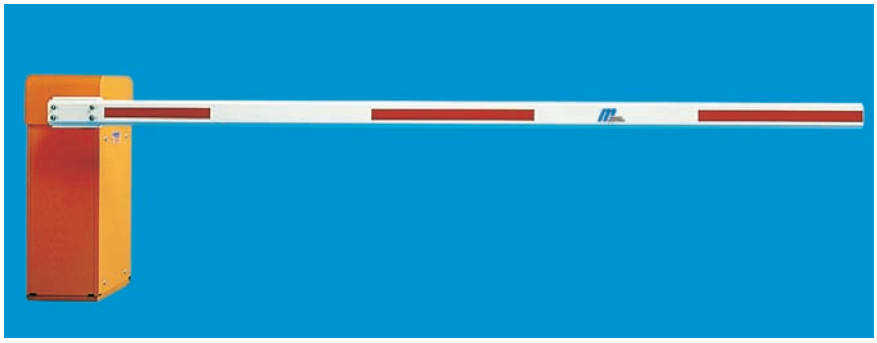
Operating Instructions

MAGSTOP Barriers

Type: MTS 6/8

Please read entire manual carefully before starting installation.

Info



Barriers MAGSTOP

MTS 6
MTS 8

Technical Data :	Type	MTS 6	MTS 8
Max. barrier width	feet	26′	33′
Opening/closing time	s	6.5	8.5
Voltage V		115	115
Frequency	Hz	60	60
Power consumption	W	280	280
Housing width	inches	18.5″	18.5″
depth	inches	14.5″	14.5″
height	inches	43″	43″
Weight excluding boom	Lbs	298	298
Motor		SAM 210 – 24	SAM 210 – 34
Capacitor	C1/C2 µF	30/20	30/20

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Barrier Gate
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Technology

The combination of our patented torque motor and a sinusoidal lever system represents a simple drive system with high reliability. This drive system permits fast opening and closing times without "bouncing" of the boom in the end positions. The sinusoidal lever system ensures that the boom is locked in both end positions. In the event of power failure, however, it can easily be moved by hand.

The boom weight is exactly balanced by means of built-in springs. Adjustment to the appropriate boom length is carried out at the factory before delivery. Modifications such as shortening of the boom or the attachment of sign-boards can be adjusted without difficulty on site during installation.

Drive

The heart of the Magnetic barrier is the 115 V AC patented blockable torque motor. It requires neither limit switches nor a slip clutch and is maintenance-free.

The torque motor can be blocked in any position without causing damage. In the end positions, it stops with the voltage still applied, and locks the boom via the lever system. With MTS barriers, the motor power is reduced to about 15 W in the end positions to economise on operating costs.

The heat generated by the torque motor prevents condensation and corrosion, ensuring reliable and problem-free operation particularly in winter.

Housing

A steel frame construction with galvanised, phosphate-treated sheet steel cladding is used for Magnetic barriers MTS 6 and MTS 8. The plastic coating provides optimum protection against corrosion.

The fold-out detachable fixing plate for control equipment consists of colourless anodised aluminium. All components in the barrier housing are easily accessible via the maintenance hatch and the detachable hood.

The housing is coated, as standard, in the colour RAL 2000. Special colours are available if required at extra cost.

Version

All barriers are available in both "right-hand" or "left-hand" versions.

The hatch to the control equipment is on the road side.

Barrier Boom

The barrier boom consists of octagonal, 1/10" thick special aluminium section of dimensions 5" x 31/2". The maximum barrier width is 33′. The section is coated in white plastic (RAL 9010) and laminated with a red reflective film. Hence the boom is readily visible even at night.

Control

Magnetic offers a wide range of control equipment. From simple controls with reversing switches to the MUA multi-function control device, or even the fully automatic unit with MCU control device. A detailed description of the various control devices is available on request. All the necessary control devices are mounted on the fold-out fixing plate.

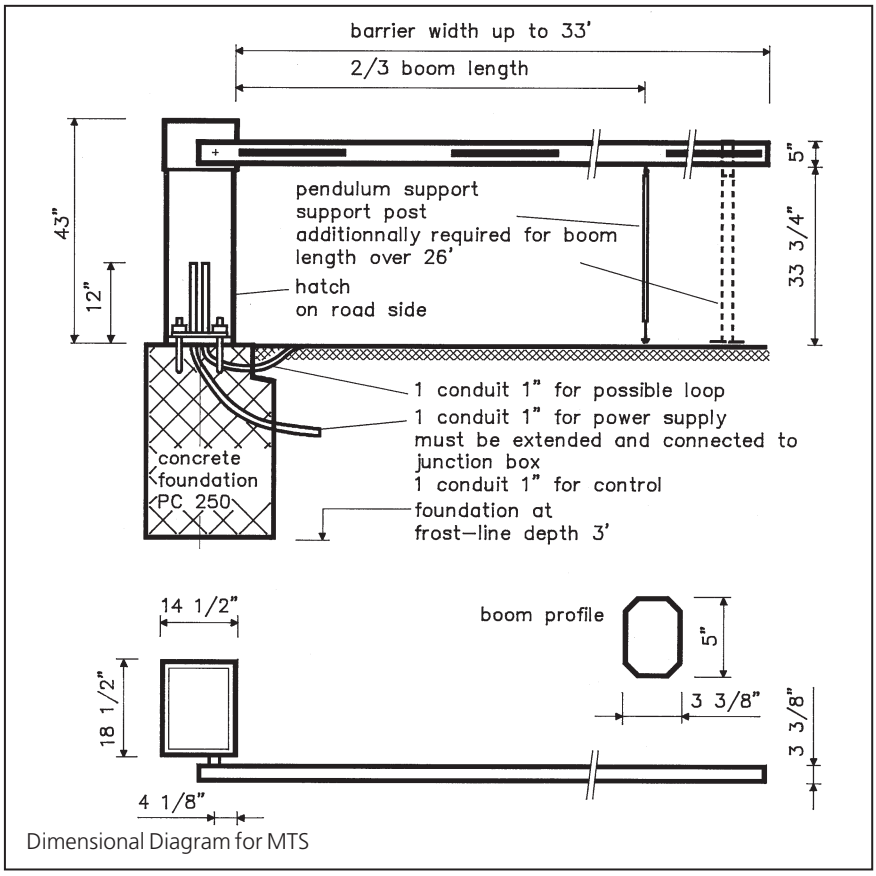
5B0US,5103/0/04.02

Magnetic Automation Corp. 3160 Murrell Road, Rockledge, FL 32955, USA Phone (321) 6358585 Telefax (321) 6359449 info@magnetic-usa.com

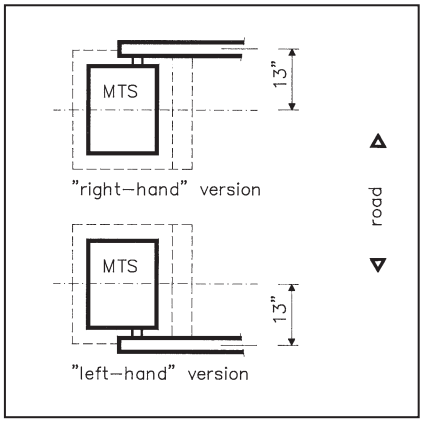
Safety

The following safety points should be observed with regard to the installation and operation of a Magnetic barrier:

1. The concrete foundation is to be provided in accordance with Works Document Info MM 5115 by the builder.
2. A distance of at least 24" is to be maintained between the boom tip and the nearest building or wall.
3. For permanent installation, a main switch which disconnects all poles is to be provided by the builder.
4. Opening and closing operations must be observed! Installation of the operating elements outside the field of view is not permitted; a visual link must exist between the barrier unit and the control elements.
5. During operation, the presence of persons or goods in the movement zone of the boom is not permitted.
6. When a boom length of 12' is exceeded, the installation of a pendulum support or support post is required.
7. The boom fixing is designed to withstand wind strengths of max. 10 Beaufort Scale (= 10.44 Lb/sqft; 500 N/m^2).

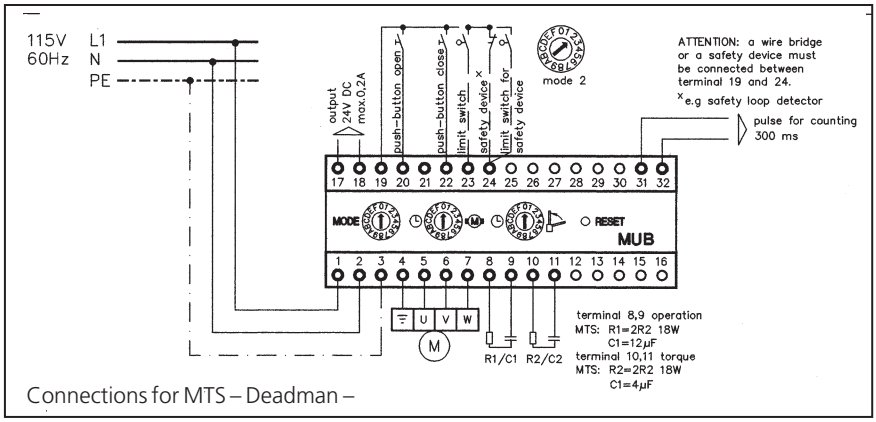


Dimensional Diagram for MTS



Electrical Connection

Electrical connection for standard version MTS barriers is in accordance with the diagram overleaf.
Where our control equipment is used, special wiring diagrams are to be observed depending on the configuration. These can be obtained from the factory.



