OPERATING INSTRUCTION MANUAL

AUTOMATIC SCREW CAPPING MACHINE

Model: Single Head

Machine No. G-19074
Mfg. Year: 2019-20

CLIENT: ECO FARMS PTY LTD.

MAHARSHI™

- HEAD OFFICE -

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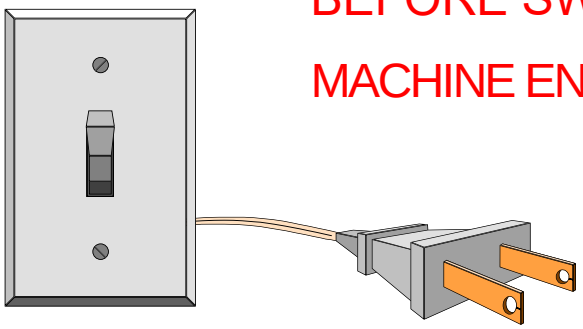
MOST IMPORTANT

BEFORE SWITCHING “ON" THE MACHINE ENSURE THE FOLLOWING



- POWER SUPPLY: 220/240 V AC. SINGLE PHASE STABILIZED (ONLY THROUGH STABILIZED POWER SOURCE, IN CLIENT SCOPE)

  (ANY SPIKE / ELECTRIC SURGE CAN DAMAGE THE ELECTRONIC PCB / COMPONENTS)

- AIR SUPPLY: 4 TO 6 Kg./cm^2 ONLY THRO' FRL AT CONSTANT PRESSURES.

  (for pneumatic operations)

- ENSURE TIGHTNESS OF ALL ELECTRICAL & PNEUMATIC CONNECTORS.

NOTE:

This operating manual is a detailed handbook on how to use the **Single Head Screw Capping Machine (pick and place).** The said this information is important to ensure that you obtain trouble free, economic service from machine.

Information in the manual is mainly intended for those, who will be directly concerned with the machine. This will enable how to operate the **Single Head Screw Capping Machine (pick and place)** safely, to pinpoint and deal with faults, and to adjust the machine quickly to treat various products/materials.

Table of Contents

INTRODUCTION

Automatic the **Single Head Screw Capping Machine (pick and place)** Specially designed for capping of different size of Oval/flat/Round Bottles. This Machine can handle Various Size of Bottles & Round Caps with the help of Some Change Parts like Cap Chute, Capping Head (die) & Main Product Wheel. Machine is Smoothly Runs at the Speed up to 20-40 BPM depending upon the size of the Bottles & Caps. Cap Elevator supplied with Machine for Round plastic caps, which will feed only oriented caps into the cap chute. Capping head provided with magnetic torque adjustment. Capping head has provision of Height adjustment screw jack for different height of bottles. There is individual AC. Motor & Gearbox Provided with require Speed to Rotate the Capping Head for Cap Tightening & Pneumatic Cylinder for Up/Down Motion. There is Pneumatic Cap Placing/Pressing Assy. Provided on Machine over the Cap Chute for pushing the cap down and place cap on bottle mouth. Individual motor used in capping machines developed for more flexibility, accuracy, and efficiency. This feature specifically offers better spindle control, precise application, tightening torque & tolerances. Machine has Touch screen HMI with PLC for Operating & Programming for Data Feeding, Safety Cabinet, Law Air Pressure Switch and Emergency Stop as per client requirements.

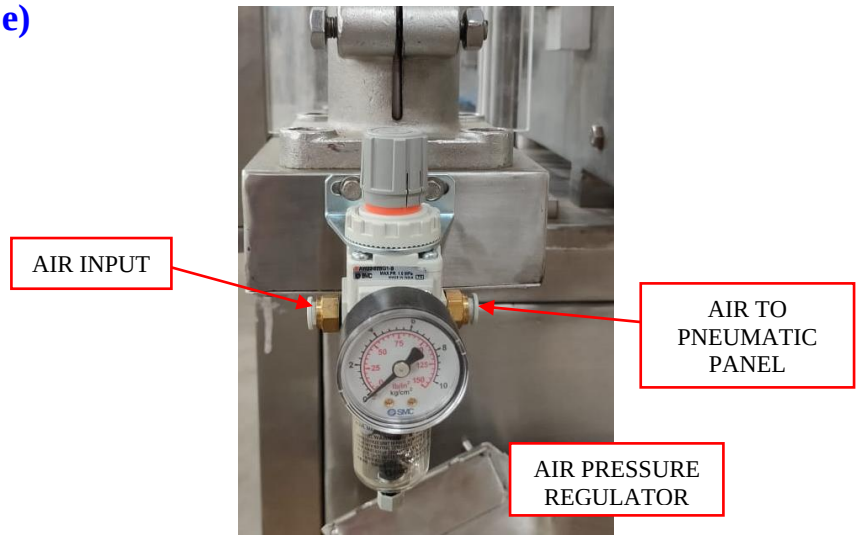
INSTALLATION INSTRUCTION

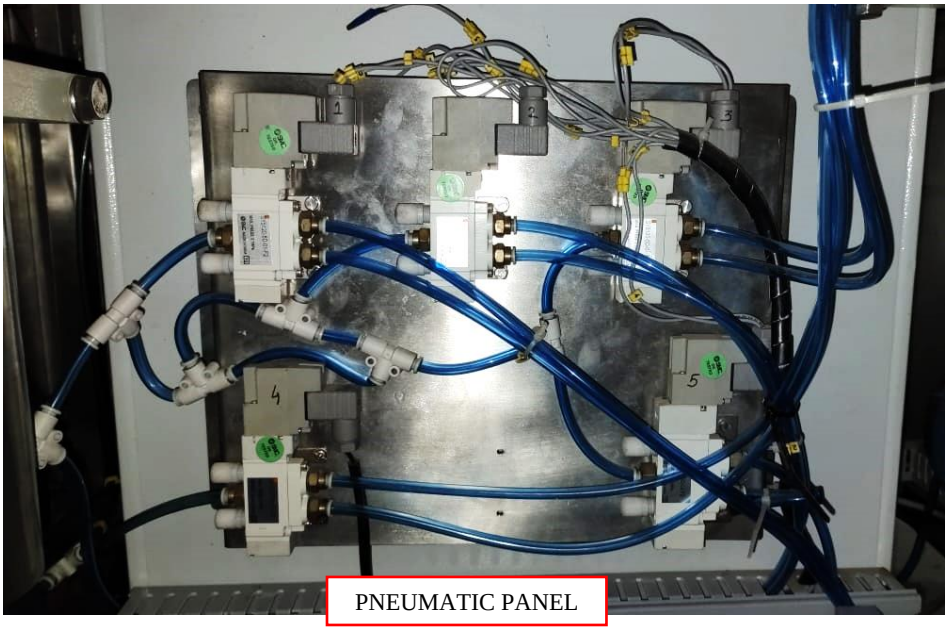
The machine is dispatched with the cap chute, cap vibrator, star wheel, all other tools and fitting parts are packed separately within the case. The machine is secured to its wooden baseboard by four bolts.

After the machine has been put into position, leveled, and bolted down, it should be thoroughly cleaned to remove the protective covering of grease and anti-rust compound. The machine should be connected to the cap elevator and cap vibrator.

POWER SUPPLY: PROVIDE 220/240V AC. SINGLE PHASE STABILIZED POWER SUPPLY (ONLY THROUGH STABILIZED POWER SOURCE IN CLIENT SCOPE; SUGGESTED 2 KVA).

AIR SUPPLY: Provide Main Compressed Air Supply At 4 - 6 Kg/cm² At Constant Pressure Thro' FRL Unit, To Air Pressure Regulator Fitted On Side Cover Of Machine Frame. As Shown in Bellow Picture. (FRL In Client Scope)





PNEUMATIC PANEL

After Installation, further run the machine for short duration should be operated before fitting the cap chute, cap vibrator, star wheel and whole arrangement to assembly line. Also, the variable speed drive should be operated through the complete range of speeds a couple of time.

SALIENT FEATURES

- No Bottle Machine Stop
- No Cap Machine Stop
- Stainless Steel Construction
- Geneva base Indexing system
- Cap Feeder Elevator for Cap Feeding in machine through Cap Chute.
- Separate Capping Spindle drive through AC. Motors & Gear Box.
- Caps are individually Placed on Bottle Mouth by the Pneumatically operated pusher Cylinder.
- Capping chuck head with chuck tip for one cap size.
- Individual drive for Capping Head, Product Wheel Indexing and Conveyor Motor for easy settings.
- Cap delivery chute (sorter to placer) for one cap size.
- Tightening Torque can be adjusted by Magnetic Torque for different size of caps.
- Adjustable conveyor operating height, to align with other online machine conveyor.
- The change parts will be required only for whereas for Cap and Bottle size/diameter change. And only simple adjustments are required which makes this unit versatile.
- Accurate and repeatable performance.
- PLC controlled with Touch Screen HMI.

