ENGINE FUEL SERVICE DATA

SS0QX-03

Fuel heater	Resistance	at 20°C (68°F)	0.5 – 2.0 Ω	
Injection nozzles	Nozzle opening pressure			
(1HZ)	New nozzle	M/T, A/T (White indication ring)	14,710 – 15,690 kPa (150 – 16	60 kgf/cm ² , 2,133 – 2,276 psi)
		A/T (Brown indication ring)	15,690 - 16,671 kPa (160 - 170 kgf/cm², 2,276 - 2,41	
	Reused nozzle	M/T, A/T (White indication ring) 14,220 – 15,220 kPa (145 – 155 kgf/cm ² , 2,062 -		55 kgf/cm ² , 2,062 – 2,205 psi)
		A/T (Brown indication ring)	ng) 15,200 - 16,181 kPa (155 - 165 kgf/cm ² , 2,205 - 2	
	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	Pre-lift		0.06 – 0.08 mm (0.00236 – 0.00315 in.)	
(1HD-T)	Nozzle opening pressure	No.1		
	No.2 (Inspection pressure)		13,239 - 14,220 kPa (135 - 14	15 kgf/cm ² , 1,920 – 2,062 psi)
	Pre-lift and nozzle opening pressure adjusting shim		0.700 mm (0.0276 in.)	0.750 mm (0.0295 in.)
	thickness		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.)
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Injection nozzles	Pre-lift and nozzle opening pressure adjusting shim	1.580 mm (0.0622 in.)	1.590 mm (0.0626 in.)
(1HD-T)	thickness	1.600 mm (0.0630 in.)	1.610 mm (0.0634 in.)
(Cont'd)	(Cont'd)	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	Nozzle opening pressure No.1	17,162 - 18,142 kPa (175 - 1	185 kgf/cm ² , 2,489 – 2,631 psi)
(1HD-FTE)	No.2 (Inspection pressure)	33,539 - 35,500 kPa (342 - 3	362 kgf/cm ² , 4,864 – 5,149 psi)
	No.2 pressure spring washer (No.1 nozzle opening	0.800 mm (0.0315 in.)	0.825 mm (0.0325 in.)
	pressure adjusting shim) thickness	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	0.700 mm (0.0276 in.)	0.750 mm (0.0295 in.)
	pressure adjusting shim) thickness	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	No.1 pressure spring washer (No.2 no.	zzle opening	1.850 mm (0.0728 in.)	1.900 mm (0.0748 in.)	
(1HD-FTE)	pressure adjusting shim) thickness		1.950 mm (0.0768 in.)	2.000 mm (0.0787 in.)	
(Cont'd)	(Cont'd)		2.050 mm (0.0807 in.)	2.100 mm (0.0827 in.)	
			2.150 mm (0.0846 in.)		
Injection pump	Direction of rotation		Clockwise as seen from drive sid		
(1HZ, 1HD-T)	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		24.4 mm (0.961 in.)		
		1HD-T	, ,		
	Plunger spring	1HZ	` '		
			31.2 mm (1.228 in.)		
	1HD-T		16.6 mm (0.645 in.)		
			15.5 mm (0.610 in.)		
	Pneumatic bellows spring 1HZ w/ HAC		,		
	Boost compensator spring	1HD-T	, ,		
	Roller height variation		0.02 mm (0.0008 in.)		
	Pickup sensor resistance		650 – 970 Ω		
	Timer adjusting screw protrusion pre-s	setting	7.5 – 8.0 mm (0.295 – 0.315 in.)		
	Plunger spring shim thickness		0.5 mm (0.020 in.)	0.8 mm (0.031 in.)	
			1.0 mm (0.039 in.)	1.2 mm (0.047 in.)	
			1.5 mm (0.059 in.)	1.8 mm (0.071 in.)	
			2.0 mm (0.079 in.)		
	Flyweight holder thrust clearance		0.15 – 0.35 mm (0.0059 – 0.0138		
	Governor gear adjusting washer thick	kness	1.05 mm (0.0413 in.)	1.25 mm (0.0492 in.)	
			1.45 mm (0.0571 in.)	1.65 mm (0.0650 in.)	
			1.85 mm (0.0728 in.)		
	Governor shaft protrusion		0.3 – 2.0 mm (0.012 – 0.079 in.)		
	Plunger pre-strokes	1HZ	,		
	1HD-T		, ,		
	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	' ' ' '	1.67 N/mm (0.17 kgf/mm)	
			1.77 N/mm (0.18 kgf/mm)	1.86 N/mm (0.19 kgf/mm)	
		411D T (D) ::	1.96 N/mm (0.20 kgf/mm)	4 40 11/ (0 40 1 1/)	
	1HD-T (Philippine)		1.08 N/mm (0.11 kgf/mm)	1.18 N/mm (0.12 kgf/mm)	
		411D T (Olls)	1.27 N/mm (0.13 kgf/mm)	1.37 N/mm (0.14 kgf/mm)	
		1HD-T (Others)	1.57 N/mm (0.16 kgf/mm)	1.77 N/mm (0.18 kgf/mm)	
	Governor alogue alua hand this line	4117	1.96 N/mm (0.20 kgf/mm)	2.16 N/mm (0.22 kgf/mm)	
	Governor sleeve plug head thickness	1HZ	,	3.1 mm (0.122 in.)	
			3.2 mm (0.126 in.)	3.3 mm (0.130 in.)	
			3.4 mm (0.134 in.)	3.5 mm (0.138 in.)	
			3.6 mm (0.142 in.)	3.7 mm (0.146 in.)	
			3.8 mm (0.150 in.)	3.9 mm (0.154 in.)	
			4.0 mm (0.158 in.) 4.2 mm (0.165 in.)	4.1 mm (0.161 in.)	
	Governor sleeve plug head thickness 1HD-T			3.1 mm (0.122 in.)	
	Governor sieeve plug neau triickness	ו – טחו	3.2 mm (0.126 in.)	3.3 mm (0.130 in.)	
			3.4 mm (0.134 in.)	3.5 mm (0.138 in.)	
			3.6 mm (0.142 in.)	3.7 mm (0.146 in.)	
			3.8 mm (0.150 in.)	3.9 mm (0.154 in.)	
			4.0 mm (0.158 in.)	4.1 mm (0.161 in.)	
			4.2 mm (0.165 in.)	4.3 mm (0.169 in.)	
			4.4 mm (0.173 in.)	4.5 mm (0.177 in.)	
			4.6 mm (0.181 in.)	4.7 mm (0.185 in.)	
			4.8 mm (0.189 in.)	4.9 mm (0.193 in.)	
	ETE ENGINE (DM617E)		5.0 mm (0.197 in.)	5.1 mm (0.201 in.)	

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