GreenMech
The Professionals' Choice

QUADTRAK 160

OPERATORS MANUAL

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SECTION:

INTRODUCTION

This manual explains the proper operation of your machine. Read these instructions thoroughly before operating and maintaining the machine. Failure to do so could result in personal injury or equipment damage. Consult your GreenMech supplier if you do not understand the instructions in this manual.

CAUTION! This symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury to yourself or others, and carefully read the message that follows.

We recommend that you keep this manual with the machine in the box provided. Locate and note here the serial number and quote it in any communications. This is important when ordering spares. Remember to include all numbers and letters.

VIN Number……

Serial Number.....

Write in the number!

Fig 1.1 Serial Number plate under battery cover.

This manual covers the following models.

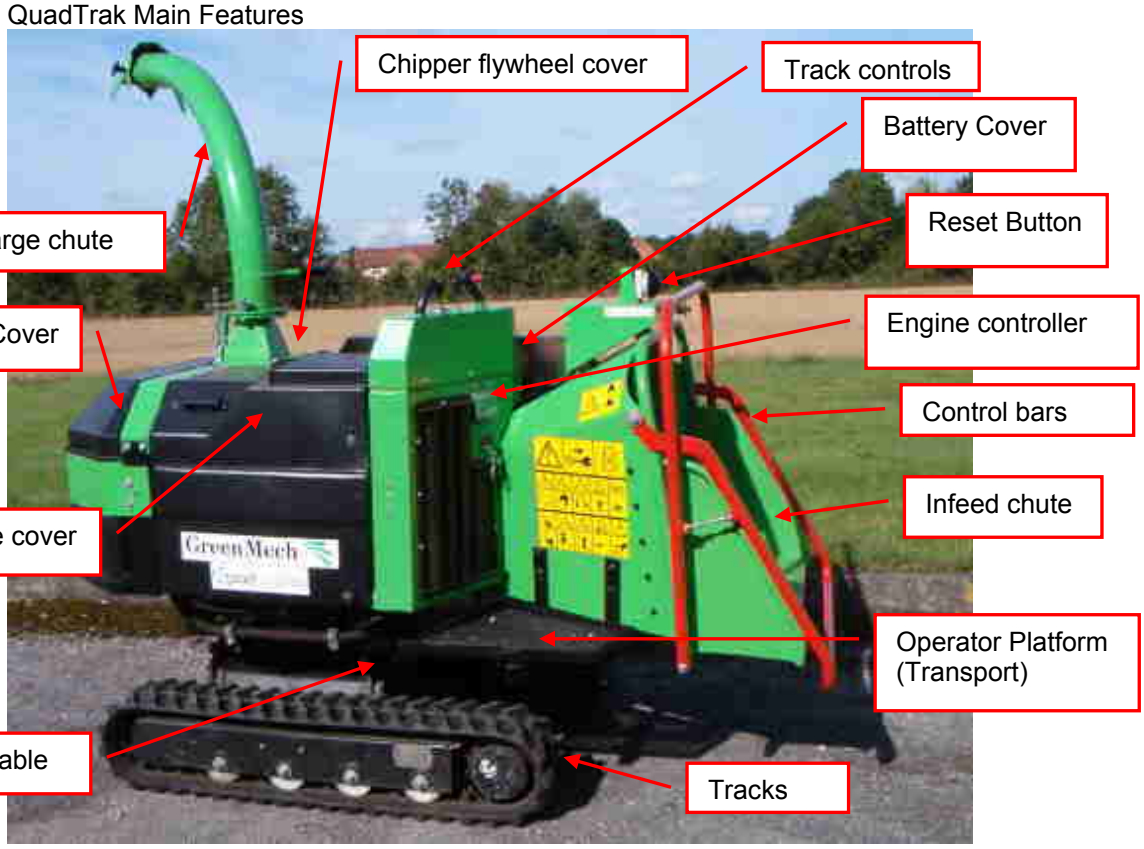
QuadTrak 160 self-propelled tracked chipper with dual control bar, and infeed roller speed control. Optional turntable and electric tilting tracks. Optional road trailer.

The information in this manual is correct at the time of publication. However, in the course of development, changes to the machine specification are inevitable. Should you find any information to vary from the machine in your possession please contact your GreenMech dealer for up to date information.
This manual may contain standard and optional features and is not to be used as a machine specification.

PURPOSE

CAUTION! This machine is designed solely to chip wood and must not be used for any other purpose. The machine should only be used by trained operators who are familiar with the content of this instruction manual. It is potentially hazardous to fit or use any parts other than genuine GreenMech parts. The company disclaims all liability for the consequences of such use, which in addition voids the machine warranty.

Fig 2.1 QuadTrak Main Features



TECHNICAL SPECIFICATION QuadTrak 160	
Max Capacity	230mm X 160mm (9inch x 6inch)
Chipper Flywheel	500mm x 25mm
Speed	2150 rpm
Chipping Blades	4 Disc Blades
Feed Rollers	2 x Hydraulic
Power Control	No-Stress Electronic Feed Roller Controller
Power Unit	Kubota 3 cyl. turbo
Length (Transport)	2368mm
Length (Work)	2368mm
Width (Transport and min. for Work)	1366mm
Height (Storage)	1366mm
Height (Work)	2487mm
Weight	1030kg

Noise
Noise levels vary depending on type of material being processed. Also duration of operation is variable. Noise emission tests have been carried out and the guaranteed sound power level is displayed on the CE plate as follows: **Lwa 114dba**
Minimise noise by switching to idle or stopping the engine whenever chipping is not in progress.

⚠ CAUTION! Operators must wear appropriate ear protection. Bystanders must be kept away from proximity of machine.

Lifting Points
There is a single central lifting point by the base of the discharge chute.

⚠ CAUTION! Lift with extreme care. The machine may tilt because the single lifting point may not be directly over the centre of gravity.

Trailer
An optional purpose-built road trailer is available.
The chipper may be used whilst secured to the trailer with the trailer hitched to the vehicle.
Please refer to this manual for safe use.

Fig 2.2 Trailer (optional)

3.1 ENSURE:

3.1.1 All Operators must be fully trained in the use of their machine.
(Certificated Operator training courses are available on request.)
3.1.2 The Operators Manual is read and understood.
3.1.3 The enclosed HSE guidance notes are read and understood.
3.1.4 Appropriate Personal Protective Equipment (PPE) is worn, including non-snag clothing, gloves, eye and hearing protection.
3.1.5 The machine is positioned with the body level.
3.1.6 (Number not used)
3.1.7 All guards are fitted and in good condition.
3.1.8 Blades are in good condition and secure.
3.1.9 All blades are sharpened or replaced in “Sets”.
3.1.10 All fasteners are checked regularly for tightness.
3.1.11 Only “WOODEN” materials free of nails etc., are fed into the machine.
3.1.12 Correct First Aid Kit including large wound dressing is available on site.
3.1.13 Fire extinguisher is available on site.

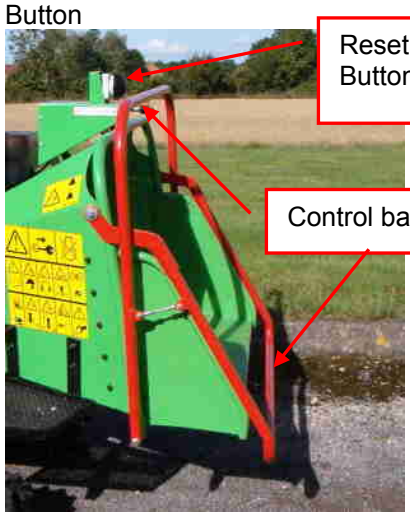
3.2 NEVER:

3.2.1 Work on the machine until the chipper flywheel is stationary and engine has stopped.
3.2.2 Operate the machine without protective clothing (Eye protection, Earmuffs, and Gloves), or high visibility clothing when working on roadside.
3.2.3 Operate with loose articles of clothing, including loose cuffs on gloves.
3.2.4 Work under a raised component without adequate safety support.
3.2.5 Operate the machine with untrained personnel or with individuals present who are not involved in the chipping operation.
3.2.6 Leave the machine unattended with engine running at full operating speed. (See section 4)
3.2.7 Put any part of your body into the infeed chute while the machine is running.
3.2.8 Operate the machine whilst under the influence of alcohol or drugs.
3.2.9 Operate inside a building or confined space.
3.2.10 Climb on the infeed chute.
3.2.11 Impede or obstruct the Stop control.

3.3 ALWAYS:

3.3.1 Check machine before starting (see Section 4 Preparation and Section 5.1 Operation: Pre-work checks).
3.3.2 Be aware of potential hazards in the work area, i.e. uneven ground, tree roots, trip/slip hazards, obstructions and type of materials being fed into the machine.
3.3.3 Feed from the side.
3.3.4 Keep clear of discharge area.
3.3.5 Have a second trained operator within easy reach of the machine.
3.3.6 Maintain strict discipline at all times.
3.3.7 Service machine at specified periods. (see Section 6: Routine Maintenance).
3.3.8 Note direction of discharge chute and if necessary note the wind direction to prevent debris from being blown into highway or where it could affect members of the public.
3.3.9 Keep the body level.
3.3.10 Check the route to the worksite for gradients, undulations and obstructions.
3.3.11 Remove key before doing any maintenance.

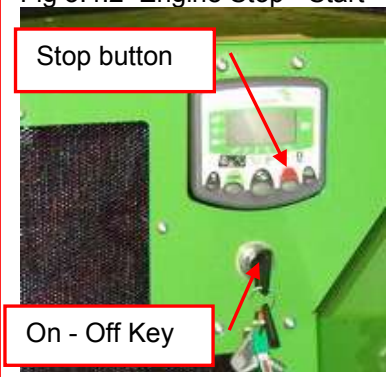
Fig 3.4.1 Control Bar and Reset Button



Control Bar positions
(Viewed towards left side of chute)
STOP FEED IN FEED OUT

FEED OUT FEED IN STOP
(Viewed towards right side of chute)

Fig 3.4.2 Engine Stop - Start



3.4 Safety Controls and Switches

3.4.1 Emergency Stop using Control Bar (fig 3.4.1)

In the event of an emergency, push control bar fully in to STOP feed rollers.

3.4.1.1 When emergency has been cleared, press reset button to restart feed rollers; control bar automatically returns to Feed In position.

3.4.1.2 If control bar is pushed accidentally to STOP when NOT an emergency, press reset button to restart. (as above 3.4.1.1.)

3.4.1.3 To reverse feed rollers to Feed Out, pull control bar outwards. Press reset button to return to Feed In.

3.4.2 Engine Stop button

3.4.2.1 To stop engine, press red stop button on control unit, and/or turn key anticlockwise to the '0' position. (fig 3.4.2).

3.4.2.2 To restart, reset key clockwise to 1.

3.4.2.3 To disable machine, remove key.

⚠ CAUTION! Do not restart engine until hazard has been removed.

3.5 Control cut-outs

Cut-outs are installed to stop and prevent restarting due to specific events.

3.5.1 Engine overheating is protected by thermal cut-out switch in coolant circuit.

3.5.2 Low engine oil pressure is protected by pressure switch in engine oil pump.

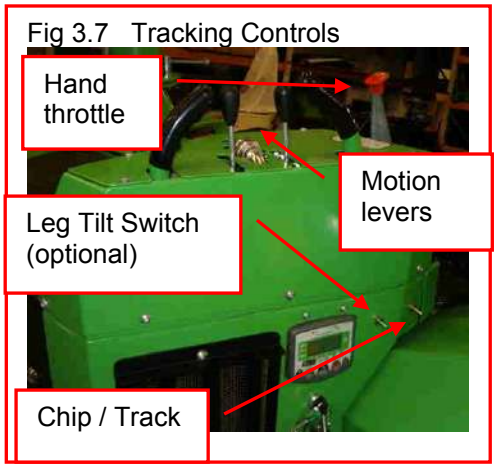
3.5.4 Discharge chute folded for transport is protected by a microswitch to shut off fuel solenoid.

3.6 No Stress system

3.6.1 Speed sensor disables feed roller FEED IN or FEED OUT mode when engine speed is below factory pre-set value.

3.6.2 Overload sensor reverses feed to FEED OUT.

Fig 3.7 Tracking Controls



3.7 Tracking Controls (Fig 3.7)

3.7.1 A two position toggle switch selects either tracking or chipping. In track mode the No Stress system will not allow the feed rollers to operate. 3.7.2 (Optional) A three position switch controls the tilt leg. Press in desired direction.

⚠ CAUTION! Take care operating tilt when standing on platform.

3.7.3 Lever controls operate the drives to the tracks. Push for forward motion. Pull for reverse motion.

3.7.4 A hand throttle (fig 3.4.2) is fitted for use only when the machine is being tracked, not when chipping.

Note: The chipper flywheel runs whenever the engine is running.

3.8 SYMBOLS on the MACHINE

These relate to operator safety, correct use and maintenance of machine. Check that all personnel understand and are familiar with meanings before using the machine.

Important Safety symbols

Take the correct action shown on the display below the stated hazard (see table)

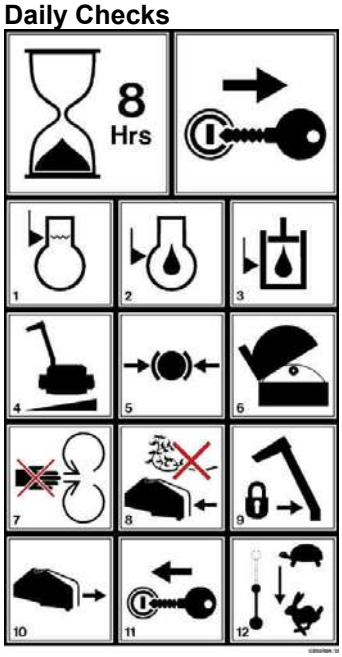
General Safety

Caution!		**Remove Key**		**Do NOT start engine**
Caution!	Beware flying object hazard	Beware noise hazard	Beware trapping hazard	Brakes off -incorrect
Read instruction manual	Wear helmet & visor	Wear ear protectors	Wear proper clothes	Brakes on -correct
Machine not level -incorrect	Beware flying object hazard	Beware flying object hazard	Beware exposed drives hazard	Caution!
Machine level -correct	Keep bystanders away	Position and lock discharge chute	Fit all guards	Keep nuts tight

Important Operating Checks Notice

Before use carry out daily the stated checks in the order shown (see table)

Daily Checks



Every 8 Hours – Daily checks		**Remove key stop engine**
1. Check coolant level	2. Check engine oil level	3. Check hydraulic oil level
4. Check machine is level	5. Check brakes are on	6. Check chipper flywheel is clear of debris
7. Check all guards are in place	8. Check infeed chute is clear of debris	9. Lock discharge chute
10. Pull control bar to work position	11. Start engine	12. Increase from Idle to Run

Important Safety Information

Caution!

Do NOT drive up or down slopes of more than 20°

Caution!

Do NOT operate or traverse on slopes of more than 30°

Caution! Beware of thrown object hazard

Action: Stand to side of infeed chute, NOT in centre.

Caution! Beware of thrown object hazard

Action: Keepaway from fast discharge chute

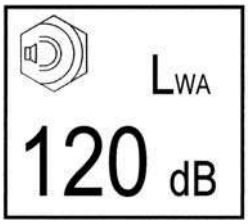
Caution! Beware Crushing hazard!

Do NOT work <u>or</u> park directly up or down slope.

Face shield must be worn

Ear defenders must be worn

Sound level



Ear defenders must be worn

Lift Point

Caution!

Do not climb into infeed chute

Caution! Infeed chute trapping hazards

Keep hands clear. Do not climb in

Transport Lock

Lock this component before moving machine

Maintenance Information

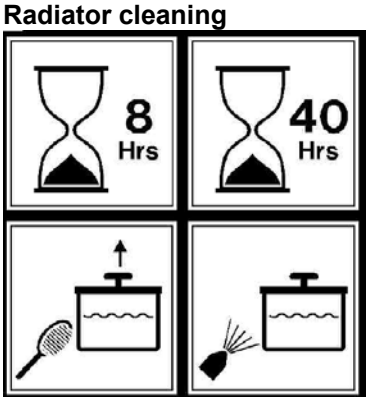
Diesel Filler

Hydraulic Filler

Grease point

40 hours / weekly

Radiator cleaning



8 Hours	40 Hours
Check radiator screen	Blow out radiator core

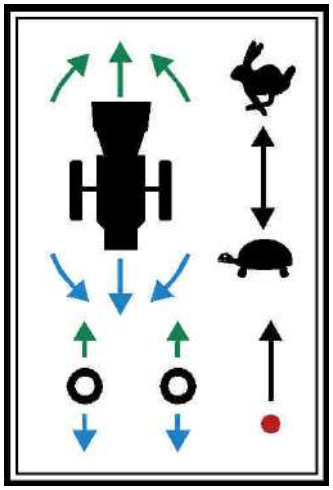
High temperature Grease 40 hours

Chipper Blade Maintenance

Caution!	Read Manual!	Remove key
Caution! Sharp edges	1) Wear protective gloves	2) Release cover bolts
3) Open chipper covers	4) Lock / Block flywheel	5) Clean blade nut and bolt recess
6) Remove blade nut	7) Clean blade spigot and flywheel recess	8) Replace and Tighten to 200Nm
9) Replace all covers	10) Secure covers	11) Replace key

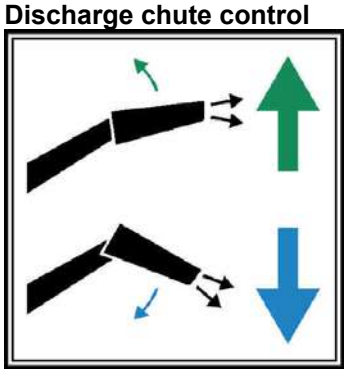
Operating Information

Track drive and throttle controls



Left lever
LH track: forwards – backwards
Right lever
RH track: forwards – backwards
Lever with red knob
Engine throttle slow - fast

Discharge chute control

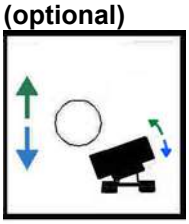


Green is UP: Blue is DOWN

Track / Chip control

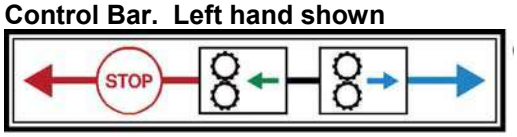
Up to chip
Down to drive

Tilt control (optional)



Extend
Retract

Control Bar. Left hand shown



Push to stop: Centre-feed in: Pull–feed out

Fig 4.2 Turntable Lock

4.1 Initial Fuelling and Parking

4.1.1 Fill fuel tank with diesel.
4.1.2 Top up hydraulic tank if necessary, with correct oil. See Section 6.
4.1.3 Position machine body level, using optional tilt if fitted.

If using on optional QuadTrak trailer

4.1.4 Keep trailer attached securely to vehicle and apply vehicle handbrake.

4.2 Turntable

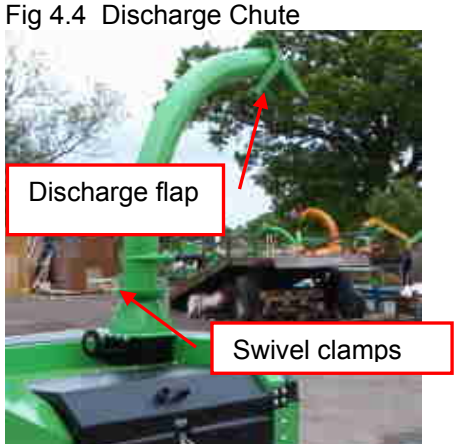
To ease working on sides of busy roads machine body can be locked in seven different working positions at 45deg steps in relation to tracks.
4.2.1 Lift locking handle (fig 4.2) and walk machine body around to desired position.
4.2.3 Ensure that body locks into new position.

⚠ CAUTION! Before travelling, ensure that turntable is rotated back into the transport position, and locked.

4.3 Infeed Chute

4.3.1 Check that height of infeed chute is suitable for ease of working.
4.3.2 Press reset button to enable control bar to operate for use.

Fig 4.4 Discharge Chute



4.4 Discharge Chute (Fig 4.4)

Note: QuadTrak chute should not be folded for self-propelled transport.
4.4.1 Release swivel clamps, point chute in desired direction and tighten clamps.
4.4.2 Set flap at desired height and tighten clamp.

⚠ CAUTION! Do not point discharge chute towards infeed area.

⚠ CAUTION! When travelling, lock discharge chute pointing away from the driver.

Fig 5.1 1 Chipper Flywheel Cover

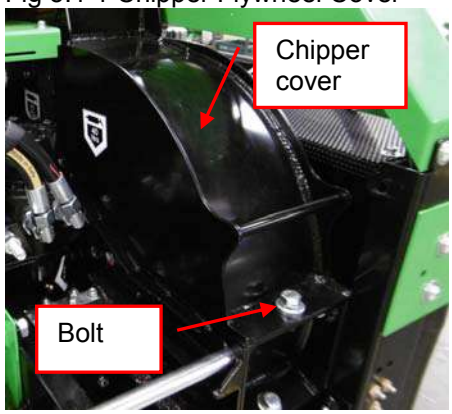


Fig 5.1 2 Flywheel Lock Pin

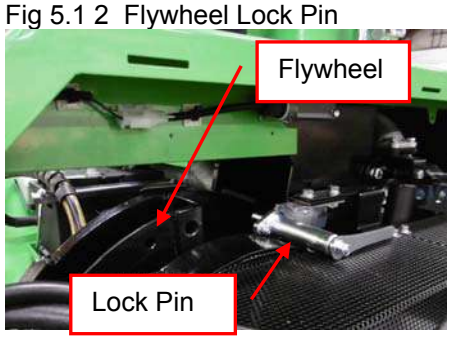
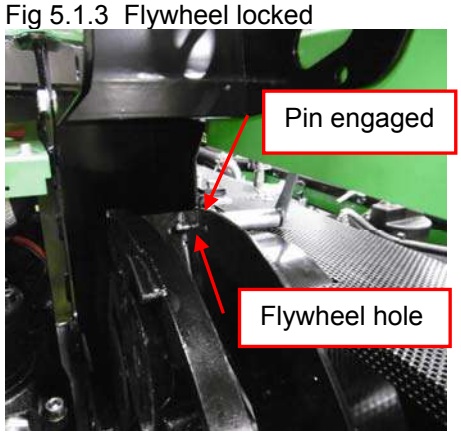


Fig 5.1.3 Flywheel locked



5.1 Pre-Work Checks:

5.1.1 Check machine is stationary, Key in OFF position or removed, and hand brake applied if to be used on trailer.

5.1.2 Check that machine body is level.

5.1.3 Check engine oil level (See Engine instruction manual).

5.1.4 Check hydraulic oil level (See Section 6).

5.1.5 Check fasteners for tightness and hydraulic connections for leaks.

5.1.6 Check condition of Disc Blades.

5.1.6.1 Unlock, raise and remove rear cover and battery cover. Check nothing is rotating.

5.1.6.2 Raise chipper flywheel cover -1 bolt (fig 5.1.1).

5.1.6.3 Withdraw spring-loaded chipper flywheel lock (Fig 5.1.2) and carefully rotate chipper flywheel to inspect blades.

Note: Flywheel pin may spring through to lock in various positions. (Fig 5.1.3)

5.1.6.4 Remove any loose wood material.

5.1.6.5 Check tightness of Disc Blade bolts and condition of blades.

5.1.6.6 If any bolts are loose, refer to maintenance section 6.7 for further action.

5.1.6.7 Withdraw flywheel lock, replace chipper flywheel cover and tighten bolt securely.

5.1.7 Remove any loose material and dust from radiator and engine bay

5.1.8 Replace all covers and secure.

5.1.9 Check discharge chute is in desired position away from infeed and all clamps are tight. (see Section 4.4)

5.1.10 Check work area and erect signs and cone off discharge area if necessary.

5.1.11 Check **ALL** safety procedures have been followed.

⚠ CAUTION! Beware sharp edges of Disc Blades and unexpected movement.

⚠ CAUTION! Always work with the chipper level across a slope, preferably with infeed direction slightly down the slope to minimise risk of material falling back out.

Fig 5.2 Engine Control Box

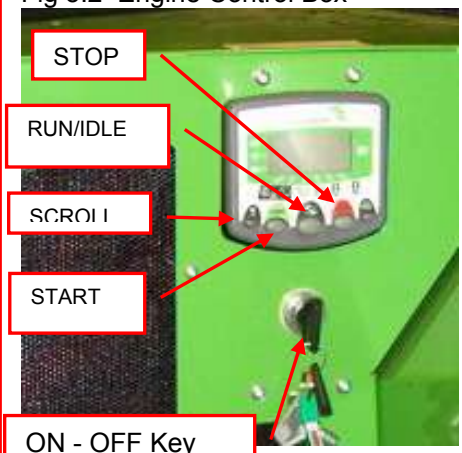


Fig 5.3.1 Tracking Controls

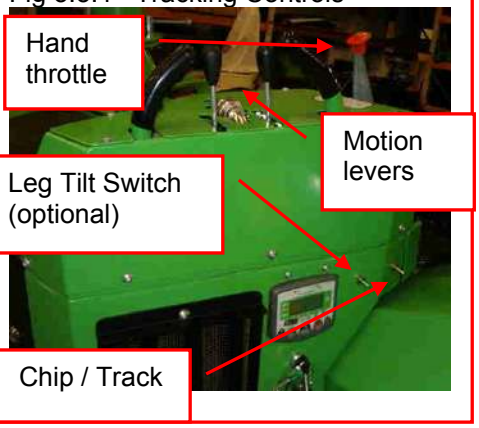
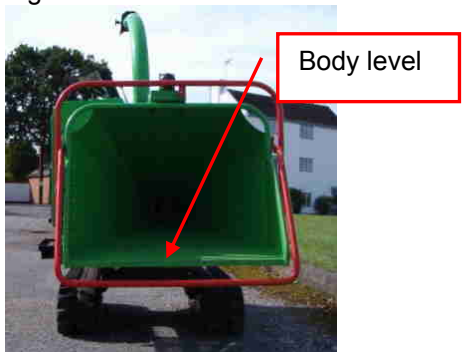


Fig 5.3.2 Track Tilt



5.2 Starting Machine (Fig 5.2)

5.2.1 Check all other personnel are clear of machine.
5.2.2 Check that feed roller control bar is pushed to the FEED OUT or STOP position, to make the machine safe.
5.2.3 Turn ON - OFF key to position **I**. Wait for pre-glow countdown to cease and chipper speed of 0 rev/min to be displayed.
5.2.4 Press green START button to start the chipper.
5.2.5 Press RUN/IDLE button to increase speed to operating speed.
5.2.6 Press reset knob at control bar (fig 3.4.1) to set control bar ready for work.

5.3 Moving the Machine

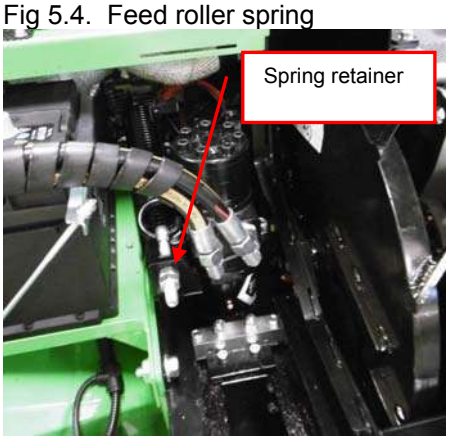
5.3.1 At tracking controls, (fig 5.3.1) Chip / Track, select Track.
5.3.2 Adjust tilt as required, keeping body level. (fig 5.3.2)
5.3.3 Push both levers together to start forward movement.
5.3.4 Open hand throttle to increase speed. Close to decrease speed.
5.3.5 Push left or right lever to steer.
5.3.6 At work site ensure body is level, using adjustable tilt.
5.3.7 Close hand throttle to slow engine.

⚠ CAUTION! Avoid static turns on hard surfaces. This will rapidly wear the tracks

⚠ CAUTION! Point discharge chute away from the driver. Over long journeys, engage chipper drive to blow out build up of exhaust gas.

⚠ CAUTION! Do not drive directly up slopes exceeding 20 degrees. Slopes up to 30 degrees may be traversed with care.

Fig 5.4. Feed roller spring



5.4 Blockages.

⚠ CAUTION! Beware sharp edges and dust. Wear protective gloves and eye shield!

5.4.1 Stop engine and REMOVE key to secure place.

5.4.2 Open chipper chamber. See 5.1 Pre-work checks.

⚠ CAUTION! Chipped material is inflammable. Expect large volume and prevent from falling into engine compartment. All material must be removed.

5.4.3 Open discharge chute and fold down at hinge to inspect and clear.

5.4.4 Clean out discharge chute thoroughly with a suitable rod to pass around bends as necessary.

5.4.5 Withdraw spring-loaded chipper flywheel lock (Fig 5.1.2) Check if chipper flywheel is free to rotate. Pull top of flywheel in operating direction of rotation. If so proceed to 5.4.12 below.

⚠ CAUTION! Beware sharp edges of blades and unexpected movement of flywheel due to resistance of engine.

If flywheel does NOT rotate freely, proceed as follows:

5.4.6. Release feed roller spring (Fig 5.4) at retainer and pull roller away from fixed roller.

5.4.7 Inspect blades from infeed chute and if necessary enter with care to clear material.

5.4.8 Carefully remove excess loose material from around chipper flywheel and note any obstructions.

5.4.9 Carefully rotate chipper flywheel in reverse direction by full revolution to release blocked material. Use bar against paddle blades for aid.

5.4.10 Carefully remove all material, checking for obstructions. Check rotation of chipper flywheel.

5.4.11 Check condition of blades. See 5.1.6

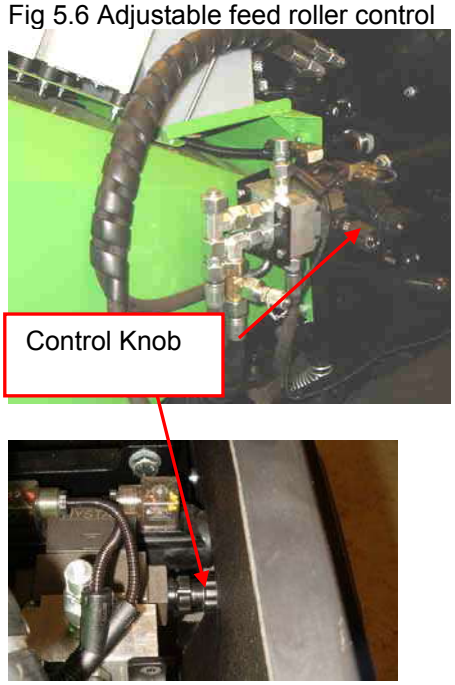
Note: Always attempt to find reason for blockage. e.g. blunt blades, slack drive belts.

5.4.12 Re-assemble all covers with correct fasteners and check for security.

5.4.13 Start machine as 5.2 and check operation.

Note: If machine will not run, repeat process or contact dealer for technical advice.

Fig 5.6 Adjustable feed roller control



Control knob settings

Material	**Setting**
up to 120mm	Fully open (3 turns)
120 - 150mm	1/2 to 3/4 turn

5.5 Stopping Machine

5.5.1 Push either control bar to STOP position.

5.5.2 Press the RUN/IDLE button and allow chipper flywheel to slow down (fig 5.2).

5.5.3 Press red STOP button to stop the engine.

5.5.4 Switch ON - OFF key to position 0.

5.5.5 Wait for chipper flywheel to stop.

⚠ CAUTION! The chipper flywheel will take several seconds to stop due to its inertia.

5.6 Adjustable Speed Feed Roller Control (if fitted)

When chipping wood sizes larger than 120mm diameter it may be necessary to reduce feed roller speed to suit the material being chipped by reducing oil flow control. Flow control knob can be carefully accessed from inside battery cover.

5.6.1 Release back-nut and turn valve control knob (fig 5.4) clockwise until valve is closed.

5.6.2 Turn knob anticlockwise to the recommended setting in the table.

5.6.3 Tighten back-nut, lower and secure cover.

⚠ CAUTION! Do not leave covers open whilst machine is running.

Fig 5.8 Machine ready for transport

1) Discharge chute pointing away from operator
2) All covers closed and locked
3) Turntable set with track motors at rear.

5.7 Operating Hints

5.7.1 Check that chipper flywheel is at full speed, rpm readout should be above 2150 rpm.
NOTE: The “No Stress” system will only allow FEED IN (Forwards) and FEED OUT operation of feed rollers when machine is running at FULL operating speed and not overloaded.
5.7.2 Reduce the chipper speed to IDLE whilst further material is collected for chipping.
5.7.3 Take care when feeding wood into the machine to allow for awkward shapes to “KICK” when contacting the feed rollers.
5.7.4 Position the end of larger sections of wood inside the infeed chute and then support the other end whilst pushing the wood into the feed rollers.
NOTE: If chipper becomes blocked do not continue to feed. It will make removal of blockage more difficult. See 5.4.

⚠ CAUTION! Do not release discharge chute clamps when chipping is in progress. Elevation of the discharge is altered by means of adjustable flap (fig. 4.4).

⚠ CAUTION! Keep working area around machine clear at all times and check only authorised personnel are present.

5.8 Preparing For Transport On Completion Of Work

5.8.1 Check that engine has stopped and chipper flywheel is stationary.
5.8.2 Remove surplus material from infeed chute and all machine surfaces.
5.8.3 Unlock, lift and secure covers to remove debris.

Turntable

5.8.4 Rotate turntable to transport position and ensure it locks.
Note: Preferred position is with track motors at rear when driving on tracks.

⚠ CAUTION! Do not leave machine parked directly up or down slope.

ROUTINE MAINTENANCE SCHEDULE

CAUTION! Always remove key and check for rotation before carrying out any maintenance.

Note: Battery, engine and tank covers are secured closed with a key. Remove when open by raising fully and lifting out to unhook hinge. Replace when task is completed.

Action	Section	Page
DAILY		
Check engine oil level and coolant (ref: engine manual)	6.2 – 6.3	6-4
Check hydraulic oil level	6.4	6-4
Check fuel level	6.5	6-4
Check all drive belts	6.6	6-4
Check condition of disc blades and retaining bolts	6.7	6-5
Clean radiator screen and around radiator	6.8	6-6
Check feed roller control bar function	3.4	3-2
Check condition of tracks	Refer to track manual	
Check track gear, nuts, rollers and bearings	Refer to track manual	
First 50 hours		
Check drive belt tension	6.9	6-6
Check battery levels	6.13	6-7
Check hydraulic connections	6.17	6-9
Check all mountings	6.18	6-9
Check feed roller control bar function	3.4	3-2
Service engine	Refer to engine manual	
Weekly in addition to Daily actions		
Blow out radiator core with air line	6.8	6-6
Check drive belt tensions	6.9	6-6
Steam clean machine	6.10	6-6
Clean air cleaner	6.11	6-7
Check electrical connections	6.12	6-7
Check battery levels	6.13	6-7
Check feed roller control bar function	3.4	3-2
Grease all bearings and pivots	6.16, 6.1	6-9
Check hydraulic connections	6.17	6-9
Check all mountings	6.18	6-9
250 hours in addition to Daily and Weekly actions		
Check all fluid levels	6.2, 6.3, 6.4	6-4
Check condition of bearings and pivots	6.16	6-8
Service engine	Refer to engine manual	
Check track gear units, rollers and bearings	Refer to track manual	
Replace return filter element	6.19	6-9
1000 hours in addition to 250 hour actions		
Change hydraulic oil when replacing filter element	6.20	6-10

Trailer (if supplied) refer also to axle manual		
First 50 hours		
Check wheel and tyre condition and pressures	6.14	6-8
Check brake condition and operation	6.15	6-8
Weekly in addition to Daily actions		
Check and adjust brakes	6.15	6-8

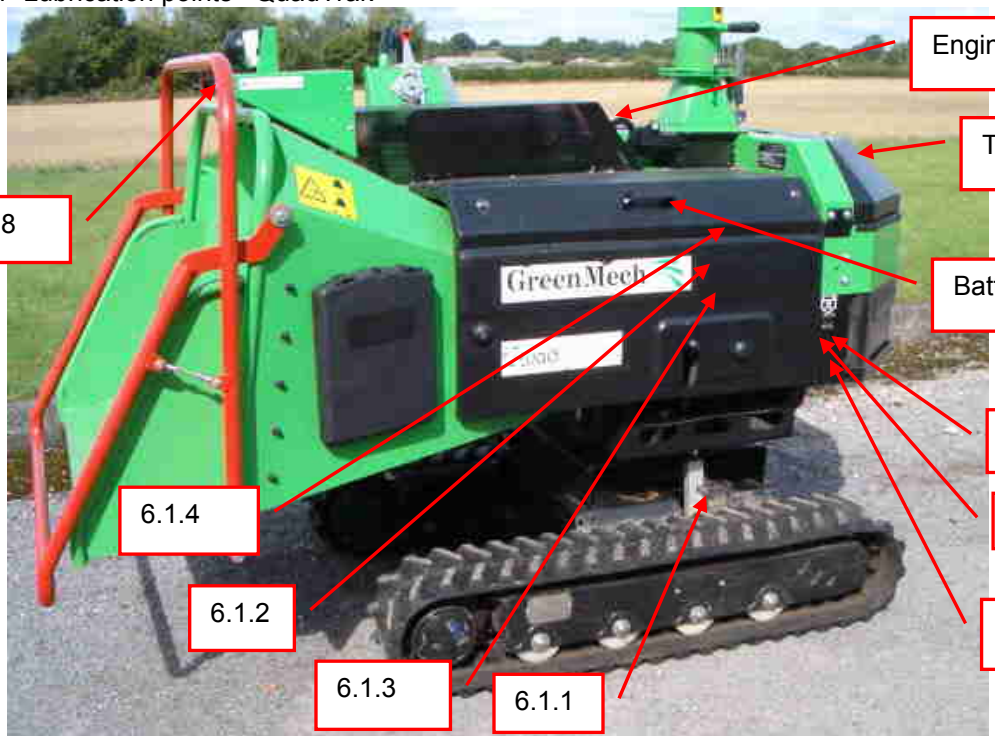
ENGINE MAINTENANCE **REFER TO ENGINE MANUAL**

TRACK MAINTENANCE **REFER TO TRACK MANUAL**

Recommended lubricants	**Specification**
Hydraulic Oil	ISO 32
Grease	Complex grease EP2 (high temperature)
Engine	SAE 15W-40 APICD

6.1 Lubrication Points (see 6.14)

Fig 6.1 Lubrication points QuadTrak



Grease except where stated

6.1.1	Track tilt (if fitted)	Clean and grease sparingly
6.1.2	Feed roller slide	Clean and grease sparingly (Fig 6.1.2)
6.1.3	Sliding Feed roller bearing	1 nipple under battery cover (Fig 6.1.2)
6.1.4	Fixed Feed roller bearing	1 nipple under battery cover (Fig 6.1.2)
6.1.5	Chipper Flywheel front bearing	1 nipple under battery cover (Fig 6.1.2)
6.1.6	Chipper Flywheel rear bearing	1 nipple under chipper cover (Fig 6.1.2)
6.1.7	Turntable	2 remote feed nipples (Fig 6.1.2)
6.1.8	Feed Roller control	Clean and grease sparingly
6.1.9	Belt tensioner	1 remote feed nipple (Fig 6.1.2)

Note 1: Do not over-grease bearings as damage to seals may occur.
Note 2: Use high temperature grease on chipper flywheel bearings.

