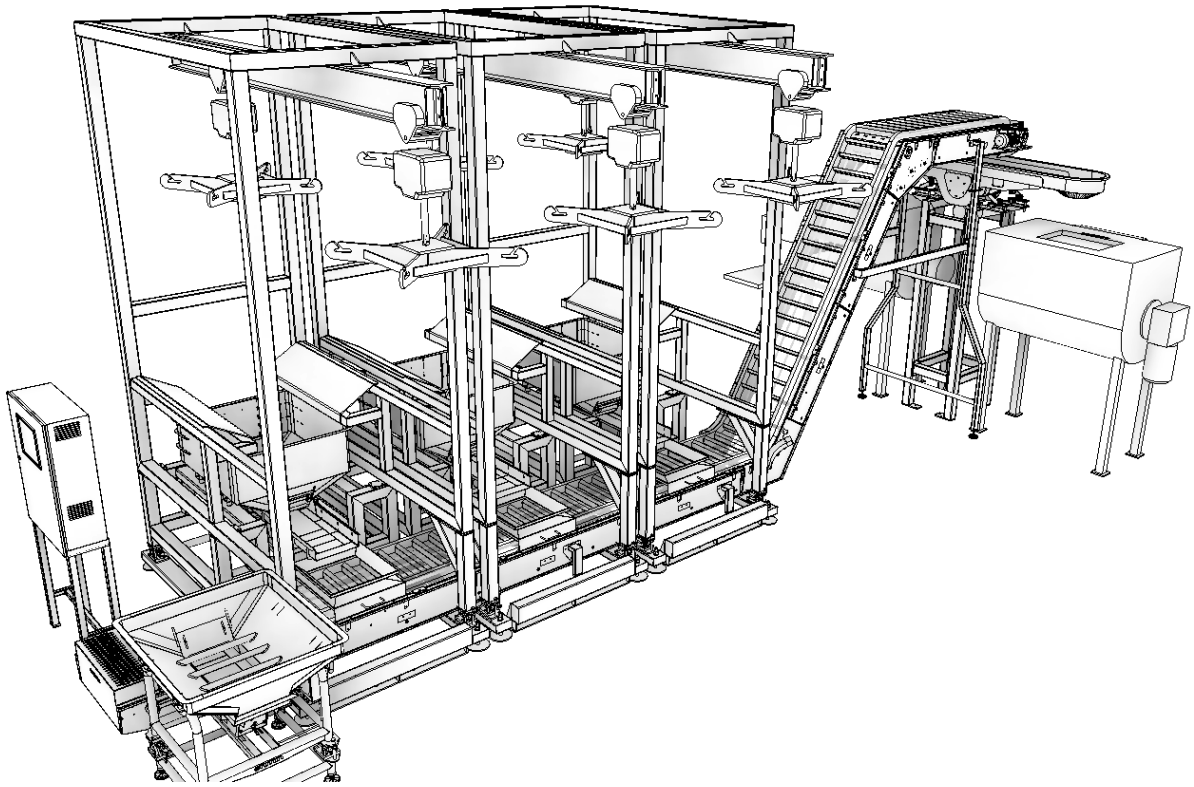
Maintenance Manual



DELIVERY SYSTEM
JOB No - P10504-000

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P: +61 3 9800 6777 **F:** +61 3 9800 2211 **E:** sales@enmin.com.au **W:** enmin.com.au
ABN: 27 442 545 946 **ACN:** 114 566 308

Select Harvest Delivery System Job No P10504-000

Table of Contents:

Appendix 1 - SEW Geared Motor

- Geared Motor

Appendix 2 - Ammeraal AEON Belt

- FDA Belt Approval
- Design Guide Lines
- General Information

Appendix 3 - MP Controller Manuals

Appendix 4 - LOAD CELL Manuals

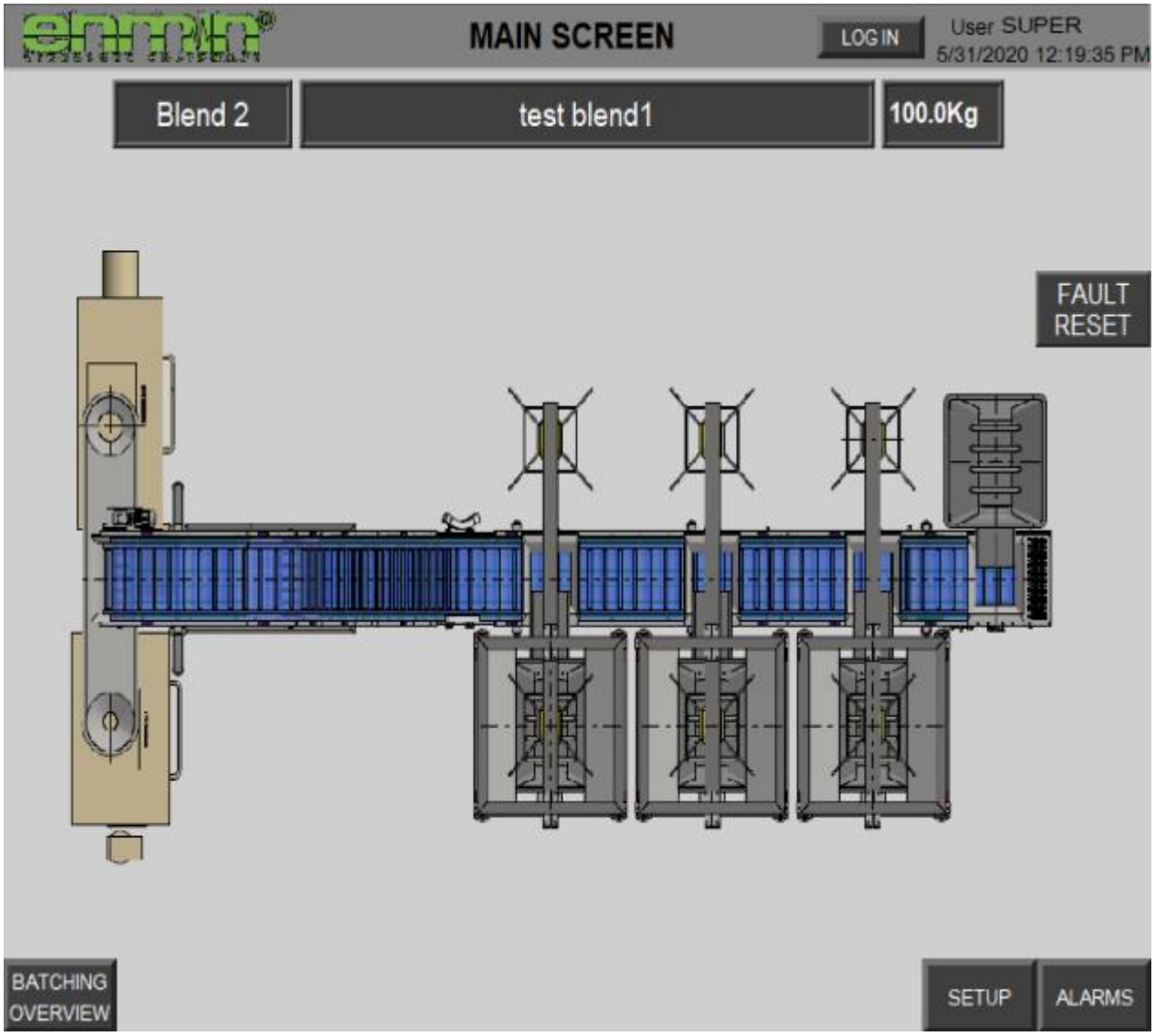
SECTION 1.1 Functional Description

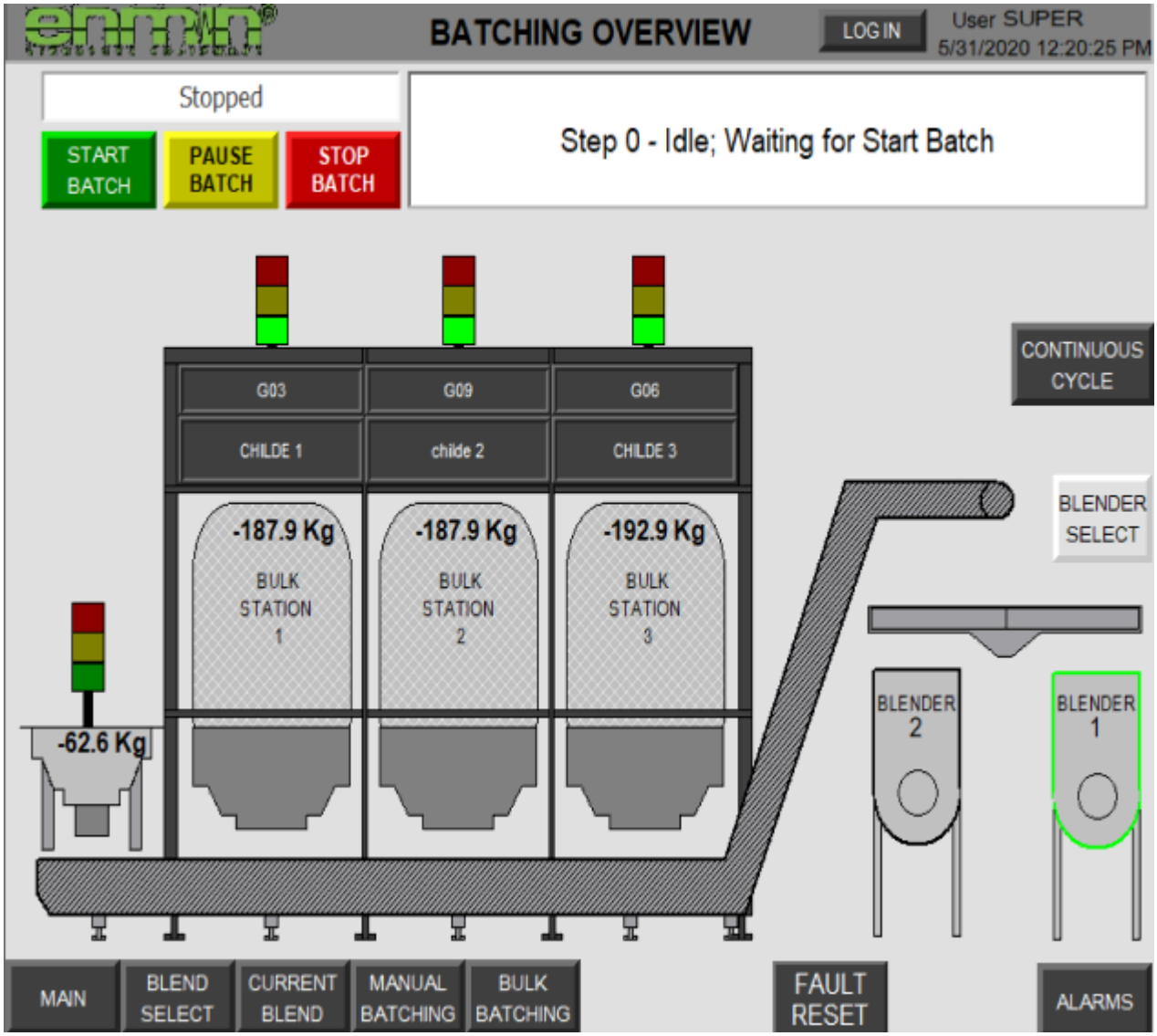
Screens

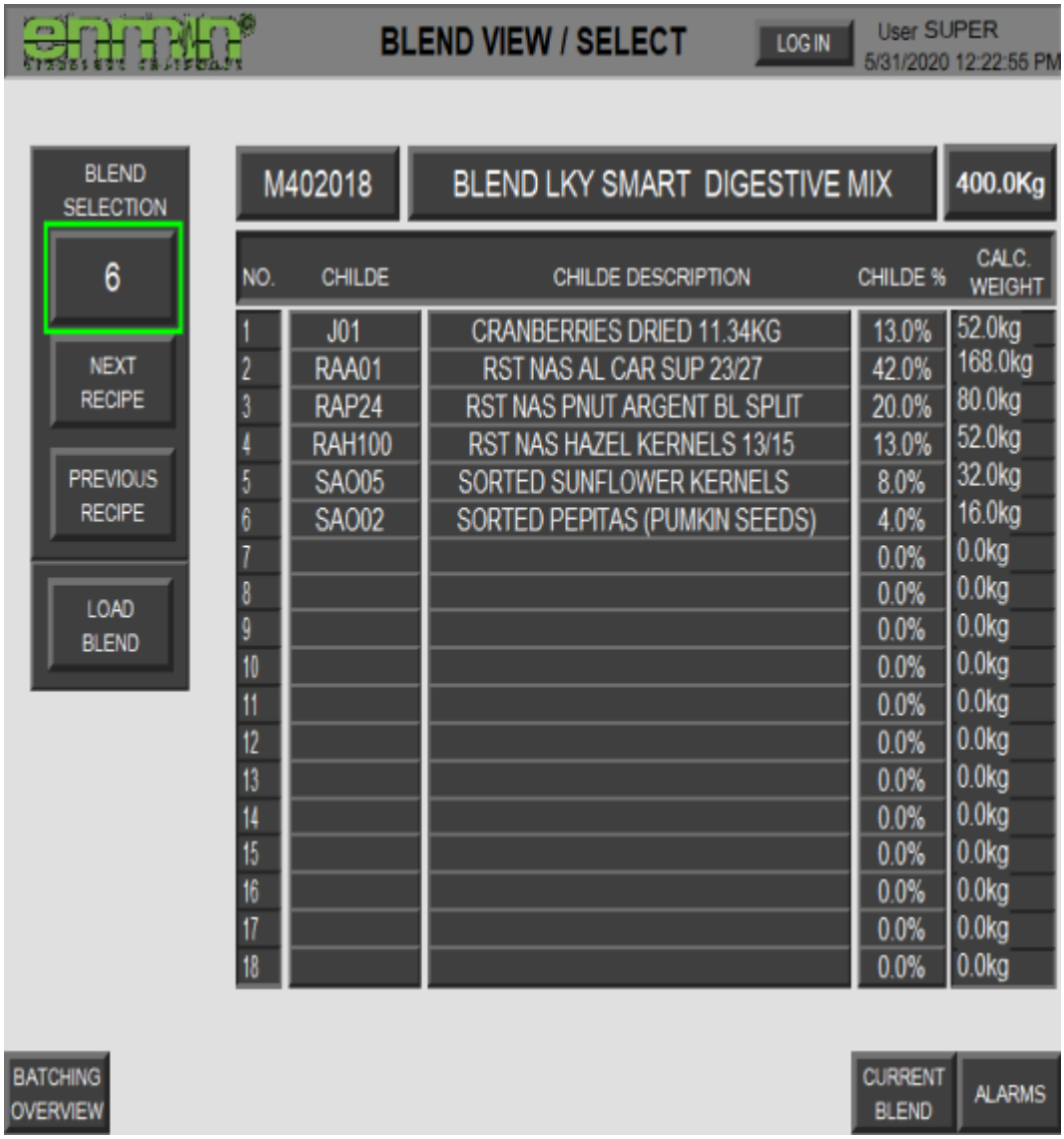
Screen navigation

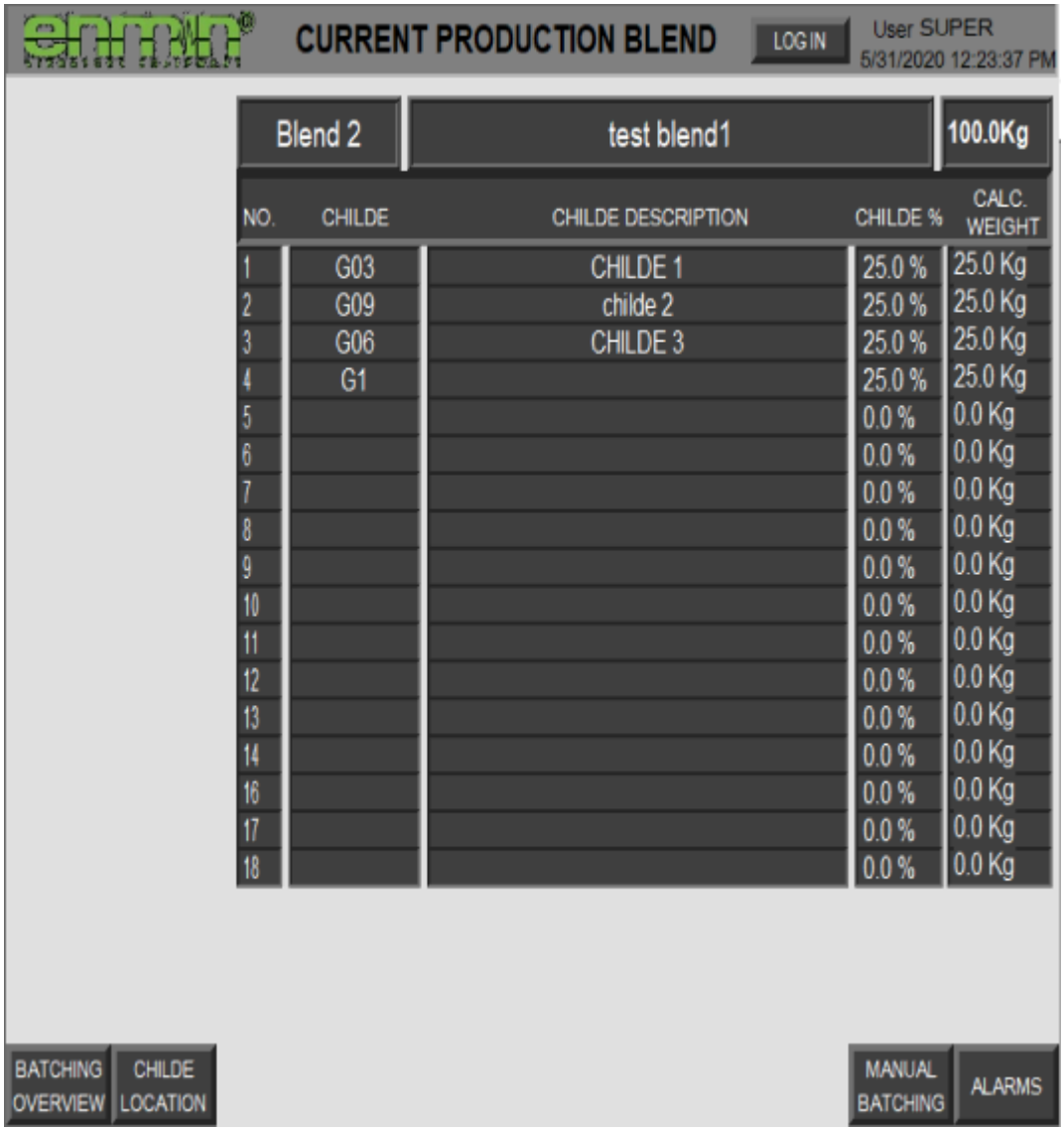
All navigation buttons are located horizontally along the bottom of the screen.
Refer to file attachment HMI Screen Layouit for navigation and screens.

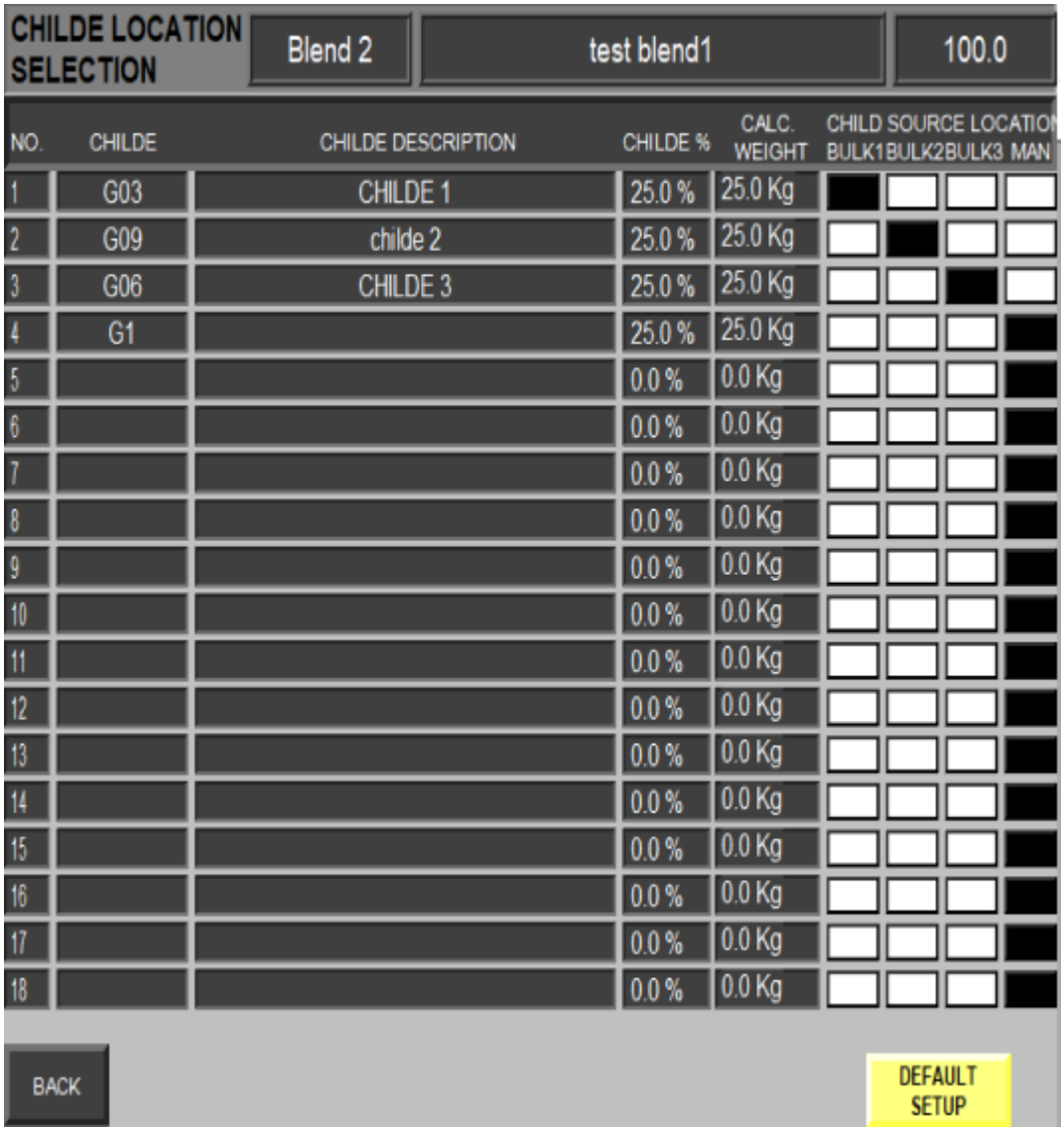
Screen shots

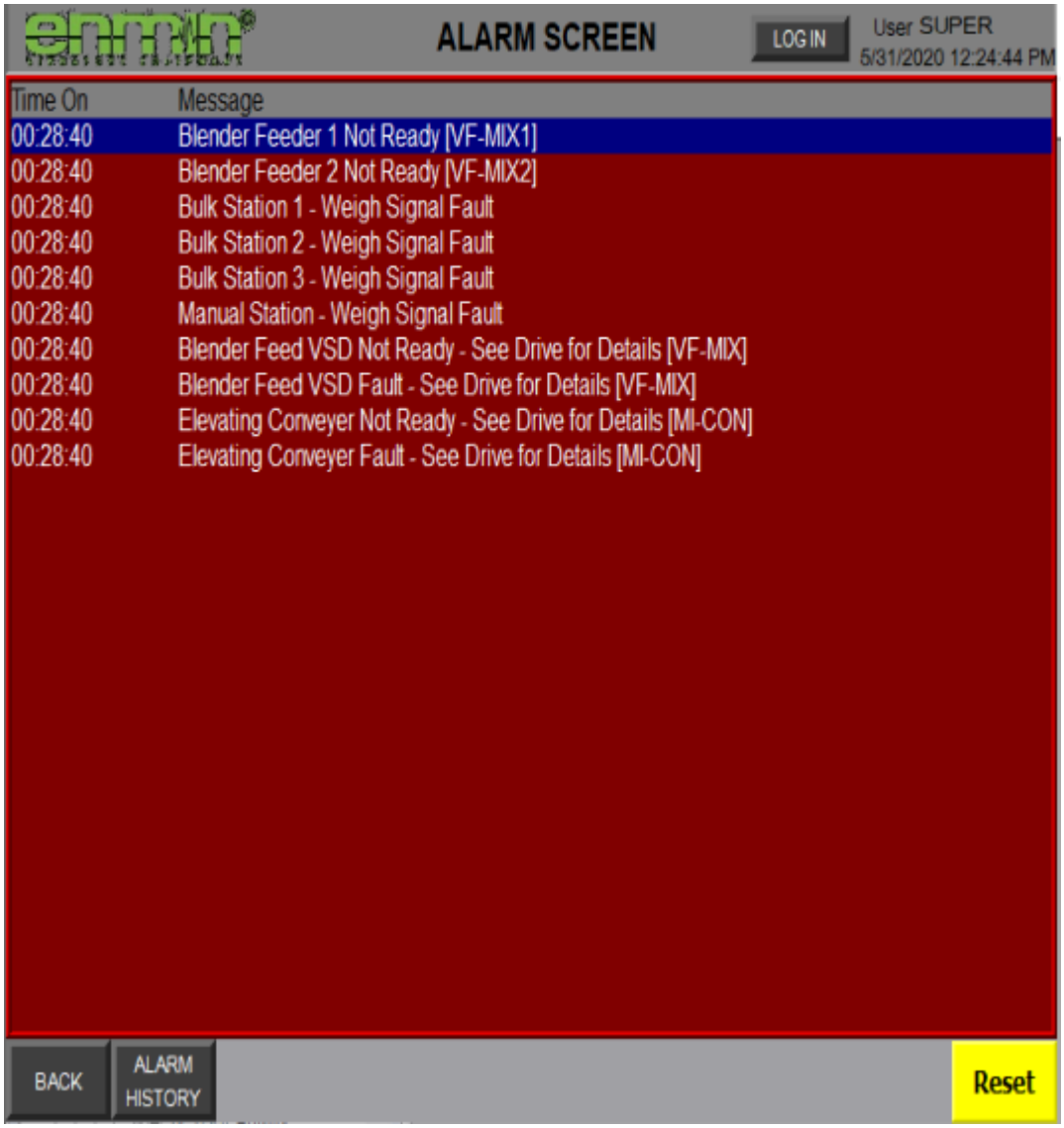


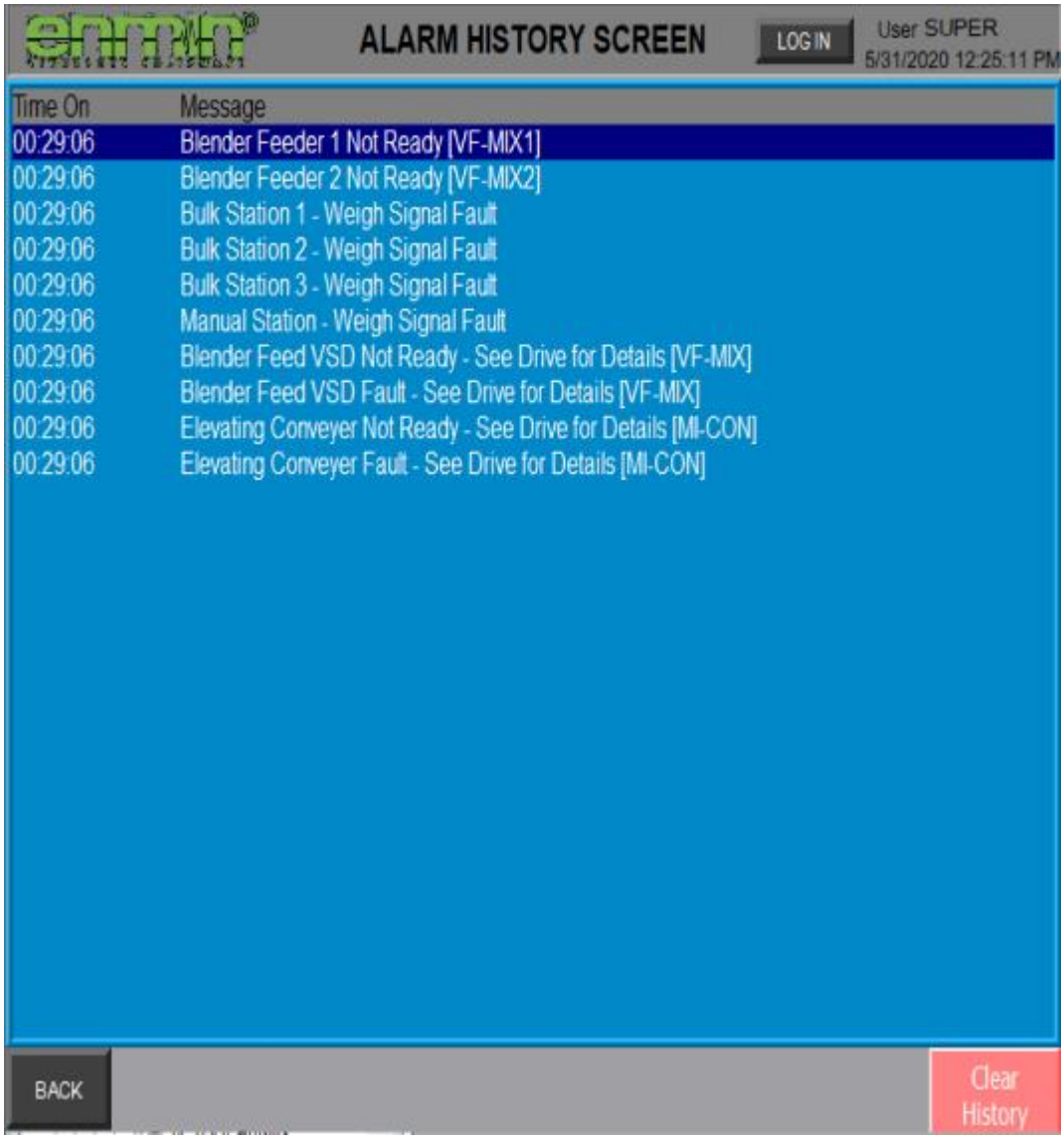

BATCHING OVERVIEW
LOG IN
User SUPER
5/31/2020 12:20:25 PM
Stopped
START BATCH
PAUSE BATCH
STOP BATCH
Step 0 - Idle; Waiting for Start Batch
CONTINUOUS CYCLE
G03
G09
G06
CHILDE 1
childe 2
CHILDE 3
-187.9 Kg
BULK STATION 1
-187.9 Kg
BULK STATION 2
-192.9 Kg
BULK STATION 3
BLENDER SELECT
-62.6 Kg
BLENDER 2
BLENDER 1
MAIN
BLEND SELECT
CURRENT BLEND
MANUAL BATCHING
BULK BATCHING
FAULT RESET
ALARMS

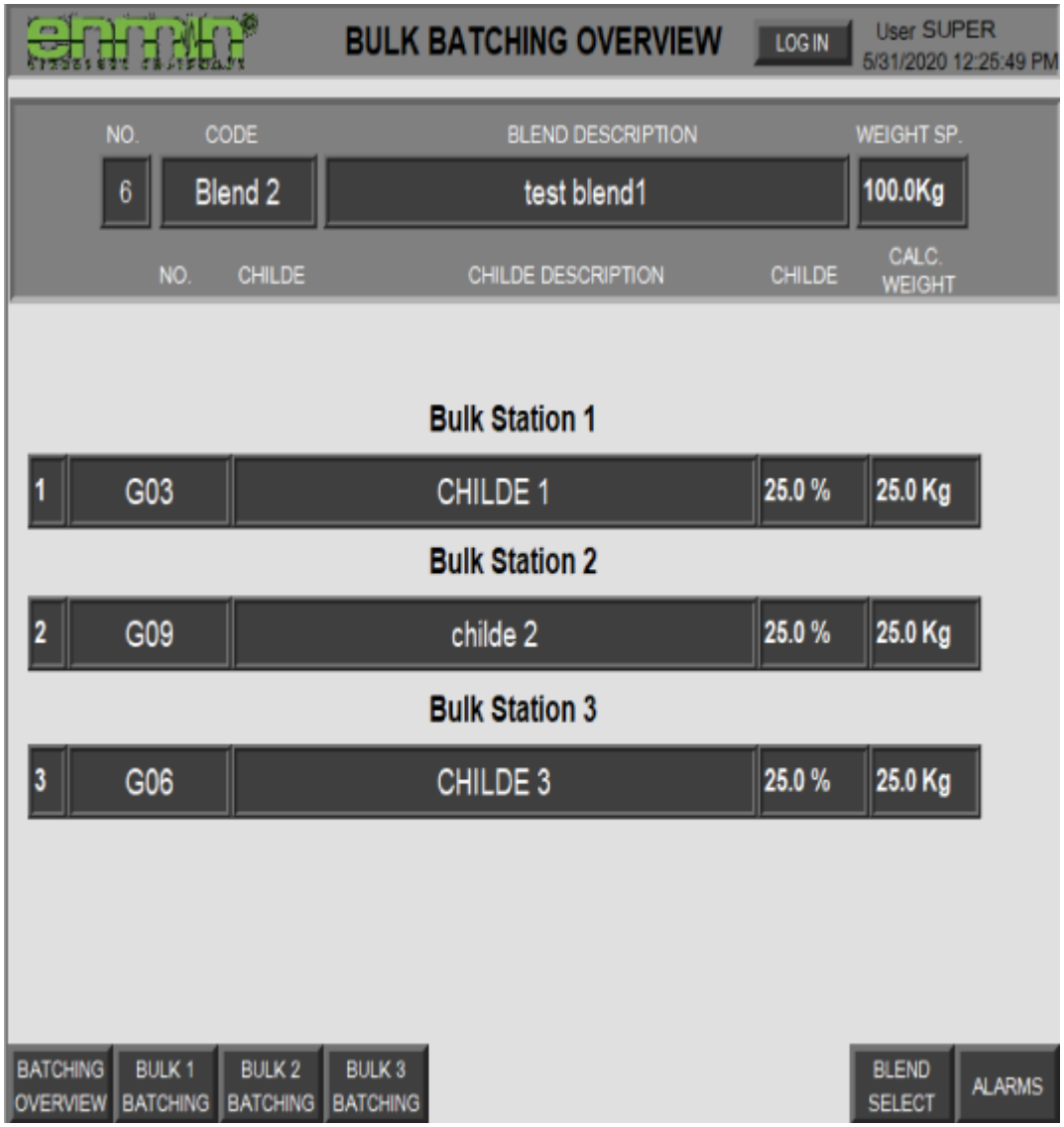

BLEND VIEW / SELECT
LOG IN
User SUPER
5/31/2020 12:22:55 PM
BLEND SELECTION
6
NEXT RECIPE
PREVIOUS RECIPE
LOAD BLEND
M402018
BLEND LKY SMART DIGESTIVE MIX
400.0Kg
NO. CHILDE CHILDE DESCRIPTION CHILDE % CALC. WEIGHT
1 J01 CRANBERRIES DRIED 11.34KG 13.0% 52.0kg
2 RAA01 RST NAS AL CAR SUP 23/27 42.0% 168.0kg
3 RAP24 RST NAS PNUT ARGENT BL SPLIT 20.0% 80.0kg
4 RAH100 RST NAS HAZEL KERNELS 13/15 13.0% 52.0kg
5 SAO05 SORTED SUNFLOWER KERNELS 8.0% 32.0kg
6 SAO02 SORTED PEPITAS (PUMKIN SEEDS) 4.0% 16.0kg
7 0.0% 0.0kg
8 0.0% 0.0kg
9 0.0% 0.0kg
10 0.0% 0.0kg
11 0.0% 0.0kg
12 0.0% 0.0kg
13 0.0% 0.0kg
14 0.0% 0.0kg
15 0.0% 0.0kg
16 0.0% 0.0kg
17 0.0% 0.0kg
18 0.0% 0.0kg
BATCHING OVERVIEW
CURRENT BLEND
ALARMS


CURRENT PRODUCTION BLEND
LOG IN
User SUPER
5/31/2020 12:23:37 PM
Blend 2
test blend1
100.0Kg
NO. CHILDE CHILDE DESCRIPTION CHILDE % CALC. WEIGHT
1 G03 CHILDE 1 25.0 % 25.0 Kg
2 G09 childe 2 25.0 % 25.0 Kg
3 G06 CHILDE 3 25.0 % 25.0 Kg
4 G1 25.0 % 25.0 Kg
5 0.0 % 0.0 Kg
6 0.0 % 0.0 Kg
7 0.0 % 0.0 Kg
8 0.0 % 0.0 Kg
9 0.0 % 0.0 Kg
10 0.0 % 0.0 Kg
11 0.0 % 0.0 Kg
12 0.0 % 0.0 Kg
13 0.0 % 0.0 Kg
14 0.0 % 0.0 Kg
16 0.0 % 0.0 Kg
17 0.0 % 0.0 Kg
18 0.0 % 0.0 Kg
BATCHING OVERVIEW
CHILDE LOCATION
MANUAL BATCHING
ALARMS

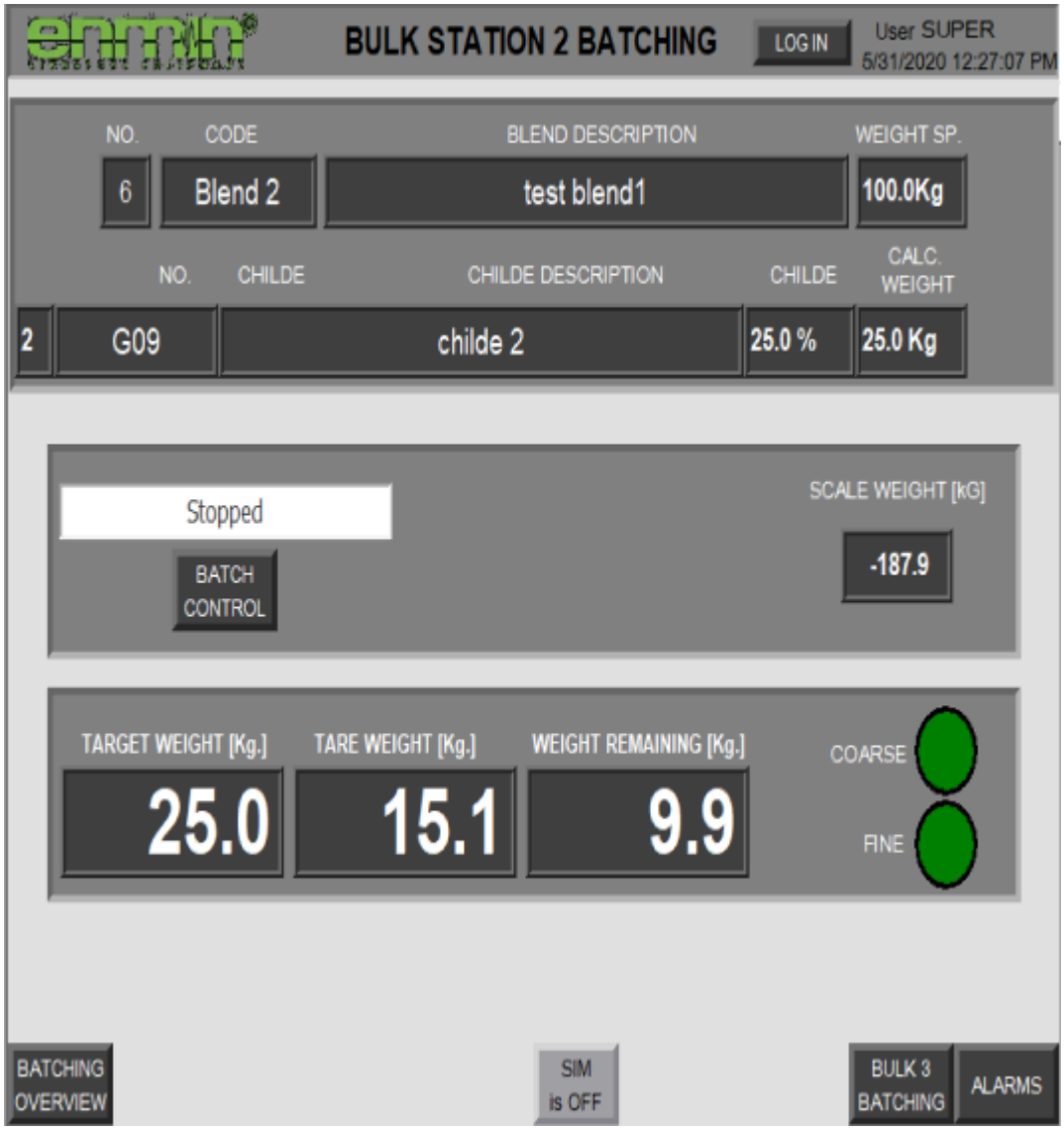

CHILDE LOCATION SELECTION
Blend 2
test blend1
100.0
NO.
CHILDE
CHILDE DESCRIPTION
CHILDE %
CALC. WEIGHT
CHILD SOURCE LOCATION
BULK1 BULK2 BULK3 MAN
1 G03 CHILDE 1 25.0 % 25.0 Kg
2 G09 childe 2 25.0 % 25.0 Kg
3 G06 CHILDE 3 25.0 % 25.0 Kg
4 G1 25.0 % 25.0 Kg
5 0.0 % 0.0 Kg
6 0.0 % 0.0 Kg
7 0.0 % 0.0 Kg
8 0.0 % 0.0 Kg
9 0.0 % 0.0 Kg
10 0.0 % 0.0 Kg
11 0.0 % 0.0 Kg
12 0.0 % 0.0 Kg
13 0.0 % 0.0 Kg
14 0.0 % 0.0 Kg
15 0.0 % 0.0 Kg
16 0.0 % 0.0 Kg
17 0.0 % 0.0 Kg
18 0.0 % 0.0 Kg
BACK
DEFAULT SETUP


ALARM SCREEN
LOG IN
User SUPER
5/31/2020 12:24:44 PM
Time On
Message
00:28:40 Blender Feeder 1 Not Ready [VF-MIX1]
00:28:40 Blender Feeder 2 Not Ready [VF-MIX2]
00:28:40 Bulk Station 1 - Weigh Signal Fault
00:28:40 Bulk Station 2 - Weigh Signal Fault
00:28:40 Bulk Station 3 - Weigh Signal Fault
00:28:40 Manual Station - Weigh Signal Fault
00:28:40 Blender Feed VSD Not Ready - See Drive for Details [VF-MIX]
00:28:40 Blender Feed VSD Fault - See Drive for Details [VF-MIX]
00:28:40 Elevating Conveyer Not Ready - See Drive for Details [MI-CON]
00:28:40 Elevating Conveyer Fault - See Drive for Details [MI-CON]
BACK
ALARM HISTORY
Reset


ALARM HISTORY SCREEN
LOG IN
User SUPER
5/31/2020 12:25:11 PM
Time On
Message
00:29:06 Blender Feeder 1 Not Ready [VF-MIX1]
00:29:06 Blender Feeder 2 Not Ready [VF-MIX2]
00:29:06 Bulk Station 1 - Weigh Signal Fault
00:29:06 Bulk Station 2 - Weigh Signal Fault
00:29:06 Bulk Station 3 - Weigh Signal Fault
00:29:06 Manual Station - Weigh Signal Fault
00:29:06 Blender Feed VSD Not Ready - See Drive for Details [VF-MIX]
00:29:06 Blender Feed VSD Fault - See Drive for Details [VF-MIX]
00:29:06 Elevating Conveyer Not Ready - See Drive for Details [MI-CON]
00:29:06 Elevating Conveyer Fault - See Drive for Details [MI-CON]
BACK
Clear History


BULK BATCHING OVERVIEW
LOG IN
User SUPER
5/31/2020 12:25:49 PM
NO.
CODE
BLEND DESCRIPTION
WEIGHT SP.
6
Blend 2
test blend1
100.0Kg
NO.
CHILDE
CHILDE DESCRIPTION
CHILDE
CALC. WEIGHT
Bulk Station 1
1
G03
CHILDE 1
25.0 %
25.0 Kg
Bulk Station 2
2
G09
childe 2
25.0 %
25.0 Kg
Bulk Station 3
3
G06
CHILDE 3
25.0 %
25.0 Kg
BATCHING OVERVIEW
BULK 1 BATCHING
BULK 2 BATCHING
BULK 3 BATCHING
BLEND SELECT
ALARMS


BULK STATION 1 BATCHING
LOG IN
User SUPER
5/31/2020 12:26:10 PM
NO.
CODE
BLEND DESCRIPTION
WEIGHT SP.
6
Blend 2
test blend1
100.0Kg
NO.
CHILDE
CHILDE DESCRIPTION
CHILDE
CALC. WEIGHT
1
G03
CHILDE 1
25.0 %
25.0 Kg
Stopped
BATCH CONTROL
SCALE WEIGHT [kG]
-187.9
TARGET WEIGHT [Kg.]
TARE WEIGHT [Kg.]
WEIGHT REMAINING [Kg.]
25.0
5.2
19.8
COARSE
FINE
BATCHING OVERVIEW
RESET SEQ
SIM is OFF
BULK 2 BATCHING
ALARMS


BULK STATION 2 BATCHING
LOG IN
User SUPER
5/31/2020 12:27:07 PM
NO.
CODE
BLEND DESCRIPTION
WEIGHT SP.
6
Blend 2
test blend1
100.0Kg
NO.
CHILDE
CHILDE DESCRIPTION
CHILDE
CALC. WEIGHT
2
G09
childe 2
25.0 %
25.0 Kg
Stopped
BATCH CONTROL
SCALE WEIGHT [kG]
-187.9
TARGET WEIGHT [Kg.]
TARE WEIGHT [Kg.]
WEIGHT REMAINING [Kg.]
25.0
15.1
9.9
COARSE
FINE
BATCHING OVERVIEW
SIM is OFF
BULK 3 BATCHING
ALARMS


BULK STATION 3 BATCHING
LOG IN
User SUPER
5/31/2020 12:27:31 PM
NO.
CODE
BLEND DESCRIPTION
WEIGHT SP.
6
Blend 2
test blend1
100.0Kg
NO.
CHILDE
CHILDE DESCRIPTION
CHILDE
CALC. WEIGHT
3
G06
CHILDE 3
25.0 %
25.0 Kg
Stopped
BATCH CONTROL
SCALE WEIGHT [kG]
-192.9
TARGET WEIGHT [Kg.]
TARE WEIGHT [Kg.]
WEIGHT REMAINING [Kg.]
25.0
25.1
-0.1
COARSE
FINE
BATCHING OVERVIEW
RESET SEQ
SIM is OFF
MANUAL BATCHING
ALARMS


MANUAL BATCHING
LOG IN
User SUPER
5/31/2020 12:27:55 PM
NO.
CODE
BLEND DESCRIPTION
WEIGHT SP.
6
Blend 2
test blend1
100.0Kg
NO.
CHILDE
CHILDE DESCRIPTION
CHILDE
CALC. WEIGHT
0
0.0 %
0.0 Kg
Stopped
BATCH CONTROL
START BATCH
PAUSE BATCH
STOP BATCH
SCALE WEIGHT.
-62.6 Kg
COARSE ADD'N
FINE ADD'N
Stopped - Ready
WEIGHT SP.
TARE WEIGHT.
REMAINING.
0.0 Kg
-61.8 Kg
86.8 Kg
BATCHING OVERVIEW
Ack
RESET SEQ
SIM is OFF
BULK BATCHING
ALARMS


SETUP SCREEN
LOG IN
User SUPER
5/31/2020 1:49:23 PM
IN FLIGHT (KG)
TOL-MIN (KG)
TOL-MAX (KG)
FINE FEED
BULK STATION 1
20.0
0.5
0.5
0.0
BULK STATION 2
10.0
1.0
4.0
0.0
BULK STATION 3
0.0
0.0
0.0
0.0
OPERATION MODE
CONTINUOUS CYCLE
BLENDER CONV. (VF-MIX) SPEED SETPOINT (%)
100
CONVEYOR MI-CON SPEED SETPOINT (%)
75
CONVEYOR TRANSFER STOP DELAY SETPOINT (sec)
30
BLENDER RUN TIME SETPOINT (sec)
45
BLENDER EMPTY TIME SETPOINT (sec)
20
BACK
SYSTEM SETTINGS
DIAGNOSTIC SCREEN
MANUAL OPERATION
ALARMS

