208	15
Knock sensor x Cylinder block		20	208	15
Engine oil pressure switch assy x Cylinder head		15	153	11
Water by–pass pipe No.1 x Cylinder block		9.0	92	80 in.·lbf
Drive shaft bearing bracket x Cylinder block		54	551	40
V–ribbed belt tensioner assy x Timing chain cover		60	607	44
Ignition coil assy x Cylinder head		9.0	92	80 in.·lbf
Water inlet x Cylinder block		9.0	92	80 in.·lbf
Exhaust manifold converter x Cylinder head		37	378	27
Exhaust manifold stay x Exhaust manifold converter		44	449	32
Manifold converter insulator No. 1 x Exhaust manifold converter		12	122	9
Intake manifold x Cylinder head		30	306	22
Fly wheel (M/T) x Crank shaft		130	1,327	96
Drive plate & ring gear (A/T) x Crankshaft		98	1,000	72
Transverse engine engine mounting bracket front x Transverse engine engine mounting insulator front		87	887	64
Transverse engine engine mounting bracket rear x Transverse engine engine mounting insulator rear		87	887	64
Front suspension cross member sub–assy front x Body	Front Rear	45 133	459 1,356	33 98
Front suspension brace RH x Frame	Bolt A Bolt B	133 80	1,356 816	98 59
Front suspension brace LH x Frame	Bolt A Bolt B	133 80	1,356 816	98 59
Transverse engine engine mounting insulator LH x Engine mounting bracket LH		87	887	64
Transverse engine engine mounting insulator RH x Engine mounting bracket RH		52	530	38

Part Tightened		N·m	kgf·cm	ft·lbf
Engine mounting bracket x No, 2 RH x Transverse engine engine mounting insulator	A	52	530	38
	B	113	1,152	83
Clutch release cylinder x manual transaxle	Bolt A	12	122	89
	Bolt B	9.0	92	80 in.·lbf
	Bolt C	5.0	51	44 in.·lbf
Vane pump assy x Timing chain cover		43	439	31
Front suspension arm sub–assy lower No. 1 x Lower ball joint		127	1,296	94
Front stabilizer link assy x Front suspension		74	755	55
Floor panel brace front x Floor		30	306	22
Engine service cover bracket RH x Body				
	w/o Air conditioning	9.0	92	80 in.·lbf
	RHD (w/ Air conditioning) steering position type	9.0	92	80 in.·lbf
Cooler bracket x Body	LHD (w/ Air conditioning) steering position type	9.0	92	80 in.·lbf
Oil reservoir bracket No. 1 x Body		8.0	82	71 in.·lbf
Return tube sub–assy x Frame		8.0	82	71 in.·lbf
Radiator reserve tank x sub–assy x body		5.0	51	44 in.·lbf
Compressor and magnetic clutch x Cylinder block	w/ Air conditioning	25	255	18
Radiator relay block x Frame		5.0	51	44 in.·lbf
Engine cover No. 1 x Cylinder head cover		7.0	71	62 in.·lbf
Air cleaner assy x Body		5.0	51	44 in.·lbf
Cylinder head x Cylinder block	1st	79	806	58
	2nd	Turn 90°	Turn 90°	Turn 90°
Camshaft timing control valve assy x Cylinder head		9.0	92	80 in.·lbf
Camshaft timing gear assy x Camshaft		54	551	40
Camshaft timing sprocket x Camshaft		54	551	40
Camshaft bearing cap No. 1 x Cylinder head		30	301	22
Camshaft bearing cap No. 2 x Cylinder head		30	301	22
Camshaft bearing cap No. 3 x Cylinder head		9.0	92	80 in.·lbf
Chain tensioner assy No. 1 x Timing chain cover		9.0	92	80 in.·lbf
Chain tensioner plate x Stiffening crankcase assy		12	122	9
Oil pump drive sprocket x Oil pump		30	301	22
Chain vibration damper No. 1 x Cylinder head		9.0	92	80 in.·lbf
Chain vibration damper No. 1 x Cylinder block		9.0	92	80 in.·lbf
Timing chain guide x Cylinder block		9.0	92	80 in.·lbf
Chain tensioner slipper x Cylinder block		19	194	14
Timing chain cover (See page 14–139)	Bolt A	9.0	92	80 in.·lbf
	Bolt B	21	214	15
	Bolt C	43	438	32
	Nut	9.0	92	80 in.·lbf
Oil pan x Stiffening crankcase assy		9.0	92	80 in.·lbf
Oil pan drain plug x Oil pan		25	255	18
Crankshaft pulley x Crankshaft		170	1,733	125
Cylinder head cover x Cylinder head	Bolt A	11	112	8.0
	Bolt B	14	143	10
	Bolt C	21	214	15

1AZ–FSE:

Part Tightened	N·m	kgf·cm	ft·lbf
Front wheel RH	103	1,050	76
Drain plug (M/T)	49	500	36
Engine hanger No.1 x Cylinder head	38	387	28
Engine hanger No.2 x Cylinder head	38	387	28
Engine coolant temperature sensor x Cylinder head	20	208	15

Part Tightened		N·m	kgf·cm	ft·lbf
Knock sensor x Cylinder block		20	208	15
Engine oil pressure switch assy x Cylinder head		15	153	11
Water by–pass pipe No.1 x Cylinder block		9.0	92	80 in.·lbf
Drive shaft bearing bracket x Cylinder block		54	551	40
Oil level gauge guide x Cylinder block		9.0	92	80 in.·lbf
V–ribbed belt tensioner assy x Timing chain cover		60	607	44
Ignition coil assy x Cylinder head		9.0	92	80 in.·lbf
Water inlet x Cylinder block		9.0	92	80 in.·lbf
Exhaust manifold converter x Cylinder head		37	378	27
Exhaust manifold stay x Exhaust manifold converter		44	449	32
Manifold converter insulator No. 1 x Exhaust manifold converter		12	122	9
Surge tank stay No. 1 x Intake manifold		21	210	15
Intake manifold x Cylinder head		30	306	22
Throttle Body bracket x Throttle body		21	210	15
Fly wheel (M/T) x Crank shaft		130	1,327	96
Drive plate & ring gear (A/T) x Crankshaft		98	1,000	72
Transverse engine engine mounting bracket front x Transverse engine engine mounting insulator front		87	887	64
Transverse engine engine mounting bracket rear x Transverse engine engine mounting insulator rear		87	887	64
Front suspension cross member sub–assy front x Body	Front Rear	45 133	459 1,356	33 98
Front suspension brace RH x Frame	Bolt A Bolt B	133 80	1,356 816	98 59
Front suspension brace LH x Frame	Bolt A Bolt B	133 80	1,356 816	98 59
Transverse engine engine mounting insulator LH x Engine mounting bracket LH		87	887	64
Transverse engine engine mounting insulator RH x Engine mounting bracket RH		52	530	38
Engine mounting bracket x No, 2 RH x Transverse engine engine mounting insulator	A B	52 113	530 1,152	38 83
Clutch release cylinder x manual transaxle	Bolt A Bolt B Bolt C	12 9.0 5.0	122 92 51	89 80 in.·lbf 44 in.·lbf
Vane pump assy x Timing chain cover		43	439	31
Front suspension arm sub–assy lower No. 1 x Lower ball joint		127	1,296	94
Front stabilizer link assy x Front suspension		74	755	55
Floor panel brace front x Floor		30	306	22
Engine service cover bracket RH x Body	RHD steering position type	9.0	92	80 in.·lbf
Cooler bracket x Body	LHD steering position type	9.0	92	80 in.·lbf
Oil reservoir bracket No. 1 x Body		8.0	82	71 in.·lbf
Return tube sub–assy x Frame		8.0	82	71 in.·lbf
Radiator reserve tank x sub–assy x body		5.0	51	44 in.·lbf
Compressor and magnetic clutch x Cylinder block		25	255	18
Radiator relay block x Frame		5.0	51	44 in.·lbf
Engine cover No. 1 x Cylinder head cover		7.0	71	62 in.·lbf
Air cleaner assy x Body		5.0	51	44 in.·lbf
Cylinder head x Cylinder block	1st 2nd	79 Turn 90°	806 Turn 90°	58 Turn 90°
Camshaft timing control valve assy x Cylinder head		9.0	92	80 in.·lbf
Camshaft timing gear assy x Camshaft		54	551	40

Part Tightened		N·m	kgf·cm	ft·lbf
Camshaft timing sprocket x Camshaft		54	551	40
Camshaft bearing cap No. 1 x Cylinder head		30	301	22
Camshaft bearing cap No. 2 x Cylinder head		30	301	22
Camshaft bearing cap No. 3 x Cylinder head		9.0	92	80 in.·lbf
Chain tensioner assy No. 1 x Timing chain cover		9.0	92	80 in.·lbf
Chain tensioner plate x Stiffening crankcase assy		12	122	9
Oil pump drive sprocket x Oil pump		30	301	22
Chain vibration damper No. 1 x Cylinder head		9.0	92	80 in.·lbf
Chain vibration damper No. 1 x Cylinder block		9.0	92	80 in.·lbf
Timing chain guide x Cylinder block		9.0	92	80 in.·lbf
Chain tensioner slipper x Cylinder block		19	194	14
Timing chain cover (See page 14–222)	Bolt A	9.0	92	80 in.·lbf
	Bolt B	21	214	15
	Bolt C	43	438	32
	Nut	9.0	92	80 in.·lbf
Oil pan x Stiffening crankcase assy		9.0	92	80 in.·lbf
Oil pan drain plug x Oil pan		25	255	18
Crankshaft pulley x Crankshaft		170	1,733	125
Cylinder head cover x Cylinder head	Bolt A	11	112	8.0
	Bolt B	14	143	10
	Bolt C	21	214	15

