PIPELINE EQUIPMENT

RMA GROUP GOES H_2

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With its national hydrogen strategy, the federal government of the Federal Republic of Germany has given a strong push and directive to the use of hydrogen in all sectors of the energy system. A systematic approach to the generation, transport and use of hydrogen is a key factor.
The Federal Ministry of Education and Research has therefore decided to allocate research funds for cooperation between industry and research (R&D) and has set the course for a national hydrogen strategy with the **TransHyDE** project.

Chart: Project Management Jülich on behalf of the BMBF | Source reference: BMBF website

In addition to the system analysis, in which a systematic concept is being developed, in which our national transport infrastructure functions as an integral part of a European long-distance supply, there are four major research projects.

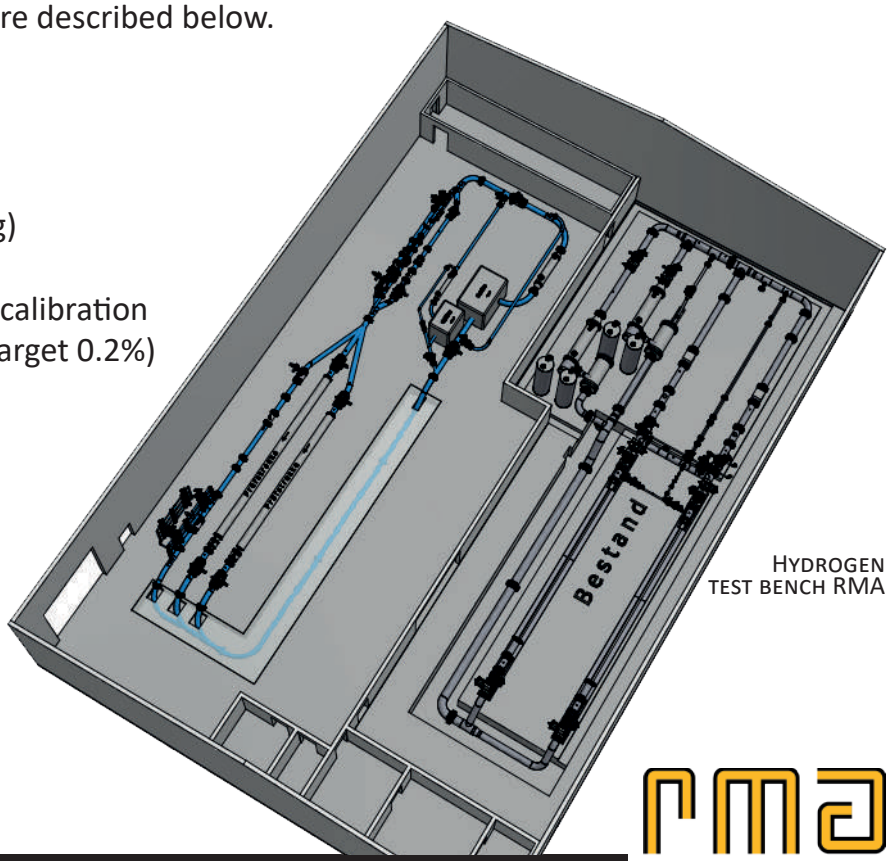
- Secure infrastructure: material testing, sensors, security
- H_2 transport via ammonia
- H_2 transport via LOHC (liquid organic hydrogen)
- Standardization, Norms, certification

RMA Rheinau GmbH & Co. KG is responsible for the project "Safe Infrastructure" (TransHyDE VV 2), which has a term of four years, as the project coordinator. Within this project, valves, equipment, materials and sensors are tested that are required for the safe transport of hydrogen in existing gas or new H_2 lines to be built.