Connections for MTS – Deadman –

Info

MAGNETIC AUTOCONTROL™

Barriers
MAGSTOP

Guidelines for foundations

Foundations for Barrier MIB and Control column MEC

In order to ensure the stability of the barrier, the foundation is to be constructed as-agreed with the TÜV ("Technical Monitoring Association, Test Centre for Appliance Safety") and in accordance with the following guidelines.

1. Excavate a hole for the foundation to frost-line depth (at least 800 mm). The dimensions of the foundations at the boom must be at least 500 mm x 600 mm for the MIB series barriers and MEC 10N/H/L control column (Figure 1) and 350 x 350 mm for the MEC 10M/E control column (Figure 3).
   On the road side, the foundation is to be 100 mm larger at the bottom than the top (Figure 1).

2. Lay separate conduits of 29 mm diameter for the power supply and control lines. An additional conduit with of 29 mm diameter is to be inserted at road level for loops (Figure 1).

3. Concrete the foundation hole using BH PC 250 concrete (concrete strength W = 25 N/mm²). For barriers, the concrete must be reinforced (Figure 2).

4. A smooth finish must be provided in the housing area, so that the barrier housing sits flat level and stable.

5. Drill the bore holes for the anchor bolts in accordance with the layout plan when the concrete has hardened sufficiently. For the MIB barriers, MEC control column, bore hole Ø 10 mm, A = 80 mm deep (Figure 1).

6. Set the appropriate anchor bolts into the bore holes (Figure 1) and assemble the barrier housing in accordance with the assembly instructions:

MIB 20/30/40	581E,5000
MIB 10	580E,5123
MEC 10N/H/L	580E,5201
MEC 10M/E	580E,5203

7. Lay paving or other finishing material as required.

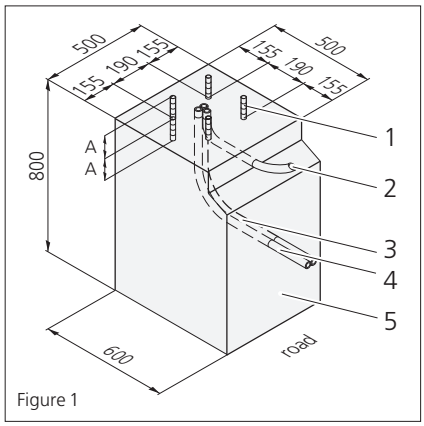


Figure 1

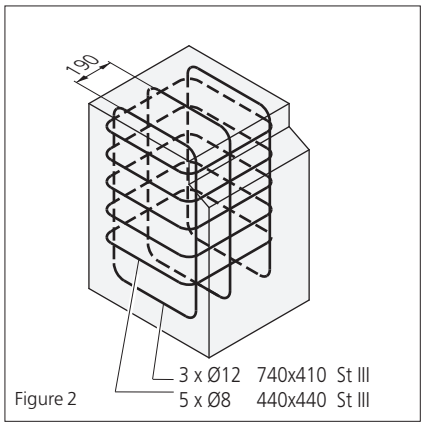


Figure 2

1 masonry anchor (four in total)
2 empty conduit for induction loop connections
3 empty conduit for power supply cable
4 empty conduit for control cables
5 concrete foundation

Foundation for Support post (Fig. 4)

The Magnetic support post is used with-boom lengths which exceed 3,5 m, to support the boom in the horizontal position.

When preparing the foundation, it should be ensured that the barrier and post foundations are at the same level. The bottom of the foundation should measure about 300 x 300 mm, and should be located at the frost-line depth of 800 mm.

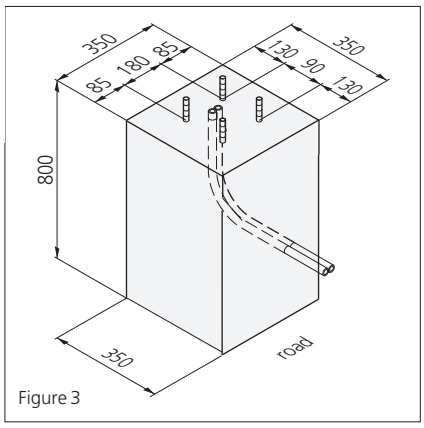


Figure 3

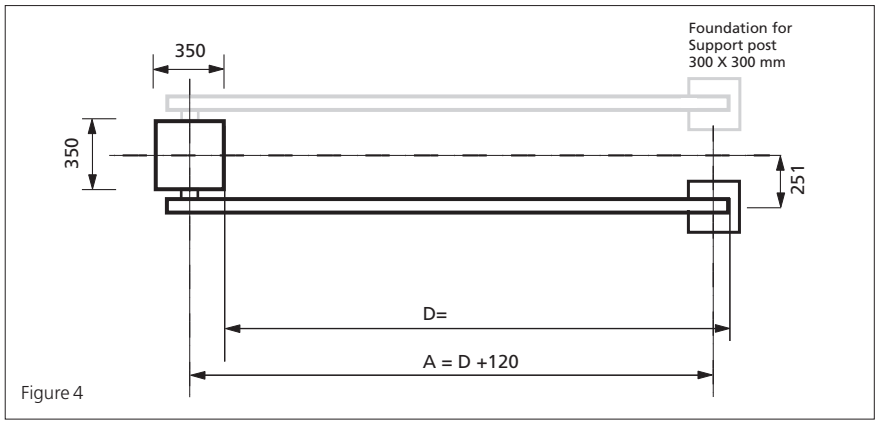


Figure 4

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Foundations for Barrier MTS 6/8

In order to ensure the stability of the barrier, the foundation is to be constructed as agreed with the TÜV ("Technical Monitoring Association, Test Centre for Appliance Safety") and in accordance with the following guidelines.

1. Excavate a hole for the foundation to frost-line depth (at least 800 mm). The dimensions of the foundations at the bottom must be at least 600 mm x 600 mm for the MTS series barriers (Fig. 5).

2. Lay separate conduits of 29 mm diameter for the power supply and control-lines. An additional conduit with of 29 mm diameter mm must inserted at road level for loops. (The foundation frame must be suspended with 2 boards above the foundation hole.) (Figure 5).

3. Concrete the foundation hole with BH PC 250 concrete (concrete strength W = 25 N/mm². The foundation frame must be concreted evenly and flush. Reinforcement is absolutely required for the barriers (Figure 6).

4. In the area of the housing , a smooth finish must be provided so that the barrier housing rests in a level, horizontal position .

5. As soon as the concrete has sufficently hardened, the barrier housing must be installed according to the installation instructions .

6. Lay paving or other finishing materials as required

Foundation for Support post (Fig. 7)

The Magnetic support post is used with-boom lengths which exceed 3.5 m, to support the boom in the horizontal position.

When preparing the foundation, it should be ensured that the barrier and post foundations are at the same level. The bottom of the foundation should measure about 300 x 300 mm, and should be located at the frost-line depth of 800 mm.

Assembling the housing (Fig.8/9)

The barrier housing is positioned vertically on the upper face of the foundation and secured using the fastenings from assembly set that is supplied with the system. (See Fig. 8). In order to be able to adjust the housing later, the nuts are only lightly tightened initially.

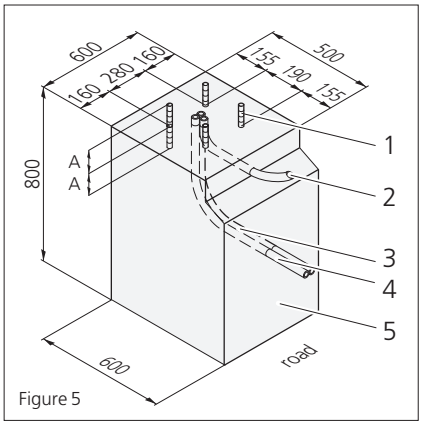

Figure 5

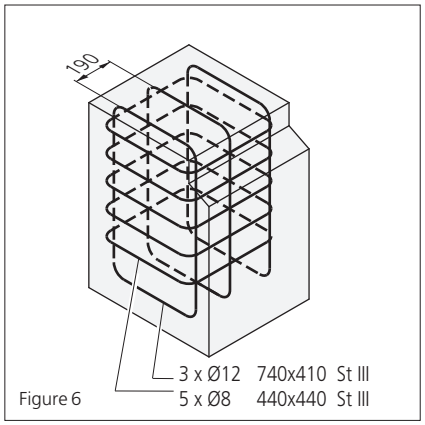

Figure 6

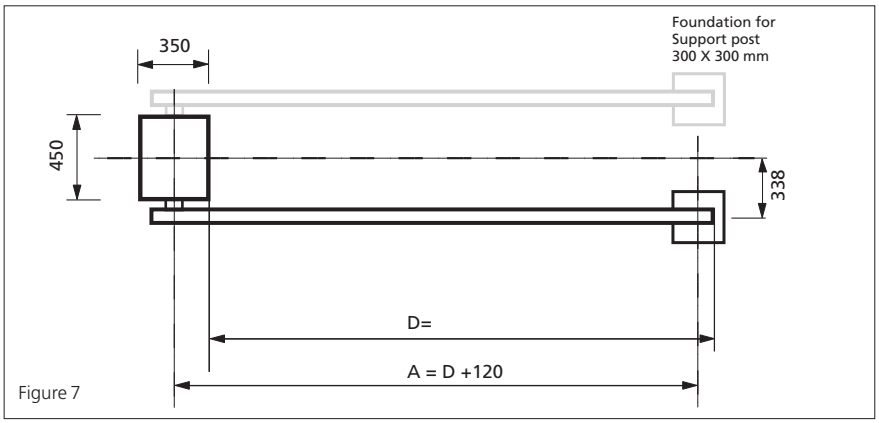

Figure 7

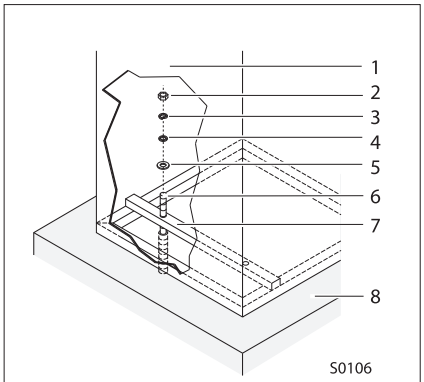

Figure 8 MIB + MEC-Housing

1 barrier housing
2 nut
3 split washer
4 plain washer
5 plain washer
6 masonry anchor
7 U-section
8 concrete foundation

