COVEYA

WE KEEP YOU MOVING

# BULK FEED HOPPER FH510

# OPERATION AND MAINTENANCE MANUAL

# BULK FEED HOPPER

# FH510

*Figure 1 - BFH FH510 with optional Agitator, Body Extensions, Scraper & Ladders.*

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BFH - BULK FEED HOPPER FH510 ..... 6
PPE – Personal Protective Equipment ..... 10

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# 1 Introduction

This product is designed to provide years of reliable service throughout its working life.

The unique design of the **Bulk Feed Hopper FH510 (**BFH**)** system is the result of 30 years of research and hands-on experience in the conveyor & materials handling industry. In depth experience, attention to detail, a commitment to quality and excellent service are the foundations that have built a first-rate reputation and provided complete customer satisfaction.

Please take time to read this Instruction Manual; it will guide you step-by-step through installation to ensure you get the maximum performance from your conveyor.

This manual covers installation, parts required, maintenance, CE conformity and warranty conditions.

We, the manufacturers, want you to achieve a high level of satisfaction with your **Bulk Feed Hopper FH510** system. If you have any comments or queries, please do not hesitate to contact us:

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# 2 Safety Instructions

To use this equipment properly, you must observe the safety regulations, the assembly instructions and the operating instructions to be found in this manual. All persons who use and service the equipment have to be acquainted with this manual and must be informed about any potential hazards. Children and frail people must not use the equipment. Children should be supervised at all times if they are in the area in which the equipment is being used.

It is also imperative that you observe the accident prevention regulations in force in your area. The same applies for general rules of occupational health and safety.

The manufacturer shall not be liable for any changes made to the equipment or for any damage resulting from such changes.

**Caution:**

⚠ Read all instructions. Failure to follow instructions listed below may result in electric shock, fire and/or serious injury. Always isolate from electrical supply before carrying out any form of maintenance.

⚠ Ensure all guarding is fitted and in good condition before operating the machine.

⚠ Never enter the hopper or reach inside whilst it is running or without the power supply isolated, serious injury or death may occur.

⚠ Do not attempt to install the bulk feed hopper in high winds.

# 3 Environmental Protection

Recycle unwanted materials instead of disposing them as waste. All parts and packaging should be sorted, taken to the local recycling centre and disposed of in an environmentally safe way.

# 4 Conformity

The BFH conforms to relevant safety standards in the country in the EU where the product is purchased. The machinery, taking into account the state of art, complies with, or is designed and constructed so far as it is possible to comply with, the relevant health and safety regulations. Please request the declaration of conformity for your BFH from your supplier.

# 5 Specifications

*Table 1 - BFH Specifications*

| Bulk Feed Hopper FH510 Specifications | | |
|---|---|---|
| Hopper Material Volume without extensions | 9 | m3 |
| Hopper Material Volume with optional extensions | 13.5 | m3 |
| Maximum Throughput | 250 | t/h |
| Conveyor Belt Width | 1000 | mm |
| Conveyor Belt Speed @50Hz | 0.116 | m/s |
| Conveyor Belt Motor Power | 4.0 | kW |
| Conveyor Belt Motor Voltage | 415V 3PH + E | V |
| Agitator Speed @50Hz (if fitted) | 9.6 | rpm |
| Agitator Motor Power (if fitted) | 11.0 | kW |
| Agitator Motor Voltage (if fitted) | 415V 3PH +N+E | V |
| Agitator Torque (if fitted) | 11000 | Nm |
| Maximum Weight | 6500 | kg |
| Optional Agitator Assembly Weight | 1100 | kg |
| Optional Body Extension Assembly Weight | 510 | kg |
| Optional Ladder Weight (each) | 20 | kg |
| Optional Control Panel Mounting Weight (not inc panel) | 72 | kg |
| Optional Belt Scraper Weight | 30 | kg |
| Minimum Weight, NO OPTIONAL EXTRAS | 4650 | kg |

# 6 Dimensions

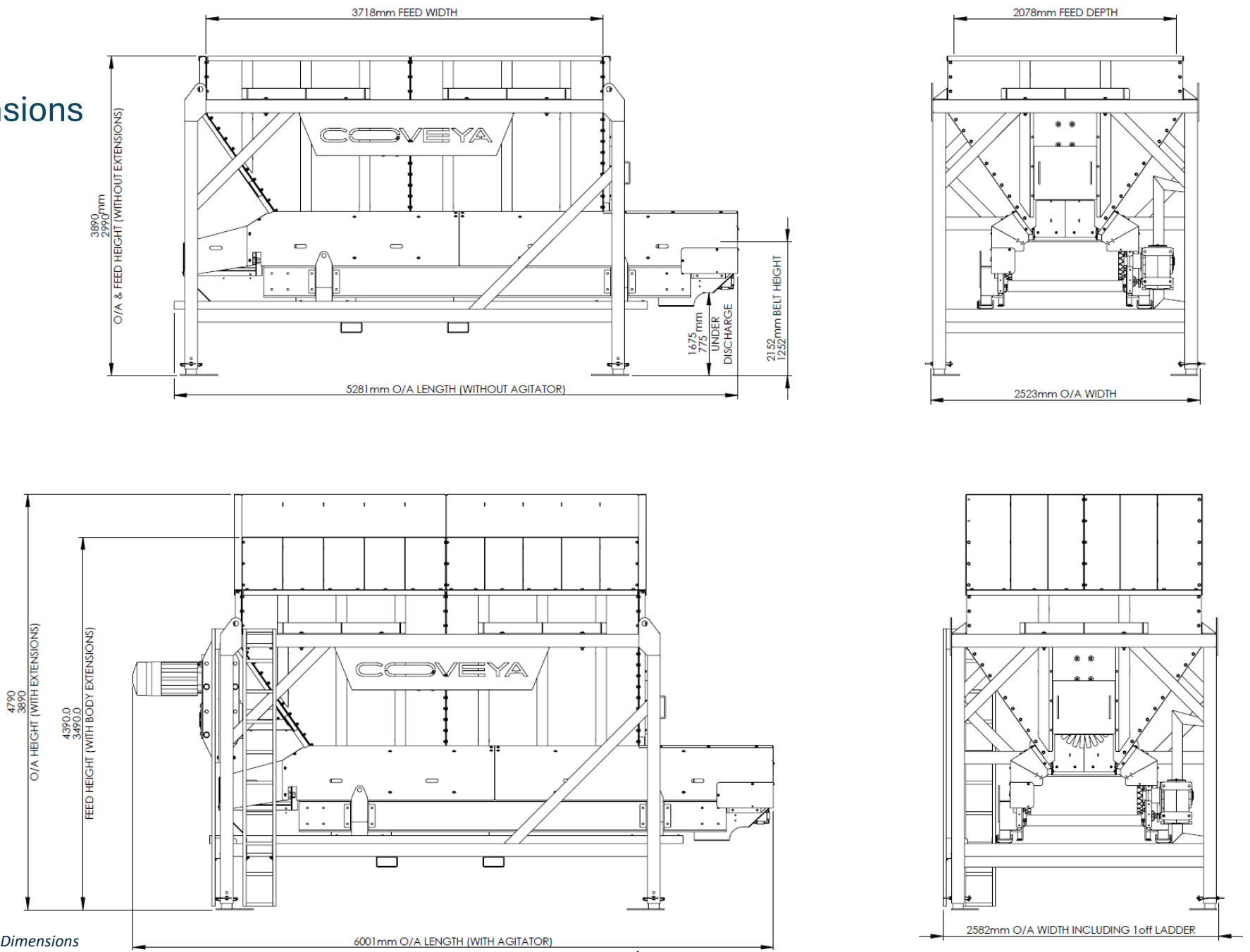



*Figure 2 - BFH Basic Dimensions*

# 7 Tools & PPE

## 7.1 Tools

- Tape measure/laser measure/site measure to ensure accurate positioning of the bulk feed hopper.
- Line marker.
- SDS electric hammer drill.
- SDS drill bit suitably sized for chosen concrete anchor system.
- Spanner/ratchet suitably sized for chosen concrete anchor system.
- Spirit level.
- Grease gun.
- Socket set.
- Regular spanner set up to 32mm.
- 46mm & 60mm spanners or a large adjustable spanner capable of up to 60mm.
- Allen key/allen socket set.

## 7.2 PPE

- Hard hat
- Gloves
- Goggles
- Ear protection
- Safety footwear

# 8 Lifting & Handling

## 8.1 Manual handling

- Most components of the BFH exceed the UK HSE recommended maximum lifting weights for individuals, please use caution and ensure you abide by the manual handling regulations in your county.
- Observe correct lifting procedures at all times, mind your back!

## 8.2 Mechanical handling

- When lifting the BFH use the 4 lifting eyes provided on each corner of the main frame, see figure below.

⚠ WARNING! Dependant on specification, the BFH can weigh up to 6500kg, please ensure all lifting equipment is rated for the weight of your BFH and observe correct lifting procedures at all times! Consult your specification and the weights table in the specification section to ascertain the weight of your model.

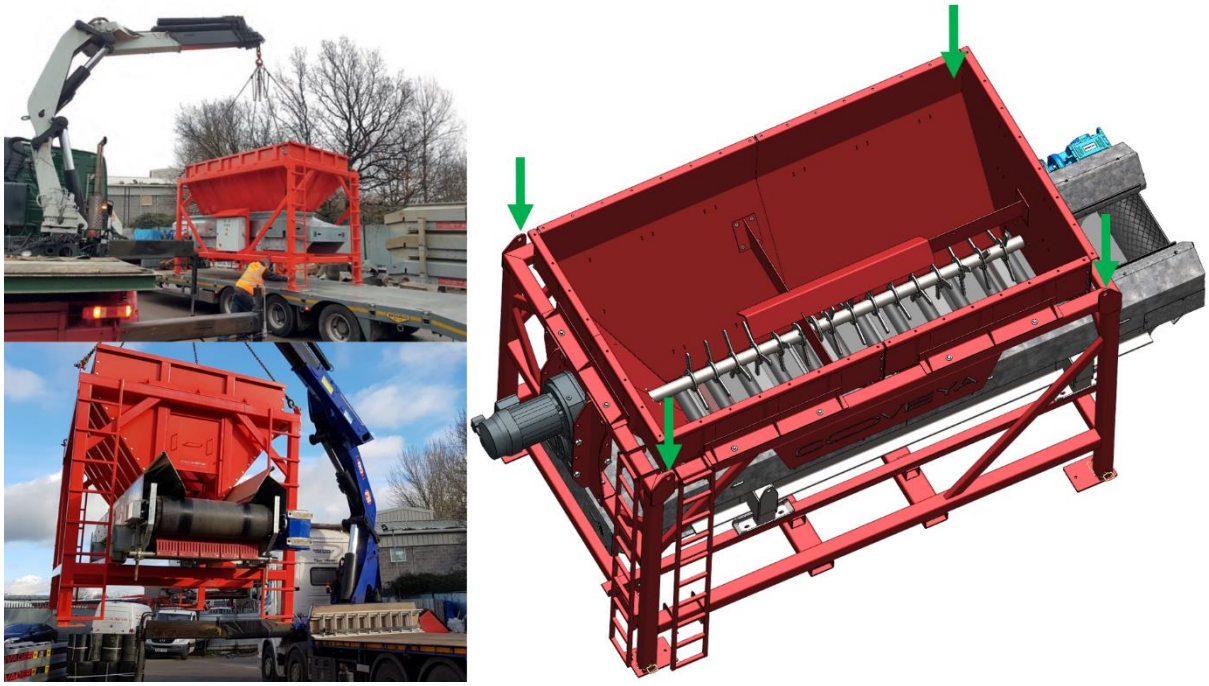


*Figure 3 - BFH Lifting Points*

# 9 Mechanical Installation

The BFH must be fixed to the floor using 4off M16 concrete anchors, one through each foot plate, into concrete of suitable structural integrity to bear the loads imposed by the BFH including a full hopper of material. Shims under the foot plate(s) may be necessary to allow the hopper to be levelled if finer adjustments than +/-50mm are required.

