



**HIGH PRESSURE &  
MICRO  
hydraulic solutions**

## Industries and Applications

For each application offering little space thus requiring intelligent solutions, we are the reliable partner with thorough application knowledge in high pressure and micro hydraulics quickly responding to your needs.

From component to system.



# BIERI Newsletter July 2018

**BIERI**  
HYDAC INTERNATIONAL

Successful use of BIERI Products -

Demonstrated here in Lifting and Transport Systems

## Machine Lifting Systems



- Heavy-load transporter with large transformers



- Load is lifted using four synchronized cylinders and set down on transport rollers for further positioning

### Application description

Lifting heavy loads of often several tons in order to transport, position or align them using single acting hydraulic cylinders. Depending on the application, the loads to be lifted may vary significantly and may include machines in workshops, large transformers or structural components.

### Challenge

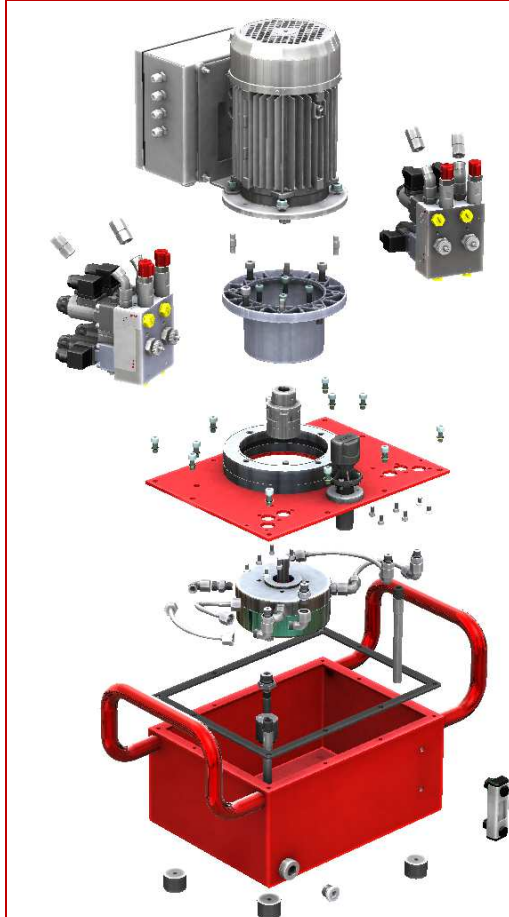
For lifting heavy and above all extensive loads, several cylinders are usually used simultaneously. It is not uncommon that this results in additional demands being made on the synchronization of the cylinders.



- Customized power unit with BIERI pump and application-specific valve blocks

## Our Solution

### From assembly



### To power unit



**MKA** power unit with four circuits and equipped as follows:

- Pump flow at each of the four pressure outlets independent of the load distribution
- Oil reservoir made from welded steel sheet with removable cover sheet for the assembly of the multi-outlet pump via bell housing and damping ring.
- Valve blocks and breather filter are located on the cover of the oil reservoir and easily accessible.
- Electrical control system in switch box, fixed to engine with bracket
- Cable remote control with switches arranged in two parallel lines for raising resp. lowering the cylinders
- Control system completely wired ready for operation



# MKA

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## Multi-circuit power unit → 700 bar

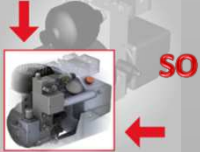
### The solution for lifting applications with synchronized cylinders

#### HIGH PRESSURE & MICRO hydraulic solutions

For each application offering little space thus requiring intelligent solutions, we are the reliable partner with thorough application knowledge in high pressure and micro hydraulics quickly responding to your needs.

From component to system - our solutions stand for:

Optimized installation space



Multi-functionality



Energy efficiency

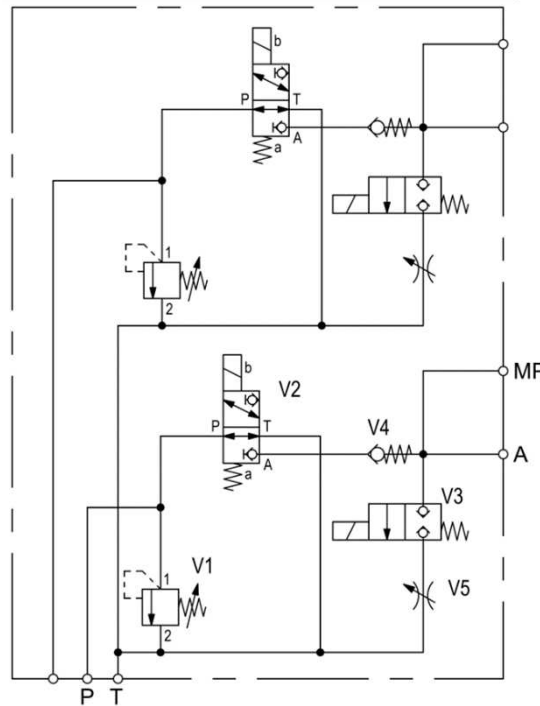


Sustainability - Reliability



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#### Hydraulic diagram of one valve block



#### Product Description

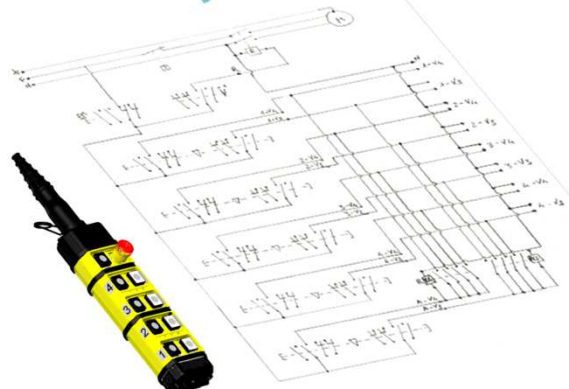
The MKA power unit is based on a **BIERI multi-outlet pump (MRK)** and has four hydraulic independent pressure outlets. The outputs are implemented in pairs in two valve blocks which are equipped as follows:

- 2x connection each for hydraulic device (single acting lift cylinder, A) and pressure gauge (MP)
- 2x pressure relief valve 700 bar (V1)
- 2x bidirectional 3/2 valve for controlling the unthrottled pump circulation (V2)
- 2x 2/2 valve for the throttled lowering of the hydraulic device (V3)
- Check valve for holding the load during the switching operation (V4)
- Adjustable throttle for controlling the lowering speed of the cylinder (V5)

#### Technical basic data

- p 700 bar HP
- Vg/HP 4x 0.4 cm<sup>3</sup>/rev
- n 1500 rev/min
- P 2.2 kW
- U 1-ph (230 V – 50 Hz) or 3-ph (400/230 V – 50 Hz)
- Operating mode S3
- Tank contents fill volume 16 l useful volume capacity 10 l
- Dimensions 628 x 454 x 550 mm
- Weight approx. 50 kg

#### Electrical control system



#### Features → Advantages

- Externally mounted motor:  
→ Less heating of oil
- Application-specific valve blocks  
→ Compact and space-saving implementation of required control function as well as excellent accessibility of the hydraulic connections and throttles
- Multi-outlet pump  
→ Synchronization of lift cylinder independent of load due to four independent hydraulic circuits
- Control using two-rowed hand-held remote  
→ Cylinders may be controlled both individually and jointly using a concentration switch