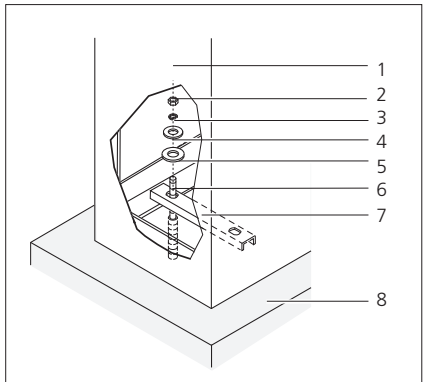

Figure 9 MTS-Housing

1 barrier housing
2 nut
3 split washer
4 plain washer
5 plain washer
6 masonry anchor
7 U-section
8 concrete foundation

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Info

MAGNETIC AUTOCONTROL™

Operating and installation instructions

Barriers-MAGSTOP MTS 6 / 8

1. Delivery

The Magstop barrier consists of:

1 Housing
2 Keys for the door (attached to the flange)
1 Documentation located inside the door

Accessories in separate box:

1 Foundation accessories C
2 Mounting rails (U Profile)
1 Boom Accessories B
1 Spare spring with steel sleeve

The Magstop barrier and the boom are delivered separately. Please check if the shipment is complete and in good condition. Any damages during transport should be the subject of a claim on the transport agency.

2. Foundation

To mount the barrier on the foundation and to lay the conduit, please refer to the enclosed information sheet MM 5115.

3. Housing

Fix the barrier to the foundation in accordance with figure 1 using accessories C. For final alignment of the housing the nuts only need to be tightened.

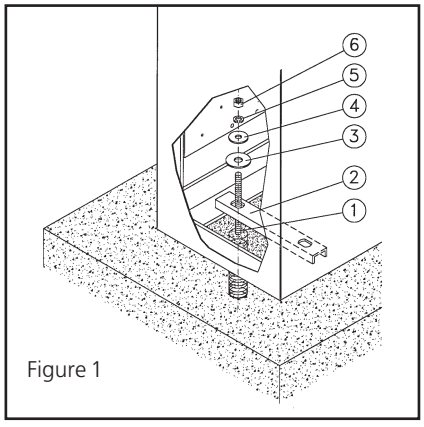

Figure 1

4. Installation of the barrier boom

4.1. Short barrier boom

Fix the barrier boom to the flange in accordance with figure 2 using accessories C.
Afterwards align the barrier and tighten the nuts securing the housing to the foundation.

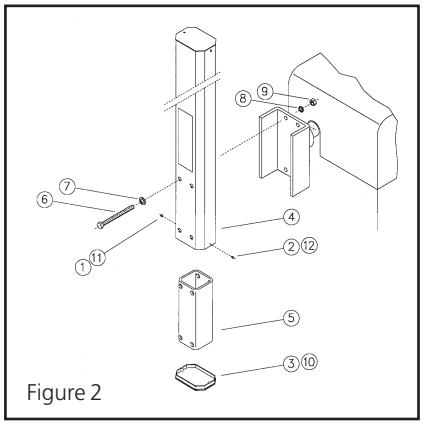

Figure 2

4.2. Long barrier boom

In order to facilitate the installation of a long boom the cover must be removed after having released the 3 T-bolts shown in figure 3.
To ease installation the flange can be moved to a horizontal position by releasing the 2 screws SW 10 at the upper lever (MTS 8 has 4 screws and 2 levers); the barrier boom can then be fixed to the flange by using accessories D.

After having fixed the barrier boom raise it manually to the vertical position; for safety reasons the screws SW 10 are to be tightened to 125 Nm.
Afterwards align the barrier and tighten the nuts securing the housing to the foundation.

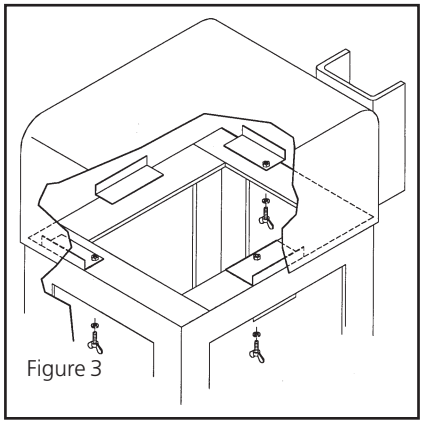
Figure 3

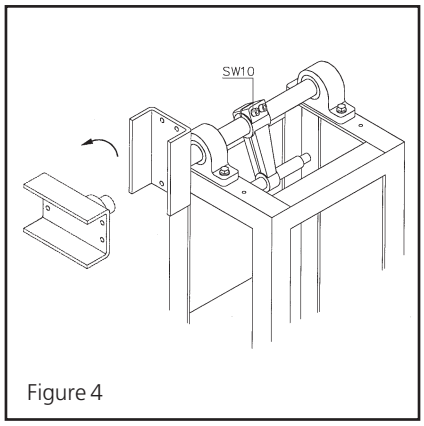

Figure 4

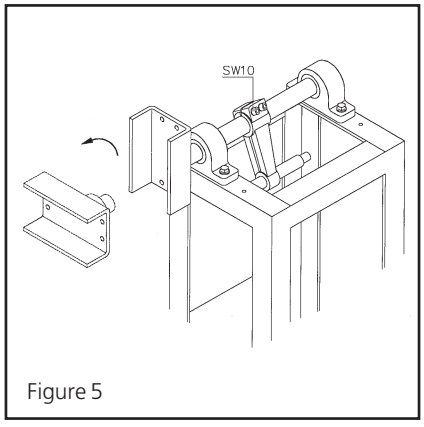

Figure 5

5. Electrical connections

Connection to the main electrical supply must be carried out by a qualified electrician. The wiring diagrams are in the documentation inside of the door.

Afterwards check that the installation operates correctly.

6. Adjustments

The barrier boom was adjusted to a horizontal closed end position and can be adjusted to local conditions, see paragraph 4.2.

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7. Special applications

Should boom mounted stop signs, warning boards, lights etc. be required the springs must be re-adjusted due to the additional weight on the boom. The barrier boom is balanced with the motor de-energised at approximately 45 degrees.
If the existing springs are not sufficient for correct operation an additional spring must be fixed.

8. Pendulum support

For boom lengths exceeding 3500 mm a pendulum support is required which is to be mounted as shown in figure 6 and is fixed by 2 screws (M 6/SW 4) such that the narrow part of the mounting flange points towards the end of the boom.

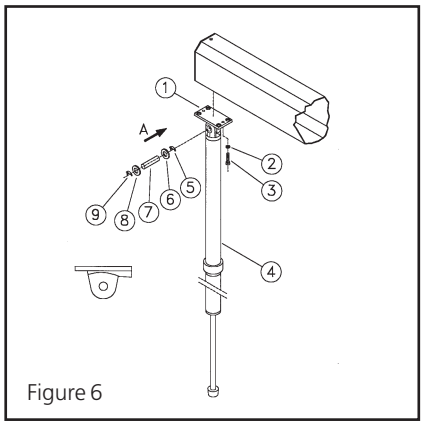


Figure 6

9. Lever adjustment

When the barrier boom is in the horizontal position, and the motor is supplied with power, the level system can be adjusted correctly if the barrier is locked (A). If the barrier is in the locked position (A).

There the connection bars (B) and the motor levers (C) are in the aligned position. The motor is supplied with power, but its power consumption is reduced (torque).

In the event of power failure, the motor lever is forced out of the dead center position by springs in the system, and the barrier may be operated by hand by applying sufficient pressure to the barrier boom.

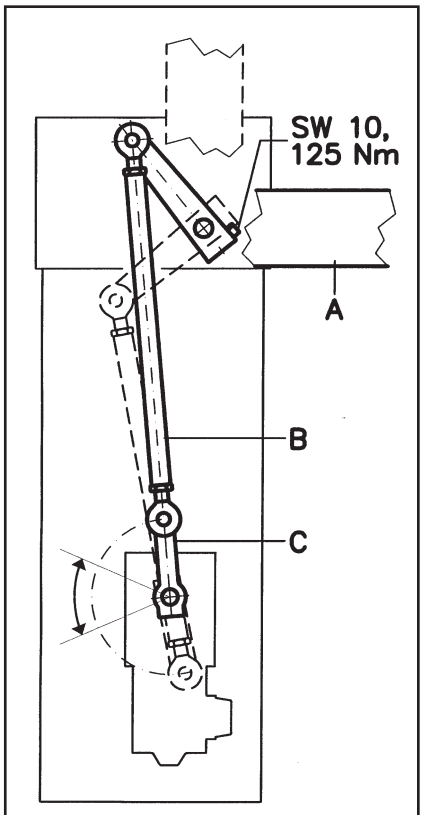
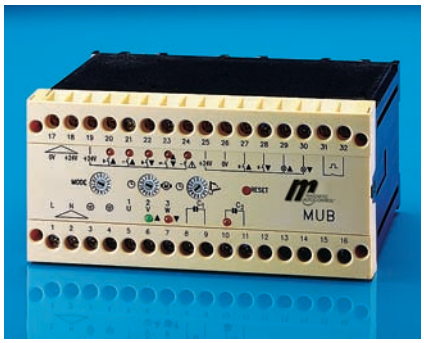


Figure 7

Info

MAGNETIC AUTOCONTROL™



Control units MAGTRONIC

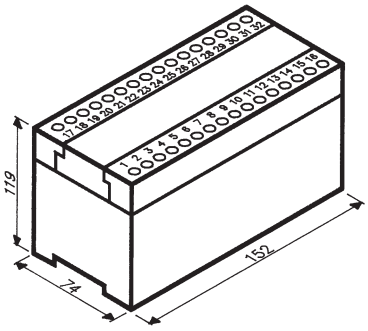
MUB

MUB Control Equipment

The MUB microprocessor control unit can be used with all Magnetic barriers with manual or automatic operation. The barrier is opened and closed by use of special operator panels, or a customer installed pulse generator with potential free contacts.
For external equipment, there is a 24 Volt DC supply output (maximum 200 mA).
Triac switching of the barrier motor provides maintenance-free service.

