

ABB Safety Configuration Report

A detailed description of functions and validation procedures can be found in the SafeMove application manual.

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1. General Information

Created by:	Default User
Creation date:	2023-06-05T09:47:45.7676035-04:00
System name:	2600-801846
Configuration version:	1.03.01
Controller image version:	1.03.03
Checksum:	BB74F3EF4CFFBD15910C247F2FD15302DB2678514D9F34D603831AA7CEB9AAFF
Protected elements checksum:	F1945CD6C19E56B3C1C78943EF5EC18116907A4CA1EFC40A57D48AB1DB7ADFC5

2. Safety Configuration

2.1 Drive Modules

Drive Module 1 Configuration

Max speed manual mode
250.000 mm/s

Drive Module 1 Configuration - ROB_1

Safe brake ramp start speed offset	Elbow offset	Baseframe	
100.000 mm/s	x: -126.000 mm y: 0.000 mm z: 225.000 mm	Position x: 0.000 mm y: 0.000 mm z: 0.000 mm Orientation x: 0.000 deg y: 0.000 deg z: 0.000 deg	

ROB_1 - Upper Arm Geometries

Upper Arm Geometries - Capsule_1

Type	Radius	Start	End
Capsule	125.000 mm	x: 132.318 mm y: -5.081 mm z: 134.510 mm	x: 761.160 mm y: -7.429 mm z: 124.007 mm

Upper Arm Geometries - Sphere

Type	Radius	Center
Sphere	300.000 mm	x: 0.000 mm y: -86.959 mm z: 74.361 mm

Upper Arm Geometries Verified: _____

Drive Module 1 Configuration - Synchronization

Activation	Synchronization status
Software synchronization	No signal

Synchronization - Sync position

Joint	position
1	0.000 deg
2	0.000 deg
3	0.000 deg
4	0.000 deg
5	0.000 deg
6	0.000 deg

Synchronization Verified: _____

Drive Module 1 Configuration - Cyclic Brake Check

CBC: Inactivated

2. Safety Configuration

Drive Module 1 Configuration - Tools

Tools - Tool

Activation	Active status	TCP	Orientation
Permanently active	No signal	x: 0.000 mm y: 0.000 mm z: 0.000 mm	x: 0.000 deg y: 0.000 deg z: 0.000 deg

Tool - Speed Supervision Points (Flange Coordinates)

Number	X	Y	Z
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Tool - Tool Geometries

Tool Geometries - Gripper

Type	Radius	Start	End
Capsule	100.000 mm	x: 41.257 mm y: 0.000 mm z: -28.608 mm	x: 74.287 mm y: 0.000 mm z: 107.134 mm