1. Position BFH in desired location.
2. Lift the BFH slightly to take weight off adjustable leg pins.
3. Remove the leg pins on all 4 corners.
4. Lift the BFH to just of the desired final height.
5. Insert leg pins in closest possible holes in each leg and fit the lynch pin through the leg pins.
6. If necessary, shim under the feet to achieve the BFH sitting level with all four legs in contact with the ground/shims & supporting the BFH.
7. Lower the BFH.
8. Insert concrete anchors as per the manufacturer's instructions.

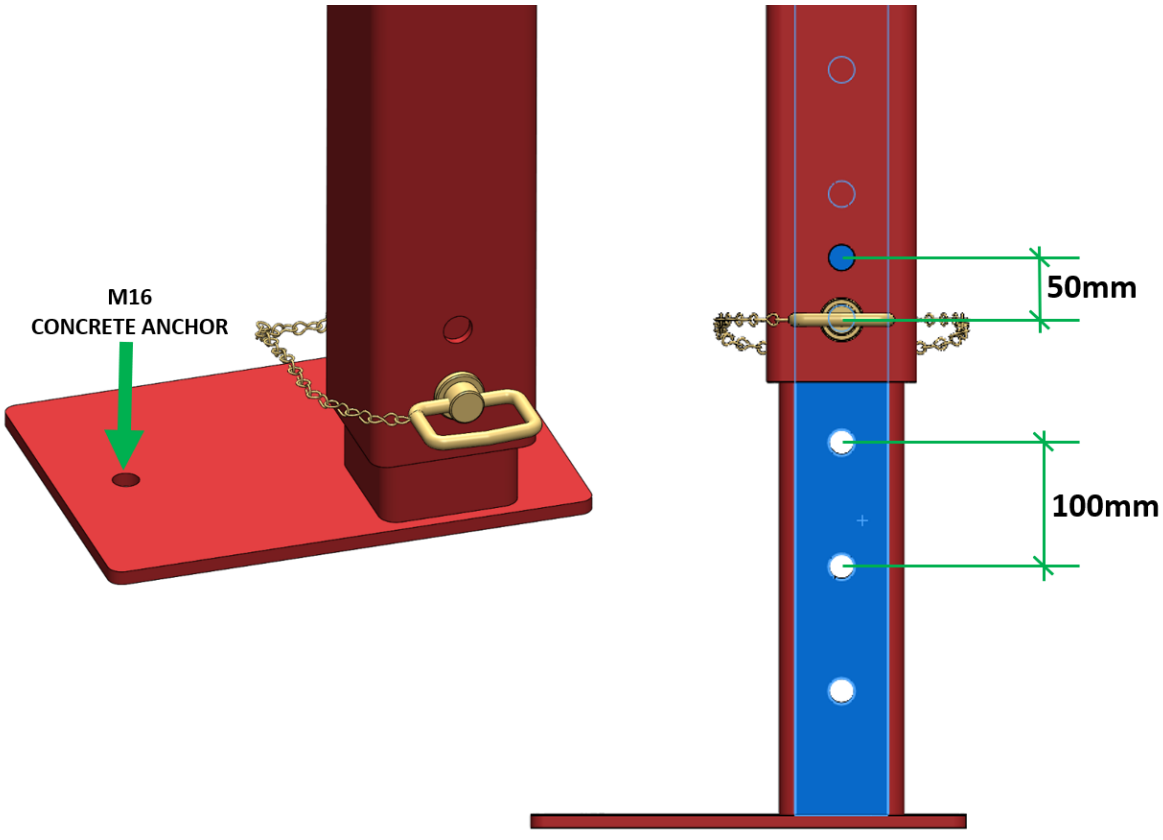



*Figure 4 - BFH Anchoring & Leg Adjustment*

# 10 Electrical Installation

⚠ WARNING! ALL ELECTRICAL WORK MUST BE CARRIED OUT BY A QUALIFIED ELECTRICIAN AND SHALL COMPLY WITH RELEVANT STANDARDS AND LEGISLATION.

⚠ WARNING! IT IS IMPORTANT ANY ELECTRICAL COMPONENTS OR WIRING FIXINGS THAT ARE ATTACHED TO THE BULK FEED HOPPER DO NOT INTERFERE WITH THE OPERATION OF THE HOPPER OR THE FREE RUNNING OF THE MOVING CONVEYOR BELT.

1. Prior to commencing the electrical installation the proposed source of supply should be examined to ensure that it is fit for purpose in terms of capacity, over current protection and fault current protection. The supply cable, from the point of supply to the BFH, shall be suitable to be resistant to the environment in which the BFH is situated (e.g. armoured construction). The rated setting of the over current protective device is determined by the current carrying capacity of the conductors to be protected.

2. Once the BFH has been placed and fixed in position, the electrical wiring can commence. Control equipment shall be easily accessible and located between 0.6m and 1.9m above the ground. An upper limit of 1.7m is recommended.

3. Control equipment shall include the following as a minimum: -

a. A supply disconnection device (isolator) shall be fitted for both the conveyor drive motor and the agitator drive motor (if fitted) which is capable of disconnecting the electrical equipment of the machine from the supply when required.

b. A motor starter and contactor complete with overload protection which shall be fitted in an easily accessible location.

c. An emergency stop system which is capable of stopping the conveyor in an emergency. Emergency stop devices shall have positive operation, be self-latching and shall be one or more push button operated switches which shall be installed in such a way that at least one may be reached within 10m from any accessible point of the equipment.

4. When an emergency stop device(s) has been activated and the conveyor and agitator (if fitted) has come to an immediate halt. The conveyor and agitator (if fitted) shall remain in a stationary condition until that device has been reset and the start device has subsequently been activated.

5. All interconnecting cables shall be suitable to be resistant to the environment in which the BFH is situated (e.g. armoured construction).

# 11 Conveyor Belt Tracking & Tensioning

⚠ WARNING! Conveyor belt tracking must be performed with the BFH power on and the conveyor belt moving, ensure all loose clothing/hair/jewellery/etc, remains clear of the moving belt. Serious injury could occur.

## 11.1 Conveyor Belt Tracking – Head

1. ⚠ Stop the BFH and isolate the power supply. ⚠
2. Remove the three bolts mounting the head tracking guard using a 13mm spanner or ratchet & set guard to one side.
3. Using a 60mm spanner, loosen the locking nut on the head tracking slider nearest the hopper body and back it off ≈10mm away from the tracking slider.

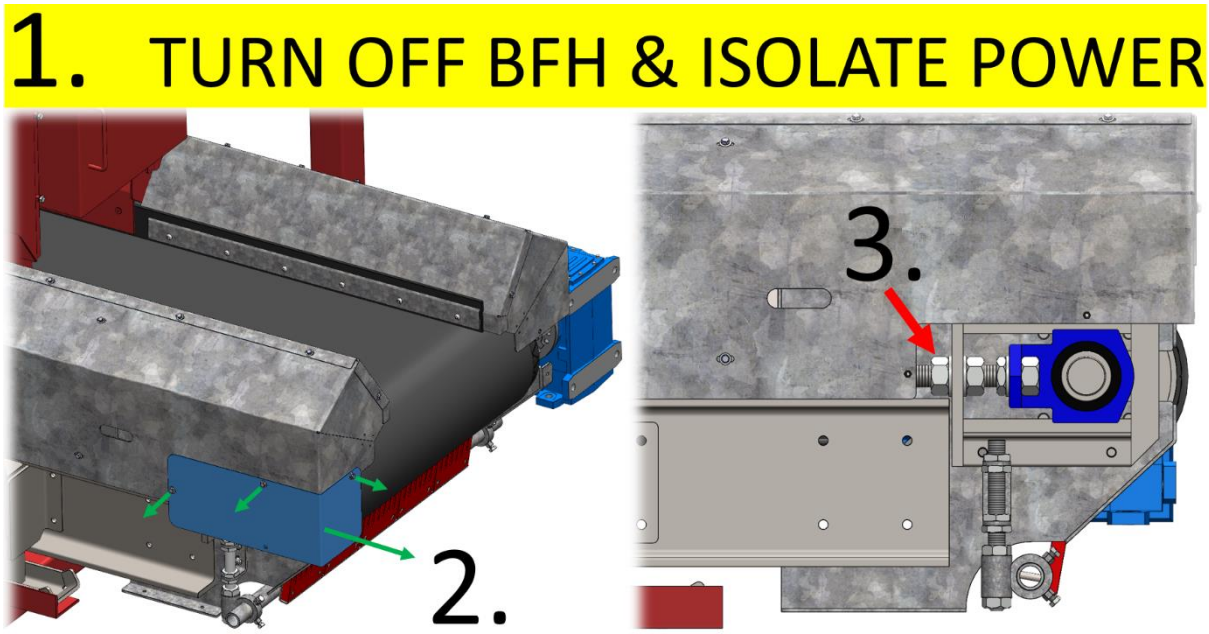



*Figure 5 - Belt Tracking - Head - 1,2,3*

4. Turn on the isolator, ensure all persons and tools are clear of the BFH and start the conveyor.

5. Making small adjustments at a time and allowing the conveyor to run for some time between adjustments to allow the belt to settle, a minimum of one full belt rotation is recommended, turn the adjusting nut near the head drum clockwise to the move the belt toward the motor side of the conveyor (green arrows in figure below). Turn the nut anticlockwise to move the belt toward the tracking slider/the side you are working on (red arrows in figure below).

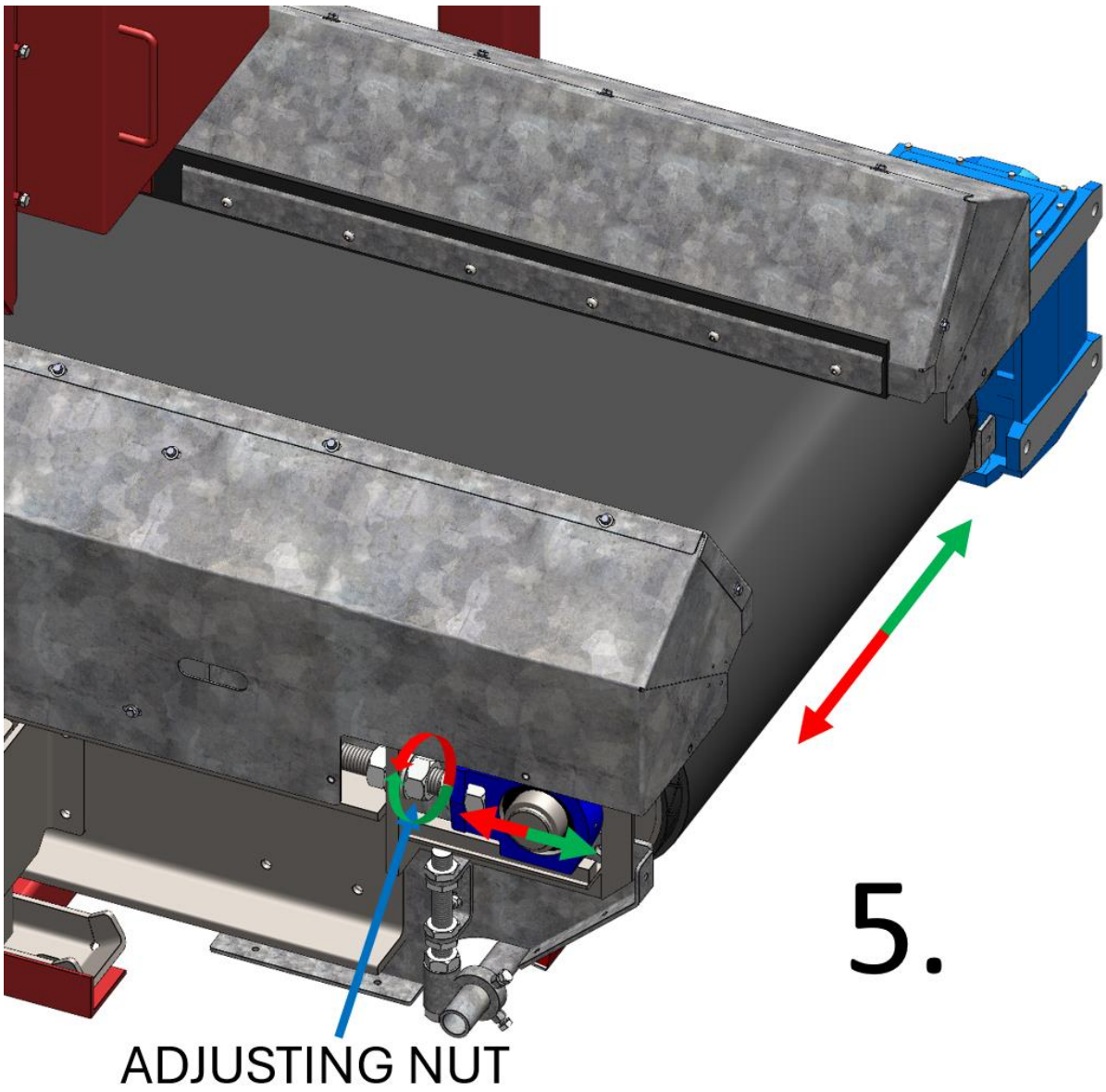



*Figure 6 – Belt Tracking – Head – Input vs. Direction (Step 5)*

6. Once the belt is running central on the head drum, lock the locking nut shown in step three against the head tracking slider.
7. Allow the belt to continue to run for several minutes to ensure good tracking has been achieved and the belt does not wander over time, if it does wander, repeat the process above.
8. Turn off the conveyor & isolate the power.
9. Replace the head tracking guard.

