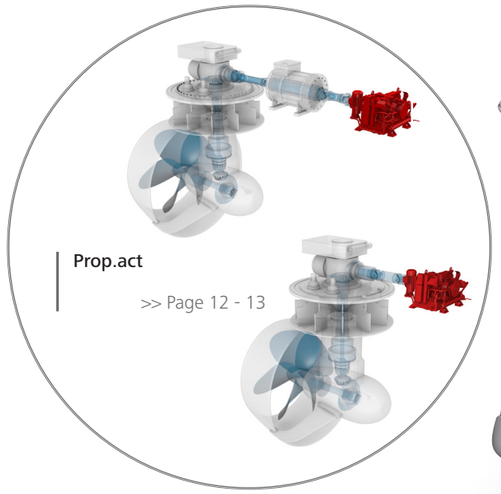
Ortlinghaus

MARINE PROPULSION TECHNOLOGY

Keeping vessels on course



Prop.act

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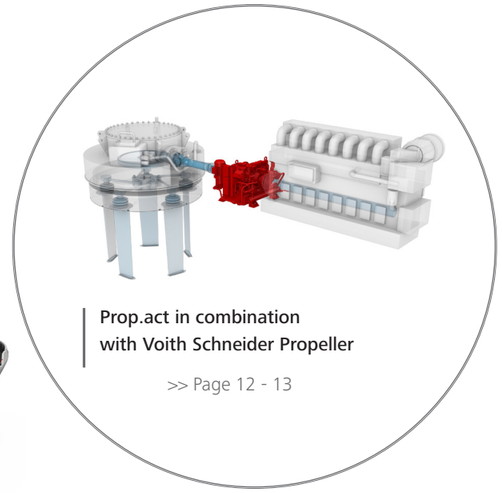
Tugboats



Prop.act in combination
with Voith Schneider Propeller

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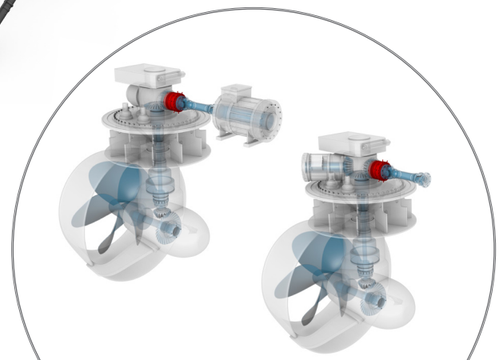
Workboats

Pleasureboats



Hydraulically actuated clutches
for hybrid drive trains

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Fishing vessels

Marine Propulsion Technology

Ortlinghaus in Marine Propulsion Technology

The optimal design of marine propulsion solutions and the selection of best fitting components for an operational profile is a big challenge for today's ship owners, ship builders and ship designers. The scope of options is growing, and it is difficult to keep up with the quick developments.

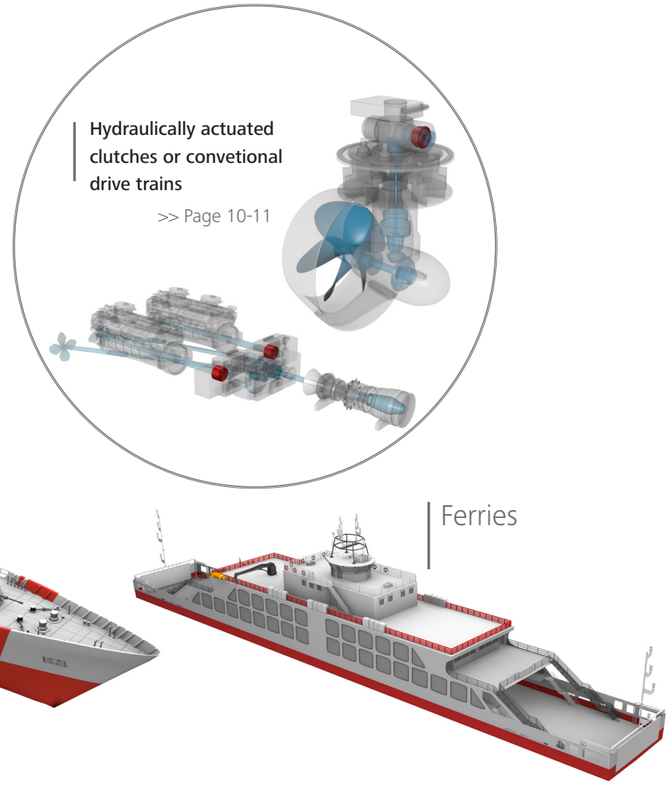
Ortlinghaus has delivered innovative products for more than 75 years into the marine market and our clutches, brakes and propulsion system solutions have proven themselves for decades in this field.

To keep up with the rapid pace of development and the growing requirements of new intelligent drive solutions Ortlinghaus uses its experience and market presence together with its customers and partners to meet these challenges.

There are many factors that need to be taken into account when deciding which solution is the best for specific drive train application and Ortlinghaus is aware of these. Choosing the right solution for the different types of drive train application is our daily business. With our new end of line test bench for our slipping clutch units Ortlinghaus has taken the next step towards the future to provide proven and tested quality.

This brochure is designed to introduce you into our products and solutions for the marine propulsion technology.