Tool Geometries Verified: _____

Tool Verified: _____

Drive Module 1 Configuration - Safe Zones

Safe Zones - CellWalls

Tool speed supervision priority
Normal

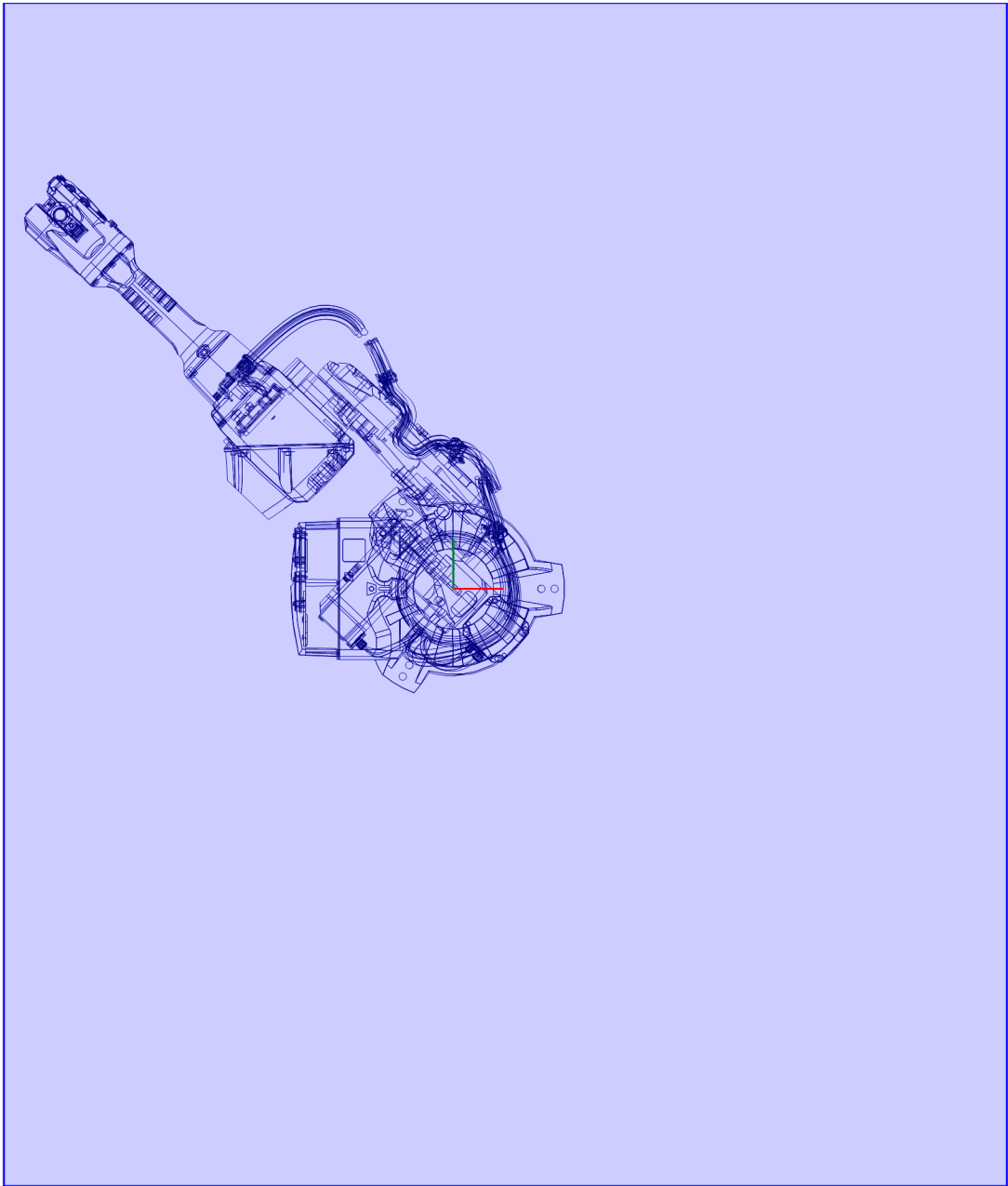
CellWalls - Coordinates

Top	Bottom
2000.000 mm	0.000 mm

Vertices

Number	X	Y
1	-1110.000 mm	-1475.000 mm
2	1367.432 mm	-1475.000 mm
3	1367.432 mm	1447.228 mm
4	-1110.000 mm	1447.228 mm

CellWalls - Floor plan



CellWalls - Tool Position Supervisions

Tool Position Supervisions - CW_AllowTravel

Activation	Function active status	Violation stop category	Violation signal
Permanently active	No signal	Category1Stop	No signal
Include upper arm geometry	Allow inside		
true	true		

CellWalls Verified: _____

Safe Zones - ChuteElectrical

Tool speed supervision priority
Normal

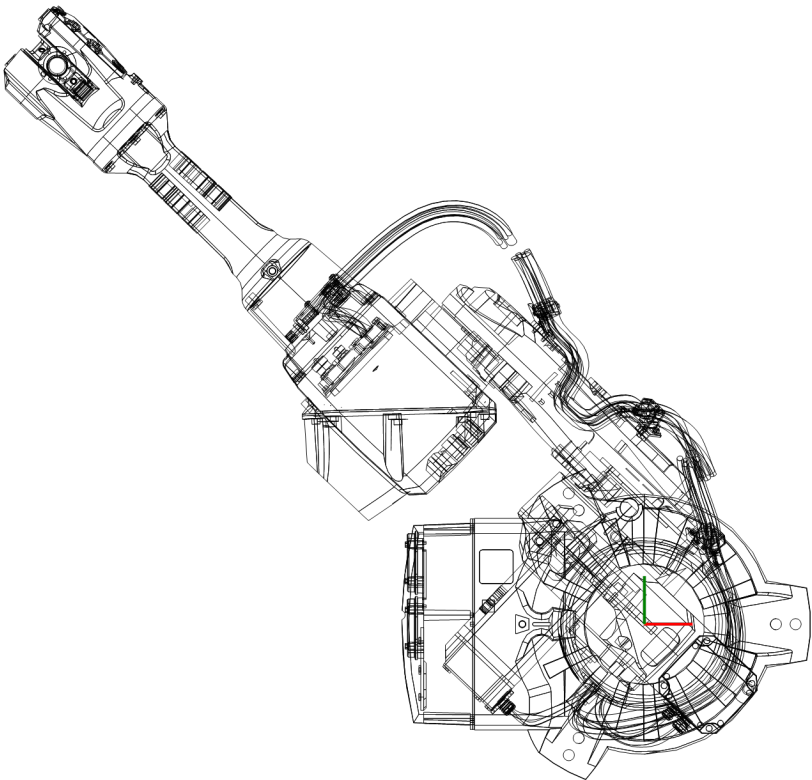
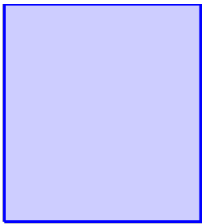
ChuteElectrical - Coordinates

Top	Bottom
750.000 mm	0.000 mm

Vertices

Number	X	Y
1	175.000 mm	1390.000 mm
2	500.000 mm	1390.000 mm
3	500.000 mm	1750.000 mm
4	175.000 mm	1750.000 mm

ChuteElectrical - Floor plan



ChuteElectrical - Tool Position Supervisions

Tool Position Supervisions - CE_DenyTravel

Activation	Function active status	Violation stop category	Violation signal
Permanently active	No signal	Category1Stop	No signal

