

DEPRAG

Operating instructions

Pneumatic screwdriver

345-308UD	382058 A
345-408UD	382058 B
345-508UD	382058 C

DEPRAG

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CERTIFIED AS PER DIN EN ISO 9001

Jan-04 Technical alterations reserved

MICROMAT-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!

Content:	Page
1. Operating Instruction	2
1.1 Connection + Installation	2
1.2 Operation	3
1.3 Range- and Exchange of Clutch Spring	3/
1.4 Torque Adjustment	5
2. Parts Breakdown	7/8
3. Maintenance	6
3.1 General	6
3.2 Testing and Maintenance	6
4. Trouble Shooting	9
5. Safety Tips	10
6. Dismantling Instructions	11
7. Assembly Instructions	12
8. EC-Conformity Declaration	13
9. All important data at a glance	14

9. All important data at a glance

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Model:	345-308UD	345-408UD	345-508UD
Order no.	382058 A	382058 B	382058 C
Length (inches / mm)	6,9 / 177	6,9 / 177	7,2 / 183
Diameter of motor housing (inches / mm)	0,6 / 17		
Drive (mm)	B 3 (3 mm)		
Weight (kg / lbs)	0,17 / 0,38	0,17 / 0,38	0,18 / 0,40
Air Pressure Requirement (bar)	6,3		
Hose I.D. Requirement (mm)	3		
Torque min. (Ncm / in.oz)	2 / 3	2 / 3	2 / 3
Soft pull-up max. (Ncm / in.oz)	40 / 57	60 / 83	70 / 97
Hard pull-up max. (Ncm / in.oz)	50 / 70	60 / 83	70 / 97
Speed (min ⁻¹):	1300	950	300
Noise Level (dB(A)):	65		
Vibration (m/s ²)	< 2,5		
Air consumption (m ³ /min / cfm)	0,1 / 3,5		

8. EC-Conformity Declaration

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

We,

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

hereby confirm, that the

DEPRAG-MICROMAT-ULTRA 345-308UD
345-408UD
345-508UD

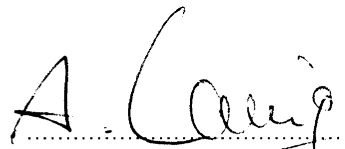
conform to the following, relevant regulation:

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

Applicable Standard:

- EN 292

Amberg, 29.01. 2004


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



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) Oilfree operation could result in a loss of performance of up to 20 %.

1. Operating Instruction

1.1 Connection and Installation

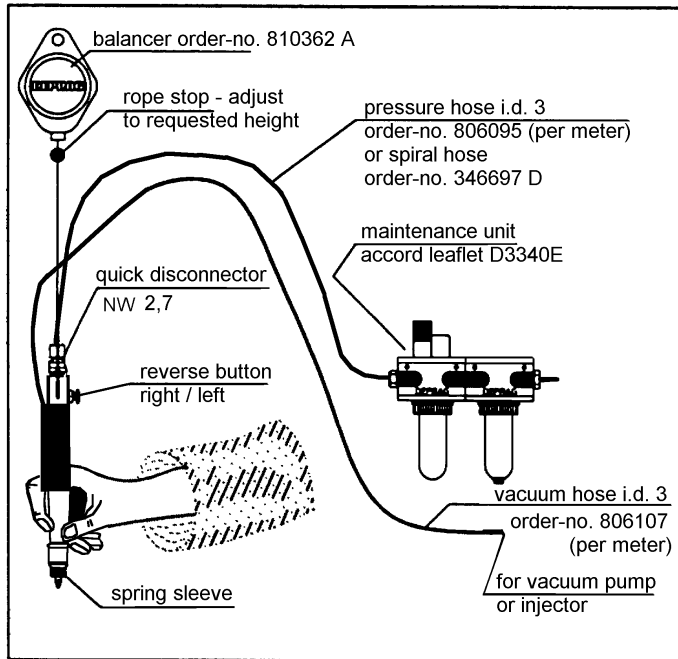
- Blow out air hose before connecting it to the tool.
- connect the MICROMAT-ULTRA Screwdriver as follows
 - a) if used with lubrication, connect driver to Maintenance Unit, consisting of Filter, Lubricator and Regulator.
 - b) if used without lubrication, connect driver to Maintenance Unit, consisting of Filter and Regulator.
- The required I.D. of pressure hose is 3 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.

