

HANSA C16c

Operation, maintenance and safety manual



All operators must fully read and understand this operator's manual before using the equipment. Keep this manual for future reference.



3 YEAR | **GLOBAL WARRANTY**

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MANUFACTURER: HANSA NEW ZEALAND



+64 7 849 4749



info@hansaproducts.co.nz



www.hansaproducts.com

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What can my Hansa chipper process?

Intended uses of the chipper

The Hansa C16c chipper is built to process organic material including wooden branches not exceeding 110mm in diameter respectively. It is designed to be used on a regular basis by semi commercial garden maintenance contactors and hire / rental companies. **Do NOT** use the chipper for any other purpose.

Organic wastes include:

- ✓ Prunings, stalks, roots, vegetable matter, hay, grass, bark
- ✓ Dry manure
- ✓ Branches
- ✓ Palm fronds
- ✓ Dead and hard timbers (Note: these will dull the knives faster)
- ✓ Paper or cardboard



Do NOT process:

- ✗ Flax, root balls
- ✗ Soil, bones, sand, grit, stones, metal

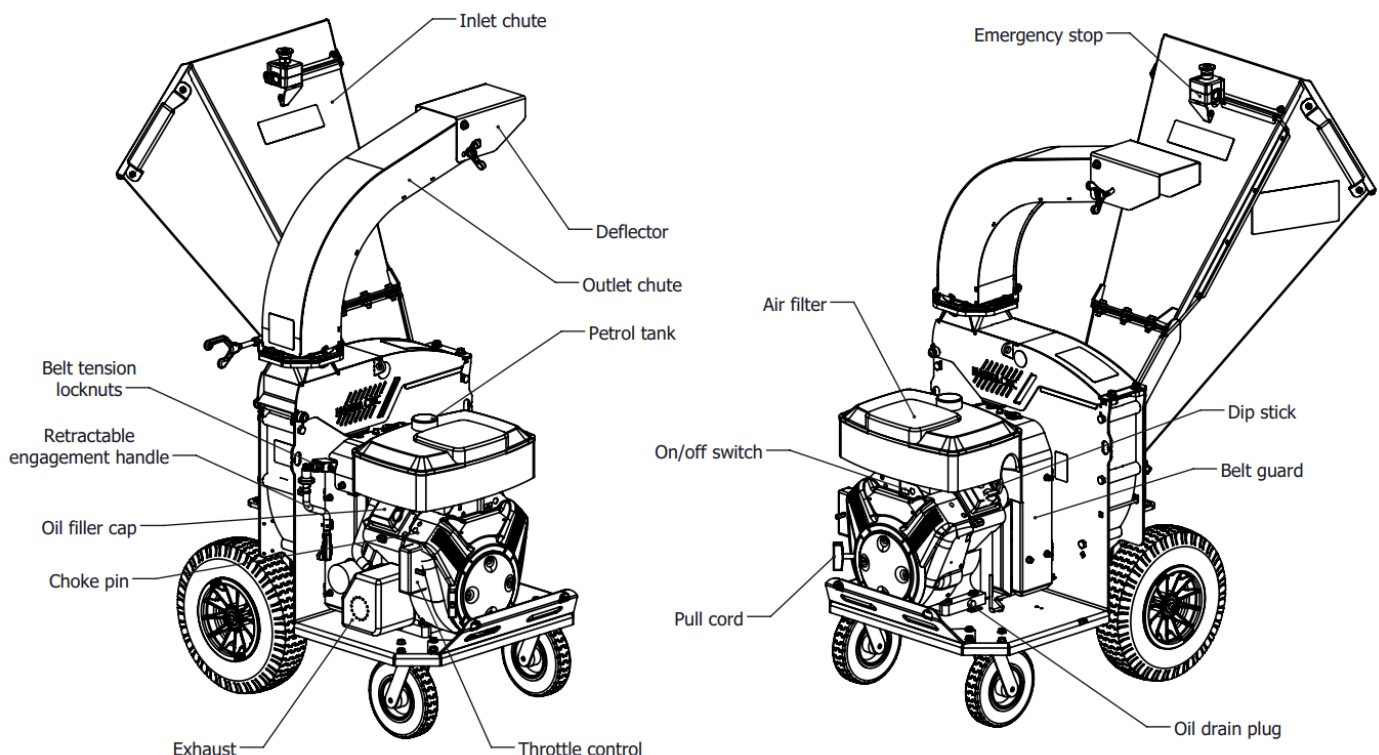
If you have any questions, contact your authorised dealer.



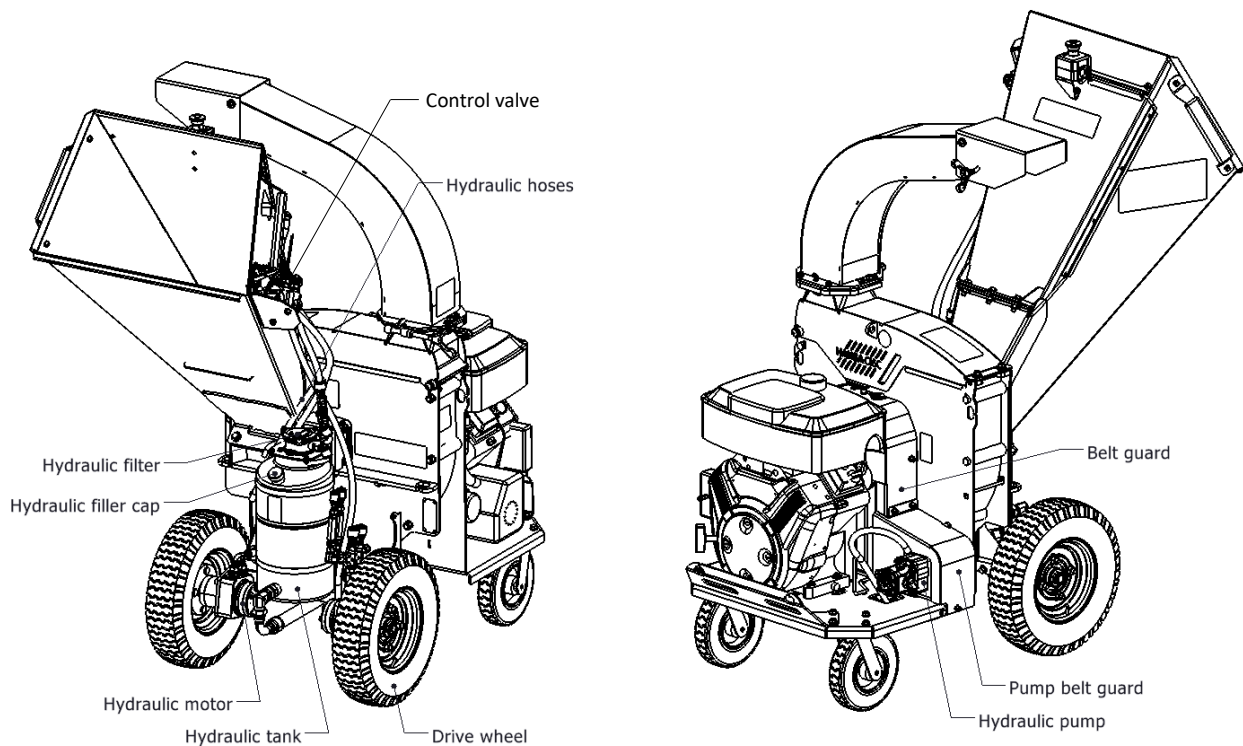
Do NOT exceed 110mm branch diameter

Receiving your Hansa chipper

Chipper components – all models



Chipper components – HydraDrive specific



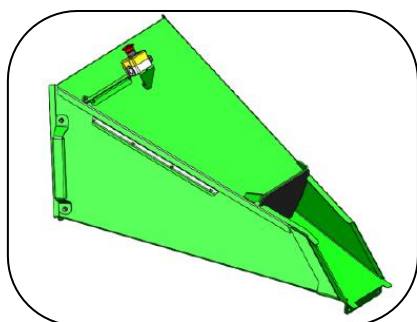
Tools required for assembly (not supplied):

- 10 mm spanner - to fit the emergency stop to the inlet
- 16 mm spanner - to fit the inlet and outlet chute
- 17 mm spanner - to fit the inlet and outlet chute
- 19mm spanner - to fit the wheels – HydraDrive model
- 6 mm Allen key - to fit the wheels – Standard model
- 5 mm Allen key - to fit the HydraDrive control bracket
- 4 mm Allen key - to fit the emergency stop to the inlet

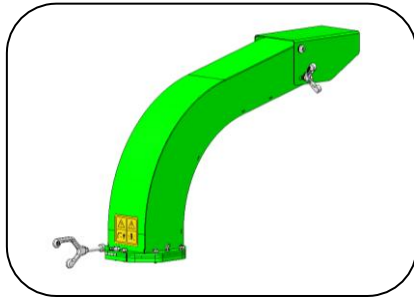
Parts supplied for assembly



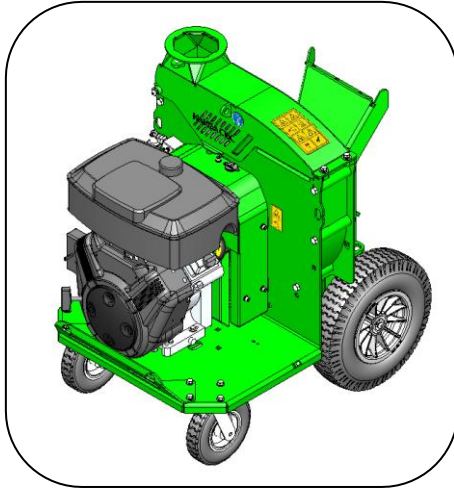
All **fasteners** included to fix the inlet chute and outlet chute onto chipper



