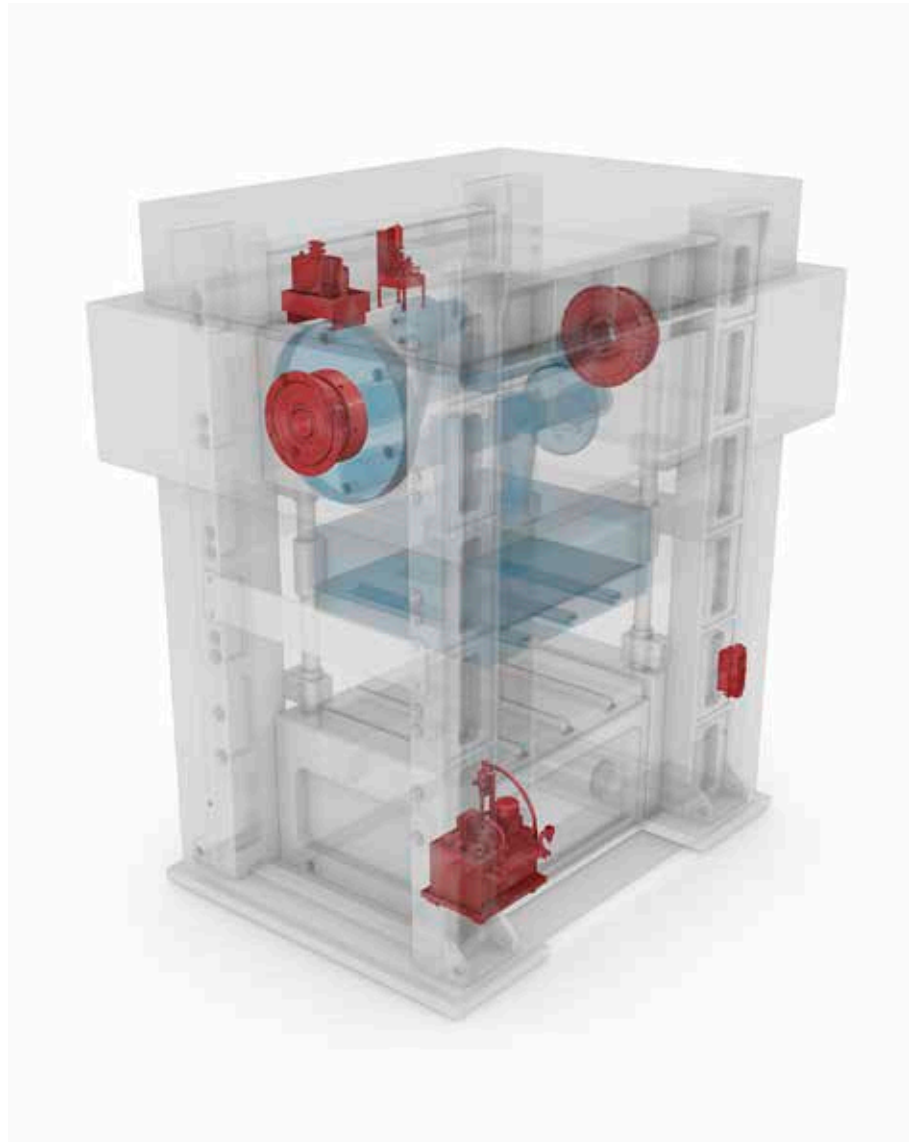
