

# KM20/KM32 KRIMPOMATIC WORKSHOP SERIES

## Hose Crimper Operation Manual



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# General

## General Information

Before unpacking or operating the crimping machine, read this manual completely. Every operator is required to read and understand it. The manual contains the critical guidance needed to use the machine safely.

The content is intended solely for competent personnel capable of operating the machine without creating risk to themselves, other people, property, the machine, or the environment.

Operators must be demonstrably competent in:

- Troubleshooting methods
- Conducting machine inspections
- Performing basic mechanical maintenance tasks
- Safe hose-making practices and procedures

Disassembly and full maintenance procedures are not included in this manual and must only be performed by an authorised service technician.

Keep this manual accessible and in good condition for future reference. For a replacement copy, contact your nearest Motion branch.

Motion assumes no responsibility for injury or damage to persons, the machine, or property arising from improper use, prohibited modifications, or any misinterpretation of the safety instructions contained in this manual.

The machine is delivered on a pallet suitable for handling and lifting with a forklift. After unpacking, lift the unit using an approved lifting sling with an appropriate load rating.

## Pre-Commencement Inspection

- Lubricate the cylinder's conical surfaces.
- Verify there is no abnormal noise throughout the full range of motion.
- Confirm all dies are present and correctly numbered.
- Check calibration in accordance with the calibration procedure.
- Check labels and stickers are in place

## Safety

**All operation and safety procedures are to be read and understood and only trained staff are to operate the equipment. Personal Protective Equipment is to be always worn whilst operating the crimper and safety requirements are to be adhered to. Isolate power with the supply disconnecting device before service or die changes.**

- Keep hands clear of moving dies.
- Wear appropriate PPE
- Slight agitation and occasional friction sound at maximum thrust are normal.
- A brief collision sound from the valve core at high pressure open or close is normal.
- Stop work if vibration, leaks, alarms, or unusual noise occur.

## Warning Zones

Warning zones

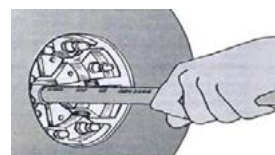
High pressure region: cylinders and pipes; forging dangerous: Shaded.

Warning 1

Do not put your hands inside the dies while the motor is running.

Warning 2

When crimping a fitting, hold the hose far enough to avoid crimping your hand.



Warning 3

Dies open and close by depressing the hand emergency pushbuttons at both ends of the valve. Do not touch these pushbuttons during normal operation.

Warning 4

High voltage. The electric box is to be opened only by a professional electrician.

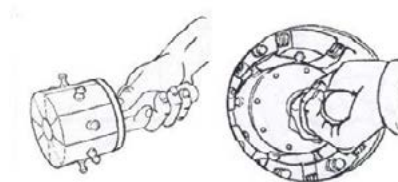


Warning 5

The rear of the crimping head is covered by a housing protecting the operator from the crimping hazard under the housing between rear flange and cylinder. Do not remove this housing.

Warning 6

When changing dies with the quick-change tool, hold the handle as shown in the figures. Make sure your hand will not get between the dies.



## Hose & Tube Assemblies

- If a hydraulic hose or tube ruptures, bursts, leaks or must be disconnected, shut off the pump immediately.
- Never handle a leaking, pressurized hose with your hands.
- Keep hoses away from flames, sharp edges, heavy impacts, and extreme temperatures. Do not kink, twist, curl, or bend them so tightly that oil flow is restricted.
- Inspect hoses periodically for wear or damage; failure can cause injury.
- Verify hose materials and coupling seals are compatible with the hydraulic fluid in use.
- Prevent hose contact with corrosive substances.
- Do not paint couplings; paints/solvents can degrade the hose.
- Do not use the hose to move the attached crimper; stress can damage the hose and cause injury.

## Installing the Machine

- Provide adequate clearance around the crimper at the installation site.
- Keep an unobstructed area matching the machine's base footprint to allow efficient maintenance and assembly.
- It is recommended for additional stability to install level mounting pads under the four base fixing points.

## Commissioning

### Oil fill

Fill the oil tank to the centre line of the indicators on the dipstick with hydraulic oil meeting ISO 46 viscosity (Shell Tellus T46 or equivalent). It is recommended to pump the oil into the tank through a 20-µ filter to ensure that oil is free of contaminants

