

Essa[®] LM2 Pulverising Mill

LM2

Spare Parts Lists

Revision 0

2.5 Operating/Maintenance Spare Parts

The sections that follow contain lists of parts recommended to, commission, operate and maintain this equipment.

2.5.1 Recommended Commissioning Spares

Not applicable. No commissioning spares are recommended for this machine.

2.5.2 Recommended Operating/Maintenance Spares – Mill

The following Spare Parts List shows the parts recommended to be held in stock for 12 months operation and general maintenance of the Mill. It does not include parts that may be required during a major overhaul. Please refer to the comprehensive Parts List in Section 9 of this manual.

Item	Item No.	Quantity
Vee belts	225003	2
Hour counter	605911	1
Bearing	221005	2
Bearing housing	221019	2
Platform insert	470029	1
Air line 6 mm	340012	3 m
Air bag clamp	111070	2
Pneumatic regulator	340002	1
Mill spring spigot bush	115050	12
Spring	350010	6

Table 2 Recommended Operating/Maintenance Spares for the Mill

2.5.3 Recommended Operating/Maintenance Electrical Spares – Mill

The following Spare Parts List shows the electrical parts recommended to be held in stock for 12 months operation and general maintenance of the Mill. Please refer to the comprehensive Parts List in Section 9 of this manual, for a complete electrical parts list and illustrations with figure reference numbers corresponding to those shown in the Table below.

Fig Ref #	Item No. for 220-240V	Item No. for 380-415V	Description	Qty
3	604059	604059	Contactor	1
4	604252	604250	Overload relay	1
9	340064	340064	Solenoid valve 50/60 Hz	1
10	616200	616200	Air pressure switch	1
11	340001	340001	Air clamp bleed control	1
13	340002	340002	Filter regulator	1
14	605918	605918	Start switch actuator	1
15	605919	605919	Stop switch actuator	1
34	605805	605805	Lid locking safety switch	1

Table 3 Recommended Operating/Maintenance Electrical Spares - Mill

2.5.4 Recommended Operating/Maintenance Spares - Millmate

The following Spare Parts List shows the parts recommended to be held in stock for 12 months operation and general maintenance of the Millmate. Please refer to the comprehensive Parts List in Section 9 of this manual.

Item	Item No.	Quantity
Air line 4 mm	340182	3 m
Air line 6 mm	340012	3 m
Air bag	111070	2
Pneumatic regulator	340002	1

Table 4 Recommended Operating/Maintenance Spares for the Millmate

2.5.5 Recommended Critical Insurance Spares

Not applicable. No critical insurance spares are recommended for this machine.

9 PARTS

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9.1 General Content

The following sections outline details of the sub assemblies and parts of the Essa® LM2 Pulverising Mill.

9.2 Major Assemblies

9.2.1 List of Major Assemblies

The following list and Figures below indicate the major assemblies of the Essa® LM2 Pulverising Mill.

1. Mill
2. Cabinet
3. Millmate



Figure 41 The Essa® LM2 Pulverising Mill



Figure 42 The Cabinet



Figure 43 The Millmate

9.3 Parts Lists

9.3.1 Parts of the Essa® LM2 Pulverising Mill

The Parts List and Figure below, illustrate the details, quantities and location of parts which may be required for use on the Essa® LM2 Pulverising Mill.

Figure Reference No.	Item No.	Description	Qty per Machine
1	614007	Drive motor	1
2	112056	Base frame assembly	1
3	115050	Mill spring spigot bush	12
4	350010	Spring	6
5	225031	Universal drive shaft	1
6	112006	Mill head platform	1
7	111070	Airbag clamp	1
8	470029	Platform insert	1
9	221005	Bearing	2
10	221019	Bearing housing	2
11		Jacking bolt & nut	1
12	115013	Motor mount plate	1
13	343088	Grease nipple	2

Table 13 Parts of Essa® LM2 Pulverising Mill

For any parts required, that do not have an item number showing, please contact FLSmidth. Contact details for FLSmidth can be found in Section 1 of this document.

