

BOMBARDIER-ROTAX
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TUNING INSTRUCTIONS FOR ROTAX-ENGINE
TYPE 174

DESCRIPTION

By reduction of the intake length with a carburetor mounted at the side of the engine, an increase of the carburetor diameter (recommended dimension = 34 mm Ø), minor modifications on the cylinder and the use of a special exhaust system the top output of the engine type 174 can be increased to 33 - 35 HP at 10200 r.p.m.

Additionally required original Rotax-parts:

1 disk valve, part no. 224 100

1 clutch cover, part no. 212 048 (if required, see paragr. 2)

2. GENERAL ASPECTS

The modification postulates better-than-average craftsmanship and theoretical knowledge and the availability of the necessary machine tools and suitable aggregates for welding aluminum. Further should be checked whether the clutch cover of the engine to be modified is of aluminum, as modifications on a magnesium cover would be extremely difficult as regards welding. If the clutch cover consists of magnesium, an aluminum clutch cover, part no. 212 048, should be ordered.

The dimensions in brackets on the drawings enclosed as well as the indicated contour of the carburetor flange with the thread bores for fixation refer to the use of a Mikuni-carburetor VM 36. If an other carburetor type is used, these details change accordingly.

3. MODIFICATIONS ON CRANKCASE, CLUTCH COVER AND DISC VALVE COVER

- 3.1 According to sheet 1 and 2, an intake hole located symmetrically to the cylinder axis has to be machined into the crankcase half, clutch side. The respective part of the standard (oval) intake hole has to be filled with a suitable metal cement or -adhesive.
- 3.2 The side walls of the oil pump box (dash-lined on sheet no. 3) have to be removed. As to sheet no. 3, the clutch cover has to be machined down to a side wall height of 22 mm on the shaded space outlined by thick lines. The opening is closed by a suitably cut-to-size aluminum plate, 6 mm thick.

Then the position of the carburetor will be determined: The centre of carburetor VZ should be placed 44 mm from centre of crankshaft KM and as close as possible to the centre line ML of the intake opening of the crankcase.

The welded-in 6 mm aluminum plate as mentioned before has to be machined in the area of carburetor flange and on the inside (a little greater than the front surface of the disc valve - intake socket - see sheet no. 4) parallel to the clutch cover-sealing surface. The intake opening of the former rearward induction tract has to be closed to suit.

- 3.3 The disc valve cover has to be made according to sheet no. 4. Inlet- and outlet opening of the intake socket have to be aligned with the adjacent openings in the crankcase and clutch cover. When machining the intake-tunnel care must be taken not to remove the entire wall between tunnel and drive gear (clearance 48 mm \varnothing for 174).

Very Critical on 250!

*Same as
124*

Height H of disk valve cover depends on the respective dimension of the clutch cover; no metallic contact of the two parts is allowed.

Sealing between the two covers is effected by an O-ring on the front side of the disk valve - intake socket, where a groove has to be made according to the available O-ring dimension.

4. DISK VALVE

A disk valve no. 224 100 has to be modified as shown on sheet no. 2, i.e. one edge has to be machined back by 14° . The correct position is obtained if on "Top Dead Centre - position" of the crankshaft the original edge of the disk valve alignes with mark DM cast into the crankcase (disk valve opening at 140° B.T.D.C., closing at 92° A.T.D.C.).

5. MODIFICATIONS ON CYLINDER

174: See sheet no. 5

The cylinder has to be lifted by 0,5 mm by means of an aluminum sheet formed like a cylinder flange gasket. The exhaust port has to be machined 3,0 mm higher. From the upper cylinder plain surface has to be turned off as much as necessary to obtain a squeeze gap of 1,1 mm. The cylinder bore has to be extended by honing to obtain a piston clearance of 0,12 mm (standard clearance 0,06 mm).

6. EXHAUST SYSTEM

- shown on sheet no. 8 in straight position - should be made exactly to the drawing and be installed in the vehicle with not too narrow bends.

