Operating, Maintenance And Service Manual
Spare Parts List
IS-033/034 Round Cut Heading Machine
Preface

This manual is dedicated to the personnel responsible for the operation, maintenance and service of a Baader IS-033/034 Heading Machine.

Carefully read the instructions and safety precautions given in this manual. Do not attempt to operate maintain or service this machine until you have thoroughly read and understood the information contained in this manual.

It is the responsibility of the owner to ensure training is given to all personnel involved on the operation of these machines.

**Baader Ísland ehf.** Will not assume any liability for damages due to the non-observance of this manual, inadequately trained personnel, improper handling of the machine nor its application in fields other than those specified in this manual.

In case of arbitrary modifications by removing or mounting parts or any modification of the machine without our written approval, our conformity declaration (EC directive) will become invalid.

Use only Baader genuine spare parts.

It is imperative to comply with the legal safety regulations for food processing machinery which are in force in your country.

This manual is the intellectual property of Baader Ísland ehf and may not be copied, reproduced nor made available to third parties without our prior written approval.

**Warning:** To clearly show details of this machine, covers, guards, barriers or doors may have been removed or shown in an open position. All such safety components must be replaced prior to the machine being used. Failure to observe this instruction may result in serious personal injury or death.
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Important Note

Caution In case of non compliance, damage of the machine and or property cannot be ruled out.

Particular attention required:–
Danger of personal injury.

Danger
Unprotected electrical systems.
SAFETY PRECAUTIONS
IMPORTANT FOR THE MACHINE OPERATORS!

Non-specified use, as well as improper operation of the machine can result in serious bodily injuries and severe material damages. It is essential that operators observe the following safety instructions.

- Read the operating instructions prior to starting up the machine.
- Unauthorised personnel must not operate maintain or service the machine.
- Wear close fitting work clothing, especially around arms.
- Do not wear any finger rings.
- Do not reach into running machine.
- Do not place loose articles on the machine.
- Do not run the machine unattended.
- In case of failure of the functional sequence, prior to cleaning, maintenance and lubrication, switch off the machine. Put the machine switch to 0 position and secure it.
- Only qualified personnel should maintain or service the machine, strictly observing these operating instructions.
- The safety devices installed by the manufacturer must not be bypassed, modified or removed!
- Spraying in electrical enclosures and controls gears is prohibited; explosion hazard.
- Never operate maintain or service this machine if affected by alcohol or other substances that may impair alertness or judgement.
- Use safety protective equipment.
Safety instruction

Prior to starting up the machine:

Ensure all machine covers are fitted.

Verify the proper functioning of all safety devices.

During operation, the machine should stop ...
... when pressing the emergency button (fig 1, item 1) (red light).
... when pressing the stop button (fig 2, item 1) (red light).
... when actuating the safety lever (fig 1, item 3) in front of the feeding section.
... when opening the guards (fig 1 and 2, item 4)
... when removing the head chute (fig 2, item 5)
Safety sensors

Machines built from May 2012 have magnetic safety sensors as standard.

The sensors comprise two parts, a magnet (fig 3, item 1) and a sensor (fig 3, item 2), which need to be aligned for correct working.

Failure of the magnetic safety sensors can be the result of:

- Opening and closing the guard too quickly;
- Opening and closing the guard only a short distance;
- Closing the guard with a slamming action;

To rectify this situation the following steps should be taken.

- Open the guard fully and close it in a controlled manner;
- Turn off the power supply for 10 seconds and then restore power;
General

The machine is designed to remove the head of whitefish with throat cut.

It is recommended to wash the fish prior to beheading.

Note:
Live fish and fish in the state of rigor mortis cannot be processed.
Technical Data:

Fish Species : Whitefish

Process Condition : Throat cut

Size range : 1 to 13 kg

Throughput rate : Up to 30 fish per minute

Power Consumption : 2.2 kW

Water supply
- Consumption : approx. 10 litre per minute
- Pressure : 1 to 5 bar (15 to 75 psi)
- Connection : 3/8" (hose ID 10mm)

Dimensions
- Length : 1673mm (65.9")
- Width : 930mm (36.6")
- Height : 1777mm (70")

Weight : 310kg

Operator requirements : 1 person

Noise measurement
(evaluation according to DIN 45635) Workplace level (LpAeq) : 82dB(A) – Wear Ear Protection.

The machine is configured for the above mentioned size range and throughput rate. However the proportions and the quality of the fish (season, fishing ground, degree of freshness etc.) have an influence on the figures indicated, these may vary in practice. Live fish and fish in the state of rigor mortis cannot be processed.
Dimensions
Machine Set-up

The machine shall be readily accessible from all sides for ease of operation and maintenance.