Alarm List

System is configured for 100 Alarms

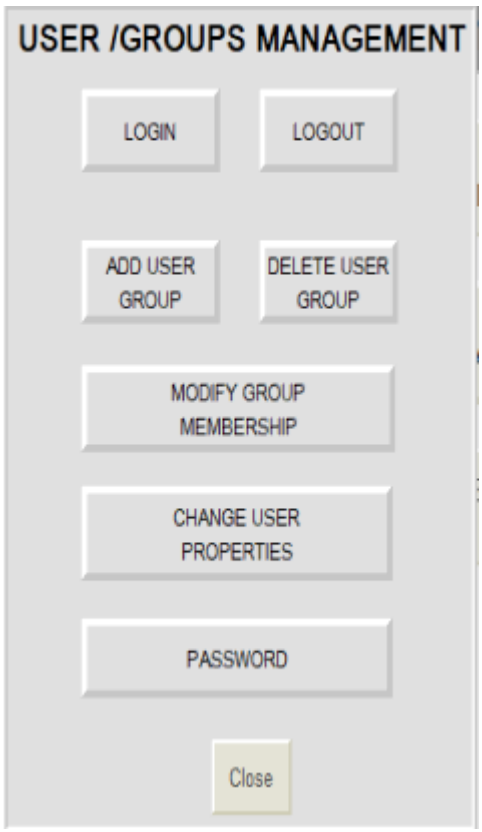
Alarm No	Trigger	Trigger State	Alarm Message	PLC Source Address
1	AlmTrig_0	1	Emergency Stop Pressed	I-EStopOK=0
2	AlmTrig_1	1	Bulk 1 Vibratory Feeder Failed to Start [VF-BF1]	VB_BF1.AlarmFailStart
3	AlmTrig_2	1	Bulk 1 Vibratory Feeder Failed to Stop [VF-BF1]	VB_BF1.AlarmFailStop
4	AlmTrig_3	1	Bulk 1 Vibratory Feeder is in Manual Mode [VF-BF1]	VB_BF1.AutoRunFwd & NOT VB_BF1.Ready
5	AlmTrig_4	1	Bulk 2 Vibratory Feeder Failed to Start [VF-BF2]	VB_BF2.AlarmFailStart
6	AlmTrig_5	1	Bulk 2 Vibratory Feeder Failed to Stop [VF-BF2]	VB_BF2.AlarmFailStop
7	AlmTrig_6	1	Bulk 2 Vibratory Feeder is in Manual Mode [VF-BF2]	VB_BF2.AutoRunFwd & NOT VB_BF2.Ready
8	AlmTrig_7	1	Bulk 3 Vibratory Feeder Failed to Start [VF-BF3]	VB_BF3.AlarmFailStart
9	AlmTrig_8	1	Bulk 3 Vibratory Feeder Failed to Stop [VF-BF3]	VB_BF3.AlarmFailStop
10	AlmTrig_9	1	Bulk 3 Vibratory Feeder is in Manual Mode [VF-BF3]	VB_BF3.AutoRunFwd & NOT VB_BF3.Ready
11	AlmTrig_10	1	Manual Station Vibratory Feeder Failed to Start [VF-MF]	VB_MF.AlarmFailStart
12	AlmTrig_11	1	Manual Station Vibratory Feeder Failed to Stop [VF-MF]	VB_MF.AlarmFailStop
13	AlmTrig_12	1	Manual Station Vibratory Feeder is in Manual Mode [VF-MF]	VB_MF.AutoRunFwd **& NOT** VB_MF.Ready
14	AlmTrig_13	1	Vibratory Feeder Lower Motor VF-Low Overload TOL3 Trip	I1.3 = 0
15	AlmTrig_14	1	Spare	
16	AlmTrig_15	1	Spare	
17	AlmTrig_16	1	Spare	
18	AlmTrig_17	1	Spare	
19	AlmTrig_18	1	Spare	
20	AlmTrig_19	1	Blender 1 Feeder Not Ready [VF-MIX1]	**NOT** VF_MIX.Ready
21	AlmTrig_20	1	Blender 1 Feeder is in Manual Mode [VF-MIX1]	VF_MIX.AutoRunFwd **& NOT** VF_MIX.inAuto
22	AlmTrig_21	1	Blender 2 Feeder Not Ready [VF-MIX2]	NOT VF_MIX.Ready
23	AlmTrig_22	1	Blender 2 Feeder is in Manual Mode [VF-MIX2]	VF_MIX.AutoRunrev & NOT VF_MIX.inAuto

24	AlmTrig_23	1	Spare	
25	AlmTrig_24	1	Blender 1 Discharge Gate Failed to Open	SV_4510.AlarmFailAct
26	AlmTrig_25	1	Blender 1 Discharge Gate Failed to Close	SV_4510.AlarmFailDeact
27	AlmTrig_26	1	Blender 1 Discharge Gate is in Manual Mode	SV_4510.AutoAct **& NOT** SV_4510.inAuto
28	AlmTrig_27	1	Blender 2 Discharge Gate Failed to Open	SV_4522.AlarmFailAct
29	AlmTrig_28	1	Blender 2 Discharge Gate Failed to Close	SV_4522.AlarmFailDeact
30	AlmTrig_29	1	Blender 2 Discharge Gate is in Manual Mode	SV_4522.AutoAct & NOT SV_4522.inAuto
31	AlmTrig_30	1	Bulk 1 Station Weigh Signal Fault	Local:2:I.Ch0Fault
32	AlmTrig_31	1	Bulk 1 Station Batching Fail	BF1_Stn_Batch.fail
33	AlmTrig_32	1	Bulk 1 Station Batch Module Not Ready	BF1_Stn_Batch.Start **& NOT** BF1_Stn_Batch.Ready
34	AlmTrig_33	1	Bulk 1 Station Batch Module is in Manual	MainStep_009.X **& NOT** BF1_Stn_Batch.inAuto
35	AlmTrig_34	1	Bulk 2 Station Weigh Signal Fault	Local:2:I.Ch1Fault
36	AlmTrig_35	1	Bulk 2 Station Batching Fail	BF2_Stn_Batch.fail
37	AlmTrig_36	1	Bulk 2 Station Batch Module Not Ready	BF2_Stn_Batch.Start & NOT BF2_Stn_Batch.Ready
38	AlmTrig_37	1	Bulk 2 Station Batch Module is in Manual	MainStep_011.X & NOT BF2_Stn_Batch.inAuto
39	AlmTrig_38	1	Bulk 3 Station Weigh Signal Fault	Local:2:I.Ch2Fault
40	AlmTrig_39	1	Bulk 3 Station Batching Fail	BF3_Stn_Batch.fail
41	AlmTrig_40	1	Bulk 3 Station Batch Module Not Ready	BF3_Stn_Batch.Start & NOT BF3_Stn_Batch.Ready
42	AlmTrig_41	1	Bulk 3 Station Batch Module is in Manual	MainStep_013.X & NOT BF3_Stn_Batch.inAuto
43	AlmTrig_42	1	Manual Station Weigh Signal Fault	Local:2:I.Ch3Fault
44	AlmTrig_43	1	Manual Station Batching Fail	Man_Stn_Batch.fail
45	AlmTrig_44	1	Manual Station Batch Module Not Ready	man_Stn_Batch.Start & NOT man_Stn_Batch.Ready
46	AlmTrig_45	1	Auto Cycle Pre-Requisites preventing Start	
47	AlmTrig_46	1	Blender Feed VSD Not Ready - See Drive for Details [VF-MIX]	**NOT** VF_MIX_VSD.Ready
48	AlmTrig_47	1	Blender Feed VSD Fault - See Drive for Details [VF-MIX]	VF_MIX_VSD.Alarm
49	AlmTrig_48	1	Elevating Conveyor Not Ready - See Drive for Details [MI-CON]	**NOT** MI_CON.Ready
50	AlmTrig_49	1	Elevating Conveyor is in Manual [MI-CON]	MI_CON.AutoRunFwd **& NOT** MI_CON.inAuto
51	AlmTrig_50	1	Elevating Conveyor Fault - See	MI_CON.Alarm

			Drive for Details [MI-CON]	
52	AlmTrig_51	1	Bulk Station 1 - Waiting on Operator Acknowledge	
53	AlmTrig_52	1	Bulk Station 2 - Waiting on Operator Acknowledge	
54	AlmTrig_53	1	Bulk Station 3 - Waiting on Operator Acknowledge	
55	AlmTrig_54	1	Manual Station - Waiting on Operator Acknowledge	
56	AlmTrig_55	1	Alarm Message 55	
57	AlmTrig_56	1	Alarm Message 56	
58	AlmTrig_57	1	Alarm Message 57	
59	AlmTrig_58	1	Alarm Message 58	
60	AlmTrig_59	1	Alarm Message 59	

Brief Description of Operation

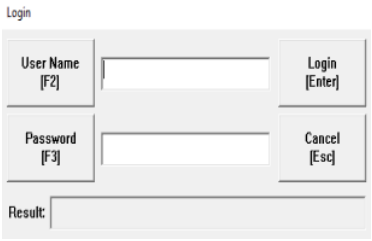
User Administration
Users, User Groups and Passwords are setup in the USER/GROUPS MANAGEMENT SCREEN.



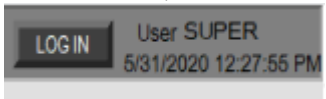
Access this screen from main menu by selecting SETUP/SYSTEM SETTINGS/USER MANAGEMENT to get the popup window to appear.

Current Setup has default User which does not require a login
To Change/Edit Recipes and some setup parameters, the User Group SUPER must be active.
The current password to access super is
Username : super
Password : super

The active login is shown in the top left corner of the screen Banner. The button to login is also in this region; select to login



To login, select User Name and enter the name **super**
Select Password and enter the password **super**
Once User name and password have been entered, select Login .
If successful, The User will change from default to SUPER



Blends

VIEWING BLENDS

From the main screen select BATCHING OVERVIEW/BLEND SELECT
Blends (Recipes) consist of Childes (Ingredients)
Blends can be selected in two ways:-

1. Press the NEXT BLEND to display the next blend. Press PREVIOUS BLEND to view the previous blend.
2. Press the Blend No and enter the number of the Blend to be viewed.

Note: Blends can be viewed without affecting the Batching operation.
There are 79 Blend locations available and 18 Childe locations available.

Selecting the Production Blend

Once SUPER level has been entered, the LOAD BLEND button appears. Pressing this button and confirming will load the currently displayed Blend to the Current Bllend which is the Production Blend. The Current Production Blend can be viewed by selecting the CURRENT BLEND Button.

Selecting the Childe Location

From the CURRENT BLEND Screen, Select the CHILDE LOCATION Button to display the CHILDE SELECTION SCREEN.
The Black box indicates that the Childe is selected while a white box indicated that the Childe is not selected. It is possible to have no selection for a Childe by selecting it as Bulk and then changing the Bulk selection although there should be no reason to do this.
Using the Selection Boxes, the location for each Childe can be changed.
The Childe lLocation Setup does not form part of the Blend Recipe so should be checked when a new Blend is loaded.
Pressing the Yellow DEFAULT SETUP will change to the Default Childe Selection
The Columns indicates the source of the Childe.
Note: A Childe will only be included in the Batch sequence if it has been selected and has a setpoint that is greater than 0.
Bulk 1, Bulk 2 and Bulk 3 Childes are batched simultaneously from theor respective stations while Manual Addition selections are batched in the order in which they appear in the list.
Sslecting the required

Childe Quantity

The Childe quantity is entered as a percentage. The actual amount in Kg is calculated as a percentage of the Total Blend Kg. It is not possible to enter Childe Kg's to calculate the percentage.

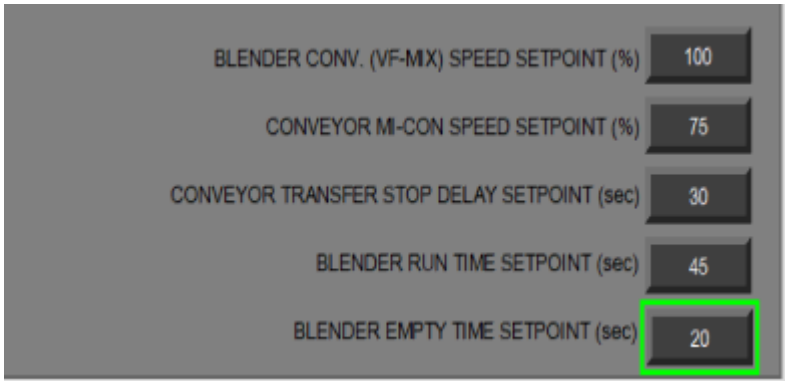
Batch Quantity

The overall Batch Quantity is displayed in Kilograms.
Changing Blend Parameters
All Blend Parameters including Blend Code, Blend Name, Blend Total Quantity, Childe Code, Childe Name, Childe Percentage can be changed by pressing the parameter of interest and entering the new value.
Note Blend Code and Childe Code can be a maximum of 8 Characters while the description fields can be 30 characters
The onus is on the operator to enter a valid recipe where the total percentages add up to 100%. It will not effect the Batch operation, ultimately the system will batch whatever amount in Kilograms is displayed against each Childe.

Batch Operation

There are two Batch operations that commence when Batching is started.
1 Bulk Batching from stations 1 to 3 that batch a single Childe simultaneously
2 Manual Addition where the operator is prompted to enter Childe ingredients one after the other
From the BATCHING OVERVIEW Screen,
Press the START BATCH button to start batching operation.

1. The system will first check if all equipment is in Automatic mode. If not, a yellow button will appear that when pressed places everything into Automatic mode.
2. The system also checks that the 3 Bulk Station Acknowledge buttons have been pressed.
3. If the Destination Blender is ready, the system will:-
4. Start the Blender Reversing Conveyor followed by the Elevator Conveyor.
5. Enable Manual Batch operation. The operator can be guided by viewing the Manual Batch Screen
6. The 3 Bulk Stations will simultaneously batch until the target weight is reached.
7. Once the Manual Addition is completed, the Manual Vibrator will start to deliver the contents of the Manual station to the Blender.
8. The Conveyors will run until the Transfer Stop Time has ended that can be adjusted on the SETUP SCREEN



9. The transfer Conveyors will stop, and the Blender will start and run for the Blender Run Time.
10. The Batch Sequence will start a new batch preparation to the alternate Blender
11. Once Blender run time is up, the Discharge gate will open while the Blender continues to run until the Blender Empty Time is reached at which time the Blender will stop while the Discharge Gate remains open.
12. Pressing the Blender Acknowledge Button closes the respective Discharge gate ready for the next Batch

If at item 3, the Blender is not ready, the manual batchcan be prepared but the Conveyors do not start or Bulk Batching until the target Blender is ready.

Lights on system auto as a conversation starter,

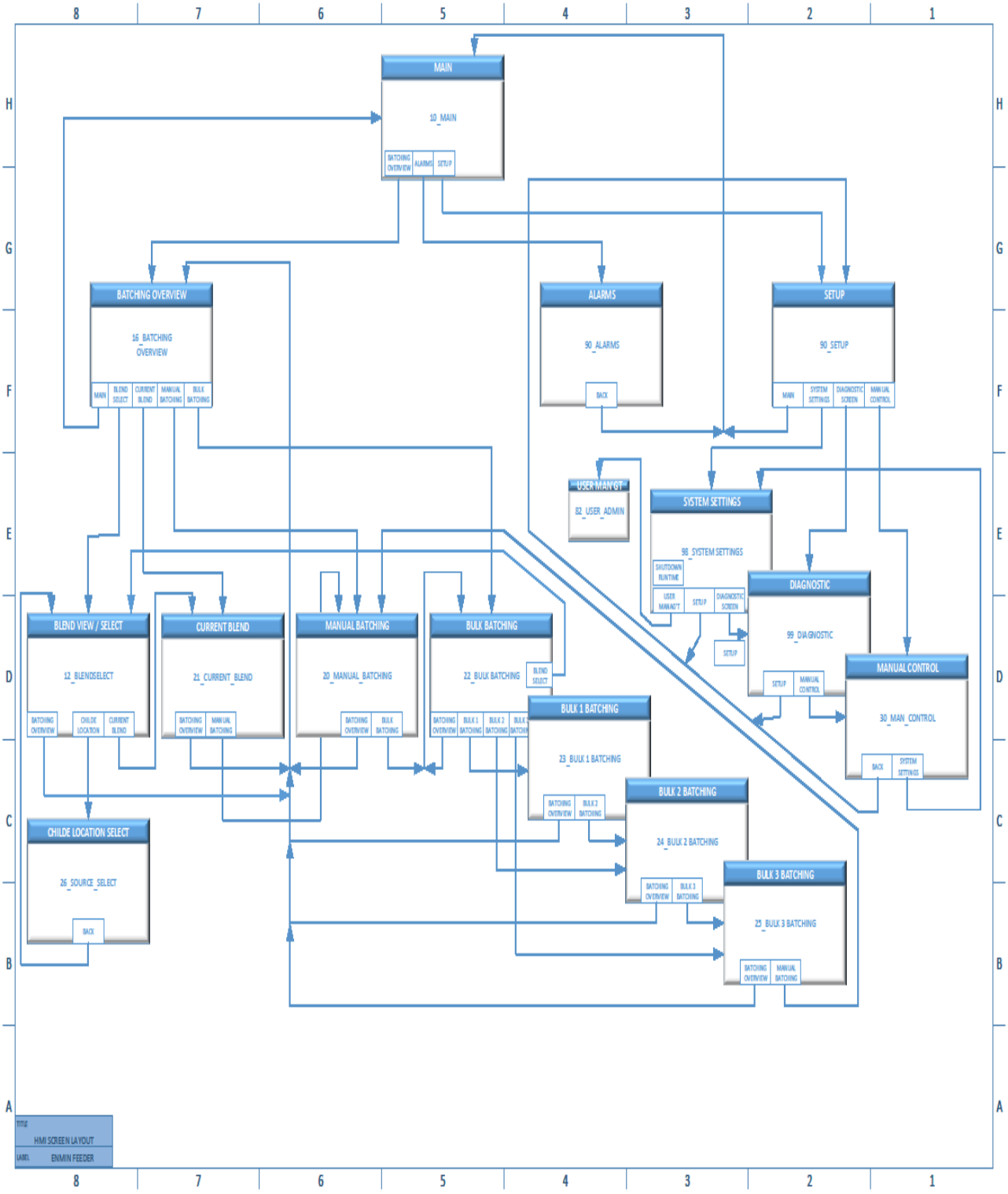
Manual add station

1. Light tower will be amber Indicating start first manual add
2. Each ingredient is to be added one by one in order of defined recipe (order indicated on the HMI)
3. Once addition A has reached its addition amount defined in the recipe light tower will stay amber and green light will turn on until acknowledgment of addition via a button or HMI located on the hand feed station.
4. Once acknowledge button is pressed green light will switch off
5. Only amber light is now shown – this indicates it has moved to the next ingredient in the recipe
6. Repeat until recipe ingredients are satisfied
7. once recipe ingredients are satisfied amber light will turn off and the green light is on indicating ready to discharge
8. discharge sequence will commence if system ready
9. if system is not ready green light will flash until ready
10. once manual station has discharged amber light only will come on again indication ready to load the next batch
11. once satisfied light will be green to discharge of flash green until ready to discharge.
12. Etc.

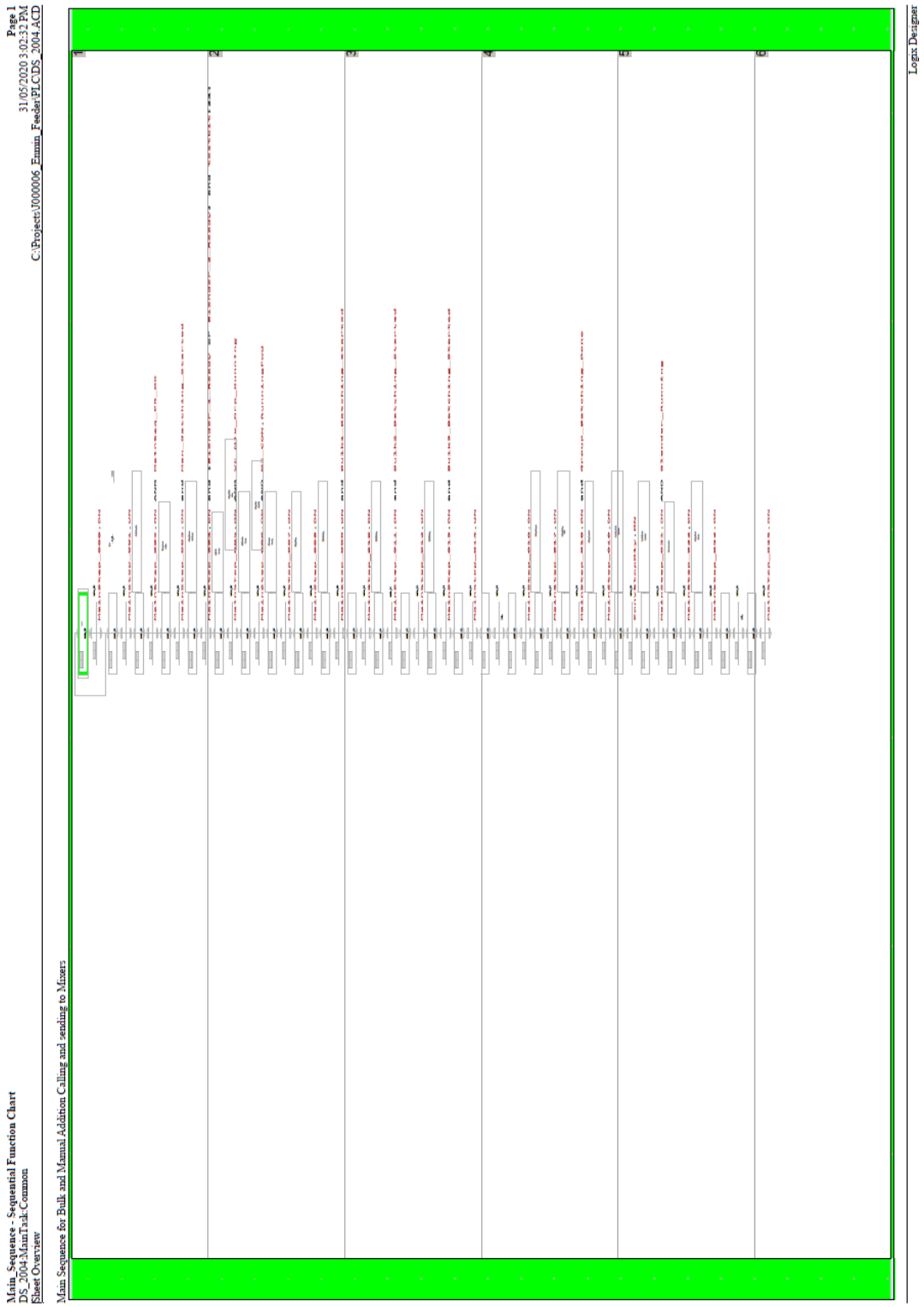
Bulk Bag stations 1,2,3

1. light will be amber Indicating load bulk bag
2. acknowledge button will then be pressed to indicate load bulk bag loaded (station 1,2,3)
3. green light will illuminate
4. station (1,2,3) will start to discharge
5. once station has discharged correct amount bulk station will stop and
6. light tower will flash green indicating ready for next batch
7. if we do not have enough for the next batch in the station amber light will illuminate indication remove empty bag replenish with new bag
8. once new bag is loaded operator will acknowledge with push button at station
9. light tower will show green if ready or flash green if waiting to discharge
10. etc.

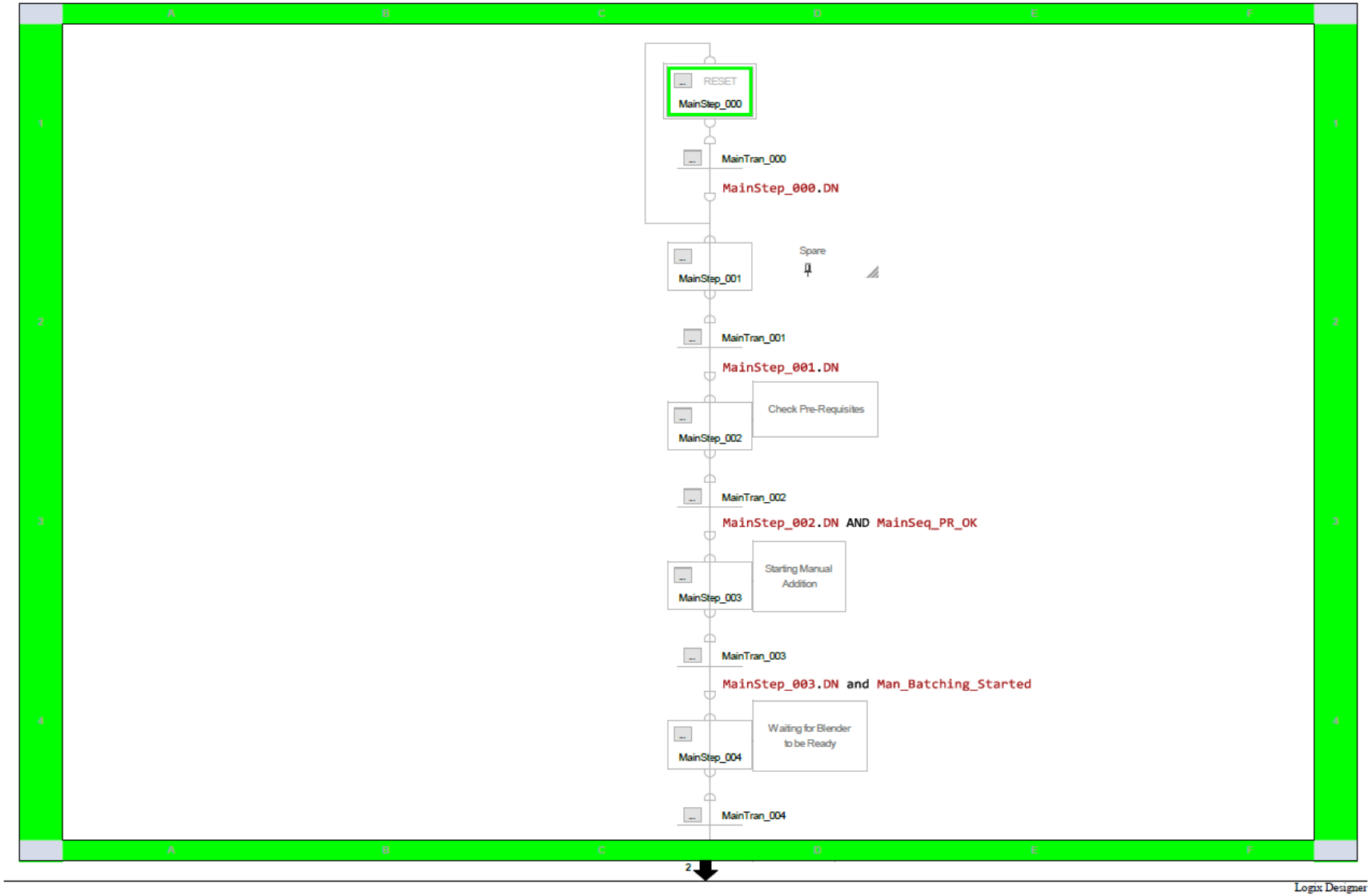
SECTION 1.2 HMI Screen Layout



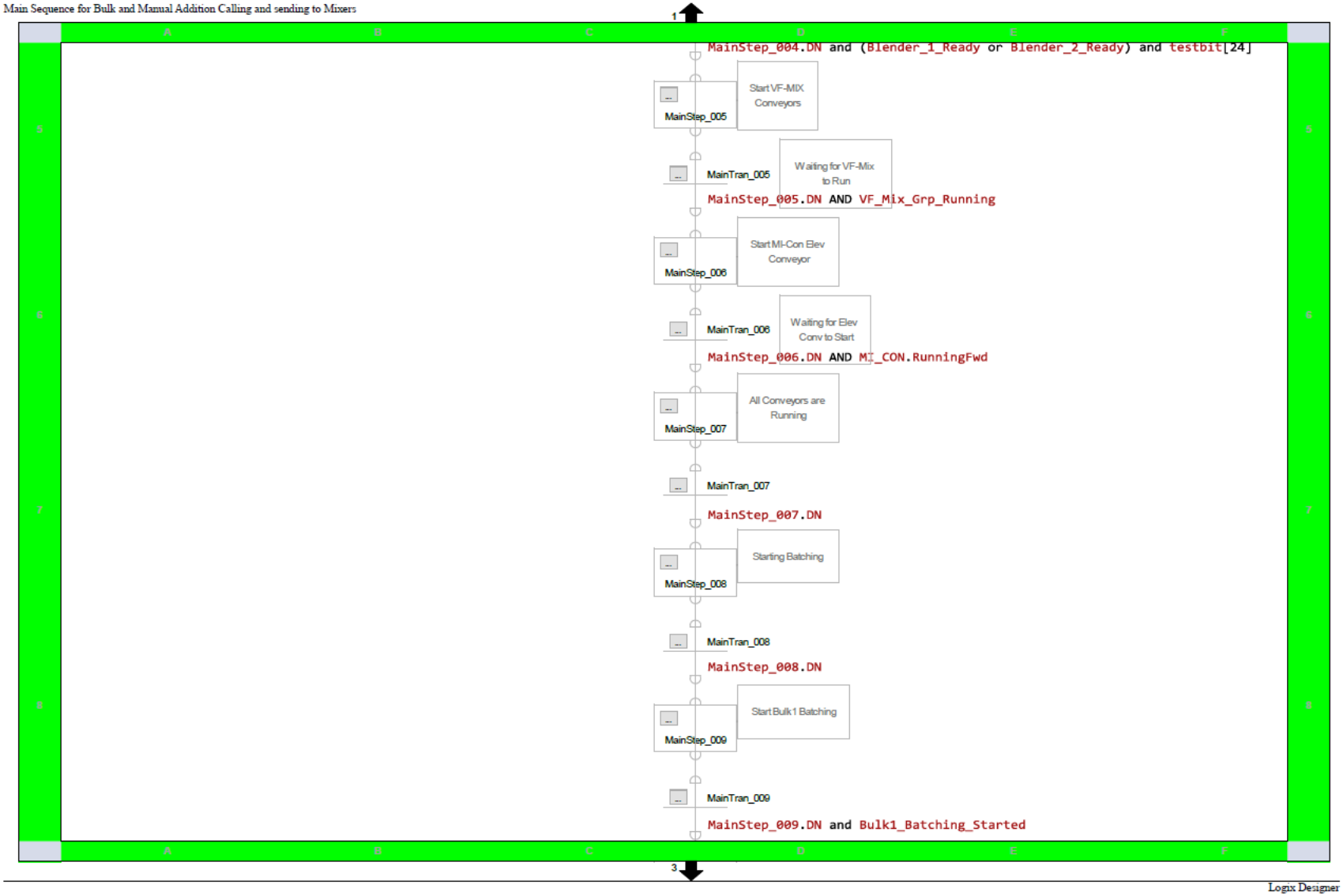
SECTION 1.3 MAIN Sequence



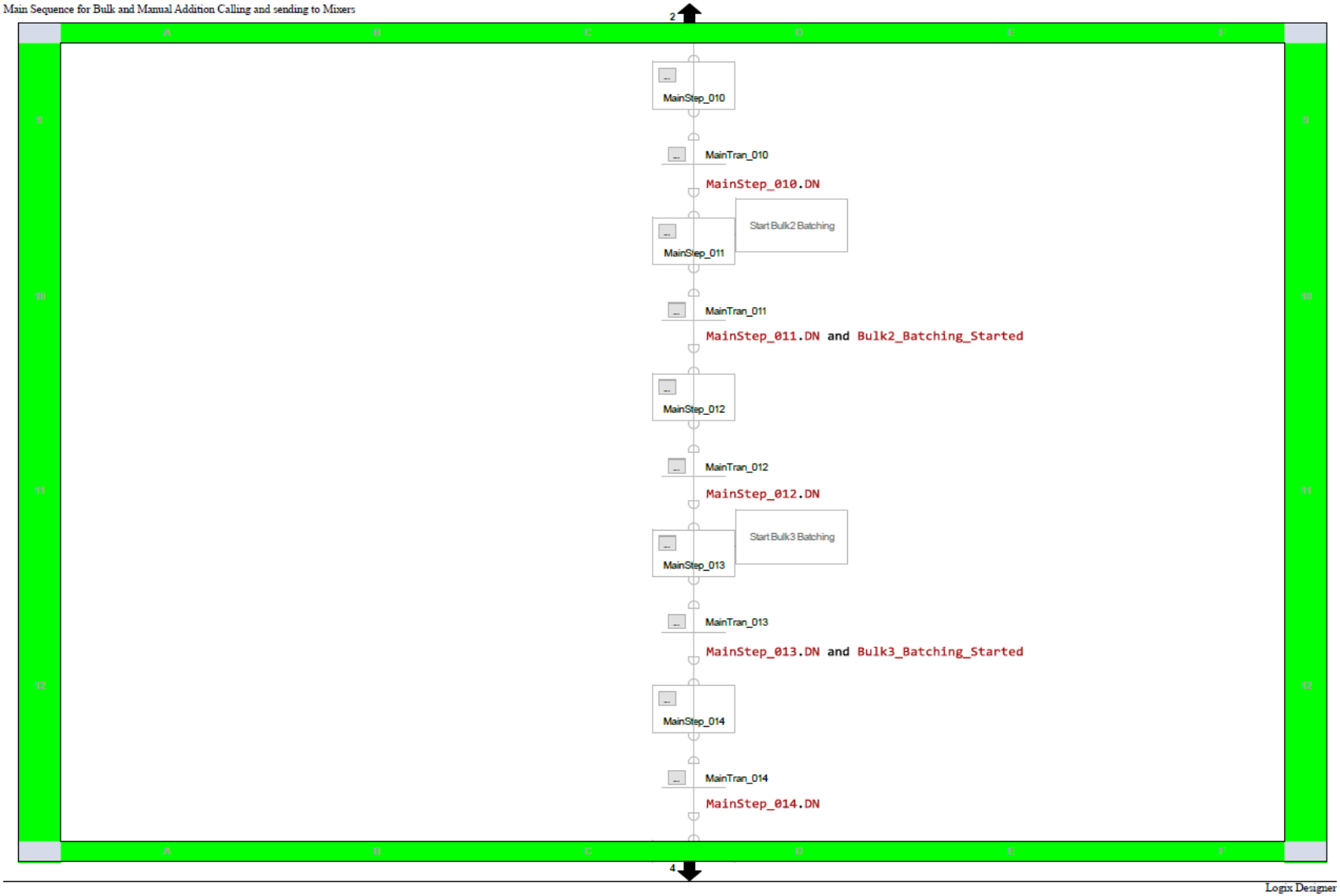
Main Sequence for Bulk and Manual Addition Calling and sending to Mixers



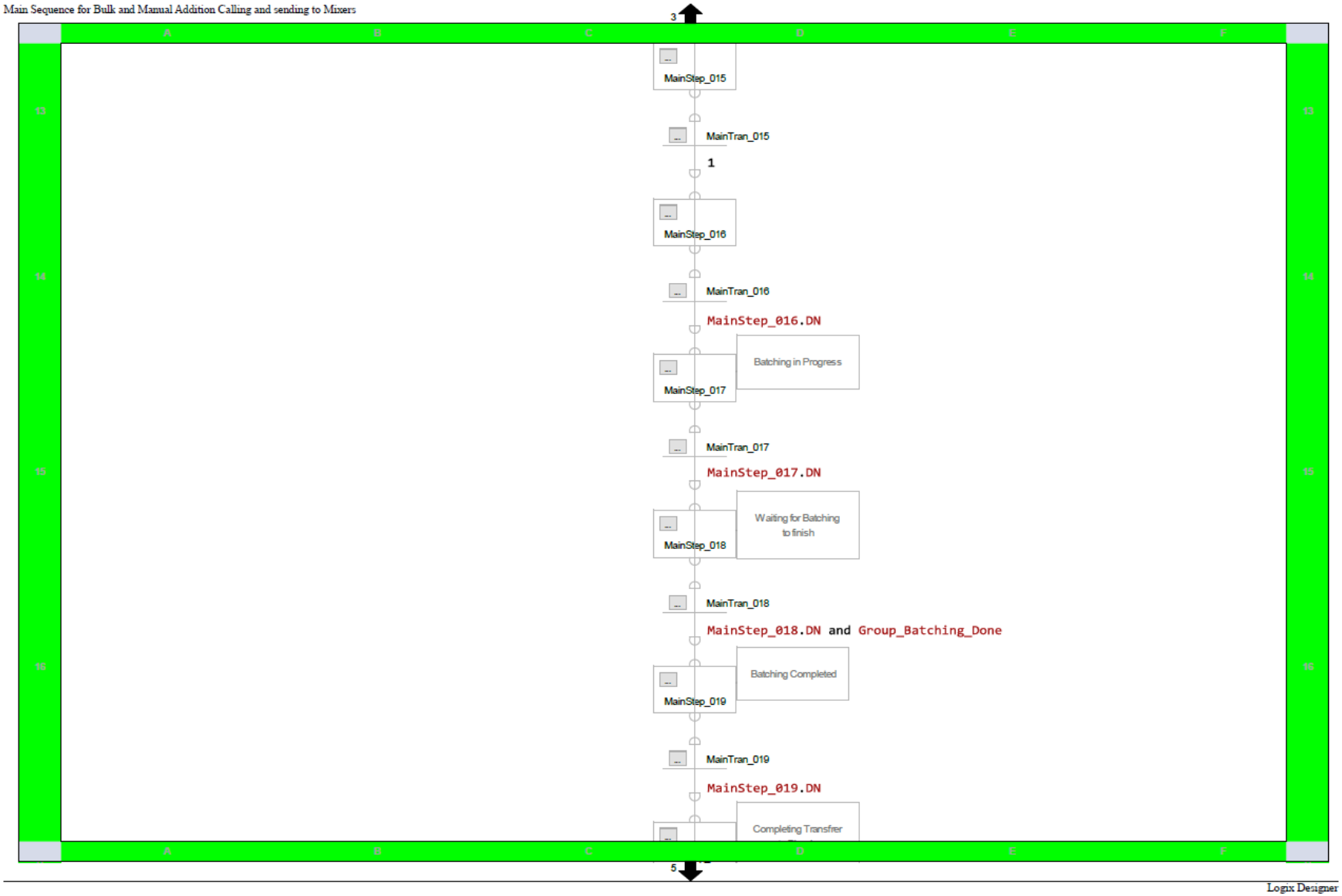
Main Sequence for Bulk and Manual Addition Calling and sending to Mixers



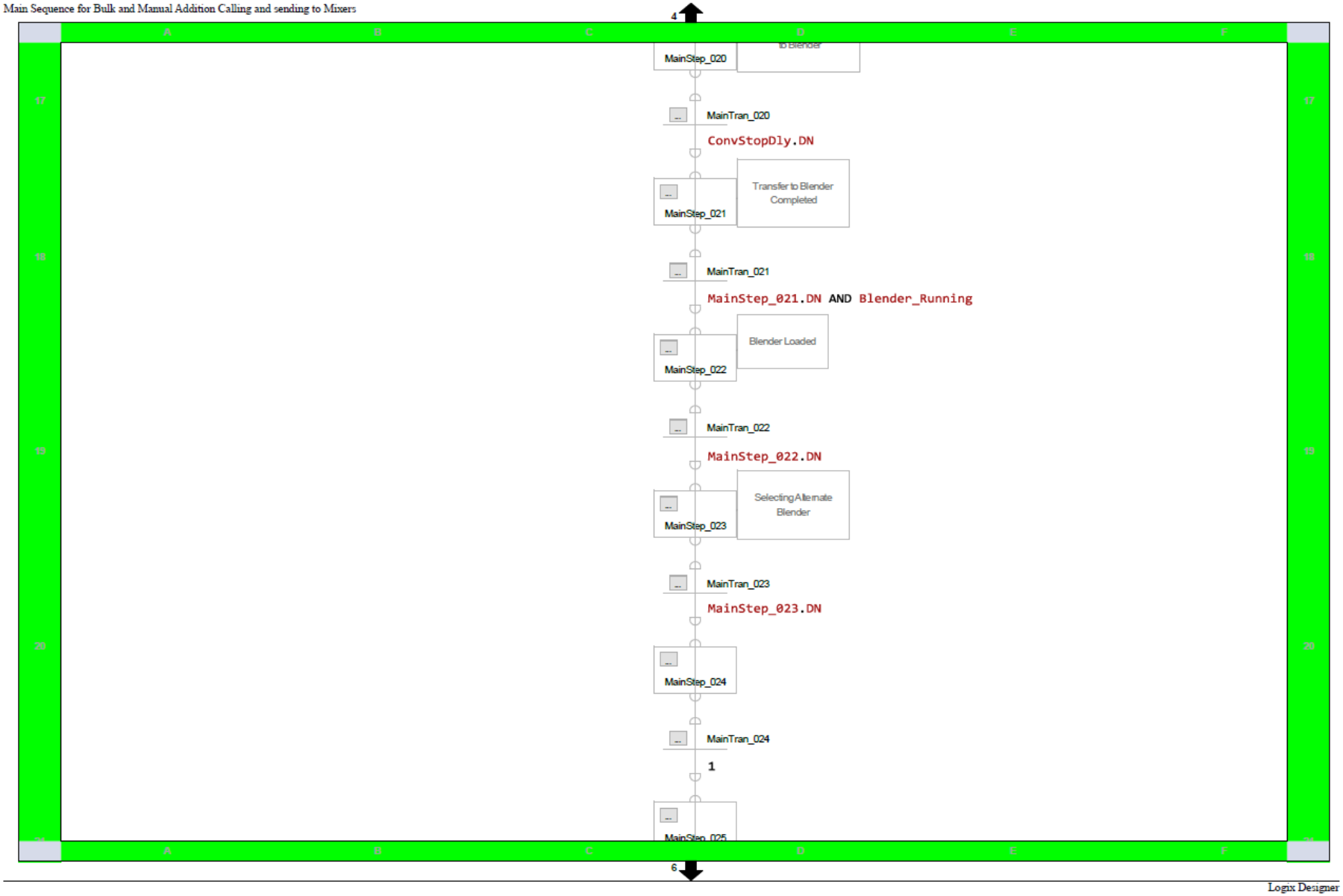
Main Sequence for Bulk and Manual Addition Calling and sending to Mixers



