

USER GUIDE

Strimech Barrier Master® - (BM/10E, BM/10C, & BM/15E)



Introduction

STRIMECH BARRIER MASTER® - (BM/10E, BM/10C, & BM/15E)
Thank you for choosing the Strimech Barrier Master®

Strimech was founded in 1977 and have built a reputation for supplying quality equipment to an ever -changing market place. Strimech design and manufacture attachments for materials handling. Strimech supply attachments for use with a wide range of power source machines and have extensive experience in supplying attachments for a wide range of industries and applications throughout the world.

For more information please go to www.strimech.co.uk or
Tel: 0044 (0) 1922 649700

Safety and Operating Instructions for Strimech Barrier Master®

Before using the Strimech Barrier Master® you must read and understand these operating instructions, along with the power source machine manual and any other relating Health and Safety guidance and regulations. In addition, the specific risks must be assessed.

These operating instructions do not cover training given to operatives; we strongly recommend that the appropriate training is provided and the operators are made aware of any residual dangers.

Signal work 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, will result in death or serious injury.

Caution Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

Precautions and Qualifications

Only qualified and trained persons can operate or maintain the Strimech Barrier Master®. All approved protective equipment must be used while in the working area.

Never use the machine when you are tired or under the influence of drugs, alcohol or medication.

Installation Precautions

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 - 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 disconnect the hydraulic system when the hydraulic oil is hot.

Never run any hydraulic lines for the attachment through the driver's cab.

CAUTION - Skin eczema

Hydraulic oil can cause eczema if it comes in contact with the skin.

Avoid getting hydraulic oil on your hands.

Always use protective gloves when working with hydraulic oil. Wash hands after contact with hydraulic oil.

Refer to your own risk assessments and HSE COSHH regulations.

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 – Label.

WARNING – Metal Fatigue

The Strimech Barrier Master® is exposed to large forces when being used. The Strimech Barrier Master® frame is susceptible to metal fatigue during operation & must be inspected daily and thoroughly checked periodically.

WARNING - Unexpected movements

If the Strimech Barrier Master® gets stuck, there may be sudden and unexpected movement that can cause injuries.

Keep a safe distance away from the Strimech Barrier Master® when in use

Only when it is safe to do so - Always inspect the equipment prior to use. Never use the equipment if you suspect that it is damaged.

Keep hands away from the compression mechanism and any moving parts.

Never abuse the equipment.

Pay attention at all times.

WARNING - Dust and fume hazard

Dust and/or fumes created when using the machine may cause serious and permanent respiratory disease, illness or other injury.

Ensure all site specific risk assessments are read and understood before using the Strimech Barrier Master®.

WARNING - Slipping, tripping and falling hazards

Ensure all site specific risk assessments are read and understood.

WARNING - Manual Handling

Ensure all specific risk assessments are read and understood

WARNING - Machine modification

Any modifications to the Strimech Barrier Master® may result in bodily injuries to yourself or others.

Never modify the machine. Modified machines are not covered by warranty or liability.

Always use original parts and accessories approved by Strimech.

Change damaged parts immediately.

Replace worn components.

Grease all points weekly or daily if required.

WARNING - Accessory hazards

Accidental engagement of accessories during maintenance or installation can cause serious injuries when the hydraulic supply is connected.

Never inspect clean, install or remove accessories while the hydraulic supply is connected.

Storage

Keep the Strimech Barrier in a safe place. Shelter from the weather and frost if possible

Design and Function

Strimech Barrier Master® is a powerful hydraulic attachment designed for pulling up posts with any profile, and posts and tubes with a diameter up to 235mm, utilising an hydraulic pulling force of either 10 or 15 tonnes (depending on the model).

