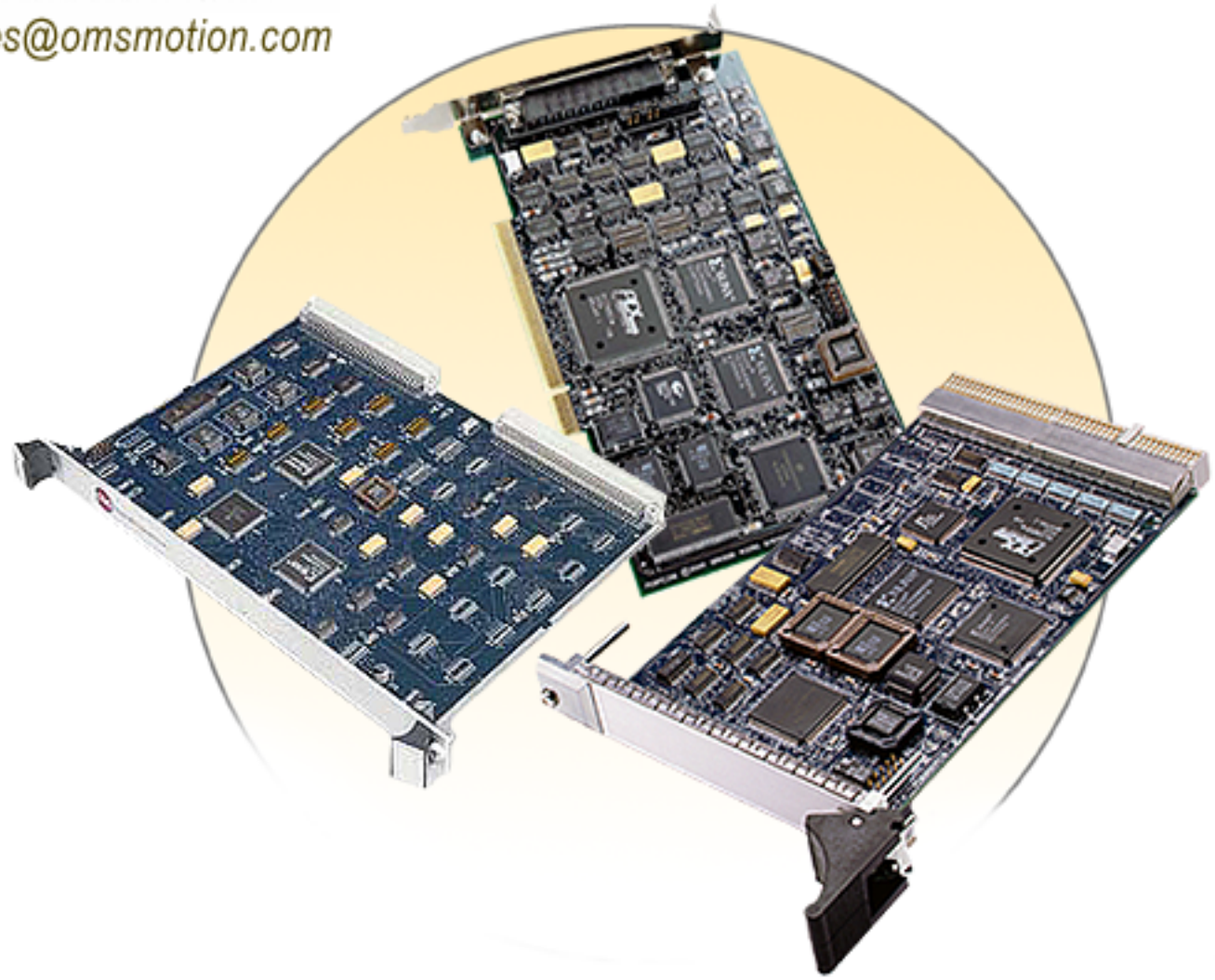
Oregon Micro Systems, Inc.™
"The Company in Motion"®
800-707-8111 ~ 503-629-8081
sales@omsmotion.com



Multi-Axis Motion Control

Tech Support

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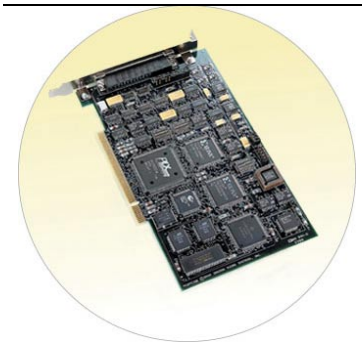
Oregon Micro Systems, Inc.
1800 NW 169th Place, Suite C100
Beaverton, OR 97006
Phone: 503-629-8081 or 800-707-8111
Fax: 503-629-0688
www.OMSmotion.com

ISO 9001 CERTIFIED

Oregon Micro Systems, an ISO 9001 certified company, provides a wide range of Multi-Axis Motion Controllers for many common platforms used in projects ranging from outer space, to the flexibility needed in assembly lines. OMS also offers motors, drivers, and a variety of accessories to meet your motion needs.

