

Wuxi Jinyang Lab Test Report
无锡金阳实验室测试报告

TEST REPORT

测试报告

Starter Endurance Test Report Report

起动机耐久测试报告

PN:20190801

Wuxi Jinyang Laboratory

无锡金阳试验室

Date:Aug,2019 (2019年8月)

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无锡金阳实验室测试报告

Test Purpose: Test product for new supplier (XX) 测试的目的: 为供应商测试产品(XX)		Conclusion: 结果: 合格		
Test Name: starter Endurance test 测试的名称: 起动机耐久测试		Report No: 20190801 报告编号: 20190801		
Sample Nam: 28100-EW030 样品名字: 28100-EW030	Test Equipment: starter endurance test bench 测试仪器: 起动机耐久测试台			
Test Condition: 测试条件 Starting with no ignition or fuel: 1seconds 死启动时间: 2秒; Starting with ignition or fuel: 1 seconds 活启动时间: 1秒; Over running time: 2 seconds 超速时间: 1秒		Responsible Person: Shen 负责人: 沈君		
Test Specifications: 测试规格 Cranking Time: 启动时间 Starting with no ignition or fuel: 2 seconds 死启动时间: 2秒 Starting with ignition or fuel: 1 seconds 活启动时间: 1秒 Over running time: 1 seconds 超速时间: 1秒 Break time: 30seconds 暂停时间: 30秒 Cranking Torque: 16Nm: 16Nm Cranking Speed: 2400rpm 速度: 2400rpm Cranking current: 340A 电流: 340A Power supply resistance: 10 mΩ 电源电阻: 10mΩ Testing Volt: 24V 电压: 24V Rated power: 5KW 功率: 5千瓦 Cooling method: Fan 冷却方案: 风扇 Run the performance before and after the testing to check output specifications 运行机组性能在测试之前和之后, 来检查输出规格				
Order Date: 预定日期:	Finish data: 2018.08.01 完成日期:	Tested Sample keep period: 3 Month 样品保存时间3个月		
Tester Sign: shenjun 测试者签名:	Verify: 审核:	Approval: 批准:		
Test conclusion and data analysis: 测试结果和数据分析 1. Performance: NO 性能: 否定 2. Main changes: NO 主要变动: 否定 Endurance Test Start: CYCLES 耐久测试次数 Unit #1: 10000 cycles; Unit #2 : 10000 cycles;				
Check Items 测试项目	Before test 测试前	After test 测试后		Notes
Brush 碳刷	#1 Starter 17. 9mm	#2 Starter 17. 9mm	#1 Starter 15. 3-15. 5mm	#2 Starter 15. 4-15. 6mm
Max Torque 最大扭力	64NM	64NM	61NM	61NM
Max Current 最大电流	873A	896A	901A	917A
Max Power 最大功率	5. 82KW	5. 98KW	5. 81KW	5. 87KW
Torque @Max Power 最大功率时的扭力	49. 340NM	48. 583NM	44. 592NM	44. 357NM
Bushing 单向器内轴衬 (inside the drive pinion)				
Performance testing on D&V tester before and after cycle tester as attached below.				
Conclusion / Comments: 结论点评 TEST PASS				

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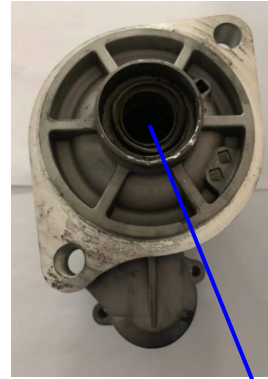
无锡金阳实验室测试报告

Key components photos comparison (After testing): 关键部件照片对比



前盖轴承未破损，外观无损坏
Bush on D.E housing is not worn, appearance
no damage

前盖 D.E housing



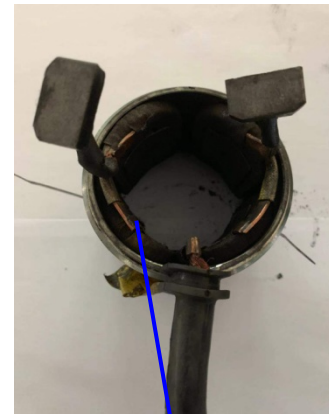
前盖轴承未破损，外观无损坏
Bush on D.E housing is not worn, appearance
no damage

