

DEPRAG

Operating Instruction Booklet

Pneumatic Air Motor

68-0013/IEC90A

444792 A

Dear Customer:

This tool is the result of more than 70 years of experience in the design and manufacturing of pneumatic tools for the industrial market.

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, one of our international support offices or us direct at DEPRAG. We will be happy to answer any questions. Please visit our web site: www.deprag.com

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1 Safety Tips

1.1. General Safety Tips



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

Generally, the operator of the equipment and/or machinery is responsible for the equipment's perfect condition and operation, while observing all necessary safety regulations. The equipment and/or machinery has been constructed in accordance with the newest level of technology while recognizing all necessary safety-related requirements. Nevertheless, while operating the equipment and/or machinery there is a risk of bodily harm to the operator as well as damage to equipment and/or machinery and other property.

Operate the equipment and/or machinery only if equipment/machinery

- Is used for the task it was designed for
- is in perfect working condition and safe to use.

It is important to observe the technical data of the equipment, especially in regards to the environmental temperatures. The designated area of use for this equipment is clearly described in chapter *Designated Equipment Use* and those requirements have to be observed as well. Prerequisite for the safe conduct and the uninterrupted operation of the equipment, is the knowledge of the basic safety tips and the safety regulations. Additionally, all current regulations for a safe operational area, for accident-prevention guidelines of electrical and mechanical installations, as well as noise suppression demands must be observed. During any maintenance or repair work, a clean work surface is recommended. Also, it is not recommended to either eat or smoke during repair or maintenance. Arbitrary changes made to the equipment, which alters its designated use, voids the warranty and cancels the manufacturers liability.

- The tool is not insulated to protect against an electrical power surge.
- It is not recommended to use this tool in explosive hazardous environments, unless it was specifically designed for such a use.
- During the disconnection or reconnection of the tool from the compressed air, an injury is possible because of a whipping pressure-hose.

The operating instruction booklet, especially the safety symbols and safety tips attached to the equipment or included in the documentation, must be observed at all times by all persons getting into contact with the equipment.

1.2. 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 is allowed to operate, maintain and repair this equipment. A malfunction, which impairs operator safety, must be immediately removed.

1.3. 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.

1.4. Warranty and Liability

Unless otherwise specified, our “General Sales and Delivery Conditions” apply. Warranty and liability claims in regards to persons or equipment damages 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.

1.5. Symbol Description



Read and observe the Operating Instruction Booklet, prior to and during operation of tool.



DANGER

Reference to an immediate danger to a person. May lead to serious injuries or even death, if unobserved!



Properly recycle environmentally damaging grease, cooling agents or detergents



RECOMMENDATIONS

Important or additional information on the equipment or in the documentation



Use eye protection or wear safety goggles

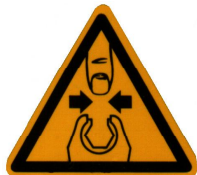


Wear hearing protection



Warning against hand-injuries.

Attention: Keep away your hands from areas, which are marked with this symbol!



Hands may be crushed, seized or otherwise injured.



ESD-protected area

Equipment may be damaged or destroyed by an electrostatic discharge.

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
- During disconnecting or reconnecting of an air-operated equipment, injury may occur due to a whipping air-hose

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!

1.6. Observe Environmental Regulations



When working on or with the equipment, it is imperative to observe all requirements in regards to waste-disposal and proper recycling.

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

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

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

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

2 Designated Equipment Use

The motor is designated to be assembled with another machine.

3 Installation

- Blow out air line and pressure hose, prior to connection it to the tool.
- Make sure, that all air lines have a sufficient cross-section (see technical data) and hoses must be free of bends and kinks. The hose length should not exceed 2 meters.
- All DEPRAG Motors, may be operated either with or without lubricated air. (see paragraph: Maintenance and Upkeep). Best results are achieved, when motor is lubricated with 1 – 2 drops of oil per 1m³. When motor is operated with dry air, a performance reduction of up to 20% occurs and maintenance increases!
- Connect the equipment as follows:
 - a) for standard operation connect to a maintenance unit consisting of filter with condensation reservoir, oiler and pressure regulator. When selecting a maintenance unit, make sure to observe the motor's air consumption requirement (see technical data).

