

Manual Actuator

MA

Type Series Booklet



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Type Series Booklet MA

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Contents

Manual Actuators	4
Manual Gearboxes	4
MA	4
Main applications	4
Operating data	4
Design details	4
Product benefits	4
Technical data	5
Type series	5
Materials	6
MA 12 manual gearbox	6
MA 25 manual gearbox	7
Variants	8
Handwheel locking arrangement	8
Limit switch box	8
Dimensions and weights	9
Dimensions [mm] and weights [kg] for MA 12	9
Dimensions [mm] and weights [kg] for MA 25	9

Manual Actuators

Manual Gearboxes

MA



- MA: flat end or square end

- The manual gearboxes are equipped with a handwheel and position indicator.

Product benefits

- Grease-packed for life (silicone-free grease) at the factory, therefore maintenance-free.
- No interference with the piping due to top-mounted handwheel
- Visual position indicator under sight glass for remote indication
- Irreversible gear kinematics in any position
- High-efficiency force transmission

Main applications

- Air-conditioning
- General industrial applications

Operating data

Table 1: Operating properties

Characteristic	Value	
MA/MA+	MA 12	MA 12+
	MA 25	MA 25+
Min. permissible temperature [°C]	≥ -20	
Max. permissible temperature [°C]	≤ +80	
Output torque [Nm]	≤ 250	
Enclosure	IP65	

Design details

Design

- The MA manual gearboxes developed by KSB-AMRI cover torques of up to 250 Nm.
- The MA series of manual gearboxes with planetary gear is especially suited for centred-disc butterfly valves. They are mainly used in air-conditioning systems.
- Exterior coating of MA+ with ISO 5211 compliant square head drive: polyurethane coating, average thickness 80 µm, colour: RAL 5002 blue
- Exterior coating of MA with flat or square head drive: polyurethane, average thickness 80 µm, colour: RAL 9011 black
- Actuator/valve interface to ISO 5211
- The manual gearboxes are equipped with removable adapters allowing them to be mounted on valves with different types of shaft end:
 - MA+: square end to Standard ISO 5211

Technical data

Type series

Table 2: Torques [Nm] and number of handwheel turns

Type	Nominal output torque	Nominal input torque	Number of handwheel turns
MA / MA+			
12	125	23	8
25	250	40	8

Table 3: Standardised interface and shaft dimensions

Type	Interface standardised to ISO*	Max. permissible shaft dimensions					
		Square end		Valve-dependent	Flat end		Valve-dependent
		Height	Square end		Height	Flat end	
MA							
12	F04 - F05	-	-	-	25	H14	H9, H11, H14
25	F07 - F10	-	-	-	38	H17	H17
					38	H19	H14, L19, H19
MA+							
12	F04 - F05	17	T14	L11, L14, T11, T14	-	-	-
25	F07 - F10	20	T17	L14, L17, T14, T17	-	-	-

- * Direct mounting in the case of identical interfaces
 Mounting by means of intermediate flange in the case of different interface sizes and footprints

Materials

MA 12 manual gearbox

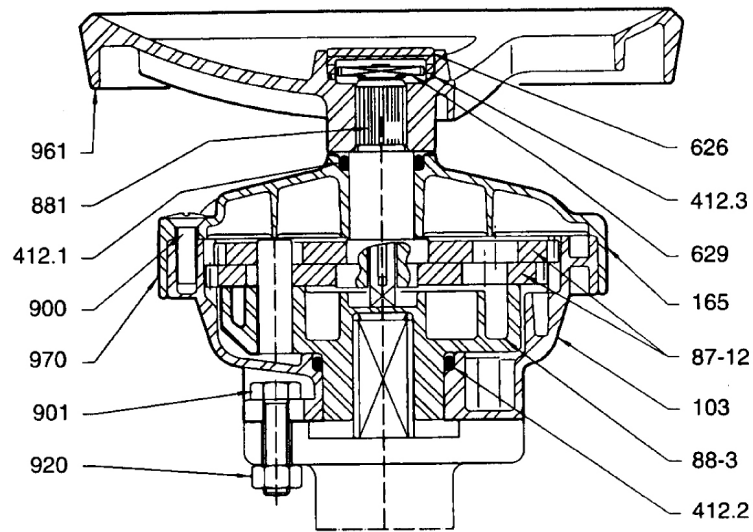


Fig. 1: Sectional drawing of MA 12

Table 4: List of components

Part No.	Description	Materials
103	Gear housing	Light metal alloy
165	Bonnet	Light metal alloy
412.1	O-ring	Nitrile
412.2	O-ring	Nitrile
412.3	O-ring	Nitrile
626	Sight glass	Polycarbonate
629	Position indicator	Polypropylene
87-12	Planet wheel	Steel
881	Eccentric shaft	Steel, phosphated
88-3	Torque-transmitting element	Light metal alloy
900	Thread-cutting screw	Galvanised steel
901	Hexagon head bolt	Galvanised steel
920	Nut	Galvanised steel
961	Handwheel	Light metal alloy
970	Name plate	Adhesive label, polyester-coated

