

# Thread Formats

This screen has two different formats based on whether the **Output G76 threading cycle** check box is selected or not. The description of this check box is shown below:

## Output G76 threading cycle

The postprocessor has two type of threading output, the standard G33 single point threading and the G76 threading canned cycle. Checking this box will activate the G76 threading canned cycles. The G76 Multiple Repetitive Threading Cycle provides a complete threading operation with two output blocks of information. The controller interprets the data in these two block and generates the multiple passes required to cut an entire thread.

### The first G76 block:

- G76 Ppppppp Qqqqq Rrrrr
  - Pppppppp - the first two digits are the number of finish passes, the second

two digits are thread pull out chamfer amount, the third two digits are tool nose angle.

- Qqqqq - specifies the minimum depth of cut per pass
- Rrrrr - specifies amount of stock to leave for the finish pass

### The second G76 block

- G76 Xxxxx.xxxx Zzzz.zzzz Ppppp Qqqqq Rrrrr Fffff
  - Xxxxx.xxxx - specifies the X end point of the thread.
  - Zzzz.zzzz - specifies the Z end point of the thread.
  - Ppppp - specifies the single depth of the thread.
  - Qqqqq - specifies the cutting depth of the first pass.
  - Rrrrr - specifies the taper angle of the thread.
  - ffff - specifies the thread lead.

The following THREAD/AUTO command must be used to generate the G76 threading:

```
THREAD/AUTO[,LEFT-RIGHT][,IN-OUT],START,s, LENGTH,I,DIAMTR,d1,d2, INCR,s1[,s2][,ATANGL,a][,PULBAC,d,a][,BOTH][,PITCH,p][,REPEAT,r] [,OPSTOP][,OPSTOP][,SELECT,s][,CLEARP,x,y] [,FEDRAT,f1,f2,f3,f4,f5] [,START,s,n][,TAPER,x,y,a]
```

See [THREAD/AUTO](#)

## Output G76 Threading Cycle

The following describes the panel when the **Output G76 Threading Cycle** check box is checked.

## **Prep / G-Codes**

### ***1st Output Block***

Select the Prep/G-code for the first G76 threading block. Normally this is 76.

### ***2nd Output Block***

Select the Prep/G-code for the second G76 threading block. Normally this is 76.

## **Addresses**

### ***P Address***

Select the letter address used for the P values in the G76 threading blocks.

### ***Q Address***

Select the letter address used for the Q values in the G76 threading blocks.

## **R Address**

Select the letter address used for the R values in the G76 threading blocks.

## **F Address**

Select the letter address used for the F values in the G76 threading blocks.

## **Output Formats - 1st Block**

### **Set P Address Format**

Set the first G76 block, P address format. The format sets the number of places each side of the decimal point to output and whether the address requires leading zeros, trailing zeros, a plus sign and a decimal point

- A 33 format outputs the address with 3 places to the left and 3 places to the right of the decimal point.
- A 60 format outputs the address with 6 places to the left and no places to the right of the decimal point.

### **Set Q Address Format**

Set the first G76 block, Q address format. The format sets the number of places each side of the decimal point to output and whether the address requires leading zeros, trailing zeros, a plus sign and a decimal point:

- A 33 format outputs the address with 3 places to the left and 3 places to the right of the decimal point.
- A 60 format outputs the address with 6 places to the left and no places to the right of the decimal point.

### **Set R Address Format**

Set the first G76 block, R address format. The format sets the number of places each side of the decimal point to output and whether the address requires leading zeros, trailing zeros, a plus sign and a decimal point:

- A 33 format outputs the address with 3 places to the left and 3 places to the right of the decimal point.
- A 60 format outputs the address with 6 places to the left and no places to the right of the decimal point.

## **Output Formats - 2nd Block**

### **Set P Address Format**

Set the second G76 block, P address format. The format sets the number of places each side of the decimal point to output and whether the address requires leading zeros, trailing zeros, a plus sign and a decimal point:

- A 33 format outputs the address with 3 places to the left and 3 places to the right of the decimal point.
- A 60 format outputs the address with 6 places to the left and no places to

the right of the decimal point

### ***Set Q Address Format***

Set the second G76 block, Q address format. The format sets the number of places each side of the decimal point to output and whether the address requires leading zeros, trailing zeros, a plus sign and a decimal point:

- A 33 format outputs the address with 3 places to the left and 3 places to the right of the decimal point.
- A 60 format outputs the address with 6 places to the left and no places to the right of the decimal point.

