

# **NORTH AMERICAN CUREMASTER**

## **SERVICE MANUAL**

**ETS2, ETS3 & ETS5  
S214, S310, S516**

FORM FM 67  
ISSUE 8 (VALID FROM 8/12/06)  
© Edwin Trisk Ltd.2006

# IMPORTANT

**PLEASE READ THESE INSTRUCTIONS THOROUGHLY BEFORE COMMENCING ASSEMBLY OR OPERATION OF THE UNIT.**

**FAILURE TO DO SO COULD RESULT IN DAMAGE OR INJURY, FOR WHICH EDWIN TRISK LIMITED WILL ACCEPT NO RESPONSIBILITY OR LIABILITY.**

THIS EQUIPMENT MUST BE EARTHED.

REMOVE ALL PACKING PIECES FROM EACH CASSETTE HEAD BEFORE USE.

THIS UNIT MUST NOT BE USED IN A SPRAY BOOTH WHERE THERE IS A POTENTIALLY FLAMMABLE ATMOSPHERE UNTIL EXTRACTION OF ANY FLAMMABLE VAPOUR IS COMPLETE. WE ALSO ADVISE CONTINUED EXTRACTION DURING CURE.

DO NOT MOVE THE UNIT AROUND USING THE MAINS CABLE.

DO NOT MOVE THIS UNIT DURING OPERATION OR JUST AFTER USE, AS THIS MAY LEAD TO PREMATURE EMITTER FAILURE. ALLOW UNIT TO COOL FIRST.

A SUITABLY RATED FUSE MUST BE USED TO PROTECT THE UNIT.

THIS UNIT SHOULD ONLY BE USED TO CURE PAINT OR PRIMER APPLIED TO METALLIC PANELS.

DO NOT POINT THE UNIT AT ANY LIVING BEING.

DO NOT POINT THE UNIT AT ANY EASILY FLAMMABLE SUBSTANCES.

ISOLATE MAINS SUPPLY BEFORE REMOVING COVERS.

CAUTION: THE SUPPORT ARM EXTENDS FIERCELY WHEN CASSETTE ASSEMBLY IS NOT FITTED.

IN CASE OF DAMAGE TO THE SUPPLY CORD, THE USER MUST NOT ATTEMPT TO REPAIR IT. INSTEAD, QUALIFIED PERSONNEL SHOULD BE CONTACTED.

TAKE CAUTION WHEN OPERATING MECHANICAL COMPONENTS – ENSURE THAT ALL BODY PARTS (THE USERS OR OTHERWISE) ARE FREE FROM WITHIN OPERATIONAL AREAS TO AVOID ENTRAPMENT.

THIS MANUAL (ISSUE 07) IS ONLY INTENDED FOR THE ASSEMBLY AND OPERATION, OR THE SERVICING OF THE MODELS MENTIONED ON THE FIRST PAGE.

THIS MANUAL IS AN UNCONTROLLED DOCUMENT. TRISK RESERVE THE RIGHT TO UPDATE UNIT SPECIFICATIONS WITHOUT PRIOR NOTICE OR CONSULTATION.

PLEASE READ THE RELEVANT REPAIR PROCEDURE THOROUGHLY AT LEAST ONCE BEFORE COMMENCING ANY SERVICING OPERATION.

SERVICING OPERATIONS SHOULD ONLY BE CARRIED OUT BY QUALIFIED SERVICE PERSONNEL WHO MUST USE TRISK APPROVED COMPONENTS.

**IF IN ANY DOUBT ABOUT ASSEMBLY OR OPERATION OF THE UNIT, PLEASE DO NOT HESITATE TO CONTACT YOUR DISTRIBUTOR OR THE TRISK SERVICE DEPARTMENT.**

THIS PAGE IS LEFT BLANK INTENTIONALLY.

# CONTENTS

1. INTRODUCTION .....	6
1.1. SERVICING TOOLS .....	6
2. TECHNICAL SPECIFICATIONS.....	7
2.1. CUREMASTER SUPER ETS2 (S2/14) .....	7
2.2. CUREMASTER ULTRA ETS3 (S3/10).....	7
2.3. CUREMASTER SUPER TWIN ETS5 (S5/16).....	7
3. UNIT BREAKDOWN.....	8
3.1. CUREMASTER SUPER ETS2: S2/14.....	8
3.2. CUREMASTER ULTRA ETS3: S3/10 .....	20
3.3. CUREMASTER SUPER TWIN ETS5: S5/20, S5/21 .....	32
4. FAULT FINDING GUIDE .....	45
5. REPAIR PROCEDURES.....	48
5.1. REMOVAL OF CONTROL BOX FROM UPRIGHT .....	48
5.2. MAINS CABLE REPLACEMENT .....	49
5.3. CASSETTE CORD REPLACEMENT*.....	49
5.4. CONTACTOR REPLACEMENT.....	50
5.5. TIMER REPLACEMENT .....	51
5.6. IEC SOCKET REPLACEMENT.....	51
5.7. GAS STRUT REPLACEMENT.....	52
5.8. I.R EMITTER REPLACEMENT .....	52
6. APPENDICES.....	54
APPENDIX 1. 3 WAY TERMINAL BLOCK CONNECTIONS (BASE OF UPRIGHT) ....	55
APPENDIX 2a. CONNECTIONS AT TOP OF UPRIGHT (ETS2) .....	56
APPENDIX 2b. CONNECTIONS AT TOP OF UPRIGHT (ETS3) .....	56
APPENDIX 2c. CONNECTIONS AT TOP OF UPRIGHT (ETS5).....	57
APPENDIX 3a. SOCKET CONNECTIONS (ETS2).....	58
APPENDIX 3b. SOCKET CONNECTIONS (ETS3).....	59
APPENDIX 3c. SOCKET CONNECTIONS (ETS5).....	60
APPENDIX 4a. ELECTRICAL CIRCUIT DIAGRAM (ETS2).....	61
APPENDIX 4b. ELECTRICAL CIRCUIT DIAGRAM (ETS3).....	62
APPENDIX 4c. ELECTRICAL CIRCUIT DIAGRAM (ETS5 (PGA 004)).....	63

# 1. INTRODUCTION

This manual is intended to aid the servicing of the TRISK branded products listed on the cover. Servicing operations should only be carried out by qualified service personnel who must use TRISK approved components. Although every effort has been made to ensure that the following information is accurate, it is only intended to help service personnel rather than direct them in their every step. It is vitally important that any problems encountered when servicing units are referred to your importer.

PLEASE NOTE THAT WHEN SERVICING THE UNIT, REFER TO SECTION 5; FAULT FINDING GUIDE, BEFORE COMMENCING ANY REPAIR PROCEDURE.

## **1.1. SERVICING TOOLS**

The following tools are the minimum required to service the range of products listed on the front cover;

<u>No. Required</u>	<u>Description</u>
1	Round, Parallel tipped 3mm, Screwdriver
1	Round, Parallel tipped 5mm, Screwdriver
1	Round, Supadrive No. 1, Screwdriver
2	19mm Combination Spanners
2	17mm Combination Spanners
1	Stanley Hand Drill
1	Drill 3mm diameter
1	Combination Pliers
1	Wire Strippers / Cutters
1	Allen Key (6mm AF)
1	Crimp Tool for Crimping Red, Blue and Yellow Insulated Crimp Connections
1	Hand Rivet Gun with nozzle for 3mm rivets.
1	Heyco Hand-pliers

## **2. TECHNICAL SPECIFICATIONS**

### **2.1. CUREMASTER SUPER ETS2 (S2/14)**

Rated Voltage	220-240V, 60Hz, 1 Phase
Power Consumption (nominal)	3 emitters, full power: 3300W
Heating elements:	3 quartz, tungsten filament ruby-sleeved Infra-Red Emitters
Area of cover:	100cm x 80cm
Dimensions:	(Width): 66cm, (Height): 164cm, (Length): 150cm
Weight:	50Kg

### **2.2. CUREMASTER ULTRA ETS3 (S3/10)**

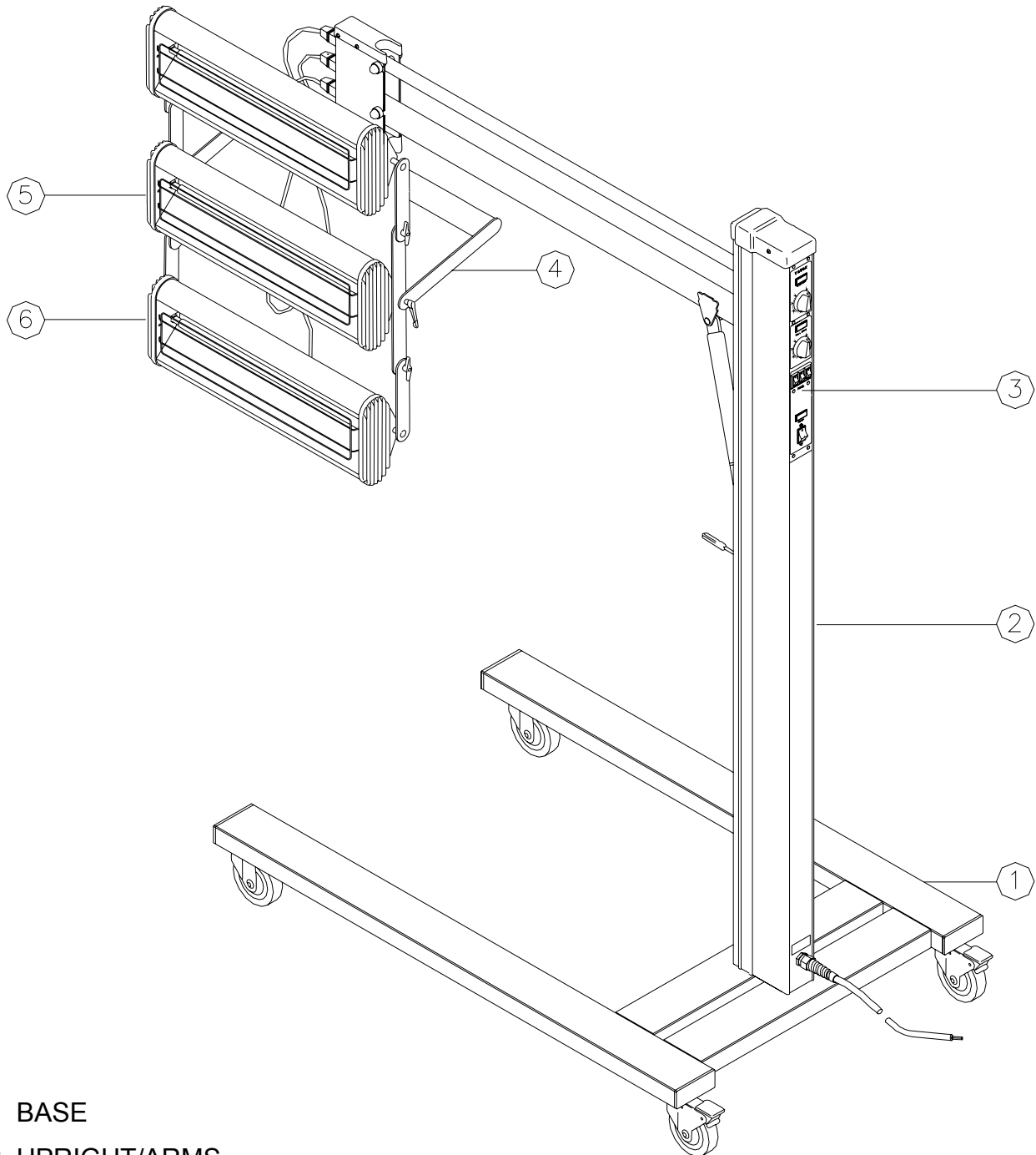
Rated Voltage	220-240V, 60Hz, 1 Phase
Power Consumption (nominal)	3 emitters, full power: 4500W
Heating elements:	3 quartz, tungsten filament ruby-sleeved Infra-Red Emitters
Area of cover:	100cm x 120cm
Dimensions:	(Width): 66cm, (Height): 164cm, (Length): 150cm
Weight:	50Kg

### **2.3. CUREMASTER SUPER TWIN ETS5 (S5/16)**

Rated Voltage	220-240V, 60Hz, 1 Phase
Power Consumption (nominal)	6 emitters, full power: 6600W
Heating elements:	6 quartz, tungsten filament ruby-sleeved Infra-Red Emitters
Area of cover:	100cm x 180cm
Dimensions:	(Width): 66cm, (Height): 164cm, (Length): 150cm
Weight:	70Kg

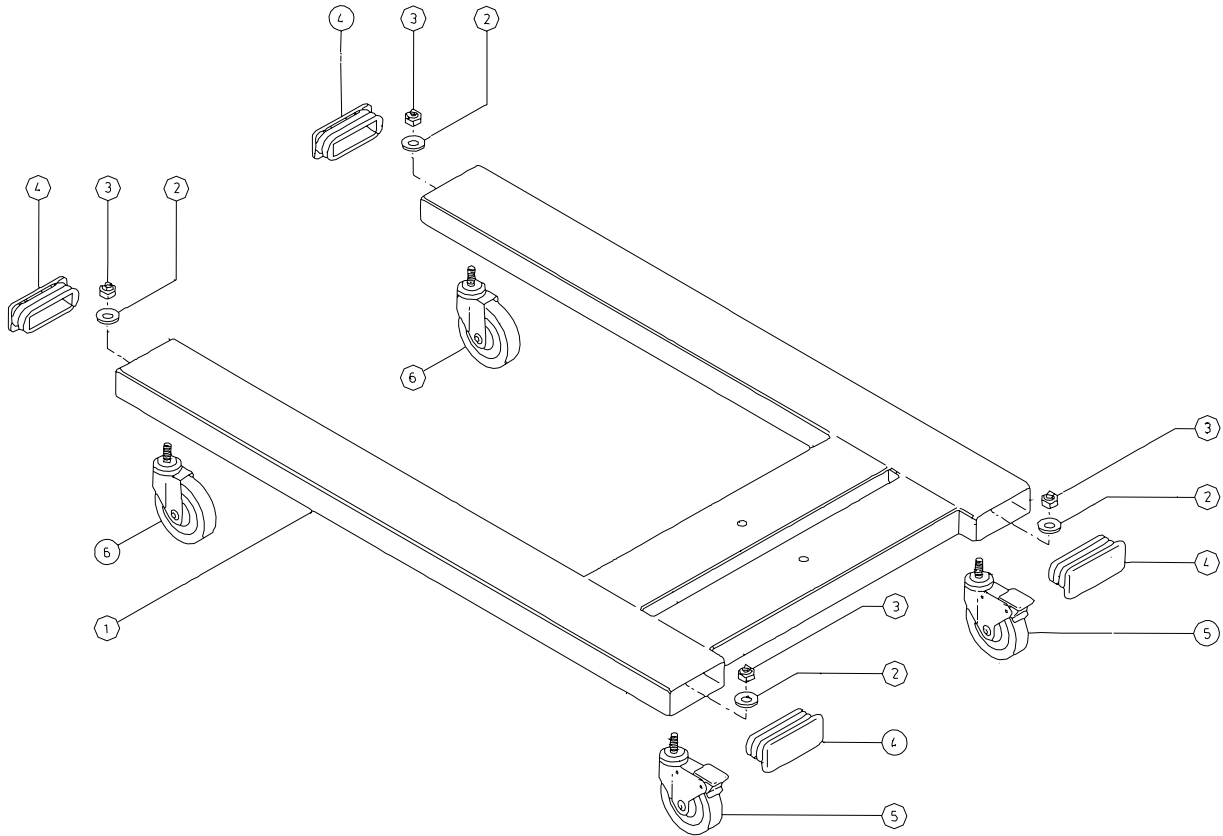
## 3. UNIT BREAKDOWN

### 3.1. CUREMASTER SUPER ETS2: S2/14



- 1 BASE
- 2 UPRIGHT/ARMS
- 3 CONTROL BOX
- 4 I.R. CASSETTE/BACKBAR ASSEMBLY
- 5 I.R. CASSETTE (CENTRE)
- 6 I.R. CASSETTE (OUTER)

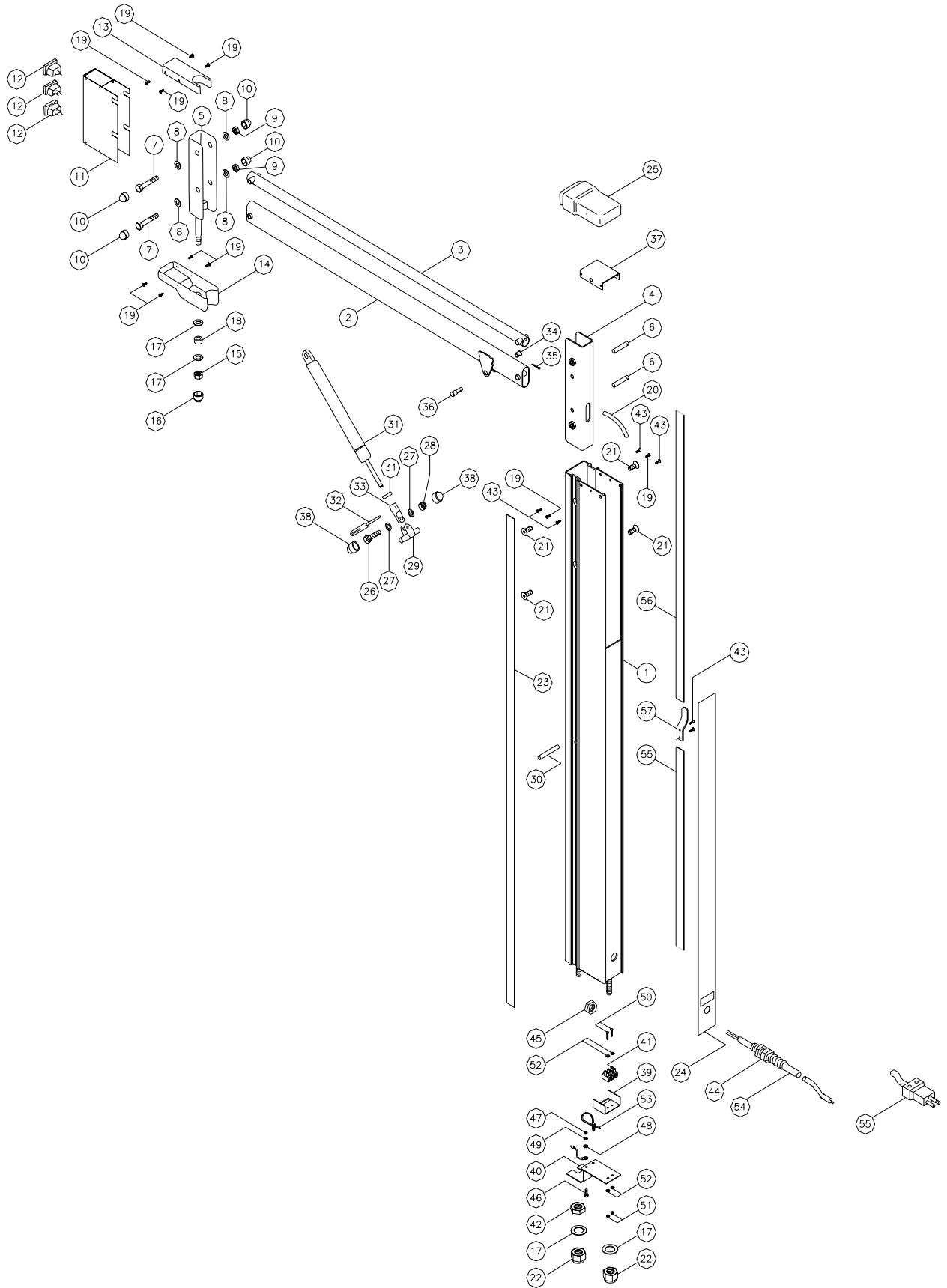
### 3.1.1. BASE



### BASE COMPONENTS

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD008Y	BASE	1
2	S8031	WASHER, M10	4
3	S0293A	LOCKNUT, M10, NYLOC	4
4	S0075D	ENDCAP, PLASTIC	4
5	S0065	BRAKED CASTOR	2
6	S0064	UNBRAKED CASTOR	2