Place the machine on the base plates (fig.6 item 1), using the adjusting spindles (fig.6 item 2) level and adjust the working height of the machine. When complete lock the adjusting spindles using the lock nut (fig.6 item 3).
Power Connection

The machine is supplied with approximately 5m of Ölflex 191 5 G 2.5 cable terminating in a type 416P6 plug which is IP44 splash-proof and conforms to IEC 60 309-2.

To comply with the legal safety regulations, the machine has to be connected to the mains electrical supply in accordance with the circuit diagram taking into account the regulations of the local electrical authorities and the rules EN 60204 and VDE 0100.

Seal the cable bushes and screw so they are watertight.

An electrician must read and understand the electrical drawings supplied with the machine before connecting to the electrical supply. After connecting the machine the electrician should test correct function of the electrical equipment and ensure the machine is correctly grounded. It is important to verify the correct rotation of the electrical motors. Ensure that all exposed electrical equipment is properly covered. Seal the cable bushes and tighten to make watertight. The doors of the cabinet must be closed after the completion of the electrical connection.

Always lock the main electrical switch in the OFF position prior to performing any maintenance or service work.

Do not bypass or wire around any safety equipment.

Removal of any cover or guard is prohibited.

Improper operation or insufficient maintenance can result in serious personal injury and severe material damages.

Employees who are responsible for safe working practices have to ensure that:
- any maintenance or service work is only completed by qualified personnel.
- operating instructions and information required for procedures completed by operators to be available at all times. Operators must strictly observe the contents of this information.
**Water Connection**

The water connection (fig. 7 item 1) is configured for 3/8" hose (ID 10mm).

The hose should be led from the top down to the machine and secured to the hose tail by means of a hose clip.

Water pressure should be a between 1 to 5 bar (15 to 75 psi)
Initial Start-up Procedure

Prior to starting the machine, remove the preservative from all areas in contact with the product.

Wash the machine from bottom to top using a low pressure wash (max 30 bar) with drinking water heated to 60°C.

After cleaning, run the machine briefly; grease to remove any cleaning fluid that may have penetrated the bearings.
Cleaning

Clean the complete machine at regular intervals (8 operating hours). When using low-pressure cleaning devices, do not direct the jet into bearings.

Rest periods

Set the main switch unto position 0.
Remove product remainders and wash the machine from all sides with a powerful water jet.

Pre cleaning

Start and clean the machine observing the appropriate safety distance from the moving machine parts:
- with low pressure, max 30 bar.
- with 60°C drinking water.
- from bottom to top.

Keep the safety distance.
Make sure that clothing, hoses, cleaning devices do not get caught by the moving components of the machine; danger of serious bodily injuries and damage to the machine.
Do not run the machine unattended.

After pre cleaning, stop the machine, set the main switch to position 0 and secure it.
Main cleaning

The main electrical switch shall be at the 0 position and lock it. Observe the safety instructions at the beginning of this manual. Wear protective clothing during cleaning and sanitation operations. Observe the specific national regulations for the cleaning agents and disinfectants used.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Cleaning Agent</th>
<th>Device / Method</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>Main Cleaning</td>
<td>2 – 5% P3-topax 17 *</td>
<td>Foam with low-pressure foaming device</td>
<td>From bottom to top reaction time 15 minutes</td>
</tr>
<tr>
<td></td>
<td>For removing calcareous deposits, use 1 time per week cleaning foam 2 – 5% P3-topax 56 instead of P3-topax 17</td>
<td>From bottom to top reaction time 15 minutes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drinking water at 60°C</td>
<td>Rinse with low pressure, max 30 bar</td>
<td>Carefully from top to bottom</td>
</tr>
<tr>
<td>Check</td>
<td></td>
<td>Visual</td>
<td></td>
</tr>
<tr>
<td>Sanitation</td>
<td>1% P3-topax 91</td>
<td>Low-pressure spraying, max 30 bar</td>
<td>From top to bottom, reaction time about 10 – 15 minutes since contingent upon germ spectrum; refer to product data sheet</td>
</tr>
<tr>
<td>Rinsing</td>
<td>Drinking water max 20°C</td>
<td>Low pressure, max. 30 bar</td>
<td>Rinse again carefully</td>
</tr>
</tbody>
</table>

* To avoid white deposits, P3-topax 17 should not be foamed on hot surfaces.

The cleaning agents P3-topax 17 and P3-topax 56 recommended the avoidance of painted areas of the machine due to aggressive cleaning properties of the products.

