



CR400 CRUSHER USER MANUAL

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Introduction

Thank you for choosing Dragon Equipment. Our crushers are designed to give safe and reliable service if operated in accordance with this instruction manual. It describes the controls, pre-use inspections, start-up, operating, and shutdown procedures.

The CR400 is designed to reduce sections of concrete, bricks or stones by a crushing action. The reduction output can be adjusted to produce different sizes of product (hardcore).

Limitations

- Steel-reinforced sections should be avoided.
- Wood (any type), cloth, rubber etc. must not be placed into the crusher's jaws.
- Be aware if any of these items are encased into the set concrete during crushing as they may cause a stoppage.

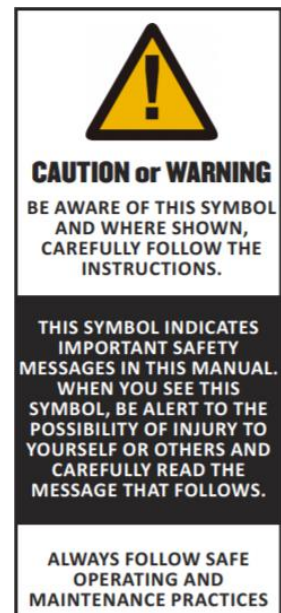
Delivery

All Dragon Equipment CR400 Crusher machines have a full pre-delivery inspection before leaving the factory and are ready to use. Read and understand this instruction manual before attempting to operate or move the crusher.

Important Health and Safety Information

Before using your new crusher, please take the time to read this manual. Failure to do so could result in:

- Personal injury.
- Equipment damage.



- Property damage.
- Third-party injuries.

The machine must be properly operated and maintained to keep it in a safe and efficient functioning condition. Ensure that all controls are free of mud, grease, or other matter that might cause slips hazardous to the operator or other personnel. Report all malfunctions to those responsible for maintenance or site safety. Do not operate the equipment until corrected. Normal service or maintenance performed as required can prevent unexpected and unnecessary downtime. This handbook describes general inspections, servicing and operation with the normal safety precautions required for normal operation.

This manual covers the operation and maintenance of the Dragon Equipment CR400 Crusher. All information in this manual on how to operate the machine safely is based on the latest product information available at the time of purchase. All operators must be properly trained in safe working practices before operating this machine.

Dragon Equipment's policy of continuous improvement on the design of its products may result in modifications to the crushers or their accessories. Dragon Equipment reserves the right to make modifications at any time without notice and obligation. This may result in minor discrepancies between this manual and the purchased product.

Specifications

- Width: 800mm
- Length: 3,271mm
- Height: 1,381mm
- Weight: 1200 kg
- Mouth: 410 x 205mm
- Engine Power: 17kW (23 HP)
- Feed height: 1,375mm
- Start: Electric and recoil
- Fuel: Petrol



Figure 1: Crusher Dimensions

Parts Locator

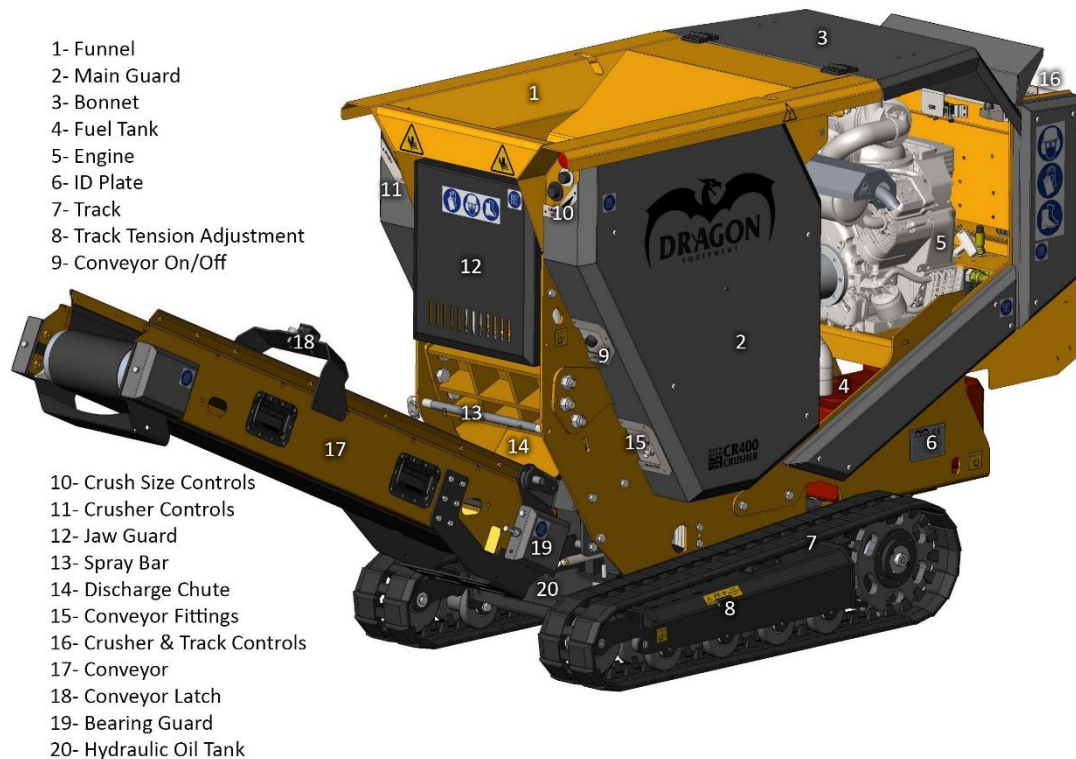


Figure 2: Parts Locator

The CR400 crusher has the following fixed guards for the protection of the operator, crusher and environment:

- **Inner Guard:** Protects hydraulic motors from damage during operation.
- **Drive Belt Guard:** Protects drive belt from damage and environment.
- **Engine Bonnet:** Protects the engine from the environment.
- **Hose Guards:** Prevents damage to hoses.
- **Control Tower Guard:** Protects valves from the environment.
- **Jaw Guard:** Protects crush size adjustment mechanism.

These guards may be removed for maintenance only. The operator must ensure guards are in place before operation.

Safe Working

Operator's Personal Protective Equipment (PPE)

- Suitable work gloves.
- Steel toe cap safety boots complying with ISO 20345:2011.
- Appropriate close-fitting clothing.
- Never wear loose clothing, rings, watches etc. that might catch the controls.
- High-visibility clothing complying with ISO 20471:2013 if required.
- Eye, head and ear protection and a face mask if appropriate.



Basic Crushing Operation Safety

The operator should be aware of the following points:

- Be aware when the crusher is processing material that is an awkward shape. The material can move in the funnel with great force.
- Never leave the crusher unattended when in operation or with the engine running.
- If an accident occurs, stop the machine, remove the key and call the emergency services if required.

General Safety Matters

- Always ensure the engine has stopped and cooled down before making any adjustments, undertaking maintenance, refuelling or cleaning.
- Always ensure there is no risk of the machine moving during operation. Be aware of slope inclines and surface conditions.
- If there are any fluid leaks, cease operating the machine, stop the engine and repair before continuing.
- Take regular breaks, and do not operate the machine when tired.
- Always keep hands, feet and clothing out of the feed opening, discharge and moving parts.
- Keep the discharge area clear from debris build-up.
- Ensure protective guards are in place before operating the machine. Failure to do so may result in personal injury or loss of life.
- Always operate the crusher in a well-ventilated area to prevent the build-up of exhaust fumes.
- Ensure a fire extinguisher is available on site.
- Ensure a personal first aid kit is available and know its location.
- Do not operate the crusher in low light levels and be aware of changeable weather.
- Do not smoke when refuelling.
- Do not allow individuals to operate the machine who have not been trained.
- Do not climb onto the machine.
- Do not touch exposed wiring due to the risk of electric shock.
- Do not use the crusher inside buildings without appropriate ventilation.

Engine Noise

Noise levels above 80dB (A) will be experienced in the working position. Prolonged exposure to loud noise may cause permanent hearing loss. All persons within close vicinity of the crusher must also wear ear protection (EN 352) at all times to prevent possible hearing damage.

The average sound pressure level at one metre for the Vanguard 23 EFI is:

3600FL [dBA]	3600NL [dBA]	3000FL [dBA]	3000NL [dBA]
96.8	93.8	94.4	90.4

While operating the crusher ensure that all individuals comply with the Control of Noise at Work Regulations 2005 to prevent or reduce risks to health and safety from exposure to noise at work.

Refuelling

- Follow standard Health and Safety practices.
- Stop the engine and allow it to cool.
- Never smoke or permit naked flames nearby.
- Store fuel away from any ignition sources.
- Fuel storage containers must be approved, clearly display appropriate labels and have securely fitting caps.
- Use a funnel when refuelling and ensure the fuel cap is refitted securely.
- Avoid skin contact with fuel. If it gets into the eyes wash out with sterile water immediately and seek medical advice as soon as possible.
- Always clean up after any spillages and change clothes if appropriate.



Operating Instructions

Storage and Parking

When parking the machine overnight, or for an extended period, the following procedure in addition to that given in 'Stopping the Engine' will help maintain it in good condition for subsequent use:

- Ensure the fuel tank is full before parking the machine overnight or for extended periods to prevent condensation.
- Park on level ground where possible. If it must be parked on a slope, position the machine at right angles to the slope and block tracks securely.
- Remove the key to a place of safety.

NOTE: Ensure the equipment cannot be started or used by unauthorised or untrained personnel.

To recommission after storage the following checks must be carried out:

- Check all fluid levels.
- Check for fluid leaks.
- Check the tension of the rubber tracks.
- Check the operation of all controls.
- Check the action of all E-Stop buttons.

