

# HT-KumaP-24VDC Harvester User Manual



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# **HT-KumaP –24VDC Harvester**

## **Introduction**

Congratulations on the purchase of your *Harvester Concepts Ltd HT–KumaP Harvester*. This machine is of high quality and will reward you with reduced effort and greater efficiency in your harvesting.

Learning to operate your *HT–KumaP* won't take long. You will soon find it to be an invaluable tool.

## **Important Safety Note**

Read and understand all the instructions before using the *HT-KumaP*

- The HT– KumaP should only be used for the purposes for which it was designed. Use it for no other purpose (e.g. it is not a grader blade or battering ram!). We have manufactured the HT-KumaP using quality materials and manufacturing techniques however if faults do occur please have them corrected before you use it.
- Please read this instruction book before use and retain it for future reference.
- It requires only one person to operate the HT-KumaP - keep all others away!
- Immediately after turning the power head off, fit the cutter bar cover. It should be removed last, before restarting the power head.

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## **Specifications**

Cutting height (cutter bar above wheel ground level): 40 to 400mm  
without bag dragging on crop. (optional 40 to 600mm)

Cut width:- 800mm (optional 1200mm)

Weight, dry:- 90Kg (optioned Kg)

Wheel track:- mm (optioned 1390 - 1430mm)

Dimensions:-

Ready to use:- 1390mm max. width (optional 1560mm)

2300 long over wheels and control handle

Crop lifters extend length to 2890mm

Height typically 1100mm (variable)

For Freighting:- In crate:-

Approx Kg (optioned approx. 220Kg)

x x mm = approx m<sup>3</sup>

(optioned, 1760 x 1680 x 855= 2.52 m<sup>3</sup>)

## **Conditions of Sale and Guarantee**

Your *HARVESTER CONCEPTS LTD* product is guaranteed to be free from defects in materials and/or workmanship under normal use and service for a period of 6 months from date of initial purchase.

*HARVESTER CONCEPTS LTD'S* liability and obligation is limited to problems which *HARVESTER CONCEPTS LTD* acknowledges to be defective under the guarantee conditions either to

- the free replacement or repair (where practicable) at the *HARVESTER CONCEPTS LTD*

premises of any parts returned within the guarantee period

- or shipment of replacement parts to the customer, as mutually agreed to.

Supply of non standard parts or services from other than *HARVESTER CONCEPTS LTD* are not covered under the guarantee conditions unless prearranged, in writing, with *HARVESTER CONCEPTS LTD*

Shipment of product to *HARVESTER CONCEPTS LTD* is the consumers responsibility and cost Guarantee conditions are void for any of the following reasons:-

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Accident damage or vandalism

Modifications or unauthorised repairs to the product or its components

Where component "seconds" have been supplied

Normal wear and tear

*HARVESTER CONCEPTS LTD* cannot be held liable for any damage caused to people or other property during use of the product or as a result of any defect or malfunction of product or components supplied by *HARVESTER CONCEPTS LTD*. Use of the product is solely the users responsibility. Other losses such as delays in work, incorrect or misleading information, omissions and errors, *HARVESTER CONCEPTS LTD* is not liable for.

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## **Notes**

Your harvester is an HT-KP800-24VDC S/N KP 1645

## Roller

This is ideal for harvesting right down to ground level. It is used for crops such as leafy lettuce, salad crops etcetera.



When you wish to use the roller option, remove all equipment off the front of the harvester including the wheel / leg assemblies.

Remove the pin on the RH roller leg, then supporting the harvester weight remove the LH pin. Raise or lower the harvester until the correct cutting height is obtained and reinstall both pins.

You may also wish to fit the bin holder option for these crops.