2. Safety Configuration

Include upper arm geometry	Allow inside
true	false

ChuteElectrical Verified: _____

Safe Zones - DiscardChute

Tool speed supervision priority
Normal

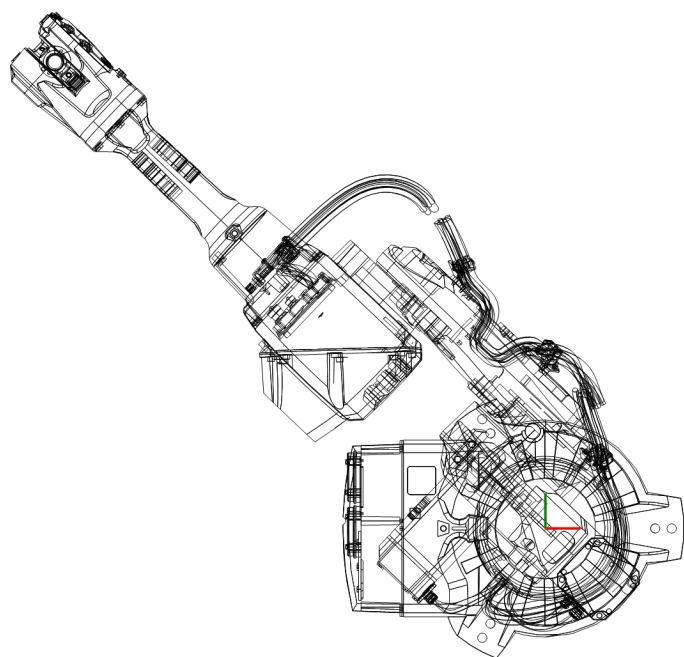
DiscardChute - Coordinates

Top	Bottom
1400.000 mm	950.000 mm

Vertices

Number	X	Y
1	1125.000 mm	300.000 mm
2	1500.000 mm	300.000 mm
3	1500.000 mm	581.346 mm
4	1125.000 mm	581.346 mm

DiscardChute - Floor plan



DiscardChute - Tool Position Supervisions

Tool Position Supervisions - DC_DenyTravel

Activation	Function active status		Violation stop category	Violation signal
Permanently active	No signal		Category1Stop	No signal
Include upper arm geometry		Allow inside		
true		false		

DiscardChute Verified: _____

Safe Zones - LaserMarkerFrame

Tool speed supervision priority
Normal

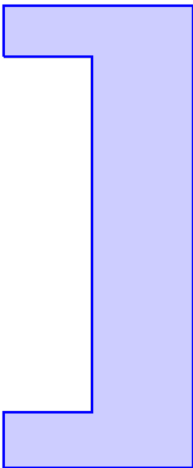
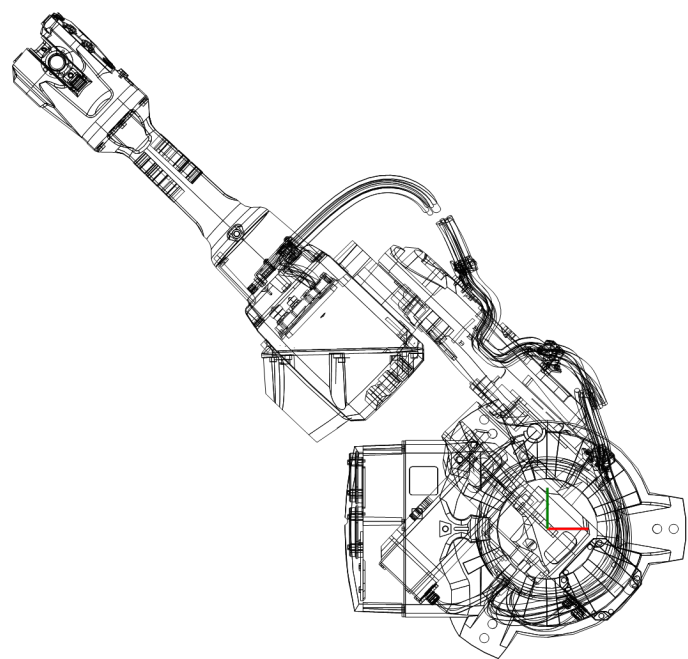
LaserMarkerFrame - Coordinates

Top	Bottom
2000.000 mm	0.000 mm

Vertices

Number	X	Y
1	1125.000 mm	224.000 mm
2	1300.000 mm	224.000 mm
3	1300.000 mm	-480.000 mm
4	1125.000 mm	-480.000 mm
5	1125.000 mm	-590.000 mm
6	1500.000 mm	-590.000 mm
7	1500.000 mm	325.000 mm
8	1125.000 mm	325.000 mm

LaserMarkerFrame - Floor plan



2. Safety Configuration

LaserMarkerFrame - Tool Position Supervisions

Tool Position Supervisions - LMF_DenyTravel

Activation	Function active status	Violation stop category	Violation signal
Permanently active	No signal	Category1Stop	No signal
Include upper arm geometry	Allow inside		
true	false		