Offshore vessels



Hydraulically actuated
clutches or convetional
drive trains

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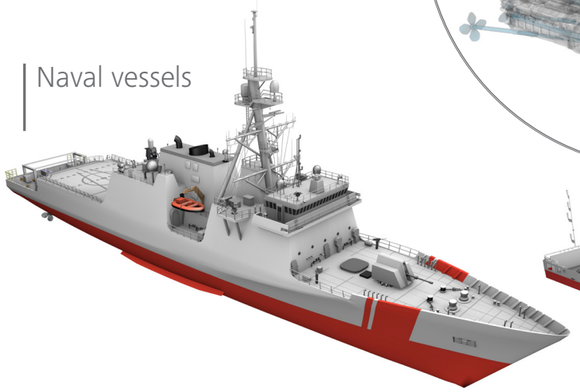
Naval vessels

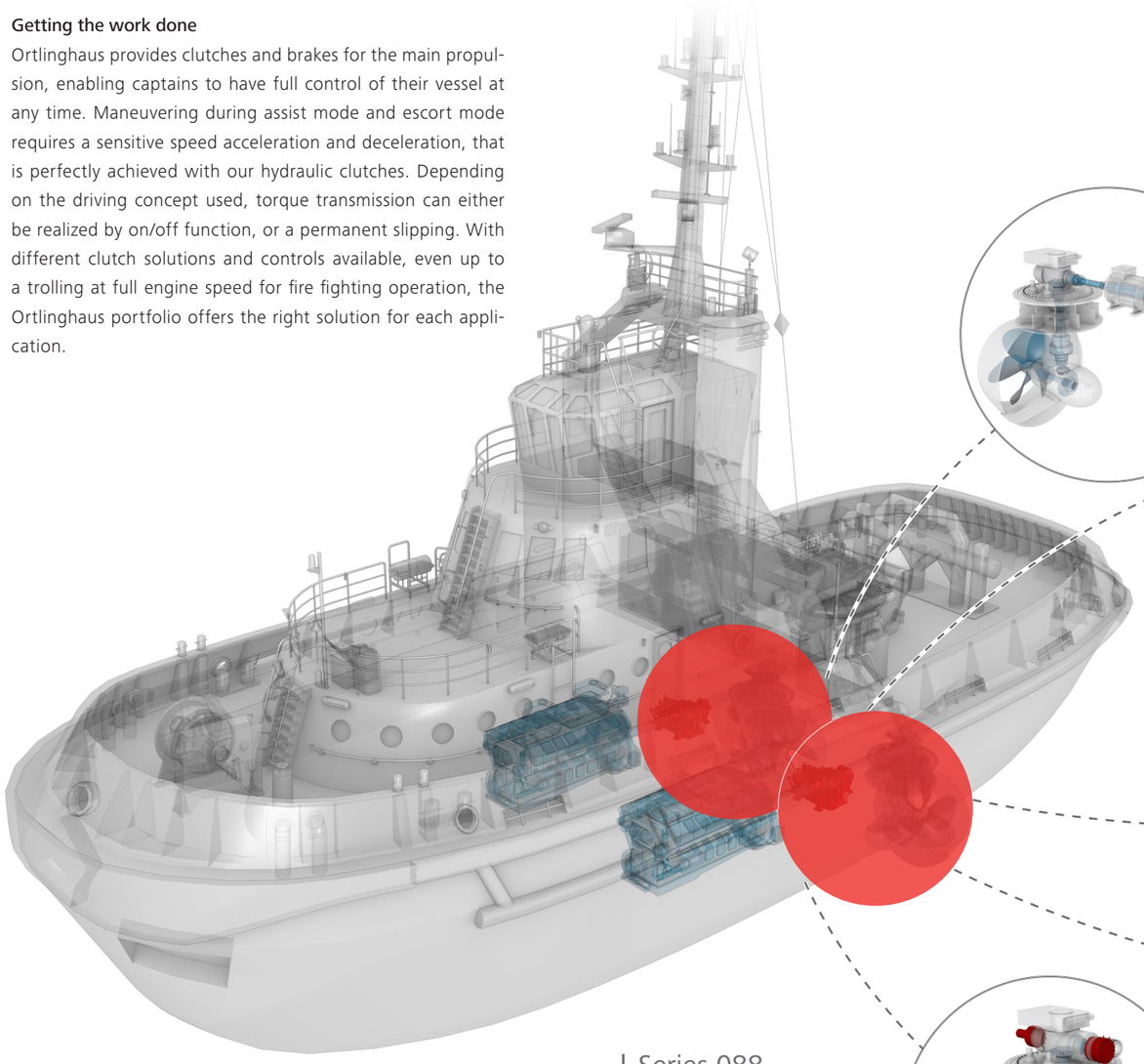


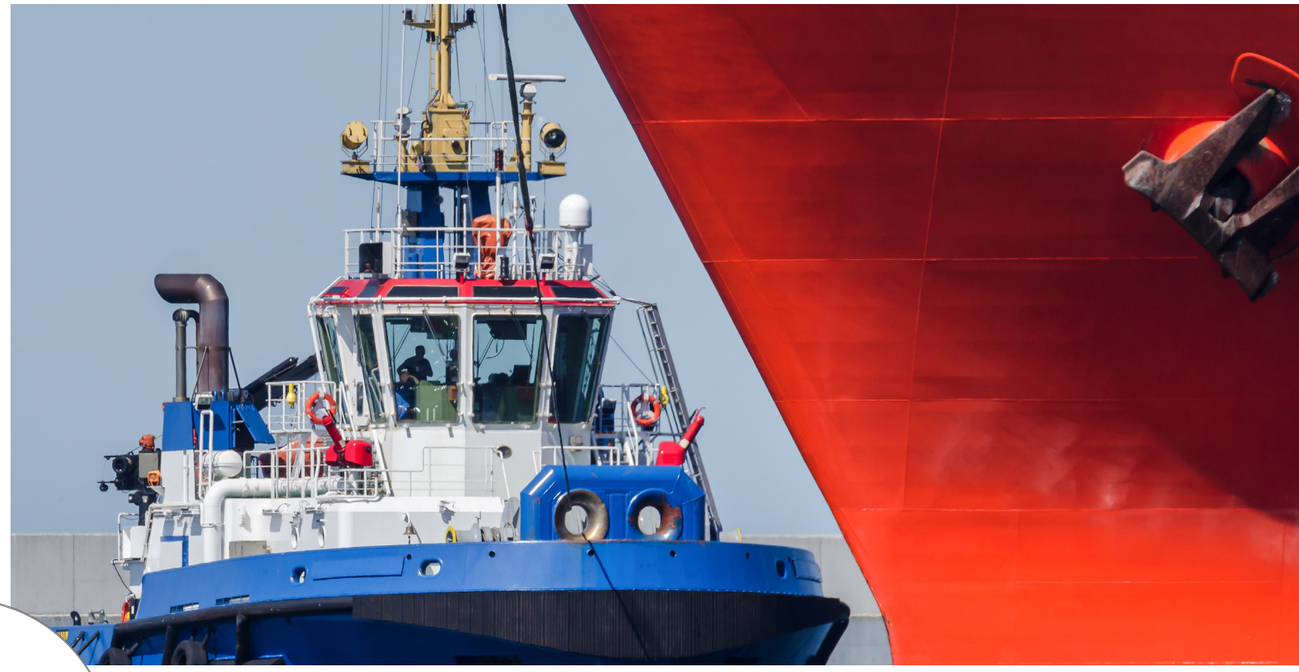
Ferries

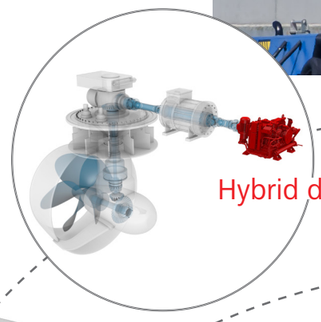
Solutions for tugboats

Getting the work done

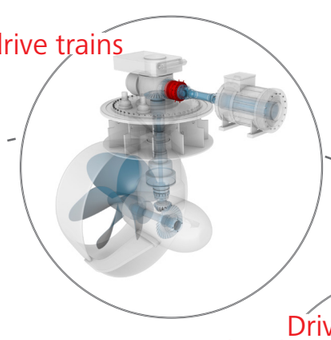
Ortlinghaus provides clutches and brakes for the main propulsion, enabling captains to have full control of their vessel at any time. Maneuvering during assist mode and escort mode requires a sensitive speed acceleration and deceleration, that is perfectly achieved with our hydraulic clutches. Depending on the driving concept used, torque transmission can