Fig 6.1.2 Grease nipples and slides under battery cover and Remote nipples

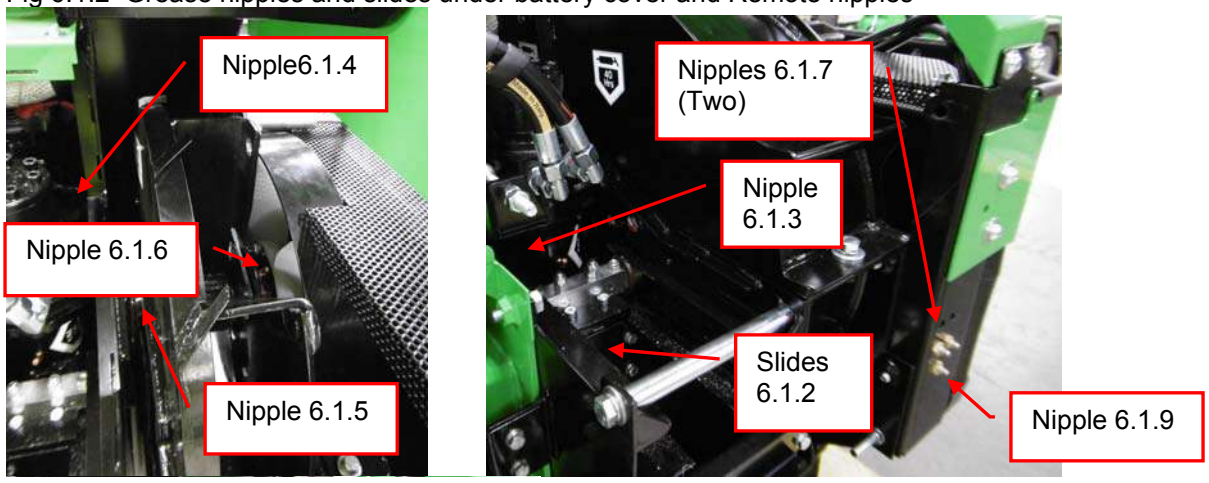


Fig. 6.2b Engine dipstick (Kubota)

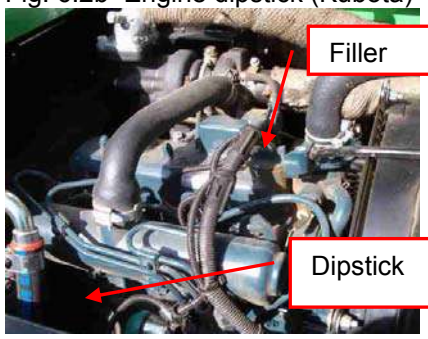


Fig.6.3 Coolant

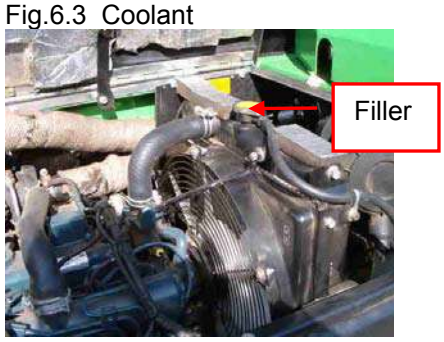
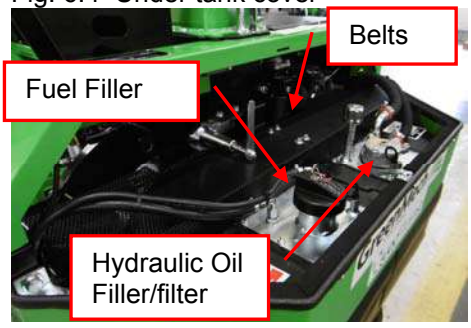


Fig. 6.4 Under tank cover



6.2 Engine Oil (Under engine cover)
6.2.1 Check daily (fig 6.2). Refer to engine manual to refill.

6.3 Coolant (Under battery cover)
6.3.1 Check daily, both radiator and overflow tank (fig 6.3). Refill as required. Check antifreeze.

⚠ CAUTION! Do not remove cap when engine is hot.

6.4 Hydraulic Oil (Under tank cover)
6.4.1 Check daily (fig 6.4). If below mark check for leaks and refill to correct level.

6.4.2 1000 hours. Remove drain plug, drain tank and refill with clean oil of correct specification. Replace filter (6.18)

6.5 Fuel Level (Under tank cover)
6.5.1 Check daily before work and fill as required (fig 6.4).

⚠ CAUTION! Use clean diesel fuel only. If in doubt, use a funnel with a filter.

⚠ CAUTION! Do not use any form of synthetic fuel.

6.6 Drive Belts (Under tank cover (fig 6.4))
Check daily, before work, the condition of all drive belts and replace if worn. See section 6.9 for further information.

Fig 6.7.1 Chipper Flywheel Cover

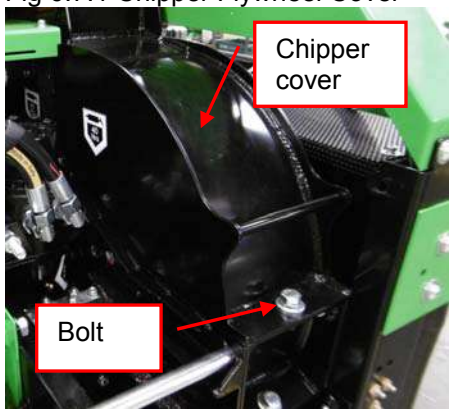


Fig 6.7.2 Flywheel Lock Pin

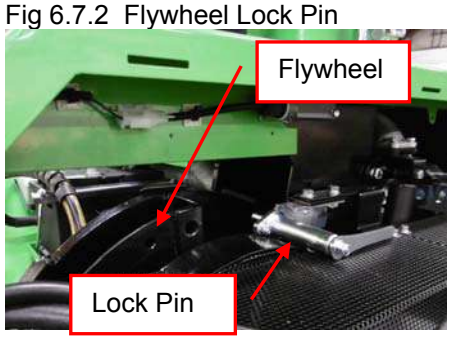


Fig 6.7.3. Flywheel and blades

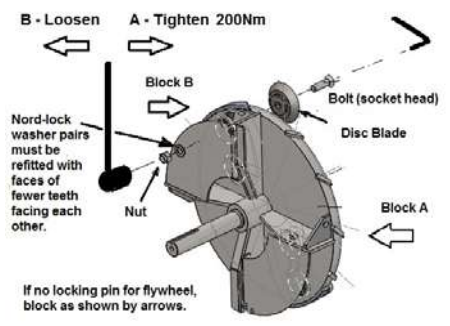


Fig 6.7.4 Blade fastening assembly

6.7 Disc Blade Cleaning - Replacement

The design of blades permits relocation in at least two rotated positions before regrinding or replacement is required.

6.7.1 Check engine is switched off, and start key removed.

6.7.2 Remove battery cover and tank cover, and check any rotation has stopped.

⚠ CAUTIONS for blade cleaning

- Blades have sharp edges. Wear protective gloves.
- Flywheel paddles and vanes create shearing and trapping points at edges of exposed housing. Do not place hands or fingers on or near flywheel and housing edges.
- Flywheel rotation may be resisted by drive in either direction. Beware unexpected movement when manually rotating flywheel between blade positions.
- Tools can slip if not fully engaged. Clean fasteners thoroughly before applying tools.
- Ensure flywheel is prevented from rotating when applying force to tools on blade fasteners.

6 7.3 Follow procedure as on symbol instructions (Section 3.8):

1) Wear protective gloves.
2) Release access panels.
3) Raise flywheel cover to expose flywheel and blades. (Section 5.1 and fig 6.7.1)..
4) Turn flywheel until lock pin springs through hole in flywheel (Fig 6.7.2) to lock securely (Fig 6.7.3).
5) Thoroughly clean debris from nut faces and bolt head socket.
6) Using socket tool, loosen nut anticlockwise. Support blade bolt with hexagon key as required and remove blade and fasteners (fig 6.7.3).
7) Thoroughly clean debris from flywheel blade housing and all components to be replaced. Inspect condition of nuts and bolts and replace if any signs of wear. (Fig 6.7.3 and fig 6.7.4)
8) Replace blade with Nord-Lock washers ensuring that flywheel remains locked for opposite rotation. Tighten to correct torque: 200Nm.
Withdraw lock pin and carefully rotate to next blade and repeat next blade removal (from 4 above) until all blades cleaned and replaced securely.
9) Replace flywheel cover (withdraw lock pin) and all other covers.
10) Check all covers are secure.
11) Replace key to start machine.

⚠ CAUTION! Blades must only be sharpened by grinding angled back face on a bench grinder. Grinding of front face will upset gap, which is factory set. Do not sharpen with hand held equipment.
All blades must be sharpened in “sets” with equal amounts removed to maintain balance. See 6.24 Note. If any blades are worn below flat annular section a complete set should be replaced.

Fig 6.8 Radiator

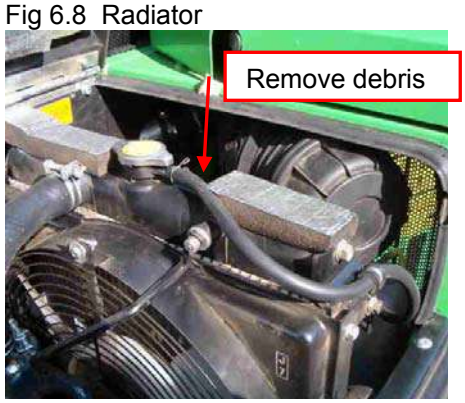


Fig 6.9.1 Drive Belt tensioner

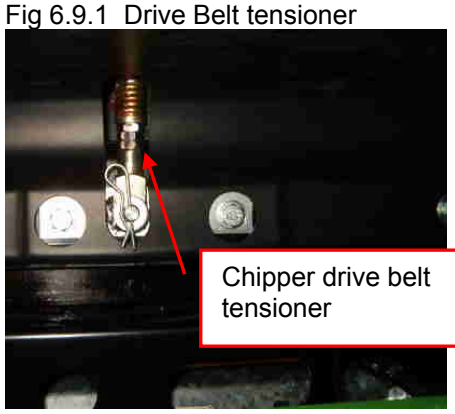


Fig 6.9.2.1 Drive Belt access

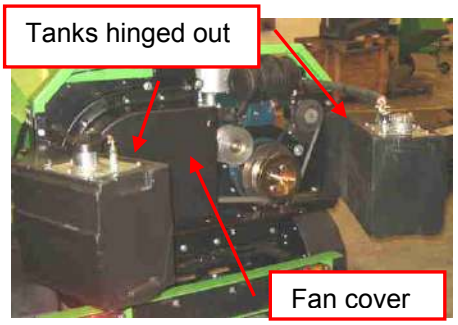
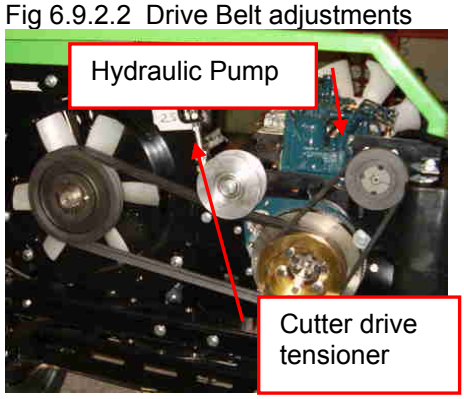


Fig 6.9.2.2 Drive Belt adjustments



6.8 Radiator (under engine cover)
Daily
6.8.1 Check radiator for debris. (fig.6.8)
50 hours or weekly
6.8.2 In addition to above, blow out radiator core from back with suitable airline and clear from front.

⚠ CAUTION! A build up of debris risks overheating of the engine and a risk of fire.

6.9 Drive belts
Belt Replacement
6.9.1 Remove tank covers from machine (fig 6.9.1).
6.9.2 Hinge tanks away from drive belt area (fig 6.9.2).
Cutter Drive
6.9.3a Remove fan covers.
6.9.4a Release nuts on idler pulley tensioner bar until belts are slack enough to be removed.
Pump drive
6.9.3b Release 4 bolts in slotted pump mounting plate to permit belts to be removed.
6.9.5 Fit new set of belts ensuring they lay snugly in pulley grooves.
6 9.6a Screw nuts on tensioner bar to re-tension belts.
6.9.6b With suitable bar ease pump plate upwards to tighten belts and secure plate with bolts.
6.9.7 Check tension.
6.9.8 Replace fan cover if removed, reposition tanks, replace all covers and secure.

6.10 Steam Cleaning
weekly and every 250 hours
6.10.1 Check all covers are fitted and closed.
6.10.2 Steam clean machine surfaces.
6.10.3 Clean electrical components with a damp rag, spray with WD40 and then wipe with dry rag.

⚠ CAUTION! Do not steam clean directly on to electrical components, e.g. control boxes.

Fig 6.11 Air Cleaner

6.11 Air Cleaner (under tank cover)
Weekly (Refer to engine manual)
6.11.1 Remove cover clips (fig 6.11) and release.
6.11.2 Slide out element and either blow out with air-line or gently tap on smooth ground to release debris.
6.11.3 Replace cover.

6.12 Electrical connections
weekly
6.12.1 Check all wiring loom connections are secure.

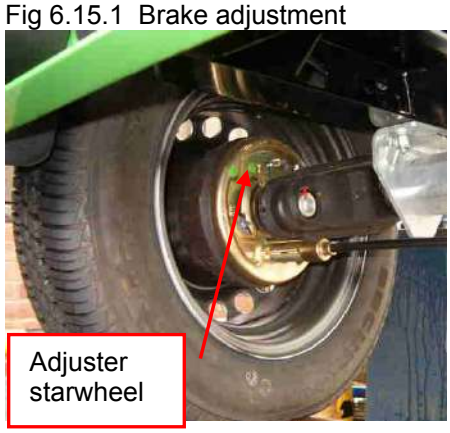
⚠ CAUTION! Poor connections will affect engine security cut-outs and may prevent starting.

Fig 6.13 Battery

6.13 Battery
First 50 hours and weekly
6.13.1 Remove battery cover.
6.13.2 Release stays to access battery.
6.13.3 Check electrolyte level and top up if required.
6.13.4 Reposition battery, and secure stays.
6.13.5 Lower cover and secure.
Removal
6.13.6 First disconnect negative (-) cable (black cap).
6.13.7 Disconnect positive (+) cable (red cap).
6.13.8 Remove clamp and carefully lift out battery.
6.13.9 Replace by connecting positive cable before negative.
6.13.10 Secure battery as 6.13.4 above.

⚠ CAUTION! Gases are explosive. Electrolyte is corrosive. Avoid sparks and spillage.

Fig 6.15.1 Brake adjustment



6.14 Tyres and Wheels (Optional Trailer only)

50 hours and 250 hours

6.14.1 Check condition of tyres.

6.14.2 Check pressures and inflate to 2.7bar (40lb/in^2) pressure as required.

6.14.3 Check wheel nuts are tight to 110Nm (80lbft) torque.

6.15 Brakes (Optional Trailer only)

50 hours, weekly and 250 hours

6.15.1 Check operation and effectiveness of overrun and handbrake.

100 hours

Adjust brakes as follows

6.15.2 Chock machine, release handbrake fully off and check drawbar is fully extended.

6.15.3 Jack up both wheels and support on axle stands.

6.15.4 Remove inner bung to expose adjuster 'starwheel' (fig 6.15.1).

6.15.5 Adjust starwheel with screwdriver until tight whilst rotating each wheel forwards until tight.

6.15.6 Slacken until wheel rotates freely in forward direction.

6.15.7 Check brake linkage has 4 to 6mm movement at cable.

6.15.8 Repeat for opposite wheel.

6.15.9 Check balance bar is straight and pulls both cables evenly (fig 6.15.2).

6.15.10 Adjust the ballnut to remove any slack from brake rod.

Note: Servicing of brakes may be required more often if above average mileage is covered.

Refer to AL-KO brake manual or GreenMech for details for brake shoe replacement and other servicing

⚠ CAUTION! Reverse rotation of wheel may prevent correct adjustment.

Fig 6.15.2 Brake adjustment

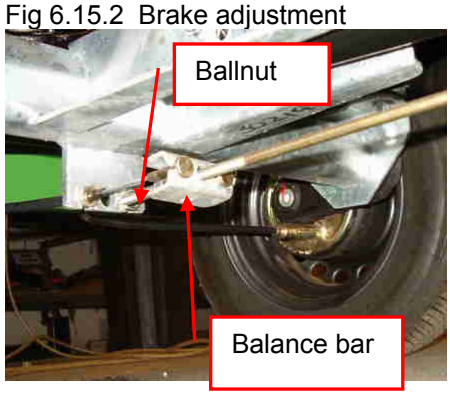


Fig 6.16 Feed roller tensioner

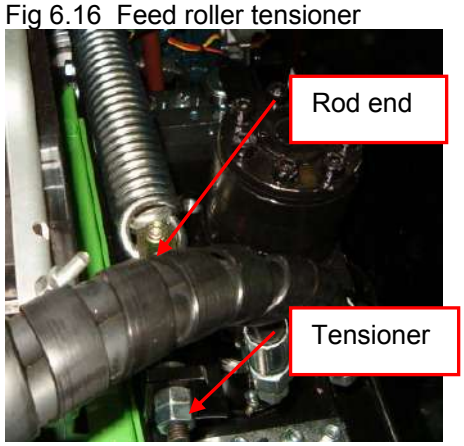
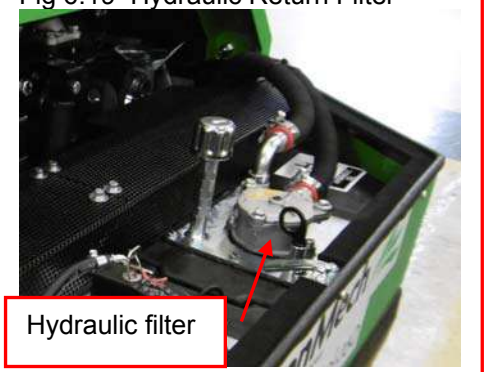


Fig 6.19 Hydraulic Return Filter



6.16 Bearings and Pivots

weekly

See paragraph 6.1 for routine lubrication.

250 hours

6.16.1 Check rotating components for excessive movement and noise in operation.

6.16.2 Replace as required.

6.16.3 Release spring retainer to clean feed roller slides. (Fig 6.16)

6.16.3.1 Slacken tensioner

6.16.3.2 Unclip rod end pin and release.

6.16.3.3 Replace and retension after cleaning.

6.17 Hydraulic connections

50 hours

6.17.1 With the aid of the circuit diagram to follow the hose routings, check all hoses and connections for leaks and damage.

6.17.2 Replace any worn or damaged hoses with the correct type and length.

6.17.3 Before removal, check routing and ensure replacement hose is fitted free of strains, twists or kinks.

⚠ CAUTION! Ensure any residual pressure is released before dismantling.

⚠ CAUTION! Ensure hoses are refitted free of twists and kinks.

6.18 Mountings

250 hours

6.18.1 Check that all mounting bolts are tight.

6.19 Hydraulic Return Filter

250 hours

6.19.1 Check oil is cool.

6.19.2 Unscrew filter cover (there is a spring under cover) and carefully lift out element; it may require gentle prising out,

6.19.3 Dispose filter according to local authority environmental procedures.

6.19.4 Fit a new filter element to the correct specification and replace cover and spring.

⚠ CAUTION! Do not overtighten.

6.20 Hydraulic Oil change 1000 hours

6.20.1 Remove hydraulic oil with suction pump at filter/filler and replace with new oil and filter of correct specification.
6.20.2 Replace suction filter.
6.20.3 Dispose of waste oil according to local authority environmental procedures.

6.21 Fuses and No Stress system

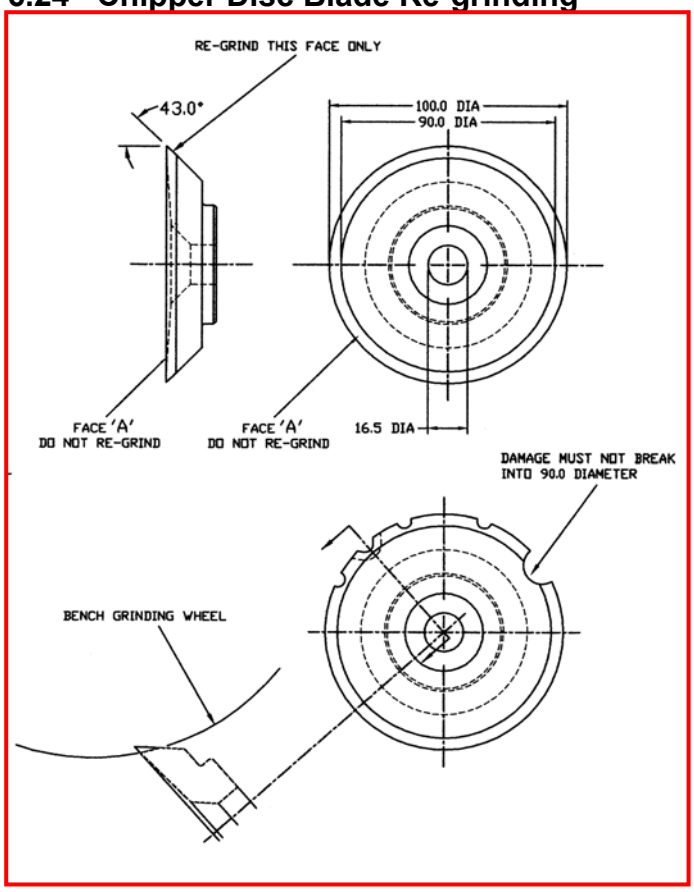
There are two fuses.
A 40 amp in-line fuse protects engine pre-heat and start circuit.
A 20 amp fuse protects power protection system.
Note The engine operating speeds for the No Stress system are factory set for particular machine builds and must not be readjusted.

6.22 Fault finding

Fault	Check	Action	Page
Engine will not start	Covers and discharge chute cut-out switches	Secure all covers and Chute	
	Battery	Recharge	6-7
	Fuel	Fill tank	6-4
	Oil pressure	Check Oil level	6-4
	Thermal cut-out	Check operation	6-4
	Fuses	Check	6-10
Engine not at correct speed	Engine control	Check operation	5-2
Flywheel will not start	Drive belts	Replace	6-6
Feed rollers do not turn	Chip/track switch	Select ‘Chip’	5-2
	Control bar	Reset and check	3-2
	Hydraulics	Check solenoid valve	
Feed will not reverse	Control bar	Reset and check	3-2
	Hydraulic valve	Check operation	
Discharge does not flow	Discharge chute	Check for blockage	4-2
	Chipper flywheel	Check for blockage	5-1
Unusual noise(s)	Flywheel and bearings	Check and replace	5-1

6.23 *Number not applicable*

6.24 Chipper Disc Blade Re-grinding



6.24.1 Examine set of chipper Disc Blades for damage. If front face 'A' is worn the blade must be scrapped. If chips have broken off the cutting edge they can be re-dressed provided that they do not go inside the 90mm diameter.

6.24.2 Always regrind the worst damaged blade first, as this will establish the target weight for the other blades.

6.24.3 If large chips exist over less than 30% of the circumference the blade may be re-ground provided the large damaged area is not used for chipping.

6.24.4 Chips may be repaired by grinding a cutting edge around the damaged area using a bench grinder.

6.24.5 With disc blade mounted on a mandrel re-grind remainder of cutting edge at 43º as shown

6.24.6 Re-grind in increments of approximately 0.01mm (0.004") until sharp edge is restored.

6.24.7 If re-grinding breaks into the 90mm diameter the blade must be scrapped.

6.24.8 After re-grinding the weight of blades within a set must not vary by more than +/- 1gm (0.03oz). The weight of each blade must not be less than 560gm (20oz)

Nordlock washers (Fig 6.7.4)
Note: Ensure that the two washers are assembled as a pair with faces of fewer teeth facing each other. Thread lubricant is recommended to ensure even torque. Do not use thread adhesive (e.g. Loctite).
Reuse:
Nord-Lock washers can normally be re-used when cleaned and re-lubricated.
Nyloc nuts should always be inspected for damage before reuse.

7.1 Storage

7.1.1 Thoroughly clean machine and note any replacement parts required.
7.1.2 Carry out 250 hour service if not already done. Refer to Section 6
7.1.3 Fit replacement parts when available.
7.1.4 Remove battery Refer to 6.13
7.1.5 Drain fuel
Note: Discharge chute may be lowered carefully over body to reduce height.

7.2 Removal from Storage

7.2.1 Charge battery and refit Refer to 6.13
7.2.2 Raise discharge chute and secure (if lowered)
7.2.3 Carry out machine preparation as necessary Refer to Section 4

When the machine is finally scrapped, the following items should be disposed of only at authorised waste disposal facilities.

Engine oil. Hydraulic oil. Antifreeze. Battery. Tracks.

If in doubt, consult the Local Authority environmental department.

Major non-ferrous items such as covers and hydraulic hoses may also be disposed of separately.

Safety Guides and Checklist as Transcribed from and Advised by Arborculture & Forestry Advisory Group and Issued as Leaflet AFA604(rev1) by HSE, issued 04/14

INTRODUCTION

This leaflet covers the safe working practices to be followed when operating a wood chipper.

It does not cover a combination of machines working within each other's risk zones (see AFAG leaflet 605 ***Mechanical roadside processing*****)**

You can use this leaflet, along with the manufacturer's handbook, as part of the risk assessment process to help identify the controls to put in place when using a wood chipper.

You must also assess the effect of the site and the weather as well as following this guidance

All operators must have had appropriate training in how to operate the machine and how to carry out the tasks require (see AFAG leaflet 805 ***Training and certification)***

PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. Use the following PPE

- A Safety Helmet, complying with EN 397, if identified as required in the risk assessment.

- Eye Protection (a mesh visor complying with EN1731 or safety glasses to EN166)

- Hearing protection (complying with EN352) where noise level exceeds 85 dB(A) (see HSE pocket card INDG363 ***Protect your hearing or lose it!)***
- Gloves with long, close-fitting cuffs that can be tucked into sleeves
- Safety Boots with good grip and ankle support (complying with EN345-1)

- Non-Snag Outer Clothing appropriate to prevailing weather conditions. High-visibility clothing (complying with EN471) should be worn when the risk assessment identifies that it is needed.

2. Each person should carry a personal first-aid kit including a large wound dressing (see HSE leaflet INDG214 ***first aid at work; Your questions answered).***

3. Hand cleaning material such as waterless skin cleanser or soap, water and paper towel should be readily available.

THE MACHINE

4. Before working with a machine, check it has been properly converted from any transport mode.

5. Ensure guards for dangerous parts (e.g. belts, pulleys, shafts etc) are secure and undamaged.

6. Ensure protective devices, such as the infeed control bar (incorporating the stopping device), are working correctly (see HSE leaflet AI S 38 ***Power-fed mobile wood chippers: Operator protection at infeed chutes).***

7. Ensure any lock for the chipping components has been disengaged;

8. Ensure the infeed hopper is clear of any materials.

9. Ensure Noise warning signs are in place.

10. For machines driven by a power take-off (PTO) shaft, before starting ensure:

- The PTO shaft is fitted with a suitable guard complying with EN1152, that encloses the shaft along its full length from tractor to machine.

- The guard is correctly fitted and in effective working ordersee AIS40 ***Power take-offs and power take-off drive shafts;***

- The PTO speed is suitable for the machine.

SELECTING THE WORK AREA

11. Select as firm a surface as possible and stabilise the machine

12. Ensure ventilation is adequate and any exhaust fumes are vented into open air if working in an enclosed space.

13. Where appropriate, if the chipper is detached from the tow vehicle, apply the handbrake and, if necessary, chock the wheels.

14. On all reasonably foreseeable approaches to the worksite, erect warning and prohibition signs conforming to the Health and Safety (Safety Signs and Signals) Regulations 1996, indicating a hazardous worksite and that unauthorised access is prohibited. In areas of very high public access, a risk assessment may indicate that additional controls (e.g. barrier tape, barriers, extra manning) are required.

15. Ensure all operations near to highways are adequately signed with the appropriate notices as specified in the Department of Transport's ***Safety at street works and road works : A Code of Practice.***

16. Ensure that the discharge chute is positioned to prevent chips being blown onto the highway during roadside operations, or in any direction where they can affect colleagues or members of the public.

17. Position the chipper so that operators do not have to stand on embankments/slopes when feeding material into the machine

EMERGENCY PROCEDURES

18. Ensure a designated and responsible person knows the daily work programme and agree with them a suitable emergency contact procedure. Where reasonably practicable use a mobile phone or radio and pre-arrange call-in system.

19. Ensure the operators can provide the emergency services with enough detail for them to be found in the event of an accident, e.g. the grid reference, the distance from the main road, the type of access (suitable for car/four-wheel drive/emergency service vehicles). In urban areas street names are essential. Know the location details before they are needed in an emergency.

OPERATION

20. Make sure the cuffs of gloves are close fitting or tucked into you're sleeves to stop them being caught on material as it is fed into the chipper.

21. Set the engine speed (and set the stress control if fitted) to obtain optimum performance.

22. Check that material to be chipped is free from stones, metal and foreign objects.

23. Stand to one side of the infeed rollers to avoid being hit by ejected material.

24. Let material go as soon as it is engaged in the infeed rollers or chipping components.

25. Use a push stick at least 1.5 metre long, for both short produce and for the last piece of produce to be chipped.

26. Do not put any part of your body (including hands or feet), into the infeed hopper while the machine is running.

27. Always follow the manufactures' instructions for dealing with blockages on the machine.

28. Keep the area of ground in front of the infeed hopper free from debris to prevent any tripping hazard.

29. Remove the engine start key when the machine is left unattended or when undertaking any maintenance.

FUELLING

30. Stop engine and, if necessary allow the machine to cool before refuelling.

31. Petrol vapour is invisible and can flow considerable distances from spillage or fuelling sites. Maintain a safe distance from any source of ignition at all times.

32. Store fuel to avoid vapour ignition from any source such as fires, people smoking or the wood chipper. Select a site shaded from direct sunlight and away from watercourses and drains.

33. Containers must be clearly labelled and have securely fitting caps. Plastic containers must be designed and approved for use with petrol or diesel fuel.

34. Replace the fuel cap securely.

35. Keep fuel from contacting the skin. If fuel gets into the eyes wash out with sterile water immediately and seek medical advise

Maintenance

36. Ensure the machine is carried out in accordance with the manufacture's handbook.

37. Check chipping components and knives each day for damage and wear.

38. Wear gloves when handling knives.

39. Before working on knives, confirm that the engine is switched off, the start key removed, and the chipping component is stationary.

40. Before opening any guard/cover or reaching into the infeed hopper or discharge chutes make sure that the engine is switched off, start key removed and dangerous parts have come to a stand still.

41. Knives must be changed or reversed if damaged or blunt. Knives must be scrapped when worn to the minimum size specified by the manufacturer.

42. When new/sharpened knives are fitted, ensure that there is the recommended clearance between the knives and the anvil.

MOVING THE MACHINE

43. Stop the engine and remove the start/stop key.

44. Lock the chipping components.

45. Secure the infeed hopper and the chip discharge chute in the transport position.

46. Check the towing bracket, attach, then lift and secure the jockey wheel.

47. Connect the electrics and the safety chain/s to the towing vehicle.

48. Ensure that the load is secure and that people are in a safe position before moving off.

Further Reading

Noise: Don't lose your hearing!
INDG363(rev2)
HSE Books 2012
www.hse.gov.uk/pubns/indg363.htm

First aid at work: Your questions answered
Leaflet INDG2114(rev1)
HSE books 2009
www.hse.gov.uk/pubns/indg214.htm

Safety signs and signals. The Health and Safety (Safety Signs and Signals) Regulations 1996. Guidance on Regulations L64 (Second edition) HSE Books 2009 ISBN 978 0 7176 6359 0
www.hse.gov.uk/pubns/books/164.htm

Power-fed mobile wood chippers: Operator protection at infeed chutes AIS38 HSE 2013
www.hse.gov.uk/pubns/ais38.htm

Power take-offs and power take-off drive shafts AIS40 HSE Books2012
www.hse.gov.uk/pubns/ais40.htm

Treework webpages:
www.hse.gov.uk/treework

GreenMech
The Professionals' Choice

WARRANTY POLICY

PERIOD OF WARRANTY

All new machinery is supplied with a 3 year parts and labour warranty from original date of purchase.

LIMITATIONS

This warranty applies only to manufacturing defect and **does not** cover repairs or costs due to:

1. Normal wear and tear.
2. Routine maintenance or adjustment.
3. Damage caused by improper handling/abuse/misuse or neglect.
4. Lack of or over lubrication
5. Overheating due to lack of maintenance.
6. Damage due to fittings/fasteners becoming loose/detached through lack of maintenance.
7. Damage caused by cleaning with water.
8. Machines serviced or repaired by non-authorised GreenMech dealers.
9. Machines incorrectly assembled or adjusted.
10. Damage caused by improper use of the machine.
11. Items/parts that are not normally covered by the warranty, including but not limited to: Blade and Blade Assemblies - Belts - Filters - Clutch Assemblies - Lubricants - Wheels & Tyres –Axles- Batteries – Bearings -Dampers - Paint
12. Consequential loss, damages or costs.

MAINTENANCE

Maintenance carried out during the warranty period should be carried out as per section 6 of the machine owner's manual and by an authorised GreenMech dealer.

ENGINES

This is covered by the manufacturer of the engine. Please refer to the separate warranty conditions as supplied with the owner's manual.

All warranty repairs must be carried out by an authorised GreenMech dealer, except for engines, please refer to separate warranty terms supplied with the engine owner's manual.

ENGINE - 2 YEAR/2000HOUR WARRANTY AGREEMENT
TERMS, CONDITIONS AND EXCLUSIONS
ALL ENGINE MODELS

Kubota (UK) Limited (The Company) guarantees all products supplied by them against any defect in material, manufacture and assembly. Each of the Company's Dealers (The Supplier) is required to give the benefit of the above warranty to the RETAIL PURCHASER of the new goods supplied by the Company as follows;

The warranty period as detailed below will commence from the date of product installation.
The product should be registered for warranty on K-net by the Supplier prior to delivery and the resulting "Warranty & Installation Certificate" printed twice in readiness for completion with the Purchaser on the day of product installation.

During product installation these warranty terms and conditions should be carefully explained to the Purchaser by the Supplier, after which both copies of the "Warranty & Installation Certificate" should be signed by the Purchaser indicating their acceptance of the products installation and warranty agreement. The Supplier's representative installing the product should then acknowledge the Purchaser's agreement and signature by counter signing both copies of the "Warranty & Installation Certificate". The first copy of the "Warranty & Installation Certificate" should be retained by the purchaser and the second copy to be retained by the dealer and attached to the PDI record and safely filed for future reference and inspection by Kubota UK Limited.

This Kubota warranty agreement may be invalidated where the following has been found to apply:
a) Where the product has been used to unreasonably perform tasks that demand more than the design and strength limitation.
b) The product has undergone modifications not approved by Kubota.
c) Conditions of usage can be determined to be abnormal.
d) Normal maintenance has not been completed correctly in accordance with the manufacturer's requirements as detailed in the machines operator manual.
e) No liability is accepted by Kubota in respect of machine or component failure when it can be determined that such failure was the result of using equipment with one or more attachments not given prior application approval by them.

A warranty in respect of any spare or replacement part (whether supplied by Kubota following a sale or pursuant to a Warranty claim) is covered to the greater of the following periods: (Parts & Labour costs)
a) One year from the date that the part was purchased. Labour will only be covered if the part has been fitted by an authorised Kubota Dealership. Only genuine Kubota parts can be claimed for in any parts warranty claim.
b) The remainder of the warranty period which is applicable to the product into which the part is incorporated.

GENERAL CONDITIONS

It should be noted that normal maintenance services such as belt or operational adjustments and the supply of materials used in any such service, are not covered by the terms of the Warranty.

In no event will the user be entitled to recover under this Warranty for incidental or consequential damages, including, but not limited to inconvenience, rental or replacement equipment, loss of profit or other commercial loss.

Only authorised Kubota Dealers can offer you the protection afforded by your Warranty and where possible you should request the assistance of the original Supplier to carry out repairs.
If, however you move to another area or your machine is working temporarily at some distance from the Supplier from whom it was purchased, you are recommended to obtain from the original Supplier the name and address of the Kubota Dealer nearest to your location and ask for arrangements to be made for any Warranty repairs to be carried out by them.

In the case of making a claim under this warranty, the procedure to adopt is as follows;
a) Notify the Kubota Dealer from whom you obtained the equipment within 24 hours of failure or as soon as practicably possible. The product should not be used further if other consequential damage could occur or if a safety concern exists.
b) Make the product available for inspection by a Dealer Technician.
c) Make all maintenance records or similar evidence available for inspection by the Kubota Dealer to demonstrate that the product has been maintained correctly according to the operator's manual schedule using the correct Kubota lubricant.
d) If the product/component has been dismantled or tampered with prior to the Dealer technician's inspection, warranty may be void.
e) Any replacement parts being claimed for must be genuine Kubota parts.