1CD–FTV:

Part Tightened		N·m	kgf·cm	ft·lbf
Idle pulley set nut		38	390	28
Air tube No. 1 x Air tube No. 2		25	255	18
Air tube No. 1 x Intake air connector		25	255	18
Air tube No. 1 x Cylinder head sub–assy		25	255	18
Air tube No. 1 x Engine mounting bracket FR		25	255	18
Engine cover No. 1 x Cylinder head cover sub–assy		8.0	82	71 in.·lbf
Engine cover No. 1 x Intake manifold		8.0	82	71 in.·lbf
Front wheel		103	1,050	76
Drain plug (Manual transaxle)		49	500	36
Engine hanger No.1 x Cylinder head		37	377	27
Engine hanger No.2 x Cylinder head		37	377	27
Engine hanger No. 1 UPR x Engine hanger No. 1		37	377	27
Engine coolant temperature sensor x Cylinder head		20	204	15
Crankshaft position sensor x Oil pump assy		8.8	90	78 in.·lbf
Camshaft position sensor x Camshaft oil seal retainer		8.8	90	78 in.·lbf
Fuel filler to injection pump fuel pipe x Cylinder block	M6 and Nut	8.8	90	78 in.·lbf
	M8	21	209	15
Oil cooler pipe x Cylinder block		59	600	43
Compressor mounting bracket x Cylinder block		42	428	31
Injection pump x Water pump		21	214	15
Oil level gage guide x Cylinder block		18	184	13
Timing belt No.3 cover x Cylinder head		7.4	75	65 in.·lbf
Intake manifold x Cylinder head		21	214	15
Wiring harness clamp bracket x Intake manifold		3.9 to 6.9	40 to 70	35 to 61 in.·lbf
Power steering idle pulley bracket x Cylinder head	Bolt A	72	734	53
	Bolt B	39	398	29
Intake manifold insulator No. 1 x Intake manifold		5.0	51	44 in.·lbf

Part Tightened		N·m	kgf·cm	ft·lbf
Injection pipe, Fuel inlet pipe x Common rail				
	Used pipe using SST	42	428	31
	Used pipe not using SST	46	469	34
	New pipe using SST	31	316	23
	New pipe not using SST	34	347	25
Injection pipe x Injector				
	Used pipe using SST	42	428	31
	Used pipe not using SST	46	469	34
	New pipe using SST	31	316	23
	New pipe not using SST	34	347	25
Injection pipe clamp x Intake manifold		5.0	51	44 in.·lbf
Fuel inlet pipe x Common rail				
	Used pipe using SST	42	428	31
	Used pipe not using SST	46	469	34
	New pipe using SST	31	316	23
	New pipe not using SST	34	347	25
Fuel inlet pipe x injection pump				
	Used pipe using SST	42	428	31
	Used pipe not using SST	46	469	34
	New pipe using SST	31	316	23
	New pipe not using SST	34	347	25
Nozzle leakage pipe No.2 x Cylinder head	Check valve	21	214	15
	Bolt	8.8	90	78 in.·lbf
Vacuum pump x Cylinder head		21	214	15
EGR valve assy x Cylinder head		18	184	13
Intake air connector with diesel throttle body x Intake manifold		21	214	15
Water inlet x Cylinder block		8.8	90	78 in.·lbf
Water outlet sub–assy x Cylinder head		21	214	15
Exhaust manifold x Cylinder head		47	479	35
EGR pipe sub–assy x Cylinder head	Bolt	37	375	27
	Nut	25	250	18
Oil filter bracket x Oil pan sub–assy		34	347	25
V–ribbed belt tensioner assy x Oil pump		31	316	23
Generator bracket No.1 x Cylinder block		37	377	27
Idler pulley Sub–assy x V–ribbed belt tensioner assy		40	408	30
Engine mounting bracket RR x Engine mounting insulator RR		64	653	47
Engine mounting bracket FR x Engine mounting insulator FR		64	653	47
Drive shaft bearing bracket x Cylinder block		64	653	47
Rear end plate x Cylinder block		8.4	86	74 in.·lbf
Flywheel x Crankshaft		71	720	52
Engine mounting member sub–assy center x Body		45	459	33
Front suspension crossmember sub–assy x Rear engine mounting bracket		87	887	64
Front suspension crossmember sub–assy x Front engine mounting bracket		52	530	38
Front suspension crossmember sub–assy x Body		133	1,356	98
Front suspension member brace x Front suspension crossmember sub–assy		133	1,356	98
Front suspension member brace x Body		80	816	59
Return tube sub–assy x Body		8.0	82	71 in.·lbf
Engine mounting insulator RH x Body		52	530	38
Engine mounting bracket LH x Engine mounting insulator LH		80	816	59
Injector driver x Engine mounting insulator RH		5.0	51	44 in.·lbf
Engine wire x Body		8.4	85	74 in.·lbf
Air tube No.2 x Manual transaxle		25	255	18
Relay box x Radiator assy		5.3	54	46 in.·lbf
Fuel filter assy x Fuel filter support		18	178	13

Part Tightened	N·m	kgf·cm	ft·lbf
Air cleaner assy x Body x Engine mounting bracket LH	7.0	71	62 in.·lbf
Engine cover No.1 x Cylinder head cover sub–assy	8.0	82	71 in.·lbf
Engine cover No. 1 x Intake manifold	8.0	82	71 in.·lbf
Timing belt tensioner x Cylinder block	21	214	15
Timing chain cover plate x Cylinder block	9.0	92	80 in.·lbf
Transverse engine engine mounting bracket x Cylinder block For 14 mm head bolt For 17 mm head bolt	 37 64	 375 650	 27 47
Timing belt No. 1 cover x Transverse engine engine mounting bracket	7.4	75	65 in.·lbf
Timing belt No. 1 cover x Oil pump assy	7.4	75	65 in.·lbf
Timing belt No. 2 cover x Transverse engine engine mounting bracket	7.4	75	65 in.·lbf
Timing belt No. 2 cover x Cylinder head cover sub–assy	7.4	75	65 in.·lbf
Timing belt No. 2 cover x Camshaft oil seal retainer	7.4	75	65 in.·lbf
Timing belt No. 2 cover x Timing belt cover No. 3	7.4	75	65 in.·lbf
Crankshaft pulley x Crankshaft	180	1,835	133
Engine mounting bracket No.2 RH x Transverse engine engine mounting bracket	52	530	38
Camshaft bearing cap x Cylinder head	20	204	15
Camshaft oil seal retainer x Cylinder head	8.8	90	78 in.·lbf
Camshaft timing pulley x Camshaft	88	899	65
Cylinder head cover x Cylinder head	13	135	9.7
Vacuum reservoir sub–assy x Cowl top panel outer	8.3	85	73 in.·lbf
Cylinder head x Cylinder block	45	459	33
Drain plug (oil pan)	34	350	25

EXHAUST

031E2–02

SERVICE DATA

1ZZ–FE/3ZZ–FE:

Compression spring		
Free length	Minimum Front x Manifold	41.5 mm (1.634 in.)
	Front x Tail	38.5 mm (1.516 in.)

1AZ–FE/1AZ–FSE:

Compression spring		
Free length	Minimum Front x Manifold	41.5 mm (1.634 in.)
	Center x Tail	38.5 mm (1.516 in.)

1CD–FTV:

Compression spring		
Minimum length	Exhaust pipe assy front x Exhaust manifold	41.5mm (1.634 in)
Compression spring		
Minimum length	Exhaust pipe assy front x Tail pipe assy	38.5mm (1.515 in)

031E3–02

TORQUE SPECIFICATION

1ZZ–FE/3ZZ–FE:

Part Tightened	N·m	kgf·cm	ft·lbf
Exhaust pipe assy front x Exhaust manifold	43	440	32
Exhaust pipe assy front x Exhaust pipe assy tail	43	440	32
Heated oxygen sensor x Exhaust pipe assy front	44	449	33
Floor panel brace front x Body	30	302	22

1AZ–FE/1AZ–FSE:

Part Tightened	N·m	kgf·cm	ft·lbf
Exhaust pipe assy front x Exhaust manifold	43	440	32
Exhaust pipe assy center x Exhaust pipe assy front	43	440	32
Exhaust pipe assy tail x Exhaust pipe assy center	43	440	32
Floor panel brace front x Body	30	302	22

1CD–FTV:

Part Tightened	N·m	kgf·cm	ft·lbf
Exhaust pipe assy front x Exhaust manifold	43	440	32
Exhaust pipe assy front x Tail pipe assy	43	440	32
Floor panel brace front x Body	30	302	22

EXTERIOR/INTERIOR TRIM

TORQUE SPECIFICATION

031GY–01

Part Tightened	N·m	kgf·cm	ft·lbf
FUEL LID CONTROL ASSY			
Fuel lid control assy x Body	8.0	82	71 in.·lbf
REAR BUMPER COVER			
Rear bumper cover x Body	5.5	56	49 in.·lbf
Rear bumper reinforcement No. 1 x Body	11.5	115	16
BACK DOOR GARNISH OUTSIDE			
Back door garnish × Body	4.9	50	43 in.·lbf
REAR SPOILER (WAGON MODELS)			
Rear spoiler × Body	9.8	99	87 in.·lbf