LaserMarkerFrame Verified: _____

Safe Zones - Camera

Tool speed supervision priority
Normal

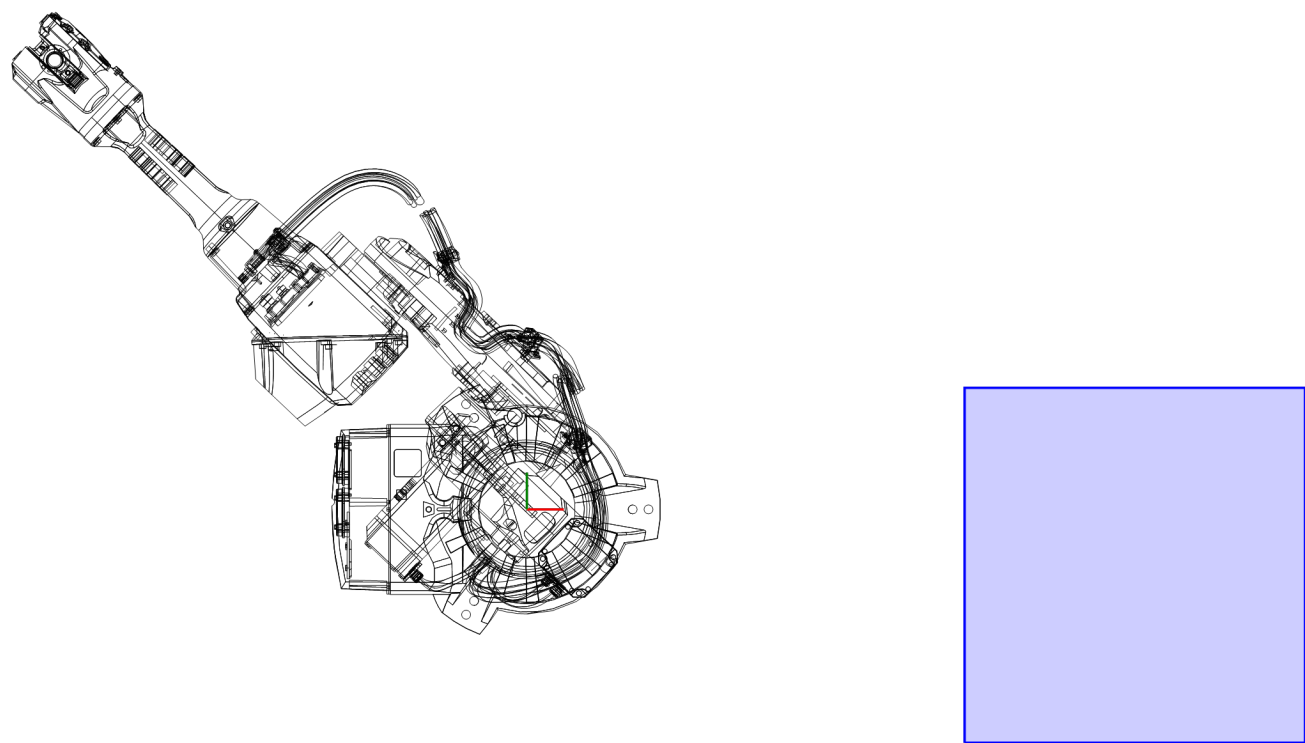
Camera - Coordinates

Top	Bottom
1990.000 mm	1775.000 mm

Vertices

Number	X	Y
1	900.000 mm	-480.000 mm
2	1600.000 mm	-480.000 mm
3	1600.000 mm	250.000 mm
4	900.000 mm	250.000 mm

Camera - Floor plan



Camera - Tool Position Supervisions

Tool Position Supervisions - C_DenyTravel

Activation	Function active status	Violation stop category	Violation signal
Permanently active	No signal	Category1Stop	No signal
Include upper arm geometry		Allow inside	
true		false	

Camera Verified: _____

Safe Zones - MaterialSensor

Tool speed supervision priority
Normal

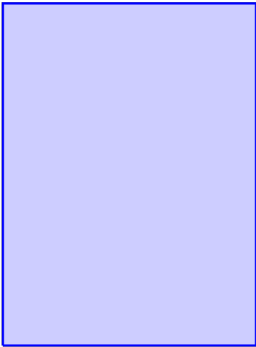
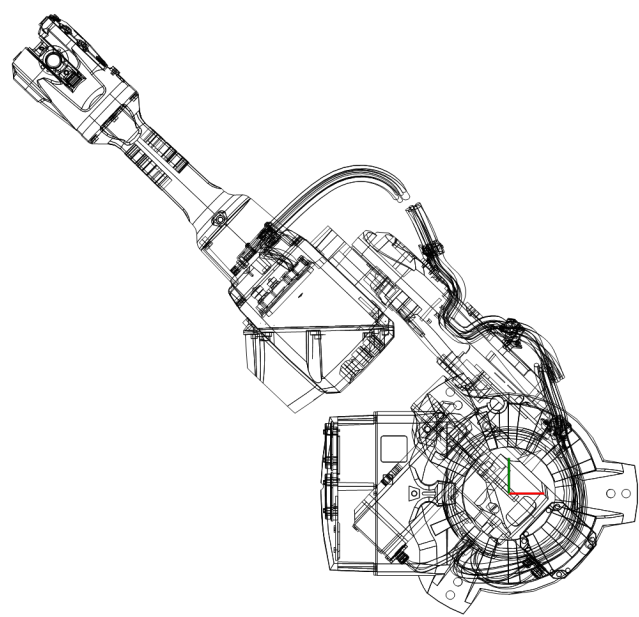
MaterialSensor - Coordinates

Top	Bottom
1875.000 mm	1425.000 mm

Vertices

Number	X	Y
1	1160.000 mm	-480.000 mm
2	1700.000 mm	-480.000 mm
3	1700.000 mm	250.000 mm
4	1160.000 mm	250.000 mm

MaterialSensor - Floor plan



MaterialSensor - Tool Position Supervisions

Tool Position Supervisions - MS_DenyTravel

Activation	Function active status	Violation stop category	Violation signal
Permanently active	No signal	Category1Stop	No signal

