



Miksch GmbH • Reulhoyer Str. 5 • 73007 Göppingen • Germany
Tel. +49-(0)7161/6724-0 • Fax +49-(0)7161/14429
E-Mail: miksch@miksch.de • www.miksch.de

Tool-changing systems
Modules of automation



Tool-changing systems

Table of Contents



Tool changer

Description	5
CUT tool changer	6
HTC tool changer	7
MTC tool changer	8



Gripper arm

BP gripper arm (rotating grippers)	9
BPS gripper arm (straight grippers)	9



Tool-changing system

Description	10
CTM tool-changing system	11
MCS tool-changing system	12

Table of Contents

Chain magazine

MCM chain magazine with transfer unit	13
--	----



Pick-up magazine

MDM disk magazine	14
MCM chain magazine	14



Special solutions

CUT52 tool changer	15
CTM40 tool-changing system	15
MCM chain magazine	15



Tool changer

Description

MIKSCH supplies cam-driven tool changers and tool-changing systems for metalcutting machinery. These carry out all the movements required for changing tools in a mechanically synchronised way. MIKSCH tool changers are suitable for installation in horizontal and vertical machines as well as installation adjacent to and opposite the spindle. Depending on the weight of the tool and the radius of the gripping arm, changeover times of less than 0.5 seconds are possible.

They also feature the acknowledged advantages of cam gears:

Fast – Accurate – Low-maintenance.

The systems can be supplied for all common tool holders.



Tool changer

CUT tool changer

The four sizes and universal installation positions make MIKSCH's CUT tool changer a real all-rounder.

Designation and tool weight:

- MAN20 for tool weights of up to 3 kg
- CUT31 for tool weights of up to 8 kg
- CUT41 for tool weights of up to 15 kg
- CUT51 for tool weights of up to 25 kg

Installation position:

- horizontal and vertical
- the tool changer can be positioned adjacent to or opposite a spindle

Drive:

- three-phase brake motor (standard)
- three-phase motor
- servo motor

Tool holders:

can be supplied for all common tool holder versions

Mirrored version can be supplied



Installation adjacent to spindle



Installation opposite horizontal spindle

Tool changer

HTC tool changer

MIKSCH's HTC tool changer is especially suited to horizontal installation positions.

Designation: HTC145 and HTC146

Tool weight: up to 15 kg

Installation position:

- horizontal
- the tool changer can be positioned adjacent to or opposite a spindle

Drive:

- three-phase brake motor
- three-phase motor
- servo motor

Tool holders:

- SK-40
- BT-40
- HSK-63, HSK-80
- Capto-C6
- Kennametal-KM63

Mirrored version can be supplied (HTC146)



HTC145-tool changer:
For horizontal installation

Tool changer

MTC tool changer

The MTC tool changer is especially suited to horizontal installation positions. Depending on how the tool changer is positioned at the installation site, the drive may be fitted either to the side or directly on the housing.

Designation: MTC050 and MTC052

Tool weight: up to 45 kg

Installation position:

- horizontal
- the tool changer can be positioned adjacent to or opposite a spindle.

Drive:

Versions:

- three-phase brake motor
- three-phase motor
- servo motor

Attachment:

- to the side of the housing
- directly on the housing

Tool holders:

- SK-50
- BT-50
- HSK-100
- Capto-C8
- Kennametal-KM100

Mirrored version can be supplied (MTC052)



MTC050 tool changer:
drive attached to the housing
directly with BP gripper arm



MTC050 tool changer:
drive attached to the side of
the housing with BPS gripper arm

Gripper arm

Gripper arm

MIKSCH's standard range contains two different types of gripper arms: the BP and BPS versions

BP gripper arm (rotating grippers)

The gripper arm is equipped with rotating grippers. The gripper arm's first movement is a rotary movement: It swivels into the tool.