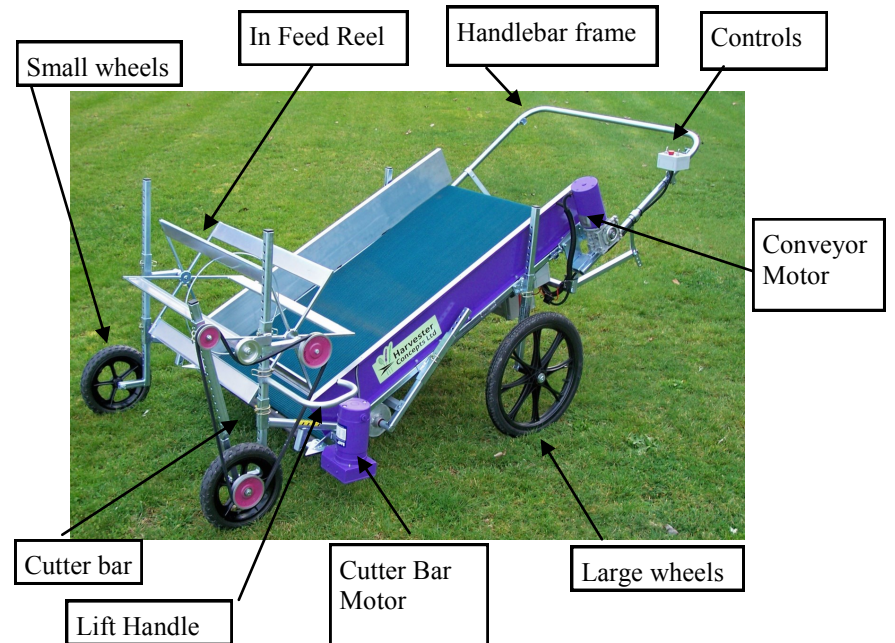


## Your HT-KumaP-24VDC Harvester Consists Of:-

- Handlebar frame & lift handle
- Conveyor and cutting head assembly
- Two large wheels, small wheels / mounts
- Collection bag, one (or bin option)
- HT- KumaP instruction book

### Optional

- Collection bags / bins
- Travel wheel
- #1200 cutting width
- Crop lifters
- Roller
- Infeed Reel
- Collection tray/ bin holder
- Full width Lift Handle
- Side shift for crop lifters



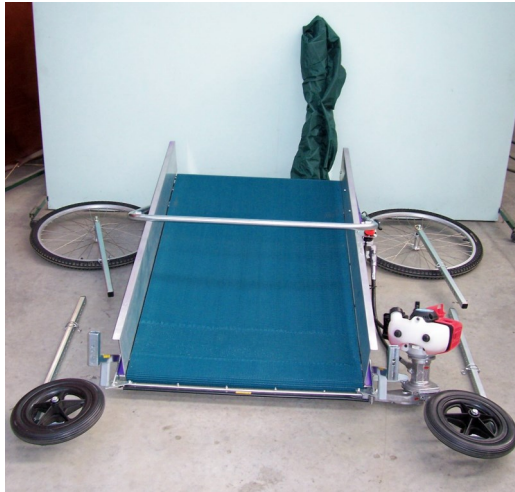
## Uses of the HT—KumaP

It's uses are about as varied as there are different crops. However some main uses include

- **General Trimming.** Pruning crops or shrubs to height
- **Herb Harvesting.** the HT will straddle the row to be harvested, cutting the crop to a uniform height and placing the trimmings in the collection bag
- **Taking Cuttings.** Cut and collect cuttings from beds ready for pricking out
- **Clean Up.** Cutting rank grass or collecting up surplus vegetation

## Assembly

- Unpack the harvester ensuring you receive all the parts and that they have not been damaged in transit.
- Layout the components on the ground in their rough position.
- Fit the handlebars and bin /battery holder - install bolts to



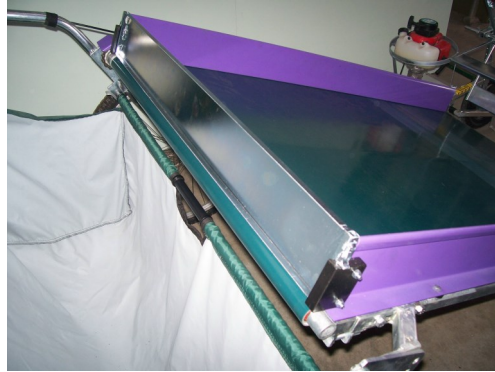
## High Rise

Longer legs can be supplied allowing the HT-KumaP to cut higher than the standard 400mm.



