TURNSTAR

RELIABLE ★ DURABLE ★ GUARANTEED

USER MANUAL

FULL HEIGHT BICYCLE TURNSTILE

FOR PEDESTRIAN & BICYCLE ACCESS

CONTENTS

1. INTRODUCTION

1.1. A bicycle full height turnstile is a type of gate used for controlling access to a restricted area.

1.2. It is designed specifically for use by bicyclists and allows them to enter and exit the area by through the turnstile with a bicycle.

1.3. The turnstile is full height, meaning it extends from the ground to the ceiling, providing a barrier to unauthorized entry.

1.4. The turnstile typically operates using a card reader or other electronic means of accessing the restricted area. It can be used in a variety of settings, such as bike-sharing stations, bike parks, and other locations where bike access needs to be controlled.

1.5. The bicycle is detected by means of a pre-installed inductive loop in front of the bicycle gate area. The loop detects a bicycle on entry and opens the gate when the entry trigger is activated, and closes the gate after the bicycle passes over the exit loop.

1.6. The inductive loop detects the metal on the steel frame of the bicycle.

2. LAYOUT

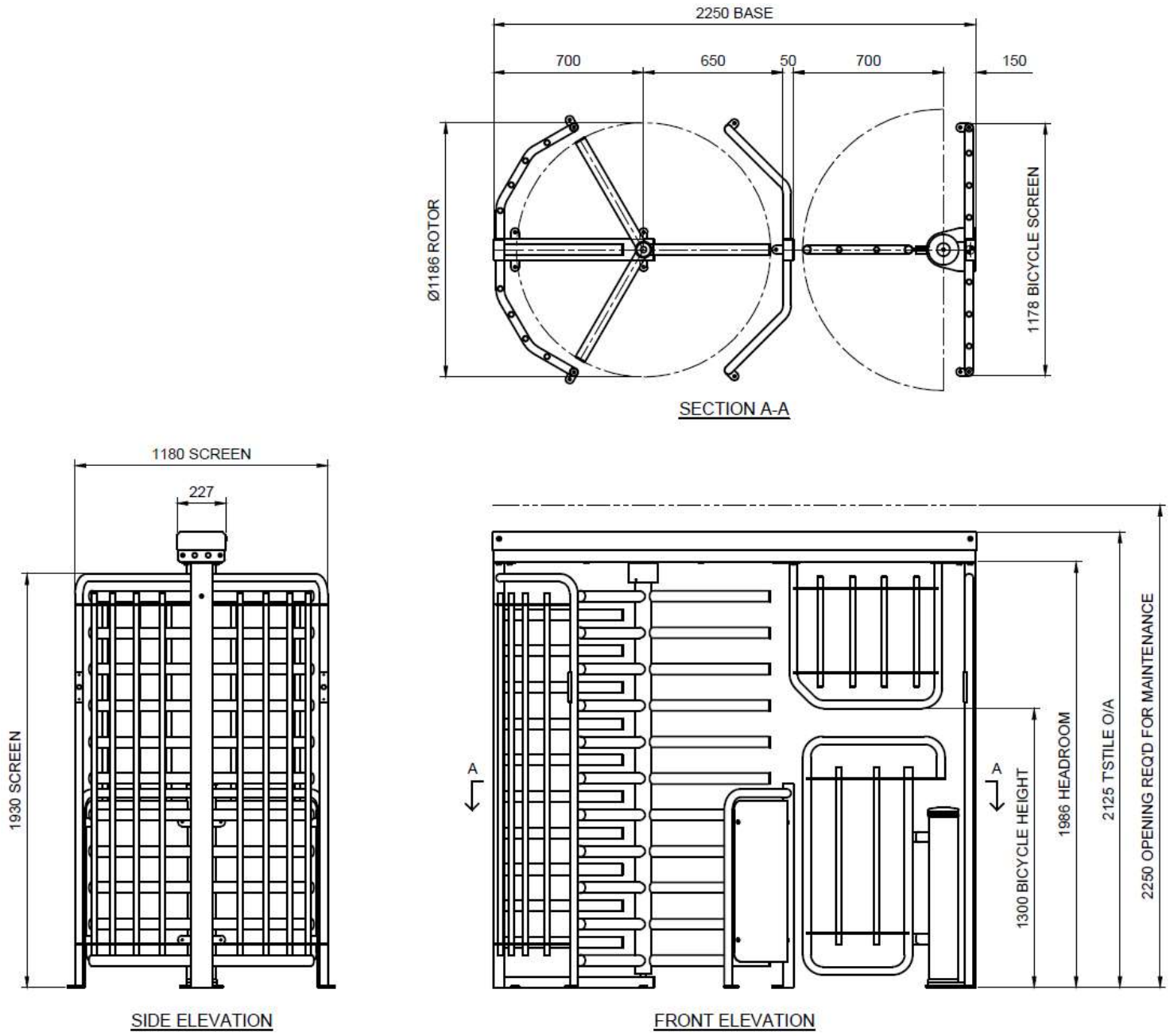

Figure 1: Layout of 3-Arm Bicycle Turnstile

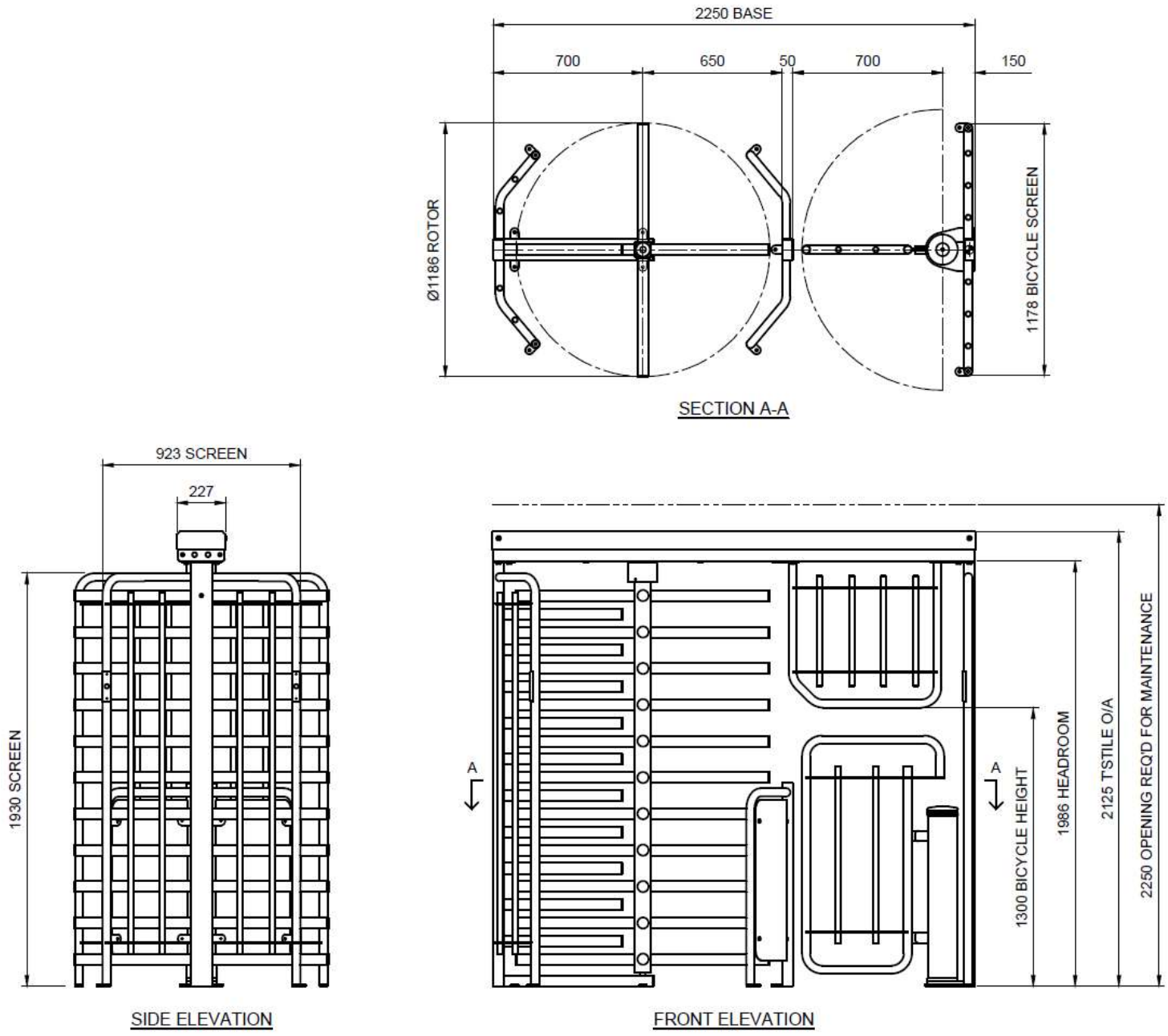

Figure 2: Layout of 4-Arm Bicycle Turnstile

2.1. The turnstile, either 3- or 4-arm requires a plinth of concrete to be prepared before installation, where the conduits and cabling for power & data is provided.

2.2. The cables must extend +- 4 meters above ground level, with the PVC conduit terminating flush with the floor level.

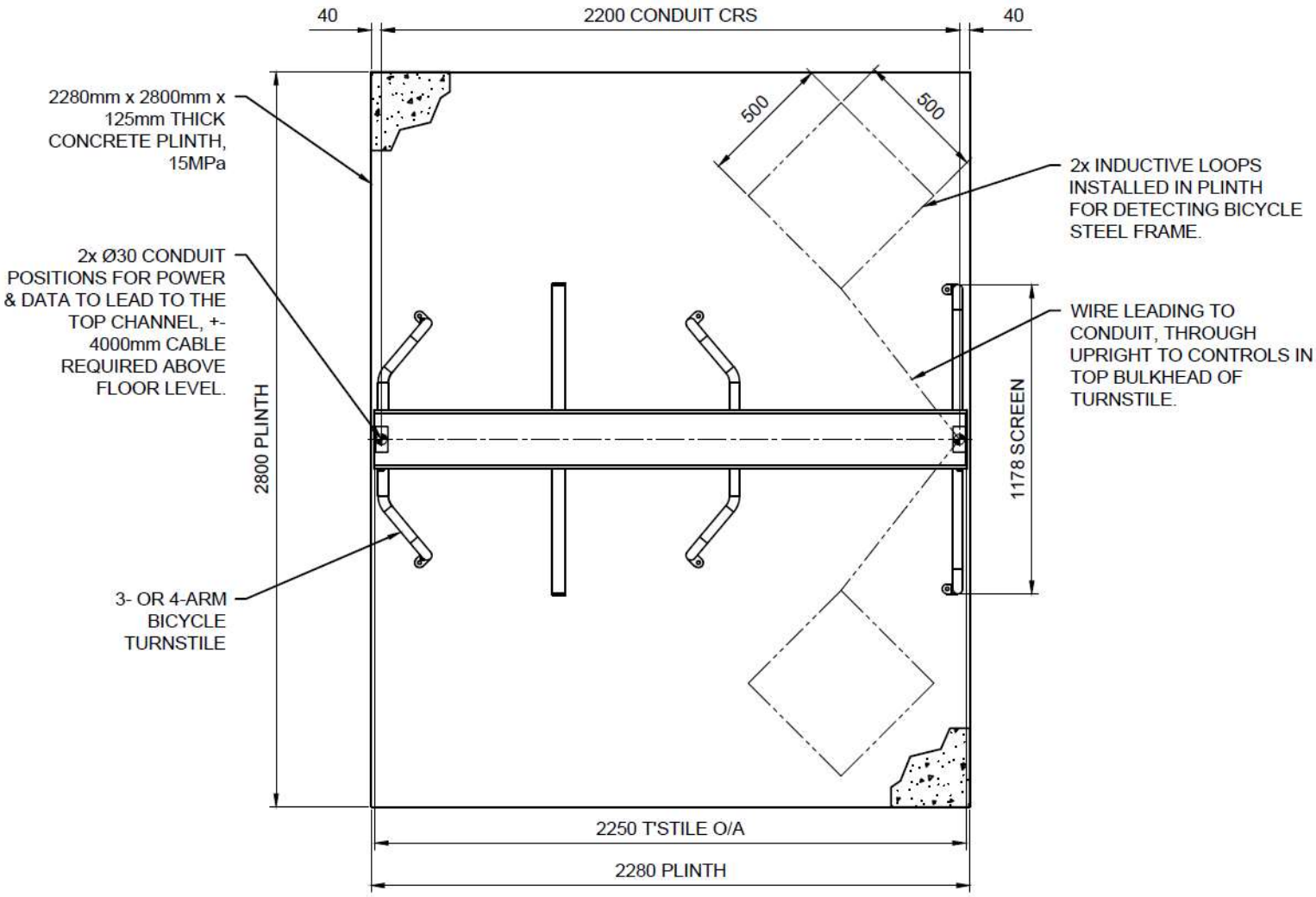

Figure 3: Plinth requirement for Bicycle Turnstiles

3. OPERATION

3.1. The cycle of operation described below can be used from either side of the turnstile, as the turnstile is bi-directional. If only a single side entry is required, this can be changed in the settings as required.

