

## T5 CORING TRAILERS

### SAFETY AND OPERATING INSTRUCTIONS



**FR** Les consignes de sécurité et d'exploitation de forage remorque

**DE** Sicherheits-und Betriebshinweise Drilling Trailer

**ES** La seguridad y las instrucciones de perforación de remolque

**PT** Instruções de segurança e operação de perfuração Trailer

**IT** Istruzioni sulla sicurezza e perforazione Trailer

**NL** Veiligheids-en gebruiksinstructies Boren Trailer

**GR** Οδηγίες ασφάλειας και λειτουργίας διάτρησης Trailer

**FI** Turvallisuusohjeet ja käyttöohjeet Poraus Trailer

**DK** Sikkerheds-og betjeningsvejledningen Drilling Trailer

**SE** Säkerhets-och bruksanvisningar Borrning Trailer

## EC DECLARATION OF CONFORMITY

### EC Declaration of Conformity (EC Directive 2006/42/EC)

We, Xcalibre Equipment Ltd, hereby declare that the machines listed below conform to the provisions of EC Directive 2006/42/EC (Machinery Directive), and the harmonised standards mentioned below.

T5 coring trailer	Pressure max
T5	190 bar

#### Following harmonised standards were applied:

- ISO/FDIS 11148-3:2009

A. The machine was manufactured in conformity with provisions in the COUNCIL DIRECTIVE of 29 December 2009 on mutual approximation of the laws of Member States on the safety of machines (2006/42/EEC) with special reference to Annex 1 of the Directive on essential health and safety requirements in relation to the construction and manufacture of machines.

B. The machine was manufactured in conformity with the provisions in other relevant COUNCIL DIRECTIVES.

C. The machine was manufactured with current standards implementing harmonised standards in accordance with Article 5 (2) and other relevant standards.

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#### Place and date:

Coventry, England 2017-12-17.

Machine data

Type: T5	
Weight without drill bit.	1350 kg laden / 850 kg unladen.
Length x width x height.	3400 mm x 1450 mm x 2950 mm.
Maximum power output.	9.0 kW.
Oil flow range.	40 l/min.
Oil pressure.	Maximum pressure is controlled within the unit itself.
Maximum pressure relief valve setting.	190 bar.
Oil working temperature.	30-70°C (86-158°F).
Oil tank.	30 litres.
Power take-off supply.	20 l/min @ engine set half speed.
Water tank.	500 litres.

Hydraulic motor options: rpm is at max engine speed = 40 l/min:

Type	rpm	Motor code
1 speed drill motor 1M4049.	Max. 800 (50cc)	AC2
1 speed drill motor 1M4066.	Max. 600 (66cc)	AC3
1 speed drill motor 1M4080.	Max. 500 (80cc)	AC4
2 speed drill motor 2M4080.	Max. 500/1000 (80cc)	AE1
2 speed drill motor 2M4100.	Max. 400/800 (100cc)	AE2
2 speed drill motor 2M4130.	Max. 300/600 (130cc)	AE3
2 speed drill motor 2M4160.	Max. 250/500 (160cc)	AE4
2 speed drill motor 2M4195.	Max. 200/400 (195cc)	AE5

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STORAGE

- Check that the machine is properly cleaned before storage.
- Store the machine in a dry place.
- Keep the machine and tools in a safe place, out of the reach of children and locked up.

DISPOSAL

A used machine must be treated and disposed of in such a way that the greatest possible portion of the material can be recycled and any negative influence on the environment is kept as low as possible, and in respect to local restrictions.

TECHNICAL DATA

Troubleshooting

Problem	Cause	Solution
Engine will not start.	Unknown.	Carry out engine checks as per engine handbook. Check condition of battery.
Engine runs but core barrel will not rotate.	Failed solenoid coil.	Replace rotation solenoid coil.
Engine runs but core barrel or feed control will not function.	Insufficient hydraulic fluid.	Check hydraulic oil level and refill.
	Snap couplings at hydraulic drill motor not fitted correctly.	Carefully re-fit snap couplings.
	Failed solenoid coil on rotation valave.	Replace rotation solenoid coil.
Drill will not feed down but will feed up.	Failed solenoid coil on feed valve.	Replace feed valve solenoid coil.
	Drill feed solenoid not functioning correctly.	Replace drill feed solenoid - Xcalibre.
	Hydraulic oil temperature too high.	Carefully re-fit snap couplings.
Inadequate machine performance.	Incorrectly fitted snap couplings at drill motor.	Check for obstructions in oil cooler matrix.
	Oil cooler not functioning.	Replace hydraulic oil filter and if necessary drain and replace hydraulic oil.
Drill motor runs too fast.	Impurities in hydraulic oil.	Contact Xcalibre and select correct size of hydraulic drill motor - see motor colour chart.

