

Corrosion Test in Glassware

ASTM D1384 – ASTM D8040



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

Item	Unit	TC40
P/N apparatus ASTM D1384 230V/50-60Hz		00T2040
P/N apparatus ASTM D1384 115V/60Hz		00T2041
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	

General

The ASTM D1384 and D8040 test methods covers a simple beaker-type procedure for evaluating the effects of engine coolants or heat transfer fluids on metal specimens under controlled laboratory conditions. In the test method, specimens of metals typical of those present in engine coolant solutions or heat transfer fluids are totally immersed in aerated engine coolant solutions or heat transfer fluids for 336 hours at 88°C (190°F). The corrosion-inhibitive properties of the test solution are evaluated on the basis of the weight changes incurred by the specimens. These test methods will generally distinguish between coolants or heat transfer fluids that are definitely deleterious from the corrosion standpoint and those that are suitable for further evaluation.

Construction

The apparatus consists of a six position TC40 circulator bath and it is standard delivered with six sets of glassware. Tamson is supplying all-glass 1000 mL containers with NS29/32 connection for the condenser. Hence, a rubber stopper is not used. 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 $\pm 0.02^\circ\text{C}$. 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 $^\circ\text{C}$, on request in $^\circ\text{F}$.

Pump

When not used for corrosion 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.


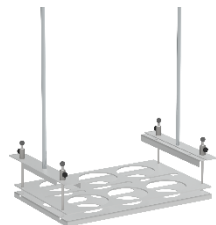





Alternative three position apparatus

A three position apparatus is available under P/N 00T2042 (230V) or 00T2043 (115V). Please see table 4 for more information.

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Table 1: Apparatus ASTM D1384 P/N 00T2040 or P/N 00T2041 consists of the following parts:

P/N	Picture	Quantity	Description
00T0681		1	TC40 circulator bath, 230V/50-60Hz.
00T0851			TC40 circulator bath, 115V/60Hz
07T8072		1	Levelling platform for ASTM D1384/D8040 tests
03T2018		1	Top cover ASTM D1384/D8040 with six openings
03T2025		6	Small lid for top cover (P/N 03T2018)
31T2050		6	Glass-tube water condenser with NS29/32 connection. The condenser is delivered with two plastic screw caps with GL14 connection (P/N 08T0120) and two plastic hose connection angles with GL14 connection (P/N 08T0122)
31T2051		6	1000 mL glass container for ASTM D1384/D8040, with three necks and standard grounded joints, centre neck with NS29 connection for the condenser and additional two side necks with GL18 connection for inserting a thermometer and aerator tube 12-C. The glass container is delivered with two plastic screw caps with GL18 connection (P/N 31T2035) and one O-ring for the thermometer (P/N 31T2053) and one O-ring for the aerator tube (P/N 31T2036). The container is also delivered with an O-ring (P/N 31T2055) and a flange with quick fit (P/N 31T2054) to hold the lid stable on the container
31T2052		6	Aerator tube porosity size 12-C, 310 mm length

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Continued Table 1: Apparatus ASTM D1384 P/N 00T2040 or P/N 00T2041 consists of the following parts:

P/N	Picture	Quantity	Description
24T0072		6	Double boss head cross with brass clamping screws
24T0078		6	Cooler clamp for stand-rod
24T0079		2	Stand-rod
24T0043		12	Tubing silicon rubber 5 mm, 1 meter
31T2070		6	Airflow meters suitable for a flow rate of 100 ml/min
34T0000		1	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 ASTM D1384 and D8040

Item	Picture	Suggested quantity	Description
08T0001		2	Bath fluid silicon oil 20..150°C 20 L
25T0901B		6	Thermometer similar to ASTM 1C, white backed, -20+150:1°C, capillary tube specially coated inside, with non-wetting blue special liquid, immersion 76mm, max.327x6-7mm, durable pigment, with works certificate at 0°C
31T2060		1	Air compressor - 230V/50-60Hz
31T2061			Air compressor - 115V/60Hz
31T2056		6, depending on number of tests	Complete set of test specimen. Complete assembled with spacers and insulators, ready for use. The coupons are pre-weighed and will be supplied with weight list and material test reports.
00T0565		1	Cooling circulator TLC15-5 - 230V/50Hz. To replace tap water that circulates through the condenser
00T0567			Cooling circulator TLC15-5 - 230V/60Hz
00T0570			Cooling circulator TLC15-5 - 115V/60Hz

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Table 3: Spare parts for air compressor after one year or 2000 hours of use


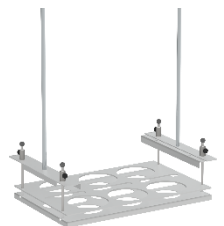

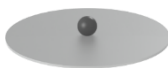





Item	Picture	Suggested quantity	Description
31T2065		1	Intake filter
31T2066		1	Non return valve
31T2067		1	5 micron filter
31T2068		1	SJ27 oil bottle 0,5ltr

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Table 4: Apparatus ASTM D1384 (three position) P/N 00T2042 or P/N 00T2043 consists of the following parts:

P/N	Picture	Quantity	Description
00T0681		1	TC40 circulator bath, 230V/50-60Hz.
00T0851			TC40 circulator bath, 115V/60Hz
07T8072		1	Levelling platform for ASTM D1384/D8040 tests
03T2018		1	Top cover ASTM D1384/D8040 with six openings
03T2025		6	Small lid for top cover (P/N 03T2018)
31T2050		3	Glass-tube water condenser with NS29/32 connection. The condenser is delivered with two plastic screw caps with GL14 connection (P/N 08T0120) and two plastic hose connection angles with GL14 connection (P/N 08T0122)
31T2051		3	1000 mL glass container for ASTM D1384/D8040, with three necks and standard grounded joints, centre neck with NS29 connection for the condenser and additional two side necks with GL18 connection for inserting a thermometer and aerator tube 12-C. The glass container is delivered with two plastic screw caps with GL18 connection (P/N 31T2035) and one O-ring for the thermometer (P/N 31T2053) and one O-ring for the aerator tube (P/N 31T2036). The container is also delivered with an O-ring (P/N 31T2055) and a flange with quick fit (P/N 31T2054) to hold the lid stable on the container
31T2052		3	Aerator tube porosity size 12-C, 310 mm length
24T0072		3	Double boss head cross with brass clamping screws
24T0078		3	Cooler clamp for stand-rod

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Continued Table 4: Apparatus ASTM D1384 (three position) P/N 00T2042 or P/N 00T2043 consists of the following parts:

P/N	Picture	Quantity	Description
24T0043		6	Tubing silicon rubber 5 mm, 1 meter
31T2070		3	Airflow meters suitable for a flow rate of 100 ml/min
34T0000		1	Blue PU tubing 6 mm, 50 meter
34T0031		3	Hose barb fitting G1/4" to I.D. 7 mm
34T0048		1	Hose adapter 6mm O.D. to G1/4" quick fit
34T0061		2	Hose adapter T-shaped 6mm O.D. to G1/4" quick fit
24T0079		2	Stand-rod