After cleaning run the machine briefly and grease to remove any cleaning fluid that may have penetrated the bearings.

Correctly dispose of cleaning agents that are ecologically harmful.
Preservation

Prior to the machine not being used for long periods. Protect the machine using food approved preservatives.

Recommended preservatives:

- Preservation spray **MBF 370** – ref. no. 51.10.0201 (400 ml can)
- Preservation liquid **MBF 360** – ref. no. 51.10.0200 (5 l container)

These preservatives meet the requirements according to USDA-H1

Before resuming production, remove the preservative from all areas in contact with the product:

- with low pressure, max 30 bar.
- with 60°C drinking water.
- from bottom to top.
Main operating parts

- Back-plate
- In-feed plate
- Transport-fork
- Trigger
- Fish-chute
- Head-chute
- Knife

Fig 8
Warning

Ensure the machine is isolated from the electrical supply before attempting to rotate the machine by hand. Failure to observe this instruction may result in serious personal injury or death.

Manually rotating machine

Use a 13 mm top key tool to manually rotate the machine (fig.9 item 1) Turn clockwise.
Cycle Start/Stop control box until 2016

- Start-reset button (fig.10 item 1). Starts the machine
  
  Note: Pressing the start-reset button for more than 1 second when released the machine will run for 1 complete cycle. If machine is not at starting point it will run to end of cycle (reset).

- Stop button (fig.10 item 2)

- Safety lever Emergency Stop (fig.10 item 3)

- Trigger (fig.10 item 4) starts 1 complete cycle
Cycle Start/Stop control box from 2016

- **Start-reset button** (fig.11 item 1). Starts the machine

  **Note:**
  
  If machine is not at starting point it will run to end of cycle (reset).

- **Stop button** (fig.11 item 2)

- **Safety lever Emergency Stop** (fig.11 item 3)

- **Trigger** (fig.11 item 4) starts 1 complete cycle

- **Emergency button** (fig 11 item 6) Press to stop machine, turn button to release.

- **White light** (fig 11 item 5) Machine is ready to start, if not on safety circuite is broken, check guards

- **Green light** (fig 11 item 1) machine is running ready for cycle start

- **Red light** (fig 11, item 2) Machine is on.
Adjustment of the cycle control proximity switch

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

It is important to verify that the proximity switch is correctly located in the holder (fig.12 item 2) prior to adjustment.

Loosen the gland nut (fig.12 item 3).
Push the cable sheath towards the holder, whilst maintaining pressure re-tighten the gland nut.

Loosen the 2 hexagon nuts (fig.12 item 1).

Rotate the machine manually as described in chapter Manually rotating machine, so that the switch-fane is at its closest position to the proximity switch holder (fig.12 item 2).

Adjust the distance between the switch-fane and the proximity switch (fig.12 item 2) to 1mm.
Re-tighten the 2 hexagon nuts (fig.12 item 1).
Adjustment of the locking arm stop

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Loosen the hexagon locknut (fig.13 item 2).
The machine can be manually rotated as described in chapter Manually rotating machine, to aid the setting of the locking arm.

The rest position of the locking arm should be 8mm below the level of the cam.

Adjust the rest position by turning the hexagon head bolt (fig.13 item 1).

Re-tighten the hexagon locknut (fig.13 item 2).
Adjustment of cycle start position

STOP

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Note:

The setting of the locking arm stop must be completed prior to adjusting the cycle start position.

Loosen (do not remove) the 3 hexagon head bolts (fig. 14 item 1).

Turn the cam (fig. 14 item 2) as far possible anti-clock wise.

Re-tighten the 3 hexagon bolts (fig. 14 item 1)

(Continued on next page)
Adjustment of switch fan

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Turn the machine by hand as described in chapter Manually rotating machine until the spring cam (lower cam fig 15, item 1) reaches the position shown in Fig 15 (280mm). Loosen the 17mm hex head bolt and adjust the switch fan (fig 15, item 2) to 90° then retighten the 17mm securing bolt.
Cam alignment position

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

The upper 2 cams have a setting mark (fig 16, item 1) on the uppermost side of the cam. This setting mark should be aligned with the key (fig 16, item 2). Cam are not in right height in this picture for demonstration purpose.

The setting mark (fig 17 item 1) for the lowest cam is located on the side of the cam support. It should be aligned with the key (fig 17, item 2)
Adjustment of the knife-drive support bracket

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Loosen do not remove the 2 hexagon bolts (fig.18 and 19 Items 1 and 2).

