Robust Coupling Systems for **Outdoor Applications at Construction Sites**

Whether in classic construction, mining and tunnelling, ship yards, petrochemical industry, agriculture or in gardening and landscaping: In these areas, reliable coupling systems are required which withstand extreme use and weather conditions.

The **LÜDECKE** construction product portfolio offers high-quality and robust products - optimised for a number of challenging applications and different media.

Advantages:

- First-class and especially solid materials
- Safe, reliable and durable
- Simple and intuitive handling
- Different sizes and connection types
- From standard range to individual solutions and customised hose assemblies

Quality and Service

Lifetime-Guarantee: Original **LÜDECKE** Claw Couplings and Clamps made of malleable iron from the 60s still used today in pneumatic demolition hammers

Engineered and Made in Germany - with this promise we do not only guarantee excellent products but also a comprehensive customer service.

On the following pages, we will give you an insight on how important it is to choose high-quality couplings and fittings in this area.

Avoid unnecessary safety risks with the **LÜDECKE** construction range which has been tested and meets the DIN standards (page 204). Take the chance and have **LÜDECKE** customise your products for the hose you want (page 205).

Materials

For all products, LÜDECKE only uses premium materials which are customised to the application.

Malleable iron

Most of the LÜDECKE construction fittings are made of malleable cast iron. This material has perfect mechanical properties (e.g. high tensile strength) which prevent brittle fractures when subject to excess strain. As a result, malleable cast iron is perfect for applications in which the components are exposed to strong dynamic stress (e.g. vibrations) and high mechanical forces. LÜDECKE only works with galvanised and yellow passivated malleable cast iron (free of chrome VI) in accordance with the RoHS guideline.

Steel (Hardened/ Nickel-Plated/ Zinc-Plated)

If products are used under tough conditions (i.e. in foundries), they need to be manufactured out of machining steel (hardened, nickel-plated or zinc-plated). This material has good case-hardening properties and a long lifetime.

Aluminium

Products made of aluminium impress with their very low weight (up to 60% weight reduction). This makes them much easier to handle when in continuous operation. Aluminium is resistant to corrosion as well as chemical media and is ideally suited for machining.

Brass (Plain/ Nickel-Plated)

The material brass MS 58 (machining brass) is a very sturdy material which guarantees high durability and is perfectly suited for galvanisation (nickel, chrome). In the construction sector, this material is applied for complementary products (e.g. locking nuts).

Stainless Steel

In areas with specific hygiene standards or when conveying various difficult media, quick connect couplings made of stainless steel are required. For further information, please refer to our program for the processing industry.

Seals

Depending on the requirements, LÜDECKE offers various types of high-quality sealings made of NBR, brass, PTFE and PUR.

Broad Range

From classic claw couplings, mortar couplings and sandblast couplings to hose clamps and throttle valves: At LÜDECKE you will surely find the right product for a wide range of applications.

Top Quality
for Safe Working

High-Risk Potential Caused by Inferior Material

Fracture test - left: **LÜDECKE** hose clamp (no crack/ fracture), right: hose clamp from the Far East (complete fracture)

Again and again, you will find cheap copies of claw couplings and their matching hose clamps on the market. They are mostly manufactured in the Far East.

Lack of functionality
However, using such products comes with a high-risk potential: On the one hand, many cast components have great tolerances. Often, the couplings can no longer be tightly connected and or lead to leakages. Moreover, due to the unproperly casted hose barbs and high tolerances of the clamps, a safe fitting of a hose cannot be guaranteed!

High Potential of Fractures
As these copies are often produced with low-quality and non-approved materials such as chilled cast iron (white iron), the products may easily fracture under high strain (i.e. when installed in strongly vibrating construction machines with compressed air).

Using such unsuitable products poses a high liability risk!

Safety with High-Quality and Standardised Components

To avoid these great safety risks, pay attention to the following:

- White iron and other inferior materials are hard and very brittle due to their high amount of cementite steel. As a result, they are inappropriate materials for high stress applications
- The production of malleable cast iron is more time-consuming and expensive as it undergoes an additional annealing treatment. However, this provides malleable cast iron with enhanced mechanical properties and makes it perfect for extreme conditions.
- Only components should be sold and used which follow the current standards (DIN 3489, DIN 3238, DIN 20039) and show the obligatory manufacturer's branding.

