

## Operating Instruction Booklet

- Translation of the original instructions -

### Pneumatic Drilling Machine

PV16BN

6060836A



#### **NOTICE ALL DOCUMENTATIONS !**

Before beginning work this operating instruction booklet has to be read through carefully. Always follow the instructions during operation.

Give this operating instruction booklet to the operator.

# Contents

<b>1</b>	<b>IMPORTANT NOTES</b>	<b>4</b>
<b>2</b>	<b>SAFETY INSTRUCTIONS</b>	<b>5</b>
2.1	General safety instructions for standard operation (outside Ex-area)	5
2.2	Safety Instructions for Air Drills	6
2.3	Additional Safety Instructions for Usage in Ex-area	7
2.4	Owner Obligation	8
2.5	Operator Obligation	8
2.6	Warranty and Liability	8
<b>3</b>	<b>INTENDED USE</b>	<b>9</b>
<b>4</b>	<b>DELIVERY CAPACITY</b>	<b>9</b>
4.1	Model number description, tag description	9
4.2	Nomenclature	10
<b>5</b>	<b>ASSEMBLY INSTRUCTIONS</b>	<b>11</b>
5.1	Prior to Installation	11
5.2	Pre-Installation	11
5.3	Operating Pressure and Temperature Range	11
5.4	Usage in an Ex- area	12
5.5	Pneumatic Installation	13
5.6	Air Quality	14
<b>6</b>	<b>OPERATION</b>	<b>15</b>
6.1	Check Lists	15
6.2	Air Drill Operation	16
6.3	Measure Surface Temperature (if drill is used in an Ex-area)	16
<b>7</b>	<b>HANDLING</b>	<b>18</b>
7.1	Optional equipment	18
7.2	Clamp Inserting Tool and Change Drill Chuck	18
7.3	Connection	18
<b>8</b>	<b>MAINTENANCE AND UPKEEP</b>	<b>19</b>
8.1	Wear parts	20
<b>9</b>	<b>DISASSEMBLY – ASSEMBLY</b>	<b>20</b>
9.1	Spare Parts Drawing	21
9.2	Dimensional Drawing	24
<b>10</b>	<b>SHUT DOWN AND STORAGE</b>	<b>25</b>
<b>11</b>	<b>TROUBLESHOOTING</b>	<b>25</b>
<b>12</b>	<b>DISPOSAL</b>	<b>26</b>

<b>13</b>	<b>TECHNICAL DATA .....</b>	<b>27</b>
<b>14</b>	<b>EU-DECLARATION OF CONFORMITY .....</b>	<b>28</b>
<b>15</b>	<b>EC-DECLARATION OF CONFORMITY .....</b>	<b>29</b>
<b>16</b>	<b>SERVICE LOCATIONS AND AUTHORIZED PARTNERS .....</b>	<b>30</b>

## **List of illustrations**

Illustration 1 – Diagram of the drill PV16BN.....	14
Illustration 2 – Areas with the highest measuring temperature .....	17

# 1 Important Notes

**The safety and warning instructions contained should invariably be followed!**

The signal words and symbols used in the technical documentation (safety instructions, operating instruction booklet, etc.) have the following meaning:



## DANGER

Indicates an **immediate danger** which causes serious injuries or even death if not avoided.



## WARNING

Indicates a **threatening danger** which can cause serious injuries or even death if not avoided.



## CAUTION

Indicates a **danger or unsafe procedure** which can cause injuries to a person or material damages if not avoided.



## NOTICE

Indicates a **potentially dangerous situation** which can cause damage to the product or its surroundings if not avoided.



## IMPORTANT

Indicates tips and other useful information.



**Important instructions relating to explosion protection.**

**Definition** Potentially explosive atmosphere (hereinafter referred to as „**Ex-area**“)

=An atmosphere which could become explosive due to local and operational conditions.



The observance of the operating instructions is the precondition for an error free operation and the fulfillment of warranty claims. Therefore, please read the operating instruction booklet prior to working with the air machine!

The operating instruction booklet contains important tips for service and should therefore be kept in the vicinity of the machine.

In each case the symbol used does not replace the safety text. The text must always be read fully. In some cases other symbols will be used with the signal words.

## 2 Safety instructions

### 2.1 General safety instructions for standard operation (outside Ex-area)

#### *Introduction*



Prior to operating the drill, make sure to carefully read this operating instruction booklet (short OP).

**Please pay attention to the additional safety instructions in the individual chapters of this OP.**

There are moving parts and maybe hot surfaces, during and after operating this air-tool.

Assembly / installation, connection, operation as well as maintenance and repair work may only be performed by DEPRAG or qualified persons / technical experts.

**Injury and damage to property may occur due to inaccurate installation and operation or non-designated use.**

#### *Dealing with Compressed Air*

- Always wear safety goggles.
- Do not move into the stream of the compressed air.
- Operate the tool with compressed air only. Do not operate this tool using other gases or liquids.
- Do not operate the tool at higher pressure than specified. Make sure to supply compressed-air having the specified quality.

## 2.2 Safety Instructions for Air Drills

See also safety instruction booklet no. 016000 (pink-colored).



### WARNING

#### **Serious injuries or even death possible!**

Disconnect machine from air/power supply before changing or mounting the inserted tool or accessory.



### WARNING

#### **Breakage of the inserted tool can cause serious injuries.**

Check that the maximum operating speed of the inserted tool is greater than the speed marked on the machine's type plate.

Do not exceed the maximum operating speed.



### CAUTION

#### **Sharp drill edges or filings can damage hands and cause cuts or rips.**

Wear close fitting and suitable gloves to protect hands.



### CAUTION

#### **Injuries to fingers and hands by entangling.**

When wearing gloves (e.g. rubber coated or metal reinforced) make sure that they not become entangled.

Keep hands away from rotating chuck and drill bit.



Always wear impact-resistant safety goggles (according to EN 166 Grade B).

We recommend wearing close fitting and suitable safety gloves (according to EN 388 category 2) and protective clothing.

- Use only approved inserting tools.
- Prior to operating tool, make sure that collet/drill chuck and drill bit is securely installed.
- Prior to operating tool, remove key from chuck (if applicable).
- If the machine locks-up, an increased reaction torque occurs. Reason for lock-up: Tool operates over capacity; jamming of the drill bit in material or when drill bit breaks through the material.
- Do not allow the drill bit to rattle on the work-piece as this is likely to cause a substantial increase in vibration.
- Reduce down pressure, shortly before bit breaks through the material to be drilled (on thin work-pieces there is a danger that the drill may catch and pull the work-piece upwards).
- After turning-off the machine, the tool will continue to rotate (inertia). Lay aside handheld machines in a safe way and position and wait for standstill. Do not apply pressure to its surface.
- The drill may only be used for manual operations. Do not use any additional clamping fixtures.
- Treat all rotating parts with extreme care.

