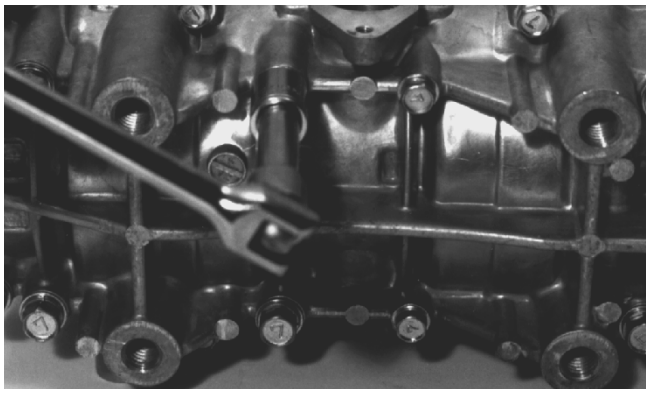
Arctic Cat Engine Specifications

ITEM		370 cc	440 cc	500 cc EFI	500 cc Carb	570 cc	600 cc EFI	700 cc Carb	700 cc EFI	900 cc EFI
Engine Model Number		AA37A8	AS44A9	AX50L5	AV50L5	AA56A5	AJ60L3	AE70L4	AD70L4	AB86L5
Displacement	— cc — cu in.	367 22.41	431 26.3	499 30.4	499 30.4	565 34.5	599 36.54	698 42.59	698 42.59	862 52.6
No. of Cylinders		2	2	2	2	2	2	2	2	2
Bore	— mm — in.	60 2.362	65 2.559	71 2.795	71 2.795	73.8 2.910	73.8 2.906	79.7 3.145	79.7 3.145	85 3.346
Stroke	— mm — in.	65 2.559	65 2.559	63 2.480	63 2.480	66 2.598	70 2.755	70 2.755	70 2.755	76 2.992
Compression Ratio		6.3:1	6.5:1	6.34:1	6.30:1	6.4:1	6.46:1	6.49:1	6.49:1	6.41:1
Cooling System		Fan Cooled	Fan Cooled	Liquid Cooled	Liquid Cooled	Fan Cooled	Liquid Cooled	Liquid Cooled	Liquid Cooled	Liquid Cooled
Gasoline Octane (min)		87	87	87	87	87	87	87	87	87
Fuel Mixture		Oil Injection	Oil Injection	Oil Injection	Oil Injection	Oil Injection	Oil Injection	Oil Injection	Oil Injection	Oil Injection
Ignition Timing	degrees — mm — in.	18③* 2.012 0.079	18③* 2.012 0.079	16③* 1.535 0.060	30③* 5.258 0.207	18③* 2.049 0.081	15②* 1.509 0.059	12⑦* 0.969 0.038	12⑧* 0.969 0.038	23④* 3.775 0.149
Spark Plug (NGK)		BR9EYA	BR9EYA	BR9EYA	BR9EYA	BR9EYA	BR9EYA	BR9EYA	BR9EYA	BR9EYA
Spark Plug Gap	— mm — in.	0.7-0.8 0.028-0.031	0.7-0.8 0.028-0.031	0.7-0.8 0.028-0.031	0.7-0.8 0.028-0.031	0.7-0.8 0.028-0.031	0.7-0.8 0.028-0.031	0.7-0.8 0.028-0.031	0.7-0.8 0.028-0.031	0.7-0.8 0.028-0.031
Lighting Coil Output		12V/185W	12V/185W	12V/156W	12V/156W	12V/210W	12V/190W	12V/156W	12V/190W	12V/190W
Ignition Type		CDI/NOI	CDI/NOI	CDI/NOI	CDI/NOI	CDI/NOI	CD/NOI	CDI/NOI	CDI/NOI	CDI/NOI
Piston Skirt/Cylinder Clearance Range	— mm — in.	0.060-0.150 0.0024-0.0059	0.080-0.150 0.0031-0.0059	0.075-0.105 0.0029-0.0041	0.075-0.105 0.0029-0.0041	0.095-0.150 0.0037-0.0059	0.075-0.105 0.0029-0.0041	0.075-0.105 0.0029-0.0041	0.075-0.105 0.0029-0.0041	0.075-0.105 0.0029-0.0041
Piston Ring End Gap Range	— mm — in.	0.15-0.80 0.006-0.031	0.15-0.83 0.006-0.033	0.20-0.40 0.008-0.016	0.20-0.40 0.008-0.016	0.20-0.83 0.008-0.033	0.30-0.50 0.012-0.0196	0.30-0.50 0.012-0.0196	0.30-0.50 0.012-0.0196	0.30-0.50 0.012-0.020
Cylinder Trueness Limit (max)	— mm — in.	0.1 0.004	0.1 0.004	0.1 0.004	0.1 0.004	0.1 0.004	0.1 0.004	0.1 0.004	0.1 0.004	0.1 0.004
Piston Pin Diameter Range	— mm — in.	17.995-18.000 0.7085-0.7087	15.995-16.000 0.6297-0.6299	21.995-22.000 0.8659-0.8661	21.995-22.000 0.8659-0.8661	17.995-18.000 0.7085-0.7087	21.995-22.000 0.8659-0.8661	21.995-22.000 0.8659-0.8661	21.995-22.000 0.8659-0.8661	23.995-24.000 0.9447-0.9449
Piston Pin Bore Diameter Range	— mm — in.	17.998-18.006 0.7086-0.7089	15.996-16.004 0.6298-0.6301	22.002-22.010 0.8662-0.8665	22.002-22.010 0.8662-0.8665	17.998-18.006 0.7086-0.7089	22.002-22.010 0.8662-0.8665	22.002-22.010 0.8662-0.8665	22.002-22.010 0.8662-0.8665	24.002-24.010 0.9450-0.9453
Connecting Rod Small End Bore Diameter Range	— mm — in.	23.003-23.011 0.9056-0.9059	21.003-21.011 0.8269-0.8272	27.003-27.011 1.0631-1.0634	27.003-27.011 1.0631-1.0634	23.003-23.011 0.9056-0.9059	27.003-27.011 1.0631-1.0634	27.003-27.011 1.0631-1.0634	27.003-27.011 1.0631-1.0634	29.003-29.011 1.1410-1.1420
Connecting Rod Radial Play Range	— mm — in.	0.02-0.03 0.0008-0.0012	0.02-0.03 0.0008-0.0012	0.003-0.020 0.0001-0.0007	0.003-0.020 0.0001-0.0007	0.02-0.03 0.0008-0.0012	0.003-0.020 0.0001-0.0007	0.003-0.020 0.0001-0.0007	0.003-0.020 0.0001-0.0007	0.003-0.020 0.0001-0.0008
Crankshaft Runout (t.i.r.)	— mm — in.	0.05 0.002	0.05 0.002	0.05 0.002	0.05 0.002	0.05 0.002	0.05 0.002	0.05 0.002	0.05 0.002	0.05 0.002
Crankshaft End Play Range	— mm — in.	0.05-0.10 0.002-0.004	0.05-0.10 0.002-0.004	0.05-0.10 0.002-0.004	0.05-0.10 0.002-0.004	0.05-0.10 0.002-0.004	0.05-0.10 0.002-0.004	0.05-0.10 0.002-0.004	0.05-0.10 0.002-0.004	0.05-0.10 0.002-0.004
Reed Stopper Height	— mm — in.	N/A	N/A	8.0 0.315	8.0 0.315	6.0 0.236	11.0 0.433	11.0 0.433	11.0 0.433	11.0 0.433