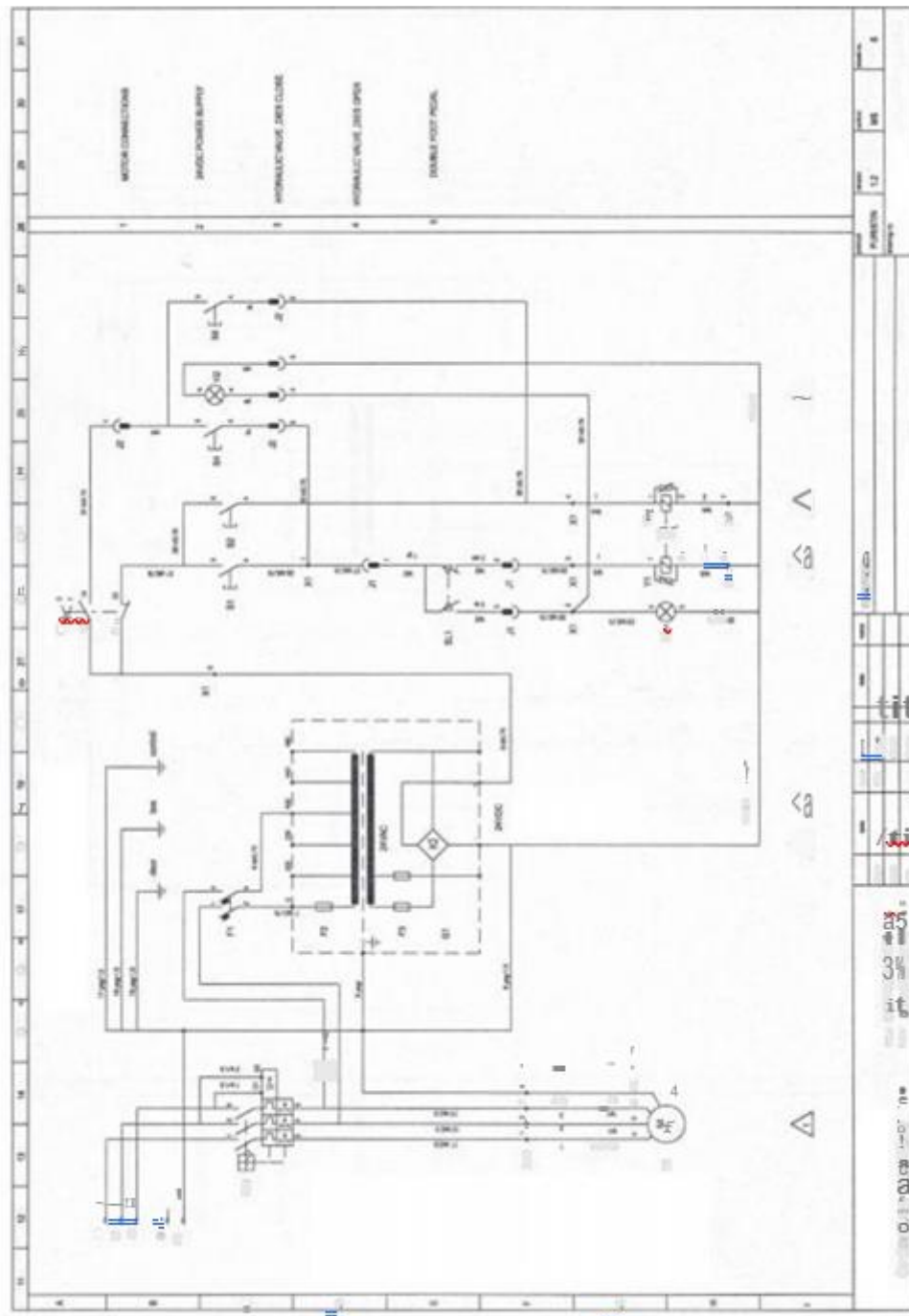
### Electrical connection

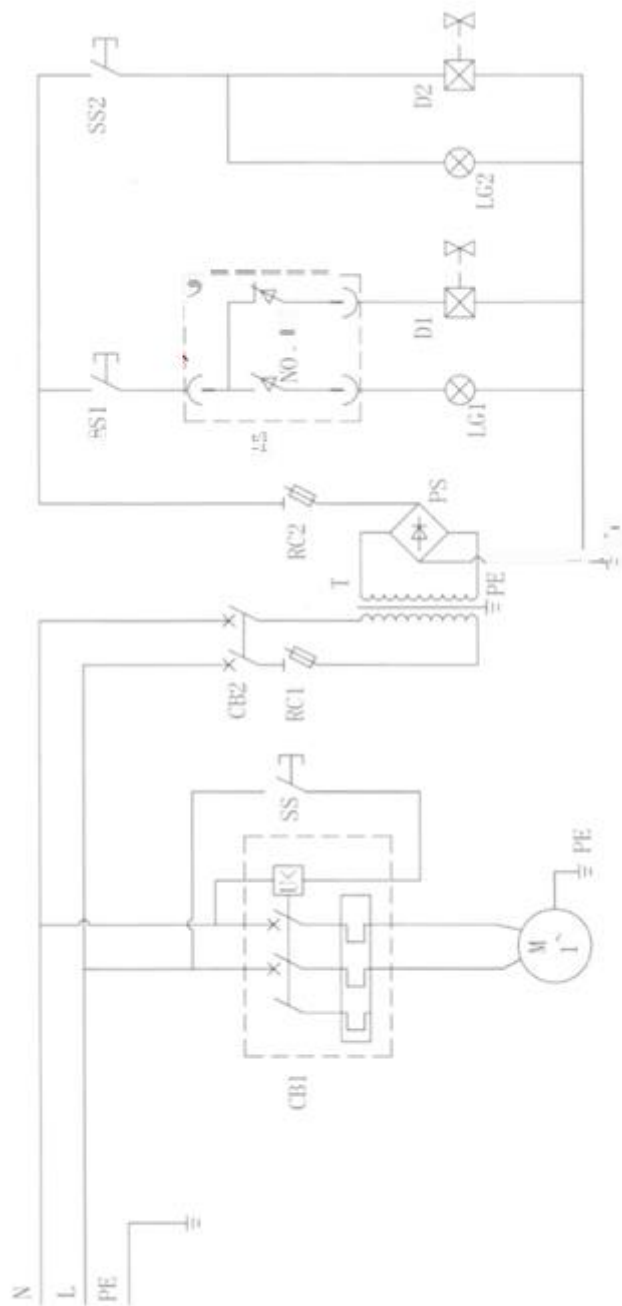
**CAUTION!** Check that the machine voltage (see type plate) is equal to your supply voltage. For proper installation to local code, consult a licensed contractor. Bring the supply cable in through the hole in the side panel of the electric box. Secure the cable with a relief plug.

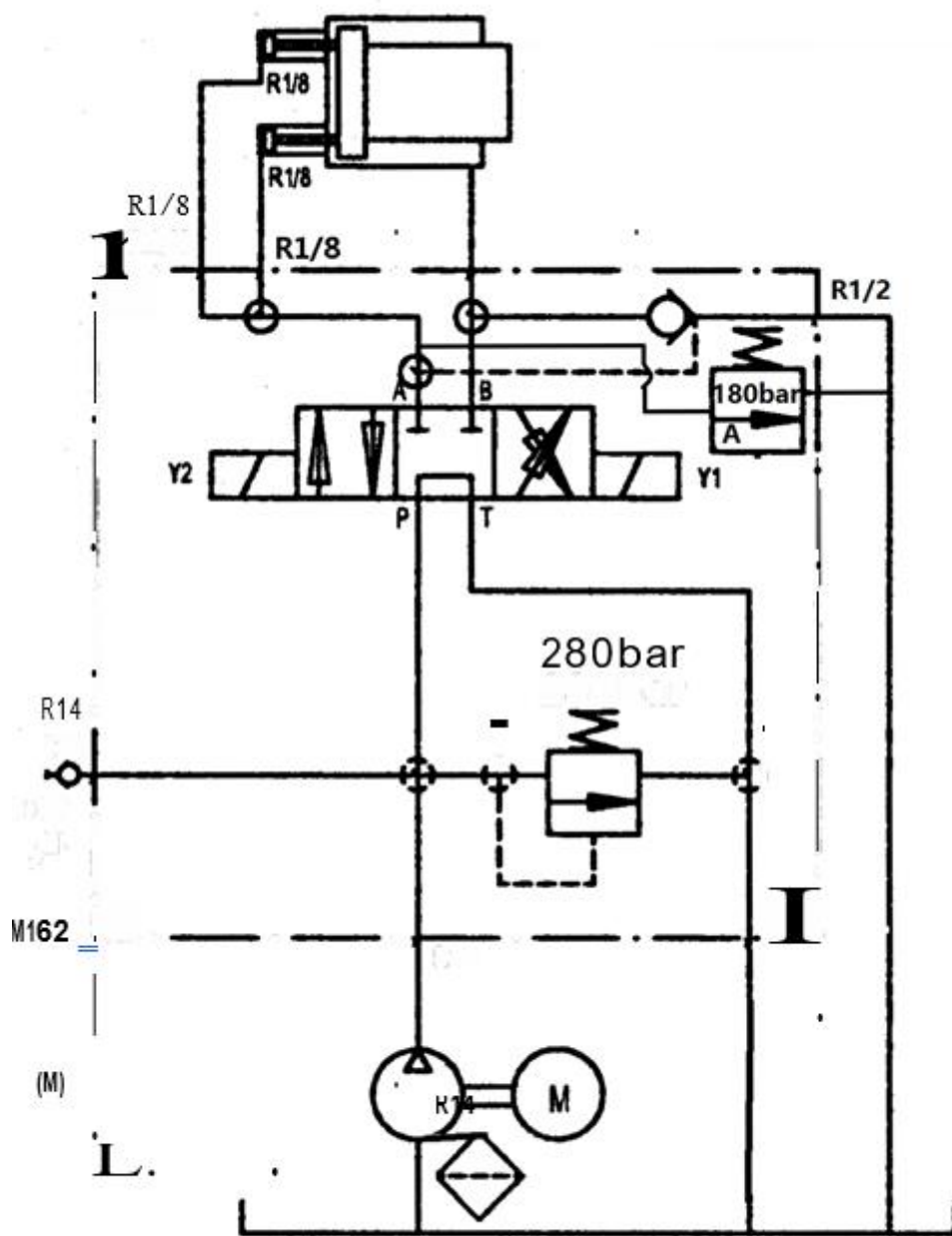
**3-phase:** Connect the phase conductors to the respective L1, L2 and L3 terminals in the supply disconnecting device. Connect the earth connection to the ground terminal on the fixing plate.

