

INSTALLATION QUALIFICATION (IQ)



Project No : EMG-20-036
Date : 20.01.2021
Document Ref No : EMG-20-036.IQ

AUTOMATIC ROTATIVE 6 HEAD (Pilfer
Proof) CAPPING MACHINE

M-KAP-B01

YOUR INOVATION SOLUTION PARTNER



	Installation Qualification (IQ)				 Global Dış Ticaret ve Danışmanlık A.Ş.	
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	2

Protocol Document Approved

Prepared by

Name	Department/Function	Date	Sign



Approved by

Name	Department/Function	Date	Sign

Date of Revision



Rev.No.	Date	Prepared by	Description of Changement
01	20.01.2021		Initial Revision



	Installation Qualification (IQ)					 Global Dış Ticaret ve Danışmanlık A.Ş.
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Ocak.2021	Page No	3

1.	Purpose.....	4
2.	Scope.....	4
3.	Test Participant and Assignment.....	4
4.	Drawing	5
5.	Component List.....	6
6.	Critical Sensör List.	10
7.	Assembling of Equipment.....	11
8.	IQ for Electrical and Control Cabine.....	12
9.	Hardware Setup Qualification.....	13
10.	Software Setup Qualification.....	14
11.	IQ Test Specifications.....	15
12.	Installation Qualification Test.	16
13.	Additional Test	18
14.	Test Deviation Records /Deficiencies List.	19
15.	Comments and Explanations	20
16.	Additions	21
17.	Release for OQ.	22
18.	Test Report Acceptance.....	23



	Installation Qualification (IQ)					 Global Dış Ticaret ve Danışmanlık A.Ş.
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	4

1. Purpose

The purpose of this installation qualification document is to define the installation activities for the Modular Capping Machine and its components

2. Scope

This installation qualification document is prepared for Rotative Capping Machine and related components



Equipment Name	Equipment Code	Equipment / Serial No
Automatic Rotative Capping Machine	M-KAP-B01	3858

3. Test Participant and Assignment

In installation qualification activities, the personnel specified in the following list will be employed and must be filled in manually with a blue ballpoint pen.

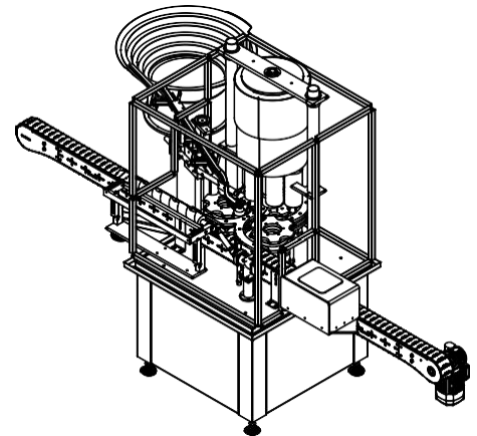
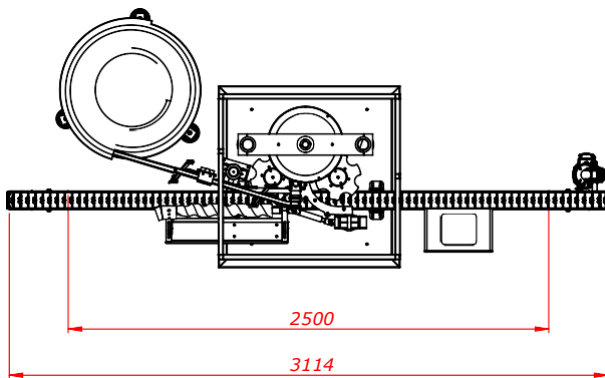
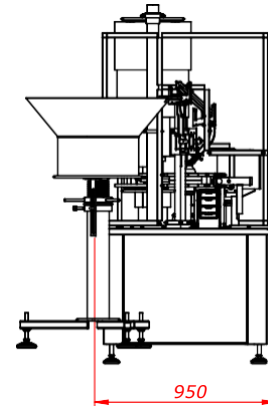
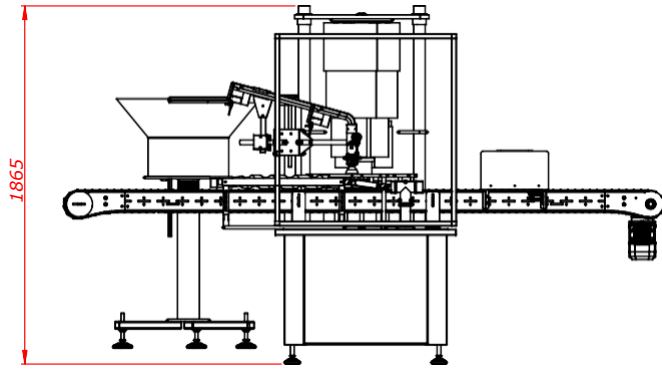
Name&Surname	Assignment	Date	Sign