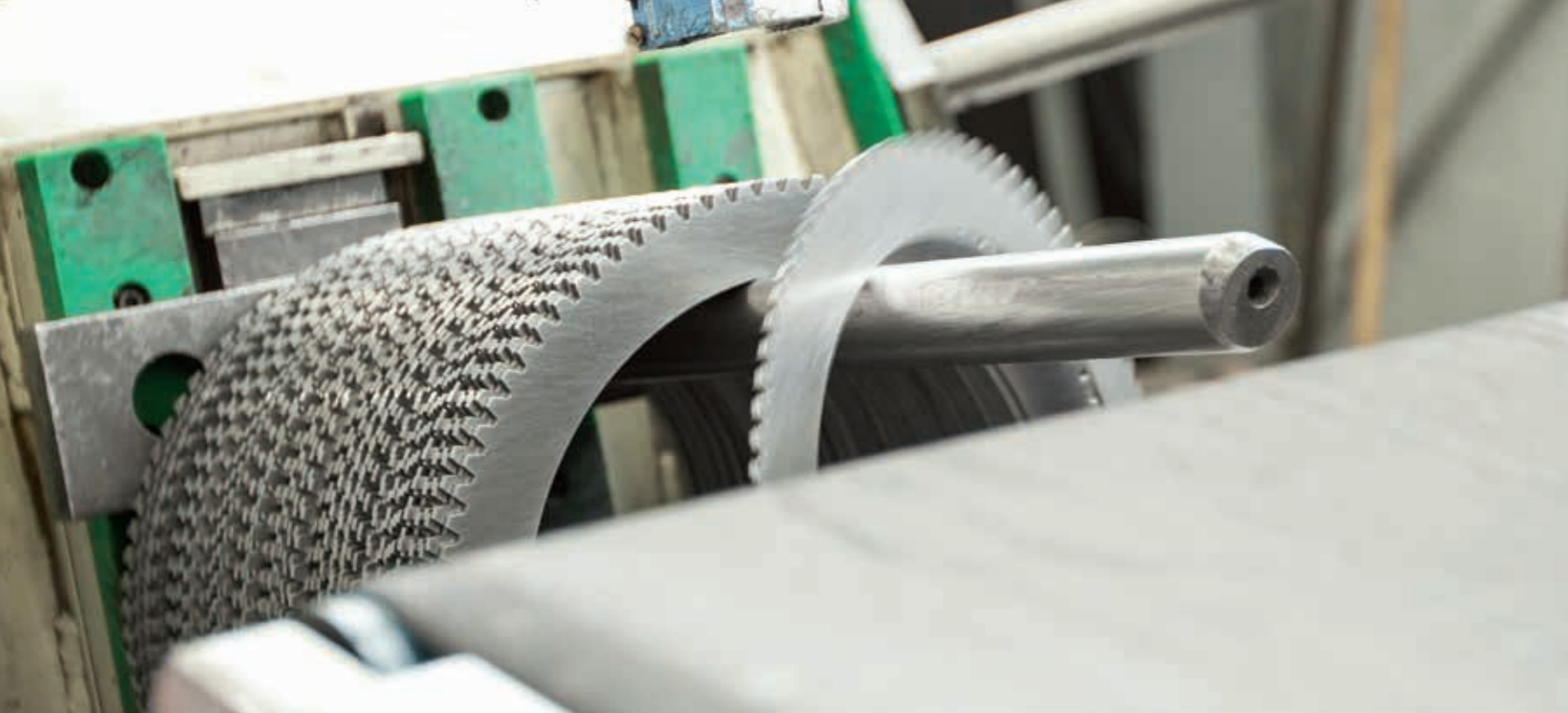