## 2.3 Additional Safety Instructions for Usage in Ex-area



**Explosive gas atmospheres may cause grave or fatal injury when coming in contact with hot or movable parts in the air drill.**

Assembly / installation, connection, operation as well as maintenance and repair work may only be performed by DEPRAG or qualified persons /technical experts and if the following items are observed:

- read OP
- all warning and alert messages attached to the air drill
- all other or the operation pertinent documentation, such as project documents, operating instructions and control diagrams
- all machine specific regulations and requirements
- the most current and valid national/regional regulations (explosion protection, safety, accident prevention)

Air drill is used in accordance with the instructions of the technical documentation, while observing the information inscribed on the tag. It corresponds to valid standards and regulations and fulfills the requirements per guideline ATEX 2014/34/EU (government ordinance of the Czech Republic No. 176/2008 Sb.), ISO 8000-36 and ISO8000-37.




These air drill may be used in below ground and above-ground mining operations, where pit gas and/or flammable dust occur (group I M2 or Group I Mb). Air drills may be used in areas where occasionally explosive atmospheres occur, which may be a combination of air and gas or steam and fog of flammable fluid mixture. Group II, category 2 G or IIB Gb (Zone 1 and Zone 2).



Below are safety related tips which should be followed during installation, operation and maintenance of the drill:

- Use the drill only if the material and used lubrication liquids are resistant to mechanical- or chemical reactions or to rust, so that the explosion-protection remains valid.
- Exchangeable tools have to be coordinated with each other.
- The air drill has to be grounded (for example by conductive air-supply lines).
- The drill needs to be cleaned on a regular basis to keep the dust deposit to no more than 5 mm, if the drill is operated in an EX-area (mining).
- If the drill is used in a mining operation, always follow all current national mining regulations.
- Additional safety tips of the manufacturer in regards to compressed air generation and air quality have to be observed.



**Air drills without engraved -Symbol are not designed for the use in Ex-areas.**

## 2.4 Owner Obligation

The owner is obliged to only let persons operate the equipment, who:

- are familiar with basic work environment safety rules and accident-preventing regulations. Also, those persons must have been instructed in the correct use of the equipment.
- have read and understood all safety and warning notifications in the operating instruction booklet, as well as all other documentation pertaining to this equipment.
- check and confirm at regular intervals, that a safety oriented operation is guaranteed.

Only qualified and authorized personnel are allowed to operate, maintain and repair this equipment. A malfunction, which impairs operator safety, must be immediately removed.

## 2.5 Operator Obligation

Personnel, who is engaged in the operation of the equipment, must always be committed to:

- observe the basic safety and accident preventing regulations
- read and observe the safety and warning notifications of this operating instruction booklet.

## 2.6 Warranty and Liability

Unless otherwise specified, our „General Sales and Delivery Conditions“ apply [www.deprag.cz](http://www.deprag.cz). Warranty and liability claims in regards to persons or equipment damage are invalid if one or several of the following causes apply:

- Use of the equipment in a non-designated application.
- Improper installation, operation, service or maintenance of the machine.
- Operation of the machine with either defective or removed safety and protection devices.
- Non-observance of the requirements stated in the operating instruction booklet, in regards to transportation, storage, mounting, installation, operation, maintenance and service of the equipment.
- Structural change or adjustment on the equipment to a non-designated use.
- Inadequate supervision of wear parts.
- Improper repair, inspection or maintenance.
- Catastrophic cases because of a war, acts of god or other reasons which are beyond our control.



### 3 Intended Use

This drill is designed for the manual drilling with drills into the steel, wood and plastic. This product is suitable to use in potentially explosive environment, with regards to the restrictions set by the manufacturer.

The tools' technical data, as well all pertinent conditions for its use, can be found in this operating instruction booklet.

**Deviations from these requirements are not allowed!**

### 4 Delivery Capacity






Check that the shipment is complete and that there have been no damages in transit.

Quantity	Name	Order No.
1	Operating instruction booklet	015157
1	Drilling Machine	6060836A
1	Press bolt	830717
1	Allen key 5	800448
1	Depth stop	6072204

#### 4.1 Model number description, tag description

Type key (example)	Type plate – engraved (example)	
<b>PV 16 B N</b> 	<b>DEPRAG</b>	Manufacturer
	<b>PV16BN</b>	Type
	<b>19/.....</b>	Mfg. Year/ Serial No.
	<b>max. 6,3 bar</b>	Operating Pressure
	<b>I M2 Ex h I Mb X</b> <b>II 2 G Ex h IIB T6 Gb X</b> 	Explosion Protection Characteristics

## 4.2 Nomenclature

<i>Example:</i>   I M2 Ex h I Mb X II 2G Ex h IIB T6 Gb X	
	<b>Communauté Européenne = European Community</b> This symbol documents the declaration of the manufacturer that the required guidelines – as stated in the Declaration of Conformity – are observed and its provisions are followed.
	Identification of device suitable for standard use in potentially explosive atmospheres.
I	Equipment Group - equipment is suited for use in mines with occurrence of methane. If an explosive atmosphere occurs, turn this equipment off.
M2	Tools of this category are suited for the use in below-ground- and above-ground mining, where methane-gas or flammable dust may occur. If an explosive atmosphere occurs, turn this tool off
Ex	Denotation of the equipment for which the effective initiation sources have been treated according to requirements of the prescribed equipment protection level (EPL)
h	Safety structural protection according to ISO 80079-37, 36
Mb	Equipment is suited for use in in potentially explosive atmospheres - mines with occurrence of the methane group I EPL Mb. If an explosive atmosphere occurs, turn this tool off.
X	„Observe special requirements“ In the operating instruction booklet marked with the symbol 
II	Equipment Group – equipment is suited for use in areas where an explosive atmosphere other than mines with occurrence of methane. If an explosive atmosphere occurs, turn this tool off.
2	Tool of this category is suited for above-ground use in which explosive atmosphere may contain a significant amount of flammable gases and / or dusts other than methane or coal dust. If an explosive atmosphere occurs, turn this tool off.
G	This tool is suited for above-ground use in which explosive atmosphere may contain a significant amount of flammable gases other than methane. If an explosive atmosphere occurs, turn this tool off.
IIB	Equipment Group – equipment is suited for use in areas where an explosive atmosphere other than mines with occurrence of methane. If an explosive atmosphere occurs, turn this tool off.
T6	<b>Temperature Class:</b> T6 = 85°C. Max. permissible surface temperature according to ISO 80079-36. A tool with the temperature class T6 may not exceed a maximum surface temperature of 85°C; there is a safety margin of 5 °K. Therefore, the operating temperature of the drill should not exceed 80°C.
Gb	The denotation of an explosive mixture group. An explosive mixture consists of a mixture of gas, vapor or mist with air. The device is intended for operation in zone 1. The possible duration of an explosive atmosphere in zone 1 is generally up 10 to 1000 hours per year.



