SLG Prüf- und Zertifizierungs GmbH

TEST PROTOCOL
150mm Angle Grinder
Durability Test

Protocol

Protocol No	1079-07-MM-07-PP001	
Tested by (+ signature)	Kretzschmar	.....
Approved by (+ signature)	Kékedi	.....
Date of issue	03.06.2008	
Contents	4 pages	

Testing laboratory

Name	SLG Prüf- und Zertifizierungs GmbH
Address	Burgstädter Straße 20, D-09232 Hartmannsdorf, Germany
Testing location	as above

Client

Name	Robert Bosch Tool Corporation
Address	1800 West Central Avenue
.....	IL 60056 Mount Prospect, United States of America

Test specification

Standard	Test Program after agreement with customer
Test procedure	Durability Test

Test item

Description	150mm Angle Grinder			
Brand / Type	BOSCH 1812PSD	120V / 60Hz	10A	9300min^{-1}
	DEWALT D28144	120V / 60Hz	13A	9000min^{-1}
	METABO WEP 14-150 Quick	120V / 60Hz	12A	9000min^{-1}
	MILWAUKEE 6160-20	120V	11A	9000min^{-1}

Testing

Date of receipt of test item	11 / 2007
Date(s) of performance of test	11 / 2007 … 06 / 2008

Testing Parameter

Operation ..... on a brake test rig

Cycle ..... 2 hours running (20s noload / 100s load)
1 hour rest time

Load ..... 1,25 times of nominal load

Rated Voltage ..... 120V / 60Hz

Running-in of changed carbon brushes..... 1 minute no load and 5 minutes rated load

Test Result

BOSCH 1812 PSD	**0601 833 210 / 001**	**0601 833 210 / 002**	**0601 833 210 / 003**
Nominal load	10A		
1,25 times of nominal load	12,5A		
Reached running time [h]	**1397**	**1336**	**745**
Remarks during the test	-	-	-
Condition after the test	motor winding overheated and defective	collector defective, lamella worn out	gearbox worn out

DEWALT D28144	**011 572**	**008 612**	**011 541**
Nominal load	13A		
1,25 times of nominal load	16,3A are not possible, therefore 14,5A was set		
Reached running time [h]	**567**	**542**	**609**
Remarks during the test	The maximum possible load is 14,5A. If the load is higher, the overload protection switch out the sample after a short time.		
Condition after the test	collector defective, lamella worn out	motor winding overheated and defective	collector defective, lamella worn out

METABO WEP 14-150	**704 0032 428**	**705 0035 039**	**705 0035 041**
Nominal load	12A		
1,25 times of nominal load	15A		
Reached running time [h]	**71**	**195**	**135**
Remarks during the test	-	-	-
Condition after the test	collector defective, lamella worn out	collector defective, lamella worn out	collector defective, lamella worn out

MILWAUKEE 6160-20	**A16 A507 360 227**	**A16 A507 360 226**	**A16 A507 360 232**
Nominal load	11A		
1,25 times of nominal load	13,8A		
Reached running time [h]	**182**	**320**	**225**
Remarks during the test	-	-	-
Condition after the test	gearbox worn out	collector defective, lamella worn out	contact problems at the switch and the PCB

Change of brushes

BOSCH 1812 PSD	0601 833 210 / 001	0601 833 210 / 002	0601 833 210 / 003
Brush type	E64		
1st change after … hours	154	158	143
2nd change after … hours	275	296	252
3rd change after … hours	398	408	355
4th change after … hours	483	517	451
5th change after … hours	577	616	546
6th change after … hours	668	720	618
7th change after … hours	756	822	701
8th change after … hours	839	916	-
9th change after … hours	919	1014	-
10th change after … hours	998	1110	-
11th change after … hours	1072	1205	-
12th change after … hours	1140	1288	-
13th change after … hours	1211	1319	-
14th change after … hours	1281	1336	-
15th change after … hours	1348	-	-
16th change after … hours	1396	-	-

DEWALT D28144	011 572	008 612	011 541
Brush type	640491-01		
1st change after … hours	81	85	79
2nd change after … hours	153	157	155
3rd change after … hours	205	217	228
4th change after … hours	261	275	302
5th change after … hours	317	330	363
6th change after … hours	362	387	427
7th change after … hours	404	441	483
8th change after … hours	448	497	524
9th change after … hours	483	-	568
10th change after … hours	520	-	609
11th change after … hours	546	-	-
12th change after … hours	559	-	-

Change of brushes

METABO WEP 14-150	704 0032 428	705 0035 039	705 0035 041
Brush type	171 and 172		
1st change after … hours	61	70	69
2nd change after … hours	-	135	133
3rd change after … hours	-	194	-

MILWAUKEE 6160-20	A16 A507 360 227	A16 A507 360 226	A16 A507 360 232
Brush type	L42 F12		
1st change after … hours	70	63	61
2nd change after … hours	128	110	117
3rd change after … hours	176	165	171
4th change after … hours	-	221	225
5th change after … hours	-	274	-

End of Test Protocol