LaboPol-21
LaboPol-25
Instruction Manual
Spare Parts and Diagrams
Always state Serial No and Voltage/frequency if you have technical questions or when ordering spare parts. You will find the Serial No. and Voltage on the type plate of the machine itself. We may also need the Date and Article No of the manual. This information is found on the front cover.

The following restrictions should be observed, as violation of the restrictions may cause cancellation of Struers legal obligations:

Instruction Manuals: Struers Instruction Manual may only be used in connection with Struers equipment covered by the Instruction Manual.

Service Manuals: Struers Service Manual may only be used by a trained technician authorised by Struers. The Service Manual may only be used in connection with Struers equipment covered by the Service Manual.

Struers assumes no responsibility for errors in the manual text/illustrations. The information in this manual is subject to changes without notice. The manual may mention accessories or parts not included in the present version of the equipment.

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Struers
Pederstrupvej 84
DK-2750 Ballerup
Denmark
Telephone +45 44 600 800
Fax +45 44 600 801
LaboPol
Safety Precaution Sheet

To be read carefully before use

1. The operator(s) should be fully aware of the use of the machine according to the Instruction Manual.

2. The machine must be placed in an adequate working position.

3. Be sure that the actual voltage corresponds to the voltage stated on the back of the machine. The machine must be earthed.

4. Be sure that the water connections are without leaks.

5. Struers recommend that the mains water supply is shut off or disconnected if the machine is to be left unattended.

6. If you observe malfunctions or hear unusual noises - stop the machine and call technical service.

7. The machine must be disconnected from the mains prior to any service. Wait until residual potential on the capacitors is discharged.

8. Do not cycle mains power more than once every three minutes. Damage to the drive will result.

The equipment should only be used for its intended purpose and as detailed in the Instruction Manual.

The equipment is designed for use with consumables supplied by Struers. If subjected to misuse, improper installation, alteration, neglect, accident or improper repair, Struers will accept no responsibility for damage(s) to the user or the equipment.

Dismantling of any part of the equipment, during service or repair, should always be performed by a qualified technician (electromechanical, electronic, mechanical, pneumatic, etc.).
Disposal

Equipment marked with a WEEE symbol contain electrical and electronic components and must not be disposed of as general waste.
Please contact your local authorities for information on the correct method of disposal in accordance with national legislation.
# User’s Guide

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1. Getting Started

Checking the Contents of Packing

In the packing box you should find the following parts:

1. LaboPol-21/-25, complete with inlet hose
2. Power cable
3. Splash rings
4. Outlet hose
5. Hose clamp ø 25-40 mm
6. Hose nipple
7. Union nut, 1/2"
8. Gasket
9. Hose clamp
10. Set of Instruction Manuals

Unpacking LaboPol

- Remove the three screws, securing LaboPol onto the bottom of the crate, using a 13 mm pipe spanner.
- Lift LaboPol off the bottom plate and place it on a stable table.
- Remove the two transportation support nuts at the bottom of LaboPol using a 10 mm fork spanner (only on specific models).

Placing LaboPol

- LaboPol should be placed on a steady table with an adequate working height. The machine must be placed close to power supply, water mains and water outlet facilities.

Back View of LaboPol

- Water outlet
- Water inlet
- On/off switch for specimen mover
- Power supply socket for specimen mover
- Communication socket for specimen mover
- Fuse
- Main switch
- Power inlet
Supplying Power

Always remember to switch the power off when installing electrical equipment.

**IMPORTANT**
Check that the mains voltage corresponds to the voltage stated on the type plate on the back of the machine.

The LaboPol is shipped with 2 types of Mains cables:

**Single-phase Supply**
The 2-pin (European Schuko) plug is for use on single-phase connections.

If the plug supplied on this cable is not approved in your country, then the plug must be replaced with an approved plug. The leads must be connected as follows:
- Yellow/green: earth
- Brown: line (live)
- Blue: neutral

**2-phase Supply**
The 3-pin (North American NEMA) plug is for use on 2-phase power connections.

If the plug supplied on this cable is not approved in your country, then the plug must be replaced with an approved plug. The leads must be connected as follows:
- Green: earth
- Black: line (live)
- White: line (live)

**Connection to the Machine**
Both cables are on the other end equipped with an IEC 320 cable connector that has to be connected to the LaboPol.