### 3.1.2. UPRIGHT / ARM ASSEMBLY



## UPRIGHT / ARM ASSEMBLY COMPONENTS

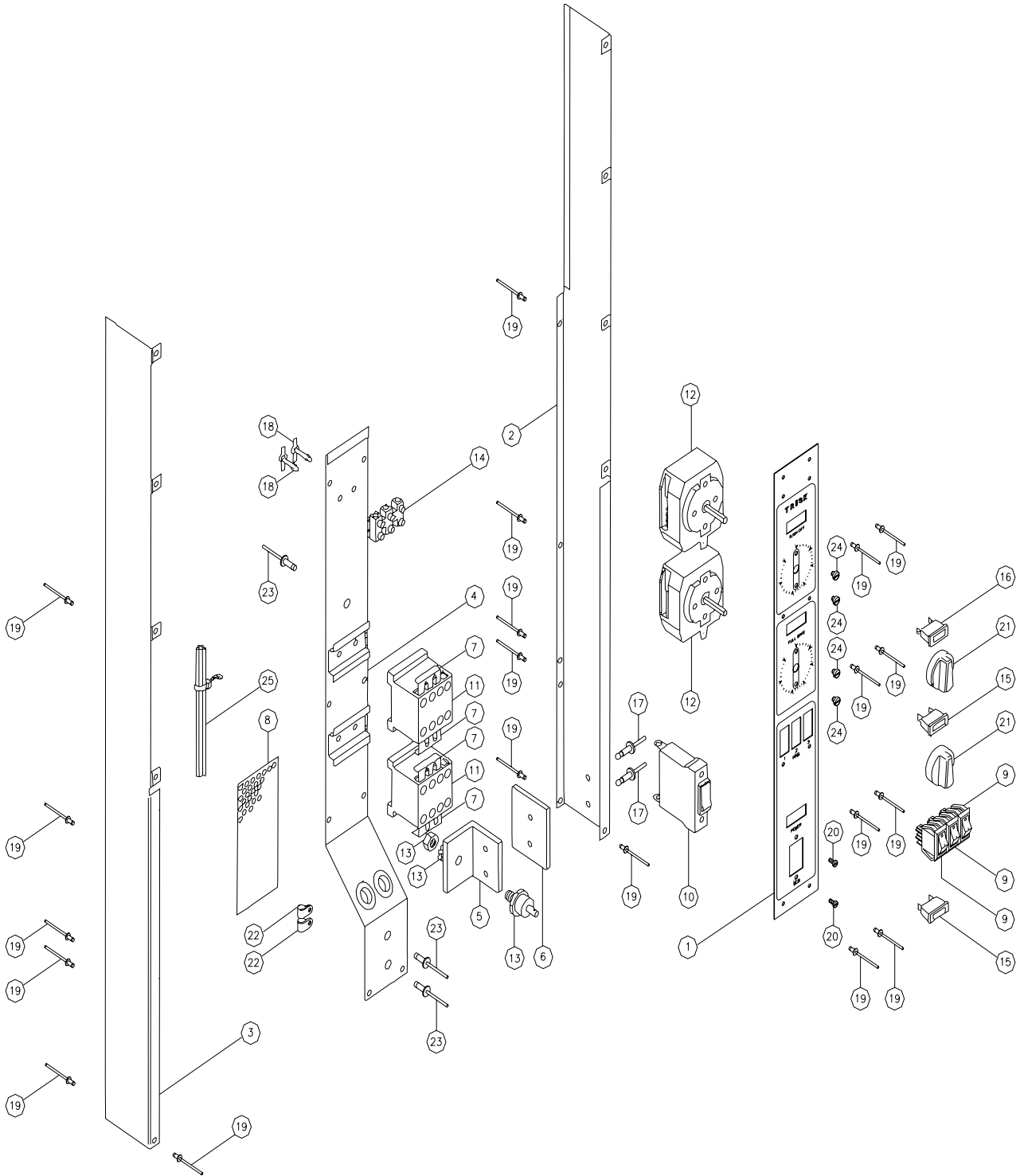
ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD093	UPRIGHT COLUMN	1
2	PDD002X	SUPPORT ARM	1
	PDD023	LABEL – LOGO	2
	PDD085	LABEL – ‘CAUTION – THIS ARM EXTENDS’	2
	T1040	HANDLE, PLASTIC, LARGE	1
	S0330	RIVET Ø4.8 x 15, ALUMINIUM	2
	PDD107	LABEL – ‘DANGER- RISK OF EXPLOSION’	2
3	PDD002Y	CONTROL ARM	1
4	PDD003X	‘U’ CHANNEL – COLUMN	1
	S0078	GROMMET STRIP	127mm
5	S8020	‘U’ CHANNEL – SOCKET	1
	S0078	GROMMET STRIP	127mm
	S0275	BOLT, M12 x 90	1
6	S8027A	ROLL PIN Ø10 x 50	2
7	S8032	BOLT, M10 x 60	2
8	S8031	WASHER, M10	4
9	S0293A	LOCKNUT, M10	2
10	S8030	NUT CAP, M10	4
11	PPA012	SOCKET HOUSING	1
12	372.03	IEC SOCKET	3
13	PDD040Y	TOP END CAP, SOCKET HOUSING	1
14	PDD040X	BOTTOM END CAP, SOCKET HOUSING	1
15	T1033	LOCKNUT, M12, BINX	1
16	S0076	NUT CAP, M12	1
17	S0314	WASHER, M12	2
18	PDD036W	SPACER	1
19	S0251C	SCREW, SELF TAPPING, POZI HEAD, No8 x 1/2”, TYPE B	10
20	N/A	THIS ITEM IS FACTORY FITTED*	
21	S8028	SCREW, COUNTERSUNK, SOCKET HEAD, M10 x 20	4
22	S0294A	LOCKNUT, M12	2
23	PDD012X	COVER, SIDE	1
24	PDD108	COVER, FRONT	1
25	PDD042	TOP CAP, UPRIGHT	1
26	S8040	BOLT, M8 x 30	1
27	S0312	WASHER, M8	2
28	S0292A	LOCKNUT, M8	1
29	PDD011	PIVOT BRACKET	1
30	PDD033	PIN	1
31	S0112	GAS STRUT, 800N HALF NUT	1
32	S0117	LEVER, GAS STRUT	1
	S0118	LEVER END	1
33	S0116	END, GAS STRUT	1
34	177.01	CAPPED STARLOCK, 5/16”	2
35	194.01	SPACER	2
36	D320.03.36	STRUT ARM PIN	1
37	PDD043	COLUMN TOP BRACKET	1
38	S0077	NUT CAP, M8	1
39	PDD095	SHROUD, TERMINAL BLOCK	1
	PDD089	LABEL – ‘1 PHASE TERMINAL BLOCK’	1

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
40	PDD094	BRACKET, TERMINAL BLOCK	1
41	S0174	TERMINAL BLOCK, 30A, 3-WAY	1
42	S0294C	HALF NUT, M12	1
43	S0257	SCREW, COUNTERSUNK, POZI HEAD, No8 x 1/2", TYPE B	4
44	350.08	STRAIN RELIEF GLAND, SPIRAL, PG21	1
45	351.02	LOCKNUT, PG21	1
46	S0269	SCREW, HEX HEAD, M5 x 16	1
47	S0291	NUT, M5	1
48	S0308	WASHER, M5	1
49	S0308A	WASHER, SHAKEPROOF, M5	1
50	118.01	SCREW, NYLON, M4 x 30	2
51	148.01	NUT, NYLON, M4	2
52	158.01	WASHER, NYLON, M4	4
53	S0220A	CABLE TIE – SNAP IN	1
54	S0191	CABLE – MAINS INPUT	6m
	S0240A	PLUG, VALISE	1
55	PDD139	SIDE COVER STRIP, LOWER	1
56	PDD140	SIDE COVER STRIP, UPPER	1
57	PDD142	CABLE HANGER	1

\*ITEMS THAT ARE FACTORY FITTED CANNOT BE ORDERED AS A PRE-PREPARED PART.

THIS PAGE IS LEFT BLANK INTENTIONALLY.

### 3.1.3. CONTROL BOX ASSEMBLY

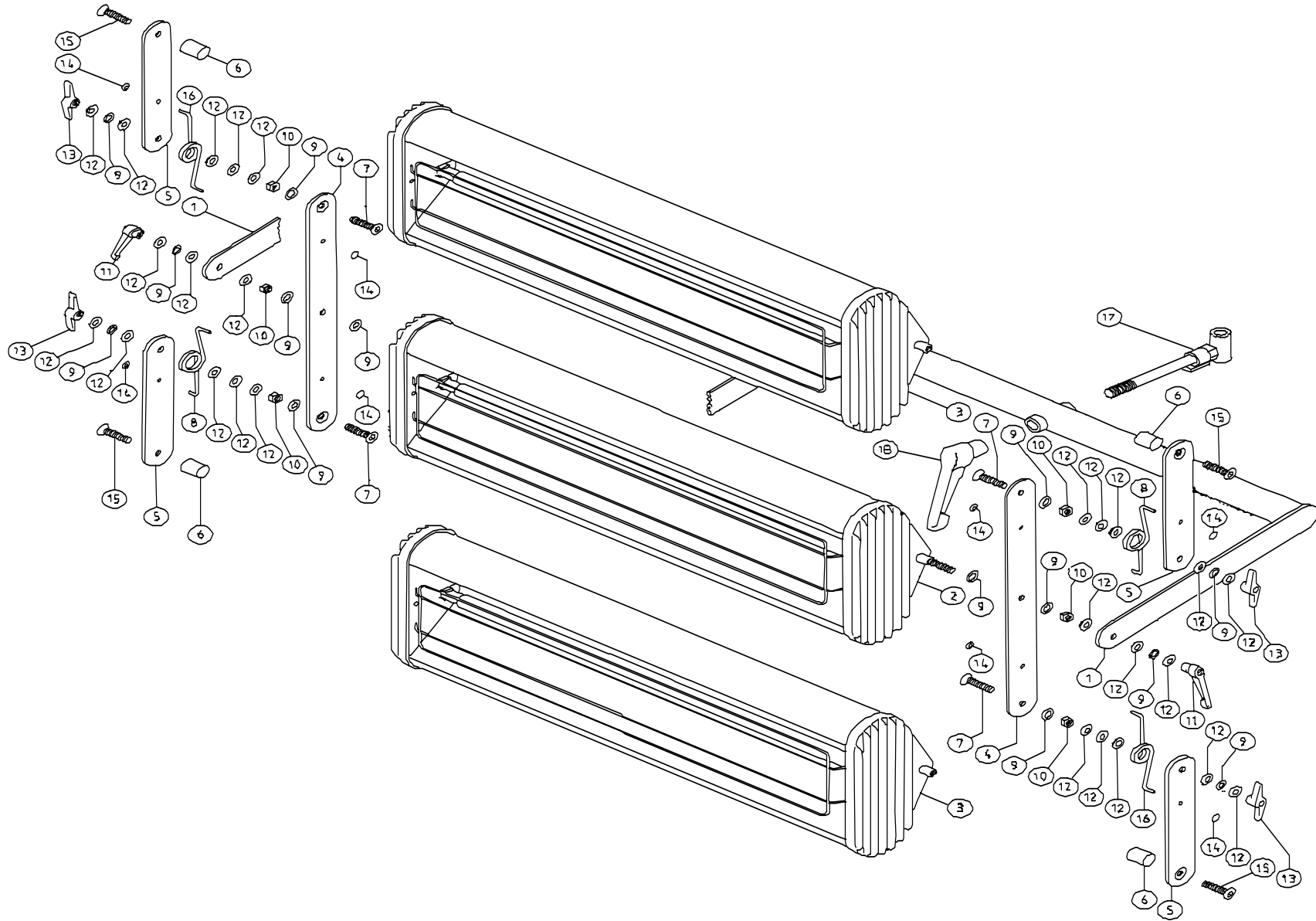


## CONTROL BOX ASSEMBLY COMPONENTS

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD048	FASCIA PANEL	1
	PDD064X	LABEL – ‘FLASH OFF 60Hz’	1
	PDD064Y	LABEL – ‘FULL BAKE 60Hz’	1
	PDD066X	LABEL - SWITCHES	1
2	PDD052	SIDE SHEET, RIGHT HAND (SHORT)	1
	S0352	POLYESTER INSULATING TAPE	1.5m
3	PDD053	SIDE SHEET, LEFT HAND (SHORT)	1
	S0352	POLYESTER INSULATING TAPE	1.5m
4	PDD054	BASE (SHORT)	1
	PDD073	DIN RAIL BRACKET	2
	S0328A	RIVET Ø3.2 x 6	6
	S0355	GROMMET, Ø11.1	2
5	PDD057	HEAT SINK	1
6	PDD056	HEAT SINK SPACER (SHORT)	1
7	PDD058	CONTACTOR SHORTING LINK	4
8	PDD079	HEAT SINK GRILLE (SHORT)	1
9	S0185	SWITCH	3
10	S0161	CIRCUIT BREAKER	1
11	S8068C	CONTACTOR	2
12	S0228A	TIMER (60Hz)	2
13	S0241	DIODE	1
14	S0173C	TERMINAL BLOCK, 20A, 3-WAY	1
15	S0182	INDICATOR, RED	2
16	S0182A	INDICATOR, AMBER	1
17	S0340B	POP RIVET Ø4.8 x 12, NYLON	2
18	S0349	RETAINING PIN	2
19	S0328A	POP RIVET Ø3.2 x 8	20
20	S0256	SCREW, POZIDRIVE HEAD, TAPTITE, M3 x 8	2
21	S0227	TIMER KNOB	2
22	S0340C	P-CLIP, Ø12.5 CABLE	2
23	S0330	POP RIVET Ø4.8 x 15, ALUMINIUM	3
24	S0311	SCREW, PAN HEAD, M4 x 4	4
25	N/A	THIS ITEM IS FACTORY FITTED*	

\*ITEMS THAT ARE FACTORY FITTED CANNOT BE ORDERED AS A PRE-PREPARED PART.

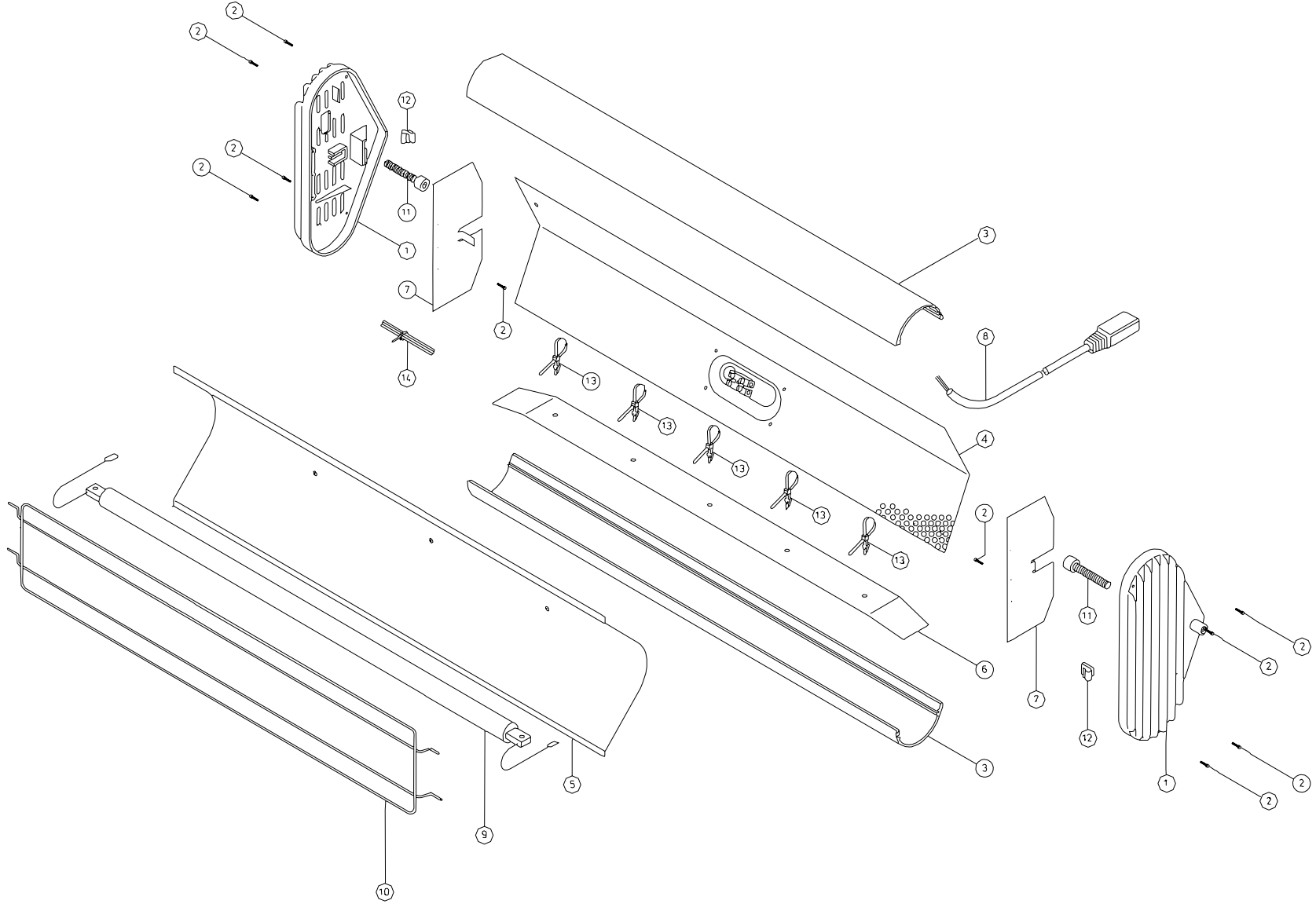
### 3.1.4. CASSETTE / BACKBAR ASSEMBLY



## IR CASSETTE / BACKBAR ASSEMBLY COMPONENTS

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD132	BACKBAR (LONG)	1
	395.03	CABLE TIE MOUNTING	1
	S0220	CABLE TIE	1
	S0328A	RIVET	1
2	PPA008W	IR CASSETTE ASSEMBLY (CENTRE)	1
3	PPA008Y	IR CASSETTE ASSEMBLY (OUTER)	2
4	PDD014X	SIDE BRACKET, LONG	2
5	PDD014Y	SIDE BRACKET, SHORT	4
6	PDD036X	SPACER	4
7	S8051	SCREW, COUNTERSUNK SOCKET HEAD, M8 x 35	4
8	PDD034X	SPRING, RIGHT HAND SIDE BRACKET	2
9	S0321A	WASHER, SHAKEPROOF, M8	14
10	S8054	NUT, M8	6
11	S0087B	RATCHET LEVER, FEMALE, M8	2
12	S0312	WASHER, M8	26
13	S0087A	WING KNOB, FEMALE	4
14	S8053	WASHER, CAPPED STARLOCK, M3	8
15	S8052	SCREW, COUNTERSUNK SOCKET HEAD, M8 x 45	4
16	PDD034Y	SPRING, LEFT HAND SIDE BRACKET	2
17	PDD131	PIVOT BOLT	1
18	T1011	RATCHET LEVER, FEMALE, M12	1