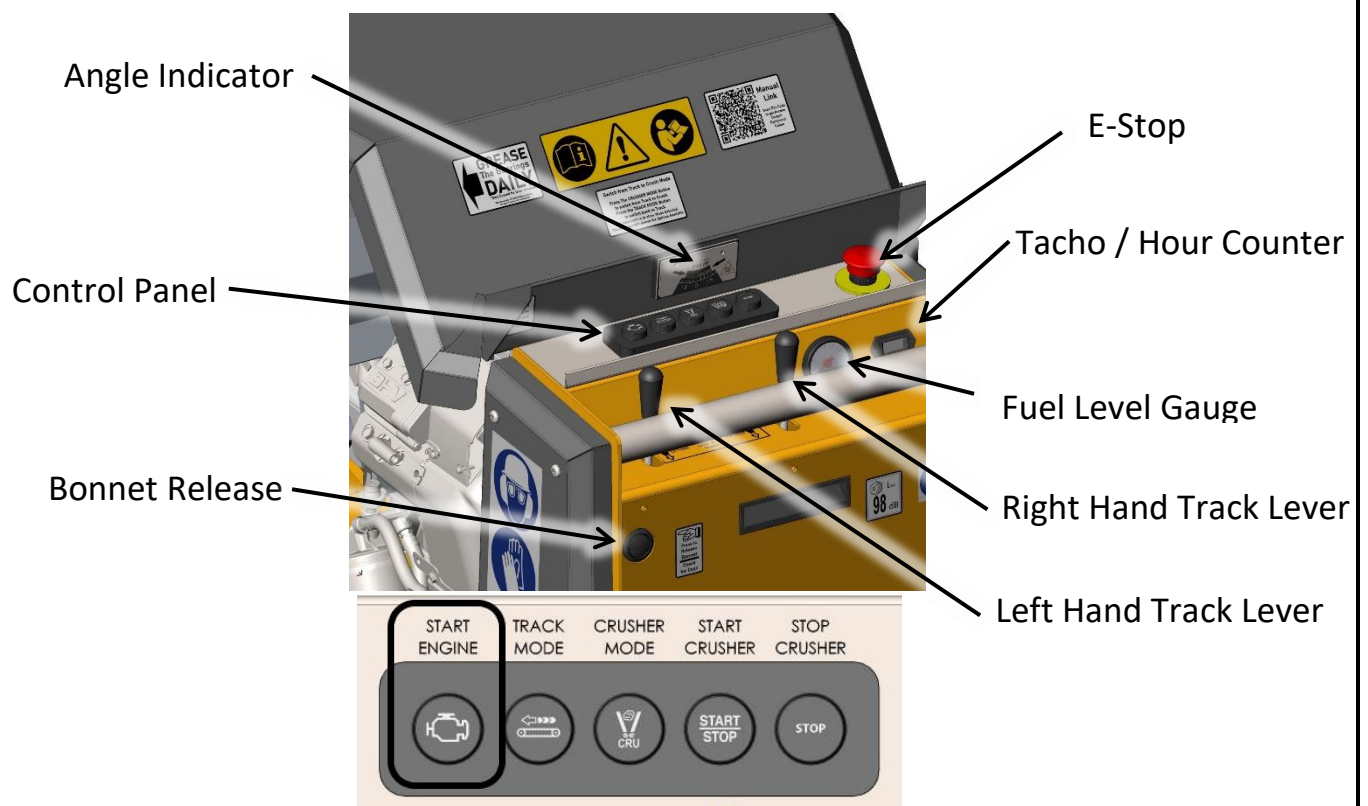


Figure 3: Summary of Switches, Controls and Gauges

Starting the Engine

Checks Before Starting

- Ensure the machine is located on firm flat ground.
- Check all guards are fitted.
- Carefully inspect tracks for cuts or other damage.
- Check the chute is clear and that there are no obstructions.
- Visually check for fluid leaks.
- Ensure there is sufficient fuel in the fuel tank.
- Ensure that all track levers are in the neutral position.
 - Ensure E-Stop buttons are pulled out.



WARNING

Do not use or attempt to start the crusher without the protective guarding in place. Failure to do so may result in personal injury or loss of life.

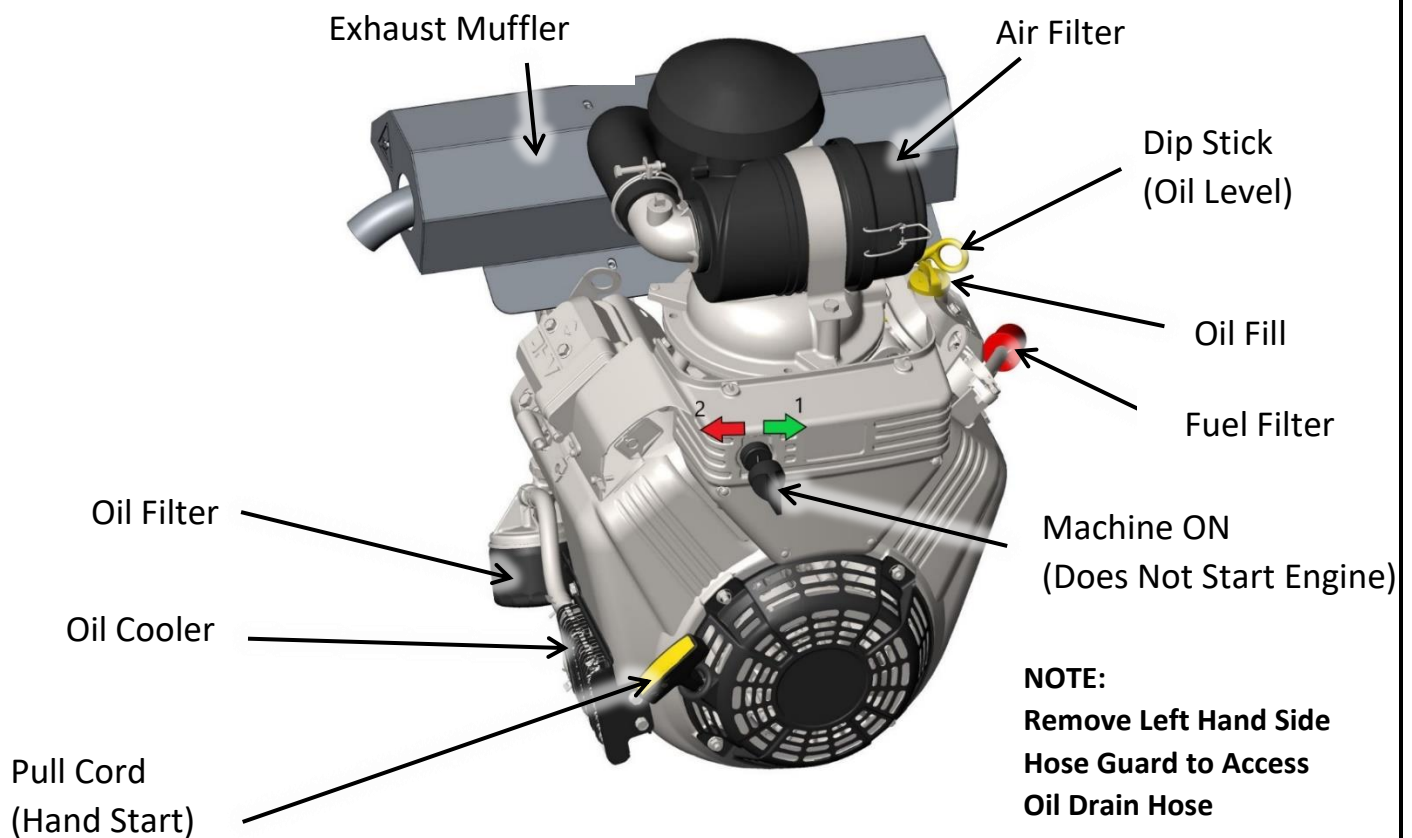


Figure 4: Engine Parts and Controls

Starting Procedure

Do not place the engine under full load at full speed immediately after starting. Always allow the engine to fully circulate lubricant and warm up gradually before operating at full speed and load.

- Insert the key into the ignition, turn the key clockwise to turn ON the machine. **Green 1 Fig 4**
- Press Start Engine Button on control Panel and the engine will crank over. Fig 3
- Release the button as soon as the engine starts.
- Allow the engine to warm up.

NOTE: To extend the life of the starter motor, use only short starting cycles - 5 seconds max.

Stopping the Engine

- Turn the Key anticlockwise to the stop position.
- This will stop the engine.
- The machine will turn off automatically after 1 second.
- For more detailed information refer to the Engine Owner's Manual.

NOTE: Do not use the E-Stop to turn the engine off in normal conditions.

NOTE: When the key is turned to the off position, the crusher will turn off automatically after 1 second.

Emergency Stopping

Should the machine need to be stopped in an emergency, push one of the red E-Stop buttons. These are located at each end of the machine and will stop the engine and disable the drive to the crusher jaws. The engine cannot be restarted until the activated E-Stop button is reset. Before resetting the E-Stop button inspect the machine to ensure it is safe to continue operation.

NOTE:

- **If the engine is not to be restarted remember to reset the E-Stop.**
- **Failure to reset the E-Stop will cause the Control Panel Button Lights to flash Blue. Fig 3**

Tracking the Machine

The crusher is designed to operate in either crusher or crawler mode, but not at the same time. To move the machine the following procedure must be followed:

Tracking Controls

- Track Mode Button.
- Left-hand Track Lever.
- Right-hand Track Lever.
- E-Stop.

