



PRIEST RIVER, ID
(208) 448-0400

Component Maintenance
Manual
A-10036

WHEEL ASSEMBLIES, OIL BATH
& GREASE PACK TYPES; AND
BRAKE ASSEMBLY

**COMPONENT MAINTENANCE MANUAL
FOR
AEROCET WHEEL ASSEMBLIES, OIL BATH, AND
GREASE PACK TYPE; AND AEROCET BRAKE
ASSEMBLY**




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RECORD OF REVISION

REV NO.	ISSUE DATE	DESCRIPTION OF CHANGES	BY	CHECKED
I/R	7/06/09	Initial Release.	BT	TH
01	2/19/16	<p>Broadened document scope to include 65-42170, 5.00-5 information. Removed 35A-51800-2; added 35A-51800-3. (Throughout document)</p> <p>Removed tire pressures. (Part of installation data & and AFMS requirements.)(Section 30-40-10)</p> <p>Added Introduction, explaining basic intent and use of document.</p> <p>RECOMMENDED SERVICE SCHEDULE was TIME LIMITS/MAINTENANCE CHECKS, Continued Airworthiness Service Schedule and General Practice</p> <p>Removed Airworthiness Limitations section and all references to ICA, such as Documents Title and Header.</p> <p>Added instruction in introduction to refer to Installation ICA for Airworthiness Limitations.</p> <p>(Complete document revision.)</p>	RB	M. Hamley
02	12/16/16	<p>Added 35A-51650 brake to document. This includes: Document Title, Recommended Inspections, Illustrations and Parts Listings.</p> <p>Added illustrated parts list for brake for customer reference of AeroCet's part numbers.</p>	DjM LM	
03	11/5/2018	<p>Updated 6.00-6 Wheels and Brakes IPC Section.</p> <p>Added Figure 32-40-40-01-c for brake part alternates.</p> <p>All above changes reflect latest approved type data.</p> <p>Added detailed lubricant inspections. (Scheduled Maintenance)</p> <p>Added lubricant inspection details in Unscheduled Maintenance Inspections.</p> <p>Added several product listings in Bolt Protection.</p>	RB	



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INTRODUCTION

1. General:

This Component Maintenance Manual is one part of a larger Maintenance Manual system or set, intended to detail the recommended disassembly, inspection, troubleshooting, and parts replacements which are specific to Aerocet wheel and brake assemblies. Wheel and brake installation is to be covered in Aerocet float-specific Maintenance Manuals, such as A-10031 (for Aerocet Model 3400 Amphibious Floats) or A-10038 (for Aerocet Model 6650 Amphibious Floats).

For main wheels using Cleveland Brake Assemblies, please refer to the latest revision of the Cleveland Wheels and Brakes Component Maintenance Manual, AWBCMM0001-14 or latest released revision (the dash number, "-14" refers to the revision level release.)

Refer to installation instructions, such as Maintenance Manuals for float gear, for tire sizes and ply ratings. Use installation-specific tire pressures according to installation instructions or Airplane Flight Manual Supplement.

Aerocet offers two basic types of bearing lubrication systems, which are assembly-specific, "Oil-Bath" and "Grease Pack" types. Procedures are listed for each, where they are different. Lubricants are listed in Section 30-40-40 for bearings and lubricants in the wheels.

Refer to installation specific Instructions for Continued Airworthiness for Airworthiness Limitations.



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RECOMMENDED SERVICE SCHEDULE

TABLE 32-05-10-1

INSPECTION TIME INTERVALS			HOURS (MONTHS) (Whichever occurs first)			
			25	50	100 (12)	200 (24)
		Notes				
Wheel Assemblies	Wheels	Inspect for corrosion, cracks and other visible damage	X			
	Fasteners	Inspect that nuts are properly installed and have not worked loose. Bolt threads should be flush to 1-1/2 threads extending beyond the nut.	X			
	Brake Disk	Inspect the brake disk for rust, excessive grooves, large cracks, or other visible damage. Replace disk when minimum thickness falls below 0.327 in. / 8.306 mm		X		
	Oil Bath Reservoir (15W-50 Multi-Grade Motor Oil) See filling instructions In "Main Wheel Assembly" section.	Inspect for water contamination in the oil bath resulting in a light brown emulsion. For fresh water use, inspect annually. For salt water usage, inspect more frequently, every 2 months recommended. Flush and replenish as needed.	X		X	
	Grease Pack Type (Bearing Grease) See filling instructions In "Main Wheel Assembly" section.	Charge reservoir with grease gun slowly until grease expels from purge hole in seal, 2 month intervals recommended. For Salt water usage, recharge system after each occurrence.	X			

	Tires	Visually inspect tires for cuts, flat spots, and tread or sidewall damage. Check inflation pressure.	X				
Brake Assembly	Housing and fittings	Inspect for corrosion, cracks, or other visible damage. Check inlet fitting bosses and anchor bolt lugs for cracks.	X				
	Back Plate	Inspect attachment bolts to insure they are properly torqued and have not worked loose. Gaps between the back plate and cylinder would be evidence of this.				X	
	Brake Cylinder anchor Bolts	Inspect anchor bolts in torque plate bushings for sloppiness. Slight movement is normal. Excessive movement is cause for removal and detailed inspection.				X	
	Brake Linings	Linings should be visually checked for extreme chipping on the edges. Lining worn to a minimum thickness of 0.100 inch (2.54 mm) must be replaced.				X	
	Torque Plate	Visually inspect torque plate for corrosion, cracks, loose anchor bolt bushings, or other visible damage. Anchor bolt bushings must be flat against torque plate surface.				X	
	Brake Fluid	Inspect for any brake fluid leaks. Organic linings which have been contaminated with fluid should be replaced.			X		

SCHEDULED MAINTENANCE CHECKS

Lubricant Inspection, 25 hours - Oil Bath Wheels –

1. With wheel oriented in accordance with Oil Bath Type, Reservoir Filling Instructions, drain a small amount of oil from wheel into a clear tube or suitable container.
2. Inspect fluid for contamination.
 - a. Lubricant (oil) should be a clear brown coloration. (Pass)
 - b. Milky, chocolatey or murky fluid indicates emulsified water or other contamination. Darkened, opaque fluid may indicate used, burned or overheated condition. Metal flakes, grit or particles may indicate contamination, or failing bearing, shaft or other components. (Fail)
3. If lubricant fails inspection, then proceed to complete draining of lubricant, remove and complete a full tear-down of the wheel assembly, then inspect, clean and re-assemble.
4. If lubricant passes inspection (clear, brown coloration), then proceed to refill wheel cavity in accordance with Oil Bath Type, Reservoir Filling Instructions.
5. Amphibian Operations: Recommend suspending or lifting the wheel clear of the ground and spinning the wheel, listening for rumbling or grinding that might indicate bearing damage. Check for play in the assembly by grabbing the tire fore and aft, or top and bottom and rocking. Discernable play may simply require tension adjustment of the axle nut. Excessive play may indicate damaged components. Discernable rolling noise and excessive play requires tear down inspections.

Lubricant Inspections, 25 hours – Grease Pack Wheels

Grease pack wheels may be charged with fresh grease lubricant more often than 25 hours, especially in marine environments where they must be thoroughly rinsed with fresh water and recharged daily or with each occurrence of use in salt water. Wheels that see more infrequent use may be re-charged every 2 months. (The strategy is to keep the cavity full of grease. It is common practice in amphibian operations to recharge the wheel daily when used in marine environs. This purges air, which can allow water to enter due to temperature and pressure changes in the wheel.)

