

010720 EN

DEPRAG

Operating instructions

Pneumatic screwdriver

346-227U
346-327U
346-527U

359794 A
359794 B
359794 C

DEPRAG

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CERTIFIED AS PER DIN EN ISO 9001

Jan-04 Technical alterations reserved

MINIMAT-ULTRA

Dear Customer:

Congratulations, you chose the enclosed tool 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, Metal Working Tools and Hammers.

Please don't hesitate to call on us for all of your needs, from individual hand tools to the complete automated screwdriving cell. Our products offer solutions to all requirements, which may be needed in the screwdriving 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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Before starting operation of tool make sure to carefully read and follow operating instruction.

General Information

All DEPRAG MINIMAT-ULTRA screwdrivers can be used with or without lubrication. (Please refer to 3.2 Testing and Maintenance)

1. Operating Instruction

1.1 Connection and Installation

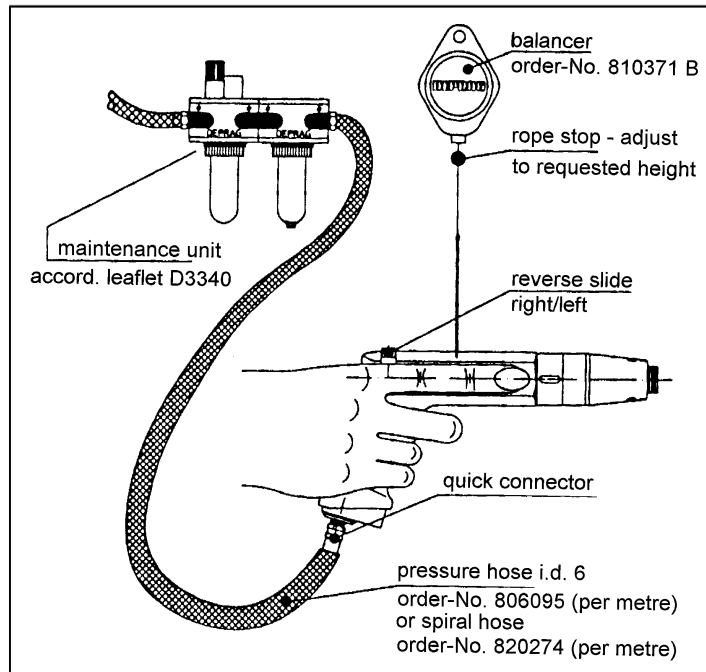
- Blow out air hose before connecting it to the tool.
- connect the MINIMAT-ULTRA Screwdriver as follows
 - a) if used with lubrication, connect driver to Maintenance Unit, consisting of Filter, Lubricator and Regulator.
 - b) if used without lubrication, connect driver to Maintenance Unit, consisting of Filter and Regulator.
- The required I.D. of pressure hose is 6 mm. Please make sure, that the pressure hose length does not exceed 2 meters (6,6 ft.)
- Unless otherwise requested the driver is preset to max. torque with the strongest clutch spring.
- The air pressure should be 90 PSI (6,3 bar). A pressure below 90 PSI reduces tool performance, a pressure above 90 PSI increases wear and tear on the tool.

We recommend in accordance with the ISO 8573-1 the quality of compressed air:

	Class	Test oil level mg/m ³	Test dust m mg/m ³	Test water DTP g/m ³
Oiled air	4	5	15 8	+3 6
Oilfree air	3	1	5 5	-20 0,88

Attention:

Make sure the hoses allow unrestricted air flow; avoid bends, nicks, etc.



Picture 1: Connection of a DEPRAG MINIMAT-ULTRA Screwdriver

Operation with Finder and Magnetic Bits:

To mount the finder (optional equipment)

- unscrew the screw cap (left hand thread)
- slide the spring sleeve into the screw cap, place spring into finder and then re-assemble the screw cap.

1.2 Operation

The operation of the DEPRAG MINIMAT-ULTRA Screwdriver is very simple. Hold the driver as shown on picture 1 and place the bit into the screw drive. As soon as you push the trigger, the screwdriver starts automatically and assembles the screw. When the preset torque is reached, the clutch disengages and the driver stops. When you let go of the trigger, the driver is ready to start again.

When loosening screw, the reverse button has to be pushed additionally.

