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PRESS RELEASE

Automatic stripping of core-moulded pipe seals

Corbas, France – December 1st, 2015 – REP international offers a simple and economic solution to a problem that is familiar to manufacturers of pipe seals.

The stripping process… often the stumbling block of the moulding process

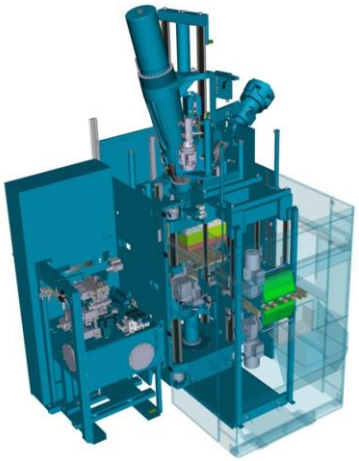
When performed manually, the stripping process is often very difficult and productivity is considerably impacted; when being performed automatically, the challenge is to do it quickly without any heat loss and without production stoppages, due to overlapping seals. The solutions generally implemented in the industry today, such as moulding with two sets of rotating core bars, require a very large press opening stroke to perform the core bar rotation outside the press and/or front and rear stripping units that lead to considerable space requirements and very high capital costs.

A simple and efficient solution

REP has recently worked on several projects and today offers to its customers a competitive and profitable turnkey solution for reduced size on the automatic stripping of EPDM pipe seals of any size. You can watch the stripping process on http://www.youtube.com/REPinternational.

The solution can be matched to any seal size. It is based on conveyor belts equipped with rotating belts, allowing for the individual stripping of the seals. The spacing between the bottom and top belts can be easily adjusted, thanks to a mechanical stopper system, thus making it possible to switch over from one seal type to another. The rotation speeds of the top and bottom belts can also be adjusted independently.

The belts are designed in compliance with a multi-layer technology, in order to ensure the reliability of the stripping process and the speed, while observing the quality of the stripped parts. In addition, the core bar in/out speeds on the kit (low/high speed, depending on the stroke limit) can be controlled. The kit is fully retractable for easy access to the cores on the rear side of the machine, allowing maintenance operations or more rapid production changes.



Front and rear view of the press V69

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Project example for a pipe seal of a nominal diameter of 50 and 110mm

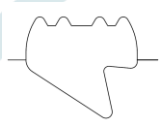


Figure 4: Profile of a pipe seal

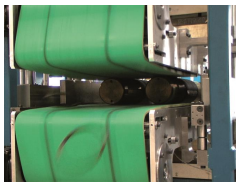
The equipment

The machine proposed is an injection moulding machine REP V69Y50 with a clamping force of 400 tons, including a kit specially designed for automatic stripping, a vacuum system, hydraulic top and bottom ejectors and ancillary heating comprising heating elements inside the cores to hold the core temperature during the stripping process.

The tooling consists of a 112-cavity mould (2 cores) and a 2-nozzle cold runner block for the part of a nominal diameter of 110mm. For the part of a nominal diameter of 50mm, we use a 208-cavity mould (4 cores) and a 4-nozzle cold runner block.

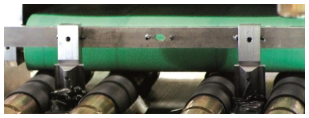
The cycle

After the mould opens, the ejectors move out to lift the frame-supported cores. The cores move to the rear of the press (electrical movement) and simultaneously the rotation of the two belts allows for sequential stripping of the pipe seals.



Belt rotation

The runners are automatically stripped and separated from the parts during the core bar translation: Metal guides are used to separate the runners as the core bars index on the kit.



Separation of the runners

The runners are recovered in a receptacle inside the cage, whereas the parts are recovered at the discharge end of the cage extension in a receptacle or using an automatic conveyor.

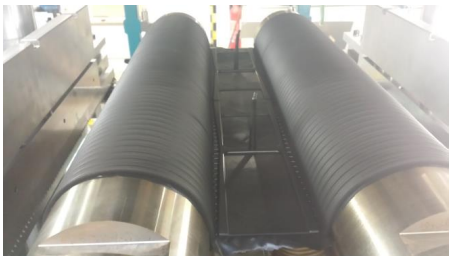
When the cores move inside press, a laser detection unit is activated to guarantee no seal adheres to the cores. If this is the case, an alarm signals for operator action at the end of the in-stroke of the cores.

The result

On this project, the customer's profitability requirements have been met. The stripping time reached for both types of seals was approximately 40 seconds.

Laser detection

The entire system is competitively priced, with an excellent investment/payback ratio. This is a simple, rugged solution that is both reliable and easy to control during production.



View of the seals ND110 on the core bars

View of the 4-core mould for seals ND50

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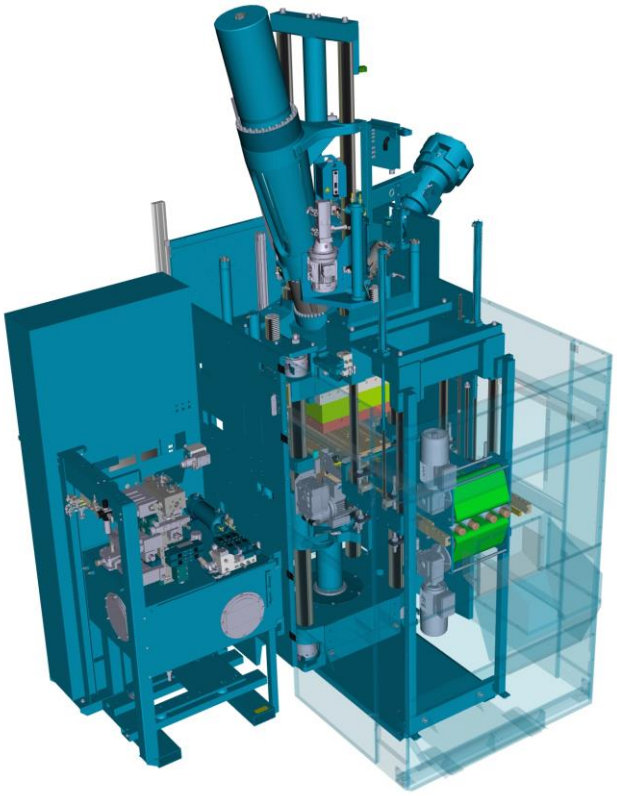