2. Safety Configuration

Include upper arm geometry	Allow inside
true	false

MaterialSensor Verified: _____

Safe Zones - LaserMarkerTable

Tool speed supervision priority
Normal

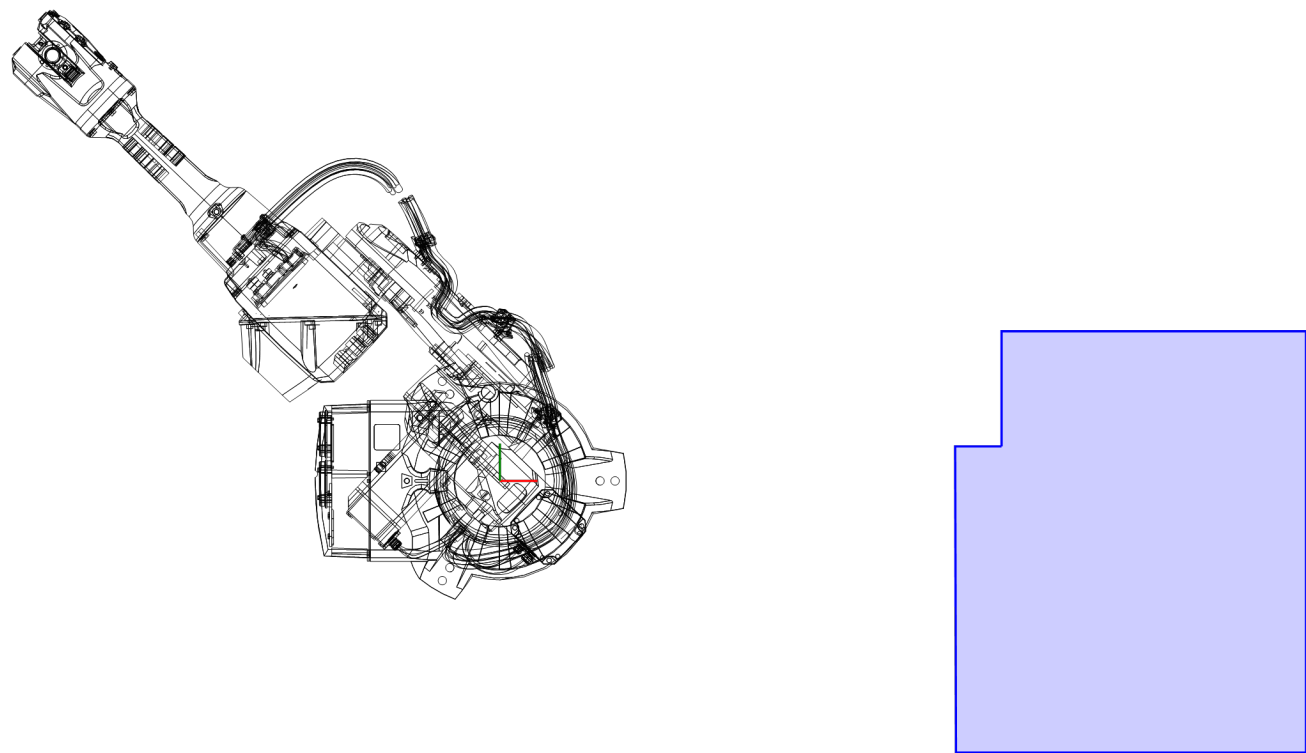
LaserMarkerTable - Coordinates

Top	Bottom
950.000 mm	0.000 mm

Vertices

Number	X	Y
1	1089.000 mm	75.000 mm
2	988.212 mm	75.000 mm
3	990.000 mm	-590.000 mm
4	1750.000 mm	-590.000 mm
5	1750.000 mm	325.000 mm
6	1089.000 mm	325.000 mm

LaserMarkerTable - Floor plan



LaserMarkerTable - Tool Position Supervisions

Tool Position Supervisions - LMT_DenyTravel

Activation	Function active status	Violation stop category	Violation signal
Permanently active	No signal	Category1Stop	No signal
Include upper arm geometry	Allow inside		
true	false		

LaserMarkerTable Verified: _____

Safe Zones - BushingPressTop

Tool speed supervision priority
Normal

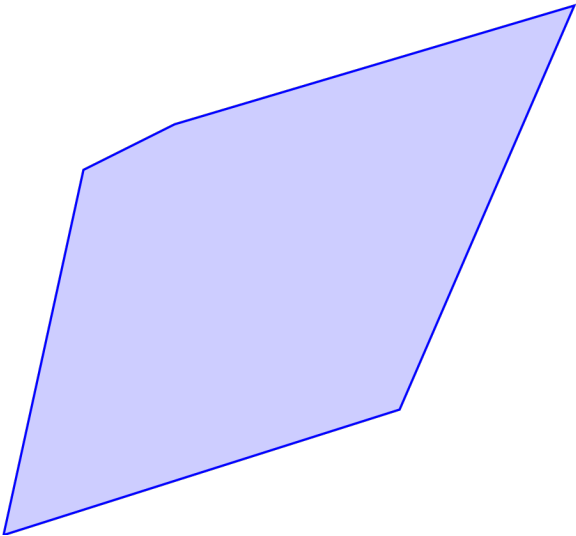
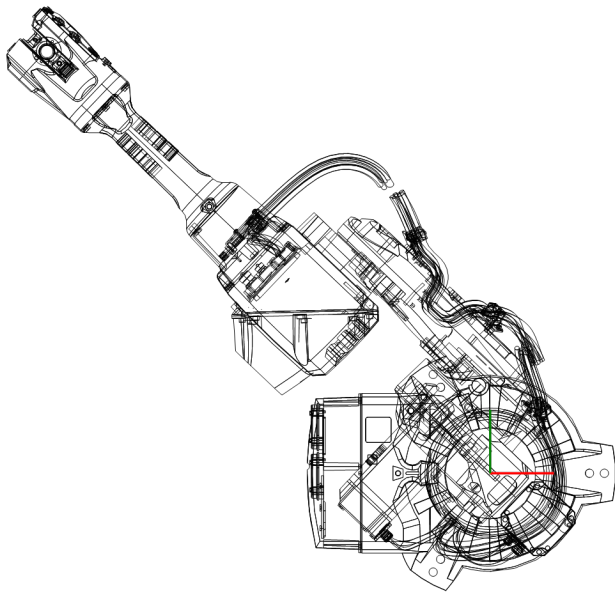
BushingPressTop - Coordinates