Please note that lubricant, fuel and coolant samples are frequently needed to determine the cause of failure and therefore the machine should be presented with all the original fluids and their levels unchanged and undiluted

If the failure is found to be the result of faulty manufacture or assembly the failed components will be replaced entirely free of charge. Kubota Dealers are requested to submit their warranty claim upon Kubota within 28 days and return any defective parts and fluid samples immediately if requested.

In accordance with the Company policy of continuous improvements to its products, alteration in specification may be made at any time without notice and the Company shall not accept responsibility for any discrepancies which may occur between the specification of its products and the description thereof in its publications.

WARRANTY PERIOD
The full and maximum warranty term will be <u>two years or two thousand hours</u> whichever comes first and is subject to the exclusions shown below;

EXCLUSIONS applicable to the first year or up to 1000hrs use;
Includes all serviceable items and any component subject to fair wear and tear, such as;

Filters (air, fuel, hydraulic)	Fan belts,
Glow plugs	Fuses
Lubricants and antifreeze +	Fuel Injection Equipment*

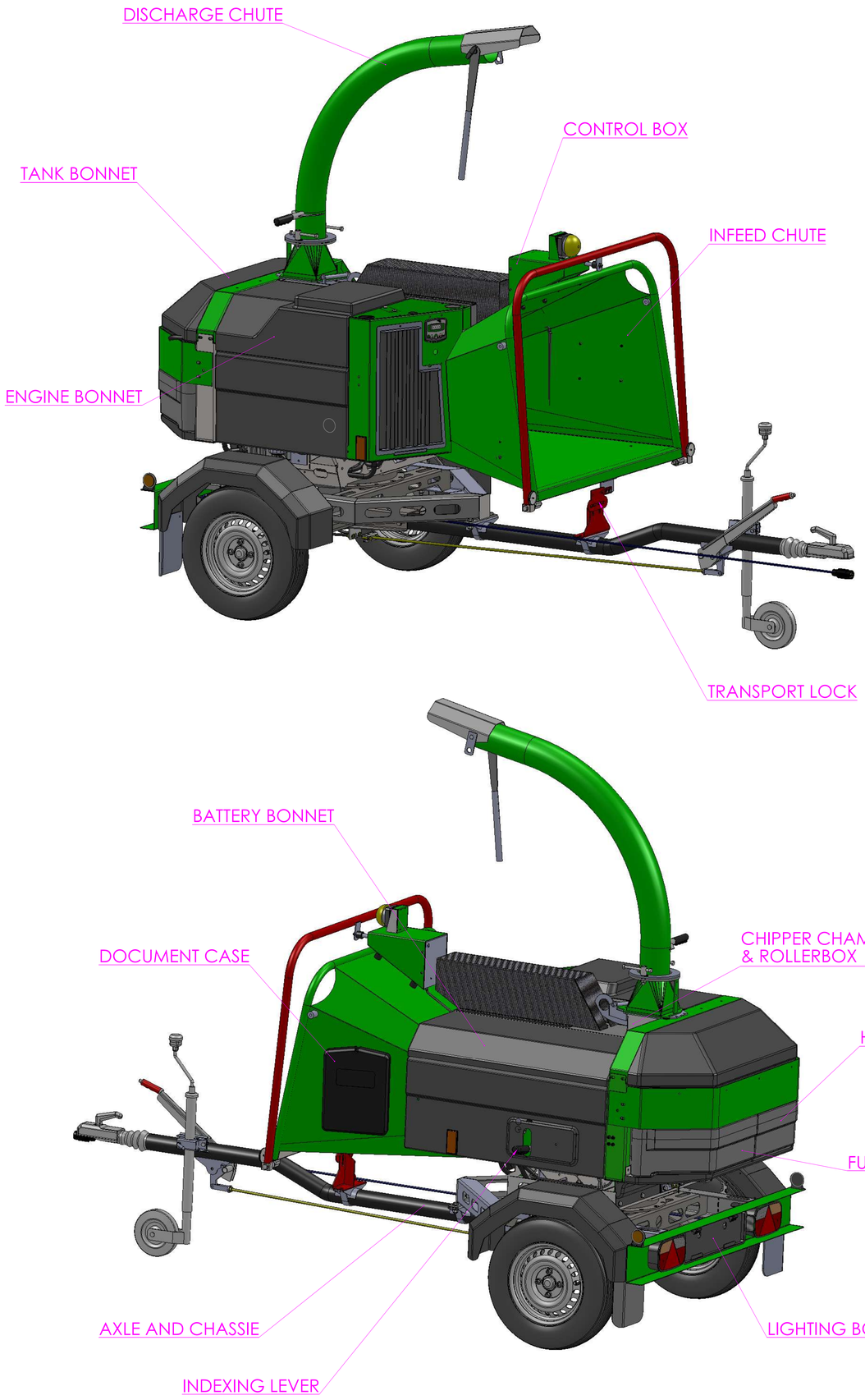
- + Lubricants and Coolants will be accepted if lost or contaminated as a consequence of a warrantable failure and repair. Only the specified Kubota lubricants should be used and will be accepted.

- * Injection equipment warranty claim will only be accepted if supported by a written report from a Bosch or Denso Diesel Agent that clearly identifies the warrantable defect.

ADDITIONAL EXCLUSIONS in second year or after first 1000 operational hours whichever occurs first:

Radiator	Paintwork
Thermostat	Electrical components
Water pump	Hoses and pipes

This guarantee is given in addition to any rights you may have against Kubota (UK) Ltd, or the Supplier from whom you purchased the product, and does not affect or prejudice any rights you may have under the Sale of Goods Act, or in general.



INDEX

QC160

QUADTRAK

Item No	No Off	Description	Part No	Material

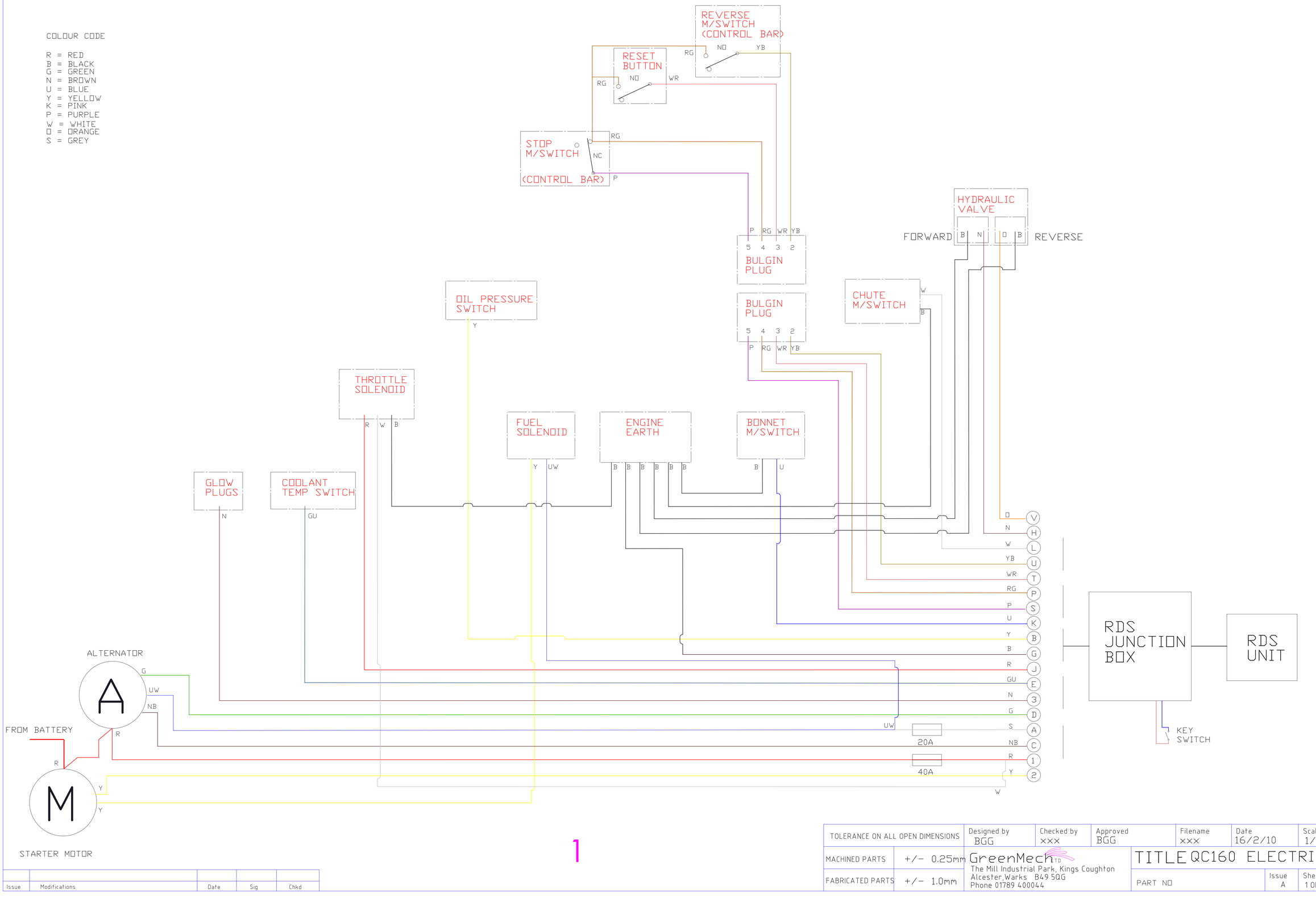
DO NOT SCALE - IF IN DOUBT ASK

THIS DRAWING IS 1ST ANGLE PROJECTION

DIMENSIONS IN MILLIMETERS

COLOUR CODE

R = RED
B = BLACK
G = GREEN
N = BROWN
U = BLUE
Y = YELLOW
K = PINK
P = PURPLE
W = WHITE
O = ORANGE
S = GREY



1

Issue	Modifications	Date	Sig	Chkd

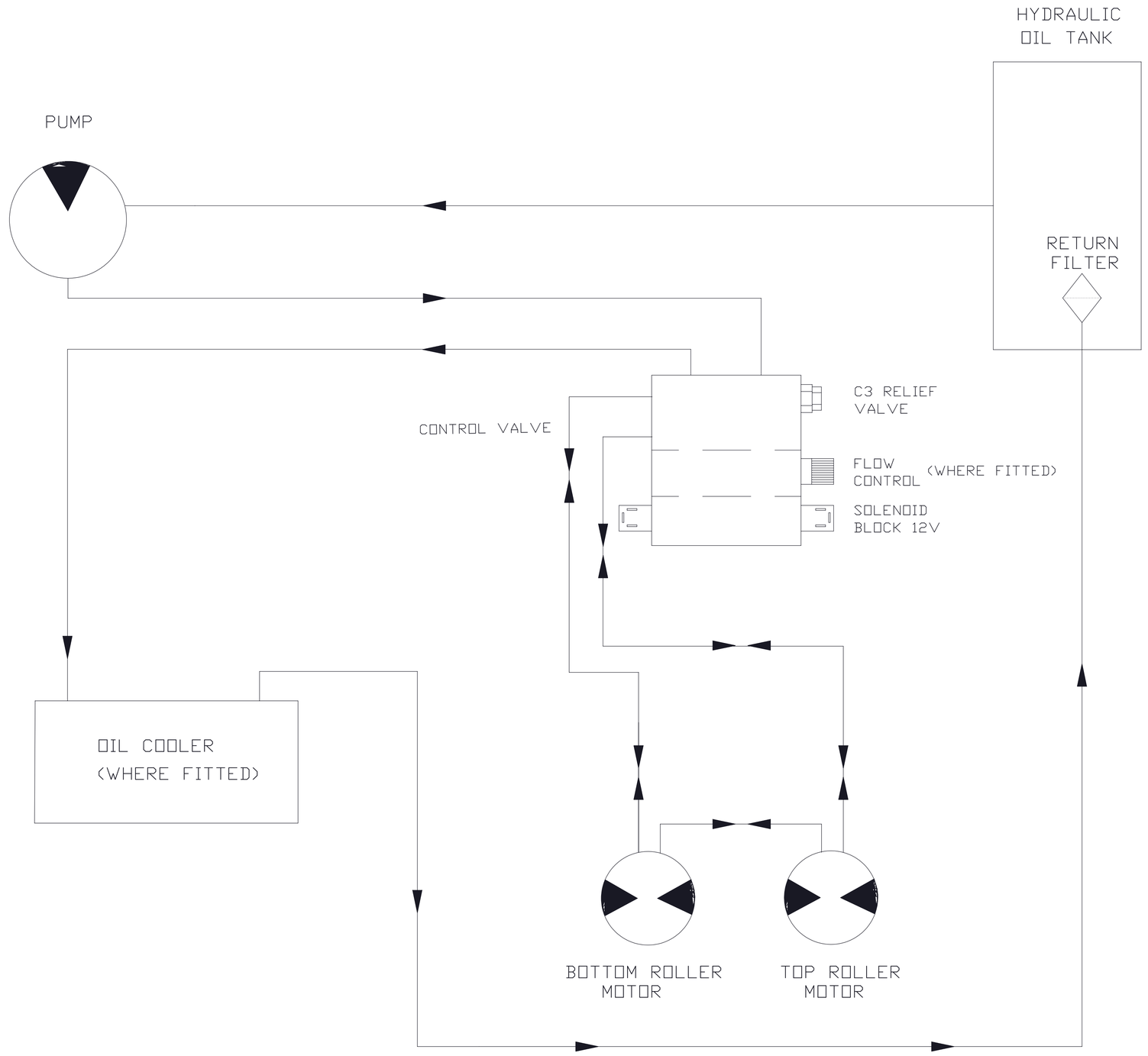
TOLERANCE ON ALL OPEN DIMENSIONS		Designed by	Checked by	Approved	Filename	Date	Scale
		BGG	xxx	BGG	xxx	16/2/10	1/1
MACHINED PARTS	+/- 0.25mm	GreenMech LTD The Mill Industrial Park, Kings Coughton Alcester,Warks B49 5QG Phone 01789 400044		TITLE QC160 ELECTRICAL			
FABRICATED PARTS	+/- 1.0mm			PART NO		Issue A	Sheet 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



2

REV	MODIFICATION	DRAWN	APPRD	DATE

	NAME	SIGNATURE	DATE
DRAWN	BGG		2/12/10
CHK'D			
APPV'D	BGG		

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH: xxxxxxxxxx

DEBUR AND BREAK SHARP EDGES

TOLERANCES
MACHINED PARTS +/- 0.025mm
FABRICATED PARTS +/- 1.0mm

GreenMech Ltd
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG Tel 01789 400044

MATERIAL:

TITLE: QC160 HYDRAULIC CIRCUIT

WEIGHT:

DWG NO.

A1

SCALE:1:1

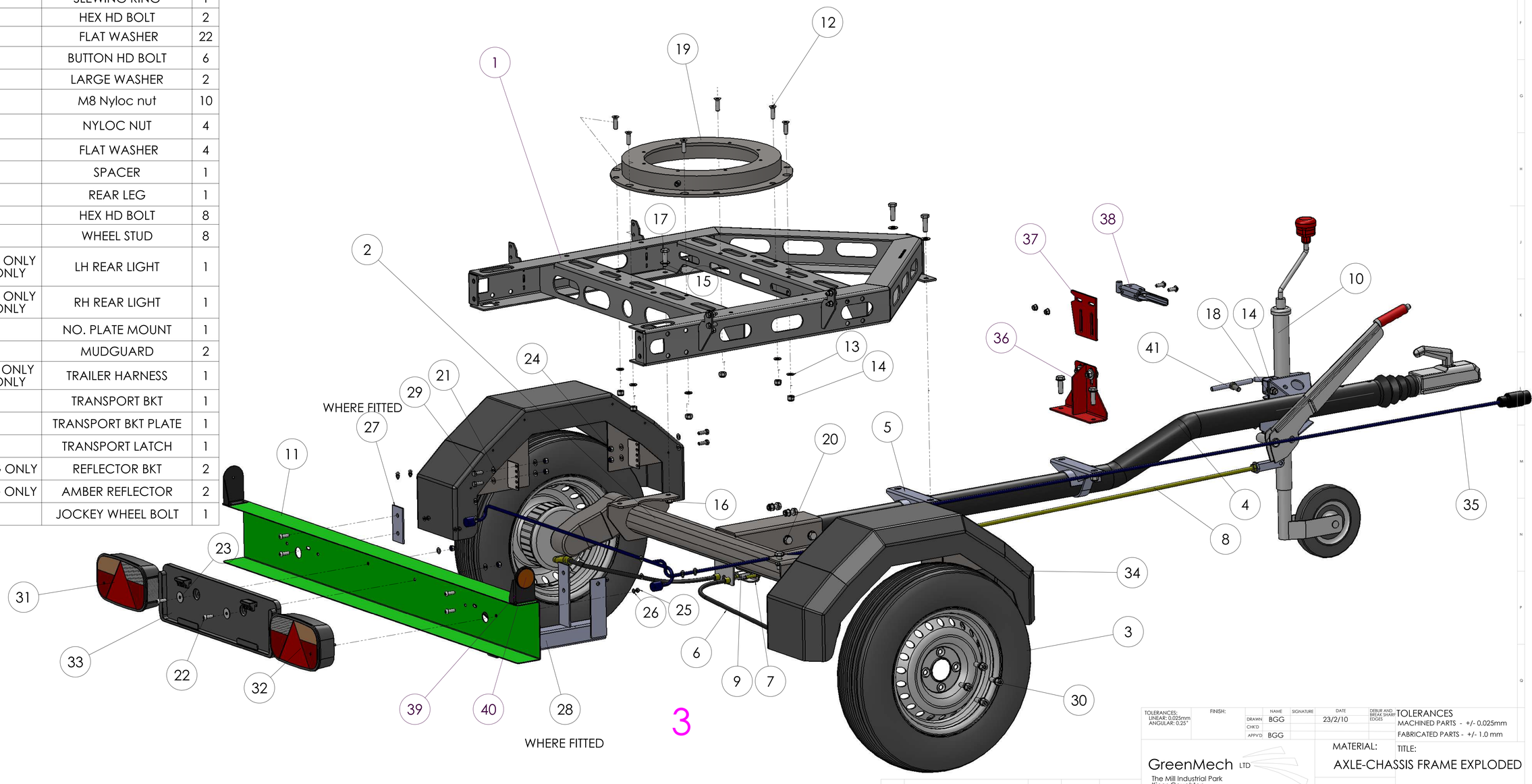
SHEET 1 OF 1

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-

ITEM NO.	PART NUMBER	DESCRIPTION	QUTY.
1	QC160-1-1	QUAD-CHIP TRAILER FRAME	1
2	QC160-1-1016	ALKO AXLE	1
3	QC160-1-1023	WHEEL AND TYRE	2
4	QC160-1-1001L	ALKO T-POLE	1
5	QC160-1-1020	T-POLE CLAMP	1
6	QC160-1-1021	BRAKE CABLE	1
7	QC160-1-1018	COMPENSATOR	1
8	QC160-1-1017L	HAND BRAKE ROD	1
9	QC160-1-1019	COMPENSATOR NUT	1
10	QC160-1-1022	JOCKEY WHEEL	1
11	QC160-1-10	LIGHTBOARD	1
12	81035	C/SUNK HD BOLT	6
13	91002	M10 B WASHER	14
14	91001	NYLOC NUT	10
15	91202	FLAT WASHER	14
16	91201	M12 NYLOC	10
17	91240	HEX HD BOLT	6
18	91030	HEX HD BOLT	4
19	QC160-1-1002N	SLEWING RING	1
20	912120	HEX HD BOLT	2
21	90802	FLAT WASHER	22
22	60825	BUTTON HD BOLT	6
23	90802-R	LARGE WASHER	2
24	90801-Nyloc	M8 Nyloc nut	10
25	90601-Nyloc	NYLOC NUT	4
26	90602	FLAT WASHER	4
27	QC160-1-62	SPACER	1
28	QC160-1-67	REAR LEG	1
29	90825	HEX HD BOLT	8
30	QC160-1-1024	WHEEL STUD	8
31	GM-1002-TLA 13 PIN PLUG ONLY EC1928462 7 PIN PLUG ONLY	LH REAR LIGHT	1
32	GM-1001-TLA 13 PIN PLUG ONLY EC1928463 7 PIN PLUG ONLY	RH REAR LIGHT	1
33	EC1928464	NO. PLATE MOUNT	1
34	EC150019	MUDGUARD	2
35	GM-1003-TLL 13 PIN PLUG ONLY EC1928465 7 PIN PLUG ONLY	TRAILER HARNESS	1
36	QC160-4-23MK2	TRANSPORT BKT	1
37	QC160-4-35MK2	TRANSPORT BKT PLATE	1
38	QC160-4-1010	TRANSPORT LATCH	1
39	QC160-1-96-3 13 PIN PLUG ONLY	REFLECTOR BKT	2
40	GM-1001-RYR 13 PIN PLUG ONLY	AMBER REFLECTOR	2
41	QC160-1-71	JOCKEY WHEEL BOLT	1



3

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

	NAME	SIGNATURE	DATE	DEBUR AND BREAK SHARP EDGES
DRAWN	BGG		23/2/10	
CHK'D				
APPV'D	BGG			

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

TITLE:
AXLE-CHASSIS FRAME EXPLODED

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

WEIGHT:

DWG NO. A0

SCALE:1:20 SHEET 1 OF 1

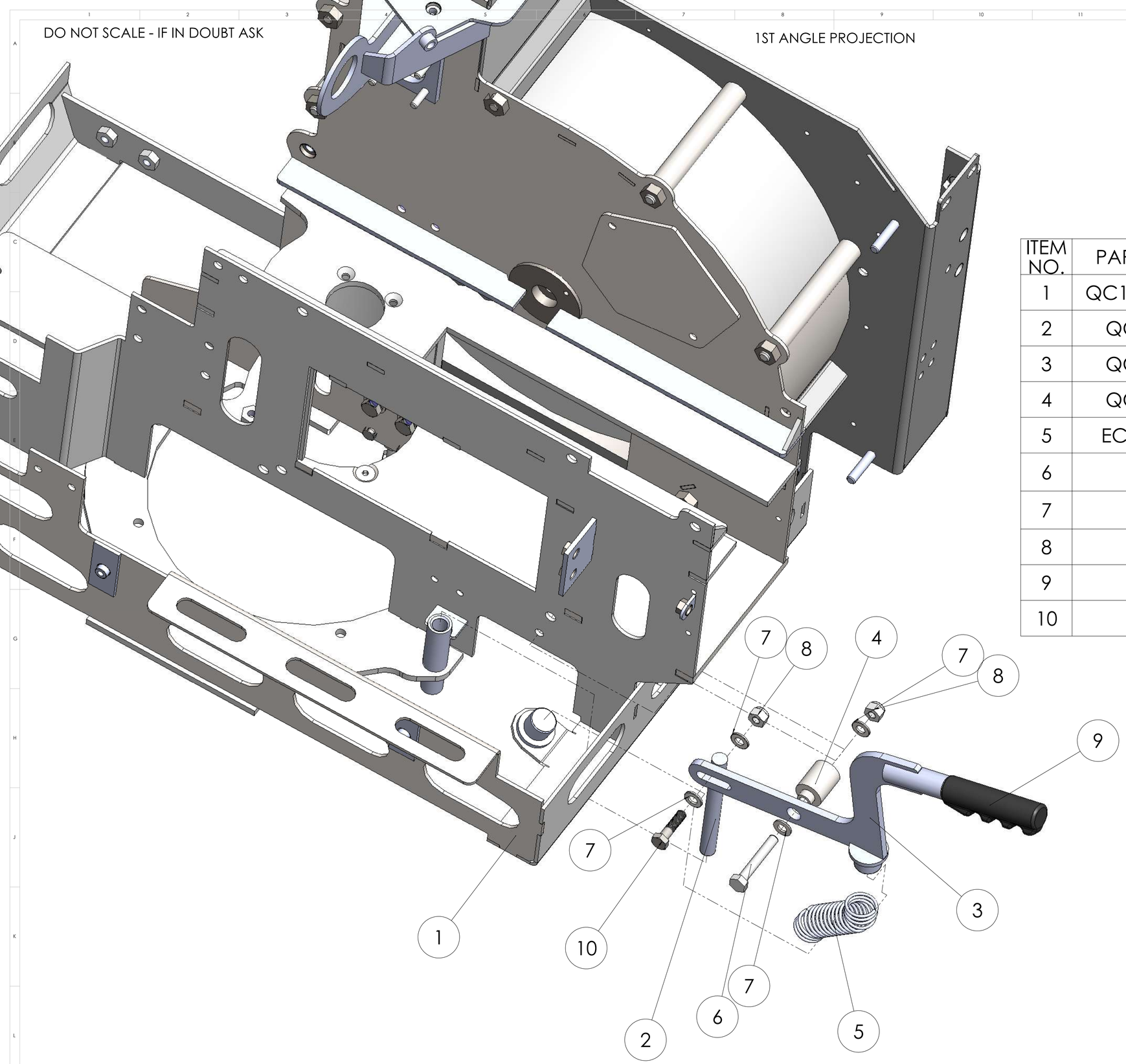
REV	MODIFICATION	DRN	APPRD	DATE

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-1-11MK2	TURNTABLE WELD ASSY	1
2	QC160-1-44	INDEX PIN	1
3	QC160-1-46	INDEXING LEVER	1
4	QC160-1-43	INDEX ARM PIVOT	1
5	EC1928116-2	TURNTABLE LEVER SPRING	1
6	91065	M10 X 60 BOLT	1
7	91002	M10 B WASHER	4
8	91001	NYLOC NUT	2
9	9227	PLASTIC HANDLE GRIP	1
10	91040	M10 x 40BOLT	1

4

REV	MODIFICATION	DRAWN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH: xxxxxxxxxx

	NAME	SIGNATURE	DATE
DRAWN	BGG		12/8/10
CHK'D			
APPV'D	BGG		

DEBUR AND BREAK SHARP EDGES

TOLERANCES
MACHINED PARTS +/- 0.025mm
FABRICATED PARTS +/- 1.0mm

GreenMech Ltd
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG Tel 01789 400044

MATERIAL:

TITLE:
INDEXING LEVER EXPLODE

WEIGHT:

DWG NO.

A1

SCALE:1:5

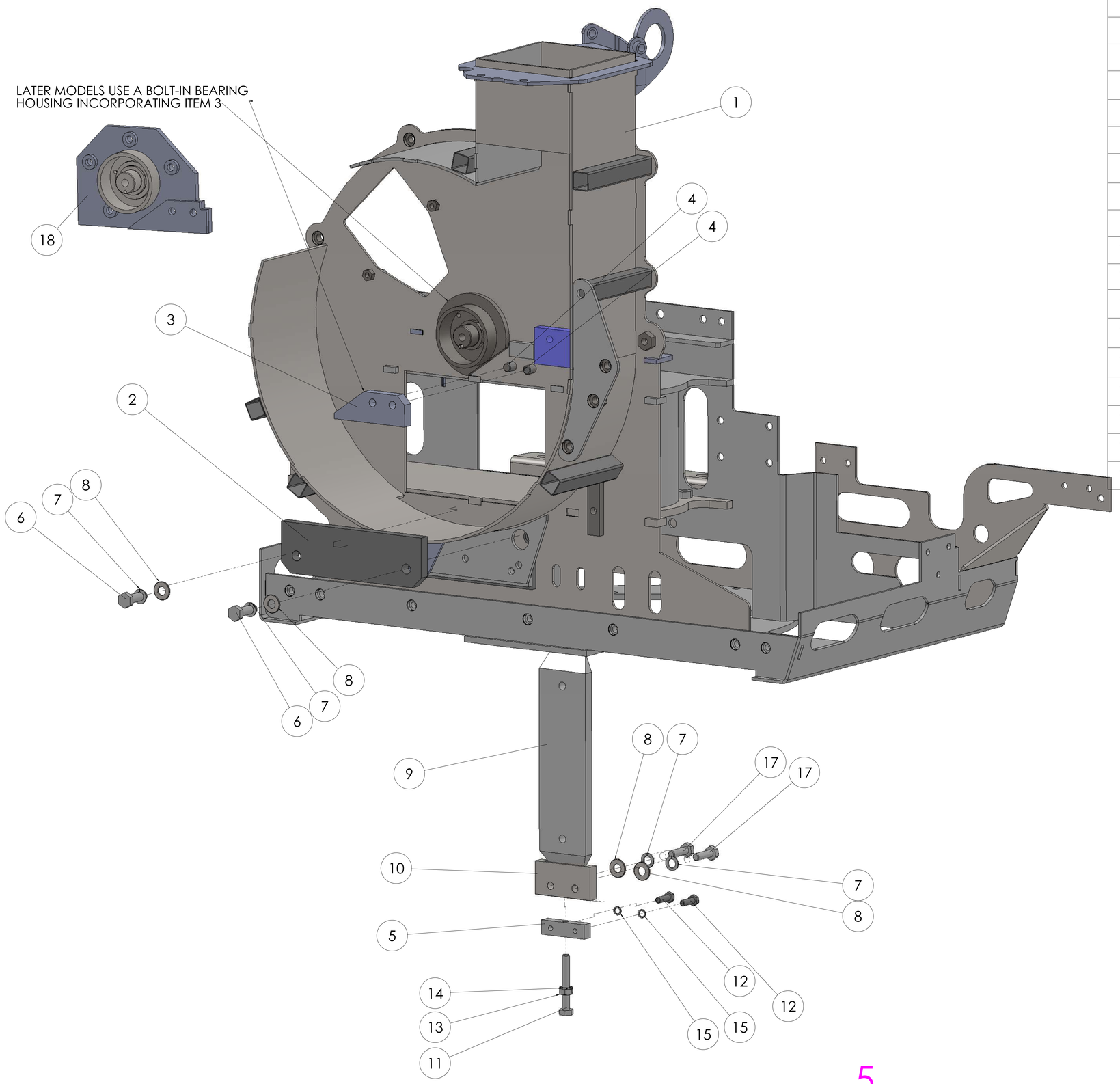
SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-1-11MK2	CHIPPER CHAMBER/ROLLERBOX	1
2	EC130-2-27	HORIZONTAL SHEARBAR	1
3	QC160-2-41	TOP SHEARBAR SEGMENT	1
4	91220	HEX HEAD BOLT	2
5	CM170-2-37	SHEARBAR LOCK	1
6	91240	HEX HD BOLT	2
7	91203	SPRING WASHER	4
8	91202	FLAT WASHER	4
9	EC35-2-43	VERTICAL SHEARBAR	1
10	CM170-2-32	SHEARBAR CLAMP	1
11	91075	HEX HEAD BOLT	1
12	90825	HEX HD BOLT	2
13	91001=P	PLAIN NUT	1
14	91004	SHAKEPROOF WASHER	1
15	90804	HEX HEAD BOLT	2
16	91204S	STARLOCK WASHER	2
17	91035	M10 x 35mm	2
18	QC160-2-8MK3	BEARING HOUSING	1

5

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		26/4/10
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

TITLE:
SHEARBARS EXPLODED

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

WEIGHT:

DWG NO. A0

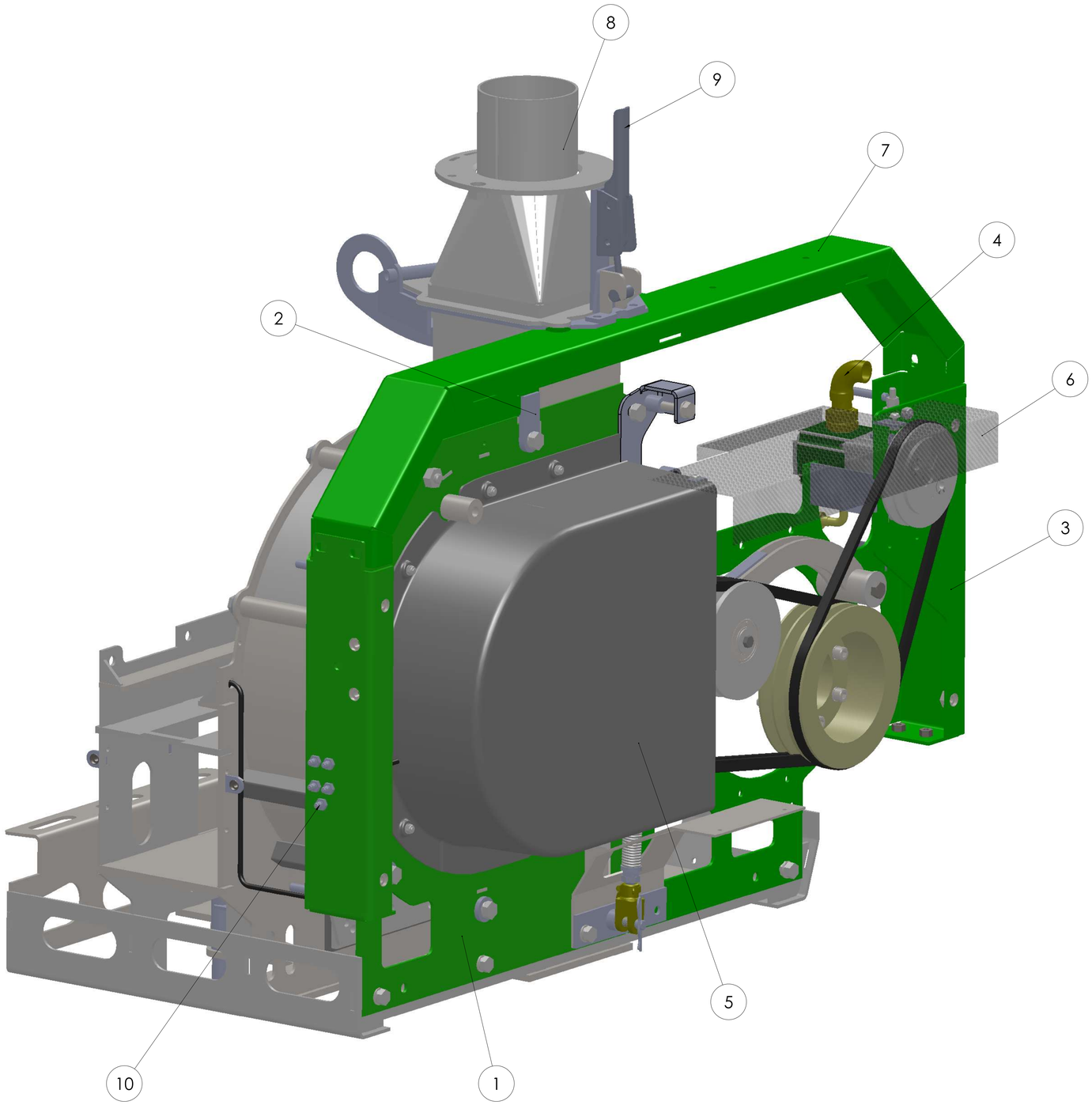
SCALE:1:10 SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-2-18	C/CFRONT PLATE FAB	1
2	QC160-2-61	CLAMP PLATE	1
3	QC160-6-1	EMGINE PLATE WELD ASSY	1
4	QC160-6-9001	HYDRAULIC PUMP ASSY	1
5	QC160-1-1010	PLASTIC FAN COWL	1
6	QC160-6-92	DRIVE GUARD	1
7	QC160-1-37	UPPER HOOP WELD ASSY	1
8	QC160-2-26	SQUARE TO ROUND FAB	1
9	QC160-4-1010	TRANSPORT LATCH	1
10	EC151037	REMOTE GREASE NIPPLE	5

6

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		16/4/12
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

MATERIAL:

WEIGHT:

TITLE:

CHIPPER CHAMBER

DWG NO.

