

Constituent Separation by Centrifuge - PetroCEN (semi-automatic) ASTM D 96 former

ASTM D 96 (obs.)

Product group(s): Fuel

User group(s): Crude Oil

Scope: This test method covers the centrifuge method for determining sediment and water in crude oil during field custody transfers.

This test method may not always provide the most accurate results, but it is considered the most practical method for field determination of sediment and water.

When a higher degree of accuracy is required, the laboratory procedure described in Test Methods D 4006, D 4377 or D 473 should be used.



Constituent Separation Test Equipment

API 2542 - AASHTO T 55 - JIS K2601 (ASTM D 96, BS 4385)

to be composed of:

- **Centrifuge "Heatable"**
Requirements:
Test Temperature: 60 ±3 °C
Relative centrifugal force: 500 rcf
Test time: 5 min.
- **Swing-out Rotor Set & Accessories**
- 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 ⁻¹ (in steps of 1 rpm)
<u>Max. speed rpm:</u>	13500 min ⁻¹ (actual achievable speed depends on the rotor-type)
<u>Max. permitted speed rpm:</u>	3000 min ⁻¹ (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 self-explanatory single-knob control
<u>Operation:</u>	
<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


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

13-2161	Centrifuge PetroCEN "Heatable" up to +70°C ±1°C <u>Like 13-2160 but:</u> Power supply: 120 V, 50-60 Hz, 7 A only!
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Options & Accessories

13-2142	Rotor Set with conical 8"-tubes ASTM D 91, ASTM D 96, ASTM D 893, ASTM D 1796, ASTM D 2711, ASTM D 4007, ISO 3734, ISO 9030
	<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)
	<u>Note!</u> Max. permitted speed 3000 rpm

13-2143	Rotor, swing-out type with 4-test places 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
	<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

13-2145	Conical Tube, 8" , 100 ml, approx. Ø 37 x 200mm ASTM D 91, ASTM D 96, ASTM D 893, ASTM D 1796, ASTM D 2711, ASTM D 4007, ISO 3734, ISO 9030
	(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)
	Already included in Rotor-Set (13-2142)!

13-2146	Rubber Pad for 8" conical / trace tube Already included in Rotor-Set (13-2142)!
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13-2144	Bucket with rubber pad and thread for 8" conical / tracetube. <u>Note!</u> Already included in Rotor-Set (13-2142)!
13-2153	Hazard-Reduction-Cap for 8" conical / trace tube
13-1077	Rack, 6-place, for 8" conical / trace tube
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13-2155	Conical Tube, 6", 100 ml, approx. Ø 45 x 165mm ASTM D 96 (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 / 50 / 100 ml)
13-2156	Rubber Pad for conical 6" tube
13-2154	Bucket for conical 6" tube
13-2117	Rack 4-place, for conical 6" tube
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13-0087	Liquid Bath, 6-place Range: ambient to +150 °C Openings: Ø 51 mm Power supply: 230 V, 50/60 Hz
13-1078	Stoppers, cork (19-16/27), pack of 50
13-2151	Rack on castors with 2 doors Dimensions (W x D x H): 571 x 635 x 470 mm

Spare Parts

13-2157	Seal for centrifuge lid
13-2158	Wedge Belt for centrifuge

Order Guideline

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