Technical

The complete controller is contained in an isolated plastic housing. If required, rapid and easy replacement is possible by means of two removeable terminal strips on a standard mounting rail.
Three rotary switches located on the top panel control the mode (function) setting the torque time (max. 15 seconds) and the hold open time (max. 75 seconds).
The indication of the active signal entries, barrier boom position (up/down) and the torque operation is achieved through built in LED's.



Dimensional Diagram MUB

Functions

The factory sets the mode (function) by the customer's requirements. By turning the rotary-switches this function may be changed at a later date.

After every power failure, or every function change, it is recommended to „RESET".

Mode 1:
(Maintained contact function 100)
The barrier is controlled by a potential-free switch. Contact closed = barrier „closed".

Mode 2:
(Dead man function 200)
To open the barrier, merely press the key „open". The key „close" must be operated until the barrier has reached its lowest limit. If the key is released prior to this, the barrier will open again.
For the feedback of the position „closed" a limit switch is necessary (terminal 19 and 23).

Mode 3:
(Pulse control function 300)
The barrier position is controlled by pulses from a push-button. Each pulse results in a directional change (up/down) of the barrier boom.

Mode 4:
(Pulse control function 350)
The barrier position is controlled by pulses from two separate push buttons. One for „up" and one for „down".

Mode 5:
(Dynamic function 400)
The barrier is opened by a pulse and closes automatically after an adjustable hold-open-time or immediately after the safety device has been passed or after a closing pulse has been given. As safety device an induction loop for example must be installed under the barrier boom. Closing is prevented as long as a vehicle is positioned in the detection area.

Mode 6:
(Same function as mode 5)
When using a safety loop and an opening loop the loops are detecting the direction of the traffic, i. e. the barrier closes immediately after the safety loop has been passed.

Mode 7:
(Static function 500)
Like mode 5 function 400, but without automatic closing after a specified hold-open-time. The barrier remains open until a vehicle has activated the safety device and only closes after it has left the detection area.

Mode 8:
(Same function as mode 7 with additional detection of direction, see mode 6.)

Detection

If a vehicle is in the barrier boom area, closing can be prevented by connection of the safety loop detection system to the terminal 19 and 24.
(Normally closed contact.)
The detector MID 1A-100 is recommended for use with induction loops that are installed in the ground.
In the event that no detection is desired a wire bridge must be connected between terminals 19 and 24.

Electronic Braking

To increase the lifetime of the mechanism of a barrier with short opening and closing times of under 2 seconds, an electronic braking action can be applied just prior to reaching the end position of the up and down actions. A braking limit switch with two trip cams is required (terminal 19 and 23).
The braking function is not possible in Mode 2 (Deadman).

Count Pulse

A potential-free pulse (300 ms) is given to terminals 31 and 32, after a vehicle opens and passes the closing detection device.

Connection

All connections can be made to the externally mounted terminal strips. All function inputs and status signals operate at a safe voltage level and are separated by optocouplers. The connections for the motor and capacitors carry a 115 Volt potential.

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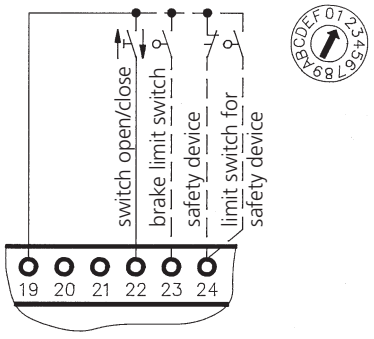
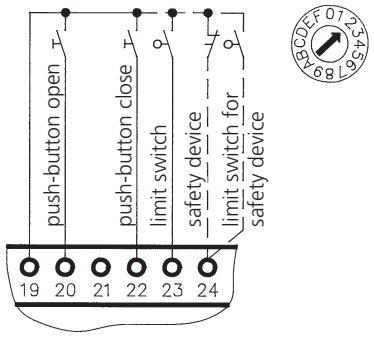
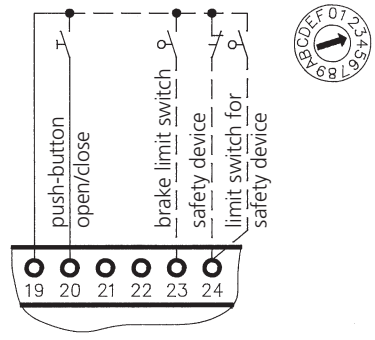


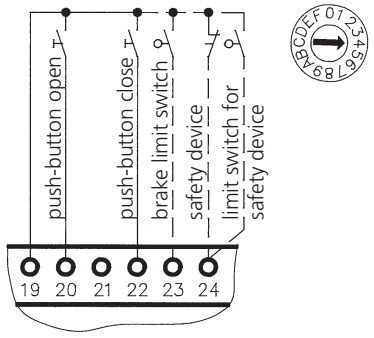
Connection Mode 1



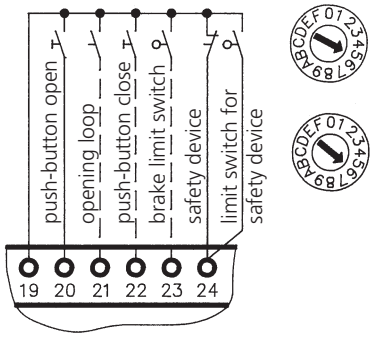
Connection Mode 2



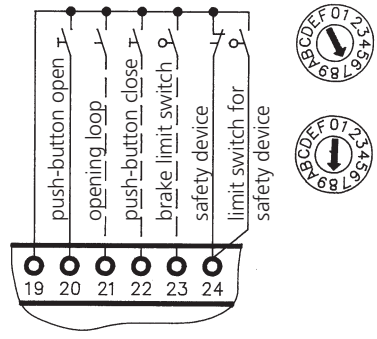
Connection Mode 3



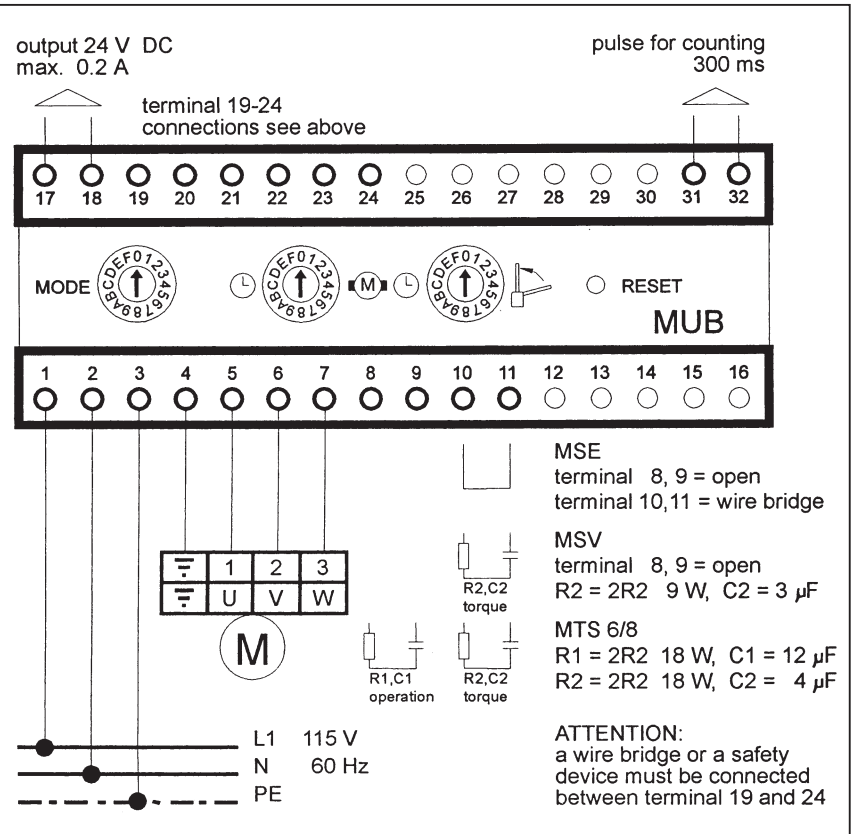
Connection Mode 4



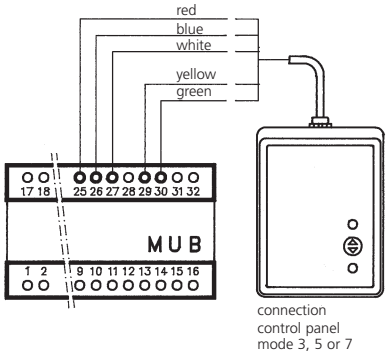
Connection Mode 5 and 6



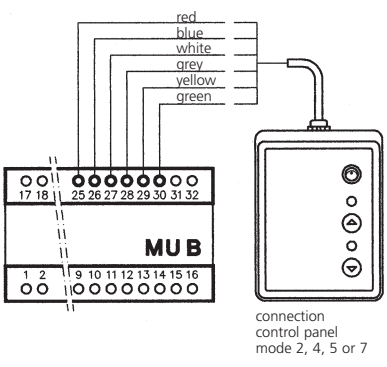
Connection Mode 7 and 8



Connection MUB



Connection control panel MKI 6P-150



Connection control panel MKI 6P-175

MID2E - 800

Induction Loop Detector
Dual Channel Detector
Directional Detection

Presence vehicle detection for parking control and gate/barrier applications

Special characteristics:

- **Plastic housing with compact size to be mounted directly on DIN - or C-rail**
- **Direct cabling, no plug socket**
- **Microprocessor controlled**
- **Isolation transformer between loop and detector electronics**
- **Automatic Calibration when switching on or when changing the adjustment of holding time**
- **Adjustment of unlimited holding time possible**
- **Indication with LED`s**
- **All adjustments with DIP - switch on front panel**
- **Adjustments of relay operation principle**
- **Low voltage supply, AC or DC supply possible**
- **Direction detection adjustable**
- **Permanent or pulse output adjustable**

Magnetic Automation Corp.
3160 Murrell Rd
Rockledge, FL 32955
Phone: (001) 321-635-8585
Fax: (001) 321-635-9449
E-mail: info@magnetic-usa.com
Web: www.ac-magnetic.com

Technical Data

Power supply:	24 V AC/DC, +/- 10 %
Power consumption:	max. 1,5 W
Temperature range:	-20°C - +70°C
Max. humidity	max. 95%, not condensing
Loop inductance range:	25 - 800 µH
Frequency range:	30 - 130 kHz
Sensitivity range (df / f):	0,01% - 0,65% in 4 steps
Loop lead-in:	max. 250 m
Output relays:	1 relay with contact n.o. per channel pulse output at leaving of loop adjustable for channel 2. relay operation principle: rest operation/current operation /contact n.c./contact n.o. adjustable with jumper or solder strap on circuit board
Switch voltage:	24 V AC/DC
Housing	plastic-clamp enclosure for shelf or DIN-rail socket with 2x 3-pin. clamps
Dimensions:	79 x 22,5 x 90 mm (h x w x d)
Protection class:	IP 40 (waterproofed)

Terminal connection

Terminal screws on top

signature	function
0V	power supply (neutral)
24V	power supply (24V AC/DC)
2b	contact n.o - channel 2

Terminal screws on bottom

signature	function
1a	common – channel 1
1b	contact n.o - channel 1
2a	common – channel 2

DIP-switch modes

1	2	3	4	5	6	7	8	function
off	off	-	-	-	-	-	-	sensitivity channel 1 - step 1 (low)
on	off	-	-	-	-	-	-	sensitivity channel 1 - step 2 (med. low)
off	on	-	-	-	-	-	-	sensitivity channel 1 - step 3 (med. high)
on	on	-	-	-	-	-	-	sensitivity channel 1 - step 1 (high)
-	-	off	off	-	-	-	-	sensitivity channel 2 - step 1 (low)
-	-	on	off	-	-	-	-	sensitivity channel 2 - step 2 (med. low)
-	-	off	on	-	-	-	-	sensitivity channel 2 - step 3 (med. high)
-	-	on	on	-	-	-	-	sensitivity channel 2 - step 1 (high)
-	-	-	-	off	-	-	-	frequency low
-	-	-	-	on	-	-	-	frequency high
-	-	-	-	-	off	-	-	holding time 5 minutes
-	-	-	-	-	on	-	-	holding time unlimited
-	-	-	-	-	-	off	-	presence detection
-	-	-	-	-	-	on	-	direction detection
-	-	-	-	-	-	-	off	output permanent signal (both relays)
-	-	-	-	-	-	-	on	output pulse signal at leaving of loop – only channel 2 or direction pulse output (if DIP7=on)

(off = left switch position)
(on = right switch position)

Function of LED's

LED green	LED red	function
off	off	power off
flash	off	detector calibrates
on	off	detector ready for operation, loop free
on occupied	on	detector ready f. operation, loop
off	on	loop failure
pulse	-	loop frequency by pulse signal

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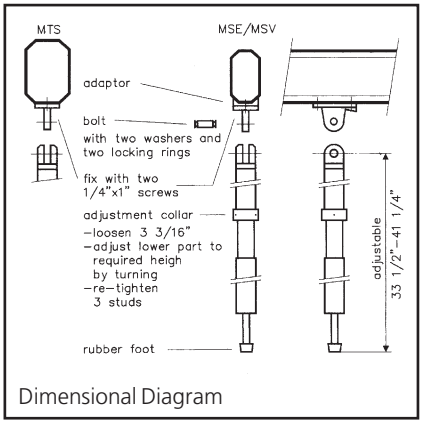
Web: www.ac-magnetic.com

Info

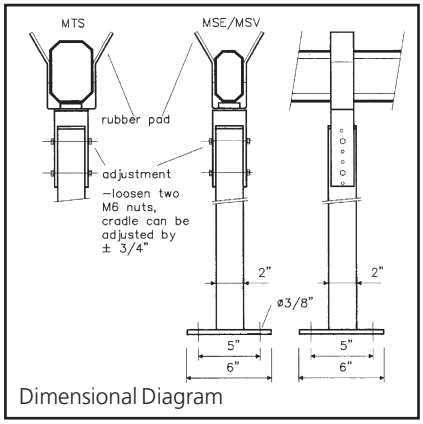
MAGNETIC AUTOCONTROL™

Barriers Accessories
MAGSTOP

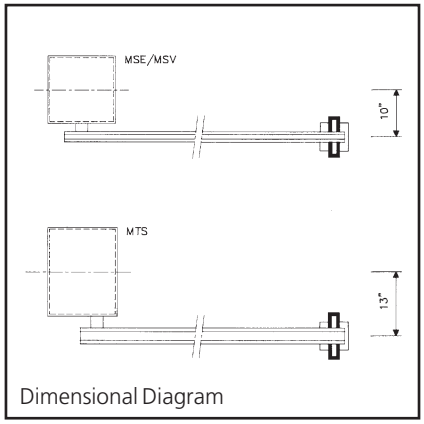
Pendulum support
Support post
Boom locking



Dimensional Diagram



Dimensional Diagram



Dimensional Diagram

Pendulum support

The Magnetic pendulum support is used with boom lengths exceeding 12' to cushion and support the boom in the horizontal position. Bouncing of the boom is prevented by the cushioning action of the pendulum support.

Assembly:

The pendulum support is provided with a fixing plate. The boom has insert nuts to accept two 1/4 x 1 cheese-head screws with spring washers.

Adjustment:

Three studs are located at the thicker part of the upper tube. After the studs are loosened, the lower section of the pendulum support can be adjusted by means of the built-in threaded spindle.

When the boom is in the horizontal position, the distance between the rubber foot and the tube should be about 1/4 ". This results in a good damping effect and prevents the rubber foot freezing onto the tube in the winter. After adjustment has been carried out, the three studs must be tightened again.

Support post

The Magnetic support post is used with boom lengths which exceed 12', to support the boom in the horizontal position.

The support post is constructed from rectangular steel tubing with RAL 2000 powder coating.

The cradle section at the top is designed to accommodate all Magnetic booms.

Installation:

Installation of the support post is effected by means of the base plate onto a foundation with anchor bolts provided by the builder. All required plugs, bolts and nuts are included in the equipment supplied.

When installing, it should be ensured that the boom sits correctly in the cradle when it is in the horizontal position.

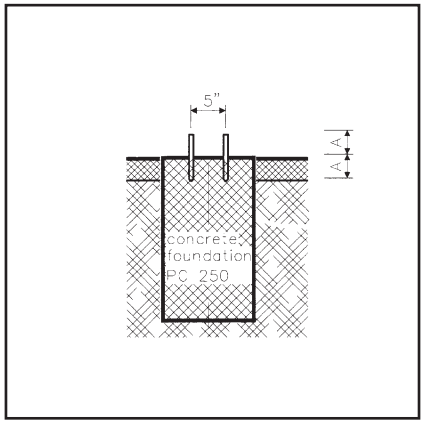
Adjustment:

The cradle can be adjusted by ± 3/4 " to permit compensation for differences in height between the barrier foundation and the support post foundation.

Additionally, a pendulum support is recommended as damping for the lower position, so that the boom falls gently into the cradle.

Foundation:

When preparing the foundation, it should be ensured that the barrier and post foundations are at the same level. The bottom of the foundation should measure about 200 x 200 mm, and should be located at the frost-line depth of 800 mm.



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Magnetic Automation Corp. 3160 Murrell Road, Rockledge, FL 32955, USA Phone (321) 6358585 Telefax (321) 6359449 info@magnetic-usa.com

Boom locking

The Magnetic boom lock offers optimum protection against forcible opening of the barrier boom.

The lock is installed inside the barrier boom with the electrical leads passing through the boom and into the barrier housing which ensures protection against corrosion, misuse or vandalism.

During the position "Off", as shown in figure 1, the lock is energized with the resultant warmth, from the solenoid, preventing condensation and corrosion, thus ensuring reliable operation, particularly in winter.

