



Drilling and Milling Machine HU 45 DM-4 VARIO NG DRO X-FEED

Article number: 12098

Year of construction: 2026

Manufacturer: HUVEMA BV

Read this manual carefully before putting the machine into operation.

TABLE OF CONTENTS

1	Warranty provisions	4	5.18	Points of attention during use	31
1.1	Warranty	4	5.19	Stop procedure	31
1.2	Exclusions	4	5.20	Regular stop procedure	31
1.3	Statutory rights	4	5.21	Shift change / temporary standstill	31
			5.22	End of working day / prolonged standstill	31
			5.23	Emergency stop procedure mandatory	32
			5.24	Location of emergency stop button(s)	32
			5.25	Actions in an emergency	32
			5.26	Resuming after emergency stop mandatory	32
			5.27	Other emergency measures and contacts	33
2	Machine Directives and CE	6			
2.1	Applicable directives and standards	6			
2.2	CE marking	6			
2.3	EU Declaration of Conformity	6			
3	Safety & Installation	8	6	Maintenance & Faults	34
3.1	Safety symbols and their meaning	8	6.1	Maintenance schedule	34
3.2	General safety instructions	11	6.2	Daily maintenance	34
3.3	Personal protective equipment (PPE)	13	6.3	Periodic maintenance	34
3.4	Unpacking and checking	13	6.4	Lubrication plan	35
3.5	Packaging and residual material	14	6.5	Fault diagnosis and solutions	36
3.6	Working environment	14	6.6	Spare parts	37
3.7	Electrical connection	15			
3.8	First commissioning	16	7	Disposal and Recycling	38
4	Technical Specifications	18	7.1	Disposal of the machine	38
4.1	Dimensions and weight	18	7.2	Taking the machine out of service	38
4.2	Electrical data	18	7.3	Dismantling	38
4.3	Performance specifications	18			
4.4	Noise level	18	8	Technical drawings	40
4.5	Ambient conditions	20	8.1	Overview of technical drawings	40
			8.2	Parts drawing	40
			8.3	Electrical diagram	41
5	Operating Instructions	22			
5.1	Introduction and intended use	22			
5.2	Machine description	22			
5.3	Intended use mandatory	22			
5.4	Foreseeable misuse mandatory	22			
5.6	Operating controls mandatory	24			
5.7	Operation overview	25			
5.8	Emergency stop button(s) mandatory	27			
5.9	Indicator lights and displays	27			
5.10	Start-up procedure	28			
5.11	Required operator qualifications mandatory	28			
5.12	Preparation before start-up	28			
5.13	Start-up procedure step by step	28			
5.14	Normal use	29			
5.15	Technical limits mandatory	29			
5.16	Setting parameters	29			
5.17	Carrying out machining	29			

INTRODUCTION

Congratulations on the purchase of this HUVEMA machine. We want you to keep getting the best performance out of it. That is why this manual contains information on safety, operation and maintenance.

Keep this manual in case you need information in the future.

Your HUVEMA machine comes with a **1 year warranty**. Should a defect occur within this period, please contact your dealer.

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1. WARRANTY PROVISIONS

1.1 WARRANTY

This HUVEMA product comes with a warranty of **1 year**. If your product develops a defect within this period, please contact the dealer where you purchased the product, or contact **HUVEMA BV** directly by telephone on **+31 (0) 413 34 22 75** or by e-mail via **info@huvema.nl**.

1.2 EXCLUSIONS

This warranty does not cover damage caused by:

- Normal and regular wear and tear
- Abuse or improper use
- Lack of maintenance
- Defects in consumables
- Deliberate damage
- Cosmetic damage
- Failure to follow the instructions described in this manual
- Loss of use value

1.3 STATUTORY RIGHTS

This warranty does not affect your statutory rights.

reference: /Users/centevanliempe/cowork/Markdown to indesign/Werkmap/handleiding machines/12098-EN/handleiding_COMPLEET-12098-EN

2. MACHINE DIRECTIVES AND CE

2.1 APPLICABLE DIRECTIVES AND STANDARDS

This machine complies with the following European directives and standards:

Directive	Description
2006/42/EC	Machinery Directive - safety requirements for the design and construction of machinery
2014/35/EU	Low Voltage Directive - electrical equipment within certain voltage limits
2014/30/EU	EMC Directive - electromagnetic compatibility

In addition, the following harmonised standards have been applied:

Standard	Description
EN ISO 12100:2010	Safety of machinery - General principles for design, risk assessment and risk reduction

2.2 CE MARKING

The CE marking on this machine indicates that the machine complies with the applicable European directives and that a conformity assessment procedure has been carried out.

The CE marking is visibly affixed to the type plate of the machine. Do not remove or damage the CE marking. A machine without a valid CE marking must not be put into operation within the European Economic Area (EEA).

2.3 EU DECLARATION OF CONFORMITY

HUVEMA BV hereby declares that the machine to which this manual relates is in conformity with all relevant provisions of the applicable EU directives.

Manufacturer: HUVEMA BV

Address: Kennedylaan 14, 5466 AA Veghel, The Netherlands

Machine: Drilling and Milling Machine HU 45 DM-4 VARIO NG DRO X-FEED

Article number: 12098

Year of CE marking: 2026

The complete signed EU Declaration of Conformity is available on request from your dealer or directly from HUVEMA BV.

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3. SAFETY & INSTALLATION

3.1 SAFETY SYMBOLS AND THEIR MEANING

The following symbols are used in this manual to indicate risks. Make sure you know all symbols before operating the machine.

WARNINGS

Symbol	Code	Description
	W001	General danger
	W012	Danger of electrical voltage
	W021	Danger of fire
	W002	Danger of explosion
	W024	Danger of crushing (hands)
	W025	Danger from rotating parts
	W017	Danger of hot surface
	W004	Danger of laser light

MANDATORY ACTIONS

Symbol	Code	Description
	M004	Safety glasses mandatory - EN 166 1F
	M008	Safety gloves mandatory - S1P and S3
	M014	Safety helmet mandatory - EN 397
	M013	Face shield mandatory - EN 166 B
	M001	General mandatory pictogram
	M003	Wearing hearing protection mandatory - EN 352
	M002	Reading the manual mandatory

PROHIBITIONS

Symbol	Code	Description
	P003	Open flames prohibited
	P002	Smoking prohibited

Symbol	Code	Description
	P080	No unauthorised access
	P013	Mobile phones prohibited

3.2 GENERAL SAFETY INSTRUCTIONS

These instructions are for your own safety. Read them thoroughly before use and keep them for future reference.

As with all machines, working with this machine involves hazards. Correct operation limits these risks. If the safety regulations are not observed, risks are unavoidable. Observe the general safety regulations where applicable.

The construction of the machine may not be modified in any way. If this is done nevertheless, it is entirely at the user's own risk. This also voids your warranty. The supplier cannot be held liable for damage resulting from modifications.

If you have any questions, contact your dealer.

WARNING:

When using power tools, always observe the basic safety precautions to reduce the risk of fire, electric shock and personal injury!

The machine may only be used by a recognised, well-qualified and competent person aged **18 years or older**, who:

- Has read and understood these operating instructions
 - Is familiar with the operation of similar equipment
 - Knows how these machines must be operated
 - Is aware of all possible risks and acts accordingly.
 - Please read these points carefully before starting to work with the machine.
1. Always work in accordance with the safety regulations - M002.
 2. Keep guards and similar devices in place / do not remove them.
 3. Electrically driven machines fitted with a plug must always be connected to an earthed socket.
 4. Loose handles or operating keys must always be removed. Make it a habit to always check the machine before use.
 5. Keep the workplace clean and free of obstacles. A cluttered workplace increases risk.
 6. The machine must not be installed in a hazardous environment, i.e. not in damp or wet rooms. Also do not expose the machine to rain.
 7. The machine must be placed on a level and stable surface.
 8. Ensure good lighting at the workplace.
 9. The machine must never be overloaded. The capacity of the machine is greatest when it is loaded correctly.
 10. Use the machine only for the work for which it was made.
 11. Always set the machine to the correct speed for the type of work and use the correct accessories for the type of work.
 12. Make sure the machine cannot start unexpectedly. Always check the on/off switch.
 13. Keep children and unauthorised persons away from the machine. They must always be kept at a safe distance from the machine.
 14. Make sure the workshop cannot be entered by unauthorised persons. Fit safety locks in the form of sliding bolts, lockable main switches and the like.