Air Consumption	Thread Size	Part No.
0,05 - 0,5 m ³ /min	G 1/4	820454 A
0,15 – 1,5 m ³ /min	G 1/2	820455 A
0,8 – 4,0 m ³ /min	G 3/4	821608 A

- b) for the use with minimal lubrication connect equipment to a maintenance unit, consisting of Filter with condensation reservoir and Regulator

Air Consumption	Thread Size	Part No.
0,05 - 0,5 m ³ /min	G 1/4	822408 A
0,15 – 0,9 m ³ /min	G 3/8	826981 A
0,5 – 1,5 m ³ /min	G 1/2	822409 A
0,8 – 6,0 m ³ /min	G 3/4	826982 A

Each in connection with a Point-of-Use Oiler (Part No. 378077 A)

- c) For oilfree operation, connect to Filter/Regulator, consisting of Filter with condensation reservoir and Pressure Regulator.

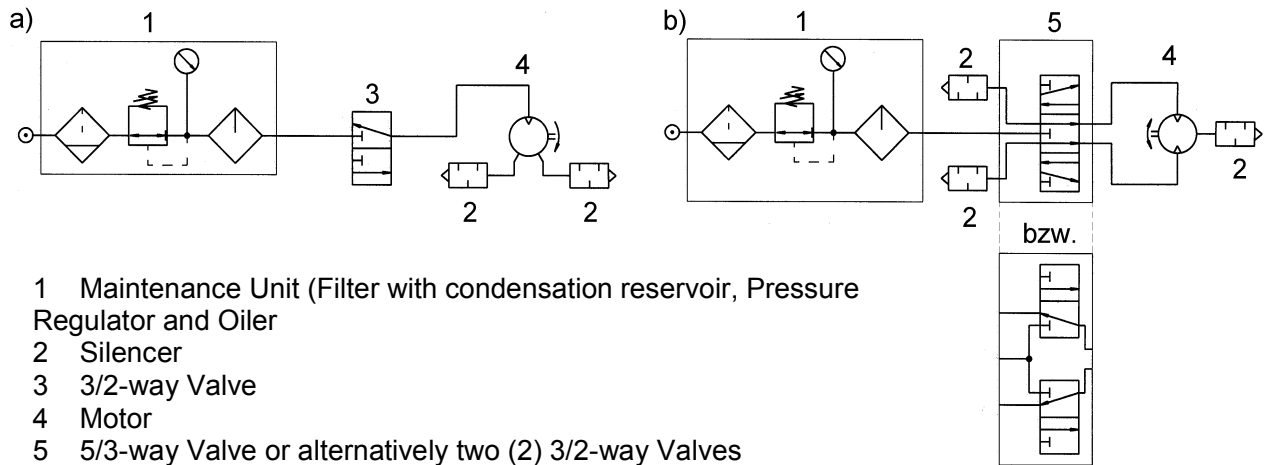
Air Consumption	Thread Size	Part No.
0,05 - 0,5 m ³ /min	G 1/4	822408 A
0,15 – 0,9 m ³ /min	G 3/8	826981 A
0,5 – 1,5 m ³ /min	G 1/2	822409 A
0,8 – 6,0 m ³ /min	G 3/4	826982 A

- Check pressure at directly on the machine. The Regulator needs to be adjusted to an airflow of 6 bar (85 PSI). A higher pressure leads to increased wear and tear. A lower pressure results into reduced power output.

When operating motor with only one turn-direction, connect motor as shown below (a) and if operated with reverse direction as well, see (b). It is important that the port which is not connected to an air-inlet, functions as the exhaust port and has to remain open.

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

	CLASS	RESIDUE OF OIL	RESIDUE OF DUST		RESIDUE OF WATER	
		Content mg/m ³	Particle Size μm	Concentration max. mg/m ³	Dew Point °C	Pressure Concentration max. g/m ³
Lubricated Air	4	5	15	8	+3	6
Dry Air	3	1	5	5	-20	0,88



4 Operation

Connect motor to air supply. The motor starts by remote valve.

5 Assembly - Disassembly

Disassembly: (see Spare Parts Drawing)

ATTENTION



Prior to disassembly, disconnect equipment from air supply! Otherwise, machine starts automatically and an injury may occur.

Only experienced maintenance personnel is allowed to assemble or disassemble this equipment.

After repair or maintenance, verify that equipment runs to specification!

Principally, use only DEPRAG original spare parts. Otherwise, a reduction in equipment power-output and an increased maintenance-requirement occurs. If NON-DEPRAG parts are installed, DEPRAG is justified to void any existing warranty and liability obligations.