Top	Bottom
2100.000 mm	1050.000 mm

Vertices

Number	X	Y
1	500.000 mm	-1750.000 mm
2	1367.432 mm	-1475.000 mm
3	1750.000 mm	-590.000 mm
4	875.000 mm	-850.000 mm
5	675.000 mm	-950.000 mm

BushingPressTop - Floor plan



2. Safety Configuration

BushingPressTop - Tool Position Supervisions

Tool Position Supervisions - BST_DenyTravel

Activation	Function active status	Violation stop category	Violation signal
Permanently active	No signal	Category1Stop	No signal
Include upper arm geometry	Allow inside		
true	false		

BushingPressTop Verified: _____

Safe Zones - BushingPressBottom

Tool speed supervision priority
Normal

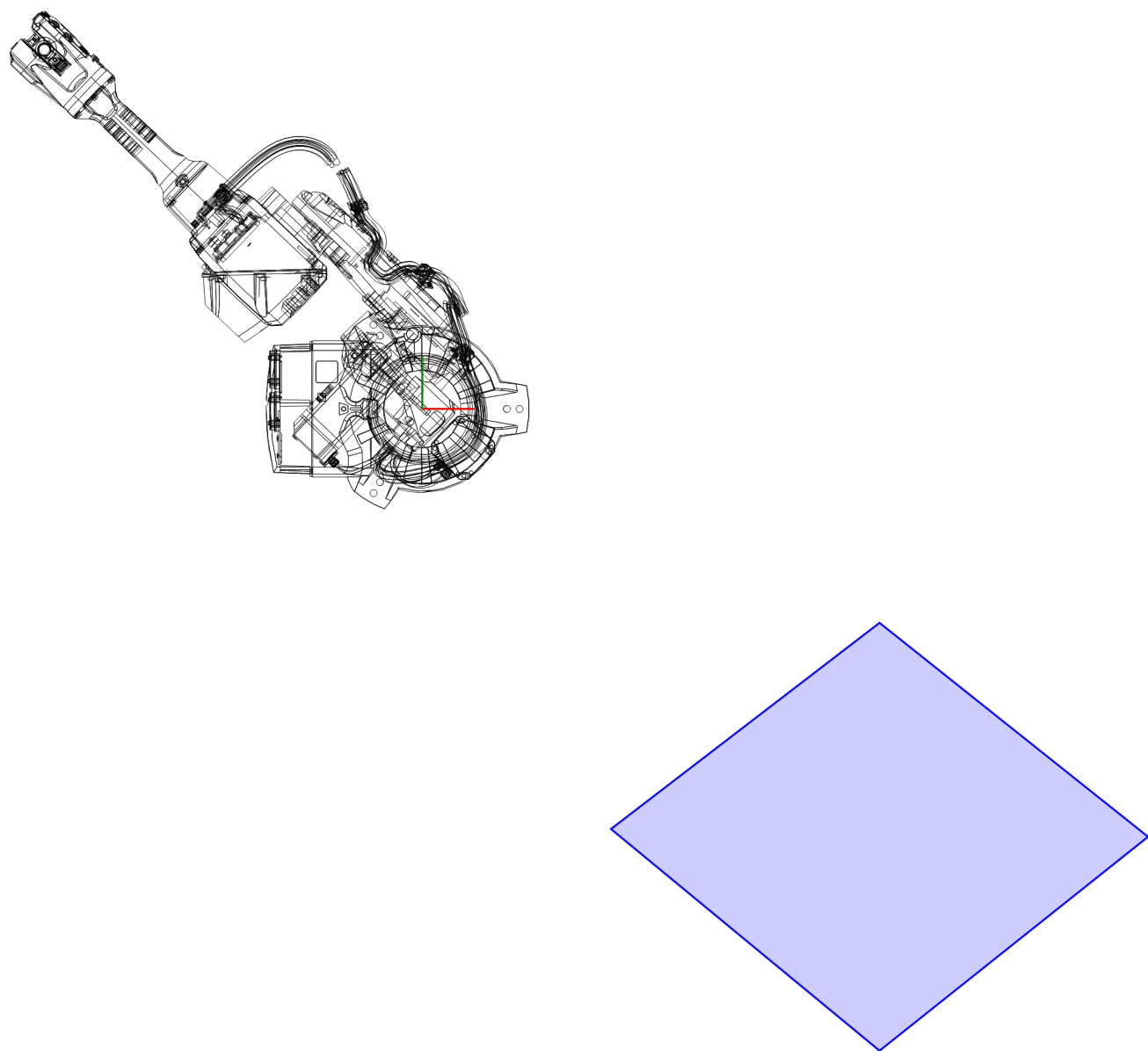
BushingPressBottom - Coordinates

Top	Bottom
675.000 mm	0.000 mm

Vertices

Number	X	Y
1	1175.000 mm	-1650.000 mm
2	1865.000 mm	-1100.000 mm
3	1175.000 mm	-550.000 mm
4	485.000 mm	-1080.000 mm