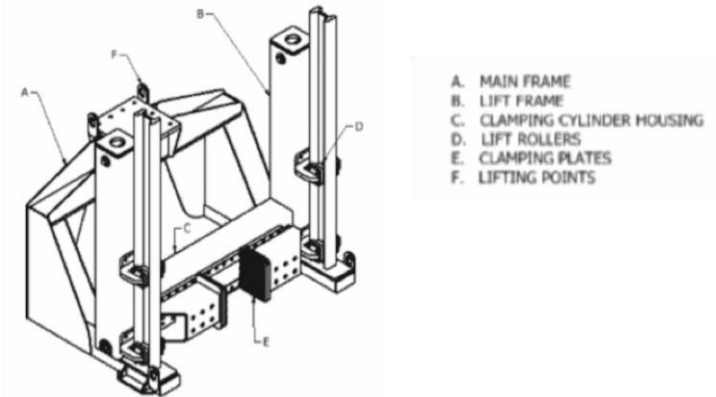


Fig 1: Strimech Barrier Master® Major Parts

Labels

The Strimech Barrier Master® is fitted with labels containing important safety information. The labels must be in good condition and easy to read. New labels can be ordered from Strimech Tel: 0044 (0)1922 649700

Data Plate

STRIMECH ENGINEERING LTD			
TEL: 01922 649700 FAX: 01922 649802			
Part No	<input type="text"/>	<input type="text"/>	Date <input type="text"/>
Serial Number	<input type="text"/>	Ctr of Gravity <input type="text"/>	Approx Net Weight <input type="text"/>
Machine Model	<input type="text"/>	Rated Capacity <input type="text"/>	s.w.L. <input type="text"/>
Attachment	<input type="text"/>	CE WARNING The capacity of the truck and attachment combination must be complied with.	

Fig 2: Strimech Barrier Master® Data Plate

Serial number to be retained as it needs to be quoted when ordering parts or for warranty purposes.

Safety Label



Fig 3: Strimech Barrier Master® Warning Label

Installation:

WARNING -Whipping hydraulic hose

Hydraulic hoses under pressure can whip uncontrollably if connections become loose 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 all hydraulic hoses.

Check that the hydraulic hose and the connections are not damaged.

Hoses

The hydraulic hoses connecting the power source machine, to the Strimech Barrier Master® must have approved working pressure of at least 250bar (3800psi). The hoses on the Strimech Barrier Master® itself, must have an approved working pressure of at least 250bar (3800psi).

Quick-release Couplings

The original Strimech hydraulic hoses are fitted with quick release couplings compatible with many hydraulic power sources. Check these are suitable with the power source before attempting to operate the Barrier Master®

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 release couplings which can cause overheating and cause foreign matter to enter the hydraulic system.

Operation

Involuntary start of the machine may cause injury.

Keep your hands away from the start and stop device until you are ready to use the machine.

Learn how the machine is switched off in the event of an emergency.

WARNING - There is a risk of injury

Never put your fingers in the roller or slots of the frame.

Never put your fingers between the post and the clamp plates.

Never touch Barrier Master® while pulling the posts.

Never use the Barrier Master® as a lifting device.

Never use the Barrier Master® for unsuitable work

Operating

If you need to operate the Strimech Barrier Master® in soft soils or sand, optional pads are available. See Strimech accessories.

Start and Stop

Connecting hoses

Inspect the couplings

Make sure the couplings are clean and serviceable.

Connect the hoses

Attach the return line hose

Attach the feed line hose

Rotate the collar on the female coupling to secure the coupling

Check the hydraulic oil level.

Start the engine and run the power source to fill up the hydraulic oil level.

Check the hydraulic oil level

Disconnecting hoses

Prepare the power source.

Stop Engine

Release excess pressure in hydraulic system. Refer to the machine manual.

Rotate the collar on the female coupling.

Release the feed line hose.

Release the return line hose.

Rotate the collar on the female coupling.

Protective caps

Fit protective caps over the ports to prevent contamination.

Start

When connecting the hoses to the power source with the quick-release couplings; release excess pressure in hydraulic system. Refer to the power source machine manual.

Ensure that any power source you plan to use is compatible with the Strimech Barrier Master®.

Start the power source and allow it to run for a few minutes to warm the hydraulic oil.

Position the Strimech Barrier Master®, clamp plates wide apart, with post as central to clamp plates as possible.

Activate clamp rams until they clamp pole securely.

Activate lift rams until they reach full extension. They will automatically stop when they reach full stroke.

If the post is not fully removed repeat the previous procedure.

Strimech Barrier Master® MUST NOT be used to lift the pole or post; only to pull it from the ground.

Storage

The Strimech Barrier Master® should be stored safely as per your risk assessment. Keep dry and sheltered from the weather and frost if possible

Maintenance

Regular maintenance is a basic requirement for the continued safe and efficient use of the attachment.