前盖 D.E housing



定子内径ID of FC
测试前before test:
 $\Phi 60.8 \pm 0.10$
测试后after test: $\Phi 61.2$

定子总成 FC assy



定子内径ID of FC
测试前before test:
 $\Phi 60.8 \pm 0.10$
测试后after test: $\Phi 62.04$

定子总成 FC assy

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Key components photos comparison (After testing): 关键部件照片对比



轴头直径diameter of shaft head

测试前before test: $\Phi 90 - 0.015$

电枢外径OD of armature

测试前before test: $\Phi 60 - 0.05 + 0.05$

测试后after test: $\Phi 60.10$

换向器外径OD of commutator

测试前before test:

$\Phi 36 - 0.15 + 0.15$

测试后after test: $\Phi 35.82$

电枢总成 armature assy



轴头直径diameter of shaft head

测试前before test: $\Phi 90 - 0.015$

电枢外径OD of armature

测试前before test: $\Phi 60 - 0.05 + 0.05$

测试后after test: $\Phi 60.00$

换向器外径OD of commutator

测试前before test:

$\Phi 36 - 0.15 + 0.15$

测试后after test: $\Phi 35.83$

电枢总成 armature assy



测试后外观完好，未见破损
after test, appearance is ok, no damage

后盖 C.E housing



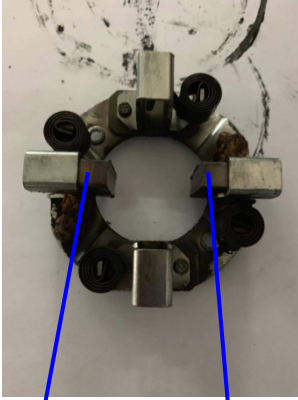
测试后外观完好，未见破损
after test, appearance is ok, no damage

后盖 C.E housing

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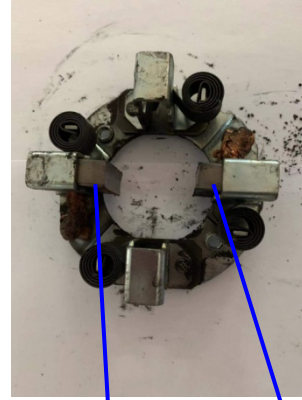
无锡金阳实验室测试报告

Key components photos comparison (After testing): 关键部件照片对比



电刷长度brush length
测试前before test: 17.9
测试后after test: 15.3-

刷架 brush holder assy



电刷长度brush length
测试前before test: 17.9
测试后after test: 15.4-

刷架 brush holder assy

齿轮公法线NML of gear
测试前before test:
 $\Phi 14.30 -0.08$
测试后after test:
 $\Phi 14.28$



单向器齿头未打滑失灵，包圈未松动
Clutch no slip. cover no loose

单向器 Clutch

齿轮公法线NML of gear
测试前before test:
 $\Phi 14.30 -0.08$
测试后after test: $\Phi 14.25$



单向器齿头未打滑失灵，包圈未松动
Clutch no slip. cover no loose

单向器 Clutch

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Key components photos comparison (After testing): 关键部件照片对比



滚珠、扭簧未见变形
No deformation of spring
and drive roller

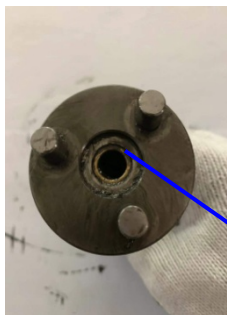


滚珠、扭簧未见变形
No deformation of spring
and drive roller



轴头直径diameter of shaft
head
测试前before test: $\Phi 12-$
- - - - -

轴径diameter of shaft
测试前before test:
 $\Phi 26-0.03 -0.05$
测试后after test: $\Phi 26.02$



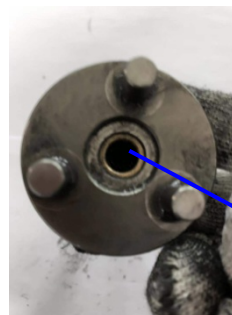
铜套内径ID of bush
测试前before
test: $\Phi 9+0.05 +0.03$

行星轮轴 planetary gear shaft



轴头直径diameter of shaft
head
测试前before test: $\Phi 12-$
- - - - -

轴径diameter of shaft
测试前before test:
 $\Phi 26-0.03 -0.05$
测试后after test: $\Phi 26.00$



