

# **BEF320-1A**

## **Operating Manual**

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**BEF320-1A**  
Operating Manual

# **BEF320-1A**

## **OPERATING MANUAL**

This manual covers to the best of our knowledge, the operation and maintenance of the BEF320 Multi-plane. Before operation of the equipment the operating manual must be read and understood by the operator. The safety regulations must be followed at all times. Service of electrical and hydraulic 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 this instruction 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, failure to inspect the machine for damage or other faults that may influence the operation prior to starting work, or failure to follow the safety regulations listed or applicable to the job site.



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# STARTING WORK

CHECK the following prior to starting the equipment:

- Check condition of cutter drum assembly
- Check all bolts for tightness
- Check drive belt condition and tension
- Check drive pulleys are undamaged and clean
- Check all leads, pipes and hoses for damage
- Check electrical cables/plugs
- Check RCD protection is fitted and working

1. Ensure power supply is correct. BEF320-1A requires a 380/415v 32amp supply from the mains or generated by a minimum of 25kva on 50 cycles.
2. After connecting the machine to the power supply turn the red isolator (on the front of electric panel) to the on position. Red light will illuminate on panel.
3. BEFORE starting the machine ensure the cutter drum assembly is clear of the ground. If not adjust using hand wheel.
4. ENSURE the drive control levers are in the non-drive/neutral (central) position and speed control knob is turned to OFF position.
5. Connect vacuum hose to dust port at side of machine if dust control vacuum is being used.
6. START the electric motor using the green button on top of the electric panel. Check that the three phase power supply is phased to suit the machine. The electric motor should be turning in direction of arrow on cooling fan cover ie clockwise when viewed from the non drive side of machine. If not the electric motor will be turning in reverse and hydraulic drive systems will not operate. (To reverse phases see page 3).
7. OPERATE the hydraulic lift/lower lever allowing the machine to fall to its lowest position
8. SLOWLY rotate the hand wheel until the cutters make contact with the surface to be treated.
9. Push both drive control levers forward and slowly open the speed control knob until machine is moving at satisfactory speed.
10. Adjust hand wheel to desired cutting depth and engage hand wheel locking pin.
11. To raise and lower machine use hydraulic lift lever to the left of hand wheel.
12. To turn machine around at end of run raise out of cut, reduce forward speed and pull either drive control lever back through neutral and into reverse. Pulling the left lever will make machine turn left and the right one turn right.



## GENERAL OPERATION

It is essential that the cutters are not lowered too far and too hard onto the surface as serious damage could be caused to the machine and cutter drum assembly.

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 cutters rather than as grinders or picks. Do not pull the control levers into reverse when cutting as this could result in the machine reversing quickly in an uncontrolled manner.

**The machine should operate smoothly with a minimum of vibration. When the depth of cut is correctly set very little effort should be required to operate the machine.**

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 and machine components 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%.

The BEF320 should always be 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 recommended that the machine is not operated in reverse whilst the cutters are in contact with the surface. When lifting the cutter drum from the work surface it is not necessary to turn the hand wheel - lift upwards by simply operating the hydraulic lift lever.

Always use the shortest possible length of extension cable. To avoid voltage drop the cable must be a minimum of 6mm. Maximum length of cable can then be up to 75 metres.

The motor is fitted with thermal overload protection. Should the thermal trip be activated then it must be allowed to cool and reset. Almost without exception if a motor trips out it is an indicator of a fault elsewhere either on the machine or with the power supply or simply that the machine is being overloaded.

**Note: the thermal trip on the motor is a fail safe device and is not intended to be continuously reset.**

If the motor repeatedly cuts out then it will be damaged.

Possible causes are: An inadequate or faulty power supply.

Overloading of the machine.

Mechanical fault on the machine e.g. bearing or cutter drum failure.

The machine can only be overloaded by setting the depth of cut to low. When overloaded the machine can vibrate which will in turn damage the electrical switch components.

The electric control panel is fitted with two safety devices which further protect the motor from damage. The switches are set by the manufacturer and under no circumstances should be adjusted.



## DUST CONTROL

To control any dust created by the operation connect an industrial dust collector or vacuum to the 50mm port at the rear of the machine. We recommend the SPE 316 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.)**

## PHASE REVERSING

If the electrical motor is turning anti clockwise when viewed from the non drive end and the hydraulic drive system is not working the power supply to your BEF320 is incorrectly phased. The correct carry out the following.

1. Isolate power supply.
2. Open electric panel door.
3. Turn phase reverse switch to opposite position.
4. Close panel door.
5. Re connect power supply and retest.

**Note:** If machine is still turning in reverse seek advice of qualified electrician.

The BEF320 machine should always be moved by its own hydraulic power driven system as pushing the machine continually around by hand could result in internal damage to the hydraulic motor and pump system.



# MAINTENANCE

PRIOR TO ANY MAINTENANCE OR ADJUSTMENT ISOLATE POWER SUPPLY AND STOP EQUIPMENT

**After use:** Clean the machine to remove all build up of dust and surface residues. 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

## **Drum Removal:**

Remove bolts on side plate and then screw two bolts back into the two tapped holes in the side plate. Continue winding in and this will push side plate off dowel pins. Pull off side plate, remove key from shaft. Pull out cutting drum. Fitting a new cutter head is simply a reversal of the above procedure, a little care must be taken to align the drive shaft, cutter drum and support end drive bush.

**EXCESSIVE FORCE SHOULD NOT BE NEEDED TO REFIT THE CUTTER DRUM.**

## **Cutter Drum Maintenance:**

When changing cutter drum always check that the flail shafts are not worn with pronounced grooves and also that the centres of cutters and spacers are not elongated and beginning to "mushroom". The drum assembly is hitting concrete with great force 650 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 then new bearings should be fitted. Lightly oiling the drive shaft will prevent a build up of rust which could cause difficulty when changing the drum. At the same time check belt tension and condition also checking the pulley grooves are clean and undamaged.

The drive shaft is manufactured from high quality steel 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 it can be bent.

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

Remove all build up and deposits of material from the under side of the drum housing. On certain applications, e.g. the removal of damp self levelling compounds, it may be necessary to clean away deposits hourly! Failure to do so could result in overload of the drum assembly, drive motor and drive belts



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### Height Adjustment Maintenance:

Ensure the height screw thread is cleaned and then lightly oiled. Periodically it should be removed and the female threaded section cleaned out and oiled. At the same time the self-aligning bearing should be greased.

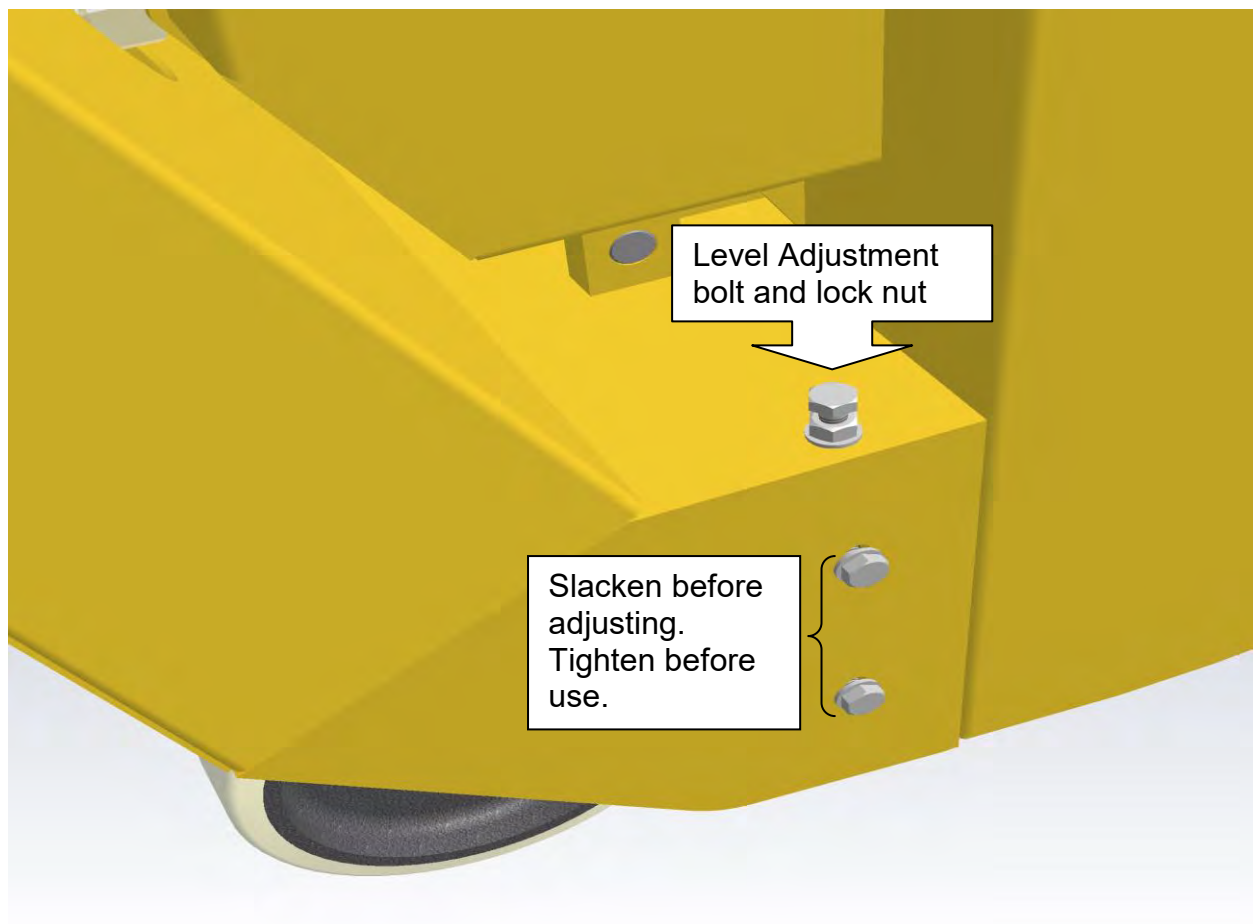
The clevis pin should be oiled regularly to maintain a light, smooth height adjustment.

### BEF320 Cutter Drum Adjustment:

Should the machine be cutting more heavily on one side. Stop machine and isolate power supply, adjust lock nut/bolt assembly on top of right hand side of chassis. By adjusting up or down the cutting action can be reset level again. Retighten all bolts. Test on sample area and if required reset until cutting correctly.

