

Operators Manual

Portable Milling Rail



INDEX

- 1.0 - Operators Safety Notes
- 2.0 - General Description
- 3.0 - Machine Preparation
- 4.0 - Machine Mounting
- 5.0 - Machine Operation
- 6.0 - Trouble Shooting
- 7.0 - Machine Maintenance & Spares

1.0 Operators Safety Notes

Check all equipment against packing notes/despatch documents/Parts list ensuring all equipment is correct and suitable for the intended purpose before operation.

READ THE OPERATION MANUAL CAREFULLY. Learn the operations, application, and limitations as well as the specific potential hazards peculiar to this machine.

- 1.1 Eye protection must be worn during all cutting operations. Any other personal protective equipment applicable to the work area or the operation must be worn.
- 1.2 The work area should be cordoned off and the appropriate warning signs posted and all other aspects of Site Safety Requirements relating to work areas adhered to.

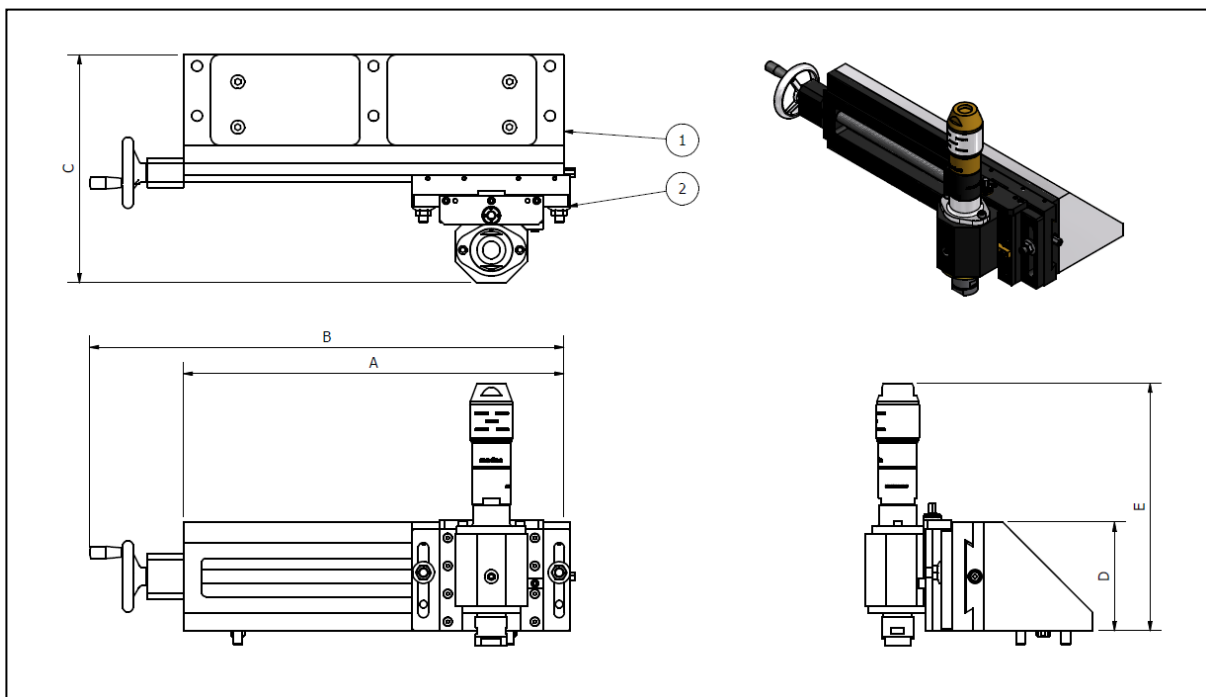
Information signs identifying Emergency Stop Mechanism, Moving Machine Parts and other hazards must be clear and obvious.
- 1.3 Equipment should be assembled in accordance with the operator's manual.
- 1.4 Always check the power supply is compatible with the equipment to be used.
- 1.5 Ensure the equipment is suitable to perform the task, e.g. correct cutting M/Cs, etc.
- 1.6 Ensure all equipment is stable and secure. Ensure cables, hydraulic hoses and other sources of motive power are clear of potential obstructions and are properly secured to the workplace.
- 1.7 Ensure that when high-pressure hydraulic hoses are used that the connections are fully secured to prevent parting under pressure.
- 1.8 Ensure the correct air couplings and hose clamps are used. **Jubilee clips etc are illegal.** Refer to Pressure System Regulations and Site Safety Requirements, for the correct air supply.
- 1.9 Ensure the air or hydraulic supply is properly filtered and clean and the air supply is lubricated. Ensure that the air supply is adequate to run the machine i.e. 90 P.S.I. at 90 C.F.M.
- 1.10 All hoses must be evacuated and free from contamination or debris. Blow air hose clear of water, etc before coupling to equipment. Ensure all hose connections are to the correct safety specifications.
- 1.11 Any lifting of equipment using lifting tackle must be performed using the correct lifting point, i.e., eyebolts etc. Refer to company Safety Policy for manual and mechanical lifting. LOLER Regs 1998 and Site Safety Requirements.
- 1.12. Do not touch the machine while it is working. Keep clothing and other loose objects away from moving parts of the machine.
- 1.13. Do not attempt to adjust the cutting tools while the machine is in motion.
- 1.14. If the cutting tools should jam while cutting is taking place, Stop the machine immediately
- 1.15 When working at height or above other work stations or where danger exists of objects falling or falling persons, and causing damage and/or injury, ensure persons are protected in accordance with HASAW Regs 1996 and Site Safety Requirements.
- 1.16 The operator must view the work piece to be cut and then using his/her training and experience the operator must use the safest and most efficient method of performing the task that will avoid any unnecessary spillage, damage or danger.