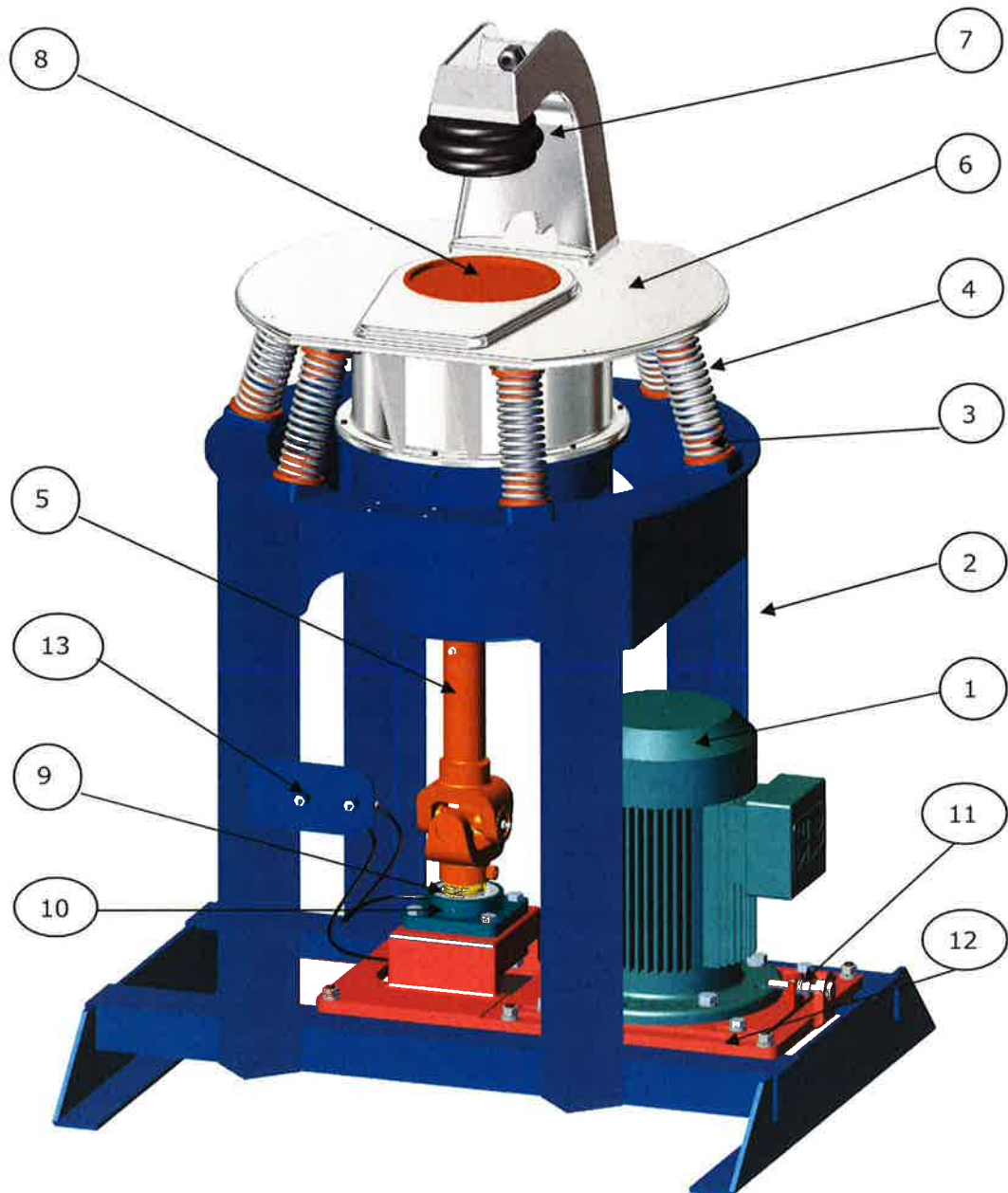


Figure 44 Parts of the Essa® LM2 Pulverising Mill

9.3.2 Parts of the Mass Assembly

The Parts List and Figure below, illustrate the details, quantities and location of parts which may be required for use on the mass assembly.

Figure Reference No.	Item No.	Description	Qty per Machine
14	112004	Eccentric weight	1
15	112018	Shaft	1
16	522802	Seloc pin	1
17	223002	Seal	2
18	221004	Bearing	2
19	525307	Plug (grub screw)	2
20	223003	Seal	1
21	229005	Circlip	1
22	229010	Circlip	1
23	112022	LM2 housing lower	1

