



BEF200N

OWNER'S MANUAL





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BEF200N
Operating Manual

This manual is provided to persons purchasing an SPE machine and may not be reproduced in part or full without written permission of SPE International Ltd.

This manual provides the basic information required and is only to be used as a guideline. The SPE machines are manufactured and covered by SPE design registrations granted and pending.

SPE International Ltd reserves the right to alter the equipment design and specification as required without notice.

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SAFETY

Only trained operatives should be allowed to work the BEF200N.

All operatives should wear ear defenders, goggles and an effective dust mask.

Note: It is possible that the noise level produced by the BEF200N could exceed 90dbA. Personal noise protection must be worn.

To control dust it is recommended that an SPE dust control unit is fitted.

Never leave the BEF200N unattended while in use.

Always stop the motor/engine and raise the quick lift lever so that the cutter drum is clear of the floor.





Always ensure that all power leads are disconnected before attempting to service the machine. The service of electrical components should be carried out by authorised personnel.

Never remove the side plate or belt guard until the cutter drum has come to a complete standstill. Never tip the machine backwards until the cutters have come to rest.

Never operate the machine outdoors in wet conditions as the electrical components are not waterproof.

Noise and vibration will occur at various levels dependent on the attachments and work being completed. SPE have assessments conducted under test conditions detailed in the operating manual. (See pages 26-29). However, it is recommended that additional tests are taken on site to provide the operator with accurate information on using the equipment within the guidelines laid down by the Health & Safety Executive

SAFETY PRECAUTIONS

	<p>DANGER EXPLOSION HAZARD</p> <p>Never operate the machine in an explosive atmosphere, near combustible materials, or where ventilation does not clear exhaust fumes.</p>
	<p>WARNING BURN HAZARD</p> <p>Never come into contact with the engine or muffler when engine is operating or shortly after it is turned off. Serious burns may occur.</p>
	<p>CAUTION MOVING PARTS</p> <p>Before starting the machine, ensure that all guards and safety devices are in place and functioning properly.</p>
	<p>ATTENTION READ OWNER'S MANUAL</p> <p>Read and understand owner's manual before using this machine. Failure to follow operating instructions could result in serious injury or death.</p>

BEF200N OPERATING MANUAL

This manual covers, to the best of our knowledge, the operation and maintenance of the **BEF200N**. Before operation of the equipment the manual should be read and understood by the operator. The safety regulations must be followed at all times. Service of electrical components should be carried out by authorised personnel. Failure to follow these instructions could result in damage to the machine and/or serious personal injury or death.

WARNING

Failure to follow these instructions may result in serious personal injury or death. SPE disclaims all responsibility for damage to persons or objects arising as a consequence of incorrect handling of the machine and failure to inspect the machine for damage or other faults that may influence the operation prior to starting work.

STARTING WORK

Check the following prior to starting equipment:

- Check condition of cutter drum assembly
 - Check all bolts for tightness
 - Check drive belt condition and tension
 - Check plugs and cables for damage
1. Before starting the machine ensure that the cutter drum assembly is clear of the ground by raising the quick lift lever so that the cutters are clear of the ground. Adjust the handlebar to a comfortable height and position.
 2. Connect the power supply.
 3. Connect the vacuum hose to the dust port at the rear of the machine if a dust control vacuum is being used.
 4. **110V** - Start the motor by turning the switch on the panel to the start position. Hold for 2-3 seconds for the motor to start and release. The switch will return to its run position. To STOP the machine turn switch anti-clockwise.
230V/400V - Start the motor by pressing the green start button on the panel. To STOP the machine press the red STOP button.
 5. To start cutting gently lower the quick lift lever to return the cutting drum to the operating position. Turn the handwheel of the fine height adjustment until the desired depth of cut is achieved. (The machine could possibly be overloaded by setting the depth of cut too low. The cutters must be allowed to "float" on the cutter shafts without excessive downward pressure. This floating action allows the cutters to perform as the designer intended (i.e.) as flails rather than as grinders or picks. The machine should operate smoothly with a minimum of vibration.)

GENERAL OPERATION

- Excessive downward pressure on the cutters may marginally improve the work rate/finish but the definite increase in wear rates on the cutter drum assembly, machine components and overloading the motor is the negative result.
- Remember two light passes are quicker and more cost effective than one slow heavy pass. Tests have proven conclusively that heavy downward pressure reduces cutter and drum life by over 50%.
- To remove dust, connect an industrial dust collector or vacuum to the 50mm port (part no 9109) at the rear of the machine. We recommend SPE Dust Control units for almost 100% dust control. In the absence of a dust control unit it is acceptable to spray water onto the surface or to feed water down the vacuum port. Cutter drum assembly life is increased by around 10% when operating the machine in this way.
- (Note: Electrical motors and switches are not waterproof, take care to protect them from splashes.)
- The BEF200N is normally operated in a forward direction, the operator varies the speed of travel to determine the final finish, having already pre-set the depth control. It is permissible to operate the machine with a backwards and forwards action. Each pass should be overlapped to produce a uniform finish.

ELECTRICAL INSTRUCTIONS

The BEF200N machine is supplied with a specially commissioned 110V electric motor and starter switch assembly. Each unit is fully tested and the safety overload relays have been calibrated and set according to the manufacturers specifications. In the event of the malfunction on a new machine the owner should first check that the power supply on site is suitable and adequate.

- The **110V** motor requires a 32 Amp supply.
- To avoid voltage drop the cable size must be a minimum of 4.0mm 3 core. Maximum length of cable not to exceed 30 metres.
- If a transformer is used it must have a continuous rated output of at least 3 KVA. In practice this means that a 5 KVA transformer must be used.

- The **230V/400V** require a 16 Amp supply.

All cables should be fully uncoiled and never left wrapped around cable reels or tied in loops.

If the power is to be generated, the BEF200N requires a minimum 8kva generator.

The motor is protected with a safety trip in the panel. Should the trip be activated, you must isolate the power supply, open the panel and reset the trip.

If the motor repeatedly cuts out then it will be damaged. The possible causes are either an inadequate power supply, overloading of the machine, or an electrical fault. The machine can only be overloaded by setting the depth of cut too low.

See page 22 for Electrical Specifications.

CUTTER DRUM REMOVAL

Isolate the power supply and ensure the cutter drum has come to a complete standstill.

Raise the Quick Lift lever so that the cutters are clear of the ground.

Loosen the four 8mm set screws and remove the side plate. When new this cover can stick and it may be necessary to lever off the plate with a screwdriver.

With the side plate (Part No. 9201) removed the cutter drum will simply slide off the drive shaft.

Fitting a new cutter head is simply a reversal of the above procedure.
(Note: It is essential that the four 8mm set screws are tight at all times.)

Cutter drum maintenance:

When changing a cutter drum always check that the flail shafts are not excessively worn with pronounced grooves and that the centres of cutters and spacers are not elongated or beginning to mushroom. The screws which hold the drum end plates in position must be tight and in good condition.

It is expensive and false economy to run the cutter drum components until they break. Try to establish a routine for replacing wear parts before they cause problems. (Remember the drum assembly is hitting concrete with great force 1,800 times every minute!) Expenditure on consumables must be expected and built into all job costing.

