



Ferguson

SERVICE MANUAL

Component Details	Dimensions New		Clearance New		Permissible Worn Clearance or Dimension		Remarks
	Ins.	mms.	Ins.	mms.	Ins.	mms.	
Check Chain Shackle Length	1.189 1.205	30.201 30.607					This dimension taken from pin hole centre to inside face.
Check Chain Assy. Total Length	10.358 10.425	263.093 264.795			10.7	271.76	This length between pin hole centres.
Transmission.							
Shifter Mechanism.							
Shifter Rail Dia.	.7465 .7475	18.961 18.987					
Shifter Rail Bore in Casing	.749 .750	19.025 19.050	.0015 .0035	.038 .089	.006	.152	
Plunger Spring Details.	Axial load 12 ± 1 lb. Load may be increased in increments of 3 lbs. (1.361 kg) by fitting 1/16" (1.588 mm) shims up to a maximum of 5/16" (7.938 mm) giving max. load of 27 lbs. (12.247 kg). Free length 1.571" (39.903 mm). Solid length .832" (21.133 mm). Nominal fitted length 1.32" (33.528 mm).						
Thickness of Shifter Forks at Pressure Faces.	.372 .368	9.449 9.347	.008 .016	.203 .406	.025	.634	
Width of Groove in Coupling Connectors	.380 .384	9.652 9.754					
Mainshaft.							
First Gear Bushing Bore.	2.0620 2.0635	52.375 52.413	.0015 .0052	.038 .132	.007	.177	
Mainshaft Dia. at Position of 1st Gear	2.0605 2.0583	52.337 52.281					
2nd Gear Bushing Bore.	2.0620 2.0635	52.375 52.413	.0015 .0052	.038 .132	.007	.177	
External Dia. of Bearing Connector	2.0605 2.0683	52.337 52.281					
Countershaft.							
3rd. Gear Bushing Bore.	2.0620 2.0635	52.375 52.413	.0015 .0052	.038 .132	.008	.203	
Ext. Dia. of Counter-shaft 3rd. Gear Bush	2.0605 2.0583	52.337 52.281					
4th. Gear Bushing Bore	2.0635 2.0620	52.413 52.375	.0052 .0015	.132 .038	.007	.177	
Ext Dia. of Connector Bearing.	2.0605 2.0583	52.377 52.281					
Reverse Gear Bushing Bore	1.1250 1.1256	28.575 28.590	.002 .003	.051 .076	.008	.203	
Reverse Shaft Dia.	1.123 1.122	28.524 28.499					
End Float—Main & Countershaft.	See Remarks					Fit shims behind mainshaft bearing retainer and P.T.O. Shaft bearing support to give preload of 7 to 12 lbs. ins. (.081—.138 kg.m) on main and countershafts.	

Component Details	Dimensions New		Clearance New		Permissible Worn Clearance or Dimension		Remarks
	Ins.	mms.	Ins.	mms.	Ins.	mms.	
Backlash(A) —Sliding Coupling and Mating Teeth on Gear Wheels .008" .203 mm .010" .254 mm			(B) —Sliding coupling and mating teeth on connectors— .0005" .013 mm. .0015" .038 mm.		(C) — Gear teeth— .004" .102 mm. .008" .203 mm.		

Power Take-off Shaft.

Rear splines 6 × 1.92" (48.77 mm) long × 1.121" (28.47 mm) dia. × .922" (23.42 mm) dia. × .275" (6.99 mm) wide.
1.123" (28.52 mm) .932" (23.67 mm) .277" (7.04 mm)
21/64" (8.33 mm) dia. hole at distance of 1/2" (12.7 mm) from shaft end.
End Cover Int. Dia. 2 1/2" (63.5 mm).

Clutch.

Release Shaft Dia.	.997 .996	25.324 25.298				
			.004 .0065	.102 .165	.010	.254
Bush Bore.	1.001 1.0025	25.425 25.464				

Clutch Springs. 9 green springs each of 105 lb. (47.627 kg) to 115 lb. (52.199 kg).
9 orange springs each of 90 lb. (40.823 kg) to 100 lb. (45.358 kg).

Orange springs superseded green springs after Tractor Serial No. 32872.

