

# RAISED PANEL MASTER RPM3 & RPM5 MANUAL



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# Safety Rules

As with all machinery there are certain hazards involved with the operation and use. Using it with caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result. If you have any questions relative to the installation and operation, do not use the equipment until you have contacted your supplying distributor.

Read carefully before operating the machine.

1. Keep the working area clean and be sure adequate lighting is available.
2. Do not wear loose clothing, gloves, bracelets, necklaces or ornaments. Wear face, eye, respiratory and body protection devices as indicated for the operation or environment.
3. Be sure that the power is disconnected from the machine before tools are serviced or an attachment is to be fitted or removed.
4. Never leave the machine with the power on.
5. Do not use dull, gummy or cracked cutting tools.
6. Be sure that the keys and adjusting wrenches have been removed and all the nuts and bolts are secured.

# Limited Warranty

New machines and accessories sold by Laguna Tools carry a one-year warranty effective from the date of shipping. Machines sold through dealers must be registered with Laguna Tools within 30 days of purchase to be covered by this warranty. Laguna Tools guarantees all new machines and accessories sold to be free of manufacturers' defective workmanship, parts and materials. We will repair or replace, without charge, any parts determined by Laguna Tools, Inc. to be a manufacturer's defect. We require that the defective item/part be returned to Laguna Tools with the complaint. Any machines returned to Laguna Tools must be returned with packaging in the same manner in which it was received. If a part or blade is being returned it must have adequate packaging to ensure no damage is received during shipping. In the event the item/part is determined to be damaged due to lack of maintenance, cleaning or misuse/abuse, the customer will be responsible for the cost to replace the item/part, plus all related shipping charges. This limited warranty does not apply to natural disasters, acts of terrorism, normal wear and tear, product failure due to lack of maintenance or cleaning, damage caused by accident, neglect, lack of or inadequate dust collection, misuse/abuse or damage caused where repair or alterations have been made or attempted by others.

Laguna Tools, Inc. is not responsible for additional tools or modifications sold or performed (other than from/by Laguna Tools, Inc.) on any Laguna Tools, Inc. machine. Warranty maybe voided upon the addition of such described tools and/or modifications, determined on a case-by-case basis.

Software purchased through Laguna Tools Inc. is not covered under this warranty and all technical support must be managed through the software provider. Software is non-refundable.

Normal user alignment, adjustment, tuning and machine settings are not covered by this warranty. It is the responsibility of the user to understand basic machinery operation, settings and procedures and to properly maintain the equipment in accordance with the standards provided by the manufacturer.

Parts, under warranty, are shipped at Laguna Tools, Inc.'s cost either by common carrier, FEDEX ground service or a similar method. Technical support to install replacement parts is primarily provided by phone, fax, e-mail or Laguna Tools Customer Support Website. The labor required to install replacement parts is the responsibility of the user.

Laguna Tools is not responsible for damage or loss caused by a freight company or other circumstances not in our control. All claims for loss or damaged goods must be notified to Laguna Tools within twenty-four hours of delivery. Please contact our Customer Service Department for more information.

Only **new** machines sold to the original owner are covered by this warranty. For warranty repair information, **call 1-800-332-4094**.



## Noise Emission

### NOTES CONCERNING NOISE EMISSION:

Given that there exists a relationship between noise level and exposure times, it is not precise enough to determine the need for supplementary precautions. The factors affecting the true level of exposure to operators are clearly the amount of time exposed, the characteristics of working environment other sources of dust and noise etc. For example, adjacent machines in other words the level of ambient noise. It is possible that exposure level limits will vary from country to country.

We recommend that you wear noise protection equipment at all times when

## Specification Sheet

Specification	MDM2030-0148	MDM2050-0148
Table dimensions	66" x 12.25"	66" x 12.25"
Cutter capacity	7 Diameter	4 7 Diameter
Spindle diameter X height	1.25 Diameter x 5 adjustable heights	1.25 Diameter x 5 adjustable heights
Spindle speeds	6000 to 80 00 RPM	6000 to 8000 RPM
Motor power	7.5hp 220v 3-phase w/ VFD	10hp 220v 3-phase w/ VFD
Dust collection diameter [hood]	5 inch	5 inch
Machine weight	1400 lbs	1400 lbs
Job clamp	Yes	Yes
Tool kit	Yes	Yes
Compressed air requirement	90 PSI 1 CFM	90 PSI 1 CFM
Maximum material thickness	1.25	1.25
Maximum arch height	2 standard	2 standard
Maximum arch width	24	24

## Receiving Your Machine

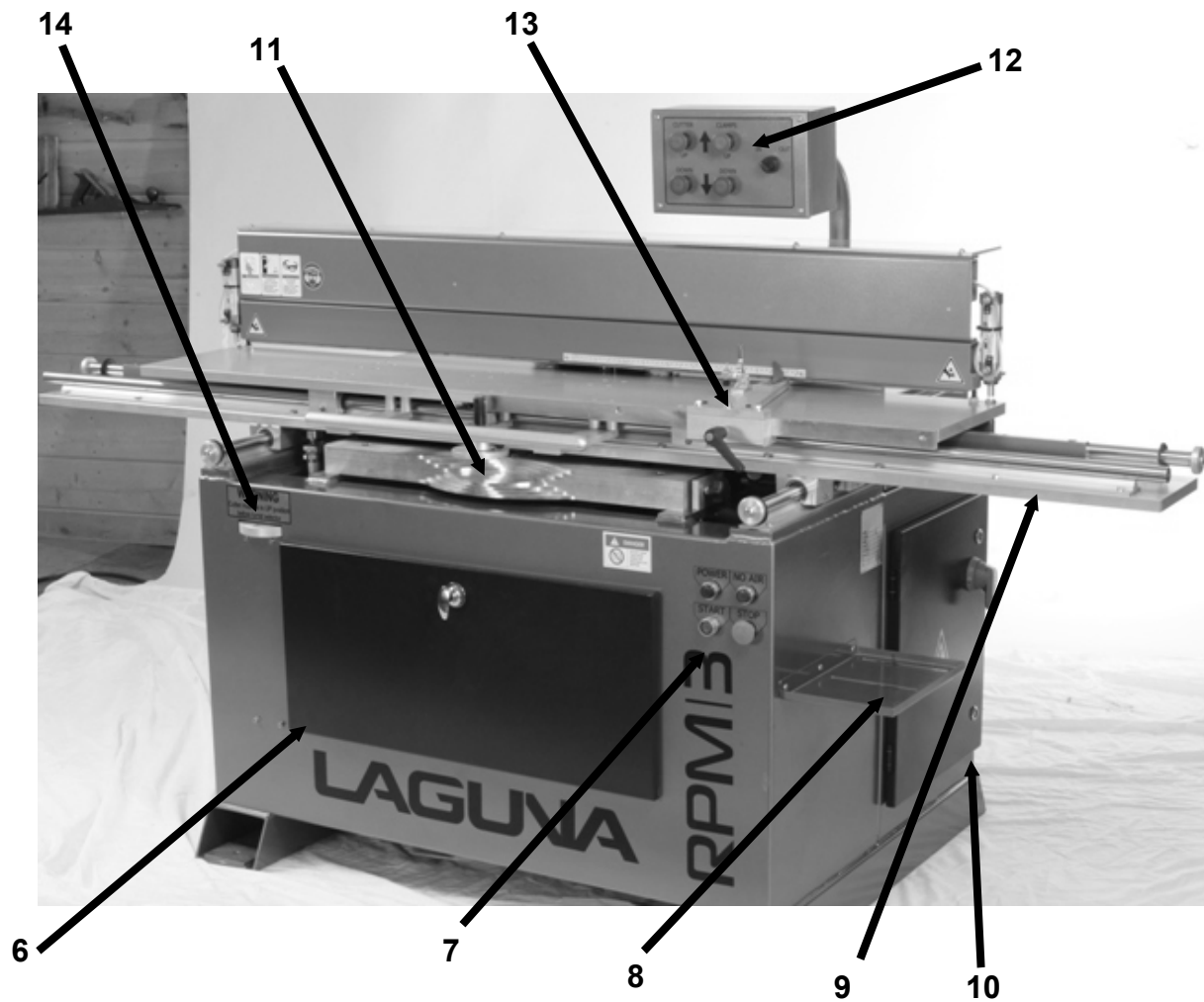
Note. It is probable that a third party will deliver your machine.

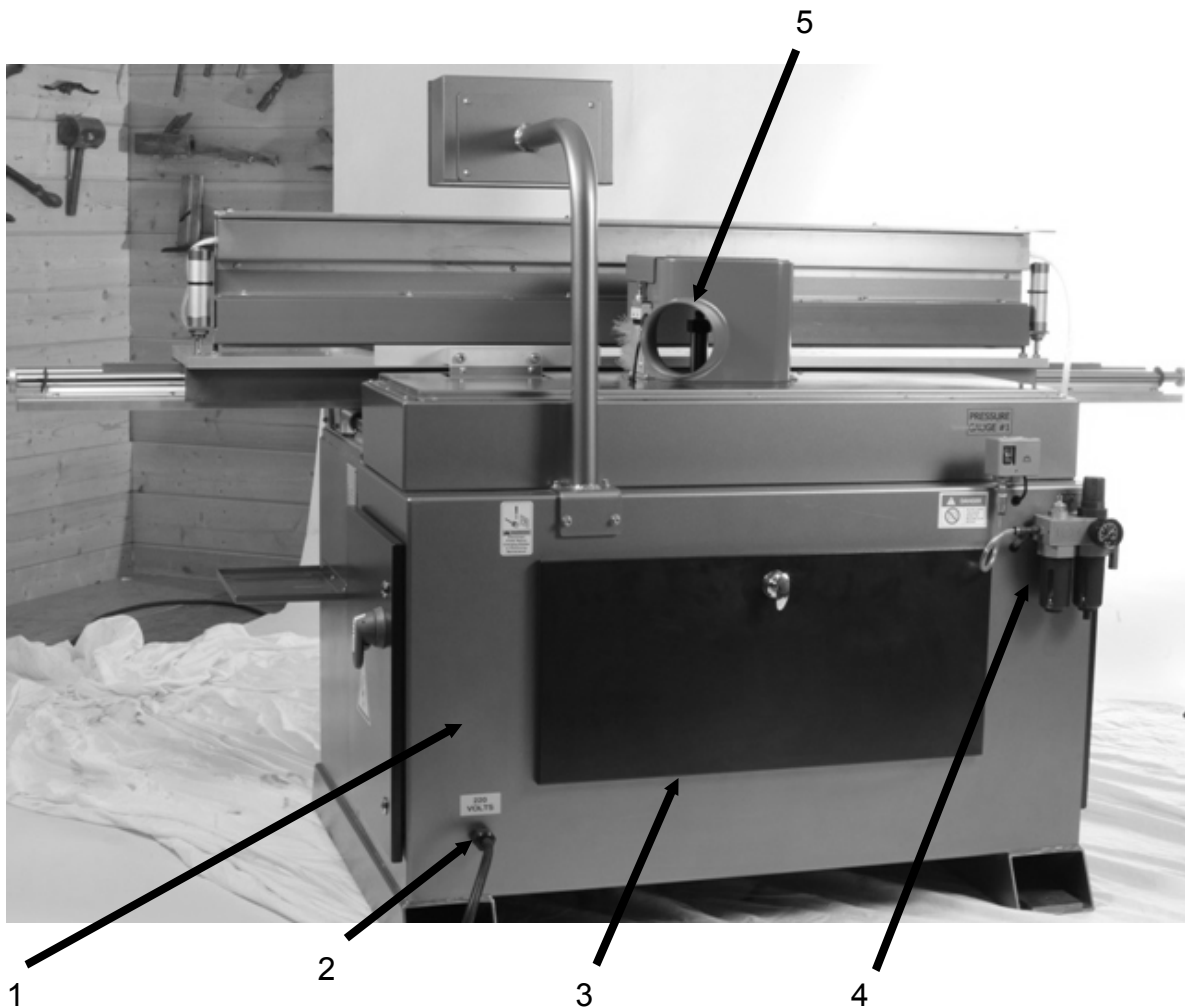
Before you unpack your new machine you will need to first inspect the packing, invoice and shipping documents supplied by the driver. Insure that there is no visible damage to the packing or the machine. You need to do this prior to the driver leaving. All damage must be noted on the delivery documents and signed by you and the delivery driver. You must then contact the seller [Laguna Tools] as soon as practical. If damage is found after delivery, contact the seller as soon as practical.

# Introduction to Shaper

This Shaper is designed to give you years of safe service. Read this owners' manual in its entirety before assembly or use.

## PARTS OF THE SHAPER



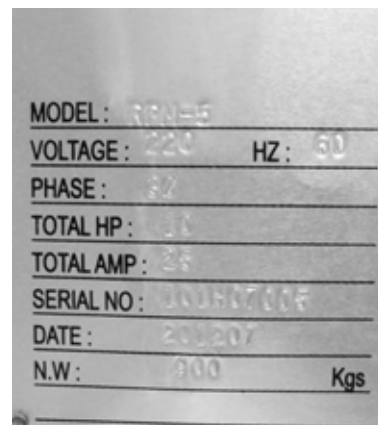


<b>Cabinet</b>	<b>1</b>	<b>Tool tray</b>	<b>8</b>
<b>Electrical connection</b>	<b>2</b>	<b>Sliding table</b>	<b>9</b>
<b>Rear access door</b>	<b>3</b>	<b>Electrical cabinet</b>	<b>10</b>
<b>Air connection</b>	<b>4</b>	<b>Template</b>	<b>11</b>
<b>Dust port</b>	<b>5</b>	<b>Control panel</b>	<b>12</b>
<b>Front access door</b>	<b>6</b>	<b>Fence</b>	<b>13</b>
<b>Power control</b>	<b>7</b>	<b>Turret selector</b>	<b>14</b>

The Machine does not have many parts to assemble. The major parts are discussed in this manual. If you are not familiar with the machine take the time to read this section and become familiar with the machine.

**IDENTIFICATION:**

There is a plate at the back of the machine listing all the manufacturing data including the serial number, model, etc.



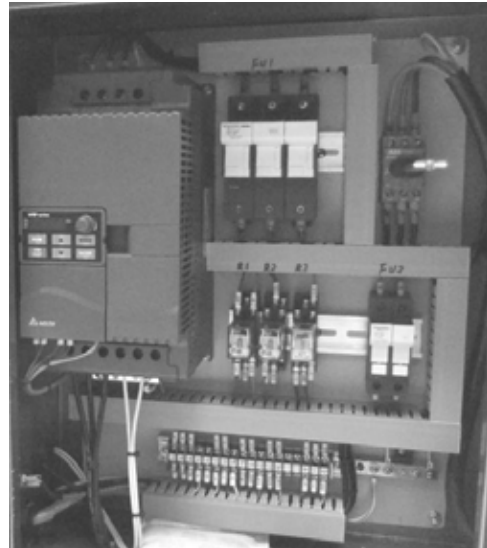


### 1. CABINET

The cabinet has a large footprint and is a welded construction manufactured from heavy gauge steel plate. The cabinet houses all the parts of the machine and the heavy construction ensures that the machine is stable. This weight also helps to absorb any vibration that is produced during cutting.

### 2 / 10. ELECTRICAL SYSTEM

The electrical system consists of an electrical motor controlled by a VFD (variable frequency drive), start switch, stop switch, limit switches, door switch, contactor and internal breaker. No cable or plug is supplied as the length of the cable and the type of plug will be dependent on your installation.



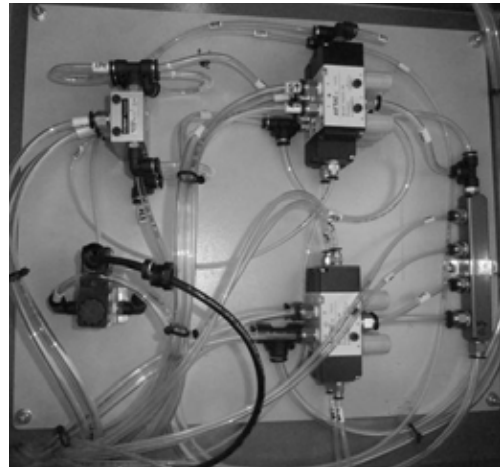
Electrical cabinet

### 3. REAR ACCESS DOOR

The rear access door allows access to the motor and other parts of the machine

### 4. AIR CONNECTION

The pneumatic control system consists of a number of valves and control switches that are located inside the machine cabinet and are accessible if you open the door. A consistent dry clean supply pressure of 6.5 bar minimum is required for the machine.