The safety level of a complete assembly group is determined by the lowest Ex-classification of this components.

## 5 Assembly Instructions



### WARNING

**Air under pressure can cause severe injury.**

Disconnect tool from the air / power supply prior the assembly, installation and maintenance work.



**Perform all assembly, installation, maintenance and repair work outside of the Ex-area.**

### 5.1 Before you Start

**Use this drill only when:**



- the details of the drill tag correspond with the details of the potentially explosive atmosphere of use (tool group, category, Ex-area, temperature class, maximum surface temperature)
- the drill is undamaged
- it was verified that no explosive atmospheres, oils, acids, gases, steams or radiation, occurred during installation.

### 5.2 Preliminary Work

Drive shafts and flange areas should always be free from anticorrosive solvents, dirt or other agents. Solvents should not be allowed to penetrate the gear seal ring – this may cause material damage!



To avoid a swelling of the seal rings and damage to internal parts of the drill, use only solvents approved by DEPRAG (such as HAKU 1025-810-1 cold cleaner).  
Seal material: NBR / FKM

### 5.3 Operating Pressure and Temperature Range

**Operating Pressure** Maximum operating pressure: 6.3 bar / 90 PSI

**Temperature Range**

permissible ambient temperature at standard operating (outside Ex-area):

-20°C to +60°C

**permissible ambient temperature for use in Ex-area:**

-20°C to +40°C



**Compressed Air Temperature**

The temperature of the compressed air used may not exceed the permissible ambient temperature requirements.



**If ambient temperatures are different, please contact DEPRAG!**

## 5.4 Usage in an Ex- area

Always follow the safety instructions while usage the air-drill in an EX-area!

### **Grounding**

The air drill must be grounded, for example by using

- an air-supply line made of metal or
- an electrically conductive hose.

The resistance between drill and ground has to be measured (requirement:  $\leq 10^6 \Omega$ ).



**Only use drive attachments that correspond to guideline ATEX 2014/34/EU, ISO 8000-36 and ISO 8000-37.**

The explosion-proof air drills correspond to the design requirements of the design group I M2 and II category 2 G, or IIB Gb. Those drills are suited for the installation into Zone 1 and Zone 2.

### **Temperature Class**

You can find the temperature class that is permitted for the air motor on the model tag (Ex-Protection-Marking).

### **Protection Class**

All air drills must correspond – for a minimum – with the standard EN 60529 of the protection class IP 54. They are designed for the used in dusty or damp environments.

### **Ambient Conditions**

Make sure that the drill is sufficiently ventilated and that there is no additional warming source (i.e. such as a clutch, inserted tools).

### **Connection**



Open inlet- and exhaust ports are not permissible. Those type of ports have to be closed, using either a fireproof filter or hosing. If only hosing is connected to any of the open ports (without the use of a fireproof filter), then that hosing has to be piped out of the explosive area. Only used hoses or piping suitable for explosion-hazardous areas for connecting the drill.

The possible entry of any solid particles into the compressed air inlet must be prevented!



- The design of the drill is complete steel based on the requirements it is used to work in the explosion dangerous environment.
- It is imperative to use only pressure hoses that correspond with the NORM EN 1127-1 and EN 1127-2 par. 6.4.7, EN 13463-1 par. 4.7 (idt CLC/TR 50404:2003), ISO 80079-36 and ISO 80079-37 when used in the classification-areas I and II.

## 5.5 Pneumatic Installation

This pneumatic machine may be operated with lubricated air. The best performance is achieved by adding 1 - 2 drops oil per 1 m<sup>3</sup> of air consumption.

### **Prior to connection of drill**

Before connecting the air supply line to the drill, clean the air pipe and the air hose by slightly blowing air into the pipe/hose. This will remove any dirt particles that are present in the pipe/hose.

**Always wear safety goggles, tightly hold the pipe/hose and do not move into the air stream.**

Remove the covers from the connections.

Turn the air-supply to „OFF“.

### **Air supply line**

Make sure that all air lines have a sufficient cross-section (→ “*Technical Data*”) and that there are no throttle areas, bends or kinks. If the air supply line is longer than 2 meters, then next larger hose I.D. should be installed in order to avoid a loss of power. Note: the maximum length of hose is 5-meters.

The air-supply for the drill needs to be filtered (see chapter 5.6).

Do not use any Teflon tape on the threads of the pipe.

### **Operating Pressure**

Check and make sure that the flow-pressure at the drill connection side is 6.3 bar (90 PSI). A higher air pressure leads to increased wear and tear (install a pressure regulator). A lower pressure reduces the power output of the drill.

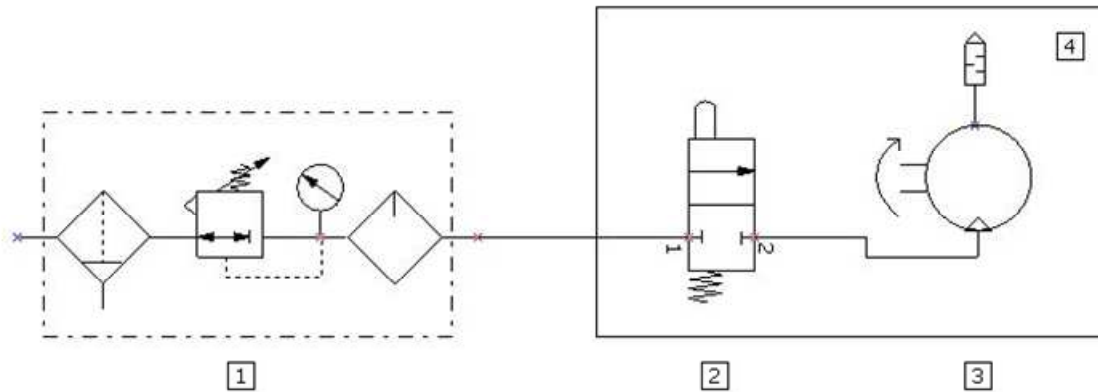
The maintenance unit, the valves and the silencers have to be selected according to the air consumption of the machine. Install components, which have a measurement that will limit the pressure drop – when measured from the maintenance unit to the machine – to less than 0.5 bar (7.25 PSI).