For further customer convenience, OMS provides support software including example programs and application notes for each product.

All OMS controls are 100% burned-in, tested, and quality inspected. During normal office hours, customers will always speak with a person when calling our support line at **503-629-8081 or 800-707-8111.**

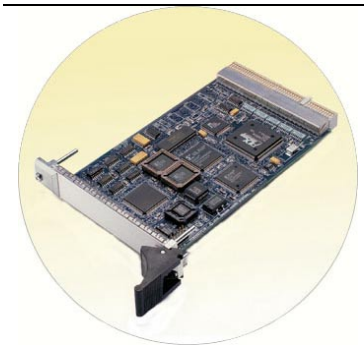


PCI Bus

PCIx Intelligent Motion Controller

The PCIx is a PCI bus based motion controller with 2 or 4 axes of motion that support both servo and stepper applications.

- Optically isolated I/O, +/- limit switches, home inputs, and differential encoder feedback inputs
- Independent and coordinated motion of all axes
- Circular interpolation
- Constant velocity linear interpolation (all axes)
- Electronic gearing
- Custom, Parabolic, "S"-curve and Linear trajectory profiles
- Software for Windows 95/98 and Windows NT
- A single shielded connector shares a common pin-out and configuration with other OMS controllers
- Compatible with the IO68 breakout board & cables

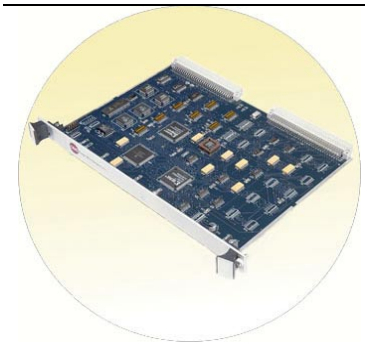


cPCI Bus

CIX Intelligent Motion Controller

The CIX is a CompactPCI bus based motion controller. It is a 3U, 33MHz controller capable of operating up to 4 servo and/or stepper axes.

- Opto-isolation protects inputs to the CIX (except encoder inputs which are differential)
- Outputs are differential for optimum noise immunity
- All control signals and other I/O lines are housed in the cPCI P2 connector accessible on rear I/O backplanes
- Independent and coordinated motion of all axes
- Circular interpolation
- Constant velocity linear interpolation (all axes)
- Electronic gearing
- Custom, Parabolic, "S"-curve & Linear trajectory profiles
- Software for Windows 95/98 and Windows NT

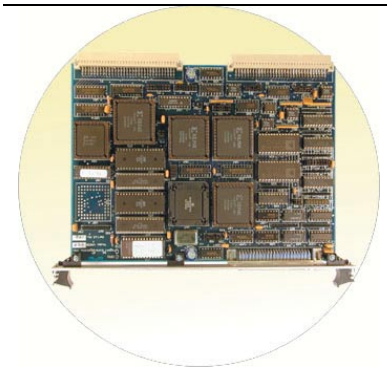


VME Bus

VX2 & VS4 Intelligent Motion Controller

The VX2 & VS4 are VME bus based motion controllers, and are one of the newest additions to the OMS family. They are capable of controlling up to 6 axes of stepper motion with encoder feedback available on selected models.

- Output is step & direction
- Each axis has a pair of limit inputs plus a home input, as well as an auxiliary output for driver or amplifier current control
- Up to 8 "user definable" TTL I/O lines
- All control signals are on the P2 connector
- Independent and coordinated motion of all axes
- Circular interpolation
- Constant velocity linear interpolation (all axes)
- Electronic gearing
- Parabolic, "S"-curve & Linear trajectory profiles

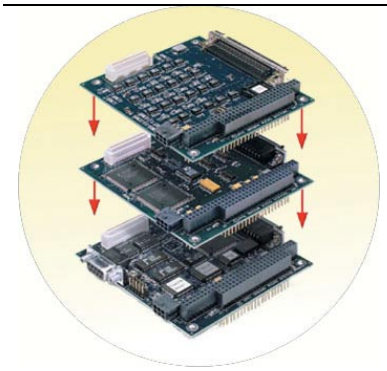


VME Bus

VME58 Intelligent Motion Controller

The VME58 is a VME bus based motion controller with 4 or 8 axes of motion that support both servo and stepper applications.

- Encoder feedback for stepper axes is available
- Servo outputs can be +/- 10VDC, 0-10VDC with direction, bipolar PWM, or unipolar PWM with direction (configurable by the user)
- Each axis has a pair of limit inputs plus a home input, as well as an auxiliary output for driver or amplifier current control
- Up to 22 "user definable" TTL I/O lines
- Independent and coordinated motion of all axes
- Circular interpolation
- Constant velocity linear interpolation (all axes)
- Electronic gearing
- Custom, Parabolic, "S"-curve & Linear trajectory profiles

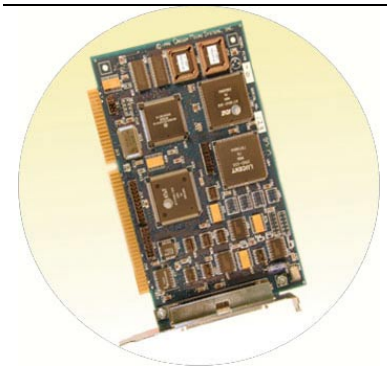


PC/104 Bus or Stand-Alone

PC68 Intelligent Motion Controller

The PC68, a PC/104 bus based controller and/or Stand-Alone controller, with high speed RS/232 port, will operate from 2 to 8 axes of stepper and/or servo applications.