Pneumatic control system

### 5. DUST COLLECTION

A dust collection port is located at the back of the machine and is 5" diameter. It connects to the bottom of the spindle hood.

### 6. FRONT ACCESS DOOR

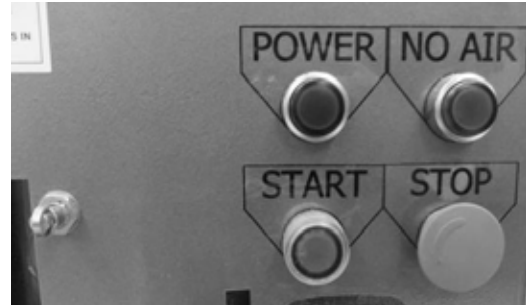
The front access door allows access to the height turret and various switches.



View through front door

7. POWER CONTROL

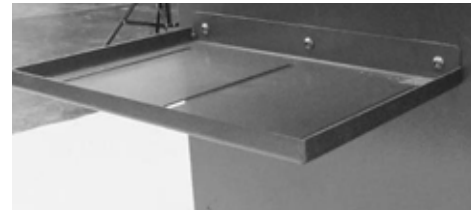
The power control is located on the front of the cabinet and switches the electrical power and air on / off. It is also the location for the start and emergency stop buttons.



Power control panel

8. TOOL TRAY

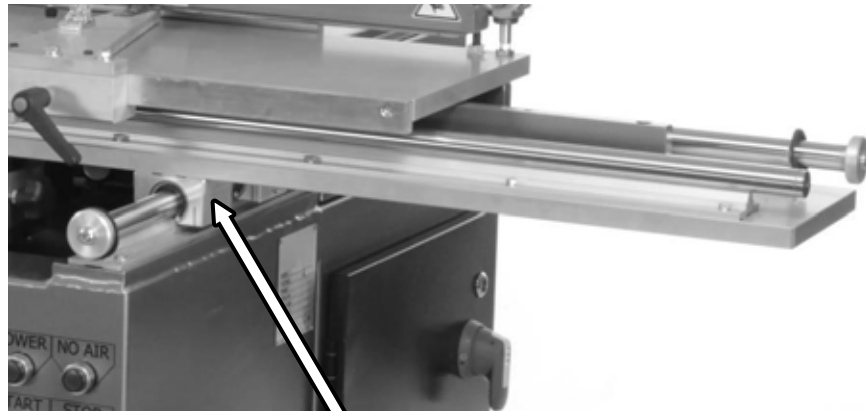
A tool tray is provided on the right hand side of the machine.



Tool tray

9. SLIDING TABLE

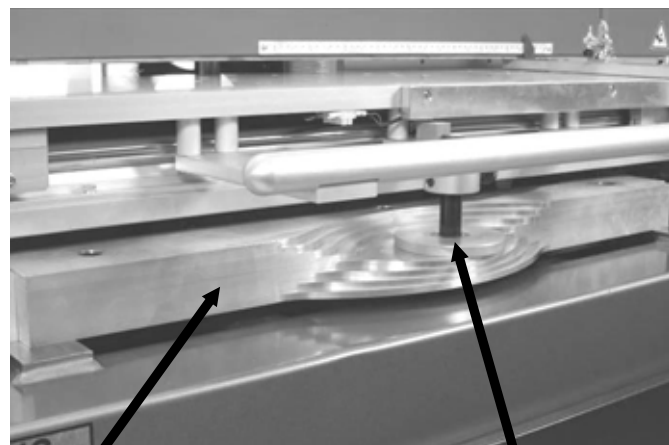
The sliding table is guided by liner bearings both forward / back and left / right.



Sliding table liner bearings

11. TEMPLATE

The template is located on the front of the machine and the job is moved in relation to the cutter head by a follower that guides the sliding table.

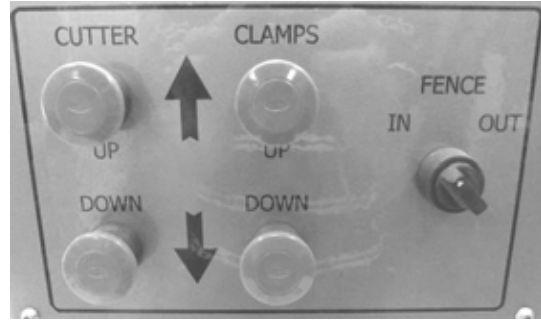


Template

Template follower

## 12. CONTROL PANEL

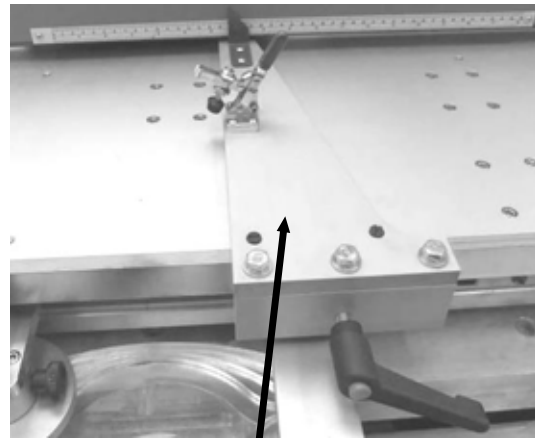
The control panel moves the cutter up / down and the clamps up / down. It also moves the fence in / out and is situated on an arm over the top of the machine for ease of access.



Control panel

## 13. FENCE

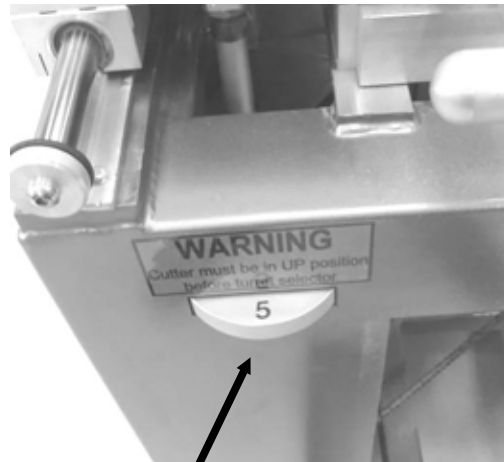
The fence is located on the front of the machine and can be adjusted in relation to a rule located on the overhead clamp. The fence is provided with a clamp to hold a chip limiter.



Fence

## 14. TURRET SELECTOR

The machine is provided with a turret system that is used to set the cutter head to predetermined heights. The turret selector is positioned on the front of the machine.



Turret selector

## Where to Locate Your Machine

Before you remove your machine from the pallet select the area where you will use your machine. There are no hard and fast rules for its location but below are a few guidelines.

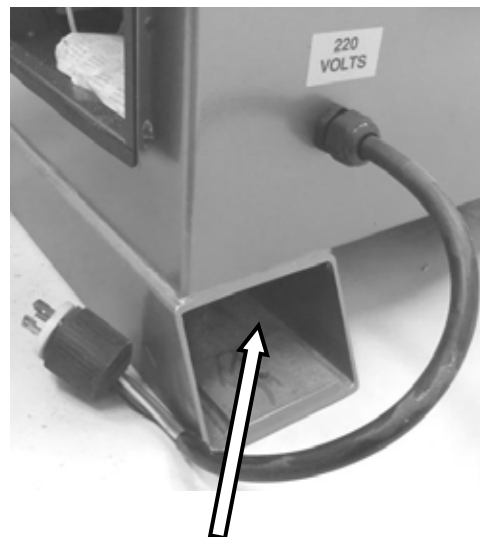
1. Adequate lighting. The better the lighting the more accurate and safely you will be able to work
2. Solid floor. You should select a solid flat floor, preferably concrete or something similar.
3. Close to power source and dust collection.
4. Allow an area for the storage of blanks and finished jobs.

## Unpacking Your Machine

To unpack your machine you will need tin snips, knife and a wrench.

1. Using the tin snips cut the banding that is securing the packing box [if fitted].  
**WARNING: EXTREME CAUTION MUST BE USED BECAUSE THE BANDING WILL SPRING AND COULD CAUSE INJURY.**

2. Dismantle the box or remove the row of screws around the base of the box and lift the box off the pallet. You will need two people to lift the box off the pallet.
3. Using the knife cut the plastic wrap. The parts and accessories that were ordered are in the box.
4. Remove the base mounting bolts that secure the machine to the box [if fitted].
5. It is recommended that the machine be removed from the pallet by lifting it with a hoist or forklift. Remove the pallet and lower to the floor. Slings or fork lift blades should be fed through lifting points.



Lifting point

The machine can be lifted using a fork-lift truck / "SLING" with a minimum lifting capability of 1000 Kg [ 2400 lb]

Note: If you have any doubt about the described procedure, seek professional assistance. Do not attempt any procedure that you feel is unsafe or that you do not have the physical capability of achieving.

# Assembly and Setup

What you will receive with the machine.



1. Tool kit
2. Mounting feet.
3. Leveling bolts.
4. Cabinet keys.
5. Spindle spacers and shims.
6. Spindle wrench.
7. Grease gun

## CLEANING THE MACHINE

Remove the rust protection grease with WD 40 or similar solvent  
It is important that you remove all the grease and re lubricate with a Teflon based lubricant as Teflon has less tendency to attract sawdust and cause clogging.

## LEVELING THE MACHINE

The machine is provided with 4 leveling bolts and 4 mounting feet. Move your machine to its final position and using a spirit level on the table adjust the leveling

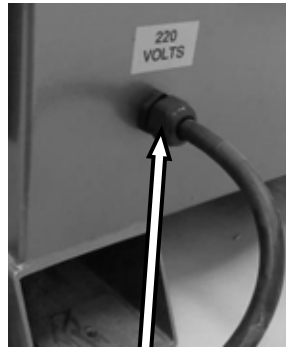
bolts so that the table is level in both directions. Ensure that the machine does not rock.

### ELECTRICAL CONNECTION

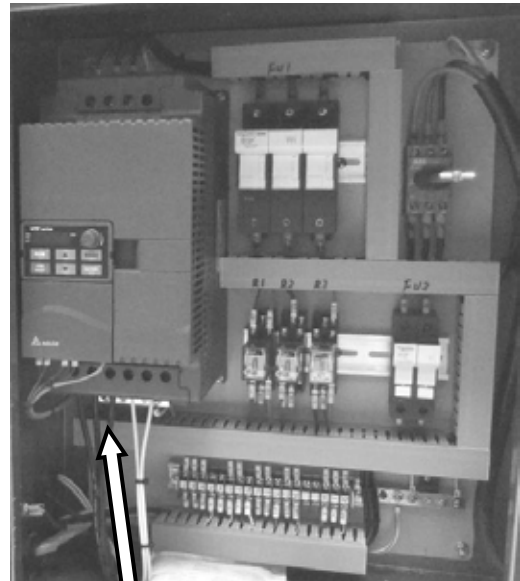
Note. The machine is not supplied with an electrical plug, as the type of plug will be dependent on the installation. A qualified electrician must carry out the electrical installation.

### FITTING THE ELECTRICAL CABLE

The electrical cable is terminated in the electrical cabinet as shown. The electrical cable must be feed through the cable grommet at the back of the machine.



Cable Grommet



Mains electrical termination point

### FITTING THE DUST COLLECTION

The machine is supplied with a 5 inch dust port positioned on the back of the spindle hood. A 5-inch diameter hose needs to be connected to a dust collector with a minimum capacity of 1,000 cubic feet per minute minimum. The stronger the dust collector, the better .



Dust port

Note. Two things are very important to ensure that the machine performs consistently. One is the cleanliness of the machine; the other is a clean, dry air supply. If the dust and chips that are produced by the cutters on the machine are not removed, they will jam or block the various switches and micro-switches. It is therefore important that the dust collection works efficiently and is of sufficient power to remove all the dust and chips from the machine.

### CONNECTING AIR TO THE MACHINE

The input air regulator regulates the air pressure that is supplied to the machine. You will require an air supply that can deliver a constant minimum pressure of 6.5 bar. The input air regulator will need to be adjusted to 6.5 bar once you have connected your air supply to the machine.

Note: No air pipe is supplied, as the length will depend on your installation.

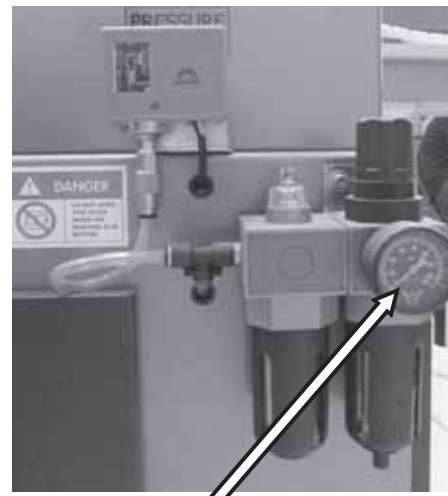
To adjust the air pressure, pull the cap out and rotate until the gauge reads the correct pressure. Once the pressure is adjusted, push the cap in.

Note: An air supply of 6.5 bar minimum is required for the machine. It is strongly recommended that 7 bar be supplied to the machine and that the regulator then be set to 6.5 bar. This will ensure that the machine always has the minimum required air pressure. The input regulator has a moisture trap that must be emptied each day.

Note: It is important that the air that is supplied to the machine is clean and dry. The machine will not perform consistently if the air is dirty, as any dirt will block the valves. Wet or damp air will damage your machine and cause inconsistent performance.

Note: The pneumatic system does not need any type of lubricant. Some types of lubricant can damage the machine and compromise the machine's functions.

Note: During maintenance, always disconnect the air supply.



Air regulator

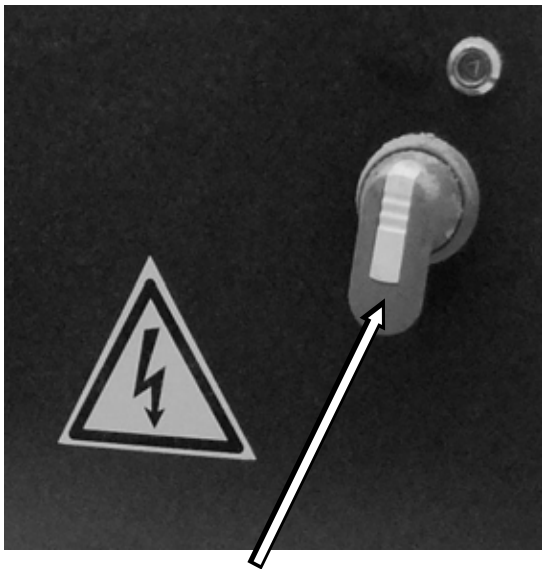
### BEFORE STARTING THE MACHINE

1. Read and understand the instruction manual before operating the machine.
2. If you are still not thoroughly familiar with the operation of the machine get advice from a qualified person.
3. Make sure the machine is properly grounded and that the wiring codes are followed.
4. Do not operate the machine if tired or while under the influence of drugs, alcohol, or medicine.
5. Always wear eye protection, safety glasses or a safety shield, and hearing protection.
6. Wear dust mask, long term exposure to the fine dust created by the machine is not healthy.
7. Remove your tie, rings, watch, and all jewelry. Roll up your sleeves never wear any loose fitting clothing, you do not want anything to get caught.

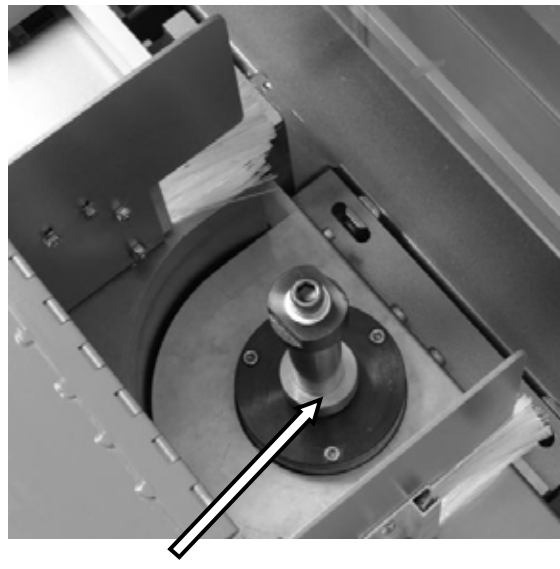


Control Panel

8. Make sure that the guards are in place and use them at all times. The guards protect you from coming in contact with the cutter.
9. Make sure that you use the proper size and type of cutters.