	Installation Qualification (IQ)					 Global Dış Ticaret ve Danışmanlık A.Ş.
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	5



4. Drawings

Drawing No	Add	Explantion
3858-ED.127-24.12.2020-01	PDF Dosyası	Rotative Capping Electric Scheme



Controlled by :	Sign :	Date :
Confirmed by :	Sign :	Date :



	Installation Qualification (IQ)					 Global Dış Ticaret ve Danışmanlık A.Ş.
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	6



5. Component List

Mechanic List

Mechanic List (ROTATIVE CAPPING MACHINE-3858)

Stuck No	Stuck Name	QTY	Unity
5 PLAY-124XM20X189	L00457145 (124XM20X189 M20 PASL.AYAK) MAFSALLI	4	QTY
5 MRED-EVO30-18-93	EVO30-0,18KW./96dd.İ:14.5 MİKSAN MOT.REDÜKT.+ FL	1	QTY
5 MRED-AG35-L13-ST-1/1	FRANCIA YÖN DEĞİŞTİRİCİ AG35-L13-ST-1/1	1	QTY
PÜLFERPROF-K000000322-B	KY08430002_A (SSA PÜLFERPROF SIVAMA KAFA GRUBU)	6	QTY
5 RBUT-51104	51104 BUTE RULMAN (20-35-10)	2	QTY
5 RZZX-6001	6001 RULMAN (12-28-8)	2	QTY
5 RZZX-6001	6001 RULMAN (12-28-8)	4	QTY
5 RZZX-6002	6002 RULMAN (15-32-9)	2	QTY
5 RZZX-6003	6003 RULMAN (17-35-10)	2	QTY
5 RZZX-6004	6004 RULMAN (20-42-12)	2	QTY
5 RZZX-6005	6005 RULMAN (25-47-12)	4	QTY
5 RZZX-6006	6006 RULMAN (30-55-13)	12	QTY
5 RZZX-6201	6201 RULMAN (12-32-10)	2	QTY
5 RZZX-6204	6204 RULMAN (20-47-14)	4	QTY
5 RZZX-6205	6205 RULMAN (25-52-15)	1	QTY
5 RZZX-62201	62201 RULMAN (12-32-14)	1	QTY
5 RZZX-62201	62201 RULMAN (12-32-14)	5	QTY
5 RYKE-30-47-10	30-47-10 YAG KEÇESİ SUP-TEX	2	QTY
5 RBUT-51113	51113 BUTE RULMAN (65-90-18)	2	QTY
5 RBUT-51120	51120 BUTE RULMAN (100-135-25)	2	QTY
5 RBUT-52207	52207 BUTE RULMAN (30-62-34)	1	QTY
5 MAFSAL-05G-Q14X28X60	05G-14X28X60 HASSAS U MAFSAL	2	QTY
5 MAFSAL-05M-52X56X27,5	MF 05 M (52X56X27,5) KORUMA LASTİĞİ	2	QTY
5 RKAP-GS14-30-42	GS14 30-35 KAPLIN (KULKARNI)	1	QTY
5 SOMUN-KM7	KM7 M35X1,5 KONTRA SOMUN)+MB7 PUL	2	QTY
5 PLMT-12	12 MİL TUTUCU (13114)	1	QTY
5 PLFA-12	12 FOTESEL AYAĞI (13115)	3	QTY
5 PLKO-M8-1	M8 DİŞİ SUSTALI KOL SİYAH	1	QTY
5 PLDT-M10-K	M10-KEL.KÜÇ.DİŞİ TOPUZ (1118 44 305) Q44	2	QTY