## 11.2 Conveyor Belt Tracking – Tail

1. ⚠ Stop the BFH and isolate the power supply. ⚠
2. Position yourself on the side of the conveyor that the belt has moved away from/the side where the belt is furthest away from the tail plate.
3. Using a 46mm spanner, loosen the locking nut on the tensioner and back it off ≈10mm away from the tracking slider.
4. Turn on the isolator, ensure all persons and tools are clear of the BFH and start the conveyor.
5. Making small adjustments at a time and allowing the conveyor to run for some time between adjustments to allow the belt to settle, a minimum of one full belt rotation is recommended, turn the tensioning nut nearer the tail drum anti-clockwise to the move the belt toward your side of the conveyor. Keep making small anti-clockwise adjustments to gradually bring the belt closer toward the side you are working on. Turn the nut clockwise to move the belt toward the far side if you adjust it too far

*Figure 7 - Conveyor Tail Tensioning*

toward the side you are working on.

6. Once the belt is running central on the tail drum, lock the locking nut shown in step three against the tensioner.
7. Allow the belt to continue to run for several minutes to ensure good tracking has been achieved and the belt does not wander over time, if it does wander, repeat the process above.
8. Turn off the conveyor & isolate the power.

⚠ NOTE, tracking adjustments made at the head or tail may affect the tracking at the other end of the conveyor, you may have to make head and tail tracking adjustments simultaneously to achieve good belt tracking.

### 11.3 Conveyor Belt Tensioning

1. ⚠ Stop the BFH and isolate the power supply. ⚠
2. Using a 46mm spanner, loosen the tensioner locking nut on BOTH the tail tensioners and back them off ≈20mm away from the tracking slider.
3. Turn on the isolator, ensure all persons and tools are clear of the BFH and start the conveyor.
4. Make small incremental equal adjustments to BOTH tensioning nuts. Turn tensioning nuts clockwise to increase belt tension, turn tensioning nuts anti-clockwise to decrease belt tension.
5. Once required belt tension has been achieved, tighten the tensioner locking nut against the tensioner on BOTH tensioners.
6. Allow the belt to run for several minutes to allow the belt to settle and highlight if tracking has been affected.
7. Turn off the conveyor & isolate the power.

NB, making non-equal adjustments to the tensioning nuts will affect the belt tracking at the tail or head and require the tracking procedure(s) to be repeated. It is advisable to make small equal adjustments until the required belt tension is reached.

# 12 Adjusting Hopper Skirting

The hopper skirting must be adjusted to maintain a satisfactory barrier against material escape. The frequency of these adjustments will be dependant on the wear rate caused by the material passing through the hopper. Regular checks are required as per the maintenance schedule.

## 12.1 Adjusting Hopper Skirting – Tail

1. ⚠ Stop the BFH and isolate the power supply. ⚠
2. Remove tail guard by removing 5off fixings from each side using a 13mm spanner or similar.
3. If the area is dirty, clean the area of the belt where the skirt contacts the belt as well as the bottom edge of the skirt. Clean the whole conveyor if necessary, if material is trapped between skirt & belt, good skirt adjustment cannot be achieved.
4. Loosen the 4off nuts on the skirting mounting studs using a 17mm spanner or similar. Only loosen them enough that the rubber can drop down on its slots to contact the belt.
5. Once all the nuts have been loosened and the skirt has slid down to contact the belt giving light pressure between the skirt and belt across its entire length, re-tighten the nuts to clamp the skirt in position.
6. Refit ALL guarding that has been removed.

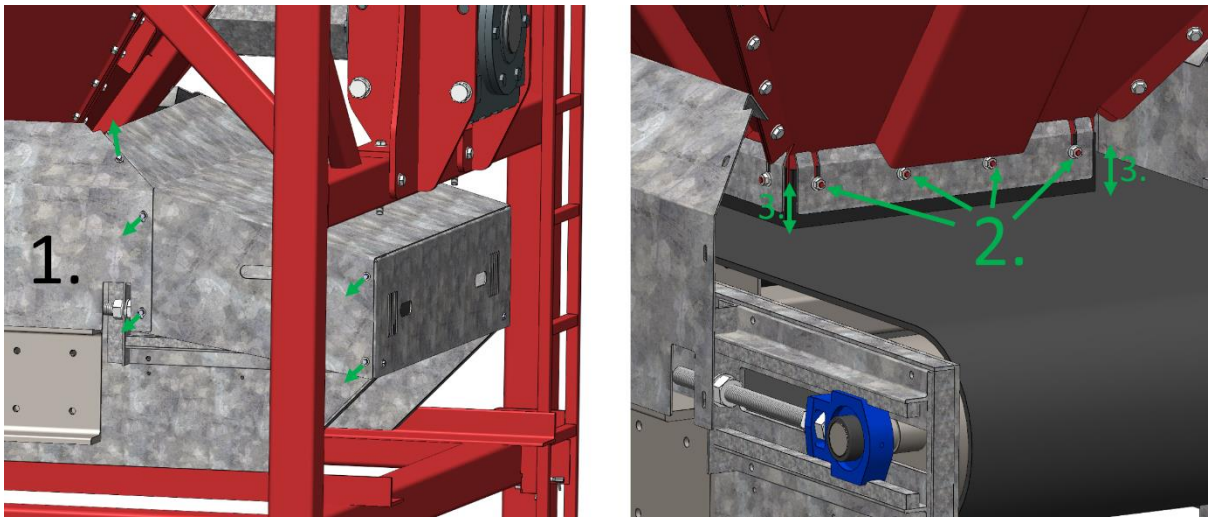



*Figure 8 - Adjusting Hopper Skirting – Tail*

## 12.2 Adjusting Hopper Skirting – Side

1. ⚠ Stop the BFH and isolate the power supply. ⚠
2. On the side to be worked on first, remove the side guards shown in blue in the figure below using a 13mm spanner or similar. Allow the discharge skirt panel to rest on the belt and the side guard support for now. NB the right side of the BFH is shown in the figure below, if the side skirting is to be adjusted on both sides, both sides of guarding can be removed at this point.
3. If the area is dirty, clean the area of the belt where the skirt contacts the belt as well as the bottom edge of the skirt. Clean the whole conveyor if necessary, if material is trapped between skirt & belt, good skirt adjustment cannot be achieved.
4. Loosen the 10off nuts on the skirting mounting studs using a 17mm spanner or similar. Only loosen them enough that the rubber can drop down on its slots to contact the belt.

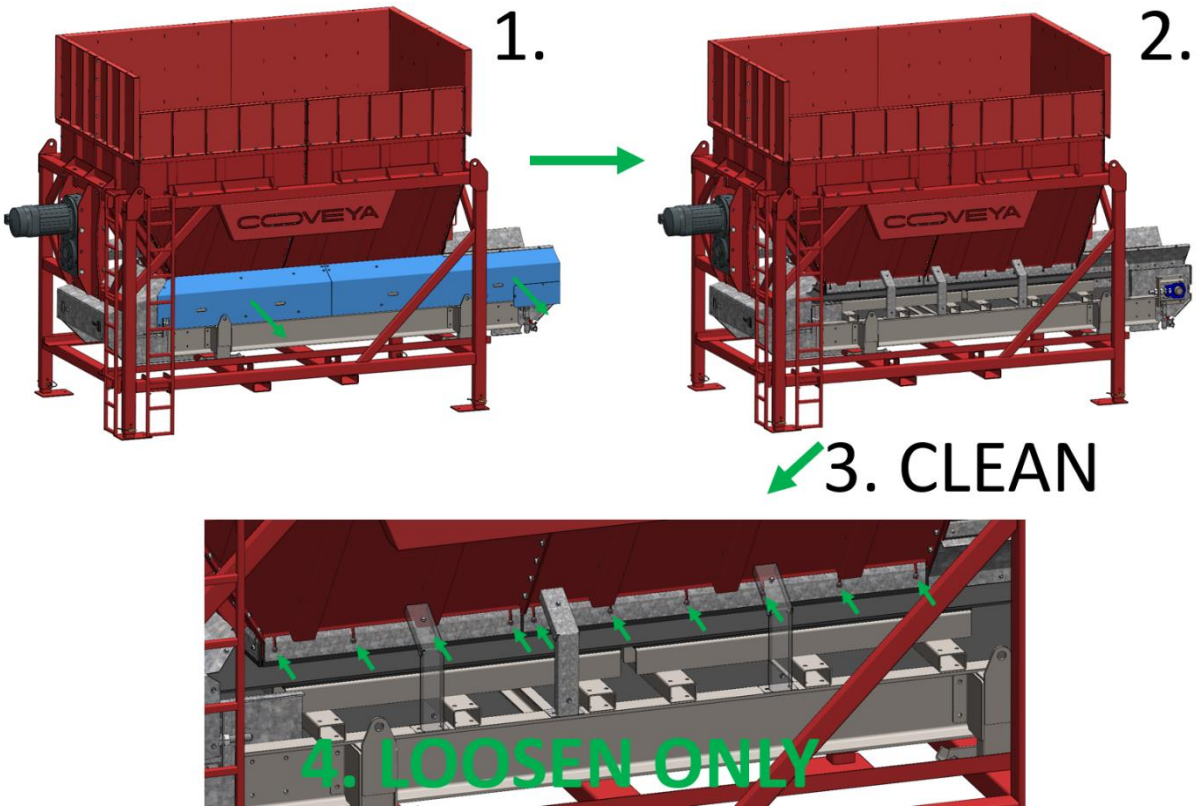
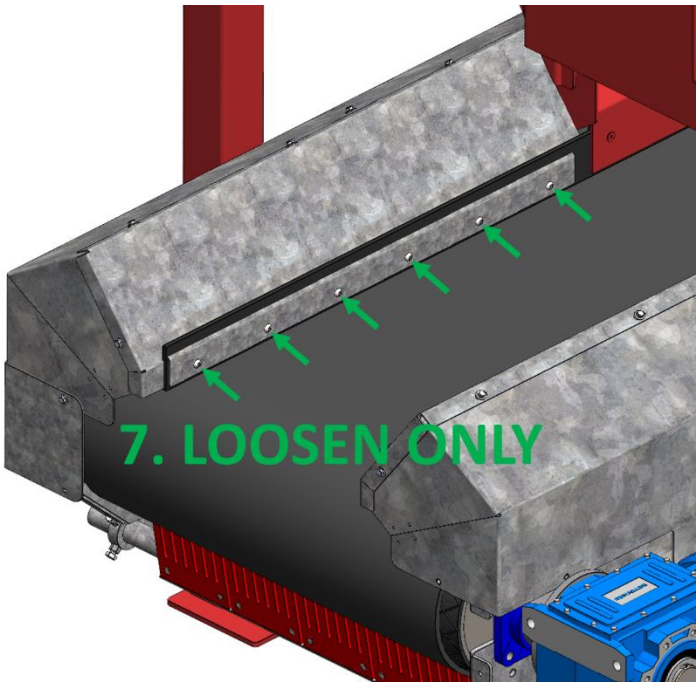



*Figure 9 - Adjusting Hopper Skirting - Side - 1-4*

5. Once all the nuts have been loosened and the skirt has slid down to contact the belt giving light pressure between the skirt and belt across its entire length, re-tighten the nuts to clamp the skirt in position.
6. Refit ALL guarding that has been removed.

