

VAPORISING OIL ENGINE

(Manufactured by the Standard Motor Co.)

This information supersedes that originally issued on Pages B.9 to B.12.

Engine : 85 mm bore x 92 mm stroke as fitted to Tractors Type TE-D 20.

Displacement : 2088 CC (127.4 cu. ins.)

Firing Order : 1, 3, 4, 2.

There are several types of the V.O. Engine, namely :—

Engine Nos. S120, S10E to S170, I73E covering versions 1 & 2.

Compression Ratio : 4.8 to 1.
Max. Belt H.P. : 23.9

Engine Nos. S170, I74E onwards, covering versions 3 & 4.

Compression Ratio : 5.1 : 1.
Max. Belt H.P. : 25.4

| Component Details | | Dimensions New | | Clearance New | | Remarks |
|--|----------|----------------|--------|---------------|------|--|
| | | ins. | mm. | ins. | mm. | |
| Pistons & Sleeves. | | | | | | |
| Piston Dia. (Thrust Side Top Skirt) | F. Grade | 3.3430 | 84.912 | | | Piston fitted with four rings above gudgeon pin, one ring below. These grades are identical with those of 85 m/m bore petrol engine. |
| | | 3.3427 | 84.905 | | | |
| | G. .. | 3.3434 | 84.922 | | | |
| | | 3.3430 | 84.912 | | | |
| | H. .. | 3.3438 | 84.932 | | | Oversize pistons available to suit rebored sleeves. |
| | | 3.3434 | 84.922 | | | |
| | | | | .0037 | .094 | |
| Sleeve Bore (Parallel) | F. .. | 3.3463 | 84.996 | .0030 | .076 | Sleeves identical with those of 85 mm bore petrol engine. |
| | | 3.3460 | 84.988 | | | |
| | G. .. | 3.3467 | 85.006 | | | Replacement sleeves available as standard size, and rebored + .020" (.508 mm). |
| | | 3.3464 | 84.998 | | | |
| | H. .. | 3.3471 | 85.016 | | | |
| | | 3.3468 | 85.009 | | | |
| Clearance, Bottom of Piston Skirt (Thrust Side). | | | | .0022 | .056 | Thrust side Piston Skirt tapered .0015" (.038 mm) on diameter. |
| | | | | .0015 | .038 | |
| Top Land Diameter | | 3.329 | 84.557 | .0190 | .483 | |
| | | 3.327 | 84.506 | .0170 | .432 | |
| Ring Groove Width Top, 2nd, and 3rd. | | .0807 | 2.050 | | | |
| | | .0797 | 2.024 | | | |
| | | | | .003 | .076 | |
| | | | | .001 | .025 | |
| Compression Ring Width. Top, 2nd, and 3rd. | | .0787 | 1.999 | | | |
| | | .0777 | 1.974 | | | |
| Ring Groove Width 4th | | .1895 | 4.813 | | | |
| | | .1885 | 4.788 | | | |
| | | | | .003 | .076 | Similar tolerances for oversize rings — .010" (.245 mm), + .020" (.508 mm) + .030" (.762 mm). |
| | | | | .001 | .025 | |
| Slotted Scraper Ring Width 4th | | .1875 | 4.763 | | | |
| | | .1865 | 4.737 | | | |
| Ring Groove Width 5th | | .158 | 4.013 | | | |
| | | .157 | 3.987 | | | |
| | | | | .003 | .076 | |
| | | | | .001 | .025 | |
| Slotted Scraper Ring Width 5th | | .156 | 3.962 | | | |
| | | .155 | 3.937 | | | |
| Ring Gap (closed) | | | | .015 | .381 | |
| | | | | .010 | .254 | |

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| Component Details | Dimensions New | | Clearance New | | Remarks |
|---|---|------------|------------------|--|---------|
| | ins. | mm. | ins. | mm. | |
| Oversize Sleeves & Pistons | | | | | |
| Piston Diameter | 3.3632 | 85.425 | | | |
| — .020" (.508 mm). | 3.3627 | 85.413 | | | |
| | | | .0043 | .110 | |
| Sleeve Bore (Parallel) | 3.36700 | 85.522 | .0030 | .076 | |
| — .020" (.508 mm) | 3.36625 | 85.503 | | | |
| Valve Head Diameters. | | | | | |
| Version 1. Engine Nos. S120, S10E — S121, 954E. | | | | | |
| Inlet | 1.252 | 31.800 | | | |
| | 1.248 | 31.699 | | | |
| Exhaust | 1.252 | 31.800 | | | |
| | 1.248 | 31.699 | | | |
| Version 2. Engine Nos. S121, 955E — S170, 173E. | | | | | |
| Inlet | 1.176 | 29.870 | | | |
| | 1.172 | 29.769 | | | |
| Exhaust | 1.051 | 26.695 | | | |
| | 1.047 | 26.594 | | | |
| Version 3. Engine Nos. S170, 174E — S225, 311E. | | | | | |
| Inlet | 1.113 | 28.270 | | | |
| | 1.109 | 28.169 | | | |
| Exhaust | 1.051 | 26.695 | | | |
| | 1.047 | 26.594 | | | |
| Version 4. Engine Nos. S225, 312E onwards. | | | | | |
| Inlet | 1.238 | 31.445 | | | |
| | 1.234 | 31.344 | | | |
| Exhaust | 1.051 | 26.695 | | | |
| | 1.047 | 26.594 | | | |
| Thermostat. | | | | | |
| Valve begins to open | 167 F—176 F | 75°C—80°C. | | | |
| Valve fully open | 203 F. | 95°C. | | | |
| Valve lift | .312 | 7.94 | | | |
| Carburettor. | | | | | |
| Zenith Type 24 T-2 (fully variable main jet). | | | | | |
| | Choke Tube | | 17 | | |
| | Main jet | | 105 | | |
| | Slow Running jet | | 60 | | |
| | Progression | | 120 (2 holes) | | |
| | Needle Seating | | 2.0 mm. | | |
| | Fuel level at 4" 6" head | | 15 mm. | | |
| | Inter-con | | 1 mm drilled. | | |
| | Air jet | | 2.0 mm. | | |
| | Carburettor Bowl Stamped | | "V.O." | | |
| Distributor. Static Setting 4° (crankshaft), before T.D.C. (Versions 1 & 2 and early editions of version 3, 6° (Crankshaft). | | | | | |
| Spark Plug | | | | | |
| Reach | .75 | 19.05 | | | |
| Thread diameter | | 14 mm. | | | |
| Gap | .035 | .89 | | | |
| | .030 | .76 | | | |
| Fill-up Data. | | | | | |
| Fuel Tank. | Vaporising Oil : 7 Imperial Gallons (31.5 litres) | | | Petrol : 1 Imperial Gallon (4.5 litres). | |

For other details and data — refer to 85 mm. bore petrol engine, Pages B21 to B25

