



Zero Harm Foundry Ladles – Providing safer pouring solutions

John Richardson, Director at A1 Roper Ltd, discussing safer pouring solutions for Ladle Operators within the foundry.

What is Zero Harm?

A few years ago we were invited by a Leading UK foundry, which were part of a worldwide group, to take part in an initiative called ZEROHARM. Their Main objective was to have a Zero Accident record throughout their whole group of companies by 2012. Their slogan being:

ZEROHARM

Zero Deaths
Zero Injuries to the Public
Zero Ruined Lives Among All Our People



Our Design Brief

Our design brief at the time was to help design and implement a Ladle that could achieve the status of Zero Harm. The Ladle chosen was an 8 Ton Bottom Pour Ladle. The Ladle was to be modified for operation with all operators at a safe distance from the ladle during the pouring process where dangers associated with molten metal usage come into effect.

How We Achieved ZH

After numerous discussions and design ideas with the Foundry we finally settled on having the Ropastop Bottom Pour Side System operated remotely by hydraulics and having the RoperLok Ladle Gearbox operated by Electric Motor.

Various power options were tried to power the hydraulic powerpack, including batteries, but it was found using a 110v supply was best and most reliable way. The controls for the Ropastop Bottom Pour Slide

System were designed in such a way that if there was any loss of power, or signal from the remote control then the system would go into its failsafe mode and the nozzle would close, stopping the flow of molten metal from the Ladle.

The electric motor on the Roperlok Ladle Gearbox was to be used for de-slagging, cleaning and nozzle changing purposes.

The Outcome

Once the ZeroHarm Ladle had been fully tested and successful trials had been run in the foundry the Ladle was then entered into the group's worldwide ZeroHarm safety challenge competition, which it won. It was also entered into the innovation section of the Occupational Safety and Health Awards, in which it gained a place in the final 3.

What We Now Offer

We were granted permission to apply the ZeroHarm name to our Ladle and now have the pleasure of being able to offer various types of ZH Ladles. Any of our Ladles can be made ZH, all Ladles also come with self-engaging safety catches, splash guards and heat shields. All of our Ladle gearboxes can also be fitted with our unique Gearbox Braking System, which is designed to hold the Ladle or Lifting Bail in any position once the handwheel has been released.



ZH Lip-Pouring Ladles, complete with Motorised Remotely Operated Roperlok Gearbox.



ZH Bottom-Pouring Ladles, complete with Remotely Operated Hydraulic Ropastop Bottom Pour Slide System.



ZH Bottom-Pouring Ladles, complete with Remotely Operated Hydraulic Ropastop Bottom-Pour Slide System and Motorised Remotely Operated Roperlok Gearbox.

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