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Herb Harvester HH2002C

User Manual



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Introduction

Congratulations on purchasing your Harvester Concepts Ltd HH2002C harvester. This machine is of high quality and will reward you with reduced effort and a great harvest.

Learning to use your HH2002C will not take long but please read the following notes first:-

Important Safety Notice

- The HH2002C should only be used for the purposes for which it was designed. It is not a battering ram or a grader blade!
- We have manufactured the H2002C using quality materials and methods however if a fault does occur please have it rectified before using the harvester
- Please read this handbook, also the engine handbook (where supplied) before operating the harvester
- Unless specifically mentioned in the handbook the HH2002C only requires a towing vehicle operator and a second operator for the harvester - keep all other people away!
- The Fadge holder has very sharp retainers on it - **be careful!** If the Fadge holder is not being used either remove it or fit the packaging corks on them.
- Never put your hands near moving parts!! Always stop the engine first and operate controls to remove any chance of motion occurring.
- There are several “pinch” areas on the harvester (conveyor raise / lower, draw bar sideways movement etc) - keep clear of these areas
- Always fit the lift ram locks and lower the conveyor gently onto them on completion of the harvest or / and whenever the engine is turned off
- Always turn the engine off before approaching the cutter head area

Fingers ride over plant:

- Finger spacing is too wide

Cuttings bunch up behind cutter bar:

- Conveyor speed not matched to ground speed
- Paddles too high above conveyor tray. Chain idler vertical height may need adjusting. Note original position in case you need to return to it. Both sides of harvester need adjusting the same amount. Chain tension may need adjusting to allow for new idler position - adjusters at the top of the conveyor on each side.

Cuttings getting wrapped around conveyor / chains / paddles:

- Fades overfull / not packed down enough. Stop the conveyor before this occurs. If it happens, stop the machine and clear all the cuttings away before proceeding.

Paddles not sitting square on harvester:

- Conveyor chains may have been too loose allowing a chain to jump a tooth on the top sprocket. Alternatively one of the top sprockets may have come loose on its drive shaft (note that the front sprocket shaft also has fixed sprockets and effectively times the chain. To realign the paddles the sprockets should be realigned and tightened. The conveyor chains may need loosening and/or the joining link removed to allow the chains to be placed correctly on the sprockets. Look at the conveyor from the front and side of the machine to ensure chains are tensioned evenly and paddles are square to the framework.

- Immediately after turning the engine off, fit the cutter bar cover. It should be removed last, before starting the engine.
- The harvester is supported on 3 wheels when the drawbar is not connected to a towing vehicle. Do not climb on the harvester or apply loadings to it in this condition - it is possible to unbalance the harvester .

Your HH-Harvester Consists of:

- The main Harvester
- Fade holder and 2 fades
- Finger assembly
- Drawbar
- Instruction book for harvester
- CTP model:
- Engine instruction book / tool kit
- Hydraulic system oil

Assembly

Carefully unpack the harvester, laying components out around the harvester in their approximate mounting position. Remove all packing and ensure components are not damaged.

Ensure the harvester is mounted on its wheels and the jockey wheel is supporting drawbar .

Chock the wheels and jack up the drawbar as shown.

Pull out the retaining handle on the jockey wheel and stow



it in horizontal position.
Remove the yellow transport bracket.



Carefully unfold the drawbar so it faces out the front. Engage the ram into mounting slot and insert mounting pin and securing lynch pin.

Shift the jockey wheel to vertical position and lower jack so the jockey wheel supports the harvester. If the jockey wheel doesn't have sufficient clearance with the towing vehicle it can be unbolted and moved to an alternative mounting further back on the drawbar.



The Fadge holder simply slides onto rails extending from the top end of the conveyor. Install with the retainers facing downwards.

DANGER: Be carefull not to contact the fadge holding pins - they can be hazardous to your health!



Slide the finger assembly un-

16. Quick Release couplings, draw bar ram

Fault Finding

Engine will not start:-

- Ensure engine has fuel in it and fuel cock is open
- Ensure harvester controls are in "start" position and engine is not under load.
- Use choke as required. If you flood the engine, leave 15 minutes and try again
- Ensure engine stop buttons or wiring to them are damaged (they can be unplugged at the rear of the engine for testing however you will not be able to stop the engine until they are plugged back in)
- Read engine handbook and service engine as required.

