

September 2021

OPEX®



Sure Sort™ Operator Manual for Version 4.2 Machines

9166900OM-SK-V4.2

Revision 21-05

Original Instructions



Sure Sort™



WARNING

Read this manual thoroughly before attempting to operate this equipment.
Keep a current copy for your reference.

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(117 _____ “

_____”).

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**EU Declaration of Conformity
Sure Sort**

This declaration of conformity is issued under the sole responsibility of the manufacturer.

1.0 Manufacturer

NAME	OPEX Corporation
ADDRESS	305 Commerce Drive, Moorestown, NJ 08057, USA

2.0 Technical File

Technical documentation is compiled in accordance with Part B of Annex VII of the machinery directive. This documentation is available on a reasoned request by appropriate national authority to our authorized representative:

NAME	Andre Bernhardt
ADDRESS	Auf der Lug 8 71726 Benningen am Neckar

3.0 Description and identification

Description	Item Sorter
Model	Sure Sort
Serial Number	
Year Manufactured	From 2019

4.0 Directives

2006/42/EC	Machinery Directive
2014/53/EU	Radio Equipment Directive
2014/30/EU	Electromagnetic Compatibility Directive

5.0 Harmonized Standards used

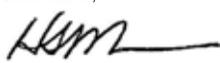
EN 61000-6-2: 2005	Electromagnetic compatibility (EMC). Generic standards. Immunity for industrial environments
EN 61000-6-4: 2011	Electromagnetic compatibility (EMC) -- Part 6-4: Generic standards - Emission standard for industrial environments
EN 619: 2002+A1:2010	Continuous handling equipment and systems. Safety and EMC requirements for equipment for mechanical handling of unit loads
EN ISO 12100-2:2003	Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles
EN 60204-1:2006+A1:2009	Safety of machinery. Electrical equipment of machines. General requirements
ETSI EN 300 328 V2.1.1 (2016-11)	Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU
ETSI EN 301 489-1 V1.9.2 (2011-09)	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

6.0 Technical Standards used

NFPA 79:2018	Electrical Standard for Industrial Machinery
UL 2011:2006	Outline of Investigation for Factory Automation Equipment
CSA C22.2 No. 301-2016	Industrial electrical machinery
UL 61800-5-1 (iBOT only)	Standard for Adjustable Speed Electrical Power Drive Systems: Safety requirements – Electrical, Thermal and Energy

7.0 Approval

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Place of issue	Moorestown, NJ, USA
Date of issue	Feb 19, 2019
Authorized	Scott Maurer, 
Title	President, International Division



EU Declaration of Conformity Sure Sort

This declaration of conformity is issued under the sole responsibility of the manufacturer.

1.0	Manufacturer	NAME	OPEX Corporation
		ADDRESS	305 Commerce Drive, Moorestown, NJ 08057, USA
2.0	Technical File	Technical documentation is compiled in accordance with Part B of Annex VII of the machinery directive. This documentation is available on a reasoned request by appropriate national authority to our authorized representative:	
		NAME	OPEX Business Machines Pty Ltd
		ADDRESS	Level 12, 225 George Street Sydney, NSW 2000 Australia
3.0	Description and identification	Description	Item Sorter
		Model	Sure Sort
		Serial Number	
		Year Manufactured	From 2019
4.0	Directives	2006/42/EC	Machinery Directive
		2014/53/EU	Radio Equipment Directive
		2014/30/EU	Electromagnetic Compatibility Directive
5.0	Harmonized Standards used	EN 61000-6-2: 2005	Electromagnetic compatibility (EMC). Generic standards. Immunity for industrial environments
		EN 61000-6-4: 2011	Electromagnetic compatibility (EMC) -- Part 6-4: Generic standards - Emission standard for industrial environments
		EN 619: 2002+A1:2010	Continuous handling equipment and systems. Safety and EMC requirements for equipment for mechanical handling of unit loads
		EN ISO 12100-2:2003	Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles
		EN 60204-1:2006+A1:2009	Safety of machinery. Electrical equipment of machines. General requirements
		ETSI EN 300 328 V2.1.1 (2016-11)	Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU
		ETSI EN 301 489-1 V1.9.2 (2011-09)	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
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		Date of issue	Feb 19, 2019
		Authorized	Scott Maurer, 
		Title	President, International Division

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Table 1-2: Revision History for Translated Manuals

()			()

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DE	
EN	

ES	
FR	

IT	
JA	

KO	
PL	

1

1.1. About this Manual	10
1.1.1. Manual Navigation Aids	11

2

2.1.	10
2.2.	12
2.3. (PPE)	14
2.4.	15
2.5.	16
2.5.1. (E-Stops)	16
2.5.1.1. 가	18
2.5.2.	19
2.5.2.1. LED	20
2.5.3. ()	22
2.5.4.	23
2.6.	24
2.7. - (LOTO)	25
2.7.1. - ?	25
2.7.2. /	26
2.7.2.1.	26
2.7.2.2.	26
2.7.3. LOTO -	28
2.7.4. AC	31
2.7.4.1.	31
2.7.4.2.	33
2.7.5. LOTO - iBOT	34

2.7.6.	.....	36
2.8.	.....	38
2.8.1.	.....	39
2.8.1.1.	.....	39
2.8.1.2.	.....	40
2.8.1.3.	.....	41
2.8.1.4.	.....	42
2.8.1.5.	.....	43
2.8.1.6.	.....	44
2.8.1.7. UPS	.....	45
2.8.1.8.	.....	46
2.8.1.9.	.....	47
2.8.1.10. /	.....	48
2.8.1.11.	.....	49
2.8.1.12.	.....	50
2.8.1.13. IO 4-	.....	51
2.8.1.14.	.....	52
2.8.1.15.	.....	53
2.8.2.	.....	54
2.8.2.1.	.....	54
2.8.2.2.	.....	55
2.8.2.3.	.....	56
2.8.2.4.	.....	57
2.8.3.	.....	58
2.8.3.1.	.....	58
2.8.3.2.	.....	59
2.8.3.3.	.....	60
2.8.4.	.....	61
2.8.4.1.	.....	61
2.8.4.2.	.....	62
2.8.4.3.	.....	63
2.8.4.4.	.....	64
2.8.4.5.	.....	65
2.8.4.6.	.....	66
2.8.4.7. “ ”	.....	67
2.8.4.8.	.....	68
2.8.4.9.	.....	69
2.8.4.10.	.....	70

2.8.4.11.	.....	71
2.8.5.	.....	72
2.8.5.1.	.....	72
2.8.5.2.	.....	73
2.8.5.3.	.....	74
2.8.5.4.	.....	75
2.8.5.5. “	.....”	76
2.8.5.6. 가	.....	77
2.8.5.7.	.....	78
2.8.5.8.	.....	79
2.8.6. iBOT	.....	80
2.8.6.1. iBOT	.....	80
2.8.6.2. iBOT	.....	81
2.8.6.3. iBOT	.....	82
2.8.6.4. iBOT	.....	83
2.8.6.5. iBOT	.....	84
2.9. 가	.....	85
2.10.	.....	90

3

3.1.	.....	94
3.2. Sure Sort™	.....	101
3.2.1. OPEX	.....	102
3.2.2. OPEX ELC	.....	103
3.3.	.....	104
3.3.1.	.....	104
3.3.2. ( )	.....	104
3.3.3.	.....	105
3.3.4.	.....	105
3.3.5.	.....	106
3.4.	.....	107
3.5. -	.....	109
3.6. - (EU)	.....	110
3.7. -	.....	111

3.8.	.....	113
3.8.1.	가	113
3.8.2.	FCC :	114
3.9.	.....	116

4

4.1.	.....	120
4.1.1.	.....	120
4.1.2.	.....	122
4.2.	.....	124
4.3.	.....	124
4.3.1.	.....	125
4.4.	.....	126
4.4.1.	.....	126
4.4.1.1.	ELC	126
4.4.1.2.	.....	128
4.4.2.	.....	130
4.4.3.	.....	135
4.5.	.....	140
4.6.	/	141
4.7.	.....	142
4.8.	.....	144
4.8.1.	.....	147
4.8.1.1.	.....	148
4.9.	iBOT	150

5

3.4.2.	.....	151
3.4.2.1.	.....	153
3.4.2.2.	/	153
3.4.2.3.	.....	153

3.4.2.4.		.....	154
3.4.2.5. iBOT	가	.....	154
3.4.2.6. iBOT		.....	155
3.4.2.7.		156	
3.4.3.		.....	157
3.5.	&	.....	159
3.5.1.		.....	159
3.5.2.		.....	160
3.5.3.		.....	165
3.6.	가	.....	169

G

G.1.		.....	172
G.2.		.....	173

A

(200-) ()

A.1.		.....	178
A.2.		.....	179
A.3.		.....	180
A.4.		.....	181

2.2

Sure Sort™

Operator Manual for Version 4.2 Machines

2.1.

2.1.	.....	10
2.2.	.....	12
2.3.	(PPE)	14
2.4.	.....	15
2.5.	.....	16
2.5.1.	(E-Stops)	16
2.5.2.	.....	19
2.5.3.	()	22
2.5.4.	.....	23
2.6.	.....	24
2.7.	- (LOTO)	25
2.7.1.	- ?	25
2.7.2.	/	26
2.7.3.	LOTO -	28
2.7.4.	AC	31
2.7.5.	LOTO - iBOT	34
2.7.6.	.....	36
2.8.	.....	38
2.8.1.	.....	39
2.8.2.	.....	54
2.8.3.	.....	58
2.8.4.	.....	61
2.8.5.	.....	72
2.8.6.	iBOT	80
2.9.	가	85
2.10.	.....	90

OPEX

:

-
- (PPE)
-
-
- /
-
-

 WARNING

2.2.



WARNING

Sure Sort

“ ”

- 가

iBOT

iBOT

가

가

89 “ 가

iBOT

- iBOT

iBOT

iBOT

가

, Sure Sort

가 5 lbs (2.27kg)

가

- 가

가

- OPEX

가

(

)

가

가

“

”

119 “ ”

가

가

2.3.

(PPE)

- 가 (PPC) , , ,
가 .
- Sure Sort AC () Arc Flash PPE 1 . Arc
Flash 1 PPE :
- Arc- , 4 cal/cm² (16.75 J/ cm²)
 - Arc- , Arc
 - Arc- Arc
 - Arc- , , (AN)
 - -
 - (SR)
 - ()
 - 가
 - 가 (AN)
- 가 PPE
.

2.4.

가

가

NOTICE

Sure Sort

:

-
- 가
- 10 . 가

2.5.

Sure Sort™
가

2.5.1. (E-Stops)



(E-Stop)

(2-1) .

Sure Sort

가

Note:

“ ”



Figure 2-1: Sure Sort

) 가 가 . 200- () . 100- ()
 2-2).
 (bin)
 . 11
 가 가
 . 100- R . 200-
 Q

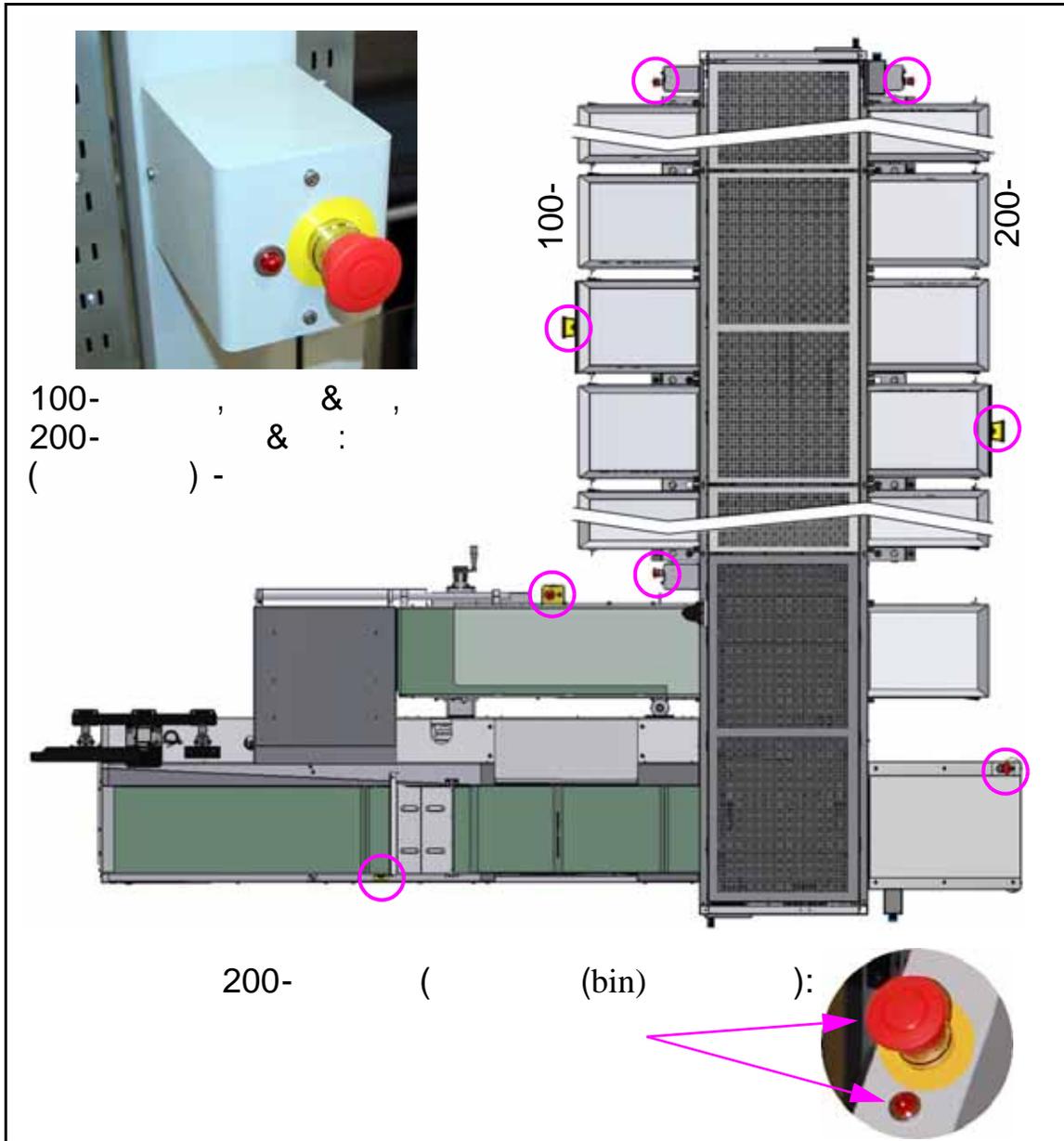


Figure 2-2: , 11-

2.5.1.1.

가



- 가 : ' .
- 1.
 2. 가 30 “ - (LOTO) ”
 3. 가
 - 4.
 5. 가
 6. 가 가
 - 7.
 - 8.
 9. / 가
 10. 가

2.5.2.1.

LED

가 6 (2-4).
iBOT .

RPM (가) OPEX

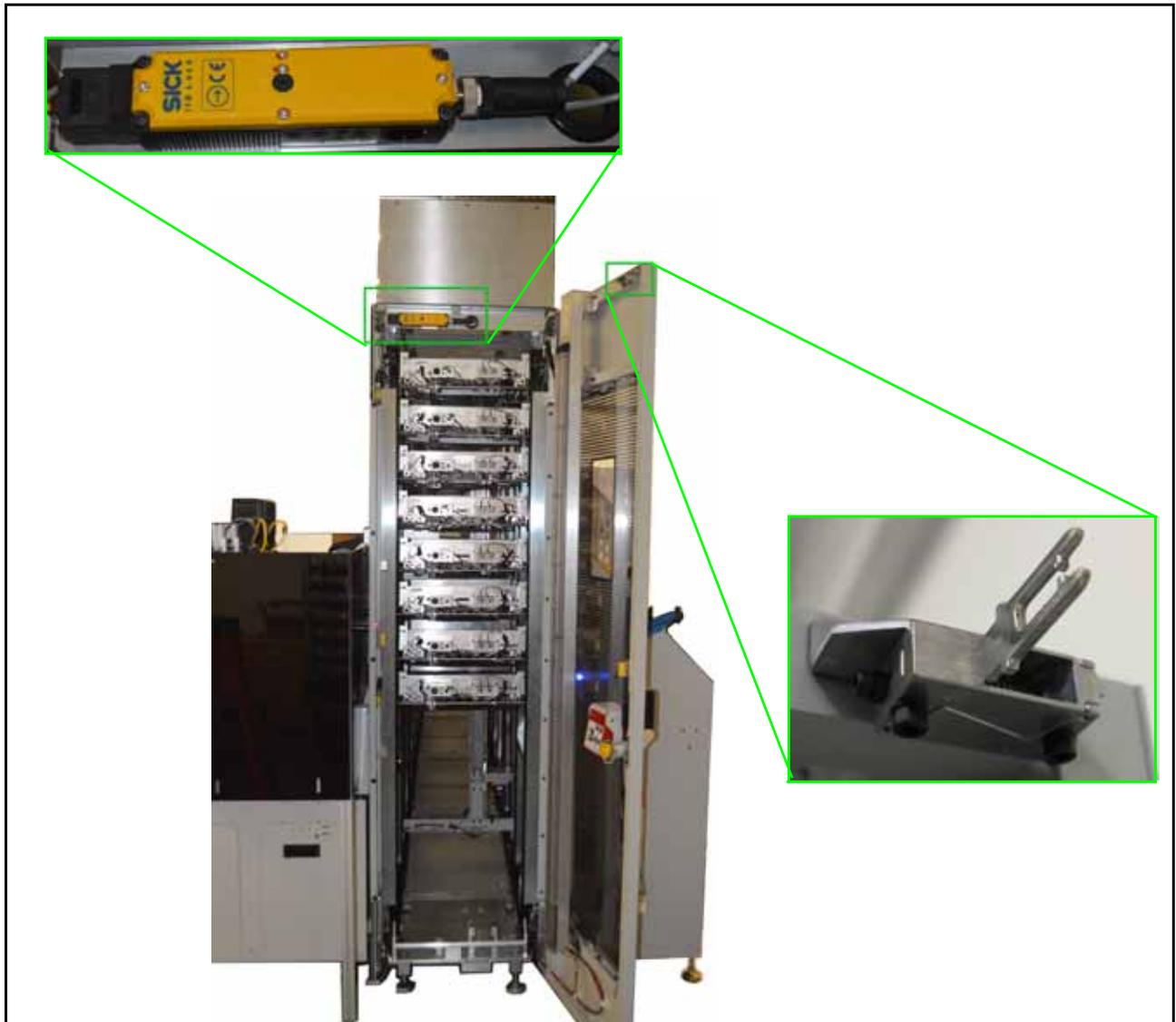


Figure 2-4:

가 , LED가 (2-5).



Figure 2-5: LED

Note:

_____).

(28 “ ”

2.5.3. ()

2-6 () 가 ()



Figure 2-6: ()

2.5.4.

가).

69

(2-7

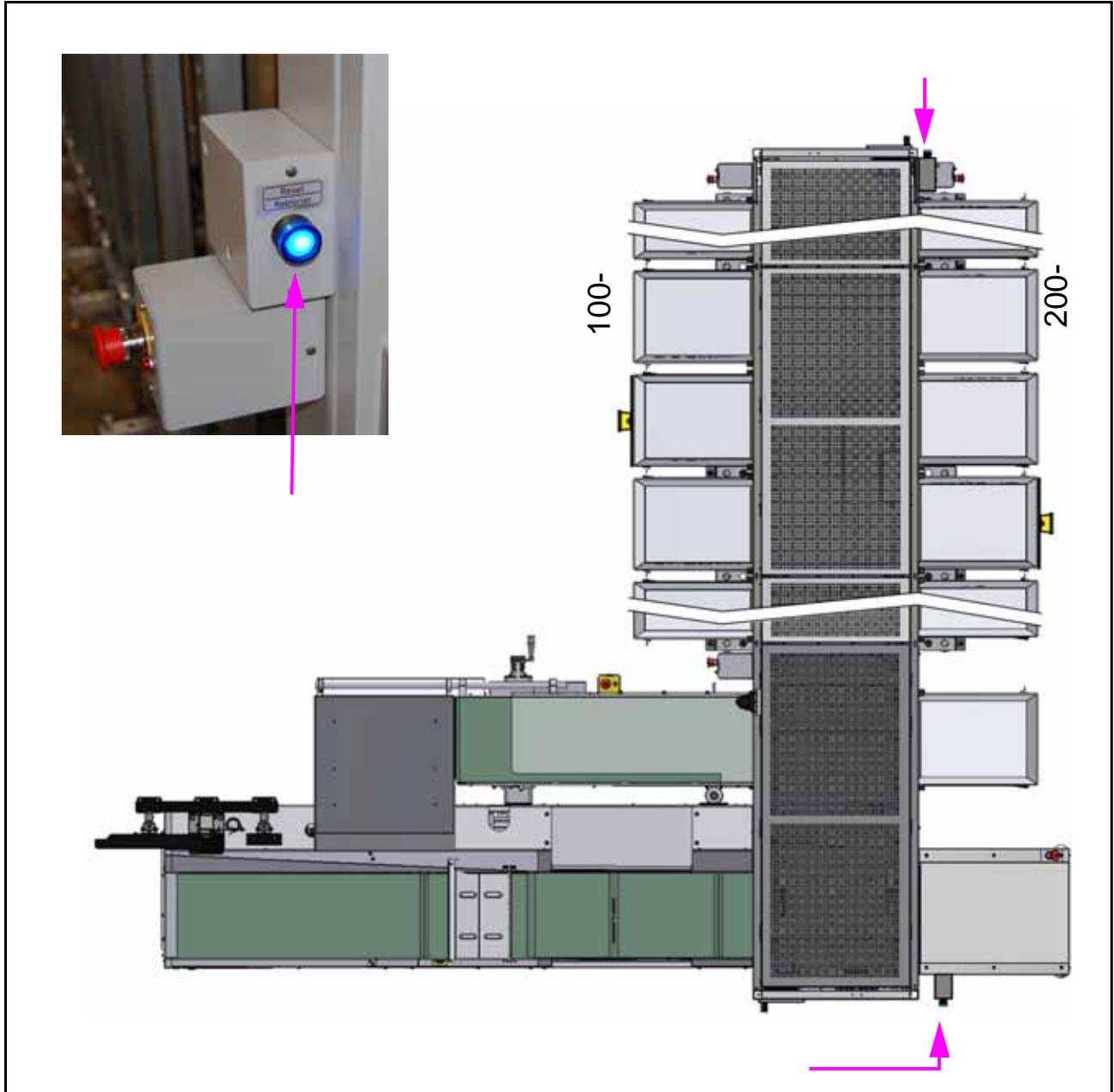


Figure 2-7:

2.6.

가 . 가
(2-8).

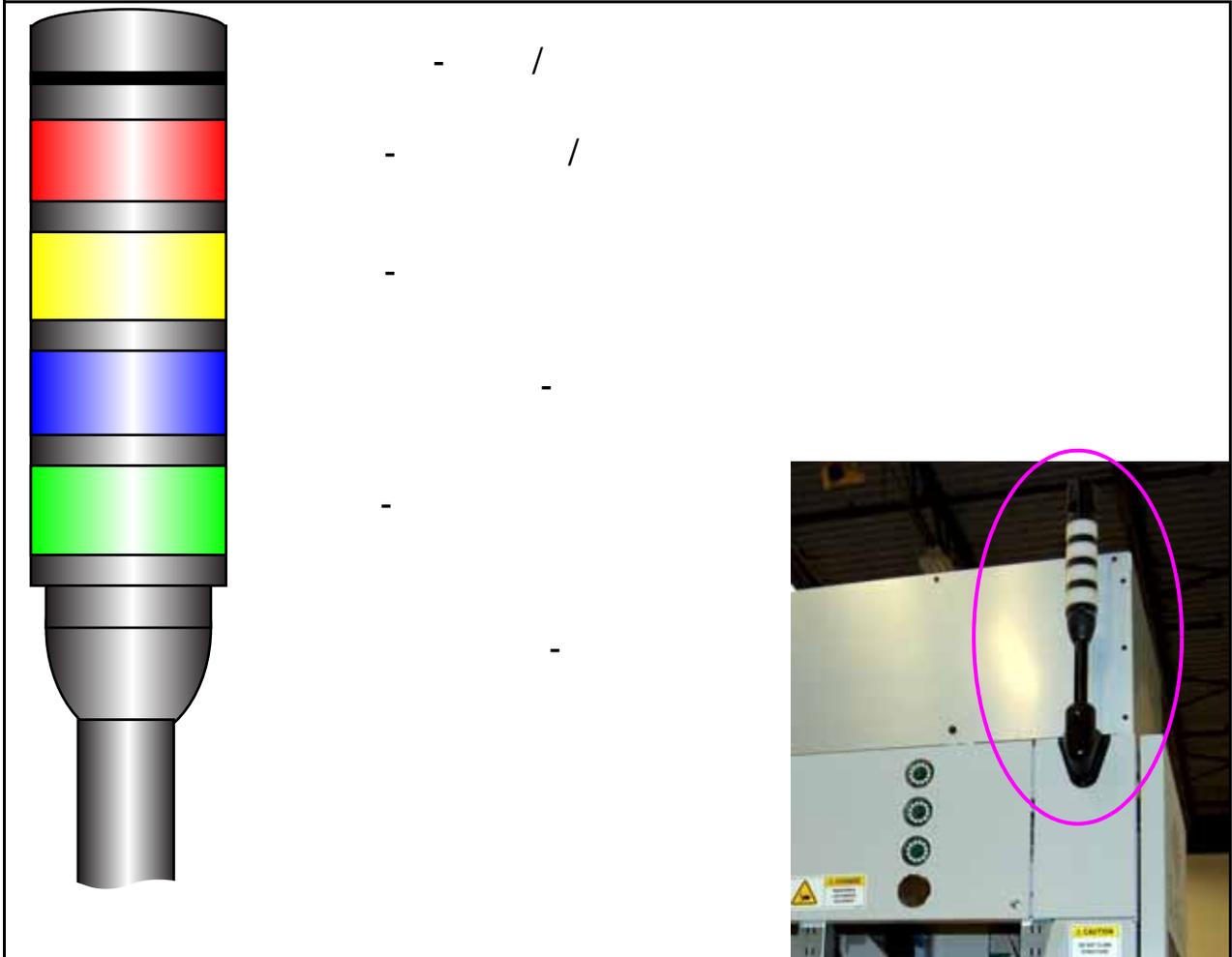


Figure 2-8:

2.7. - (LOTO)



2.7.1. - ?

LOTO (-)
가
. LOTO가

(2-9
가). LOTO



Figure 2-9: LOTO

2.7.2.

/

2.7.2.1.

LOTO

(2-10).



가 :

4가
2
12
12

Figure 2-10:

/

2.7.2.2.

가 , AC
(32 2-11)가 . AC

- ,
- AC

가

36 “AC”

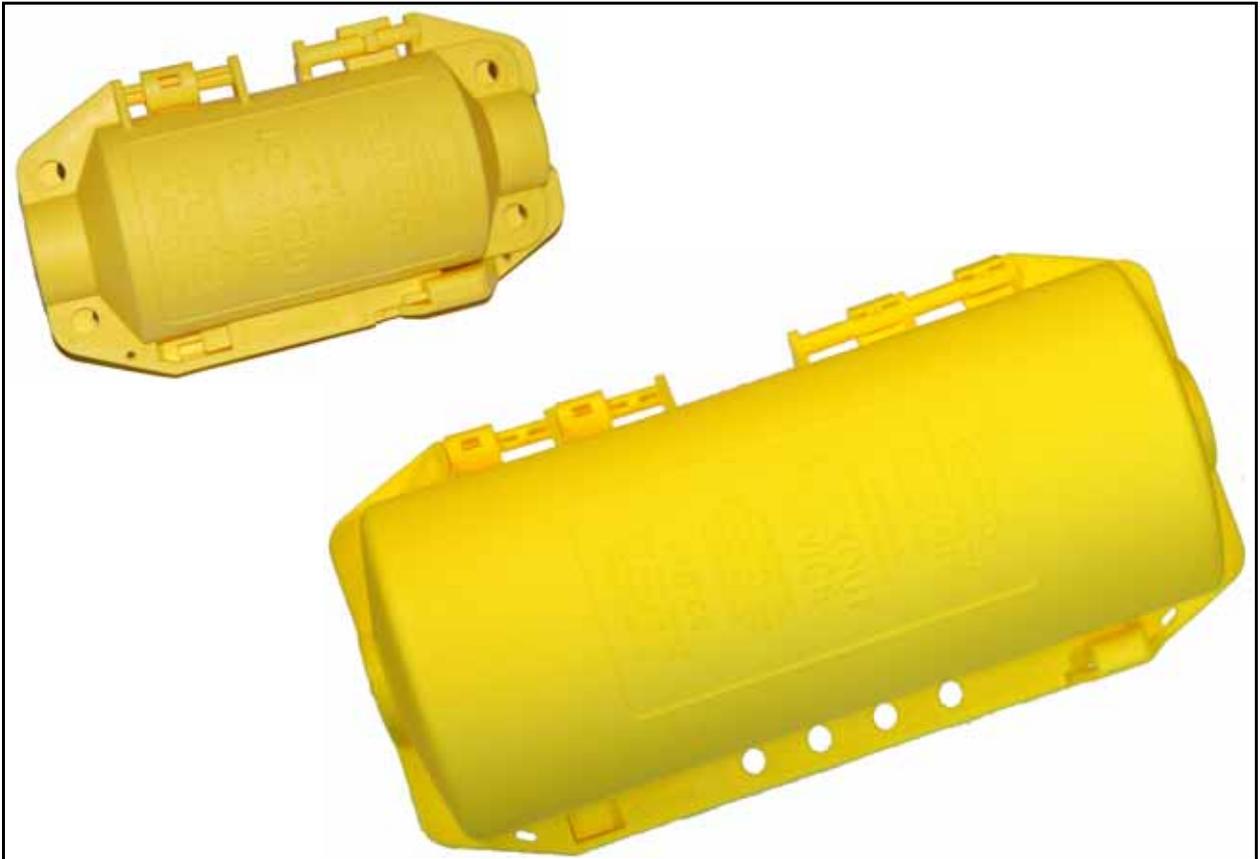
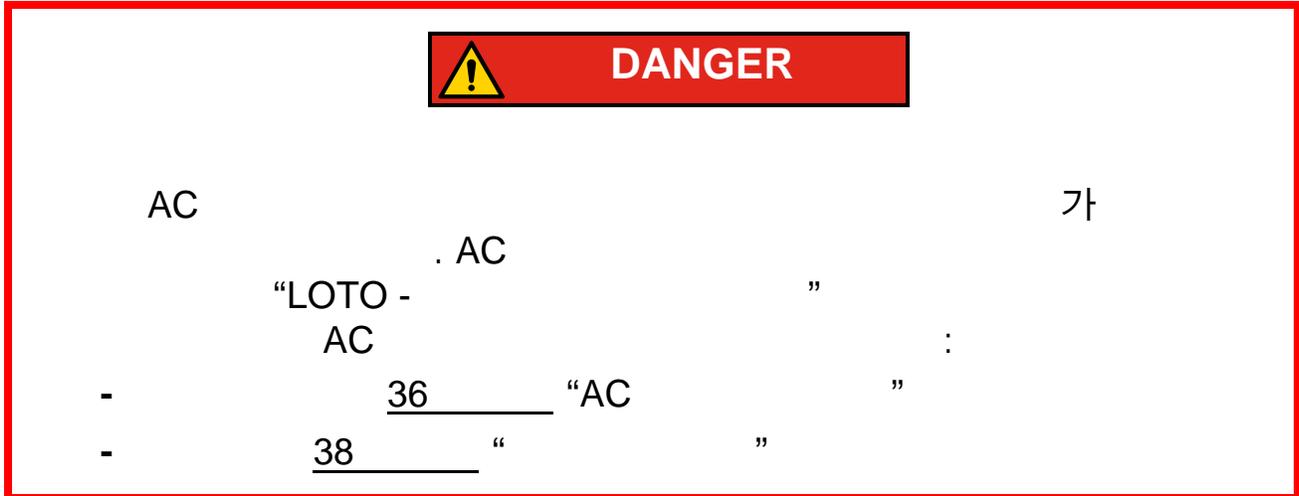


Figure 2-11:

2.7.3. LOTO -

가 Sure Sort



Sure Sort

1. LOTO

2. 가 , iBOT

3. RTM

RTM

4.

5. 가 UPS

6. “ ” (2-12).



Figure 2-12:

7. 13).

(2-



Figure 2-13:

8. 2-14).

