

# DAP

App. NO.: 4041700  
Voltage: 220-240/50-60  
1991.05

Grinding and Polishing Machines  
Instruction Manual

Schleif- und Poliermaschinen  
Gebrauchsanweisung

Machines de prépolissage et polissage  
Mode d'emploi



 **Struers**

## **DAP Instruction Manual**

In technical enquiries and in orders for spare parts, please state app. No. and voltage (see cover).

All information and data in this Instruction Manual were valid when it was printed. The Struers policy being, however, to make current improvements of our products, we reserve ourselves the right to modify our products without notice. Besides, we ask you to note that this Instruction Manual concerns apparatus and all accessories. Consequently, it may happen that the Manual mentions equipment which is not of relevance for your purpose at the present time.

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## 1. DESCRIPTION

DAP is a complete programme of relatively small motor-driven machines for wet grinding and for alumina and diamond polishing of metallographic, ceramic and mineralogical specimens. All machines may be used for both manual and automatic polishing.

A DAP machine consists of a circular turntable on which can be mounted grinding, lapping and/or polishing discs of diameters up to 250 mm. The turntable is supported by precision ball bearings and driven by an electric motor via a belt drive which ensures uniform and silent running.

The motor and the turntable are mounted on sturdy bearing plates which are clamped in the lower cabinet. Spillpan and outlet are incorporated in the upper cabinet-unit on which are also mounted water tap and nozzle (except for DAP-6). The left side of the control panel of DAP-7 and DAP-8 has a rotary switch with three positions for off, low speed and high speed. Having just one speed, DAP-6 is only provided with an on/off switch. DAP-V has a turnbutton for preselection of speed, an ON/OFF switch and an indicator for control of the speed. The servo-controlled motor ensures constant speed at all loads.

On DAP-6, DAP-7, DAP-8 and DAP-V, a thermo-fuse is mounted on the front plate which switches off the apparatus in case of overload.

## 2. TECHNICAL DATA

Motor: Single phase

Voltage, frequency  
DAP-7 and DAP-8:  
110 V, 50 Hz  
115 V, 60 Hz  
220-240 V, 50 Hz  
220 V, 60 Hz

DAP-V and DAP-6:  
110-115 V, 50-60 Hz  
220-240 V, 50-60 Hz

Output:

DAP-7: 30/50 W  
DAP-8: 80/120 W  
DAP-6: 120 W  
DAP-V: 180 W

Rotational speeds:

DAP-6: 250 rpm  
DAP-7: 125/250 rpm  
DAP-8: 300/600 rpm  
DAP-V: 40-600 rpm (stepless)

Maximal diameter of polishing/grinding disc: 250 mm

Recommended diameter of the grinding- and polishing discs: 200 mm

Dimensions:

Width 350 mm, Depth 590 mm,  
Height 245 mm

Weight:

DAP-6: 14 kg  
DAP-7: 16 kg  
DAP-8: 16 kg  
DAP-V: 17 kg

### 3. INSTALLATION

#### 3.1 Contents of packing case

##### DAP-6:

1 DAP-6  
1 cover  
1 splash ring, 210 mm dia.  
1 splash ring, 240 mm dia.  
1 drain hose 1" x 1,5 m  
1 drain elbow pipe  
3 hose clips 20-32 mm  
1 Allen key (4 mm)

##### DAP-7:

1 DAP-7  
1 cover  
1 splash ring, 210 mm dia.  
1 splash ring, 240 mm dia.  
1 drain hose 1" x 1,5 m  
1 drain elbow pipe  
3 hose clips 20-32 mm  
1 hose connection  
1 coupling nut  
1 gasket  
1 hose clip 13 mm  
1 Allen key (4 mm)

##### DAP-8:

1 DAP-8  
1 cover  
1 splash ring, 210 mm dia.  
1 splash ring, 240 mm dia.  
1 drain hose 1" x 1,5 m  
1 drain elbow pipe  
3 hose clips 20-32 mm  
1 hose connection  
1 coupling nut  
1 gasket  
1 hose clip 13 mm  
1 Allen key (4 mm)

##### DAP-V:

1 DAP-V  
1 cover  
1 splash ring, 210 mm dia.  
1 splash ring, 240 mm dia.  
1 drain hose 1" x 1,5 m  
1 drain elbow pipe  
3 hose clips 20-32 mm  
1 hose connection  
1 coupling nut  
1 gasket  
1 hose clip 13 mm  
1 Allen key (4 mm)

#### 3.2 Connection to water (not DAP-6)

Place the machine close to water outlet and drain. Connect the thin hose to the water outlet and fit it with the 13 mm hose clip. If not present already, the hose connection with gasket and coupling nut supplied with the machine may be mounted on the water outlet ( $\frac{1}{2}$ " pipe thread, BS 2779:6 $\frac{1}{2}$ ).