Ortlinghaus



System Solutions for
Drives in Flywheel Presses



Ortlinghaus

Founded in:	1898
Employees:	> 500
Subsidiaries:	Ortlinghaus (U.K.) Ltd. / England Ortlinghaus France / France Ortlinghaus AG / Switzerland Ortlinghaus Drive Technology (Shanghai) Co., Ltd / China Ortlinghaus Drive Technology India Pvt.Ltd. / India OOO „Ortlinghaus RUS“ / Russia
Manufacturing:	Wermelskirchen / Germany Gams / Switzerland Shanghai / China
Sales:	Worldwide via agencies

Ortlinghaus Group.

Otto Ortlinghaus established the Ortlinghaus Group in 1898. It originally manufactured machine knives and tools. Since 1923 Ortlinghaus has been producing plates, which form the technological core of most of our products.

Today, we are a fourth-generation family-run company with more than 550 employees and manufacturing sites in Germany, Switzerland, and China. We are proud of our long history and have structures and processes in place to ensure the long-term stability of the Group. Our values and long-term targets, which comprise stability, innovation, and growth, are aligned in this respect, too.

One of the most distinctive features of the Group is its collaborative culture. Shareholders, management and employees alike all have a firm commitment to this. In addition, we promise our customers to always and unwaveringly protect the Ortlinghaus brand, which is embodied in the quality of our products. Since the foundation of our company, we have repeatedly left our mark on technology history: As early as 1932, Ortlinghaus produced multi-plate clutches as a complete machine element.

However, we achieved worldwide renown with the Sinus® plate, which had a substantial impact on press technology. The last decade has seen many breakthrough developments in the field of mechatronic systems, especially in the press technology and marine technology sectors. One recent example of this is the Pa.go mechatronic closed-loop control system for clutch-brake units in large automotive presses.

Next to the press technology sector, Ortlinghaus is active in the following industries:

- Marine technology
- Agriculture & Forestry technology
- Construction technology
- Oil & Gas technology
- Materials handling technology
- Mining technology



Applications.

Systems solutions for drives in flywheel presses

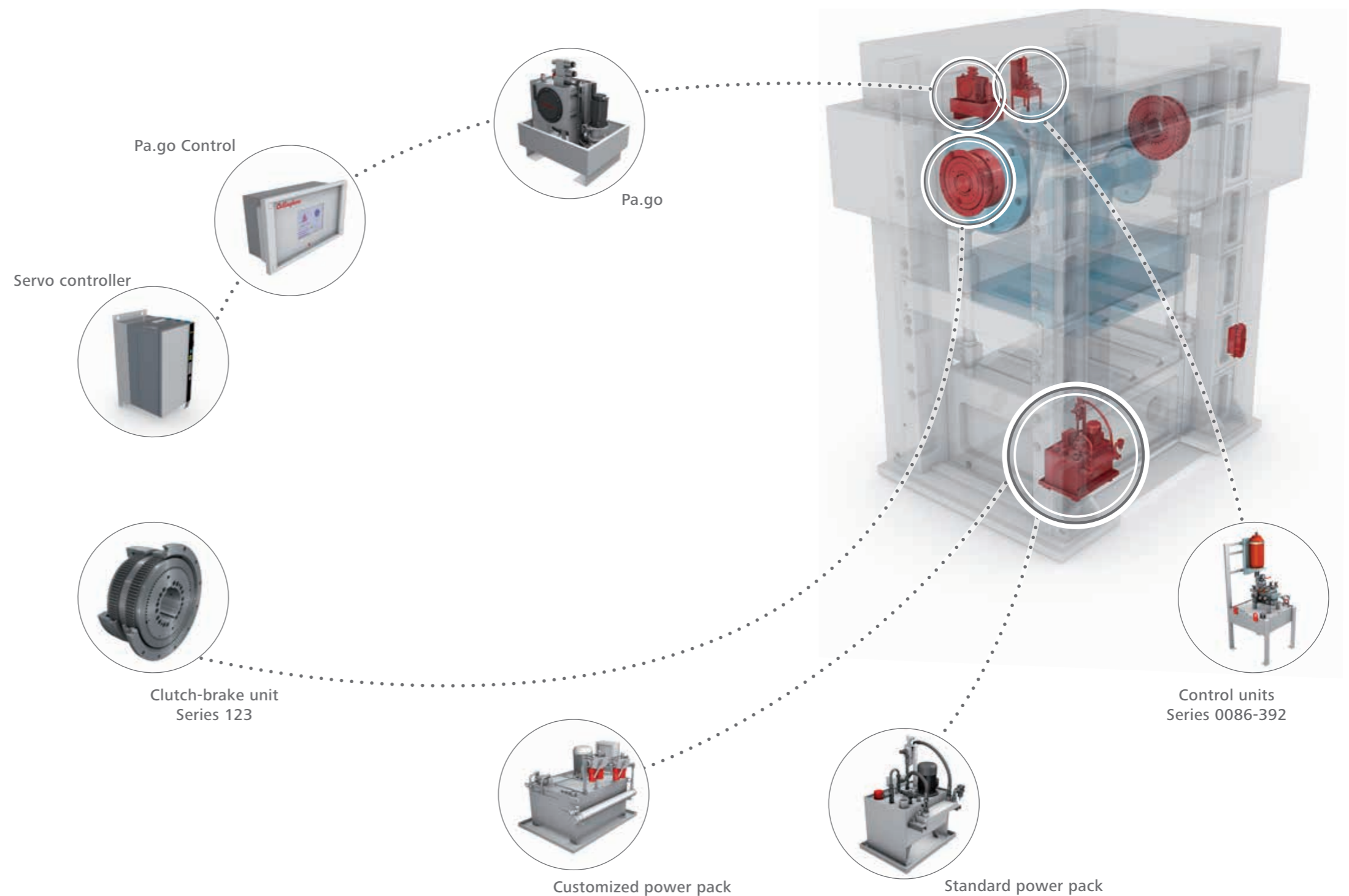
Large-format presses for the automotive industry normally use hydraulically actuated, wet-running clutch-brake units. These clutch-brake units are actuated by control systems that use pressure oil. They also have a permanent supply of cooling oil, which is responsible for removing the frictional heat from the system. Depending on the requirements of the specific application, different hydraulic power packs are required to supply oil.

