



No. 2500- I

## No. 2500- I

### KRK high-consistency disc refiner

The refiner is one of basic machines used in test and research area of pulp and paper industry and other related industries. It turns wood chips into pulp, conditions the pulp, and makes pulp of synthetic fibers, glass fibers and carbon fibers. With this machine, it is easy to perform processing into fiber and fibrillation of various polymers in diverse fields. Its shape is the same as the practical refiner used in the manufacturing plant, producing the same quality of the actual final product.

#### <Features>

1. Wide processing range of low consistency (3 %) to high consistency (30 %)
2. Provided with a parallelism adjusting system with 3-point support to eliminate error in parallelism caused by opening and closing of the cover
3. Compact design of the material feed system. The casing inside is accessible by loosening four bolts, facilitating cleaning and operation.

**Specimens subject to refining:** RGP, CGP, KP, straw pulp, waste paper, polyethylene, polypropylene, nylon, polyester, acryl, glass fiber, carbon fiber, hard board, corn, dried fish bone, etc.

**Section in contact with liquid:** SUS-316 (stainless steel)

**Interstice adjustment:** 1/100 mm adjustable

**Crushing plate:** stainless steel casting, one set includes plates, 305 mm in diameter

**Rotation speed of main shaft:** 3,000 rpm (standard)

**Driving motor:** three-phase 200 / 220 VAC, 22 kW / 30 kW

**Material feeder:** screw type

**Motor for feeder:** three-phase 200/220 VAC, 0.2 kW, steplessly variable

**Optional:** star-delta starter

**Power source:** three-phase 200/220 VAC 50/60 Hz 82/105A

**Outer dimensions:** 1030×1440×1270 mm

**Instrument weight:** 700 to 800 kg



No. 2500- II

## No. 2500- II

### KRK continuous high-consistency refiner

This refiner, like the No.2500-I, has been developed for continuous processing for a long time of various wood chips and other diverse fiber materials. It is used in laboratories and intermediate plants.

**Specimens subject to refining:** RGP, CGP, KP, straw pulp, waste paper, etc.

**Section in contact with liquid:** SUS-316 (stainless steel)

**Interstice adjustment:** 1/100 mm adjustable

**Crushing plate:** stainless steel casting, one set includes 6 plates, 305 mm in diameter

**Rotation speed of main shaft:** 3,000 rpm (standard)

**Driving motor:** three-phase 200 / 220 VAC, 22 kW / 30 kW

**Material feeder:** screw type

**Optional:** flange type material feed and recovery section

**Motor for feeder:** three-phase 200/220 VAC, 0.2 kW, steplessly variable speed

**Optional:** star-delta starter

**Power source:** three-phase 200/220 VAC 50/60 Hz 107A

**Water supply:** cooling water

**Outer dimensions:** 1030×1440×1270 mm

**Instrument weight:** 800 kg

## Refiner plate

The pattern and material of the plate has a close relationship with not only pulp quality but also available feed amount of chip and specific power consumption. The pattern and material are selected on the basis of experience and operation record. The plate is composed of two sections: breaking zone where chips are roughly broken, and refining zone for complete defibration and beating. The plate is made of high-chrome stainless steel. One set includes six plates. Three plates on each side (rotational and fixed sides) forms one segment. The photo shows the shapes.

**Plate diameter:** 305 mm in diameter

**Material:** stainless steel antiwearing material

**Outer dimensions:** 260×115×15 mm

**Plate weight:** 1.5 kg×6 plates

<shape and features>

### A - B:

For intermediate breaking. Capable of beating to make fibers directly from chips. Plate "A" is provided with a circumferential line to improve the breaking force. Plate "B" facilitates discharge.

### C - I:

Plate with smaller number of blades skew and not so sharp, suitable for defibration of coarse material without cutting fibers. "I" is provided with a circumferential line. "C" is effective to defibrate coarse materials, without cutting the fibers. "I" is provided with a circumferential line, while "C" has no edge.

When you desire to improve strength, "D" is suitable. It is designed for fine breaking, producing less amount of cut fibers.

"E" has a configuration similar to the raffinator, having a close correlation with the practical equipment, featuring improved flow in the breaker zone.