Main electrical isolator



Spindle without cutter fitted

10. Secure the wood firmly with the clamps and feed it into the machine at a moderate speed.
11. Check that all the doors are closed and the panels are fitted. There are micro switches on panels and if they are not fitted and locked in position the machine will not start.
12. Check that the red emergency stop button is fully out. [Twist clockwise to reset].

#### MACHINE TEST

Now is the time to test the machine.

1. Check that the machine is clear of all tools and other loose objects.
2. Check that all the adjusting and locking handles are tight.
3. Check that there is no cutter fitted, it is far safer to test the machine without a cutter fitted.
4. Check that the mains isolation switch is in the on position and that the power indicator light is lit.
5. Start the machine by pressing the green start switch.
6. Check to insure that the spindle is turning counter clockwise when observed from above.
7. Now is the time to check that the safety switches and control switches are functioning correctly before you fit a cutter.
8. With the machine running [no cutter fitted] operate the red emergency stop switch by pressing towards the machine. The motor should have the power removed and slow down.
9. Reset the emergency stop button and restart the machine. With the machine running [no cutter fitted] slowly open the front panel door until the safety switch cuts the power to the motor. Close the door until the motor has stopped.



10. With the machine running, slowly open the rear access door until the safety switch cuts the power to the motor. Close the door until the motor has stopped.
11. With the machine running, slowly open the spindle cover until the safety switch cuts the power to the motor. Close the door until the motor has stopped.
12. If any of the safety switches fails to operate correctly do not use the machine until the fault has been corrected.

Before you cut any wood read the safety rules at the front of this manual

#### FITTING A CUTTER

1. With the power disconnected from the machine.
2. Raise the spindle to the maximum height.
3. Open the spindle hood and remove any spacers on the spindle.
4. Clean both the spacer rings and the spindle shaft as debris can change the installed height of a cutterhead.
5. Select the spacers that are suitable for the cutter head that you are fitting.

Note . Always mount the cutter head as close to the bottom of the spindle as practical, this will minimize vibration, reduces stress on the machine and improve the surface finish of the cut.

6. Fit the cutter head. Ensure that the cutter is fitted for the correct rotation. Note. When fitting the spacers make sure that the security nut is properly fitted and provides clamping pressure on the tooling stack. The security nut ensures that the cutters will not loosen during operation and motor braking.
7. Tighten the lock bolt.
8. Rotate the cutter shaft by hand to ensure that it rotates freely and that the cutters do not contact any part of the machine including the sliding table, hood or clamp.
9. Put the lid back in the closed position. The machine will not start with the cover open as the safety micro switch will not be activated.



Selection of cutters  
[not supplied with the machine]



Cutter spindle

## TEMPLATE FOLLOWER ADJUSTMENT

The template follower guides the table [and job] as it is moved along the template. It has a built in height sensor that changes the fence position as it senses that the follower is raised vertically.

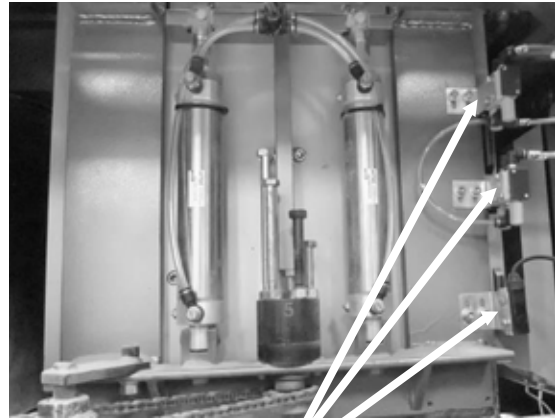
Note. All straight cuts are made with the follower at the max height.

Note. If you are making a cope cut use a backer board that must be thinner than the job being cut or the clamp will not hold the job securely. The backer board should be secured with the small clamp located on the fence on the sliding table.

### NOTE

The backer board is used to prevent blowout on the back of a finished part when making the cope cut. The following is the proper method for making a cope backer board.

1. Cut  $\frac{3}{4}$ " thick board 14" long. Oak or any type of hardwood will have a longer life.
2. The backer board should not be thicker than the parts being cut
3. Trim to 1" wide.
4. Clamp the backer board in the machine and make the cope cut. DO NOT REMOVE THE BACKER BOARD.
5. Stop the cope cutter on the machine with the stop switch.
6. Make a pencil mark across the backer board along the line from the air clamp bar.
7. Remove the backer board and undercut the board  $\frac{1}{16}$ " deep from approximately  $\frac{1}{4}$ " past the line all the way to the end with the cope cut.
8. The air clamp will not touch the backer board now if it is properly undercut and has the width clearance on each side of the air clamp.
9. The backer board is held in place by the toggle clamp on the sliding fence when making cope cuts.

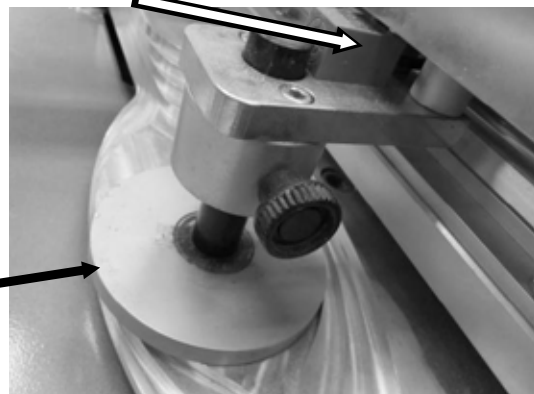


Spindle height sensors

## SPINDLE HEIGHT SENSORS

The machine has an automatic speed selection system. This consists of spindle height sensors. As the spindle height is changed, the sensors are activated and change the speed of the spindle.

Height Sensor



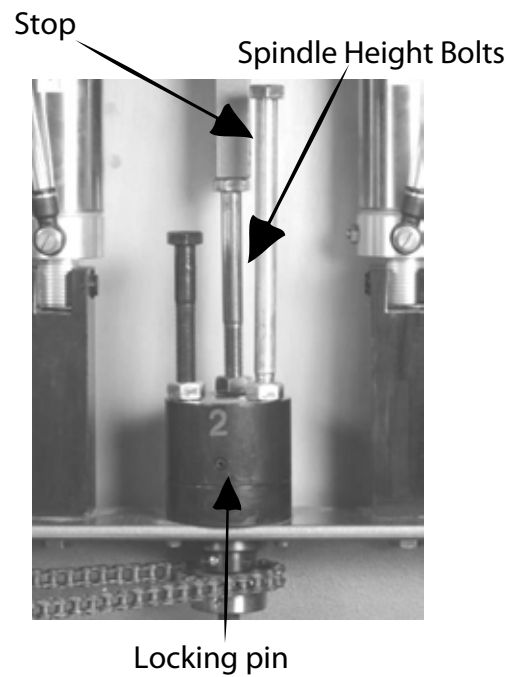
Template Follower

### TURRET HEIGHT ADJUSTMENT

The turret has spindle height adjustment bolts that can be set to suit various heights of cutters. The turret can be removed from the machine to ease adjustment.

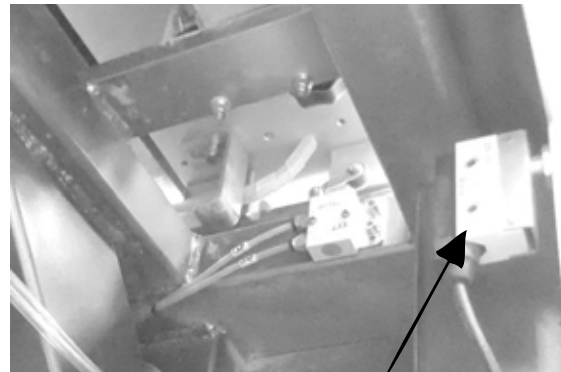
To remove the turret, raise the spindle so that the stop is off of the spindle height bolts.

To adjust the set height, loosen the lock nut and adjust the bolt. Once adjustment has been completed, tighten the lock nut and refit the turret making sure that it is in the correct position.



### ADJUSTING THE SPINDLE HEIGHT

Note. The table must be in the fully forward position prior to moving the spindle height. There is a safety micro switch under the table that must be engaged prior to raising or lowering the spindle.

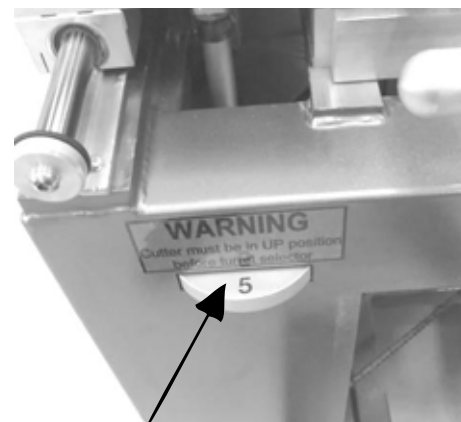


Spindle height safety micro switch

### TURRET ROTATION

To rotate the turret the cutter must be moved to the up position and then once the turret position has been selected move the spindle down onto the turret stop.

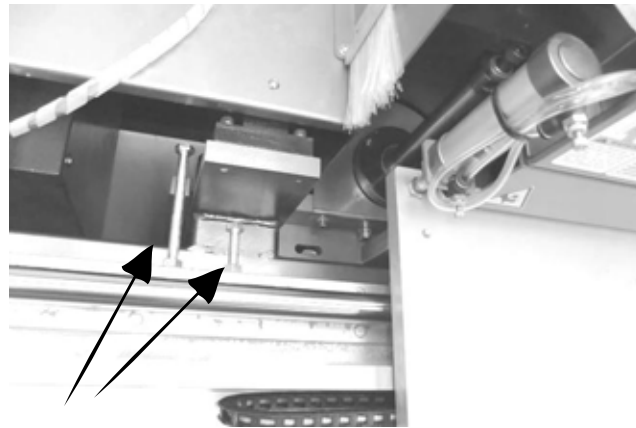
Note. It is not possible to move the turret with the spindle in the down position as it is clamped by the pressure of the spindle.



Turret rotation selector

### TABLE STOPS

There are two sets of table stop bolts that limit the rearward movement of the sliding table in relation to the tooling height. The long bolt is for large cutter diameters and the short bolt is for use with small diameter cutters. These stops are preset from the factory and should not require any adjustments.

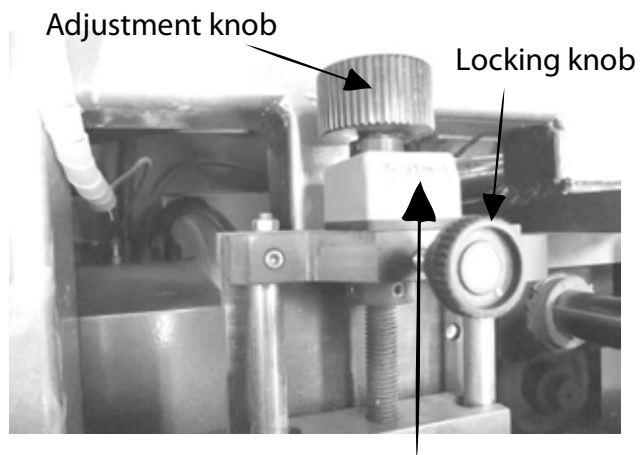


Stop bolts

### FENCE FINE ADJUSTMENT

The fence is adjustable and its position can be moved by losing the locking knob, rotating the adjustment knob and re locking in position. The fence should only be adjusted if needed and after performing test cuts.

Note. The counter reads in metric.



Fence fine adjustment counter

### ADJUSTMENT OF CUTTERS

The final height adjustments for the cutterheads must be done by making test cuts. The cutter height adjustment is set by a combination of spindle spacers and turret height adjustments. It is good practice to save a set of sample cuts once the spindle is properly set to assist in setting the machine in the future. A large spacer between the large diameter panel raising cutter and the smaller diameter stile and rail cutters is used to keep the cutters from contacting the edge of the sliding table.

# Maintenance

All tools and machines require regular maintenance and the raised panel master is no exception. This section details the general maintenance and care of your machine. In general we recommend that you only use a Teflon based lubricant on the machine. Regular oil attracts dust and dirt and the Teflon tends to dry and has fewer tendencies to accumulate dirt and saw dust on your machine.

## FITTING AND ADJUSTING THE DRIVE BELT

1. Disconnect the electrical power and air supply from the machine.
2. Loosen the motor adjusting screw.
3. Remove the old belt and replace with the new belt.
4. Re-tension the belt with the motor adjusting screw.

## WEEKLY MAINTANINCE

1. Check all nuts and bolts are tight
2. Clean the machine and check that the dust hose is clear. Make sure that all moving parts are clean and free from saw dust and dirt.
3. Lubricate all moving parts with a Teflon based lubricant.
4. Wax the table and all none painted parts.
5. Check the drive belt for damage, oil, dirt and cracks.
6. Check that the breaking system on the motor stops the electrical motor in less than 10 seconds.

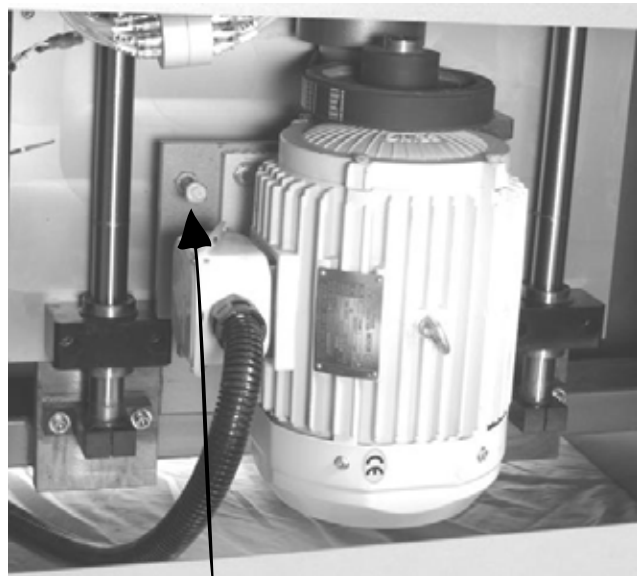
Note. You can only function the break a maximum of 10 times per hour.

## DRIVE BELT

The drive belt should last for many years [depending on the usage] but need to be inspected regularly for cracks, cuts and general wear. If damage is found replace the belt.

## BEARINGS

All bearings are sealed for life and do not require any maintenance. If a bearing becomes faulty replace it.



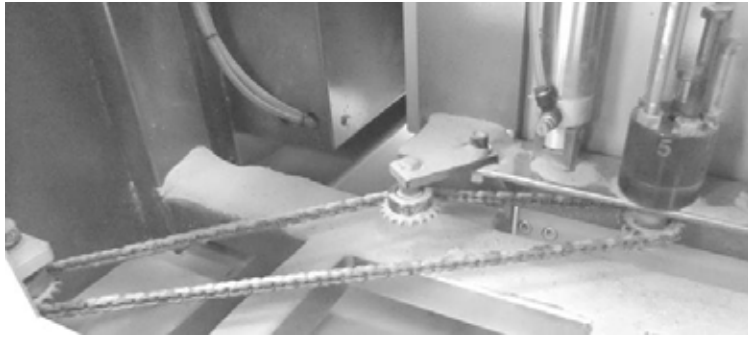
Motor adjusting screw

### TURRET CHAIN ADJUSTMENT

To remove any slack from the turret chain,

1. Loosen the clamp bolt on the chain idler
2. Swivel until the slack is removed.
3. Re-tighten the clamp bolt.

Note. Do not over tighten the chain as it will make moving the turret difficult.