All components of this system – including the clutch-brake unit, oil inlet, control system and hydraulic power pack – have to be perfectly aligned with each other. Any changes to individual components in the system will impact on the other components. The automobile manufacturers also have sometimes extensive specifications regarding the design of hydraulic power packs. For you as a customer, Ortlinghaus is the ideal partner to supply the entire system from a single source. We provide the safest solution for avoiding problems relating to communication and responsibilities between individual suppliers of clutch-brake units, oil inlet, control systems, and hydraulic power packs.

Production in Germany and China

Ortlinghaus has the systems expertise and the production facilities to engineer and manufacture hydraulic power packs at its headquarters in Wermelskirchen, Germany, and at Ortlinghaus China in Shanghai. Ortlinghaus offers a broad range of standard power packs and standard control systems for various sizes of clutch-brake units and for a wide array of press sizes.

With its factories in both Germany and China, Ortlinghaus is also capable of producing standard power packs and hydraulic power packs in accordance with the specifications of end customers up to tank volumes of 2,000 litres for large-format flywheel presses for the automotive industry, and can count a number of well-known manufacturers among its customers. You, too, can benefit from Ortlinghaus' systems expertise and its experience with a wide range of equipped systems.



Systems Comparison.

Pneumatically actuated, dry-running Control: Press Safety Valve

Function

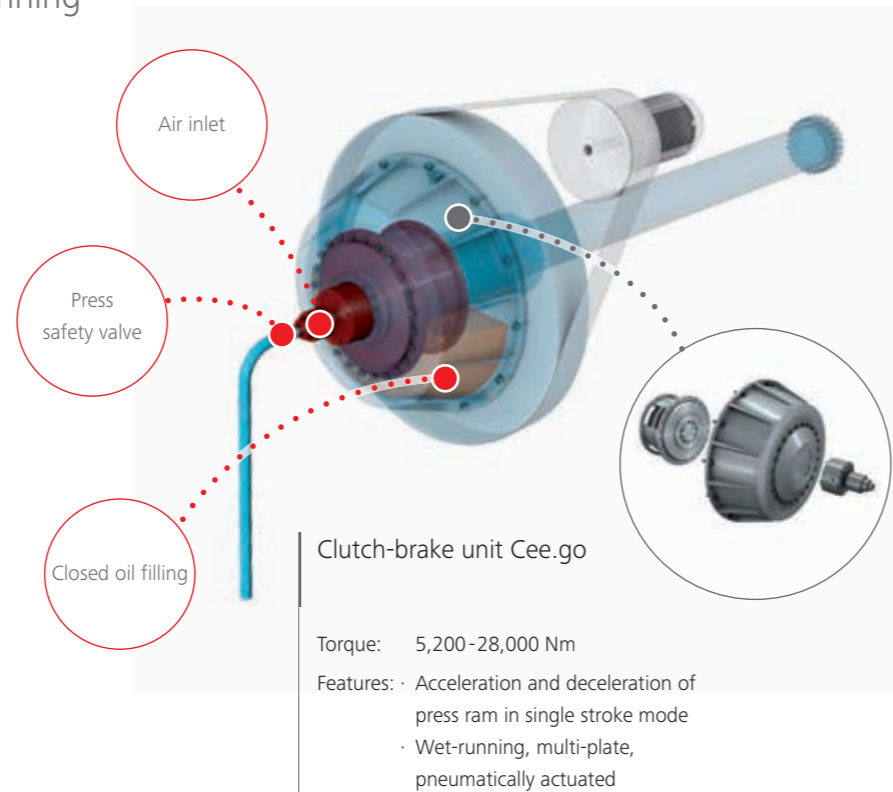
With the pneumatically actuated systems from the series 406 and 420, Ortlinghaus provides dry running systems. The clutch-brake unit is engaged via a pneumatically actuated press safety valve by compressed air. This system is completely free of oil and widely used in presses in continuous stroke mode.