Check the connection against the wiring diagram enclosed in the spare parts list. Check that the motor rotation is parallel with the arrow on the tank close to the motor. In case

**Single-phase:** Connect the phase and the neutral to the respective terminals in the supply disconnecting device. Connect the earth connection to the ground terminal on the fixing plate. Check the connection against the wiring diagram enclosed in the spare parts list.







## Running In

Recommended running in period for a new machine is 50 crimp cycles. It will be enough if the greasing cycle is halved during the running in period. The purpose of frequent greasing is to ensure that there is always grease enough between the sliding surface. Due to the surface pressure the grease sinks into the metal pores ensuring good sliding properties for the machine's lifetime.

## Greasing

The master dies of the machine have been greased at the factory after the final testing. However, the grease may have dried during transportation and storing and therefore the machine should be greased according to the operating instructions before commissioning.

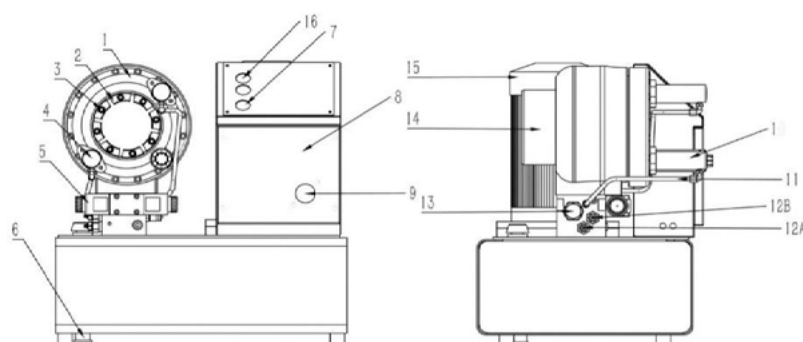
Greasing of the master dies is an important part of machine maintenance. The purpose of frequent greasing is to ensure that there is always enough grease between the sliding surfaces. It is recommended to grease the machine after every 100 crimps.

## Test Run

1. Start the motor.
2. Adjust the crimping diameter to 10.0 and the retraction to the maximum value.
3. During the first crimping cycles air in the cylinders may make the piston/dies move irregularly and at high speed. Cycle the press a few times till the motion becomes even.
4. To avoid accidents, make sure that there are no foreign objects between the dies.
5. In case the dies do not move in either direction, the motor rotates in wrong direction. Correct by interchanging two phase conductors in the supply disconnecting device.
6. Test the operation of each button

# Operation

## Key Components



| Item | Name                        | Operation                                                                                                                                                                                     |
|------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Flange                      | When the workpiece is pressed against the conical surface of the bottom die, slight panel movement at maximum thrust is normal. Occasional friction sounds are normal.                        |
| 2    | Master Dies                 | Back and forth sliding with a spring soft connection provides clamping of the workpiece.                                                                                                      |
| 3    | Locking Pin                 | A spring return locks the dies.                                                                                                                                                               |
| 4    | Return Cylinder             | Pushes the master dies back to the open position during operation.                                                                                                                            |
| 5    | Electromagnetic Valve       | Controls cylinder movement forward and backward. At highest pressure, opening and closing may cause the valve core to close the oil port, and a brief collision sound is a normal phenomenon. |
| 6    | Unloading of Oil            | When replacing hydraulic oil, unscrew the connector to unload oil.                                                                                                                            |
| 7    | Control Button              | Closing button; dies close; when the bottom die stroke meets the required button-press condition, the LED lights up                                                                           |
| 8    | Electricity Box             | Complete set of electric control parts.                                                                                                                                                       |
| 9    | Switch                      | Start/stop switch. On input power loss, it safely disconnects; reset to turn on. Thermal overload trips motor off on overload.                                                                |
| 10   | Control Device              | When the compression diameter reaches the required size, the bottom die stops; theoretical accuracy 0.02 mm.                                                                                  |
| 11   | Hydraulic Pipe              | Supplies hydraulic oil to the return cylinder.                                                                                                                                                |
| 12A  | Overflow Valve A            | Relieves pressure when pump output exceeds setting. Set at 280 Bar; do not set higher to avoid pump damage.                                                                                   |
| 12B  | Overflow Valve B            | Relieves pressure when pump output exceeds setting. Set at 140 Bar; helps avoid the return cylinder moving back too fast.                                                                     |
| 13   | Fluid Control One-way Valve | Large flow and rapid opening of master die to improve work efficiency                                                                                                                         |
| 14   | Piston                      | Drives the master die by moving back and forth repeatedly.                                                                                                                                    |
| 15   | Motor                       | Drives the oil pump.                                                                                                                                                                          |
| 16   | Scram Button                | Stop switch.                                                                                                                                                                                  |

## Controls and Indicators

### Supply disconnecting device

- Starts and stops the motor, isolates the machine from power.
- The under-voltage trip becomes dead only when you disconnect the plug or supply cable from mains.

### Crimping push button

- Dies close while you hold the button.
- Movement stops when you release the button or when the preset crimping diameter is reached.

### Retraction button

- Dies open while you hold the button.
- Movement stops when you release the button or when the set maximum retraction is reached.
- Dies do not open if already at the set retraction position.

### Crimping diameter dial

- Sets the target crimping diameter and works with the die set.

### Die chart

- Lists die sets, crimping diameter ranges, and matching dial values.

### Indicator lamps

- Crimping diameter reached lamp shows when the set crimp is achieved.
- Retraction diameter reached lamp shows when the dies are at the retraction position. Automatic mode cannot start until this is reached.
- Delay lamp shows when the delay function is active.

### Operating area

- Work in front of the controls. Keep this area clear.

## Prestart Checks

- Isolate power before any setup.
- Inspect dies, locking pin, and flange for wear or damage.
- Check hydraulic connections for leaks.
- Install the correct die set for the job.
- Set the crimping diameter dial per the die chart.
- Set the retraction diameter dial large enough for easy insertion, keep extra travel as short as possible.

## Start Up

### Machine Placement

Position the machine on a level, stable surface.