### **Lubrication**

Fill the oil container of the oiler to the indicated oil level. Used only lubricant DEPRAGOL INDUSTRIAL 6074291(1 liter).



The maintenance unit must be suitable for use in potentially explosive environment.



- 1. Maintenance unit
- 2. On-valve
- 3. Drill PV16BN
- 4. Silencer

**Illustration 1 – Diagram of the drill PV16BN**

### 5.6 Air Quality

With regard to air quality according to ISO 8573-1:2010 we recommend:

	Class	Residual Dust		Residual Water		Residual Oil
		particle size $\mu\text{m}$	max. concentration $\text{mg}/\text{m}^3$	max. concentration $\text{g}/\text{m}^3$	pressure dew-point $^{\circ}\text{C}$	content $\text{mg}/\text{m}^3$
Lubricated air	-/4/4	25	10	6	+3	5

## 6 Operation

### 6.1 Check Lists

This check list shows all activities, which have to be performed **prior to the use** of the air drill in an Ex-area (according to the guideline ATEX 2014/34/EU, ISO 8000-36, 37).

Test prior to use of drill in Ex-area	Checked	Reference chapter
Do the following specifications of the tag on the drill agree with the required specifications of the Ex-area?: <ul style="list-style-type: none"> <li>• Tool group</li> <li>• Tool category</li> <li>• Ex-area</li> <li>• Temperature class</li> <li>• Maximum surface temperature</li> </ul>		4.1 4.2
Has it been confirmed that during the installation of the drill there were no explosive atmospheres, such as oil, acid, gas, steam or radiation?		5.1
Is the ambient temperature in accordance with requirements?		4.1
Has it been certified that the air-drill is sufficiently ventilated and that there is no additional warming source?		5.4
Is a formal EC-Declaration of conformity in accordance with the guideline ATEX 2014/34EU for all drive-elements present?		5.4
Is the drill grounded?		5.4

This check list shows all activities, which have to be performed **during the use** of the air drill in an explosive hazardous area according, to the guideline ATEX 2014/34/EU, ISO 8000-36 and DIN EN ISO 8000-37.

Test performed during to use of drill in Ex-area	Checked	Reference chapter
After approximately 1.5 hours of operation, measure and record the surface temperature. The max. permissible temperature of the surface may not be exceeded. When the measured temperature of the surface $T_{max}$ is exceeded, then the gear must be stopped immediately and you must contact DEPRAG!		6.3

## 6.2 Air Drill Operation



**Make sure that all air supply parts are correctly connected, prior to operating the tool.**

**Do not step into the air stream.**

Turn the air-supply to „ON“.

If necessary, adjust the air-pressure or the flow-pressure to achieve the required speed or torque.

Adjust the oiler as described in chapter 5.6.

## 6.3 Measure Surface Temperature (if drill is used in an Ex-area)



**The details of the maximum allowable surface temperature as shown on the drill tag are based on measurements under normal environmental- and installation conditions. Small changes to those conditions (such as a constructed installation area) will considerably effect the temperature development!**

### **Measure Surface Temperature**

It is very important to measure the surface temperature of the drill during operation. Measurement can be done using conventional temperature measuring instruments.

The surface temperature should be taken on the marked measuring points „M1“, „M2“, „M3“ and „M4“ (see illustration 2).

The maximum allowable surface temperature is reached after approx.. 1.5 hours of operation.

The maximum temperature may not exceed

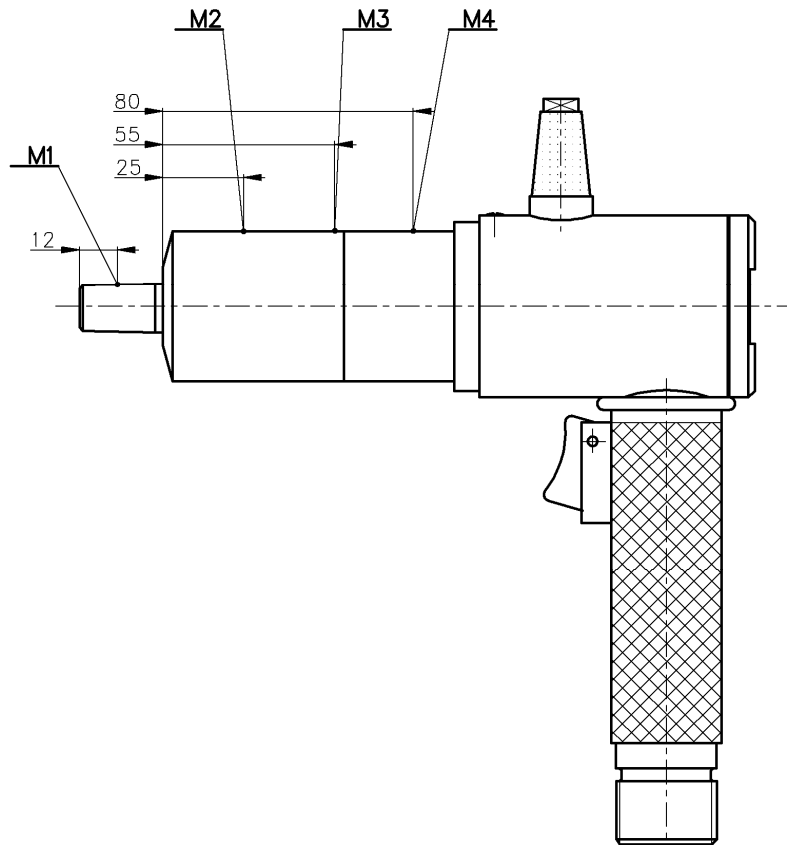
- 40°C for group II category 2G, IIB Gb
- 110°C for group I M2, I Mb

Ambient temperature in the Ex-area:  
-20°C to +40°C.



