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PRONOMIC

Manual for MobiCrane II

Preface

Congratulations on your choice of MobiCrane as your company's lifting aid. The MobiCrane is designed to handle piece goods up to a maximum weight of 185 lbs with the help of mechanical, pneumatic and vacuum grippers. Maximun load depends on model, weight class and your grippers own weight. Your grippers weight shall be calculated into maximum allowed weight.

MobiCrane can be delivered in several variants. It can be designed for being mounted on a wall, existing column, mounted on the floor or mounted on a base plate so it can be moved between work places depending on how your company has made the selections.

Your MobiCrane can be equipped with a standard gripper or a special gripping tool suited to your requirements. The gripper may be quickly replaced and there are several different models with suction, hook or mechanical gripping action. If your MobiCrane is fitted with an adapted gripper, instructions for this are included in Appendix A (Gripdon/Grippers).

Before using the MobiCrane, all personnel must read through this manual to be able to handle the equipment in a safe and efficient way.

This manual shall always be stored close to your MobiCrane

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WARNING!

- **Before using the MobiCrane, it is essential that all personnel have carefully read and understood this manual.**
- **The MobiCrane is intended for use in illuminated premises.**
- **Always consider your own and your co-workers' safety when using the lifting aid.**
- **Be aware there is always a danger of the goods releasing from the gripper.**
- **Protective steel-toed shoes must always be worn when working with the MobiCrane.**
- **Lift goods only inside the MobiCrane's action radius. Otherwise a dangerous pendulum motion may occur.**
- **MobiCrane PV has to be connected to compressed air with a pressure of no less than 90 PSI (6 bar) at the connection point on the MobiCrane. The connected compressed air must be free from oil, water and dirt.**
- **Note what kind of surface the goods have where the suction cups are applied. A weak or thin surface may break or deform so much that the suction cups cannot grip sufficiently. If the suction cups are applied on a sticker or other glued-on surface the load may be released from the sticker and fall.**
- **Any external compressed air hose and/or electrical cable must be positioned in such a manner that there is no risk of snagging, falling or tripping on them.**
- **Under no conditions remove the compressed air hose from the MobiCrane when it is being used. This action will cause loss of vacuum and the gripping function will stop.**
- **Use caution when relocating the MobiCrane. Think about the mobility of the lifting arm.**
- **MobiCrane may not be used while being relocated or if it is not positioned on a level floor.**
- **MobiCrane may not be used to lift people or live animals.**
- **Make sure that the load is relocated in as low position as possible.**
-  **Ensure that no body part is underneath a hanging load.**
-  **Ensure that nobody passes or stands underneath a hanging load.**
- **The MobiCrane may not be used by anyone under the age of 18 or any person legally declared a minor.**
- **To prevent unauthorised personnel from using the MobiCrane, the main switch key must be removed when the MobiCrane is not in use.**

Safety and limitations

MobiCrane

MobiCrane is designed to aid in manual lifting of goods up to a maximum of 185 lbs. Maximun load depends on model, weight class and your grippers own weight. Your grippers weight shall be calculated into maximum allowed weight.

The lifting function is powered by a 24 VDC electrical motor with adjustable speed to regulate the lifting speed. The MobiCrane PV is designed for use together with a pneumatic (compressed air) gripper, with built-in vacuum ejector and check valve or a pneumatic squeeze gripper, which grips and holds the goods. MobiCrane M is designed for use together with mechanical grippers. The MobiCrane is fitted with a double-jointed pivot arm for easy lateral movement, which enables loading and unloading within the whole working area. On some models the height of the tower can be adapted to your workstation. The Mobicrane PV requires a compressed air connection to be able to run a compressed air gripper. The MobiCrane is designed for indoor use.

Picture 1. MobiCrane with adjustable height and round floor plate in order to make it easier to move it between work stations.

Picture 2. Vacuum unit for MobiCrane PV.

Picture 3. Vacuum unit with red/green eye.

Picture 4. Handle for MobiCrane M

MobiCrane gripper for model PV

The gripper is connected to the line, control cable and air hose at the end of the MobiCrane pivot arm. PV grippers are fitted with a built in pneumatic vacuum pump, providing a fast and safe vacuum when gripping and holding goods. The built-in safety system VMS ensures that lifting of goods takes place only when a sufficient vacuum level has been reached. Another safety system, AVSG, prevents accidental shutdown of the vacuum pump when the load is in a raised position. N.B. Some grippers have instead double action for releasing the load and a red/green eye instead for the AVSG and VMS safety systems.

MobiCrane gripper for model M

The gripper is connected to the line and control cable at the end of the MobiCrane pivot arm.

Safety systems on model PV

AVSG (**A**ccidental **V**acuum **S**hut-off **G**uard) is a system that prevents the operator from accidentally shutting down the vacuum when the gripper is under load.

VMS (**V**acuum **M**onitoring **S**ystem) controls that there is a sufficient vacuum level to guarantee a safe lifting operation. If the vacuum level is too low, VMS prevents the operator from lifting the goods.

N.B. Grippers with red/green eye and double action for releasing the load doesn't have these safety systems.

Installation of the crane

(Valid for MobiCrane for fixed mounting). When installing the crane it is important to consider applicable standards and regulations for your region. It is also important to determine the nature and quality of the floor or foundation that will support the crane as well as ensuring that the correct type of crane has been selected for your application.

NOTE To assess the options available when deciding how to mount the crane, consult the buildings owner. It is important to plan the installation carefully in order to save time and avoid complications. Follow the recommendations in this manual closely. It is important to be meticulous and careful in order to ensure a safe and reliable crane.

Choosing how to install the crane

(Valid for MobiCrane for fixed mounting). If your crane is intended to be mounted on a wall or existing column see below. The crane is intended to be mounted to a group of bolts cast into the floor or foundation. Under certain conditions the crane may be bolted to a concrete floor using chemical or stud anchor. When deciding if this is possible one must consider the length of the arms, the load to be lifted, the weight of the crane and the nature and quality of the concrete used in the floor as well as the thickness of the concrete.

NOTE Consult the buildings owner to determine if the floor and floor beams can sustain the torque M_x and the vertical force Q. The grouting is based on normal base conditions, consult the buildings owner to determine what the conditions are at your site.

Crane intended to be mounted on a wall or existing column

(Valid for MobiCrane for fixed mounting). Crane intended to be mounted on a wall or existing column. When deciding if this is possible one must consider the length of the arms, the load to be lifted, the weight of the crane and the nature and quality of the wall or existing column.

NOTE Consult the buildings owner to determine if the wall or column can sustain the torque M_x and the vertical force Q.

Mounting with chemical or stud anchor

(Valid for MobiCrane for fixed mounting to the floor). When the buildings owner has approved the mounting method – contact a supplier of mounting bolts and make sure that:

-The concrete has adequate quality.

-The concrete has adequate thickness.

-The bolt or anchor dimensions are suitable for use with the cranes mounting plate.

-The bolts in combination with the quality of the concrete can handle the forces caused by the crane with a suitable safety margin.

-That the accredited company/agency accept the mounting method

When this is done it can be determined if using chemical or stud anchor is a suitable method of mounting.