GENERAL OPERATION

1. fix the appropriate size of Capping Head (Die) & Cap chute as per cap size; and Product Wheel (Star Plate) as per bottle size. Set the side guide of conveyor as per Bottle Size. Leave 2-3 mm Space between Bottles and Guide for smooth running.
2. After completion of Change over, start the Machine and check for the proper product transfer and all functions by 'INCH' button given on Operation Panel.
3. Load the Sufficient caps in Cap Loading Hoper of Cap Elevator & Bottles on Conveyor of from online connected upstream machine & Then Start Conveyor. Now Bottles are received from in feed of conveyor and moved to Cap Placing Station assy.
4. There is Pneumatic Cap Placing Assy. Provided which will push the cap down from cap chute to place on bottle mouth.
5. Now, The Bottle picks up the cap one by one from the Cap chute and further moves to the capping head.
6. Now, Bottles received from in feed side of conveyor After Cap Placing on Bottles are automatically feed to the indexing star plate.

7. Cap Elevator feeds the cap into the cap chute continuously. If there are no sufficient caps in chute, No-Cap sensor (Leuze Make) will give signal to PLC & Machine will stop & alarm display in HMI Screen.

8. Continuous clockwise Rotating Capping Head Have an individual AC. Motor & Gearbox to Rotate the Head & Pneumatic Cylinder for Up/Down Motion. Capping head will comes down, hold the cap & rotate clock wise to tighten the Cap on bottle's mouth properly.

9. After completion of capping procedure, capping head moves up and release the capped bottle by Pneumatic Bottle Ejector Cylinder. Now, Product Wheel will transfer the Capped Bottle on Discharge End of Conveyor and then other on-line connected Machine i.e. Labelling Machine.

10. There is a provision of counting sensor / Out-feed Jamming at out feed conveyor for count the capped bottle and display on HMI and in case of Bottle jamming at Out Feed Conveyor, Machine will be Stop.

11. There is also Digital Low Air pressure switch provided, in case of low air pressure machine will stop and alarm will display on HMI screen.

12. There is also provision of Emergency stop for stop the machine, In case of any emergency.

Note: Before put the machine in continuous operation, please check the all operation by Inching.

SPECIAL INSTRUCTION

Initial Running of Gear Box

The Machine has been subjected to a short test before dispatch to the customer, but it takes many hours of running under full load for a worm gear to attain its highest efficiency. The machine may, if necessary, be put to work immediately on full load, but if circumstances permit, it is better for the ultimate life of the worm gear to run it under gradually increasing loads, attaining full load after about 8 to 15 hours. Reasonable precautions should be taken to avoid overloads in the early stage of running.

Temperature rise on the initial run will be higher than that eventually attained after the gear is fully run in.

Variable Speed Drive

The variable speed is obtained by means of AC. Variable Frequency Drive (VFD)

Height Adjustment

The cap head height control setting is up and down type, height-setting bolt is provided beside the head pillar.

HEAD HEIGHT
ADJUSTMENT SCREW

OPERATING PANEL

TOUCH SCREEN HMI
FOR OPERATING & PROGRAMMING

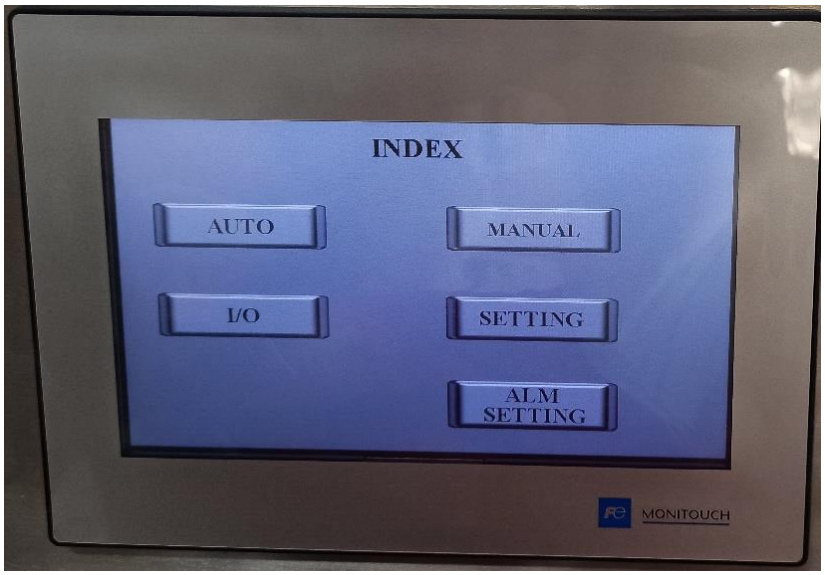
Operating Panel Consisting following control,

1.	Touch Screen HMI (‘**Fuji**’ Make)
2.	Panasonic Make, Digital Air Pressure Switch
3.	Inching Push Button
4.	Emergency Stop Switch (for stop the machine in case of emergency)
5.	Mains On/Off Switch

Feed the Data as per size of Bottle and Caps and then run the Machine.

1- MAIN HOME SCREEN

2-INDEX

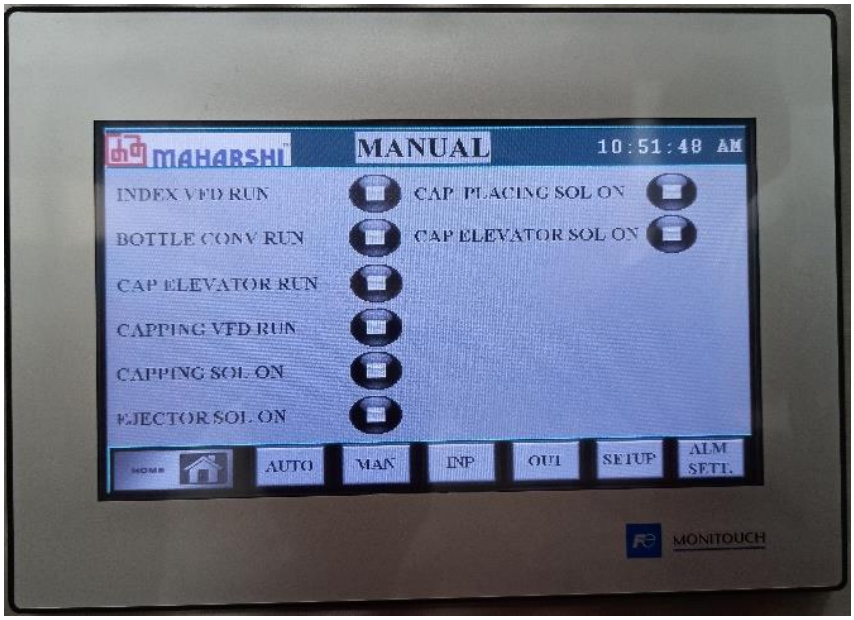


3-MACHINE CONTROL

This screen is use for Machine Cycle Run / Stop.

START: Use for Machine Cycle Run
MACHINE RESET: Use for Machine Function Reset before Run Machine Cycle.
Note:- Reset every time before start Machine Cycle.
BOTTLE PER MIN: Showing speed of Machine.
TOTAL COUNTER: Showing Total Production Counts.
RESET: Use for TOTAL COUNT Reset.

4- MANUAL



This screen is use for Manually Check all Motor and Valve.

INDEX VFD RUN: To Start/ Stop for Star wheel Indexing Motor
BOTTLE CONV RUN: To Start/ Stop for Bottle Conveyor Motor
CAP ELEVATOR RUN: To Start/ Stop for Cap Elevator Motor
CAPPING VFD RUN: To Start/ Stop for Capping Head Motor
CAPPING SOL. ON: To Operate Capping Head Up Down Cylinder at Capping Station
EJECTOR SOL. ON: To Operate Bottle Ejector Cylinder at Outfeed of Star wheel
CAP PLACING SOL. ON: To Operate Cap Placing Cylinder at Cap Chute Station
CAP ELEVATOR SOL. ON: To Operate Cap Elevator Air Valve at Cap Elevator

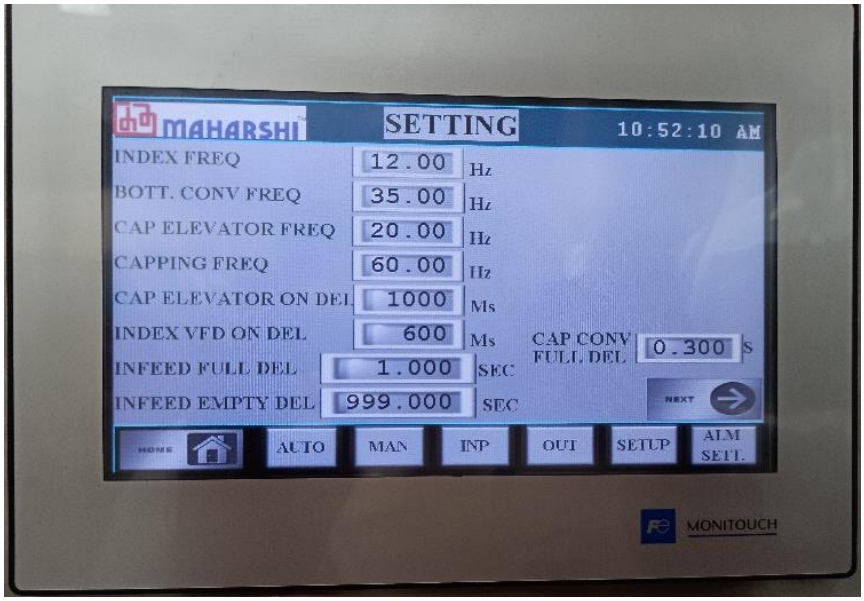
5-INPUT LIST

In the INPUT LIST screen, it is showing the operating condition of all Inputs which are used in machine. It will indicate with Green and Red Color. It will Showing Green when it Is working.

