

Thrusters with Gear Pump

for electrohydraulic brakes



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E09.070e



Thrusters with Gear Pump

for electrohydraulic brakes



Features	Code
Thruster	T
Design	G
Lifting forces of 2 000 N, 3 500 N, 4 500 N or 5 500 N are available	200 to 550
Total stroke of 60 mm, 80 mm or 120 mm are available	06 08 12
Installation dimension h1 of 550 mm, 555 mm or 595 mm	550 555 595
Options (see page 4)	...

Example for ordering

Thruster TG, lifting force 2 000 N, total stroke 60 mm, installation dimension h1 550 mm, with manual hand release and increased corrosion protection:

TG 200 - 06 - 550 - LS - M

Design and function

The electrohydraulic thruster combines all the basic elements of a hydraulic system in a coaxial unit: an electric motor, a hydraulic pump and a hydraulic cylinder. It is designed to exert a constant linear force for a given stroke.

The pump coupled to the motor shaft builds up hydraulic pressure under the piston, which causes an upward movement in the hydraulic cylinder against the external attenuation spring. When the engine is switched off, the piston in the hydraulic cylinder moves back via the external attenuation spring.

The hydraulic force is almost independent of the piston position of the cylinder. With a lower load, the stroke movement is faster and the downward movement slower.

Advantages

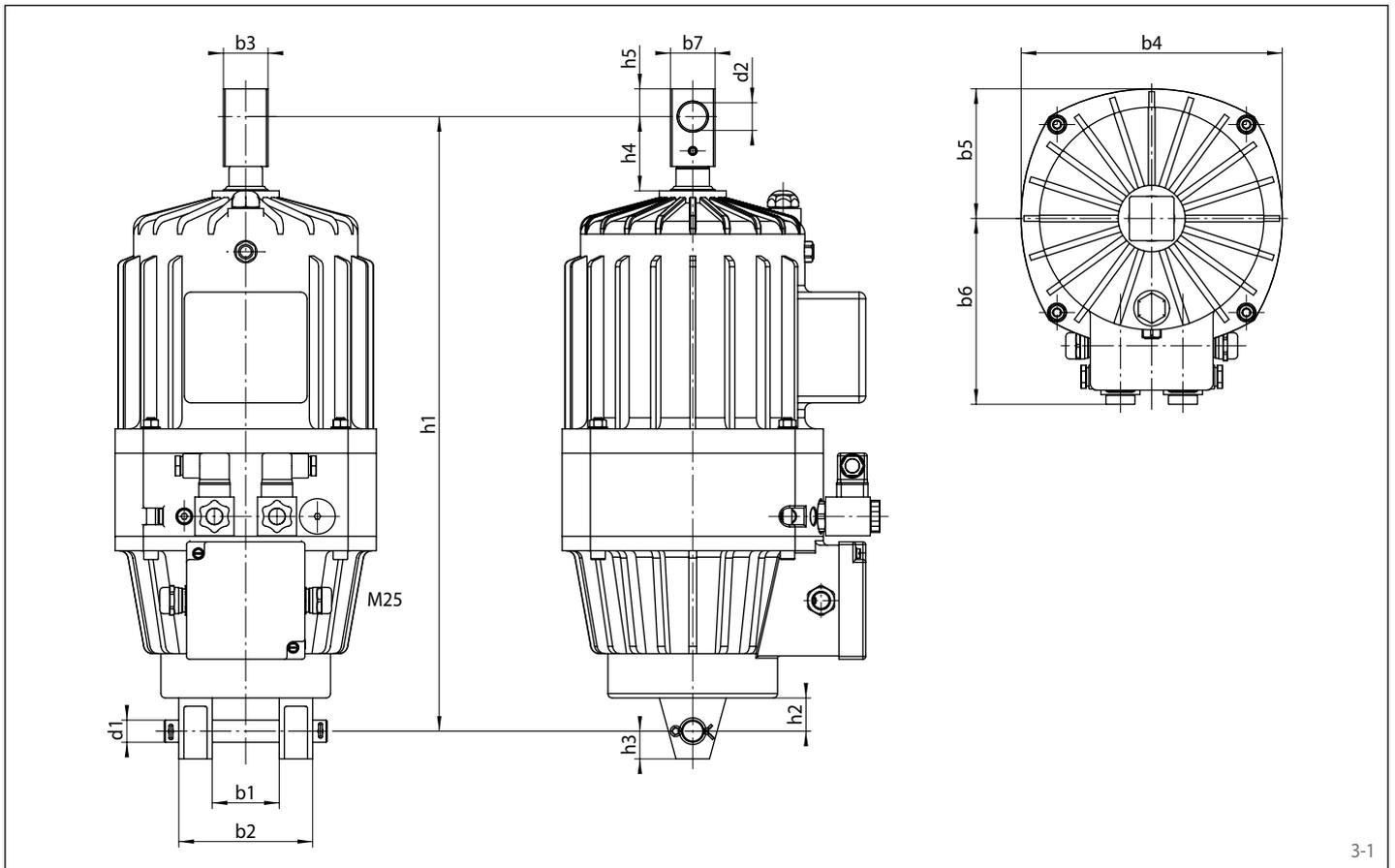
- The hydraulic force of the thruster is independent of the position of the piston rod
- The thruster cannot be overloaded, even if an external force acts on the piston rod that is greater than the thrust of the thruster
- Depending on the ambient conditions, extremely short closing times well below 90 ms can be achieved
- As soon as the thruster has fully opened the brake, the thruster goes into energy-saving pressure-less circulation mode
- Maintenance-friendly design allows valves to be replaced without dismantling the thruster

