5.0 MAINTENANCE

5.1 CLEANING
Every cleaning operation of the safety component must be carried out with the machine turned off and carried out by personnel suitably trained for ordinary maintenance.
The cleaning of the various components must be carried out using water and neutral detergents. Do not absolutely use corrosive agents or acids. The transparent POLYCARBONATE LEXAN ® shield, is easy to clean:
- Do not absolutely dry-rub with rags or abrasive sponges. They will make the surface opaque.
- Dusty surfaces can be cleaned with warm water and then dried accurately to avoid residual lime with water that is too hard that in a later rubbing might scratch the shield.
- We recommend cleaning the safety component every time it is necessary to have a clear and sure view of the work to be performed.

5.2 SHUT-DOWN
In case it is necessary to put the safety component out of order, all the operations needed to put the machine itself out of order must be carried out as the machine IS NOT IN SAFETY.

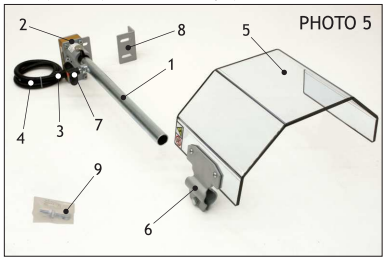
5.3 WASTE DISPOSAL
Whenever you decide not to use the safety component, the subject of the present manual, any longer because it is obsolete or irremediably faulty or worn out, put it out of order adopting the following procedures:
A) Make sure to have stopped the machine and its disconnection from the general power supply.
B) Check the absence of residual potential and kinetic power.
C) Disconnect the electric interlock cable from the machine with due precaution.
D) If useful to reduce the overall dimensions and/or make transport easier, dismantle its various parts with extreme caution.
Operate in conformity with the regulations in force in your country of use for its disposal, employing companies specialized in scrapping, recycling and disposing of electric equipment.
The components with this symbol indicated above, respond to the requisites requested by the new regulations (2002/96/CE – 2002/95/CE) introduced to protect the environment from electric and electronic equipment that have to be disposed of in an appropriate manner at the end of their life cycle.
Ask information on the matter from the local authorities in the zones dedicated to the disposal of electric and electronic waste.
By disposing of this product in the appropriate way, you contribute to avoid potential negative consequences that might result from an inadequate disposal of the product. The equipment consists of non-biodegradable parts and substances that might pollute the environment if not disposed of suitably.
In addition, parts of this material can be recycled, avoiding polluting the environment.
It is your and out duty to contribute to the health of the environment.

5.4 PACKAGE DISPOSAL
Dispose of the packaging material separating possible materials of different nature and according to the legislation in the matter in the country of use. The materials with the present symbols can be recycled because they can be recuperated and must be deposited in suitable spaces and/or containers. Obtain information from the competent body.

6.0 SPARE PARTS

6.1 TECHNICAL ASSISTANCE
Consult your Dealer, or our Technical Service directly, providing the data necessary shown on the plate on the safety guard.
- Type of safety guard - Series number - Date of purchase.

In addition, provide all the precise information concerning the problem found.



Pos.	Codice	Description - Photo 5
1	**AMU220**	Complete micro-switch box
2	**MPI-02**	Safety micro-switch - n.2 NC
3	**PG-01/10/09**	Sheath clamp PG9 - 10/13
4	**GC-01/10**	Corrugated polyamide sheath Ø 10/13 - mt. - 1,0
5	**PTR-20/... /SS**	Plastic spare shield - mod: 300 - 350
6	**AMU252**	Complete Shield-arm fixing clamp
7	**223666-C2**	Knob M10x20
8	**CMU007**	Anchorage stirrup
9	**VMU21**	Anchoring screws kit

Safety component identification label

Quality control sheet

Structure	
Shield	
Microswitch 1	
Screws kit	
Operator	
Signature	

Space for name and DEALER and/or IMPORTER SEAL

Tecno Più S.r.l. - Production Safety Devices - Via Ottorino Respighi 56/6 - 47841 - Cattolica (RN) Italy - P. I.v.a. 03657250407
Tel. 0039 (0) 541-833349 - Fax. 0039 (0) 541 830837 - http://www.tecnopiu.it - info@tecnopiu.it

Tecno Più S.r.l.
Produzione Protezioni Antinfortunistiche per macchine utensili ed automatiche

PMU 04 - Instruction Manual
PTR 20/300 - PTR 20/350

TABLE OF CONTENTS

Interlocked safety guard for radial Drill - PTR 20/...