Hydraulic system malfunction:

- Ensure oil level correct
- Ensure filter has been serviced
- Contact Harvester Concepts Ltd with a description of the problem and they will advise rectification action to take.

Poor harvest quality:

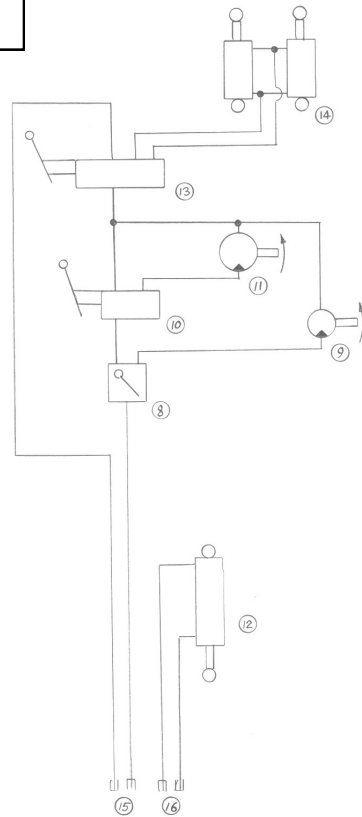
- Ensure cutter bar is sharp and is operating fast enough

To achieve a good harvest it is necessary to balance

- Finger spacing (width of base bush)
- The cutter bar height (low enough to get cuttings off fingers)
- Ground speed (if in doubt, try speeding up!)
- Conveyor speed (ground speed approx.)

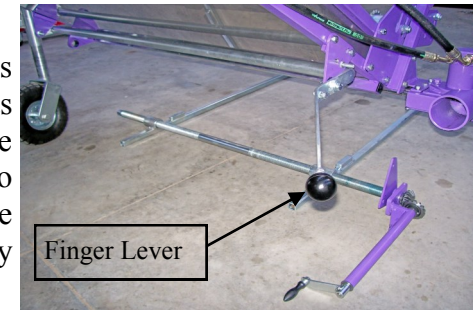
Some experimenting may be required to achieve the correct balance, especially on different age / size of crops.

-CT option



8. Flow control valve; Prince CP-RD137-8
9. Motor, cutter bar. Char Lynn 129-0018
10. Diverter valve, conveyor control. MTC-DDF3V02A
11. Motor, conveyor. Char Lynn. 101-1700-009
12. Ram, draw bar 2.5x1.25x6 stroke
13. Control valve, draw bar / cutter bar raise lower. (Relief valve set 14 Bar, 200 PSI)
14. Rams (2), cutter bar raise / lower. 1.5x0.75x10 stroke
15. Quick Release couplings, main system

der the harvester as shown.
 Move the finger lever rearwards
 Slacken off the LH mount bolts
 Raise the LH plain end of the
 finger assembly and insert it into
 it's mount (may require 2 people
 or a support to keep assembly
 near level)



Raise the handle end ensuring
 the side shift adjuster handle is facing upwards. When the mounting
 plate aligns with the mounting holes on the RH conveyor frame, se-
 cure it using 2 mounting bolts and spring washers. Tighten all
 mounting bolts.



If for any reason the side shift handle needs adjusting from this po-
 sition, it can move in a radial direction by slackening the clamp bolt
 on it's shaft mount, repositioning and clamping up the bolt again.