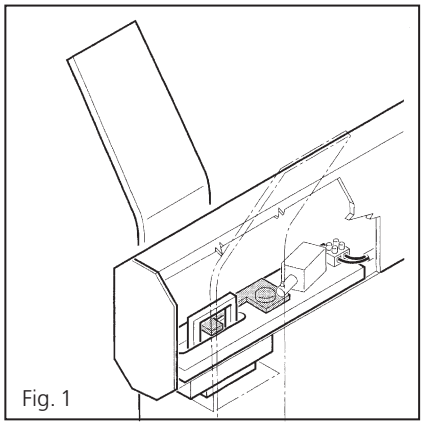


Fig. 1

In case of power failure the device locks automatically, as shown in figure 2; the barrier boom can be opened manually as shown in figure 3.

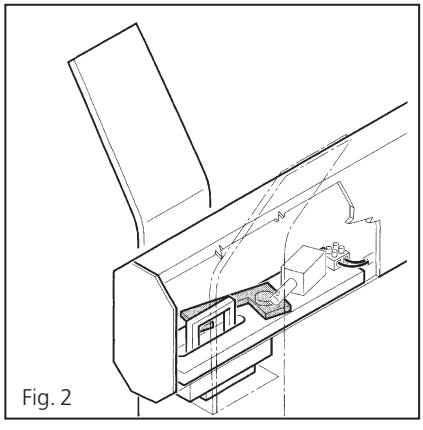


Fig. 2

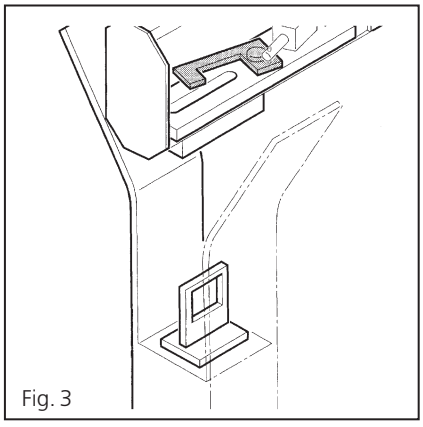


Fig. 3

To ensure correct functioning of the lock the barrier boom must not rest heavily on the support pillar. If necessary the locking plate or barrier boom must be re-adjusted.

For the installation, adjustment and guidelines for the foundations please refer to the leaflet on the supporting pillar.

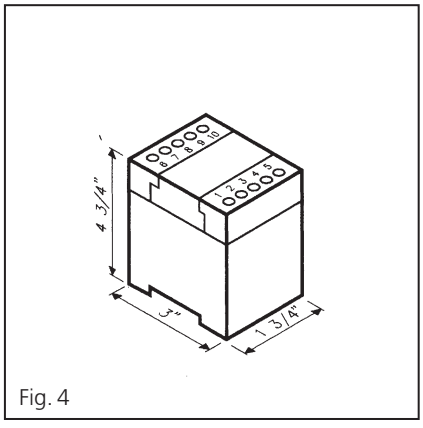


Fig. 4

Control Unit MMV

The control unit, figure 4, was developped to control the lock and can be combined with all Magnetic control units as shown in figure 5. It is mounted, and wired, on the hinged mounting plate and is adjusted at the factory.

The lock can be altered to suite local requirements, or boom lengths, with the time adjusted by the potentiometer on the front panel.

The locking time is 10 seconds after the boom closes.

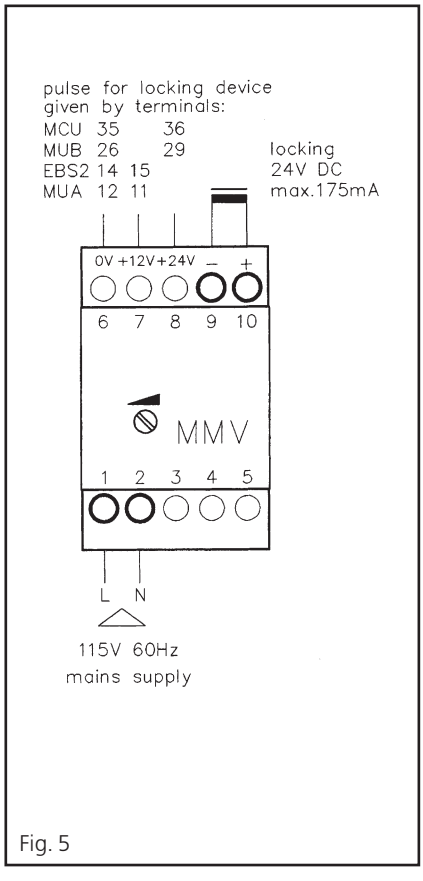
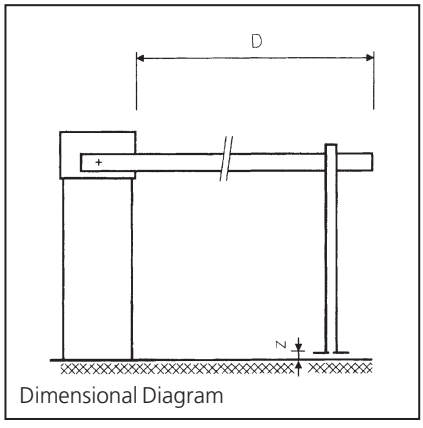
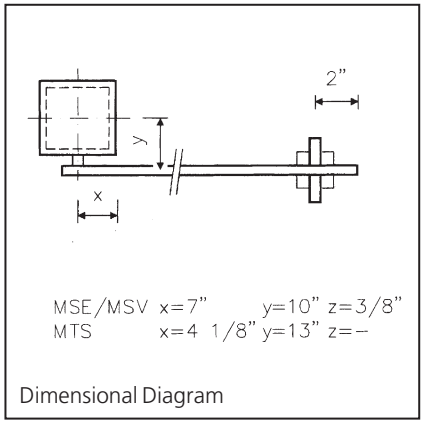


Fig. 5



Dimensional Diagram



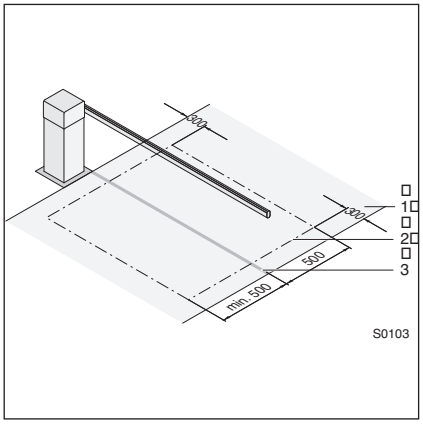
Dimensional Diagram

Info

MAGNETIC AUTOCONTROL™

Barrier Accessories MAGSTOP

Loop installation instructions



1 Access lane
2 Induction loop
3 Projection of the barrier boom over the surface of the lane, assuming standard loop installation

General

Barrier installations which close automatically utilise induction loops, to detect approaching vehicles.
The following points should be taken into account when laying induction loops.

1. The loop should be laid symmetrically with respect to the boom. When determining the layout of the loop, it should be remembered that the boom is fixed to the barrier housing at one side.

2. The detection loop should be situated so that there is a distance of at least 2 ½' behind, and in front of the boom. In special cases it is possible to deviate from this value by agreement with the factory if a smaller detection area is required.

3. The distance from the barrier housing and the end of the boom should be approx. 1' from the induction loop.

4. When concreting in or laying the loop, it should be ensured that the loop cannot move while in operation. Any geometrical changes result in inductance changes, causing interference to the detector.

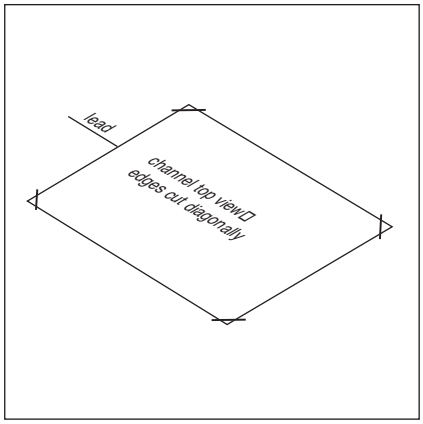
5. Where iron reinforcement is used, it should be ensured that a minimum spacing of 1' exists. Iron reinforcement produces fundamental attenuation and reduces the sensitivity of the detector.

6. For checking purposes, a volume resistance < 2 Ohm and an insulation resistance with respect to earth > 1 MOhm must be measured after the loop is laid. Otherwise there is a defect in the loop.

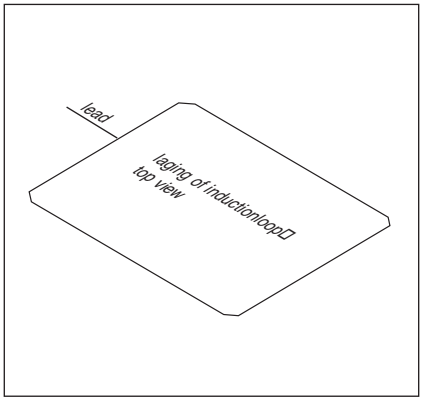
Laying in bitumen/asphalt

For installation in this type of sub-surface, a 1½" deep channel must be cut with a grinding wheel. It must be ensured that the cuts overlap at the corners so that the same depth is achieved at every point.

The loop must then be laid carefully in the channel and pressed down with a piece of wood. Under no circumstances must the insulation be damaged.



