

DESIGN QUALIFICATION

Machine Model : Very High Speed Screw Capping Machine JPSC-9.

Customer : ALKEM LABORATORIES LTD. (BADDI).

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DESIGN QUALIFICATION

MACHINE MODEL: VERY HIGH SPEED SCREW CAPPING MACHINE

JPSC-9

	Signed	Date
Prepared By:		
Reviewed By:		
J..P. MACHINE TOOLS		

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11. Report Approval

	Signed	Date
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Reviewed By:		
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1.0 PROTOCOL APPROVAL

1.1 Protocol Written by:

Preparation of this qualification protocol is responsibility of **Validation Co Ordinator**

M/s J.P. MACHINE TOOLS.

Designation	Signature	Date
Prod. Manager		
Q.C. Engineer		

1.2 Protocol Approved by:

Pre approval of this qualification protocol is the responsibility of the **Validation Core Committee**

customer:- ALKEM LABORATORIES LTD.

Designation	Signature	Date

	Signed	Date
Prepared By:		
Reviewed By:		
J..P. MACHINE TOOLS		

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2.0 OBJECTIVE:

The purpose of this Design Qualification is to provide documented evidence to demonstrate that all key aspects of the equipment supplied by **M/S J.P. MACHINE TOOLS**. The document will be finally approved by the client by a sign out at the foot of each page / annexure and a final sign out on the cover sheet.

- Each subcomponent Complies with engineering design and URS with manufacturer's recommendations.
- The system meets the current Good Manufacturing Practice requirements and all other regulatory Requirements.

3.0 RESPONSIBILITIES:

CUSTOMER

- Reviewing and approval of protocol.
- To provide URS for the equipment.

MANUFACTURER

1. To design, engineer and provide the complete technical details of the equipment pertaining to its design qualification viz.
 - (a) Machine overview
 - (b) P & ID drawing
 - (c) Equipment orientation with layout
 - (d) Specification of the sub-components / bought out items, and their make, model & quantity / brochures,
 - (e) Details of utilities
 - (f) Material of construction of all components
2. To facilitate the client for the Factory Acceptance Test of the machine at their works.
3. To confirm the safe delivery of the equipment to the user site.
4. To ensure that no un-authorized and / or unrecorded design modifications shall take place. If any point of time, any change is desired in the mutually agreed design, change control procedure shall be followed and documented.
5. To ensure the proper installation & commissioning of the equipment.

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4.0 USER REQUIREMENT SPECIFICATION (URS)

DESCRIPTION	SPECIFICATION
Equipment	M/C: VERY HIGH SPEED SCREW CAPPING MACHINE
Scope of supply	Including all standard accessories with following scope of supply: a) Capping heads with Magnetic clutches. b) AC drive. c) Rotary Orienter Cap feeder.
Capacity	240 Bpm (bottle per minutes)
Process	Equipment should be able to perform screw cap sealing of bottle.

5.0 MACHINE DESCRIPTION

J.P. MACHINE TOOLS Very High Speed screw capping machine is versatile self supported on stainless steel leg with height adjustable adjustment system. The machine is precision equipment on sturdy welded steel frame completely enclose in stainless steel sheet and doors are provided to facilitate to servicing of m/c.

The container moving on conveyor belt are separated by in feed worm and transferred to the infeed turret which then transfer it to the center turret below the cap sealing head. The caps are oriented in the cap orieneter, the oriented caps are moved to the cap transfer turret thru' the cap chute. The cap sealing head, which is synchronized with the cap transfer turret, picks up the cap from the cap transfer turret. The cap sealing head comes down on the container and tightens the cap with pre set torque. Each cap sealing head is provided with an adjustable torque magnetic clutch. The clutch slips on reaching the adjusted torque.

The capped container is then moved from center turret to the out feed turret and then on to the exit side of the conveyor.