Main Sequence for Bulk and Manual Addition Calling and sending to Mixers

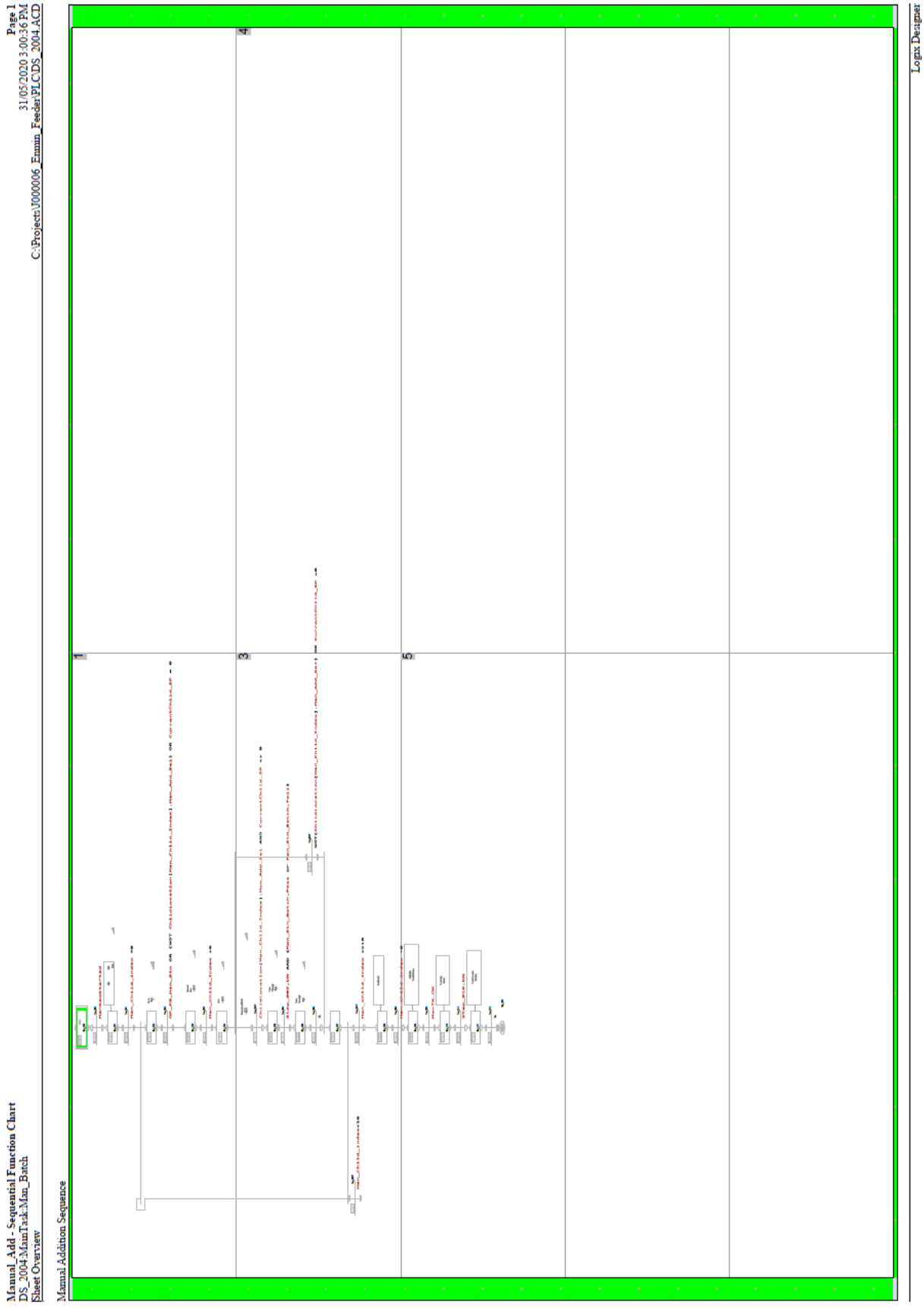


Main Sequence for Bulk and Manual Addition Calling and sending to Mixers

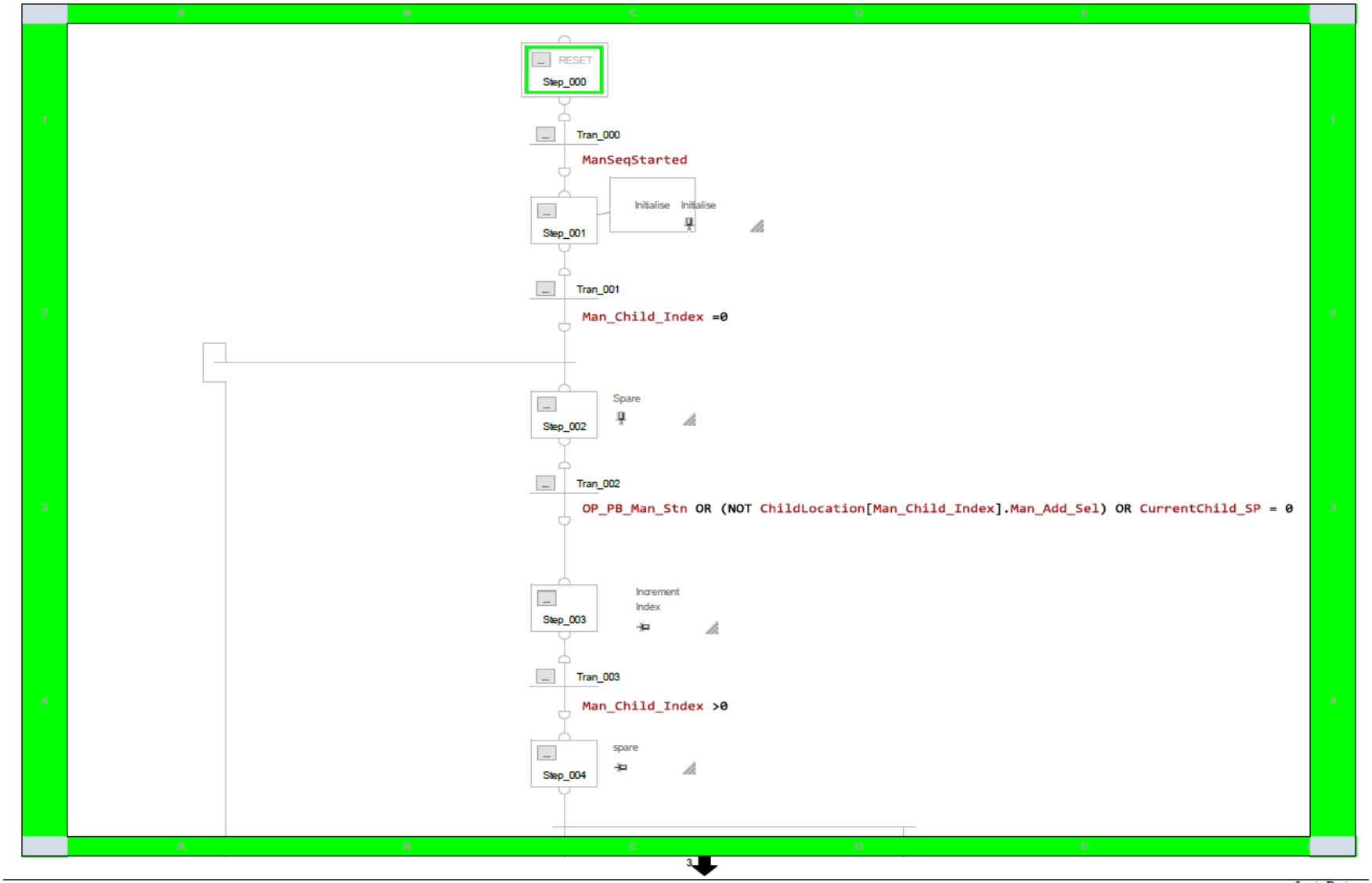


Main Sequence for Bulk and Manual Addition Calling and sending to Mixers

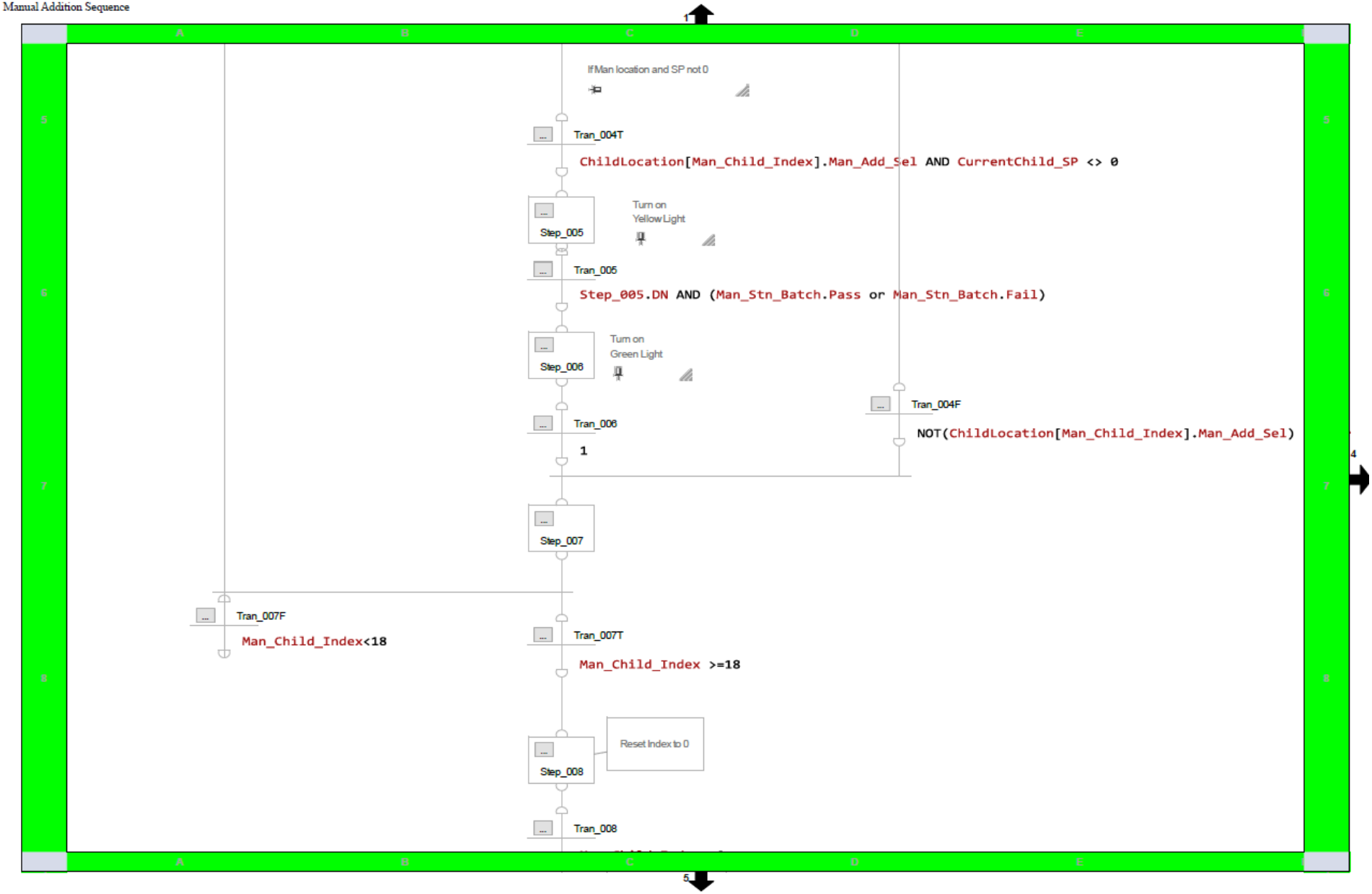
SECTION 1.4 MANUAL Sequence



Manual Addition Sequence

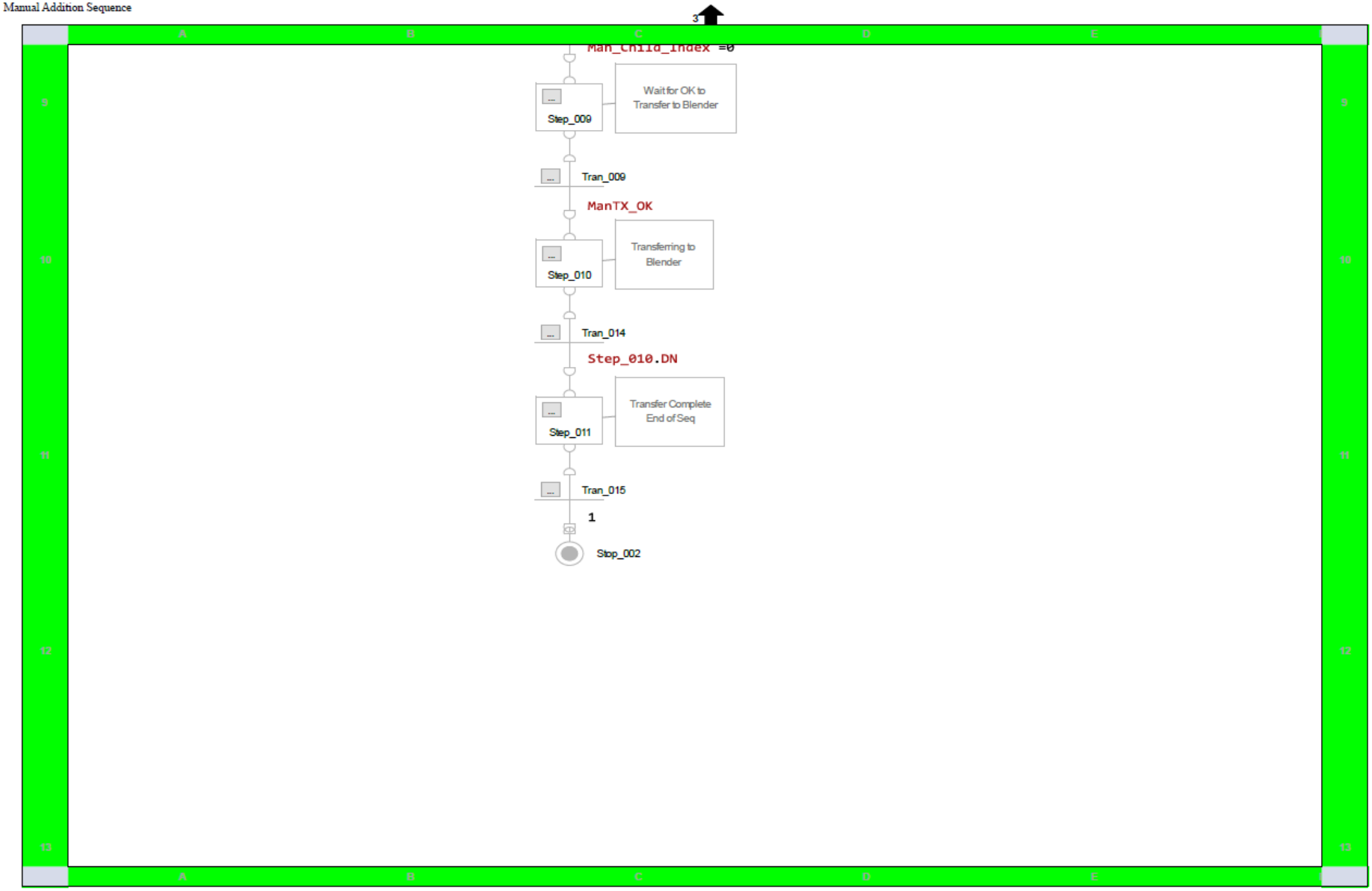


Manual Addition Sequence



Manual Addition Sequence

Manual Addition Sequence



Section 1.5 - System Components

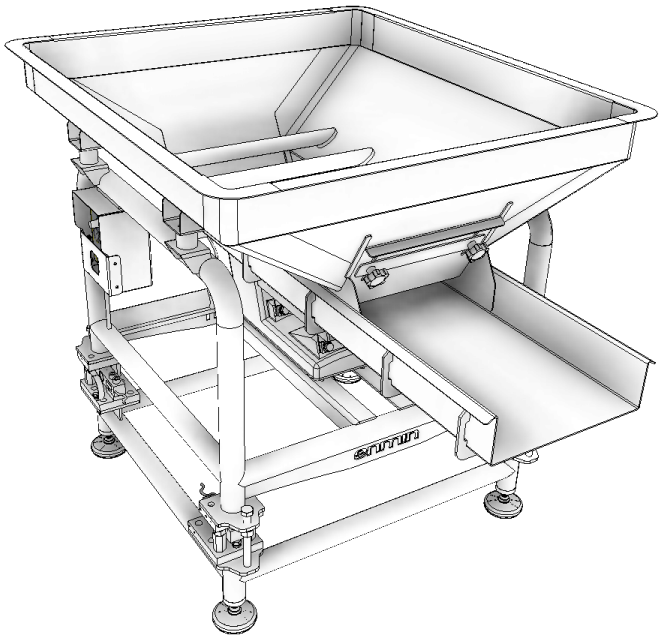
The main components of the Delivery System are as follows:

Weigh Hopper Feeder Item No 0002…Refer Section 2

Purpose:
Provide manual loading for blended product and on demand, based on weight settings, deliver product to an elevating conveyor.

Specification:
Enmin Electromagnetic Weigh Hopper Feeder is designed to accept a manually loaded batch of mixed product and deliver based on weight settings. All contact surfaces to be full 304 stainless steel construction, vibratory drives will be Enmin electromagnetic E feeder designed for automatic stop / start and variable speed control.
Weigh hopper feeder will be fitted with Load Cells and
Warning light system. This combination helps achieve target weight settings for a variety of recipes.

(Motor Size: 240 Volt / 1 Ph / Full Load Current = 2.0 Amp)



Recommended Spare Parts List - *Weigh Hopper Feeder*

Date: June 2020
Customer: Select Harvest
Project: Delivery System
Title: Weigh Hopper Feeder
Job No: P10504-0001

QTY	*P/N*	*DESCRIPTION*	*PRICE*
1	CV6-FS	Controller - IP 56 (Plastic)	
1	EMA LD4	240 Volt 50 Hz 1 Phase	
4	M1044040	LD4 Isolator - 40 DURO	
1		Load Cell SK30X 300 C3 c/w 803788 (Stabiflex mount)	
2	166346 VC.692/40 SST-M8	M8 Blind Female Lobe Knob (Stainless Steel Insert)	

After sales service:

We will endeavour to support our equipment through all reasonable avenues. For After Sales Assistance Enmin can be contacted:

6 Wadhurst Drive
Boronia Victoria Australia 3155.
Phone: 03 9800 6777 during business hours
Facsimile :03 9800 2211
Email: Enmin@enmin.com.au
Web site: www.enmin.com.au

Elevator Conveyor Item No 0003……Refer Section 3

The incline conveyors function is to Provide a central delivery system to an existing reversing feeder.

(Motor Size = 1.1Kw / 415 Volt / 3 Phase /Full Load Current = 2.55 Amp)

Purpose:

Elevating conveyor will gently delivery product to a height of approximately 3.3 m from ground level into the Reversing Feeder and Blending Stations.

Specification:

The Elevating conveyor will be constructed from full 304 stainless steel construction with FDA food grade belting and running gear. Belts will be scoop cleated with side wall guides to reduce the risk of product spillage. The Elevating Conveyor will be fixed in place.

The Elevating Conveyor will be supplied with variable speed and meet all current Australian safety design standards.

Recommended Spare Parts List - *Elevator Conveyor*

Date: June 2020
Customer: Select Harvest
Project: Delivery System
Title: Incline Conveyor
Job No: P10504-0003

QTY	*P/N*	*DESCRIPTION*	*PRICE*
2	UCF-207	35mm Dia. Plastic Flange Housing-4 hole / St Steel Insert	
2	FB-206	30mm Dia. Plastic Flange Housing-3 hole / St Steel Insert	
2	UCUP-205	25mm Dia. Plastic Flange Housing-2 hole / St Steel Insert	
2	6205-2RS	25mm Dia. Deep Grooved Ball Brg / St.steel	
2		Ammeraal Aeon-50 /190mm (12Tooth) Sprocket c/w 40mm Square Bore	
1	SA57/TDRN90S4/TF	1.1Kw at 38rpm, Mount=M1, TB=180, Shaft=30 at A	

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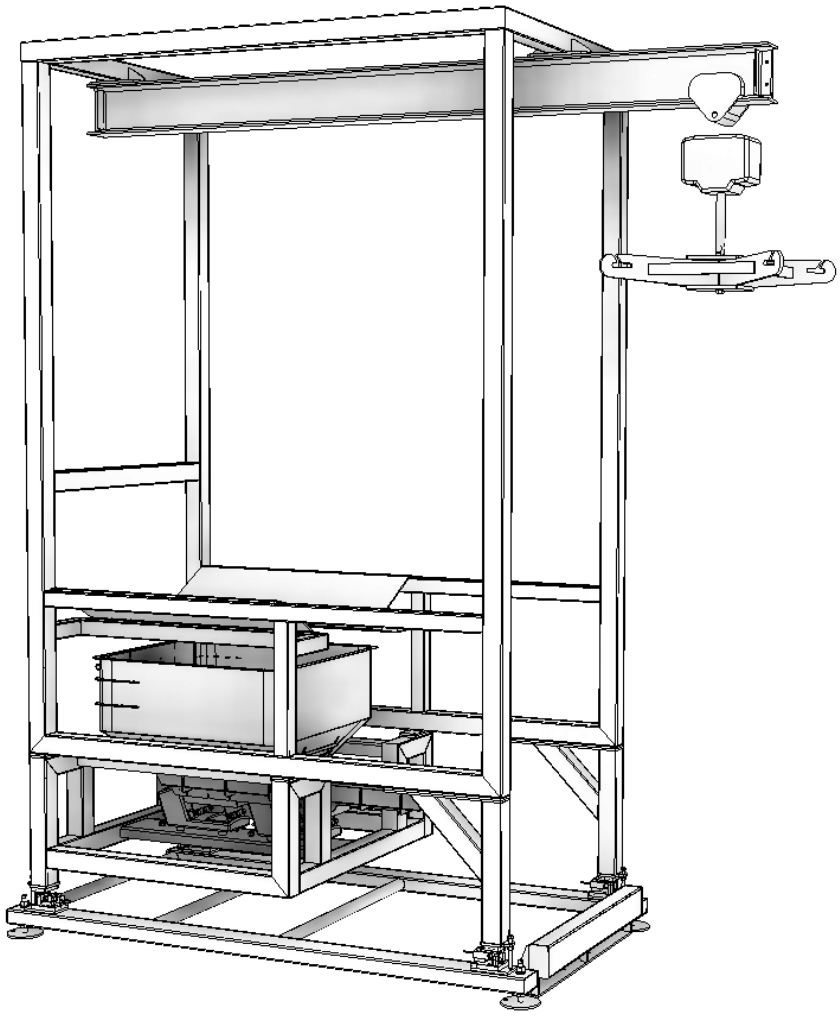
Email: Enmin@enmin.com.au
Web site: www.enmin.com.au

Bulk Bag Weigh Feeder Item No 0002…Refer Section 2

Purpose:
Provide manual loading for blended product and on demand, based on weight settings, deliver product to an elevating conveyor.

Specification:
Enmin Electromagnetic Bulk Bag Weigh Feeder is designed to accept a Bulk Bag and deliver based on weight settings.
All contact surfaces to be full 304 stainless steel construction, vibratory drives will be Enmin electromagnetic E feeder designed for automatic stop / start and variable speed control.
Bulk Bag Weigh feeder will be fitted with Load Cells and
Warning light system. This combination helps achieve target weight settings for a variety of recipes.

(Motor Size: 240 Volt / 1 Ph / Full Load Current = 4.0 Amp)



Recommended Spare Parts List - *Bulk Bag Weigh Feeder*

Date: June 2020
Customer: Select Harvest
Project: Delivery System
Title: Bulk Bag Weigh Feeder
Job No: P10504-0002

QTY	*P/N*	*DESCRIPTION*	*PRICE*
1	CV6-FS	Controller - IP 56 (Plastic)	
1	EMA LD4	240 Volt 50 Hz 1 Phase	
4	M1044070	LD4 Isolator - 70 DURO Part No M10404070	
1		Load Cell SK30X 1000 C3 c/w 803788 (Stabiflex mount)	
2	166346 VC.692/40 SST-M8	M8 Blind Female Lobe Knob (Stainless Steel Insert)	
3	GN-237-NI-40-40-A-GS	Hinge: - 25mm x 25mm hole ctrs / 5.5mm hole c'sunk	
2	gn_607.1_8_ak_ni_	Plunger c/w Rest Position	

After sales service:

We will endeavour to support our equipment through all reasonable avenues. For After Sales Assistance Enmin can be contacted:

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Boronia Victoria Australia 3155.
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Email: Enmin@enmin.com.au
Web site: www.enmin.com.au

Section 1.6 - Safety Notes

The following basic safety notes must be read carefully to prevent injury to persons and damage to property. The operator must make sure that the basic safety notes are read and observed. Make sure that persons responsible for the plant and its operation have read through the operating instructions carefully and understood them. If you require further information, please contact ENMIN.

Safety warning labels should be used and protection covers installed where considered necessary. Consultation with in-house OHAS officers should be considered.

Danger

- Conveyors may have live, uninsulated (in case of open connector/terminal boxes), and sometimes moving or rotating parts as well as hot surfaces during operation.
- All work related to storage, setup, connection, start up, maintenance and repair may only be carried out by qualified personnel.
- Apply general factory safety practices for machinery.
- Avoid wash down with high pressure water jets.
- Never remove any warning or information labels from equipment.
- Never install damaged conveyors
- Always report damages to ENMIN
- Removing any guarding without authorization, improper use and incorrect installation and operation may result in severe injuries to persons or damage to property.

Section 1.7 - Mechanical Installation

1.7.1 Receiving of Goods

On receipt of your goods you are recommended to immediately inspect them and if necessary report any issues with the equipment. The delivery documentation will list all major components and accessories.

1.7.2 Assembly

In the majority of cases the equipment will be shipped fully assembled and therefore the only requirement will be the locating and fixing of the machine.

1.7.3 Installation

Locate equipment assembly in required position, ensuring correct alignment. Level equipment by placing spirit level across and along belt structure. The conveyor structure should be level in both directions to +/- 1degree.
Fix conveyor supports to floor and/or structural platform by means of dynabolts and/or chemsets. (customers preference).

1.7.4 Starting Procedures

Prior to starting equipment for the first time, the following check list should be consulted.

- Motor covers should be secure
- Fixing bolts
- Covers in place
- Discharge chutes fitted where necessary
- No loose bolts
- No adjacent equipment in contact
- Electrical connections are correct
- Personal are aware of start up

1.7.5 Regular Maintenance

As with any piece of moving equipment some maintenance is required, regular inspection will ensure trouble free operation.

Inspect conveyor belt for general wear. Grease bearings on drive shaft and tail shaft. Bearings should be relubricated at regular intervals to prevent damage. Exact relubricating intervals are difficult to predict because of differing environments.

Junction Boxes and motors are all IP rated, however we do not recommend long periods of direct high pressure water on these items.

Check there is no excessive temperature rise in the conveyor motors (Refer to SEW manual). If you think the motors may be running too hot check the corresponding amps draw to confirm.

Section 1.8 - Electrical Installation

Electrical connection diagrams for equipment motors are located in the appropriate manufacturer's manuals.

Prior to turning on the equipment, ensure the following has been done.

- Double check all electrical connections are correct
- All mechanical installation has been completed and no tools have been left on the belt

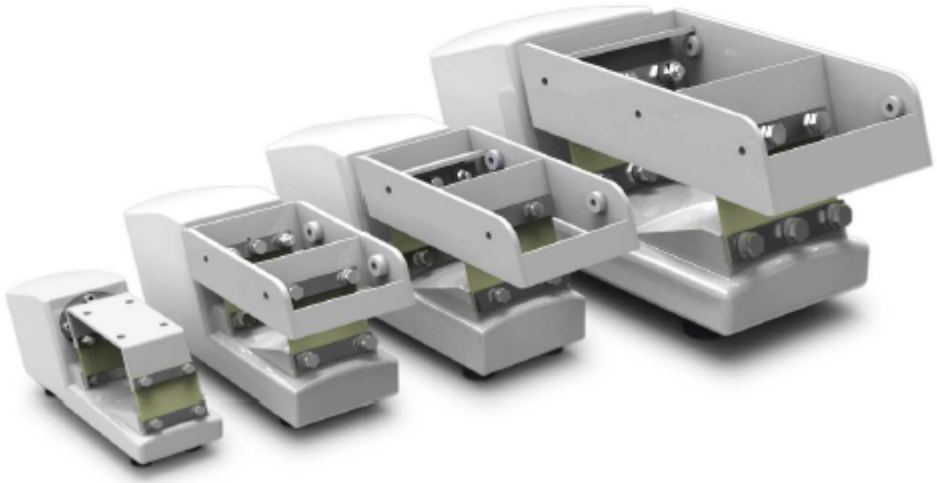
Maintenance Manual

SECTION 2

ELECTROMAGNETIC Feeder Manual

Select Harvest Delivery System Job No P10504-000

INDEX



1.0 INTRODUCTION

Enmins range of Electromagnetic Vibratory Feeders, commonly known throughout the Industry as the E Feeder,offers a unique handling method of controlling the flow of bulk materials into secondary processing operations.
Product can be screened, sized or accurately metered assuring a smooth uniform flow that is fully variable from a dribble to a surge.
Enmins range of Vibratory Feeders are fully designed and manufactured in Australia, using locally produced components. Enmin E type feeders are electromagnetic powered units, the following instructions are common to all models in our range. After unpacking give the feeder a thorough check for any damage that may have occurred during transport. All units are supplied with a ***Data Specification Sheet***, this will outline and provide a permanent record of the original set-up and specifications of the drive unit and tray when applicable.
Where the feeder is supplied with a pan fitted never lift the unit by the pan. The feeder has been factory tuned for your application and handling by the pan could cause damage.

2.0 LOCATION

The feeder is supplied with rubber isolators it is essential that these should be interposed between the base and the support structure. Adequate clearance must be provided between the feeder and the pan to avoid contact with chutes, hoppers or support steelwork.
Failure to do this will dramatically reduce the performance of the feeder and can lead to damage. Where the feeder is located under a hopper care should be taken to avoid head loading this will have a dampening effect thus reducing performance of the feeder and can lead to damage. The support steelwork should be well braced to accept any transmitted vibrations.

3.0 CONTROLLER

The controller should be located as close to the feeder as is practical and preferably wall mounted, the cleaner the environment the better. Inside the controller you will find a connection instruction diagram. Power input is 240 Volt 50
Hz or 110 Volt 60 Hz single phase unless otherwise specified. The power supply should be clean and where ever possible free from spikes or voltage surges. Stabilized control circuits are available to overcome these problems. (Refer separate controller instruction booklet)

4.0 MAINTENANCE

Some materials will gradually build up in the pan this can cause reduction in feed rate. If excessive the feeder can be overloaded, on a regular basis remove any such build up. The feeder and its controller should be kept reasonably clean; a low-pressure air supply is recommended for cleaning these items, avoid using water. If this is essential ensure that the controller and the feeder drive unit is covered. It is also recommended that periodic checking of all spring bolts be carried out. **(\Refer specification data sheet for torque values)**

5.0 COIL REMOVAL

Should the coil need to be removed, switch off power and isolate the controller and the feeder. Undo the four outside bolts on the feeder back plate; remove the plate and coil. Now undo the two coil clamp bolts from the holder.

6.0 SPRING REMOVAL

On the EVF LD 1 Feeders the front and rear springs are the same therefore can be interchanged, however the springs on the LD 2, LD 3 & LD 4 are different due to an additional hole in the rear spring. We suggest that one set of springs be changed at a time. After removal of the clamp plate mark the springs F1, F2 (front 1 etc) for ease of reassembly.Shim plates will also be fitted; these must be replaced when refitting. Never reinstall faulty or suspect springs; replace them with new ones. Springs and shims should be refitted in the same order as removed. Bolts are standard Nickel-plated types, never replace with tensile types, and consult the service department for advice if replacing due to corrosive areas.

7.0 OPERATION

We recommend that no alterations to the feeder be made without first contacting our service department for advice.
Additions or changes to the feeder can cause serious damage resulting in coil failure or reduced performance.
Before switching power to the feeder, rotate the sweep knob to its zero position. On powering the unit the red indicator light will glow indicating power is being applied to the coil, slowly rotate the sweep knob and you will observe the pan oscillating. A stroke or amplitude indicator is fixed to the pan as the power is increased; the amplitude of the pan will also increase. It also maybe necessary to use the trim pot adjustment to fine tune the drive.

(Refer Air Gap adjustment diagrams)
Recommended amplitude range.

Model EVF-LD 1 0.5 MM
Model EVF-LD 2 0.8 – 1 MM
Model EVF-LD 3 1.2 – 1.4 MM
Model EVF-LD 4 1.8 – 2 MM

8.0 IMPORTANT

When operating normally the feeder will give a constant value of noise level that generally should register no more than 70 to 72 dba maximum. If the noise level increases or hammering occurs switch off the Feeder immediately and refer to the trouble shooting section.

9.0 INSTALLATION MAINTENANCE

These Vibratory Feeders have no motors, shafts or other moving parts that require lubrication, therefore maintenance is a minimum requirement. To ensure your equipment remains reliable a few simple procedures should be followed:
• After 2 hours of operation check fixing bolts that they are secure.
• That the feeder has not increased its noise level.
• The feeding rate is consistent.

10.0 THE AIR GAP

This is the space that exists between the coil face and the armature or striker plate. It is of paramount importance the air gap is correct for good feeder performance. If the air gap is too close the faces can come into contact and cause a hammering noise, this will lead to coil failure and can cause broken springs or cracking of the pan. Alternatively too great an air gap will cause the current to climb to dangerous levels. A high current condition can result in coil failure, controller component failure and reduced material feeding. The air gap is set at the factory when the feeder is tuned and should not require adjustment if however high voltage is applied to the feeder or if damage has occurred then some adjustment may be required.

11.0 MODEL EVF LD1

The air gap on this model is changed by adjustment of the large screw on the back plate. Turn off the power to the feeder; release the large locking nut. If the feeder is hammering increase the air gap by the gap by turning the screw anti-clockwise. This is a fine adjustment and you may need to repeat the procedure a few times, once satisfied secure the locking nut.

12.0 MODEL EVF LD 2, 3, 4

To adjust the air gap the back plate must be removed, follow the coil maintenance procedure. Below the coil will be shims by adding to or removing the air gap is changed.

(Refer Drawing)

NOTE: Always check the rating plate fixed to the feeder for correct voltage and electrical information as well as feeder identification and serial number

13.0 ELECTRICAL

Feeder coils under normal operating conditions will run warm but never too hot to touch. A high current condition can result in coil burn out, failure of control components or reduced material flow. The controller has a built in fuse for protection, line spikes can cause component failure, and increases in voltage will cause the feeder to surge.

14.0 TROUBLE SHOOTING

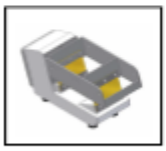
FEEDER OPERATES TOO SLOW
Line voltage low.
Unit is in contact with chute or other rigid structure.
Cracked or broken pan.
Broken spring.
Bolts loose or broken.
Faulty Controller.

FEEDER OPERATES TOO FAST
Line voltage too high.
Controller set too high.
Over Sprung

FEEDER WILL NOT OPERATE
No power to the controller, Fuse blown.
Controller failure.
Coil burnt out or damaged.
Short circuit in wiring.

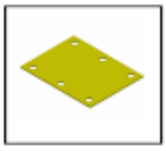
15.0 HARDWARE REFERENCE GUIDE

The following examples are what Enmin consider to be the most common hardware components used in conjunction with our range of Electromagnetic Vibratory Equipment. Enmin will always endeavor to source the best possible products to compliment our equipment and thus ensuring the quality, reliability and workmanship remain at the highest possible standards.



VIBRATORY LD DRIVES
Our drives have been designed with the food and allied industries in mind, incorporating fully encapsulated coils and stainless steel components as standard.

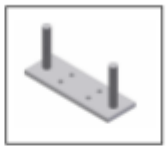
VIBRATORY DRIVE HD
Suspended drives have proven to be a very useful tool when accurate metering of high tonnages is required.



LEAF SPRING
Fiberglass leaf springs are not only durable but provide the deflection necessary to ensure maximum feed rates can be achieved. A wide variety of options are available.

ELECTROMAGNETIC COIL
All Enmin coils are specifically wound to our specifications, they are unique in design to our equipment and are all standard encapsulated to meet the most demanding of application.

RUBBER ISOLATOR
Solid rubber isolators provide a significant reduction in transmit ion of vibration from drive to sub frame or mounting structure.

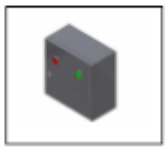


ADJUSTMENT PAD
The adjustment pad is used exclusively on our equipment and has been designed in conjunction with the torsion mount for final adjustment in the overall level of the equipment.

ARTICULATED FOOT
Adjustment due to unevenness in floor levels will usually be taken up by an articulated foot. Bolt down options are also available when a permanent installation is required.

CASTOR
Lockable and adjustable castors are available in food and non-food grade standards. Castors are often used when the equipment is used in multiply locations or for ease of removal.

MP CONTROLLERS
Focusing exclusively on controllers for electromagnetic drives enables MP Elettronica to present one of the worlds most comprehensive ranges.



CONTROL BOX
Control boxes are built to meet the highest safety standards world wide. Boxes are available in mild steel powder coated or stainless steel finish, functions range from variable speed to PLC.

16.0 SPECIFICATION DATA SHEET

DRIVE ELECTRICAL SPECIFICATION

MODEL	PHASE	Hz	VOLTS	INPUT CURRENT	REC CONTROLLER
EVF-LD 1	SINGLE	50	240	0.25 AMPS	R3F
EVF-LD 2	SINGLE	50	240	0.4 AMPS	R3F
EVF-LD 3	SINGLE	50	240	1 AMP	R3F
EVF-LD 4	SINGLE	50	240	2 AMPS	R3F

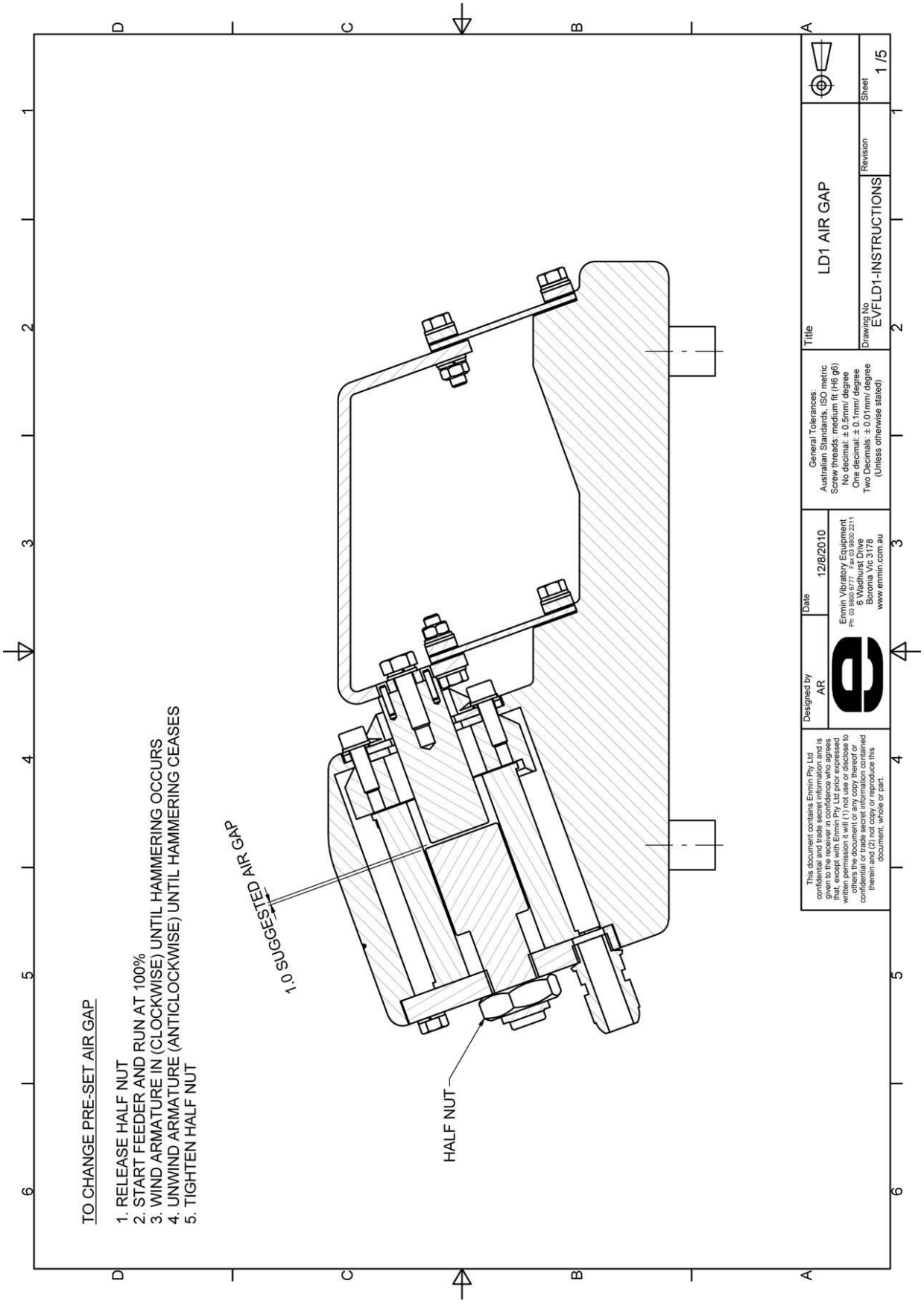
Note : All information provided is based on a single drive configuration, for optional electrical specification Please consult the manufacturer or local supplier.

DRIVE MECHANICAL CONFIGURATION

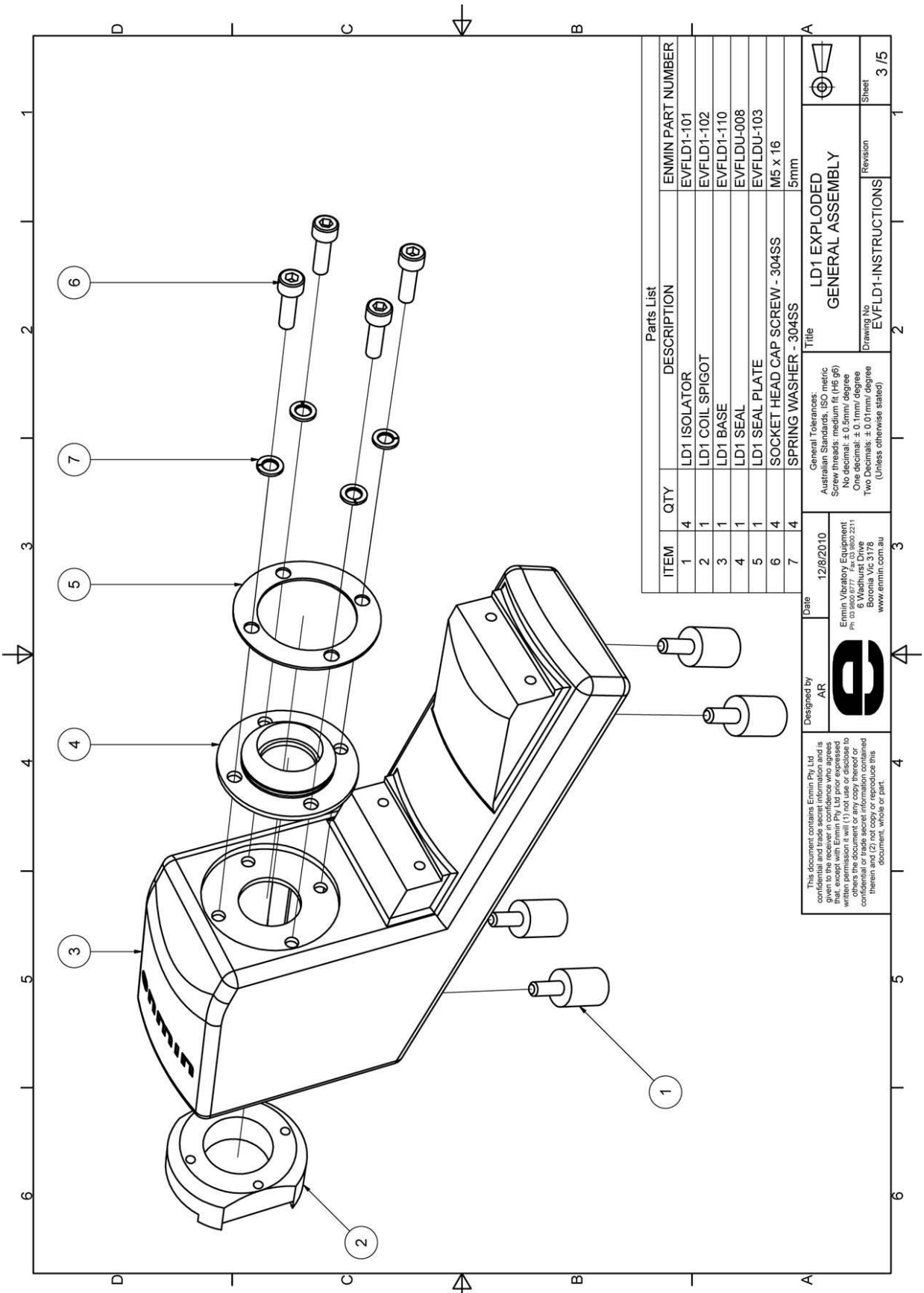
MODEL	SPRING FRONT	SPRING REAR	AIR GAP	AMPLITUDE	TORQUE
EVF-LD 1	.050 x 1	.070 x 1	2.0 MM (MAX)	0.6 MM (MAX)	17 nm
EVF-LD E2	.090 x 1 .050 x 1	.090 x 1	2.5 MM (MAX)	1.2 MM (MAX)	17 nm
EVF-LD 3	.090 x 1	.130 x 1	2.5 MM (MAX)	1.4 MM (MAX)	17 nm
EVF-LD 4	.130 x 1	.195 x 1	3.5 MM (MAX)	2.0 MM (MAX)	35 nm

Note : All information provided is based on a single drive configuration, if multiple drives or non-standard trays have been employed the information provided may not be applicable. For factory settings please provide the serial number located on the drive to the manufacturer.

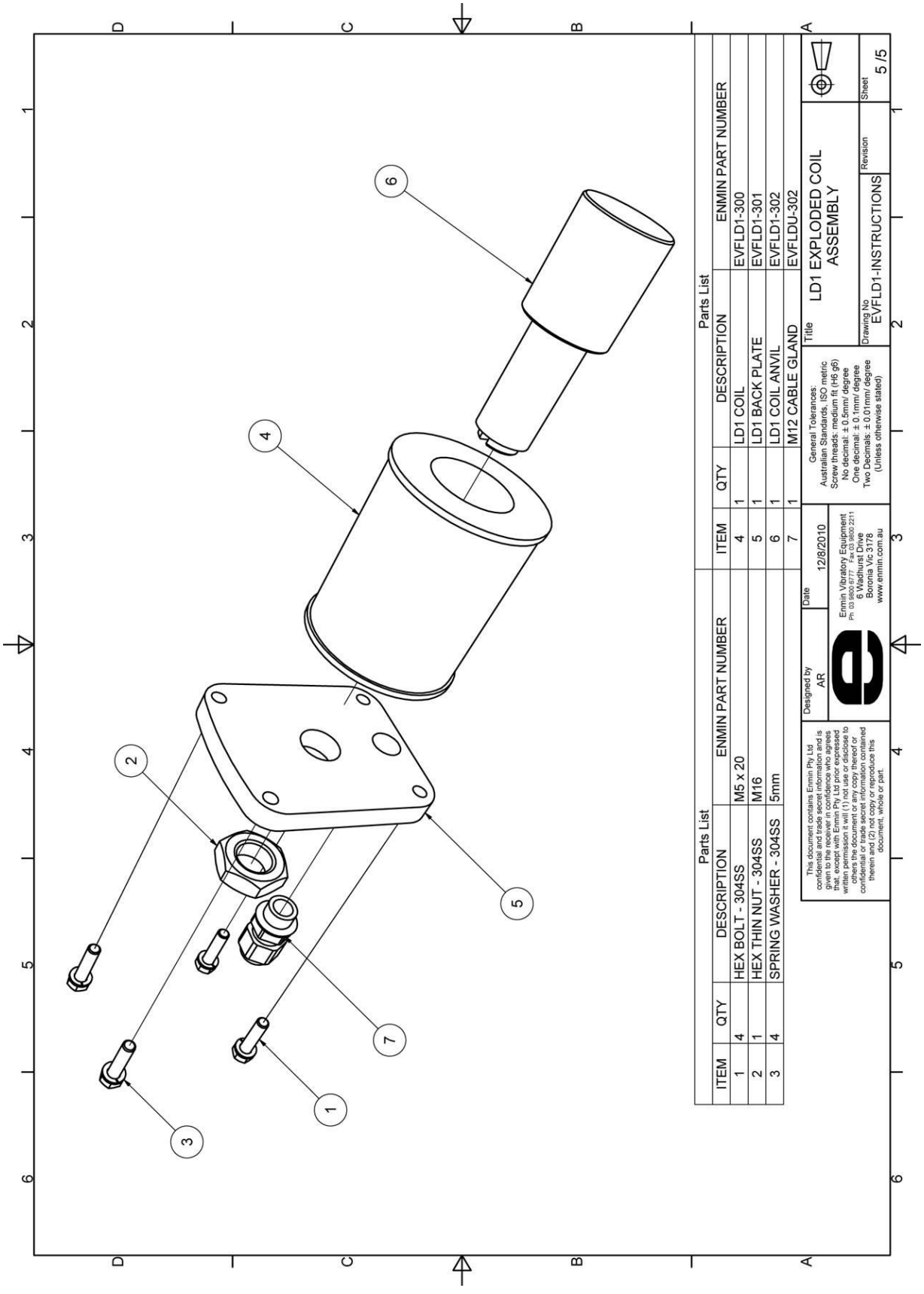
17.1 EVF LD1 AIRGAP DRAWING



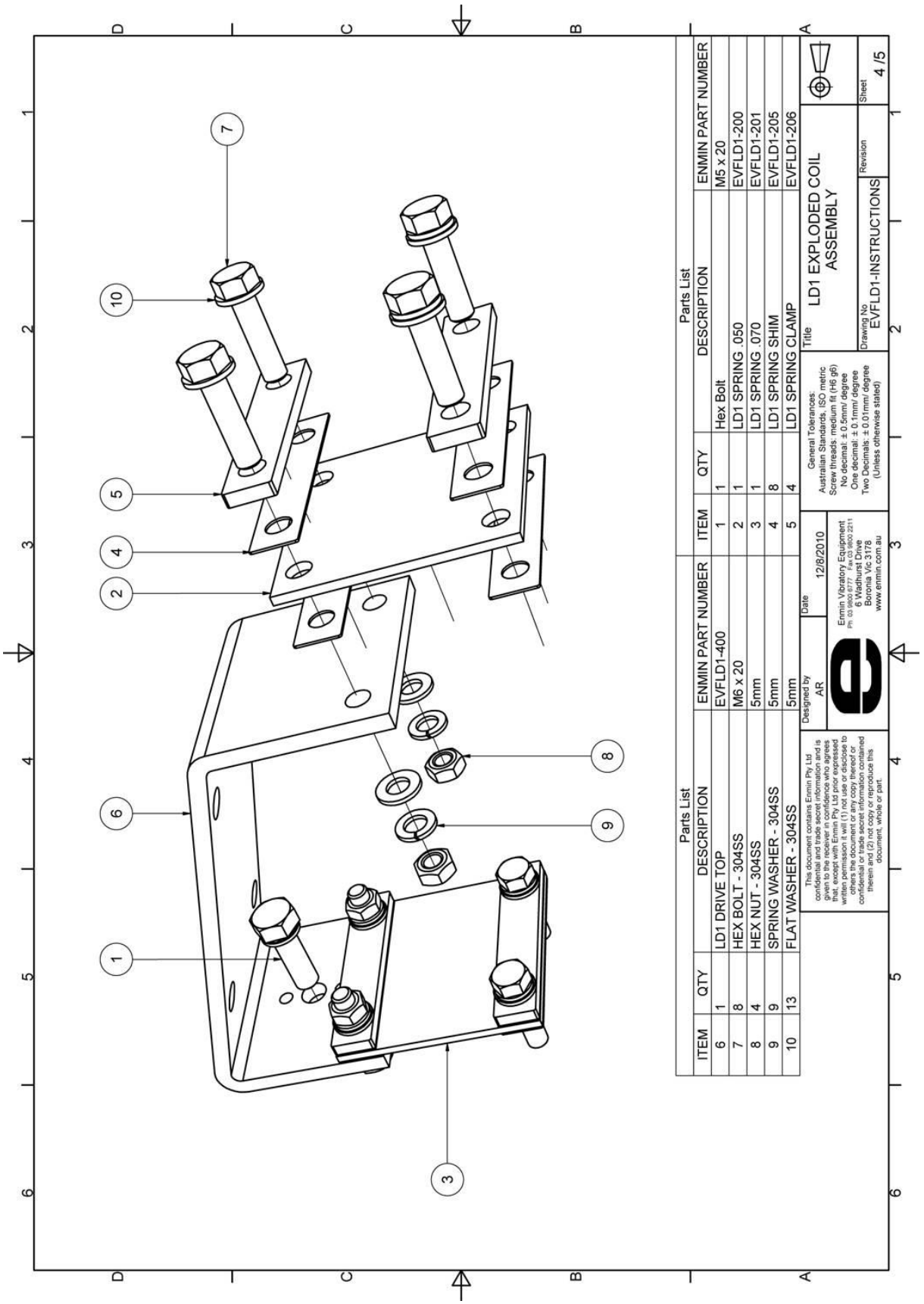
17.2 EVF LD1 EXPLODED CASTING ASSEMBLY



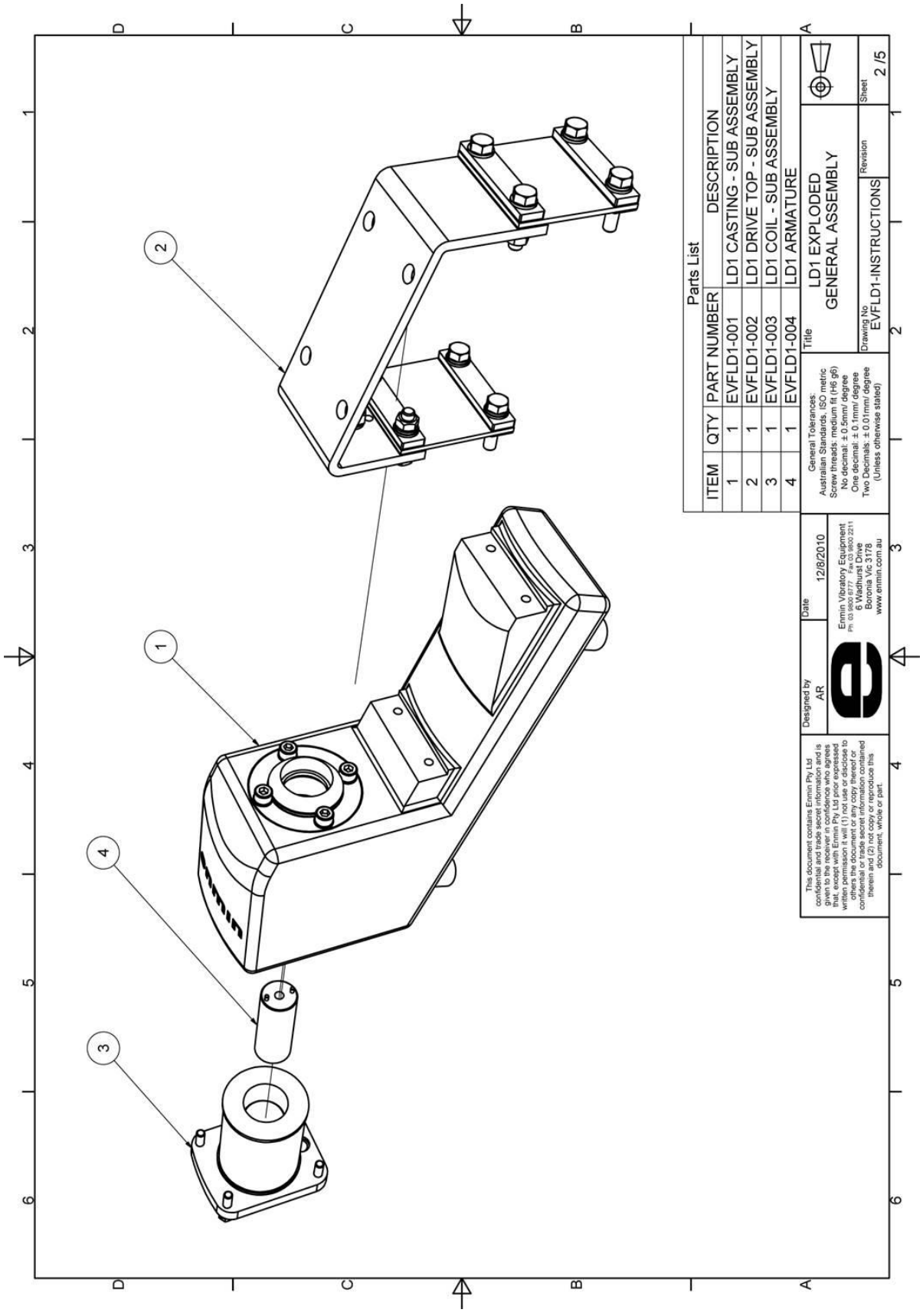
17.3 EVF LD1 EXPLODED COIL ASSEMBLY



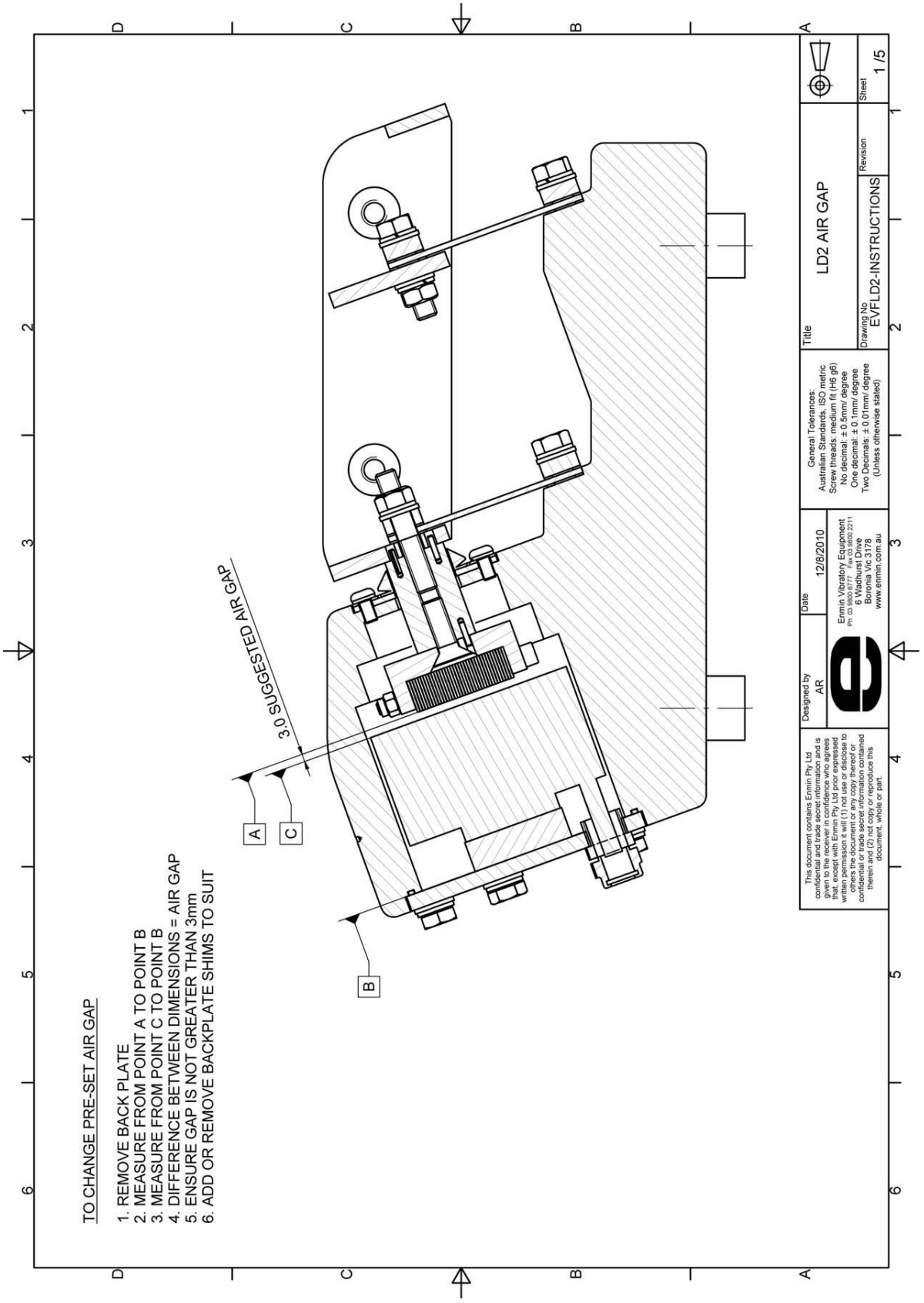
17.4 EVF LD1 EXPLODED DRIVE TOP ASSEMBLY



