ENGINE FUEL

SERVICE DATA

SS0QX–03

Fuel heater	Resistance at 20°C (68°F)	0.5 – 2.0 Ω
Injection nozzles (1HZ)	Nozzle opening pressure	
	New nozzle M/T, A/T (White indication ring)	14,710 – 15,690 kPa (150 – 160 kgf/cm^2, 2,133 – 2,276 psi)
	A/T (Brown indication ring)	15,690 – 16,671 kPa (160 – 170 kgf/cm^2, 2,276 – 2,418 psi)
	Reused nozzle M/T, A/T (White indication ring)	14,220 – 15,220 kPa (145 – 155 kgf/cm^2, 2,062 – 2,205 psi)
	A/T (Brown indication ring)	15,200 – 16,181 kPa (155 – 165 kgf/cm^2, 2,205 – 2,347 psi)
	Adjusting shim thickness	0.900 mm (0.0354 in.) 0.925 mm (0.0364 in.)
		0.950 mm (0.0374 in.) 0.975 mm (0.0384 in.)
		1.000 mm (0.0394 in.) 1.025 mm (0.0404 in.)
		1.050 mm (0.0413 in.) 1.075 mm (0.0423 in.)
		1.100 mm (0.0433 in.) 1.125 mm (0.0443 in.)
		1.150 mm (0.0453 in.) 1.175 mm (0.0463 in.)
		1.200 mm (0.0472 in.) 1.225 mm (0.0482 in.)
		1.250 mm (0.0492 in.) 1.275 mm (0.0502 in.)
		1.300 mm (0.0512 in.) 1.325 mm (0.0522 in.)
		1.350 mm (0.0531 in.) 1.375 mm (0.0541 in.)
		1.400 mm (0.0551 in.) 1.425 mm (0.0561 in.)
		1.450 mm (0.0571 in.) 1.475 mm (0.0581 in.)
		1.500 mm (0.0591 in.) 1.525 mm (0.0600 in.)
		1.550 mm (0.0610 in.) 1.575 mm (0.0620 in.)
		1.600 mm (0.0630 in.) 1.625 mm (0.0640 in.)
		1.650 mm (0.0650 in.) 1.675 mm (0.0659 in.)
		1.700 mm (0.0669 in.) 1.725 mm (0.0679 in.)
		1.750 mm (0.0689 in.) 1.775 mm (0.0699 in.)
		1.800 mm (0.0709 in.) 1.825 mm (0.0719 in.)
		1.850 mm (0.0728 in.) 1.875 mm (0.0738 in.)
		1.900 mm (0.0748 in.) 1.925 mm (0.0758 in.)
		1.950 mm (0.0768 in.)
Injection nozzles (1HD–T)	Pre–lift	0.06 – 0.08 mm (0.00236 – 0.00315 in.)
	Nozzle opening pressure No.1	17,652 – 18,633 kPa (180 – 190 kgf/cm^2, 2,560 – 2,702 psi)
	No.2 (Inspection pressure)	13,239 – 14,220 kPa (135 – 145 kgf/cm^2, 1,920 – 2,062 psi)
	Pre–lift and nozzle opening pressure adjusting shim thickness	0.700 mm (0.0276 in.) 0.750 mm (0.0295 in.)
		0.800 mm (0.0315 in.) 0.850 mm (0.0335 in.)
		0.900 mm (0.0354 in.) 0.950 mm (0.0374 in.)
		0.975 mm (0.0384 in.) 1.000 mm (0.0394 in.)
		1.025 mm (0.0404 in.) 1.050 mm (0.0413 in.)
		1.075 mm (0.0423 in.) 1.100 mm (0.0433 in.)
		1.125 mm (0.0443 in.) 1.150 mm (0.0453 in.)
		1.175 mm (0.0463 in.) 1.200 mm (0.0472 in.)
		1.225 mm (0.0482 in.) 1.250 mm (0.0492 in.)
		1.280 mm (0.0504 in.) 1.290 mm (0.0508 in.)
		1.300 mm (0.0512 in.) 1.310 mm (0.0516 in.)
		1.320 mm (0.0520 in.) 1.330 mm (0.0524 in.)
