

Quick Start Guide

Using DPRNT with your KME Indexer, Tombstone, Trunnion.

Set up:

Connecting to Machine

- M-Code signal cables need to be connected to the machining center. Use the attached diagram to locate the appropriate connection points. (Haas machines, look at Haas diagram)
- Connect communication cable to RS-232 serial port
- Make sure Macros are enabled in control panel (HAAS Machines Only)

Connecting to Control Box

- Connect M-Code (yellow 4 pin) signal cable and serial RS232 communication cables to back of box.

Programming:

Please read this entire manual before starting the use of your KME product.

Below you will find many different configurations and samples on how to move and use your KME product.

Positioning & Resolution:

KME units have a very tight resolution and programmability. You can program all of our units .001 to 999.999

You can also program with a negative or positive number with 3 decimal places. Below is an example.

Example:

DPRNT[C1*237.951*237.951*1] This will move drive 1 clockwise 237.951°

DPRNT[C3*-237.951*-237.951*3] This will move drive 3 counter clockwise to 237.951°

DPRNT commands for Indexers

DPRNT[P0] → Machine will pause while indexing and wait for finished signal, when indexing is complete, machine will continue.

DPRNT[P1] → This option will index and send signal back to machine but will not wait for indexing to complete (normally used during a tool change operation or a staging position and confirmed later in program) **Not recommended until you have spent time getting used to your system**

DPRNT[A1*90*90*1] → Moves clockwise to 90° from zero position

DPRNT[A1*-90*-90*1] → Moves counter clockwise to 90° from zero position

DPRNT[A1*180*180*1] → Moves clockwise to 180° from zero position

DPRNT[A1*-180*-180*1] → Moves counter clockwise to 180° from zero position

M-Code

Your KME unit is designed to send and receive a signal to an identified user I/O M-Code. The M-Code will be entered into your G-code programming **below** the DPRNT command. This will pause the CNC mill, allowing the unit to move to the correct position. Once positioned, the unit sends a signal back to the CNC mill to continue with program.

Contact your local Machine Tool Dealer to find out what your available M-code is.

M21→ Haas M-Code used in most Haas Machines.

Using G103 P1 in your program (HAAS Machines Only)

You must use G-103 P1 in your G-code at the beginning of your program. (only one time) this allows your Haas Machine to use single block so the indexer will use the m-code correctly.

Sample programming for Indexer

G103 P1; (at the top of your g-code)
DPRNT[A1*90*90*1]; (will index to 90°)
M21; (or user defined M-Code)
DPRNT[A1*180*180*1]; (will index to 180°)
M21; (or user defined M-Code)
DPRNT[A1*-180*-180*1]; (will index to -180°)
M21; (or user defined M-Code)

Please note: if you use DPRNT[P1] you must go back to DPRNT[P0] when index is complete. Otherwise, your control box will stay in **“Don’t wait for <FIN>” code mode**. Until your box is shut off or reset.

This is a sample G-code using the DPRNT[P1]

Sample programming for Indexer (using P1)

DPRNT[P1]; (setting up to Index during a tool change) Can also be used as a staging angle and confirmed with a DPRNT [P0] at a later time

DPRNT[A1*90*90*1]; (will index to 90°)
M21; (or user defined M-Code)

DPRNT[P0];
(Going back to Default Mode, machine will pause and wait for indexing to finish)

DPRNT[A1*180*180*1]; (will index to 180°)
M21; (or user defined M-Code)

DPRNT[A1*-180*-180*1]; (will index to -180°)
M21; (or user defined M-Code)

DPRNT commands for Tombstones and Trunnions

- DPRNT[P0] → Machine will pause while indexing and wait for finished signal, when indexing is complete machine will continue.
- DPRNT[P1] → This option will index and send signal back to machine but will not wait for indexing to complete (normally used during a tool change operation or a staging position and confirmed later in program)
- DPRNT[C1*90*90*1] → Moves top left side drive clockwise to 90° (trunnion left side drive)
- DPRNT[C2*90*90*2] → Moves top right side drive clockwise to 90° (trunnion center drive)
- DPRNT[C3*90*90*3] → Moves bottom left side drive clockwise to 90° (trunnion right side drive)
- DPRNT[C4*90*90*4] → Moves bottom right side drive clockwise to 90°
- DPRNT[A1*90*90*1] → Moves trunnion table A drive 90°

In some cases you will need to use the following in you g-code for the Fanuc controller.

- POPEN; (Opens serial port to communicate with KME controller)
G8 P0; (Stops look ahead until indexer has finished with rotation)
G8 P1; (Starts look ahead brings it back to normal)
PCLOS; (Closes Serial Port)

Switching IO Ports back and forth.

In some cases when using data transfers to send programs into a Fanuc controller the IO port is set at 15. Or if your using a memory card that would be using IO port 4. Our KME units normally use IO port 0. Below is an example on how to switch IO ports automatically in your g-code program. You only have to do this 1 time in your g-code. Once at the beginning and once at the end of your program.

Sample:

G10L52; (This turns the IO port to 0)
N20R0;
G11;

G10L52; (This turns the IO port to 15)
N20R15;
G11;

Sample programming for Tombstone and Trunnion (independent movements on drives)

G10L52; (This turns the IO port to 0)
N20R0;
G11;

G8 P0; (Stops look ahead until indexer has finished with rotation)

POPEN (Opens RS232 serial port)

DPRNT[C1*90*90*1] ; (Moves top left side drive clockwise to 90°)
M21; (or user defined M-Code)

DPRNT[C2*180*180*2]; (Moves top right side drive clockwise to 180°)
M21; (or user defined M-Code)

DPRNT[C3*-180*-180*3]; (Moves bottom left side drive counter clockwise to 180°)
M21; (or user defined M-Code)

DPRNT[C4*25*25*4]; (Moves bottom left side drive clockwise to 25°) (C4 is tombstones only)
M21; (or user defined M-Code)

G8 P1; (Starts look ahead brings it back to normal)

PCLOS; (Closes Serial Port)

G10L52; (This turns the IO port to 15)
N20R15;
G11;

Sample programming for Tombstone and Trunnion (simultaneous movements on drives)

DPRNT[C1*90*90*1] ; (Moves top left side drive clockwise to 90°)
DPRNT[C2*180*180*2]; (Moves top right side drive clockwise to 180°)
DPRNT[C3*-180*-180*3]; (Moves bottom left side drive counter clockwise to 180°)
M21; (or user defined M-Code)

Execution:

To enter DPRNT mode on KME control box, hit the start button while at main menu. Your control box is now ready to communicate with machine. The control box will remain in DPRNT mode. To exit DPRNT mode, simply push jog soft key or push the e-Stop button to reset normal mode.