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5.1 TECHNICAL SPECIFICATIONS OF COMPONENTS & SUB-COMPONENTS / BOUGHT OUTS

Name Of Component / Accessories	Description
Drive motor	Make: HAVELLS, HP:-1, RPM:- 1390
Gearbox	Make: BONFIGLIOLI, Ratio: 15:1 ratio , FLANGE mounted
Orienter gearedmotor	Make: Bonfiglioli , H.P:- 0.125, RPM:- 24, flange mounted
Conveyor Gearedmotor	Make: Bonfiglioli, H.P.: - 0.25, RPM: 50, flange mounted
Pneumatic cylinder	Make: SMC, with Solenoid valves make:-SMC
Capping head assly	MOC : SS-304, Al. and plastics.
Star wheels	Rotating star wheels for movements of bottles MOC- UHMWPE
Cap feeder	Cap orienter device MOC: Polycarbonate + Al. + ss-304
Feed worm	Provide pitch to containers to match with infeed turret, MOC : Delrin
Chute	To convey & place the cap to cap transfer turret. MOC : SS-304
Proxy Switch and photo sensor.	INDUCTIVE Spec: PNP/NO Photosensor:- PNP/NO
Conveyor chain	MOC: Delrin- MCC/ HABASIT
Leveling bolt	m-16x100 long MOC-SS-304

5.2 DETAILS OF UTILITY

DESCRIPTION	SPECIFICATION
1. Electrical Supply	
Phase	3 Phase- 4 WIRE
Voltage	415 V AC
Frequency	50 Hz
2. AIR SUPPLY	
CONSUMPTION	COMPRESSED AIR @ 6kg/cm2
QUALITY	Oil, water & dust free
Flow pressure	4 kg/ cm2

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5.3 MATERIAL OF CONSTRUCTION

SR. NO.	DESCRIPTION	MOC SPECIFIED	ACCEPTED YES/NO
1.	Cam	SG Iron	
2.	Cam Follower	Standard Bearing	
3.	Star wheel	UHMWPE	
4.	Feed worm	Delrin	
5.	Conveyor chain	Delrin	
6.	Door frame	Aluminum	
7.	Cap Orienter	SS-304, Polycarbonate, Aluminum.	
8.	Conveyor channels	SS-304	
9.	Bottle guide on conveyor	SS-304	
10.	Cap chute	SS-304	
11. .	CAPPING HEAD ASSY.	SS-304, Aluminum, Plastic	

Signed

Date

Prepared By:

Reviewed By:

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6.0 DESIGN VERIFICATION

6.1 P & ID DIAGRAM FOR REFERENCE & APPROVAL

Approval status : APPROVED / NOT APPROVED

Any change in the approved diagram : Yes / No

If yes, the reason for change

.....
.....
.....
.....
.....

6.2 EQUIPMENT ORIENTATION WITH ROOM LAY OUT :

Approval status: APPROVED / NOT APPROVED

Any change in the approved Orientation Layout : Yes / No

If yes, the reason for change

.....
.....
.....
.....
.....

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7.0 DOCUMENT VERIFICATION

Objective	Ensure that all relevant design documentation is in place and referenced.
Method	Log the document title, reference number, and final approval date and revision number.
Acceptance Criteria	All columns in the table should be completed. All documents should be identified, approved and referenced. Sign & date as approved in the space.

Engineering Documentation	Reference Number	Revision	Approval Date	Accepted Yes / No
G.A. Drawing	As per IO manual / DQ			
ELECTRICAL DRG.	As per IO manual / DQ			
Utility Requirement Specifications	As per DQ- 4.0	-	-	
Component List	DQ- 5.3 & IO manual	-	-	

8.0 INSTRUMENTS & CONTROL REVIEW

Sr. No.	Instrument Description	Make/Description	Accepted Yes / No
1.	AC drive	DELTA	
2.	Proximity Switches & Photocells	PNP, NO	
3.	Pneumatic cylinders	SMC/Festo	
4.	FRL unit	SMC/Festo	
5.	Solenoid valves	SMC/Festo -24V/DC	

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9.0 FAT PROCEDURE:

Factory Acceptance Test Procedure shall be as follows:

After the completion of erection work of the machine, client shall be informed to perform the Factory Acceptance Test (FAT)

Client shall perform the FAT at the manufacturer site and record all the data in the prescribed FAT document as per the details given below:

1. Test criteria
2. Design Verification Check list
3. Deficiency & Corrective Action report
4. Pre-installation requirements
5. Final report

10.0 CHANGE CONTROL PROCEDURE:

Change in the agreed design shall be addressed through the well-defined change control procedure.

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11.0 REPORT APPROVAL:

Approved by: M/s J.P. MACHINE TOOLS

Designation	Signature	Date
Prod. Manager		
Q.C. Engineer		

Approved by: - Customer

Designation	Signature	Date

DQ IS VARIFIED AND FOUND SATISFACTORY.