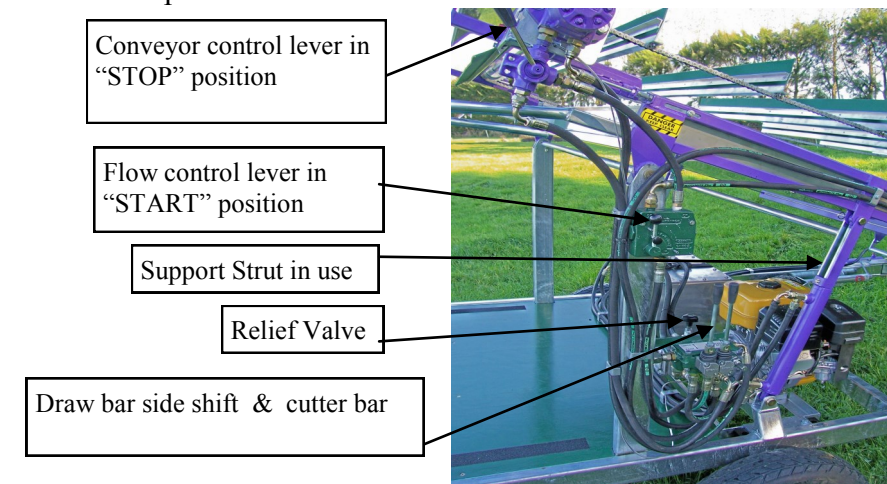
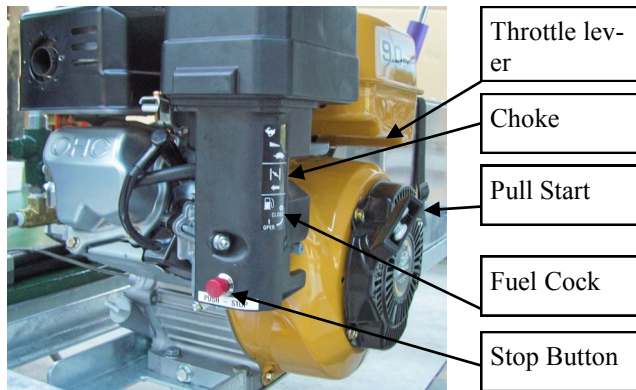
Dismantling

Dismantling is a reversal of the assembly procedure. The Fadge
 holder should be removed if not required, or at least the retaining
 pins covered to prevent accidents. Corks or a block of foam plastic
 (polystyrene) provides a good cover. The fingers may need remov-
 ing for storage or transport. Likewise, the draw bar can be folding

around, across the front of the harvester. Chock the main wheels and remove the pin connecting the drawbar to the ram. Gently swing the drawbar around on the jockey wheel but not as far as to hit the conveyor. Chock in place.

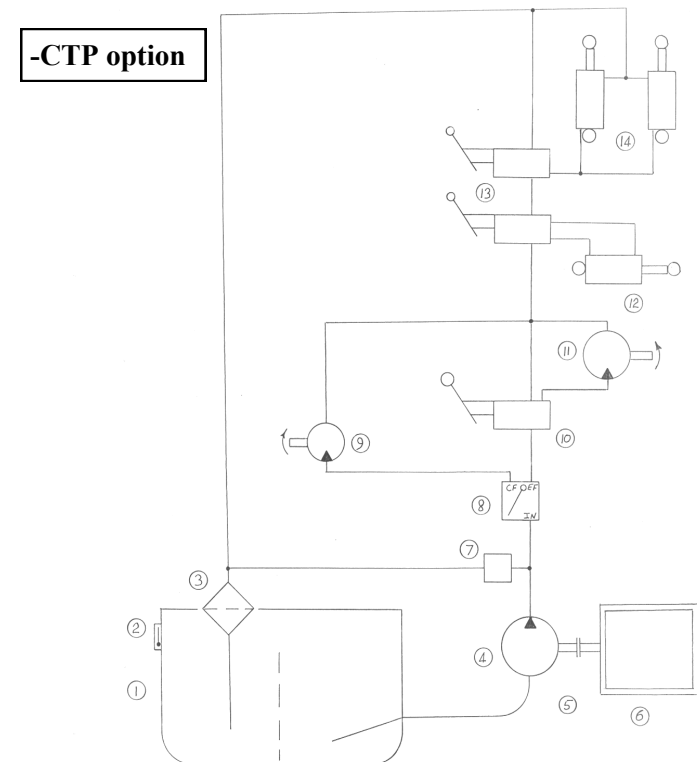
Start Up (for -CTP model)

1. Refuel the engine if required. Check engine oil level
2. Check hydraulic oil reservoir sight gauge. Oil should be approximately 1/2 way up the sight gauge with the conveyor resting on its support strut
3. Remove the cover off the cutter bar
4. Ensure only the operator is near the harvester
5. Ensure the conveyor and flow control levers are set as shown in the picture:-



