Prevention from PSG drive seizure during commissioning

Saumyen Chakraborty (Engine) - 2024-09-27 - Engine Articles

Drive seizure of PSG fitted to Cummins engine during first run is common to customer. This is happened when Engine oil is used for Governor and lift against a suction lift from sump.

Cause of derive seizure are due to...

1. Governor direction of rotation is indicated at the bottom of the base of the Governor. Single arrow, if viewed, the Governor is unidirectional rotation only and the Governor must be used for same directional rotation engine. If the arrow is in both direction, clockwise and counter clockwise, Governor can be used for any directional rotation engine. Rotation direction must be viewed from top of the Governor

Drive rotation must be matched with engine drive rotation for unidirectional rotation Governor.

2. Oil supply to Governor may be through the inlet of Base of the Governor or through the relief valve of the Governor. Suction lift should not be more than 1 feet. Suction lift is measured from the Oil level in sump. Therefor it is necessary that Oil sump must be filled in proper level.

3. Minimum siphon level is that oil level in the Governor below which Governor Pump gears are no longer submerged in Oil. Suction Cavitation will be created whenever prime mover will be started and damaged the gear pump or engine will be out of control.

4. For first commissioning of Governor there is a potential that minimum siphon level is not there. Crank start should not be done in first run but run the engine for few seconds (1 to 2 sec) and stop during Oil priming. Process should be done more than one time (recommended three times at least). No priming or single Priming may fail to create suction head due to cavitation effect inside Gear pump and seized the Governor drive immediately during cranking.