**3.1.5. I.R. CASSETTE ASSEMBLY (CENTRE)**  
**3.1.6. I.R. CASSETTE ASSEMBLY (OUTER)**



## CASSETTE ASSEMBLY (CENTRE) COMPONENTS

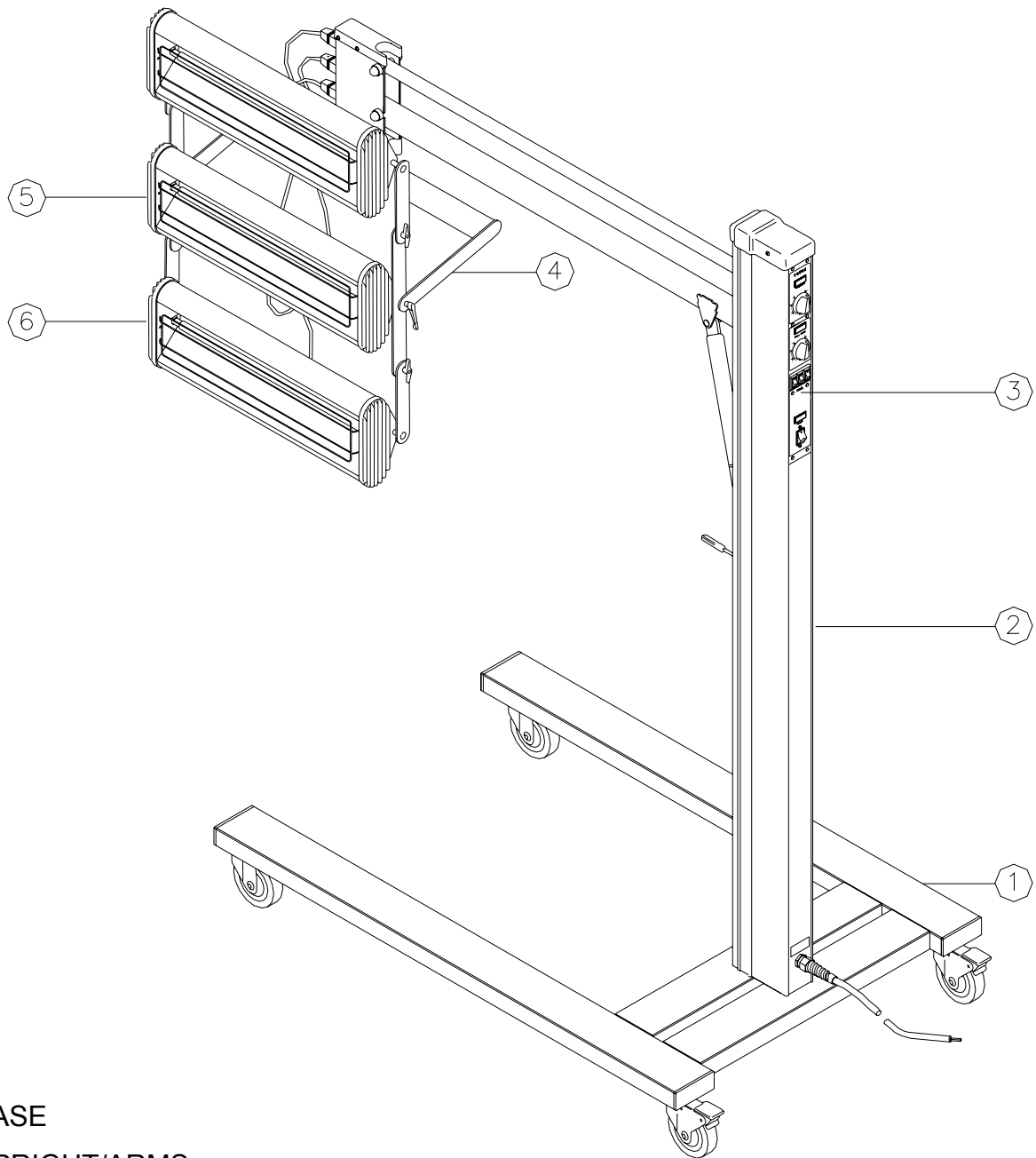
ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD072	END CAP	2
2	S0251	SCREW, SELF TAPPING, No4 x 3/8"	10
3	PDD006Y	CASSETTE SIDE (LONG)	2
4	PDD006W	CASSETTE BACK MESH (LONG)	1
5	PDD007X	BACK REFLECTOR (LONG)	1
	S0332	RIVET Ø3.2 x 8, ALUMINIUM	4
6	PDD082	CABLE TRAY (LONG)	1
7	PDD021	SIDE REFLECTOR	2
8	370.20	PLUG/CORDSET	1
	CM01.05.20	STRAIN RELIEF PLATE	1
	350.05	STRAIN RELIEF GROMMET	1
	S0173C	TERMINAL BLOCK, 20A, 3-WAY	1
	S0349	RETAINING PIN	1
	S0328A	RIVET Ø3.2 x 8, BLACK	6
9	380.07	I.R. EMITTER	1
10	PDD005X	GRILLE	1
11	S8049	SCREW, CAP HEAD SET, M8 x 50	2
12	S8008	CABLE CLIP	2
13	S0220A	CABLE TIE – SNAP IN	4
14	N/A	THIS ITEM IS FACTORY FITTED*	

\*ITEMS THAT ARE FACTORY FITTED CANNOT BE ORDERED AS A PRE-PREPARED PART.

## CASSETTE ASSEMBLY (OUTER) COMPONENTS

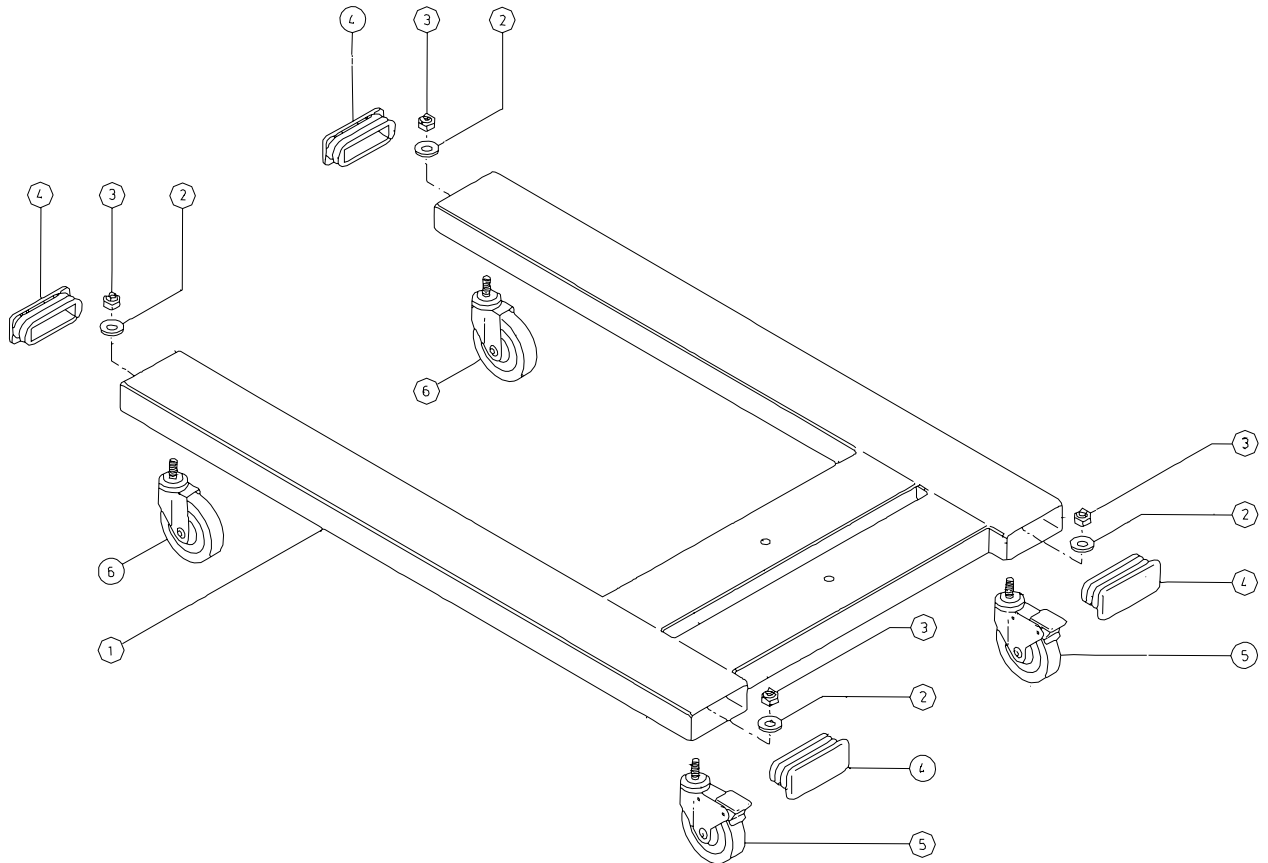
AS ABOVE BUT WITHOUT ITEM NUMBER 11

### 3.2. CUREMASTER ULTRA ETS3: S3/10



- 1 BASE
- 2 UPRIGHT/ARMS
- 3 CONTROL BOX
- 4 I.R. CASSETTE/BACKBAR ASSEMBLY
- 5 I.R. CASSETTE (CENTRE)
- 6 I.R. CASSETTE (OUTER)

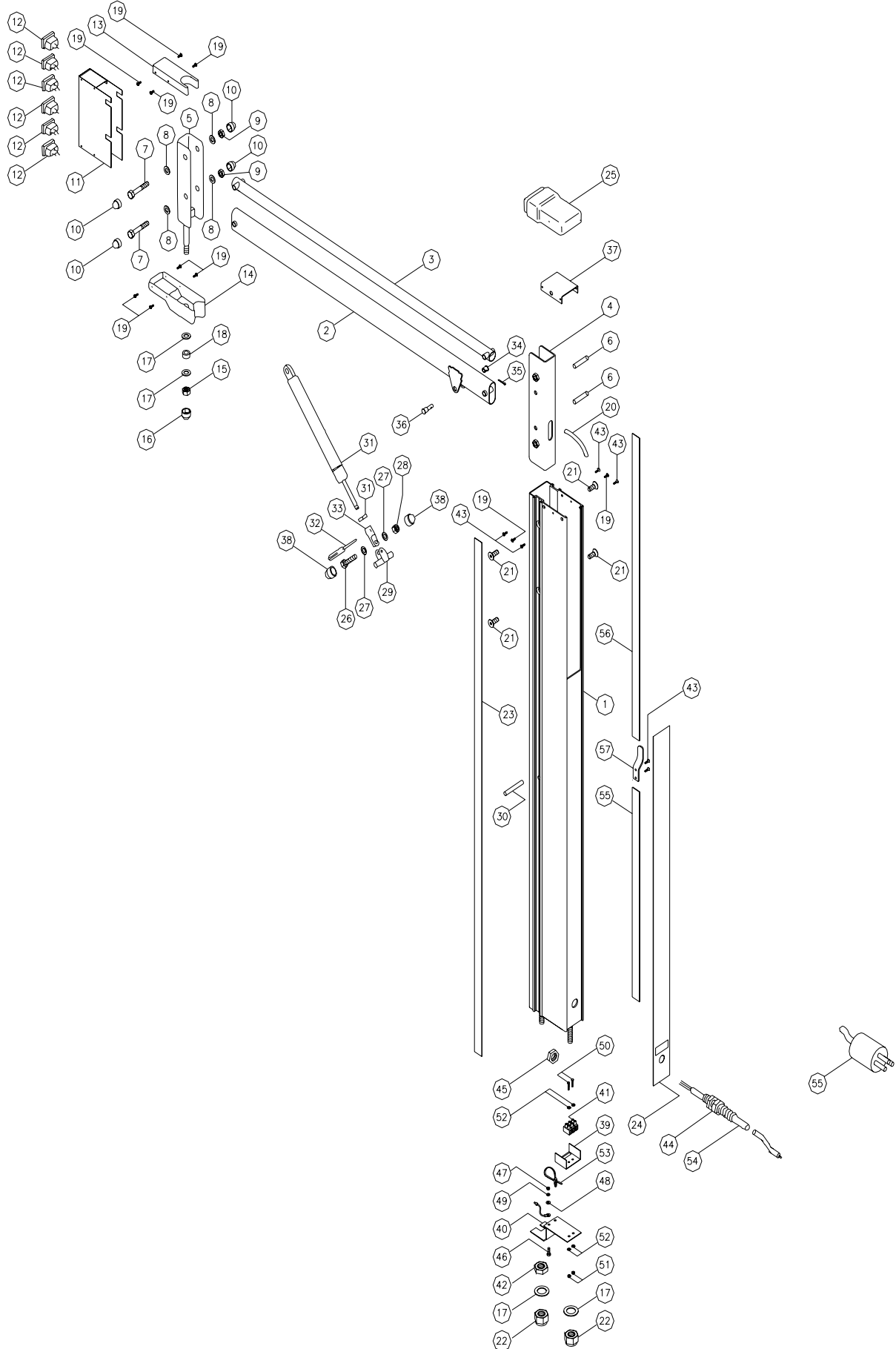
### 3.2.1. BASE



### BASE COMPONENTS

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	S360.01.01	BASE (S3/20)	1
2	S8031	WASHER, M10	4
3	S0293A	LOCKNUT, M10, NYLOC	4
4	S0075D	ENDCAP, PLASTIC	4
5	S0065	BRAKED CASTOR	2
6	S0064	UNBRAKED CASTOR	2

### 3.2.2. UPRIGHT / ARM ASSEMBLY



## UPRIGHT / ARM ASSEMBLY COMPONENTS

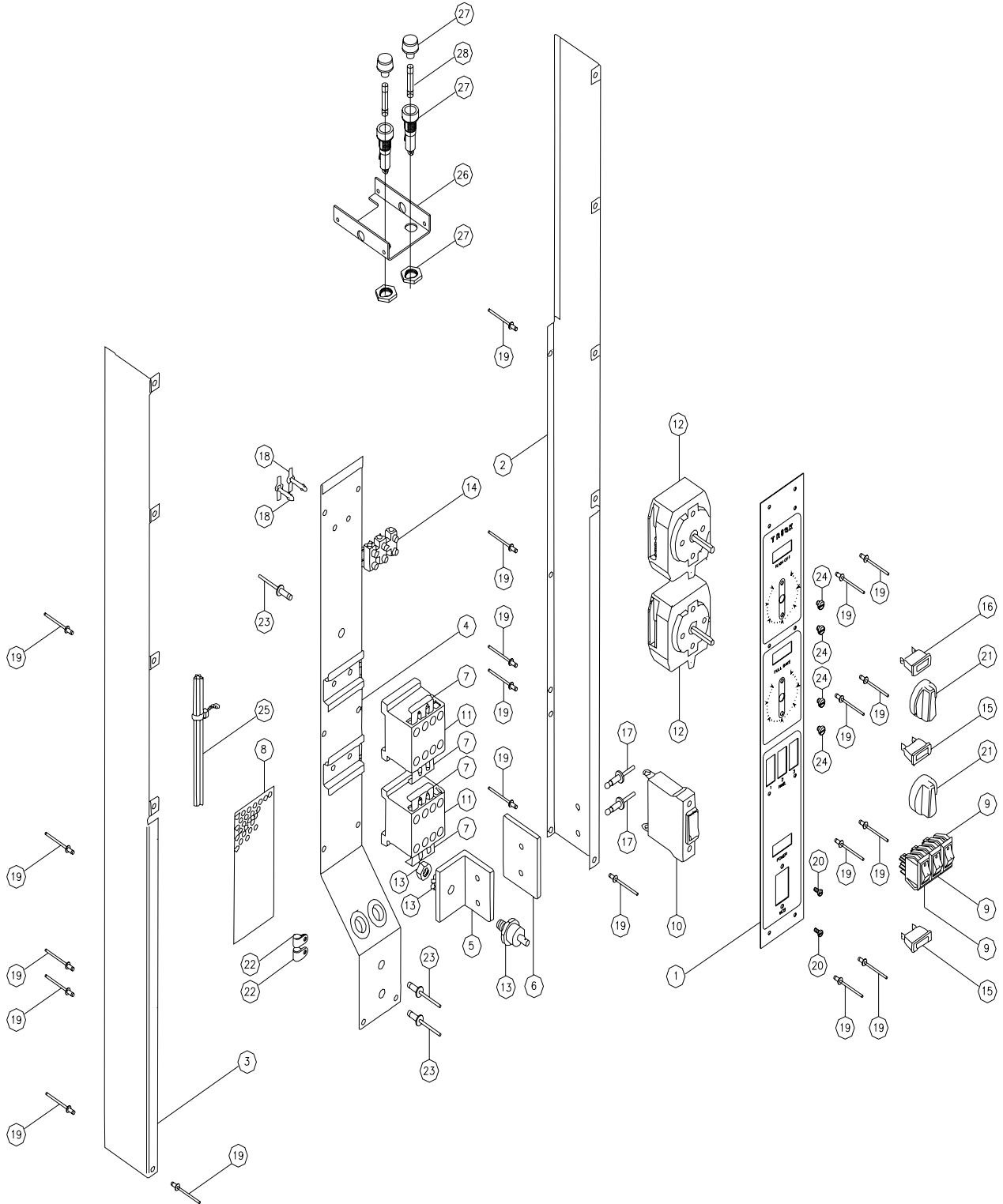
ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD093	UPRIGHT COLUMN	1
2	PDD002X	SUPPORT ARM	1
	T1040	HANDLE, LARGE	1
	S0330	POP RIVET Ø4.8 x 15, ALUMINIUM	2
	S330.02.20	LABEL – LOGO	2
	PDD085	LABEL – ‘CAUTION – THIS ARM EXTENDS’	2
	PDD107	LABEL – ‘DANGER – RISK OF EXPLOSION’	2
3	PDD002Y	CONTROL ARM	1
4	PDD003X	‘U’ CHANNEL – COLUMN	1
	356.01	GROMMET STRIP	127mm
5	PDD003Y	‘U’ CHANNEL – SOCKET	1
	356.01	GROMMET STRIP	127mm
	S0275	BOLT, M12 x 90	1
6	S8027A	ROLL PIN Ø10 x 50	2
7	S8032	BOLT, M10 x 60	2
8	S8031	WASHER, M10	4
9	S0293A	LOCKNUT, M10	2
10	S8030	NUT CAP, M10	2
11	PPA012	SOCKET HOUSING	1
12	372.03	IEC SOCKET	3
13	PDD040Y	TOP END CAP, SOCKET HOUSING	1
14	PDD040X	BOTTOM END CAP, SOCKET HOUSING	1
15	T1033	LOCKNUT, M12, BINX	1
16	S0076	NUT CAP, M12	1
17	S0314	WASHER, M12	4
18	PDD036W	SPACER	1
19	S0251C	SCREW, SELF TAPPING, POZI HEAD, No8 x 1/2”, TYPE B	10
20	N/A	THIS ITEM IS FACTORY FITTED*	
21	S8028	SCREW, COUNTERSUNK, SOCKET HEAD, M10 x 20	4
22	S0294A	LOCKNUT, M12	2
23	PDD012X	COVER, SIDE	1
24	PDD018	COVER, FRONT	1
25	PDD042	TOP CAP, UPRIGHT	1
26	S8040	BOLT, M8 x 30	1
27	S0312	WASHER, M8	2
28	S0292A	LOCKNUT, M8	1
29	PDD011	PIVOT BRACKET	1
30	PDD033	PIN	1
31	550.03	GAS STRUT, 1200N HALF NUT	1
32	S0117	LEVER, GAS STRUT	1
	S0118	LEVER END	1
33	S0116	END, GAS STRUT	1
34	177.01	CAPPED STARLOCK, 5/16”	2
35	194.01	SPACER	2
36	D320.03.36	STRUT ARM PIN	1
37	N/A	N/A	
38	S0077	NUT CAP, M8	1
39	PDD095	SHROUD, TERMINAL BLOCK	1
	PDD089	LABEL – ‘1 PHASE TERMINAL BLOCK’	1