	Signed	Date
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INSTALLATION / OPERATIONAL QUALIFICATION (IQ / OQ)

For

CUSTOMER

RANBAXY LABORATORIES LTD. (BADDI)

Model:

JPSC -9.

Sr. No.

02/12.

	Signed	Date
Prepared By:		
Reviewed By:		
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Objective

1. Scope
2. Responsibility
3. Machine Description
4. Validation Requirements
 - 5.1 IQ Requirements
 - 5.2 OQ Requirements
5. Qualification Test Sheets
6. Installation Qualification Tests
 - 7.1 Document & Drawing Verification
 - 7.2 Verification of Technical Spec. for In-house & bought out items
 - 7.3 Utilities Verification
 - 7.4 Material of construction Verification
 - 7.5 Installation Qualification Test Status
7. Operational Qualification Tests
 - 8.1 Testing of Control Panel
 - 8.2 Power failure recovery verification
 - 8.3 Emergency Operating Verification
8. Change Control Procedure
9. Report Approval

	Signed	Date
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Reviewed By:		
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1.0 OBJECTIVE:

The purpose of this study is to ensure the proper re-installation of **VERY HIGH SPEED SCREW CAPPING** at CUSTOMER'S site.

This study verifies:

- Qualification of the unit re-installation and examination of all background information is performed to assure conformance to and manufacturer's specifications (URS).
- The equipment meets the current Good Manufacturing Practices (GMP) requirements and all other regulatory obligations.
- No unauthorized or unrecorded modifications have taken place.
- Operating Procedures/ Preventive Maintenance Procedures (PMP) have been identified and listed.
- All critical instrumentation has been identified.
- All utilities are properly connected.
- All safety features are accounted for.
- All relevant data have been checked.

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Reviewed By:		
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2.0 SCOPE:

The scope of this qualification protocol is limited to the Installation and Operational Qualification of **VERY HIGH SPEED SCREW CAPPING MACHINE** at CUSTOMER. This qualification protocol is part of a validation activity for the **VERY HIGH SPEED SCREW CAPPING MACHINE**

IQ / OQ

The validation will include the Operational Qualification of the **VERY HIGH SPEED SCREW CAPPING MACHINE**, once the Installation Qualification of the equipment has been completed. Qualification activities will include the equipment and associated utilities.

3.0 RESPONSIBILITIES:

CLIENT:

1. To perform the Factory Acceptance Test (FAT)
2. To perform the Site Acceptance Test (SAT)

MANUFACTURER

1. Machine overview
2. Installation Qualification Tests
3. Operational Qualification Tests

4.0 **MACHINE DESCRIPTION:**

J.P. MACHINE TOOLS VERY HIGH SPEED screw capping machine is versatile self supported on stainless steel leg with height adjustable adjustment system. The machine is precision equipment on sturdy welded steel frame completely enclose in stainless steel sheet and doors are provided to facilitate to servicing of m/c.

The container moving on conveyor belt are separated by in feed worm and transferred to the infeed turret which then transfer it to the center turret below the cap sealing head. The caps are oriented in the cap orienter, the oriented caps are moved to the cap transfer turret thru' the cap chute. The cap sealing head, which is synchronized with the cap transfer turret, picks up the cap from the cap transfer turret. The cap sealing head comes down on the container and tightens the cap with pre set torque. Each cap sealing head is provided with an adjustable torque magnetic clutch. The clutch slips on reaching the adjusted torque.

The capped container is then moved from center turret to the out feed turret and then on to the exit side of the conveyor.

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The VERY HIGH SPEED screw cap sealing machine is precision built on sturdy welded steel frame completely enclose in stainless steel sheet and doors are provided to facilitate the servicing of machine.

5.0 EQUIPMENT INSTALLATION CHECKLIST:

5.1 IQ Requirements for VERY HIGH SPEED SCREW CAPPING MACHINE

The following requirement / practices apply to VERY HIGH SPEED SCREW CAPPING MACHINE IQ activities:

- Verify that systems are installed in accordance with approved engineering drawings and documents, which shall include the following (as applicable)
 - A) Flow diagrams, isometric drawings, electrical & mechanical drawings, and P&IDs
 - B) Equipment and Installation specification; and
 - C) Vendor drawings and equipment manuals
- Verify that the equipment and instrumentation are clearly described as per vendor, model, capacity, materials of construction and any critical criteria.
- Verify that piping and equipment intended to operate under pressure are tested and certified.
- All the critical process instrumentation will be calibrated according to the appropriate SOPs before the Operational Qualification has started.
- Confirm that the VERY HIGH SPEED SCREW CAPPING MACHINE is installed properly and that the documentation is available.