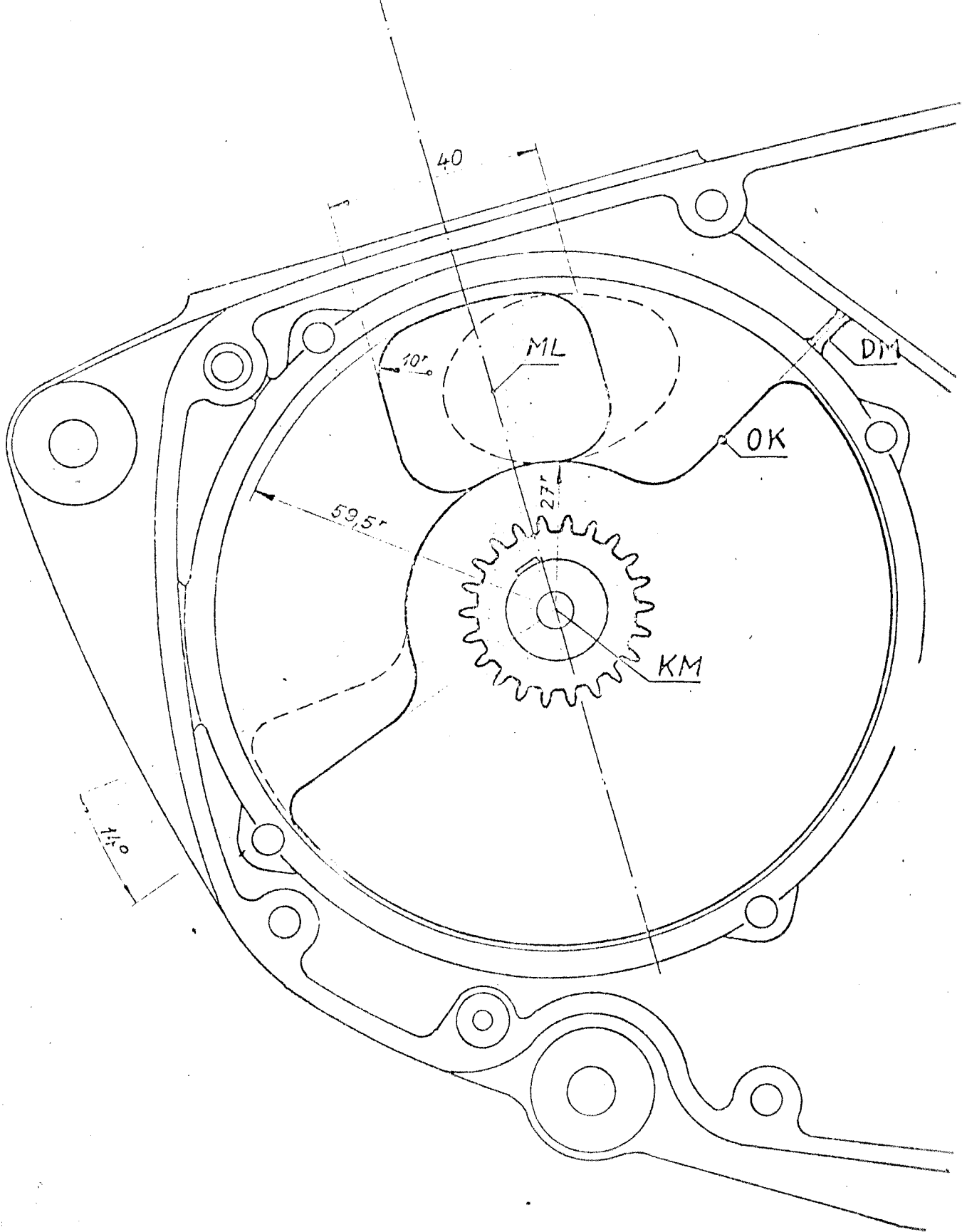
7. FURTHER TECHNICAL RECOMMENDATIONS

Fuel: Super gasoline with special two-stroke oil,
mixing ratio 25 : 1

Ignition timing: 1,2 mm B.T.D.C.

Caloric value of spark plug: 340.

