

2.1.10 Boring 4 – CYCLE88



Programming

CYCLE88 (RTP, RFP, SDIS, DP, DPR, DTB, 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)
DTB	real	Dwell time at final drilling depth
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 4, a dwell time, a spindle stop without orientation M5 and a programmed stop M0 are generated when the final drilling depth is reached. Pressing the NC START key continues the retraction movement in rapid traverse mode until the retraction plane is reached.



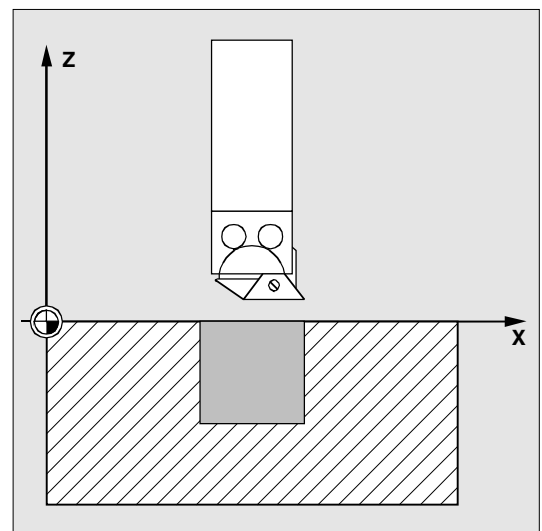
Sequence of operations

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
- Dwell time at final drilling depth
- Spindle stop with M5 (`_ZSD[5]=1`) or
- spindle and program stop with M5 M0 (`_ZSD[5]=0`). Press the NC START key after program stop.
- Retraction to retraction plane with G0



2.1 Drilling cycles



Description of parameters

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

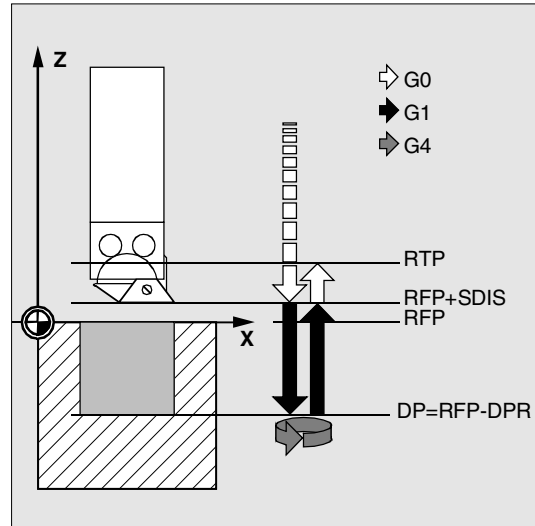
Cycle setting data _ZSD[5] see Section 3.2.

DTB (dwell time)

Parameter DTB is the dwell time at the final drilling depth (chip breaking) in seconds.

SDIR (direction of rotation)

The programmed direction of rotation is active for the movement to the final drilling depth.
If values other than 3 or 4 (M3/M4) are programmed, alarm 61102 "No spindle direction programmed" is output and the cycle is aborted.



Programming example

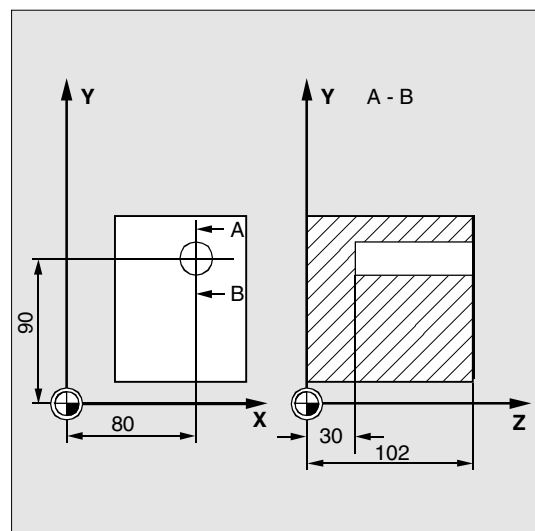
Fourth boring pass

Cycle CYCLE88 is called at position X80 Y90 in the ZX plane.

The boring axis is the Z axis.

The safety clearance is programmed as 3 mm. The final drilling depth is defined as a value relative to the reference plane.

M4 is active in the cycle.



DEF REAL RFP, RTP, DPR, DTB, SDIS	Definition of parameters
N10 RFP=102 RTP=105 DPR=72 DTB=3 SDIS=3	Value assignments
N20 G17 G90 F100 S450	Specification of technology values
N30 G0 X80 Y90 Z105	Traverse to drilling position
N40 CYCLE88 (RTP, RFP, SDIS, , DPR, -> -> DTB, 4)	Cycle call with programmed spindle direction M4
N50 M30	End of program

-> Must be programmed in a single block