

## Constituent Separation by Centrifuge - PetroCEN (semi-automatic) ASTM D 893

ASTM D 893

**Product group(s):** Fuel

**User group(s):** Crude Oil, Fuel Oil

**Scope:** This test method covers the determination of pentane and toluene insolubles in used lubricating oils.



### Constituent Separation Test Equipment

ASTM D 893

to be composed of:

**- Centrifuge "Heatable"**

Requirements:

Test Temperature: room

Relative centrifugal force: 600 to 700 rcf

Test time: 20 min.

**- Swing-out Rotor Set**

- or **Swing-out Rotor & Accessories**

### Technical Data



#### Heated Bench Top Centrifuge

<u>Type:</u>	electronic without rotor
<u>Temperature range:</u>	ambient to +70°C ±1°C
<u>Max. capacity:</u>	4 x 100 ml buckets
<u>Cooling:</u>	air cooled
<u>Min. speed rpm:</u>	100 min <sup>-1</sup> (in steps of 1 rpm)
<u>Max. speed rpm:</u>	13500 min <sup>-1</sup> (actual achievable speed depends on the rotor-type)
<u>Max. permitted speed rpm:</u>	3000 min <sup>-1</sup> (due to safety reasons)
<u>Timer:</u>	0 to 60 min or permanent mode and automatic cut-off
<u>Pre-selectable:</u>	speed, gravitational field, time and temperature
<u>Digital indication:</u>	speed, working time, rotor & bucket combination with their data and heating temperature
<u>Programming:</u>	all parameters, customer programs, program memory of 50 data sheets
<u>Operation:</u>	self-explanatory single-knob control
<u>Noise level at max. speed:</u>	approx. 73 dB (A)
<u>Max. acceleration:</u>	approx. 29 sec.
<u>Max. deceleration:</u>	approx. 28 sec.
<u>Kinetic energy max.:</u>	106.950 Nm
<u>Safety:</u>	vibration detector, cover (not explosion proof!)
<u>Dimensions (H x W x D):</u>	425 x 574 x 685 mm
<u>Weight:</u>	116 kg without rotor

## Main Unit

<b>13-2160</b>	<p><b>Centrifuge PetroCEN "Heatable" up to +70°C ±1°C</b>  <u>Lubricating Oil Tests:</u></p> <p>ASTM D 91 - JIS K2503      Precipitation Number</p> <p>ASTM D 893                      Insolubles in Used Lubricating Oil</p> <p>ASTM D 2273 - JIS K2503   Trace Sediment</p> <p>ASTM D 2711                    Demulsibility Characteristics</p> <p><u>Amount of Water &amp; Sediment:</u></p> <p>API 2542 - AASHTO T 55 - JIS K2601          (ASTM D 96, BS 4385)      Crude Oil (Field Test)</p> <p>ASTM D 4007 (IP 359)      Crude Oil (Laboratory Test)</p> <p>ASTM D 1796 - API 2548          (DIN 51 793, IP 75)          Fuel &amp; Crude Oil (Laboratory Test)</p> <p>ASTM D 2709                    Middle Distillate Fuel</p> <p>ISO 3734                         Residual Fuel Oil</p> <p>ISO 9030                         Crude Petroleum</p> <p><u>Note!</u> For more details see "Technical Data" section</p> <p>Power supply: 230 V, 50/60 Hz, 7 A only!</p>
<b>13-2161</b>	<p><b>Centrifuge PetroCEN "Heatable" up to +70°C ±1°C</b>  <u>Like 13-2160 but:</u>          Power supply: 120 V, 50-60 Hz, 7 A only!</p>

## Options & Accessories

<b>13-2142</b>	<p><b>Rotor Set with conical 8"-tubes</b>          ASTM D 91, ASTM D 96, ASTM D 893, ASTM D 1796,          ASTM D 2711, ASTM D 4007, ISO 3734, ISO 9030</p> <p><u>Consisting of:</u>          1 swing-out-head with 4-test places (13-2143),          4 buckets with thread (13-2144),          4 conical, 8-inch test tubes (13-2145)</p> <p><u>Note!</u> Max. permitted speed 3000 rpm</p>	
<b>13-2143</b>	<p><b>Rotor, swing-out type with 4-test places</b>          ASTM D 91, ASTM D 96, ASTM D 893, ASTM D 1796,          ASTM D 2273, ASTM D 2709, ASTM D 2711, ASTM D 4007,          ISO 3734, ISO 9030</p> <p><u>Note!</u>          Already included in Rotor-Set (13-2142)!          Test tubes, buckets and pads are subject to separate order.          Max. permitted speed 3000 rpm</p>	
<b>13-2145</b>	<p><b>Conical Tube, 8" , 100 ml, approx. Ø 37 x 200mm</b>          ASTM D 91, ASTM D 96, ASTM D 893, ASTM D 1796,          ASTM D 2711, ASTM D 4007, ISO 3734, ISO 9030</p> <p>(range:subdivision 0-0.5:0.05 / 0.5-2:0.1 / 2-3:0.2 / 3-5:0.5 /          5-10:1 / 10-25:5 / 25-100:25 ml)</p> <p>Already included in Rotor-Set (13-2142)!</p>	
<b>13-2146</b>	<p><b>Rubber Pad for 8" conical / trace tube</b>          Already included in Rotor-Set (13-2142)!</p>	

<b>13-2144</b>	<b>Bucket</b> with rubber pad and thread for 8" conical / tracetube. <u>Note!</u> Already included in Rotor-Set (13-2142)!
<b>13-2153</b>	<b>Hazard-Reduction-Cap for 8" conical / trace tube</b>
<b>13-1077</b>	<b>Rack, 6-place, for 8" conical / trace tube</b>
<b>13-1078</b>	<b>Stoppers, cork (19-16/27), pack of 50</b>
<b>13-2151</b>	<b>Rack on castors with 2 doors</b> Dimensions (W x D x H): 571 x 635 x 470 mm

### Spare Parts

<b>13-2157</b>	<b>Seal for centrifuge lid</b>
<b>13-2158</b>	<b>Wedge Belt for centrifuge</b>

### Order Guideline

Minimum equipment:	1x 13-2160, 1x 13-2142
Spares (approx. 1 year):	Tubes (see above)
Additional requirements:	