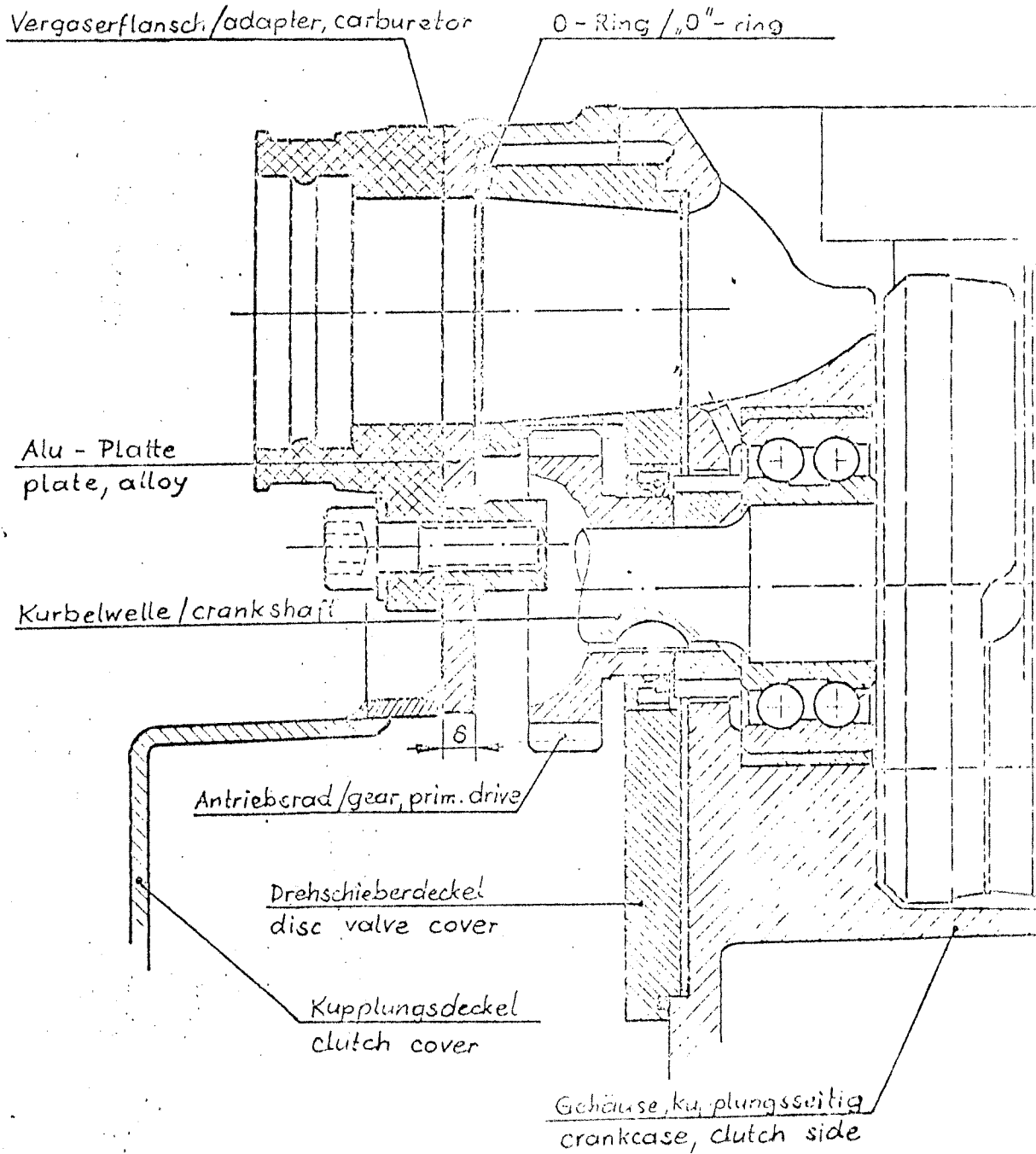
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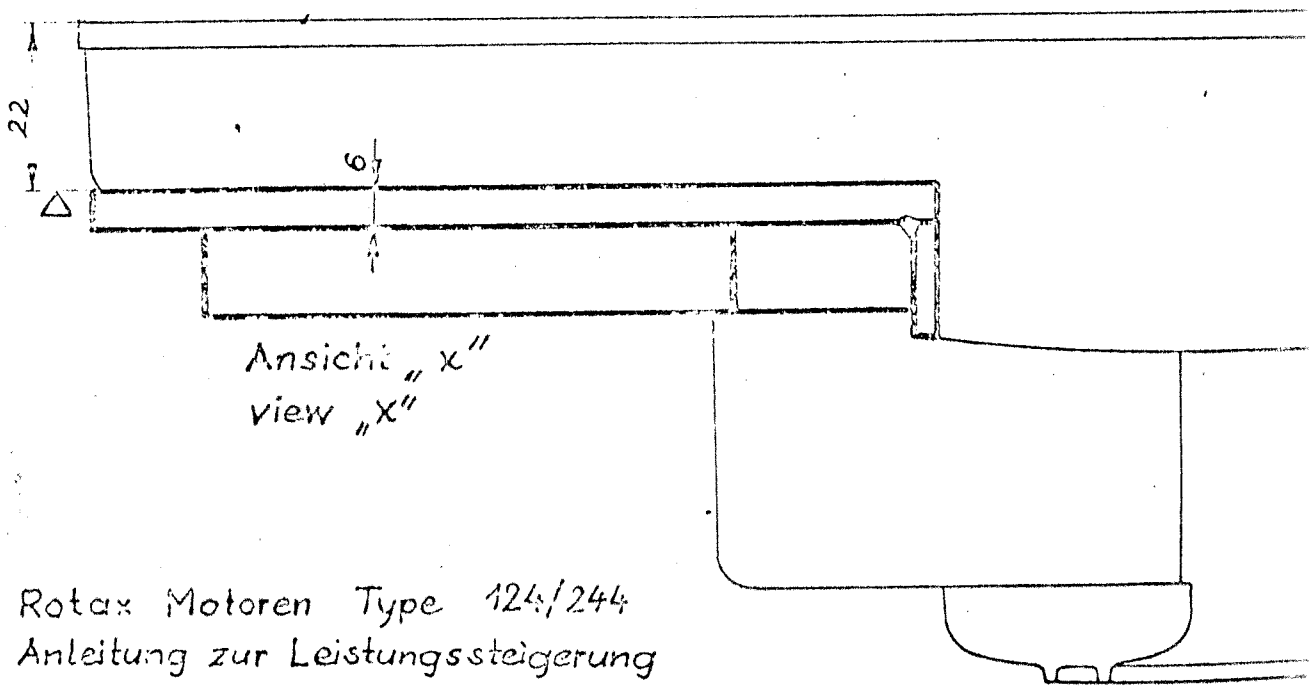
