Tamson Instruments
Specification sheet

Oxidation Stability of Lubricating Oils used in Automotive Transmissions by Artificial Ageing

CEC L-48-00 (B)

Item	Unit	TC40
P/N apparatus CEC L-48-00(B) 230V/50-60Hz		00T2050
P/N apparatus CEC L-48-00(B) 115V/60Hz		00T2051
Power	[kW]	230V: 3.0 / 115V: 1.8
Range	°C °F	Ambient .. 250 Ambient ..482
Reading	[°C/°F]	°F on request
Setting	[°]	0.1
Stability	[°C]	0.02
Heating	[kW]	230V: 2.8 / 115V: 1.75
Bath volume	[L]	40
Bath openings	[mm]	6
Bath depth	[mm]	200
TC40 dimensions (L x W x H)	[mm]	705 x 375 x 440
Complete apparatus dim. (L x W x H)	[mm]	760 x 650 x 880
Materials	Used inside bath: stainless steel 304, brass	
CE	Conforms to CE regulation	

- **Stainless steel bath**
- **Bath drain**
- **Easy to operate**
- **Six positions**
- **Complete apparatus for six tests**

CEC L-48-00

General
The CEC L-48-00 (B) test method covers the oxidation stability of lubricating oils used in automotive transmissions by artificial ageing. CEC L-48-00 assesses resistance of lubricants to high temperature oxidation and the ability to resist oil degradation and sludging. A lubricant is heated and aerated under controlled conditions.

Construction
The apparatus consists of a six position TC40 circulator bath and it is standard delivered with six sets of glassware. The cover of the bath has six openings with lids. Stand-rods with clamps to hold the glassware in the same position, flowmeters and tubing are standard included. Please see table 1 for more information. The temperature range of the bath is from ambient +5°C to 250°C. Other accessories for this test method are supplied by Tamson, please see table 2.

Accuracy
The insulation of the bath and electronic design result in a very stable working temperature of ± 0.02°C The set point can be set in steps of 0.1°C in the range of 0°C up to 250°C (148..482°F). The readout is displayed in 0.1°C. The controller has an internal accuracy of 0.01°C.

Temperature readout
Standard available in °C, on request in °F.

Pump
When not used for oxidation tests, the pump can be used to circulate the bath content to an external application.

Safety
The bath conforms to CE regulation. It is further equipped with a mechanical resettable safety thermostat. A low liquid float (P/N 07T0080) is included and will switch-off the apparatus when the bath fluid is too low.

The apparatus should be placed in a fume hood to avoid oil vapours spreading into the laboratory.

Test evaluation
For the test evaluation, two additional instruments are needed. One instrument to determine the kinematic viscosity of the sample, which is also manufactured by Tamson. The degree of oxidation is measured by FTIR in accordance with ASTM D7214 which quantifies the Peak Area Increase (PAI) in the carbonyl region.

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Table 1: Apparatus CEC L-48-00 B P/N 00T2050 or P/N 00T2051 consists of the following parts:			
P/N	**Picture**	**Quantity**	**Description**
00T0681		1	TC40 circulator bath, 230V/50-60Hz.
00T0851			TC40 circulator bath, 115V/60Hz
03T2027		1	Levelling platform for CEC L-48-00 (B) tests, including cover with lids and brackets to hold flowmeters and dryer..
31T2100		6	Complete set of glassware for CEC L-48-00 (B)
24T0072		6	Double boss head cross with brass clamping screws
24T0078		6	Cooler clamp for stand-rod
24T0079		2	Stand-rod
24T0043		10	Tubing silicon rubber 5 mm, 1 meter
31T2070		6	Airflow meters suitable for a flow rate of 5L/h
34T0000		1	FESTO Blue PU tubing 6 mm, 50 meter
34T0031		6	Hose barb fitting G1/4” to I.D. 7 mm
34T0048		1	Hose adapter 6mm O.D. to G1/4” quick fit
34T0061		5	Hose adapter T-shaped 6mm O.D. to G1/4” quick fit

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Table 2: Accessories for CEC L-48-00 B			
Item	**Picture**	**Suggested quantity**	**Description**
00T0238		2	Bath fluid silicon oil 550 - 20 litres transparent, 80..250°C
31T2038		1	Thermocouple device to measure the sample temperature
00T0782		1	TV2000MKII viscosity bath. For more information, please see specification sheet 'tv series'
31T2060		1	Air compressor 230V/50-60Hz
31T2061			Air compressor 115V/60Hz
31T2044		1	Gas drying tower, 75 mm x 289 mm, with 1/8" stainless steel NPT fittings and connectors to mount on TC40
31T2041		1	Refilling for dryer (P/N 31T2042), 5 lbs, 8 mesh

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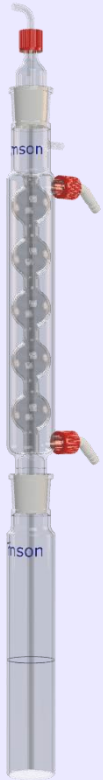
Table 3: Spare parts for air compressor after one year or 2000 hours of use			
Item	**Picture**	**Suggested quantity**	**Description**
31T2065		1	Intake filter
31T2066		1	Non return valve
31T2067		1	5 micron filter
31T2068		1	SJ27 oil bottle 0,5L