Maximizing Starting Torque on PowerFlex 753 / 755 AC Drives

1. Verify Motor Nameplate **Parameters 25** through **31** match what is listed on the motor.
   Motor Data

   Ensure the Following Parameters are set, using the par# button and editing:

   25= "460" motor nameplate Volts

   26= motor NP Amps (FLA)

   27= motor NP hertz (probably set at 60)

   28= set to motor nameplate PRM

   29= set to "0" or Horsepower

   30= set to motor nameplate HP (ie. 10, 20, etc.)

   31= set to the # of poles of the motor (3600rpm = 2, 1800rpm = 4, 1200rpm =6 ect.).

2. Set **Parameter 35** to **1 [Induction SV]** (Induction Motor, Sensorless Vector Control Mode)
3. **Parameter 70 [Autotune]**: (**Do a Static Tune**)

- Provides a manual or automatic method for setting **Parameter 73**, **Parameter 74 [Ixo Voltage Drop]** and **Parameter 75[Flux Current Ref]**. Valid only when parameter **Parameter 35 [Motor Ctrl Mode]** is set to **1 [Induction SV]**, **2 [Induct Econ]**, or **3 [Induction FV]**.
- **0 [Ready]** – **Parameter 70** returns to this setting following a **Static Tune** or **Rotate Tune**, at which time another start transition is required to operate the drive in normal mode. It also permits manually seting **Parameter 73 [IR Voltage Drop]**,**Parameter 74 [Ixo Voltage Drop]** and **Parameter 75 [Flux Current Ref].**

- **2 [Static Tune]** – Press the start key, A temporary command that initiates a non-rotational motor stator resistance test for the best possible automatic setting of **Parameter 73 [IR Voltage Drop]** in all valid modes and a non-rotational motor leakage inductance test for the best possible automatic setting of **Parameter 74 [Ixo Voltage Drop]**
- **Parameter 621 [Slip RPM @ FLA]** After Static Tune is run and par 70 reads 0 (Ready) then set par 621 to 0 also.

4. **Parameter 306 [Duty Rating] Set this to 1 for HD**

- Selects the continuous and overload capacity of the drive.
- **0 [Normal Duty]** – Provides the highest continuous rating, but smaller overload ratings (110% for 60 seconds, 150% for 3 seconds).
- **1 [Heavy Duty]** – Provides a smaller continuous rating, but larger overload ratings (150% for 60 seconds, 180% for 3 seconds).
- If the setting of this parameter is changed, check the setting of **Parameter 422 [Current Limit 1]** and **Parameter 423[Current Limit 2].**
- This parameter is only reset when Set Defaults **All** (not recommended) is executed.
- For Frame 2 drives rated under 7.5 kW (10 Hp) this parameter only displays the normal duty rating but will have heavy duty overload ratings. Changing the setting of this parameter will affect the continuous current rating of the drive which will be reflected in **Parameter 21 [Rated Amps]**

5.Verify **Parameter 414** is at default of 20 Hz. Set to lower value ONLY if the motor is externally cooled.

- Mtr OL Hertz : Motor Overload Hertz
  Selects the output frequency below which the motor operating current is de rated (more sensitive) to account for the reduced self-cooling capability of typical motors, operating at slower speeds. For motors with extra low speed cooling capacity (e.g. 10:1 or blower cooled), reduce this setting to take full advantage of the motor being used.
- Once this is done then you can proceed to setting up your start, stop and speed ref parameters.