**If the surface temperature exceeds this mandate. The drill must be stopped immediately and you will need to contact DEPRAG right away.**





***Illustration 2 – Areas with the highest measuring temperature***

## 7 Handling

Use the machine only while observing all safety and maintenance instructions.

The drill starts by trigger.

### 7.1 Optional equipment

Name	Part No.
Press bolt	6071900
Drill chuck MK1	830726
Drill chuck MK2	830727

More equipment such as pressure hoses and connection components etc → catalog D3340 or request.

All catalogs are available for download from our web site: [www.deprag.com](http://www.deprag.com)

### 7.2 Clamp Inserting Tool and Change Drill Chuck

Use only with drill chucks recommended by the producer.

Make sure the surface is clean and grease free.

#### Clamp inserting tool:

- Disconnect the drill machine from the air supply.
- Insert the drill bit into the drill chuck and tighten it by means of the supplied drill chuck key.
- Remove the drill chuck key.
- Check that the tool is secure before start up.

#### Change drill chuck:

- Disconnect the drill machine from the air supply.
- Press out Drill chuck using press bolt 830717. Reduction Sleeve Mk1 and Mk2 press out using press bolt 6071900.

### 7.3 Connection

- Connect the hose (width 10 mm) with the hose nozzle 6013802 or with the nipple 315071 to the drilling machine. Secure the pressure-hose with the hose-clamp in such a way, that the connection is always secure, even during operation at the highest allowable air-pressure.
- Open the shut-off cock for the air supply (operating pressure 6.3 bar). The flow pressure may not be under 5 bar– minimum power!

## 8 Maintenance and Upkeep

The first maintenance should be performed after 500 operating hours. Thereafter, we recommend adjusting the maintenance intervals in accordance with the general usage- and wear conditions of the drill, as well as the condition of the fabrication area.

The air drill should be regularly checked in regards to excessive noise and/or if the gears show an increased play.

### **Maintenance unit**

- Regularly clean filter of the maintenance unit
- Drain water condensation
- Regularly check the oil-level in the oiler and refill the oiler as needed.

### **Lubrication**

The bearings have to be sufficiently greased.

**Use only lubricants approved by the manufacturer.**

### **Bearing Exchange**

To assure a continued low surface temperature if drill is used in an EX-area, replace the bearings after 8.000 operating hours.



### **Worn Vanes**

Our experience has shown that the vanes (in a complete set) have to be replaced after maximum 1000 operating hours. This interval may be longer or shorter depending on the air quality and the fabrication conditions.



### **Loss of Power**

If the drill does no longer operate efficiently, the reason may be that the vanes are clogged in the rotor-slots. This clogging is caused by the resin residue in the oil which hinders the smooth gliding of the vanes. In such a case, it is recommended to clean the drills' motor.

### **Seals**

An insufficient seal can cause a loss of power.



If the drill is maintained on a regular basis, then the wear and tear on the movable parts is minimal. The wear mainly depends on the air pressure and the lubrication.

We recommend sending a failed air drill to us for repair. We have all the necessary special repair tools for the disassembly, original spare parts and the trained repair specialists that can adjust the drill to the correct gap play. The gap play determines the drills power, efficiency and life expectancy.



Maintenance and repair on hydraulic and pneumatic equipment may only be performed by specially trained personnel!  
 Disconnect equipment from air supply, prior to repair of pneumatic or hydraulic equipment.



Provide regular preventive maintenance on hoses and airlines. Exchange hose lines, even if there is no visible damage! (Observe corresponding requirements of the manufacturer!)

After repair and maintenance, check the following items:

- Make sure all detached and re-attached connections are solid
- Confirm that removed covers, screens or filters were re-installed.

After conclusion of maintenance or repair and prior to start of operation, make sure to:

- Remove all materials, tools and other supplies needed for the maintenance or repair from work area of the equipment
- Remove leaking liquid or oils
- Make sure all safety devices on the equipment work perfectly!

### 8.1 Wear parts

Quantity	Description	Part. No.
1	Vane	826035
1	Screen	315035

We recommend to replace the O-rings generally.

## 9 Disassembly – Assembly

(→ Spare Part Drawing/s)



**Disassembly and assembly of the air machine may only be performed by DEPRAG or qualified persons /technical experts.**



**The air machine may start and cause injury. Disconnect air motor from the air supply.**

After every maintenance session, verify that equipment runs to the required specifications.

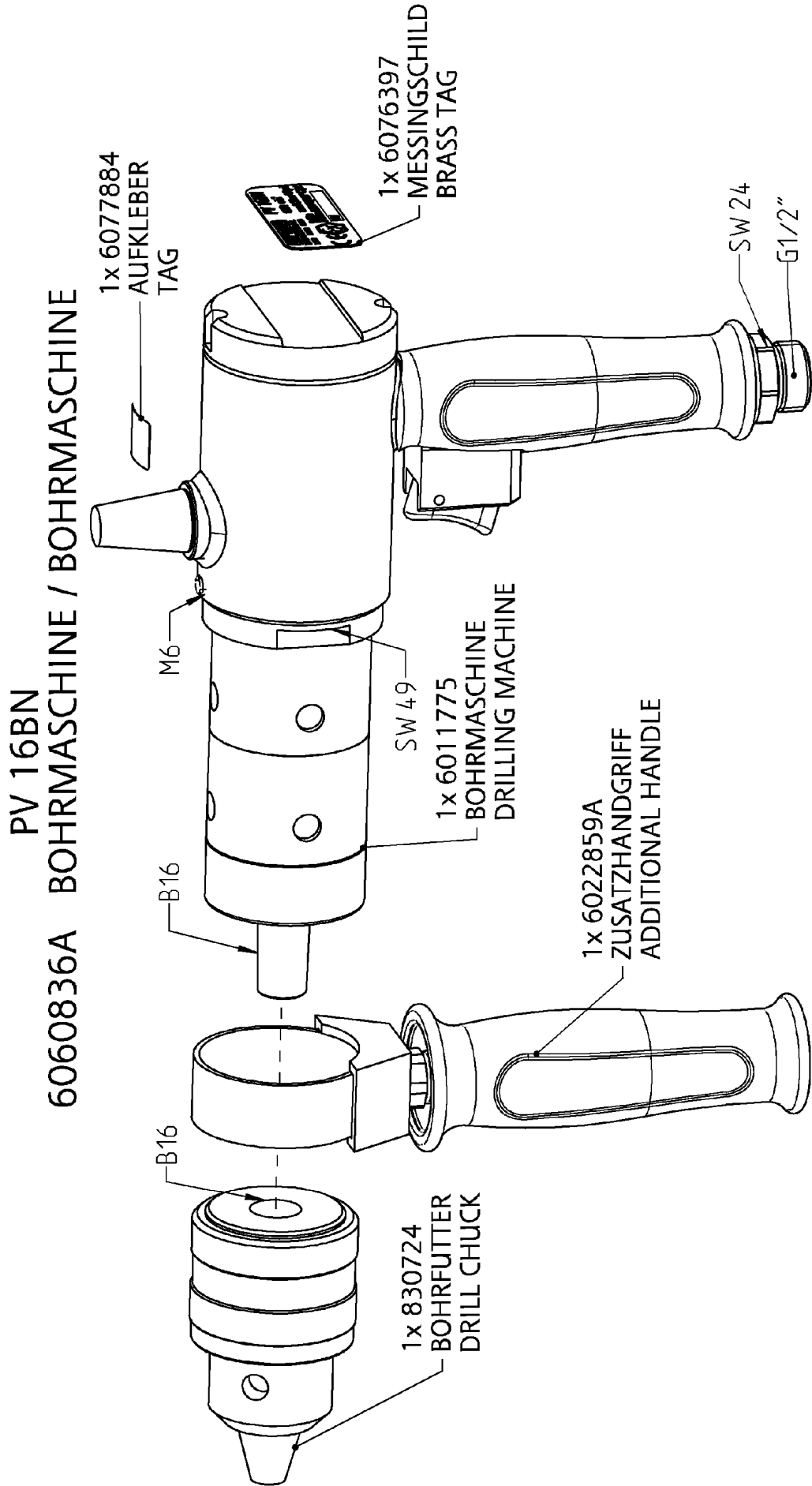
Principally, use only DEPRAG original spare parts. Otherwise, a reduction of equipment power- output and an increased maintenance requirement occurs.

