APEX
MACHINE GROUP
Reaching New Heights in Production

Operation Manual
Model 2037M-D
Serial No 180413

Warranty and Service

APEX Machine Group warrants every product it sells. If you need service or repair, contact us or one of our Service Dealers

WARRANTY
Apex Machine Group machines carry a limited warranty which varies in duration based upon the product.

WHAT IS COVERED?
This warranty covers any defects in workmanship or materials subject to the exceptions stated below.
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WHO IS COVERED?
This warranty covers only the initial purchaser of the product.

WHAT IS THE PERIOD OF COVERAGE?
The APEX Machine Group warranty is for a **Two Year Period** (4000 hours) from the date of purchase.

WHAT IS NOT COVERED?
This warranty does not cover defects due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, improper repair or alterations, or lack of maintenance. Also the warranty does not cover those consumable item such as graphite canvas, platen felt, mistrack switch tips, fuses or other normal wear items.

HOW TO GET SERVICE
Contact APEX Machine Group at 855-500-7263, www.apexmachinegroup,com, or the dealer you purchased the machine from.

Manufacturer or Distributor is not responsible for, and will not pay for, work done, material furnished, or repairs made by others unless agreed to in writing prior to performing work. All express delivery charges, repair labor and expenses are the responsibility of the customer.

Parts repaired or replaced under warranty are covered for the balance of the original machine warranty, or a standard 90-day parts warranty, whichever is longer.

Except as stated above, there are no warranties, expressed or implied, including the warranties of merchantability and fitness for a particular purpose.

HOW STATE LAW APPLIES
This warranty gives you specific legal rights; you may also have other rights which vary from state to state.

Caution : Please read and understand this manual prior to operation of this machine.

Machine Warranty Registration

By e-mail at : **www.apexmachinegroup.com**

Or mail a registration card to :

Apex Machine Group
4700 Olson Memorial Highway
Golden Valley, Minnesota 55422

Warranty Registration Card

Model No. 2037M-D

Serial No. 180413

Date Purchased : _____

Company Name : _____

Address : _____

_____

Phone No . _____

E-mail Address : _____

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Warnings

Please note: You can be badly injured working on or around a Sander. Only do service work for which you have the knowledge and proper equipment. If you have any doubt about your ability to perform a service job, please call our tool free line at 877-754-7266 or 855-500-7239 or contact an authorized dealer to schedule a qualified technician.

1. Read and understand the entire owner's manual before attempting assembly or operation.

2. Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.

3. Replace the warning labels if they become obscured or removed.

4. This sander is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a sander, do not use until proper training and knowledge have been obtained.

5. Do not use this sander for other than its intended use. If used for other purposes, Apex Machine Group disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.

6. Always wear approved safety glasses/face shields while using this sander. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.

7. Before operating this sander, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Remove all loose clothing and confine long hair. Non-slip footwear or anti-skid floor strips are recommended. Do **not** wear gloves. Steel toed shoes are recommended because heavy parts can fall off the conveyor table onto feet.

8. Wear ear protectors (plugs or muffs) during extended periods of operation.

9. Some dust created by power sanding, and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead based paint.
- Crystalline silica from bricks, cement and other masonry products.
- Chromium from certain metal types.

Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as face or dust masks that are specifically designed to filter out microscopic particles.

10. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication. Make sure nothing is on the conveyor bed before starting machine.

11. Make certain control switch is **OFF** before connecting the machine to the power supply.

12. Make certain the machine is properly grounded.

13. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.

14. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately.

15. Check damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

16. Provide for adequate space surrounding work area and non-glare, overhead lighting.

17. Keep the floor around the machine clean and free of scrap material, oil and grease.

18. Keep visitors a safe distance from the work area. **Keep children away.**

19. Make your workshop child proof with padlocks, master switches or by removing starter keys.

20. Give your work undivided attention. Looking around, carrying on a conversation and “horse-play” are careless acts that can result in serious injury.

21. Remove loose items and unnecessary work pieces from the area before starting the machine.

22. Maintain a balanced stance at all times so that you do not fall or lean against the conveyor belt or other moving parts. Do not overreach or use excessive force to perform any machine operation.

23. Keep hands clear while feeding workpieces onto the conveyor table. The workpiece will be forced down as it begins to feed into the machine, causing a pinching action between workpiece and conveyor table.

24. Stand to one side of the conveyor table and do not let anyone else stand in line with the table while a workpiece is being fed through the machine.

25. For the larger 37” and 52” wide sanders do not attempt to sand stock shorter than 12 inches long without some type of fixture to help it through the machine. Do not sand stock less than .040” thick.

26. Never reach into a running machine. Turn off and disconnect from power source before attempting to retrieve parts from within the machine.

27. Use the right belt at the correct speed and feed rate. Do not force a sanding belt to do a job for which it was not designed. The right belt will operate more efficiently and safer.

28. Use recommended accessories; improper accessories may be hazardous.

29. Turn off the abrasive belt head and the brush heads before cleaning. You may need to use a brush or compressed air to remove chips or debris — do not use your hands.

30. Do not stand on the machine. Serious injury could occur if the machine tips over.

31. Never leave the machine running unattended. Turn the power off and do not leave the machine until all moving parts come to a complete stop.

Familiarize yourself with the following safety notices used in this manual:

⚠CAUTION — This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

⚠WARNING — This means that if precautions are not heeded, it may result in serious injury or possibly even death.

Introduction

This manual is provided by APEX Machine Group covering the safe operation and maintenance procedures for Wide Belt Sanders. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. This machine has been designed and constructed to provide years of trouble free operation if used in accordance with instructions set forth in this manual. If there are any questions or comments, please contact either your local dealer or APEX Machine Group who can also be reached at our web site: www.apexmachinegroup.com or
855-500-7263.

Specifications

Model Number.....2037M-D
Working Width (in.) .....36”
Maximum Thickness (in.).....5 ½”
Minimum Part Length (in.).....16”
Table Height from Floor (in.) .....41”
Main Drive Motors .....20 HP, 3Ph, 230 voltage
Power Feed Motor .....2 HP, 3Ph
Sanding Belt Size (in.) .....37 x 75”
Required Air Pressure (PSI).....75 to 80
Gross Shipping Weight (lbs.).....4.500 machine
Net Weight (lbs.).....5,030 machine

NOTE:

The above specifications were current at the time this manual was published, but because of our policy of continuous improvement, APEX Machine Group reserves the right to change specifications at any time without prior notice.

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Unpacking

Open shipping container and check for shipping damage. Report any damage immediately to your distributor and shipping agent. Do not discard any shipping material until the sander is installed and running properly. Compare the contents of your container with the packing list to make sure all parts are intact. Missing parts, if any, should be reported to your distributor. Read this instruction manual thoroughly for assembly, maintenance and safety instructions.

Contents of the Shipping Container

1 Sander
1 Start – Up Sanding belts
1 Open wrench for leveling bolts
3 Open-end wrenches, 8-10, 12-14, 17-19
1 Set of hex wrenches
1 Owner's manual
1 Warranty card (in Manual page 2)

Read and understand the entire contents of this manual before attempting set-up or operation! Failure to comply may cause serious injury.

Assembly

The sander should be placed on a level, sturdy floor, preferably concrete, with plenty of space surrounding it for on- and off-loading of stock, and general maintenance work.
Open the two lower panels infeed and outfeed, leveling screws inside the cabinet (Figure 1) to level the sander. The machine can also be secured to the floor with high quality lag screws (not provided) through the machine frame inside the cabinet.

support

Figure 1

Remove the protective coating from exposed metal surfaces with a soft cloth moistened with kerosene or a good commercial solvent. Do not use acetone, gasoline or lacquer thinner, as these have a low flash point and can be a fire hazard, as well as damage the paint finish. Do not get solvents on rubber or plastic areas of the machine.

Air Supply Connection

The sander must be connected to an air supply unit. The recommended working pressure is 75 to 80 PSI.

The air connection is on the Filter/Regulator unit located at the back of the sander (Figure 2). Attach the incoming air supply to the connector with a flexible

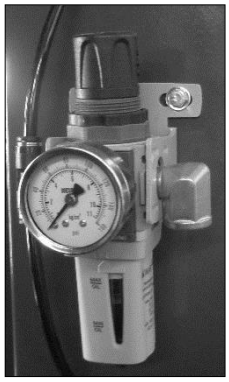


Figure 2

Installing or Replacing Sanding Belt

1. Machine should be disconnected from power source.
2. Turn the air valve switch (A, Figure 3) to Off position.
3. Remove the lock screw (B, Figure 3) by turning it counterclockwise and lifting up.
4. Remove the spacer block (C, Figure 3).
5. Inspect the sanding belt for defects such as chipped or torn edges. Do not use a belt if it is damaged.

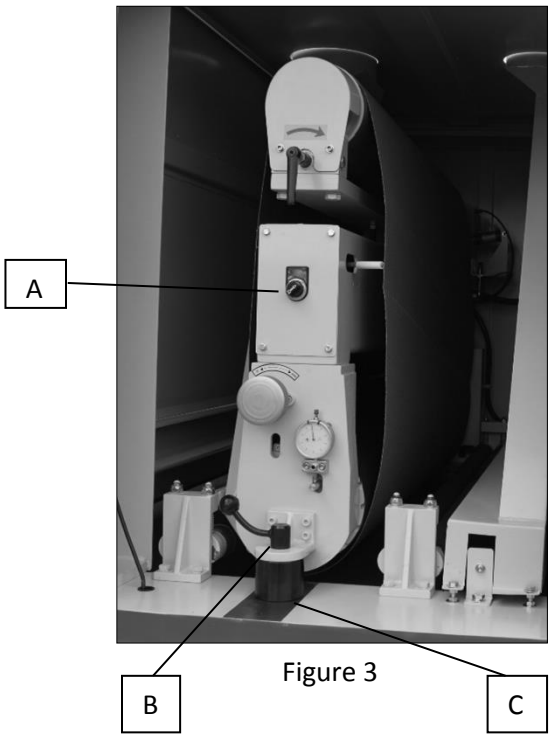


Figure 3

CAUTION **Make sure the direction of the arrows on the inside of the sanding belt matches the rotation of the machine.**

6. Install the new belt by placing it first over the upper roller, then over the contact rollers, and slide the belt all the way onto the roller.

7. Center the belt while avoiding contact with the limit switch fingers that are located on each side of the belt.

8. Re-install the spacer block (C, Figure 3) and lock screw (B, Figure 3) and tighten the lock screw by turning clockwise.

9. Turn the air valve switch (A, Figure 3) to ON to tension the sanding belt.

10. Make sure there is clearance between sanding belt edges and the limit switch fingers on either side. If there is not, make the appropriate corrections (with the air valve turned OFF).