3.2. For normal operation of the turnstile without a bicycle, trigger the card reader from the approach side. The turnstile will unlock.

3.3. Move through the turnstile rotor by pushing the rotor by hand.

3.4. When existing the rotor, the turnstile will lock.

3.5. For normal with a bicycle, trigger the card reader from the approach side. With bicycle over the loop, the gate will automatically open, and the turnstile will unlock.

3.6. Move through the turnstile through the rotor, pushing the rotor by hand and pushing the bicycle through the gate.

3.7. When existing the rotor, the turnstile will lock.

3.8. When the bicycle passes the exit loop, the gate will automatically close.

4. PARTS

4.1. The turnstile consists of 8 main parts:

- Comb screen.
- Rotor.
- Half screen.
- Automatic Gate.
- Bicycle Screen.
- Gate Top Frame.
- Channel.
- Top Cover.

4.2. The comb screen and bicycle screen should be assembled with the top channel first, then the rotor with the mechanism and then the gate and gate top frame.

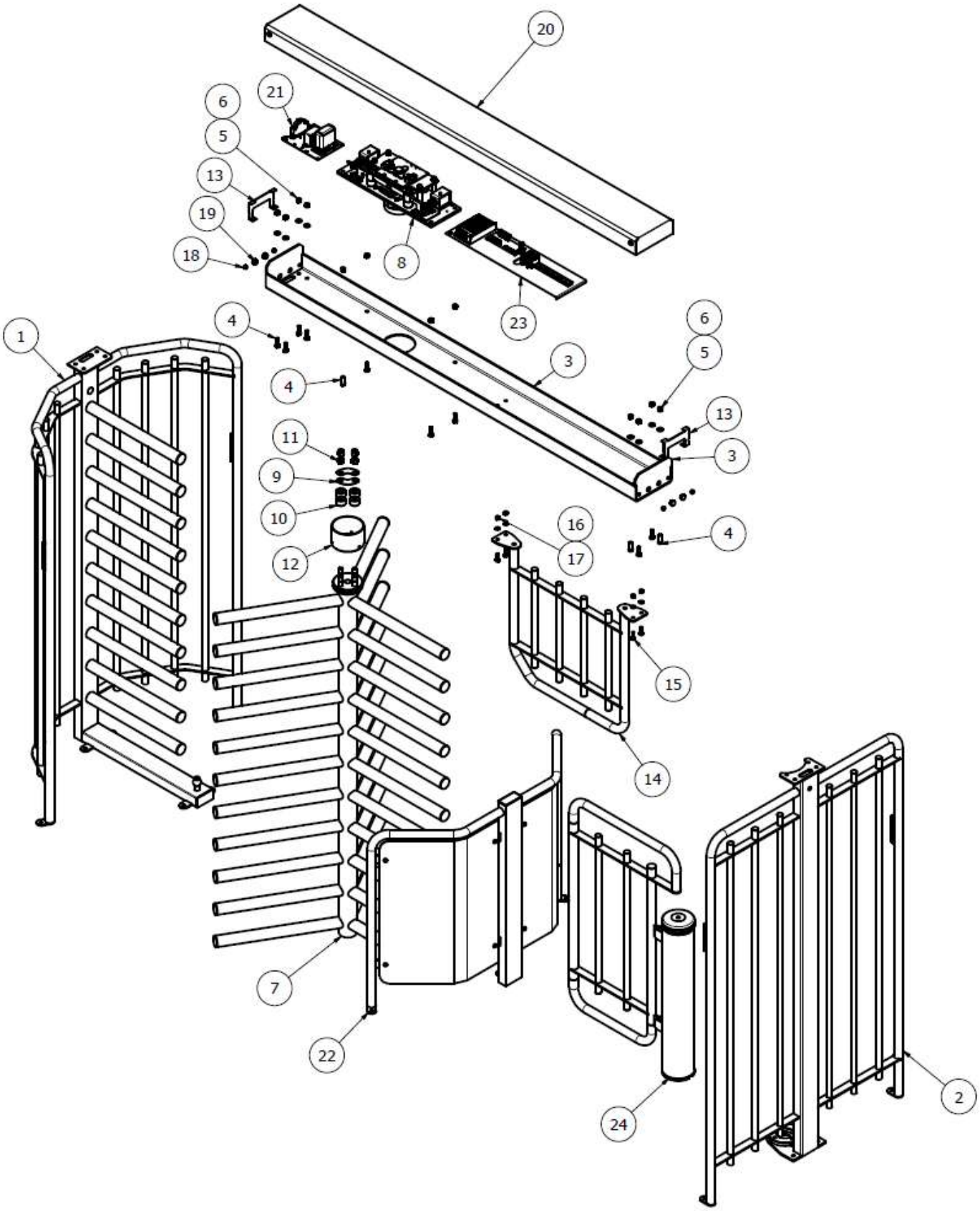

Figure 4: Assembly of 3-arm Full Height Turnstile

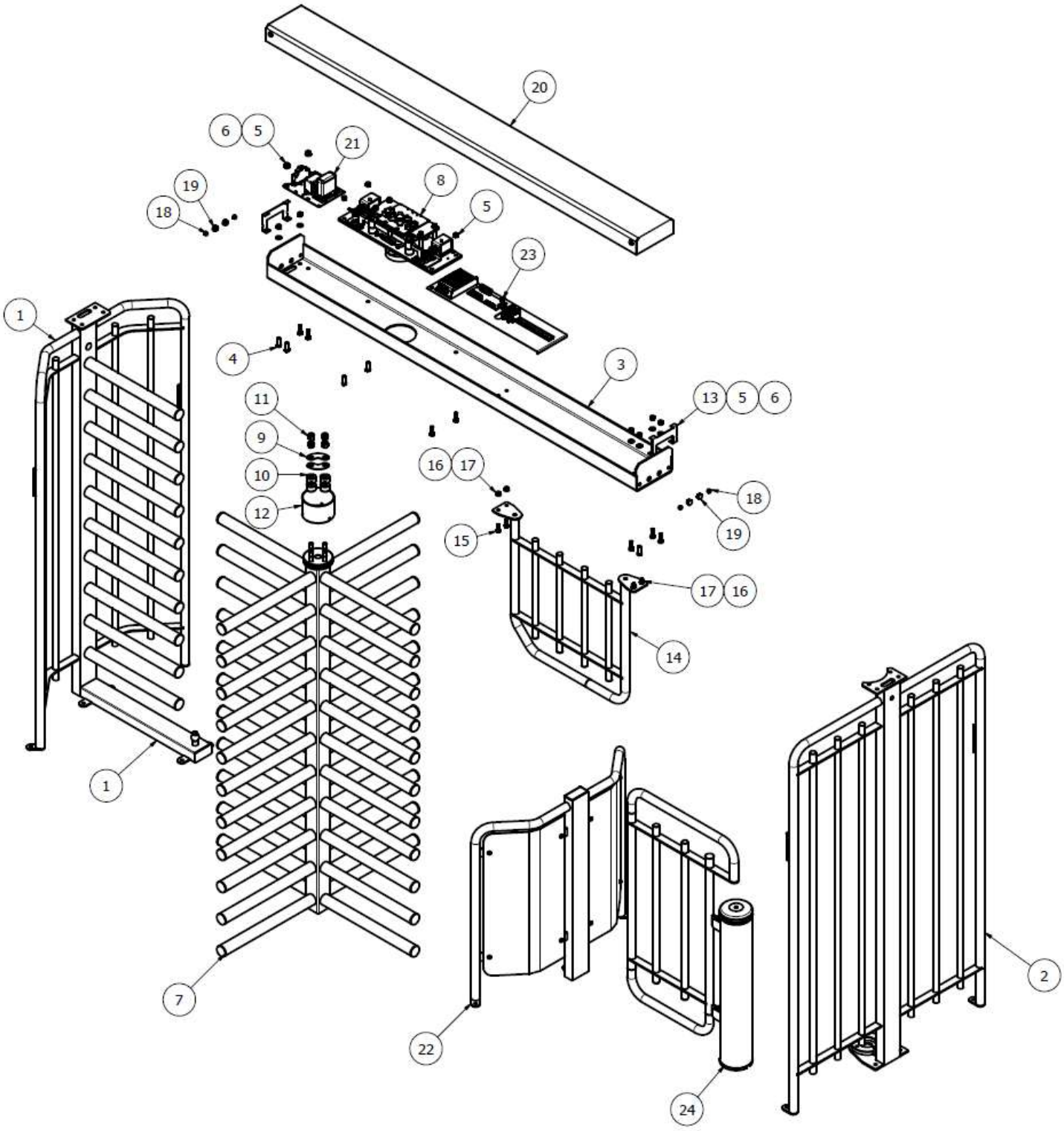

Figure 5: Assembly of 4-arm Full Height Turnstile

Table 1: Parts List for Turnstile

No	Qty	Part Number	Description
1	1	1445-SA-01 *	BICYCLE TURNSTILE 3-ARM SCREEN COMB ASSEMBLY
2	1	1445-SA-07	FLAT 1400 BICYCLE SCREEN ASSEMBLY
3	1	1445-WM-15	2250 BICYCLE TOP CHANNEL WELDMENT
4	12	M12x35-HSS-ZP	M12x35 HEX SET SCREW, ZP
5	12	M12-HN-ZP	M12 HEXNUT, ZINC PLATED
6	8	M12x24-PFW-ZP	M12x24 PLAIN FLAT WASHER, ZP
7	1	FHT-SA-27 *	TITAN 3 SINGLE ROTOR ASSEMBLY
8	1	TSM-AS-02 *	3-ARM FH MECHANISM – FAIL SECURE
9	2	FHT-LC-33	BEAN WASHER
10	4	FHT-PT-02	RUBBER DISK BUFFER, 40 OD x 16 ID x 25mm
11	4	M16-NHN-ZP	M16 NYLOCK HEX NUT, ZP
12	1	FHT-SA-01	TOP DISK SLEEVE ASSEMBLY
13	2	FHT-LC-29	LOCKING PLATE
14	1	1445-SA-08	BICYCLE GATE TOP FRAME
15	4	M10x30-HSS-ZP	M10x30 HEX SET SCREW, ZP
16	4	M10x20-PFW-ZP	M10x20 PLAIN FLAT WASHER, ZP
17	4	M10-HN-ZP	M10 HEX NUT, ZP
18	4	13-PP-BL	DIA 13 INTERNAL PANEL PLUG, BLACK HDPE
19	4	20_22-DPP-BL	DIA 20-22 DOME PANEL PLUG, BLACK HDPE
20	1	1445-SA-03	TOP COVER ASSEMBLY
21	1	CP-AS-03	FULL HEIGHT CONTROL PANEL ASSY
22	1	1445-SA-21	3-ARM BICYCLE PLATE SCREEN ASSEMBLY
23	1	1445-SA-20	CONTROLS FOR PULSE GATE
24	1	1445-SA-13	BICYCLE GATE AUTOMATIC SS
*: Part number may differ per model e.g., 3-arm or 4-arm.			
Note: Part numbers shown for mild steel version. Stainless steel version numbers will differ.			