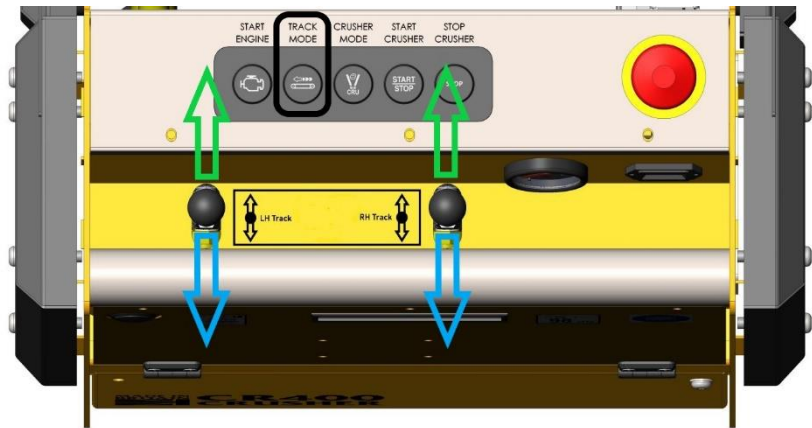


Figure 5: Tracking Controls

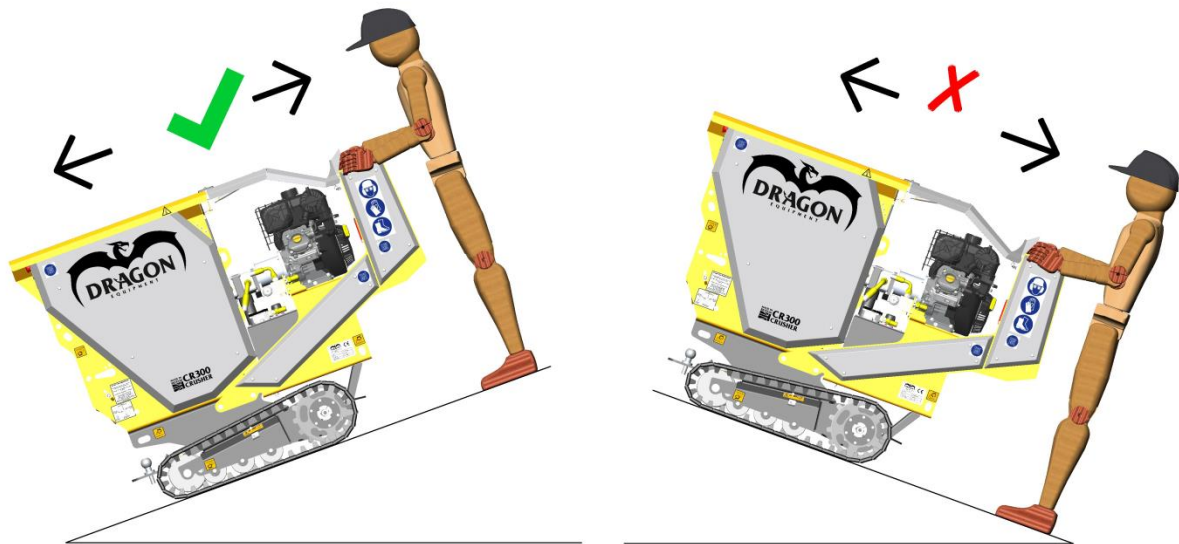
Checks Before Tracking

- Always face the direction the machine is travelling.
- Make sure the area around the machine is clear of personnel and obstructions before moving.
- Whenever possible operate straight up or down slopes. A side-hill operation can cause sideslip and possible rollover.
- The maximum side traverse angle on a slope is up to 20° (degrees), see Figure 6.
- When negotiating slopes greater than 10 degrees or loading onto a trailer, track the crusher in reverse so the operator is above the crusher, see Figure 6.

Tracking Procedure

- Select Track Mode on the control panel (If not already selected).
- The engine speed will automatically change to the correct speed.
- To steer the machine, apply differing pressure to the control levers.
- Apply equal forward pressure on both levers to make the machine move forward in the desired direction at speed.
- Applying equal pressure on both levers to the reverse position will make the machine move backwards at the desired speed.

Tracker Angle Limits



Always stay uphill of the machine while tracking.
DO NOT track the machine on slopes over 20°.

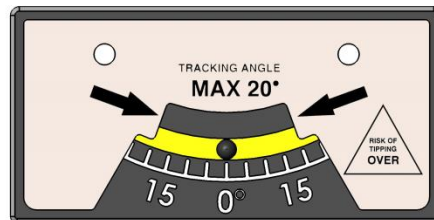
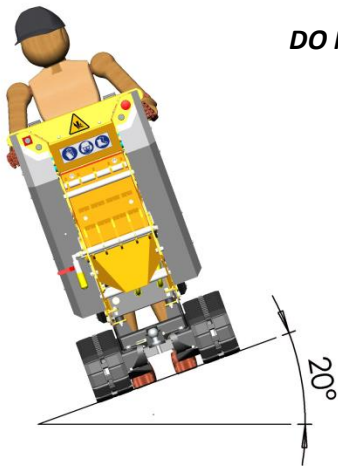


Figure 6: Tracking Angle Limits

Crushing

The CR400 has an electronic monitoring device to ensure the engine is kept at the optimum operating speed known as No-Stress. A product that has a harder density will automatically be detected and select a different operation mode until the greater load has passed. A product that requires a greater breaking force than the crusher can apply will automatically activate the Anti-Stall function and turn off the jaw movement so as not to stall the engine.

Crushing Controls

- Crusher Mode
- Start crusher - Activates continuous forward movement by pressing once.
- Stop crusher - Stops forward movement by pressing once.
- Reverse - Activates reverse (when the button is released the reverse action stops).
- E-Stop

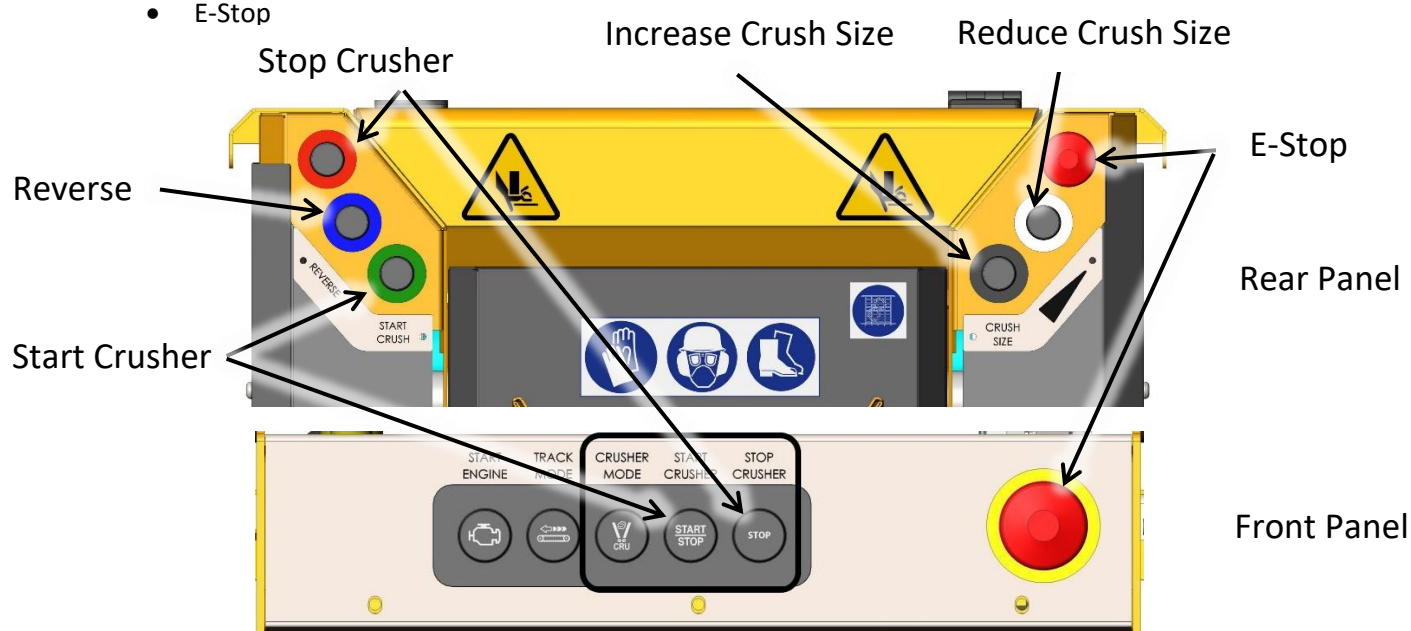


Figure 7: Crushing Controls – Front & Rear

Checks Before Crushing

- Always position the machine on a level firm surface for loading and ensure the loading area is clear from slips and trips.
- Ensure the funnel and jaw opening are free from objects not intended for crushing.
- Before feeding material into the machine ensure it is running smoothly with no fluid leaks or unusual noises. Product up to the recommended size can then be fed into the machine. Place it onto the machine funnel and allow it to drop into the jaw opening.

Crushing Procedure

- Select Crusher Mode on the Front Control Panel.
- Selecting the Crusher Mode will automatically increase the engine speed.
- Start the crushing operation by pressing the Start Crusher button on either control panel.
- Stop the crushing operation by pressing the Stop Crusher button on either control panel.
- In the event of a jam refer to the Blockages section on page 20.

NOTE: Never place your hands or any part of your body into the crushing jaws with the jaw moving.

Adjustment of Crush Size

- Press and hold the white upper button to decrease the crush output size. (Smaller)
- Press and hold the black Lower button to Increase the crush output size (Bigger)

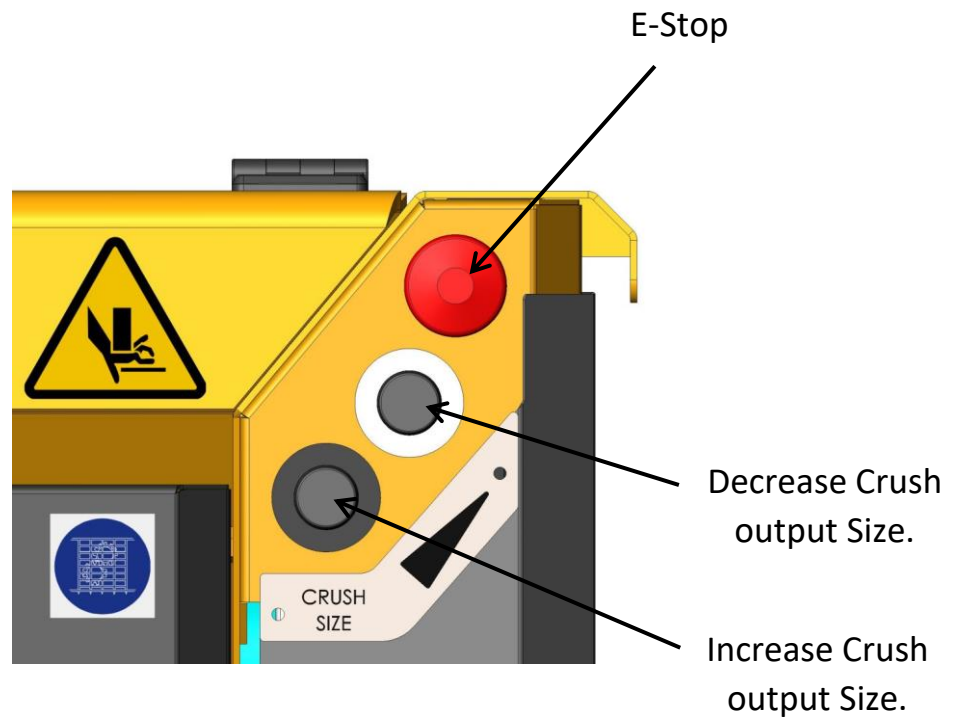


Figure 8: Crush Size Adjustment

NOTE: Greasing the Crush Adjustment Mechanism: The four (4) grease points must be lubricated at the points shown (Figure 19) **once every 3 months** with two pumps of grease from a grease gun. Adjust crush size up or down so the lower grease points are accessible through the slot.