Hydraulic Circuit Diagram

1. Reservoir
2. Sight gauge; level/temperature. NOMT-LG1T
3. Filter / Air Breather; Fairey Arlon TTF-40. Replacement element, Oil PXX1A-10, Air 84.33.176.01
4. Pump, Lamborghini. MLPD/G205C
5. Shaft coupling / bell housing (HC-R62 insert)
6. Engine, Robin EX27, 9HP
7. Relief valve; EVMP10V2. Set on max 158Bar (2300 PSI)



Attach filter servicing guide here

Every 50 hours

- Sharpen cutter blades as required.
- Remove and clean air filter. This is part of the oil filter on top of the reservoir (see attached leaflet on page 17)
- Do engine 50 / 100 / 200 hour etcetera, servicing - see page 9 of engine handbook
- Lubricate the finger adjusting lead screw thread with a dry lubricant stick.
- Check and adjust conveyor chain tension (evenly on both sides). Should be about 30mm sag in top length of conveyor.

Every 250 hours

Do 50 hour servicing plus:

- Replace Hydraulic filter element
- While filter is apart check internal magnet for contamination build up. Some is normal but if an abnormal amount occurs it is an indication that something in the system is wrong and a failure could occur. Once evaluated, wipe the magnet clean with a clean cloth. Reassemble the filter.

Every 2000 hours

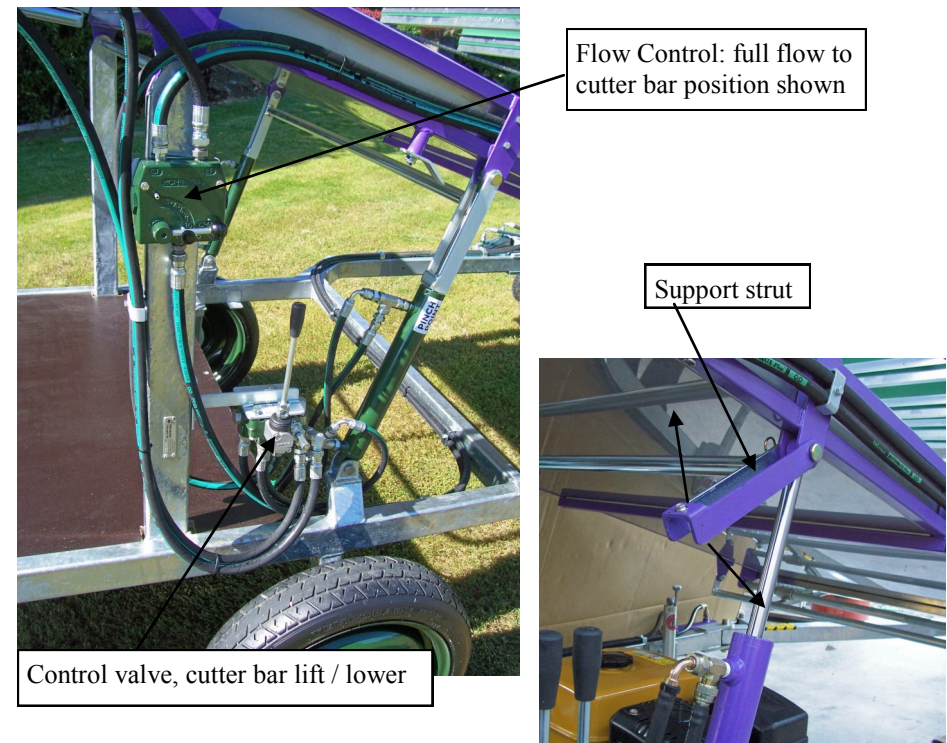
Do 250 hour servicing plus:

- Drain oil tank and dispose of waste oil at a recycling centre. Remove tank lid and clean inside of tank until it is absolutely clean. Refill with new ISO 46 hydraulic oil

For spare parts or assistance please contact Harvester Concepts Ltd

6. On the engine; set the fuel cock to “Open”, when the engine is cold, the choke “ON” and apply just a little throttle
 7. Pull the pull start chord
 8. When the engine fires carefully reduce the choke as required
 9. Let the engine warm up for a minute**There are 2 engine stop buttons - one on the engine and another adjacent to the conveyor control valve.**

