

>>> Service Letter

Technical Aspects are FAA Approved

Number: L95-12 B
Replaces L95-012 A

Date: 04/18/2005

Subject: Overhaul and repair procedures for the SA65000-A20P power assemblies.

Application:

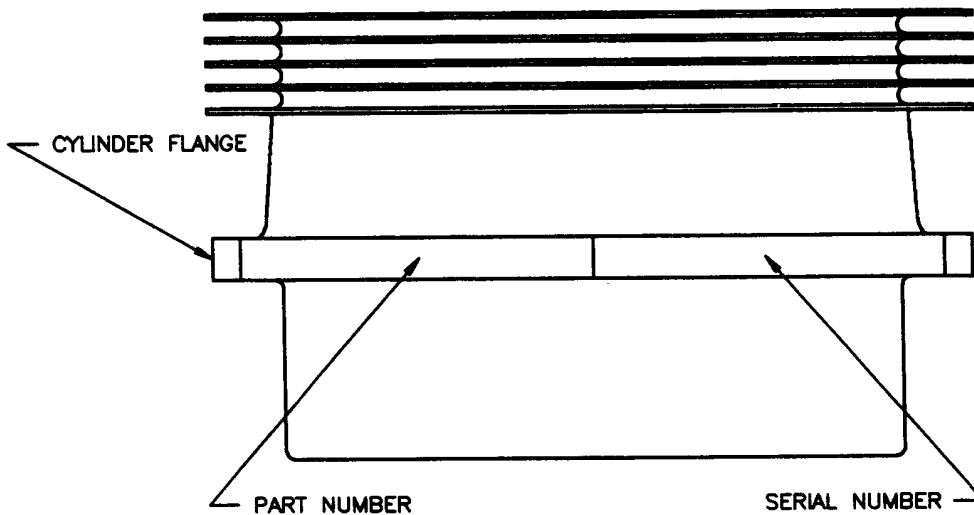
Cylinder/Power Assemblies	Engine Applications
SA65000-A20P	A65-1, A65-3, A65-6, A65-7, A65-8, A65-9, A65-12, A65-14

Compliance: Any time the above cylinders are removed for overhaul or repair.

This Service Letter covers specific differences between Superior Air Parts, Inc. SA65000 series Millennium® cylinders, and the original equipment manufacturer's cylinders, as it pertains to repair and overhaul. If a specific procedure is not addressed in this Service Letter, the applicable procedure in the original equipment manufacturer's current overhaul manual applies. The cylinders are identified by part number and serial number on the cylinder flange, as shown in Figure 1.

Cylinder Bore

The Millennium® cylinder barrels are manufactured from per AMS 6382 steel. The barrels are through hardened with a choke bore, which should be maintained during any boring or honing operation. See Figure 2 and Table of Limits, included in this Service Letter, for new standard cylinder dimensions and finish specifications.



Any time a cylinder is removed, the diameter and out-of-round condition should be checked and the cylinder inspected for scoring, galling, low spots, and ring step. Inspection results should be compared to the dimensions in Figure 2 and in the original equipment manufactures current overhaul manual. Through hardened steel cylinders that are worn, can be plated back to standard dimensions. Piston Rings for steel cylinders should be used in through hardened cylinder barrels unless the cylinder has been chrome or nickel plated. Refer to the appropriate repair service instructions for rings to be used with the type of plating being placed in service.

Cylinder Heads

Superior Air Parts, Inc. Millennium[®] cylinder heads for the engines listed in this service letter have been manufactured using ASTM B26 Aluminum Alloy in compliance with Superior Air Parts material specifications.

Valve Guides

Millennium[®] cylinders listed in this service letter are being manufactured with prereamed Ni-Resist exhaust valve guides for improved durability. Intake guides supplied with the new cylinders are also prereamed. Both guides are available in standard and oversizes. Consult the current Superior Service Letters and price catalogue for part numbers and available oversizes. A Table of Limits is provided as part of this Service Letter to provide pertinent clearance and dimensional information.

CAUTION

Superior Air Parts, Inc. Exhaust valves with chrome flashed stems must be used with the Ni-Resist exhaust valve guides.

