

Recommendations for SHARK-Drill® (extra) short to standard holder.

Always select shortest possible drill

Important: carbide inserts only suitable up to approx. „6-7 x D“.

In order to obtain a problem free machining with the short (to medium) drills, the following has proven successful:

- 1) Check and possibly adjust coolant pressure (73)
- 2) Immediately after the first cut we suggest a chip breaking and cutting data review. The target should be short and easily removable swarf.
- 3) Measure the hole and check that tolerance is acceptable.
- 4) During the machining always ensure that the swarf is short and removed from the hole. Otherwise a pecking cycle may be required.

Swarf control

The following recommendations have also proved advantageous:

- Monitor swarf control
- If not yet at maximum feed rate potential, an increase in feed rate can lead to better chip breaking.
- If none of these changes are successful it may be necessary to insert a pecking cycle.

For many materials in the stainless steel area, but also others, it may not always be possible to achieve acceptable chip breaking simply by adjusting v_c and f . In such cases a pecking cycle will be needed. This should only be a small peck cycle of approx 0.1 mm.

A pecking cycle where the tool is removed out of the hole is not recommended.

As a rule take increments of approx 10% of the drill diameter (e.g. 20 mm diameter = 2 mm peck depth).

Recommendations for the extended and long SHARK-Drill®

Always select the shortest possible drill

Attention: Carbide inserts are not recommended.

In order to obtain a problem free machining with the extended and long drills, the following has proven successful:

- 1) Pilot drilling (approx. 1 x D) with same diameter. The drill point should be same or larger than SHARK-Drill® insert.

Other start options:

Centering with 132 degree drill point (up to 65 mm)

Centering with 144 degree drill point (from 65 – 114 mm)

Careful penetration (approx 50% of recommended feed rate) until full diameter is achieved.

- 2) Chip breaking and cutting data optimizing before starting. Target is short and easy to evacuate swarf.

Modify cutting data as below:

	Extended	Long
V_c [m/min]	0,9	0,85
f [mm/U]	-	0,90

- 3) Check the coolant pressure and flow rate. The coolant pressure (see page 73) can be adjusted using the following formula:

SHARK-Drill® - Extended x 1,3
 - Long x 1,5

- 4) Measure the hole and check that tolerance is acceptable.

- 5) Increase cutting data to previously established data and finish drilling, making sure that the swarf remains short and leaving the hole problem free. Otherwise a peck cycle may be required.