6-OUTPUT LIST

In the OUTPUT LIST-1 screen, it is showing the operating condition of all Outputs which are used in machine. It will indicate with Green and Red Color. It will Showing Green when it Is working.

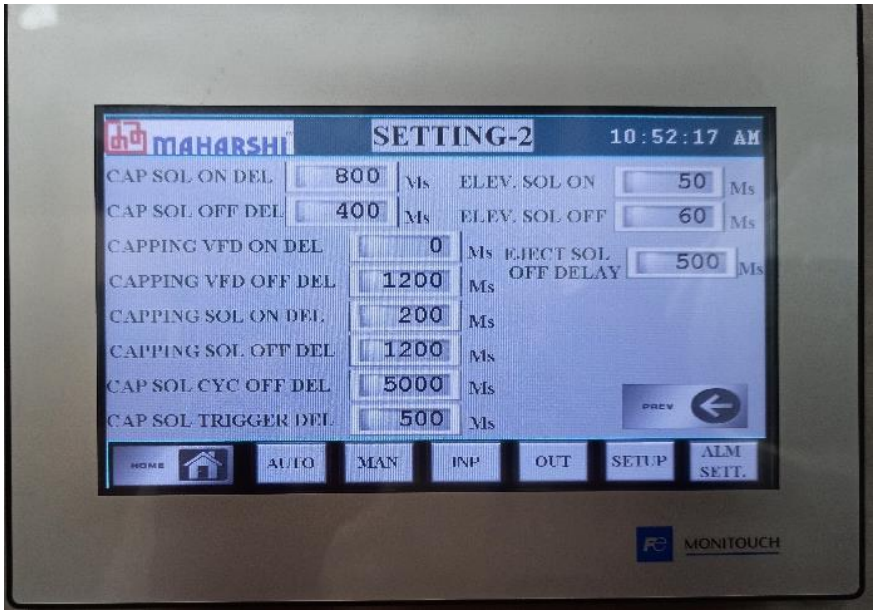
7- SETTING



This screen is use for Setting of Machine.

INDEX FREQ: Speed of Star wheel Indexing Motor
BOTTLE CONV. FREQ: Speed of Bottle Conveyor Motor
CAP ELEVATOR FREQ: Speed of Cap Elevator Motor
CAPPING FREQ: Speed of Capping Head Motor
CAP ELEVATOR ON DELAY: On Delay Time for Cap Elevator After Start the Cycle.
CAP CONV. FULL DELAY: Off Time for Cap Elevator after Cap Reach at Chute Sensor Level.
INDEX VFD ON DEL: On Time for Indexing Motor after Completing Capping Operation
INFEED FULL DEL: Time setting of Infeed Full Alarm
INFEED EMPTY DEL: Time setting of Infeed Empty Alarm
NEXT: For Going in Next screen of Setting
(Note: Ms. = millisecond)

8- SETTING-2



This screen is use for Setting of Machine.

CAP SOL ON DEL: On Time for Cap Placing Cylinder at Cap Chute Station.
CAP SOL OFF DEL: Off Time for Cap Placing Cylinder at Cap Chute Station.
ELE. SOL ON: On Time for Air Valve of Elevator
ELE. SOL OFF: Off Time for Air Valve of Elevator
CAPPING VFD ON DEL: On Time for Capping Motor after Bottle Stop at Capping Station
CAPPING VFD OFF DEL: Off Time for Capping Motor after Bottle Stop at Capping Station
CAPPING SOL. ON DEL: On Time for Capping Cylinder at Capping Station
CAPPING SOL. OFF DEL: Off Time for Capping Cylinder at Capping Station
CAP SOL. CYL OFF DELAY: Off Time for Capping Cycle if inputs are empty
CAP SOL TRIGGER DEL
EJECT SOL. OFF DELAY: Off Time for Bottle Ejector Cylinder at the Outfeed of Star wheel
(Note: Ms. = millisecond)

9- ALARM SETTING

INFEED JAM DEL.: Time setting of Infeed Jam.
INFEED EMPTY DEL.: Time setting of Infeed Empty.
OUTFEED JAM DEL.: Time Setting of Outfeed Jam.
CAP CHUTE EMPTY DEL.: Time setting of Cap Chute Empty.
BOTTLE STOP TIME
DOOR ALM INLINE: Alarm Inline / Bypass Selection of Safety Door.

HOW TO DO CHANGEOVER

1. CHECK POWER SUPPLY AND AIR SUPPLY AND SWITCH ‘ON’ THE MACHINE.
2. TAKE REQUIRED BOTTLE AND SET CONVEYOR SIDE GUIDE AS PER BOTTLE SHAPE & SIZE.
3. TAKE ALL CHANGE PART (STAR WHEEL/PRODUCT WHEEL) OF REQUIRED SIZE OF BOTTLE AND SET IT ON MACHINE.
4. AFTER SETTING OF STAR WHEEL, SET BACK PRODUCT GUIDE OR GUIDE BELT ASSEMBLY AS PER BOTTLE SHAPE & SIZE AND CHECK FOR PROPER BOTTLE TRAVELLING OR NOT.
5. NOW TAKE CAPPING HEAD AS PER CAP SIZE AND FIX IT ON MACHINE AND ADJSUT THE CAPPING HEAD HEIGHT UP OR DOWN AS PER BOTTLE HEIGHT.
6. PUT MANUALLY BOTTLE WITH CAP BELOW CAPPING HEAD AND CHECK IT WITH INCHING BUTTON. THAT BOTTLE AND CAP ARE IN CENTER OR NOT.

7. TAKE REQUIRED SIZE CAP CHUTE AND SET IT ON MACHINE; ADJUST REQUIRED HEIGHT OF CAP ORIENTATION UNIT BY ADJSTING UP & DOWN STUD.