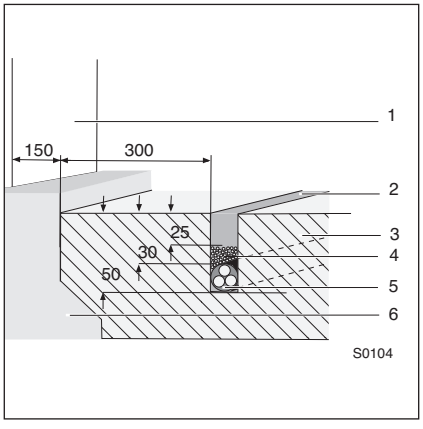
The channel is then sealed with a casting compound. The temperature of the casting compound must not exceed 212° F during the reaction.



Induction loops are available as ready-made cables with the following dimensions

KAS 1	loop periphery	20'
KAS 2	loop periphery	40'
KAS 3	loop periphery	68'
KAS 4	loop periphery	30'
KAS 5	loop periphery	50'

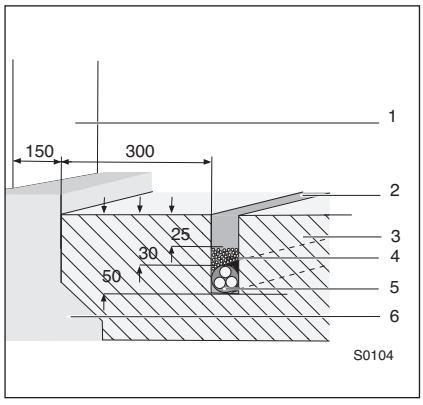
In all cases the feed line measures a max. of 150'. Under no circumstances must it be used in rolled form, but it must be cut to the required length on site.



1 Barrier housing
2 Channel with sealing compound
3 Asphalt covering
4 Glass sand layer
5 Loop cable
6 Concrete foundation

Info number: MF 5117/US Magnetic Automation Corp. 3160 Murrell Road, Rockledge, FL 32955, USA Phone (321) 6358585 Telefax (321) 6359449 info@magnetic-usa.com

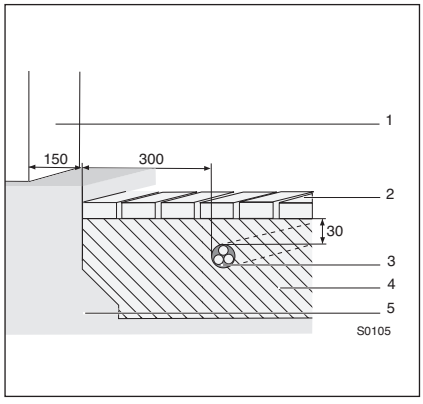
Alternatively, you can make up a loop yourself from 0,75–1,5 mm² single core wire. Ensure that the inductance is between 70 and 500 mH. This can usually be achieved by means of 3 to 5 windings. The feed line must be twisted at least 20 times per meter. The same installation data apply as for the ready-made loops.



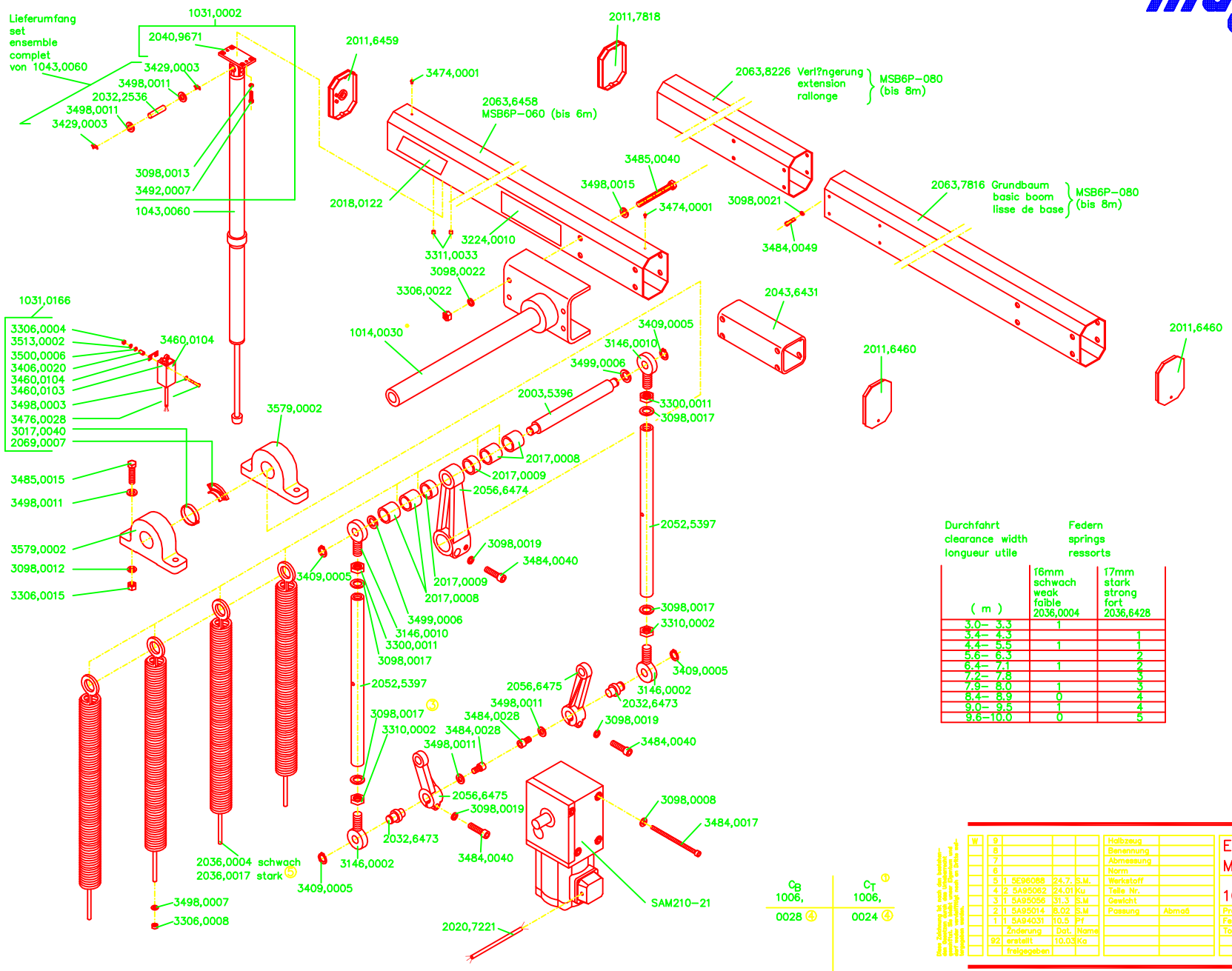
1 Barrier housing
2 Channel with sealing compound
3 Asphalt covering
4 Glass sand layer
5 Loor wire
6 Concrete foundation

Laying under composite slabs

In this case the ready-made loop must be used. It must be ensured that the loop is laid in a sand bed and cannot be damaged. A sand layer of about 30 mm must be present between the slabs and the loop.



1 Barrier housing
2 Paving stones
3 Loop cable
4 Sand bed
5 Concrete foundation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CT ⑤ 1006, 0024 ④
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4 2 5A95082 24.01 Ku
3 1 5A95058 31.3 S.M
2 1 5A95014 8.02 S.M
1 1 5A94031 10.5 Pf
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92 erstellt 10.03 Ka
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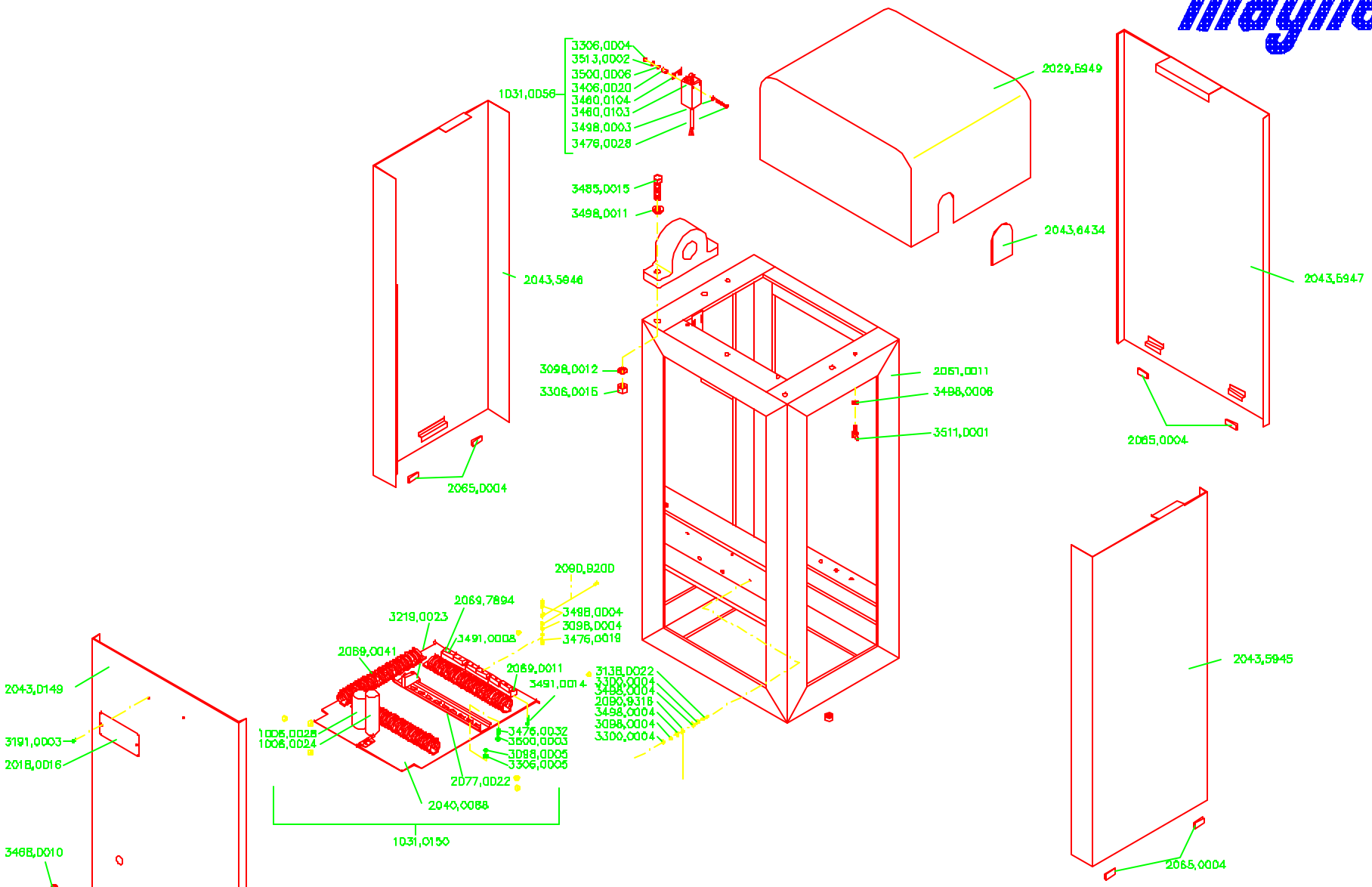
1053,0024
Proj.Nr. 5A93008
Maßstab ⅔
DIN A4Q
Festigkeitsberechnung
Toleranzberechnung
Magnetic
Elektromotoren GmbH
Hauptstraße 6
D-79669 Maulburg