- 15.** Never leave the machine unattended while it is running. Always switch the machine off, but only after it has come to a complete standstill.
- 16.** Always secure workpieces properly using a machine vice or clamping device. This keeps both hands free to operate the machine. Clamped workpieces may only be measured when the machine is switched off.
- 17.** Keep your hands away from sharp and rotating parts.
- 18.** Do not lean over the machine.
- 19.** Wear suitable work clothing.
- 20.** Do not wear loose clothing, gloves, ties, scarves, rings, necklaces, bracelets, jewellery or other accessories that could be caught in rotating parts.
- 21.** Wear footwear with rubber soles or safety shoes - M008.
- 22.** Wear a hairnet in case of long hair.
- 23.** Always wear safety glasses and work in accordance with the safety regulations - M004.
- 24.** At noise levels above 80 dB(A) hearing protection is recommended; above 85 dB(A) hearing protection is mandatory.
- 25.** A dust mask is advisable for dusty work.
- 26.** The machine must never be operated while you are under the influence of alcohol or drugs. This also applies to medication that negatively affects your reaction time.
- 27.** The machine is operated by a qualified user in the manner described in this manual.
- 28.** Never stand on the machine or its accessories.
- 29.** Keep your balance at all times.
- 30.** Make sure the machine is disconnected from the power supply before carrying out maintenance work or replacing machine parts.
- 31.** Before commissioning, ensure that the oil reservoirs are sufficiently filled, provided the machine is equipped with a gearbox and/or hydraulic system, and that any other required oil and/or auxiliary fluids (e.g. for cooling) are filled and present.
- 32.** Check for damaged parts and accessories. If parts are damaged, replace or repair them immediately.
- 33.** Use only the prescribed accessories. See the manual. The use of improper parts or accessories can entail certain risks.
- 34.** The machine must not be used if protective covers or other safety devices have been removed. If protective covers are removed for transport, they must be properly refitted before (re)commissioning. Never remove guards or protective covers from the machine.
- 35.** Always keep the machine in optimal condition. To this end, keep the cutting surfaces sharp and clean. Read the manual carefully and follow the instructions for cleaning, lubricating and changing tools.
- 36.** Never stand under or near a machine that is suspended or being lifted.
- 37.** Keep the original packaging for transport or relocation of the machine.

3.3 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal protective equipment is mandatory when working with this machine. Always wear the standard protective equipment below and any additional equipment specifically required for this machine.

Standard mandatory for all HUVEMA machines	Explanation
Safety glasses (M007)	Protection against flying chips and coolant
Safety shoes (M004)	Protection against falling parts and tools
Close-fitting work clothing	No loose clothing, scarves or jewellery
Hair tied up or cap	Prevents entanglement in moving parts
Additional PPE	When mandatory
Hearing protection (M003)	Wearing hearing protection in accordance with the EN 352 standard is mandatory above 85 dB(A); recommended from 80 dB(A).
Safety gloves (M010)	Wearing safety shoes in accordance with the EN ISO 20345 standard, minimum class S1, is mandatory.
Face shield (M013)	Wearing safety glasses in accordance with the EN 166 standard is mandatory.
Dust mask / respiratory protection	Wearing a dust mask in accordance with the EN 149 standard (e.g. FFP2) is recommended for dust-producing operations.

Consult your company's risk assessment (RI&E) for additional obligations. HUVEMA is not liable for injury resulting from failure to wear the prescribed protective equipment.

3.4 UNPACKING AND CHECKING

The machine is supplied in packaging to prevent damage during transport. The raw materials in this packaging can be reused or recycled. We recommend keeping the packaging in case the machine needs to be moved.

1. Unpack all parts and place them on a flat, stable surface.
2. Remove all packaging and shipping material.
3. Check that the contents of the delivery are complete and free of damage. If you find that parts are missing or damaged, do not use the product, but contact your dealer. Using an incomplete or damaged product constitutes a danger to persons and property.
4. Make sure you have all the accessories and tools required for assembly and use. This also includes suitable personal protective equipment.
5. If necessary, remove the anti-corrosion agent from the machine with a soft cloth. If required, use turpentine or white spirit.
6. If necessary, apply a thin layer of machine oil to prevent rust. Wipe all parts thoroughly clean with a cloth.

3.5 PACKAGING AND RESIDUAL MATERIAL

Our products and accessories are packed in deposit-free packaging material. The packaging and residual material consists of recyclable material, such as cardboard, expanded polystyrene parts, polyethylene films and bags, polypropylene straps and a wooden frame. If possible, keep the packaging until the end of the warranty period. After this period, you can take it to an official (local) collection point.

The end user is responsible for the correct disposal of packaging and residual materials.

WARNING!

The machine and the packaging material are not toys. Do not let children play with plastic bags, films or small parts. There is a danger of swallowing or suffocation!

3.6 WORKING ENVIRONMENT

- Carefully choose the location where you want to place the machine.
- The machine must be installed on a solid, level surface.
- Ensure sufficient freedom of movement around the machine for operation and use.
- Do not expose the machine to heat or moisture.
- Good lighting of the machine and work area increases safety while working.
- The voltage and frequency of the power source must correspond to the connection values of the machine.
- The ambient temperature must be between -10° C and +50° C.
- The relative humidity must not exceed 90%.

3.7 ELECTRICAL CONNECTION

Always have the electrical connection carried out by a certified electrical installer in accordance with local laws and regulations.

Specification	Value
Mains voltage	400 V
Connected load	1,5 kW
Nominal current	3,5 A
Fuse rating	16 A
Connection	3~
Protection class	IP54
Residual current device required	Yes

Before connecting, check that the mains voltage corresponds to the value on the type plate. Use an extension cord with a sufficient cross-section. Never connect the machine without proper earthing.

3.8 FIRST COMMISSIONING

Carry out the following steps when putting the machine into operation for the first time:

1. Check that all transport locks and packaging material have been removed.
2. Check the oil and lubricant levels (see chapter 6 — Maintenance).
3. Check that all protective covers and safety devices are present and correctly fitted.
4. Connect the machine to the mains (see 3.7).
5. Start the machine briefly and check the direction of rotation — it must correspond to the arrow indication on the machine.
6. Let the machine run unloaded for a few minutes and check for unusual noises or vibrations.
7. Carry out a first trial operation under light load.

In case of deviations or doubts: switch off the machine immediately and contact HUVEMA BV or your dealer.

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4. TECHNICAL SPECIFICATIONS

4.1 DIMENSIONS AND WEIGHT

Specification	Value
Length	1250 mm
Width	960 mm
Height	1320 mm
Weight (net)	325 kg
Weight (gross, packed)	360 kg
Required floor area	730 × 530 mm

The dimensions include standard accessories. With optional extensions the dimensions may differ. Consult the type plate on the machine for the exact data.

4.2 ELECTRICAL DATA

The HU 45 DM-4 VARIO NG DRO X-FEED is powered by a three-phase supply voltage of 400 V, 50 Hz. The main motor has a power of 1.5 kW and a nominal current of approximately 3.5 A. The control cabinet contains a thermal motor protection set to this nominal current. A circuit fuse or circuit breaker of 16 A (characteristic C) is recommended for the installation. The spindle speed is controlled via a controller with potentiometer, combined with two mechanical ranges; the direction of rotation is switched with two contactors (anticlockwise/clockwise). The electrical components have protection class IP54; the machine must therefore be installed in a dry, indoor location. The complete electrical diagram is enclosed as an appendix to this manual.

4.3 PERFORMANCE SPECIFICATIONS

The HU 45 DM-4 VARIO NG DRO X-FEED is suitable for drilling up to 32 mm diameter (cast iron) and 120 mm depth, and for milling with end mills up to 25 mm and face mills up to 76 mm. The machine has a table of 800 × 240 mm with 3 T-slots, and offers a longitudinal/cross travel of 560 × 190 mm.

4.4 NOISE LEVEL

The noise level of the machine has been measured in accordance with EN ISO 3744. The values below were measured under full load and representative operating conditions.

Measurement	Value
Sound power level (LWA)	91 dB(A)
Sound pressure at workstation (LPA)	80 dB(A)
Measurement uncertainty (K)	3 dB(A)

At a sound pressure of 85 dB(A) or higher, wearing hearing protection is mandatory in accordance with Directive 2003/10/EC. Always wear hearing protection during prolonged use of the machine.

The actual noise level may vary depending on the material being machined, the tooling used and the working conditions.

