

# Linear actuators

## MAGFORCE STG

### Description

Magforce linear actuators type STG are specially suitable for use in vehicles, agricultural machines and industrial applications due to their DC motor and compact, robust design. Due to the performance of the permanent magnet motor (24 VDC) the speed is slightly dependent on the load. A thermal switch incorporated in the motor cuts off the power supply in the event of overheating and resets itself again after cooling. The stroke is restricted by internal mechanical stops. Magforce actuators have an integrated friction clutch to protect the actuator and the application from overload. The internal mechanical end stops must not be used as stroke limit. If it cannot be avoided that the actuator runs into the end stops, the use of end switches (accessories or external) is imperative. The motor, however, should be prevented from operating for long periods of time against the end stops. The duty cycle stated below relates to an ambient temperature of +40 °C and an interval operating time of 10 minutes. The technical data mentioned refer to operation under nominal load. The standard stroke is 200 mm, but lengths up to 700 mm are available on request, whereby the body length is increased proportionally. With increasing push forces the safety factor decreases. In order to maintain the recommended safety factor

of  $S=4$  an additional guide bearing can be fitted, which extends the body length by 50 mm.

### Electrical Connection

Electrical connections are extremely simple because there are no built-in limit switch. Reversing of the motor is achieved by changing poles via push button or relay. A direct change of direction should be avoided because of the arising inertia forces. The push button or switch must return automatically to the neutral position when it is released so that the motor does not run against the end stops for longer than necessary. Alternatively external limit switches can be supplied on request which switch off the motor in the end positions. When using a battery make sure that its capacity is sufficient.

### Installation

The actuator is attached via the rear and front clevis. An adapter supplied optionally as well as the fork head can be fixed to the push tube. Turning of the push tube is generally possible. When using the limit switch with STG actuators, the push tube must not be turned again after limit switch adjustment. Side loads on the push tube must be avoided. The push tube must not be subjected to bending loads and motor and levers should be aligned. Make sure that the electric cables are not damaged by squeezing, bending or stretching.



Customers must ensure that the cable entry point is tight to guarantee protection class IP54.

### Maintenance

The linear actuator has sufficient lubrication reserve and is almost maintenance-free. Only the push tube should be cleaned and lightly greased from time to time. The service life depends very much on the corresponding application (for example, temperature, conditions regarding run, force and cycles, as well as environmental influences) and must be found out in case of need. Defective motors may be repaired only in our factory for safety reasons.

### Remark

If our actuators are used for applications where persons could be directly or indirectly endangered, we have to be contacted in order to discuss safety precautions.

Technical data:	Unit	STG 10007	STG 12010	STG 15020	STG 15040
Push/pull force	kN	10	12	15	15
Static load	kN	16	16	16	16
Speed	mm/s	14	11	5	3
Stroke length	mm	100 to 700	100 to 700	100 to 700	100 to 700
Voltage	VDC	24	24	24	24
Power consumption	W	840	840	768	528
Current consumption	A	35	35	32	22
Duty cycle (SD 10 min.)	%	10	10	10	10
Ambient temperature	°C	-10 to +40	-10 to +40	-10 to +40	-10 to +40
Protection/insulation	-	III/E	III/E	III/E	III/E
Protection class	IP	54	54	54	54
Weight (with 200 mm stroke)	kg	14,6	14,6	14,6	14,6



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Accessories

- adapter 1031,0106
- fork head complete 1051,9038
- limit switches complete  
0 ... 370 mm stroke lengths  
1043,0268
- limit switches complete  
100 ... 445 mm stroke lengths  
1043,0252
- limit switches complete  
200 ... 740 mm stroke lengths  
1043,0266
- potentiometer 475 mm stroke lengths  
1 kΩ standard 1063,0011
- potentiometer max. 944 mm  
stroke lengths  
1 kΩ standard 1063,0012
- other potentiometer values on request
- extended motor shaft
- magnetic brake
- back-up nut