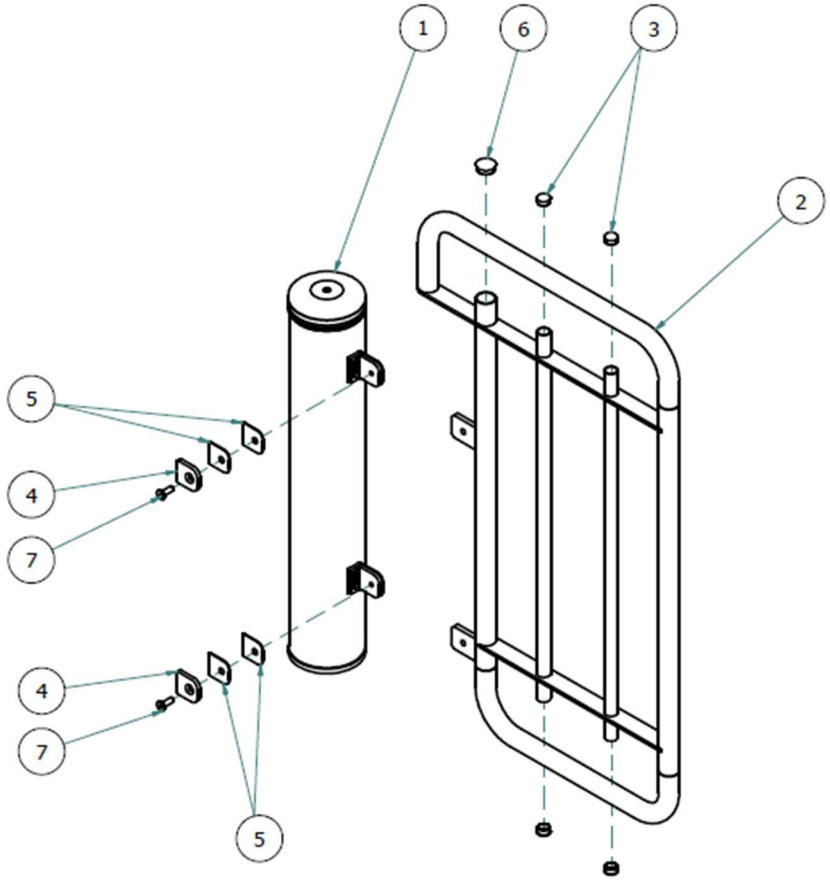

Figure 6: Assembly of Gate Frame

Table 2: Parts List for Gate Frame

No	Qty	Part Number	Description
1	1	SNGA-AS-07	GENERAL ASSEMBLY MOTOR PILLAR ONLY (SWIFT)
2	1	1445-WM-20	BICYCLE GATE WELDMENT SS
3	4	25-TP-BL	DIA 25 TUBE PLUG, BLACK HDPE
4	2	SNGA-LC-13	GLASS MOUNTING TAB MOVING
5	4	SNGA-PT-02	GLASS CLAMP RUBBER
6	1	38-TP-BL	DIA 38 TUBE PLUG, BLACK HDPE
7	2	M10x30-CSK-A2	M10x30 SOCKETHEAD COUNTERSUNK CAPSCREW, A2

