

# DEPRAG

## OPERATING INSTRUCTIONS

### Grinder

20-061  
20-065

312600 D  
312600 B

# DEPRAG

**DEPRAG SCHULZ GMBH u. CO.**

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ZERTIFIZIERT NACH DIN EN ISO 9001

Jun-00 Änderungen vorbehalten

Dear Customer:

Congratulations, you chose the enclosed grinder from an extensive DEPRAG product line. This tool is the result of more than 60 years experience in the design and manufacturing of pneumatic tools for the industrial market. We offer a complete program of pneumatic tools, such as Drills, Tappers, Grinders, Screwdrivers, Impact Wrenches, Metalworking Tools and Hammers.

Please don't hesitate to call on us for all of your assembly tool needs, from individual hand tools to the complete automated screwdriving cell. Our products offer solutions to all requirements, which may be needed in the assembly sector.

We kindly ask, that you read these operating instructions carefully, so that you will be able to use this tool safely and for many years to come. If you need additional information, please contact your DEPRAG Representative or contact us direct at DEPRAG. We will be happy to answer any questions.

We hope you will be pleased with your new tool!

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## 9. Technical Specifications

Manufacturer	DEPRAG SCHULZ GMBH
Address	Postfach D-92203
Phone	09621/371
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Description	Grinder	
	20-061	20-065
Type	312600D	312600 B
Part No.	312600D	312600 B
Exhaust	At air inlet	
Start Function	Lever Valve	Twist Valve
Grinding Pin Ø mm	ceramic (30m/s) 33 epoxy resin (45m/s) 50 epoxy resin with fiber reinforcement (80m/s) 70	ceramic (30m/s) 33 epoxy resin (45m/s) 50 epoxy resin with fiber reinforcement (80m/s) 70
Speed (unloaded) rpm	15500	
Air Consumption under load m <sup>3</sup> /min	0.9	
Power Output, kW	0.8	
Main Diameter, mm	48	
Length, mm	337	
Weight, kg	2.0	
Hose ID required, mm / inch	10 / 3/8"	
Connection Thread	10 / 3/8"	
Noise Level dB(A)	80	
Operating Pressure, bar / PSI	6.3 / 90 PSI	
Vibration m/s <sup>2</sup>	<2.5	

Error	Reason	Solution
Tool does not start	Worn or jammed vanes	Replace vanes 312129
Motor rotates, but grind spindle does not move	Broken clutch	Replace clutch 311928
Tool does not shut-off	Worn o-ring	Replace o-ring 802506

## 7. EC-Conformity Declaration

### **EC-Conformity Declaration according to the EC-Machine-Guidelines 89/392EWG, Amendment IIA**

We,

DEPRAG SCHULZ GMBH & CO.  
PO Box 1352  
D-92203 Amberg

hereby confirm, that the design of the Grinders

20-061  
20-065

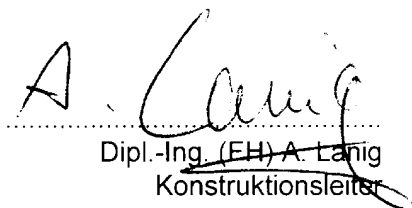
conform to the following, relevant regulation:

- EC-Machine-Guidelines, Version 91/368/EWG, Amendment No. 1 and No. 2.2.

Applicable Standard:

- EN 292

Amberg, 07.02. 2004

  
Dipl.-Ing. (FH) A. Lanig  
Konstruktionsleiter



Before operating tool, make sure to carefully read observe this operating instruction booklet.

## 1. Safety Tips

### **Attention:**

When operating a grinder, make sure to apply the following basic safety measurements to protect against an electrical short, injury- or fire hazards!

1. Disconnect tool from air supply prior to repair or maintenance.
2. When strong vibration or noise occurs during operation, turn tool off immediately and check rotating parts for damage.
3. Test grinder with grinding insert installed and in accordance with the requirements of the insert manufacturer.
4. Disorder in the work-area yields accident-danger.
5. Don't expose the grinder to rain. Provide good illumination. Don't use the grinder in close proximity of combustible liquids or gases.
6. Unused tools should be stored in dry, locked area.
7. Use specified grinding inserts only. Test and make sure that the rated speed of the insert is higher than the speed of the grinder.
8. Do **not** alter either grinder or grinding inserts after their delivery!
9. Use grinder only with the provided safety features such as safety cover or safety flange. Do not remove those safety features!
10. Do not grind nearby inflammable materials or in explosion-endangered areas.
11. Operate grinder in such a way that sparks are directed away from operators face and body.
12. Always provide clean air to work area, if the tool is being used in an unhealthy or explosive environment and if steams or aerosols occur.
13. Observe labeling-, operational restrictions and special application-tips, such as „hearing-protection“, etc.
14. Always sufficiently secure workpieces prior to any operation.