Designation: BP gripper arm

Tool weight: up to 45 kg

Centre distance: up to 800 mm

Tool holders:

- can be supplied for all common tool holder versions



BP gripper arm

BPS gripper arm (straight grippers)

The gripper arm is equipped with straight grippers that give the tools lateral support. The gripper arm's first movement is a lifting movement:

Designation: BPS gripper arm

Tool weight: up to 45 kg

Centre distance: up to 800 mm

Tool holders:

- can be supplied for all common tool holder versions



BPS gripper arm

Tool-changing system

Description

A MIKSCH tool-changing system is a combination of a magazine and tool changer with gripper arm. MIKSCH distinguishes between tool-changing systems with disk magazines and those with chain magazines.



Tool-changing system

CTM tool-changing system

The CTM tool-changing system comprises a disk magazine with rotary indexing table combined with a CUT tool changer with gripper arm. The tool case in the disk magazine swivels 90° into the tool change position to allow the gripper arm to grip the tools.

Designation and tool weight:

- CTM20 for tool weights of up to 3 kg
- CTM30 for tool weights of up to 8 kg
- CTM40 for tool weights of up to 15 kg
- CTM50 for tool weights of up to 25 kg

Installation position: horizontal and vertical

Drive:

- three-phase brake motor (standard)
- three-phase motor
- servo motor

Tool holders:

can be supplied for all common types of tool holder

Number of spaces: 12, 20, 30, 48

All CTM tool changing systems can be supplied in a mirrored version



CTM40 tool-changing system with 20 spaces

Tool-changing system

MCS tool-changing system

The MCS tool-changing system consists of a MCM chain magazine with tool changer. The tools are removed from the spindle and magazine using the tool changer with gripper arm and then replaced. To do this, the tool case swivels 90° into the tool change position.

Designation: MCS tool-changing system

Tool weight: up to 45 kg

Installation position: horizontal and vertical

Drive:

- chain magazine: servo motor
- tool changer:
 - three-phase brake motor
 - three-phase motor
 - servo motor

Tool holders:

- SK-25 – SK-60
- HSK-25 – HSK-160
- other versions can be supplied to match sizes

Number of spaces: 20 – 60

MCS040 tool-changing system:
equipped for HSK-A63 tool holder



Chain magazine

MCM chain magazine with transfer unit

The transfer case of the transfer unit takes the tool out of the magazine gripper of the MIKSCH chain magazine by moving from the rear over the tool holder. The transfer case then moves to the side and makes the tool available for other assemblies, e.g.:

- for a tool changer with gripper arm
- for another chain magazine

Designation: MCM chain magazine

Tool weight: up to 45 kg

Installation position: horizontal and vertical

Drive: servo motor

Tool holders:

- SK-25 – SK-60
- HSK-25 – HSK-160
- other versions can be supplied to match sizes

Number of spaces: 20 – 60

MCM050 chain magazine with transfer unit
equipped for Capto-C8 tool holder



Pick-up magazine



MDM050 disk magazine:
equipped for
SK-50 tool holder

All magazines that transfer tools directly to spindles are known as pick-up magazines.

MDM disk magazine

The MIKSCH MDM disk magazine is a pick-up system. The disk and tool grippers serve as the tool magazine. The magazine is driven directly by a servo motor and makes the tools available at the transfer position.

Designation: MDM disk magazine

Tool weight: up to 25 kg

Installation position: vertical

Drive: servo motor

Tool holders:
can be supplied for several tool holder versions

Number of spaces: 12, 20, 30

MCM chain magazine

The MIKSCH MCM chain magazine is a pick-up system. Tool grippers which serve as tool magazines are fitted on the chain links.

Designation: MCM chain magazine

Tool weight: up to 25 kg

Installation position: horizontal and vertical

Drive: servo motor

Tool holders:

- SK-25 – SK-60
- HSK-25 – HSK-160
- other versions can be supplied to match sizes

Number of spaces: 20 – 60

MCM040 chain magazine:
equipped for HSK-A63 tool holder

Special solutions



CUT52 tool changer
fitted on linear unit to remove a tool
from a chain magazine and guide it
to the spindle

CTM40 tool-changing system
fitted on linear unit to guide the
tool-changing system to the spindle



MCM chain magazine
without swivel equipment:
the tool is taken out of the
magazine directly