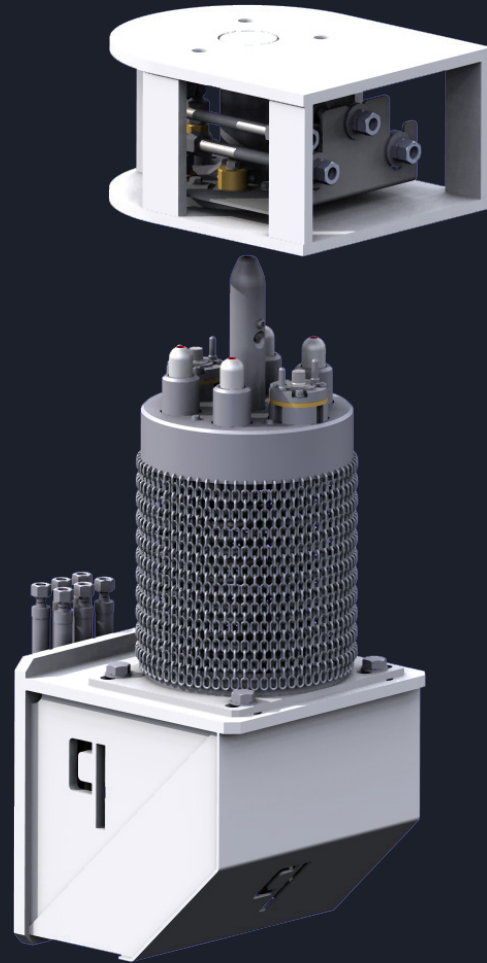




Automatic multi-media coupling system



geared for safety and multi-functionality



qouplerM is a patented automatic multi-media coupling system designed to withstand harsh and demanding environments, particularly in steel mills. It automatically delivers various media such as gas, liquids, hydraulics, electrical currents, and signals through a flexible and robust coupling connection.

As an integrated system, **qouplerM** not only ensures the supply of various media to ladles containing large volumes of molten steel, but also eliminates the need for personnel to perform manual coupling operations.

qouplerM is the world's first multi-media coupling system. It embodies qoncept's philosophy of developing innovative solutions that combine production optimisation and operator protection.



Embark on a journey towards production optimization and safety.
Discover the possibilities with qouplerM.

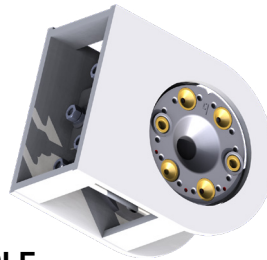
System Highlights

- Multi-functional and multi-media coupling solution for up to 7 separate supply lines.
- Simultaneously and automatically couples different media such as gas, liquids, hydraulics, electrical currents, and signals.
- Immediately supplies various media without the need for personnel to connect hoses or cables from the supply source.
- High flexibility in all directions to compensate for misalignment between the coupling partners.
- Offers highest coupling reliability and rate due to the spring-loaded system.
- Dust and temperature resistant for use in the harshest environments.
- Features an advanced identification mechanism for coupled devices (e.g., ladles), transmitting data to automation or Level 2 systems.



” couplerM is designed for **multi-functionality** and maintaining the highest level of **operator safety**.

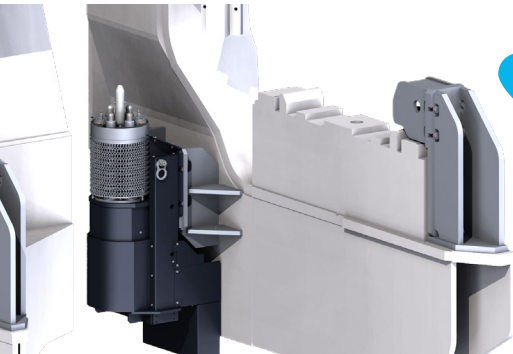
System Components & Application



FEMALE SECTION ON LADLE
Moving Coupling



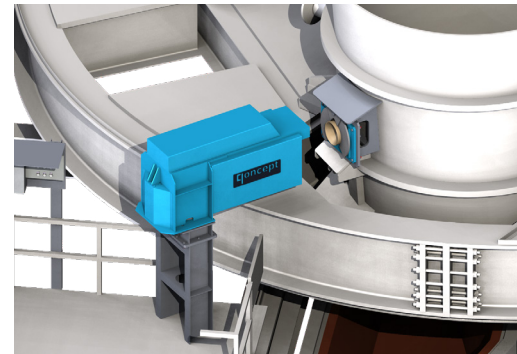
MALE SECTION
Fixed Coupling



Application for connecting gas and electrical signals to steel ladles in various installation positions



Horizontal and vertical installation possible





PATENTED TECHNOLOGY

Technical Data

PARAMETER		DESCRIPTION
Flexibility		Misalignment tolerance: 65 mm (±2.5") in all axes
Media	Gas	Ar, N ₂ (other gases upon request) max. 25 bar (360 psi) max. 450 °C (850 °F) ambient temperature
	Hydraulics	max. 275 bar (4000 psi) 150 °C (300 °F) ambient temperature higher values upon request
	Electrics	max. 1000 V (500 A), depending on application 450 °C (850 °F) ambient temperature higher values upon request
	Fluids	Parameters depending on fluid
Identification		Identification of coupled devices (up to 63 different devices possible).