either be realized by on/off function, or a permanent slipping. With different clutch solutions and controls available, even up to a trolling at full engine speed for fire fighting operation, the Ortlinghaus portfolio offers the right solution for each application.

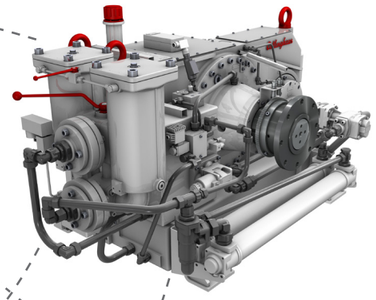






Hybrid drive trains





Prop.act

Self-sufficient, ready-to-install clutch unit

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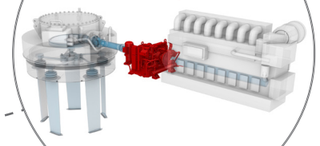
Drive trains with Voith Schneider Propeller



Series 021

Hydraulically actuated multi-plate clutch

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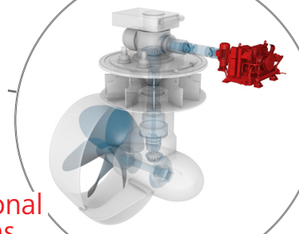
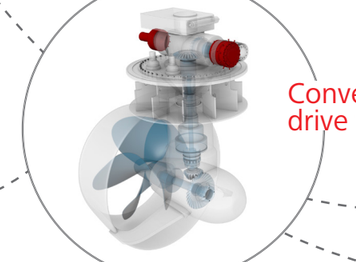
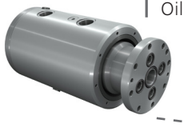