### **Removeable Top Fence**

Used mainly on the HT-Cress.  
Used when the cut crop is hand gathered for bundling or packaging.



### **Wheel Fence**

Used on field type crops where crop snagging around the wheel can be a problem i.e Pasture trial blocks



### **Wind Shields**

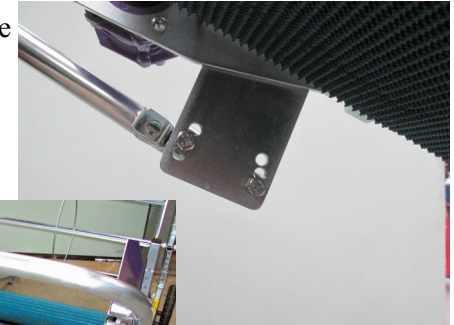
Help prevent wind blow as crop drops into collection bag / bins. Removable, one fitted each side. Weighted at bottom edge / independent of collection bag



### **Wind Cover**

The see through mesh cover prevents the cut crop being blown off the harvester by wind. Can be fitted in 2 positions depending if the in feed reel is fitted or not. Second picture shows wind shields fitted as well but they are not required unless the wind is severe (time to stop!)

hold them in a suitable position.



- Lift the Rear end of the harvester and insert the rear wheel legs into their holders. Retain with lynch pins

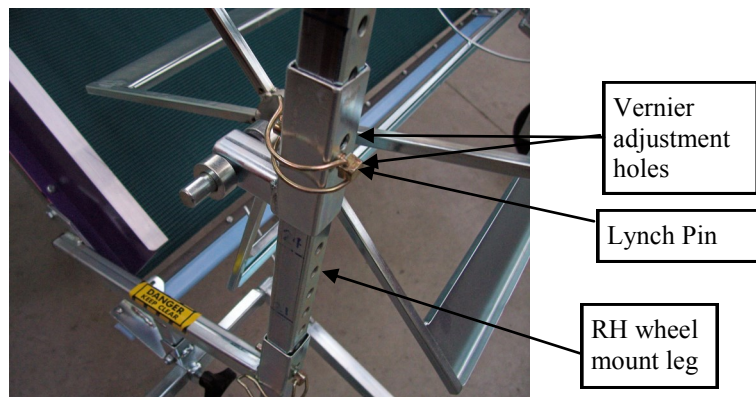
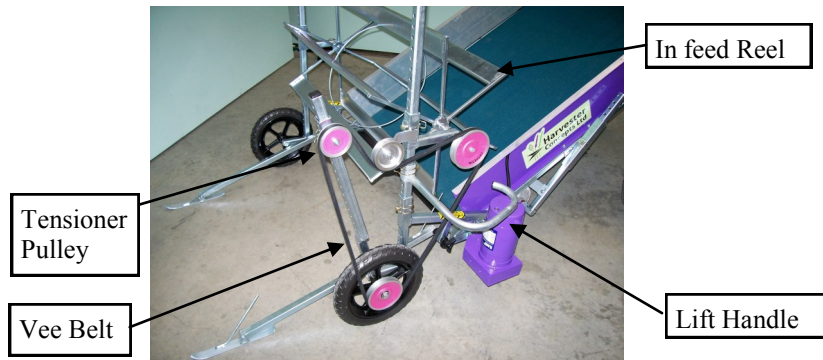


- Lift the front of the harvester and install the front wheel legs into their holders. If the In Feed Reel option has been supplied the "Vee" shaped leg is fitted into the Left Hand side holder (as viewed from the rear)



RH Leg mount

- When adjusting the machine height a 25° to 30° conveyor angle should be aimed for. This ensures the optimum cutting geometry is retained while allowing the collection bag to clear the crop, all without too steep an angle for the cuttings to travel up



The bin holder takes 2 Recrate 47 or 75 size bins. Adjustments are provided, down each side of the tray, to achieve the optimum tray / bin positions.

**Lift Handle,**

Used for lifting the front of the Harvester. It fits into the front legs, as shown, and is retained by a lynch pin. Reposition as required. Also acts as protection for the engine.