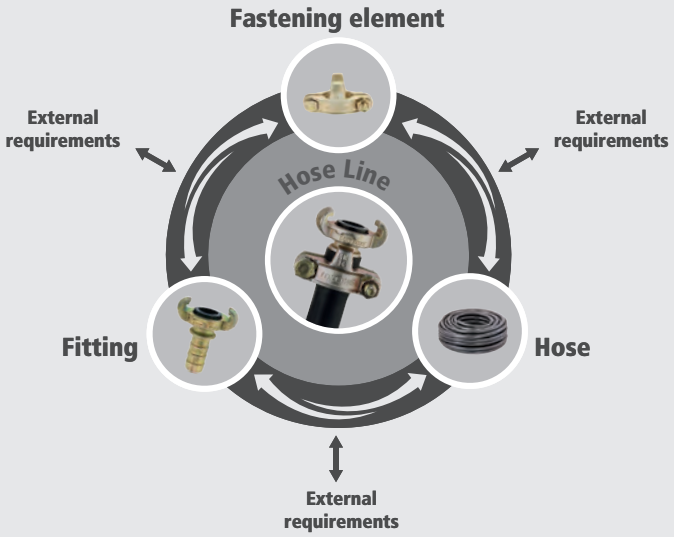
Original **LÜDECKE** Claw Coupling according to DIN 3489

Counterfeit from the Far East (no manufacturer's branding, inferior material)

The products of the **LÜDECKE** construction range undergo continuous, strict quality tests. In this way, we always guarantee high reliability for permanent use.

Assembly of
Hoses and Fittings

It is all about the perfect connection



High-quality couplings and fittings are essential for reliable and safe operation. However, long-term and satisfying results are only achieved, when all components of a hose line interact perfectly.

Problems when assembling fittings on hoses:
There are a number of hose manufacturers which often offer different materials and dimensions for identical hose sizes and purposes due to missing standards.

Then there are the fittings manufacturers. They produce diverse fittings for standard hose sizes and use different assembly methods. These fittings have also dimensional tolerances just as the hoses. This is why barb contours from various manufacturers can vary in form and dimension.

General Statements are not always Possible

Assembled hose lines often act very differently under pressure and temperature. Depending on the application, this will hamper a secure connection between hose and fitting.
Moreover, the requirements hose lines have to meet are continuously increasing with regards to resistance to operating pressures, ambient and operating temperature, chemical substances and external mechanical strain.
Due to the variety of impacting parameters, it is not possible to make a generalised statement about the reliability of hose assemblies based on their individual components.

Professional Hose Assemblies with LÜDECKE

Based on the desired hose type, LÜDECKE helps to select the right fitting and assembly method.

All hose assemblies are also tested in our own test centre using a wide range of criteria.
Our specially trained experts (persons qualified to test hose assemblies in accordance to German law § 2 Para. 6 BetrSichV) can make reliable statements about their suitability for the applications and media in question.

If you cannot find a properly sized fitting for your hose, we will be happy to produce a customised solution.

Claw Couplings

The **LÜDECKE** claw coupling is the system which is applied world-wide for compressed air supply in construction and industry.

Malleable cast iron is the only material we use in this manufacturing process (exception: stainless steel for critical media). Due to its heat treatment, this cast material guarantees the required elasticity especially for thin walled parts and is the mandatory material according to DIN 3489 and DIN 3238.

The **LÜDECKE** claw coupling range consists of different versions and offers numerous application possibilities.

Advantages:
- High-quality materials
- Very robust and durable
- Simple and fast handling
- Identical coupling head: connection versions and sealing systems can be connected with each other
- Maximum bore for maximum flow
- Increased safety with MODY-Safety-Screwing-Couplings and claw couplings with safety collar
- Different connection and thread types

A Reliable Classic

The success story of **LÜDECKE** started with the claw coupling. To this day, this product is characterized by reliability, safety and excellent quality.

The Coupling Concept: Simply Brilliant

Push the two couplings together at 180° degrees opposite to each other until the seal faces touch. Afterwards, rotate one coupling half as far as it will go into the opposite direction of the other - the couplings lock into place.

