Model MPC-602/302 has been designed for automatic determination of Pour Point (PP) and Cloud Point (CP) with small specimen size and shorter test time while securing better test precision than the conventional manual method’s. PP measurement is made by utilizing a new automatic method, namely Air Pressure method, which yields eventually no bias against the conventional test method’s, repeatability of 1 °C, and reproducibility of 2 °C. This epoch-making accuracy has made PP determination at 1 °C intervals make more sense. The CP/PP mode executes a CP determination and then a PP determination consecutively, which further improves the test throughput. MPC-602 is a 6 tests version, and MPC-302 is a 3 tests version of its original single test model (MPC-102L). ASTM has approved the PP test method: ASTM D6749 on “Standard Test Method for Pour Point of Petroleum Products (Automatic Air Pressure Method)”.

*Accuracy information is for typical samples.

POUR POINT AT 1 °C INTERVALS FOR HIGHER YIELD IN PROCESS: The conventional PP test methods yield a rough PP numbers of multiple of 3 °C, and thus higher resolution in PP determination has been long awaited for more elaborate process control. With the patented Air Pressure method, PP can be now determined at 1 °C intervals with high accuracy, since the disturbance on the formation of wax crystal structure through the test process is at a minimal level. When PP is measured at 1 °C intervals, typical repeatability and reproducibility are 1 °C and 2 °C, respectively.

EASY SAMPLE HANDLING: Since the required specimen volume is a mere 4.5 ml and the specimen cup is a test-tube type removable jar, the sample handling is extremely easy.

EASY, QUICK, AND PRECISE PP/CP DETERMINATION: Just set up the specimen, set test parameters, and then press the START key to start a test. Specimen is cooled at the steepest possible rate without affecting the formation/growth of wax crystal, which has been known to be critical in PP/CP determination. For fuel oils, the specimen may be even pre-heated automatically and then cooled for CP/PP determination, which further improves test throughput.
**SPECIFICATIONS:**

**TYPE:**
Mini Pour Point (PP) and Cloud Point (CP) tester with 6 test heads (MPC-602) or 3 test heads (MPC-302) in Bench-top package.

With sequential CP and PP measurement capability.
Sample cooling and pre-heating by Peltier modules with external cooling liquid.

**TEST STANDARDS:**
ASTM D6749/D97, ISO 3015 (PP),
ASTM D2500, ISO 3016 (CP)

**SPECIMEN VOLUME:** 4.5ml

**MEASURING RANGE:** *(typical)*
+51 °C to -65 °C with cooling liquid of -35 °C
+51 °C to -60 °C with cooling liquid of -25 °C
+51 °C to -40 °C with tap water of 20 °C

*:Sample viscosity, etc. affects on lowest temperature of the measuring range.

**MEASUREMENT MODES:**
Selectable from various modes.

1. CP mode
2. PP modes: Programmed by the user. Programmable parameters are:
   *Amount of applied air pressure for PP detection, to accommodate different sample types: L(low) for diesel fuels, H(high) for lube oils, VH(very high) and UH (ultra high) for residual fuels and similar samples.
   *Testing intervals: 1.0 °C, 2.5 °C, or 3.0 °C
   (In total, 4x3=12 modes for PP.)
3. CP/PP modes: CP is determined and then PP.
   PP detection is programmable by the user with the same parameters as PP modes'. (12 modes in total.)

**SAMPLE AUTOMATIC PRE-HEATING:**
Automatic preheating at either +45 °C or EPP+10 °C.
*(EPP=Expected Pour Point)*

**DISPLAY:**
Test parameters, EPP, bath temperature, sample temperature, PP, and CP displayed on VFD.
Temperatures displayed with 0.1 °C increments.

**PRINTER:** (built-in)
PP, CP, mode, EPP, etc. printed by thermal printer.

**EPP SETTING:**
EPP(Expected Pour Point) needs to be set prior to test starts.

**SPECIMEN CUP:**
Cylindrical glass test jar with 4.5ml sample volume.

**SENSORS:**
Compound type sensor assembly for PP and CP.
PP detected by air pressure method (patented). CP detected photo-electrically. PT100 temp. sensors.

**SAMPLE COOLING RATE:**
As standard, 4 °C/min. till EPP+40 °C, and 1 °C/min. thereafter. Cooling process is programmable.

**SAFETY SHUTDOWN:**
As hot side of Peltier module reaches 60 °C while preheating, warning buzzer beeps and heating stops.

**DATA OUTPUT:**
RS-232C 1 channel

**POWER REQUIREMENTS:**
100, 120, 220, or 240VAC
1.5kW (MPC-602), 1.0kW (MPC-302)

**DIMENSIONS AND WEIGHT:**
800Wx550Dx850H, 115kg (MPC-602), 95kg (MPC-302)

**ORDERING INFORMATION:**

<table>
<thead>
<tr>
<th>STANDARD ACCESSORIES:</th>
<th>MPC-602</th>
<th>MPC-302</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Specimen Cup with Reflex Seal</td>
<td>20 pcs</td>
<td>10 pcs</td>
</tr>
<tr>
<td>2.Spare Pressure Conducting Tube</td>
<td>6 pcs</td>
<td>3 pcs</td>
</tr>
<tr>
<td>3.AC power cable</td>
<td>1 pc</td>
<td>1 pc</td>
</tr>
<tr>
<td>4.Hose and cramps for Chillers</td>
<td>1 set</td>
<td>1 set</td>
</tr>
<tr>
<td>5.Instruction manual</td>
<td>1 copy</td>
<td>1 copy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OPTIONAL ACCESSORIES:</th>
<th>MPC-602</th>
<th>MPC-302</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Regulator with Pressure Gauge</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(for Connecting Tap Water)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chillers for -60 °C of Measurement:</td>
<td>TANAKA TCU-40A, Neslab RTE-740(*1) or Julabo FP-40MV(*2)</td>
<td></td>
</tr>
<tr>
<td>Use above chiller x 3 sets for MPC-602, 2 sets for MPC-302</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chiller for -40 °C of Measurement:</td>
<td>Use above chiller x 1 set (MPC-602 and 302)</td>
<td></td>
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<tr>
<td>*1: Made in USA. *2: Made in Germany.</td>
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</table>

**SUGGESTED SPARES FOR 2 YEARS:**

<table>
<thead>
<tr>
<th>602</th>
<th>302</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Specimen Cup with Reflex Seal</td>
<td>100 pcs</td>
</tr>
<tr>
<td>2.Reflex Seal</td>
<td>120 pcs</td>
</tr>
<tr>
<td>3.Pressure Conducting Tube</td>
<td>30 pcs</td>
</tr>
<tr>
<td>4.O-Ring set (G-35 and P-8)</td>
<td>12 sets</td>
</tr>
<tr>
<td>5.Printing Roll Paper</td>
<td>40 pcs</td>
</tr>
</tbody>
</table>

Specifications subject to change without prior notice.

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