MAINTENANCE

Regular maintenance is a basic requirement for the continued safe and efficient use of the machine. Follow the maintenance instructions carefully.

- Before starting maintenance on the machine, clean it in order to avoid exposure to hazard substances. See ‘Dust and fume hazards’
- Use only authorised parts. Any damage or malfunction caused by the use of unauthorised parts is not covered by warranty or product liability.
- When cleaning mechanical parts with solvent, comply with appropriate health and safety regulations and ensure there is satisfactory ventilation.
- For major service to the machine, contact your nearest authorised workshop.
- After each service, check that the machine's vibration level is normal. If not, contact your nearest authorised workshop.

Every day

- Clean and inspect the machine and its functions each day before the work commences.
- Conduct a general inspection for leaks and damage.
- Check the trailer is roadworthy and that tyres, brakes and lights are road legal and functioning correctly.
- Check the engine oil level.
- Check the fuel tank level.
- Check the engine coolant level.
- If working in dusty conditions check that the engine air filter is clean.
- Check that the hydraulic filter indicator gauge situated next to the hydraulic filter is in the green area when the engine running.

First 20 hours - also

- Clean the engine air filter.
- Check for leaks from fuel, coolant and hydraulic fluid.
- Check the condition and serviceability of the battery.
- Change engine oil on petrol engine machines.
- Carry out all engine checks in line with the engine handbook supplied with the machine.

Every 50 hours - also

- Clean the engine air filter.
- Check for leaks from fuel, coolant and hydraulic fluid.

- Check the condition and serviceability of the battery.
- Carry out all engine checks in line with the engine handbook supplied with the machine.

Engine filter and oil changes by working hours completed

Engine type	Oil filter	Air filter	Fuel filter	Oil change
Kohler 1003	250	100	250	250
Honda GX630	200	100	300	20/100
Hatz 1B40	500	100	500	250
Honda GX390	100	50	100	20/100
Honda GX270	100	50	100	20/100

Hydraulic filter and oil changes by working hours completed

Machine	Filter	Oil change
T5D/T5P	100	250

Every 250 hours - also

- Check the radiator matrix for any contamination that may block the airflow through the radiator.
- Carry out all engine and hydraulic checks in line with the engine and operators handbook supplied with the machine

Every 500 hours - also

- Carry out all engine and hydraulic checks in line with the engine and operators handbook supplied with the machine.

Every 1000 hours - also

- Check all external nuts and fittings for tightness.
- Ensure all guards are securely fitted and are in good working order.
- Carry out all engine and hydraulic checks in line with the engine and operators handbook supplied with the machine.

Every 4000 hours - also

- Carry out all engine and hydraulic checks in line with the engine and operators handbook supplied with the machine.

Every 6000 hours - also

- Drain and clean engine fuel tank.
- Check engine throttle controls.
- Carry out all engine and hydraulic checks in line with the engine and operators handbook supplied with the machine.

INTRODUCTION

Thank you for choosing a product from Xcalibre Equipment.

Since 1987, we have been committed to finding new and better ways of fulfilling our customers' needs.

We design and manufacture high quality, hydraulically powered diamond coring trailers, diamond drilling rigs, drill stands, hand held diamond core drills and power packs for civil, marine and all types of construction industries.

Our key emphasis on the performance of coring drilling equipment is:

- Functionality
- Reliability
- Efficiency
- Utmost drilling performance
- Safety

Through the years, we have developed innovative and ergonomic product designs that have helped customers, in more than 26 countries worldwide, improve and rationalize their daily work. Our experts are highly trained professionals with extensive product knowledge and application experience.

For more information please visit: [xcalibre.com](http://xcalibre.com)

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ABOUT THE SAFETY AND OPERATING INSTRUCTIONS

The aim of the instructions is to provide you with knowledge of how to use the coring trailer in an efficient, safe way. The instructions also give you advice and tell you how to perform regular maintenance on the coring trailer.

Before using the coring trailer for the first time you must read these instructions carefully and understand all of them.

SAFETY INSTRUCTIONS

To reduce the risk of serious injury or death to yourself or others, read and understand the safety and operating instruction before installing, operating, repairing, maintaining, or changing accessories on the machine.