- 1.17 Refer to the Site Safety Requirements for identifying hazards prior to machining work on pipe work, which carries hazardous substances.
- 1.18 Ensure the work piece is supported and/or will be secure throughout the whole of the operation. Refer to Site Safety Requirements regarding supporting pipe/flanges if craneage or other lifting equipment is to be used.
- 1.19 Store and/or segregate any cut ends, cut pieces and/or machine swarf/waste in accordance with any Site Environmental requirements.

2.0 General Description

The Roberts Portable Milling Rail is designed to give a lightweight portable milling unit for in-situ operating conditions. The simple external clamping system allows ease of set-up and a secure rigid mounting. Bespoke Adaptors can be supplied to allow the machine to mount as per the customers' specification.

The machine consists of a Rail Unit with a separate (Detachable) Milling Head. The drive is provided by a detachable drive unit, which allows a choice of drives. There is also an option of adding a Power Feed, which again is powered by a detachable drive unit. Cutting tool setting and adjustment are achieved by use of only a few hand tools.



General Dimensions (These are to be used as a guide only)

MODEL No.	UNIT	TRAVEL	DIM A	DIM B	DIM C	DIM D	DIM E
PM-380	IMPERIAL (Inch)	17.00	21.00	26.00	12.60	6.00	13.60
	METRIC (mm)	432.00	533.40	660.40	320.04	152.40	345.44
PM-1000	IMPERIAL (Inch)	39.37	48.38	52.38	11.70	9.80	23.80
	METRIC (mm)	1000.00	1228.85	1330.45	297.18	248.92	604.52
PM-2000	IMPERIAL (Inch)	78.74	88.00	92.00	11.70	9.80	23.80
	METRIC (mm)	2000.00	2235.20	2336.80	297.18	248.92	604.52

3.0 Machine Preparation

- Ensure the following is applied, prior to mounting the machine. Check all equipment against the packing notes/despatch documents/Parts list and ensure all equipment is correct and suitable for its intended purpose before operation.
- Perform risk assessment(s) for application. Always check that the power supply is compatible with the equipment to be used. Ensure the equipment is suitable to perform the task, e.g. correct cutting machines.
- **Power source and controls are not supplied with the equipment unless specified by the Customer/user. The following recommendations should be observed.**
- **An Emergency STOP or ON/OFF valve, clearly marked as such should be positioned on/at or as near as possible to the power source.**
- Ensure the air or hydraulic supply is properly filtered and clean and that the air supply is lubricated.
- Ensure all hose connections are to the correct safety specification.

3.1 Machine Mounting – Dependent on Application

The versatility of the machine, allows it to be mounted in various ways. As standard the machine is supplied with a mounting plate, allowing you to secure in position with four screws and two location pins. It's possible to mount the machine on pipe, flanges or in any bespoke positions as required. For specific mounting instructions, please refer to your Proposal Drawings.

Ensure the following is applied prior to mounting the machine.

Prepare risk assessment(s) for the application. Equipment must be assembled in accordance with the operator's manual. Ensure all equipment is stable and secure.

