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PURIFICATION SYSTEMS

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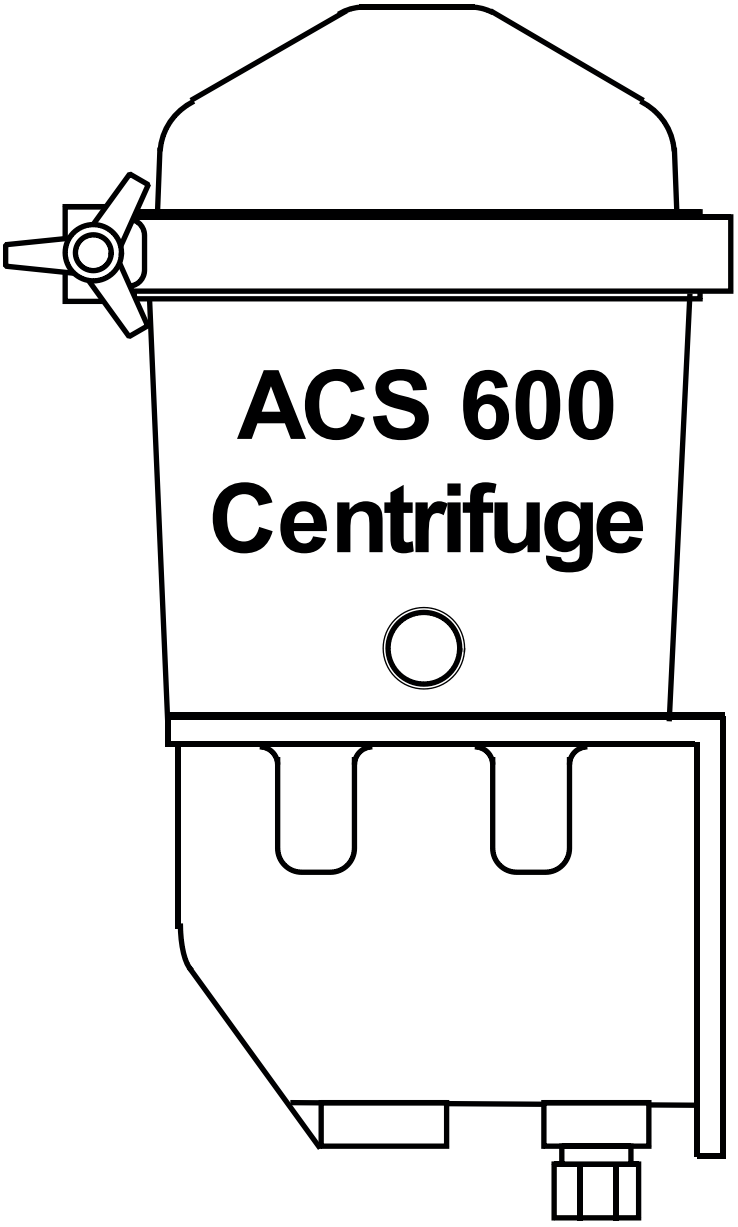
Model ACS 600