7. Loosen the 6off bolts on the discharge skirting clamp using a 6mm allen key/allen socket. Only loosen them enough that the rubber can drop down on its slots to contact the belt.




8. Once all the bolts have been loosened and the skirt has slid down to contact the belt giving light pressure between the skirt and belt across its entire length, re-tighten the bolts to clamp the skirt in position.

# 13 Belt Scraper

Optionally fitted, these are heavy duty finger scrapers for cleaning of the plain or chevron conveyor belt. There are 2 types of scraper available for the BFH however they are fitted and adjusted in the same way.

**a. 1044A PLAIN BELT SCRAPER** 25 finger blade with carbide tips.

**b. 1044B CHEVRON BELT SCRAPER** 35 finger blade with stainless steel tips.

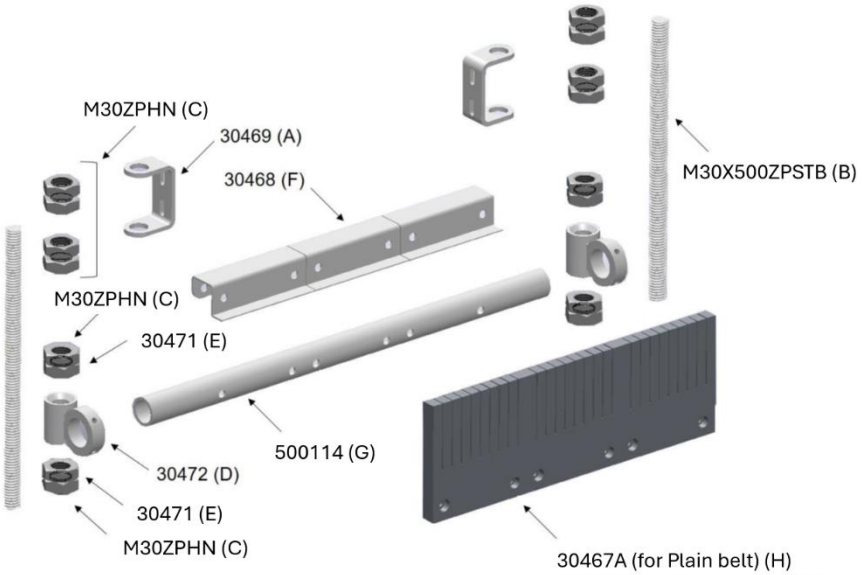



*Figure 10 – Belt Scraper Parts Diagram*

## 13.1 Belt Scraper Angle Adjustment

Before adjusting the scraper pressure, please ensure that the finger blades of the scraper and angled slightly forward into the moving belt at approximately a 10° angle, see figure below. Slacken the locking bolts in coupling (D) and rotate the scraper tube (G) to the position as described. Lock in place by tightening the 4off locking bolts in the 2off couplers (D).

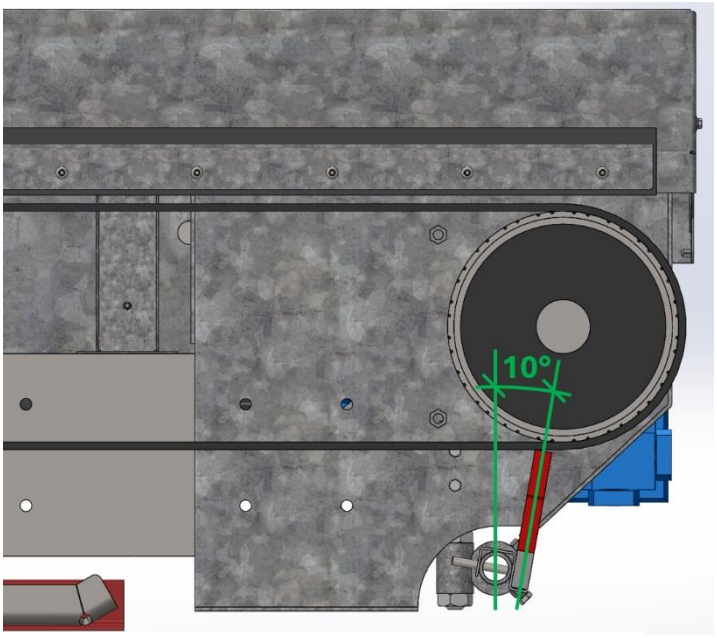



*Figure 11 - Belt Scraper Angle Adjustment*

## 13.2 Belt Scraper Pressure Adjustment Procedure.

1. ⚠ Stop the BFH and isolate the power supply. ⚠
2. Loosen the 4off locking nuts (C) above and below the couplings (D) on both sides and wind them up/down out of the way.
3. Loosen the 2off tapered nuts (E) above the couplings (D) on both sides and wind them up/down out of the way.
4. Apply scraper tension by winding the tapered nuts (E) below the couplings (D) up on both sides to apply moderate even pressure between the fingers (H) and the belt. Lower the tapered nuts (E) to reduce pressure.
5. Once desired pressure has been reached wind down upper tapered nuts (E) on both sides and tighten them against the couplers (D).
6. Wind the 4off locking nuts (C) against the tapered nuts (E) and tighten.

# 14 Grease Points

The manufacturer recommends the use of high-quality general-purpose lithium grease or bearing grease, EP2 or LM2 grease for example.

⚠ WARNING! Failure to apply grease to the bearings in accordance with the maintenance schedule detailed in this warranty will invalidate your warranty. Moreover, lack of grease could lead to premature bearing failure and costly machine down time.

⚠ WARNING! Do not over grease bearings, this can cause seal damage & premature bearing failure.

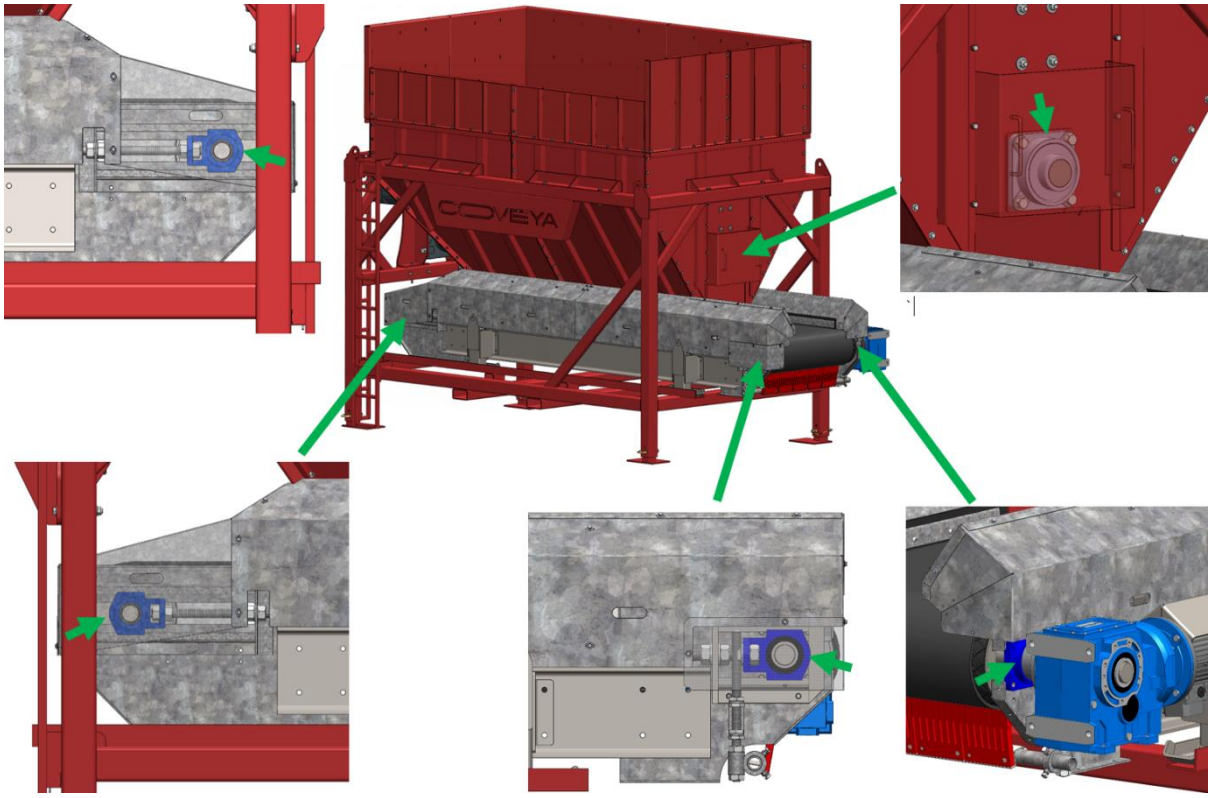



*Figure 12 - BFH Grease Points*

N.B. Auto-greasing units can be supplied, please contact your supplier for details.

# 15 Maintenance Schedule

⚠ WARNING! Isolate power supply to the BFH before performing any maintenance checks or maintenance!

Routine maintenance checks are very important in maintaining the full useful working life of your BFH. A regular maintenance program paying due attention to all the components itemised in this Maintenance Schedule section will reduce the likelihood of break-down and costly downtime. Frequency of checks will depend on conveyor usage i.e. material being handled, hours worked per day etc. Checks are recommended at regular intervals depending on the amount of working hours that the BFH is being used for.

A main feature in extending the life of your conveyor is thorough cleaning at regular intervals to prevent material build-up particularly around the feed and discharge points (good housekeeping is essential).

## 15.1 Daily Maintenance

Daily maintenance should be performed to discover minor issues that are easily rectifiable before they can develop into major issues.

- Check all guarding is fitted & in good condition, damaged safety guards may no longer protect from harm.
- Check any electrical safety systems are operational without fault.
- Check belt tension & tracking & adjust if required.
- Inspect conveyor belt for damage, rips/tears, wear. Witness marks on the belt could be an indication of material build up, tracking issues or seized rollers.
- Check for material build up behind guarding, around the drums and bearing, inside the belt, clear as necessary.
- Check top & return rollers are free to rotate, clear any obstructions and/or replace the affected roller(s).
- Check skirting rubbers for wear or rips, adjust or replace as necessary. Worn or damaged skirting can result in material ingress to working parts of the conveyor causing damage.
- Check for loose components. Fixings, nuts & bolts are tight.
- If fitted, check for excessive build-up of material on the agitator blades & shaft, clear as necessary.
- If fitted, check for any bent or excessively worn agitator fingers, straighten/replace as necessary.
- If fitted, check for excessive runout/whip in the agitator shaft, this is an indication the shaft is bent & must be rectified for operation can continue.

### 15.2 Weekly Maintenance (or 60 hours)

- Perform all daily checks as above.
- Check head & tail drums bearings are securely mounted, do not present excessive movement or have damage to seals, replace as necessary.
- Grease head bearings, use 2 pumps in each bearing.
- Grease tail bearings, 2 pumps in each bearing.
- If fitted, grease agitator tail bearing, 3 pumps.
- Check scraper fingers are not excessively worn and are correctly adjusted, adjust as necessary.

### 15.3 Monthly Maintenance (or 250 hours)

- Perform all daily & weekly checks to ensure issues are found and rectified.
- Check oil level in conveyor drive gearbox, top up with grade 320 gear oil.
- If fitted, check oil level in agitator drive gearbox, top up with grade 320 gear oil.