Any lifting of equipment using lifting tackle must be performed using the correct lifting point, i.e., eyebolts etc. Refer to Site Safety Requirements for manual and mechanical lifting. LOLER Regs 1998 and Site Safety Requirements.

Ensure cables, hydraulic hoses and other sources of motive power are clear of potential obstructions and are properly secured to workplace.

NOTE: The air supply must be properly filtered and lubricated using quality airline oil. To ensure the best performance, the airline used must deliver 90 P.S.I. at 60 C.F.M. (MT10 Motor) or 90 P.S.I. at 90 C.F.M. (MT30 Motor).

4.0. Machine Operation

Ensure all Risk Assessments and any resulting method statements and/or counter measures have been carried out before starting cutting operations.

The work area should be cordoned off and the appropriate warning signs posted and all other aspects of Site Safety Requirements relating to work areas adhered to.

Information signs identifying Emergency Stop Mechanisms, Moving Machine Parts and other hazards must be clear and obvious.

Equipment should be assembled in accordance with the operator's manual.

Ensure any equipment is stable and secure. Ensure cables, hydraulic hoses and other sources of motive power are clear of potential obstructions and are properly secured to workplace.

Eye protection must be worn during all cutting operations. Any other personal protective equipment applicable to the work area or the operation must be worn.

Subject to work area/location and ambient noise levels hearing protection should be worn.

5.0. Procedure for Machine Operation

- 5.0.1. Select the required cutting tool and assemble them to the holder, ensuring it is fitted to cut in a clockwise direction.
- 5.0.2. Connect the hose (Hydraulic/Air) to the Power Feed Drive Motor if applicable or use the Handwheel to feed (Horizontal Feed) the cutter head to the start position (as required).
- 5.0.3. Hand feed (Vertical Feed) the Cutter until it is around 2mm from the face to be machined. This can be done using a ratchet on the hex drive.
- 5.0.4. Connect the hose (Hydraulic/Air) to the Power Head Drive Motor.
- 5.0.5. Ensure All Personnel are clear of the work area before powering up the Hydraulics/Air. Ensure All Valves are closed when the power is turned on.
- 5.0.6. Open the Valve to supply the power head and ensure the cutter is at an appropriate speed.
- 5.0.7. Hand feed (Vertical Feed) the Cutter so that the machine starts cutting & continue until you reach a suitable first cut depth. The head can now be locked in position (Vertically).
- 5.0.8. You can now use the horizontal feed to start your cut. Speeds & Feeds are important to your surface finish, life of the cutter and general performance of the machine.
- 5.0.9. Repeat the cutting process, changing your cut heights until you reach your desired outcome.

When cutting is completed:

Note: Disassembly of the machine is the reverse procedure to that of assembly.

- Do not touch the machine while it is working. Keep clothing and other loose objects away from moving parts of the machine.
- Do not attempt to adjust the cutting tool while the machine is in motion.
- If the cutting tools should jam while cutting is taking place, stop the machine immediately.

