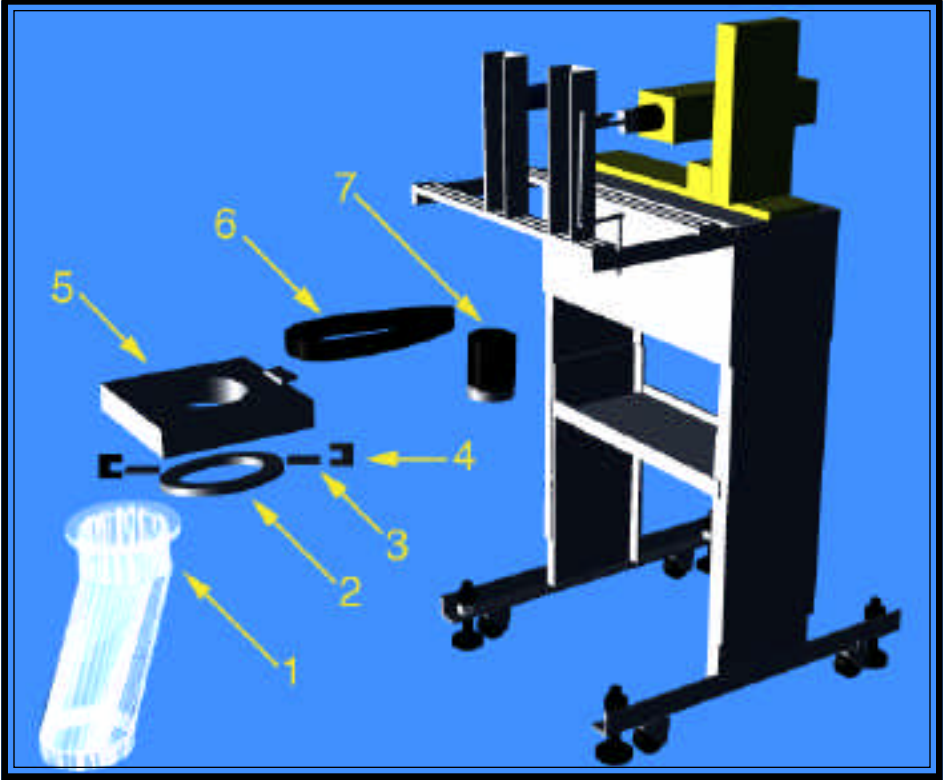


# KAWAGUCHI K-CUT 520

## SORTER INSTALLATION MANUAL



1/05/98



# SAFETY PRECAUTIONS

## HAZARD

**Improper grounding of this equipment could result in a risk of electrical shock**

### PREVENTION:

- This product must be grounded to avoid the possibility of electrical shock. In the event of an electrical short circuit, grounding reduces the risk of electrical shock by providing an escape wire for the electric current.
- This equipment comes with a blue and white power reducer/surge protector box that should be used as the robots power source.
- The wall outlet that you use with the included power reducer/surge protector must be properly installed and grounded in accordance with all local codes and ordinances.
- If the cord or electrical connections become damaged, then call a qualified electrician or service person to make the necessary repairs.

## HAZARD

**Moving parts can cause harm to operators and passersby**

### PREVENTION:

- Only trained personnel should operate and adjust the robot.
- All personnel should stay clear of the robot during operation.
- During operation and programming all personnel should stay clear of the pneumatic functions, particularly the cutting devices.
- Guards or diverters should be set into place to disallow the opportunity for plastic parts to 'fly' out and hit passersby.
- Frequently check all bolts and screws on the robot and fixtures to ensure that they stay tight.
- Perform regular maintenance.