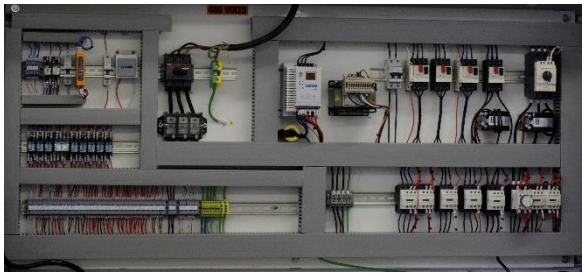
NOTE: The sander will not start if a limit switch is engaged.

11. Before doing any sanding, the sanding belt should be tested for proper tracking and oscillation. See the appropriate sections in this manual.

Grounding Instructions

⚠ WARNING Electrical connections must be made by a qualified electrician in compliance with all relevant codes. This machine must be properly grounded while in use to help protect the operator from electrical shock and possible fatal injury.

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock to the operator.



Improper connection of the equipment grounding conductor can result in risk of electric shock.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
The sander should be connected to a dedicated circuit with proper amperage service. The sander has been factory wired to run at 208 volt operation.

208 , 230 or 460 Volt Operation

Refer to the diagram inside the sander's electrical box for clarification of electrical connections and proper voltage of your unit.

These diagrams are also shown on pages of this manual.

Operation

1. Make sure the machine is always disconnected from the main power supply. Place a warning placard (if used) on the fuse holder or circuit breaker to prevent it being turned on while the machine is being wired.
Always follow proper Lock Out/Tag Out procedures when performing any wiring on this machine. Follow local/county codes.

2. Make sure the power source corresponds to the specifications of the sander as recorded on the sander's motor plate.

3. Open the sander's electrical box and connect the incoming power leads to the proper marked terminals.
Connect the green ground wire to grounding terminal

4. Connect the machine to power (or install the fuses or reset the breaker at the power source).

5. Press the Reset and check drum rotation first , to check that the contact drum is rotating in the proper direction . (clockwise or with the direction of the conveyor belt.

6. If the contact drum rotates in the wrong direction, turn off the machine and **disconnect from power**. Switch any two of the power leads .

7. Re-connect power to the sander once drum rotation is confirmed.

Adjustments

Sanding Belt Tracking and Oscillation

The sanding belt should oscillate left and right without a tendency to slide off the rollers. If the sanding belt runs outside of the normal track, it will contact a limit switch and the machine will stop automatically.
The oscillation settings have been made at the factory, but should be checked by the operator.

NOTE: When a new sanding belt is installed, there may be a slight length tolerance between the right and left sides of the sanding belt which may result in incorrect tracking. If this occurs, the oscillation timing can be set to compensate.

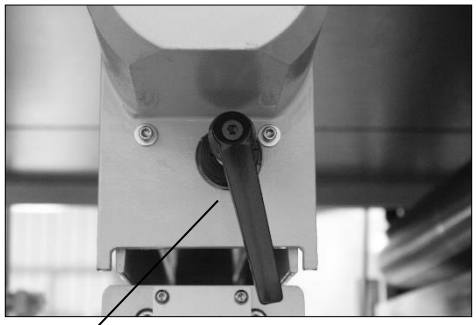


Figure 5

1. Turn off belt tension switch and center the sanding belt , turn belt tension switch back on. Now turn the head reset switch and then turn to jog, oscillation adjustment is done while abrasive belt is running and while holding the jog button.

2. The upper roller will pivot left and right. The duration of the sanding belt's oscillation to the right side and to the left should be equal. For example, if the oscillation time to the right is one second, then the oscillation time to the left should also be one second.

3. If the oscillation time to the right side is one second, but the oscillation time to the left side is longer, then turn the tracking adjustment lever either right or left which will adjust the tracking movement left to right, do this until proper timing is achieved.
(see Figure 5.)

4. It is possible that when changing to new belt or changing to a belt that has a heavier backing which is different from 50 to 180 grit, you may have to follow the above instructions.

Sanding Belt Oscillation

Belt oscillation is done with a photo electric tracking eye and a air solenoid valve. When the sanding belt is operating the edge of the belt will pass across the light beam , which will then activate a solenoid valve that will allow air to pass to the tracking cylinder and pivot the upper idler roll. This will cause the belt to travel in the opposite direction on the Idler roll.
This process will continually repeat itself.

If for some unknown reason the idler roll does not pivot check the photo eye for dust or other blockage, solenoid if it has power and will shift and if air is going to the tracking cylinder itself.

Release the sanding belt tension and slide the belt so you know the light from the photo eye can see past the edge of the belt. Make sure that no dust is blocking the photo eye. If photo eye light can pass across , put something in the light path and see if the idler roll will move. If it still does not , remove air line from tracking cylinder and see if air is passing thru the line to the cylinder . (When you block the light path air should change from this line.) Last check the solenoid , if you manually move the piston in the solenoid the air should shift in the air line to the tracking cylinder.

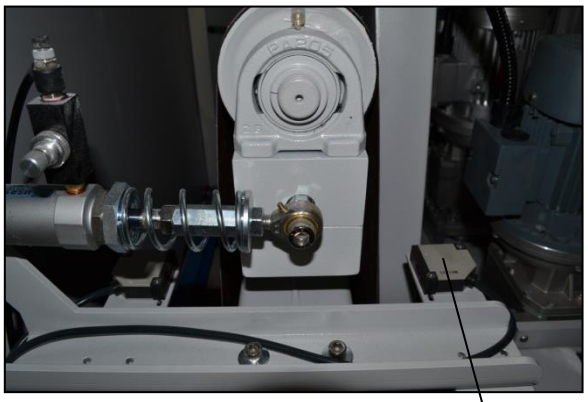


Figure 6

If at this point you can not determine problem contact your local dealer or call Apex Machine Group for service.

Frequently inspect photo eye and make sure it is clean and clear of obstructions.

Oscillation Speed

To adjust the speed of the oscillation, there is a speed control knob (Figure 7), on the tracking cylinder , loosen jam nut and adjust air flow which will slow down or increase the belt oscillation speed.
When finished, tighten jam nut.

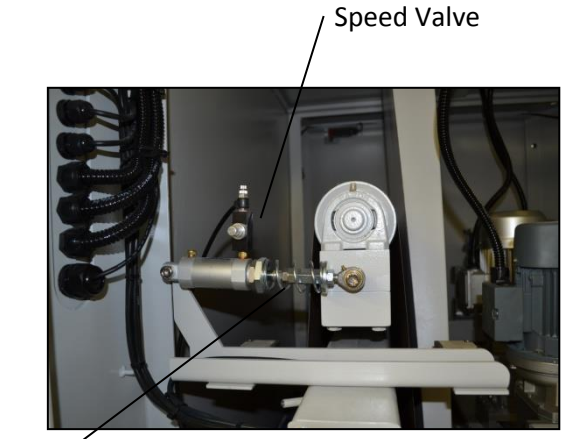


Figure 7

Adjusting Contact Drum for Abrasive Belt Thickness

If using sanding belts that vary a lot in thickness
(Example : 220 cloth back to a 80 grit belt)
Follow the procedure below to " raise or lower " contact drum depending on abrasive belts you are using .
So you maintain the same hold down roller pressure.

Figure 9

1. First determine the difference in thickness from the belt you were using to the one you will put on the machine. Use a calipers to measure the difference or check with your belt supplier.

2. Loosen locking bolt (figure 9)

3. Rotate drum adjustment dial (figure 9) to raise or lower the contact drum using the dial indicator to check the amount of movement of the drum per the distance you determined in step 1.

4. Tighten locking bolt (figure 9)

5. Now follow the instructions on starting on page 13 for **Sanding Belt Oscillation Adjustment** and adjust the new belt so it oscillates properly

Caution: **Abrasive belt must be a minimum .040 / 1 mm higher than the hold down rollers for proper feeding pressure. Failure to do so could cause possible improper feeding of the product and/or possible kick out**.

V-Belt Tension and Replacement

For the first few days of operation new belts should be checked occasionally and adjusted for tension as necessary until the belts are properly "worn in."
The v-belts on the main motor should be checked for proper tension.

Tighten any of the v-belts as follows:

1. Disconnect sander from power source.

2. Loosen the lower hex nut on the motor base.

3. Tighten the top hex nut to lower the motor plate until proper tension is achieved.

4. When the belt is properly tensioned, you should be able to push in the belt approximately 3/4" at a point midway between the pulleys using moderate finger pressure.

5. Re-tighten the bottom hex nut (Figure 9) against the bottom of the motor plate.

If installing a new v-belt, use the hex nuts to raise the motor plate enough to remove the old belt and mount the new one.

NOTE: When replacing v-belts on the main motor, replace the entire set simultaneously. Preferably a matched set is best .

Figure 10

Lock Nut for Adjusting V-Belt

Conveyor Belt Tension

Check the tension of the conveyor belt on the infeed and outfeed rollers – the conveyor belt should be tight enough that you cannot shift it with your hands. If the conveyor belt needs tightening, proceed as follows.

Figure 11

1. When running conveyor belt.

2. Rotate the adjustment screws (the left one is shown in Figure 11) as needed with a wrench. Rotate clockwise to increase tension, counter-clockwise to decrease tension.

NOTE: Do not over-tighten the screws as this will hasten wear of the conveyor belt. However new belts will stretch in the first couple of weeks.

Conveyor Belt Tracking

The conveyor belt should remain centered upon the rollers during operation. If it approaches to either the left or right side, adjustment is necessary.

First check that the conveyor belt tension is correct. If the tension needs adjustment, do this **first** before you adjust the tracking (see "Conveyor Belt Tension"). Then proceed as follows.

Conveyor belt tracking should be adjusted while the conveyor belt is running. Make adjustments in increments (¼ turn at a time)and allow the conveyor belt time to respond to each change.

Keep hands away from the moving conveyor belt.

1. Turn on the conveyor belt.

2. Adjust tracking using the same adjustment screws that were used for tensioning in Figure 10.

3. If conveyor belt is moving to the right side, turn the right screw clockwise. This will return the tracking toward the left. Conveyor generally run to the loose side.

4. If the conveyor belt is moving to the left side, turn the left screw clockwise. This will return the tracking toward the right.

5. A positioning wheel (Figure 12) has been provided on the right and left sides of the conveyor belt to limit the belt tracking. When adjusting the tracking, the conveyor belt should be moved until its edge just touches the positioning wheels.