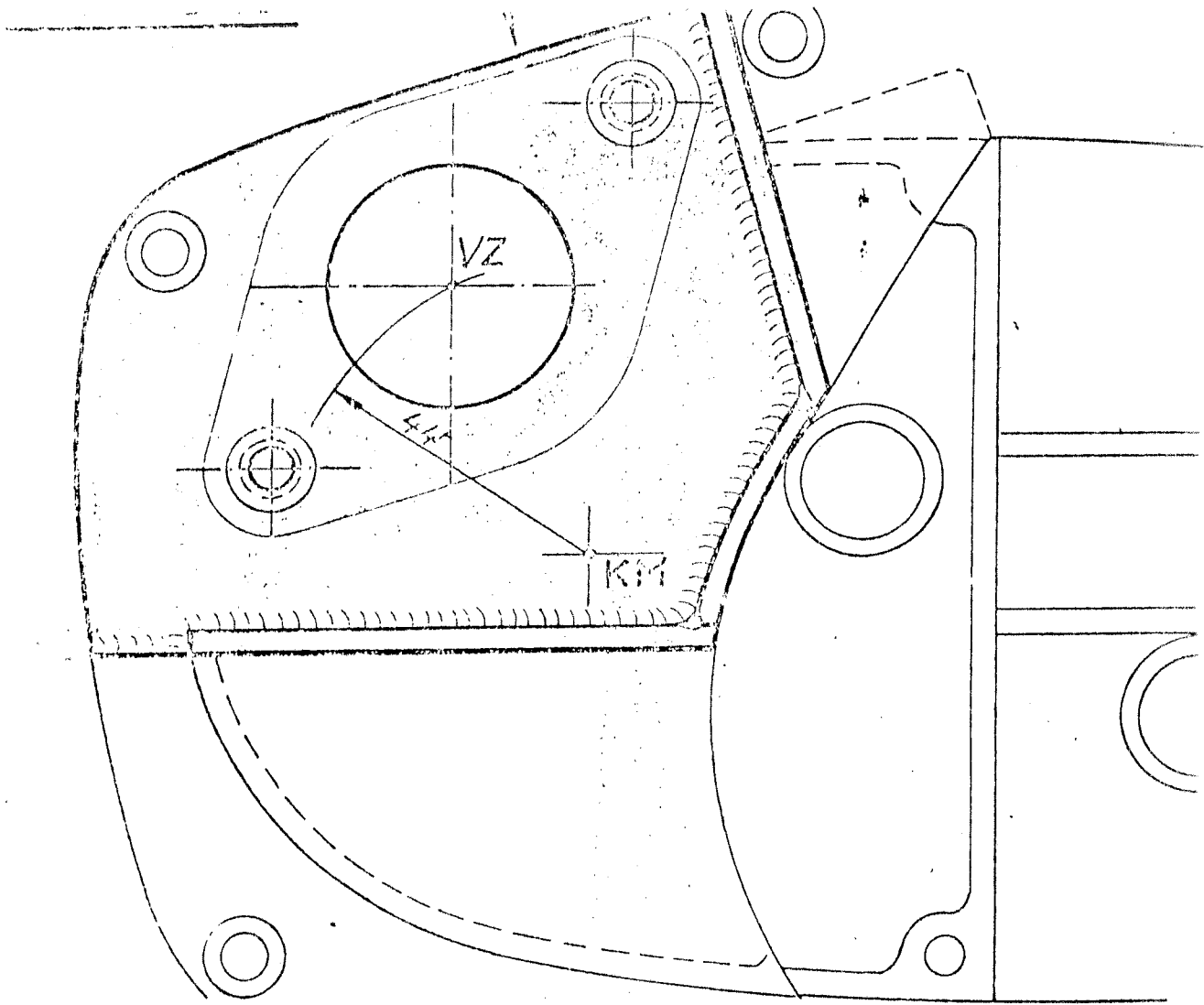
Rotax Motoren Type 124/244
Anleitung zur Leistungssteigerung