铜套内径ID of bush
测试前before
test: $\Phi 9+0.05 +0.03$

行星轮轴 planetary gear shaft

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Key components photos comparison (After testing): 关键部件照片对比



拨叉测试后未见变形、未开裂

After test, shift lever no deformation no crack

拨叉 shift lever



拨叉测试后未见变形、未开裂

After test, shift lever no deformation no crack

拨叉 shift lever



测试后未见变形、破损

No deformation ,cracking after test

调整垫片、挡圈、卡簧等

adjustment plate,stop collar ,slip ring and so on



测试后未见变形、破损

No deformation ,cracking after test

调整垫片、挡圈、卡簧等

adjustment plate,stop collar ,slip ring and so on

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Key components photos comparison (After testing): 关键部件照片对比



内齿圈齿形完整，行星齿轮轴承未破损inner gear is complete, needle bush in small gear is not broken

内齿圈及行星齿轮
inner gear ring and small gear



内齿圈齿形完整，行星齿轮轴承未破损inner gear is complete, needle bush in small gear is not broken

内齿圈及行星齿轮
inner gear ring and small gear



开关测试后没有粘连、不断电现象，外盖、弹簧等部件未见变形、开裂。

No adhesion, power is off, cap and spring is not deformed, cracking

电磁开关 solenoid



开关测试后没有粘连、不断电现象，外盖、弹簧等部件未见变形、开裂。

No adhesion, power is off, cap and spring is not deformed, cracking

电磁开关 solenoid

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Key components photos comparison (After testing): 关键部件照片对比