- Encoder feedback available for stepper axes
- Servo outputs can be either +/-10VDC or 0-10VDC with direction
- Two limits, one home, and one auxiliary output are standard per axis
- Up to 12 "user definable" I/O, expandable to 144 opto-isolated I/O
- Independent and coordinated motion of all axes
- Circular interpolation
- Constant velocity linear interpolation (all axes)
- Electronic gearing
- Custom, Parabolic, "S"-curve & Linear trajectory profiles
- Software for Windows 95/98 and Windows NT
- Compatible with the IO68 breakout board

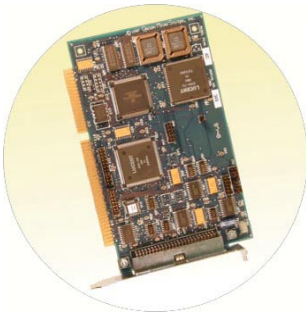


ISA Bus

PC48 Intelligent Motion Controller

The PC48 is an ISA bus based motion controller. This unit can control up to 8 stepper axes depending on model.

- Encoder feedback is available
- Each axis has a pair of limits and one home input per axis plus an auxiliary output for driver current control
- Up to 22 "user definable" TTL I/O lines
- Compatible with the IO38 breakout board
- Independent and coordinated motion of all axes
- Circular interpolation
- Constant velocity linear interpolation (all axes)
- Electronic gearing
- Custom, Parabolic, "S"-curve & Linear trajectory profiles
- Software for Windows 95/98 and Windows NT

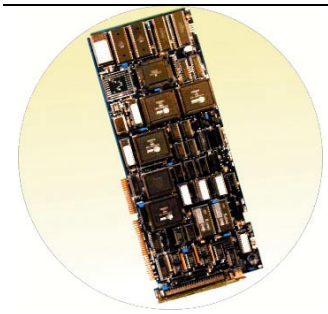


ISA Bus

PC46 Intelligent Motion Controller

The PC46 is an ISA bus based motion controller. It is a short ISA card that controls 2 to 6 stepper axes depending on model.

- Encoder feedback is available
- Independent home and plus / minus over-travel inputs per axis plus an auxiliary output for driver current control
- Up to 20 "user definable" TTL I/O lines
- Independent and coordinated motion of all axes
- Circular interpolation (on specific models)
- Constant velocity linear interpolation (all axes) (on specific models)
- Electronic gearing
- Custom, Parabolic, "S"-curve & Linear trajectory profiles
- Software for Windows 95/98 and Windows NT



ISA Bus

PC58 Intelligent Motion Controller

The PC58 is an ISA bus based motion controller. The PC58 is capable of controlling up to 8 axes of stepper or servo motion.

- Encoder feedback for stepper axes is available
- Can control a mix of servo and stepper axes
- Servo outputs can be +/- 10VDC, 0-10VDC with direction, bipolar PWM, or unipolar PWM with direction (configurable by the user)
- Each axis has a pair of limit inputs plus a home input as well as an auxiliary output for driver or amplifier current control
- Up to 22 "user definable" TTL I/O lines
- Independent and coordinated motion of all axes
- Circular interpolation
- Constant velocity linear interpolation (all axes)
- Electronic gearing
- Custom, Parabolic, "S"-curve & Linear trajectory profiles
- Dual-Port RAM for real-time communications
- Software for Windows 95/98 and Windows NT

Drivers

PMD4 Series Step Motor Driver

The PMD4 series are precision step motor drivers available with resolutions from full step up to 100:1 microstepping. Surface mount construction, low cost, small form factor, open chassis for easy cooling, and protected I/O signals make these units an excellent choice for almost any stepper application.

- Optional power supplies
- Clamped transient over voltage
- Under voltage
- Latched short circuit (phase to phase & phase to ground)
- Latched thermal protection
- Compatible with most 4, 6, or 8 lead step motors

PMD8 Series Step Motor Driver

The PMD8 Series are precision step motor drivers available with resolutions from full step to microstepping and higher power handling capabilities than the PMD4 series. Surface mount construction, low cost, small form factor, closed chassis, and protected I/O signals make these units an excellent choice for almost any stepper application.

- UL recognized
- Optional power supplies and heat sinks
- Clamped transient over voltage
- Under voltage
- Latched short circuit (phase to phase & phase to ground)
- Latched thermal protection
- Compatible with most 4, 6, or 8 lead step motors

Motors

HT6x Series Step Motors

The HT6x step motor series is characterized by its high torque attributes. All HT6x motors are NEMA23 frame size and are available with up to 350 oz./in. holding torque.