### ELECTRICAL ISOLATION

There is an electrical isolation switch on the electrical control box. This switch activates the main isolator inside the electrical control box. The switch is provided with a lock out / tag-out device which accepts a pad lock for additional safety. It is recommended that this is not relied on and that should you need to conduct maintenance the mains electrical supply is disconnected from the machine.



## Troubleshooting

### POOR CUT

1. Cutter head not fitted to the bottom of the shaper spindle. Reposition the cutter on the spindle.
2. Cutter blades **dull**. Replace or re-sharpen the blades.
3. Direction of cutter rotation incorrect.
4. Over feeding the job. Slow the feed rate.

### MACHINE WILL NOT START

1. Check that the start switch is being depressed fully.
2. Check that the electrical power cord is plugged into the power outlet.
3. Check that the electrical supply is on [reset the breaker].
4. With the power disconnected from the machine, check the wiring in the plug is correct. Check that the rubber insulation is stripped enough and is not causing a bad connection. Check that all the screws are tight.
5. With the power disconnected from the machine, check the wiring to the machine plug is correct. Check that the rubber insulation is stripped enough and is not causing a bad connection. Check that all the screws are tight
6. Check that you have the correct power 220V not 110V
7. Check the earth **ground** wire is wired correctly
8. Check that all covers are closed.
9. Check that the emergency stop switch is in the full out position.

### THE MACHINE WILL NOT STOP

This is a very rare occurrence as the machine is designed to fail-safe. If it should occur and you cannot fix the fault, seek professional assistance. The machine must be disconnected from the power and never run until the fault has been rectified.

1. Stop switch faulty. Replace the stop switch.
2. Internal contactor faulty. Replace the contactor.

### MOTOR TRIES TO START BUT WILL NOT TURN

1. With the power disconnected from the machine. Try to turn the shaper spindle by hand. If the spindle will not turn check the reason for the jamming. Typical reasons may include foreign object lodged in the machine.
2. Motor faulty. Replace the motor.
3. Motor break engaged .

### MOTOR OVERHEATS

The motor is designed to run very hot, but should it overheat it has an internal thermal overload protector that will shut it down until the motor has cooled down and then it will reset automatically. If the motor overheats wait until it has cooled down and restart. If the motor shuts down consistently, check for the reason. Typical reasons are dull cutters, overfeeding the wood, motor cooling fan clogged or faulty, motor cooling fins clogged, brake engaged and excessive ambient temperature.

### SQUEAKING NOISE

1. Check that the motor cooling fan is not contacting the fan cover.
2. Check the bearings.
3. Check the drive belt.

### CUTTER SLOWS DOWN DURING A CUT

1. Loose drive belt. Re-tension the belt.
2. Dull cutters. Replace the cutter knives or have them re sharpened.
3. Feeding the wood too fast. Slow down the feed rate.
4. Oil or dirt on the drive belt. Clean or replace the drive belts.

### CUTTER OVERHEATS

1. Dull cutters. Change the knives or sharpen.

### MACHINE VIBRATES

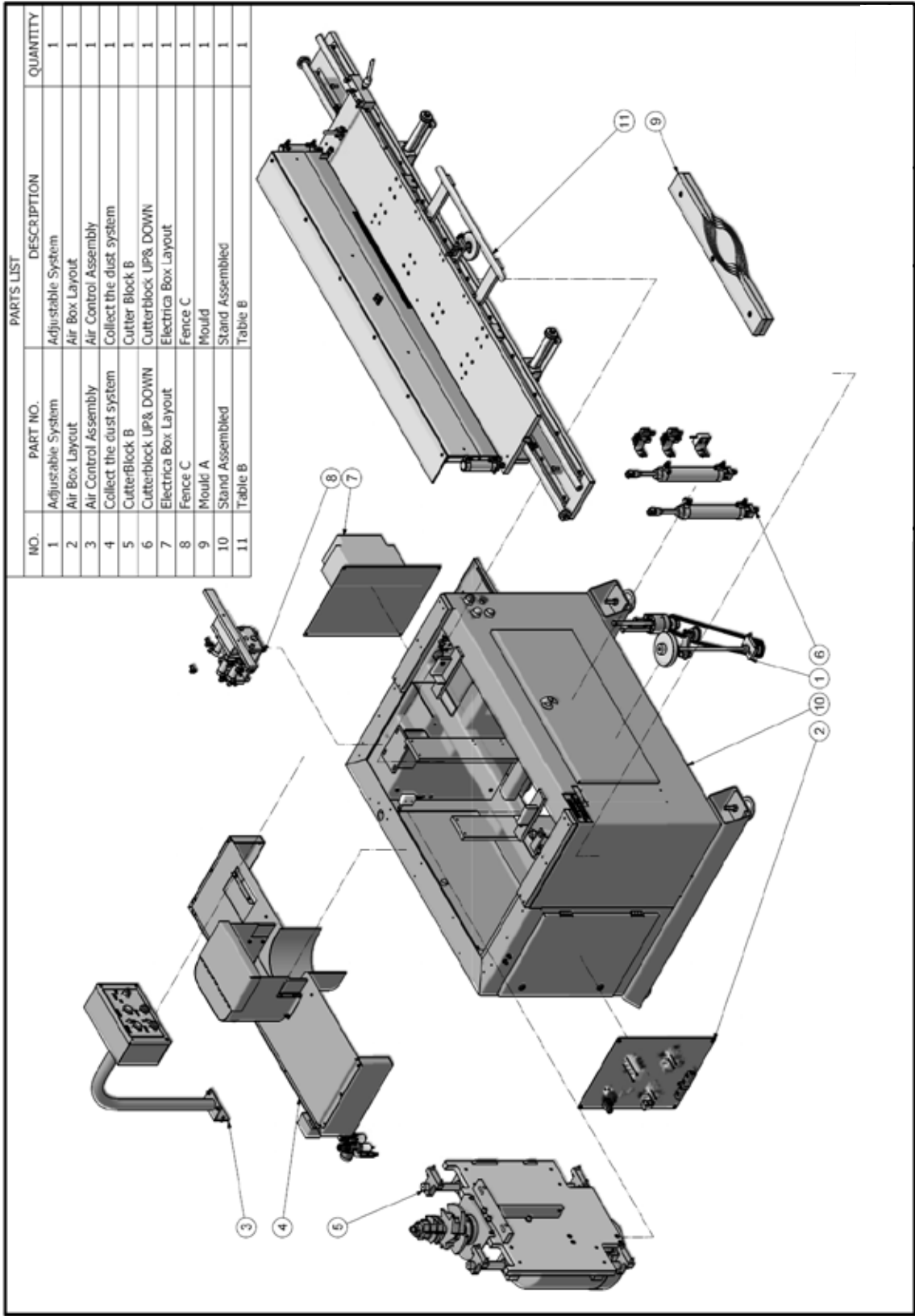
1. Machine not level on the floor. Re-level the machine ensuring that it has no movement.
2. Damaged drive belt. Replace the belt.
3. Cutter head unbalanced.

### POOR DUST COLLECTION

1. Check the capacity of the dust collection system. You need a minimum of 1000 cubic feet per minute at the machine. The stronger the dust collection the better.
2. Check the dust hose is not blocked.
3. Check that the dust collector is not full.