1. Slowly charge reservoir with grease gun until grease is expelled through the purge hole in the grease seal.
 - a. Observe the purged contents, watching for water or other contamination.
 - b. Excessive water, or continued water left in the cavity will risk bearing corrosion and pitting, and early replacement. In the case of contamination, frequent tear-down and full inspection is necessary, removing contaminants and water, cleaning all parts thoroughly and re-assembling.
2. Amphibian Operations: Recommend suspending or lifting the wheel clear of the ground and spinning the wheel, listening for rumbling or grinding that might indicate bearing damage. Check for play in the assembly by grabbing the tire fore and aft, or top and bottom and rocking. Discernable play may simply require tension adjustment of the axle nut. Excessive play may indicate damaged components. Discernable rolling noise and excessive play requires tear down inspections.

Wheel Disassembly

1. Insure aircraft is secure and stable before beginning any work. Refer to Brake system Service and Maintenance manual for proper procedures. (Cleveland Wheels and Brakes, Component Maintenance Manual AWBCMM0001-14 or later revision) Deflate tire immediately after jacking aircraft and before axle nut is loosened.
2. Remove valve core from stem and exhaust remaining air in tire. For Oil Bath type, loosen the Brake Bleeder assemblies and drain the oil reservoir within the wheel hub. Remove brake by removing back plate tie bolts from brake disk if necessary. Remove wheel from axle.
3. Disassemble wheel on a clean flat surface, being careful not to nick, scratch, or gouge wheel halves. Verify that all air is exhausted from tire. Separate the tire beads from the wheel halves, using a bead breaker or by applying pressure in even increments around the entire sidewall of the tire as close to the tire bead as possible.
4. Remove all Tie Bolts, Nuts, and Washers holding the wheel halves together. Remove the Brake Disk from wheel if necessary. Separate the inner and outer wheel halves and remove tire. Remove Retaining Rings and drive Grease Seals from wheel halves with a suitable drift. Remove Bearing Cones and store carefully to avoid damage or contamination. The Bearing Cup is a shrink fit into the wheel half and should not be removed, unless replacement is necessary due to scratches, nicks, pitting, corrosion, or evidence of overheating. If Bearing Cup replacement is necessary, place wheel half in an oven not exceeding 350 deg. F for 20 minutes.

WARNING

Wheel halves will remain very hot, protective gloves are required.

Remove wheel half from heat source and immediately remove bearing cup. If bearing cup does not fall out, tap it evenly with a suitable drift pin or use a hydraulic press.

Brake Disassembly

1. Brake Disassembly without removing wheel. Wheel removal is not necessary unless brake torque plate needs to be removed. Before Disassembly assure that parking brake is in the off position and that wheels are blocked.
2. Remove and cap brake lines attached to brake (Cap brake inlet fitting) and move line out of the way.
3. Remove back plate tie bolts and washers and remove back plate. Carefully slide brake assembly away from torque plate. If torque plate needs to be removed refer to Wheel Removal instructions. Remove torque plate attachment bolts, nuts and washers; note the orientation for reinstallation. Remove torque plate.
4. Disassemble brake on a clean flat surface, being careful not to nick, scratch, or gouge any part of the brake housing or operating parts.
5. Separate cylinder and back plate. Then remove the pressure plate by sliding over anchor pins.

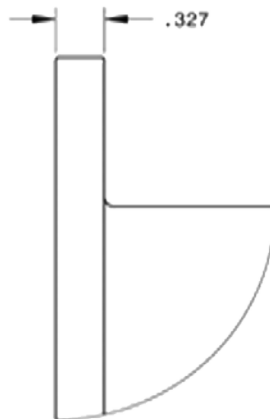
WARNING

Use Caution blowing piston out of cylinder with air, as the pistons could fly out at high velocity. It is suggested that the cylinder be pointed down and cushioned with a rag to prevent damage to the piston on exiting. Safety Glasses should be worn to protect eyes from dirt and fluid.

6. Remove inlet fitting. Inject air into the brake inlet ports to remove pistons. (15psi to 20psi max) [103 to 138 kPa max]. Then remove the o-rings from either piston. It is recommended that o-rings be replaced at reassembly. O-rings that have not be damaged, cut, or deteriorated may be reused.
7. If brake lining needs to be replaced, drill rivets out while being careful not to drill larger holes in the pressure/back plate. Then separate the lining from the pressure/back plate. Acceptable brake linings and other parts are listed in the parts catalog portion of this manual.

Wheel Inspection

3. Visually inspect wheel halves for cracks, nicks, corrosion, or other damage. Any cracks in the wheel half are cause for replacement of wheel half. The tire bead seat area of a wheel is typically an area of stress concentration and possibly subjected to trauma from tire beads and tools used to remove tires. Special attention should be taken in this area when inspecting for defects. All defect indications must be thoroughly investigated to determine part airworthiness. Dye penetrant inspection and visual examination is an effective method to evaluate a defect indication. To facilitate the inspection process, it is recommended that the paint be stripped in the area being evaluated. Replace any cracked or excessively corroded parts. Small nicks, scratches, or pits may be blended out and polished with fine sandpaper. Treat and repaint to original condition.
4. Inspect wheel bearing cup bore for burrs, primer residue, or foreign matter. Make sure surface is clean. Inspect Retaining Ring and Grease Seals for distortion and wear. Rubber grease seals should be replaced whenever wheel is disassembled.
5. Wheel Tie Bolts by nature of their application are subjected to fatigue type loads. It is best to replace these fasteners at overhaul. If bolts are to be reused they must be inspected for cracks, bending, thread damage, or excessive corrosion. Bolts with evidence of any of these conditions should be replaced with bolts of corresponding part numbers. Inspect self-locking nuts for damage. If nut can be turned onto bolt by hand, past the nut's self-locking feature, it should be replaced with nuts of corresponding part numbers.
6. Inspect O-rings for cuts, nicks, distortion, or excessive wear. Check to be sure O-ring has not become brittle or hard. Replace as necessary with O-rings of corresponding part numbers.
7. Inspect Brake Disk for cracks, excessive wear, or scoring, mounting hole elongation, corrosion, and warping. Remove corrosion and blend out small nicks using fine (400 grit) sandpaper. Replace brake disk if disk is worn below wear limits 0.327in./8.306mm thickness.



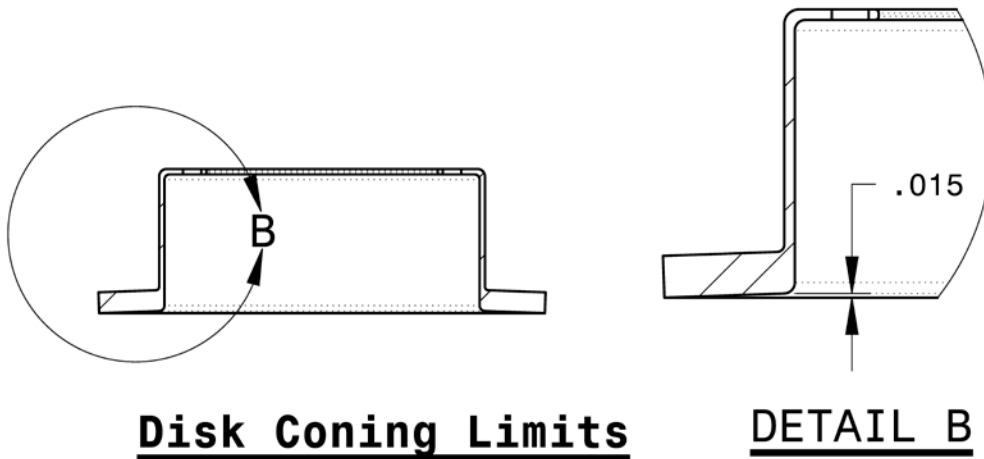
MINIMUM BRAKE DISK
WEAR THICKNESS

FIGURE 32-05-20-05-a

Coning of disk in excess of 0.015in./0.381mm is cause for replacement.
Areas of repair by means of sandblast, wire wheel or sandpaper can be refinished with a compatible primer and a coat of heat resistant paint. Heat resistant paints may be locally procured from auto parts supply.

