

DBS Drive Unit Troubleshooting Guide

For E-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 electric shock and risks related to rotating equipment.

LOOK FOR THE OBVIOUS

When troubleshooting, first look for:

Electric motor direction of rotation.

Fluid level in the main gear housing.

Check the shear pin.

SYMPTOM 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.
	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.

E-Type Drive Train

Symptoms	Causes	Corrective Actions
Mechanism not turning	Shear pin broken.	Replace shear pin.
	Key or bolts have sheared between one of the drive train gear box components.	Identify where rotation has stopped. Look in each of the oil/grease fill ports.
	Coupling between the electrical motor and gear box broken.	Replace the coupling.

Torque Gauge And Limit Switch

Symptoms	Causes	Corrective Actions
Needle not zero at no load	Needle loose.	Zero and tighten needle.
Needle bouncing	Adapter assembly is worn.	Overhaul adapter assembly.
	Planetary gearbox is out of timing.	Refer to planetary gearbox section.
Limit switch does not work	Adjuster set too high or too low.	Change limit switch settings.
	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 and 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.

Helical And Worm Gear Primary Reducer

Symptoms	Causes	Corrective Actions
Excessive noise	Lack of lubrication.	Inspect gears and add lubricant as necessary.
	Loose fasteners.	Tighten fasteners.
Grease spill	Seal or shaft worn.	Needs service, replace seals, check breathers.
	Excessive lubricant.	Wipe off and use less lubricant.
	Water contamination.	Check rain cover.
Excessive heat	Over load.	Observe clarifier mechanism; identify cause of excessive load.
	Incorrect lubricant.	Refer to lubrication section and use the right lubricant.
	Need service.	Overhaul the gear box.

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.

Adapter (E drive)

Symptoms	Causes	Corrective Actions
Crown shaft moving up	Worn bearing in the adapter.	Rebuild adapter.
Frequently break shear pins	Worn adapter.	Rebuild adapter.
	Drive is overloaded.	Observe clarifier mechanism; identify cause of excessive load.
Primary reducer oscillating vertically	Worn adapter.	Rebuild adapter.

Main Bearing Housing

Symptoms	Causes	Corrective Actions
Excessive	Poor lubrication.	Check lubrication.

noise/shudder		
	Clarifier mechanism misalignment.	Align clarifier mechanism.
	Overload.	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.