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
40	PDD094	BRACKET, TERMINAL BLOCK	1
41	S0174	TERMINAL BLOCK, 30A, 3-WAY	1
42	S0294C	HALF NUT, M12	1
43	S0257	SCREW, COUNTERSUNK, POZI HEAD, No8 x 1/2", TYPE B	4
44	S0514	STRAIN RELIEF GLAND, SPIRAL, PG21	1
45	S0514A	GLAND NUT, PG21	1
46	S0269	SCREW, HEX HEAD, M5 x 15	1
47	S0291	NUT, M5	1
48	S0308	WASHER, M5	1
49	S0308A	WASHER, SHAKEPROOF, M5	1
50	118.01	SCREW, NYLON, M4 x 30	2
51	148.01	NUT, NYLON, M4	2
52	158.01	WASHER, NYLON, M4	4
53	S0220A	CABLE TIE – SNAP IN	1
54	300.07	CABLE – MAINS INPUT	6m
55	S0240B	PLUG, MAINS, 30A, TWISTLOCK	1
56	PDD139	SIDE COVER STRIP, LOWER	1
57	PDD140	SIDE COVER STRIP, UPPER	1
58	PDD142	CABLE HANGER	1

\*ITEMS THAT ARE FACTORY FITTED CANNOT BE ORDERED AS A PRE-PREPARED PART.

THIS PAGE IS LEFT BLANK INTENTIONALLY.

### 3.2.3. CONTROL BOX ASSEMBLY

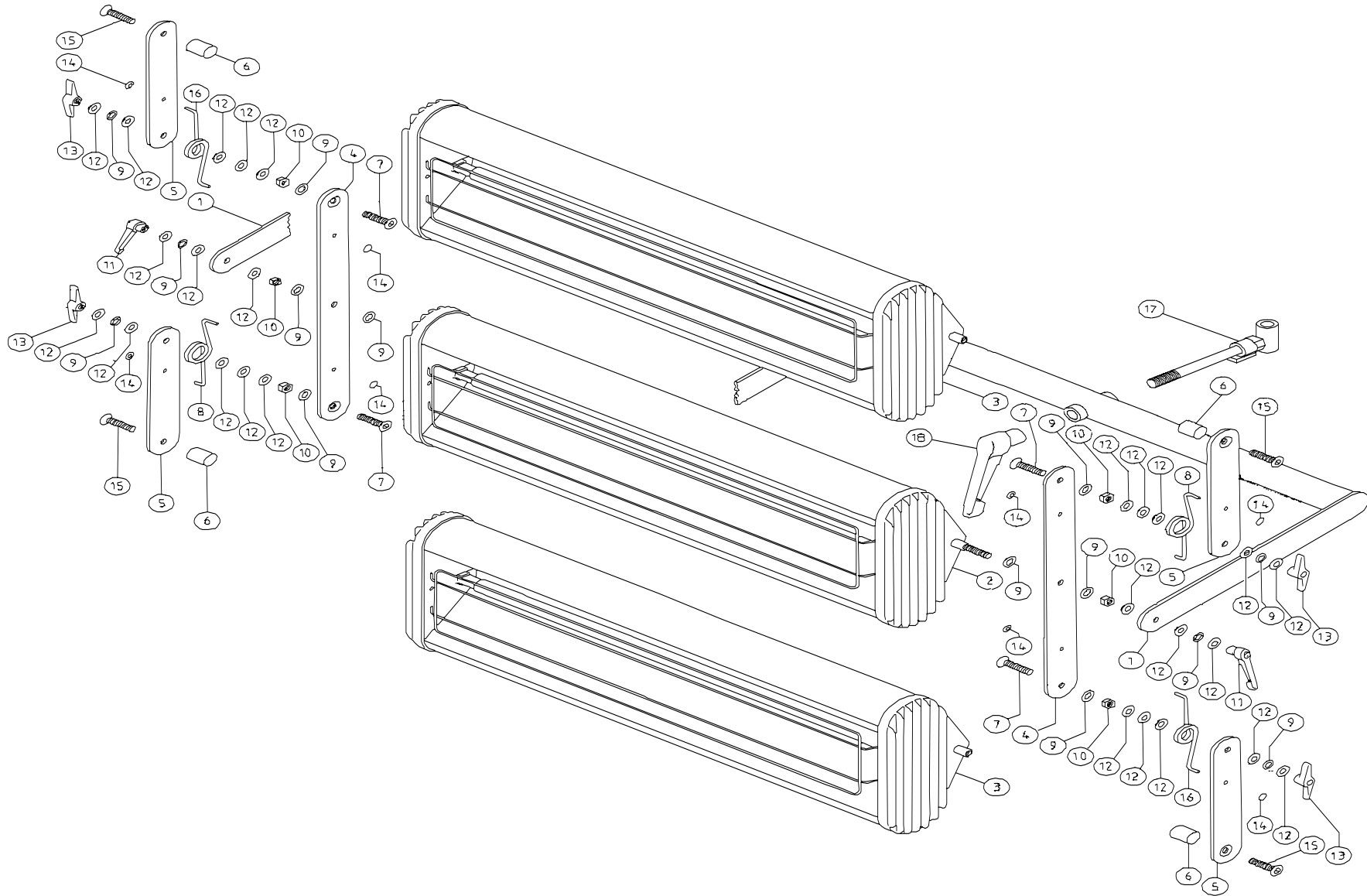


## CONTROL BOX ASSEMBLY COMPONENTS

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD048	FASCIA PANEL	1
	PDD064X	LABEL – ‘FLASH OFF 60Hz’	1
	PDD064Y	LABEL – ‘FULL BAKE 60Hz’	1
	PDD066X	LABEL – ‘SWITCHES’	1
2	PDD052	SIDE SHEET, RIGHT HAND (SHORT)	1
	S0352	POLYESTER INSULATING TAPE	2.3m
3	PDD053	SIDE SHEET, LEFT HAND (SHORT)	1
	S0352	POLYESTER INSULATING TAPE	2.3m
4	PDD054	BASE (SHORT)	1
	PDD073	DIN RAIL BRACKET	2
	S0328A	RIVET Ø3.2 x 6	6
	S0355	GROMMET, Ø11.1	2
5	PDD057	HEAT SINK	3
6	PDD056	HEAT SINK SPACER (SHORT)	3
7	PDD058	SHORTING LINK	4
8	PDD079	HEAT SINK GRILLE (SHORT)	1
9	S0185	SWITCH	3
10	S0162	CIRCUIT BREAKER	1
11	S8068C	CONTACTOR	2
12	S0228A	TIMER (60Hz)	2
13	S0241	DIODE	3
14	S0173C	TERMINAL BLOCK, 20A, 3-WAY	1
15	S0182	INDICATOR, RED	2
16	S0182A	INDICATOR, AMBER	1
17	S0340B	POP RIVET Ø5 x 12, NYLON	2
18	S0349	RETAINING PIN	2
19	S0328A	POP RIVET Ø3.2 x 6	26
20	S0256	SCREW, POZIDRIVE HEAD ‘TAPTITE’ M3 X 8	2
21	S0227	TIMER KNOB	2
22	S0340C	P-CLIP, Ø12.5 CABLE	2
23	S0330	POP RIVET Ø4.8 x 15, ALUMINIUM	3
24	S0311	SCREW, PAN HEAD, M4 x 4	4
25	S0242	RESISTOR	1
	N/A	THIS ITEM IS FACTORY FITTED*	
26	PDD124	BRACKET, TOP COLUMN (FUSES)	1
	PDD220	LABEL – ‘FUSE RATING’	1
27	320.01	FUSE HOLDER	2
28	S0180A	FUSE, 15A, TIME DELAY	2

\*ITEMS THAT ARE FACTORY FITTED CANNOT BE ORDERED AS A PRE-PREPARED PART.

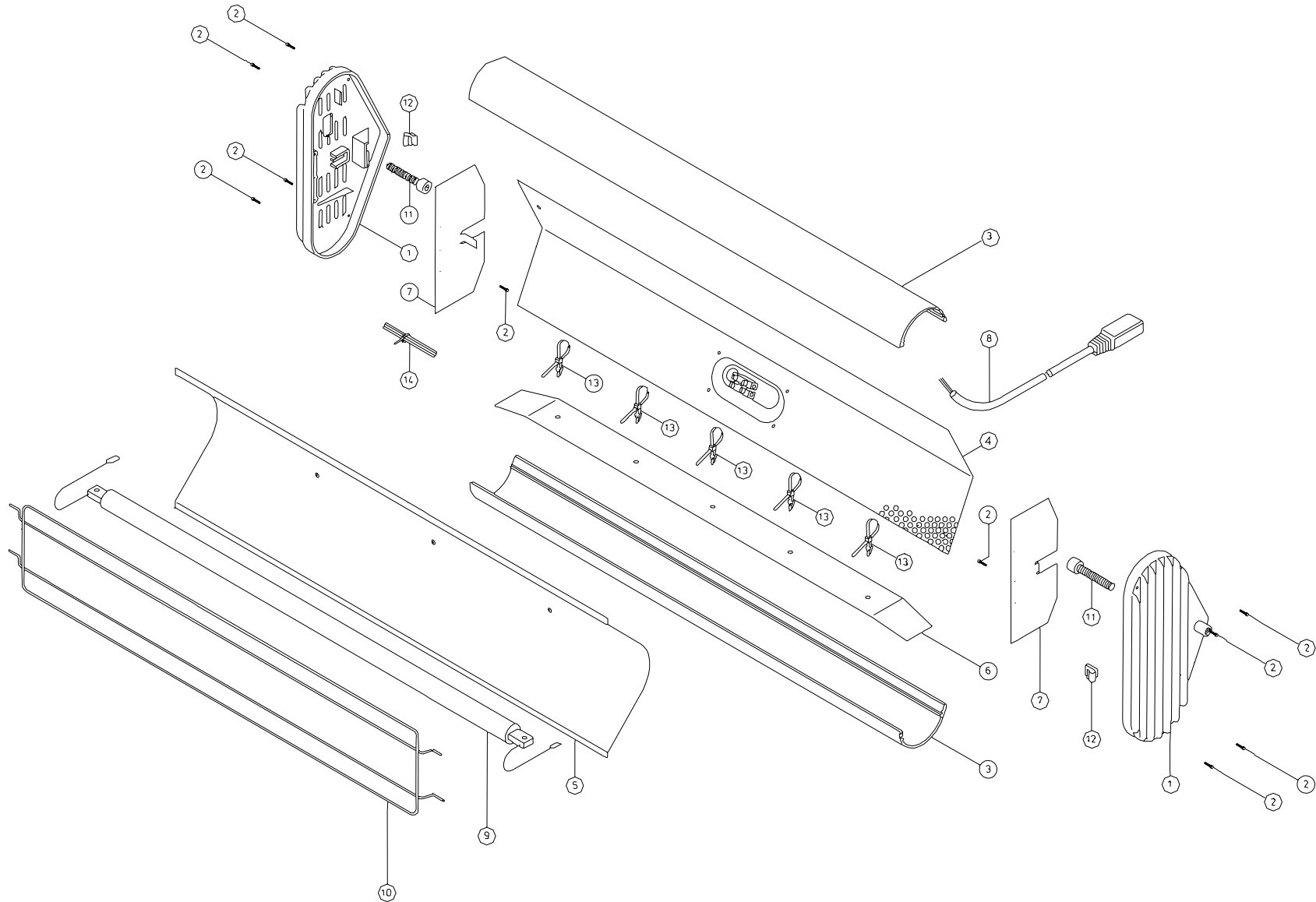
### 3.2.4. CASSETTE / BACKBAR ASSEMBLY



## IR CASSETTE / BACKBAR ASSEMBLY COMPONENTS

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	S360.06	BACKBAR (LONG)	1
2	S310.05.02	I.R. CASSETTE ASSEMBLY (CENTRE)	1
3	S310.05.01	I.R. CASSETTE ASSEMBLY (OUTER)	2
4	PDD014X	SIDE BRACKET, LONG	2
5	PDD014Y	SIDE BRACKET, SHORT	4
6	PDD036X	SPACER	4
7	S8051	SCREW, COUNTERSUNK SOCKET HEAD, M8 x 35	4
8	PDD034X	SPRING, RIGHT HAND SIDE BRACKET	2
9	S0321A	WASHER, SHAKEPROOF, M8	12
10	S8054	NUT, M8	6
11	S0087B	RATCHET LEVER, FEMALE	2
12	S0312	WASHER, M8	20
13	S0087A	WING KNOB, FEMALE	4
14	S8053	WASHER, CAPPED STARLOCK, M3	8
15	S8052	SCREW, COUNTERSUNK SOCKET HEAD, M8 x 45	4
16	PDD034Y	SPRING, LEFT HAND SIDE BRACKET	2
17	PDD131	PIVOT BOLT	1
18	T1011	RATCHET LEVER, FEMALE, M12	1

**3.2.5. I.R. CASSETTE ASSEMBLY (CENTRE)**  
**3.2.6. I.R. CASSETTE ASSEMBLY (OUTER)**



## CASSETTE ASSEMBLY (CENTRE) COMPONENTS

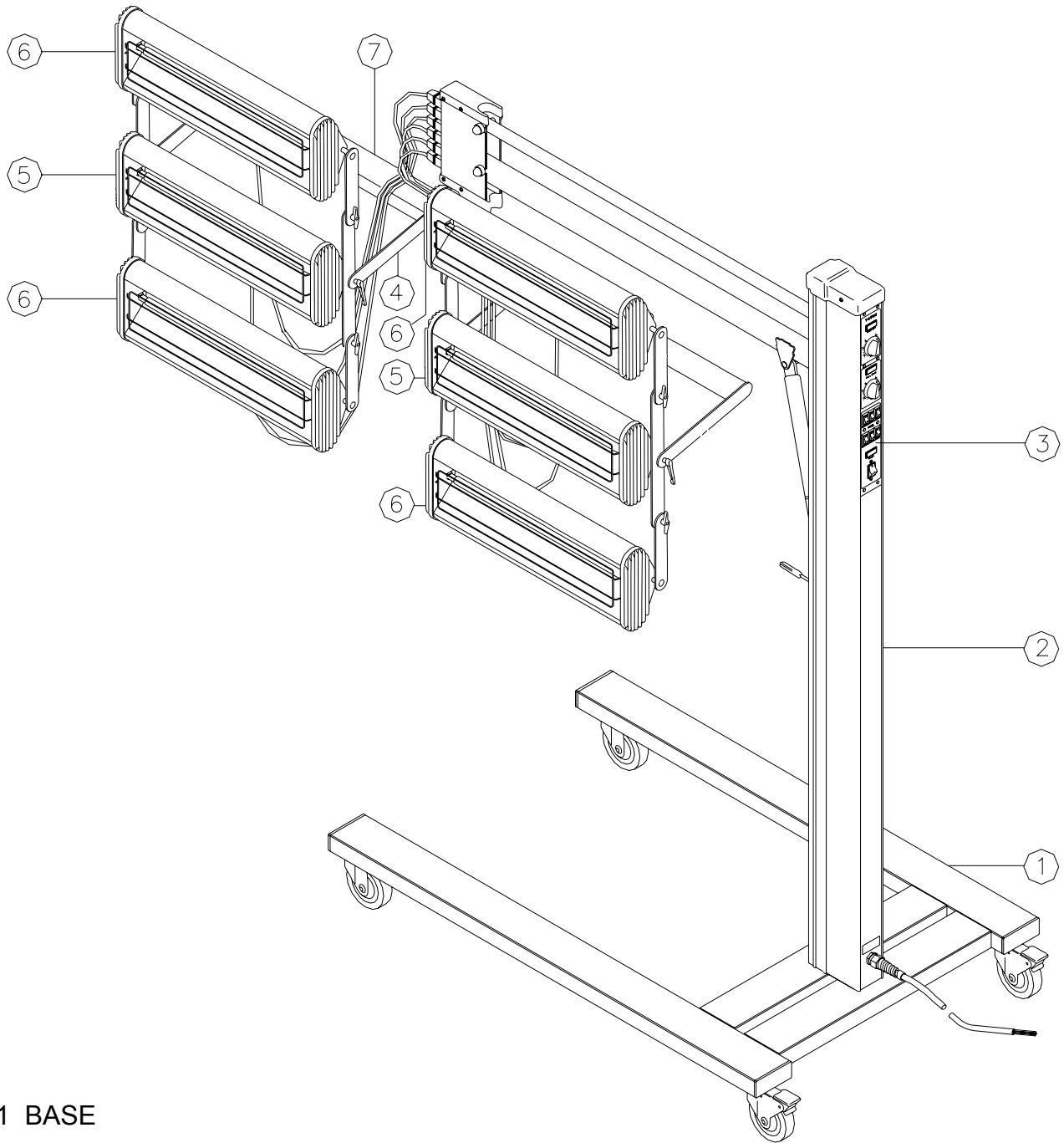
ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD072	END CAP	2
2	S0251	SCREW, SELF TAPPING, No4 x 3/8"	10
3	S330.05.24	CASSETTE SIDE (V-LONG)	2
4	S330.05.20	CASSETTE BACK MESH (V-LONG)	1
5	S330.05.21	BACK REFLECTOR (V-LONG)	1
	S0332	RIVET Ø3.2 x 8, ALUMINIUM	2
6	S330.05.23	CABLE TRAY (V-LONG)	1
7	PDD021	SIDE REFLECTOR	2
8	370.05	PLUG/CORDSET	1
	CM01.05.20	STRAIN RELIEF PLATE	1
	350.05	STRAIN RELIEF GROMMET	1
	S0173C	TERMINAL BLOCK, 20A, 3-WAY	1
	S0328A	RIVET Ø3.2 x 8, BLACK	6
	S0309	WASHER, SHAKEPROOF, M3	4
	S0349	RETAINING PIN	1
9	380.11	I.R. EMITTER	1
10	S330.05.22	GRILLE (V-LONG)	1
11	S8049	SCREW, CAP HEAD SET, M8 x 50	2
12	S8008	CABLE CLIP	2
13	S0220A	CABLE TIE – SNAP IN	6
14	N/A	THIS ITEM IS FACTORY FITTED*	

\*ITEMS THAT ARE FACTORY FITTED CANNOT BE ORDERED AS A PRE-PREPARED PART.