4.5 AMBIENT CONDITIONS

The machine is designed for use in a professional workshop environment. Observe the ambient conditions below to ensure safe working and to prevent premature wear.

Condition	Required value
Ambient temperature (operation)	+5 °C to +40 °C
Ambient temperature (storage)	-10 °C to +60 °C
Relative humidity	Max. 90% (non-condensing)
Installation site	Indoors, covered and dry
Maximum altitude above sea level	1,000 m
Floor load	Minimum 850 kg/m ²

Do not expose the machine to direct sunlight, dust, aggressive vapours or corrosive substances. If in doubt about the suitability of the installation site, contact HUVEMA BV.

5. OPERATING INSTRUCTIONS

5.1 INTRODUCTION AND INTENDED USE

This manual describes the operation of the machine in accordance with Machinery Directive 2006/42/EC, Annex I §1.7.4. Read this manual in full before putting the machine into operation.

5.2 MACHINE DESCRIPTION

The HU 45 DM-4 VARIO NG DRO X-FEED is a gear-driven drilling and milling machine with a heavy-duty cast iron base and column, suitable for drilling and milling small to medium-sized workpieces of cast iron and steel. The vertical spindle (taper DIN 2080 ISO 30) is infinitely variable via a variator with two mechanical speed ranges (75–435 and 435–2500 rpm). The machine has a tilting milling head, a cross table with three T-slots, an automatic table longitudinal feed (X-FEED), a 3-axis digital readout (DRO) and an emergency stop.

5.3 INTENDED USE MANDATORY

The machine is intended exclusively for the following use:

1. Drilling holes in metal: cast iron up to $\varnothing$ 32 mm, steel up to $\varnothing$ 25 mm, drilling depth up to 120 mm
2. Milling: face milling up to $\varnothing$ 76 mm and end milling up to $\varnothing$ 25 mm
3. Angle machining thanks to the tilting milling head
4. Tapping (thread cutting) with reversible direction of rotation
5. Permitted materials: cast iron, (mild) steel and comparable machinable metals
6. Workpieces fitting within the table surface (800 × 240 mm), firmly clamped via the T-slots; max. spindle-to-table distance 420 mm
7. Suitable for machine shop, maintenance and small production

Permitted users: Trained metalworkers with professional knowledge and experience in drilling and milling work, minimum 18 years of age
Users who have read and understood this manual in full and follow the safety regulations
Persons who have been instructed in the operation, working and risks of this machine
Trainees or interns only under the direct supervision of a competent instructor
Users who are physically and mentally fit and wear the prescribed PPE
Not permitted: unauthorised, untrained or uninstructed personnel and persons under the influence

5.4 FORESEEABLE MISUSE MANDATORY

The following applications are expressly prohibited and fall outside the intended use:

1. Machining wood, stone or composite; the machine is exclusively for metal
2. Exceeding the maximum speed of 2500 rpm
3. Working with removed or opened protective covers and safety devices
4. Machining workpieces larger than the table capacity (800 × 240 mm)
5. Not clamping the workpiece or clamping it insufficiently, or measuring while the machine is running

- 6.** Overloading the machine or using too high a speed for the material
- 7.** Bringing hands near the rotating spindle or tool
- 8.** Modifying the construction or using non-prescribed parts
- 9.** Operation by unauthorised, untrained or uninstructed persons
- 10.** Adjusting the speed while the machine is running

Residual risks mandatory

Despite the safety measures taken, the following residual risks remain:

- Flying chips during drilling and milling
- Cuts when changing drills or cutters
- Grabbing/drawing-in hazard at rotating spindle, tool and gears
- Noise level can exceed 80 dB(A) during heavy operations
- Crushing when adjusting head and table or when lubricating
- Heat development and slight vibrations at the spindle during prolonged use

PERSONAL PROTECTIVE EQUIPMENT MANDATORY DURING OPERATION

Safety shoes, safety glasses, hearing protection (if >80 dB), no loose clothing/jewellery. Adjust per machine based on risk assessment.

5.6 OPERATING CONTROLS MANDATORY

All operating controls with their name, location and function are described below. Familiarise yourself with each control before putting the machine into operation.

Overview image of the machine with the main components

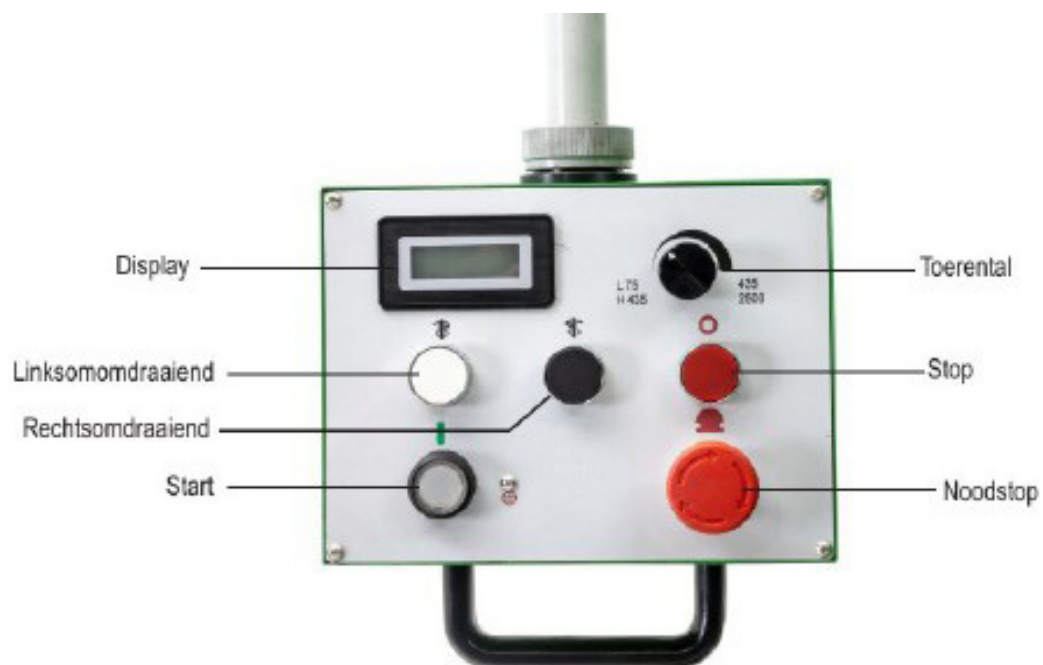


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No.	Designation	Function / Description
1	Milling head (tilting)	Carries the spindle; tiltable for machining at an angle
2	Vertical spindle (taper ISO 30)	Holds drilling or milling tools (DIN 2080 ISO 30)
3	Column	Carries the head and guides the vertical movement
4	Cross table with T-slots	Carries and positions the workpiece; travel 560 × 190 mm
5	Base	Cast iron base of the machine
6	Control panel	Contains start, stop, direction of rotation, speed control and emergency stop
7	Digital readout (DRO)	3-axis position readout X/Y/Z (SDS2-3MS)
8	Table longitudinal feed drive (X-FEED)	Automatic longitudinal feed of the table in the X direction
9	Main/feed handle	For manual movement of head and spindle feed

5.7 OPERATION OVERVIEW

Image of control panel 2



12098-afb5.7-1

No.	Designation	Function / Description
1	Analogue display	Digital display spindle speed
2	White transparent button	Button for switching the machine on
3	Red button	Button for switching the machine off
4	Rotary knob	Rotary knob for variable speed
5	White button	Button for anticlockwise spindle rotation
6	Black button	Button for clockwise spindle rotation
7	Large red button	Emergency stop

5.8 EMERGENCY STOP BUTTON(S) MANDATORY

The emergency stop is a separate mandatory control:

- Emergency stop (SB3)
- Design: red mushroom button, self-locking (pressing locks it, turn clockwise to unlock). When pressed, the control current is cut and the machine stops completely.
- Location: on the control panel on the swivel arm, bottom right.
- Operation: interrupts the 24 V control circuit, causing the contactors (KM1/KM2) to drop out and the spindle to stop immediately.
- After an emergency stop: first remedy the cause, then unlock the button and restart according to the start-up procedure.
- Before each start, check that the emergency stop is unlocked (turn clockwise until the button pops back up).