7. All important data at a glance

Technical Data:

Manufacturer: DEPRAG-SCHULZ GMBH & CO
 Address: PO Box 1352
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 Phone: (800) 4 DEPRAG = (800)
 433-7724
 Fax: (214) 221-8163

Series:	DEPRAG MINIMAT-ULTRA Screwdriver		
Model:	346-227U	346-327U	346-527U
Order no.	359794 A	359794 B	359794 C
Length (inch) / (mm):	9,25 / 235		
Diameter of motor housing (inch) / (mm)	0,66 / 17		
Drive (mm):	F 6,3 (1/4")		
Weight (kg):	1,0		
Air Pressure Requirement (bar):	6,3		
Hose I.D. Requirement (mm):	min. LW 6 1/4"		
Torque Capacity (in.lbs.):	0,5 - 2,5	0,3 - 3,0	0,3 - 4,5
Speed (min ⁻¹):	2900	1100	500
Noise Level (dB(A)):	66		
Vibration (m/s ²)	< 2.5		

6. EC-Conformity Declaration

EC-Conformity Declaration according to the EC-Machine-Guidelines 98/37/EWG, Amendment IIA

We,

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

hereby confirm, that the Screwdriver

DEPRAG-MINIMAT-ULTRA 346-227U
 346-327U
 346-527U

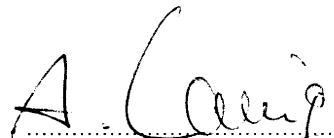
conform to the following, relevant regulation:

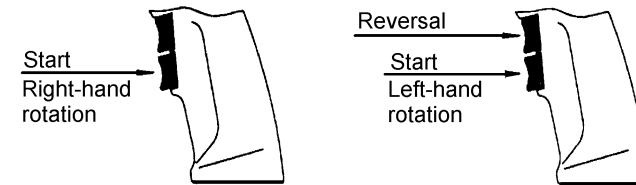
- EC-Machine-Guidelines, Version 98/37/EWG, Amendment No. 1 and No. 2.2.

Applicable Standard:

- EN 292

Amberg, 13.01. 2004


Dipl. Ing. (FH) A. Langig
Mr. Design Dpt.



Picture 2: reverse button

The driver has a quick change chuck integrated. After the sleeve 351890 has been pulled toward the tip of the driver (see picture 5), the bit (6,3 mm = 1/4" hex drive) can be removed or inserted.

Before change of bits, disconnect the air. Otherwise the driver may start and possibly cause an injury. Please use only high quality 1/4" hex bits.

Please note that an injury is possible:

- If the driver reacts with an unexpected motion or is damaged.
- When the bit and the trigger are pushed, the screwdriver starts automatically.

1.3 Range- and Exchange of Clutch Spring

The torque range of the DEPRAG MINIMAT-ULTRA Screwdriver is adjustable. Please see a listing for the torque ranges of the color coded springs below.

Torque Range of individual clutch springs: (appx.)

Part	WireÆ	Color	Torque minimum	Torque maximum
326417	3,4	black	1,5 Nm = 13,2 in.lbs.	4,8 Nm = 42,2 in.lbs.
323034	3,2	violet	2,0 Nm = 17,6 in.lbs.	4,5 Nm = 39,6 in.lbs.
323035	2,8	green	1,4 Nm = 12,3 in.lbs.	2,4 Nm = 21,1 in.lbs.
323036	2,2	red	0,5 Nm = 4,4 in.lbs.	1,5 Nm = 13,2 in.lbs.
323037	1,6	yellow	0,2 Nm = 1,8 in.lbs.	0,6 Nm = 5,28 in.lbs.

All torque values are based on 90 PSI (6,3 bar) air pressure.

Attention:

Operate clutch only in specified range with correct clutch spring mounted!

Change of Clutch Spring (Picture 3)

Prior to change of clutch spring, disconnect driver from air supply.

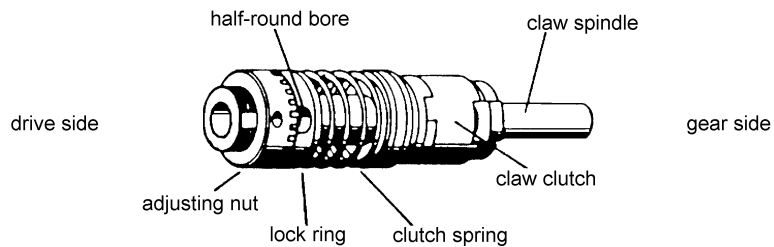
1. Unscrew clutch bearing 352276 F. (left hand thread)
2. Take out clutch 352252 A/B/C complete.
3. Press torque setting screwdriver 326240 into the halfround bore of the lock ring 326110/1 and turn in clockwise direction, until the adjustment nut 326111 is unscrewed.

4. Pull off lock ring 326110/1.
5. Remove clutch spring, replace with new clutch spring and reassemble clutch in reverse order.
6. Push clutch into the clutch bearing and tighten clutch bearing to the motor housing of the screwdriver. (left hand thread)

Attention:

The claw of the clutch must engage with the claw of the spindle.