Conventional drive trains





Series 088

Oil inlet

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Series 222

Hydraulically actuated brake

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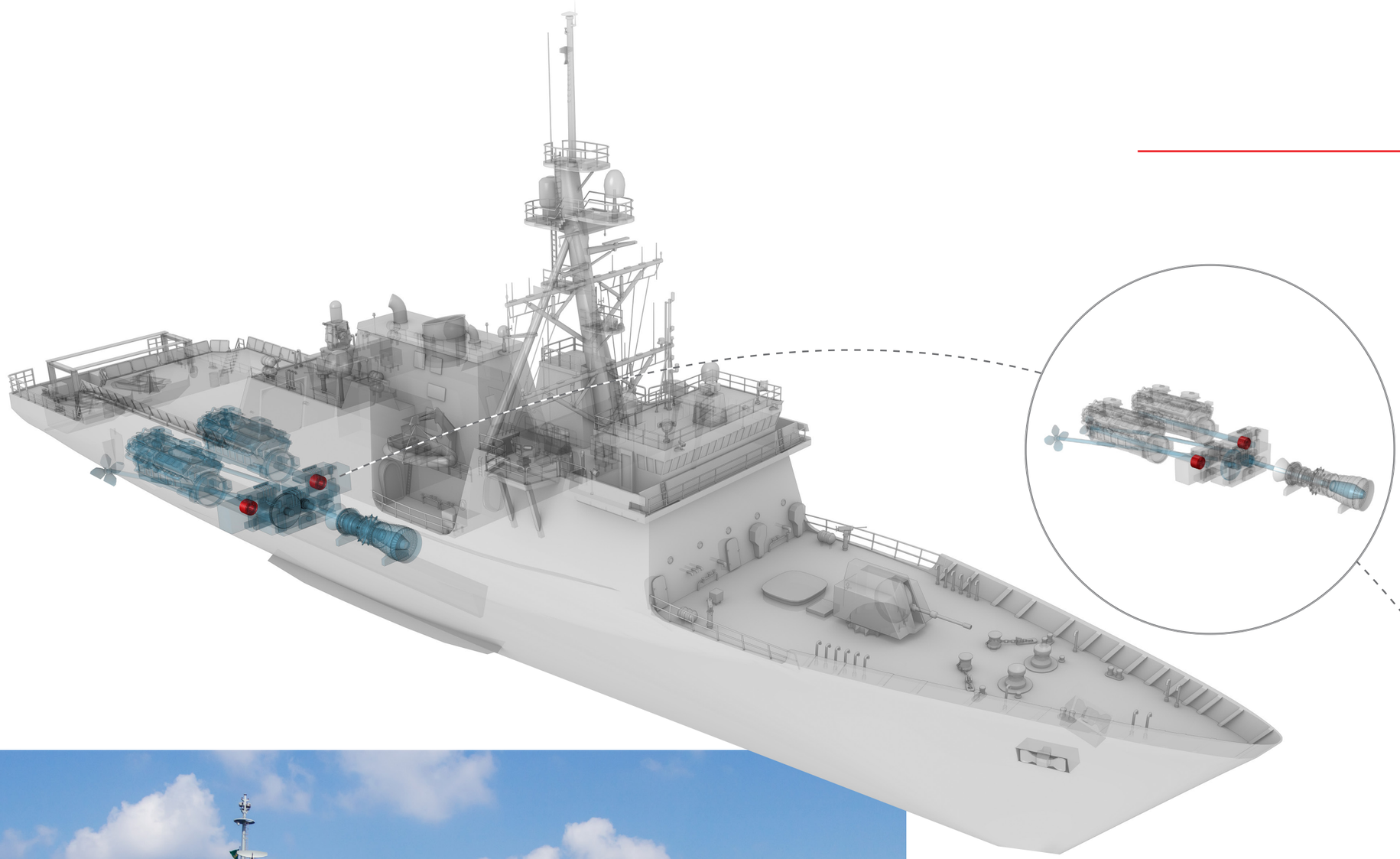
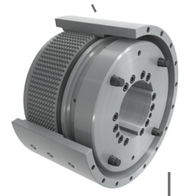
Clutch solutions for naval vessels



Exceptional reliability combined with high performance

Frigates have high requirements on their components. Especially in defending situations fast reactions are of great significance and in any case, reliability is a must.

Ortlinghaus is delivering solutions for naval vessels for more than 75 years as a reliable partner and is ready for future missions.