5.9 INDICATOR LIGHTS AND DISPLAYS

- Green - machine ready / in operation
- Orange / yellow — warning; action required before further operation
- Red — fault or emergency stop active; Do not resume without corrective action

Indicator lights and displays HL – power/operation indicator light: lights up as soon as the main switch (QS) is switched on and the machine is energised; goes out when the power is interrupted. Speed display: shows the set/actual spindle speed on the control panel. Digital readout (DRO, SDS2-3MS): shows the position of the table/spindle on the X, Y and Z axes.

5.10 START-UP PROCEDURE

WARNING

Always carry out the start-up procedure in the order indicated. Before starting, check that all guards are in place and locked.

5.11 REQUIRED OPERATOR QUALIFICATIONS MANDATORY

The machine may only be operated by persons who:

1. Have completed a recognised metalworking training programme, or have demonstrably equivalent practical experience with drilling and milling work
2. Have read and understood this manual in full
3. Have been instructed by a competent colleague or supervisor on the operation and safety of this machine
4. Minimum age 18 years, unless it concerns a trainee/intern working under direct supervision
5. Familiar with the risks and with the use of the prescribed PPE

5.12 PREPARATION BEFORE START-UP

1. Check the work area: free of obstacles and unauthorised persons
2. Check all guards/protective covers: present, undamaged and fitted
3. Check the oil level of the gearbox via the oil sight glass on the side (at least up to the mark)
4. Lubricate according to the lubrication schedule and clean the table (free of dust and oil)
5. Check tool and workpiece: drill/cutter correctly in the taper (ISO 30), workpiece firmly clamped in the T-slots
6. Check the power supply: 400 V / 50 Hz, 3-phase; earth conductor correctly connected
7. Check that speed and range are matched to the operation
8. Check that the emergency stop (SB3) is unlocked

5.13 START-UP PROCEDURE STEP BY STEP

1. Turn the main switch (QS) to the ON position (I); the indicator light (HL) lights up
2. Select the mechanical speed range (75–435 or 435–2500 rpm) and set the speed with the controller (VR)
3. Select the direction of rotation: start the spindle clockwise (SB4) or anticlockwise (SB5)
4. Carry out an unloaded test run of approx. 1 minute at low speed and check for abnormal noises and vibrations
5. The machine is ready for use

5.14 NORMAL USE

ATTENTION

Never exceed the maximum technical values. When in doubt: stop the machine and consult a supervisor.

5.15 TECHNICAL LIMITS MANDATORY

The following maximum values must never be exceeded:

Parameter	Maximum value
Max. drilling diameter cast iron (mm)	32
Max. drilling diameter steel (mm)	25
Max. drilling depth (mm)	120
Max. milling diameter end mill (mm)	25
Max. milling diameter face mill (mm)	76
Spindle speed range (rpm)	75–435 / 435–2500
Throat spindle–column (mm)	220
Max. distance spindle–table (mm)	420
Spindle taper	DIN 2080 ISO 30
T-slots	3 × 14 mm

5.16 SETTING PARAMETERS

1. Selecting the speed range: set the mechanical range (75–435 or 435–2500 rpm) according to the speed label on the machine
2. Fine-tuning the speed: within the range, set the speed infinitely with the controller/potentiometer (VR); read it on the speed display
3. Setting the drilling depth: use the fixed depth stop for a blind hole, or the free position for a through hole
4. Setting the head: set the height and angle of the tilting head and tighten the wing screw/nuts
5. Setting the table: adjust the play with the gib strip and clamp the direction not in use
6. Spindle return spring: only adjust if necessary (e.g. with a multiple drilling/tapping head)
7. X-FEED: set the automatic longitudinal feed and the stops for the desired milling length

5.17 CARRYING OUT MACHINING

1. Starting up and warming up: clean the table, check lubrication points and oil level, switch on the main switch (QS) (HL lights up) and let the machine run briefly at low speed; check the direction of rotation.
2. Mounting the tool: clean the spindle taper (ISO 30) and the taper of the tool; mount the drill or cutter

correctly and firmly. Never use a damaged or rusty taper.

- 3.** Clamping the workpiece: clamp the workpiece firmly to the table via the T-slots (3 × 14 mm) and check the fastening.
- 4.** Setting parameters (machine stopped): set range, speed, depth stop and feed; never change the speed while the machine is running.
- 5.** Starting the spindle: select the direction of rotation (SB4 clockwise / SB5 anticlockwise) and read the speed on the display.
- 6.** Carrying out the operation:
- 7.** Drilling: feed with the feed handle; for steel, use cutting oil or coolant and remove chips regularly.
- 8.** Milling: use the spindle handwheel for micro-feed and the automatic longitudinal feed (X-FEED); keep the milling force limited and clamp the table firmly.
- 9.** Tapping: select the direction of rotation with the tapping switch (clockwise/anticlockwise).
- 10.** During the operation: periodically check chip formation, temperature and vibrations; remove chips only at standstill with a hook or brush.
- 11.** Finishing the operation: retract the spindle, stop the spindle and only then remove the workpiece; clean the machine.
- 12.** Emergency: in case of danger, immediately press the emergency stop (SB3); after remedying, unlock and restart.

5.18 POINTS OF ATTENTION DURING USE

- Do not change the speed/range while the machine is running — stop the spindle first.
- Remove chips only at standstill, with a hook or brush — never by hand.
- Never work with removed or opened protective covers.
- Always clamp the workpiece firmly; never measure while the machine is running.
- Keep hands away from the rotating spindle and tool.
- Do not overload the machine and match the speed to the material.
- For steel, use cutting oil/coolant; keep cutting surfaces sharp and clean.
- Wear the prescribed PPE and no loose clothing, gloves or jewellery.
- Monitor noise and motor temperature; stop in case of abnormal noise or vibrations.
- De-energise the machine before maintenance or tool changes.

5.19 STOP PROCEDURE

Always follow the procedure below when stopping the machine after normal use.

5.20 REGULAR STOP PROCEDURE

1. End the feed and retract the spindle to the top position; switch off the X-FEED.
2. Stop the spindle with the stop button (SB1) and wait until everything has come to a complete standstill.
3. Switch off the main switch (QS); the indicator light (HL) goes out and the machine is de-energised.
4. Remove workpiece and tool.
5. Clean the machine: remove chips and coolant residues, clean table and guideways and lubricate where necessary.

5.21 SHIFT CHANGE / TEMPORARY STANDSTILL

Put the machine in idle state (steps 1-4 of 4.1)

- Stop the spindle (SB1) and end the feed; retract the spindle.
- Never leave the machine running unattended; when stepping away, at least stop the spindle.
- Keep the protective covers closed and do not leave loose tools on the table.
- Remove chips around the workpiece (at standstill).
- Record the status and any irregularities in the machine logbook.

5.22 END OF WORKING DAY / PROLONGED STANDSTILL

- Carry out the complete stop procedure and de-energise the machine.
- Check oil level and lubrication points; top up if below the minimum.
- Clean the machine and treat bare metal surfaces with protective oil.
- Cover the machine if applicable.
- In case of prolonged standstill: disconnect the machine from the power supply.

5.23 EMERGENCY STOP PROCEDURE MANDATORY

DANGER — EMERGENCY

In case of danger to persons or serious machine damage: activate the emergency stop IMMEDIATELY. Remove yourself and others from the danger zone.

5.24 LOCATION OF EMERGENCY STOP BUTTON(S)

- The emergency stop button (SB3) is located on the control panel on the swivel arm, bottom right. It is the red mushroom button.

5.25 ACTIONS IN AN EMERGENCY

1. Immediately press the emergency stop (SB3); the machine stops immediately and completely.
2. Stay out of the danger zone until the spindle has come to a complete standstill; never stop a rotating spindle by hand.
3. When in doubt, switch off the main switch and de-energise the machine, especially in case of smoke, sparks or an electrical problem.
4. Warn colleagues and keep others at a distance.
5. In case of injury: provide first aid and call in professional help / 112 if necessary.
6. In case of fire or electrical defect: use a suitable CO₂/powder extinguisher; never extinguish with water.
7. Identify and remedy the cause before restarting; electrical faults only by a qualified technician.
8. Report and record the incident in the logbook.

5.26 RESUMING AFTER EMERGENCY STOP MANDATORY

WARNING

NEVER restart the machine without the authorisation of a competent person and without the cause having been identified and remedied.