Great care should be taken to ensure belts have correct tension and also correct alignment. Serious damage could be caused to the drive shaft, drive shaft bearings and drive motor if the belts are excessively tight.

**Note: Never operate the BEF320 without belt guard fitted**







# BASIC MAINTENANCE/CHECKLIST

**DAILY:** (or every 8hrs to 10hrs)

- Check cutters
- Check flail shafts
- Check all bolts and nuts for tightness
- Check belt tension
- Check plugs/cables
- Check hydraulic oil level.
- Clean any debris from drum enclosure and ensure drum turns freely.

**WEEKLY:**

- All the above with following:-
- Grease all moving parts on height adjustment mechanism
- Remove side plate
- Check drum/bushes
- Check side plate bearing
- Check drive bushes
- Check drive shaft
- Check support wheels
- Check hydraulic drive system

**MONTHLY:**

- All the above with following:-
- Change hydraulic oil
- Strip down fully winding mechanism
- Clean all threads and re-grease



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## SAFETY

**In the interest of site safety the BEF320 should never be operated unless some form of residual current circuit breaker is fitted (RCD).**

Only trained operatives should be allowed to work the BEF320.

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

**Note: It is possible that the noise level produced by the BEF320 could exceed 90dbA. Personal noise protection must be worn.**

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






Never leave the BEF320 unattended while in use. Always stop the motor and raise the height adjustment fully up before leaving the machine.

Always ensure that all power leads and hoses are disconnected before attempting to service the machine. 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.



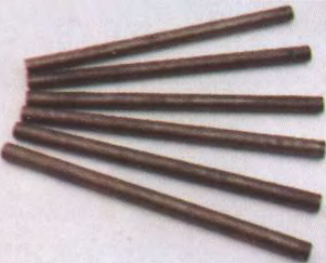
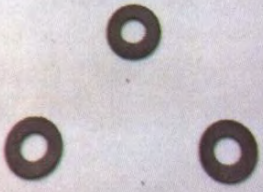

The BEF320 should never be used in wet/damp conditions and should be stored under cover and kept dry at all times.

Noise and vibration will occur at various levels dependant on the attachments and work being completed. SPE have assessments conducted under test conditions detailed in the operating manual. (See page 26). 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 and safety executive.

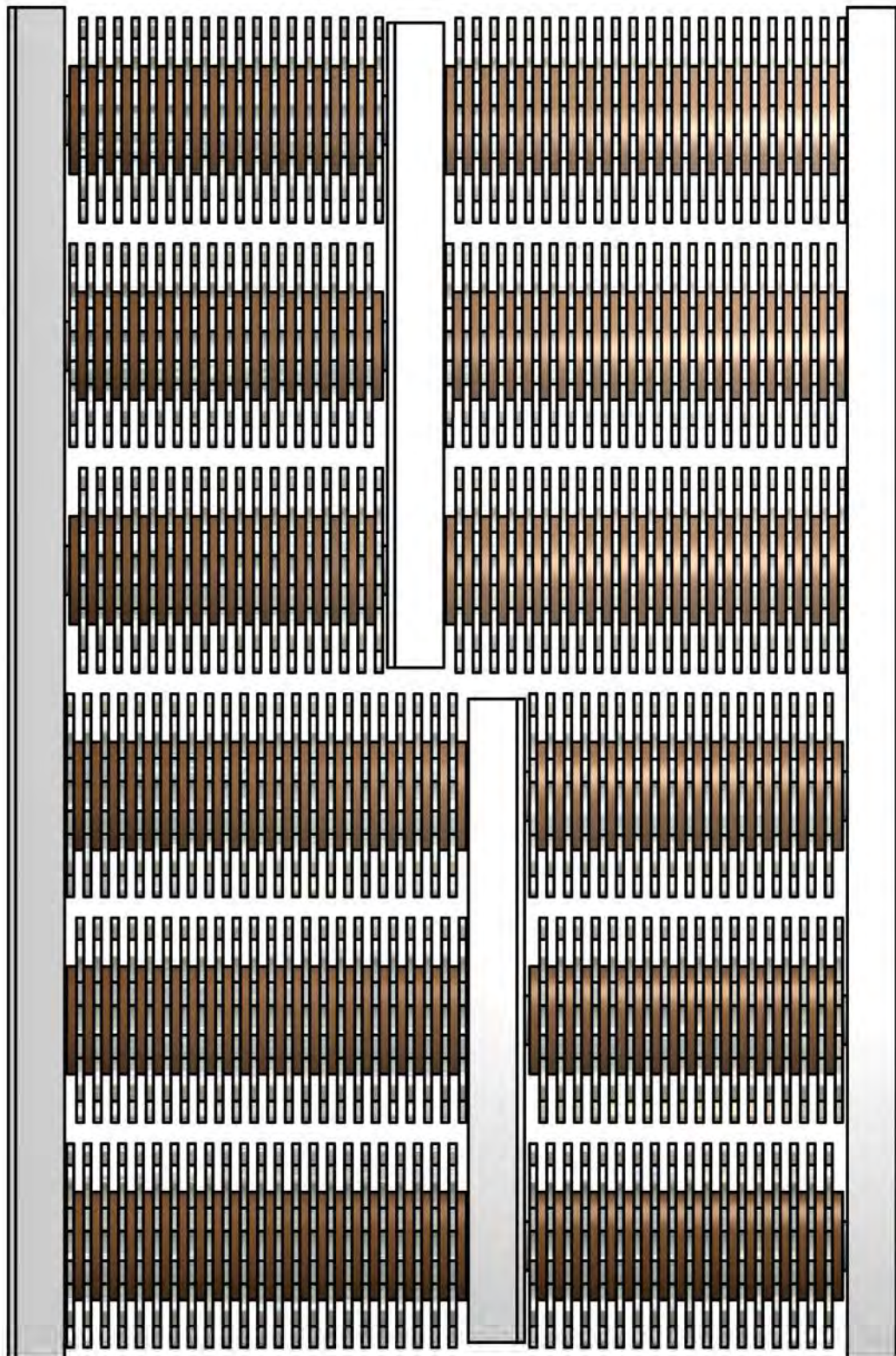
## ACCESSORIES

	Part number	Description	Application
	<b>32001</b>	Heavy duty drum complete with T.C.T. cutters and spacers.	Hardened steel cutter with tungsten inserts, for all concrete texturing, scabbling, planing and grooving applications. Removal of bridge deck and car park membranes, heavy industrial contamination, epoxy coatings and road markings. Use on heavy applications for longer life and higher output.
	<b>32002</b>	Heavy duty drum complete with beam flails	Heat treated steel cutter for the removal of paint coatings and laitence from new floors. Also used for removing of grease build ups, dirt and ice deposits, keying and light scabbling of concrete when a "fine textured" surface is required.
	<b>32003</b>	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 materials and rubber deposits.
	<b>80800</b>	T.C.T. Cutter: 8 point hardened steel cutter with tungsten carbide insert.	For all concrete texturing scabbling, planing and grooving applications. Removal of bridge deck and car park membranes, heavy industrial contamination, epoxy coatings and road markings. Use on heavy applications for longer life and higher output.
	<b>80120</b>	Beam cutter: Heat treated steel cutter.	For the removal of paint coatings and laitence from new floors. Also used for the removing of grease build ups, dirt and ice deposits, keying and light scabbling of concrete when a "fine textured" surface is required.

## ACCESSORIES

	<p><b>20mm 80600N</b></p>	<p>Milling cutter: Tipped with tungsten carbide.</p>	<p>For the removal of thermoplastic road/runway markings, rubber based deposits and cold plastic coatings from asphalt and concrete.</p>
	<p><b>32000</b></p>	<p>Heavy duty drum complete with flail shafts.</p>	<p>For use with various cutter configurations.</p>
	<p><b>32020</b></p>	<p>Heavy duty flail shaft.</p>	<p>Hardened cutter shaft.</p>
	<p><b>40240</b></p>	<p>Spacing washer.</p>	<p>Hardened spacing washer.</p>
	<p><b>3049</b></p>	<p>Hardened Bush.</p>	<p>Hardened drum inserts to carry flail shafts.</p>





