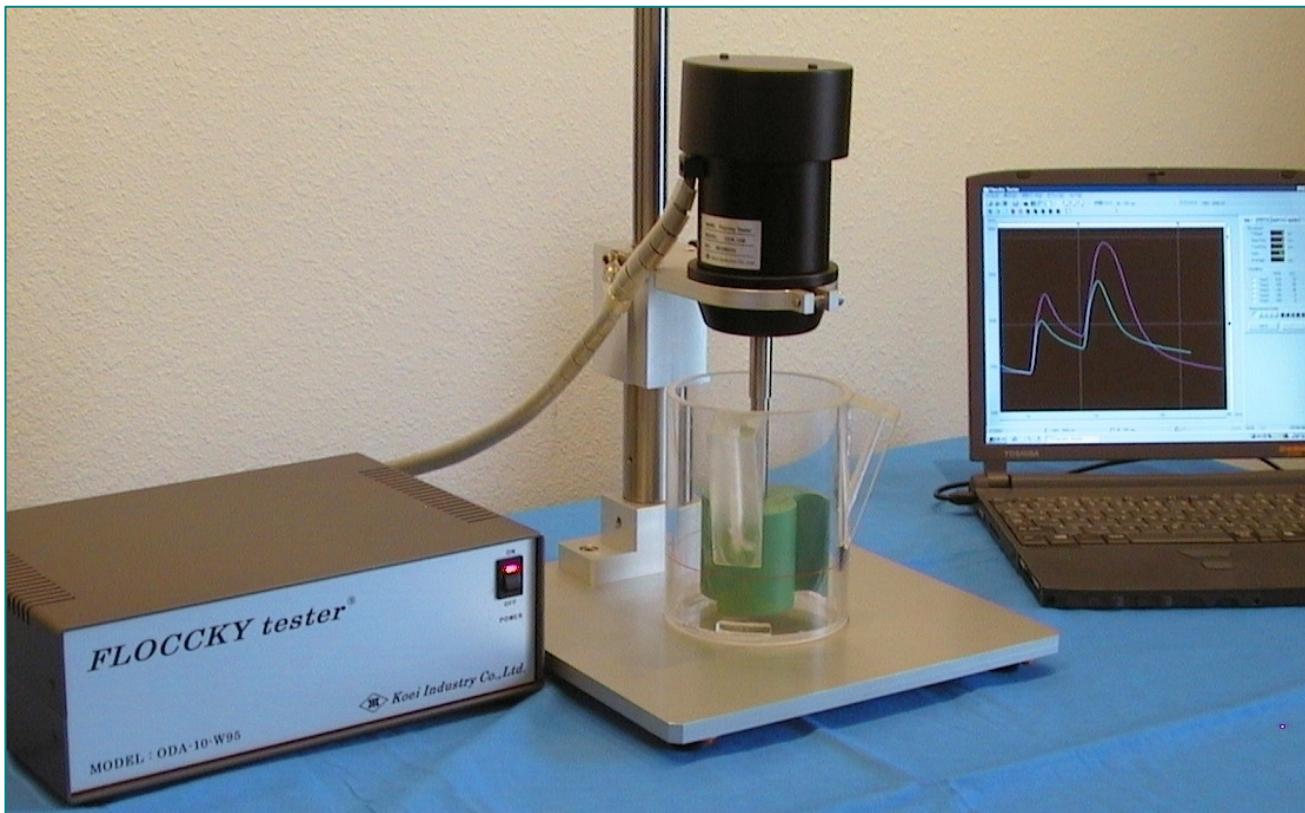


# Koei Floccky Tester ODA-10 (PAT.)



## **INCREASED WASTE WATER TREATMENT EFFICIENCY AND REDUCED COSTS THROUGH FASTER, SIMPLER, MORE PRECISE MEASUREMENT**

When waste water character changes every minute during treatment, the traditional methods of measuring flock – with a jar tester, a leaf tester, or visual observation – simply aren't enough for you to make the most efficient decisions to control dehydration and filtration.

### **Improved Effectiveness, Reduced Costs.**

The Floccky Tester ODA-10 takes just minutes to give you the precise information you must have to choose the best type of flocculant (organic, Anion, Cation, Nonion, etc.) and determine the optimum dosage level. It uses Koei's simple patented process to measure all three critical factors of flocculation: solid consistency, flocculation degree, and floc strength.

It's accurate and instant results shown by numeric figures eliminate guessing-work, and avoid inferior dehydration, excessive usage of flocculants, and dehydrator problems.

### **Simple, Precise Operation**

Simple enough for use on site or in the lab, the Floccky Tester prevents the usual problems which reduce the effectiveness of your treatment and can increase your operating costs.

The tester quickly provides the required data by measuring the load created on an impeller after flocculants are added to a test sample.