(

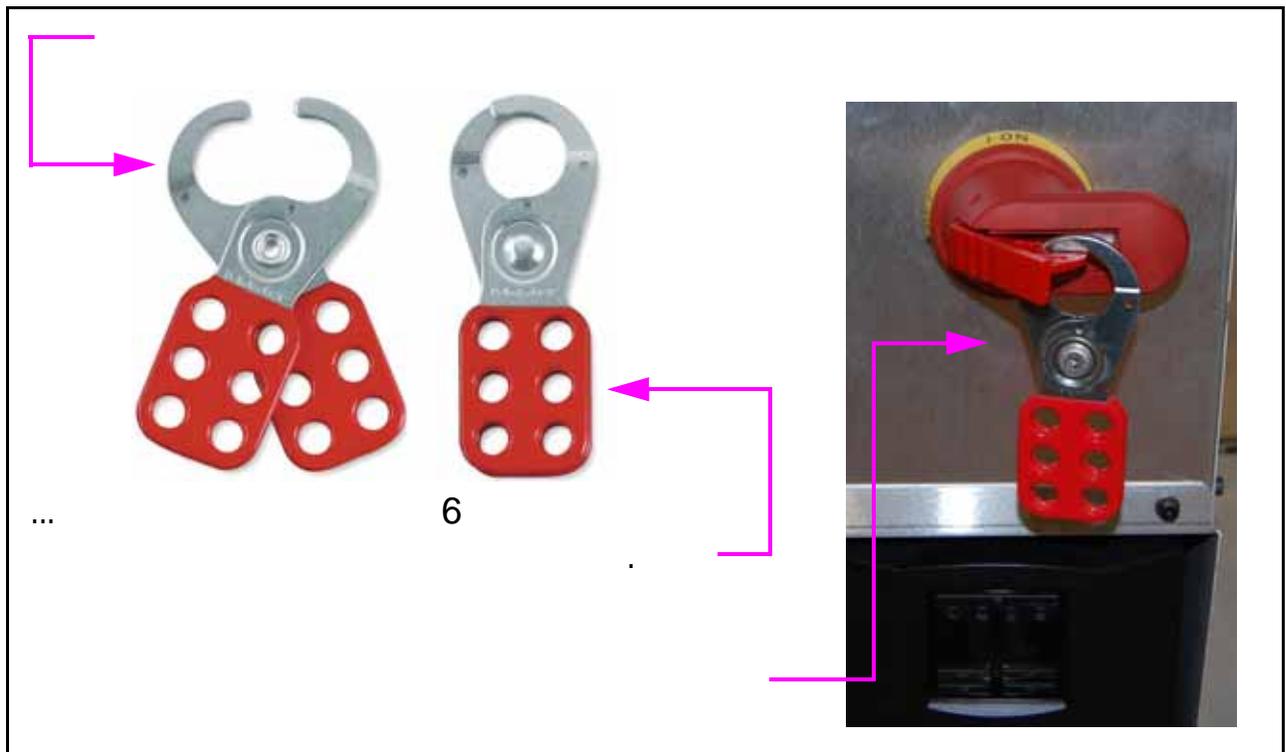


Figure 2-14:

9.

가

2-15).

가



Figure 2-15: , 가

2.7.4. AC

2.7.4.1.



가 (32 2-11
Sure Sort AC AC

- ·
1. 33 “LOTO - _____”
 2. AC
 3. AC OPEX (37
2-16):
 - a. AC (
 - b. 가 가

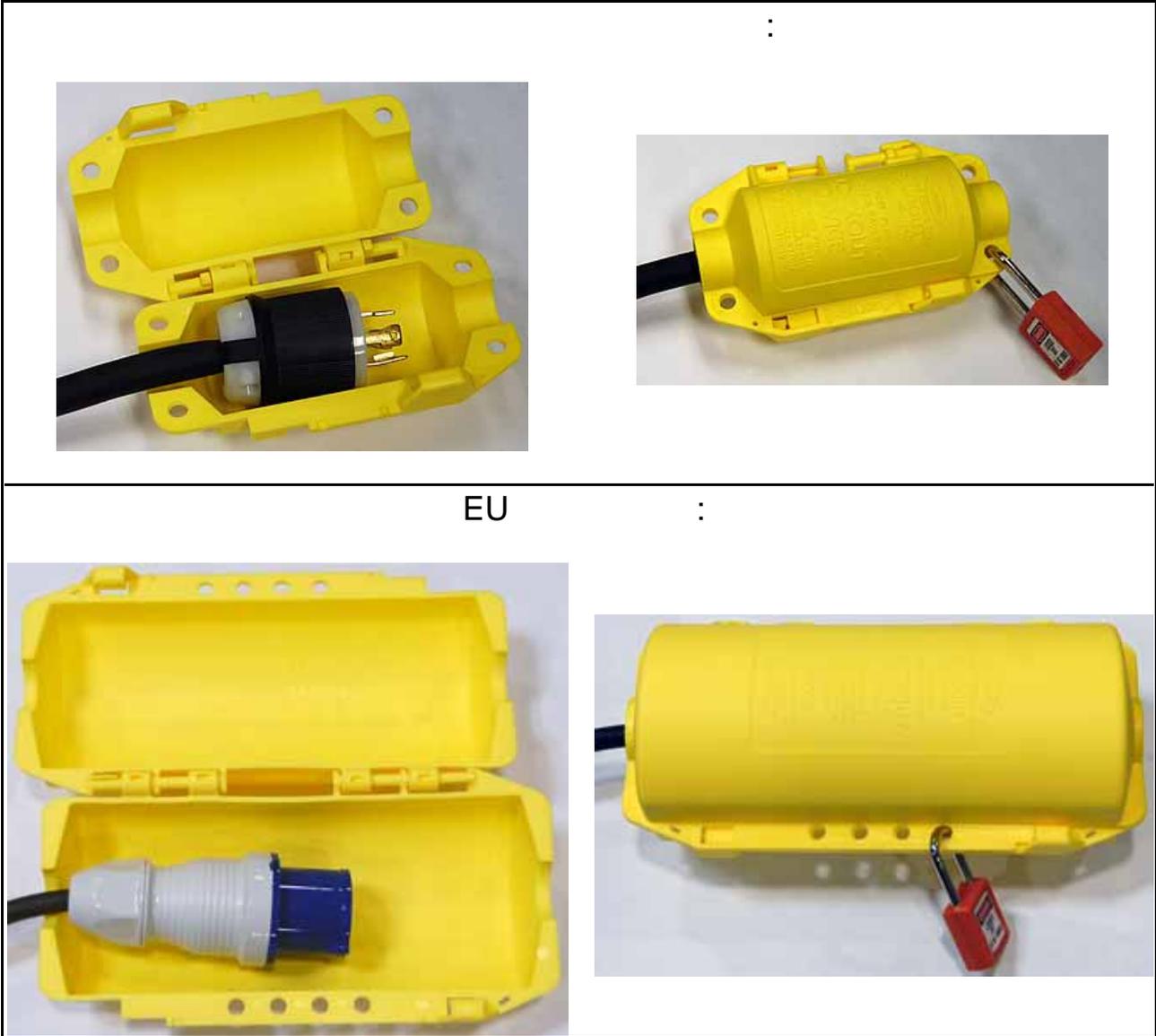
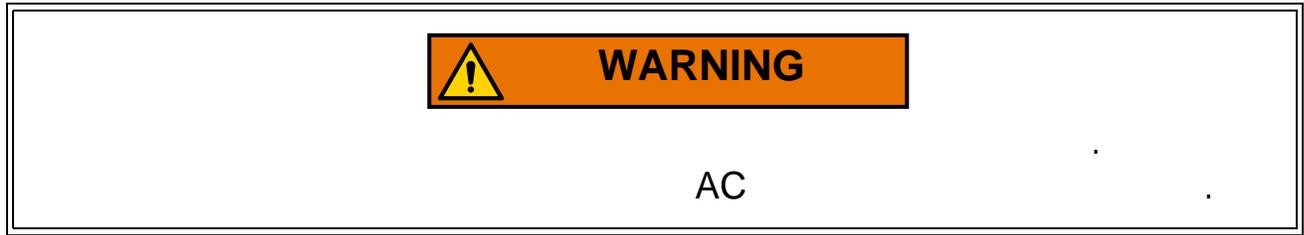


Figure 2-16: OPEX

2.7.4.2.



Sure Sort

AC

. Sure Sort AC

1. 33 "LOTO -"

2. : AC
(2-17).

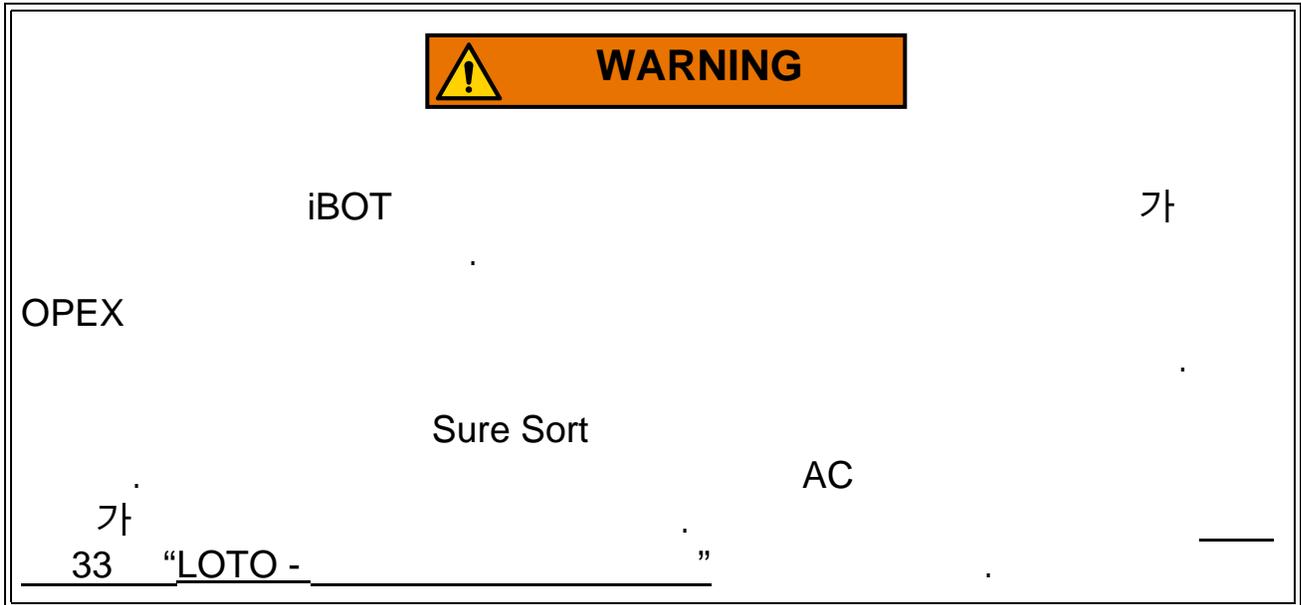


Figure 2-17: - / AC

2.7.5. LOTO -

iBOT

iBOT



1. LOTO

2. 가 iBOT

3. “ ” (33 2-12).

4. 10 가
6 가 (2-18
).



Figure 2-18:

5. (2-19).



Figure 2-19:

6.

7.

- a. LED가 가 (2-20).
- b. 가

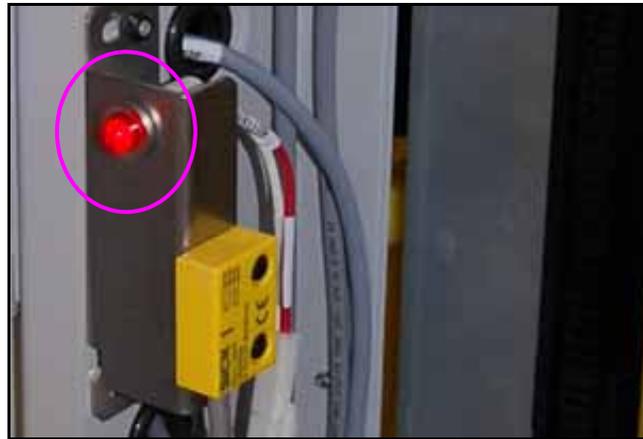


Figure 2-20: LED

2.7.6.

가 가

1.

2. 가

3.

가

4.

5.

6. LOTO “ ”

7.

가

8. LOTO 가

가

2.8.

Sure Sort

가

가

:

- / 2
- / 2
- ()

가

(2-21).

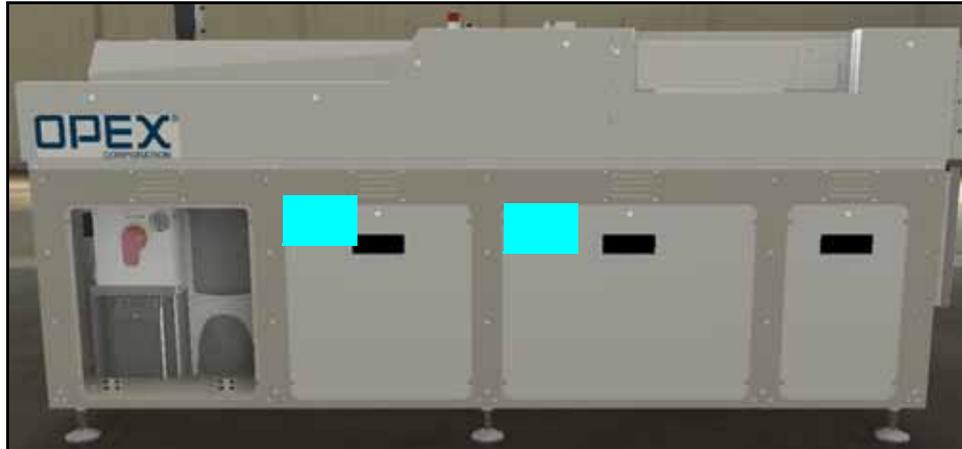


Figure 2-21:

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Sure Sort



WARNING

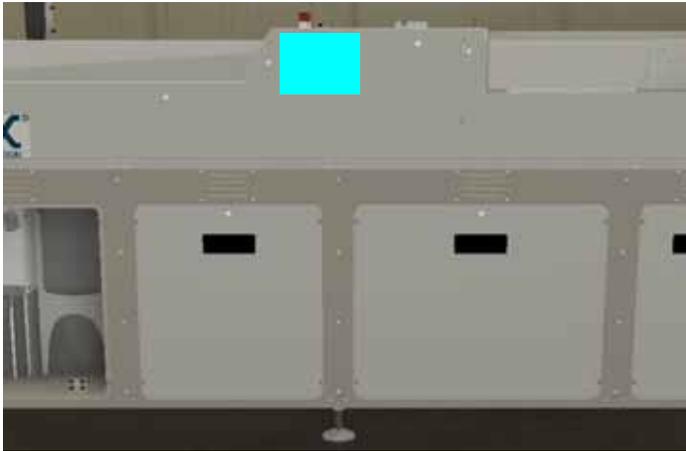
2.8.1.

2.8.1.1.

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Table 2-1:

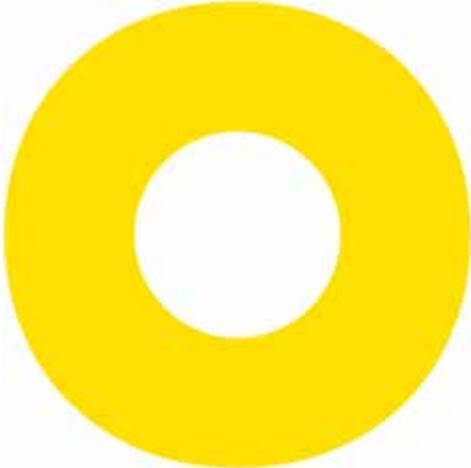
	<p>US (8074300)</p> 
	<p>CA (8074310)</p> 
	<p>EU / AU / JP (8074330)</p> 

2.8.1.2.

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⋮

(2-2).

Table 2-2:

	(8156400) 

2.8.1.3.

: 가 UPS
 (2-3).
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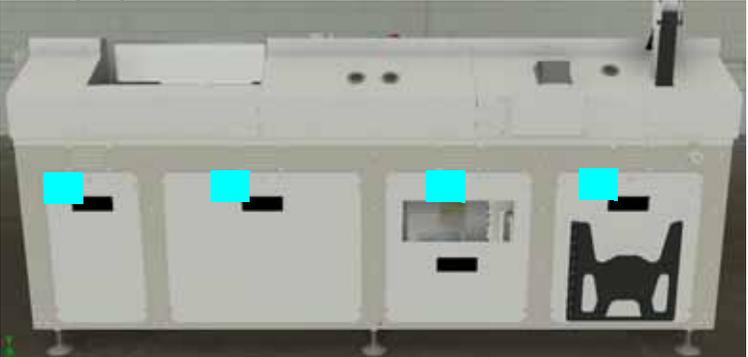
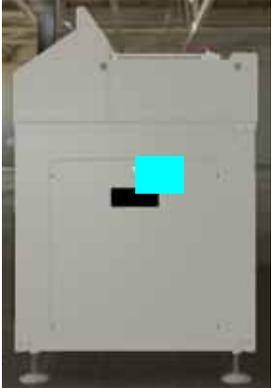
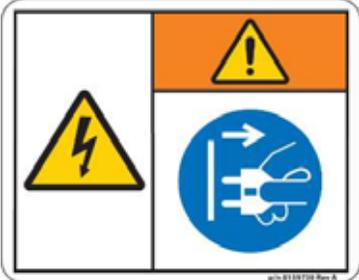
Table 2-3:

	<p style="text-align: center;">US (8165700)</p> <div style="border: 1px solid black; padding: 5px;">  <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #FF8C00; color: white; text-align: center;">! WARNING</td> </tr> <tr> <td style="font-size: small;"> Arc Flash and Shock Hazard Follow all requirements in NFPA 70E for safe work practices and for personal protective equipment </td> </tr> <tr> <td style="background-color: #FF8C00; color: white; text-align: center;">! ADVERTENCIA</td> </tr> <tr> <td style="font-size: small;"> Riesgo de descarga y arco eléctrico Siga todos los requisitos en NFPA 70E para prácticas de trabajo seguras y equipos de protección personal </td> </tr> </table> </div>	! WARNING	Arc Flash and Shock Hazard Follow all requirements in NFPA 70E for safe work practices and for personal protective equipment	! ADVERTENCIA	Riesgo de descarga y arco eléctrico Siga todos los requisitos en NFPA 70E para prácticas de trabajo seguras y equipos de protección personal
	! WARNING				
	Arc Flash and Shock Hazard Follow all requirements in NFPA 70E for safe work practices and for personal protective equipment				
! ADVERTENCIA					
Riesgo de descarga y arco eléctrico Siga todos los requisitos en NFPA 70E para prácticas de trabajo seguras y equipos de protección personal					
<p style="text-align: center;">CA (8165710)</p> <div style="border: 1px solid black; padding: 5px;">  <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #FF8C00; color: white; text-align: center;">! WARNING</td> </tr> <tr> <td style="font-size: small;"> Arc Flash and Shock Hazard Follow all requirements in NFPA 70E for safe work practices and for personal protective equipment </td> </tr> <tr> <td style="background-color: #FF8C00; color: white; text-align: center;">! AVERTISSEMENT</td> </tr> <tr> <td style="font-size: small;"> Risque d'électrocution et d'arc électrique Suivre toutes les exigences Z462-15 pour la sécurité au travail et les équipements de protection individuelle </td> </tr> </table> </div>	! WARNING	Arc Flash and Shock Hazard Follow all requirements in NFPA 70E for safe work practices and for personal protective equipment	! AVERTISSEMENT	Risque d'électrocution et d'arc électrique Suivre toutes les exigences Z462-15 pour la sécurité au travail et les équipements de protection individuelle	
! WARNING					
Arc Flash and Shock Hazard Follow all requirements in NFPA 70E for safe work practices and for personal protective equipment					
! AVERTISSEMENT					
Risque d'électrocution et d'arc électrique Suivre toutes les exigences Z462-15 pour la sécurité au travail et les équipements de protection individuelle					
<p style="text-align: center;">EU / AU / JP (8165730)</p> <div style="border: 1px solid black; padding: 5px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #FF8C00; color: white; text-align: center;">!</td> </tr> <tr> <td style="text-align: center;">  </td> </tr> </table> </div>	!				
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2.8.1.4.

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Table 2-4:

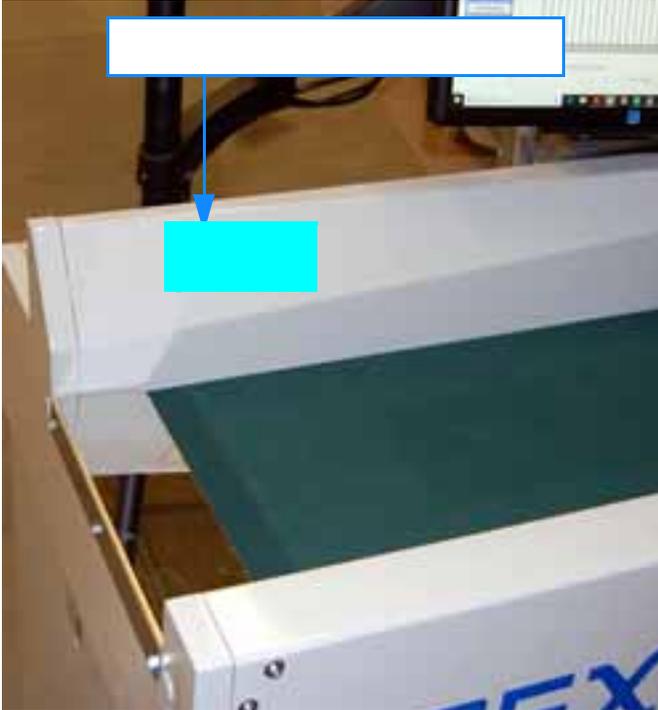
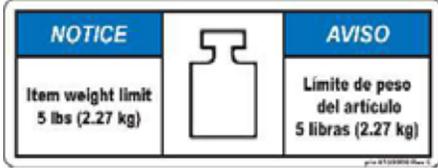
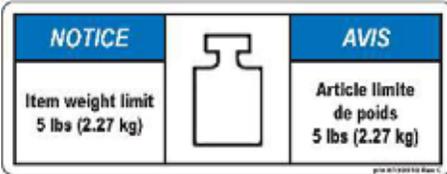
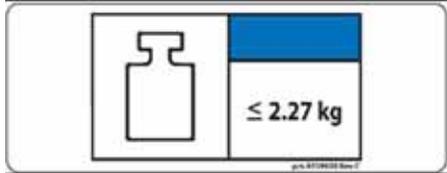
<p>(4x)</p>  <p>(4x)</p>  <p>(1x)</p> 	<p>US (8159700)</p>  <p>CA (8159710)</p>  <p>EU / AU / JP (8159730)</p> 
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2.8.1.5.

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 : 5 lbs (2.27kg)

(2-5

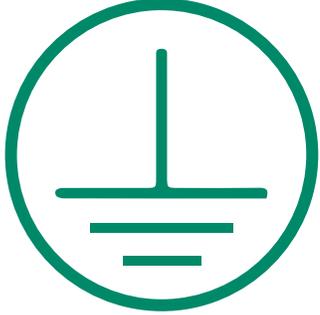
Table 2-5:

	<p>US (8159900)</p> 
	<p>CA (8159910)</p> 
	<p>EU / AU / JP (8159930)</p> 

2.8.1.6.

:AC (2-6).

Table 2-6:

	Description
<p>Back of the AC Power Enclosure</p> 	<p>ALL Regions (P24835-01)</p> 

2.8.1.7. UPS

: UPS

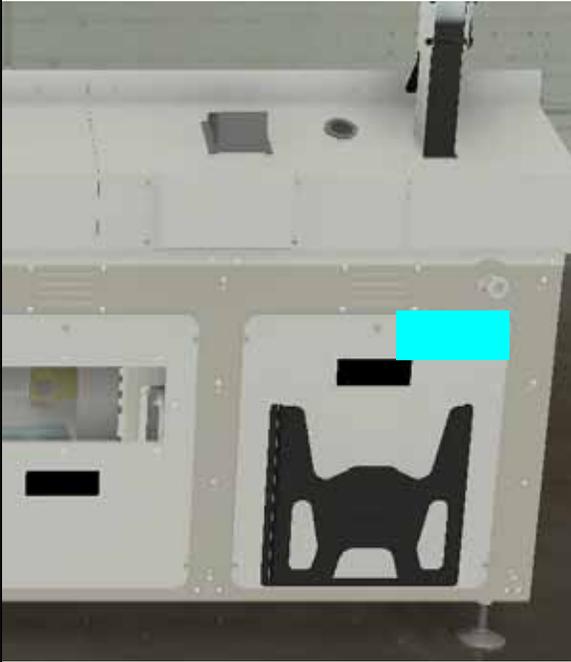
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(2-7).

:

UPS

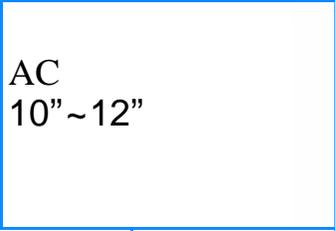
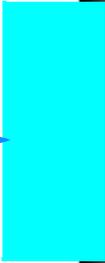
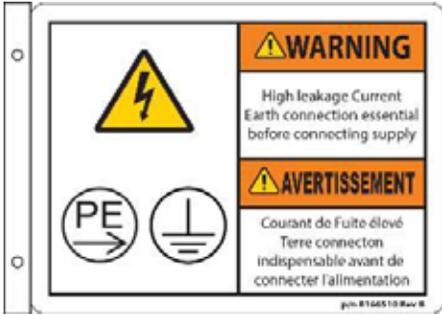
Table 2-7: UPS

	<p style="text-align: center;">US (8136300)</p> <div style="border: 1px solid black; padding: 5px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; padding: 5px;"> <p style="text-align: center;">⚠ WARNING</p> <p style="text-align: center;">UNINTERRUPTIBLE POWER SUPPLY disconnect before servicing</p> </td> <td style="width: 33%; padding: 5px; text-align: center;"> <p>⚡</p>   </td> <td style="width: 33%; padding: 5px;"> <p style="text-align: center;">⚠ ADVERTENCIA</p> <p style="text-align: center;">FUENTE DE PODER ININTERRUMPIBLE desconectar antes de reparar</p> </td> </tr> </table> <p style="text-align: right; font-size: small;">p/n 8136300 Rev C</p> </div>	<p style="text-align: center;">⚠ WARNING</p> <p style="text-align: center;">UNINTERRUPTIBLE POWER SUPPLY disconnect before servicing</p>	<p>⚡</p>  	<p style="text-align: center;">⚠ ADVERTENCIA</p> <p style="text-align: center;">FUENTE DE PODER ININTERRUMPIBLE desconectar antes de reparar</p>
	<p style="text-align: center;">⚠ WARNING</p> <p style="text-align: center;">UNINTERRUPTIBLE POWER SUPPLY disconnect before servicing</p>	<p>⚡</p>  	<p style="text-align: center;">⚠ ADVERTENCIA</p> <p style="text-align: center;">FUENTE DE PODER ININTERRUMPIBLE desconectar antes de reparar</p>	
	<p style="text-align: center;">CA (8136310)</p> <div style="border: 1px solid black; padding: 5px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; padding: 5px;"> <p style="text-align: center;">⚠ WARNING</p> <p style="text-align: center;">UNINTERRUPTIBLE POWER SUPPLY Disconnect before servicing</p> </td> <td style="width: 33%; padding: 5px; text-align: center;"> <p>⚡</p>   </td> <td style="width: 33%; padding: 5px;"> <p style="text-align: center;">⚠ AVERTISSEMENT</p> <p style="text-align: center;">ONDULEUR ALIMENTATION Débrancher avant l'entretien</p> </td> </tr> </table> <p style="text-align: right; font-size: small;">p/n 8136310 Rev C</p> </div>	<p style="text-align: center;">⚠ WARNING</p> <p style="text-align: center;">UNINTERRUPTIBLE POWER SUPPLY Disconnect before servicing</p>	<p>⚡</p>  	<p style="text-align: center;">⚠ AVERTISSEMENT</p> <p style="text-align: center;">ONDULEUR ALIMENTATION Débrancher avant l'entretien</p>
<p style="text-align: center;">⚠ WARNING</p> <p style="text-align: center;">UNINTERRUPTIBLE POWER SUPPLY Disconnect before servicing</p>	<p>⚡</p>  	<p style="text-align: center;">⚠ AVERTISSEMENT</p> <p style="text-align: center;">ONDULEUR ALIMENTATION Débrancher avant l'entretien</p>		
<p style="text-align: center;">EU / AU / JP (8136330)</p> <div style="border: 1px solid black; padding: 5px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px; text-align: center;"> <p>⚡</p>  </td> <td style="width: 50%; padding: 5px;"> <p style="text-align: center;">⚠</p>  </td> </tr> </table> <p style="text-align: right; font-size: small;">p/n 8136330 Rev C</p> </div>	<p>⚡</p> 	<p style="text-align: center;">⚠</p> 		
<p>⚡</p> 	<p style="text-align: center;">⚠</p> 			

2.8.1.8.

: AC (2-8).
:

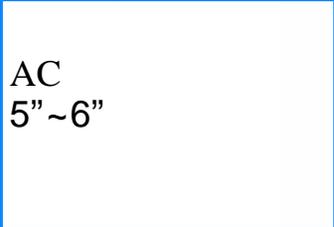
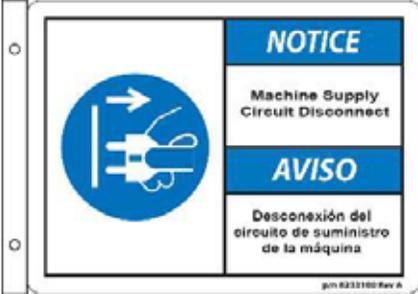
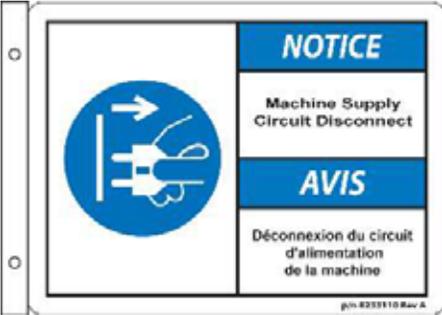
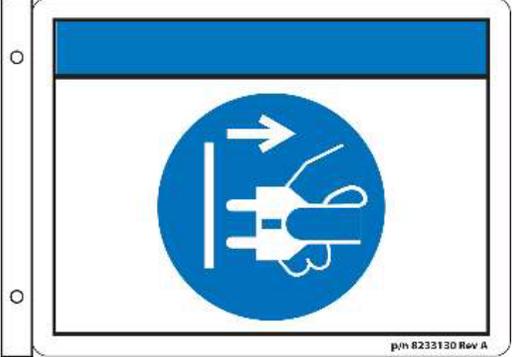
Table 2-8:

 <p>AC 10"~12"</p> 	<p>US (8166500)</p>  <p>CA (8166510)</p>  <p>EU / AU / EU (8166530)</p> 
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2.8.1.9.

:AC (2-8).