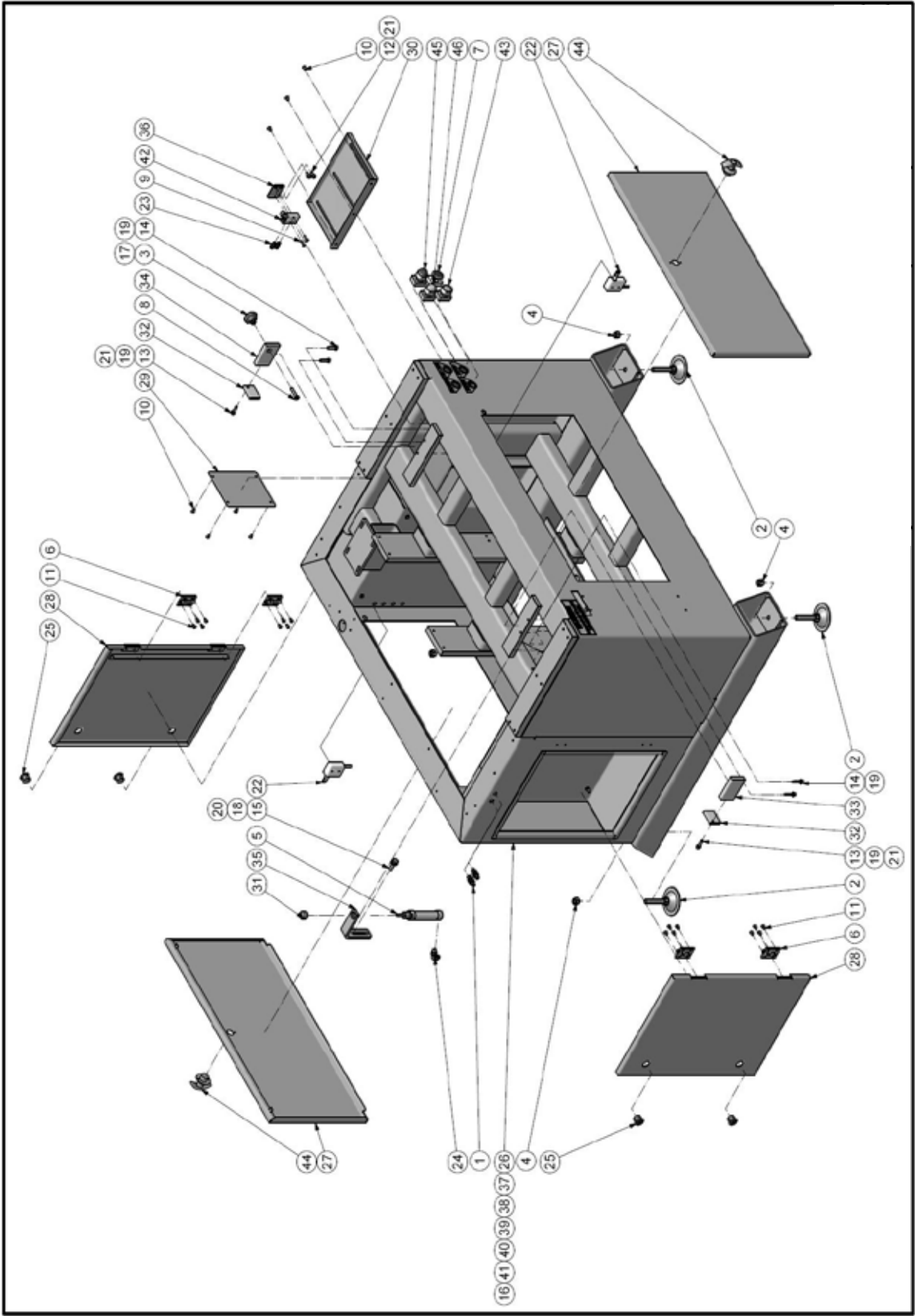


# Exploded View Drawings and Parts List

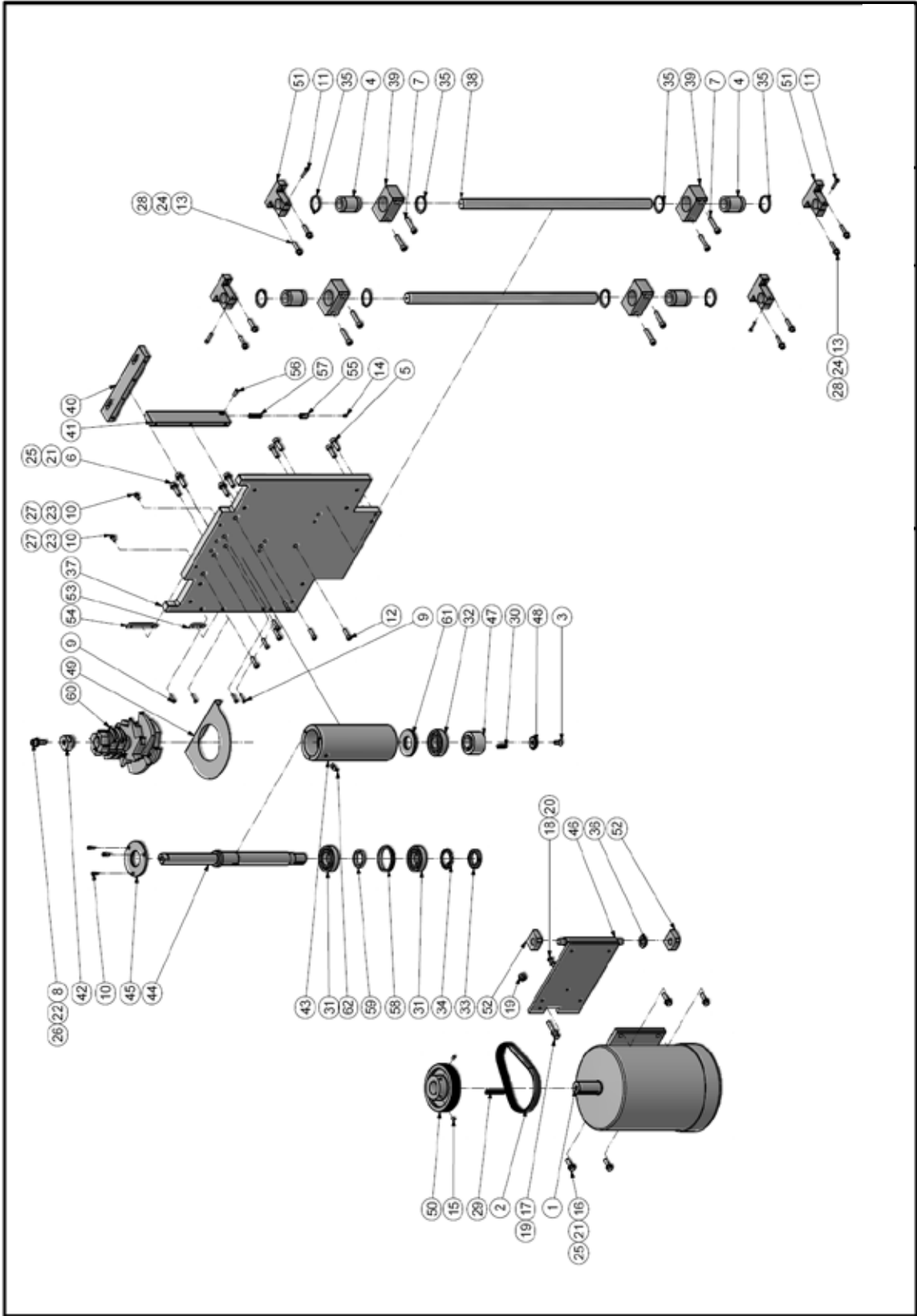


**PARTS LIST**

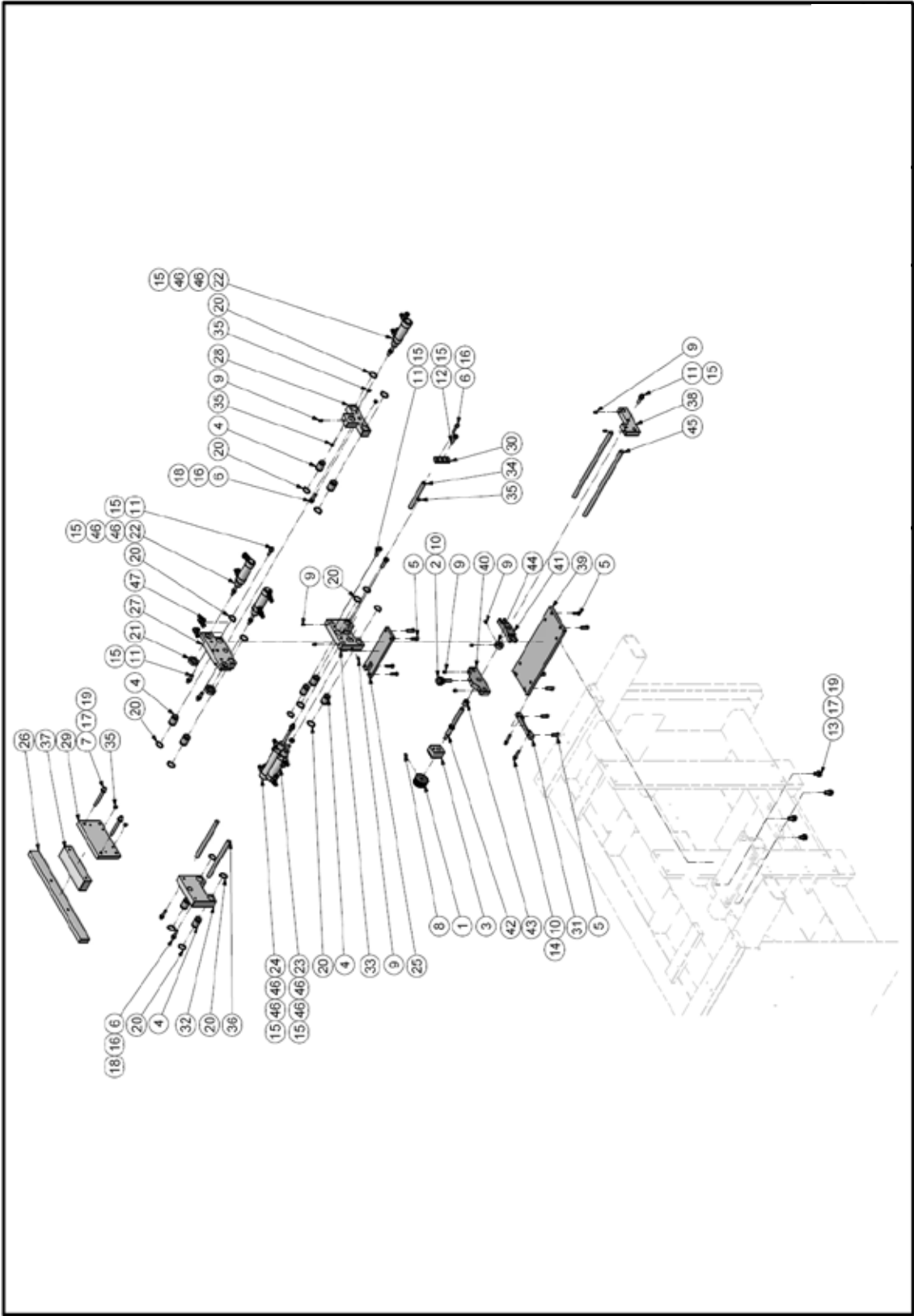
NO.	PART NO.	DESCRIPTION	QUANTITY
1	Adjustable System	Adjustable System	1
2	Air Box Layout	Air Box Layout	1
3	Air Control Assembly	Air Control Assembly	1
4	Collect the dust system	Collect the dust system	1
5	CutterBlock B	Cutter Block B	1
6	Cutterblock UP& DOWN	Cutterblock UP& DOWN	1
7	Electrica Box Layout	Electrica Box Layout	1
8	Fence C	Fence C	1
9	Mould A	Mould	1
10	Stand Assembled	Stand Assembled	1
11	Table B	Table B	1



PARTS LIST				PARTS LIST			
NO.	PART NO.	DESCRIPTION	QUANTITY	NO.	PART NO.	DESCRIPTION	QUANTITY
1	410010073	Handy Couplings, 3816EBC-06	2	36	RP250H0098	Valves Bracket	1
2	401260003	Adjuster Pads, W1/2"-100L	4	37	RP250Z001A	Power Stickers	1
3	402070002	Hand Knobs, 6020-50-M8	1	38	RP250Z002A	NO Air Stickers	1
4	401101011	Hex Nut, 1/2-13UNC	4	39	RP250Z003A	Stop Stickers	1
5	409010018	Cylinder, 020-25L	1	40	RP250Z004A	Start Stickers	1
6	402090003	Aluminum Hinges, DK-50	4	41	RP250Z007A	Warning Stickers	1
7	416010001	Emergency Stop	1	42	409030022	Valves, 3/2-06-R	1
8	401052146	Counter Sunk Head Cap Screw, M8-40	1	43	416010006	Button, ON	1
9	401041003	Phillips Head Screw, M4-20	2	44	402010020	Pulls, B19	2
10	401032029	Button Head Screw, M6-10	7	45	416010009	Guiding Lights	1
11	401022026	Cap Screw, M5-8	16	46	416010009	Power Lights	1
12	401022053	Cap Screw, M6-16	2				
13	401022056	Cap Screw, M6-25	2				
14	401022057	Cap Screw, M6-30	4				
15	401010037	Hex Head Bolt, M10-30	1				
16	401101004	Hex Nut, M6	8				
17	401101005	Hex Nut, M8	1				
18	401150005	Lock Washer, Ø10	1				
19	401150003	Lock Washer, Ø6	6				
20	401140005	Washer, 10*21	1				
21	401140010	Washer, 6*12.5	4				
22	416040001	Limit Switch TZ7311	2				
23	410010049	Handy Couplings, MLCNLI-04	2				
24	410010058	Handy Couplings, MLELLI - Ø8	1				
25	402170002	Latches, MS-705-3-A	4				
26	RP250A005B	Stand	1				
27	RP250A007B	Cover	2				
28	RP250A012B	Electrical Control Cover	2				
29	RP250A015A	Cover	1				
30	RP250A021A	Cover	1				
31	RP250D001A	Shaft	1				
32	RP250E001A	Bracket	2				
33	RP250E002A	Bracket	1				
34	RP250E003A	Bracket	1				
35	RP250E005A	Cylinder Bracket	1				

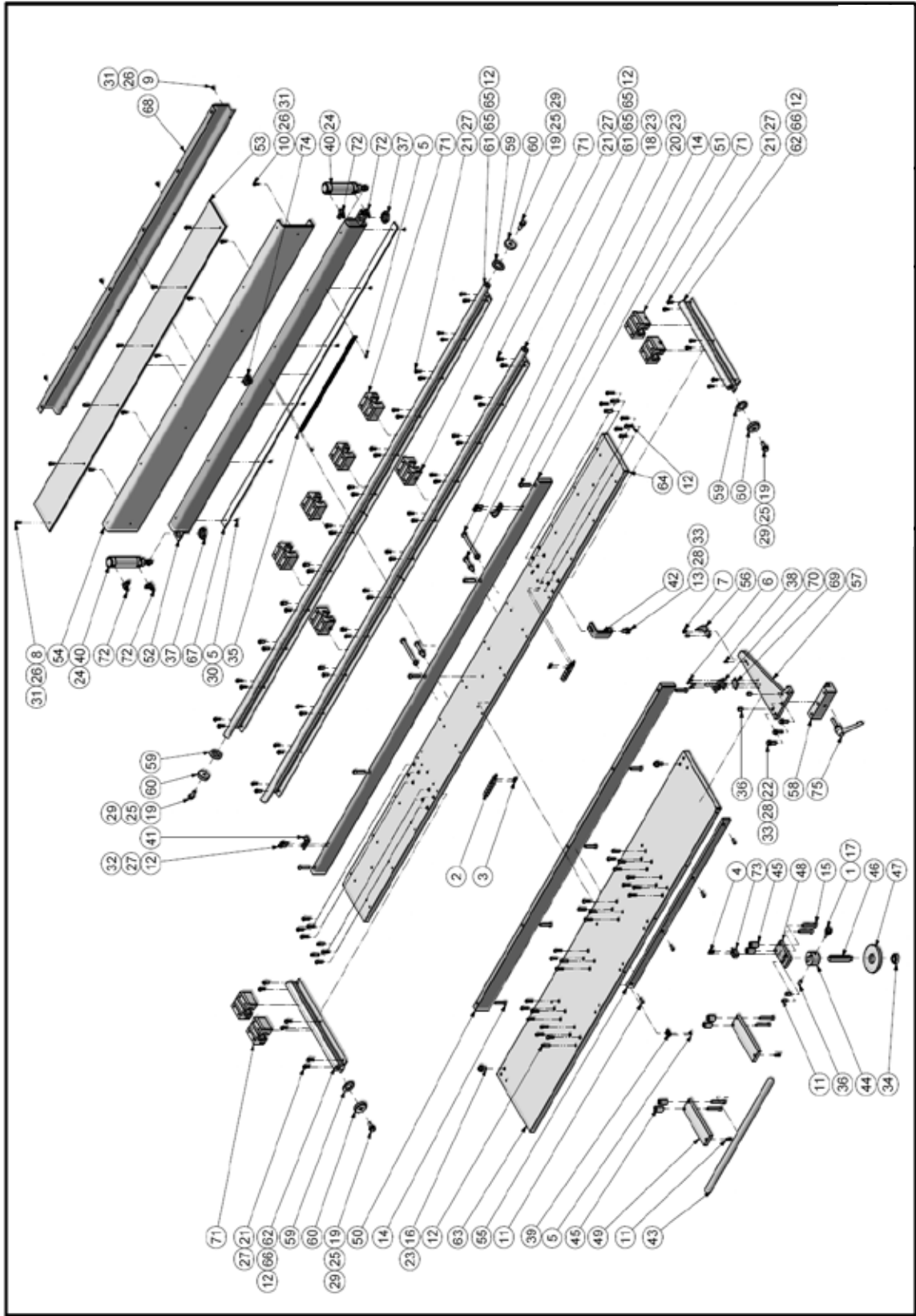


PARTS LIST				PARTS LIST			
NO.	PART NO.	DESCRIPTION	QUANTITY	NO.	PART NO.	DESCRIPTION	QUANTITY
1	10HP13ZSAL	Motor, 10HP13ZS	1	36	-403050006	Thrust Bearing, NTB20354	1
2	240310	Ridded Belts 240310	1	37	RP2508001B	Spindle Base	1
3	-401052152	Counter Sunk Head Cap Screw, M10-25	1	38	RP2508002B	Shaft	2
4	-404020011	Linear Bushing, JB-30AVV	4	39	RP2508003B	Linear Flushing Housing Unit	4
5	-401022106	Cap Screw, M10-35	4	40	RP2508019B	Bracket	1
6	-401022107	Cap Screw, M10-40	4	41	RP2508020B	Bracket	1
7	-401022111	Cap Screw, M10-50	8	42	RP2508024A	Outside Law Orichid	1
8	-401022128	Cap Screw, M12-35	1	43	RP2508028B	Spindle Shaft Box	1
9	-401022033	Cap Screw, M5-25	4	44	RP2508030B	Spindle	1
10	-401022053	Cap Screw, M6-16	5	45	RP2508032B	Cover, Front	1
11	-401022057	Cap Screw, M6-30	4	46	RP2508034C	Motor Base	1
12	-401022080	Cap Screw, M8-30	7	47	RP2508035B	Pulley, Special	1
13	-401022082	Cap Screw, M8-40	8	48	RP2508036A	Special Washer	1
14	-401071035	Set Screw, M6-10	1	49	RP2508037B	Cover	1
15	-401072049	Set Screw, M8-10	2	50	RP2508038B	Pulley	1
16	-401010038	Hex Head Bolt, M10-35	4	51	RP2508040B	Holders For Shaft	4
17	-401010041	Hex Head Bolt, M10-60	1	52	RP2508042A	Bracket	2
18	-401010021	Hex Head Bolt, M8-30	1	53	RP2508043A	Dogs	1
19	-401101006	Hex Nut, M10	3	54	RP2508044A	Dogs	1
20	-401101005	Hex Nut, M8	1	55	RP2508059A	Bumpers	1
21	-401150005	Lock Washer, Ø10	8	56	RP2508060A	Pin	1
22	-401150006	Lock Washer, Ø12	1	57	RP2508061A	Spring, Ø1.7-Ø12-40L	1
23	-401150003	Lock Washer, Ø6	2	58	RS-3058	Ring	1
24	-401150004	Lock Washer, Ø8	8	59	RS-3059	Ring	1
25	-401140005	Washer, 10*21	8	60	Tool RP2505	Tool PR2505	1
26	-401140014	Washer, 12*24	1	61	-401330013	Disc Springs, DB-80	2
27	-401140010	Washer, 6*12.5	2	62	410030005	Grease Nipples, 1/8"-45	1
28	-401140006	Washer, 8*17	8				
29	-401230034	Parallel Key, 10-8-70	1				
30	-401230005	Parallel Key, 8-7-32	1				
31	-403010309	Ball Bearing, 6208-C3/2NSE	2				
32	-403017263	Ball Bearing, 6307-CH/2NSE	1				
33	-401120003	Spanner Lock Nut, AM08	1				
34	-401160003	Ext Tooth Washer, AW08	1				
35	-401252033	Retaining Rings For Shaft, R45	8				