### 15.4 Annual Maintenance (or 3000 hours)

- Replace conveyor gearbox oil.
- If fitted, replace agitator gearbox oil.
- Check hopper body for damage or wear to panels, replace as necessary.
- Check conveyor framework for damage or wear, replace as necessary.
- Check for any damage to paintwork or corrosion in the BFH framework & body that may pose a risk to structural integrity if corrosion were allowed to persist. The internal faces of the hopper body may remain uncoated if in consistent use, coat/paint internal surfaces if the hopper is not in use for long periods of time. Remedy paintwork as required.

### 15.5 Documentation of Maintenance

All maintenance should be performed in accordance to the maintenance schedule detailed in this manual. You must record and store your maintenance record to uphold your warranty.

### 15.6 Routine Maintenance Contracts

Service contracts are available. Contact your supplier for details.

### 15.7 Bulk Feed Hopper Washdown

Periodic washing and cleaning of your BFH will be necessary to maintain its efficient operation. The manufacturers recommend the use of a high-power water jet or similar (e.g. steam cleaner). Correct PPE should be worn when carrying out washing etc. Prior to undertaking any washing, the hopper should be empty and the environment the conveyor is situated in should be considered and that no damage of surrounding items is likely to occur. Ensure there is adequate drainage prior to washing. Excessive material should be disposed of in a manner that will not cause damage to the environment. It will be necessary to remove conveyor guarding to give access to the belt area. Ideally the belt tension should be released allowing the belt to be raised to gain access to the inside of the conveyor frame. Particular attention and thorough washing will be required around the head and tail drum areas.

## 15.8 Warranty

It is important that the Maintenance Schedule is adhered to in order to validate the manufacturer's warranty.

The manufacturer will correct, free of charge, any defects in material or workmanship for a period of 12 months, from date of purchase, subject to the terms and conditions stated below.

**TERMS AND CONDITIONS OF WARRANTY**

The manufacturer will repair or replace, free of charge, any mechanical or electrical components supplied in conjunction with any conveyors or other equipment carrying a warranty supplied either by the manufacturer or an appointed agent and located within the United Kingdom, or repair or replace any parts thereof which are shown to the satisfaction of the manufacturer to be defective due to faulty materials or workmanship within twelve months from the date of purchase, provided the faulty part(s) are returned, complete and carriage paid, either to the manufacturer or an appointed agent. Any parts removed will become the property of the manufacturer.

This warranty is valid subject to the operator providing proof to the equipment supplier (if requested) that the recommended Maintenance schedule shown within the BFH Instruction Manual has been adhered to.

**THIS WARRANTY SHALL NOT COVER ANY FAULT OR DEFECT CAUSED BY:**

1. Incorrect installation or operation arising from failure to observe the instructions of the manufacturer or its agents e.g. inadequately rated power source or incorrect voltage or power cables.

2. Physical damage, however it was caused.

3. Repairs or alterations carried out by third parties other than the manufacturer or an authorized agent.

**THE FOLLOWING ITEMS ARE EXCLUDED FROM THE WARRANTY:**

1. Fair wear and tear

2. Belt, skirting & belt scraper blade/fingers.

This warranty shall not apply to nor cover any other claims whatsoever. It will, in particular, (without limiting the generality of the foregoing), not cover any claims for conversion or modification or for the cost of repairs carried out by any third party without the prior consent of the manufacturer.

Before free service is given under this warranty the purchaser must provide to manufacturer's satisfaction, proof of date of purchase of the conveyor and quote the serial number(s). If replacement parts are fitted then the original period of warranty will not be extended.

# 16 Parts Diagrams

## 16.1 Subassembly Overview

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. | STANDARD/OPTIONAL |
|---|---|---|---|---|
| 1 | HC1000-BFH-C-L | HC1000 BFH - CONVEYOR SUBASSEMBLY - MOTOR LH | 0-1 | CHOOSE ITEM 1 OR 2 |
| 2 | HC1000-BFH-C-R | HC1000 BFH - CONVEYOR SUBASSEMBLY - MOTOR RH | 0-1 | CHOOSE ITEM 1 OR 2 |
| 3 | HC1000-BFH-G | HC1000 BULK FEEDER - CONVEYOR GUARDING SUBASSEMBLY | 1 | STANDARD |
| 4 | HC1000-BFH-B | HC1000 BULK FEED HOPPER - HOPPER BODY SUBASSEMBLY | 1 | STANDARD |
| 5 | HC1000-BFH-F | HC1000 BULK FEED HOPPER - FRAME SUBASSEMBLY | 1 | STANDARD |
| 6 | BFH1021 | HC1000 BULK FEEDER - 400/3 PLAIN BELT (12m) | 0-1 | CHOOSE ITEM 6 OR 7 |
| 7 | BFH1023 | HC1000 BULK FEEDER - 400/3 CHEVRON BELT (12m) | 0-1 | CHOOSE ITEM 6 OR 7 |
| 8 | HC1000-BFH-AG | HC1000 BULK FEED HOPPER - AGITATOR SUBASSEMBLY | 0-1 | OPTIONAL |
| 9 | HC1000-BFH-BE | HC1000 BULK FEED HOPPER - HOPPER BODY EXTENSION | 0-1 | OPTIONAL |
| 10 | HC1000-BFH-LD | HC1000 BULK FEED HOPPER - LADDER SUBASSEMBLY | 0-4 | OPTIONAL |
| 11 | HC1000-BFH-PM | HC1000 BULK FEED HOPPER - CONTROL PANEL MOUNTING SUBASSEMBLY (NOT INC CONTROL PANEL) | 0-1 | OPTIONAL |
| 12 | 1044A | HC1000 Finger Scraper - Flat Belt | 0-1 | OPTIONAL |
| 13 | 1044B | HC1000 Finger Scraper S/S Tips - Chevron Belt | 0-1 | OPTIONAL |

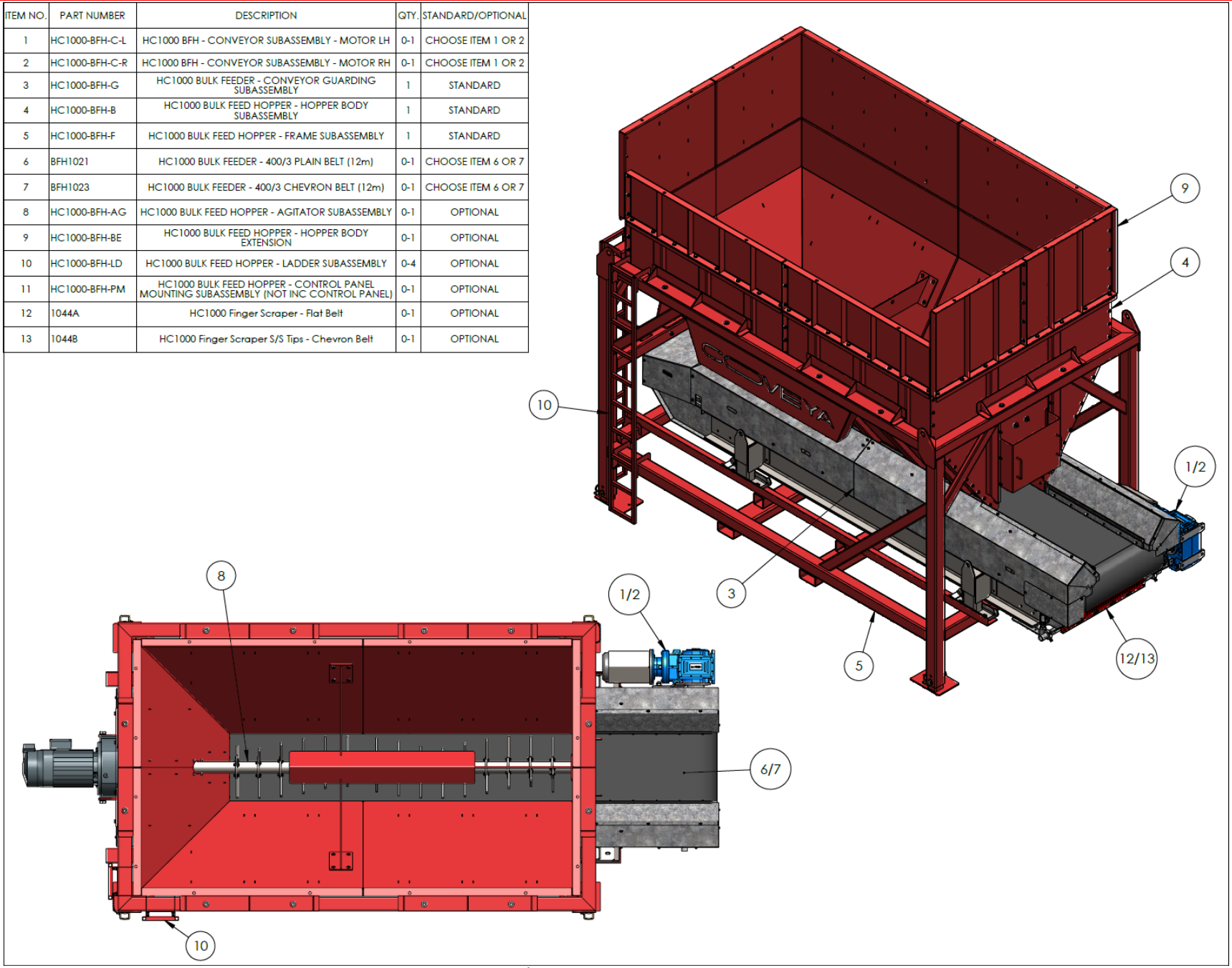



*Figure 13 - BFH Subassembly Overview*

## 16.2 Conveyor Parts Diagram

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 501687 | HC1000 BFH - CONVEYOR FRAME ASSY | 1 |
| 2 | 502141 | HC1000 DRIVE DRUM 70MM SHAFT | 1 |
| 3 | 504163 | HC1000 TAIL DRUM - 60mm SHAFT | 1 |
| 4 | 505503 | HC1000 - HEAD PLATE LH | 1 |
| 5 | 505504 | HC1000 - HEAD PLATE RH | 1 |
| 6 | 502148 | HC1000 HEAD BEARING SLIDE FOR ST70 | 1 |
| 7 | 502146 | HC1000 - TORQUE ARM FOR B143UC | 1 |
| 8 | 502147 | TORQUE ARM BRACKET | 1 |
| 9 | 502150 | MOTOR COVER | 1 |
| 10 | 504164 | HC1000 TAIL PLATE LH - 60mm SHAFT | 1 |
| 11 | 504165 | HC1000 TAIL SIDE PLATE RH - 60mm SHAFT | 1 |
| 12 | 504201 | HC1000 TAIL BEARING SLIDER - 60mm SHAFT | 2 |
| 13 | 502010 | HC1000 BFH - ROLLER FRAME ASSY | 2 |
| 14 | 502012 | FEED HOPPER TOP ROLLER | 12 |
| 15 | 502013 | FEED HOPPER ROLLER FRAME SLIDER | 4 |
| 16 | 500082 | HC1000 Return Roller | 2 |
| 17 | 501640 | HC1000 SKID LEGS | 4 |
| 18 | S1744 | Motovario B143UC Helical Bevel Gearbox, 149.59 Ratio, Ø70mm Hollow Bore + 132MA 4kW 6pole Motor, 6.5rpm Output Speed | 1 |
| 19 | 505481 | HC1000 DRIVE DRUM KEY 20X12X300 | 1 |
| 20 | ST70 | | 1 |
| 21 | MSF70 | | 1 |
| 22 | ST60 | | 2 |
| 23 | M30ZPFN | M30 BRIGHT ZINC PLATED FULL NUT | 8 |
| 24 | M30X500ZPSTB | M30 x 500mm BZP Stud Bar | 2 |
| 25 | M30ZPW | M30 BRIGHT ZINC PLATED WASHER | 4 |
| 26 | M39X250ZPSTB | M39 x 250mm BZP Stud Bar | 1 |
| 27 | M39ZPN | M39 BZP NUT | 3 |
| 28 | M39ZPW | M39 BZP WASHER - FORM A | 3 |
| 29 | M24X90ZPSB | M24 x 90mm BZP Set Bolt | 1 |
| 30 | M24ZPW | M24 BZP Washer - Form C | 3 |
| 31 | M24ZPN | M24 BZP NUT | 1 |
| 32 | M24 NYLOC | NYLOC NUT M2.5 - M36 | 1 |
| 33 | M39ZPHN | M39 BZP HALF NUT | 1 |

