

DBS Drive Unit Troubleshooting Guide

For F-Type Drive Units

SAFETY FIRST

Have professional maintenance personnel or a certified technician review your drive. Follow the general guidelines for troubleshooting the electrical-mechanical system. Pay particular attention to risks such as electrical shock, high pressure hydraulic fluid, and risks related to rotating equipment.

LOOKING FOR THE OBVIOUS

When troubleshooting, first look for:

1. Electric motor direction of rotation.
2. Fluid level in the hydraulic box.
3. Fluid level in the main gear housing.
4. Check the oil filter.

SYMPTOMS AND POSSIBLE SOLUTIONS

Electrical Motor

Symptoms	Causes	Corrective Actions
Not rotating	Terminal wires are loose or not wired correctly.	Check connections.
	Signal from the torque cutoff switch.	Identify cause of the signal.
	Circuit breakers tripped.	Reset and check running current.
	Motor relay contacts are not functioning.	Check relay contacts and trace control signals.
	Fuses have been blown.	Replace fuses and check causes of overload.
Over heating	Motor is overloaded.	Check locked rotor current; identify loads.
	Filter circuit clogged.	Change filter and oil.
	Motor operating on wrong voltage.	Confirm line voltage on each leg, and motor wiring pair up.
Excessive noise	Electric motor fan broken; fan cover is bent; or fan is hitting the cover.	Replace motor fan, repair or replace cover.

F-type Drive Train

Symptoms	Causes	Corrective Actions
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Rake not turning	Not sufficient hydraulic oil.	Add more oil.
	Hydraulic hoses loose.	Drain fluid, raise lid, tighten hose fittings.
	Electric motor running backwards.	Change motor rotation.
	Worn spline.	See primary reducer section on type F reducer coupling.
	Slipping coupling.	Replace the coupling connecting the electrical motor to the hydraulic pump.
Excessive heat	Hydraulic fluid too viscous.	Replace with 10W, (ISO32) hydraulic oil.
	Test valve closed or restricted.	Open test valve.
	Drive is overloaded.	Observe clarifier mechanism; identify cause of excessive load.
Excessive noise	Same as above.	Same as above.
	Pump cavitation.	Check for pump inlet restrictions.
Irregular rotation	Same as for excessive heat & noise.	Same as above.
	Hydraulic oil level low.	Add fluid.

Planetary Gear Box

Symptoms	Causes	Corrective Actions
Grease spill	Lubricant over full.	Wipe clean and allow level to establish over time.
	Water is leaking into the gearbox.	Check breathers and rain cover, identify leaking sources.
	Relief pressure on the check breather is too low.	Use a higher pressure check breather.

Torque Gauge And Limit Switches

Symptoms	Causes	Corrective Actions
Needle not zero when no load	Needle loose.	Zero and tighten needle.
Needle bouncing	Rake mechanism is binding or misaligned.	Identify and adjust interference. Refer to clarifier manufacturer.
	Drive is cycling off and on.	Motor controls not properly wired. Refer to electrical controls supplier.
	Snubber is not functioning.	Replace snubber.
	Hydraulic motor is hitching.	Replace hydraulic motor.
	Planetary gearbox is out of time.	Refer to planetary gearbox section for instructions.
Limit switch does not work	Adjuster set too high or too low.	Change the adjuster setting.
	Alarm and cutoff switches are reversed.	When looking at switch scale, right switch must be used as the higher set point switch.
	Switch box is contaminated with moisture or contaminants.	Clean the enclosure and check conduit for leaks.
	Switch terminal screws or washers have fallen under switches.	Disassemble switches from the frame, remove foreign objects, reassemble.
	Bad connections.	Tighten terminals and check for shorts.
	Switch broken.	Replace switch.

Main Bearing Housing

Symptoms	Causes	Corrective Actions
Excessive noise/shudder	Poor lubrication.	Check lubrication.
	Clarifier mechanism misalignment.	Align clarifier mechanism.
	Over load.	Observe clarifier mechanism; identify cause of excessive load.
Broken bolts	Overload.	Check load conditions, call DBS.
Excessive condensate	Normal due to high humidity environments	Drain condensate weekly. Not removing condensate will reduce machine life.