- Available with or without a flat on the single or double-ended shaft
- Planetary gear heads of various configurations
- Direct-mount encoders available as options

HT9x Series Step Motors

HT9x step motors, like their HT6x siblings, are characterized by their high torque attributes. All HT9x motors are NEMA 34 frame size and are available with up to 1000 oz./in. holding torque.

- Available with our without a flat on the single or double-ended shaft
- Planetary gear heads of various configurations
- Direct-mount encoders available as options

Motion Control Using OMS-EZ™ Commands

- OMS motion controllers can be used for most applications requiring motion control. OMS offers the precision required for a scanning electron microscope to the flexibility needed in assembly line packaging, OMS controllers do the job.

- The power of the OMS-EZ™ command set is its simplicity and versatility. The value of the OMS command set is realized by a rapid time-to-market and easy maintenance by non-computer experts. In addition, real-time Application Programmers now have the ability to build systems that will react to external events and trigger ancillary processes through a single motion control interface.

- The OMS-EZ™ command set is universal across our product families. For example, the command to move an axis on one controller is the same command on another. When the requirements of an application change you can use the newest, most cost-effective, controller without a major "overhaul" of the software… be it servo, stepper or a change bus structure.

- OMS-EZ™ commands are composed of ASCII character strings, such as MR1000 (meaning Move Relative 1000 steps). A complete motion control project may often be accomplished using a simple text editor or word processor. Just type the desired command sequence into the text editor and send it off to an OMS controller.

- Interactive applications combining data acquisition boards, video frame grabbers, etc., can be written using C/C++, Basic or any other programming language. Drivers, DLLs and example code is available at no charge on diskettes or from our Web page on the Internet (www.OMSmotion.com).

- The following pages outline application examples for OMS controllers and OMS-EZ™ commands to perform the tasks.

Application Example

➢ Repetitive Motion

The stamping machine in **Figure 1** requires simple **repetitive motion** on one axis. This example assigns acceleration and maximum velocity to the linear actuator attached to the X axis. The machine will stamp a part as long as the switch connected to I/O bit 1 is held low. A "While" loop encapsulates motion commands that advance and retract the stamp.

```
AX          * Address the X axis
AC100000    * Set Acceleration to 100,000 steps/sec/sec
VL25000     * Set Velocity to 25,000 steps/sec
WS1         * While I/O bit 1 is low, perform loop
  MR80000;GO    * Move Relative +80,000 steps
  MR-80000;GO   * Move Relative -80,000 steps
WD          * Test I/O bit 1, wait here if high
```

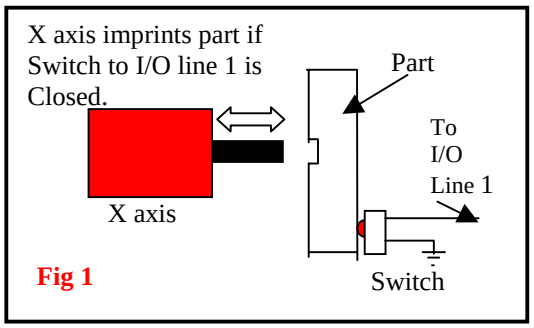


Fig 1

Application Example

➢ Movement of an X-Y Stage

The illustration in **Figure 2** suggests **movement of an X-Y stage** as it positions to accept small parts into an egg-crate container of 4 rows by 8 columns. There are 2000 steps from cell to cell. This example introduces "nested loops" and the use of User I/O lines, available on all OMS controllers.

```
AA                  * Address All axes
AC100000,100000     * Set acceleration of X & Y axes
VL25000,25000       * Set max velocities of X & Y axes
LS8                 * Loop Start, execute 8 times (columns)
 LS4                * Loop Start, execute 4 times (rows)
  MR2000;GO         * Move Relative, X only, 2,000 steps
  BH2;WT1000;BL2    * Set Bit 2 High, Wait 1 sec, lower bit 2
 LE                 * Loop End, 4 vertical slots are filled
 MR-8000,2000;GO    * Move X to start and Y left 1 column
LE                  * Loop End, all 32 slots will be filled
MR-8000,-14000;GO   * Move Relative, back to 0,0 point
```