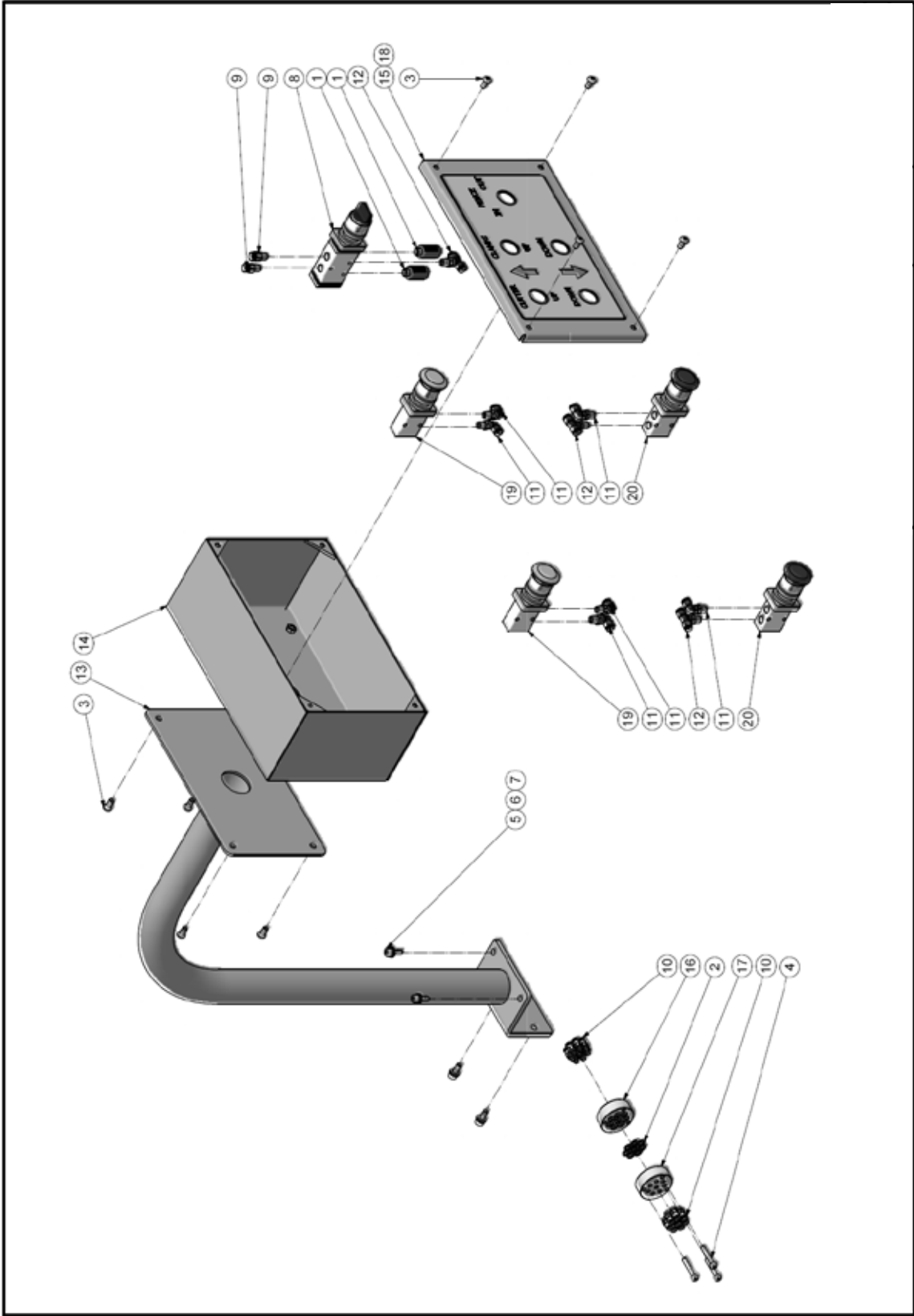


PARTS LIST			PARTS LIST				
NO.	PART NO.	DESCRIPTION	QUANTITY	NO.	PART NO.	DESCRIPTION	QUANTITY
1	402080007	Control Knobs, 7021-42-B8	1	26	RP2500006C	Fence	1
2	402100003	Knurled Nuts, 8031-25-M6	1	27	RP2500006D	Seat For Cylinder	1
3	402200005	Position Indicators	1	28	RP2500020C	Seat For Cylinder	1
4	404020013	Linear Bushings, JB-12AWW	9	29	RP2500021B	Bracket For Fence	1
5	401022055	Cap Screw, M6-20	10	30	RP2500022C	Joint Plates	1
6	401022057	Cap Screw, M6-30	4	31	RP2500023B	Adjustment Bracket	1
7	401022088	Cap Screw, M8-70	2	32	RP2500024C	Holders For Shaft	1
8	401072025	Set Screw, M5-10	1	33	RP2500025C	Holders For Shaft	1
9	401072035	Set Screw, M6-10	10	34	RP2500026C	Shaft	1
10	401072044	Set Screw, M6-40	3	35	RP2500027B	Dogs	6
11	401072057	Set Screw, M8-35	6	36	RP2500028C	Shaft	2
12	401072058	Set Screw, M8-40	1	37	RP2500029B	Bracket	1
13	401070019	Hex Head Bolt, M8-20	4	38	RP2500033A	Seat	1
14	401101004	Hex Nut, M6	2	39	RP2500034A	Lock Seat	1
15	401101005	Hex Nut, M8	12	40	RP2500035A	Seat	1
16	401150003	Lock Washer, Ø6	4	41	RP2500036A	Adjustment Bracket	1
17	401150004	Lock Washer, Ø8	6	42	RP2500037A	Adjustment Screw	1
18	401140010	Washer, 6*12.5	3	43	RP2500038A	Bushings	1
19	401140013	Washer, 8*17	6	44	RP2500039A	Set Collars	1
20	401252016	Retaining Rings For Shaft, R21	18	45	RP2500040A	Shaft	2
21	401102009	Hex Nut, M2.2xP1.5	2	46	SPCNL1-06	Speed Controllers, SPCNL1-06	10
22	409010015	Cylinder, Ø20-20L	3	47	UNTEL-3x06	Handy Couplings, UNTEL - 3x06	2
23	409010020	Cylinder, Ø20-40L	1				
24	409010016	Cylinder, Ø20-65L	1				
25	RP2500005D	Lock Seat	1				

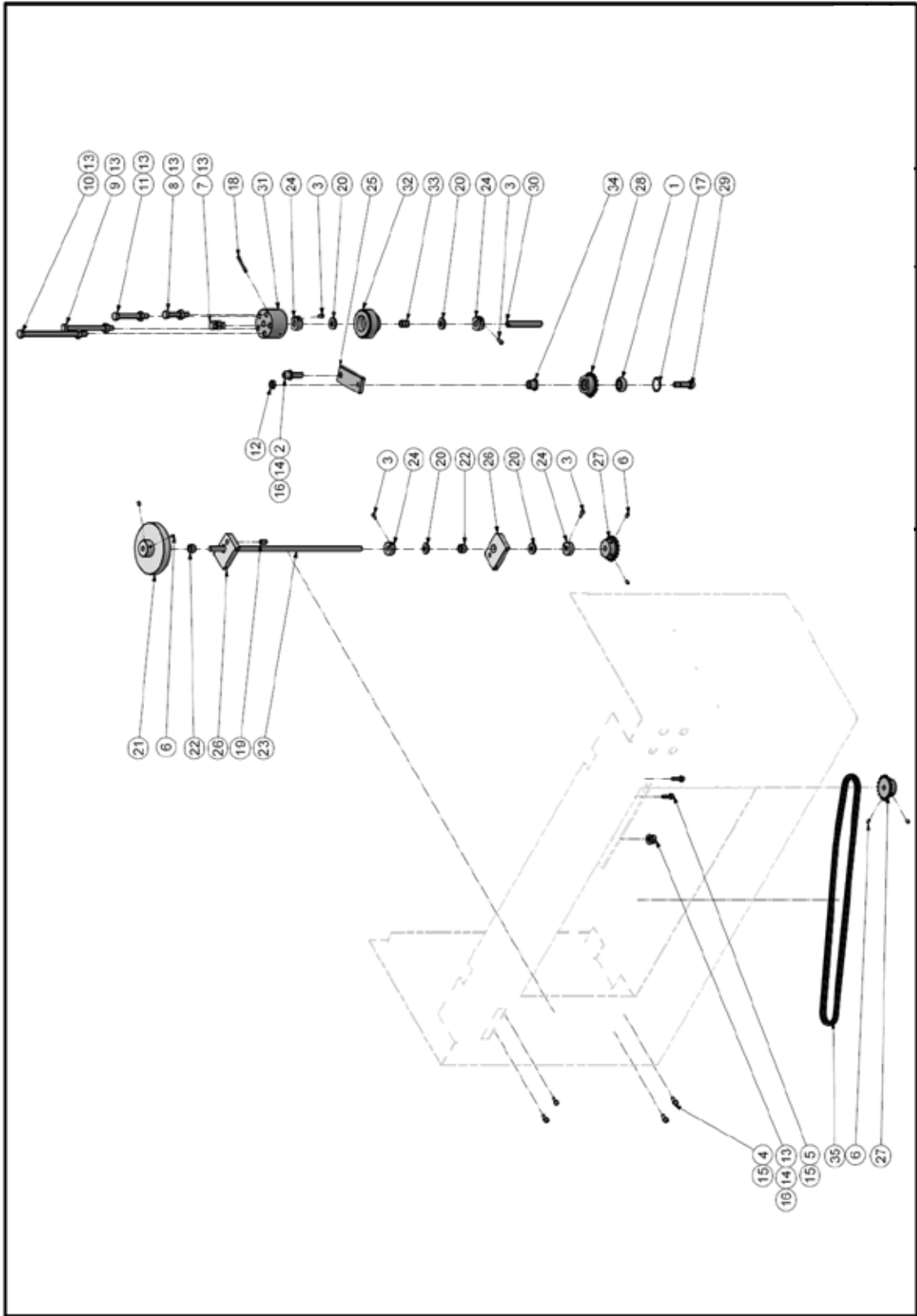




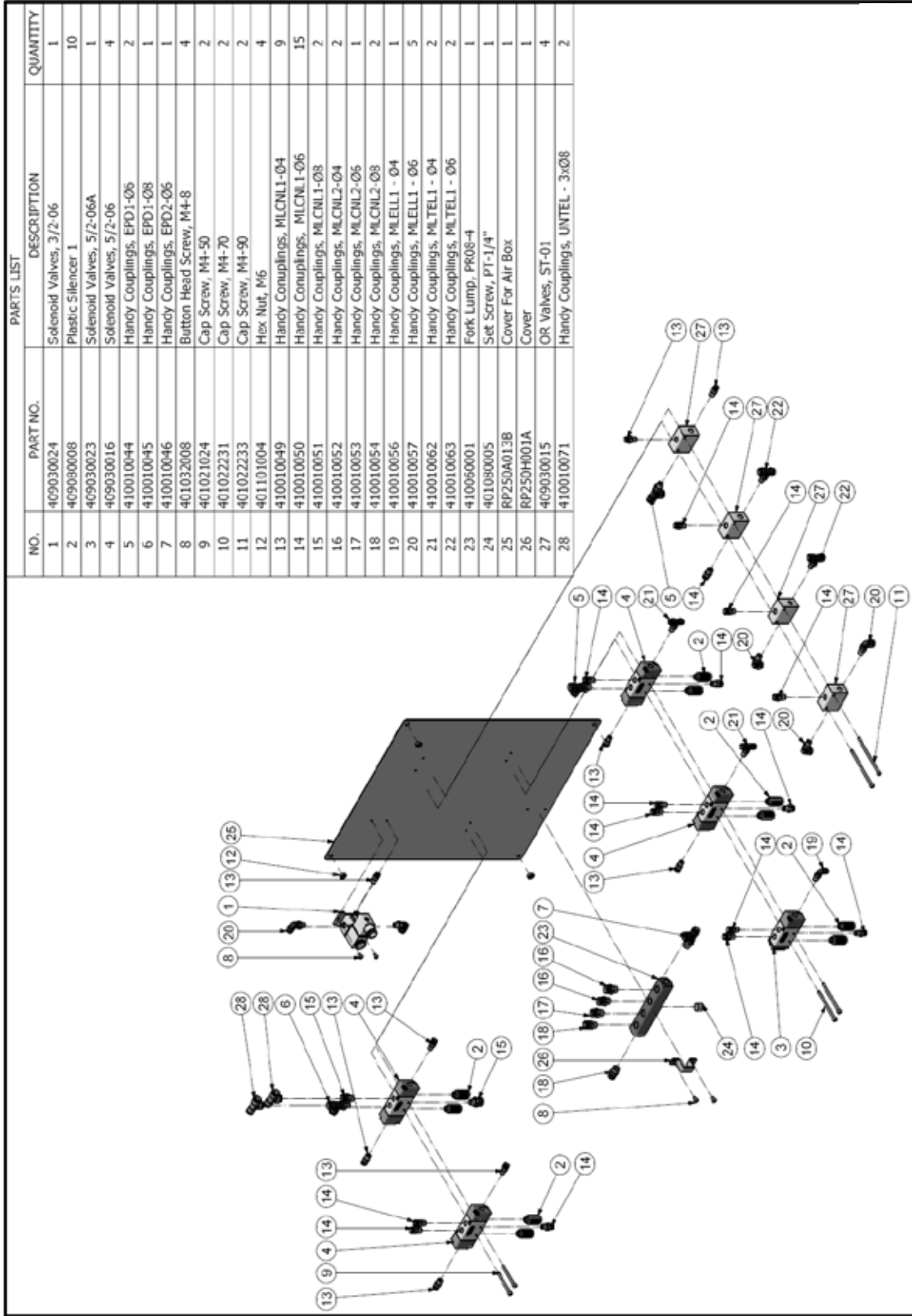
PARTS LIST				PARTS LIST			
NO.	PART NO.	DESCRIPTION	QUANTITY	NO.	PART NO.	DESCRIPTION	QUANTITY
1	402100003	Knurled Nuts, 8031-25-M6	1	41	RP2504020A	Lock Bracket	2
2	414010010	Cablechain, CP5015E21550	1	42	RP2508023B	Dogs	1
3	401052109	Counter Sunk Head Cap Screw, M4-10	4	43	RP250C001A	Shaft	1
4	401042021	Phillips Head Screw, M3-20	2	44	RP250C002A	Copy Seat	1
5	401042020	Phillips Head Screw, M3-8	10	45	RP250C003A	Bushings	6
6	401032008	Button Head Screw, M4-8	4	46	RP250C004A	Shaft For Copy Roller	1
7	401032017	Button Head Screw, M5-10	2	47	RP250C005A	Copy Roller	1
8	401032020	Button Head Screw, M5-20	6	48	RP250C006A	Lock Plates	1
9	401022028	Cap Screw, M5-10	4	49	RP250C007A	Flexible Plates	2
10	401022030	Cap Screw, M5-16	6	50	RP250C008A	Bracket	1
11	401022053	Cap Screw, M6-16	8	51	RP250C009A	Bracket	1
12	401022056	Cap Screw, M6-25	74	52	RP250C010B	Press Seat	1
13	401022079	Cap Screw, M8-25	1	53	RP250C011A	Cover	1
14	401022082	Cap Screw, M8-40	10	54	RP250C012B	Bracket	1
15	401022085	Cap Screw, M8-55	6	55	RP250C013A	Fence Rails	1
16	401072070	Set Screw, M10-35	2	56	RP250C014C	Indicator Board	1
17	401072042	Set Screw, M6-30	1	57	RP250C016A	Fence	1
18	401010047	Hex Head Bolt, M10-120	2	58	RP250C017A	Guide Rails	1
19	401010037	Hex Head Bolt, M10-30	4	59	RP250C018A	Uerthane Washer	4
20	401010041	Hex Head Bolt, M10-60	2	60	RP250C019A	Set Collar	4
21	401010009	Hex Head Bolt, M6-20	60	61	RP250C020B	Shaft	2
22	401010021	Hex Head Bolt, M8-30	3	62	RP250C021A	Shaft	2
23	401101006	Hex Nut, M10	6	63	RP250C022A	Table	1
24	401101013	Hex Nut, M10x1.25	2	64	RP250C023B	Table	1
25	401150005	Lock Washer, Ø10	4	65	RP250C024B	Shaft Guide Rails	4
26	401150002	Lock Washer, Ø5	16	66	RP250C025A	Shaft Guide Rails	2
27	401150003	Lock Washer, Ø6	64	67	RP250C028A	Antivibration Pads	1
28	401150004	Lock Washer, Ø8	4	68	RP250C029A	Cover	1
29	401140005	Washer, 10*21	4	69	RP250C030A	Washer	1
30	401140015	Washer, 3*7	6	70	RX-121-1	Toggle Clamps, RX121-1	1
31	401140002	Washer, 5*10	16	71	404020012	Linear Bushing Housing Units, SMY25UU	10
32	401140010	Washer, 6*12.5	4	72	410040008	Speed Controllers, SPCNLI-06	4
33	401140004	Washer, 8*17	4	73	416031010	Proximity Switch, TL-Q5MC1	1
34	403013103	Ball Bearing, 6003-2NES	1	74	410010070	Handy Couplings, UNTEL - 3x06	2
35	K-039	Scale Plates	1	75	402040021	Adjustable Hand Levers, 4020-80-M10-40	1
36	402110006	Ball Plungers, M10-16L	3				
37	401102010	Hex NUT, M27xP2	2				
38	402110010	Ball Plungers, M5-12L	1				
39	414042011	Terminal, PAR	1				
40	409010017	Cylinder, Ø32-50L	2				