Parts List

QTY	PART NUMBER	DESCRIPTION
246	40240	Spacer
246	80120	Beam Flail

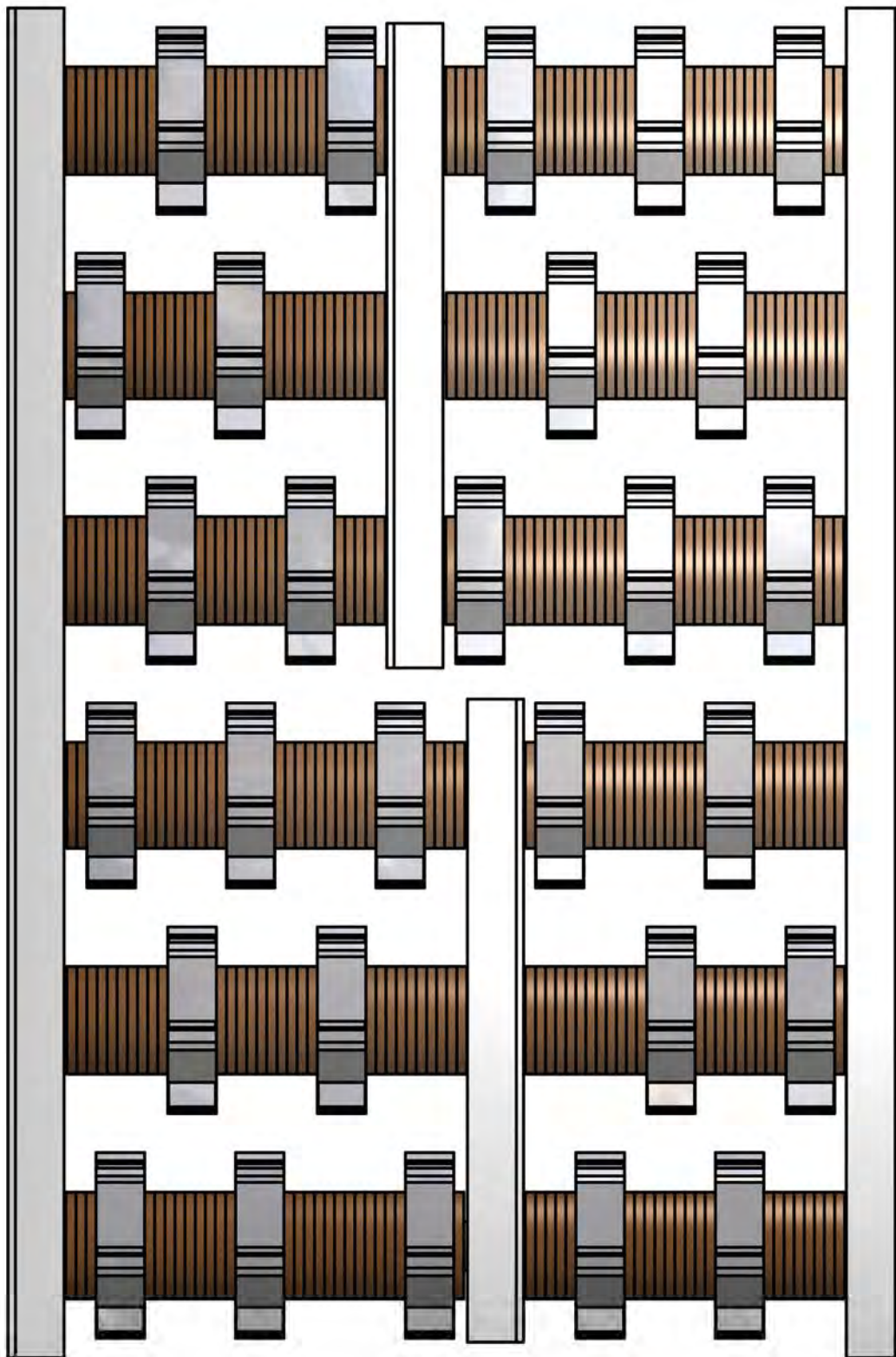
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SPE International Limited  
 Honeyholes Lane, Dunholme  
 Lincoln, LN2 3SU, England  
 Tel: +44 (0) 1673 860 709  
 or +44 (0) 1673 860 330  
 Fax: +44 (0) 1673 861 119  
 Web Site: <http://www.spe-int.com>  
 E-mail: [sales@spe-int.com](mailto:sales@spe-int.com)

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Drawn	TITLE		Drum c/w Beam Flails
D.G.A.			
Checked	Drawing No.	MACHINE	
P.A.	BEF-320_Drum-BF	BEF 320	



Parts List

QTY	PART NUMBER	DESCRIPTION
292	40240	Spacer
28	80600N	Milling Cutter

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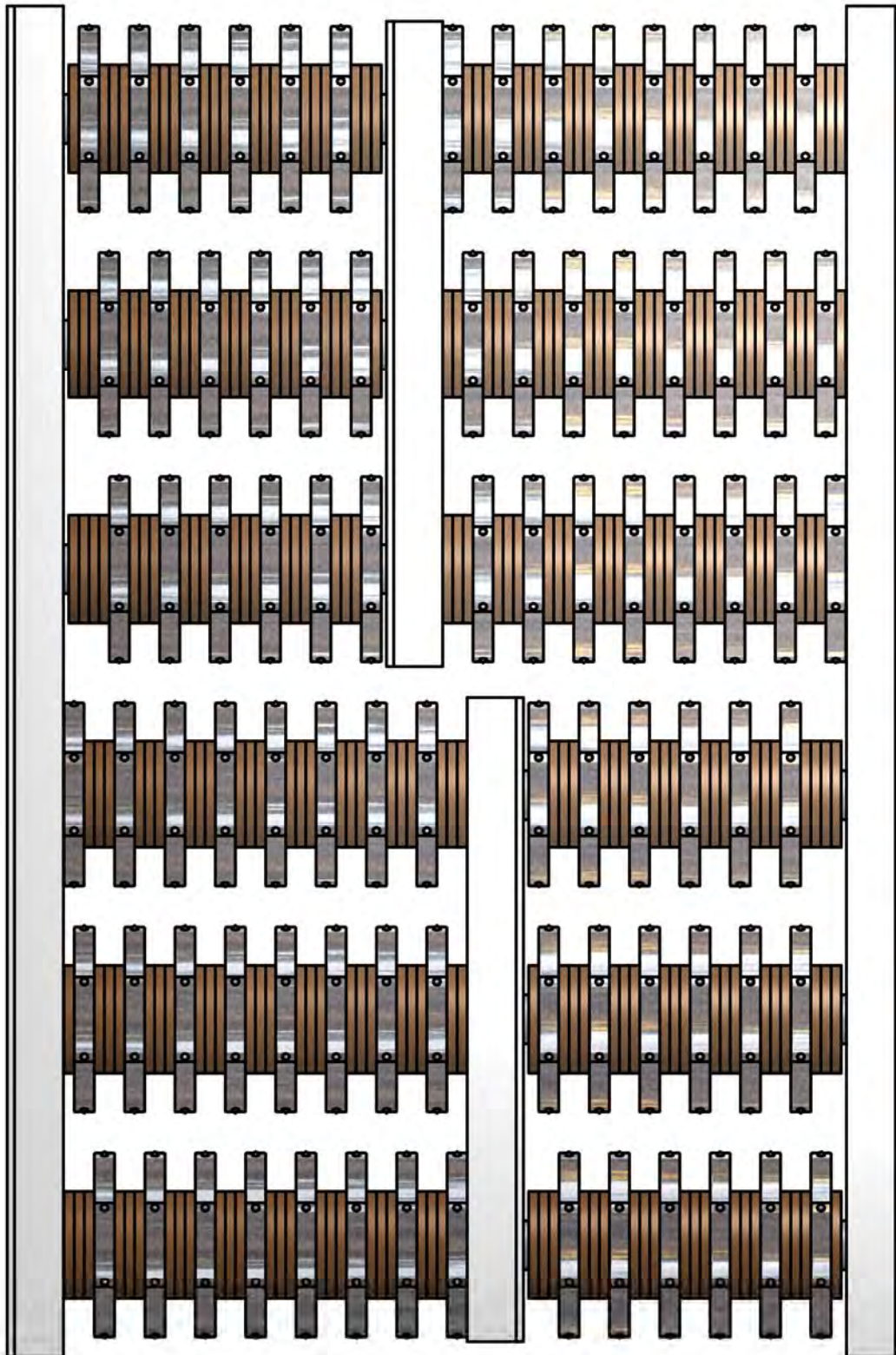


SPE International Limited  
 Honeyholes Lane, Dunholme  
 Lincoln, LN2 3SU, England  
 Tel: +44 (0) 1673 860 705  
 or +44 (0) 1673 860 330  
 Fax: +44 (0) 1673 861 119  
 Web Site: <http://www.spe-int.com>  
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Drawn	TITLE Drum c/w Milling Cutters	
D.G.A.		
Checked	Drawing No.	MACHINE
P.A.	BEF-320_Drum-MC	BEF 320





Parts List

QTY	PART NUMBER	DESCRIPTION
258	40240	Spacer
84	80800	TCT Cutter

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 Honeyholes Lane, Dunholme  
 Lincoln, LN2 3SU, England  
 Tel: +44 (0) 1673 860 705  
 or +44 (0) 1673 860 330  
 Fax: +44 (0) 1673 861 119  
 Web Site: <http://www.spe-int.com>  
 E-mail: [sales@spe-int.com](mailto:sales@spe-int.com)

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Drawn	TITLE Drum c/w Tungsten Carbide Tips	
D.G.A.		
Checked	Drawing No.	MACHINE
P.A.	BEF-320_Drum-TCT	BEF 320



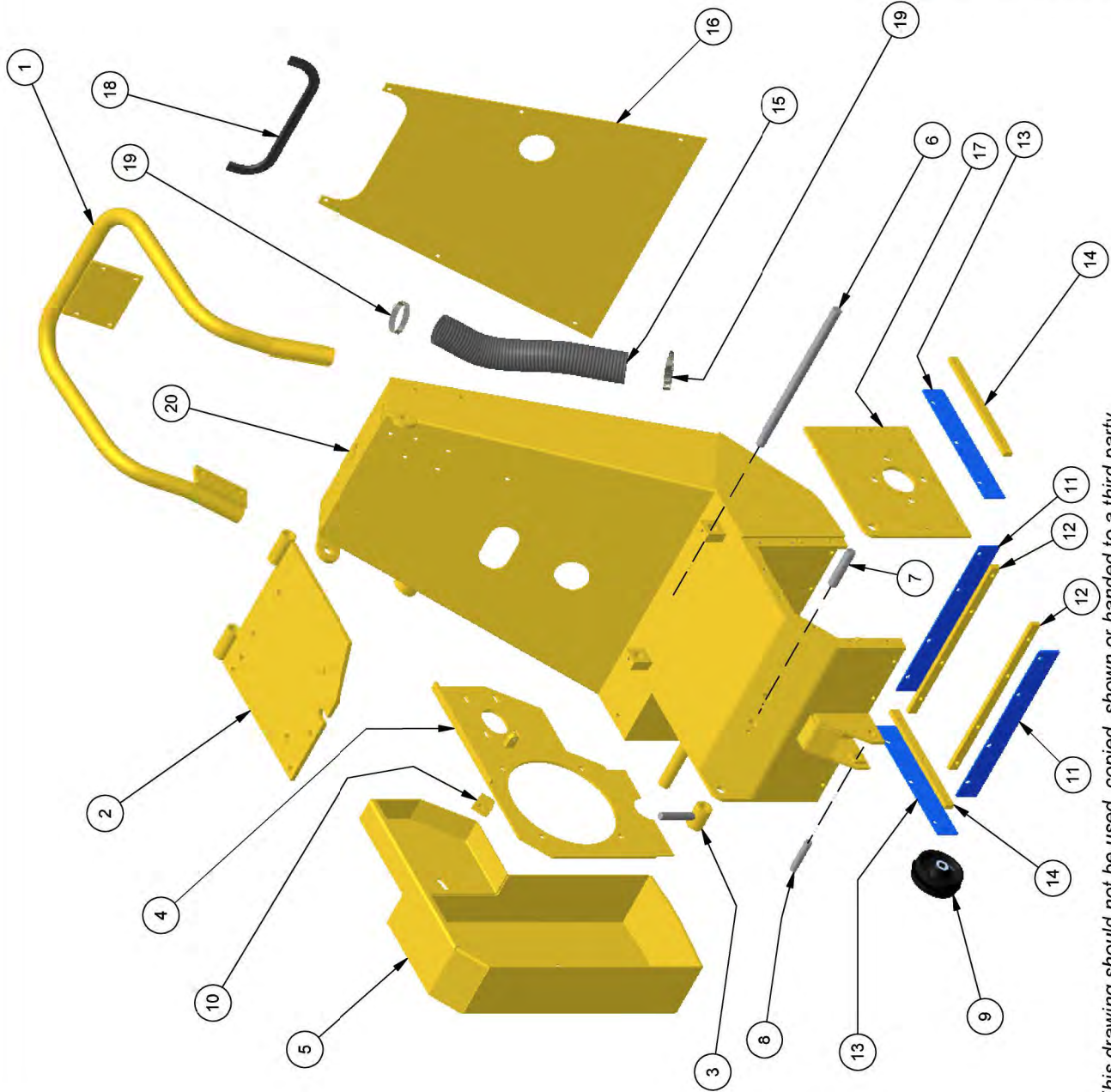
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Operating Manual

