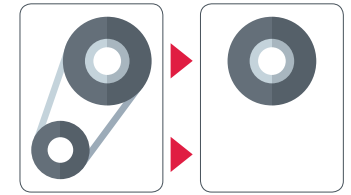


# EASY MOTION MOTORS



## A solution to enhance the energy saving and the safety of the roller mills

V Project S.R.L., thanks to its twenty-year professional experience in the milling sector, can propose a solution to improve the milling experience in the grinding room.

It is a kinematic system of grinding rollers which can be applied to the majority of the roller mills on the market (also *retrofit*). It reduces significantly the consumption and it can solve some problems of maintenance and machines' safety.

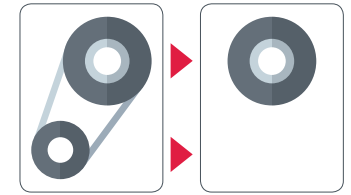
**The system consists in a motor keyed directly to the quick roller and attached with a floating system to the machine, through a reaction arm.**

This kind of motor was specifically designed for this kind of use and it can boast even a **liquid cooling system** (generally drinking water in order to avoid the contamination) and to extract the thermal energy produced by the machine and then take it out of the room or of the building.

In this way, you can have **very high specific power** in proportion to the dimensions. It is used a **synchronous variable reinforced reluctance motor** specifically designed to be **extremely reliable**, to have a **reduced weight** (in proportion to the power implemented) and a **high level of scalability**.



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The system is available in **three sizes** which cover the entire range of the asynchronous motors, generally used between **5,5 and 37 KW**.

These motors are characterized by **a quite flat yield curve, in proportion to the load. This makes possible the use of bigger motors, also on the passages which need less power, without increasing the losses** and reducing at the same time the stock of spare parts to two or even one single kind of motor for all the machines.

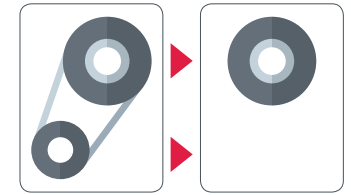
**The motor is equipped with a specific drive which was specifically chosen and calibrated** to change the speed and to make the rollers move in the opposite direction, in order to perform a cleaning phase before the milling cycle.

The combination of motor and drive ensures an excess loads' more precise rotation and **control in comparison with the traditional systems**. It also ensures a total protection in case of rollers' block.

In case of **partial initial block**, detected precisely by the system, it is possible to stop the feeding and open the rollers without stopping them, eliminate the cause of the block (rollers too close, links, excess load of the distribution) and start the milling again.



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### MAIN STRENGTHS

- **Real energy saving**, more or less from **25 to 30%** in comparison with the asynchronous motor with belt transmission
- **Longer duration of the return belt** and, in general, of the machine
- **Low motors' running temperatures**
- **Reduced maintenance** because of the lack of belts and thanks to the presence of little motor cushions
- **Increased safety from injuries for the reduced number of moving parts** and better safety for the absence of belt slippage or motor bearings' blockages
- **Better machine's cleaning**
- **Decreasing of the ambient temperature**
- **Silent**
- **It can be potentially applied to any rolling mills**
- **Reduced motors' weight** (in comparison with the traditional ones) and **simple assembling and disassembling procedures**
- **Further possibility to reuse the thermal cooling energy for other possible uses** (offices' heating) obtaining, in this way, an almost unitary system's yield

### ESTIMATE FOR THE RETROFIT'S INSTALLATION

In order to make an estimate, please consider the following data:

- **Traditional motor 22 kW**
- **Average motor's load: 70%**
- **Hours of use per year: 6.500**
- **Cost of the energy in the first year: 0,18 €/kWh**

This motor's consumption is 100.100 kWh, i.e. 18.018 euro in the bill. Considering a 25% estimated possible saving, the consumption is reduced to 75.075 kWh, that is 13.513 euro, i.e. a net saving of 4.504 euro/year.

Taking into account the cost of the installed motor, of the cooling rate and of some possible modifications to the machine (which total 9.000 euro) it is clear that, without considering the tax depreciation, the possible other incentives, the saving on the maintenance and the long-lasting machine's running, **in two years time you can have an economic gain.**

It is evident that in case of new installation, the economic gain is even bigger because, in this case, it is not necessary to provide pulleys, belts, asynchronous motor, motor's installation beam, tightening parts etc.

✓ PATENT PENDING