1.0 INTRODUCTION

The interlocked Guard for radial Drill mod. **PTR 20/...** allows the operators to protect themselves against direct contact with the front part of the spindle and against the projection of a part of shavings and lubricant coolant generated during working. Equipped with a shield made of transparent plastic material, it allows to have a clear vision of the "segregated" area and the work progress. Equipped with a special safety switch for intercepting the closing position, which, suitably connected electrically (Par. 4.4 electric connection of the safety interlock to the machine) enables to start the spindle motor, only in the maximum closing position of the guard.

1.1 TERMINOLOGY
- Identification plate; the **PTR 20/...** code identifies the interlocked safety guard, therefore:
  - P = Guard
  - TR = Radial Drills
  - 20 = Sub-category of belonging
  - ... = Shield dimension abbreviating (base x height)
- Safety component: **Interlocked safety guard for radial Drill - EN 12717**

1.2 PURPOSE AND CONTENTS
The aim of this manual is not simply to provide instructions for the functioning of the safety component but mainly to guarantee that the work of the operators can be carried out under the highest safety conditions possible. It includes information concerning the technical aspect, functioning, maintenance, spare parts, disposal and proper use of the safety components.
The instructions for use: Are an integral part of the safety component - An indispensable document for the proper use and safety of the product - Must always be available for immediate consultation. Before carrying out any operation on the machine, the operators and qualified technicians must carefully read the instructions contained in the present publication.
No part of the documentation may be duplicated, reproduced or transmitted in any form or by any electronic, mechanical or photographic means without explicit permission of the constructor. In case of doubt about the correct interpretation of the instructions, refer to the Constructor to obtain the necessary clarifications.
The constructor provides this manual with the purpose of giving all the information and instructions necessary for the proper use of the safety component.
All the operations that require assembly or disassembly of parts must be assigned to authorized technical personnel.
OBSERVE THE ACCIDENT PREVENTION REGULATIONS AND THE RULES OF SAFETY AND WORK MEDICINE IN FORCE IN THE COUNTRY OF USE OF THE MACHINE.

1.3 LIMITS AND RESPONSIBILITIES
Any operation NOT explicitly described or NOT explicitly permitted by this manual is strictly forbidden - No responsibility can be attributed, whether civil, penal or any other type, to the constructor in the case of accident occurring in the presence and not necessarily " in consequence" in the case of violation of one or more (none excluded) of the instructions of this operation manual - In addition, responsibility for the above violations of this equipment is explicitly and irrevocably recognized to whoever consequently gives it in use to others - Whoever acquires and /or receives this equipment in use without recognizing the validity of the previous clause must immediately cease the use of such equipment, otherwise the two previous clauses must be considered explicitly and irrevocably accepted with the simple start and use of the equipment.
Read carefully and understand well all the instructions before use. In case of doubt, contact the constructor.

1.4 RECIPIENTS
Recipient of the present manual is the personnel assigned to work on the machine, who, other than being professionally prepared in his occupation, must read the manuals paying particular attention to the safety regulations and the paragraphs relevant to his competence.

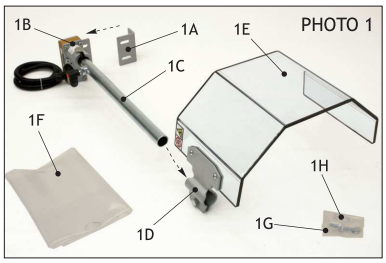
1.5 CONSERVATION
The instructions Manual must be kept in the vicinity of the Machine, and, above all, protected from liquids and anything else that might reduce its legibility.