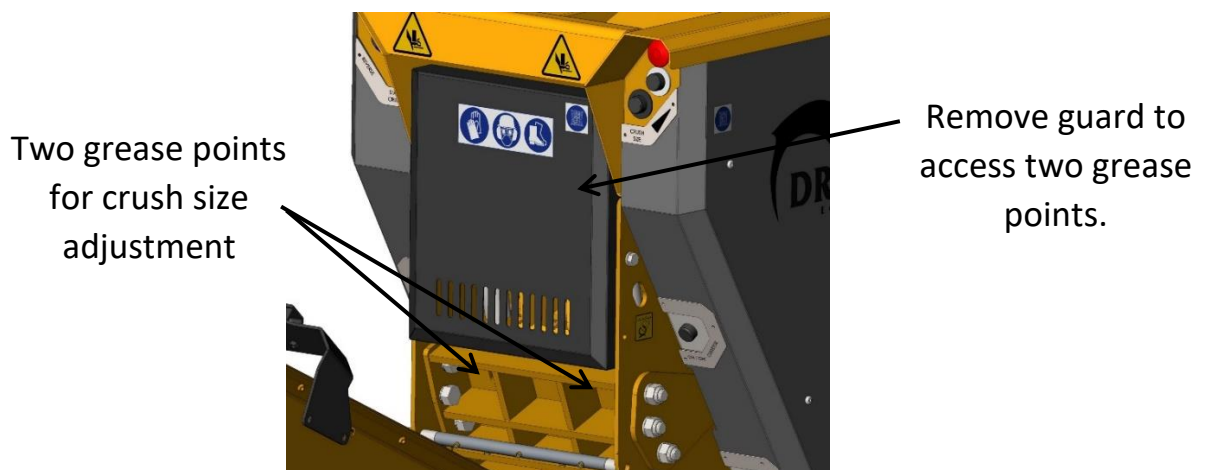


Figure 9: Grease points for Crush Size Adjustment

Conveyor

Specifications

- Total width: 430mm
- Belt width: 300mm
- Length: 1755mm
- Weight: 60kg
- Max. throughput: 10 tonnes an hour
- Max. incline angle: 30 degrees
- Max. discharge height: 1100mm
- Pressure Valve: 100bar



Figure 10: Conveyor Dimensions

Pre-Operation Inspections

- Check around the belt and belt barriers for debris and blockages.
- Check the out-feed location is clear.
- Don't run material through the conveyor without guards in place.
- Check the belt for wear & tear before use.

NOTE: Emergency stop will also stop belt operation

Conveyor Operation

NOTE: If track mode is enabled conveyor will switch off automatically. Crush mode will need to be reselected and the start-up procedure repeated to engage the conveyor.

Do not press the On/Off button without first connecting the hoses



1. To start the conveyor the crusher must be on and operating in crush mode.
2. Press the black On/Off button located on the crushing end of the machine to turn on the belt.

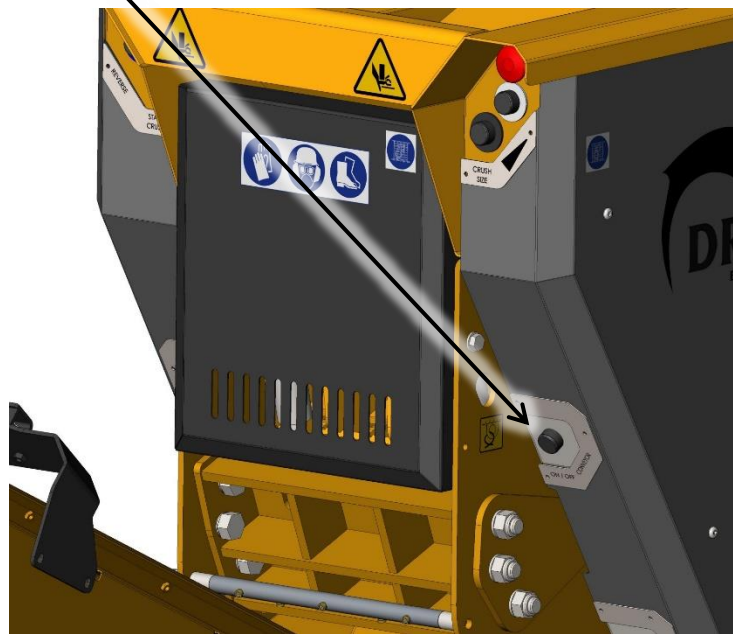
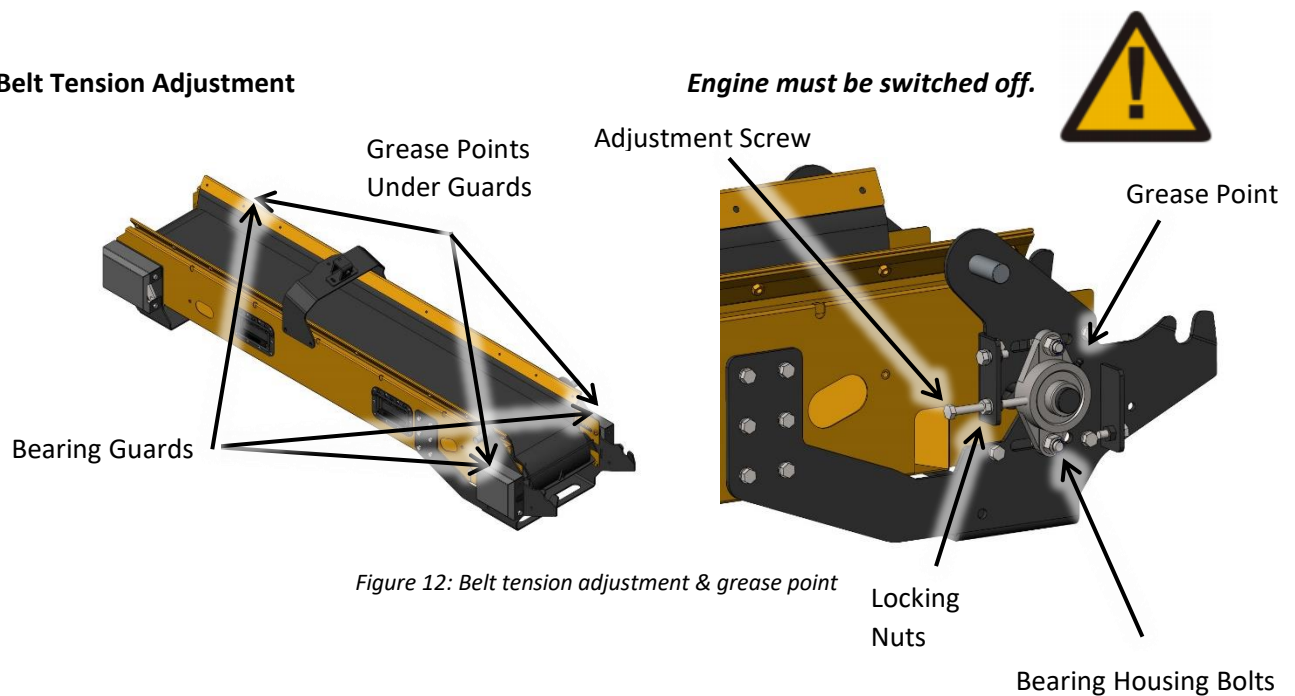


Figure 11: On/Off button for conveyor

3. Make sure the conveyor belt is running before feeding material into the machine.
4. Press the black On/Off button again to turn the conveyor off.

Servicing of Conveyor

Belt Tension Adjustment



1. Remove left and right bearing guards.
2. Loosen x4 bearing housing bolts (left and right side).
3. Loosen the lock nut and tighten the adjustment screw initially for two turns only, followed by small increments as required. Ensure both sides are adjusted equally.
4. Tighten the locking nut and x4 bearing housing bolts.
5. Run check test.
6. Re-fit bearing guard.

NOTE: Greasing the Bearing: The three (3) bearings must be lubricated at the point shown (Figure 14) **once every 3 months** with two pumps of grease from a grease gun.

Power Take-Off (PTO) Port

PTO Specifications for auxiliary tools.

- 22 litres per minute.
- 150 bar.

Do not press the On/Off button without first connecting the hoses

The engine must be switched off



NOTE: The emergency stop will also stop belt operation.

If crush mode is enabled, power to PTO will switch off automatically. Track mode will need to be reselected and the start-up procedure repeated to re-engage.

Fitment and Removal of Auxiliary Tool

1. Clean ports and connectors on the crusher and Auxiliary Tool.
2. Connect the two hoses.
3. When removing the Auxiliary Tool disconnect both hoses and replace the caps.

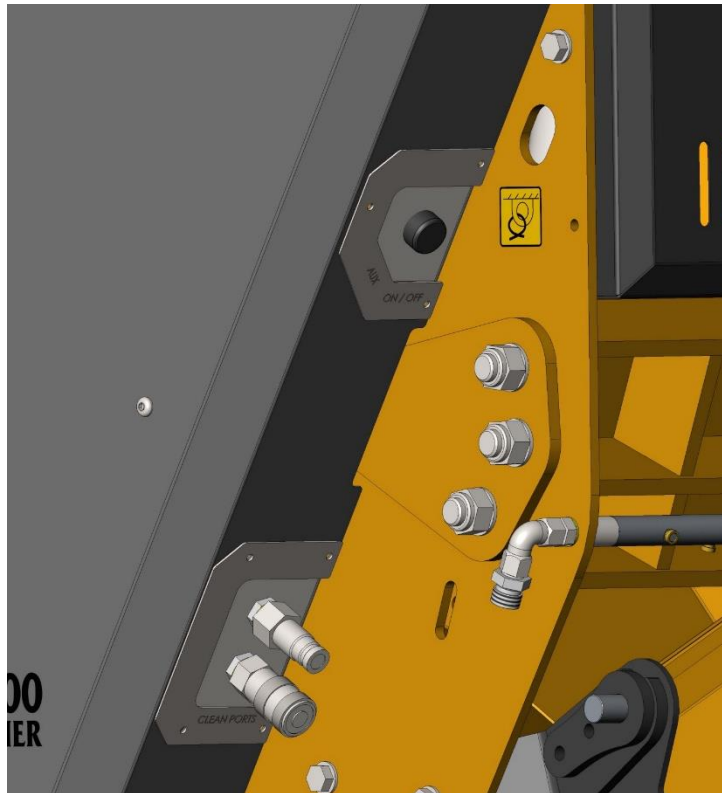


Figure 13: P.T.O. Port detail

Troubleshooting

- The machine will not track:
 - The mode selector is set to Crush – Set the switch to Track Mode.
 - Rock jammed into drive sprocket – change direction and remove the loose rock.
- Crushing jaws will not start moving:
 - The crusher is jammed – refer to the blockages section below.
 - The mode selector is set to Track – Set the switch to Crusher Mode.
- The engine will not crank to start:
 - Ensure all E-Stops are in the off position. No LED Blue light showing.
- The engine will crank, but not start:
 - No fuel in the tank – Check level and fill as required.
 - Wrong fuel has been poured into the tank – Drain fuel from the tank and replace it with the correct grade of petrol.