### Die Selection

- Determine the required finished crimp diameter for your hose assembly.
- Select the die set whose range includes your target crimp measurement.

Example: For a 17.0 mm crimp diameter, use the size 16 die set (covers 16–19 mm range).

- Each die is stamped with the minimum crimp measurement in its range.
- Selecting the correct range ensures optimal crimping results.

### Note:

Crimping outside the specified range is not recommended.

Using undersized dies may cause the ferrule to deform.

### Operation

1. Turn the main power switch to power on the machine.
2. The motor remains idle until you press either the crimp or retraction button.
3. To operate, press the crimp or retraction button.

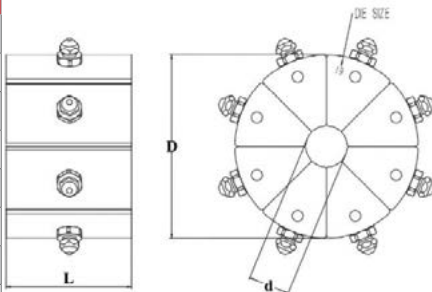
## Selecting Die Set

Use only die sets provided by the manufacturer. Use of other die sets risks operator injury or machine damage.

Refer to the fitting manufacturer's specifications for proper crimping diameter for the fitting. Each die set has its own crimping range.

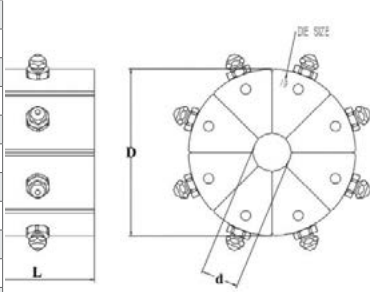
**Crimping Diameter Chart – KM20**

| D  | L  | Crimping Range |
|----|----|----------------|
| 14 | 55 | 14 - 16mm      |
| 16 | 55 | 16 - 19mm      |
| 19 | 55 | 19 - 23mm      |
| 23 | 55 | 23 - 27mm      |
| 27 | 55 | 27 - 31mm      |
| 31 | 70 | 31 - 36mm      |
| 36 | 75 | 36 - 41mm      |
| 41 | 75 | 41 - 47mm      |
| 47 | 85 | 47 - 54mm      |



**Crimping Diameter Chart – KM32**

| D  | L   | Crimping Range |
|----|-----|----------------|
| 14 | 55  | 14 - 16mm      |
| 16 | 55  | 16 - 19mm      |
| 19 | 55  | 19 - 23mm      |
| 22 | 55  | 22 - 26mm      |
| 26 | 70  | 26 - 30mm      |
| 30 | 70  | 30 - 34mm      |
| 34 | 75  | 34 - 39mm      |
| 39 | 75  | 39 - 45mm      |
| 45 | 90  | 45 - 51mm      |
| 51 | 90  | 51 - 57mm      |
| 57 | 100 | 57 - 63mm      |
| 63 | 100 | 63 - 69mm      |
| 69 | 100 | 69 - 75mm      |



*In addition to the standard dies, a wide range of special dies are available on request*

## Die Storage and Quick-Change System

### Overview

The optional die rack and quick-change tool (QCT) allow for convenient storage of die sets near the machine and enable rapid installation of complete die sets into the master dies.

### Pre-Installation Requirements

- Clean all contact surfaces on both the die set and master dies to prevent damage.
- Set the crimping diameter dial to 0.0.
- Retract the dies to their maximum open position.



### Installing a Die Set

1. Insert the QC tool pins into the desired die set on the die rack.
2. Rotate the tool clockwise and pull the complete set from the rack.
3. Hold the QC tool by the handle (see Figure), keeping your hand clear of the die area.
4. Position the die set between the master dies.
5. Begin closing the master dies.
6. Close completely until the pins positively lock into place.
7. Remove the QC tool, the dies are now ready for operation.



### Removing a Die Set

Perform the installation steps in reverse order:

1. Close the master dies.
2. Insert the QC tool into the die set.
3. Open the master dies.
4. Return the die set to the die rack.

**Safety Note:** Always ensure your hands remain clear of the dies during installation and removal.

## Changing a Single Die

Start the motor and depress the retraction button until maximum retraction is reached. Stop the motor.

**CAUTION! THE MOTOR SHALL ALWAYS BE STOPPED DURING INSTALLATION OF DIES.**

Prior to installing dies, clean the contact surfaces of both the die set and master dies properly to avoid damaging the surfaces.

- Pull the pull pin in the master die with the tool delivered together with the machine (see figure).
- Insert the die with the retaining pin into the master die, die number always towards you. Release the pull pin



## Setting the Crimping Diameter

From the crimping diameter chart on the electric box door, you can see the die set numbers and the corresponding crimping ranges. The upper section of the chart shows the corresponding dial position for each crimping diameter in the columns.

**Crimping diameters in the grey zone of the chart are not recommended to be used with the die set in question.**



The crimping diameter dial has been calibrated at the factory so that when the dial is set at 0.0, the resulting diameter will be the minimum diameter of the die set installed, i.e. with die set **20-16** the crimping diameter will be **16mm**, die set **20-19** gives a diameter of **19mm** etc. Each full turn clockwise of the adjusting knob of the dial will add **1mm** to the crimping diameter. Each division on the measuring scale corresponds to **1/100 mm**.

## Crimping with MS-Control

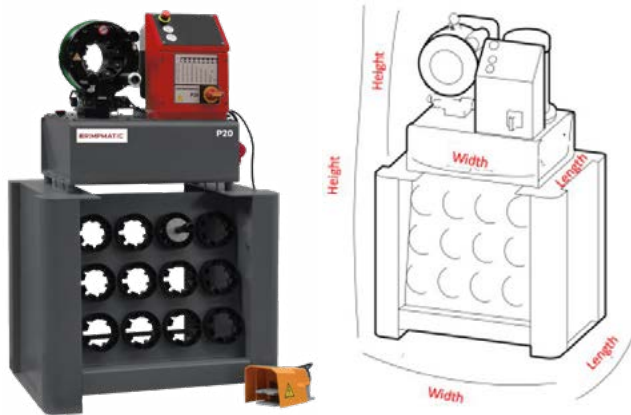
**WHEN CRIMPING A HOSE FITTING, ENSURE SUFFICIENT CLEARANCE TO AVOID CRIMPING YOUR HAND!**

1. After installing the proper die set and adjusting the crimping diameter, insert the hose and fitting between the dies.
2. Depress and hold down the crimping push-button until the preset diameter has been reached.
3. Depress the retraction button and take the crimped assembly out.
4. Check the result and measure the diameter. If necessary, correct the scale value and crimp again. To enable faster crimping and reliable results in the future, make a chart of the diverse hose/fitting combinations and the corresponding die sets and dial adjustment values.