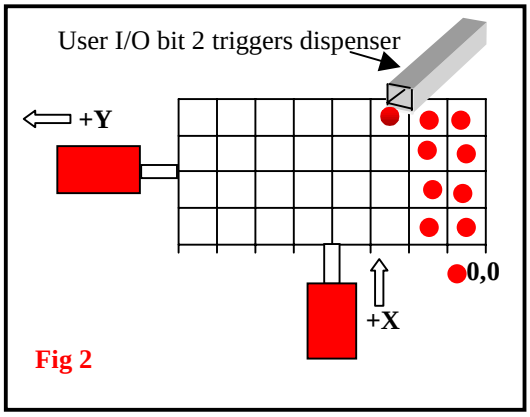


Fig 2

Application Example

➢ Servo Motor Control

The example in **Figure 3** deals with the use of **servo motor control** to push heavy stock of uneven density into a router blade. The task of the motion controller is to accept high speed input from a shaft position encoder and keep the motor tracking toward the desired final encoder count. PID filter parameters may be sent to an OMS servo controller at any time. Therefore, multiple sets of values may be kept on file and sent to the controller as needed, in milleseconds.

```
AX                  * Address the encoder/motor on the X axis
AC500000;           * Specify an acceleration of 500,000 encoder pps²
VL100000;           * Specify a constant velocity of 100,000 encoder pps
KP50; KI3; KD35.1;  * PID filter parameters for this motor/load
HN                  * Enable PID filter position correction
MA20000;GO          * Move Absolute 20,000 encoder counts into cutter
```

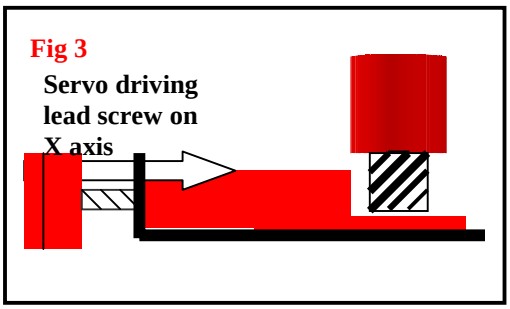


Fig 3
Servo driving lead screw on X axis

Application Example

➢ Linear, Cosine, Parabolic, & Custom motion profiles

Figure 4 describes **Linear, Cosine, Parabolic** and **Custom motion profiles** found in all OMS controllers. Linear acceleration is the default and is used most often. Cosine or "S" curve profiles offer the smoothest start-stop transition for conveying liquids and top heavy loads. Parabolic acceleration profiles may be used to quickly pass through mechanically resonant points during acceleration and deceleration.

```
AX              * Address X axis
AC10000         * Accelerate 10,000 pps/s
VL5000          * Constant velocity 5,000 pps
PF              * Use default linear profile
MA75000; GO     * Move Absolute 75,000 steps

AX
AC10000
VL5000
CN              * Switch to Cosine profile
MA75000; GO

AX
AC10000
VL5000
PN7             * Use 7 step Parabolic curve
MA75000; GO
```

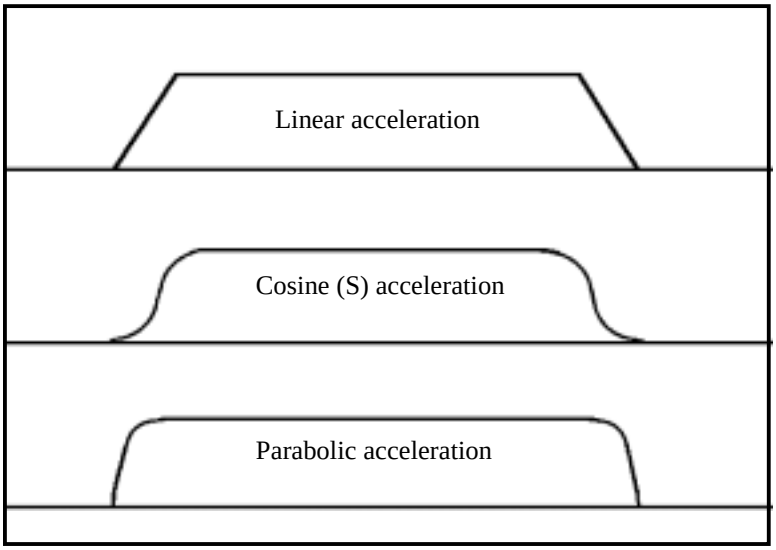


Fig 4

Application Example

➢ Asymmetrical, Custom profiles

Figure 5 describes a more sophisticated application that may require unique acceleration profiles. Therefore, selected OMS controllers additionally support **asymmetrical profiles** as well as **custom profiles**.

```
AX          * Select  X axis
AC200000    * Set acceleration in pps/sec
DC100000    * Set deceleration in pps/sec
VL30000     * Set peak velocity in pps
MR50000;GU  * Select distance and execute
```

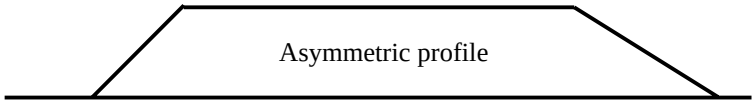


Fig 5

Application Example

➢ Custom Profile

Figure 6 uses a **custom profile** and accepts up to 25 changes in acceleration during ramp up and ramp down. A change point is defined as RT#,# (accelerate at n% of the AC value till reaching m% of VL).