标准件 standard part

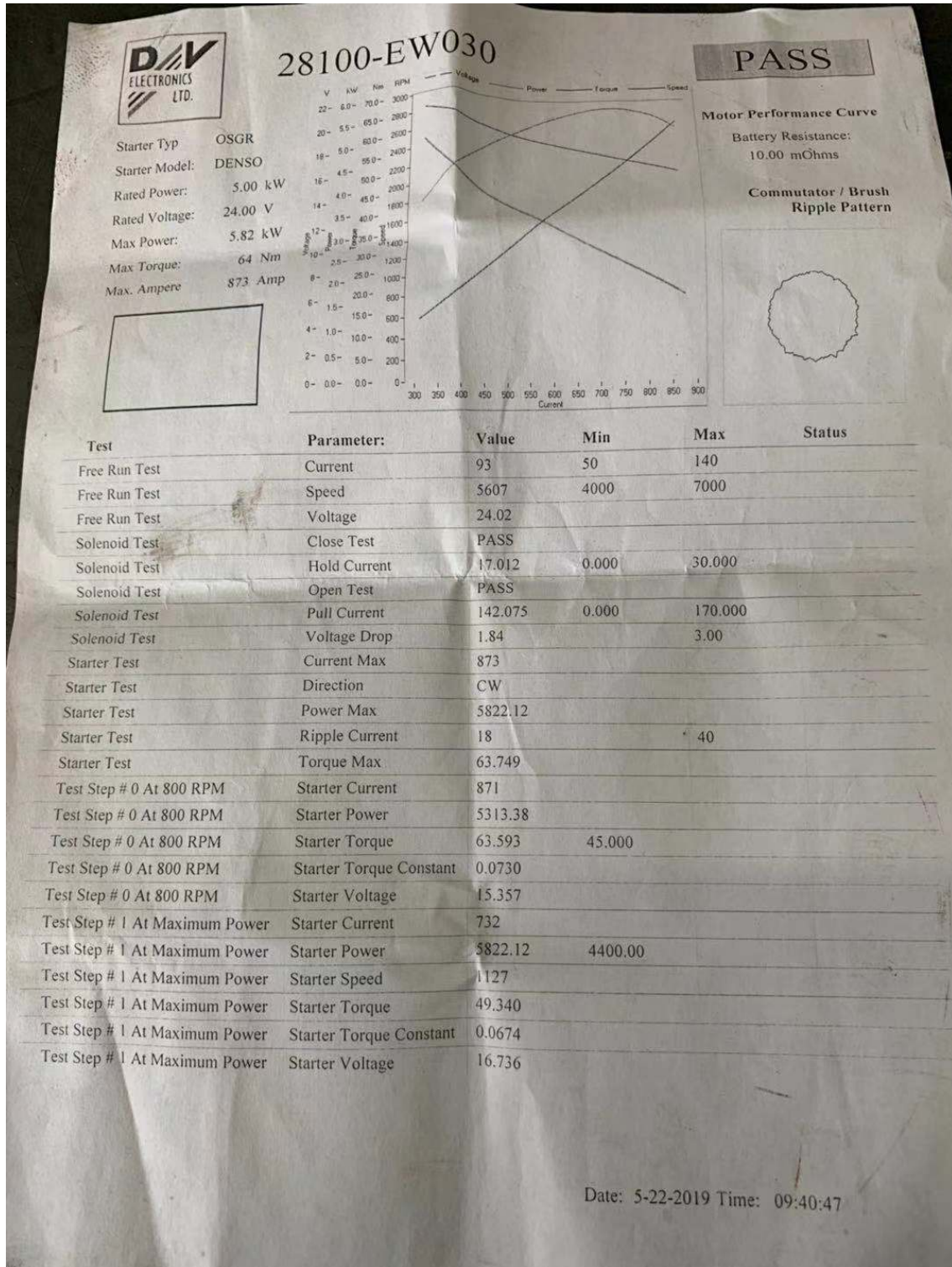


标准件 standard part

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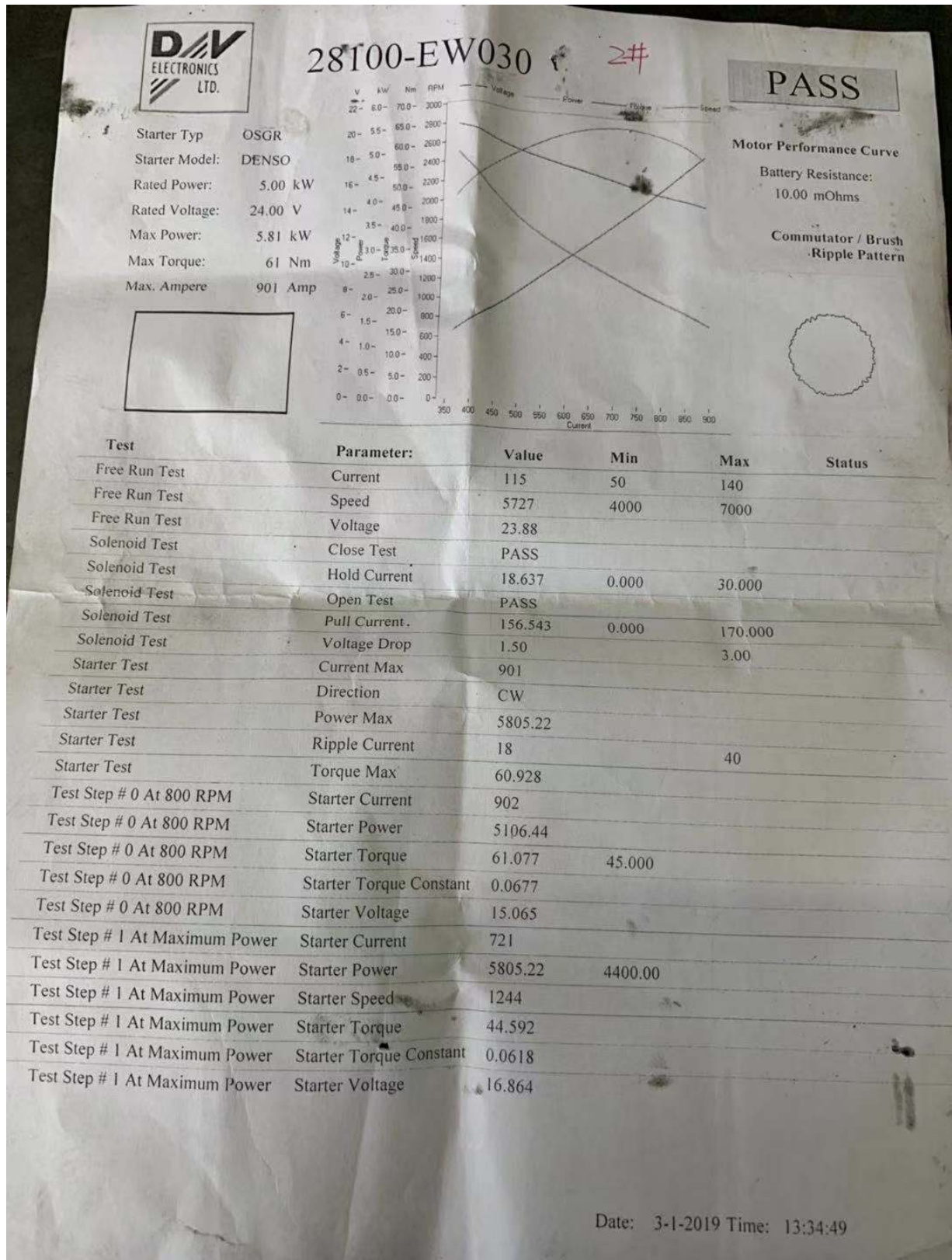
1 号机试验前 Unit 1 before test