Blockages

A blockage or jam can be caused by:

- Material jammed in the funnel.
- Overfeeding material or oversized material.
- A foreign body in the crusher funnel such as wood or metal.
- Excessive wet soil, clay etc.

Continuing to feed material into a blocked machine may cause damage to the machine, if the crusher becomes blocked, proceed as follows:

- Use the Blue Reverse button to inch the jaws backwards and forwards, which in most cases will shift the product and cause it to drop deeper into the jaws, so allowing the crushing process to continue.
- If this action does not have the desired effect. Stop the engine immediately.
- While wearing gloves remove most of the debris causing the blockage.
- Restart the engine and select Crush Mode.
- Press the Green Start Button to continue, and repeat the reverse action as required.
- Allow machine time to clear any excess material remaining before you continue feeding.
- Using the crush size adjuster opening or closing the jaws bigger or smaller will in most cases remove the blockage to allow to continue crushing.

Service Instructions

Safe Maintenance

While carrying out maintenance, handle the crusher's components with care to avoid injury, it is recommended that gloves are worn while carrying out servicing to minimise the risk of contact with hazardous materials. The major components of this machine are heavy and if required, lifting equipment should be used.

Safe Lifting and Securing of the Crusher

If the crusher cannot be driven onto its transport vehicle, a hoist can be used. The lifting points are designed to lift only the machine's weight. Always inspect the lifting bar before each use and do not use it if damaged. Maximum lift weight is as indicated on the machine data plate.

The method of securing the crusher can vary depending on the type of carrier and the position of tie-down points available on the carrier. It is recommended that correctly rated ratchet straps are used to secure the machine via the track frame or over the tracks to the carrier lashing points. This must be carried out by competent qualified personnel. Failure to secure the load correctly could result in chassis and/or undercarriage damage or loss of load.

Lubrication and Servicing

Lubrication is an essential part of preventive maintenance. The instructions regarding types of lubricants and the frequency of their application must be followed to prolong the life of the machine. Periodic lubrication of moving parts helps prevent the possibility of mechanical failures. Thoroughly clean all fittings, caps, plugs etc., to prevent dirt from entering the system while servicing. Lubricants must be at operating temperatures when draining.

Do not operate any system unless the oil level is within the operating range as indicated on the dipstick, level plug or sight glass. All change and service periods are recommendations based on average operating conditions. Lubricants showing evidence of excessive heat, oxidation or dirt should be changed more frequently to prevent these conditions. Lubricants change and service periods must be established based on individual job conditions.

Recommended Lubricants

- Engine - Vanguard[®] Synthetic 15W-50
- Hydraulic - VG32 Mineral Oil
- Grease Nipples – Shell Gadus S3 V100 premium multi-purpose grease

Spares

Only fit genuine Dragon Equipment crusher spares. Failure to do so will invalidate the warranty and may result in damage to the crusher, personal injury or even loss of life.



WARNING

Always immobilise the machine before undertaking any maintenance work on the crusher by removing the ignition key and disconnecting the battery. Ensure the crusher is stable and on level ground before performing any maintenance.

Service Schedule

First 5 Hours	
<ul style="list-style-type: none"> • Change engine oil • Check for hydraulic oil leaks 	Refer to engine manual Page 22
Every 8 Hours or Daily	
<ul style="list-style-type: none"> • Check engine oil level • Clean area around muffler and engine controls • Clean air intake grille • Check hydraulic oil leaks • Visually check the machine for damage • Grease the bearings 	Refer to engine manual Refer to engine manual Refer to engine manual Page 23 Page 25
Every Month	
<ul style="list-style-type: none"> • Grease all lubrication points and check track tension 	Page 25
Every 3 Months	
<ul style="list-style-type: none"> • Grease conveyer 	Page 19
First 50 hours	
<ul style="list-style-type: none"> • Change hydraulic oil filter 	Page 24
Every 100 Hours or Annually	
<ul style="list-style-type: none"> • Service exhaust system 	Refer to engine manual
Every 200 Hours or Annually	
<ul style="list-style-type: none"> • Change engine oil • Clean air filter¹ • Check the tension of the Drive Belts 	Refer to engine manual Refer to engine manual Page 26
Every 600 Hours or Every 3 years	
<ul style="list-style-type: none"> • Replace air filter 	Refer to engine manual
Annually	
<ul style="list-style-type: none"> • Replace spark plug • Service fuel system • Service cooling system¹ • Change hydraulic oil and replace hydraulic oil filter • Check fittings 	Refer to engine manual Refer to engine manual Refer to engine manual Page 24 Page 27

¹ In dusty conditions or when airborne debris is present, clean more often.

Engine Servicing

All engine servicing must be performed in accordance with the Engine Manufacturer's Handbook.

NOTE: Failure to adhere to this may invalidate the warranty and/or shorten engine life.

Hydraulic Hose Check for Leaks

All hydraulic hoses should be regularly inspected for chafing and leaks. The hydraulic system is pressurized to 150 Bar (2175 PSI) and the hoses must be kept in good condition. If any hydraulic components are changed, new seals should be installed during reassembly. Fittings should then be retightened.

Changing the Hydraulic Oil Filter

Place a tray under the existing filter to catch any oil.

- Undo the filter element from the filter housing as shown in **Error! Reference source not found..**
- Install a new filter element to the filter housing. Tighten the new filter using an oil filter strap.

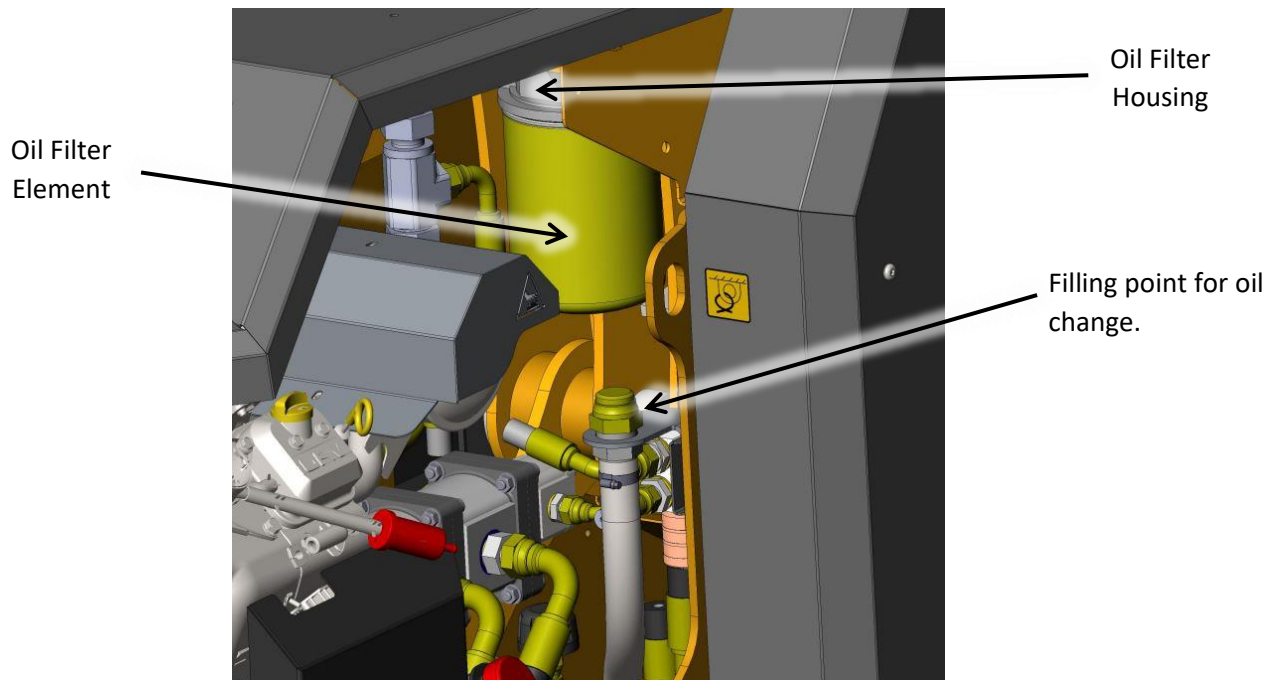
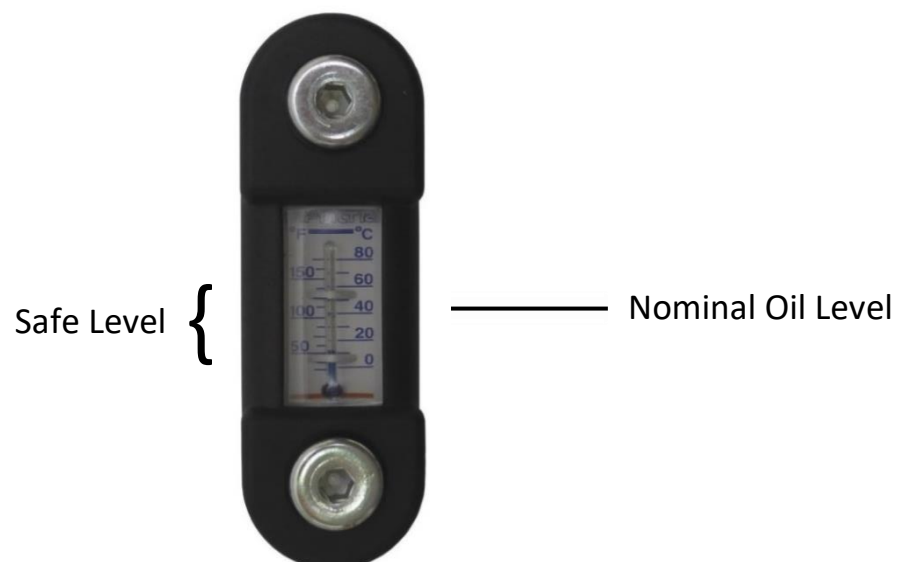


Figure 14: Changing the Hydraulic Oil Filter

Changing Hydraulic Oil

- Remove the drain plug on the hydraulic oil tank and allow the oil to drain into a container.
- Clean the magnet and refit the drain plug. Note any presence of excessive debris.
- Refill with VG 32 hydraulic oil to Nominal Oil Level – Approximately 50 litres as shown below.