# Specifications

## KM20



### Krimpmatic™ KM20 220 Volt (Single Phase) & 400 Volt (3 Phase)

DIES: 14/16/19/23/27/31/36/41/47 STAND & RACK

**\*\* Additional die sets available on request in sizes 6mm, 8mm, 10mm, 12mm & 52mm.**

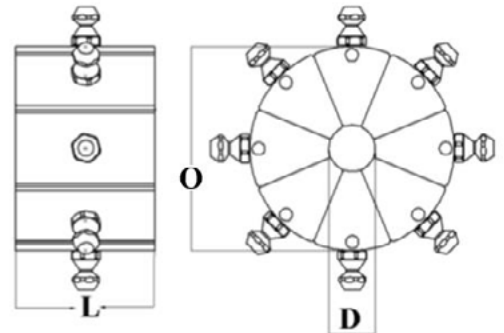
The Krimpmatic™ KM20 is a compact, efficient and easy to use machine powered by either a 220 volt (single phase) or 400 volt (3 phase) electric motor.

Ideally suited for the large volume manufacture of hose assemblies in sizes from 6mm (1/4") through to 32mm (1-1/4") 4 spiral & 38mm (1-1/2") 2 wire braid hose.

Commonly used in small workshops. The quick-change tool will assist with efficient die change over.

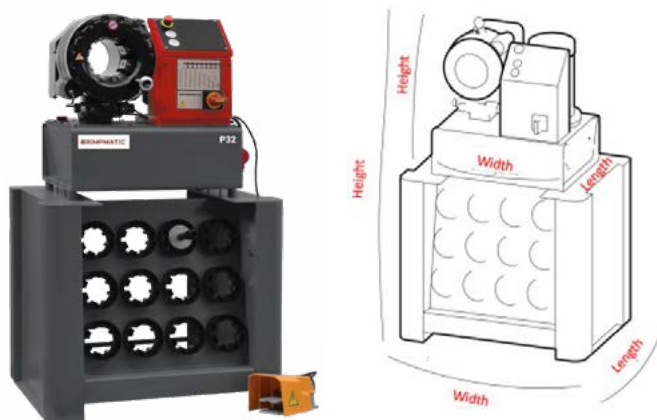
| Part No.           | D  | Crimping Range | L  | O  |
|--------------------|----|----------------|----|----|
| 87-CR-KM20-DIE006* | 6  | 6 - 8mm        | 55 | 84 |
| 87-CR-KM20-DIE008* | 8  | 8 - 10mm       | 55 | 84 |
| 87-CR-KM20-DIE010* | 10 | 10 - 12mm      | 55 | 84 |
| 87-CR-KM20-DIE012* | 12 | 12 - 14mm      | 55 | 84 |
| 87-CR-KM20-DIE014  | 14 | 14 - 16mm      | 55 | 84 |
| 87-CR-KM20-DIE016  | 16 | 16 - 19mm      | 55 | 84 |
| 87-CR-KM20-DIE019  | 19 | 19 - 23mm      | 55 | 84 |
| 87-CR-KM20-DIE023  | 23 | 23 - 27mm      | 55 | 84 |
| 87-CR-KM20-DIE027  | 27 | 27 - 31mm      | 70 | 84 |
| 87-CR-KM20-DIE031  | 31 | 31 - 36mm      | 70 | 84 |
| 87-CR-KM20-DIE036  | 36 | 36 - 41mm      | 75 | 84 |
| 87-CR-KM20-DIE041  | 41 | 41 - 47mm      | 75 | 84 |
| 87-CR-KM20-DIE047  | 47 | 47 - 52mm      | 85 | 84 |
| 87-CR-KM20-DIE052* | 52 | 52 - 60mm      | 85 | 84 |

**\* Optional Dies**



| Technical Parameters                  |          | 87-CR-KM20-220V                       | 87-CR-KM20-400V                       |
|---------------------------------------|----------|---------------------------------------|---------------------------------------|
| Crimping Range                        | (mm)     | 6 - 61                                | 6 - 61                                |
| Crimping Force                        | (kN)     | 1,370                                 | 1,370                                 |
|                                       | (ton)    | 137                                   | 137                                   |
| Theoretical Production Capacity 1/2"  | (p/hour) | 850                                   | 600                                   |
| Capacity                              | (inch)   | 1-1/2" (2 braid)<br>1-1/4" (4 spiral) | 1-1/2" (2 braid)<br>1-1/4" (4 spiral) |
| Die Set Series                        |          | KM20                                  | KM20                                  |
| Max. Opening                          | (mm)     | + 25                                  | + 25                                  |
| Max. Opening without dies             | (mm)     | 109                                   | 109                                   |
| Master Die (Diameter)                 | (mm)     | 84                                    | 84                                    |
| (Length)                              | (mm)     | 80                                    | 80                                    |
| Closing Speed of Master Dies (mm/sec) | (mm/sec) | 1                                     | 2.5                                   |
| Control                               |          | Semi-Automatic                        | Semi-Automatic                        |
| Control Unit                          |          | Dial Vernier                          | Dial Vernier                          |
| Pump                                  | (l/min)  | 8                                     | 8                                     |
| Max. Pressure                         | (bar)    | 280                                   | 280                                   |
| Motor Power                           | (kW)     | 2.2                                   | 3                                     |
| Motor Power<br>Frequency              | (HP)     | 3                                     | 4                                     |
|                                       | (amps)   | 14.6                                  | 6.9                                   |
|                                       | (volts)  | 220                                   | 400                                   |
|                                       | (hz)     | 50                                    | 50                                    |
| Electrical Plug                       | (amps)   | 15                                    | 10                                    |
| Electrical Circuit Breaker            |          | C Curve                               | C Curve                               |
| Enclosure Class                       |          | IP54                                  | IP54                                  |
| Sound Pressure Level                  | (db(A))  | 70                                    | 70                                    |
| Quick Change Tool                     |          | Y                                     | Y                                     |
| Die Rack                              |          | Y                                     | Y                                     |
| Stand                                 |          | Y                                     | Y                                     |
| Foot Pedal                            |          | Y                                     | Y                                     |
| Mirror                                |          | Optional                              | Optional                              |
| Electric Back Stop Device             |          | Optional                              | Optional                              |
| <b>Dimensions: (L x W x H)</b>        |          |                                       |                                       |
| Machine                               | (mm)     | 600                                   | 600                                   |
| Machine<br>Machine inc Stand          | (mm)     | 840                                   | 840                                   |
|                                       | (mm)     | 670                                   | 670                                   |
|                                       | (mm)     | 1340                                  | 1340                                  |
| Machine                               | (kg)     | 204                                   | 204                                   |
| Shipping                              | (mm)     | 930                                   | 930                                   |
| Shipping                              | (mm)     | 750                                   | 750                                   |
|                                       | (mm)     | 890                                   | 890                                   |
|                                       | (kg)     | 227                                   | 227                                   |
|                                       |          |                                       |                                       |

## KM32



### Krimpatic™ KM32 220 Volt (Single Phase) & 400 Volt (3 Phase)

DIES: 14/16/19/22/26/30/34/39/45/51/57/63/69 - STAND & RACK

**\*\* Additional die sets available on request in sizes 6mm, 8mm, 10mm, 12mm, 74mm & 78mm.**

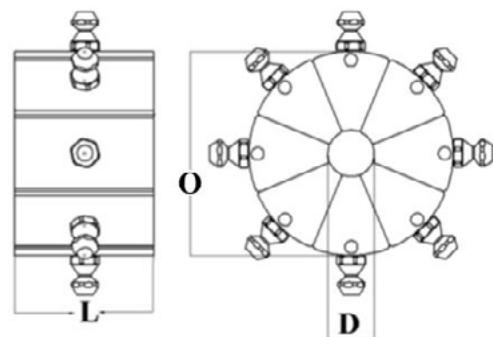
The Krimpatic™ KM32 is a compact, efficient and easy to use machine powered by either a 220 volt (single phase) or 400 volt (3 phase) electric motor.