(Continued on next page)
Manually rotate the machine as described in chapter Manually rotating machine to move the transport fork as close as possible to the knife.

Press the knife bracket against the inbus bolt (Fig 20 item 1) as shown on the picture.

Then turn the knife bracket until the knife is in the centre of the cut out (Fig 21 item 2) on the arm.

Retighten the bolts on (Fig 18 and 19, item 1 and 2)
Adjustment of the transport fork setting distance.

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Manually rotate the machine as described in chapter Manually rotating machine to move the transport fork as close as possible to the knife.

The transport fork should be 15 to 20mm from the circular knife, see (fig.19). For adjustment see (fig.20).

Slacken the hexagon nut (fig.20 item 1) and using the 2 adjusting bolts adjust (fig.20 items 2 and 3) the position of the transport fork.

It is important to ensure that the bolts (fig.20 items 2 and 3) are re-tightened after adjustment.

When complete re-tighten the hexagon nut.
Replacement of the transport fork cam roller

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Manually rotate the machine as described in chapter Rotating machine to aligning the cam roller to the access hole machined in the cam plate (fig.21).

Slacken the 2 hexagon head bolts (fig.21 items 1 and 2) and remove the hexagon nut (fig.21 item 1).

The transport cam roller can now be removed through the access hole.

Reverse the procedure to re-assemble.
Adjustment of the Transport Fork

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Manually rotate the machine as described in chapter Manually rotating machine, to move the transport fork as close as possible to the knife.

Slacken, do not remove the hexagon bolts (fig.22 item 1 & 2).

The distance between the middle of the transport fork to the knife should be between 2 to 3mm in the middle and 10mm at the end. (fig.23).

Re-tighten the hexagon bolts (fig.22 item 1 and 2).
Adjustment of the in-feed plate

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Manually rotate the machine as described on page 13, to move the transport fork to the in-feed plate.

To adjust the in-feed plate (fig.25 item 2), slacken the 3 hexagon bolts (fig.24 item 1, 2 and 3).

The in-feed plate (fig.25 item 2) should be adjusted as close to the transport fork (fig.25 item 1) as possible.

It is important that the in-feed plate and the transport fork do not touch during the complete cycle.

Re-tighten the 3 hexagon bolts (fig.24 item 1, 2 and 3)
Adjustment of the back plate maximum travel stop screw.

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Manually rotate the machine as described in chapter Manually rotating machine, until the back plate reaches its maximum travel.

Slacken the lock nut (fig.26 item 1) and adjust the stop screw (fig.26 item 2) to a clearance distance of 16mm.

Re-tighten the lock nut.
Adjustment of the angular position of the back plate.

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Loosen, do not remove, the 2 hexagon head bolts (fig.27 item 1) in the slots.

Adjust the back plate angle to accommodate different species of fish. Adjustment in the direction of the RED arrow (fig.27) closer to neck bone more yield.

Adjustment in the direction of the YELLOW arrow (fig.27) away from neck bone less yield.

Fig 27
Adjustment of the back plate minimum travel stop screw.

Prior to working on the machine switch the main electrical switch to the **0** position and lock it. Failure to comply may result in serious personal injury or death.

Manually rotate the machine, as described in chapter Manually rotate machine, until the back plate reaches its minimum travel.

Slacken the lock nut (fig.28 item 1) and adjust the stop screw (fig.28 item 2) to maintain a clearance of approximately 10mm.

Re-tighten the lock nut.
Adjustment of back-plate travel position

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Manually rotate the machine, as described in chapter Manually rotate machine, until the back plate is approximately in the middle of its travel.

Loosen do not remove the hexagon head bolt (fig.29 item 1).

Adjust the back plate (fig.30, item 2) position by turning the eccentric bushing (fig.29 item 2) for the back-plate cam roller (fig. 26 item, 3).

The clearance of the back plate to the transport should be approximately 10mm (fig.30).

Re-tighten the hexagon head bolt (fig.29 item 1)
Adjustment of the trigger

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

It is important to verify that the proximity switch is correctly located in the holder (fig.31 item 1) prior to adjustment.

Loosen the gland nut (fig.31 item 2) push the cable sheath towards the holder, whilst maintaining pressure re-tighten the gland nut.

Loosen, do not remove, the 2 hexagon head bolts (fig. 31 item 3).

Adjust the clearance of the proximity switch holder (fig.31 item 1) to 1mm (fig.31 item 4). Re-tighten the 2 hexagon head bolts (fig.31 item 3).

The trigger weight can be adjusted by loosening the hexagon head nut and bolt (fig.32 item 5) and moving its position along the slot.