Table 2-9:

	<p style="text-align: center;">US (8233100)</p>  <p style="text-align: center;">CA (8233110)</p>  <p style="text-align: center;">EU / AU / EU (8233130)</p> 
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2.8.1.10. /

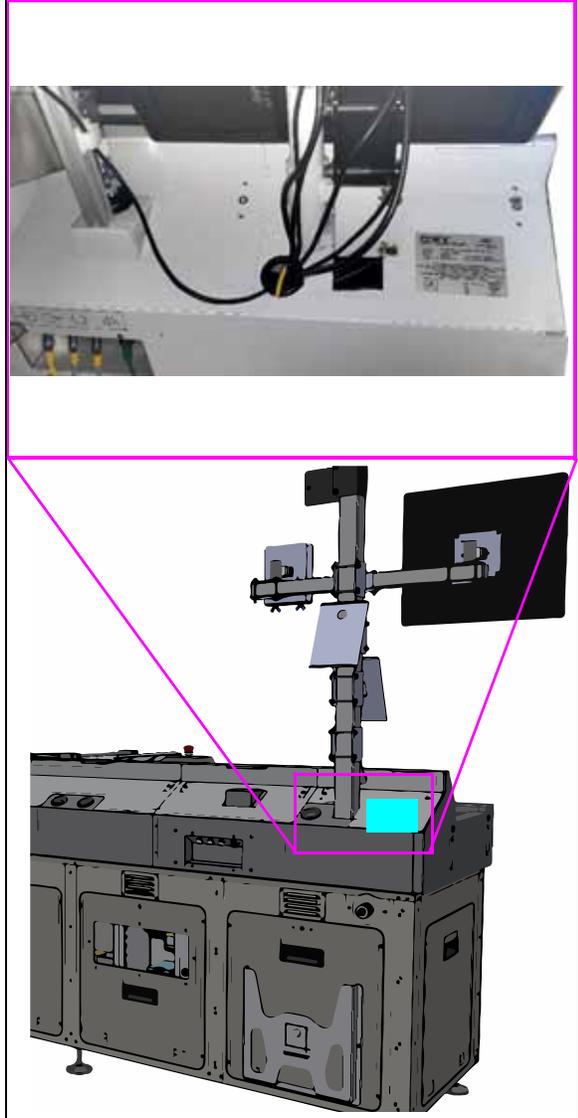
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(2-10).
D.O.M., NRTL

CE,

50/60Hz

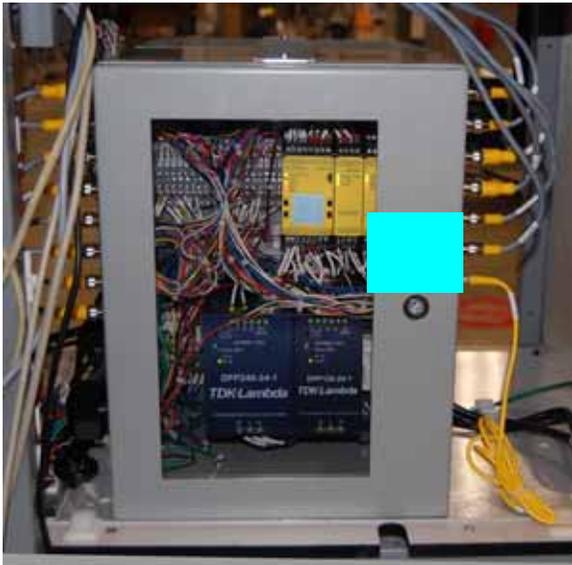
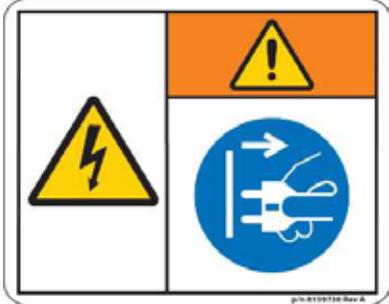
Table 2-10: /

	<p style="text-align: center;">US / CA (8237900)</p> <div style="border: 1px dashed black; padding: 5px;"> <p style="text-align: center;">OPEX[®] CORPORATION 305 COMMERCE DRIVE MOORESTOWN, NJ 08057 USA</p> <p style="text-align: right;">Sure Sort. ITEM SORTER</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Voltage</td> <td>208/120 VAC, 1PH, 60Hz (2W + N + PE)</td> </tr> <tr> <td>Current</td> <td>12 A Full Load</td> </tr> <tr> <td>SCCR</td> <td>200 kA</td> </tr> <tr> <td>Largest Load</td> <td>208VAC 5A</td> </tr> </table> <p style="text-align: right;">Document # 5092000 Max amb temp 90°F (32.2°C)</p> <p style="font-size: small;">Subject to one or more of the following patents: U.S.: 7,861,844 8,104,601 8,622,194 8,726,740 9,010,517 10,052,661 10,071,857 CANADA: 2673932 JAPAN: JP5562646 KOREA: KR101489337 EUROPE: EP2121204 Other patents pending. FIRMWARE AND SOFTWARE COPYRIGHT 2007 - 2020 ALL RIGHTS RESERVED OPEX CORPORATION MOORESTOWN, NJ USA</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  <p>2 US</p> </div> <div style="text-align: center;">  <p>SERIAL NO _____</p> </div> <div style="text-align: center;"> <p>D.O.M.</p> <p>sh 8237900 Rev A</p> </div> </div> </div> <p style="text-align: center;">EU / AU (8237930)</p> <div style="border: 1px dashed black; padding: 5px;"> <p style="text-align: center;">OPEX[®] CORPORATION 305 COMMERCE DRIVE MOORESTOWN, NJ 08057 USA</p> <p style="text-align: right;">Sure Sort. ITEM SORTER</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Voltage</td> <td>230 VAC, 1PH, 50Hz (1W + N + PE)</td> </tr> <tr> <td>Current</td> <td>12 A Full Load</td> </tr> <tr> <td>SCCR</td> <td>200 kA</td> </tr> <tr> <td>Largest Load</td> <td>230VAC 5A</td> </tr> </table> <p style="text-align: right;">Document # 5092000 Max amb temp 90°F (32.2°C)</p> <p style="font-size: small;">Subject to one or more of the following patents: U.S.: 7,861,844 8,104,601 8,622,194 8,726,740 9,010,517 10,052,661 10,071,857 CANADA: 2673932 JAPAN: JP5562646 KOREA: KR101489337 EUROPE: EP2121204 Other patents pending. FIRMWARE AND SOFTWARE COPYRIGHT 2007 - 2020 ALL RIGHTS RESERVED OPEX CORPORATION MOORESTOWN, NJ USA</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  <p>2 AU</p> </div> <div style="text-align: center;">  <p>SERIAL NO _____</p> </div> <div style="text-align: center;"> <p>D.O.M.</p> <p>sh 8237930 Rev B</p> </div> </div> </div> <p style="text-align: center;">JP (8237940)</p> <div style="border: 1px dashed black; padding: 5px;"> <p style="text-align: center;">OPEX[®] CORPORATION 305 COMMERCE DRIVE MOORESTOWN, NJ 08057 USA</p> <p style="text-align: right;">Sure Sort. ITEM SORTER</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Voltage</td> <td>200 VAC, 1PH, 50/60Hz (2W + PE)</td> </tr> <tr> <td>Current</td> <td>12 A Full Load</td> </tr> <tr> <td>SCCR</td> <td>200 kA</td> </tr> <tr> <td>Largest Load</td> <td>200VAC 5A</td> </tr> </table> <p style="text-align: right;">Document # 5092000 Max amb temp 90°F (32.2°C)</p> <p style="font-size: small;">Subject to one or more of the following patents: U.S.: 7,861,844 8,104,601 8,622,194 8,726,740 9,010,517 10,052,661 10,071,857 CANADA: 2673932 JAPAN: JP5562646 KOREA: KR101489337 EUROPE: EP2121204 Other patents pending. FIRMWARE AND SOFTWARE COPYRIGHT 2007 - 2020 ALL RIGHTS RESERVED OPEX CORPORATION MOORESTOWN, NJ USA</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  <p>2 JP</p> </div> <div style="text-align: center;">  <p>SERIAL NO _____</p> </div> <div style="text-align: center;"> <p>D.O.M.</p> <p>sh 8237940 Rev B</p> </div> </div> </div>	Voltage	208/120 VAC, 1PH, 60Hz (2W + N + PE)	Current	12 A Full Load	SCCR	200 kA	Largest Load	208VAC 5A	Voltage	230 VAC, 1PH, 50Hz (1W + N + PE)	Current	12 A Full Load	SCCR	200 kA	Largest Load	230VAC 5A	Voltage	200 VAC, 1PH, 50/60Hz (2W + PE)	Current	12 A Full Load	SCCR	200 kA	Largest Load	200VAC 5A
Voltage	208/120 VAC, 1PH, 60Hz (2W + N + PE)																								
Current	12 A Full Load																								
SCCR	200 kA																								
Largest Load	208VAC 5A																								
Voltage	230 VAC, 1PH, 50Hz (1W + N + PE)																								
Current	12 A Full Load																								
SCCR	200 kA																								
Largest Load	230VAC 5A																								
Voltage	200 VAC, 1PH, 50/60Hz (2W + PE)																								
Current	12 A Full Load																								
SCCR	200 kA																								
Largest Load	200VAC 5A																								

2.8.1.11.

: ; I/O (2-11).

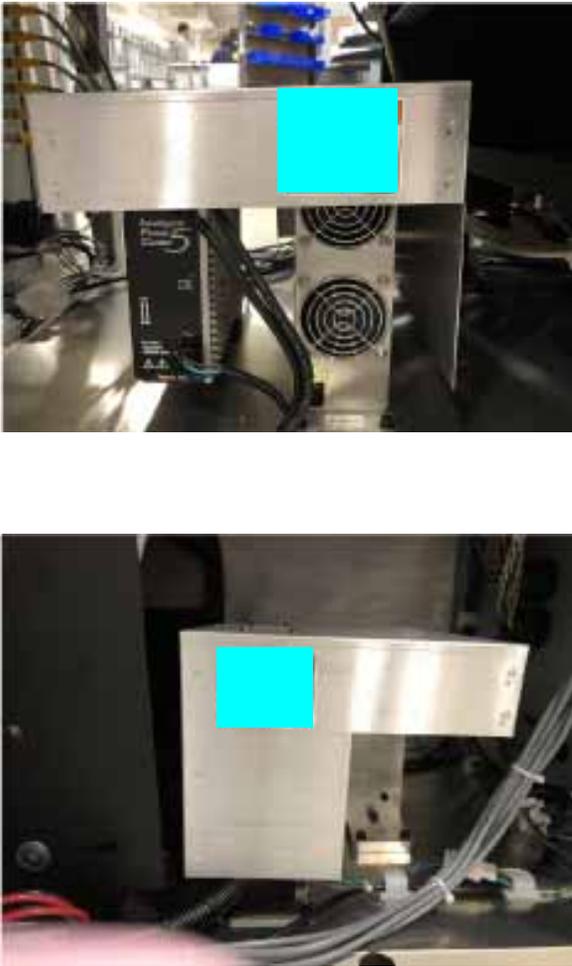
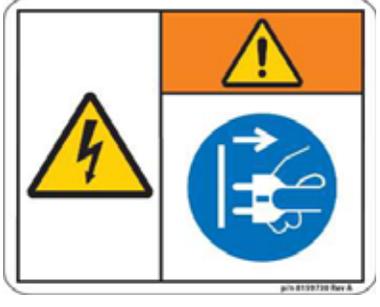
Table 2-11:

 <p>I/O</p> 	<p>US (8159700)</p>  <p>CA (8159710)</p>  <p>EU / AU / JP (8159730)</p> 
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2.8.1.12.

DC (28V, 75V) (2-12).

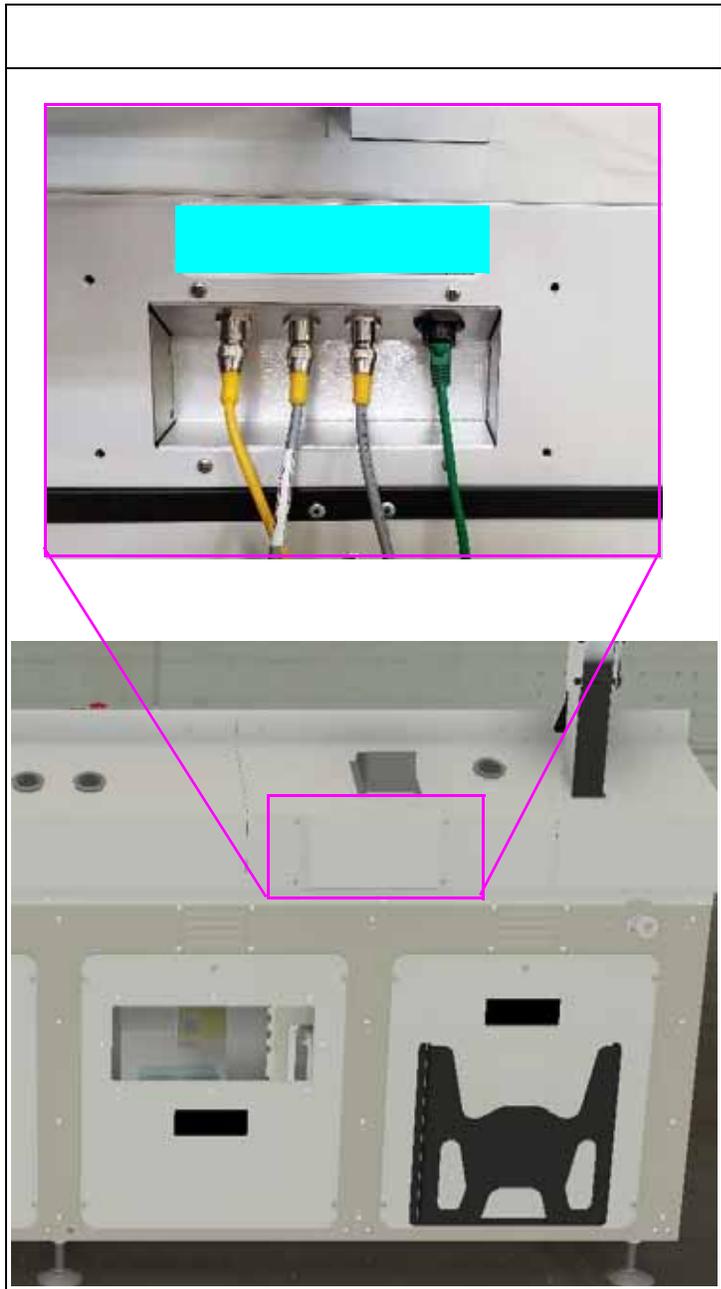
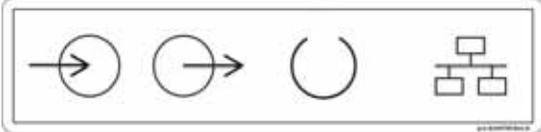
Table 2-12:

<p>DC (28V, 75V)</p> 	<p>US (8159700)</p>  <p>CA (8159710)</p>  <p>EU / AU / JP (8159730)</p> 
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2.8.1.13. IO 4-

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:4 (2-13).

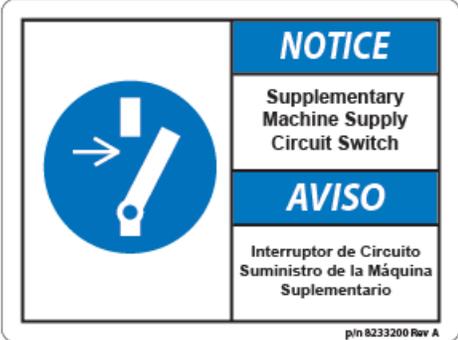
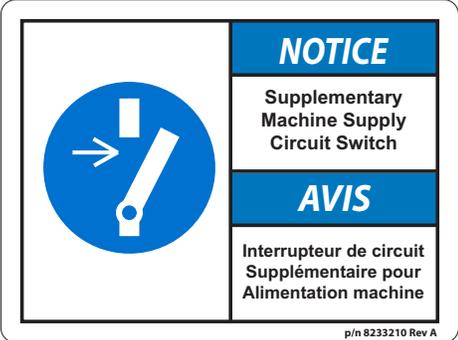
Table 2-13: IO 4-

 <p>The image shows a close-up of the IO 4- ports on a machine. There are four ports: three yellow cables and one green cable. A red box highlights the ports. Below it, a larger image shows the machine's front panel with a red box indicating the location of the IO 4- ports.</p>	<p>(8244700)</p>  <p>The diagram shows four symbols in a row: a circle with an arrow pointing right, a circle with an arrow pointing left, a circle with a vertical line through the center, and a square with a vertical line through the center.</p>
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2.8.1.14.

: /
2-14).
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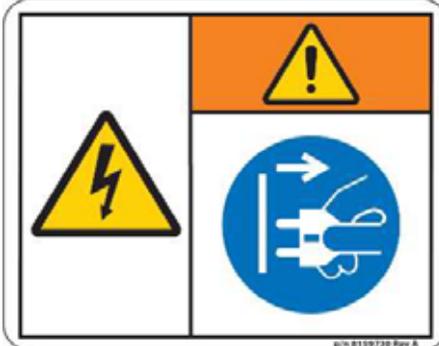
Table 2-14:

	<p>US (8233200)</p> 
	<p>CA (8233210)</p> 
	<p>AU, EU, JP (8233230)</p> 

2.8.1.15.

: / (2-15).

Table 2-15:

	<p>US (8159700)</p> 
	<p>CA (8159710)</p> 
	<p>EU / AU / JP (8159730)</p> 

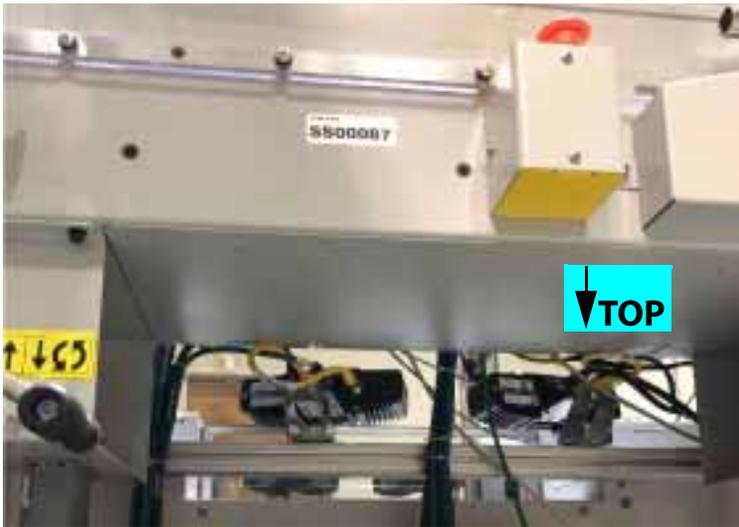
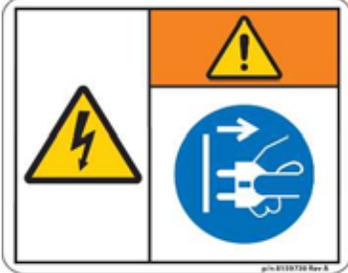
2.8.2.

2.8.2.1.

:
).
:

(2-16

Table 2-16:

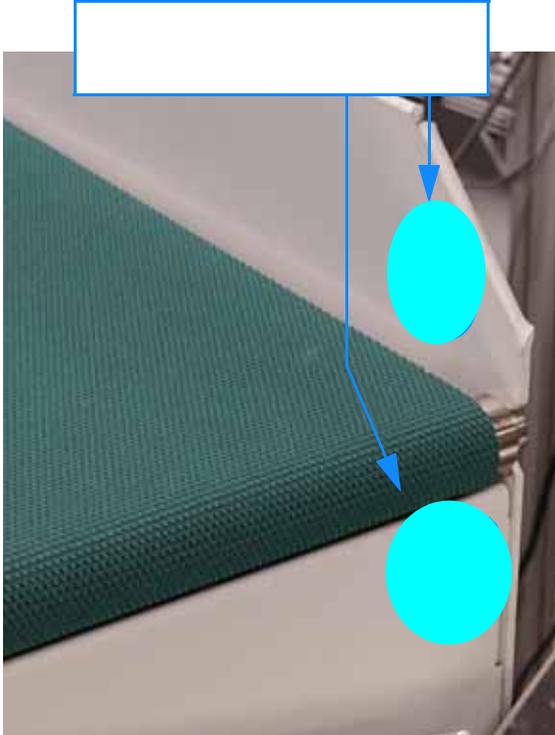
	<p>US (8159700)</p>  <p>CA (8159710)</p>  <p>EU / AU / JP (8159730)</p> 
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2.8.2.2.

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⋮

(2-17).

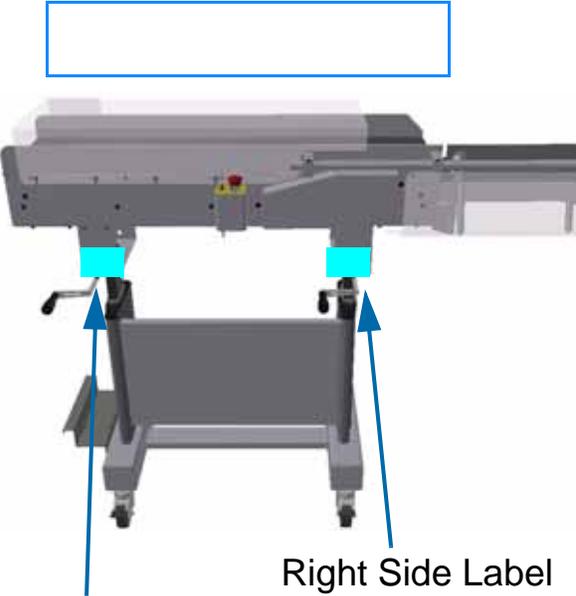
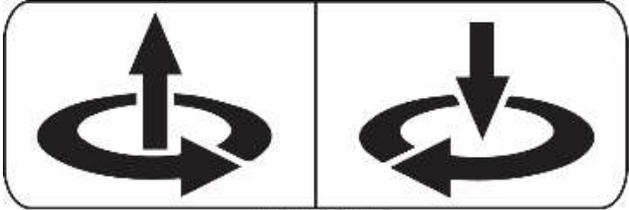
Table 2-17:

	<p>(1637200)</p> 
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2.8.2.3.

:
(2-18).
:
1”

Table 2-18:

 <p>Left Side Label</p> <p>Right Side Label</p>	<p>(8175400)</p>  <p>p/n 8175400 Rev B</p>
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2.8.2.4.

: (2-19).
:

Table 2-19:

	<p>(8174000)</p> 

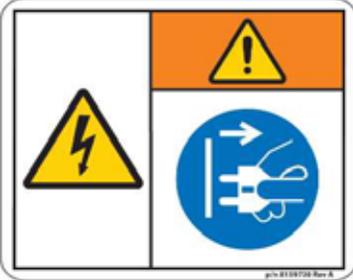
2.8.3.

2.8.3.1.

⋮
⋮

(2-20).

Table 2-20:

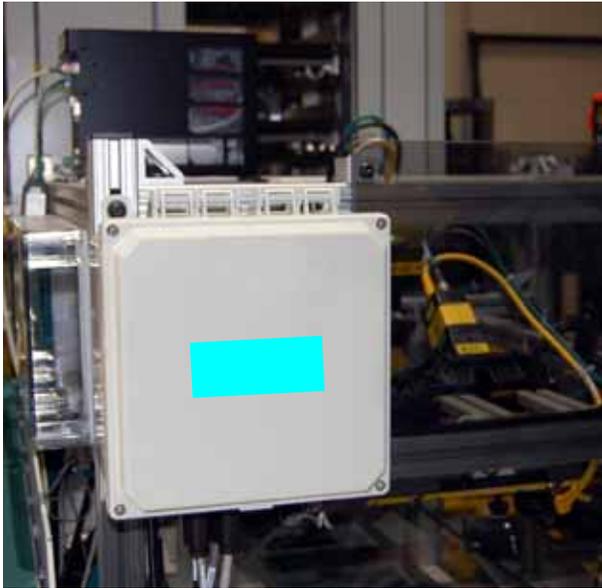
	<p>US (8159700)</p>  <p>CA (8159710)</p>  <p>EU / AU / JP (8159730)</p> 
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2.8.3.2.

⋮
⋮

(2-21).

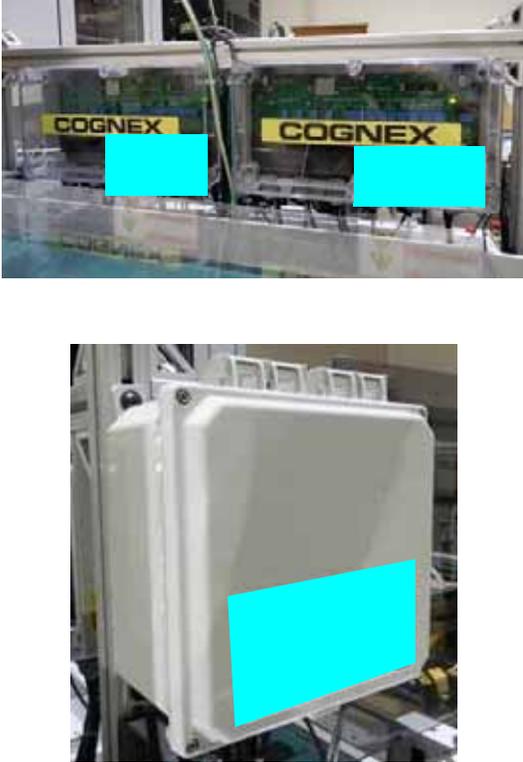
Table 2-21:

	<p>(8174000)</p> 

2.8.3.3.

: , (2-22).
:

Table 2-22:

<p style="text-align: center;">IO</p> 	<p style="text-align: center;">US (8165700)</p>  <p style="text-align: center;">CA (8165710)</p>  <p style="text-align: center;">EU / AU / JP (8165730)</p> 
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2.8.4.

2.8.4.1.

: , (2-23).
:

Table 2-23:

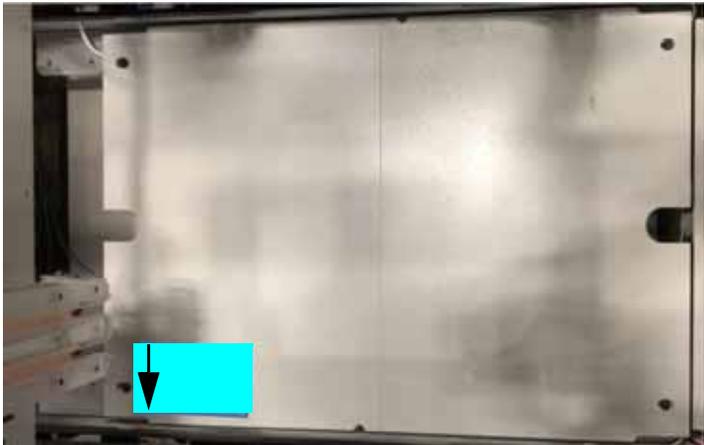
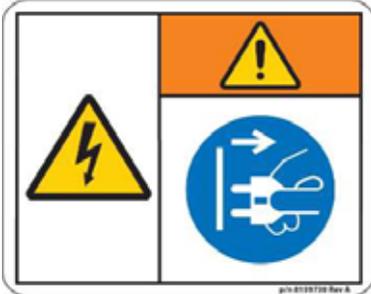
	<p>(8174000)</p> 

2.8.4.2.

⋮

(2-24).

Table 2-24:

	<p>US (8159700)</p>  <p>CA (8159710)</p>  <p>EU / AU / JP (8159730)</p> 
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2.8.4.3.

: , (2-25) .
 :

Table 2-25:

	<p>US (7686200)</p> 
	<p>CA (7686210)</p> 
	<p>EU / AU / JP (7686230)</p> 

2.8.4.4.

: , 200 () (2-26).
:

Table 2-26:

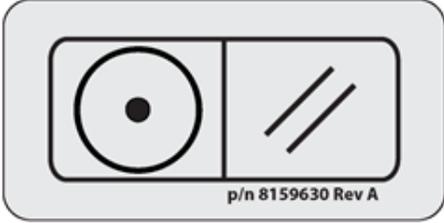
	<p>US (8187900)</p> 
	<p>CA (8187910)</p> 
	<p>EU / AU / JP (8187930)</p> 

2.8.4.5.

⋮

(2-27).

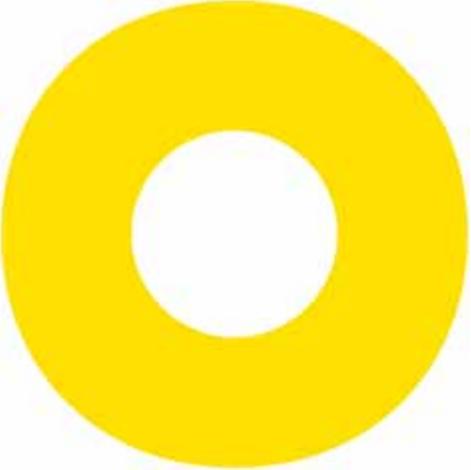
Table 2-27:

 	<p>US (8159600)</p>  <p>CA (8159610)</p>  <p>EU / AU / JP (8159630)</p> 
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2.8.4.6.

: ; (bin) (2-
28).
:

Table 2-28:

	<p>(8156400)</p> 
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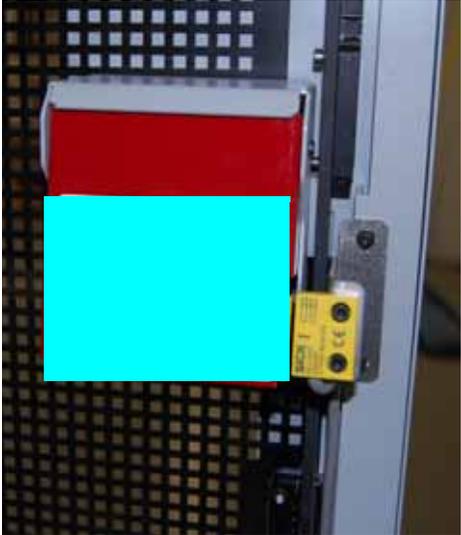
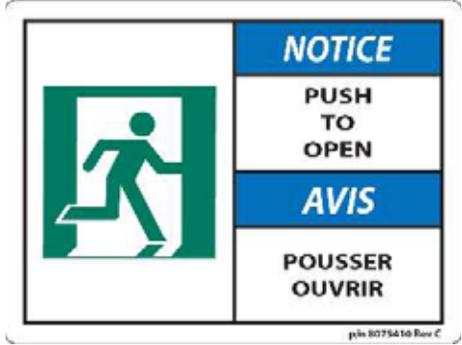
2.8.4.7. “

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2-29).

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Table 2-29: “PUSH TO OPEN” Label

	<p style="text-align: center;">US (8075400)</p> 
	<p style="text-align: center;">CA (8075410)</p> 
	<p style="text-align: center;">EU / AU / JP (8075430)</p> 

2.8.4.8.

⋮

(2-30).

Table 2-30:

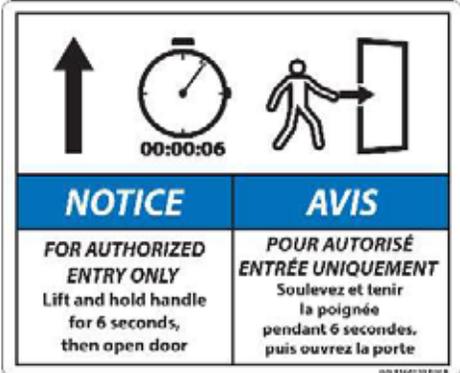
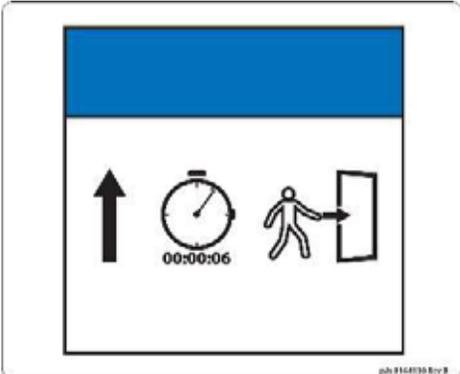
	<p>US (8074400)</p> 
	<p>CA (8074410)</p> 
	<p>EU / AU / JP (8074430)</p> 

2.8.4.9.

⋮

(2-31).

Table 2-31:

	<p style="text-align: center;">US (8164100)</p> 
	<p style="text-align: center;">CA (8164110)</p> 
	<p style="text-align: center;">EU / AU / JP (8164130)</p> 

2.8.4.10.

⋮
⋮

(2-22).

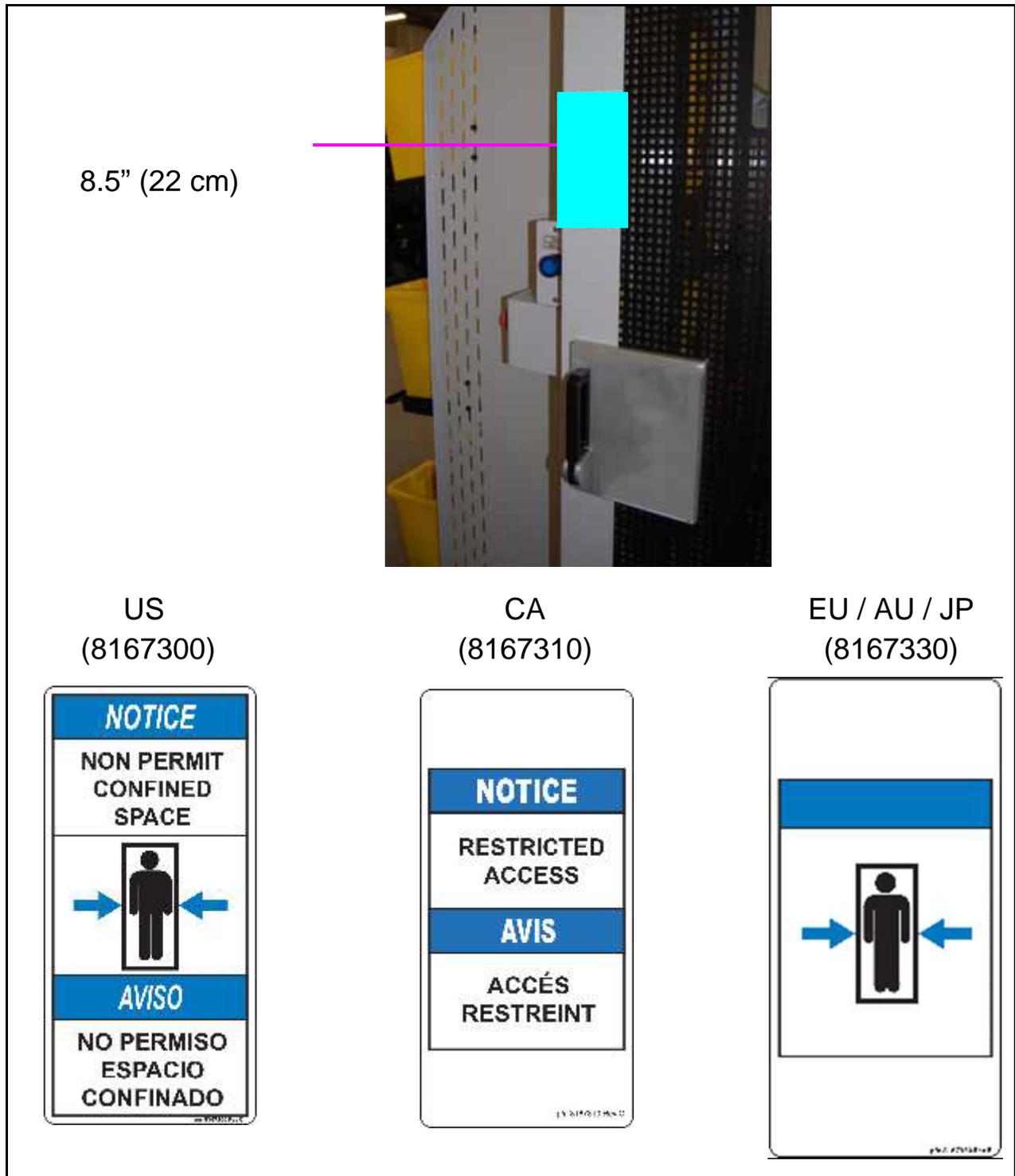
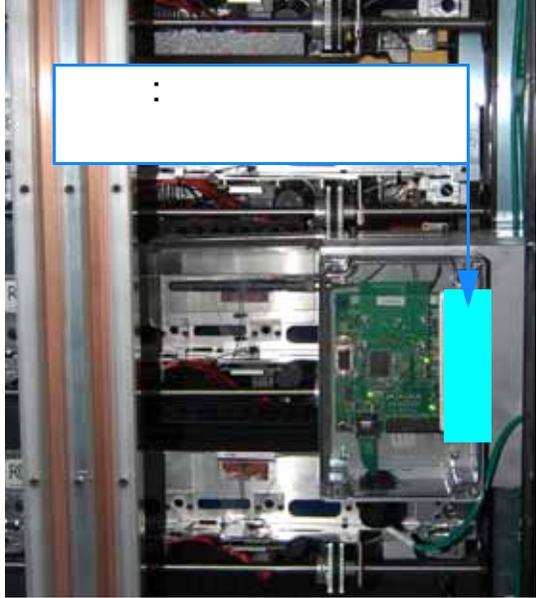
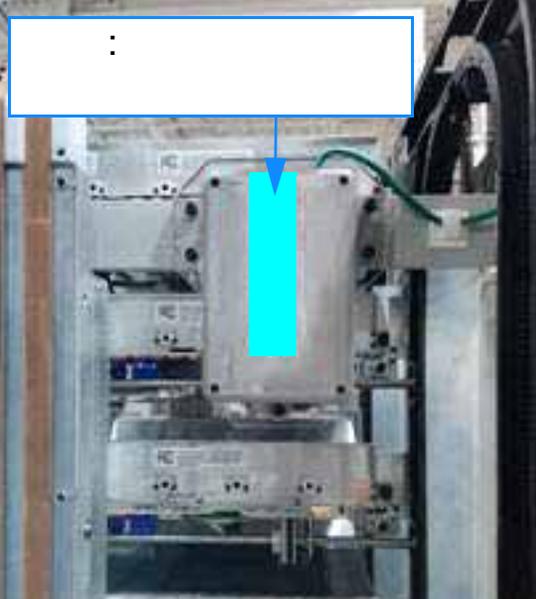


Figure 2-22:

2.8.4.11.