Mounting with stud anchor (Hilti HAS M12 120mm)

(Valid for MobiCrane for fixed mounting to the floor). When the buildings owner and accredited company/agency have approved the mounting method - for (Hilti HSA M12 120mm) the following conditions must be met:

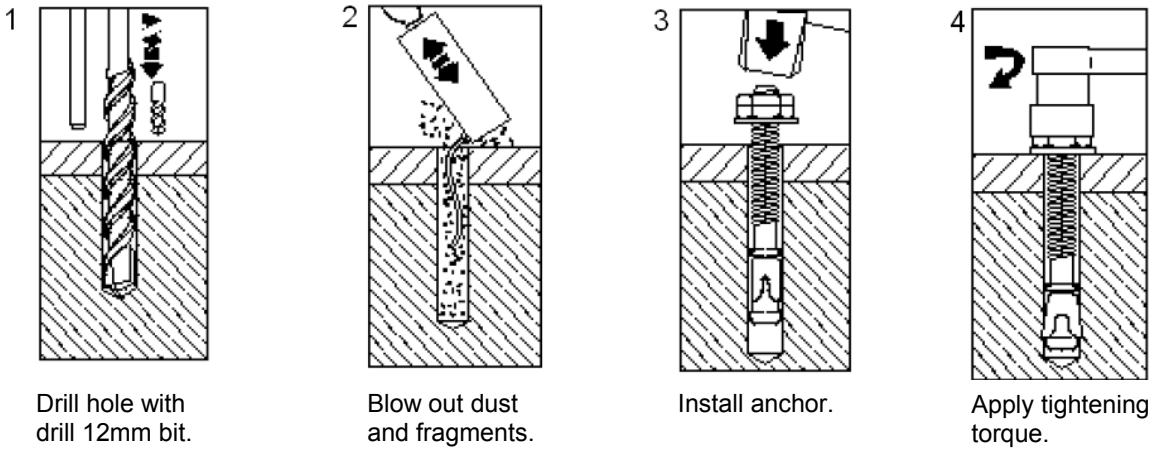
-The concrete must not be cracked.

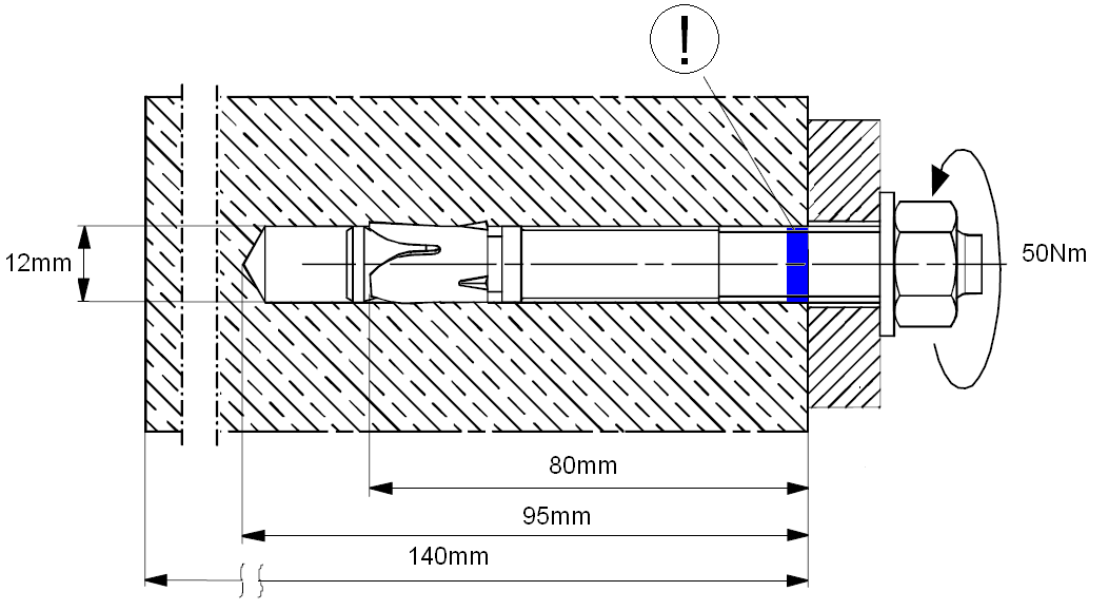
-The concrete must be of quality C20/25 (K25) according to ENV 206 or better >20 N/mm^2

-The concrete must be at least 6” thick.

-The drill holes must be a least 7” from any edges or joints in the concrete.

-The stud anchor must be mounted according to the instructions below.



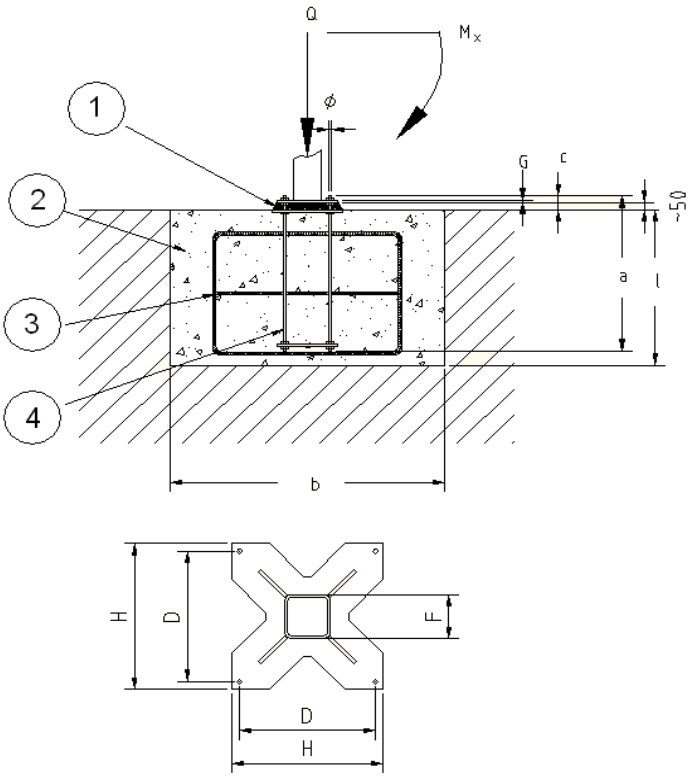


Mounting the crane with bolts cast in grouting

The grouting is based on normal base conditions, consult the buildings owner to determine what the conditions are at your site. Concrete reinforcement with bolts suitable for this type of crane can be obtained from your supplier. The minimum dimension of the hole is specified. Casting the concrete foundation should be done by professionals. Concrete with minimum quality K250 should be used. Note the placement of the bolts above the foundation. Pouring the expanding concrete should be done right before mounting the crane. Do not use the crane for 25 days after pouring the foundation.

Grouting with bolts cast in concrete for articulated jib crane

1. Expanding concrete
2. Concrete quality K250
3. Reinforcement
4. Bolt assembly



Data for articulated jib crane with maximum forces												
Base plate				Bolt assembly			Concrete foundation		Tightening torque		Forces	
D	F	G	H	a	c	Ø	b	l	Recommended with oilied 8.8 bolts		Mx(Nm)	Q(N)
356	120	12	398	810	110	M12	1200	810	M12	81Nm	7000	3600
									M14	128Nm		
									M16	197Nm		

How to install using chemical or stud anchor

1. Mark the position on the floor where the crane should be mounted to achieve a good working area.
2. Use the foot plate as a template for the holes.
3. Drill thru the holes in the foot plate if this is suitable for the type of anchor used.
4. Make the hole the size specified by the supplier of the anchor.
5. Mount the bolts as specified by the supplier of the anchor.
6. Mount the column with the nuts. Use flat washers.
7. Do a first vertical alignment.
8. Do a final vertical alignment by placing spacers under the base plate. This will require the nuts to be loosened. Tighten the nuts again after the alignment is complete.
9. Mount the jib arm according to description.
10. If the jib arm after it has been mounted moves toward a certain point a final adjustment of the column can be done until it stand still.