2.0 GENERAL INFORMATION

2.1 CONSTRUCTOR'S DATA
FOR ANY REQUEST AND/OR INFORMATION APPLY TO:
TECNO PIÙ S.R.L. - Via O. Respighi 56/6 - 47841 Cattolica (RN) Italy - Tel. +39 0541 833349 - Fax +39 0541 830837 - info@tecnopiu.it - www.tecnopiu.it

2.2 GUARANTEE
The present Conventional Guarantee offered by the producer is fully valid during the course of the period indicated below, exclusively with respect to the provisions:
- For the duration of 12 (twelve) months coming into effect from the product receipt date; coming into effect from the date shown on the relevant Delivery Stamp, except for a different definition of the sales contract with the purchaser. - The Guarantee includes exclusively the parts substituted, excluding the work force. - Are not comprised in the Guarantee, the components subject to unavoidable usury due to the normal service, (like an example the plastic shields). - Damage to the safety components caused by the following are not included in the Guarantee: Transport and/or movement - Operator Errors - Incorrect connection to the electric plant of the machine - Lack of maintenance envisaged by the Manual - Faults and/or breakages of the machine not attributable to its malfunction.

2.3 ARRANGEMENTS
Costs such as the intervention for arranging the safety component on the machine are at the expense of the Customer: Arrangement of the attachment/support on the machine - Electric Supply of the Machine, in conformity with the Regulations in force in the Country of use - For installation, an adequate area of maneuver around the machine is required for the needs requested by the operation to be performed.



3.0 DESCRIPTION OF THE SAFETY COMPONENT

3.1 CHOOSING THE SAFETY COMPONENT

The safety component **PTR 20/...** is available with various size shield, **PHOTO 2**.
Select the correct size, according to the characteristics and dimensions of the machine:
- First check the general dimensions of the machine, considering that, on a generous size machine, it is possible to work both small and big pieces, therefore the component must be chosen considering the highest potential of the machine, and in relation to the type of working that the machinery must be equipped for.
- Opt for the most suitable guard size, considering a safety distance to be kept between the protection shield and the spindle, including the tool being used and any shavings which might be dragged during working.

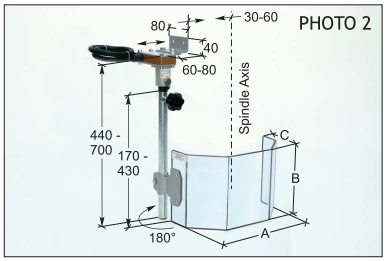
3.2 CONDITION OF SUPPLY

PHOTO 1 - Regardless of the quantity of safety components purchased, the general package is in any case in the form of one or more robust cardboard boxes, containing the various single packages, well protected from each other with suitable material (cardboard and expanded polystyrene plugs).
The safety device **PTR 20/...** is supplied pre-assembled in some groups, contained in appropriate polyethylene cases **1F**, the assembly screws are contained in a small case **1G**.
All the packages are marked with an external identification label **1H**, bearing the data of the article purchased and with relevant progressive numbering; the same label is also on the back of this user manual.

3.3 TECHNICAL INFORMATION

Characteristics	Unit of measurem.	Values
Level of protection	Accord. to IEC/EN 60529	IP 67
Working temperature	°C	- 5°C + 45°C
Electric safety switch characteristics		
Mechanical duration of safety switch with suitable greasing of the piston head	Cycles of maneuver	1 Million
Type of electric contacts	Nr	2 NC
Nominal insulation voltage	Ui	400V
Short circuit protection	gG type fuse	10A
Interrupted current (nominal capacity contacts)	Category of use: DC13 AC15	24V - 2A - 125V - 0,4A 250V - 0,3A 24V-4A / 120-250V-4A 400V - 3A
Characteristics of the transparent Shield		
Thickness used	MM.	6
Module strength	DIN 53457 N/mm²	2500
Ultimate tensile strength	DIN 53455 N/mm²	> 70
Bending strength	DIN 53452 N/mm²	100