**WARNING!**
The output voltage from this cable is 200 – 240V and not 110V. DO NOT use this cable to connect equipment that use an 110V power supply. Failure to adhere to this may result in material damage.

**DANGER!**
The machine must be earthed

**IMPORTANT**
If LaboPol has not been connected to a specimen mover, the switch “specimen mover” must be put into off position. Otherwise LaboPol cannot be started.
Supplying Water

**Water Outlet**
- Connect the outlet hose to the water outlet on the back of the machine and secure the hose using the hose clamp.
- Lead the other end of the outlet hose to the drain. Be absolutely sure to place the outlet hose with a steady slope to prevent the water from being discharged too slowly, which may cause overflow or blocking of the water outlet. Avoid sharp bends on the outlet hose.

**Water Inlet**
- Connect the inlet hose to the water tap and secure with a hose clamp. The fittings (gasket, union nut and reduction ring) supplied with the machine may also be used for the connection.
2. Operation

Getting Acquainted with LaboPol

Take a moment to familiarise yourself with the location and names of the LaboPol components.

Mounting a Disc

- Place the preparation disc on the turntable and turn it until the three pins of the preparation disc engage with the holes in the turntable.

Starting the Machine

LaboPol-21

- Press the start switch 🔄.

LaboPol-25

- Select the desired speed.
- Press the start switch 🔄.

Stopping the Machine

- Press the stop switch ☑.
# Reference Guide

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<tr>
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<tr>
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</table>
1. Advanced Operations

Selection of Disc

LaboPol is designed for use with wet grinding and polishing discs. The diameter of wet grinding discs with ring should be 230 or 250 mm. When using polishing cloths, MD-Allegro or SiC-paper/ SiC-foil, discs with 200 mm or 250 mm dia. can be used.

Mounting of Specimen Mover (Optional)

LaboPol can be equipped with a LaboForce-3 or LaboForce-1 specimen mover.

Please Note
To mount the specimen mover, see the LaboForce Instruction Manual.
2. Struers Metalog Guide™

LaboPol is designed for preparation of most materials. In Struers Metalog Guide™ you will find a detailed description of grinding/polishing methods for automated mechanical specimen preparation.

Struers Metalog Guide™ offers preparation methods for the most common materials, based on a simple analysis of two key properties: hardness and ductility. Finding the right method is easy, including choice of consumables. Always consult Struers Metalog Guide™ on the Struers website for the correct preparation method for the actual specimens.

*Metalog Guide™*
A complete guide to materialographic specimen preparation.

3. Accessories and Connected Equipment

**Accessories**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Cat. No:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Grinding Disc with Ring</td>
<td></td>
</tr>
<tr>
<td>230 mm dia., aluminium</td>
<td>02426936</td>
</tr>
<tr>
<td>250 mm dia., aluminium</td>
<td>02426915</td>
</tr>
<tr>
<td>Polishing Discs</td>
<td></td>
</tr>
<tr>
<td>200 mm dia., aluminium</td>
<td>03756902</td>
</tr>
<tr>
<td>230 mm dia., aluminium</td>
<td>02426908</td>
</tr>
<tr>
<td>250 mm dia., aluminium</td>
<td>02426907</td>
</tr>
<tr>
<td>Disc for Magnetic Fixation</td>
<td></td>
</tr>
<tr>
<td>MD-Disc, 200 mm dia.</td>
<td>02426920</td>
</tr>
<tr>
<td>MD-Disc, 250 mm dia.</td>
<td>02426919</td>
</tr>
</tbody>
</table>

**Connected Equipment**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Cat. No:</th>
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</thead>
<tbody>
<tr>
<td>LaboForce-1, specimen mover</td>
<td></td>
</tr>
<tr>
<td>1 x 100-120 V / 50-60 Hz</td>
<td>05276116</td>
</tr>
<tr>
<td>1/3 x 200-240 V / 50-60 Hz</td>
<td>05276227</td>
</tr>
<tr>
<td>LaboForce-3, specimen mover</td>
<td></td>
</tr>
<tr>
<td>1 x 100-120 V / 50-60 Hz</td>
<td>05216117</td>
</tr>
<tr>
<td>1/3 x 200-240 V / 50-60 Hz</td>
<td>05216227</td>
</tr>
</tbody>
</table>