NOTE: Use plastic gloves to keep oil off skin and dispose of the used oil and filter in an ecologically sound way.

Figure 15: Hydraulic Oil level

Grease Moving Parts

Periodic lubrication of moving parts will help reduce the possibility of mechanical failures.

- Grease each nipple on the left-hand side of the machine as shown below.

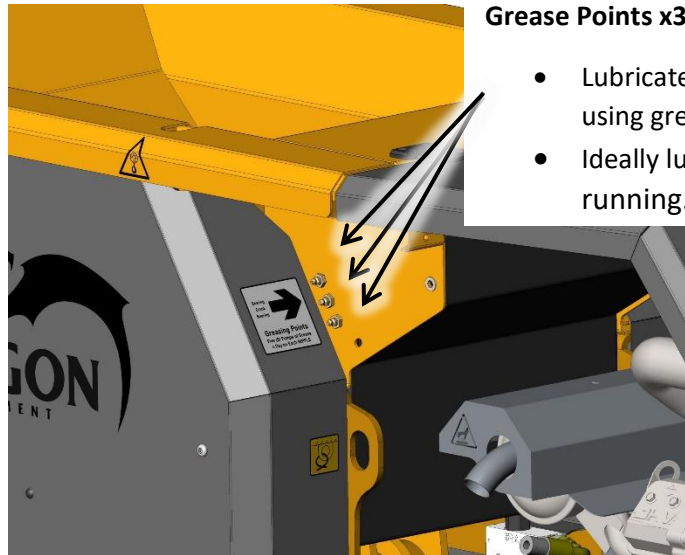


Figure 16: Grease Nipples Location

Grease Track Tensioners

- The correct tension is about 10-15mm up and down movement over the length of the track.
- Avoid over-tensioning tracks. Aside from causing unnecessary wear and friction on the drivetrain, pumping excessive pressure into the idler grease adjuster will cause the seals to fail.

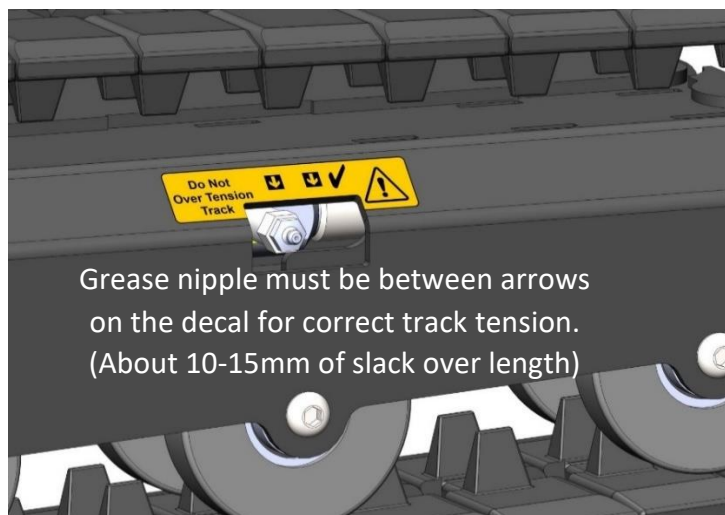


Figure 17: Track Tension

NOTE: Greasing the Crush Adjustment Mechanism: As detailed on Page 16.

Tension Drive Belts

Check belt tension as required by the service schedule.

NOTE: Belt failures due to lack of correct tensioning will not be covered under your Dragon Equipment warranty.

1. Remove the side panel.
2. Loosen the four bolts ("A") retaining the tensioner with a 17 mm spanner so that the pulley/motor mount plate slides freely.
3. Using a 17mm spanner loosen the securing nut ("B")
4. Using a 17 mm spanner adjust the tensioner bolt ("C") to draw down the mounting plate until correct belt tension is achieved.
5. Re-tighten the securing nut ("B") and the four bolts ("A") retaining the pulley/motor mount plate.
6. Run the machine, test, and recheck belt tension.

NOTE: Incorrectly tensioned drive belts will cause poor performance and excess belt, pulley and motor wear.

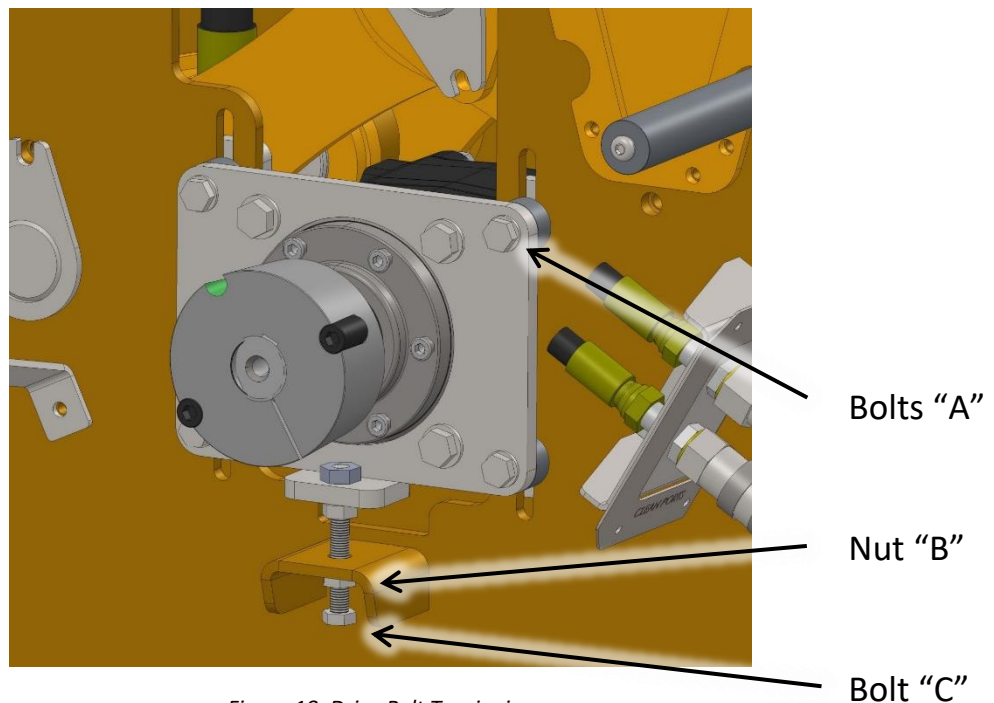


Figure 18: Drive Belt Tensioning

Check Fittings

The Dragon Equipment CR400 is subject to large loads during its normal course of operation. Therefore, there is a possibility that the nuts and bolts and other fastenings can lose their torque over time. It is vital that checks are made at regular intervals to ensure the security of these fasteners by using a torque wrench to the required torque (see below).

NOTE: Uncalibrated torque wrenches can be inaccurate by as much as 25%. Therefore, a calibrated torque wrench must be used to achieve the tightening torques.

	Size	Pitch	Torque lb-ft	Torque Nm
General Bolt	M8	Standard	20	27
General Bolt	M10	Standard	45	61
General Bolt	M12	Standard	65	88

Hazardous Materials and End of Machine Life

The following hazardous materials are within Dragon Equipment machines:

- Engine oil.
- Petrol.
- Grease.
- Hydraulic oil.

MATERIAL SAFETY DATA SHEETS FOR HAZARDOUS MATERIALS ARE AVAILABLE ON REQUEST. REFER TO THESE FOR FIRST AID AND FIRE PROTECTION MEASURES.

Recommended procedures and safety precautions must be followed for safe handling, removal and disposal of hazardous materials. Avoid direct contact and store in a cool, well-ventilated area away from sources of ignition, strong oxidising agents and strong acids. Ensure any spillages are dealt with immediately and in accordance with local/regional law by preventing any ground or drainage system contamination.

End of Machine Life

At the end of the machine's life, follow approved local waste and disposal methods for recycling materials, while ensuring you adhere to all applicable local/regional Health and Safety and Environmental laws. If disassembling the machine structure, refer to the maintenance instructions while being aware of any parts with mechanical pressure or tension applied. It is recommended that items are separated into material groups where possible and recycled using appropriate local agencies. Once decommissioned, supply the serial number to Dragon Equipment to close the machine's records.

Battery Safety Information

The rechargeable battery, located under the left hand side main guard is a sealed unit that is not hazardous when used according to the manufacturer's recommendations.

Safety advice:

- Keep out of reach from children.
- Keep away from moisture.
- Do not breathe dust.
- In case of contact with eyes, rinse immediately with plenty of water for 15 minutes and seek medical attention.
- Wear safety goggles or glasses with side shields if handling a leaking or ruptured battery.
- Use Viton rubber gloves and a rubber apron if handling a leaking or ruptured battery.
- Skin Contact: Wash immediately with water and soap.
- Inhalation of Vented Gas: Remove to fresh air and seek medical attention.
- Ingestion: Seek medical attention immediately.

Fire and Explosion Data:

Extinguishing Media: Dry chemicals, water.

Fire-Fighting Procedures: Use a self-contained breathing apparatus and protective clothing.

Unusual Fire and Explosion Hazards: Toxic gases (HF, PF₆) will be formed if cells or batteries are involved in a fire. Cells or batteries may flame or leak potentially hazardous organic vapours if exposed to excessive heat, fire or over-voltage conditions. Damaged or opened cells or batteries may result in rapid heat and the release of flammable vapours.

Storage and Handling / Use

- Do not store batteries in a manner that allows terminals to short-circuit.
- Do not place batteries near heating sources, nor exposed to direct sunlight for long periods. Elevated temperatures can result in reduced battery service life.
- Charging Battery. Use only approved chargers and procedures. Improperly charging a cell or battery may cause the cell or battery to flame or damage.
- Battery Disassembly. Never disassemble a battery. Should a battery unintentionally be crushed, thus releasing its contents, rubber gloves must be used to handle all battery components. Avoid inhalation of any vapours that may be emitted.
- Battery Short Circuit. Do not short-circuit a battery. A short circuit can result in overheating of the terminals and provide an ignition source. More than a momentary short circuit will generally reduce the cell or battery service life and can lead to the ignition of surrounding materials or materials within the cell or battery if the seal integrity is damaged. Extended short-circuiting creates a high temperature in the cell and at the terminals. Physical contact with high temperatures can cause skin burns. In addition, an extended short circuit may cause the cell or battery to ignite.
- Avoid reversing cell polarity within a battery assembly. Reversing cell polarity may cause the cell or battery to flame or emit gases.