Post this safety and operating instruction at work locations, provide copies to employees, and make sure that everyone reads the safety and operating instruction before operating or servicing the machine.

In addition, the operator or the operator's employer must assess the specific risks that may be present as a result of each use of the machine.

Safety signal words

The safety signal words Danger, Warning and Caution have the following meanings:

- DANGER** Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- WARNING** Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- CAUTION** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

Personal precautions and qualifications

Only qualified and trained persons may operate or maintain the machine. They must be physically able to handle the bulk, weight, and power of the tool. Always use your common sense and good judgement.

Personal protective equipment

- Always use approved protective equipment. Operators and all other persons in the working area must wear protective equipment, including at a minimum:
- Protective helmet.
  - Hearing protection.
  - Impact resistant eye protection with side protection.
  - Respiratory protection when appropriate.
  - Protective gloves.
  - Proper protective boots.
  - Appropriate work overall or similar clothing (not loose-fitting) that covers your arms and legs.

Drugs, alcohol or medication

- ▲ **WARNING: Drugs, alcohol or medication**  
Drugs, alcohol or medication may impair your judgment and powers of concentration. Poor reactions and incorrect assessments can lead to severe accidents or death.
  - ▶ Never use the machine when you are tired or under the influence of drugs, alcohol or medication.
  - ▶ No person who is under the influence of drugs, alcohol or medication may operate the machine.

Installation - precautions

- ▲ **CAUTION: Fitting core barrels and tools**  
Incorrect fitting of a core barrel can result in the barrel becoming loose during operation. Risk for crushed hands and fingers. Risk of severe injury or crushed hands and fingers.
  - ▶ Check that the core barrel is correctly fitted and that it rotates concentric to the drill shaft.
  - ▶ Never use inferior quality core barrels.

- ▲ **CAUTION: Moving parts**  
Risk for crushed hands and fingers.
  - ▶ Never check core barrels when the drill is rotating and never check samples with unprotected hands or fingers.

Operation - precautions

- ▲ **DANGER: Explosion hazard**  
If a warm core barrel comes into contact with explosives, an explosion could occur. During operation with certain materials as well as use of certain materials in machine parts, sparks and ignition can occur. Explosions will lead to severe injuries or death.
  - ▶ Never operate the machine in any explosive environment.
  - ▶ Never use the machine near flammable materials, fumes or dust.
  - ▶ Make sure that there are no undetected sources of gas or explosives.
  - ▶ Never drill or attempt to drill into an old hole.

- Once a suitable register has been created the drill feed control can then be increased by repeated operation of the feed control toggle switch with 6 additional settings available (see below).
- If the drill jams or inspection of the core is required then operate the drill feed control lever up once to stop the feed or hold up to withdraw the drill.
- To continue drilling follow the above procedure.
- Indicator lights:
  - Green indicator light on the handset shows whenever it is connected and power is on.
  - Six drill feed pressure controls as below:
    - 1<sup>st</sup> red light flashing (soft-start ) = No.1
    - 1<sup>st</sup> red light steady = No.2
    - 1<sup>st</sup> red steady + 2<sup>nd</sup> flashing = No.3
    - 1<sup>st</sup> red steady + 2<sup>nd</sup> steady = No.4
    - 1<sup>st</sup> red steady + 2<sup>nd</sup> steady + 3<sup>rd</sup> flashing = No.5
    - 1<sup>st</sup> red steady + 2<sup>nd</sup> steady + 3<sup>rd</sup> steady = No.6
- Always turn drill rotation 'OFF' before touching the core barrel or inspecting the core or core cavity.

Drilling - additional notes

- When drilling concrete the water flow through the core barrel should be just enough to show a paste like appearance as it exits onto the surface material.
- When drilling softer materials such as asphalt the water flow should be slightly faster than used in concrete to ensure that all the loose particles are flushed away.
- If the core barrel repeatedly jams during drilling, then only use 'half-feed' condition, or in severe condition only use the 'soft-start' condition.
- If the core barrel becomes securely jammed, turn machine off and rotate the core barrel using large spanners to free.
- If the noise of the core barrel drilling changes significantly it maybe that the barrel has reached some much harder material, such as steel rebars. If this happens then rotate the drill feed control anticlockwise to reduce the speed and force of the drill feed.
- If you believe the core barrel is rotating too fast the drill speed rotation can be reduced by lowering the engine speed on the throttle control.
- Once the drilling process has been completed always return the trailer to a safe and secure condition.
- Never leave the core barrel attached to the drill when the machine is being transported or towed.

