

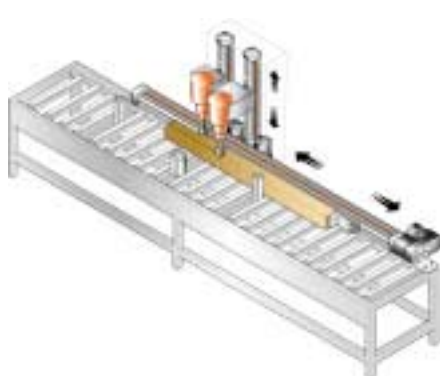
**Profile Cutting Machines**  
Intricate profile movements  
of water jets and lasers



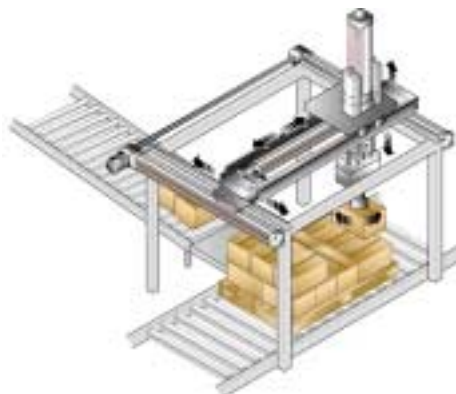
**Slitting Machines**  
High speed traverse applications  
for slicing of materials



**Material Handling Systems**  
Vertical and horizontal transfer  
movements



**Milling Machines**  
Precise slow speed feeding in 2-axes

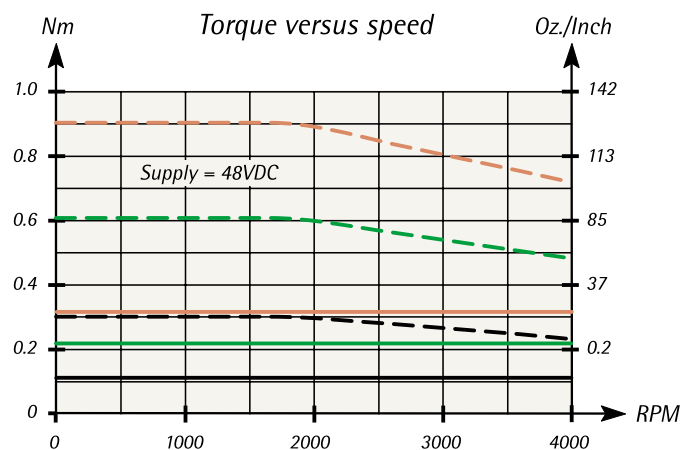


**Auto Handling**  
High speed pick and place  
movements

**Other applications**

- Replacement for pneumatic solutions
- Replacement of step motors, offering much faster response and speed
- Conveyer systems
- Replacement for small frequency inverters
- Electronic gearing with analogue speed offset
- $\pm 10V$  speed/torque driver for external controllers
- Screw and toothed belt pick and place robots
- Labelling dispensers

Technical specifications	MAC50	MAC95	MAC140	Unit
Supply Voltage	12-48	12-48	12-48	VDC
Av. current @48VDC/rated load	1.2	2.4	3.2	ADC
Peak supply current @48VDC	3	6	9	ADC
Speed range (nominal)	0-4000	0-4000	0-4000	RPM
Rated power @4000RPM	46	92	134	W
Cont. torque @tamb.-25°C	0.11	0.22	0.32	Nm
Peak torque @tamb.-25°C	0.32	0.62	0.9	Nm
Rotor inertia	0.075	0.119	0.17	kgcm <sup>2</sup>
Physical dimensions	Ø59x112	Ø59x131	Ø59x153	mm
Weight (without exp. module)	0.6	0.85	1.1	kg
Protection class	IP42 / IP67 optional			



MAC50      MAC95      MAC140

— — — = Peak Torque      — — — = Peak Torque      — — — = Peak Torque  
 — — — = Average Torque      — — — = Average Torque      — — — = Average Torque



...when motors must be controlled

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# The MAC motor



**t h e c o m p l e t e  
m o t i o n s o l u t i o n**

The major advantages of the MAC motor are:

- High performance
- Cost-effective
- Decentral intelligence
- Quiet and maintenance free operation
- High efficiency
- Low operational cost
- Less machine space required
- Low installation cost. Shorter and faster installation
- Fewer possibilities for wiring errors
- Minimum positioning error during operation and halt
- Modular flexibility
- New users can easily set up the system

Main Features (basic MAC motor):

- Ideal for high volume applications in harsh industrial environments
- Accepts position and velocity commands sent via 2 serial interfaces
- Genuine AC-servomotor with high torque at high speed
- Wide range of supply voltage 12-48VDC
- Pulse and direction input makes it possible to replace any step motor
- Quadrature output to master controller when used as a  $\pm 10V$  driver
- Great flexibility due to many I/O possibilities and many functions
- 2 outputs for In position and Error indication
- High performance 4th-order position and velocity filter which only needs a single inertia adjustment
- Oscillations due to non-linear mechanical systems are avoided
- Switching technology in motor and power supply
- High performance serial protocol with addressing facilities
- Easy and simple Windows program available for installation /set-up

# The MAC motor - the complete motion solution

Brushless servo motor with integrated controller  
All necessary components in one unit



MacTalk setup and installation software



Optical encoder (4096 CPR) for precise positioning and speed regulation



Ball bearings  
for maintenance  
free operation

3 phase brushless  
servo motor

Hall sensors for initializing  
and maintaining motor in a  
stationary position after  
powering up

A wide range of planetary  
and backlash free gears can be  
provided for the MAC motors



## MAC motor expansion modules

Module with D-Sub connectors

Type: MAC00-B1

- Ideal for pulse,  $\pm 10V$  input or RS232/422/485 interface
- Home switch input
- LEDs to indicate status
  - Home switch status
  - Input power status
- Sourcing outputs
- Optional with integrated cables



NanoPLC module with D-Sub conn.

Type: MAC00-R1

- Ideal for stand-alone operation with sequential program execution
- 8/4 Opto isolated in-/out
- Outputs up to 200mA
- LEDs to indicate
  - Output status
  - Home+ power status
- RS232/RS485 interface



NanoPLC with integrated cables

Type: MAC00-R2

- Ideal for stand-alone operation with sequential program execution
- 8/4 Opto isolated in-/out
- Outputs up to 200mA
- Protection IP67
- Status outputs
- RS232/RS485 interface



Profibus-DP with integrated cables

Type: MAC00-FP2

- Control and setup via 12Mbit/s Profibus-DP
- Logic I/O's for
  - High speed start/stop
  - In position indication
  - Home switch
- Protection IP67
- RS232/RS485 interface
- Optional with D-Sub conn.



IP67 Versions

- Resistant against rough chemicals
- Cost-Effective in harsh wet environment
- Ideal for the food processing, pharmaceutical and chemical industries
- A double shaft seal and leak-proof cable entry provide watertight sealing
- A thick protective layer of epoxy surface treatment is bonded to the motor body



Other MAC motor expansion modules planned

Ethernet module, CAN-bus module, Devicenet module, Wireless module and Advanced miniPLC module.

Customer-specific modules on request.