4E1-3
NELSON
H-63C
H-63CP

July 15, 1966

TYPE CERTIFICATE DATA SHEET NO. 4E1

Engines of models described herein conforming with this data sheet (which is a part of type certificate No. 4E1) and other approved data on file with the Federal Aviation Agency, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Civil Air Regulations provided they are installed, operated and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder	Nelson Aircraft Corporation 115 Colonial Manor Road Irvin, PA	
Model	H-63C	H-63CP
Type	4HOA (two stroke cycle, vertically mounted, direct drive)	4HOA (two stroke cycle, horizontally mounted, direct drive)
Rating		
Max. continuous b.h.p., r.p.m., at sea level pressure altitude, full throttle	43-4000-S.L.	45-4000-S.L.
Takeoff b.h.p., r.p.m., at sea level pressure altitude, full throttle	43-4000-S.L.	48-4400-S.L.
Fuel (Min. grade aviation gas.)	80/87	--
Oil	SAE 30 "RPM Outboard Motor oil (two cycle only)"	--
Fuel-oil mixture ratio	16:1	--
Bore and stroke, in.	2-11/16 x 2-3/4	--
Displacement, cu. in.	63	--
Compression ratio	8:1	--
Weight (dry) lb. (includes starter and generator	76 lb. (includes cooling fan. cooling shroud and clutch)	67 lb.
C.G. location		
From front face of crankshaft	8.670	--
Above centerline of crankshaft	.280	--
Propeller shaft	Special, 1-1/4" dia. tapered 18°	--
Carburetor	Special Diaphragm Type, Nelson P/N E-500	--
Ignition, dual	Battery - 12 volt	--
Ignition Timing, °BTC		
Main (center plug)	30°	--
Aux. (inclined plug)	25°	--
Spark plugs	Champion 5-Com. or D-9	--
NOTES	1, 2, 3, 4, 5	1, 2, 3, 4, 5

"- -" indicates "same as preceding model"

Certification basis	CAR 13, effective June 15, 1956 as amended by 13-1. Type Certificate No. 4E1 issued February 8, 1960. Application for Type Certificate March 15, 1958.
Production basis	Engines are being produced for the Type Certificate holder by Franklin Engine Company, Inc., Syracuse, New York under the terms of their Production Certificate No.9.

NOTE 1. Maximum permissible temperature:

Cylinder head	430°F
Cylinder base flange	330°F

NOTE 2. Fuel pressure limits at inlet to carburetor:

Maximum	Minimum
1.5 p.s.i.	.5 p.s.i.

NOTE 3. Weight of additional furnished equipment:

	Weight, lb.
(a) Ignition coils (4)	4.1
(b) Selenium rectifier	.65
(c) Voltage regulator	.7

NOTE 4. The Model H-63C engine has been approved specifically for helicopter applications and the Model H-63CP engine has been approved specifically for fixed-wing applications.

NOTE 5 The crankshaft of the Model H-63CP engine has not been substantiated at stress levels higher than those encountered with a fixed pitch propeller resulting in a full throttle static r.p.m. of 4000 r.p.m. or more. Accordingly, this engine is not eligible for use with any controllable propellers or with any fixed pitch propellers resulting in a full throttle static r.p.m. of less than 4000 r.p.m. Before this engine can be eligible for use with such propellers, the crankshaft must be substantiated endurance wise at at least the maximum stress levels which will be encountered with the particular propeller in question.

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