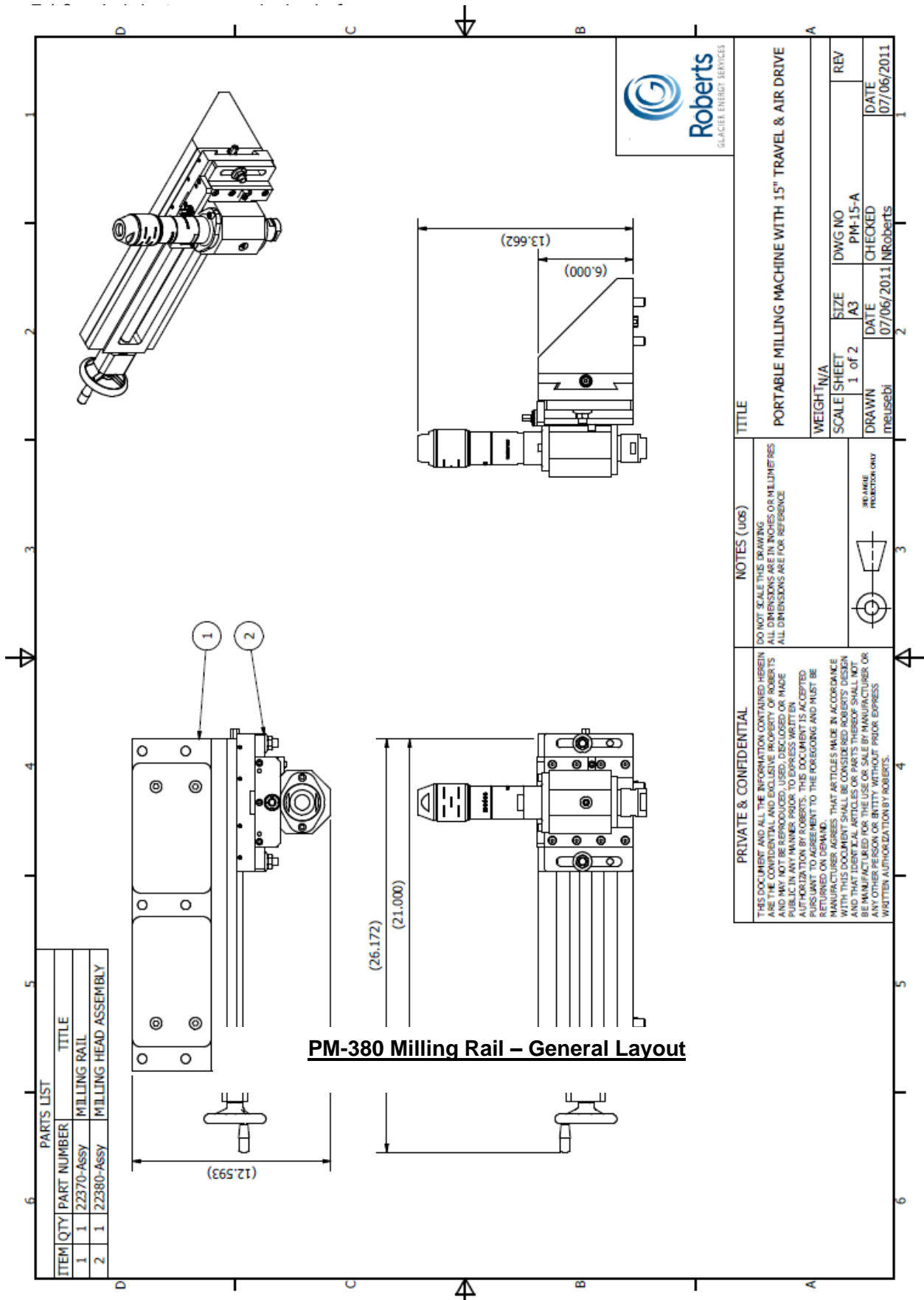
6.0 Trouble Shooting

<u>FAULT</u>	<u>SOLUTION</u>
The machine runs in an anti-clockwise direction.	Insufficient air supply to the motor (90 P.S.I. at 90 C.F.M. 0.75" bore hose)
The cutting tool is blunt or chipped.	Check Speeds, Feeds and rigidity of the machine.
Vertical Feed Isn't working.	Check locking screws are released. Ensure there is nothing blocking the slide.
Horizontal/Power Feed Isn't working.	Check the feed screw is free of debris/cuttings. Ensure there is nothing blocking the slide.