8. AFTER ATTACHED CAP CHUTE SEE CAPS COMING WITHOUT PROBLEM FROM ORIENTATION UNIT IN MANUAL MODE OR NOT.

9. NOW SET NO-CAP (CAP FLOW) SENSOR, PRODUCT SENSOR & OUT-FEED JAMMING / COUNTING SENSOR AT PROPER POSITION.

10. NOW CHECK SOME BOTTLE AND CAP BY INCHING THAT ALL BOTTLE & CAP SENSE PROPERLY OR NOT.

11. NOW PASSING SOME BOTTLE AND CHECK ALL BOTTLE IS PICK THE CAP FROM CAP CHUTE BY INCHING BUTTON.

12. AND THEN BY INCHING BUTTON SEE THAT ALL BOTTLE WITH CAP IS PROPERLY SEALING / TIGHT OR NOT.

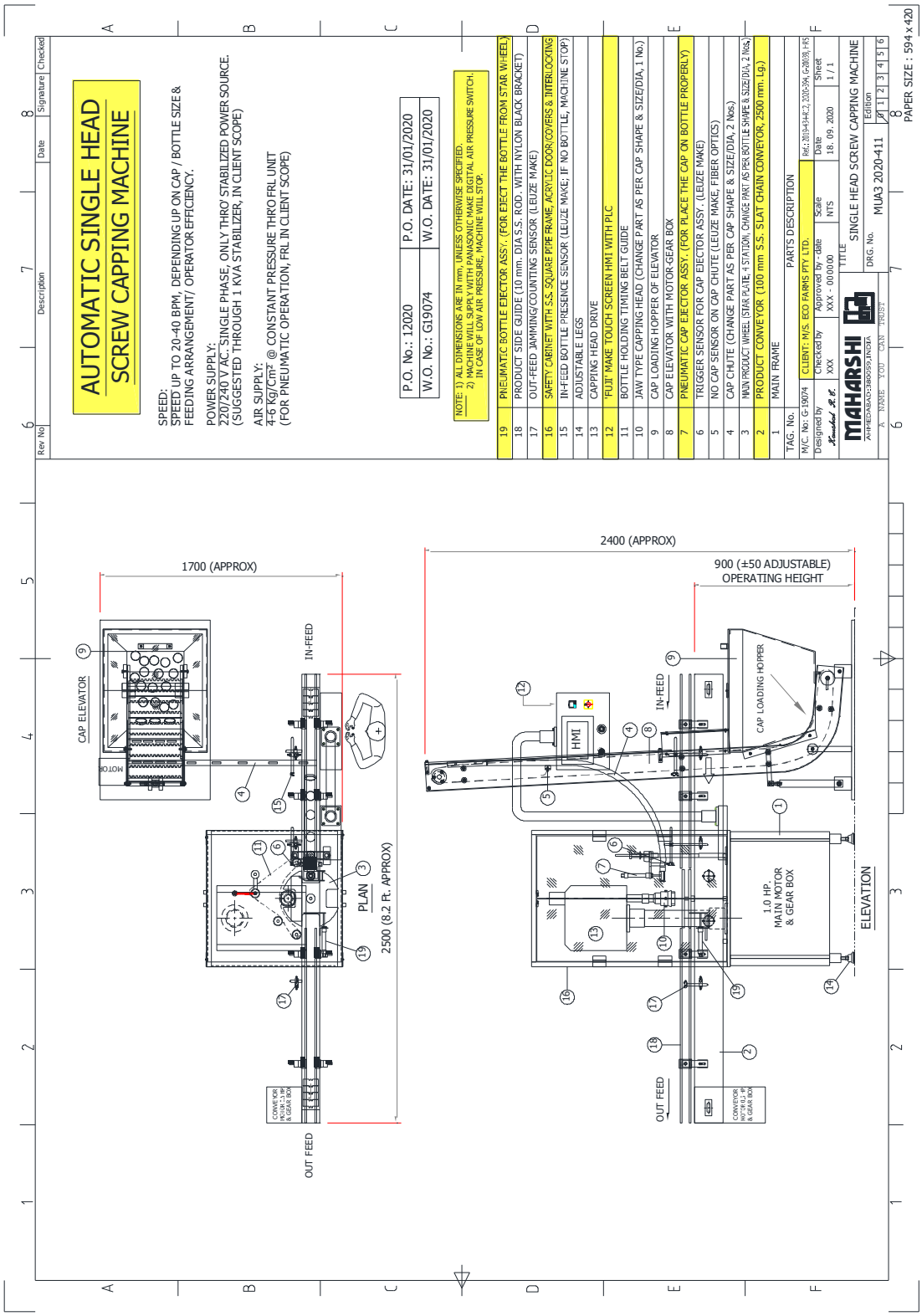
13

IF SOME CAP TIGHTNEES ISSUE HAPPENED, THEN MAKE FINE TUNE IT WITH CAP HEAD TORQUE ADJUSTMENT.

14

IF ALL BOTTLE AND CAP IS PROPERLY TIGHTEN; THEN GO INTO AUTO MODE AND TAKE PRODUCTION.

GA. DRAWING OF MACHINE



TECHNICAL SPECIFICATION

Machine Name / Model	**Single Head Screw Capping Machine (pick and place)**
Machine No.	**G-19074**
Speed	Up to 20-40 BPM. (Depending up on Cap & Bottle Shape & Size/Dia.)
Overall Dimension (L x W x H)	As Per GA. Dwg. No. MUA3 2020-411 (Ref. Line Layout Dwg. No. 2019-434-R12)
Conveyor Operating height	**100 mm S.S. Slat Chain Conveyor, 2500 mm Lg.** & Conveyor Operating Ht. 900 mm. (± 50 Adjustable)
Conveyor Product guide	Dia. 10 S.S. Double Rod with Black Nylon Bracket.
Bottle supporting belt on periphery of main product wheel	Bottle holding Timing belt on periphery of Product wheel, which will hold the bottles during moving in product wheel.
INPUT SPECIFICATION	
Bottle shape & size	Different size of Round Bottles
Cap size	Different size of Round Caps
Change Parts Supplied with the Machine.	2 Set of Product Wheel (4 Station, Star Plate) as per different size of Bottles and 1 No Cap Chute & 1 No. Capping Head as per different size of caps.
Note: Following Change Parts Required When Change Bottle & Cap Size. **for Bottle**: Product Wheel (Star Plate) **for Cap**: Cap Chute & Capping Head (Die)	
Main drive Motor	**'Rotomotive'** Make, 0.5 HP. (0.37 KW), Three Phase, AC. Motor
Main drive Gear box	**'Rotomotive'** Make, Type: Box-O50, Size: 71B5, Ratio: 20 : 1
Motor for Conveyor	**'Rotomotive'** Make, 0.5 HP. (0.37 KW), Three Phase, AC. Motor
Gear box for Conveyor	**'Rotomotive'** Make, Type: Box-O40, Size: 71B5, Ratio: 20 : 1
Motor for Capping Head	**'Rotomotive'** Make, 0.25 HP. (0.18 KW), Three Phase, AC. Motor
Gear box for Capping Head	**'Rotomotive'** Make, Type: Box-O30, Size: 71B5, Ratio: 10 : 1
Motor for Cap Elevator	**'Rotomotive'** Make, 0.5 HP. (0.37 KW), Three Phase, AC. Motor
Gear box for Cap Elevator	**'Rotomotive'** Make, Type: Box-O40, Size: 71B5, Ratio: 20 : 1
Variable AC. Frequency Drive (VFD) for Main Motor	**'Fuji'** Make, Type / Model : FRN0006C2S-7A
Variable AC. Frequency Drive (VFD) for Conveyor Motor	**'Fuji'** Make, Type / Model : FRN0004C2S-7A
Variable AC. Frequency Drive (VFD) for Capping Head Motor	**'Fuji'** Make, Type / Model : FRN0004C2S-7A
Variable AC. Frequency Drive (VFD) for Cap Elevator Motor	**'Fuji'** Make, Type / Model : FRN0004C2S-7A

Operating Panel (HMI with PLC)	**'Monitouch - Fuji'** Make, Touch Screen HMI for operating & programming with PLC.
Cap Feeding Device	Cap Elevator with 10" Wide, Delrin Slat with pusher for continuous feeding of caps from S.S. Cap Storage hopper via bowl to cap chute with 0.5 HP. Motor, Suitable Gear box & AC Drive
Pneumatic Cap Ejector Assy.	**'Janatics'** Make, Cylinder & Solenoid Valve fitted on Adjustable Assy. for cap chute, Near Star Plate. (For Place the Cap on Bottle)
Pneumatic Bottle Ejector Assy.	**'SMC'** Make, Cylinder & Solenoid Valve fitted at Star Wheel Assy. (For Eject the Bottle from Star Wheel & Exit to the Conveyor End)
Pneumatic Cylinder for Capping Head Up/Down.	**'SMC'** Make, Cylinder & Solenoid Valve fitted at Capping Head Drive Assy.(For Up/Down Movement of Capping Head)
Air Pressure Regulator	**'SMC'** Make, Model: AW20=02BG1-B
Air Gauge	**'SMC'** Make
Low Air Pressure Switch/ Alarm	**'Panasonic'** Make, Digital Air Pressure Switch, in case of low air pressure, Machine will Stop and alarm display on HMI Screen.
Bottle Presence Sensor @ In-feed	**'Leuze'** Make, Sensor for Presence the cap; installed at in feed.
No-Cap (Flow) Sensor on Cap Chute	'**Leuze**' Make Fiber Optic
Bottle Jamming / counting Sensor @ Out Feed	**'Leuze'** Make, Sensor installed on conveyor at out feed.
Trigger Sensor for Cap Ejector Assy.	**'Leuze'** Make, Sensor installed on conveyor at Cap Ejector Assy.
Safety Cabinet	Safety Cabinet of S.S. Square Pipe frame & transparent Acrylic covers/doors with Interlocking, in case of Door open, Machine will Stop.
Emergency stop	Provided on S.S. box of HMI, for stop the machine; In case of any emergency.

Utilities:

Power Supply	**220/240 V Ac. Single Phase, Only Through Stabilized Power Source.** (Suggested Through **2 KVA** Stabilizer, In Client Scope)
Air Supply (For Pneumatic Operation)	**4 To 6 Kg/Cm²** Thro' FRL at Constant Pressure. **(FRL Unit, in Client Scope)**

MAINTENANCE

DAILY:

1. The machine should be kept clean and free from spilled product.
2. Check the all Product Guides & make sure for proper bottle transfer, if required set properly.
3. Select the Appropriate Change Parts according to Bottle/Cap Size.
4. Check the all sensor are clean and at proper position.

WEEKLY:

1. Check the surface of slats of product conveyor is clean and not contaminated.
2. Check the tightness of all bolts & nuts to avoid misalignment or accident.
3. Please apply the grease to all chain/gear drives. (do not apply grease/oil to timing pulley, belt drive)

MONTHLY:

1. Check the slats of product conveyor, conveyor green wear strip guide and nylon back guide for sign of wear and replace if require.
2. **Blow the low-pressure air to control panel from a distance to remove dust without damaging wiring connections.**
3. Check the wiring connectors, if found loose, tighten the same.
4. Check the oil level in gear box. (Note: 'Rotomotive' make gear box is supplied with long-life lubrication and they do not require any maintenance.)