15. Before each operation, visibly check grinding inserts and grinder to assure their intactness and suitability for the application.
16. During the disconnection or reconnection of the grinder from the compressed air, an injury is possible because of a whipping pressure-hose. Additionally, it is imperative **NOT** to operate or to press the start-lever.
17. Before setting aside the grinder, make sure the tool is switched off and has come to a full stand still.
18. The DEPRAG grinder is only allowed to be operated when connected to a maintenance-unit, consisting of Filter, Regulator and Oiler (approximately 1 drop of oil per minute) The air-pressure may **NOT** exceed 6 bar.
19. Only operators with fact understanding, educated by authorized and responsible specialists, may operate the grinder.
20. When operating grinders, it is necessarily that the operator wears goggles, gloves, hearing-protection, and a hairnet if operator has long hair. Additionally the operation may require the Operator to wear a facemask, leather apron and safety shoes..
21. Do not wear wide clothing or jewelry, for they can be seized by movable parts.
22. Use a respiratory mask, if operation generates dust.
23. Observe safety regulations of grinding insert manufacturer.
24. The grinder should be used exclusively for its designated purpose.
25. Inspect grinder and inserts prior to operation for wear and tear. Immediately replace worn parts to avoid injury!
26. The dismantling as well as the reassembly of our DEPRAG drill-spindles may only be done by an authorized specialist or us.
27. The DEPRAG grinders are designed for the exclusive use in an industrial environment.

The tool is not insulated to protect against an electrical power surge. It is not recommended to use this tool in explosive hazardous environments. The speed of 15500 rpm is a maximum and grinder should not run faster than this speed. Check speed on a regular basis.

## **2. Installation**

- Blow out air hose before connecting it to the grinder.
- Connect tool to a maintenance unit, filled with resin- and acid-free oil (SAE 10. DEPRAG-Oil 790081 A, 250 cm<sup>3</sup>) and adjust oiler as needed.

## **6.1 Spare Parts Listing**

see picture 1 – Spare Parts Listing - Pages 5/6

## **7. Inspections and Maintenance**

These grinders require little maintenance. If the following rules are observed, the tool reaches its promised high life span and remains in a safe condition to use. Check the air filter (exhaust water condensation on a regular basis) and the oil reservoir, as well as the oiler adjustment (we recommend DEPRAG-Oil, Part No. 790081 A (250 cm<sup>3</sup>). Lubrication: approx. 1 - 2 Drops per 1 m<sup>3</sup> air consumption

During the warranty period, we recommend the return of the grinder when malfunctioning.

Only when repairing, wash and grease ball bearings (we recommend Grease: Aral HL2). ). Any other comparable lithium soap grease may also be used:

BP Energrease LS2  
Esso Beacon 2  
Shell Alvania 2

<b>Wear Parts:</b>	Vane (4 pcs.)	312129
	Collet (Ø8)	312696
	O-Ring	802506
	O-Ring	802581

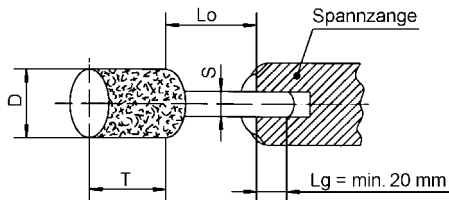
## **7.1 Trouble Shooting**

<b>Error</b>	<b>Reason</b>	<b>Solution</b>
Insufficient Power	Restriction in air hose	Remove bends or other restrictions
	Air pressure too low	Minimum air pressure should be 6.3 bar (90 PSI) for maximum performance
	Hose I.D. is too small	Use required hose I.D. of 3/8"
	Screen Support or Silencers are dirty	Clean or replace screen support 313207
	Vanes are worn	Exchange vanes
Tool does not start	No air, Shut-Off valve is closed	Open Shut-Off valve

### **Attention:**

Use only approved grinding inserts with a correct shaft diameter. Make sure the rated speed of the insert is higher than the speed of the grinder (15500-rpm).