⋮
 :FCC I.C. () (2-32).

Table 2-32:

	<p>US / CA (7682610)</p> <div data-bbox="797 800 1446 961" style="border: 1px solid black; padding: 5px;">  <p>This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.</p> <p><small>Contains FCC ID: VDM2054710 Contains IC: 7175A-2054710 Model: 205471010 OPEX® Corporation</small></p> </div> <p>EU / AU (N/A)</p>
	<p>CE-Mark</p> <p>JP : MIC (7682640)</p> <div data-bbox="881 1434 1360 1591" style="text-align: center;">  <p>R 012-170046 Model: 2054710</p> </div> <p style="text-align: right; font-size: small;">p/n 7682640 Rev C</p>

2.8.5.

2.8.5.1.

: (2-33).
:

Table 2-33:

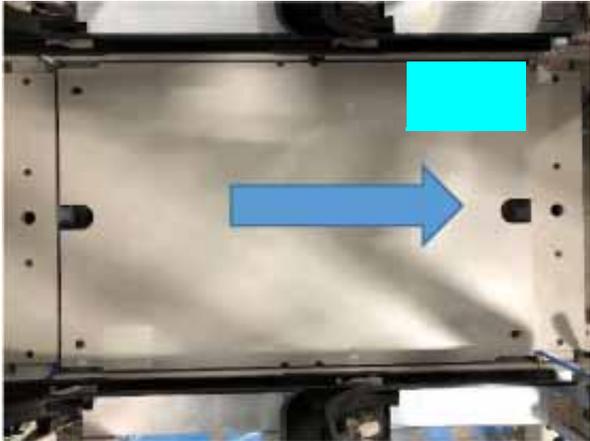
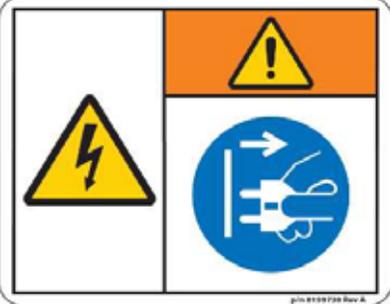
	<p>US (7686200)</p> 
	<p>CA (7686210)</p> 
	<p>EU / AU / JP (7686230)</p> 

2.8.5.2.

⋮
⋮

(2-34).

Table 2-34:

	<p>US (8159700)</p>  <p>CA (8159710)</p>  <p>EU / AU / JP (8159730)</p> 
------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

2.8.5.3.

⋮
⋮

(2-35).

Table 2-35:

	<p style="text-align: center;">US (8187900)</p> 
	<p style="text-align: center;">CA (8187910)</p> 
	<p style="text-align: center;">EU / AU / JP (8187930)</p> 

2.8.5.4.

: , (2-36). 11-
 : 100 , R
 ; 200 , Q (ECO 19-1755).
 :

Table 2-36:

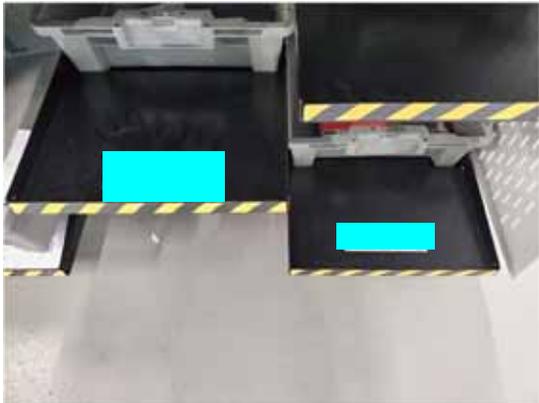
	<p>(8156400)</p> 
------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------

2.8.5.5. “ ”

: 가 (2-37).

: 가 .

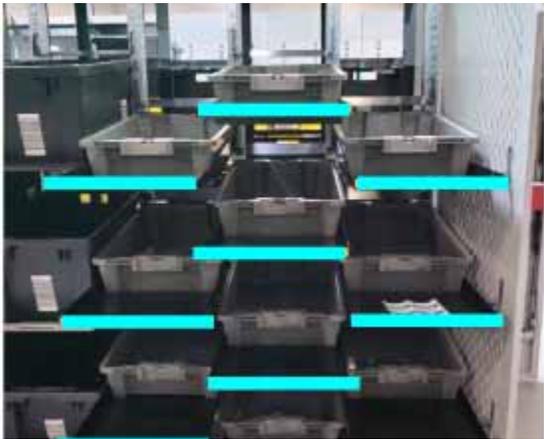
Table 2-37: “ ”

	<p>US (8204700)</p> 
	<p>CA (8204710)</p> 
	<p>EU / AU / JP (8204730)</p> 

2.8.5.6. 가

⋮
⋮ 가 . (2-38).

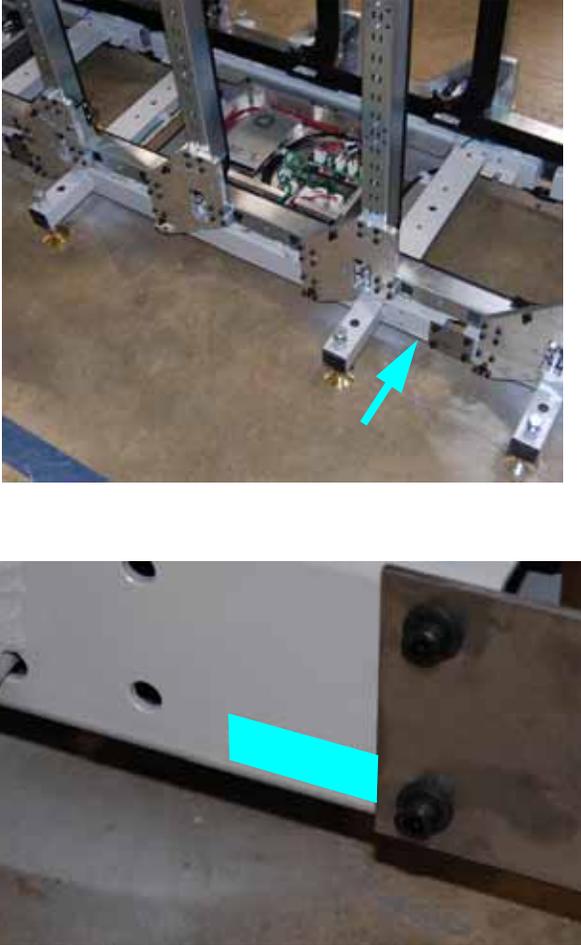
Table 2-38: 가

	<p>(8206000)</p> 
-----------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------

2.8.5.7.

:
:
(2-39).

Table 2-39:

	<p>(8174000)</p> 
------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------

2.8.5.8.

: , (2-40).
:

Table 2-40:

	<p>(8174000)</p> 
------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------

2.8.6. iBOT

2.8.6.1. iBOT

: iBOT , (2-41).
: iBOT .

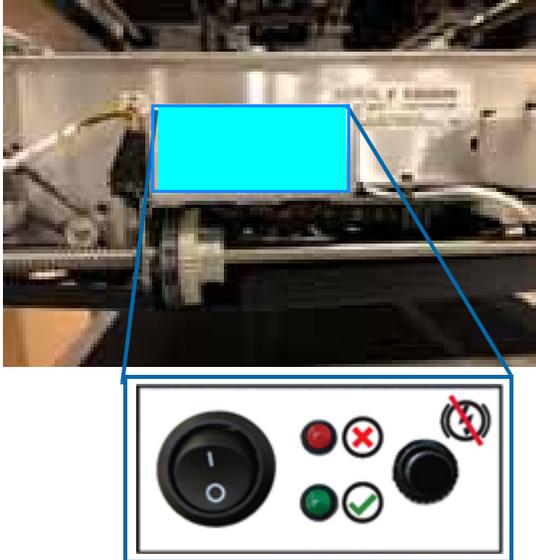
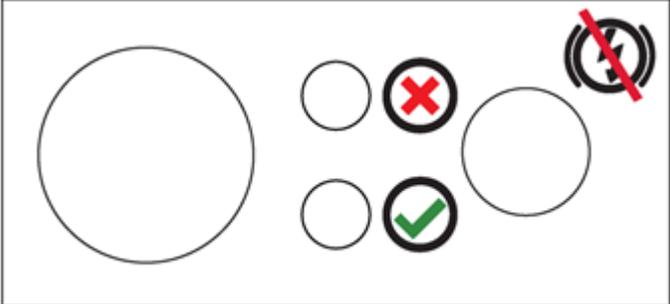
Table 2-41: iBOT

<div data-bbox="207 661 576 730" data-label="Text"> <p>iBOT</p> </div> <div data-bbox="207 743 745 1146" data-label="Image"> </div> <div data-bbox="451 1184 561 1222" data-label="Text"> <p>, iBOT</p> </div> <div data-bbox="190 1331 761 1724" data-label="Image"> </div>	<div data-bbox="1109 1052 1295 1100" data-label="Text"> <p>(7242808)</p> </div> <div data-bbox="802 1152 1435 1383" data-label="Text"> <p>SERIAL # SBXXXXX SURE SORT® IBOT® PART#9161308 <small>ALL RIGHTS RESERVED</small> <small>OPEX CORPORATION MOORESTOWN, NJ MM/YYYY</small></p> </div>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

2.8.6.2. iBOT

:iBOT , iBOT (2-42).

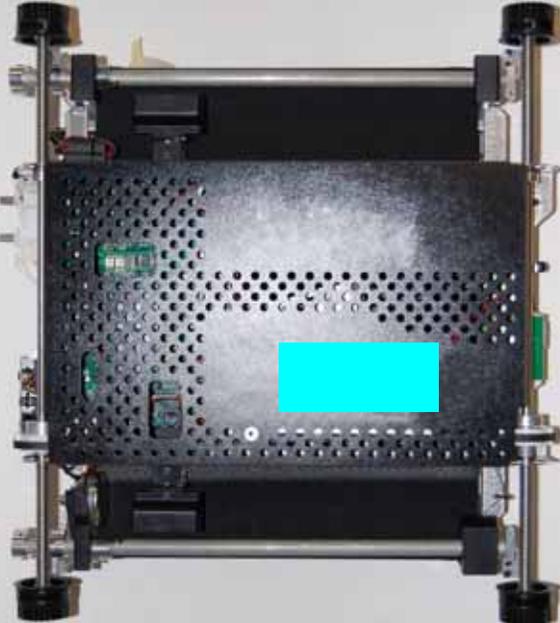
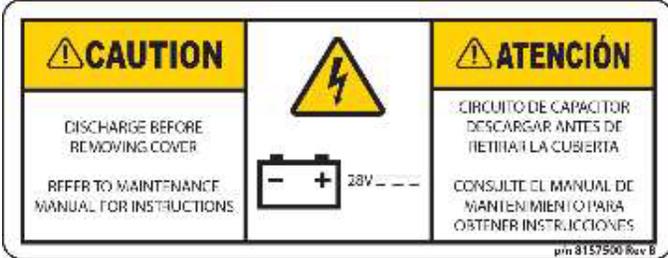
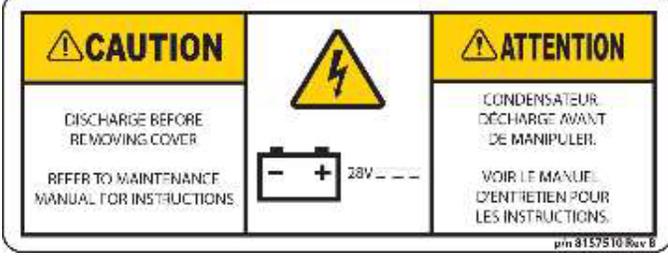
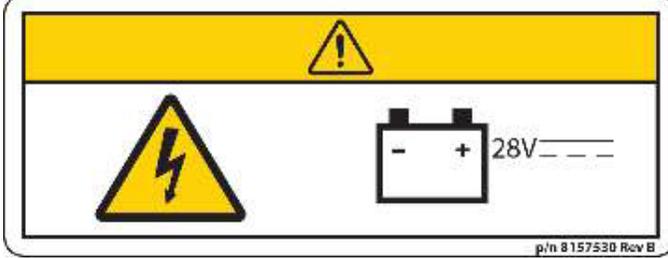
Table 2-42: iBOT

 <p>The photograph shows a control panel with a large black knob on the left, a red button with a white 'X' in the top right, a green button with a white checkmark in the bottom right, and a black button with a white lightning bolt and a red diagonal slash in the top right. A blue callout box highlights the top right area of the panel.</p>	<p>All Regions (7242710)</p>  <p>The diagram shows a large circle on the left, two small circles in the middle, and a larger circle on the right. The top-right small circle has a red 'X' over it, and the bottom-right small circle has a green checkmark over it. The larger circle on the right has a lightning bolt symbol with a red diagonal slash over it.</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

2.8.6.3. iBOT

: iBOT (2-43).

Table 2-43: iBOT

	<p>US (8157500)</p>
	 <p>CAUTION DISCHARGE BEFORE REMOVING COVER REFER TO MAINTENANCE MANUAL FOR INSTRUCTIONS</p> <p>ATENCIÓN CIRCUITO DE CAPACITOR DESCARGAR ANTES DE QUITAR LA CUBIERTA CONSULTE EL MANUAL DE MANTENIMIENTO PARA OBTENER INSTRUCCIONES</p> <p><small>p/n 8157500 Rev B</small></p>
	<p>CA (8157510)</p>
 <p>CAUTION DISCHARGE BEFORE REMOVING COVER REFER TO MAINTENANCE MANUAL FOR INSTRUCTIONS</p> <p>ATTENTION CONDENSATEUR DÉCHARGE AVANT DE MANIPULER VOIR LE MANUEL D'ENTRETIEN POUR LES INSTRUCTIONS</p> <p><small>p/n 8157510 Rev B</small></p>	
<p>EU / AU / JP (8157530)</p>	
 <p><small>p/n 8157530 Rev B</small></p>	

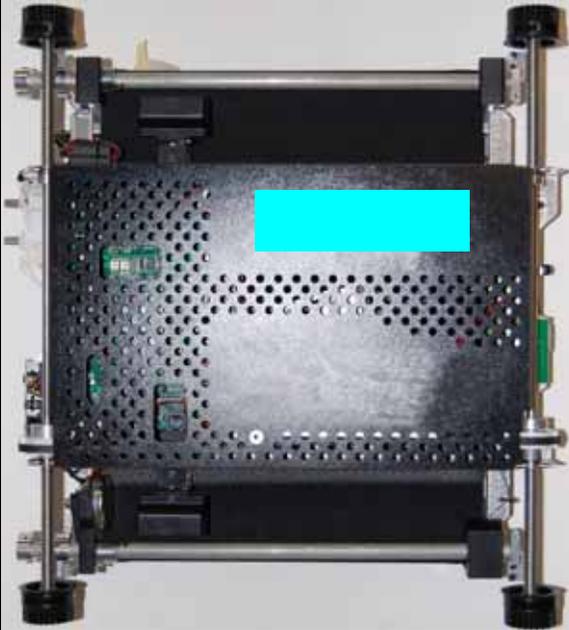
2.8.6.4. iBOT

iBOT (2-44).

:

가 _____ 89 “ 가 ”

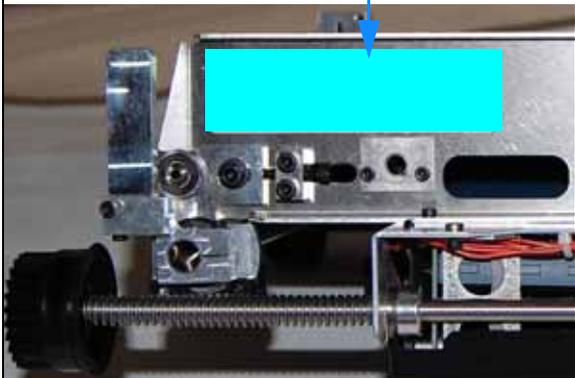
Table 2-44: iBOT

	<p>US (8156300)</p> 
	<p>CA (8156310)</p> 
	<p>EU / AU / JP (8156330)</p> 

2.8.6.5. iBOT

iBOT (2-45).
 :FCC I.C. ()

Table 2-45: iBOT

	<p align="center">US / CA (7682610)</p> <div data-bbox="797 527 1446 688" style="border: 1px solid black; padding: 5px;">  <p>This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.</p> <p><small>Contains FCC ID: VDM2054710 Contains IC: 7175A-2054710 Model: 205471010 OPEX® Corporation</small></p> </div>
	<p align="center">EU / AU (N/A)</p> <p align="center">CE-</p> <p align="center">JP : MIC (7682640)</p>
	<p align="center">  R 012-170046 Model: 2054710 </p> <p align="right"><small>p/n 7682640 Rev C</small></p>

2.9. 가



Product Information Sheet

An MSDS is not required. This information sheet is provided as a service to our customers. An MSDS for the active chemical inside the listed products is available upon request. **For US Customers:** The products referenced herein are exempt articles and are not subject to the OSHA Hazard Communications Standard Requirement 29 CFR 1910.1200. **For EU Customers:** The products referenced herein are not submitted to 91-155 EEC, as they are considered as components and not as a chemical substance. **Notice:** The information and recommendations herein contained are made in good faith and are believed to be accurate at the date of preparation. Maxwell Technologies Inc. makes no warranty expressed or implied.

Product Information

Manufacturer Maxwell Technologies Inc. 9244 Balboa Avenue San Diego, CA 92123 Phone: 858-503-3300 Fax: 858-503-3333	Product: Ultracapacitors
EMERGENCY PHONE: North America Chemtrec Hazmat Communication Center 1 800 424 9300 + 1 703 527 3887 Europe Swiss Toxicological Information Centre +41 (0)44 251 5151	Models: All configurations and versions of PC5, PC10, PC5-5, BCAP0005 and BCAP0010
	Date: June 19, 2009
	Asia Chemtrec Hazmat Communication Center 1 800 424 9300 + 1 703 527 3887

Product Components

Important Safety Note: Ultracapacitors should not be opened, disassembled, crushed, burned, or exposed to high temperatures (>85°C, 185°F), and should be operated only within their defined operating specifications. Failure to adhere to operating specifications could result in poor device performance or unsafe operating conditions. Exposure to the components contained within the ultracapacitor could be harmful under certain circumstances. In case of exposure to ultracapacitor contents, wash affected area for at least 15 minutes with generous amounts of water and seek medical attention. Fires involving these types of ultracapacitors should be extinguished with CO₂, dry chemical, alcohol foam, or all purpose AFFF extinguishing media. Water may be ineffective but should be used to cool fire-exposed containers, structures and to protect personnel.

BOOSTCAP® ultracapacitors are composed of the following major components:

Electrodes:	Activated Carbon
Separator:	Polypropylene or Cellulose
Electrolyte:	Quaternary salt (tetraethylammonium tetrafluoroborate) Organic solvent (acetonitrile)
Other:	Aluminum, steel

Disposal

BOOSTCAP ultracapacitors are neither specifically listed nor exempted from government hazardous waste regulations. The only material of possible concern is the organic solvent, which when discarded or disposed of, is a hazardous waste according to Federal regulations (40 CFR 261). It is listed as Hazardous Waste Number U003, so listed due to its toxicity and ignitability. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements, as these may be more restrictive than federal laws and regulations.

Transportation

Ultracapacitors as articles are not specifically listed nor exempted from hazardous materials regulations (HMR). The U.S. Department of Transportation has provided Maxwell Technologies a written determination regarding Maxwell's PC5 and PC10 BOOSTCAP ultracapacitor products that the materials comprising the ultracapacitors are "...in a quantity and form that does not pose a hazard in transportation. Therefore, the ultracapacitors are not subject to the HMR."

 Maxwell Technologies, Inc. Worldwide Headquarters 9244 Balboa Avenue San Diego, CA 92123 USA Phone: +1 858 503 3300 Fax: +1 858 503 3301	 Maxwell Technologies SA CH-1728 Rossens Switzerland Phone: +41 (0)26 411 85 00 Fax: +41 (0)26 411 85 05	 Maxwell Technologies GmbH Brucker Strasse 21 D-82205 Gilching Germany Phone: +49 (0)8105 24 16 10 Fax: +49 (0)8105 24 16 19	 Maxwell Technologies, Inc. - Shanghai Representative Office Rm.2104, Suncome Liauw's Plaza 738 Shang Cheng Road Pudong New Area Shanghai 200120, P.R. China Phone: +86 21 5836 5733 Fax: +86 21 5836 5620
info@maxwell.com – www.maxwell.com			

Document #1004596.4



7520 Mission Valley Road • San Diego, CA 92108-4400 • USA
Tel: 619.398.9700 • Fax: 619.398.9797 • www.tecategroup.com

**Tecate Group RoHS 2002/95/EC
Including Directives: 2011/65/EU (RoHS 2) &
2015/863/EU (RoHS 3) Amendment to Annex II dated 3/31/16**

Tecate Group certifies that all of the products listed below comply with the requirements of the European Union’s Restriction of the Use of Hazardous Substances in Electrical and Electronic Equipment (“RoHS”) Directive 2002/95/EC, 2011/65/EU and the amendment to Annex II Directive 2015/863/EU dated 3/31/15 and contain less than the threshold percentages of the following substances:

Substance	RoHS Threshold
Cd (Cadmium)	100 ppm 0.01%
Cr VI (Hexavalent Chromium)	1000 ppm 0.1%
Hg (Mercury)	1000 ppm 0.1%
Pb (Lead)	1000 ppm 0.1%
PBBs (Polybrominated Biphenyls)	1000 ppm 0.1%
PBDEs (Polybrominated Diphenyl Ethers)	1000 ppm 0.1%
Bis(2-Ethylhexyl) phthalate (DEHP)	800 ppm 0.08%
Benzyl butyl phthalate (BBP)	800 ppm 0.08%
Dibutyl phthalate (DBP)	800 ppm 0.08%
Diisobutyl phthalate (DIBP)	800 ppm 0.08%

Certified By: James Kroessler

Signature:

Title: Director of Quality Assurance

Issue Date: October 24, 2017

RoHS3 General 20190716



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Products in this certification include:

CMC, CMC(HV), CMCF, CMCS, CMX, CSM, CMCS, CMS

931AF, 932A, 932D, 932AD, 932AF, 933AF, 932X, 933, 933X, 935X

CMR, CD, CMA, CMT

522, 522L, 522Z, 511

92, 92P, 2013S, 2014, 2014S, 2114, 2114Y, 814, 901, 902, 914, 914D, 2101, 2102, 9014, 9114, 2024, 2124, 2124V, 5124V, 7124, 924, 9245, 9245WT, 9247, MPX, MPXM, 2001, 2101, 2101V, 6001, 801, 901, 2012, 6002, 7102H, 7124, 7155, 902, 9024F, 9024R, 9023, 9024

MXEL, MXLH, MXLP, MXLX, MXLXH, MXM, MXMH, MXML, MXMS, MXNP, MXNW, MXS, MXNP, MXNW, MXS, MXW, MXWE, MXWH, MXWL, MXWM, MXWP, MXWRU, MXWX, MXZ, MXZH, MXZM, MXZX, MXZZ, LC, LCE, LG, LGE, 712, 712E, 712L, 724, 724E, 724L, 724S, 724SE, 724SL, 724X, 724Z, RN5, 711, 723, 725E, 725H, 725L, 725W, 725X, 728B, 728L, 730, 730W, 725R, TLL, TRC, TRE, TRS, TRZ, RN, RN7, RN7E, RNB, RNBE, RNH

MXCPA, MXCPB, MXCPH, MXCPP, MXCPT, CPL, CPS, CPU, CPX

PC, TPL, TPLE, TPLS

Ultracapacitor module types: PBM, TC, PBL, PBLE, PBL, PLLLE, PBD, PBL and PC5-5, TC.

All 17- Series ultracapacitor modules.

All 39- Series ultracapacitor cell.

All wire harnesses.

RoHS3 General 20190716

**The Components Group of Tecate Group Policy on European
Registration, Evaluation, Authorization and Restriction of Chemicals
(REACH) Legislation from the European Union (EU)**

Preregistration and registration of substances in articles: Tecate Group – Components Division (Capacitors and Ultracapacitors) does not currently supply any products that would be considered an article with a substance intended to be released during normal and reasonably foreseeable conditions of use. Tecate Group – Components Division therefore, does not have any plans for Registration or preregistration.

Substances of Very High Concern (SVHC) under REACH: Tecate Group – Components Division does not currently have any chemicals used in the production of part numbers included in this COC that are on the list of Substances of Very High Concern. Please see the specific lists on the following page.

Further, the parts covered in this COC do not contain any substances listed in REACH Annex XVII when used for the purposes listed in Annex XVII.

SVHC 201 publish date of 2019-07-16

I will be your REACH contact. If you have any questions, please contact me.

Certified By: James Kroessler
jimk@tecategroup.com



Signature:
Title: QA Manager

File: REACH_201_COC_20190819



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931AF, 932A, 932D, 932AD, 932AF, 933AF, 932, 933, 933X, 935

CMR, CD, CMA

522, 522L, 522Z, 511

92, 92P, 2013S, 2014, 2014S, 2114, 2114Y, 814, 901, 902, 914, 914D, 2101, 2102, 9014, 9114, 914, 914D, 2024, 2124, 2124V, 5124V, 7124, 924, 9245, 9245WT, 9247, MPXM, 2001, 2101, 2101V, 6001, 801, 901, 2012, 6002, 7102H, 7124, 902, 9024F, 9024R

MXEL, MXLH, MXLP, MXLX, MXLXH, MXM, MXMH, MXML, MXMS, MXNP, MXNW, MXS, MXNP, MXNW, MXS, MXW, MXWE, MXWH, MXWL, MXWM, MXWP, MXWRU, MXWX, MXZ, MXZH, MXZM, MXZX, MXZZ, LC, LCE, LG, LGE, 712, 712E, 712L, 724, 724E, 724L, 724S, 724SE, 724SL, 724X, 724Z, RN5, 711, 723, 725E, 725H, 725L, 725W, 725X, 728B, 728L, 730, 730W, 725R, TLL, TRC, TRE, TRS, TRZ, RN, RN7, RN7E, RNB, RNBE, RNH

MXCPA, MXCPB, MXCPH, MXCPP, MXCPT, CPL, CPS, CPU, CPX

PC, TPL, TPLE, TPLS

Ultracapacitor module types: PBM, TC, PBL, PBLE, PBLL, PLLLE, PBD, PBLs and PC5-5, TC.

All 17- Series ultracapacitor modules.

All 39- Series ultracapacitor cells.

File: REACH_201_COC_20190819

2.10.

2-23).

OPEX

가

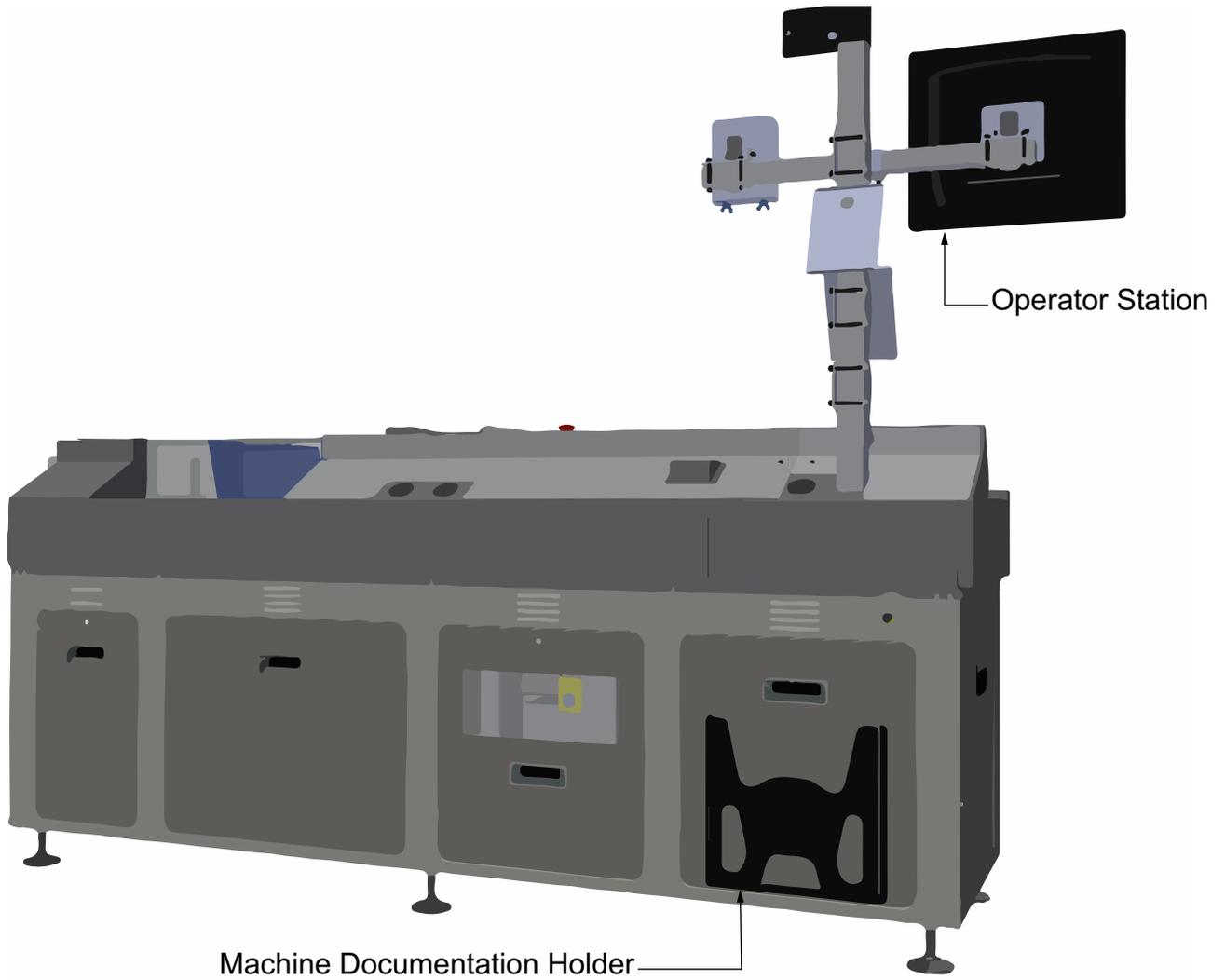


Figure 2-23:

Note:

A “ (200-) () ”

가

()

3. 3

3.1.	.....	94
3.2. Sure Sort™	.....	101
3.2.1. OPEX	.....	102
3.2.2. OPEX ELC.	.....	103
3.3.	.....	104
3.3.1.	.....	104
3.3.2. ( )	.....	104
3.3.3.	.....	105
3.3.4.	.....	105
3.3.5.	.....	106
3.4.	.....	107
3.5.	-	109
3.6.	- (EU).....	110
3.7.	-	111
3.8.	.....	113
3.8.1. 가	.....	113
3.8.2. FCC :	.....	114
3.9.	.....	116

3.1.

OPEX Sure Sort™ “ ” “ ” ,
(bin) .
Sure Sort , , ,
(3-1).