Lead the thick hose to drain and be absolutely sure to place the hose with a steady downward slope to prevent the water from being discharged too slowly which may cause overflow or blocking of the water outlet.

In order to avoid elbows on the tubing, the enclosed elbow pipe can be mounted on the tubing in an appropriate place.

#### 3.3 Connection to the mains

Mount a plug on the electric cable, connecting it as follows:

yellow/green lead to earth  
blue lead to neutral  
brown lead to phase  
(blue and brown lead are freely interchangeable).

Before connecting the machine, check that the local mains voltage corresponds to the voltage stated on the machine type plate.

4. OPERATION

To start DAP-7 and DAP-8 turn the rotary switch one or two steps, corresponding to low or high speed.

DAP-6 is started by means of the ON/OFF switch.

DAP-V is started by preadjustment of the speed by setting the turn button and then turn the ON/OFF switch to ON. The speed can be fine-adjusted according to the tachometer. At start and stop it is not necessary to operate the speed selector if the speed has not to be changed.

The grinding, lapping or polishing disc is mounted on the turntable by inserting the three pins of the disc in the corresponding holes in the turntable (fig. 5). Before mounting the disc, make sure that the contact surface are clean and smooth.

Now the machine is ready for use (fig. 6).

5. ACCESSORIES

The range of discs comprises grinding disc for affixation of grinding paper according to the Knuth-Rotor principle (Codeword: ROTTO/Ø 200 mm, DEPRO/Ø 230 mm), polishing disc for self-adhesive (Codeword: DEPKI) or clamped-on polishing cloth (Codeword: DEPKI and CLAMP) and further a number of special lapping or lapping/grinding disc of various materials. In addition, a complete programme of consumables is available, including grinding paper, polishing cloths, diamond paste/spray, alumina, lapping powders and cooling-lubricating media.

DAP-7 and DAP-V are prepared for mounting of Pedemin (fig. 7), an automatic specimen mover to be used at fine-grinding and polishing of 1, 2 or 3 specimens. Pedemin can prepare specimens of diameter up to 40 mm, with individual pressure on all three specimens.

Refer to special leaflets.

If grinding paper is used on DAP-6 it is recommended to use water as coolant. Therefore it is possible to mount a water tap on the machine (Codeword: DAPTA).

6. MAINTENANCE

The DAP-machines are designed and constructed for many years of trouble-free running without much attention to their function as all bearings are sealed and no further lubrication is needed. Thus maintenance will generally be limited to cleaning the exterior of the machines, the spill pan and the drain hose. Where the machines are used, say, for alumina polishing or SiC lapping the spill pan should be kept clean so as to prevent the suspension from drying and thus blocking the hose. To avoid erratic movement the contact surface between disc and turntable should be kept clean.

Generally Cleaning

The best way to clean the machine is to use ordinary soapy water with subsequent wiping off.

Note: Never use solvents (for inst. Xylene) of any kind.

The belt may need tightening from time to time, the transmission being less efficient with inadequate belt tension. In order to tighten (or to replace) the belt, remove the turntable (300 MP 26) and unscrew the upper cabinet-unit (4 Allen screws on the underside of the apparatus are unscrewed by means of the Allen key (4 mm)). Tighten the belt by pushing the motorplate backwards after having loosened the wing-nuts. The belt must be tightened in such a way that a pressure of 100 N in the middle between the pulleys makes the belt bend 10-20 mm.

3 MP 1

3 MP 14

3 MP 15

3 MP 16

3 MP 17

## 7. SPARE PART LIST

Please state apparatus No. and Spare Part No.