Ideally suited for the large volume manufacture of hose assemblies in sizes from 6mm (1/4") through to 38mm (1-1/2") 6 spiral & 51mm (2") 4 spiral hose.

Commonly used in small workshops. The quick-change tool will assist with efficient die change over.

| Part No.           | D  | Crimping Range | L   | O  |
|--------------------|----|----------------|-----|----|
| 87-CR-KM32-DIE006* | 6  | 6 - 8mm        | 55  | 99 |
| 87-CR-KM32-DIE008* | 8  | 8 - 10mm       | 55  | 99 |
| 87-CR-KM32-DIE010* | 10 | 10 - 12mm      | 55  | 99 |
| 87-CR-KM32-DIE012* | 12 | 12 - 14mm      | 55  | 99 |
| 87-CR-KM32-DIE014  | 14 | 14 - 16mm      | 55  | 99 |
| 87-CR-KM32-DIE016  | 16 | 16 - 19mm      | 55  | 99 |
| 87-CR-KM32-DIE019  | 19 | 19 - 22mm      | 55  | 99 |
| 87-CR-KM32-DIE022  | 22 | 22 - 26mm      | 70  | 99 |
| 87-CR-KM32-DIE026  | 26 | 26 - 30mm      | 70  | 99 |
| 87-CR-KM32-DIE030  | 30 | 30 - 34mm      | 70  | 99 |
| 87-CR-KM32-DIE034  | 34 | 34 - 39mm      | 75  | 99 |
| 87-CR-KM32-DIE039  | 39 | 39 - 45mm      | 75  | 99 |
| 87-CR-KM32-DIE045  | 45 | 45 - 51mm      | 90  | 99 |
| 87-CR-KM32-DIE051  | 51 | 51 - 57mm      | 90  | 99 |
| 87-CR-KM32-DIE057  | 57 | 57 - 63mm      | 100 | 99 |
| 87-CR-KM32-DIE063  | 63 | 63 - 69mm      | 100 | 99 |
| 87-CR-KM32-DIE069  | 69 | 69 - 75mm      | 100 | 99 |
| 87-CR-KM32-DIE074* | 74 | 74 - 80mm      | 100 | 99 |
| 87-CR-KM32-DIE078* | 78 | 78 - 87mm      | 100 | 99 |

**\* Optional Dies**



| Technical Parameters                        |          | 87-CR-KM32-220V                    | 87-CR-KM32-400V                    |
|---------------------------------------------|----------|------------------------------------|------------------------------------|
| Crimping Range                              | (mm)     | 6 - 87                             | 6 - 87                             |
| Crimping Force                              | (kN)     | 2,000                              | 2,000                              |
|                                             | (ton)    | 200                                | 200                                |
| Theoretical Production Capacity (1/2" Hose) | (p/hour) | 850                                | 700                                |
| Capacity                                    | (inch)   | 1-1/2" (6 spiral)<br>2" (4 spiral) | 1-1/2" (6 spiral)<br>2" (4 spiral) |
| Die Set Series                              |          | KM32                               | KM32                               |
| Max. Opening                                | (mm)     | + 33                               | + 33                               |
| Max. Opening without dies                   | (mm)     | 132                                | 132                                |
| Master Die (Diameter)                       | (mm)     | 99                                 | 99                                 |
| (Length)                                    | (mm)     | 80                                 | 80                                 |
| Closing Speed of Master Dies (mm/sec)       | (mm/sec) | 0.6                                | 2.7                                |
| Control                                     |          | Semi-Automatic                     | Semi-Automatic                     |
| Control Unit                                |          | Dial Vernier                       | Dial Vernier                       |
| Pump                                        | (l/min)  | 2.8                                | 12                                 |
| Max. Pressure                               | (bar)    | 280                                | 280                                |
| Motor Power                                 | (kW)     | 3.7                                | 4                                  |
| Motor Power<br>Frequency                    | (HP)     | 5                                  | 5.3                                |
|                                             | (amps)   | 14.6                               | 8                                  |
|                                             | (volts)  | 220                                | 400                                |
|                                             | (hz)     | 50                                 | 50                                 |
| Electrical Plug                             | (amps)   | 15                                 | 10                                 |
| Electrical Circuit Breaker                  |          | C Curve                            | C Curve                            |
| Enclosure Class                             |          | IP56                               | IP56                               |
| Sound Pressure Level                        | (db(A))  | 71                                 | 71                                 |
| Quick Change Tool                           |          | Y                                  | Y                                  |
| Die Rack                                    |          | Y                                  | Y                                  |
| Stand                                       |          | Y                                  | Y                                  |
| Foot Pedal                                  |          | Y                                  | Y                                  |
| Mirror                                      |          | Optional                           | Optional                           |
| Electric Back Stop Device                   |          | Optional                           | Optional                           |
| <b>Dimensions: (L x W x H)</b>              |          |                                    |                                    |
| Machine                                     | (mm)     | 600                                | 600                                |
| Machine<br>Machine inc Stand                | (mm)     | 840                                | 840                                |
|                                             | (mm)     | 730                                | 730                                |
|                                             | (mm)     | 1400                               | 1400                               |
| Machine                                     | (kg)     | 286                                | 286                                |
| Shipping                                    | (mm)     | 930                                | 930                                |
| Shipping                                    | (mm)     | 770                                | 770                                |
|                                             | (mm)     | 890                                | 890                                |
|                                             | (kg)     | 310                                | 310                                |
|                                             |          |                                    |                                    |

# Preventative Maintenance

## Cleaning

Keeping the machine clean ensures smooth and safe operation.

- Wipe external surfaces with a dry cloth or soft paper.
- **Do not** use water, solvents, or abrasive materials.
- Use a small brush to clean the inner surfaces of the crimping head.
- Remove dirt and debris regularly to prevent buildup.

## Routine Maintenance & Inspection

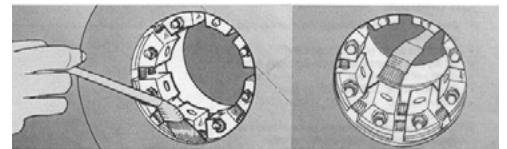
Regular maintenance and inspection are essential to preserve accuracy and keep the machine in optimal condition.