5.2 OQ Requirements for VERY HIGH SPEED SCREW CAPPING MACHINE

The following requirement / practices apply to VERY HIGH SPEED SCREW CAPPING MACHINE OQ activities:

- Verify that the VERY HIGH SPEED SCREW CAPPING MACHINE , perform and operate in accordance with the client specification and requirements (URS).
- Verify that critical instrumentation is calibrated against a traceable standard according to approved procedures.
- Verify component-operating parameters such as temperature, pressure, flow rate, control sequences and out-put. (As applicable)
- Review the preventive maintenance program and procedures to ensure that they are comprehensive and support continued, reliable performance of the equipment.

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6.0 QUALIFICATION TEST SHEETS:

The Installation tests are specified according to the Validation Master Plan for **VERY HIGH SPEED SCREW CAPPING MACHINE**. The following is specified for each test (as applicable).

- Test number
- Rationale or Purpose for test
- Test equipment to be used (if applicable)
- Procedure
- Acceptance criteria
- Results or data to be recorded
- Comments / Conclusions
- Reviewed by
- Clarification certificate verification (if applicable)

7.0 Installation Qualification Tests:

The table below lists the tests to be performed as part of the Installation Qualification phase.

TEST NUMBER	CRITICAL FEATURE
7.1	Document & Drawing Verification
7.2	Verification of Technical specification for In-House & sub-components / bought out items
7.3	Utility Verification
7.4	Critical instrument calibration verification
7.5	Material of construction verification

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7.1 Document & Drawing Verification

- **Rationale -**

To verify that the documentation provides complete and correct technical references and permits servicing of the unit.

- **Test equipment –**

None Required

- **Procedure –**

- Verify that the required documents and drawings listed in the tables below are available.
- Review the documents and drawings for completeness and exactness with the installed unit.
- Attach the copies of the drawings to this protocol or reference the location from where they can be easily retrieved.
- Any items in the installation, which are not conforming to the corresponding drawings, must be commented on in the appropriate space. List the non-conformances and the reasons for them in an attachment if necessary.

- **Acceptance Criteria –**

- The documents must be accurate and complete.
- The drawing information must correspond to the physical installation.

- **Documentation Verification Results:**

Title	Document Number	Reference & Rev. Date	Initial / Date
Installation, Maintenance & Operation Manual		----	
Acceptance criteria met? (Yes / No)			

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- Drawing Verification Results:**

Title	Document Number	Reference & Rev. Date	Location	Initial / Date
Overall view <u>VERY HIGH SPEED SCREW CAPPING MACHINE</u>				
Approved equipment room layout (front view)				
Approved equipment room layout (Top view)				
Approved equipment room layout (side view)				
Acceptance criteria met? (Yes / No)				

7.2 Verification of Technical Specification for In-House & Sub-Components / Bought Out Items

- Rationale -**

To verify that each major components of the VERY HIGH SPEED Screw Capping Machine are present and identified.

- Test Equipment**
None Required

- Procedure**

- Confirm that identification nameplates have been applied to the units and that these indicate the following (where applicable)
 - Type
 - Identification
 - Manufacturer
 - Model number
- Confirm that the various components of VERY HIGH SPEED Screw Capping Machine are present and tagged as per specifications and drawings, in the proper number and configuration.
- Record the method of verification (i.e. purchase order, equipment drawing, manual, packing slip, etc.)
- Note any deviation or discrepancies and recommend follow up action if required.

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- **Acceptance Criteria**

All units and parts specified in design qualification and on latest revision of drawings must be present, documented and tagged.