Mounting the column to the foundation

a Make sure the adjustment bolts on the threaded bar are places 2” above the foundation/floor and that there is no concrete on the threads.
b Place the column (without the arms) horizontally on the floor with the foot plate facing the bolts.
c Lift the column and place it over the threads, make sure it is facing the right way.
e Do a first vertical alignment fig.1 – fig.4. Check that the fulcrum is vertical using an accurate water level in combination with parallel rule.
f A final vertical adjustment of the fulcrum can be done using the nuts on either side of the foot plate. When the fulcrum is perfectly vertical, tighten all the bolts, but make sure the adjustment is not lost.
g Let the concrete set for about 25 days after the foundation has been casted
h Mount the jib arm according to description.
i If the jib arm moves to a certain point when it have been mounted an adjustment according to Fig.4 can be made until it stand still.

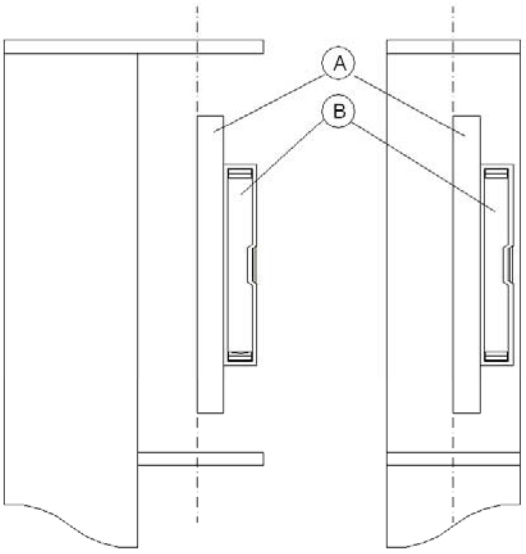


Fig. 1

Fig. 2

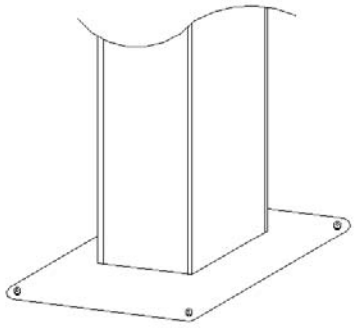


Fig. 3

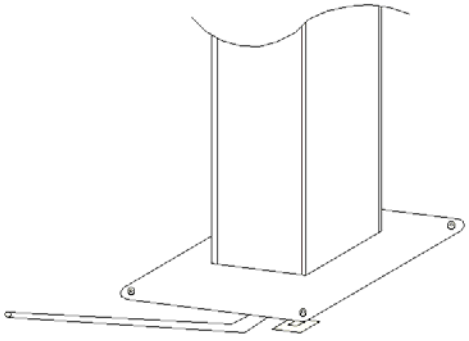


Fig. 4

A Parallel ruler
B Water level

Mount the jib arm

Picture 5. How to mount the jib arm

1) The bearings and bearing holders are assembled to the inner arm at delivery
2) Slide the bearing holders into place between the plates on the column
3) Oil the threads of the bolts.
4) Place the bolts and the washers in the holes of the top bearing holder
5) Place the bolts and the washers in the holes of the bottom bearing holder
6) Tighten the bolts in the lower bearing holder
7) Make sure that the upper bearing holder is aligned with the upper plate
8) Tighten the bolts in the upper bearing holder
9) Tighten all the bolts to 40 lb/ft

Inspection and maintenance

Inspection is to be carried out in accordance with EU machine directive and local regulations (harmonizing standard). Pre use inspection by an accredited company/agency is not mandatory when the product is CE-certified. The responsibility for the crane being safe rests on the manufacturer and the person/company that carried out the installation. For impartial assessment, it is recommended that a pre use inspection is carried out by an accredited company. In some cases a yearly inspection should be carried out by an accredited company/agency.

Unpacking and Assembly

(Valid for MobiCrane with base plate) Ensure that the MobiCrane is lowered direct onto on a flat floor and that no loose objects are allowed under the base plate. Unpack and remove any transport packaging. If the MobiCrane is not placed on a flat surface, the lifting arm may be set in motion when not loaded. If the MobiCrane is placed unstably or on loose objects, there is a risk of crushing or unstable lifting.

Picture 6. Tower stabilising bolts.

Vertical adjustment of the upper tower and lifting arm

(Only models with adjustable height) For optimum function of MobiCrane, the upper tower and lifting arm must be raised as high as possible with regard to the ceiling and any obstacles under the ceiling. The upper tower can be vertically adjusted up and down in increments of 4" to obtain the desired lifting height. Upon delivery, the tower is secured for transport at its lowest position. Use a lifting aid, e.g. a forklift, if available. If there is no lifting aid, at least two persons are required, one person to lift and lower the tower and another person to secure with the tower bolt at each increment.

1. Completely loosen the tower stabilising bolts.
2. Secure the arm.
3. Loosen the wing nut on the security bolt running through the tower and remove the security bolt.
4. Raise or lower to the desired height and match a hole in the outer and inner tower. ⚠**When the red marking on the inner tower begins to appear, the tower may not be raised higher.**
5. Insert the security bolt and firmly screw in the wing nut.
6. Tighten the stabilising bolts in the tower.
7. Air hose and cable can be adjusted so that they are tight by loosening the bolt of the lower attachment and pulling so that they are just tight enough.

Picture 7. Air hose and lower attachment for hose and cable.

Compressed air on model PV

Connect compressed air, 90 PSI (6,0 bar) to the compressed air connection point on the control panel. **The compressed air must be free from oil, water and dirt.** Ensure that the external compressed air hose causes no risk of persons snagging, tripping or falling.

Connecting a PV gripper:

1. Attach the shackle on the line to the loop on the top of the gripper (see picture 9). Firmly close the shackle.
2. Connect the air hose to the quick coupling on the gripper.
3. Connect the electrical cable to the contact on the gripper.

Connecting an M gripper:

1. Attach the shackle on the line to the loop on the top of the gripper. Firmly close the shackle.
2. Connect the electrical cable to the contact on the gripper.

Start-up 24V current:

Turn the main switch key clockwise.

Checking the vacuum function of the gripper model PV:

1. Put the suction cups against a flat, smooth and dry metal surface.
2. Start the vacuum ejector. The gripper then sucks on to the surface.
3. Check the pressure gauge on the gripper. It should show at least 72 PSI (5 bar) when the gripper is activated.
4. If the pressure gauge does not show enough pressure then the air supply must be checked and adjusted if needed. **Do no lift if the pressure is too low!**

Picture 8. 1) Pressure gauge on gripper.
2) Lifting speed rheostat

Check the VMS (Vacuum Monitoring System) on model PV

Check the VMS by pressing down the gripper until the micro switch clicks, and press the lift control button for lifting. If the VMS system is functioning then the MobiCrane will not be able to lift. If a fault is detected then see "VMS (Vacuum Monitoring System) checks and solutions".

Ready to run!

Your MobiCrane is now ready to use. The lifting and gripping function is steered with the control handle of the gripper. The speed of the lifting and lowering can be adjusted with the rheostat on the gripper. If the MobiCrane that you have purchased is equipped with "Wig-Wag piezo switch speed control in the gripper" then the lifting and lowering speed is adjusted with the help of the lift control button.

Relocating the MobiCrane

MobiCrane with a base plate is easy to relocate between different workstations by using a pallet truck or forklift. If a forklift is used, insert the forks centred in the holes in the bottom plate and lift slowly. When using a pallet truck, insert the forks in the same location, but ensure that the wheels in the front of the pallet truck are inserted in the recess beneath the lifting holes. Some models of pallet truck are designed without a lift wheel at the front of the fork, and cannot be used to lift the MobiCrane.

Secure the arm in the folded position before the relocation. Otherwise, the lifting arm may swing uncontrollably during the relocation. It is also important to ensure that the lifting arm or tower do not snag on anything during the relocation.

Replacing the gripper model PV

The MobiCrane is built for easy adaptation to different lifting conditions. There are different gripping tools for different types of goods. To replace the gripper follow these steps.