1. Unscrew the three cylinder screws 800548.
2. Remove bearing cover 444795.
3. Unscrew the groove nut 823749.
4. Remove the safety sheet metal 823750.
5. Unscrew the three cylinder screws 800487.
6. Assemble the Pull-of-device on the cover 444796 and remove the cover.



NOTE

Exchange only complete sets of vanes.

7. Remove the five springs and the five vanes. Minimum width of vane should be 30 mm. Vanes that are too narrow or damaged have to be replaced in sets (5 pcs).

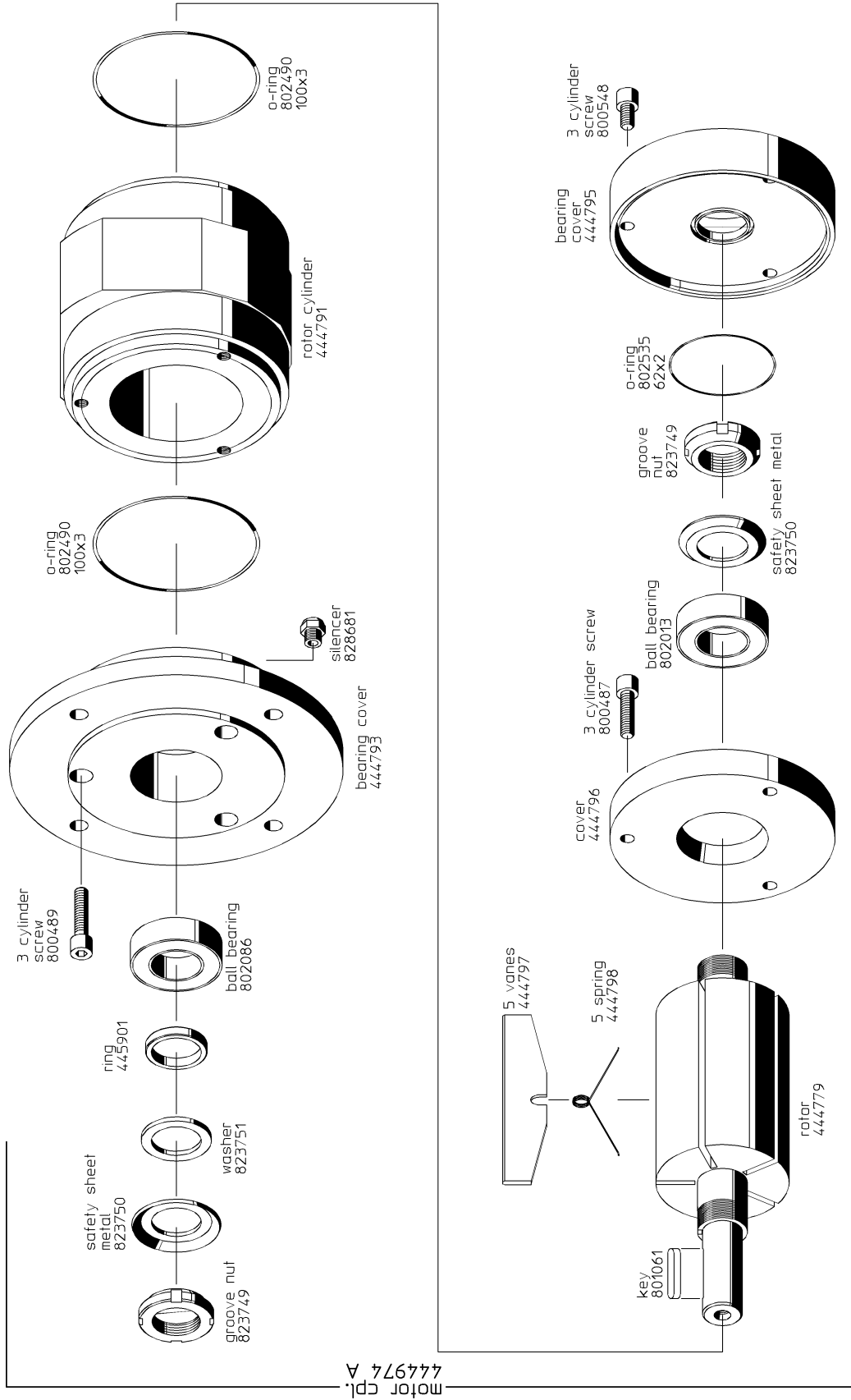
Assembly:

1. Clean rotor.
2. Insert the new springs and the new vanes into the rotor.
3. Press the cover 444796 on the rotor above the inner ring of the ball bearing 802013.
4. Tighten the three cylinder screw 800487.
5. Assemble the safety sheet metal 823750.
6. Screw on the groove nut 823750.
7. Assemble the bearing cover 444795 using the three cylinder screws 800548.

