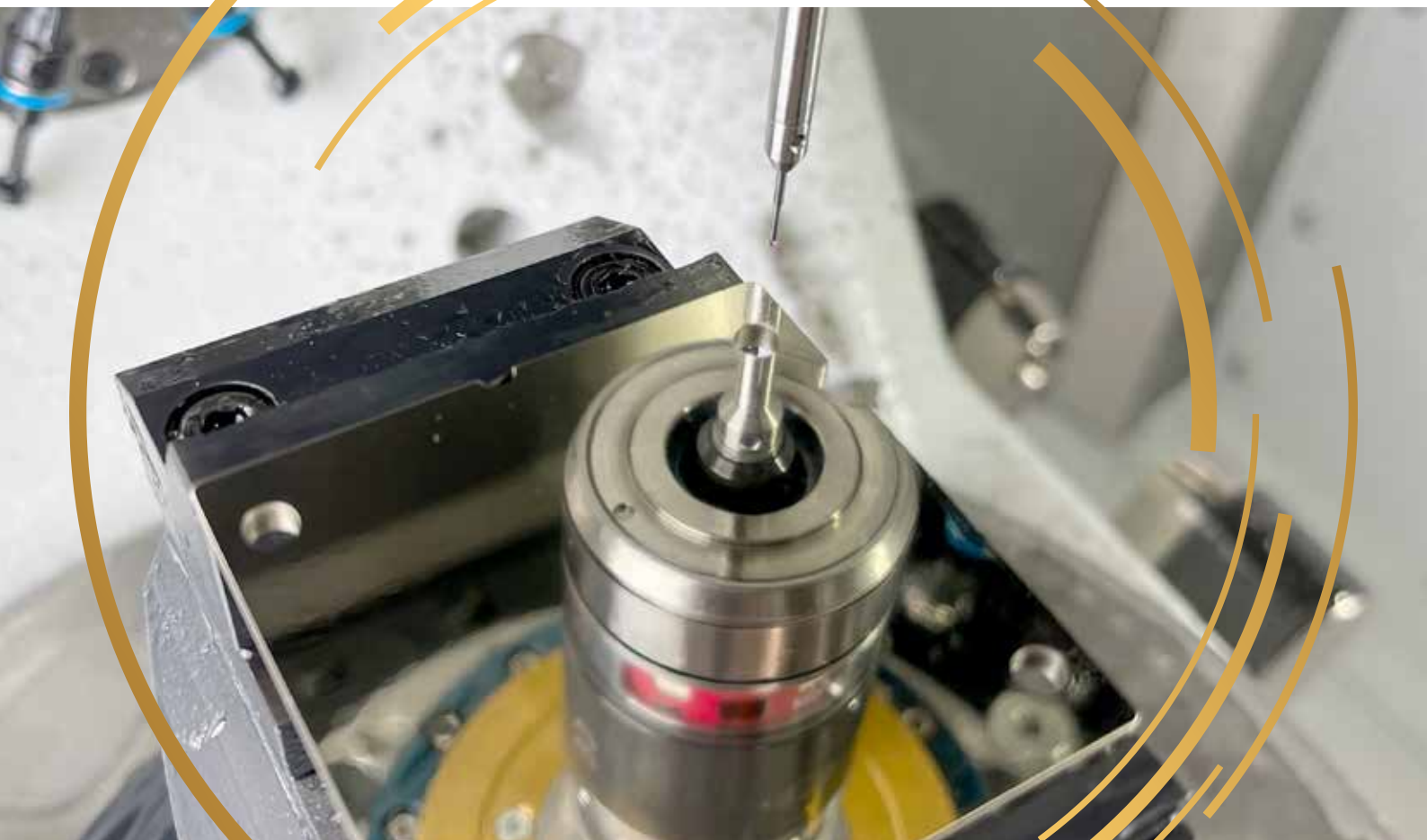


# MOLD & DIE SPINDLES

PRECISION. HIGH PRECISION.





# TECHNOLOGY LEADER

## FOR PRECISE, FAST AND POWERFUL ROTATION

We are the world leader in precise, fast and high-performance rotation. Our more than 85 years of experience is reflected in all our technical innovations. As an international technology leader, we distinguish ourselves through our expertise in the areas of development, simulation, production and performance testing – market leaders from all over the world rely on FISCHER products.

Thanks to high-torque motors, our motor spindles work highly dynamically with extremely short start-up and braking times and impress with their high power density. Standardized tool holders as well as robust feeding and clamping systems ensure flexibility and durability. Fast tool changes and automatic changing systems enable reliable use without restrictions.

Thermal symmetry and long-term stability as well as excellent running smoothness and long-term accuracy make our spindles the preferred choice for the extreme requirements in the field of mold and die.