Free movement of pedal should be 3/8" (9.5 mm). This dimension taken between upper side of pedal and underside of footrest bracket. Movement of release lever ends 1/2" (13 mm). Variation in release lever height should not exceed .015" (.381 mm).

Rear Axle.

Backlash — Crown wheel and pinion .004" (.102 mm). Half shaft end float .008" (.203 mm).
.025" (.634 mm). .020" (.508 mm).
Clearance between crown wheel and thrust pads .013" (.033 mm).
.020" (.508 mm).

Front Axle.

Centre Trunnion	1.756	44.602				
Bushing Int. Dia.	1.764	44.806				
Fitted.			.008 .017	.203 .432	.035	.088
Centre Pin Dia.	1.747 1.748	44.347 44.399				
Bore of Outer Axle for Spindle Bushes	1.3735 1.3745	34.887 34.912	±.001	±.025		
Ext. Dia. Spindle Bushes.	1.3735 1.3745	34.887 34.912				
Int. Dia. Spindle Bushes	1.249 1.250	31.725 31.750	.003 .005	.076 .127	.010	.254
Spindle Dia.	1.246 1.245	31.648 31.623				

Steering.

Backlash—Screw adjustment against rear faces of segments to give minimum backlash without binding.

Distances between ball centres and vertical plane through drop arm crankshaft centre 2.17" (55.12 mm) with steering wheel in straight ahead position.

Pulley Attachment.

Pulley width 6 1/2" (165 mm) Dia. 9" (229 mm). Gear Ratio to P.T.O. Shaft 1.86 to 1. Backlash between driving gears .004" (.102 mm)
.020" (.508 mm)

PETROL ENGINE, PART No. 57963

(Manufactured by the Standard Motor Co.)

ENGINE—80 mm bore, fitted to tractors Type TE-A20, TE-C20.

Stroke 92 mm. Piston Displacement 112.9 cu. ins. (1850 c.c.)

Compression ratio 5.77 to 1.

Maximum belt horse power—23.9.

Tightening Torque—Cylinder Head Nuts 60 to 65 lbs. ft.
(8.25—8.95 kg. metres).
Big End Nuts 42 to 46 lbs. ft.
(5.8—6.4 kg. metres).

Main Bearing Nuts 90 to 100 lbs. ft.
(12.4—13.8 kg. metres).
Flywheel Cap Screws 42 to 46 lbs. ft.
(5.8—6.4 kg. metres).

Component Details	Dimensions New		Clearance New		Permissible Worn Clearance or Dimension		Remarks
	Ins.	mms.	Ins.	mms.	Ins.	mms.	
Crankshaft.							
Journal Diameter	2.4795 2.4790	62.979 62.967	.0025 .0010	.064 .025	.006 dry	.152	Similar tolerances for re-ground crankshaft to .020", .030", .040" (.508, .762, 1.016 mm) undersize.
Bearing Diameter (Fitted)	2.4815 2.4805	63.030 63.015					
Crankshaft End Float.							
Centre Journal Length.	1.7507 1.7498	44.468 44.445	.0117 .0048	.297 .122	.010 dry	.254	Crankshaft end float controlled by thickness of thrust washers.
Centre Bearing Cap width + 2 thrust washers.	1.7450 1.7390	44.323 44.171					
Big End.							
Crankpin Diameter	2.0861 2.0866	52.987 53.000	.0024 .0006	.061 .015	.006	.152	Similar tolerances for re-ground crankshaft to .020", .030", .040" (.408, .762, 1.016 mm) undersize.
Bearing Diameter	2.0985 2.0872	53.302 52.015					
Connecting Rod End Float.							
Crankpin Length	1.1890 1.1870	30.201 30.150	.0115 .0075	.292 .191			
Con-Rod Width	1.1795 1.1775	29.959 29.909					
Ovality—Journals & Crankpins.					0.002	.051	Minimum diameter to be such that the permissible worn clearance for bearings is not exceeded.
Taper—Journals & Crankpins.					0.002	.051	
Small End.							
Bore for Bush	1.0000 .9995	25.4 25.387	— .0035 — .0050	+ .09 — .13			Heat piston in boiling water for removal and fitting of gudgeon pin.
Bush, Ext. Dia.	1.0045 1.0035	25.514 25.489					
Bush, Int. Dia.	.8752 .8738	22.230 22.220	+ .00035 — .00030	+ .009 — .008			These clearance figures taken at 68°F.
Gudgeon Pin, Dia.	.87510 .87485	22.228 22.221	+ .00045 — .00005	+ .011 — .001			
Gudgeon Pin Holes in Piston	.8853 .87505	22.233 22.226					