CAUTION

Do not apply surface coatings or lubricants to friction surfaces, as it may contaminate brake linings.



Disk Coning in excess of .015 inch
(0.381mm) is cause for replacement

FIGURE 32-05-20-05-b

Brake Inspection

1. Visually inspect cylinder for cracks, nick, corrosion, or other damage. Cracks can sometimes be found in the area around the anchor bolts or ports. If some are found then replace the cylinder. Check for dimpled areas around the back plate bolt holes maximum allowed depth of dimples is .005in(.127mm).

NOTE

Not all damage is visible through paint; parts of the inspected areas are required to remove paint from surface.

2. Inspect fitting ports and piston bores for contamination. Light scratches or nicks in the piston bores, or on the chamfers within the bores may be hand polished with fine sand paper. Heavy scratches, nicks, and burrs in the pilot bore area can prevent the piston from properly retracting, resulting in brake drag.
3. Replace o-rings with o-rings of corresponding part numbers. If o-rings are being reused, reuse the o-ring in same position in which they were removed, but only if o-rings are not damaged in any way. Inspect o-rings for cuts, nicks, distortion, brittleness, or excessive wear.
4. Inspect pistons for nicks and burrs. Check piston tails for damage and replace piston if substantial damage is found. Thoroughly clean part.
5. Inspect the brake lining for edge chipping and surface deterioration. Normal use will cause some edge chipping. An acceptable amount of chipping cannot exceed a maximum of 10% of the surface area of lining. If it does exceed 10% then it is cause for replacement. Minor amount of metal chips in lining is normal and don't affect performance of brakes. Elongated rivet or pins holes are cause for replacement. Material transfer from brake lining to brake disk that exceeds 30% of the surface area is cause for replacement.
6. Inspect back plate and pressure plate for cracks, nicks, rust, warping, stripped threads, elongated holes, or any other damage. Small nicks and light corrosion can be hand sanded with fine sand paper.
7. If present, clean with fine sand paper and apply a film of dry film lubricant. Be careful when removing corrosion from torque plate bushing to prevent excessive material removal.
8. Check for steps in holes, which indicate severe cocking of the cylinder anchor bolt in the torque plate. Hole damage is cause for torque plate replacement.
9. Check the anchor bolt bushing and mount bolt hole areas for elongation or cracks. Badly elongated holes or cracked torque plates should be replaced with new torque plates of corresponding part number. Minor corrosion on the torque plate should be removed with fine sand paper.
10. Inspect bolts for cracks, bends, thread damage, or excessive corrosion. Bolts with evidence of any of these should be replaced with bolts of corresponding part number.

UNSCHEDULED MAINTENANCE CHECKS

Exceptional Inspection

In a variety of circumstances, it is necessary to perform prompt inspection for damage. It is the responsibility of the pilot to determine the severity of damage, and the flightworthiness of the aircraft in the field. Inspections and repairs are to be performed as necessary and per practices outlined throughout this manual.

A list of possible scenarios includes, but is not limited to the following:

1. Landing completed on rough or unconventional surfaces.
2. Collision with foreign objects on runway, potholes or other imperfections on the runway surface.
3. Taxi on low pressure, or flat tire.

WARNING

Re-inflating a tire which has been run with low air pressure is hazardous. Deflate, remove, and thoroughly inspect the tire for chaffing, scuffing, debris or damage. Replace the tire and tube if any of these conditions are detected. After inspection, re-inflate in a safety cage with a remote air chuck. Stop immediately if any "popping" is heard or, if bulging is detected. Deflate and replace tire and tube.

NOTE

Not all damage is visible; Tires that have been run with low air pressure build excessive heat and can have broken cords, especially in the sidewall areas where most flexing and fatigue occur.

4. Excessive lubricant from wheel cavity.
 - 4.1. Some weeping or wicking is expected, especially from the grease pack type wheels which have a vent for purging grease, a normal part of operations. However, this can be minimized by regular cleaning with a rag.
 - 4.2. Oil bath wheels may have a small amount of wicking, which might collect dust, however liquid oil on and around the wheel, or on the ground should be assessed, and the oil level checked. Slow leaking should be addressed at the next possible opportunity, keeping the oil level at operational levels until the seals and components can be inspected or replaced.

WARNING

NEVER PERFORM FLIGHT OPERATIONS WITH A DRY WHEEL CAVITY. This will damage bearings, shafts or other components, leading to possible component seizure, and subsequent ground control difficulties.



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CHAPTER 40-10 WHEEL AND BRAKE ASSEMBLY

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ILLUSTRATED ASSEMBLY INSTRUCTIONS

Wheel Assembly

1. Preparing wheel halves for assembly. Press fit the bearing cups into the bearing seats of the Wheel Halves, “half A”, and “half B”. Preheating the wheel halves from 200° to 350° F maximum, for 20 minutes, and/or freezing the cups will ease the assembly of these components. Be aware that the wheel half will cool quickly and limit assembly time.



FIGURE 32-40-10-01-a Preheating wheel half in portable oven



FIGURE 32-40-10-01-b Press fitting bearing cup with Arbor press

For Oil Bath type, install 2 ea. brake bleeder assemblies, into ports located on “Wheel half B”. *For Grease Pack type, install 1 ea. Grease fitting, into port located on “Wheel half B”.* Apply Teflon tape or pipe dope to fitting threads and tighten securely. Also on “Wheel half B”, install 2 ea. O-rings and Plugs to ports as shown. *Grease Pack type uses 1 plug without o-ring.* Apply a small amount of white lithium grease to o-ring, position on plug and press fit in place using a soft face hammer.



FIGURE 32-40-10-01-c Apply Teflon tape or pipe thread dope to fitting thread



FIGURE 32-40-10-01-d Tighten brake bleeder assemblies, 2 locations on wheel half B



FIGURE 32-40-10-01-e Drive plug with o-ring till seated firmly in place

2. Bearing and Grease Seal installation. Bearings may be lightly lubricated to prevent corrosion, SAE15W-50 is recommended. *For grease pack type, pre-pack the bearings with the appropriate grease before assembly.* (See 30-40-10, Grease Pack Type, Reservoir Filling Instructions, and 30-40-40, Product Listings for acceptable grease type.) Locate the bearing cones in place and capture with grease seal. Press fit the seal using a suitable drift just under the major diameter of the seal to seat. Take care not to damage or deform grease seal. Lock the seal with retaining ring.



FIGURE 32-40-10-02-a Apply oil protection if wheel is to be stored before final assembly on aircraft



FIGURE 32-40-10-02-b Locate grease seal for press fit



FIGURE 32-40-10-02-c Seat the grease seal with a hammer or a Press, using a properly sized drift, suitable to fit inside the wheel hub, but closely sized to the seal outside diameter.



FIGURE 32-40-10-02-d Verify even access to the retaining ring groove. Seal must be flat, evenly installed to function properly. If the seal is incorrectly installed or damaged, then replace it.