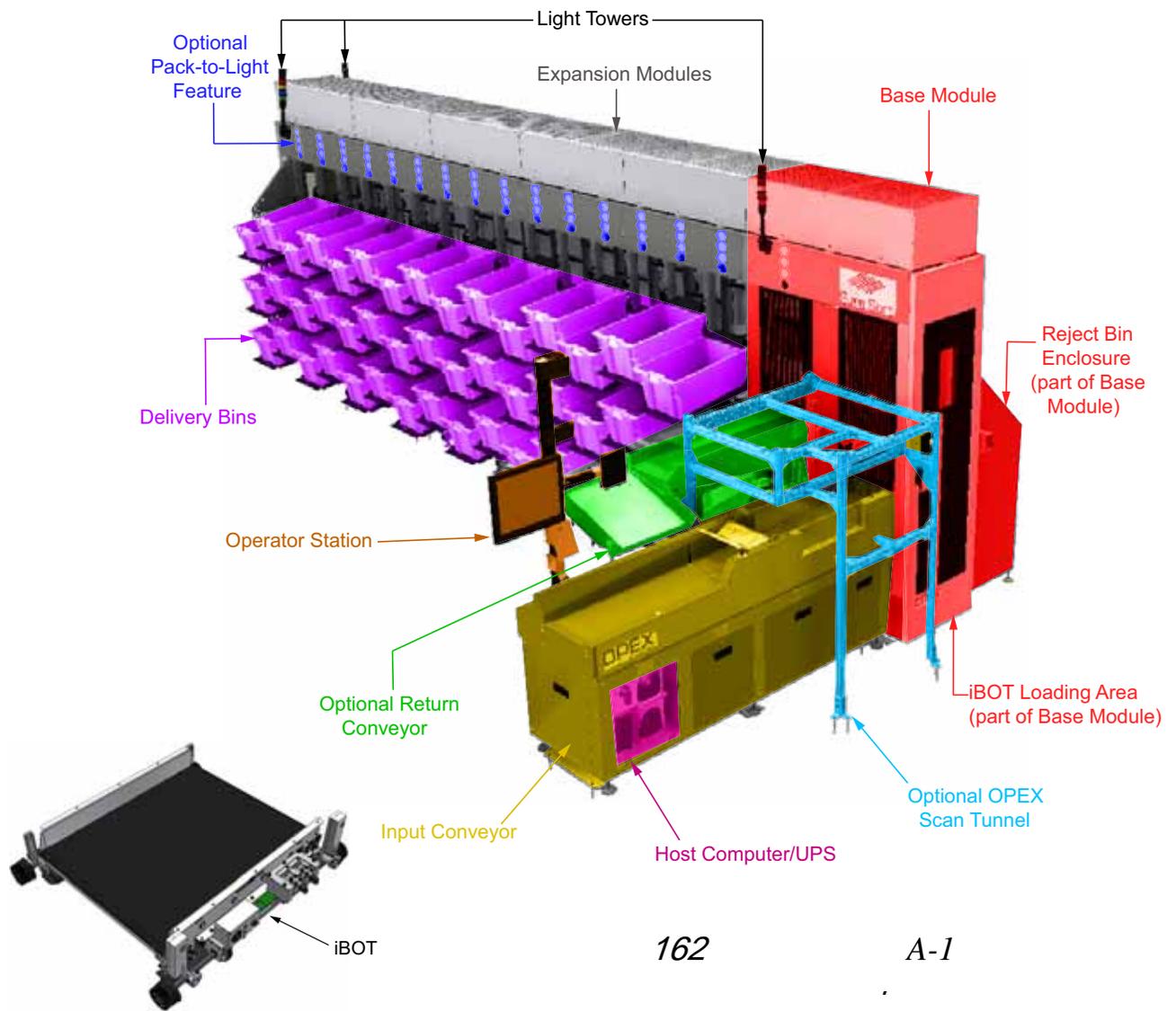


Figure 3-1: Sure Sort -

Sure Sort

Note:

() ()
 (200-) ()”

A “

iBOT

1

(3-2).

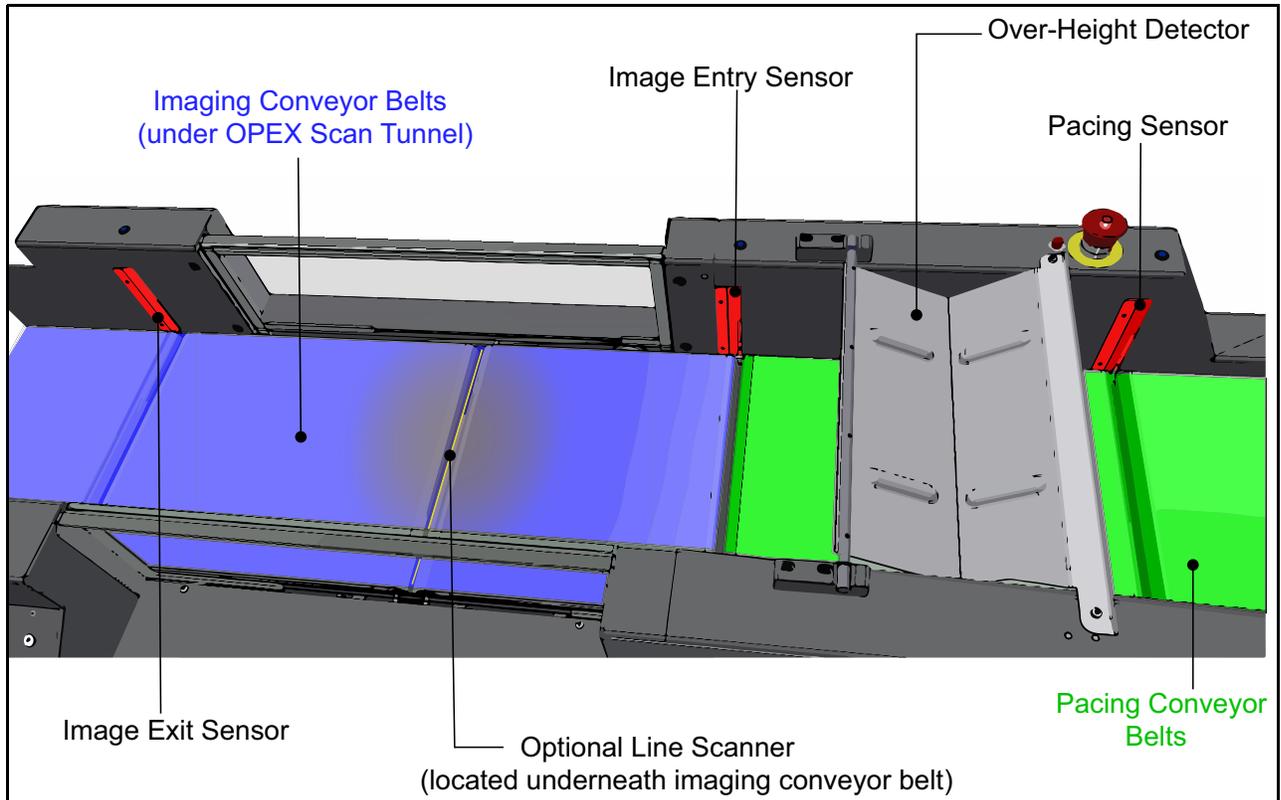


Figure 3-2:

Sure Sort

(102).

& UPS -

® 10 / 64bit / 8Gb /

Raid1 SSD
 ELC

가

Sure Sort
 . UPS

ELC - (WMS)
(105 "OPEX ELC").

OPEX ()-

7

("OPEX")
가 " ")
(3-3). I/O I/

O

가

RS232

I/O

Com 1

ELC



Figure 3-3:

(RTM)
(1-4).



Figure 3-4: RTM

(bin),
iBOT

(E-Stop)
Sure Sort

가

가

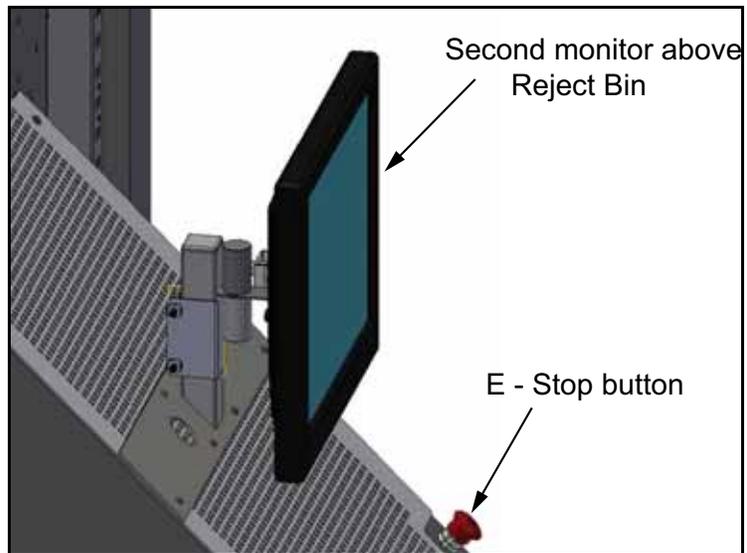


Figure 3-5:

- iBOT 가 가
- iBOT
- Sure Sort 22 iBOT

() -

Sure Sort

iBOT 가 (bin) 11
 가 (bin)

(bin) - 4", 7" 12" (10.16,
 17.78 30.48cm) (bin)

(bin) LED () - 가 (PTL)
 가 WMS

(bin) (PTL) 255 LED
 , " (bin) 가 , (bin) 가 ,
 . PTL , 가 "

LED

가

:

- LED (3-6).



Figure 3-6: LED

- (bin) LED “ ” (3-7).

4 LED

가 (bin)

12 LED

(bin)

: (bin) ,

(bin)

, (bin) , (bin)

3 (bin)



Figure 3-7:

()- 가
(3-8).



Figure 3-8:

()- 가
(3-9).



Figure 3-9:

3.2. Sure Sort™

Sure Sort™	OPEX	ELC ()
(WMS)	OPEX	ELC ()
1. 가			
2.			ELC
3. ELC		(WMS)	
4.	(WMS)	(bin)	ELC
5. ELC (bin)		OPEX	
6. iBOT			
7. ELC			
8. ELC		(WMS)	

3.2.1. OPEX

OPEX

(3-10).

, iBOT

/

. OPEX

(INtime)

.

,

, iBOT

).

OPEX

ELC

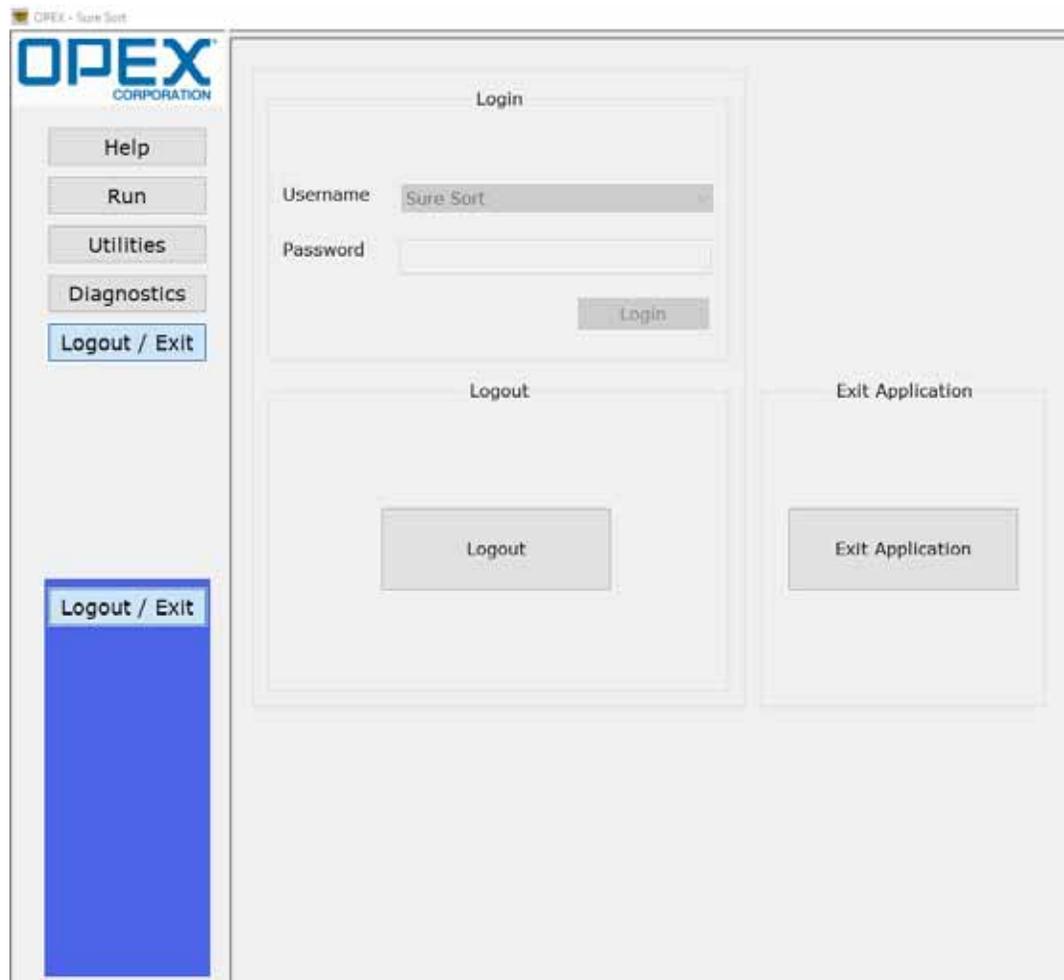


Figure 3-10:

3.2.2. OPEX ELC

OPEX ELC (Sure Sort
WMS (3-11). ELC
WMS (bin) (bin)
, iBOT
, ELC (OPEX ,
) .

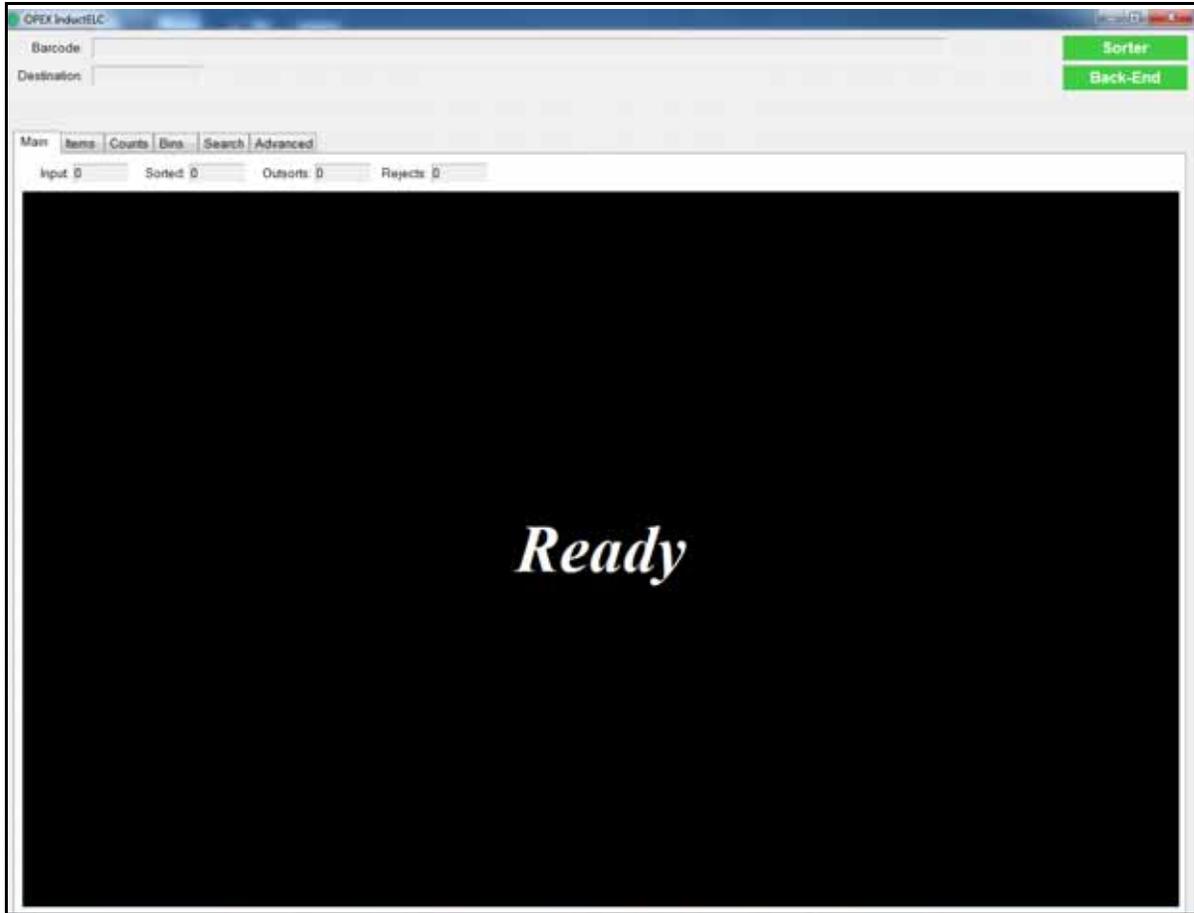


Figure 3-11: OPEX ELC -

3.3.

3.3.1.

	<ul style="list-style-type: none"> • 555.6" (14.11 m) 11 • 가 105" (2.7 m)
	<ul style="list-style-type: none"> • 132" (3.35 m)
	<ul style="list-style-type: none"> • 102" (2.6 m)
	<u>109 "</u>
	<u>110 " - "</u> <u>113 " - (EU)";</u> <u>114 " - "</u>

3.3.2.

()

	2" 15" (5.08 cm 38.1 cm)
	2" 12" (5.08 cm 30.5 cm)
	0.007" 4.0" (0.018 cm 10.16 cm)
	5 lbs. (2.27 kg)

3.3.3.

iBOTs	22
(Bin)	4" (10.16 cm), 7" (17.78 cm), 12" (30.48 cm)
	3,600 가
	<ul style="list-style-type: none"> • 6- OPEX • •
	WMS
(PTL)	LED (: 가 (bin)
	11

3.3.4.

							1 (m ²)
	24" (60.96 cm)	82" (208.28 cm)	13.7 ft ² (1.27 m ²)	71" (180.34 cm)	714 lbs (323.87 kg)	714 lbs (323.87 kg)	33 lb/ft ² (161.12 kg/m ²)
	34.5" (87.63 cm)	58.5" (148.59 cm)	14.0 ft ² (1.30 m ²)	89" (226.06 cm)	668 lbs (303 kg)	1160 lbs* (526.17 kg)	83 lb/ft ² (405.24 kg/m ²)
	57" (144.78 cm)	44.5" (113.03 cm)	17.6 ft ² (1.64 m ²)	89" (226.06 cm)	220 lbs (99.79 kg)	2058 lbs* (933.49 kg)	117 lb/ft ² (571.24 kg/m ²)
	25.5" (64.77 cm)	68.5" (173.99 cm)	12.2 ft ² (1.13 m ²)	46" (116.84 cm)	215 lbs (97.52 kg)	215 lbs (97.52 kg)	17.8 lb/ft ² (86.91 kg/m ²)
	39.5" (100.33 cm)	39.5" (100.33 cm)	10.8 ft ² (1.00 m ²)	60" (152.40 cm)	161 lbs (73.03 kg)	161 lbs (73.03 kg)	14.9 lb/ft ² (72.75 kg/m ²)

Note: (*)

7 (bin) 350lbs,
50lbs
100lbs

3.3.5.

	TÜV (), CE, FCC
	<p>11 Sure Sort</p> <p>-</p> <p>*</p> <ul style="list-style-type: none"> • : 78.4 dB - 60.1 dB Leq • (): 74.3 dB Leq <p>*</p>
	<p>: 40° ~ 90°F (4° ~ 32°C)</p> <p>: -20° ~ 140°F (-29° ~ 60°C)</p> <p>: 32° ~ 100°F (0° ~ 38°C)</p>
	40% ~ 95% RH
	<2000m

3.4.

12).

(3-

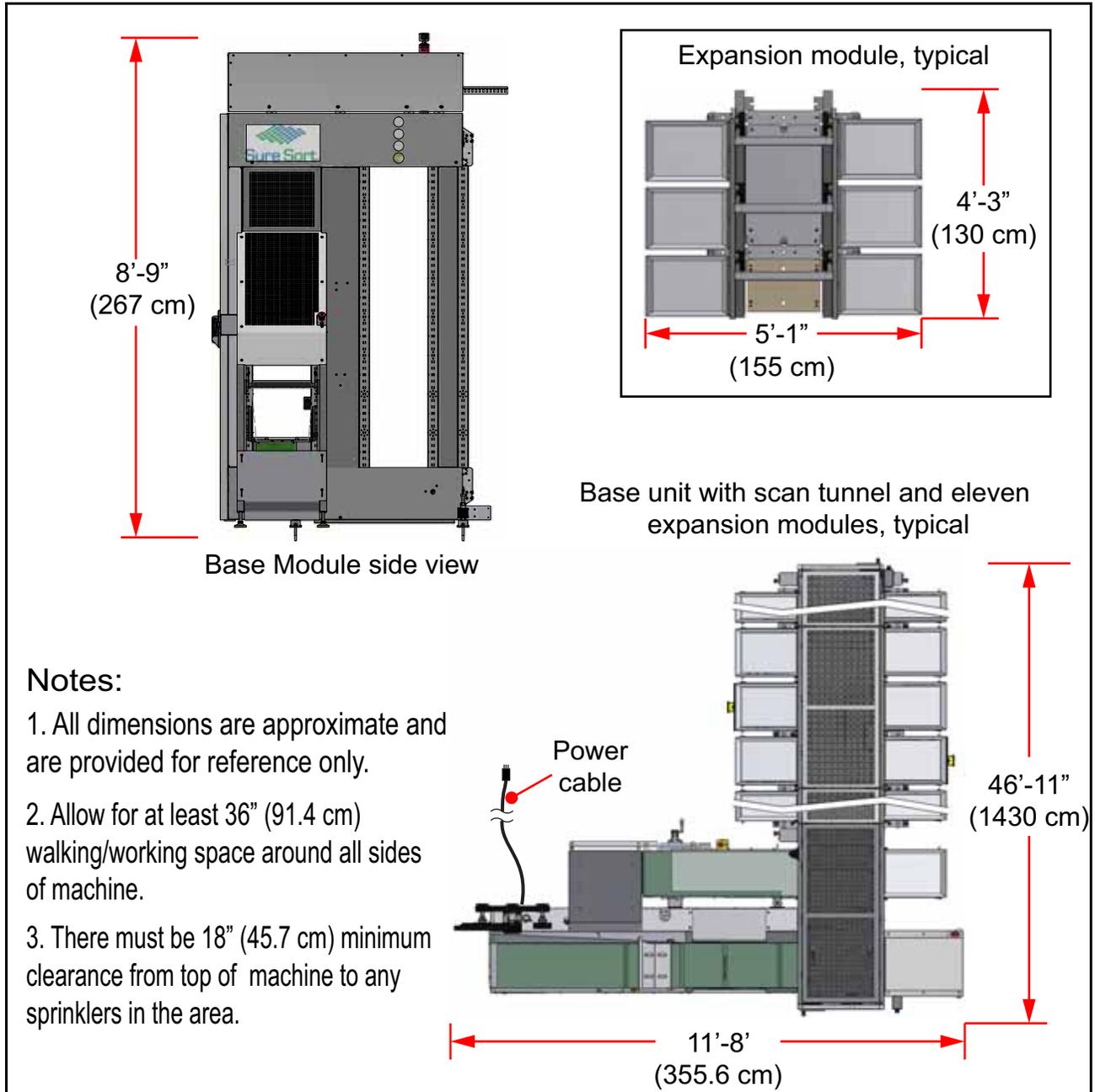


Figure 3-12:

Note:

A “ ()
(200-) ()”

3.5.

- Sure Sort 120/208 VAC, , 60Hz (2 + +)
) AC
- = 208VAC (+6%/-10%)
 - = 120VAC (+6%/-10%)
- 15 ft. (4.57 m) 10/4 SO , AC
 NEMA
- NEMA L14-30R (Hubbell HBL2713)
 30Amp 3-14

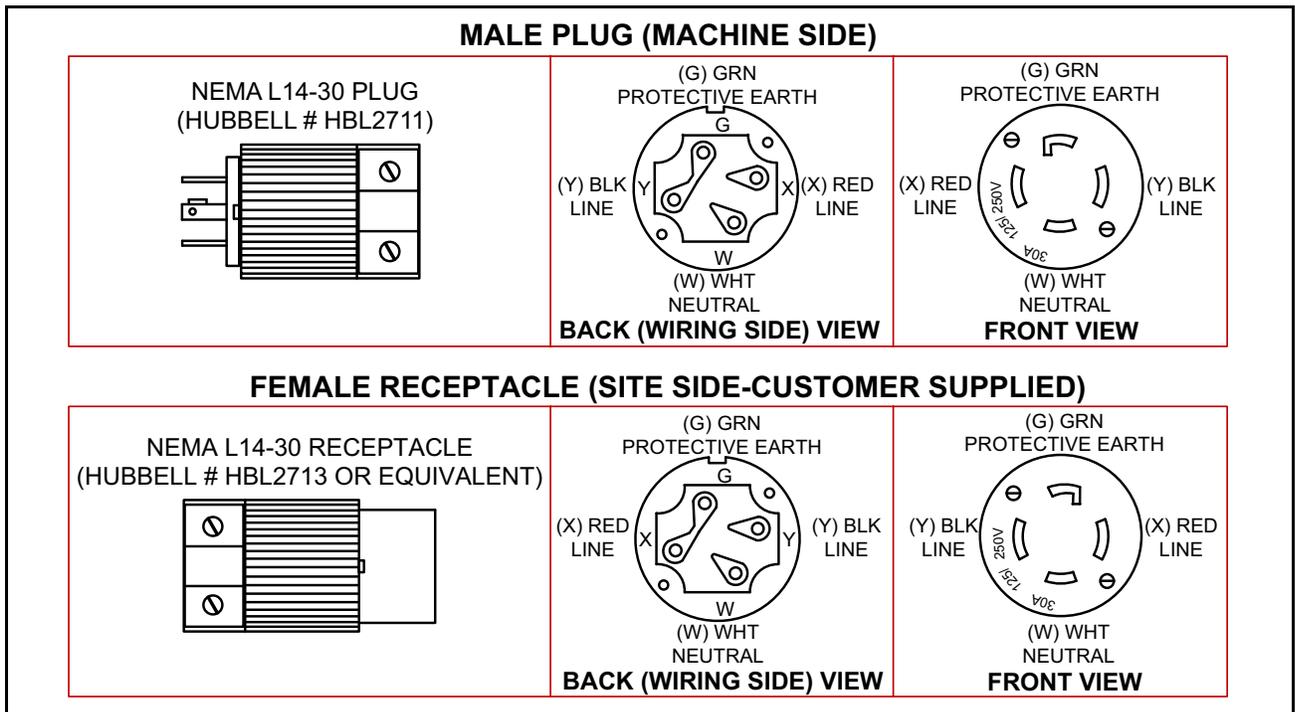


Figure 3-13:

3.6.

(EU)

Sure Sort 230 VAC, 50Hz (1 + +)
) AC
• = 230VAC (+/-10%)
15 ft. (4.6 m) 10/3 HAR
IEC 309 (Walther Electric #230306)
32 Amp
, IEC 309 (Walther
Electric #330306) 3-14 (EU)

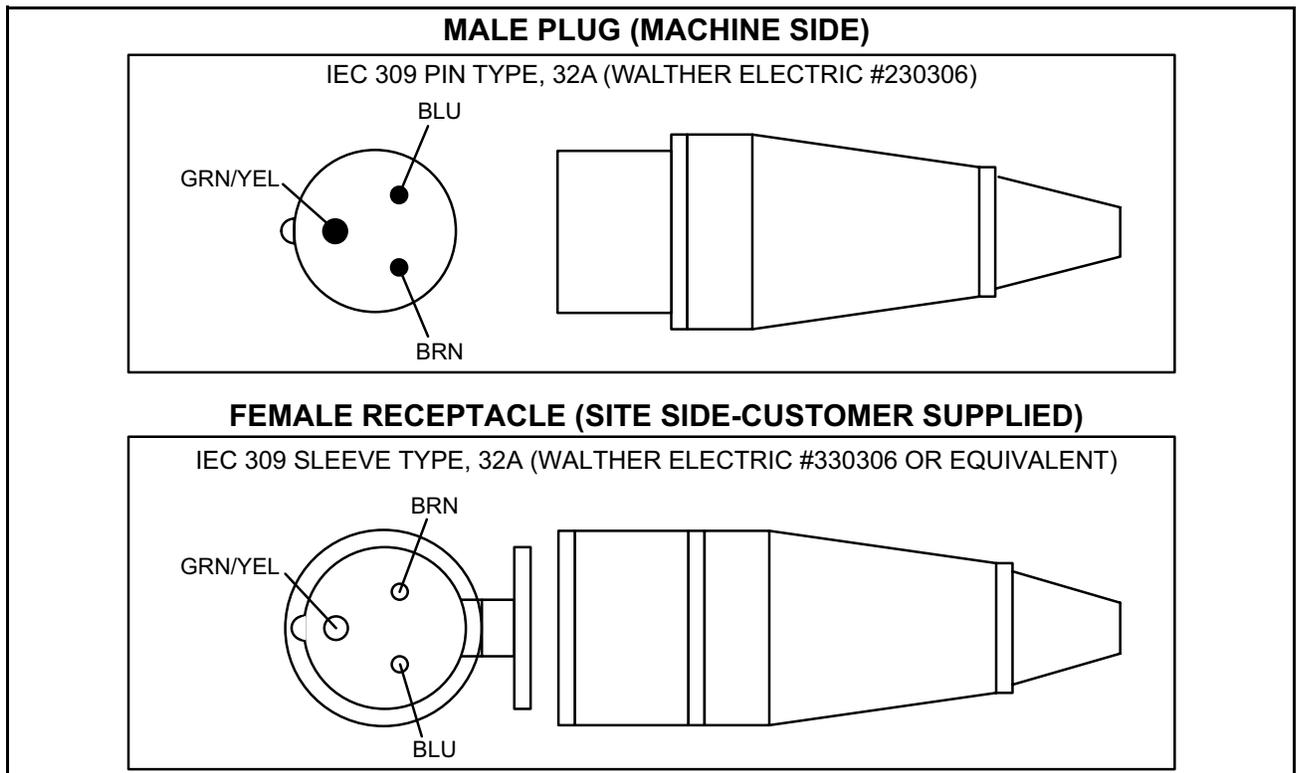


Figure 3-14: (EU)

3.7.

-

200 VAC (+/-10%), 50 Hz AC

200-210 VAC (+/-10%), 60 Hz AC

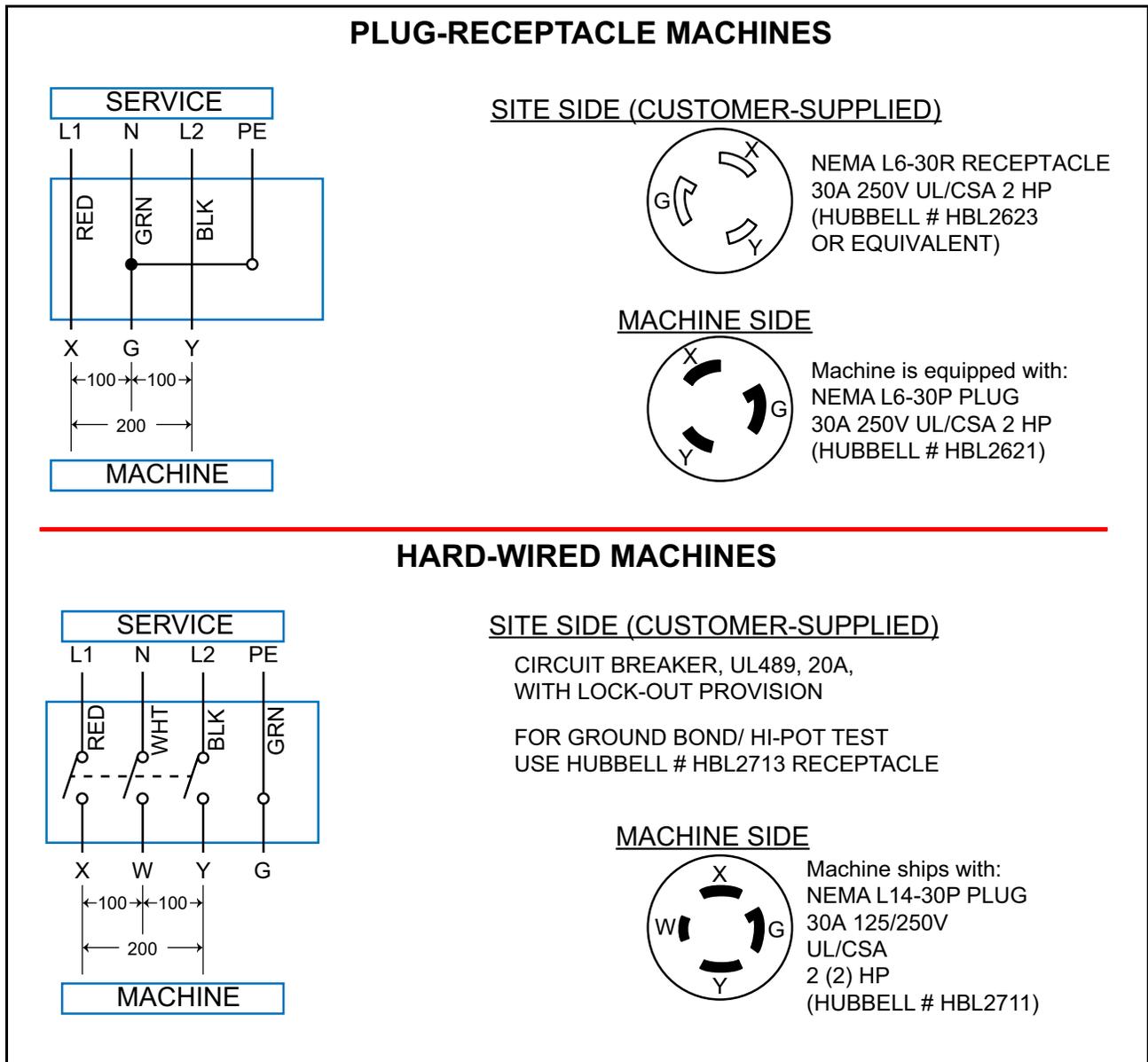


Figure 3-15:

3.8.