When positioning the harvester and using the drawbar and cutter bar height controls, the engine need only be run at 1/3 throttle setting



Operation

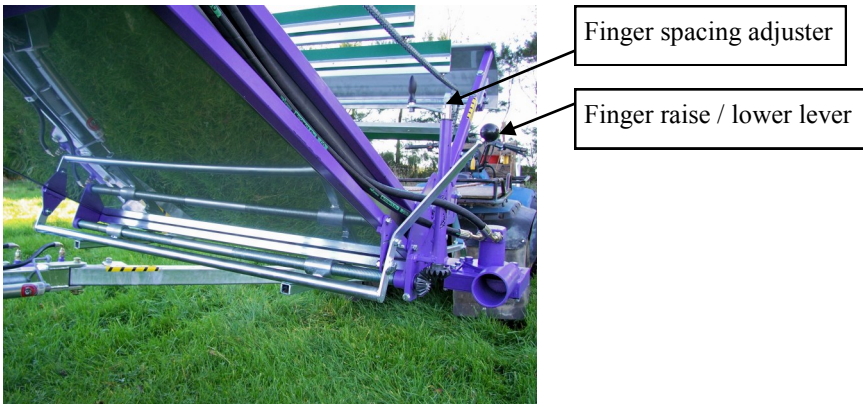
For the –CTP model it is normal for the operator to stand beside the harvester to adjust the controls however some can be operated from the rear platform.

For the –CT model the controls are as shown:-

Warning: ensure people are clear of the machine when operating the controls - there are several pinch areas which can cause injury!

The **draw bar** can be moved to offset the harvester from the towing vehicle. This is useful to

- Align the harvester on the crop rows when the towing vehicle has limited sideways movement.
- Drive the towing vehicle down the middle of the rows and use the drawbar to align the harvester on the crop rows
- When there is limited room at the ends of the rows (headlands) the drawbar side shift can be used to assist turning the harvester
- To position the harvester behind the towing vehicle when travelling or passing through gateways.



tied on or removed.

The drawbar can be stowed in a transport position—reverse of assembly—see page 4 and 5.

Maintenance

Before use (Daily):

- refuel engine and check its oil level
- Check system oil reservoir oil level
- Ensure tyres are inflated correctly
- Grease the cutter bar gearbox and conveyor bearings (2 pumps of grease gun to each nipple. Use a general purpose or food grade grease)

After use:

- Wash down the harvester as required
- Spray the cutter bar with a light corrosion preventing food grade oil (☼). Fit the protective cover.
- Inspect for oil leaks and rectify any.
- Inspect and replace nuts on any loose conveyor paddles.

Before Storage:

- Ensure machine is dry
- Spray chains, hinge points etc with oil as per (☼) above.
- House harvester or cover to keep the weather off.
- For long storage periods, drain the fuel tank and run the engine until it runs out of fuel. Jack the harvester up and place on blocks so the wheels are off the ground

After Initial 20 hours

Carry out 50 hour servicing plus;

- Replace hydraulic oil filter
- Carry out engine service (see page 9 of engine manual)
- Check for loose nuts and bolts

The Towing Vehicle

This can be a ride on mower, ATV or tractor. With small vehicles do not tow the harvester at speed, up or down slopes or on hills. A larger towing vehicle will be required in these situations.

The ultimate drawbar height is 450mm. Different heights will result in a sloping rear deck.

The Jockey Wheel

The jockey wheel supports the harvester when there is no towing vehicle connected to the drawbar. The harvester can also be manoeuvred on the jockey wheel (**Be careful** - it can be damaged if overloaded, especially if wheel is extended a long way!).

A bar on the side of the jockey wheel mount is pulled out allowing the jockey wheel to rotate. Release the lock bar to allow the wheel to lock in position. **Caution!** The jockey wheel handle should always be left in a position where it will not foul on the conveyor frame as it is raised or lowered!

Travel

When the harvest is finished, the controls should be returned to their “start” positions. Reduce the engine speed to a fast idle.

The fingers can be removed but if they are left on the harvester be careful they do not contact the towing vehicle in all draw bar positions or when turning sharp corners!