FIGURE 32-40-10-02-e Installing retaining ring

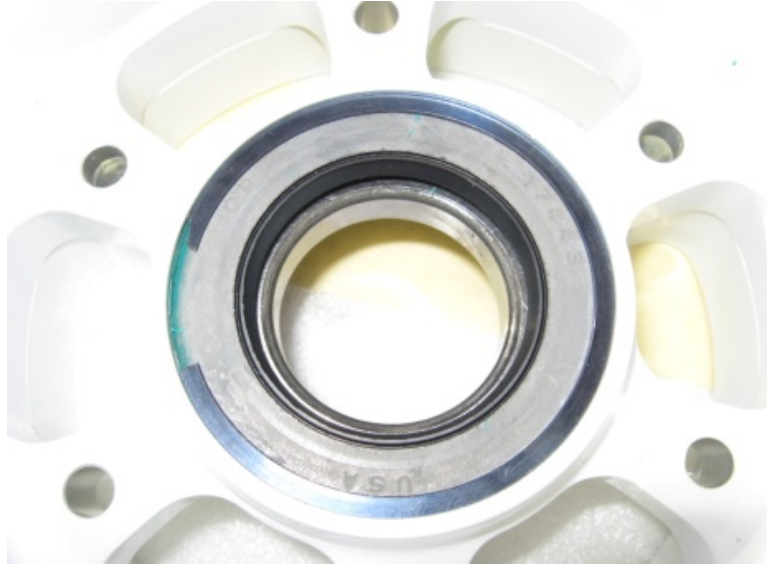


FIGURE 32-40-10-02-f Completed bearing hub assembly

Joining Tire and Wheel halves.

A light amount of talcum powder to the inside of tire will aid the tube in proper positioning. Locate the inner tube inside of tire, once in place, inflate the tube just enough to allow the tube to conform to the tire.

CAUTION

Never re-use a tube in a new tire. It may be prudent to replace the tube in a used tire.

Wet each side tire bead with a small amount of liquid soap, this will aid in mounting the wheel halves to tire.



FIGURE 32-40-10-03-a Talcum powder aids in seating the inner tube



FIGURE 32-40-10-03-b Position tube loosely in tire

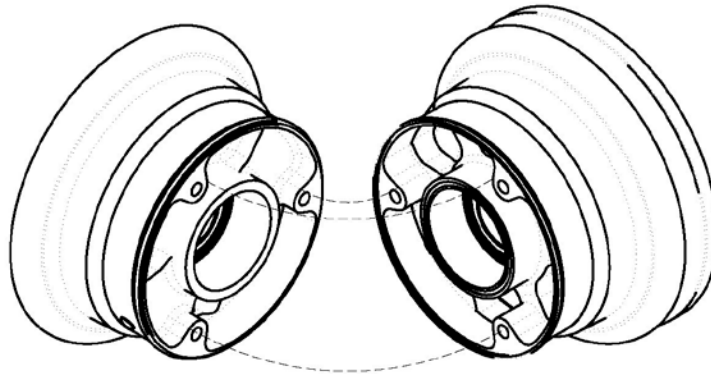
Position “Wheel half B” to tire first, to allow access from behind to guide tube valve stem through the stem port on the wheel. “Wheel half A” requires an o-ring at the center bore location. Apply white lithium grease to groove and fit the o-ring in place



FIGURE 32-40-10-03-c Feed valve stem through port in hub and seat wheel half in tire



FIGURE 32-40-10-03-d Lithium grease holds o-ring in place during assembly



ALIGN BOSSES AS SHOWN

FIGURE 32-40-10-03-e

With tire lying flat and “Wheel half B” side down, align “Wheel half A” over tire and press in position. Align wheel half lug bosses as two halves come together, sandwiching the tire and tube between wheel halves. Assure the center bore O-ring remains intact during this operation.

Align brake disk with hole pattern of “Wheel half A”. Install 6 ea. tie rod bolts with washers, from the disk side and through the two wheel halves. While holding components together, access the opposite side of wheel and install 6 ea. Self-locking nuts and washers to bolt threads. Tighten nuts in a diagonal pattern and torque to 140 in/lb.



FIGURE 32-40-10-03-f Install tie bolts with washers from
brake disc side of wheel assembly



FIGURE 32-40-10-03-g Install self-locking nuts with washers



FIGURE 32-40-10-03-h Tighten nuts and tie bolts
evenly with a diagonal crossing pattern



FIGURE 32-40-10-03-i Finish tightening nuts with torque wrench to values shown below.

Torque Values for Tie Bolts:

35A-51600 or 35A-51800, 6.00-6 Main Wheel Assemblies: 100-140in/lb.

65-42170, 5.00-5 Nose Wheel Assemblies: 70-100in/lb.

We recommend that all exposed fasteners be sealed to prevent corrosion. With a small brush, apply an even coat of PUR-AL-KETONE, or an equivalent product, to exposed fastener heads, nuts and threads. Re-apply each time the wheel is serviced.



FIGURE 32-40-10-03-j Apply bolt protection to all exposed nuts, threads, bolt heads and fittings

Brake Assembly

1. If Brake lining needs to be replaced begin by riveting the brake lining to both pressure plate and back plate. Rivets are to be oriented (as shown in figure 32-40-10-04-a) with the head facing the side with the brake lining. If linings are still adequate for continued use, go to step 2.



FIGURE 32-40-10-04-a Brake Lining rivet head orientation.



FIGURE 32-40-10-04-b Riveting Brake lining to pressure plate.



FIGURE 32-40-10-04-c Riveting Brake lining to back plate.

2. To begin the assembly of the brake, start by pressing the brake pistons into the housing you should be able to press them into the housing by hand however if they resist you can apply a small amount of white lithium grease and use an arbor press to press the piston into place.



FIGURE 32-40-10-04-d Pressing brake pistons into brake housing with mechanical press.

3. Then press the anchor pins into the housing using the arbor press. Flip the housing over and bolt the anchor pin to the housing using MS21250H04026 self-locking nut with NAS1149D0416J low profile washers.



FIGURE 32-40-10-04-e Pressing anchor pin into brake housing with mechanical press.



FIGURE 32-40-10-04-f Bolting anchor pin bolts.

4. To install to wheel slide pressure plate onto anchor pins, slide brake into brake mount using anchor pins. Then install back plates using MS221250H00426 bolts and MS20002C4. Using a 12-point 5/16" socket. (No brake mount is shown. It must be done during installation)



FIGURE 32-40-10-04-g Installing pressure and back plate to the brake housing.

5. Install both the bleeder assembly and the brake hydraulic fitting to housing and assure that the o-rings are tightly seated against housing.



FIGURE 32-40-10-04-h Fitting Installed on Brake assembly.



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Oil Bath Type, Reservoir Filling Instructions

For 35A-51800, 6.00-6 Wheel Assembly, Oil Bath Type:

1. Orient the wheel with the valve stem toward the ground. (See Figure 32-40-10-5-a.)
2. Attach filler tube to lowermost fill port.
3. Open filler ports and pump fluid through the lower.
4. Cavity is full when fluid begins to escape the upper port.
5. Close ports and clean excess fluid.

Oil Bath Reservoir capacity:

3.5 Fluid Ounces, approx. 15W-50 Multi-Grade motor oil

For 65-42170, 5.00-5 Nose Wheel Assembly, Oil Bath Type:

1. Orient the wheel with the valve stem 45° from vertical. (See Figure 32-40-10-5-b)
2. Attach filler tube to lowermost fill port.
3. Open filler ports and pump fluid through the lower.
4. Cavity is full when fluid begins to escape the upper port.
5. Close ports and clean excess fluid.