**Full Width model**

As above but is retained by nyloc nuts. Can be left in place if it doesn't interfere with the crop. Reposition as required.



**Transport Wheel**

When moving some distance between harvests an optional travel wheel can be fitted. This allows your harvester settings to be retained. The travel wheel is simply plugged into the quick release fitting on the LH front wheel mount (modified). This raises the cutter bar well above vegetation and allows easy manoeuvring. If more ground clearance is required the LH wheel is adjusted down.



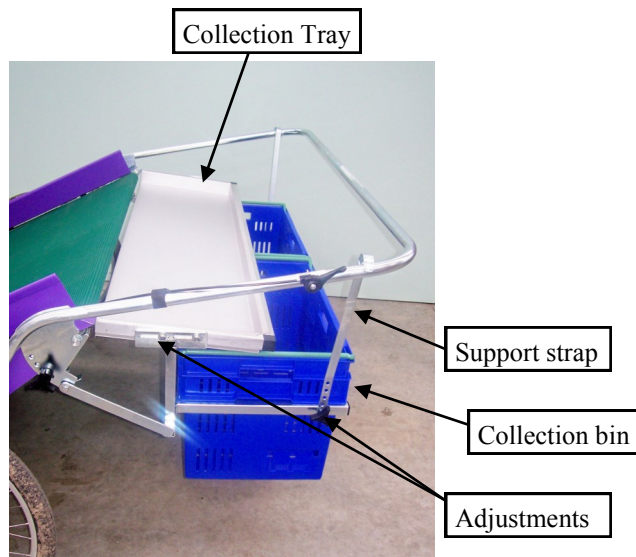


quired, the collection bag can be fitted over the top of the bin holder.

### **Collection Tray / Bin Holder**

This is used when the operator requires to hand gather or bundle the cuttings and manually place them into a collection bin. It is usually used in conjunction with the in feed reel.

The cuttings come off the conveyor and as they arrive on the collection tray the operator gathers them up. Depending on the operation and number of workers the harvest may be near continuous or it may be a series of small forward movements followed by bundling operations.



- Fit the lift handle to the front LH wheel mount leg and lynch pin in place for ease of lifting the front of the harvester around or in a position to protect the motor

Where the in feed reel option is supplied:-

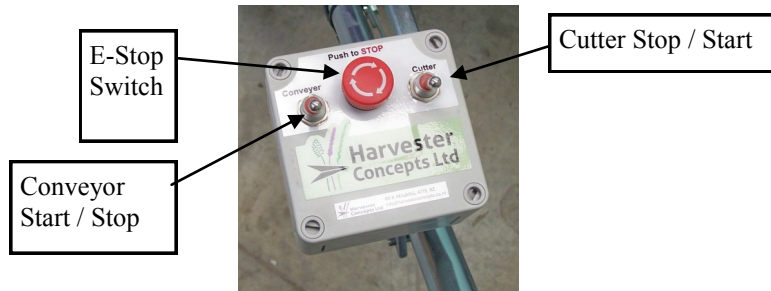
1. With a person on each side of harvester, evenly slide the reel assembly down over the wheel mounting legs and lynch pin at a suitable height. Ensure the same height is selected at each side. In use, a suitable height is when the cuttings are brushed nicely onto the conveyor. The reel should contact the top 1/3 of cutting—the longer the cutting, the less it needs to contact
2. Fit the Vee belt as per the drawing and tension lightly by sliding the tensioner pulley upwards and lynch pinning in place – see picture on previous page. An extra longer A86 vee belt is supplied for use with longer “legs” at the higher settings.

- There are 2 or 4 holes provided on the framework allowing finer adjustments to be made.
- Fit collection bag. The alloy tubes fit in the “U” shaped brackets on the frame. Ensure it is fitted the correct way round. The bag support tubes have spring loaded plungers in their ends. Push the tubes to the LH (engine) side to compress the plungers, for fitting or removing the collection bag.