Valve Seats

The listed Millennium[®] cylinders are supplied with 30° intake valve seats and 45° exhaust valve seats. Intake seats and exhaust valve seats are available in oversizes for future repair. Consult the current Superior service letters and price catalogue for available oversizes. A Table of Limits is provided as part of this Service Letter to provide pertinent clearance and dimensional information.

Piston and Piston Rings

You must use the following piston and piston ring combination with the SA65000 series cylinders. The combination to be used consists of the SA65100 piston, two SA65120 compression rings and one SA65130 oil control ring. Rings for chrome cylinder barrels will be available in the future.

Parts installed in the power assembly SA65000-A20P:

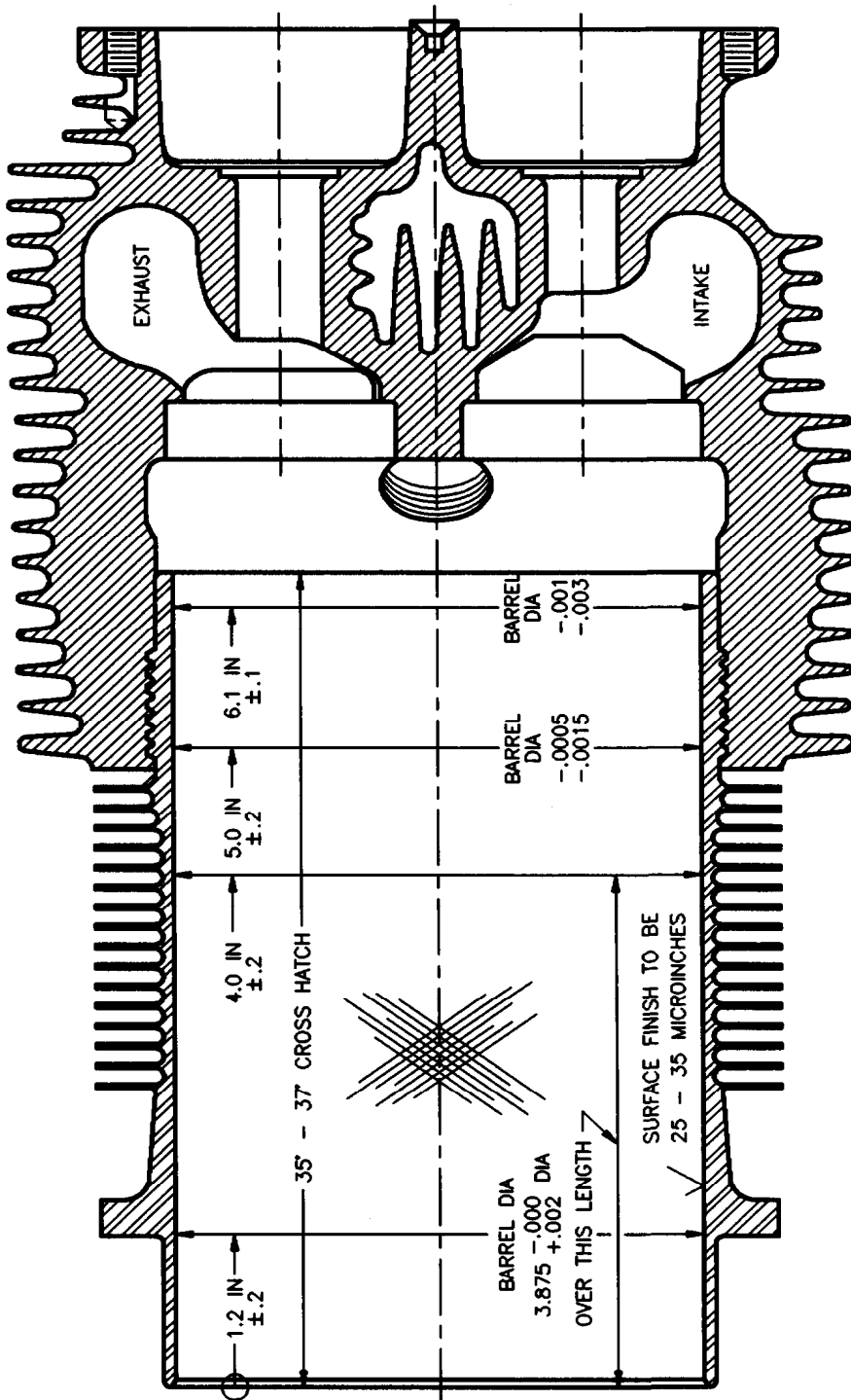
SA10205	Exhaust Guide (Ni-Resist)
SA10209	Intake Guide (Tin Bronze)
SA65170	Exhaust Seat (Stainless Steel)
SA65150	Intake Seat (Stainless Steel)
MS9018-05/2-52	Insert, Spark
SA22949 M05	Bushing, Rocker
SA401870	Stud, Intake
SA402151	Stud, Exhaust
SA21284	Tube, Pushrod
MS20913-1H	Plug, Pipe