Table 14 Parts of the Mass Assembly

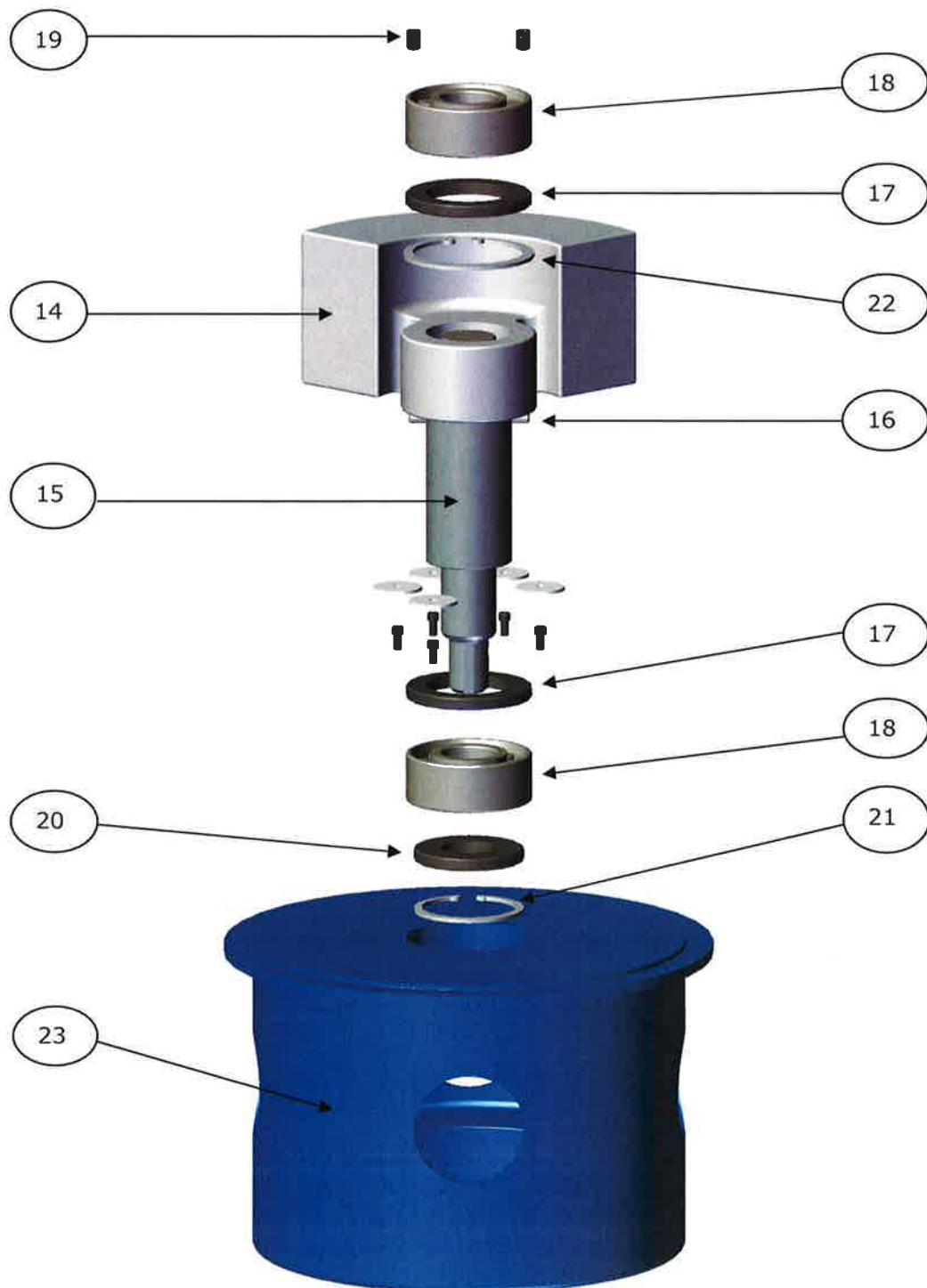


Figure 45 Parts of the Mass Assembly

9.3.3 Parts of the Cabinet

The Parts List and Figure below, illustrate the details, quantities and location of parts which may be required for use on the cabinet

Figure Reference No.	Item No.	Description	Qty per Machine
24	112030	Cabinet lid	1
25	112051	Cabinet hinge	1
26	112079	Cabinet sound foam kit	1
27	343422	Removable front inspection panel	1
28	613200	Axial fan (on rear panel)	1
29	611040	Control box (enclosure only)	1
30	605813	Timer	1
31	605911	Hour meter	1
32	340002	Air regulator	1
33	607004	3 phase plug & lead	1
34	605805	Lid locking safety switch	1