FRONT SUSPENSION

0313B–05

SERVICE DATA

Front wheel alignment	Vehicle height		
	(Normal package)	Front: A *1 – B *2	92 mm (3.62 in.)
		Rear: D *4 – C *3	61 mm (2.40 in.)
	(Rough road package)	Front: A *1 – B *2	72 mm (2.83 in.)
		Rear: D *4 – C *3	41 mm (1.61 in.)
	Toe–in (total)		0°06' ± 12' (0.1° ± 0.2°), 1 ± 2 mm (0.04 ± 0.08 in.)
		Rack end length difference	1.5 mm (0.059 in.) or less
	Wheel angle [Electric motor power steering]		
	(Normal package)	Inside wheel	38°17' ± 2° (38.28° ± 2°)
		Outside wheel: Reference	32°52' (32.87°)
	(Rough road package)	Inside wheel	38°42' ± 2° (38.70° ± 2°)
		Outside wheel: Reference	33°16' (33.27°)
	Wheel angle [Oil pressure power steering]		
	(Normal package)	Inside wheel	35°47' ± 2° (35.78° ± 2°)
		Outside wheel: Reference	31°15' (31.25°)
	(Rough road package)	Inside wheel	36°09' ± 2° (36.15° ± 2°)
		Outside wheel: Reference	31°38' (31.63°)
	Camber		
		Normal package	–0°34' ± 45' (–0.57° ± 0.75°)
		Rough road package	–0°19' ± 45' (–0.32° ± 0.75°)
		Right–left error	45' (0.75°) or less
	Caster		
		Normal package	2°54' ± 45' (2.90° ± 0.75°)
		Rough road package	2°40' ± 45' (2.67° ± 0.75°)
		Right–left error	45' (0.75°) or less
	Steering axis inclination		
		Normal package	12°27' ± 45' (12.45° ± 0.75°)
		Rough road package	11°56' ± 45' (11.93° ± 0.75°)
		Right–left error	45' (0.75°) or less
Front suspension	Lower ball joint turning torque		0.98 – 4.9 N·m (10 – 50 kgf·cm, 9 – 43 in.·lbf)
	Stabilizer bar link ball joint turning torque		0.05 – 1.96 N·m (0.5 – 20 kgf·cm, 0.4 – 17 in.·lbf)

***1: Ground clearance of front wheel center**

***2: Ground clearance of lower suspension arm front bolt center**

***3: Ground clearance of toe control arm inner bolt center**

***4: Ground clearance of rear wheel center**

0313A–05

TORQUE SPECIFICATION

Part Tightened		N·m	kgf·cm	ft·lbf
Tie rod end lock nut		74	755	55
Steering knuckle x Shock absorber		220	2,240	162
Hub nut		103	1,050	76
Suspension support x Piston rod		47	479	35
Suspension support x Body		39	398	29
Suspension crossmember sub–assy x Body		133	1,360	98
Suspension crossmember sub–assy x Engine mounting insulator		80	816	59
Suspension crossmember sub–assy x Center member		96	979	71
Suspension member brace x Body	Bolt A:	80	816	59
	Bolt B:	133	1,360	98
Speed sensor wire harness bracket set bolt		19	192	14
Stabilizer bracket No.1 x Suspension crossmember (w/o HID)		19	194	14
Stabilizer bracket No.1 x Suspension crossmember (w/ HID)	Bolt A:	5.4	55	48
	Bolt B:	19	194	14
Stabilizer bar link set nut		74	755	55
Lower suspension arm x Lower ball joint		89	908	66
Lower ball joint x Steering knuckle		103	1,050	76
Lower suspension arm x Suspension crossmember		137	1,400	101

FUEL

031E0–01

SERVICE DATA

GASOLINE:

Compression spring		
Free length	Minimum Front x Manifold (1ZZ–FE/3ZZ–FE)	41.5 mm (1.634 in.)
	Front x Tail (1ZZ–FE/3ZZ–FE)	38.5 mm (1.516 in.)
	Center x Tail (1AZ–FE/1AZ–FSE)	38.5 mm (1.516 in.)

031E1–02

TORQUE SPECIFICATION

1ZZ–FE/3ZZ–FE:

Part Tightened		N·m	kgf·cm	ft·lbf
Fuel delivery pipe sub–assy x Cylinder head sub–assy	Bolt A	19	194	14
	Bolt B	9.0	92	80 in.·lbf

1AZ–FE:

Part Tightened	N·m	kgf·cm	ft·lbf
Fuel delivery pipe sub–assy x Cylinder head sub–assy	20	204	15
Fuel pressure pulsation damper assy x Fuel delivery pipe sub–assy	9.0	92	80 in.·lbf

1AZ–FSE:

Part Tightened		N·m	kgf·cm	ft·lbf
Cylinder head cover x Fuel pump assy		25	255	18
Fuel pipe sub–assy No.1 x Fuel delivery pipe sub–assy		9.0	92	80 in.·lbf
Fuel pipe sub–assy No.1 x Fuel pump assy		30	306	22
Fuel pressure pulsation damper assy x Fuel pump assy		33	331	24
Engine cover bracket x Cylinder head		38	388	28
Engine cover sub–assy No.1 x Cylinder head cover		7.0	71	62 in.·lbf
Nozzle holder clamp x Cylinder head		13	127	9
Fuel delivery pipe sub–assy x Cylinder head		19	194	14
Surge tank stay No.1 x Cylinder block		21	210	15
Intake manifold x Cylinder head	Stud bolt	9.5	97	84 in.·lbf
	Bolt	30	306	22
	Nut	30	306	22

GASOLINE:

Part Tightened	N·m	kgf·cm	ft·lbf
Fuel tank band sub–assy No. 1 LH x Body	40	400	29
Fuel tank band sub–assy No. 1 RH x Body	40	400	29
Parking brake cable assy No. 3 x Body	5.0	51	44 in.·lbf
Parking brake cable assy No. 2 x Body	5.0	51	44 in.·lbf
Fuel tank protector No. 1 x Body	5.4	54	47 in.·lbf
Fuel tank protector No. 1 x Fuel tank band sub–assy No. 1 RH	5.4	54	47 in.·lbf
Exhaust pipe assy front x Exhaust manifold (1ZZ–FE/3ZZ–FE)	43	440	33
Exhaust pipe assy front x Exhaust pipe assy tail (1ZZ–FE/3ZZ–FE)	43	440	33
Exhaust pipe assy center x Exhaust pipe assy front (1AZ–FE/1AZ–FSE)	43	440	33
Exhaust pipe assy center x Exhaust pipe assy tail (1AZ–FE/1AZ–FSE)	43	440	33

1CD–FTV:

Part Tightened		N·m	kgf·cm	ft·lbf
Nozzle holder clamp x Cylinder head sub–assy		26	265	19
Nozzle leakage pipe assy x Injector assy	Hollow screw	18	184	13
	Union bolt	22	224	16
Nozzle leakage pipe No. 2 x Cylinder head sub–assy	Hollow screw	21	214	16
	Bolt	8.8	90	79 in.·lbf
Injection pipe sub–assy No. 1 – No. 4 x Injector assy				
	Used pipe using SST	42	428	31
	Used pipe not using SST	46	469	34
	New pipe using SST	31	316	23
	New pipe not using SST	34	347	25
Injection pipe sub–assy No. 1 – No. 4 x Common rail assy				
	Used pipe using SST	42	428	31
	Used pipe not using SST	46	469	34
	New pipe using SST	31	316	23
	New pipe not using SST	34	347	25

Part Tightened	N·m	kgf·cm	ft·lbf
Injection pipe clamp No. 2 x Intake manifold	5.0	51	44 in.·lbf
Fuel inlet pipe sub–assy x Common rail assy			
Used pipe using SST	42	428	31
Used pipe not using SST	46	469	34
New pipe using SST	31	316	23
New pipe not using SST	34	347	25
Fuel inlet pipe sub–assy x Injection pump assy			
Used pipe using SST	42	428	31
Used pipe not using SST	46	469	34
New pipe using SST	31	316	23
New pipe not using SST	34	347	25
Air cleaner case x Body	7.0	71	62 in.·lbf
Air cleaner case x Transverse engine engine mounting bracket	7.0	71	62 in.·lbf
Engine cover No. 1 x Cylinder head cover sub–assy	8.0	82	71 in.·lbf
Engine cover No. 1 x Intake manifold	8.0	82	71 in.·lbf
Vacuum reservoir sub–assy x Cowl top panel outer	8.3	85	74 in.·lbf
Injection pump assy x Water pump assy	21	210	15
Injection pump drive pulley x Injection pump assy	64	650	47
Intake manifold insulator No. 1 x Intake manifold	5.0	51	44 in.·lbf
Common rail assy x Cylinder head sub–assy	43	438	32
Transverse engine engine mounting bracket x Water pump assy	64	650	47
Transverse engine engine mounting bracket x Cylinder block sub–assy	37	375	27
Idler pulley sub–assy x V–ribbed belt tensioner assy	40	408	30
Battery clamp sub–assy x Body	5.0	51	44 in.·lbf
Front wheel	103	1,050	76
Fuel filter assy x Fuel filter support	18	178	13

DIESEL:

Part Tightened	N·m	kgf·cm	ft·lbf
Fuel tank band sub–assy x Body	40	400	29
Parking brake cable assy x Body	5.4	55	48 in.·lbf
Fuel tank protector No. 1 x Body	5.4	55	48 in.·lbf
Fuel tank protector No. 1 x Fuel tank band sub–assy No. 1	5.4	55	48 in.·lbf

HEATER AND AIR CONDITIONING

031HH–01

SERVICE DATA

Refrigerant charge volume	Standard:	440 ± 30 g (15.51 ± 1.06 oz.)
Belt deflection	New belt:	11 – 13 mm (0.43 – 0.51 in.)
	Used belt:	13.5 – 16.5 mm (0.53 – 0.64 in.)