- If the machine suffers engine failure whilst on stabilizers and the machine needs to be moved, follow this procedure. Standing in a safe position, pull rear stabilizer release valve, see picture on page 10. When operated this will allow the rear stabilizers to retract by raising the front jockey wheel. Then the pull the front stabilizer release valve which will allow the front stabilizer to retract. Repeat this operation until stabilizers are clear of the surface which will allow limited movement of the trailer.

When taking a break

- During all breaks you must place the machine in such a way that there is no risk for it to be unintentionally started.
- In the event of a longer break or when leaving the workplace switch off the engine and remove the ignition key but also remove the control lead/handset and store safely for future use..

When in transit

- Always remove the guard and core barrel.
- Always ensure the engine is switched 'OFF' whenever the machine is in any form of transit.



## OPERATION

### ▲ WARNING: Involuntary start

Involuntary start of the machine may cause injury.

- ▶ Keep your hands away from the start and stop device until you are ready to start the machine.
- ▶ Learn how the machine is switched off in the event of an emergency.
- ▶ Stop the machine immediately in all cases of power supply interruption.

### Preparations before starting

#### Check the drilling equipment

- Check that all of the drilling equipment is in a good condition.
- Inspect the hoses generally for signs of damage.
- Check that the core barrel is in a good condition and has the correct segments relating to the surface being drilled.
- Check the trailer is fitted with the correct hydraulic motor to provide the correct drill speed for the diameter and surface material being drilled.
- Clean all safety labels. Replace any that are missing or cannot be read.
- Ensure that the hydraulic couplings are clean and fully serviceable.
- Ensure that the fittings are tight and leak-proof.
- Check that the water tank has sufficient water.
- Check that the hydraulic oil level is correct.
- Ensure there is sufficient fuel.
- Carry out all necessary engine checks.
- Screw the core barrel onto the adaptor which is fitted onto the water swivel and tighten by means of a spanner.
- Check that the core drill is not blocked and will allow water flow through without obstruction.
- Ensure that the trailer brake is applied and the trailer is in a safe position. Use wheel chocks wherever possible.
- Never attempt to modify or tamper with the pressure relief valves fitted to the machine.
- Xcalibre Equipment recommends all operators complete one of it's recognised training courses which cover all aspects of safety and operation for coring trailers.

### Emergency stop

- The machine can be stopped by depressing the yellow 'EMERGENCY STOP' button positioned at the top of the control panel.
- Whenever there is danger or risk of injury always press the 'EMERGENCY STOP' button.
- The button can be released by twisting.
- Before re-starting the machine always carryout the normal start up checks.

### Operating

#### Before drilling

1. Ensure the trailer is correctly positioned with the handbrake applied and disconnected from the towing vehicle.
2. Securely insert the control lead into the socket on the back face of the machine.
3. Ensure the hydraulic drill motor switch is in the 'OFF' position.
4. Ensure the drill feed control is easily reached by the operator.
5. Ensure the core barrel is securely attached.
6. If fitted, position the guard into the drilling position.
7. Start the engine and set the throttle control.

### Drilling

- Stand beside the core trailer and out of the roadway.
- Lower the stabilizers using the handset toggle switch until the trailer is firmly in the raised position.
- Operation of the front or rear stabilizers can be made independently by holding the stabilizer toggle switch forwards or rearwards. See picture page 10.
- Lower the core barrel to just above the surface, by operating the drill feed control and once positioned return the lever to the centre position.
- Start the drill rotation and check the barrel rotates concentrically.
- Adjust of water coolant flow is controlled by the tap adjacent to the drill motor.
- Stopping or starting the drill motor rotation also stops and starts the flow of water.
- Operating the drill feed control 'once' which puts the feed into 'soft-start' condition, which should be maintained for approximately 10 to 15 seconds to create a register in the surface of the material.

### ▲ WARNING: Unexpected movements

The core barrel is exposed to heavy strains when the machine is used. The core barrel may break due to fatigue after a certain amount of use. If the core barrel breaks or gets stuck, there may be sudden and unexpected movement that can cause injuries.

- ▶ Always inspect the equipment prior to use.
- ▶ Never use the equipment if you suspect that it is damaged.
- ▶ Make sure that the handles are clean and free of grease and oil.
- ▶ Keep your feet away from the core barrel.
- ▶ Stand firmly and always firmly hold on to the machine controls.
- ▶ Never drill in an old hole or a previously damaged hole.
- ▶ Never start the machine unless all guards are in position.
- ▶ Never 'ride' on the machine.
- ▶ Never strike or abuse the equipment.
- ▶ Check regularly for wear on the core barrels and check whether there are any signs of damage to the segments or to the sides of the core barrel.
- ▶ Never use core barrels with missing segments.
- ▶ Pay attention and look at what you are doing.