### ***Set R Address Format***

Set the second G76 block, R address format. The format sets the number of places each side of the decimal point to output and whether the address requires leading zeros, trailing zeros, a plus sign and a decimal point:

- A 33 format outputs the address with 3 places to the left and 3 places to the right of the decimal point.
- A 60 format outputs the address with 6 places to the left and no places to the right of the decimal point.

### ***Set F Address Format***

Set the second G76 block, F address format. The format sets the number of places

each side of the decimal point to output and whether the address requires leading zeros, trailing zeros, a plus sign and a decimal point

- A 33 format outputs the address with 3 places to the left and 3 places to the right of the decimal point.
- A 60 format outputs the address with 6 places to the left and no places to the right of the decimal point.

## **Do Not Output G76 Threading Cycle**

The following describes the panel when the **Output G76 Threading Cycle** check box is NOT checked.

### **Prep/G-Codes**

#### **Constant Lead**

This field sets the numeric value associated with the preparatory code for constant lead threading (commonly G33). If this machine does not require a preparatory code for threading operations, the proper response is NR (not required). If this machine cannot perform threading operations at all, NA (not applicable) is the proper response.

### ***Increasing Lead***

This field sets the numeric value associated with the preparatory code for cutting increasing lead threads. If this machine is not capable of this type of threading, the proper response is NA (not applicable).

### ***Decreasing Lead***

This field sets the numeric value associated with the preparatory code for cutting decreasing lead threads. If this machine is not capable of this type of threading, the proper response is NA (not applicable).

## **Threading Register(s)**

### ***Controller uses I/K registers***

If your controller uses the I and K registers for threading, you should check this box. If your controller requires only one address for threading do not check this box.

### ***Threading address***

If your controller only uses one register for threading enter it here. If two registers are required you need to use the I/K registers as your threading registers.



### **Set Register Format**

Clicking this button will activate the *Dialog* that will provide the user an opportunity to set the I/K threading register addresses for the mode (Inch or Metric) under which it was activated.

### **Allow zero to be output in thread lead register(s)**

This option provides control of conditions where a thread lead of zero would be output or suppressed. Equivalent postprocessor commands:

- PLABEL/OPTION,56,TO,0 \$\$ Output zero in thread register (default).
- PLABEL/OPTION,56,TO,1 \$\$ Do not output zero in thread register.

### **Thread lead register(s) are modal**

This option provides control of output of the thread lead registers when the lead values are repetitious. Equivalent postprocessor commands:

- PLABEL/OPTION,58,TO,0 \$\$ Thread lead registers are non-modal (default).
- PLABEL/OPTION,58,TO,1 \$\$ Thread lead registers are modal (e.g., the register is only output when it changes).

### **Set Thread Lead Spec as**

The postprocessor will set the specification of thread lead as either threads per inch

or as actual lead (displacement per revolution). Although in the U.S. lead is often specified as TPI, in Metric it is not usually desirable to state the number of threads per millimeter. Select the proper output required by your control. Equivalent postprocessor commands:

- PLABEL/OPTION,50,TO,0 \$\$ PITCH/t is threads per unit (default).
- PLABEL/OPTION,50TO,1 \$\$ PITCH/t is direct lead.>

## Resolution during thread mode

When the threading encoder is engaged, the programmable resolution (location of the implied decimal point) of the register containing the lead value (normally I or K) usually changes. Enter the resolution available during the thread mode. This parameter is used for rounding the lead value for maximum accuracy. Most machines accept lead to the accuracy of .00001 (inch).

## OP/Thread Clear Distance

A flag to indicate that an OP/THREAD will use the current point as set in the threading menu CLEAR\_DIST=d or will use the default of 0.05. Using the CLEAR\_DIST option will match the PTC menu and thread simulation.

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 Option File Generator Help

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