Pneumatically actuated, wet-running Control: press safety valve

Function

Our next option is the wet running and pneumatically actuated clutch-brake unit Cee.go. This clutch-brake unit is also engaged by compressed air via a PSV. The plates are running inside an oil filled cover. In this way the oil filled housing has to be sealed by shaft sealings. The advantage of this solution is a nearly wear-free mode of operation in single stroke mode, whereby the thermal capacity is limited. The reason for this is the permanent oil filling without the opportunity of exchanging and cooling the oil. For a lot of applications this solution is sufficient.



Hydraulically actuated, wet-running Control: Hydraulic progressive control

Control units

Series 0086-392

- Features:
- Fast filling and draining of the piston chamber of the clutch-brake unit
 - Control of the clutching and breaking function of the clutch-brake unit
 - Including safety valve

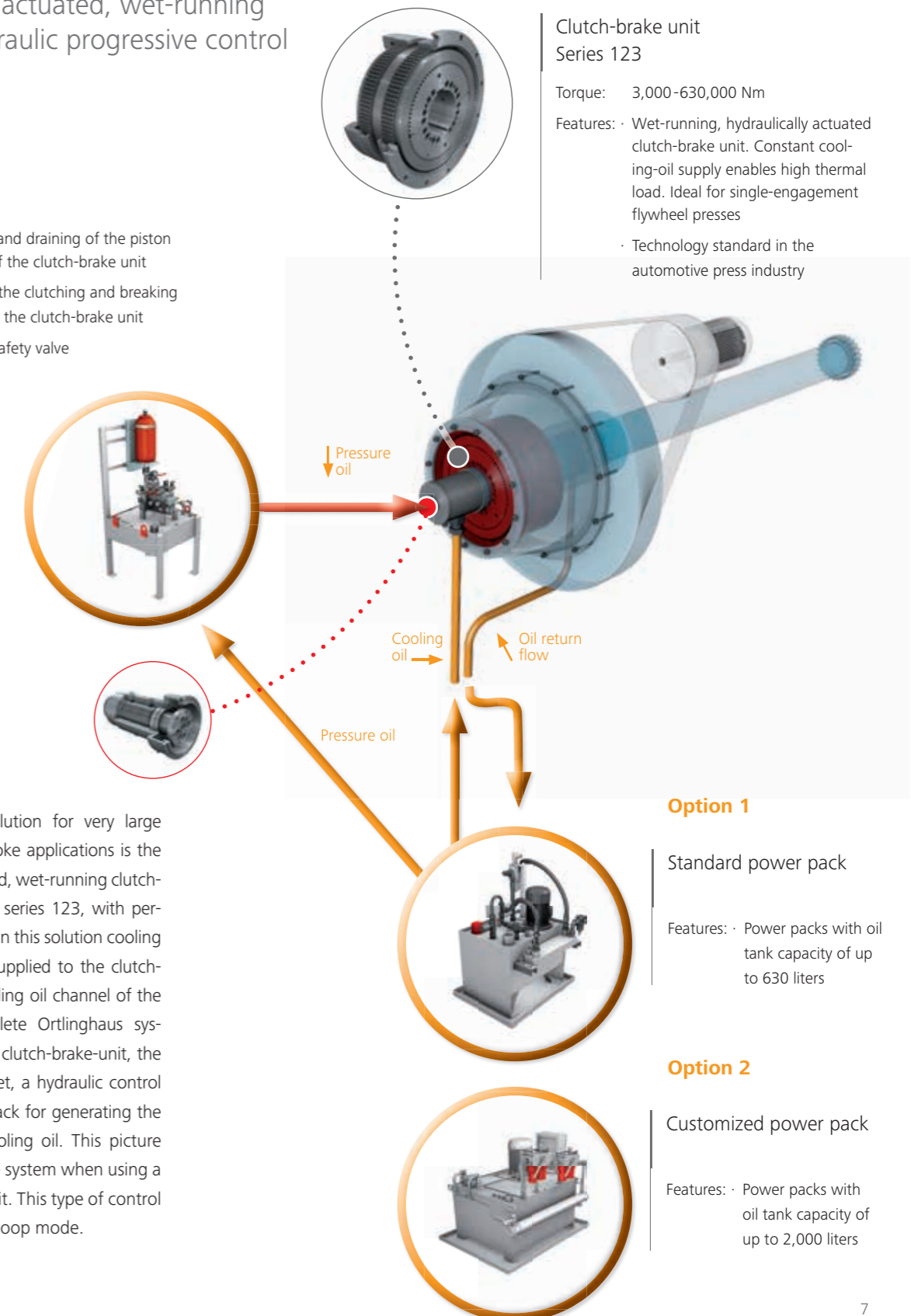