### ▲ WARNING: Stalling hazard

If the core barrel gets caught or stalled during operation, the whole machine will be put under load by the drill motor, so always remain well clear of the core barrel whenever it is rotating.

- ▶ Make sure that the controls or handles are clean and free from grease and oil.
- ▶ Never drill in an old hole.

### ▲ WARNING: Trapping hazard

There is risk of neck wear, hair, gloves and clothes getting dragged into or caught by a rotating core barrel, tool or accessories. This may cause choking, scalping, lacerations or death. To reduce the risk:

- ▶ Never grab or touch a rotating core barrel or drill.
- ▶ Avoid wearing clothing, neck wear or gloves that may get caught.
- ▶ Cover long hair with a hair net.

### ▲ WARNING: Dust and fume hazard

Dusts and/or fumes generated or dispersed when using the machine may cause serious and permanent respiratory disease, illness, or other bodily injury (for example, silicosis or other irreversible lung disease that can be fatal, cancer, birth defects, and/or skin inflammation).

Some dusts and fumes created by drilling, breaking, hammering, sawing, grinding and other construction activities contain substances known to the State of California and other authorities to cause respiratory disease, cancer, birth defects, or other reproductive harm. Some examples of such substances are:

- Crystalline silica, cement, and other masonry products.
- Arsenic and chromium from chemically-treated rubber.
- Lead from lead-based paints.

Dust and fumes in the air can be invisible to the naked eye, so do not rely on eye sight to determine if there is dust or fumes in the air.

To reduce the risk of exposure to dust and fumes, do all of the following:

- ▶ Perform site-specific risk assessment. The risk assessment should include dust and fumes created by the use of the machine and the potential for disturbing existing dust.
- ▶ Use proper engineering controls to minimize the amount of dust and fumes in the air and to minimize build-up on equipment, surfaces, clothing, and body parts. Examples of controls include: exhaust ventilation and dust collection systems, water sprays, and wet drilling. Control dusts and fumes at the source where possible. Make sure that controls are properly installed, maintained and correctly used.
- ▶ Wear, maintain and correctly use respiratory protection as instructed by your employer and as required by occupational health and safety regulations. The respiratory protection must be effective for the type of substance at issue (and if applicable, approved by relevant governmental authority).
- ▶ Work in a well ventilated area.
- ▶ If the machine has an exhaust, direct the exhaust so as to reduce disturbance of dust in a dust filled environment.
- ▶ Operate and maintain the machine as recommended in the operating and safety instructions.

- ▶ Select, maintain and replace consumables/inserted tools/other accessory as recommended in the operating and safety instructions. Incorrect selection or lack of maintenance of consumables/inserted tools/other accessories may cause an unnecessary increase in dust or fumes.
- ▶ Wear washable or disposable protective clothes at the worksite, and shower and change into clean clothes before leaving the worksite to reduce exposure of dust and fumes to yourself, other persons, cars, homes, and other areas.
- ▶ Avoid eating, drinking, and using tobacco products in areas where there is dust or fumes.
- ▶ Wash your hands and face thoroughly as soon as possible upon leaving the exposure area, and always before eating, drinking, using tobacco products, or making contact with other persons.
- ▶ Comply with all applicable laws and regulations, including occupational health and safety regulations.
- ▶ Participate in air monitoring, medical examination programs, and health and safety training programs provided by your employer or trade organizations and in accordance with occupational health and safety regulations and recommendations. Consult with physicians experienced with relevant occupational medicine.
- ▶ Work with your employer and trade organization to reduce dust and fume exposure at the worksite and to reduce the risks. Effective health and safety programs, policies and procedures for protecting workers and others against harmful exposure to dust and fumes should be established and implemented based on advice from health and safety experts. Consult with experts.

#### ▲ WARNING: Projectiles

Failure of the core barrel or of a hydraulic tool may generate high velocity projectiles. During operating, splinters or other particles from the working material may become projectiles and cause personal injury by striking the operator or other persons. To reduce these risk:

- ▶ Use approved personal protective equipment and safety helmet, including impact resistant eye protection with side protection.
- ▶ Make sure that no unauthorised persons trespass into the working zone.
- ▶ Keep the workplace free from foreign objects.
- ▶ Ensure that the work piece is securely fixed.