**Remember...**

Struers offers a comprehensive range of consumables for grinding and polishing. Please ask for separate leaflets.
### 4. Trouble-Shooting

<table>
<thead>
<tr>
<th>Error</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise when the machine starts or the machine will not pull</td>
<td>The belt is not sufficiently tight</td>
<td>Call a Struers service technician. The belt must be replaced.</td>
</tr>
<tr>
<td>The machine does not operate when the start switch ✡ is pressed.</td>
<td>- The main switch is off &lt;br&gt;- The fuse at the rear of LaboPol has blown &lt;br&gt;- The switch for the specimen mover at the back of LaboPol is set to &quot;on&quot;, but no specimen mover is connected.</td>
<td>- Turn the main switch on&lt;br&gt;- Replace the fuse&lt;br&gt;- Set the switch to &quot;off&quot;</td>
</tr>
<tr>
<td>Water is not draining away</td>
<td>- Drain hose squeezed &lt;br&gt;- Drain hose clogged &lt;br&gt;- Drain hose does not slope away</td>
<td>- Straighten the hose &lt;br&gt;- Clean the hose &lt;br&gt;- Adjust the hose to an even slope</td>
</tr>
<tr>
<td>Water dripping underneath the machine</td>
<td>The water does not drain away</td>
<td>See above</td>
</tr>
<tr>
<td>Cooling water stops</td>
<td>- Water tap on mains closed &lt;br&gt;- Built-in water tap closed &lt;br&gt;- Built in water tap blocked &lt;br&gt;- Filter at the water inlet blocked</td>
<td>- Turn the water on &lt;br&gt;- Turn the water on &lt;br&gt;- Clean water tap &lt;br&gt;- Clean filter</td>
</tr>
<tr>
<td>The preparation disc vibrates</td>
<td>Dirt underneath the disc or on the turntable</td>
<td>Clean the contact face between the disc and the turntable.</td>
</tr>
<tr>
<td>Continuous, irregular wear on a grinding/polishing surface.</td>
<td>Coupling on either the specimen holder/mover plate or the specimen mover head of the polishing machine is worn.</td>
<td>Please contact a Struers Service Technician to replace the coupling.</td>
</tr>
</tbody>
</table>
5. Maintenance

Daily Service

- Clean all accessible surfaces with a moist cloth.

Weekly Service

- Remove the splash ring and the preparation disc, and remove all dirt from the tray and the drain tube.
# 6. Technical Data

<table>
<thead>
<tr>
<th>Subject</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disc</strong></td>
<td></td>
</tr>
<tr>
<td>Diameter</td>
<td>200-250mm / 8-10”</td>
</tr>
<tr>
<td>Speed</td>
<td>250 rpm</td>
</tr>
<tr>
<td>Rotational direction</td>
<td>Counter-clockwise</td>
</tr>
<tr>
<td>Motor</td>
<td>250 W</td>
</tr>
<tr>
<td>Torque at disc</td>
<td>Continuous @ 250 rpm</td>
</tr>
<tr>
<td></td>
<td>Max. &gt;12.0Nm @ 250 rpm</td>
</tr>
<tr>
<td><strong>Safety standards</strong></td>
<td>Please refer to the Declaration of Conformity</td>
</tr>
<tr>
<td>Noise level</td>
<td>Approx. 58 dB(A) at idle running at a distance of 1.0 m/39.4” from the machine</td>
</tr>
<tr>
<td>Surrounding temperature</td>
<td>5-40°C / 41-104°F</td>
</tr>
<tr>
<td>Humidity</td>
<td>Non condensing</td>
</tr>
<tr>
<td>Supply</td>
<td>1 (N+L+PE) or 2 (L+L+PE) phase</td>
</tr>
<tr>
<td>Power</td>
<td>320 W</td>
</tr>
<tr>
<td>Voltage / frequency</td>
<td>Max. load 3.3 A</td>
</tr>
<tr>
<td>200-240V / 50-60 Hz</td>
<td></td>
</tr>
<tr>
<td>Pressure for tap water</td>
<td>1-10 bar / 14.5-145 psi</td>
</tr>
<tr>
<td>Water inlet</td>
<td>1/2”</td>
</tr>
<tr>
<td>Water outlet</td>
<td>ø32mm / 1 1/4”</td>
</tr>
<tr>
<td><strong>Dimensions and weight</strong></td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>700 mm / 27.6”</td>
</tr>
<tr>
<td>Depth</td>
<td>690 mm / 27.2”</td>
</tr>
<tr>
<td>Height</td>
<td>220 mm / 8.7”</td>
</tr>
<tr>
<td>Weight</td>
<td>28 kg / 62 lbs</td>
</tr>
</tbody>
</table>
English