031HI–01

TORQUE SPECIFICATION

Part Tightened	N·m	kgf·cm	ft·lbf
V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO. 1			
Tighten	2.5	25	22 in.·lbf
Fully tighten	39	390	29
AIR CONDITIONER RADIATOR ASSY			
Air conditioning tube assy x Cooler evaporator sub–assy No. 1	3.5	35	30 in.·lbf
Air conditioner unit assy x Body	9.8	100	87 in.·lbf
BLOWER ASSY			
Blower assy x Body Bolt:	9.8	100	87 in.·lbf
W/PULLEY COMPRESSOR ASSY (3ZZ–FE)			
W/pulley compressor assy x Engine	29	300	21
Cooler refrigerant discharge hose No. 1 x W/pulley compressor assy	9.8	100	87 in.·lbf
Cooler refrigerant suction hose No. 1 x W/pulley compressor assy	9.8	100	87 in.·lbf
W/PULLEY COMPRESSOR ASSY (1ZZ–FE)			
W/pulley compressor assy x Engine	29	300	21
Cooler refrigerant discharge hose No. 1 x W/pulley compressor assy	9.8	100	87 in.·lbf
Cooler refrigerant suction hose No. 1 x W/pulley compressor assy	9.8	100	87 in.·lbf
W/PULLEY COMPRESSOR ASSY (1AZ–FSE)			
W/pulley compressor assy x Engine	29	300	21
Cooler refrigerant discharge hose No. 1 x W/pulley compressor assy	9.8	100	87 in.·lbf
Cooler refrigerant suction hose No. 1 x W/pulley compressor assy	9.8	100	87 in.·lbf
W/PULLEY COMPRESSOR ASSY (1AZ–FE)			
W/pulley compressor assy x Engine	29	300	21
Cooler refrigerant discharge hose No. 1 x W/pulley compressor assy	9.8	100	87 in.·lbf
Cooler refrigerant suction hose No. 1 x W/pulley compressor assy	9.8	100	87 in.·lbf
W/PULLEY COMPRESSOR ASSY (1CD–FTV)			
W/pulley compressor assy x Engine	29	300	21
Cooler refrigerant discharge hose No. 1 x W/pulley compressor assy	9.8	100	87 in.·lbf
Cooler refrigerant suction hose No. 1 x W/pulley compressor assy RHD:	9.8	100	87 in.·lbf
Suction servic valve x W/pulley compressor assy LHD:	9.8	100	87 in.·lbf
Cooler refrigerant suction hose No. 1 x Suction servic valve	9.8	100	87 in.·lbf
W/RECEIVER CONDENSER ASSY			
Cap x W/receiver condenser assy	2.9	29	25 in.·lbf
Magnet valve x W/receiver condenser assy	3.4	35	30 in.·lbf
Discharge tube x Magnet valve	3.4	35	30 in.·lbf
Discharge tube x W/receiver condenser assy	5.4	55	47 in.·lbf
Liquid tube sub–assy B x W/receiver condenser assy	5.4	55	47 in.·lbf
Discharge hose sub–assy x W/receiver condenser assy	5.4	55	47 in.·lbf
Liquid tube sub–assy A x W/receiver condenser assy	5.4	55	47 in.·lbf
HEAER ASSY			
Heater assy x Body	7.5	76	66 in.·lbf

IGNITION

031E4–01

SERVICE DATA

1ZZ–FE/3ZZ–FE:

Spark plug		
Recommended spark plug	DENSO made	K16R–U11
	NGK made	BKR5EYA11
Electrode gap	K16R–U11, BKR5EYA11	1.0 to 1.1 mm (0.039 to 0.043 in.)
Camshaft position sensor		
Resistance	Cold	835 to 1,400 Ω
	Hot	1,060 to 1,645 Ω
Crankshaft position sensor		
Resistance	Cold	1,630 to 2,740 Ω
	Hot	2,065 to 3,225 Ω

1AZ–FE:

Spark plug		
Recommended spark plug	DENSO made	K20R–U11
	NGK made	BKR6EYA11
Electrode gap	K20R–U11, BKR6EYA11	1.0 to 1.1 mm (0.039 to 0.043 in.)
Camshaft position sensor		
Resistance	Cold	835 to 1,400 Ω
	Hot	1,060 to 1,645 Ω
Crankshaft position sensor		
Resistance	Cold	985 to 1,600 Ω
	Hot	1,265 to 1,890 Ω

1AZ–FSE:

Spark plug		
Recommended spark plug	DENSO made	SK20BR11
Electrode gap	SK20BR11	1.0 to 1.1 mm (0.039 to 0.043 in.)
Camshaft position sensor		
Resistance	Cold	835 to 1,400 Ω
	Hot	1,060 to 1,645 Ω
Crankshaft position sensor		
Resistance	Cold	985 to 1,600 Ω
	Hot	1,265 to 1,890 Ω

031E5–01

TORQUE SPECIFICATION

1ZZ–FE/3ZZ–FE:

Part Tightened	N·m	kgf·cm	ft·lbf
Spark plug x Cylinder head	18	184	13
Ignition coil (with igniter) x Cylinder head cover	9.0	92	80 in.·lbf
Camshaft position sensor x Cylinder head sub–assy	9.0	92	80 in.·lbf
Crankshaft position sensor x Timing chain cover sub–assy	9.0	92	80 in.·lbf
Cord clamp x Timing chain cover sub–assy	9.0	92	80 in.·lbf

1AZ–FE/1AZ–FSE:

Part Tightened	N·m	kgf·cm	ft·lbf
Spark plug x Cylinder head	19	194	14
Ignition coil (with igniter) x Cylinder head cover	9.0	92	80 in.·lbf
Camshaft position sensor x Cylinder head sub–assy	9.0	92	80 in.·lbf
Crankshaft position sensor x Timing chain cover sub–assy	9.0	92	80 in.·lbf

INSTRUMENT PANEL/METER

TORQUE SPECIFICATION

031I3–01

Part Tightened	N·m	kgf·cm	ft·lbf
Instrument Panel Reinforcement × Passenger Airbag	20	204	15

INTAKE

031FQ–01

SERVICE DATA

1AZ–FSE:

Vacuum switching valve assy No. 1		
Resistance	at 20°C (68 °F)	33 to 39 Ω

1CD–FTV:

Turbocharging pressure		
Standard pressure		15 to 45 kPa (0.15 to 0.46 kgf/cm^2, 2.2 to 6.5 psi)
Turbo pressure sensor		
Voltage	3 (VC) – 1 (E2)	4.5 to 5.5 V
Voltage drop	apply vacuum 13.3 kPa (100 mmHg, 3.94 in.Hg)	0.1 to 0.3 V
	apply vacuum 26.7 kPa (200 mmHg, 7.87 in.Hg)	0.3 to 0.5 V
	apply vacuum 40.0 kPa (300 mmHg, 11.81 in.Hg)	0.5 to 0.7 V
	apply vacuum 57.3 kPa (400 mmHg, 15.75 in.Hg)	0. 7 to 0.9 V
	apply vacuum 66.7 kPa (500 mmHg, 19.96 in.Hg)	0. 9 to 1.0 V
Voltage up	applied vacuum 19.6 kPa (0.20 kgf/cm2, 2.84 psi)	0.1 to 0.4 V
	applied vacuum 39.2 kPa (0.40 kgf/cm2, 5.69psi)	0.4 to 0.7 V
	applied vacuum 58.8 kPa (0.60 kgf/cm2, 8.53psi)	0.7 to 1.0 V
	applied vacuum 78.5 kPa (0.80 kgf/cm2, 11.4psi)	1.0 to 1.3 V
	applied vacuum 98.0 kPa (1.00 kgf/cm2, 14.2psi)	1.3 to 1.6 V

031FR–02

TORQUE SPECIFICATION

1CD–FTV:

Part Tightened		N·m	kgf·cm	ft·lbf
Turbo water pipe sub–assy No.1 x Turbocharger sub–assy		13	135	9.7
Turbocharger sub–assy x Exhaust manifold		53	540	39
Turbo oil outlet pipe x Turbocharger sub–assy		13	135	9.7
Manifold converter sub–assy x Turbocharger sub–assy	1st	8.0	82	71 in.·lbf
	2nd	25	255	18
Manifold stay x Manifold converter sub–assy	1st	8.0	82	71 in.·lbf
	2nd	61	622	45
Manifold stay x Cylinder block sub–assy	1st	8.0	82	71 in.·lbf
	2nd	61	622	45
Turbohcharger stay x Turbocharger sub–assy	1st	8.0	82	71 in.·lbf
	2nd	56	571	41
Turbocharger stay x Cylinder head sub–assy	1st	8.0	82	71 in.·lbf
	2nd	56	571	41
Manifold stay No. 2 x Manifold converter sub–assy	1st	8.0	82	71 in.·lbf
	2nd	56	571	41
Manifold stay No. 2 x Cylinder head sub–assy	1st	8.0	82	71 in.·lbf
	2nd	56	571	41
Exhaust manifold heat insulator No. 2 x Turbocharger sub–assy		12	122	8.9
Turbo insulator No. 1 x Manifold converter sub–assy		20	204	15
Turbo insulator No. 1 x Turbocharger sub–assy		20	204	15
Turbo insulator No. 2 x Manifold converter sub–assy		20	204	15
Exhaust pipe assy x Heater bracket sub–assy	w/ Cold area	7.5	76	66 in.·lbf
Exhaust pipe assy x Body	w/ Cold area	7.5	76	66 in.·lbf
Heater bracket x Body	w/ Cold area	7.5	76	66 in.·lbf
Heater pump assy x Heater bracket	w/ Cold area	7.5	76	66 in.·lbf
Air tube No. 1 x Air tube No. 2		25	255	18
Air tube No. 1 x Intake air connector		25	255	18
Air tube No. 1 x Cylinder head cover		25	255	18
Air tube No. 1 x Engine mounting bracket FR		25	255	18
Air cleaner case x Body		7.0	71	62 in.·lbf
Intercooler assy x Body		7.0	71	62 in.·lbf
Intercooler cooling air duct x Intercooler assy		5.0	51	44 in.·lbf
Air cleaner case x Engine mounting insulator LH		7.0	71	62 in.·lbf
Engine cover No. 1 x Cylinder head cover sub–assy		8.0	82	71 in.·lbf
Engine cover No. 1 x Intake manifold		8.0	82	71 in.·lbf
Vacuum reservoir sub–assy x Cowl top panel outer		8.3	85	73 in.·lbf