1. Turn off the main power with the key on the control panel.
2. Remove the air hose by pulling apart the quick coupling.
3. Part the electrical contact to the control panel by pressing the quick-lock completely and then pulling apart the contact.
4. Open the shackle and remove the gripper.
5. Mount a new gripper by attaching it to the shackle. Firmly tighten the shackle.
6. Attach the air hose to the quick coupling.
7. Re-attach the control panel contact. The MobiCrane is ready for use with the new gripper.

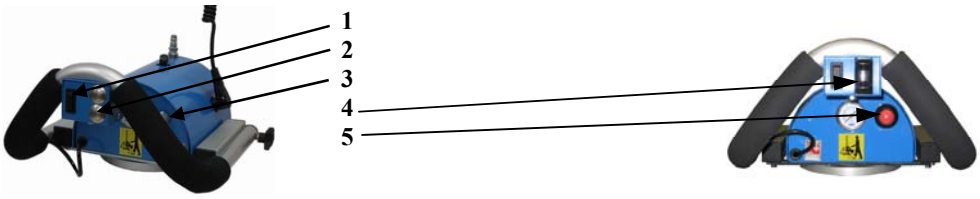
Picture 9. Gripper attachments. 1) Air attachment.
2) Loop for shackle 3) Connector to control cable.

Use

When the MobiCrane is assembled according to the directions noted above and a gripper is mounted, and the function has been checked, it is ready for use.

Lifting/lowering load

1. Before beginning to handle goods, ensure that the MobiCrane is able to reach both to grip the goods and to unload the goods at the intended location. Lifting outside the MobiCrane action radius is not allowed, this may cause a dangerous pendulum motion.
2. Ensure that there is adequate space for the operator to move freely and handle all goods in a safe manner.
3. Feed out line by pressing the lift control button until the gripper reaches down to the goods. Do not feed more line than needed. The slack-line protection will stop the down movement.



Picture 10 Control buttons. 1) Vacuum control button. 2) Lift control button.3) Lifting speed rheostat. 4) Wig-Wag lifting control button. 5) Red-green eye on some vacuum units.

4. Place the gripper on the top of the goods (above the centre of gravity). Ensure that the suction cups are in contact with the surface of the goods. Start the vacuum function by pressing the vacuum control button on the gripper. If the gripper does not grip directly, push the gripper lightly down. Check that the suction cups are contracted by the vacuum before the load is lifted.

⚠ **Note the kind of surface to which the suction cups are applied. A weak or thin surface may break or deform, resulting in a loss of sufficient suction to hold the load.**

⚠ **If the MobiCrane aborts the upward lifting motion, then the vacuum level has fallen below the permitted safety level. Lower the goods immediately if this happens.**

⚠ **If the red/green eye becomes red on grippers equipped with one, the vacuum level is under the security level. Lower the load immediately if this happens.**

⚠ **The suction cups slip more easily if the surface is wet.**

⚠ **Ensure that the lifting line does not touch any sharp or jagged edge but runs freely between the lifting arm and the gripper.**

5. When the gripper has a secure hold of the goods, it is ready to lift.

6. Lift the goods by pressing the lift control switch on the gripper.

   Note that the goods can begin a dangerous pendulum movement if the lift is not vertical.

7. Move the goods to the site where they are to be placed in as low position as possible in order to minimize the risk for damaging people or gods, lower them by pressing down the lift control button on the gripper.

   Do not crush hands, feet or other parts of the body when the goods are lowered!

8. Release the gripper from the goods by turning off the vacuum function with the vacuum control button on the gripper. This may not take place until the whole weight of the goods is resting on the surface. The AVSG safety system prevents the vacuum from being shut down while there is a load on the line. **N.B Grippers with double action for realising the load and red/green eye don't have the safety system AVSG**
9. If the gripper doesn't let go of the gods it has to do with vacuum that is left between the check valve and the suction cups. If this happens press the vacuum control button ones more in order to blow compressed air into the suction cups.

Care and maintenance

After use

During long stops, the main switch key should be turned off. The MobiCrane uses power even in stand-by mode.

Daily inspection on model PV

The MobiCrane is designed for easy maintenance. However, the following inspections shall be carried out by the operator on a daily basis to maintain the functionality and safety of the MobiCrane.

- Check that the gripper vacuum function works properly.
    - Put the gripper suction cups against a flat, smooth and dry metal surface.
    - Start the vacuum pump. The gripper will then grip the surface.
        - Check the pressure gauge on the gripper. It must show a pressure of at least 72 PSI (5 bar) when the gripper is on.
        - If the pressure gauge shows insufficient pressure, the air supply must be checked and adjusted if necessary. If there is not enough pressure, the VMS (Vacuum Monitoring System) will prevent lifting. **Do not lift if there is not enough pressure!**
- Ensure that the suction cups and connections are clean and undamaged. Defective or worn parts must be exchanged and dirty suction cups must be cleaned.
- Check that the shackle bolt is firmly attached.
- To achieve proper functioning of the vacuum gripper, a compressed air filter is essential to separate dirt and water. Ensure that it is in working order. Clean when necessary.
- Keep the machine clean. ⚠ **The MobiCrane must not be flushed with water!**

Daily inspection on Model M

- Check that the shackle bolt is firmly tightened.
- Keep your MobiCrane clean. ⚠ **The MobiCrane must not be flushed with water!**

Inspection every second month

The following checks shall be carried out by your service personnel and documented with date and signature every second month or if something has happened to the MobiCrane that cannot be deemed normal use, for example a collision.

Check that:

- **Only on model PV:** Suction cups and vacuum hoses are undamaged.
- **Only on model PV:** Air hoses are not damaged, pinched or folded. Check this from the attachment point at the gripper all the way through the tower to the attachment point for incoming air.
- Control cables and their couplings are undamaged and correctly routed.
- Line blocks are undamaged and roll smoothly.
- The lifting line is not worn or damaged.
- The security bolt on the tower is not damaged or loosening.
- **Only on model PV:** The VMS system works, by pressing down the gripper until the micro switches click, press the lift control button for lifting. If the VMS system works the MobiCrane won't lift. For more information about faults, see "VMS (Vacuum Monitoring System) checks and solutions".
- **Only on model PV:** The ejector is clean.
- If damaged or worn parts are detected they must be replaced before continued use of the MobiCrane.

Inspection every 12th month

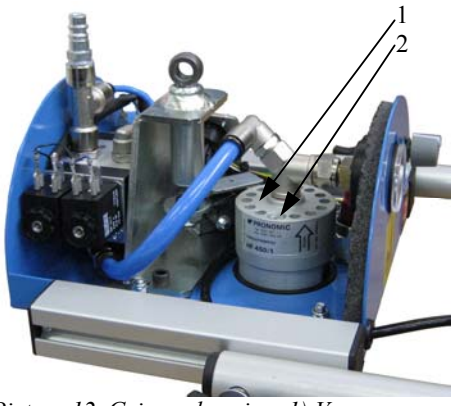
During this inspection, which is carried out by your service personnel, the two-monthly control is extended to include the following items and is to be documented with date and signature in the service file.

- Check the line drum. The ends of the line drum must be straight and undamaged.
- Check the welds and that no cracking has occurred.
- Check bolted joints. Tighten bolts.
- If damage through wear or faulty parts is detected, the parts must be replaced before continued use of the MobiCrane.

Cleaning the vacuum pump on model PV

Even when using an air filter, it sometimes happens that particles of dirt find their way into the gripper and reduce the effect of the vacuum pump. This problem is easily dealt with by cleaning the vacuum pump. To do this, follow these simple steps:

1. Turn off the main switch.
2. Disconnect all attachments between the gripper and the MobiCrane.
3. Unscrew the roof of the gripper housing and lift it vertically upwards.
4. Unscrew the socket head bolts on the vacuum ejector (2 pcs).
5. Lift the upper part of the ejector together with the hose nipple and pressure gauge.
6. With a damp cloth, wipe clean both parts of the vacuum ejector. ⚠ **Corrosive cleaning agents must not be used!**
7. Replace the upper part of the vacuum pump and fasten the socket head bolts.
8. Replace and fasten roof.
9. Now remount the gripper on the MobiCrane. Test run the gripper before use.



