DENSO

Parties outside the secret

１枚がベスト

Structure system diagram	Issuing section: Electric manufacturing department 2 production engineering room 4 / date of creation: 2/8/2016	Approval: 松 5/07/20 久	examination: 吉 5/07/20 田	create: 小 5/07/20 坂			Distribution cloth Ahead					

Line name	Assembly part number, part name	name / For quantity confirmation
690A MG Stereoline	212100-0080 Stater S / A, Mo Tar	Priority management designation: S 13, C 1, C 2, ○
System No. Systematic name <1/1> 19 19 Visual inspection boxed	Model Product Name 212101-0080 ASSY DRAWING, statuser	Delivery destination, reserved vehicle type Toyota 690A

19-001
1st: Visual inspection of appearance (side of core, power line, high viscosity varnish adhesion)

19-002
2st: Power line position, thermistor continuity check

19-003
3st: Core inner diameter check, coil end visual inspection

19-004
4st: QR code read check

19-005
5st: Boxing

ASSY DRAWING, Stager
212101-0080

No.	Revision Date	Revision item	Reason for revision	Revised person
△ 2	1/19/2017	Thermistor connector jig confirmation item	Thermistor connector jig TMC specification change	Kosaka

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1枚がベスト

Process control statement

Issuing section	Approval	examination	create	Distribution cloth Ahead
Electric manufacturing department 2 production engineering room 4	吉 6/02/08 田	小 6/02/08 坂	小 6/02/08 坂	
date of creation: 2/8/2016				

System No. -System diagram number Line name

690A MG Stereoline

Assembly part number, part name

212100-0080

Stater S / A, Mo Tar

name: For initial flow

Priority management designation: SCCC 13 1 2 1717

Process No. / Process name / Station name <1/2>

19 19

Visual inspection boxed

Model Product Name

212100-0080

Stater S / A, Mo Tar

Delivery destination, reserved vehicle type

Toyota

690A

<Process specifications>

Perform a final visual inspection and
Pack the product in a shipping box.

<Equipment>

NO.1 equipment

Equipment machine number	IMB-1820
Equipment name	Visual inspection / boxing machine
Model	————
capacity	2.9kW, 3.0t
Manufacturer name	Machinery Department

<Master>

NO.1 Master

Master No.	40
Master name	Precision master (including thermistor resistance master)

NO.2 Master

Master No.	41 41
Master name	Precision master (power line terminal position check) (tentative)

NO.3 Master

Master No.	42
Master name	Malfunction master

<Inspection conditions>

Core side appearance inspection	There is no gap in the core seat
	Varnish / No powder adhesion
	No rust
Power line Welded part appearance inspection	No powder / adhesion on the inseam (Fig.1)
	Welded corner residue / no ball separation
	No blisters in the weld film
High viscosity varnish visual inspection	No deviation in coating position (Fig.2)
	Don't forget to apply in 3 places
	The amount of application is normal
Power line height / position	There should be no misalignment of the power line terminal
Thermistor resistance / appearance inspection	No disconnection
	No powder / varnish adhesion
	Connector part not cracked / damaged
Lead side visual inspection	No powder shortage
	No pinhole
	No scratches / dents
	Varnish Icicles
	(Satisfaction with allowable dimensions)
	No powder bridging in the circumferential direction
	No scratches on the koa edge
	No rust
	Power line terminal / No dents
	No contact between the neutral line and the power line
Core inner diameter side appearance inspection	Coil inner diameter ϕ141.38 or less
	Cuff crack / scratch / no dent
	Inshu inner diameter should not pop out
Anti-lead side visual inspection	No powder adhesion
	No scratches / dents
	No scratches on the koa edge
	No rust
	Power line terminal / No dents
	Varnish Icicles
	(Satisfaction with allowable dimensions)
QR code reading inspection	The QR code can be read
	There must be a serial number stamp
Cycle time	90s