Warranty Statement

Each machine supplied by Dragon Equipment Ltd is accompanied by a registration form that must be completed in full and returned to:

Sales Manager (email: sales@dragon-equipment.co.uk)

Failure to register your machine may invalidate the manufacturer's warranty.

Liability

The warranty period begins when the product is delivered to the first purchaser. Only genuine parts may be used to carry out repairs. Failure to use only genuine parts may invalidate the Manufacturer's Warranty.

Dragon Equipment Ltd will not be held responsible if:

- The machine has been used to perform tasks that demand outside of its design and strength limitations.
- The machine has undergone modifications not approved by Dragon Equipment Ltd.
- Conditions of use have been abnormal.
- Normal maintenance as set out and detailed by Dragon Equipment Ltd has not been adhered to.

Limitations

- Normal maintenance and servicing and any materials used to carry out routine servicing are not covered by this warranty.
- Service items include lubricants, coolants, filters, spark plugs, drive belts, leaks (oil, and air), paintwork, wear parts and tracks.
- The warranty liability of Dragon Equipment Ltd is limited to the diagnosis, repair or replacement of the defective part depending on the product terms and conditions.
- Dragon Equipment Ltd shall be under no liability whatever to the customer for any indirect loss and/or expense (including loss of profit) suffered by the customer arising out of a breach by Dragon Equipment Ltd of this contract.

Warranty Audits and Surveys

Dragon Equipment Ltd reserves the right to carry out audits and inspections in relation to any reimbursed or outstanding warranty claims to determine that all relevant details and information is correct.

Service Bulletins

Dragon Equipment Ltd may occasionally issue service bulletins to keep the customer up to date as to any improvements or changes that may take place on the complete assembly or component parts.

Warranty Terms

One year or 1000 hours whichever occurs first from the date of installation.

Warranty Claim Submission Procedures

Claims must be reported accurately along with all relevant details given, as follows:


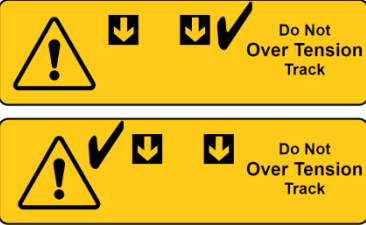







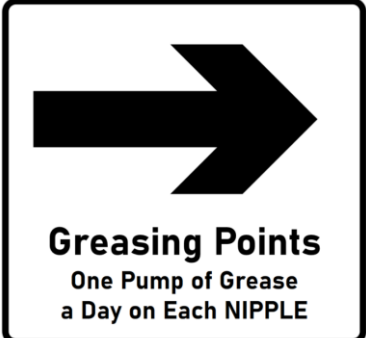
- OWNERS NAME AND ADDRESS: to include site location, if different.
- MACHINE TYPE:
- DATE OF FAILURE:
- INSTALLATION DATE: The actual date of installation, not the invoice date.
- SERIAL NUMBER: Serial number of the unit.
- ENGINE NUMBER: Serial number of the engine.
- HOURS USED: State hours used on the elapsed usage indicator.
- DETAILS OF FAILURE: Give a full report on the failure.







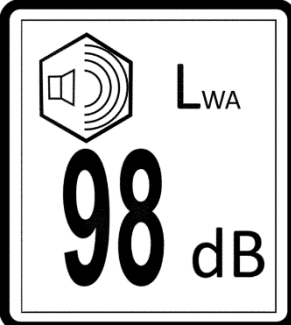


Accurate information is vital to determine the following:



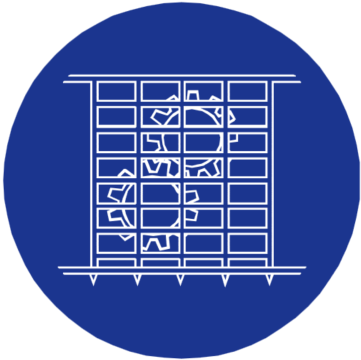
- That the failure is to be covered under the terms and conditions of the warranty. If this is the case, then the costs will be covered by Dragon Equipment Ltd.
- If the failure is determined to be non-warrantable, further authorisation to continue will be sought before any rectification work takes place.

The information above must be provided even if your warranty claim is a “parts only” claim. The reported faulty/defective part must be immediately returned to Dragon Equipment Ltd to enable full inspection of the parts to be carried out. If the failure is covered under the terms and conditions of the warranty a credit note will be despatched to the customer. If the failure is deemed non-warrantable, an invoice will be raised accordingly.

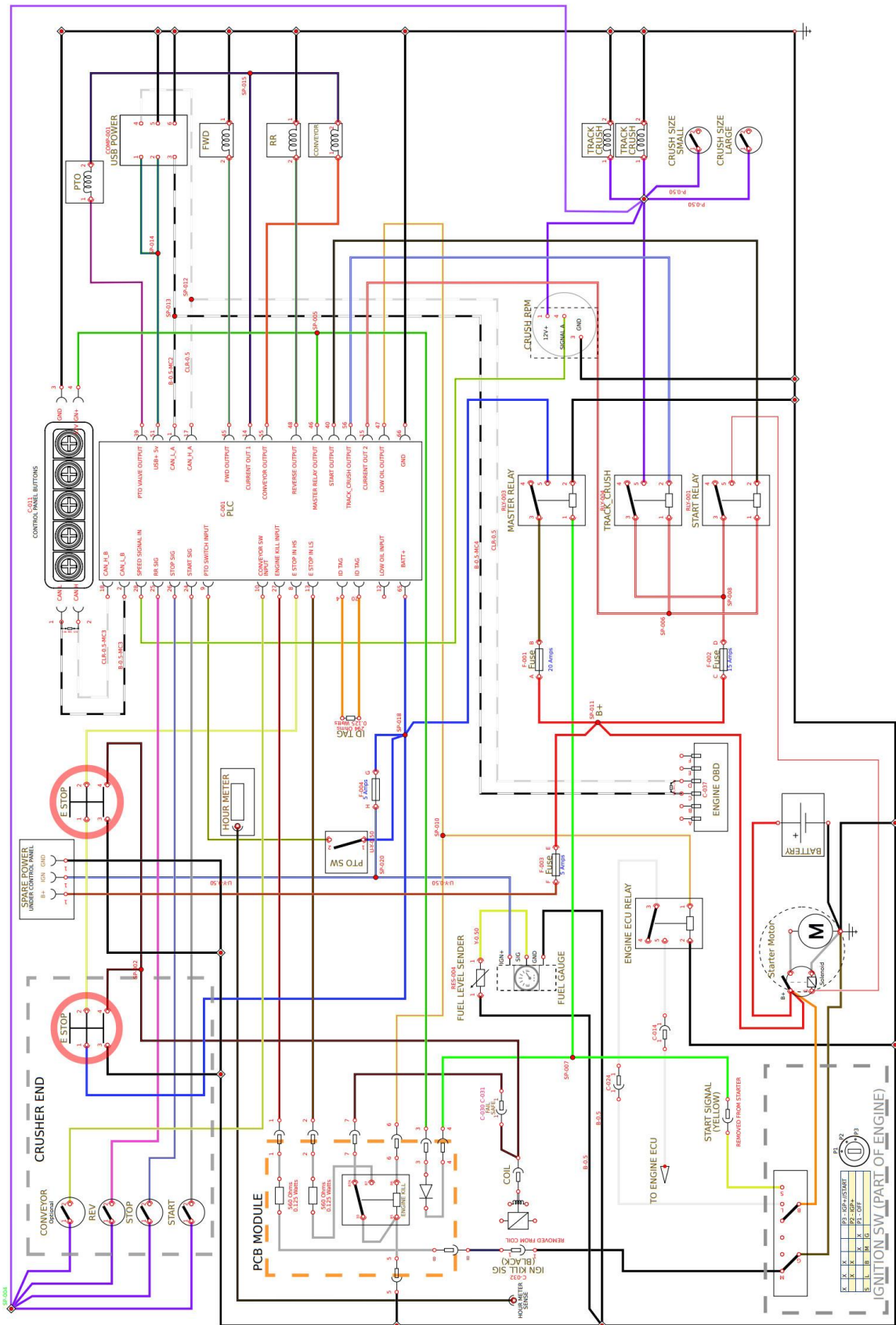
Decals

Part No. Description: No. Req' Per MC:	Decal:	Part No. Description: No. Req' Per MC:	Decal:
30-D-00373-A: CAUTION! Keep Hands Out 3 No. Off		30-D-0807-A: Correct Track Tension (Left & Right) 1 No. Off	
30-D-00414-A: Read the Manual Before use. 1 No. Off		30-D-02327-A: Tracking Operation CR400 1 No. Off	
30-D-00378-A: Lifting Eye (For Machine Weight only) 2 No. Off		30-D-00379-A: Hold Down Point 10 No. OFF	
30-D-00809-A: Dragon Logo 2 No. Off		30-D-02085-A: CR400 Logo 3 No. Off	
30-D-00808-A: Grease Bearings (Grease Daily) 1 No. Off		30-D-00380-A: Grease Points (Grease Daily) 1 No. Off	