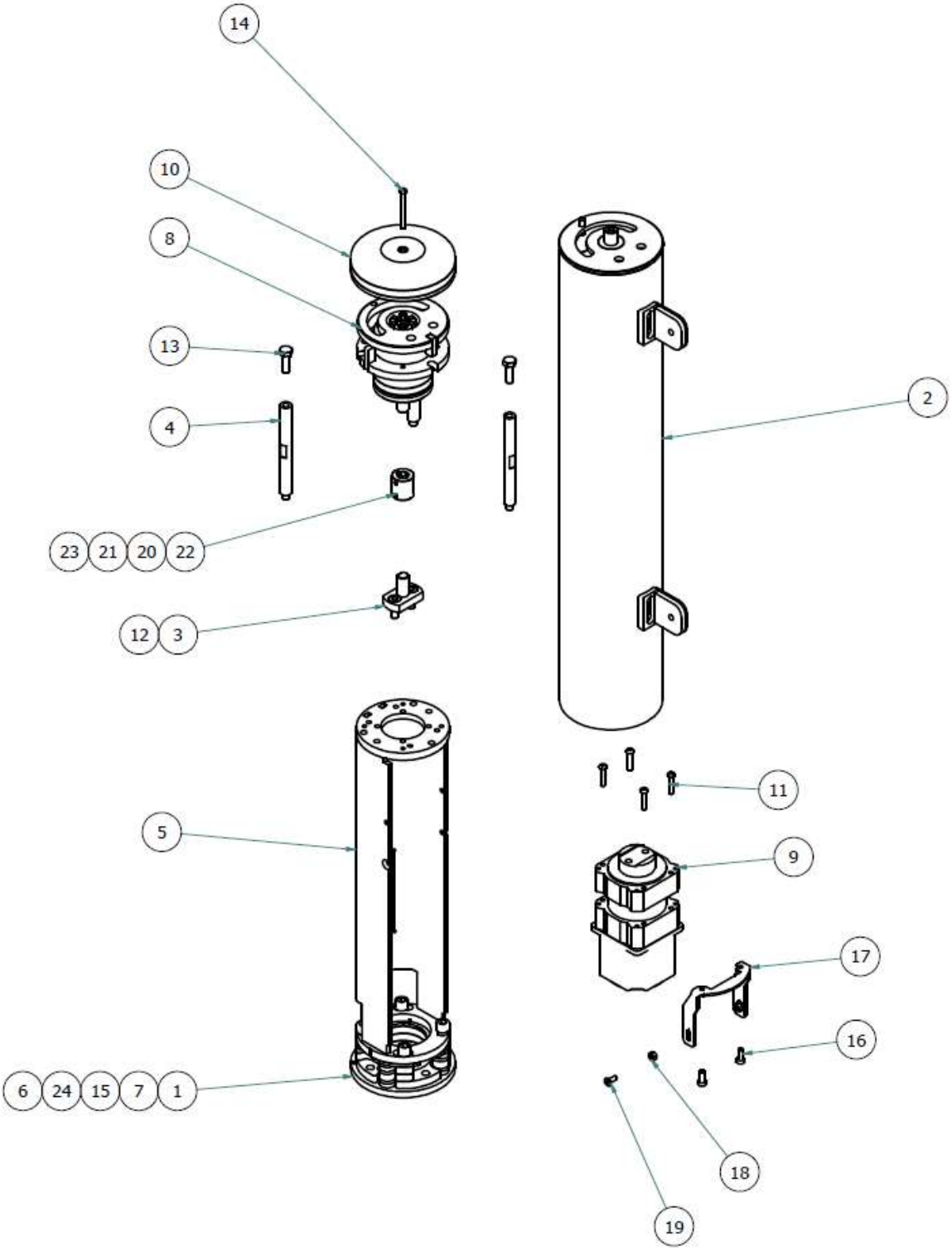

Figure 7: Assembly of Gate Pillar

Table 3: Parts List for Gate Pillar

No	Qty	Part Number	Description
1	1	SNGA-WM-02	WELD ASSEMBLY: BOTTOM BRACKET
2	1	SNGA-WM-13	WELD ASSEMBLY: BODY SHORT
3	1	SNGA-WM-08	WELD ASSEMBLY: MOTOR COUPLING
4	3	SNGA-MA-06	SUPPORT PIN
5	1	SNGA-WM-12	WELD ASSEMBLY: MAIN STRUCTURE SHORT
6	4	SNGA-MA-01	PIN
7	4	SNGA-MA-05	CENTERING WHEEL
8	1	SNGA-SA-01	SUB ASSEMBLY: MOTOR BRAKE
9	1	MTR-BLDC24	24V BLDC MOTOR
10	1	SNGA-SA-04	ASSEMBLY: TOP COVER WITH LED
11	4	M6x30-BHCS-ZP	M6x30 BUTTONHEAD CAPSCREW, ZP
12	2	M10x20-SHCS-ZP	M10x20 SOCKETHEAD CAPSCREW, ZP
13	3	M10x30-HSS-ZP	M10x30 HEX SET SCREW, ZP
14	1	M6x60-BHCS-ZP	M6x60 BUTTONHEAD CAPSCREW, ZP
15	8	O-RING-22x4	22x4 O-RING
16	2	M6x16-SHCS-ZP	M6x16 SOCKETHEAD CAPSCREW, ZP
17	1	SNGA-LC-26	MOTOR BRACKET
18	2	M6-HN-ZP	M6 HEX NUT, ZP
19	2	M6x16-CSK-ZP	M6x16 SOCKETHEAD COUNTERSUNK CAPSCREW, ZP
20	1	SNGA-MA-31	KEY
21	1	SNGA-MA-32	KEY
22	1	SNGA-MA-34	COUPLING
23	4	M6x6-FPSS-ZP	M6x16 FLAT POINT SET SCREW, ZP
24	4	M12x55-SHCS-ZP	M12x55 SOCKETHEAD CAPSCREW, ZP

5. DIAGRAMS

5.1. From mains power, connection to the panel is done to the connector block for live, neutral and earth. See *Figure 8: Power Connection*.