Picture 12. Gripper housing. 1) Vacuum ejector. 2) Socket head bolts (2pcs.)

Charging with integrated charger

MobiCrane is supplied with a 24V battery charger. Batteries should be charged on a regular schedule based on crane use.

Heavy use charge daily. Light use 2 per week. Battery charger requires 110V input to operate.

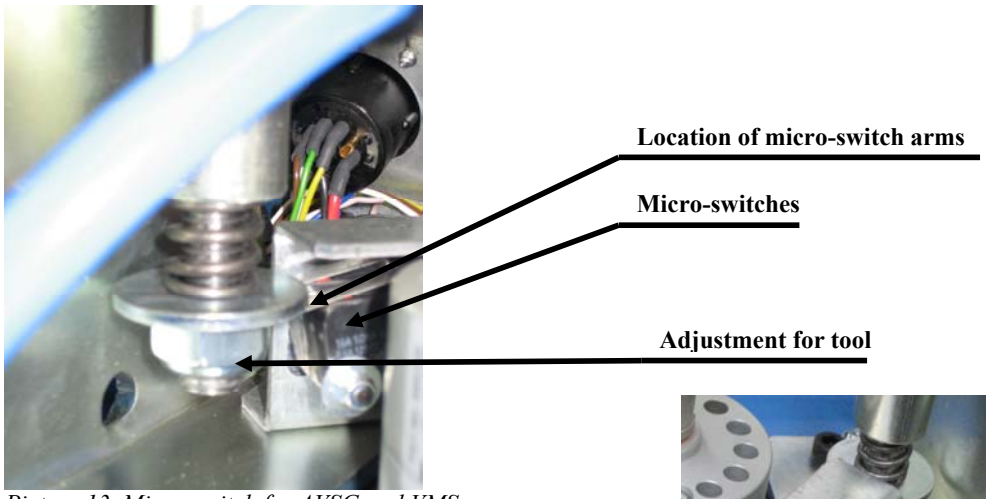
Checks and solutions VMS (Vacuum Monitoring System) model PV

Check the VMS (Vacuum Monitoring System) by pressing down the gripper until the micro switches click and press on the lift control button for lifting. If the VMS system is functioning, the MobiCrane will not lift. If the system is faulty, check that the micro-switches that steer the system are functioning and that the micro-switch arms are on the correct side of the plate (See pictures 13 and 14). If faulty, replace the micro-switches (article number 6215161).

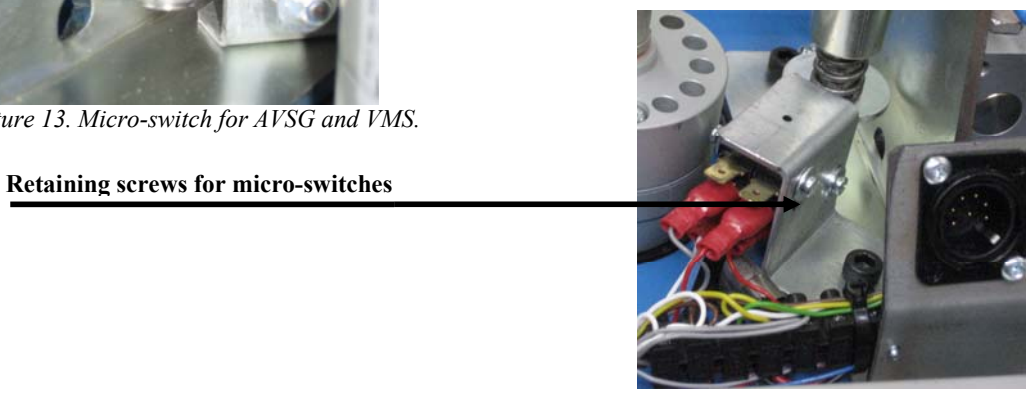
Adjusting spring

The force needed to make the micro switches click shall be appr. 11-22 lbs. In order to check the adjustment of the spring, load the gripper more and more without using vacuum, a click sound from the vacuum switch reveals the weight the tool is adjusted for. If the VMS system is functioning then the MobiCrane will not be able to lift but it is still possible to go down with the load. If the spring is adjusted at 2-9 lbs the acceleration force or the weight of the operators arms when she/he holds the gripper can compress the spring so that the operator experience that the movement up without load is very jumpy. It depends on that the VMS-system stops the up movement when the micro switches get an impulse and then when the micro switch loose the signal the motor starts again. It can be very short time periods which can be experienced as if the rope jumps a little on the drum.

If you adjust the spring with the nut marked “Adjustment for tool” you have to adjust the micro switches so that the arms are pressed down buy the plate.



Picture 13. Micro-switch for AVSG and VMS.



Picture 14 Bracket for micro-switches.

Troubleshooting model PV

Fault	Possible cause	Action
Lifting function does not work.	The surface of the goods is not smooth enough or too porous for the gripper to achieve sufficient vacuum level. The VMS system prevents lifting	Try moving the gripper to get a new grip. Ensure that no particles are trapped between the suction cups and the goods. Ensure that the lifting surface of the goods is not damaged. If the problem remains, contact your retailer.
	The electrical system has entered its power saving mode. This can happen after a certain idle period.	Switch off the main power with the red key on the control panel and then turn it on again.
	The connection to the electrical cable at the gripper is incorrectly installed or not firmly attached.	Ensure that the coupling is correctly installed.
	Fuse blown.	Replace fuse. If it blows again contact your retailer.
	Electrical cable damaged.	Replace cable or contact your retailer.
	The speed potentiometer is set at too low a speed.	Increase the set speed with the speed potentiometer on the control panel.
	Weak battery.	Charge the battery. Check the battery if it does not take a charge. Replace battery if needed.
Insufficient suction (vacuum level low).	There is not enough pressure at the connection point with the gripper.	Ensure that the air pressure is at least 90 psi (6 bar) at the gripper when the vacuum function is activated. Inspect the air hoses to ensure that they are not damaged, pinched or folded.
	The vacuum ejector is dirty.	Disassemble and clean the vacuum ejector.

Fault	Possible cause	Action
Vacuum function does not work.	Connection to electrical cable at grip tool incorrectly installed or not firmly attached.	Ensure that the attachment is correctly installed.
	Fuse blown.	Replace fuse. If it blows again contact your retailer.
	Control cable damaged.	Replace the cable or contact your retailer.
	Air hose damaged.	Replace the air hose or contact your retailer.
	Weak battery.	Charge the battery. Check the battery if it does not take a charge. Replace battery if needed.
	Valve broken	Change the valve

Troubleshooting model M

Fault	Possible cause	Action
Lift function does not work.	The electrical system has entered its power saving mode. This can happen after a certain idle period.	Switch off and on the main power with the red main switch key on the control panel.
	The connection to the electrical cable at the gripper is incorrectly installed or not firmly attached.	Ensure that the coupling is correctly installed.
	Fuse blown.	Replace fuse. If it blows again contact your retailer.
	Electrical cable damaged.	Replace cable or contact your retailer.
	The speed potentiometer on the control panel is set at too low a speed.	Adjust upwards the speed with the potentiometer on the control panel.
	Weak battery.	Charge the battery. Check the battery if it does not take a charge. Replace battery if needed.