Component Details	Dimensions New		Clearance New		Permissible Worn Clearance or Dimension		Remarks	
	Ins.	mms.	Ins.	mms.	Ins.	mms.		
Pistons & Sleeves.								
Piston Dia.—(Thrust Side Top Skirt)	3.1461	79.908					Sleeves and pistons graded F.G.H. in steps of .0004" (.010 mm).	
	3.1472	79.939	.0028	.071				
Sleeve Bore (Parallel)	3.1492	79.99	.0034	.086				
	3.1503	80.018						
Piston Dia. (Thrust Side Bottom Skirt)	3.1476	79.949	.0013	.033				
	3.1487	79.977	.0019	.048				
Top Land Diameter	3.133	79.578	.0162	.412				Piston fitted with three rings above gudgeon pin, one ring below. On engines S101E to S56962E a plain bottom scraper ring fitted below gudgeon pin.
	3.131	79.527	.0193	.490				
Ring Groove Width Top and 2nd.	.0957	2.431						
	.0947	2.405	.0030	.076	.005	.127		
Compression Ring Width Top & 2nd.	.0937	2.380	.0010	.025				
	.0927	2.355						
Ring Groove Width (3rd.)	.1895	4.813	.0030	.076	.005	.127	Similar tolerances for over-size pistons +.020" (.508 mm). Oversize rings +.010" (.245 mm) +.020" (.508 mm) +.030" (.762 mm). Replacement sleeves available as standard size, and rebored +.020" (.508 mm).	
	.1885	4.788	.0010	.025				
Scraper Ring Width (3rd.)	.1875	4.763						
	.1865	4.737						
Ring Groove Width (4th.)	.1580	4.013	.0030	.076	.005	.127		
	.1570	3.987	.0010	.025				
Scraper Ring Width (4th.)	.1560	3.962						
	.1550	3.937						
Ring Gap (Closed)			.010	.25				
			.006	.15				
Clearance Between :								
Sleeve & Upper Block			.045	1.143			Dimensions taken respectively at top flange and spigot of sleeve.	
			.015	.381				
Sleeve & Lower Block			.003	.076				
			.0095	.013				
Stand-out of Sleeve			.003	.076			Desired clearance when assembled.	
			.0055	.140				
Water Pump & Thermostat.								
Housing Bore for Bearing	1.1813	30.005						
	1.1807	29.990						
			+.0007	+.018				
Bearing Case, Ext. Dia.	1.1811	30.000	-.0004	-.010				
	1.1806	29.987						
Oil Pump.								
Approximate capacity at 50 lbs. per square inch (3.52 kg/sq. cm.) is 3.95 gallons (16.94 litres) per minute at 2,000 r.p.m. (Engine)								
Outer Rotor, outside dia.	1.598	40.589						
	1.599	40.615						
			.001	.025				
Housing, internal dia.	1.601	40.665	.003	.075				
	1.600	40.640						
Rotor depth—outer and inner :	0.9995	25.387						
	0.9985	25.362						
			.0005	.013			A combined worn clearance of .004" (.101mm) indicates need of cover and housing face lapping.	
			.0015	.038				
Housing depth	1.001	25.403						
	1.000	25.400						

Component Details	Dimensions New		Clearance New		Permissible Worn Clearance or Dimension		Remarks
	Ins.	mms.	Ins.	mms.	Ins.	mms.	
Inner rotor, major dia.	1.171 1.172	29.743 29.769					
Inner rotor, minor dia.	.729 .731	18.517 18.567					
Clearance on rotors			.004 .0005	.102 .013			Where clearance exceeds .010" (.253 mm) new parts should be fitted.

Camshaft.