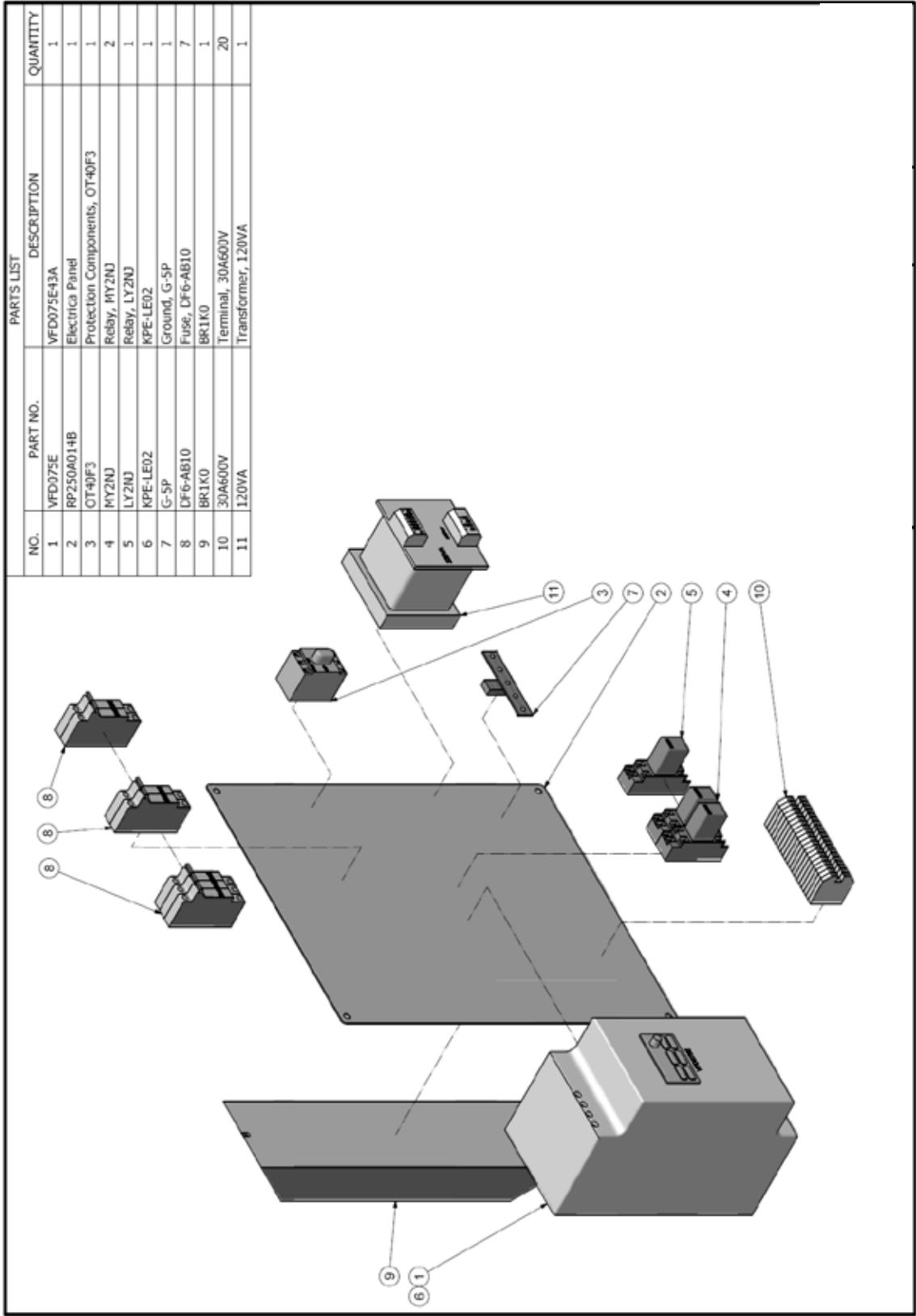
NO.	PARTS LIST			PARTS LIST			
	PART NO.	DESCRIPTION	QUANTITY	NO.	PART NO.	DESCRIPTION	QUANTITY
1	409060008	Plastic Silencer 1	2	11	410010056	Handy Couplings, MLELL1 - Ø4	6
2	408032004	O-Ring, P6	8	12	410010062	Handy Couplings, MLTEL1 - Ø4	3
3	401032030	Button Head Screw, M6-12	8	13	RP250A003B	Contrail Panel Arm	1
4	401022034	Cap Screw, M5-30	3	14	RP250A009A	Air Contrail Box	1
5	401022053	Cap Screw, M6-16	4	15	RP250A010A	Air Contrail Cover	1
6	401150003	Lock washer, Ø6	4	16	RP250D041A	Flanged A	1
7	401140010	Washer, 6*1.25	4	17	RP250D042A	Flanged B	1
8	409030019	Valves, 5/2-06+HS	1	18	RP250H007A	Panel	1
9	410010049	Handy Couplings, MLCNLI-Ø4	2	19	409030021	Valves, 3/2-06-G	2
10	410010029	Handy Couplings, MLCNLM5-Ø4	15	20	409030020	Valves, 3/2-06-R	2



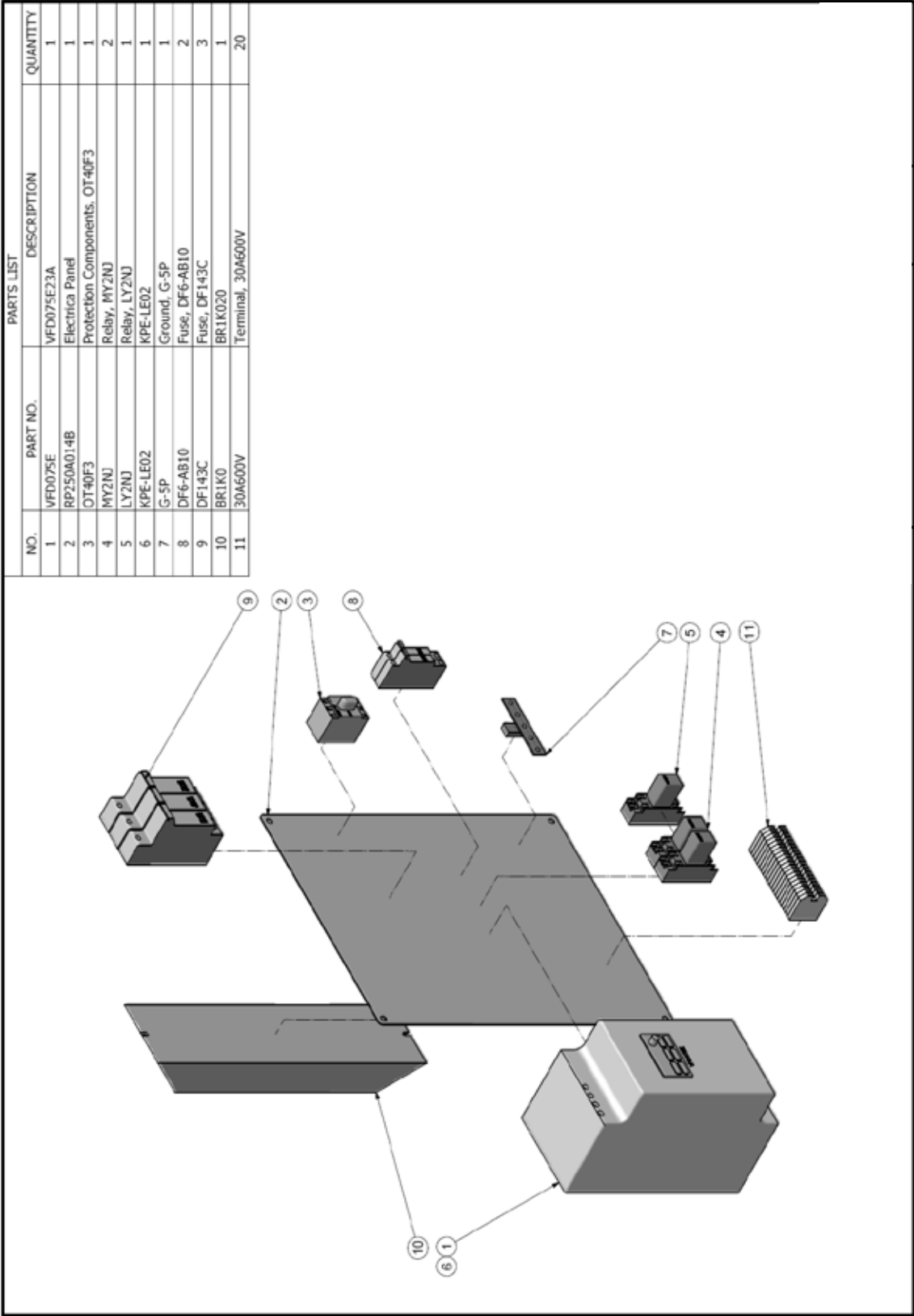
PARTS LIST				PARTS LIST			
NO.	PART NO.	DESCRIPTION	QUANTITY	NO.	PART NO.	DESCRIPTION	QUANTITY
1	403015131	Ball Bearing, 6201-2INSE	1	26	RP2508011A	Plate	2
2	401021129	Cap Screw, M12-40	1	27	RP2508012A	Sprockets RS35-18T	2
3	401022028	Cap Screw, M5-12	4	28	RP2508013A	Sprockets RS35-18T	1
4	401022053	Cap Screw, M6-16	4	29	RP2508014A	Shaft	1
5	401022056	Cap Screw, M6-25	2	30	RP2508015A	Shaft	1
6	401072035	Cap Screw, M6-10	6	31	RP2508016B	Collars	1
7	401011034	Hex Head Bolt, M12-30	1	32	RP2508017A	Lock Seat	1
8	401011035	Hex Head Bolt, M12-60	1	33	RP2508018A	Bushing	2
9	401011036	Hex Head Bolt, M12-140	1	34	RP2508022A	Washer	1
10	401011037	Hex Head Bolt, M12-190	1	35	RP2508056A	RS35-134	1
11	401011028	Hex Head Bolt, M12-90	1				
12	401101006	Hex Nut, M10	1				
13	401101007	Hex Nut, M12	6				
14	401150006	Lock Washer, Ø12	2				
15	401150003	Lock Washer, Ø6	6				
16	401140014	Washer, 12"×24	2				
17	401251024	Retaining Rings For Hole, R32	1				
18	401200020	Spring Pins, Ø5-50	1				
19	402110011	Ball Plunger, M10-16L	1				
20	403050005	Thrust Bearings, MTR12764	4				
21	RP2508005B	Adjustment Handwheel	1				
22	RP2508006A	Bushing	2				
23	RP2508007B	Shaft	1				
24	RP2508008A	Set Collars	4				
25	RP2508009A	Adjustment Bracket	1				



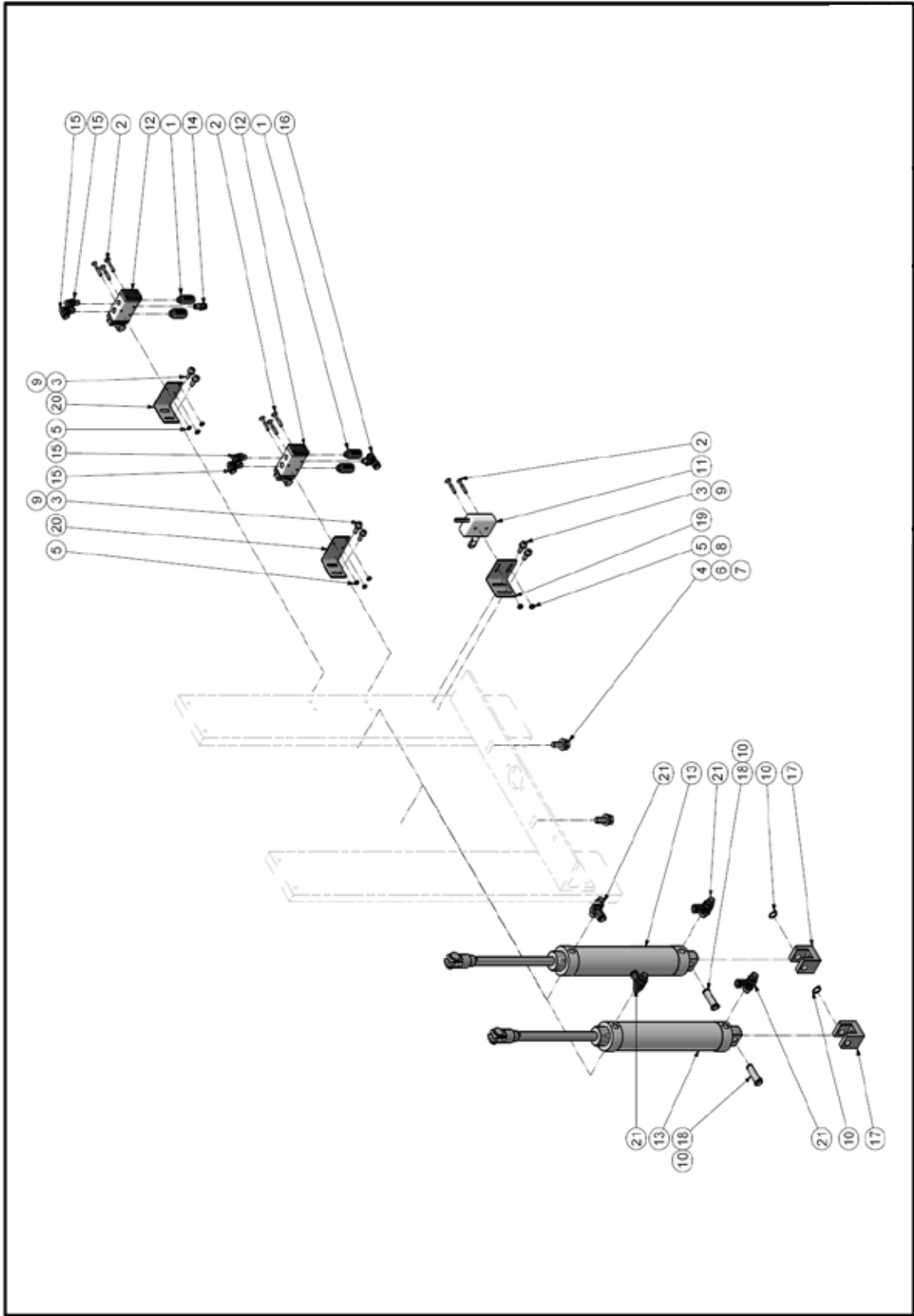
PARTS LIST			
NO.	PART NO.	DESCRIPTION	QUANTITY
1	409030024	Solenoid Valves, 3/2-06	1
2	409080008	Plastic Silencer 1	10
3	409030023	Solenoid Valves, 5/2-06A	1
4	409030016	Solenoid Valves, 5/2-06	4
5	410010044	Handy Couplings, EPD1-06	2
6	410010045	Handy Couplings, EPD1-08	1
7	410010046	Handy Couplings, EPD2-06	1
8	401032008	Button Head Screw, M4-8	4
9	401021024	Cap Screw, M4-50	2
10	401022231	Cap Screw, M4-70	2
11	401022233	Cap Screw, M4-90	2
12	401101004	Hex Nut, M6	4
13	410010049	Handy Couplings, MLCNL1-04	9
14	410010050	Handy Couplings, MLCNL1-06	15
15	410010051	Handy Couplings, MLCNL1-08	2
16	410010052	Handy Couplings, MLCNL2-04	2
17	410010053	Handy Couplings, MLCNL2-06	1
18	410010054	Handy Couplings, MLCNL2-08	2
19	410010056	Handy Couplings, MLELL1 - 04	1
20	410010057	Handy Couplings, MLELL1 - 06	5
21	410010062	Handy Couplings, MLTEL1 - 04	2
22	410010063	Handy Couplings, MLTEL1 - 06	2
23	410050001	Fork Lump, PR08-4	1
24	401080005	Set Screw, PT-1/4"	1
25	RP250A013B	Cover For Air Box	1
26	RP250H001A	Cover	1
27	409030015	OR Valves, ST-01	4
28	410010071	Handy Couplings, UNTEL - 3x08	2



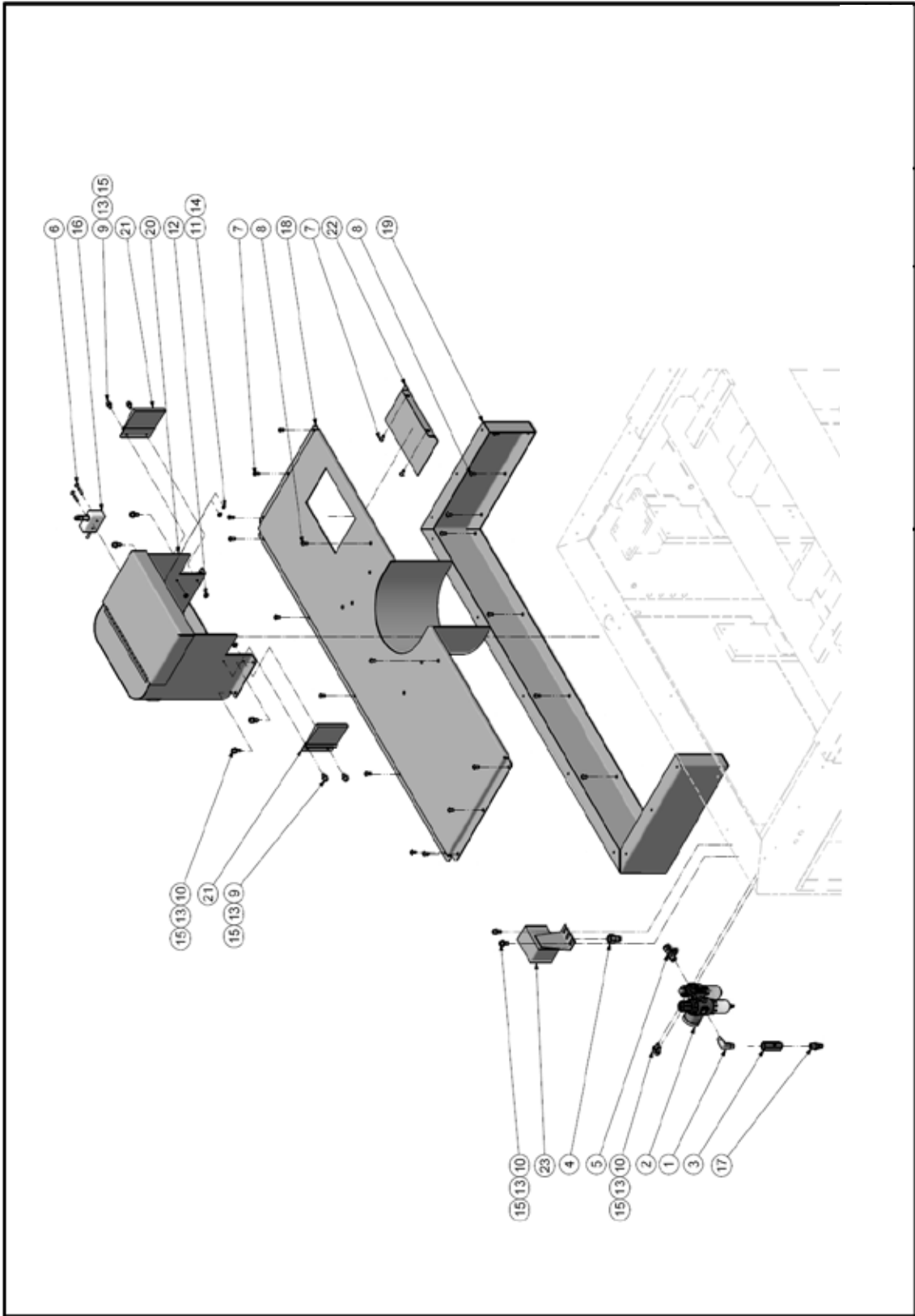




PARTS LIST			
NO.	PART NO.	DESCRIPTION	QUANTITY
1	VFD075E	VFD075E23A	1
2	RP250A014B	Electrica Panel	1
3	OT40F3	Protection Components, OT40F3	1
4	MY2NJ	Relay, MY2NJ	2
5	LY2NJ	Relay, LY2NJ	1
6	KPE-LE02	KPE-LE02	1
7	G-5P	Ground, G-5P	1
8	DF6-AB10	Fuse, DF6-AB10	2
9	DF143C	Fuse, DF143C	3
10	BR1K0	BR1K020	1
11	30A600V	Terminal, 30A600V	20