1. First fully remedy the cause of the emergency stop; in case of an electrical cause, only by a qualified technician.
2. Check the surroundings: no one in the danger zone, work area free of obstacles and chips.
3. Check machine and clamping: tool undamaged and mounted, workpiece clamped, protective covers present.
4. Unlock the emergency stop (SB3): turn clockwise until the button pops back up.
5. Restore the power: main switch (QS) on, indicator light (HL) lit.
6. Briefly test run at low speed and check direction of rotation, noise and vibrations.
7. Resume the operation and record the emergency stop and its cause in the logbook.

5.27 OTHER EMERGENCY MEASURES AND CONTACTS

EMERGENCY NUMBER

112 Fire brigade / Police / Ambulance

INTERNAL REPORTING POINT

To be filled in by the user: name and telephone number of the contact person/emergency response officer and any other emergency measures.

- Fire extinguisher located at: To be filled in by the user: location of fire extinguisher
- First-aid supplies located at: To be filled in by the user: location of first-aid supplies
- Emergency exit direction: To be filled in by the user: location of emergency exit

6. MAINTENANCE & FAULTS

6.1 MAINTENANCE SCHEDULE

A well-maintained machine works more safely, more accurately and lasts longer. Carry out maintenance according to the schedule below and record the work carried out in a maintenance log.

Always switch off the machine and wait until all moving parts have come to a complete standstill before carrying out maintenance work. If possible, lock the main switch (lock-out/tag-out).

Use only the recommended lubricants and cleaning products. The use of unsuitable products can damage the machine and void the warranty.

Always have repairs to electrical components carried out by a qualified electrical installer.

Interval	Work
Daily	Clean the machine, remove chips, visually check moving parts
Weekly	Lubricate guideways, check fastenings, check coolant level
Monthly	Check for wear, clean filters, inspect drive belt
Annually	Full inspection, check all lubrication points, check electrical connections

6.2 DAILY MAINTENANCE

Carry out the following work at the start or end of each working day. Daily maintenance prevents premature wear and faults.

1. Switch off the machine and wait until all moving parts have come to a standstill.
2. Remove all chips, sawdust and other waste from the machine and the working environment.
3. Clean the outside of the machine with a soft cloth. Do not use compressed air on guideways — this blows dirt into the lubrication.
4. Visually check the guideways for damage, wear or excessive contamination.
5. Check the coolant level and top up if necessary.
6. Check that all safety devices (guards, emergency stop) are present and correctly fitted.
7. Apply a thin layer of lubricant to unprotected metal surfaces to prevent corrosion.
8. Record any irregularities (unusual noises, vibrations, leaks) in the maintenance log.

Use only approved cleaning agents. Do not use solvents on plastic parts, seals or painted surfaces.

6.3 PERIODIC MAINTENANCE

In addition to daily maintenance, the following work is required periodically. Consult the maintenance schedule (6.1) for the exact intervals.

Work	Interval
Lubricate guideways (see lubrication plan 6.4)	Weekly
Inspect drive belt(s) for wear and tension	Monthly
Replace coolant and clean reservoir	Monthly
Clean or replace filters	Monthly
Check all fastening bolts for tightness	Monthly
Visually inspect electrical connections and cables	Annually
Check earth connection	Annually
Measure wear parts and replace if necessary	Annually
Complete cleaning including internally	Annually

Have major periodic maintenance carried out by a certified technician. HUVEMA BV offers maintenance contracts – contact us via info@huvema.nl.

6.4 LUBRICATION PLAN

Use only the recommended lubricants. Incorrect lubricants can damage the machine and void the warranty. When in doubt, consult HUVEMA BV or the lubricant supplier.

Lubricate all lubrication points at the indicated interval frequency. Apply lubricant until it visibly emerges at the side of the bearing or guideway – too much lubrication is just as harmful as too little.

Lubrication point	Lubricant	Interval	Quantity
Internal spline drive (spindle pulley)	Quality grease	Twice a year	Fill via the lubrication hole on top of the spline drive
Spindle and column	Machine oil (thin layer)	Continuous / as required	Thin layer
Spindle return spring	Oil SAE 20	Once a year	Thin layer
Gearbox	Oil SAE 68	Replace annually	Level up to the centre of the oil level indicator
Spindle pinion	Lubriplate	Every 90 days	Thin layer
Ball bearings (sealed)	None (sealed)	n/a	–

6.5 FAULT DIAGNOSIS AND SOLUTIONS

Consult the table below in the event of faults. Never carry out repairs while the machine is in operation. When in doubt, switch off the machine and contact HUVEMA BV.

Fault	Possible cause	Solution
	No mains voltage	Check plug, fuse and emergency stop
Machine does not start	Thermal protection tripped	Let motor cool down for 10 min., reset thermal protection
	Drive belt broken	Replace drive belt (see 6.3)
	Insufficient lubrication	Lubricate guideways and bearings (see 6.4)
Unusual noise during use	Loose part or bolt	Check and tighten all fastenings
	Wear on bearing or gear	Contact HUVEMA BV
	Overload	Reduce the machining depth or feed
Motor overheating	Cooling blocked	Clean the ventilation openings of the motor
	Thermal protection defective	Contact HUVEMA BV
	Tool blunt or damaged	Replace or regrind the tool
Poor machining quality	Insufficient cooling	Check coolant level and supply
	Workpiece not properly clamped	Check the clamping of the workpiece
Coolant leakage	Seal worn	Replace seal
	Hose or fitting loose	Tighten or replace
Machine vibrates strongly	Workpiece not balanced	Rebalance the workpiece
	Wear in drive	Contact HUVEMA BV

For faults not listed in this table, or if you cannot remedy the cause yourself: switch off the machine, secure the workplace and contact us on 0413 34 22 75 or info@huvema.nl.

6.6 SPARE PARTS

Use only original HUVEMA spare parts or parts approved by HUVEMA. The use of non-original parts can endanger safety, damage the machine and void the warranty.

When ordering, always note the article number of the machine and the part number. You will find this information on the type plate of the machine and in the parts drawing.

Part	Recommended replacement interval
Lubricants and oils	See lubrication plan (6.4)
V-belt / drive belt	In case of wear or damage
Fuses	If defective – replace with a fuse of the same rating
Filters (coolant/air)	Clean monthly, replace annually
Carbon brushes (if applicable)	In case of heavy wear

Ordering

Spare parts are available from your HUVEMA dealer or directly from HUVEMA BV:

Telephone	0411 43 23 75
E-mail	info@huvema.nl
Website	www.huvema.nl

State the machine article number and the required part number with your order.
HUVEMA reserves the right to modify parts without prior notice.

7. DISPOSAL AND RECYCLING

7.1 DISPOSAL OF THE MACHINE

The equipment and its accessories are made of various types of material, such as metal and plastic. Never dispose of defective machine parts with household waste.

In order to comply with European Directive 2012/19/EC on waste electrical and electronic equipment and its implementation in national legislation, waste electrical and electronic equipment must be separated from other waste and disposed of in an environmentally sound manner.

To this end, the machine can be registered with a specialised recycling company, which will dispose of the machine in accordance with the national regulations for recycling and waste processing.

HUVEMA pays a waste management contribution for this purpose and is registered with WEEE, which collects and recycles e-waste on behalf of producers.

7.2 TAKING THE MACHINE OUT OF SERVICE

If the machine is not going to be used for an extended period, it is advisable to take it out of service as follows:

- Disconnect the machine from the power supply.
- Release tension from the components.
- Clean the coolant reservoir, if present.
- Carefully clean the machine and oil it.
- Cover the machine if necessary.

7.3 DISMANTLING

If the machine has to be discarded or scrapped, the material must be disposed of and processed according to the type of material and component:

- **Cast iron and ferrous metals** are raw materials that can be taken to a smelter for remelting after any other substances have been removed.
- **Electrical components**, such as cables and other components (magnetic strips etc.), must be processed in accordance with local regulations.
- **Used mineral and synthetic and/or mixed oils**, water-containing oils and greases are considered chemical waste and must be handed in and processed by a specialised waste processing service.

NOTE: As standards and legislation in the field of waste are constantly evolving and therefore subject to change, the user must keep informed of the regulations in force at the time of disposal of the machine, as these may differ from those described above, which should be regarded as a general guideline.

reference: /Users/centevanliempe/cowork/Markdown to indesign/Werkmap/handleiding machines/12098-EN/handleiding_COMPLEET-12098-EN

8. TECHNICAL DRAWINGS

8.1 OVERVIEW OF TECHNICAL DRAWINGS

This chapter contains an overview of the technical drawings belonging to this machine. The drawings are intended for use by qualified technical personnel and have been prepared in accordance with the applicable NEN/ISO standards.