LIGHTING

TORQUE SPECIFICATION

031HC–01

Part Tightened	N·m	kgf·cm	ft·lbf
Height control sensor sub–assy Fr RH x Body	7.9	81	70 in.·lbf
Height control sensor sub–assy Fr RH x Stabilizer bar rear	5.8	59	51 in.·lbf
Height control sensor sub–assy Rr RH x Suspension menber	7.9	81	70 in.·lbf
Height control sensor sub–assy Rr RH x Upper control arm assy	5.8	59	51 in.·lbf

LUBRICATION

SERVICE DATA

031H5–01

1ZZ–FE/3ZZ–FE:

Oil pressure	at idle speed at 3,000 r/min	29 kPa (0.3 kgf·cm^2, 4.2 psi) or more 294 to 539 kPa (3.0 to 5.5 kgf·cm^2, 43 to 78 psi) or more
Adhesive		Part No. 08833 – 00080, THREE BOND 1344, LOCTITE 242, or equivalent

1AZ–FE:

Oil pressure	at idle speed at 3,000 rpm	29 kPa (0.3 kgf·cm^2, 4.3 psi) or more 245 to 539 kPa (2.5 to 5.5 kgf·cm^2, 36 to 78 psi) or more
Adhesive		Part No. 08833 – 00080, THREE BOND 1344, LOCTITE 242, or equivalent

1AZ–FSE:

Oil pressure	at idle speed at 3,000 rpm	29 kPa (0.3 kgf·cm^2, 4.3 psi) or more 245 to 539 kPa (2.5 to 5.5 kgf·cm^2, 36 to 78 psi) or more
Adhesive		Part No. 08833 – 00080, THREE BOND 1344, LOCTITE 242, or equivalent

1CD–FTV:

Oil pressure	at idle speed at 4,500 rpm	29 kPa (0.3 kgf·cm^2, 4.3 psi) or more 245 – 588 kPa (2.5 – 6.0 kgf·cm^2, 36 – 85 psi)
Adhesive		Part No. 08833 – 00080, THREE BOND 1344, LOCTITE 242, or equivalent

031H6–01

TORQUE SPECIFICATION

1ZZ–FE/3ZZ–FE:

Part Tightened	N·m	kgf·cm	ft·lbf
Oil pressure switch x Cylinder head	15	153	11
Oil pan drain plug x Oil pan	37	377	27
Oil pump x Cylinder block	9.0	92	80 in.·lbf

1AZ–FE:

Part Tightened	N·m	kgf·cm	ft·lbf
Oil pressure switch x Cylinder head	15	153	11
Oil pan drain plug x Oil pan	25	250	18
Oil pump x Cylinder block	19	195	15
Timing chain guide x Cylinder block	9.0	92	80 in.·lbf
Chain vibration damper No.1 x Cylinder block	9.0	92	80 in.·lbf
Oil pan sub–assy x Cylinder block	9.0	92	80 in.·lbf
Transverse engine engine mounting insulator x Cylinder block	52	530	38
Engine service cover bracket RH x Body w/o Air conditioning RHD (w/ Air conditioning) steering position type	9.0 9.0	92 92	80 in.·lbf 80 in.·lbf
Cooler bracket RH x Body LHD (w/ Air conditioning) steering position type	9.0	92	80 in.·lbf
Engine x wire	7.0	71	62 in.·lbf
Oil reservoir bracket No. 1 x Body	8.0	82	71 in.·lbf
Cooler refrigerant suction hose No. 1 x cooler bracket No, 1 LHD (w/ Air conditioning) steering position type	9.0	92	80 in.·lbf
Return tube x Body	8.0	82	71 in.·lbf
Ignition coil assy x Cylinder head cover	9.0	92	80 in.·lbf
Vane pump x Cylinder block	37	377	27
Engine cover sub–assy x Cylinder block	7.0	71	62 in.·lbf
Front wheel RH	103	1,050	76

1AZ–FSE:

Part Tightened	N·m	kgf·cm	ft·lbf
Oil pressure switch x Cylinder head	15	153	11
Oil pan drain plug x Oil pan	25	250	18
Oil pump x Cylinder block	19	195	15
Timing chain guide x Cylinder block	9.0	92	80 in.·lbf
Chain vibration damper No.1 x Cylinder block	9.0	92	80 in.·lbf
Oil pan sub–assy x Cylinder block	9.0	92	80 in.·lbf
Transverse engine engine mounting insulator x Cylinder block	52	530	38
Engine service cover bracket RH x Body RHD steering position type	9.0	92	80 in.·lbf
Cooler bracket RH x Body LHD steering position type	9.0	92	80 in.·lbf
Engine x wire	7.0	71	62 in.·lbf
Oil reservoir bracket No. 1 x Body	8.0	82	71 in.·lbf
Cooler refrigerant suction hose No. 1 x cooler bracket No, 1 LHD steering position type	9.0	92	80 in.·lbf
Return tube x Body	8.0	82	71 in.·lbf
Ignition coil assy x Cylinder head cover	9.0	92	80 in.·lbf
Vane pump x Cylinder block	37	377	27
Engine cover sub–assy x Cylinder block	7.0	71	62 in.·lbf
Front wheel RH	103	1,050	76

1CD–FTV:

Part Tightened	N·m	kgf·cm	ft·lbf
Oil drain plug x Oil pan sub–assy No. 2	34	350	25
Oil pump x Cylinder block	31	320	23

Part Tightened		N·m	kgf·cm	ft·lbf
Crankshaft position sensor x Oil pump assy		8.8	90	78 in.·lbf
Oil pan sub–assy x Cylinder block	Bolt A	42	428	31
	Bolt B	21	214	15
	Bolt C	11	112	8
	Bolt D	12	122	9
Oil pan insulator x Oil pan sub–assy		7.5	76	66 in.·lbf
Oil strainer sub–assy x Oil pan sub–assy	Bolt	21	209	15
	Nut	13	135	10
Oil pan Sub–assy No.2 x Oil pan sub–assy		12	119	9
Engine oil level sensor x Oil pan sub–assy No.2		7.0	71	62 in.·lbf
Oil level gage guide x Cylinder block		18	184	13
V–ribbed belt tensioner assy x Oil pump assy		31	320	23
Timing belt idler sub–assy No. 1 x Cylinder head		35	357	26
Timing belt idler sub–assy No. 2 x Oil pump assy		47	479	35
Engine mounting insulator sub–assy RH x Transverse engine engine mounting bracket		52	530	38
Engine mounting insulator sub–assy RH x Body		52	530	38
Engine cover No. 1 x Cylinder head cover sub–assy		8.0	82	71 in.·lbf
Engine cover No. 1 x Intake manifold		8.0	82	71 in.·lbf
Front wheel RH		103	1,050	76
Oil cooler assy x Cylinder block		45	454	33

MANUAL TRANSMISSION / TRANSAXLE

030NC–02

SERVICE DATA

C50, C250	
Transmission case oil seal drive in depth	9.9 ± 0.3 mm (0.390 ± 0.012 in.)
Transaxle case oil seal drive in depth	1.9 ± 0.3 mm (0.075 ± 0.012 in.)
E354, E357	
Transmission case oil seal drive in depth	3.5 ± 0.5 mm (0.138 ± 0.020 in.)
Transaxle case cover oil seal drive in depth	0 ± 0.5 mm (0 ± 0.020 in.)

030ND–02

TORQUE SPECIFICATION

Part Tightened		N·m	kgf·cm	ft·lbf
FLOOR SHIFT TRANSMISSION CONTROL CABLE ASSY				
Floor shift transmission control cable assy x Body		5.0	51	44 in.·lbf
Front floor heat insulator No.1 x Body		5.5	56	49 in.·lbf
FLOOR SHIFT SHIFT LEVER ASSY				
Floor shift shift lever assy x Body		12	122	9
MANUAL TRANSAXLE ASSY (1ZZ–FE/ 3ZZ–FE)				
Filler and drain plugs		39	400	29
Engine hanger set bolt		38	387	28
Engine mounting bracket RR x Transaxle		64	653	47
Engine mounting bracket RR x Engine mounting insulator RR		87	887	64
Engine mounting bracket FR x Transaxle		64	653	47
Engine mounting bracket FR x Engine mounting insulator FR		52	530	38
Manual transaxle assy x Engine	Bolt A: Bolt B: Bolt C:	64 47 23	650 480 230	47 35 17
Transverse engine engine mounting bracket LH x Transaxle		64	653	47
Engine mounting bracket LH x Engine mounting insulator LH	Bolt A: Nut B:	52 80	530 816	38 59
Starter assy x Manual transaxle assy		37	380	27
Starter wire set nut		13	130	9
Clutch release cylinder assy x Transaxle	Bolt A: Bolt B: Bolt C:	25 14 5.0	250 141 21	19 10 44 in.·lbf
Manual transaxle assy x Wire harness clmap	Bolt A: Bolt B:	26 19	260 195	19 14
Manual transaxle assy x Ground cable	Bolt A: Bolt B:	26 40	260 410	19 30
Battery carrier x Body		13	131	9
Battery clamp sub–assy x Body	Bolt: Nut:	5.0 3.5	51 36	44 in.·lbf 31 in.·lbf
Air cleaner assy x Body		5.0	51	44 in.·lbf
Cylinder head cover No.2 x Engine		7.0	71	62 in.·lbf
Hood set bolt		13	133	10
MANUAL TRANSAXLE ASSY (1AZ–FE/ 1AZ–FSE)				
Filler and drain plugs		49	500	36
Engine hanger x Engine		38	387	28
Transmission case protector x Transaxle		18	184	13
Engine mounting bracket RR x Transaxle		64	653	47
Engine mounting bracket RR x Engine mounting insulator RR		87	887	64
Engine mounting bracket FR x Transaxle		64	653	47
Engine mounting bracket FR x Engine mounting insulator FR		52	530	38
Manual transaxle assy x Engine	Bolt A: Bolt B: Bolt C:	64 46 44	650 470 449	47 34 32
Transverse engine engine mounting bracket LH x Transaxle		64	653	47
Engine mounting bracket LH x Engine mounting insulator LH	Bolt A: Nut B:	52 80	530 816	38 59
Manual transaxle assy x Ground cable	Bolt A: Bolt C:	26 40	260 410	19 30
Manual transaxle assy x Wire harness clamp		8.4	85	74 in.·lbf
Clutch release cylinder assy x Transaxle	Bolt A: Bolt B:	9.0 12	92 120	80 in.·lbf 9