Oil Bath Reservoir capacity:

4.4 Fluid Ounces, approx. 15W-50 Multi-Grade motor oil

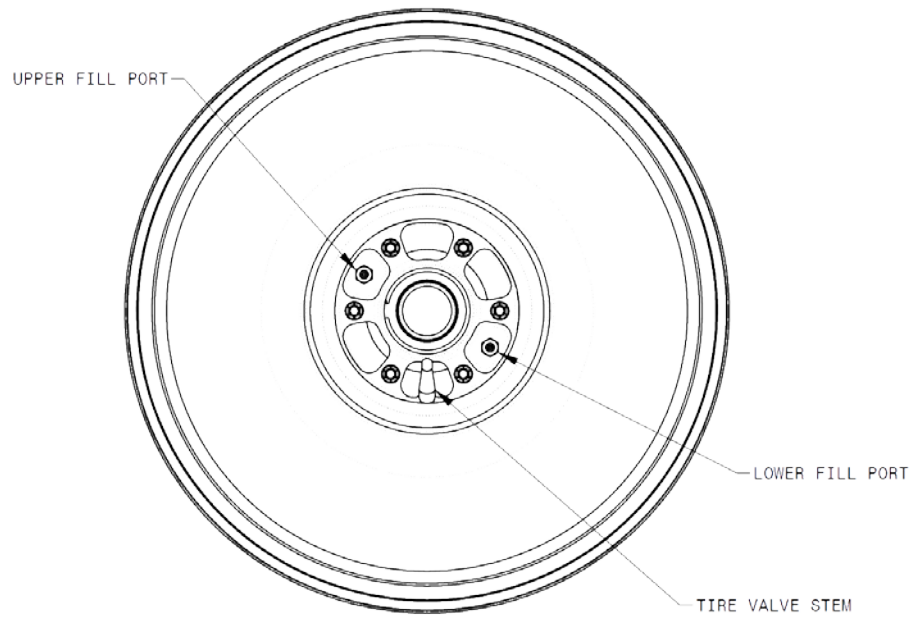


Figure 32-40-10-5-a Showing orientation (clocking) of 35A-51800 main wheel fill ports

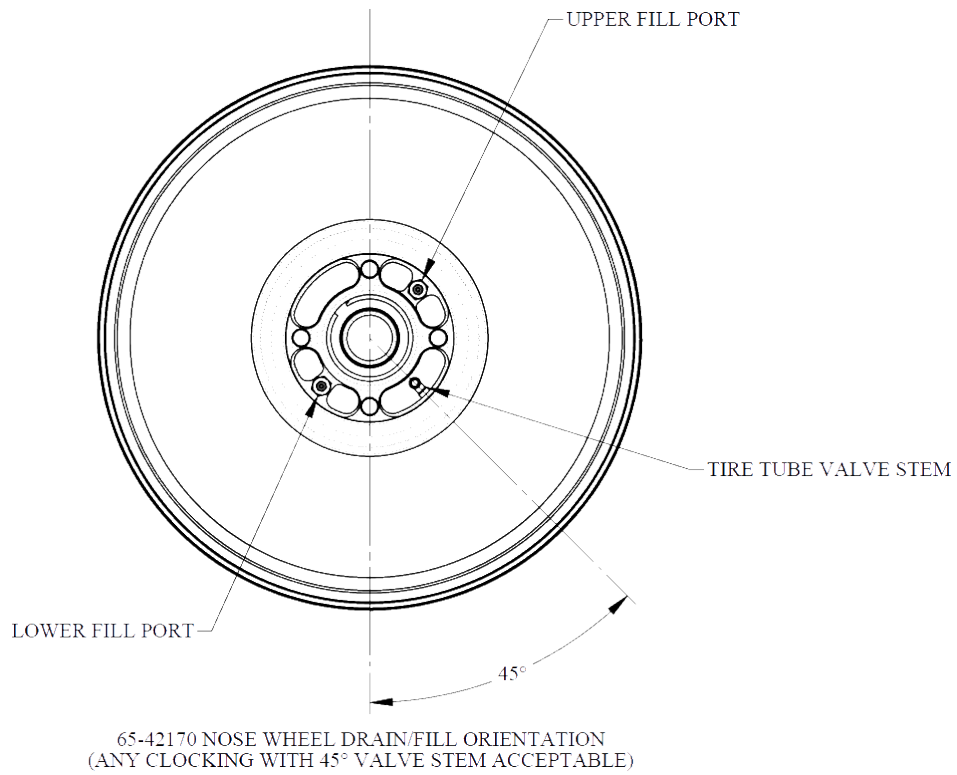


Figure 32-40-10-5-b Showing orientation (clocking) of 65-42170 5.00-5 nosewheel fill ports.

Grease Pack Type, Reservoir Filling Instructions

For 35A-51600, 6.00-6 Wheel Assembly, Grease Pack Type:

1. Attach grease gun to grease fitting
2. Activate grease gun slowly during filling
3. Cavity is full when grease escapes through seal port
4. Clean excess grease

Grease Pack Reservoir capacity:

96.2 Grams, approx. BG HCF Grease, #605, or equivalent



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WHEEL ASSEMBLIES, OIL BATH
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BRAKE ASSEMBLY

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SPECIAL TOOLS AND EQUIPMENT

Tool requirements

1. Screw Driver, Flat
2. Hammer
3. Ratchet / Socket set, SAE
4. 12-point 5/16" socket
5. Torque Wrench, in/lb.
6. Mallet, Soft face
7. Teflon tape or Pipe dope
8. Wrench set, open end, SAE
9. Hydraulic or Arbor Press,
10. Drifts, Aluminum or fiber
11. Approx. 2.5" dia. x 2" lg.
 1.5" dia. x 6" lg.
 .38" dia. x 4" lg.



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WHEEL ASSEMBLIES, OIL BATH
& GREASE PACK TYPES; AND
BRAKE ASSEMBLY

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ILLUSTRATED PARTS LIST

35A-51600 6.00-6 MAIN WHEEL ASSEMBLY, GREASE PACK TYPE_____	40
35A-51800 6.00-6 MAIN WHEEL ASSEMBLY, OIL BATH TYPE_____	42
65-42170 5.00-5 NOSE WHEEL ASSEMBLY, OIL BATH TYPE_____	44
35A-51650 AEROCET BRAKE ASSEMBLY_____	46
ACCEPTABLE ALTERNATES FOR AEROCET BRAKE COMPONENTS_____	48