**For complete information on the unique Floccky Tester ODA-10 by Koei, please talk with your Koei representative.**

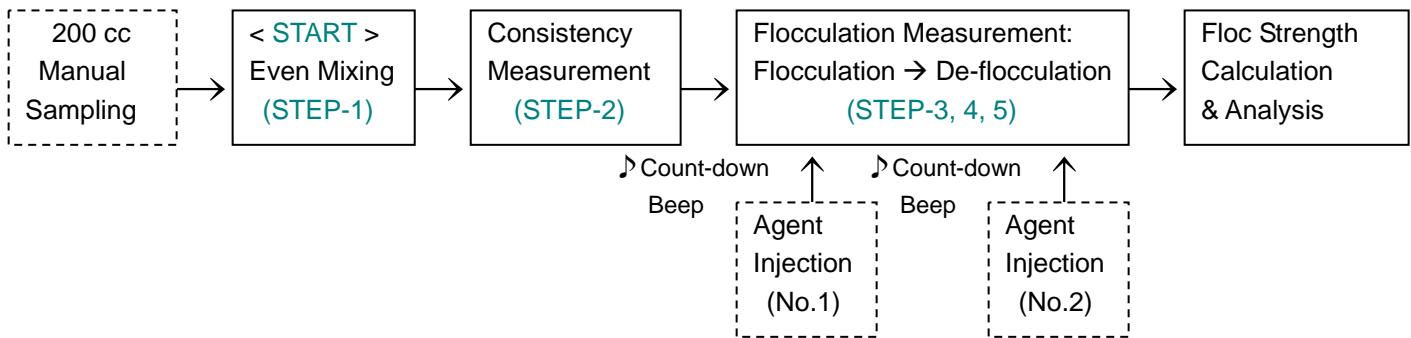


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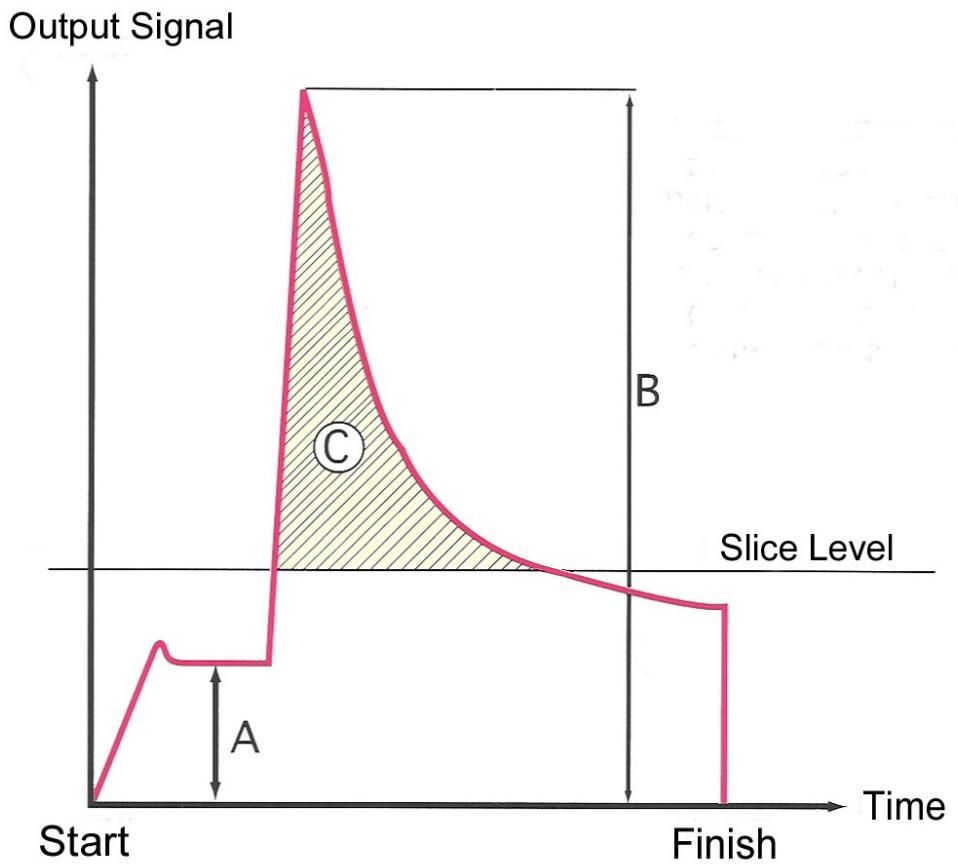
## COMPLETE MEASUREMENT, SIMPLE TESTING OFF LINE

### Measurement Cycle



The impeller rotation speed and duration time is programmable for five stages (Step 1 – 5), which provides the most useful setting to simulate your flow / machine conditions.