#### ▲ WARNING: Slipping, tripping and falling hazards

There is a risk of slipping or tripping or falling, for example tripping on the hoses or on other objects. Slipping or tripping or falling can cause injury. To reduce this risk:

- ▶ Always make sure that no hose or other object is in your way or in any other person's way.
- ▶ Always make sure you are in a stable position with your feet as far apart as your shoulders width and keeping a balanced body weight.

#### ▲ WARNING: Hydraulic oil

Spilled hydraulic oil can cause burns, accidents due to slippery conditions and will also harm the environment.

- ▶ Take care of all spilled oil and handle it according to your safety and environmental regulations.
- ▶ Never dismount the hydraulic machine when the hydraulic oil is hot.
- ▶ Never run any hydraulic lines for attachment of the hydraulic machine through the drivers cab.

## INSTALLATION

### Hoses

The various hydraulic pressure hoses fitted to the machine are approved for a working pressure of at least 200 bars. To resist exterior wear and tear, we always recommend using a 2-layer hydraulic hose. Always ensure that hydraulic hoses are correctly fitted that all hose connections are tight. Never pull, lift or apply any load to the hydraulic hoses.

### Quick-release couplings

The original Xcalibre Equipment hydraulic hoses are fitted with flat-face quick-release couplings that are strong and easy to clean. The quick-release couplings are fitted so that the male connection supplies oil and the female connection receives oil.

**NOTICE:** Wipe all couplings clean before connecting. Ensure that couplings are clean and correctly engaged before operation. Failure to do so may result in damage to the quick couplings and cause overheating and cause foreign matter to enter the hydraulic system.

### Hydraulic oil

In order to protect the environment, Xcalibre Equipment recommends the use of biologically degradable hydraulic oil. No other fluids should be used.

- Viscosity (preferred) 20-40 cSt.
- Viscosity (permitted) 15-100 cSt.
- Viscosity index Min. 100.

Standard mineral or synthetic oil can be used. Make sure to only use clean oil and filling equipment.

When the machine is used continuously, the oil temperature will stabilise at a level which is called the working temperature. This will, depending on the type of work and the cooling capacity of the hydraulic system, be between 20-40°C (68-104°F) above the ambient temperature. At working temperature, the oil viscosity must lie within the preferred limits. The viscosity index indicates the connection between viscosity and temperature. A high viscosity is therefore preferred, because the oil can then be used within a wider temperature range. The machine shall not be used, if oil viscosity fails to remain within the permitted area, or if the working temperature of the oil does not fall between 20°C (68°F) and 70°C (158°F).

### Operating pressure

The maximum pressure of the hydraulic system is preset and should never be adjusted. However, excessive working pressures can be generated if a snap coupling is incorrectly fitted which in turn can cause overloading which will cause damage to the machine. The maximum pressure of the machine is 190 bar (limited by safety valve).

### Water flushing

For diamond bit core drilling, water flushing is required. Water is supplied through the in-built water swivel underneath the hydraulic motor.

The water tank should always contain sufficient water to ensure that flushing can take place whilst the machine is drilling.

Once the water tank is close to being empty, stop drilling and replenish.

The rate of water flow can be adjusted by means of the yellow control tap situated to the right of the control panel.

If the machine is to be left in sub-zero conditions, the water tank should be drained and the electric pump run for approximately 1 minute to ensure there is no water left in the system.

### Drill bit

#### Choosing the core barrel

Always use the correct core barrel for the surface material being drilled. If in doubt consult recommendations from Xcalibre Equipment.

To avoid unnecessary machine damage, it is important to choose high quality core barrels.

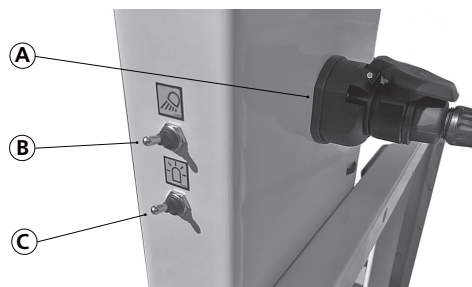
#### Fitting and removing core barrels

Core barrels are fitted directly into the machine drive shaft (1-1/4" UNC) using the drive adaptor supplied with the machine. Always wear gloves when handling core barrels.