Technical data

MobiCrane

Type:	MC20
Weight:	728 lbs
Lifting capacity (max):	125 lbs
Lift height (max):	About 90.5”. Depending on gripper.
Lifting arm length:	2m
Sound level:	64 dB (A) / 62 dB (B)
Line:	189”, Dyneemic -32, diam. 6.0 mm. Tensile strength 3000 lbs
Energy support:	2 series connected 12 V, 54 Ah, maintenance free batteries, alternatively 110/24V AC/DC converter
Lifting motor:	Amer MP80M/2 power rating 400W

Type:	MC25
Weight:	740 lbs
Lifting capacity (max):	70 lbs
Lift height (max):	About 90.5”. Depending on gripper.
Lifting arm length:	2.5m
Sound level:	64 dB (A) / 62 dB (B)
Line:	209”, Dyneemic -32, diam. 6.0 mm. Tensile strength 3000 lbs
Energy support:	2 series connected 12 V, 54 Ah, maintenance free batteries, alternatively 110/24V AC/DC converter
Lifting motor:	Amer MP80M/2 power rating 400W or Amer MP56L 200W

Type:	MC30
Weight:	750 lbs
Lifting capacity (max):	30 lbs
Lift height (max):	About 90.5”. Depending on gripper.
Lifting arm length:	3m
Sound level:	64 dB (A) / 62 dB (B)
Line:	228”, Dyneemic -32, diam. 6.0 mm. Tensile strength 3000 lbs
Energy support:	2 series connected 12 V, 54 Ah, maintenance free batteries, alternatively 110/24V AC/DC converter
Lifting motor:	Amer MP80M/2 power rating 400W or Amer MP56L 200W

Type:	MCX20
Weight:	1025 lbs
Lifting capacity (max):	175 lbs
Lift height (max):	About 90.5”. Depending on gripper.
Lifting arm length:	2m
Sound level:	64 dB (A) / 62 dB (B)
Line:	189”, Dyneemic -32, diam. 6.0 mm. Tensile strength 3000 lbs
Energy support:	2 series connected 12 V, 54 Ah, maintenance free batteries, alternatively 110/24V AC/DC converter
Lifting motor:	Amer MP80M/2 power rating 400W

Type:	MCX25
Weight:	1036 lbs
Lifting capacity (max):	150 lbs
Lift height (max):	About 90.5”. Depending on gripper.
Lifting arm length:	2.5m
Sound level:	64 dB (A) / 62 dB (B)
Line:	209”, Dyneemic -32, diam. 6.0 mm. Tensile strength 3000 lbs
Energy support:	2 series connected 12 V, 54 Ah, maintenance free batteries, alternatively 110/24V AC/DC converter
Lifting motor:	Amer MP80M/2 power rating 400W

Type:	MCX30
Weight:	1050 lbs
Lifting capacity (max):	125 lbs
Lift height (max):	About 90.5”. Depending on gripper.
Lifting arm length:	3m
Sound level:	64 dB (A) / 62 dB (B)
Line:	228”, Dyneemic -32, diam. 6.0 mm. Tensile strength 3000 lbs
Energy support:	2 series connected 12 V, 54 Ah, maintenance free batteries, alternatively 110/24V AC/DC converter
Lifting motor:	Amer MP80M/2 power rating 400W

Type:	MCX35
Weight:	1058 lbs
Lifting capacity (max):	110 lbs
Lift height (max):	About 90.5”. Depending on gripper.
Lifting arm length:	3.5m
Sound level:	64 dB (A) / 62 dB (B)
Line:	189”, Dyneemic -32, diam. 6.0 mm. Tensile strength 3000 lbs
Energy support:	2 series connected 12 V, 54 Ah, maintenance free batteries, alternatively 110/24V AC/DC converter
Lifting motor:	Amer MP80M/2 power rating 400W

Type:	MCX40
Weight:	1070 lbs
Lifting capacity (max):	70 lbs
Lift height (max):	About 90.5”. Depending on gripper.
Lifting arm length:	4m
Sound level:	64 dB (A) / 62 dB (B)
Line:	268”, Dyneemic -32, diam. 6.0 mm. Tensile strength 3000 lbs
Energy support:	2 series connected 12 V, 54 Ah, maintenance free batteries, alternatively 110/24V AC/DC converter
Lifting motor:	Amer MP80M/2 power rating 400W or MP56L 200W

Service card for in-house inspection model PV

Observe that in some countries, depending on national regulations, certain inspections have to be performed by an accredited body.

Copy this page and place in your service file to keep a record of which inspections have been carried out and when.

For further information on service points, see the manual.

In the first inspection after 2 months' operations, inspect all bolted joints.

Inspection every second month

Action	OK	Sign.
Check that gripper suction cups and vacuum hoses are undamaged.		
Check that compressed air hoses are not damaged, pinched or folded. Check this from attachment point at gripper all the way through the tower to the attachment point for incoming air.		
Check that the control cables with couplings are undamaged and correctly routed.		
Check that the line block is undamaged and rolls smoothly.		
Check that the lift line is not worn or damaged.		
Check that the tower bolt is not damaged or loosening.		
Check VMS system.		
Clean the ejector.		
⚠ **If damage through wear or faulty parts is detected, the parts must be replaced before continued use of the MobiCrane.**		

Supplement inspection every 12th month

Action	OK	Sign
Check line drum.		
Check welds and that there is no cracking.		
Check bolted joints.		
⚠ **If damage through wear or faulty parts is detected, the parts must be replaced before continued use of the MobiCrane.**		

…… ……

Date Inspection supervisor

Service card for in-house inspection model M

Observe that in some countries, depending on national regulations, certain inspections have to be performed by an accredited body.

Copy this page and place in your service file to keep a record of which inspections have been carried out and when.

For further information on service intervals, see the manual.

In the first inspection after 2 months' operations, inspect all bolted joints.

Inspection every second month

Action	OK	Sign.
Check that gripper attachment and bolts are undamaged.		
Check that control cables with attachments are undamaged and correctly routed.		
Check that the line block is undamaged and rolls smoothly		
Check that the lift line is not worn or damaged.		
Check that the tower bolt is not damaged or loosening.		
⚠ **If damage through wear or broken components is detected, the parts must be replaced before continued use of the MobiCrane.**		