	Installation Qualification (IQ)					 Global Dış Ticaret ve Danışmanlık A.Ş.
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	7

Elektronik List

Electronic (ROTATIVE CAPPING MACHINE-3858)

Stuck No	Stuck Name	QTY	Unity
5 EPPA-800X1065X500-P	800X1065X500 PASL.PİYANO PANO	1	QTY
5 EFFİ-150X150-FAN	PFB2000-150X150mm 230V.FANLI FİLTRE (TF2000)	1	QTY
5 EFFİ-150X150-FİLTRE	PFA-2000-150X150X27mm FİLTRE IZGARA (TFA2000)	1	QTY
5 ETERM-KTS011	KTS011-0-60c TERMOSTAT (STEGO)01141.0-00	1	QTY
5 EKPS-ONKA-7160	7160 ONKA PANO PRİZİ	1	QTY
5 EFLA-SNT-74-B-RGB	SNT-74-B-RGB 12-24V.DC 4-RENK BAZIRLI İKAZ LAMBASI	1	QTY
5 EDKK-40-80	40X80 GRİ DELİKLİ KABLO KANALI (2mtX36mt.)	2	METER
5 EHKO-3G3MX2-AB004E-ECT	0,4/0,55 KW. HIZ KONTROL (3G3MX2-AB004-E-ECT)	2	QTY
5 EHKO-3G3MX2-AB007E-ECT	0,75/1,1 KW. HIZ KONTROL (3G3MX2-AB007-E-ECT)	1	QTY
5 EGKA-S8VK-C12024	S8VK-C12024 (24V.DC 5-A.120W. GÜÇ KAYNAĞI)	1	QTY
5 TMK-A9K24110-10AX1	10AX1 W.OTOM.SİGORTA (A9K24110) TMK	1	QTY
5 TMK-A9K24116-16AX1	16AX1 W.OTOM.SİGORTA (A9K24116) TMK	1	QTY
5 TMK-A9K24106-6AX1	6AX1 W.OTOM.SİGORTA (A9K24106) TMK	2	QTY
5 TMK-VCF-0	VCF-0 - 25A ENMİYET ŞALTERİ	1	QTY
5 TMK-XB5-AD21	XB5-AD21 0-1 MANDALLI BUTON	1	QTY
5 TMK-XB5-AS542	XB5-AS8442 ACİL DURDURMA BUTONU	1	QTY
5 ETİKET-28113	EMERGENCY ETİKETİ -800F-15YSE112 (ALLEN BRADLEY)	1	QTY
5 TMK-XB5-AW33B5	XB5-AW33B5 YEŞİL LEDLİ BUTON	1	QTY
5 TMK-XB5-AW36B5	XB5-AW36B5 MAVİ LEDLİ BUTON	1	QTY
5 TMK-XAL-D101H29	XAL-D101H29- YEŞİL 1'Lİ BUTON KUTUSU	1	QTY
5 TMK-GV--AN11	GV-AN11- MOTOR KORUMA YAN KONTAGI	1	QTY
5 TMK-GV2-ME06	GV2-ME06- 1-1.6A MOTOR KORUMA	1	QTY
5 ERÖ-K8AK-PM2	K8AK-PM2 KONTROL RÖLESİ (OMRON)	1	QTY
5 TMK-LC1-D32M7	LC1-D32M7 220V.AC 15KW/32A.KONTAKTÖR TMK	1	QTY
5 EM-KONT-DILEM-10-G-24V	DILEM-10-G (4 KW.24V. DC KONTAKTÖR (MOELLER)	2	QTY
5 ESEN-E2B-S08LN04-MC-B1	E2B-S08LN04-MC-B1 OMS (M8 UZUN SENSÖR 4mm) PNP	1	QTY
5 ESWÇ-Z-15GQ22-B	Z-15GQ22-B MAKARALI SWİÇ (OMRON)	2	QTY
5 ERÖ-CMS-E-ER-099182	CMS-E-ER 099182 DEGERL.ÜNİTESİ (EMNİY.RÖLESİ)	1	QTY
5 BECK-CX5130-0122	CX5130-0122 BASİC CPU MODULE CX5130 MICROSOFT	1	QTY
5 BECK-CX2900-0038	CX2900-0038 30 GB CFAST CARD 3D FLASH EXTENDED	1	QTY
5 BECK-EL1008	EL1008- 8 KANAL 24VDC 3.0 ms FİLTR.DİGİTAL GİR.TER	1	QTY
5 BECK-EL1809	EL1809 (16-CHANNEL DİGİTAL İNPUT TERMİNAL	1	QTY
5 BECK-EL2008	EL2008- 8 KANAL 24VDC 0.5A DİGİTAL ÇIKIŞ TERMİNALİ	1	QTY
5 BECK-EL2809	EL2809 (16-CHANNEL DİGİTAL OUTPUT TERMİNAL	1	QTY
5 BECK-EL9011	EL9011 (SONLANDIRICI PLAKA)	1	QTY
5 BECK-ZK1090-9191-0010	ZK1090-9191-0010 ETHER CAT KABLOSU 1mt BECKHOFF	1	QTY



