

**For increased high radial  
and axial loading**

**Designed waterproofed  
(e. g. for stoneworking)**

type of protection IP 54

CSA version possible

type of protection IP 55  
(possible on request)



# Special Motors

## three-phase motor with squirrel cage rotors

type of protection IP 54



### Special features

The special motors given in this list are suitable for the rough operating conditions of the stone-working industry. Special seals prevent the penetration of dust and water spray during stone machining. The extraordinarily strong shaft ends are designed for direct tooling and can be executed as cylindrical ends with fitted key and locking screw thread or with taper.

The bearing shields of these motors are provided with feet in order to lead the high forces from strong rolling bearings directly to the foundation or support. On special request the shaft of the motor can be supplied as a hollow shaft. Therefore, a convenient means of supplying spray water directly into the centre of the tool, e. g. using cup grinding wheels, is possible.

### General

The motors are totally enclosed, surface cooled and they meet the conditions of protection type IP 54 according to DIN EN 60034-5/VDE 0530 part 5. The motors can be supplied for several rotating speeds. The long slender motor with low profile and the advantage of very little loss of cutting depth suitable especially for sawing

purposes and also for those cases in which the diameter of the motor is important due to space considerations. All motor types are available according to the CSA standards (file no. L.R. 16865).

### Mechanical design Housing and bearing shields

The housings are flat and long, they have outside ribs for cooling and they are made in grey cast iron. The bearing shields have mounting feet and additional lugs for fastening a protection hood or a spray arrangement.

All assembly joints have special seals. The bearing shields of types K 140 W are made of cast steel or steel welded, the remaining types are made of grey cast iron.

### Terminal box

The split terminal box is sealed to meet conditions of protection type IP 55 and its lower part is filled with synthetic resin. The terminal box is situated normally on the right-hand side on viewing towards the drive end but can also be attached on the left-hand side on request.

On rotating the box respectively by 90° it is possible to attach a conductor on each side. After completion of the motor, however, this rotation cannot be carried out owing to the presence of synthetic resin.

### Shafts

The motors have labyrinth seals on both bearing shields and they have partly additional V- and O-rings. Labyrinth seals are dynamically acting seals which become fully effective only at the nominal rotating speeds of the motor.

The shaft ends are produced according to ISA fit k6, from 55 mm diameter upwards to ISA fit m6. Hollow shafts or special shafts can be supplied within the maximum possible diameter range.

### Bearings

All motors are provided with sufficient dimensioned roller bearings and have facilities for re-lubrication.

The bearings are held by powerful dished spring stacks, free of axial play and allow also a vertical positioning of the motor.

### Saw blade flanges

On supplying flanges for holding a diamond saw blade we ask you to give us the accurately specified clamping diameter provided by the saw blade suppliers as an absolutely necessary information. In order to ensure vibration free running the saw blade flange at the motor-end is once again faced by turning after the installation on the motor in relation to the shaft, and after that it must no longer be dismantled.

Saw blade flanges require a matching shaft end depending on the diameter. Please examine the shaft end shown on the drawing whether it is suitable for the specified saw blade flanges. It is possible to take into account different lengths and diameters up to  $d_{max}$ . Tools and grinding wheels must be well balanced to ensure a quiet running of the motor.

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The given rating information refers to a frequency of 50 Hz. The motors meet the DIN EN 60034-1/VDE 0530 part 1 regulations. A performance reduction is necessary when the motors are installed into ambient temperatures over 40°C (104°F) or at height exceeding 1000 m (3,280 ft) above main sea level. Depending on the type the motors develop a pull-out torque of approximately 250 to 350 % of the nominal torque. On short

period utilisation of these performance peaks it is recommended to dimension the protection arrangement and the supply conductor according to higher current met in these cases. However, we ask you to make special inquiries here. All motors can be supplied for different voltages and frequencies. The rotors of all motors have die cast aluminium cages and current displacement characteristics during starting.

## Electrical design Rating and voltage

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For the insulation of the motors high quality insulating materials are used. The impregnation is effected according to the latest technology of vacuum processing.

The winding meets the conditions of insulation class "F".

## Insulation

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The motors can be switched on directly or with a star-delta switch, if the local connection regulations require this.

## Switching on