MA 25 manual gearbox

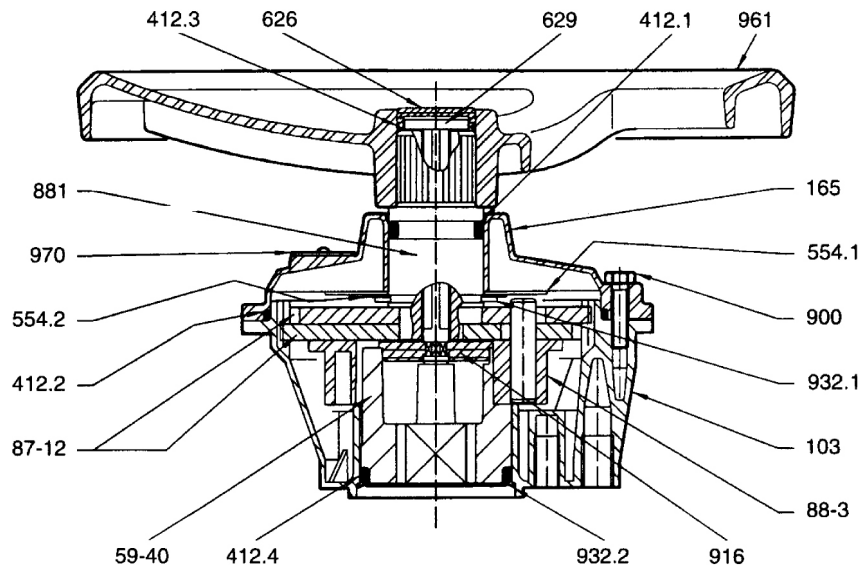


Fig. 2: Sectional drawing of MA 25

Table 5: List of components

Part No.	Description	Materials
103	Gear housing	Light metal alloy
165	Bonnet	Light metal alloy
412.1	O-ring	Nitrile
412.2	O-ring	Nitrile
412.3	O-ring	Nitrile
412.4	O-ring	Nitrile
554.1	Washer	Galvanised steel
554.2	Disc spring	Galvanised steel
59-40	Actuating bush	Zinc alloy
626	Sight glass	Polycarbonate
629	Position indicator	Polypropylene
87-12	Planet wheel	Steel
881	Eccentric shaft	Tempered steel
88-3	Torque-transmitting element	Light alloy and steel
900	Thread-cutting screw	Galvanised steel
916	Screw plug	Nitrile
932.1	External circlip	Steel
932.2	Internal circlip	Steel
961	Handwheel	Light metal alloy
970	Name plate	Adhesive label, polyester-coated

Variants

Handwheel locking arrangement

Locking by chain

Manual gearboxes of the MA series can be padlocked with a chain.

(Padlock not included in scope of supply)

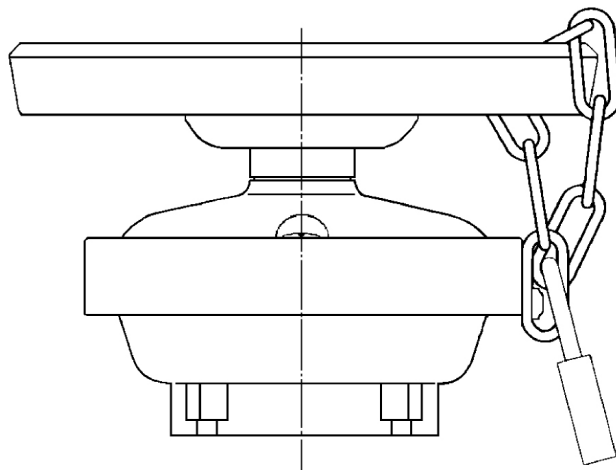


Fig. 3: MA 12 with chain and padlock

Limit switch box

MA manual gearboxes can be equipped with a limit switch box.

This limit switch box is mounted between the valve and the gearbox. It can be equipped with two switches (1 for OPEN, 1 for CLOSED) of the following types:

- Standard microswitch or explosion-proof microswitch
- Standard proximity sensor or proximity sensor to NAMUR

Connection is effected either by cable gland or connector.