**Declaration of Conformity**

Manufacturer, responsible for Technical File

Struers A/S
Pederstrupvej 84
DK-2750 Ballerup, Denmark
Telephone +45 44 600 800

Herewith declares that

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>LaboPol-21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type No:</td>
<td>529</td>
</tr>
<tr>
<td>Machine Type:</td>
<td>Grinding and polishing machine</td>
</tr>
</tbody>
</table>

is in conformity with the provisions of the following directives:

- **Safety of Machinery**: 2006/42/EC according to the following standard(s): EN ISO 12100:2010, EN 60204-1:2006/AC:2010.
- **RoHS**: 2011/65/EU according to the following standard(s): EN 50581:2012.

Supplementary Information: The equipment complies with the American standards:

UL508.

The above has been declared according to the global method, module A

Date: 23.02.2016

Christian Skjold Heyde, Vice President, R & D and Production, Struers ApS

---

Dansk

**Overensstemmelseserklæring**

Fabrikant, ansvarlig for Teknisk Dossier

Struers A/S
Pederstrupvej 84
DK-2750 Ballerup, Danmark
Telefon 44 600 800

erklærer herved, at

<table>
<thead>
<tr>
<th>Produktnavn:</th>
<th>LaboPol-21</th>
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<tbody>
<tr>
<td>Type nr.:</td>
<td>529</td>
</tr>
<tr>
<td>Maskintype:</td>
<td>Slibe og polér maskine</td>
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</table>

er i overensstemmelse med følgende EU-direktiver:


Supplerende oplysninger: Endvidere overholdes de amerikanske normer: UL508.

Ovenstående overensstemmelse(r) er erklæret iflg. den globale metode, modul A


Christian Skjold Heyde, Vice President, Udvikling og Produktion, Struers ApS
## Declaration of Conformity

### Manufacturer, responsible for Technical File

- **Struers A/S**
- **Pederstrupvej 84**
- **DK-2750 Ballerup, Denmark**
- **Telephone +45 44 600 800**

### Herewith declares that

<table>
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<tr>
<th>Product Name:</th>
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<tbody>
<tr>
<td>Type No.:</td>
<td>586</td>
</tr>
<tr>
<td>Machine Type:</td>
<td>Grinding and polishing machine</td>
</tr>
</tbody>
</table>

is in conformity with the provisions of the following directives:

**Safety of Machinery**
- 2006/42/EC according to the following standard(s):
  - EN ISO 12100:2011
  - EN ISO 13849-2:2014
  - EN 60204-1:2006/AC:2010
  - EN ISO 13857:2008
  - EN 349 + A1:2010
  - EN 1037 + A1:2010

**EMC-Directive**
- 2004/108/EC according to the following standard(s):
  - EN 61000-6-1:2007

**RoHS**
- 2011/65/EU according to the following standard(s):

### Supplementary Information

The equipment complies with the American standards:
- UL508.

The above has been declared according to the global method, module A

---

## Dansk

### Fabrikant, ansvarlig for Teknis Dossier

- **Struers A/S**
- **Pederstrupvej 84**
- **DK-2750 Ballerup, Danmark**
- **Telefon 44 600 800**

erklærer herved, at

<table>
<thead>
<tr>
<th>Produktnavn:</th>
<th>LaboPol/-25</th>
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</thead>
<tbody>
<tr>
<td>Type nr.:</td>
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<tr>
<td>Maskintype:</td>
<td>Slibe og polér maskine</td>
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</table>

er i oversættelse med følgende EU-direktiver:

**Maskindirektivet**
- 2006/42/EF efter følgende norm(er):
  - EN ISO 12100:2011
  - EN ISO 13849-2:2014
  - EN 60204-1:2006/AC:2010
  - EN ISO 13857:2008
  - EN 349 + A1:2010
  - EN 1037 + A1:2010

**EMC-direktivet**
- 2004/108/EF efter følgende norm(er):
  - EN 61000-6-1:2007

**RoHS**
- 2011/65/EU efter følgende norm(er):

**Supplerende oplysninger**

Endvidere overholdes de amerikanske normer:
- UL508.