If NON-DEPRAG parts are installed, then DEPRAG is justified to avoid any existing warranty and liability obligations.

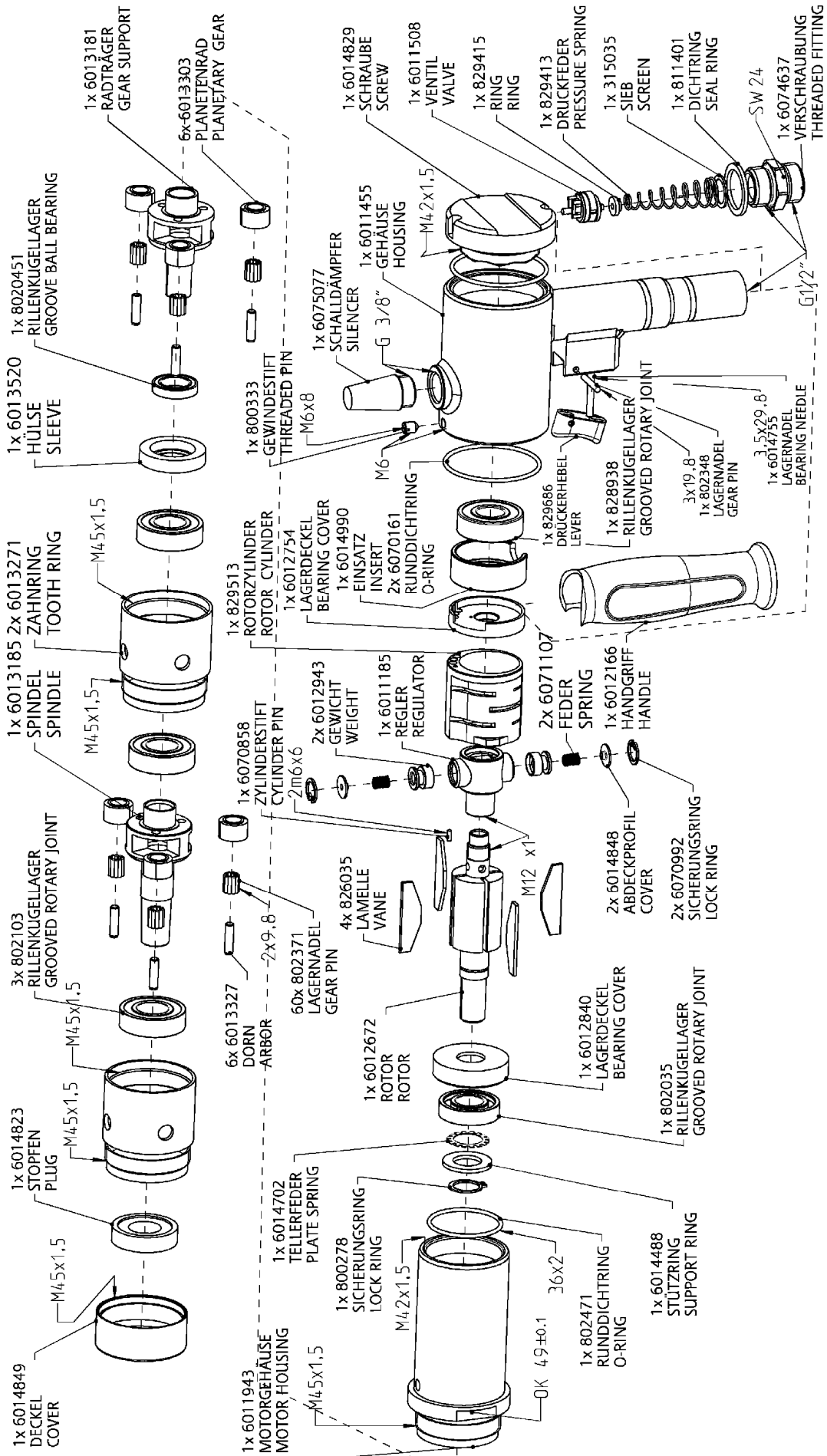


Only use original DEPRAG service tools in order to avoid causing damage.