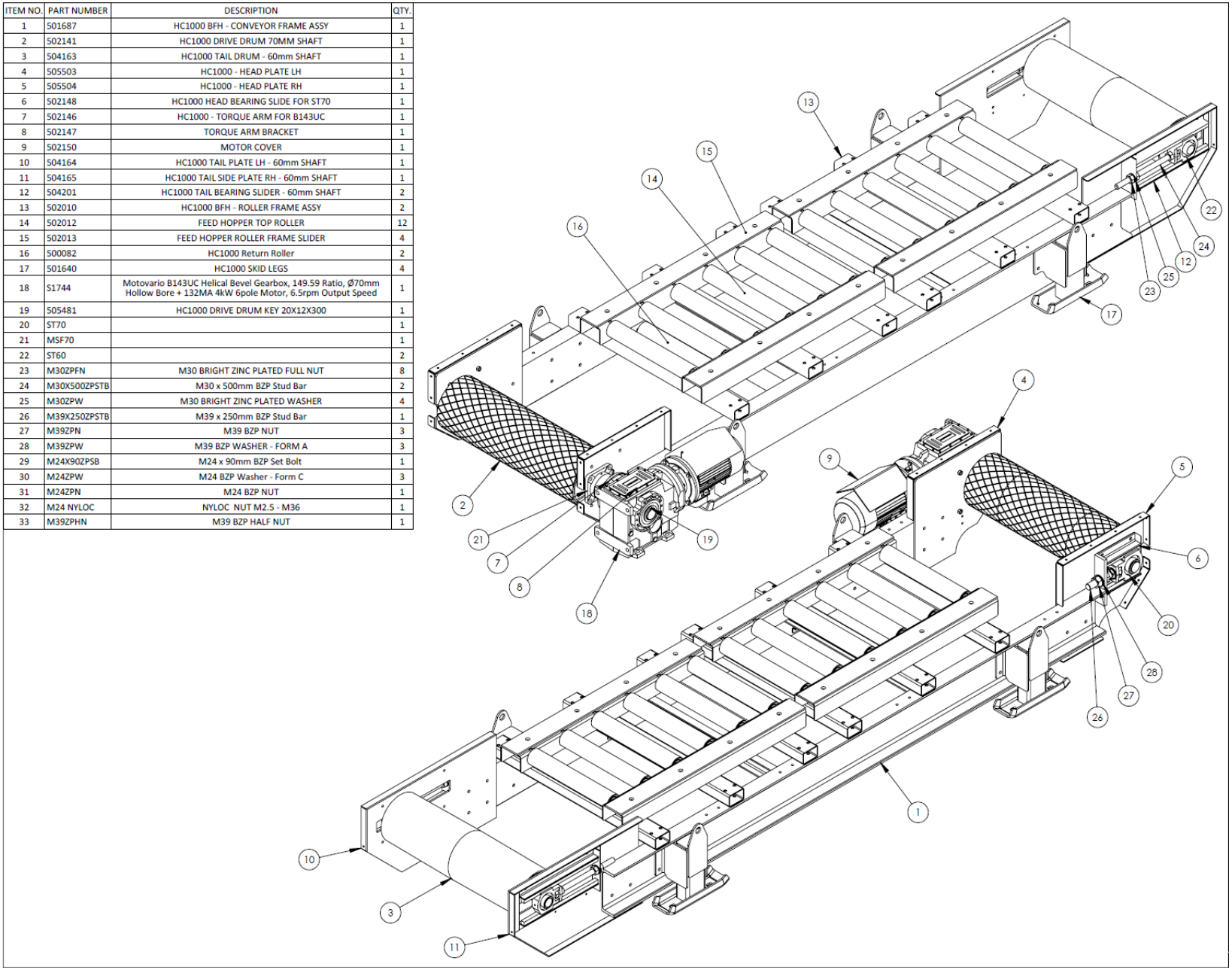



*Figure 14 - BFH Conveyor Parts Diagram*

## 16.3 Conveyor Guarding Parts Diagram

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 504264 | HC1000 BFH - HOPPER CONVEYOR SIDE GUARD - LH | 1 |
| 2 | 504265 | HC1000 BFH - HOPPER SIDE PANEL CONNECTORS | 8 |
| 3 | 504267 | HOPPER FRONT GUARDING PLATE LH | 1 |
| 4 | 504303 | HC1000 BFH - HOPPER REAR SIDE COVER - RH | 1 |
| 5 | 504304 | HC1000 BFH - HOPPER CONVEYOR SIDE GUARD - RH | 1 |
| 6 | 504305 | HOPPER FRONT GUARDING PLATE RH | 1 |
| 7 | 504311 | HC1000 - TAIL GUARD BACK - 2 PIECE | 1 |
| 8 | 504312 | HC1000 BFH - HOPPER REAR SIDE COVER - LH | 1 |
| 9 | 504363 | SKIRT CLAMP | 2 |
| 10 | 505502 | HC1000 BFH - HEAD TRACKING GUARD | 1 |
| 11 | 505579 | HC1000 BFH - SIDE GUARD TOP EDGE FISH PLATE | 2 |
| 12 | ISO 7380 - M10 x 35 - 35C | | 12 |
| 13 | M10ZPSW | M10 BZP FLAT SPRING WASHER | 12 |
| 14 | TFHE10 | M10 BZP Reduced Head Hex Rivet Nut | 12 |
| 15 | TFHE8 | M8 RIVET NUT REDUCED HEAD HEX INSERT | 48 |
| 16 | M8X25ZPSB | M8 X 25 ZINC PLATED SET BOLT | 63 |
| 17 | M8ZPW | M8 BZP WASHER - FORM C | 81 |
| 18 | M8ZPSW | M8 BRIGHT ZINC PLATED FLAT SPRING WASHER | 63 |
| 19 | M8ZPN | M8 BZP NUT | 18 |

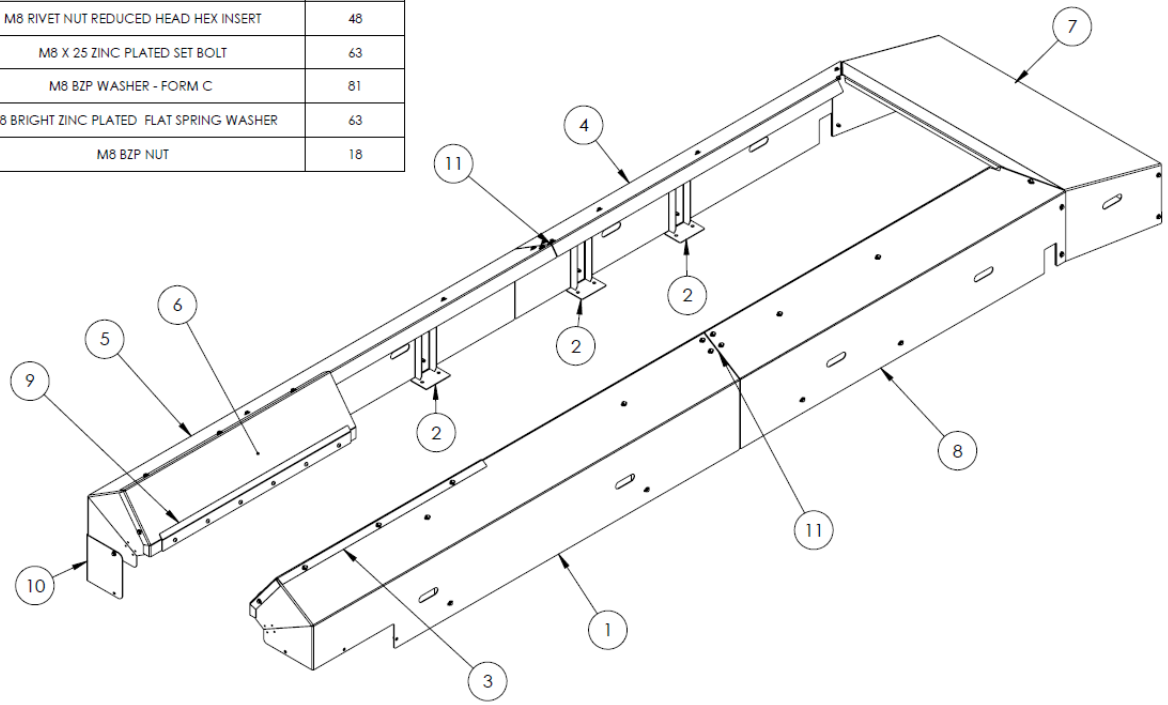



*Figure 15 - BFH Conveyor Guarding Parts Diagram*

## 16.4 Hopper Body Parts Diagram

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. | Revision |
|---|---|---|---|---|
| 1 | 504054 | HC1000 BFH - BACK END SIDE ASSEMBLY - LH | 1 | REV05 |
| 2 | 504055 | HC1000 BFH - BACK END SIDE ASSEMBLY - RH | 1 | REV05 |
| 3 | 504056 | HC1000 BFH - HOPPER FRONT SIDE ASSY | 2 | REV04 |
| 4 | 504057 | HC1000 BFH - FRONT PANEL ASSEMBLY | 1 | REV05 |
| 5 | 504152 | HOPPER FLOW GATE | 1 | REV01 |
| 6 | 504916 | MATERIAL BREAKER BAR V2 | 1 | REV02 |
| 7 | 505482 | HC1000 BULK FEED HOPPER - BACK PANEL (WITH OR WITHOUT AGITATOR) | 1 | REV03 |
| 8 | 505484 | HC1000 BFH - BACK PANEL AGITATOR HOLE BLANK | 1 | REV01 |
| 9 | 505485 | HC1000 BFH - FRONT PANEL AGITATOR HOLE BLANK | 1 | REV01 |
| 10 | 505499 | HC1000 BULK FEED HOPPER - ONE PIECE RUBBER SIDE SKIRT | 2 | REV01 |
| 11 | 504064 | BACK PLATE SKIRT CLAMP | 1 | REV01 |
| 12 | 504065 | BACK END SIDE SKIRT CLAMP | 2 | REV01 |
| 13 | 504079 | BACK SKIRT RUBBER | 1 | REV01 |
| 14 | 504052 | FRONT END SKIRT CLAMP | 2 | REV01 |
| 15 | M16X160ZPB | M16 x 160MM ZINC PLATED BOLT | 12 | REV01 |
| 16 | M16ZPWFG | M16 BZP WASHER FORM G | 36 | REV01 |
| 17 | M16ZPNN | M16 ZINC PLATED NYLOK NUT | 24 | REV01 |
| 18 | M12X30ZPSB | M12 x 30MM BZP SET BOLT | 86 | REV01 |
| 19 | M12ZPW | M12 ZINC PLATED WASHER | 172 | REV01 |
| 20 | M12ZPSW | M12 ZINC PLATED SPRING WASHER | 86 | REV01 |
| 21 | M12ZPN | M12 ZINC PLATED NUT | 86 | REV02 |
| 22 | M16X40ZPCSKMS | M16 X 40 BZP CSK MACHINE SCREW | 12 | REV01 |
| 23 | M24ZPSW | M24 BZP SPRING WASHER | 4 | REV01 |
| 24 | M24ZPW | M24 BZP Washer - Form C | 4 | REV01 |
| 25 | M24X40ZPSB | M24 X 40MM BZP SET BOLT | 4 | REV01 |
| 26 | M10X25ZPSHC | M10 X 25MM ZINC PLATED SQUARE HEAD CAP BOLT | 4 | REV01 |
| 27 | M10ZPW | M10 BZP WASHER - FORM C | 28 | REV01 |
| 28 | M10ZPSW | M10 BZP FLAT SPRING WASHER | 29 | REV01 |
| 29 | M10ZPN | M10 ZINC PLATED NUT | 28 | REV01 |
| 30 | M10X25ZPSB | M10 X 25MM ZINC PLATED SET BOLT | 6 | REV01 |