Rotax Engines Type 124/244
Tuning Instructions

Ansaugtrakt
"Short" Induction



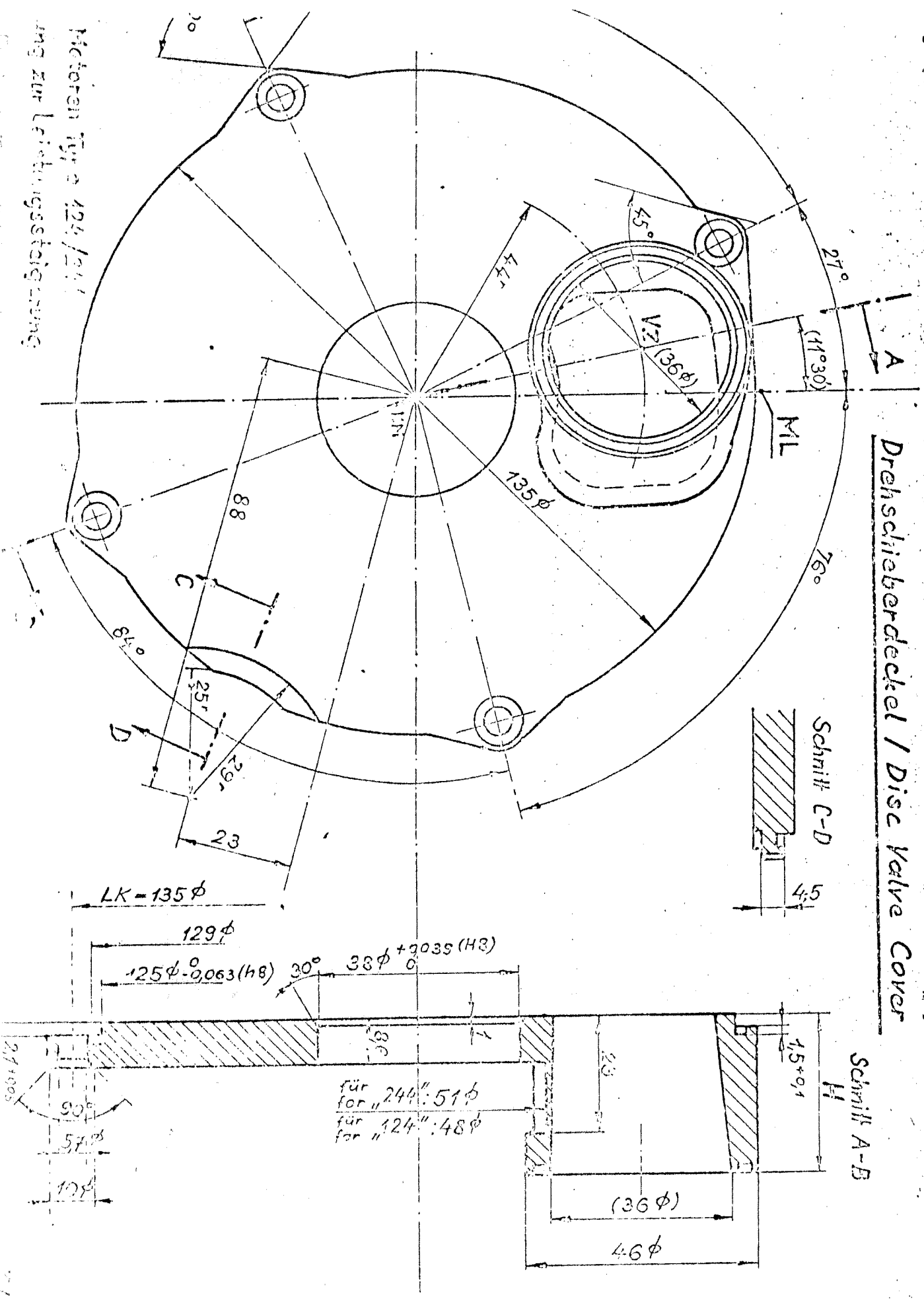
Rolox Motoren Type 124/244
Anleitung zur Leistungssteigerung



