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SERVICE LETTER November 2005

Issue Date

Friday, November 11, 2005

Subject/Purpose

Upgrade of main gear wheels

Affected Models

None. As required.

Compliance Time

None.

Maintenance

As per Service Manual.

Required Parts

Grove wheels with 1 ¼" axel

Part Number	Description	Qty
65-1M	600 x 6 Wheels & brake (includes 36-1experimental Caliper)	2
5015	600 x 6 with 1 ¼" axle	2
5712	1.438 x 1.25 axle spacer	2
5510	1 ¼ axle nut	2

Above kit is required when upgrading from the 500 x 5 to the 600 x 6 main wheels. Note that axle diameter is the same.

Grove wheels with 1 ½" axel

Part Number	Description	Qty
60-1M	600 x 6 Wheels & brake (includes 36-1experimental Caliper)	2
5016	600 x 6 with 1 ½" axle	2
5511	1 ½" axle nut	1

BRAKE INSTALLATION GUIDELINES

Use the Proper Brake Fluid — Improper brake fluid will ruin the seals in the brake system. Use only standard aircraft Mil-H-5606 red hydraulic fluid. Never use automotive brake fluid!

Bleed the Brakes — The best method to fill and bleed aircraft brakes is from the bottom up. Loosely connect a 1/8" ID clear hose to the brake caliper bleeder screw from your brake fluid source. An oil can used exclusively for this purpose works well. Pump the oil can until the hose is full of fluid, with no air bubbles. Tightly secure the hose to the bleeder valve, while opening it a quarter turn. Pump fluid into the system until it fills the brake cylinder reservoir. (The reservoir filler or vent cap must be open during this process). Tighten the bleeder valve screw, remove the hose, and reseal the reservoir. Check your work by insuring that the reservoir is full and that you have a "hard peddle."

If you have a "soft-peddle," pump the brakes several times. Many times that will fix the problem. If the problem persists, drain the fluid and repeat the above process.

Tighten and Safety Wire the Brake Calipers — Torque the brake caliper bolts to 80 inch-pounds, and then safety wire.

Seat the Brake Pads — These non-asbestos organic composition brake pads require a thin layer of glazed material at the lining friction surface in order to provide maximum braking performance. This glazed layer is produced by the heat generated during normal braking operations, and is maintained during the life of the lining. Since new brake pads do not have this layer, it must be created by the following process:

1. Heat the pads by performing a full stop from 30 - 40 mph.*
2. Allow the brakes to cool for 5 - 10 minutes
3. Test the results at full static run-up. If the brakes hold, break-in is complete. If they fail to hold, repeat steps 1 and 2 until they do.

* NOTE: Step 1. normally produces adequate heat to condition the brake pads. Another method is to taxi several hundred yards at 50-75% power while severely "riding" the brakes to maintain a slow taxi speed.

NOTE: Above is from the Grove Aircraft web site. For up to date information, please see www.groveaircraft.com

TROUBLE	PROBABLE CAUSE	CORRECTION
1. Unable to obtain sufficient hydraulic brake pressure or spongy pedal	Air in hydraulic system.	Check for source, then bleed hydraulic system.
	Brake pedal binding	Check for freedom of movement of brake pedal and master cylinder
2. Excessive pedal travel	Incorrect installation	Refer to Installation Instructions.
	Leak in system— brake, master cylinder, fittings, or lines.	Locate leak and repair.
	Defective master cylinder.	Repair or replace.
3. Brake Drag	Back plate bolts loose.	Torque bolts to proper value.
	Piston jammed in caliper	Remove caliper and repair cylinder or piston
	Foreign matter wedged in brakes	Locate and remove
	Master cylinder not releasing hydraulic pressure	Repair or replace master cylinder.
	Parking brake valve defective	Repair or replace parking brake valve.
	Foreign matter lodged between torque pins and torque plate bushings.	Clean and inspect . Replace if necessary.
	Bent torque plate.	Replace torque plate.
4. Rapid disc and/or pad wear.	Bent torque pins Dragging brakes	Replace torque pins. Refer to Trouble #2
	Excessive rusting, scoring, or pitting of brake disc	Clean or replace disc.
	Excessive back plate deflection caused by bent bolts or over torquing bolts.	Check torque of bolts, replace bolts if bent.
	5. Brakes won't hold.	Improper conditioning of brake pads.
Contaminated pads.		Replace pads.
Insufficient hydraulic pressure.		Refer to Trouble #1.
Brake pad carburized (overheated)		Replace pads

NOTE: Above chart is from the Grove Aircraft web site. For up to date information, please see www.groveaircraft.com

Inspection and Servicing:

Also see Table 1 in Service Manual.

1. Inspect the brake caliper for freedom of motion and for hydraulic leaks.
2. Check brake linings for deterioration and maximum permissible wear.
3. Check the brake lines for chafing, damage and leaks.
4. Inspect the brake discs for corrosion, wear and loose or missing rivets.
5. Check the master cylinders for security of mounting, general condition, and fluid level.
6. Check pedal travel for a "hard pedal". If a pedal is "soft" or has excessive play, service the system.

Note that new manufactured Alarus CH2000 may use the 500 X 5 with 1 ¼" axles, or 600 X 6 with 1 ¼" axles or 600 x 6 with 1 ½" axles.

Note that nose wheel is 500 x 5 only.

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