	Operation Qualification (OQ)					
EMG-20-036.QQ	Rev.No	01	Rev.Date	28.Dec.2020	Page No	8



6. Critical Sensor List

Critical Sensor List (ROTATIVE CAPPING MACHINE-3858)

Stuck No	Stuck Name	QTY	Unit
5 ESEN-E2B-S08LN04-MC-B1	E2B-S08LN04-MC-B1 OMS (M8 UZUN SENSÖR 4mm) PNP	1	QTY
5 ESWÇ-Z-15GQ22-B	Z-15GQ22-B MAKARALI SWİÇ (OMRON)	2	QTY
5 ESEN-800735-NBB4-12GM5	NBB4-12GM50-E2-V1 (M12 SOK.ENDÜKT.SENSÖR)+032798	1	QTY

Tested By :	Sign :	Date :
Checked By :	Sign :	Date
Approved By :	Sign :	Date :



	Installation Qualification (IQ)					 Global Dış Ticaret ve Danışmanlık A.Ş.
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	9

7. Equipment Assignment

The identification plate, position, orientation and fixation of the equipment are checked after equipment installation. These controls apply to all equipment on the line. This work covers the entire line.

Test Control	Is it Proper?	
	Yes	No
Is the identification plate (equipment no) on the equipment?		
According to the layout drawings, was the equipment installed in the correct position?		
Check the alignment of the equipment with the water gage . Is the alignment of the equipment appropriate?		
Is it appropriate to fix the equipment?		
Is the equipment undamaged?		

Tested By :	Sign :	Date :
Checked By :	Sign :	Date
Approved By :	Sign :	Date :





8. IQ For Electrical and Control Cabine

This table applies to all line equipment. Situations that make a difference are indicated in the " comments " section.

Test Control	Is it Proper ?		
	Yes	No	N/A
Is the order complete?			
Is manufacturer documentation available?			
Do the cabin doors open and close properly?			
Are cautionary and informative signs appropriate?			
Is it connected to the protection earth of all doors, doors and metal sheets?			
Feed mono phase			
Feeding rated frequency 50Hz			
All emergency stop circuits have been tested and are they suitable?			

Tested By :	Sign :	Date :
Checked By:	Sign:	Date: :
Approved By :	Sign :	Date :

	Installation Qualification (IQ)				 <small>Global Dış Ticaret ve Danışmanlık A.Ş.</small>	
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	11



9. Hardware Setup Qualification

IQ for PLC Control

Equipment Code	Equipment Name	QTY.	Pro.
5 BECK-EL1008	EL1008- 8 KANAL 24VDC 3.0 ms FİLTRE.DİJİTAL GİR.TER	1	QTY
5 BECK-EL1809	EL1809 (16-CHANNEL DİJİTAL İNPUT TERMİNAL	1	QTY
5 BECK-EL2008	EL2008- 8 KANAL 24VDC 0.5A DİJİTAL ÇIKIŞ TERMİNALİ	1	QTY
5 BECK-EL2809	EL2809 (16-CHANNEL DİJİTAL OUTPUT TERMİNAL	1	QTY

Controllers	Yes / No / NA	Date	Sign
PLC / controller construction in accordance with specifications			



	Installation Qualification (IQ)					 Global Dış Ticaret ve Danışmanlık A.Ş.
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	12