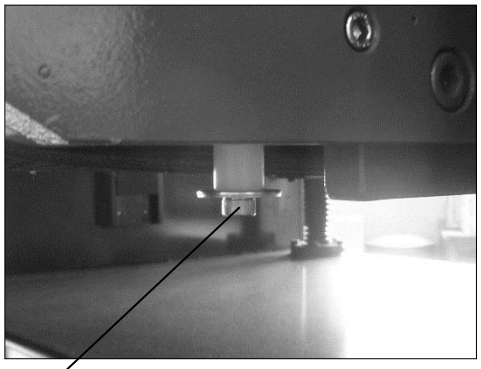


Figure 12

6. Allow the sander to run for several minutes while observing the conveyor belt tracking and readjust if necessary.

Feed Rate

The feed rate is infinitely variable within the provided range, in order to meet the sanding requirements of a wide variety of materials. Selecting a proper feed rate is largely a matter of experience. In general, soft woods require a higher feed rate, while hard woods require a lower feed rate.

Change the feed rate while the conveyor belt is running.

Adjust the feed rate with the conveyor speed adjustment knob on the control panel. Turn the adjustment knob clockwise to increase the conveyor belt speed, counterclockwise to decrease it.

Pressure Roll Adjustment

The front and rear pressure rolls have been factory adjusted. This setting should, however, be checked before operating the sander.

The pressure rolls should be parallel to the conveyor table with equal pressure on each end and are set slightly below the level of sanding belt. (.040 / 1 mm below contact drum)

If the ends of the work piece are sniped or dubbed the fron pressure rolls are too low. The pressure should be enough firmly hold the work piece against the conveyor, but not so hard that the ends of the work piece spring up after clearin the roll.

To raise or lower each pressure roller.

1. Disconnect sander from power source.

2. The sanding belt should be installed, and the air tension valve turned ON.

3. Place a sanded panel or set up block with even thickness on the conveyor table and under the pressure roller.

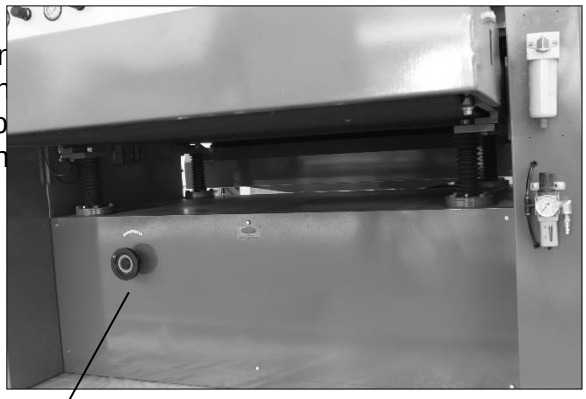


Figure 13

4. Raise the table manually using the handwheel (Figure 13) until the panel or set up block contacts the pressure roller.

5. Make sure the pressure at the right and left side of pressure roller is even.

6. If adjustment is needed, release the lock nut (Figure 14) with a 14mm wrench.

7. With another 14 mm wrench (Figure 14) adjust other hex nut . Rotate the hex nut clockwise to raise that side of the pressure bar, counterclockwise to lower it

8. When finished, re-tighten lock nut (Figure 14).

Figure 14

Table Parallelism

Parallelism of the conveyor table to the contact roller has been factory-set and **should not** require further adjustment. However, as the machine receives extended use, this setting should be checked.

First look at contact drum for wear and then inspect parallelism by one of two methods.

1. Use a flat sheet of equal thickness. Pass the sheet through the machine at a sanding depth of that just puts a scratch on the sheet, then measure or inspect the sheet at different points to see if it was sanded over the complete sheet . If excessive variation occurs, the table needs adjusting. OR, remove the sanding belt and place a gauge of some kind at one side of the conveyor table and below the contact roller. Raise the table manually using the hand wheel until the gauge just touches the contact roller. Repeat at the other side of the table and compare the gauge readings. If the readings are different, the table needs adjusting.

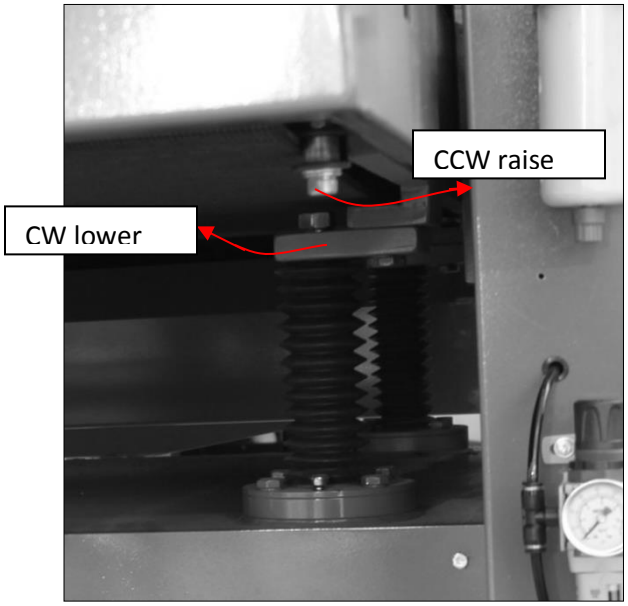


Figure 15

2. Disconnect sander from power source.

3. At the area of the table that needs adjustment, loosen the screws (A, Figure 15) on the bracket of the lift screw, and rotate the lift screw as needed. (The lift screw is protected by the dust guard bellow.) Turn the lift screw clockwise to lower the table in that area, counterclockwise to raise the table (see Figure 15).

4. Tighten screws (A, Figure 15).

5. Re-connect sander to power, and make further test runs. Make additional adjustments as needed, **with the machine disconnected from power**.

Operating Controls

Figure 17 shows the control panel functions.

1. The emergency stop button shuts down all machine operations. The button remains engaged after being pushed. To disengage, rotate the ring until the emergency stop button pops back out.
The emergency stop cover has a plate (shown in Figure 16) which shuts down all machine operations when it is pushed.

Figure 16

2. Stop / Reset (red) buttons located to the left of each load meter shuts off the sanding heads during normal operation. These also reset the brake for checking abrasive belt tracking adjustment or setting up a part to be sanded.

3. Conveyor belt speed adjustment knob, turning to the right increases the speed and to the left decreases the conveyor speed.
Adjust while conveyor belt is running.

4. Reset Jog Selector switches have two functions , when turned left it resets the brake , and when turned and held to the right will allow the sanding head to run and allow you to adjust the tracking of the sanding belt and adjust the tracking .
Note: Must hold switch to keep the head running.

5. Green buttons located below each load meter will turn on the sander once it has been set up and you are ready to run parts. Each button turns on each head separately. The conveyor has a separate green start button.

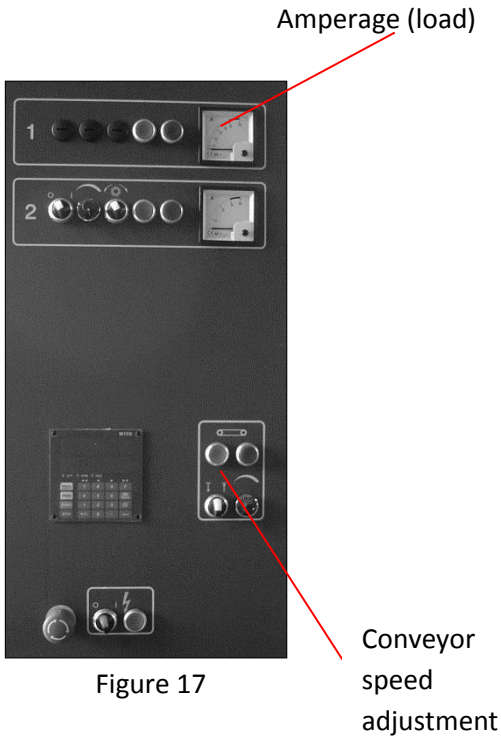


Figure 17

Amperage Meter

The amperage meter (Figure 17) continually monitors the load upon the sander. To avoid tripping of the circuit breaker and the overload relays, reduce the load immediately when the amperage meter indicates excessive amperage pull.

Operation

Before operating the sander, make sure that:

1. The dust collection system or water is turned on.

2. Sanding belt tracking and oscillation are working properly.

3. Conveyor belt tracking is correct.

4. All screws and handles are tightened securely.

5. Working air pressure is correct. (Normal working pressure is 75 to 80 PSI.) Do not operate sander until normal pressure is reached.

6. Thickness is correctly determined .

7. Feed rate is correctly set.

8. Work piece is free of any obstructions that could tear the sanding belt.

Braking System

The sander will not start or will halt operations if any of the following occur:

- No air supply to the machine.
- No sanding belt installed.
- Improper belt tension.
- Sanding belt runs out of track.
- The emergency stop button on outfeed panel is pressed.
- The emergency stop over thick part on top of the conveyor table is pushed.

If the sanding belt breaks, all movement will be stopped, conveyor table can be raised or lowered manually to remove any part or parts.

Once the machine has stopped, the operator should find why the braking system was tripped, and make the necessary adjustments. The machine can then be re-set and started.

Maintenance

Before doing any maintenance on the sander, disconnect it from the electrical supply by pulling out the plug or switching off the main switch. Failure to comply may cause serious injury.

The interior of the machine should be thoroughly cleaned each day after using the sander. Remove the sanding belt before cleaning and re-install it when finished.

Blow dust off the conveyor belt with compressed air or use a dust collector vacuum attachment. In case of wet machine wash down top and inside of belt.
The bearings should be greased after every 150 work hours.

The water should be removed daily from inside the filter cups. On the filter/regulator at the back of the cabinet, press the drain cock (see Figure 2). On the filter inside the cabinet, unscrew the cup to empty it.

The oil inside the gear reducer should be replaced after the first 100 work hours and every 2500 work hours thereafter. Recommended oil is ESSO S220 (Shell S320) or equivalent. See Figure 17 .