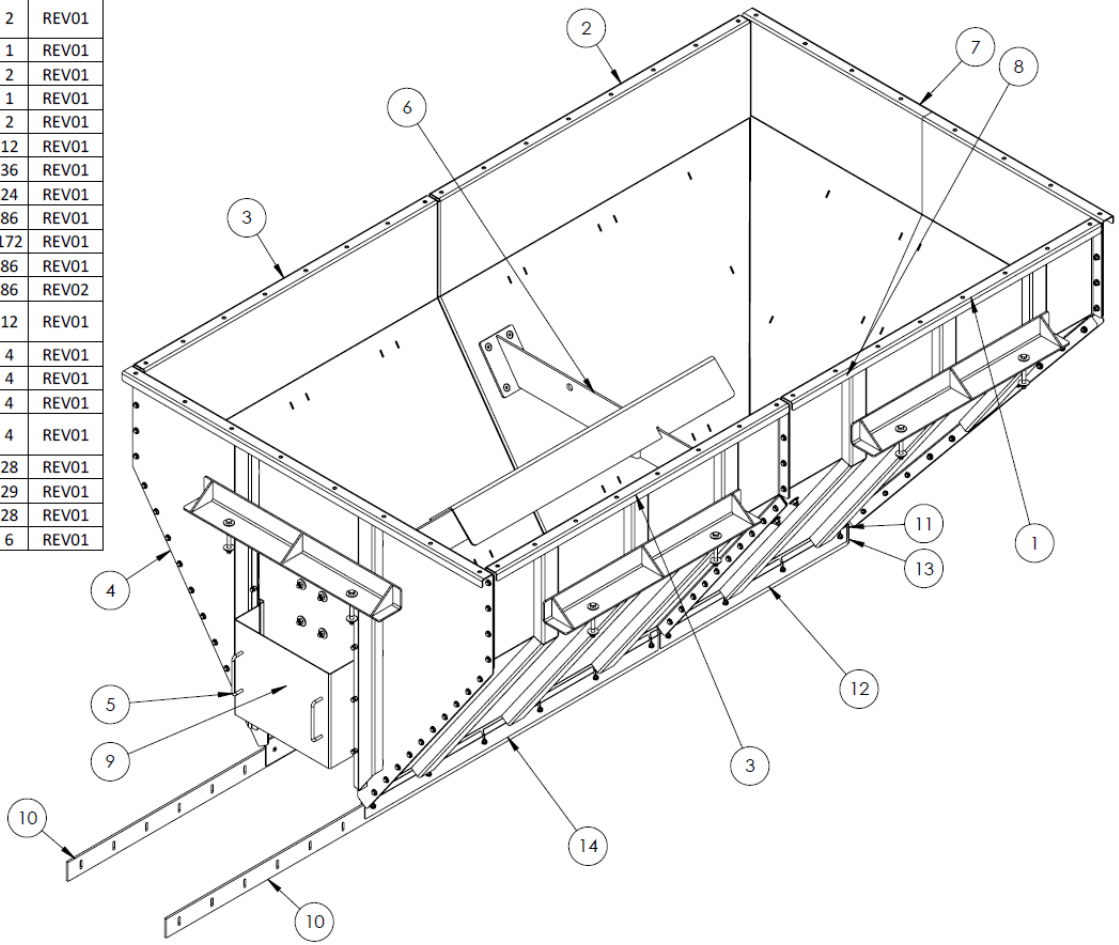



*Figure 16 - BFH Hopper Body Parts Diagram*

## 16.5 Agitator Parts Diagram

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. | Revision |
|---|---|---|---|---|
| 1 | MSF100 | 4 Bolt Cast Iron Flange Bearing Unit 100mm Bore | 1 | REV01 |
| 2 | 504063 | HC1000 BFH - AGITATOR ASSEMBLY | 1 | REV05 |
| 3 | 504209 | HC1000 BULK FEED HOPPER - AGITATOR SHAFT KEYWAY | 1 | REV01 |
| 4 | FA127B DRN160M4_V | SEW 11.0kW 9.6RPM GMU FOR BFH AGITATOR | 1 | REV01 |
| 5 | 505487 | HC1000 BULK FEED HOPPER - BOLT ON AGITATOR GEARBOX MOUNTING | 2 | REV01 |
| 6 | 505600 | HC1000 BFH - AGITATOR SHAFT GUARD | 1 | REV02 |
| 7 | M30X60ZPSB | M30 X 60MM BZP SET BOLT | 8 | REV01 |
| 8 | M30ZPSW | M30 BZP SPRING WASHER | 8 | REV01 |
| 9 | M30ZPW | M30 BRIGHT ZINC PLATED WASHER | 8 | REV01 |
| 10 | M24X60ZPSB | M24 X 60MM BZP SET BOLT | 4 | REV01 |
| 11 | M24ZPSW | M24 BZP SPRING WASHER | 4 | REV01 |
| 12 | M24ZPW | M24 BZP Washer - Form C | 4 | REV01 |
| 13 | M16X180ZPB | M16 x 180MM ZINC PLATED BOLT | 4 | REV01 |
| 14 | M16X160ZPB | M16 x 160MM ZINC PLATED BOLT | 8 | REV01 |
| 15 | M16ZPW | M16 ZINC PLATED WASHER | 24 | REV01 |
| 16 | M16ZPNN | M16 ZINC PLATED NYLOK NUT | 12 | REV01 |
| 17 | M12X45ZPSB | M12 X 45MM ZINC PLATED SET BOLT | 6 | REV01 |
| 18 | M12X40ZPSB | M12 X 40MM ZINC PLATED SET BOLT | 45 | REV01 |
| 19 | M12ZPW | M12 ZINC PLATED WASHER | 102 | REV01 |
| 20 | M12ZPNN | M12 BZP NYLOC NUT | 51 | REV01 |
| 21 | M6X16ZPSB | M6 x 16MM ZINC PLATED SET BOLT | 9 | REV01 |
| 22 | M6ZPSW | M6 BZP SPRING WASHER | 9 | REV01 |
| 23 | M6ZPPW | M6 BZP PENNY WASHER - 20MM DIAMETER | 9 | REV01 |
| 24 | TFHE6 | M6 RIVET NUT REDUCED HEAD HEX INSERT | 6 | REV01 |

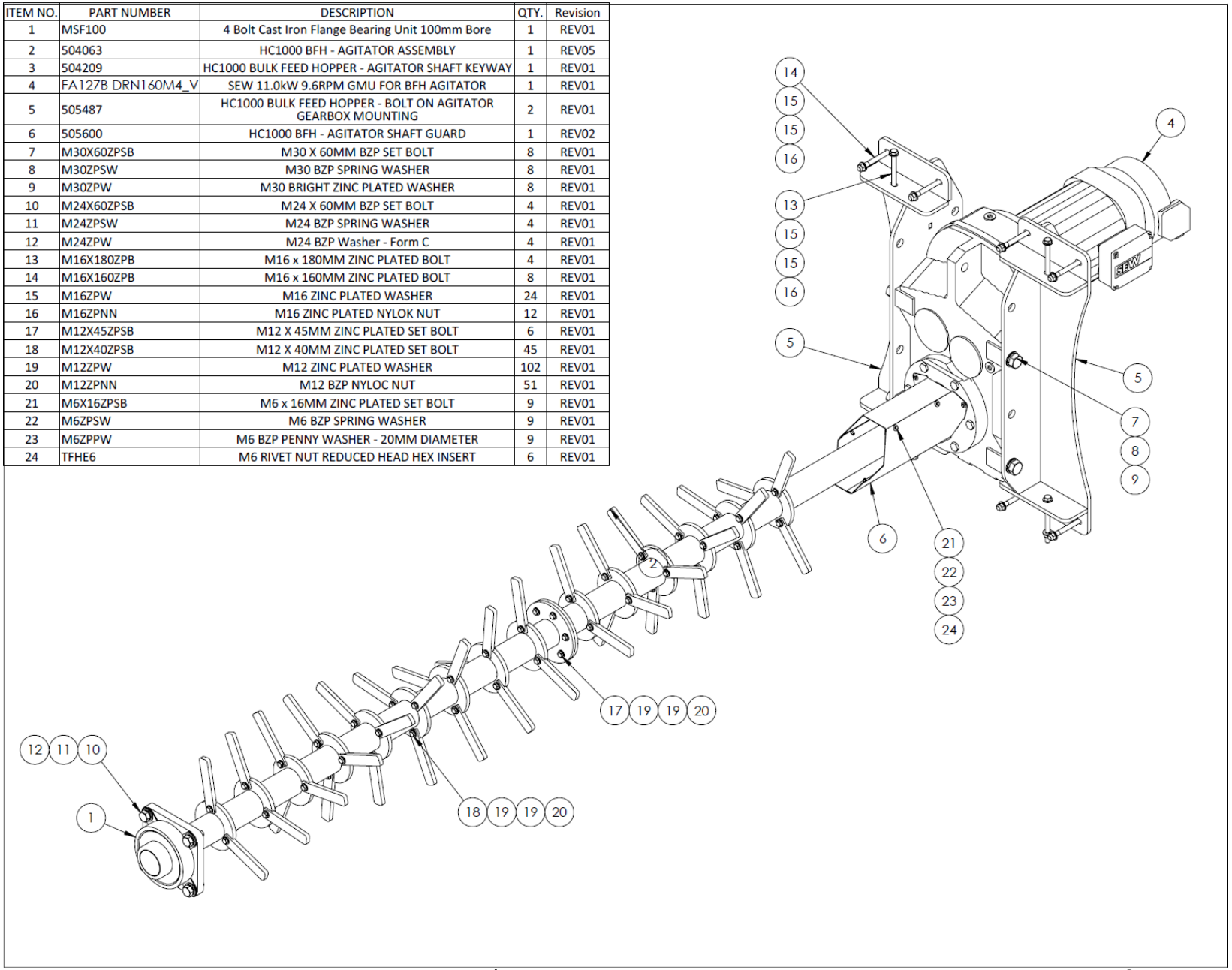



*Figure 17 - BFH Agitator Parts Diagram*

## 16.6 Body Extension Parts Diagram

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. | Revision |
|---|---|---|---|---|
| 1 | 504084 | HC1000 BFH - FRONT EXTENSION PLATE - A (500x1804mm) | 1 | REV05 |
| 2 | 504085 | HC1000 BFH- FRONT EXTENSION PLATE - B (500x1912mm) | 1 | REV04 |
| 3 | 504080 | HC1000 BFH - SIDE EXTENSION PLATE - A (900x1108mm) | 2 | REV04 |
| 4 | 504081 | HC1000 BFH - SIDE EXTENSION PLATE - B (900x1108mm) | 2 | REV04 |
| 5 | 504082 | HC1000 BFH - BACK EXTENSION PLATE - A (900x1912mm) | 1 | REV04 |
| 6 | 504083 | HC1000 BFH - BACK EXTENSION PLATE - B (900x1804mm) | 1 | REV03 |
| 7 | M16X35ZPSB | M16 X 35MM BRIGHT ZINC PLATED SET BOLT | 48 | REV01 |
| 8 | M16ZPW | M16 ZINC PLATED WASHER | 97 | REV01 |
| 9 | M16ZPSW | M16 ZINC PLATED SPRING WASHER | 48 | REV01 |
| 10 | M16ZPN | M16 BZP NUT | 48 | REV01 |
| 11 | M12X35ZPSB | M12 X 35MM ZINC PLATED SET BOLT | 34 | REV01 |
| 12 | M12ZPW | M12 ZINC PLATED WASHER | 68 | REV01 |
| 13 | M12ZPSW | M12 ZINC PLATED SPRING WASHER | 34 | REV01 |
| 14 | M12ZPN | M12 ZINC PLATED NUT | 34 | REV02 |

M16 BOLTS FOR BOLTING EXTENSION PANELS TO HOPPER BODY.
M12 BOLTS FOR BOLTING EXTENSION PANELS TO EACH OTHER.