While changing the drum the condition of the drive shaft and side plate bearings should be checked. If any roughness, side play or leakage of grease is detected, new bearings should be fitted. Lightly oiling the drive shaft will prevent a built up of rust which could cause difficulty when changing the drum.

The drive shaft is manufactured from high quality steel and then heat treated to produce the special properties required. The shaft is extremely strong and virtually unbreakable when used as intended. If, however, sideways pressure is exerted on the shaft while it is not supported by the side plate bearing then it can be bent.

With the drum removed check that the vacuum port is free from blockages and that the dust skirt is in good condition.

MAINTENANCE

Prior to any maintenance or adjustment you must isolate the power supply.

AFTER USE:

Clean the machine to remove all the build up of dust and surface residue. If using a hose pipe or pressure washer take care that water is not directed onto electrical components and switches.

(Note: Motors and switches are not waterproof)

Ensure the height adjustment thread is cleaned and then lightly oiled. Periodically it should be removed and the female, threaded section cleaned out and oiled regularly to maintain a light, smooth height adjustment.

The HTD drive belt will give a long and trouble free operating life if basic procedures are followed.

Daily, check the drive pulleys for build up of deposits and trapped stones. Check the belt and teeth for surface cuts and cracks, once the surface of the belt is damaged it will soon fail. Build up of dirt in the pulley teeth causes two problems: The belt becomes tight and as the teeth can no longer fully mesh properly, all the power is transmitted through the tip of the teeth with obvious negative results.

The drive belt is tensioned by two eye bolts at the front of the motor. It is important that the drive belt is not over tensioned. It should be tight enough for all teeth to make full contact but should allow a little movement to allow for "self alignment".

Serious damage could be caused to the drive shaft, drive shaft bearings and drive motor if the belt is excessively tight. Generally, when the motor is started and run, a tight belt can be detected by a low hum/whistle.

Note: Never operate the BEF200N without a belt guard.

All components should be checked daily for tightness and the drive belt for tension.

BASIC MAINTENANCE CHECKLIST

DAILY: (or every 8hrs to 10hrs)

- Check the cutters.
- Check the flail shafts.
- Check all nuts and bolts for tightness.
- Check the belt tension.
- Check the plugs and cables.
- Check engine oil.
- Check Air Filter.
- Check for any recommendations in Honda Service Manual.

WEEKLY:

All the above with the following: -



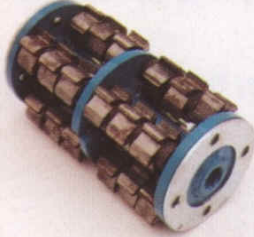

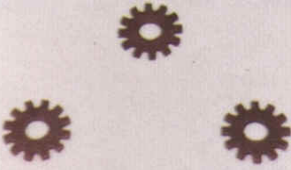

- Grease all moving parts on the height adjustment mechanism.
- Remove the side plate.
- Check the drum.
- Check the drive shaft bearings.
- Check the drive bush.
- Check the drive shaft.
- Check the support wheels and grease.






MONTHLY:

All the above with the following: -

- Strip down fully the winding mechanism.
- Clean all threads and re grease.

ACCESSORIES

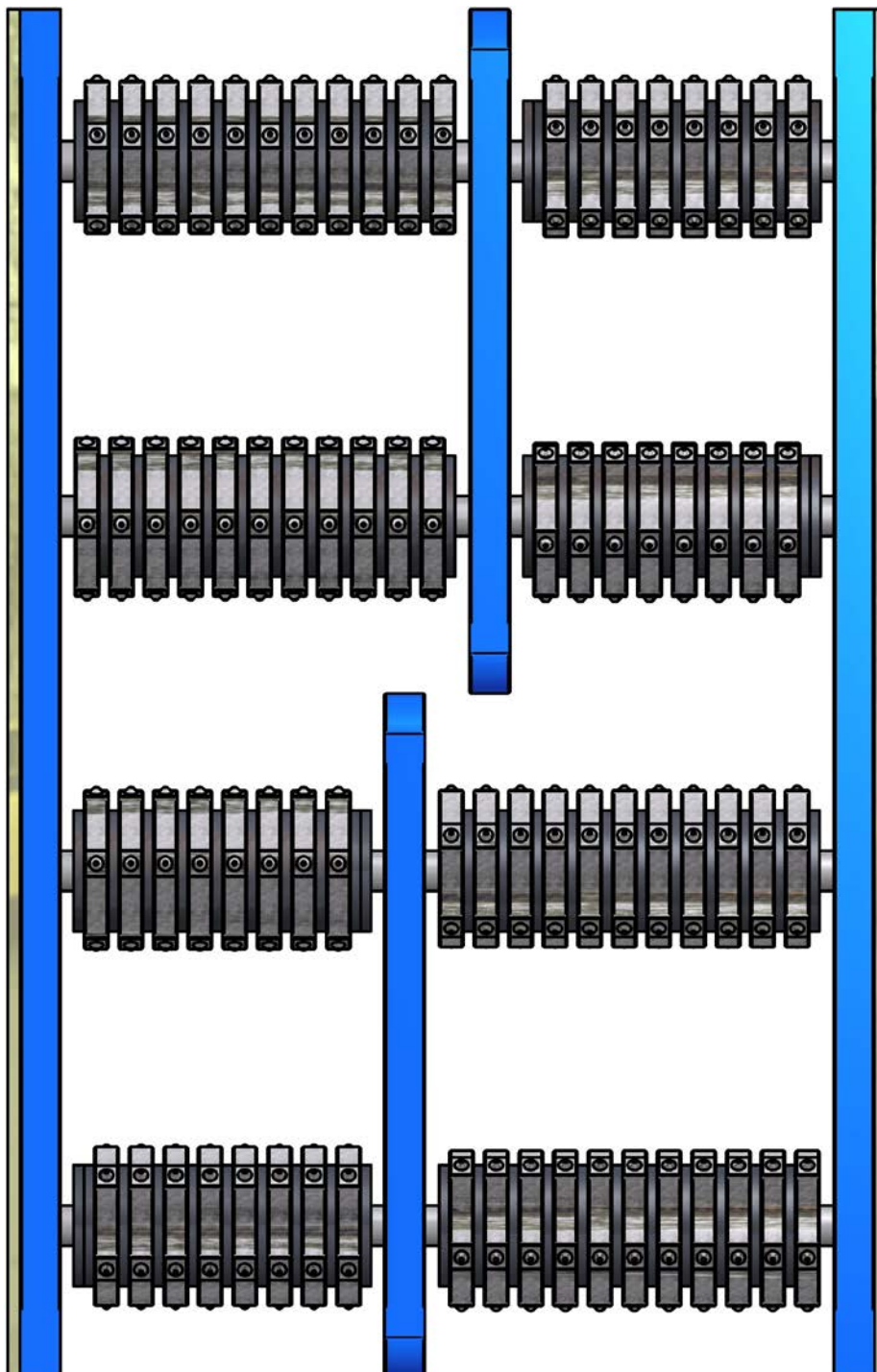
	Part No	Description	Application
	20001	Heavy duty drum complete with T.C.T. cutters and spacers.	For all concrete texturing, scabbling, planing and grooving applications. Also for the removal of road markings, roof chippings and brittle coatings. Use on heavy applications for longer cutter life and higher output.
	20002	Heavy duty drum complete with beam flails.	For the removal of paint, laitance and coatings from floors. De-rusting and descaling ship decks. Also used removing build up of grease, dirt and ice deposits. Keying of concrete when a fine textured surface is required.
	20003	Heavy duty drum complete with milling cutters and spacers.	For the removal of thermoplastic road/runway markings. Very efficient and cost effective with none of the problems associated with burning off thermoplastics. Also for removal of bituminous and rubber deposits.
	45500	T.C.T. Cutter: 5 point hardened steel cutter with tungsten carbide insert.	For all concrete texturing, scabbling, planing and grooving applications. Also for the removal of road markings, roof chippings and brittle coatings. Use on heavy applications for longer cutter life and higher output.
	45120	Beam Cutter: Heat treated steel cutter.	For the removal of paint, laitance and coatings from floors. De-rusting and descaling ship decks. Also used for removing build-up of grease, dirt and ice deposits. Keying of concrete when a fine textured surface is required.
	45600	Milling Cutter: Tipped with tungsten carbide.	For the removal of thermoplastic road/runway markings, rubber based deposits, cold plastic coatings from asphalt and concrete.