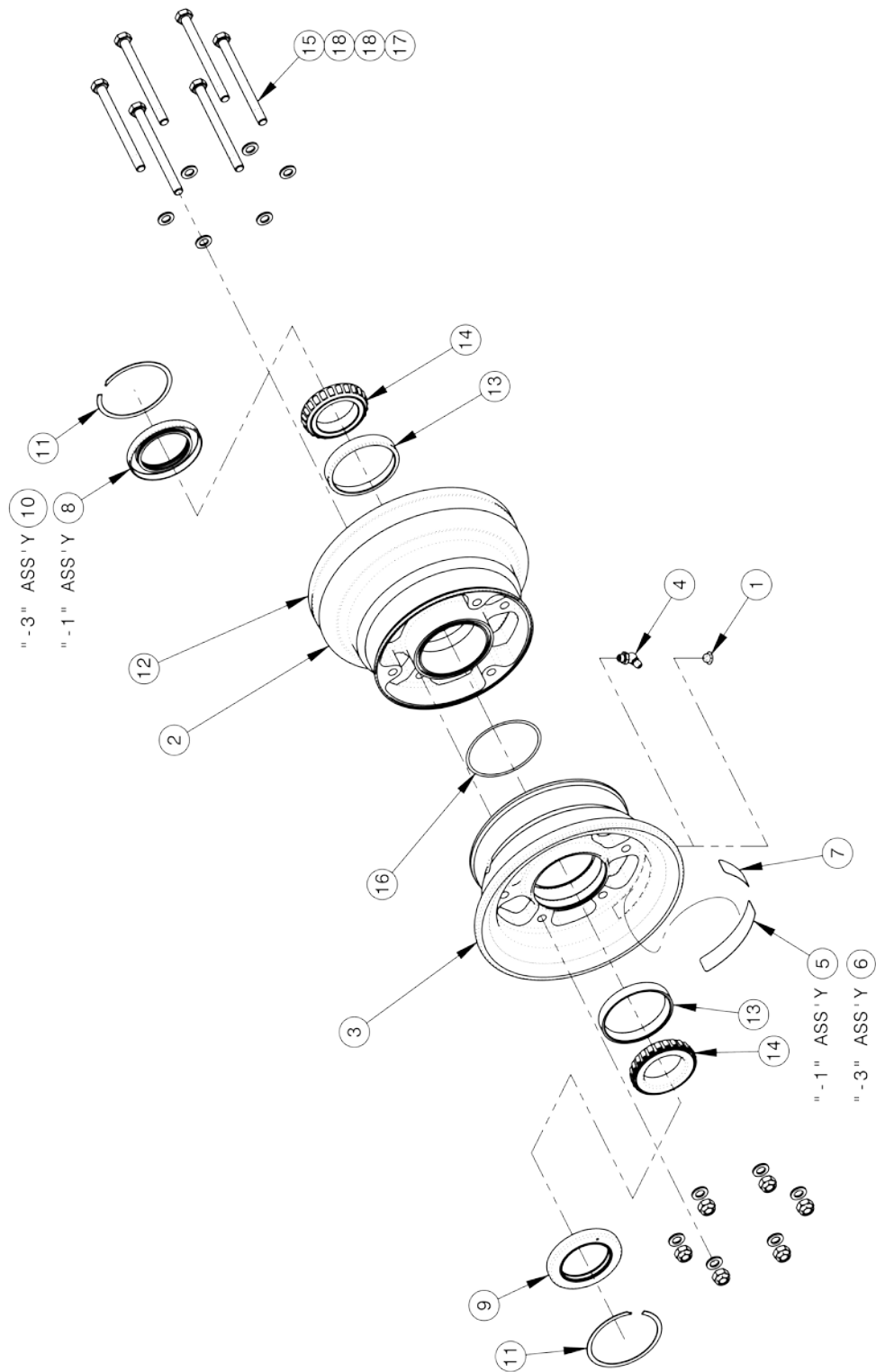


FIGURE 32-40-30-01-c 35A-51600, 6.00-6 MAIN WHEEL ASSEMBLY, GREASE PACK TYPE

PARTS LIST FOR 35A-51600 6.00-6 WHEEL ASSEMBLY, GREASE PACK TYPE

ITEM NO.	35A-51600-1	35A-51600-3	QTY	PART NUMBER	DESCRIPTION	ALTERNATES
1	1	1	1	35A-51507	PLUG	
2	1	1	1	35A-51601	5.00" X 6.00" (6.00-6) WHEEL HALF A	
3	1	1	1	35A-51602	5.00" X 6.00" (6.00-6) WHEEL HALF B	
4	1	1	1	35A-51615	GREASE FITTING	
5	1	-	-	35A-51620-1	TSO PLACARD	
6	-	1	1	35A-51620-3	TSO PLACARD	
7	1	1	1	35A-51621	WARNING PLACARD	
8	1	-	-	35A-51625-1	GREASE SEAL	
9	1	1	1	35A-51625-2	GREASE SEAL	
10	-	1	1	35A-51627	GREASE SEAL	
11	2	2	2	35A-51715	RETAINING RING	
12	1	1	1	164-24500	DISC, BRAKE (PARKER)	PER FIGURE 32-40-40-01-01-c
13	2	2	2	13836-20629	BEARING CUP, TIMKEN P/N*	"-20024"
14	2	2	2	13889-20629	BEARING CONE, TIMKEN P/N*	"-20024"
15	6	6	6	AN5-36A	BOLT - MACHINE, AIRCRAFT	
16	1	1	1	M83461/1-037	O-RING, NITRILE	
17	6	6	6	MS21044N5	NUT, SELF-LOCKING, REGULAR HEIGHT	
18	12	12	12	NAS1149DD0563K	WASHER, FLAT	

FIGURE 32-40-30-01-d PARTS LIST FOR 35A-51600 6.00-6 MAIN WHEEL ASSEMBLY, GREASE PACK TYPE

*Timken designation, “-20629” refers to bearings which are aircraft specific.
 Refer to FIGURE 32-40-40-01-c Alternate Parts List for Aerocet Brake Components