The drawings are included as separate pages immediately after this overview. Always keep the drawings together with this manual.

No.	Description
TA-001	Exploded view head / drive
TA-002	Exploded view base / table / cross slide (X-FEED)
TA-003	Dimensional drawing of the machine (front and side view)
TE-001	Electrical diagram – main power wiring diagram

Note: The drawings reflect the state at the time of delivery. In the event of technical changes, revised drawings (new revision) will be supplied. Always check that you are using the most recent revision. Drawings can be requested via info@huvema.nl.

8.2 PARTS DRAWING

The parts drawing provides a detailed overview of all individual parts of the machine, including a parts list with article numbers. Use this drawing when ordering spare parts.

Important: Use only original HUVEMA spare parts. The use of non-original parts can endanger the safety of the machine and void the warranty.

Spare parts can be ordered via:

E-mail: info@huvema.nl

Telephone: 0413 34 22 75

Website: www.huvema.nl

8.3 ELECTRICAL DIAGRAM

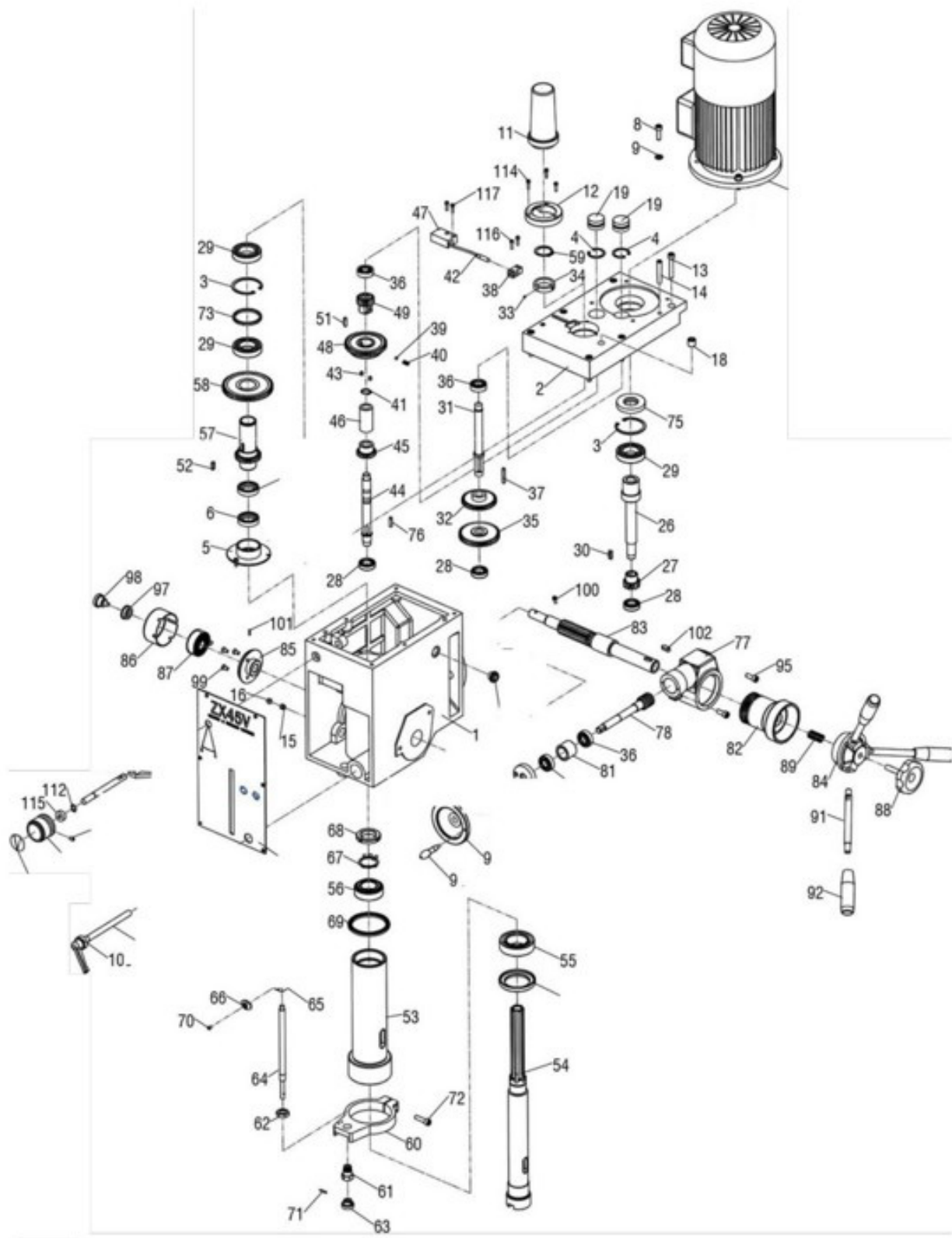
The electrical diagram shows the complete electrical wiring of the machine, including connection points, fuses, relays and components. The diagram is intended exclusively for use by certified electricians.

Danger of electrical voltage — Always disconnect the machine completely from the power supply (main switch locked) before carrying out any work on the electrical installation. Always have repairs carried out by a qualified electrical installer.

The electrical diagram contains at least the following information:

- Main power supply connection diagram (phase diagram)
- Control cabinet wiring diagram
- Overview of fuses and relays
- Connection data for motors and sensors

Exploded view head / drive



12098-TA001

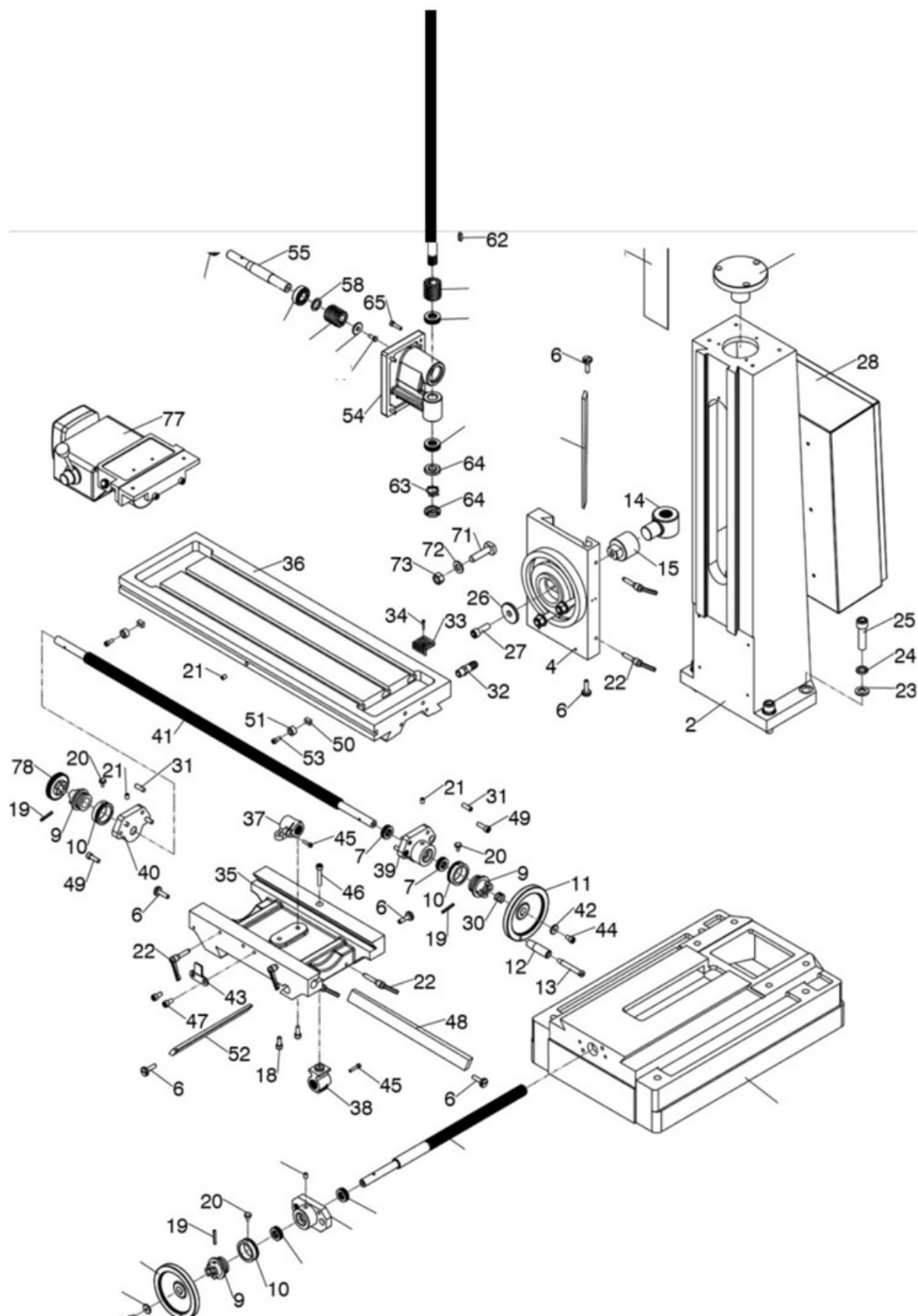
No.	Qty	Code	Description
1	1	20010B	Kopbehuizing
2	1	20011B	Afdekkap kopbehuizing
3	2	Ø62	Inwendige borgring
4	2	Ø35	Inwendige borgring
5	1	20018B	Luchtdichte basis
6	2	45×35X10	Luchtdichte ring
7	1	1.5KW	Motor
8	1	M8X25	Schroef
9	1	8	Sluitring
10	1	20201	Plaat
11	1	20304-1B	Afdekking asbout
12	1	20304V1	Basis afdekking asbout
13	6	M8X45	Schroef
14	2	8×40	Pen
15	1	M10×10	Schroef
16	1	M10×8	Schroef
17	1	6X28	Pen Maatstaaf
18	1	ZG3/8"	Bout
19	2	20020B	Dop
20	1	20307C	Snelheidshendel
21	2	M6X12	Schroef
22	1	ZG3/8"	Olieplug
23	3	M5x10	Schroef
24	6	M4X8	Schroef
25	1	M18X1.5	Oliepeilstaaf
26	1	20105B	I-as
27	1	20105-1-B	Tandwiel Z14
28	3	6003 / P5	Lager
29	3	6007 / P5	Lager
30	1	5X25	Spie
31	1	20106V	II-as
32	1	20110V	Tandwiel Z35
33	4		Magnetische bolletjes
34	1	20304V	
35	1	20106-1-B	Afstandbus Z41
36	4	6202 / P5	Lager