Part Tightened		N·m	kgf·cm	ft·lbf
Battery carrier x Body		13	131	9
Battery clamp sub–assy x Body	Bolt: Nut:	5.0 3.5	51 36	44 in.·lbf 31 in.·lbf
Air cleaner assy x Body		5.0	51	44 in.·lbf
Engine cover sub–assy No.1 x Engine		9.0	92	80 in.·lbf
Hood set bolt		13	132	10
MANUAL TRANSAXLE ASSY (1CD–FTV)				
Filler and drain plugs		49	500	36
Engine hanger x Engine		37	377	27
Transmission case protector x Transaxle		18	184	13
Engine mounting bracket RR x Transaxle		64	653	47
Engine mounting bracket RR x Engine mounting insulator RR		87	887	64
Engine mounting bracket FR x Transaxle		64	653	47
Engine mounting bracket FR x Engine mounting insulator FR		52	530	38
Manual transaxle assy x Engine	Bolt A: Bolt B: Bolt C: Bolt D: Bolt E:	64 46 40 20 8.0	653 469 408 200 82	47 34 30 14 71 in.·lbf
Transverse engine engine mounting bracket LH x Transaxle		64	653	47
Engine mounting bracket LH x Engine mounting insulator LH	Bolt A: Nut B:	52 80	530 816	38 59
Accumulator to flexible hose tube x Transaxle	Bolt A: Bolt B: Bolt C:	12 5.0 9.0	120 51 92	9 44 in.·lbf 80 in.·lbf
Manual transaxle assy x Ground cable		13	131	9
Air tube No.2 x Transaxle		25	255	18
Starter assy x Transaxle		37	380	27
Starter wire set nut		13	130	9
Radiator reserve tank assy x Body		6.0	61	53 in.·lbf
Air tube No.1 x Engine		25	255	18
Battery clamp sub–assy x Body	Bolt: Nut:	5.0 3.5	51 36	44 in.·lbf 31 in.·lbf
Air cleaner assy x Body		7.0	71	62 in.·lbf
Engine cover No.1 x Engine		8.0	82	71 in.·lbf
Hood set bolt		13	133	10

PARKING BRAKE

031FV–01

SERVICE DATA

Parking brake lever travel at 196 N (20 kgf, 44.1 lbf):		6 – 9 clicks
Rear brake disc inside diameter	Standard	173 mm (6.81 in.)
	Maximum	174 mm (6.85 in.)
Parking brake shoe lining thickness	Standard	3.5 mm (0.138 in.)
	Maximum	1.0 mm (0.039 in.)

031FW–01

TORQUE SPECIFICATION

Part Tightened	N·m	kgf·cm	ft·lbf
Wheel nut	103	1,050	76
Parking brake lock nut	5.0	51	44 in.·lbf
Parking brake lever sub–assy x Body	13	127	9
Front floor heat insulator No.2 x Body	5.5	56	49 in.·lbf
Front floor heat insulator No.1 x Body	5.5	56	49 in.·lbf
Exhaust pipe installation bolt	43	440	32
Front floor panel brace x Body	30	302	21
Fuel tank protector No.1 x Body	5.5	56	49 in.·lbf
Parking brake cable assy No.3 x Fram	5.0	51	44 in.·lbf

POWER STEERING

030G6–04

SERVICE DATA

POWER STEERING FLUID		
Fluid level rise	Maximum	5 mm (0.20 in.)
Fluid pressure at idle speed with valve closed	AZ Series: 1CD–FTV:	8,300 to 9,000 kPa (85 to 92 kgf/cm^2, 1,204 to 1,305 psi) 8,800 to 9,500 kPa (90 to 97 kgf/cm^2, 1,276 to 1,378 psi)
STEERING WHEEL		
Steering effort at idle speed	(Reference)	5.5 N·m (56 kgf·cm, 49 in.·lbf)
VANE PUMP ASSY		
Vane pump rotating torque		0.27 N·m (2.8 kgf·cm, 2.4 in.·lbf) or less
Vane pump shaft and vane pump housing oil clearance	Maximum	0.07 mm (0.0028 in.)
Vane plate thickness	Minimum	1.405 to 1.411 mm (0.05531 to 0.05555 in.)
Clearance between the rotor groove and plate	Maximum	0.03 mm (0.0012 in.)
Spring free length	Minimum	36.9 mm (1.453 in.)
STEERING GEAR ASSY		
Total preload (Tie rod rotating torque)	(Turning)	0.29 to 1.96 N·m (3 to 20 kgf·cm, 2.57 to 17.35 in.·lbf)
Total preload (Control valve rotating torque)	(Turning)	0.6 to 1.1 N·m (6 to 11 kgf·cm, 5.3 to 9.7 in.·lbf)
RACK & PINION POWER STEERING GEAR ASSY		
Total preload (Tie rod rotating torque)	(Turning)	0.49 to 3.43 N·m (5 to 35 kgf·cm, 4.34 to 30.38 in.·lbf)

030G7–04

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
VANE PUMP ASSY (AZ Series)			
Vane pump housing sub–assy rear x Vane pump housing sub–assy front	22	224	16
Power steering oil pressure switch	21	214	15
Pressure port union sub–assy	69	704	51
Power steering suction port union set bolt	12	122	9
Vane pump assy x Pump bracket rear	44	449	32
Vane pump assy set bolt	26 (37)	264 (377)	19 (27)
Pressure feed tube assy x Vane pump assy	52	525	38
Pressure feed tube assy clamp set bolt	8.0	82	71 in.·lbf
VANE PUMP ASSY (1CD–FTV)			
Vane pump housing sub–assy rear x Vane pump housing sub–assy front	22	224	16
Pressure port union sub–assy	69	704	51
Power steering suction port union set bolt	12	122	9
Vane pump assy set bolt Bolt A:	72	734	53
Bolt B:	39	398	29
Pressure feed tube assy x Vane pump assy	41 (44.1)	414 (450)	30 (33)
Pressure feed tube assy clamp set bolt	8.0	82	71 in.·lbf
STEERING GEAR ASSY			
Engine hanger set bolt	38	387	28
Steering rack x Steering rack end sub–assy	60 (83.5)	616 (851)	45 (62)
Tie rod end sub–assy lock nut	74	750	54
Steering gear assy set bolt	49	500	36
Steering intermediate shaft x Steering pinion shaft	35	360	26
RACK & PINION POWER STEERING GEAR ASSY			
Engine hanger set bolt AZ Series:	38	390	28
1CD–FTV:	37	375	27
Tie rod end sub–assy lock nut	74	750	54
Rack & pinion power steering gear assy set bolt	49	500	36
Steering intermediate shaft x Control valve pinion shaft	35	360	26
Front suspension crossmember sub–assy x Frame	113	1,356	98
Crossmember bracket x Frame Bolt A:	113	1,356	98
Bolt B:	80	816	59
Crossmember x Engine mounting insulator RR	52	530	38
Center member x Frame	45	459	33
Center member x Engine mounting insulator FR	52	530	38
Front suspension arm sub–assy lower No.1 x Lower ball joint	89	908	66
Front stabilizer link assy set nut	74	755	55
Pressure feed tube assy x Rack & pinion steering gear assy	41 (44.1)	414 (450)	30 (33)
Steering gear outlet return tube x Rack & pinion steering gear assy	41 (44.1)	414 (450)	30 (33)
Outlet return tube clamp set bolt (LHD)	8.0	82	71 in.·lbf
Tie rod end sub–assy x Steering knuckle	49	500	36
Steering intermediate shaft assy No.2 set bolts	35	360	26
Front wheel hub nut	103	1,050	76

( ): For use without SST(s)

REAR SUSPENSION

SERVICE DATA

031HF–01

Rear wheel alignment	Toe–in (total)	
	Normal package:	0°18’ ± 12’ (0.3° ± 0.2°, 3.0 ± 2.0 mm, 0.12 ± 0.08 in.)
	Rough road package:	0°18’ ± 12’ (0.3° ± 0.2°, 3.0 ± 2.0 mm, 0.12 ± 0.08 in.)
	Camber	
	Normal package:	–0°54’ ± 30’ (–0.9° ± 0.5°)
	Rough road package:	–0°30’ ± 30’ (–0.5° ± 0.5°)
	Right–left error	30’ (0.5°) or less