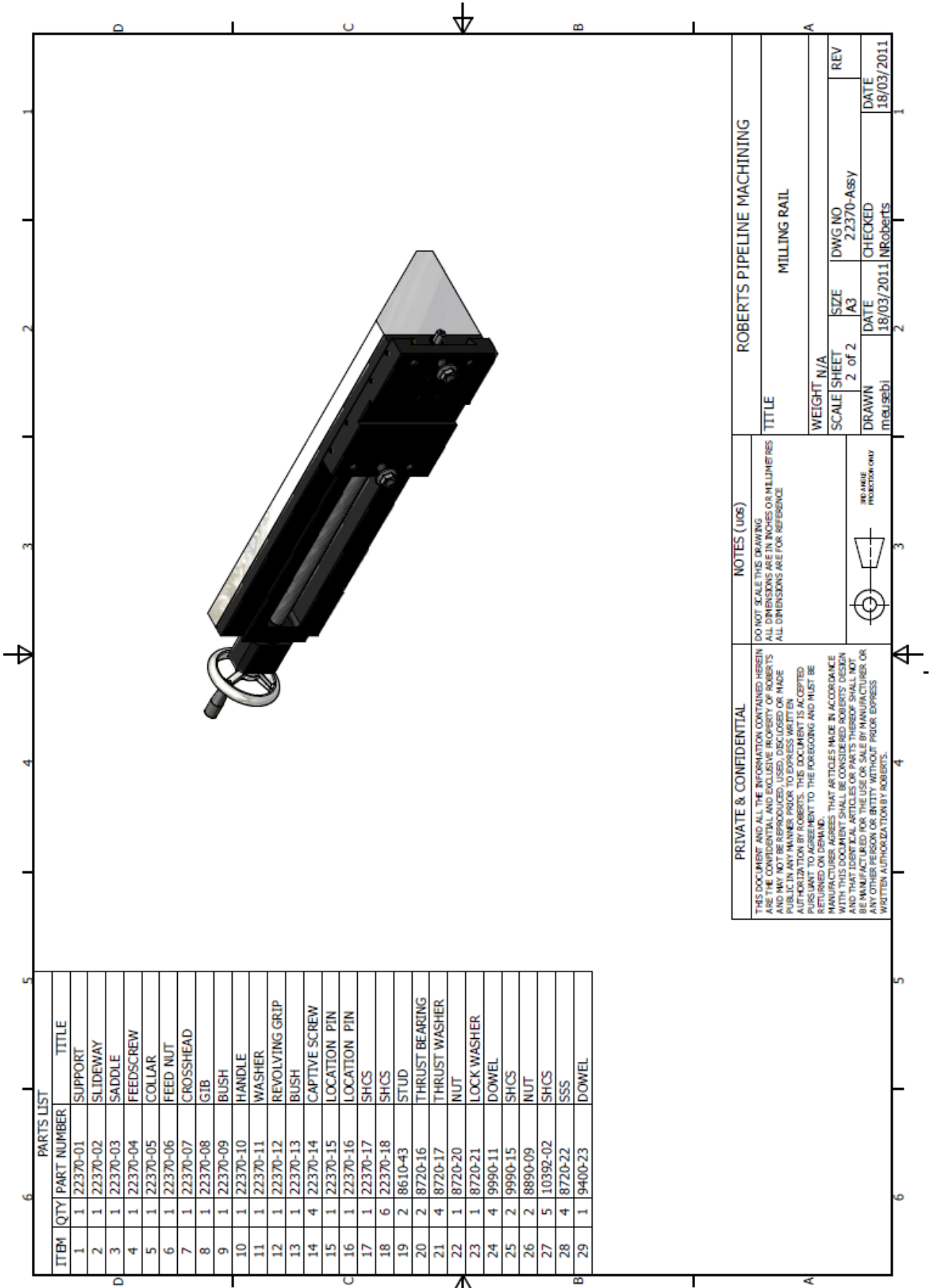
7.0. Machine Maintenance and Spares

7.1. Machine Preparation Maintenance


7.1.1. Ensure faces are free of "burrs" and any visible damage, remove and remedy as required to maintain existing accuracy and fits.



