Chapter 2 Part E:
LEADER air-cooled four-stroke engines (Zip 125, Skipper ST, Liberty 125, ET4 125, Fly 125, LX4 125, S125)

Refer to the beginning of Chapter 1 for model identification details

Contents

Degrees of difficulty

Easy, suitable for novice with little experience	**Fairly easy,** suitable for beginner with some experience	**Fairly difficult,** suitable for competent DIY mechanic	**Difficult,** suitable for experienced DIY mechanic	**Very difficult,** suitable for expert DIY or professional

Specifications

General

Type	Single cylinder four-stroke
Capacity	124.01 cc
Bore	57.0 mm
Stroke	48.6 mm
Compression ratio	10.1 to 11.1 : 1

Camshaft

Intake and exhaust lobe height	
Zip 125, Skipper ST, Liberty 125, ET4	27.8 mm
Fly 125, LX 125, S125	
Intake	27.5 mm
Exhaust	27.2 mm
Left-hand journal diameter	
Standard	32.50 mm
Service limit (min)	32.44 mm
Right-hand journal diameter	
Standard	20.00 mm
Service limit (min)	19.95 mm
Camshaft endfloat	
Standard	0.11 to 0.41mm
Service limit	0.42 mm

1st oversize	57.144 to 57.172 mm
2nd oversize	57.344 to 57.372 mm
3rd oversize	57.544 to 57.572 mm

Cylinder head

Warpage (max)	0.05 mm
Left-hand camshaft bearing housing diameter	32.500 to 32.525 mm
Right-hand camshaft journal housing diameter	20.000 to 20.021 mm
Rocker arm shaft housing	12.000 to 12.018 mm
Rocker arm shaft diameter	11.977 to 11.985 mm
Rocker arm internal diameter	12.000 to 12.011 mm
Valve seat width (max)	1.6 mm

Valves, guides and springs

Valve clearances	See Chapter 1
Intake valve	
Overall standard length	80.6 mm
Stem diameter	
Service limit (min)	4.960 mm
Guide bore diameter	
Standard	5.022 mm
Stem/valve guide clearance	
Standard	0.013 to 0.040 mm
Service limit	0.062 mm
Face width	3.1 mm
Exhaust valve	
Overall standard length	79.6 mm
Stem diameter	
Service limit (min)	4.950 mm
Guide bore diameter	
Standard	5.022 mm
Stem/valve guide clearance	
Standard	0.025 to 0.052 mm
Service limit	0.072 mm
Face width	3.0 mm
Valve spring free length (intake and exhaust)	n/a

Cylinder bore – aluminium cylinder

Bore diameter (measured 38.5 mm down from top edge of the cylinder, at 90° to piston pin axis)	
Standard	
Size-code A	56.980 to 56.987 mm
Size-code B	56.987 to 56.994 mm
Size-code C	56.994 to 57.001 mm
Size-code D	57.001 to 57.008 mm
1st oversize	57.180 to 57.208 mm
2nd oversize	57.380 to 57.408 mm
3rd oversize	57.580 to 57.608 mm

Piston – aluminium cylinder

Piston diameter (measured 36.5 mm down from top edge of the piston, at 90° to piston pin axis)	
Standard	
Size-code A	56.933 to 56.940 mm
Size-code B	56.940 to 56.947 mm
Size-code C	56.947 to 56.954 mm
Size-code D	56.954 to 56.961 mm
1st oversize	57.133 to 57.161 mm
2nd oversize	57.333 to 57.361 mm
3rd oversize	57.533 to 57.561 mm
Piston-to-bore clearance (when new)	0.040 to 0.054 mm
Piston pin diameter	14.996 to 15.000 mm
Piston pin bore diameter in piston	15.001 to 15.006 mm

Cylinder bore – cast iron cylinder

Bore diameter (measured 38.5 mm down from top edge of the cylinder, at 90° to piston pin axis)

Standard

Crankshaft

Combined width of flywheels and big-end	51.4 mm
Runout A (max)*	0.15 mm
Runout B (max)*	0.01 mm
Runout C (max)*	0.10 mm
Endfloat	0.15 to 0.40 mm

** See illustration 21.18 for runout measurement points*

Torque settings

Valve cover bolts	11 to 13 Nm