Table 15 Parts of the Cabinet

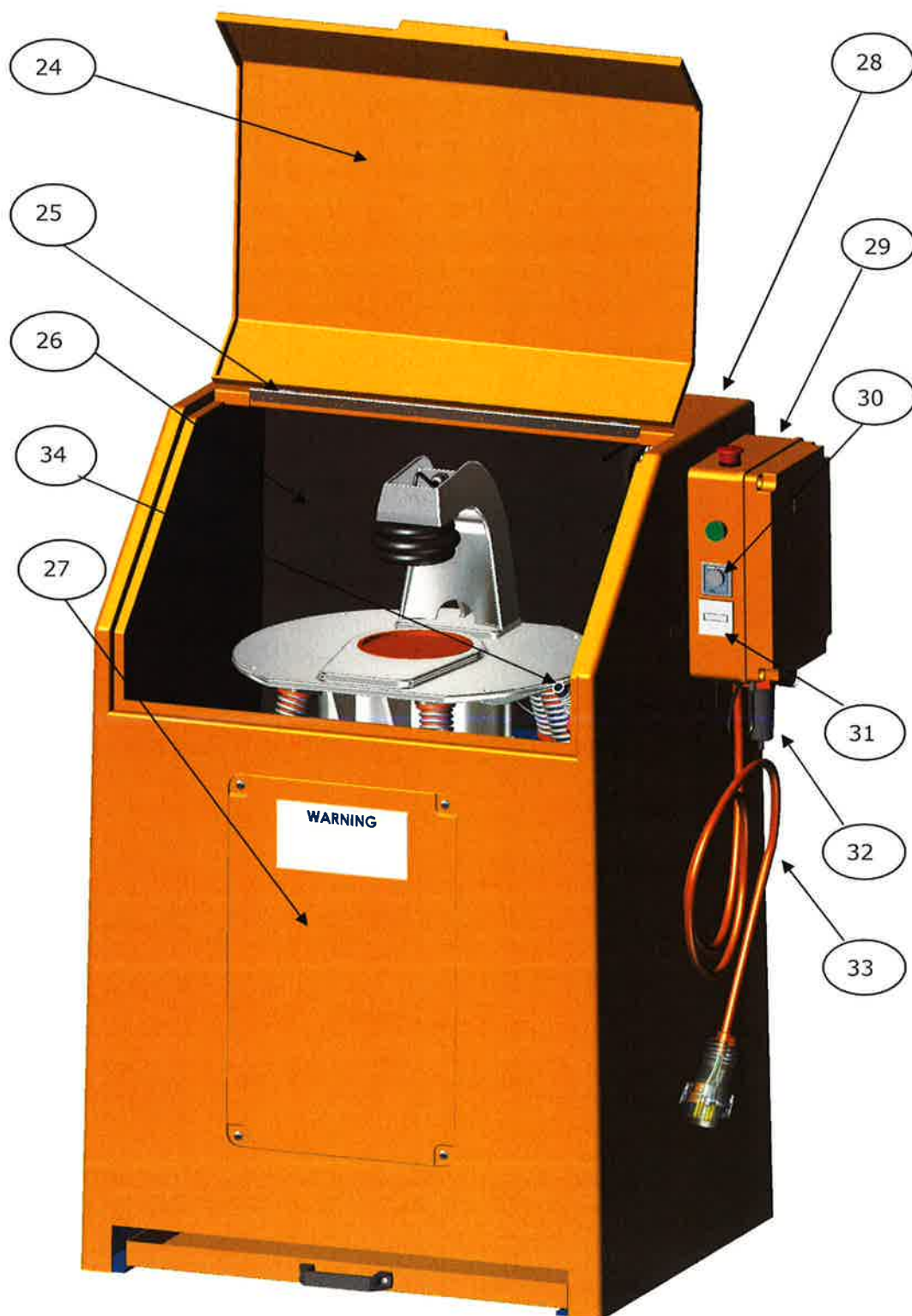


Figure 46 Parts of the Cabinet

9.3.4 Accessory Parts

The Parts List and Figure below, illustrate the details and quantities of accessory parts supplied with the Essa® LM2 Pulverising Mill.

Figure Reference No.	Item No.	Description	Qty per Machine
35	470015	Disc (puck) hook	1
36	350017	Grease tube	1
37	512708	Dynabolt M12 X 60	4
	346790	Torx key T20 for lid locking safety switch	1

Table 16 Accessories

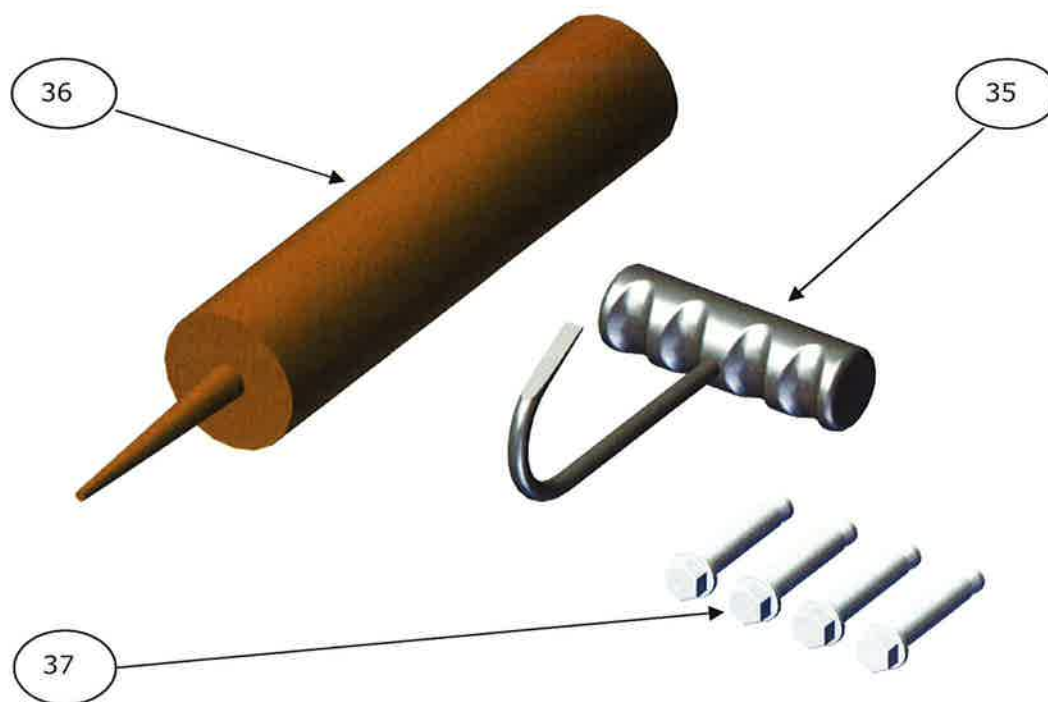


Figure 47 Accessories (T20 Torx Key not illustrated)

9.3.5 Drive Belts & Pulleys

The Parts List and Figure below, illustrate the details, quantities and location of parts which may be required for use on the drive belts and pulleys, for both 60 Hz and 50 Hz applications.

Figure Reference No.	Item No.	Description	Qty per Machine
		For 60 Hz applications	
38	225012	Motor pulley	1
39	225006	Driven pulley	1
40	225010	Motor bush taper lock	1
41	225007	Driven bush taper lock	1
42	225011	Vee belt	2
		For 50 Hz applications	
38	225004	Motor pulley	1
39	225006	Driven pulley	1
40	225005	Motor bush taper lock	1
41	225007	Driven bush taper lock	1
42	225003	Vee belt	2