## CASSETTE ASSEMBLY (OUTER) COMPONENTS

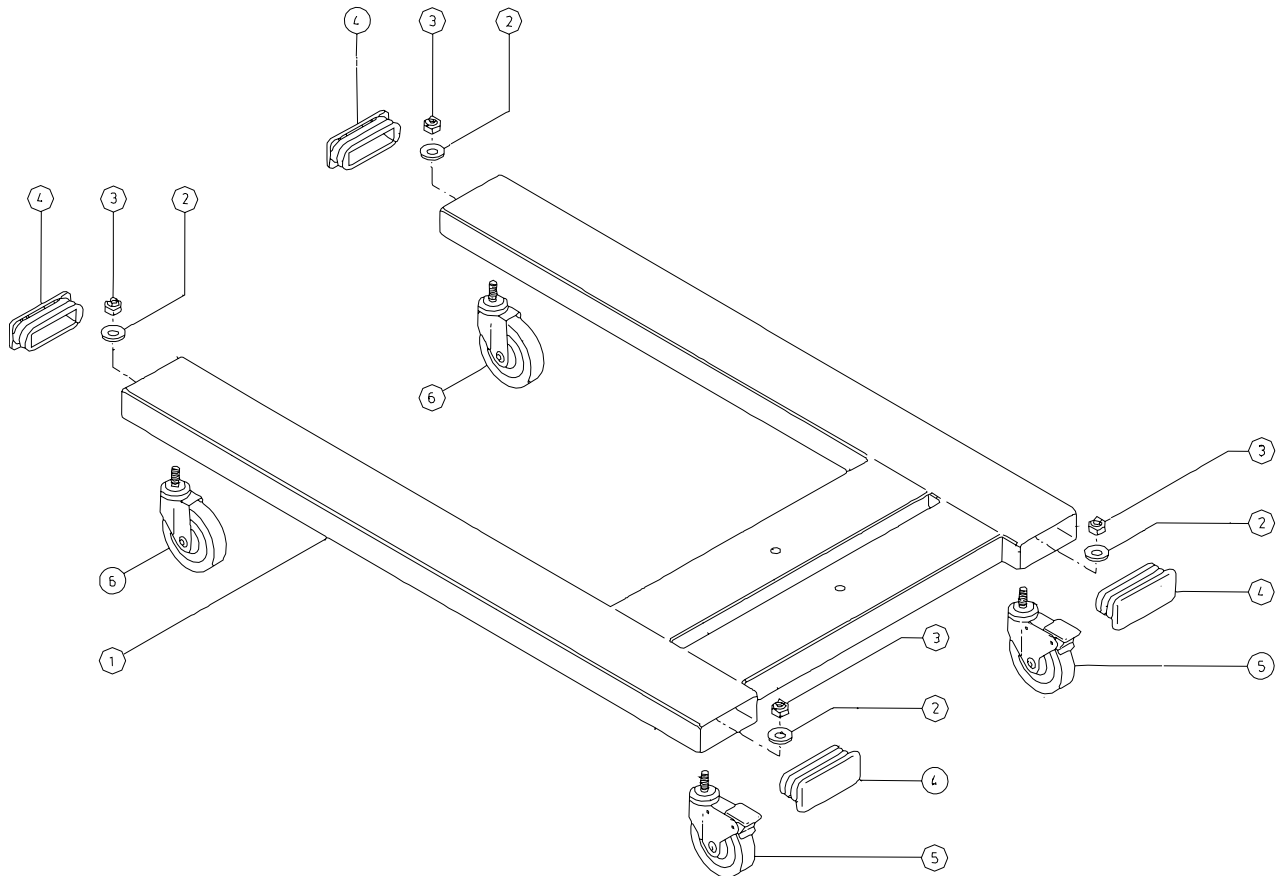
AS ABOVE BUT WITHOUT ITEM NUMBER 11

### 3.3. CUREMASTER SUPER TWIN ETS5: S5/20, S5/21



- 1 BASE
- 2 UPRIGHT / ARMS
- 3 CONTROL BOX
- 4 I.R. CASSETTE / BACK BAR ASSEMBLY
- 5 I.R. CASSETTE (CENTRE)
- 6 I.R. CASSETTE (OUTER)
- 7 DOUBLE UNIT BRACKET

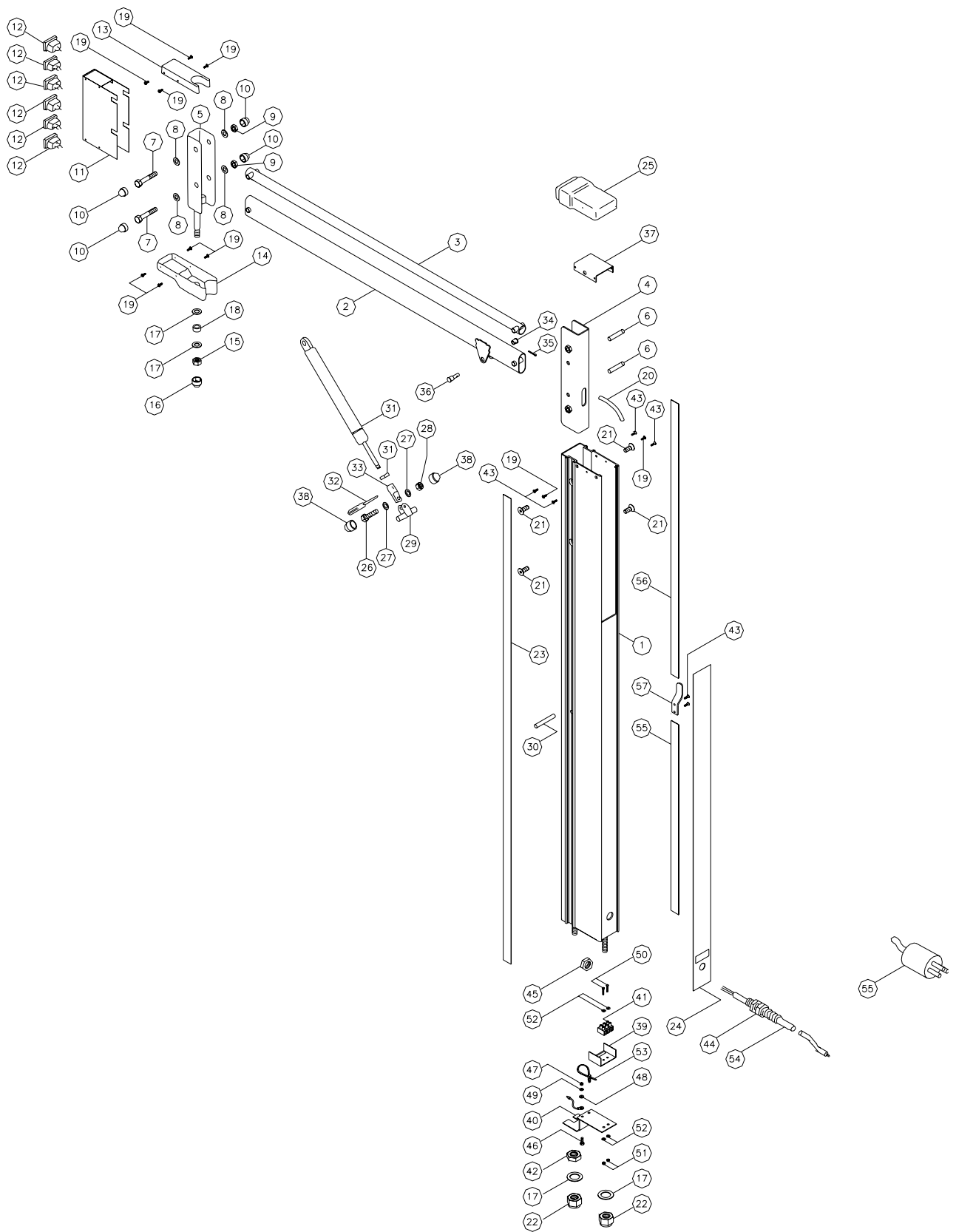
### 3.3.1. BASE



### BASE COMPONENTS

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	S360.01.01	BASE	1
2	S8031	WASHER, M10	4
3	S0293A	LOCKNUT, M10, NYLOC	4
4	S0075D	ENDCAP, PLASTIC	4
5	S0065	BRAKED CASTOR	2
6	S0064	UNBRAKED CASTOR	2

### 3.3.2. UPRIGHT / ARM ASSEMBLY



## UPRIGHT / ARM ASSEMBLY COMPONENTS

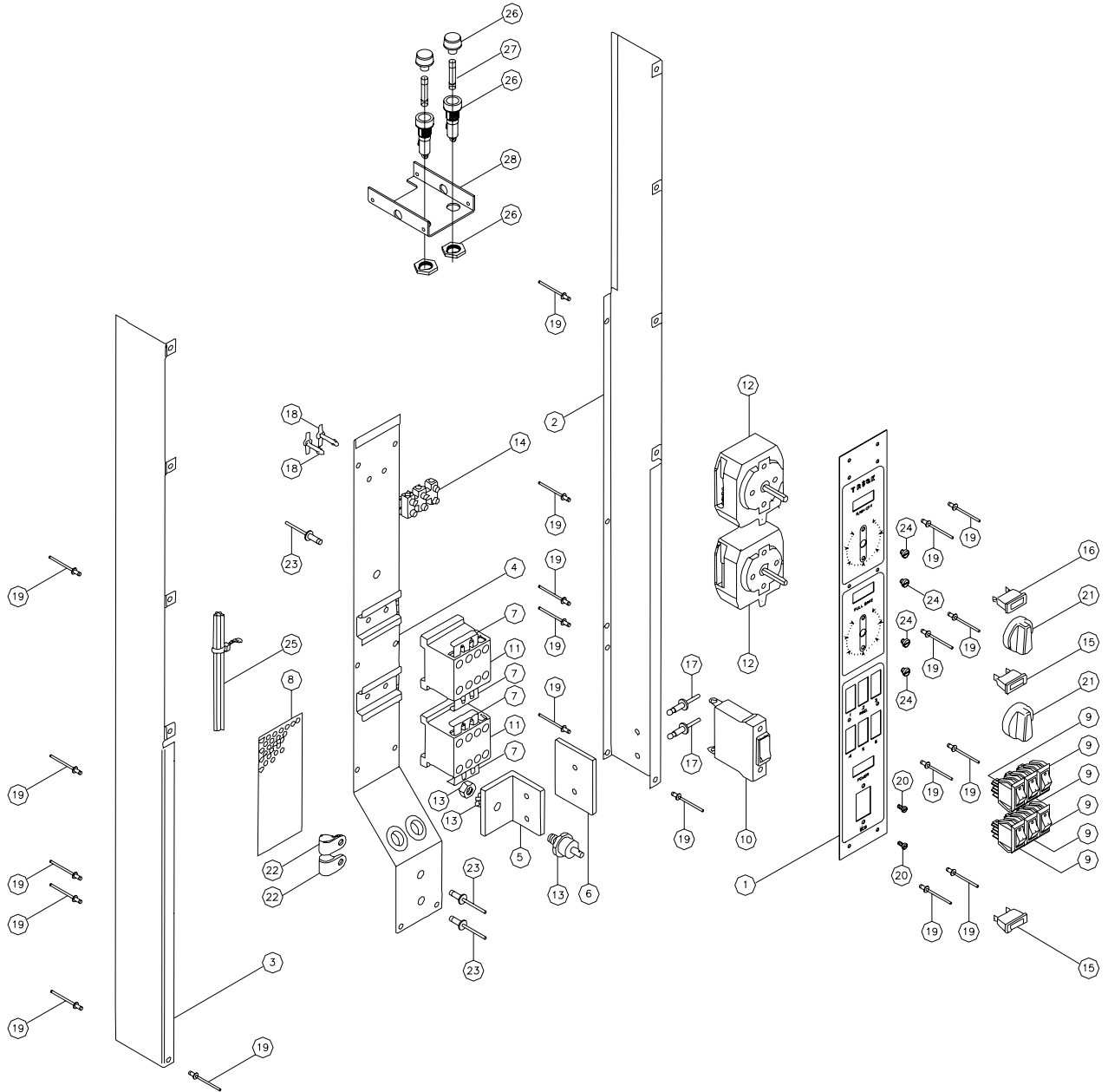
ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PSA093	UPRIGHT COLUMN	1
2	PDD002X	SUPPORT ARM	1
	T1040	HANDLE, LARGE	1
	S0330	POP RIVET Ø4.8 x 15 ALUMINIUM	2
	PDD025	LABEL – ‘CUREMASTER SUPER TWIN’	2
	PDD085	LABEL – ‘CAUTION – THIS ARM EXTENDS’	2
	PDD107	LABEL – ‘DANGER:- RISK OF EXPLOSION’	2
3	PDD002Y	CONTROL ARM	1
4	PDD003X	‘U’ CHANNEL – COLUMN	1
	S0078	GROMMET STRIP	127mm
5	PDD003Y	‘U’ CHANNEL - SOCKET	1
	S0078	GROMMET STRIP	127mm
	S0275	BOLT, M12 x 90	1
6	S8027A	ROLL PIN Ø10 x 50	2
7	S8032	BOLT, M10 x 60	2
8	S8031	WASHER, M10	4
9	S0293A	LOCKNUT, M10	2
10	S8030	NUT CAP, M10	4
11	PPA013	DOUBLE SOCKET HOUSING ASSEMBLY	1
12	372.03	IEC SOCKET	6
13	PDD040Y	TOP END CAP, SOCKET HOUSING	1
14	PDD040X	BOTTOM END CAP, SOCKET HOUSING	1
15	T1033	LOCKNUT, M12, BINX	1
16	S0076	NUT CAP, M12	1
17	S0314	WASHER, M12	4
18	PDD036W	SPACER	1
19	S0251C	SCREW, SELF TAPPING, POZI HEAD, No8 x 1/2”, TYPE B	10
20	N/A	THIS ITEM IS FACTORY FITTED*	
21	S8028	SCREW, COUNTERSUNK, SOCKET HEAD, M10 x 20	4
22	S0294A	LOCKNUT, M12	2
23	PDD012X	COVER, SIDE	1
24	PDD108	COVER, FRONT	1
25	PDD042	TOP CAP, UPRIGHT	1
26	S8040	BOLT, M8 x 30	1
27	S0312	WASHER, M8	2
28	S0292A	LOCKNUT, M8	1
29	PDD011	PIVOT BRACKET	1
30	PDD033	PIN	1
31	S0115	GAS STRUT, 1500N HALF NUT	1
32	S0117	LEVER, GAS STRUT	1
	S0118	LEVER END	1
33	S0116	END, GAS STRUT	1
34	177.01	CAPPED STARLOCK	2
35	194.01	SPACER	2
36	D320.03.36	STRUT ARM PIN	1
37	N/A	SEE CONTROL BOX FOR DETAILS	
38	S0077	NUT CAP, M8	1
39	PDD095	SHROUD, TERMINAL BLOCK	1
	PDD089	LABEL – ‘1 PHASE TERMINAL BLOCK’	1

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
40	PDD094	BRACKET, TERMINAL BLOCK	1
41	S0174	TERMINAL BLOCK, 30A, 5-WAY	1
42	S0294C	HALF NUT, M12	2
43	S0257	SCREW, COUNTERSUNK, POZI HEAD, No8 x 1/2", TYPE B	4
44	350.08	STRAIN RELIEF GLAND, SPIRAL, PG21	1
45	351.02	LOCKNUT GLAND, PG21	1
46	S0269	SCREW, HEX HEAD, M5 x 15	1
47	S0291	NUT, M5	1
48	S0308	WASHER, M5	1
49	S0308A	WASHER, SHAKEPROOF, M5	1
50	118.01	SCREW, NYLON, M4 x 30	2
51	148.01	NUT, NYLON, M4	2
52	158.01	WASHER, NYLON, M4	4
53	S0220A	CABLE TIE – SNAP IN	1
54	S0191A	CABLE – MAINS INPUT	6m
55	S0240B	PLUG, MAINS	1
56	PDD139	SIDE COVER STRIP, LOWER	1
57	PDD140	SIDE COVER STRIP, UPPER	1
58	PDD142	CABLE HANGER	1

\*ITEMS THAT ARE FACTORY FITTED CANNOT BE ORDERED AS A PRE-PREPARED PART.