2 GPM at 60 PSIG
600cc Dirt Capacity

Installation Instructions
Parts List
Service Instructions



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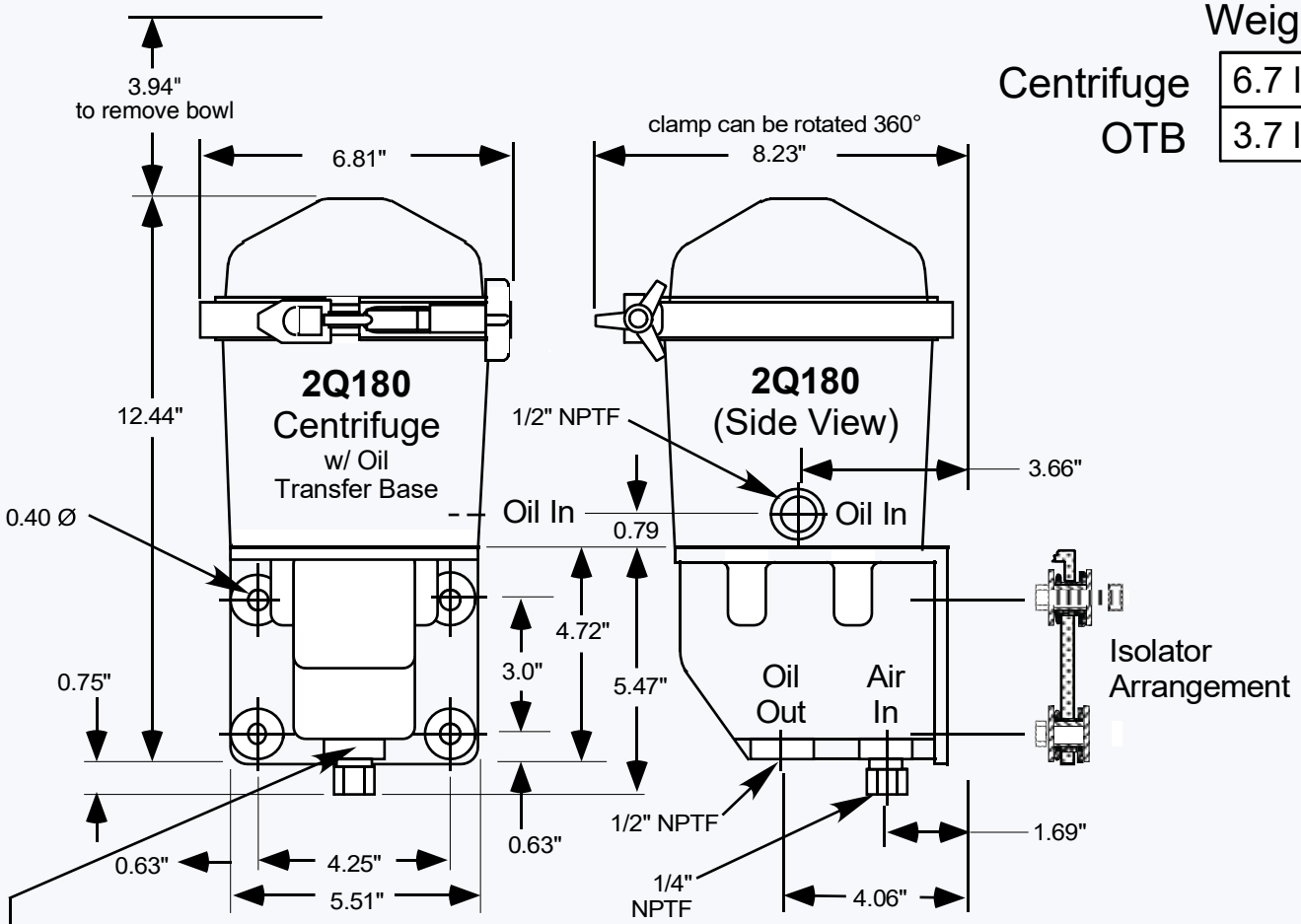
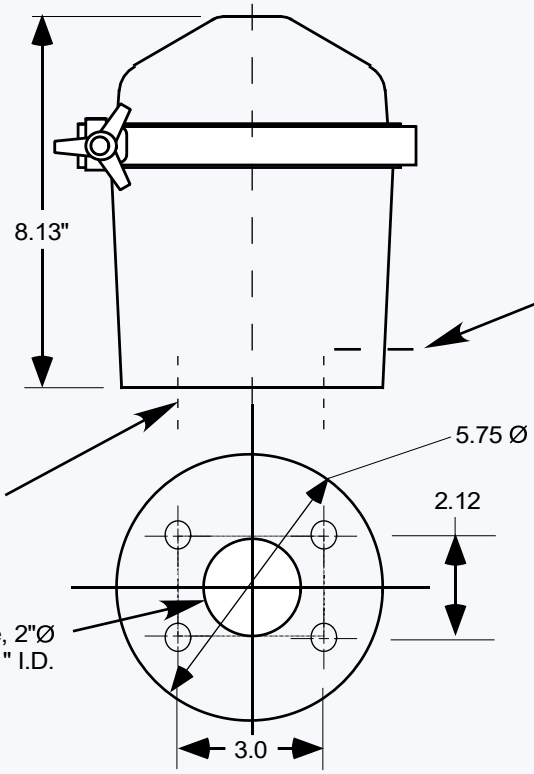
ACS 600 Centrifuge

—Installation Dimensions—

Weight	
Centrifuge	6.7 lb
OTB	3.7 lb



2Q175
Centrifuge for
gravity drain
(request 2Q320 Kit)



ACS 600 Centrifuge

—Installation Instructions—

Oil Supply to Centrifuge

Oil supply should be taken from the highest pressure, hottest source available; on an engine this is just downstream of the lube oil pump. Use a 3/8" sch 80 pipe or #8 hose for the supply line with a full-opening ball valve installed at the inlet to allow service without engine shutdown. Preferred inlet pressure is 60 to 80 psig, but the ACS 600 centrifuge will operate effectively at 40 to 100 psig. When using an external pump for flow supply, set the pump internal relief valve at 105 psi.