We equip selected variants with the unique CSC (Compact Shaft Cooling) cooling system, which offers several outstanding advantages due to the internal cooling of the spindle shaft. Even under the highest load and at high speeds, the spindle shaft heats up only minimally and hardly expands. Even with changing loads, speeds and torques, it remains thermally stable, thus shortening the time to thermal constancy.

# SPINDLE FEATURES

## HIGH PERFORMANCE IN PRECISION MANUFACTURING

Molds and tooling are an essential part of the manufacturing industry. Exact shaping and material processing are the basis for precision. They are crucial for the production of precise and complex components in a wide range of industries. These include the automotive, medical, aviation, consumer goods, food and packaging industries as well as many other industries.

Molds and tools are made of different materials and with a wide variety of manufacturing processes. This places high demands on a spindle and requires a combination of flexibility and absolutely consistent precision.

### High Accuracy

We deliver at HSK-40

- Standard R1/R2:  $\leq 0.003/0.01\text{mm}$
- Grinded when assembled:  $\leq 0.0015/0.005\text{mm}$

### High speed Requirements

We deliver

- HSK-32: Up to 60,000 rpm
- HSK-40: Up to 42,000 1/min (up to 45,000 1/min with CSC)
- HSK-63: Up to 30,000 rpm

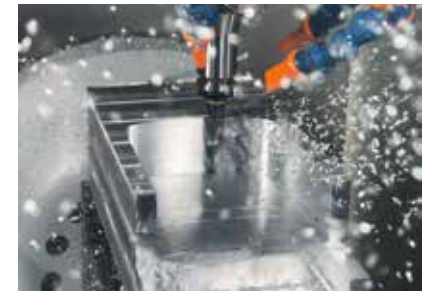
### Smooth running

We offer lowest vibration at HSK-40

- Standard V1/V2:  $\leq 1\text{mm/s}$

### Shaft Cooling Option Facts

- Lower axial expansion (up to -70%)
- Reduced saturation times after tool and speed changes (up to -80%)
- Reduced temperature input into the new tool or probe due to the cool tool interface
- Further increased service life due to thermally constant conditions



## YOUR CONTACT



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Sales

# MOLD & DIE SPINDLES

## HIGHEST PERFORMANCE IN A COMPACT DESIGN

| TYPE                  |                           | MFW-1224/60  | MFW-1224/42        | MFW-1224/45  | MFW-1406/24  |
|-----------------------|---------------------------|--------------|--------------------|--------------|--------------|
| Outer diameter        | D [mm]                    | 120          | 120                | 120          | 140          |
| Tool interface        |                           | HSK-E32      | HSK-E32<br>HSK-E40 | HSK-E40      | HSK-E50      |
| Max. speed            | nmax [min <sup>-1</sup> ] | 60.000       | 42.000             | 45'000       | 24'000       |
| Lubrication           |                           | DLS          | DLS                | DLS          | Grease       |
| Direction of rotation |                           | left & right | left & right       | left & right | left & right |
| Power S1 / S6 40%     | P [kW]                    | 8.5 / 7.9    | 15.0 / 18.75       | 15.0 / 20.0  | 15.0 / 18.7  |
| Torque S1 / S6 40%    | M [Nm]                    | 3.4 / 3.9    | 6.0 / 7.6          | 6.0 / 7.5    | 23.0 / 28.8  |
| Nominal speed         | nN [min <sup>-1</sup> ]   | 24'000       | 24'000             | 24'000       | 6'200        |
| Motor frequency       | [Hz]                      | 2'000        | 1'400              | 1'500        | 800          |
| Motor technology      |                           | ASYN         | ASYN               | SYN          | SYN          |
| Voltage               | [V]                       | 350          | 420                | 446          | 490          |
| Current S1            | [A]                       | 22           | 33                 | 28           | 60           |
| Length                | L [mm]                    | 365          | 333                | 383          | 465          |
| Weight                | [kg]                      | 21,0         | 24,0               | 25,0         | 38,0         |
| Shaft cooling system  |                           | –            | –                  | Yes          | –            |
| Coolant Through Unit  |                           | Yes          | Yes                | Yes          | Yes          |
| Encoder               |                           | Yes          | Yes                | Yes          | Yes          |
| OPTIONS               |                           |              |                    |              |              |
| Shaft clamping        |                           | –            | –                  | Yes          | –            |
| Dilation sensor       |                           | Yes          | Yes                | Yes          | Yes          |
| Vibration sensor      |                           | Yes          | Yes                | Yes          | Yes          |