### Safety Precautions:

- Isolate power before performing any maintenance. Failure to do so may result in serious injury.
- Only qualified personnel should carry out maintenance tasks.
- If power is not required for the maintenance procedure, switch off the main circuit breaker.
- All **electrical maintenance** must be performed by qualified technicians only.

## Lubricating and Greasing

1. Clean and lubricate the machine every 8 operating hours. Retract the dies before lubricating.
2. Using a small brush, lightly grease the cone-shaped surfaces inside the cylinder. Lubricate sparingly and frequently to prevent power loss and wear on sliding surfaces.
3. Lubricate the inner surface of the conical flanges at least daily with a suitable grease.
4. Apply grease to the front and rear of the dies with a small brush.
5. Lubricate often with small amounts rather than infrequently with large amounts.
6. Do not grease the piston rod.



## Oil Change

1. Drain the oil from the tank by removing the drain plug located at the bottom of the tank.
2. Dispose of the used oil in accordance with local environmental regulations and guidelines.
3. Refill the tank until the oil level reaches the centre line of the oil level sight glass.

### Oil Tank Capacities:

Fill the oil tank to centre line of the indicators on the dipstick with hydraulic oil meeting ISO 46 viscosity (Shell Tellus T46 or equivalent).

It is recommended to pump the oil into the tank through a 20-y filter to ensure that oil is free of contaminants

### Oil Change Intervals:

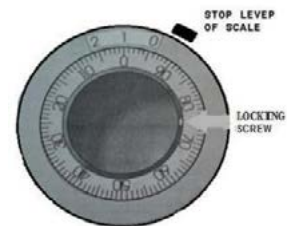
- Perform the first oil change after 500 hours of operation.
- Thereafter, change the hydraulic oil every 1,000 hours of operation.

In the event of any oil spillage, clean it up immediately using an appropriate oil spill kit.

## Re-calibration of Crimping Diameter Dial

**NOTE: The crimping diameter dial has been calibrated at the factory during test run.**

1. Use a seamless steel ferrule, 25 mm outer diameter, 2 mm wall, with die set 20 19 for KM20 and 32 19 for KM32.
2. Set the dial at 1.0 so the expected crimp diameter is 20.00 mm. Lock the dial. Crimp the ferrule and measure the actual diameter.
3. Remove the control dial carefully. Do not turn the dial shaft.
4. Open the dial lock and set the measured diameter on the dial. Relock and reinstall.
5. Set the dial to the intended diameter and crimp another ferrule. The measured result should match the dial. If not, repeat with care.
6. After adjustment, each die set should produce its minimum nominal crimp at dial 0.0.



## Master Die Spring Replacement

Master die springs are consumable components and should be replaced after every 100,000 crimps. Replacement requires specialised tools and technical expertise. Contact your local Motion branch to arrange for spring replacement.

**⚠ Warning:** Do not operate the machine if any springs are broken or twisted. Damaged springs can cause equipment malfunction or personal injury.

## High-Pressure Hydraulic Pipes

The return cylinders on both sides of the crimping head control the backward piston movement and simultaneous die retraction. The hydraulic pipes connected to these cylinders operate under high pressure.

### Important Guidelines:

- Handle pipes and connectors carefully to prevent damage and leakage.
- If a connector shows signs of leakage, ensure it is properly tightened.
- Replace leaking pipes immediately, do not attempt to repair them.

**⚠ Warning:** Never attempt to repair high-pressure hydraulic pipes. Always replace damaged pipes with new components.

## Troubleshooting

| Trouble                           | Possible cause                               | Action                                                    |
|-----------------------------------|----------------------------------------------|-----------------------------------------------------------|
| Machine will not start            | No electric supply                           | Check fuses and supply cable connections.                 |
|                                   | Motor protection tripped                     | Reset. If it trips again, check motor and pump condition. |
|                                   | Switch broken                                | Check and replace.                                        |
|                                   | Low supply voltage                           | Check voltage up to the motor. Correct supply.            |
| Motor runs but no piston movement | Wrong rotation direction                     | Swap two phases in the supply disconnecting device.       |
|                                   | Low oil level                                | Check and refill.                                         |
|                                   | Fuse, rectifier, or transformer faulty       | Check and replace.                                        |
|                                   | Dial broken, control faulty, or valve faulty | Check, repair, or replace. See model specific notes.      |
|                                   | Pump or coupling broken                      | Check and replace.                                        |
| Insufficient crimping force       | Insufficient lubrication                     | Lubricate the dies.                                       |
|                                   | Low oil level                                | Check and refill.                                         |
|                                   | Pressure relief valve stuck                  | Check and clean. Replace if needed.                       |
|                                   | Pilot check valve leaking                    | Check and replace.                                        |
|                                   | Leak in pump or pressure pipe                | Check, tighten, or replace.                               |
|                                   | Coupling between motor and pump slipping     | Check and replace.                                        |
| Crimping diameter varies          | Set value changed                            | Verify settings.                                          |
|                                   | Dial knob loose in MS models                 | Check, calibrate, and tighten.                            |
|                                   | Dial loose in IS or AS models                | Check, calibrate, and tighten.                            |
|                                   | Dial loose or broken in MS models            | Check, tighten, or replace.                               |
|                                   | Sliding potentiometer loose or broken        | Check, fasten, or replace.                                |
|                                   | Valve sticking                               | Check and clean.                                          |

## Warranty

The machines are warranted against defects in material and manufacture. Within the limits of the warranty, the defective part will be replaced with a new one, or when possible, repaired free of charge.

The warranty is valid for 12 months after commissioning, yet for a period not exceeding 18 months after delivery ex works from the manufacturer.

The warranty does not compensate for damage due to improper use, overload, neglect, or normal wear. Working and travelling costs as well as freight charges caused by warranty repairs are not covered by the warranty.