Table 17 Drive Belts & Pulleys

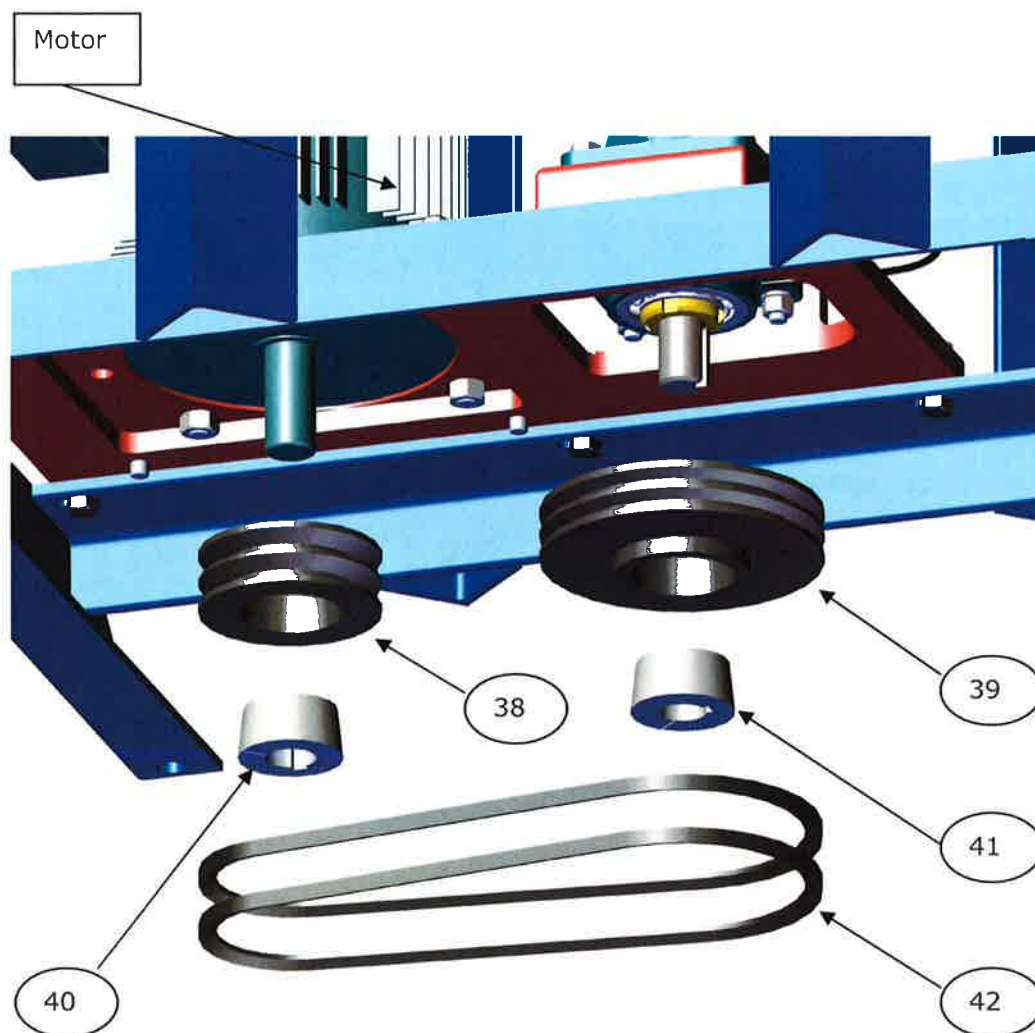


Figure 48 Drive Belts & Pulleys

9.3.6 Electrical Parts of the Essa® LM2 Pulverising Mill

Refer to the Table and Figures below, for replacement of any control box component parts. Please engage a qualified electrician or technician to identify faults and work on the control box parts.

Fig Ref #	Item No. for 220-240V	Item No. for 380-415V	Description	Qty
1	611040	611040	Enclosure	1
2	612000	612000	Transformer	1
3	604059	604059	Contactor	1
4	604252	604250	Overload relay	1
5	605813	605813	Timer	1
6	605911	605911	Hour run meter	1
7	652244	652244	Start button	1
8	652243	652243	Stop button	1
9	340064	340064	Solenoid valve 50/60 Hz	1
10	616200	616200	Air pressure switch	1
11	340001	340001	Air clamp bleed control	1
12	340003	340003	Air pressure gauge	1
13	340002	340002	Filter regulator	1
14	605918	605918	Start switch actuator	1
15	605919	605919	Stop switch actuator	1
16	340024	340024	Air fitting elbow	1
17	340027	340027	Straight connector	2
18	340040	340040	Special tee fitting	1
19	340048	340048	Tee plug	1
20	340096	340096	Swivel elbow	2
21	605814	605814	Timer mounting bracket	1
22	609500	609500	Cable gland 16 mm	1

23	609514	609514	Cable gland 25 mm	1
24	609521	609521	Cable gland 12 mm	2
25	652011	652011	Cable	1
26	652006	652006	Wiring harness	1
27	340039	340039	Air bleed plug	1
28	340035	340035	Bulkhead connector – 6 mm	1
29	340041	340041	Tee	1
30	340026	340026	Straight connector	1
31	340012	340012	Air hose 6 mm	2
32	340182	340182	Air hose 4 mm	2
33	607004	607004	3 Phase plug & lead	1
34	605804	605804	Crouzet multi function timer	1

Table 18 Parts List for the Electrical Control Box

Note: Fig Ref' 34 in the control box parts list above, the Crouzet multi function timer, is for the new lid locking safety switch and provides the factory set seven second delay before allowing the cabinet lid to be opened. See the Figure below.