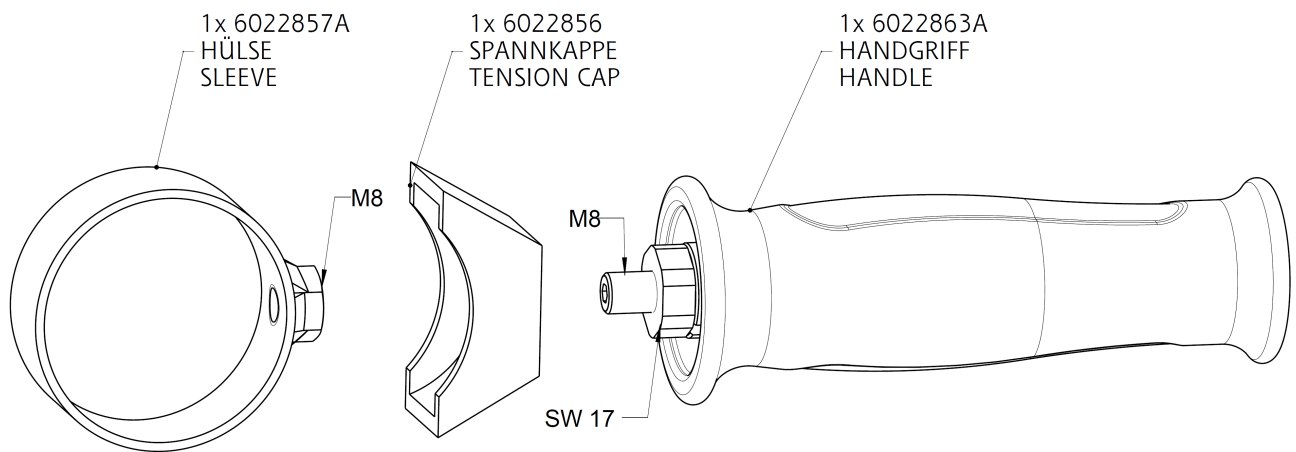
9.1 Spare Parts Drawing



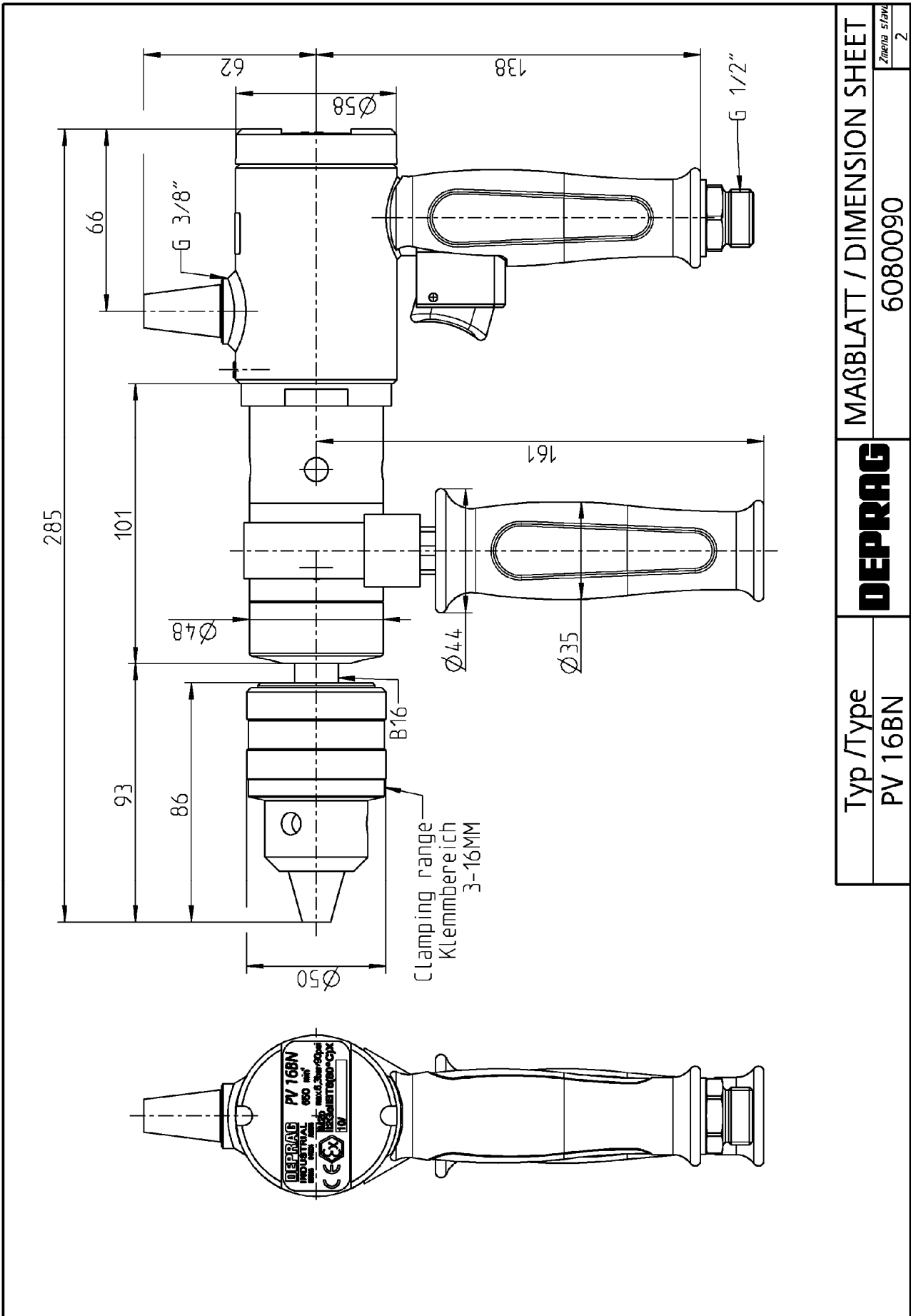
6011775 BOHRMASCHINE / DRILLING MACHINE



### 6022859A ZUSATZHANDGRIFF /ADDITIONAL HANDLE



## 9.2 Dimensional Drawing



Typ / Type PV 16BN	<b>DEPRAG</b>	MAßBLATT / DIMENSION SHEET	Zmena strany 2
		6080090	



## 10 Troubleshooting

Fault				Cause	Corrective Action
Torque too low	Speed too low	Drill does not run	Drill operated, but gets slower during operation		
•	•	•		Dirt or other debris in the drill	Check and clean
•	•	•		Rusty internal parts	Check and clean or repair
•	•			Air pressure is too low	Increase air pressure
	•			Hose ID is too small	Use a hose with a larger diameter
	•		•	Exhaust air is being throttled	Check and correct
•	•	•	•	Internal parts are frozen	Disassemble and repair drill
	•		•	Compressor is too small; air volume is too low	Supply larger air volume
	•		•	Air supply is located too far from the motor	Optimize installation
•	•		•	Insufficient lubrication	Provide the required air-quality
•	•	•	•	Worn or seized vanes	Exchange vanes

## 11 Shut Down and Storage

- Turn the air supply to “OFF”.
- Disconnect the Drill from the air supply.
- Blow clean, dry air at low pressure into the air-inlet of the drill.
- Drip a couple of drops of oil into the air-inlet channel and turn the shaft by hand so that the oil is evenly distributed. Recommended oil: see chapter 5.5 – „*Lubrication*“.
- Close all connections.
- The drill may now be stored until needed again.