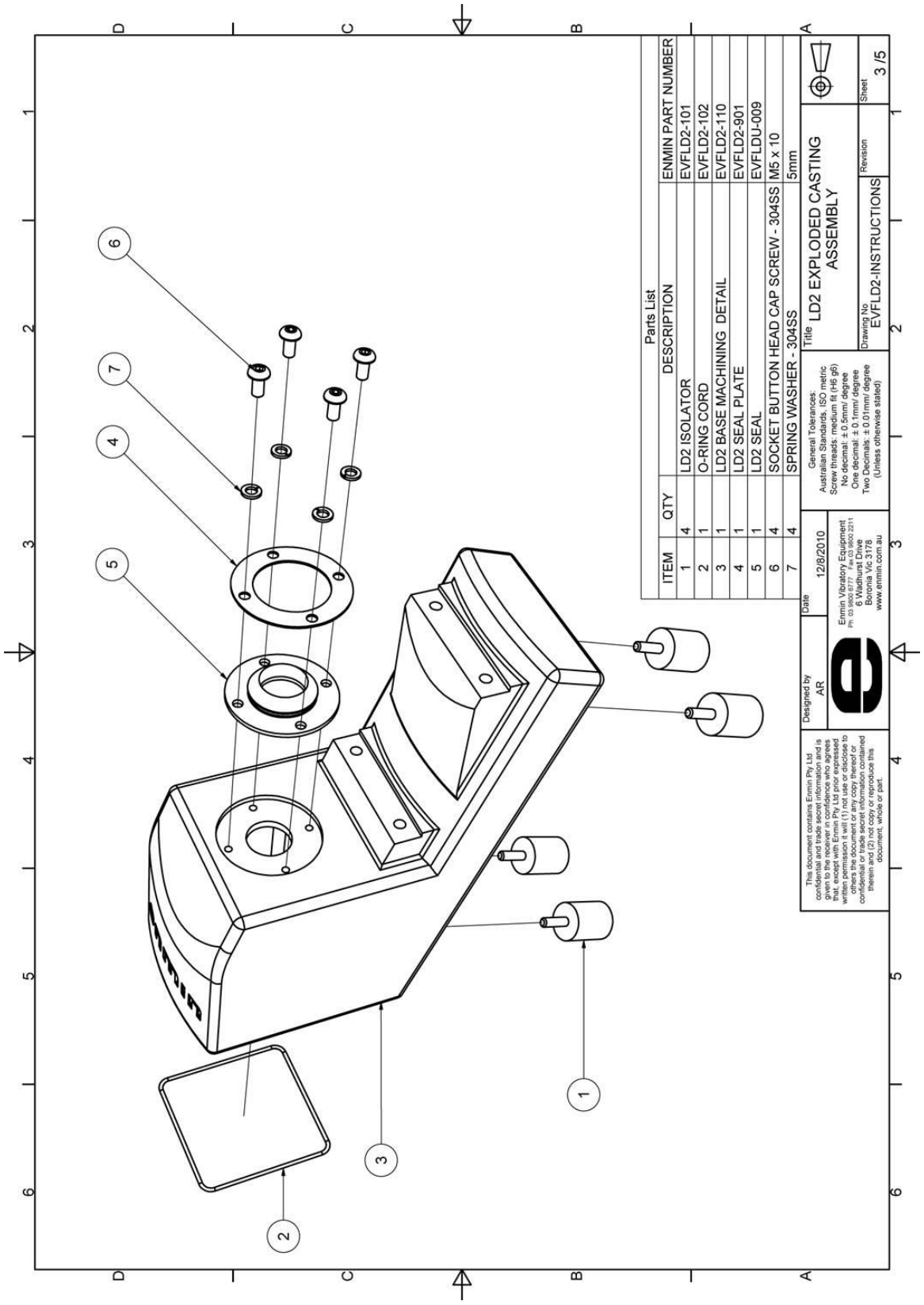
17.5 EVF LD1 EXPLODED GENERAL ASSEMBLY



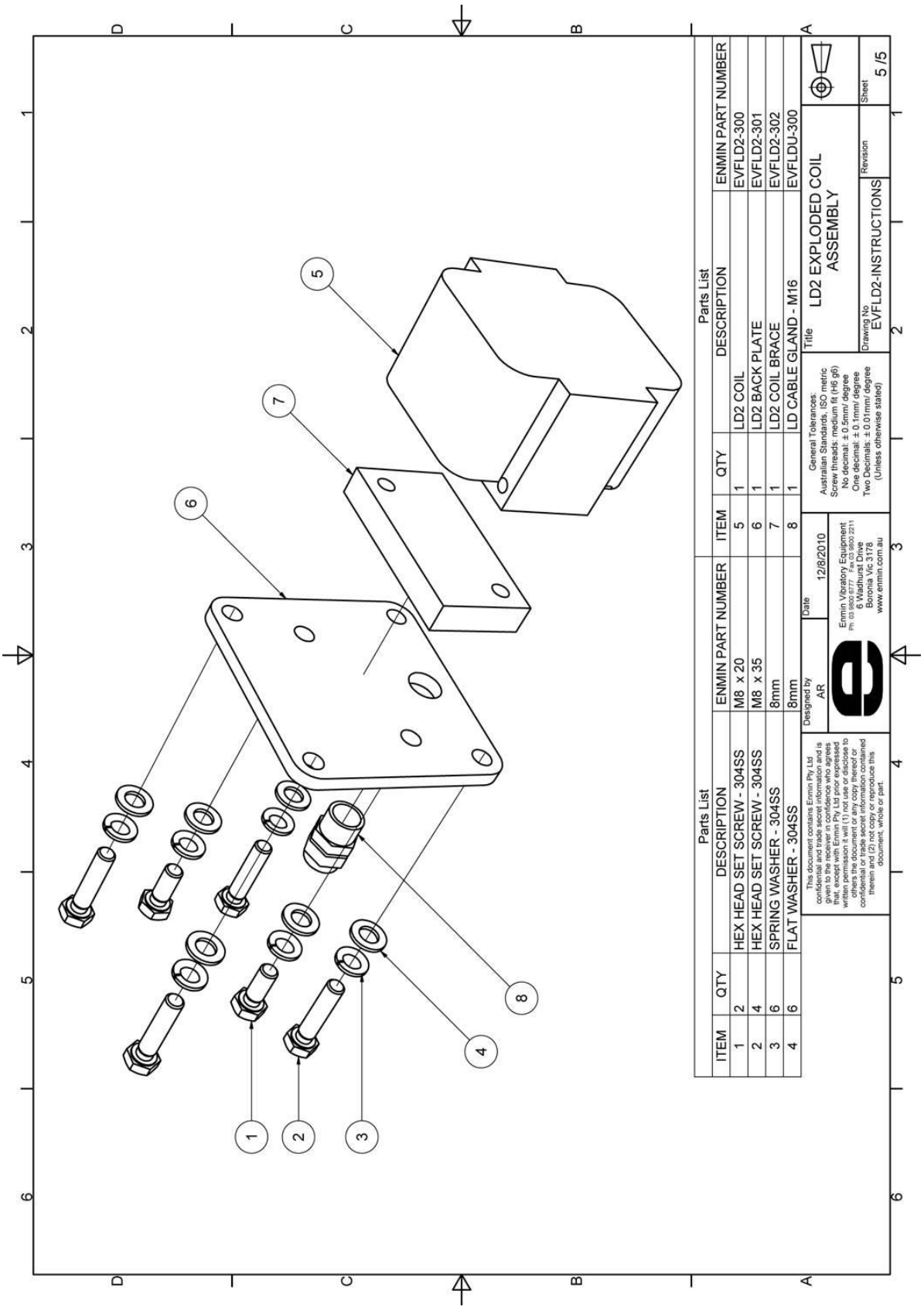
18.1 EVF LD2 AIRGAP DRAWING



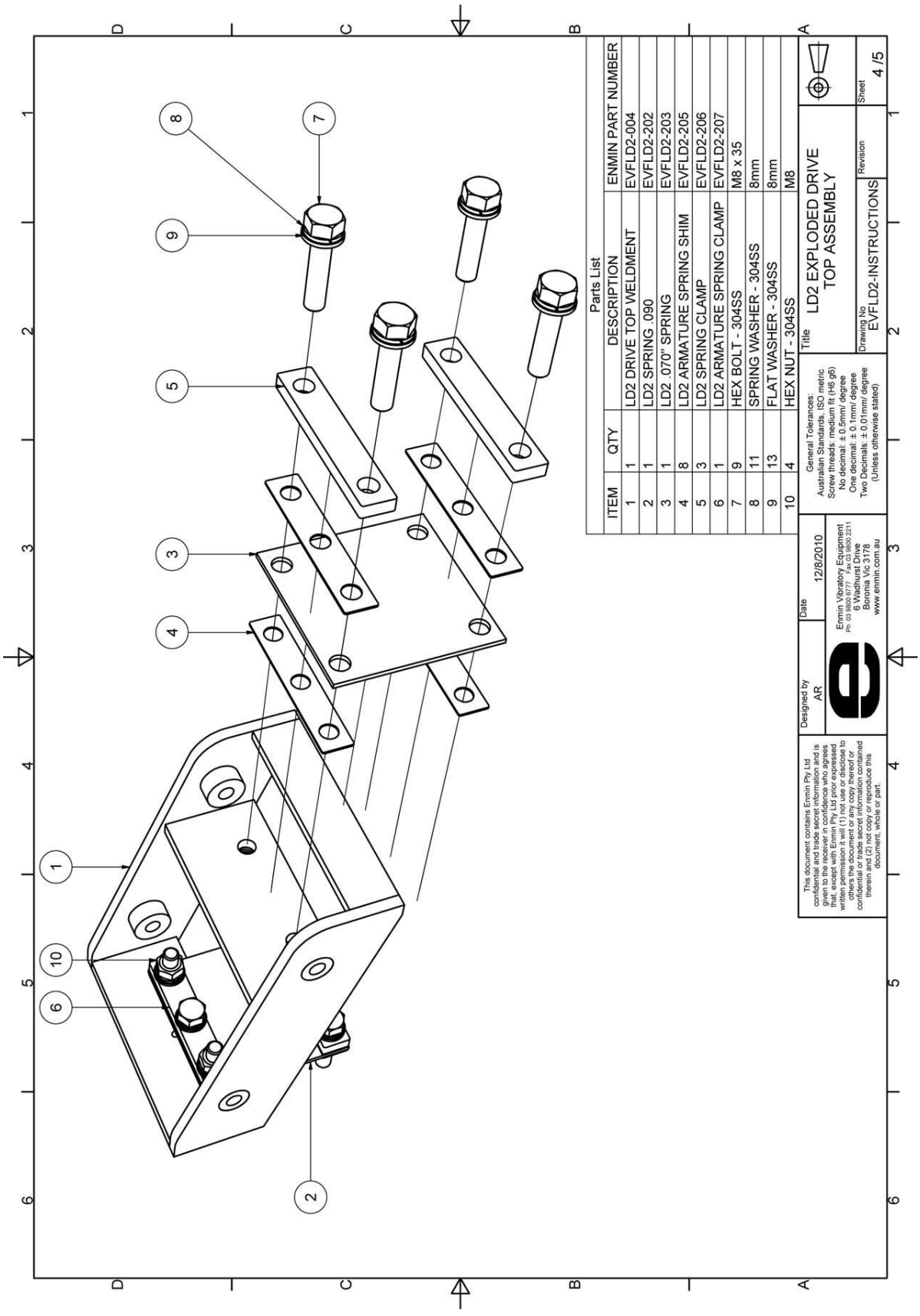
18.2 EVF LD2 EXPLODED CASTING ASSEMBLY



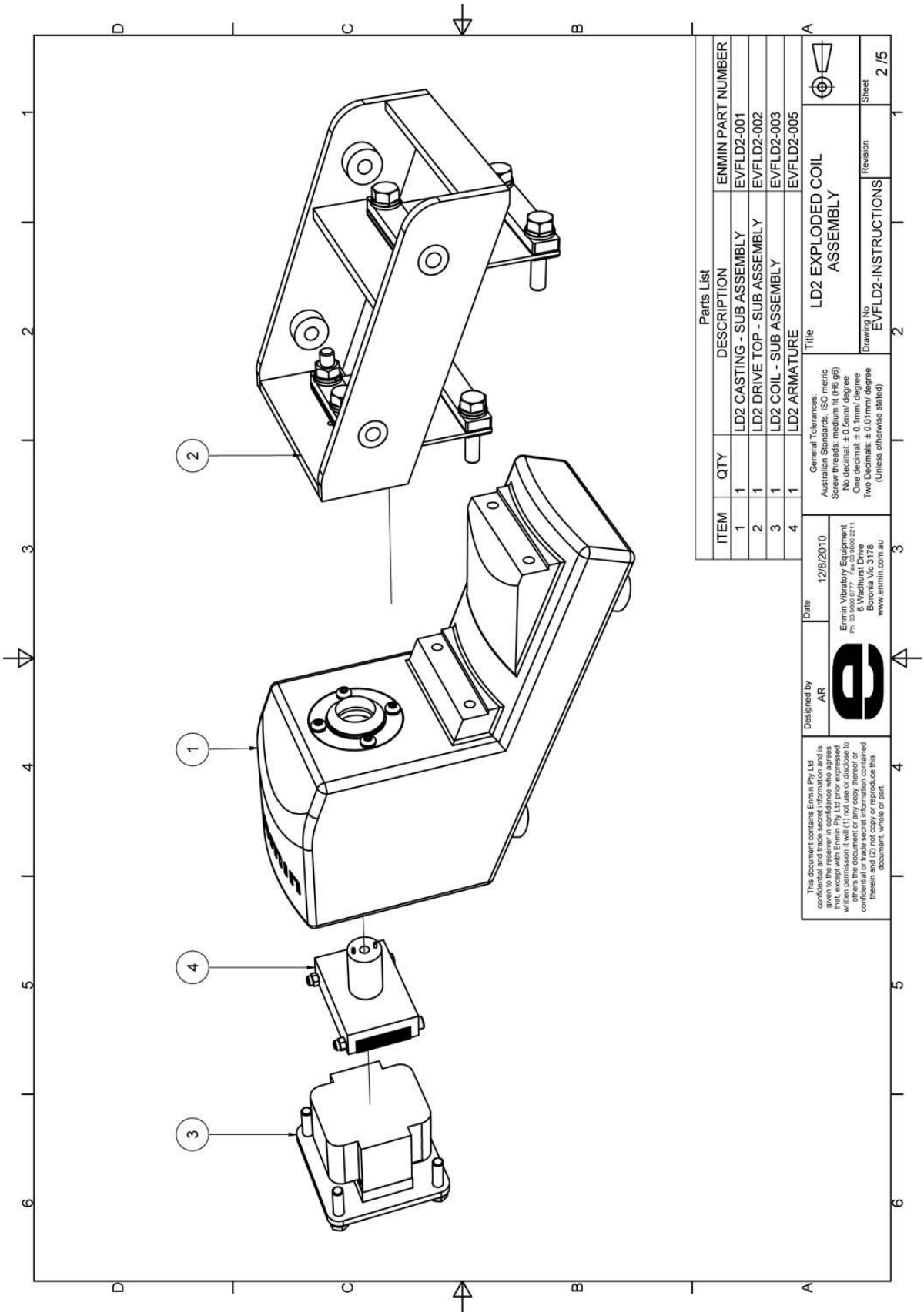
18.3 EVF LD2 EXPLODED COIL ASSEMBLY



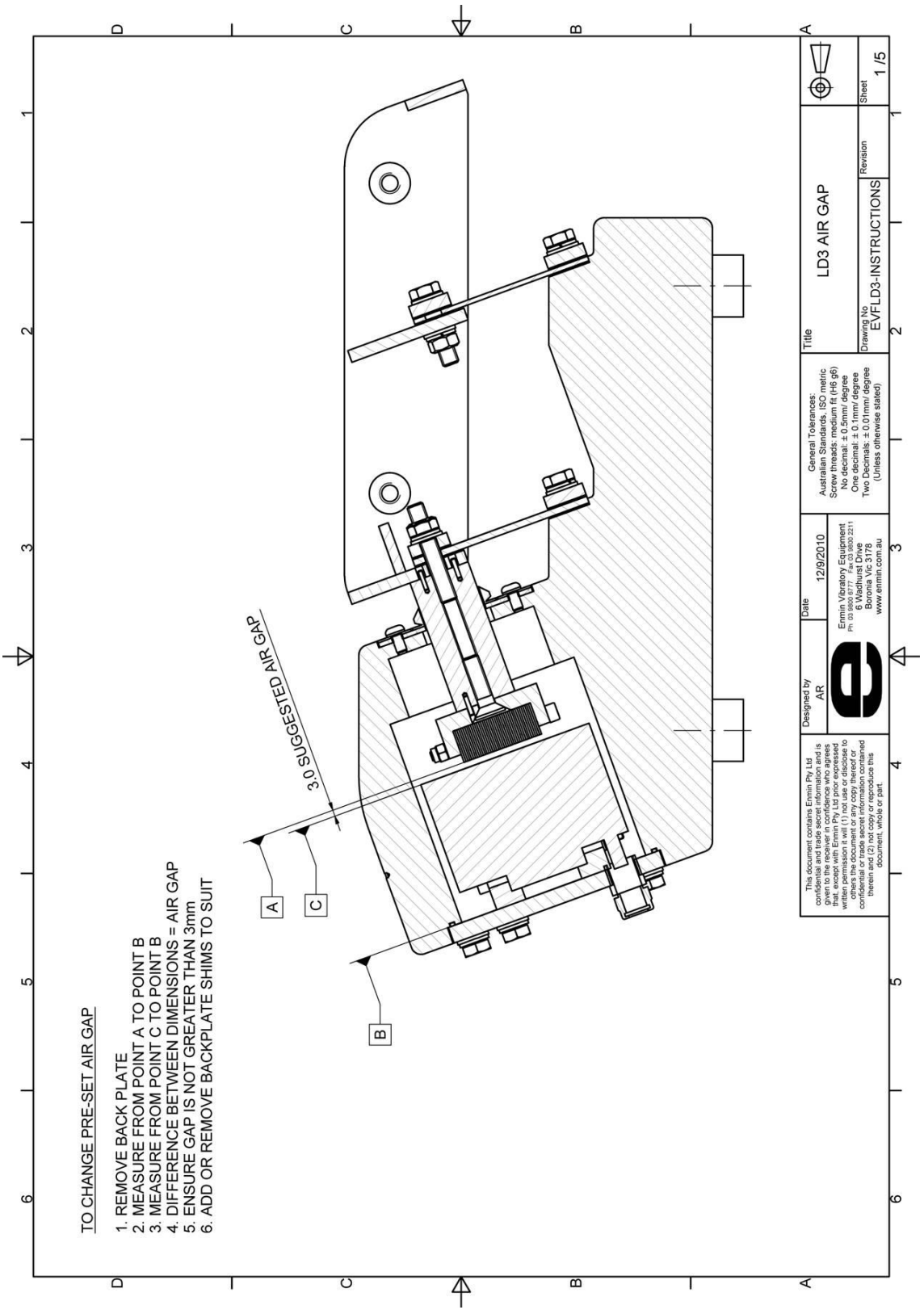
18.4 EVF LD2 EXPLODED DRIVE TOP ASSEMBLY



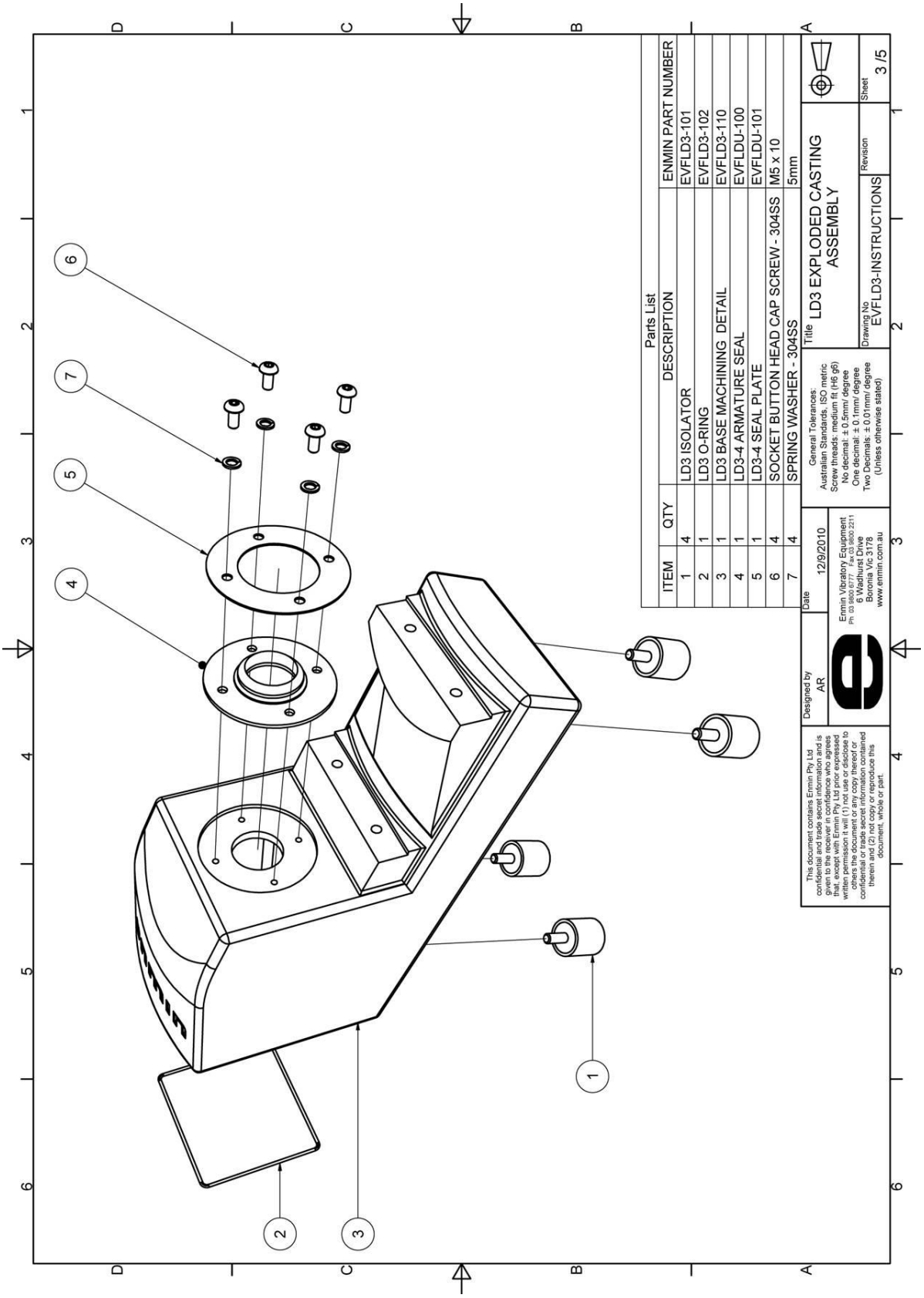
18.5 EVF LD2 EXPLODED GENERAL ASSEMBLY



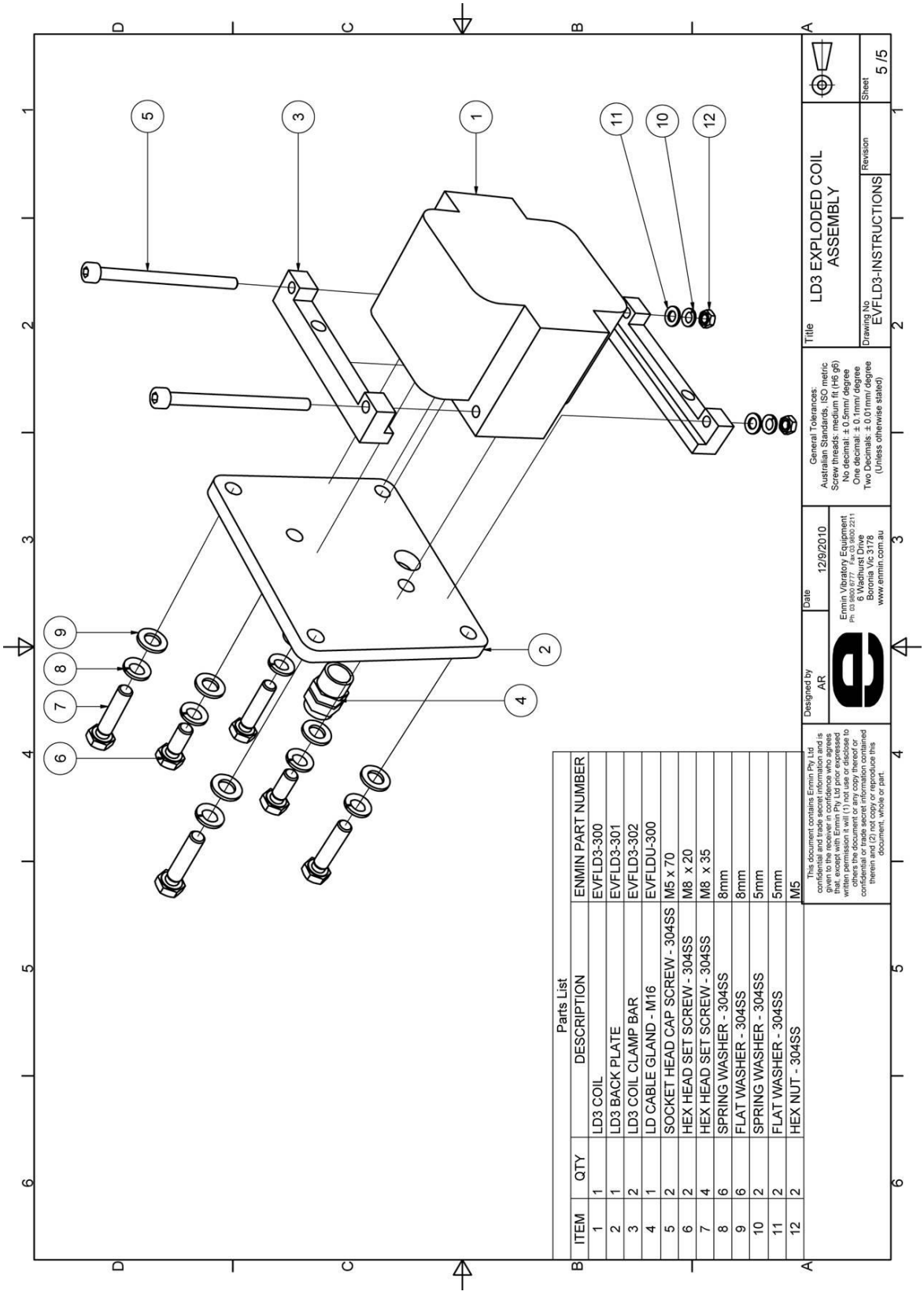
19.1 EVF LD3 AIRGAP DRAWING



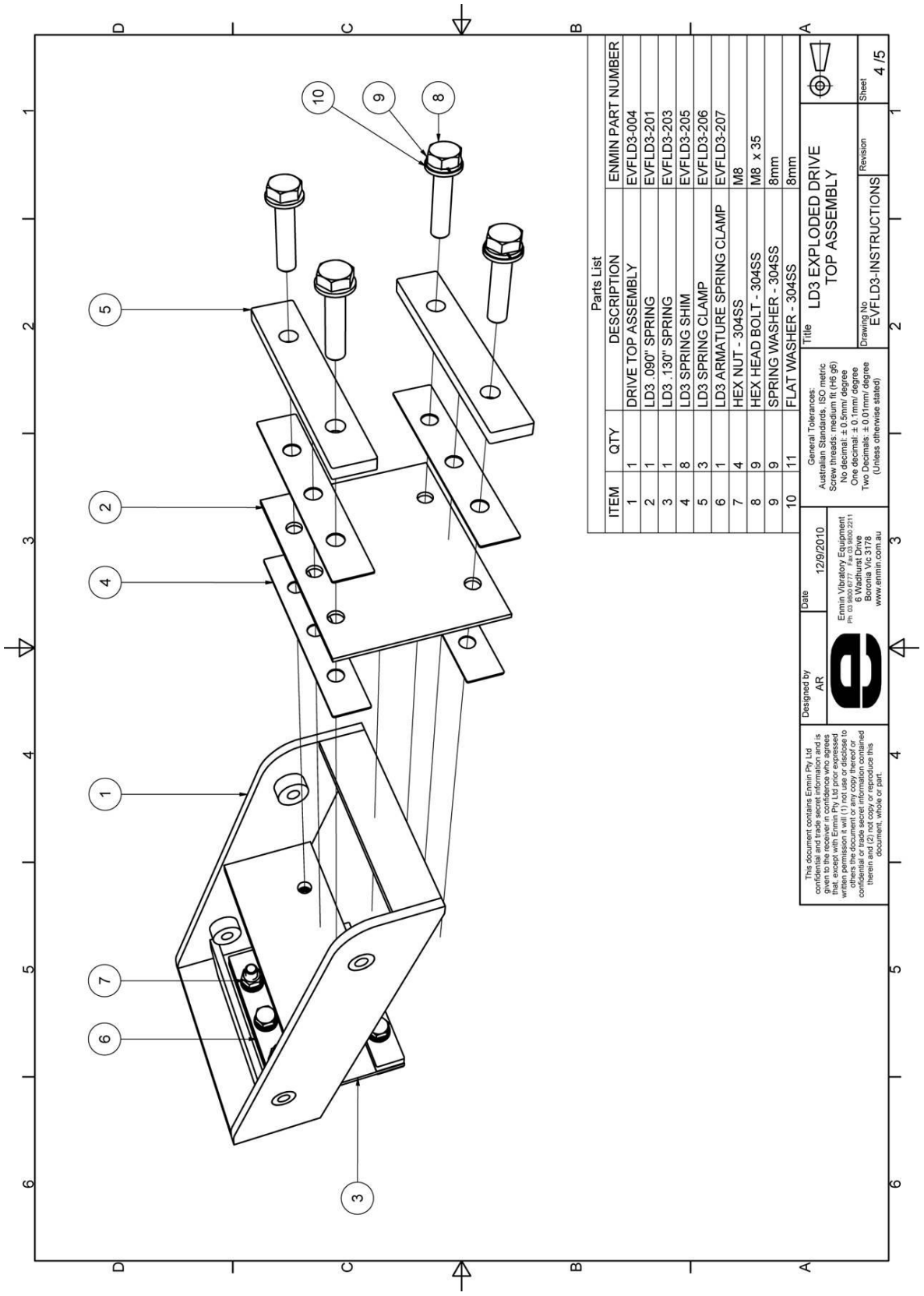
19.2 EVF LD3 EXPLODED CASTING ASSEMBLY



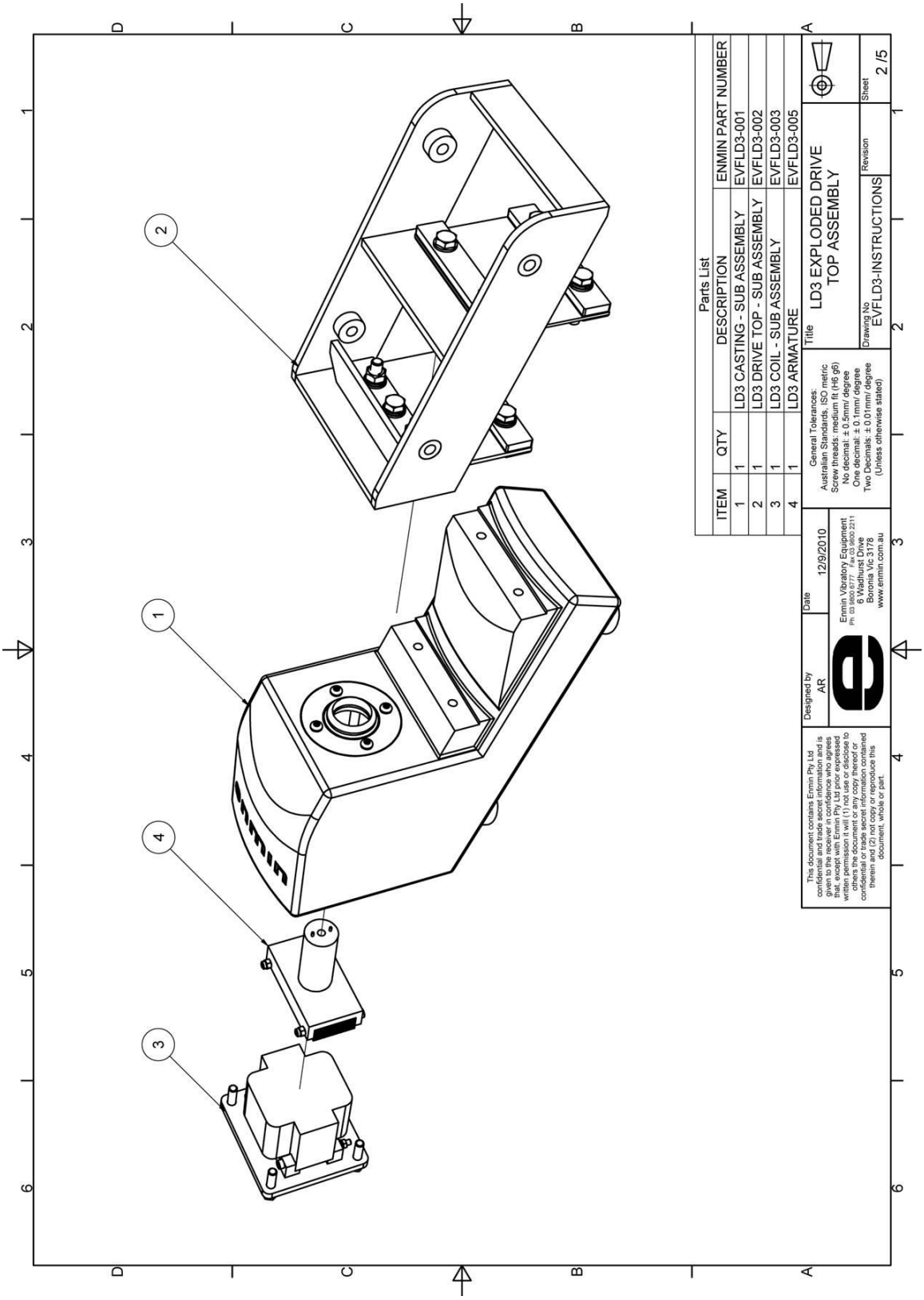
19.3 EVF LD3 EXPLODED COIL ASSEMBLY



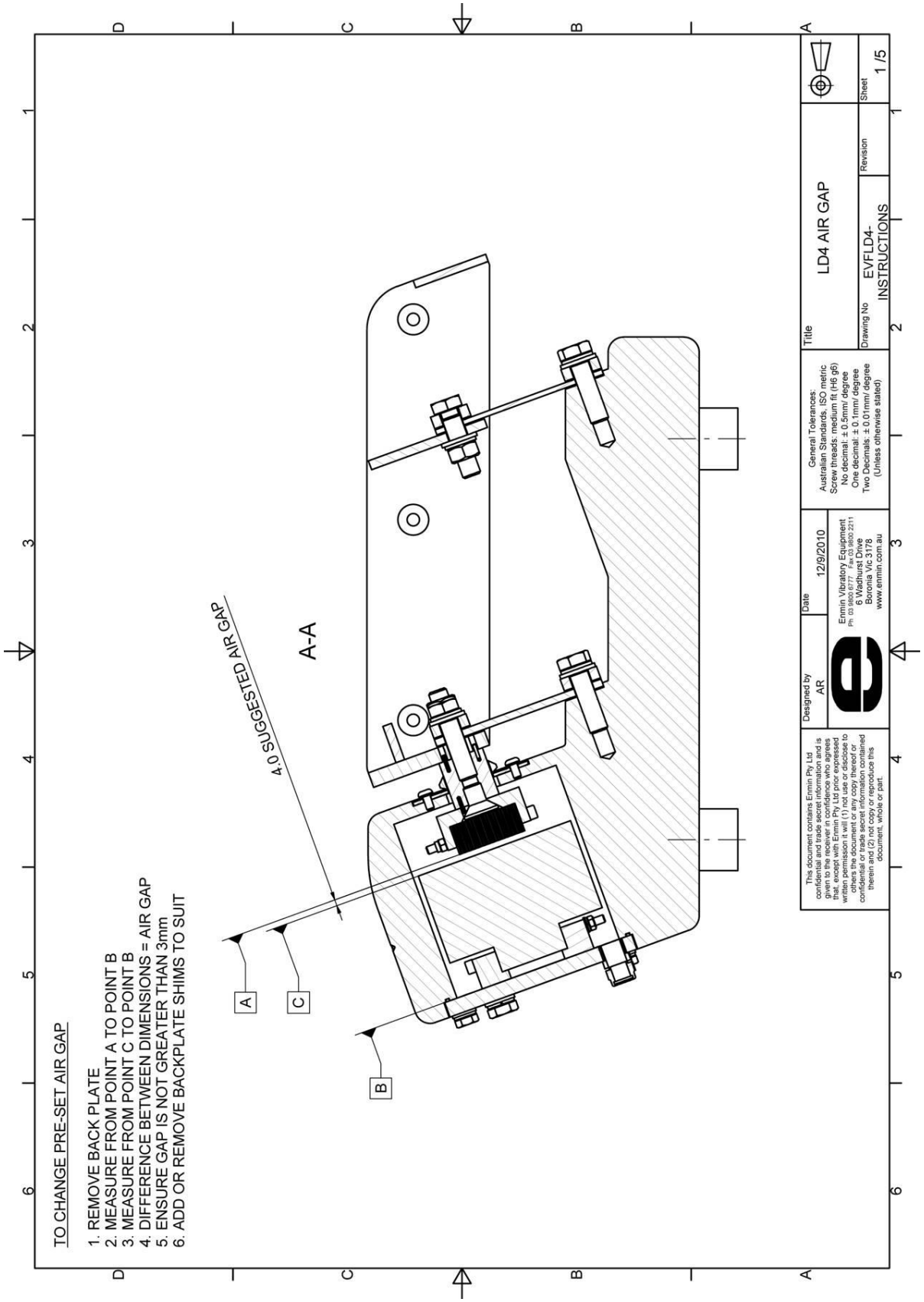
19.4 EVF LD3 EXPLODED DRIVE TOP ASSEMBLY