A0

SCALE:1:5

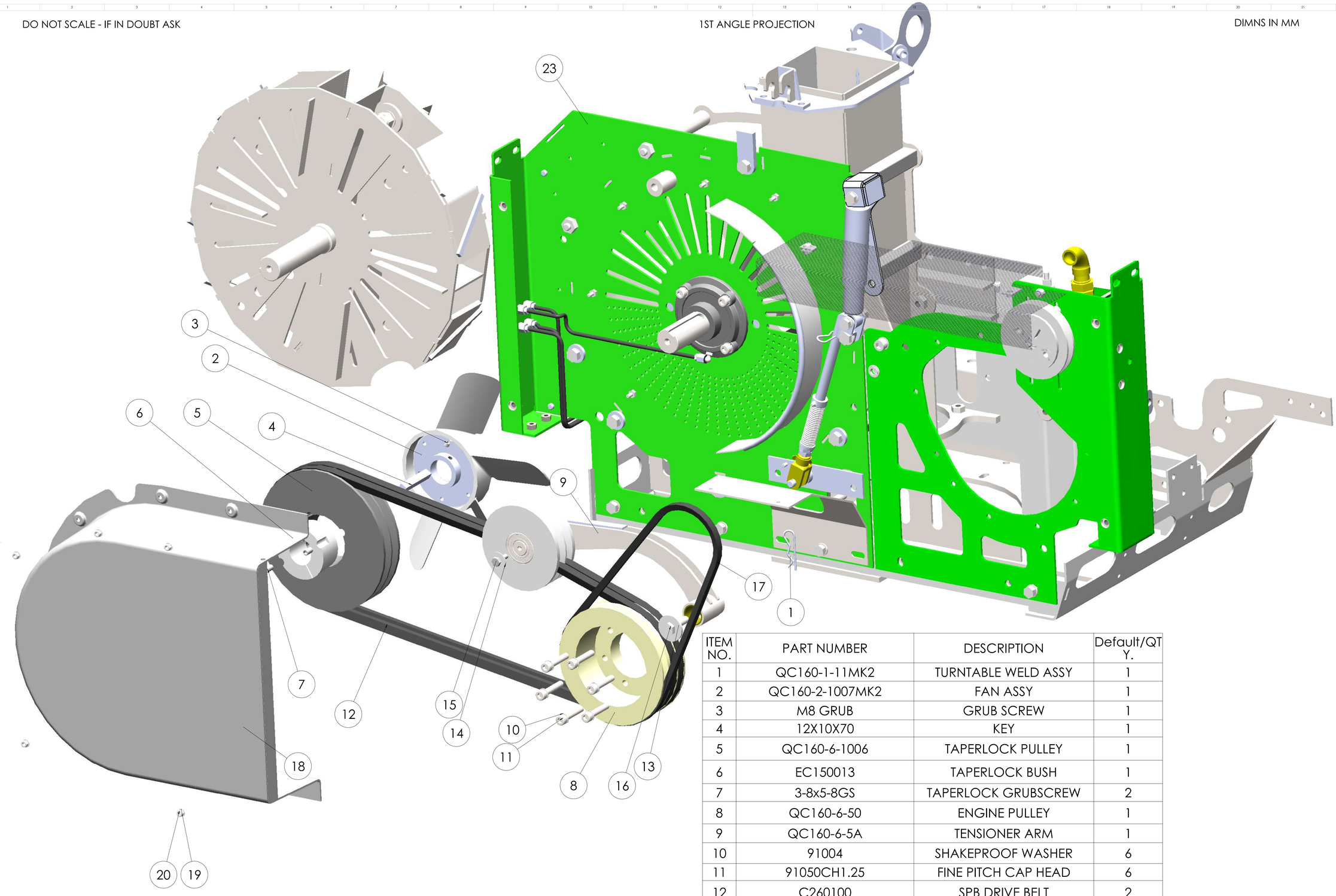
SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	Default/QTY.
1	QC160-1-11MK2	TURNTABLE WELD ASSY	1
2	QC160-2-1007MK2	FAN ASSY	1
3	M8 GRUB	GRUB SCREW	1
4	12X10X70	KEY	1
5	QC160-6-1006	TAPERLOCK PULLEY	1
6	EC150013	TAPERLOCK BUSH	1
7	3-8x5-8GS	TAPERLOCK GRUBSCREW	2
8	QC160-6-50	ENGINE PULLEY	1
9	QC160-6-5A	TENSIONER ARM	1
10	91004	SHAKEPROOF WASHER	6
11	91050CH1.25	FINE PITCH CAP HEAD	6
12	C260100	SPB DRIVE BELT	2
13	91202-R	M12 LARGE WASHER	1
14	90802-R	LARGE WASHER	1
15	90825	M8 HEX HD BOLT	1
16	91245	M12 HEX HD BOLT	1
17	QC160-6-1008	SPA DRIVE BELT	1
18	QC160-1-1010	PLASTIC FAN COWL	1
19	90602	M6 FLAT WASHER	6
20	90601	M6 NYLOC	6
23	QC160-2-18	C/CFRONT PLATE FAB	1

REV MODIFICATION DRN APPRD DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH:

	NAME	SIGNATURE	DATE	DEBUR AND BREAK SHARP EDGES
DRAWN	BGG		14/12/10	
CHK'D				
APPV'D	BGG			

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

TITLE:
DRIVE GEAR EXPLODED

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

WEIGHT:

DWG NO. A0

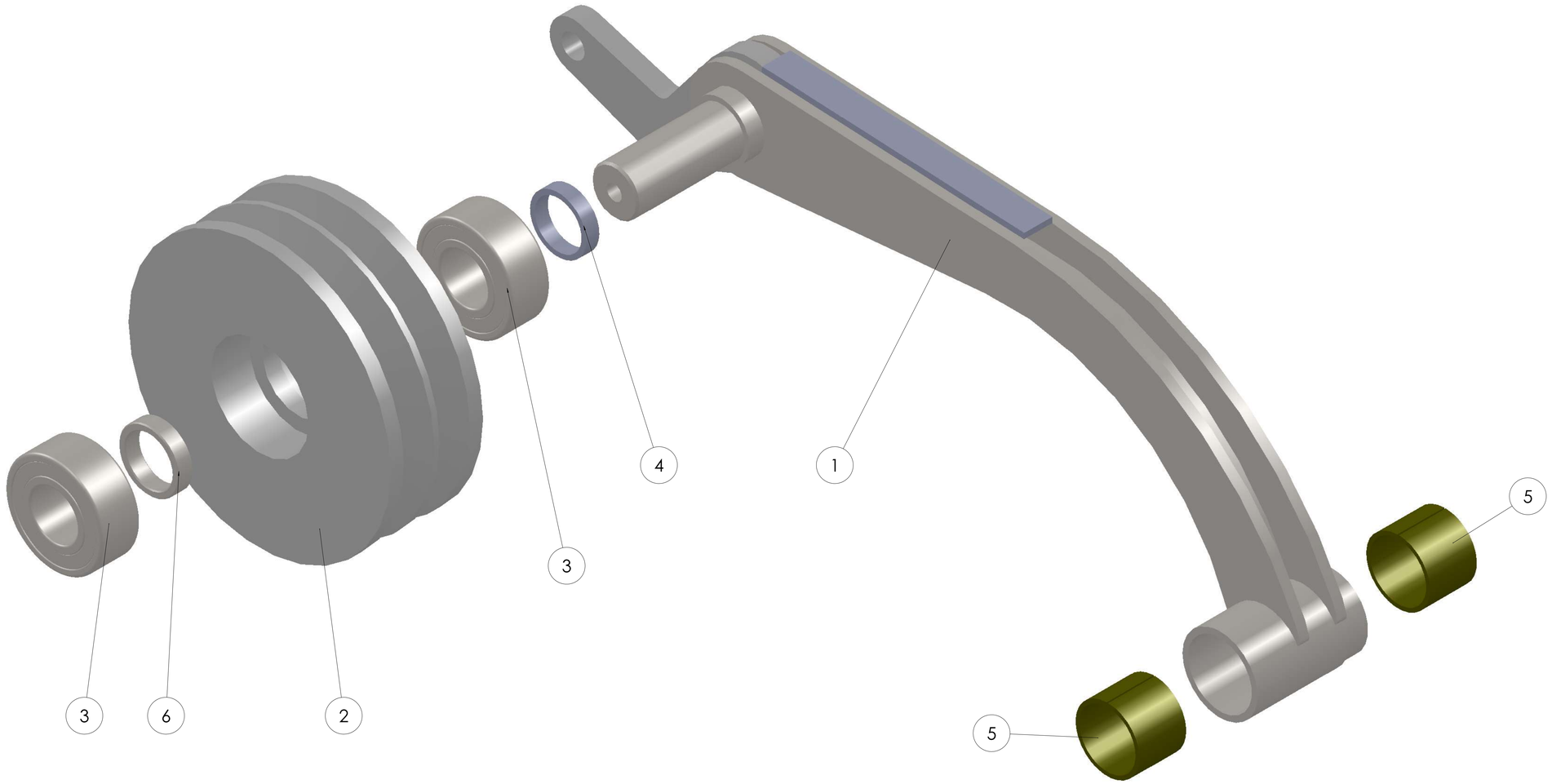
SCALE:1:10 SHEET 1 OF 4

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-6-5A	TENSIONER ARM-COMPLETE WITH ITEM 5	1
2	QC160-6-1021A	IDLER PULLEY-COMPLETE WITH ITEMS 3/4/6	1
3	C252121	3205ZZ BEARING	2
4	QC160-6-90	PULLEY SPACER	1
5	QC160-6-1024	BRONZE BUSH	2
6	QC160-6-94	SPACER	1

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

	NAME	SIGNATURE	DATE	DEBUR AND BREAK SHARP EDGES
DRAWN	BGG		14/12/10	
CHK'D				
APPV'D	BGG			

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

MATERIAL:

WEIGHT:

TITLE:
TENSIONER ARM EXPLODED

DWG NO.

A0

SCALE:1:2

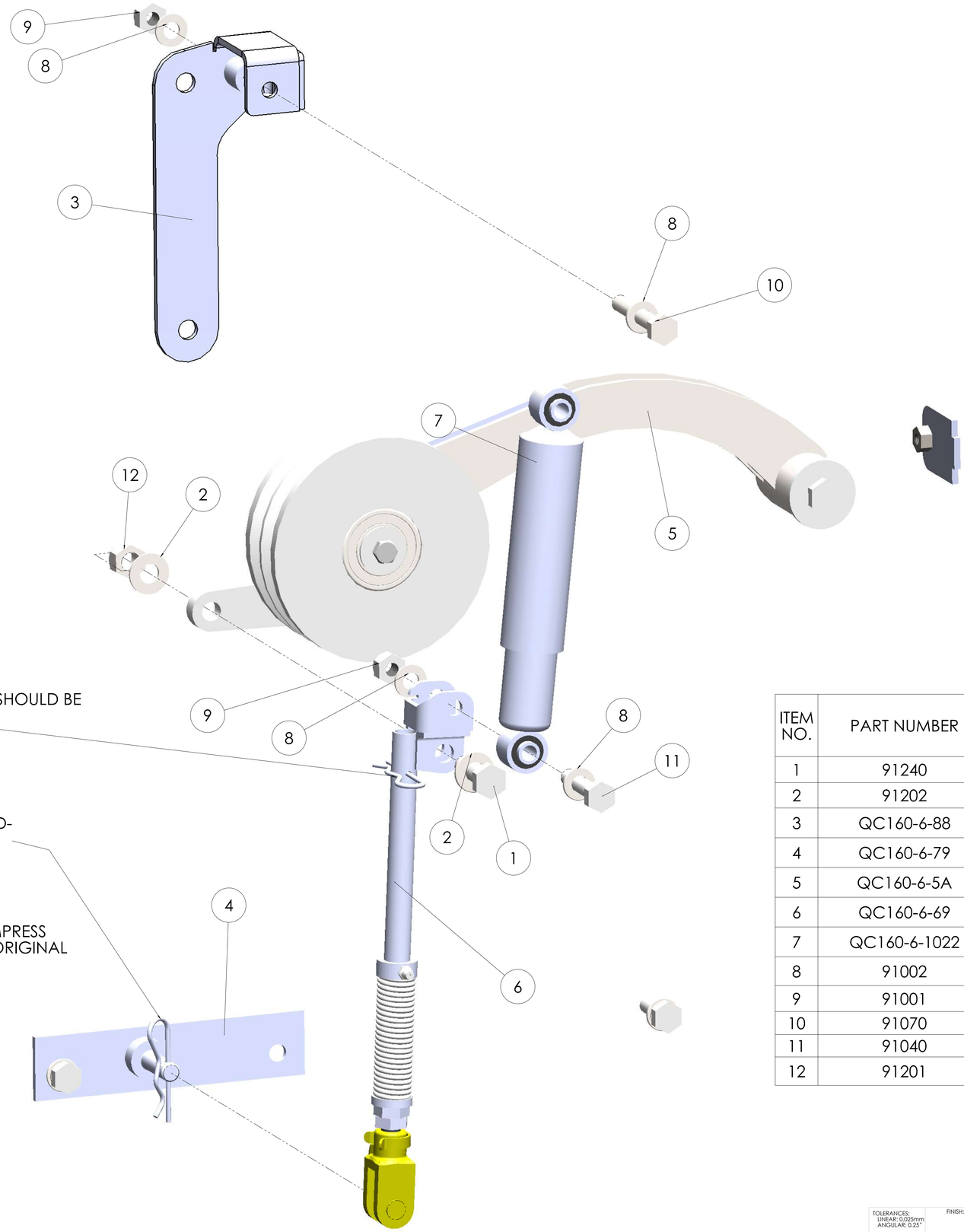
SHEET 2 OF 4

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



WHEN FITTING TENSIONER -R CLIP SHOULD BE FITTED AS SHOWN

WHEN TENSIONER HAS BEEN FITTED- PULL OUT R CLIP AND FIT HERE

WHEN DETENSIONING BELTS-COMPRESS TENSIONER AND REFIT R CLIP TO ORIGINAL POSITION

ITEM NO.	PART NUMBER	DESCRIPTION	FLYWHEEL EXPLODED/QTY.
1	91240	HEX HD BOLT	1
2	91202	FLAT WASHER	2
3	QC160-6-88	DAMPER TOP MOUNT	1
4	QC160-6-79	TENSIONER MOUNT	1
5	QC160-6-5A	TENSIONER ARM	1
6	QC160-6-69	TENSIONER COMPRESSED	1
7	QC160-6-1022	DAMPER	1
8	91002	M10 B WASHER	4
9	91001	M10 NYLOC NUT	2
10	91070	HEX HD BOLT	1
11	91040	M10 BOLT	1
12	91201	M12 NYLOC	1

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		14/12/10
CHK'D			
APPV'D	BGG		

TOLERANCES

MACHINED PARTS - +/- 0.025mm

FABRICATED PARTS - +/- 1.0 mm

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

MATERIAL:

WEIGHT:

TITLE:

TENSIONER SYSTEM EXPLODED

DWG NO. A0

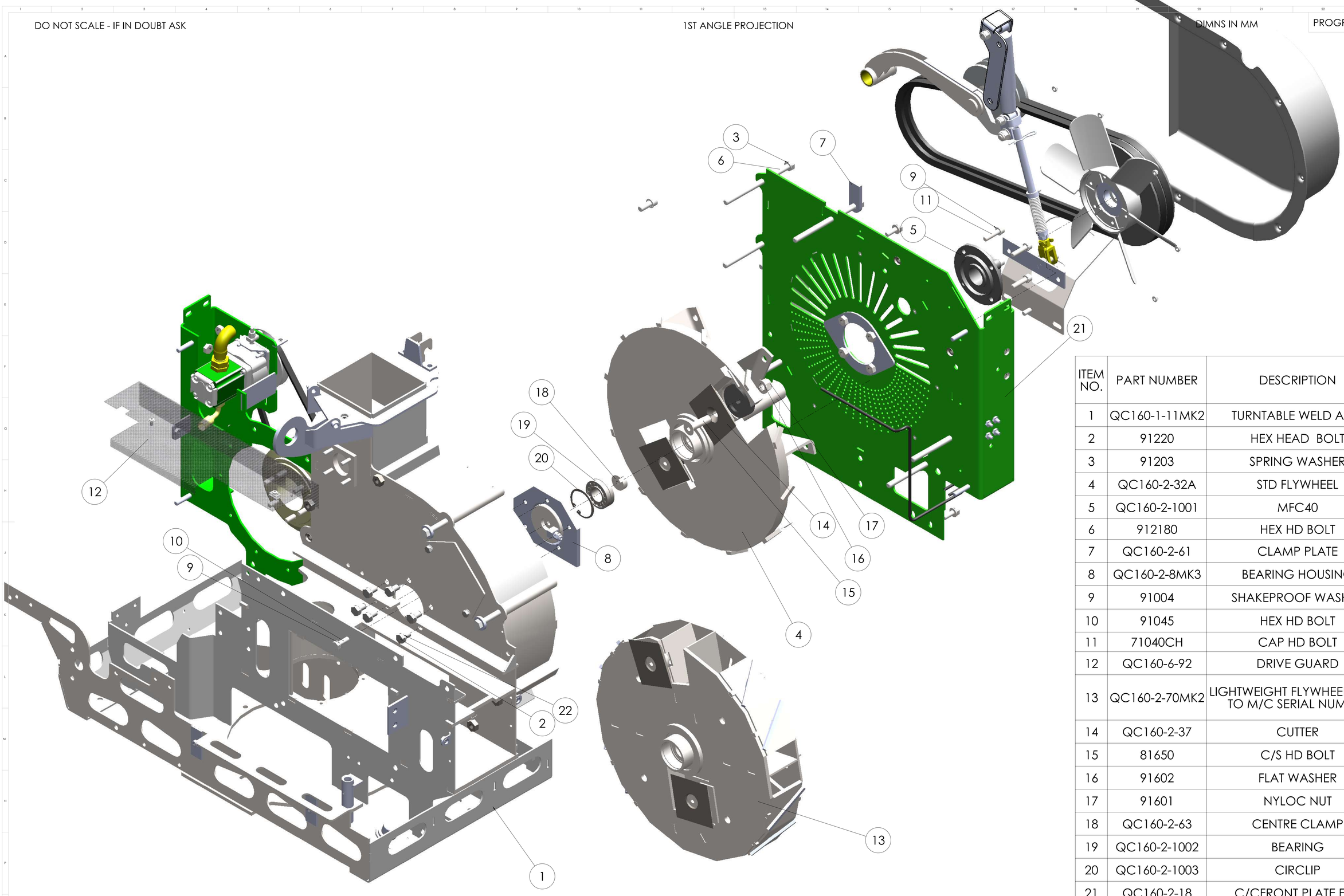
SCALE:1:5 SHEET 3 OF 4

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	FLYWHEEL EXPLODED/QTY.
1	QC160-1-11MK2	TURNTABLE WELD ASSY	1
2	91220	HEX HEAD BOLT	6
3	91203	SPRING WASHER	11
4	QC160-2-32A	STD FLYWHEEL	1
5	QC160-2-1001	MFC40	1
6	912180	HEX HD BOLT	8
7	QC160-2-61	CLAMP PLATE	1
8	QC160-2-8MK3	BEARING HOUSING	1
9	91004	SHAKEPROOF WASHER	11
10	91045	HEX HD BOLT	1
11	71040CH	CAP HD BOLT	4
12	QC160-6-92	DRIVE GUARD	1
13	QC160-2-70MK2	LIGHTWEIGHT FLYWHEEL REFER TO M/C SERIAL NUMBER	1
14	QC160-2-37	CUTTER	2
15	81650	C/S HD BOLT	2
16	91602	FLAT WASHER	2
17	91601	NYLOC NUT	2
18	QC160-2-63	CENTRE CLAMP	1
19	QC160-2-1002	BEARING	1
20	QC160-2-1003	CIRCLIP	1
21	QC160-2-18	C/CFRONT PLATE FAB	1
22	91204S	STARLOCK WASHER	6

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		14/12/10
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

TITLE:
FLYWHEEL EXPLODED

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

WEIGHT:

DWG NO. A0

SCALE:1:10 SHEET 4 OF 4

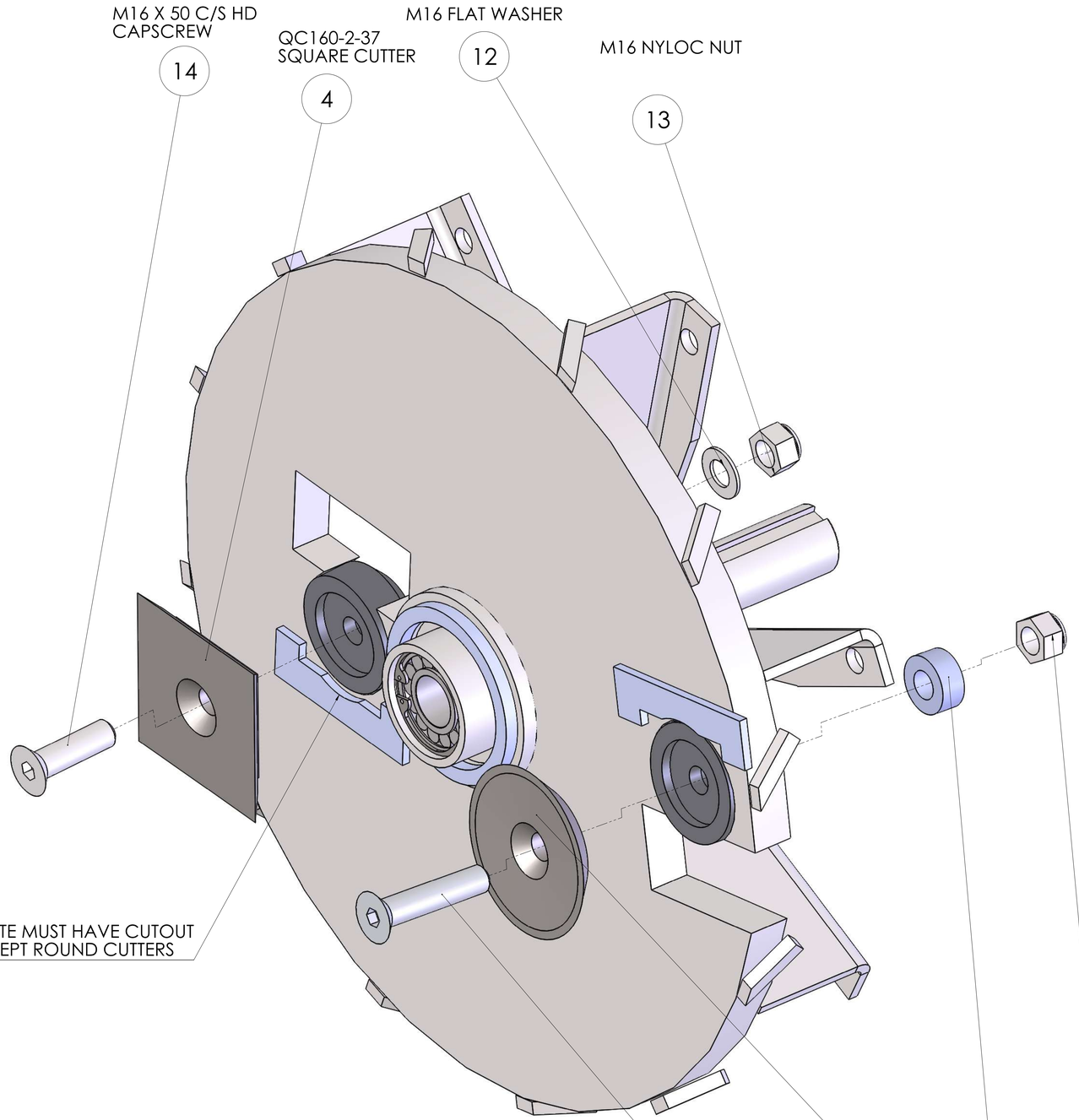
REV	MODIFICATION	DRN	APPRD	DATE

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



IMPORTANT

WHEN CONVERTING TO DISC BLADES FROM SQUARE BLADES, THE LONGER BOLT-ITEM 20 AND THE BALANCE WEIGHT-ITEM 21 MUST BE FITTED TO THE OUTER CUTTER AS SHOWN

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		XXXXXXXX
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

MATERIAL:

TITLE:
FLYWHEEL AND CUTTER TYPES

WEIGHT:

DWG NO.

A0

SCALE:1:5

SHEET 1 OF 2

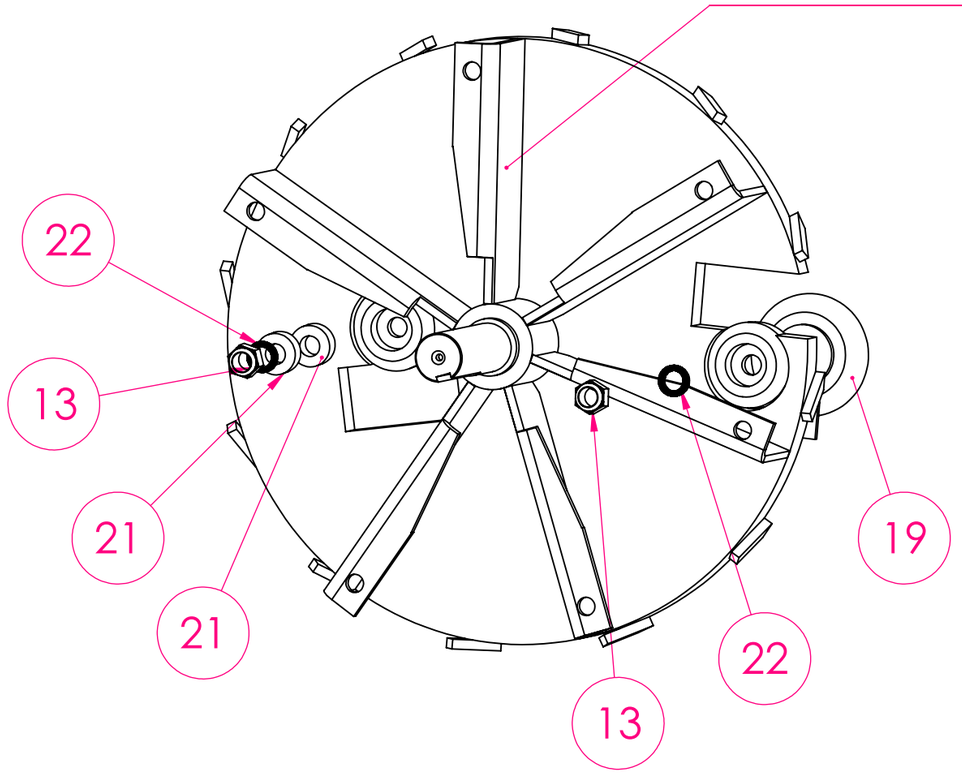
DO NOT SCALE - IF IN DOUBT ASK

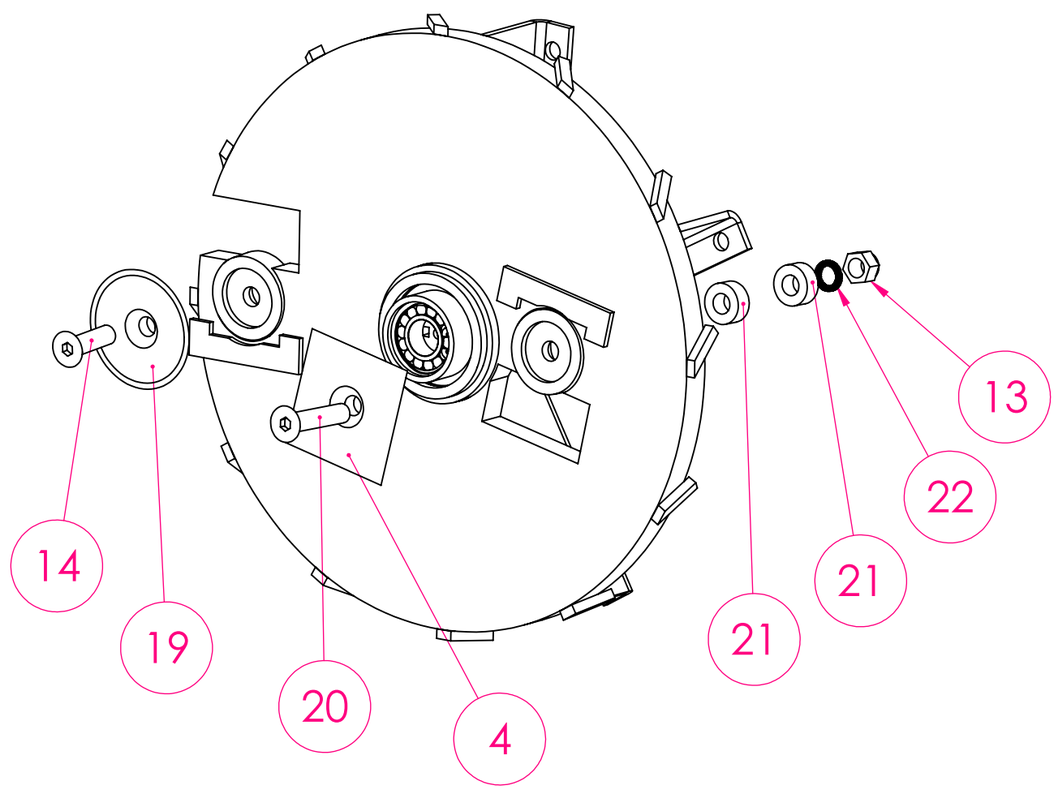
1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-

AS THIS CONFIGURATION
ON FLYWHEELS CODED: QR





ITEM No	PART NUMBER	DESCRIPTION	QTY
4	QC160-2-37	SQUARE CUTTER	2
13	91601H	NYLOC NUT (HALF)	2
14	81650	C/SK HD CAPSCREW	1
19	C202503	ROUND CUTTER	2
20	81680	C/SK HD CAPSCREW	1
21	QC160-2-92	BALANCE WEIGHT	2
22	91607	NORLOCK WASHER	2

IMPORTANT
WHEN USING SQUARE CUTTERS
2 BALANCE WEIGHTS ARE REQD ON INSIDE CUTTER
TORQUE TO 200Nm

12

REV	MODIFICATION	DRN	APPD	DATE

TOLERANCES:
LINEAR: 0.025MM
ANGULAR: 0.25°

FINISH:

	NAME	QUANTITY	DATE
DRAWN	RVMR		22/05/2013
CHK'D			
APPV'D	BGG		

DEBUR AND BREAK SHARP EDGES

TOLERANCES
MACHINED PARTS +/- 0.025mm
FABRICATED PARTS +/-1.0mm

GreenMech Ltd

The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG Tel 01789 400044

Material & Thickness

TITLE:
New cutter configuration

Weight:

DWG NO.
FLYWHEEL AND CUTTER TYPES

A3

SCALE:1:5

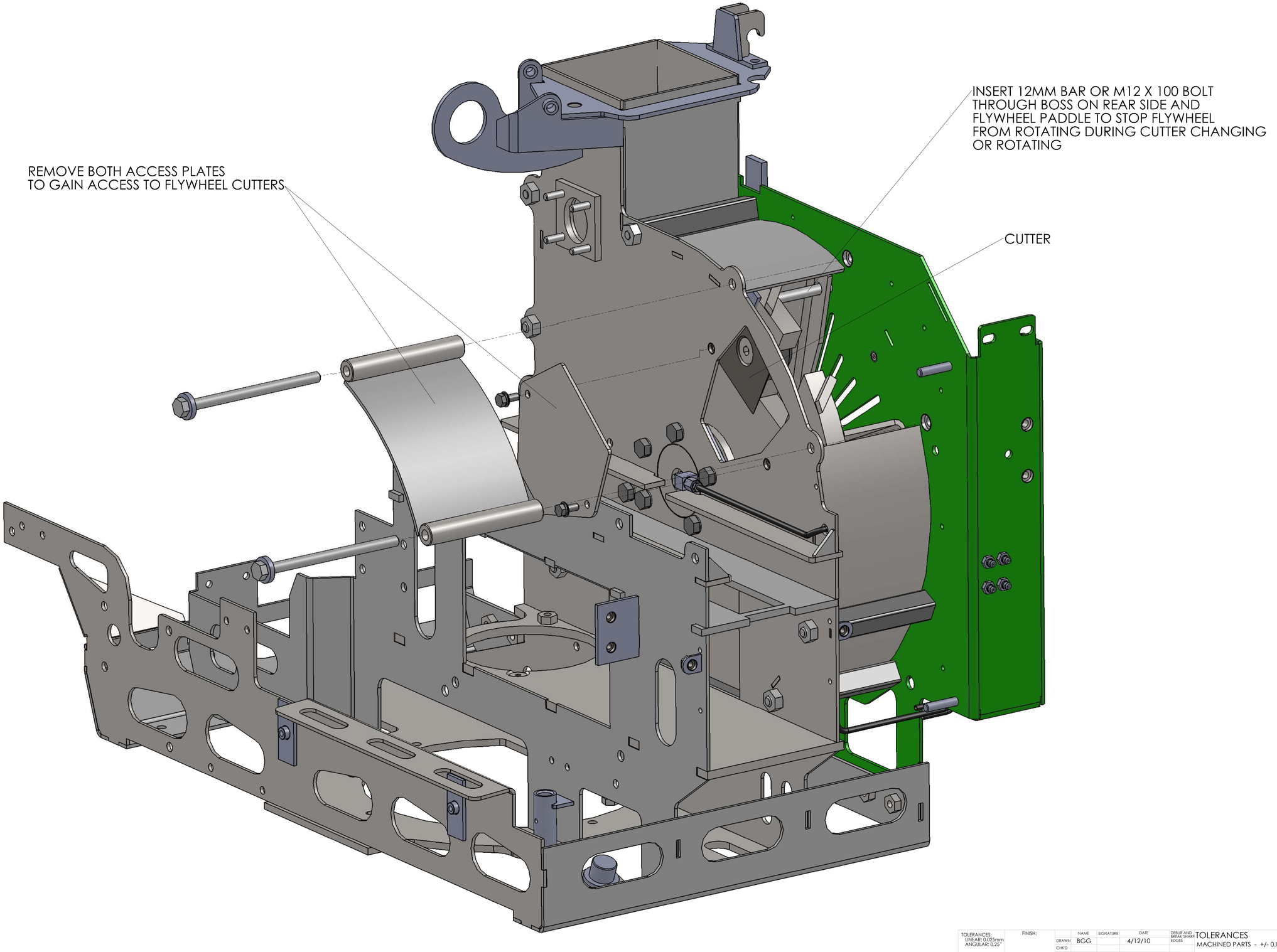
SHEET 2 OF 2

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



13

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		4/12/10
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

TITLE:
CUTTER CHANGING
EXPLODED

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

WEIGHT:

DWG NO. A0

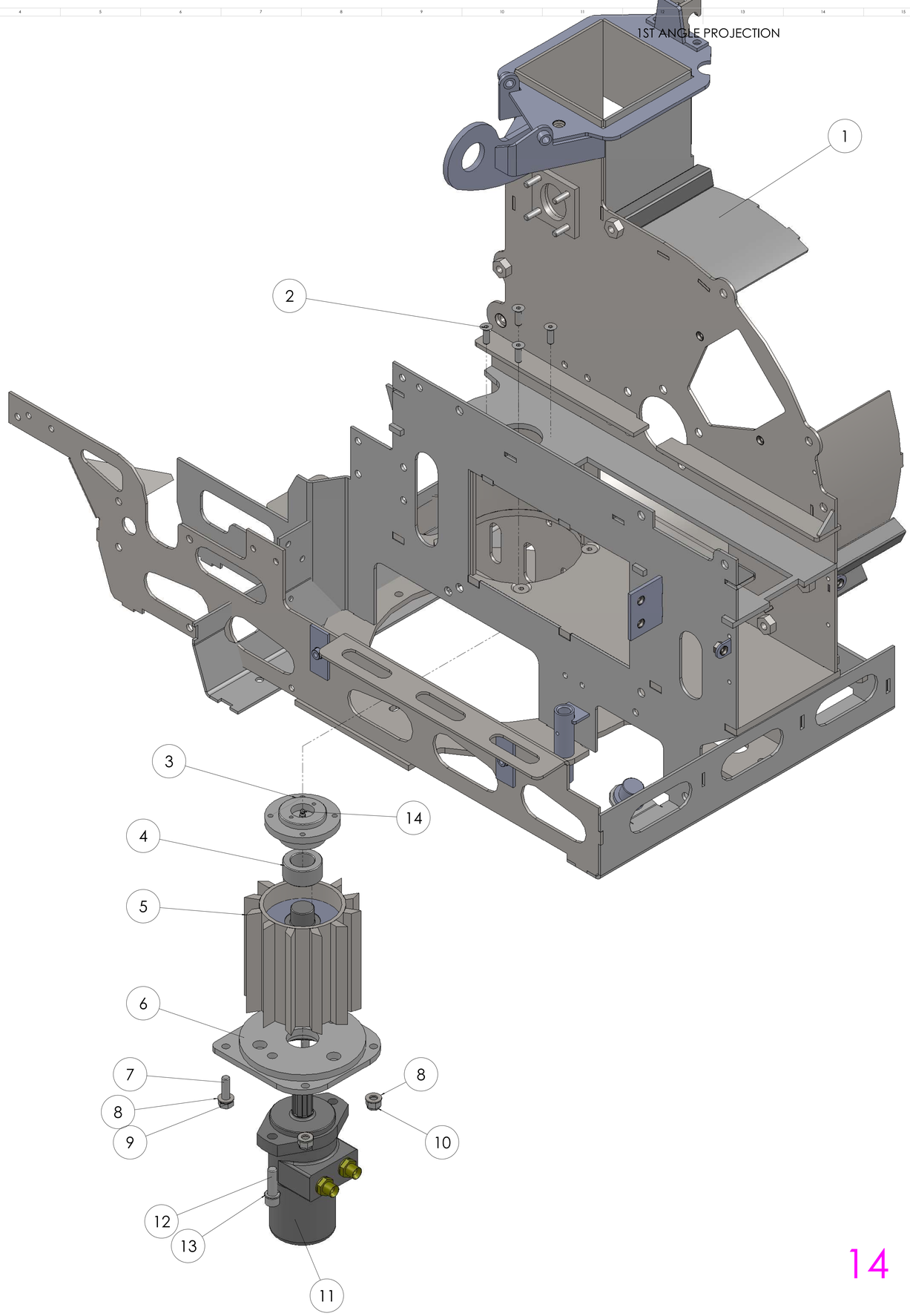
SCALE:1:5 SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-1-11MK2	TURNTABLE WELD ASSY	1
2	80825CS	M8 CS HD BOLT	4
3	QC160-3-40	BUSH HOUSING	1
4	QC160-3 41	NYLON BUSH	1
5	QC160-3-32	EARLY FIXED ROLLER	1
6	QC160-3-11	MOTOR PLATE	1
7	91035	HEX HD BOLT	2
8	91002	FLAT WASHER	4
9	91003	SPRING WASHER	2
10	91001	NYLOC NUT	2
11	C200207-1	HYD. MOTOR	1
12	71240	M12 CAP HD	2
13	91203	SPRING WASHER	2
14	GNS 500	GREASE NIPPLE	1

14

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		27/7/10
CHK'D			
APPV'D	BGG		

TOLERANCES

MACHINED PARTS - +/- 0.025mm

FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

WEIGHT:

TITLE:

EARLY TYPE FIXED ROLLER

DWG NO.