Series 202

Hydraulically actuated clutch

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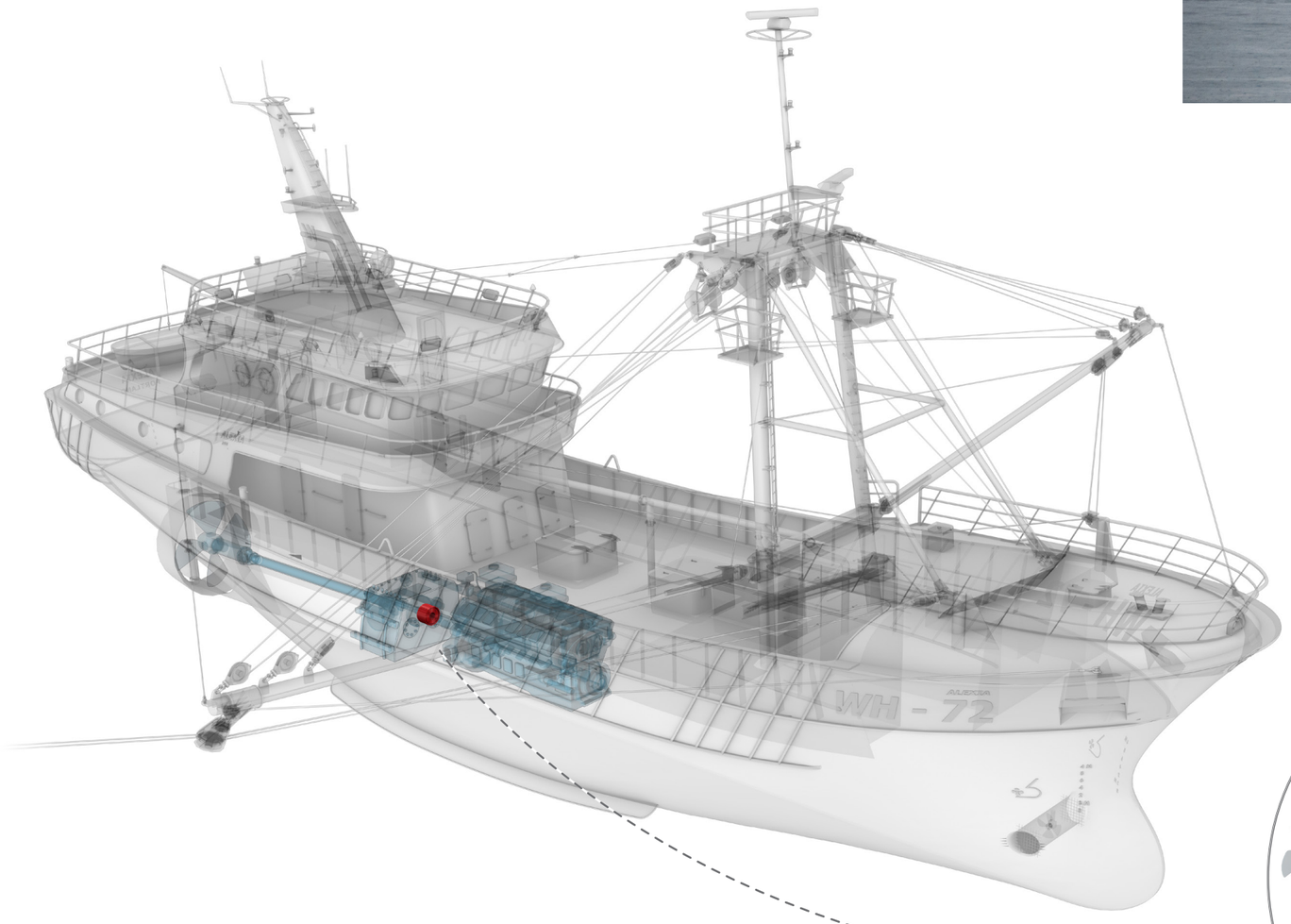
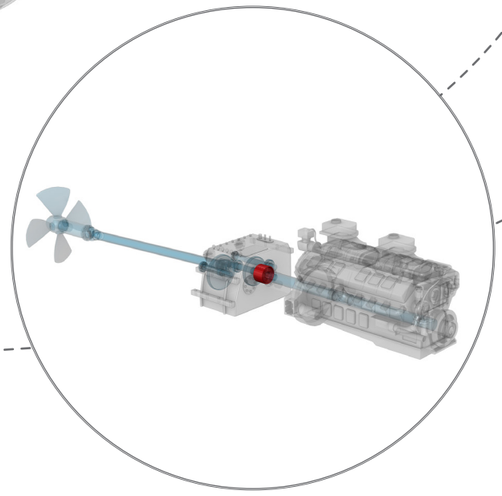
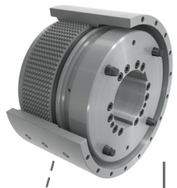
Clutches for fishing vessel

Full of dedication for the catch

High quality functionality and crew safety during all sea conditions is what counts for a fishing vessel and this is what Ortlinghaus drive train solutions defines.







Series 202

Hydraulically actuated clutch

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Series 021

Hydraulically actuated clutch

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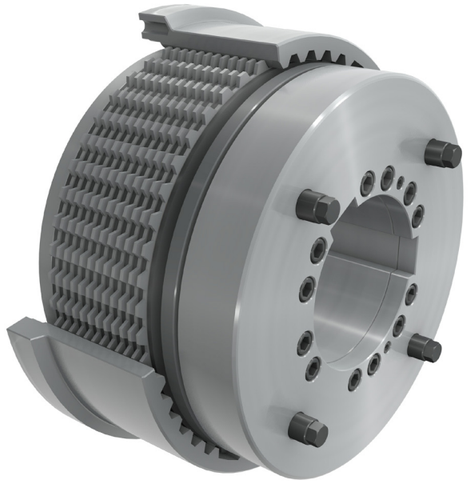
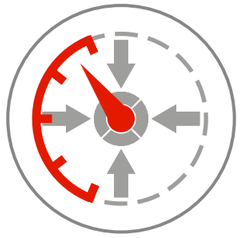


Clutch series 021 & 202

Hydraulically actuated multi-plate clutch

Ortlinghaus clutches unite the properties of high torque and high thermal absorption rates into a compact design. This brings highest performance into smallest space in combination with low weights and costs.

The customer interface can be adapted to the customer needs and this offers design flexibility and low integration efforts on the customer side.



High power density

The Ortlinghaus sinter lining combination inside these clutches combines highest torques in small clutch designs.

High engineering competence

With more than 75 years of experience Ortlinghaus has calculated thousands of clutches for different applications and drive train solutions safely and reliably.

Optimal maintenance conditions

These clutches deliver durability and long service intervals.

Maneuverability

With the wet running frictions system inside Ortlinghaus clutches ensure constant performance.

Lower dry docking costs

Due to long service intervals lower dry docking costs can be achieved.

Efficient operation

The nearly loss-free torque transmission ensures efficient operation.

Simple integration

Customizable interfaces of these clutches allow a simple integration in different drive train applications.

Sustainability

Environmentally compatible oils (e.g. EAL oils) can be used for our clutches according to our released oil list.