Ovenstående oversættelse(r) er erklæret iflg. den globale metode, modul A

---

Dato: 13.02.2015

Christian Skjold Heyde,

Vice President, Udvikling og Produktion, Struers A/S
Spare Parts and Diagrams

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- Block Diagram, LaboPol-25 ....................... 15863450E

Some of the drawings may contain position numbers not used in connection with this manual.

Always state Serial No and Voltage/frequency if you have technical questions or when ordering spare parts.

The following restrictions should be observed, as violation of the restrictions may cause cancellation of Struers legal obligations:

Instruction Manuals: Struers Instruction Manual may only be used in connection with Struers equipment covered by the Instruction Manual.

Service Manuals: Struers Service Manual may only be used by a trained technician authorised by Struers. The Service Manual may only be used in connection with Struers equipment covered by the Service Manual.

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Struers
Pederstrupvej 84
DK-2750 Ballerup
Denmark
Telephone +45 44 600 800
<table>
<thead>
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<th>Drawing</th>
<th>Pos.</th>
<th>Spare Part</th>
<th>Part No.</th>
</tr>
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<tr>
<td>15180060</td>
<td></td>
<td><strong>Bottom cabinet, assembled</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber foot grey ø20x20</td>
<td>2GB00009</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sealing strip Grey 1.5x10</td>
<td>2IP10151</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Splash ring ø250</td>
<td>15180101</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Splash ring ø200</td>
<td>15180102</td>
</tr>
<tr>
<td>14920065</td>
<td></td>
<td><strong>Water tap, assembly</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water tap, assembled</td>
<td>R5200050</td>
</tr>
<tr>
<td>15180050</td>
<td></td>
<td><strong>Bearing Assembly</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ball bearing, 6004-2RSR</td>
<td>2BK00045</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wave spring wash., 28x34.5x0.5</td>
<td>2GF60020</td>
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<td></td>
<td></td>
<td>Ball bearing, 6003-2RS1, ø17xø35</td>
<td>2BK00040</td>
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<tr>
<td></td>
<td></td>
<td>Pulley ø230, machined</td>
<td>15180520</td>
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<tr>
<td></td>
<td></td>
<td>FEDER A 5x5x20</td>
<td>2ZF10520</td>
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<td></td>
<td></td>
<td>Washer 10 A2 DIN9021A</td>
<td>2ZA20010</td>
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<tr>
<td>LaboPol-21,-25</td>
<td></td>
<td>Driving belt, ø7x1900±1mm.</td>
<td>14910014</td>
</tr>
</tbody>
</table>
# LaboPol-21 / -25
## Spare Parts and Diagrams

<table>
<thead>
<tr>
<th>Drawing</th>
<th>Pos.</th>
<th>Spare Part</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15863450</td>
<td></td>
<td><strong>LaboPol Series wiring Diagram</strong></td>
<td></td>
</tr>
<tr>
<td>LaboPol-21</td>
<td></td>
<td>EPM Module V2.0 LP21, programmed</td>
<td>15293902</td>
</tr>
<tr>
<td>LaboPol-25</td>
<td></td>
<td>EPM Module V2.2 LP25, programmed</td>
<td>15863903</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LenzeFreq.conv.8200smd370W16kHz, A1</td>
<td>2PB81372</td>
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<tr>
<td></td>
<td></td>
<td>Switch 1804.1102 Black, S4</td>
<td>2SA60104</td>
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<tr>
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<td>Connector 3-POL. Female S678, X3</td>
<td>2XM00403</td>
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<td>3-POL Female, X2</td>
<td>2XN11032</td>
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<td></td>
<td>Solid State Relay 10A 4-30Vdc, K1</td>
<td>2KL81310</td>
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<td>Mains socket w. fuse + switch, X1</td>
<td>2XN32107</td>
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<td>Insul.cap, Mains connection, (X1)</td>
<td>2XN30001</td>
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<td>Fuse holder, Mains socket, (X1)</td>
<td>2XN32901</td>
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<td>4.00A T Fuse glass 6.3x32 250V, (X1)</td>
<td>2FU14200</td>
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<td>Module holder. 3 elem. MHR-3, S1,S2</td>
<td>2SA41603</td>
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<td>Contact block 1 NC 1/2. MTO, S2</td>
<td>2SB10071</td>
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<tr>
<td></td>
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<td>Contact block 1 NO 3/4. MTI, S1</td>
<td>2SB10072</td>
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<tr>
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<td>Eco.push butt.head RTR (red), S2</td>
<td>2SA00415</td>
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<tr>
<td></td>
<td></td>
<td>Eco.push butt.head RTG (green), S1</td>
<td>2SA00410</td>
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<td>Motor 71C4 250W 240 60CSA klix, M1</td>
<td>2ME51654</td>
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<tr>
<td></td>
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<td>Rotary switch, machined, S32</td>
<td>15420077</td>
</tr>
</tbody>
</table>