	<p>20020</p>	<p>Wire brush crimped.</p>	<p>Removal of light deposits, rust. Cleaning and polishing steel.</p>
	<p>20021</p>	<p>Wire brush twist knot.</p>	<p>Removal of laitance, grease, oil, rubber deposits, rust and flaky paint.</p>
	<p>20000</p>	<p>Heavy Duty drum complete with flail shafts.</p>	<p>For use with various cutter configurations.</p>
	<p>20010</p>	<p>Heavy duty flail shaft.</p>	<p>Hardened cutter shaft.</p>
	<p>24140</p>	<p>Spacing washer.</p>	<p>Hardened spacing washer</p>

DRUM CUTTER SET-UP

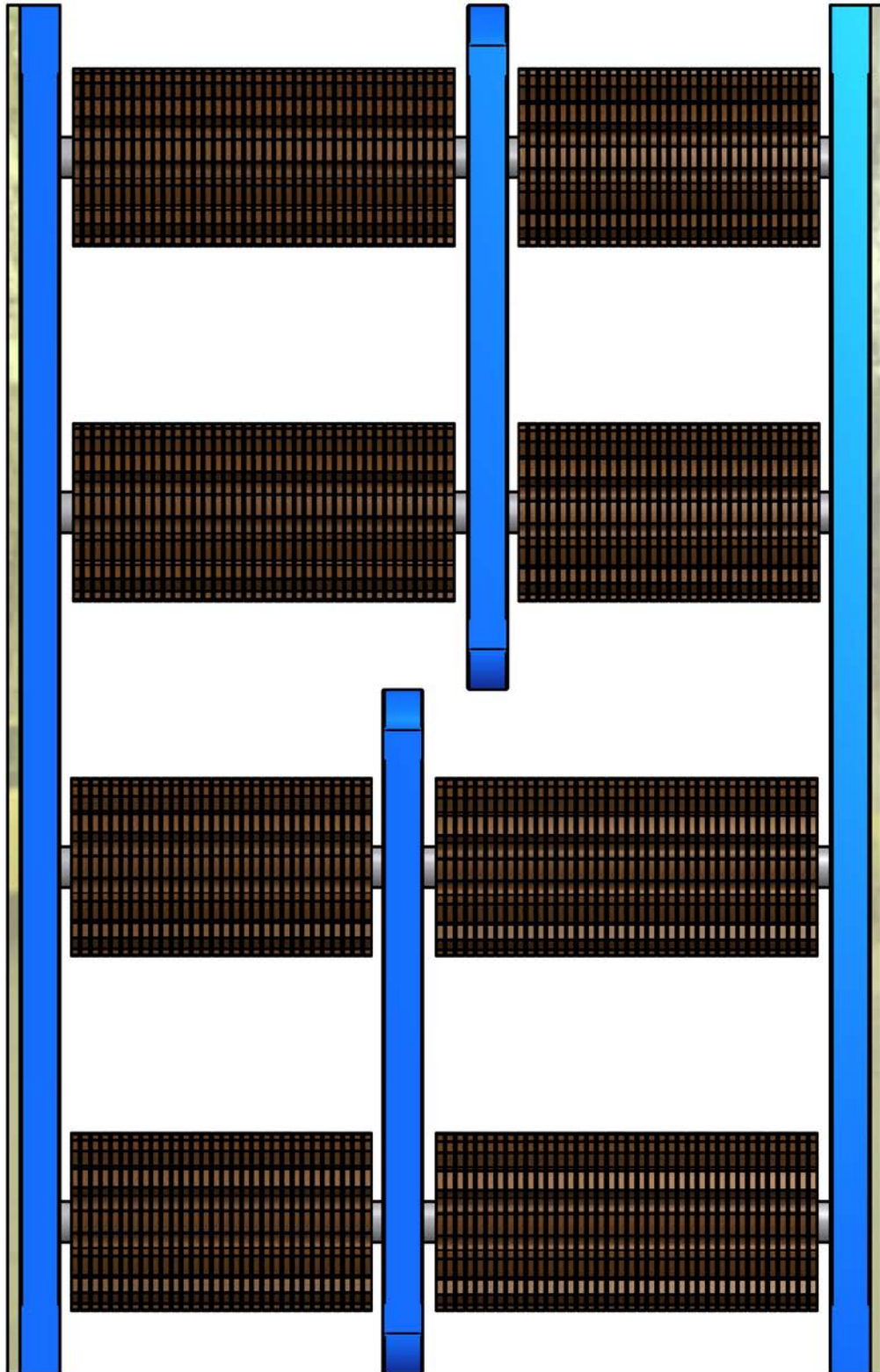
TCT

PART No.	DESCRIPTION	QTY
45500	TCT CUTTER	76
24140	SPACER	84



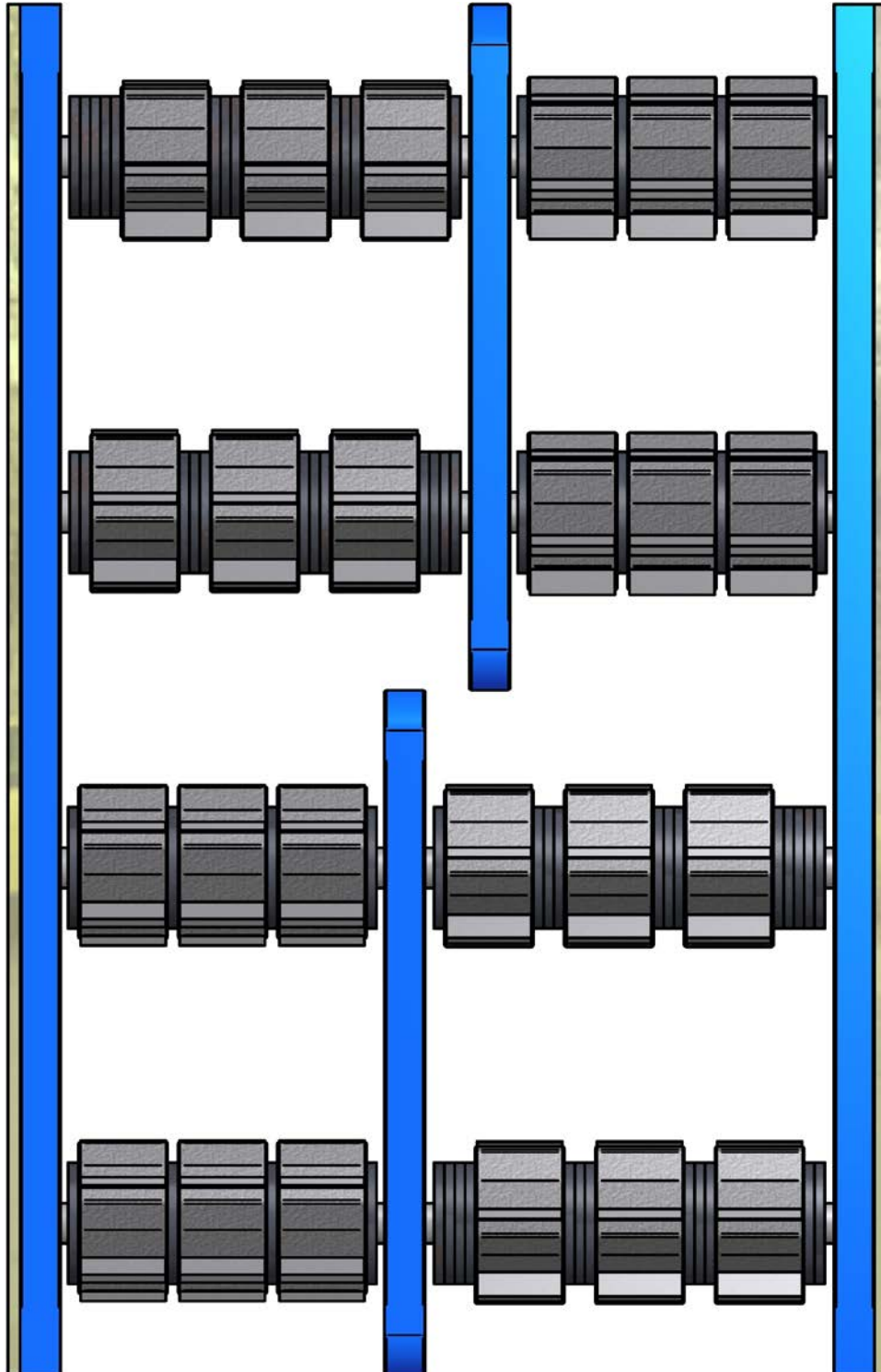
BEAM FLAILS

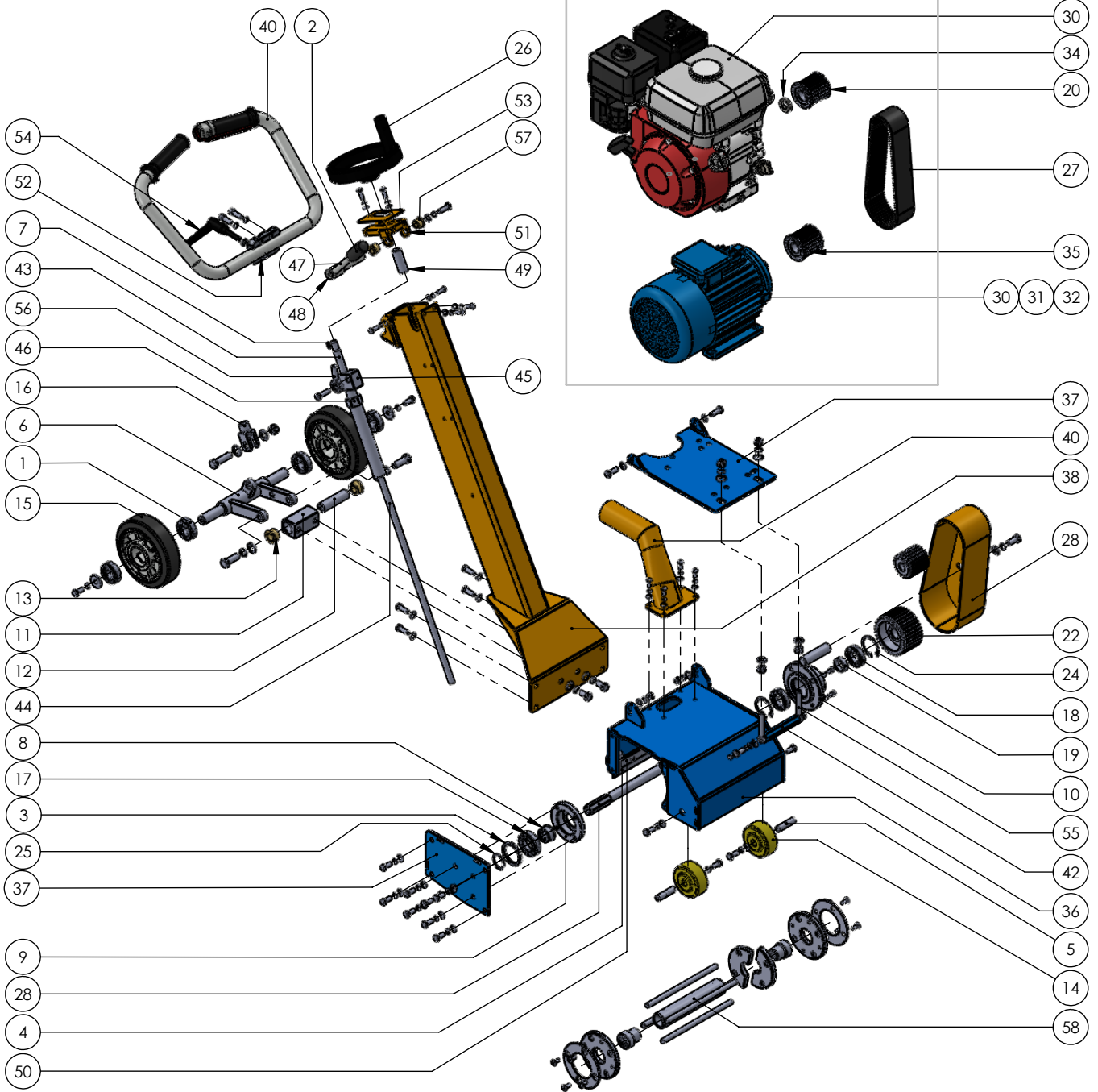
PART No.	DESCRIPTION	QTY
45120	BEAM CUTTER	272