Inlet chute



Outlet chute



Chipper body

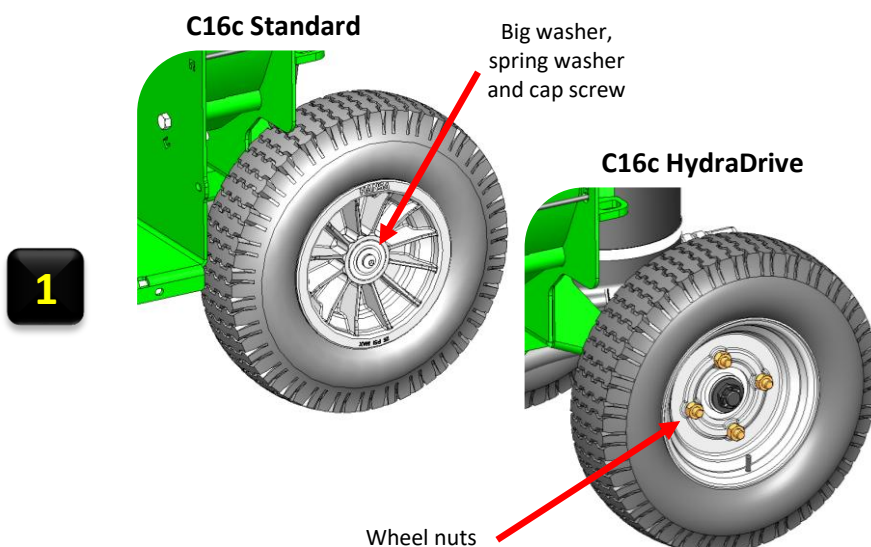
Note that the wheels may not be fitted.

Assembling the chipper

When you receive your Hansa brush chipper, the wheels and inlet and outlet chute may not be assembled on the chipper.

All the fasteners (bolts, nuts and washers) are attached to their respective components or in an accompanying fastener bag.

Fit the wheels



C16c Standard:

Ensure that the tyre valves are facing outwards.

Secure each wheel with a big M10 washer, M10 spring washer and M10x16 cap screw.

Ensure that the big washer is touching the wheel followed by the small spring washer, then the screw head.

Tighten the cap screws with a 6mm Allen key.

C16c HydraDrive:

Ensure that the tyre valves are facing outwards.

Fit the wheels with the supplied 7/16" wheel nuts.

Tighten the nuts with a 19mm spanner.

Fit the outlet chute – all models

2



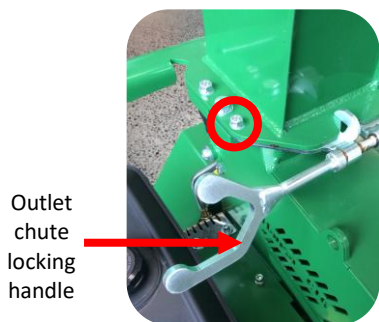
Lightly grease the flange on the chipper body.

3



Slide the outlet chute onto the greased flange of the chipper body, ensuring that the locking hinge is open.

4



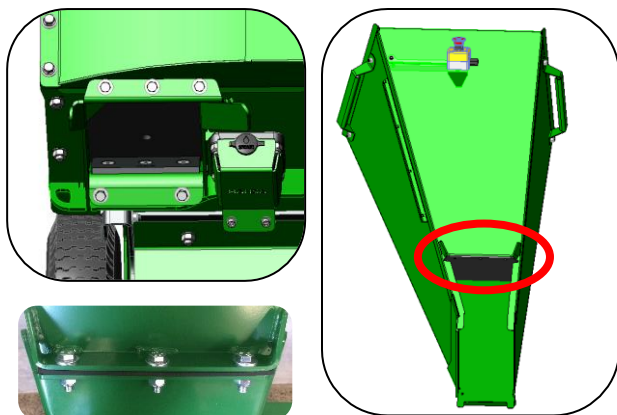
Close the locking hinge and fasten the two m6 bolts, spring washers, and washers to the locking pin on each side of the outlet using a 10 mm spanner. Ensure the spring washer is between the bolt head and washer.

Tighten the outlet chute locking handle to secure the outlet chute to the chipper body.

Note: The outlet chute locking handle will be in the documentation package.

Fit the inlet chute – all models

5



Place the inlet chute onto the chipper body with the black rubber flap sandwiched in between and ensure all three holes line up. Tighten the nuts, washers, and bolts using a 16 mm and 17 mm spanner. Ensure that the washer is touching the bolt head.

6



Line up holes and insert the bolts, washers and nuts, ensuring the big washer is touching the bolt head.

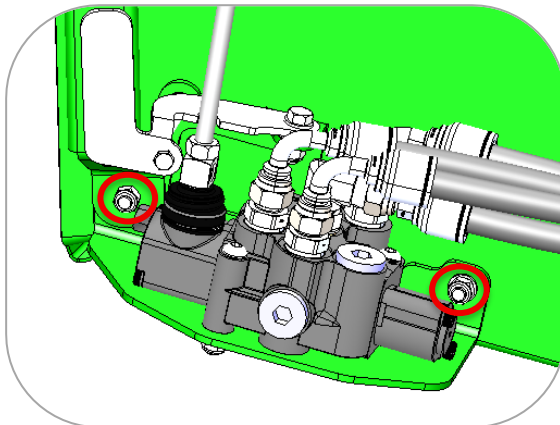
7



Plug the emergency stop wiring into the wiring of the body part.

Fit the control valve assembly - HydraDrive Only

8



Attach the control valve bracket to the right hand side of the inlet chute using the supplied fasteners and a 5mm Allen Key and 13mm spanner.

The valve bracket fits underneath the bottom handle flange.

Safety

Preventing accidents is the responsibility of every equipment operator. The operator is responsible for any accidents or hazards occurring to people or their property. Ensure every operator is familiar with the safe operation procedures and controls of the machine, how to identify hazards, and the steps required to avoid injury while handling and operating the chipper. Relevant information is contained in this manual.

- ❌ **Do NOT** modify the design of the chipper.

Operator competency

- ✅ Ensure that every person operating the chipper understands and follows the safe operating and maintenance procedures as detailed in this manual.
- ❌ **Do NOT** allow persons below the age of 16 to operate the chipper. Additionally, local regulations may restrict the age of the operator.
- ❌ **Do NOT** allow persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge to operate the machine.

Identifying hazards and risks

Identify hazards and risks, and take preventative steps to avoid accidents and minimise risk. Possible hazards include, but are not

limited to, moving parts, thrown objects, weight of chipper and components, and the operating environment.

Below is a list of hazards and actions required to prevent injury.

 Hazard	Risk	Corrective action
 Dust	Injury or irritation of the eyes Respiratory irritation	Wear safety glasses Process freshly cut materials and/or wear a dust mask
 Exhaust Fumes	Respiratory irritation	Place the chipper in a manner that the operator is not exposed to direct exhaust fumes
 Hot Exhaust	Heat burns	Keep bare hands and other body parts a safe distance away from hot exhaust
 Fire	Heat burns	Clear any build-up of chipping debris around the engine and exhaust regularly
 Belt Drive	Skin pinching and/or abrasions	Ensure that all belt guards are in place, and keep away from the belt
 Cutting rotor and knives	Pinching, crushing, cutting, severing	Keep hands and other body parts out of the inlet chute  Use a stick to push materials into the inlet chute  Do NOT push the stick beyond the guard flap
 Sound	Damage to hearing	Always wear ear protection when operating the machinery
 Discharge material	Eye injury, minor cuts	Always wear safety glasses when operating the machinery  Do NOT stand in front of the outlet chute  Do NOT face the machinery in a place where the outlet chute is directed on a hard surface
 Feeding material	Cuts and scrapes	Wear safety gloves Wear tight fitting long sleeves and pants to cover bare skin when operating the machinery
 Weight of the chipper	Straining, crushing	Place the machinery on level ground
 Petrol, oil, grease	Poisoning, skin irritation, harmful vapours	Take care when handling petrol, oil and grease Wash skin if contaminated with petrol, oil or grease  Do NOT refuel the chipper in enclosed areas
 Stability of the chipper	Straining, crushing	Do not climb or descend a ramp greater than 20 degrees. Apply foot brake or chock the wheels when parked.

Operation

Operating the chipper

It is helpful, (but not required) to keep a wooden stick handy, approx. 60 mm diameter x 600 mm long for:

- Pushing in short, brushy and very leafy materials
- Keeping the inlet chute clear

The chipper is self-feeding and has a large inlet opening. It can process:

- Prunings, stalks, vines, leaves, roots and vegetable matter, paper and cardboard
- Freshly cut material is better to process than dry
- Maximum branch diameter capacity for the C16c is 110 mm



Safe setup procedure

Before you start:

- ✔ Ensure the chipper is positioned in an open area and on firm level ground.
- ✔ Ensure that the outlet chute is discharged onto soft ground (e.g. grass)
 - ✘ **Do NOT** allow the outlet chute to discharge chip onto hard surfaces (such as a paved or gravel surface)
 - ⇒ Ejected material can rebound and cause injury
- ✔ Keep children, pets and spectators clear of the work area at all times
 - ✘ **Do NOT** operate the chipper where there is a hazard to onlookers
 - ✘ **Do NOT** allow any person under the age of 18 to operate the chipper
- ✔ Check:
 - ✔ That all screws, nuts, bolts, and other fasteners are properly secured
 - ⇒ Check details on general chipper maintenance in this manual
 - ✔ That all chipper components are in place and in good condition
 - ⇒ If any parts are worn or damaged, contact Hansa for replacements
 - ✔ That fuel and engine oil levels are above the minimum levels
 - ✔ That the inlet chute and housing are clear of any leftover material
 - ✔ That all labels are in good condition and easily legible
 - ⇒ Replace damaged or unreadable warning and operating
 - ⇒ View photos of labels in appendix A
- ✔ Refuelling:
 - ⚠ Take extra care in handling fuels
 - ⇒ They are flammable and vapours are explosive
 - ⚠ Use only an approved fuel container
 - ✔ Always replace and securely tighten fuel cap after refuelling
 - ✔ Allow engine to cool down before refuelling
 - ✔ If you need to drain the fuel, ensure this is done outdoors
 - ✘ **Do NOT** smoke when using or refuelling the chipper
 - ✘ Never remove fuel cap or add fuel with the engine running
 - ✘ Never refuel the chipper indoors
 - ✘ Never store the chipper or fuel container inside where there is an open flame, such as a water heater
 - ✘ If fuel is spilled, do not attempt to start the engine, but move the chipper away from the area of spillage before starting