No.	Qty	Code	Description
37	1	6X36	Spie
38	1		De sondehouder
39	1	Ø8	Kogel
40	1		Veer
41	1	Ø18	Buitenste borgring
42	1		Zoekunit
43	2	M6X12	Schroef
44	1	20107V	Ill-as
45	1	20110-2-B	Tandwiel Z18
46	1	20107V.1	Afstandbus
47	1	20304V2	Beschermkap
48	1	20113-B	Tandwiel Z43
49	1	20115-B	Tandwiel Z16
50	1	5X50	Spie
51	1	6X18	Spie
52	1	6X18	Spie
53	1	20019	Spindelhuls
54	1	20104B	Spindel
55	1	30207 /P5	Lager
56	1	30206 /P5	Lager
57	1	20114V	Tandhuls Z25
58	1	20116-B	Tandwiel Z53
59	1	Ø35	Buitenste borgring
60	1	20012	Aanvoerbasis
61	1	20128	Steunbasis
62	1	20129	Moer
63	1	20130	Knop
64	1	20131	Maatstaaf
65	1	20021	Vaste bout
66	1	20132	Maatbord
67	1	Ø30	Borgring
68	1	M30X1.5	Borgmoer
69	1	20308	Rubberen ring
70	1	M4X8	Schroef
70	1	3x18	Splitpen
72	1	M8X30	Bout

No.	Qty	Code	Description
73	1	20024B	Scheidingsring
74	1	20133B	Lagerdeksel
75	1	FB35X62X10	Oliekeerring
76	1	6X22	Spie
77	1	20015	Wormwielkast
78	1	20119	Wormas
79	1	20302	Wormafdekking
80	1	M6X12	Schroef
81	1	20120	Scheidingsring
82	1	20016	Wormwiel
83	1	20117	Rondselas
84	1	20013	Handgreepbehuizing
85	1	20118	Veerbasis
86	1	20123	Veerkap
87	1	20122	Veerplaat
88	1	20303	Geribbelde handgreep
89	1		Drukveer
90	1	20017	Schaalplaat
91	1	20121B	Handgreepstang
92	1	20301B	Handgreepwiel
93	1	20306B	Handgreepkogel
94	1	20305-B	Handgreepstang
95	2	M8X25	Schroef
96	1	10107	Schroef
97	1	203063	Sluitring
98	1	203066	Schroef
99	3	M6X12	Schroef
100	1	M5X12	Schroef
101	2	3X12	Pen
102	1	8X20	Spie
103	2	M5X20	Schroef
104	1	3X15	Pen
105	1	20124B	Vaste bout
106	1	20203B	Vastklemblok
107	1	20202B	Vastklemblok
108	1		Handgreep

No.	Qty	Code	Description
109	1	20125B	Hendelas
110	1	20022-1B	Hendel
111	1	20204-2B	Hendelbeugel
112	1	12	Ext-borgring
113	1	M6X16	Schroef
114	3	M4X16	Schroef
115	2	12X22X8	Oliekeerring
116	2	M4X16	Schroef
117	2	M4X18	Schroef
118	1	20307C2	Plaat

Exploded view base / table / cross slide (X-FEED)