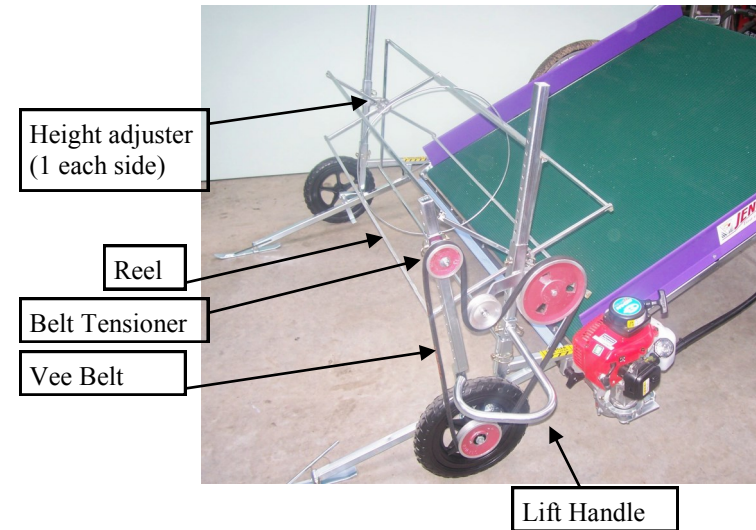
**Dismantling** is in reverse of assembly.

## Start Up

1. With the machine adjusted ready for harvesting, remove the cutter bar cover.



2. Ensure the E-stop switch is turned on (Twist and release—it should pop up to the on position. **Push The E-Stop switch down at any time to stop both cutter bar and conveyor motors**).
3. The e-stop switch and both motor switches should be in the off position and the cutter bar cover fitted before any adjustments are done. **CAUTION:** Do not approach the front of the machine with the cutter bar running. Always switch it off and fit the cutter bar cover.
5. For Pasture measuring applications the collection bag is weighted with lead shot so it weighs 1Kg (KP800). This is for ease of weighing samples. For access the spring loaded plunger can be removed for adding / reducing weight as required.
6. When manoeuvring or pushing the HT-KumaP some distance, you may prefer to raise the front end off the ground by pushing down on the handle bars. To get the handlebars at a comfortable travelling height the rear wheel heights can be adjusted to suit—quicker than adjusting the handlebars.



### **To Adjust:-**

Slacken belt tensioner (the vee belt can remain in place unless the reel is being totally removed). Holding the reel nearer the pulley side, remove the height adjusting pins and slide the reel to its new height setting. Reinstall pins ensuring reel is level, and tighten tensioner.

**Note:** For low reel or cutting heights the crop lifters may have to be removed or the lifter tine bent out of the way of the reel.

To remove, slacken belt tensioner, remove belt, remove height adjusting pins and lift off reel. Fitting is in reverse but take care not to lose mounts and to fit them the correct way around.

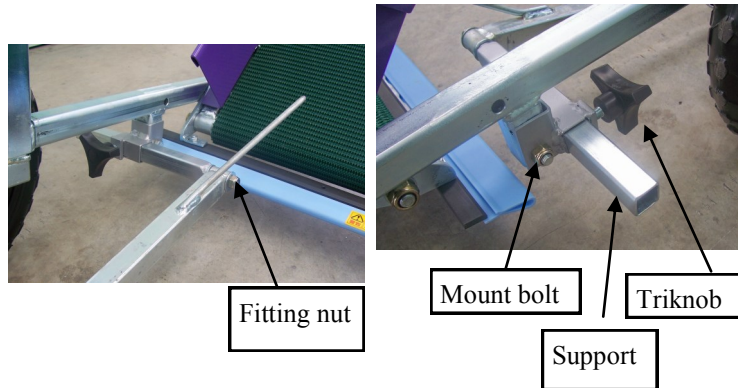
### **Bin Holder**

Holds the bins, Recrate 47 or 75's

On the HT-KP-24VDC the bin holder is part of the battery holder. Hence it is not removable. However, if re-

## Crop Lifter Side Shift

These are made to suit the application but standard adjustment is 140mm each side. For larger side shift, a second set of longer supports are supplied.