A0

SCALE:1:5

SHEET 1 OF 1

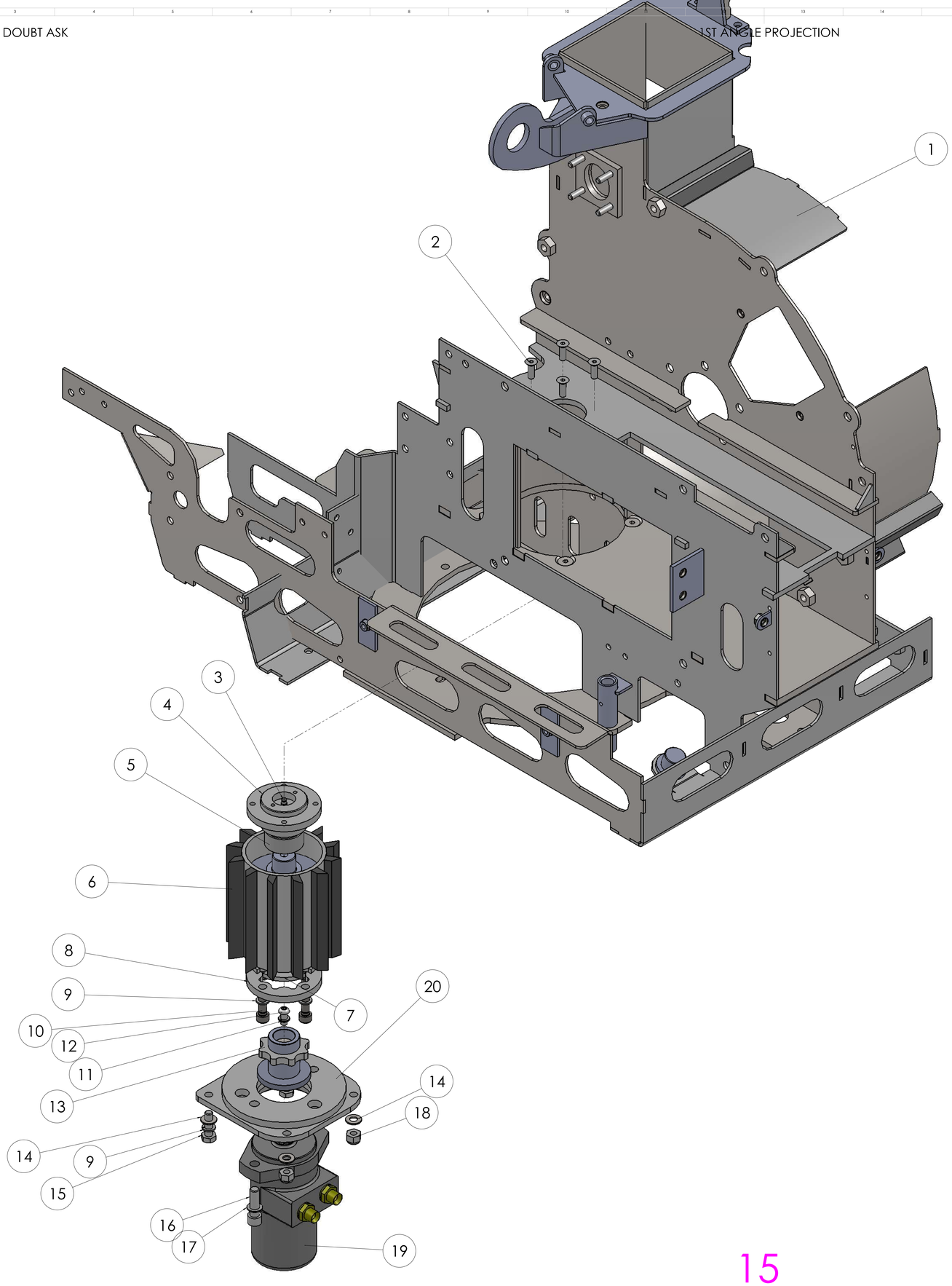
GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-1-11MK2	TURNTABLE WELD ASSY	1
2	80825	C/S HD CAPSCREW	4
3	GNS500	GREASE NIPPLE	1
4	QC160-3-40	BUSH HOUSING	1
5	QC160-3-41	NYLON BUSH	1
6	QC160-3-32MK2	LATER FIXED ROLLER	1
7	QC160-3-58	SPACER	1
8	QC160-3-60	DRIVE PLATE	1
9	91003	SPRING WASHER	6
10	71030	CAP HD BOLT	4
11	90803	SPRING WASHER	1
12	60820	BUTTON HD BOLT	1
13	QC160-3-57	DRIVE SPLINE	1
14	91002	FLAT WASHER	4
15	91035	HEX HD BOLT	2
16	71240	CAP HD BOLT	2
17	91203	SPRING WASHER	2
18	91001	NYLOC NUT	2
19	C200207-1	HYD MOTOR	1
20	QC160-3-11	MOTOR PLATE	1

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		28/7/10
CHK'D			
APPV'D	BGG		

MATERIAL:

WEIGHT:

TOLERANCES

MACHINED PARTS - +/- 0.025mm

FABRICATED PARTS - +/- 1.0 mm

TITLE:

LATER TYPE FIXED ROLLER

DWG NO.

A0

SCALE:1:10

SHEET 1 OF 1

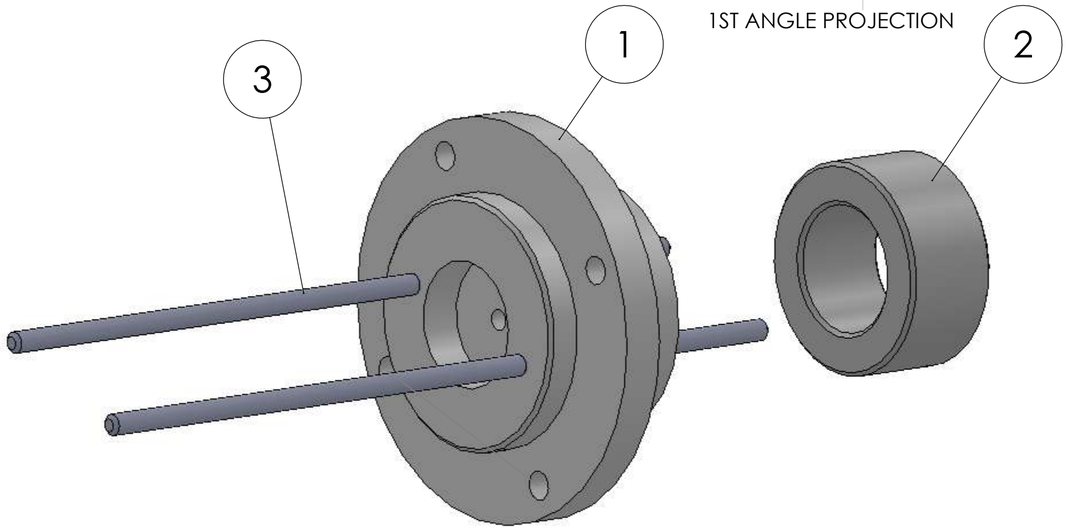
GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

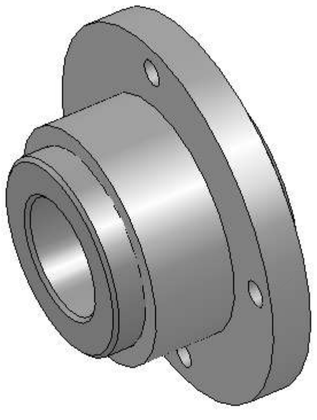
PROGRAM No:-



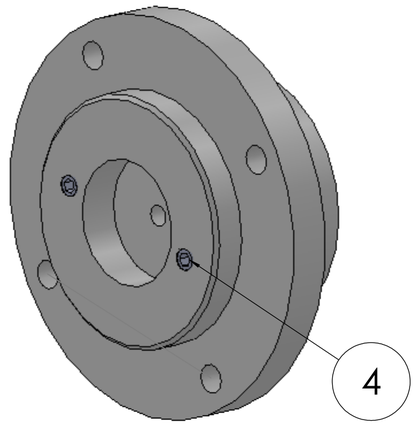
ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	QC160-3-40	BUSH HOUSING	1
2	QC160-3-41	BUSH	1
3	5MM ROD	LOCATING ROD	2
4	40620	GRUBSCREW	2

1-
USE 2 5MM RODS TO LOCATE BUSH INTO HOUSING

2-
PRESS BUSH 2/3RDS INTO HOUSING AND REAM 30MM
-REMOVE DEBRIS



3-
PRESS BUSH FULLY INTO HOUSING AND FIT GRUBSCREW
FLUSH WITH TOP OF HOUSING



NOTE:5MM RODS CAN BE USED TOREMOVE
BUSH FROM HOUSING

16

REV	MODIFICATION	DRAWN	APPRD	DATE

	NAME	SIGNATURE	DATE
DRAWN	BGG		17/8/10
CHK'D			
APPV'D	BGG		

TOLERANCES:
LINEAR: 0.025MM
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

TOLERANCES
MACHINED PARTS +/-0.025mm
FABRICATED PARTS +/-1.0mm

GreenMech Ltd

The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG Tel 01789 400044

MATERIAL:

TITLE:
FIXED ROLLER BUSH ASSY
LATER MODELS

WEIGHT:

DWG NO.

A2

SCALE:1:2

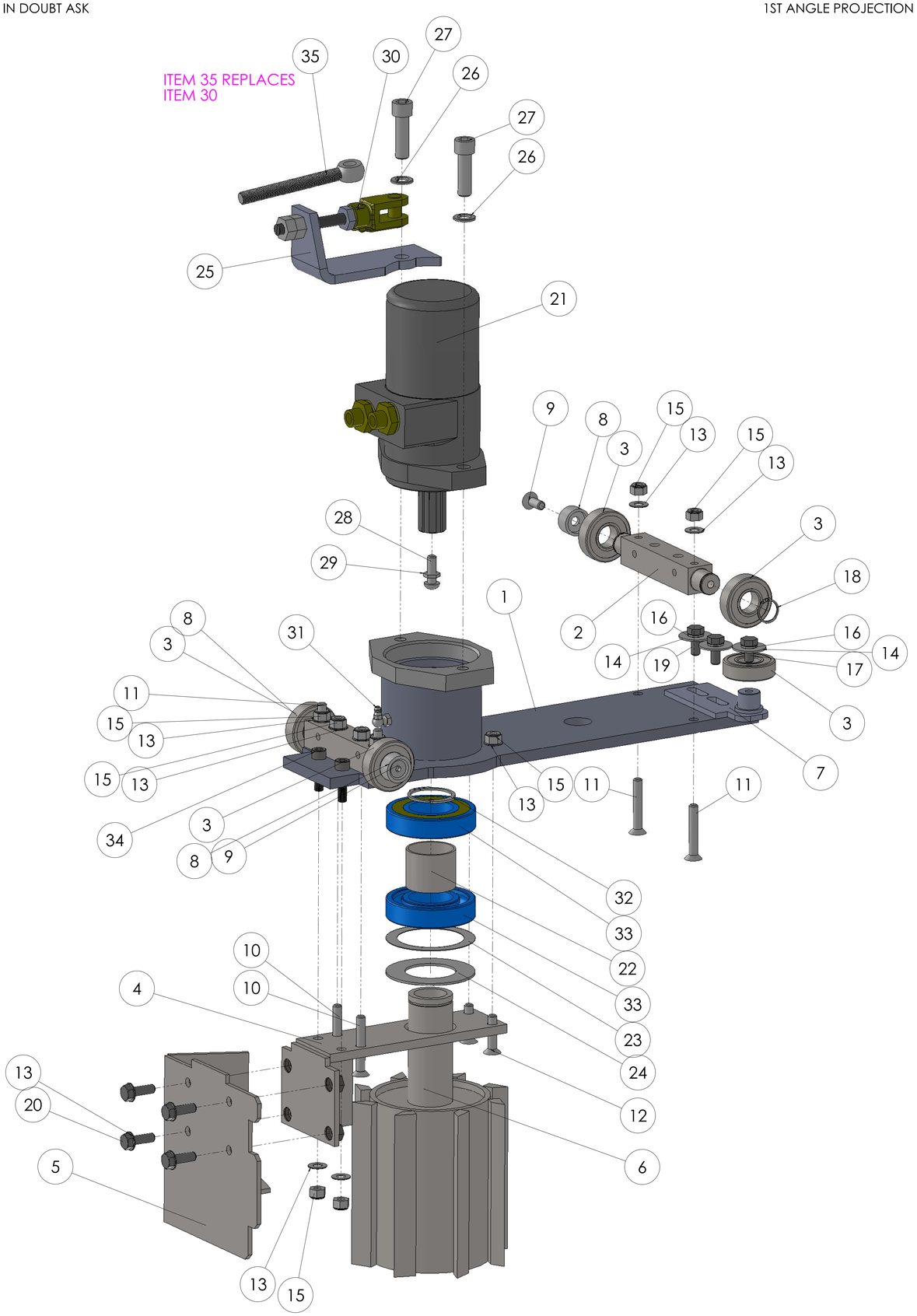
SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-3-15MK2	ROLLER SLIDE PLATE	1
2	QC160-3-19MK2	ROLLER AXLE	2
3	QC160-3-1002	BEARING (6204ZZ)	5
4	QC160-3-20MK2	GUIDE MTG PLATE	1
5	QC160-3-24	GUIDE FIXING PLATE	1
6	QC160-3-31	TOP ROLLER	1
7	QC160-3-44	GUIDE ROLLER BKT	1
8	QC160-3-43	NYLON ROLLER	3
9	80820	C/S HD BOLT	3
10	80855	C/S HD BOLT	2
11	80850	C/S HD BOLT	4
12	80835	C/S HD BOLT	2
13	90802	FLAT WASHER	14
14	90802-R	LARGE WASHER	3
15	90801	NYLOC NUT	10
16	90803	SPRING WASHER	3
17	90816	HEX HD BOLT	1
18	QC160-3-1003	20 EXT CIRCLIP	1
19	90820	HEX HD BOLT	2
20	90825	HEX HD BOLT	4
21	C200207-1	HYDRAULIC MOTOR	1
22	QC160-3-46	SPACER	1
23	EC130-3-36	SHIM	1
24	EC130-3-35	END PLATE	1
25	QC160-3-48	ANCHOR PLATE	1
26	91203	SPRING WASHER	2
27	71240	M12 CAP HD	2
28	60825	BUTTON HD BOLT	1
29	90801PT	M8 PLAIN THIN NUT	1
30	QC160-3-54	SPRING ADJUSTER	1
31	GNS690	GREASE NIPPLE	1
32	QC160-3-1004	40 EXT CIRCLIP	1
33	C252119	ROLLER BEARING 6208RS	2
34	70830	CH BOLT	2
35	QC160-1-1041	SWING BOLT	1

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		26/5/10
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

MATERIAL:

WEIGHT:

TITLE: SLIDING ROLLER EXPLODED

DWG NO.

A0

SCALE:1:5

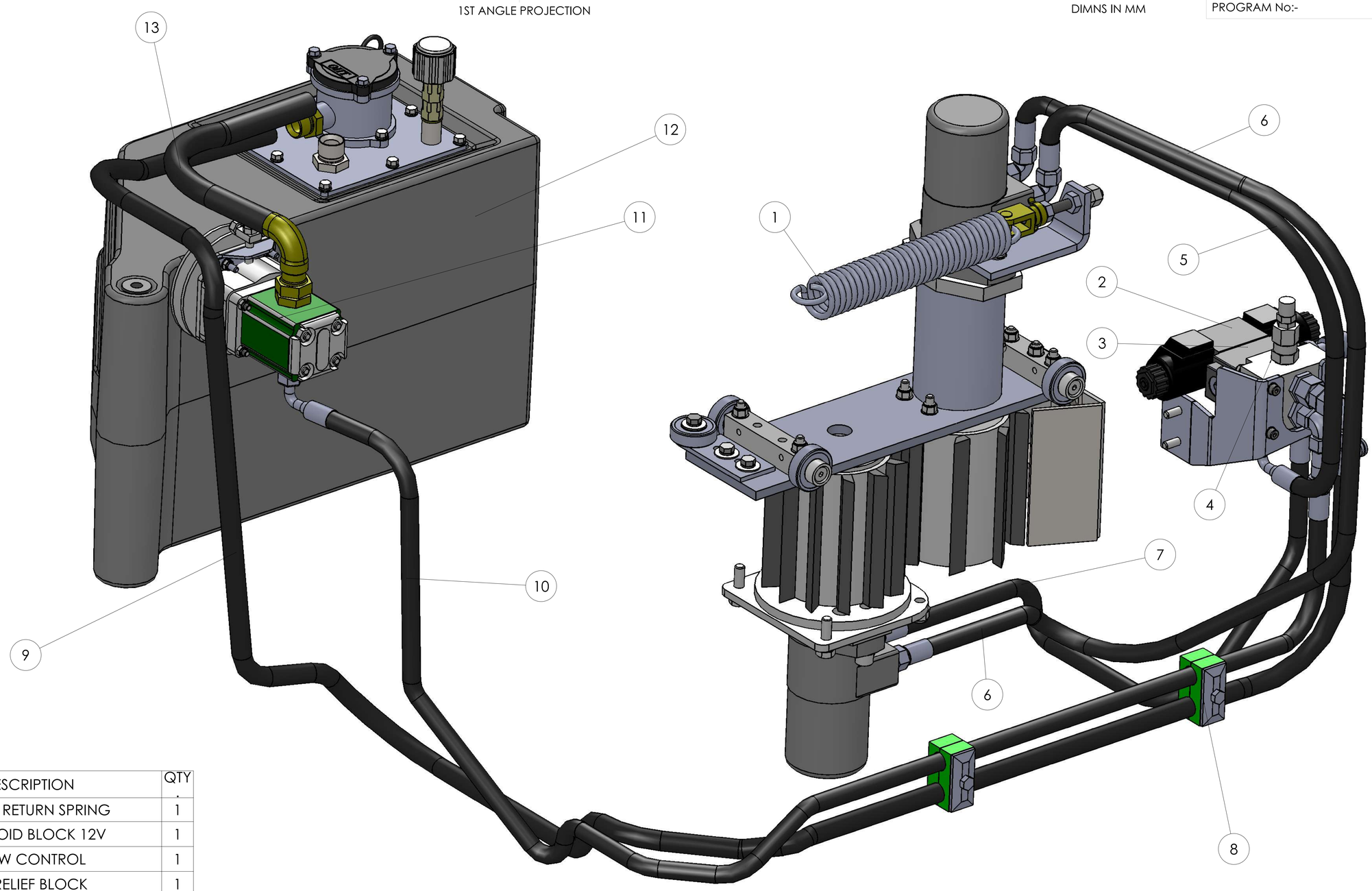
SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-3-1001-1	ROLLER RETURN SPRING	1
2	QC160-6-9002	SOLENOID BLOCK 12V	1
3	QC169-6-9003	FLOW CONTROL	1
4	QC160-6-9004	C3 RELIEF BLOCK	1
5	QC160-6-9010	HYDRAULIC PIPE	1
6	QC160-6-9009	HYDRAULIC PIPE	1
7	QC160-6-9008	HYDRAULIC PIPE	1
8	QC160-6-9011	HOSE CLAMP	2
9	QC160-6-9007	HYDRAULIC RETURN PIPE	1
10	QC160-6-9006	HYDRAULIC FEED PIPE	1
11	QC160-6-9001	HYDRAULIC PUMP ASSY	1
12	QC160-1-1003-H	HYDRAULIC TANK	1
13	QC160-6-9005	HYDRAULIC SUCTION PIPE	1

EARLY MODELS WITHOUT OIL COOLER

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		XXXXXXXX
CHK'D			
APPV'D	BGG		

TOLERANCES

MACHINED PARTS - +/- 0.025mm

FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

TITLE:

HYDRAULIC LAYOUT

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

WEIGHT:

DWG NO. A0

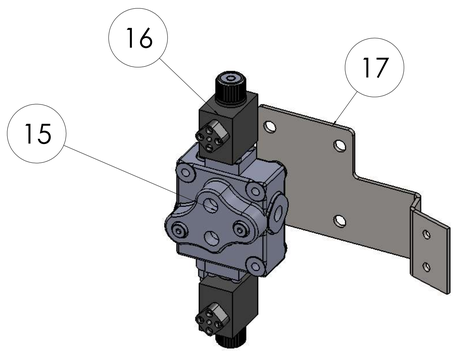
SCALE:1:5 SHEET 1 OF 1

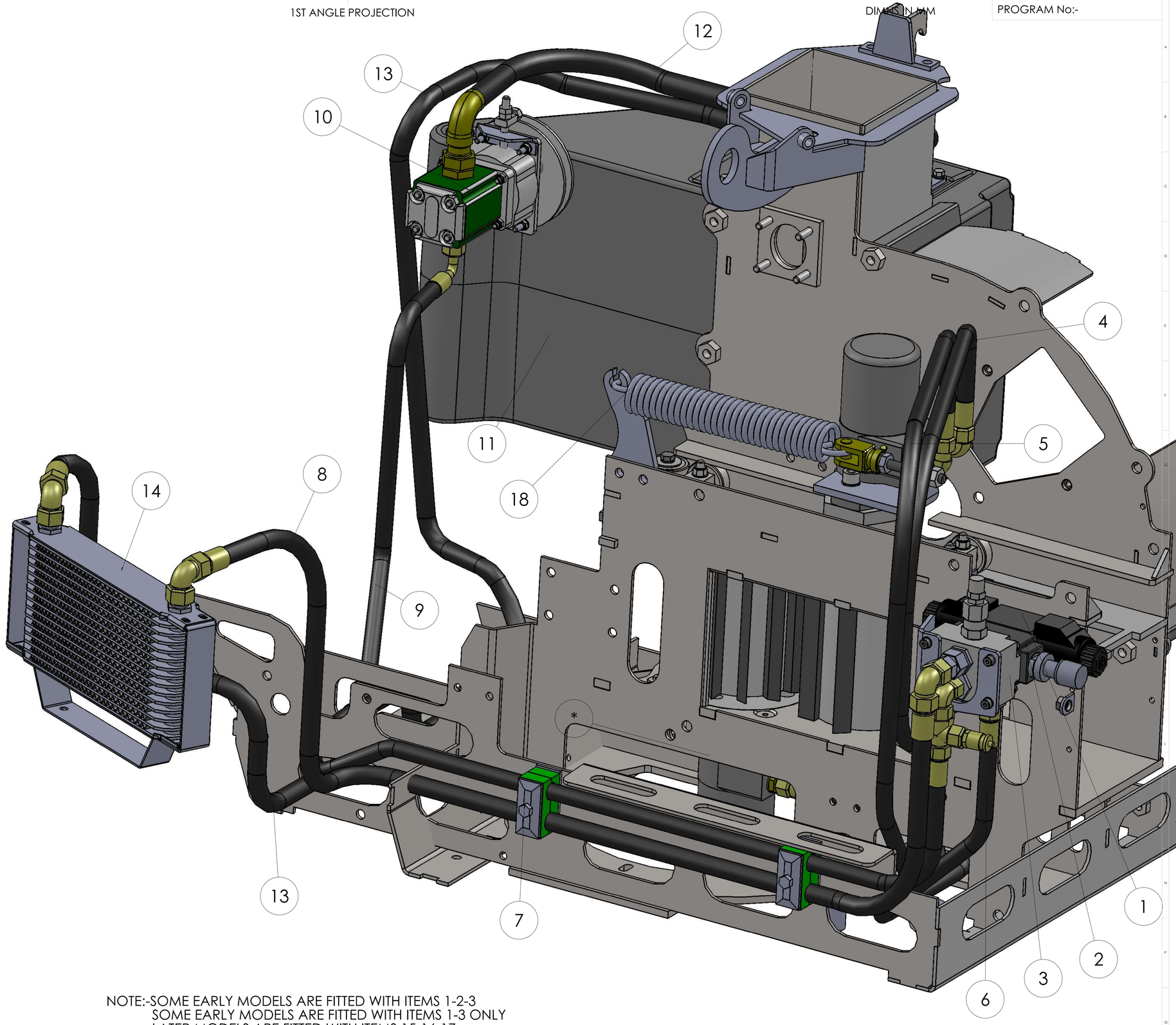
DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMS IN MM

PROGRAM No:-





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-6-9002	SOLENOID BLOCK 12V	1
2	QC160-6-9003	FLOW CONTROL	1
3	QC160-6-9004	C3 RELIEF BLOCK	1
4	QC160-6-9010	HYDRAULIC PIPE	1
5	QC160-6-9009	HYDRAULIC PIPE	1
6	QC160-6-9008	HYDRAULIC PIPE	1
7	QC160-6-9011	HOSE CLAMP	2
8	QC160-6-9007	HYDRAULIC RETURN PIPE	1
9	QC160-6-9006	HYDRAULIC FEED PIPE	1
10	QC160-6-9001	HYDRAULIC PUMP ASSY	1
11	QC160-1-1003-H	HYDRAULIC TANK	1
12	QC160-6-9005	HYDRAULIC SUCTION PIPE	1
13	QC160-6-9016	HYDRAULIC RETURN PIPE	1
14	QC160-6-9015	OIL COOLER	1
15	QC160-6-9017	ALTERNATIVE VALVE	1
16	QC160-6-9018	12VDC COIL	2
17	QC160-3-69	ALTERNATIVE BKT	1
18	QC160-3-1001-1	ROLLER RETURN SPRING	1

NOTE:-SOME EARLY MODELS ARE FITTED WITH ITEMS 1-2-3
SOME EARLY MODELS ARE FITTED WITH ITEMS 1-3 ONLY
LATER MODELS ARE FITTED WITH ITEMS 15-16-17

19

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		1/12/10
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

TITLE:
HYDRAULIC LAYOUT WITH OIL COOLER

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

WEIGHT:

DWG NO. A0

SCALE:1:5

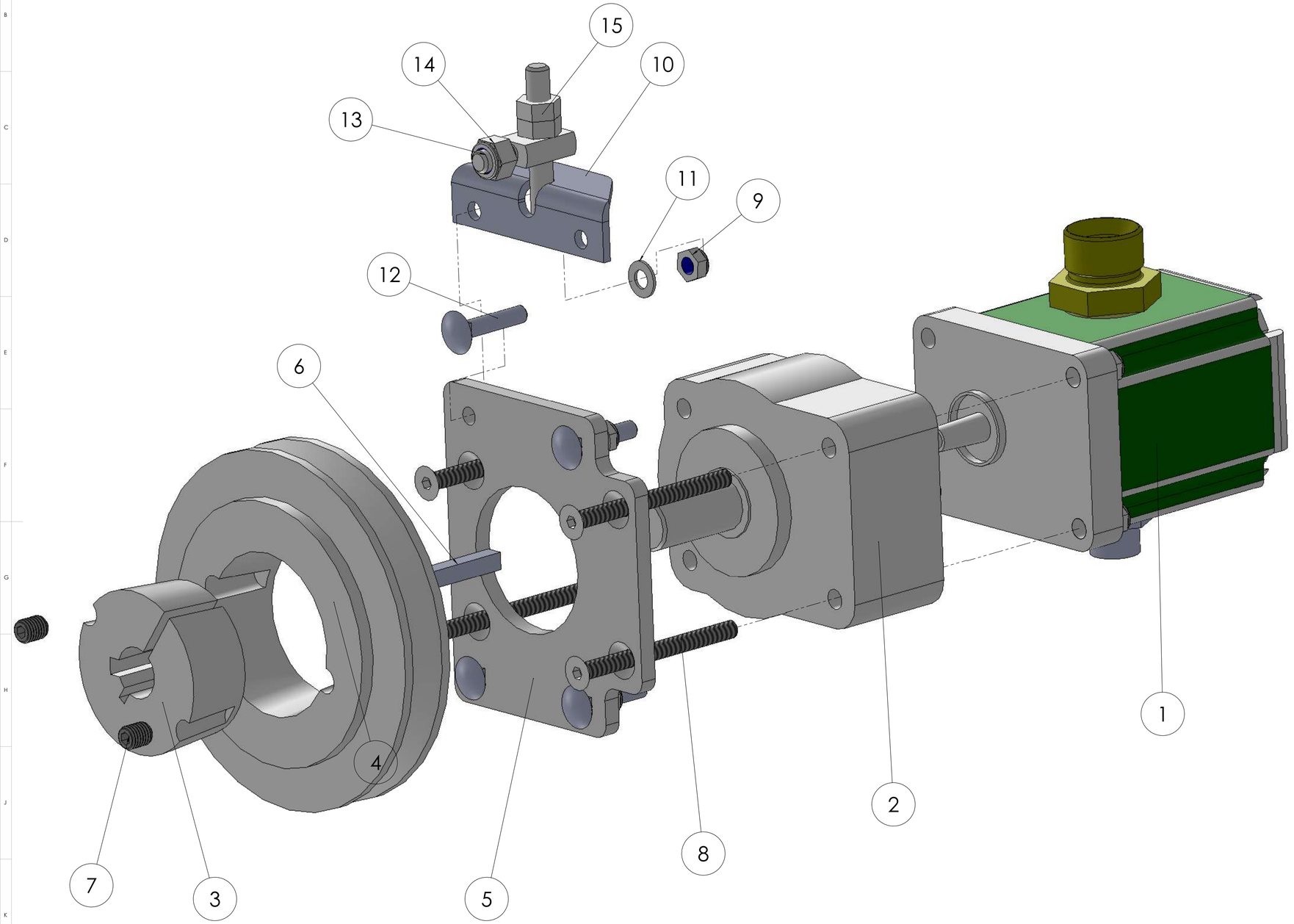
SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-6-9001	PUMP	1
2	EC1523705	BEARING SUPPORT	1
3	TMP220612	TL BUSH	1
4	QC160-6-9005	PULLEY	1
5	QC160-6-12	PUMP PLATE	1
6	6 X30	KEY	1
7	951610	GRUB SCREW	2
8	80670	M6 x 70mm C/SUNK	4
9	90601-Nyloc	NYLOC NUT	8
10	QC160-6-60	PUMP ADJUSTER	1
11	90602	FLAT WASHER	4
12	90630CB	COACHBOLT	4
13	TC220215	CLEVIS	1
14	90801-Nyloc	M8 Nyloc nut	1
15	90801P	M8 PLAIN NUT	2

20

REV	MODIFICATION	DRAWN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH: xxxxxxxxxx

	NAME	SIGNATURE	DATE
DRAWN	BGG		6/8/10
CHK'D			
APPV'D	BGG		

DEBUR AND BREAK SHARP EDGES

TOLERANCES
MACHINED PARTS +/- 0.025mm
FABRICATED PARTS +/- 1.0mm

GreenMech Ltd
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG Tel 01789 400044

MATERIAL:

TITLE:
HYDRAULIC PUMP ASSY

WEIGHT:

DWG NO.
QC160-6-9001 EXPLODED

SCALE:1:5

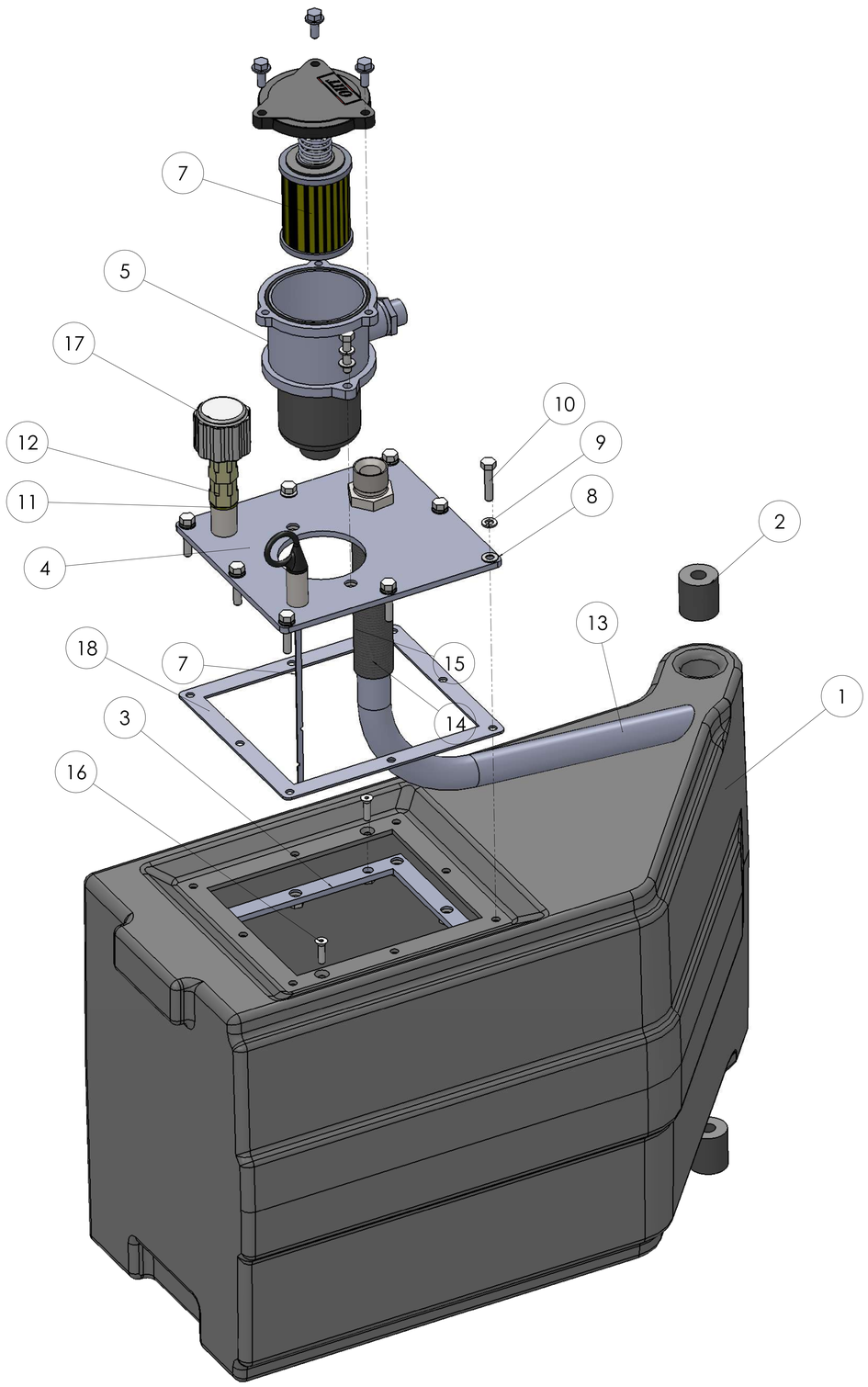
SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-1-1003-H	HYDRAULIC TANK	1
2	QC160-1-1011	MOUNTING BUSH	2
3	QC160-1-26	TANK CLAMP PLATE	1
4	QC160-1-28	HYD TANK PLATE	1
5	EC151029	OIL RETURN FILTER	1
6	EC151029/1	FILTER ELEMENT	1
7	QC160-1-1026	DIPSTICK	1
8	90602	FLAT WASHER	10
9	90603	M6 S/WASHER	10
10	90630	HEX HD BOLT	10
11	QC160-6-9013	BONDED WASHER	1
12	QC160-6-9014	EXTENSION BUSH	2
13	QC160-1-61	OIL PIPE	1
14	27031	HOSE CLIP	2
15	QC160-6-9012	RUBBER PIPE	1
16	80520	C/SUNK HD BOLT	2
17	ST1928-1-150	UCC TANK BREATHER	1
18	QC160-9-1016	TANK GASKET	1

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		6/8/10
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

MATERIAL:

TITLE:

HYDRAULIC TANK EXPLODED

WEIGHT:

DWG NO.

A0

SCALE:1:5

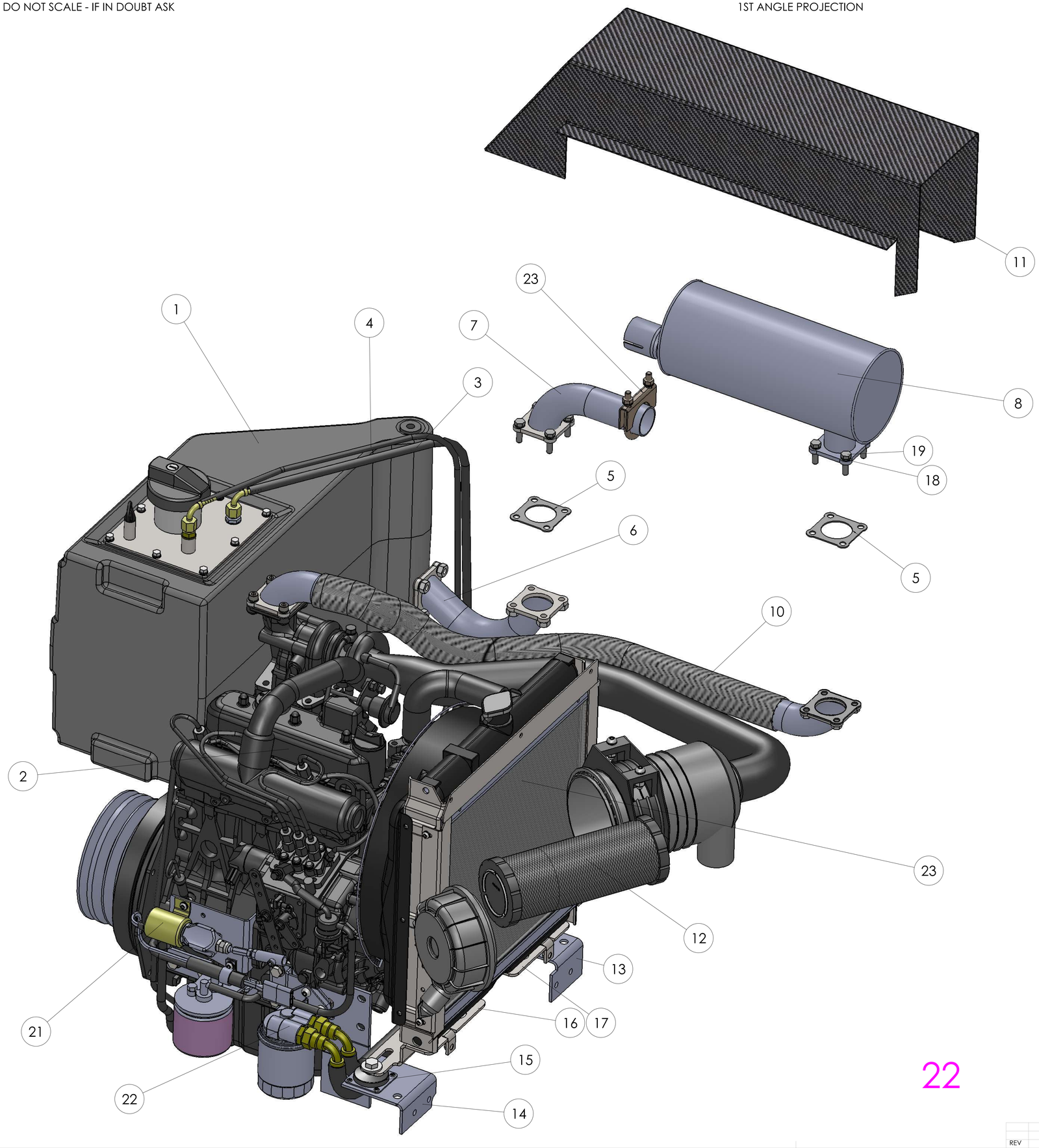
SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-1-1003F	FUEL TANK ASSY	1
2	QC160-6-1001K3	ENGINE ASSY	1
3	QC160-1-1038	FUEL SUCTION PIPE	1
4	QC160-1-1039	FUEL BLEED PIPE	1
5	S120021	EXHAUST GASKET	5
6	QC160-2-56	EXHAUST SPIGOT	1
7	QC160-2-57MK2	EXHAUST BELBOW	1
8	QC160-6-61	SILENCER	1
9	QC160-6-1020	AIR INTAKE PIPE	1
10	QC160-6-48	FLEXIBLE EXHAUST PIPE	1
11	QC160-6-93	EXHAUST GUARD	1
12	SI20003-2	AIR FILTER ELEMENT	1
13	QC160-6-56	NS RAD SUPPORT B-S	1
14	QC160-6-77	OS RAD SUPPORT QT	1
15	SI-20015	LOWER RAD MOUNT	2
16	QTRAK-048	LOER RAD BKT	1
17	QTRAK-048OH	LOWER RAD BKT	1
18	90803	M8 SPRING WASHER	20
19	90830	M8 x 30 BOLT	8
20	SI 20032	THROTTLE SOLENOID	1
21	QC160-6-1032	REMOTE OIL FILTER MOUNT	1
22	QC160-6-82	MESH SCREEN	1
23	C150113-2	EXHAUST CLAMP	1

KUBOTA ENGINE

22

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		27/6/11
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

MATERIAL:

TITLE:
FUEL AND EXHAUST SYSTEM EXPLODED

WEIGHT:

DWG NO.