In regards to air-quality according to ISO 8573-1, we recommend:

	Class	Residue of Oil Content mg/m ³	Residue of Dust		Residue of Water	
			particle size µm	max. concentration mg/m ³	pressure dewpoint °C	max. concentration g/m ³
Lubricated Air	4	5	15	8	+3	6
Dry 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 MICROMAT-ULTRA Screwdriver

Operation with Finder and Magnetic Bits:

To mount the finder (optional equipment)

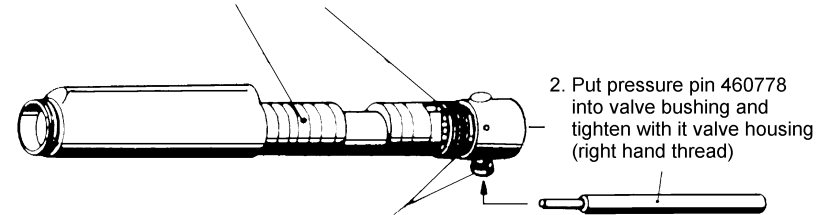
- unscrew the screw cap (left hand thread)
- slide the spring sleeve into the screw cap, place spring into finder and then re-assemble the screw cap.

1.2 Operation

The operation of the DEPRAG MICROMAT-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 screwdriver it starts automatically and assembles the screw. When the preset torque is reached, the clutch disengages and the driver stops. After lifting, the driver is ready to start again. When loosening screw, press the reverse button to the left (see picture 2) before you start the driver. While pressed down, the reverse button may be locked by turning it slightly, so that the screwdriver can be set to continuous left-hand-rotation.

7. Assembly Instructions

1. Put together motor-gear-assembly and valve housing and slide motor housing over them until thread stop

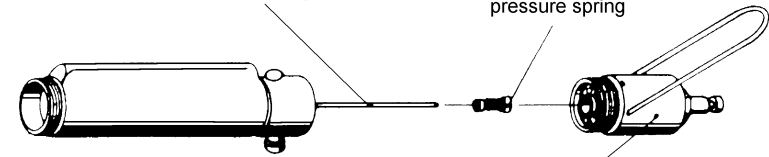


2. Put pressure pin 460778 into valve bushing and tighten with it valve housing (right hand thread)

3. Insert valve button into valve bushing and tighten thread pin (right hand thread)

4. Insert valve pin

5. Insert valve disc and pressure spring

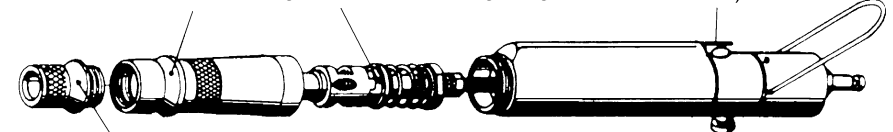


6. Tighten connecting piece (right hand thread) by means of suspension hook 323688

7. Insert clutch into clutch bearing and tighten onto screwdriver (left hand thread)

Attention:
The hexagon of the clutch must engage into the hexagon of the screwdriver gearing