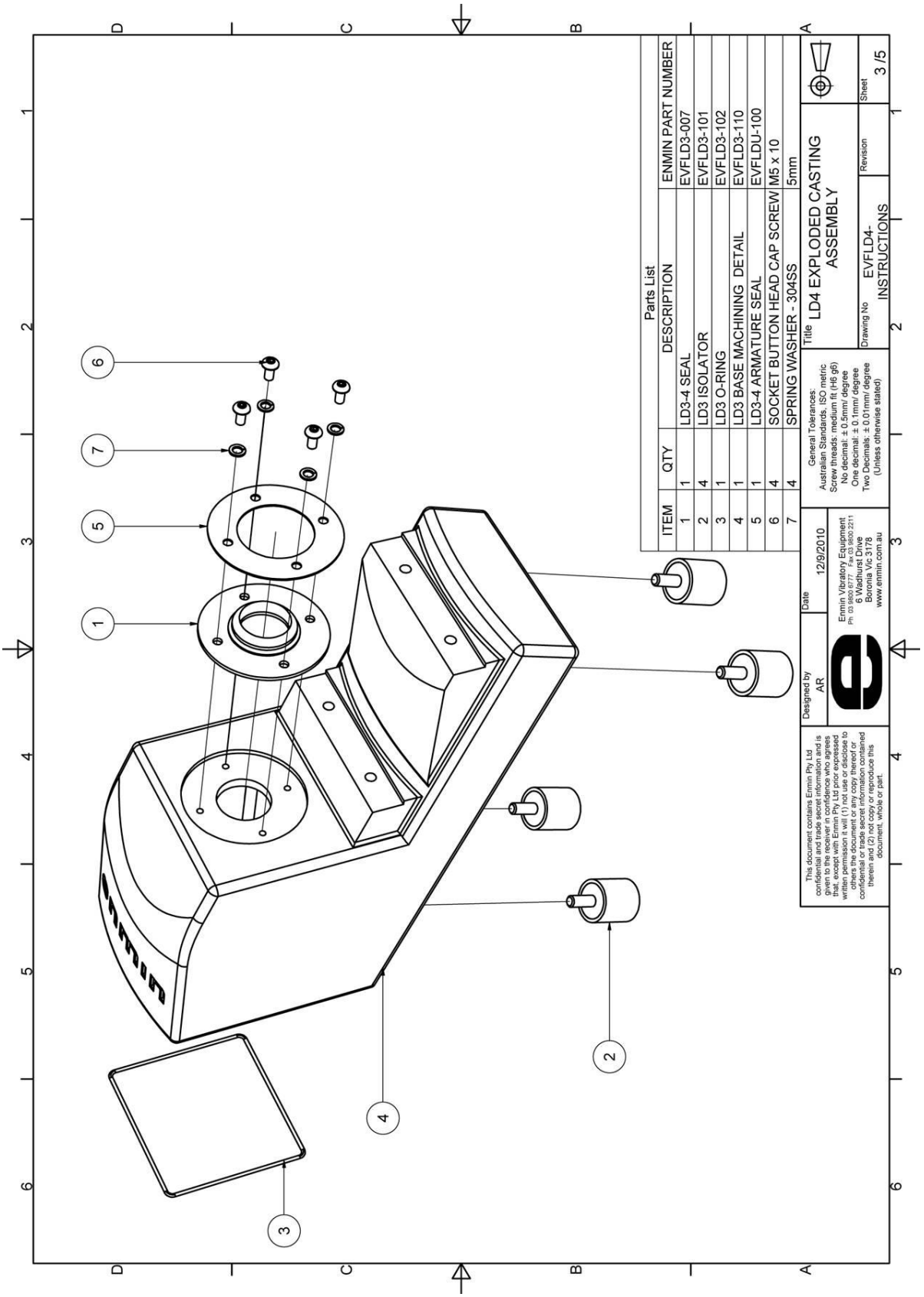
19.5 EVF LD3 EXPLODED GENERAL ASSEMBLY



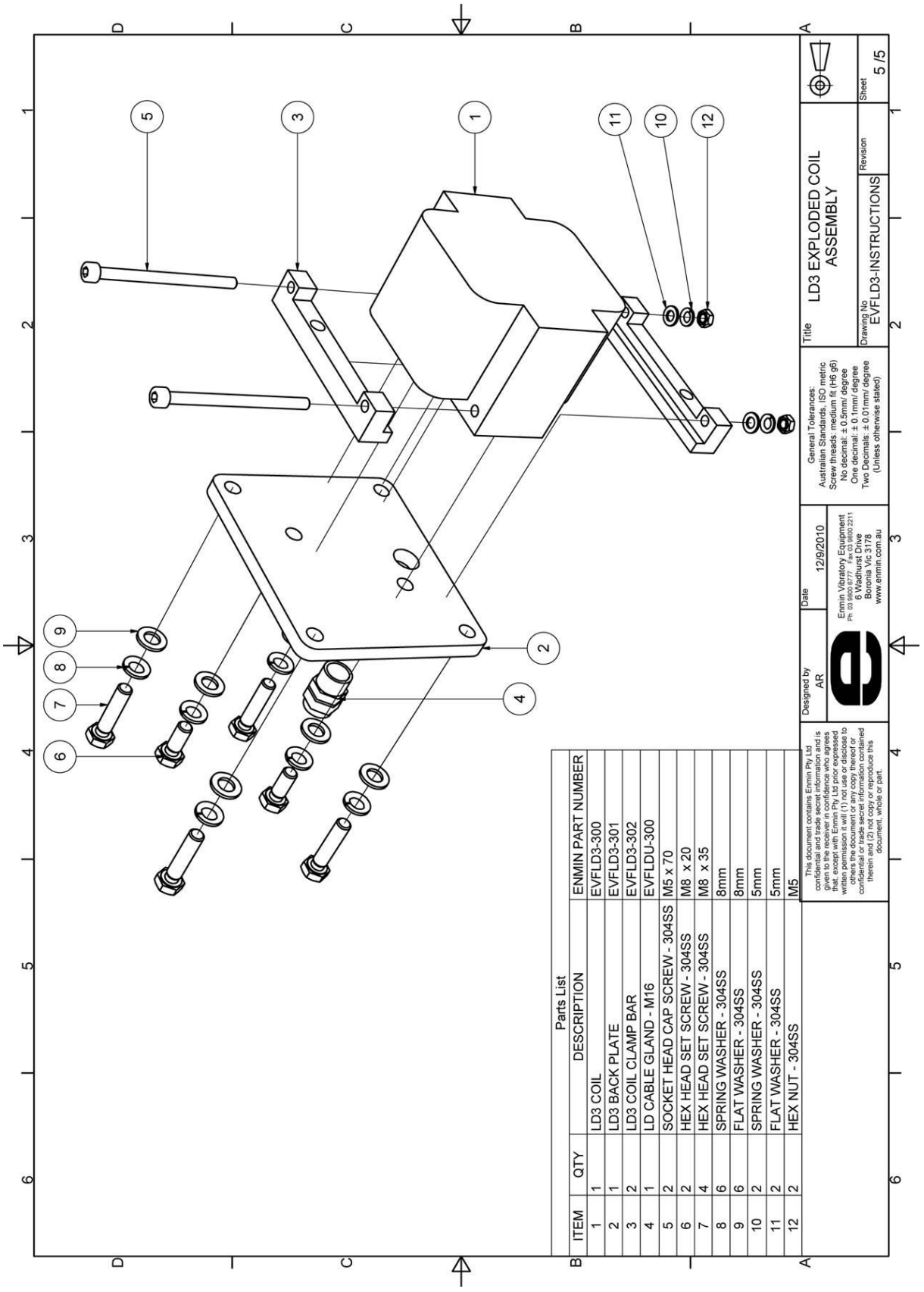
20.1 EVF LD4 AIRGAP DRAWING



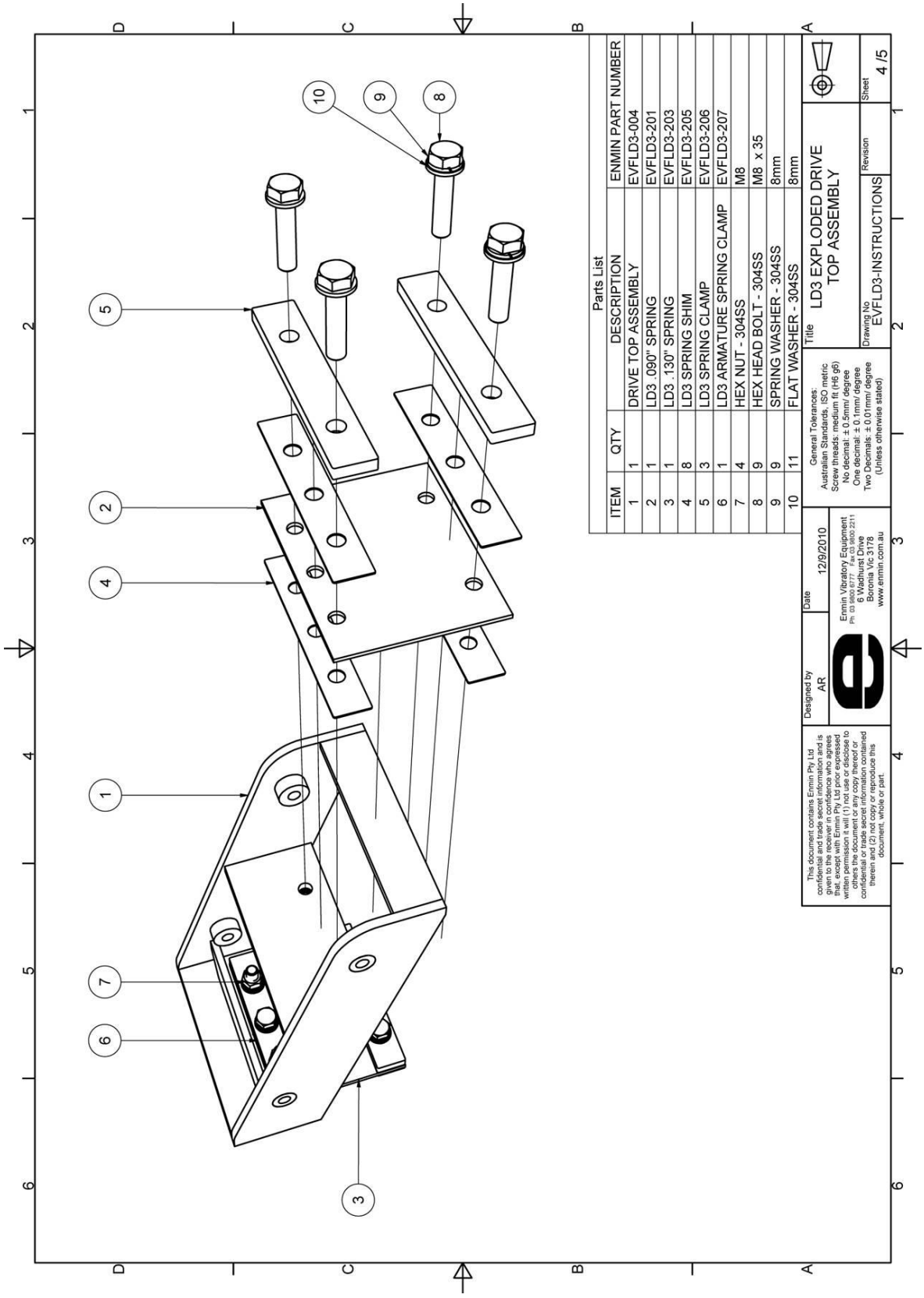
20.2 EVF LD4 EXPLODED CASTING ASSEMBLY



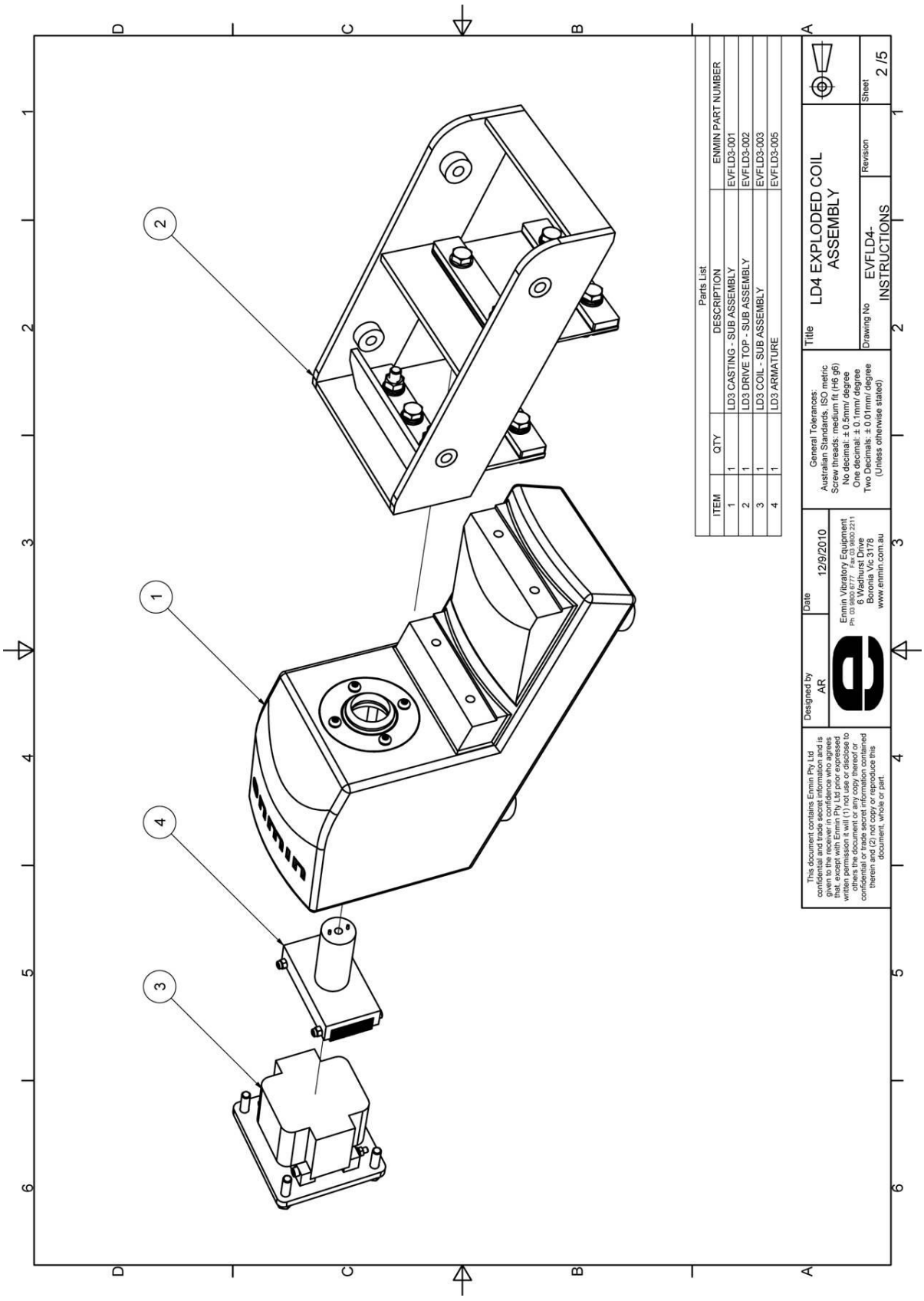
20.3 EVF LD4 EXPLODED COIL ASSEMBLY



20.4 EVF LD4 EXPLODED DRIVE TOP ASSEMBLY



20.5 EVF LD4 EXPLODED GENERAL ASSEMBLY



Maintenance Manual

SECTION 3

Elevating Conveyor Manual

Select Harvest Delivery System Job No P10504-000

Incline Conveyor
Part No P10466-0002

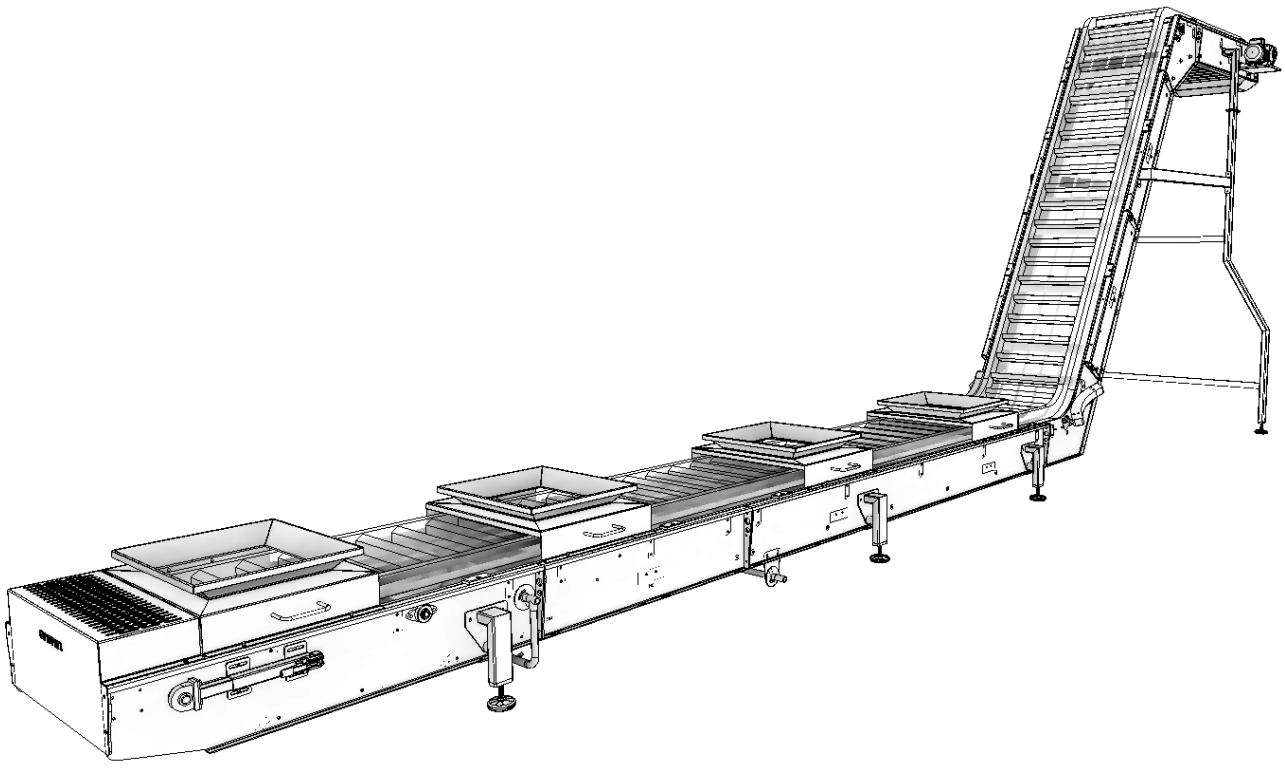
Table of Contents:

Section 3.1 - General Information

Operating instructions are an integral part of the conveyor and contain important information for operation and service. They are intended for staff responsible for the assembly, installation, start up and maintenance of the conveyor.

The operating instructions must be easily accessible to all staff responsible for the plant and its operation.

If you are unclear about any information in this manual, or you require further information, contact Enmin.



Section 3.2 - Introduction

The Incline Conveyors function is to deliver product to nominated elevated height.

The Incline Conveyor Belt is positively driven by plastic sprockets, not friction rollers. The sprockets have square bores and are driven by matching square shafts. The square shaft arrangement easily transmits torque without the need for troublesome keys and keyways. Square shafts and square bored sprockets have proven to be effective, trouble free and simple.

Ammeraal AEON belts used on this conveyor are well suited for hygienic food-processing applications. At first glance, they may appear to be traditional flat belts. Unlike traditional flat belts, these belts drive on sprockets like a modular plastic belt and are not under tension, enabling easy lifting for conveyor cleaning and solving nearly all traditional flat belt problems.

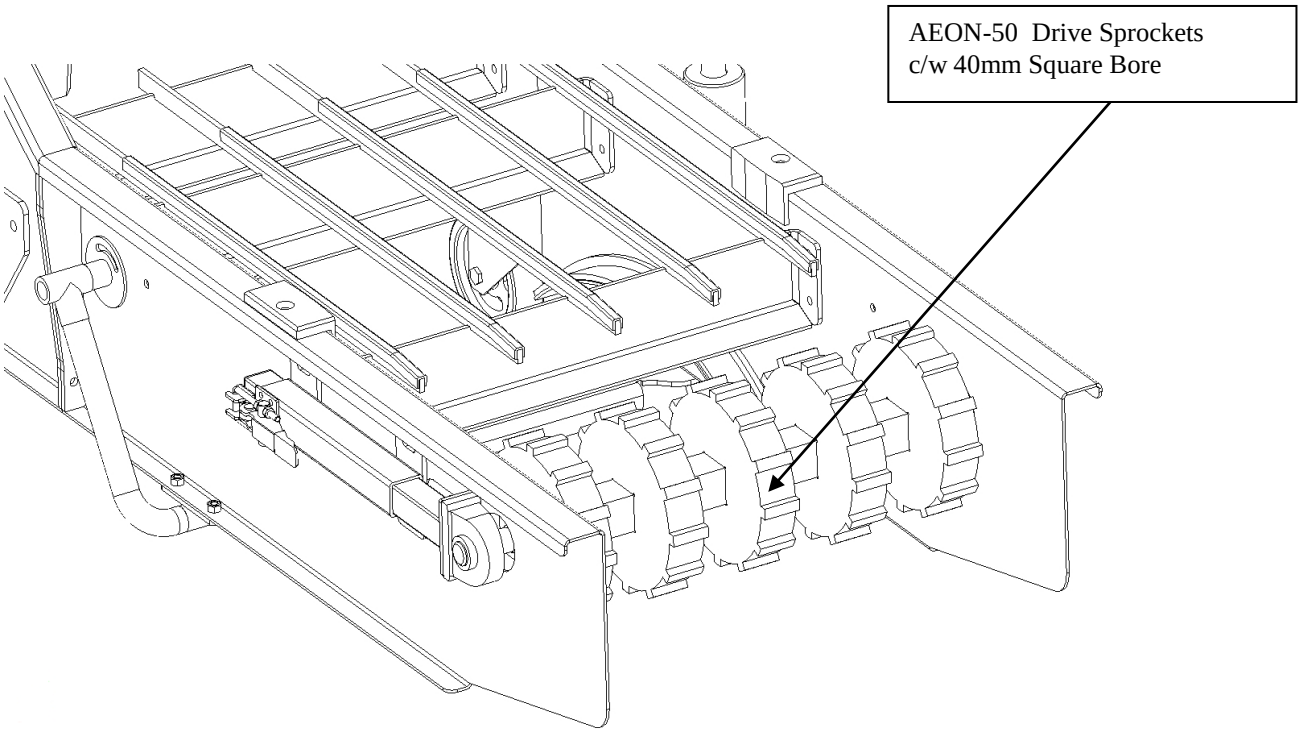


Figure 3.1 Drive Shaft & Sprocket

Section 3.3 - Safety Notes

The following basic safety notes must be read carefully to prevent injury to persons and damage to property. The operator must make sure that the basic safety notes are read and observed. Make sure that persons responsible for the plant and its operation have read through the operating instructions carefully and understood them. If you require further information, please contact ENMIN.

Safety warning labels should be used and protection covers installed where considered necessary. Consultation with in-house OHAS officers should be considered.

Danger

- Conveyors may have live, uninsulated (in case of open connector/terminal boxes), and sometimes moving or rotating parts as well as hot surfaces during operation.
- All work related to storage, setup, connection, start up, maintenance and repair may only be carried out by qualified personnel.
- Apply general factory safety practices for machinery.
- Avoid wash down with high pressure water jets.
- Never remove any warning or information labels from equipment.
- Never install damaged conveyors
- Always report damages to ENMIN
- Removing any guarding without authorization, improper use and incorrect installation and operation may result in severe injuries to persons or damage to property.

Section 3.4 - Mechanical Installation

3.4.1 Receiving of Goods

On receipt of your goods you are recommended to immediately inspect them and if necessary report any issues with the equipment. The delivery documentation will list all major components and accessories.

3.4.2 Assembly

In the majority of cases the equipment will be shipped fully assembled and therefore the only requirement will be the locating and fixing of the machine.

3.4.3 Installation

Locate conveyor assembly in required position, ensuring correct alignment.
Level conveyor by placing spirit level across and along belt structure. The conveyor structure should be level in both directions to +/- 1degree.
Fix conveyor supports to floor and/or structural platform by means of dyna-bolts and/or chem-sets. (customers preference).

3.4.4 Starting Procedures

Prior to starting equipment for the first time, the following check list should be consulted.

- Motor covers should be secure
- Fixing bolts
- Covers in place
- Discharge chutes fitted where necessary
- No loose bolts
- No adjacent equipment in contact
- Electrical connections are correct
- Personal are aware of start up

3.4.5 Regular Maintenance

As with any piece of moving equipment some maintenance is required, regular inspection will ensure trouble free operation.

Inspect conveyor belt and belt flights for general wear. Grease bearings on drive shaft and tail shaft. Bearings should be relubricated at regular intervals to prevent damage. Exact relubricating intervals are difficult to predict because of differing environments.

Junction Boxes and motors are all IP rated, however we do not recommend long periods of direct high pressure water on these items.

Check there is no excessive temperature rise in the conveyor motors (Refer to SEW manual). If you think the motors may be running too hot check the corresponding amps draw to confirm.

3.4.6 Inspection and Maintenance of SEW Eurodrive motors

The following information is from “Operating Instructions, SEW Eurodrive” Please refer to original document for detailed information and additional references.

3.4.7 Inspection and maintenance periods

Time period	**What to do?**
• every 3000 operating hours, at least every six months	• Check oil
• depending on operating conditions (see following illustration), at least every three years	• Replace mineral oil • Replace bearing grease
• depending on operating conditions (see following illustration), at least every five years	• Replace synthetic oil • Replace bearing grease
• R17, R27, F27 and Spiroplan® gear units are lubricated for life and do not require maintenance	
• different (depending on external influences)	• Touch up or replace surface/corrosion protection coat

Figure 3.2 Gearbox Maintenance Chart

3.4.8 Lubricant replacement schedule

Change oil more often in special version and under more demanding/aggressive ambient conditions!

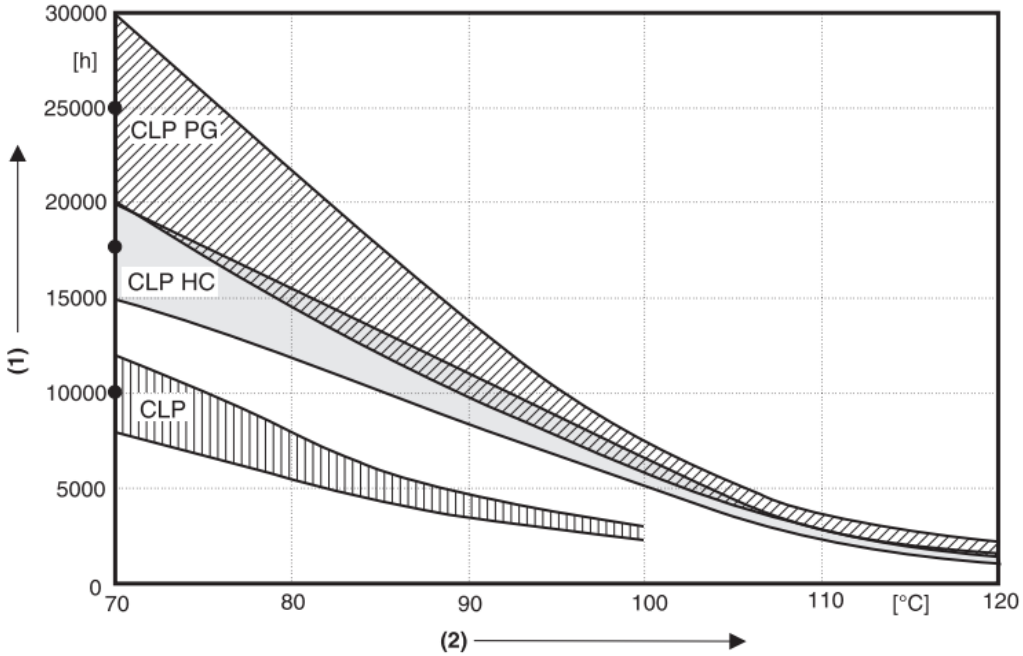


Fig. 3.3: Replacement schedule for standard gear units operating under normal ambient conditions.

(1) Operating hours

(2) Oil bath steady-state temperature

• Average value depending on oil type at 70° C

3.4.9 Inspection/maintenance of gear units

Do not mix synthetic lubricants with each other nor with mineral lubricants!
Mineral oil is the standard lubricant.
The position of the oil level plug, oil drain plug and the breather valve is dependent on the mounting position.

Checking the oil level

1. **De-energize the drive and secure against Un-intentional switch-on!**
   Wait until the gear unit has cooled down – Danger of burns!

2. See section "Setup of gear unit" for change in mounting position!
3. For gear units with oil level plug: remove oil level plug, check fill level and correct if necessary, install oil level plug

Check oil

1. De-energize the drive and secure against Un-intentional switch-on!
   Wait until gear unit has cooled down – Danger of burns!
2. Remove some oil from the oil drain plug
3. Check oil consistency
– Viscosity
– If the oil is visibly contaminated, it is recommended to change it sooner than re-commended by the maintenance intervals listed under the heading "Inspection and maintenance periods" on page 32
4. For gear units with an oil level plug: remove oil level plug, check oil fill level and correct if necessary, install oil level plug

Changing the oil

Only change the oil when the gear unit is at operating temperature.

1. **De-energize the drive and secure against unintentional switch-on!**

Wait until the gear unit has cooled down – Danger of burns!

Note: Gear unit must still be warm, otherwise the high viscosity of excessively cold oil will make it harder to drain the oil correctly.

2. Place a container underneath the oil drain plug
3. Remove oil level plug, breather plug/valve and oil drain plug
4. Drain oil completely
5. Install oil drain plug
6. Fill new oil of the same type through the breather hole, otherwise consult our service department
– Amount in accordance with the mounting position (see section "Lubricant fill levels") on the nameplate
– Check at the oil level plug
7. Install oil level plug
8. Install breather plug/valve

Section 3.5 - Electrical Installation

Electrical connection diagrams for the conveyor drive motor and the vibration unit are located in the drawing section of this manual and in the appropriate manufacturer's manuals.

Prior to turning on the equipment, ensure the following has been done.

- Double check all electrical connections are correct
- All mechanical installation has been completed and no tools have been left on the belt
- Rotation of motor has been checked and wired correctly

Section 3.6 - Recommended Spare Parts List

Recommended Spare Parts List

Date: June 2020
Customer: Select Harvest
Project: Delivery System
Title: Incline Conveyor
Job No: P10504-0003

QTY	*P/N*	*DESCRIPTION*	*PRICE*
2	UCF-207	35mm Dia. Plastic Flange Housing-4 hole / St Steel Insert	
2	FB-206	30mm Dia. Plastic Flange Housing-3 hole / St Steel Insert	
2	UCUP-205	25mm Dia. Plastic Flange Housing-2 hole / St Steel Insert	
2	6205-2RS	25mm Dia. Deep Grooved Ball Brg / St.steel	
2		Ammeraal Aeon-50 /190mm (12Tooth) Sprocket c/w 40mm Square Bore	
1	SA57/TDRN90S4/TF	1.1Kw at 38rpm, Mount=M1, TB=180, Shaft=30 at A	

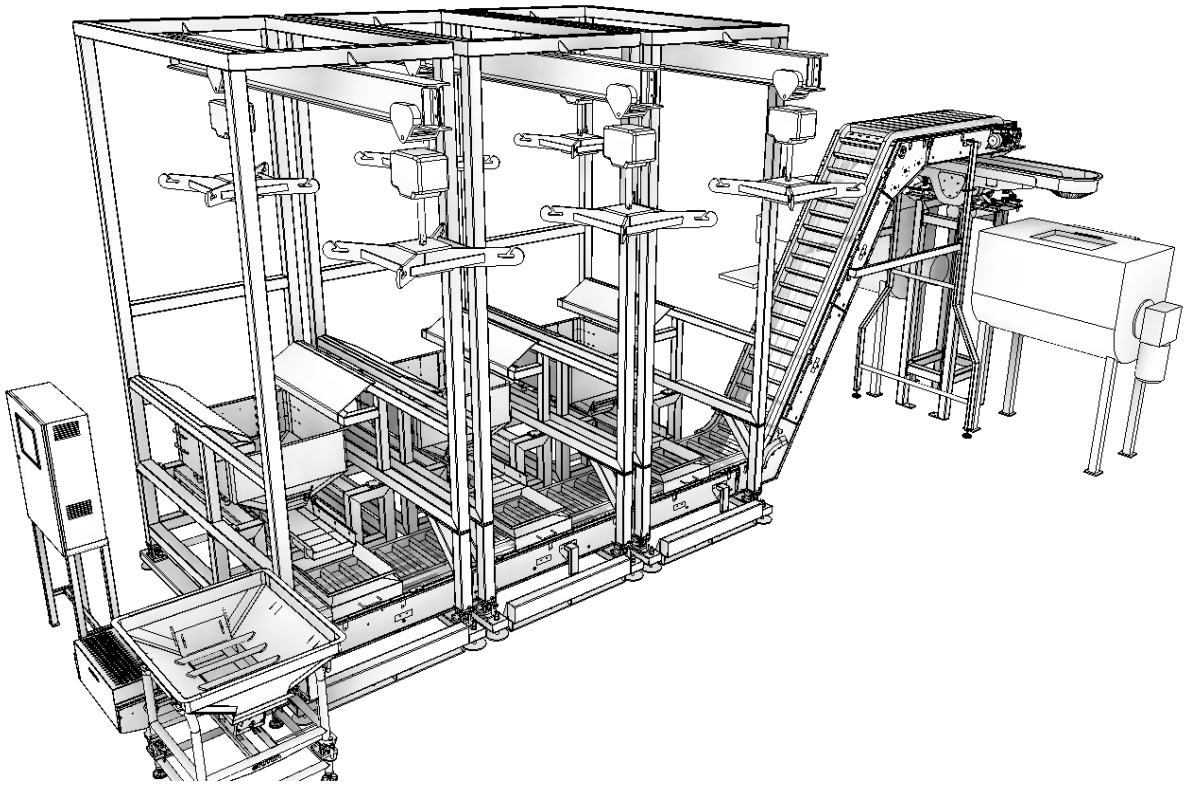
After sales service:

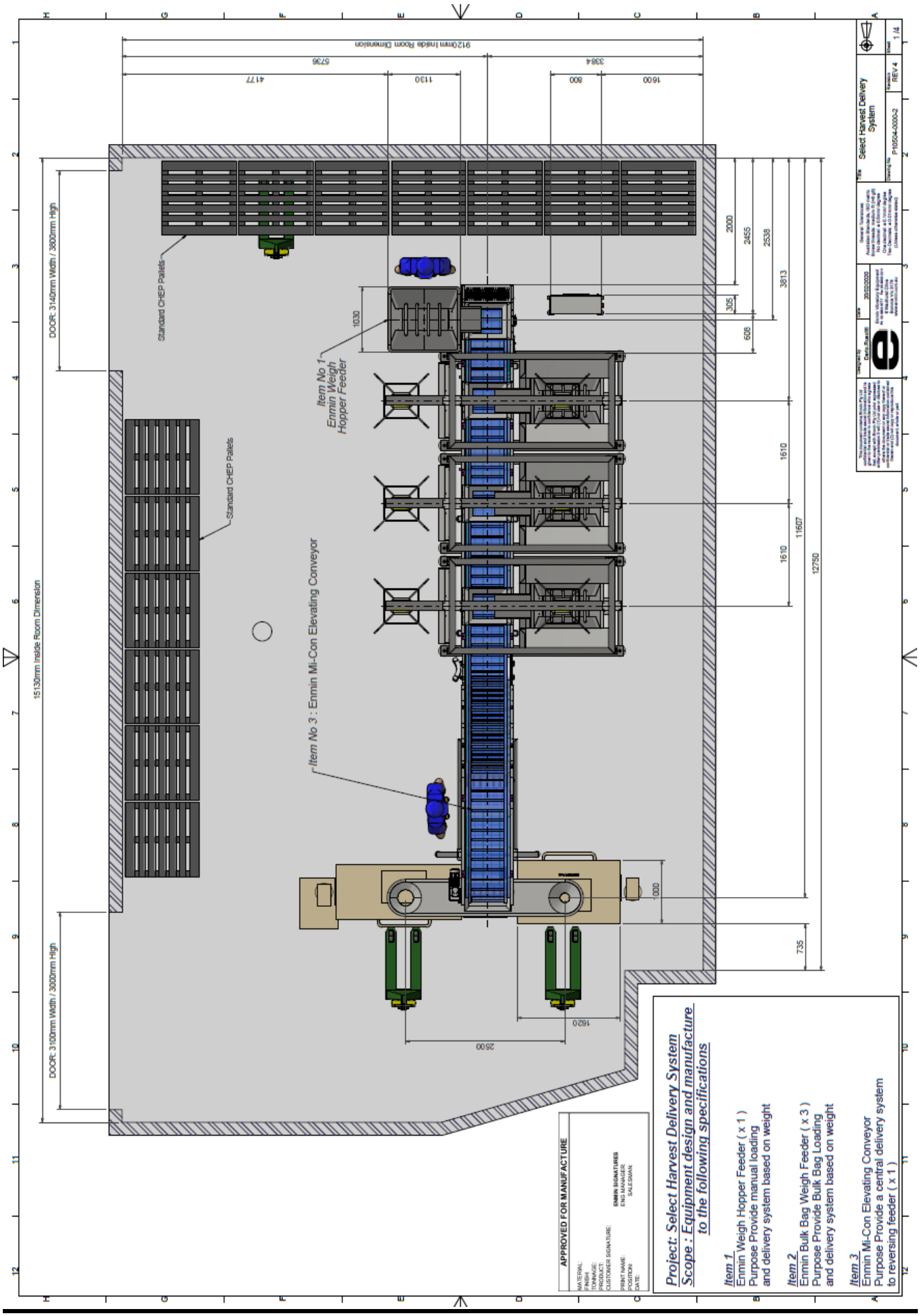
We will endeavour to support our equipment through all reasonable avenues. For After Sales Assistance Enmin can be contacted:

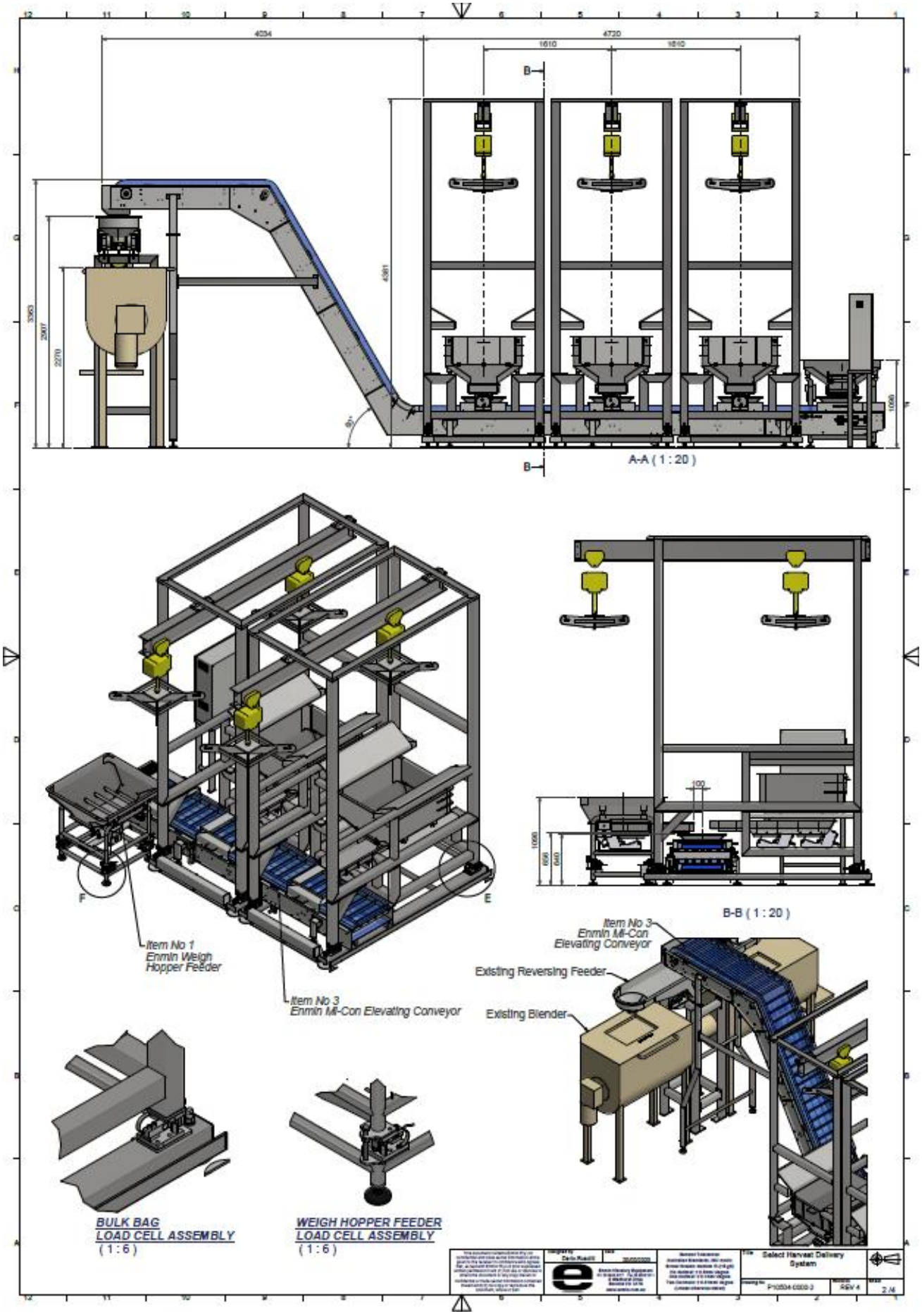
6 Wadhurst Drive
Boronia Victoria Australia 3155.
Phone: 03 9800 6777 during business hours
Facsimile :03 9800 2211
Email: Enmin@enmin.com.au
Web site: www.enmin.com.au

SECTION 5

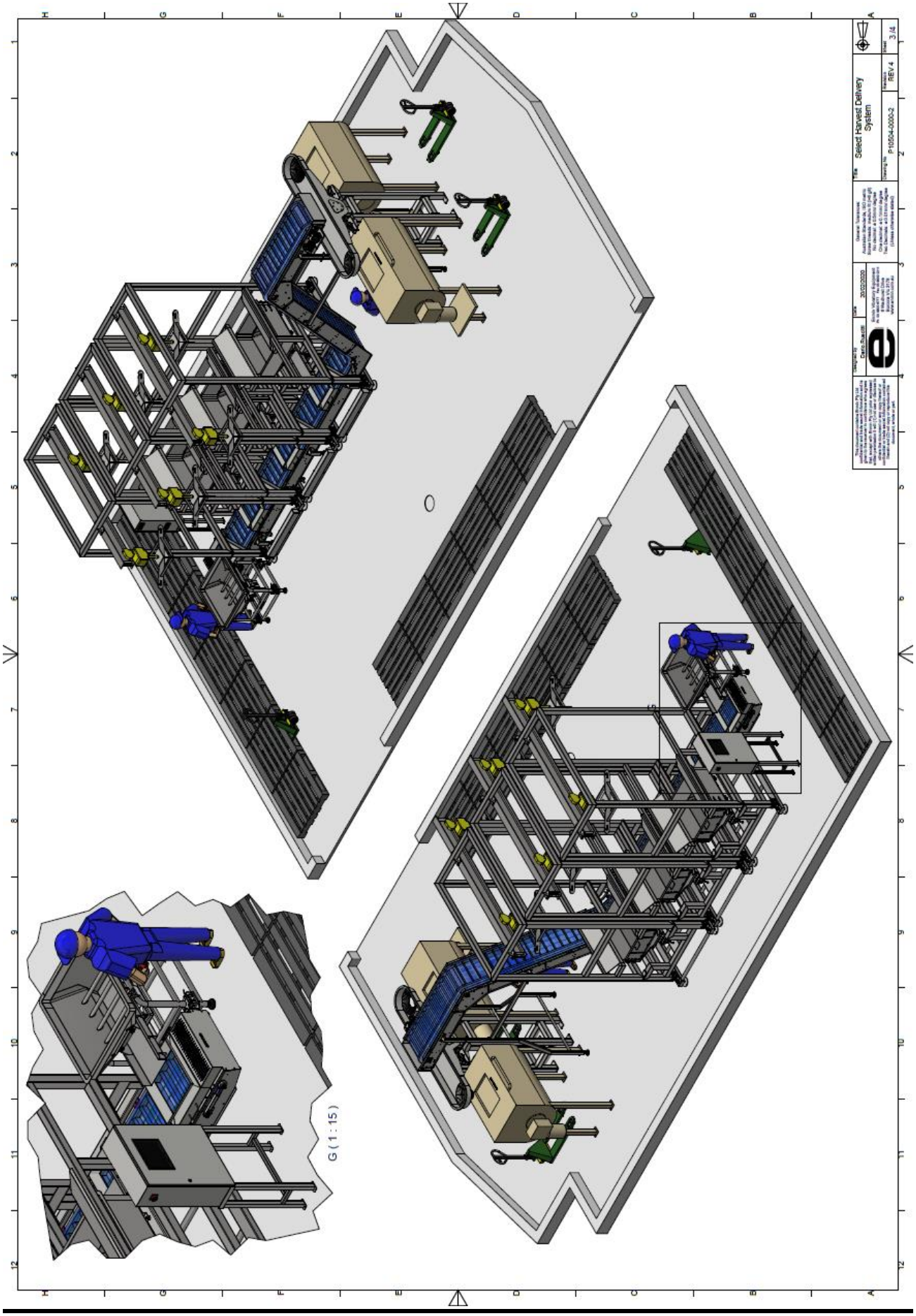
PLANT LAYOUT AND ASSEMBLY DRAWINGS



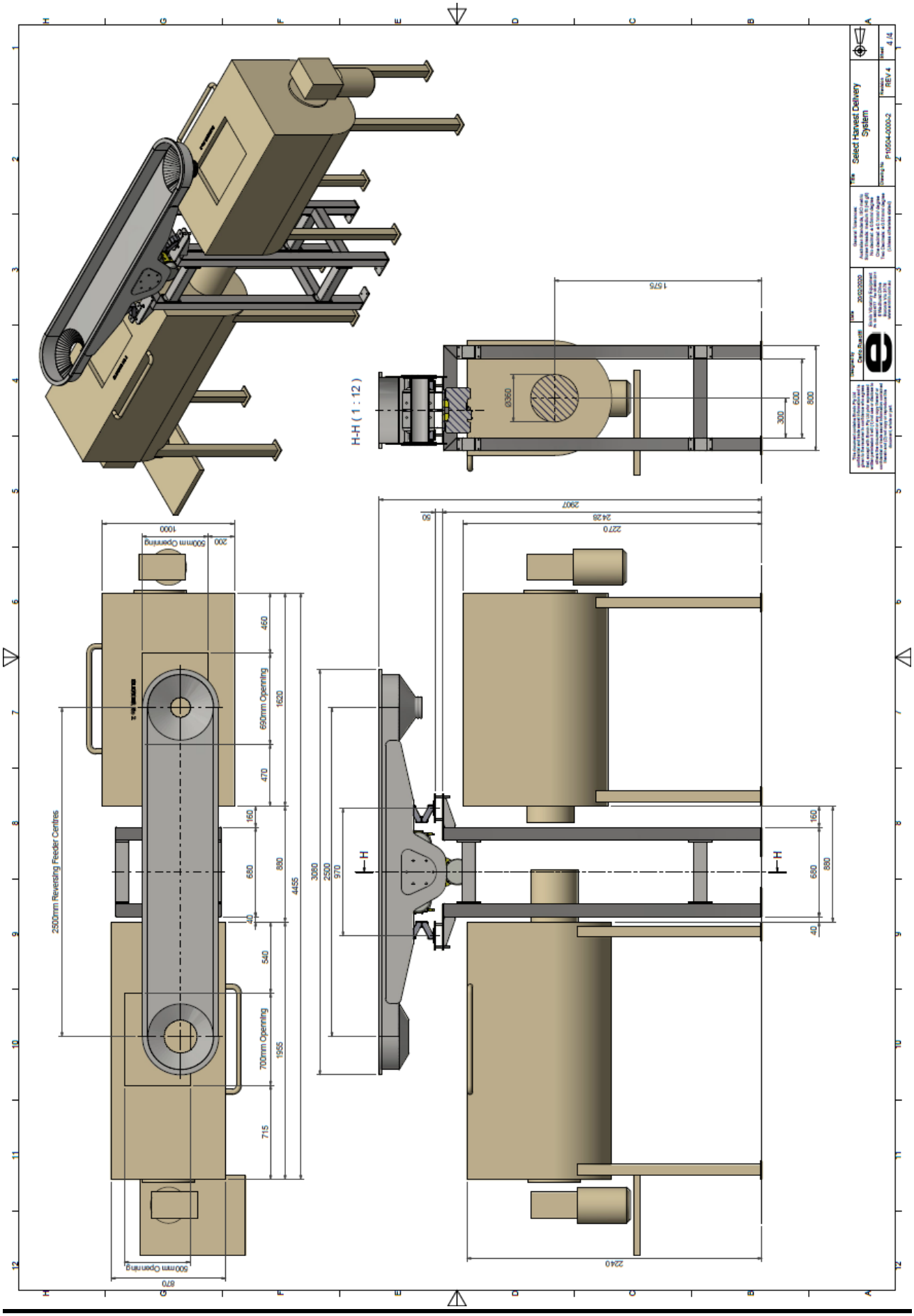

9120mm Inside Room Dimension
5736
3384
4177
1130
800
1600
15130mm Inside Room Dimension
DOOR: 3140mm Width / 3800mm High
DOOR: 3100mm Width / 3000mm High
Standard CHEP Pallets
Standard CHEP Pallets
Item No 1
Enmin Weigh
Hopper Feeder
Item No 3 : Enmin Mi-Con Elevating Conveyor
2000
2455
2538
3813
1610
11607
12750
1030
305
608
1000
735
1620
2600
Select Harvest Delivery System
P10504-0000-2
REV 4
1 /4
APPROVED FOR MANUFACTURE
Project: Select Harvest Delivery System
Scope : Equipment design and manufacture to the following specifications
Item 1
Enmin Weigh Hopper Feeder (x 1)
Purpose Provide manual loading and delivery system based on weight
Item 2
Enmin Bulk Bag Weigh Feeder (x 3)
Purpose Provide Bulk Bag Loading and delivery system based on weight
Item 3
Enmin Mi-Con Elevating Conveyor
Purpose Provide a central delivery system to reversing feeder (x 1)



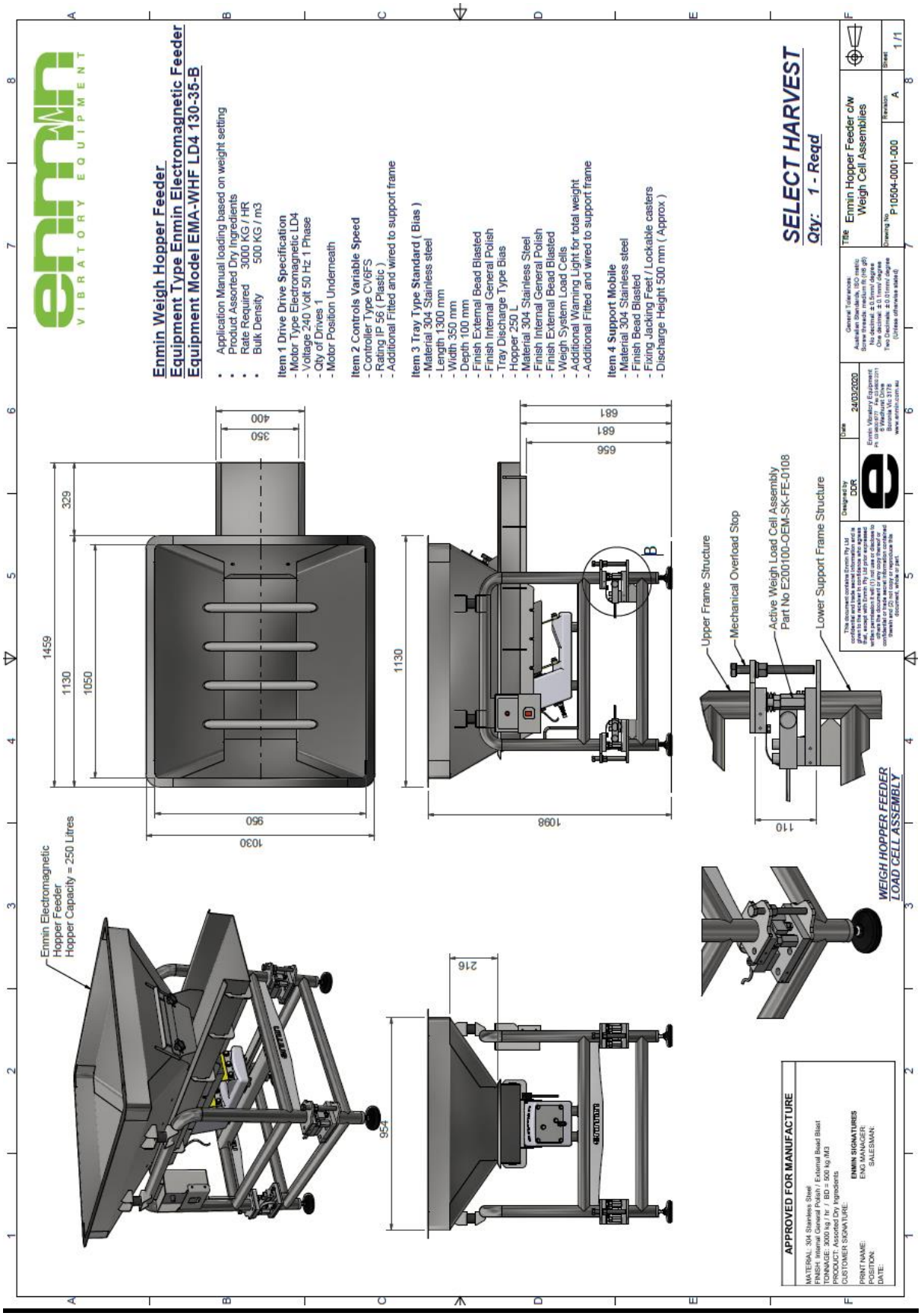
Select Harvest Delivery System Job No P10504-000