**Follow all OSHA, federal and local ordinances required for this equipment.**

# COMPONENTS

## Pre-assembled

1. One clear acrylic diverter and 8 hex bolts
2. One acrylic funnel with a metal extension and two hex bolts
3. One stepping motor
4. One drive belt
5. Two end of stroke sensors

## Separate

1. One power cord extension
2. One bundled set of four connector cords
3. One controller unit (with 4 screws)
4. One controller chip
5. One On/Off toggle switch (with 1 label and 1 bolt)

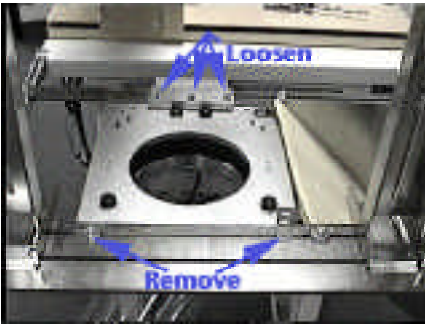
## Concept

Since this is a relatively simple procedure this manual will describe the installation method only and for removal we recommend that you carefully study this small manual before removing. Also when removing be sure to store the components in properly cushioned containers.

When you receive your new sorter device it should be partially assembled. The drive belt, stepping motor, end of stroke sensors and mounting bracket should be already in place. All that you will need to do is bolt it to the tray, install the controller, controller chip, On/Off switch and cords to make it work. You should plan on 30 minutes for installation.

## Mounting the sorter frame

First make sure that air and power are disconnected from the robot. Carefully study the graphic here to understand the orientation of the sorter tray onto the 520's front mounting brackets.

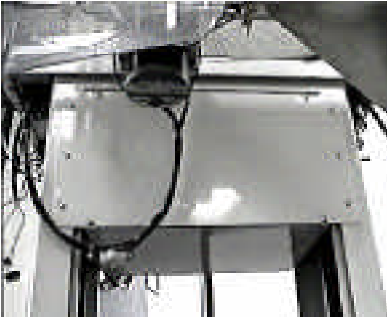


As you face the front of the 520 you should orient the sorter frame so that the 'L' bracket is in back, like the one shown here. Loosen the 3 hex bolts on the 'L' bracket slightly and gently slide the slot over the back of the rear mounting bracket on the 520. When slid all of the way in this should allow the sorter tray to hang from the 520's rear mounting bracket.

Now take the other two hex bolts and with one hand supporting the sorter tray, thread them through the front of the 520's mounting bracket and tighten them into the sorter tray until firm. Now snug the 'L' bracket's bolts. To move the sorter tray from side to side, you should now only have to slightly loosen the 5 mounting bolts and gently push the sorter into position.

## Removing the front panel

You will need to completely remove the front panel to gain access to the controller wiring. The front panel is held in place with 10 screws: 6 on the outside, screwed into the frame and 4 longer ones on the inside connected to the controller box. All of these screws should be removed to gain access to this panel. If after all of the screws are removed the panel will not come off easily it is because of the gasket sticking to the frame. If the gasket is sticking you should gently pry the panel off (the gasket is part of the panel and should come off with it).