# **Spare Parts Breakdown**



Parts List

ITEM	QTY	SPE PART NUMBER	DESCRIPTION
1	1	3002	Handle
2	1	3003	Motor Mounting Plate
3	1	3017	T-Bar
4	1	3031B	Pump Mounting Plate
5	1	3025	Belt Guard
6	1	3024	Swivel Pin
7	1	3018	Swivel Pin (T-Bar)
8	1	3016	Axle
9	1	3015	Front Wheel
10	1	3025A	Guard Support Bracket
11	2	3022	Front/Rear Seal
12	2	3021	Front/Rear Retaining Bar
13	2	3019	Side Seal
14	2	3020	Retaining Bar
15	1	3081	Vac Hose
16	1	3001B	Back Plate
17	1	3058A	Side Plate
18	1	3082	Edging Strip
19	2	HC-60	Hose Clip
20	1	3001	Main Chassis



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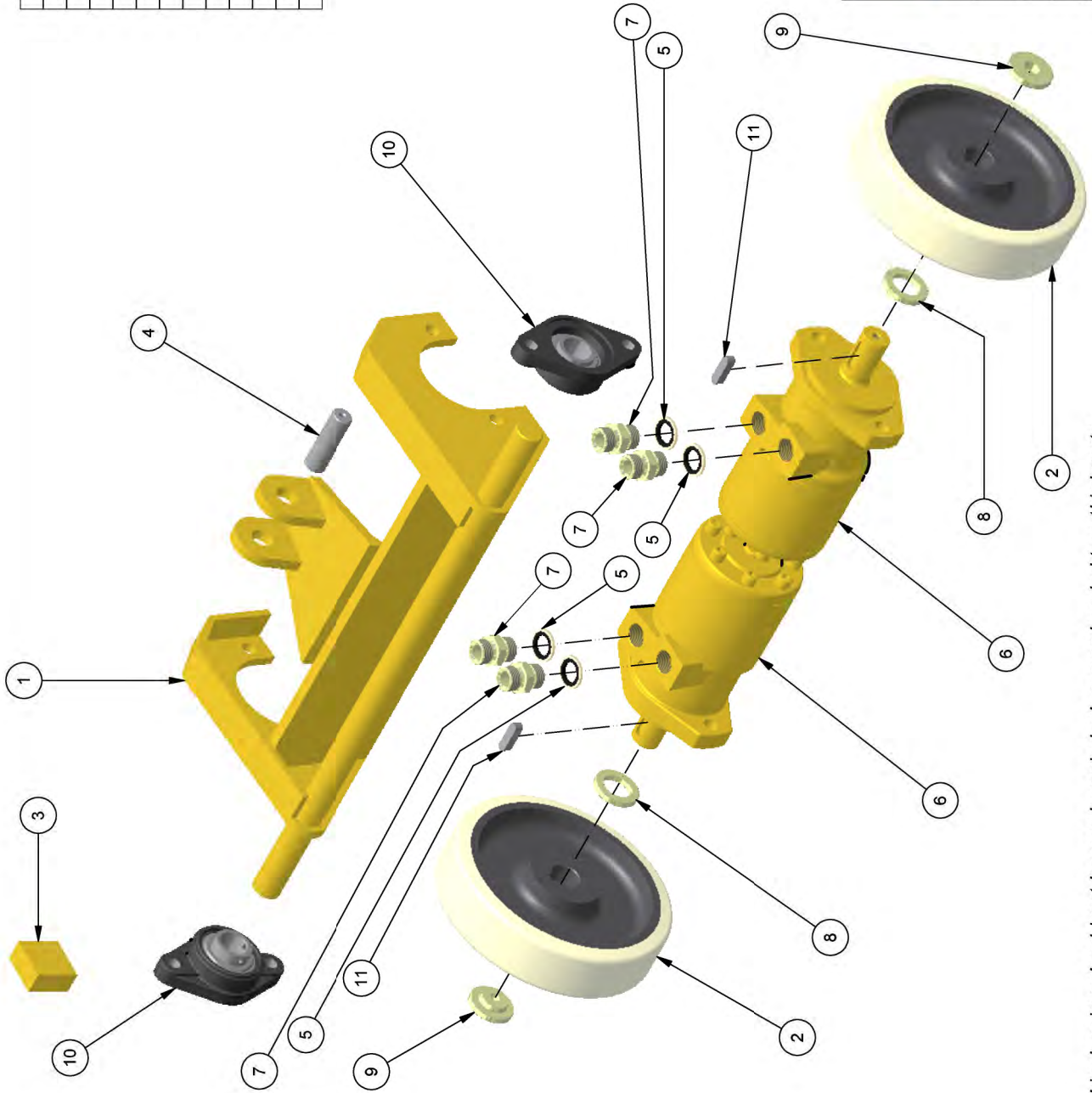
SPE International Limited  
 Honeyholes Lane, Dunholme  
 Lincoln, LN2 3SU, England  
 Tel: +44 (0) 1673 860 708  
 or +44 (0) 1673 861 119  
 Fax: +44 (0) 1673 861 119  
 Web Site: <http://www.spe-int.com>  
 E-mail: [sales@spe-int.com](mailto:sales@spe-int.com)

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Drawn		TITLE	Body Components
D.G.A.			
Checked		Drawing No.	MACHINE
P.A.			

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Parts List			
ITEM	QTY	SPE PART NUMBER	DESCRIPTION
1	1	3004	Rear Wheel Bracket
2	2	07034	Wheel
3	1	3014A	Bearing Block
4	1	3009	Hyd. Ram Pin
5	4	DW 08	1/2" Dowty Washer
6	2	09009	Wheel Motor
7	4	ADAPT 003	1/2" m-m Hyd. Adaptor
8	2	07035A	Spacer Washer
9	2	07035	Hub Cap
10	2	3014	Flange Bearing
11	2	9131	8x30 Parallel Key



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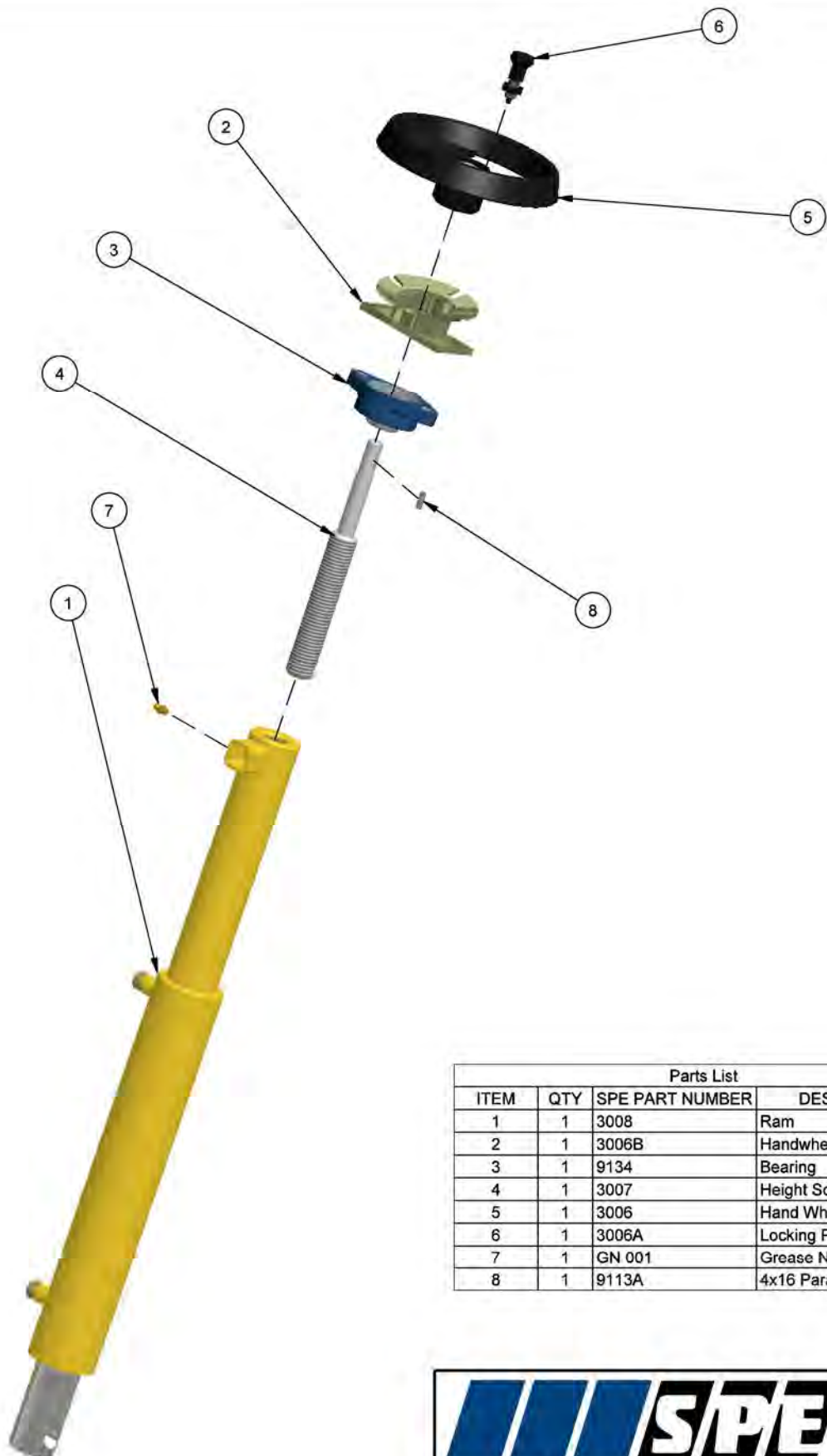
SPE International Limited  
 Honeyholes Lane, Dunholme  
 Lincoln, LN2 3SU, England  
 Tel: +44 (0) 1673 860 708  
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Drawn	TITLE	Undercarriage Components
D.G.A.		
Checked	Drawing No.	MACHINE
P.A.	BEF-320_Unc-01	BEF 320-1A