Note: Sure Sort

3.8.1. 가

2006/42/EC	
2014/53/EU	
2014/30/EU	
EN 61000-6-2: 2005	(EMC).
EN 61000-6-4: 2011	(EMC) - 6-4 : -
EN 619: 2002+A1:2010	EMC
EN ISO 12100-2:2003	- 2 :
EN 60204-1:2006+A1:2009	
ETSI EN 300 328 V2.1.1 (2016-11)	; 2,4 GHz ISM ; 2014/53/EU 3.2
ETSI EN 301 489-1 V1.9.2 (2011-09)	(ERM); (EMC) ; 1 :
NFPA 79:2018	
UL 2011:2006	
CSA C22.2 No. 301-2016	
UL 61800-5-1 (iBOT only)	가 : - ,

2006/42/EC	
	/ / 가
	1 :
	2 : / / 가
IEC 61508:2010 parts 1-7	3 :
	4 :
	5 :
	6 : IEC 61508-2 IEC 61508-3
	7 :

3.8.2. FCC :

FCC 47CFR PT 15.247 - 902-928 MHz, 2400-2483.5 MHz, 5725-5850 MHz

FCC 47CFR PT 15 SPT B - 47 CFR 15 B:

RSS 210 - () - I

FCC / FDD

FCC 15 가

: (1)

, (2)

OPEX Corporation

(8")

FCC

가

가 /

가

20cm

3.9.

OPEX (3-16) / iBOT (121 3-17) OPEX

2

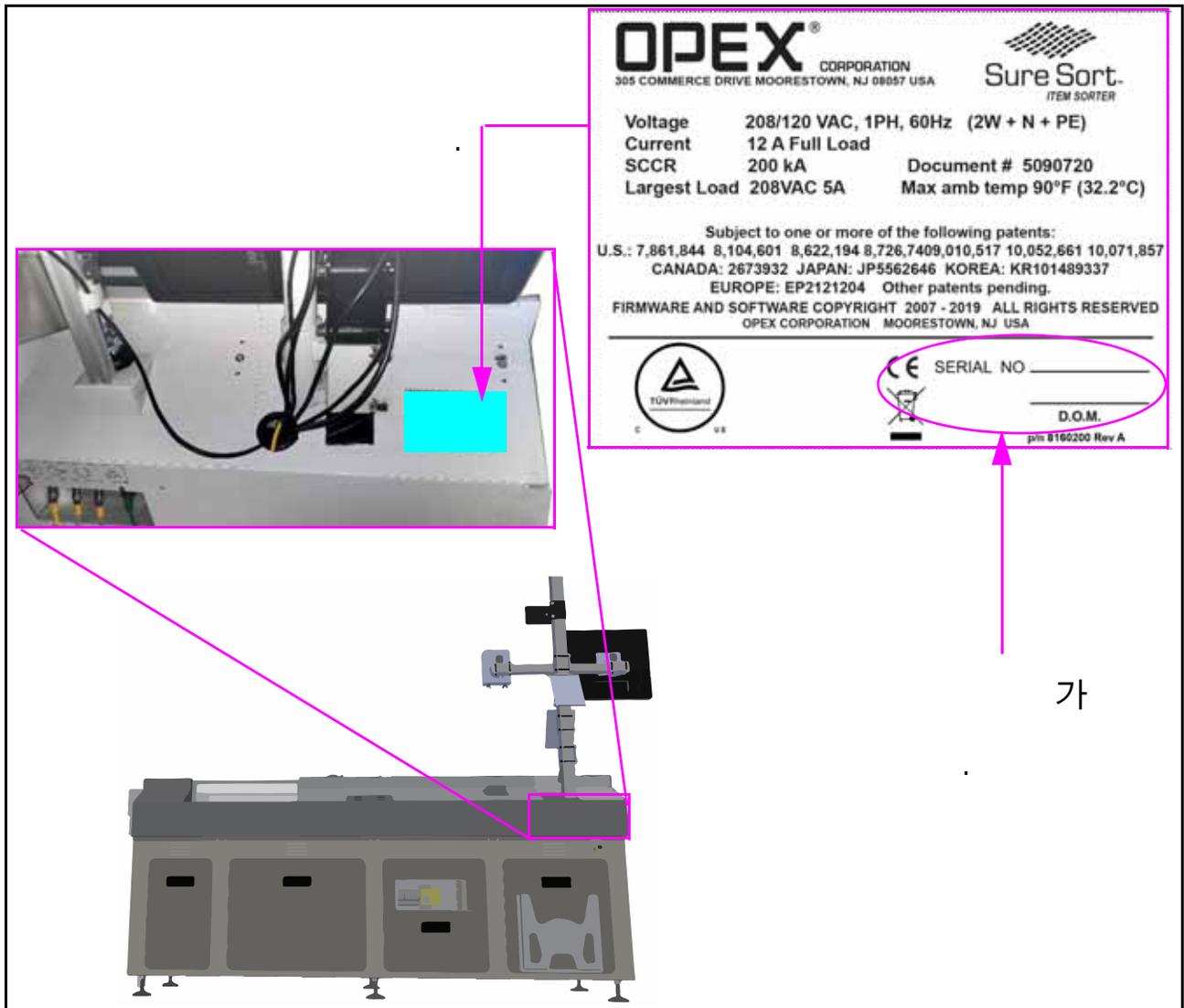


Figure 3-16:

Note:

A : “ () (200-) () ”

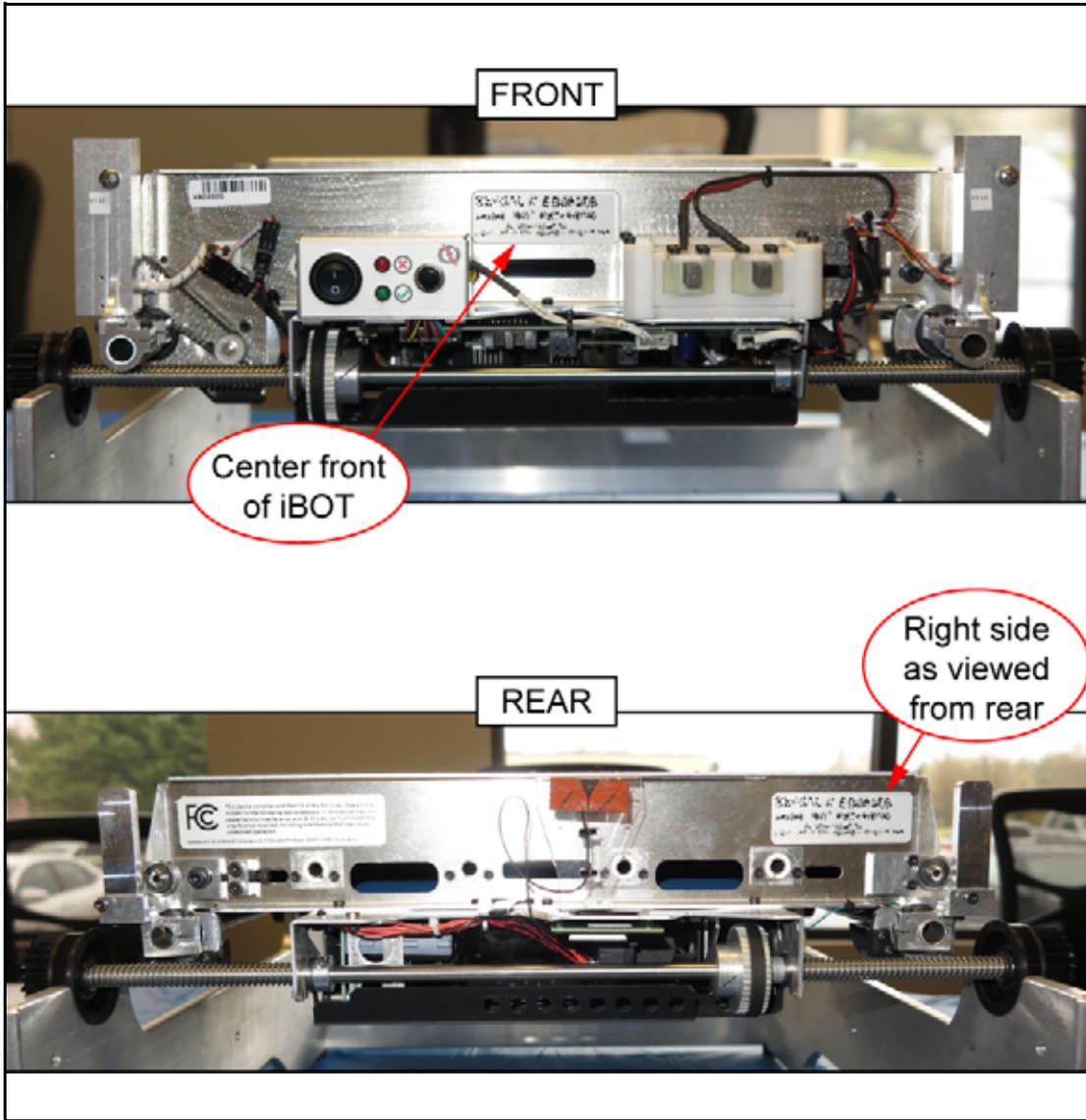


Figure 3-17: iBOT

()

1.

- 1.1. 120
 - 1.1.1. 120
 - 1.1.2. 122

1.1.



WARNING

OPEX Sure Sort
가 :

-
-
-
-

Sure Sort

, (bin)

(가):

-
-
-

가

가

).

PDF

www.opexservice.com

(

).

5

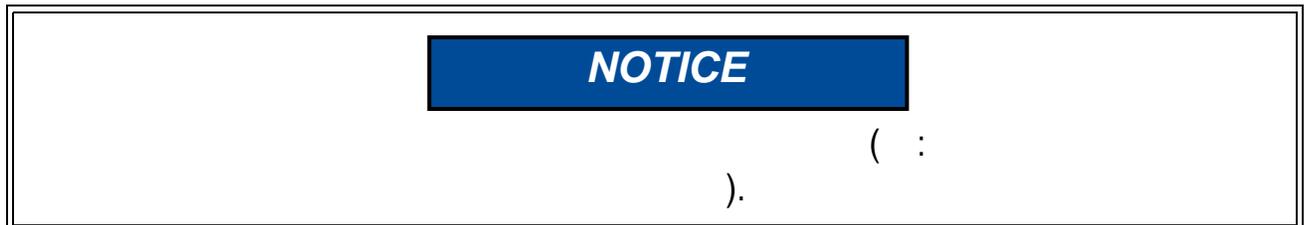
1.1.1.

PDF

Adobe[®] Acrobat Reader[®]*

*Adobe Acrobat Reader Adobe Systems Incorporated

1.1.2.



Note:

2 : “ ”

2.

2.1.	.....	124
2.2.	.....	124
2.2.1.	.....	125
2.3.	.....	126
2.3.1.	.....	126
2.3.2.	.....	130
2.3.3.	.....	135

2.1.

Sure Sort™

2.2.

ELC

(see Figure 2-1).

Main | Items | Counts | Bins | Search | System				
Time Range: Today ▼ 2018-04-09 - 12:00:00am to 2018-04-09 - 11:21:37am				
Overview				
Input			8	
Sorted			6	75.0%
Outsorts			0	0.0%
Rejects			2	25.0%
Barcode Readers				
Auto Read Attempts	8			
Auto Good Reads	7	87.5%		
Auto Bad Reads	1	12.5%		
Manual Reads	0			
Outsorts				
Rejects				
ELC Rejects				
Sorter Rejects				
Unknown bin location	2	100.0%		25.0%

Figure 2-1: ELC -

- : - - - -
- - ELC (가) (bin) 가
- : (bin) , iBOT

2.2.1.

가 (5-2) :

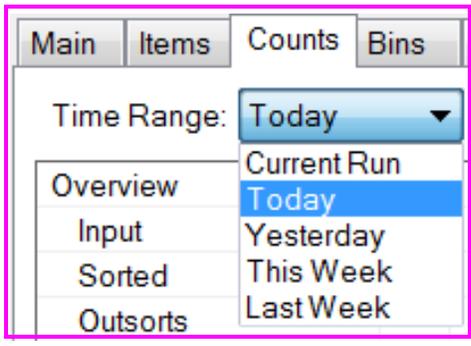


Figure 2-2:

: C:/OPEX/Export/Induct ELC. .CSV

	WMS 가 ELC
	WMS 가 ELC . ELC
	ELC , (가)가 ELC '9' . ELC ELC ().
(bin)	WMS 가 (bin) ELC
	ELC가 WMS 가
	iBOT . 가 가 ELC 가 ELC가 , , 가
	, ELC “ ”

2.3.1.2.

	가
가	가 iBOT
	가 iBOT
iBOTS 가	가 iBOT iBOT iBOT iBOT , iBOT (bin) iBOT iBOT iBOT
	가 (RTC) iBOTS 가
(Bin)	(bin) (bin)
	가

	가 가 (' 가) 가 가 (bin) 가 , 가 .
ELC	ELC (ELC가) '24' 가 ELC ELC (
ELC	가 ELC
ELC	ELC
	(bin) Sure Sort XL 가 .
	Sure Sort XL 가 가
	iBOT Sure Sort XL (bin)

2.3.2.

.CSV

()	() 가 (RTC) 가 iBOT가 iBOT 가
iBOT	(RTC)가 iBOT 가
	(RTC)가 iBOT iBOT
ELC	ELC() ELC ELC 가 , ELC 가
ELC	) 가 ELC(가 가

가 가	가
	가 가
-	(RTC)
iBOT	iBOT iBOT 가 iBOT
iBOT iBOT	iBOT 가 가 iBOT iBOT
iBOT	iBOT 가 가 가
iBOT	iBOT 가 iBOT

iBOT	iBOT iBOT (RTC)가
iBOT	iBOT iBOT iBOT
iBOT	iBOT 가
iBOT	(RTC)가 iBOT iBOT
iBOT	iBOT 가 , iBOT iBOT 가 iBOT 가
	가 (ELC) ELC

iBOT	(RTC)가 iBOT iBOT 가 가 , iBOT
	() (E-Stop)
	iBOT
	, 가 가
iBOT	(RTC)가 iBOT
	, 가 가 가
	가
	(E-Stop)

	가 가 가
	가
	가 가 가 가
	가
	가
100-	100 (E-Stop) 가
200-	200 (E-Stop) 가
	iBOT (bin) 가 iBOT
	(RTC)가
	가 가

가	(bin) iBOT (bin) .
COM	iBOT 가 , 가 .

2.3.3.

가	iBOT 가 가 1 , 가 .
가	가 2 .
가	가 . 2
가	가 2 .
가	가 2 .
가	가 iBOT “ ” . 2 .
가	가 2 .

가	1
가	가
가	가 1 가
가 MCLR	가 / (MCLR) / (MCLR) 2
가	가 2
가	가 1
가	가 가 (CRC) 가 가 (CRC)가 가 2
가	가 1

가	1 .
가	가 . 2 .

()

3.3

3.1.	.....	140
3.2.	/	141
3.3.	.....	142
3.4.	.....	144
3.4.1.	.....	147
3.4.2.	.....	151
3.4.3.	.....	157
3.5.	&	159
3.5.1.	.....	159
3.5.2.	.....	160
3.5.3.	.....	165
3.6.	가	169

3.1.



Sure Sort™

(4-1)

가

Sure Sort™

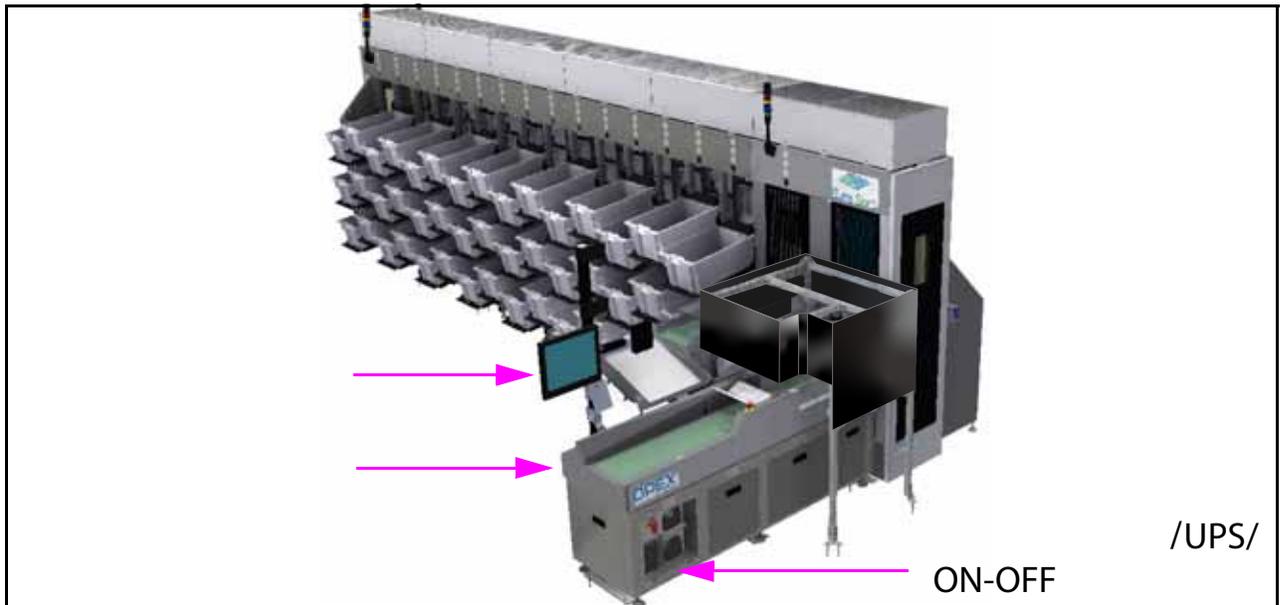


Figure 3-1:

Note: Sure Sort

96

3.2.

1. _____ (4-2) . _____ 33 “LOTO- _____ ON
_____ OFF

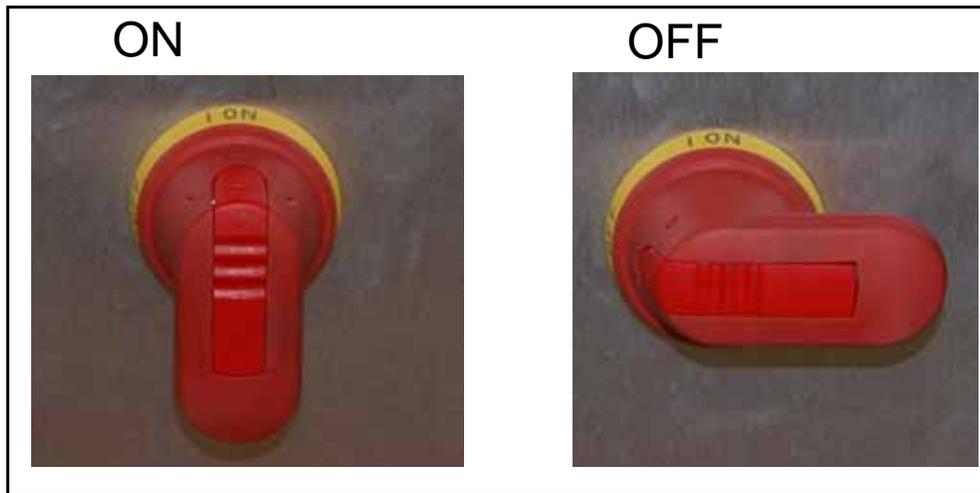


Figure 3-2:

- ON/OFF

2. UPS _____ UPS
3. _____ Windows
1. _____
2. _____
3. UPS _____
4. _____ OFF _____

3.3.

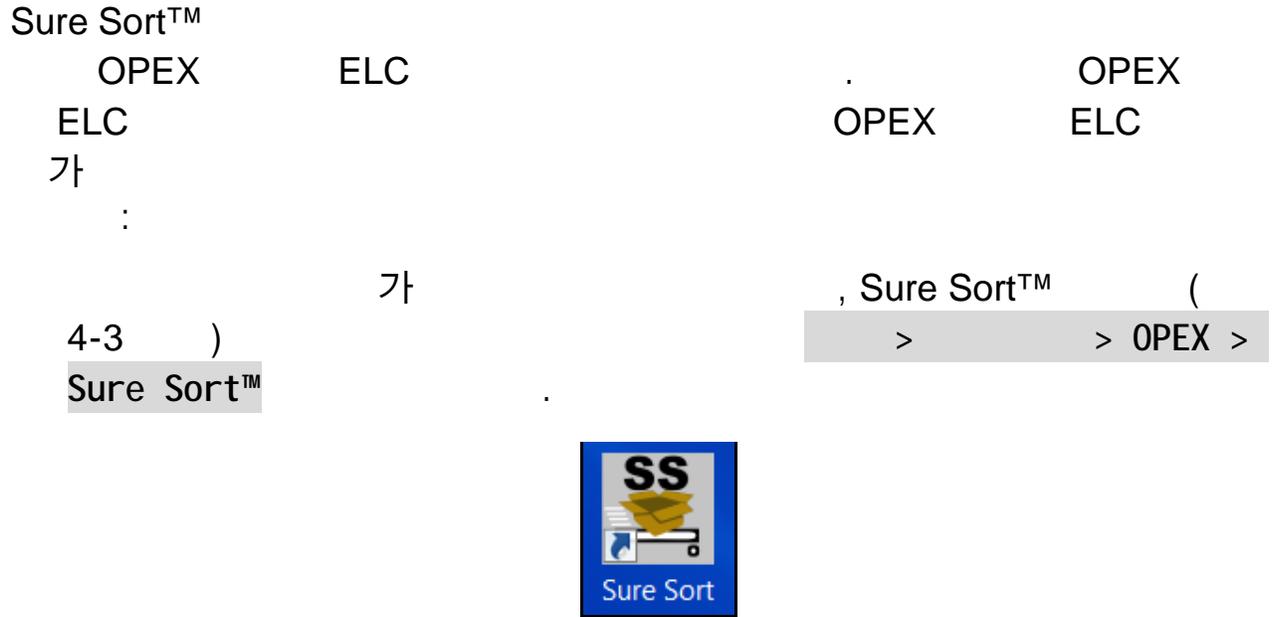


Figure 3-3: Sure Sort

Sure Sort (4-4)
(
126).

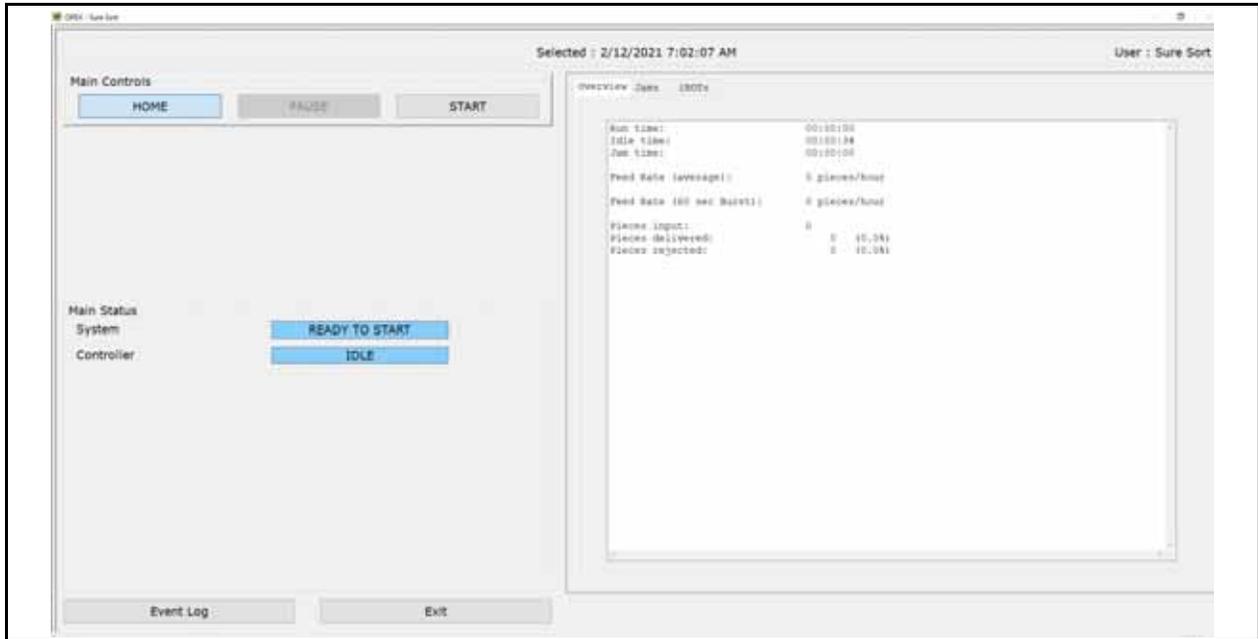


Figure 3-4:

OPEX ELC 가 (4-5)
 OPEX InductElc > OPEX > InductELC > OPEX InductElc



Figure 3-5: OPEX ELC

ELC :
 OPEX ELC 가 Sure Sort 가
 가 가
 “ ”

가
Alt + Tab

가
가 (4-6).



Figure 3-6: Sure Soft

가 , (Figure 3-7
).

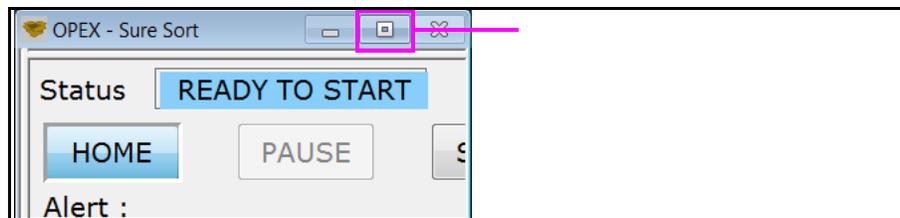


Figure 3-7:

3.4.

Sure Sort™

(Figure 3-8)

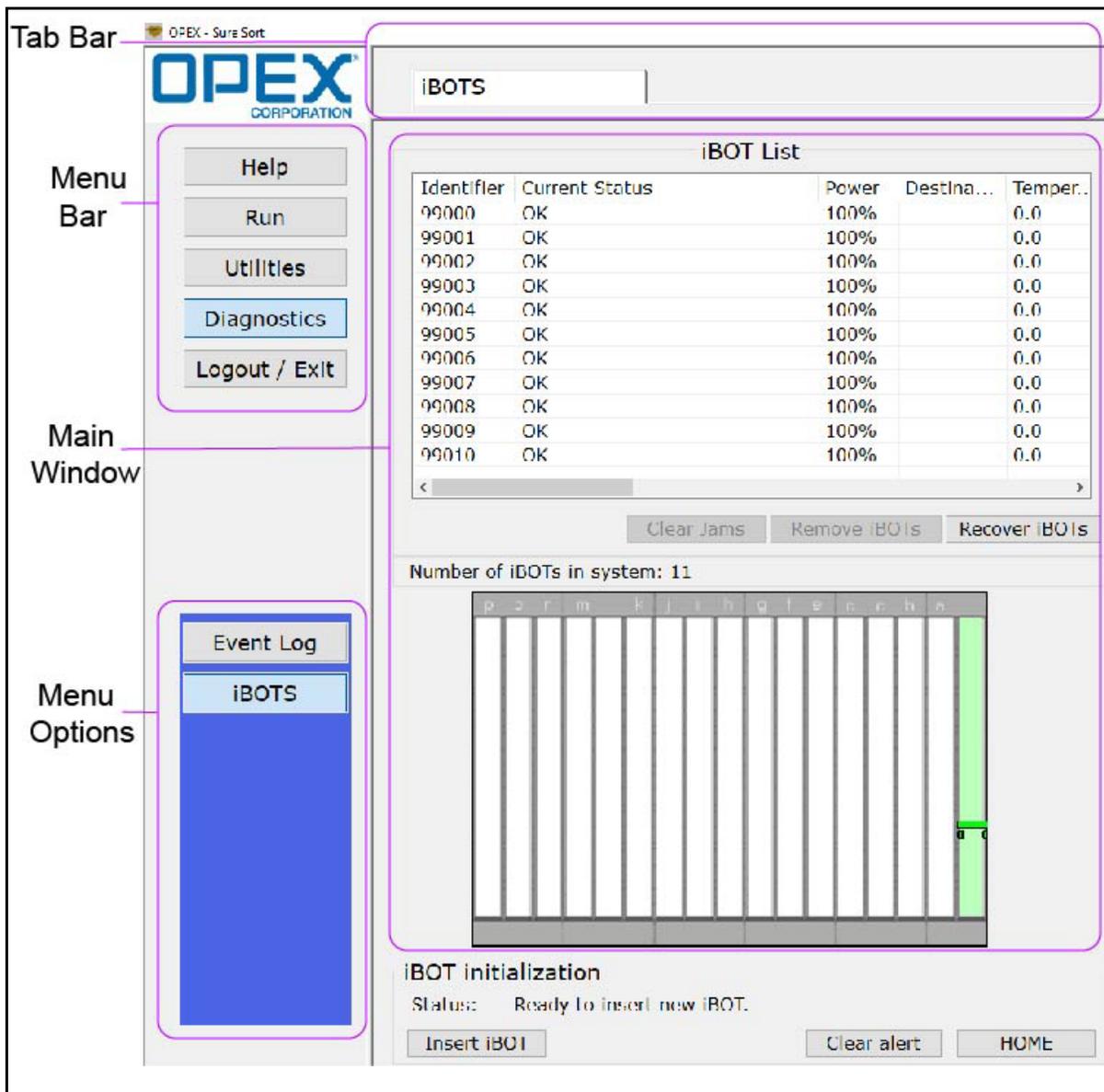


Figure 3-8:

가

:

-
-
-
-

-

- iBOT (

iBOT
).

iBOT

-

/

3.4.1.



:

-
- 가
-
- iBOT

가

가

:

(4-9).

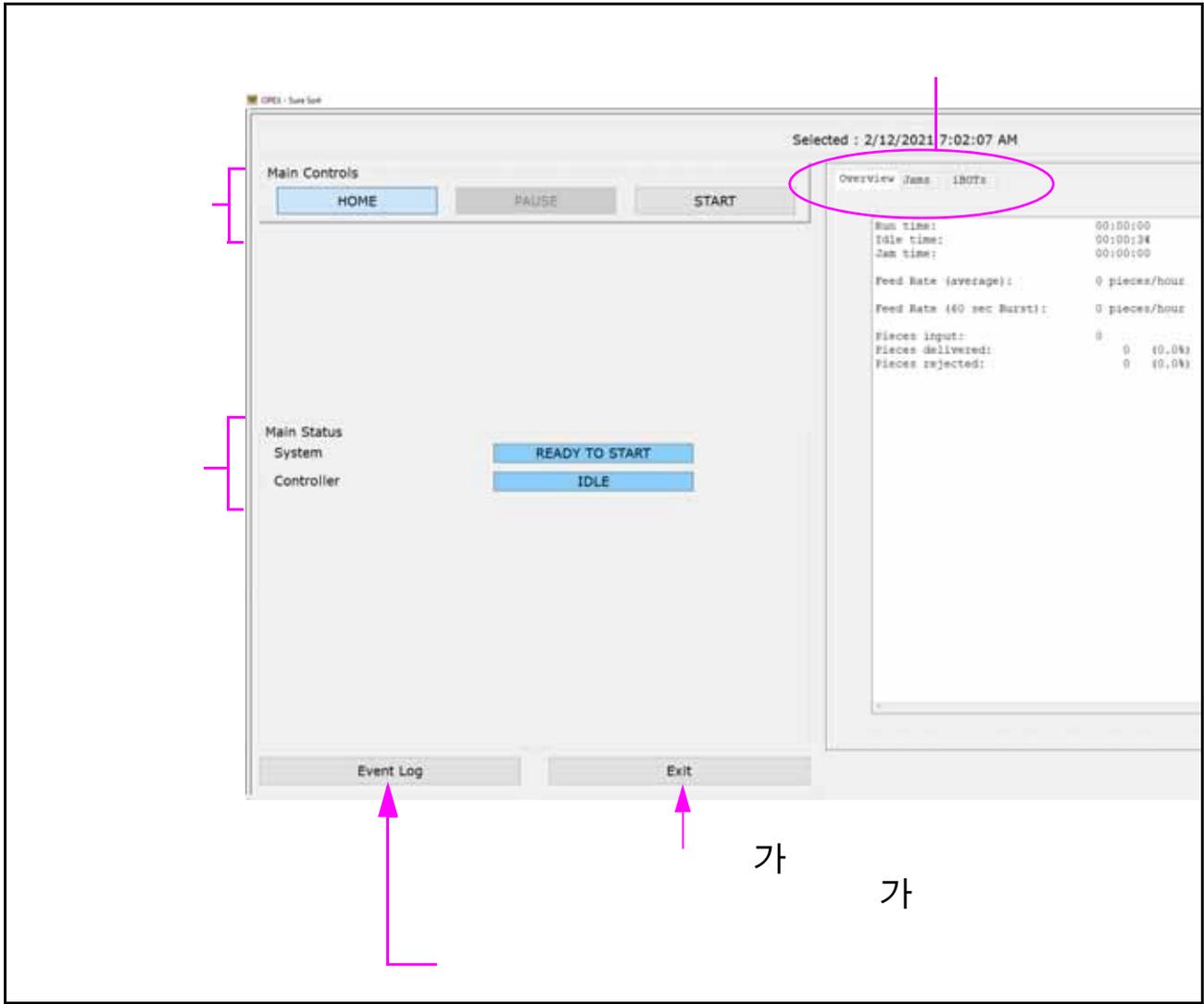


Figure 3-9:

3.4.1.1.

가

:

3.4.1.1.1.

(4-10).