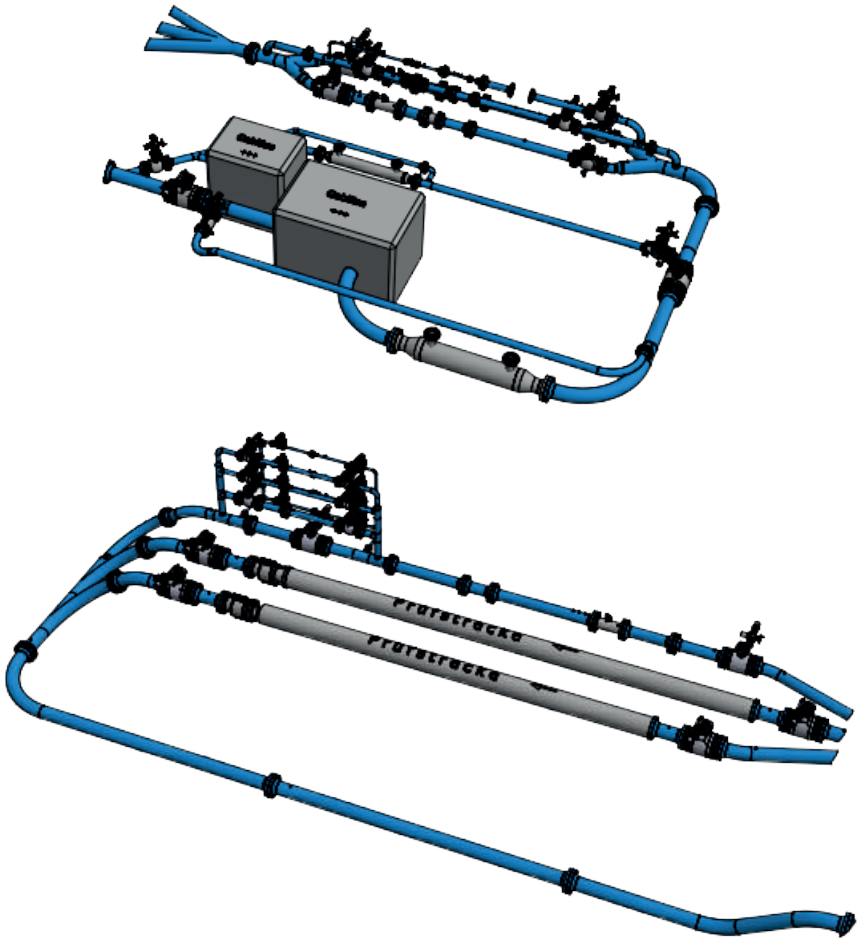
The energetic billing of the transported gases requires not only the determination of the gas quality but also the flow measurement with calibrated measuring devices. For natural gas, the approval, calibration or verification and operation of these devices are comprehensively regulated (cf. the DVGW or PTB regulations). The aim is to gain knowledge about the metrological behaviour of different meter types in hydrogen under operating conditions. These findings will allow the set of rules for flow measurement in hydrogen networks to be expanded in order to ensure that the requirements of calibration law are also met there and consumer protection is guaranteed.

The specific requirements in the gas industry with regard to an exact billing of the energy consumed by calibrated measuring devices is essential. As the largest single application point within this project, RMA will build the world's first hydrogen test Facility of this size in Rheinau, Germany. Together with the Physikalisch Technische Bundesanstalt (Government Agency) (PTB), hydrogen standards are being developed which serve as reference measuring systems for calibrating H_2 measuring devices.
The technical data of the test stand, which will be available in mid-2022 for research / testing purposes and for custody transfer, are described below.

- Qmax = 7000 m3/h
- Qmin = 5 m3/h
- pmax = 51 barg
- pmin = 16 barg (ideal target 8 barg)
- Nominal sizes: DN50 to DN300
- Measurement uncertainty for the calibration value of a test item ≤ 0.3% (ideal target 0.2%)



Hydrogen
test bench RMA



Hydrogen test bench RMA

Even outside of this project organization, the RMA Group has been working on the development and modification of the existing product range for some time with regard to upcoming requirements in relation to the hydrogen compatibility of the Equipment.

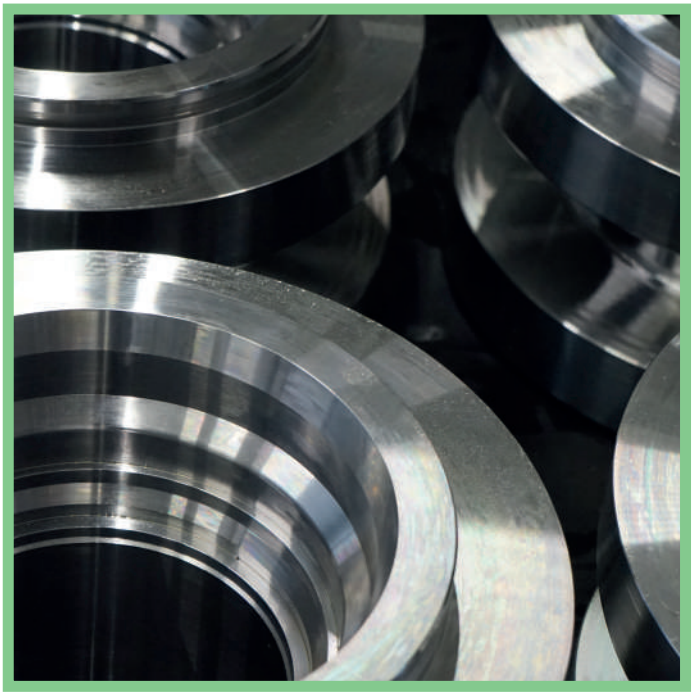
Together with the SGS TÜV Saar, RMA has developed a test program on the basis of which the Ball Valves listed below were tested for 100% hydrogen use.