Safe operating procedure



DO:

- ✔ **Wear safety equipment:** Safety glasses, hearing protection and protective gloves must be worn at all times - ensure that the gloves fit tightly.
- ✔ Tie long hair up
 - ⇒ Long hair could be pulled into chipper
- ✔ Wear clothes that sit tightly
 - ⚠ Avoid scarves and any items that can get caught in the chipper
- ✔ Keep your face and body away from the inlet chute
- ✔ Stand clear of the discharge zone, even when no material is being fed into the machine
- ✔ Place the chipper on even ground and direct outlet chute on soft ground
- ✔ Ensure exhaust is pointing away from the working area and downwind from the operator and onlookers
- ✔ Keep proper balance and footing at all times and stand at the same level as the chipper
 - ✘ **Do NOT** over-reach
 - ✘ **Do NOT** run near the machine
- ✔ Feed only freshly cut material into the chipper
 - ✘ **Do NOT** feed in materials covered in gravel, stones and dirt as this can rebound, injure the operator and damage the machinery
- ✔ Prune to a size that suits the chipper's capabilities
- ✔ Pre-cut side branches
 - The branch will 'self-feed' more efficiently
- ✔ Keep the engine clean of debris and other accumulations



- ⚠ This prevents damage to the engine or possible fire
- ✔ Feed limbs and branches through butt end first, leaving the bushy head on
 - ⇒ This helps guide the limb down the inlet chute
 - ⇒ It reduces spinning and the occurrence of ejection of small pieces back up the inlet chute
- ✔ Hold larger branches back and feed the chipper with care until you are familiar with its capacity
 - ⇒ Engine will slow down or stall if the branch is too large
- ✔ Feed longer pieces together with short stubby pieces
- ✔ Feed soft materials intermittently with branches
 - ⇒ The wood chips tend to clean out any soft residue left in the chipper
 - ⇒ The chipper can clog up with soft, wet or fibrous materials
- ✔ Keep the outlet free of blockage
 - ⇒ If blockage occurs, turn the engine off, disconnect the spark plug wire and wait for rotor to stop spinning. Open the outlet chute and remove material until the outlet chute is clear
- ✔ As the discharge material piles up
 - ⇒ Move the chipper to direct the outlet chute away from the pile, or move the processed material to avoid blocking
- ✔ Turn the engine off whenever you leave the work area
- ✔ Only climb or descend ramps under power that are less than 20 degrees – HydraDrive model
- ✔ Only operate the valve control lever with the engine running – HydraDrive model

DO NOT:

- ✗ Run the chipper in an enclosed area
 - ⚠ Exhaust fumes contain carbon monoxide which is poisonous, colourless, odourless, and tasteless
- ✗ Operate the chipper wearing loose clothing and untied long hair
- ✗ Stand at a higher level than the base of the chipper when feeding material into it
- ✗ Process old materials such as dried wooden branches
 - ⇒ They get very hard and springy when dried out
 - ⇒ They are more awkward to handle
 - ⇒ The knives dull much quicker
- ✗ Feed short, stubby pieces of wood into the chipper
 - ⇒ They bounce and spin in the inlet chute
 - ✔ Feed short stubby pieces together with longer pieces
- ✗ Feed branches that are too large
 - ⇒ The chipper can easily stall
- ✗ Put soil, sand, grit, stones, glass, pieces of metal or other foreign objects into the chipper
 - ⇒ This will damage the sharp edge of the cutting knives and can rebound and injure the operator
- ✗ Put root balls and dead wood into the chipper
 - ⇒ This dulls the knives quickly
- ✗ Overload the chipper
 - ⇒ If the cutting rotor is slowing down, feed the material in slower
- ✗ Allow processed material to build up in the discharge area as this can
 - ⇒ Prevent proper discharge
 - ⇒ Result in kickback of material through the feed opening
- ✗ Transport the chipper while the engine is running
- ✗ Tamper with the engine governor settings on the chipper
 - ⇒ The governor controls the maximum safe operating speed and protects the engine and all moving parts from damage caused by overspeed
- ✗ Operate the chipper with blunt knives
 - ⇒ This causes excessive vibration which may result in damage to the chipper
- ✗ Move or tilt the chipper while it is running
- ✗ Touch any guards or stick hands between guards while the machine is on
- ✗ Put hands or any other part of the body or clothing:
 - ⇒ Inside the feed chute past the rubber flap
 - ⇒ Inside or near the opening of the discharge chute
 - ⇒ Near any moving part
- ✗ Remove any guards on the chipper unless the engine is turned off and the cutting rotor has come to a complete standstill
- ✗ Leave the chipper on while it is unattended
- ✗ Climb or descend ramps under power greater than 20 degrees – HydraDrive model

⚠ Operate the valve control lever with the engine switched off – HydraDrive model

Starting procedure

1

Fuel lever ("on" position)

Engine switch ("on" position)



Choke lever ("on" position)



Turn the fuel lever and engine switch to the "on" position.

Pull the choke lever to turn the choke on.

2

Throttle lever (halfway position)



Turn the throttle to the halfway position and disengage the belt drive by winding the engagement handle anticlockwise until it comes to a stop.

3

Pull cord



Pull the pull cord in one smooth motion to start the engine.

4



Once the engine is started and has warmed up (approx. 10 seconds), move the choke lever to the "off" position by pushing the lever in towards the engine.

5



To engage the belt drive, slowly rotate the engagement handle clockwise until it comes to a stop.

This must be done slowly to allow the cutting rotor to pick up speed; otherwise, the engine may stall.

6



Turn the throttle to max.

HydraDrive operation

Note: The HydraDrive unit is only able to be moved using the HydraDrive controls, and when the engine is running.

1

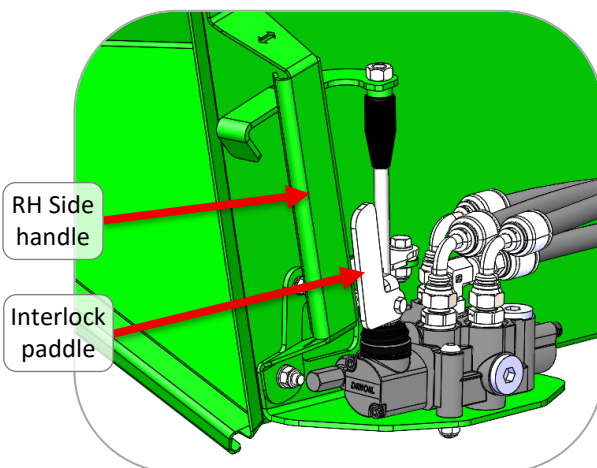
Throttle lever
("min" position)



With the engine running set the throttle to "min" position or slightly faster.

Disengage the rotor belt drive.

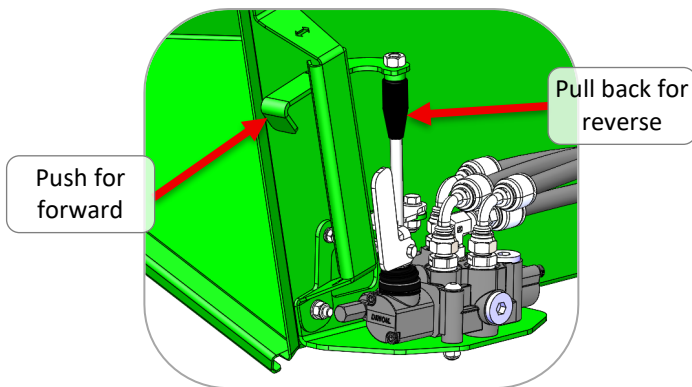
2



To operate:

- Grasp the inlet chute side handles with both hands.
- With your right hand, squeeze the interlock paddle up against the side handle to unlock the valve control lever.

3



To drive **FORWARD**:

- Push the control lever forward with your thumb.

To drive in **REVERSE**:

- Pull the lever back with your fingers.

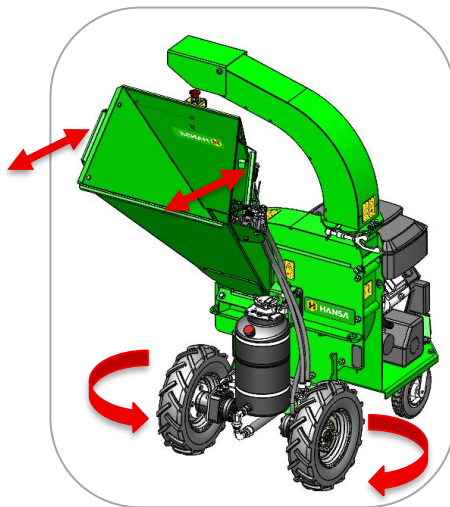
To **STOP**:

- Release / return the lever to centre (neutral) and release the interlock paddle to lock the lever. The drive wheels will then lock, though the unit is still able to be turned.



WARNING! Do **NOT** operate the valve control lever with the engine switched off. This could cause uncontrolled movement due to loss or reduction of drive-wheel braking, leading to equipment damage or personal injury.