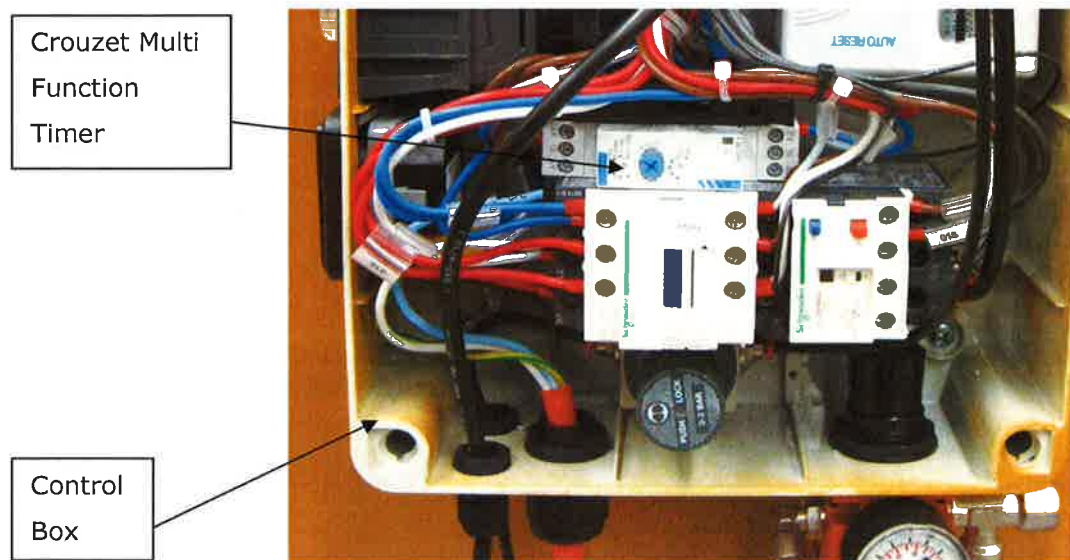


Figure 49 Crouzet Multi Function Timer

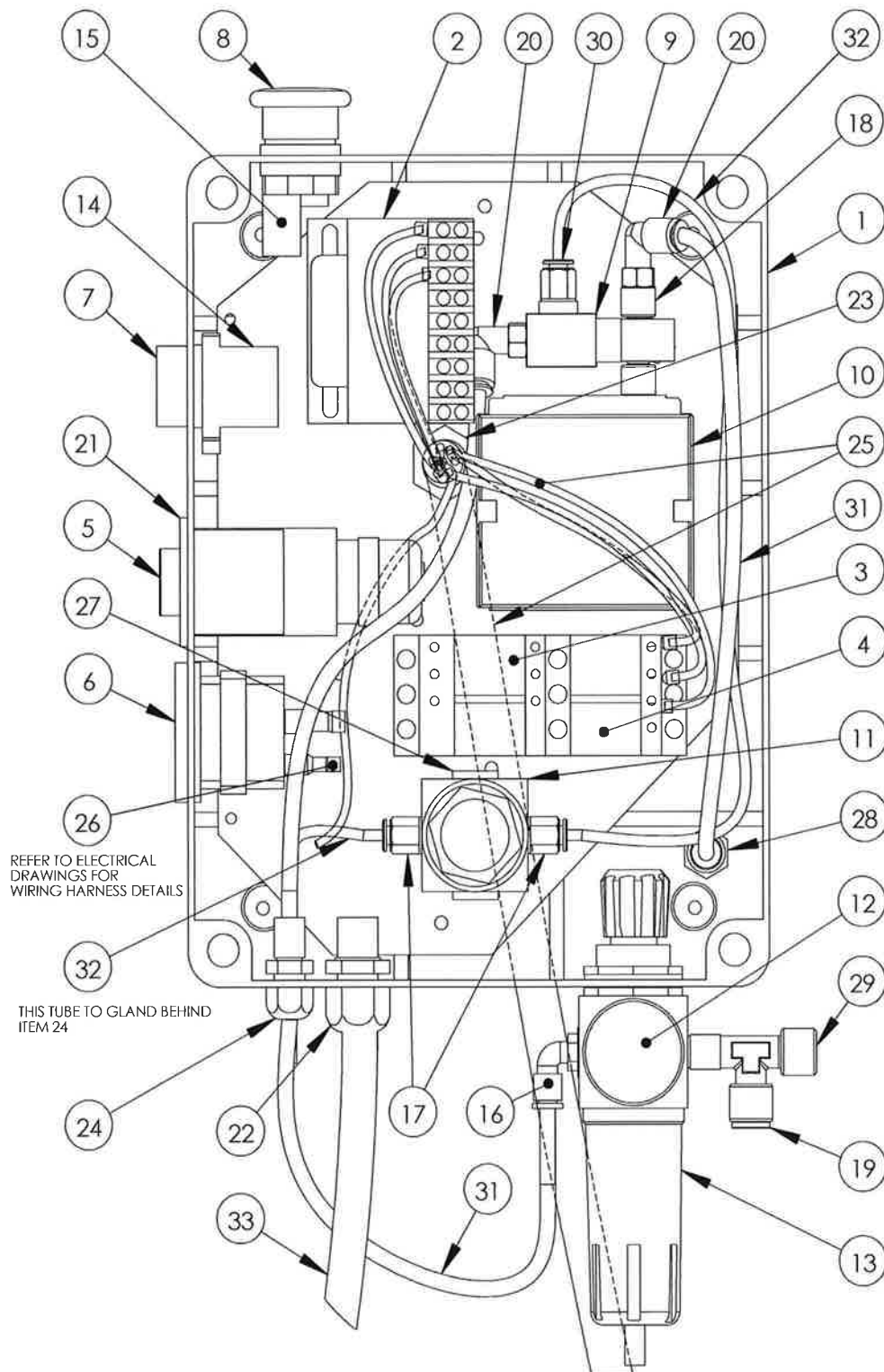


Figure 50 Illustration of the Parts of the Control Box

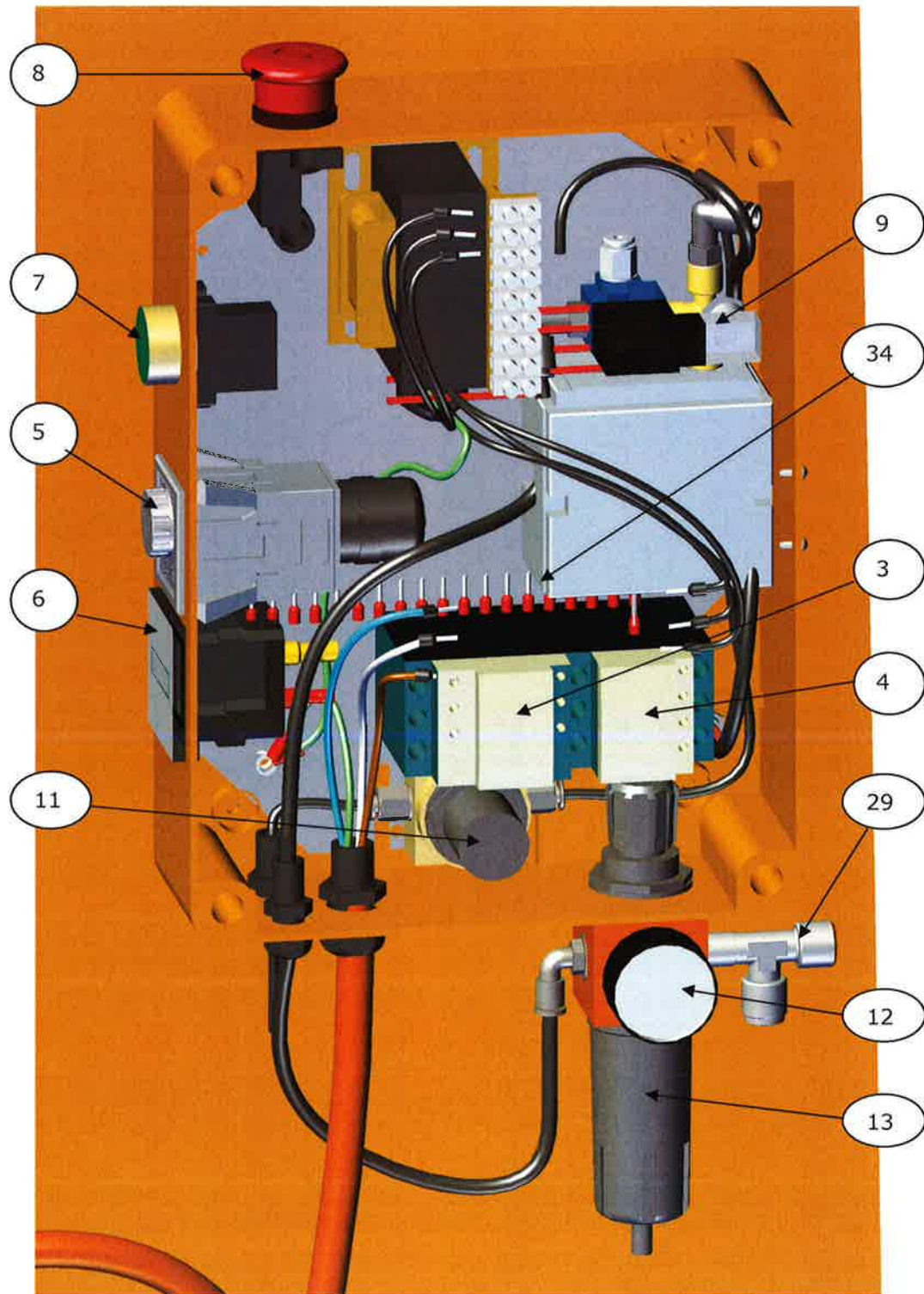


Figure 51 Main Parts of the Electrical Control Box

Note: Fig Ref' 34 indicates the location of the Crouzet multi function timer (not depicted).

9.3.7 Bowls, Lids, Rings, Rollers, Grinding Elements & Seals

The Parts List, Figure and Table below, illustrate the item numbers of the bowls, lids and grinding elements etc, which may be ordered for use on the Essa[®] LM2 Pulverising Mill.