範囲:ハッチング部

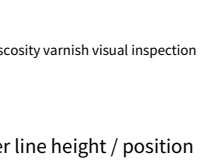


Fig.1

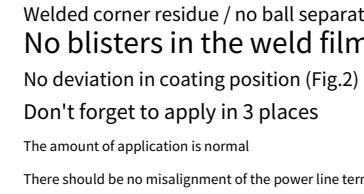


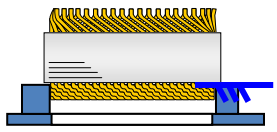
Fig.2

<Working method>

1. Bring the work to the equipment 1st
2. Perform a visual inspection of the side of the core (4 images).
3. Perform a visual inspection (6 images) of the welded part of the power line.
4. Perform a visual inspection (3 images) for the presence or absence of high-viscosity varnish adhesion.
5. Move the work to the 2st.
6. Remove the clip attached to the neutral wire and put it in the clip folder.
7. Clamp the power line resin part and check the power line position / height.
   The clamp position is shown in Fig.3.
8. Check that the thermistor connector is not cracked or damaged, and perform a continuity check. Then hook the thermistor to the power line.
9. Move the work to 3st.
10. After clamping the outer diameter of the core, check the inner diameter of the core.
11. Lift the work and perform a visual inspection on the lead side.
12. Perform a visual inspection on the inner diameter side of the core.
13. Rotate the work and perform a visual inspection on the opposite side.
14. Move the work to the 4st to the inner diameter clamp.
15. Read the QR code with the QR leader. Then pack it in a box and close the lid. ..
16. Pay out in 6 boxes. Make sure you have 6 clips when paying out.
17. Return the empty pallet.

<Processing drawing>

1st, 2st



Anti-lead core edge reference

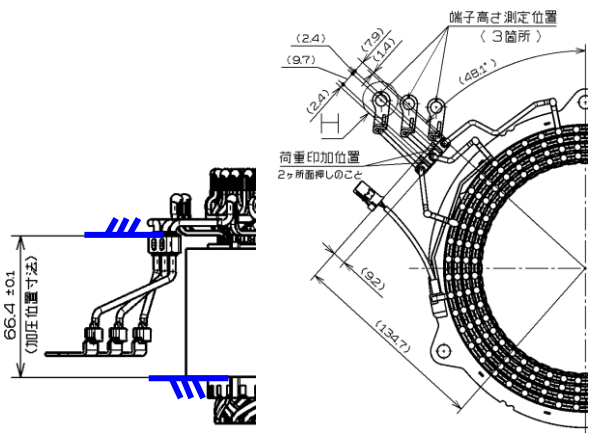
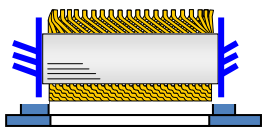


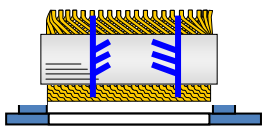
Fig.3

3st



Core outer diameter standard

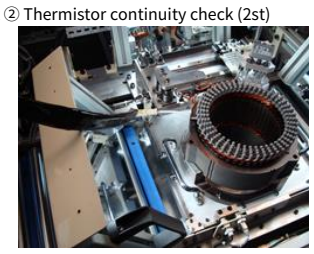
4st, 5st



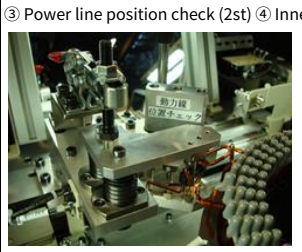
Core inner diameter standard

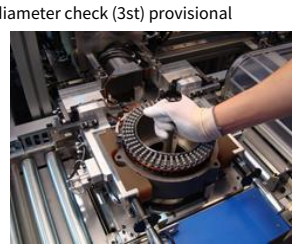
<Processing drawing>

① Visual inspection camera & lighting (1st ② Thermistor continuity check (2st)