4

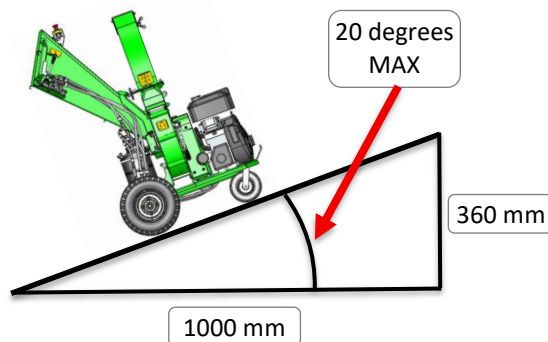


To turn the unit, apply steering force through the side handles, whilst moving either forward or reverse to point the unit in the desired direction.

The unit can be turned tightly due to the design of the hydraulic drive system.

It may also be turned / rotated with the control valve in the neutral position (one wheel will turn forwards and the other wheel will turn backwards).

5



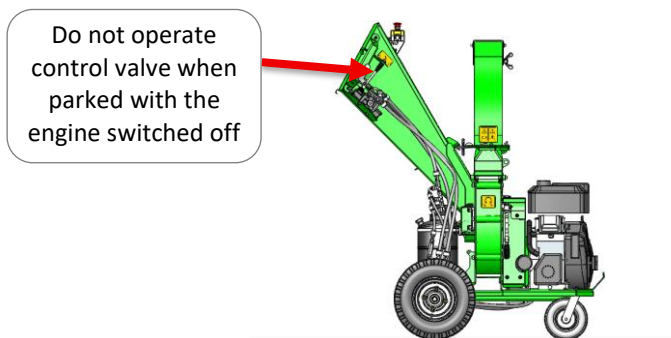
Climbing or descending ramps

The HydraDrive machine is designed to climb or descend a ramp with a **maximum ramp angle of 20 degrees**

This is a rise of 360 mm over a distance of 1000 mm.

When climbing or descending, the machine must be maintained level side-to-side.

6



Parking

Park the unit on a flat, level surface.

Do NOT operate the valve control lever when the engine is switched off as this may lead to hydraulic fluid draining back to the tank and the drive-wheel braking feature may be reduced or lost.

As the unit is still able to be turned / rotated with the valve control lever in neutral, it is recommended to chock the wheels when parked.

Shutdown Procedure

1



Throttle lever
("min" position)

Turn the throttle lever to the "min" position.

2



Disengage the belt drive by rotating the engagement handle anticlockwise until it comes to a stop.

3

Engine switch
(off position)



Fuel lever (off
position)

Turn the engine switch and fuel lever to the "off" position.



WARNING! Do NOT disengage the belt drive with the chipper running at full revs, as this will cause friction and vibration on the belt drive.

Petrol



The C16c chipper requires 91 unleaded petrol to run; check the petrol level before starting.

Emergency stop

The emergency stop acts as an immediate kill switch to the engine. It does not stop the cutting rotor from spinning. The cutting rotor will continue to spin for some time due to its rotational inertia. To engage the emergency stop, push the red button. To disengage the emergency stop, twist the red button clockwise until it releases outwards.

- ✔ Use it when foreign matter such as sand, stones or metal enters the inlet chute
- ✔ Use it in response to an immediate hazard/danger to an operator or onlooker
- ✔ After the cutting rotor comes to a halt, follow the regular shutdown procedure in addition to using the emergency stop
- ✔ Inspect the machine before resetting the emergency stop
- ✘ Under normal conditions, **Do NOT** use the emergency stop in place of the regular shutdown procedure

Storage

- ✔ Always allow the chipper to cool before storing
- ✔ Store the chipper out of the reach of children
- ✔ Store the chipper where fuel vapor will not reach an open flame or spark
- ✔ Switch fuel lever to off position
 - ⇒ For extended storage periods, run the unit dry of fuel
- ✔ Store the chipper out of the rain
 - ⇒ Water can rust the steel body of the chipper

Troubleshooting



What to do if:

- ? The chipper won't start
 - The engine oil level might be too low
 - ⇒ The chipper is fitted with oil alert and will not start if the oil level is too low
 - ✔ Check the oil level and top up if required
 - The chipper is placed on a slope
 - ⇒ The chipper is fitted with oil alert and will not start if the oil is not level
 - ✔ Move the chipper to level ground
 - The emergency stop is still engaged
 - ✔ Ensure emergency stop is disengaged before starting the chipper
- ? Belt drive engagement will not work
 - The inlet chute or housing might be blocked
 - ✔ Turn engine off, disconnect the spark plug wire, ensure cutting rotor has completely stopped, remove debris, restart engine, then attempt to re-engage the belt drive
- ? The chipper slows down and stalls
 - The chipper is clogged up
 - ✔ Turn the engine off, disconnect the spark plug wire, ensure cutting rotor has completely stopped, remove debris, then close and lock the outlet chute
- ? Discharge slows down
 - The chipper is clogged up
 - ✔ Turn the engine off, disconnect the spark plug wire, ensure cutting rotor has completely stopped, remove debris, then close and lock the outlet chute
- ? The chipper is slowing down
 - The chipper can't process the amount of material fed into it
 - ✔ Feed the material in slower
 - ✔ Reduce material volume
- ? The chipper will not self-feed
 - The knives and/or anvil might be blunt
 - ✔ Inspect and sharpen or replace knives and/or anvil as required. Ensure correct clearances between knives and anvil
- ? The material is ejected in long strips

- The knives and/or anvil might be blunt
 - ✔ Inspect and sharpen or replace knives and/or anvil as required. Ensure correct clearances between knives and anvil
- ❓ The chipper is clogged
 - ✔ Turn the engine off, disconnect the spark plug wire, ensure cutting rotor has completely stopped, remove debris, then close and lock the outlet chute
- ❓ The chipper starts making unusual noise, the cutting rotor strikes a foreign object or the chipper starts to vibrate
 - ✔ Turn the engine off, disconnect the spark plug wire, ensure cutting rotor has completely stopped, then inspect for damage
 - ✔ Replace or repair any damaged parts
 - ✔ Check for and tighten any loose parts
 - ✖ **Do NOT** attempt to repair the chipper unless you are competent to do so



WARNING! Do NOT open the housing unless the engine and cutting rotor have completely stopped.

Maintenance

Maintain the chipper with care and keep it clean at all times.

To service or inspect the equipment, or to change an accessory, you must:

- ✓ Switch the engine off
- ✓ Allow the chipper to cool before any inspections or adjustments
- ✓ Wait until the cutting rotor and engine are at a complete standstill before opening the cutting rotor housing
- ✓ Disconnect the spark plug wire from the spark plug
- ✓ Switch fuel lever to off position

Initially after 2 working hours:

- ✓ Check for any loose nuts and bolts
- ✓ Check belt tension (refer to belt tension section)
 - ⇒ The belts will stretch when they are new
- ✓ Grease the two cutting rotor bearings
 - ⇒ One or two pumps are sufficient
 - ⇒ Be careful not to over grease
 - ⇒ The bearings are already greased when the equipment is new
 - ⇒ Grease with bearing grease or all-purpose grease

Every 20 working hours:

- ✓ Check for any loose nuts and bolts
- ✓ Check belt tension (refer to belt tension section)
- ✓ Grease two bearings as above, be careful not to over grease
- ✓ Check sharpness of knives
- ✓ Check condition of guarding (belt guard and outlet chute)
 - ⇒ A damaged guard must be replaced by an identical or equivalent guard immediately
 - ⇒ It is recommended to contact Hansa for a replacement guard.

Knife re-sharpening and knife replacement

How do I know that the knives need re-sharpening?

- ⇒ Chipper loses its self-feeding action with blunt knives
- ⇒ Material has to be pushed in
- ⇒ Material comes out in long strips



WARNING! Do NOT operate your chipper with blunt knives.

- ⇒ Blunt knives will cause excessive vibration
- ⇒ Blunt knives result in damage to the chipper

How to re-sharpen the knives:

If you don't have a surface grinder or are unsure how to re-sharpen the knives, contact a professional saw doctor or Hansa to

arrange re-sharpening.



WARNING! Be careful when working around the sharp knives. Be aware that even though the power source is unplugged, the cutting means can still move.

Tools and materials required for re-sharpening (approx. 40 mins):

- 13 mm spanner
- A stick magnet (optional)
- Surface grinder
- Coolant

Remove the knives for sharpening

1

Open the rotor housing cover by removing the two housing cover locking bolts with an 18 mm spanner, then lift the rotor housing cover to access the cutting rotor.

Rotate the cutting rotor to gain access to the knives, then engage the belt drive to stop the cutting rotor from rotating.

2



Use a 13 mm spanner to remove the knives from the cutting rotor. There are five bolts that you must remove to do so.

- ⇒ Be careful not to drop the bolts or knives into the chipper
- ⇒ A stick magnet can be used to retrieve them if this does occur

3



Measure the width of the knife and check that it will be at least 46 mm after sharpening.

If the knife will be shorter than 46 mm, then the knives should be replaced. Please contact your nearest Hansa dealer.

Sharpen the knives

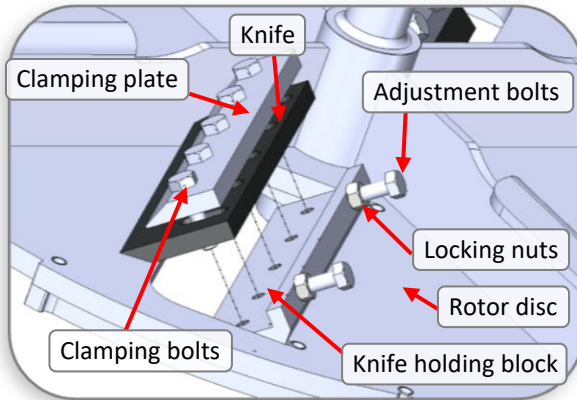
4



Sharpen the knives on a surface grinder. A cutting angle of 36 ° is critical for the performance of the chipper. Make sure plenty of coolant is used when grinding to avoid softening of the steel knives.