Overview Jams iBOTS	
Run time:	00:01:22
Idle time:	00:00:02
Jam time:	00:00:36
Jam count:	1
Feed Rate (average):	1214 pieces/hour
Feed Rate (60 sec Burst):	180 pieces/hour
Pieces input:	28
Pieces delivered:	28 (100.0%)
Pieces rejected:	0 (0.0%)

Figure 3-10:

	가
()	1
(60)	60
	가
	(bin)

Note:

Sure Sort

3.4.1.1.2.

(4-11).

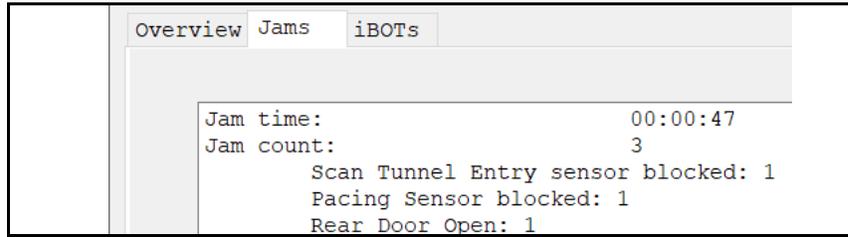
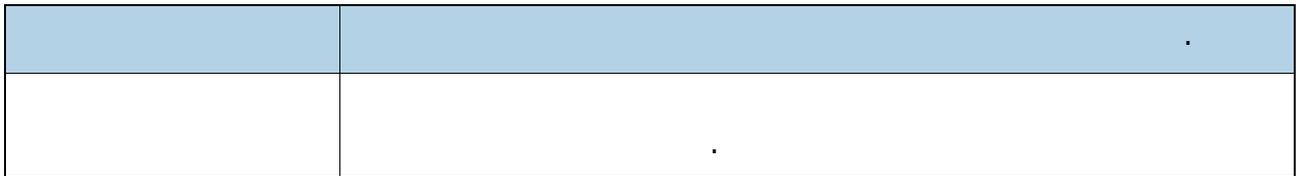


Figure 3-11:



3.4.1.2. iBOT

iBOT iBOT (4-12).

iBOT (bin), 가 , 가 iBOT .

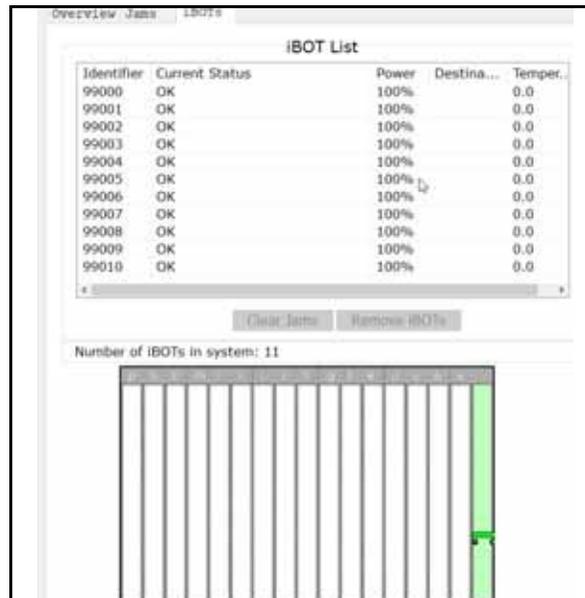


Figure 3-12: iBOT

가 : iBOT iBOT

iBOT (4-13):



Figure 3-13: **iBOT**

iBOT iBOT

Note: iBOT

3.4.2.

가 “ ”
iBOT “ ”

NOTICE

iBOT (가)
OPEX

가
(4-14).

가

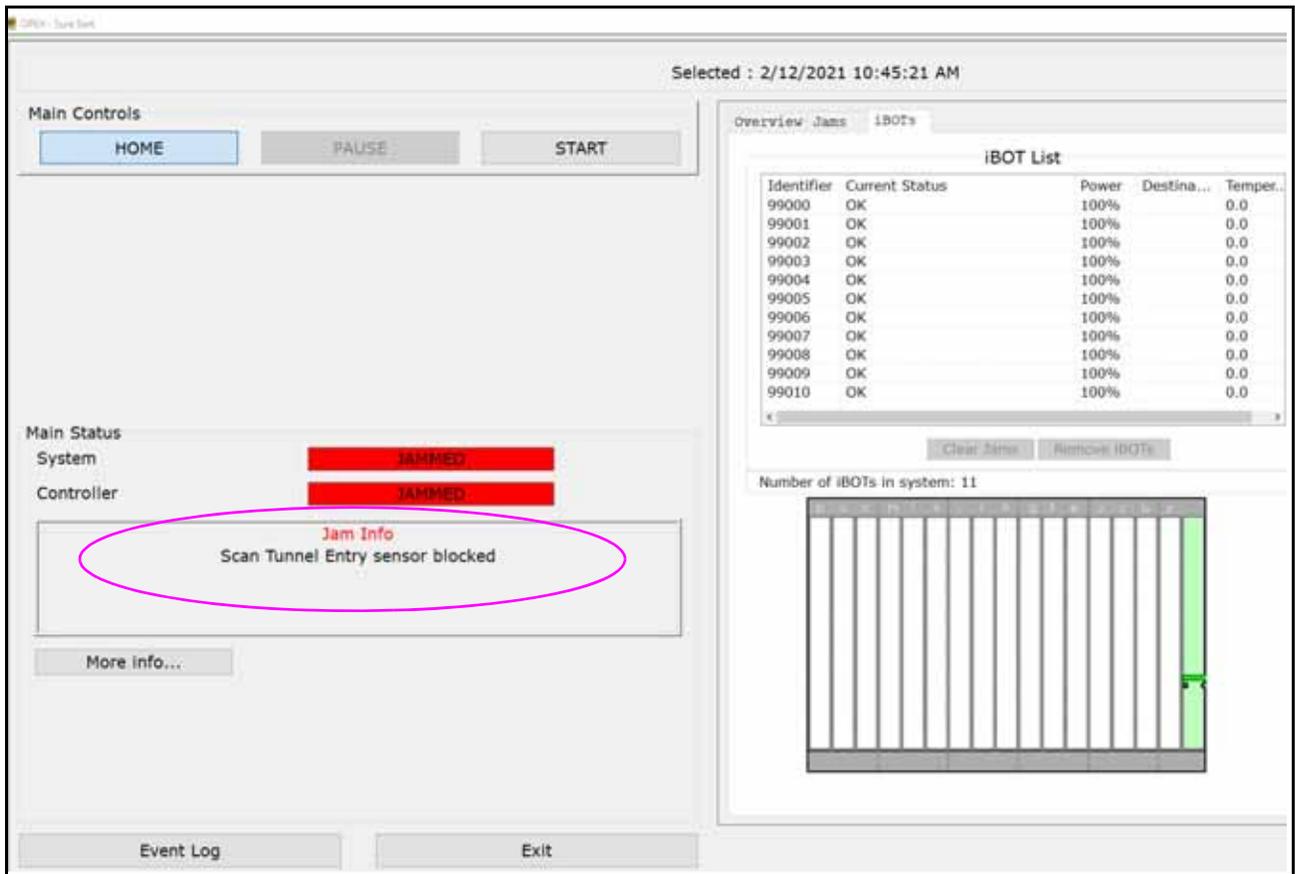


Figure 3-14:

...

(4-15)

Figure 3-15.

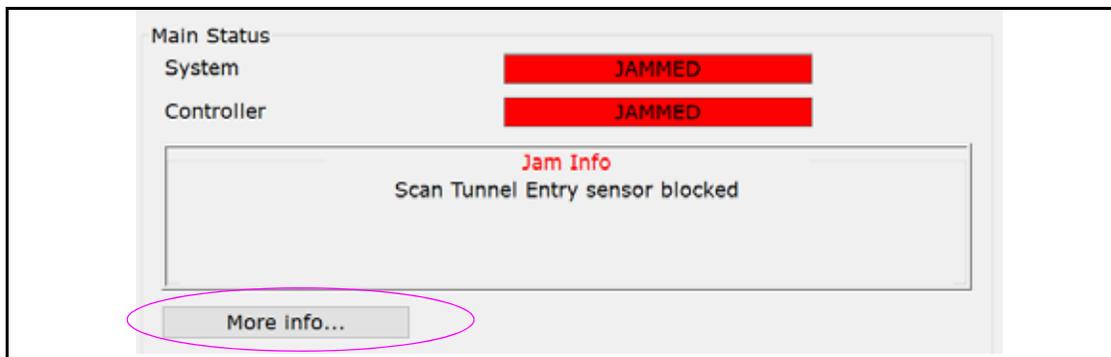


Figure 3-15: “ ... ”

3.4.2.1.

iBOT

iBOT

3.4.2.2. /

가

(4-16).



Figure 3-16:

Note:

(bin)

iBOT

iBOT

가

3.4.2.3.

iBOT

(4-17).



Figure 3-17:

3.4.2.4.

가 iBOT (4-18). 가

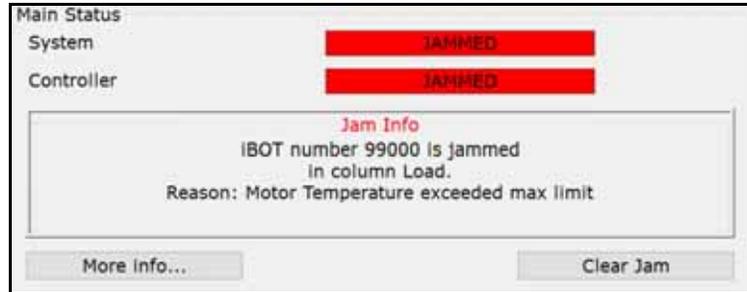


Figure 3-18:

3.4.2.5. iBOT

가

iBOT (bin) , iBOT (biin) (4-19).



Figure 3-19: (bin)

iBOT (bin) (bin) (bin) (4-20).



Figure 3-20: (bin) iBOT

iBOT (bin) iBOT (bin)

3.4.2.6. iBOT

iBOT 가 (bin) (bin) (4-21).



Figure 3-21: (bin)

, 가 (bin) (bin) (4-22).



Figure 3-22: iBOT

3.4.2.7.

4 가
가
(4-23).



Figure 3-23:

140 4-29
4
(4-24),

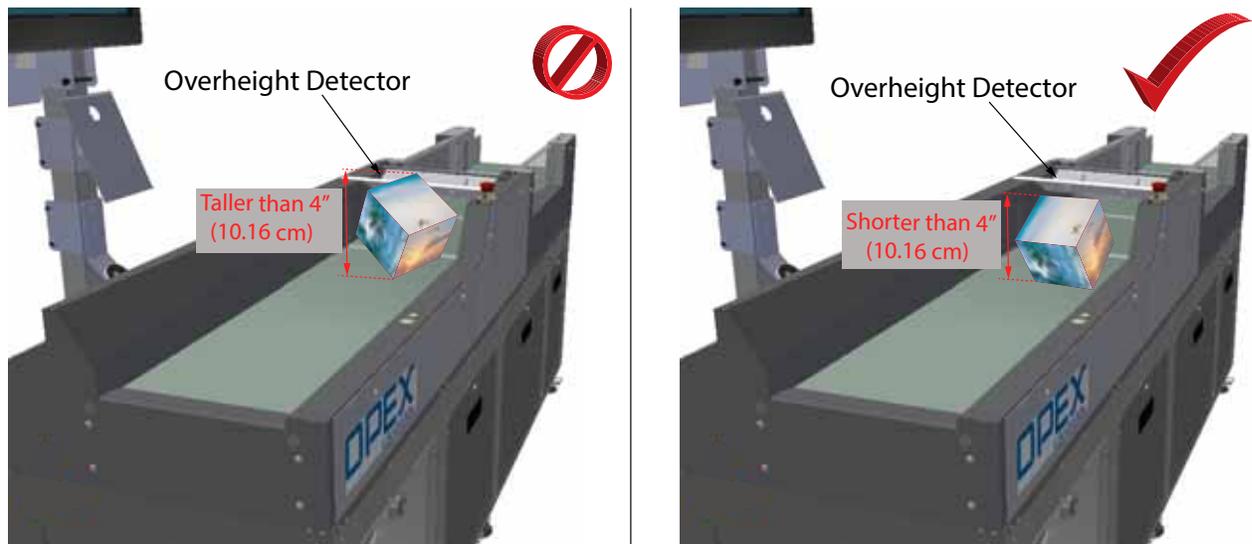


Figure 3-24:

3.4.3.

NOTICE
OPEX

가 (4-25). iBOT
iBOT
가

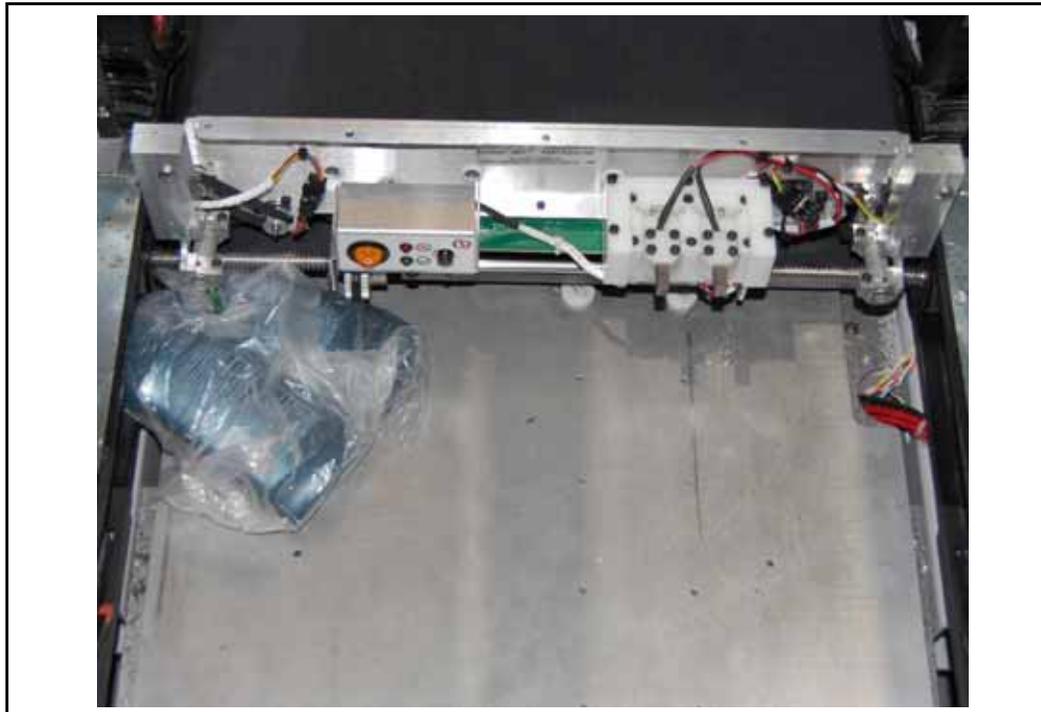


Figure 3-25:

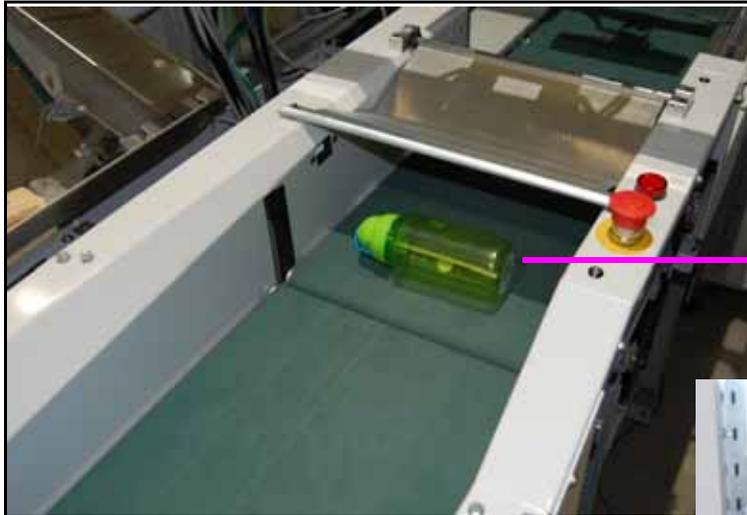
(4-26).

가

가

iBOT

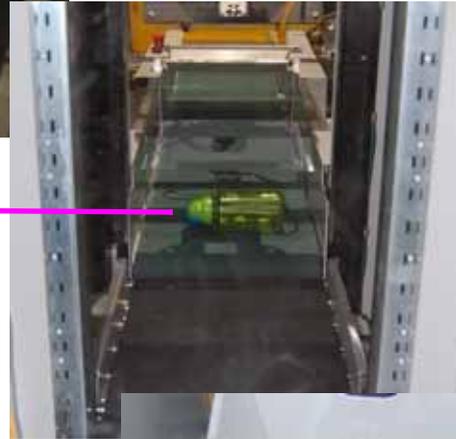
가



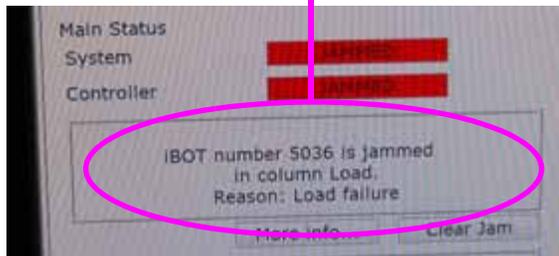
가

iBOT

가



가



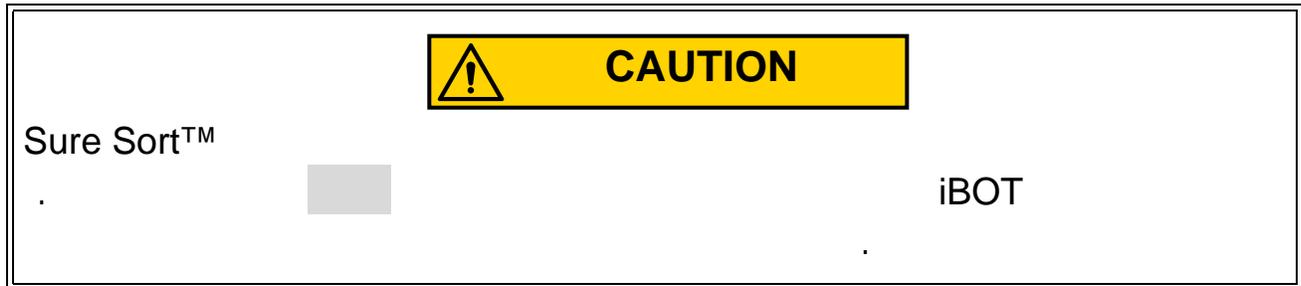
(bin)

Figure 3-26:

3.5.

&

3.5.1.



1. OPEX 가 (4-27), iBOT (bin)

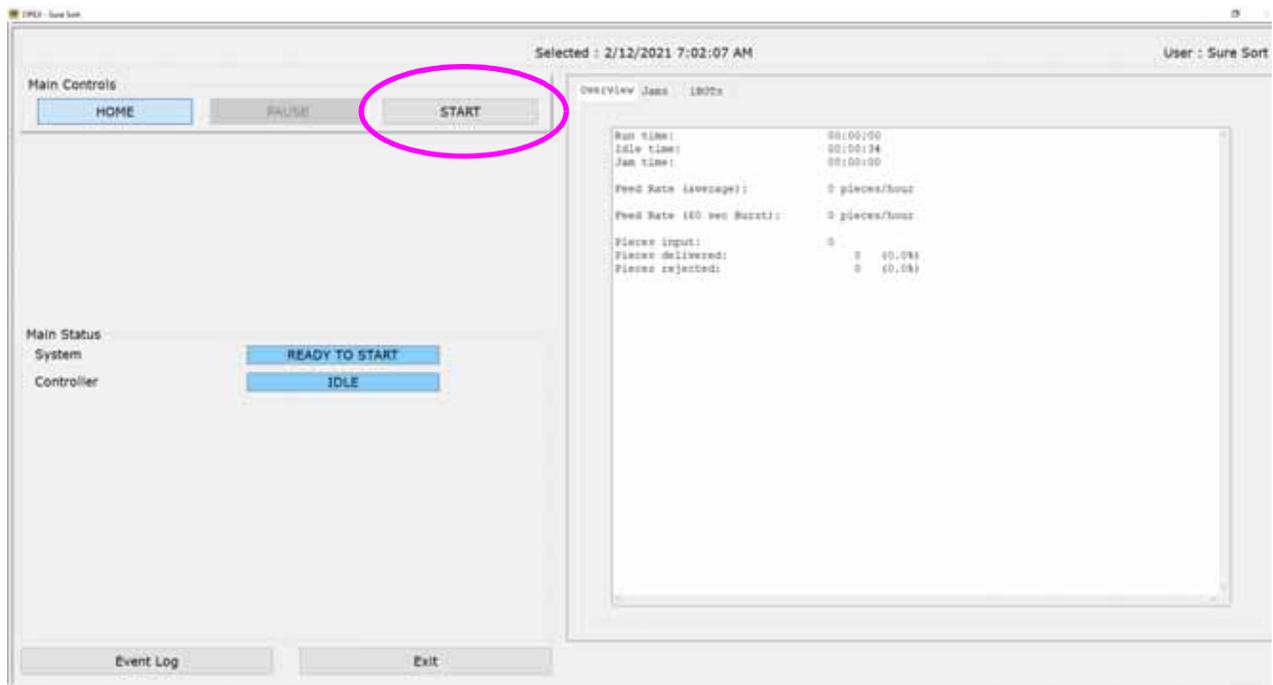


Figure 3-27: OPEX

2. 가 OPEX ELC

3.

“ ” 가 ELC (4-28).

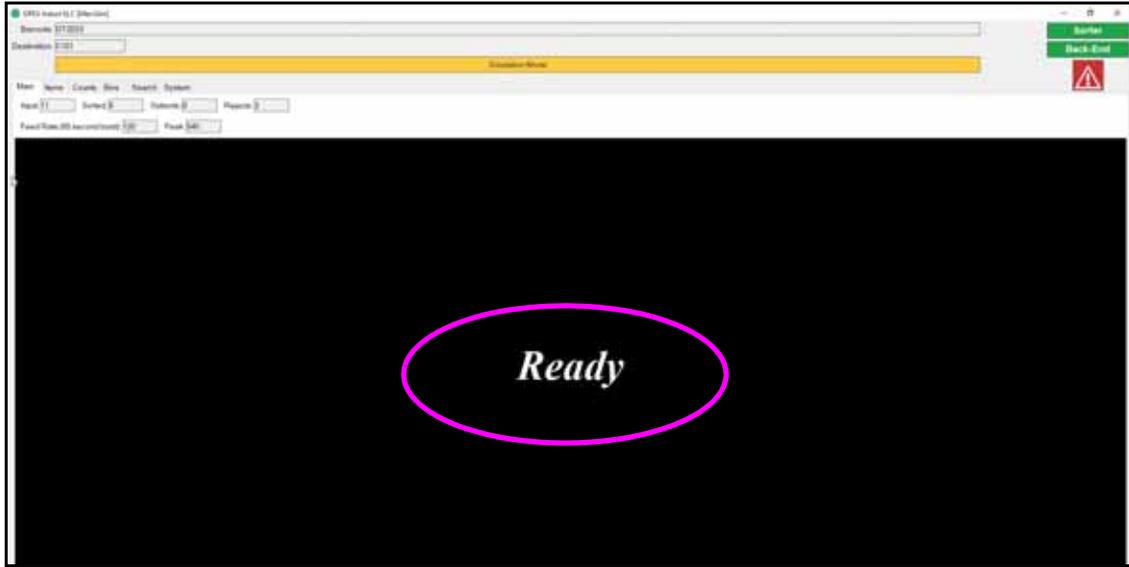
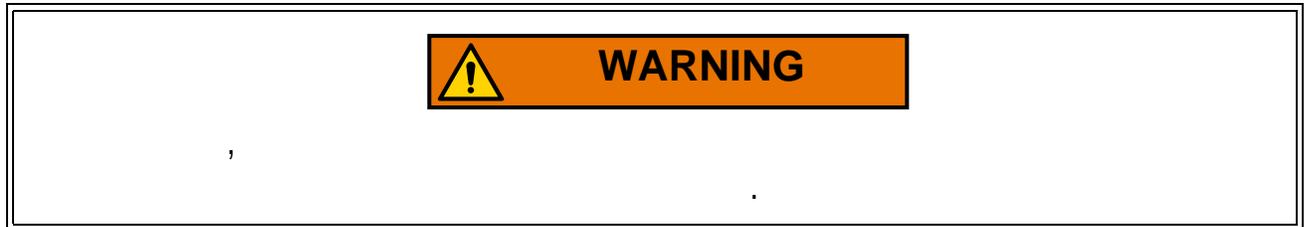


Figure 3-28: OPEX ELC

3.5.2.



1. (4-29).

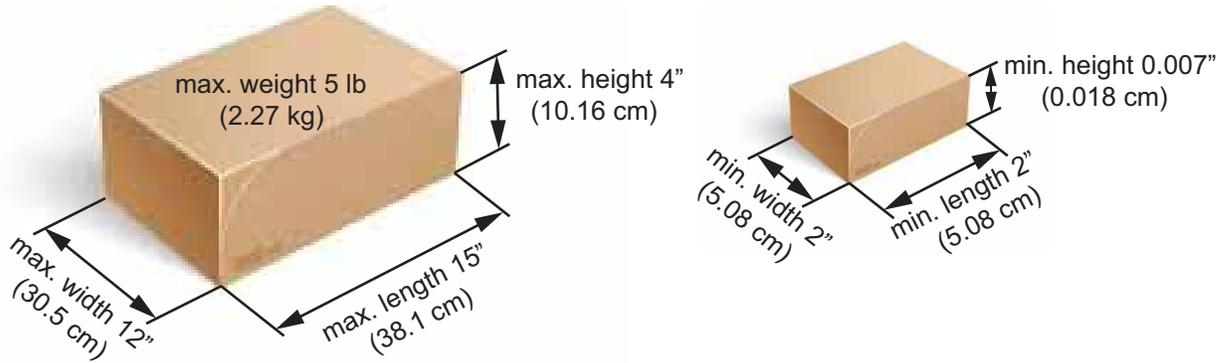


Figure 3-29:

2. 3 (8cm)
(4-30).



Figure 3-30: “ ”

3. ” 가 (4-31). “

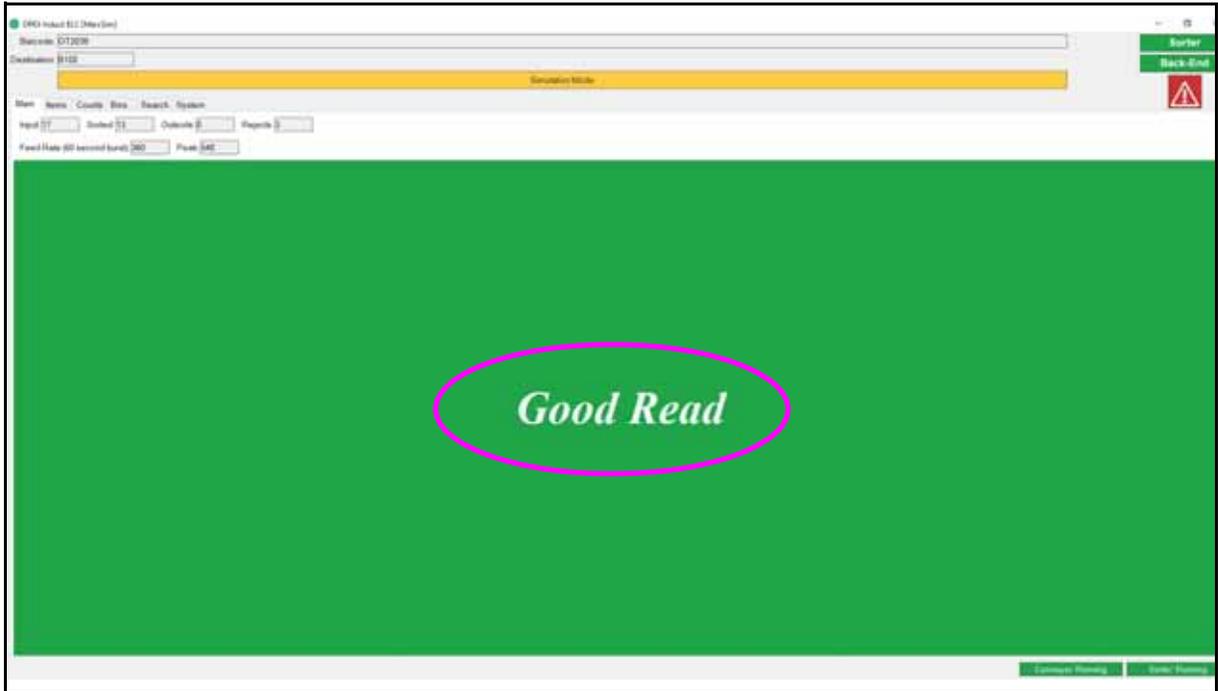


Figure 3-31: OPEX ELC -

4.

iBOT ELC가 (bin)

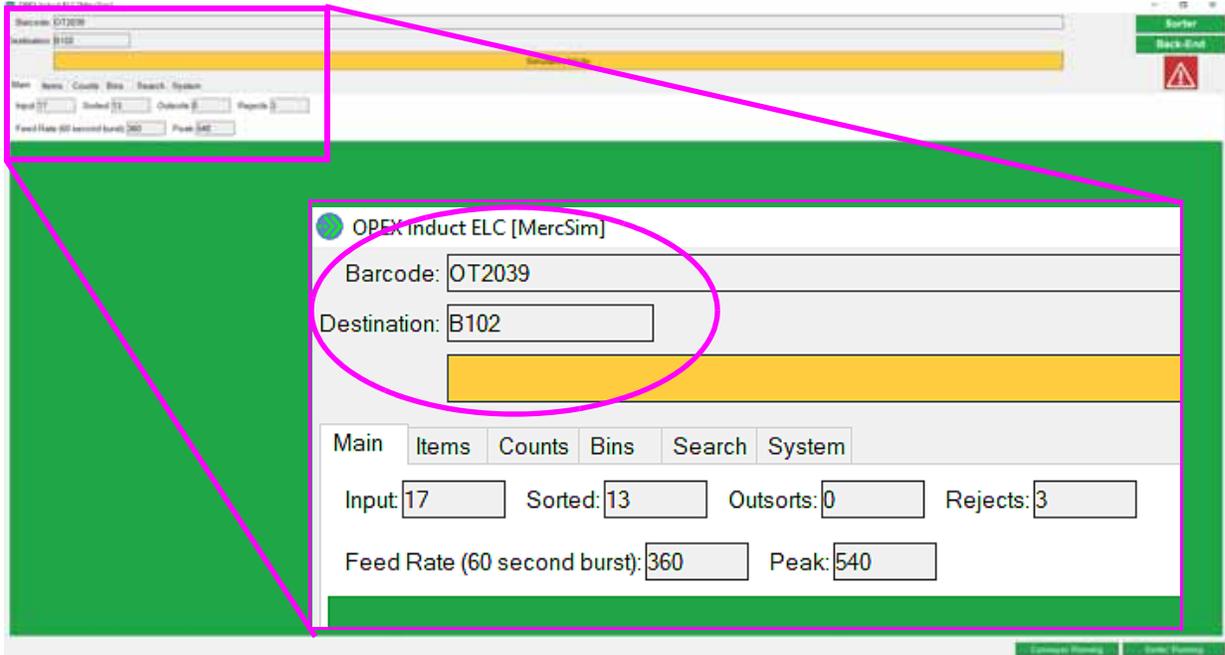


Figure 3-32: (bin)

5.

iBOT

(4-33

).

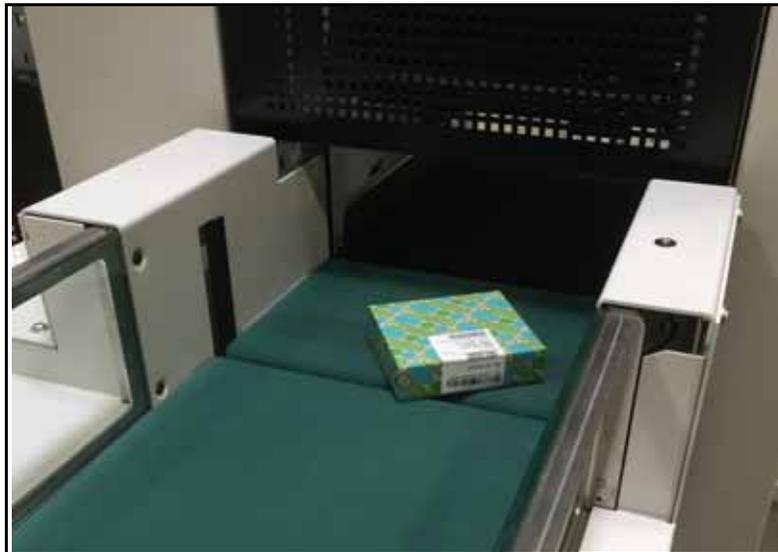


Figure 3-33: iBOT

iBOT

(bin)

6.

Note:

가 . iBOT iBOT

가 , iBOT (bin) (OPEX ELC

“ ”) (4-34).

“ ”) .