| TYPE                  |                           | MFW-2102/20   | MFW-2104/24  | MFW-2702/20   | MFW-3601/08          |
|-----------------------|---------------------------|---------------|--------------|---------------|----------------------|
| Outer diameter        | D [mm]                    | 210           | 210          | 275           | 360                  |
| Tool interface        |                           | HSK-A63       | HSK-A63      | HSK-A100      | HSK-A100<br>HSK-A125 |
| Max. speed            | nmax [min <sup>-1</sup> ] | 20'000        | 24'000       | 20'000        | 8'000                |
| Lubrication           |                           | DLS           | DLS          | DLS           | DLS                  |
| Direction of rotation |                           | left & right  | left & right | left & right  | left & right         |
| Power S1 / S6 40%     | P [kW]                    | 25.0 / 31.0   | 29.0 / 38.0  | 50.0 / 62.0   | 100.0 / 123.0        |
| Torque S1 / S6 40%    | M [Nm]                    | 119.4 / 148.0 | 69.2 / 90.7  | 251 .0/ 313.0 | 1'000.0 / 1'239.0    |
| Nominal speed         | nN [min <sup>-1</sup> ]   | 2'000         | 4'000        | 1'900         | 1000                 |
| Motor frequency       | [Hz]                      | 1'000         | 800          | 1'333         | 533                  |
| Motor technology      |                           | SYN           | ASYN         | ASYN          | ASYN                 |
| Voltage               | [V]                       | 814           | 350          | 380           | 420                  |
| Current S1            | [A]                       | 131           | 66           | 133           | 199                  |
| Length                | L [mm]                    | 558           | 542          | 707           | 930                  |
| Weight                | [kg]                      | 103,0         | 95,0         | 220,0         | 550,0                |
| Shaft cooling system  |                           | –             | Yes          | Yes           | –                    |
| Coolant Through Unit  |                           | Yes           | Yes          | Yes           | Yes                  |
| Encoder               |                           | Yes           | Yes          | Yes           | Yes                  |
| OPTIONS               |                           |               |              |               |                      |
| Shaft clamping        |                           | –             | –            | Yes           |                      |
| Dilation sensor       |                           | Yes           | Yes          | Yes           | Yes                  |
| Vibration sensor      |                           | Yes           | Yes          | Yes           | Yes                  |

**OPTIONS**  
The **dilation sensor** is a spindle-integrated length measuring sensor, which determines the axial shaft expansion and enables length compensation on the machine.

The **vibration sensor** integrated into the spindle can be used to detect imbalance and provides the signals essential for process and spindle monitoring.

| MFW-1412/36 | MFW-1412/36 | MFW-1709/30 | MFW-1709/30 |
|-------------|-------------|-------------|-------------|
|-------------|-------------|-------------|-------------|



# PERIPHERALS

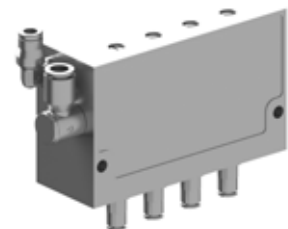
## PERFECT FOR YOUR SPINDLE



### Oil-air central lubrication unit

Pre-assembled central lubrication unit on aluminium base plate with the following components:

- Lubrication pump with level control
- Main shut-off valve
- Ultra-fine filter for oil
- Air treatment for central lubrication unit and sealing airt



### Oil-air dosing unit

- Used for oil metering in spindles with oil-air bearing type
- 100 % tested and certified
- Compatible with current competitor product



### Exhaust air filter

- For collecting waste oil coming out of spindle oil return path
- Dampens the air noise of the lubrication system



### CSC Aggregate

- Shaft cooling unit for all common CSC spindles
- Low pressure for shaft cooling
- High pressure for tool change



### Frequency converter

The correct design of the converter is decisive for the smooth running, power development and heat generation of your spindle unit. FISCHER has been working closely with the leading converter manufacturers for years and regularly exchanges experience. As a result, we offer you optimum conditions when defining the inverter and are happy to support you in choosing the suitable supplier.



### Filter choke

When using pulse width modulating (PWM) frequency inverters in the low-cost price segment, the interposition of a motor choke is mandatory. The FISCHER test center supports you in the design of the motor choke.

The ideal frequency inverter/choke combination results in less heat loss in the rotor and stator and higher power output. Results were measured and documented on the FISCHER test bench.



### Operating fluids

Proven auxiliary and operating materials such as lubricating oil, hydraulic oil, coolant and coolant additives for maximum service life of FISCHER products.



### Accessories

Our accessories can be found on our website at:

[www.fischerspindle.com/accessories](http://www.fischerspindle.com/accessories)

# SERVICE AND REPAIRS

## THE RIGHT OFFER FOR EVERY NEED

### SERVICE AND SUPPORT

- On-site support: Support for commissioning of spindle systems
- Maintenance training and application consulting
- Service visits for minor repairs or optimizations
- On-site vibration and bearing analysis
- Trainings

### REPAIRS OF FISCHER SPINDLES AND MILLING HEADS

- FISCHER Spindle Group has service centers and production facilities around the world
- Repair FISCHER spindles with original parts; refurbish key components as needed; bring spindle to like new condition.
- Express repairs
- Repair of FISCHER milling heads

### THIRD PARTY SPINDLE REPAIRS

- We repair all brands of spindles in our worldwide group companies
- Analysis, repairs and retrofits of all your spindles
- FISCHER quality, service and advice
- All from one source

### SERVICES

#### Spindle hotel

Your spindle is stored at FISCHER and checked for proper function at regular intervals. The warranty begins with the call-off and delivery of the spindle.