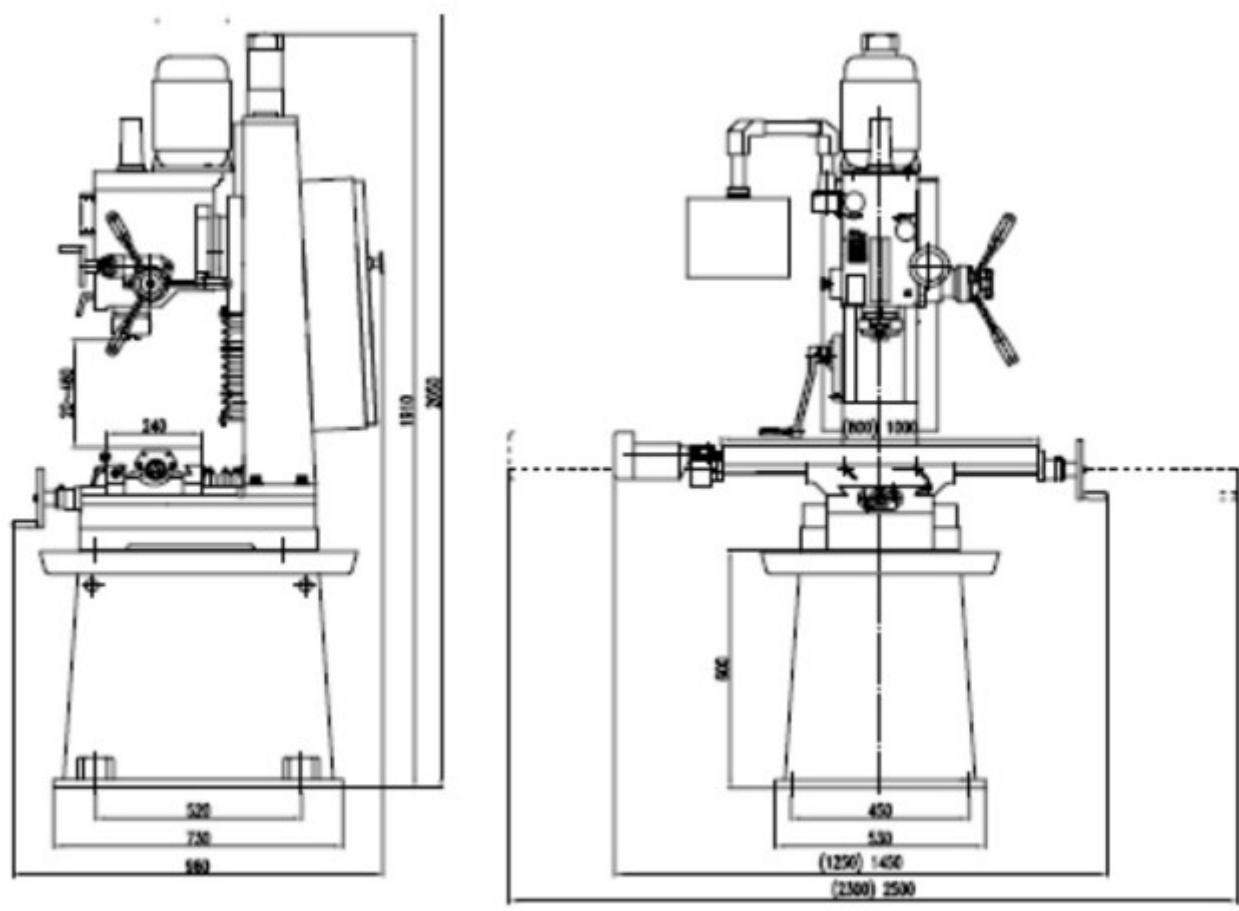
12098-TA002

No.	Qty	Code	Description
1	1	10010	Voet
2	1	10013	Kolom
3	1	10021	Vierkante flens
4	1	10016	Hoogteversteller
5	1	10025	Verstelstrip
6	6	10106	Schroef
7	4	51103	Lager
8	1	10104	Tafelschroef
9	3	10102	Schijfkoppeling
10	3	10111	Schaalplaat
11	3	10301	Wiel
12	3	20305-1B	Draaihendel
13	3	20305-2B	Schroef
14	1	10024	Moer
15	1	10117	Moerbeugel
16	1	10014	Afdekkap
17	3	M8x20	Schroef
18	4	M8X25	Schroef
19	3	5X35	Pen
20	2	10107	Schroef
21	5	8	Oliebakje
22	6	M8	Vaste handgreep
23	4	16	Sluitring
24	4	16	Sluitring
25	4	M16X60	Bout
26	1	10120	Sluitring
27	1	M12X35	Schroef
28	1	10119	Schakelkast
29	1	10124	Beschermkap
30	6	10103K.1	Veer
31	6	8X30	Pen
32	1	300411	Buisverbinding
33	1	300401.1	Filterzeef
34	2	M3x25	Schroef
35	1	10011	Middenvoet
36	1	10012	Tafel

No.	Qty	Code	Description
37	1	10202	Tafelmoer
38	1	10203	Tafelvoetmoer
39	1	10020	Rechterflens
40	1	10019	Links
41	1	10103	Tafelschroef
42	3	6	Sluitring
43	1	10105	Vast blok
45	2	M5X20	Schroef
46	1	M8X45	Schroef
47	2	M8X16	Schroef
48	1	10022	Gib-strip
49	4	M8X25	Schroef
50	2	10108	Verplaatsbaar vast blok
51	2	10109	Steun voor vast blok
52	1	10023	Gib-strip
53	2	M6 X 16	Schroef
54	1	10017	Verhoog- en verlaagvoet
55	1	10113	As
56	2	20109	Tandwiel
57	2	6004	Lager
58	1	100218	Sluitring
59	1	10015	Flens
60	1	10016	Schroef voor omhoog en omlaag
61	2	51104	Lager
62	2	6 X 20	Spie
63	1	20	Borgring
64	2	M20X1.5	Borgmoer
65	7	M6 X 20	Schroef
66	1	20109.1	Sluitring
67	1	M8x16	Schroef
68	1	10018	Handgreep
69	1	10018.1	Draaigreep
70	1	10018.2	Schroef
71	3	M14x55	Bout
72	3	14	Sluitring
73	3	M14	Moer

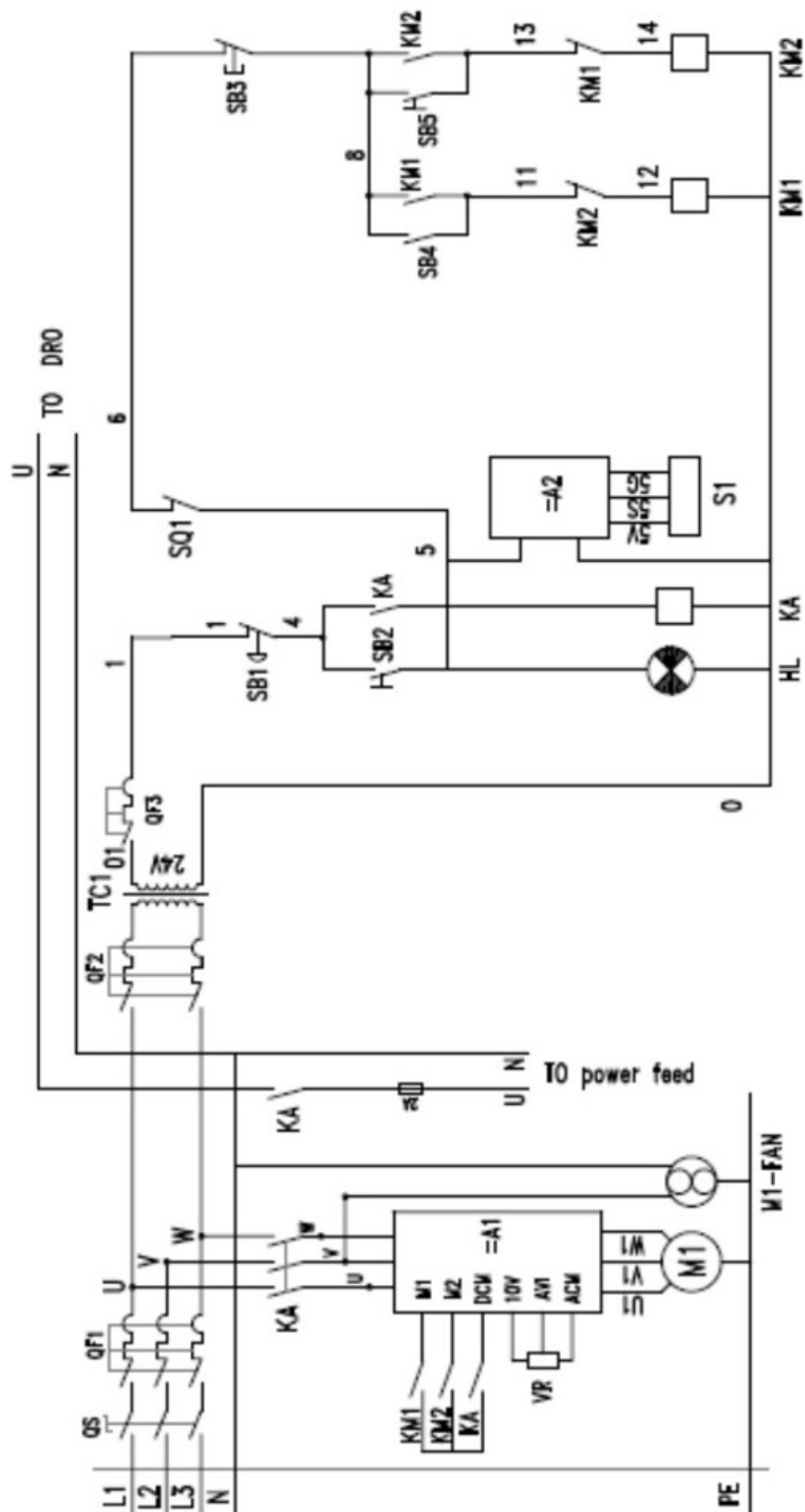
No.	Qty	Code	Description
74	1	450209	Draaikoppeling
75	1	5X40	Pen
76	1	M6 X 10	Schroef
77	1		Aandrijving
78	1		Tandwiel

Dimensional drawing of the machine (front and side view)



12098-TA003

Electrical diagram – main power wiring diagram



12098-TE001

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info@huvema.nl

+31 413 34 22 75

Visiting address:

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5466 AA Veghel

The Netherlands

Company details:

CoC (KVK): 16028008

LEI: 724500AZHHJYT5JT8J76

VAT: NL003107905B01

Opening hours:

Monday: 08.30 – 17.00

Tuesday: 08.30 – 17.00

Wednesday: 08.30 – 17.00

Thursday: 08.30 – 17.00

Friday: 08.30 – 15.00

Saturday: Closed

Sunday: Closed

Due to continuous improvements to our machines, certain descriptions and technical data may differ from those of the machine supplied. Always state the year of construction, the type and the serial number of the machine in your correspondence. Neither the manufacturer nor the importer can be held liable for errors arising when the instructions in this manual are not carefully followed, or from improper use of this machine. No rights can be derived from this manual. Publications, including excerpts, are only permitted with the consent of the publisher and the editor. Reprinting and commercial exploitation of any kind – including via databases – is only permitted with the prior consent of Huvema BV.