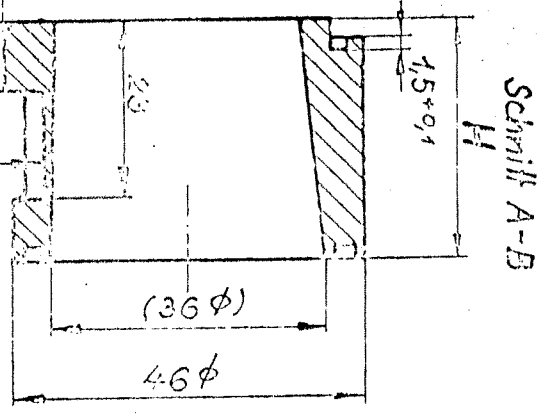
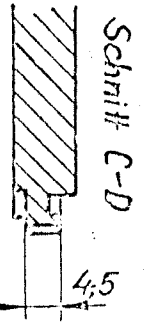
Rotax Motoren Type 124/244
 Anleitung zur Leistungssteigerung

Rotax Engines Type 124/244
 Tuning Instructions

Motoren Typ a 424/244
 ang zur Leistungssteigerung

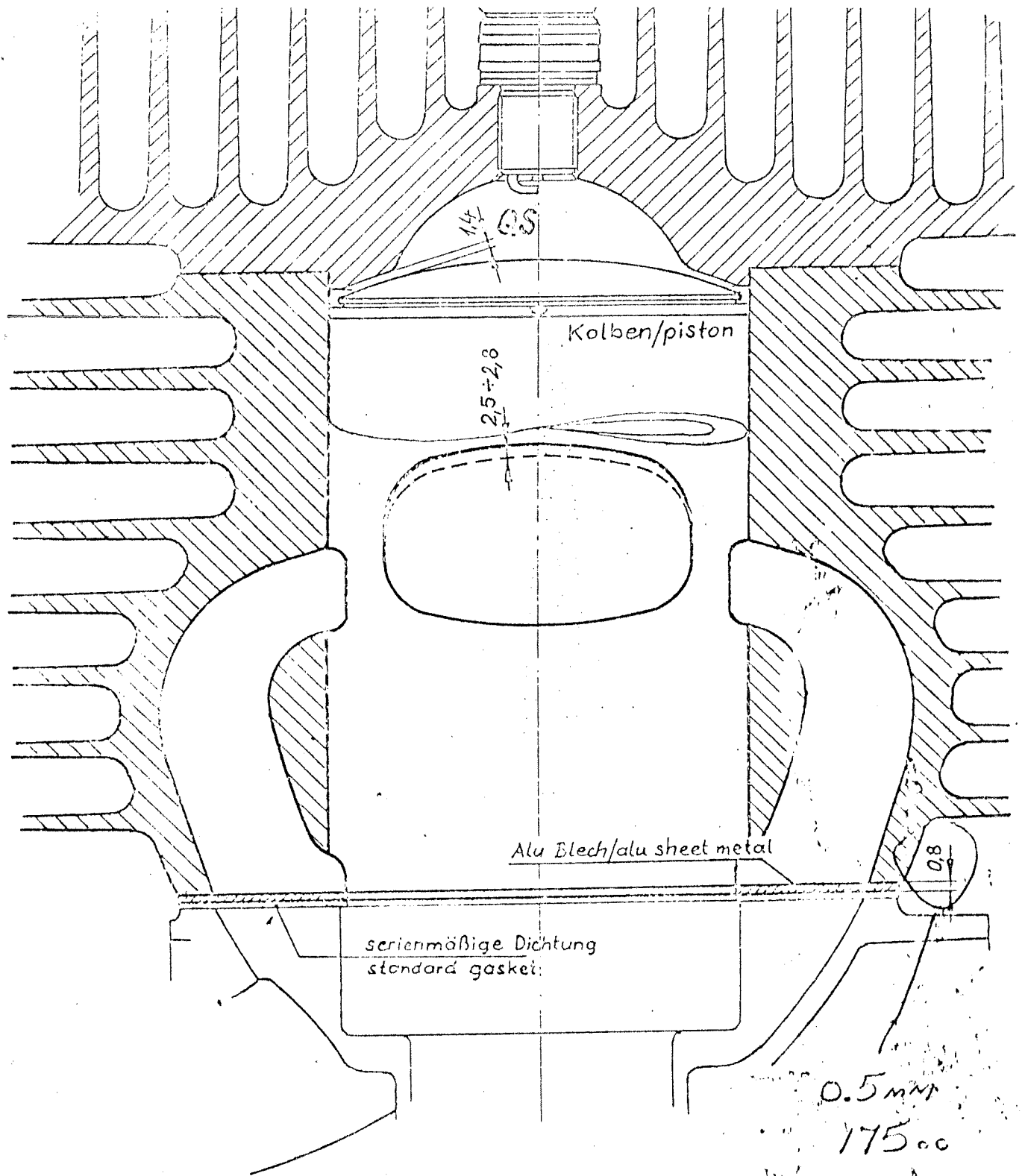


Drehschieberdeckel / Disc Valve Cover



für "244": 51φ