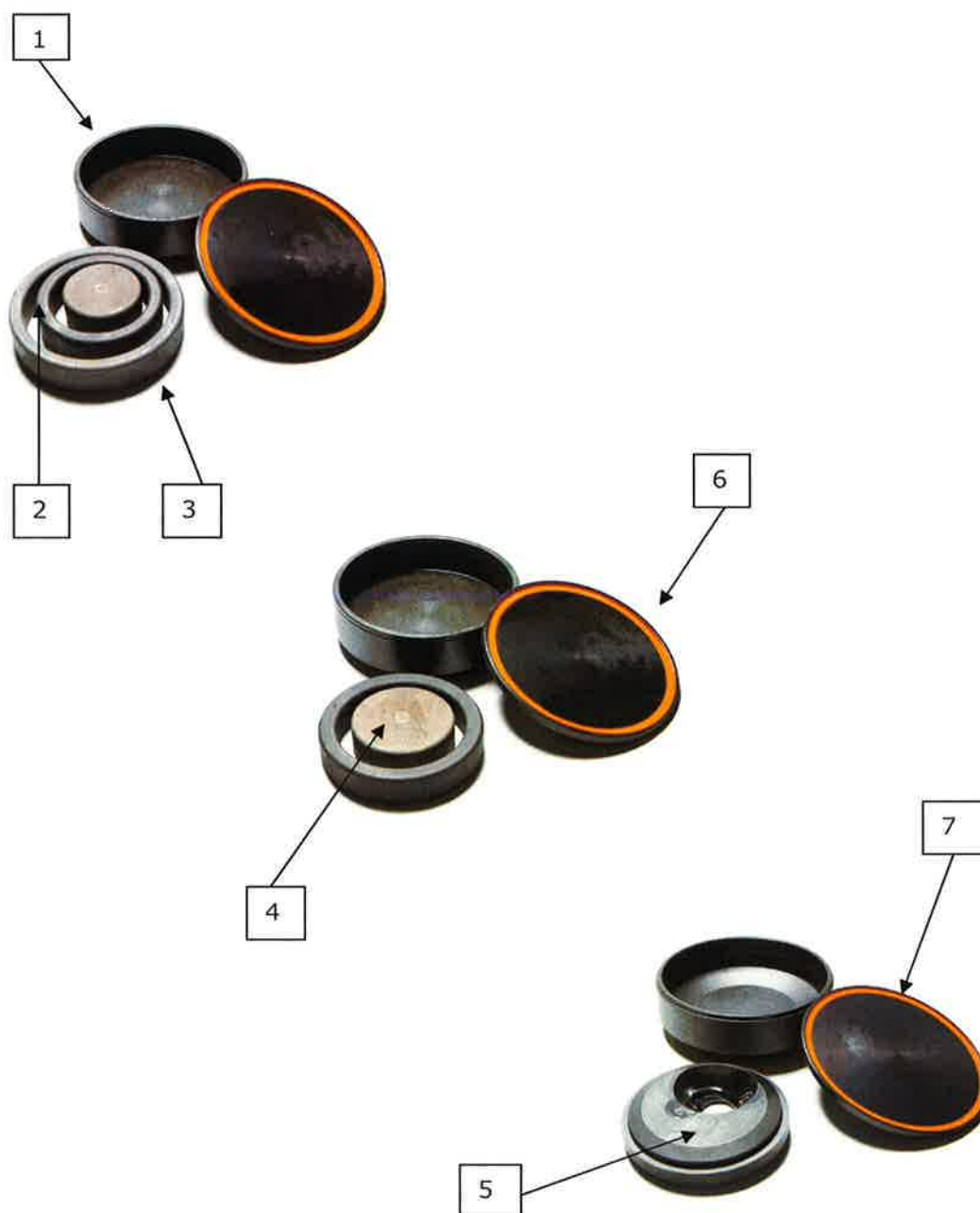


Figure 52 Bowls, Rings, Rollers, Discs & Lids

Bowl Model	Steel Type	Bowl (1)	Inner Ring (2)	Outer Ring (3)	Roller (4)	Grinding Element (5)	Lid (6)	O Ring / Lid Seal (7)
B50	CS	471002			471003		471004	470049
	SS	477002			477003		471004	470049
B100	CS	471042	471007		471008		471009	223020
	SS	477006	477007		477008		471009	223020
B125	CS	471014	471007		471008		471009	223020
	SS	477014	477007		477008		471009	223020
B300	CS	471016	471096	471095	471097		471018	470040
	SS	477016	477096	477095	477097		471018	470040
B400	CS	471016	471098		471099		471018	470040
	SS	477016	477098		477099		471018	470040
B800	CS	471025				471026	471027	470039
	SS	477025				477026	471027	470039
B1000	CS	471029				471030	471032	470038
	SS	477029				477030	471032	470038
B2000	CS	471034				471035	471036	470021
	SS	477034				477035	471036	470021
WC125	TC	474073 for the whole set						

Table 19 Bowl Parts Re-order Item Numbers

Note: Steel Types are – CS = Chrome Steel, SS = Standard Steel, TC = Tungsten Carbide.

For further details about bowl and disc types, such as typical element analysis, please contact FLSmidth. Contact details for FLSmidth can be found in Section 1 of this document.

9.3.8 Spacer Rings for use with Bowls

Due to the limited range of the air bag clamp and the variation in the size of the bowls, spacer rings are used with the smaller bowls to achieve the necessary height for effective clamping of the bowls and lids by the air bag clamp.

The Parts List below illustrates the Item Numbers of the spacer rings applicable to specific bowl sizes which may be re-ordered for use on the Essa® LM2 Pulverising Mill.

Bowl Model	Spacer Rings Item No.
B50	470001
B100	470003
B125	470005
B300	
B400	
B800	470007
B1000	
B2000	Item No. not required
WC125	470066

Table 20 Bowl Spacer Ring Item Numbers

9.3.9 Additional Parts not illustrated

For any additional parts required that are not illustrated in this Manual Parts List, please contact FLSmidth. Contact details for FLSmidth can be found in Section 1 of this document.