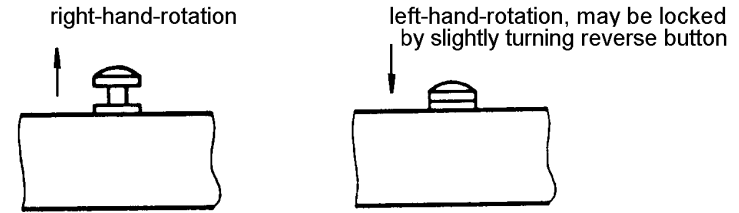
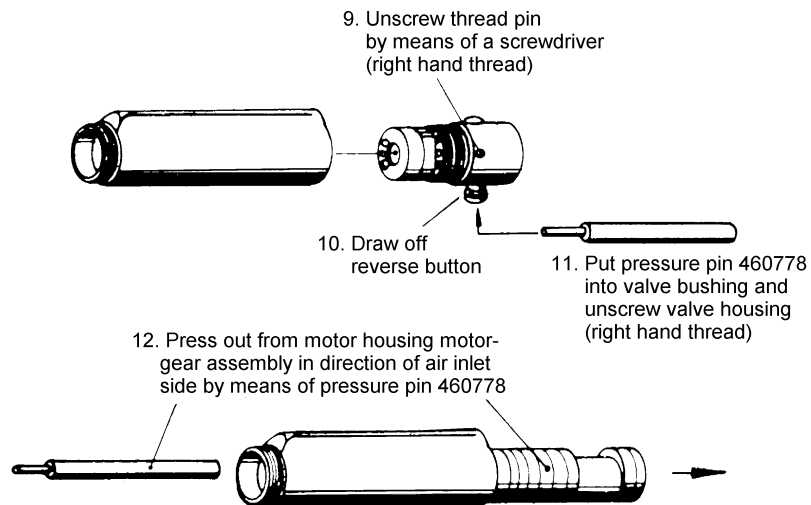
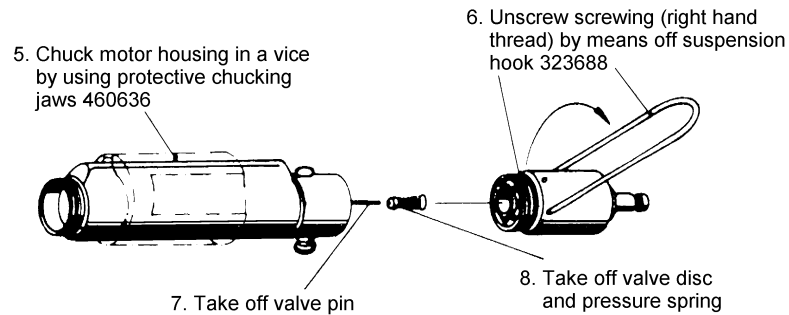
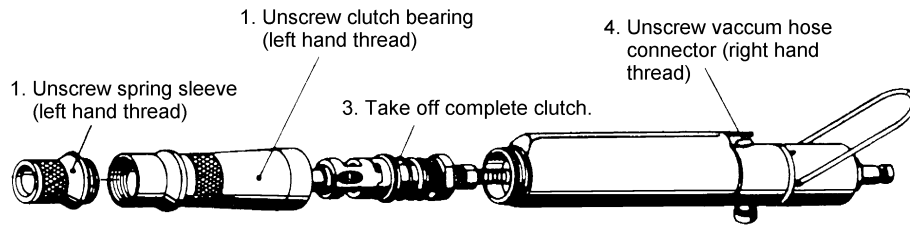
8. Tighten vacuum hose connector (right hand thread)



9. Tighten spring sleeve (left hand thread)

Attention:
Check and ensure that engagement lift on the spindle is available.

6. Dismantling Instructions



Picture 2: Reverse button as seen from Operator side

The driver has a quick change chuck integrated. Before change of bits, disconnect the air. Otherwise the driver may start and possibly cause an injury.

- Unscrew the spring sleeve. (left hand rotation)
- Inserting of bit by pressing it into the hexagon end.
- After pressing spindle 337290/1 bit may be removed.

Injuries may occur:

- if trigger is depressed and the bit rotating.
- if the driver reacts with an unexpected motion or is damaged.

1.3 Range- and Exchange of Clutch Spring

The torque range of the DEPRAG MICROMAT-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
347218	2,0 mm	abraded	55 Ncm = 4,9 in.lbs.	70 Ncm = 6,1 in.lbs.
326730	1,8 mm	blue	25 Ncm = 2,2 in.lbs.	60 Ncm = 5,3 in.lbs.
323877	1,6 mm	green	9 Ncm = 0,8 in.lbs.	42 Ncm = 3,7 in.lbs.
323878	1,1 mm	red	5 Ncm = 0,4 in.lbs.	15 Ncm = 1,3 in.lbs.
322914	0,7 mm	natural	2 Ncm = 0,2 in.lbs.	5 Ncm = 0,4 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.