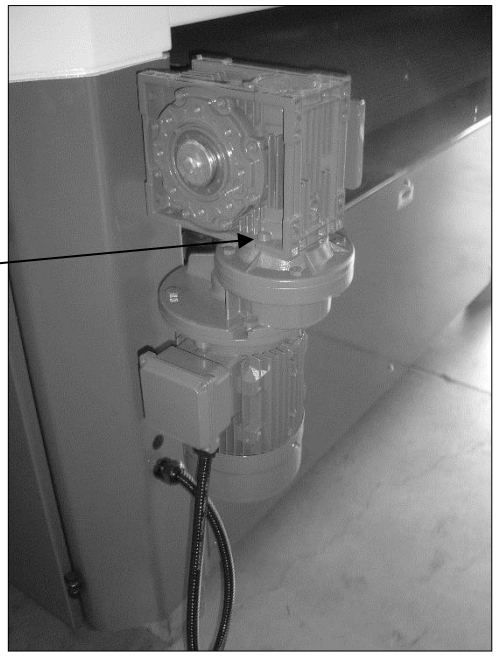


Figure 18

Troubleshooting the Sander

Trouble	Probable Cause	Remedy
Sander will not start.	No incoming power.	Check that sander is connected to power, fuses are not blown or circuit breakers are not tripped.
	Low voltage.	Check voltage at power source.
	Loose wiring.	Inspect and remedy any loose connections on sander.
	Starting switch is defective.	Replace switch.
	Motor is defective.	Replace motor.
Sanding belt loads or wears too quickly.	Grit of sanding belt is too fine.	Choose a larger grit of sanding paper or lighten up on sanding pressure.
	Too much material being sanded off.	Reduce the amount of material being removed.
	Coolant is not on or set too light on the flow.	Turn up flow rate on coolant valve.
	Sanding paper is worn out	Change belt
	Material is soft and being fed too slowly	Speed up conveyor belt speed.
Sanding belt will not run, or slips on roller.	Emergency stop button is engaged	Disengage the stop button.
	Limit switches are activated.	Position sanding belt so it is between the limit switches.
	Insufficient air pressure causing belt to slip on rollers .	Make sure air pressure regulator is set at 75 to 80 PSI (page 9).
	Dust or debris on conveyor rollers.	Clean conveyor rollers.
Sanding belt keeps tripping limit switch.	Tracking adjustment/oscillation is not correct.	Set tracking correctly.
	Dust or debris covering photo eye	Check and clean dust/debris from photo eye
Machine takes too long to stop after emergency switch is activated.	Air pressure is too low.	Set air pressure to 75 to 80 PSI.
	Brake pads are worn.	Replace brake pads
Grinding noise when brake is activated.	Brake pads are worn.	Replace brake pads (rotor may need turning also).
Too much rounding	Too much material is being removed, too tightly.	Reduce the amount of pressure on the part by opening up the conveyor bed opening slightly
The front end of stock is thinner than the rear.	Rear hold down roller is too low in relation to the contact drum.	Raise rear pressure bar (page 16-17)
The rear end of stock is thinner than the front.	Front hold down roller is too low in relation to the contact drum.	Raise front pressure bar(page 16)

Trouble	Probable Cause	Remedy
Uneven thickness between the left and right sides of the workpiece.	Table not positioned correctly in relation to contact drum.	Adjust table until it is parallel left to right (pages 17-18).
	Front hold down roller not in correct position in relation to contact drum.	Adjust front hold down roller so parallel. (See page 16)
	Graphite strip and felt pad are won out.	Replace graphite strip and felt pad. (See page 14.)
	Conveyor belt is worn.	Replace conveyor belt (contac APEX Service Tech.)
Uneven thickness between the leading and trailing workpiece	Feed rate is too high.	Reduce feed rate. See page 16
	Too much stock removal.	Reduce amount material being removed.
	Grit of sanding belt too fine.	Use larger grit sanding belt.
	Unequal position of hold down rollers.	Adjust hold down roller to produce pressure on stock.
	Table not parallel front to back.	Adjust table until it is parallel front to back (pages 17-18).
Workpiece slips on conveyor belt.	Not enough pressure between hold down roller and workpiece	Increase pressure between hold down roller and workpiece.
	Too much dust or debris on conveyor belt.	Clean conveyor belt with compressed air.
	Rear pressure bar too low, halts the work piece.	Raise rear hold down roller until proper contact is achieved
Straight strip of notches or grooves in the workpiece.	Dirty hold down rollers.	Clean hold down rollers.
	Contact drum is scratched.	Replace contact drum.
	Graphite strip and felt pad are worn	Replace graphite and pad.
“Snake” marks on workpiece.	Local damage to the sanding belt.	Replace sanding belt.
Straight parallel running stripes over entire width of workpiece.	Joint of the sanding belt is too thick or is open.	Repair joint or replace sanding belt.
Glossy spots on the wood.	Sanding belt is too old.	Replace with new sanding belt.

Replacement Parts

Replacement parts are listed on the following pages, use these pages to find the parts you need to order and follow the instructions listed below.

How To Order Parts

APEX Machine Group
4700 Olson Memorial Highway
Golden Valley , Minnesota 55442
Toll-Free: (855) 500-7263
Local: (952) 224-2899
www.apexmachinegroup.com

To process your order request correctly please provide the following information:

- **Your Company Name**
- **Shipping Address**
- **Your Name**
- **Telephone number, include extension**
- The exact method of delivery you want (air mail, Federal Express, UPS Red, DHL, motor freight, rail freight, etc.)
- Machine **Model** & **Serial Number**; found on the ID plate attached to the machine.
- Item Number; found on the Bills of Material in the Operator's Manual.
- Part Number; found on the Bills of Material in the Operator's Manual.
- Quantity Needed
- Description; found on the Bills of Material in the Operator's Manual.
- Reference Drawing Number; found on the Bills of Material in the Operator's Manual.

Replacement Parts List

These are parts we recommend you purchase. These are replacement parts that will normally be needed during the service life of your machine. By having these on hand your machine down time will be minimized.

Qty	Description
4	Pinch Roll Bearings
4	Pinch Roll Springs
2	Bearings, Flange Contact drum
2	Bearing brush roller
4	Brake Pucks/Pads
2	Solenoid Valve
4	Limit Switch Tip kit (includes: ceramic tip, spring, & fastners) (Use ceramic tips or tips that do not spark, steel may cause sparks)
1	Tracking Eye complete set
1	Conveyor belt

Apex Machine Maintenance

Continual, scheduled maintenance by trained personnel is advised to keep the Apex machine functioning as safely and effectively as possible. To avoid unnecessary wear and the potential breakdown of the machine, the following scheduled maintenance procedures should be performed on the machine regularly. The maintenance of the Apex sanders is based on the sander running a full 8 hour shift per day.

Daily:

- Normal daily cleaning; clean out machine by blowing all excess grindings from conveyor bed, around photo eyes for belt tracking and hold down rollers, make sure machine is clean and dry for next work shift.

Weekly:

- Thorough cleaning, including blowing out inside of machine & conveyor belt.
- Check to insure conveyor belt is centered on sander.
- The machine should be checked for loose parts and bolts, and tightened if loose.
- Check abrasives for wear.

Monthly:

- Thorough cleaning & conveyor belt.
- Inspect control box for dust, if excessive dust, vacuum dust on electrical components.
- Check to insure conveyor belt is centered on sander.
- The machine should be checked for loose parts and bolts, and tightened if loose.
- Grease all bearings at grease points including bearings on conveyor.
- V-belts should be inspected and tightened if necessary.
- All air fittings and valves should be checked for leaks.
- Emergency stops should be tested.
- Check abrasives for wear.
- Inspect conveyor belt for excessive wear

Yearly:

- Extensive cleaning, including controls panels, switches & conveyor belt.
- Repeat daily, weekly and monthly maintenance at 12 month point.
- Inspect and replace oil for conveyor gear drive unit (90 weight gear lube).
- Inspect brake pads on disc calipers need to be checked every six months and replaced if needed.
- Conveyor bed level side to side, if bed is not level then re-level machine side to side.

If you need assistance with these or any other machine issues please call Apex Machine Group at (855) 500-2739 or email info@apexmachinegroup.com

Machine number 2037M-D Serial# 180413

Scheduled maintenance performed by _____ Date _____

Scheduled maintenance performed by _____ Date _____

Scheduled maintenance performed by _____ Date _____

Scheduled maintenance performed by _____ Date _____

Scheduled maintenance performed by _____ Date _____

Scheduled maintenance performed by _____ Date _____

Scheduled maintenance performed by _____ Date _____

Scheduled maintenance performed by _____ Date _____

Scheduled maintenance performed by _____ Date _____

Scheduled maintenance performed by _____ Date _____

Scheduled maintenance performed by _____ Date _____

Scheduled maintenance performed by _____ Date _____

Notes _____

_____

_____

_____

Follow-up _____

_____

M 15 Set – UP

For Programming Thickness

T enter the thickness of the material to be obtained with the M15 unit ,the following steps should be followed:

1. Press the yellow button on the keypad labeled "Prog"

2. Enter the thickness you desire by pressing the buttons on the keypad. Such as: .125 for 1/8". (Caution: you must press the decimal point when you desire thickness settings less than 1".)

3. To enter this thickness into the system, press the "arrow" , located in the right hand corner of the keypad.

4. Once this is entered, the "Start" button located on the bottom left hand side of the keypad will start to flash red in color.

5. Press the "Start" button and the machine will start to move the conveyor bed to the thickness you desire.

Note: If you wish to erase the thickness you entered, press the button directly above the enter arrow. This button looks like a division sign. If you wish not to have the machine go to the thickness shown when the "Start" button is flashing, press the "Stop" button directly below the "Start" button on the left hand side of the keypad.

Loss of Power or change the Battery

If you need to reset the unit to the correct thickness of the part you just ran or know follow the following steps.

Press F 2 Press enter lower right corner button

Enter the thickness you desire (example 1.00)

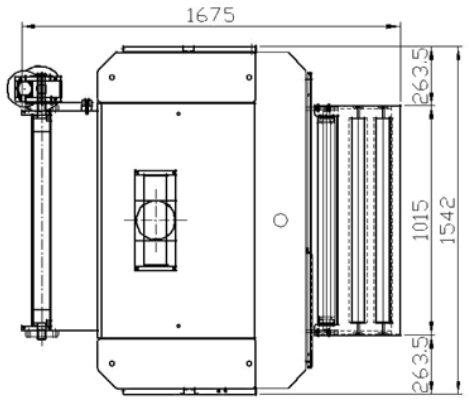
Press enter lower right corner button

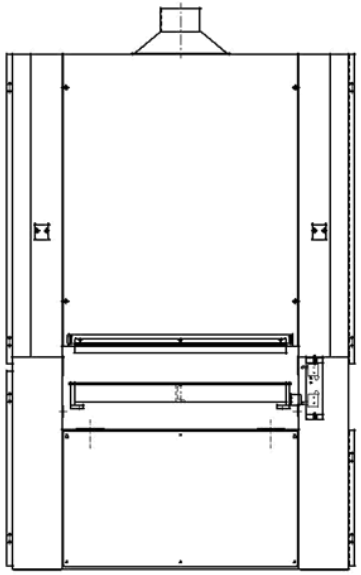
Press F 0 Press enter and press enter a second time.