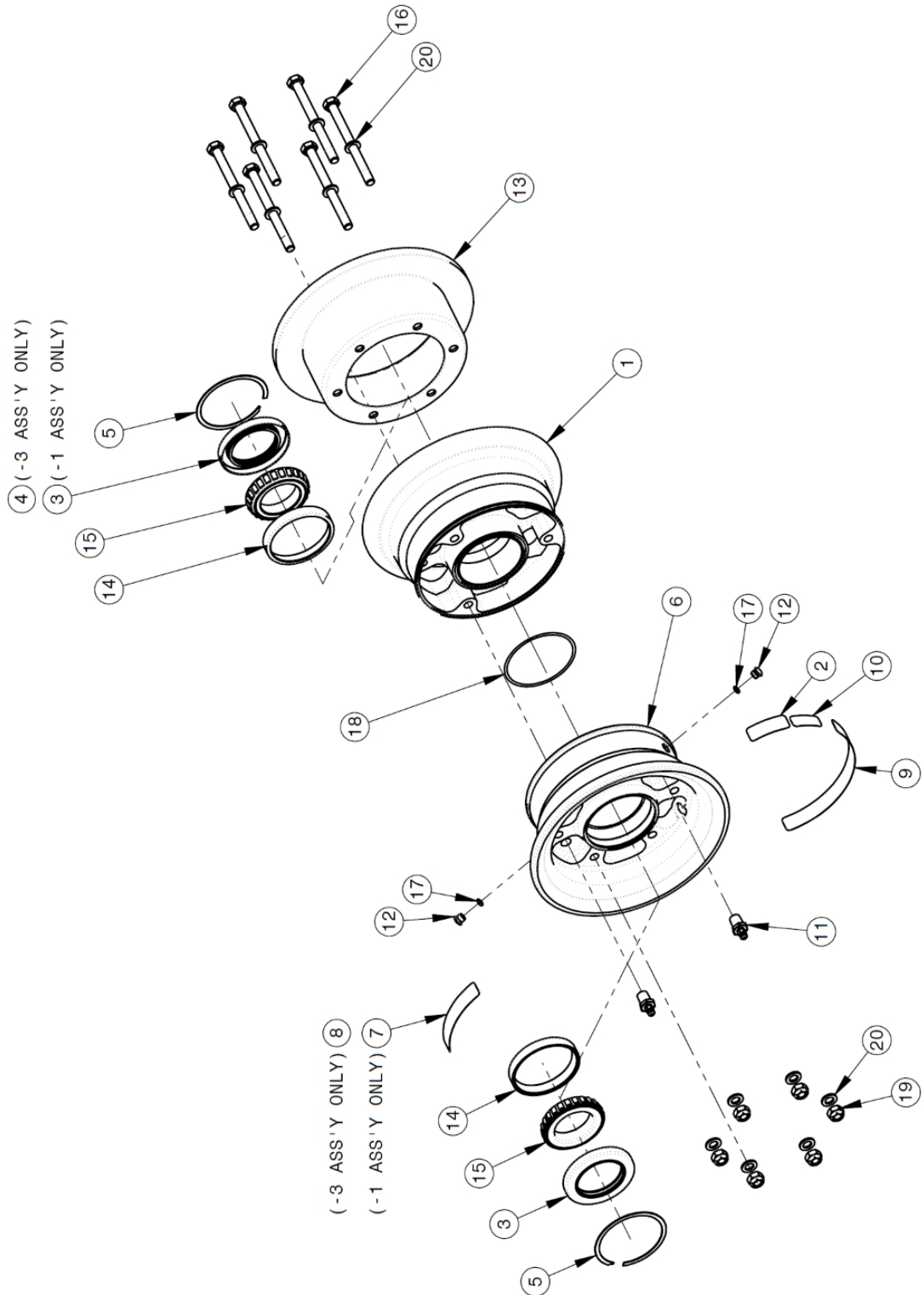


FIGURE 32-40-30-01-a 35A-51800, 6.00-6 MAIN WHEEL ASSEMBLY, OIL BATH TYPE

PARTS LIST FOR 35A-51800 WHEEL ASSEMBLY

ITEM NO.	35A-51800-1 QTY	35A-51800-3 QTY	PART NUMBER	DESCRIPTION	ALTERNATES
1	1	1	35A-51601	5.00" X 6.00" (6.00-6) WHEEL HALF A	
2	1	1	35A-51621	WARNING PLACARD	
3	2	1	35A-51625-1	GREASE SEAL	
4	-	1	35A-51627	GREASE SEAL	
5	2	2	35A-51715	RETAINING RING	
6	1	1	35A-51802	5.00" X 6.00" (6.00-6) WHEEL HALF B	
7	1	-	35A-51820-1	TSO PLACARD	
8	-	1	35A-51820-3	TSO PLACARD	
9	1	1	35A-51822	FILLING INSTRUCTIONS PLACARD	
10	1	1	35A-51823	PATENT PLACARD	
11	2	2	65-42180	BRAKE BLEEDER ASSEMBLY, 1/8-27 NPT	
12	2	2	65-42181	PLUG	
13	1	1	164-24500	DISC, BRAKE (PARKER)	PER FIGURE 32-40-40-01-01-c
14	2	2	13836-20629	BEARING CUP, TIMKEN P/N*	"-20024"
15	2	2	13889-20629	BEARING CONE, TIMKEN P/N*	"-20024"
16	6	6	AN5-36A	BOLT - MACHINE, AIRCRAFT	
17	2	2	M83461/1-007	O-RING (ALT. USE MS28775-007)	
18	1	1	M83461/1-037	O-RING, NITRILE	
19	6	6	MS21044N5	NUT, SELF-LOCKING, REGULAR HEIGHT	
20	12	12	NAS1149D0563K	WASHER, FLAT	

FIGURE 32-40-30-01-b Parts list for 35A-51800 Wheel Assembly, Oil Bath Type

*Timken designation, "-20629" refers to bearings which are aircraft specific.
 Refer to FIGURE 32-40-40-01-c Alternate Parts List for Aerocet Brake Components

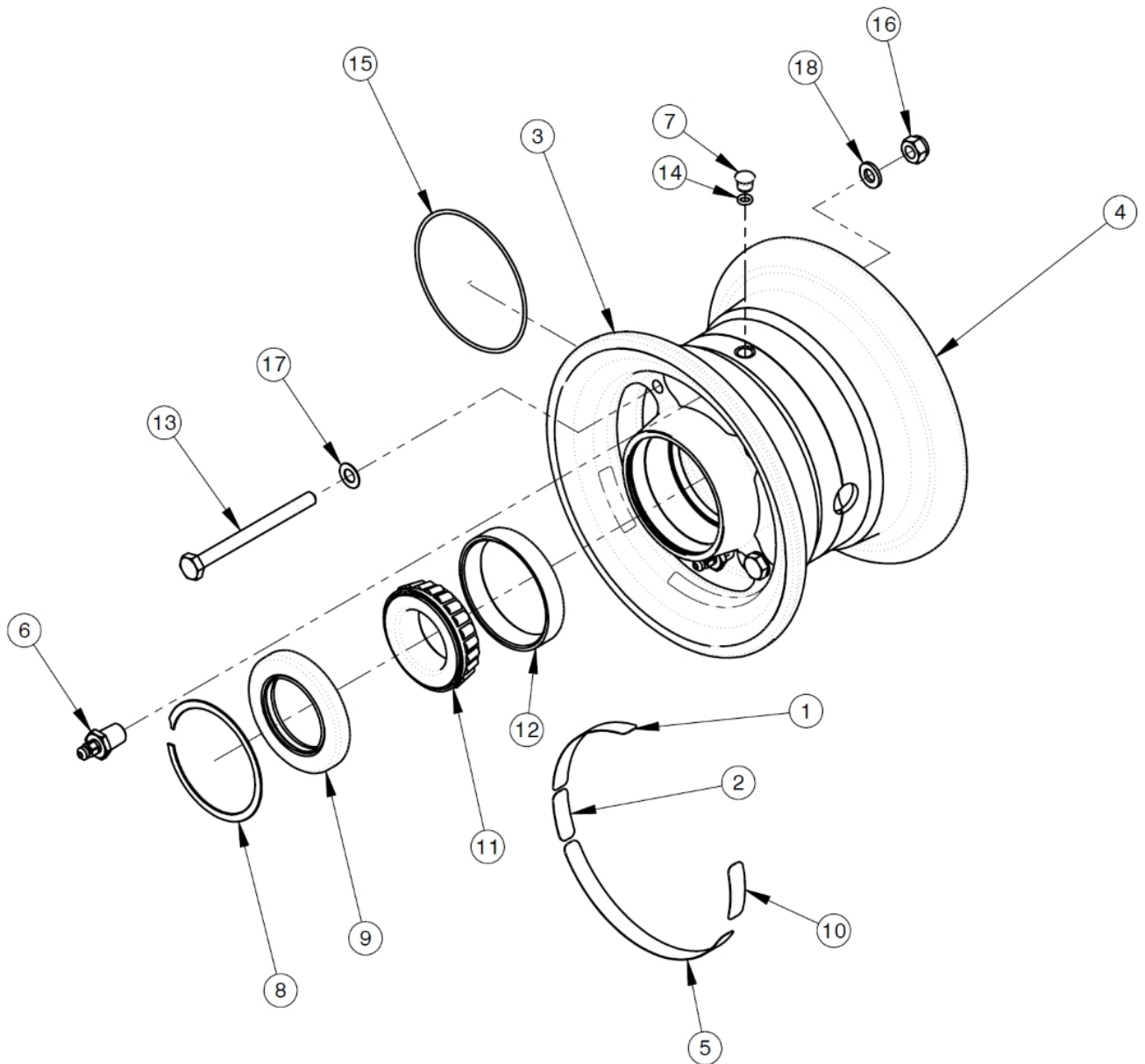


FIGURE 32-40-30-01-e 5.00-5, 65-42170 Nose Wheel Assembly, Oil Bath Type

PARTS LIST FOR 65-42170 5.00-5 NOSE WHEEL ASSEMBLY

ITEM NO.	QTY	PART NUMBER	DESCRIPTION
1	1	65-42172	TSO PLACARD
2	1	65-42173	PLACARD, SIZE AND SERIAL, 65-42170 WHEEL ASSEMBLY
3	1	65-42174-1	WHEEL HALF A
4	1	65-42174-2	WHEEL HALF B
5	1	65-42176	FILLING INSTRUCTIONS PLACARD
6	2	65-42180	BRAKE BLEEDER ASSEMBLY, 1/8-27 NPT
7	2	65-42181	PLUG
8	2	65-42183	RETAINING RING, INTERNAL
9	2	65-42184	WHEEL SEAL, 1 1/2" NOMINAL SHAFT
10	1	65-42198	WARNING PLACARD
11	2	08125-20629	BEARING CONE, TIMKEN P/N*
12	2	08231-20629	BEARING CUP, TIMKEN P/N*
13	4	AN4-30A	BOLT - MACHINE, AIRCRAFT
14	2	M83461/1-007	O-RING (ALT. USE MS28775-007)
15	1	M83461/1-039	O-RING (ALT. USE MS28775-039)
16	4	MS21044N4	NUT, SELF-LOCKING, REGULAR HEIGHT
17	4	NAS1149D0416K	WASHER, FLAT
18	4	NAS1149D0463K	WASHER, FLAT

FIGURE 32-40-30-01-f Parts List for Nose Wheel Assembly, Oil Bath Type

*Timken designation, "-20629" refers to bearings which are aircraft specific.