3.4 WEIGHTS AND DIMENSIONS



Code	A	B	C		Weight Kg
PTR 20/300	300	200	150		4,1
PTR 20/350	350	240	175		4,4

DECLARATION OF CONFORMITY CE

Second Attachment IIC of 2006/42/EC

The manufacturer: **Tecno Più S.r.l.**
Via O. Respighi 56/6 – 47841 – Cattolica (RN) Italy

DECLARES ON HIS OWN AND EXCLUSIVE RESPONSIBILITY
That the safety components that do not enter into attachment Iv of 2006/42/EC put onto the market separately and identified as:

Type: **PTR 20/300 - PTR 20/350**
Safety function performed : Interlocked Safety Guard for radial Drill
Year of construction: 2013

Are in conformity with what is envisaged by the inherent Community directives:
- **2006/42/EC** relative to machines
- **2006/95/EC** relative to safety of the electric material

And have been, in addition, respected as far as the following harmonized regulations are applicable:

- **UNI EN 1088:2008:** Safety of the machinery - Interlocking devices associated with safety guards – Principles of design and choice.
- **UNI EN 953:2009:** Safety of the machinery - safety guards - General Requisites for the design and construction of fixed and mobile safety guards.
- **CEI EN 60947-5-1** e **IEC 947-5-1:** Low voltage equipment. Devices for control circuits and maneuver elements - Electromechanical devices for control circuits.
- **CEI EN 60204-1:** Safety of the machinery. Electric equipment of the machines. Part 1: General rules.

Date: Cattolica

Tecno Più S.r.l.
The legal representative

Signature... *Laureti Stefano*

3.5 SHIELD MATERIAL

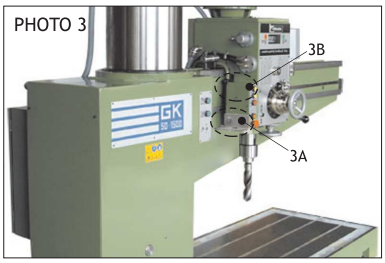
LEXAN® POLYCARBONATE: it is a compact POLYCARBONATE plate (PC), transparent and colourless, highly impact and bending-proof and quite abrasion-proof, mechanical characteristics that make this material ideal to be used as protection shield against accidental impacts.
LEXAN® POLYCARBONATE has therefore an actual resistance higher than any other similar plastic material:
- in transportation and handling.
- in all working phases.
- in assembly.
- in the final use.

LEXAN® POLYCARBONATE includes the positive characteristics of many plastic materials, but its mechanical characteristics can be impaired when coming into contact with certain chemical products, such as common solvents, highly alkaline products and certain lubricant-coolants, and anyway with all the substances which contain typically aggressive agents against the PC.

3.6 REFERENCE DIRECTIVES AND REGULATIONS

The protection device has been created in conformity with Community directives and European harmonizing regulations pertaining to machines and in particular:

4.0 INSTALLATION

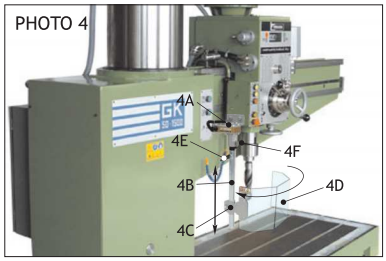


4.1 ASSEMBLING THE SAFETY COMPONENT

1 - **PHOTO 1** - The safety component is simply assembled by joining the three groups, using the nuts and bolts supplied.
Assemble the shield **1E**, inserting its clamp **1D** through the telescopic rod **1C**.
2 - then install the angular anchor stirrup **1A** on the body of the micro-switch box **1B**.
Note: The **PTR 20/...** series guards are assembled by the company in the standard configuration for the installation on the left side of the machine, as in the case of most radial Drills. If necessary, it is possible to reverse the guard assembly side, from left to right, by simply intervening on the reversibility of the components forming the microswitch box **1B**.