Follow the daily maintenance instructions carefully, and ensure the periodic inspections are adhered to and recorded on the maintenance schedule.

Before undertaking maintenance on the attachment, ensure all safety instructions are read for both the power source machine and the Strimech Barrier Master® attachment. Ensure compliance with all appropriate health and safety regulations.

Use only authorised parts. Any damage or malfunction caused by the use of unauthorised parts is not covered by warranty or product liability.

Daily Maintenance *(To be carried out by the operator)*

Ensure the machine is turned off and that the hydraulic system is unpressurised.

Clean and visually inspect the Strimech Barrier Master®

Check hydraulic system for leaks, damage and wear & tear.

Clean quick-release hydraulic couplings keeping them free from debris and dirt.

Check hydraulic cylinders, pipes and valves for cracks and leaks.

Check bolted joints and connections are fully tightened and undamaged.

Check clamp and slide ways for cracks and wear.

Check steelwork structure for weld cracks and wear & tear

Check clamping pads are serviceable and are securely tightened

Grease all grease points.

Clean and grease all slideways

Ensure any additionally attached equipment is properly maintained.

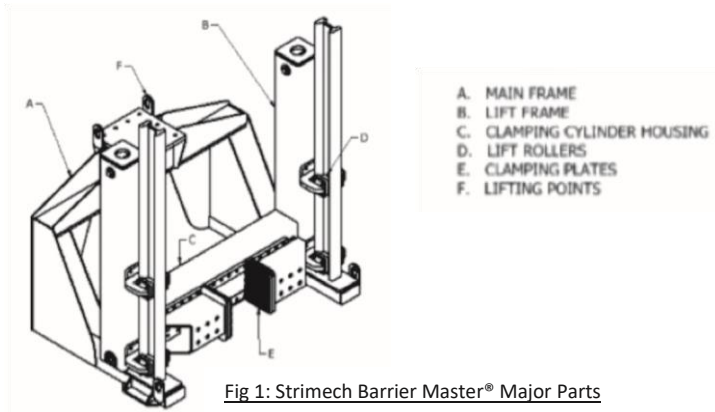
Periodic Inspection *(To be carried out by a competent person* or returned to Strimech)*

At 6 monthly increments the Barrier Master® must be thoroughly cleaned and inspected and all wearing parts to be checked as per the maintenance schedule. This work must be performed by a competent person, or returned to Strimech.

**A 'Competent person' is:*

One who has been trained by Strimech to work upon this particular attachment. Or: One who has had sufficient experience working with similar equipment in a similar or related industry. He will be familiar with steel fabricated frames, moving mechanical parts and devices and has experience working with hydraulics generally, including valves, cylinders, pipes and hoses. He will be able to assess the condition of all of the parts. He must also be aware of related health and safety requirements and COSHH. He will be expected to approach Strimech for specific advice as and when necessary.

Maintenance Schedule (6 Monthly)



Thoroughly clean the attachment to allow inspection of the complete steel frame and hydraulic system components.

Visually inspect the entire machine for excessive wear & tear.

Visually inspect all steelwork and check the integrity of all welds.

Visually inspect lifting points for wear or any damage.

Ensure all bolted joints are fully tightened.

Check all hydraulic components for leaks.

Remove guards around lifting frame uprights to allow access to vertical slideways.

Inspect vertical slideways.

Inspect vertical guide bearings.

Replace guards.

Inspect clamping slideways.

Inspect clamping plates for excessive wear or damage.

Ensure clamping plates are fully tightened.

Grease all grease points.

Clean and grease all slideways

Check all guards are in place and in good order.

Check all safety stickers are in place and are in good order.

Use only genuine Strimech parts

Troubleshooting

PROBLEM	CAUSE	SOLUTION
Barrier Master® will not operate	Oil flow and/or pressure too low	Check the performance and connection of the power source
	Oil level too low	Check oil level Check system for leaks
	Couplings or hoses blocked	Remove restriction
	Defective seals in cylinder	Replace seals
Barrier Master® has insufficient pulling force or operates slowly	Cold hydraulic oil	Allow oil reach operating temperature.
	Power source not adjusted correctly	See the operating manual for the power source
	Oil level too low	Check oil level Check system for leaks
	Air in the hydraulic oil viscosity	Use oil with correct viscosity according to the section “Hydraulic oil”
Barrier Master® overheats	Low hydraulic oil level	Check oil level Check system for leaks