031HG–01

TORQUE SPECIFICATION

Part Tightened	N·m	kgf·cm	ft·lbf
Hub nut	103	1,050	76
Piston rod set nut	56	571	41
Shock absorber x Body	80	816	59
Shock absorber x Rear suspension arm	160	1,632	118
Parking brake cable set bolt	5.0	51	44 in.·lbf
Skid control sensor wire harness bracket set bolt	5.0	51	44 in.·lbf
Rear suspension arm bracket x body	65	663	48
Rear suspension arm x Rear suspension member	74	755	55
Rear suspension arm bracket x Rear suspension arm	110	1,122	81
Rear axle carrier (front side) x Rear suspension arm	105	1,071	77
Rear axle carrier (rear side) x Rear suspension arm	74	755	55
Upper control arm x Rear axle carrier	74	755	55
Upper control arm x Suspension member	74	755	55
Lower control arm x Rear axle carrier	60	612	44
Lower control arm x Suspension member	105	1,071	77
Stabilizer bar x Stabilizer link	44	449	32
Stabilizer link x Suspension arm	44	449	32
Stabilizer bar bracket x Suspension member	35	357	26

SEAT

TORQUE SPECIFICATION

031HN–01

Part Tightened		N·m	kgf·cm	ft·lbf
FRONT SEAT				
Seat Inner belt assy x Seat adjuster assy		42	428	31
Seatback cover bracket x Seat adjuster assy (w/ Side airbag)		6.0	61	53 in.·lbf
Seat assy x Body		37	375	27
Seat position airbag sensor x Seat adjuster assy		8.0	82	71 in.·lbf
Power seat motor assy (Reclining) x Seat adjuster assy		4.5	46	40 in.·lbf
Power seat motor assy (Slide) x Seat adjuster assy	Bolt Nut	4.0 3.5	41 36	35 in.·lbf 31 in.·lbf
Power seat motor assy (lifter) x Seat adjuster assy	Bolt Nut	2.5 25	25 255	22 in.·lbf 18
Power seat motor assy (Front vertical) x Seat adjuster assy	Bolt Nut	2.5 25	25 255	22 in.·lbf 18
Front seatback spring assy x Front seat adjuster		25	255	18
REAR SEAT				
Armrest assy x Seatback assy		8.0	82	71 in.·lbf
Seat belt assy outer center x Seatback frame		42	428	31
Seat belt assy outer center x Body		42	428	31
Seatback lock assy x Seatback frame		30	306	22
Seatback hinge x Seatback frame		18	185	13
Seatback hinge x Body		18	185	13
Seatback hinge center x Body		18	185	13
Seatback hinge center x Seatback frame		18	185	13
Side seatback assy x Body		18	185	13
Bench type seatback assy x Body		18	185	13
Seat cushion frame x Body		18	185	13

SEAT BELT

TORQUE SPECIFICATION

031H8–01

Part Tightened	N·m	kgf·cm	ft·lbf
FRONT SEAT BELT			
Front seat outer belt assy RH (Upper bolt) x Body	7.5	76.5	66 in.·lbf
Front seat outer belt assy RH (Lower bolt) x Body	42	430	31
Front seat inner belt assy RH x Front seat assy	42	430	31
Front shoulder belt anchor adjuster assy x Body	42	430	31
Front seat outer belt (Floor anchor side) x Body	42	430	31
Front seat outer belt (Shoulder anchor side) x Body	42	430	31
REAR SEAT BELT			
Rear seat 3 point type belt assy inner x Body	42	430	31
CRS anchor bracket sub–assy RH x Body	31	316	23
Rear seat belt assy outer center (Retractor side) x Body	42	430	31
Rear seat belt assy outer center (Floor anchor side) x Body	42	430	31
Rear seat 3 point type belt assy outer (Upper bolt) x Body	7.5	76.5	66 in.·lbf
Rear seat 3 point type belt assy outer (Lower bolt) x Body	42	430	31
Rear seat 3 point type belt assy outer (Floor anchor side) x Body	42	430	31

SLIDING ROOF/CONVERTIBLE

TORQUE SPECIFICATION

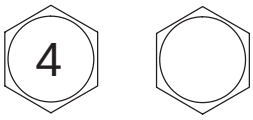
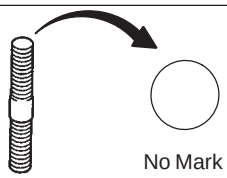
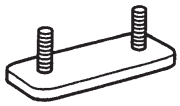
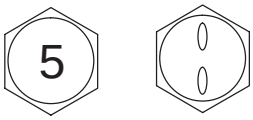
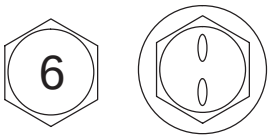
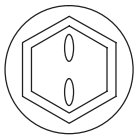
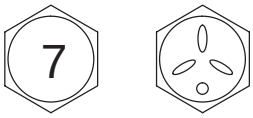
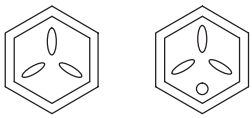
031GX–01

Part Tightened	N·m	kgf·cm	ft·lbf
Sliding roof glass assembly × Drive cable	4.0	40	35 in.·lbf
Sliding roof housing sub–assy × Body			
Bolt	5.0	51	44 in.·lbf
Nut	5.5	56	49 in.·lbf

STANDARD BOLT

HOW TO DETERMINE BOLT STRENGTH

030LK–05

Bolt Type				Class
Hexagon Head Bolt		Stud Bolt	Weld Bolt	
Normal Recess Bolt	Deep Recess Bolt			
				4T
				5T
				6T
				7T
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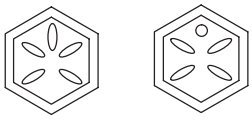
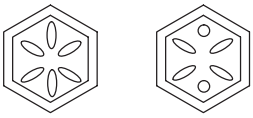
				10T
				11T

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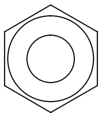
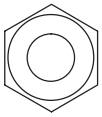
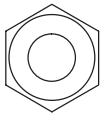
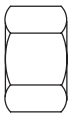
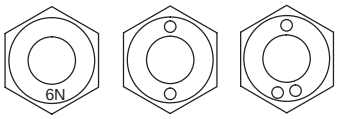
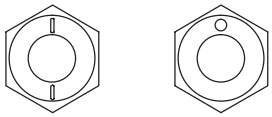
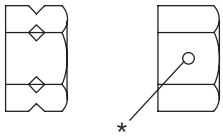
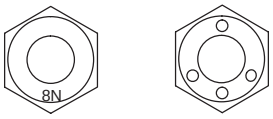
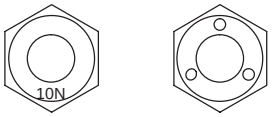
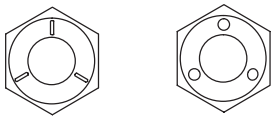
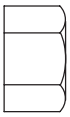
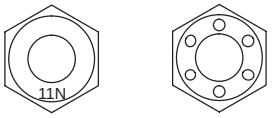
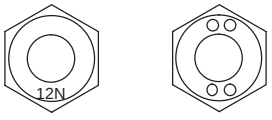
030LM–05

HOW TO DETERMINE NUT STRENGTH

Nut Type			Class
Present Standard Hexagon Nut	Old Standard Hexagon Nut		
	Cold Forging Nut	Cutting Processed Nut	
 No Mark			4N
 No Mark (w/ Washer)	 No Mark (w/ Washer)	 No Mark	5N (4T)
 6N			6N
		 *	7N (5T)
 8N			8N
 10N		 No Mark	10N (7T)
 11N			11N
 12N			12N

*: Nut with 1 or more marks on one side surface of the nut.

B06432

HINT:

Use the nut with the same number of the nut strength classification or the greater than the bolt strength classification number when tightening parts with a bolt and nut.

Example: Bolt = 4T

Nut = 4N or more

030LL–05

SPECIFIED TORQUE FOR STANDARD BOLTS

Class	Diameter mm	Pitch mm	Specified torque					
			Hexagon head bolt			Hexagon flange bolt		
			N·m	kgf·cm	ft·lbf	N·m	kgf·cm	ft·lbf
4T	6	1	5	55	48 in.·lbf	6	60	52 in.·lbf
	8	1.25	12.5	130	9	14	145	10
	10	1.25	26	260	19	29	290	21
	12	1.25	47	480	35	53	540	39
	14	1.5	74	760	55	84	850	61
	16	1.5	115	1,150	83	–	–	–
5T	6	1	6.5	65	56 in.·lbf	7.5	75	65 in.·lbf
	8	1.25	15.5	160	12	17.5	175	13
	10	1.25	32	330	24	36	360	26
	12	1.25	59	600	43	65	670	48
	14	1.5	91	930	67	100	1,050	76
	16	1.5	140	1,400	101	–	–	–
6T	6	1	8	80	69 in.·lbf	9	90	78 in.·lbf
	8	1.25	19	195	14	21	210	15
	10	1.25	39	400	29	44	440	32
	12	1.25	71	730	53	80	810	59
	14	1.5	110	1,100	80	125	1,250	90
	16	1.5	170	1,750	127	–	–	–
7T	6	1	10.5	110	8	12	120	9
	8	1.25	25	260	19	28	290	21
	10	1.25	52	530	38	58	590	43
	12	1.25	95	970	70	105	1,050	76
	14	1.5	145	1,500	108	165	1,700	123
	16	1.5	230	2,300	166	–	–	–
8T	8	1.25	29	300	22	33	330	24
	10	1.25	61	620	45	68	690	50
	12	1.25	110	1,100	80	120	1,250	90
9T	8	1.25	34	340	25	37	380	27
	10	1.25	70	710	51	78	790	57
	12	1.25	125	1,300	94	140	1,450	105
10T	8	1.25	38	390	28	42	430	31
	10	1.25	78	800	58	88	890	64
	12	1.25	140	1,450	105	155	1,600	116
11T	8	1.25	42	430	31	47	480	35
	10	1.25	87	890	64	97	990	72
	12	1.25	155	1,600	116	175	1,800	130