- **House Connections rigid and flexible**
- **Steel Ball Valve type HKSF-W (PMSS)**
- **Steel Ball Valve type HKSF (soft sealing)**
- **PE Ball Valve**
- **Insulating couplings type IK / IKL / ET**
- **Rotary Gate Valves**
- **Gate Valves**

RMA GROUP GOES H_2

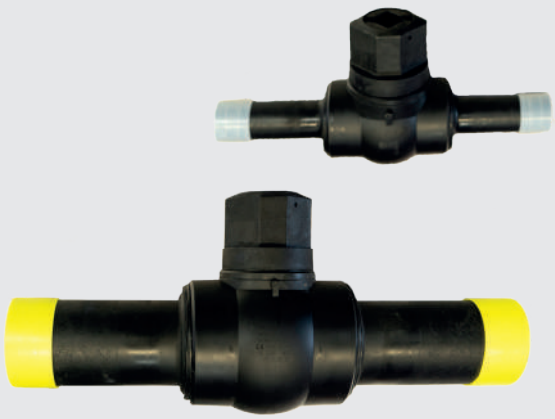
Our H_2

H_2 suitable flanges



H_2 tested IK

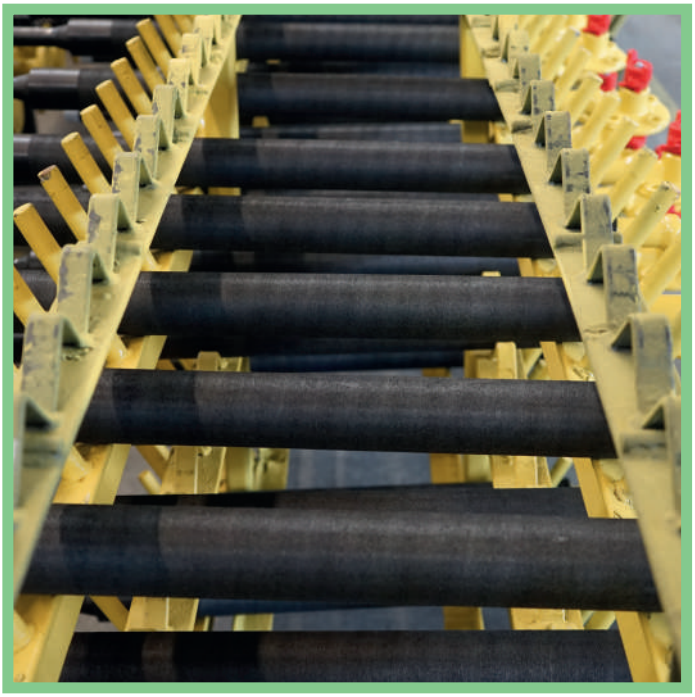
H_2 suitable HKSF-PE



100% H_2 SUITABLE

H_2 Cylinder bundle with pressure reducer

H_2 suitable Balls



H_2 suitable House Connections

H_2 testet Ball Valve

RMA PRODUCTS – TÜV APPROVED!

External tightness test with H_2 at the Rotary Gate Valves & Internal tightness test

H_2 Testing with water at the ASR Gate Valve

H_2 Pressure and time measurement

"As a country of innovation, Germany has the opportunity to develop a leading role in research, development and to take over the export of hydrogen technologies".

Dr. Stefan Kaufmann,
Innovation Officer "Green Hydrogen"
at the
Federal Ministry of Education and Research.

We, the companies of the RMA Group, have accepted the challenges and will do everything we can to implement the goals of the Paris Climate Agreement with innovative technology and committed employees.

Contact us.

"Our energy for your success"

PIPELINE EQUIPMENT

CeH4

EVB TECHNIK
EMSR + AUTOMATISIERUNGSTECHNIK

heat
GAS TECHNOLOGIES

R+I
ROHR- U. INDUSTRIEANLAGEN

FIVENTURES

www.rma-armaturen.de/en

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Kehl	RMA Kehl GmbH & Co KG
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Rheinau	RMA Training GmbH & Co KG
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