Oil Transfer Base (OTB) Style - Remote Mount

The air-operated control in the 2Q180 centrifuge permits the ACS 600 centrifuge to be installed on the frame rail, base plate or deck in any location convenient for service of the unit, above or below the sump level. The control in the OTB maintains the proper oil level for maximum centrifuge speed and efficiency. Air supply should be from a clean source at 40 to 120 psi; if only higher pressures are used, request 2J528 regulator. If air supply lines are likely to be dirty, install the PN 3D786 pre-filter on the inlet to prevent dirt from damaging the regulator. Air control consumes less than 0.02 SCFM volume.

If a turbocharger is the only pressurized air source, request details. Installation instructions and fitting & hose kits for many engines are available from Glacier.

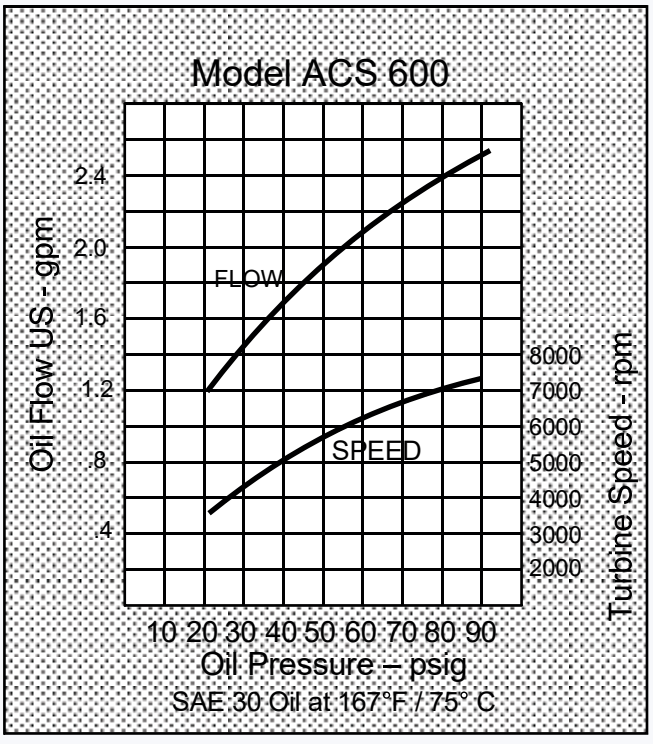
The clean oil drain line to the sump should be a 3/8" sch 80 pipe or #8 hose to a 1/2” connection located above the oil level if possible; oil fill openings or drilled-and-tapped holes are alternatives. A below-oil-level drain requires that a 1/2” swing or low-opening pressure check valve be located at the OTB discharge to prevent backflow duing centrifuge service. Shut-off valves must never be used.

Gravity-Drain Mounting

For mounting on top of a tank top or directly to engine sump without the OTB, the centrifuge must be close-coupled to the sump with an unrestricted 1.5” I.D. (minimum) drain. This drain must return above the normal sump oil level. The drain line must be sloped downward from the centrifuge outlet and be free of sharp bends or traps. A crankcase door can sometimes be modified to provide a suitable drain opening and mounting point. Be sure the sump side of the drain opening is clear and that the drain oil does not impinge on moving parts of the engine. A kit to replace the obsolete Model 100 centrifuge with the much-superior ACS 500 is now available from Glacier, including a gravity-drain centrifuge, fasteners and seals.

Mechanical Considerations

The ACS 600 centrifuges are high speed devices and should be securely mounted to prevent excessive vibration. Operation up to 15 degrees from vertical is permitted. Pump/motor units can be matched to supply pressurized oil to the centrifuge when a supply source is unavailable-contact Glacier for more details.



ACS 600 Centrifuge

—Service Instructions—

1. Shut off engine and allow centrifuge turbine assembly (d) to come to a complete stop.

2. Loosen handle on clamp (b), disengage tee bolt and remove cover (a), using coin in gap to separate cover from housing.