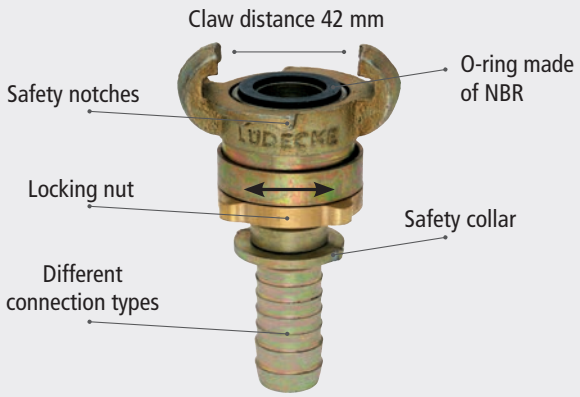


To disconnect, push the coupling and the counterpart together in axial direction. Afterwards, turn one coupling half as far as possible in the opposite direction as you would do when connecting and remove it from the counterpart.

Maximum Safety

Operator and machine safety is always our top priority. This is why we offer our claw couplings with two safety functions.

MODY-Safety-Screwing Coupling DIN 3238



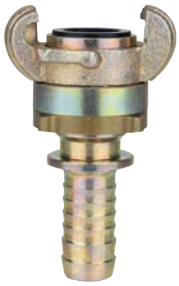
To ensure a perfect connection, we recommend to take the MODY-safety-screwing coupling. It has a locking nut which is tightened manually and prevents the coupling halves from loosening.
In general, we recommend to always choose a classic claw coupling with a MODY-safety-screwing coupling. This connection is absolutely safe, easy to connect and 100 % leakage-proof.

Claw Couplings with Safety Collar

Many **LÜDECKE** claw couplings are available with an optional safety collar. Special hose clamps allow for a reliable and technically correct assembly of the hose to the coupling. The hose clamps have safety claws which hook firmly into the safety collar. This prevents unintended slipping or loosening of the hose. The safety claws also ensure that the hose clamps are attached to the hose stems with the correct spacing - incorrect installation can be eliminated.

Overview of Claw Couplings

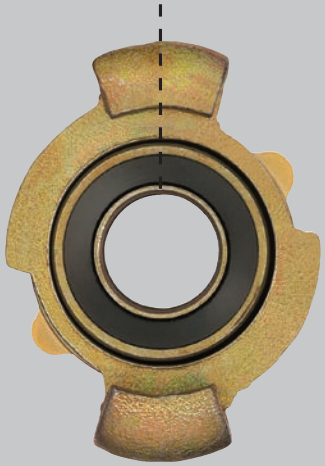
	also in Stainless Steel Standard	Swivelling	also in Stainless Steel MODY-Safety-Screwing Coupling	With Brass Seal
	DIN 3489	DIN 3489	DIN 3238	
				
Materials				
Claw:	Malleable iron (zinc-plated + yellow passivated)	Malleable iron (zinc-plated + yellow passivated)	Malleable iron (zinc-plated + yellow passivated)	Malleable iron (zinc-plated + yellow passivated)
Connector:	Malleable iron (zinc-plated + yellow passivated)	Steel (zinc-plated + yellow passivated)	Steel (zinc-plated + yellow passivated)	Malleable iron (zinc-plated + yellow passivated)
Locking nut:	-	-	MS 58 plain	-
Screw:	-	-	-	Steel (zinc-plated + yellow passivated)
Seals:	NBR	NBR	NBR, Brass	Brass
Special seals on request:	TFEP, FKM, EPDM	TFEP, FKM, EPDM	TFEP, FKM, EPDM	TFEP, FKM, EPDM
Max. Working Pressure:	PN 10 bar	PN 16 bar	PN 16 bar	PN 10 bar
Temperature:	-40°C - + 95°C	-40°C - + 95°C	-40°C - + 95°C	-40°C - + 95°C
Thread types:	ISO 228, NPT	ISO 228	ISO 228, NPT	ISO 228
Claw distance:	42 mm	42 mm	42 mm	42 mm
Others:	also available in stainless steel	-	also available in stainless steel, also available with colour coated claw	-
Page:	211	213	214	216

With Bore for Safety-Clips	Left-Closing	Made of Hardened Steel	Made of Forged Brass	US-Version with Bore for Safety Clips	US-Version with Bore for Safety Clips - MODY
					