Note: If an additional complete manual is required call Apex Machine Group 855-500-2739

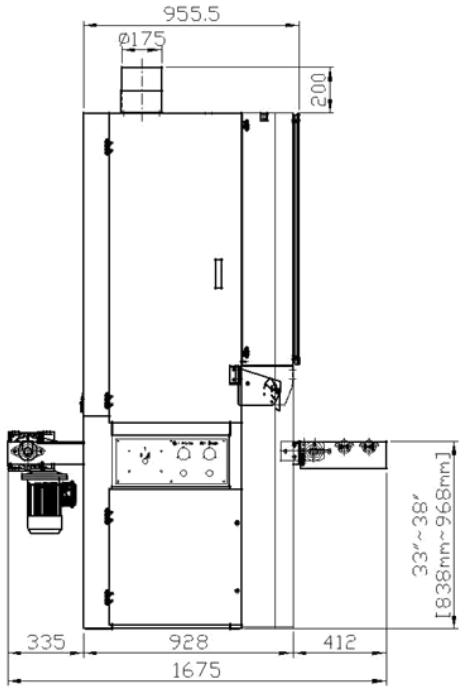
Or e-mail info@apexmachinegroup.com Attn.: Service Department

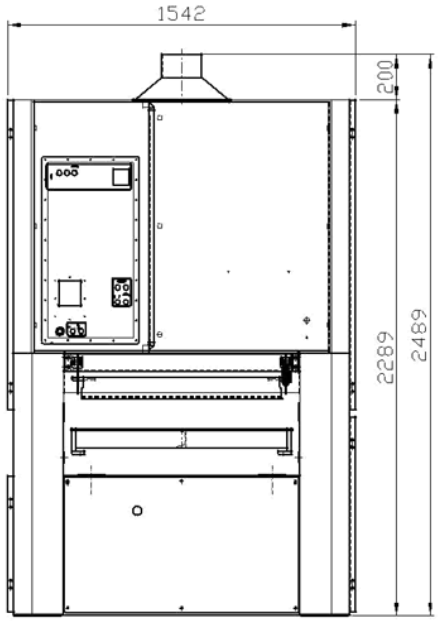
ITEM	N umber	Description
1	GCP-7390020067	DIMENSIONAL
2	GCP-7390041035	MAIN ASSY,UPPER FRAME
2-1	GCP-7390042033	UPPER FRAME SUB-ASSY
2-1-1	GCP-7390032009	ELECTRICAL ENCLOSURE
2-2	GCP-7390034009	TRIP BAR ASSY,OVERTHICK
2-3	GCP-7390097001	CLEANING BRUSH ASSY
3	GCP-7390019048	COVER ASSEMBLY
4	GCP-7390033004	SWITCH ASSY,DOOR
5	GCP-7390006046	CONVEYOR ASSY
5-1	GCP-7390007018	DRIVE ASSEMBLY,CONV
5-1-1	GCP-7390029017	GEARMOTOR,NMRV075 I120 1HP
5-2	GCP-7390005008	TAKE UP ROLL ASSY
5-3	GCP-7390058008	INFEED GUARD ASSY
6	GCP-7390004011	CONVEYOR SUPPORT ASSY
6-1	GCP-7390043006	ASSEMBLY,CONVEYOR LIFT GEARING
6-2	GCP-7390044006	ASSEMBLY,JACK
7	GCP-7390031003	DIGITAL READOUT ASSY
8	GCP-7390065004	LIMIT SWITCH ASSY,CONV BED HEIGHT
9	GCP-7390010021	DRUM HEAD ASSY
9-1	GCP-7390048013	FRAME ASSY,DRUM
9-1-25	GCPR4-1094000-01	CONTACT DRUM(40~45)
9-1-26	GCPV4-1191000	PULLEY(130mm)
9 -2	GCP-7390055006	Hold Down Rolls Assembly IDLER ROLL ASSY
9 -3	GCP-7390045006	Hold Down Rolls Assembly SWITCH ASSY ,IDLER ROLL ASSY
10	GCP-7390003052	ASSY,MOTOR PLATE,DRUM HEAD
11	GCP-7390008037	Hold Down Rolls Assembly





OUTFEED VIEW

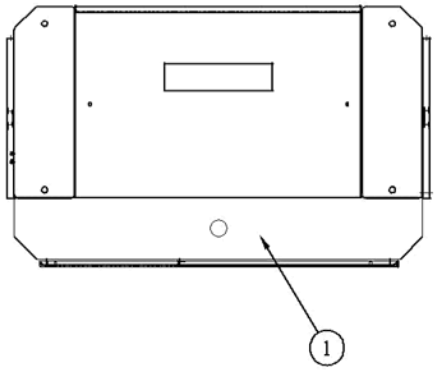


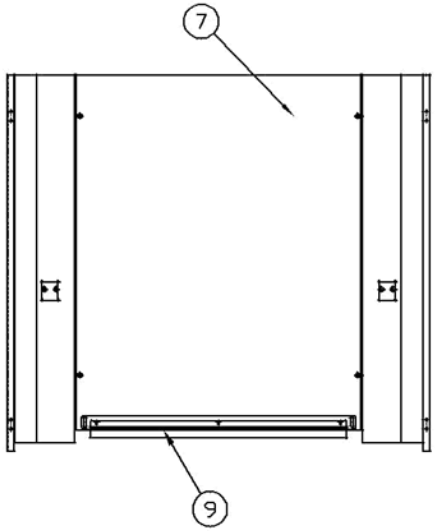


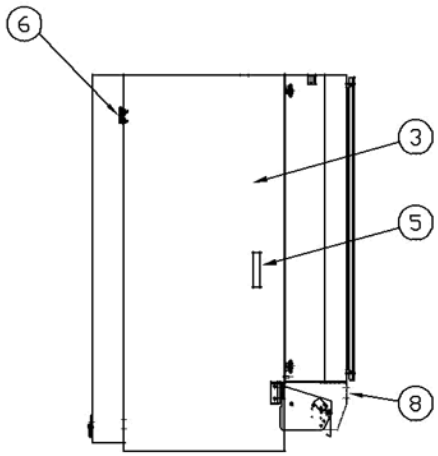
INFEED VIEW

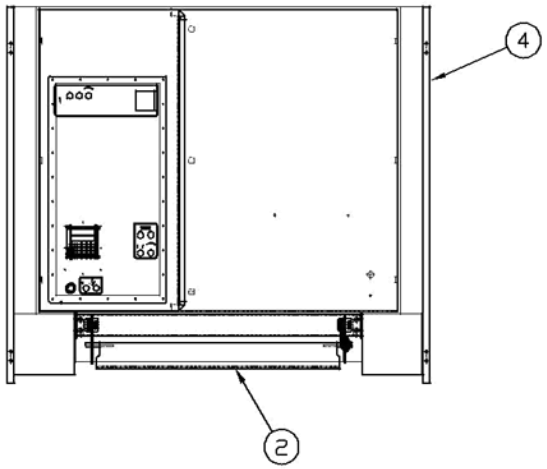
UNITS	mm	DATE	NUMBER	GCP-7390020067
SCALE	1 : 30	03-31-2018		
TITLE	DIMENSIONAL 2037M-D-0006		Number of drawing sheets: 1	REV: 00

ITEM NO	Number	Description	Quantity
1	GCP-7390042033	UPPER FRAME SUB-ASSY	1
2	GCP-7390034009	TRIP BAR ASSY,OVERTHICK	1
3	GCPP4-1157900	OUTBOARD UPPER DOOR	1
4	GCPP4-1158100	INBOARD UPPER DOOR	1
5	GCPB1-0207-2	DOOR LATCH	1
6	GCPX4-1019200	DOOR HINGE	8
7	GCPP4-1091901	PANEL,OUTFEED COVER	1
8	GCPP3-1092300	INFEED UPPER COVER	1
9	GCP-7390097001	Cleaning brush assembly	1