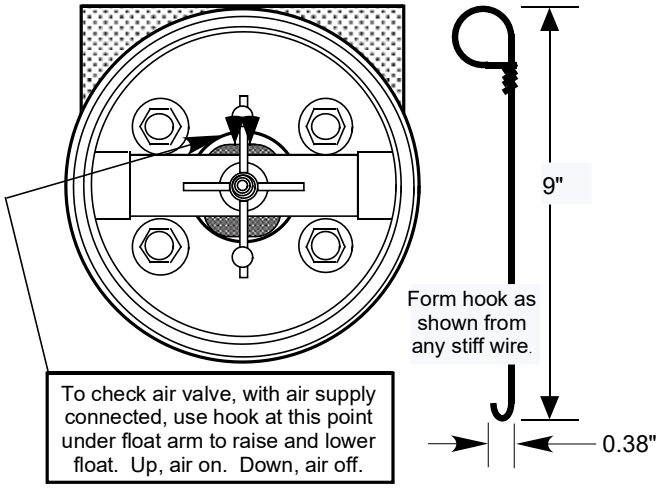
3. Partially withdraw centrifuge turbine assembly (d) from the housing (e) and allow oil to drain from nozzles (o) before removing completely. Hold the centrifuge turbine assembly in one hand and loosen knurled bowl nut (h) several turns until the face of the nut projects beyond the bronze bushing face. Carefully separate centrifuge bowl (k) from turbine base (i) by striking the face of the nut (h) with the palm of one hand while holding the bowl in the other. Do not strike the nut or the bushing with or against a hard surface or damage will result. Finish removing the nut and then remove the bowl and baffle/screen (m).

4. Simply replace the dirty centrifuge bowl with a new one OR carefully remove the dirt cake from the bowl (k) using a wooden spatula or other non-damaging tool. Wipe out bowl with solvent. Note: To save time in cleaning, an optional die-cut Bristol paper insert (l) is available as a service part and may be installed to allow the compressed cake to be removed quickly.

5. Wash and clean baffle/screen (m) and turbine base (i), removing and discarding black Nitrile bowl seal (n).

6. Inspect top and bottom bushings of centrifuge turbine base (i). Replace turbine assembly if bushings show severe wear. Re-assemble: Place baffle/screen (m) over stem (i) of turbine base and seat evenly over shoulder on base. Install bowl seal (n) in recess in outer edge of turbine base. Slide a new centrifuge bowl (k) over stem and seat uniformly over bowl seal. Install and tighten knurled bowl nut (h) securely, using finger pressure only.

TOP VIEW WITH CENTRIFUGE REMOVED



7. Inspect housing assembly (e) paying special attention to journal areas of spindle. Replace housing if damaged.

8. Clean and inspect cover (a). Always remove the old cover seal (c), clean the groove in the housing and mating surface of the cover and replace with a new black Nitrile seal.

9. Check control mechanism (g) --see diagram above.

10. Install centrifuge turbine assembly (d) on spindle. Be sure it rotates freely. Replace cover (a), position clamp (b) uniformly over cover and housing flanges, and tighten clamp handle securely by hand pressure only.

11. With the engine running, check all connections and joints for leaks.

TROUBLE-SHOOTING

CENTRIFUGE REMOVES TOO LITTLE DIRT

Check for Proper Operation

Warm up engine and then bring engine to normal speed for one minute and immediately shut it down. If the Spinner II unit is working correctly the turbine can be heard spinning. As with any high speed device, it may go through momentary periods of vibration as it passes through critical speeds while slowing to a stop. This is normal. If the turbine is not spinning or if vibration is severe or continuous at all speeds, an error may have been made in assembly. Repeat steps 1—10, paying special attention to the proper seating of baffle/screen (m), the bowl seal (n) (Step 6) and the control mechanism (Step 9). If vibration persists, substitute a different centrifuge turbine assembly (d).

If the turbine is spinning properly, the centrifuge is doing its job of removing harmful abrasive dirt regardless of the amount of deposit found in the bowl. The visible deposit is largely soot and its thickness will vary from 1/16" to completely full depending on oil type, oil change interval, engine type and condition, and operating conditions. Oils with an organic dispersant-type additive package are likely to show less deposit build-up than oils with a metallic detergent-type additive package. With the organic package, some of the soot is dispersed in the oil in sub-micronic particles too small to be filtered or even removed by centrifugal force.

OIL LEAKS

Cover Seal:

Remove cover (a) and cover seal (c). Clean seal grooves in housing and mating surface on cover. Install a new cover seal (b) in the housing groove, replace cover (a), position clamp (b) uniformly over cover and housing flanges, and tighten clamp handle securely by hand pressure only.