- **VERY HIGH SPEED SCREW CAPPING MACHINE, Major Components Results:**

Description	Specification	Accepted Yes / No	Sign. / Date
Main Drive motor	Make: HAVELLS, HP-1.5, RPM -1390		
Gearbox	Make: BONFIGLIOLI , Ratio-20:1		
Orienter gearmotor	Make :Bonfiglioli –HP-0.125 RPM-24, flange mounted.		
Conveyor gearmotor	Make: Bonfiglioli , HP-0.25 RPM -50, flange mounted.		
Pneumatic cylinder	Make: Festo		
Capping Head assly	MOC :SS-304, Al., Plastic		
Star wheel	MOC: UHMW PE, divided equally to locate bottle under Cap sealing head		
Cap orienter	MOC ss-304, Acrylic, Plastic.		
Feed worm	To provide initial pitch to match infeed turret. MOC::Delrin		
Chute	To convey & place caps from orienter to cap transfer turret. MOC:- SS-304		
Foundation bolts	M-16 X 150 long MOC: SS-304		

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7.3 Utility Verification

- **Rationale –**

To verify that all necessary utilities are correctly installed.

- **Test Equipment -**

Calibrated digital single-meter

- **Procedure –**

- 1) Confirm that utilities connections are configured as per specification and in compliance with local codes.
- 2) Record the results in the table below. Note any deviation or discrepancies.

- **Acceptance Criteria –**

All services and connections must be installed and documented.

- **Utilities Specification Results:**

Description	Specification	Measured Results	Accepted Yes / No	Sign. / Date
Electrical	Phase:	3 phase		
	Voltage:	380-415 V		
	Frequency:	50 Hz		
Compressed Air	pressure	6 bar		
	Flow rate	0.5 CFM		

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7.4 Critical Instrument Calibration Verification

- **Rationale –**

To verify that all critical instruments for the **VERY HIGH SPEED SCREW CAPPING MACHINE** has been calibrated before starting the Operational Qualification.

- **Test Equipment –**

Calibrated digital single meter (or any other instrument)

- **Procedure –**

- a) Verify that all critical instruments are calibrated using an approved procedure, against a traceable standard.
- b) Note any deviation or discrepancies and recommend follow up action if required.
- c) For all critical instruments, attach copies of calibration certificates to this protocol.

- **Acceptance Criteria –**

All critical instrumentation for the **VERY HIGH SPEED SCREW CAPPING MACHINE** shall be in a state of calibration.

- **Instruments List Results:**

Description	Specification	TRIAL TAKEN IN MACHINE OK/NOT OK	Accepted Yes / No	Sign. / Date
AC drives	DELTA			
Proxi sensor	Shiva			
Photo sensaor	Shiva			

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7.5 Material of Construction Verification

- **Rationale –**

To verify that all assembly of the **VERY HIGH SPEED SCREW CAPPING MACHINE** has been manufactured as per the specification provided by the client.

- **Test Equipment**

Moly testing unit (to identify SS-304 or SS-316 materials)

- **Procedure –**

- A) Put a drop of Moly. Solution on the material to be tested.
- B) Take battery & keep anode at one end of the material and cathode at Moly drop.
- C) If the solution turns pink and stays for around one minute, then it is SS316 & if the solution turns pink and immediately vanishes, then it is SS304.

- **Acceptance Criteria –**

All material of construction for the **VERY HIGH SPEED SCREW CAPPING MACHINE** shall meet the MOC provided in Design Qualification.

- **Material of Construction Verification Results**

Description	Specification	Accepted Yes / No	Sign. / Date
Cap Orienter	SS-304		
Capping head	SS-304		
Conveyor chain	Delrin		
Cap chute	SS-304		
Operating control panel	SS-304		
Star wheel	UHMWPE		
Door cabinet frame	Aluminium		
Feed worm	Delrin		
Foundation bolt	SS-304		

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7.6 Installation Qualification Test Status

The table below lists the tests performed and related results.

Test Number	Critical Feature	Pass / Fail		Deviation Found	
		Pass	Fail	Yes	No
7.1	Document & Drawing Verification				
7.2	Verification of Technical specification for In-House & sub-components / bought out items				
7.3	Utility Verification				
7.4	Critical instrument calibration verification				
7.5	Material of construction verification				

Description	Yes	No	Sign. / Date
All critical test / verification have been performed and acceptance criteria and / or major deviation completed before starting Operational Qualification.			

Conclusions / Comments:



PASS



FAIL

	Signed	Date
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8.0 Operational Qualification Tests

The table below lists the tests to be performed as part of the Operational Qualification phase.

TEST NUMBER	CRITICAL FEATURE
8.1	Testing of main operating control panel board.
8.2	Power failure recovery verification
8.3	Emergency operation verification

8.1 Testing of main operating control panel board

- **Rationale –**

To verify the normal & true operation of the control panel board.