MILLING CUTTERS

PART No.	DESCRIPTION	QTY
45600	MILLING CUTTER	24
24140	SPACER	64





ITEM NO.	SPENo	DESCRIPTION	QTY.
1	6204	Bearing	4
2	7034	Knob Grip	1
3	9102	S/P Spacer	1
4	9106	Dust Skirt	1
5	9107	Front Axle	2
6	9110	Rear Axle Assembly	1
7	9113A	Key	1
8	9114	Hex Drive Bush	1
9	9115	S/P Bearing Housing	1
10	9116	Bearing Housing Assembly	1
11	9117	Swing Arm Boss	1
12	9118	Swing Arm Pin	1
13	9119	Oillite Bush	2
14	9120	Wheel	2
15	9121	Wheel	2
16	9122	Clevis	1
17	9123	Bearing	1
18	9124	Bearing	2
19	9125	Drive Shaft Spacer	1
20	9126	Pulley (Gas)	1
21	9127	Pulley (Electric)	1

ITEM NO.	SPENo	DESCRIPTION	QTY.
22	9128	Drive Pulley	1
23	9131	Key	1
24	9132	Circlip	2
25	9133	Circlip	1
26	9135	Knob	1
27	9137	Belt (Electric & Gas/Petrol)	1
28	9138	Belt Guard	1
28	9140	Drive Shaft	1
30	9141	Engine (Honda GX160)	1
31	9142	Motor (110V)	1
32	9144	Motor (400V)	1
33	9146	Motor (230V)	1
34	9158	Spacer (Gas Drive Pulley)	1
35	9160	Pulley (NA)	2
36	9200	Main Body Assembly	1
37	9201	Right Side Plate	1
37	9202	Motor Plate	1
38	9203	Handle Assembly	1
40	9205	Handle Assembly (with Switch)	1
40	9206	Vac Port	1
42	9301	Height Adjust Block	1

ITEM NO.	SPENo	DESCRIPTION	QTY.
43	9302	Height Screw	1
44	9303	Main Rod	1
45	9304	Pitch Block	1
46	9305	Adjustable Height Tube	1
47	9308	Pitch Handle	1
48	9309	Pitch Handle Rod	1
49	9310	Handle Sleeve	1
50	9311	Wear Plate	1
51	9312	Handle Cap	1
52	9313	Handle Plate	1
53	9314	Handle Top Plate	1
54	9315	M8 Lock Handle	1
55	9316	M8 Swing Bolt	2
56	9317	Rod End	1
57	9318	Bush	2
58	9321	Spacer	1
58	20025	Drum	1

DWG No.

REV ISSUE
BEF200N A 1.01

SCALE **NOT TO SCALE**

ELECTRICAL COMPONENTS

110V

SPE PART NO	DESCRIPTION	QTY
SP2518-11	Panel box	1
SP190005	Hinge kit	1
SP630-304	Surface Mount Plug	1
9245	Rubber Mount	4
9249	Panel Box Back plate	1
9250	Plug retaining plate	1
9254	Rotary switch	1
9255	Contactor 110V	1
9256	Contact breaker	1
9258	Conduit gland	1
9259	Conduit	1
156MF@240V	Start capacitor	1
70MF@450V	Run capacitor	1

230V

SPE PART NO	DESCRIPTION	QTY
SP2518-11	Panel box	1
SP190005	Hinge kit	1
SPBF181023	Contactor 220V	1
SPLM2B7223	On/Off Push Button	1
SP60HD216	Trip 2 Pole 16 Amp	1
SPRF3814	Overload 9-14A	1
SPLM2TC10	On/Off Contact	1
SPLM2TC01	On/Off Contact	1
SPLM2AU120	Contact Holder	1
SP7302	220V 16A Schuko T/Plug	1
7562	2.5mm Cable (Black)	6
9245	Rubber Mount	4
9249	Panel Box Back plate	1
9258	Conduit gland	1
9259	Conduit	1

400V

SPE PART NO	DESCRIPTION	QTY
SP2518-11	Panel box	1
SP190005	Hinge kit	1
SPBF181040	Contactora 400V	1
SPLM2B7223	On/Off Push Button	1
SP60HD310	Trip 3 Pole 10 Amp	1
SPRF3806	Overload 4-6.5A	1
SPLM2TC10	On/Off Contact	1
SPLM2TC01	On/Off Contact	1
SPLM2AU120	Contact Holder	1
SP610PH	5 Pin 16A Ph/Rev Surface Plug	1
9242	Surface Plug Ret Plate 230/415V	1
9245	Rubber Mount	4
9249	Panel Box Back plate	1
9250	Plug retaining plate	1
9258	Conduit gland	1
9259	Conduit	1

SPECIFICATION SHEET

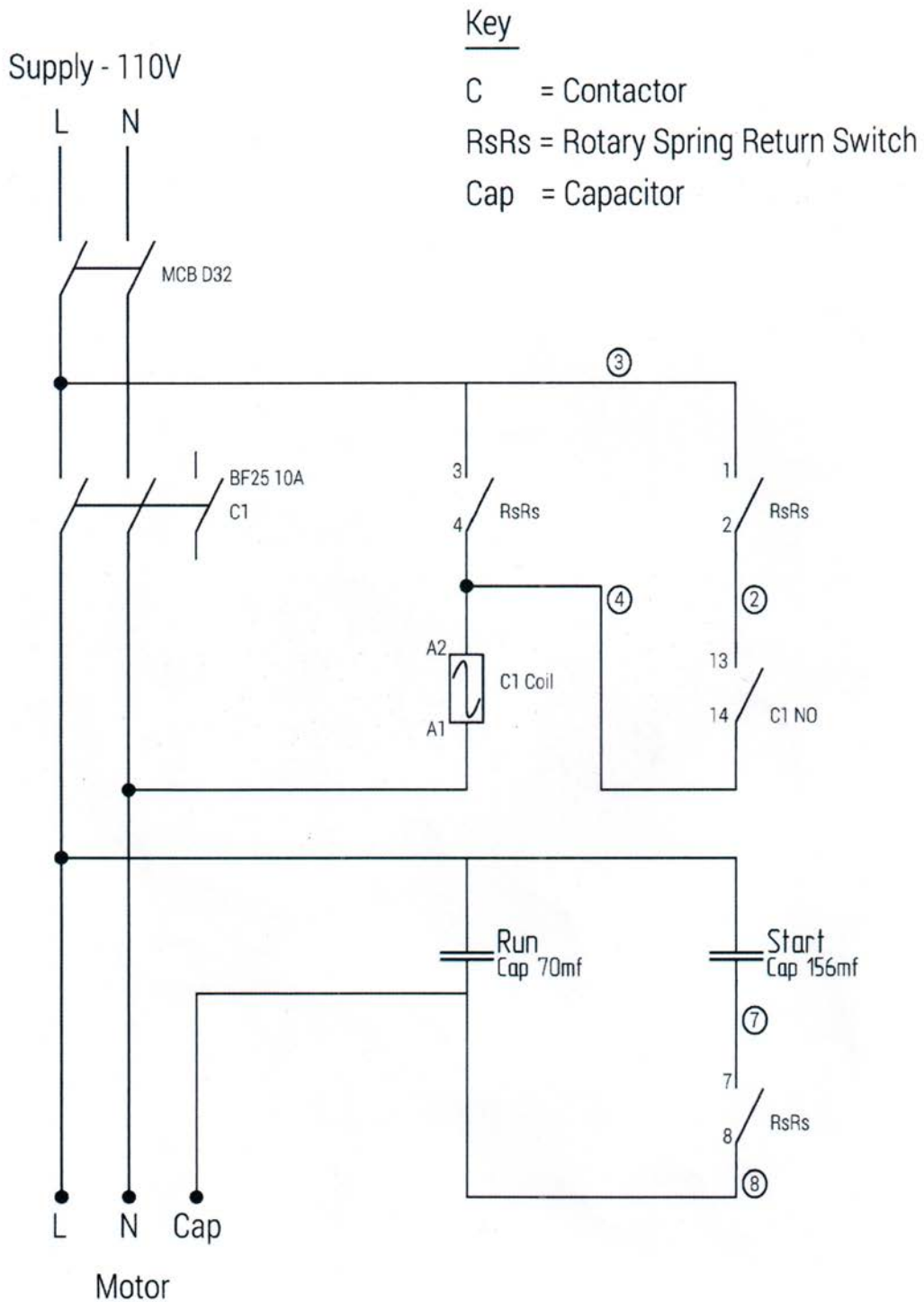
SPECIFICATIONS				
Type	Electric 1 Phase		Electric 3 Phase	Petrol
Part Number	BEF200N-1	BEF200N-2	BEF200N-3	BEF200N-4
Voltage	110V	230V	400V	
Power Output	3hp	3hp	3hp	5.5hp
Cycles	50hz	50hz	50/60hz	-
Cutter Head Speed (rpm)	1753	1753	1753 (50hz)	1833
Motor speed (rpm)	2870	2870	2870 (50hz)	3000
Machine Dimensions (mm)				
Length	940			
Width	340			
Height	905			
Weight (kg)	54	54	54	49
Working width of cutters (mm)	200			
Working distance from wall (mm)	45			
Working distance from wall with edger attachment (mm)	5-8			