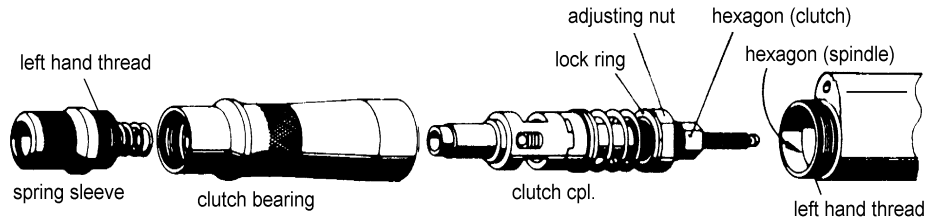
1. Unscrew spring sleeve cpl. 364670 A. (left hand thread)
2. Unscrew clutch bearing cpl. 337333/2. (left hand thread)

3. Take out clutch 382059 A/B complete.
4. Put wrench 805492 AF 6 mm on to the hexagon of the clutch shaft 326496/1 and screw off adjusting nut 323711 by means of the wrench 805491 AF 11 mm. (right hand thread)
5. Draw off lock ring 323710.
6. Take off clutch spring and assemble clutch in reverse order.
7. Introduce clutch cpl. into the clutch bearing and screw the latter on to the screwdriver.

Attention:

The claw of the clutch shaft 326496/1 must engage with the claw of the gear support 339258 / 345412. Check this and ensure that engagement lift on the spindle is available.

8. Adjustment of the clutch according to 1.4.



Picture 3: Change of Clutch Springs

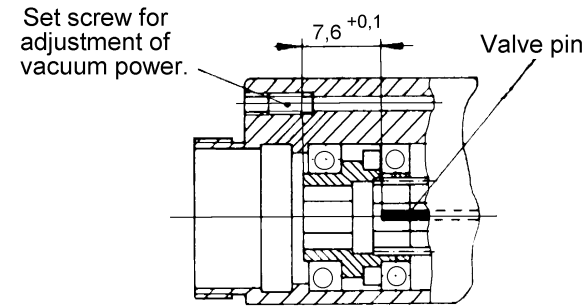
1.4 Torque Adjustment

Disconnect driver from air supply.

1. Unscrew spring sleeve 364670 A. (left hand thread)
2. Unscrew clutch bearing 337333/2. (left hand thread)
3. Take out clutch 382059 A/B complete.
4. Put wrench 805492 AF 6 mm on to the hexagon of the clutch shaft 326496/1 and turn adjusting nut 323711 by means of the wrench 805491 AF 11 mm. You get a higher torque by turning the adjusting nut in clockwise order and vice versa a lower torque.
5. Introduce clutch cpl. into the clutch bearing and screw the latter on to the screwdriver.

Attention:

The claw of the clutch shaft 326496/1 must engage with the claw of the gear support 339258 / 345412. Check this and ensure that engagement lift on the spindle is available.



Picture 5: Actual size of Valve Pin (to be measured under air-pressure)



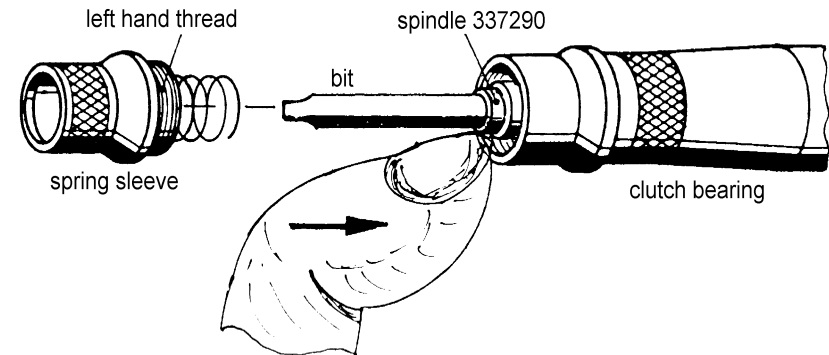
Attention:

When connecting to compressed air supply valve pin may be catapulted out which may cause serious injuries. When checking the actual size of the valve pin make sure to not hold the screwdriver towards yourself nor any other person.

Check the actual size only with compressed air connected!

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.