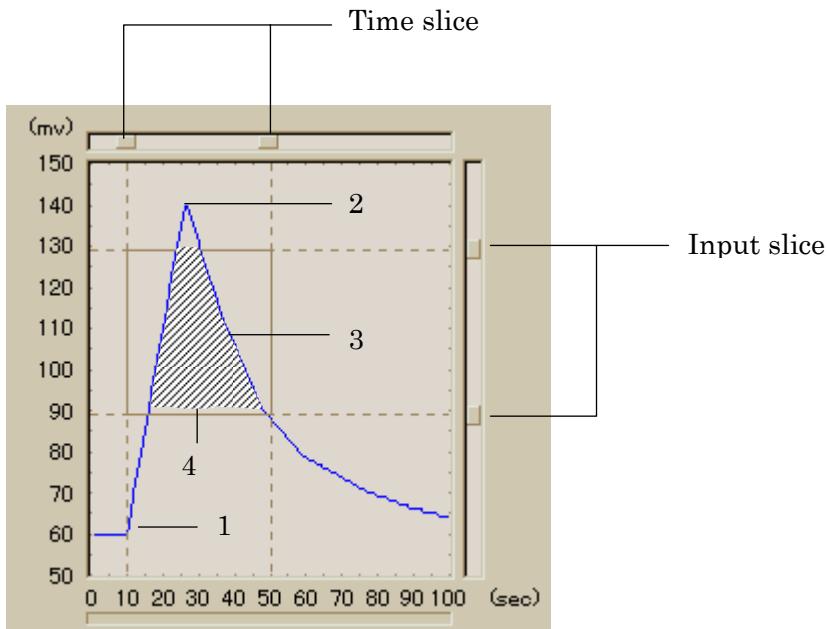
### Measurement Principle



The Floccky tester measures changes in viscosity resistance on its impeller surface.

After the impeller starts rotating in the beaker, the tester measures the viscosity resistance of blank sample (A) which is interpreted as TS consistency level. After flocculants are added manually to the sample through the beaker injection port, and floc begin forming, the tester detects and measures increased force (viscosity resistance) on the impeller surface. (B) indicates the peak value of flocculation degree. As the impeller gradually destroys the formed floc, the force on the impeller surface (value of flocculation degree) decreases overtime, becomes close to blank level (A) eventually. The floc strength is represented by the area under the flocculation curve and above the bottom slice line (C).

## Useful Functions for Flocculation Analysis



- 1: Consistency Level
- 2: Peak Flocculation Degree
- 3: SUM value (presenting Floc Strength)
- 4: Slice Time (duration of signal above bottom slice level)

- Max. ten wave-form data can be displayed on screen.
- The primary analytical parameter values of Consistency (A), Peak (B) and SUM (C) are displayed on screen, also can be presented in bar graphs.
- Slice line can be set at various levels. Top & bottom slice lines, and side (time axis) slice lines are applicable.
- With different setting of slice lines, these parameter values are automatically recalculated.
- When consistency reference (benchmark) data are already saved in the software, the measured consistency force value (mV or m-Nm) can be automatically converted into the saved format (eg. %)

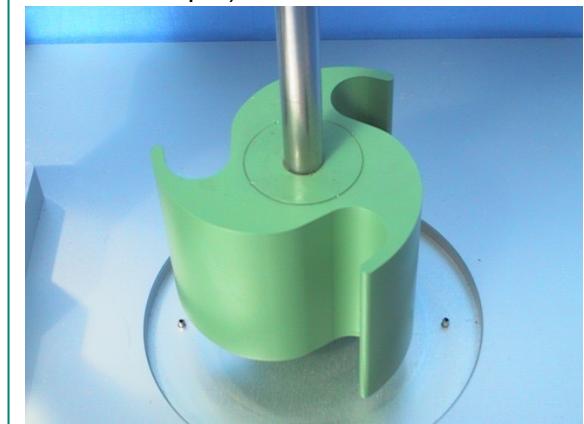
## Applications

- The Floccky tester can provide an intuitively understandable wave-form flocculation & deflocculation trend data to capture polymer reaction speed and floc durability characteristics.
- Simulation of flow characteristics of polymer adding & mixing process.
- Simulation of constant shear against floc in various types of dehydrators including belt press, screw press, filter press, and centrifuge.

The diagram: Courtesy of Pulp & Paper Research Institute of Canada

### The Impeller

Floccky tester impeller is designed to pick up viscosity resistance on the impeller surface, and not to cause any turbulence during its high-speed rotation (min. 30 rpm – max. 420 rpm).