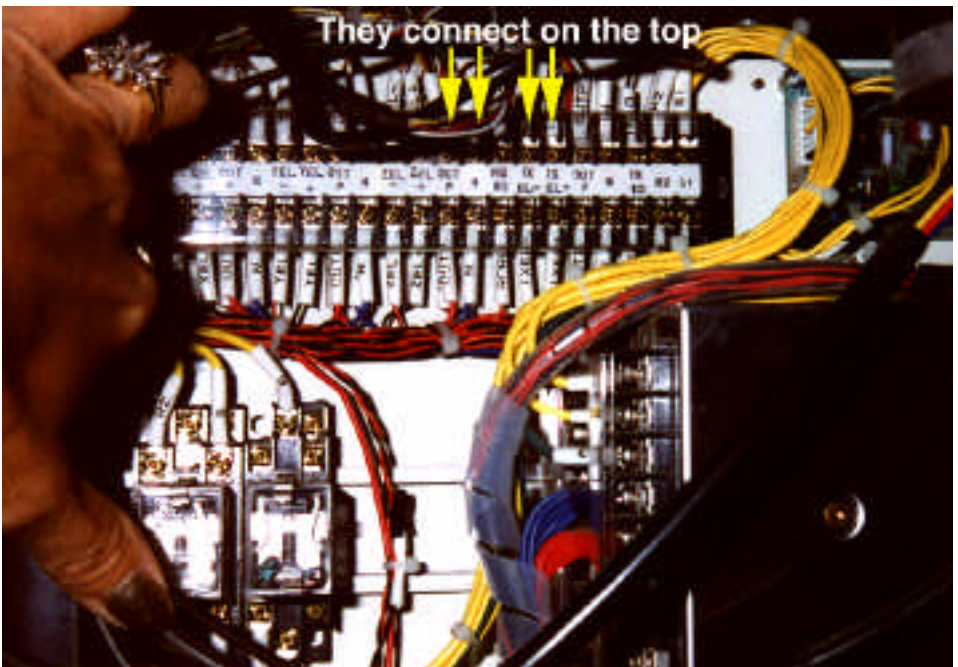


## Connecting the sensor cords

The two end of stroke sensors are located on the bottom of the sorter frame. The cord that connects to them has 2 plugs on one end and 4 wire connectors on the other. The two plugs, plug into the sensors. As you face the 520 [XEL-] plugs into the left sensor and [XEL+] plugs into the right. They plug in with the [N] on top [XEL] in the middle and [OUT P] at the bottom.



With the sensors plugged in you will have to connect the other end to the 520. (Refer to the graphic at the top of this page) First you should remove one of the knockouts on the top left side of the 520. Now thread the end of the cord through the knockout and into the front cavity of the controller box. On the inside front of the controller box is a circuit board across the upper left; this is where the 4 wires will connect.



Remove the clear guard covering the board. All of the wires connect to the top side as you can see in the graphic. The labels on the wires will connect to the corresponding labels on the board. They start at the 6th in from the right, then 7th, then 9th and finally 10th (notice that it skips one). Be sure to firmly tighten each wire into place with out disrupting the other wire's locations. Now replace the plastic guard (we recommend that you leave the front panel off for now).

If necessary, use the following color coding:

**IXEL+** = **Yellow**

**IXEL-** = **White**

**N** = **Black/Green**

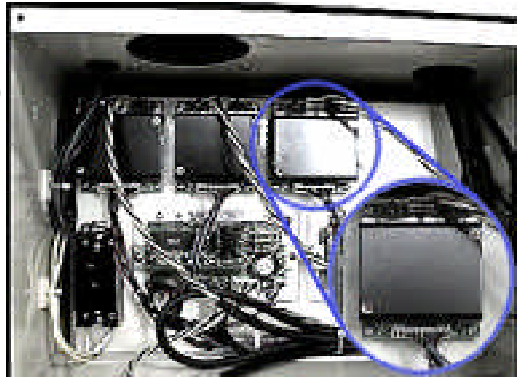
**OUT P** = **Red/Brown**

## Installing the driver

The driver, driver chip, power cord and On/Off switch install in the back of the 520's controller box, so the first thing that you will need to do is open the back panel. To do this you remove the two screws shown in the graphic. Do not remove any other screws from the back panel! If after removing these two screws you still have trouble opening this panel then the gasket is sticking and you may need to gently pry the panel open (as with the front panel the gasket is part of the panel and stays with the door).



Once you have opened the panel you will see two drivers already mounted. Take the sorter driver (IX) and use the included 4 screws to mount it to the back with the 5 prong plug at the top and the larger 12 prong plug at the bottom.



Once you have secured the driver use locate the 12 prong female plug in the bundle below the driver and gently plug it into the driver.

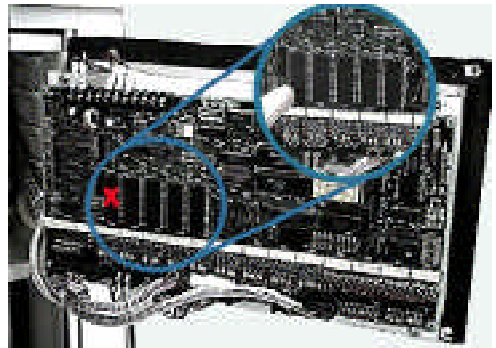
The five prong top of the driver accepts the power cord from the stepping motor on the sorter. Locate the cord from the stepping motor and the extension that plugs into it and connect them. Now you will need to thread this cord through one of the knock-outs on the left of the 520 (left as you face it) and into the back to plug into the top of the controller.



Once you have plugged the power into the controller you will need to secure it so that it can not be tugged out or pulled from the outside. Do this by using a strong plastic tie to secure it.

