	Service instruction	No	
melex ROK ZAŁOŻENIA 1971	**Speed reduction procedure**	ver.: I	
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Problem description

In the special areas with the speed drive limit is necessary to decrees motor speed to fulfils this requirement. Recommended solutions could have a minimal influence on motor and vehicle performances based on controller adjustment.

- FIELD MIN should never be set below the rated value specified by the manufacturer and will cause arcing between the brushes and commutator, significantly reducing motor and brush life.
- Maximum available field current determines the maximum torque that can be produced by the motor.
- Field current has influence on the motor speed, if it increase then motor speed is decreased
- For slow speeds, a higher FIELD MIN is preferable, in order to ensure a smooth transition between the drive and regen states.
- For high speeds, a lower FIELD MIN is usually necessary to allow the vehicle to achieve true closed loop speed control and not be limited by the field current.

Solutions

Below are steps to reduce the motor speed

1. Do not set the field mapping parameters outside the motor's safe commutation limits. Before start to next steps check documentations.
2. This procedure should be performed with a hot motor (after drive)
3. Increase the field current and observe the vehicle speed. If "hunting" or oscillation occurs decrease the field current.
4. Observe the Arm Current in the Monitor menu, and set the FIELD MAP START to a value above the Arm Current reading.
5. Repeat from Step 1 for the Mode 2 forward speed and for reverse speed.
6. If the speed limit is not achieved then reduce MAX SPEED parameter up to required speed value
7. Achieving better control at low speeds. If the vehicle responds well for fast, full range throttle transitions but is too jumpy during low speed maneuvering, reduce the THROTTLE MAP.
8. **ANY CHANGES** in the controller settings must be established with Melex technical department

Motor type	Field Min	Field Map Start range
DE	Min = 3	up to 120 Amp
DL	Min = 4	up to 130 Amp
DV3	Min = 6	up to 100 Amp

Example

vehicle / model / gear ratio / wheel	parameter		
	FIELD MIN	MAX SPEED	Vehicle speed [km/h]
967 / DV3 / 13:1 / 20.5	6	100	30
	8	100	25
	10	100	22
	10	90	20
	10	80	17
	10	70	15