

STATE SCIENTIFIC CENTRE OF THE RUSSIAN FEDERATION FOR
AUTOMOBILE CONSTRUCTION NAMI - TESTING CENTRE
2, Avtomotornaya St., Moscow, 125438, Russian Federation

POCC RU.0001.21MT08

TECHNICAL CERTIFICATION SERVICE EEK OOP
22 F
Tel./Fax +7 (495)456 36 92
E-mail: volkov@nami.ru



APPROVED

Testing Center Director

V.I. Volkov

TEST PROTOCOL

1. ITEMS TO BE TESTED

Samples of automotive oil filters to be used in internal combustion engines: TC-1030 (TOTACHI, Totachi Industrial Co., Ltd Japan), 90915-YZZJ1 (TOYOTA, Toyota Motor Corp. China) и W68/3 (MANN FILTER, MANN-HUMMEL GmbH, Germany).

The marking, containing the manufacturer's name, trademark, bar code and product designation are applied to the filters and their packaging.

2. TEST OBJECTIVE

The objective of the given tests is to define, whether the aforementioned filters meet the requirements of the Technical Regulations of the Customs Union 018/2011 "On the safety of wheeled vehicles" (Appendix No10, paragraph 79) and GOST R 53844-2010 "Automotive vehicles. Secondary oil filters for car, tractor and combine harvester engines. Technical requirements and test methods".

3. SCOPE AND PROCEDURE OF TESTS

Tests were conducted according to the procedures set forth in GOST R 53844-2010 on the bench stand, certified at the GOST R 8.568-97, with Lukoil engine oil (Service Category SF / CC, viscosity grade 10W-40) at a temperature of 80°C. Hydraulic characteristics of filtering elements were determined using spacer corresponding to GOST R ISO 4548-1-2009 "Test methods for full-flow oil filters for internal combustion engines. Part 1: Dependence of pressure differential versus flow rate".

4. TEST RESULTS

Results, obtained during tests of oil filters, are given in the table.

5. SUMMARY

Tests of the oil filters have shown that they comply with the requirements of the Technical Regulations of the Customs Union 018/2011 “On the safety of wheeled vehicles” (Appendix №10 79) and GOST R 53844-2010 "Automotive vehicles. Secondary oil filters for car, tractor and combine harvester engines. Technical requirements and test methods”.

Senior Research Engineer

I.A. Markelov (Signed)

Parameters	Parameter values			
	At the GOST R 53844-2010 (Section 4)	At the tests		
		Totachi TC-1030	Toyota 90915-YZZJ1	MANN W68/3
1. Hydraulic resistance of filters at the flow of 1000 l/h and $t_m = 80^\circ\text{C}$, MPa	At the design documentation, not more than 0,030 MPa	0.018	0.019	0.018
2. Completeness of filtering, %	Not less than 25 (from 35 to 65%)	62	39	38
3. Fineness of filtering, microns	Not more than 57* (from 25 to 45 microns)	28	43	44
4. Tightness of the filter and the absence of residual deformations under pressure, MPa	2,5 P nominal** or not less than 0.75 MPa	Filter is seal tight, no residual deformations present	Filter is seal tight, no residual deformations present	Filter is seal tight, no residual deformations present
5. Critical pressure differential, till destruction, Mpa	3.0 P nominal** or not less than 0.90 MPa	Filter is seal tight at P=1.5 MPa	Filter is seal tight at P=1.5 MPa	Filter is seal tight at P=1.5 MPa
6. Pressure differential on the filter element, till destruction, Mpa	2 Δ P of valve opening, not less than 0,1 MPa	>0.20	>0,20	>0,20
7. Pressure of relieve valve at opening start, MPA	At the design documentation, 0.10	0.90	0.90***	0.90
8. Hydraulic resistance of bypass valve at the flow of 1000 l/h and $t_m = 80^\circ\text{C}$, MPa	At the design documentation, not more than 0,15 MPa	0.085	0.12	0.12
9. Seal tightness of filter anti-drain valve, MPa (m. of oil pressure)	$2,6 \times 10^{-3}$ not more than 0,3	Seal tight	Seal tight	Seal tight

10. Filtering element work surface area, cm ²	At the design documentation, not less than 500 cm ²	697	782	635
11. Weight of 1 m ² of filtering screen element, g	Not rated (150-200)	150	203	196
12. Obliqueness of axis of threaded hole against rubber gasket surface, mm	Not more than 0.5	0	0	0
13. Filter connecting thread, mm	³ / ₄ 16 UNF-2B (FIAT 01747 Table, 17,323-17,678)	17,59	17,41	17,50
14. Filter replacement interval, 1000 km	not less than 10,0	>15**	>15***	>15***

* The value for fineness of filtering has been obtained by calculation according to the formula, set forth in the GOST R 53844-2010;

** nominal pressure of oil in engine lubrication system

*** Expert review.