THIS PAGE IS LEFT BLANK INTENTIONALLY.

### 3.3.3. CONTROL BOX ASSEMBLY

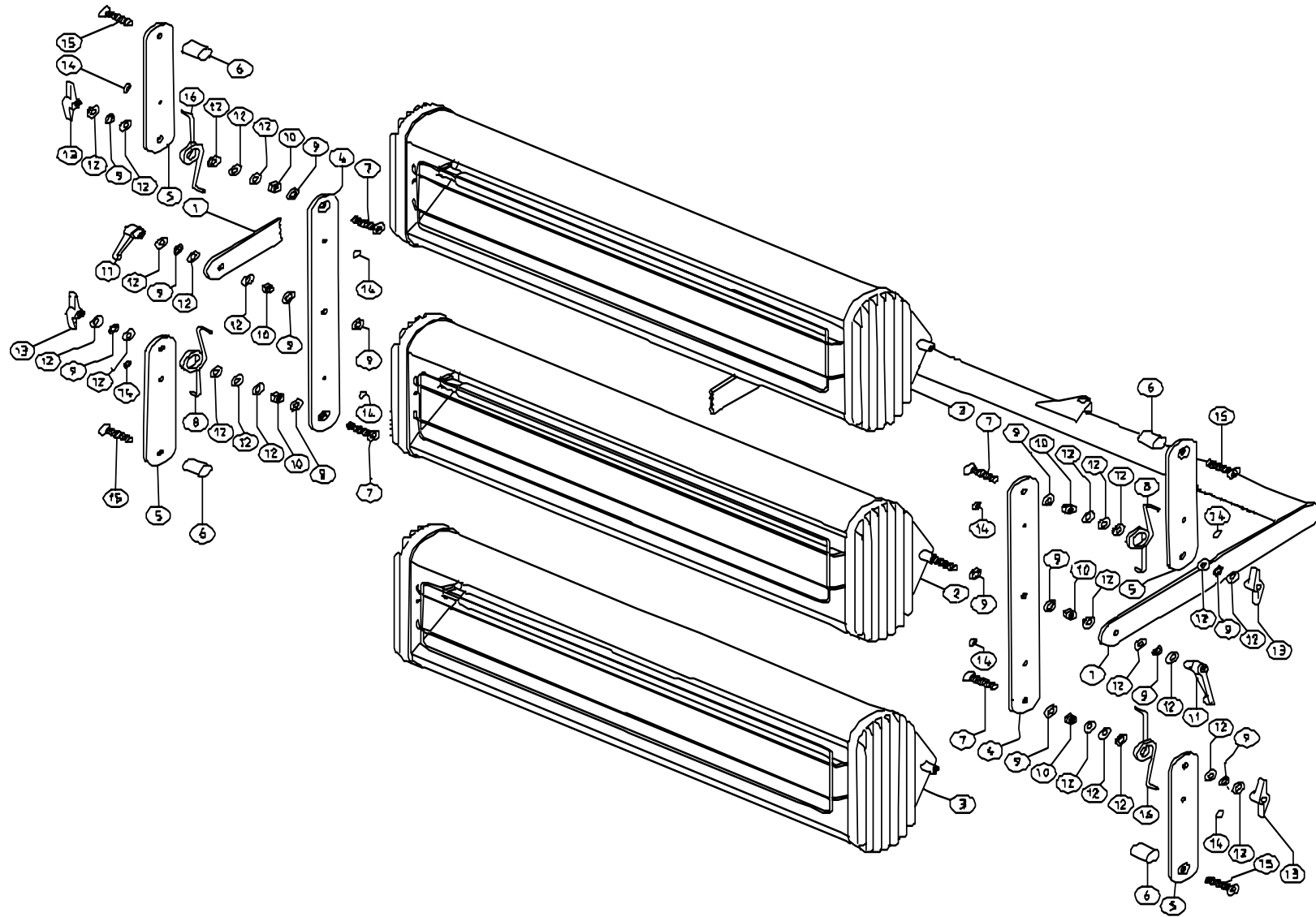


## CONTROL BOX ASSEMBLY COMPONENTS

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD044	FASCIA PANEL	1
	PDD064X	LABEL – ‘FLASH OFF 60Hz’	1
	PDD064Y	LABEL – ‘FULL BAKE 60Hz’	1
	PDD067Y	LABEL – SWITCHES	1
	PDD220	LABEL – FUSE RATING	1
2	PDD052	SIDE SHEET, RIGHT HAND (SHORT)	1
	S0352	POLYESTER INSULATING TAPE	1.5m
3	PDD053	SIDE SHEET, LEFT HAND (SHORT)	1
	S0352	POLYESTER INSULATING TAPE	1.5m
4	PDD054	BASE (SHORT)	1
	PDD073	DIN RAIL BRACKET	4
	S0328A	RIVET Ø3.2 x 8	4
	S0355	GROMMET, Ø11.1	2
5	PDD057	HEAT SINK	3
6	PDD056	HEAT SINK SPACER (SHORT)	3
7	PDD058	CONTACTOR SHORTING LINK	1
8	PDD079	HEAT SINK GRILLE (SHORT)	1
9	S0185	SWITCH	2
10	S0162	CIRCUIT BREAKER	1
11	S8068C	CONTACTOR	2
12	S0228A	TIMER (60Hz)	2
13	S0241	DIODE	3
14	S0174	TERMINAL BLOCK, 30A, 3-WAY	1
15	S0182	INDICATOR, RED	2
16	S0182A	INDICATOR, AMBER	1
17	S0340B	POP RIVET Ø5 x 12, NYLON	8
18	S0298	NUT, NYLON, M3	2
	S0250	SCREW, NYLON, M3 x 25	
	S0307	WASHER, NYLON, M3	
19	S0328A	POP RIVET Ø3.2 x 8	34
20	S0256	SCREW, POZIDRIVE HEAD, TAPTITE, M3 x 6	2
21	S0227	TIMER KNOB	2
22	S0340C	P-CLIP, Ø12.5 CABLE	2
23	S0330	POP RIVET Ø4.8 x 15, ALUMINIUM	4
24	S0311	SCREW, PAN HEAD, M4 x 4	4
25	S0242	RESISTOR, 1MΩ, 0.75W	1
	N/A	THIS ITEM IS FACTORY FITTED*	
26	320.01	FUSE HOLDER	2
27	S0180A	FUSE, 15A TIME DELAY	2
28	PDD124	BRACKET, FUSE	1

\*ITEMS THAT ARE FACTORY FITTED CANNOT BE ORDERED AS A PRE-PREPARED PART.

### 3.3.4. I.R. CASSETTE / BACKBAR ASSEMBLY

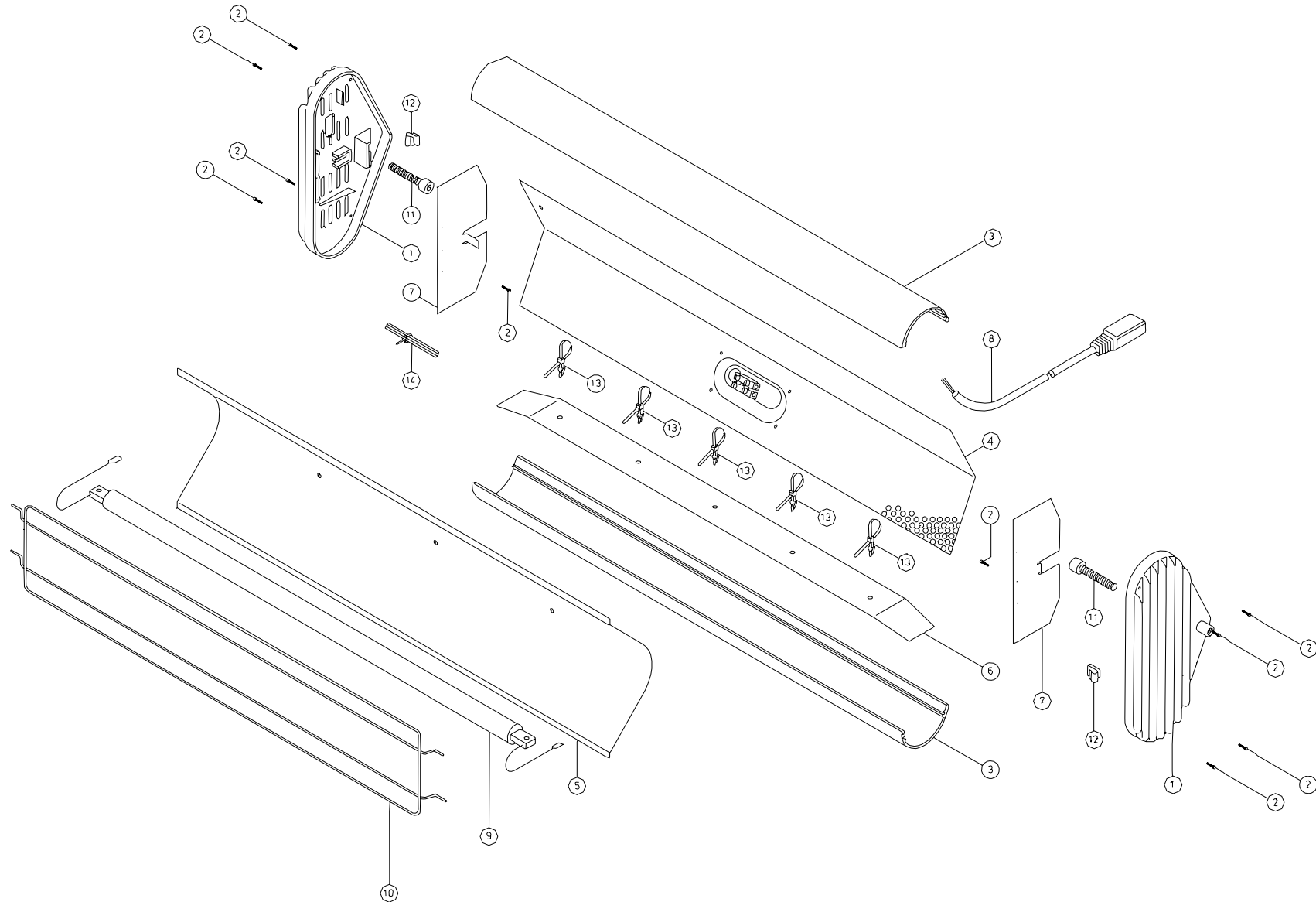


## IR CASSETTE / BACKBAR ASSEMBLY COMPONENTS

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD170	BACKBAR (LONG)	1
2	PPA008W	I.R. CASSETTE ASSEMBLY (CENTRE)	1
3	PPA008Y	I.R. CASSETTE ASSEMBLY (OUTER)	2
4	PDD014X	SIDE BRACKET, LONG	2
5	PDD014Y	SIDE BRACKET, SHORT	4
6	PDD036X	SPACER	4
7	S8051	SCREW, COUNTERSUNK SOCKET HEAD, M8 x 35	4
8	PDD034X	SPRING, RIGHT HAND SIDE BRACKET	2
9	S0321A	WASHER, SHAKEPROOF, M8	14
10	S8054	NUT, M8	6
11	S0087B	RATCHET LEVER, FEMALE	2
12	S0312	WASHER, M8	26
13	S0087A	WING KNOB, FEMALE	4
14	S8053	WASHER, CAPPED STARLOCK, M3	8
15	S8052	SCREW, COUNTERSUNK SOCKET HEAD, M8 x 45	4
16	PDD034Y	SPRING, LEFT HAND SIDE BRACKET	2

NOTE: THE ABOVE QUANTITIES ARE PER CASSETTE BANK; SO DOUBLE EACH QUANTITY FOR PER UNIT

**3.3.5. I.R. CASSETTE ASSEMBLY (CENTRE)**  
**3.3.6. I.R. CASSETTE ASSEMBLY (OUTER)**



## CASSETTE ASSEMBLY (CENTRE) COMPONENTS

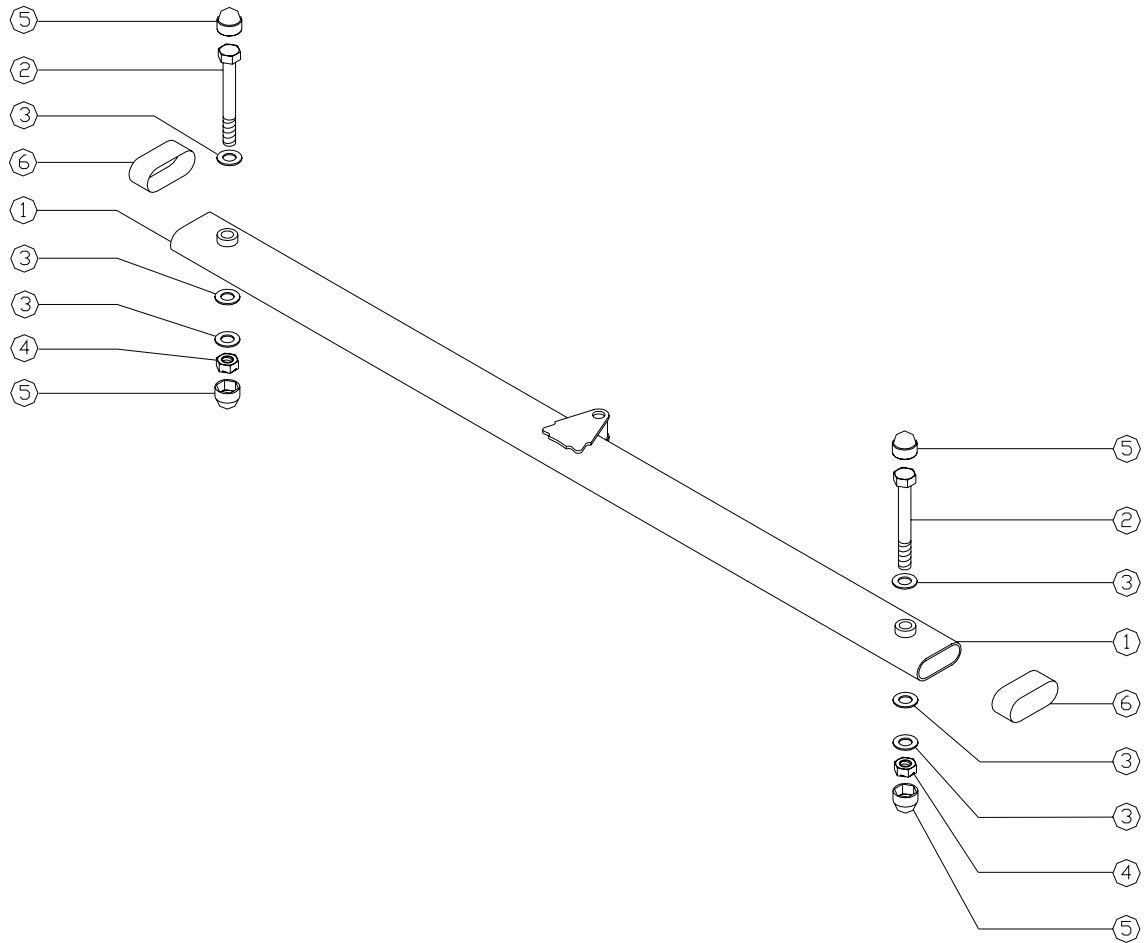
ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD072	END CAP	2
2	S0251	SCREW, SELF TAPPING, No4 x 3/8"	8
3	PDD006Y	CASSETTE SIDE (LONG)	2
4	PDD006W	CASSETTE BACK MESH (LONG)	1
5	PDD007X	BACK REFLECTOR (LONG)	1
	S0332	RIVET Ø3.2 x 8, ALUMINIUM	3
6	PDD082	CABLE TRAY (LONG)	1
7	PDD021	SIDE REFLECTOR	2
8	370.20	PLUG/CORDSET	1
	CM01.05.20	STRAIN RELIEF PLATE	1
	350.05	STRAIN RELIEF GROMMET	1
	S0173C	TERMINAL BLOCK, 20A, 3-WAY	1
	S0328A	RIVET Ø3.2 x 8, BLACK	6
	S0309	WASHER, SHAKEPROOF, M3	4
	S0349	RETAINING PIN	1
9	380.07	I.R. EMITTER	1
10	PDD005X	GRILLE (LONG)	1
11	S8049	SCREW, CAP HEAD SET, M8 x 50	2
12	S8008	CABLE CLIP	2
13	S0220A	CABLE TIE – SNAP IN	4
14	N/A	THIS ITEM IS FACTORY FITTED*	

\*ITEMS THAT ARE FACTORY FITTED CANNOT BE ORDERED AS A PRE-PREPARED PART.

## CASSETTE ASSEMBLY (OUTER) COMPONENTS

AS ABOVE BUT WITHOUT ITEM NUMBER 11

### 3.3.7. DOUBLE UNIT BRACKET



### DOUBLE UNIT BRACKET COMPONENTS

ITEM NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	PDD172	DOUBLE UNIT BRACKET	1
SUPPLIED WITH THE FOLLOWING ITEMS:			
2	S0276	BOLT, M12 x 110	2
3	S0314	WASHER, M12	6
4	S0294A	LOCKNUT, M12	2
5	S0076	NUT CAP, M12	4
6	PDD045	END CAP	2

## 4. FAULT FINDING GUIDE

PROBLEM	INDICATOR STATUS	ACTION
<b>(1) INFRA RED EMITTERS WILL NOT TURN OFF</b>	Timer indicator lamp does not turn off at end of pre- set time.	Timer (CONTROL BOX: 12) may be sticking. Manually turn timer off and check that the indicator lamp turns off. REPLACE TIMER (PROCEDURE 5 REFERS)
	Timer indicator lamp turns off at end of timing sequence.	Manually turn timer on and off and listen for contactor (relay) (CONTROL BOX); 11) opening and closing - contactor may be sticking. Tap side of upright to see if contactor will open. Re-check operation. If problem persists; REPLACE CONTACTOR (PROCEDURE 4 REFERS)
<b>(2) INFRA RED EMITTERS WILL NOT TURN ON.</b>	Timer indicator lamp showing timer on.	Check that cassette cords (I.R. CASSETTE – CENTRE/OUTER; 8) are securely plugged into their IEC sockets (UPRIGHT/ARMS; 12)
		Manually turn Timer on and off and listen for Contactor (CONTROL BOX: 11) opening and closing.
		Listen for buzzing sound of contactor trying to operate; REPLACE CONTACTOR (PROCEDURE 4 REFERS)
		Check operation of other timer (CONTROL BOX; 12) manually and see if the infrared emitters will turn on. If operating correctly; REPLACE CONTACTOR ON ORIGINAL TIMER (PROCEDURE 4 REFERS)
		Check that the supply voltage is within operating range of unit.