① @ 1400 RPM
② @ 1800 RPM
③ @ 2000 RPM
④ @ 2500 RPM
⑤ @ 3200 RPM
⑥ @ 3500 RPM
⑦ @ 4000 RPM
⑧ @ 4350 RPM

*Engine Warm

Back to TOC
Back to Section TOC
Next



A831

24. Separate the crankcase halves by installing two crankcase cap screws in diagonal corners leaving the heads approximately 6 mm (1/4 in.) out. Using a plastic hammer, tap on each cap screw head until the halves separate. Remove the cap screws.

⚠ CAUTION

DO NOT drive any tool between the crankcase halves to separate the crankcase. Damage to the sealing surfaces will result.

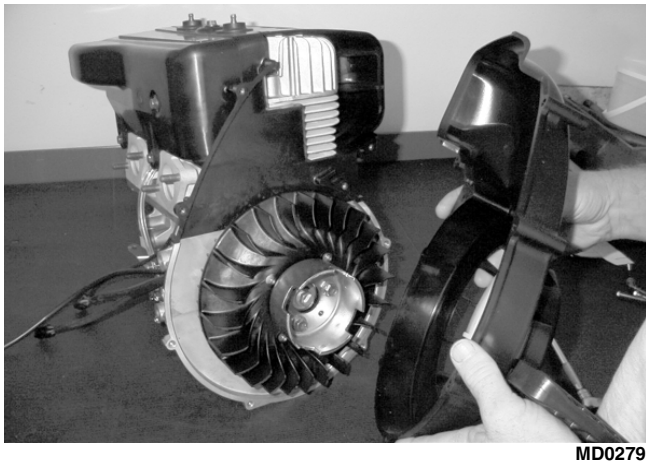
25. Remove the rubber bands holding the connecting rods; then separate the crankcase halves. Account for the two dowel pins. Lift the crankshaft free from the crankcase half and slide the two crankshaft seals off the crankshaft. Account for the C-ring and five bearing retaining pins.

Disassembling Engine
(570 cc Models)

1. Remove the exhaust manifold. Account for the gaskets.

2. Remove the nuts, lock washers, and washers securing the intake flange assembly. Account for the gaskets, insulators, and the heat deflector.