#### Spindle pool for machine manufacturers

While your spindle is being repaired, you can benefit from one of our pool spindles. You can continue adding value without interruption and keep production going.

#### Exchange spindles for end customers

We offer exchange spindles available in short notice with your defective spindle. This depends on the spindle type and availability.

#### Spindle repair service

We offer a professional and binding repair service. On request we provide a detailed analysis of the defective spindle as well as individual quotations.

#### Spindle Taxi

Your spindle will be picked up free of charge in Europe.

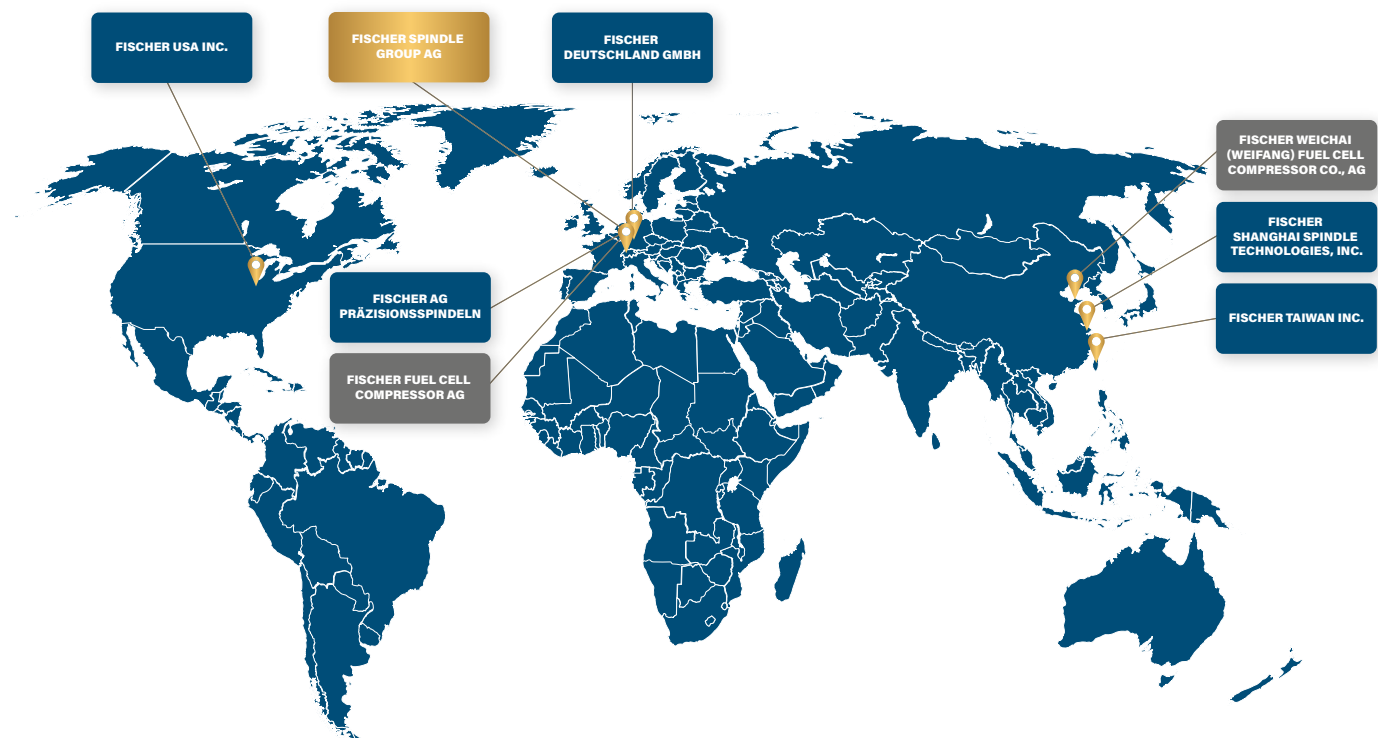
#### Spindle periphery

We support you in the selection and design of the appropriate periphery for a safe operation of the spindle.

# LOCATIONS WORLDWIDE

## OF THE FISCHER GROUP

The FISCHER family is present at five locations worldwide and employs over 400 people. A strong global team with the greatest enthusiasm for technology, ensuring customer satisfaction through successful, innovative products and outstanding service.



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**Precision.**



**Speed.**



**Power.**

[www.fischerspindle.com](http://www.fischerspindle.com)