<p>30-D-02325-A:</p> <p>Engine Start CR400</p> <p>1 No. Off</p>	<p>Starting the Engine</p> <p>Insert key into ignition Turn Key Clockwise to Turn ON Machine Press "Start Engine" Button Engine will Turn Over and Start</p> <p>Stopping the Engine</p> <p>Turn key anticlockwise to OFF position The Engine will STOP The Crusher Control will turn off Automatically after 10 seconds</p> <p>Do Not Use the E-STOP to Stop Engine when in Normal Use. The E-STOP is for Emergency use ONLY</p>	<p>30-D-00382-A:</p> <p>Location Bonnet Release</p> <p>2 No. Off</p>	
<p>30-D-02324-A</p> <p>Crush Size Adjust CR400</p> <p>1no. Off</p>	<p>Crush Size Adjustment</p> <p>Can only adjust crush size in crush mode.</p> <p>White button reduces crush size. Black button increases crush size.</p> <p>Jaws may not adjust until crushing.</p>	<p>30-D-02321-A:</p> <p>QR Manual Link Universal</p> <p>1 No. Off</p>	 <p>Manual Link</p> <p>Scan This Code to get Access Dragon Equipment Online</p>
<p>30-D-00381-A:</p> <p>Bonnet release Button</p> <p>1 No. Off</p>		<p>30-D-02322-A</p> <p>Conveyor Release Location V1</p> <p>1 No. Off</p>	
<p>30-D-02326-A</p> <p>Taperlock Tight Check</p> <p>2 No. Off</p>	<p>30-D-02326-A</p> <p>Taperlock Tight Check</p> <p>2 No. Off</p>	<p>30-D-00416-A:</p> <p>Noise Level (Wear Ear Protection)</p> <p>1 No. Off</p>	<p>Taperlock</p> <p>Check Grub Screws Are Tight at Least Once a Week</p> 
<p>30-D-00381-A:</p> <p>Bonnet release Button</p> <p>1 No. Off</p>		<p>30-D-00416-A:</p> <p>Noise Level (Wear Ear Protection)</p> <p>1 No. Off</p>	
<p>30-D-00381-A:</p> <p>Bonnet release Button</p> <p>1 No. Off</p>		<p>30-D-00381-A:</p> <p>Bonnet release Button</p> <p>1 No. Off</p>	<p>Conveyor Release</p> <p>Pull on ring to release conveyor.</p> 

<p>30-D-00413-A:</p> <p>Personal Protective Equipment required.</p> <p>1 No. Off</p>		<p>30-D-00374-A:</p> <p>Personal Protective Equipment required</p> <p>1 No. Off</p>	
<p>30-D-00375-A:</p> <p>DANGER Do Not operate without guard in place.</p> <p>6 No. Off</p>			

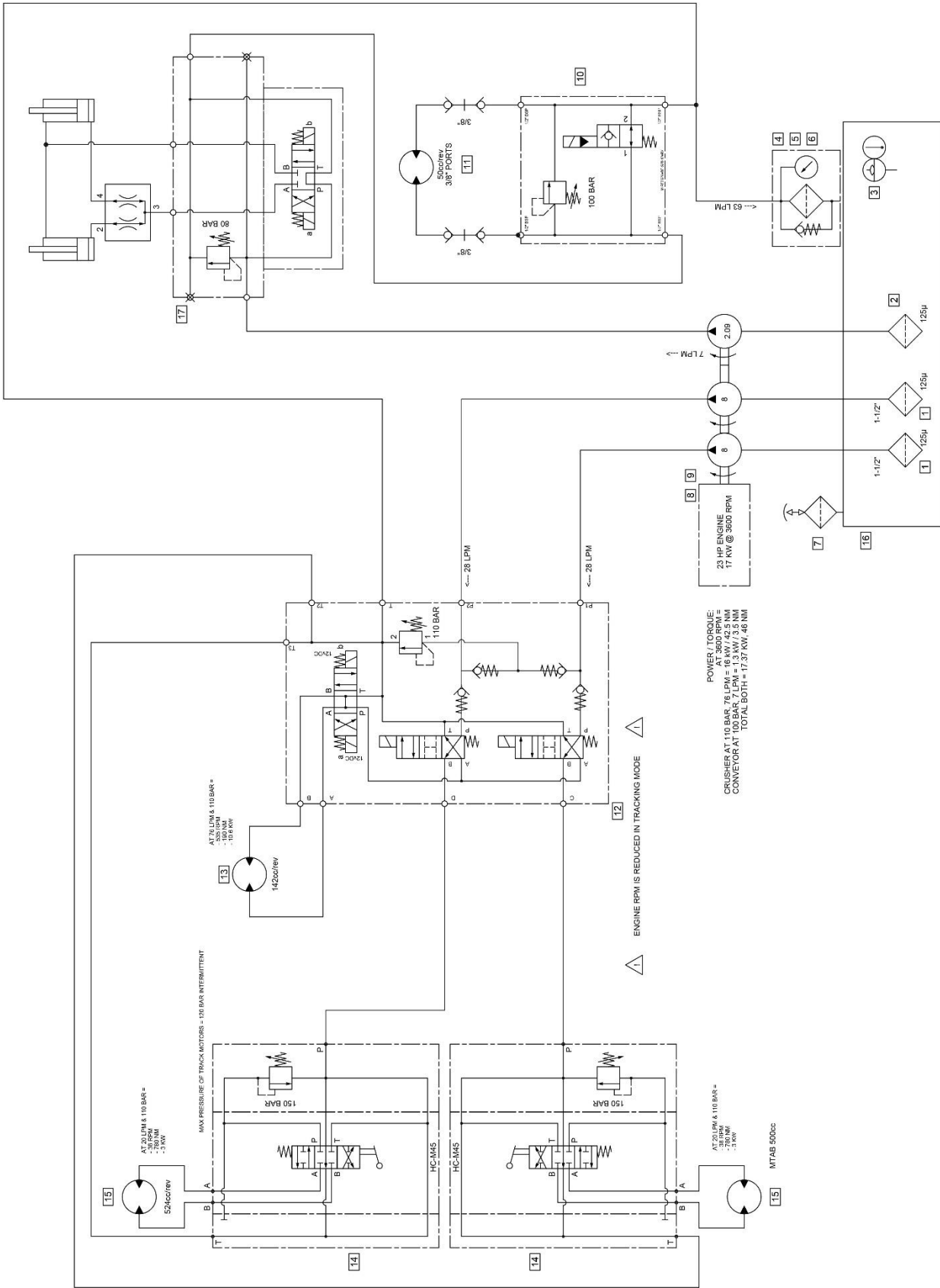
Electrical Circuit Diagram



Electrical Component List

Item	Part No.	Description	Quantity
Hour Meter	30-B-00693-A	Hours Counter V1	1
C-001	30-B-00204-A	MC41-FS Control Unit	1
C-011	30-B-00689-A	Button Set 5	1
E-STOP	30-B-00692-A	E-Stop Button	2
Battery	30-B-00884-A	Battery 12V 50Ah 500A V1	1
Crush RPM	30-B-00734-A	Speed Sensor V1	1
Wiring Loom	30-B-02040-A	Loom Kit CR400 V1 Inc Battery Leads	1
PCB Module	30-B-00749-A	Kill Engine Relay V1	1
Button	30-B-00771-A	Button Splash Proof	5
Relay	30-B-00906-A	Relay Micro V1	3
Fuse 5A	Fuse Blade Mini 5A		2
Fuse 15A	Fuse Blade Mini 15A		1
Fuse 20A	Fuse Blade Mini 20A		1

Hydraulic Circuit Schematic



Declaration of Conformity

EC Declaration of Conformity



We

Dragon Equipment Limited

Of

Unit 3
Anglia Business Park
Wattisham Road
Ringshall
Suffolk
IP14 2HX

This declaration of conformity is issued under the sole responsibility of the manufacturer and includes the following models:

- Dragon Equipment CR400 Crusher

The object of the declaration described above is in conformity with the relevant Community harmonisation legislation:

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2014/30/EU
- Noise Emission in the Environment by Equipment for use Outdoors 2000/14/EC

Signed for and on behalf of Dragon Equipment Limited by:

A handwritten signature in blue ink, appearing to be 'J. Haines', written over a faint, large 'DRAGON EQUIPMENT' watermark.

Mr Jeff Haines (Managing Director)

Dated: 30 August 2023

Identification Plate

Information regarding the machine model, code, chassis serial number, power and machine weight can be found on the serial number plate. This plate is located on the rear left-hand side of the machine and the serial number should always be referenced in any correspondence with the dealer or manufacturer.

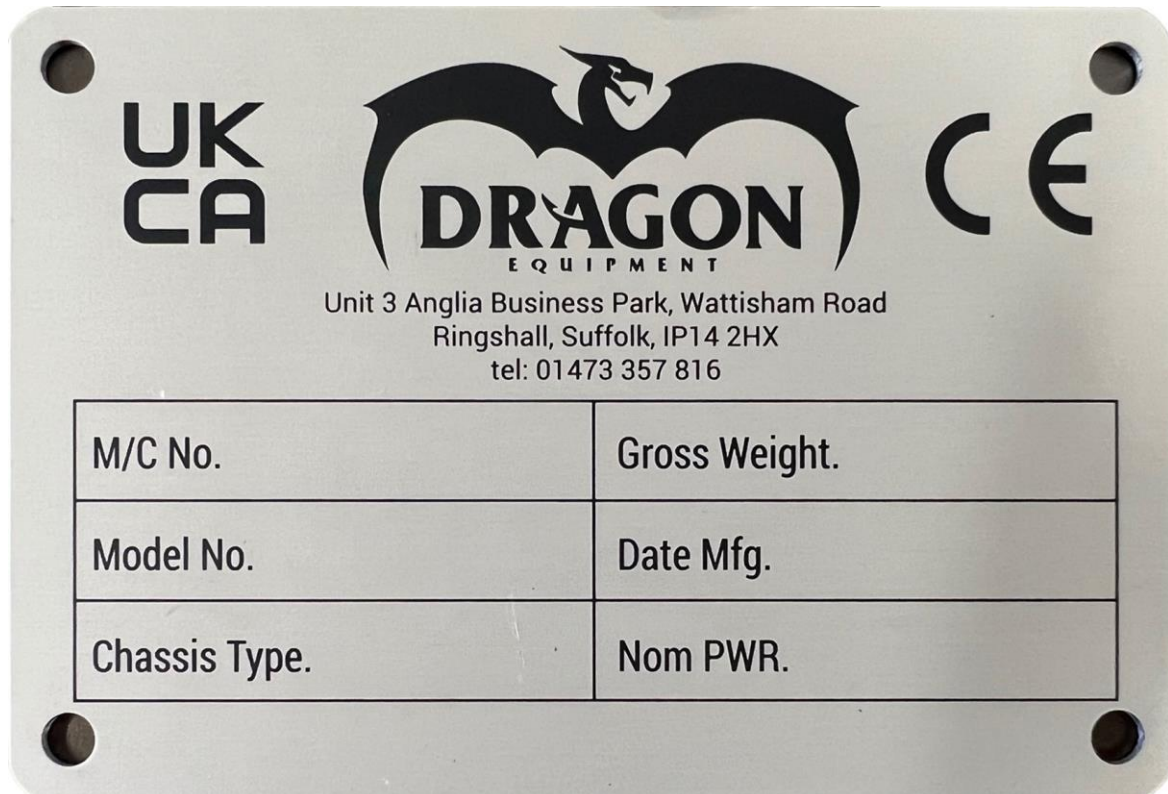


Figure 19: Identification Plate