GENERAL FAULTS AND RECTIFICATION

- **MACHINE IS NOT STARTING**

CHECK THE POWER SUPPLY.

CHECK THE MCB IN ELECTRICAL PANEL IS ‘ON’ OR NOT.

- **IF MACHINE IS NOT RUN IN AUTO MODE.**

CHECK EMERGENCY BUTTON IS ‘PRESSED’ OR NOT.

CHECK CLUTCH SENSOR (OPTIONAL) IS ACTIVE OR NOT.

- **IF BOTTLE IS NOT PROPERLY TRAVELING.**

CHECK SETTING OF STAR WHEEL & CONVEYOR SIDE GUIDE.

CHECK THE ALIGNMENT OF CONVEYOR AND STAR WHEEL

SYNCHRONIZE THE SPEED OF CONVEYOR AND MACHINE.

CHECK CENTER STAR WHEEL AND SUPPORTING GUIDE / BELT SETTING THAT BOTTLE IS NOT DAMAGED.

- **IF CAP IS NOT PROPERLY TIGHT.**

CHECK CAPPING HEAD TORQUE AS PER CAP SIZE.

CHECK BOTTLE IS ROTATING AT CAPPING TIME OR NOT.

CHECK CAPPING HEAD HEIGHT AND PRESSURE ON BOTTLE AND CAP IS OK OR NOT.

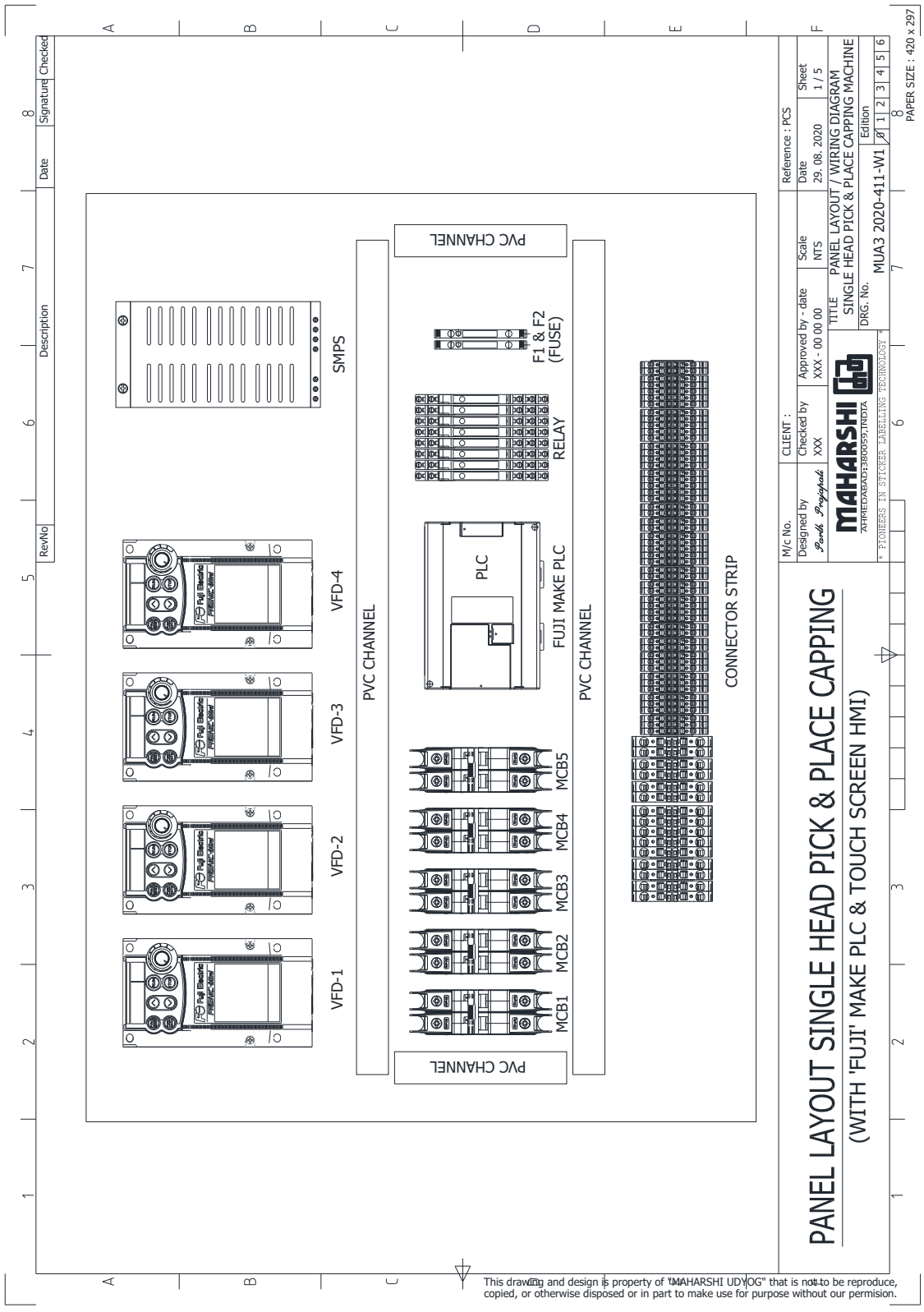
- **IF CAP IS NOT PROPER COMING FROM CHUTE.**

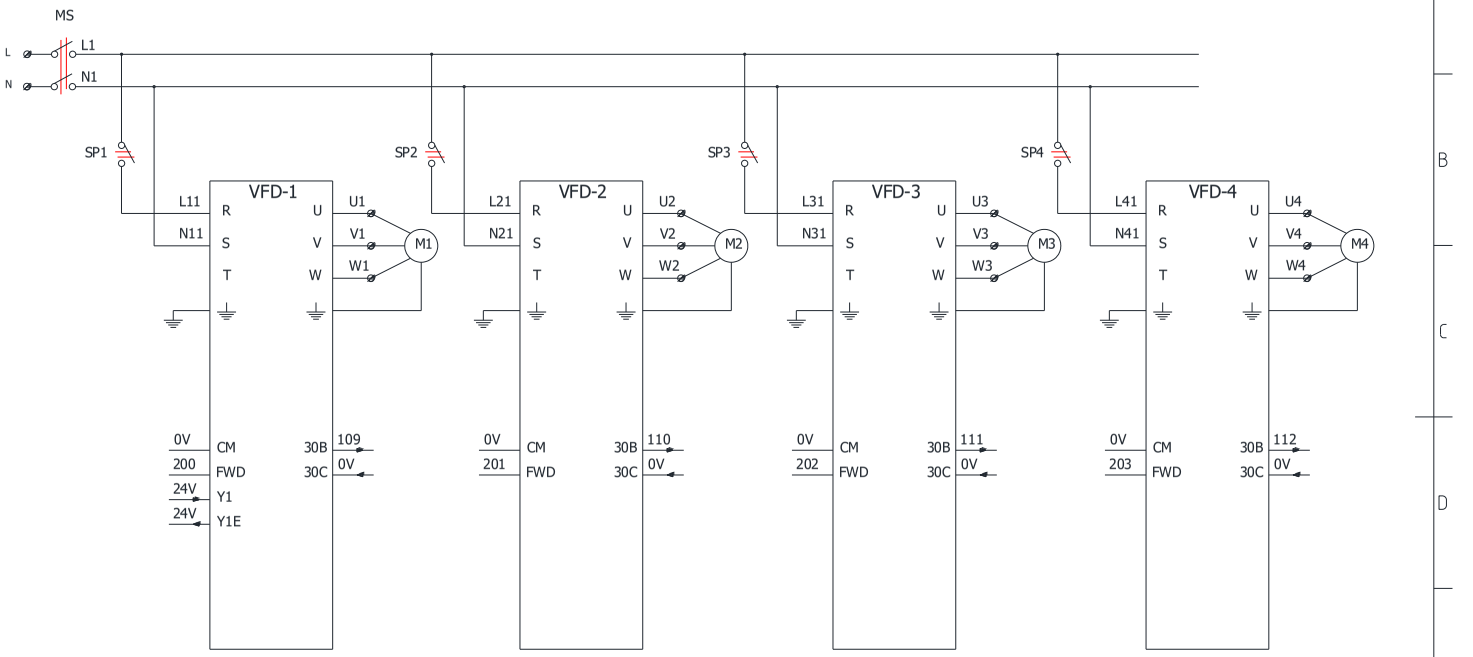
CHECK CHUTE AND CAP ORIENTATION UNIT ALIGNMENT.

CHECK SETTING OF CHUTE

CHECK CAP SIZE IS OK AS PER CHUTE SIZE OR NOT.