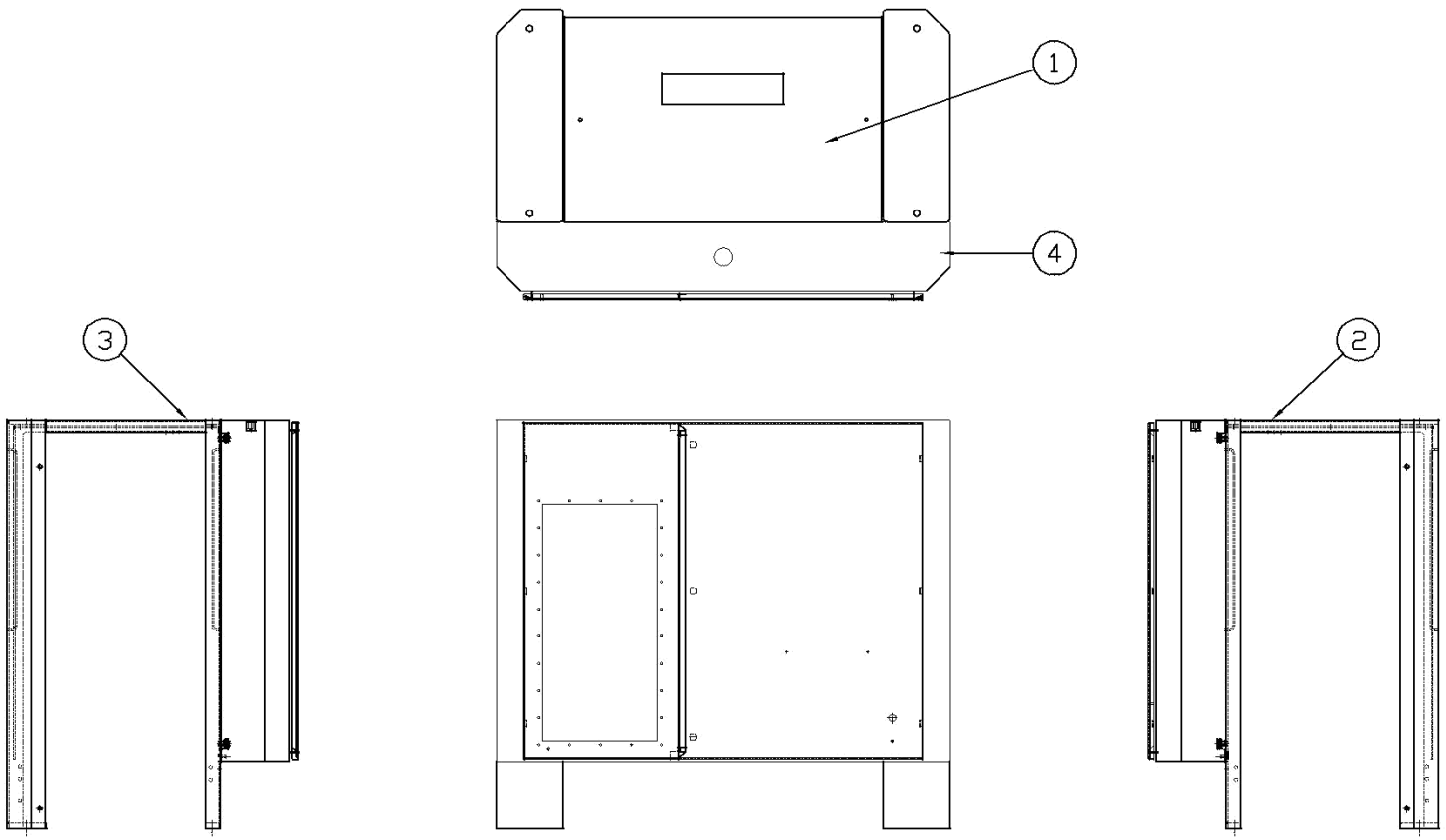








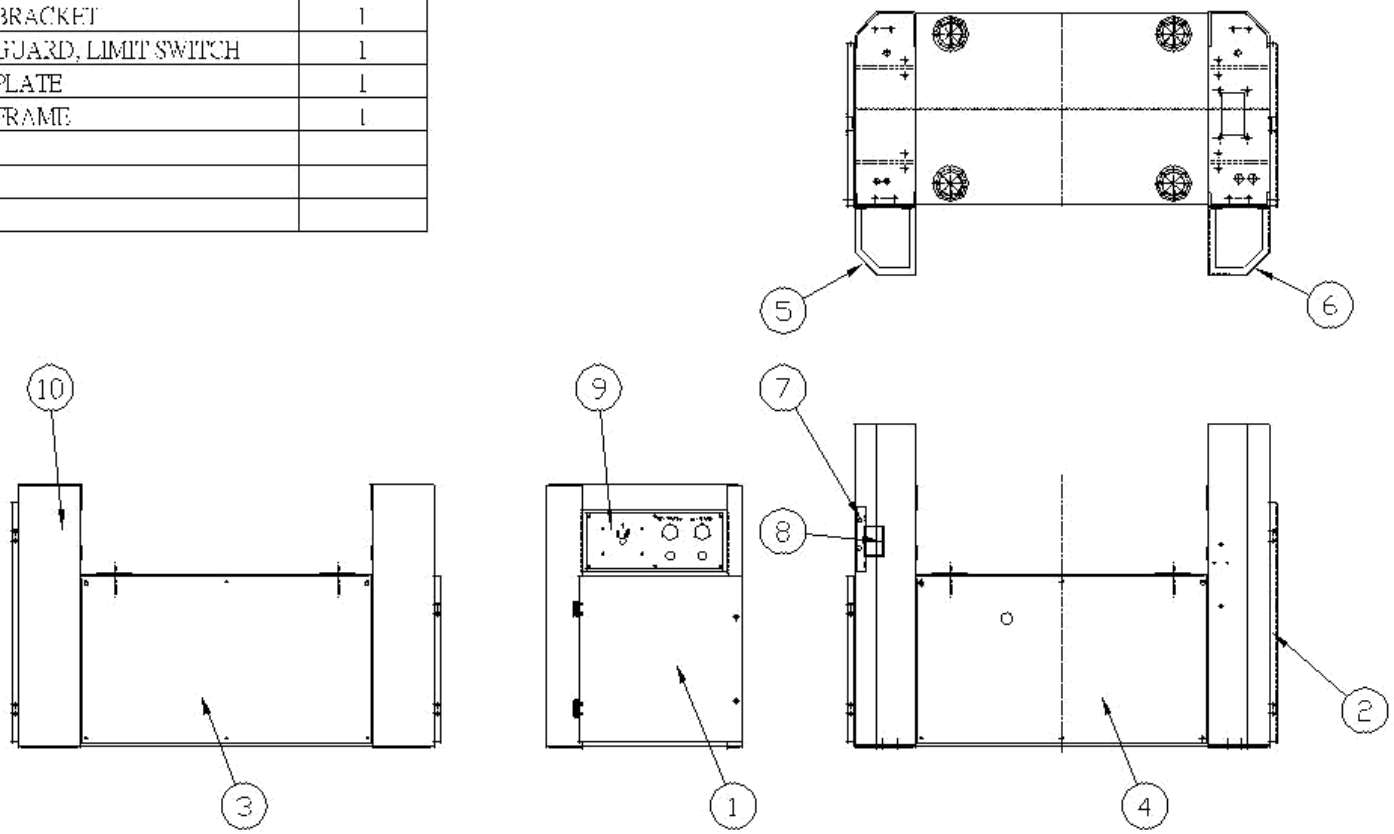
UNITS	mm	DATE	NUMBER	GCP-7390041035
SCALE	1 : 25	10-20-2017		
TITLE	MAIN ASSY,UPPER FRAME		Number of drawing sheets: 1	REV: 00



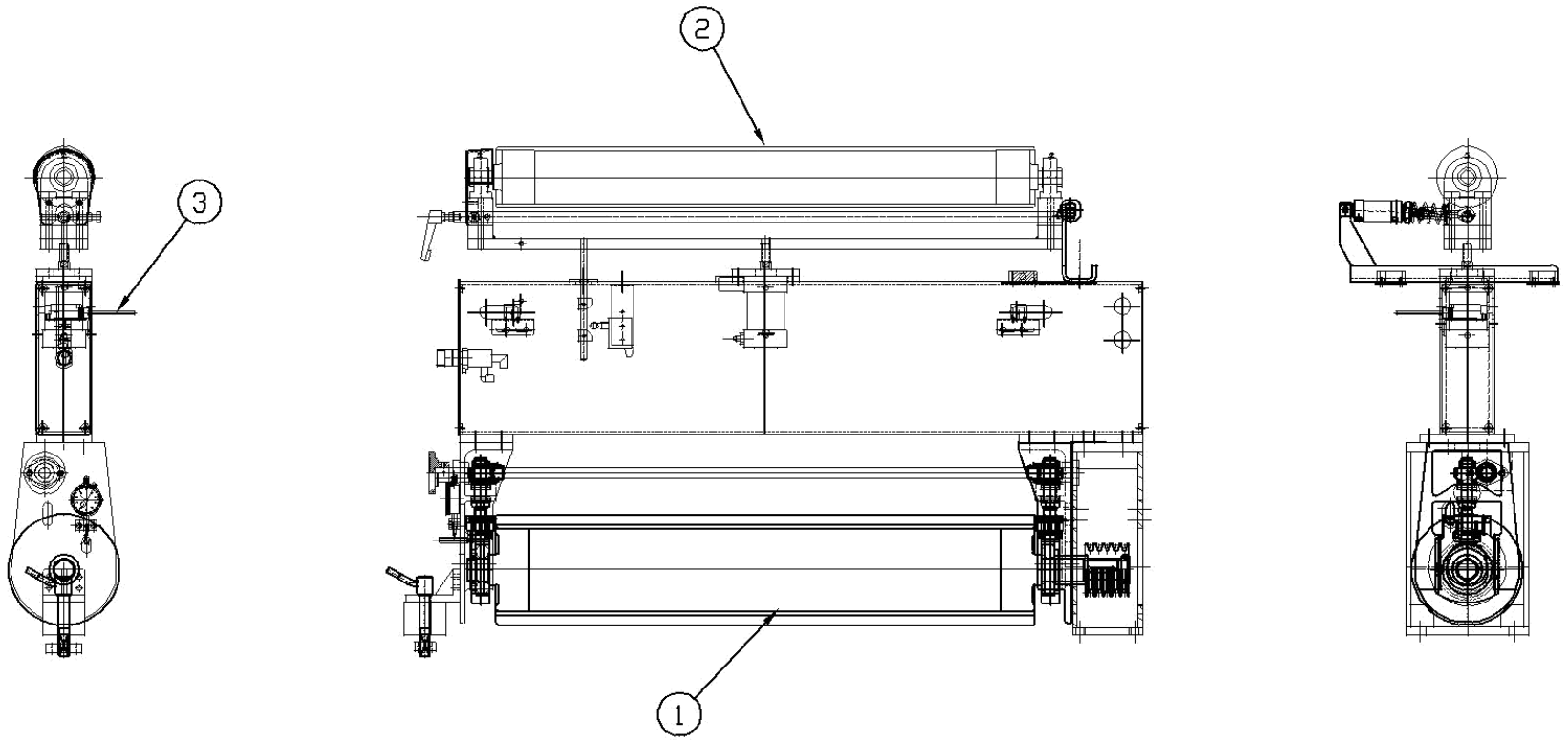
ITEM NO	Number	Description	Quantity
1	GCPP4-1157600	top cover	1
2	GCPX4-1157700	IB door frame	1
3	GCPX4-1157800	OB door frame	1
4	GCP-7390032009	electrical enclosure assy	1

UNITS	mm	DATE	NUMBER	GCP-7390042033
SCALE	1 : 20	12-28-2015		
TITLE	UPPER FRAME SUB-ASSY		Number of drawing sheets: 1	REV: 00

ITEM NO	Number	Description	Quantity
1	GCPP4-1158000	outboard lower door	1
2	GCPP4-1158200	inboard lower door	1
3	GCPM-1092100	outfeed lower panel	1
4	GCPP4-1092000	infeed lower panel	1
5	GCPP4-1077102	outboard lower panel	1
6	GCPP4-1077202	inboard lower panel	1
7	GCPPM-1158300	BRACKET	1
8	GCPP4-1067100	GUARD, LIMIT SWITCH	1
9	GCPM4-1158600	PLATE	1
10	GCPX3-1157500	FRAME	1
11			
12			
13			