BushingPressBottom - Floor plan



BushingPressBottom - Tool Position Supervisions

Tool Position Supervisions - BPB_DenyTravel

Activation	Function active status	Violation stop category	Violation signal
Permanently active	No signal	Category1Stop	No signal
Include upper arm geometry		Allow inside	
true		false	

BushingPressBottom Verified: _____

Safe Zones - ConveyorTop

Tool speed supervision priority
Normal

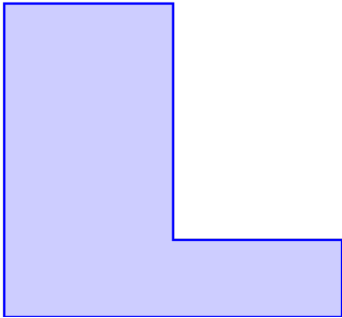
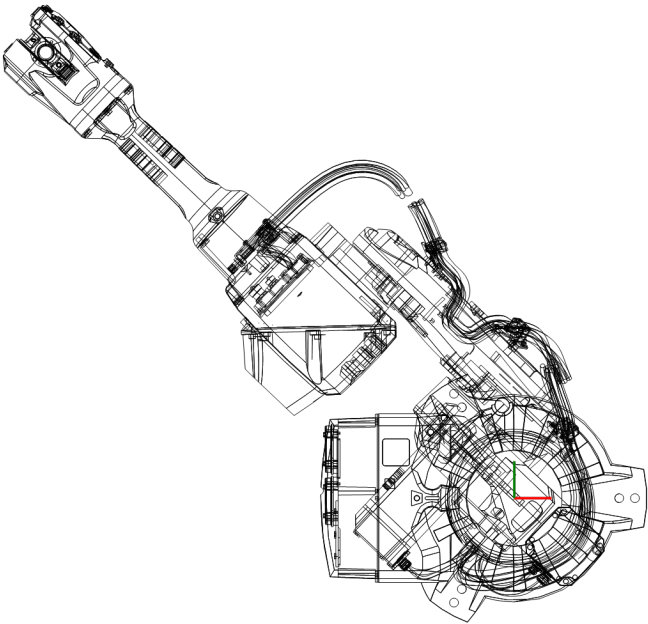
ConveyorTop - Coordinates

Top	Bottom
2050.000 mm	0.000 mm

Vertices

Number	X	Y
1	-1200.000 mm	-1600.000 mm
2	-500.000 mm	-1600.000 mm
3	-500.000 mm	-1440.000 mm
4	-850.000 mm	-1440.000 mm
5	-850.000 mm	-950.000 mm
6	-1200.000 mm	-950.000 mm

ConveyorTop - Floor plan



2. Safety Configuration

ConveyorTop - Tool Position Supervisions

Tool Position Supervisions - CT_DenyTravel

Activation	Function active status	Violation stop category	Violation signal
Permanently active	No signal	Category1Stop	No signal
Include upper arm geometry	Allow inside		
true	false		

ConveyorTop Verified: _____

Safe Zones - ConveyorBottom

Tool speed supervision priority
Normal

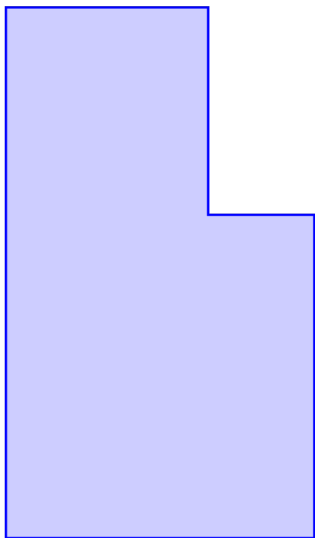
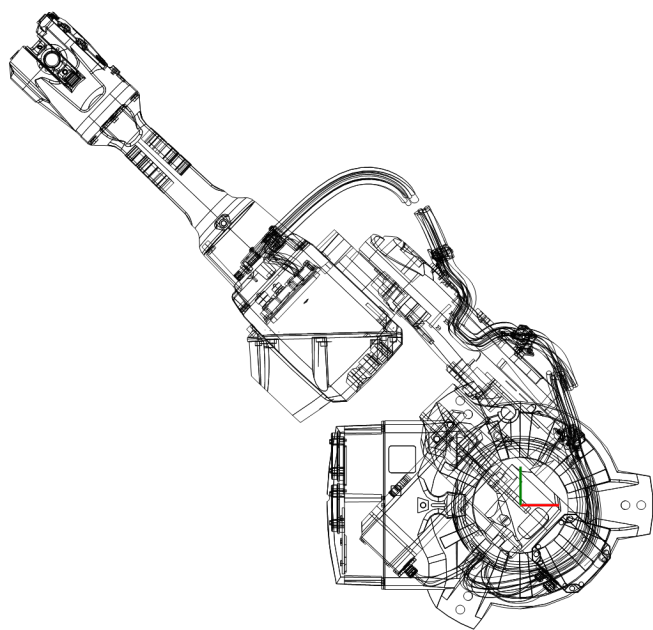
ConveyorBottom - Coordinates