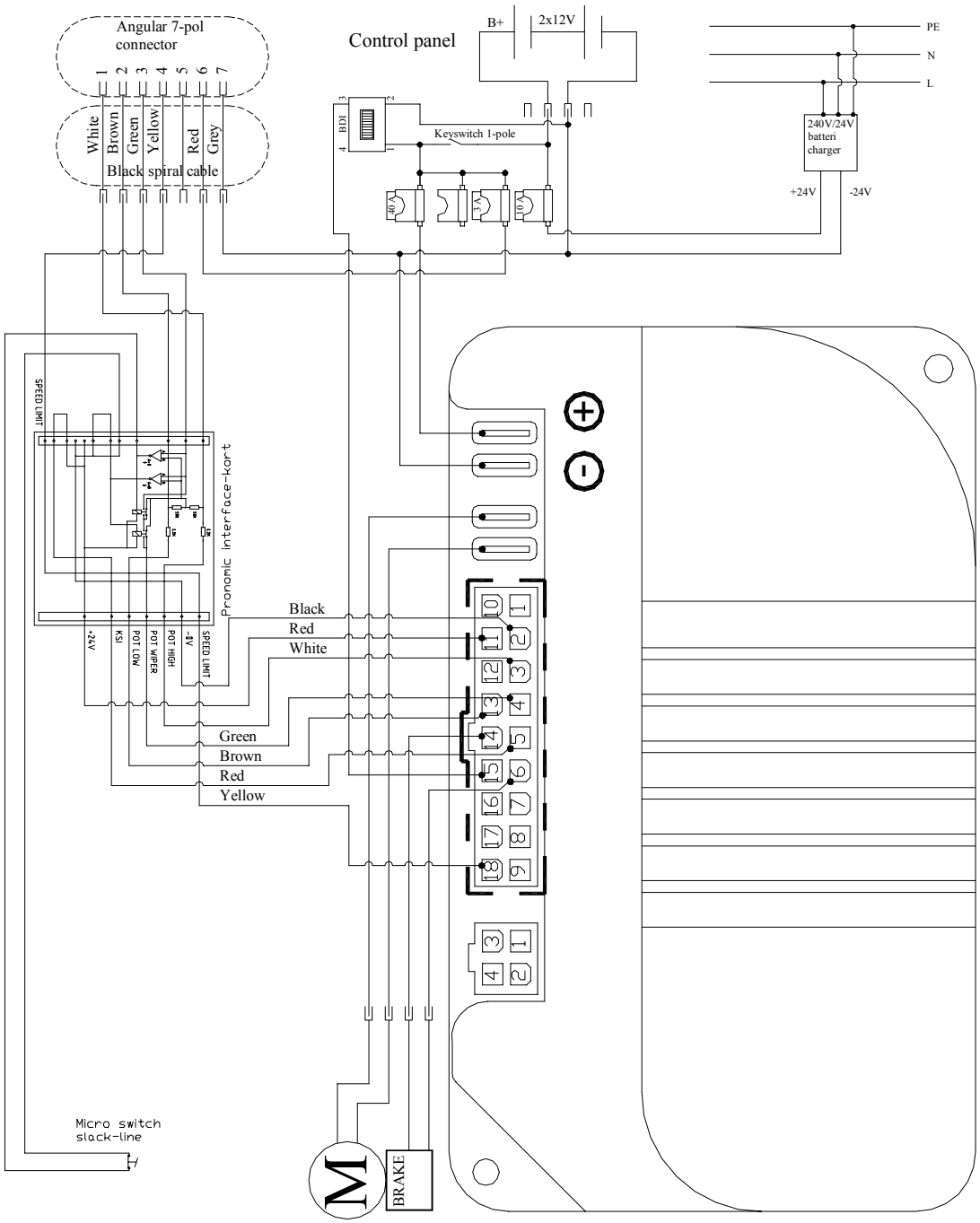
Supplement for inspection every 12th month

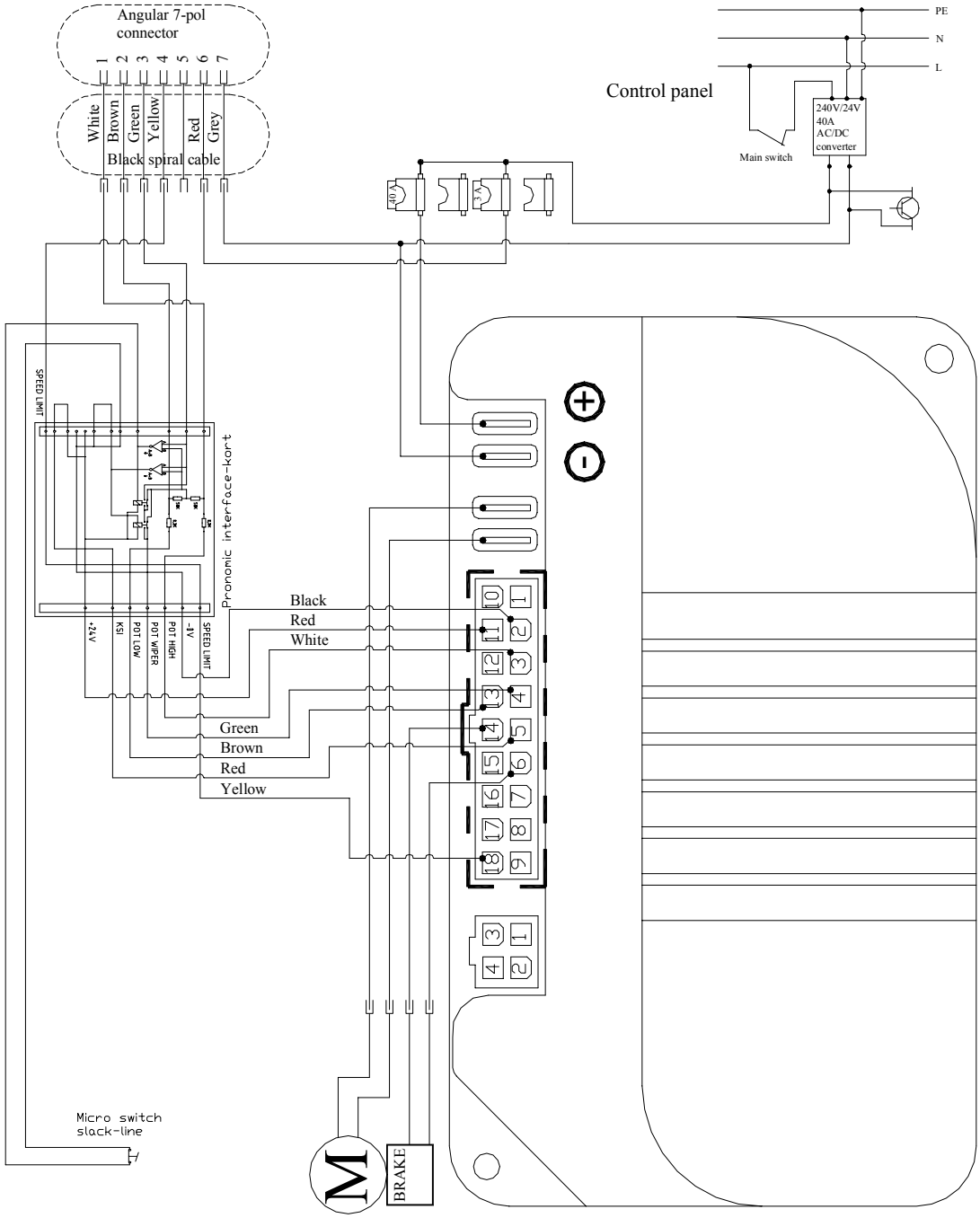
Action	OK	Sign.
Check line drum.		
Check welds and that there is no cracking.		
Check bolted joints.		
⚠ **If damage through wear or broken components is detected, the parts must be replaced before continued use of the MobiCrane.**		

