



SL - Live Tooling - Operation

SL - Live Tooling - Operation - Introduction

Live tool motor speed functions are controlled primarily by the **Q** address code. The **Q** address specifies RPM in integer values from 1 to maximum spindle speed (Parameter 131). **NOT TO BE CHANGED BY USER!** The maximum spindle speed is 5000 RPM.

Speeds from S1 to the value in Macro variable 730 (usually 1200) will automatically select low gear and speeds above the value in Macro variable 730 will select high gear. Two **M** codes, M41 and M42 can be used to override the gear selection. M41 for low gear and M42 for high gear. Low gear operation above S1250 is not recommended. High gear operation below S100 may lack torque or speed accuracy. Accuracy is best at the higher speeds and in low gear.

SL - Live Tooling - Operation - Warm-Up Program

Live tooling motors, which have been idle for more than 4 days, must be thermally cycled prior to operation. This will prevent possible overheating of the motor due to settling of lubrication. A 20-minute warm-up program has been supplied with the machine, which will bring the motor up to speed slowly and allow the motor to thermally stabilize. This program may also be used daily for warm-up prior to high-speed use. The program number is O02020 (Live Tool Warm-Up).

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O02020(Live Tooling Warm-Up)
M133 Q250;
G04 P200.;
M133 Q500;
G04 P200.;
M133 Q1250;
G04 P200.;
M133 Q2500;
G04 P200.;
M133 Q3750;
G04 P200.;
M133 Q5000;
G04 P200.;
M30;
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SL - Live Tooling - Operation - Run-In Program

Live tooling motors must go through a run-in cycle at the time of machine installation prior to operating at speeds above 1,000 RPM. A program has been supplied with the machine that will run-in the live tooling motor during machine installation and should also be used after long periods of machine down-time (two weeks or more). The program number is O02021 (Live Tool motor Run-In). Cycle Time: 2 hours.

SL - Live Tooling - Operation - Orientation

Orientation of the spindle is automatically performed for tool changes and can be programmed with M119 commands. Orientation is performed by turning the spindle until the encoder reference is reached, the spindle motor holds the spindle locked in position. If the spindle is orientated and electronically locked, commanding spindle forward or reverse will release the lock.