Reinstall the knives

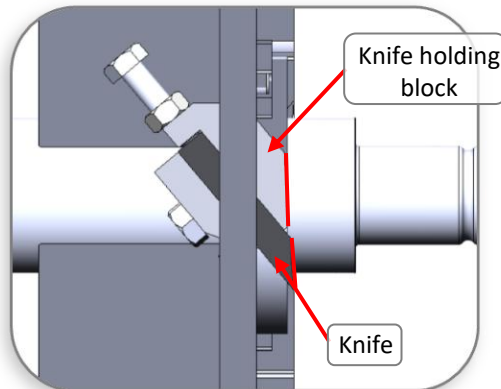
5



Clean all mounting surfaces and remount the knives in the reverse procedure.

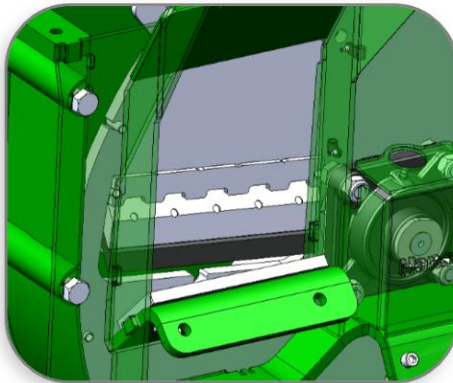
Note: Be sure to replace the knives the correct way around (as shown in the diagram). Only tighten the clamping bolts enough to hold the knives in place during adjustment. Do not tighten them fully until step 7.

6



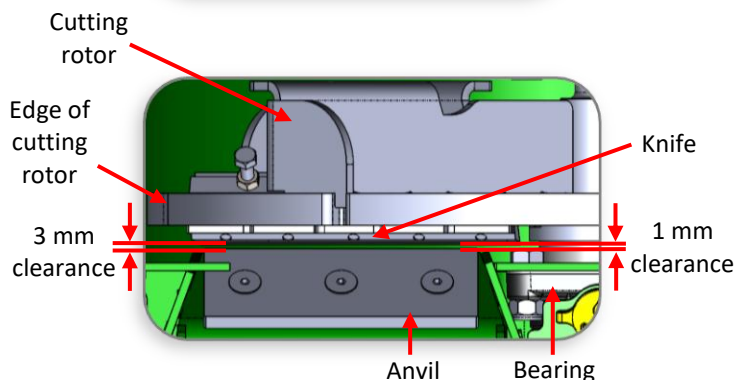
Side view: Rotor disc

Adjust the knives initially using the adjustment bolts to protrude the edge of the knife just past the edge of the knife holding block.



After sharpening, the width of the knives will have been reduced, therefore the gap between the knives and anvil may require adjustment. This gap is tapered out slightly to allow for a small amount of movement in the cutting rotor as it bites into the wood.

7



Top view: Knife and anvil set-up

If there is not enough clearance, the knife edge may touch the anvil through deflection when cutting heavy branches and damage the sharp edge. Too much clearance will allow small twigs and fibrous materials to be dragged through without being cut.

Adjust the knife in or out using the two adjustment bolts to achieve the correct clearance between the knife and anvil. The clearance between the knife and anvil should be approximately 1 mm on the inside closest to the bearing and 3 mm on the outside closest to the edge of the cutting rotor (refer to diagram for more detail).

After the correct clearance is set, fully tighten the clamping bolts using a torque wrench to 35 N.m. and tighten the locking nuts on the adjustment bolts.

Note: Before adjusting the knives, ensure the gap between the holding block and the anvil is 4 - 5 mm. If not, then the anvil can be adjusted through the mounting slots. Once the position has been set, tighten the three M10 countersunk anvil bolts and torque to 50 Nm, then make further adjustments with the knives as described above.

Turn the cutting rotor slowly by hand to check that it turns freely.



Close and secure the outlet chute.



WARNING! Every time the knife clamping bolts are torqued up to 35 Nm and loosened off again, the life of the bolts is reduced. The knife clamping bolts must be replaced at most after every six sharpens. Contact Hansa for replacement bolts (m8x35 bolts of grade 8.8 or higher). Use only genuine Hansa bolts.

Anvil adjustment/replacement

When cutting edge of the anvil is dull, the anvil can be reversed. Each edge of the anvil will typically last for several hundred hours of operation. When both edges are worn, the anvil will need to be replaced.

To access the anvil the inlet chute needs to be removed (use the reverse procedure to fit the inlet on page 3). A 5 mm Allen key, 17 mm socket and an extension are required to remove the anvil.

With the knives removed or set right back, the gap between the knife holding block and anvil should be 4 - 5 mm. The position of the anvil can be adjusted through the mounting slots. When this has been set, tighten the three M10 countersunk anvil bolts using a torque wrench to 50 Nm and then make further adjustments with the knives as described above.

Turn the cutting rotor slowly by hand to check that it turns freely.

Engine servicing

For servicing of the engine, please refer to the Briggs and Stratton engine manual (C16c).

Checking engine oil

It is recommended you check the oil level every time you use your chipper. Use a good quality oil such as SAE 10W30 or SAE 10W40. For optimal performance of your chipper, the engine oil should be completely changed every 100 operating hours, or roughly once every 12 months on average.

C16c: To check the oil level on the Briggs and Stratton Vanguard engine, unscrew the oil filler cap/dipstick, clean the dipstick, then insert the dipstick into the oil filler cap. Screw the dipstick all the way in for an accurate reading. Refill the oil to the FULL mark on the dipstick, if required.



Oil filler cap

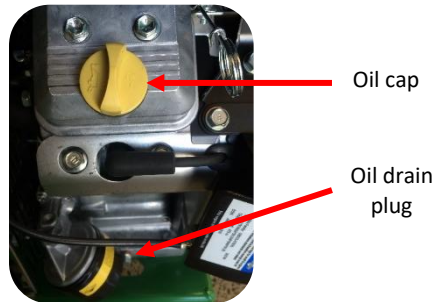


Oil dipstick

Changing engine oil

1

Run the engine for 1-2 minutes in order to warm up the oil. Place a container underneath the engine. Remove oil filler cap/dipstick and oil drain plug, then let the oil drain into the container, through the opening in the chassis.



2

Screw the oil outlet drain plug back in and fill the engine with SAE 10W30 or SAE 10W40 through the oil filler cap/dipstick hole. The oil capacity of the C16c is 1.4 L.

3

Recheck the oil level. It should be close to, but not above, the upper limit indicator on the dipstick. Screw the oil filler cap/dipstick back into the hole. Dispose of the used engine oil in an environmentally sensitive way.

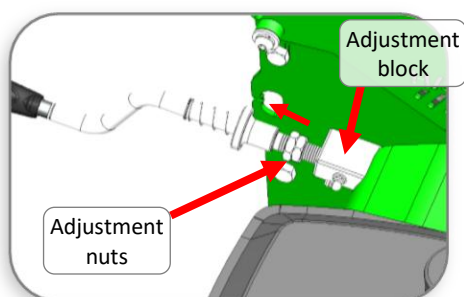
Belt tension

Rotor belt tension

Correct belt tension is crucial for minimising belt wear and maximising machine efficiency. To check the belt tension, first ensure the belt drive is disengaged by turning the engagement handle anticlockwise. Then, from the fully disengaged position, gently turn the engagement handle clockwise until you feel it start to resist. From this position, turn the engagement handle clockwise. If the tension is set correctly, the handle should turn one full revolution clockwise before coming to a stop. If there is a difference greater than 1/6 of a revolution either clockwise or anticlockwise from one full revolution, then the belt tension should be corrected following the 'adjusting belt tension' procedure.

Adjusting rotor belt tension

1



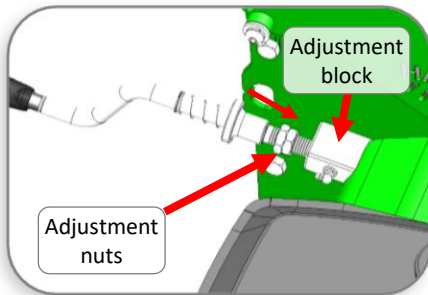
Using two 24 mm spanners, unlock the two locking nuts from above the adjustment block on the engagement handle by turning the top nut anticlockwise and the bottom nut clockwise. Then move both locking nuts upward along the thread.

2



From the fully disengaged position, gently turn the engagement handle clockwise until you feel it start to resist. From this position, turn the engagement handle one full revolution clockwise. This is the recommended tension for the belt drive when in the fully engaged position.

3



Using two 24 mm spanners, screw the two M16 adjustment nuts downwards until they touch the adjustment block. Then turn the top nut clockwise and the bottom nut anticlockwise simultaneously to lock the nuts in place.

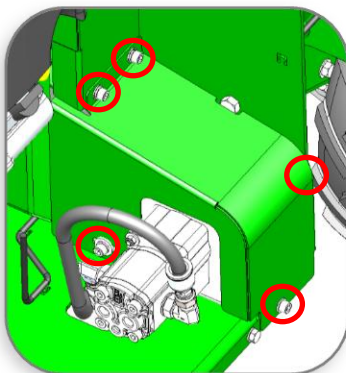
Pump belt tension (HydraDrive)

Correct belt tension is crucial for minimising belt wear and maximising machine efficiency. To check the belt tension, remove the pump belt guard. Then, apply a 5 kg force vertically down to the middle of the belt and check the deflection is 5mm.

If this deflection is not observed, the belt tension should be corrected following the 'Adjusting pump belt tension' procedure.

Adjusting pump belt tension

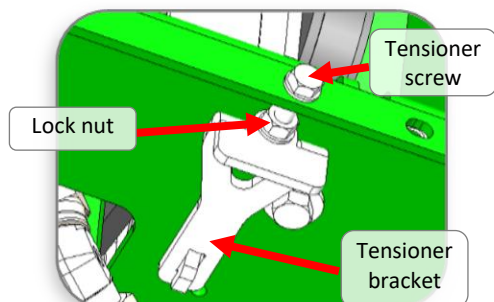
1



Using a 5 mm Allen key, unbolt and remove the pump belt guard (5x M8 cap screws).