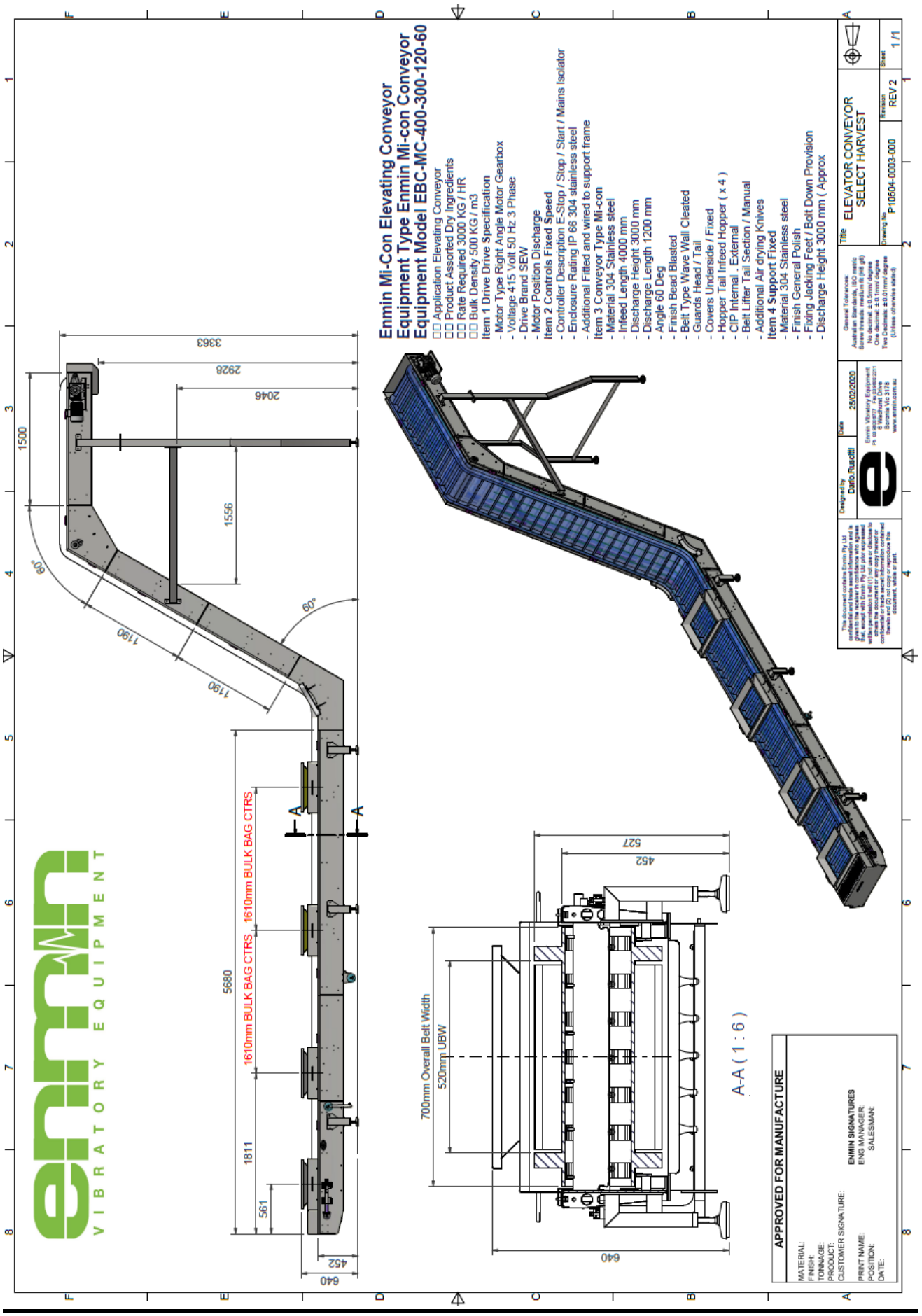


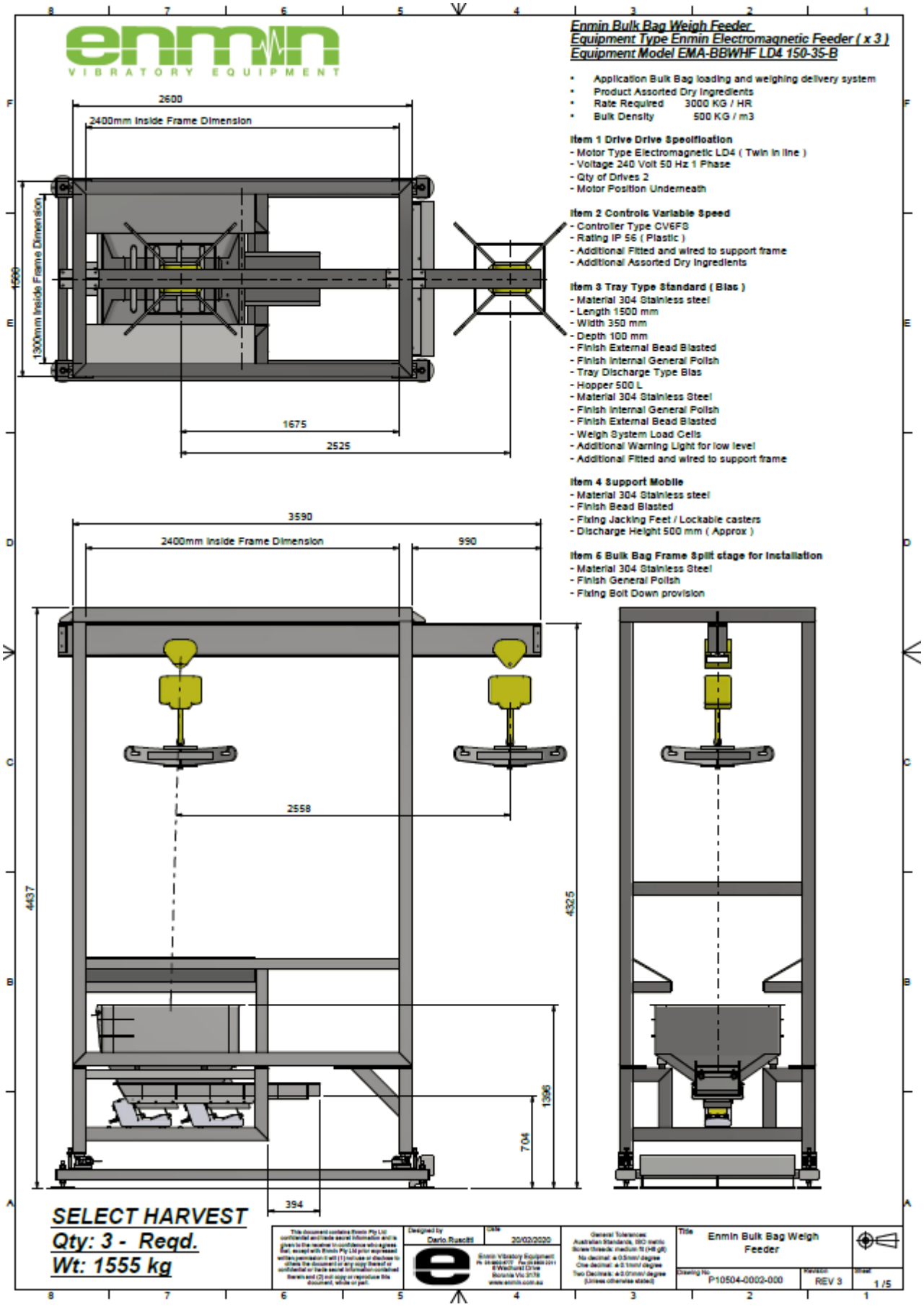
Select Harvest Delivery System Job No P10504-000

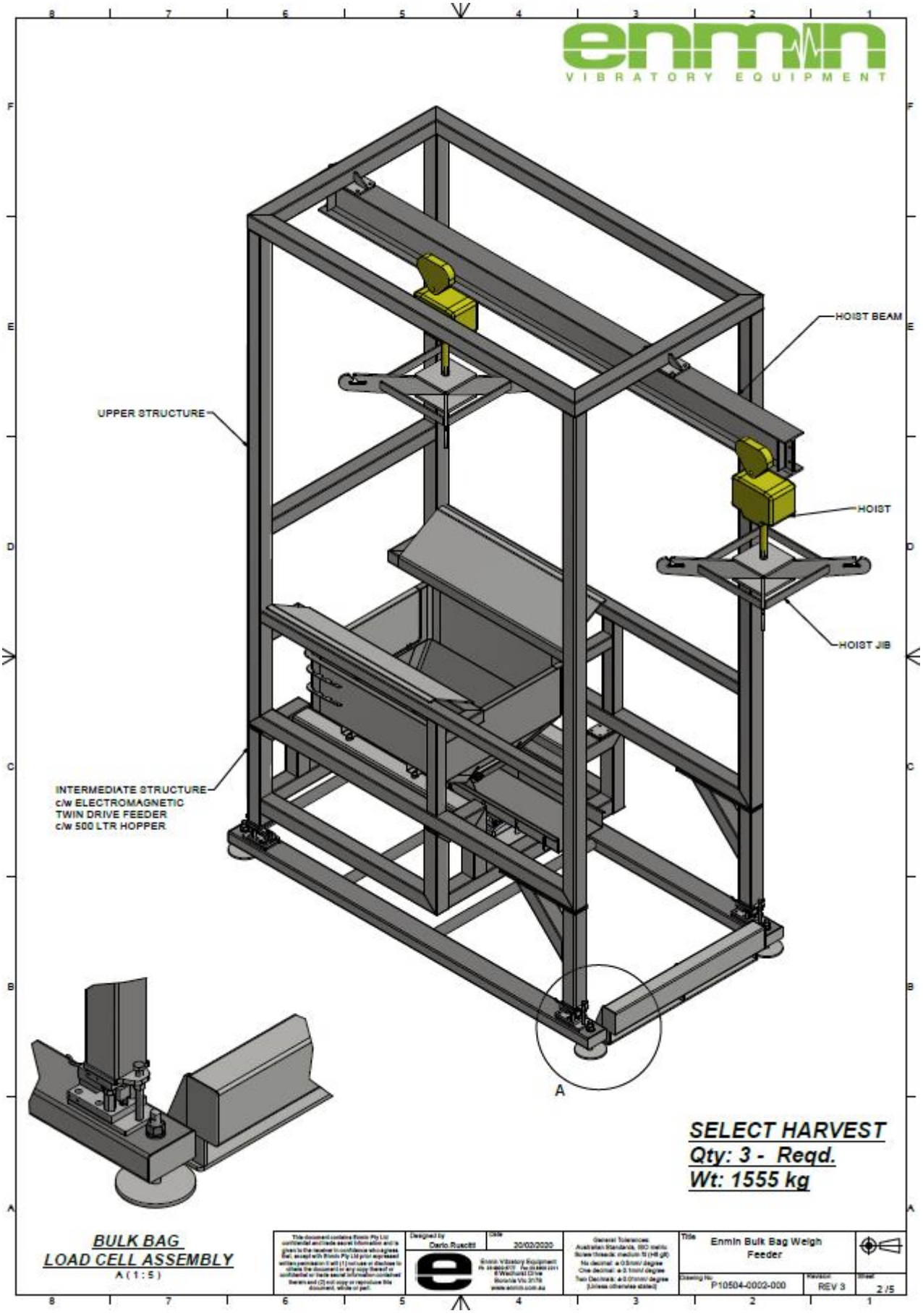


Select Harvest Delivery System Job No P10504-000

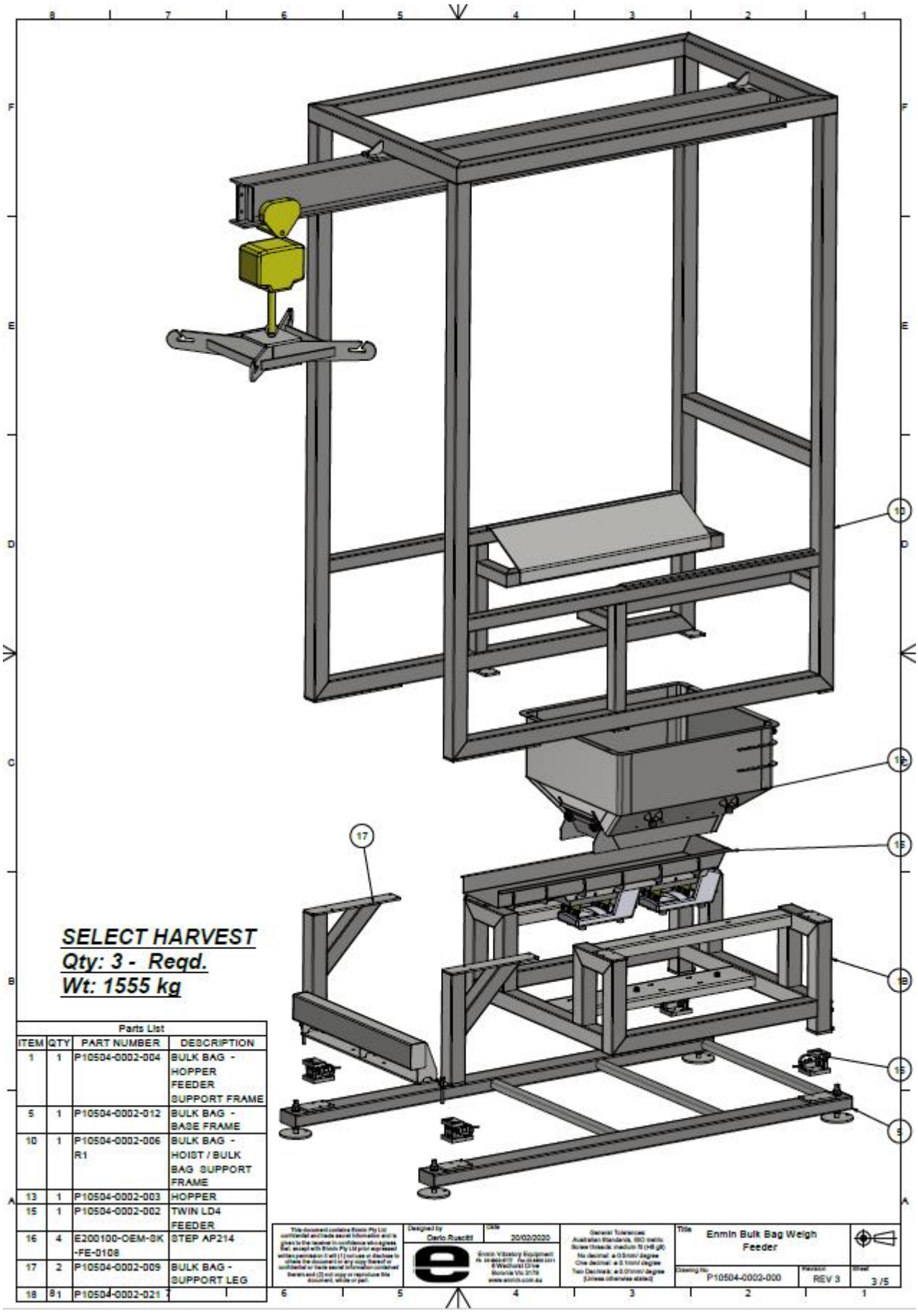

Enmin Weigh Hopper Feeder
Equipment Type Enmin Electromagnetic Feeder
Equipment Model EMA-WHF LD4 130-35-B
Application Manual loading based on weight setting
Product Assorted Dry Ingredients
Rate Required 3000 KG / HR
Bulk Density 500 KG / m3
Item 1 Drive Drive Specification
- Motor Type Electromagnetic LD4
- Voltage 240 Volt 50 Hz 1 Phase
- Qty of Drives 1
- Motor Position Underneath
Item 2 Controls Variable Speed
- Controller Type CV6FS
- Rating IP 56 (Plastic)
- Additional Fitted and wired to support frame
Item 3 Tray Type Standard (Bias)
- Material 304 Stainless steel
- Length 1300 mm
- Width 350 mm
- Depth 100 mm
- Finish External Bead Blasted
- Finish Internal General Polish
- Tray Discharge Type Bias
- Hopper 250 L
- Material 304 Stainless Steel
- Finish Internal General Polish
- Finish External Bead Blasted
- Weigh System Load Cells
- Additional Warning Light for total weight
- Additional Fitted and wired to support frame
Item 4 Support Mobile
- Material 304 Stainless steel
- Finish Bead Blasted
- Fixing Jacking Feet / Lockable casters
- Discharge Height 500 mm (Approx)
SELECT HARVEST
Qty: 1 - Reqd
Enmin Electromagnetic
Hopper Feeder
Hopper Capacity = 250 Litres
Upper Frame Structure
Mechanical Overload Stop
Active Weigh Load Cell Assembly
Part No E200100-OEM-SK-FE-0108
Lower Support Frame Structure
WEIGH HOPPER FEEDER
LOAD CELL ASSEMBLY
APPROVED FOR MANUFACTURE
MATERIAL: 304 Stainless Steel
FINISH: Internal General Polish / External Bead Blast
TONNAGE: 3000 kg / hr / BD = 500 kg /M3
PRODUCT: Assorted Dry Ingredients
CUSTOMER SIGNATURE:
PRINT NAME:
POSITION:
DATE:
ENMIN SIGNATURES
ENGINEER:
SALESMAN:
Designed by DGR
Date 24/03/2020
Title Enmin Hopper Feeder c/w Weigh Cell Assemblies
Drawing No P10504-0001-000
Revision A
Sheet 1 /1


Enmin Mi-Con Elevating Conveyor
Equipment Type Enmin Mi-con Conveyor
Equipment Model EBC-MC-400-300-120-60
Item 1 Drive Drive Specification
- Motor Type Right Angle Motor Gearbox
- Voltage 415 Volt 50 Hz 3 Phase
- Drive Brand SEW
- Motor Position Discharge
Item 2 Controls Fixed Speed
- Controller Description E-Stop / Stop / Start / Mains Isolator
- Enclosure Rating IP 66 304 stainless steel
- Additional Fitted and wired to support frame
Item 3 Conveyor Type Mi-con
- Material 304 Stainless steel
- Infeed Length 4000 mm
- Discharge Height 3000 mm
- Discharge Length 1200 mm
- Angle 60 Deg
- Finish Bead Blasted
- Belt Type Wave Wall Cleated
- Guards Head / Tail
- Covers Underside / Fixed
- Hopper Tail Infeed Hopper (x 4)
- CIP Internal , External
- Belt Lifter Tail Section / Manual
- Additional Air drying Knives
Item 4 Support Fixed
- Material 304 Stainless steel
- Finish General Polish
- Fixing Jacking Feet / Bolt Down Provision
- Discharge Height 3000 mm (Approx
Title
ELEVATOR CONVEYOR
SELECT HARVEST
Drawing No
P10504-0003-000
Revision
REV 2
Sheet
1/1
Designed by
Dario Ruscelli
Date
25/02/2020
Enmin Vibratory Equipment
8 Wadhurst Drive
Boronia Vic 3155
www.enmin.com.au
APPROVED FOR MANUFACTURE
MATERIAL:
FINISH:
TONNAGE:
PRODUCT:
CUSTOMER SIGNATURE:
PRINT NAME:
POSITION:
DATE:
ENMIN SIGNATURES
ENG MANAGER:
SALESMAN:
A-A (1 : 6)
3363
2928
2046
1500
1556
60°
1190
1190
5680
1610mm BULK BAG CTRS
1610mm BULK BAG CTRS
1811
561
452
640
700mm Overall Belt Width
520mm UBW
527
452
640
VIBRATORY EQUIPMENT


Enmin Bulk Bag Weigh Feeder
Equipment Type Enmin Electromagnetic Feeder (x 3)
Equipment Model EMA-BBWHF LD4 150-3S-B
• Application Bulk Bag loading and weighing delivery system
• Product Assorted Dry Ingredients
• Rate Required 3000 KG / HR
• Bulk Density 500 KG / m3
Item 1 Drive Drive Specification
- Motor Type Electromagnetic LD4 (Twin In line)
- Voltage 240 Volt 50 Hz 1 Phase
- Qty of Drives 2
- Motor Position Underneath
Item 2 Controls Variable Speed
- Controller Type CV6FS
- Rating IP 56 (Plastic)
- Additional Fitted and wired to support frame
- Additional Assorted Dry Ingredients
Item 3 Tray Type Standard (Bias)
- Material 304 Stainless steel
- Length 1500 mm
- Width 350 mm
- Depth 100 mm
- Finish External Bead Blasted
- Finish Internal General Polish
- Tray Discharge Type Bias
- Hopper 500 L
- Material 304 Stainless Steel
- Finish Internal General Polish
- Finish External Bead Blasted
- Weigh System Load Cells
- Additional Warning Light for low level
- Additional Fitted and wired to support frame
Item 4 Support Mobile
- Material 304 Stainless steel
- Finish Bead Blasted
- Fixing Jacking Feet / Lockable casters
- Discharge Height 500 mm (Approx)
Item 5 Bulk Bag Frame Split stage for Installation
- Material 304 Stainless Steel
- Finish General Polish
- Fixing Bolt Down provision
2600
2400mm Inside Frame Dimension
1300mm Inside Frame Dimension
1675
2525
3590
2400mm Inside Frame Dimension
990
2558
4437
4325
1396
704
394
SELECT HARVEST
Qty: 3 - Reqd.
Wt: 1555 kg
Designed by
Dario Ruscitti
Date
20/02/2020
Title
Enmin Bulk Bag Weigh Feeder
Drawing No
P10504-0002-000
Revision
REV 3
Sheet
1 /5



Select Harvest Delivery System Job No P10504-000



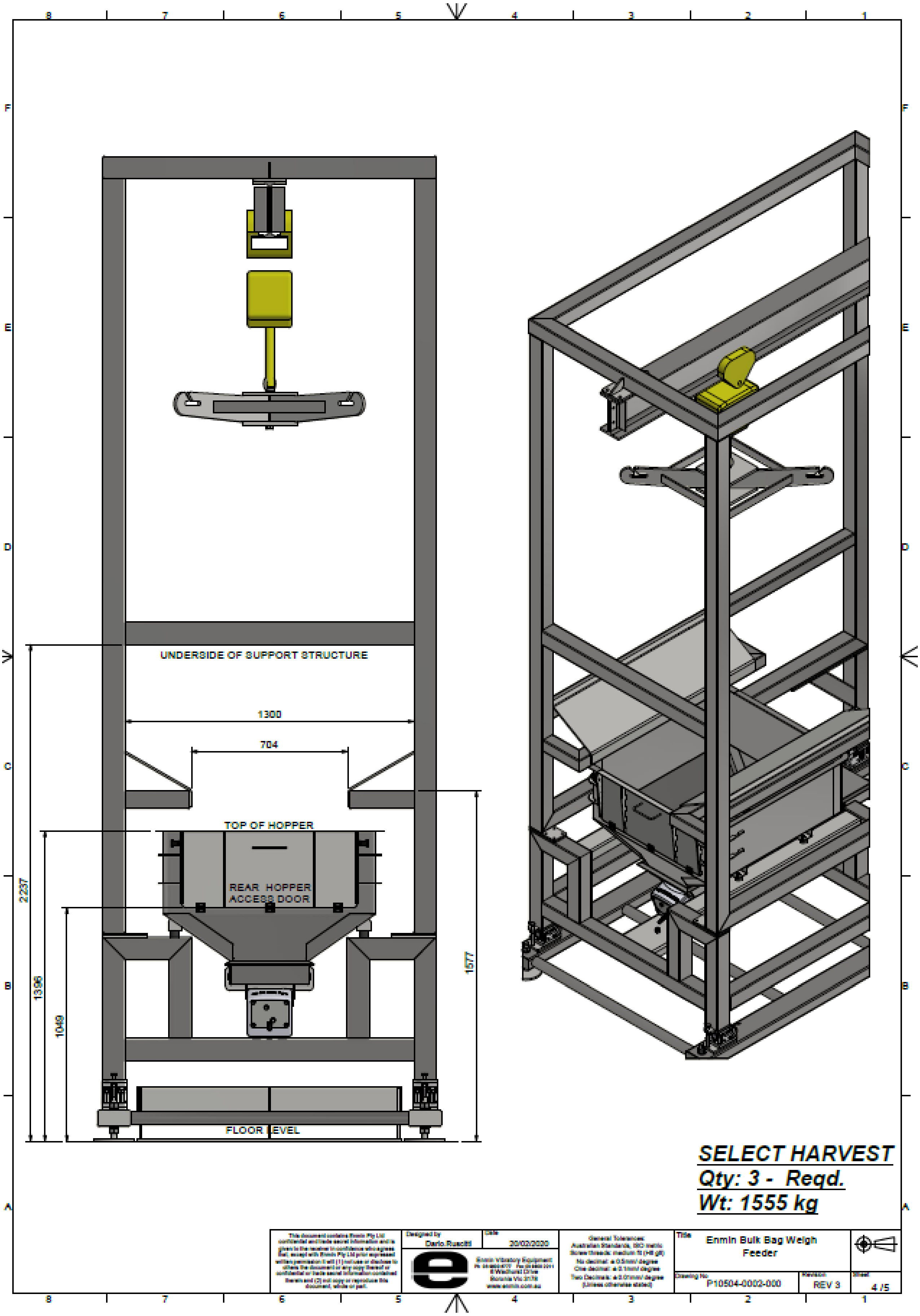
SELECT HARVEST
Qty: 3 - Reqd.
Wt: 1555 kg

Parts List

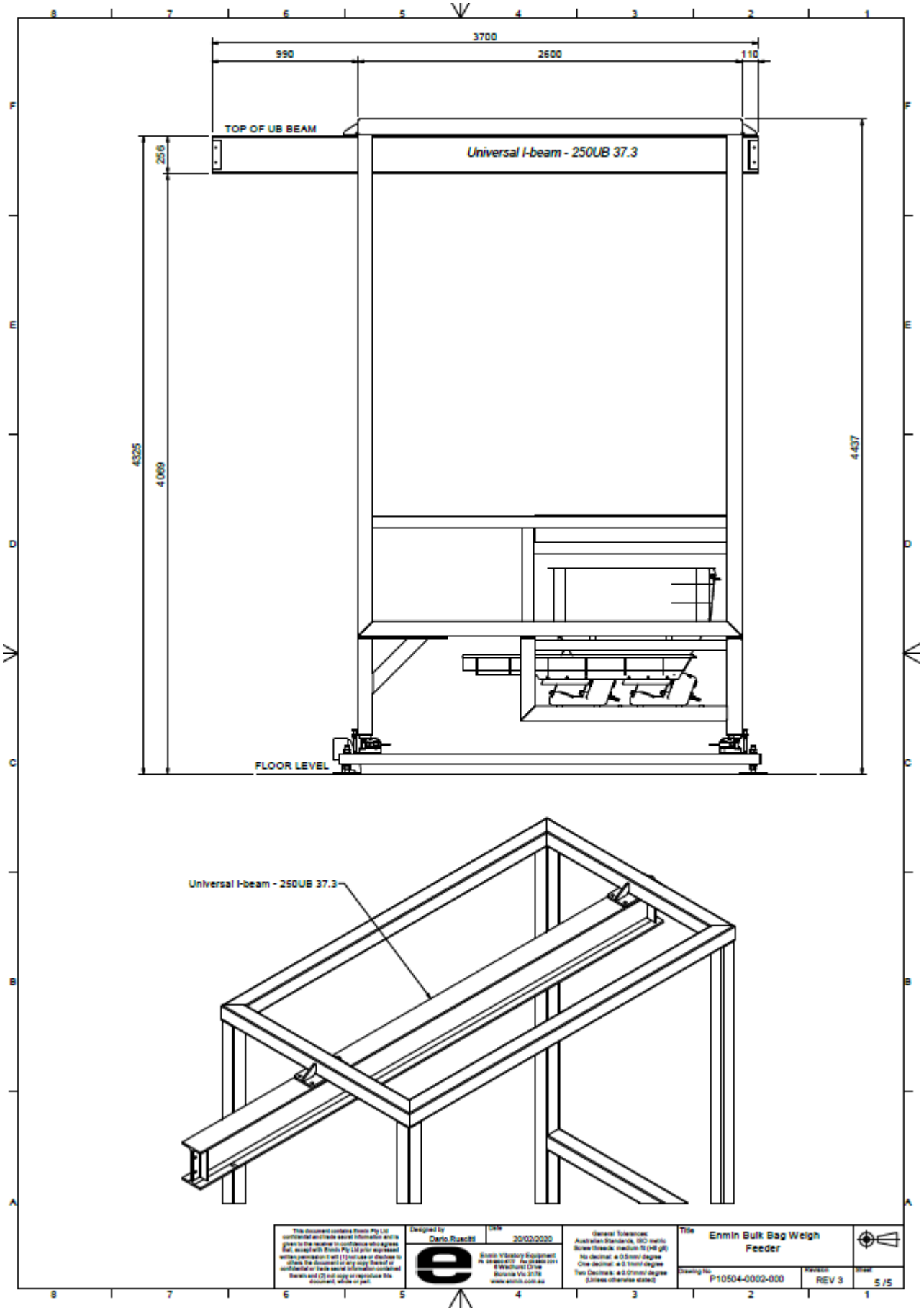
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	P10504-0002-004	BULK BAG - HOPPER FEEDER SUPPORT FRAME
5	1	P10504-0002-012	BULK BAG - BASE FRAME
10	1	P10504-0002-006 R1	BULK BAG - HOIST / BULK BAG SUPPORT FRAME
13	1	P10504-0002-003	HOPPER
15	1	P10504-0002-002	TWIN LD4 FEEDER
16	4	E200100-OEM-SK -FE-0108	STEP AP214
17	2	P10504-0002-009	BULK BAG - SUPPORT LEG
18	81	P10504-0002-021	

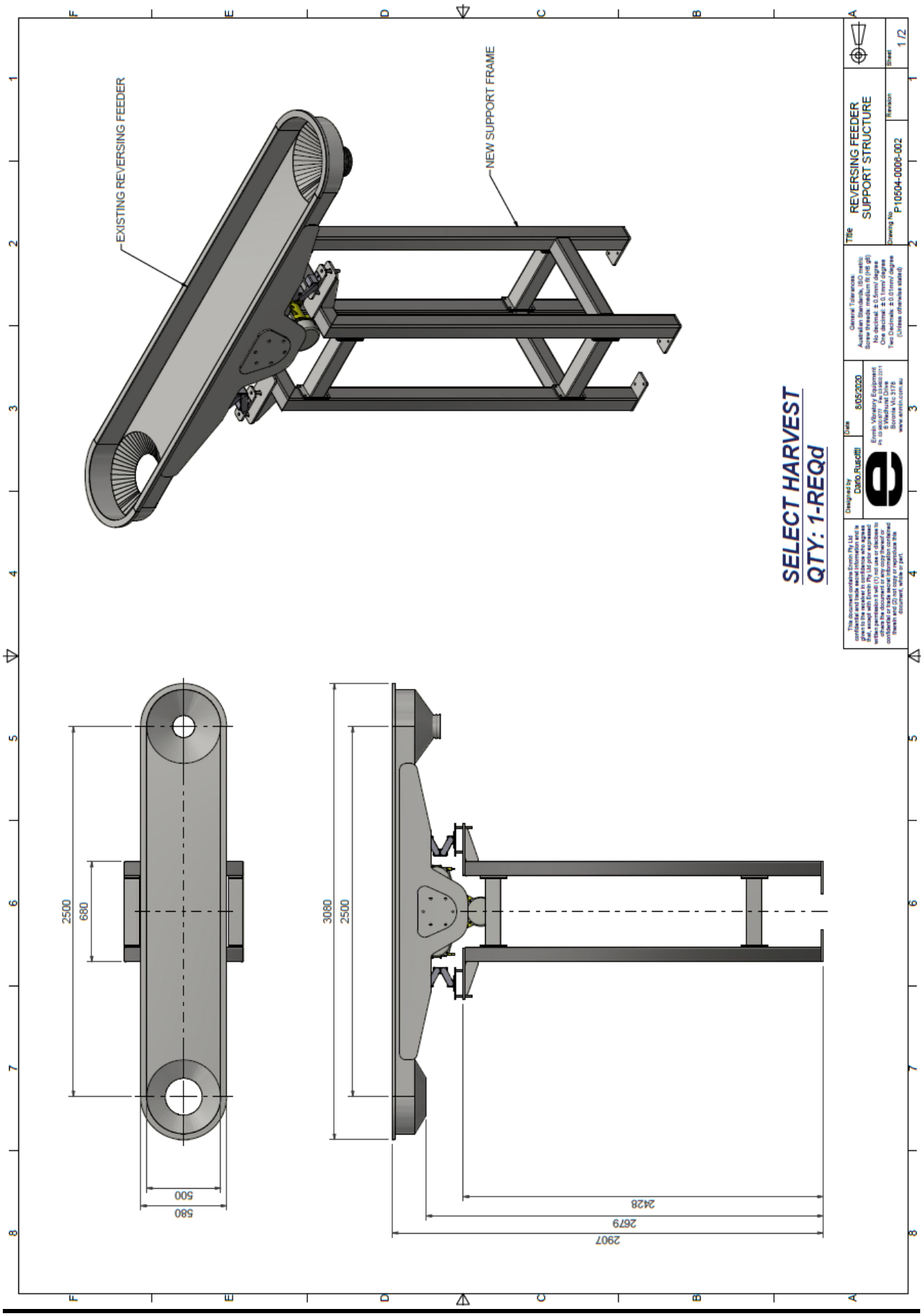
Designed by: Dario Ruscitti
Date: 20/02/2020
Title: Enmin Bulk Bag Weigh Feeder
Drawing No: P10504-0002-000
Revision: REV 3
Sheet: 3/5

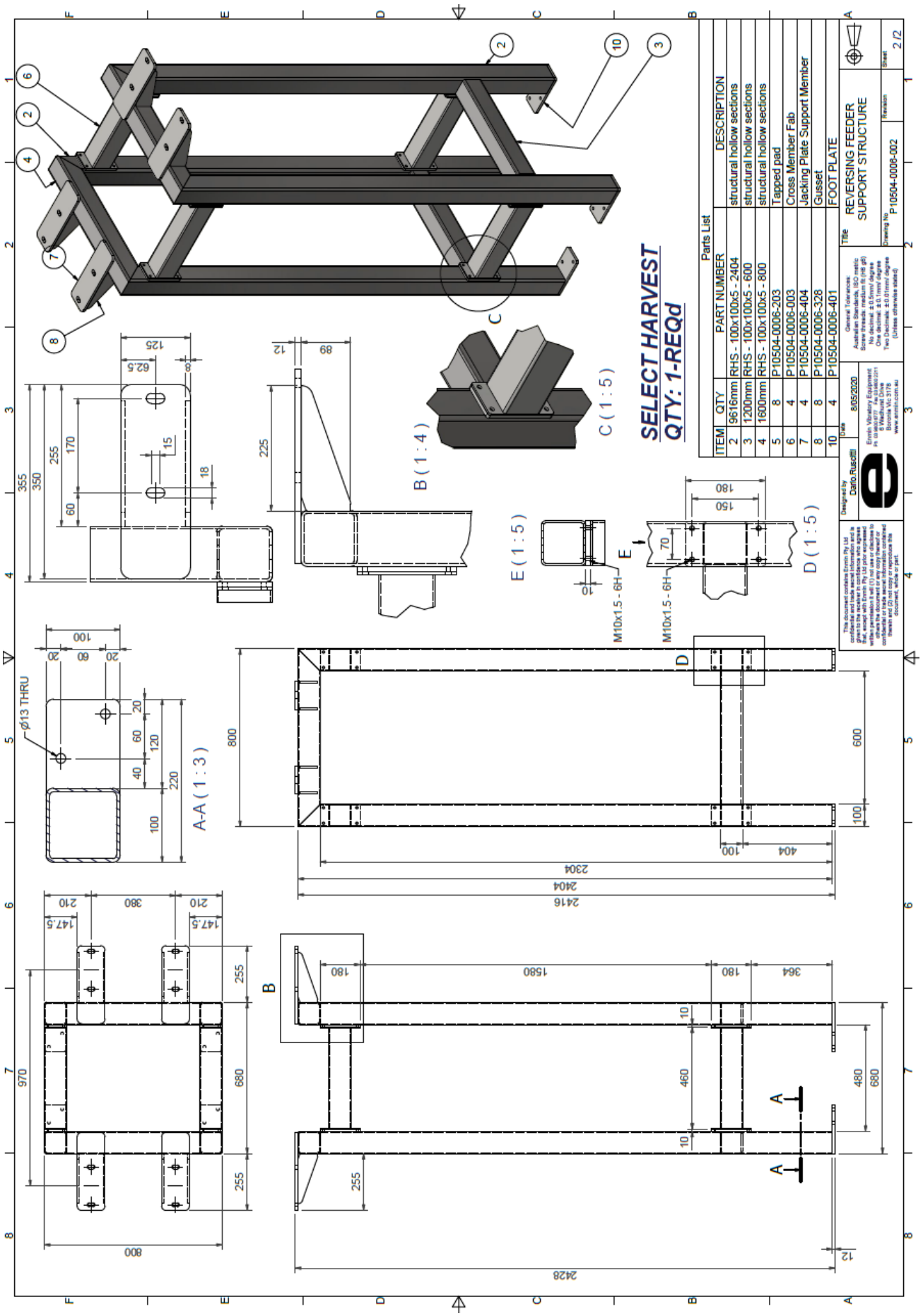
enmin
VIBRATORY EQUIPMENT

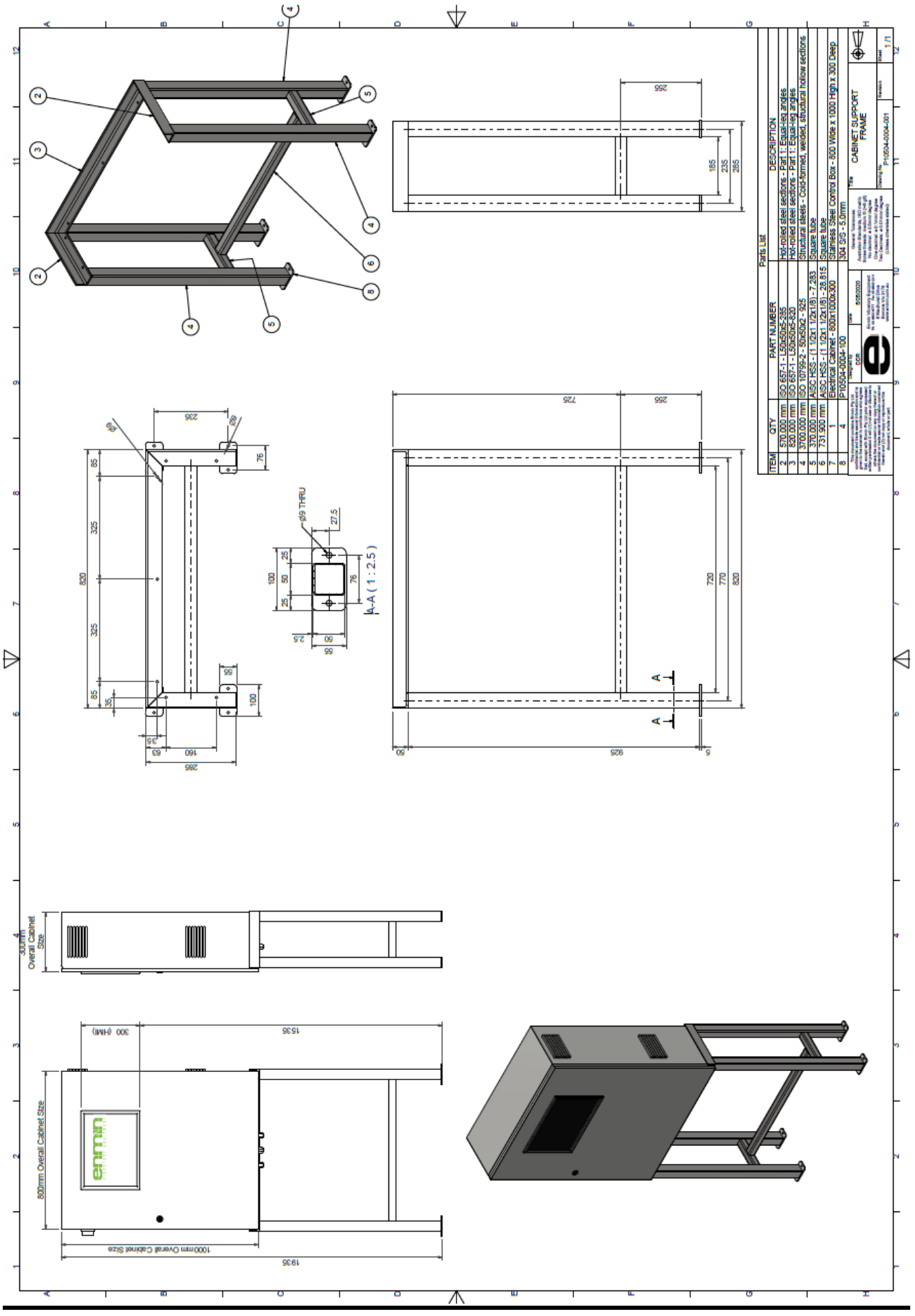


Select Harvest Delivery System Job No P10504-000


3700
990
2600
110
TOP OF UB BEAM
Universal I-beam - 250UB 37.3
256
4325
4069
4437
FLOOR LEVEL
Universal I-beam - 250UB 37.3
Designed by
Dario Ruscitti
Date
20/02/2020
Title
Enmin Bulk Bag Weigh Feeder
Drawing No.
P10504-0002-000
Revision
REV 3
Sheet
5 /5


EXISTING REVERSING FEEDER
NEW SUPPORT FRAME
SELECT HARVEST
QTY: 1-REQd
REVERSING FEEDER
SUPPORT STRUCTURE
P10504-0006-002
1/2
Designed by
Dario Ruscitti
8/05/2020
2500
680
500
580
3080
2500
2428
2679
2907


SELECT HARVEST
QTY: 1-REQd
Parts List
ITEM QTY PART NUMBER DESCRIPTION
2 9616mm RHS - 100x100x5 - 2404 structural hollow sections
3 1200mm RHS - 100x100x5 - 600 structural hollow sections
4 1600mm RHS - 100x100x5 - 800 structural hollow sections
5 8 P10504-0006-203 Tapped pad
6 4 P10504-0006-003 Cross Member Fab
7 4 P10504-0006-404 Jacking Plate Support Member
8 8 P10504-0006-328 Gusset
10 4 P10504-0006-401 FOOT PLATE
Title REVERSING FEEDER SUPPORT STRUCTURE
Drawing No P10504-0006-002
Revision
Sheet 2/2
Designed by Dario Rubotti
Date 8/05/2020
A-A (1 : 3)
B (1 : 4)
C (1 : 5)
D (1 : 5)
E (1 : 5)
M10x1.5 - 6H
Ø13 THRU


Parts List
ITEM
QTY
PART NUMBER
DESCRIPTION
2 570.000 mm ISO 657-1 - L50x50x5-285 Hot-rolled steel sections - Part 1: Equal-leg angles
3 820.000 mm ISO 657-1 - L50x50x5-820 Hot-rolled steel sections - Part 1: Equal-leg angles
4 3700.000 mm ISO 10799-2 - 50x50x2 - 925 Structural steels - Cold-formed, welded, structural hollow sections
5 370.000 mm AISC HSS - (1 1/2x1 1/2x1/8) - 7.283 Square tube
6 731.900 mm AISC HSS - (1 1/2x1 1/2x1/8) - 28.815 Square tube
7 1 Electrical Cabinet - 600x1000x300 Stainless Steel Control Box - 600 Wide x 1000 High x 300 Deep
8 4 P10504-0004-100 304 3/S - 5.0mm
CABINET SUPPORT FRAME
P10504-0004-001
A-A (1 : 2.5)
800mm Overall Cabinet Size
1000mm Overall Cabinet Size

SECTION 6 *ELECTRICAL SCHEMATICS*

DELIVERY SYSTEM POWER & CONTROL

ELECTRICAL DRAWINGS 000-049

SHEET	SIZE	DESCRIPTION	REV	SHEET	SIZE	DESCRIPTION	REV
000	A3	TITLE PAGE	A	025	A3	-	A
001	A3	DRAWING INDEX 1: 000-049	A	026	A3	-	-
002	A3	-	A	027	A3	-	-
003	A3	POWER & CONTROL PANEL ARRANGEMENT	A	028	A3	-	-
004	A3	-	-	029	A3	-	-
005	A3	EQUIPMENT LIST 1	A	030	A3	ETHERNET NETWORK ARRANGEMENT	A
006	A3	EQUIPMENT LIST 2	A	031	A3	-	A
007	A3	CABLE COLOUR SCHEDULE	A	032	A3	ONBOARD IO	A
008	A3	LABEL SCHEDULE 1	A	033	A3	IO MODULE 1 & 2: AI, DO	A
009	A3	LABEL SCHEDULE 2	A	034	A3	IO MODULE 3 & 4: DO, DI	A
010	A3	415V/240V POWER DISTRIBUTION	-	035	A3	-	A
011	A3	VIBRATOR & HOIST POWER DISTRIBUTION	A	036	A3	-	A
012	A3	VFD SCHEMATIC: BLENDER INFEED CONVEYOR	A	037	A3	-	A
013	A3	VFD SCHEMATIC: MI-CON CONVEYOR	A	038	A3	-	-
014	A3	FEEDER SCHEMATIC: VIBRATORY FEEDERS	A	039	A3	-	-
015	A3	-	A	040	A3	BULK FEEDER 1 LOADCELL CONNECTIONS	A
016	A3	-	-	041	A3	BULK FEEDER 2 LOADCELL CONNECTIONS	A
017	A3	-	-	042	A3	BULK FEEDER 3 LOADCELL CONNECTIONS	A
018	A3	-	-	043	A3	MANUAL FEEDER LOADCELL CONNECTIONS	A
019	A3	-	-	044	A3	-	-
020	A3	24V DC CONTROL POWER SUPPLY	A	045	A3	BLENDER CONTROL CONNECTIONS	-
021	A3	-	A	046	A3	-	-
022	A3	E-STOP SCHEMATIC	A	047	A3	-	-
023	A3	-	-	048	A3	-	-
024	A3	-	-	049	A3	-	-