When complete re-tighten the hexagon head nut and bolt.
Warning

It is possible a piece of fish can keep the trigger depressed allowing the machine to continuously cycle. It is important to keep the area around the cycle start trigger clear (see fig.33).
Tension of the knife drive belt

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Loosen, do not remove, four hexagon head bolts (fig. 34 item 1).

Adjust the tension off the toothed belt (fig. 34 item 2) by lifting the motor (fig. 34 item 3) up or down in the slots.

The correct tension of the toothed belt should allow approximately 20mm of movement in the middle of the belt.

When complete re-tighten the four hexagon head bolts.
Knifes
To achieve the best possible results, knife edges should be sharp. The knife is to be verified at regular intervals and be re-sharpened if required. It is necessary to remove the knife from the machine for sharpening.

Knife Replacement.

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

Danger wear protective gloves when handling knifes.

(Part no. 52100196 = 1 off; 2 are included in the tool set)

Knife nuts with left–handed threads are marked with notches on the hexagon.

Using two 41mm spanners one on the knife shaft (Fig 35. item 1) and the other on the knife nut (Fig 35. item 2) slacken the M20 LEFT HAND THREAD knife nut.

Always press the spanners toward each other to minimize risk of slipping when the nut is loosened.

Remove the knife nut.

It is now possible to remove the rotary knife.
After removal of the rotary knife.

Clean the knife mounting face.

Replace the rotary knife ensuring the knife drive dogs are located in the rotary knife.

Use a suitable food quality anti seize lubricant when re-placing the knife nut.

Using two 41mm spanners one on the knife shaft and the other on the knife nut tighten the M20 LEFT HAND THREAD knife nut.
Grease Lubrication

The machine has been lubricated with BAADER “Special grease GLS 380/N3”.

This grease is of the GRAS type, semi-synthetic and highly seawater resistant. It complies with the German Food and Consumer Goods Acts (LMBG § 5, art. 1, clause 1) and is authorized according to USDA H1. We recommend using this lubricant at all times. When using other GRAS lubricants, the trouble free functioning of the machine cannot be guaranteed. Ensure only grease free from contaminants is used.

Do not blend with mineral lubricants.

Note that mineral lubricants do not comply with the provisions of Food and Consumer Goods Acts and may thus not be used.

The complete lubrication system (jerk fitting, mouth of grease gun, hand lever press and the coupling) should be free of any impurities! The maximum lubricant pressure at the mouth of the grease gun should not exceed 190 bar.

Whenever cleaned, the machine is to be lubricated to expel any cleaning fluids that may have penetrated the machine bearings.
Grease maintenance

Lubricant: Special grease (Baader order no: 51.50.0103)

Lubricate daily in all lubrication nipples (8 pcs) located by the head chute (Fig 39 yellow arrows).

Whenever cleaned, the machine is to be lubricated to expel any cleaning fluids that may have penetrated the machine bearings.
Lubricant change of the gear motors

Prior to working on the machine switch the main electrical switch to the 0 position and lock it. Failure to comply may result in serious personal injury or death.

- Unscrew the drain and vent plugs.
- After draining the oil, flush the gear box thoroughly using suitable flushing oil.
- Prior to filling the gear motor with new oil, make sure that all flushing oil residue is removed. Replace the drain plug.
- Checking the oil level: With the gear at rest, the oil must extend to the lower rim of the threaded bore when the oil level screw is removed.
- Refit the vent plug.
- The roller bearings should to be cleaned and greased during the same period. Make sure that only one third of the roller bearing space is filled with grease to prevent premature failure.
- Lubrication change every 2000 hrs or 1 year.
Country related list of cleaning Agents and Disinfectants

<table>
<thead>
<tr>
<th>Country</th>
<th>P3-topax 12</th>
<th>P3-topax 17</th>
<th>P3-topax 56</th>
<th>P3-topax 68</th>
<th>P3-topax 99</th>
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<tr>
<td>Brazil</td>
<td>Quorum Pink II</td>
<td>Quorum Pink II</td>
<td>Quorum Purple</td>
<td>Quorum Amber</td>
<td>Quorum Clear</td>
<td>Ster-Bac</td>
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**Lubrication and Preservative Recommendation**

The mineral oil companies listed maintain Technical Services whose engineers will always be available to our customers to give technical advice in lubricating matters.

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1) authorised by USDA-H1. The lubricant is of the GRAS type.
2) comply with the USDA-H1 requirements and is of the GRAS type, semi-synthetic and extremely seawater resistant.