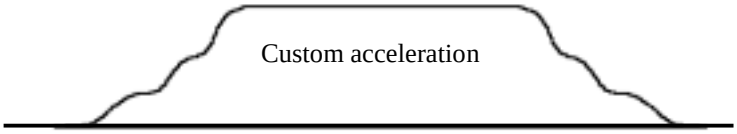


Fig 6

```
AX                      * Select  X axis
DR1                     * Define profile #1
RT0.084591,0.0061558;   * First point of profile
RT...                   * Repeat up to 25 points
RT0.784591,1.0000000;   * Last point of profile
ED                      * End profile definition
SR1                     * Select profile #1
AC10000                 * Base acceleration used to compute a custom acceleration profile
VL5000                  * The final or maximum velocity once up to speed
MR10000;GO              * Move using new profile
```

Application Example

➢ Limit Switches; Homing

Figure 7 is the next example, it uses **limit switches** on a stage to perform **homing**. The stage has X and Y axes limit switches installed at its lower right corner but no home switches on the left. Our objective is to initialize X & Y to zero at the lower left corner of the stage. Thereafter, an application may address the stage in the 1st quadrant. The procedure commands the X axis to move to a point beyond its limit switch in a positive direction. OMS controllers automatically stop motion on an axis if its limit is detected. Upon hitting the limit it will be commanded to pull back 190000 steps and set the X position counter to 0. The Y axis is then moved negative till its limit switch is hit. A zero is loaded into the Y axis position counter upon reaching the Y axis limit switch. Both axes are now recognized as 0,0 at the lower left and 190000,120000 as the upper right corner of the stage.

```
AA                  * Define a homing rate for both X & Y axes as they seek limit switches
AC500000,500000     * Accelerate at 500,000 steps per/sec/sec
VL100000,100000     * Once up to speed move at this rate
BL8                 * Light a LED, attached to User I/O line 8, to indicate "in motion"
AX                  * Start the home sequence for X axis
MR193000;GO         * From anywhere, move right
WQ                  * Wait till move is complete
LP0                 * Make this X position 0
AY                  * Home sequence for Y axis
MR-130000;GO        * From anywhere move down
WQ                  * Wait till move is complete
LP0                 * Define this point 0 (lower limit)
AX                  * X is sitting at its upper limit
MR-190000;GO        * Move 190000 steps left on X axis
WQ                  * Wait till 190000 is reached
LP0                 * Now define the left most X position as 0
AA                  * Switch to Axes-All mode
RP BH8              * Request report and turn off LED. The reply will indicate the stage is at 0,0
                    * If homing sensors were installed at 0,0 the HM (Home) command could
                      replace most of this procedure simply and automatically
```

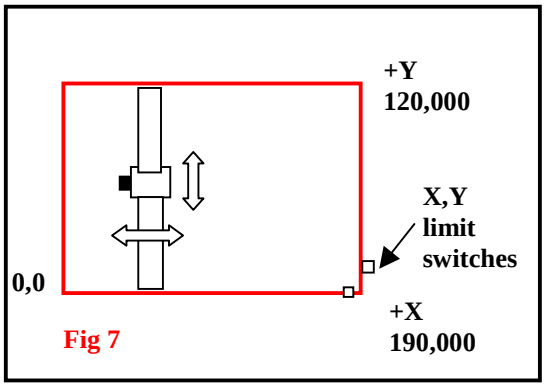


Fig 7

Application Example

➢ Constant Velocity Contouring

Figure 8 is an example of **Constant Velocity Contouring** is used to maintain a uniform heat level while traversing a circuitous path as in cutting or welding. This partial listing will scribe 9 holes in a clockwise direction at a constant velocity of 85,000 steps per second. Figure 8 traces the tool path from Start, around each arc and finishes at 0,0.

Constant velocity:
As a circle, arc or line segment is traced, the vector sum of the paired velocities at any point will be a constant value.

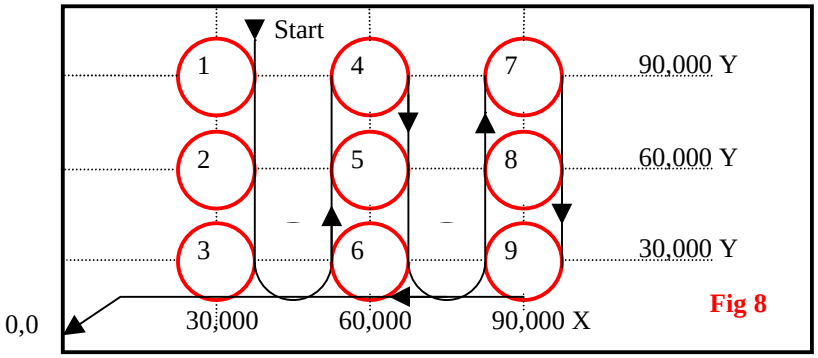


Fig 8

```
AA                          * Axes-All mode, accept multi-axes commands
AC1000000,1000000           * Set accelerations to 1,000,000 steps/sec/sec on X and Y
VL85000,85000               * Set X,Y velocities to 85,000 steps/sec
CV85000                     * Constant Velocity of 85,000 steps/sec
                            * CD, start contour definition of lines and arc segments
CD40000,90000;              * Enter upper left circle (1) at X40000, Y90000
CR30000,90000,-6.2831853;   * Center of circle is at X30000, Y90000. Radius is 10,000 units
MT40000,60000;              * Stay on tangent to next entry X,Y
CR30000,60000,-6.2831853;   * Center of mid left circle (2)
MT40000,30000;              * Stay on tangent to next entry X,Y
CR30000,30000,-6.2831853;   * Center of lower left circle (3)
CR50000,30000,3.1415926;    * Exit arc to head back up to top center
MT60000,90000;              * Now at left edge of upper center circle (4)
CR70000,90000,-9.4247779;   * 3 pie turns, exiting down toward center circle
```