## Plugging the controller chip into the mother board

The graphic here shows where the chip is installed (or removed) from the mother board (on the back of the door). When installing you will notice that there is an open port on the left. This is were the chip plugs in. When installing or removing this chip you need to take particular care to be sure not to damage the prongs or bend the chip.



It is suggested that you use the correct tool for installing and removing this chip. This tool can be obtained from Kawaguchi America.

## Installing the toggle switch



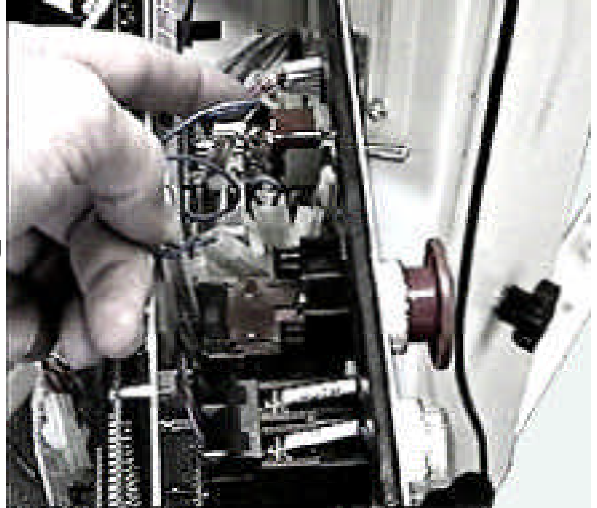
The toggle switch connects onto the back panel as shown in the graphics on this page.

First remove the knockout closest to where the pendant plugs in. Then with the door still open, place the label on the outside and slide the toggle switch from the inside into the knockout. Now take the included

bolt and thread it onto toggle switch. Continue to gently tighten the toggle until it is snug.

Now locate the plug labeled [INI5]. This plug should be just below the installed toggle switch. When you find it, plug it into the toggle switch to complete the sorter install.

Carefully close the back panel (watch for pinched wires) and screw it into place with the two screws. Now take the ten screws for the front panel and with the 6 short ones on the outside and the 4 slightly longer ones on the inside; screw it into place.



Flip the toggle to the 'ON' position, connect power and air to the 520, power it up and test the sorter. If the sorter does not work at this time, turn off the power to the 520 and flip the toggle to the 'OFF' position, restart the 520 and test it again. If you are still having problems with the sorter you should call Kawaguchi America's technical service for help.

## Installing the funnel and diverter

Under the sorter the metal tab should be near to the right sensor. If it is not in the correct position then power down the 520, rotate it to face out to the front and restart the 520 (it should now be near the right sensor). Now with it in the correct position and powered on use the included hex bolts and washers to connect the diverter, facing the right. **!Be very careful so you will not over tighten these as the acrylic will break easily!**

The funnel connects to the top of the sorter tray with the small metal 'L'. The short arm of the 'L' is the bottom and the long part gently connects to the funnel allowing its height to be adjusted.

# THE K-CUT 520 SORTER ONE YEAR LIMITED WARRANTY

Kawaguchi America Ltd. will repair your sorter if it is defective in materials or workmanship. The warranty is good for one year from the date of purchase.

Should you feel that your sorter is defective and want to take advantage of this warranty then contact your nearest authorized technical service representative by either fax, phone, e-mail or mail to inform them of your problem. Kawaguchi America Ltd. will then schedule the proper warranty work necessary to repair your sorter. Kawaguchi America Ltd. will assume the cost of parts and labor involved in repair or replacement cost (the owner will be responsible only for the shipping costs).

This warranty covers only parts or components which are defective and does not cover repairs due to normal wear, misuse, accidents, defective power supply or lack of proper maintenance.

All warranty repairs done to the K-cut 520 must be performed by Kawaguchi America Ltd. or an authorized service dealer. Repairs or attempted repairs by anyone other than Kawaguchi America Ltd. or an authorized service dealer will not be covered by this warranty.

Kawaguchi America Ltd. is not responsible for any costs or expenses of providing substitute equipment or service during periods of malfunction or nonuse.

Some states do not allow exclusion of incidental or consequential damages or limitations on how long an implied warranty lasts; therefore those limitations may not apply to you.

This limited warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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