WIRING DIAGRAM





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WIRING DETAIL FOR SINGLE HEAD PICK & PLACE CAPPING

(WITH 'FUJI' MAKE PLC & TOUCH SCREEN HMI)

M/c No.	CLIENT :			Reference : PCS	
Designed by	Checked by	Approved by - date	Scale	Date	Sheet
Parth Prajapati	XXX	XXX - 00 00 00	NTS	29. 08. 2020	2 / 5

MAHARSHI
AHMEDABAD:380059,INDIA
* PIONEERS IN STICKER LABELLING TECHNOLOGY *

TITLE: WIRING DIAGRAM
SINGLE HEAD PICK & PLACE CAPPING MACHINE

DRG. No. MUA3 2020-411-W2

Edition: 0 1 2 3 4 5 6

PAPER SIZE : 420 x 297

RevNo	Description	Date	Signature	Checked

PANEL TERMINATION / CONNECTOR STRIP

L	N	E	E
1 Ø, 230V AC INPUT SUPPLY		EARTHING	

U1	V1	W1	U2	V2	W2	U3	V3	W3	U4	V4	W4
MOTOR M1			MOTOR M2			MOTOR M3			MOTOR M4		

				X0	X1	X2	X3	X4	X5					X6	X7	X8
24V	24V	0V	0V	100	101	102	103	104	105	24V	24V	0V	0V	106	107	108
24 VDC FOR SENSOR				PLC INPUT						24 VDC FOR SENSOR				PLC INPUT		

COM1	304	COM2	305	COM3	306	COM4	307	COM5	308	COM6	309
PLC DIGITAL O/P (NO)											

WIRING DETAIL FOR SINGLE HEAD PICK & PLACE CAPPING

(WITH 'FUJI' MAKE PLC & TOUCH SCREEN HMI)

M/c No.	CLIENT :			Reference : PCS	
Designed by: Parth Prajapati	Checked by: XXX	Approved by - date: XXX - 00 00 00	Scale: NTS	Date: 29. 08. 2020	Sheet: 3 / 5

MAHARSHI AHMEDABAD:380059,INDIA

* PIONEERS IN STICKER LABELLING TECHNOLOGY *

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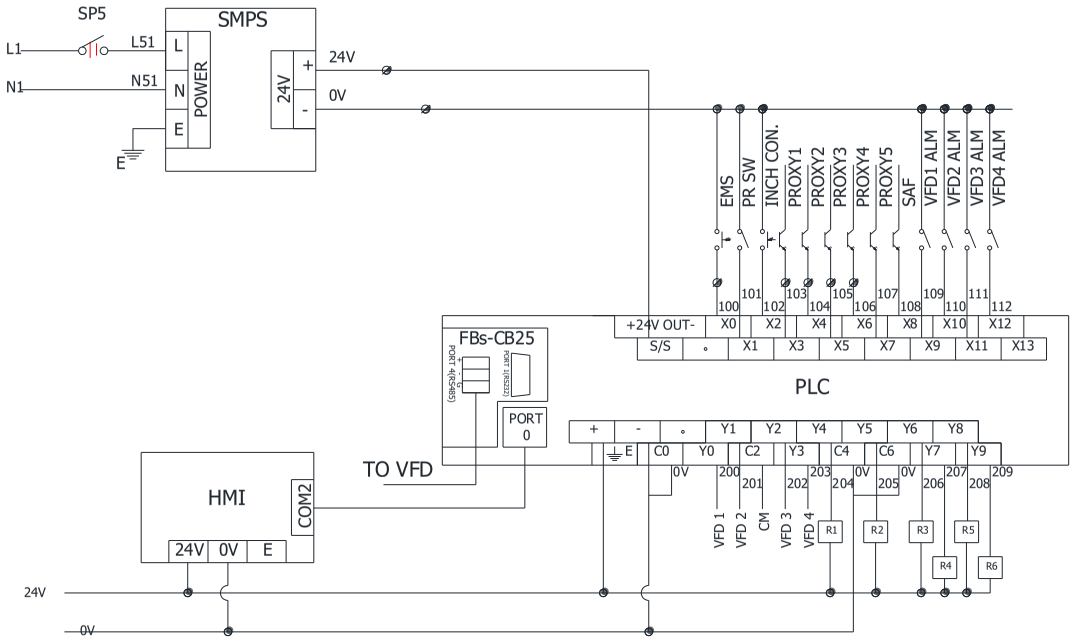


PLC INPUT / OUTPUT LIST

INPUTS

X0	: EMERGENCY STOP PB
X1	: LOW AIR PRESSURE S/W
X2	: INCH-CONVEYOR VFD
X3	: BOTTLE SENSOR-1 (INFEED)
X4	: CAP SENSOR-1 (CHUTE)
X5	: BOTTLE SENSOR-2 (CAPPING STATION)
X6	: INDEX PROXY
X7	: BOTTLE SENSOR-3 (OUTFEED)
X8	: SAFETY DOOR SENSOR
X9	: MAIN VFD HEALTHY
X10	: BOTTLE CONVEYOR VFD HEALTHY
X11	: CAP CONVEYOR VFD HEALTHY
X12	: CAP HEAD VFD HEALTHY
X13	: SPARE

OUTPUT

Y0	: MAIN VFD
Y1	: BOTTLE CONVEYOR VFD
Y2	: CAP CONVEYOR VFD
Y3	: CAP HEAD VFD
Y4	: SOL. VALVE 1 (CAP)
Y5	: BOTTLE EJECTOR VALVE 2
Y6	: SOL. VALVE 3 (CAPING HEAD)
Y7	: SOL. VALVE 4 (BOTTLE GRIPPING)
Y8	: SPARE
Y9	: SOL. VALVE 5 (CAP ELEVATOR)

WIRING DETAIL FOR SINGLE HEAD PICK & PLACE CAPPING

(WITH 'FUJI' MAKE PLC & TOUCH SCREEN HMI)

M/c No.	CLIENT :			Reference : PCS	
Designed by	Checked by	Approved by - date	Scale	Date	Sheet
Parth Prajapati	XXX	XXX - 00 00 00	NTS	29. 08. 2020	4 / 5

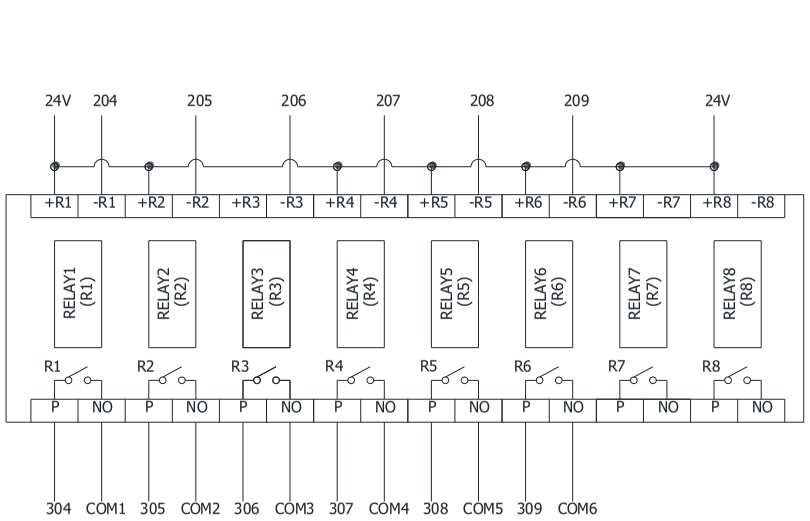
MAHARSHI
AHMEDABAD:380059,INDIA
* PIONEERS IN STICKER LABELLING TECHNOLOGY *

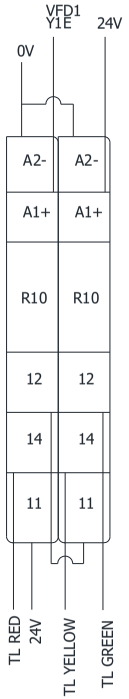
TITLE: WIRING DIAGRAM
SINGLE HEAD PICK & PLACE CAPPING MACHINE

DRG. No. MUA3 2020-411-W4 | Edition 0 1 2 3 4 5 6

PAPER SIZE : 420 x 297

RevNo	Description	Date	Signature	Checked





RELAY INTERFACE

WIRING DETAIL FOR SINGLE HEAD PICK & PLACE CAPPING

(WITH 'FUJI' MAKE PLC & TOUCH SCREEN HMI)

M/c No.	CLIENT :			Reference : PCS	
Designed by	Checked by	Approved by - date	Scale	Date	Sheet
Parth Prajapati	XXX	XXX - 00 00 00	NTS	29. 08. 2020	5 / 5