The complete example is available as an Application Note from OMS

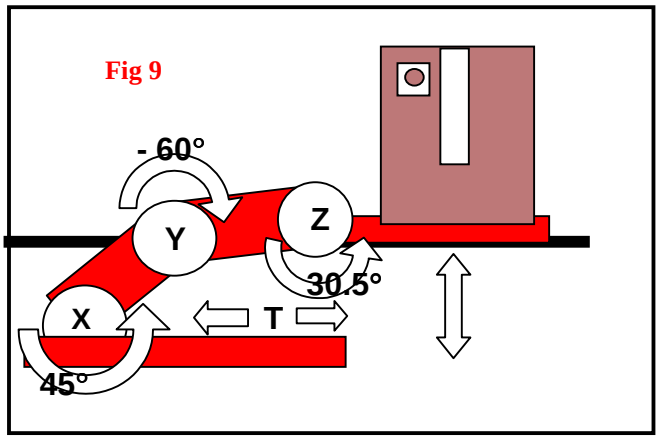
```
MT120000,30000;             * Move to entry X,Yy of lower right circle (9)
CR110000,30000,-7.8534816;  * Exit aimed toward left edge for gentle ramp down
MT10000,20000;              * Continue to this point at the constant velocity
CE                          * End contour definition
                            * Next commands set up to execute the defined path
MT40000,120000; GO CX       * Ramp up tangent to 1st circle(Start); execute contour
AA                          * Return to Axes-All mode
AC300000,300000             * Re-establish acceleration values to move home quickly
VL85000,85000               * Re-establish velocity values
MT0,0; GO                   * Go back to the 0,0 home position
```

Application Example

➢ Working in inches, feet, millimeters, degrees

Figure 9 suggests **working in inches, feet, millimeters, degrees** rather than motor steps. The User Units command (UU) greatly simplifies programming and conversion tasks. Consider the job of this automated warehouse, package place and retrieval gantry. The part attached to rails on the floor moves back and forth in units of inches. The arms of the gantry are commanded in degrees of rotation. All we need know is the number of motor steps required to move one unit. If a motor takes 2000 steps to rotate 360 degrees then the ratio is 5.55555 **:** 1.

If the motor moving the gantry horizontally along the floor track moves 1 inch in 2000 steps its ratio is 2000 **:** 1. Once an OMS motion controller has been given the ratios the application programmer may command the gantry in familiar easy to understand terms.



AT UU2000;	* A linear motor, T, moves at 2000 steps per inch along the floor
AX UU5.55555;	* Motor on X axis requires 2000 steps to rotate 360 degrees
AY UU5.55555;	* Motor on Y axis requires 2000 steps to rotate 360 degrees
AZ UU5.55555;	* Motor on Z axis requires 2000 steps to rotate 360 degrees
AA	* The following commands pertain to all axes
AC50,50,50,6.5;	* Accelerate X,Y,Z 50 deg/sec/sec, and T at 6.5 inches/sec/sec
VL15,15,15,10;	* At speed move X,Y,Z 15 deg/sec and T 10 inches/sec
CN	* Accelerate all axes using a Cosine "S" curve for smoothest motion
MA,,,144.5; GO	* Advance the gantry (motor on T axis) from 0 to the 12.5 foot point
ML45,-60,30.5; GO	* Perform a coordinated linear motion on 3 axes simultaneously
	* Note that X,Y,Z have been addressed in degrees

The application program controlling this automated warehouse may query an OMS controller at any time for the current position or velocity of any axes. A home command (HM) may be issued to each axis to assure machine alignment at startup or after slip detection. Moves may be instructed to interrupt the running application when the destination has been reached, thus freeing the host processor for other jobs. The commands shown above work equally well with stepper or servo motors whether they transport grams, gallons or tons.

