

PRODUCT INFORMATION

TBR Engineering developed the most powerful and compact Gunning Manipulator - best in class - for the hot repair of Oxygen Converters.

Its efficient gunning technique allows accurate gunning at areas of premature wear thus leading to optimized refractory mix consumption and to extended converter campaigns.

Minimized time need for repair and appropriate performance result in a distinctive increase of the BOF vessel availability.

Mobile, rail-tracked and steady state types are available (modular design concept) .

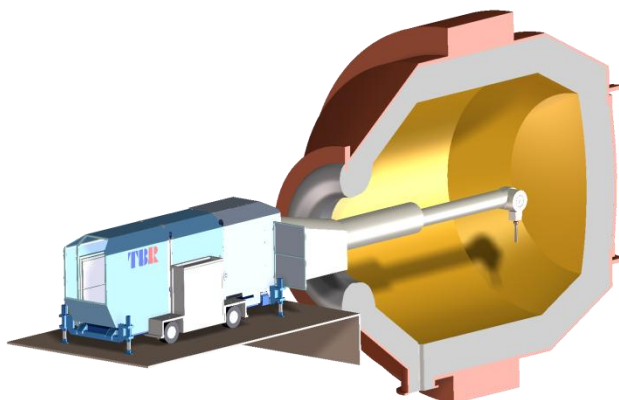
Process automation and remote control gives best labor safety. The integrated data recorder collects reproducible refractory repair information.



Mobile version in operation at Salzgitter Flachstahl GmbH, October 2009

MAIN FEATURES

- Infinitely variable telescoping lance with endless rotating head and a gunning nozzle swiveling during operation
- Gunning nozzle is accurately positioned according to the vessel lining face
- Repair mix is blasted across pre-programmed areas to build up one or multiple layers (automatic / semi-automatic mode)
- Individual repair possible using the remote control (manual mode)
- Optimized nozzle design, controlled water addition



Mobile version

- Even and compact refractory layers, reduced material need
- Low-height lance arrangement
- Innovative cooling system
- 60 minutes repair cycle time, 1700 centigrade environment
- Improved operation safety (no hydraulics in the hot area)
- Easy lifting by crane
- Short manipulator prep-time

FIELDS OF APPLICATION

General: Repair of refractory linings by means of dry gunning
Main application: Oxygen Converter (BOF)
Other applications: Ladles, hearth furnaces, AOD

PERFORMANCE

Material: usual refractory gunning mixes
Gunning capacity: up to 600 kg/min depending on type of material, air volume and type of pressure vessel feeder
Feeder hose: \varnothing 40 to \varnothing 80 mm
Application limit: max. 1.700 centigrade
Cycle time: max. 60 minutes

DIMENSIONS

Overall length, stand-by: 6.700 mm
Overall length, extended: 16.300 mm
Overall width (mobile version): 2.300 mm
Overall height (mobile version): 2.700 mm
Total stroke: 8.600 mm

WEIGHT, LOADS

Overall weight, mobile version: 12,0 t
Support force, stand-by, front / rear: 50 / 70 kN
Support force, max. stroke, front / rear: 90 / 30 kN