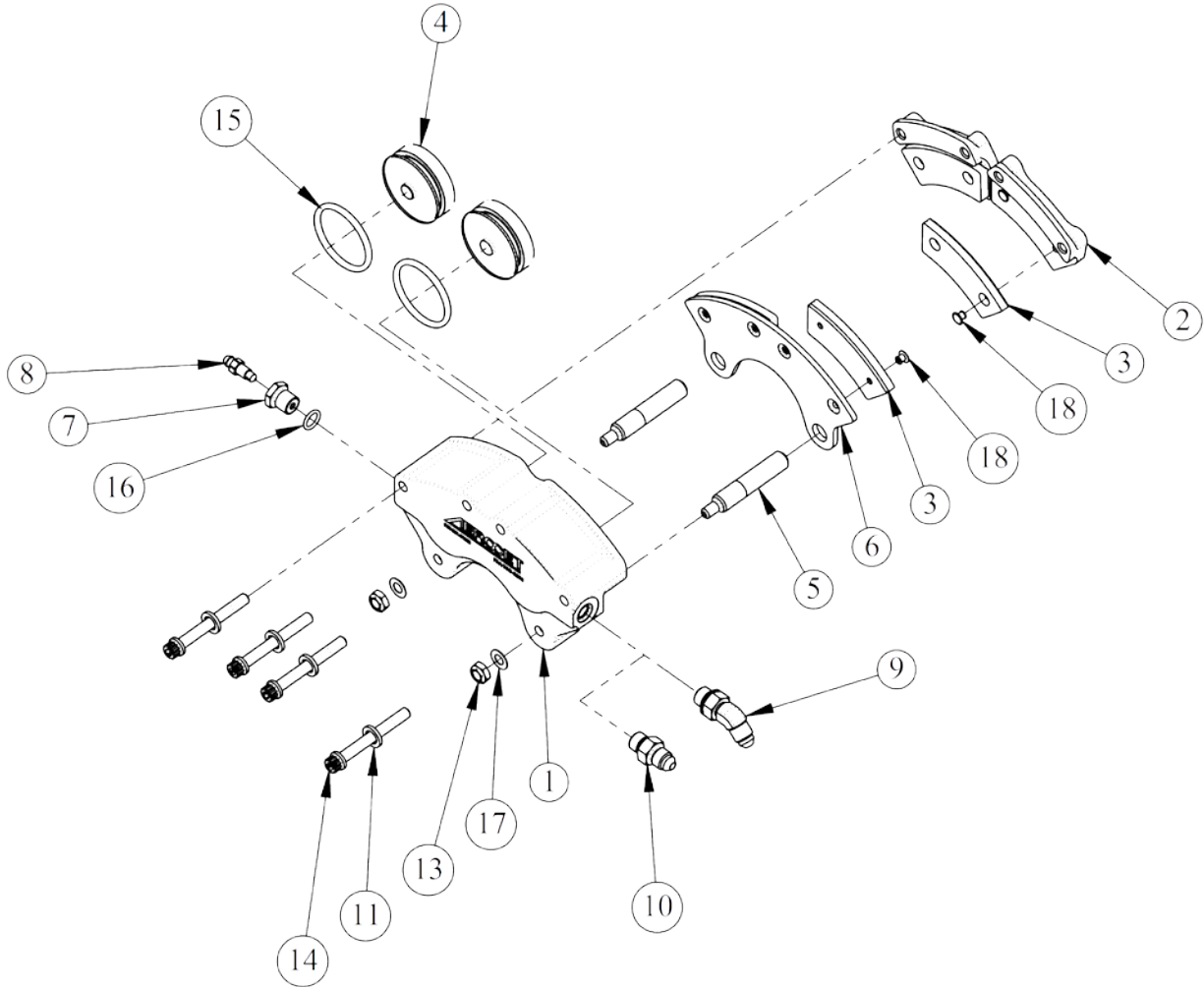


FIGURE 32-40-40-01-a Parts List Brake Assembly

PARTS LIST FOR 35A-51650 BRAKE CYLINDER ASSEMBLY				
ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	ALTERNATES
1	1	35A-51651	BRAKE BODY	
2	2	35A-51653	BACK PLATE	
3	4	35A-51654	BRAKE LINING	PER FIGURE 32-40-40-01-01-c
4	2	35A-51656	BRAKE PISTON	
5	2	35A-51657	ANCHOR PIN	
6	1	35A-51661	INNER LINING PLATE	
7	2	35A-51671	BLEEDER ADAPTER	
8	2	35A-51672	BLEEDER SCREW	
9	1	35A-51673	45° STRAIGHT THREAD ELBOW	
10	2	66-47168	STRAIGHT THREAD CONNECTOR (MS51525-4)	
11	4	MS20002C4	WASHER, COUNTERSUNK, HIGH STRENGTH	
12	1	MS20995C32	SAFETY WIRE, Ø.032, STAINLESS	
13	2	MS21083N4	NUT, SELF-LOCKING, LOW HEIGHT	
14	4	MS21250H04026	BOLT, TENSION, 180 KSI FTU	
15	2	MS28775-222	O-RING, NITRILE	
16	2	MS28778-4	O-RING, STRAIGHT THREAD TUBE FITTING BOSS	
17	2	NAS1149D0416J	WASHER, FLAT	
18	8	RA105-002	BRAKE RIVET (RAPCO P/N)	PER FIGURE 32-40-40-01-01-c

FIGURE 32-40-40-01-b Parts List Brake Assembly

ACCEPTABLE ALTERNATES FOR AEROCET BRAKE COMPONENTS

Cleveland Parker	Rapco	Aerocet	Aviation Products Systems, Inc. (APS)	Grove	Description
164-24500	--	35A-51612	APS164-24500	--	Brake Disc
164-24501	--	--	--	--	Brake Disc, Chrome Plated
066-10500	RA66-10500	35A-51654	APS66-10500	066-105	Lining
105-00200	RA105-00200	--	APS105-00200	105-001	Rivet

FIGURE 32-40-40-01-c Alternate Parts List for Aerocet Brake Components

PRODUCT LISTING

1. Bolt Protection – PUR-AL-KETONE, LPS Industries LPS 3, Zip Chemical Co. Zip D-5029NS, EZ Turn Lubricant United-Erie, or DuBois Chemical ACG-2 Polymer-fortified, Aluminum Complex Grease.
2. Oil Bath Reservoir Lubricant – Aeroshell 15W-50 Multi-Grade Motor Oil or equivalent
3. O-ring lubrication – White Lithium Grease
4. Bearing Grease – HCF Grease, P/N 605, BG Products, Inc. Wichita, KS 67213, or equivalent
5. Tire Talc, 1LB – P/N 17-250, Aircraft Spruce & Specialty Co., or equivalent

-END-