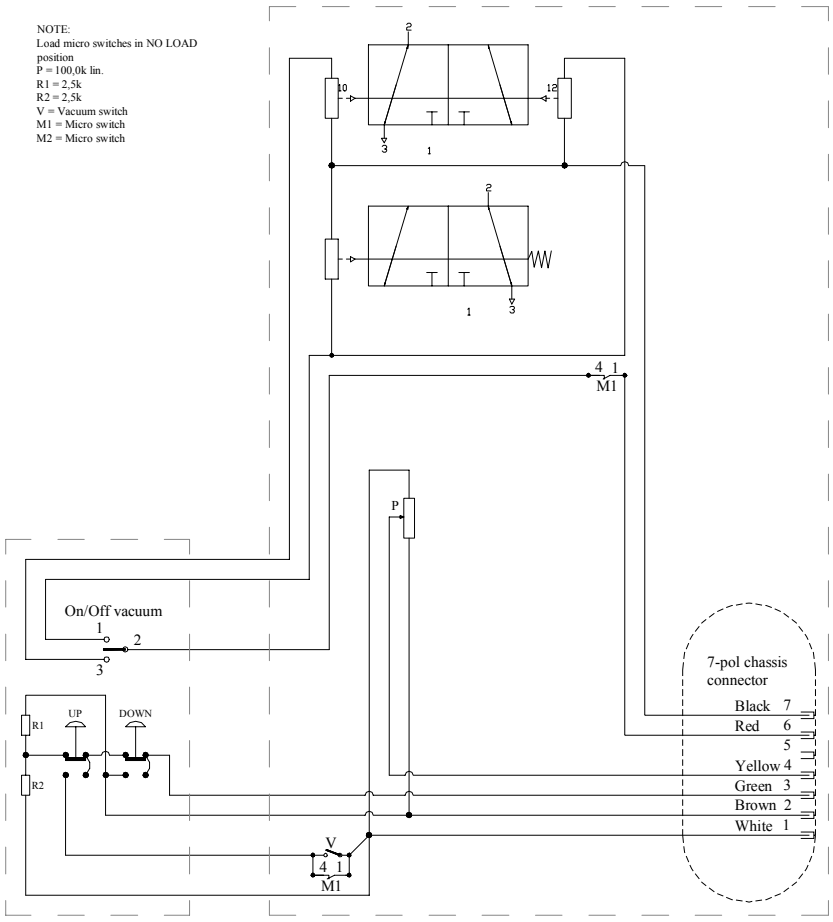
…… ……

Date Inspection supervisor

Wiring diagram

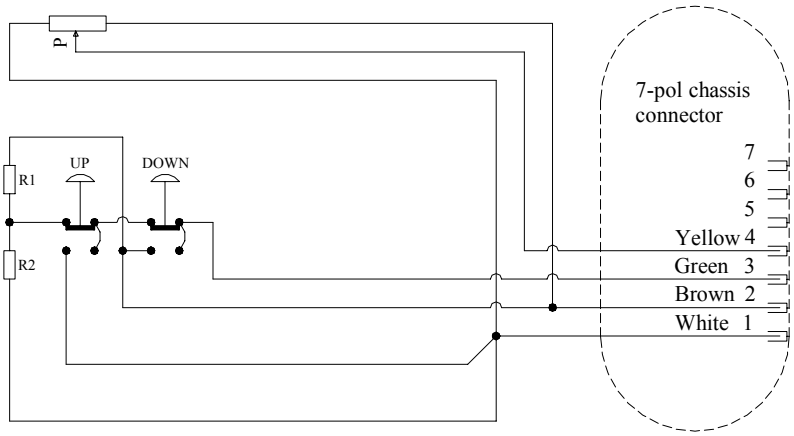



Angular 7-pol connector
1 2 3 4 5 6 7
White Brown Green Yellow Red Grey
Black spiral cable
Control panel
PE
N
L
240V/24V 40A AC/DC converter
Main switch
40 A
3 A
SPEED LIMIT
Pronomic interface-kort
+24V
KSI
POT LOW
POT PWM REF
POT HIGH
-1V
SPEED LIMIT
Black
Red
White
Green
Brown
Red
Yellow
Micro switch slack-line
M
BRAKE

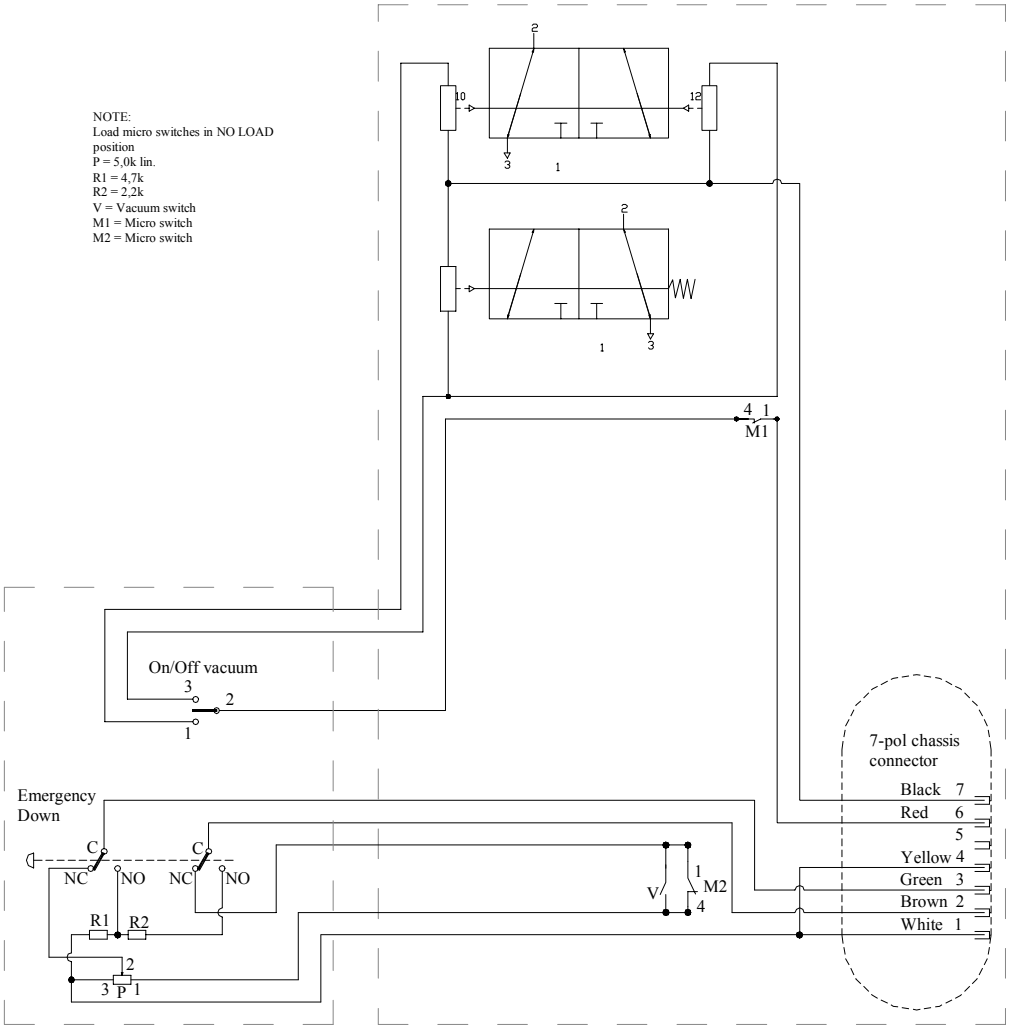


MobiCrane vacuum gripper
Up/down Version 1

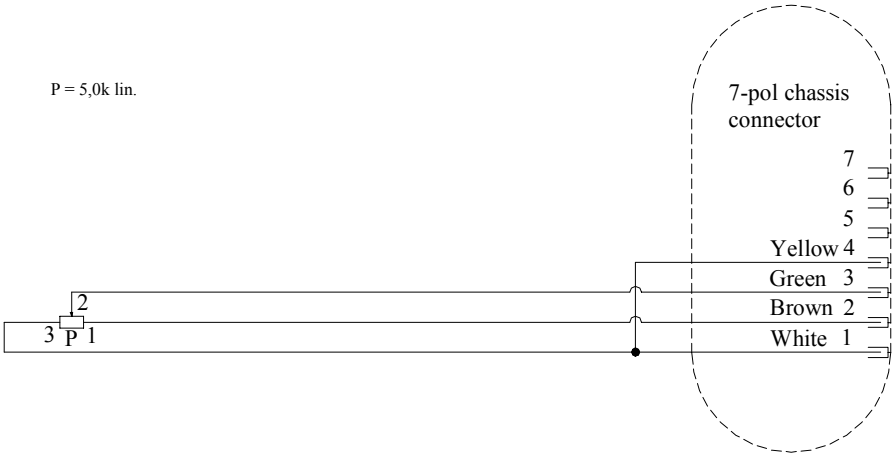
P = 100,0k lin.
R1 = 2,5k
R2 = 2,5k



MobiCrane mechanical gripper
Up/down Version 1



MobiCrane vacuum gripper
Wig-Wag Version 1



MobiCrane mechanical gripper
Wig-Wag Version 1