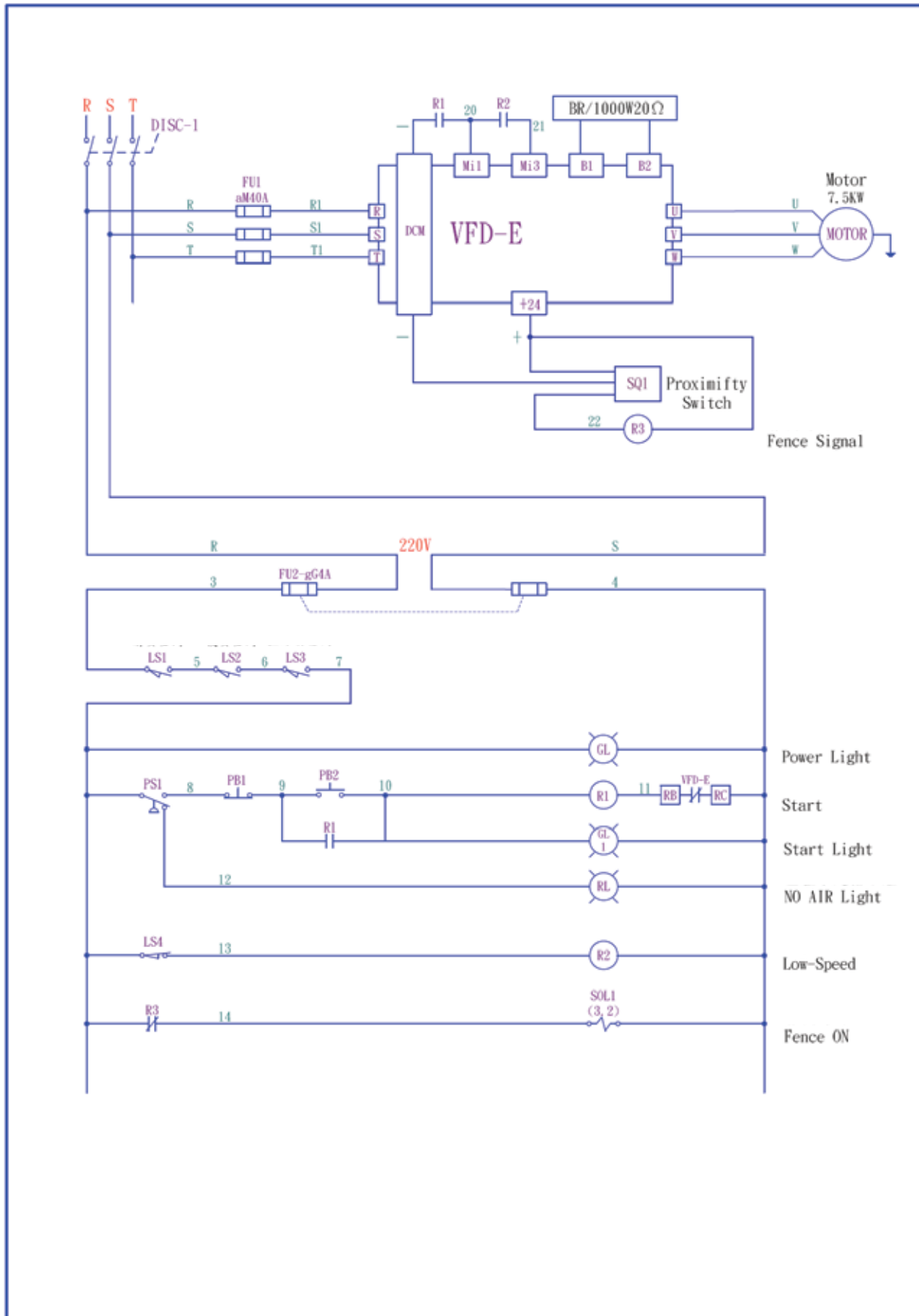
PARTS LIST				PARTS LIST			
NO.	PART NO.	DESCRIPTION	QUANTITY	NO.	PART NO.	DESCRIPTION	QUANTITY
1	409080008	Plastic Silencer 1	4	16	410010063	Handy Couplings, MLTELL1 - Ø6	1
2	401042002	Phillips Head Screw, M4x30	8	17	RP250B021B	Cylinder Seat	2
3	401022053	Cap Screw, M6-16	6	18	RP250B027B	Shaft	2
4	401010036	Hex Head Bolt, M10x25	2	19	RP250H003B	Bracket For Valves	1
5	401101002	Hex Nut, M4	8	20	RP250H010A	Bracket For Valves	2
6	401150005	Lock Washer, Ø10	2	21	410040011	Fitting, SPCNL2-Ø8	4
7	401140005	Washer, 10*21	2				
8	401140001	Washer, 4*9	2				
9	401140010	Washer, 6*12.5	6				
10	401252007	Retaining Rings For Shaft, R12	4				
11	416040001	Limit Switch TZ7311	1				
12	409030018	Valves, 5/2-06-R	2				
13	409010019	Cylinder, Ø50-175L-P	2				
14	410010050	Handy Couplings, MLCNL1-Ø6	1				
15	410010057	Handy Couplings, MLELL1 - Ø6	4				

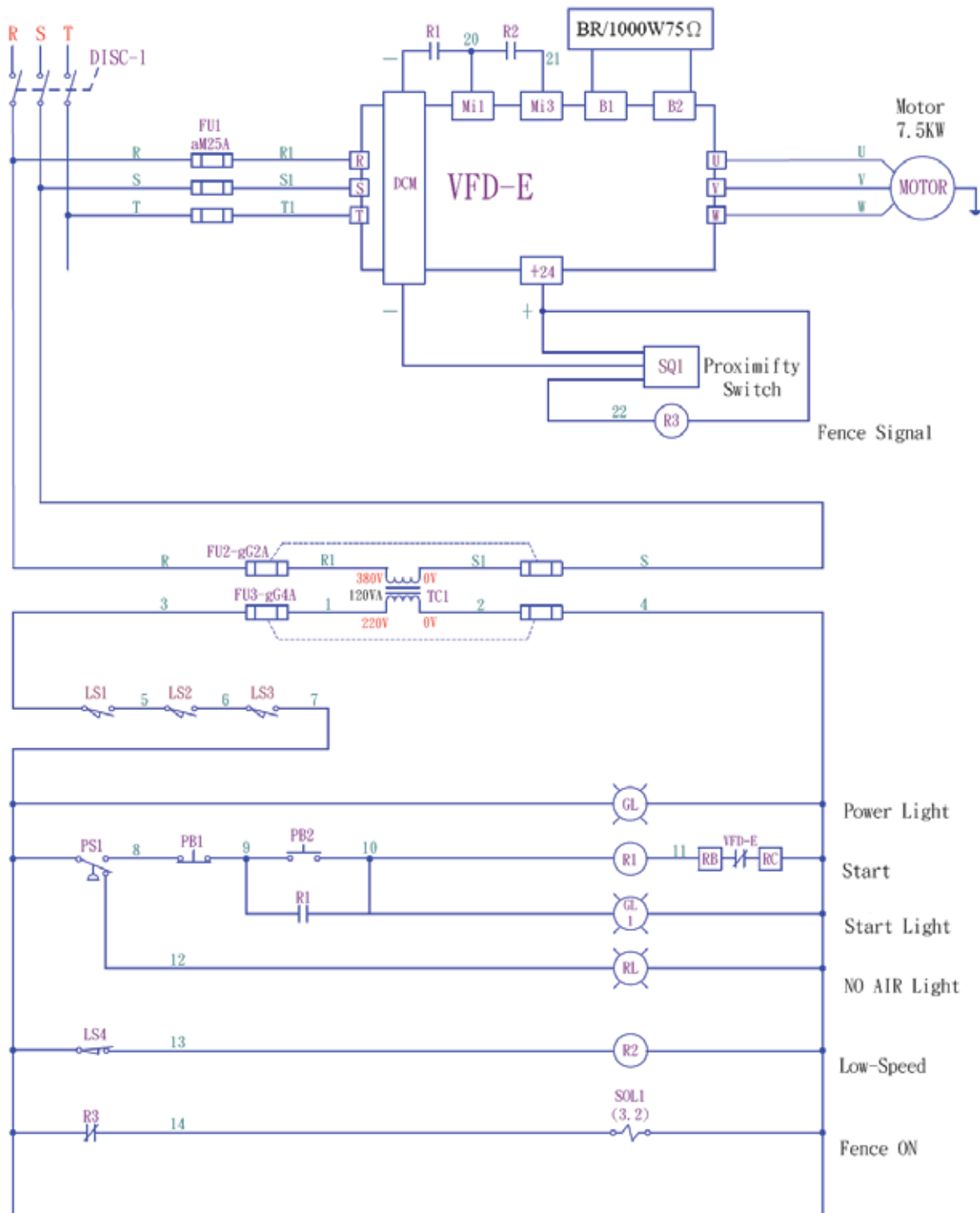


PARTS LIST				PARTS LIST			
NO.	PART NO.	DESCRIPTION	QUANTITY	NO.	PART NO.	DESCRIPTION	QUANTITY
1	410071015	Connector A02-L202	1	21	RP250A008B	Brush	2
2	409040004	Air Source Treatment Unit, UFR/L-02	1	22	RP250A018A	Cover	1
3	409030014	Check Valve, CV-02	1	23	409080019	Pressure Control, S-976	1
4	410010048	Straight Female EPCF2-08	1				
5	410010047	Handy Couplings, EPD2-08	1				
6	401042002	Phillips Head Screw, M4-30	2				
7	401032018	Button Head Screw, M5-12	13				
8	401032031	Button Head Screw, M6-12	13				
9	401022051	Cap Screw, M6-12	4				
10	401022053	Cap Screw, M6-16	8				
11	401101002	Hex Nut, M4	2				
12	401101004	Hex Nut, M6	4				
13	401150004	Lock Washer, 06	12				
14	401140001	Washer, 4*9	2				
15	401140010	Washer, 6*12.5	12				
16	416040001	Limit Switch T27311	1				
17	410010055	Quick Couplers, PM-20	1				
18	RP250A001B	Cover	1				
19	RP250A002B	Cover	1				
20	RP250A004B	Dust Cover	1				

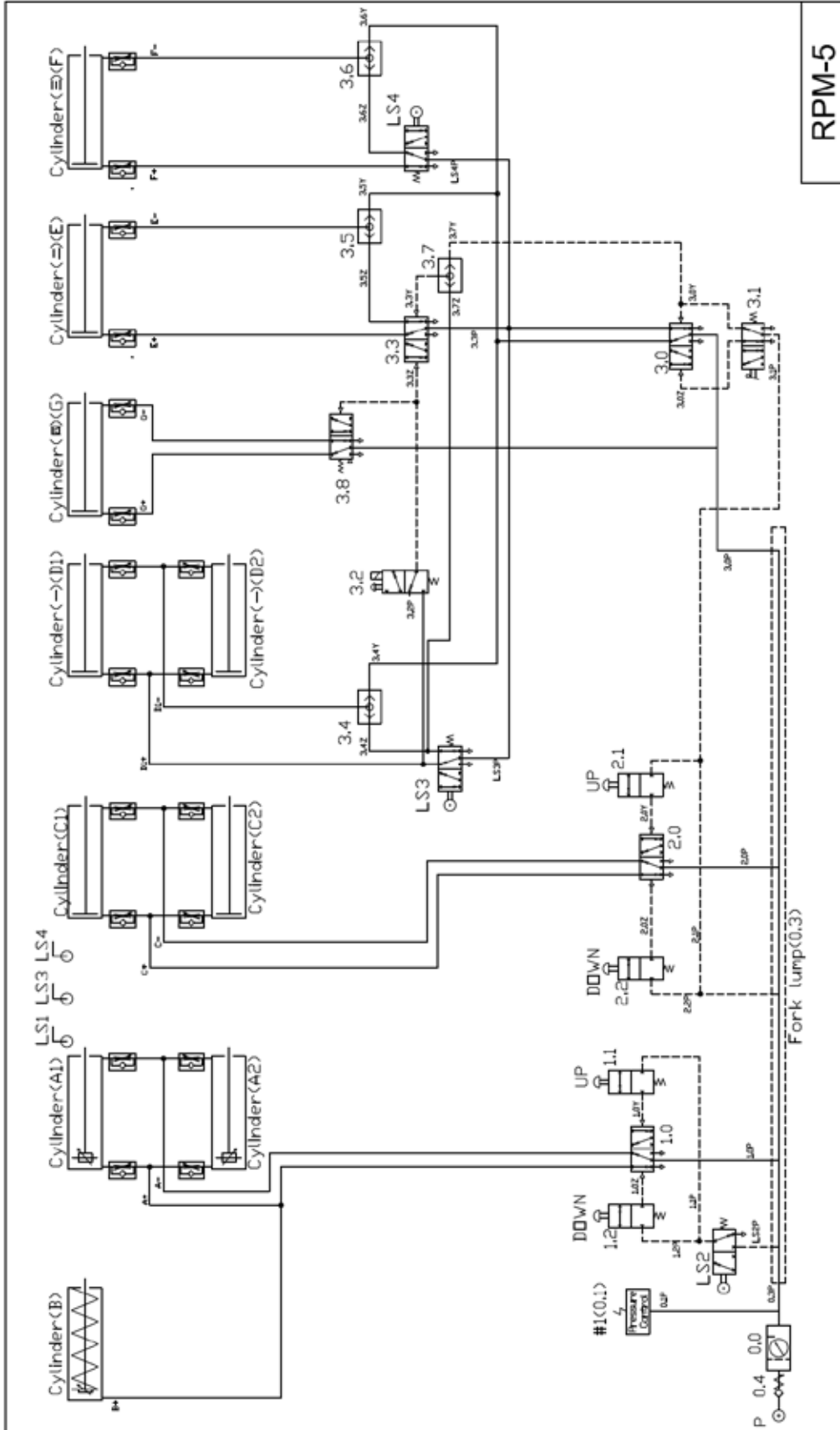


# Electrical Drawings









RPM-5

# **LAGUNA**

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