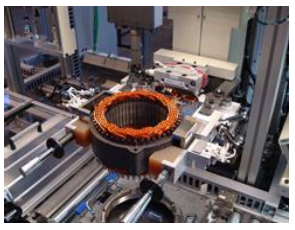
③ Power line position check (2st) ④ Inner diameter check (3st) provisional



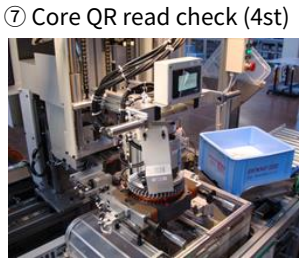


⑤ Lead side appearance inspection (3st)

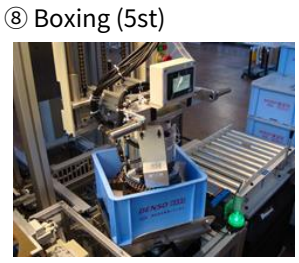
⑥ Anti-lead side appearance inspection (3st)



⑦ Core QR read check (4st)



⑧ Boxing (5st)

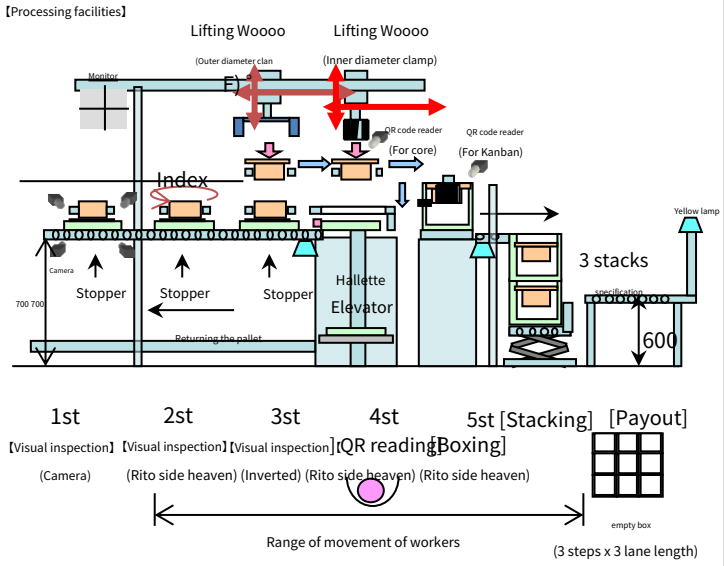


⑨ Payout / stacking (5st)

⑩ Finished product payout (6 boxes)

<Processing drawing>

【Processing facilities】



<Master check>

Carry out a master check at the time of in-process (1 / direct) The master should be input from the 1st and paid out from the 3st OK

Master: Image / video check, QR code read check

Thermistor resistance check, power line terminal position check NG

master: thermistor continuity NG check, power line position NG check,

QR code read NG check

<Defective product treatment>

The varnish inner diameter adhered product and the icicle product should be re-loaded with trimming. Power line welding NG should be re-loaded.

* Reloading should be done in the reloading lane in front of the power line welder.

<Regular cleaning>

Below, for items, use Fent, etc.

1 / Perform regular cleaning directly.

- Pallet positioning unit
- Power line check part
- Core inner diameter check cage surface / receiver
- Mirror for checking the appearance of work

<Daily inspection>

- Carry out based on the daily inspection check sheet. -

Implement based on the refueling guidance table.

No.	Revision Date	Revision item	Reason for revision	Revised person
△ 2	1/19/2017	Thermistor connector jig confirmation item	Thermistor connector jig TMC specification change	Kosaka

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Process control statement

Issuing section	Approval	examination	create	Distribution
Electric manufacturing department 2 production engineering room 4	吉 6/02/08 田	小 6/02/08 坂	小 6/02/08 坂	cloth Ahead
date of creation 2/8/2016				

System No. -System diagram number Line name	Assembly part number, part name	name
690A MG Stereoline	212100-0080 Stater S / A, Mo Tar	For initial flow
		Priority management designation SCCC 13 1 2 17 17

