

MAINTENANCE STANDARDS

All dimensions in millimeters

PART	ITEM	DW168		DW177		DW188	
		*STANDARD (MM)	*SERVICE LIMIT (MM)	*STANDARD (MM)	*SERVICE LIMIT (MM)	*STANDARD (MM)	*SERVICE LIMIT (MM)
ENGINE	<i>Max. speed</i>	5000rpm	-	5000rpm	-	5000rpm	-
	<i>Idle speed</i>	2400~2700rpm	-	2400~2700rpm	-	2400~2700rpm	-
	<i>Cylinder compression</i>	50 – 90 psi	-	60 – 100 psi	-	60 – 100 psi	-
CYLINDER	<i>Sleeve I.D.</i>	68.015~68.025	68.156	77.02~77.03	77.179	88.015~88.025	88.195
CYLINDER HEAD	<i>Warpage</i>	0	0.10	0	0.10	0	0.10
PISTON	<i>Skirt O.D.</i>	67.975~67.985	67.85	76.970~76.980	76.85	87.970~87.980	87.85
	<i>Piston-to-cylinder clearance</i>	0.030~0.050	0.12	0.040~0.060	0.1	0.045~0.065	0.1
	<i>Piston-to-piston pin bore clearance</i>	0.004~0.016	0.08	0.004~0.016	0.08	0.004~0.016	0.08
	<i>Piston Pin bore I.D.</i>	18.002~18.008	18.042	18.002~18.008	18.042	20.002~20.008	20.042
	<i>Pin O.D.</i>	17.992~17.998	17.94	17.992~17.998	17.95	19.992~19.998	19.94
PISTON RINGS	<i>Ring side clearance</i>						
	<i>Ring, Top</i>	0.08~0.12	0.10	0.02~0.06	0.15	0.02~0.06	0.15
	<i>Ring, Compression</i>	0.07~0.11	0.10	0.02~0.06	0.15	0.02~0.06	0.15
	<i>Ring Assy, Oil</i>	0.02~0.16	0.15	0.02~0.16	0.15	0.04~0.19	0.15
	<i>Ring end gap</i>	0.15~0.35	1.0	0.20~0.35	1.0	0.20~0.40	1.0
	<i>Ring width</i>						
	<i>Ring, Top</i>	1.420~1.440	1.3	1.97~1.99	1.75	1.97~1.99	1.75
<i>Ring, Compression</i>	1.420~1.440	1.3	1.97~1.99	1.75	1.97~1.99	1.75	
<i>Ring Assy, Oil</i>	2.37~2.49	2.3	2.77~2.79	2.5	2.65~2.78	2.5	
CONNECTING ROD	<i>Small end I.D.</i>	18.011~18.022	18.06	18.011~18.022	18.06	20.011~20.022	20.06
	<i>Big end I.D.</i>	30.02~30.03	30.06	33.02~33.03	33.06	36.02~36.03	36.06
	<i>Big end oil clearance</i>	0.030~0.055	0.1	0.029~0.055	0.1	0.029~0.064	0.1
	<i>Big end side clearance</i>	0.95~1.45	1.85	0.55~1.25	1.65	0.55~1.25	1.65
CRANKSHAFT	<i>Crankshaft O.D.</i>	29.975~29.990	29.92	32.975~32.991	32.92	35.966~35.991	35.92
VALVES	<i>Valve clearance</i>						
	<i>IN</i>	0.10~0.15	-	0.10~0.15	-	0.10~0.15	-
	<i>EX</i>	0.20~0.25	-	0.20~0.25	-	0.20~0.25	-
	<i>Stem O.D.</i>						
	<i>IN</i>	5.468~5.48	5.318	6.568~6.580	6.44	6.568~6.580	6.44
	<i>EX</i>	5.418~5.44	5.275	6.545~6.560	6.40	6.545~6.560	6.40
	<i>Guide I.D. IN/EX</i>	5.500~5.512	5.572	6.600~6.615	6.66	6.600~6.615	6.66
	<i>Stem clearance</i>						
	<i>IN</i>	0.020~0.044	0.1	0.020~0.070	0.11	0.020~0.070	0.11
	<i>EX</i>	0.060~0.084	0.12	0.040~0.070	0.15	0.020~0.070	0.15
	<i>Seat width</i>	0.7~0.9	2.0	0.8~1.0	2.0	0.7~0.9	2.0
<i>Spring free length</i>	30~31	29.0	38.5~39.5	37.5	38.5~39.5	37.5	

* unless otherwise noted

PART	ITEM	DW168		DW177		DW188	
		*STANDARD (MM)	*SERVICE LIMIT (MM)	*STANDARD (MM)	*SERVICE LIMIT (MM)	*STANDARD (MM)	*SERVICE LIMIT (MM)
CAMSHAFT	<i>CAM height</i>						
	<i>IN</i>	27.700	27.45	31.716	31.35	32.585	32.25
	<i>EX</i>	27.747	27.50	31.754	31.35	32.068	31.80
	<i>Camshaft O.D.</i>	13.966~13.984	13.916	15.966~15.984	15.92	15.966~15.984	15.92
CRANKCASE COVER	<i>Camshaft holder I.D.</i>	14.000~14.018	14.05	16.000~16.018	16.05	16.000~16.018	16.05
SPARK PLUG	<i>Gap</i>	0.7 ~ 0.8	-	0.7 ~ 0.8	-	0.7 ~ 0.8	-
SPARK PLUG BOOT	<i>Resistance</i>	10k	7.5 – 10.5 k	10k	7.5 – 10.5 k	10k	7.5 – 10.5 k
IGNITION COIL	<i>Resistance</i>						
	<i>Primary</i>	1.3Ω±0.2Ω	-	1.3Ω±0.2Ω	-	1.3Ω±0.2Ω	-
	<i>Secondary</i>	6.4kΩ±1kΩ	-	6.4kΩ±1kΩ	-	6.4kΩ±1kΩ	-
	<i>Air gap</i>	0.4±0.2	-	0.4±0.2	-	0.4±0.2	-
STARTER MOTOR	<i>Brush length</i>	10	5.5	10	5.5	10	5.5

* unless otherwise noted

TORQUE TABLE

ITEM	TORQUE			
	168 (N – M)	177/188 (N – M)	168 (FT-LB)	177/188 (FT-LB)
CONNECTING ROD BOLT	12-14	14-16	10	12
CYLINDER HEAD BOLT	32-35	50-55	26	41
FLYWHEEL NUT	80-90	90-115	66	85
ROCKER ARM PIVOT BOLT	28-32	28-32	24	24
CRANKCASE COVER BOLT	27-30	27-30	22	22
OIL LEVEL SWITCH JOINT NUT	6-8	6-8	6	6
FUEL FILTER, JOIN NUT	6-8	6-8	6	6
MUFFLER MOUNTING NUT	27-30	27-30	22	22
AIR CLEANER WING NUT	8-12	8-12	9	9
OIL DRAIN BOLT	20-25	25-30	18	18
FUEL TANK BOLT, NUT	8-10	8-10	7	7
AIR CLEANER MOUNTING NUT	1-2	1-2	1	1
UNSPECIFIED TORQUE VALUES				
5MM BOLT, NUT	5-7	5-7	5	5
6MM BOLT, NUT	8-12	8-12	9	9
8MM BOLT, NUT	24-28	24-28	21	21
10MM BOLT, NUT	50-55	50-55	41	41