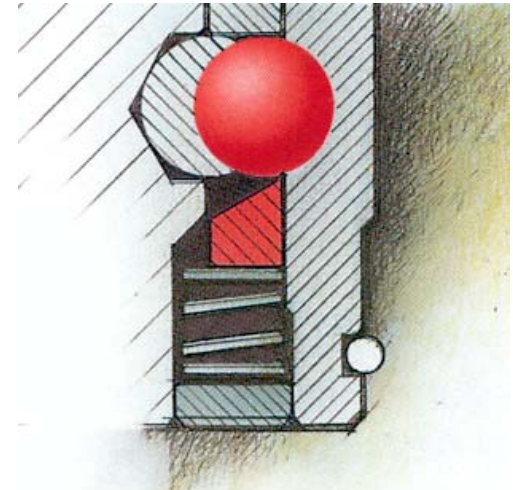


- Quick Change System
- Safety clutch
- Length compensation
- Floating system
- Additional hard start





Definition

The Quick Change System in the tapping chucks and adaptors guarantees tool changes in between very short times. This is possible by changing the taps in the adaptors or by changing of complete length adjusted adaptors.

Construction

Quick changing is done by steel balls which are locked in a position where the other part is fixed

Advantages

- very short tool change cycles on multi spindle machines (for example transfer lines) are possible
- tools can be complete with the adaptor, adjusted in the correct length, changed
=> Reducing the downtime through reducing the tool changing times



Safety Clutch

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Definition

The safety clutch prevents breakage of the tool because of blunt taps, wrong drilled wholes, blind wholes, less lubrication or other reasons

Construction

BILZ Safety Clutches are always ball clutches and never sliding clutches. So they are absolute resistant of wear

Advantages

- Using 100% of the tool life
- Engaging of the clutch before breakage will come
- no damaging of the tool



Definition

The in the chucks integrated length compensation compensates differences between feed and pitch. The feed of the machine is compensated while the safety clutch is engaging. The length compensation gives the possibility of multi spindle tapping operations with different pitches without synchronizing the speed to the feed

Construction

Length Compensation in tension:

The taps should always be cut in the tension compensation. The feed of the machine should be about 95% of the pitch. While the feed is stopped the after-running of the spindle may not be bigger than the rest of the length compensation in tension. A breakage of the tool would be the result

Length Compensation on pressure:

The chucks must have a length compensation on pressure while working with safety clutch. This a security to compensate the feed while the torque becomes to high.

Advantages

- increasing of the tool life because of reducing the axial power on the flanks
- compensation of differences in the pitch (multi spindle machines)
- compensating of differences between feed and pitch



Definition

The parallel floating system is used while the borings are spilled (cast iron) or manufactured on an other machine or other operations. In this cases the center line of the machine spindle is not in true alignment to the center line of the boring. The thread or the reamed boring will be out of tolerance.

Construction

The torque is driven over ball carried cross plates which compensate the center line difference.

Advantages

- reamed borings and threads are in between the tolerance
- wearing of the tool is reduced



Definition

The additional hard start of the chucks guarantees that the tool will begin to cut and the length compensation on pressure will not be pressed while starting the cutting operation. This is special required on tap formers which need more axial power than taps.

Construction

Balls are pressed over a spring powered ring with a certain angle in a groove. Before the normal power of the length compensation will work, the balls have to be pressed out of the groove against the spring power.

Advantages

Safe begin of cut from tap or former to guarantee the programmed thread depth.



1. milling

2. cutting/forming

- with length compensation
- Rigid Tapping
- Tapping Attachment



Threads Clamping System

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	Chucks with length compensation conventional machines	Rigid Tapping	Tapping-Attachments
Function	<ul style="list-style-type: none"> axial length compensation compensates differences in the pitches 	<ul style="list-style-type: none"> rigid chuck synchronized feed is necessary 	<ul style="list-style-type: none"> selfreversing attachment with a reversable gear
Advantage	<ul style="list-style-type: none"> modular design Using safety clutches avoids breakage of the taps constant low power on the flanks differences of no sychronized feed are compensated Quick Change System 	<ul style="list-style-type: none"> modular design Operation time is depending on the machine 	<ul style="list-style-type: none"> modular design changing of the spindle direction is not necessary high tool life (constant cutting speed) shortest possibility of producing threads
Disadvantage	<ul style="list-style-type: none"> Speed is limited (no synchronizing between speed and feed) 	<ul style="list-style-type: none"> reduced tool life because of high power on the flanks no Quck Change System 	<ul style="list-style-type: none"> handling in the machining center (magazin, more place) life of some gear parts is limited high invest at the beginning



Time comparison

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Time comparison M 10 / 17 mm deep