		1.340 mm (0.0528 in.) 1.350 mm (0.0531 in.)
		1.360 mm (0.0535 in.) 1.370 mm (0.0539 in.)
		1.380 mm (0.0543 in.) 1.390 mm (0.0547 in.)
		1.400 mm (0.0551 in.) 1.410 mm (0.0555 in.)
		1.420 mm (0.0559 in.) 1.430 mm (0.0563 in.)
		1.440 mm (0.0567 in.) 1.450 mm (0.0571 in.)
		1.460 mm (0.0575 in.) 1.470 mm (0.0579 in.)
		1.480 mm (0.0583 in.) 1.490 mm (0.0587 in.)
		1.500 mm (0.0591 in.) 1.510 mm (0.0594 in.)
		1.520 mm (0.0598 in.) 1.530 mm (0.0602 in.)
		1.540 mm (0.0606 in.) 1.550 mm (0.0610 in.)
		1.560 mm (0.0614 in.) 1.570 mm (0.0618 in.)

Injection nozzles (1HD–T) (Cont'd)	Pre–lift and nozzle opening pressure adjusting shim thickness (Cont'd)	1.580 mm (0.0622 in.)	1.590 mm (0.0626 in.)
		1.600 mm (0.0630 in.)	1.610 mm (0.0634 in.)
		1.620 mm (0.0638 in.)	1.630 mm (0.0641 in.)
		1.640 mm (0.0646 in.)	1.650 mm (0.0650 in.)
		1.660 mm (0.0654 in.)	1.670 mm (0.0657 in.)
		1.680 mm (0.0661 in.)	1.690 mm (0.0665 in.)
		1.700 mm (0.0669 in.)	1.750 mm (0.0689 in.)
		1.800 mm (0.0709 in.)	
Injection nozzles (1HD–FTE)	Nozzle opening pressure No.1	17,162 – 18,142 kPa (175 – 185 kgf/cm^2, 2,489 – 2,631 psi)	
	No.2 (Inspection pressure)	33,539 – 35,500 kPa (342 – 362 kgf/cm^2, 4,864 – 5,149 psi)	
	No.2 pressure spring washer (No.1 nozzle opening pressure adjusting shim) thickness	0.800 mm (0.0315 in.)	0.825 mm (0.0325 in.)
		0.850 mm (0.0335 in.)	0.875 mm (0.0344 in.)
		0.900 mm (0.0354 in.)	0.925 mm (0.0364 in.)
		0.950 mm (0.0374 in.)	0.975 mm (0.0384 in.)
		1.000 mm (0.0394 in.)	1.025 mm (0.0404 in.)
		1.050 mm (0.0413 in.)	1.075 mm (0.0423 in.)
		1.100 mm (0.0433 in.)	1.125 mm (0.0443 in.)
		1.150 mm (0.0453 in.)	1.175 mm (0.0463 in.)
		1.200 mm (0.0472 in.)	1.225 mm (0.0482 in.)
		1.250 mm (0.0492 in.)	1.275 mm (0.0502 in.)
		1.300 mm (0.0512 in.)	1.325 mm (0.0521 in.)
		1.350 mm (0.0531 in.)	1.375 mm (0.0541 in.)
		1.400 mm (0.0551 in.)	1.425 mm (0.0561 in.)
		1.450 mm (0.0571 in.)	1.475 mm (0.0581 in.)
		1.500 mm (0.0591 in.)	1.525 mm (0.0600 in.)
		1.550 mm (0.0610 in.)	1.575 mm (0.0620 in.)
		1.600 mm (0.0630 in.)	1.625 mm (0.0640 in.)
		1.650 mm (0.0650 in.)	1.675 mm (0.0659 in.)
		1.700 mm (0.0669 in.)	1.725 mm (0.0679 in.)
		1.750 mm (0.0689 in.)	1.775 mm (0.0699 in.)
		1.800 mm (0.0709 in.)	1.825 mm (0.0719 in.)
		1.850 mm (0.0728 in.)	1.875 mm (0.0738 in.)
		1.900 mm (0.0748 in.)	1.925 mm (0.0758 in.)
