Constituent Separation by Centrifuge (semi-automatic) ASTM D 1796

ASTM D 1796

Product group(s): Fuel

User group(s): Crude Oil

Scope: This test method covers the laboratory test for determination of water and sediment in fuel oils by using the centrifuge method in the range from 0 to 30 % volume.

Constituent Separation Test Equipment
ASTM D 1796 - API 2548 (DIN 51 793, IP 75)

to be composed of:

- **Centrifuge "Heatable"**
  Requirements:
  Test Temperature: 60 ±1 °C
  Relative centrifugal force: 500 to 800 rcf
  Test time: 10 min.
- **Swing-out Rotor Set**
- **Swing-out Rotor**

Technical Data

Ambient or Heated Bench Top Centrifuge

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

* only at the heatable type

Main Unit

13-2160 **Centrifuge "Heatable" up to +70°C ±1°C**

Lubricating Oil Tests:

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

Amount of Water & Sediment:

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

Note! For more details see "Technical Data" section

Power supply: 230 V, 50/60 Hz, 7 A only!

13-2161 **Centrifuge "Heatable" up to +70°C ±1°C**

Like 13-2160 but:
Power supply: 115 V, 60 Hz, 7 A only!

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

Consisting of:
1 swing-out-head with 4-test places (13-2143),
4 buckets with thread (13-2144),
4 conical, 8-inch test tubes (13-2145)

Note! 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

Note!
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

Already included in Rotor-Set (13-2142)!

13-2146 **Rubber Pad for 8" conical / trace tube**

Already included in Rotor-Set (13-2142)!

13-2144 **Bucket**

with rubber pad and thread for 8" conical / tracetube.
Note! Already included in Rotor-Set (13-2142)!

13-2153 **Hazard-Reduction-Cap for 8" conical / trace tube**

13-1077 **Rack, 4-place, for 8" conical / trace tube**

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 13-2142
Spares (approx. 1 year):	Tubes (see above)
Additional requirements:	