Series 021[1]							
	Feature	Size 81	Size 85	Size 89	Size 91	Size 94	Size 96
Dynamic torque	T_{dyn}	125.000 Nm	180.000 Nm	250.000 Nm	315.000 Nm	450.000 Nm	630.000 Nm
Operating pressure	p_B	25 bar	25 bar	25 bar	25 bar	25 bar	25 bar
Speed [2]	n	1.000 min^{-1}	900 min^{-1}	800 min^{-1}	750 min^{-1}	650 min^{-1}	600 min^{-1}
Outer diameter	A	620 mm	700 mm	785 mm	860 mm	970 mm	1050 mm
Max. bore diameter	B_{max}	235 mm	265 mm	285 mm	315 mm	370 mm	400 mm
Length	L	325 mm	360 mm	385 mm	410 mm	460 mm	510 mm

1) extract of available executions and other executions on request
2) higher speeds on request

Series 202[1]						
	Feature	Size 66	Size 72	Size 75	Size 78	Size 80
Dynamic torque	T_{dyn}	22.000 Nm	32.000Nm	45.000Nm	63.000 Nm	90.000 Nm
Operating pressure	p_B	25 bar	25 bar	25 bar	25 bar	25 bar
Speed [2]	n	1.800 min^{-1}	1.600 min^{-1}	1.400 min^{-1}	1.200 min^{-1}	1.000 min^{-1}
Outer diameter	A	365 mm	425 mm	465 mm	515 mm	580 mm
Max. bore diameter	B_{max}	125 mm	150 mm	165 mm	190 mm	210 mm
Length	L	230 mm	260 mm	282 mm	326 mm	350 mm

1) extract of available executions and other executions on request
2) higher speeds on request

Prop.act series 212

Self-sufficient, ready-to-install clutch system solution

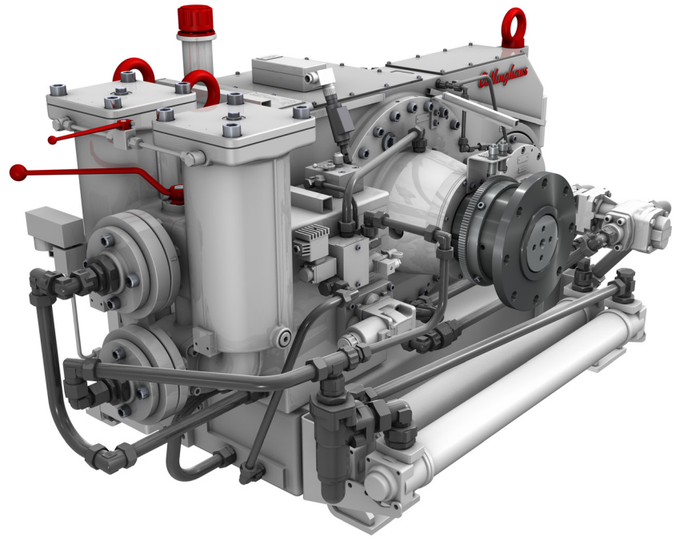
The Prop.act is a self-sufficient clutch system which comprises of an operationally ready clutch unit and the Prop.act control system. The unit can be freely positioned in the drive train and is bottom mounted in the engine room of the vessel. The engine and thruster can be connected using drive shafts, for example.

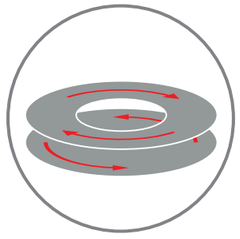
The Prop.act control system is connected to the ship's control. The supplied cooling system is integrated in the ship's cooling circuit. Free accessibility of the Prop.act facilitates ideal service conditions with a self-sufficient oil circuit, which is adapted optimally to the clutch system.

>> further information on https://prop.act.ortlinghaus.com

	Prop.act		
	66 MD	72 MD	75 HD
$T_{Mot, nenn}$	15.750 Nm	25.000 Nm	35.650 Nm
P / n - Factor	1,65	2,62	3,7
$n_{nenn, max.}$ - SL	1.800 min^{-1}	1.800 min^{-1}	1.800 min^{-1}
$n_{nenn, max.}$ - ML	1.400 min^{-1}	1.400 min^{-1}	1.000 min^{-1}
$n_{nenn, max.}$ - LL	1.000 min^{-1}	1.000 min^{-1}	750 min^{-1}
Power PTO	40 kW	60 kW	60 kW
Cooling capacity [1]	45 kW V_{H2O} =3,5m³/h; T_{H2O} =38°C	90 kW V_{H2O} =10m³/h; T_{H2O} =38°C	450 kW V_{H2O} =27m³/h; T_{H2O} =38°C
Tank oil volume	120 l	190 l	450 l
A	1.370 mm	1.740 mm	1.450 mm
B	1.230 mm	1.440 mm	1.930 mm
C	820 mm	960 mm	1.720 mm
Weight [2]	~1.250 kg	~2.000 kg	~3.900 kg
Weight [3]	~1.450 kg	~2.250 kg	~4.250 kg

1) in dependence of V_{H2O} and $T_{H2O.IN}$
2) without oil filling, without stand-by pump / brake
3) without oil filling, with stand-by pump / brake





Extreme continuous slipping

The possibility of continuous slipping makes safe manoeuvring possible even under rough sea conditions and challenging escort maneuver.

Trolling to speeds close to 0

The slipping function of the clutch in combination with the additional brake makes it possible to vary the propeller speed to almost zero.

Safety

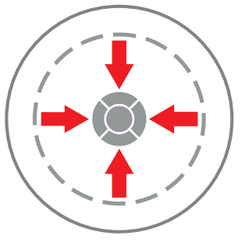
The slipping function offers a high level of safety against stalling of the diesel engine. The captain therefore always has a secure drive system at his disposal, allowing fast reactions to avoid loss of drive or control of escorted ships.

Costs

The combination of Prop.act and rudder propeller drive with fixed pitch propeller (FPP) is a cost-effective alternative to controllable pitch propeller (CPP) drives.

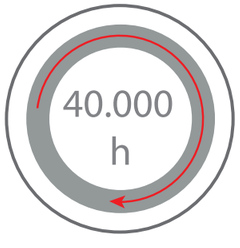
Simple integration

Straightforward integration of the Prop.act in the drive train is facilitated by free positioning in the drive train between the thruster and the engine, together with the control system supplied as an option and a cooling system.