Front Journal Dia.	2.0590 2.0595	52.299 52.311					
Bore in Block	2.0635 2.0620	52.413 52.375	.0045 .0025	.114 .051	.0065	.164	Max. wear on camshaft journals .003" (.076 mm) and .0035 (.088 mm) in cylinder block.
2nd Journal Dia. } 3rd. " " } Rear " " }	1.71575 1.71525	43.580 43.567					
Bore in Block	1.71975 1.71825	43.683 43.645	.0045 .0025	.114 .051	.0065	.164	
Locating Groove	.1885 .1865	4.788 4.737					
Locating Plate	.1835 .1820	4.661 4.623	.0065 .003	.165 .076			This clearance determines camshaft end float.

Tappets & Valves.

Tappet Bore in Block	.9380 .9373	23.825 23.807					
Tappet Dia.	.9371 .9367	23.802 23.792	.0013 .0002	.033 .005			
Valve Tip Clearance							
Inlet			.010	.254			
Exhaust			.012	.305			
Valve Guide Bore Dia.	.313 .312	7.950 7.925					
Inlet Valve Stem Dia.	.311 .310	7.899 7.874	.001 .003	.025 .076			
Exhaust Valve Stem Dia.	.309 .308	7.849 7.823	.003 .005	.076 .127			
Guide projection above spring seat.	9/16"	14.3					

Valve seating angle on valve head 45°. Valve seat angle in cylinder head 44½°.

Valve Springs.

Free length 1.716" (43.586 mm). Fitted load 38 lbs + 2 lb. (17.237 kg ± .907 kg).
Fitted length 1.25 (31.75 mm). Full lift load 60 lb. (27 kg) approx.

Flywheel.

Spigot dia. (for Starter Gear Ring)	13.406 13.403	340.512 340.436					Flywheels balanced individually. Held to crankshaft by 4 set screws locked in pairs. Single dowel. Locating holes in flywheel 90° apart, in crankshaft 180° apart.
			—.031 —.023	—.787 —.584			
Starter Gear Ring Inside Dia.	13.380 13.375	339.852 339.725					

Run-out of clutch contact face at outer dia. should not exceed .003" (.076 mm),

Clearance between starter pinion and ring gear, Engine Serial No. SIE—S67028E, .156" (3.962 mm).
Engine Serial No. S67029E onwards .114" (2.896 mm).
Face-up starter mounting flange or fit shims to suit.

Component Details	Dimensions New		Clearance New		Permissible Worn Clearance or Dimension		Remarks
	Ins.	mms.	Ins.	mms.	Ins.	mms.	
Carburettor.							
Zenith Type 24 T—2.				Holley.			
Choke Tube	17		Choke Tube	17	Discharge Nozzle.	.104" (2.642 mm) with 4 holes	
Main Jet	120		Main Jet	100	Float Needle Seat	.040" (1.016 mm) dia.	
Adj. Needle	12		Adj. Needle	1.00 drilled		.081" (2.057 mm) dia.	
S.R. Jet	50		S.R. Jet	50	Main Jet	.083" (2.108 mm) dia.	
Progression	120		Progression	120	High Speed Bleed	.035" (.889 mm) dia.	
Needle Seating	1.5 mm		Needle Seating	1.5 mm	Upper Idle Restriction	.0293" (.744 mm) dia.	
Air Jet	2.0		Petrol level at 4' 6"		Idle Discharge Hole	.046" (1.168 mm) dia.	
			Head	15 mm	Second Idle Discharge Hole	.052" (1.321 mm) dia.	
S.R. Bottom Feed	1.5		Inter-con	1mm drilled	Venturi	.046" (1.168 mm) dia.	
			Air Jet	2.0	Fuel Level at 3/4 (.341 kgm)	21/32" (16.669 mm) dia.	
			Petrol Inlet Boss Stamped M-M		fuel pressure	9/16" ± 1/32" (14.274 = .787 mm) to top face of fuel bowl.	
					Float cut-off position	7/16" (11.13 mm) measured between upper casting face and outer float top.	

Governor.

Governor lever spring: Free length: inside hooks 3.8" (96.5 mm). End Play .005" (.127 mm) Rate: 18 lbs/in + 5%. No of coils : 26. .010" (.254 mm)

Load at 1" (25.4 mm) deflection : 25 lbs. (11.34 kg) + 1 lb. (.454 kg.) Initial wound-in load: 7 lbs. (3.175 kg).