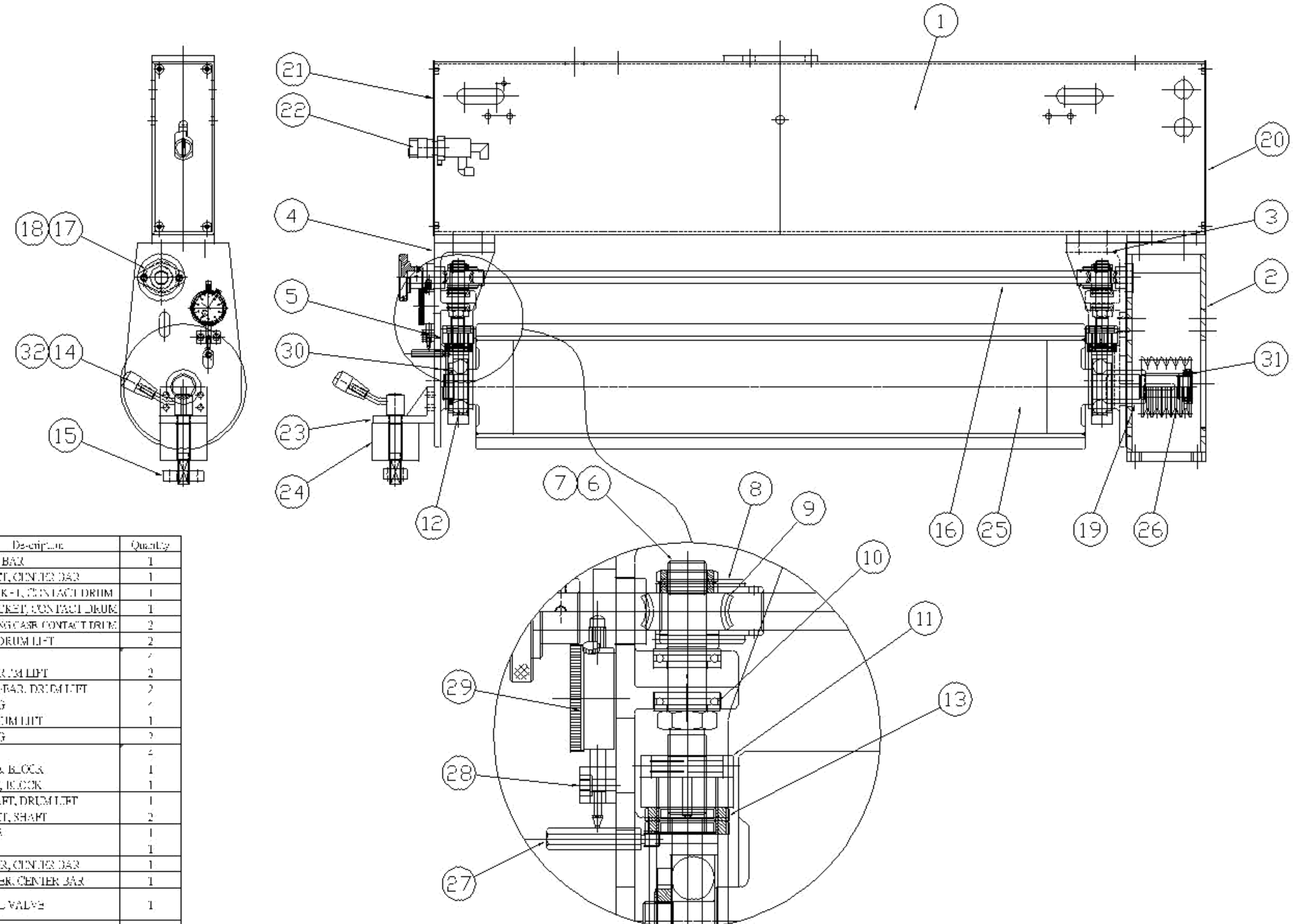


UNITS	mm	DATE	NUMBER	GCP-7390019048
SCALE	1 : 24	12-28-2016		
TITLE	COVER ASSEMBLY		Number of drawing sheets: 1	REV: 00



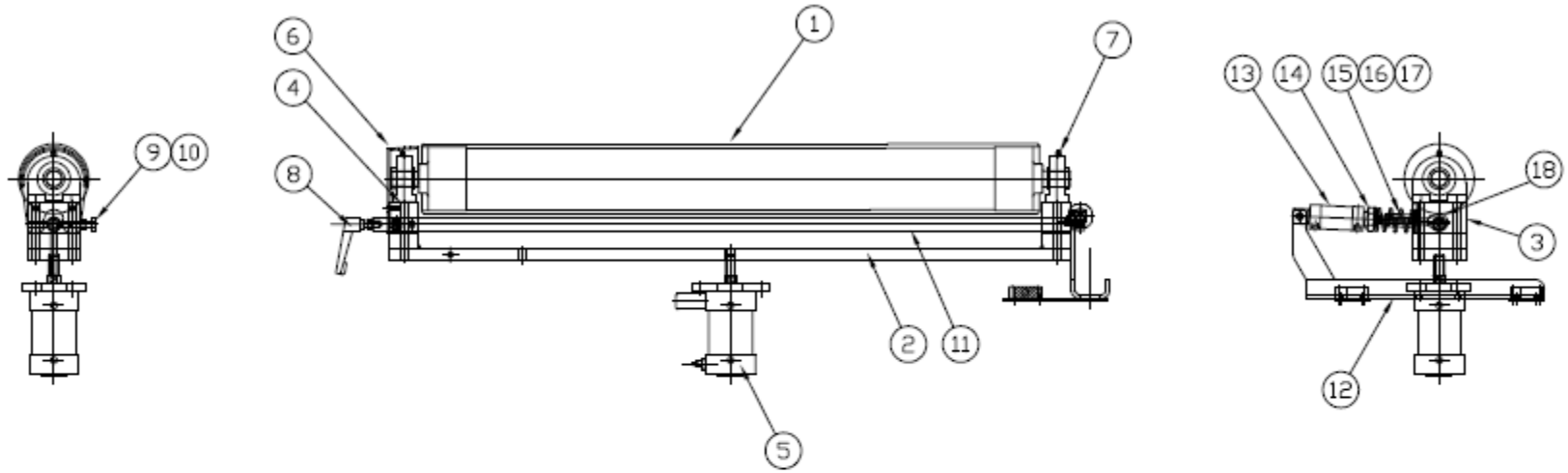
ITEM NO	Number	Description	Quantity
1	GCP-7390048013	CONTACT DRUM ASSY	1
2	GCP-7390055006	IDLER ROLL ASSY	1
3	GCP-7390049005	BELT BREAKAGE& MISTRACKING ASSY	1
4			

UNITS	mm	DATE	NUMBER	GCP-7390010021
SCALE	1 : 12	10-19-2012		
TITLE	DRUM HEAD ASSY		Number of drawing sheets: 1	REV: 00



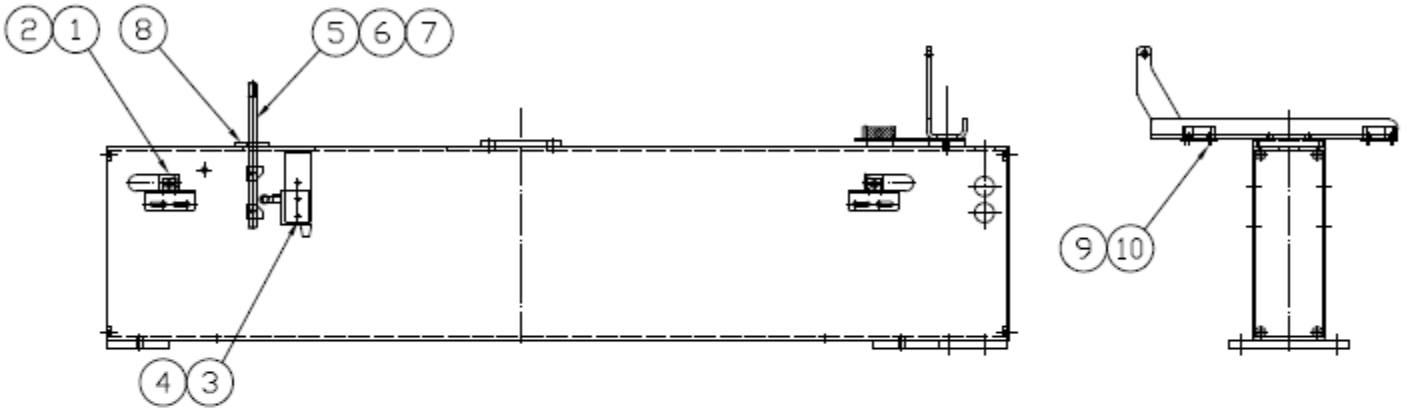
ITEM NO	Number	Description	Quantity
1	GCPX2-1120400	CENTER BAR	1
2	GCPX2-1120500	BRACKET, CENTER BAR	1
3	GCPF3-1058900	LB BRACKET, CONTACT DRUM	1
4	GCPF3-1058600	OB BRACKET, CONTACT DRUM	1
5	GCPF3-1055400	IB BEARING CASE CONTACT DRUM	2
6	GCPS4-1055500	SHAFT, DRUM LIFT	2
7	GCPD1-0284-5	NUT	2
8	GCPG4-1056600	JACK, DRUM LIFT	2
9	GCPG4-1056700	WORM GEAR, DRUM LIFT	2
10	GCPD1-0279	BEARING	2
11	GCPX4-1067400	NUT, DRUM LIFT	1
12	GCPD1-0249	BEARING	2
13	GCPD1-0284-6	NUT	2
14	GCPX4-1076300	HANDLE, BLOCK	1
15	GCPX4-1057700	FIX NUT, BLOCK	1
16	GCPS4-1120600	ADJ SHAFT, DRUM LIFT	1
17	GCPF4-1057000	BRACKET, SHAFT	2
18	GCPX4-1030100	HANDLE	1
19	GCPX4-1120800	RING	1
20	GCPPM-1120700	LB COVER, CENTER BAR	1
21	GCPPM-1092700	OB COVER, CENTER BAR	1
22	GCP.ISVEH3-1/2-S-2N	MANUAL VALVE	1
23	GCPF3-1057400	BRACKET	1
24	GCPX4-1057500	BLOCK	1
25		CONTACT DRUM	1
26		FILTER(1.0um)50/60HZ	1
27	GCPX4-1111900	rod, dial indicator	1
28	GCPX4-1018300	bracket, dial indicator	1
29	D1-0052-11	dial indicator	1
30	GCPD1-0282	Nut AN05	1
31	GCPD1-0284-4	Nut AN07	2
32	GCPD1-0135-3	HANDLE MID	1

UNITS	mm	DATE	NUMBER	GCP-7390048013
SCALE	1 : 9	10-19-2011		
TITLE	FRAME ASSY,DRUM		Number of drawing sheets: 1	REV: 00