Fig. and Pos. No.	Description	Spare Part No.
<b>Apparatus: DAP-6</b>		
<b>Electrical parts</b>		
8.1	Motor, state voltage	326 MP 76
8.2	Capacitor, state voltage	326 MP 77
1.1	Switch	388 MP 1
1.2	Thermal cut-out, 110-115V, 3.5 A	388 MP 2
1.2	Thermal cut-out, 220-240V, 1.8 A	388 MP 3
<b>Motorbridge assembly</b>		
8.3	Motor mounting plate	388 MP 4
8.4	Spacer	388 MP 5
8.5	Chock reducer, complete	388 MP 6
8.6	Chock absorber	300 MP 39
8.7	Wing nut	388 MP 7
8.8	Pulley for motor	354 MP 6
8.11	Drive belt	300 MP 3
<b>Turntable assembly</b>		
11.1	Turntable with screws	300 MP 26
8.9	Bridge for turntable assembly	388 MP 8
11.2	Pulley	388 MP 9
11.3	Axle journal	388 MP 10
11.4	Distance bush	388 MP 11
11.5	Ball bearing kit	388 MP 12
	Clamping ring for grinding disc ROTTO (Ø 200)	404 MP 23
	Driving pins, all disc's, set of 3	144 MP 18
<b>Cabinet</b>		
1.4	Upper cabinet part with outlet pipe	388 MP 13
8.10	Lower cabinet part	388 MP 14
1.3	Frontplate	388 MP 15
1.8	Splash ring, 210 mm dia.	388 MP 16
	Lid	388 MP 17
1.5	Cover plug	388 MP 18

Fig. and Pos. No.	Description	Spare Part No.
1.6	Cover plug, small	388 MP 19
	Drain elbow pipe	388 MP 20
	Outlet hose 1" x 1.5 m	388 MP 21
8.12	Rubber Knob with screw	388 MP 22
	Splash ring, 240 mm dia.	388 MP 23

**Apparatus: DAP-7**

**Electrical parts**

9.1	Motor, state voltage	402 MP 1
9.2	Capacitor, 110V/50 Hz	402 MP 2
9.2	Capacitor, 110V/60 Hz	402 MP 3
9.2	Capacitor, 220V/50 Hz	402 MP 4
9.2	Capacitor, 220V/60 Hz	402 MP 5
2.1	Switch	402 MP 6
2.2	Thermal cut-out, 110-115V, 1.2 A	402 MP 7
2.2	Thermal cut-out, 220-240V, 0.6 A	402 MP 8

**Motorbridge assembly**

9.3	Motor mounting plate	402 MP 9
9.4	Spacer	388 MP 5
9.5	Chock reducer, complete	388 MP 6
9.6	Chock absorber	300 MP 39
9.7	Wing nut	388 MP 7
9.8	Pulley for motor, 50 Hz	402 MP 10
9.8	Pulley for motor, 60 Hz	402 MP 11
9.10	Drive belt	300 MP 3

**Turntable assembly**

11.1	Turntable with screws	300 MP 26
9.12	Bridge for turntable assembly	388 MP 8
11.2	Pulley	388 MP 9
11.3	Axle journal	388 MP 10
11.4	Distance bush	388 MP 11
11.5	Ball bearing kit	388 MP 12
	Clamping ring for grinding disc ROTTO (Ø 200)	404 MP 23
	Driving pins, all disc's, set of 3	144 MP 18

Fig. and Pos. No.	Description	Spare Part No.
<b>Cabinet</b>		
2.4	Upper cabinet part with outlet pipe	388 MP 13
9.11	Lower cabinet part	388 MP 14
2.3	Frontplate	402 MP 12
2.8	Splash ring, 210 mm dia.	388 MP 16
	Lid	388 MP 17
2.5	Cover plug	388 MP 18
	Drain elbow pipe	388 MP 20
	Outlet hose 1" x 1.5 m	388 MP 21
9.13	Rubber Knob with screw	388 MP 22
	Splash ring, 240 mm dia.	388 MP 23
<b>Water cock assembly</b>		
12.1	Water cock with union nut	266 MP 2
12.2	O-Ring	266 MP 3
12.3	Admission hose with union	404 MP 22
12.4	Sprinkler pipe	300 MP 35
12.	Water cock assembly, complete Codeword: DAPTA	