PROBLEM	INDICATOR STATUS	ACTION
<b>(3) INFRARED EMITTERS TURN ON IMMEDIATELY THE MAIN POWER SWITCH IS TURNED ON.</b>	Indicator lamps on both timers should be off.	If both timer indicator lamps are off, contactor (CONTROL BOX; 11) is sticking; <b>REPLACE CONTACTOR (PROCEDURE 4 REFERS)</b>
	One of the timer indicator lamps is on.	Wait for timing sequence to finish. If timer does not turn off in reasonable time, turn off manually and check main infrared emitters turn off. If emitters need to be turned off manually, the timer (CONTROL BOX; 12) is sticking; <b>REPLACE TIMER (PROCEDURE 5 REFERS)</b>
<b>(4) INFRA-RED EMITTERS FLICKER</b>	Mains indicator lamp flickers	Check wiring to mains plug for a poor connection. Lightly tug mains cable (UPRIGHT/ARMS: 54) at base of upright. If lights are affected by this action, then the problem is with the mains cable or mains input terminal block (UPRIGHT/ARMS: 41). Examine Mains Cable for a poor connection; <b>REPLACE MAINS CABLE IF REQUIRED (PROCEDURE 4 REFERS)</b>
	Mains indicator lamp steady illumination	Ensure cassette plugs (I.R CASSETTE – CENTRE / OUTER; 8) are securely plugged into their IEC sockets (UPRIGHT / ARMS; 12) and that the cassette cords have not been damaged. If the cord is damaged; <b>REPLACE CASSETTE CORD (PROCEDURE 3 REFERS)</b>
		Examine socket housing at the end of the arm. If any IEC sockets have been damaged; <b>REPLACE DAMAGED SOCKET (PROCEDURE 6 REFERS)</b>

PROBLEM	INDICATOR STATUS	ACTION
<b>(5) ARM WILL NOT RAISE OR LOWER</b>	N/A	Gas strut locknut (upright / Arms: 31) may be slack, causing unit to jam. To reset, rotate gas strut shaft one half turn clockwise and check operation with release arm. Continue this operation until a position is obtained which allows the arm to move freely up and down when the gas strut lever is depressed. Tighten locknut.
		If examination of the gas strut reveals damage to the unit e.g. bent shaft, refer to; <b>GAS STRUT REPLACEMENT (PROCEDURE 7)</b>
<b>(6) INFRA RED EMITTER IN CASSETTE WILL NOT ILLUMINATE</b>	Mains indicator lamp is on, one timer light is on and emitter switches are on	Check cassette plugs (I.R CASSETTE-CENTRE / OUTER; 8) are securely plugged into their IEC sockets (UPRIGHT / ARMS; 12) and that the cassette cords have not been damaged. If other Infrared emitters operate correctly, substitute plug of faulty emitter unit into another socket. If emitter does not operate, it needs replacing; I.R EMITTER REPLACEMENT (PROCEDURE 8 REFERS)

## **5. REPAIR PROCEDURES**

### **5.1. REMOVAL OF CONTROL BOX FROM UPRIGHT**

1. Ensure that the unit is disconnected from the mains supply.
2. Remove the Infrared cassette from the end of the arm by removing the M12 binx style locknut (UPRIGHT / ARMS; 15) from the M12 x 90 bolt (UPRIGHT / ARMS; 5). Carefully support the Infrared cassette and slide this unit off the bolt being careful not to lose the fittings. For double units (ETS5) at least 2 people are recommended to remove the assembly. With the extended backbar it may be easier to remove each set of three cassettes and the backbar separately.
3. Remove the self-tapping screws holding the top cap (UPRIGHT / ARMS: 25) onto the top of the upright.
4. Remove the 2 plastic covers (UPRIGHT / ARMS: 23) from the sides of the upright. This will expose 4 x M10 countersunk socket head screws (UPRIGHT / ARMS: 21), which retain the main arm 'U' channel (UPRIGHT / ARMS: 4). Slacken these screws one turn to aid in the removal of the control box.
5. Remove 2 x M12 locknuts (UPRIGHT / ARMS: 22) and fittings from beneath the base that hold the upright to the base assembly. Lift the upright from the base and lay it on its side.
6. Examination of the bottom of the upright will expose a metal plate (UPRIGHT / ARMS; 40) retained by a half nut (UPRIGHT / ARMS; 42). Remove the M12 half nut and carefully slide the metal plate from M12 stud. This will reveal a terminal block (UPRIGHT / ARMS; 41) that connects the mains cable (UPRIGHT / ARMS; 54) to the control box input cable.
7. Disconnect the wires that connect Control Box to Terminal Block. NOTE: The earth terminal may be retained by M5 earth bolt. Refer to Appendix 1 for terminal block connections.
8. Slide the metal plate back onto the upright retaining stud and place the upright back onto the base assembly. For safety refit M12 locknuts.
9. Remove the self-tapping screws that secure the column top bracket (UPRIGHT / ARMS: 37) at the top of the upright.
10. Carefully remove the column top bracket from the top of the upright.
11. Within the upright are a number of in-line connectors. Separate the required in-line connectors to allow the control box to be slid upwards and slightly outwards and to be removed from the upright.

## 5.2. MAINS CABLE REPLACEMENT

1. Ensure that the unit is disconnected from the mains supply.
2. Remove the Infrared cassette from the end of the arm by removing the M12 binx style locknut (UPRIGHT / ARMS; 15) from the M12 x 90 bolt (UPRIGHT/ ARMS; 5). Carefully support the Infrared cassette and slide this unit off the bolt, being careful not to lose the fittings. For double units (ETS5) at least 2 people are recommended to remove assembly. With the extended backbar it may be easier to remove each set of three cassettes and the backbar separately.
3. Remove 2 x M12 locknuts (UPRIGHT / ARMS: 22) and fittings from beneath the base that hold the upright to the base assembly. Lift the upright from the base and lay it on it's side.
4. Examination of the bottom of the upright will reveal a metal plate (UPRIGHT / ARMS; 40) retained by a half nut (UPRIGHT / ARMS; 42). Remove the M12 half nut and carefully slide the metal plate from M12 stud. This will expose a terminal block (UPRIGHT / ARMS; 41) that connects the mains cable (UPRIGHT / ARMS; 54) to the control box input cable.
5. Removal of the mains cable involves disconnecting the mains input wires from the mains input terminal block (UPRIGHT / Arms; 41).
6. The mains input cable (14AWG, 3 core for ETS2 model, 12AWG, 3 core for ETS3 model and 10AWG, 3 core for ETS5 model) is retained by a strain relief gland (UPRIGHT / ARMS; 44) and may be removed by slackening the external hexagonal locking collar. When the new cable is fitted to the upright, the cable sheath must pass at least 5mm through the terminal block side of the spiral gland. Refer to Appendix 1 for terminal block connections.
7. The unit is now ready for re-assembly.

## 5.3. CASSETTE CORD REPLACEMENT\*

\*The Cassette Cord is usually supplied as part of a spares package complete with Strain Relief Plate and associated components. The following procedure details the steps of replacing just the Cassette Cord itself.

1. Ensure that the unit is disconnected from the mains supply.
2. Disconnect the cassette cords (I.R. CASSETTE- CENTRE / OUTER; 8) from IEC sockets (UPRIGHT / ARMS; 12).
3. Remove the affected Infrared cassette assembly from the end of the arm by removing the M12 binx style locknut (UPRIGHT / ARMS; 15) from the M12 X 90 bolt (UPRIGHT / ARMS; 5). Carefully support the Infrared cassette assembly and slide this unit off the bolt being careful not to lose the fittings.

4. Examination of the rear of the affected Infrared cassette will show the cord entering the unit via a spiral gland mounted on a strain relief plate (CASSETTE CENTER / OUTER; 4). Drill out the four rivets which hold the strain relief plate to the back mesh (CASSETTE – CENTRE / OUTER; 4) and the central rivet that holds the earth terminal to the strain relief plate.
5. A record should be made of the connections to the terminal block before removing old cable.
6. A pair of Heyco hand-pliers is usually required for removing and fitting the spiral gland but normal hand-pliers can be used if necessary. Fit the new cord (CASSETTE; 8).
7. Re-attach the cassette earth terminal. Rivet the strain relief plate onto the back mesh (I.R CASSETTE – CENTRE / OUTER; 4)
8. The unit is now ready for re-assembly

## **5.4. CONTACTOR REPLACEMENT**

1. Remove the control box as described in 5.1.
2. The first operation involves drilling out the rivets which hold the control box base metal plate (CONTROL BOX; 4) to the two side sheets (CONTROL BOX2 & 3 ). This will allow the base to be sprung out of the two side sheets leaving the fascia plate still riveted.
3. A replacement contactor will be supplied. Check that the replacement contactor has the same specifications as the faulty contactor. The cables attached to the old contactor should be transferred to the equivalent terminals on the replacement. Contactors can have their cables changed over one at a time or reference can be made to the Circuit Diagrams (Figures 4a & 4b.)  
When the wires have been changed over from the old contactor to its replacement, remove the faulty contactor from the DIN rail and replace with the new contactor. Carefully reposition the harness into a tidy condition so that when the base plate is riveted back to the side sheets, wires are not trapped and damaged. The control box should then be inspected for any damage before refitting to the upright.
4. The control box may be replaced in the upright and the in-line connections at the top of the upright re-made. Refer to Figures 2a & 2b (Connections at Top of Upright) for further details.
5. Refit the column top bracket (UPRIGHT / ARMS; 37) using fittings.
6. To complete re-assembly of unit, lift the upright from the base assembly and lay it on it's side to gain access to the bottom terminal block bracket. Slide the terminal block bracket off the column mounting studs and connect the control box leads to the terminal block. Refer to Figures 1a & 1b for terminal block connections

Carefully refit the terminal block bracket to the stud and retain it with the M12 half nut (UPRIGHT / ARMS; 42) taking care not to trap any cables in this operation.

7. Refit the upright to the base and refit the plastic top cap to the upright with self-tapping screws and re-assemble the rest of the unit.

## **5.5. TIMER REPLACEMENT**

1. Remove control box as described in 5.1.
2. Before removing faulty the timer (CONTROL BOX; 12), carefully mark the leads to the timer terminals and indicators to aid re-assembly.
3. Pull the timer knob off to expose two retaining screws. Removing these screws will allow the timer to be eased out of the control box channel after removing indicator connections. Refit the timer in reverse order to dismantling, taking care to fit the timers with M4 x 4mm long pan head screws if not already fitted.
4. If the terminals to the timers have not been identified, reference to the Circuit Diagrams should aid re-assembly (Appendices 4a, b &c).
5. Re-assemble unit as in 5.4.

## **5.6. IEC SOCKET REPLACEMENT**

1. Ensure that the unit is disconnected from the mains supply.
2. Drill out the rivets that hold the plastic top and bottom caps (UPRIGHT / ARMS; 13, 14) onto the arm socket housing (UPRIGHT / ARMS; 11). Remove caps.
3. Remove the plastic caps (UPRIGHT / ARMS; 10) that cover the bolts that attach the socket housing to the arm 'U' channel (UPRIGHT ARMS; 5).
4. Slacken the M10 locknuts (UPRIGHT / ARMS; 9) sufficiently to allow the socket housing to slide off and give access to the IEC sockets. Do not use excessive force or the wires will be damaged.
5. Take a note of the wiring connections to the damaged socket then remove the wires and unclip the socket.
6. Clip the new socket into the housing and refit the cables. If in doubt, refer to Appendices 3a, b & c(Socket Connections).
7. Refit the socket housing to arm.

## 5.7. GAS STRUT REPLACEMENT

1. Ensure that the unit is disconnected from the mains supply.
2. Check that the rating of replacement gas strut is correct (if in doubt, check rating on old gas strut).
3. Remove the self – tapping screws, which secure the plastic cap (UPRIGHT / ARMS; 25), on the top of upright.
4. Remove the 2 plastic covers (UPRIGHT / ARMS; 23) from the side of the upright.
5. Carefully support the cassette assembly on a stand or bench.
6. Remove the split pin (UPRIGHT / ARMS; 36) from the collar assembly, which fastens the gas strut to the support arm being careful not to lose the components.
7. Push out the lower gas strut pivot pin (UPRIGHT / ARMS; 30).
8. Rotate the gas strut and remove from the upright.
9. Replace with a TRISK pre-prepared gas strut..
10. Replace the lower gas strut pivot pin.
11. Adjust the arm height to suit the new gas strut setting.
12. Reassemble the holding collar arrangement and fix in place with a new split pin.

**CAUTION: Once fitted, Gas Strut should only be tested with I.R. Cassettes in place.**

13. Check that gas strut operation is satisfactory.

## 5.8. I.R EMITTER REPLACEMENT

1. Check that the replacement emitter has the correct voltage and wattage ratings. Check the old emitter end caps if in doubt.
2. Ensure that the unit is disconnected from the mains supply.
3. Remove the wire grille from the front of the Infrared cassette (I.R. CASSETTE – CENTRE OUTER; 10).
4. Remove the self-tapping screws (I.R. CASSETTE – INNER / OUTER; 2) that hold the side reflectors (I.R. CASSETTE –INNER / OUTER; 7) into cassette. A small, flat bladed screwdriver will be necessary to lift the side reflector from the cassette.

5. When the side reflectors are removed, take note of the cable positions before removing the old emitter.
6. The in-line connectors can be separated by hand, but a better solution is to use two pairs of pliers, one to hold each connector when separating the wires.
7. Fit the new Infrared emitter to the sockets in the cassette. Try to avoid touching the ruby sleeve with bare hands by using tissue paper to handle the emitter.
8. Reconnect the Infrared emitter to the cassette wiring, taking care to replace the wires in the original positions.
9. Fit the side reflectors, then clean ruby sleeve and reflectors with IPA or Methylated Spirits.
10. Refit the grille.
11. Allow 15 minutes for the solvent to dissipate before switching on.

## **6. APPENDICES**

Appendix 1: 3-way Terminal Block Connections (base of upright)

Appendix 2a: Connections at Top of Upright (ETS2)

Appendix 2b: Connection at Top of Upright (ETS3)

Appendix 2c: Connection at Top of Upright (ETS5)

Appendix 3a: Socket Connections (ETS2)

Appendix 3b: Socket Connections (ETS3)

Appendix 3c: Socket Connections (ETS5)

Appendix 4a: Electrical Circuit Diagram (ETS2)

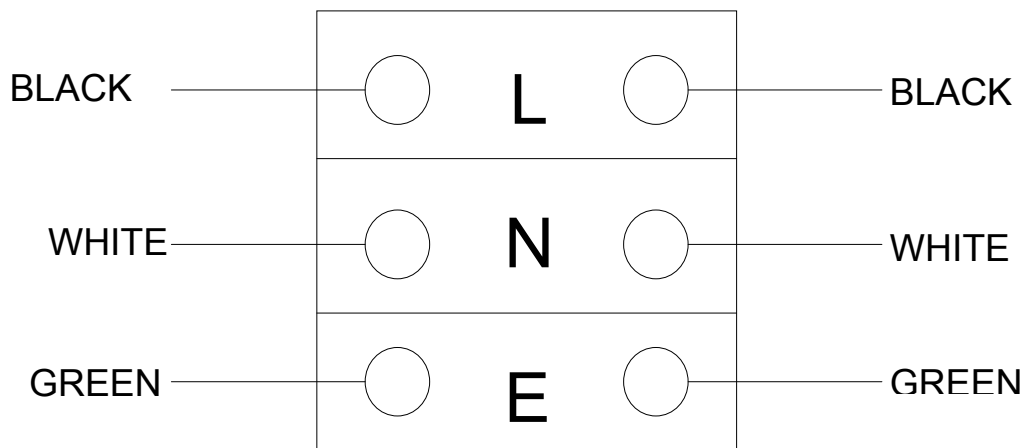
Appendix 4b: Electrical Circuit Diagram (ETS3)

Appendix 4c: Electrical Circuit Diagram (ETS5)

# APPENDIX 1. 3 WAY TERMINAL BLOCK CONNECTIONS (BASE OF UPRIGHT)

MAINS CABLE

CABLE TO CONTROL BOX



## APPENDIX 2a. CONNECTIONS AT TOP OF UPRIGHT (ETS2)

### Cable to Control Box

BROWN MARKED 1

BROWN MARKED 2

BROWN MARKED 3

BLUE

GREEN / YELLOW

Terminated with blue shrouded receptacles.

### Cable to Arms and Sockets

BLACK CORE MARKED 1

BLACK CORE MARKED 2

BLACK CORE MARKED 3

BLACK CORE MARKED 4

GREEN / YELLOW

Terminated with blue male couplers.

## APPENDIX 2b. CONNECTIONS AT TOP OF UPRIGHT (ETS3)

### Cable to Control Box

RED MARKED 1

BLUE

RED MARKED 2

BLUE

RED MARKED 3

BLUE

GREEN / YELLOW

Terminated with blue shrouded receptacles.

### Cable to Arms and Sockets

BLACK CORE 1 MARKED 1

BLACK CORE 2

BLACK CORE 1 MARKED 2

BLACK CORE 2

BLACK CORE 1 MARKED 3

BLACK CORE 2

GREEN / YELLOW

GREEN / YELLOW

GREEN / YELLOW

Terminated with blue male couplers.

## APPENDIX 2c. CONNECTIONS AT TOP OF UPRIGHT (ETS5)

### Cable to Control Box

RED MARKED1

YELLOW MARKED 1

BLUE MARKED 1

RED MARKED 2

YELLOW MARKED 2

BLUE MARKED 2

BLACK

BLACK

GREEN / YELLOW

GREEN / YELLOW

Terminated with blue shrouded receptacles.