Compact design

This type of installation saves space compared with separate firefighting drives.

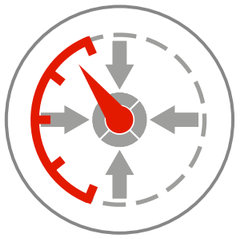


Long service life

If deployed and operated correctly, the unit achieves a main service interval of at least 40,000 operating hours.

Sturdy construction

The sturdy construction of the unit offers a high level of operational reliability.



High torque density

The Ortlinghaus friction lining combination inside these brakes ensure highest torques at small dimensions.

Durability and safety

Ortlinghaus wet running brakes provide a long service life and safety due to an optimal design, durability and functional reliability.

Optimal maintenance conditions

These brakes are designed for durability and ensures therefore long service intervals provided that the brakes are operated within the technical limits.

Easy assembly

Due to its flangeable design these brakes allow an easy assembly.

Hydraulically actuated brake series 222

Hydraulically actuated brake

Hydraulically actuated brakes from Ortlinghaus are efficient in their design and capabilities. They feature high torques and low mass in a very compact design. Based on the closed design the brakes do not need to be housed for safety reasons. They provide optimal protection against external influences that could influence the brakes behavior which lead to an extremely long service life among others. Combined with our experience in the field of marine brakes, our consulting expertise for the selection of the best fitting brake solution and quality by Ortlinghaus without compromises these brakes are established in the marine applications.

	Series 222						
	Feature	**Size 39**	**Size 47**	**Size 55**	**Size 63**	**Size 69**	**Size 84**
Dynamic torque[1)]	T_{dyn}	2.400 Nm	3.600 Nm	5.600 Nm	8.900 Nm	15.500 Nm	69.000 Nm
Operating pressure	p_B	25 bar	25 bar	25 bar	25 bar	25 bar	20 bar
Speed [2)]	n_{max}	5.500 min^{-1}	4.400 min^{-1}	2.900 min^{-1}	2.700 min^{-1}	2.500 min^{-1}	1.300 min^{-1}
Outer diameter	A	205 mm	245 mm	295 mm	350 mm	400 mm	710 mm
Max. bore diameter[3)]	B_{max}	65 mm	90 mm	110 mm	140 mm	150 mm	300 mm
Length	L	110 mm	125 mm	175 mm	190 mm	200 mm	250 mm

1) higher torques on request
2) higher speeds on request
3) bore execution with keyways or toothing according to DIN 5480

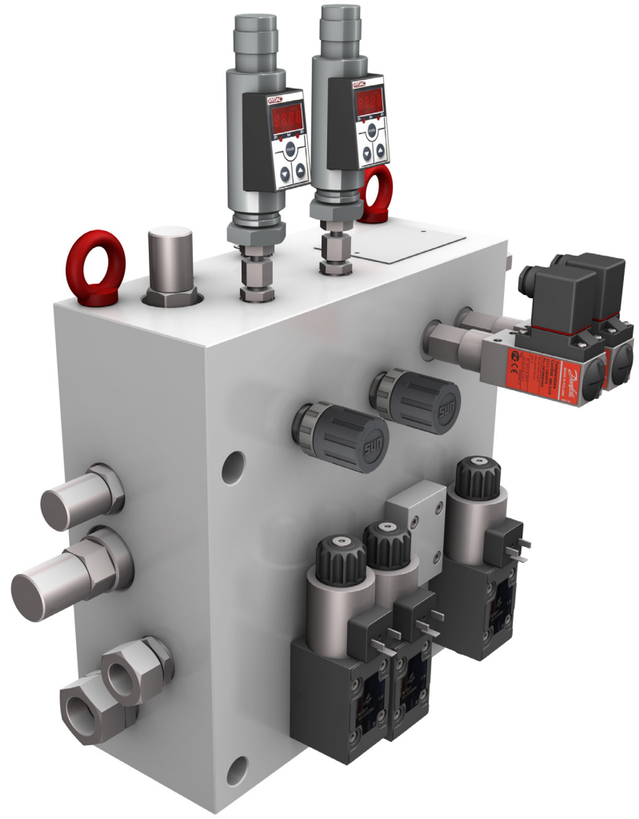
Hydraulic control unit for marine clutches

Hydraulic control unit

To achieve a complete scope of supply Ortlinghaus developed a control unit which incorporates different functions to minimize installation complexity for the clutch control. This control unit can be delivered for the control by means of a pilot pressure valve or with a proportional valve to allow a smooth engagement of the clutch.

	Hydraulic control unit for the engagement of marine clutches and pressure control			
	Feature	**II**	**II**	**III**
Operating pressure [1]	p_B	30 bar	30 bar	30 bar
Operating viscosity [1]	ν@50°C	22 - 68 cst	22 - 68 cst	22 - 68 cst
Operating temperature	T	20 - 70 °C	20 - 70 °C	20 - 70 °C
Oil volume	V_{oil}	≤ 40 L/min	40...80 L/min	80...120 L/min
Length	L	430 mm	480 mm	530 mm
Width	W	200 mm	230 mm	250 mm
High	H	500 mm	530 mm	550 mm