Clutch-brake unit
Series 123

Torque: 3,000-630,000 Nm

- Features:
- Wet-running, hydraulically actuated clutch-brake unit. Constant cooling-oil supply enables high thermal load. Ideal for single-engagement flywheel presses
 - Technology standard in the automotive press industry

Function

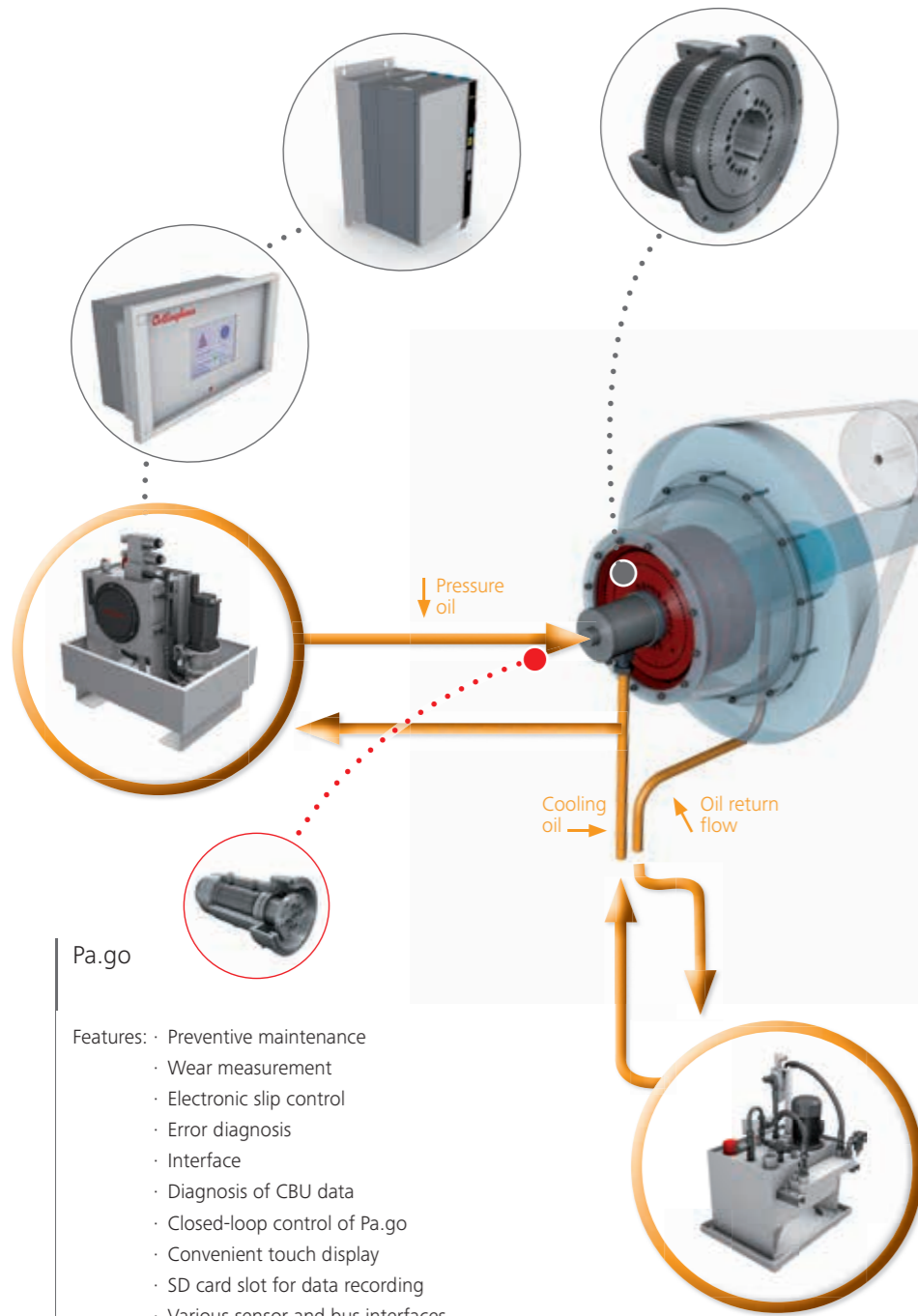
The Ortlinghaus solution for very large presses in single stroke applications is the hydraulically actuated, wet-running clutch-brake-unit from the series 123, with permanent oil-cooling. In this solution cooling oil is permanently supplied to the clutch-brake-unit via a cooling oil channel of the oil-inlet. The complete Ortlinghaus system consists on the clutch-brake-unit, the multi-channel oil-inlet, a hydraulic control unit and a power pack for generating the pressure oil and cooling oil. This picture shows the complete system when using a hydraulic control unit. This type of control units work in open-loop mode.