Control Rod: Free length: inside hooks 2.687" (68.25 mm). Rate: 64 lbs./in ± 5%. No of coils: 11½.

Compensating Spring: Load at ½" (12.7 mm) deflection : 38 lbs. (17.237 kg) ± 1½ lbs. (.681 kg). Initial wound-in load: 6 lbs. (2.722 kg).

VAPORISING OIL ENGINE, PART No. 500038

(Manufactured by the Standard Motor Co.)

ENGINE—85 mm bore, fitted to tractors Type TE-D20, TE-E20.

Stroke 92 mm. Piston Displacement 127 cu. ins. (2088 c.c.)

Compression ratio 4.8 to 1.

Maximum belt horse power—23.9.

Tightening Torque—Cylinder Head Nuts 60 to 65 lbs. ft.
(8.25—8.95 kg. metres).

Big End Nuts 42 to 46 lbs. ft.
(5.8—6.4 kg. metres).

Main Bearing Nuts 90 to 100 lbs. ft.
(12.4—13.8 kg. metres).

Flywheel Cap Screws 42 to 46 lbs. ft.
(5.8—6.4 kg. metres).

Component Details	Dimensions New		Clearance New		Permissible Worn Clearance or Dimension		Remarks
	Ins.	mms.	Ins.	mms.	Ins.	mms.	
Crankshaft.							
Journal Diameter	2.4795 2.4790	62.979 62.967	.0025 .0010	.064 .025	.006 dry	.152	Similar tolerances for re-ground crankshaft to .020", .030", .040" (.508, .762, 1.016 mm) undersize.
Bearing Diameter (Fitted)	2.4815 2.4805	63.030 63.015					
Crankshaft End Float.							
Centre Journal Length.	1.7507 1.7498	44.468 44.445	.0117 .0048	.297 .122	.010 dry	.254	Crankshaft end float controlled by thickness of thrust washers.
Centre Bearing Cap width + 2 thrust washers.	1.7450 1.7390	44.323 44.171					
Big End.							
Crankpin Diameter	2.0861 2.0866	52.987 53.000	.0024 .0006	.061 .015	.006	.152	Similar tolerances for re-ground crankshaft to .020", .030", .040" (.508, .762, 1.016 mm) undersize.
Bearing Diameter	2.0985 2.0872	53.302 52.015					
Connecting Rod End Float.							
Crankpin Length	1.1890 1.1870	30.201 30.150	.0115 .0075	.292 .191			
Con-Rod Width	1.1795 1.1775	29.959 29.909					
Ovality—Journals & Crankpins.					0.002	.051	Minimum diameter to be such that the permissible worn clearance for bearings is not exceeded.
Taper—Journals & Crankpins.					0.002	.051	
Small End.							
Bore for Bush	1.0000 .9995	25.4 25.387	-.0035 +.0050	+.09 -.13			Heat piston in boiling water for removal and fitting of gudgeon pin.
Bush, Ext. Dia.	1.0045 1.0035	25.514 25.489					
Bush, Int. Dia.	.8752 .8738	22.230 22.220					
Gudgeon Pin, Dia.	.87510 .87485	22.228 22.221	+.00035 -.00030	+.009 -.008			These clearance figures taken at 68 F.
Gudgeon Pin Holes in Piston	.8853 .87505	22.233 22.226	+.00045 -.00005	+.011 -.001			