### Cable to Arms and Sockets

BLACK MARKED 1

BROWN MARKED 2

BLACK MARKED 3

BLACK MARKED 11

BROWN MARKED 22

BLACK MARKED 33

BLUE

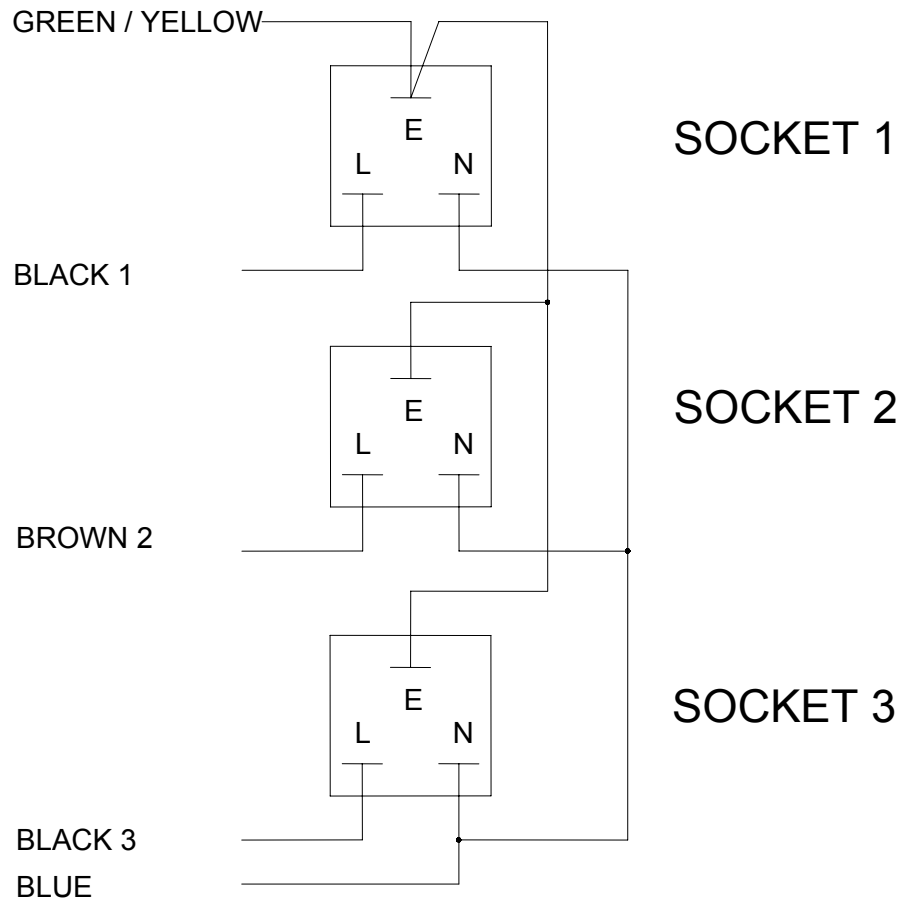
BLUE

GREEN / YELLOW

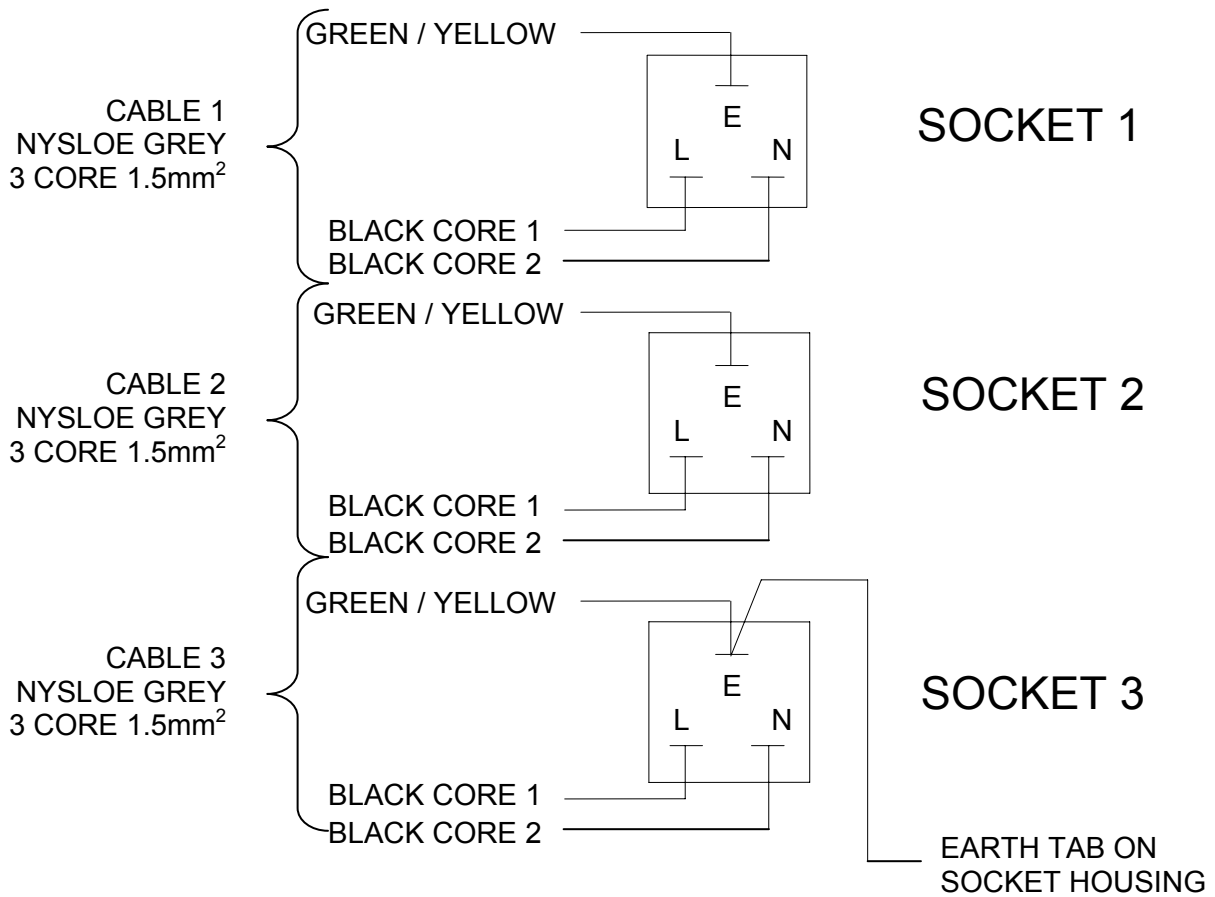
GREEN / YELLOW

Terminated with blue male couplers.

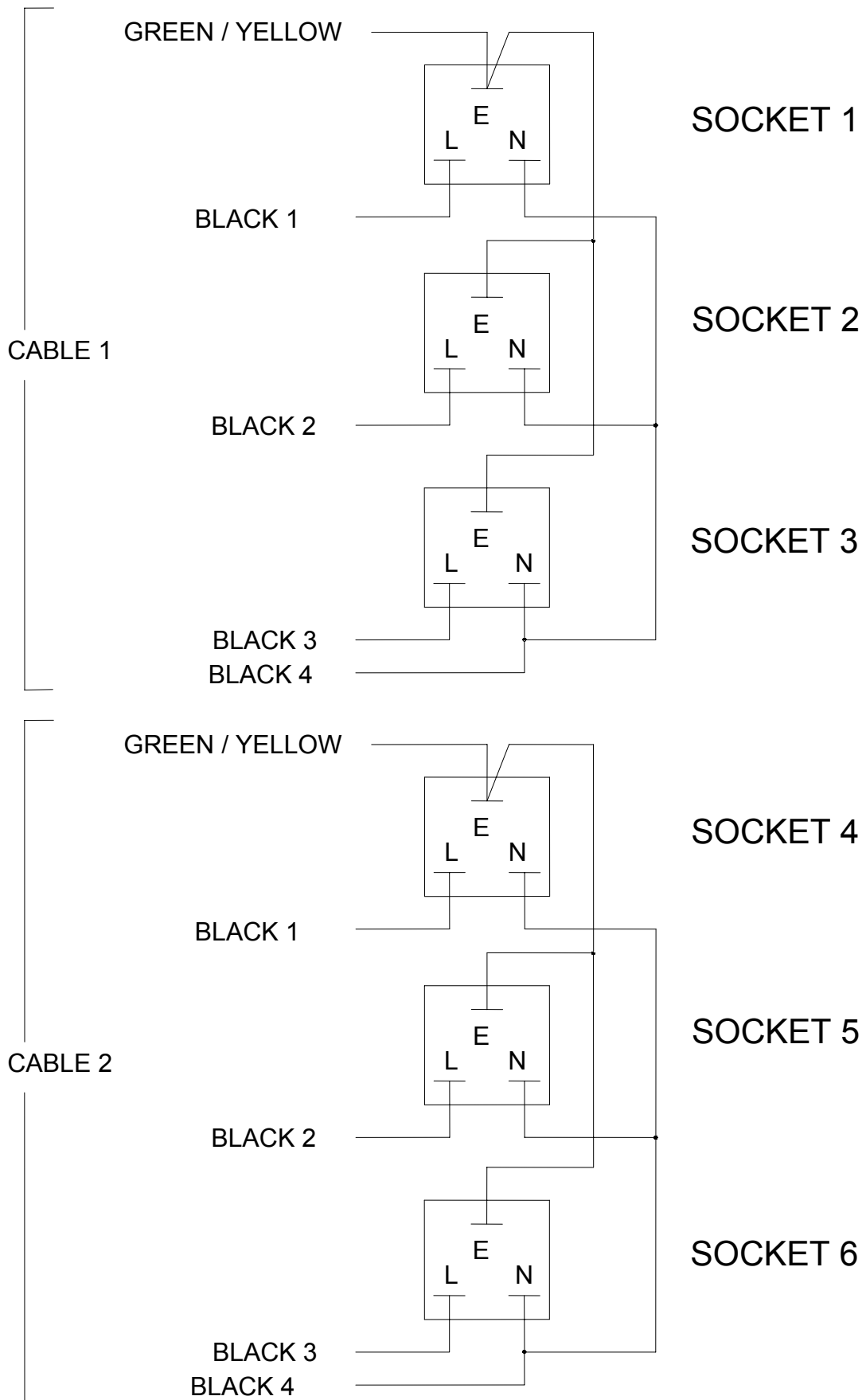
# APPENDIX 3a. SOCKET CONNECTIONS (ETS2)



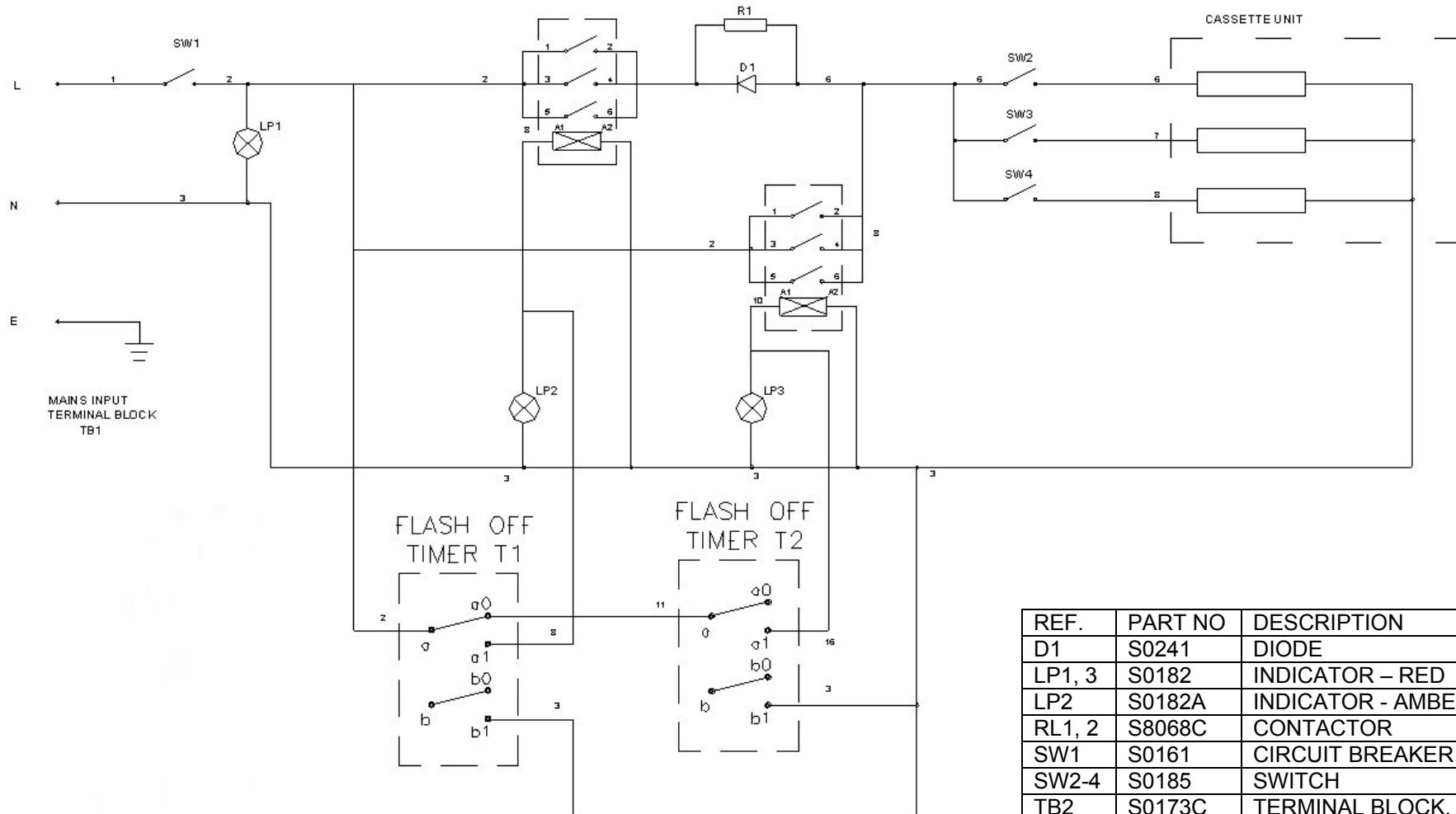
# APPENDIX 3b. SOCKET CONNECTIONS (ETS3)



# APPENDIX 3c. SOCKET CONNECTIONS (ETS5)

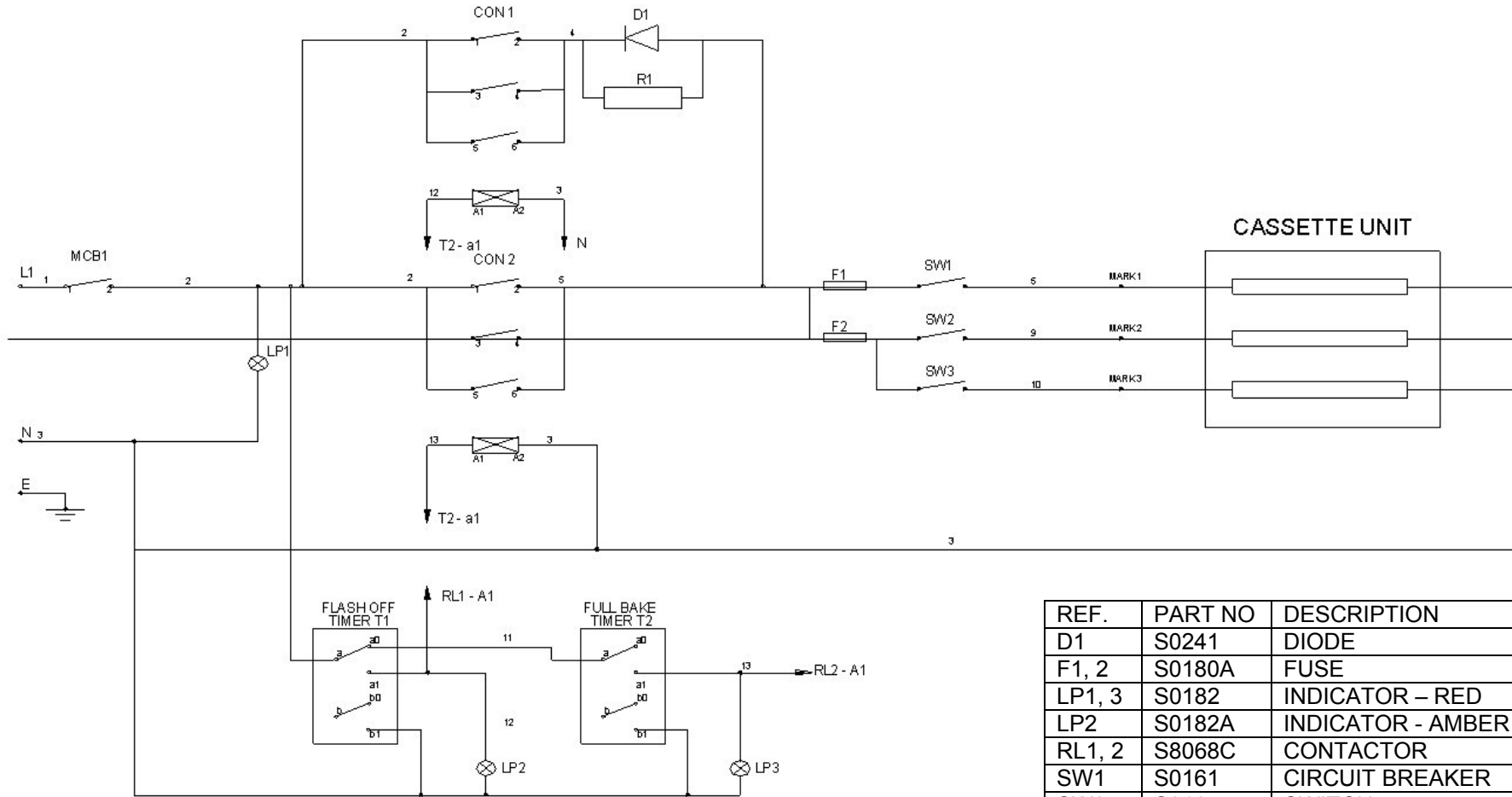


# APPENDIX 4a. ELECTRICAL CIRCUIT DIAGRAM (ETS2)



REF.	PART NO	DESCRIPTION
D1	S0241	DIODE
LP1, 3	S0182	INDICATOR – RED
LP2	S0182A	INDICATOR - AMBER
RL1, 2	S8068C	CONTACTOR
SW1	S0161	CIRCUIT BREAKER
SW2-4	S0185	SWITCH
TB2	S0173C	TERMINAL BLOCK, 20A
T1, 2	S0228	TIMER
R1	N/A	FACTORY FITTED

# APPENDIX 4b. ELECTRICAL CIRCUIT DIAGRAM (ETS3)



REF.	PART NO	DESCRIPTION
D1	S0241	DIODE
F1, 2	S0180A	FUSE
LP1, 3	S0182	INDICATOR – RED
LP2	S0182A	INDICATOR - AMBER
RL1, 2	S8068C	CONTACTOR
SW1	S0161	CIRCUIT BREAKER
SW2-4	S0185	SWITCH
TB2	S0173C	TERMINAL BLOCK, 20A
T1, 2	S0228	TIMER
R1	N/A	FACTORY FITTED





FM 67  
ISSUE 8

© Edwin Trisk 2006

**EDWIN TRISK LTD,**  
8 – 9 BLEZARD BUSINESS PARK  
SEATON BURN  
NEWCASTLE UPON TYNE  
TYNE AND WEAR  
NE13 6DS  
UNITED KINGDOM

Tel: +44 (0) 845 113 5522  
Fax: +44 (0) 845 113 5511  
E-mail: [infrared@trisk.co.uk](mailto:infrared@trisk.co.uk)  
Web: [www.trisk.co.uk](http://www.trisk.co.uk)