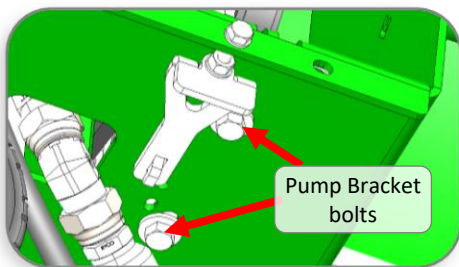
Note: The lower, outer screw has a loose nut, the others screw into captive nuts.

2



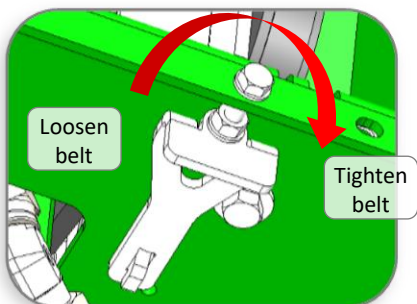
Using two 13mm spanners, unlock the belt tensioner screw by unwinding the lock nut away from the tensioner bracket.

3



Using a 16 mm spanner, loosen the two pump bracket bolts on the underside of the machine.

4



To **tighten** the pump belt:

Using a 13 mm spanner, turn the tensioning screw clockwise until the belt is at the correct tension.

Lock the tensioning screw with the lock nut.

Tighten the two pump bracket bolts.

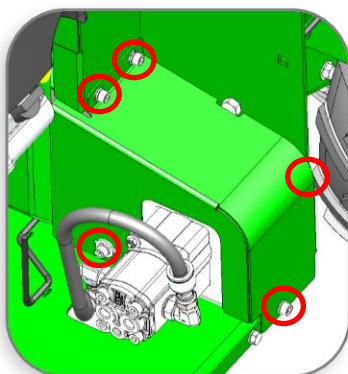
To **loosen** the pump belt:

Using a 13 mm spanner, turn the tensioning screw anticlockwise until the belt is at the correct tension.

Lock the tensioning screw with the lock nut.

Tighten the two pump bracket bolts.

5



Refit the pump belt guard.

Belt replacement

If the belts in your chipper look similar to any of the following images or are clearly broken, then they need to be replaced.



Cracked underside of belt



Split belt cover



Soft, swollen belt



Worn cover on back of belt



Sidewall belt wear

If a belt change is necessary, follow these steps

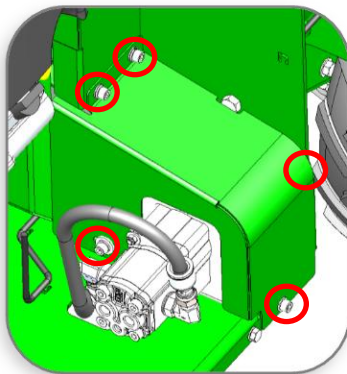
Note: If you have the HydraDrive model, in order to change the rotor belts, you will first need to loosen and remove the pump belt. These steps are included below. These steps can be ignored if you have the Standard model.

1



Ensure the rotor belt drive is disengaged by turning the engagement handle fully anticlockwise.

2



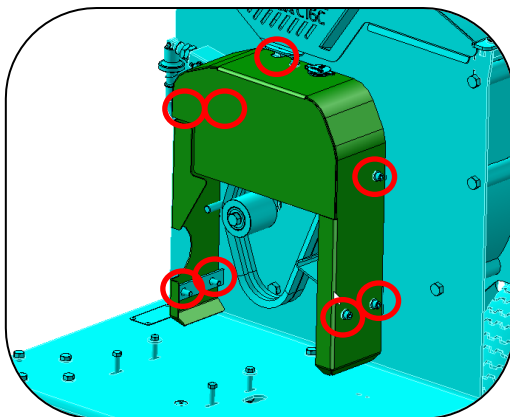
HydraDrive Only

Using a 5 mm Allen key, unbolt and remove the pump belt guard (5x M8 cap screws).

Note: The lower, outer screw has a loose nut, the others screw into captive nuts.

Fully loosen the pump belt tension as detailed in 'Pump belt tension (HydraDrive)' on page 19.

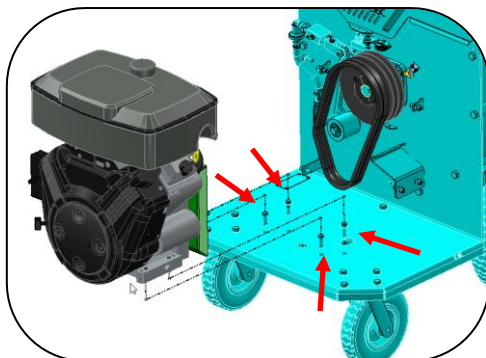
3



Using a 6 mm Allen key, unbolt and remove the pulley guards (8xM8 cap screws).

Note: Engine not shown in this view.

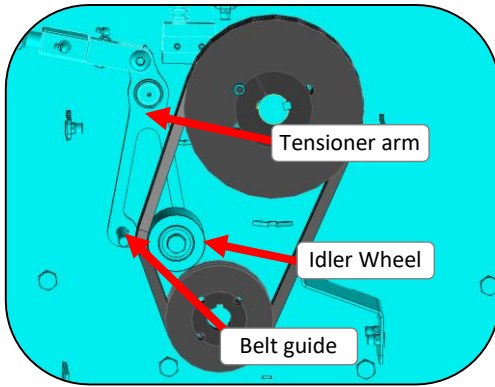
4



Using two 13 mm spanners, unbolt and remove the engine (4xM8 Nuts).

Note: loosen the belt tensioner to allow room for removal.

5

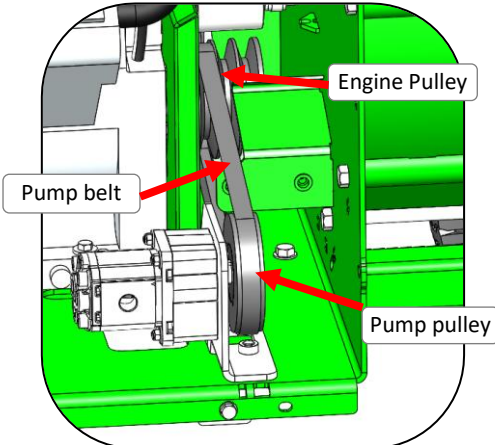


Rotor Belts

Remove the old belts and replace (2 x B34 vee belts).

Note: The belts pass in between the idler wheel and belt guide on the tensioner arm.

6

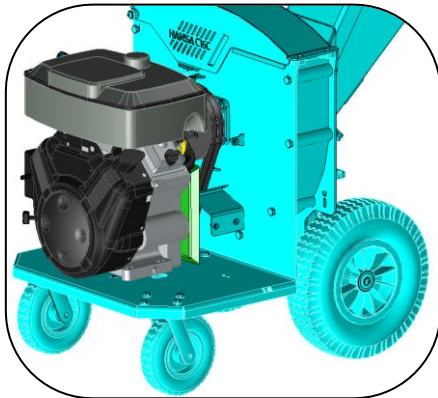


HydraDrive Only

With the rotor belts removed from the engine pulley, access is available to remove the pump belt.

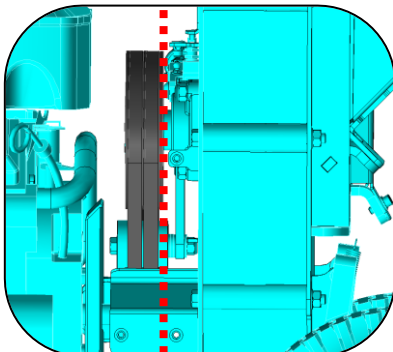
Remove the old pump belt and replace (1 x B34 vee belt).

7



Place engine back in place and ensure that ALL pulleys are in line.

8



Fully tighten the four bolts holding the engine to the chassis.

Check the pulleys are still in line by placing a straight-edge across the back face of the top (rotor) and bottom (engine) pulley.

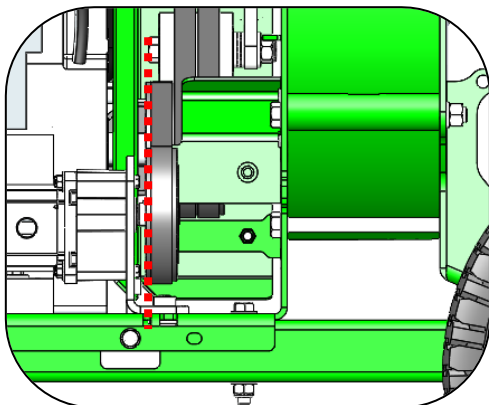
If they are not in line, loosen the four bolts holding the engine onto the chassis and then repeat this step.

HydraDrive Only

The positions of all three pulleys on their respective shafts are set in the factory and should realign when the engine is put back in place and aligned with the rotor pulley as described above.

If they do not align, the position of the pulleys on their shafts may need to be adjusted.

9

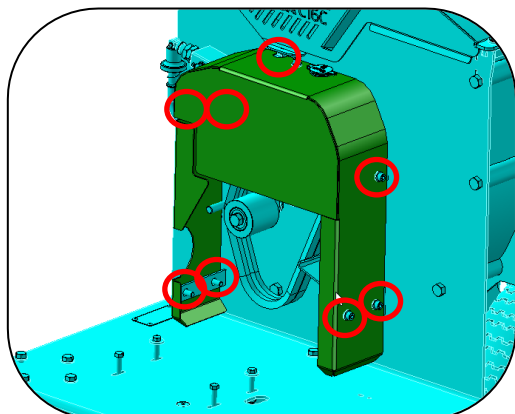


HydraDrive Only

Check the pulleys are still in line by placing a straight-edge across the front face of the engine pulley and the pump pulley.

If they are not in line, loosen the four bolts holding the engine onto the chassis and then repeat this step.