A0

SCALE:1:10

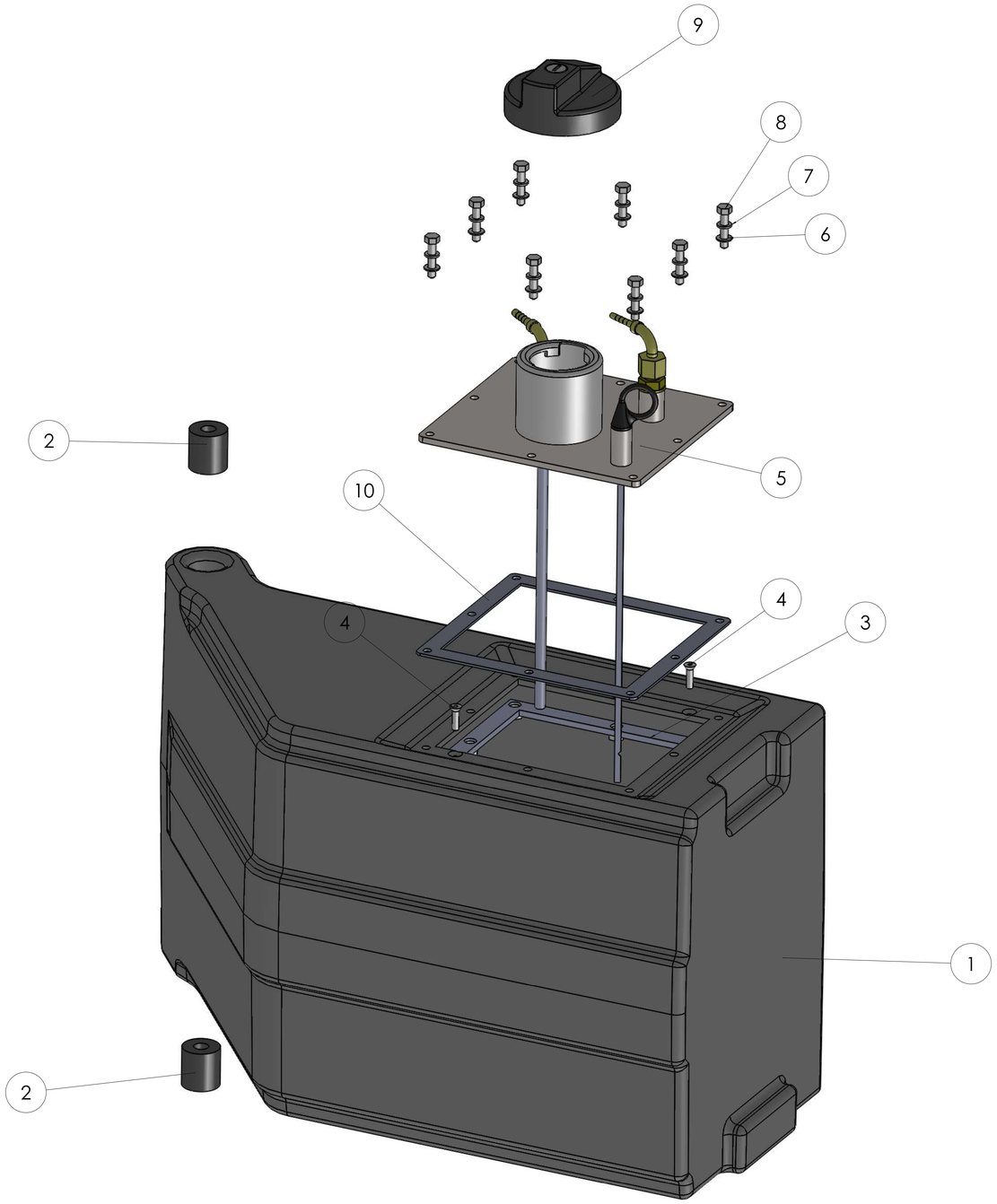
SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-1-1003-F	FUEL TANK	1
2	QC160-1-1011	QUAD CHIP TANK MOUNTING BUSH	2
3	QC160-1-26	TANK CLAMP PLATE	1
4	80520	C/SUNK HD BOLT	2
5	CQ160-1-27A	FUEL TANK PLATE	1
6	90602	FLAT WASHER	8
7	90603	M6 S/WASHER	8
8	90630	HEX HD BOLT	8
9	STC1928-109	STC1928-109 FUEL CAP	1
10	QC160-9-1016	TANK GASKET	1

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES, LINEAR: 0.025mm ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		11/4/11
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

WEIGHT:

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

TITLE:
FUEL TANK EXPLODED
FUEL TANK ASSY

DWG NO. A0

SCALE:1:5 SHEET 1 OF 2

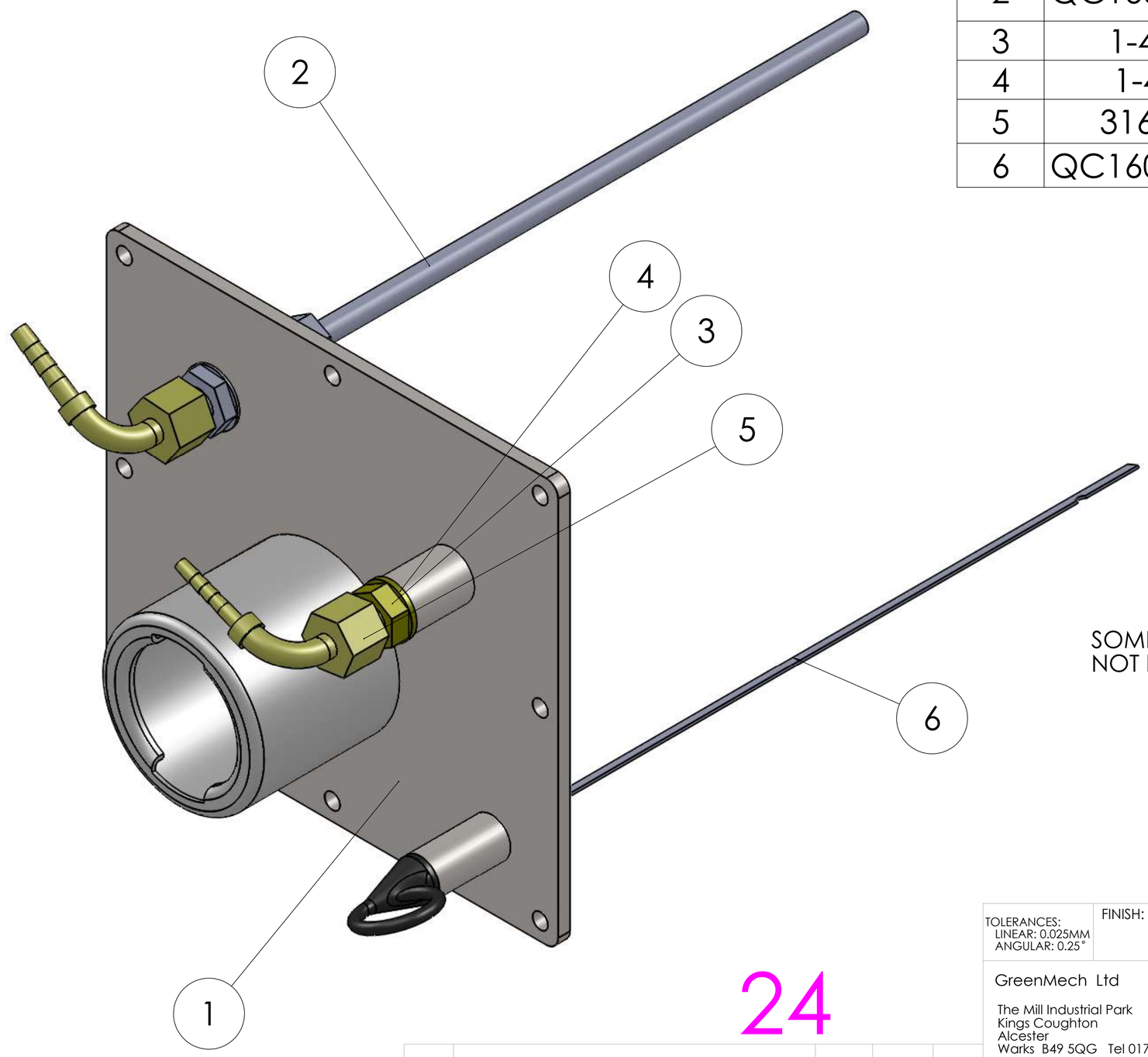
DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-1-27	FUEL TANK PLATE	1
2	QC160-1-1036	SUCTION PIPE	1
3	1-4MM	MALE ADAPTOR	1
4	1-4BW	BONDED WASHER	1
5	316 TAIL	HOSE TAIL	1
6	QC160-1-1034	DIPSTICK	1



SOME EARLY MODELS DO NOT INCLUDE DIPSTICK

24

REV	MODIFICATION	DRAWN	APPRD	DATE

TOLERANCES:
LINEAR: 0.025MM
ANGULAR: 0.25°

FINISH:

	NAME	SIGNATURE	DATE
DRAWN	BGG		11/4/11
CHK'D			
APPV'D	BGG		

DEBUR AND BREAK SHARP EDGES

TOLERANCES
MACHINED PARTS +/-0.025mm
FABRICATED PARTS +/-1.0mm

GreenMech Ltd

The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG Tel 01789 400044

MATERIAL:

TITLE:
FUEL TANK PLATE

WEIGHT:

DWG NO. A2

SCALE:1:5

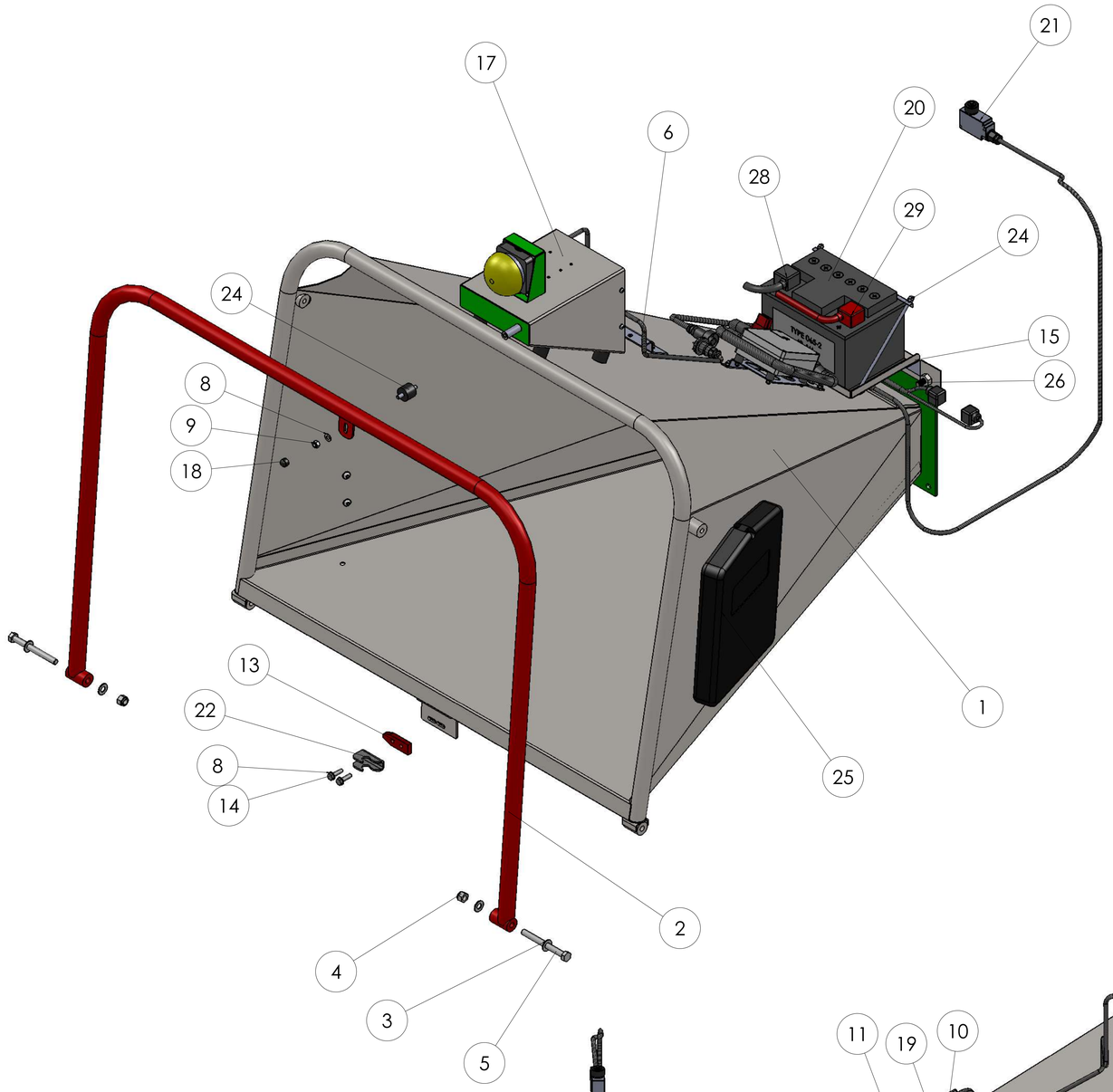
SHEET 2 OF 2

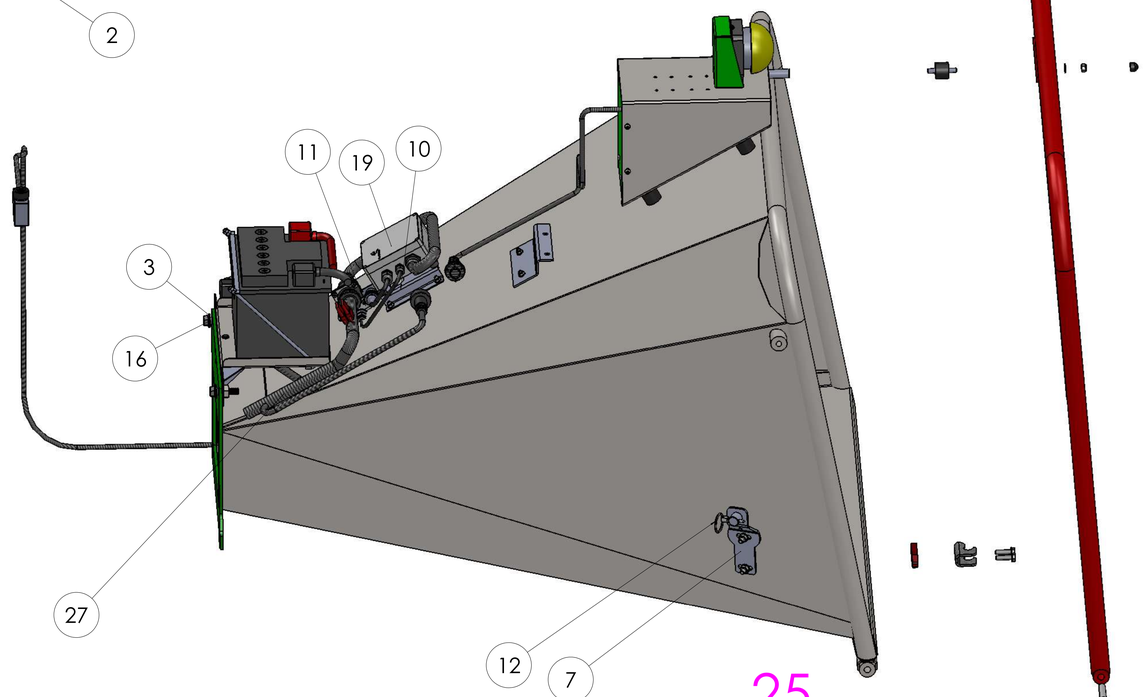
DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-4-1	INFEED CHUTE	1
2	QC160-4-7	CONTROL BAR	1
3	91202	FLAT WASHER	6
4	91201	M12 NYLOC	2
5	912120	HEX HD BOLT	2
6	QC160-4-22	BRIDGE BKT	1
7	QC160-5-3	DISCHARGE DOCKING BKT	1
8	90802	FLAT WASHER	9
9	90801	NYLOC NUT	7
10	QC160-6-51	J BOX BKT	1
11	ST1928-6-24	HARNESS BKT	1
12	EC150021-1	LYNCH PIN	1
13	QC160-4-26	LATCH GUIDE	1
14	90830	M8 x 30 BOLT	2
15	QC160-1-18	BATTERY TRAY	1
16	91203	SPRING WASHER	2
17	QC160-4-10	CONTROL BOX	1
18	QC160-4-1009	M8 NUT CAP	5
19	QC160-6-1028	JUNCTION BOX	1
20	QC160-6-1002	065-2 48AH BATTERY	1
21	C200206	MICROSWITCH	1
22	QC160-4-1011	LATCH	1
23	SI20014	ANTIVIBRATION MOUNT	5
24	C200906	BATTERY CLAMP KIT	1
25	C170409	DOCUMENT CASE	1
26	91245	HEX HD BOLT	2
27	QC160-4-10	MK1 CONTROL BOX	1
28	QC160-6-1035	NEGATIVE BATTERY LEAD	1
29	QC160-6-1034	POSITIVE BATTERY LEAD	1

25

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		28/6/11
CHK'D			
APPV'D	BGG		

TOLERANCES

MACHINED PARTS - +/- 0.025mm

FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

TITLE:

INFEED CHUTE EXPLODED

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

WEIGHT:

DWG NO.

A0

SCALE:1:10

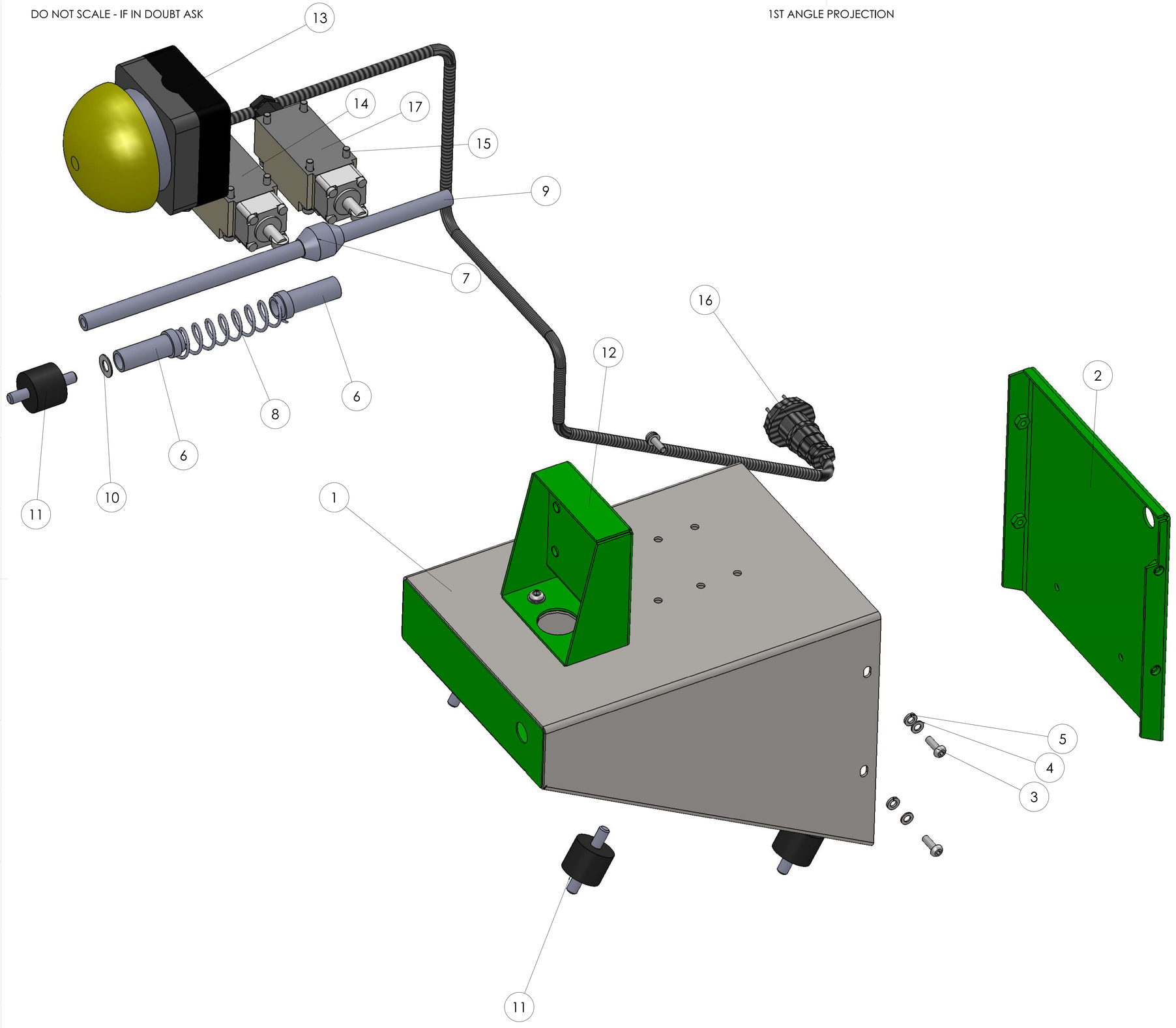
SHEET 1 OF 3

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-4-10	CONTROL BOX FAB	1
2	QC160-4-11	END COVER	1
3	90516BH	M5 x 16mm B/HEAD	4
4	90502	FLAT WASHER	4
5	90503	M5 S/WASHER	12
6	QC160-4-17	SPRING TUBE	2
7	QC160-4-18	STRIKER BOSS	1
8	C200327	SPRING D12770	1
9	QC160-4-16	SLIDE ROD	1
10	90802	FLAT WASHER	1
11	S120014(S)	ANTIVIBRATION MOUNT	5
12	QC160-4-19	SWITCH BOX	1
13	QC160-9-1003	RESET SWITCH	1
14	C203111	REVERSE LIMIT SWITCH	1
15	90540(25)CH	CAPHEAD BOLT	8
16	QC160-6-1029	CONTROL BOX HARNESS	1
17	C203111-1	STOP LIMIT SWITCH	1

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		28/6/11
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

TITLE:

CONTROL BOX

INFEED CHUTE EXPLODED

DWG NO.

SCALE:1:5

SHEET 2 OF 3

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

WEIGHT:

REV	MODIFICATION	DRN	APPRD	DATE

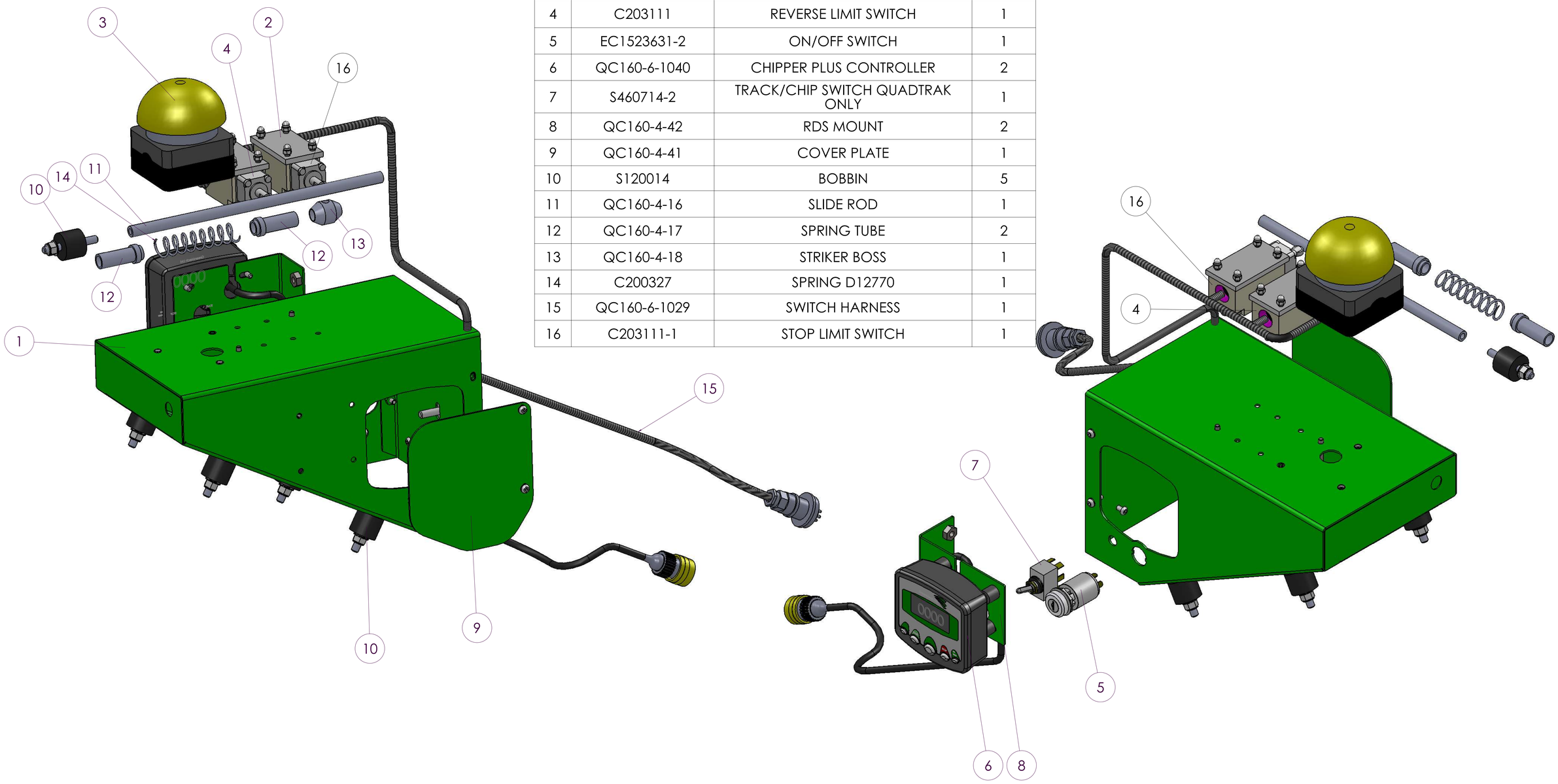
DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-

ITEM NO.	PART NUMBER	DESCRIPTION	Built up/QTY.
1	QC160-4-10MK2	CONTROL BOX	1
2	MK2ST1928-4-73	BOLTING PLATE	2
3	QC160-6-1003	RESET SWITCH	1
4	C203111	REVERSE LIMIT SWITCH	1
5	EC1523631-2	ON/OFF SWITCH	1
6	QC160-6-1040	CHIPPER PLUS CONTROLLER	2
7	S460714-2	TRACK/CHIP SWITCH QUADTRAK ONLY	1
8	QC160-4-42	RDS MOUNT	2
9	QC160-4-41	COVER PLATE	1
10	S120014	BOBBIN	5
11	QC160-4-16	SLIDE ROD	1
12	QC160-4-17	SPRING TUBE	2
13	QC160-4-18	STRIKER BOSS	1
14	C200327	SPRING D12770	1
15	QC160-6-1029	SWITCH HARNESS	1
16	C203111-1	STOP LIMIT SWITCH	1



27

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		8/4/13
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

TITLE:
LATER TYPE
CONTROL BOX FAB

DWG NO
INFEED CHUTE EXPLODED

REV

WEIGHT:

SCALE:1:5

SHEET 3 OF 3

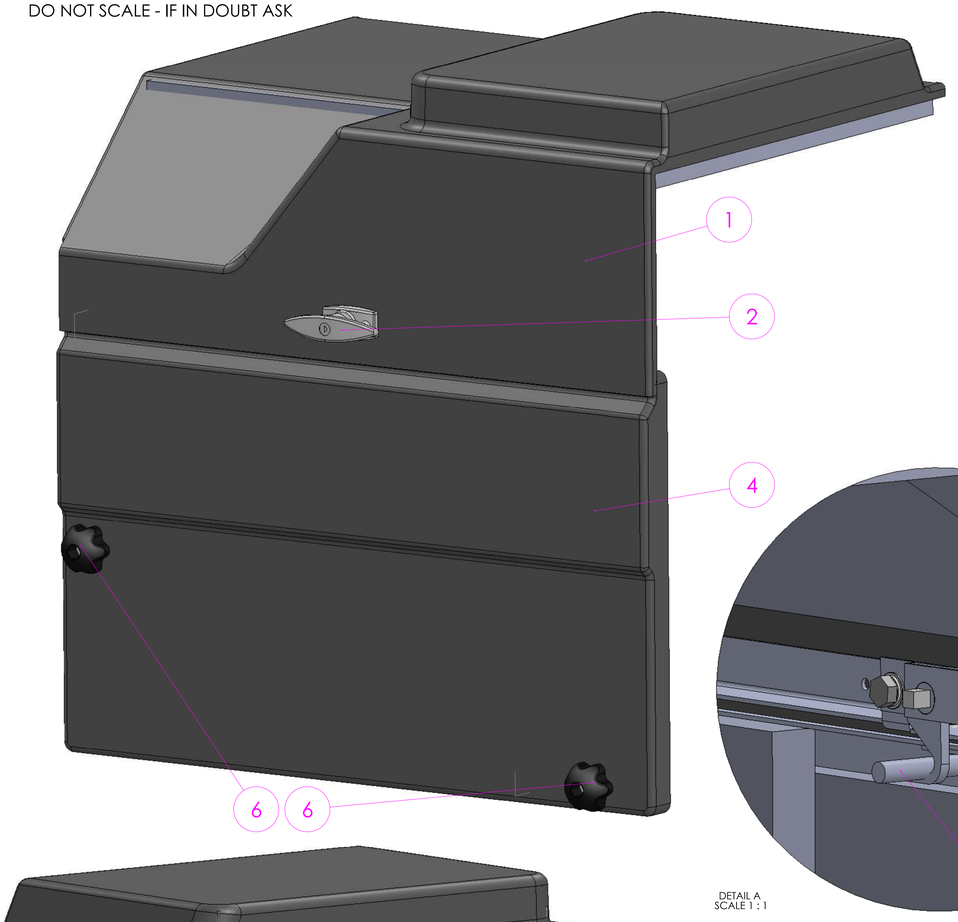
GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

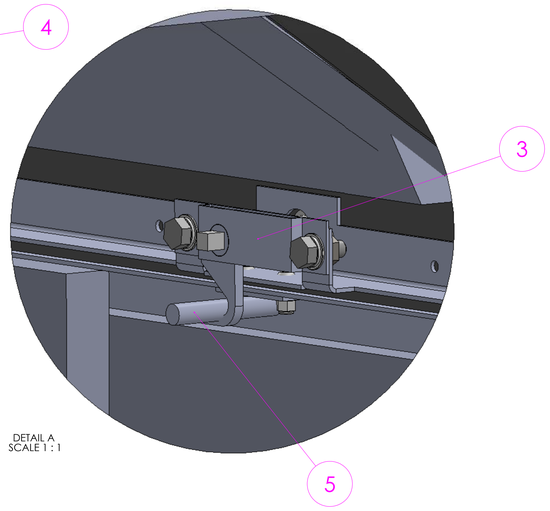
DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

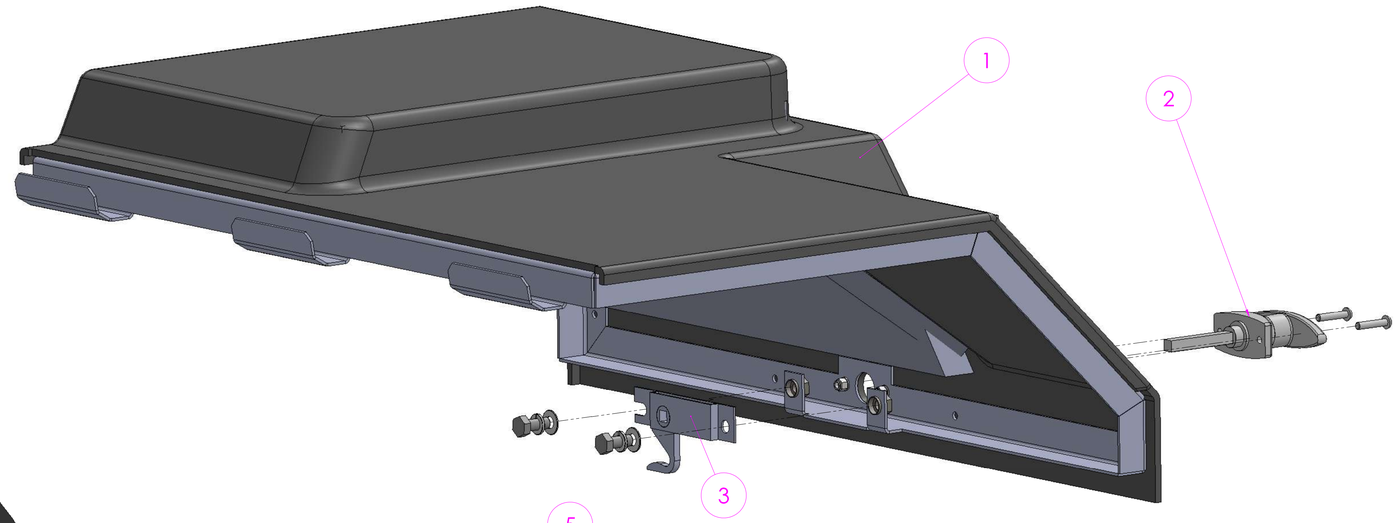
DIMNS IN MM

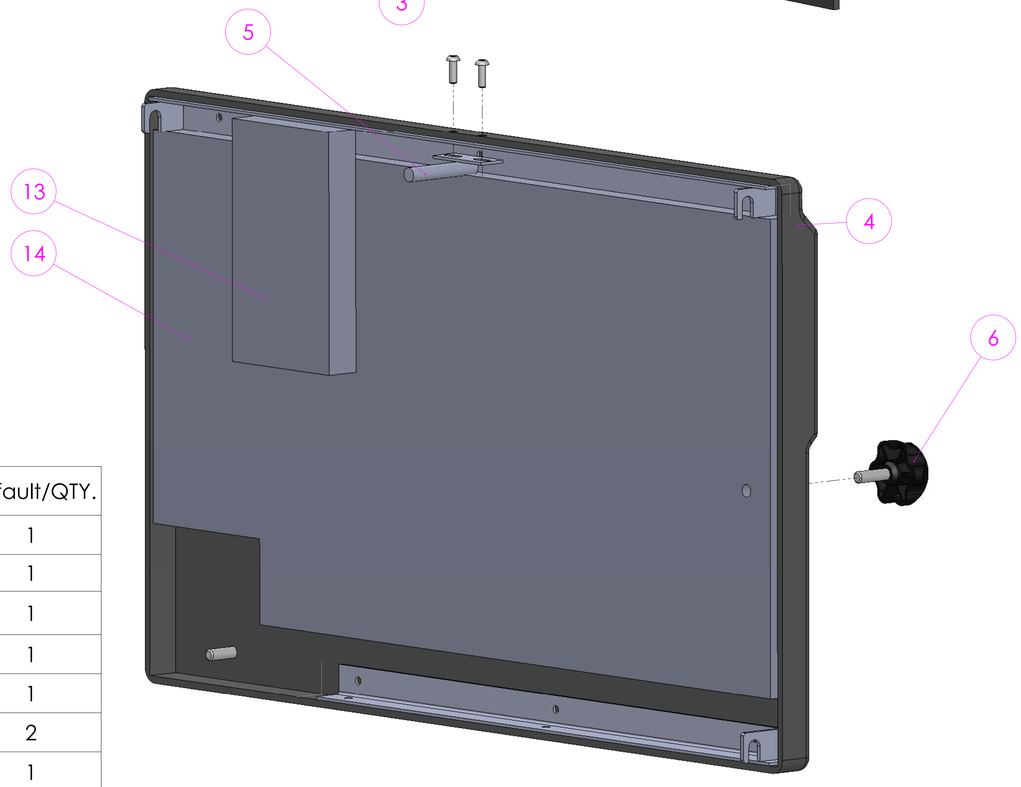
PROGRAM No:-

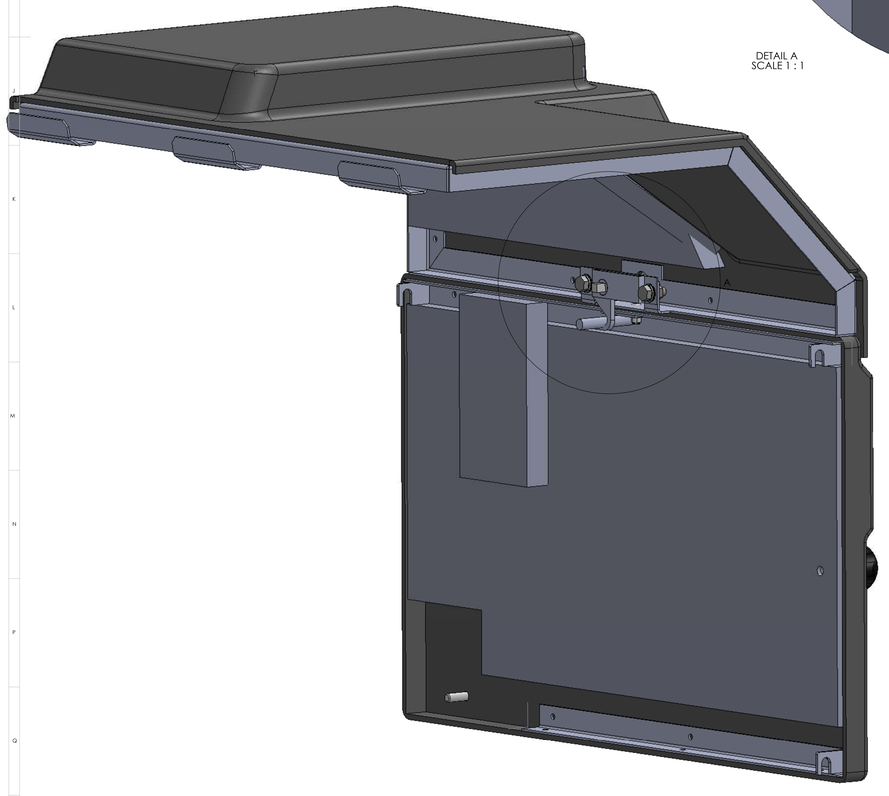




DETAIL A
SCALE 1 : 1







ITEM NO.	PART NUMBER	DESCRIPTION	Default/QTY.
1	QC160-1-1004A	ENGINE BONNET	1
2	C170101	TEE HANDLE	1
3	C170102	BONNET LATCH	1
4	QC160-1-1005A	ENGINE SIDEPANEL	1
5	QC160-1-85	CATCH PLATE	1
6	CS100-4-17	PLASTIC GRIPNUT	2
7	QC160-1-1048	ENGINE BONNET FOAM	1
8	QC160-1-1049	ENGINE BONNET PACKER FOAM	2
9	QC160-1-1050	ENGINE BONNET FRONT FOAM	1
10	QC160-1-1051	ENGINE BONNET TRIANGLE FOAM	1
11	QC160-1-1052	ENGINE BONNET SHORT FOAM	1
12	QC160-1-1053	ENGINE BONNET REAR BUFFER FOAM	1
13	QC160-1-1047	ENGINE SIDEPANEL BUFFER FOAM	2
14	QC160-1-1046	ENGINE SIDEPANEL FOAM	1

