

Item	Unit	Data
		DT30/30E/30R

POWERHEAD

Recommended operating range		r/min	5000 – 5600
Idle speed		r/min	1000 ± 50 (in-gear: approx. 850)
* Cylinder compression		kPa (kg/cm ² , psi)	670 (6.7, 95)
** Crankshaft runout	STD	mm (in)	0.00 – 0.05 (0.000 – 0.002)
	Limit	mm (in)	0.10 (0.004)
Conrod deflection	Limit	mm (in)	5.0 (0.20)
Cylinder head distortion	Limit	mm (in)	0.10 (0.004)
Cylinder distortion	Limit	mm (in)	0.10 (0.004)
Piston diameter	STD	mm (in)	70.905 – 70.920 (2.7915 – 2.7921)
Cylinder bore	STD	mm (in)	71.000 – 71.015 (2.7953 – 2.7959)
Piston to cylinder clearance	STD	mm (in)	0.087 – 0.102 (0.0034 – 0.0040)
	Limit	mm (in)	0.182 (0.0072)
Piston measuring position		mm (in)	24 (0.94) from piston skirt end
Cylinder measuring position		mm (in)	40 (1.6) from cylinder top surface
Wear on cylinder bore	Limit	mm (in)	0.10 (0.004)
Piston pin diameter	STD	mm (in)	17.995 – 18.000 (0.7085 – 0.7087)
	Limit	mm (in)	17.980 (0.7079)
Piston pin hole diameter	STD	mm (in)	18.002 – 18.010 (0.7087 – 0.7091)
	Limit	mm (in)	18.030 (0.7098)
Piston ring end gap	STD	mm (in)	0.20 – 0.40 (0.008 – 0.016)
	Limit	mm (in)	0.80 (0.031)
Maximum reed stop opening		mm (in)	6.0 – 6.4 (0.24 – 0.25)
Reed to seat clearance	Limit	mm (in)	0.20 (0.008)
Thermostat operating temperature		°C (°F)	48 – 52 (118 – 128)

* Figures shown are guidelines only, not absolute service limits.

** Total indicator reading.

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LOWER UNIT

Gearcase oil amounts	ml (US/Imp. oz)	230 (7.8/8.1)
Gear ratio		2.091 (23/11)
Preliminary gear shim & thrust washer		
Pinion back up shim	mm (in)	2.0 (0.08)
Forward back up shim	mm (in)	1.2 (0.05)
Reverse back up shim	mm (in)	2.0 (0.08)
Forward thrust washer	mm (in)	1.5 (0.06)
Reverse thrust washer	mm (in)	1.5 (0.06)

Initial selection-shim adjustment may be required.

CARBURETOR (Except E13 & E40)

Type	MIKUNI	B32-28
I.D. mark		964A1
Main jet	#	160
Pilot jet	#	70
Air screw	Turns open	1-1/4 ± 1/4
Float height	mm	12 ± 2
NOTE: Hold carburetor vertical (bore up) and slowly rotate to an inverted horizontal position until float adjustment tab contacts inlet needle valve. Holding carburetor in this position, measure with vernier caliper from the float to the top of the main jet at 180° from the needle valve.		

CARBURETOR (E13 & E40)

Type	MIKUNI	B32-28
I.D. mark		964J0
Main jet	#	160
Pilot jet	#	70
Air screw	Turns open	1-1/4 ± 1/4
Float height	mm	12 ± 2
NOTE: Hold carburetor vertical (bore up) and slowly rotate to an inverted horizontal position until float adjustment tab contacts inlet needle valve. Holding carburetor in this position, measure with vernier caliper from the float to the top of the main jet at 180° from the needle valve.		

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ELECTRICAL

Ignition timing	Degrees at r/min	TDC $0^\circ \pm 3^\circ$ at 1300, BTDC $25^\circ \pm 2^\circ$ at 4000	
Condenser charge coil resistance	Ω at 20 °C	304 – 456 [G–B/R]	
Pulser coil resistance	Ω at 20 °C	81 – 123 [W/R–B/W]	
Ignition coil resistance (Without spark plug cap)	Primary	Ω at 20 °C	0.2 – 0.3 [O–B]
	Secondary	k Ω at 20 °C	4.0 – 6.1 [H.T. cord–H.T. cord]
Spark plug cap resistance	k Ω at 20 °C	Except E13 & E40: 10 E13 & E40: No resistor type	
Battery charge coil resistance	Manual start	Ω at 20 °C	0.24 – 0.38 [Y–R/Y], 0.11 – 0.17 [Y–R]
	Electric start	Ω at 20 °C	0.24 – 0.38 [Y–R]
Battery charge coil output (12 V)	Manual start	Watt	30/80
	Electric start	Watt	80
Standard spark plug	Type	NGK	Except E13 & E40: BR7HS-10 E13 & E40: B7HS-10
	Gap	mm (in)	0.9 – 1.0 (0.035 – 0.039)
Fuse amp rating	A	20: Electric start model	
Recommended battery capacity (12 V)	Ah (kC)	35 (126) or over: Electric start model	
Choke solenoid coil resistance	Ω at 20 °C	3.5 – 5.1 [O–B]: Remote control model	
Starter motor relay coil resistance	Ω at 20 °C	3.5 – 5.1 [Y/G–B]: Electric start model	

STARTER MOTOR (only for Electric start model)

Max. continuous time of use	Sec	30	
Motor output	kW	0.6	
Starter motor brush length	STD	mm (in)	12.5 (0.49)
	Limit	mm (in)	9 (0.35)
Commutator undercut	STD	mm (in)	0.5 – 0.8 (0.02 – 0.03)
	Limit	mm (in)	0.2 (0.01)
Commutator outside diameter	STD	mm (in)	30 (1.18)
	Limit	mm (in)	29 (1.14)
Allowable commutator taper	STD	mm (in)	0.05 (0.002)
	Limit	mm (in)	0.40 (0.016)
Pinion to ring gear gap	mm (in)	3.5 – 5.0 (0.12 – 0.20)	

PEAK VOLTAGE

- Remove all spark plugs to eliminate the variables at cranking speed.
- Crank with recoil starter.
- Use a STEVENS peak voltage tester, Model CD-77.

Testing sequence		Tester probe connection		Peak voltage	Tester range	Remarks
		⊕ (Red)	⊖ (Black)			
CDI output		Orange	Black	110 V or over	NEG 500	With ignition coil connected
Condenser charge coil output		Green	Black/Red	100 V or over	POS 500	With CDI unit disconnected
Pulser coil output		White/Red	Black/White	1 V or over	SEN 5	With CDI unit disconnected
Battery charge coil output	Manual start	Yellow	Red	0.4 V or over	POS 5	With rectifier disconnected
		Yellow	Red/Yellow	1.7 V or over		
	Electric start	Yellow	Red	1.7 V or over		