magnetic



9					Maßstab		
8					Benennung		
7					Abmessung		
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5	2	SAB5007	20.2	SP	Werkstoff		
4	2	SAB5002	24.01	Ku	Teile Nr.		
3	1	SAB4118	03.9	PF	Revision		
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Spare parts drawing NTS8/8

1053.0023

Proj.Nr.

Maßstab DIN A

Festigkeitsberechnung

Toleranzberechnung

Magnetic
Elektromagnete GmbH
Hauptstrasse 8
D-79288 Neuburg

Preventative Maintenance for Magnetic MAGSTOP barriers type MTS6/8-900

Technical Data:

Max.barrier width	27.0 FT
Opening/closing time	6.5 sec.
Voltage V	115.0 V
Frequency	60 Hz.
Power Consumption	280.0 W
Housing width	18.5 Inch
depth	14.5 Inch
height	43.0 Inch
Weight excluding boom	298.0 Lbs
Motor	SAM210-24
Capacitors	C1 30µF/C2 20µF

Technology:

The combination of our patented torque motor and a sinusoidal lever system represents a simple drive system with high reliability. This drive system permits fast opening and closing times without "bouncing" of the boom in the end positions.
The sinusoidal lever system ensures that the boom is locked in both end positions. In the event of power failure it can easily be moved by hand or adjustments for a boom length up to 20FT for automatically opening in power failure is possible.

The boom weight is exactly balanced by means of built-in springs. Adjustment to the appropriate boom length is carried out at the factory before delivery.
Modifications such as shortening of the boom or the attachment of sign-boards or any kind of weight, as long it doesn't exceed the weight limit, can be adjusted without difficulty on site during installation.

Drive:

The heart of the Magnetic barriers is the 115V AC patented blockable torque motor. It requires neither limit switches nor a slip clutch and is maintenance free.

The motor can be blocked in any position without causing damage. In both end positions, the motor stops with the voltage still applied, and locks the boom via the sinusoidal lever system.
In both end positions the motor-power is reduced to about 15W to economize on operating costs.
The heat generated by the torque motor prevents condensation and corrosion, ensuring reliable and problem-free operation particularly in cold climatic conditions.

Horizontal and vertical position alignment of barrier arm:

Please refer to drawing # 1053.0023 and # 1053.0079

1. Move gate arm to the up position and turn power off.
2. Use keys to open front panel (2043.0149).
3. Fold down aluminum controller board and open 3 wing screws (3511.0001) in order to take off the housing lid .
4. Hold boom in up position firmly and open the 2 (two) socket head cap screws which clamp the spring lever (# 2056.6474) to the flange shaft (#3484.0040) with a 10 mm hex key wrench, so you are able to move the gate arm to the desired position .
5. Tighten the 2 (two) socket head cap screws with a tightening moment of 125Nm - 90ft/lbs.
6. Two people are required to do this adjustment, one holding the boom the other opening and tightening the screws.

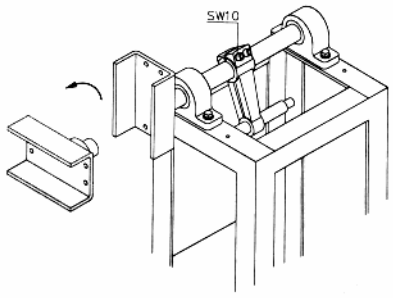

Figure 4

90 degree alignment of gate arm operating angle:

Please refer to drawing # 1053.0023 and # 1053.0079

1. Move gate to up position and turn power off.
2. Use keys to open front panel (2043.0149).
3. Fold down aluminum controller board and open 3 wing screws (3511.0001) in order to take the housing lid off.
4. Take off back panel (2043.5947) and both side panels (2043.5945/2043.5946).
5. Turn power back on and move gate arm to down position
6. Loosen the 2 (two) hex nuts (LH and RH tread) on each end of the 2 (two) connecting rods (Figure 7 part B).
7. Turning the connecting rods clockwise increase the boom arm movement angle, counter clockwise reduces the angle of movement
8. Both connecting rods (part B) have to be turned at the same time.
9. The distance between the center of the mounting holes of the two universal bearings (# 3146.0010) has to be the same on both sides.
10. Adjust the barrier arm by turning the connecting rods past the desired horizontal position. Then move the boom to the up position.
    Follow instructions **Alignment of horizontal and vertical position of barrier arm: 1-7**
    This will automatically compensate for the horizontal adjustment.
11. Tighten the 4 (four) hex nuts.

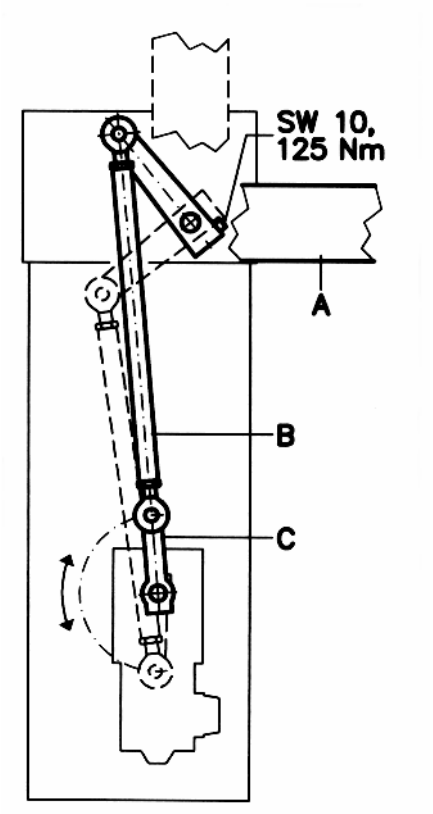

Figure 7

Adjustment for automatic opening in the event of power failure:
Please refer to drawing # 1053.0023 and # 1053.0079

1. Remove the barrier lid and all panels.
2. Move gate arm to down position
3. Loosen the socket head cap screw which clamps the motor lever(C)
4. Adjust connecting rod (A) and motor lever(B) so there is a approximately 3˚ deflection towards the rear of the barrier. This will move the lever system so that it is out of the in line adjustment (locked).
5. Tighten the socket head cap screw with a torque moment of 125Nm-90ft/lbs.
6. Repeat the same steps on the second connecting rod.
7. **Do not loosen both motor levers at the same time.**
8. Adjust the springs accordingly, so that the tension of the springs pulls the gate arm from the horizontal position, in the event of a power failure. Adjust the springs by turning the M8 hex nuts attached to the springs. Clockwise = lower tensioning of springs/counter clockwise = higher tensioning of springs.

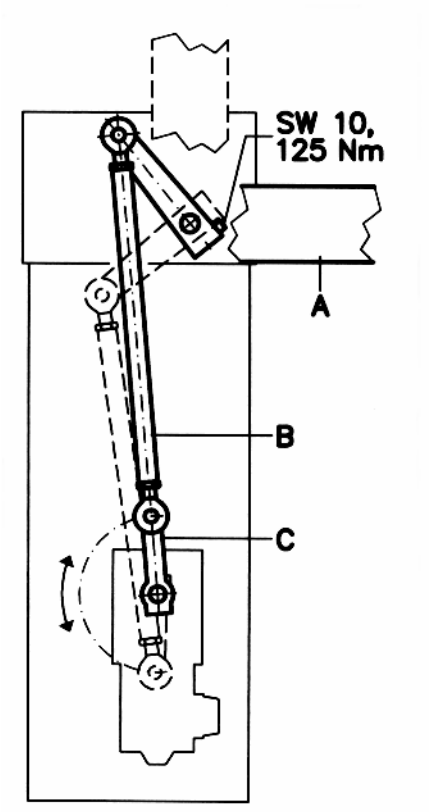

Figure 7

Maintenance schedule:

A Monthly

Check barrier arm alignment in horizontal and vertical position. Adjust levers if necessary.

B Annually

1. Check spring tension adjustment to ensure boom arm raises on power failure.
2. Lubricate flange bearings. Recommended grease Tribol 3020/1000-2 DIN 51502.
3. Check electrical connections.