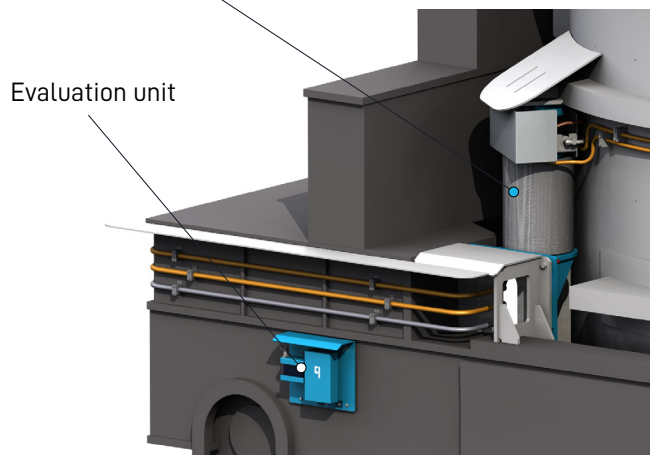
couplerM automatically connects various media when a ladle is placed on a station such as a ladle handling stand, ladle transfer car, ladle furnace, and others. Once installed, there's no need for personnel to manually connect hoses to supply sources.

The female section is attached to the ladle, while the male section is attached to a ladle station. The male and female sections ensure a tight connection when pressed together. The male section is spring-loaded and offers lateral and axial flexibility to ensure a proper connection even when the two sections are not perfectly aligned.

Intelligent Tracking for Ladles and Coupled Equipment

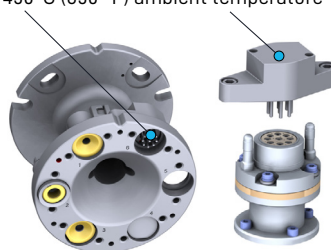
qouplerM features a groundbreaking identification system for coupled devices (e.g., ladles), transmitting data via an evaluation unit to automation or Level 2 systems. It can be integrated into ladle cars or other coupling points.

qouplerM unit inserted on ladle



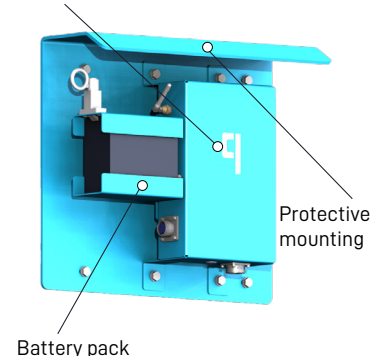
Ladle identification plug

Ceramic 9-pin plug
450°C (850 °F) ambient temperature



Ladle identification socket
(connected to evaluation unit)

Evaluation unit



NUMBER OF DEVICES

Up to 63 different devices
(Integrated temperature
measurement on ladle coupling)

EVALUATION UNIT

Proprietary evaluation
unit with onboard
ESP32 chipset

POWER SUPPLY

Onboard rechargeable
battery pack or
110V / 230V

COMMUNICATION

LAN (Cat6) or
WiFi (2.4 GHz)

MESSAGING

MQTT or HTTP messaging upon coupling
and decoupling (Profinet communication
available upon request)

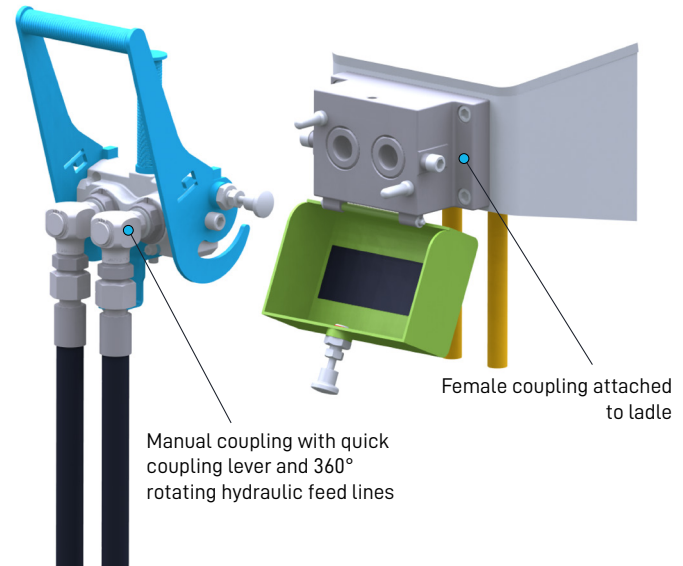
Hydraulic Manual Coupling at Ladle Maintenance

gouplerM enables the automatic coupling of hydraulic connections during the casting process, streamlining operations and reducing manual effort. For added flexibility, a manual quick coupling can be optionally installed in the ladle maintenance area.



Manual coupling for ladle maintenance

DETAILS ON MANUAL COUPLING



Manual coupling with quick coupling lever and 360° rotating hydraulic feed lines

Female coupling attached to ladle



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