It is especially important to keep in mind, that the allowable speed of the installed grinding insert will be reduced, if the distance between the end of the collet and the bottom of the insert (open shaft length "Lo") is increased. It is important that the minimum shaft insertion length "Lg" is 20 mm (see picture 2) and to observe the recommendations given by the insert manufacturer. New grinding inserts should be mounted into the collet and checked adjusted as needed to avoid an out-of-balance operation.



Picture 2: minimum insertion length of shaft

## **6. Assembly and Dis-Assembly**

### **Attention:**

The disassembly and assembly of air-tools should only be performed by properly trained personnel. Test speed of 15500 rpm after maintenance or repair.

### **Dis-Assembly:**

Disconnect tool from air supply. Unscrew spindle-bearing 312511 (left-hand-thread). Remove twist-valve or lever-valve complete (right-hand-thread). Unscrew threaded bushing 312514 from motor housing (left-hand-thread). Push motor out of the motor housing. Remove bearing cover 311892 / 311893. Remove, check and measure the 4 vanes 312129. Minimum width of vane should be 10 mm. Exchange vanes, which are damaged, worn or too narrow.

### **Assembly:**

In reverse order; always test smoothness of operation and speed!

**Optional:** Special Repair Tools (refer also to our catalog D090E)

Clamping Strip 460228 for spindle 312591  
Chucking Jaws 460333 for motor housing 311887  
Fixture 460476 for rotor cylinder 311886  
Tachometer 807416 (measuring range 40 - 50000 rpm)

- The required pressure hose should have a 3/8" ID and should not exceed a 2-meter length [power loss].
- Make sure to use grinder with lubricated air only
- The air pressure should be (90 PSI) 6.3 bar. A pressure below 90 PSI reduces tool performance. If air pressure is above 7 bar, install a regulator.

In regards to air-quality according to ISO8573-1, we recommend:

	Class	Residue of Oil Content mg/m <sup>3</sup>	Residue of Dust μ mg/m <sup>3</sup>	Residue of Water DTP g/m <sup>3</sup>
Lubricated Air	4	5	15 8	+3 6

## **3. Application Areas**

The midget grinders 20-061 and 20-065 are used preferably with grinding pins or milling inserts, mainly for the treatment of steel - and cast-iron in foundries, in the entire mechanical engineering industry, the machine- and die industry, the appliance-industry as well as during ship-, container- and equipment-construction.

## **4. Handling**

The tool should only be used when in perfect working condition; in accordance to its designated use and only when all safety- and danger recommendations of the operating instruction booklet are observed. Any malfunction, which would result into injury to an operator, has to be immediately removed. It is required to use safety goggles when operating this drill. To wear safety gloves is recommended.

## **5. Operation**

### **Grinding Pin Insertion:**

Insert grinding pin into collet 312696 (Ø8-mm) and tighten collet with ring-wrench (AF12/AF15).

### **Connection:**

Connect hose 806096 (ID 10 mm = 3/8") to maintenance unit. Open shut-off valve (operating pressure 6.3 bar = 90 PSI).

### **Start:**

20-061: Press lever 302860 A to start grinder.

20-065: Turn twist-valve 301314 to start grinder.

Collet  
 Spindle Bearing  
 Vanes  
 Grinding Spindle  
 Needle Bearing  
 Threaded Bushing  
 Sleeve  
 Threaded Bushing  
 Spacer  
 Ball Bearing  
 Clutch  
 Ball Bearing  
 Bearing Cover  
 Bearing Pin  
 Bearing Pin  
 Motor Housing  
 Ball Bearing  
 Washer  
 Hex Screw  
 Intermediate Ring  
 Shrink Hose  
 Rotor Cylinder  
 Bearing Cover  
 Spring Bolt  
 Lock  
 Twist Sleeve  
 O-Ring  
 Threaded Flange  
 Screen Support  
 Hose Plug  
 Valve Housing  
 Tension Sleeve  
 O-Ring  
 Valve Pin  
 Spring  
 Plug  
 Pressure Hose  
 Hose Ferrule  
 O-Ring  
 Valve Pin  
 Lever complete  
 Groove Pin  
 Exhaust Hose  
 Wrench  
 AF  
 Cylinder Pin  
 Sleeve  
 Valve Housing  
 Tension Sleeve  
 Valve Pin  
 Plug  
 Wrench  
 AF  
 O-Ring  
 Valve Spring  
 SPARE PARTS ORDER EXAMPLE:  
 4 Vanes  
 part no.

Picture 1: Spare Parts Listing  
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