The lifter retainer only works when the crop lifter is adjusted fully outwards (do this when you wish to lift the front of the harvester). To convert from the fixed fitting to side shift, the bolt, spacers and triknob need removing and the arm fitted up to the side shift assembly and secured with the fitting nut.

If the HT-KumaP is a high rise model then the crop lifter will be an extending model as they will need to be lengthened when the harvester is raised high. To lengthen, simply push in the nib spring found on the outside face of the lifter arm and slide the arm to the position required.

## In Feed Reel

The reel ensures the crop is pushed onto the conveyor and is not lost over the front of the cutter bar. It also lays the crop onto the conveyor roughly in the same direction which is required if hand gathering or bunching the cuttings.

## Battery Charging

A charging port is mounted on the Left Hand side of the harvester.

A special 24VDC charger is supplied with the harvester. Read its instructions before use.

LED Indicator

Charging Port

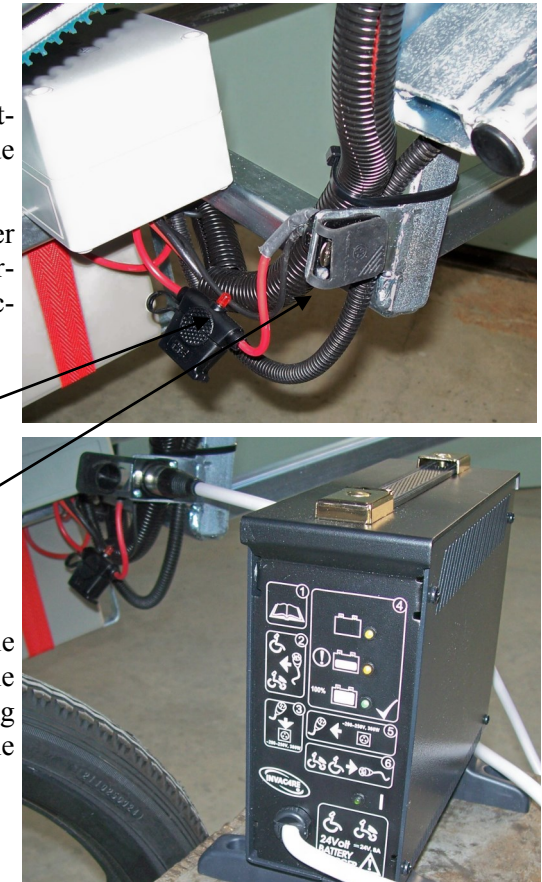
As required, when the batteries run low or at the end of the days work, plug in the charger to the charging port.

## Fault Finding

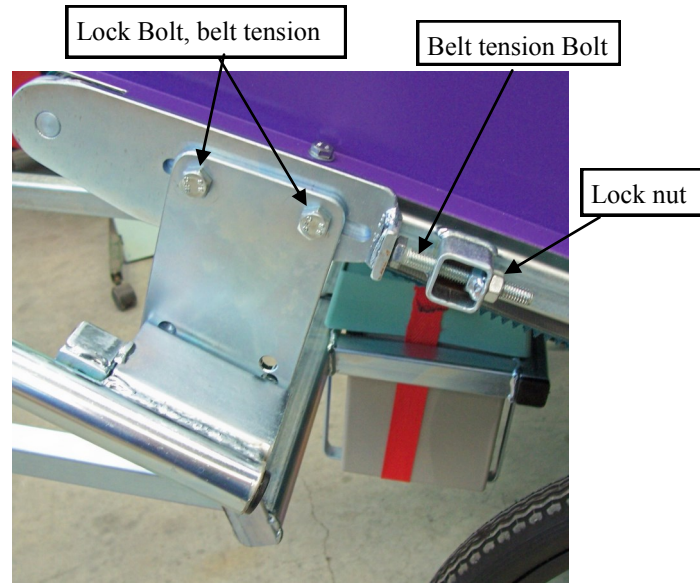
Neither motor will operate:

- Check the e-stop switch is in the on position (up)
- Check batteries are charged
- Check the circuit breaker on the Left hand battery. Press the pin on the end of it to reset it, then try restarting each motor

Conveyor not driving correctly



- Conveyor belt too tight. It should only be tight enough to grip on the drive roller without slipping.



