

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

TC E00008SE
Revision Original
Merlyn Products IO-540-MX1 Original Issue Date: April 30, 2008

TYPE CERTIFICATE DATA SHEET E00008SE

This data sheet, which is part of Type Certificate No. E00008SE, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: Merlyn Products Inc.
7500 West Park Drive
Spokane, WA 99224

I – Engine Model

IO-540-MX1

Type: 6HOA Direct Drive

Rating:
Takeoff and Maximum 250 @ 2425
Continuous hp, rpm,
Full throttle at
Sea level pressure altitude

Fuel
(Minimum grade aviation
Gasoline) 100/100LL

Injection Lycoming Type FM250

Pump Drive See Note 3

Oil Lubrication
Oil, SAE Number, Above 80 deg F 60
Above 60 deg F 50
30 deg F to 90 deg F 40
0 deg F to 70 deg F 20
Below 10 deg F 20

Oil Sump Capacity, Quarts 12

Ignition, dual
Magneto drive 1.500:1 – clockwise viewed from propeller end
Magnetos (2) Unison Slick Aircraft Products 6363 (Left)
6360 (Right)
Optional Magnetos (2) TCM Bendix S6LN-1208 (Left)
S6LN-1209 (Right)

Timing (deg BTDC) 20
Spark Plugs Champion RHB37E
Champion RHB32E
Champion RHB-36S
Champion RHB-32S

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Compression	
Bore and Stroke, in	5.125 x 4.375
Displacement, cu. in.	541.5
Compression Ratio	7.3:1
Weight (dry), lb	479 lb
C.G. Location	See Note 5
Propeller Shaft – Specification A.S. 127	Type 2, Flange Modified
Crankshaft dampers (torsional)	One fifth order and one sixth order damper.

Certification Basis:

FAR 33, Effective June 10, 1964 including amendments through amendment 21

NOTE 1. Temperature Limits (Maximum permissible)

Cylinder head (well type thermocouple)	500 deg F
Oil Inlet	245 deg F
Air inlet to injector	400 deg F

Note 2. Pressure Limits

Fuel	45 psi max, -2 psi min at inlet to fuel pump.
Pressure at inlet to fuel injector	
Maximum	45 psi
Minimum	18 psi
Minimum Idle	12 psi
Max Injector in	65 psi
Idle cutoff	

Note 3. Accessory Drive Provisions:

Accessory	Rotation Facing Drive Pad	Speed Ratio to Crankshaft	Maximum Torque (in-lb)		Maximum Overhung Moment (in-lb)
			Continuous	Static	
Starter	CC	16.556:1	N/A	450	150
Alternator	C	3.250:1	60	120	175
Vacuum Pump	CC	1.300:1	70	450	25
Hydraulic Pump	C	1.385:1	100	800	40
Tachometer	C	0.500:1	7	50	5
Prop Governor	C	0.947:1	125	2200	25
Fuel Pump	CC	1.000:1	25	450	25

“C” Clockwise, “CC” Counter-Clockwise (viewed from anti-propeller end)

NOTE 4, Accessories and Equipment

Starters, generators and alternators approved for use on this engine are listed in the latest revision to Merlyn Products Specification No. MX1

NOTE 5. The engine center of gravity is located 18.25 inches from the front face of the propeller mounting flange, and 0.88 inches below and 0.16 inches to the right of the propeller center line.

NOTE 6. This engine incorporates provisions for absorbing propeller thrust in both tractor and pusher type installations.

NOTE 7. Refer to Merlyn Products document MX1-01A, Section 1.4.3.6 for applicable inspection procedures for engines which have been operated above the specified maximum continuous RPM rating (except momentary overspeed as defined in this document).

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