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Parts List			
ITEM	QTY	SPE PART NUMBER	DESCRIPTION
1	1	3008	Ram
2	1	3006B	Handwheel Locking Plate
3	1	9134	Bearing
4	1	3007	Height Screw
5	1	3006	Hand Wheel
6	1	3006A	Locking Plunger
7	1	GN 001	Grease Nipple
8	1	9113A	4x16 Parallel Key



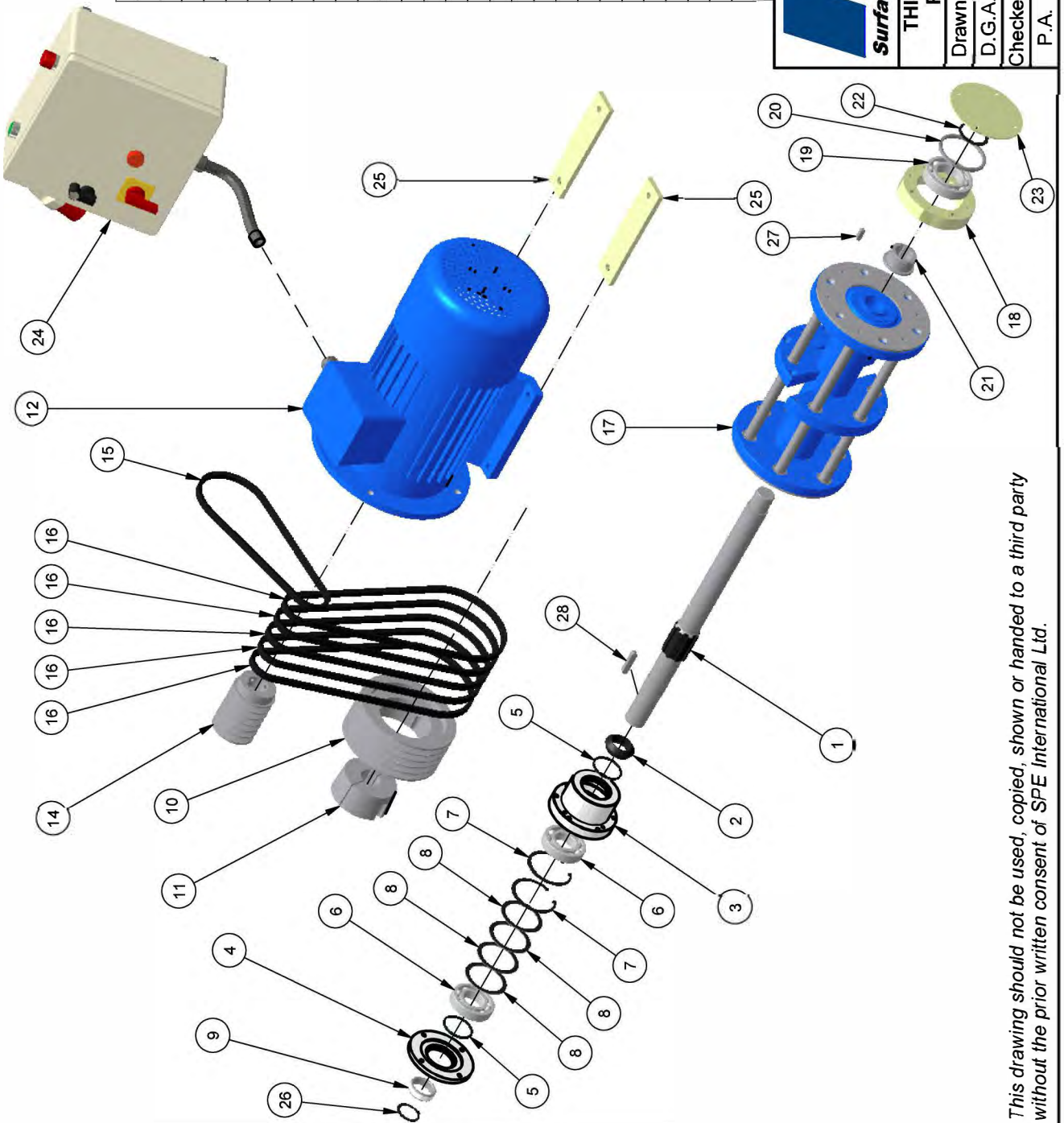
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SPE International Limited  
Honeyholes Lane, Dunholme  
Lincoln LN2 3SU, England  
Tel: +44 (0) 1673 860 709  
or +44 (0) 1673 860 330  
Fax: +44 (0) 1673 861 119  
Web Site: <http://www.spe-int.com>  
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Drawn	TITLE Height Adjuster Components	
D.G.A.		
Checked	Drawing No.	MACHINE
P.A.	BEF-320_HAd-01	BEF 320-1A

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Parts List

ITEM	QTY	SPE PART NUMBER	DESCRIPTION
1	1	3063A	Drive Shaft
2	1	701669	Washer
3	1	701665	Bearing Housing
4	1	701667	Bearing Top
5	2	703044	Lipped Seal
6	2	703063	Bearing
7	2	703060	Int Circlip
8	4	703131	Adjusting Washer - Flat
9	1	701671	Washer
10	1	3047A	Pulley
11	1	08039	Taper Lock Bush [3020 - 38mm]
12	1	3061	Electric Motor
13	1	3033A	6x39 Parallel Key
14	1	3032B	Drive Pulley
15	1	3027	Drive Belt (Hyd Pump)
16	5	11307	Drive Belt
17	1	32000	Drum c/w Flail Shafts
18	1	3066	Bearing Housing
19	1	2137	Bearing
20	1	2034	Support Side Spacer
21	1	3064A	Bearing Insert
22	1	2138	Ext. Circlip
23	1	3057	Bearing Housing End Plate
24	1	3079B	Electric Panel Assy
25	2	3087	Motor Spacer
26	1	703059	Ext. Circlip
27	1	3065	8x25 Parallel Key
28	1	703154	10x50 Parallel Key

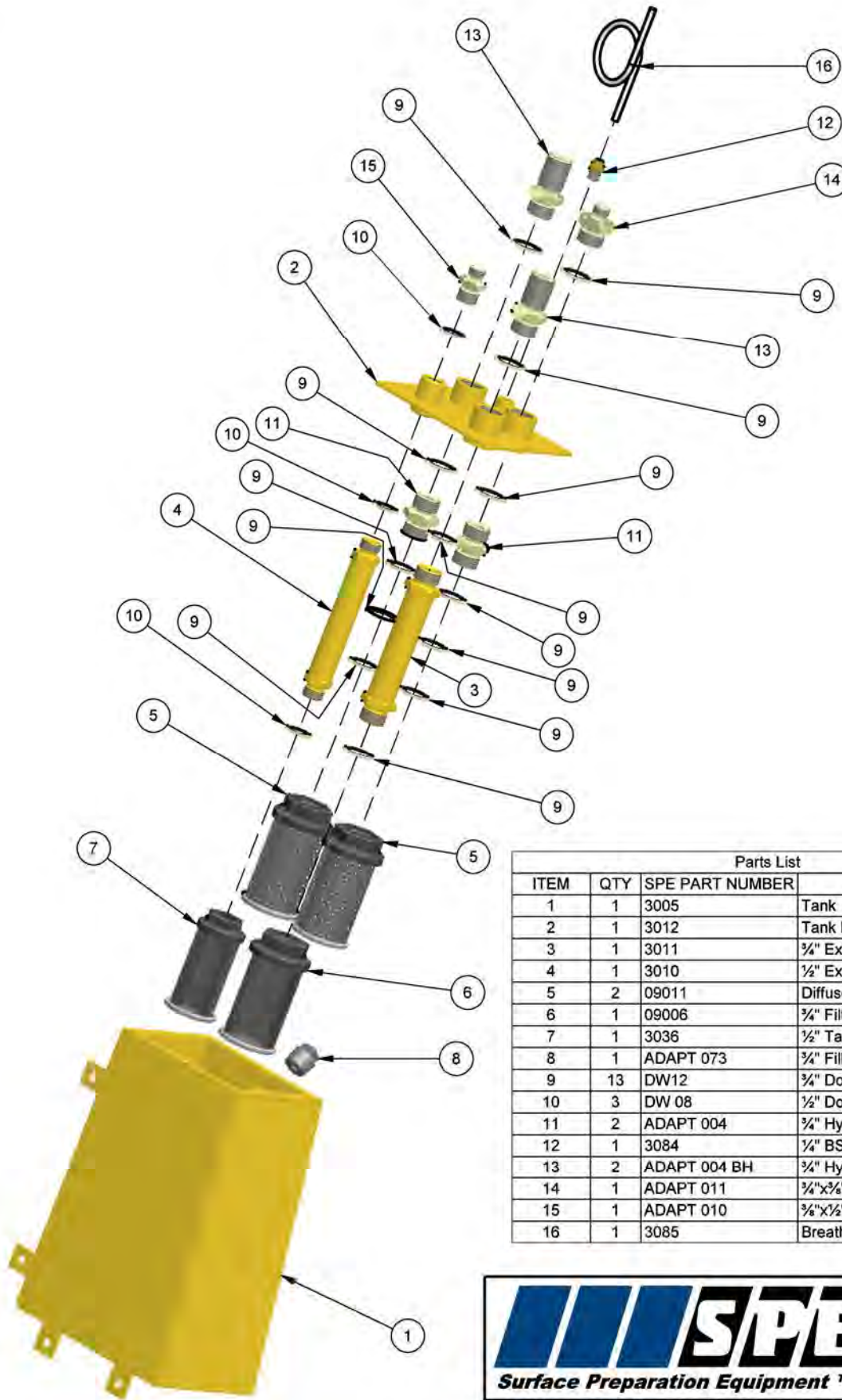


SPE International Limited  
 Honeyholes Lane, Dunholme  
 Lincoln, LN2 3SU, England  
 Tel: +44 (0) 1873 860 338  
 Fax: +44 (0) 1873 861 119  
 Web Site: <http://www.spe-int.com>  
 E-mail: [sales@spe-int.com](mailto:sales@spe-int.com)