ENGINE BONNET LINING CONSISTS OF:-
ITEM 7 - 1 OFF
ITEM 8 - 2 OFF
ITEM 9 - 1 OFF
ITEM 10 - 1 OFF
ITEM 11 - 1 OFF
ITEM 12 - 1 OFF
ITEM 13 - 1 OFF

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		12/4/13
CHK'D			
APPV'D	BGG		

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

MATERIAL:

WEIGHT:

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

TITLE:
ENGINE BONNET & SIDEPANEL

DWG NO. A0

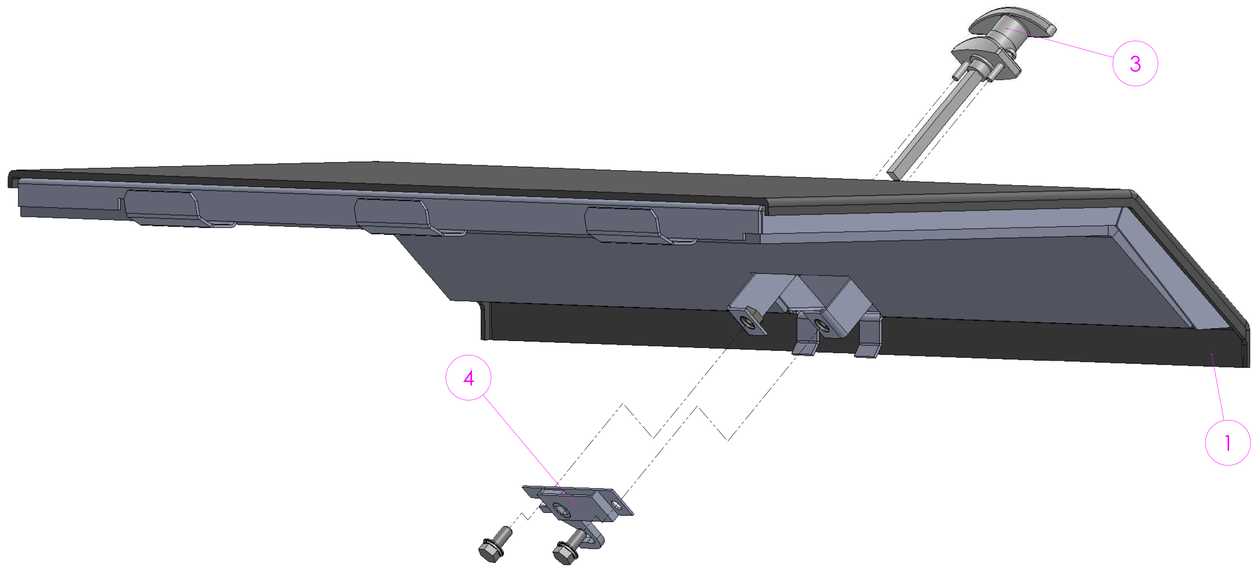
SCALE:1:5 SHEET 1 OF 1

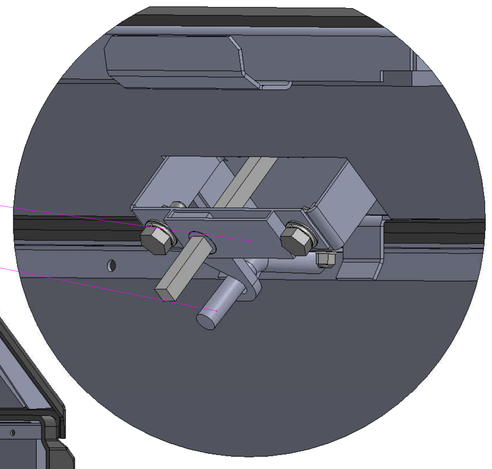
DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

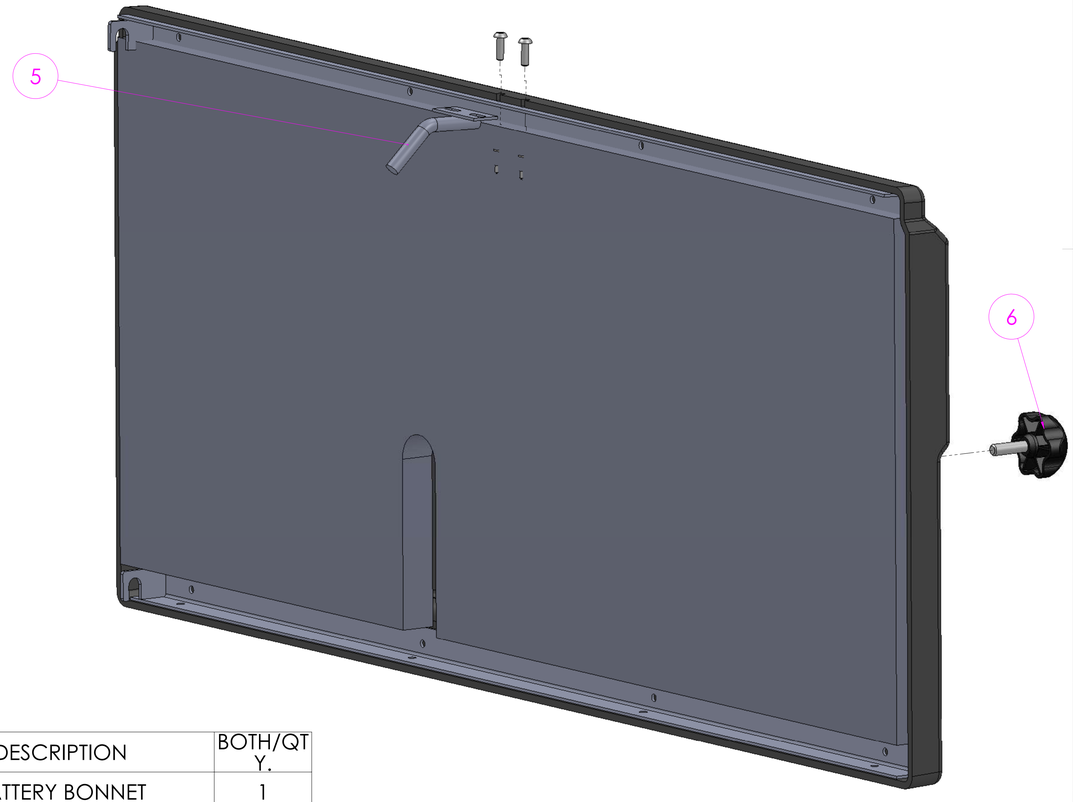
DIMNS IN MM

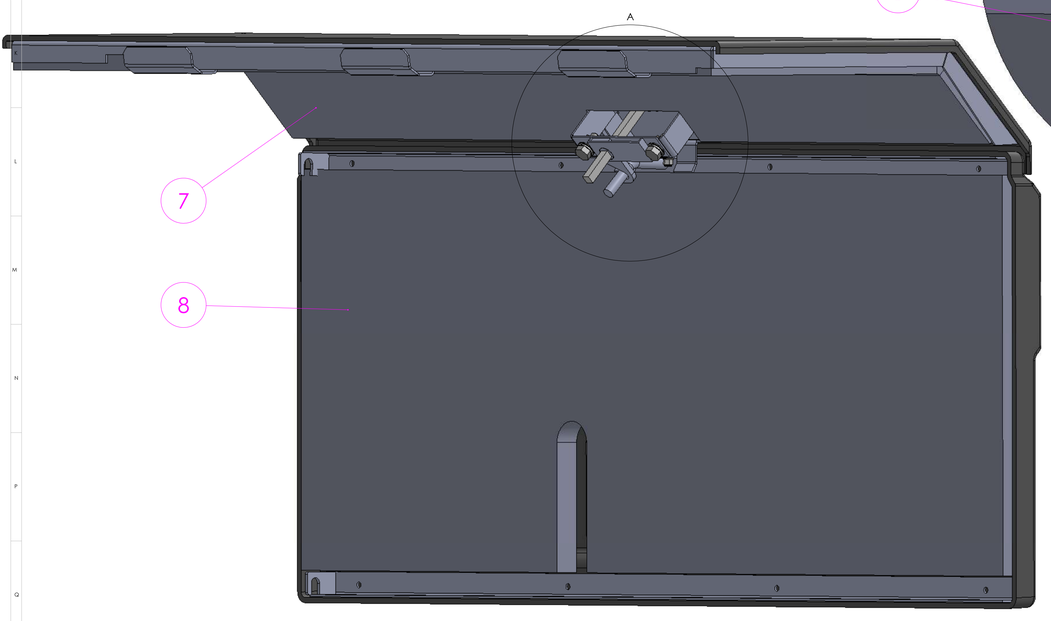
PROGRAM No:-





DETAIL A
SCALE 1 : 1





ITEM NO.	PART NUMBER	DESCRIPTION	BOTH/QTY.
1	QC160-1-1006A	BATTERY BONNET	1
2	QC160-1-1007A	BATTERY SIDE PANEL	1
3	C170101	TEE HANDLE	1
4	C170102	BONNET LATCH	1
5	QC160-1-86	CATCH PLATE	1
6	CS100-4-17	PLASTIC GRIPNUT	2
7	QC160-1-1042	BATTERY BONNET FOAM	1
8	QC160-1-1043	BATTERY SIDEPANEL FOAM	1

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		12/4/13
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

MATERIAL:

WEIGHT:

TITLE:
BATTERY BONNET & SIDEPANEL

DWG NO.

A0

SCALE:1:5

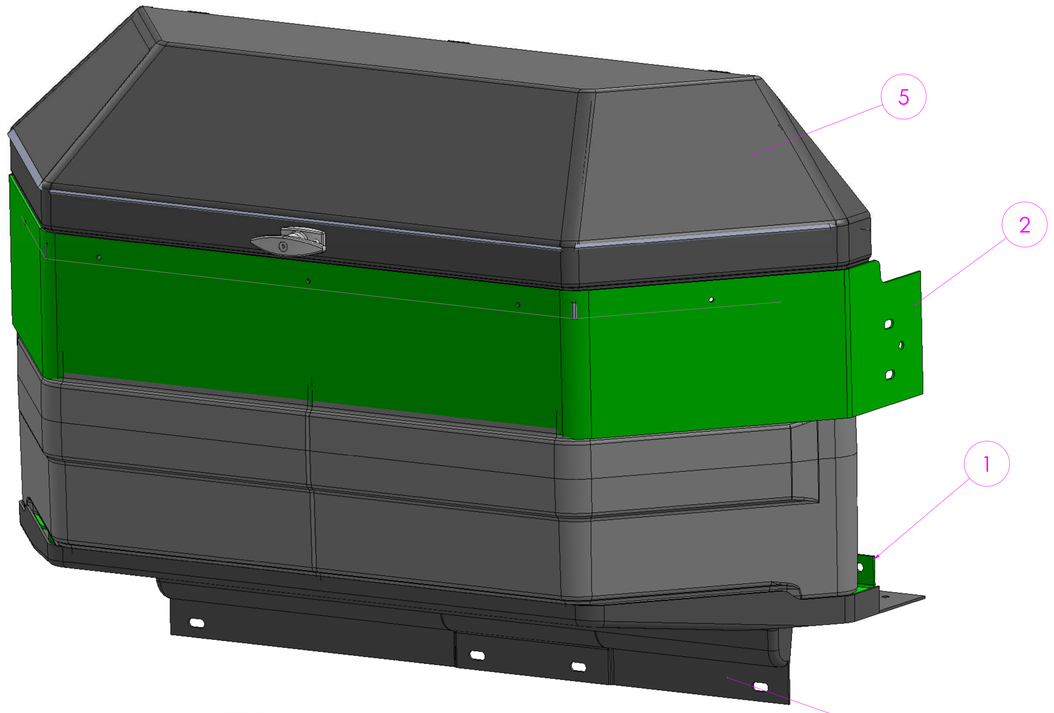
SHEET 1 OF 1

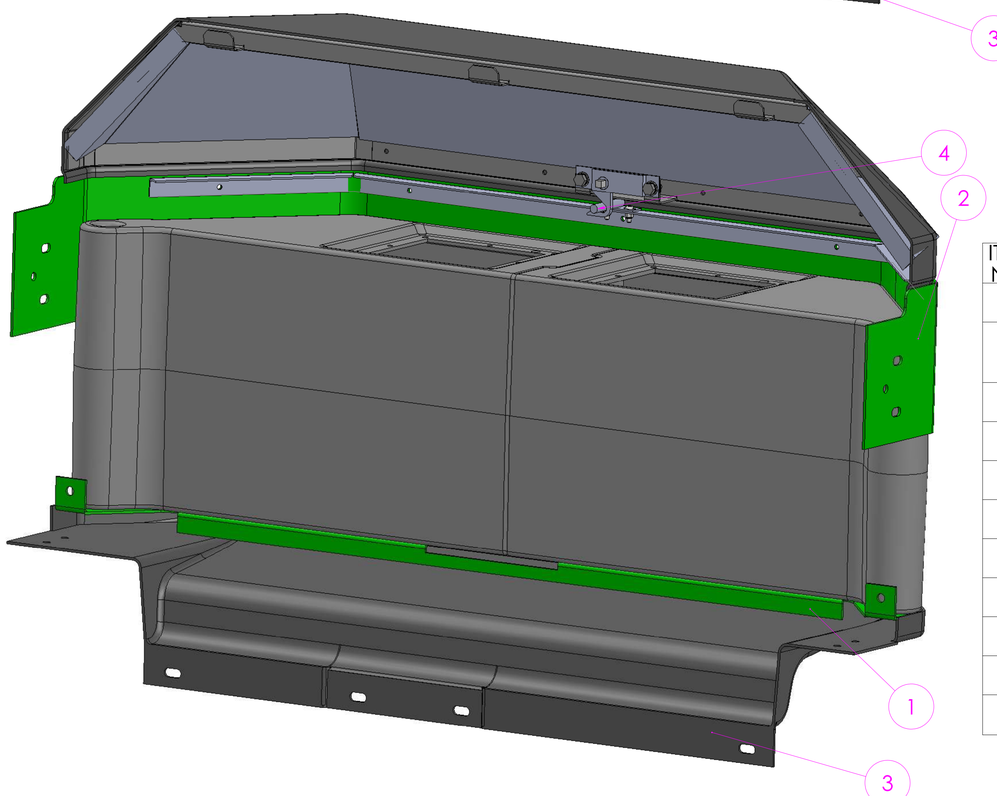
DO NOT SCALE - IF IN DOUBT ASK

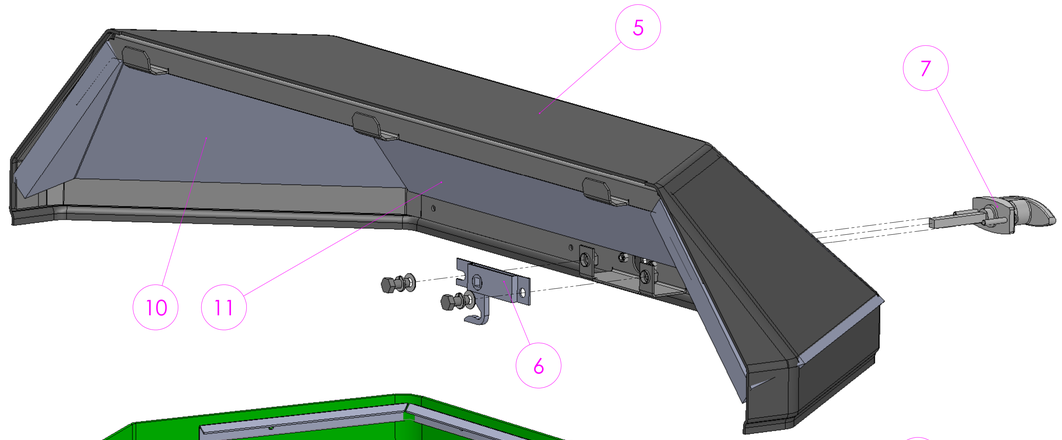
1ST ANGLE PROJECTION

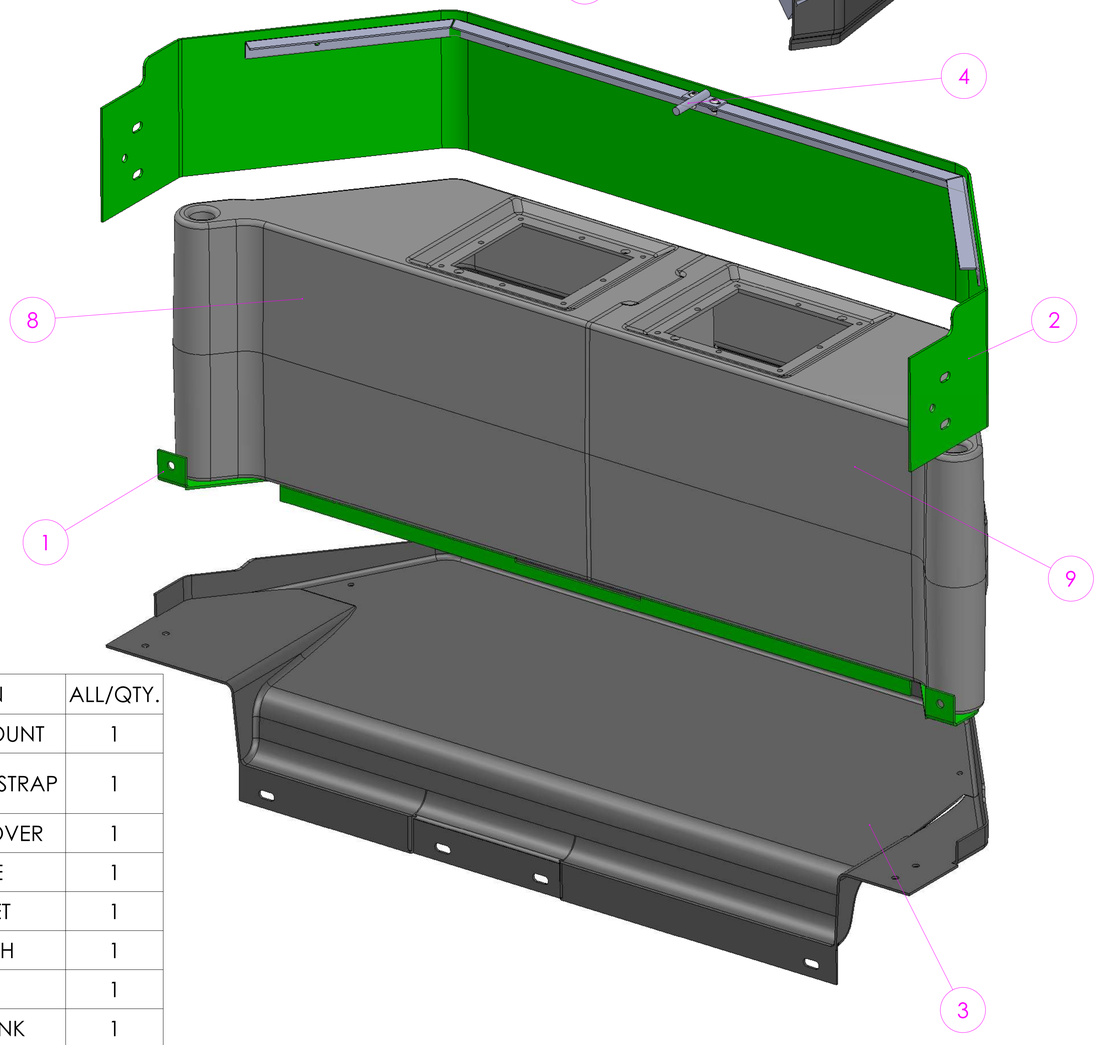
DIMNS IN MM

PROGRAM No:-









ITEM NO.	PART NUMBER	DESCRIPTION	ALL/QTY.
1	QC160-1-30	LOWER TANK MOUNT	1
2	QC160-1-34	TANK MOUNTING STRAP	1
3	QC160-1-1009	TANK LOWER COVER	1
4	QC160-1-85	CATCHPLATE	1
5	QC160-1-1008A	TANK BONNET	1
6	C170102	BONNET LATCH	1
7	C170101	TEE HANDLE	1
8	QC160-1-1003H	HYDRAULIC TANK	1
9	QC160-1-1003F	FUEL TANK	1
10	QC160-1-1044	TANK BONNET FOAM	1
11	QC160-1-1045	TANK BONNET INFILL FOAM	1

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		15/4/12
CHK'D			
APPV'D	BGG		

TOLERANCES

MACHINED PARTS - +/- 0.025mm

FABRICATED PARTS - +/- 1.0 mm

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

MATERIAL:

WEIGHT:

TITLE:

TANK BONNET

DWG NO. A0

SCALE:1:5 SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-

ITEM NO.	PART NUMBER	DESCRIPTION	QUAD/QTY.
1	EC15005-1	DISCHARGE FAB	1
2	91002	FLAT WASHER	3
3	91020	HEX HD BOLT	1
4	C180104	TEE HANDLE	1
5	C200613	TEE BOLT	2
6	QC160-5-1	DISCHARGE FLAP	1
7	91003	SPRING WASHER	1
8	91005	LARGE NYLON WASHER	4
9	9227	PLASTIC HANDLE	2
10	91202	FLAT WASHER	2

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		15/4/13
CHK'D			
APPV'D	BGG		

MATERIAL:

WEIGHT:

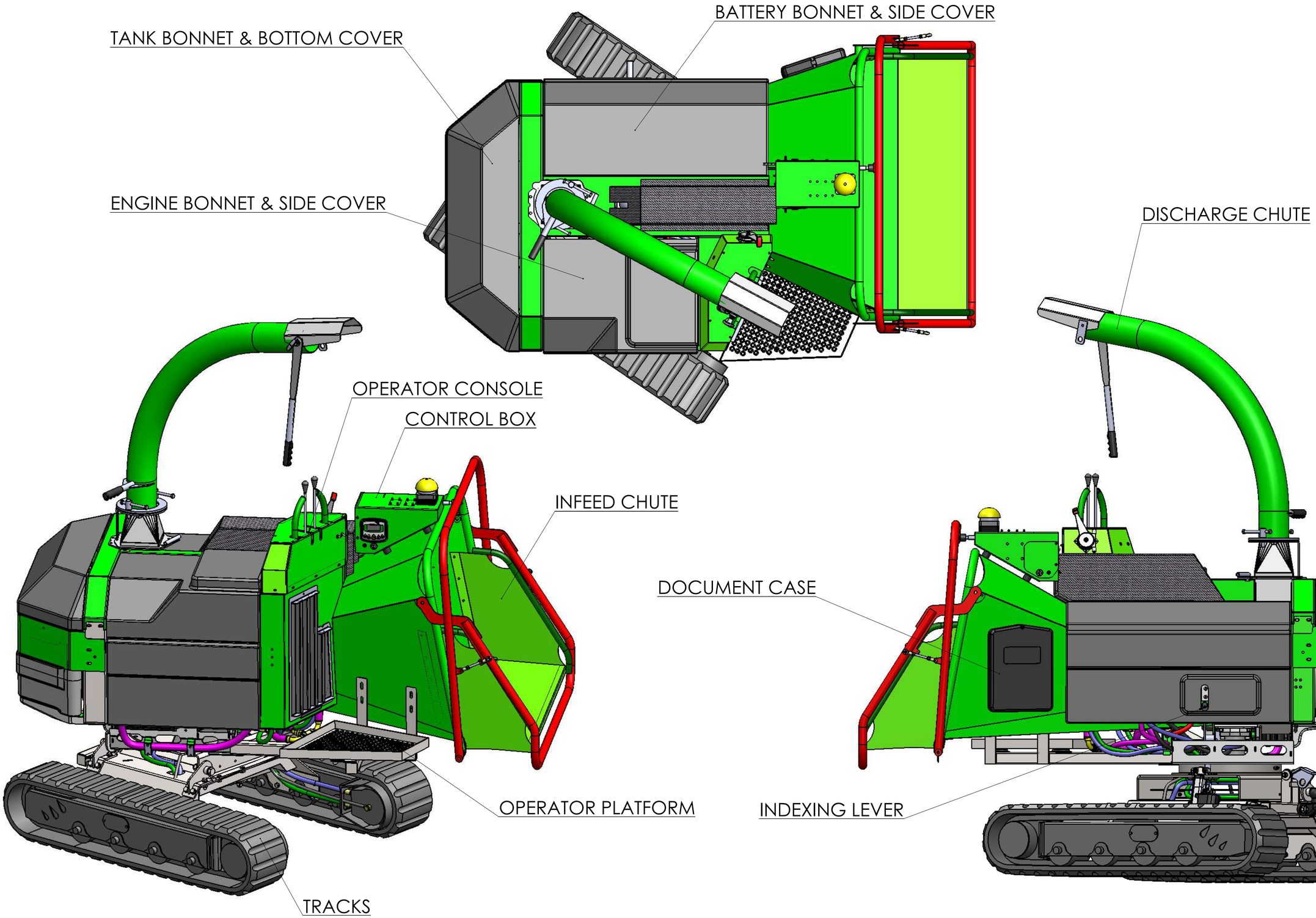
GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

TITLE:
DISHARGE EXPLODED

DWG NO. A0

SCALE:1:5 SHEET 1 OF 1


TANK BONNET & BOTTOM COVER
BATTERY BONNET & SIDE COVER
ENGINE BONNET & SIDE COVER
DISCHARGE CHUTE
OPERATOR CONSOLE
CONTROL BOX
INFEED CHUTE
DOCUMENT CASE
OPERATOR PLATFORM
INDEXING LEVER
TRACKS

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-

COLOUR CODE

R = RED
B = BLACK
G = GREEN
N = BROWN
U = BLUE
Y = YELLOW
K = PINK
P = PURPLE
W = WHITE
O = ORANGE
S = GREY

REVERSE M/SWITCH (CONTROL BAR)

RESET BUTTON

STOP M/SWITCH (CONTROL BAR)

RELAY

TRACK/CHIP SWITCH

LIFT RAM SWITCH

CLUTCH

CHANGEOVER VALVE

LIFT RAM

BULGIN PLUG

BULGIN PLUG

HYDRAULIC VALVE

FORWARD

REVERSE

CHUTE M/SWITCH

OIL PRESSURE SWITCH

THROTTLE SOLENOID

FUEL SOLENOID

ENGINE EARTH

BONNET M/SWITCH

GLOW PLUGS

COOLANT TEMP SWITCH

20A

40A

RDS UNIT

RDS JUNCTION BOX

KEY SWITCH

OPTIONAL EXTRA
WINCH

WINCH

SWITCHING RELAY

RECIEVER

OUT

IN

FROM BATTERY

ON / OFF SWITCH

ALTERNATOR

A

FROM BATTERY

M

STARTER MOTOR

33

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES
LINEAR 0.025mm
ANGULAR 0.25 °

FINISH

	NAME	SIGNATURE	DATE
DRAWN	BGG		16/2/11
CHK'D			
APPV'D	BGG		

BREAK AND DEBUR SHARP EDGES

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

WEIGHT:

TITLE:
QC160 QUADTRACK
ELECTRICAL

DWG NO. A0

SCALE 1:25 SHEET 1 OF 1

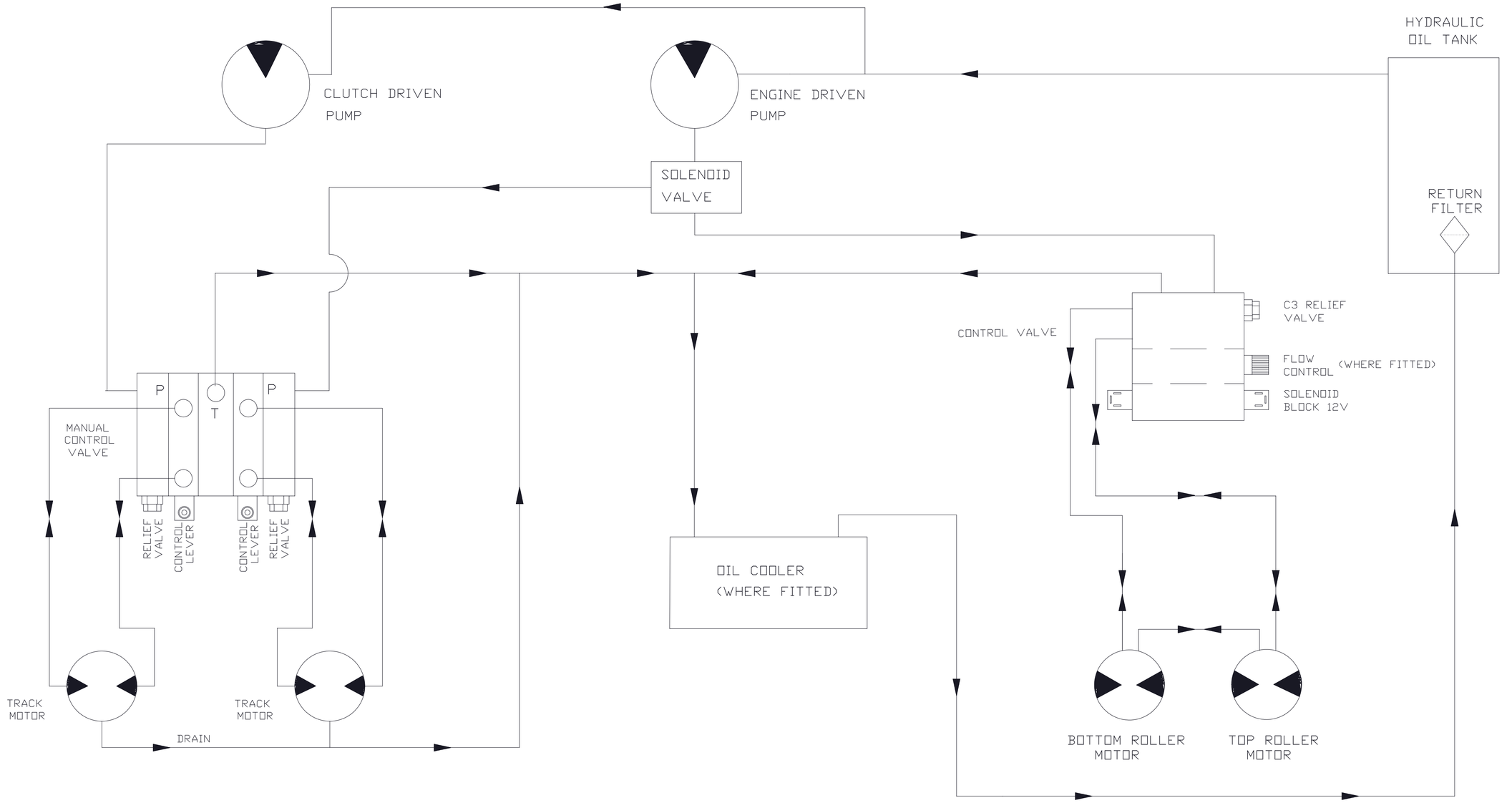
GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Works B49 5QG
Tel 01789 400044

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



34

REV	MODIFICATION	DRAWN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°	FINISH: xxxxxxxxxx		NAME	SIGNATURE	DATE
		DRAWN	BGG		17/3/11
		CHK'D			
		APPV'D	BGG		

DEBUR AND BREAK SHARP EDGES

TOLERANCES
MACHINED PARTS +/- 0.025mm
FABRICATED PARTS +/- 1.0mm

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Kings Coughton
Alcester
Warks B49 5QG Tel 01789 400044

MATERIAL:

TITLE: QUADTRACK HYDRAULIC CIRCUIT

WEIGHT:

DWG NO.