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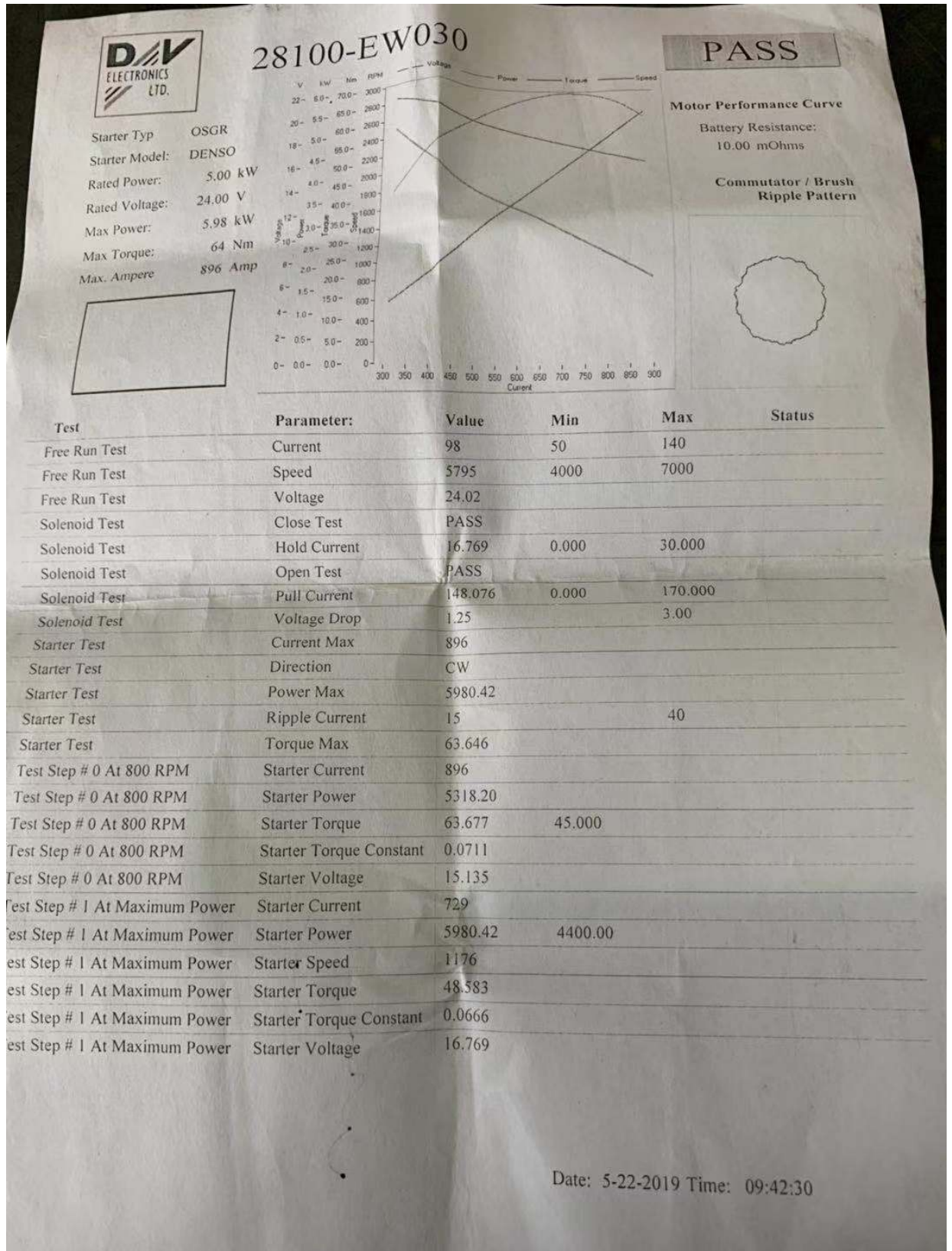
1 号机试验后 Unit 1 after test