ELECTRICAL SPECIFICATIONS

SPECIFICATIONS				
	Electric 1 Phase		Electric 3 Phase	Petrol
	BEF200N-1	BEF200N-2	BEF200N-3	BEF200N-4
Voltage	110V	230V	400V	-
Plug Size	32 Amp 3 pin	16 Amp 3 pin	16 Amp 5 pin	-
Cable Size	4.0 - 3 core	2.5 – 3 core	2.5 – 4 core	-
Max Length Cable	30 metres	30 metres	100 metres	-
Transformer	5kva	-	-	-
Generator	8 kva	8 kva	8 kva	-

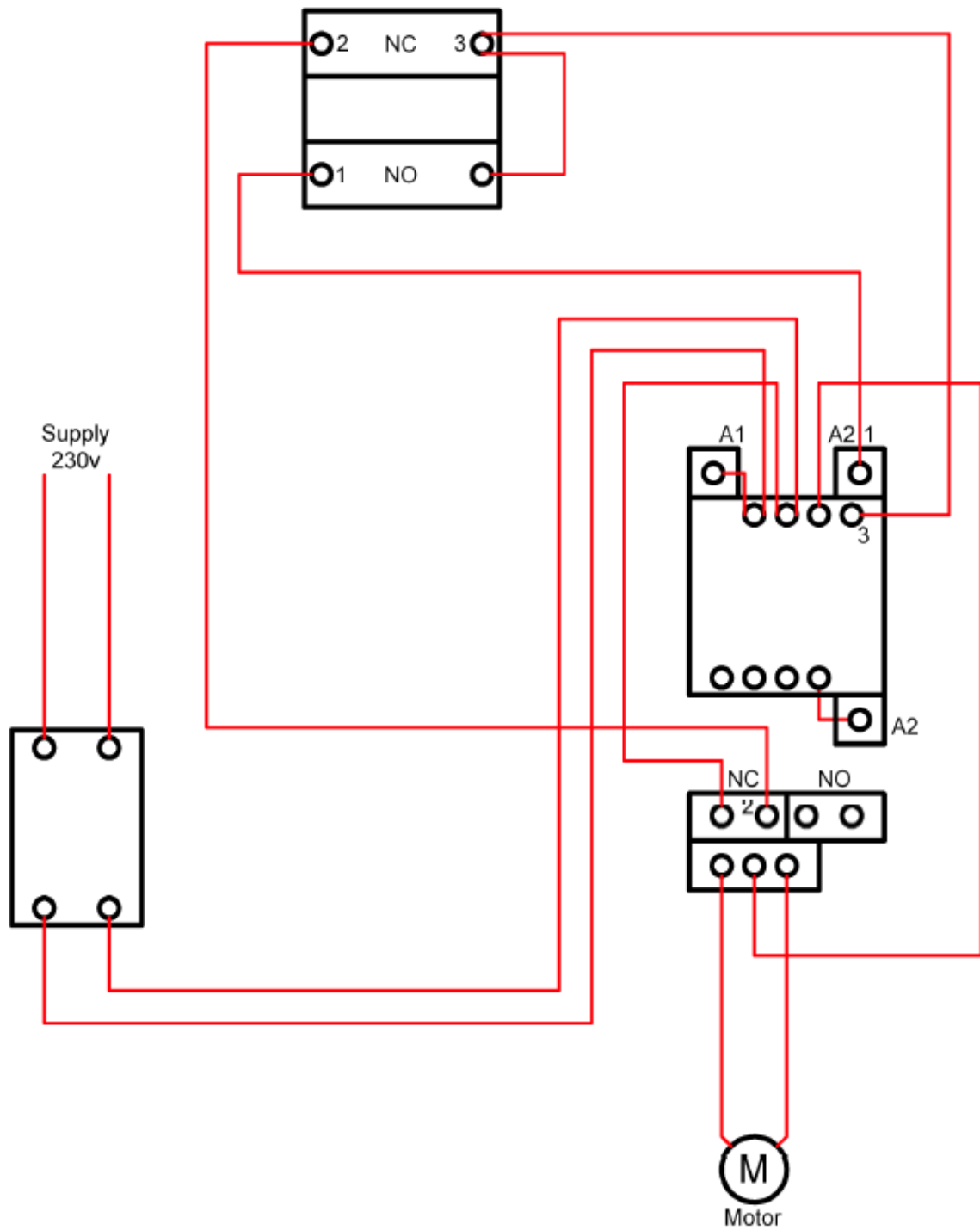
WIRING DIAGRAM

110V



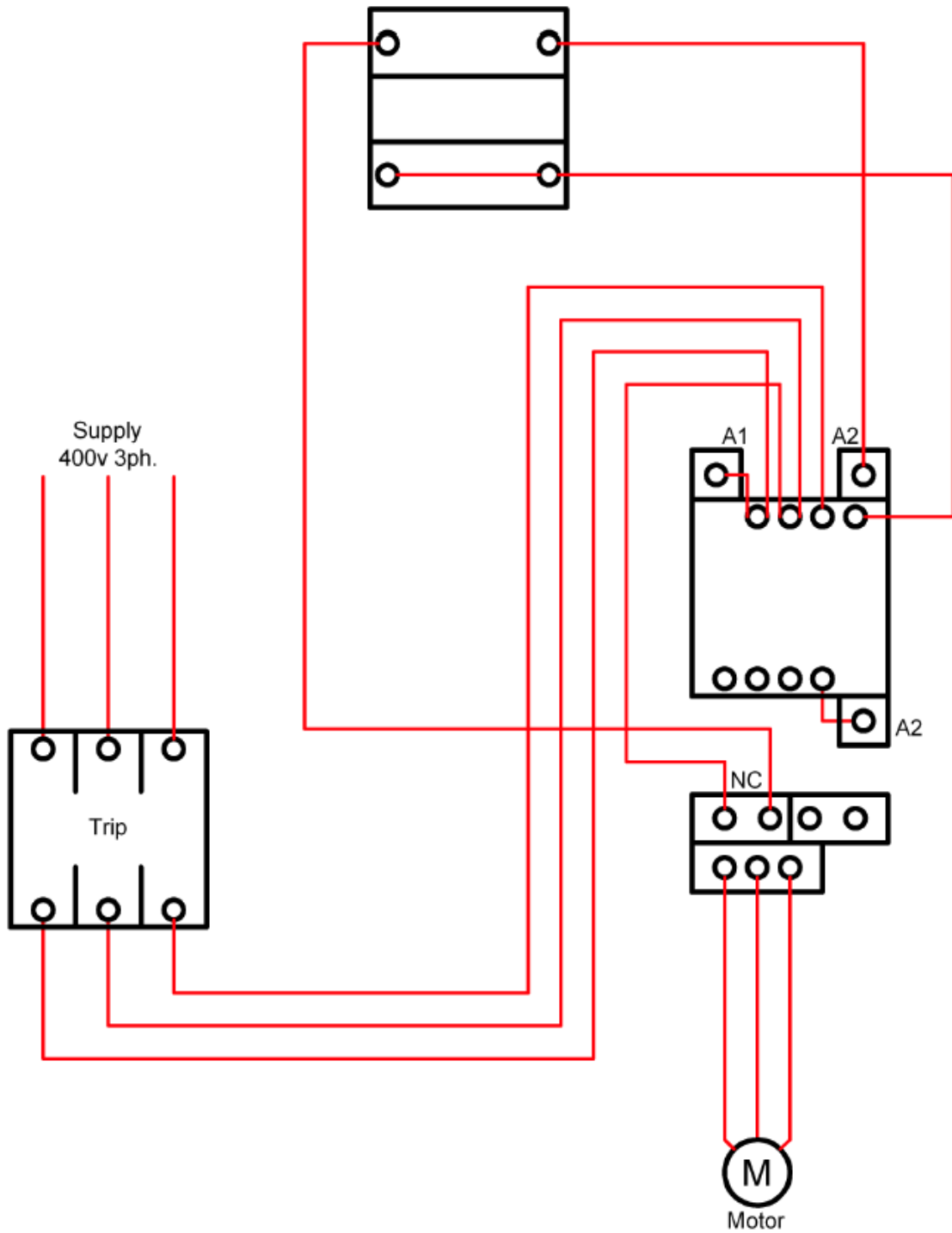
WIRING DIAGRAM

230V



WIRING DIAGRAM

400V



RECORD OF NOISE AND VIBRATION ASSESSMENT

Model No.	BEF200N Electric
Operation:	Concrete floor surface
Inserted Tool:	TCT cutters
Running Conditions:	2870 rpm
HAV Note:	Operc

HAND-ARM VIBRATION

Frequency Weighted Energy Equivalent Accelerations ($a_{h,w}$)

Measurement Position	Acceleration (m/s^2)
	Vector Sum
Handle	4.4

NOISE LEVELS

Sound Power Level (L_{WA})

L_{WA} at Octave Band Centre Frequency (Hz)								Sound Power Level L_{WA}
63	125	250	500	1000	2000	4000	8000	
46.7	61.0	81.9	86.9	90.3	91.7	91.3	84.0	96.8

Operator's Ear

$L_{Aeq,T}$ at Octave Band Centre Frequency (Hz)								Overall Level ($L_{Aeq,T}$)	L_{Peak} dB(C)
63	125	250	500	1000	2000	4000	8000		
32.1	44.1	67	75.6	79.4	77.5	75.6	67.5	84.2	99.8

RECORD OF NOISE AND VIBRATION ASSESSMENT

Model No.	BEF200N Electric
Operation:	Concrete floor surface
Inserted Tool:	Beam cutters
Running Conditions:	2870 rpm
HAV Note:	Operc

HAND-ARM VIBRATION

Frequency Weighted Energy Equivalent Accelerations ($a_{h,w}$)

Measurement Position	Acceleration (m/s^2)
	Vector Sum
Handle	3.9

NOISE LEVELS

Sound Power Level (L_{WA})

L_{WA} at Octave Band Centre Frequency (Hz)								Sound Power Level L_{WA}
63	125	250	500	1000	2000	4000	8000	
46.7	61.0	81.9	86.9	90.3	91.7	91.3	84.0	96.8

Operator's Ear

$L_{Aeq,T}$ at Octave Band Centre Frequency (Hz)								Overall Level ($L_{Aeq,T}$)	L_{Peak} dB(C)