A1

SCALE:1:1.25

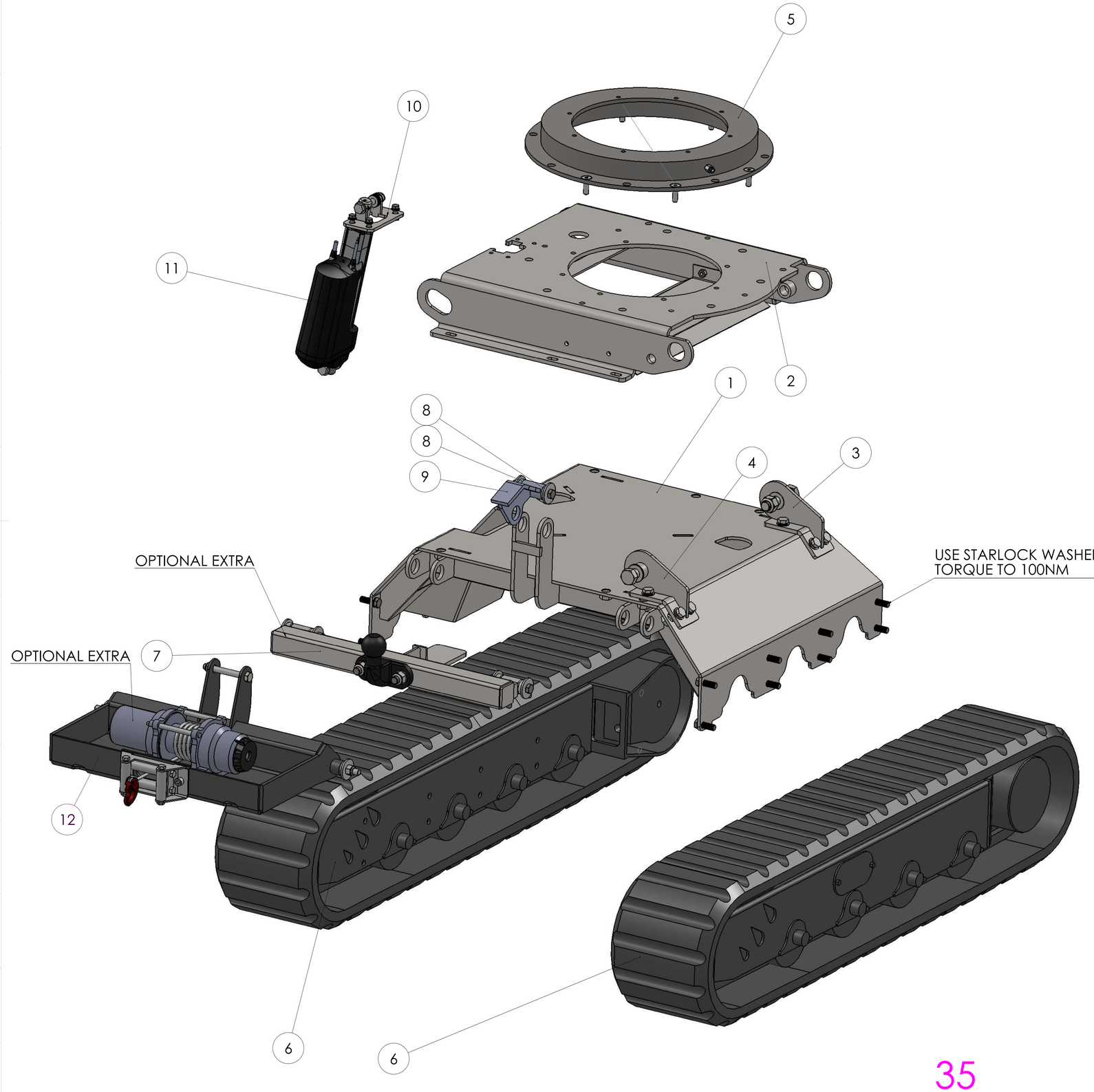
SHEET 1 OF 1

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



USE STARLOCK WASHER & THREADLOCK
TORQUE TO 100NM

ITEM NO.	PART NUMBER	DESCRIPTION	Default/QTY.
1	QTRAK-001	TRACK CHASSIS	1
2	QTRAK-002	MOUNTING PLATE	1
3	QTRAK-009	PIVOT BKT OPP HAND	1
4	QTRAK-009	PIVOT BKT	1
5	QC160-1-1002N	SLEWING RING	1
6	QC160-9-1017	GEMMO TRACK PAIR	1
7	QTRAK-110	BALL HITCH BEAM	1
8	QTRAK-084	SPACER	2
9	QTRAK-085	TRANSPORT LOCK	1
10	QTRAK-053	ACTUATOR BKT	1
11	QC160-9-1020	ACTUATOR	1
12	QTRAK-0125F	WINCH KIT	1

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		17/4/13
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

MATERIAL:

WEIGHT:

TITLE:
TRAK CHASSIS

GreenMech LTD
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG
Tel 01789 400044

DWG NO QTRAK-001 A0

SCALE:1:10 SHEET 1 OF 1

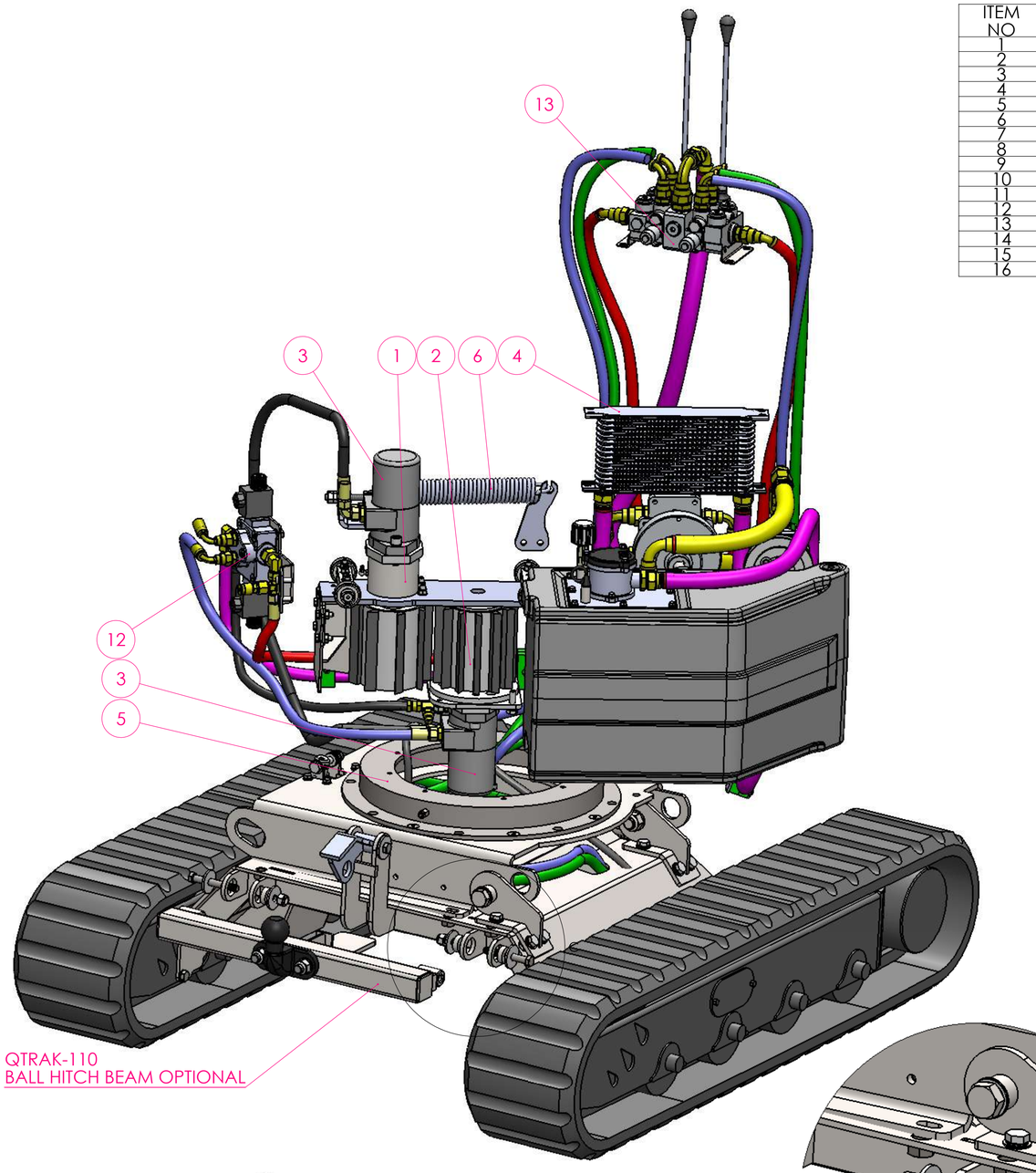
DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

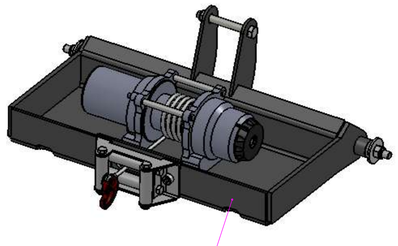
DIMNS IN MM

PROGRAM No:-

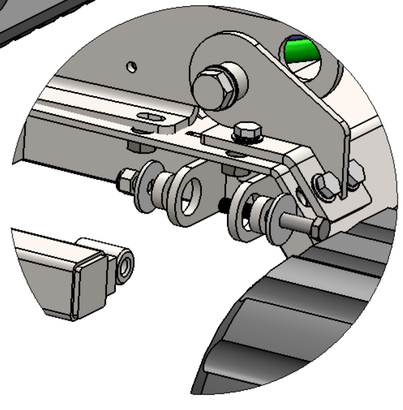
ITEM NO	PART NUMBER	DESCRIPTION	QTY
1	QC160-3-15MK2	SLIDING ROLLER ASSY	1
2	QC160-3-32MK2	FIXED ROLLER	1
3	C200207-1	HYRAULIC MOTOR	2
4	QC160-6-9015	OIL COOLER	1
5	QC160-1-1002N	SLEWING RING	1
6	QC160-3-1001-1	ROLLER RETURN SPRING	1
7	QC160-9-1019	HYDRAULIC PUMP	1
8	QC160-9-1027	CLUTCH	1
9	QC160-9-1026	FINAL DRIVE	1
10	EC151029	OIL RETURN FILTER	1
11	QC160-6-9001	HYDRAULIC PUMP ASSY	1
12	QC160-6-9017	HYDRAULIC VALVE	1
13	STC1928-901	HYDRAULIC VALVE	1
14	QC160-6-9005	HYRAULIC SUCTION PIPE	1
15	QC160-6-9006	HYDRAULIC SUCTION PIPE	1
16	QC160-6-9016	HYDRAULIC RETURN PIPE	1



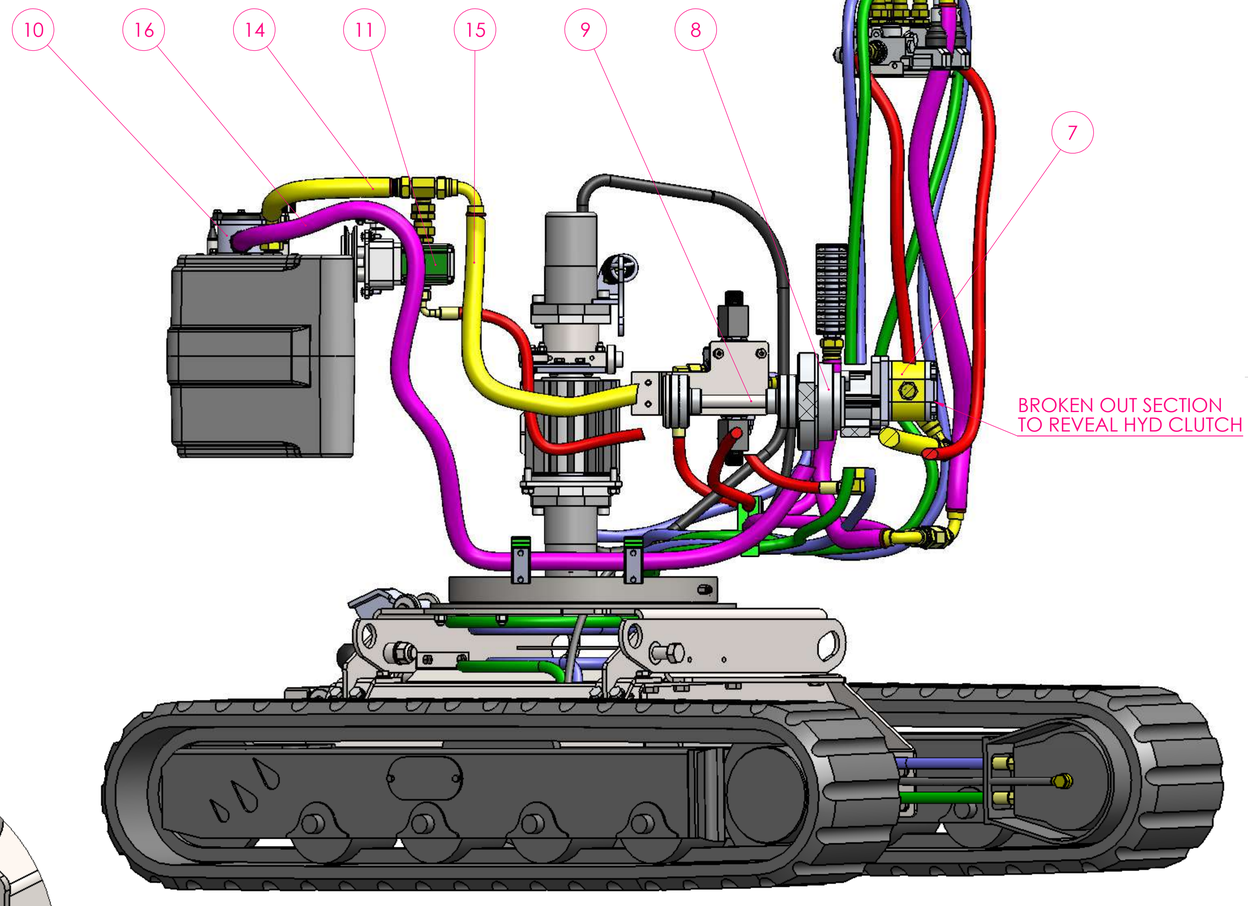
QTRAK-110
BALL HITCH BEAM OPTIONAL



QTRAK-0125F
WINCH KIT OPTIONAL EXTRA



DETAIL C
SCALE 2 : 5



BROKEN OUT SECTION
TO REVEAL HYD CLUTCH

REV	MODIFICATION	DRAWN	APPRD	DATE

36

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH: xxxxxxxxxx

	NAME	SIGNATURE	DATE
DRAWN	RVMR		03/04/13
CHKD			
APPV'D	BGG		

DEBUR AND BREAK SHARP EDGES

TOLERANCES
MACHINED PARTS +/- 0.025mm
FABRICATED PARTS +/- 1.0mm

GreenMech Ltd
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG Tel 01789 400044

MATERIAL:

TITLE:
Hydraulics detail

WEIGHT:

DWG NO QUADTRAK A1

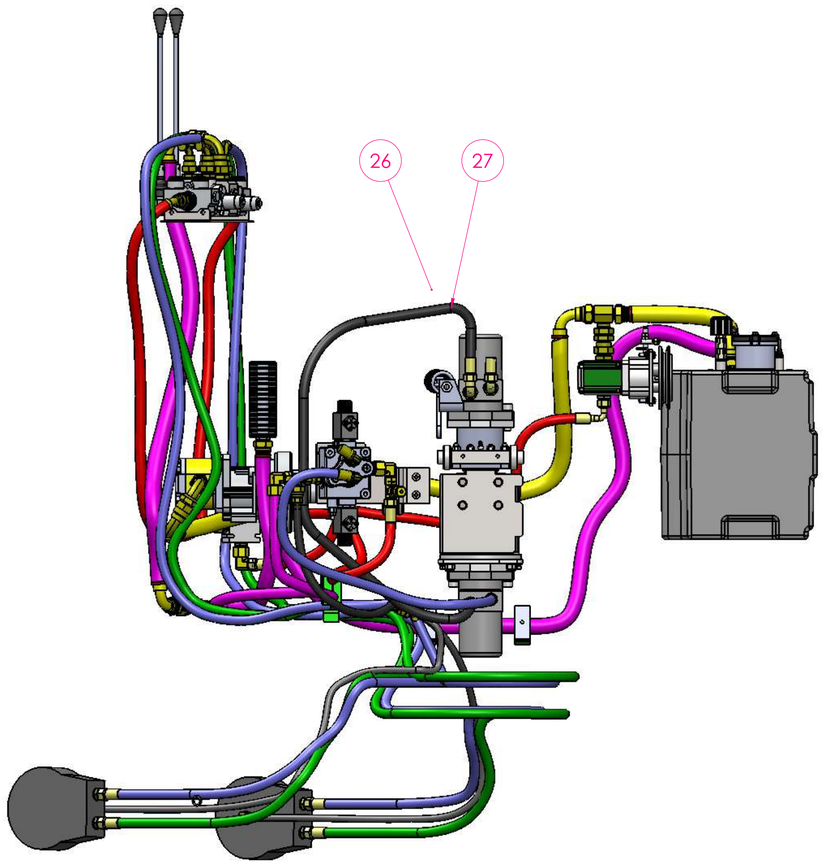
SCALE:1:20 SHEET 2 OF 3

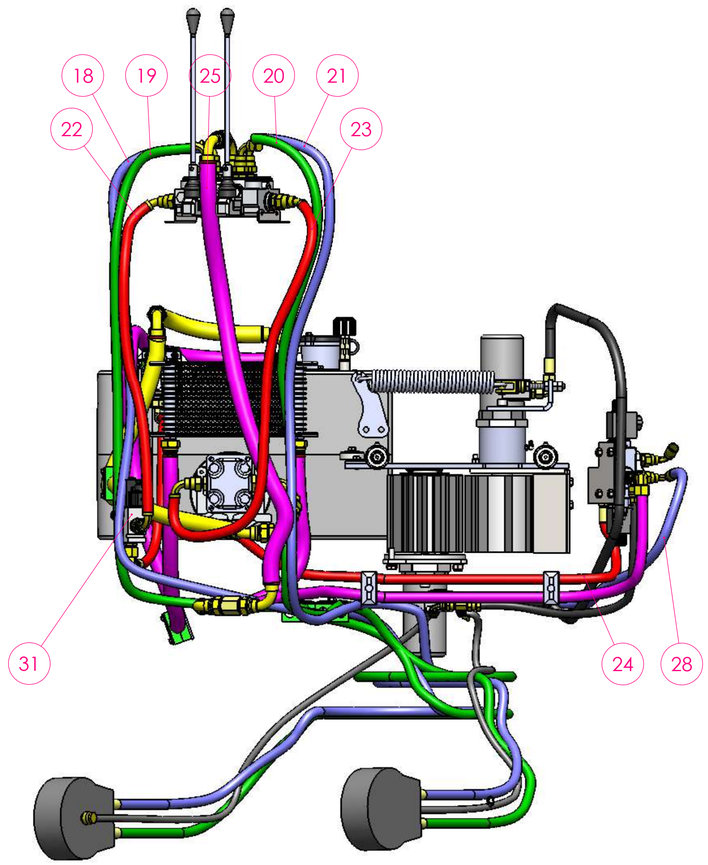
DO NOT SCALE - IF IN DOUBT ASK

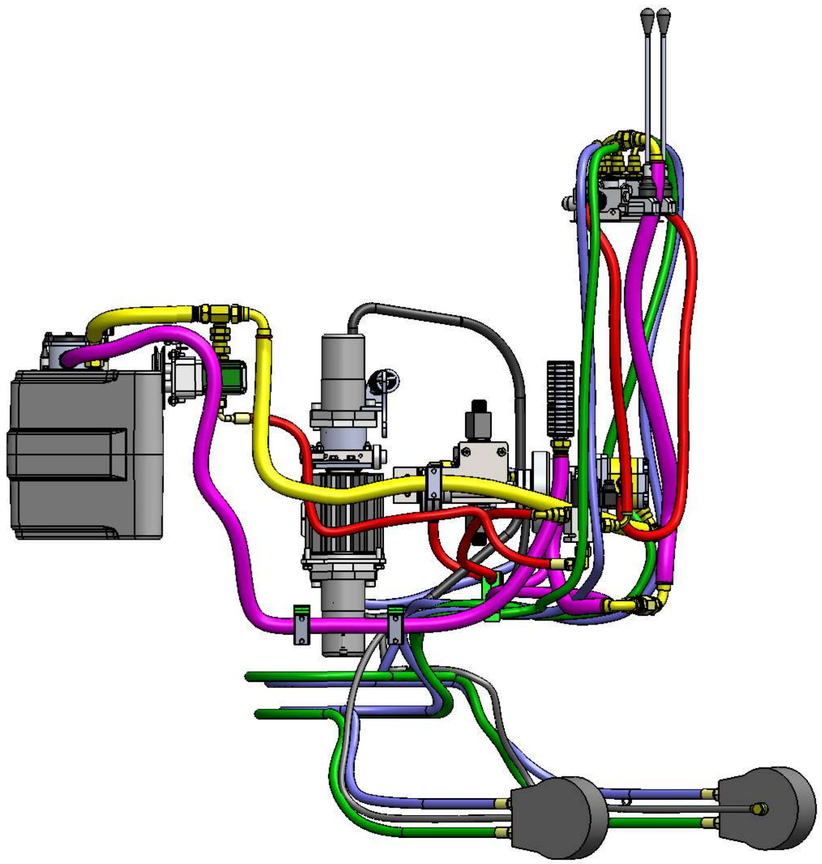
1ST ANGLE PROJECTION

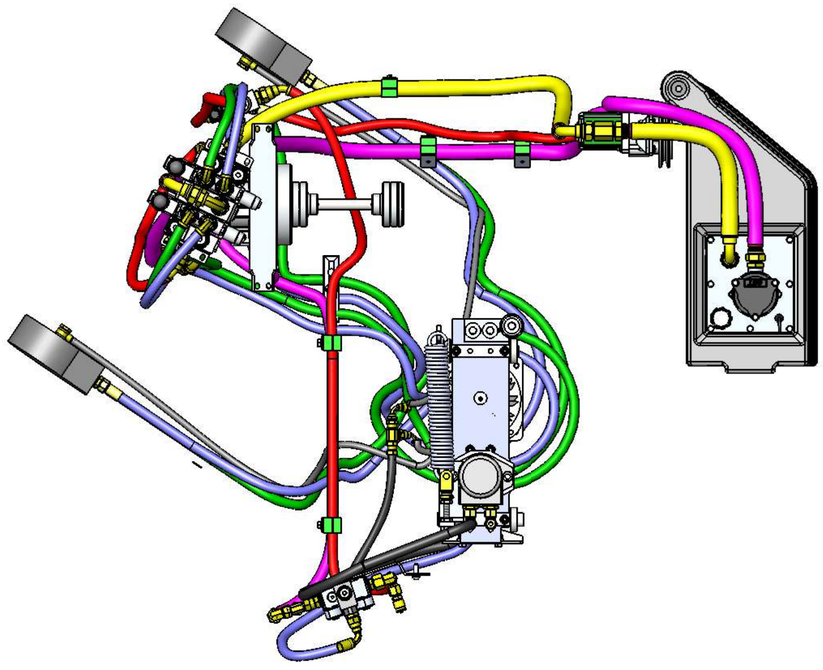
DIMNS IN MM

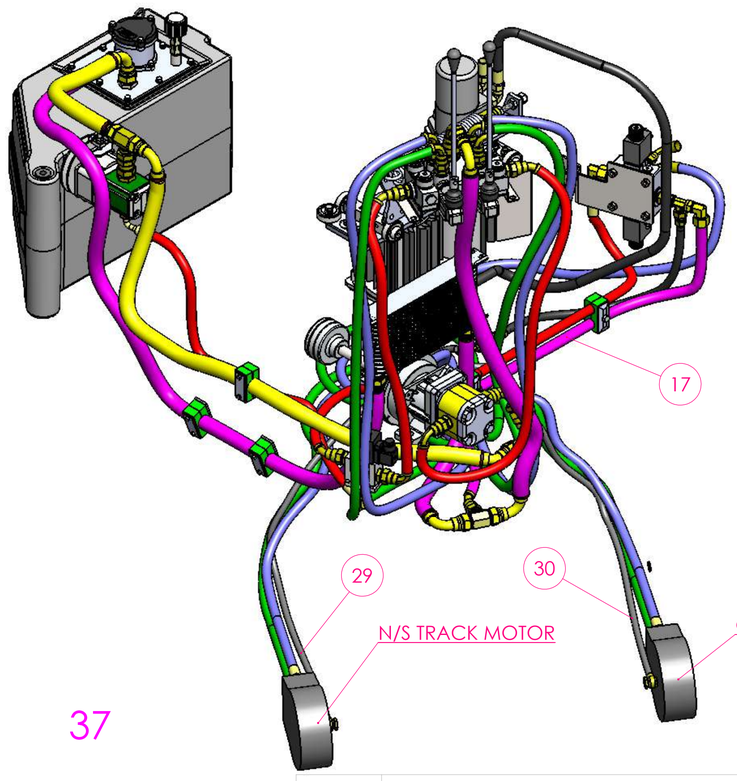
PROGRAM No:-











ITEM NO	PART NUMBER	DESCRIPTION	QTY
17	QC160-6-9016	HYDRAULIC RETURN HOSE	1
18	QTRAK-6-9001	N/S TRACK MOTOR RETURN	1
19	QTRAK-6-9002	N/S TRACK MOTOR FEED	1
20	QTRAK-6-9003	O/S TRACK MOTOR FEED	1
21	QTRAK-6-9004	N/S TRACK MOTOR RETURN	1
22	QTRAK-6-9005	TRACK VALVE FEED	1
23	QTRAK-6-9006	TRACK VALVE FEED	1
24	QTRAK-6-9007	DIRECTIONAL VALVE FEED(ROLLERS)	1
25	QTRAK-6-9008	TRACK VALVE RETURN HOSE	1
26	QC160-6-9010	ROLLER MOTOR FEED HOSE	1
27	QC160-6-9009	ROLLER MOTOR LINK HOSE	1
28	QTRAK-6-9010	ROLLER MOTORS RETURN	1
29	QTRAK-6-9011	N/S TRACK MOTOR BLEED	1
30	QTRAK-6-9012	O/S TRACK MOTOR BLEED	1
31	C251808	12V SOLENOID VALVE	1

37

REV	MODIFICATION	DRAWN	APPRD	DATE

TOLERANCES: LINEAR: 0.025mm ANGULAR: 0.25°

FINISH: xxxxxxxxxx

	NAME	SIGNATURE	DATE
DRAWN	RVMR		03/04/13
CHK'D			
APPV'D	BGG		

DEBUR AND BREAK SHARP EDGES

TOLERANCES
MACHINED PARTS +/- 0.025mm
FABRICATED PARTS +/- 1.0mm

GreenMech Ltd
The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG Tel 01789 400044

MATERIAL:

TITLE:
Bare hydraulics

WEIGHT:

DWG NO QUADTRAK A1

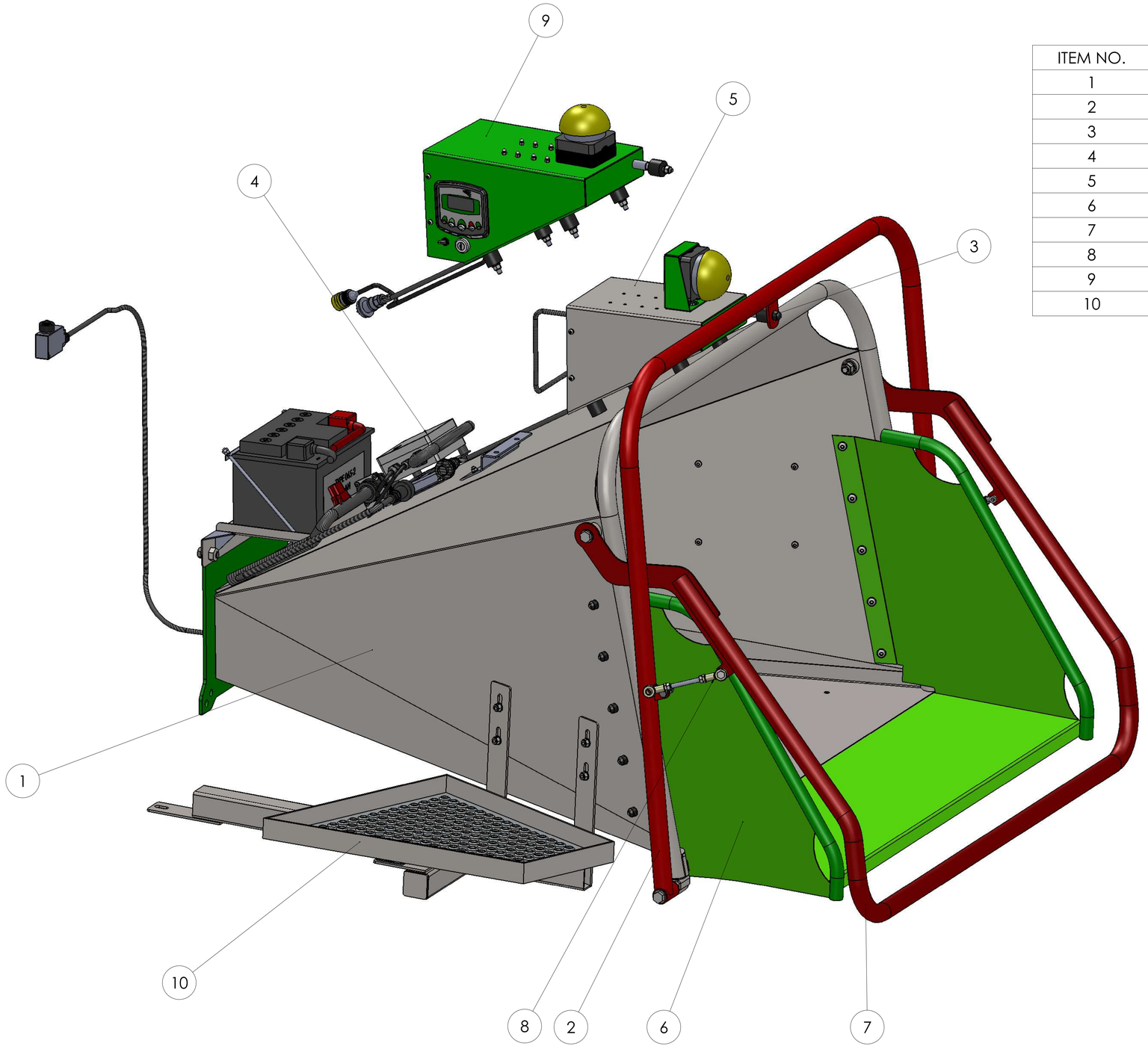
SCALE:1:20 SHEET 3 OF 3

DO NOT SCALE - IF IN DOUBT ASK

1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	QC160-4-1	INFEED CHUTE	1
2	QC160-4-7-QTRAK	CONTROL BAR	1
3	QC160-4-1009	M8 NUT CAP	11
4	QC160-6-1028	JUNCTION BOX	1
5	QC160-4-10	MK1 CONTROL BOX	1
6	QTRAK-049	FIXED INFEED FLAP	1
7	QT160-4-037MK2	LOWER CONTROL BAR	1
8	QTRAK-080	CONTROL BAR LINK	2
9	QC160-4-10MK2	MK2 CONTROL BOX	1
10	QTRAK-023	OPERATOR PLATFORM	1

REV	MODIFICATION	DRN	APPRD	DATE

TOLERANCES:
LINEAR: 0.025mm
ANGULAR: 0.25°

FINISH:

DEBUR AND BREAK SHARP EDGES

	NAME	SIGNATURE	DATE
DRAWN	BGG		17/4/13
CHK'D			
APPV'D	BGG		

TOLERANCES
MACHINED PARTS - +/- 0.025mm
FABRICATED PARTS - +/- 1.0 mm

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Alcester
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Tel 01789 400044

MATERIAL:

TITLE:
INFEED CHUTE QUADTRAK

WEIGHT:

DWG NO. A0

SCALE:1:10

SHEET 1 OF 1

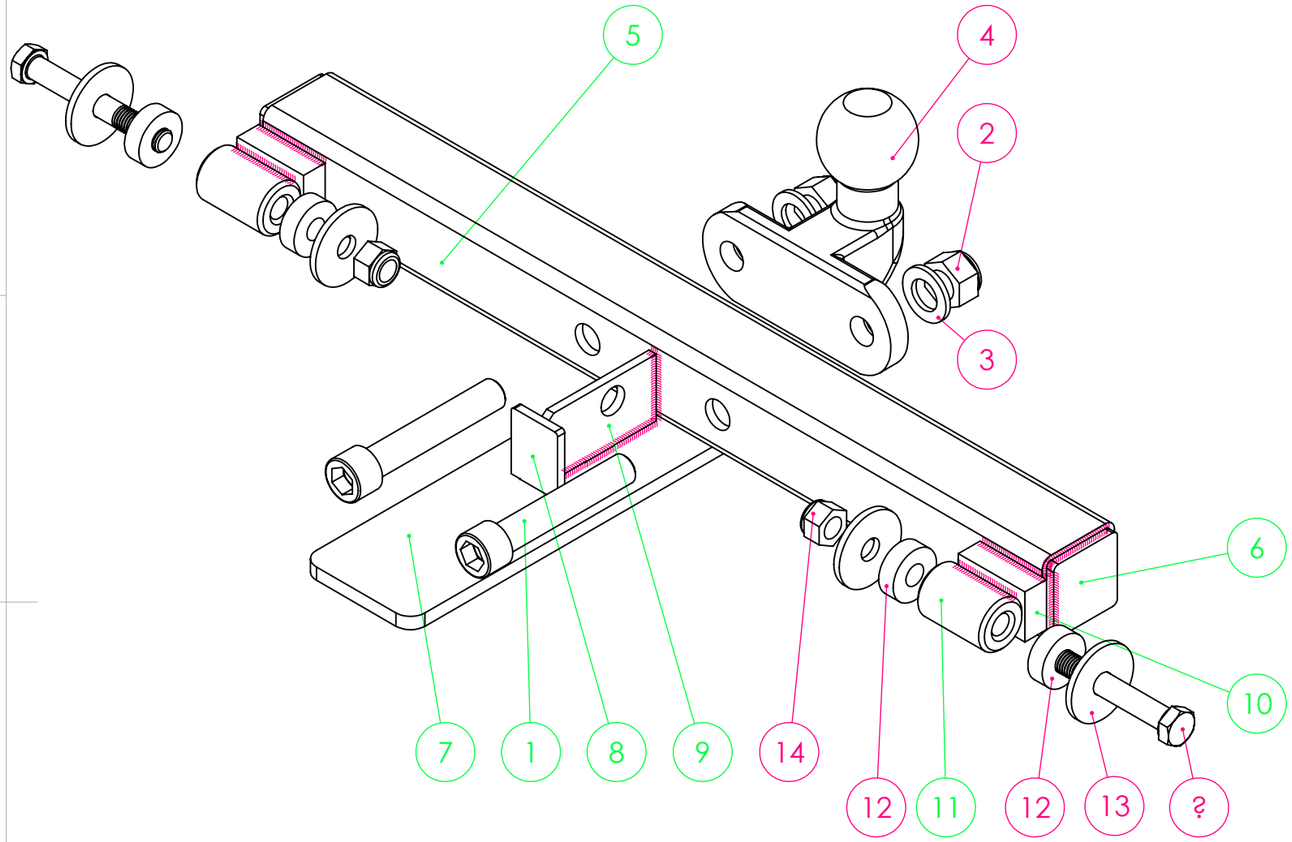
DO NOT SCALE - IF IN DOUBT ASK

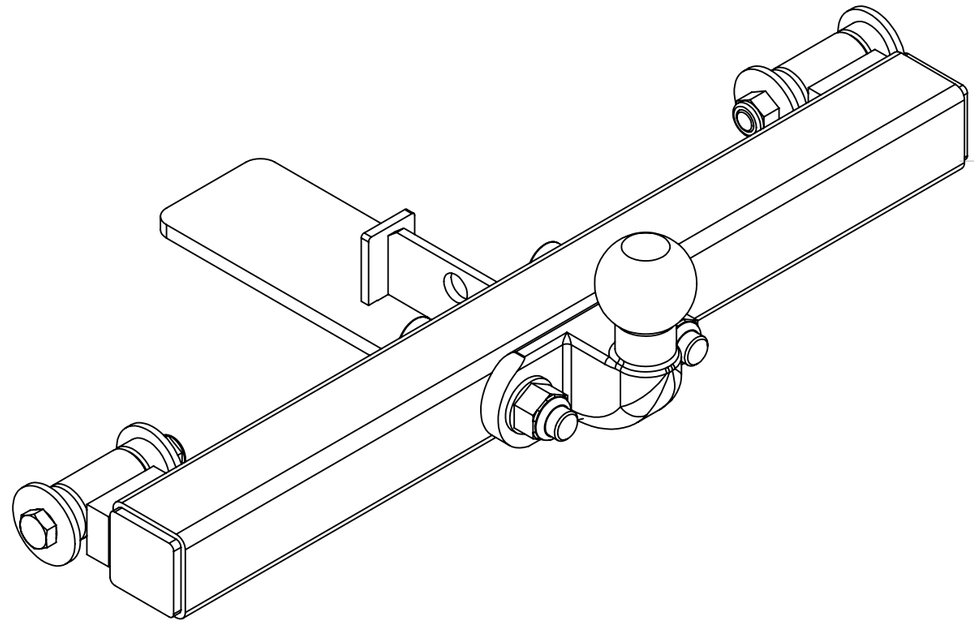
1ST ANGLE PROJECTION

DIMNS IN MM

PROGRAM No:-

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	71690	M16 x 90 Caphead bolt	2
2	91601	NYLOC NUT	2
3	91602 Washer	M16 A Washer	2
4	Ball hitch	50mm bolt on	1
5	QTRAK-110	Ball hitch beam	1
6	QTRAK-111	End cap	2
7	QTRAK-112	Support plate	1
8	QTRAK-113	Stop gusset	1
9	QTRAK-114	Brace plate	1
10	QTRAK-115	Pivot spacer	2
11	QTRAK-116	Pivot boss	2
12	QTRAK-117	Infill spacer	4
13	91202-R	M12 LARGE WASHER	4
14	91201	M12 NYLOC	2
15	91290	M12 x 90 bolt	2





39

REV	MODIFICATION	DRN	APPD	DATE

TOLERANCES:
LINEAR: 0.025MM
ANGULAR: 0.25°

FINISH:

	NAME	QUANTITY	DATE
DRAWN	RVMR	1	30/04/2013
CHK'D			
APPV'D	BGG		

DEBUR AND BREAK SHARP EDGES

TOLERANCES
MACHINED PARTS +/- 0.025mm
FABRICATED PARTS +/-1.0mm

GreenMech Ltd

The Mill Industrial Park
Kings Coughton
Alcester
Warks B49 5QG Tel 01789 400044

Material & Thickness

see BOM

WEIGHT:
7850.19

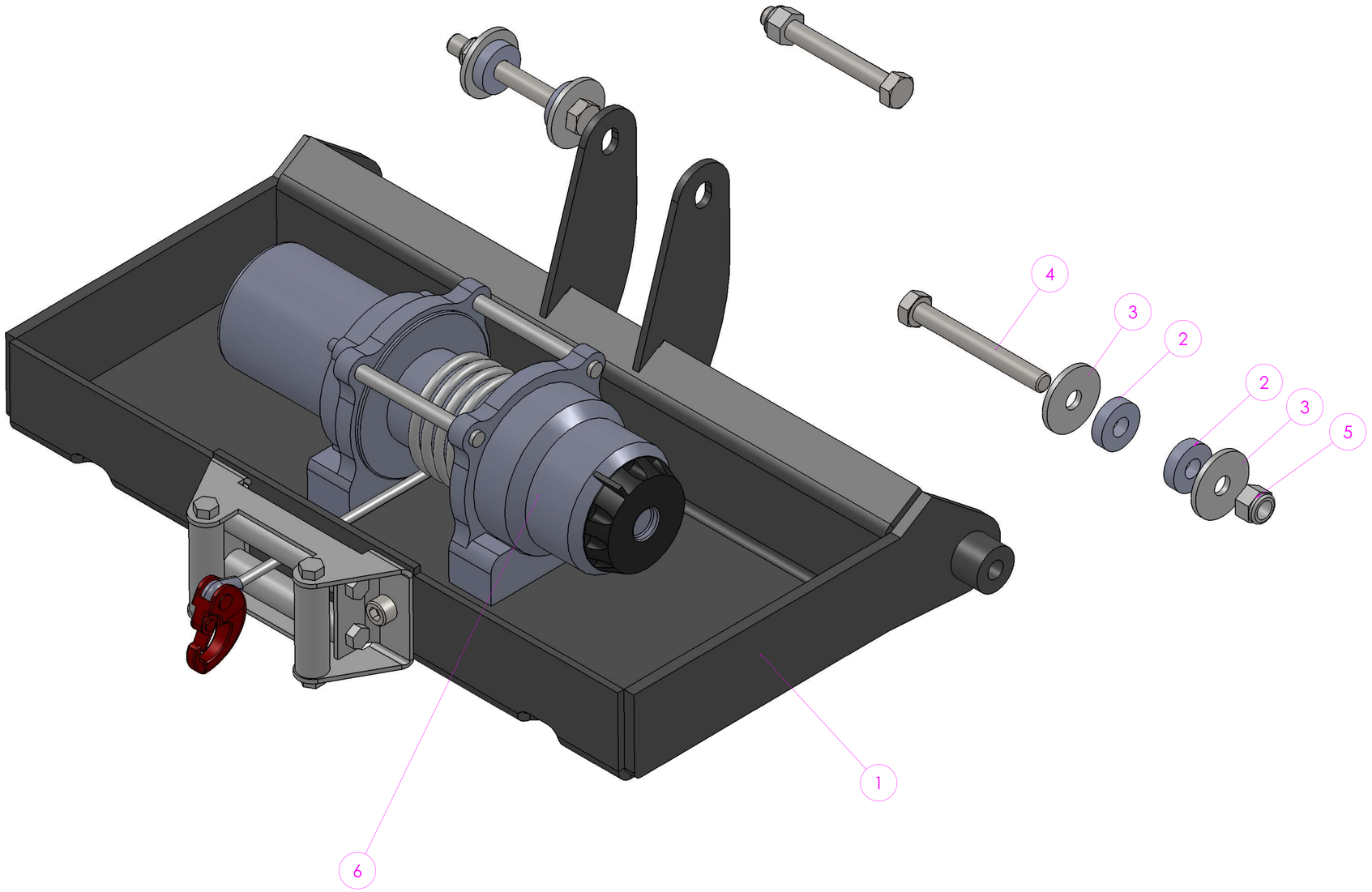
TITLE:
BALL HITCH BEAM

DWG NO. QTRAK-110

A3

SCALE:1:3

SHEET 2 OF 3



ITEM NO.	PART NUMBER	DESCRIPTION	Default/QTY.
1	QTRAK-0125F	WINCH PLATE	1
2	QTRAK-084	SPACER	4
3	91202-R	M12 LARGE WASHER	4
4	912100	HEX HD BOLT	3
5	91201	NYLOC NUT	3
6	STC1623-1-150	RT30 WINCH KIT	1

WINCH KIT

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