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Drawn	TITLE	Drum Drive Components
D.G.A.		
Checked	Drawing No.	BEF-320_DDr-01
P.A.		
		MACHINE
		BEF 320-1A

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Parts List			
ITEM	QTY	SPE PART NUMBER	DESCRIPTION
1	1	3005	Tank
2	1	3012	Tank Lid
3	1	3011	3/4" Extension Pipe
4	1	3010	1/2" Extension Pipe
5	2	09011	Diffuser
6	1	09006	3/4" Filter
7	1	3036	1/2" Tank Filter
8	1	ADAPT 073	3/4" Filler Plug
9	13	DW12	3/4" Dowty Washer
10	3	DW 08	1/2" Dowty Washer
11	2	ADAPT 004	3/4" Hyd. Connector
12	1	3084	3/4" BSP Flexi-Pipe Connector
13	2	ADAPT 004 BH	3/4" Hyd. Bulkhead Connector
14	1	ADAPT 011	3/4"x3/4" Hyd. Adapter
15	1	ADAPT 010	3/8"x1/2" m-m Hyd. Adaptor
16	1	3085	Breather Pipe

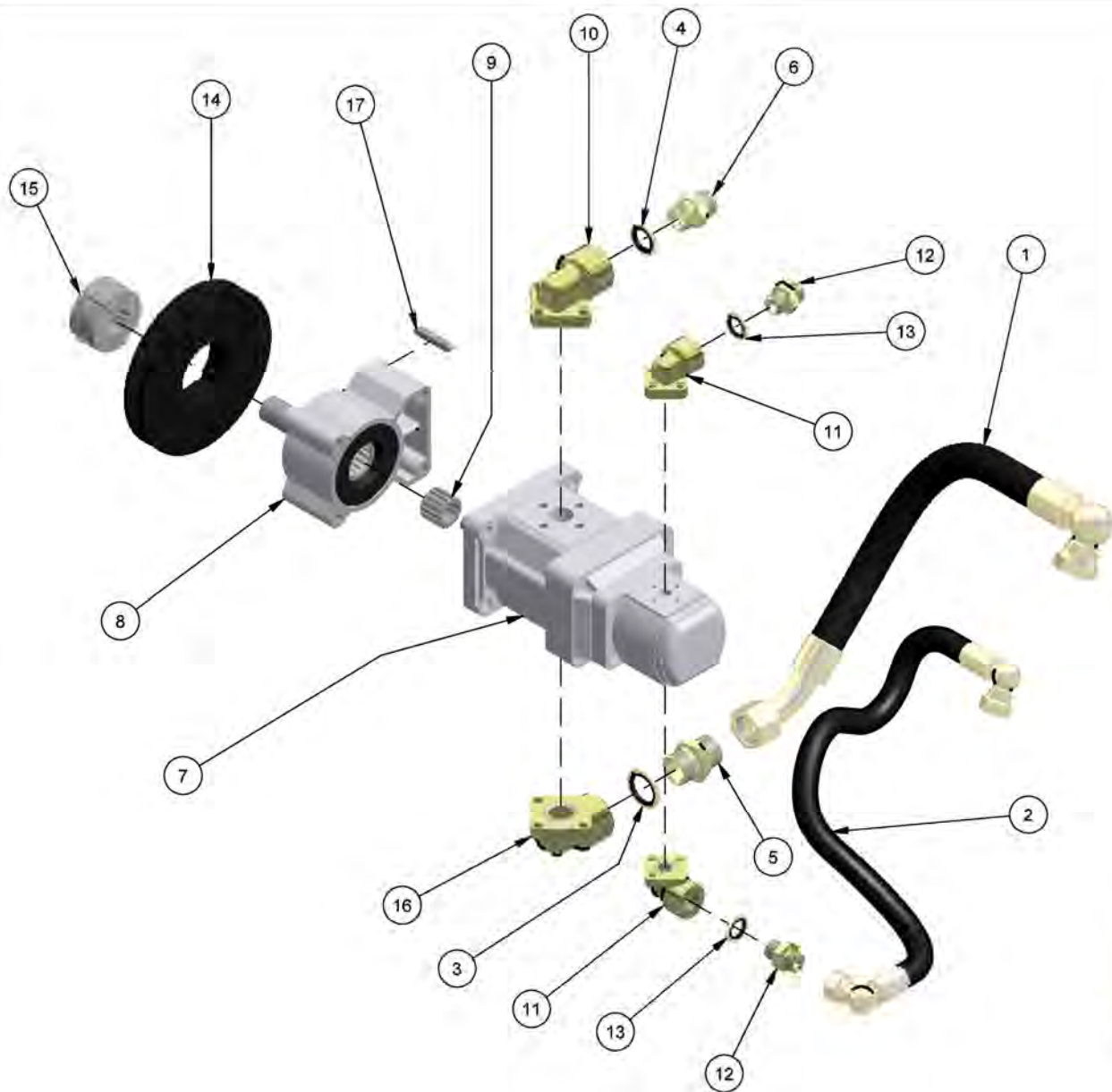
SPE International Limited  
 Honeyholes Lane, Dunholme  
 Lincoln, LN2 3SU, England  
 Tel: +44 (0) 1673 860 709  
 or +44 (0) 1673 860 330  
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Drawn	TITLE Hydraulic Tank Components	
D.G.A.		
Checked	Drawing No.	MACHINE
P.A.	BEF-320_HyT-01	BEF 320-1A

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Parts List			
ITEM	QTY	SPE PART NUMBER	DESCRIPTION
1	1	3041	Hyd. Pipe, Tank to Pump
2	1	3046	Hyd. Pipe, Tank to Pump
3	1	DW12	3/4" Dowty Washer
4	1	DW 08	1/2" Dowty Washer
5	1	ADAPT 004	3/4" Hyd. Connector
6	1	ADAPT 003	1/2" m-m Hyd. Adaptor
7	1	3035	Tandem Pump
8	1	3033	Load Adapter
9	1	3034	Splined Drive
10	1	3035B	1/2" Port Connector c/w O-Ring
11	2	3035A	3/4" Port Connector c/w O-Ring
12	2	ADAPT 002	3/4" m-m Hyd. Adaptor
13	2	DW 06	3/8" Dowty Washer
14	1	3030	Driven Pulley
15	1	3029	Taper Lock Bush [1610 - 22mm]
16	1	3035C	3/4" Port Connector c/w O-Ring
17	1	3033A	6x39 Parallel Key

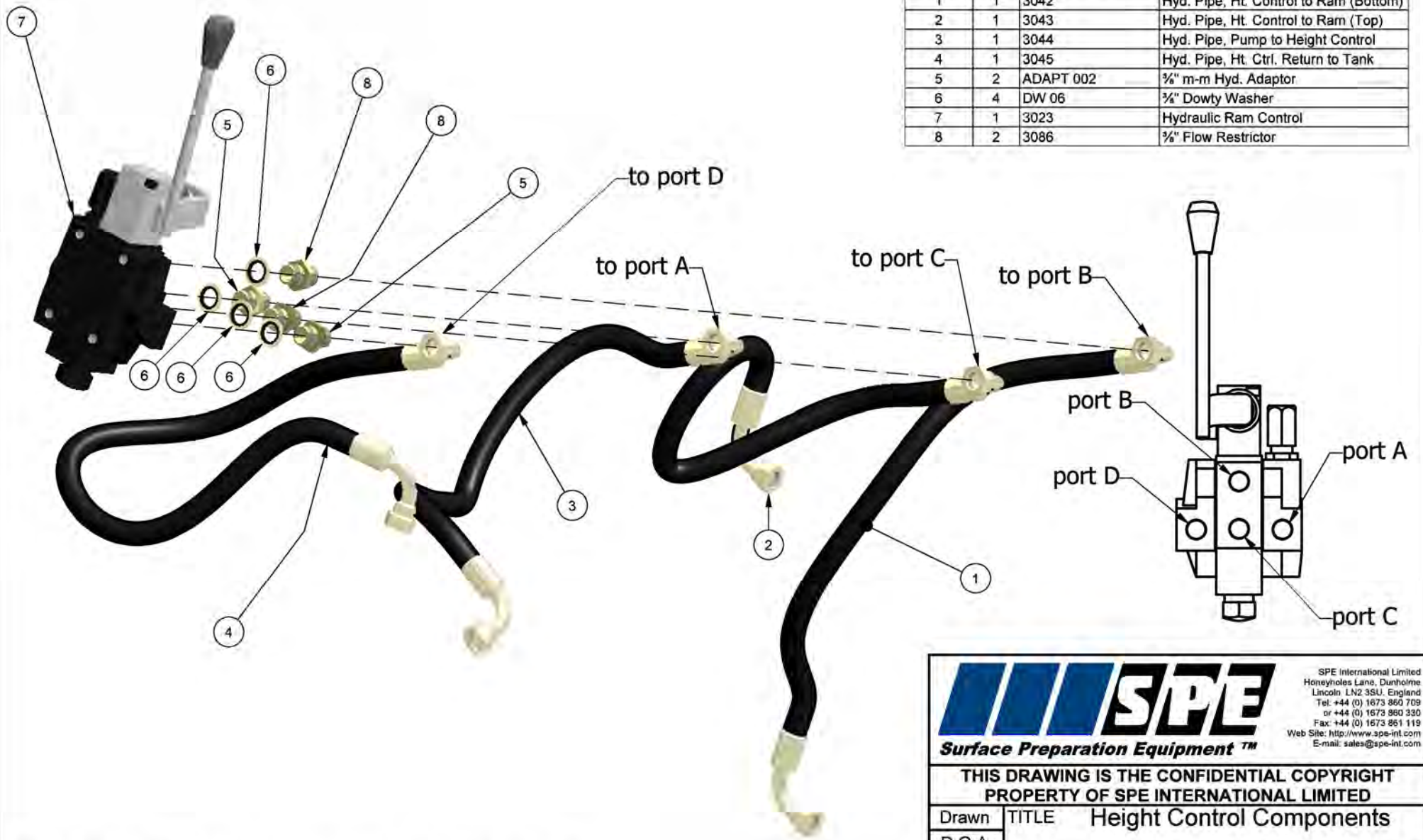

**SPE**  
**Surface Preparation Equipment™**

SPE International Limited  
 Honeyholes Lane, Dunholme  
 Lincoln LN2 3SU, England  
 Tel: +44 (0) 1673 860 769  
 or +44 (0) 1673 860 330  
 Fax: +44 (0) 1673 861 119  
 Web Site: <http://www.spe-int.com>  
 E-mail: [sales@spe-int.com](mailto:sales@spe-int.com)

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Drawn	TITLE Hydraulic Drive Components	
D.G.A.		
Checked	Drawing No.	MACHINE
P.A.	BEF-320_HDr-01	BEF 320-1A

This drawing should not be used, copied, shown or handed to a third party without the prior written consent of SPE International Ltd.