STARTING & CHARGING

031E6–01

SERVICE DATA

1ZZ–FE/3ZZ–FE:

Starter assy		
	Rated voltage and output power	12 V 1.3 kW
Specified current		85 A or less at 11.5 V
Starter relay		
Specified condition	1 – 2	Continuity
	3 – 5	No continuity
Battery		
Voltage	at 20 ˚C (68 ˚F)	12.5 to 12.9 V
Voltage regulator	Regulating voltage	12.9 to 14.9 V
	Standard amperage	10 A or less

1AZ–FE:

Starter assy		
	Rated voltage and output power	12 V 1.3 kW
Specified current		85 A or less at 11.5 V
Starter relay		
Specified condition	1 – 2	Continuity
	3 – 5	No continuity
Battery		
Voltage	at 20 ˚C (68 ˚F)	12.5 to 12.9 V
Voltage regulator	Regulating voltage	12.9 to 14.9 V
	Standard amperage	10 A or less

1AZ–FSE:

Starter (1.3 kW type)		
	Rated voltage and output power	12 V 1.3 kW
No–load characteristics	Current	85 A or less at 11.5 V
Starter (1.6 kW type)		
	Rated voltage and output power	12 V 1.6 kW
No–load characteristics	Current	75 A or less at 11.5 V
Starter relay		
Specified condition	1 – 2	Continuity
	3 – 5	No continuity
Battery		
Voltage	at 20 ˚C (68 ˚F)	12.5 to 12.9 V
Voltage regulator	Regulating voltage	12.9 to 14.9 V
	Standard amperage	10 A or less

1CD–FTV:

Starter assy		
	Rated voltage and output power	12 V 2.0 kW
Specified current		190 A or less at 11.5 V
Starter relay		
Specified condition	1 – 2	Continuity
	3 – 5	No continuity
Battery		
Except maintenance–free battery	Standard specific gravity	1.25 to 1.29 at 20 ˚C (68 ˚F)
Voltage	at 20 ˚C (68 ˚F)	12.5 to 12.9 V
Voltage regulator	Regulating voltage	13.2 to 14.8 V
	Standard amperage	10 A or less
Glow plugs		
Resistance	at 20 ˚C (68 ˚F)	Approx. 0.72 Ω
Glow plug relay		
Specified condition	1 – 2	No continuity
	3 – 4	Continuity

031E7–03

TORQUE SPECIFICATION

1ZZ–FE/3ZZ–FE:

Part Tightened	N·m	kgf·cm	ft·lbf
Starter assy x Transaxle housing	37	378	28
Starter wire x Starter assy	9.8	100	7
Generator assy x Transverse engine engine mounting bracket	25	255	18
Generator assy x Cylinder block sub–assy	54	551	40
Generator wire x Generator assy	9.8	100	7
Lead wire of field coil x Terminal C	5.9	60	52 in.·lbf

1AZ–FE/1AZ–FSE:

Part Tightened		N·m	kgf·cm	ft·lbf
Wire harness clamp bracket x Starter assy		8.4	86	74 in.·lbf
Starter assy x Cylinder block sub–assy		37	380	28
Starter wire x Starter assy		9.8	100	7
Battery carrier x Body		13	131	9
Battery clamp sub–assy x Body		5.0	51	44 in.·lbf
Battery clamp sub–assy x Battery clamp bolt		3.6	36	31 in.·lbf
Terminal x Battery		5.4	55	48 in.·lbf
Wire harness clamp bracket x Generator assy		8.4	86	74 in.·lbf
Generator assy x Cylinder block sub–assy	Bolt A	52	530	38
	Bolt B	21	214	16
Generator wire x Generator assy		9.8	100	7
Lead wire of field coil x Terminal C		5.9	60	52 in.·lbf

1CD–FTV:

Part Tightened		N·m	kgf·cm	ft·lbf
Starter x Transaxle	Bolt	37	377	27
	Terminal 30	9.8	100	7.2
Generator assy x Engine	M8	31	320	23
	M10	47	475	34
	Alternator wire	9.8	100	7
	Wire harness	5.0	51	44 in.·lbf
Glow plug assy x Cylinder head	Glow plug	12.3	125	9
	Nut	2.2	22	19 in.·lbf
Engine cover No. 1 x Cylinder head cover sub–assy		8.0	82	71 in.·lbf
Engine cover No. 1 x Intake manifold		8.0	82	71 in.·lbf
Front wheel RH		103	1,050	76

STEERING COLUMN

SERVICE DATA

031FX–01

STEERING SYSTEM		
Steering wheel freeplay	Maximum	30 mm (1.18 in.)

031FZ–01

TORQUE SPECIFICATION

Part Tightened	N·m	kgf·cm	ft·lbf
Steering intermediate shaft assy No. 2 x Oil pressure power steering column assy (LHD steering positoin type)	28	286	21
Steering sliding yoke sub–assy x Oil pressure power steering column assy (RHD steering positoin type)	28	286	21
Steering intermediate shaft assy No. 2 x Electric power steering column assy (LHD steering positoin type)	35	360	26
Steering sliding yoke sub–assy x Electric power steering column assy (RHD steering positoin type)	35	360	26
Steering sliding yoke sub–assy x Steering intermediate shaft assy No. 2	35	360	26
Steering column assy set bolt	21	214	15
Steering sliding yoke sub–assy x Steering gear assy (LHD steering positoin type)	35	360	26
Steering intermediate shaft assy No. 2 x Steering gear assy (RHD steering positoin type)	35	360	26
Steering wheel set nut	50	510	37
Steering wheel pad set screw (Torx screw)	8.8	90	78 in.·lbf
Steering column cover LWR x Steering column assy	5.0	51	44 in.·lbf
Instrument panel airbag assy	18	184	13
Power steering ECU assy (Bolt A)	8	82	71 in.·lbf
Power steering ECU assy (Bolt B)	15.5	158	11

SUPPLEMENTAL RESTRAINT SYSTEM

TORQUE SPECIFICATION

031HM–01

Part Tightened	N·m	kgf·cm	ft·lbf
Horn button assy x Steering wheel assy	8.8	90	78 in.·lbf
Steering wheel assy x Steering column assy	50	510	37
Instrument panel passenger airbag assy x Instrument panel reinforcement	20	200	14
Curtain shield airbag assy x Body	3.5 14	36 143	31 in.·lbf 10
Instrument panel airbag assy x Instrument panel reinforcement	18	184	13
Airbag sensor assy center x Body	17.5	178	13
Airbag front sensor set bolt	7.5	76	66 in.·lbf
Side airbag sensor assy LH x Body	17.5	178	13
Airbag sensor rear LH x Body	17.5	178	13
Seat position airbag sensor x Front seat	8.0	82	71 in.·lbf

TIRE & WHEEL

SERVICE DATA

0313C–05

Cold tire inflation pressure	Engine type: 3ZZ–FE, 1ZZ–FE, 1AZ–FE		
	Tire size	Front kPa (kgf/cm^2, psi)	Rear kPa (kgf/cm^2, psi)
	195/65R16 91V: 205/55R16 91V: with 4 or less occupants	220 (2.2, 32) *1 240 (2.4, 35) *2	220 (2.2, 32) *1 240 (2.4, 35) *2
	with 5 or more occupants	220 (2.2, 32) *1 250 (2.5, 36) *2	220 (2.2, 32) *1 280 (2.8, 41) *1
	Engine type: 1CD–FTV		
	Tire size	Front kPa (kgf/cm^2, psi)	Rear kPa (kgf/cm^2, psi)
	205/55R16 91V: with 4 or less occupants	240 (2.4, 35) *1 270 (2.7, 39) *2	240 (2.4, 35) *1 270 (2.7, 39) *2
	with 5 or more occupants	240 (2.4, 35) *1 280 (2.8, 41) *2	240 (2.4, 35) *1 290 (2.9, 42) *2
	Engine type: 1AZ–FSE		
	Tire size	Front kPa (kgf/cm^2, psi)	Rear kPa (kgf/cm^2, psi)
	205/55R16 91V: with 4 or less occupants	220 (2.2, 32) *1 250 (2.5, 36) *2	220 (2.2, 32) *1 250 (2.5, 36) *2
	with 5 or more occupants	220 (2.2, 32) *1 270 (2.7, 39) *2	220 (2.2, 32) *1 280 (2.8, 41) *2
	215/45R17 87W: with 4 or less occupants	240 (2.4, 35) *1 290 (2.9, 42) *2	240 (2.4, 35) *1 290 (2.9, 42) *2
	with 5 or more occupants	240 (2.4, 35) *1 310 (3.1, 45) *2	240 (2.4, 35) *1 330 (3.3, 48) *2
Tire runout	1.4 mm (0.055 in.) or less		
Imbalance after adjustment	8.0 g (0.018 lb) or less		

***1: For driving under 160 km/h (100 mph)**

***2: For driving at 160 km/h (100 mph) or over**

WINDSHIELD/WINDOWGLASS/MIRROR

031HO–01

TORQUE SPECIFICATION

Part Tightened	N·m	kgf·cm	ft·lbf
OUTER REAR VIEW MIRROR ASSY LH			
Outer rear view mirrror assy x Front door	10	102	7

WIPER & WASHER

TORQUE SPECIFICATION

031HA–01

Part Tightened	N·m	kgf·cm	ft·lbf
Wiper motor x Wiper link	7.5	76	66 in.·lbf
Wiper link x Body	5.5	56	49 in.·lbf
Wiper arm x Wiper link	21	210	15
Rear wiper motor x Body	5.5	56	49 in.·lbf
Rear wiper motor x Rear wiper arm	5.5	56	49 in.·lbf