Figure 1 REP V69 machine – rear view

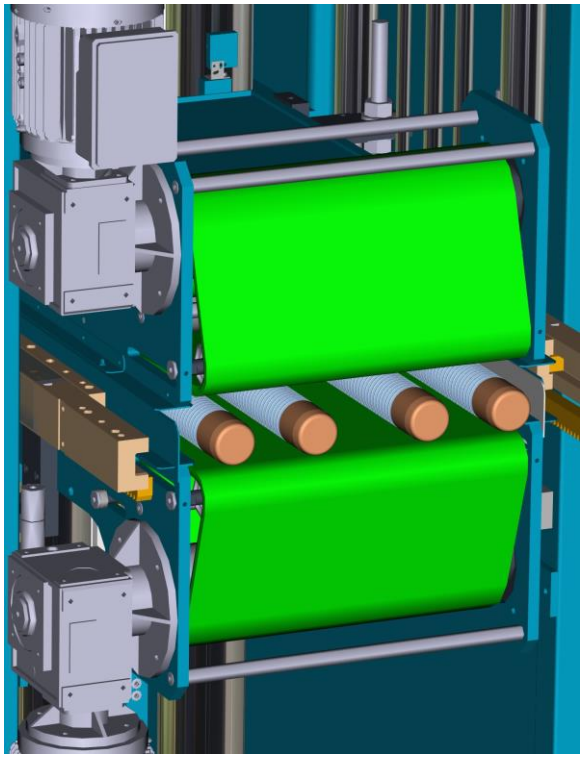

Figure 3 Rear zoom

Figure 2 REP V69 machine – front view

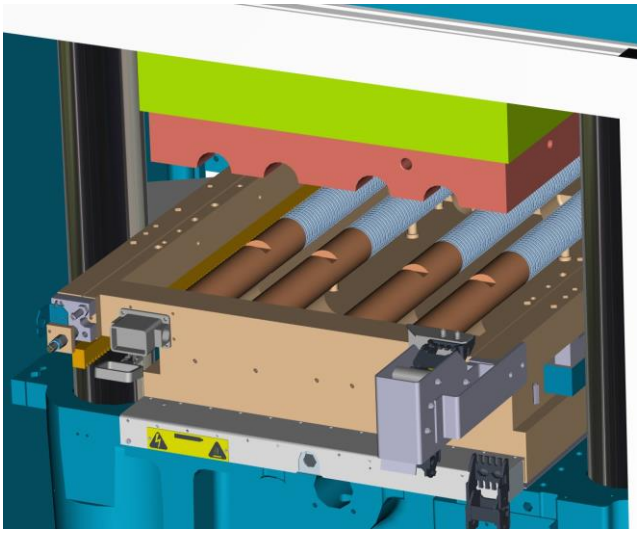

Figure 4 Front zoom

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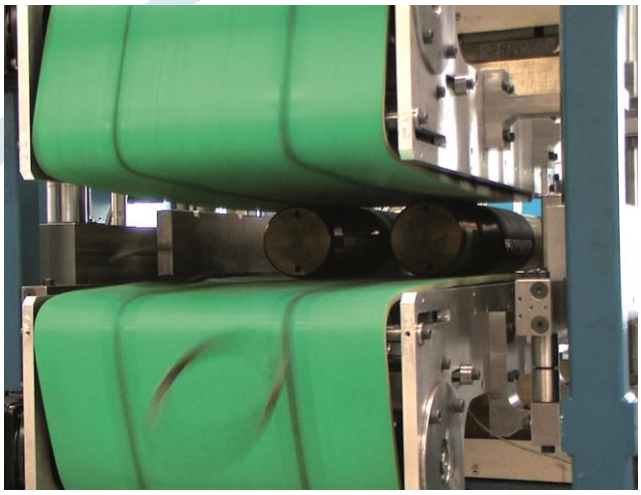

Figure 5 Belt rotation

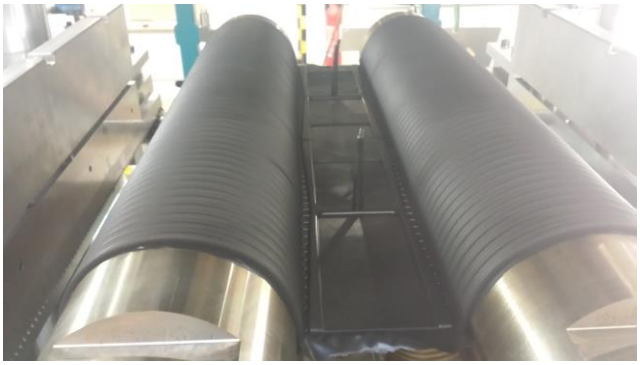

Figure 7 View of the seals ND110 on the core bars

Figure 6 Separation of the runners

Figure 8 View of the 4-core mould for seals ND50

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