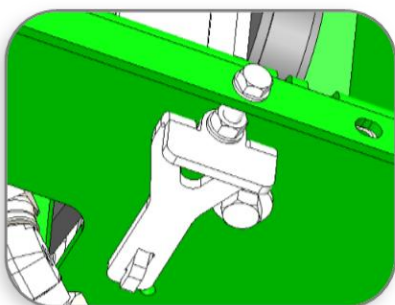
10



Ensure belts are properly tensioned (follow the 'Adjusting rotor belt tension' process on page 18). Fasten the main pulley guards back into place.

Note: Engine not shown in this view.

11

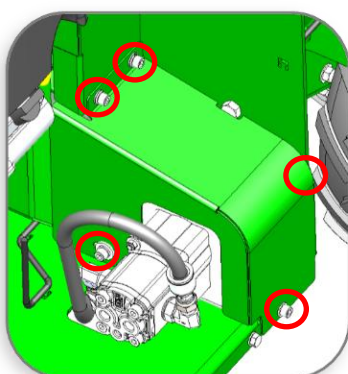


HydraDrive Only

Correctly tension the pump belt.

See section 'Adjusting pump belt tension' on page 19.

12



HydraDrive Only

Refit the pump belt guard.

Note that after replacing a belt, the tension of the new belt will quickly change as the belt initially wears into the pulley system. Recheck the belt tension after two hours of operation after belt replacement.

Hydraulic system (HydraDrive)

- Replace hydraulic oil filter every 500 hours, or every 12 months.
- Change hydraulic oil every 1000 hours. Use only good quality ISO 46 grade hydraulic oil.

The hydraulic system is a closed system therefore it should not become contaminated, however if contamination is detected, the oil should be changed. Check for contamination every 100 hours.

Fill the hydraulic oil tank so that the oil level shows at the bottom half of the dipstick. The dipstick is integral with the filler cap. Check the level with the filler cap resting on the top of the filler neck.

The level should be checked with the engine off while the oil is cold.

For any repair of the hydraulic system, contact Hansa Products or seek advice from a competent service agent.

Filter Replacement

The hydraulic filter is in the top of the hydraulic tank.

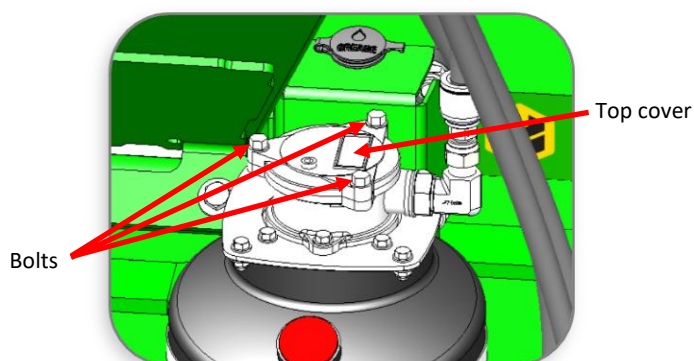
Contact Hansa Products for a replacement filter element.

To service the filter



WARNING! Ensure the hydraulic oil is cold before replacing the filter element

1



Remove the three (3) bolts on the top cover using a 10mm spanner.

Remove the top cover.

2

Remove the filter element and fit a new element.

3

Replace the top cover and secure with the three (3) bolts using a 10mm spanner.

Tyre pressure

C16c:	Main Wheels	The maximum recommended tyre pressure is 25 Psi.
	Front Castor Wheels	The maximum recommended tyre pressure is 25 Psi (hand pump only recommended)
C16c HydraDrive:	Main Wheels	The maximum recommended tyre pressure is 25 Psi.
	Front Castor Wheels	The maximum recommended tyre pressure is 25 Psi (hand pump only recommended)

High tyre pressure can cause damage to the tyres.

Bolt torque

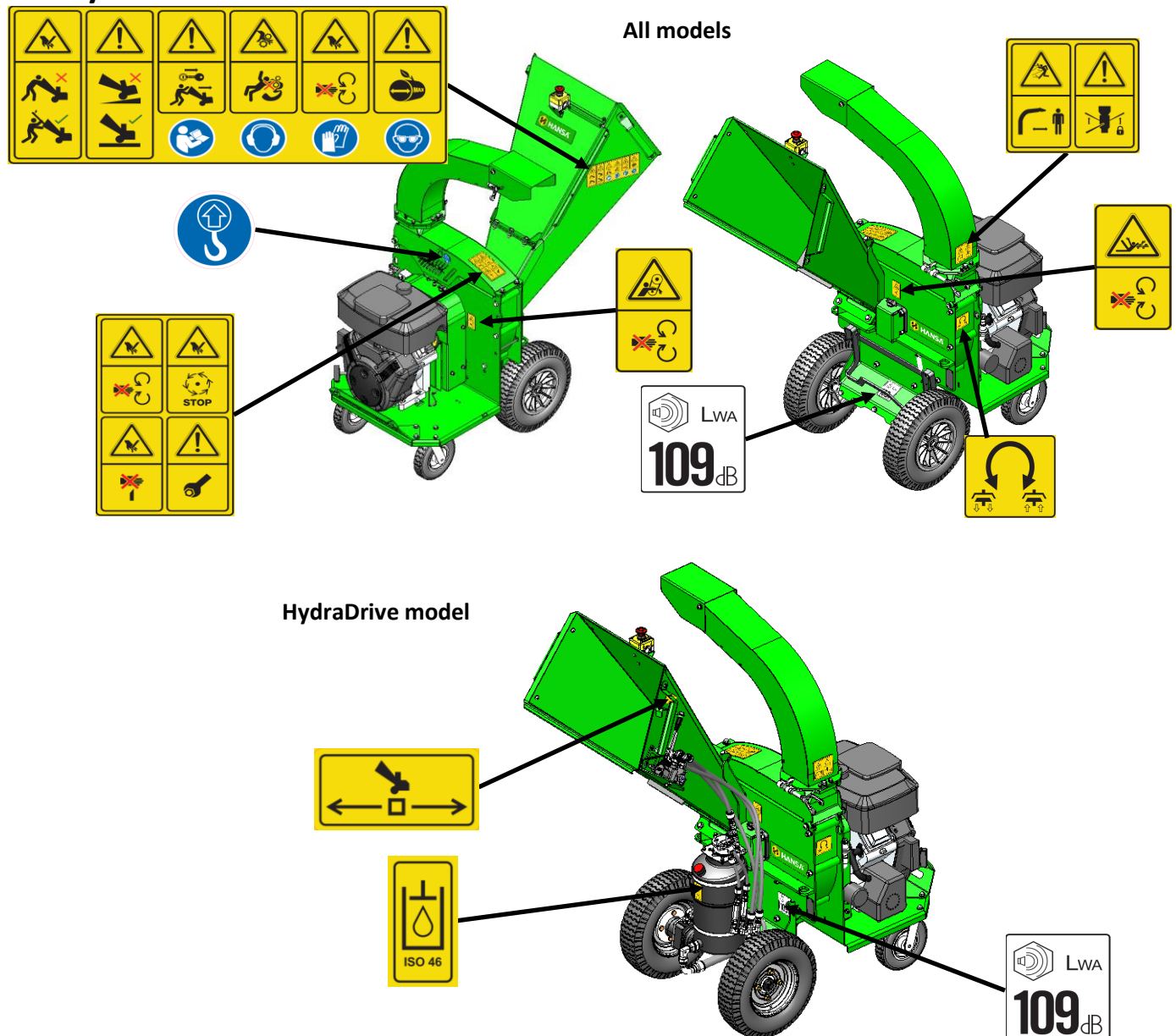
Bolt size	Spanner size	Relative Strength Bolt Marking			
		4.6		8.8	
		Recommended Tightening Torque		Recommended Tightening Torque	
		lb ft	Nm	lb ft	Nm
M8	13 mm	6	8.5	16	22
M10	16 mm	12.5	17	32	44
M12	18 mm	22	30	57	77
M16	24 mm	54	73	140	190
M20	30 mm	105	143	274	372

Specifications

Model	C16c		C16c HydraDrive
General	Length	1 345 mm	1 345 mm
	Width	655 mm	655 mm
	Height	1 580 mm	1 580 mm
	Weight	244 kg	290 kg
Engine	Make & model	B&S Vanguard	
Cutting System	Disc speed	2000 RPM	
	Disc dimensions	560 x 20 mm	
	Shaft diameter	31.75 mm	
	Knives	2	
Feed System	Chipping capacity	110 mm	
	Feed type	Gravity fed, self-feeding	
	Inlet chute opening	170 x 220 mm	
Discharge System	Discharge height	1 485 mm	
	Outlet chute type	270° swivel	
Hydraulic System	Maximum system pressure	-	2 000 psi (140 bar)
	Oil grade	-	ISO 46
	Oil capacity	-	Tank volume 10 litres Total refill volume 12 litres
Maximum climb or descend ramp angle	HydraDrive	-	20 degrees

Safety Labels

Safety Label Locations



Safety Label Explanations

Instructions manual must be read.	Ear protection must be worn.	Tight and heavy-duty gloves must be worn.	Eye protection must be worn.	Lifting Point	Stay clear of outlet chute discharge area. Keep bystanders away.	Lock outlet rotation while machine is running.

Use only wooden stick to clear blockage.	Operate only on stable level ground.	Turn machine off before moving.	Do not operate with loose clothing or long hair.	Do not extend hands down inlet chute past rubber flap.	Max 110 mm branch capacity.	Keep clear while machine is running.	Keep clear while machine is running.

Do not open while machine is running.	Do not touch moving components.	Take care while working with sharp blades.	Fasten outlet before starting machine.	Turn anticlockwise to disengage.	Turn clockwise to engage.	Noise level.

HydraDrive model

Control lever operation.	Hydraulic oil grade.	Noise level.

HANSA global industrial limited warranty

For the purposes of this warranty document, “HANSA” means HANSA Products Limited and any of its international subsidiary companies. Refer to contact details below for further information.