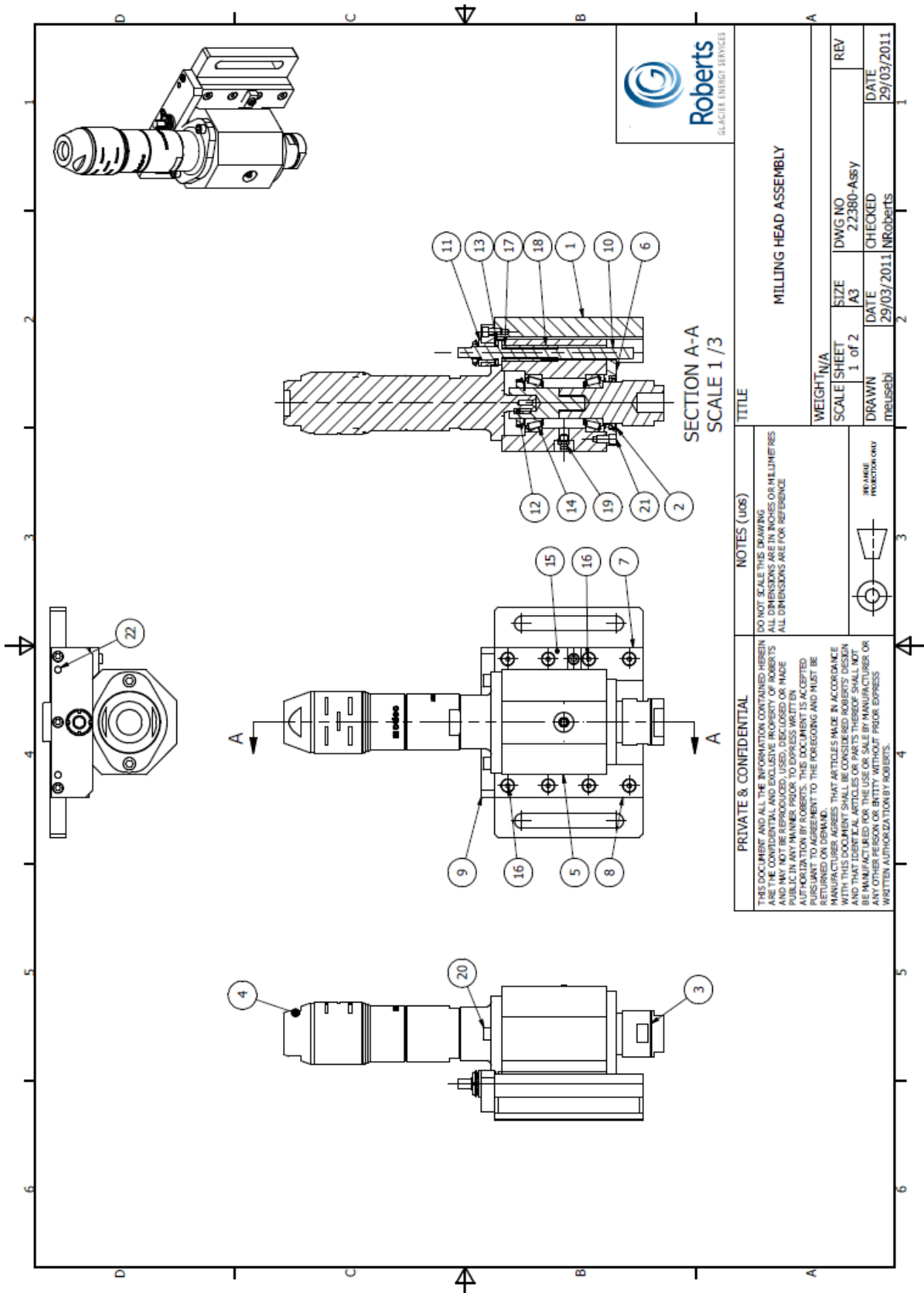
Milling Rail Assembly

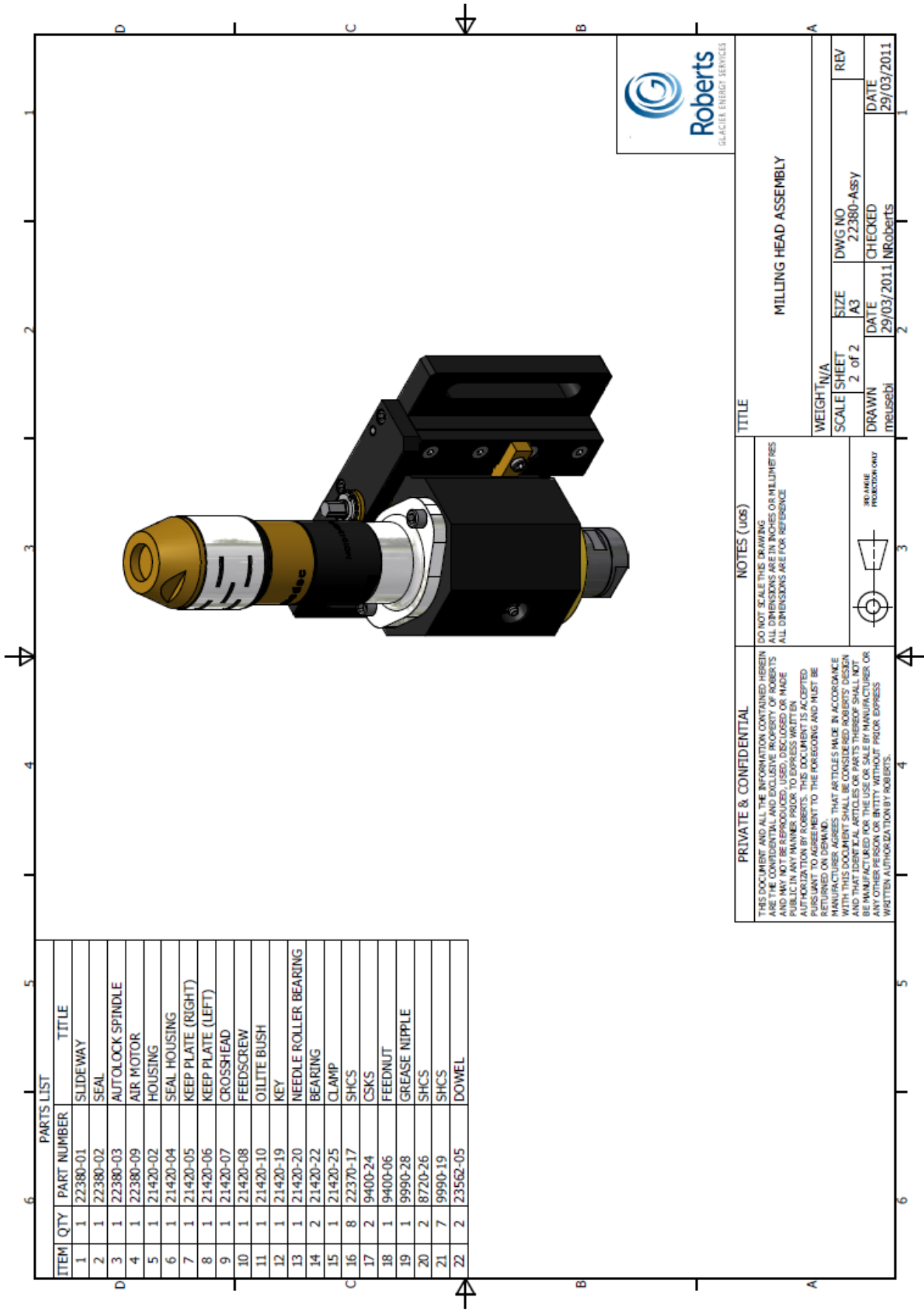



PARTS LIST		
ITEM	QTY	PART NUMBER TITLE
1	1	22370-01 SUPPORT
2	1	22370-02 SLIDEWAY
3	1	22370-03 SADDLE
4	1	22370-04 FEEDSCREW
5	1	22370-05 COLLAR
6	1	22370-06 FEED NUT
7	1	22370-07 CROSSHEAD
8	1	22370-08 GIB
9	1	22370-09 BUSH
10	1	22370-10 HANDLE
11	1	22370-11 WASHER
12	1	22370-12 REVOLVING GRIP
13	1	22370-13 BUSH
14	4	22370-14 CAPTIVE SCREW
15	1	22370-15 LOCATION PIN
16	1	22370-16 LOCATION PIN
17	1	22370-17 SHCS
18	6	22370-18 SHCS
19	2	8610-43 STUD
20	2	8720-16 THRUST BEARING
21	4	8720-17 THRUST WASHER
22	1	8720-20 NUT
23	1	8720-21 LOCK WASHER
24	4	9990-11 DOWEL
25	2	9990-15 SHCS
26	2	8890-09 NUT
27	5	10392-02 SHCS
28	4	8720-22 SSS
29	1	9400-23 DOWEL

<p>PRIVATE & CONFIDENTIAL</p> <p>THIS DOCUMENT AND ALL THE INFORMATION CONTAINED HEREIN ARE THE CONFIDENTIAL AND EXCLUSIVE PROPERTY OF ROBERTS AND MAY NOT BE REPRODUCED, USED, DISCLOSED OR MADE PUBLIC IN ANY MANNER PRIOR TO EXPRESS WRITTEN AUTHORIZATION BY ROBERTS. THIS DOCUMENT IS ACCEPTED PURSUANT TO AGREEMENT TO THE FOREGOING AND MUST BE KEPT CONFIDENTIAL.