5.2. Power requirement is 220V AC 50Hz 6A from mains.

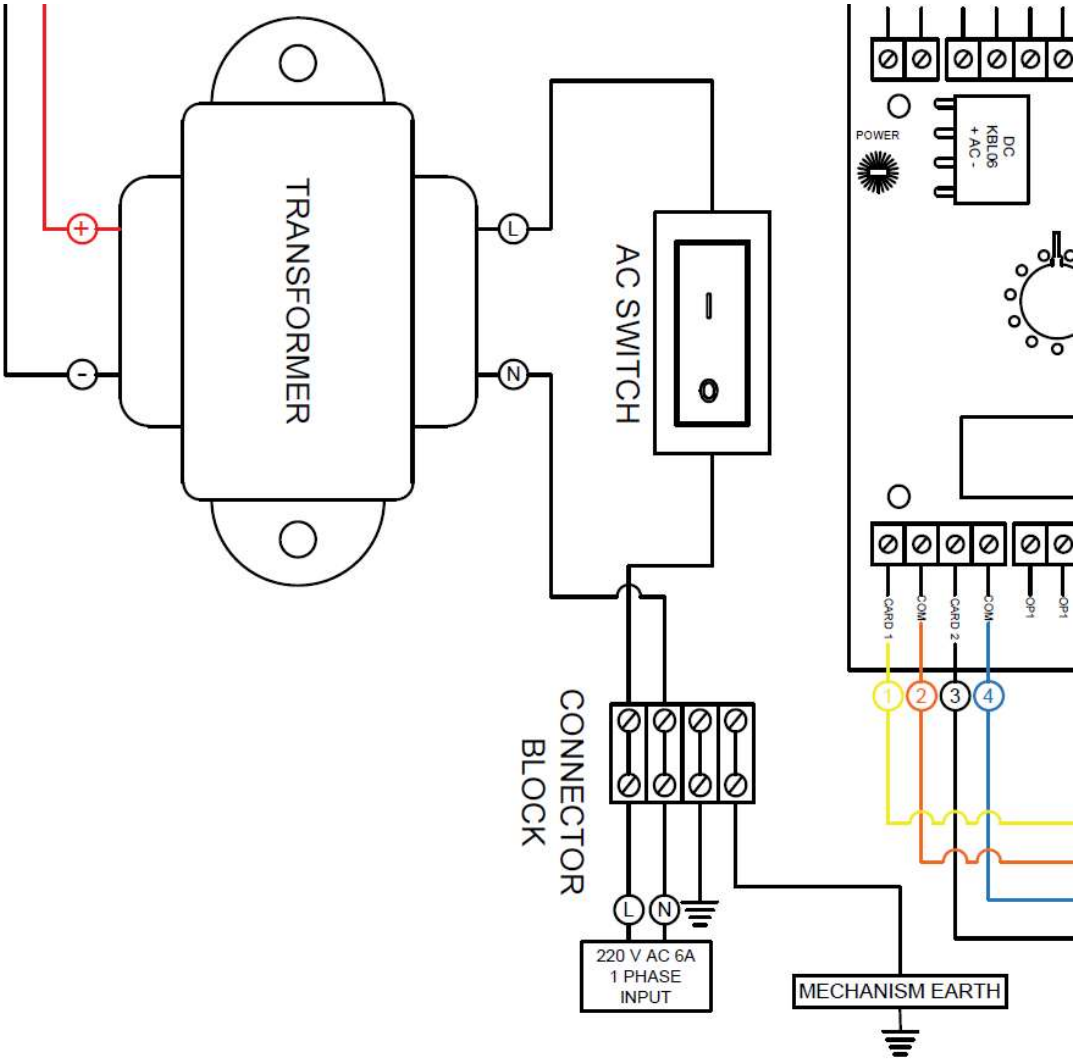

Figure 8: Power Connection

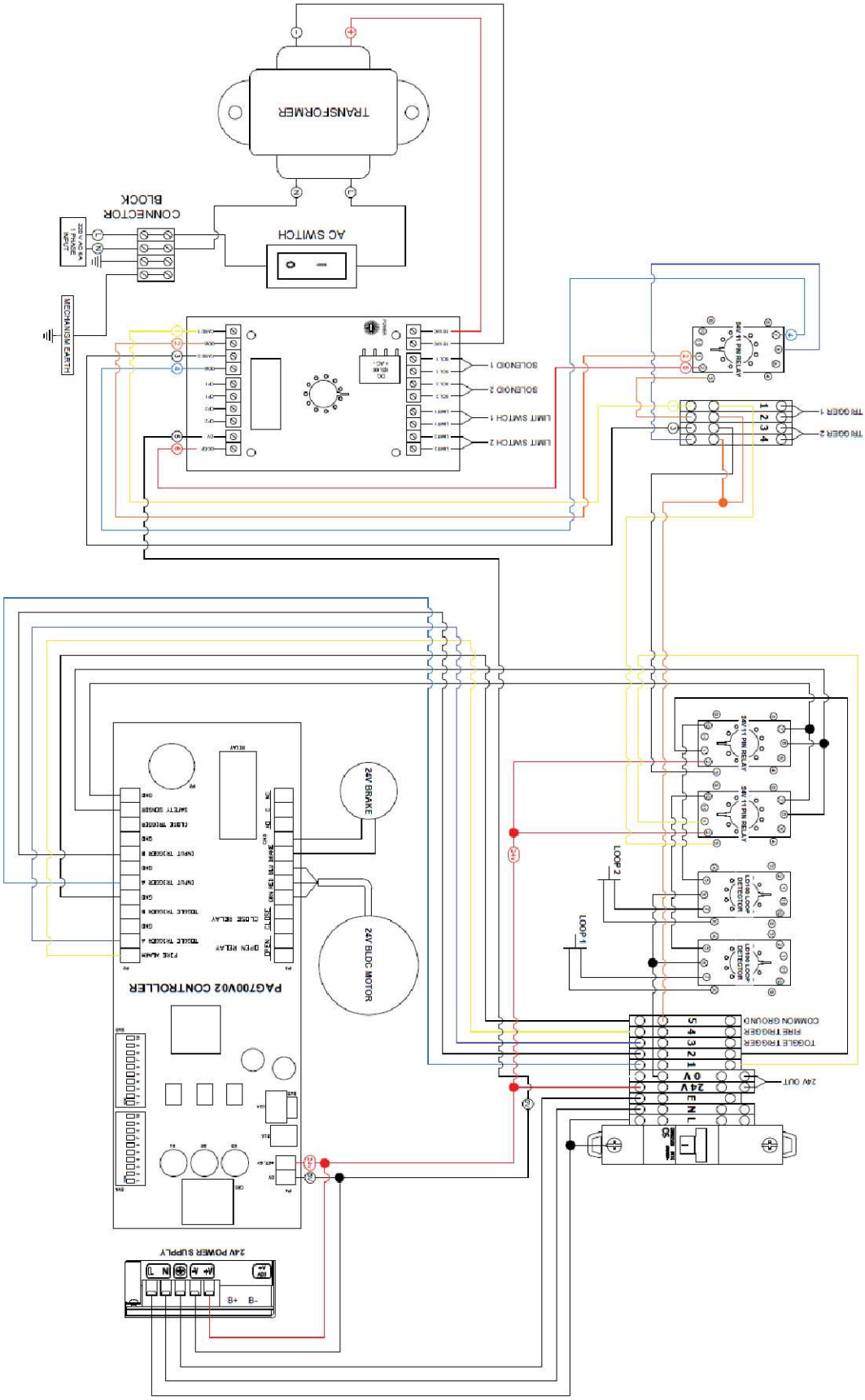

Figure 9: Full Wiring Diagram