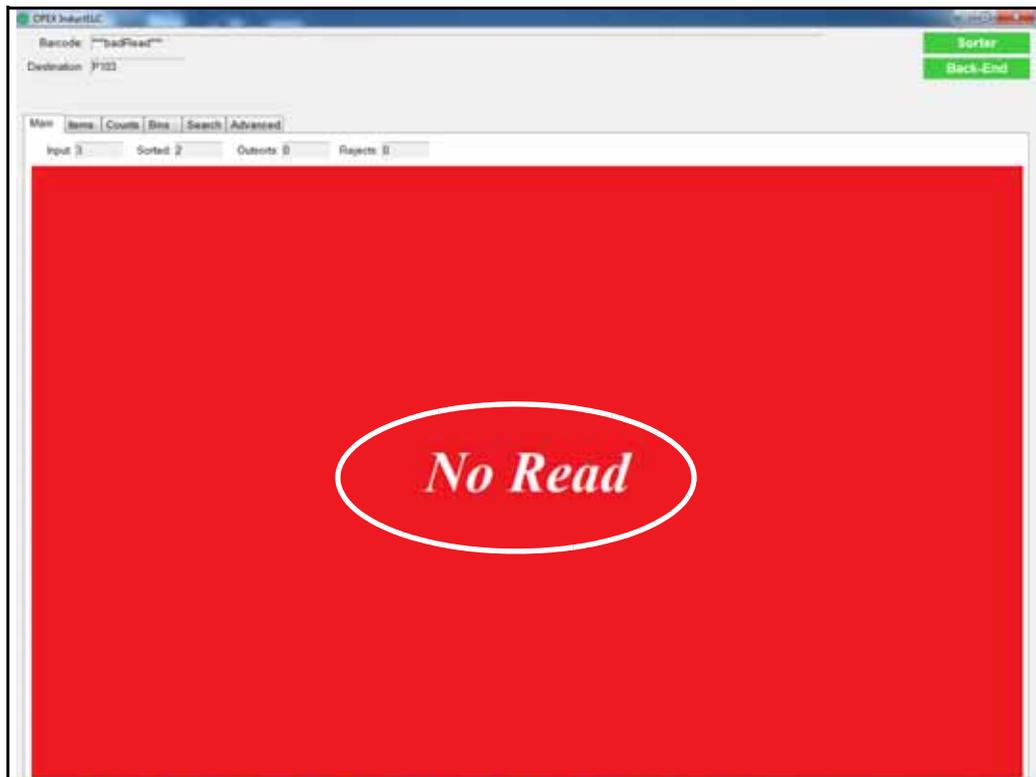


Figure 3-34: OPEX ELC -

3.5.3.

- 가
- 가
1. :
2. OPEX ELC “ ” 가
(4-35).



Figure 3-35:

가
(4-36).

Note:

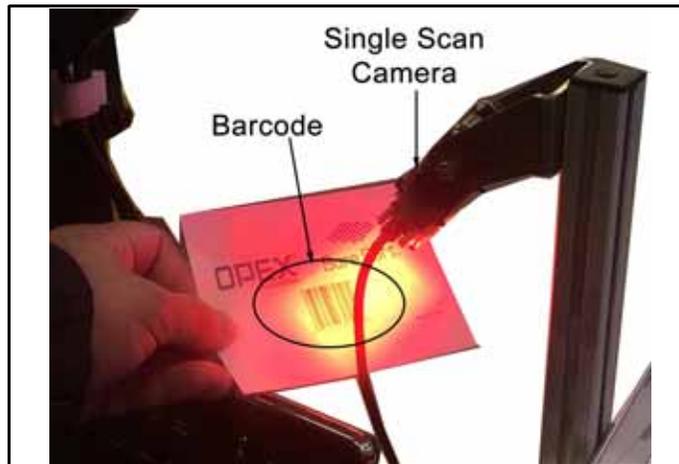


Figure 3-36:

3. OPEX ELC 가
(4-37).

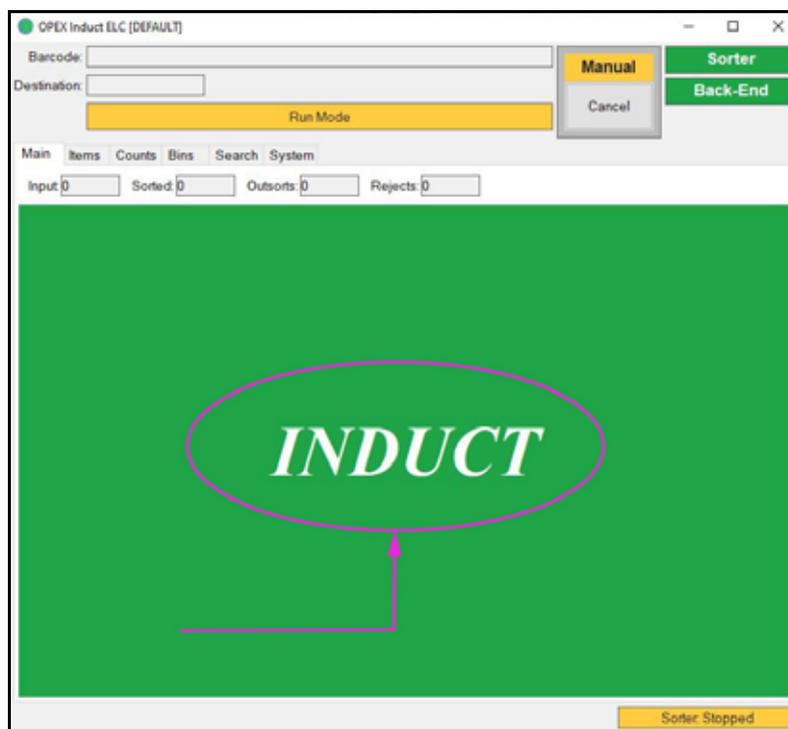


Figure 3-37: OPEX ELC -

4.

(4-38).

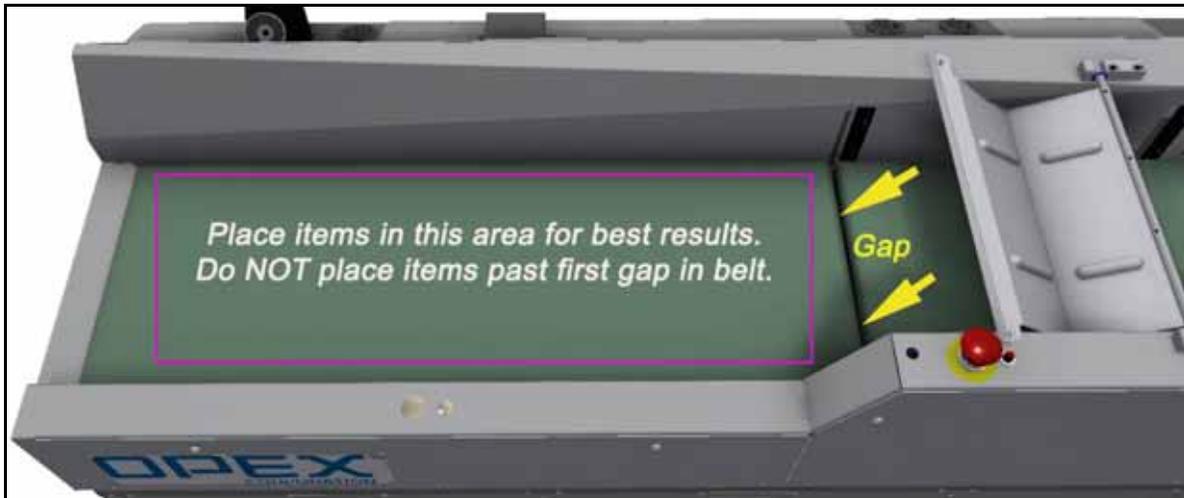


Figure 3-38: “ ”

Note:

140 4-29

5.

가

iBOT
(4-39

).



Figure 3-39: iBOT

:
가 , OPEX ELC “
” (4-40
).

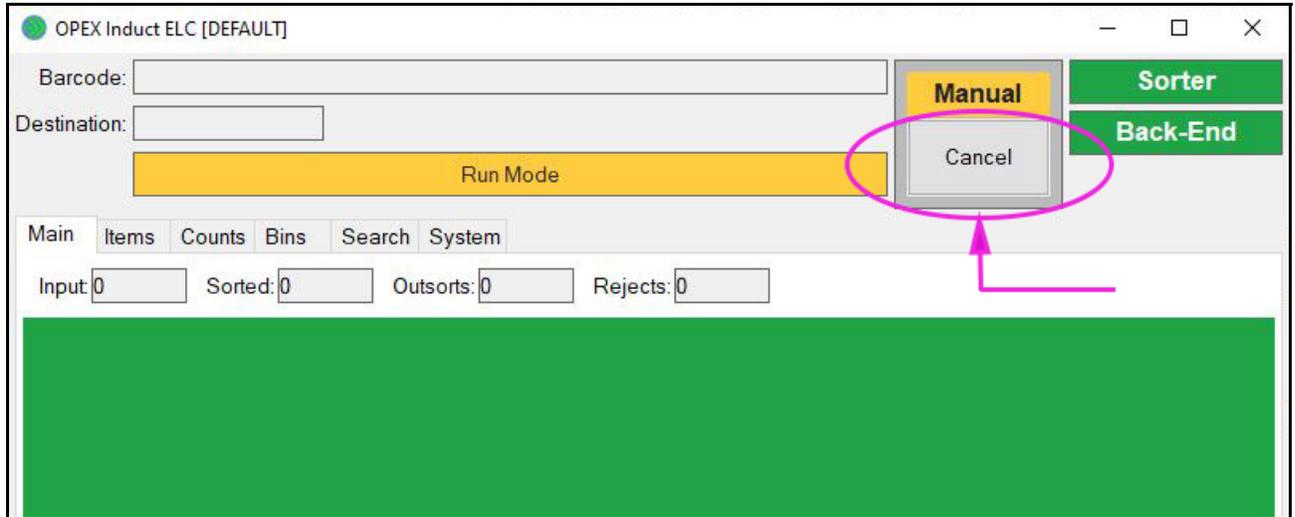


Figure 3-40:

3.6.

가

1. OPEX 가 iBOTS (4-41).

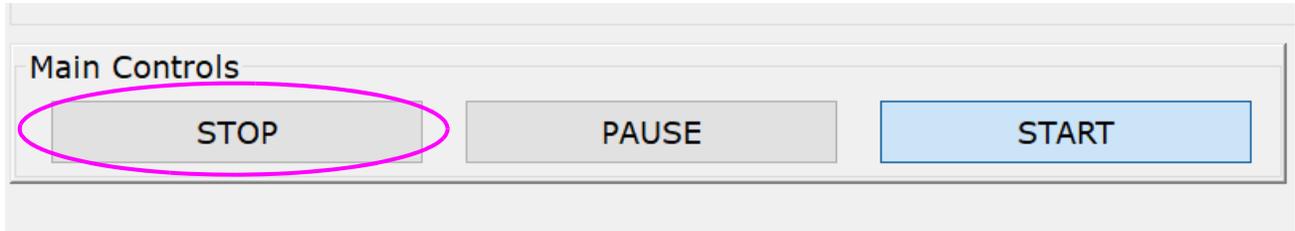


Figure 3-41: OPEX

2. 가 가 (4-42).

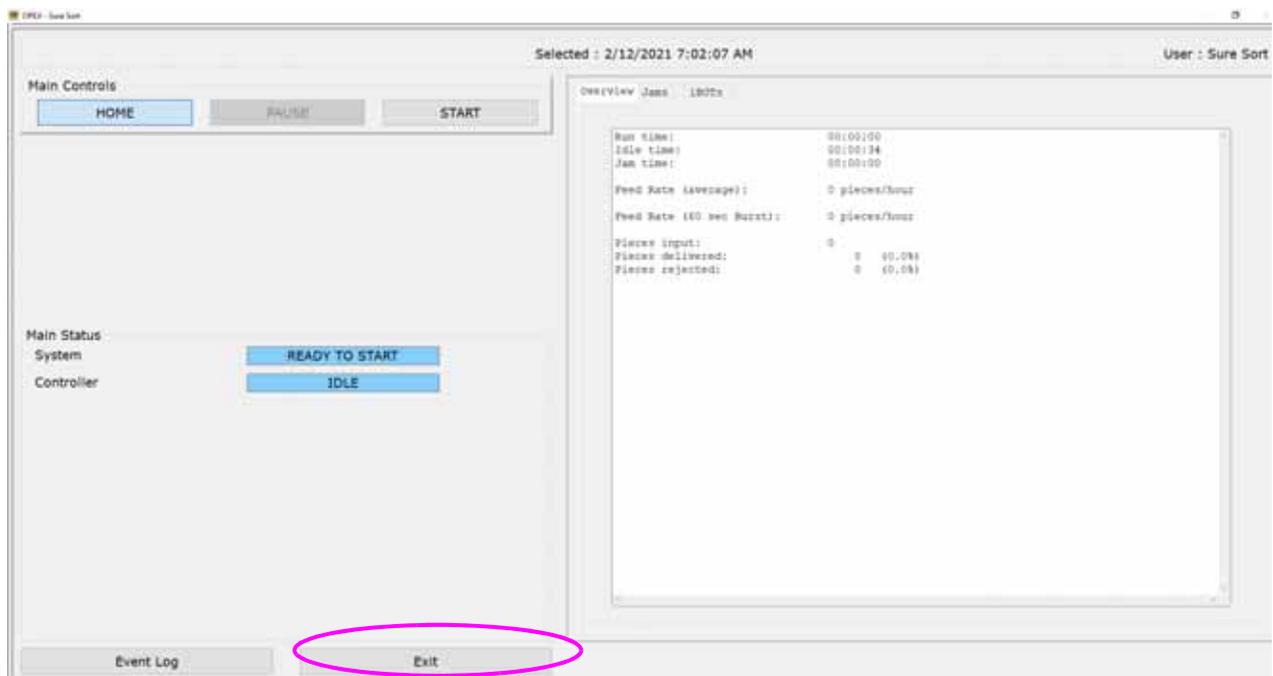


Figure 3-42: OPEX

- 가

3.

(4-43).

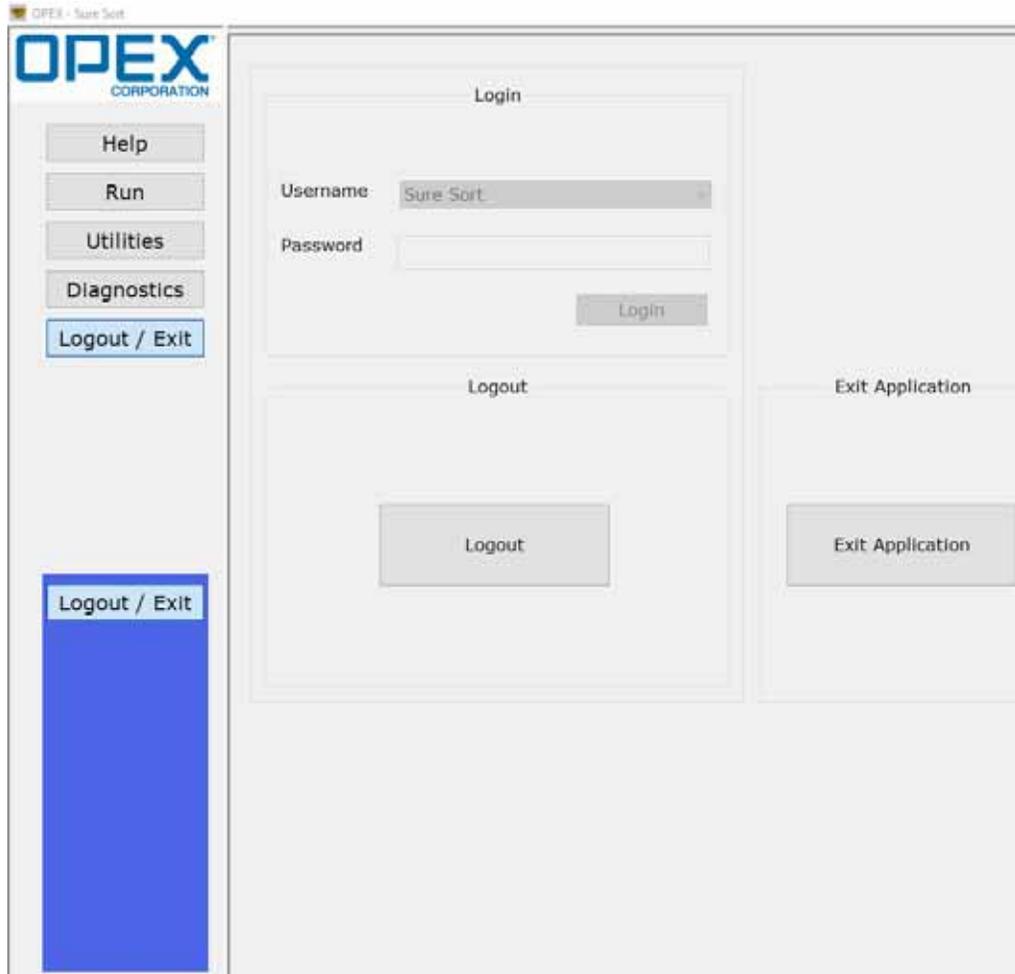


Figure 3-43:

A.



A.1.	.....	178
A.2.	.....	179
A.3.	.....	180
A.4.	.....	181

A.1.

OPEX Sure Sort™

(A-1).

NOTICE

가

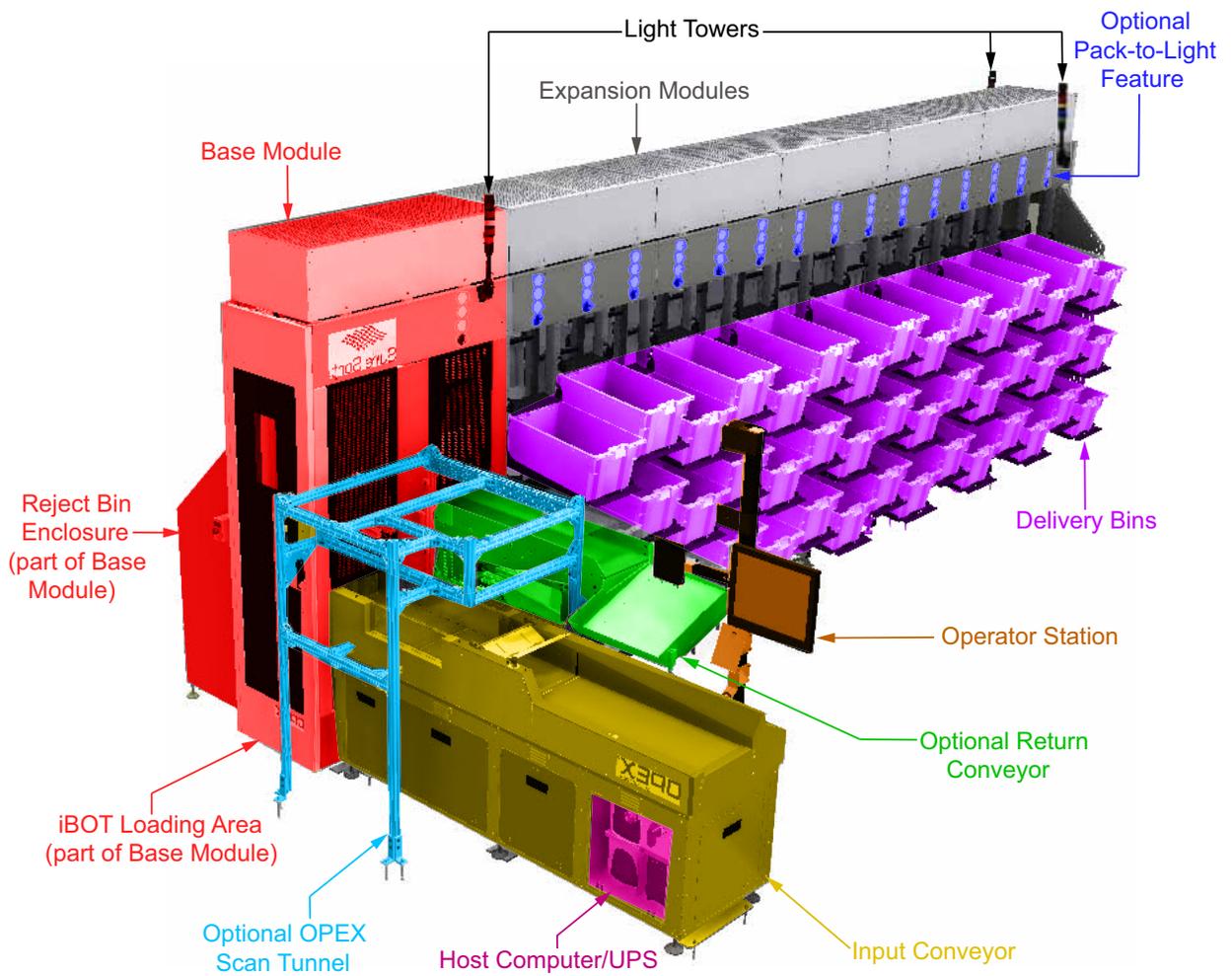


Figure A-1: Sure Sort -

A.2.

(A-2).

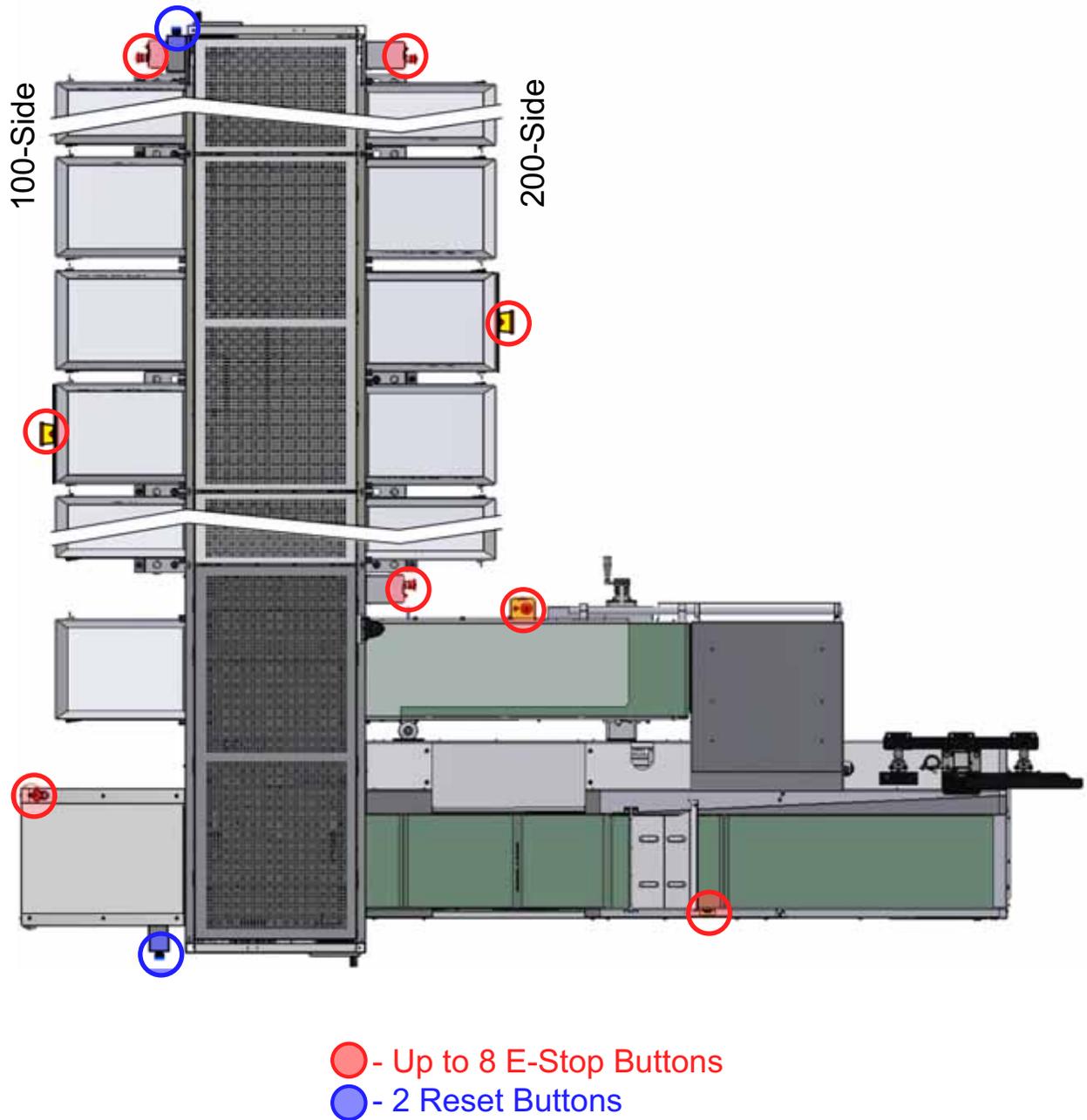
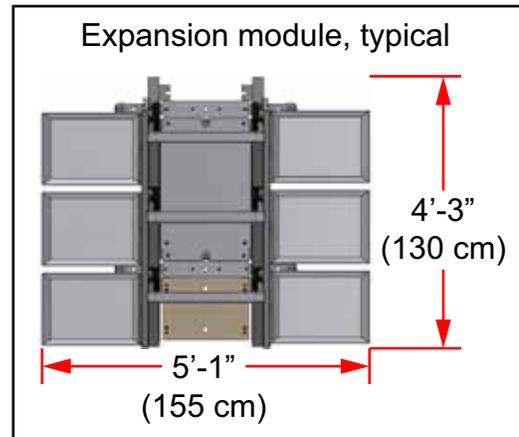
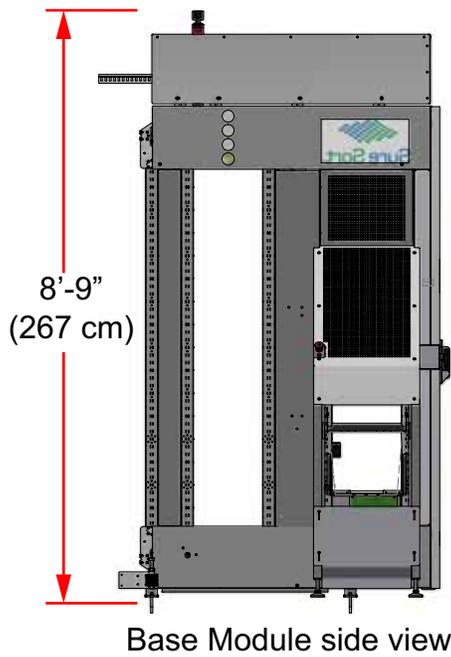


Figure A-2:

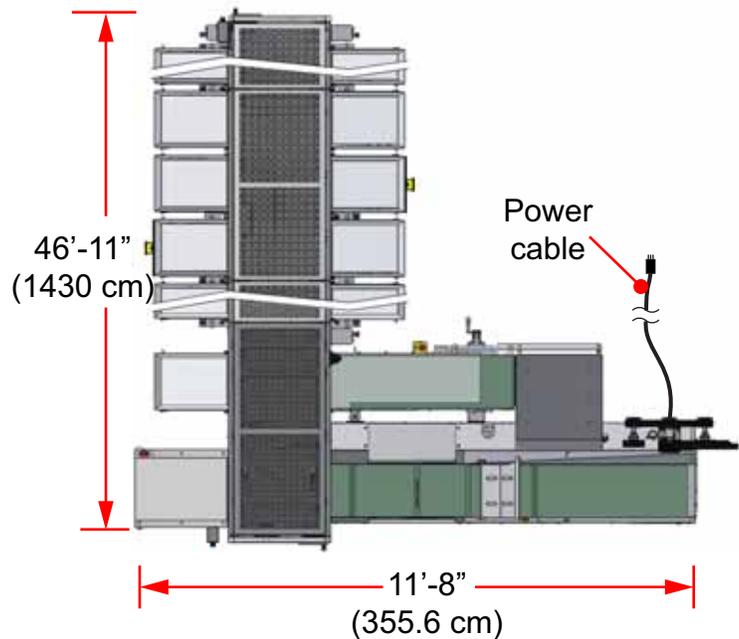
A.3.

T

(A-3).



Base unit with scan tunnel and eleven expansion modules, typical



Notes:

1. All dimensions are approximate and are provided for reference only.
2. Allow for at least 36" (91.4 cm) walking/working space around all sides of machine.
3. There must be 18" (45.7 cm) minimum clearance from top of machine to any sprinklers in the area.

Figure A-3:

A-4).

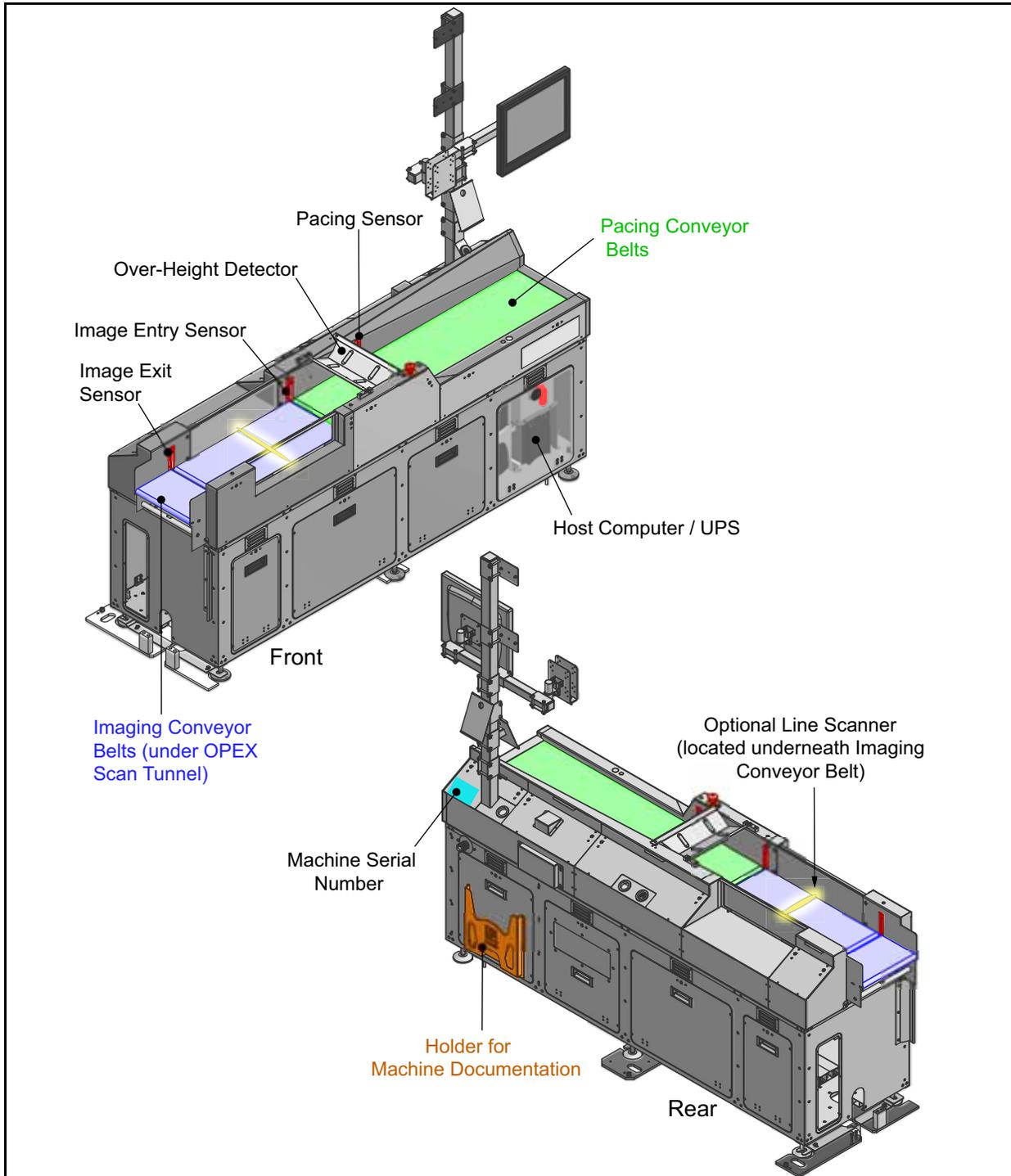


Figure A-4:

()

G.G

G.1.	.....	172
G.2.	.....	173

G.1.

Sure Sort

API -

ELC -

OPEX

RTC -

UPS -

WMS -

WMS

WMS

XCVR -

G.2.

Sure Sort

AC

- AC UPS

AC

(WMS),

(WCS)

OPEX

/

가

iBOT

iBOT

가

(bin) -

50A

- iBOT

- iBOT

2

가 iBOT

가

• iBOT

(E-Stop) - “ ”

가

- BOT

iBOT

가

가

가

INtime

PC

iBOT -

(bin)

- BOT

가

I/O

iBOT

; iBOT

iBOT

() 가

OPEX

IT

(LOTO) -

가

. LOTO

. LOTO

가

OPEX

가 iBOT

가

가

(PTL)

(bin)

가

가

(bin)

(bin) -

가

가

(bin) 가 (bin) (bin) 가

- OPEX

iBOT

가

- iBOT

iBOT

가

OPEX

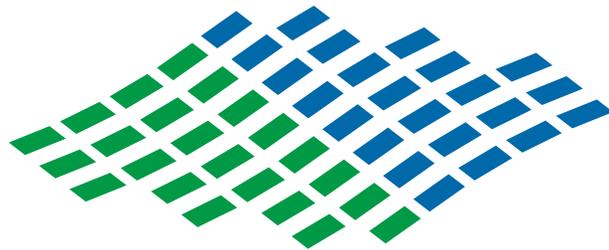
OPEX

가
가

, 1200

가

OPEX



Sure Sort™

OPEX®