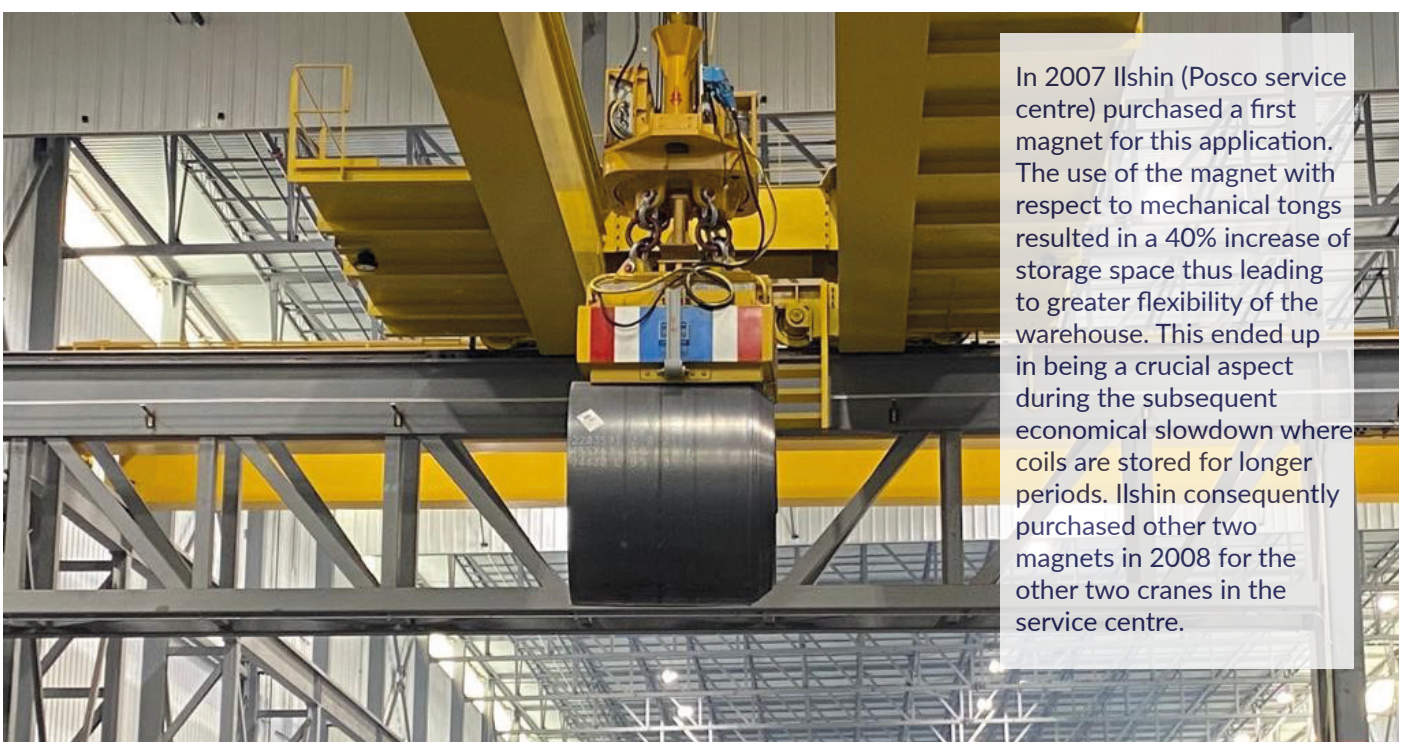
SGM
TECHNOLOGY AND PROXIMITY

ELECTRO PERMANENT MAGNETS

Eye Horizontal Coils



In 2007 Ilshin (Posco service centre) purchased a first magnet for this application. The use of the magnet with respect to mechanical tongs resulted in a 40% increase of storage space thus leading to greater flexibility of the warehouse. This ended up in being a crucial aspect during the subsequent economical slowdown where coils are stored for longer periods. Ilshin consequently purchased other two magnets in 2008 for the other two cranes in the service centre.

SOME REFERENCES

Bonfanti INTEGRATED HANDLING SOLUTIONS · Street · ZENAR The Last Word in Cranes · posco · NLMK · ILVA · CITROËN

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SAFETY

Resulting from the combination of the SGM electropermanent technology and the SGM safety monitoring device FMD.
The lifting force of the Electro-permanent magnets is independet from external energy sources = no accidental drops of the load as a result of power failure or cable interruption. The lifting force of the Electro-permanent magnets is constant in time = no accidental drops of the load as a result of a reduction on magnet lifting force.
Prior to every lift, the SGM patented Flux Measuring Device FMD checks the lifting safety conditions under which the electro-permanent magnet is working (contact conditions between surface of the load and magnet polarities).
No need for operator to get in contact with or stay by the coil. Magnet system can be operated from a safe distance using radio control, from crane cabin or from the control system of an automated storage fully integrated system. Technology of the electro-permanent magnet controllers facilitates the creation of safety redundancy.
Special recommendations for the use of electro-permanent magnets is made for locations where sudden interruptions of main electrical power may happen inadvertently.

PRODUCTIVITY

Optimisation of storage area on floor surface with possibility of using up to 90% with respect to the 40- 60% achieved by mechanical tongs.
Approch and contact with coil can be controlled a lot better than with mechanical tongs allowing for a drastic diminuition of typical damages to coils provoked by tongs.
Customers receive the exact coil lenghts they request.
The electro-permanent magnets requires just a few seconds are necessary to grip and release a coil.

USER FRIENDLY

Unlike mechanical tongs, electro-permanent magnets are Unlike electro-magnets, electro-permanents magnets do not generate heat when energised which means that they do not impose limitations on duty cycle.
Electro-permanent magnet solutions well suit the increasingly widespread application of coil parks = simple interface, no magnet overheating thus allowing for possible long emergency handling times, defined coil pick-up and release tims, operating times under normal conditions reduced to a minimum. Maintenance free as there is no heat generation inside the magnet and no moving mechanical parts.
Unlike mechanical tongs, electro-permanent magnets do not present ricks of oil leakages on coils.
The electronic controllers for electro-permanent magnets are technologically less sophisticated than the ones for electro-magnets.
This, combined with the fact that unlike electro-magnets, electro-permanents magnets do not generate heat when energised, makes the electro-permanent magnet technology easier to maintain.
No need for battery back-up.
Electronic controllers able to work in local or remote mode with a simple transfer of data and interface with other systems (diagnostics).

NOTICE

Electro-permanent magnets can only apply to applications with limitations to coil wrapping thickness or to cold rolled coils.