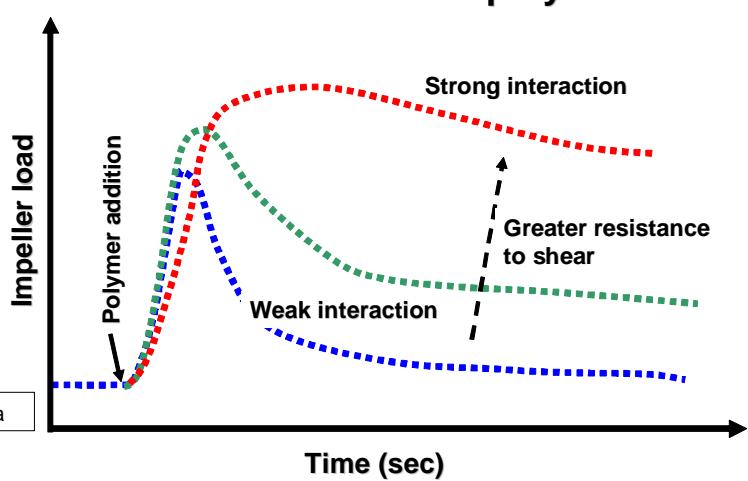


### The Beaker

The special beaker has two injection ports on the side, for easy addition of flocculant and other chemical additives and for the most efficient mixing results.



## Typical flocculation curves observed with the addition of polymers



# Koei Floccky Tester ODA-10 (PAT.)

## COMPLETE MEASUREMENT, SIMPLE TESTING OFF LINE

### Benefits

- Provides a vastly simpler method to determine the types and optimum volume of flocculants.
- Measures all three factors in one cycle – solid consistency, flocculation degree, and floc strength.
- Provides a dependable TS consistency measurement in real time.
- Easily detects excessive polymer situation.
- Operates quickly – approximately 5 - 10 minutes per test cycle (sludge flocculation testing).
- Simple and easy operation, no need for trained personnel to conduct testing.
- Portable size, and easily fits on-site or laboratory use with a light, compact tester.
- Delivers and saves results to Windows PC via USB or Serial Port connections.
- Powerful data analysis tools provide easy data comparison.
- Yields precise, consistent data of pulp stock consistency and flocculation.

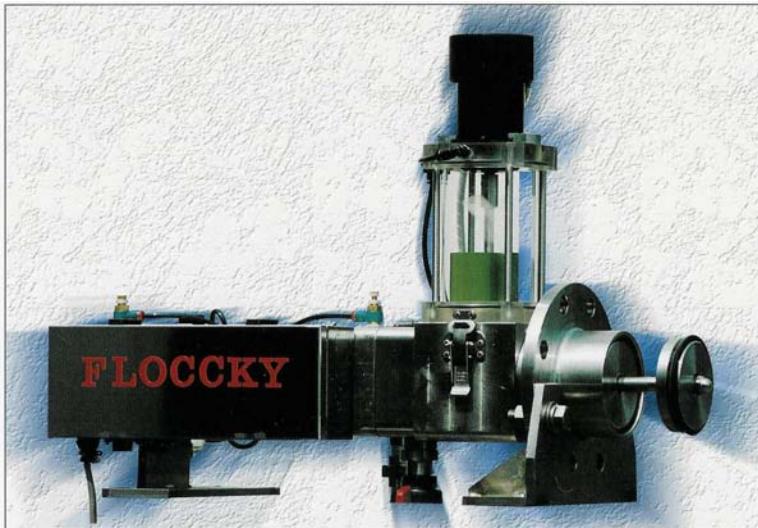
### Features & Specifications

- Applications for measurement:  
Sludge at the inlet of most kind of dehydrators  
Pulp and paper stock
- Place of use: On-site (WWTP, Paper mills, etc.),  
or Laboratory
- Temperature range: 0 – 50 C (32 – 122 F)
- Consistency range: 0.1% – 6.0%  
(depends on sample type)
- Measurement cycle: 2 – 10 minutes/cycle  
(over 30 min. to continuous mode available)
- Sampling volume: 200 cc/cycle
- Power supply: 120VAC 60Hz
- Power consumption: 25VA
- Primary Components:
  - Detector with Impeller and Stand
  - Control Panel
  - Measurement beaker
  - Software
- PC Requirement:
  - Windows 95/98/ME/2000/XP
  - USB or Serial Port (D-SUB 9-pin)
- External dimensions:  
Detector – 7 7/8" w x 7 7/8" d x 18 1/2" h,  
(Weight 11 lb.)  
Control Panel – 12 1/4" w x 10 1/2" d x 2 1/2" h,  
(Weight 4 lb.)

### <Sister Model>

### Floccky Control ODA-101

### In-line Continuous Measurement Applications



Two types for various kinds of flow characteristics  
Type-I (left): Constant volume sampling machine type  
Type-II (right): Continuous-flow vessel mount type