This limit switch box is supplied in IP65 enclosure as standard.

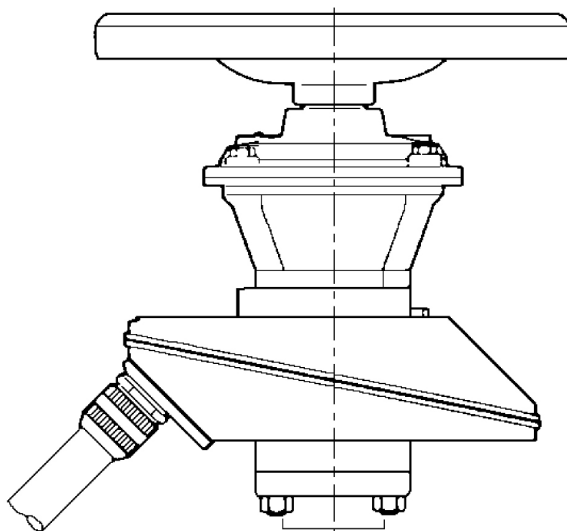


Fig. 4: MA 25 with limit switch box

Dimensions and weights

Dimensions [mm] and weights [kg] for MA 12

Weight: 1.5 kg

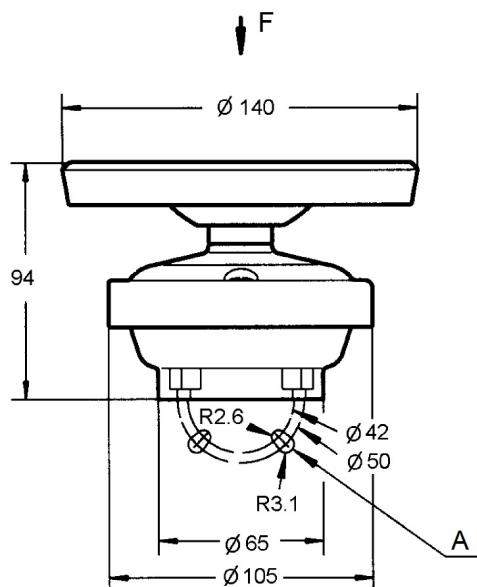


Fig. 5: Drawing of MA 12

A: 4 evenly spaced slotted holes

Dimensions [mm] and weights [kg] for MA 25

Weight: 3 kg

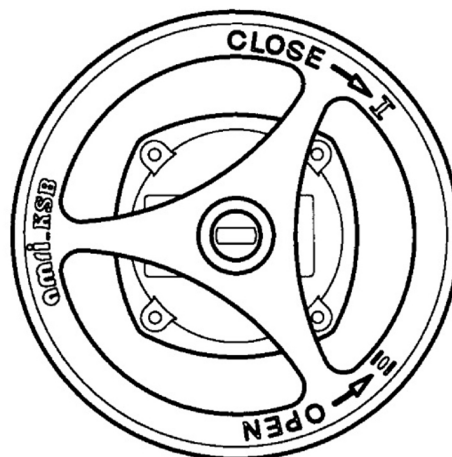
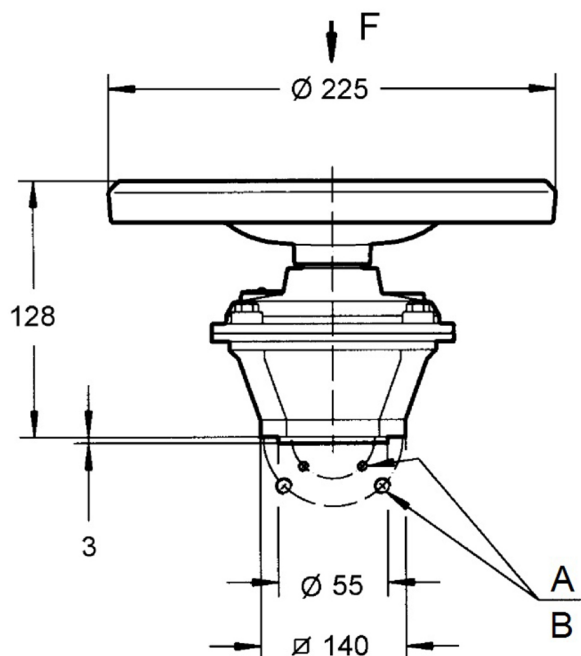


Fig. 6: Drawing of MA 25

A: 4 M8 holes evenly spaced on a 70 mm diameter circle
B: 4 M10 holes evenly spaced on a 102 mm diameter circle



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