Remember that there is a belt tensioner on each side of the machine. Both tensioners must be adjusted evenly - use a ruler. To adjust—release lock bolt and adjust tension bolt accordingly. Retighten lock nuts and lock bolts and then adjust chain tension.

- Conveyor belt loads up / doesn't track correctly—it moves to one side. The belts now have a tracking strip on them but they can still load up or become stressed if not tensioned correctly
- uneven belt tension. Belt will usually move towards the tightest side—slacken it off (see above).
- Build up of material on rollers. Slacken belt tensioners and remove belt (remove handlebars, RH conveyor fence and slide belt off RH side).

## Options

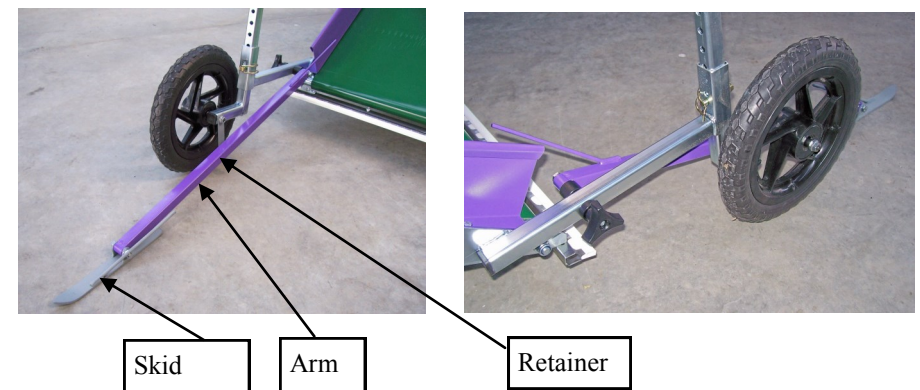
### Crop Lifters:

The two crop lifters are handed, with the tines pointing inwards, towards the conveyor. Installation is a simple case of placing the bolt through the lifter arm, through the larger spacer, through the main harvester chassis, the thin spacer and secured by the triknob.



A retainer, fitted at the wheel mounting nut, supports the crop lifter when the front of the harvester is lifted for turning corners etc. The retainers also prevent the crop lifters dropping onto the cutter bar.

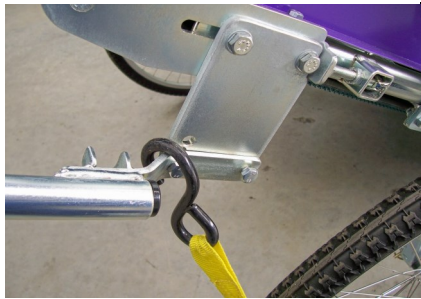
**Note:** If the wheels / retainers are removed for any reason the crop lifters should first be removed to avoid any possibility of damaging the cutter bar.



## Transporting

When transporting the Harvester it does not have to be dismantled. It can be secured on a tray or trailer using tie downs from appropriate points as shown in the pictures over page

Freighting on the back of a utility vehicle is preferred. The HT-KumaP is very light and if transporting on a trailer it is not heavy enough by itself to make the trailer springs work i.e. it will get badly shaken about. On rough road / tracks this could cause structural damage. One solution is to put an extra weight on the trailer as well as the harvester so the springs actually work!



Rear tie down point

Front leg—use bolt or pin through leg for the tie down to pull against



If the reel is fitted wrap the tie down around the mounting bracket as shown.



If you require further assistance or spare parts, please call *Harvester Concepts Ltd*

## Maintenance

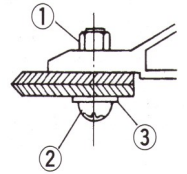
- Wash down the HT-KumaP harvester after use. Avoid directing pressurised water at any electrical components. Only wash enough to remove dirt. Over washing could induce corrosion. Sealed bearings are utilised but water under pressure could penetrate them.
- Check the cutter blades for looseness. If necessary adjust as follows.