Raise the cutter bar up sufficiently so that the conveyor support strut can be positioned over the lift rams. Unclip the strut from the conveyor frame and position over the ram as far as it will travel. **Caution:** keep your fingers clear. Lower the conveyor slowly so the strut rests on the top of the ram cases.

As required, the drawbar position can now be operated and finally, the engine stopped.

Ensure nothing falls off the harvester i.e. spare collection bags. If transporting on a trailer or truck the collection bag frame should be

Note: Monitor the crop lifters to ensure they clear the drawbar and towing vehicle when turning or operating the drawbar side shift.

WARNING:- When raising and lowering the cutter bar ensure the drawbar is positioned to clear the fingers.

When operating the **Cutter bar raise / lower control**, move the control lever slowly!

Initially the cutter bar should be raised to allow the support struts to be removed and stowed against the conveyor frame.

WARNING:-With the fingers attached the cutter bar cannot be fully lowered. For young plants or when cutting below 300mm is required the fingers should be removed. This is a reversal of the assembly procedure.

The cutter bar height may require regular adjustment to achieve the optimum harvest result.

Although the main height adjustment is on the harvester if the towing vehicle has a 3 point linkage drawbar (some tractors) then the towing vehicle operator can also fine tune the cutting height by adjusting the tractor drawbar height. However this also adjusts the whole harvester (cause the deck to tilt) so be careful and only do small adjustments from the mean cutting height initially set on the harvester.

The **Fingers** are lowered by moving their operating lever rearwards. The fingers should always be raised for reversing, travel or when manoeuvring at head lands

The fingers should be spaced apart to suit the crop or plant size. As a rough guideline, when harvesting Lavender the finger spacing should be the width of the base bush (width of bush after pruning). When adjusting the finger spacing some side loading will build up

on the fingers. To relieve this, raise and lower the fingers off the ground every few seconds. Obviously this is best done before starting a row but small adjustments are possible during the harvest. When manoeuvring the fingers should be raised by rotating the lift lever clockwise and locking in this position (Detented)

Note: Be gentle with the harvester. It is not a heavy weight machine. If things don't operate easily don't force them!

After the start up procedure the **Controls** should be adjusted as follows to commence harvesting:-

1. Rev the engine up to half throttle. Later the engine speed will need to be adjusted again
2. Unlock the screw knob and rotate the flow control clockwise. This will start the cutter bar. Rotate until a suitable cutter speed is achieved. It needs to be fast enough to cut the crop easily without being too fast to cause unnecessary wear and tear.
3. Lower the conveyor control lever at top of conveyor .
4. The engine will need to be throttled up or down to achieve the desired speed for the conveyor which is the ground speed of the harvester during harvest (approx 3.5 kph - a slow walking pace). Fine control of the conveyor speed can be achieved by adjusting the flow control— considering the cutter bar speed at the same time. Lock in place with screw knob.

Note: At any time the conveyor can be stopped by raising it's control valve lever.



To achieve a good harvest it is necessary to balance

- Finger spacing (width of base bush)
- The cutter bar height (low enough to get cuttings off fingers)
- Ground speed (if in doubt, try speeding up!)
- Conveyor speed (ground speed or slightly faster)

Some experimenting may be required to achieve the correct balance, especially on different age / size of crops.

The operator will normally stand on the rear platform during the harvest. He should

- communicate with the towing vehicle driver to stop / start as required.
- Monitor the alignment of the harvester on the crop row and advise the driver and/or adjust the drawbar position.
- Adjust cutter bar height as required, especially if plant size alters
- Compress the cuttings down into the collection fadges (**Good idea to wear protective clothing to prevent Bee stings! Keep clear of the conveyor. If a tangle or clogging occurs - stop the conveyor and switch off the engine before attempting to clear it**)
- When the fadges are nearly full signal the driver to stop. Leave the conveyor running until it has cleared all the product, then stop the conveyor. The engine can be throttled back and cutter bar stopped too. Remove the fadges and place them to one side of harvester. **DANGER: Be careful not to contact the fadge holding pins!** Storage for spare fadges is on the deck just behind the power pack. When fitting fadges, fit over the side and rear rails first, then centre rail and lastly push flap over front rail.