</p> <p>MANUFACTURER AGREES THAT ARTICLES MADE IN ACCORDANCE WITH THIS DOCUMENT SHALL BE CONSIDERED ROBERTS' DESIGN AND THAT IDENTICAL ARTICLES OR PARTS THEREOF SHALL NOT BE MANUFACTURED FOR THE USE OR SALE BY MANUFACTURER OR ANY OTHER PERSON OR ENTITY WITHOUT PRIOR EXPRESS WRITTEN AUTHORIZATION BY ROBERTS.</p>	<p>NOTES (100s)</p> <p>DO NOT SCALE THIS DRAWING ALL DIMENSIONS ARE IN INCHES OR MILLIMETRES ALL DIMENSIONS ARE FOR REFERENCE</p> <div style="text-align: center;">  </div> <p style="text-align: right; font-size: small;">SCALE FUNCTION ONLY</p>	<p style="text-align: center;">ROBERTS PIPELINE MACHINING</p> <p style="text-align: center;">TITLE MILLING RAIL</p> <p>WEIGHT N/A</p> <table style="width: 100%; font-size: x-small;"> <tr> <td>SCALE SHEET</td> <td>SIZE</td> <td>DWG NO</td> <td>REV</td> </tr> <tr> <td>2 of 2</td> <td>A3</td> <td>22370-ASSY</td> <td></td> </tr> </table> <table style="width: 100%; font-size: x-small;"> <tr> <td>DRAWN</td> <td>DATE</td> <td>CHECKED</td> <td>DATE</td> </tr> <tr> <td>mausebi</td> <td>18/03/2011</td> <td>INRoberts</td> <td>18/03/2011</td> </tr> </table>	SCALE SHEET	SIZE	DWG NO	REV	2 of 2	A3	22370-ASSY		DRAWN	DATE	CHECKED	DATE	mausebi	18/03/2011	INRoberts	18/03/2011
SCALE SHEET	SIZE	DWG NO	REV															
2 of 2	A3	22370-ASSY																
DRAWN	DATE	CHECKED	DATE															
mausebi	18/03/2011	INRoberts	18/03/2011															