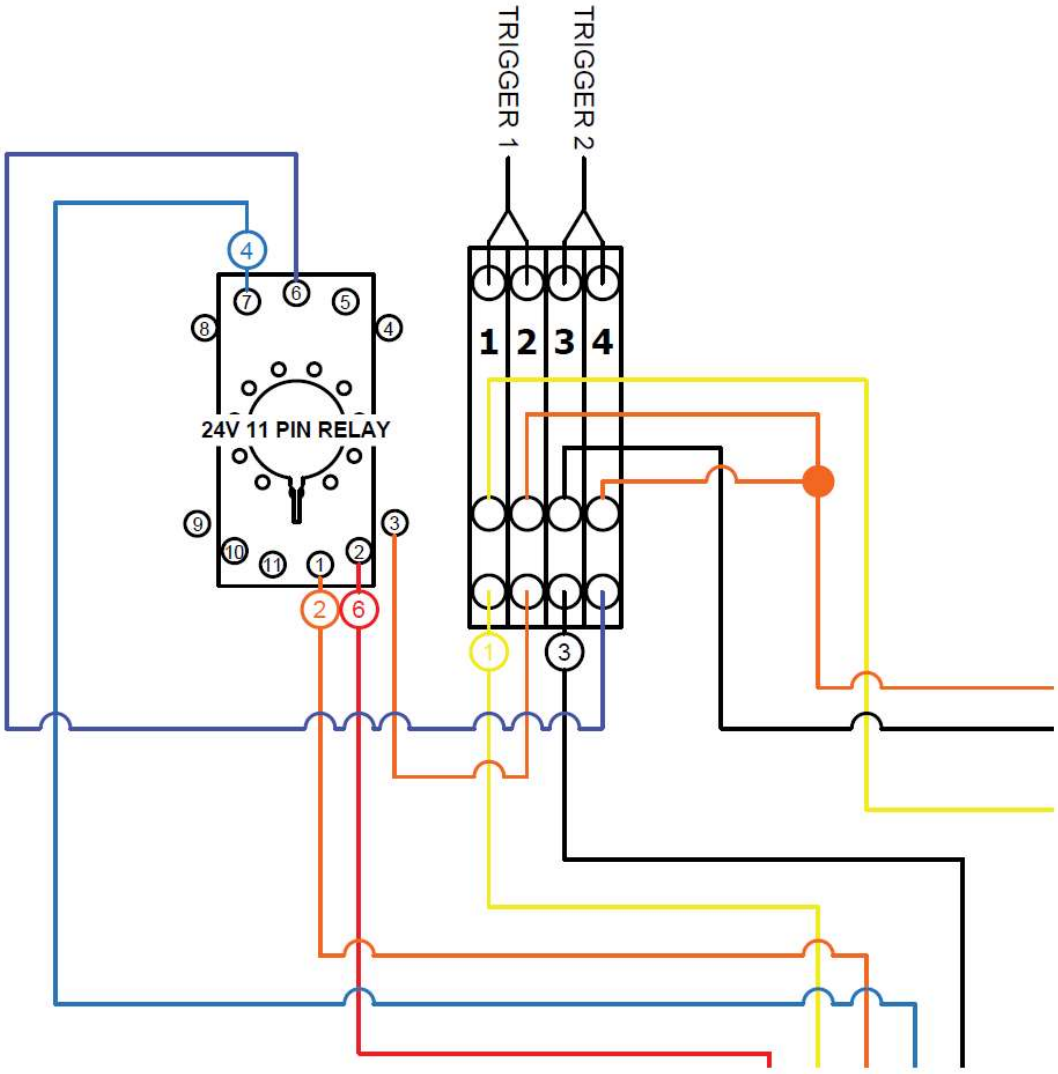

Figure 10: Triggers

5.3. In *Figure 10: Triggers*, the triggers for accessing the turnstile and gate for either direction are located. The triggers are 24V DC.