10. Software Setup Qualification



System Description	
System / Machinery Name	ROTATIVE CAPPING MACHINE
Serial Number	M-KAP-B01
Manufacturer	ELEKTROMAG
System / Device Design Purpose	HMI
Software Platform	TWİNCAT

Installation Info

Operating System	
Operating Sytem	WİNDOWS 7 Embedded

PLC Software	
Controller	BECKHOFF
Network Connection	ETHERCAT
Operator Panel	MOVİCON
Programming and Configuration Device	TWİNCAT
Comments	



	Installation Qualification (IQ)					 Global Dış Ticaret ve Danışmanlık A.Ş.
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	13

11. IQ Test Specifications



Considerations In Test Protocols

- Fill all procedures used with a blue ballpoint pen, never use a course pen.
- Never delete or doodle incorrect entries or typos. Just draw the wrong entry and type the correct entry. Do it Date and Paragh.
- Test forms must be completed by authorized personnel simultaneously with the application. It must be approved by authorized personnel..
- All supporting documents used and created during the implementation of tests are considered part of the qualification package and must be added to the end of the test.
- All protocols must be approved by the customer. All tests must be given the latest approval by the customer.

Deviation / Error

- Errors/deviations encountered during tests should include the following information;
- Reference information to the test where deviation/error is seen,,
- Estimates for deviation/error,
- Prescribed corrective action for deviation/error
- Signature and date information of the person who detected the deviation/error
- Confirmation information provided by customer regarding deviation / error



	Installation Qualification (IQ)					 Global Dış Ticaret ve Danışmanlık A.Ş.
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	14

12. Installation Qualification Test

Rotative Capping Machine

Test No	Test Step	Acceptance Criteria	Has the Acceptance Criteria been met??	Applied by Paragh/Date	Confirmed by Paragh/Date
1.1	Check the electric connections	1.5 kw monophase power line must be drawn.	Yes [] No []		
1.2	Check the air connection.	4-6 bar air line should be connect to the machine	Yes [] No []		
1.3	Check the gorunding.	Machine grounding should be made.	Yes [] No []		
1.4	Check by eye that the Rotative Capping machine does not have any defects in its visual controls. (dents, scratches, cracks, etc.)	The machine should not have any defects	Yes [] No []		
1.5	Check the model and serial number of the machine.	The definition plate must be installed on the machine together with the brand model and serial number.	Yes [] No []		
1.6	Are the enter empty and exit full photocells adjusted according to the bottle to be worked ?	Enter empty and exit full photocells should be adjusted	Yes [] No []		
1.7	Check the enter conveyor barrier width.	The width shoudl be adjusted according to the height of the bottle being worked.	Yes [] No []		
1.8	Check the vibrator group.	The vibrator group should be ready in place.	Yes [] No []		
1.9	Check the cap spinning group.	The cap spinnig group must be installed and ready for closing.	Yes [] No []		
1.10	Check the cap carrier group.	The cap carrier group must be installed and the cap must be ready for Transport.	Yes [] No []		
1.11	Check if the machine is installed in place of the star group.	The appropriate star must be installed in the bottle to be worked.	Yes [] No []		
1.12	Check the cap control photocell.	Cap control photocell must be installed.	Yes [] No []		





Installation Qualification (IQ)