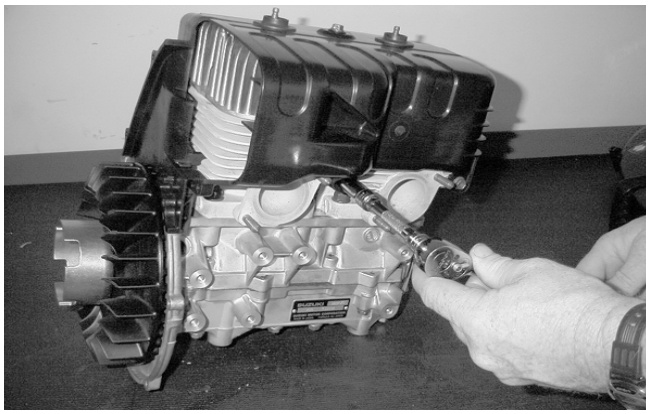
3. Remove eight cap screws securing the main fan shroud; then remove the shroud with the recoil starter assembly.



MD0279

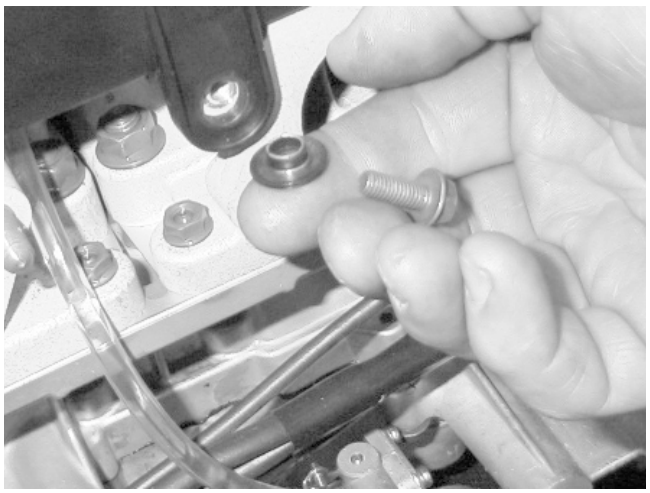
■ **NOTE: Cap screws securing the front and rear shrouds use special washers.**

4. Remove the five cap screws securing the front (exhaust-side) shroud to the cylinder head. Account for the special washers.



MD0276

■ **NOTE: Keep the special mounting hardware with the shrouds for assembling purposes.**

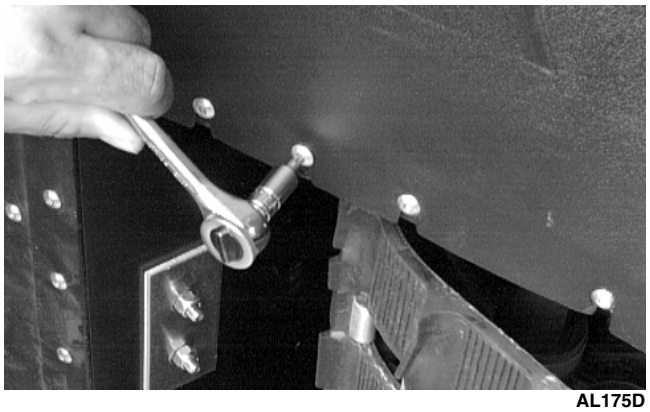


MD0065

5. Remove the spark plug grommets.

AL173D

7. Using a piece of cardboard to protect the finish, tip the snowmobile on the right side; then remove the torx-head screws securing the belly pan to the frame and tunnel.

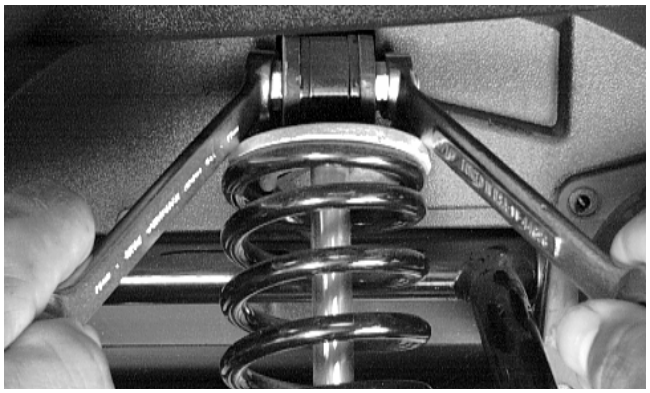


AL175D

8. Remove the screws securing the left-side steering tie rod boot; then remove the boot.

AL177D

9. Remove the shock absorber bolt.



AL178D

10. Remove the torx-head screws securing the belly pan underneath the shock mount.

AL179D

11. Remove the front belly pan-to-nosepiece Phillips-head screws.

AL181D

12. Remove the front belly pan-to-nosepiece torx-head screws.