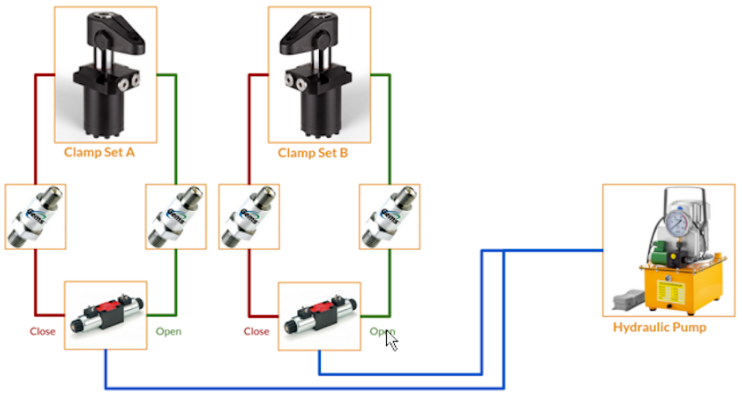
Bill Of Materials

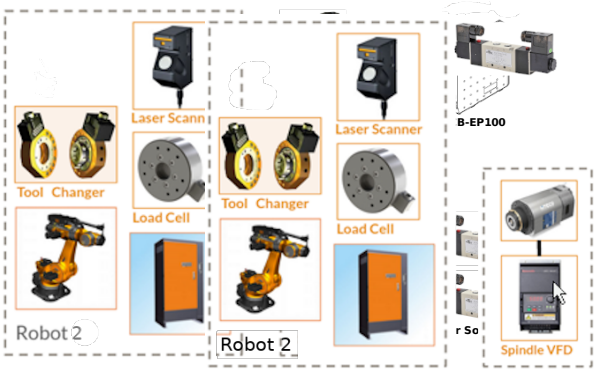
ID	Sensor	Model Number	Qy	Description	Use	Link
	Zone 1					
9	Cell PLC	CX2030	1	Mid level PLC		Beckhoff CX2030
10	Power Supply	CX2100-0014	1	Power supply for CX20xx, 130W		Beckhoff CX2100
11	EtherCat Terminal	EL6070	1	Terminal license key for Twincat 3	licenses will be stored here instead of PLC making it simple to swap PLC	Beckhoff EL6070
12	TwinSAFE Terminal	EL1918	1	8-ch digital input and logic TwinSAFE, TwinSAFE Logic	Safety master executes TwinSAFE logic and spare IO	Beckhoff EL1918
13	EtherCat Junction	EK1122-0008	1	2-port EtherCat Junction M8		Beckhoff EK1122
14	End Cap	EL9011	1	bus terminal end cap		Beckhoff EL9011
15	EtherCat Cable	ZK1090-3232-0xxx	1	M8 cable,AWG 26,female-female	M8 cables are more durable and secure than RJ45 and can easily used with EP blocks	Beckhoff ZK1090-3232-0xxx
	Zone 2					
16	Ethercat Coupler	EK1100-0008	1	EtherCat Coupler with M8 connections		Beckhoff EK1100
17	TwinSAFE Terminal	EL1904	1	4-ch digital input, TwinSAFE	KUKA x11 internal e-stop output	Beckhoff EL1908
18	TwinSAFE Terminal	EL2912-2200	1	4-ch digital output, TwinSAFE	KUKA x11 external e-stop input, pull high voltage contacts (VFD)?	Beckhoff EL2912
19	EtherCat Terminal	EL1008	1	8-ch standard digital input	2 for ATI prox sensor unlock/locked	Beckhoff EL1008
20	EtherCat Terminal	EL2008	1	8-ch standard digital output	4 for pneumatic solenoids, 1 for fluid solenoid	Beckhoff EL2008
21	EtherCat Terminal	EL6021	1	1-channel serial RS422/RS485	1 for Delta VFD-B communication to PLC	Beckhoff EL6021
22	EtherCat Scanner	EL6652	2	2-port EtherNet/IP scanner	1 for keyence comm box, 1 for KUKA robot, 1 for force comm box	Beckhoff EL6652
23	Terminal Cap	EL9011	1	bus terminal end cap	Keep the dust out and cover E-bus contacts	Beckhoff EL9011
24	Communication Unit	CB-EP100	1	EtherNet/IP communication unit	needed to communicate over EtherCat/IP	Keyence CB-EP100
25	Ethernet cable	CA77-005M0-2	2	EtherNet cable CAT7	1 for Keyence CB-EP100 (CAT7 required pg.'1-4'), 1 for Sunrise Instruments Control Box	Digikey Cable
26	Adapter	426-FIT0856	1	DB9 Male to RJ45 Female Adapter	Adapter for Sunrise Instruments Control Box	Mouser DB9-RJ45
27	RS485 Cable	Q8806-1	1	RS-422 low capacitance data cable	Cable for communication VFD<>PLC	AutomationDirect Q8806-1
28	RJ11 Connector	SKU: ST2106CO3165	1	RJ11/14 Connector Male 6P2C	Connector for RS485 connector used for VFD communication (one end only)	SharviElectronics RJ11/14
29	Solenoid Valve Cable	SC11-LS24-3	5	solenoid valve cable, 11mm DIN style molded connector to 3-wire pigtail	4 for 2x NITRA Pneumatic Solenoid Valve, 1 for NITRA Fluid Solenoid Valve	AutomationDirect SC11-LS24-3
30	EtherCat Cable	ZK1090-3232-0xxx	1	M8 cable,AWG 26,female-female	M8 cables are more durable and secure than RJ45 and can easily used with EP blocks	Beckhoff ZK1090-3232-0xxx
	Zone 3					
	Duplicate **Zone 2**					
	Zone 4					
31	EtherCat Coupler	EK1100-0008	1	EtherCat Coupler with M8 connections		Beckhoff EK1100
32	EtherCat Terminal	EL1008	1	8-ch standard digital input	4 for Gems Pressure switch output	Beckhoff EL1008
33	EtherCat Terminal	EL2008	1	8-ch standard digital output	4 for hydraulic clamp set A and B relays, 1 for Vevor Hydraulic pump relay	Beckhoff EL2008
34	Terminal Cap	EL9011	1	bus terminal end cap	Keep the dust out and cover E-bus contacts	Beckhoff EL9011
35	Slim Relay	277-10082-ND	5	Relay 24VDC Coil DIN Rail	1 to replace pedal on Vevor Hydraulic pump, 4 for hydraulic clamp set A and B	Digikey 277-10082-ND
36	Connector	5JR664-5A1-US0A	4	48-120V AC/DC 50/60Hz	4 for Hydraulic Valves	OneHydraulics 5JR664-5A1-US0A
37	Connector	557703-05M0	4	M12 Cord Set – 4 Meters	4 for Gems pressure switches	Kempston Ctrls 557703-05M0

Sheet Clamping Fixture



Zone 4

Zone 3



Zone 2

Zone 1