Systems Comparison.

Advantages of Ortlinghaus Systems Solutions.

Hydraulically actuated, wet-running
Control: Pa.go,
mechatronic closed-loop control



**Clutch-brake unit
Series 123**
Torque: 3,000-630,000 Nm
Features: · Wet-running, hydraulically actuated clutch-brake unit. Constant cooling-oil supply enables high thermal load. Ideal for single- engagement flywheel presses
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Function
The Ortlinghaus solution for very large presses in single stroke applications is the hydraulically actuated, wet-running clutch-brake-unit series 123, with permanent oil-cooling. In this solution cooling oil is permanently supplied to the clutch-brake-unit via a cooling oil channel of the oil-inlet. The complete Ortlinghaus system consists on the clutch-brake-unit, the multi channel oil-inlet, a mechatronic closed-loop control unit (Pa.go Control) and a power pack for generating cooling oil. This picture shows the complete system when using an mechatronic control system, called Pa.go. This modern type of control system functions in closed-loop mode.

Pa.go
Features: · Preventive maintenance
· Wear measurement
· Electronic slip control
· Error diagnosis
· Interface
· Diagnosis of CBU data
· Closed-loop control of Pa.go
· Convenient touch display
· SD card slot for data recording
· Various sensor and bus interfaces

Standard power pack
Features: · Power packs with oil tank capacity of up to 630 liters