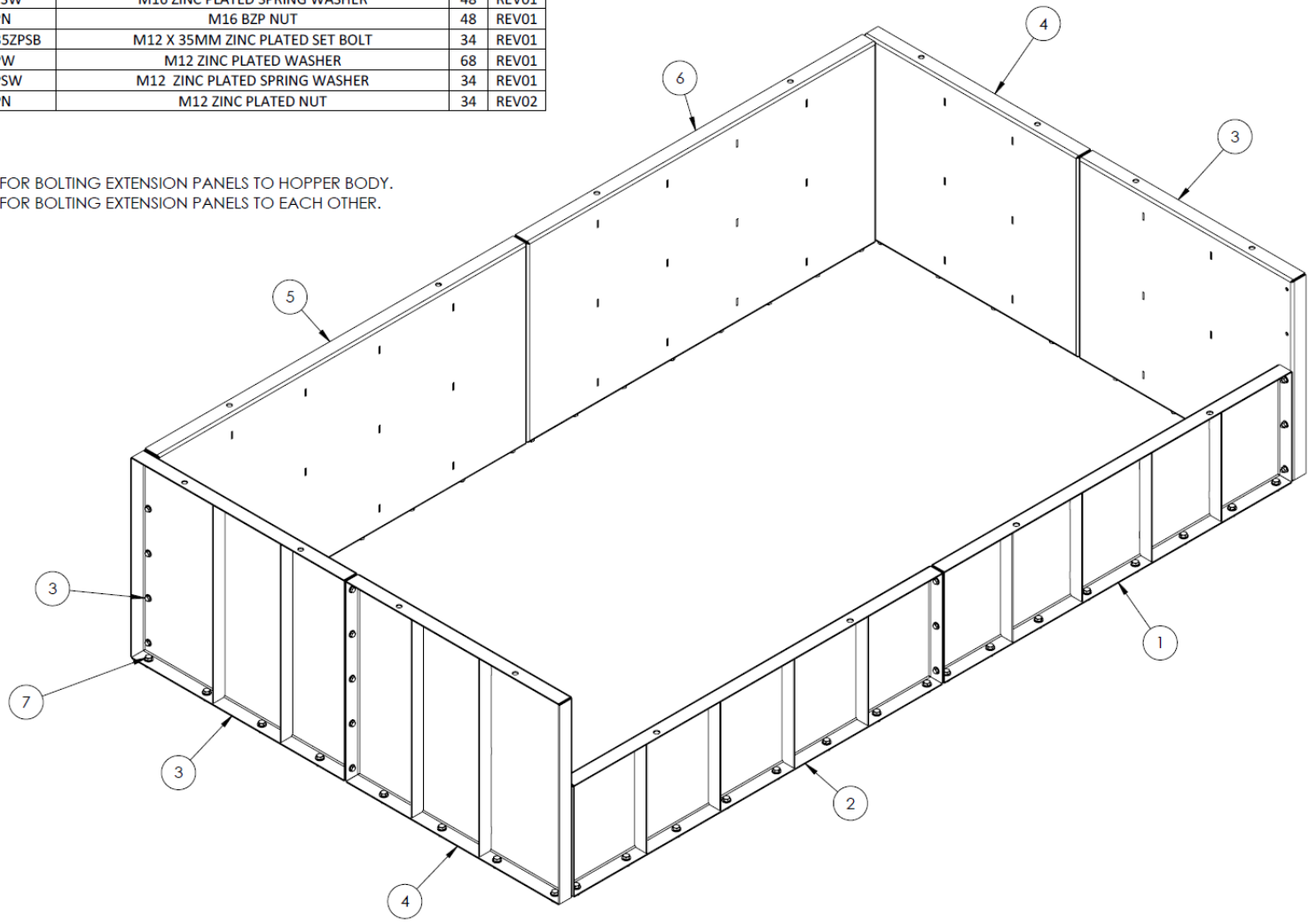



*Figure 18 - BFH Body Extension Parts Diagram*

## 16.7 Ladder Parts Diagram

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | 505498 | HC1000 BULK FEED HOPPER - LADDER | 1 |
| 2 | GN.71046 | ELESA LOCKING INDEXING PLUNGER, ZINC-PLATED WITH REST POSITION, M12 | 2 |

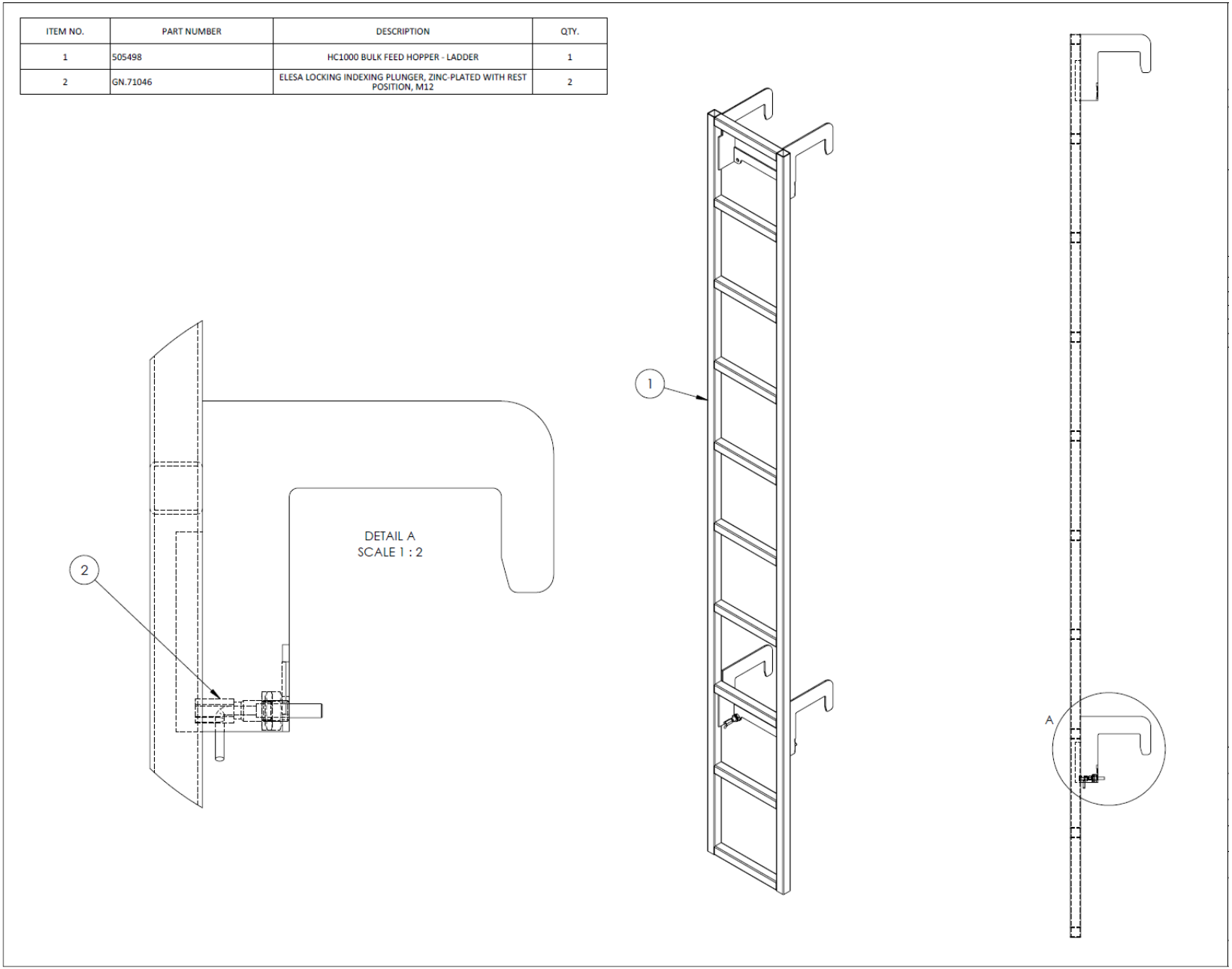



*Figure 19 - BFH Ladder Parts Diagram*

## 16.8 Belt Scraper Parts Diagram

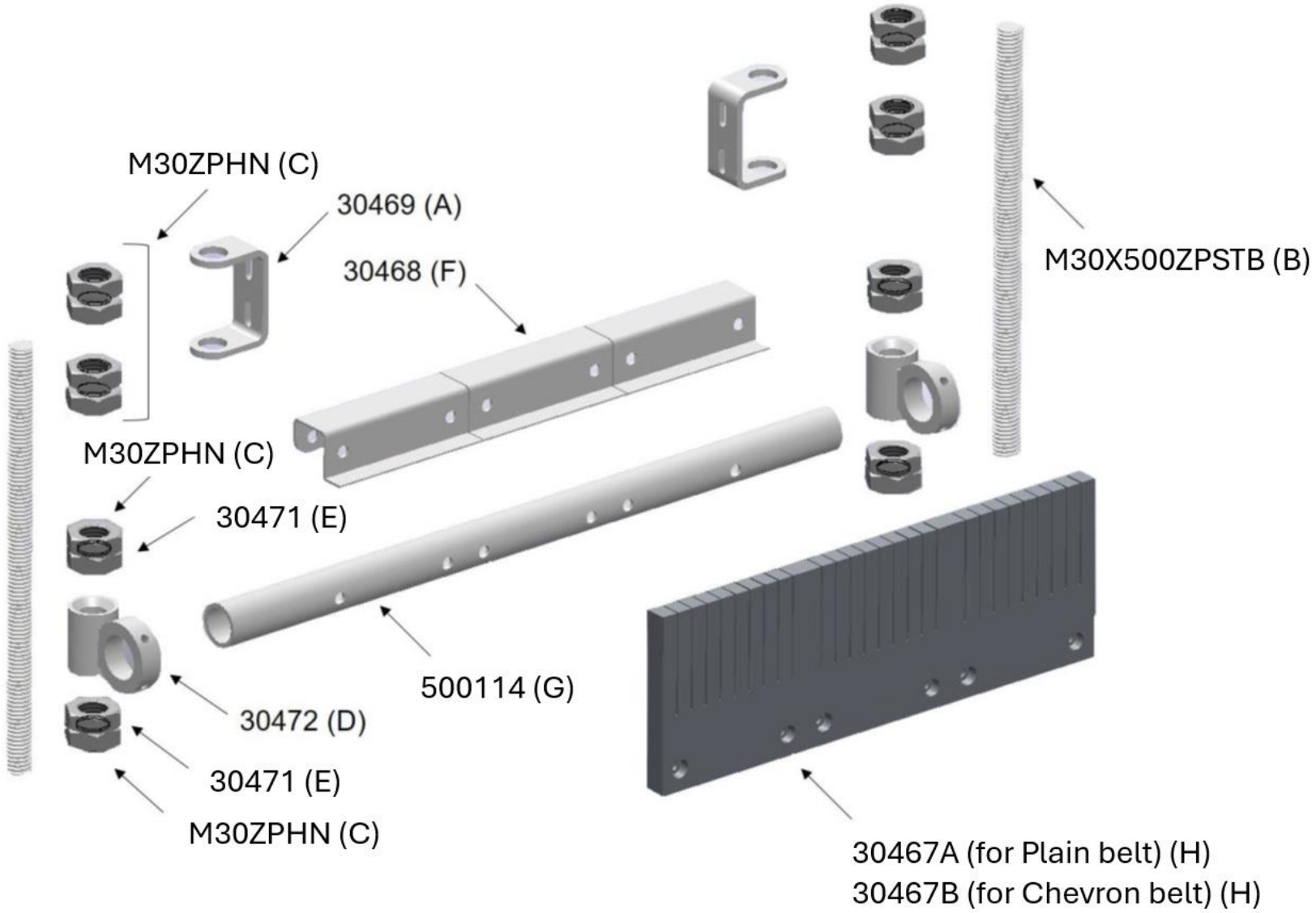



*Figure 20 - Belt Scraper Parts Diagram*