



- **SECTION 6 DIMENSIONS AND FIT CLEARANCES OF MAIN PARTS AND COMPONENTS**
- For fit clearances and wear limits of the main parts of WD615 series engines, see Fig. 2-6.

Ser. No.	Name	Std. dimensions (hole/shaft)	Fitting nature	Clearance or Interference	Wear limit
1	Main bearing shell and journal	$\phi 100^{+0.141}_{+0.095} / \phi 100_{+0.02}$	Clearance	0.095 ~ 0.161	0.17
2	Bearing seat and main bearing shell	$\phi 108^{+0.023}_0 / \phi 108^{+0.147}_{+0.125}$	Interference	-0.103 ~ -0.147	
3	Thick. of main bearing shell	3.958 - 3.970	—		
4	Crankshaft and engine body locating pin	$46^{+0.05}_{+0.025} / 46^{+0.102}_{+0.105}$	Clearance	0.102 ~ 0.305	0.35
5	Connecting rod bearing shell and crank pin	$\phi 82^{+0.105}_{+0.059} / \phi 82_{+0.02}$	Clearance	0.059 - 0.127	0.17
6	Crank pin and connecting rod big end	$46^{+0.1}_{+0.025} / 46^{+0.15}_{+0.25}$	Clearance	0.15 ~ 0.25	0.50
7	Connecting rod big end and bearing shell	$\phi 88^{+0.023}_0 / \phi 88^{+0.118}_{+0.105}$	Interference	-0.083 ~ -0.118	
8	Thick. of connecting rod bearing shell	2.97 ~ 2.979			
9	Connecting rod small end hole and bushing	$\phi 53^{+0.2}_{+0.025} / \phi 53^{+0.145}_{+0.095}$	Interference	-0.065 ~ -0.145	
10	Connecting rod bushing and piston pin	$\phi 50^{+0.041}_{+0.025} / \phi 50^{+0.005}_0$	Clearance	0.025 - 0.046	0.10
11	Piston pin boss and piston pin	$\phi 50^{+0.009}_{+0.003} / \phi 50^{+0.005}_0$	Clearance	0.003 ~ 0.013	0.025
12	Thickness of connecting rod bushing	2.75 ± 0.05	—		
13	Cylinder sleeve bore and piston skirt	$\phi 125^{+0.023}_0 / \phi 125_{+0.05}$	Clearance	0.15	0.20
14	First gas ring gap value	0.40 ~ 0.60	—		1.5
15	Thickness of second gas ring and ring groove	$3^{+0.01}_{+0.022} / 3^{+0.009}_{+0.05}$			
16	Oil ring thickness and ring groove	$4^{+0.01}_{+0.025} / 4^{+0.016}_{+0.04}$	Clearance	0.05 ~ 0.085	0.26
17	Second gas ring gap value	0.25 - 0.40	—		1.5
18	Oil ring gap value	0.35 ~ 0.55	—		1.5
19	Engine body cylinder sleeve bore and cylinder sleeve	$\phi 130^{+0.023}_0 / \phi 134.5^{+0.001}_{-0.008}$	Interference	-0.01 - 0.033	0
20	Engine body opening and cylinder sleeve flange	$\phi 134.5^{+0.10}_0 / \phi 134.5^{+0.12}_0$	Clearance	0 ~ 0.22	
21	Camshaft hole and bushing	$\phi 65^{+0.029}_0 / \phi 65^{+0.087}_{+0.023}$	Interference	-0.057 ~ -0.107	
22	Tapet hole and lifter	$\phi 38^{+0.039}_0 / \phi 38^{+0.023}_{+0.030}$	Clearance	0.025 ~ 0.089	0.15
23	Camshaft bearing and journal	$\phi 60^{+0.01}_{+0.015} / \phi 60^{+0.06}_{+0.02}$	Clearance	0.04 ~ 0.12	0.20
24	Valve guide and intake valve stem	$\phi 12^{+0.010}_0 / \phi 12^{+0.009}_{-0.068}$	Clearance	0.05 - -0.086	0.20
25	Valve guide and exhaust valve stem	$\phi 12^{+0.010}_0 / \phi 12^{+0.009}_{-0.068}$	Clearance	0.05 ~ 0.086	0.20
26	Cylinder head valve seat hole and intake valve seat	$\phi 56^{+0.029}_0 / \phi 56^{+0.066}_{+0.025}$	Interference	-0.036 - -0.085	
27	Cylinder head valve seat hole and exhaust valve seat	$\phi 56^{+0.029}_0 / \phi 56^{+0.066}_{+0.025}$	Interference	-0.036 ~ -0.085	
28	Intake valve sinkage	1.2 ~ 1.4	—		1.8
29	Exhaust valve sinkage	1.2	—		1.8
30	Rocker arm shaft hole and shaft	$\phi 24^{+0.028}_0 / \phi 24^{+0.016}_{-0.073}$	Clearance	0.012 ~ 0.066	
31	Oil pump gear and shaft	$\phi 28^{+0.061}_0 / \phi 28^{+0.013}_{-0.013}$	Clearance	-0.028 - -0.061	
32	Oil pump end cover shaft hole and shaft	$\phi 28^{+0.040}_0 / \phi 28^{+0.013}_{-0.013}$	Clearance	0.040 ~ 0.086	0.10



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Se r. N o.	Name	Std. dimensions (hole/shaft)	Fitting nature	Clearance or interference	Wear limit
33	Oil pump casing width and gear		Clearance	0.052 ~ 0.102	0.20
34	Oil pump gear side clearance	0.098 ~ 0.16	—		
35	Water pump impeller and water pump shaft	M18×1.5			
36	Water pump belt pulley and water pump shaft		Interferenc e	-0.033 ~ - 0.059	
37	Air compressor cylinder bore hole and piston		Clearance	-0.09 ~ 0.12	0.20
38	Air compressor piston ring groove and ring thickness.		Clearance	0.014 ~ 0.059 0.02 ~ 0.07	0.15
39	Air compressor first piston ring gap value	0.25 ~ 0.40	—		1.5
40	Air compressor second piston ring gap value	0.25 ~ 0.40	—		1.5
41	Air compressor oil ring gap value	0.25 ~ 0.40	—		1.5
42	Air compressor axial clearance	0.10	—		0.25
43	Supercharger axial clearance K-28	0.16 (max)	—		0.16
44	Supercharger radial clearance K-28	0.46 (max)	—		
45	Air compressor connecting rod small end and piston pin		Clearance	0.007 ~ 0.041	0.10
46	Air compressor Connecting rod bearing shell and crank pin		Clearance	0.025 ~ 0.046	0.15
47			Clearance	0.007 ~ 0.033	0.085