Component Details	Dimensions New		Clearance New		Permissible Worn Clearance or Dimension		Remarks
	Ins.	mms.	Ins.	mms.	Ins.	mms.	
Pistons & Sleeves.							
Piston Dia.—(Thrust Side Top Skirt)	3.3429	84.905					Sleeves and pistons graded F.G.H. in steps of .0004" (.010 mm).
	3.3438	84.933					
Sleeve Bore (Parallel)	3.3460	84.988					
	3.3471	85.016					
Piston Dia. (Thrust Side Bottom Skirt)	3.3442	84.943					
	3.3453	84.971					
Top Land Clearance			.017	.432			
			.019	.483			
Ring Groove Width Top 2nd and 3rd.	.0797	2.024					
	.0807	2.050	.0030	.076	.005	.127	
Compression Ring Width Top 2nd & 3rd.	.0787	1.999	.0010	.025			
	.0777	1.974					
Ring Groove Width (4th.)	.1895	4.813					Similar tolerances for oversize pistons +.020" (.508 mm). Oversize rings +.010" (.245 mm) +.020" (.508 mm) +.030" (.762 mm). Replacement sleeves available as standard size, and rebored +.020" (.508 mm).
	.1885	4.788	.0030	.076	.005	.127	
Scraper Ring Width (4th.)	.1875	4.763	.0010	.025			
	.1865	4.737					
Ring Groove Width (5th.)	.1580	4.013					
	.1570	3.987	.0030	.076	.005	.127	
Slotted Scraper Ring Width (5th.)	.1560	3.962	.0010	.025			
	.1550	3.937					
Ring Gap (Closed)			.010	.25			
			.006	.15			
Clearance Between :							
Sleeve & Upper Block			.045	1.143			Dimensions taken respectively at top flange and spigot of sleeve.
			.015	.381			
Sleeve & Lower Block			.003	.076			
			.0005	.013			
Stand-out of Sleeve			.003	.076			Desired clearance when assembled.
			.0055	.140			
Water Pump & Thermostat.							
Housing Bore for Bearing	1.1813	30.005					
	1.1807	29.990					
Bearing Case, Ext. Dia.	1.1811	30.000	+ .0007	+ .018			
	1.1806	29.987	— .0004	— .010			
Oil Pump.							
Approximate capacity at 50 lbs. per square inch (3.52 kg/sq. cm.) is 3.95 gallons (16.94 litres) per minute at 2,000 r.p.m. (Engine)							
Outer Rotor, outside dia.	1.598	40.589					
	1.599	40.615	.001	.025			
Housing, internal dia.	1.601	40.665	.003	.075			
	1.600	40.640					
Rotor depth—outer and inner :	0.9995	25.387					A combined worn clearance of .004" (.101mm) indicates need of cover and housing face lapping.
	0.9985	25.362	.0005	.013			
Housing depth	1.001	25.403	.0015	.038			
	1.000	25.400					

Component Details	Dimensions New		Clearance New		Permissible Worn Clearance or Dimension		Remarks
	Ins.	mms.	Ins.	mms.	Ins.	mms.	
Inner rotor, major dia.	1.171 1.172	29.743 29.769					
Inner rotor, minor dia.	.729 .731	18.517 18.567					
Clearance on rotors			.004 .0005	.102 .013			Where clearance exceeds .010" (.253 mm) new parts should be fitted.
Camshaft.							
Front Journal Dia.	2.0590 2.0595	52.299 52.311					
Bore in Block	2.0635 2.0620	52.413 52.375	.0045 .0025	.114 .051	.0065	.164	Max. wear on camshaft journals .003" (.076 mm) and .0035 (.088 mm) in cylinder block.
2nd Journal Dia.	} 1.71575 1.71525	43.580 43.567	.0045 .0025	.114 .051	.0065	.164	
3rd. " "							
Rear " "							
Bore in Block	1.71975 1.71825	43.683 43.645					
Locating Groove	.1885 .1865	4.788 4.737					
Locating Plate	.1835 .1820	4.661 4.623	.0065 .003	.165 .076			This clearance determines camshaft end float.
Tappets & Valves.							
Tappet Bore in Block	.9380 .9373	23.825 23.807					
Tappet Dia.	.9371 .9367	23.802 23.792	.0013 .0002	.033 .005			
Valve Tip Clearance							
Inlet			.010	.254			
Exhaust			.012	.305			
Valve Guide Bore Dia.	.313 .312	7.950 7.925					
Inlet Valve Stem Dia.	.311 .310	7.899 7.874	.001 .003	.025 .076			
Exhaust Valve Stem Dia.	.309 .308	7.849 7.823	.003 .005	.076 .127			
Valve Head Diameter :							
Inlet	1.176 1.172	29.570 29.769					
Exhaust	1.051 1.047	26.695 26.594					
Guide projection above spring seat.	9/16"	14.3					

Valve seating angle on valve head 45°. Valve seat angle in cylinder head 44½°.

Valve Springs.

Free length 1.716" (43.586 mm). Fitted load 38 lbs ± 2 lb. (17.237 kg ± .907 kg).
Fitted length 1.25 (31.75 mm). Full lift load 60 lb. (27 kg) approx.