Milling Head Assembly







TITLE
MILLING HEAD ASSEMBLY

WEIGHT N/A

SCALE / SHEET 2 of 2

SIZE A3

DWG NO 22380-Assy

REV

DATE 29/03/2011

CHECKED INRoberts

DATE 29/03/2011

NOTES (105)


DO NOT SCALE THIS DRAWING
ALL DIMENSIONS ARE IN INCHES OR MILLIMETERS
ALL DIMENSIONS ARE FOR REFERENCE

NO SCALE PROJECTION ONLY

PRIVATE & CONFIDENTIAL

THIS DOCUMENT AND ALL THE INFORMATION CONTAINED HEREIN ARE THE CONFIDENTIAL AND EXCLUSIVE PROPERTY OF ROBERTS AND MAY NOT BE REPRODUCED, USED, DISCLOSED OR MADE PUBLIC IN ANY MANNER PRIOR TO EXPRESS WRITTEN AUTHORIZATION BY ROBERTS. THIS DOCUMENT IS ACCEPTED PURSUANT TO AGREEMENT TO THE FOREGOING AND MUST BE KEPT CONFIDENTIAL.

MANUFACTURER AGREES THAT ARTICLES MADE IN ACCORDANCE WITH THIS DOCUMENT SHALL BE CONSIDERED ROBERTS' DESIGN AND THAT IDENTICAL ARTICLES OR PARTS THEREOF SHALL NOT BE MANUFACTURED FOR THE USE OR SALE BY MANUFACTURER OR ANY OTHER PERSON OR ENTITY WITHOUT PRIOR EXPRESS WRITTEN AUTHORIZATION BY ROBERTS.

Manufacturer/Supplier: Glacier Energy	Responsible Person: Glacier Energy
Machine Detail	
Machinery Description: Air and/or Hydraulic Drive, Transportable Pipe Cutting Machinery And Adaptive Attachments.	
Type: Clyde And Clyde Derivatives Year Made: 2006 Onwards Serial/Ref N^{o(s)}: As Recorded on Invoice & other Delivery Documentation CE Mark/Status: 2006/42/EC	
Approved Body/Technical File Details: There Is No Requirement For 3 rd Party Atestation. Manufacturers Full Quality Assurance Rout Is Invoked. Technical File Held By Glacier Roberts (Design/Engineering).	
Directives Complied With: 2006/42/EC	
Harmonised Standards Used: BS EN 292	
National Standards Used: BS 7662 & BS 1938 Pt5	
Manufactures' Technical Specifications/References Used: Glacier Energy Services - Roberts Pipeline Machining's Drawings & Technical Specifications, As Identified In The Technical File For The Product, Maintained At The Above Address. These Specifications Address All Essential Safety Requirements Defined In Directive.	
Limitations of Use: To Be Connected To Power Source, Assembled And Used In Accordance With And As Recommended By Glacier Energy Services - Roberts Pipeline Machining, Machine Operators Hand Book, Instructions and Risk Assessments	
Manufacturer/Supplier Empowered Signatory: Signature:  Print Name: Martin Eusebi Position: Design Engineer Date: 18/01/12	
Declaration: I Declare That The Machinery Described Is Manufactured, Assembled & Tested In Accordance With The Documented Design Specifications & Manufacturing Protocols, By Competent Persons, and that the said machinery fulfils all the relevant provisions of Directive 2006/42/EC	