Injection / Suction Lance



Product Overview

DKKI Injection / Suction Lance is the core component of the vacuum-argon sampling system, designed to collect molten steel samples with minimal contamination. It operates through a controlled two-stage process. First, high-purity argon gas is injected through the lance, purging the sampling mold chamber of ambient gases and non-metallic impurities like slag. This creates an inert environment, preventing sample oxidation and ensuring a clean foundation for chemical analysis. Once optimal immersion depth is reached, the system is switched to vacuum application by operator. With argon flow stopped, molten steel is drawn uniformly into the mold cavity through controlled suction. This prevents bubble and pinhole formation in the sample and significantly enhances efficiency in low-temperature applications where fluidity is reduced. The technology produces high-density, seamless surface samples ideal for precise optical emission spectrometry (OES) analysis, enabling accurate process control and quality assurance in steel manufacturing.

Key Features

- Two-stage argon injection and vacuum process for precise sampling
- High-purity argon purging creates an inert sampling environment
- Effective removal of slag and non-metallic impurities
- Prevents sample oxidation and ensures clean chemical analysis
- Eliminates bubbles and pinholes in sample body
- Reliable performance in low-temperature molten steel

Why DKKI

- Proven success for over three decades
- ISO 9001:2015 certified quality
- In-house testing under real operating conditions
- Free expert support and comprehensive training
- On-site consulting and troubleshooting
- Fast order processing with flexible logistics
- Standard products, customizable options
- Transparent partnerships that build trust
- Proactive customer engagement

Application Areas

- Ladle and degasser sampling in primary steelmaking operations
- Tundish and mold sampling during continuous casting processes
- High-precision sample collection for metallurgical R&D labs
- Manual sampling using hand-operated poles in foundries
- AOD converter sampling for secondary steel refining stages

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Technical Specifications

Parameter	Description
Primary Function	Collecting molten steel samples with minimal contamination for chemical analysis
Operation Method	Two-stage process: argon gas purging followed by vacuum-assisted suction
Sampling Time	Short duration for rapid sample collection
Sample Type	High-density, seamless surface samples for Optical Emission Spectrometry
Sample Surface Quality	Clean and slag-free for accurate chemical analysis
Process Gas	High-purity argon for creating an inert atmosphere and preventing oxidation
Construction Durability	Built for molten metal industrial environments
Application Flexibility	Quality assurance and process control in steel manufacturing
Process Improvement	Enhances steel quality and reduces production delays

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