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RECOMMENDED SPARES LIST

Sr. No.	Parts Description
1.	Bottle Presence Sensor @ In-feed (**'Leuze'** Make)
2.	No-Cap (Flow) Sensor on Cap Chute (**'Leuze'** Make, Fiber Optics)
3.	Bottle Jamming / counting Sensor @ Out Feed (**'Leuze'** Make)
4.	Trigger Sensor for Cap Ejector Assy. (**'Leuze'** Make)
5.	Variable AC. Frequency Drive (VFD) for Main Motor (**'Fuji'** Make, Type / Model : FRN0006C2S-7A)
6.	Variable AC. Frequency Drive (VFD) for Conveyor Motor (**'Fuji'** Make, Type / Model : FRN0004C2S-7A)
7.	Variable AC. Frequency Drive (VFD) for Capping Head Motor (**'Fuji'** Make, Type / Model : FRN0004C2S-7A)
8.	Variable AC. Frequency Drive (VFD) for Cap Elevator Motor (**'Fuji'** Make, Type / Model : FRN0004C2S-7A)
9.	Main Product Wheel (Star Plate), Nylon (2 Nos. Change part Supplied as per bottle shape/Size)
10.	Pneumatic cylinder for Cap Ejector Assy. (**'Janatics'** Make, Cylinder & Solenoid Valve)
11.	Pneumatic cylinder for Bottle Ejector Assy. (**'SMC'** Make, Cylinder & Solenoid Valve)
12.	Pneumatic cylinder for Capping Head Up/Down. (**'SMC'** Make, Cylinder & Solenoid Valve)
13.	Solenoid Valve with Coil for Air Supply
14.	Guide belt for bottle - 1450 x 30 x 3 mm thickness.
15.	Cap Chute (1 Set, Change part Supplied as per Cap shape/Size)
16.	Capping Head/Die. (1 Set, Change part Supplied as per Cap shape/Size)
17.	Spring set
18.	100 mm S.S. Slat Chain of Product Conveyor

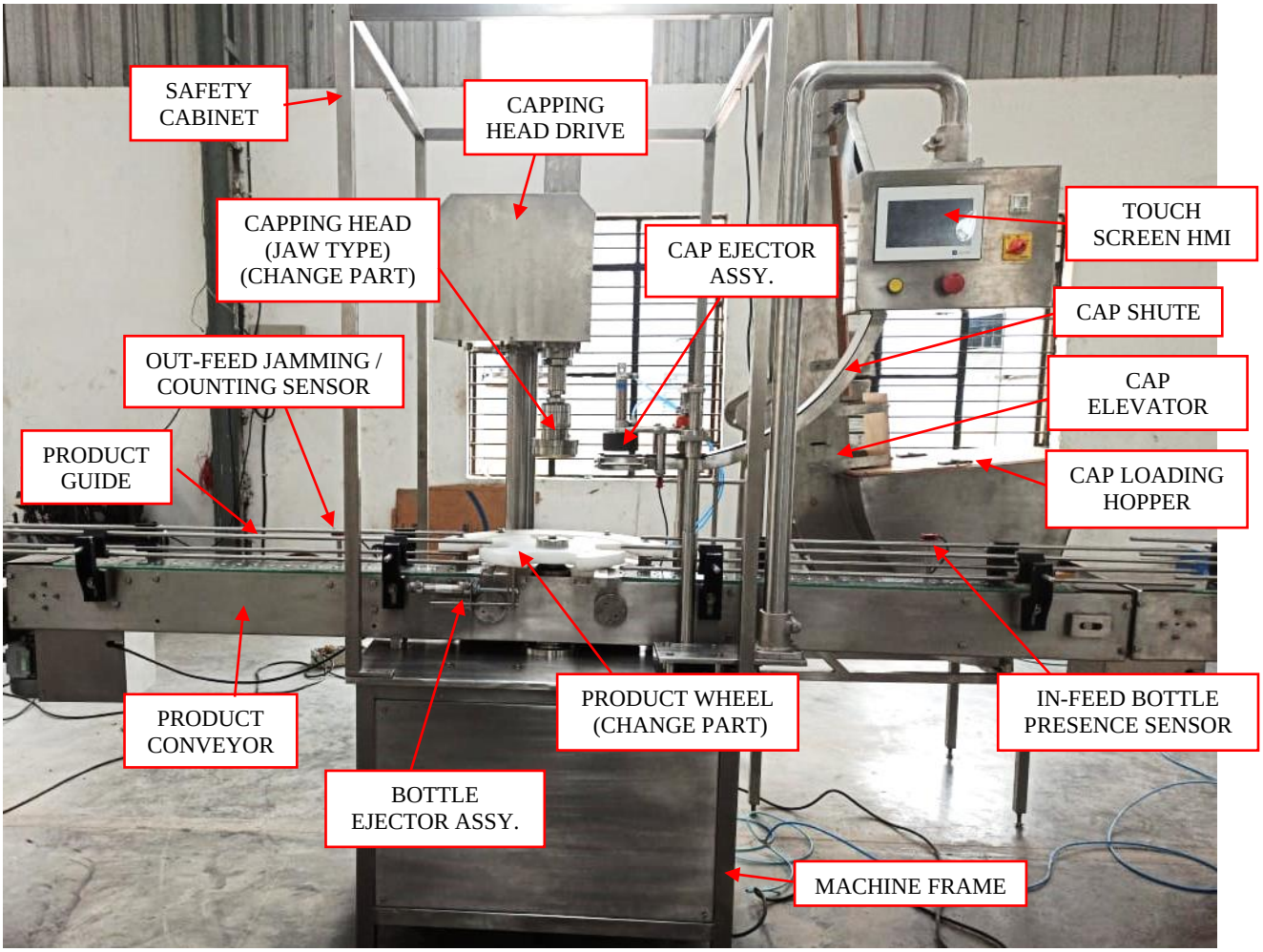
NEVER DO

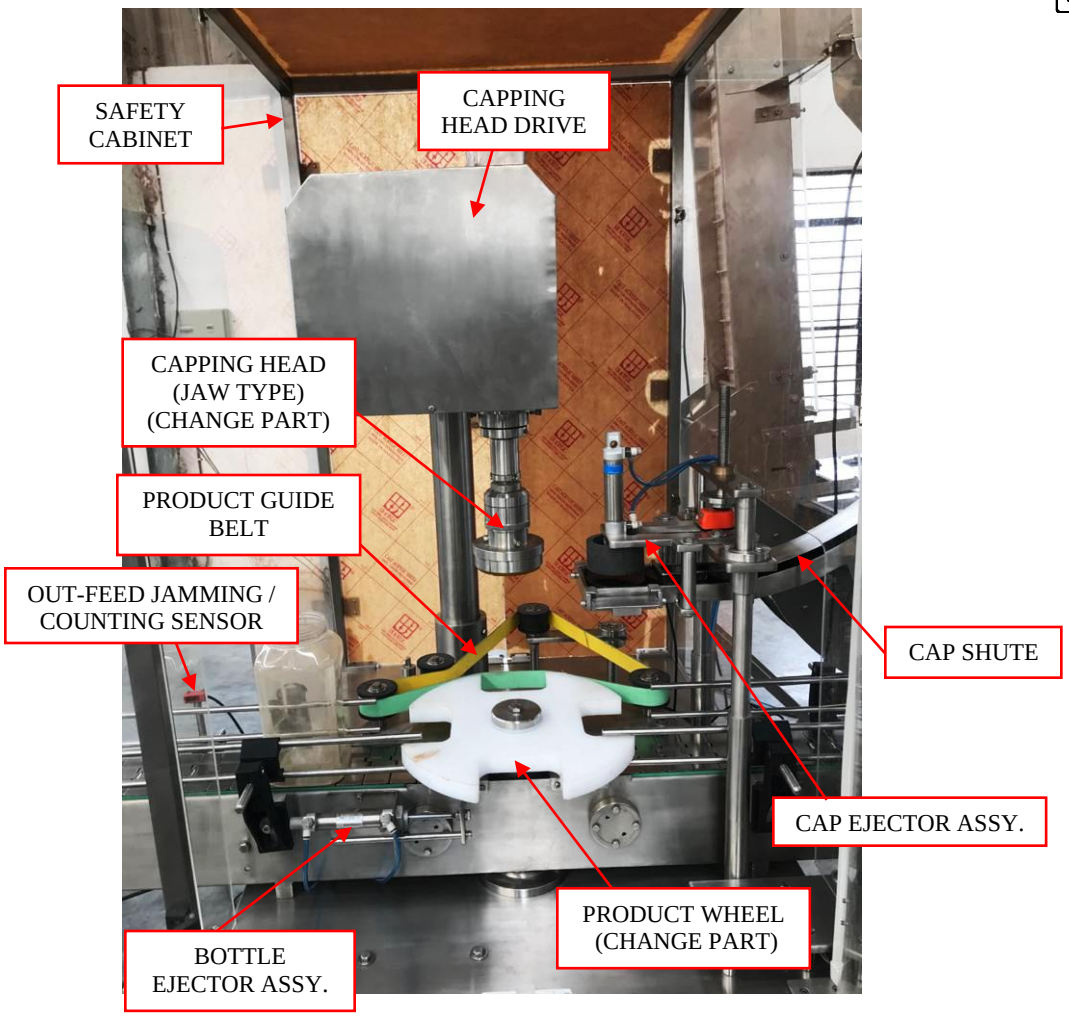
- Never put hands between rotating/ moving parts.
- Never put grease or oil on timing belt, pulley drive.
- Never Switch ‘ON’ the machine, during Maintenance.
- Never over tighten Cap die in Head.