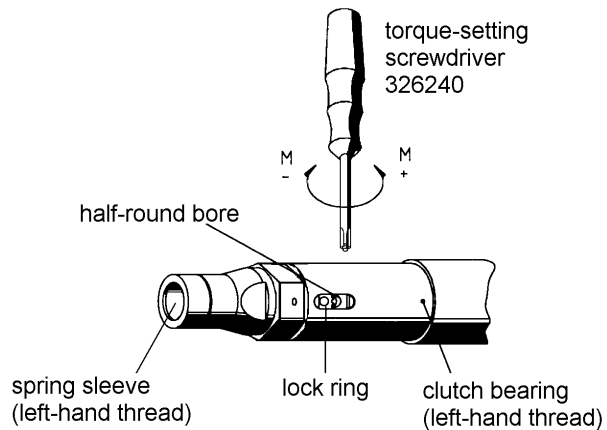
7. Adjustment of the clutch according to 1.4



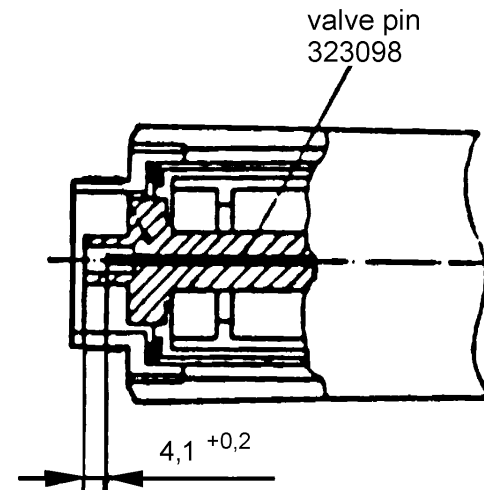
Picture 3: Change of Clutch Springs

1.4 Torque Adjustment

1. Introduce screwdriver 326240 into the halfround bore of the lock ring 326110/1 through the groove of the clutch bearing.
2. By turning the screwdriver in clockwise order the torque is reduced and vice versa increased.



Picture 4: torque adjustment



Picture 6: Actual size of Valve Pin (to be measured under air-pressure)

5. Safety Tips

The tool is not insulated to protect against an electrical power surge. It is not recommended to use this tool in explosive hazardous environments.

- 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.
- Exchange broken or worn bits and parts immediately, for they can cause injury to the Operator.

4. Trouble Shooting

Error:	Reason:	Solution:
Screwdriver does not	No air, Shut-Off valve is closed	Open Shut-Off valve
	Clutch is not engaged No push-to-start stroke	Mount clutch correctly Refer to: Range- and exchange of clutch spring
Insufficient Power	Air pressure too low	Minimum air pressure should be 90 PSI for maximum performance
	Restriction in air hose	Remove bends for other restrictions
	Valve Pin too short	Check required length of valve pin according to picture 6. If needed, exchange valve pin.
	silencer dirty	exchange silencer
	Hose I.D. is too small	Use required hose I.D.
	Vanes are worn	Exchange vanes
Driver does not shut-off or ratchets	Air pressure is too low for required torque value	Maintain air pressure of 90 PSI
	Valve Pin is too long	Check length of valve pin, either shorten or replace valve pin

2. Parts Breakdown

see Picture 5 (Page 7/8)

Special Repair Tools:

Allen Key 6 mm AF	800449
Mandrel (for valve housing 331399)	460865
Socket Wrench (for bushing 330364 and 331411)	460838
Gripping Jaw (for motor housing 326100)	460781
Socket Wrench (for screw joint 326102)	460401
Wrench 17 mm AF	800405

3. Maintenance

3.1 General

Testing and maintenance can be provided by Operator; disassembly and re-assembly of the DEPRAG MINIMAT-ULTRA Screwdriver should be done by experience maintenance personnel. Incorrect assembly or disassembly can lead to injury of an operator and damage of the tool.

We would like to advise, that

- during any maintenance or repair work, the tool must be disconnected from the air supply.
- during any maintenance or repair work, a clean working surface is recommended. Also, it is not recommended to either eat or smoke during repair or maintenance.

3.2 Testing and Maintenance

The tool 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 until 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 A. Oiling: approx. 1 - 2 drops per 1 m³ air consumption.
- If tool are being used with lubrication, we recommend to have tools tested and cleaned every 12 months (single shift).
- If tools are being used without lubrication, we recommend to have tools tested and cleaned every 6 months (single shift).