Flywheel.

Spigot dia. (for Starter Gear Ring)	13.406 13.403	340.512 340.436				
			—.031 —.023	—.787 —.584		
Starter Gear Ring Inside Dia.	13.380 13.375	339.852 339.725				

Flywheels balanced individually. Held to crankshaft by 4 set screws locked in pairs. Single dowel. Locating holes in flywheel 90° apart, in crankshaft 180° apart.

Run-out of clutch contact face at outer dia. should not exceed .003" (.076 mm).

Clearance between starter pinion and ring gear, Engine Serial No. S1E—S67028E, .156" (3.962 mm).
Engine Serial No. S67029E onwards .114" (2.896 mm).
Face-up starter mounting flange or fit shims to suit.

B12.

Carburettor.

Zenith Type 24T—2 (Min./Max. Adj. Jet) Choke Tube : 17. Main Jet : 105. Adj. Needle : 1.25 drilled. S.R. Jet : 60.
Progression : 120. Needle Seating : 1.5 mm. Petrol level at 4' 6" Head : 15 mm. Inter-con : 1mm drilled. Air Jet : 2.0.
Petrol Inlet Boss and adjusting needle head Stamped V.O.

Governor.

Governor lever spring: Free length: inside hooks 3.8" (96.5 mm). End Play .005" (.127 mm) Rate: 18 lbs/in \pm 5%. No of coils: 26.
.010" (.254 mm)
Load at 1" (25.4 mm) deflection: 25 lbs. (11.34 kg) \pm 1 lb. (.454 kg.) Initial wound-in load: 7 lbs. (3.175 kg).
Control Rod: Free length: inside hooks 2.687" (68.25 mm). Rate: 64 lbs./in \pm 5%. No of coils: 11½.
Compensating Spring: Load at ½" (12.7 mm) deflection: 38 lbs. (17.237 kg) \pm 1½ lbs. (.681 kg). Initial wound-in load: 6 lbs.
(2.722 kg).

DIESEL ENGINE

(Manufactured by the Standard Motor Co.)

ENGINE— $3\frac{1}{8}$ " (80.96 mm) bore × 4" (101.6 mm) stroke, 4 cylinders, fitted to Tractors Type TE-F20.

Displacement 127.68 cu. ins. (2092 cc.)

Compression Ratio 17 : 1

Firing Order 1, 3, 4, 2.

Maximum Belt Horse Power—26 at 2,000 r.p.m.

Tightening Torques :—

Cylinder Head Nuts 75 to 80 lb. ft. (10.4—11.1 kg.m)	Main Bearing Socket Screws 25 to 30 lb. ft. (3.5—4.1 kg.m)
Big End Nuts 65 to 70 lb. ft. (9—9.7 kg.m)	Centre Bearing Housing to Block 39 to 42 lb. ft. (5.4—5.8 kg.m)
Oil Pump Attachment 16 to 18 lb. ft. (2.2—2.5 kg.m)	Clutch Fixing Screws 26 to 28 lb. ft. (3.6—3.9 kg.m)
Flywheel Set Screws 90 to 100 lb. ft. (12.4—13.8 kg.m)	Injector Attachment 12 to 14 lb. ft. (1.6—1.9 kg.m)