 für "124": 48φ

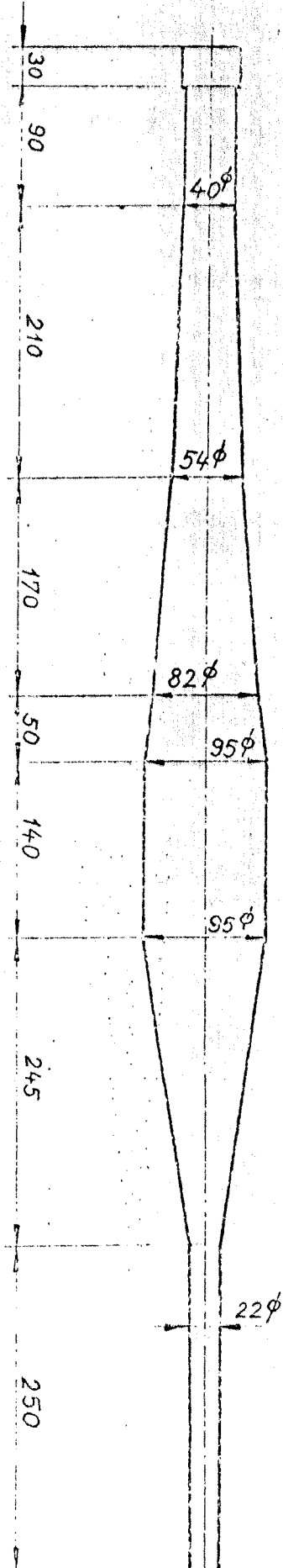
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Rotax Motor Type 244
Anleitung zur Leistungssteigerung

Rotax Engine Type 244
Tuning Instructions

Auspuffanlage / Exhaust Pipe



Rotax Motor Type 174
Anleitung zur Leistungssteigerung

Rotax Engine Type 174
Tuning Instructions