OPERATING AND MAINTENANCE MANUAL

DP3500

ROTARY MARKING DEVICE
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Introduction

1. Identification of the marking equipment

The marking equipment is identified by:

- 1 identification tag on the rear face

Have the model and serial number of the equipment ready to give to Pro-Pen each time you are in contact.

2. Regulation observance

Manufacturer, TECHNIFOR SAS - 114, quai du Rhône - 01708 MIRIBEL CEDEX - France declares:

- **Declaration of conformity**

CE marking on the equipment attests the observance of the following European directives:


- **Declaration of conformity to other directives**

Equipment is compliant with the following European directives:

Introduction

Waste Electronic and Electrical Equipment

This symbol indicates that once this equipment has reached the end of its useful life, it must not be disposed of with non-sorted municipal waste, in accordance with European Directive 2002/96/EC.

The equipment must be disposed of at an appropriate collection point for processing, sorting, and recycling of Waste Electronic and Electrical Equipment (WEEE).

The elements which compose Waste Electronic and Electrical Equipment (WEEE) may contain substances which have harmful effects on the environment or on human health.

By following these instructions, you are helping the environment, contributing to the preservation of our natural resources, and protecting human health.

- Declaration of conformity to norms

The equipment is compliant with the following norms:

- Standard NF EN 61000-6-2 of January 2006 concerning electromagnetic compatibility (EMC) - Part 6-2: generic standards- Immunity for industrial environments.
- Standard NF EN 61000-6-4 of March 2007 concerning electromagnetic compatibility(EMC) - Part 6-4: generic standards- Standard on emissions for industrial environments.

3. Work station safety

To ensure security and productivity, read this manual before starting-up the equipment.

This accessory is designed to operate at a room temperature between 5 °C (41 °F) and 45 °C (113 °F).

- When marking or doing test marking, the stylus must always have a part under it with which to make contact.

If it strikes only air, these are the risks:

- mechanical deterioration of moving parts
- void of the manufacturer’s guarantee

For more information, please refer to the warranty details delivered with the machine.
1. Presentation

This device is used to mark revolution parts:

- following the circumference of a cylindrical or conic part
- along a generator

2 sets of jaws are supplied:

- for interior securing
- for exterior securing

**Constitution**

**Mechanical constitution**

- an aluminium body
- a motor set + gear device by synchronous belt/pinions
- a mechanically adjusted chuck (handling and clamping of the part to mark)
- a chuck back, accessible after the chuck is removed
- an aluminium profile support plate (interface between DP3500 and the machine’s table)

**Electrical constitution**

- a stepping motor for the rotation of the part to mark
- a power card integrated in the body
2. DP3500 model

- **Physical characteristics**
  - dimensions (L x w x h):
    - without chuck: 184 mm (7.244 in) x 223 mm (8.78 in) x 158 mm (6.22 in)
    - with chuck: 241 mm (9.488 in) x 223 mm (8.78 in) x 158 mm (6.22 in)
  - weight:
    - without chuck: 4.9 kg (10.803 lb)
    - with chuck: 6.4 kg (14.11 lb)

The rotation axis brings the part at speeds between 5 and 240 turns/min.

Maximum moment of inertia of the part:

- without chuck: 65 kg.cm²
- with chuck: 50 kg.cm²

Moment of inertia of the cylinder: 1/2 mR² (m = Grounding, R = Radius)

Example: for a disk with a radius of 10 cm and mass of 1 kg, has an inertia of 50 kg.cm².

- **DP3500 dimensional drawings - with chuck**

---

1 : Manual chuck
2 : Electrical connector
3 : Motor
Description

- DP3500 dimensional drawings - without chuck

1: Transition Ø 13 over 55 mm (2.165 in)
2: Electrical connector
3: Motor
Dimensional drawings of the interface plate with DP3500

1 : 3 holes for CHC M6 screws to secure the P5000 table in parallel to the X axis at the operator's right
2 : 3 holes for CHC M6 screws to secure the P5000 table in parallel to the X axis at the operator’s left
3 : 2 screw for CHC M5 setting on an interface plate (to loosen and adjust the DP3500 in X)
4 : Necessary clearance (connections and passing of cables): 110 mm (4.331 in)
- Dimensional drawings of the chuck
1. **Operation**

2 functioning modes are possible when using the DP3500:

- linear marking: used to mark on generators. The chuck carries out a rotation between each marked line.
- circular marking: the stylus moves on X-Y axis. The chuck carries out a rotation between each character marked (marking with intercharacter fraction rotation).

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1: Marking on a generator  
2: Circular marking

Place the DP3500 in relation to the marking head so the axis of the part to mark is parallel to the X or Y axis of the head.

See the following dimensional drawings representing the various mounting positions.
2. Installation

- Installing the DP3500 following the X axis, at the operator’s right, opposite side of the origin

1 : Setting following the X axis, by sliding the DP3500 on the base
2 : Setting following the Y axis, by sliding the DP3500 and its base on the machine’s table
3 : Necessary clearance (connections and passing of cables): 110 mm (4.331 in)
Functional definitions

- Installing the DP3500 following the X axis, left of the operator, origin side

1 : Setting following the X axis, by sliding the DP3500 on the base
2 : Setting following the Y axis, by sliding the DP3500 and its base on the machine’s table
3 : Necessary clearance (connections and passing of cables): 110 mm (4.331 in)
3. Connections

**The different elements of the equipment must be connected with the power off. The power supply should be connected last.**

**Used with the machine’s internal program**

Remove the plug from the machine.