- **Test Equipment –**

None required

- **Procedure –**

- a) Turn the main power to ON position.
- b) Check each operation in sequence for true & normal working as specified on panel board / manual.

- **Acceptance Criteria –**

The control panel should function as specified in the verification table.

- **Verification Results –**

Operating Switch		Function / Specified	Actual	Accepted Yes / No	Sign. / Date
MACHINE	START	Machine will Start.			
	STOP	Machine will Stop			
	INCH	Machine will run in INCH mode			
	SPEED REGULATOR	Machine Speed can Increase/Decrease.			
CAP ORIENTER	SPEED REGULATOR	Rotational speed can Increase/Decrease.			
If actual result is not like expected result, turn power to panel "OFF" and notify to engineer. Document any discrepancies on the operational qualification deviation report.					

	Signed	Date
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Reviewed By:		
J..P. MACHINE TOOLS		

DESIGN QUALIFICATION

Machine Model : Very High Speed Screw Capping Machine JPSC-9.

Customer : ALKEM LABORATORIES LTD. (BADDI).

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8.2 Power failure recovery verification

- **Rationale –**

To verify that in the event of a power loss or power failure, the equipment will stop in safe condition and the operating parameter will not be lost or corrupted.

- **Test Equipment –**

None required.

- **Procedure –**

- Operate the equipment as directed in the user manual.
- While the equipment is operating, shut down the power to the main control panel.
Record if the equipment stops in a safe and secure condition.
- Wait for 3 minutes then restore power to the equipment.
- Restart the equipment. Record whether the equipment starts normally, and note any adverse condition.

- **Acceptance Criteria –**

- At step (b), the equipment shall stop in safe and secure condition.
- At step (c), the equipment shall not restart automatically / human intervention must be required.
- At step (d), the equipment shall restart normally, with no problems or adverse condition.
- After restart, the configurable parameters remain unchanged.

	Signed	Date
Prepared By:		
Reviewed By:		
J..P. MACHINE TOOLS		

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8.3 Emergency Operation Verification

- **Rationale –**

To deactivate the equipment in the event of an emergency stop.

- **Test equipment –**

None required

- **Procedure –**

A) With the emergency stop pressed in, try to cause movement of an operating function.

B) With the equipment in operation, activate (press in) the emergency stop.

- **Acceptance Criteria –**

A) The equipment will be inoperative.

B) The operation will ramp to a complete stop in 4 seconds or less,

- **Failsafe results –**

Emergency Stop			
Test	Acceptance Criteria	Accepted Yes / No	Sign. / Date
With the emergency stop pressed in, try to cause movement of an operating function	The equipment will be inoperative.		
With the equipment in operation, activate (press in) the emergency stop.	The operation will ramp to a complete stop in 4 seconds or less		

Conclusions / Comments:



PASS

FAIL

	Signed	Date
Prepared By:		
Reviewed By:		
J..P. MACHINE TOOLS		

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The table below lists the tests performed and related results.

Test Number	Critical Feature	Pass / Fail		Deviation Found	
		Pass	Fail	Yes	No
8.1	Testing of main operating control panel board.				
8.2	Power failure recovery verification				
8.3	Emergency operation verification				

Description	Yes	No	Sign. / Date
All critical test / verification have been performed and acceptance criteria and / or major deviation completed.			

Conclusions / Comments:

The Operational Qualification of the equipment is completed. All critical parameters were complies with DQ & IQ.



PASS



FAIL

	Signed	Date
Prepared By:		
Reviewed By:		
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DESIGN QUALIFICATION

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9.0 Change Control Procedure

Any changes or modifications to the equipment will be performed in accordance with the appropriate change control procedure. A separate assessment will be made if any changes or modifications are requested and to whether relevant re-qualification action steps are required.

10.0 Qualification Document Report Approval

10.1 Summary:

10.2 Certification:

The Installation and Operational Qualification for VERY HIGH SPEED SCREW CAPPING MACHINE have been examined and found to be Acceptable.

We certify the VERY HIGH SPEED SCREW CAPPING MACHINE, bearing ID No.: -032/10-11. is qualified for operational use.

	Signed	Date
Prepared By:		
Reviewed By:		
J..P. MACHINE TOOLS		