		1.950 mm (0.0768 in.)	1.975 mm (0.0778 in.)
		2.000 mm (0.0787 in.)	2.025 mm (0.0797 in.)
		2.050 mm (0.0807 in.)	2.075 mm (0.0817 in.)
		2.100 mm (0.0827 in.)	2.125 mm (0.0837 in.)
		2.150 mm (0.0846 in.)	2.175 mm (0.0856 in.)
		2.200 mm (0.0866 in.)	
	No.1 pressure spring washer (No.2 nozzle opening pressure adjusting shim) thickness	0.700 mm (0.0276 in.)	0.750 mm (0.0295 in.)
		0.800 mm (0.0315 in.)	0.850 mm (0.0335 in.)
		0.900 mm (0.0354 in.)	0.950 mm (0.0374 in.)
		0.975 mm (0.0384 in.)	1.000 mm (0.0394 in.)
		1.025 mm (0.0404 in.)	1.050 mm (0.0413 in.)
		1.075 mm (0.0423 in.)	1.100 mm (0.0433 in.)
		1.125 mm (0.0443 in.)	1.150 mm (0.0453 in.)
		1.175 mm (0.0463 in.)	1.200 mm (0.0472 in.)
		1.225 mm (0.0482 in.)	1.250 mm (0.0492 in.)
		1.275 mm (0.0502 in.)	1.300 mm (0.0512 in.)
		1.325 mm (0.0521 in.)	1.350 mm (0.0531 in.)
		1.375 mm (0.0541 in.)	1.400 mm (0.0551 in.)
		1.425 mm (0.0561 in.)	1.450 mm (0.0571 in.)
		1.475 mm (0.0581 in.)	1.500 mm (0.0591 in.)
		1.525 mm (0.0600 in.)	1.550 mm (0.0610 in.)
		1.575 mm (0.0620 in.)	1.600 mm (0.0630 in.)
		1.625 mm (0.0640 in.)	1.650 mm (0.0650 in.)
		1.675 mm (0.0659 in.)	1.700 mm (0.0669 in.)
		1.725 mm (0.0679 in.)	1.750 mm (0.0689 in.)
		1.775 mm (0.0699 in.)	1.800 mm (0.0709 in.)

Injection nozzles (1HD–FTE) (Cont'd)	No.1 pressure spring washer (No.2 nozzle opening pressure adjusting shim) thickness (Cont'd)		1.850 mm (0.0728 in.) 1.950 mm (0.0768 in.) 2.050 mm (0.0807 in.) 2.150 mm (0.0846 in.)	1.900 mm (0.0748 in.) 2.000 mm (0.0787 in.) 2.100 mm (0.0827 in.)
Injection pump (1HZ, 1HD–T)	Direction of rotation		Clockwise as seen from drive side	
	Injection order		1 – 4 – 2 – 6 – 3 – 5 (A – B – C – D – E – F)	
	Delivery valve opening pressure	1HD–T	7,350 – 8,330 kPa (75 – 85 kgf/cm^2, 1,067 – 1,209 psi)	
	Plunger spring deviation		2.0 mm (0.079 in.)	
	Spring free length			
	Delivery valve spring	1HZ	24.4 mm (0.961 in.)	
		1HD–T	12.6 mm (0.496 in.)	
	Plunger spring	1HZ	30.0 mm (1.181 in.)	
		1HD–T	31.2 mm (1.228 in.)	
	Coupling spring	1HZ	16.6 mm (0.645 in.)	
		1HD–T	15.5 mm (0.610 in.)	
	Pneumatic bellows spring	1HZ w/ HAC	35.0 mm (1.378 in.)	
	Boost compensator spring	1HD–T	19.4 mm (0.764 in.)	
	Roller height variation		0.02 mm (0.0008 in.)	
	Pickup sensor resistance		650 – 970 Ω	
	Timer adjusting screw protrusion pre–setting		7.5 – 8.0 mm (0.295 – 0.315 in.)	
	Plunger spring shim thickness		0.5 mm (0.020 in.) 1.0 mm (0.039 in.) 1.5 mm (0.059 in.) 2.0 mm (0.079 in.)	0.8 mm (0.031 in.) 1.2 mm (0.047 in.) 1.8 mm (0.071 in.)