Technical data

PRODUCT CODE	DESCRIPTION	HEIGHT	DEPTH	WIDTH
BM/10E	Barrier Master® Excavator Mount	1450mm (4'9")	940mm (3'1)	1330mm (4'4.3)
BM/10C	Barrier Master® Crane or HIAB Mount	1450mm (4'9")	940mm (3'1)	1330mm (4'4.3)
BM/15E	Barrier Master® Excavator Mount	1880mm (6'2)	1620mm (5'3.7)	1980mm (6'5.9)
Maximum hydraulic input pressure		250Bar 3800psi		
Maximum hydraulic input flow rate		46 Litres per minute		

Operating Instructions

THIS ATTACHMENT IS FOR PULLING POSTS FROM THE GROUND ONLY AND IS NOT TO BE USED FOR LIFTING.

These instructions refer only to the operation of the Barrier Master® attachment and should be read in addition to the normal safe operating instructions of the excavator/lorry mounted crane. Personnel should always stand well clear and should never be within the working area of the excavator/lorry mounted crane whilst Barrier Master® is being used.

1. Ensure excavator/lorry mounted crane and all couplings are compatible with Barrier Master® (BM).
2. Only operate BM within the boundaries of the safe working capacity of the excavator/lorry mounted crane (refer to excavator/lorry mounted crane handbook).
3. Ensure both BM and excavator/lorry mounted crane are on level ground and connect BM to excavator/lorry mounted crane via pins or quick hitch coupling (excavator), or by connecting hook to chain with shackle (crane) in the normal way, as per the excavator/lorry mounted crane operating instructions. BM can be used either facing towards or away from the excavator/lorry mounted crane. Face away from excavator when long posts are being pulled. Care should be taken at all times when releasing posts.
4. Connect both hydraulic circuits to auxiliary ports on excavator/lorry mounted crane via Q/R hydraulic couplings.
5. Before picking up BM operate both hydraulic circuits to their full extent in both directions, and then switch off power and check for any hydraulic leaks. (Do not operate if any leaks are found.)
6. Ensure BM is in its fully lowered position and grips are fully open before attempting to lift/carry/position BM.
7. When carried by an excavator; BM should be carried no more than 600mm from the ground and in its fully lowered position, for stability and safety.
8. When carried by a lorry mounted crane, BM should be lifted and positioned in accordance with the safe operating procedure for the lorry mounted crane (see crane handbook). Once BM is placed on the ground, ensure that crane arm is lowered sufficiently to allow the carrying chain to remain slack whilst BM is in operation.
9. When used with excavator, position excavator such that dipper arm will not foul on BM when it is in its raised position (Dipper arm vertical is ideal).
10. Place BM on the ground in front of post. Post should be as central as possible.
11. Ensure legs of BM are completely resting on the ground and no weight is borne by the carrier machine, excavator or lorry mounted crane (lower crane arm so carrying chain is slack before operating). If ground is uneven, position excavator or lorry mounted crane to enable BM legs to sit firmly on the ground. Suitable blocks may be placed under legs, if necessary, to ensure BM sits firmly on the ground.
12. Operate grip control fully to secure post.
13. Operate pull control slowly to pull post from the ground.
14. If using with excavator; release pressure in bucket crowd ram, or if used with lorry mounted cranes; release pressure in boom arm: so allowing BM to settle if ground is soft, ensuring the feet stay firmly resting on the ground, and no weight or other force is borne by the carrier vehicle.
15. DO NOT OPERATE crowd control circuit (excavators) or crane arm (lorry mounted cranes) to apply extra force to BM otherwise damage may result.
16. Once clear of the ground, the post can be released; taking care post does not fall towards excavator.
17. BM must not be lifted from the ground during pulling cycle or while a post is attached.
18. Once post is clear return BM to its fully lowered position with wide open grips before moving to the next post.
19. To remove BM from excavator/lorry mounted crane, place on level ground, ensure BM is in its fully lowered position with grips open. Switch off carrier vehicle power, fully release any hydraulic pressure and disconnect quick release hydraulic couplings. Remove connecting pins or operate quick hitch coupling (excavator), or remove from hook (crane), as per excavator/lorry mounted crane instructions.

Note BM = Barrier Master®