#### Apparatus: DAP-8

<b>Electrical parts</b>		
9.1	Motor, 110-115V/50-60 Hz	403 MP 1
9.1	Motor, 220-240V/50-60 Hz	403 MP 2
9.2	Capacitor, 110V/50 Hz	403 MP 3
9.2	Capacitor, 115V/60 Hz	402 MP 2
9.2	Capacitor, 220V/50 Hz	403 MP 4
9.2	Capacitor, 220V/60 Hz	402 MP 4
3.1	Switch	402 MP 6
3.2	Thermal cut-out, 110-115V, 2.5 A	403 MP 5
3.2	Thermal cut-out, 220-240V, 1.2 A	403 MP 6

Fig. and Pos. No.	Description	Spare Part No.
<b>Motorbridge assembly</b>		
9.3	Motor mounting plate	402 MP 9
9.4	Spacer	388 MP 5
9.5	Chock reducer, complete	388 MP 6
9.6	Chock absorber	300 MP 39
9.7	Wing nut	388 MP 7
9.8	Pulley for motor, 50 Hz	402 MP 10
9.8	Pulley for motor, 60 Hz	403 MP 7
9.10	Drive belt	300 MP 3
<b>Turntable assembly</b>		
11.1	Turntable with screws	300 MP 26
9.12	Bridge for turntable assembly	388 MP 8
11.2	Pulley	388 MP 9
11.3	Axle journal	388 MP 10
11.4	Distance bush	388 MP 11
11.5	Ball bearing kit	388 MP 12
	Clamping ring for grinding disc ROTTO (Ø 200)	404 MP 23
	Driving pins, all disc's, set of 3	144 MP 18
<b>Cabinet</b>		
3.4	Upper cabinet part with outlet pipe	388 MP 13
9.11	Lower cabinet part	388 MP 14
3.3	Frontplate	403 MP 8
3.8	Splash ring, 210 mm dia.	388 MP 16
	Lid	388 MP 17
3.5	Cover plug	388 MP 18
	Drain elbow pipe	388 MP 20
	Outlet hose 1" x 1.5 m	388 MP 21
9.13	Rubber knob with screw	388 MP 22
	Splash ring, 240 mm dia.	388 MP 23
<b>Water cock assembly</b>		
12.1	Water cock with union nut	266 MP 2
12.2	O-ring	266 MP 3
12.3	Admission hose with union	404 MP 22
12.4	Sprinkler pipe	300 MP 35
12.	Water cock assembly, complete Codeword: DAPTA	

Fig. and Pos. No.	Description	Spare Part No.
<b>Apparatus: DAP-V</b>		
<b>Electrical parts</b>		
10.1	Motor 110-115V/50-60 Hz	404 MP 1
10.1	Motor 220-240V/50-60 Hz	404 MP 2
10.2	Tachometer circuit board	404 MP 3
10.3	Motor control circuit board	404 MP 4
	Fuse F 1	404 MP 5
10.4	Noise suppressor, Z 1	404 MP 6
10.5	Choke coil, L 1	404 MP 7
4.1	Switch	388 MP 1
4.4	Lamp, 110V	404 MP 8
4.4	Lamp, 220V	404 MP 9
4.2	Speed selector potentiometer	404 MP 10
4.2	Knob for speed selector	404 MP 11
4.3	Tachometer	404 MP 12
	Thermal cut-out, 110-115V, 4 A	404 MP 20
	Thermal cut-out, 220-240V, 1.5 A	404 MP 21
<b>Motorbridge assembly</b>		
10.6	Motor mounting bridge	404 MP 13
10.7	Spacer	404 MP 14
10.8	Chock reducer, complete	388 MP 6
10.9	Chock absorber	300 MP 39
10.10	Wing nut	388 MP 7
10.11	Mounting plate for 404 MP 4	404 MP 15
10.12	Mounting stay for pcb	404 MP 16
10.13	Connector	404 MP 17
10.14	Pulley for motor	404 MP 18
10.15	Drive belt	300 MP 3
<b>Turntable assembly</b>		
11.1	Turntable with screws	300 MP 26
10.16	Bridge for turntable assembly	388 MP 8
11.2	Pulley	388 MP 9
11.3	Axle journal	388 MP 10
11.4	Distance bush	388 MP 11
11.5	Ball bearing kit	388 MP 12