EMG-20-036.IQ

Rev.No

01

Rev.Date



20.Jan.2021

Page No

15

Test No	Test Adımı	Kabul Kriteri	Kabul Kriteri Karşılandı mı?	Uygulayan Paraf/Tarih	Onaylayan Paraf/Tarih
1.13	Check the bottle control photocell.	Bottle control photocell must be installed.	Yes [] No []		
1.14	Check the door	Doors and safety finally switches must be installed	Yes [] No []		
1.15	Check if the capping head is suitable according to the bottle.	The head manufactured for the bottle to be worked must be mounted.	Yes [] No []		
1.16	Check the reject group.	Reject grubu must be installed.	Yes [] No []		
1.17	Check that the cap channels between the vibrator and the closing machine are installed.	Cap channel connections must be made.	Yes [] No []		
1.18	Check if the cap channel is set to a star.	According to the star, the height and center should be adjusted.	Yes [] No []		
1.19	The cap contained in the cap cannal has decreased the presence of the fork photocell check.	Cap reduced fork photocell must have been mounted in cap channel.	Yes [] No []		
1.20	Check the cap, located in the cap channel, is fork photocell finished exist.	Cap finished fork photocell must have been mounted in cap channel.	Yes [] No []		
1.21	Check that the vibrator's energy cable sockets are connected to the machine.	The power cable sockets must be connected to the machine.	Yes [] No []		
1.22	Check Vibrator cover reduced sensor.	Vibrator cap reduced sensor must be mounted	Yes [] No []		
1.23	Check that the labeling of the electrical system corresponds to what is specified in the electrical diagram.	The electrical system is correctly labeled.	Yes [] No []		
1.24	Check the control unit.	Control type should be PLC + HMI.	Yes [] No []		
1.25	After checking the electrical and air connections, put the pako switch in position 1 and check if there is electricity coming into the machine.	The electricity should be coming into the machine.	Yes [] No []		
1.26	Check the manual mode/	The machine should be jog mode.	Yes [] No []		
1.27	Check the emergency button.	There should be emergency button.	Yes [] No []		





	<p style="text-align: center;">Installation Qualification (IQ)</p>				 <small>Global Dış Ticaret ve Danışmanlık A.Ş.</small>	
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	16

13. Additional Tests

Test No	Test Step	Acceptance Criteria	Has the Acceptance Criteria been met??	Applied by Paragh/Date	Confirmed by Paragh/Date
			Yes [] No []		
			Yes [] No []		
			Yes [] No []		
			Yes [] No []		



	Installation Qualification (IQ)					 Global Dış Ticaret ve Danışmanlık A.Ş.
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	17

14. Test Deviation Records/Deficiencies List

Deviations are recorded and identified in this list. This page can be used by photocopy.



Working No:

No	Reference	Test Deviation / Deficiencies	Classification (A,B,C)	Date / Sign	Measures/Actions/Notes/Reason

A: About GMP and critical, It must be solved before finisg the IQ
B: About GMP, but not critical ,ex; missing documentation
C: Other deviations



Applied by :	Date :	Sign :
Checked by. :	Date :	Sign :
Confirmed after completed :	Date :	Sign :



	Installation Qualification (IQ)					 Global Dış Ticaret ve Danışmanlık A.Ş.
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	18

15. Comments and Explantions





	<p>Installation Qualification (IQ)</p>				 <small>Global Dış Ticaret ve Danışmanlık A.Ş.</small>	
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	19

16. Additions

Drawing No	Add	Explanation
3858-ED.127-24.12.2020-01	PDF Dosyası	Rotative Capping Elektrik Scheme



	<p style="text-align: center;">Installation Qualification (IQ)</p>				<p style="text-align: center;">  NOYEM <small>Global Dış Ticaret ve Danışmanlık A.Ş.</small> </p>	
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	20

17. Release for OQ



Deficiencies are present

- [] Cannot proceed to OQ stage / critical
Deviations/errors occurred during installation qualification work. After removal of open substances, installation Qualification Work will be repeated. Actions and responsibilities related to open substances are listed below.
- [] Not critical / Deficiencies can be completed during OQ stage.
Deficiencies occurred during the installation qualification. These deficiencies are mentioned in the descriptions section of the tests. If there is a corrective/preventive action to be taken regarding these deficiencies, below.IQ it has been accepted with existing deviations.
- [] No deficiencies about the GMP. Proceed to the OQ stage with the current deficiencies.
- [] Proceed to the OQ stage without any deficiencies.

Installation qualification studies met all acceptance criteria and no deviation/ error occurred during the studies.

According to the approval of this report,IQ(installation Qualification) has been completed and passed to the OQ(Operation Qualification) phase.



	Installation Qualification (IQ)				 Global Dış Ticaret ve Danışmanlık A.Ş.	
EMG-20-036.IQ	Rev.No	01	Rev.Date	20.Jan.2021	Page No	21

18. Test Report Acceptance

Prepared by

Name	Department/Function	Date	Sign

Approved by

Name	Department/Function	Date	Sign





Installation Qualification (IQ)



EMG-20-036.IQ

Rev.No

01

Rev.Date

20.Jan.2021

Page No

22