Picture 6: Change of Bits

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 5. If needed, exchange valve pin.
	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 (picture 5)

2. Parts Breakdown

Picture 4 (Page 7/8)

3. Maintenance

3.1 General

Testing and maintenance can be provided by Operator; disassembly and re-assembly of the DEPRAG MICROMAT-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.

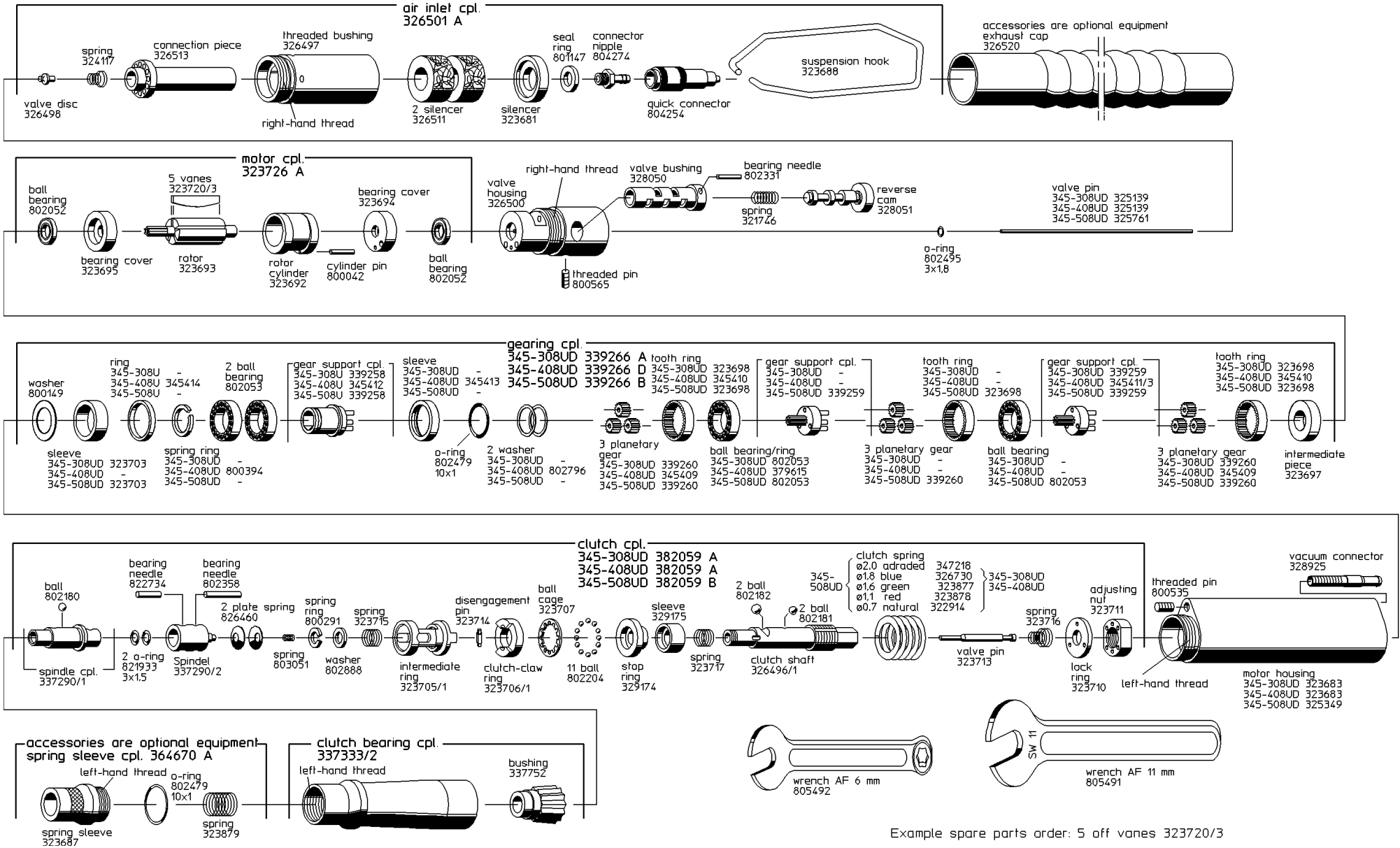
We would like to advise, that

- 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 + 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 E. 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).
- 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.



Picture 4: Parts Breakdown