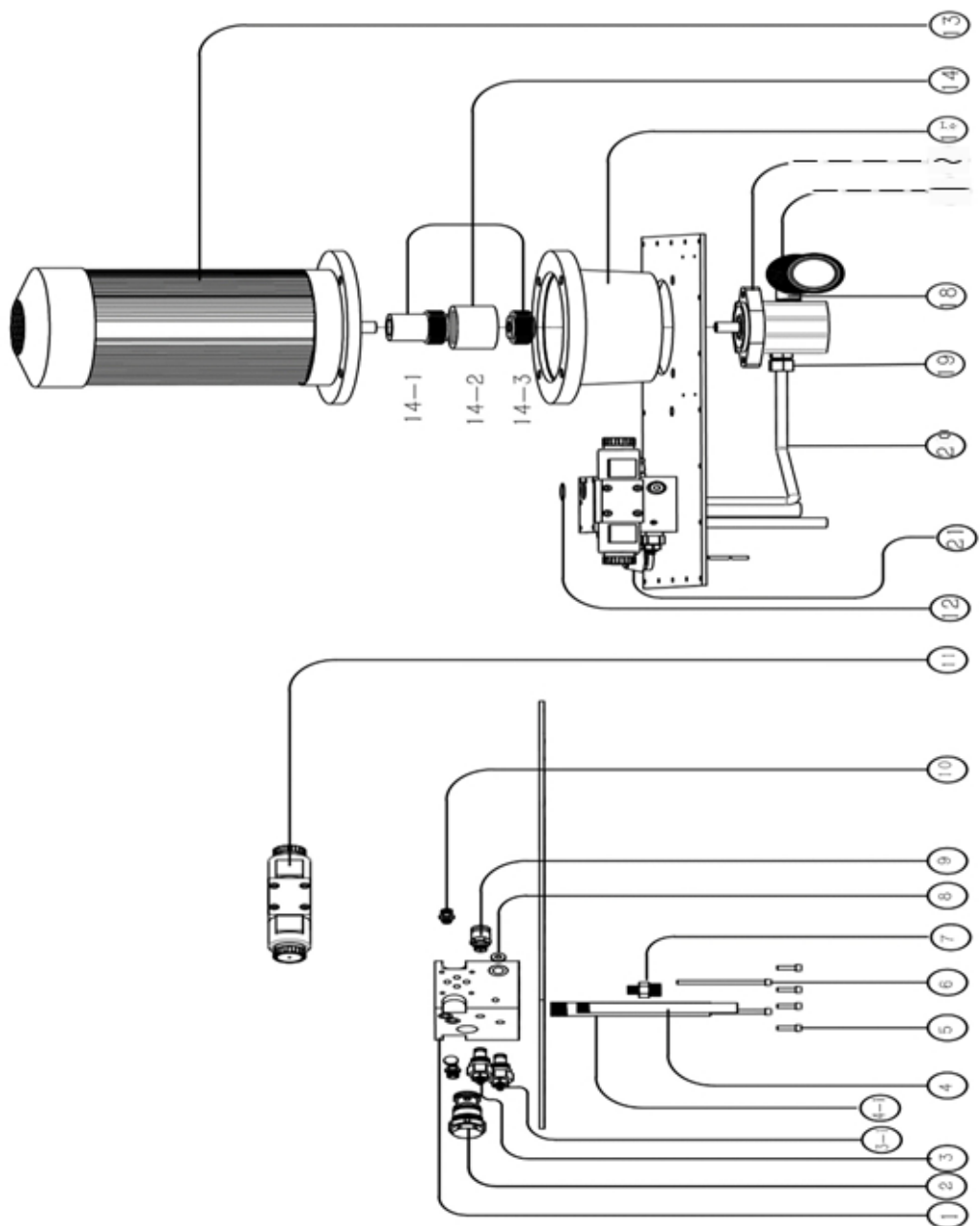
Warranty repairs shall be carried by authorised personnel.

In case warranty repair is demanded, the customer must prove that the machine is under warranty.

WARANTY DOES NOT COVER ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR ANY OTHER LOSS, DAMAGE OR EXPENSE OF ANY KIND, INCLUDING LOSS OF PROFITS.

# Technical

## Parts List



| No.    | Code      | Qty | Name                          |
|--------|-----------|-----|-------------------------------|
| 1      | P-202061  | 1   | Manifold Block                |
| 2      | P-202063  | 1   | Hydraulic Control Check Valve |
| 3      | P-202062A | 1   | Relief Valve S                |
| 3-Jan  | P-202062B | 1   | Relief Valve L                |
| 4      | P-2020611 | 1   | Return Pipe                   |
| 4-Jan  | P-2020612 | 1   | Return Pipe L                 |
| 5      | P-2020613 | 4   | Screw                         |
| 6      | P-2020614 | 2   | Screw H                       |
| 7      | P-202066  | 1   | Connector                     |
| 8      | P-202064  | 1   | Plug                          |
| 9      | P-202065  | 1   | Pressure Sensor               |
| 10     | P-202066  | 1   | Pipe Nipple                   |
| 11     | P-20208   | 1   | Magnet Valve                  |
| 12     | P-20207   | 1   | O-Ring                        |
| 13     | P-20201   | 1   | Motor                         |
| 14     | P-20301   | 1   | Coupling                      |
| 14-Jan | P-20301A  | 1   | Coupling A                    |
| 14-Feb | P-20301B  | 1   | Coupling B                    |
| 14-Mar | P-20301C  | 1   | Coupling C                    |
| 15     | P-202011  | 1   | Motor Connection Base         |
| 16     | P-20302   | 1   | Pump                          |
| 17     | P-20310   | 1   | Filter Insert                 |
| 18     | P-203021  | 1   | Elbow Connector               |
| 19     | P-20309   | 1   | Nipple 12S                    |
| 20     | P-20306   | 1   | Hydraulic Pipe                |
| 21     | P-20203   | 1   | Air Breather                  |



| No. | Code       | Qty | Name                               |
|-----|------------|-----|------------------------------------|
| 1   | P-20111    | 1   | Guide Ring 10+D160+2               |
| 2   | P-20112    | 1   | Grooved Ring UN160+180             |
| 3   | P-20110    | 1   | Cylinder                           |
| 4   | P-20152    | 1   | Grooved Ring UN200+22015           |
| 5   | P-20151    | 1   | Guide Ring 10+D220+2               |
| 6   | P-20150    | 1   | Piston                             |
| 7   | P-20160-1  | 1   | Part of Control Device KM20 MS     |
| 8   | P-20160    | 1   | Control Device KM20 MS             |
| 9   | P-20160-3  | 1   | Part of Control Device KM20/K32 MS |
| 10  | P-20160-4  | 1   | Part of Control Device KM20/K32 MS |
| 11  | P-20160-5  | 1   | Part of Control Device KM20/K32 MS |
| 12  | P-20160-6  | 1   | Part of Control Device KM20/K32 MS |
| 13  | P-20160-7  | 1   | Part of Control Device KM20/K32 MS |
| 15  | P-20160-9  | 1   | Part of Control Device KM20/K32 MS |
| 17  | P-20160-11 | 1   | Part of Control Device KM20/K32 MS |
| 18  | P-20160-12 | 1   | Part of Control Device KM20/K32 MS |
| 19  | P-20160-13 | 1   | Part of Control Device KM20/K32 MS |
| 20  | P-20136    | 2   | Elbow Connector                    |
| 21  | P-20130    | 2   | Return Cylinder                    |
| 22  | P-20132    | 2   | Seal                               |
| 23  | P-20131    | 2   | Piston of Return Cylinder          |
| 24  | P-20134    | 2   | Piston Bush Rod                    |
| 25  | P-20121    | 14  | Screw of Flange                    |
| 26  | P-20122    | 2   | Screw of Flange                    |
| 27  | P-20141    | 8   | Capped Nut                         |
| 28  | P-20144    | 8   | Locking Pin                        |
| 29  | P-20143    | 8   | Spring of Locking Pin              |
| 30  | P-20142    | 8   | Screw of Locking Pin               |
| 31  | P-20120    | 1   | Flange                             |
| 32  | P-20145    | 16  | Spring of MOS                      |
| 33  | P-20140    | 8   | Spring of Master Dies Set          |

## NOTES



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