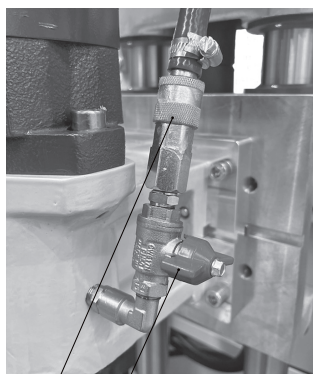
To prevent an accidental start:

1. Always ensure the engine is stopped, using the emergency stop control, before fitting or removing core barrels.
2. Tighten the core barrel onto the drive adaptor and lock using the correct spanner.
3. Then lower guard back into position before proceeding to drill.





- A. Input for remote control handset.
- B. Beacon switch.
- C. Work light switch.

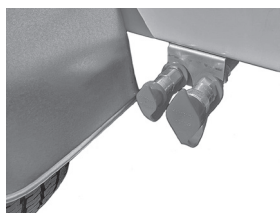


- A. Quick release water hose coupling.
- B. Water control tap.



#### Emergency front and rear stabiliser 'pull' valves.

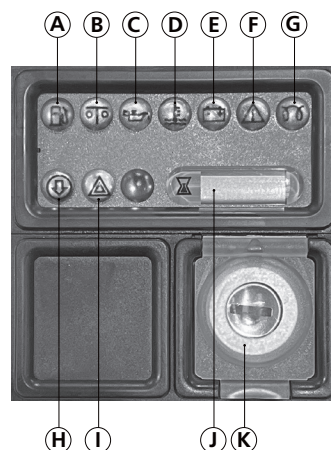
2 valves - pull to release front or rear stabilisers.



#### PTO. Use PTO at half engine RPM.



#### Stabiliser front or rear switch (optional).



- A. Low fuel light.
- B. OK running light.
- C. Engine warning light.
- D. Engine coolant temperature light.
- E. Battery charge alternator light.
- F. User warning light.
- G. Engine pre-heat light.
- H. Blocked air filter light.
- I. Alarm light.
- J. Hour meter.
- K. Ignition keyhole.

#### ▲ WARNING: Hydraulic oil at high pressure

Thin jets of hydraulic oil under high pressure can penetrate the skin and cause permanent damage.

- ▶ Immediately consult a doctor if hydraulic oil has penetrated the skin.
- ▶ Never use your fingers to check for hydraulic fluid leaks.
- ▶ Keep your face away from any possible leaks.

#### ▲ WARNING: Electrical hazard

The machine is not electrically insulated. If the machine comes into contact with electricity, serious injuries or death may result.

- ▶ Never operate the machine near any electric wire or other source of electricity.
- ▶ Make sure that there are no concealed wires or other sources of electricity in the working area.

#### ▲ WARNING: Concealed object hazard

During operating, concealed wires and pipes constitute a danger that can result in serious injury.

- ▶ Check the composition of the material before operating.
- ▶ Watch out for concealed cables and pipes for example electricity, telephone, water, gas and sewage lines etc.
- ▶ If the core barrel seems to have hit a concealed object, switch off the machine immediately.
- ▶ Make sure that there is no danger before continuing.

#### ▲ WARNING: Operating pressure

If the maximum operating pressure for the hydraulic machine is exceeded, it can result in material damage and personal injury.

- ▶ Always run the hydraulic machine with the correct operating pressure, see 'Technical data'.
- ▶ Never readjust the pressure relief valve (torque control) on the machine. Note that higher settings might lead to a higher torque, which could harm the machine and result in serious injury or death.

#### ▲ WARNING: Involuntary start

Involuntary start of the machine may cause injury.

- ▶ Keep your hands away from the start and stop device until you are ready to start the machine.
- ▶ Learn how the machine is switched off in the event of an emergency.
- ▶ Release the start and stop device immediately in all cases of power supply interruption.
- ▶ Whenever fitting or removing core barrels, switch off the engine by pressing the 'EMERGENCY STOP' button.

#### ▲ WARNING: Whipping hydraulic hose

Hydraulic hoses under pressure can whip uncontrollably if screws loosen or are loosened. A whipping hydraulic hose can cause severe injuries.

- ▶ Depressurise the hydraulic system before loosening the connection of a hydraulic hose.
- ▶ Tighten the nuts on the connections of the hydraulic hoses to the required torque.
- ▶ Check that the hydraulic hose and the connections are not damaged.