1) higher pressures, viscosities and oil volumes on request



Monitoring of operating conditions

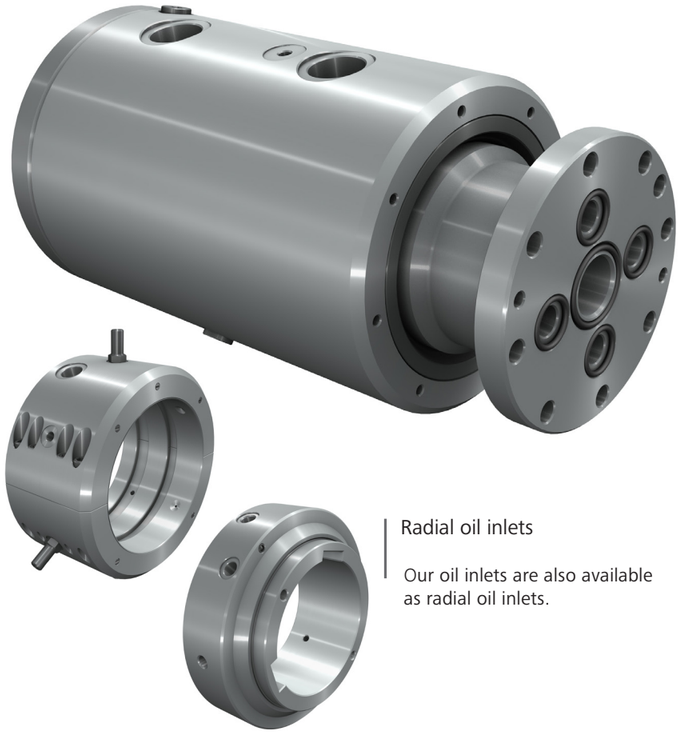
The integrated pressure and temperature sensors provide the option to monitor the operating conditions.

Soft engagement and operating comfort

With the optionally available execution with an proportional valve soft engagement of the clutch can be realized through a very flexible and sensitive pressure control.

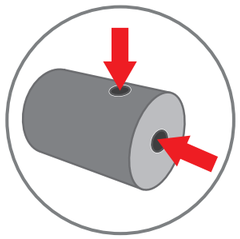
Lower installation and piping efforts

This control unit unites several functions in a small space and reduces the installation and piping efforts for the clutch control.



Radial oil inlets

Our oil inlets are also available as radial oil inlets.



Axial and radial executions available

Oil inlets can be supplied in axial or radial design. If there is no free access to push the radial oil inlet from one side onto the shaft, a split version is available for easy assembly.

Simple integration

For different setups Ortlinghaus can supply different mounting options of oil inlets which allows a simple integration.

One or two channel executions available

Ortlinghaus delivers one and two channel oil inlets. More channels on request.

Oil inlet

Oil inlet

Ortlinghaus has been manufacturing single and multi-channel rotary inlets for several decades and these are frequently supplied as accessories for oil actuated and also for oil cooled clutches. These tried and tested machine components for the feeding of pressurised oil and cooling oil into rotating shafts are standard products and are not only for use in conjunction with clutches. The oil inlets are available in axial and radial variants. In addition to this Ortlinghaus also develops and manufactures rotary inlets to customers own requirements, which are not listed in the catalogue of our standard products. It is thus possible for example to manufacture rotary inlets with more than three channels which are able to carry different media.

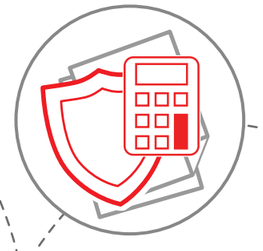
	Axial oil inlet			
	Feature	**Size 22**	**Size 27**	**Size 35**
Operating pressure [1]	p_B	30 bar	30 bar	30 bar
Speed [2]	n	2.200 min^{-1}	1.800 min^{-1}	1.400 min^{-1}
Outer diameter [3]	A	120 mm	160 mm	180 mm
Length	L	165 mm	247 mm	288 mm
Number of channels / connections	i x M	2 x G1/2	2 x G3/4	2 x G1
Oil volume [4] [5]	V_{oil}	35 L /min	100 L /min	150 L /min

1) higher pressures on request
2) higher speeds on request
3) without oil catching ring, oil catching ring on request
4) multi-channel executions for higher oil volumes on request
5) at operating viscosity 68 cSt and pressure loss ≤ 2 bar @50°C

In good hands from the beginning

Enquiry

- via contact form on our website
  >> www.ortlinghaus.com
- directly via Mail to
  >> marine@ortlinghaus.com
- contact through one of our world wide sales representatives
  > www.ortlinghaus.com
  >> Contacts & Media
  >>> Contacts

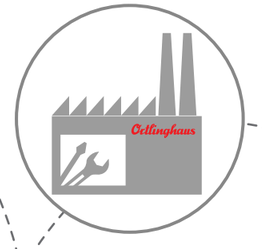


Technical consultance

- many thousands of products for different marine propulsion drive train applications in the field
- selection of technically and economically best fitting products

Order

- quick response times
- friendly support
- flexible order handling



Production

- more than 100 years of production know-how
- high quality

Delivery

- safe and reliable shipping methods according to customer requirements
- world wide delivery
- known consigner

After Sales

- world wide after sales service
- high availability
- commissioning
- >> service@ortlinghaus.com

Get in touch

Talk to one of our experts. Our Industry Manager Steve Boccarius is pleased to get in touch with you.

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Mail	steve.boccarius@ortlinghaus.com

Ortlinghaus worldwide

Founded in: 1898

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
Ortlinghaus America Latina / Brasil

Manufacturing:
Wermelskirchen / Germany
Gams / Switzerland
Jinan / China

Sales: Worldwide via agencies

Original spare parts

Product overhaul at Ortlinghaus

Service & repair worldwide

Condition check

High After-Sales-Service availability (24/7)

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