Parts List			
ITEM	QTY	SPE PART NUMBER	DESCRIPTION
1	1	3042	Hyd. Pipe, Ht. Control to Ram (Bottom)
2	1	3043	Hyd. Pipe, Ht. Control to Ram (Top)
3	1	3044	Hyd. Pipe, Pump to Height Control
4	1	3045	Hyd. Pipe, Ht. Ctrl. Return to Tank
5	2	ADAPT 002	3/4" m-m Hyd. Adaptor
6	4	DW 06	3/4" Dowty Washer
7	1	3023	Hydraulic Ram Control
8	2	3086	3/4" Flow Restrictor

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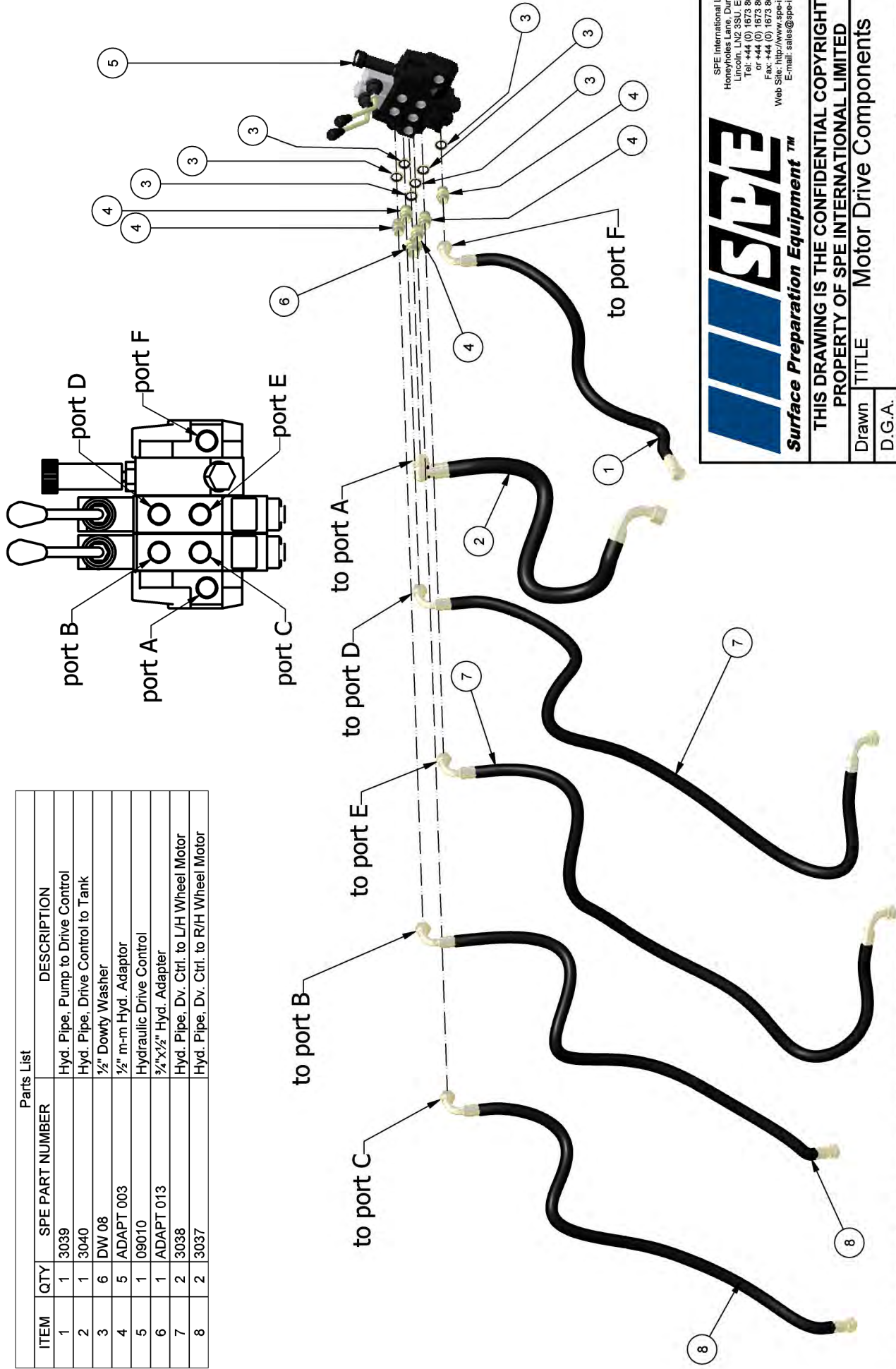
**SPE**  
Surface Preparation Equipment™

SPE International Limited  
Honeyholes Lane, Dunholme  
Lincoln LN2 3SU, England  
Tel: +44 (0) 1673 860 769  
or +44 (0) 1673 860 330  
Fax: +44 (0) 1673 861 119  
Web Site: <http://www.spe-int.com>  
E-mail: [sales@spe-int.com](mailto:sales@spe-int.com)

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Drawn	TITLE	Height Control Components
D.G.A.		
Checked	Drawing No.	MACHINE
P.A.	BEF-320_HCt-01	BEF 320-1A



Parts List		
ITEM	QTY	SPE PART NUMBER DESCRIPTION
1	1	3039 Hyd. Pipe, Pump to Drive Control
2	1	3040 Hyd. Pipe, Drive Control to Tank
3	6	DW 08 1/2" Dowty Washer
4	5	ADAPT 003 1/2" m-m Hyd. Adaptor
5	1	09010 Hydraulic Drive Control
6	1	ADAPT 013 3/4"x1/2" Hyd. Adapter
7	2	3038 Hyd. Pipe, Dv. Ctrl. to L/H Wheel Motor
8	2	3037 Hyd. Pipe, Dv. Ctrl. to R/H Wheel Motor



**Surface Preparation Equipment™**

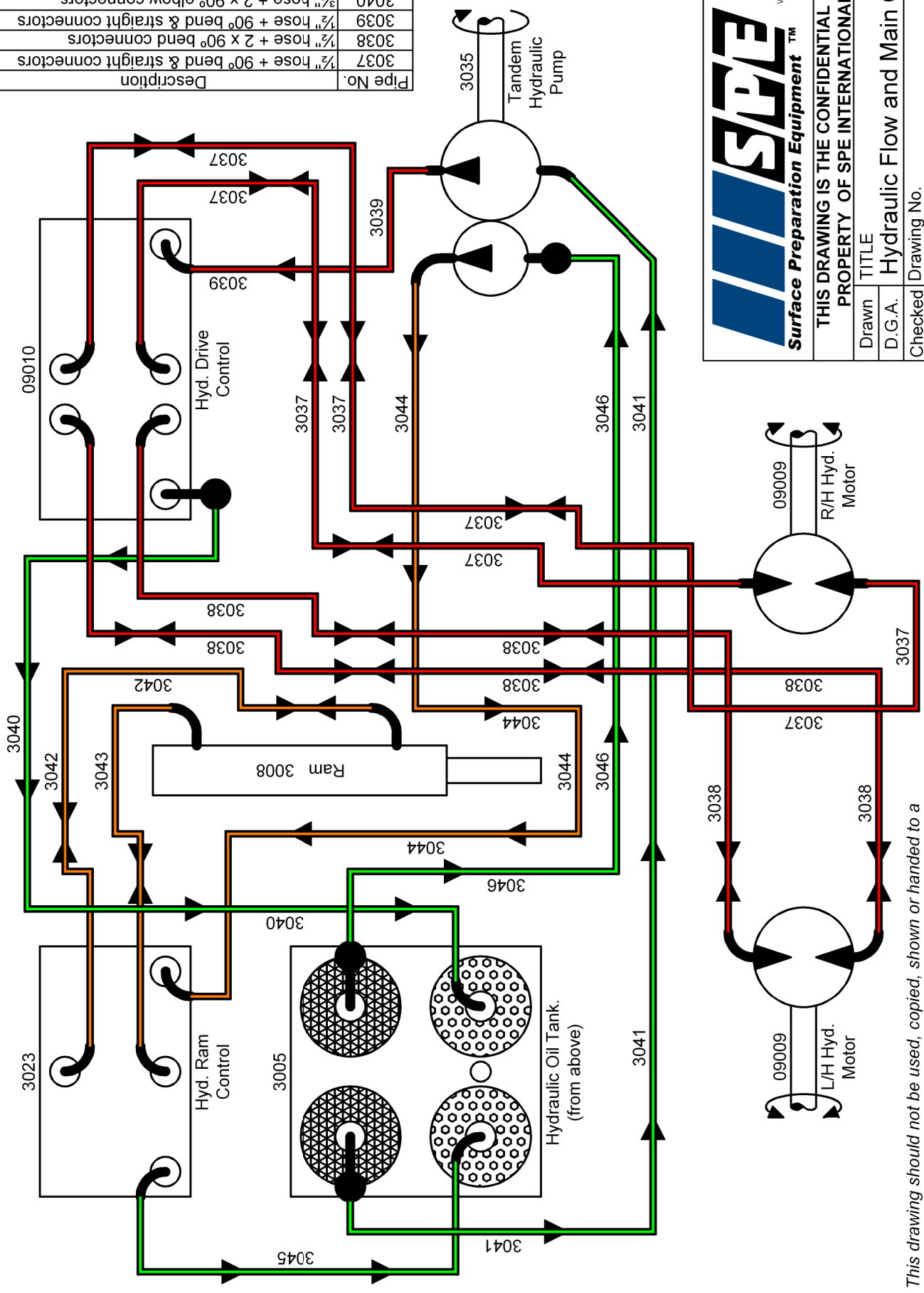
SPE International Limited  
 Honeyholes Lane, Dunholme  
 Lincoln, LN2 3SU, England  
 Tel: +44 (0) 1673 860 709  
 or +44 (0) 1673 860 350  
 Fax: +44 (0) 1673 860 319  
 Email: sales@spe-int.com  
 Web Site: <http://www.spe-int.com>