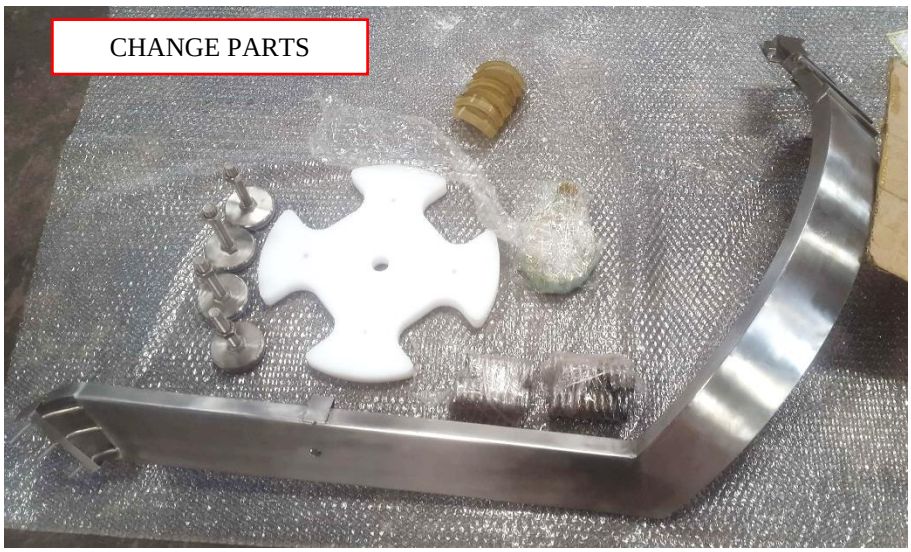
CHECK

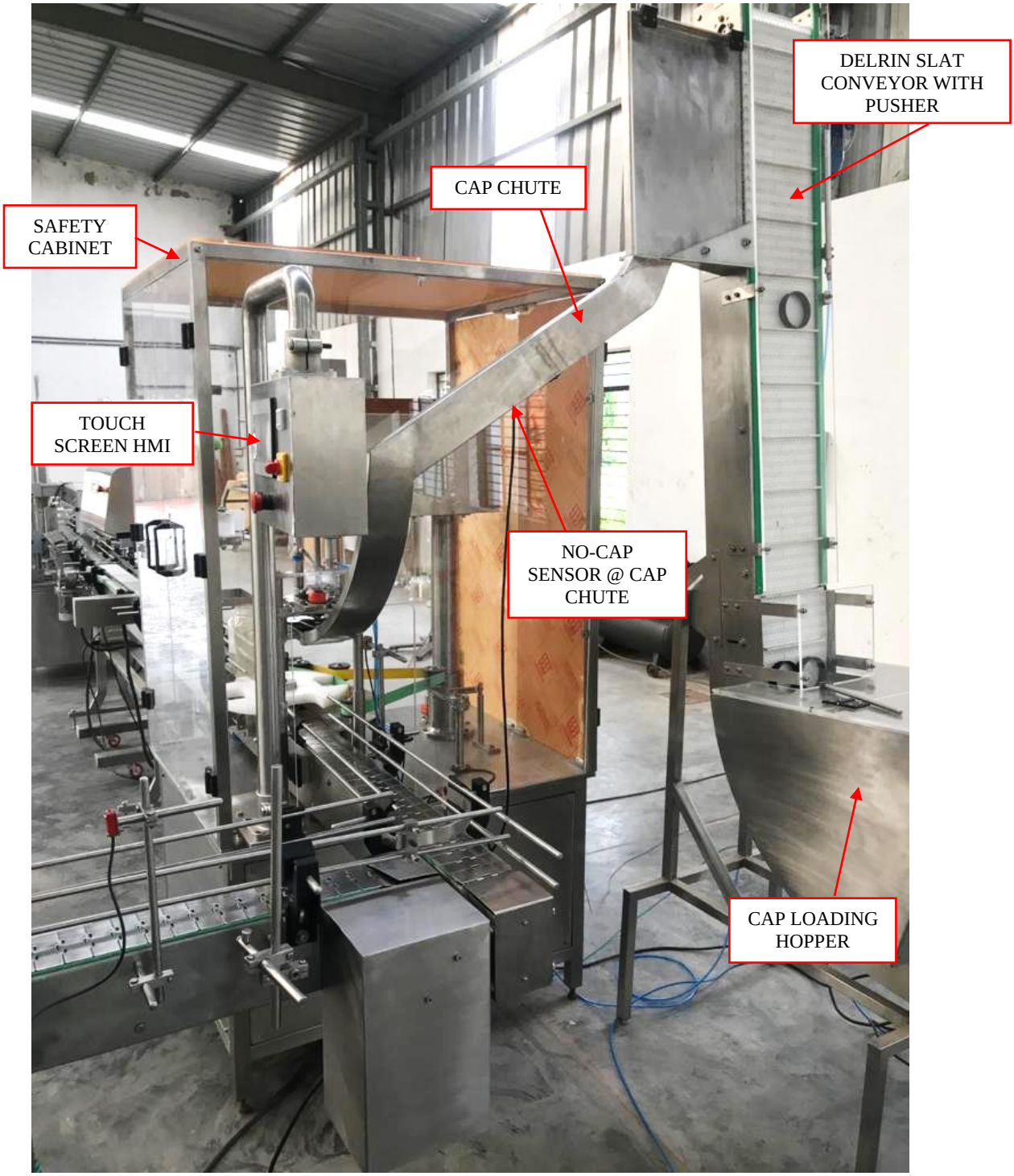
- Always Check for Proper Bottle / Cap Transfer before put Machine for Production.
- Check that all moving, rotating drive parts are getting lubrication.
- Use sufficient and correct type of lubricant to reduce wear.
- The variable speed should be operated through the entire speed range at least once per week to ensure even distribution of lubrication to prevent sticking.
- Check height of Die adjusting screw for take-off

PHOTO GALLERY

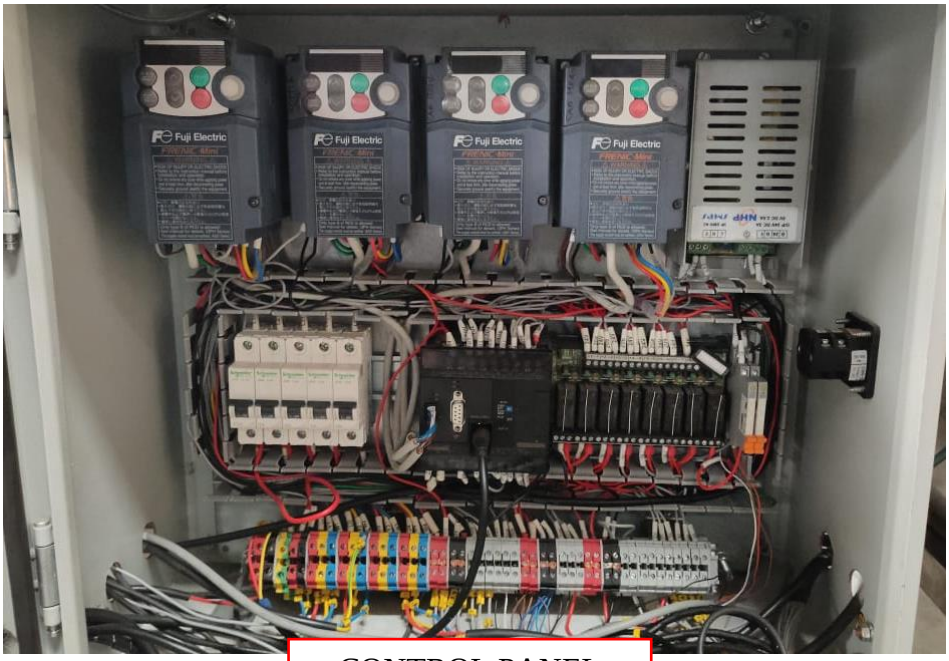



SAFETY CABINET
CAPPING HEAD DRIVE
CAPPING HEAD (JAW TYPE) (CHANGE PART)
PRODUCT GUIDE BELT
OUT-FEED JAMMING / COUNTING SENSOR
CAP SHUTE
CAP EJECTOR ASSY.
PRODUCT WHEEL (CHANGE PART)
BOTTLE EJECTOR ASSY.


CHANGE PARTS


DELRIN SLAT CONVEYOR WITH PUSHER
CAP CHUTE
SAFETY CABINET
TOUCH SCREEN HMI
NO-CAP SENSOR @ CAP CHUTE
CAP LOADING HOPPER

PNEUMATIC PANEL



CONTROL PANEL

NOTES

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