Malleable iron (zinc-plated + yellow passivated)	Malleable iron (zinc-plated + yellow passivated)	Steel (hardened, zinc-plated + yellow passivated)	MS 58 plain	Malleable iron (zinc-plated + yellow passivated)	Malleable iron (zinc-plated + yellow passivated)
Malleable iron (zinc-plated + yellow passivated)	Steel (zinc-plated + yellow passivated)	Steel (hardened, zinc-plated + yellow passivated)	MS 58 plain	Malleable iron (zinc-plated + yellow passivated)	Steel (zinc-plated + yellow passivated)
-	MS 58 plain	MS 58 plain	-	-	MS 58 plain
-	-	-	-	-	-
NBR	NBR/ Brass	NBR	NBR	NBR	NBR
TFEP, FKM, EPDM	TFEP, FKM, EPDM	TFEP, FKM, EPDM	-	-	TFEP, FKM, EPDM
PN 10 bar	PN 16 bar	PN 16 bar	PN 10 bar	PN 10 bar	PN 16 bar
-40°C - + 95°C	-40°C - + 95°C	-40°C - + 95°C	-40°C - + 95°C	-40°C - + 95°C	-40°C - + 95°C
ISO 228, NPT	ISO 228	ISO 228, NPT	ISO 228	ISO 228, NPT	ISO 228, NPT
42 mm	42 mm	42 mm	42 mm	41 mm	41 mm
available incl. safety clips (Steel zinc-plated)	also available with colour coated claw	-	French system (according to Norm NF E 29-573)	US-version, available incl. safety clips (Steel zinc-plated)	US-version, available incl. safety clips (Steel zinc-plated)
217	218	219	220	221	222

Standards for Claw Couplings

Claw Couplings according to DIN 3238

New seal holder embedded in coupling body

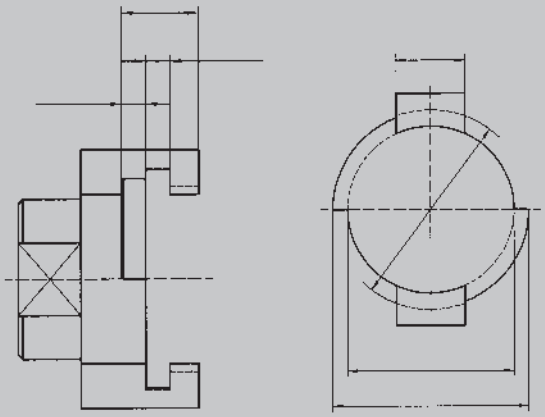


Special requirements

- Threads according to **DIN EN ISO 228-1 and ANSI/ ASME B 1.20.1**
- Claw couplings and sealing rings corresponding to this standard **must have manufacturer markings!**
- Working pressure **max. 16 bar**
- **100 % sight control**
- **100 % function check with gauge (coupling control)**
- **Approved raw materials used only:**
  Malleable iron: EN-GJMW-400-5(EN-JM1030) acc. to DIN EN 1562
  M1-Alloy: Alloy DIN 17660-CuZn39Pb2 (2.0380)
  Steel: Type to be chosen by manufacturers
  11SMnPb30 (1.0718) acc. to DIN EN 10087
  11SMnPb30 (1.0718) acc. to DIN EN 10277-3
  X5CrNi Mo 17-12-2 (1.4401) acc to. DIN EN 10088-1
  G-X5CrNiMo 19-11-2 (1.4408) acc. to DIN EN 10213-4
  G-X5CrNiMoNb 19-11-12 (1.4581) acc. to DIN EN 10213-4
- **New seal**
- **New seal holder - 2-way guidance**

Claw Couplings according to DIN 3489

Test gauge for claw couplings



Special requirements

- Threads according to **DIN EN ISO 228-1 and ANSI/ ASME B 1.20.1**
- Claw couplings and sealing rings corresponding to this standard **must have manufacturer markings!**
- Working pressure **max. 10 bar**
- **100 % sight control required**
- **100 % function check with gauge (coupling control)**
- **Approved raw materials used only:**
  Malleable iron: EN-GJMW-400-5(EN-JM1030) acc. to DIN EN 1562
  M1- Alloy: Alloy DIN 17660-CuZn39Pb2 (2.0380)
  Steel: Type to be chosen by manufacturer
  11SMnPb30 (1.0718) acc. to DIN EN 10087
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