REV	DESCRIPTION	DRN	DATE
A	ISSUED FOR APPROVAL	CN	06.04.20

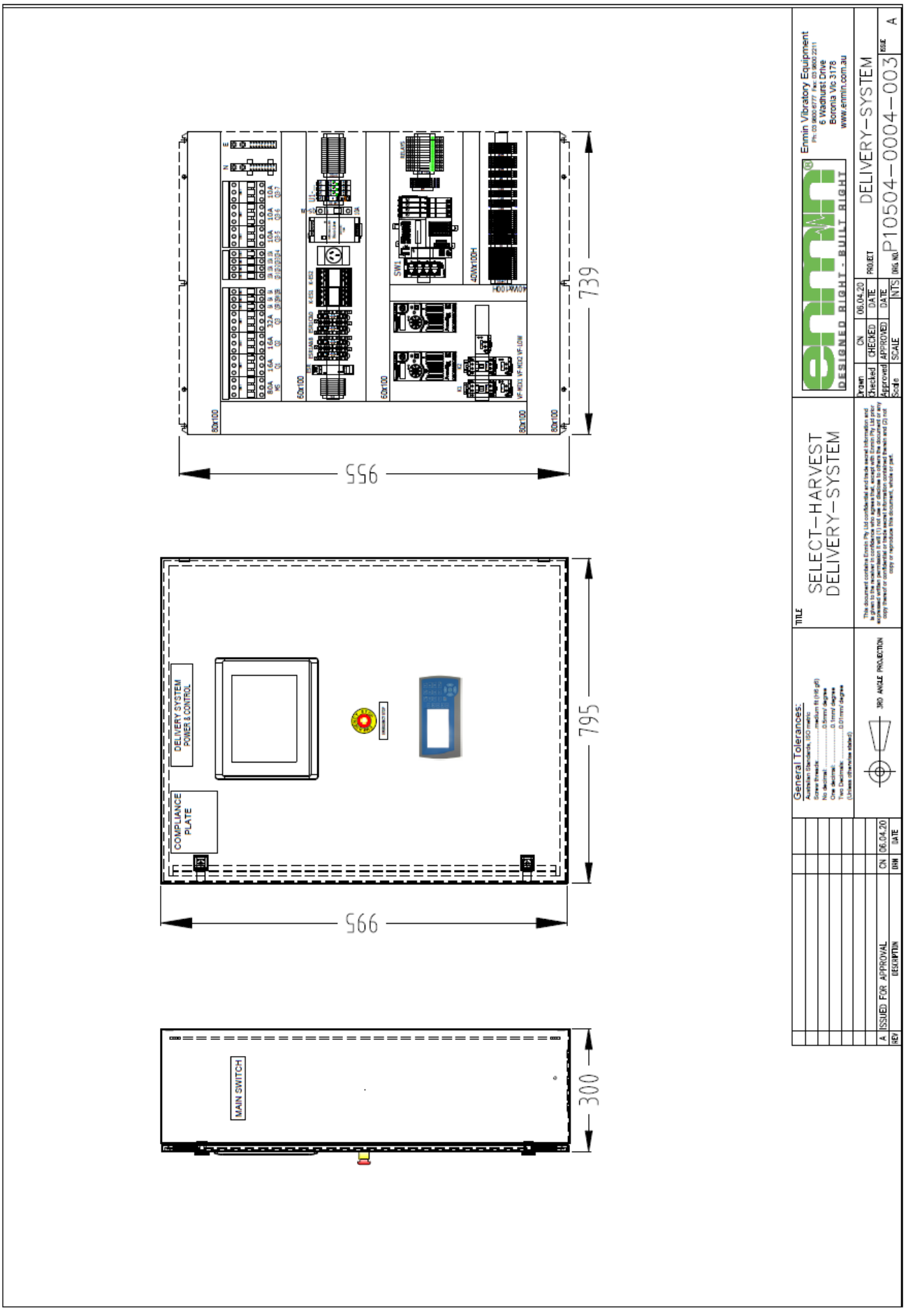
General Tolerances:
Australian Standards, ISO metric
Screw threads: ..... medium fit (H6 g6)
No decimal: ..... 0.5mm/ degree
One decimal: ..... 0.1mm/ degree
Two Decimals: ..... 0.01mm/ degree
(Unless otherwise stated)

3RD ANGLE PROJECTION

TITLE
SELECT–HARVEST
DELIVERY–SYSTEM

Enmin Vibratory Equipment
Ph: 03 9800 6777 Fax: 03 9800 2211
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au

Drawn	CN	06.04.20	
Checked	CHECKED	DATE	PROJECT DELIVERY–SYSTEM
Approved	APPROVED	DATE	
Scale	SCALE	NTS	DRG NO. P10504–0004–001 ISSUE A


955
739
966
795
300
MAIN SWITCH
DELIVERY SYSTEM POWER & CONTROL
COMPLIANCE PLATE
SELECT-HARVEST DELIVERY-SYSTEM
DESIGNED RIGHT - BUILT RIGHT
Enmin Vibratory Equipment
6 Washhurst Drive
Boronia Vic 3176
www.enmin.com.au
DELIVERY-SYSTEM
P10504-0004-003
General Tolerances:
3RD ANGLE PROJECTION
ISSUED FOR APPROVAL
06.04.20

SHEET	TAG	EQUIPMENT DESCRIPTION	MANUFACTURER / SUPPLIER	MODEL	PART NUMBER	QTY	SUPPLY BY
-	-	ENCLOSURE - STAINLESS STEEL, 1000Hx300Dx800W	RITTAL	-	-	1	
-	-	-	-	-	-	1	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	ENCLOSURE LIGHTS with DOOR SWITCHES	RITTAL or Equivalent	-	-	1	
-	-	EARTH BARS, NEUTRAL BARS	NHP	-		1 Set	
-	-	MAIN SWITCH, DIN-T, 3 POLE, 80 AMP	TERASAKI / NHP	-		1	
-	-	CIRCUIT BREAKER COMB, 3 PHASE, 80 AMP, 21 POLE, 18mm, for DIN-T MCBs	TERASAKI / NHP	-		1	
-	-	CIRCUIT BREAKER 3 PHASE - DIN-T - 6kA 10 AMP, C Curve	TERASAKI / NHP	-		2	
-	-	CIRCUIT BREAKER 1 PHASE - DIN-T - 6kA 10 AMP, C Curve	TERASAKI / NHP	-		5	
-	-	CIRCUIT BREAKER 1 PHASE - DIN-T - 6kA 16 AMP, C Curve	TERASAKI / NHP	-		3	
-	-	CIRCUIT BREAKER 1 PHASE - DIN-T - 6kA 6 AMP, C Curve	TERASAKI / NHP	-		3	
-	-	CONTACTOR, 25A, 24VDC, 1NC / 1NO (Mirrored Contacts)	SCHNEIDER	LC1-D25		2	
-	-	POWERFLEX 525 1.1kW VSD	ALLEN BRADLEY	25BD4P0N114		2	
-	-	CONTACTOR, 9A/4kW, 24VDC, 1NC / 1NO (Mirrored Contacts)	SCHNEIDER	LC1-D09		2	
-	-	THERMAL OVERLOAD, 2.5-4 AMP	SCHNEIDER	LRD08		3	
-	-	5 PORT ETHERNET SWITCH	WIEDMULLER	-	-	1	-
-	-	COMPACTLOGIX L1 CPU	ALLEN BRADLEY	-	1769L16ERBB1B	1	FREE ISSUE
-	-	PVP7 STD 10in TFT COLOUR TOUCH DLR 24V DC	ALLEN BRADLEY	-	2711PT10C22D8S	1	FREE ISSUE
-	-	POINT I/O 8AI HIGH DENSITY CURRENT MODULE	ALLEN BRADLEY	-	1734IE8C	1	FREE ISSUE
-	-	DIGITAL OUTPUT MODULE, 8xDO, 24V DC	ALLEN BRADLEY	-	1734OB8	2	FREE ISSUE
-	-	POINT I/O TERMINAL BASE	ALLEN BRADLEY	-	1734TOP3	1	FREE ISSUE
-	-	POINT I/O TERMINAL BASE	ALLEN BRADLEY	-	1734TOP	2	FREE ISSUE
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	

REV	DESCRIPTION	DRN	DATE
A	ISSUED FOR APPROVAL	CN	06.04.20

General Tolerances:
Australian Standards, ISO metric
Screw threads: ..... medium fit (H6 g6)
No decimal: ..... 0.5mm/ degree
One decimal: ..... 0.1mm/ degree
Two Decimals: ..... 0.01mm/ degree
(Unless otherwise stated)

3RD ANGLE PROJECTION

TITLE
SELECT–HARVEST DELIVERY–SYSTEM

Enmin Vibratory Equipment
Ph: 03 9800 6777 Fax: 03 9800 2211
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au

Drawn	CN	06.04.20	
Checked	CHECKED	DATE	PROJECT: DELIVERY–SYSTEM
Approved	APPROVED	DATE	
Scale	SCALE	NTS	DRG NO: P10504–0004–005 REV: A

enmin VIBRATORY EQUIPMENT

Select Harvest Delivery System Job No P10504-000

SHEET	TAG	EQUIPMENT DESCRIPTION	MANUFACTURER / SUPPLIER	MODEL	PART NUMBER	QTY	SUPPLY BY
-	-	GPO SOCKET, 10 AMP, DIN RAIL MOUNT	CLIPSAL	-		1	
-	-	POWER SUPPLY - 240V AC / 24V DC - 20 AMP	WEIDMULLER	PRO-ECO		1	
-	-	-	-	-	-	-	-
-	-	RELAY, TERMINAL STYLE, 24VDC, 1 C/O	WEIDMULLER	TRS 24VDC 1C0	1122770000	13	
-	-	SAFETY RELAY	SIEMENS	-	3SK1111-1AB30	1	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	RELAY, SAFETY, 24V DC, 1xNC, 5xNO, Guided Contact	OMRON / AWM	-	OMRG7SA-1A5B	4	
-	-	RELAY BASE, 14 PIN, LED 24V DC	OMRON / AWM	-	OMRP7SA-14F-ND-DC24	4	
-	-	TERMINAL - FUSED, 2.5mm2	WEIDMULLER	-		X	
-	-	TERMINAL - THROUGH CONNECT, 2.5mm2 WDU2.5	WEIDMULLER	1020000000		X	
-	-	TERMINAL - EARTH, 2.5mm2 WPE2.5	WEIDMULLER	1010000000		X	
-	-	TERMINAL - ACCESSORIES, End Plates, Labels, Jumper Strips	WEIDMULLER	-		1 Set	
-	-	TERMINAL - 2 TIER, THROUGH CONNECT, 2.5mm2	WEIDMULLER	-		X	
-	-	TERMINAL - 2 TIER, ACCESSORIES, End Plates, Labels, Jumper Strips	WEIDMULLER	-		1 Set	
-	-	DIN RAIL	-	-		Xm	
-	-	SLOTTED DUCT, 60W x 100D	LEGRAND	TRANSCAB		Xm	
-	-	SLOTTED DUCT, 80W x 100D	LEGRAND	TRANSCAB		Xm	

REV	DESCRIPTION	DRN	DATE
A	ISSUED FOR APPROVAL	CN	06.04.20

General Tolerances:
Australian Standards, ISO metric
Screw threads: ..... medium fit (H6 g6)
No decimal: ..... 0.5mm/ degree
One decimal: ..... 0.1mm/ degree
Two Decimals: ..... 0.01mm/ degree
(Unless otherwise stated)

3RD ANGLE PROJECTION

TITLE
SELECT–HARVEST
DELIVERY–SYSTEM

Enmin Vibratory Equipment
Ph: 03 9800 6777 Fax: 03 9800 2211
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au

Drawn	CN	06.04.20	PROJECT DELIVERY–SYSTEM
Checked	CHECKED	DATE	
Approved	APPROVED	DATE	
Scale	SCALE	NTS	DRG NO P10504–0004–006 ISSUE A

VIBRATORY EQUIPMENT

POWER			
WIRING TYPE	MINIMUM SIZE	COLOUR	NOTES
3 PHASE 400 V - ACTIVES	2.5 mm2	RED, WHITE, BLUE	-
3 PHASE 400 V - NEUTRAL	2.5 mm2	BLACK	
EARTHING CONDUCTORS	2.5 mm2	GREEN / YELLOW	
1 PHASE 230 V ACTIVE - BEFORE CIRCUIT BREAKER	2.5 mm2	PHASE COLOUR	
1 PHASE 230 V ACTIVE - AFTER CIRCUIT BREAKER	1.5 mm2	BROWN	
1 PHASE 230 V NEUTRAL	1.5 mm2	BLACK	
METERING - CTs	2.5 mm2		
CONTROL & INSTRUMENTATION			
WIRING TYPE	MINIMUM SIZE	COLOUR	NOTES
AC 110V - ACTIVE	1.0 mm2	tba	
AC 110V - NEUTRAL	1.0 mm2	tba	
DC 24V - POSITIVE	1.0 mm2	tba	
DC 24V - NEGATIVE	1.0 mm2	tba	
PLC IO	0.75 mm2	GREY	
EARTHING CONDUCTORS	1.0 mm2	GREEN / YELLOW	
NETWORK & COMMUNICATIONS			
WIRING TYPE	MINIMUM SIZE	COLOUR	NOTES
ETHERNET/IP PATCH CABLE - SWITCHES	CAT5e	Jacket - BLUE	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
-	-	-	

REV	DESCRIPTION	DRN	DATE
A	ISSUED FOR APPROVAL	CN	06.04.20

General Tolerances:
Australian Standards, ISO metric
Screw threads: ..... medium fit (H6 g6)
No decimal: ..... 0.5mm/ degree
One decimal: ..... 0.1mm/ degree
Two Decimals: ..... 0.01mm/ degree
(Unless otherwise stated)

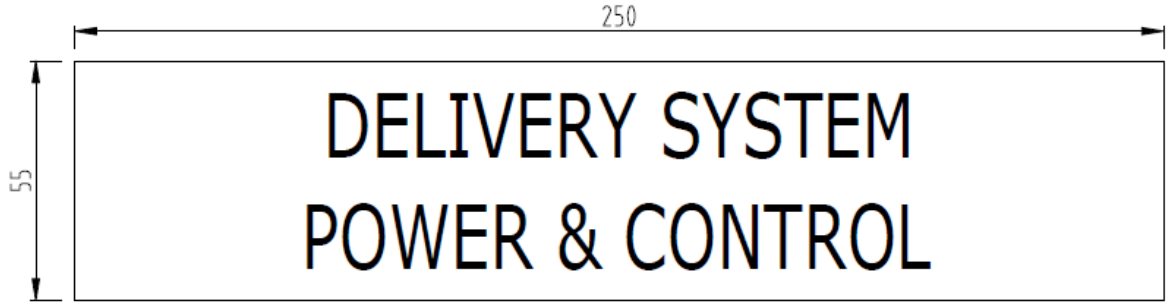
3RD ANGLE PROJECTION

TITLE
SELECT–HARVEST DELIVERY–SYSTEM

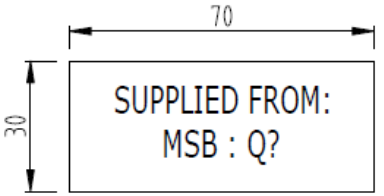
Enmin Vibratory Equipment
Ph: 03 9800 6777 Fax: 03 9800 2211
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au

Drawn	CN	06.04.20	
Checked	CHECKED	DATE	PROJECT DELIVERY–SYSTEM
Approved	APPROVED	DATE	
Scale	SCALE	NTS	DRG NO P10504–0004–007 ISSUE A

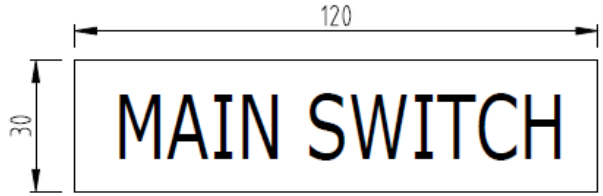
enmin VIBRATORY EQUIPMENT



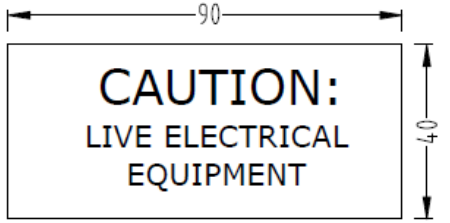
White/Black 15mm Qty=1



White/Black 6mm Qty=1



White/Black 15mm Qty=1



Yellow/Black 8/5mm Qty=1

REV	DESCRIPTION	DRN	DATE
A	ISSUED FOR APPROVAL	CN	06.04.20

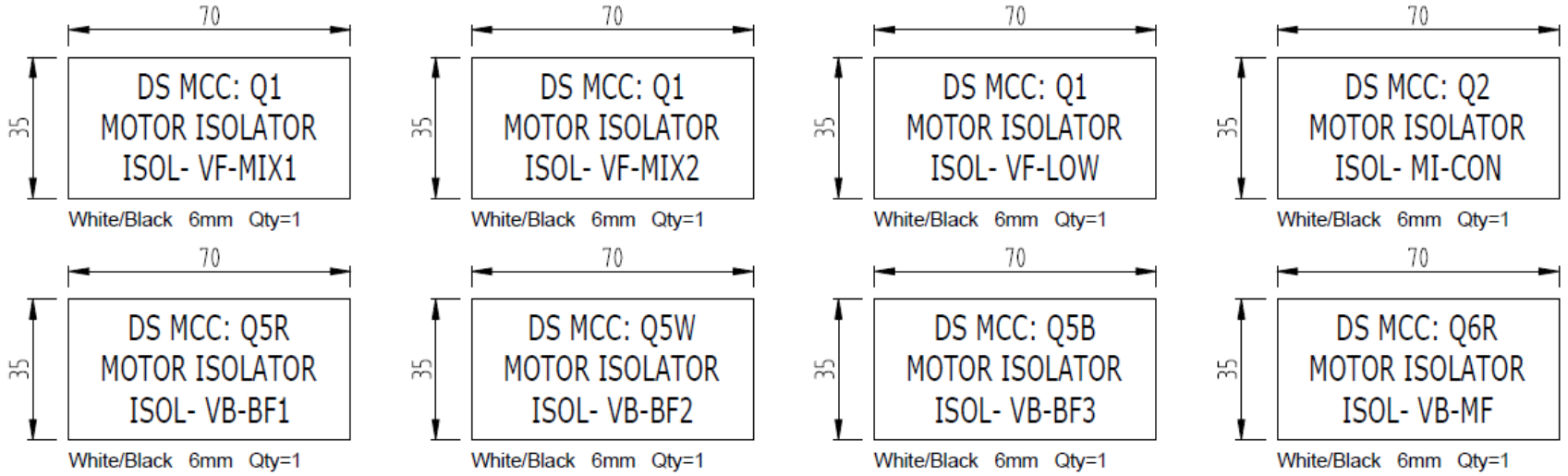
General Tolerances:
Australian Standards, ISO metric
Screw threads: ..... medium fit (H6 g6)
No decimal: ..... 0.5mm/ degree
One decimal: ..... 0.1mm/ degree
Two Decimals: ..... 0.01mm/ degree
(Unless otherwise stated)

3RD ANGLE PROJECTION

TITLE
SELECT–HARVEST
DELIVERY–SYSTEM

Enmin Vibratory Equipment
Ph: 03 9800 8777 Fax: 03 9800 2211
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au

Drawn	CN	06.04.20	
Checked	CHECKED	DATE	PROJECT DELIVERY–SYSTEM
Approved	APPROVED	DATE	
Scale	SCALE	NTS	DRG NO P10504–0004–008 ISSUE A



REV	DESCRIPTION	DRN	DATE
A	ISSUED FOR APPROVAL	CN	06.04.20

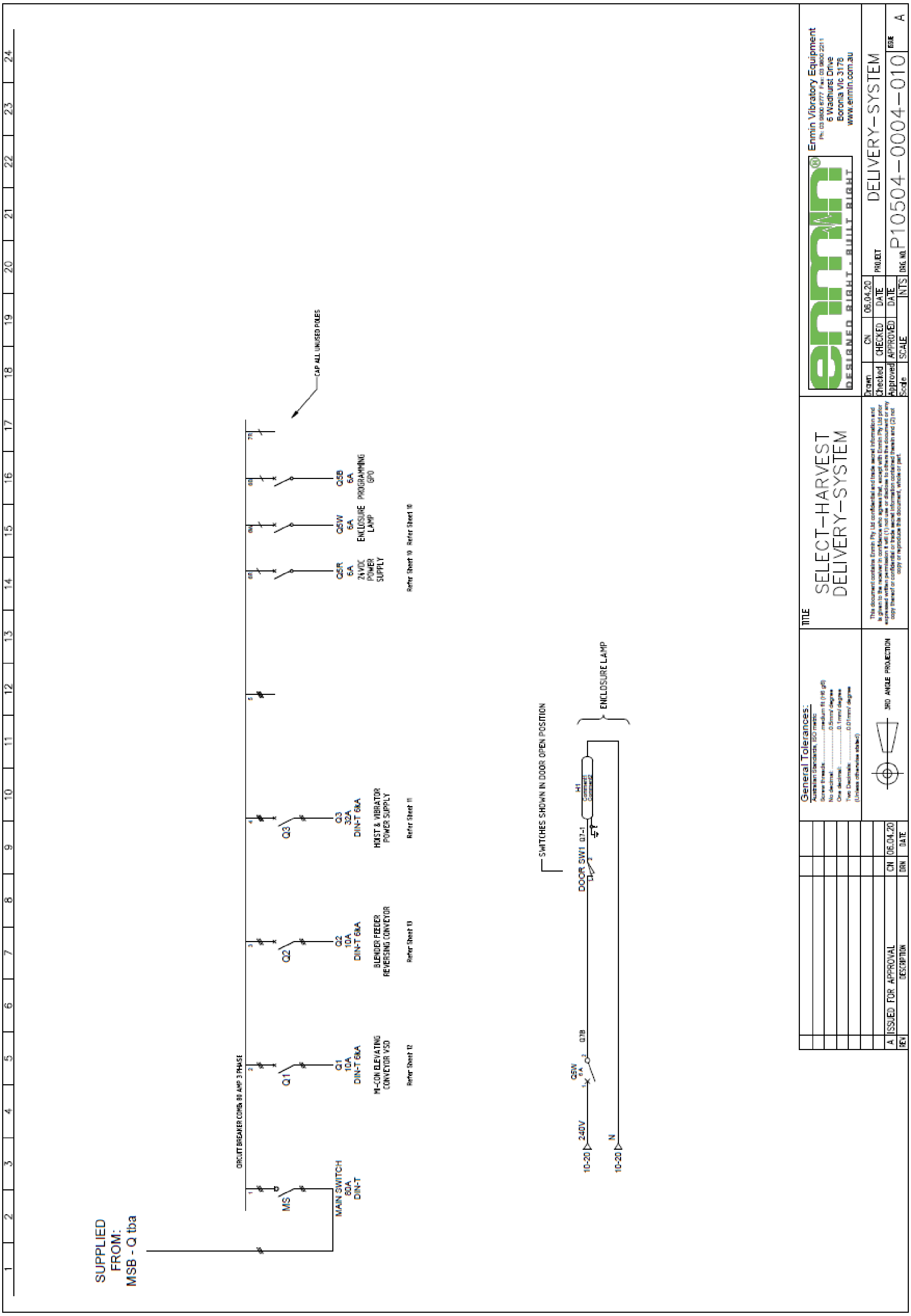
General Tolerances:
Australian Standards, ISO metric
Screw threads: ..... medium fit (H6 g6)
No decimal: ..... 0.5mm/ degree
One decimal: ..... 0.1mm/ degree
Two Decimals: ..... 0.01mm/ degree
(Unless otherwise stated)

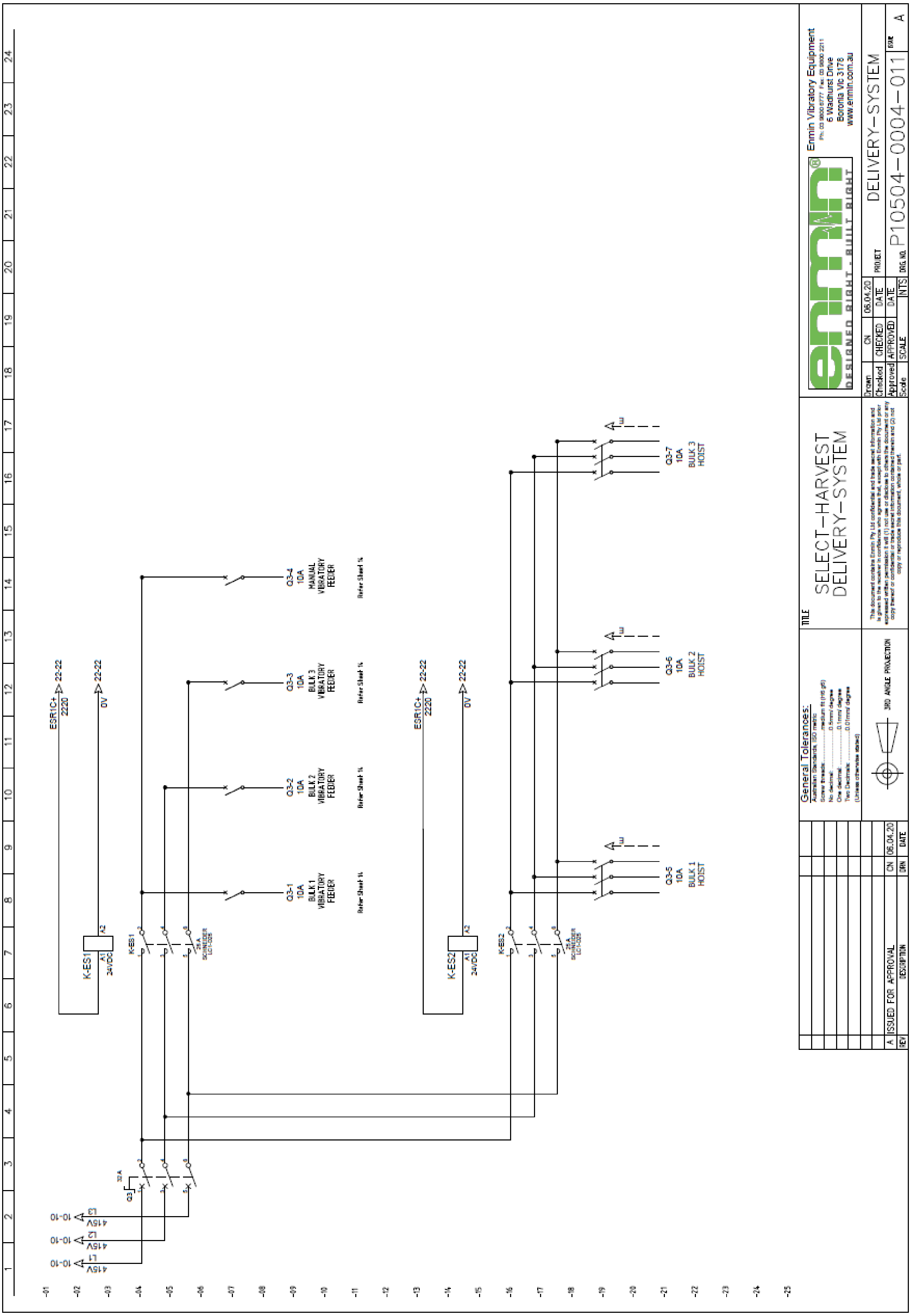
3RD ANGLE PROJECTION

TITLE
SELECT–HARVEST
DELIVERY–SYSTEM

Enmin Vibratory Equipment
Ph: 03 9800 6777 Fax: 03 9800 2211
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au

Drawn	CN	06.04.20	
Checked	CHECKED	DATE	PROJECT DELIVERY–SYSTEM
Approved	APPROVED	DATE	
Scale	SCALE	NTS	DRG NO P10504–0004–009 ISSUE A


SUPPLIED FROM: MSB - Q tba
MS
MAIN SWITCH 80A DIN-T
CIRCUIT BREAKER COMB 80 AMP 3 PHASE
Q1 10A DIN-T 6kA
MI-CON ELEVATING CONVEYOR VSD
Refer Sheet 12
Q2 10A DIN-T 6kA
BLENDER FEEDER REVERSING CONVEYOR
Refer Sheet 13
Q3 32A DIN-T 6kA
HOIST & VIBRATOR POWER SUPPLY
Refer Sheet 11
Q5R 6A 24VDC POWER SUPPLY
Refer Sheet 10
Q5W 6A ENCLOSURE LAMP
Refer Sheet 10
Q5B 6A PROGRAMMING GPO
CAP ALL UNUSED POLES
SWITCHES SHOWN IN DOOR OPEN POSITION
ENCLOSURE LAMP
DOOR SW1
H1
240V
N
General Tolerances:
3RD ANGLE PROJECTION
A ISSUED FOR APPROVAL CN 06.04.20
REV DESCRIPTION DRN DATE
TITLE
SELECT-HARVEST DELIVERY-SYSTEM
Drawn CN 06.04.20
Checked CHECKED DATE
Approved APPROVED DATE
Scale SCALE NTS
PROJECT DELIVERY-SYSTEM
DWG NO. P10504-0004-010
ISSUE A
Enmin Vibratory Equipment
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au
DESIGNED RIGHT - BUILT RIGHT



Enmin Vibratory Equipment
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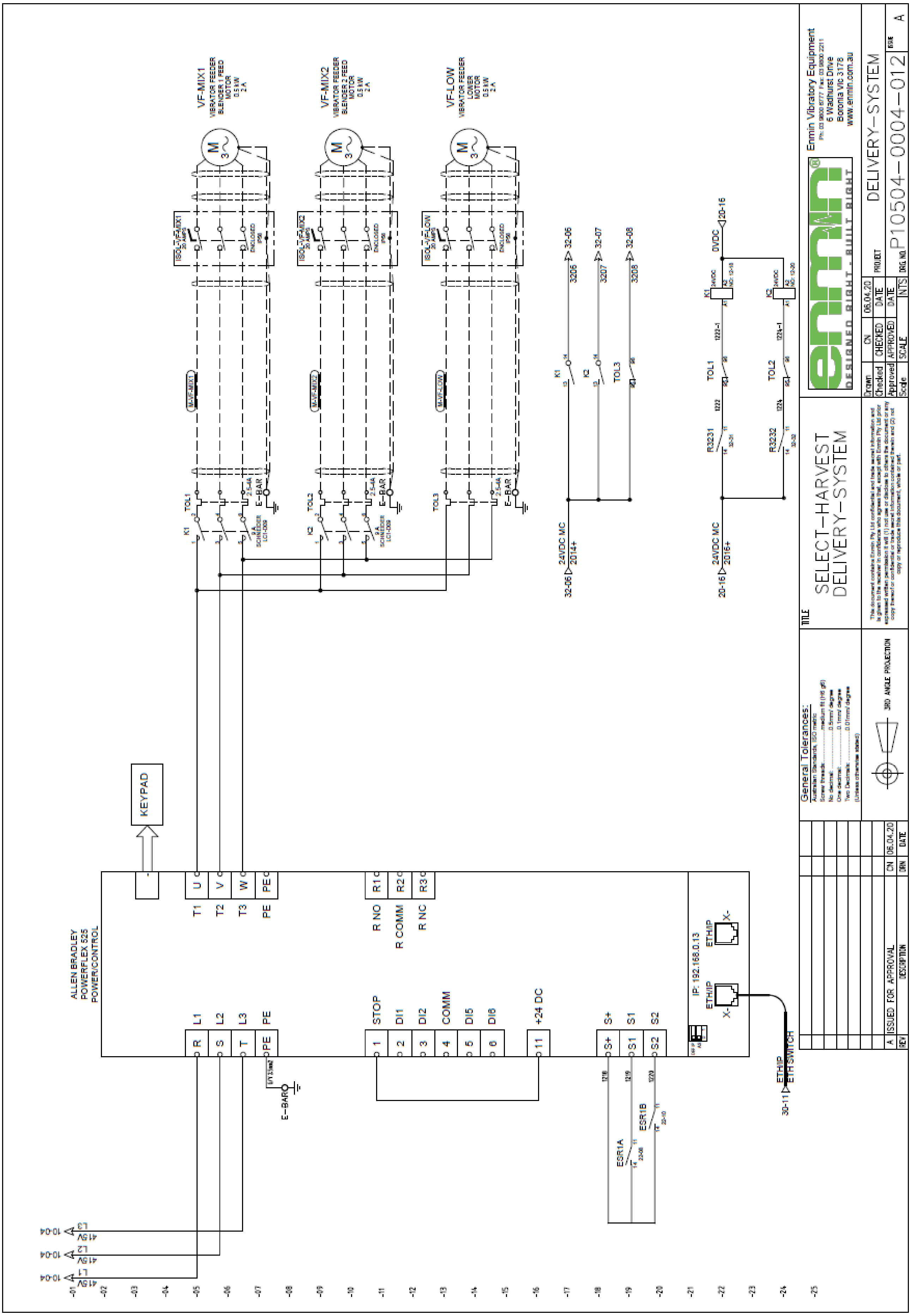
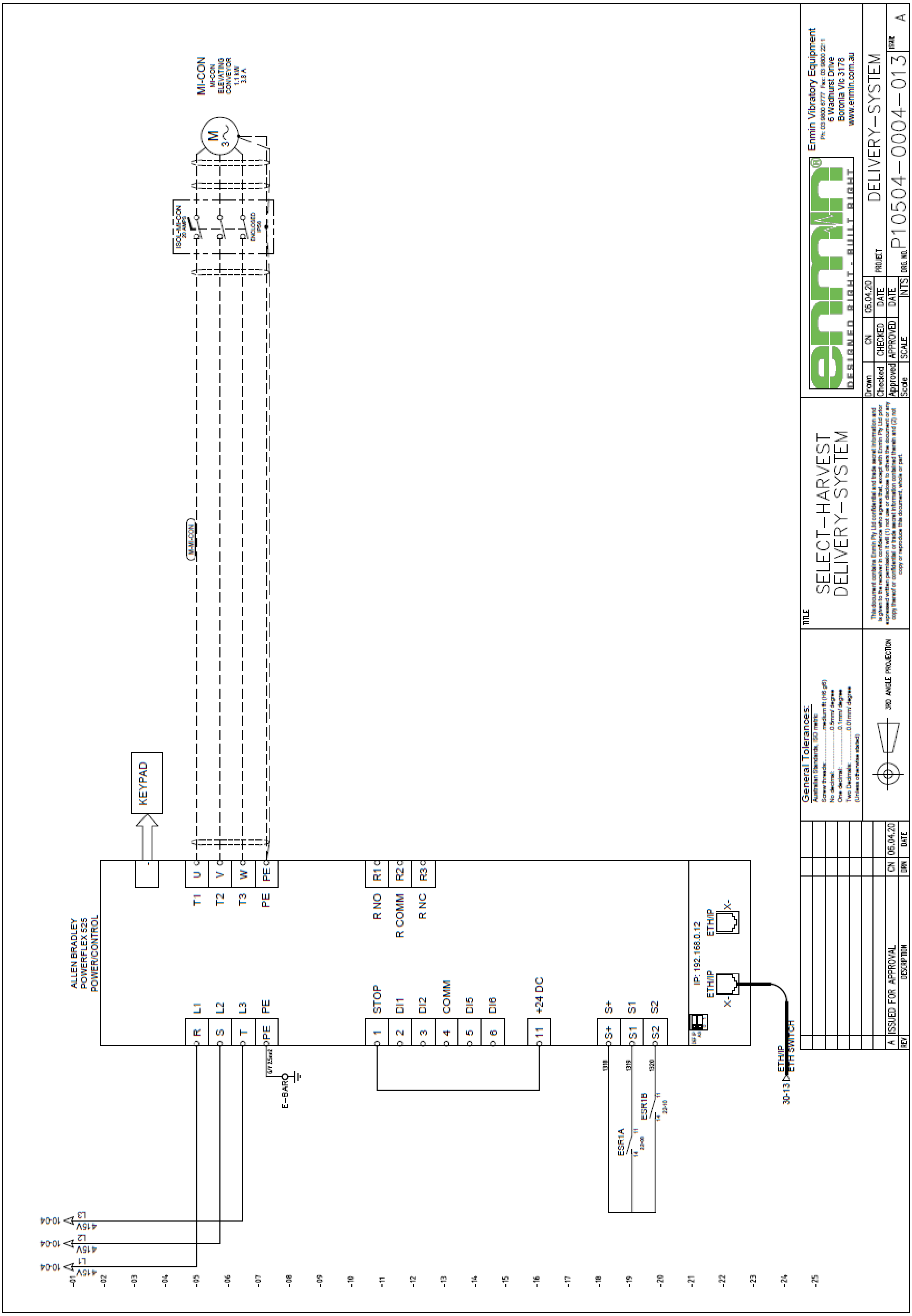
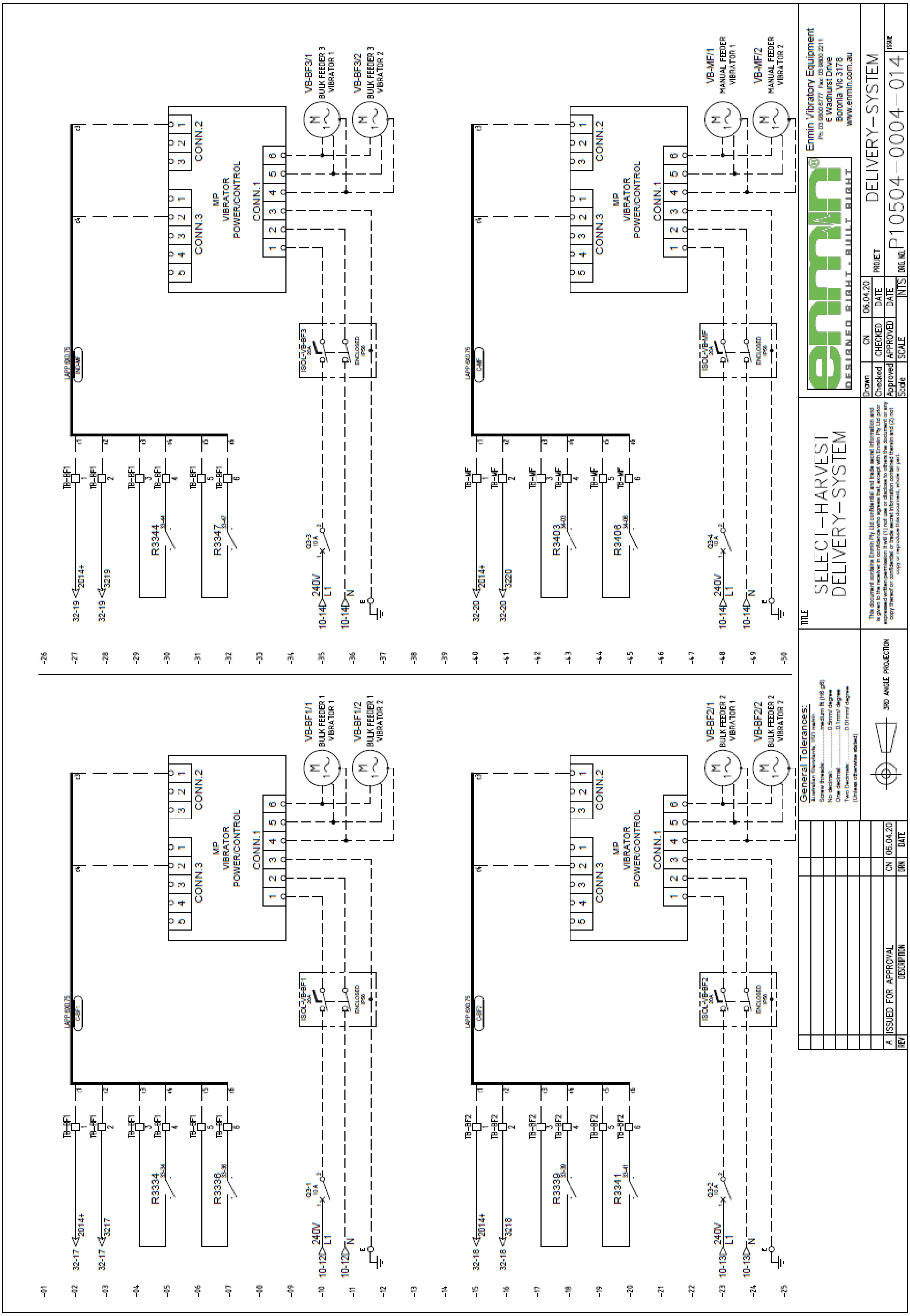
SELECT-HARVEST
DELIVERY-SYSTEM
DELIVERY-SYSTEM
P10504-0004-011
A
ISSUED FOR APPROVAL
CN
06.04.20
NTS
General Tolerances:
3RD ANGLE PROJECTION
K-ES1
K-ES2
24VDC
ESR1C+
2220
22-22
0V
Q3
32A
Q3-1
10A
BULK 1
VIBRATORY
FEEDER
Q3-2
10A
BULK 2
VIBRATORY
FEEDER
Q3-3
10A
BULK 3
VIBRATORY
FEEDER
Q3-4
10A
MANUAL
VIBRATORY
FEEDER
Q3-5
10A
BULK 1
HOIST
Q3-6
10A
BULK 2
HOIST
Q3-7
10A
BULK 3
HOIST
L1
L2
L3
415V
10-10


ALLEN BRADLEY
POWERFLEX 525
POWER/CONTROL
KEYPAD
VF-MIX1
VF-MIX2
VF-LOW
IP: 192.168.0.13
ETH/IP
ETH SWITCH
24VDC MC
SELECT-HARVEST
DELIVERY-SYSTEM
General Tolerances:
3RD ANGLE PROJECTION
Enmin Vibratory Equipment
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au
DELIVERY-SYSTEM
P10504-0004-012
A
ISSUED FOR APPROVAL
06.04.20


MI-CON
ISOL-MI-CON
MI-CON
KEYPAD
ALLEN BRADLEY
POWERFLEX 525
POWER/CONTROL
T1
T2
T3
PE
R NO
R COMM
R NC
L1
L2
L3
PE
STOP
DI1
DI2
COMM
DI5
DI6
+24 DC
S+
S1
S2
IP: 192.168.0.12
ETH/IP
E-BAR
ESR1A
ESR1B
ETH SWITCH
415V
SELECT-HARVEST
DELIVERY-SYSTEM
Enmin Vibratory Equipment
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au
DELIVERY-SYSTEM
P10504-0004-013
A
ISSUED FOR APPROVAL
06.04.20
General Tolerances:
3RD ANGLE PROJECTION
NTS