Fig. and Pos. No.	Description	Spare Part No.
	Clamping ring for grinding disc ROTTO (Ø 200)	404 MP 23
	Driving pins, all disc's, set of 3	144 MP 18
	<b>Cabinet</b>	
4.6	Upper cabinet part with outlet pipe	388 MP 13
10.17	Lower cabinet	388 MP 14
4.5	Frontplate	404 MP 19
4.10	Splash ring, 210 mm dia.	388 MP 16
	Lid	388 MP 17
4.7	Cover plug	388 MP 18
	Drain elbow pipe	388 MP 20
	Outlet hose 1" x 1.5 m	388 MP 21
10.18	Rubber knob with screw	388 MP 22
	Splash ring, 240 mm dia.	388 MP 23
	<b>Water cock assembly</b>	
12.1	Water cock	266 MP 2
12.2	O-ring	266 MP 3
12.3	Admission hose with union	404 MP 22
12.4	Sprinkler pipe	300 MP 35
12.	Water cock assembly, complete Codeword: DAPTA	

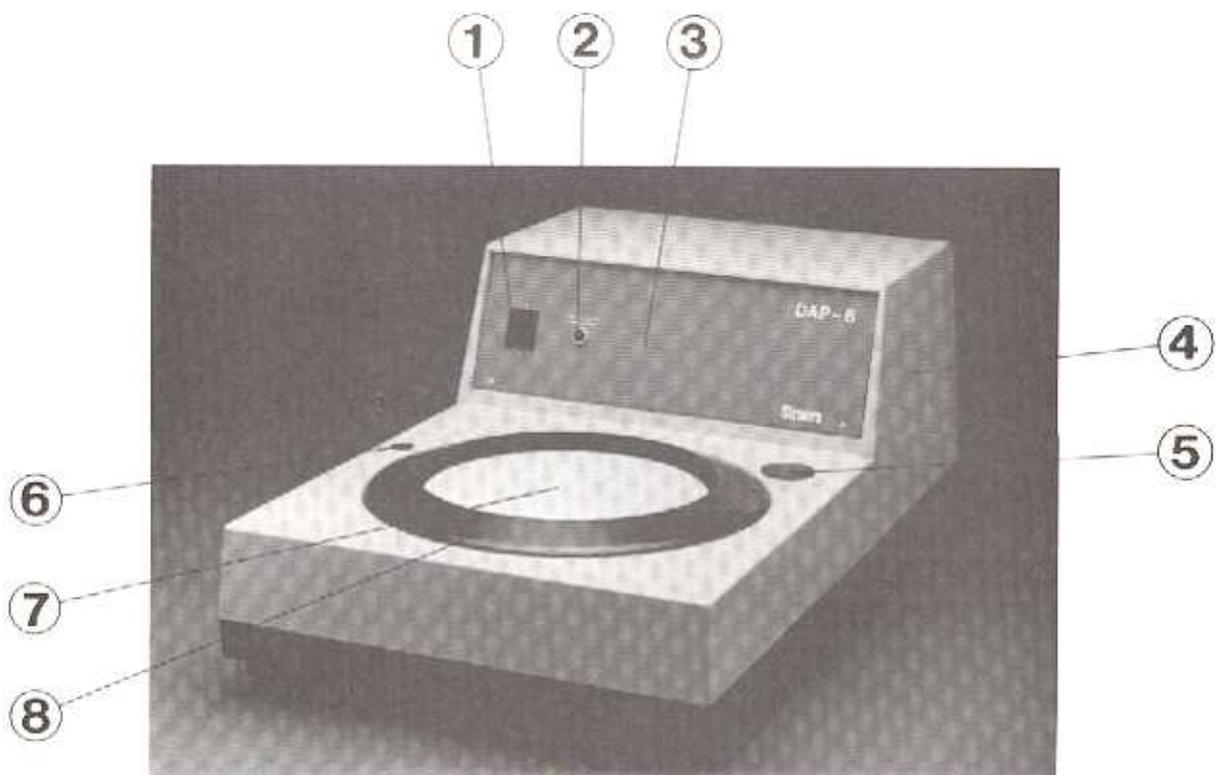


Fig. 1

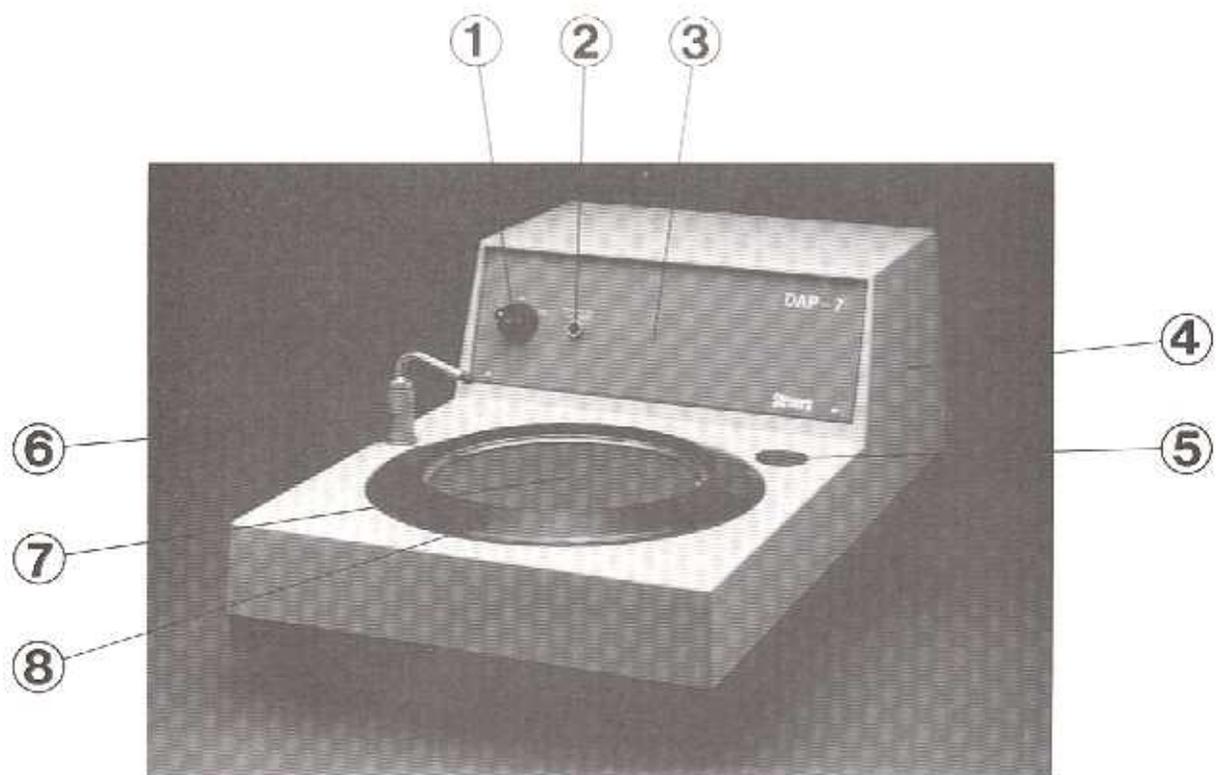


Fig. 2