Body to Control Mechanism Seal:

Remove cover and centrifuge turbine assembly. Remove control mechanism by loosening four cap screws. Discard seal (f) and clean groove and mating surfaces. Replace seal with a new one and retighten cap screws alternately to 35 lb-ft torque. It is possible to rotate the body 180° if it is necessary to locate the oil inlet port on the left side. Replace the seal and retighten bolts. Continue from Step 3 above.

Oil Line Connections:

Disconnect leaking hose and remove hose adapter from port. Clean threads in port and on adapter, and inspect for damage. Reinstall adapter using a good liquid thread sealant. Reconnect hose.

CONTROL AIR VALVE PROBLEMS

Float valve flows air constantly or not at all, up or down.
Air tank bleeds down overnight.

Check Valve (Step 9)

Most air control problems can be repaired without dismounting the centrifuge by renewing the air valve cartridge Part 2J329 (q), making certain that air valve cartridge seal Part 2J534 (r) is in place. A cartridge installed without the seal will be damaged and will leak continuously. If the float mechanism is worn or broken, the centrifuge must be disassembled and repaired with control mechanism repair kit Part 2J312. Instructions are contained in the kit.

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ACS 600 Centrifuge

—Parts Index—

CENTRIFUGE 2Q180	CENTRIFUGE 2Q185	Pt Nmbr	Description
x	x	2Q180	**CENTRIFUGE**, 600cc, 3-Lobe Clamp, OTB
x	x	2Q185	**CENTRIFUGE**, 600cc, T-Handle Clamp, OTB
x	x	2J334	BAFFLE/SCREEN - CENTRIFUGE
x	x	2J311	BODY - CENTRIFUGE TURBINE
x	x	2J336	BOWL - CENTRIFUGE
x	x	2J329	CARTRIDGE - AIR VALVE ASSEMBLY
x	x	2J321	CLAMP, COVER - KNOB STYLE
	x	2J299	CLAMP, COVER - TEE BOLT STYLE
x	x	2J331	CONTROL MECHANISM ASSEMBLY
x	x	2J320	COVER
x	x	2Q315	Gasket, ACS 600 gravity-drain
x	x	2J361	HOUSING ASSEMBLY with COV
x	x	2J335	INSERT - CENTRIFUGE, ACS 600, pkg 50
x	x	2J326	KIT - ISOLATOR, MOUNTING (SET OF 4)
x	x	2J312	KIT - REPAIR, CONTROL FLOAT ASSEMBLY
x	x	2J317	NUT - CENTRIFUGE BOWL
x	x	2J332	SCREW - HEX CAP, CONTROL MECH
x		2J333	SEAL - CENTRIFUGE BOWL [NITRILE]
	x	2J330	SEAL - CENTRIFUGE BOWL [VITON]
x		2J322	SEAL - COVER [NITRILE]
	x	2J307	SEAL - COVER [VITON]
x	x	2J534	SEAL WASHER - AIR VALVE
x	x	2J328	SEAL - CONTROL MECHANISM [VITON]
x	x	2J338	TURBINE ASSEMBLY

The ACS 600 is obsolete and no longer in production.
Identify 2Q180 (KNOB) & 2Q185 (T-HANDLE) centrifuges by style of CLAMP.

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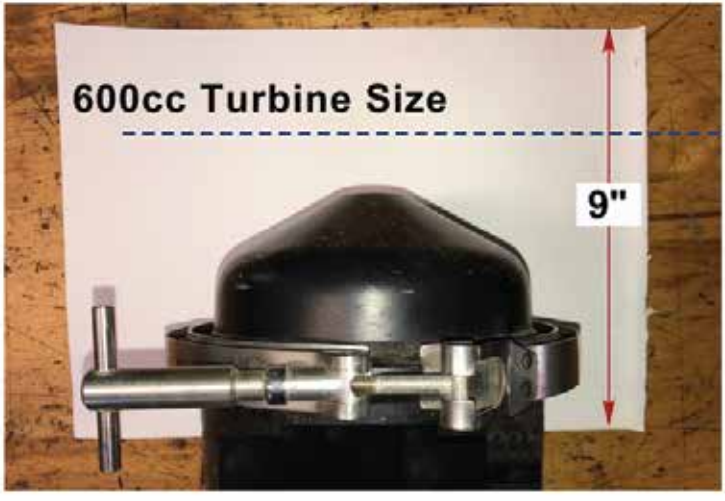
Truck Centrifuge Versions



Part Number

T-Clamp Type: 2Q185

3-Lobe Knob Type: 2Q180 (not shown)

Part Number

T-Clamp Type: 9G950 *(current production)*

3-Lobe Knob Type: 2Q190 (not shown)