#### ▲ WARNING: Noise hazard

High noise levels can cause permanent and disabling hearing loss and other problems such as tinnitus (ringing, buzzing, whistling or humming in the ears). To reduce risks and prevent an unnecessary increase in noise levels:

- ▶ Risk assessment of these hazards and implementation of appropriate controls is essential.
- ▶ Operate and maintain the machine as recommended in these instructions.
- ▶ Select, maintain and replace any hydraulic tools as recommended in these instructions.
- ▶ If the machine has a silencer, check that it is in place and in good working order.
- ▶ Always use hearing protection.

Maintenance - precautions

▲ WARNING: Machine modification

- Any machine modification may result in bodily injuries to yourself or others.
- ▶ Never modify the machine. Modified machines are not covered by warranty or product liability.
  - ▶ Always use original parts, insertion tools and accessories approved by Xcalibre Equipment.
  - ▶ Change damaged parts immediately.
  - ▶ Replace worn components in good time.

▲ WARNING: Hot core barrel

- The tip of the core barrel can become hot and sharp when used. Touching it can lead to burns and cuts.
- ▶ Never touch a hot or sharp core barrel.
  - ▶ Wait until the core barrel has cooled down before carrying out maintenance work.

▲ WARNING: Core barrel hazards

- ▶ Never inspect, clean, install, or remove the core barrel while the engine is running.

Storage - precautions

- ▶ Keep the machine and core barrels in a safe place, out of the reach of children and locked up.

OVERVIEW

To reduce the risk of serious injury or death to yourself or others, read the safety instructions section found on the previous pages of this manual before operating the machine.

Design and function

The T5 range of coring machines use hydraulic motors to rotate the core barrel at the correct speed in relation to the material being drilled.

The core barrel is automatically fed into the surface by means of a proportional valve that ensures a constant force onto the core barrel and allows the operator to maintain an optimum drilling situation.

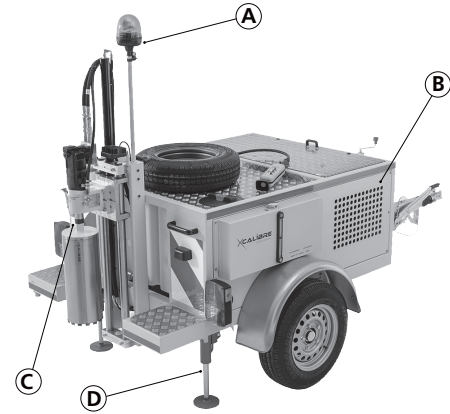
The T5 trailer is secured by means of a hydraulically operated feet or stabilizers.

The core barrels are cooled by means of an inbuilt pump supplying water at an adjustable rate via the water swivel assembly and on through the centre of the core barrel. NB: Different flow rates of water are required for different materials.

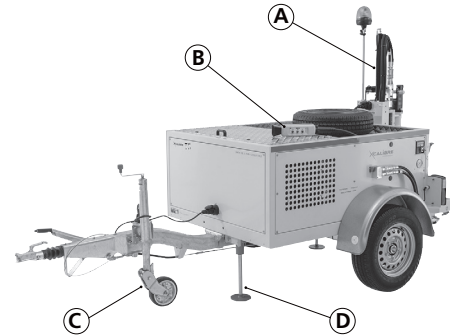
If dry drilling is required then compressed air can be fed into the water swivel connection which will then force air up the side of the core barrel to provide cooling.

The T5 hydraulically driven coring trailer provides consistent rotational torque when drilling in a variety of materials such as concrete, brickwork, rock or asphalt and steel re-bars.

Main parts



- A. Optional warning beacon.
- B. Engine cover.
- C. Drill motor and water swivel.
- D. Rear hydraulic stabilisers - two.



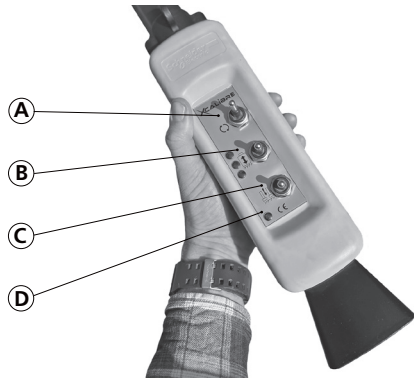
- A. Drill feed cylinder.
- B. Remote control handset and lead.
- C. Front jockey wheel.
- D. Front stabiliser.

Controls and labels

The machine is fitted with labels containing important information about personal safety and machine maintenance. The labels shall be in such condition that they are easy to read.



Handset



Handset controls

- A. Drill rotation and water feed.
- B. Drill feed control and indicators.
- C. Stabiliser leg controls.
- D. Power light.

Ignition, drill feed and engine speed lever.