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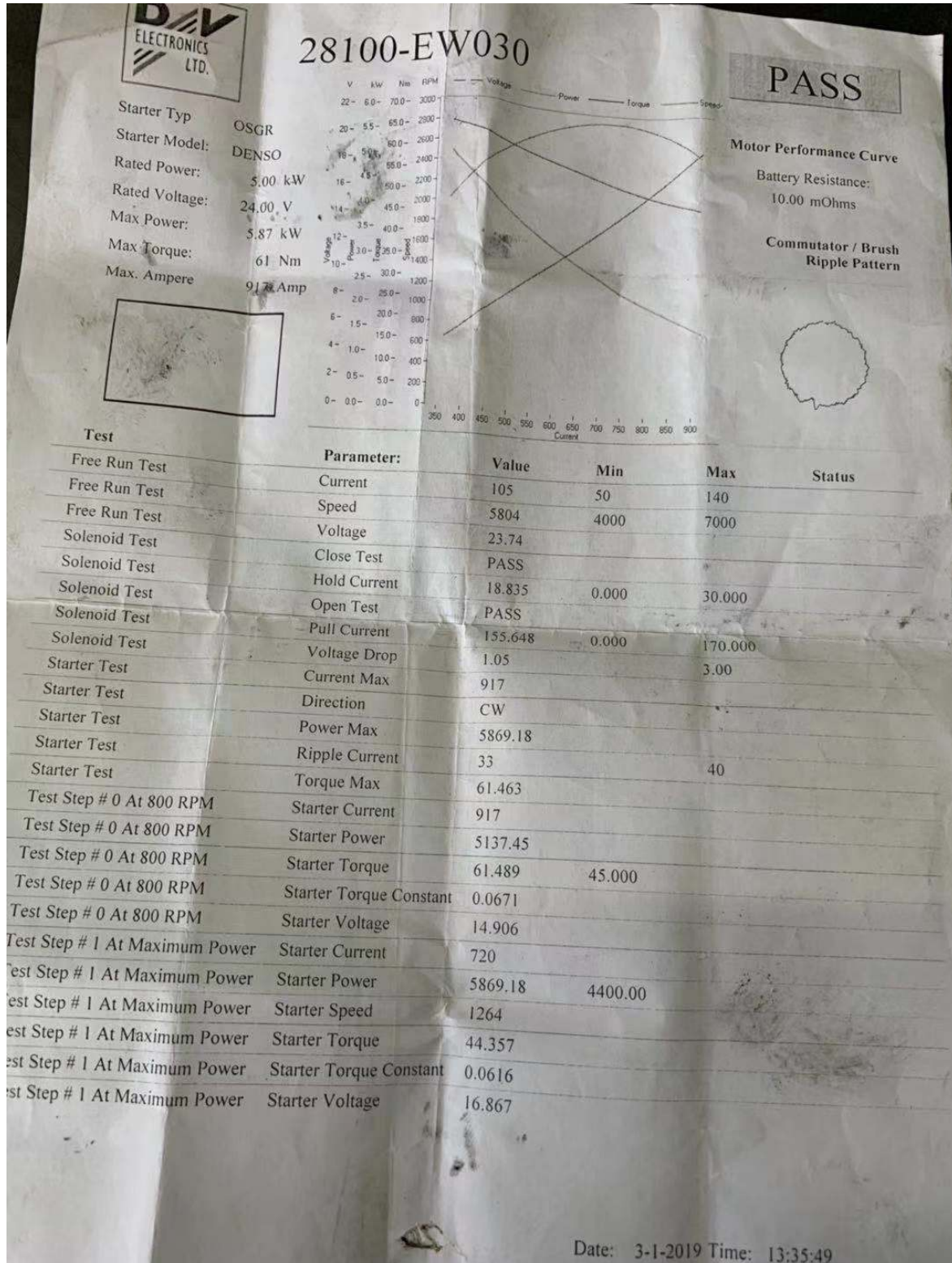
2 号机试验前 Unit 2 before test



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2 号机试验后 Unit 2 after test



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D & V testing report attached here

附加四页DV测试报告

(4pages)

For both before testing & after endurance testing

分别是耐久测试前和测试之后的报告