"F" is a special type provided with dams at different positions in the grooves. It features a longer stay time in the refining zone, thereby improving cutting effect

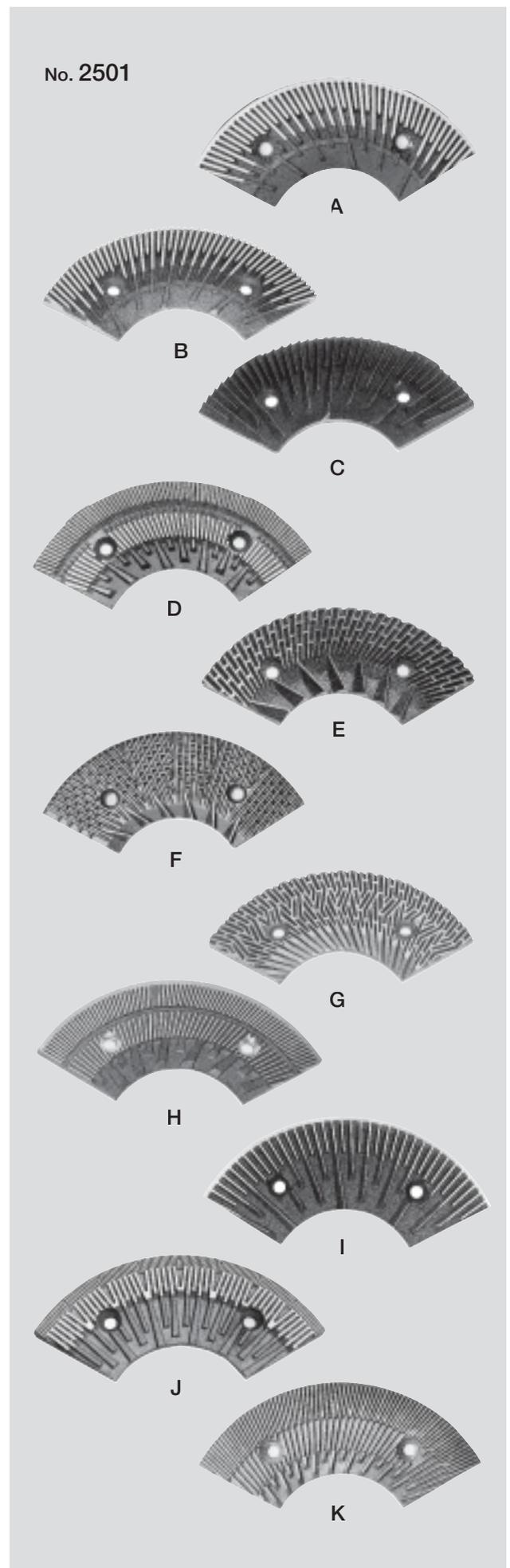
"G" has a configuration similar to the raffinator, having a close correlation with the practical equipment. It features a strong grinding effect.

"H" is for fine breaking. It is effective for grinding chips in the shape of short fine sticks.

"J" is especially effective for TMP (thermomechanical pulp). Since breakage is done strongly and rapidly near the circumference, causing less cutting, offering high strength.

"K" is a plate designed for separation of single fibers of synthetic pulp.

\* Please note that the features of each plate may change depending upon the quality of material, grindness and plate interstice.





No. 2503



## No. 2503

### KRK pressurized refiner

Since there is a keen demand for resource saving and no pollution in the world, a remarkable advance has been made recently in mechanical pulp, especially TMP (thermomechanical pulp). Much information on TMP is provided globally in the field of research and development. It is undeniable that TMP is more excellent than stone groundwood pulp (GP). So, TMP plants have been constructed and operated in many paper mills in the world. To satisfy the requirement of the pulp and paper industry, we Kumagai Riki developed in 1975 this refiner in collaboration with Japan Pulp and Paper Research Institute, Inc. which has advanced pulp preparation technology, on the basis of the conventional KRK normal pressure refiner. Set in the laboratory the same conditions as those in the practical plant operation, and steam chips for a short time, and perform pressurized refining. It features ease of operation and excellent reproducibility.

#### 1. Refiner section

**Refiner type:** single disc, batch operation

**Motor:** three-phase 200/220 VAC, 45 kW, 50/60 Hz

**Grinding plate size:** 305 mm

**Rotation speed of plate:** 3000 rpm

**Adjustment of plate parallelism:** 3-point support, with screw

**Adjustment of plate interstice:** with screw, increment of scale 0.01 mm

**Section in contact with liquid:** SUS-316, SCS-14

**Transmission:** timing belt for high speed

#### 2. Material heating section

**Tank capacity:** 6 liters (1 kg O.D.)

**Feeder:** screw type

**Feeder motor:** three-phase 200/220 VAC 0.2 kW or 0.4 kW

**Section in contact with liquid:** SUS-316, SCS-14

#### 3. Grindness adjusting section

**Pump:** constant-feed plunger type

**Discharge rate:** 0 to 2 l/min., steplessly variable speed

**Pump discharge pressure:** max. 10 kg/cm<sup>2</sup>

**Pump motor:** three-phase 200/220 VAC, 0.4 kW or 0.75 kW

**Dilution water heating:** steam heat exchanger

**Power source:** three-phase 200/220 VAC 50/60 Hz 160A

**Outer dimensions:** 2920×1200×2580 mm

**Instrument weight:** 1800 kg