Additional Related Cylinder Assy Parts

SA65160	Exhaust Valve (Chrome Flashed Stem)
SA65140	Intake Valve
SA24044	Exhaust Spring Seat Upper
SA24026	Intake Spring Seat Upper
SA625961	Spring Seat Lower
SA24029	Valve Spring Exhaust, Intake
SA625958	Valve Spring Exhaust, Intake
SA21361	Valve Keeper Exhaust, Intake
SA65100	Piston
SA65120	Compression Ring
SA65130	Oil Control Ring

Cylinder Installation Instructions

When installing the SA65000-A20P cylinder assembly, you must comply with STC SE09014SC. Instructions for compliance with the STC are contained in Superior Air Parts Service Letter No. 95-009.



CYLINDER DIMENSIONS - STANDARD (NEW)

FIGURE 2

Overhaul Table of Limits

The following measurements are in inches.

	New Minimum	Parts Maximum	Servicable Limit
Piston (SA65100)			
Above First Land	.0385L	.0425L	
Above Second & Third Land	.0345L	.0385L	
Top of Skirt	.0125L	.0155L	.0185L
Bottom of Skirt	.0095L	.0125L	.0155L
Piston Ring Side Clearance			
Piston Ring Top (SA65120)	.0065L	.0085L	.010L
Piston Ring 2nd (SA65120)	.005L	.007L	.009L
Piston Ring Oil (SA65130)	.002L	.004L	.006L
Piston Ring End Gap			
Piston Ring Top (SA65120)	.017	.028	.038
Piston Ring 2nd (SA65120)	.015	.028	.035
Piston Ring Oil (SA65130)	.012	.028	.035
Piston Pin (SA530856)			
Piston Pin Assembly in Cylinder	.0105L	.0325L	.060L
Piston Pin in Piston	.0001L	.0007L	.0015L
Piston Pin in Connecting Rod	.0014L	.0021L	.004L
NOTE: Replace piston pin assembly if piston pin plugs are loose.			
Intake Seat (SA65150)			
Seat OD Standard	1.7565	1.7575	
Seat Boss Diameter Standard	1.749	1.751	
Valve Seat in Cylinder	.0055T	.0085T	
Seat Face to Valve Axis	59° 30'	60° 30'	
Seat Face Width	.080	.100	
Exhaust Seat (SA65170)			
Seat OD Standard	1.6935	1.6945	
Seat Boss Diameter Standard	1.686	1.688	
Valve Seat in Cylinder	.0055T	.0085T	
Seat Face to Valve Axis	44° 45'	45° 15'	
Seat Face Width	.060	.080	

	New Minimum	Parts Maximum	Servicable Limit
Intake Guide (SA10209)			
Valve Guide OD Standard	.5327	.5337	
Valve Guide Boss Diameter Std.	.531	.532	
Valve Guide in Cylinder	.001T	.0027T	
Valve Guide ID Finished	.3432	.3445	
Exhaust Guide (SA10205)			
Valve Guide OD Standard	.6265	.6275	
Valve Guide Boss Diameter Std.	.6245	.6255	
Valve Guide in Cylinder	.001T	.003T	
Valve Guide ID Finished	.437	.439	
Intake Valve (SA65140)			
Valve Face to Valve Axis	59° 50'	61° 10'	
Valve in Guide	.0015L	.0035L	.005L
Exhaust Valve (SA65160)			
Valve Face to Valve Axis	45° 45'	46° 15'	
Valve in Guide	.003L	.0055L	.008L