Top	Bottom
805.000 mm	0.000 mm

Vertices

Number	X	Y
1	-1259.054 mm	-1600.000 mm
2	-620.000 mm	-1600.000 mm
3	-620.000 mm	-930.000 mm
4	-840.000 mm	-930.000 mm
5	-840.000 mm	-500.000 mm
6	-1259.054 mm	-500.000 mm

ConveyorBottom - Floor plan



ConveyorBottom - Tool Position Supervisions

Tool Position Supervisions - CB_DenyTravel

Activation	Function active status	Violation stop category	Violation signal
Permanently active	No signal	Category1Stop	No signal
Include upper arm geometry		Allow inside	
true		false	

ConveyorBottom Verified: _____

2.2 Stop Configurations

Note: These stop functions are NOT part of the emergency stop chain in the robot controller.

2. Safety Configuration

Stop

Trigger signal	Stop trigger status	Mode	Stop category
Door_0	No signal	Auto	Category1Stop

Stop Verified: _____

Stop_1

Trigger signal	Stop trigger status	Mode	Stop category
Door_1	No signal	Auto	Category1Stop

Stop_1 Verified: _____

3. Safe I/O Configuration

3.1 Global Signals

Name	Type	Default	Offset	width	protected	direction
SafetyEnable	BOOL	1	0	1		output
AutomaticMode	BOOL	0	1	1		output
ManualMode	BOOL	0	2	1		output
ManualFullSpeedMode	BOOL	0	3	1		output
DriveEnable	BOOL	0	4	1		output
DriveEnableFeedback	BOOL	0	5	1		output
LocalEmergencyStopStatus	BOOL	0	6	1		output
ExternalPowerControlActive	BOOL	0	7	1		output
ExternalPowerControlFeedback	BOOL	0	8	1		output

3.2 Networks

CSAdapter

CSAdapter - Devices

TCDEC_8B4P_DYU_G_8351570120

Name	Value
NodeId:	192.168.1.2
Safety Network Number:	000400000001
In Size Bits:	16
Out Size Bits:	0
scid:	F9598082
scid Date Time:	2021-05-26T16:20:48.842-04:00
Connection Type:	originator
Time Coordination Message Multiplier:	2
Timeout Multiplier:	2
Format Type:	2
Max Fault:	5
Protected:	

Devices - Signals

Signals - Input

Name	Type	Default	Offset	width	commissioning	protected	direction
Door_0	BOOL	0	0	1		false	input
Door_1	BOOL	0	1	1		false	input
Bushing_0	BOOL	0	2	1		false	input
Bushing_1	BOOL	0	3	1		false	input
s5	BOOL	0	4	1		false	input
s6	BOOL	0	5	1		false	input
s7	BOOL	0	6	1		false	input
s8	BOOL	0	7	1		false	input
s9	BOOL	0	8	1		false	input
s10	BOOL	0	9	1		false	input

3. Safe I/O Configuration

Name	Type	Default	Offset	width	commissioning	protected	direction
s11	BOOL	0	10	1		false	input
s12	BOOL	0	11	1		false	input

EN_Internal_Device_Safe

Name	Value
NodeId:	192.168.125.1
Safety Network Number:	123456789ABC
In Size Bits:	64
Out Size Bits:	64
scid:	NotUsed
scid Date Time:	
Connection Type:	target
Time Coordination Message Multiplier:	
Timeout Multiplier:	
Format Type:	
Max Fault:	
Protected:	

Feedback

Feedback - Devices

SC_Feedback_Dev

Devices - Signals

Signals - Output

Name	Type	Default	Offset	width	protected	direction
SafetyEnable	BOOL	1	0	1		output
AutomaticMode	BOOL	0	1	1		output
ManualMode	BOOL	0	2	1		output
ManualFullSpeedMode	BOOL	0	3	1		output
DriveEnable	BOOL	0	4	1		output
DriveEnableFeedback	BOOL	0	5	1		output
LocalEmergencyStopStatus	BOOL	0	6	1		output
ExternalPowerControlActive	BOOL	0	7	1		output
ExternalPowerControlFeedback	BOOL	0	8	1		output

3.3 Function Mappings

Function	Signal	Mandatory	Description
AutomaticMode	AutomaticMode	true	
DriveEnable	DriveEnable	true	
LocalEmergencyStopStatus	LocalEmergencyStopStatus	true	
ManualMode	ManualMode	true	
ManualFullSpeedMode	ManualFullSpeedMode	true	
SafetyEnable	SafetyEnable	true	
ExternalPowerControlActive	ExternalPowerControlActive	true	
ExternalPowerControlFeedback	ExternalPowerControlFeedback	true	

3. Safe I/O Configuration

Function	Signal	Mandatory	Description
DriveEnableFeedback	DriveEnableFeedback	true	

4. Combinatorial Logic Configuration

4.1 Pre Logic

Name	Expression
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4.2 Post Logic

Name	Expression
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Complete functionality verified and tested

Date

Signature