Connect the DP3500 to the machine with the cord supplied with the device.

To connect the cord, push the ring located on the connector. The red guide-mark on the right male connector must be in front of the female’s red connector guide-mark.

To remove the cord, pull on the ring located on the connector.
1. Parameters of the rotary device

To parameterize the speeds of the rotary device, go to the menu “Edit file” of the P05 program. Create a new marking file or select an existing one.

When a file is created, an empty block appears on the screen.

To access the sub-menu bar at the top of the screen, press the Context menu key on the keyboard.

To switch from one menu to another, use the Left or Right arrows. To scroll a menu, press Enter or the Down arrow. To close a menu, press the Up arrow. To return to the blocks and leave the sub-menus, press the Context menu key on the keyboard.

Select the “File” sub-menu using the arrow keys. Select “Properties”. Validate by pressing Enter.

The screen below appears:

![Image of rotary device speed menu]

Select “Rotary device speed” with the arrows. Validate by pressing Enter.
Piloting via an internal program

TAB 1:
Used to determine the movement speed of the rotary device.

The screen below appears:

Select the desired speed with the +/- keys of the numeric keypad.

TAB 2:
Used to configure the return to origin of the rotary device.

The screen below appears:

1 : Number of markings before return to origin
2 : Start/end file origin
3 : Return to origin type

Number of markings before return to origin: used to define after how many markings the rotary device returns to origin. If the 1 value is selected, the rotary device returns to origin after each marking.

Start/end file origin: used to define the moment the rotary device will return to origin in relation to the marking of a file. The origin at the end of a file is selected by default.

Return to origin type: used to choose the rotation direction of the rotary device to return to origin.

- clockwise
- counter-clockwise
- fast: shortest travel distance in relation to the current position
TAB 3:
Used to select the rotary device orientation in relation to the marking head.

The screen below appears:

Select the corresponding icon using the arrows. Everytime the Enter key is pressed, the orientation is changed.

Examples:

1 : Rotary device on the X axis - motor to the left
2 : Rotary device on the Y axis - motor at the bottom
3 : Rotary device on the X axis - motor to the left
4 : Rotary device on the Y axis - motor at the top

Select rotary device orientation corresponding to its installation.

Correctly select the rotary device position: the configuration selection directly influences the marking’s orientation on the part.
2. Programming

For circular marking, create a marking "Rotary device" type block.
For marking on a generator, create a "Rotary device" marking block in order to have the part turn on the wanted angle, then a "Linear" type block.

- Circular marking

Refer to the user manual for the P05 program.

Preparing a marking block:

1 : Type of marking
2 : Text to be marked
3 : X-Y coordinates
4 : Initial angle (degrees)
5 : Part radius (degrees)
6 : Marking force
7 : Character size

Specific fields of the rotary device:

Initial angle: used to define the reference angle of the marking on the rotary device. Depending on the alignment selected, the marking will be left or right aligned or centered in relation with this angle.

Part radius: used to adapt the marking to the type of part underway.
Piloting via an internal program

To enter the other information concerning the rotary device, go to tab 2. The screen below appears:

- Character font
- Compression
- Inclination
- Spacing
- Writing direction on the rotary device
- Alignment
- Rotary device rotation direction
- Marking direction

Specific fields of the rotary device:

**Writing direction on the rotary device**: used to determine character orientation.

### Rotary device positioned on the origin side

<table>
<thead>
<tr>
<th>Clockwise</th>
<th>Counter-clockwise</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Clockwise Image]</td>
<td>![Counter-clockwise Image]</td>
</tr>
</tbody>
</table>

![Diagram of rotary device positions]
Rotary device rotation direction: clockwise/counter-clockwise. Counter-clockwise direction selected by default.

- Marking on a generator

**Block 1: rotation of the part of 60° without marking**

**Block 2: linear marking on the generator 1**
Piloting via an internal program

Block 3: rotation of the part of 120° without marking

The rotation angles are always indicated in absolute in relation to the origin 0°.
Block 1: 60°
Block 3: 120° (60°+60°)

Block 4: linear marking on the generator 2
### Spare parts

<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>3512</td>
<td>Power board</td>
</tr>
<tr>
<td>90371</td>
<td>Set of 3 interior hard jaws</td>
</tr>
<tr>
<td>90370</td>
<td>Set of 3 exterior hard jaws</td>
</tr>
<tr>
<td>90372</td>
<td>Chuck key</td>
</tr>
<tr>
<td>25056</td>
<td>Cable: 1.5 m (4.921 ft)</td>
</tr>
<tr>
<td>25057</td>
<td>Interface plate</td>
</tr>
</tbody>
</table>
To contact the Pro-Pen Group

<table>
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<th>Country</th>
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