Component Details	Dimensions New		Clearance New		Remarks
	ins.	mms.	ins.	mms.	
Main Bearing Housings :					
Front					
Housing Spigot Ext. Dia.	5.0615 5.0605	128.562 128.537	.0030 .0005	.076 .013	For checking external dia. of all Housings—break housing and assemble on a mandrell 2.9180"/2.9183" (74.117/74.125 mm.) dia. without bearings. Tighten Socket Screws 29—31 lb. ft. (4—4.3 kg.m).
Bore in Cylinder Block	5.0635 5.0620	128.613 128.575			
Centre					
Housing Ext. Dia.	6.8115 6.8105	173.012 172.987	.0035 .0005	.089 .013	
Bore in Cylinder Block	6.8140 6.8120	173.076 173.025			
Rear					
Housing Spigot Ext. Dia.	6.8735 6.8725	174.587 174.562	.004 .001	.102 .025	
Bore in Cylinder Block	6.8765 6.8745	174.663 174.613			
Main Bearings.					
Housing Bores, Front, Centre and Rear.	2.9165 2.9170	74.079 74.092			For checking bore dia. assemble both halves with ring dowels fitted and tighten screws to 29—31 lb. ft. (4—4.3 kg.m).
Radial thickness of Bearings, Front, Centre and Rear	.08250 .08225	2.096 2.089			
Bearing Bore Dia. Front, Centre and Rear	2.7540 2.7530	69.952 69.926	.0040 .0025	.102 .064	Front and rear Main Bearing Liners are identical but centre is .100" (2.54 mm.) wider. With Bearings fitted into Housings tighten to specified torque setting. Desired clearance when assembled.
Crankshaft.					
Journal Dia.	2.7505 2.7500	69.863 69.850			Similar tolerances for reground Crankshaft to .010", .020", .030", .040" (.254, .508, .762, 1.016 mm.) undersize.
Crankshaft End Float					
Rear Journal Length	1.7507 1.7498	44.468 44.445	.0117 .0048	.297 .122	
Rear Bearing Housing width	1.559 1.557	39.599 39.548			
Thrust Washer thickness	.093 .091	2.362 2.311			

Component Details	Dimensions New		Clearance New		Remarks
	ins.	mm.	ins.	mm.	
Big End.					
Crankpin Dia.	2.3115	58.712			Similar tolerances for reground crankshaft to .010", .020", .030", .040", .060" (.254, .508, .762, 1.016, 1.524 mm.) undersize. For checking bearing bores—assemble Con. Rod and tighten to specified setting. For service purposes:— Max. permissible variation in Con. Rod total weights 1½ oz. (42.52 gms.). Metal may be removed from web on bearing cap for fine weight adjustment. Con. Rod assembly weight graded—N, P, Q, S, T, U—in ½ oz. stages.
	2.3110	58.699	.0035	.089	
		.0020	.051		
Bearing Bore Dia.	2.3145	58.789			
	2.3135	58.763			
Con. Rod Bore Dia.	2.4575	62.421			
	2.4570	62.408			
Bearing Shell thickness	.07175	1.822			
	.07150	1.816			
Connecting Rod End Float.					
Crankpin Length	1.4390	36.551			
	1.4370	36.500	.0105	.267	
		.0065	.165		
Con. Rod Width	1.4305	36.335			
	1.4285	36.284			
Small End.					
Bore for Bush	1.126	28.600			
	1.125	28.575	-.0050	-.127	
		-.0025	-.064		
Bush External Dia.	1.1300	28.702			
	1.1285	28.664			
Bush Internal Dia.	1.0002	25.405			
	.9998	25.395	+.00035	+.009	
		-.00035	-.009		
Gudgeon Pin Dia.	1.00015	25.404			
	.99985	25.396	+.0003	+.008	
		-.0003	-.008		
Gudgeon Pin Holes in Piston.	1.00015	25.404			
	.99985	25.396			
Pistons, Sleeves and Inserts.					
Wellworthy Type Pistons.					
Original Piston Skirt Dia. (Round and Parallel).	3.183	80.848			Ungraded up to Engine No. SA.7739E.
	3.182	80.823	.0070	.178	
			.0050	.127	
Sleeve Bore (Parallel).	3.1890	81.001			Replacement sleeves available as standard size only, (i.e. no provision made for reboring and fitting oversizes).
	3.1880	80.975			
1st Modification—Engine No. SA.7740E — SA.9205E. Piston Skirt Dia. (Round and Parallel).	—F. Grade	3.1834	80.858		Pistons and Sleeves graded F & G.
		3.1829	80.846		
	—G. Grade	3.1838	80.868		
		3.1834	80.858	.0056	.142
			.0047	.120	
Sleeve Bore (Parallel).	—F. Grade	3.1885	80.988		Replacement Pistons and Sleeves available at standard size only (i.e. no provision for oversizes).
		3.1880	80.975		
	—G. Grade	3.1890	81.001		
		3.1885	80.988	.0056	.142
			.0047	.120	

**Thank you very much
for your reading.**

**Please click here and go
back to the website.**

**Then, you can
download the complete
manual instantly.**

No waiting.