SERVICE SPECIFICATIONS

SERVICE DATE

Engine stall revolution		1FZ-FE	2,150 ± 150 rpm		
		1HD-T	1,950 ± 150 rpm		
Engine idle speed		N range	650 rpm		
Time lag	N range → D range		Less than 1.0 seconds		
	N range → R range		Less than 1.5 seconds		
Line pressure (wheel locked)					
Engine idling	(1FZ-FE)	D range	461 – 520 kPa	4.7 – 5.3 kgf/cm²	68 – 77 psi
		R range	657 – 843 kPa	6.7 – 8.6 kgf/cm²	97 – 125 psi
	(1HD-T)	D range	431 – 510 kPa	4.4 – 5.2 kgf/cm²	63 – 74 psi
		R range	637 – 843 kPa	6.5 – 8.6 kgf/cm²	92 – 122 psi
At stall	(1FZ-FE)	D range	971 – 1,226 kPa	9.9 – 12.5 kgf/cm²	144 – 181 psi
		R range	1,648 – 1,853 kPa	16.8 – 18.9 kgf/cm²	244 – 274 psi
	(1HD-T)	D range	971 – 1,226 kPa	9.9 – 12.5 kgf/cm²	144 – 181 psi
		R range	1,608 – 1,853 kPa	16.4 – 18.9 kgf/cm²	233 – 274 psi
Throttle cable adjustment					
Throttle valve fully closed			Between boot end and inner cable stopper		
		(1FZ-FE)	0 – 1 mm	0 – 0.04 in.	
		(1HD-T)	0.5 – 1.5 mm	0.020 – 0.059 in.	
Throttle valve fully opened			32 – 34 mm	1.26 – 1.34 in.	
Torque convertor correct distance		(1FZ-FE)	37.2 mm (1.465 in.) or more		
		(1HD-T)	43.8 mm (1.724 in.)		
Torque convertor sleeve runout		Limit	0.30 mm	0.0118 in.	
Drive plate runout		Limit	0.20 mm	0.0079 in.	

Shift point schedule km/h (mph)

		Throttle valve opening		100 %			5 %		100 %		
Engine	Tire size	Gear range		1 → 2	2 → 3	3 → O/D	Lock-up ON	Lock-up OFF	O/D → 3	3 → 2	2 → 1
1FZ-FE	7.50R16-6	D range	Normal mode	53–60 (33–37)	108–122 (67–76)	153–170 (95–106)	61–69 (38–43)	55–63 (34–39)	147–163 (91–101)	99–109 (62–68)	42–49 (26–30)
			Power mode	53–60 (33–37)	108–122 (67–76)	153–170 (95–106)	89–99 (55–62)	73–80 (45–50)	147–163 (91–101)	99–109 (62–68)	42–49 (26–30)
		2 range	Normal mode Power mode	–	–	–	–	–	–	118–132 (73–82)	–
		L range	Normal mode Power mode	–	–	–	–	–	–	–	60–68 (37–42)
	245/85-R16	D range	Normal mode	56–62 (35–39)	114–125 (71–78)	161–174 (100–108)	64–70 (40–43)	58–64 (36–40)	154–167 (96–103)	105–112 (65–70)	44–48 (27–30)
			Power mode	56–62 (35–39)	114–125 (71–78)	161–174 (100–108)	93–100 (58–62)	73–80 (45–50)	154–167 (96–103)	105–112 (65–70)	44–48 (27–30)
		2 range	Normal mode Power mode	–	–	–	–	–	–	124–135 (77–84)	–
		L range	Normal mode Power mode	–	–	–	–	–	–	–	63–69 (39–43)
	215/80-R16	D range	Normal mode	49–54 (30–34)	101–111 (63–69)	143–153 (89–95)	63–69 (39–43)	57–63 (35–39)	137–147 (85–91)	93–99 (58–62)	40–45 (25–28)
			Power mode	49–54 (30–34)	101–111 (63–69)	143–153 (89–95)	83–89 (52–55)	72–78 (45–48)	137–147 (85–91)	93–99 (58–62)	40–45 (25–28)
		2 range	Normal mode Power mode	–	–	–	–	–	–	110–119 (68–74)	–
		L range	Normal mode Power mode	–	–	–	–	–	–	–	56–61 (34–38)
	275/70-R16	D range	Normal mode	52–58 (32–36)	106–117 (66–73)	152–163 (94–101)	60–66 (37–41)	55–60 (34–37)	145–156 (90–97)	98–104 (61–65)	42–47 (26–29)
			Power mode	52–58 (32–36)	106–117 (66–73)	152–163 (94–101)	88–94 (55–58)	68–74 (42–46)	145–156 (90–97)	98–104 (61–65)	42–47 (26–29)
		2 range	Normal mode Power mode	–	–	–	–	–	–	116–127 (72–79)	–
		L range	Normal mode Power mode	–	–	–	–	–	–	–	59–65 (37–40)