## Service Kits

|                |                  | Service Kit LaboPol-21, -25 50Hz | 15292999  |
Loctite 5331 - Must be waterproof at 2 bar. Apply glue 1-2mm from thread start on pos 70 and assemble. Surplus of glue can easily be removed after 8-10 hours.

- Rotate when inserting

- Do not grease

- Straighten in 90° hot water in 10 sec, on a 3 mm, stainless steel rod, and cooled down in cold water before its is removed from rod.

- High vacuum grease

POS. NO. | AMOUNT | DRW. NO. | NAME | NOTE
---|---|---|---|---
10 | 1 | 14920105 | House for tap |
20 | 2 | 20D17815 | O-ring 10.82-1.78 72 NBR 872 |
40 | 2 | Z016005 | O-ring 8.10-1.673 NBR 872 |
60 | 1 | 14920113 | Man-tube Ø29 |
70 | 1 | 14920109 | Hose union |
80 | 3 | Z016020 | O-RING 5.4-1.6 72 NBR 872 |
90 | 1 | 14911070 | Stainless steel 6mm NFML-4 SORT |
100 | 1 | 14920111 | Dowel washer |
110 | 1 | 14910867 | Special nut M10 |
120 | 1 | 225051210 | Cyl. self nut M12x10 DIN 7 |
130 | 1 | 14920112 | Handle Ø29 |
140 | 1 | 22C11225 | Sleeve 12 DIN 1256 FZB |
150 | 1 | 14911070 | Pipe piece |
160 | 1 | 12660049 | Special nut 1-4 Rc |
170 | 1 | 14920086 | Tap spindle with packing
FROM LaboForce-3
THERMAL PROTECTION M2

Comment:
Use Dummy for LaboForce-1:

LaboPol-21

LaboForce-3

LaboForce-1/-3

LaboForce-1/-3

ALL WIRINGS 0,75mm², EXCEPT OTHERWISE MARKED.

COLOR CODES:
BK = BLACK
BN = BROWN
RD = RED
YE = YELLOW
BL = BLUE
GY = GREY
RD = RED

M1

POWER ON
START
STOP
SELECT
 LaboForce-1/-3

SELECT
 LaboForce-1/-3

POWER
TO
LaboForce-1/-3

W1

X1

X2

W2

W3

X3

W4

X4

X5

X6

X7

MENCE 2005
MANUFACTURED BY
15293100

120/240V
45µF

10µF

50µF

40µF

30µF

8µF

5µF

LaboPol-21

100V/50Hz.

100V/60Hz.

220-240V/50Hz.

220-240V/60Hz.

110-120V/60Hz.

MAINS SUPPLY:

Comment:
Use Dummy for LaboForce-1:

3x1mm²

3x0,75mm²

4x5AMP

115-125V/50Hz

230-240V/50Hz

120-260V/50Hz

120-240V/60Hz

110-120V/60Hz

110-120V/50Hz

220-240V/50Hz

220-240V/60Hz

10µF

30µF

40µF

50µF

CIRCUIT DIAGRAM
STRAUSS A/S
VALHOJSALLE 176
DK-2610 ROEDOVRE
DENMARK
PHONE:+45 3670 3500

Monday, December 11, 2000
Thursday, September 13, 2001

Size
PAGE CODE
DRAWING

15293100

MAIN SHEET 1 OF 1

A1

A2

A3

SCALE

REV

Sheet

0

1

2