Process No. / Process name / Station name <2/2>	Model Product Name	Delivery destination, reserved vehicle type
19 19 Visual inspection boxed	212100-0080 Stater S / A, Mo Tar	Toyota 690A

<Quality>

At the time of measurement / Heavy	No.	Characteristic / Measuring instrument	Management method: Management interval	Management method	Administrator	Process capability σ, X, Cp, Cpk	remarks	Quality ID / Relationship criteria
	1	Each display lamp / ° SW Abnormal thing Visual check	1 / direct	Condition management Check sheet	worker			
	2	Main air pressure 0.4 ± 0.02MPa Pressure gauge (0.001)	1 / direct	Condition management Check sheet	worker			
	3	Power Mora Rotation Operation Abnormal Visual check	1 / direct	Condition management Check sheet	worker			
	Four	Thermistor connector wear and no terminal scratches Visual check	1 / direct	Condition management Check sheet	worker			
	Five	Power line position confirmation jig Operation is normal Visual check	1 / direct	Condition management Check sheet	worker			
	6	Clamp part deterioration / no foreign matter adhered Visual check	1 / direct	Condition management Check sheet	worker			
	7	No abnormalities in interlock operation Visual check	1 / direct	Condition management Check sheet	worker			
	8	Stacked lifter operation is not abnormal Visual check	1 / direct	Condition management Check sheet	worker			
	9	Thermistor connector jig No deformation or deterioration △2 Dimension measurement / visual	1 / M 2	Recording paper	Team leader		2	
	Ten	Inner diameter check jig dimensions ① 136.8 (+ 0.1 / 0) 3D measuring instrument (0.0001)	2 / Y	Check sheet	worker		Check jig (class C measuring instrument)	
	11 11	Inner diameter check jig dimension ② 141.38 (+0.02/ 0 3D measuring instrument (0.0001)	2 / Y	Check sheet	worker		Check jig (class C measuring instrument)	
	12	Inner diameter check jig dimension ③ 141.8 (+ 0.1 / 0) 3D measuring instrument (0.0001)	2 / Y	Check sheet	worker		Check jig (class C measuring instrument)	
	13	OK Master, NG Master Check OK Master, NG Master	1 / direct	Check sheet	worker			
	14	Check the accuracy of the power line position check Power line position check master	1 / direct	Check sheet	worker			
	15	Master value confirmation 3D measuring instrument, line resistor	1 / Y	Recording paper	Team leader			
	16 16	No harmful scratches or hits Visual check	100%	P control chart	worker		* See limit sample	
	17 17	Power line welding Inseam powder / varnish adhesion Visual check	100%	P control chart	worker		* See limit sample	
	18 18	Power line welding is not defective Visual check	100%	P control chart	worker		* See limit sample	
C	19 19	Power line film should not be burnt Visual check	100%	P control chart	worker		* See limit sample	
◎	20	Must be applied between 2-3T of high viscosity varnish Visual check	100%	P control chart	worker		* See limit sample	
	twenty one	Checking the thermistor resistance continuity Visual check	100%	P control chart	worker		* See limit sample	
C	twenty two	No powder varnish adhered to the thermistor Visual check	100%	P control chart	worker		* See limit sample	
	twenty three	Satisfaction with the power line position height standard This machine check jig	100%	P control chart	worker			
	twenty four	Core inner diameter φ141.38 or less Core inner diameter check cage	100%	P control chart	worker			
	twenty five	Powder adhesion Visual check	100%	P control chart	worker		* See limit sample	
	26	Varnish exudation Visual check	100%	P control chart	worker		* See limit sample	
	27	Inshu inner diameter should not pop out Visual check	100%	P control chart	worker		* See limit sample	
	28 28	QR code can be read This machine QR leader	100%	P control chart	worker			
	29	No core service Visual check	100%	P control chart	worker		* See limit sample	
	30	Residual foreign matter 32 mg or less Dedicated inspection device	When 1 / M + 5M changes	x-Rs control chart	Team leader			

No.	Revision Date	Revision item	Reason for revision	Revised person
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