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Drawn	TITLE Motor Drive Components
D.G.A.	
Checked	Drawing No. BEF-320_MDr-01
P.A.	MACHINE BEF 320-1A

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Pipe No.	Description
3037	1/2" hose + 90° bend & straight connectors
3038	1/2" hose + 2 x 90° bend connectors
3039	1/2" hose + 90° bend & straight connectors
3040	3/4" hose + 2 x 90° elbow connectors
3041	3/4" hose + 45° bend & 90° elbow connectors
3042	3/8" hose + 2 x 90° bend connectors
3043	3/8" hose + 2 x 90° bend connectors
3044	3/8" hose + 2 x 90° bend connectors
3045	3/8" hose + 2 x 90° bend connectors
3046	3/8" hose + 2 x 90° elbow connectors



SPE International Limited  
 Honeyflow North Dumbrie  
 Edinburgh, Scotland  
 UK Tel: +44 (0) 1673 860 709  
 or +44 (0) 1673 860 330  
 Fax: +44 (0) 1673 861 119  
 Web Site: <http://www.spe-int.com>  
 E-mail: [sales@spe-int.com](mailto:sales@spe-int.com)

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Drawn	TITLE
D.G.A.	Hydraulic Flow and Main Components
Checked	Drawing No.
B.J.	BEF-320_Hyd-FI-01
	Machine
	BEF 320-1A

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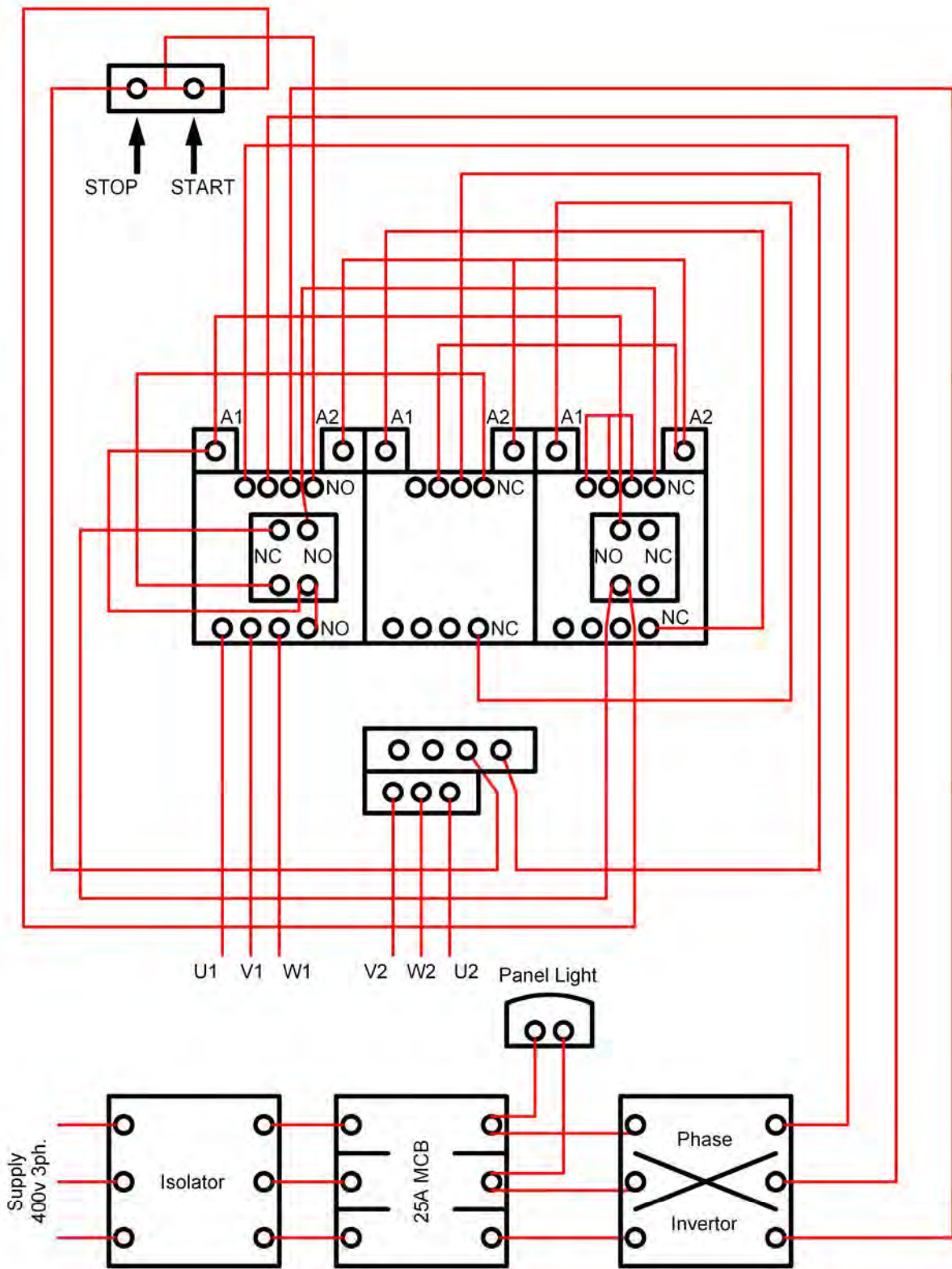


**BEF320-1A**  
Operating Manual

## **BEF320 (B) TYPE PANEL ASSY (PART NO 3079B)**

<b>QTY</b>	<b>DESCRIPTION</b>	<b>SPE PART NO.</b>
1	Panel Inc Back Plate (Tempo Pano)	SPE
1	Overload	SPLRD16
1	Star Delta Start Unit	SPE
1	Switch Block (Telemec)	SPZB4BZ101
1	Switch Block (Telemec)	SPZB4BZ102
1	Start Button (Telemec)	SPZB4BA3
1	Start Button (Telemec)	SPZB4BS44
1	Panel Light Lens (Telemec)	SPZB4BV04
1	Panel Lamp	SPZB4BV05
1	Isolator 40Amp (Pettereins)	SPFWA4/3C
1	Trip (Chint)	SP60HD325
1	32A 4Pin Surface Mtd Plug (Walther)	SP630-406
1	Switch	09026/320
1	Gland	9258/200
1	Brass Bush. Nut	608-222
4	Rubber Mounts	9245/320

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SPE International Limited  
Honeyholes Lane, Dunholme  
Lincoln, LN2 3SU, England  
Tel: +44 (0) 1673 860 709  
or +44 (0) 1673 860 330  
Fax: +44 (0) 1673 861 119  
Web Site: www.spe-int.com  
E-mail: sales@spe-int.com

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Drawn	TITLE		Machine
D.G.A.	Wiring Diagram		
Checked	Drawing No.	BEF-320_Elec-01	Machine
J.J.			



**BEF320-1A**  
Operating Manual

## SPECIFICATION SHEET

Specifications	
Type	Electric
Part Number	BEF320-1A
Power Output (hp)	15
Voltage	380/415
Cycles	50
Cutter head speed (rpm)	650
Starter	Star/Delta
Travel speed mtr/min	0-12
Machine Dimensions (mm)	
Length	1230
Width	590
Height	1220
Weight (kg) c/w cutter drum	339
Working width of cutters (mm)	320
Working distance from wall (mm)	40
Hydraulic oil	HM46
Tank capacity	6 litres

## ELECTRICAL REQUIREMENTS

Machine	Volts	Plug Size	Cable Size	Max Cable Length	Transformer	Generator
BEF320-1A	380/415	32Amp 4 pin	6.0 4 Core	75 Metres	-	25kva



**BEF320-1A**  
Operating Manual

## RECORD OF NOISE AND VIBRATION ASSESSMENT

Manufacturer:  
 Type: Scarifier  
 Model No. BEF 320-1A Electric  
 Operation : Concrete floor surface  
 Inserted Tool: TCT cutters  
 Running Conditions: 1450 rpm  
 HAV Note: Acoustic Associates

### HAND-ARM VIBRATION

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

Measurement Position	Acceleration ( $m/s^2$ )
	Vector Sum
Handle	2.337

### 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	
56.9	70.0	82.9	91.8	90.9	87.4	88.8	89.8	97.2

#### 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		
36.9	49.4	66.5	74.3	75.5	68.8	69.5	69.5	79.2	101.2





<b>BEF320-1A</b> Operating Manual
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## 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).

<i>Warranty start date:</i>	<b>As despatch date</b>
<i>Model:</i>	<b>BEF320-1A</b>
<i>Serial no:</i>	
<i>Customer name:</i>	
<i>Customer Address:</i>	

<i>Manufacturer:</i>	<b>SPE International Ltd</b>
	<b>Honeyholes Lane</b>
	<b>Dunholme</b>
	<b>Lincoln</b>
	<b>LN2 3SU</b>
	<b>England</b>
<i>Telephone:</i>	<b>+44 (0) 1673 860709</b>
<i>Fax:</i>	<b>+44 (0) 1673 861119</b>
<i>Email:</i>	<b><u>sales@spe-int.com</u></b>
<i>Web site:</i>	<b><u>www.spe-int.com</u></b>

<i>Distributor:</i>
---------------------



**BEF320-1A**  
Operating Manual

# 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)           BEF320 Multiplane

(Model/type)                 BEF320-1A

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

A handwritten signature in black ink, appearing to read 'B. Jacklin', is positioned above the printed name.

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





## CONDITIONS OF SALE

### BEF320-1A Operating Manual

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 customer's 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 coming 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