HANSA warrants each new HANSA product free from defects in materials and workmanship under normal use and routine servicing, for the warranty periods and subject to the limitations and exclusions detailed below.

HANSA offers a special extended warranty period (“Extended Warranty”) to new HANSA products purchased from an authorised HANSA dealer. The Extended Warranty period is set out below. In order to take advantage of the Extended Warranty you must:

1. Register your HANSA product through the HANSA warranty registration process and identify your HANSA product by its machine serial number. **Registration must be completed with ten (10) days from the date of purchase.** Your warranty registration confirmation email is your identification for warranty service; and
2. Have your registered HANSA product maintained in accordance with the schedule contained in the relevant owner’s manual supplied with the product by an authorised HANSA dealer for the applicable territory. In order to ensure the safe operation of your HANSA product, we strongly recommend that you only use an authorised HANSA dealer for servicing. The cost of routine or required maintenance and services is the responsibility of the purchaser. You must keep a record of all service and maintenance history as proof of servicing history. HANSA may request such servicing history when assessing any future warranty claim.

When making a claim for warrantable repairs under the Extended Warranty, your warranty registration must accompany the HANSA product. If the warranty registration is lost or destroyed, proof of purchase documentation clearly recognising the machine serial number shall be accepted for warranty purposes. Where neither is available and HANSA does not have any record of the purchaser’s details the warranty period shall be calculated from the appropriate dealer wholesale sale date. Any claim under the applicable Warranty must be made within the relevant warranty period specified below.

The Extended Warranty may be subject to cancellation if the above requirements are not satisfied.

The Extended Warranty is available to domestic (non-commercial) and commercial customers (excluding commercial customers in the business of plant/equipment hire).

All HANSA products that have not complied with the Extended Warranty registration and maintenance requirements are entitled to the “Non-Registered” warranty period set out below.

Any authorised HANSA dealer is further authorised to repair or replace any part which proves defective within the limits of the Extended Warranty or Non-Registered Warranty (the “Warranties”) at no charge to the owner, covering parts and labour. Consumable items such as but not limited to oils, grease, blades and belts shall be the responsibility of the owner. All defective parts replaced under the Warranties become the property of HANSA.

You (as owner) are responsible for all shipping and transportation costs (including insurance) to and from an authorised HANSA dealer for the product subject to a warranty claim.

Exclusions

The warranties shall NOT APPLY TO:

- Any damage which results from neglect of periodic maintenance specified by HANSA.
- Any damage which results from repair or maintenance operations by methods other than specified by HANSA.
- Any damage which results from misuse or use beyond the limitations of the intended use specified by HANSA in the operations, maintenance and safety manual, such as overloading, including foreign objects such as stones, pieces of steel, glass etc. being dropped into the running machine or use under abnormal conditions (in HANSA’s sole judgement).
- Any damage which results from use of non-genuine parts, lubricant or fluid not approved by HANSA.
- Any damage resulting from modification or installation in other products in a way not approved by HANSA which has any influence on the function and/or performance of the products.
- Any damage which results from operation other than specified in the Owner’s Manual either intentionally or by error.
- Fading of painted surfaces, deterioration of plated surfaces, deterioration of rubber and plastics, including rusting due to the passage of time.
- Normal phenomena such as noise, vibration or oil seepage which are considered by HANSA as not affecting the quality, function or performance of the product.
- Any damage due to improper storage or transport.
- Consumable replacement items: Belts, cutting blades, anvil, serviceable bearings.
- Periodical maintenance items such as cleaning, inspection and adjustments.
- Any repair and/or adjustment performed by persons other than an authorised dealer, or damage resulting therefrom.
- Any repair and/or adjustment to correct improper or poor quality work previously performed.

- Incidental expenses incurred in the warranty claim. For example: additional expenses such as those for towing, communications, hotel and meals, incurred due to breakdown of the product at a remote location. Any expense related to personal injury and/or property damage, (exclusive of the product itself). Compensation for loss of time, commercial losses or rental costs of a substitute product during the period of adjustment.
- Any damage which results from unavoidable natural disasters, fire, collision, theft, etc.
- Any normal wear or deterioration, such as that of sliding or rotating parts caused under normal operating conditions. For example: Normal wear pivot points, rod ends and bearings.
- Any damage resulting from exposure of the product to soot and smoke, medicines and chemical agents, sea water, sea breeze, salt or other environmental phenomena.

Limitations

- HANSA reserves the right to modify, alter and improve any product without incurring any obligation to replace any product previously sold with such modification.
- In no event shall HANSA's liability exceed the purchase price of the product.
- Equipment and accessories not of HANSA's manufacture (such as engine, battery and tires) are warranted only to the extent of the original manufacturer's warranty and subject to their allowance to HANSA only if found to be defective by such manufacturer.
- HANSA reserves the right to supply remanufactured parts as it deems appropriate.

HANSA Product Warranty Period

HANSA PRODUCTS	COMMERCIAL		
	DOMESTIC	(EXCLUDING HIRE)	COMMERCIAL (HIRE)
Non-Registered	12 months	12 months	3 months
Extended Warranty	36 months (Conditional)*	36 months (Conditional)*	N/A

Each of the warranty periods stated above commence from the date on which you purchased your HANSA product.

*Conditional Warranty:

This is a HANSA extended warranty period for products that are:

- Purchased from an authorised HANSA Dealer.
- Registered at the time of sale through the Hansa Products website: www.hansaproducts.com/registration
- Serviced by a HANSA Dealer in accordance with the Hansa service schedule using genuine HANSA parts.
- Extended Warranty is limited to 36 months or 1000 hours, whichever occurs first.
- Meeting all other warranty requirements.

Warranty periods vary depending on whether the purchaser is: (i) a domestic (i.e. non-commercial) customer; (ii) commercial customer (excluding plant/equipment hire businesses); or (iii) a commercial customer in the business of plant/equipment hire.

General

1. Your rights:
 - a. HANSA will recognise any implied rights and remedies that are available to you at law in the applicable territory and that cannot be excluded by HANSA.
 - b. In New Zealand, Hansa Products Ltd will recognise your statutory rights under the Consumers Guarantee Act 1993 (provided that you are a consumer for the purposes of that Act).
 - c. In Australia, this warranty is given by Hansa Products Pty Ltd. This warranty is provided in addition to other rights and remedies you have under law - our HANSA products come with guarantees that cannot be excluded under the Australian Consumer Laws.
2. If any provision of this warranty document is held by any competent authority to be invalid or unenforceable in whole or in part, the validity of the other provisions of this warranty document and the remainder of the provisions in question will not be affected.
3. The English language version of this warranty document prevails over any translated version/s of its terms.
4. This warranty document is governed by the laws of New Zealand. The parties submit to the exclusive jurisdiction of the New Zealand Courts.

Contact Details

New Zealand:

Hansa Products Limited
PO Box 10323, Te Rapa
Hamilton

Rest of World:

Please refer to www.hansaproducts.com
for a current list of our authorised dealers
and contact details relevant to your territory.

Commissioning checklist and registration



It is the retailers' responsibility to ensure that this product is correctly commissioned for use, and that the purchase is registered with Hansa Products so as to provide the owner with the full benefit of the warranty policy.

Product registration must be completed online:

www.hansaproducts.com/registration

For registration you will require the product serial number and customer details.

It is the retailers responsibility to check the following:

Final Assembly Check all bolts for tightness including knives

Operation Instruct the owner/operator on operating procedures and techniques

Safety Instruct owner/operator on safety procedures

Maintenance Explain the maintenance requirements and the importance of following the maintenance schedule to the owner/operator

Manual Emphasise the importance of reading and understanding the manual in full before initial operation of the product

Sound output information

The sound output level and the sound pressure level from the Hansa C16c have been measured in accordance with the testing provisions:

Directive 2000/14/EC
EN ISO 3744:2010
ISO 11201:2010
ISO 4871:1996
EN 13683:2003

The guaranteed sound output level which must be stated by the manufacturer in accordance with Directive 2000/14/EC is as follows:

Hansa C16c: 109 dB (A) relative to 1pW.

The wood chipper's sound pressure level at the operator's position is measured in accordance with Directive 2000/14/EC is as follows:

Hansa C16c: 94 dB (A) relative to 20μPa.

The values stated above are subject to the common uncertainty of the measuring method and the estimated variation in a product series for the type of machine. Detailed information about the measurements and results and estimation of uncertainty are found in a detailed report which can be supplied on request.

As a result of the actual sound levels, the wearing of ear protectors is mandatory when using the wood chipper.

EC Declaration of Conformity

**Manufacturer:**

Hansa Products Ltd
PO Box 10323
Te Rapa
Hamilton 3241
New Zealand

Name of the person authorized to compile the technical file on behalf of the manufacturer:**In the EU:**

Hansa Products Europe GmbH
Vöttinger Str. 2a
85354
Freising
Germany

In the UK:

Hansa Products UK Limited
Enterprise House
38 Tyndall Court, Commerce Road
PE2 6LR, Lynch Wood
Peterborough, United Kingdom

This declaration of conformity is issued under the sole responsibility of the manufacture.

Product designation: Brush chipper

Product description: Integrally powered shredder/chipper

Product model: C16c

Serial number: Serial Manufacture

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

Machinery Directive; 2006/42/EC

Noise emissions Directive; 2000/14/EC

Electromagnetic Compatibility Directive; 2014/30/EU

Restriction of Hazardous Substances Directive; 2011/65/EU

Waste Electrical and Electronic Equipment Directive 2012/19/EU

Furthermore, it is stated that the following has also been applied where applicable:

ISO 7010:2011

ISO 11684:1995

ISO 13857:2008

EN 13683:2003

EN 50581:2012

Signed for and on behalf of:

Hansa Products Ltd

A handwritten signature in black ink, appearing to read 'M Vogel', is written over a horizontal line.

Martin Vogel, Managing Director

Hamilton, New Zealand
September 24th 2025