Industry knowledge

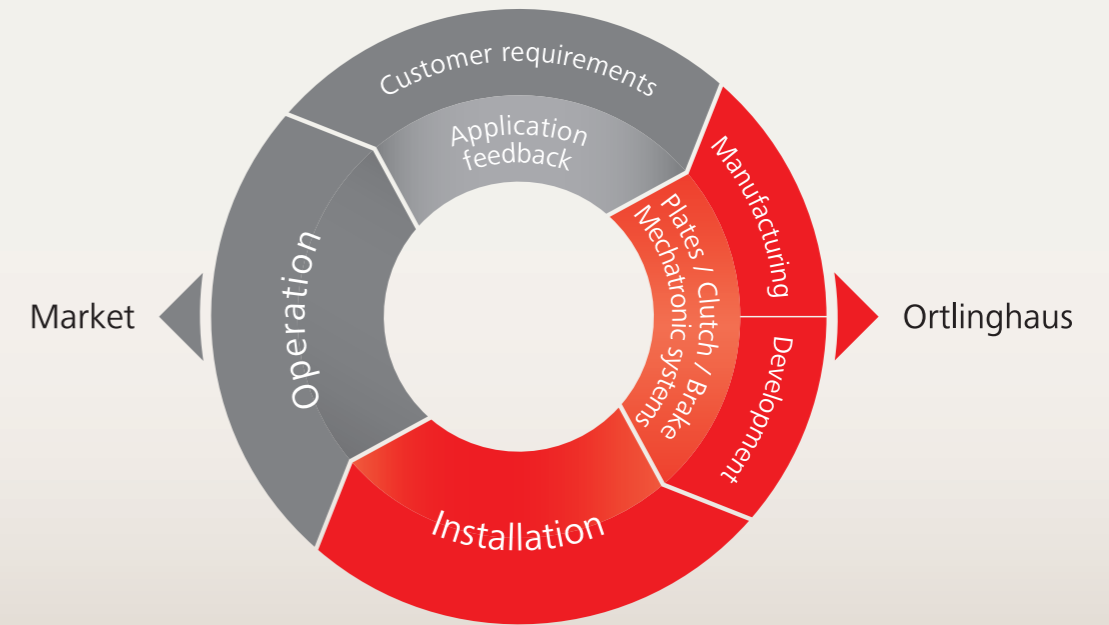
Competitive manufacturing

Technology leadership

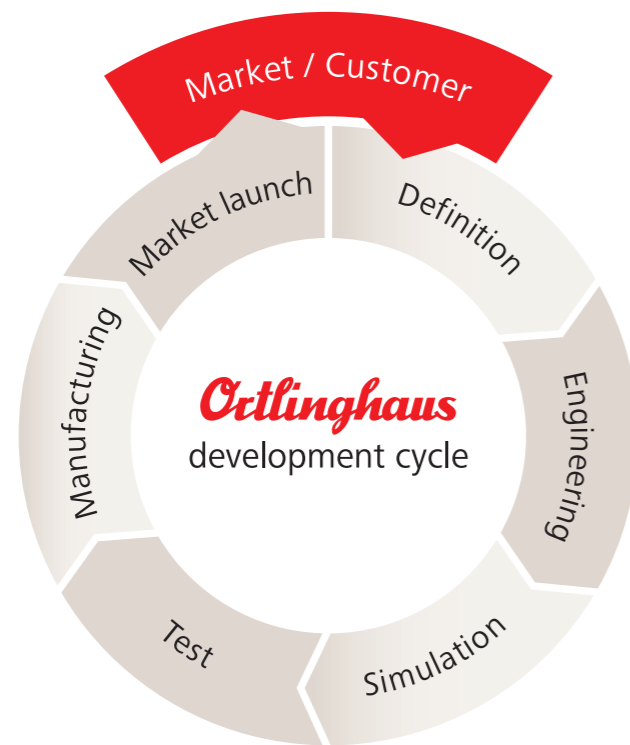
Systems engineering

Industry experience

Single source



Essential Advantages.



Single source

Ortlinghaus manufactures the whole scope of supply needed for hydraulically actuated, wet-running clutch-brake units. This allows for a perfect fit of all system components.

Systems engineering

All components are designed and engineered to work as a system.

Industry experience

Ortlinghaus has more than 75 years of experience in press technology. We have supplied the majority of clutch-brake units in large flywheel presses in operation today.

Industry knowledge

Our position as the market and technology leader of clutch-brake units has allowed us to gain a unique insight into the technological needs and requirements of this press industry.

Competitive manufacturing

We are the only supplier of clutch-brake units who manufactures and assembles all relevant components in-house in our facilities in Germany and China. This allows for an unrivalled cost and quality position.

Technology leadership

Ortlinghaus has been leading the field of clutch-brake units for many years now.

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