

2.1 Drilling cycles

2.1.9 Boring 3 – CYCLE87



Programming

CYCLE87 (RTP, RFP, SDIS, DP, DPR, SDIR)



Parameters

RTP	real	Retraction plane (absolute)
RFP	real	Reference plane (absolute)
SDIS	real	Safety clearance (enter without sign)
DP	real	Final drilling depth (absolute)
DPR	real	Final drilling depth relative to reference plane (enter without sign)
SDIR	int	Direction of rotation Value: 3 (for M3) 4 (for M4)



Function

The tool drills at the programmed spindle speed and feedrate to the programmed final drilling depth. With Boring 3, a spindle stop without orientation M5 and then a programmed stop M0 are generated when the final drilling depth is reached. The NC START key is pressed to continue the retraction movement in rapid traverse mode until the retraction plane is reached.



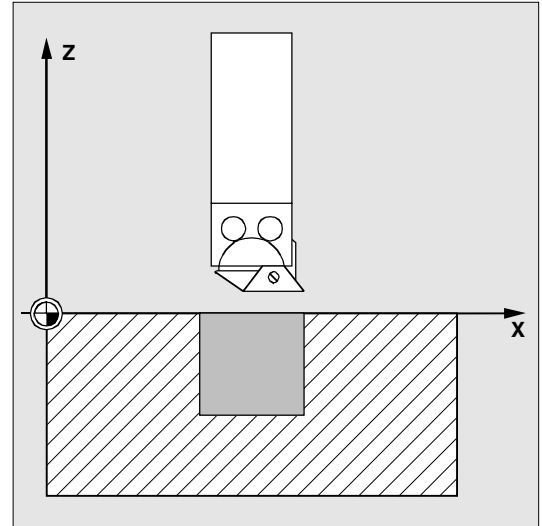
Sequence of operations

Position reached prior to cycle start:

The drilling position is the position in the two axes of the selected plane.

The cycle implements the following motion sequence:

- Approach of the reference plane brought forward by the safety clearance with G0
- Traverse to final drilling depth with G1 and the feedrate programmed before the program call
- Spindle stop with M5
- Press NC START key
- Retraction to retraction plane with G0

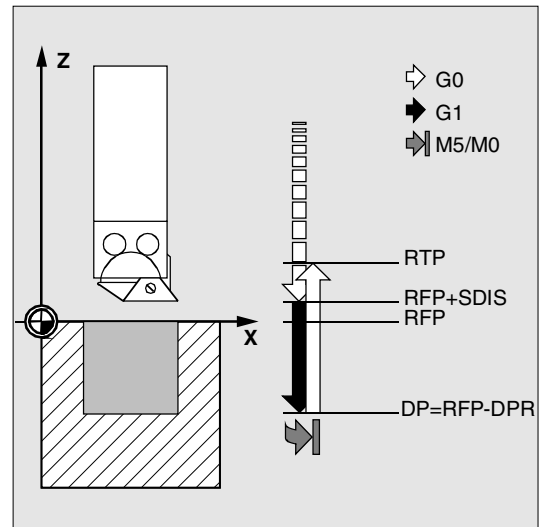


Description of parameters

See Section 2.1.2. (Drilling, Centering – CYCLE81) for a description of parameters RTP, RFP, SDIS, DP, DPR.

SDIR (direction of rotation)

With this parameter you determine the direction of rotation with which boring is performed in the cycle. If values other than 3 or 4 (M3/M4) are generated, alarm 61102 "No spindle direction programmed" is output and the cycle is aborted.

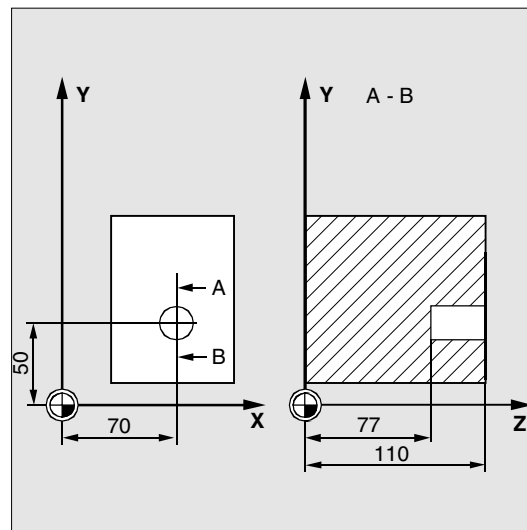




Programming example

Third boring pass

Cycle CYCLE87 is called at position X70 Y50 in the ZX plane. The boring axis is the Z axis. The final drilling depth is programmed as an absolute value. The safety clearance is 2 mm.



DEF REAL DP, SDIS	Definition of parameters
N10 DP=77 SDIS=2	Value assignments
N20 G0 G17 G90 F200 S300	Specification of technology values
N30 D3 T3 Z113	Traverse to retraction plane
N40 X70 Y50	Traverse to drilling position
N50 CYCLE87 (113, 110, SDIS, DP, , 3)	Cycle call with programmed spindle direction M3
N60 M30	End of program