		Throttle valve opening		100 %			5 %		100 %		
Engine	Tire size	Gear range		1 → 2	2 → 3	3 → O/D	Lock-up ON	Lock-up OFF	O/D → 3	3 → 2	2 → 1
1HD-T	7.50R16-6	D range	Normal mode	41—47 (25—29)	81—90 (50—56)	122—136 (76—85)	56—64 (35—40)	50—58 (31—36)	115—129 (71—80)	75—82 (47—51)	33—39 (21—24)
			Power mode	41—47 (25—29)	81—90 (50—56)	122—136 (76—85)	78—87 (48—54)	72—80 (45—50)	115—129 (71—80)	75—82 (47—51)	34—41 (21—25)
		2 range	Normal mode Power mode	—	—	—	—	—	—	89—98 (55—61)	—
		L range	Normal mode Power mode	—	—	—	—	—	—	—	38—45 (24—28)
	245/85-R16	D range	Normal mode	43—49 (27—30)	85—92 (53—57)	129—140 (80—87)	59—65 (37—40)	53—59 (33—36)	121—132 (75—82)	75—82 (47—51)	34—40 (21—25)
			Power mode	43—49 (27—30)	85—92 (53—57)	129—140 (80—87)	82—89 (51—55)	75—82 (47—51)	121—132 (75—82)	75—82 (47—51)	36—42 (22—26)
		2 range	Normal mode Power mode	—	—	—	—	—	—	93—100 (58—62)	—
		L range	Normal mode Power mode	—	—	—	—	—	—	—	40—46 (25—29)
	215/80-R16	D range	Normal mode	37—42 (23—26)	76—81 (47—50)	113—123 (70—76)	53—58 (33—36)	47—52 (29—32)	108—117 (67—73)	67—72 (42—44)	30—35 (19—22)
			Power mode	37—42 (23—26)	76—81 (47—50)	113—123 (70—76)	73—79 (45—49)	66—72 (41—45)	108—117 (67—73)	67—72 (42—44)	32—37 (20—23)
		2 range	Normal mode Power mode	—	—	—	—	—	—	83—89 (52—55)	—
		L range	Normal mode Power mode	—	—	—	—	—	—	—	35—40 (22—25)
	275/70-R16	D range	Normal mode	41—46 (25—29)	80—86 (50—53)	120—131 (75—81)	56—61 (35—38)	50—55 (31—34)	114—124 (71—77)	70—76 (43—47)	32—37 (20—23)
			Power mode	41—46 (25—29)	80—86 (50—53)	120—131 (75—81)	77—83 (48—52)	70—76 (43—47)	114—124 (71—77)	70—76 (43—47)	34—39 (21—24)
		2 range	Normal mode Power mode	—	—	—	—	—	—	88—94 (55—58)	—
		L range	Normal mode Power mode	—	—	—	—	—	—	—	38—43 (24—27)

TORQUE SPECIFICATION

Part tightened	N·m	kgf·cm	ft·lbf
Engine × Transmission 14 mm (0.55 in.) head bolt	37	380	27
Engine × Transmission 17 mm (0.67 in.) head bolt	72	730	53
Torque converter × Drive plate	55	550	40
Frame crossmember set bolt	61	620	45
Frame crossmember set nut	59	600	43
Oil cooler pipe union nut	34	350	25
Oil cooler pipe tube clamp × Transmission	10	100	7
Front differentail × Front propeller shaft	74	750	54
Transfer × Front propeller shaft	74	750	54
Transfer × Rear propeller shaft	88	900	65
Rear differentail × Rear propeller shaft	88	900	65
Crank shaft × Drive plate	100	1,000	72
Engine under cover × Frame	28	290	21
Transfer shift lever × Transmission	18	185	13
Oil pan set bolt	6.9	70	61 in.·lbf
Drain plug	27	280	20
Vaive body × Transmission case	10	100	7
Transfer under cover × Frame	28	290	21