## 12 Disposal

Disassemble the machine for the required disposal complete. Observe local and environmental regulations for the separation and recycling of materials.



**Always observe the most current regulations for disposal.**

Especially during installation, repair or maintenance water damaging agents, such as:


- lubricating greases and oil
- hydraulic fluid
- cooling agents
- solvent-containing cleaning agents

may not leak into the ground or into the sewage system!

Such materials must be stored, transported, contained and recycled in suitable containers!

Housing parts, tooth rings, shafts, as well as gear parts should be disposed off as steel scrap.

## 13 Technical Data

Type	PV16BN
Order No.	6060836A
Certified according to ATEX	CE  I M2 Ex h I Mb X II 2G Ex h IIB T6 Gb X
Direction of Rotation	right rotation
Starting	Trigger
Speed (no load) (rpm)	650
Speed, at max. load (rpm)	450
Power (kW/HP)	0.5 / 0.67
Air Consumption, at max. load (m <sup>3</sup> /min / cfm)	0.80 / 28.25
Air Consumption, unloaded (m <sup>3</sup> /min / cfm)	0.40 / 14.13
Weight (kg/lbs)	4.2 / 9.26
Hose I.D. (mm / in)	10 / 0.39
Drill chuck capacity (mm / in)	3 – 16 / 0.12 – 0.51
Spindle Cone (mm / in)	B16
Max. Drill Ø into steel (mm/in)	16 / 0.51
Max. Drill Ø into plastic (mm/in)	23 / 0.90
Max. Drill Ø into wood (mm/in)	35 / 1.37
Clamping Ø on the housing (mm/in)	48 / 1.87
Max. Air Pressure (bar/PSI)	6.3 / 90
Sound Pressure Level LpA according to DIN EN ISO 15744 (dB(A))	82.0 ) <sup>1</sup>
Sound Power Level LwA according to DIN EN ISO 15744 (dB(A))	93.0 ) <sup>1</sup>
Vibration according to EN ISO 28927-5 (m/s <sup>2</sup> )	2.04 ) <sup>2</sup> ) <sup>3</sup>

)<sup>1</sup> Uncertainty of measurement  $K_p$ ,  $K_w$  - 3 dB

)<sup>2</sup> Uncertainty of measurement  $K$  - 0,70 (m/s<sup>2</sup>)

)<sup>3</sup> Values according to EN 12096

## 14 EU-Declaration of Conformity

We,

# DEPRAG

machines unlimited

**DEPRAG CZ a.s.**

T. G. Masaryka 113, 507 81 Lázně Bělohrad

Hereby declare that the design and construction of the machine listed below conform to the applicable safety and health requirements of the Directive shown below.

This declaration is invalid if any change that has not been approved by us is made to the machine.

Type of Machine: Air-Operated Drill

Type: **PV16BN**

### Directives

ATEX 2014/34/EU

EU- Directive for equipment and protective systems Intended for potentially explosive atmospheres

### Date

2016-04

### Applied Standards

EN 1127-1

EN 1127-2

ISO 80079-36

ISO 80079-37

### Date

2019-08

2014-05

2016-04

2016-04

DEPRAG CZ a. s., T. G. Masaryka 113, 507 81 Lázně Bělohrad has filed the required documents – under Directive ATEX 2014/34/EU Annex III - with the following authority:

FTZÚ, Pikardská 1337/7, Ostrava – Radvanice

EU reference number 1026

Archive number: A538 - 17



Ing. Jiří Kotyška  
General Manager DEPRAG CZ a.s.

Lázně Bělohrad, 1/31/2020

## 15 EC-Declaration of Conformity

### EC-Declaration of Conformity in accordance with the EC Machinery Directive 2006/42/EC.

As manufacturer of the machine we declare that the Directives and Standards listed below apply to the following specified machine.

#### Manufacturer and authorized Person for Documentation:

DEPRAG CZ a.s.  
T.G. Masaryka 113  
CZ-50781 Lázně Bělohrad

**Name** PNEUMATIC DRILLING MACHINE

**Machine Type**

please see

**Serial Number**

original

**Year of Manufacture**

instructions

Directives	Date	Applied and fulfilled essential requirements
2006/42/EC	2006-06	1.1.2, 1.1.5, 1.3.4, 1.5.3, 1.7.3, 1.7.4

Standards	Date	Remark
EN ISO 12100	2011-03	partly fulfilled
EN ISO 11148-3	2012-12	
EN ISO 28662-1	1992-10	
EN ISO 28927-5	2009-12	
EN ISO 15744	2008-08	



Ing. Jiří Kotyška  
General Manager DEPRAG CZ a.s.

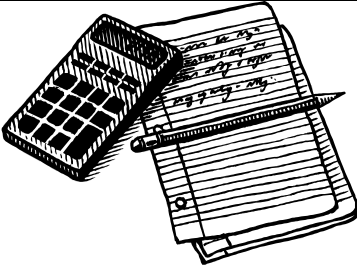
Lázně Bělohrad, 11/22/2019

## 16 Service Locations and Authorized Partners



Contacts in Czech Republic / Germany  
as well as contacts worldwide  
can be found on our web site  
[www.deprag.cz](http://www.deprag.cz)

**Notes**



# DEPRAG

machines unlimited

## DEPRAG SCHULZ GMBH u. CO.

P.O. Box 1352, 92203 Amberg, Germany  
Carl-Schulz-Platz 1, 92224 Amberg, Germany

Service-Hotline: +49 (0) 0700 00 371-371  
Phone: +49 (0) 9621 371-0  
Internet: <http://www.deprag.com>  
E-Mail: [info@deprag.de](mailto:info@deprag.de)

# DEPRAG

machines unlimited

## DEPRAG CZ a.s.

T.G. Masaryka 113  
CZ-50781 Lázně Bělohrad

Phone: +420 493 / 771 511  
Internet: <http://www.deprag.cz>  
E-Mail: [info@deprag.cz](mailto:info@deprag.cz)