63	125	250	500	1000	2000	4000	8000		
32.1	44.1	67	75.6	79.4	77.5	75.6	67.5	84.2	99.8

RECORD OF NOISE AND VIBRATION ASSESSMENT

Manufacturer: SPE
 Type: Scarifier
 Model No. BEF200N-4 Petrol
 Operation: Concrete floor surface
 Inserted Tool: TCT cutters
 Running Conditions: 2870 rpm
 HAV Note: Operc

HAND-ARM VIBRATION

Frequency Weighted Energy Equivalent Accelerations ($a_{h,w}$)

Measurement Position	Acceleration (m/s^2)
	Vector Sum
Handle	4.4

NOISE LEVELS

Sound Power Level (L_{WA})

L_{WA} at Octave Band Centre Frequency (Hz)								Sound Power Level L_{WA}
63	125	250	500	1000	2000	4000	8000	
46.7	61.0	81.9	86.9	90.3	91.7	91.3	84.0	96.8

Operator's Ear

$L_{Aeq,T}$ at Octave Band Centre Frequency (Hz)								Overall Level ($L_{Aeq,T}$)	L_{Peak} dB(C)
63	125	250	500	1000	2000	4000	8000		
32.1	44.1	67	75.6	79.4	77.5	75.6	67.5	84.2	99.8



BEF200N
Operating Manual

RECORD OF NOISE AND VIBRATION ASSESSMENT

Manufacturer: SPE
 Type: Scarifier
 Model No. BEF200N-4 Petrol
 Operation: Concrete floor surface
 Inserted Tool: Beam cutters
 Running Conditions: 2870 rpm
 HAV Note: Operc

HAND-ARM VIBRATION

Frequency Weighted Energy Equivalent Accelerations ($a_{h,w}$)

Measurement Position	Acceleration (m/s^2)
	Vector Sum
Handle	3.9

NOISE LEVELS

Sound Power Level (L_{WA})

L_{WA} at Octave Band Centre Frequency (Hz)								Sound Power Level L_{WA}
63	125	250	500	1000	2000	4000	8000	
46.7	61.0	81.9	86.9	90.3	91.7	91.3	84.0	96.8

Operator's Ear

$L_{Aeq,T}$ at Octave Band Centre Frequency (Hz)								Overall Level ($L_{Aeq,T}$)	L_{Peak} dB(C)
63	125	250	500	1000	2000	4000	8000		
32.1	44.1	67	75.6	79.4	77.5	75.6	67.5	84.2	99.8

WARRANTY

The standard warranty period of this equipment is **12 months** from the date below in accordance with the company Conditions of Sale (copy attached).