A partial list of built-in OMS-EZ™ Commands

		see figure #
AA	AXIS ALL	2
AC#	ACCELERATION	1
AF#,#	AUXILIARY OFF	
AM	AXIS MULTITASKING	
AN#,#	AUXILIARY ON	
AR	AXIS R	
AS	AXIS S	
AT	AXIS T	9
AU	AXIS U	
AV	AXIS V	
AX	AXIS X	1
AY	AXIS Y	9
AZ	AXIS Z	9
BH#	BIT HIGH, USER I/O LINE #	2
BI	BIPOLAR SERVO	
BL#	BIT LOW, USER I/O LINE #	2
BX	BIT STATUS REQUEST IN HEX	
CA	CLEAR AXIS DONE FLAG	
CD#,#;	CONTOUR DEFINE	8
CE	CONTOUR END	8
CK	CONTOUR END AND KILL	
CN	COSINE ON	4
CR#,#,#	CIRCULAR INTERPOLATION	8
CV#	CONTOUR CONSTANT VELOCITY	8
CW	CLEAR WHILE	
CX	CONTOUR EXECUTE	8
EA	ENCODER STATUS	
EF	ECHO OFF	
EN	ECHO ON	
ER#,#	ENCODER RATIO	
ES#	ENCODER SLIP TOLERANCE	
ET	ENCODER TRACKING	
HD#	HOLD DEADBAND	3
HE	HOME ENCODER	
HF	HOLD OFF	
HG#	POSTION MAINTENANCE (HOLD)	
HH	HOME HIGH	
HL	HOME LOW	
HM#	HOME	
HN	HOLD ON	
HR#	HOME REVERSE	
HS	HOME SWITCH	
HV#	HOLD VELOCITY	
IC	INTERRUPT CLEAR	
ID	INTERRUPT DONE	
II	INTERRUPT INDEPENDENT	
IN#	INTERRUPT NEARLY DONE	
IP	INTERRUPT WHEN IN POSITION	
IS	INTERRUPT ON SLIP	
KA#	ACCELERATION FEEDFORWARD COEFFICIENT	
KD#	DIFFERENTIAL GAIN COEFFICIENT	
KI#	INTEGRAL GAIN COEFFICIENT	3
KL	KILL	
KM	HOME AND KILL	
KN#	INTEGRATION INTERVAL COEFFICIENT	
KO#	OFFSET COEFFICIENT	
KP#	PROPORTIONAL GAIN COEFFICIENT	3
KR	HOME REVERSE AND KILL	
KV#	VELOCITY FEEDFORWARD COEFFICIENT	
LE	LOOP END	2
LF	LIMITS OFF	
LH	LIMIT HIGH	
LL	LIMIT LOW	
LN	LIMITS ON	
LP#	LOAD POSITION	7
LS#	LOOP START	2
MM	MOVE MINUS MODE	
MP	MOVE POSITIVE MODE	
MT#,#	MOVE TO ABSOLUTE POSITION	8
MV#,#	MOVE VELOCITY	
PA#	POWER AUTOMATIC	
PF	PARABOLIC OFF	4
PN#	PARABOLIC ON	4
QA	QUERY AXIS STATE	
QI	QUERY INTERRUPT STATUS	
RA	RETURN AXIS INTERRUPT STATUS	
RB	RETURN OUTPUT BITS	
RC	REQUEST ACCELERATION	
RE	REQUEST ENCODER POSITION	
RI	RETURN INTERRUPT STATUS	
RL	RETURN SLIP STATUS	
RP	RETURN PROGRAMMED POSITION	7
RQ	REQUEST QUEUE STATUS	
RS	RESET	
RU	REPORT POSITION IN USER UNITS	
RV	REQUEST VELOCITY	
SB#	SET BAUD RATE	
SE#	SETTLING TIME	
SF	SOFT LIMIT OFF	
SL	SOFT LIMIT ON	
SP#	STOP AT POSITION	
SW#	SYNC WAIT TO I/O BIT #	
TF	SLIP TOLERANCE KILL OFF	
TN	SLIP TOLERANCE KILL ON	
UF	USER UNITS OFF	
UN	UNIPOLAR SERVO (0 TO+10)	
UU#	USER UNITS	9
VB#	VELOCITY BASE	
VL#	VELOCITY	1
WA	WAIT FOR AXES	
WD	WHILE TERMINATE LOOP	
WG	WHILE FLAG END	
WH	WHILE LOOP	
WQ	WAIT FOR QUEUE TO EMPTY	
WS#	WHILE SYNC TRUE	1
WT#	WAIT TIME	
WY	WHO ARE YOU?	

Reasons to Partner with Oregon Micro Systems

- OMS has remarkable products… over 400,000 axis sold.
- OMS is ISO9001 certified.
- All OMS controllers receive 100% burn-in and test before shipping.
- The exclusive OMS Rapid Turn-Around program if service is required.
- Great price/performance value at the lowest installed cost to your project.
- Well-written User Manuals backed up by knowledgeable support staff.
- OMS motion control command set is universal, intuitive and easy to learn.
- Adjustments to your products no longer require a lengthy re-learning cycle.
- Broad product line of controllers, motors, drives and software.
- Capability to address unique requirements.
- Business Partnering.

Oregon Micro Systems, Inc. began in 1980 and was incorporated in 1984. We are a supplier of motion control products from the integrator to Fortune 500 companies, NASA, the largest semi-conductor equipment builders, medical research facilities, automated packaging machine builders and government research facilities and other industries. A number of our customers incorporate, in their business style, the "entrepreneur spirit". This requires that their ideas be brought to market quickly. OMS is chosen because we offer the right products, for the right price, at the right time and just as important, we are, easy to do business with… We are *"The Company in Motion"*™.