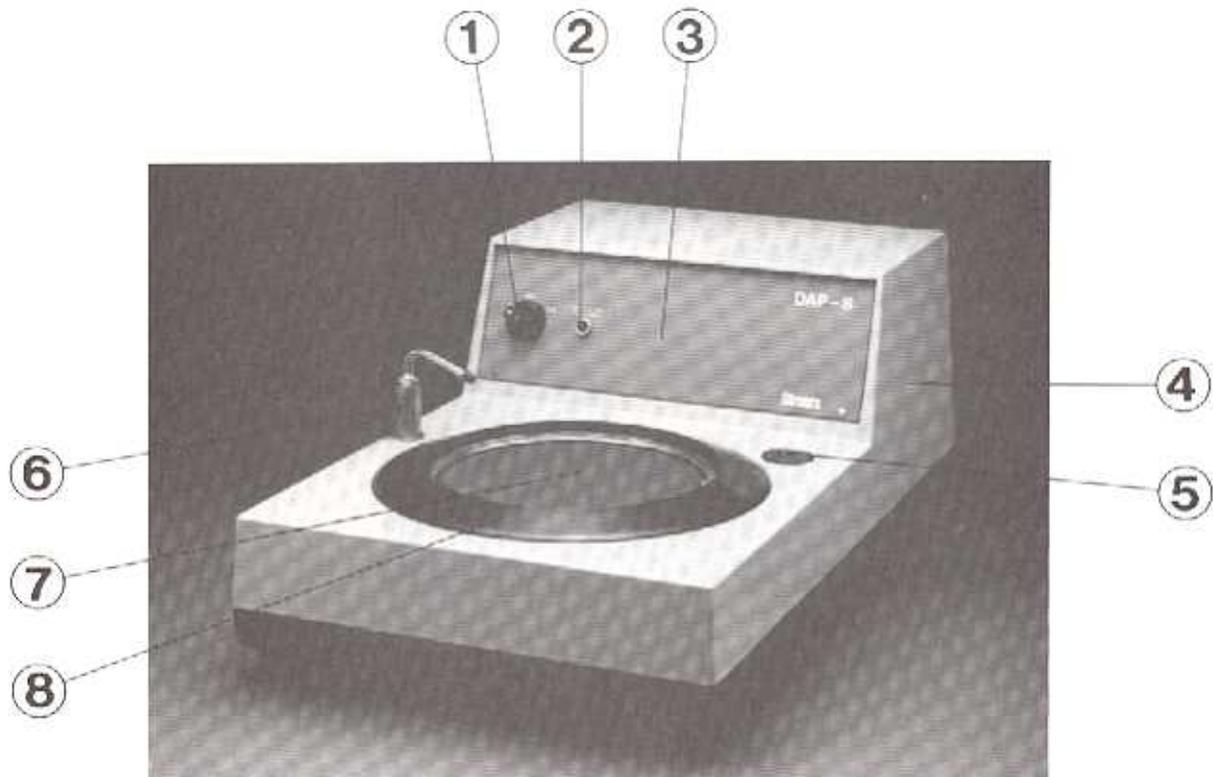


Fig. 3



Fig. 4



Fig. 5



Fig. 6

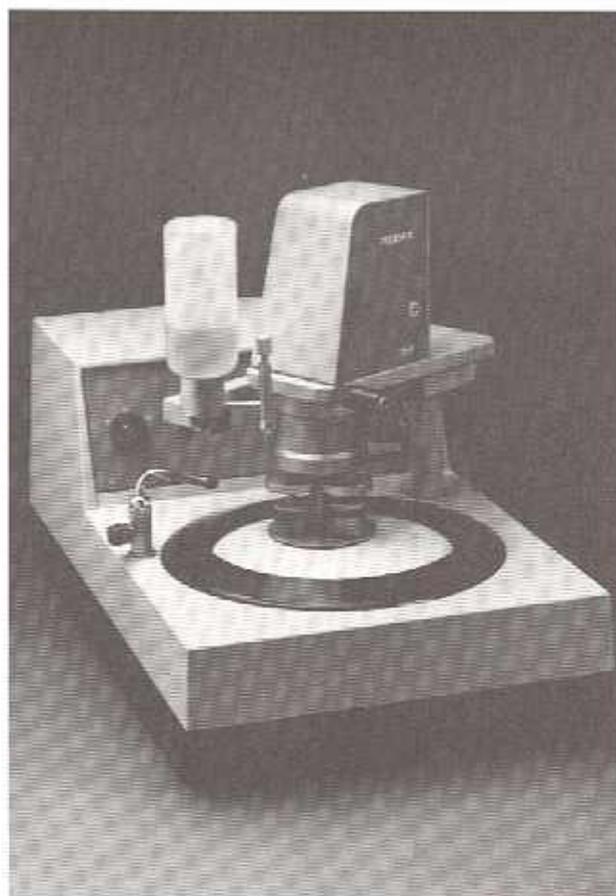
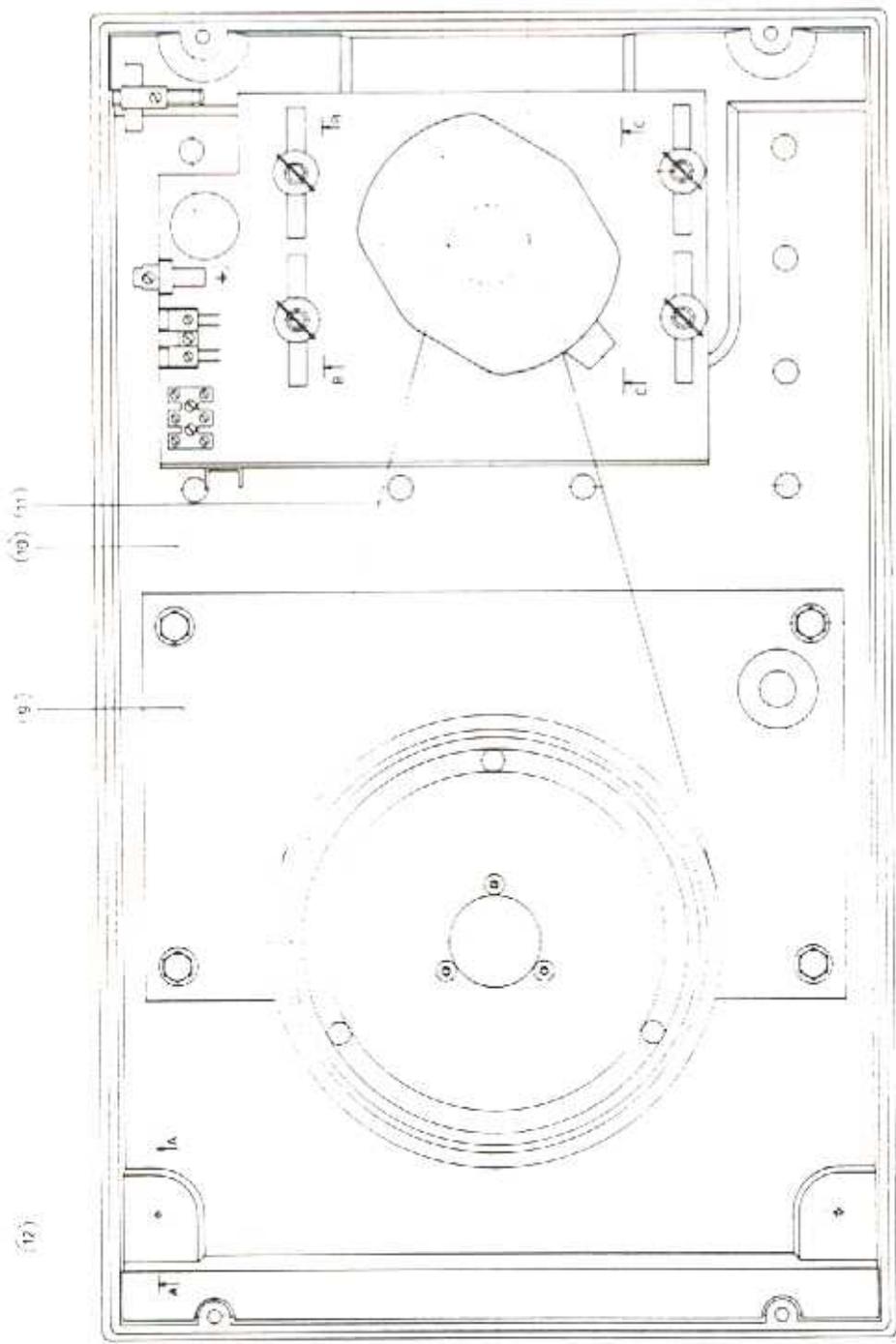
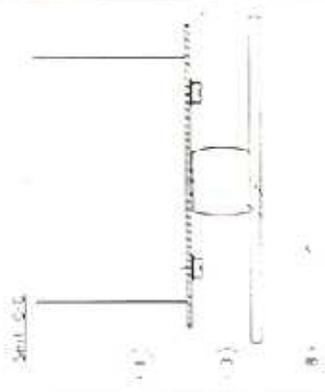
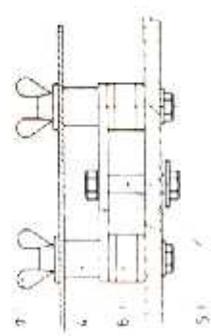


Fig. 7

Spil B. B.



388-M-95R

Fig. 8