Loosen nut (1)

Tighten screw (2) and turn back 1/2-3/4 turn

Tighten nut (1)

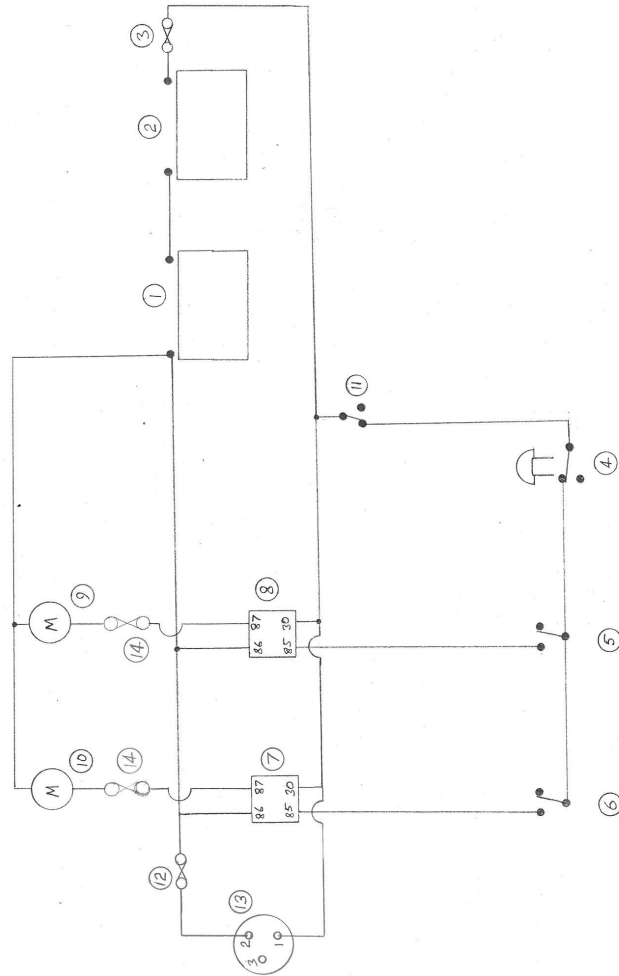
Lubricate blades, start motor and run blades for 1 minute. Turn the cutter motor and E-Stop switches off. Carefully touch each nut (1) in turn. If temperature moderate, clearance is good; too hot to touch - readjust turning (2) back a little and re-test.



- The cutter bar should be lubricated with a food grade lubricant whenever refuelling and before storing. Silicon lubricants can be applied to hinge points, sliding areas etcetera. Lubricate the cutter bar whenever refuelling- use Ochiai original grease.
- Lubricate grease nipple on the cutter bar gearbox.
- Sharpen the cutter bar if required. (Rarely required)
- The collection bag should always be emptied, washed if necessary and allowed to dry

## Wiring / Component Diagram

### Cutter bar and conveyor circuits



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### **Key:-**

- 1 / 2 Battery 12VDC, 33Ahr #PS12330
- 3 Circuit Breaker, 60 Amp. # 8567182
- 4 Master E-Stop Switch. #188-9179
- 5/6 Switch SPST #1138734
- 7/8 Relay 24VDC SPNO #9913793
- 9 Motor, Cutter bar. #EBEMPM4-7172509 Series 4 1750 RPM 24VDC
- 10 Motor / gearbox, conveyor. Transtechno EC250.24 D63 B14
- 11 Safety bar micro switch #206-5395
- 12 Charge fuse, 7.5 Amp blade style
- 13 Charge port #128-0896 + cover #500-8670
- 14 Fuse

### **Preventative Maintenance**

You will become reliant on the harvester to do its job and if a breakdown was to occur you could find yourself in an awkward predicament. We recommend regular maintenance to help avoid breakdowns.

As well as the maintenance on the previous page we recommend:-

- If used regularly, at least annually, (Heavy use every 4 months) stripping and cleaning out the reciprocating gearbox at the end of the cutter bar. Replace any worn parts. Preload the housing with some grease but not too much or it can jam the drive.
- Check cutter bar bolts for wear and replace nuts, bolts and washers as required
- Eventually the blades will need replacing, probably due to wear in the bolt slots or breakage—often due to cutting wire or other contaminants.

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