Special Repair Tools (Optional Equipment)

NAME	PART No.
Assembly tool	461642 A
Speedometer	807416

5.1. Spare Parts Drawing



Example spare parts order: 5 off vane 444797

5.2. Dimensional Drawing

Please request from DEPRAG if needed.

6 Maintenance and Upkeep

Testing and maintenance can be provided by Operator, disassembly and re-assembly of the DEPRAG Air Motor should be done by experienced maintenance personnel only. Incorrect assembly or disassembly can lead to injury of an operator and damage of the tool.

The motor requires little maintenance. If the following service rules are observed, the tool will have a long life expectancy and will remain in a safe condition.

- Check tool on a regular basis for external damage.
- Check your maintenance unit on a regular basis, make sure that sufficient oil is in the lubricator (if lubrication is used) and that the adjustment is correct. We recommend for your lubricator DEPRAGOL, part 790081 E.
- After cleaning, the gearing parts have to be greased prior to re-assembly, preferably with Grease, part 807293.
- After assembly fill 2 – 3 drops of DEPRAGOL into the air inlet nipple.
- Grease the gearing, ball, and needle bearing, as well as the o-rings every 500 operating hours, or at least once a year with a suitable grease.
- If motor is used without lubrication, reduce the maintenance requirement to 250 operating hours.
- If motor has not been used for a longer time period, drip a couple drops of Oil into the motor and let the motor run for 5 – 10 seconds.
- If malfunctioning, we recommend sending the motor to DEPRAG.

6.1. Wear Parts

QUANTITY	NAME	PART No.
5	Vanes	444797

6.2. Trouble Shooting

In the case of a malfunction, check and observe all instructions contained in this technical documentation. If necessary, adjust equipment as needed.

Possible faults and their causes are shown below:

Fault	Cause	Solution
Insufficient Power	Worn vanes	Exchange vanes
	Insufficient lubrication	Provide the required air-quality
	No air, Shut-Off valve is closed	Open Shut-Off valve
Machine does not start	No air; shut-off valve is closed.	Open shut-off valve
	Worn vanes or vanes are jammed	Exchange vanes

If necessary, send the equipment to DEPRAG.

7 Delivery Capacity

Please check the delivery capacity in regards to its completeness.

QUANTITY	NAME	PART No.
1	Operating Instruction Booklet	010953 EN
1	Motor	444792 A

8 Technical Data

Manufacturer DEPRAG SCHULZ GMBH u. CO.
Address Kurfürstenring 12 - 18 Postfach 1352
D-92224 Amberg D-92203 Amberg
Phone 09621/371-0
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MODEL No.	68-0013/IEC90A
Part No.	444792 A
Air Intake R	G 1 "
Air Intake L	G 1 "
Speed, unloaded (rpm)	6000
Air consumption (l/s)	80
Power (kW)	3,6
Machine diameter (mm)	200
Length (mm)	375
Weight (kg)	16,5
Required Hose I.D. (mm)	25/32
Noise level (dB(A)) with silencer	95
Vibration (m/s ²)	< 2,5

9 Disposal

Unused machines should be stored in a dry, locked area. Observe local and environmental regulations for the separation and recycling of materials.



Recycle waste oil to avoid environmental contamination!

10 Storage

Unused machines should be stored in a dry, locked area.

11 Declaration of Manufacturer

EC-Declaration of Manufacturer in accordance with the CE-Machine-Guideline 98/37/EC, appendix II B

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declares, that the construction of

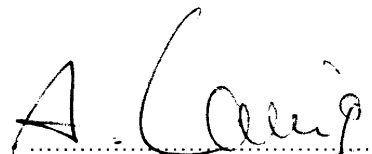
68-0013/IEC90A

is designated for the integration into another machine and operation of this other machine is prohibited until it has been confirmed that it confirms with the CE-Machine-Guideline i.d. F.98/37/EC.

used standards

- EN 292

Amberg, 01.04. 2004


Dipl. Ing. (FH) A. Lanig
Mr. Design Dept.

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ZERTIFIZIERT NACH DIN EN ISO 9001

Apr-04 Änderungen vorbehalten / Technical alterations reserved