VB-BF3/1
BULK FEEDER 3
VIBRATOR 1
VB-BF3/2
BULK FEEDER 3
VIBRATOR 2
VB-BF1/1
BULK FEEDER 1
VIBRATOR 1
VB-BF1/2
BULK FEEDER 1
VIBRATOR 2
VB-MF/1
MANUAL FEEDER
VIBRATOR 1
VB-MF/2
MANUAL FEEDER
VIBRATOR 2
VB-BF2/1
BULK FEEDER 2
VIBRATOR 1
VB-BF2/2
BULK FEEDER 2
VIBRATOR 2
MP
VIBRATOR
POWER/CONTROL
CONN.1
CONN.2
CONN.3
R3344
R3347
R3403
R3406
R3334
R3338
R3339
R3341
240V
L1
N
E
Enmin Vibratory Equipment
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au
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TITLE
SELECT-HARVEST
DELIVERY-SYSTEM
PROJECT
DELIVERY-SYSTEM
DRG. NO.
P10504-0004-014
Drawn
CN
06.04.20
Checked
Approved
Scale
NTS
DATE
General Tolerances:
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06.04.20
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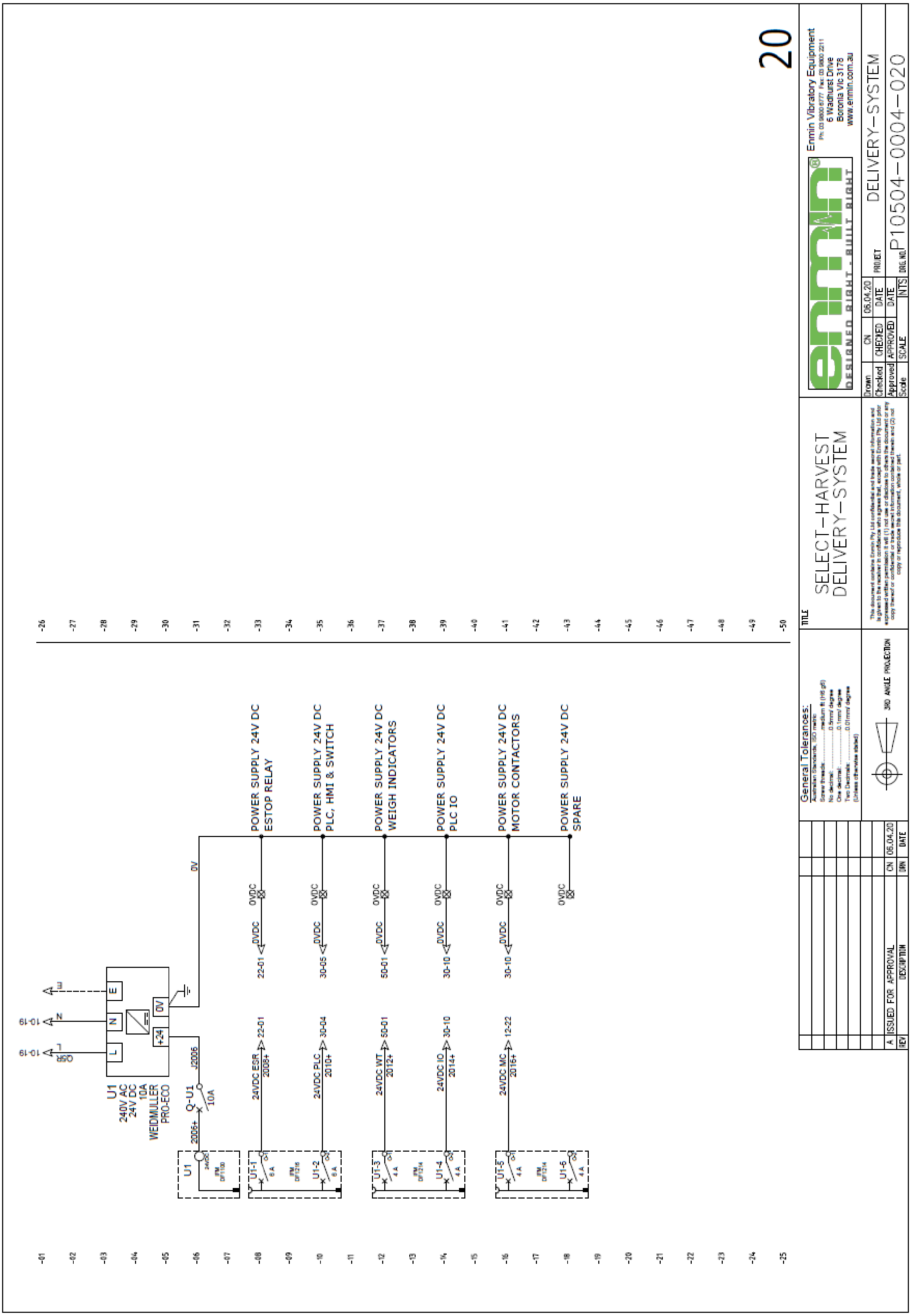
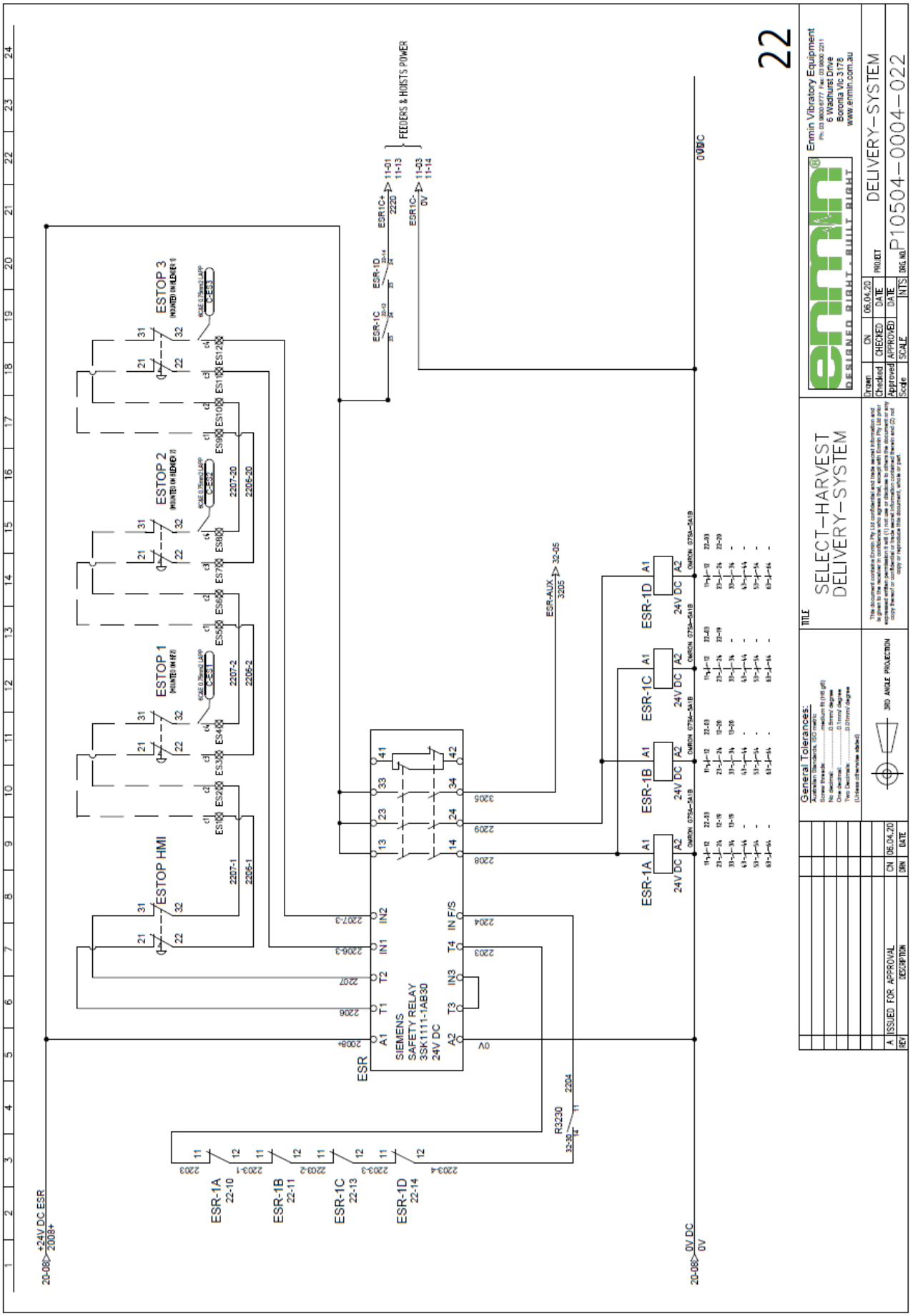
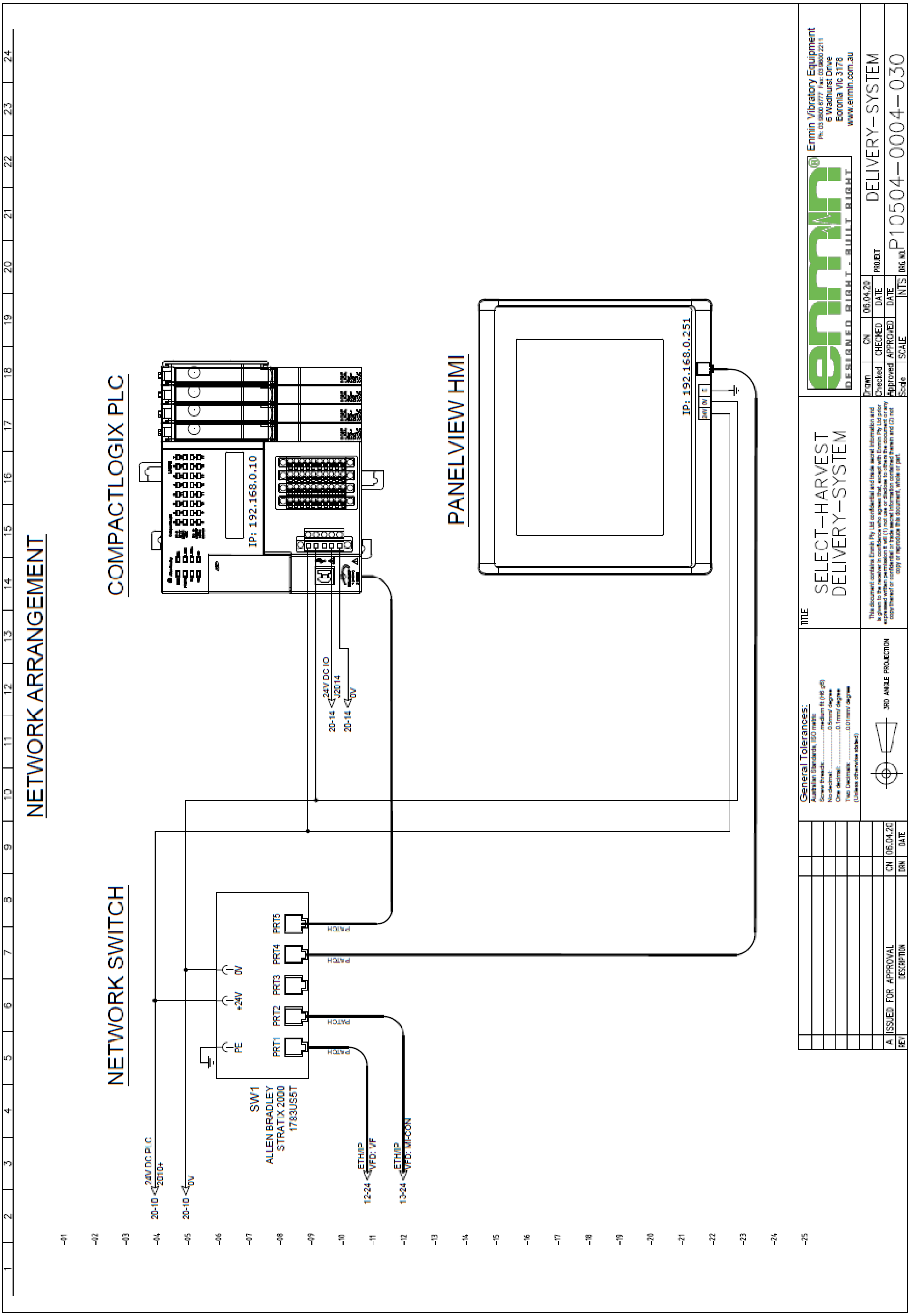
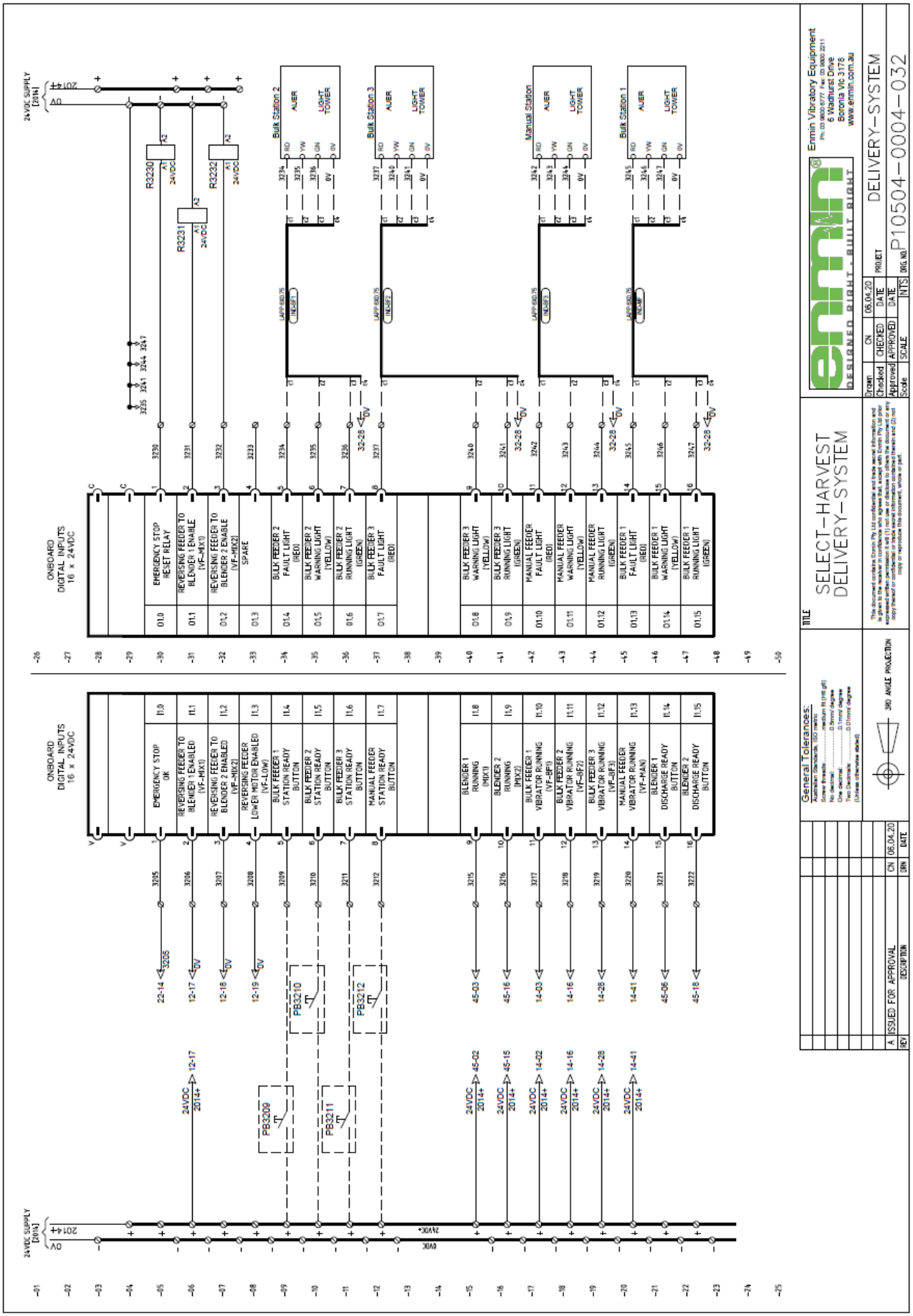
DESCRIPTION
DRN
DATE



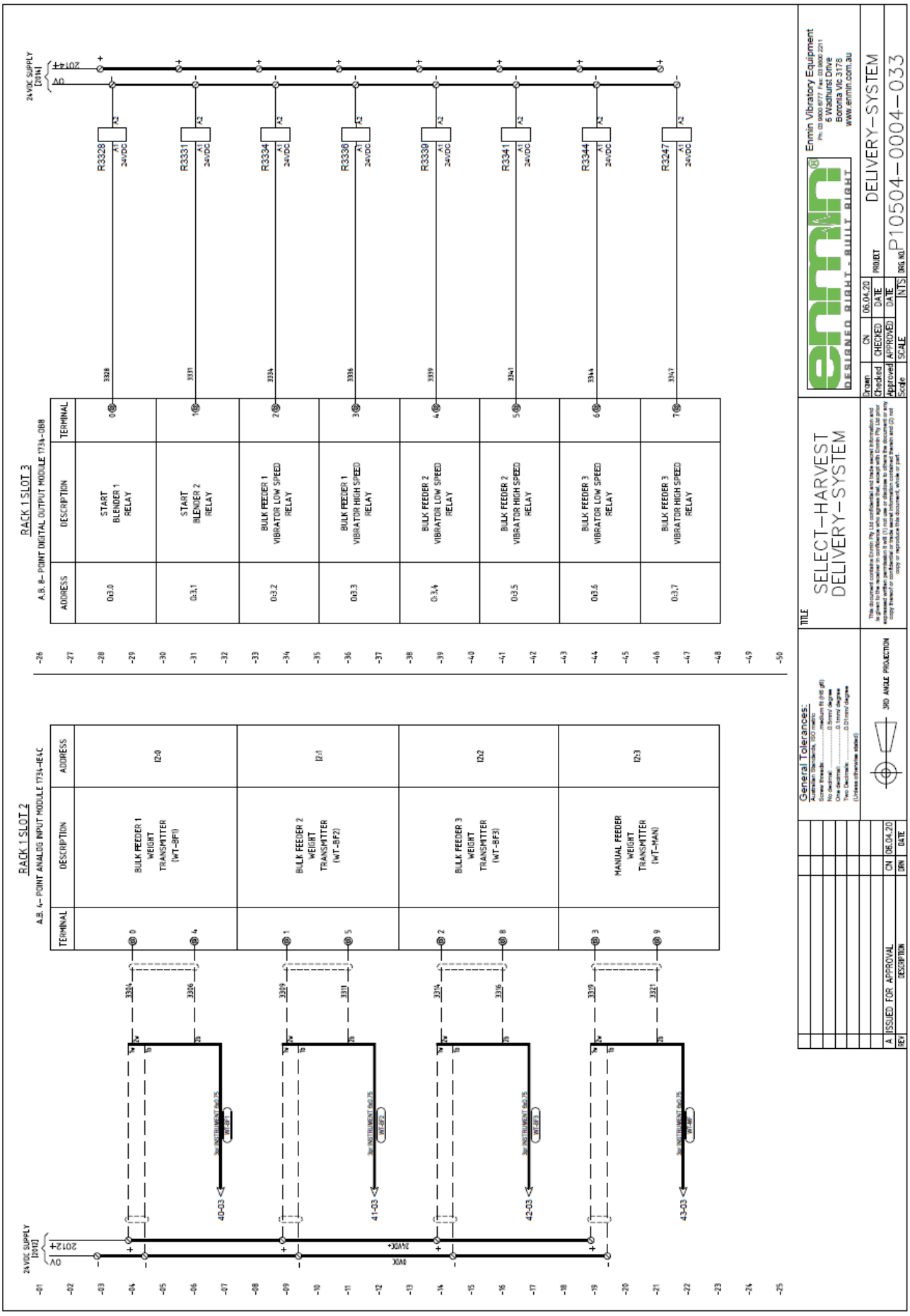
20
U1
240V AC
24V DC
10A
WEIDMULLER
PRO-ECO
Q-U1
10A
0V
POWER SUPPLY 24V DC
ESTOP RELAY
POWER SUPPLY 24V DC
PLC, HMI & SWITCH
POWER SUPPLY 24V DC
WEIGH INDICATORS
POWER SUPPLY 24V DC
PLC IO
POWER SUPPLY 24V DC
MOTOR CONTACTORS
POWER SUPPLY 24V DC
SPARE
General Tolerances:
3RD ANGLE PROJECTION
TITLE
SELECT-HARVEST
DELIVERY-SYSTEM
Enmin Vibratory Equipment
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au
DESIGNED RIGHT - BUILT RIGHT
Drawn
CN
06.04.20
Checked
CHECKED
DATE
Approved
APPROVED
DATE
Scale
SCALE
NTS
PROJECT
DELIVERY-SYSTEM
DRG. NO.
P10504-0004-020
A
ISSUED FOR APPROVAL
CN
06.04.20
REV
DESCRIPTION
DRN
DATE

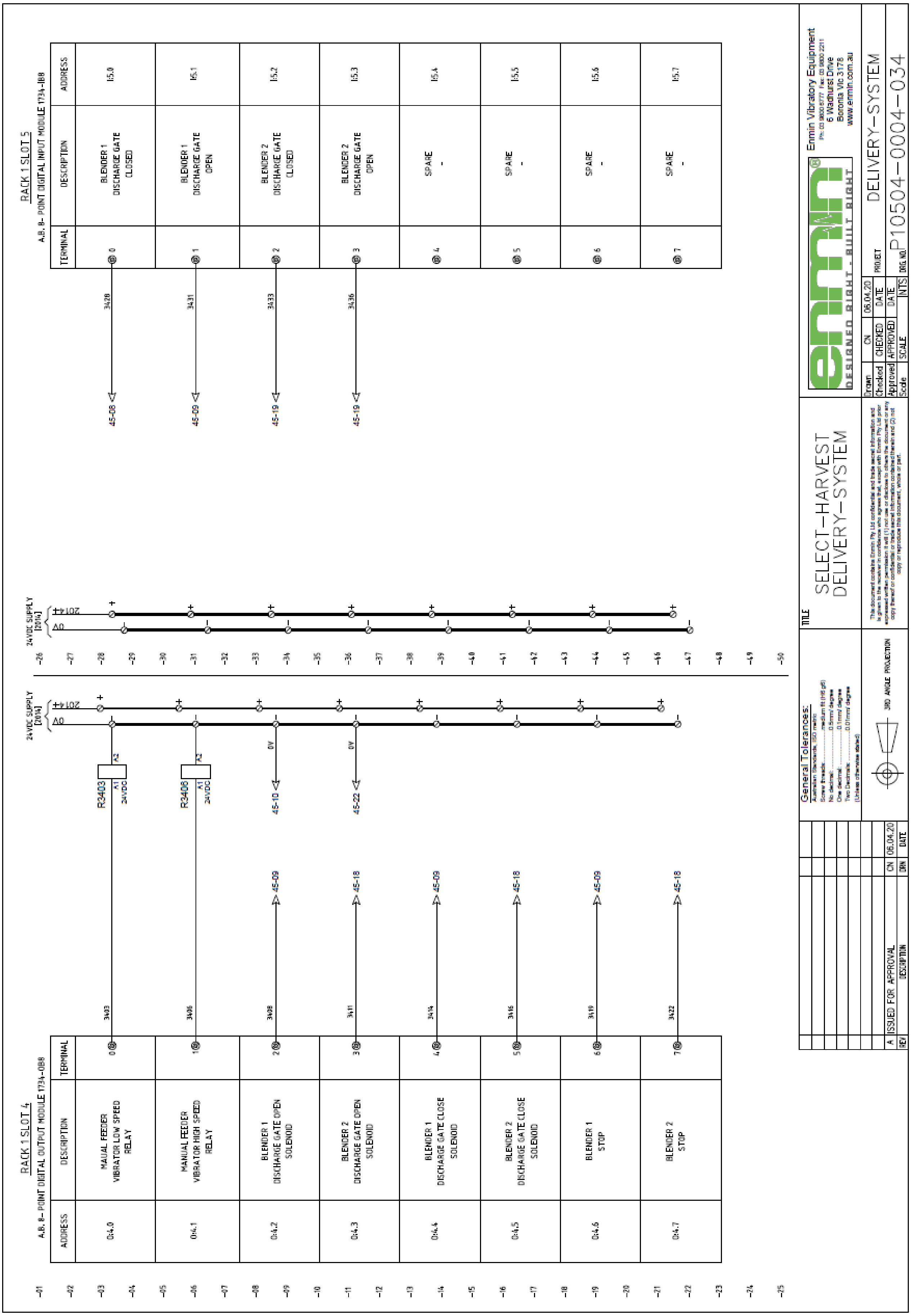

22
SELECT–HARVEST
DELIVERY–SYSTEM
DELIVERY–SYSTEM
P10504–0004–022
Ennvin Vibratory Equipment
6 Washhurst Drive
Boronia Vic 3178
www.ennvin.com.au
DESIGNED RIGHT - BUILT RIGHT
ESTOP 1
ESTOP 2
ESTOP 3
ESTOP HMI
ESR
SIEMENS
SAFETY RELAY
3SK1111-1AB30
24V DC
ESR-1A
ESR-1B
ESR-1C
ESR-1D
FEEDERS & HOISTS POWER
+24V DC ESR
0V DC
ESR-AUX
General Tolerances:
ISSUED FOR APPROVAL


NETWORK ARRANGEMENT
COMPACTLOGIX PLC
IP: 192.168.0.10
PANELVIEW HMI
IP: 192.168.0.251
NETWORK SWITCH
SW1
ALLEN BRADLEY
STRATIX 2000
1783US5T
PRT1
PRT2
PRT3
PRT4
PRT5
PATCH
PE
+24V
0V
24V DC PLC
2010+
24V DC IO
J2014
ETH/IP
VFD: VF
VFD: MI-CON
General Tolerances:
3RD ANGLE PROJECTION
SELECT-HARVEST
DELIVERY-SYSTEM
Enmin Vibratory Equipment
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au
DESIGNED RIGHT - BUILT RIGHT
DELIVERY-SYSTEM
P10504-0004-030
A ISSUED FOR APPROVAL CN 06.04.20
NTS



Select Harvest Delivery System Job No P10504-000


RACK 1 SLOT 3
A.B. 8– POINT DIGITAL OUTPUT MODULE 1734-OB8
ADDRESS
DESCRIPTION
TERMINAL
0:0.0
START BLENDER 1 RELAY
0
0:0.1
START BLENDER 2 RELAY
1
0:0.2
BULK FEEDER 1 VIBRATOR LOW SPEED RELAY
2
0:0.3
BULK FEEDER 1 VIBRATOR HIGH SPEED RELAY
3
0:0.4
BULK FEEDER 2 VIBRATOR LOW SPEED RELAY
4
0:0.5
BULK FEEDER 2 VIBRATOR HIGH SPEED RELAY
5
0:0.6
BULK FEEDER 3 VIBRATOR LOW SPEED RELAY
6
0:0.7
BULK FEEDER 3 VIBRATOR HIGH SPEED RELAY
7
R3328
R3331
R3334
R3336
R3339
R3341
R3344
R3247
24VDC SUPPLY [2014]
201+
0V
RACK 1 SLOT 2
A.B. 4– POINT ANALOG INPUT MODULE 1734-IE4C
I2:0
BULK FEEDER 1 WEIGHT TRANSMITTER (WT-BF1)
I2:1
BULK FEEDER 2 WEIGHT TRANSMITTER (WT-BF2)
I2:2
BULK FEEDER 3 WEIGHT TRANSMITTER (WT-BF3)
I2:3
MANUAL FEEDER WEIGHT TRANSMITTER (WT-MAN)
24VDC SUPPLY [2012]
201-
201+
0V
24VDC+
0VDC
40-03
41-03
42-03
43-03
General Tolerances:
3rd ANGLE PROJECTION
TITLE
SELECT–HARVEST DELIVERY–SYSTEM
Enmin Vibratory Equipment
6 Wadhurst Drive
Boronia Vic 3176
www.enmin.com.au
DESIGNED RIGHT - BUILT RIGHT
Drawn
CN
06.04.20
DATE
PROJECT
DELIVERY–SYSTEM
Checked
CHECKED
DATE
Approved
APPROVED
DATE
Scale
SCALE
NTS
DRG NO.
P10504–0004–033
A
ISSUED FOR APPROVAL
CN
06.04.20
REV
DESCRIPTION
DRN
DATE


RACK 1 SLOT 5
A.B. 8- POINT DIGITAL INPUT MODULE 1734-IB8
ADDRESS
DESCRIPTION
TERMINAL
I5.0 BLENDER 1 DISCHARGE GATE CLOSED
I5.1 BLENDER 1 DISCHARGE GATE OPEN
I5.2 BLENDER 2 DISCHARGE GATE CLOSED
I5.3 BLENDER 2 DISCHARGE GATE OPEN
I5.4 SPARE
I5.5 SPARE
I5.6 SPARE
I5.7 SPARE
24VDC SUPPLY
RACK 1 SLOT 4
A.B. 8- POINT DIGITAL OUTPUT MODULE 1734-OB8
O4.0 MAUAL FEEDER VIBRATOR LOW SPEED RELAY
O4.1 MANUAL FEEDER VIBRATOR HIGH SPEED RELAY
O4.2 BLENDER 1 DISCHARGE GATE OPEN SOLENOID
O4.3 BLENDER 2 DISCHARGE GATE OPEN SOLENOID
O4.4 BLENDER 1 DISCHARGE GATE CLOSE SOLENOID
O4.5 BLENDER 2 DISCHARGE GATE CLOSE SOLENOID
O4.6 BLENDER 1 STOP
O4.7 BLENDER 2 STOP
R3403
R3406
General Tolerances:
3RD ANGLE PROJECTION
A ISSUED FOR APPROVAL CN 06.04.20
SELECT-HARVEST DELIVERY-SYSTEM
Enmin Vibratory Equipment
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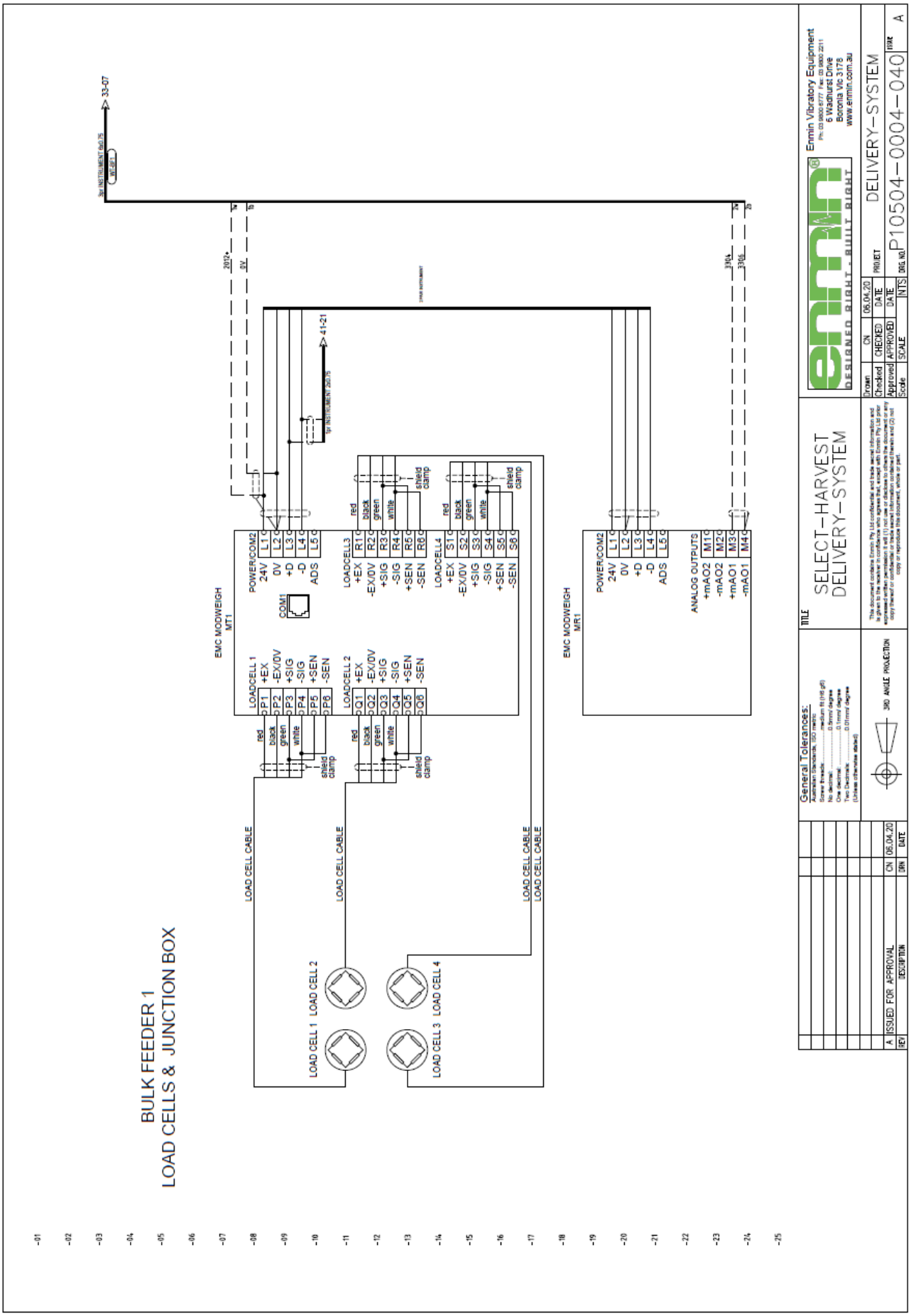
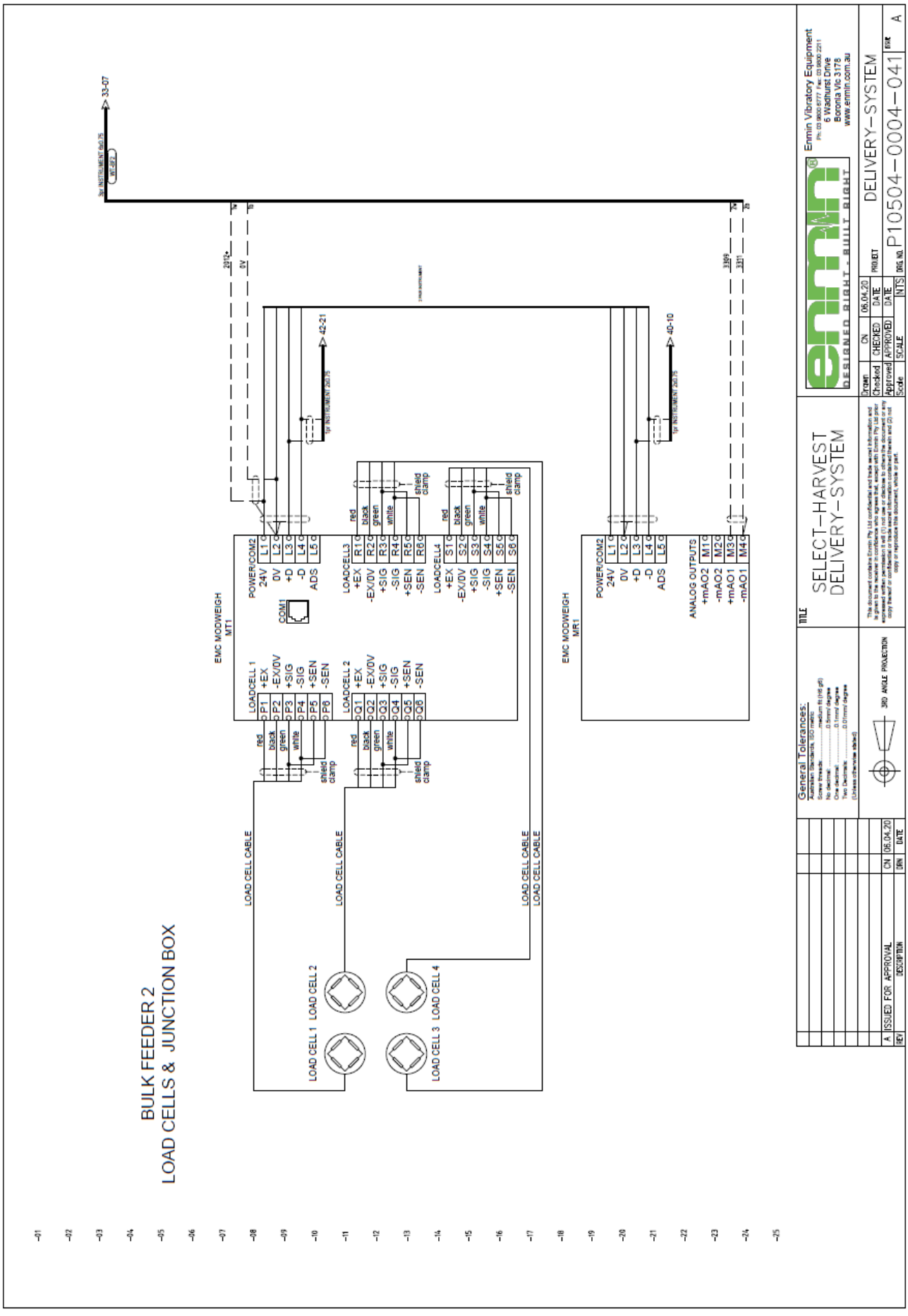
www.enmin.com.au
DESIGNED RIGHT. BUILT RIGHT
DELIVERY-SYSTEM
P10504-0004-034


BULK FEEDER 1
LOAD CELLS & JUNCTION BOX
SELECT-HARVEST
DELIVERY-SYSTEM
DELIVERY-SYSTEM
P10504-0004-040
Enmin Vibratory Equipment
6 Washhurst Drive
Boronia Vic 3178
www.enmin.com.au
DESIGNED RIGHT - BUILT RIGHT
EMC MODWEIGH MT1
EMC MODWEIGH MR1
POWER/COM2
LOADCELL 1
LOADCELL 2
LOADCELL 3
LOADCELL 4
ANALOG OUTPUTS
LOAD CELL CABLE
LOAD CELL 1
LOAD CELL 2
LOAD CELL 3
LOAD CELL 4
3RD ANGLE PROJECTION
ISSUED FOR APPROVAL


BULK FEEDER 2
LOAD CELLS & JUNCTION BOX
SELECT-HARVEST
DELIVERY-SYSTEM
DELIVERY-SYSTEM
P10504-0004-041
LOAD CELL 1
LOAD CELL 2
LOAD CELL 3
LOAD CELL 4
LOAD CELL CABLE
EMC MODWEIGH MT1
EMC MODWEIGH MR1
POWER/COM2
LOADCELL 1
LOADCELL 2
LOADCELL3
LOADCELL4
ANALOG OUTPUTS
ADS
Enmin Vibratory Equipment
6 Washurst Drive
Boronia Vic 3178
www.enmin.com.au
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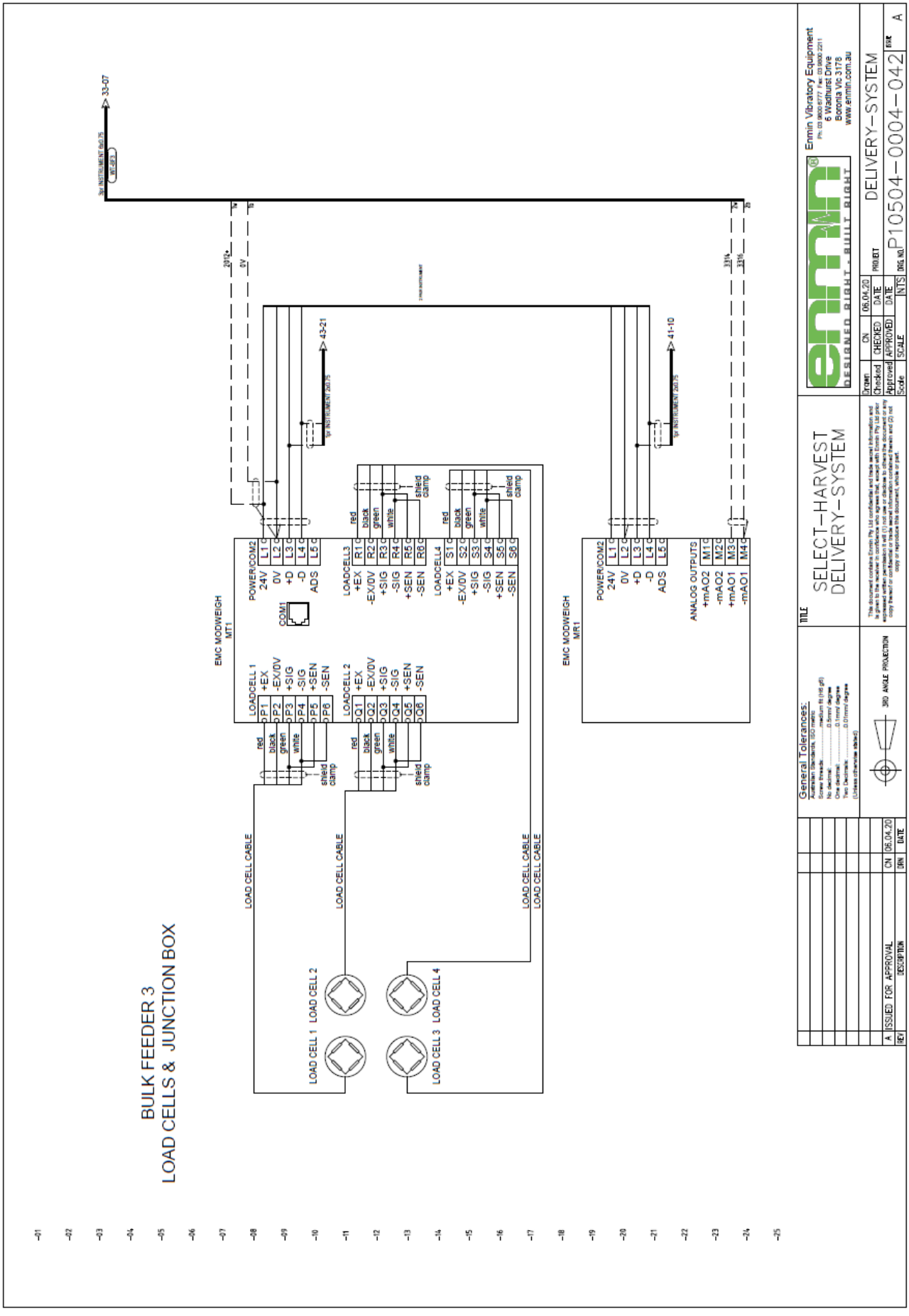
ISSUED FOR APPROVAL
3RD ANGLE PROJECTION


BULK FEEDER 3
LOAD CELLS & JUNCTION BOX
EMC MODWEIGH MT1
EMC MODWEIGH MR1
POWER/COM2
LOADCELL 1
LOADCELL 2
LOADCELL 3
LOADCELL 4
ANALOG OUTPUTS
LOAD CELL CABLE
LOAD CELL 1
LOAD CELL 2
LOAD CELL 3
LOAD CELL 4
SELECT-HARVEST DELIVERY-SYSTEM
DELIVERY-SYSTEM
P10504-0004-042
Enmin Vibratory Equipment
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Boronia Vic 3178
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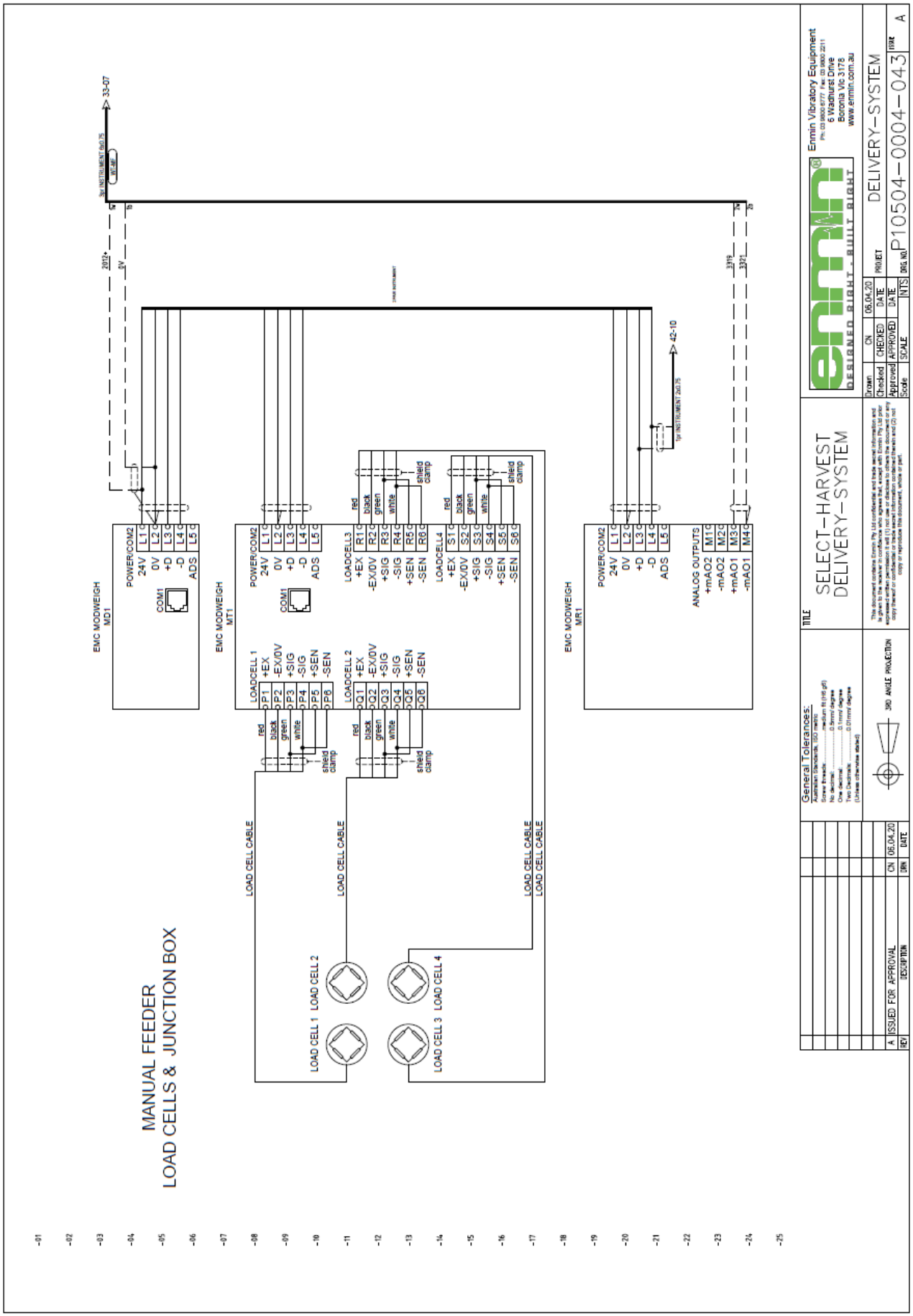
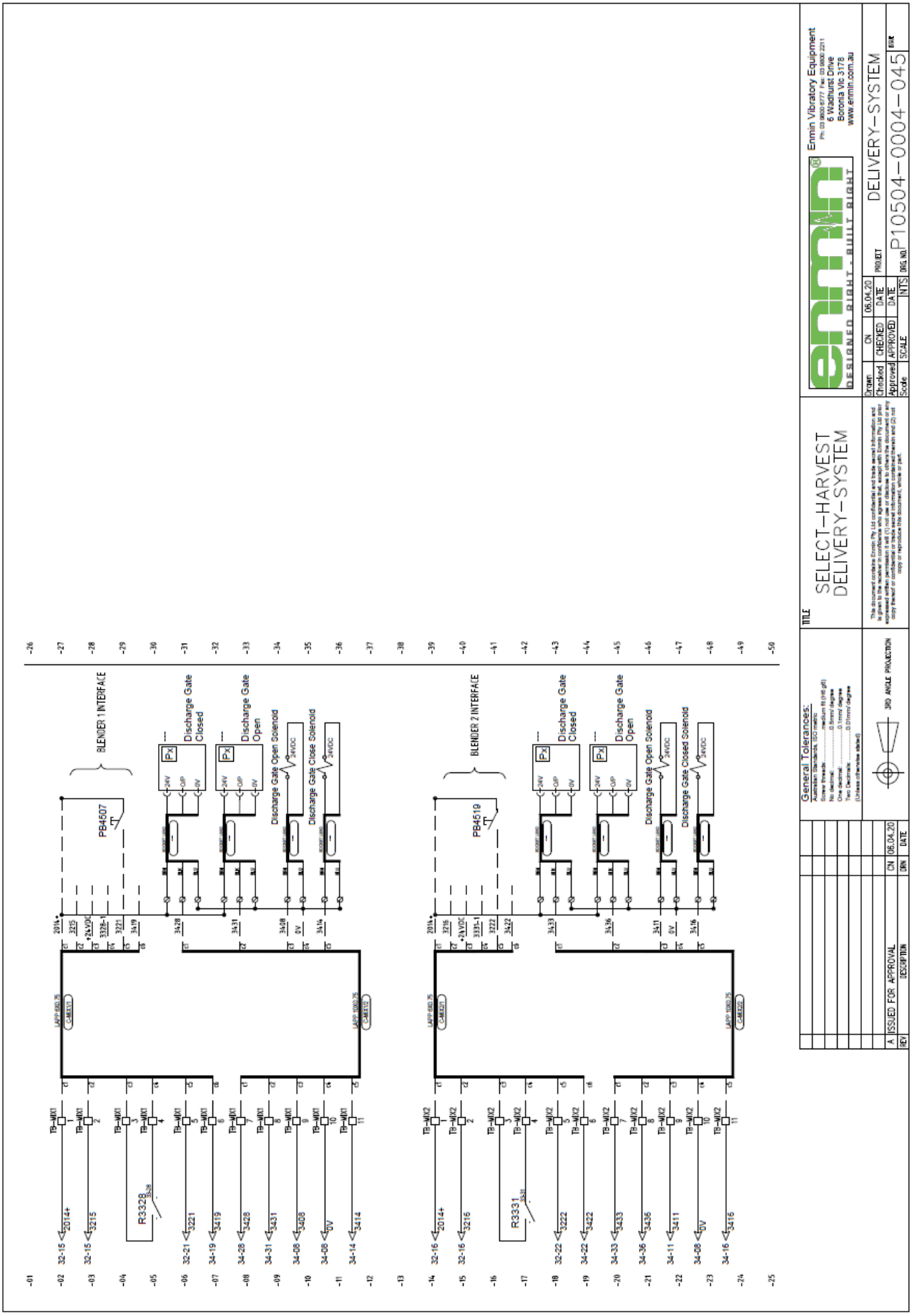
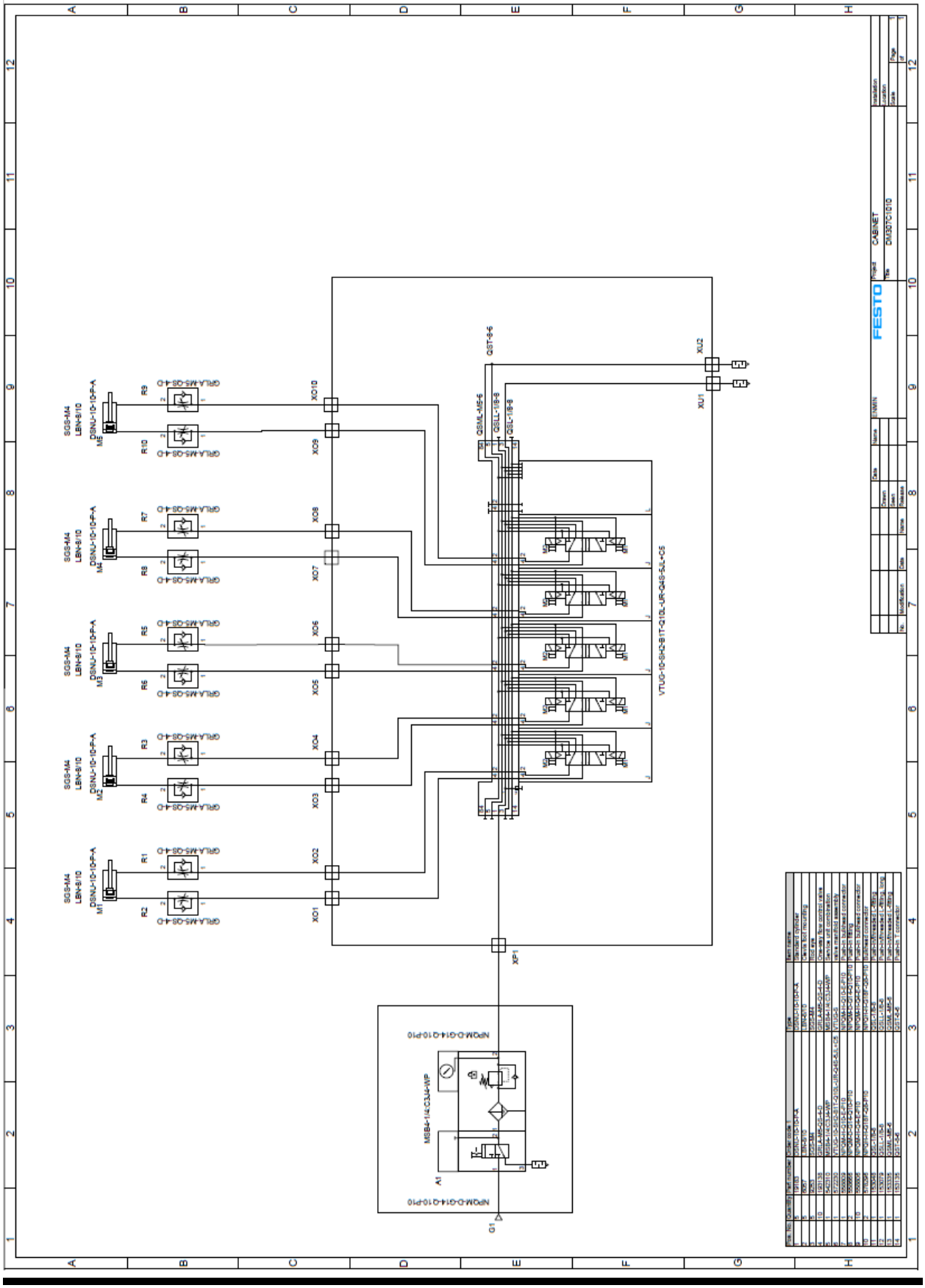
3RD ANGLE PROJECTION


MANUAL FEEDER
LOAD CELLS & JUNCTION BOX
SELECT-HARVEST
DELIVERY-SYSTEM
DELIVERY-SYSTEM
P10504-0004-043
Ennin Vibratory Equipment
6 Washurst Drive
Boronia Vic 3178
www.ennin.com.au
EMC MODWEIGH MD1
EMC MODWEIGH MT1
EMC MODWEIGH MR1
POWER/COM2
LOADCELL 1
LOADCELL 2
LOADCELL 3
LOADCELL 4
ANALOG OUTPUTS
LOAD CELL CABLE
LOAD CELL 1
LOAD CELL 2
LOAD CELL 3
LOAD CELL 4
3RD ANGLE PROJECTION
ISSUED FOR APPROVAL


BLENDER 1 INTERFACE
PB4507
Discharge Gate Closed
Discharge Gate Open
Discharge Gate Open Solenoid
Discharge Gate Close Solenoid
BLENDER 2 INTERFACE
PB4519
Discharge Gate Closed
Discharge Gate Open
Discharge Gate Open Solenoid
Discharge Gate Closed Solenoid
R3328
R3331
SELECT–HARVEST
DELIVERY–SYSTEM
Enmin Vibratory Equipment
6 Wadhurst Drive
Boronia Vic 3178
www.enmin.com.au
DELIVERY–SYSTEM
P10504–0004–045

SECTION 7 *PNEUMATIC SCHEMATICS*



Appendix 1

SEW Geared Motor

- SEW Geared Motors

Appendix 2

Ammeraal AEON Belt

- FDA Belt Approval
- Design Guide Lines
- General Information

Appendix 3

MP Controller Manuals

Appendix 4

LOAD CELL Manuals