	Flyweight holder thrust clearance		0.15 – 0.35 mm (0.0059 – 0.0138 in.)	
	Governor gear adjusting washer thickness		1.05 mm (0.0413 in.) 1.45 mm (0.0571 in.) 1.85 mm (0.0728 in.)	1.25 mm (0.0492 in.) 1.65 mm (0.0650 in.)
	Governor shaft protrusion		0.3 – 2.0 mm (0.012 – 0.079 in.)	
	Plunger pre–strokes	1HZ	0.2 mm (0.0079 in.)	
		1HD–T	0.25 mm (0.0089 in.)	
	Adjusting shim thickness		Shim are available in 131 sized in increments 0.01 mm (0.004 in.), from 1.90 mm (0.0748 in.) to 3.20 mm (0.1260 in.)	
	Timer inner spring with coefficient	1HZ	1.57 N/mm (0.16 kgf/mm) 1.77 N/mm (0.18 kgf/mm) 1.96 N/mm (0.20 kgf/mm)	1.67 N/mm (0.17 kgf/mm) 1.86 N/mm (0.19 kgf/mm)
		1HD–T (Philippine)	1.08 N/mm (0.11 kgf/mm) 1.27 N/mm (0.13 kgf/mm)	1.18 N/mm (0.12 kgf/mm) 1.37 N/mm (0.14 kgf/mm)
		1HD–T (Others)	1.57 N/mm (0.16 kgf/mm) 1.96 N/mm (0.20 kgf/mm)	1.77 N/mm (0.18 kgf/mm) 2.16 N/mm (0.22 kgf/mm)
	Governor sleeve plug head thickness	1HZ	3.0 mm (0.118 in.) 3.2 mm (0.126 in.) 3.4 mm (0.134 in.) 3.6 mm (0.142 in.) 3.8 mm (0.150 in.) 4.0 mm (0.158 in.) 4.2 mm (0.165 in.)	3.1 mm (0.122 in.) 3.3 mm (0.130 in.) 3.5 mm (0.138 in.) 3.7 mm (0.146 in.) 3.9 mm (0.154 in.) 4.1 mm (0.161 in.)
	Governor sleeve plug head thickness	1HD–T	3.0 mm (0.118 in.) 3.2 mm (0.126 in.) 3.4 mm (0.134 in.) 3.6 mm (0.142 in.) 3.8 mm (0.150 in.) 4.0 mm (0.158 in.) 4.2 mm (0.165 in.) 4.4 mm (0.173 in.) 4.6 mm (0.181 in.) 4.8 mm (0.189 in.) 5.0 mm (0.197 in.)	3.1 mm (0.122 in.) 3.3 mm (0.130 in.) 3.5 mm (0.138 in.) 3.7 mm (0.146 in.) 3.9 mm (0.154 in.) 4.1 mm (0.161 in.) 4.3 mm (0.169 in.) 4.5 mm (0.177 in.) 4.7 mm (0.185 in.) 4.9 mm (0.193 in.) 5.1 mm (0.201 in.)

Injection pump (1HZ, 1HD–T) (Cont'd)	Governor sleeve plug head thickness (Cont'd)	1HD–T	5.2 mm (0.205 in.) 5.4 mm (0.213 in.) 5.6 mm (0.220 in.) 5.8 mm (0.228 in.) 6.0 mm (0.236 in.) 6.2 mm (0.244 in.) 6.4 mm (0.252 in.) 6.6 mm (0.260 in.)	5.3 mm (0.209 in.) 5.5 mm (0.216 in.) 5.7 mm (0.224 in.) 5.9 mm (0.232 in.) 6.1 mm (0.240 in.) 6.3 mm (0.248 in.) 6.5 mm (0.256 in.)
Injection pump (1HD–FTE)	Engine speed sensor resistance	at 20°C (68°F)	205 – 255 Ω	
	Spill control valve resistance	at 20°C (68°F)	1 – 2 Ω	
	Timing control valve resistance	at 20°C (68°F)	10 – 14 Ω	