General technical data

Motor	2-pole Three-phase squirrel cage
Insulation level	F
Voltage	400 VAC 3~
Supply frequency	50 Hz
Duty factor	100%
Max. number of actuation	900/h
Insulation	IP65
Oil filling	HLP 46
Mounting position	vertical with piston rod upwards or horizontal with terminal box upwards
Permissible ambient temperature	-20 °C - +45 °C

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Dimensions

Thruster type	Internal code	b1	b2	b3	b4	b5	b6	b7	d1	d2	h1	h2	h3	h4	h5
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
TG 200-06-550	477 C	60	120	30	234	117	168	40	20	20	550	30	25	62	15
TG 550-06-550	477 J	60	120	30	234	117	168	40	20	20	550	30	25	62	15
TG 350-08-555	475 F	60	120	40	234	117	168	40	20	25	555	30	25	67	25
TG 450-08-555	475 H	60	120	40	234	117	168	40	20	25	555	30	25	67	25
TG 550-08-555	475 J	60	120	40	234	117	168	40	20	25	555	30	25	67	25
TG 350-12-595	476 F	60	120	40	234	117	168	40	20	25	595	30	25	67	25

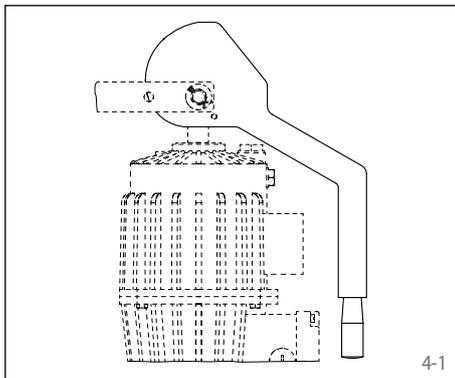
Technical Data

Thruster type	Internal code	Min. lifting force	Total stroke	Nominal power approx.	Max. current consumption at 400 V, 50 Hz	Oil Volume	Weight with Oil
		N	mm	W	A	l	kg
TG 200-06-550	477 C	2000	60	240	0,5	5,0	31
TG 550-06-550	477 J	5500	60	240	0,5	5,0	31
TG 350-08-555	475 F	3500	80	240	0,5	5,0	31
TG 450-08-555	475 H	4500	80	240	0,5	5,0	31
TG 550-08-555	475 J	5500	80	240	0,5	5,0	31
TG 350-12-595	476 F	3500	120	240	0,5	6,0	35

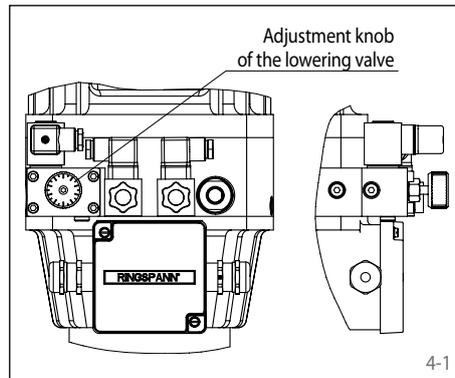
Code and description of possible options

Options	Code
<ul style="list-style-type: none"> • For temperatures down to -30 °C Filling with a special oil 	(A)
<ul style="list-style-type: none"> • For temperatures down to -40 °C With an electric heating rod for 230 VAC 	(AA)
<ul style="list-style-type: none"> • For temperatures up to +70 °C With special seals 	(W)
<ul style="list-style-type: none"> • Lowering valve Slows down the lowering of the piston rod 	(SV)
<ul style="list-style-type: none"> • Non-standard voltage & frequency For use with non-standard voltages or frequencies 	(Vf)
<ul style="list-style-type: none"> • With hand release lever To manually drive out the piston rod in a de-energised state (brake release) 	(LS)
<ul style="list-style-type: none"> • Terminal box turned 90° 	(T)
<ul style="list-style-type: none"> • Other colour than RAL 7021 	(Col)
<ul style="list-style-type: none"> • Version with increased corrosion protection 	(M)

With hand release lever (LS)



Lowering valve (SV)



Please note:

The options can not be combined arbitrarily. If you need more options, please contact RINGSPANN.

Motor connection

- The three ends of the supply cable cannot be connected to the terminals in any order, as the thruster do not operate independently of the direction of rotation of the motor. After the electrical connection, check whether the piston rod extends out of the thruster after a short operation; otherwise, two phases must be exchanged.
- The thruster should be switched via a separate contactor. The direct parallel connection with e.g. the crane motor can delay the lowering time and thus the braking effect.
- The thrusters are insensitive to voltage fluctuations of up to $\pm 10\%$.
- Mounting points for an earthing cable are provided inside and outside the terminal box.
- The terminal box has a M25 gland on one side for cable feedthrough.

Hydraulic oil

The thruster is delivered complete with oil filling HLP 46 .

Oils from other manufacturers with a viscosity of approx. $46 \text{ mm}^2/\text{s}$ at $+40^\circ\text{C}$ can also be used.

Examples:

- Fuchs Renolin 46
- Shell Tellus 46 HLP
- Liqui Moly 46 HLP
- Tectrol 46 HLP
- etc.

Operating and ambient temperature

All thrusters are designed for continuous operation and for interval operation with up to 900 operations/hour at ambient temperatures ranging from -20°C to $+45^\circ\text{C}$. At temperatures

of more than $+45^\circ\text{C}$ the oil becomes thinner; the hydraulic losses increase and the hydraulic forces decrease. At temperatures below -20°C the oil becomes denser and the piston move-

ments become slower. For these reasons, the thrusters must be filled with a suitable type of oil for extreme ambient temperatures.

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