4.2 ANCHORING THE SAFETY COMPONENT

3 - **PHOTO 3** - Bring the complete component near the anchor area, putting the angular anchor stirrup **3A** to contact with the head of the machine, identify the most suitable position, so that it does not interfere with the controls of the machine and the normal working maneuvers - it must further allow: A safe drilling-threading of the base, preventing any damage to the internal parts, (gearbox, spindle tube, etc.) - A sufficient travel of the shield-rod group without any limitation and interferences - A satisfactory horizontal "centring" with the spindle axis.
4 - For a final identification of the ideal anchor point, further consider that: the presence of any interferences between the guard and small parts or irregularities of the base can be prevented with the help of an adjustment plate (not supplied).
5 - Once the ideal position has been identified, "mark" the two holes present on the angular anchor stirrup **3A**, using a common marking-off tool.
With a suitable drill, make two Ø 6.7 holes to be threaded M8 and deep enough for the length of the screws supplied - n. 2 TE 8x20.



4.3 ADJUSTING THE SAFETY COMPONENT

6 - **PHOTO 4** - Once the guard has been anchored to the machine, proceed with the horizontal adjustment present on the slotted anchor stirrup **4A**, so that the shield middle is on the spindle axis.
7 - Proceed with the vertical adjustment of the shield, in relation to the work field to be segregated.
Note: In order to prevent eventual interferences, due to the working in progress, and to have an sufficient shield excursion to the spindle travel, are available two different adjustment ways:
A = Adjust the shield **4D** on its support telescopic rod **4B**, through the clamp **4C**.
B = Adjust the shield + telescopic rod group **4D**+**4B**, through the internal hub of microswitch box **4A**, act on the knob **4E**.
8 - To prevent the shield from opening spontaneously during working, act on the "friction" register **4F**.
Note: The protection shield **4D** is made of shock proof plastic material, it can be suitably shaped, for any interferences with the equipment present in its field of action (e.g. piece locking vice).

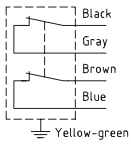
4.4 ELECTRIC CONNECTION OF THE SAFETY INTERLOCK TO THE MACHINE

The electric connection of the safety interlock to the machine requires the intervention of skilled and authorized personnel, familiar with the main safety machinery standards.
- Make sure that the machine is preset for interfacing the safety consents envisaged; consult (if present) the instruction manual supplied by the original constructor of the machine.
- The **PTR 20/...** series guards are provided with a safety switch, equipped with n.2 NC contacts (normally closed) as per norm EN 60947-5-1, and they have an electric pre-wired wire, protected by special sheath.
- The electric wires coming from the guard must be connected to the safety circuit of the machine which cuts off the control on the movement of the spindle.
- The protection sheath of the electric wire must be kept for its whole length, up to the wire input into the electric board of the machine.
- Protection from short-circuit of the electric interlock must be must be guaranteed by an anti-overcurrent device, as shown in sheet 3.3 **TECHNICAL INFORMATION.**

The devices are thus ready to be connected to a control and safety circuit with "expected architecture" of cat.3 pursuant to EN ISO 13849-1.
The closure of the interlocked guard **must not restart the spindle rotation, this must be started manually through a control provided for this purpose.**

ELECTRIC CIRCUIT

Microswitch with n.2 NC contacts



4.5 VERIFYING THE OPERATION

Once the mechanical assembly of the guard and its electric connection to the safety circuit of the machine have been completed, it is necessary to check the proper operation of the whole, as follows:
1 - It must be only possible to operate the spindle motor with the guard in closing position, therefore like represented in **PHOTO 4**.
2 - On the contrary, when opening the guard, the spindle motor must stop immediately and its restart must necessarily require a sequence of guard repositioning and motor start through voluntary maneuver, by special control provided for this purpose.