Bartell agrees to furnish without charge, F.O.B. our plant, a replacement for any part or portion thereof, comprising the main unit of the BEF200N, consisting of the exciter housing assembly, save and except drive belts, and power units, prove upon our examination, to be defective in either material or workmanship within a period of twelve (12) months from date of purchase, provided that notice of such defective part or portion thereof is given to Bartell Ltd. within the twelve month warranty period. No further or other guarantee or warranty expressed or implied in connection with the sale of the machine is given and our sole liability consists in replacing defective parts or portions thereof. We shall not be responsible for any special, indirect or consequential damages arising in any manner whatsoever.

This guarantee is for the sole benefit of the original purchaser as end user. Our responsibility under this guarantee ends in the case the original purchaser transfers ownership of the BEF200N, makes any changes or adds any parts or devices not of our manufacture to the machine.

<i>Warranty start date:</i>	As despatch date
<i>Model:</i>	BEF200N
<i>Serial no:</i>	
<i>Customer name:</i>	
<i>Customer Address:</i>	

<i>Manufacturer:</i>	SPE International Ltd
	Honeyholes Lane
	Dunholme
	Lincoln
	LN2 3SU
	England
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DECLARATION OF CONFORMITY

WE
SPE INTERNATIONAL LTD

OF
Honeyholes Lane
Dunholme
Lincoln
LN2 3SU

DECLARE that under our sole responsibility for the supply/manufacture of the product

(Description/name) **BEF200N**

(Model/type) **BEF200N**

to which this declaration relates is in conformity with the following standards and other normative documents following the provisions of Directive 2006/42/EC.



.....
Brian Jacklin – Technical Manager
SPE INTERNATIONAL LTD

CONDITIONS OF SALE

The quotation overleaf and any order placed following such quotation are subject to the following conditions of sale in which SPE International Limited is referred to as the "Company".

1. Validity of quotation

No order received from a customer by the Company shall constitute a contract until accepted in writing by the Company.

2. Prices

Prices quoted by the Company are firm for 30 days only or until previously withdrawn. Unless otherwise stated all prices are exclusive of any applicable Value Added Tax for which the customer shall be additionally liable to the Company.

3. Delivery

Delivery periods and dates are given in good faith but are not the subject of any warranty or condition and time shall not be of the essence of the contract in these respects. No liability will attach to the Company if delivery periods or dates are not met for any reason whatsoever.

4. Payment

Save as may otherwise be agreed in writing the customer shall pay the price in full on or before the estimated delivery date whereupon the Company shall raise a receipted invoice. Each invoice includes an Overdue Account Levy of 5% of the total invoice value inclusive of VAT. Subject to payment in full being made on or before the due date a sum equal to the Overdue Account Levy shall be credited to the customers account with the Company. Until such time as payment in full has been made the Company shall be under no obligation to allow or effect of any goods to the customer.

5. Warranty

The Company warrants that all goods supplied by it will correspond to their specifications and will be free from defects in materials or workmanship for a period of 12 months from the date of delivery. The Company's obligation in the event of a breach of this warranty is limited to the repair or replacement of any defective goods which shall be returned at the cost and expense of the customer to the Company. This warranty is given in lieu of all the other warranty or conditions expressed or implied (whether by statute or otherwise) and is subject to the following conditions: -

5.1 Claims must be notified in writing to the Company within seven days from the date of delivery or (where the defect is not apparent on reasonable inspection) as soon as practicable after discovery of the defect.

5.2 The Company shall be under no liability in respect of any defect in the goods arising from any drawing, design or specification supplied by the customer.

5.3 The Company shall be under no liability if the defect or failure in the reasonable opinion of the Company arises from wilful damage or misuse, negligence by the customer or any third party. Failure to follow the Company instructions, usage of non-recommended parts and materials, alteration or repair of the goods without the prior approval of the Company or non-recommended maintenance.

5.4 The Company shall be under no liability if the price for the goods has not been paid by the due date for payment.

5.5 The above warranty does not extend to: -

5.5.1 Parts, materials or equipment not manufactured by the company in respect of which the customer shall be entitled only to the benefit of any such warranty or guarantee as is given by the manufacturer to the Company.

5.5.2 Any component part of the goods or associated parts which come into contact with abrasive elements or dust within surface Preparation equipment.

5.5.3 Fair wear and tear of moving parts within the goods.

5.6 Except in the case of death or personal injury caused by the Company negligence, the Company shall not be liable for any consequential loss or damage (whether for loss of profit or otherwise) or other claims for consequential compensation.

6. Carriage

Packing, carriage, and insurance charges in respect of delivery of the goods to the customer will be charged to the customer at cost to the company.

7. Damage in Transit

The company does not accept any liability for loss or damage to the goods while in transit to the customer.

8. Risk

The risk in the goods shall pass to the customer on delivery to the customer or (if earlier) when possession of the goods is taken by a carrier for delivery to the customer.

9. Force Majeure

The Company shall not be liable to the customer or be deemed to be in breach of any contract with the customer by reason of any delay in performing or any failure to perform any obligation of the Company obligation in relation to the goods if the delay or failure was due to force majeure or to any other cause beyond the Company's reasonable control.

10. Reservation of Title

The goods sold under these conditions shall remain the absolute property of the Company and legal title in the goods shall remain vested in the Company until payment in full of all amounts invoiced or due to the Company in respect of the goods. If the customer shall enter into liquidation have a winding up order made against it or have a Liquidator, receiver, administrator or administrator receiver shall be appointed over its assets, income or any part thereof before the property in the goods has passed in accordance with this condition the Company shall be entitled immediately after giving notice of its intention to repossess any goods to enter upon the premises of the customer with such transport as may be necessary and to repossess any goods to which it has title under this condition. No liquidator, receiver, administrator, or administrative receiver of the customer shall have authority to sell goods to which the Company has title without the prior written consent of the Company.

11. Insolvency of Customer

If the customer being a body corporate, shall pass a resolution or suffer an order of the Court to be made for winding – up, or if a Receiver, Administrator or Administrative Receiver shall be appointed or, being an individual or partnership, shall suspend payment, propose or enter into any composition or arrangement with his or their creditors, or have a bankruptcy order made against him or them, then the Company shall have the right, without prejudice to any other contract with the customer, not to proceed further with the contract and shall be entitled to charge for work already carried out (whether completed or not) and for goods and materials already purchased for the customer such charge to be an immediate debt due from the customer.

12. Patent Rights, etc

The acceptance of a quotation includes the recognition by the customer of the Company under any patents, trademarks, registered designs or other intellectual property rights relating to the goods and the customer undertakes that patent numbers, trademarks or other trade markings on goods supplied shall not be obliterated, altered or defaced.

13. Applicable Law

These conditions shall be governed by and construed in accordance with English law and parties acknowledge and accept the exclusive jurisdiction of the English Courts.