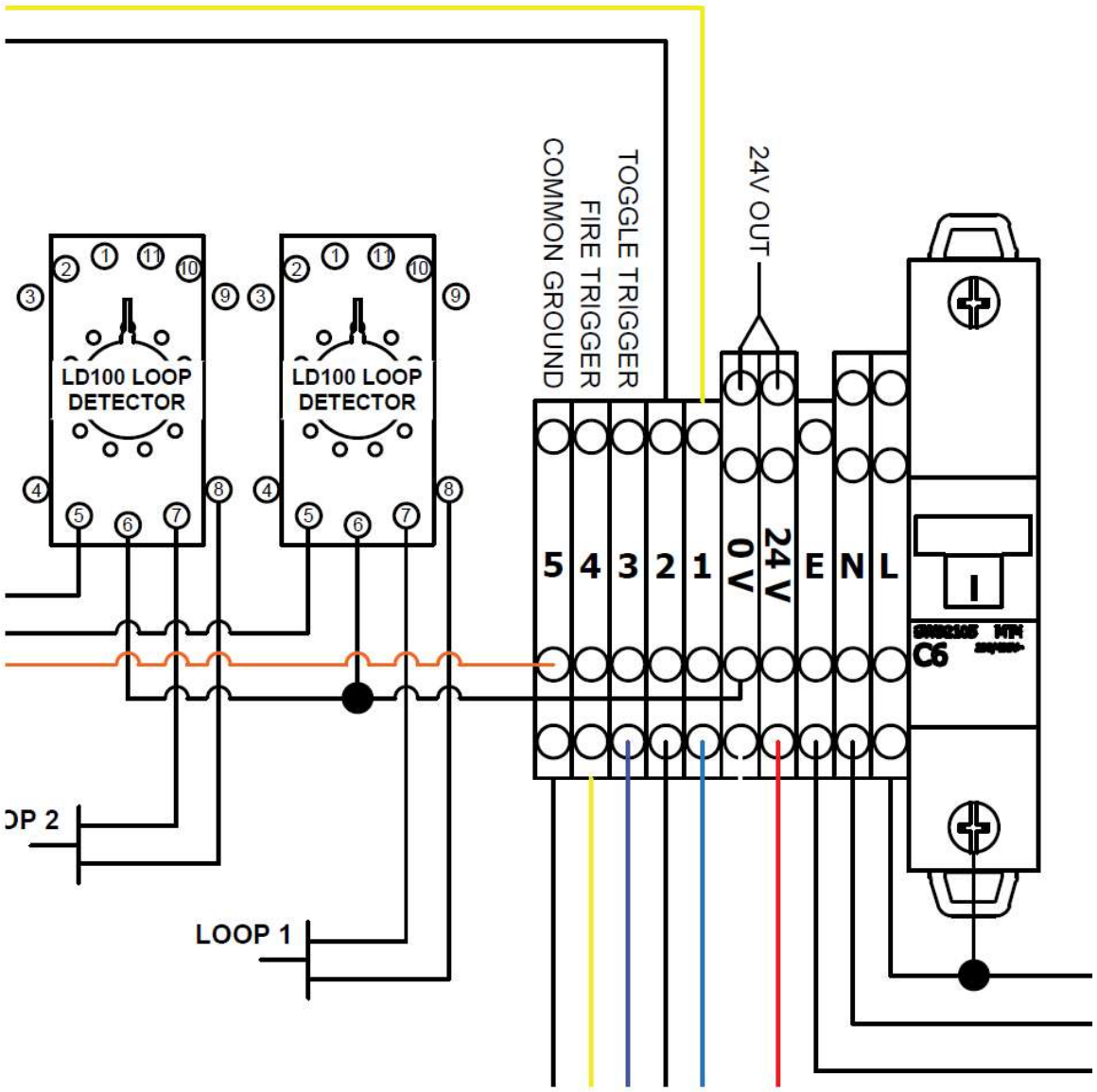

Figure 11: Secondary Triggers

5.4. In *Figure 11: Secondary Triggers*, the triggers for toggle and emergency fire are located. The triggers carry 24V DC and are shorted with the common ground.

5.5. A full wiring diagram will be attached with the document (FBT-DG-01).

6. TESTING

6.1. Start by visually inspecting the turnstile for any visible damage or obstructions. Check for broken or bent parts, rust, or other signs of damage. If any issues are found, repair or replace the damaged parts before proceeding with testing.

6.2. Turn on the power supply to the turnstile and make sure it is properly connected and functioning.

6.3. Test the rotation of the turnstile by manually unlocking the rotor at the override locks and rotating it in both directions. The turnstile should rotate smoothly and lock securely in each direction. Lock the override locks again.

6.4. Check the locking mechanism to ensure that it is functioning properly. Attempt to rotate the turnstile in the opposite direction when it is locked to ensure that it will not rotate.

6.5. Using the triggers, test the locking mechanism of the turnstile by attempting to rotate the turnstile without the proper authorization (e.g., by attempting to rotate it backwards or by attempting to enter through the exit). The turnstile should not rotate and only allow a person through to one side.

6.6. Test the emergency release trigger to ensure that it functions properly and that the turnstile can be manually unlocked in case of an emergency.

6.7. Check the power supply again and make sure that it is working properly and that all the electrical connections are tight.

6.8. Test the gate and bicycle function. If no bicycle is present, use a suitable large steel plate to trigger the inductive loops.

6.9. Make sure to keep a record of the test results and schedule regular testing to ensure that the turnstile is always in good working condition.

7. MAINTENANCE

7.1. Begin by inspecting the turnstile for any visible damage or wear. Check for broken or bent parts, rust, or other signs of damage.

7.2. Lubricate any moving parts with a light oil or lubricant. This will help to ensure smooth operation and reduce wear on the turnstile.

7.3. Clean the turnstile with a mild detergent and water. Use a soft cloth or brush to remove any dirt or grime that may have accumulated.

7.4. Test the turnstile to ensure that it is functioning properly. Try rotating the turnstile in both directions and make sure that it moves smoothly and locks securely.

7.5. Check the power supply and wiring to make sure they are in good condition. Make sure the turnstile is properly connected to the power source and that the wiring is secure.

7.6. Check the locking mechanism of the turnstile and make sure it is working properly.

7.7. Check that the manual override locks are working properly, and that the turnstile freely rotates when unlocked.

7.8. Check that the emergency fire function works properly.

7.9. If you find any issues during your maintenance check, contact Turnstar for assistance with repairs.

7.10. Schedule regular maintenance checks to ensure that the turnstile remains in good working condition.