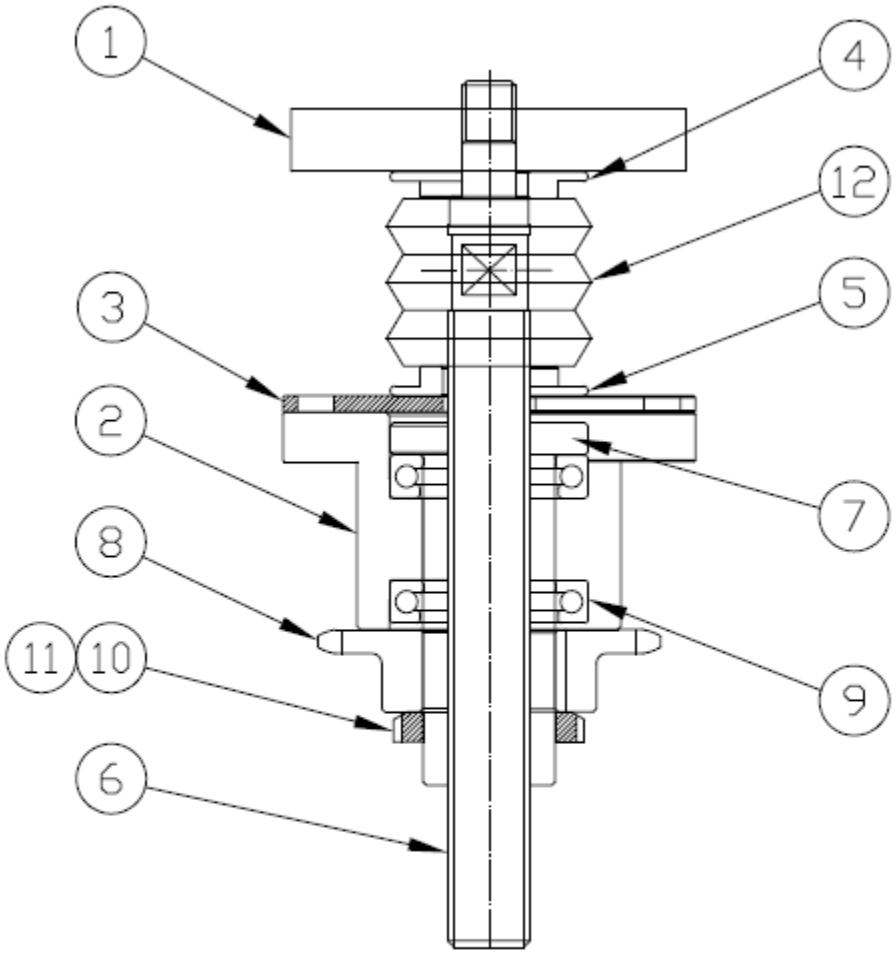
ITEM NO	Number	Description	Quantity
1	GCPR3-1120900	IDLER ROLL	1
2	GCPX1-1121000	BASE, IDLER ROLL YOKE	1
3	GCPP1-1110000	IB SPACER, IDLER ROLL	1
4	GCPP1-1110100	OB SPACER, IDLER ROLL	1
5	GCPD1-0201-2	TENSION CYLINDER	1
6	GCPP4-1076000	BELT LOADING GUIDE	1
7	GCPD1-0257	BEARING	2
8	GCPB1-0006-13	HANDLE	1
9	GCPX4-1111800	BOLT	1
10	GCPR1-1059100	HX BLOCK	1
11	GCPS4-1121100	ADJ SHAFT, TRACKING CYLIND	1
12	GCPX4-1073300	CYLINDER BRACKET	1
13	GCPD1-0229-21	TENSION CYLINDER	1
14	GCPR4-1059500	NUT	1
15	GCPX4-1059600	BLOCK	1
16	GCPR4-1059700	SPRING	1
17	GCPR4-1059800	WASHER	1
18	GCPD1-0273	BEARING	1
19			
20			

UNITS	mm	DATE	NUMBER	GCP-7390055006
SCALE	1 : 10	10-19-2012		
TITLE	IDLER ROLL ASSY		Number of drawing sheets: 1	REV: 00



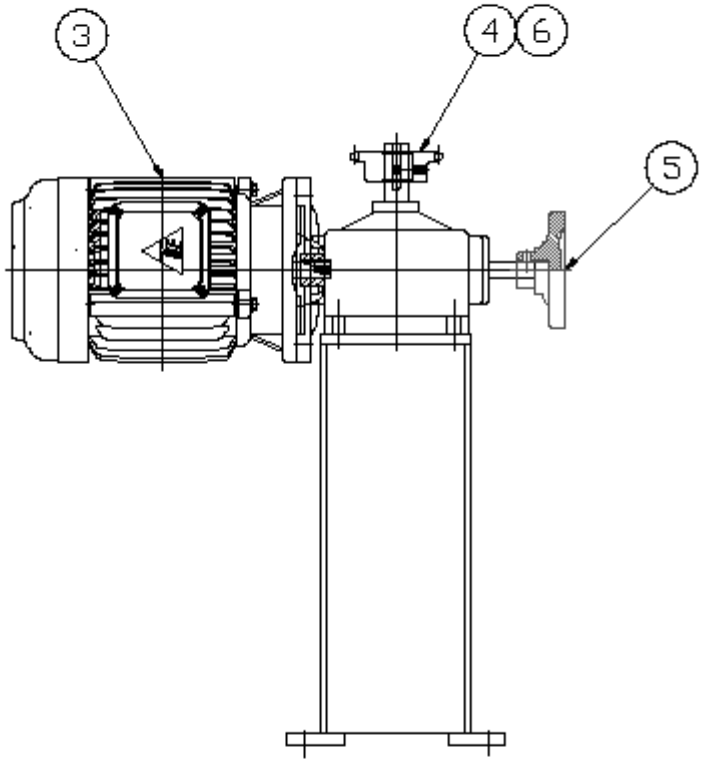
ITEM NO	Number	Description	Quantity
1	GCPP4-1109400	BRACKET, LIMIT SWITCH	2
2	GCPA1-0117-1	LIMIT SWITCH	2
3	GCPX4-1057900	BRACKET, BELT BREAKAGE	1
4	GCPA1-0118	LIMIT SWITCH	1
5	GCPX4-1058000	LOWER STOP, LIMIT SWITCH	1
6	GCPX4-1058100	UPPER STOP, LIMIT SWITCH	1
7	GCPX4-1058200	SHAFT, BREAKAGE	1
8	GCPX4-1058300	DUST PLATE	1
9	GCPP4-1109100	PHOTO EYE BRACKET	2
10	GCPA1-0124	PHOTO EYES	2
11			

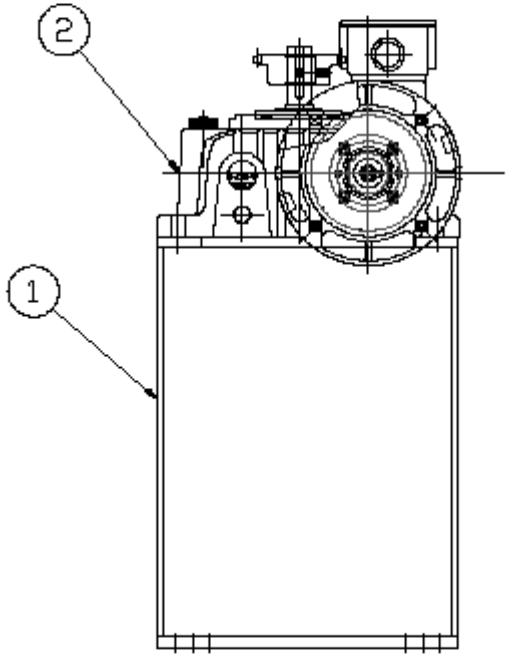
UNITS	mm	DATE	NUMBER	GCP-7390049005
SCALE	1 : 10	10-06-2012		
TITLE	SWITCH ASSY,BELT MISTRACK		Number of drawing sheets: 1	REV: 00



ITEM NO	Number	Description	Quantity
1	GCPX4-1055500	support bracket, bed	4
2	GCPF4-1055600	bearing case	4
3	GCPF4-1055700	cap, bearing case	4
4	GCPX4-1055800	top cover, rubber screw	4
5	GCPX4-1055900	bottom cover, rubber screw	4
6	GCPX4-1106600	jack, bed lift	4
7	GCPX4-1056100	Nut, bed lift	4
8	GCPC4-1056200	sprocket, bed lift	4
9	GCPD1-0277	bearing 2908, jack assy	8
10	GCPD1-0283	washer AW08	4
11	GCPD1-0282	Nut AN08	4
12	GCPB1-0030	rubber boot	2

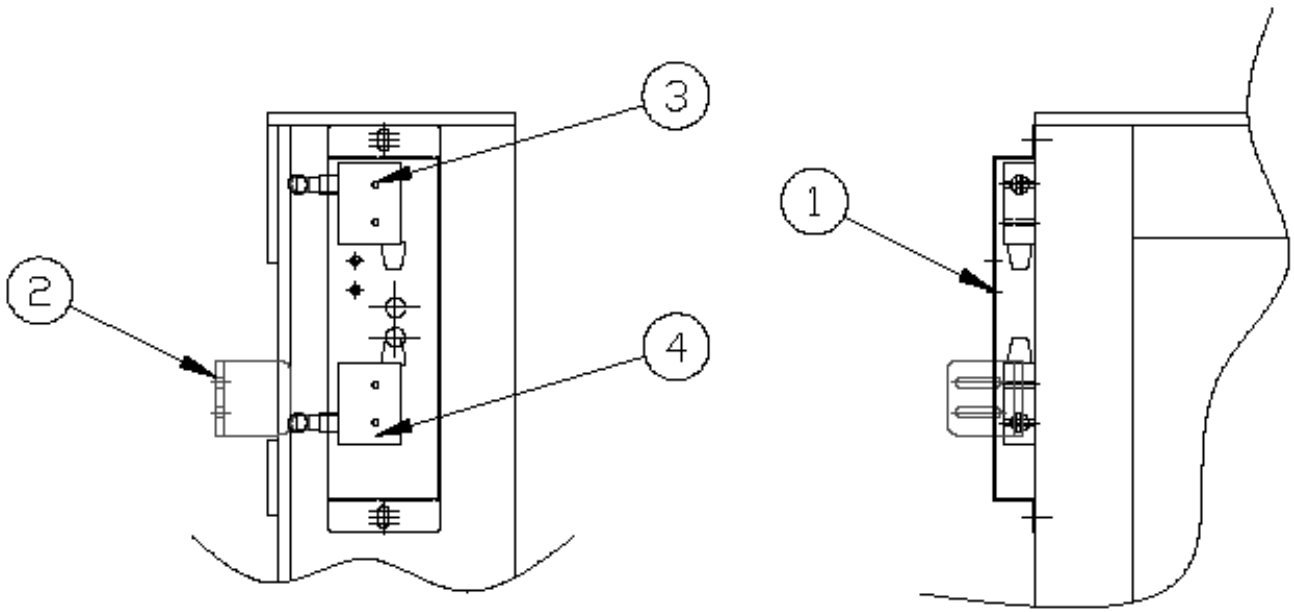
UNITS	mm	DATE	NUMBER	GCP-7390044006
SCALE	1 : 2	09-25-2012		
TITLE	ASSEMBLY,JACK		Number of drawing sheets: 1	REV: 00





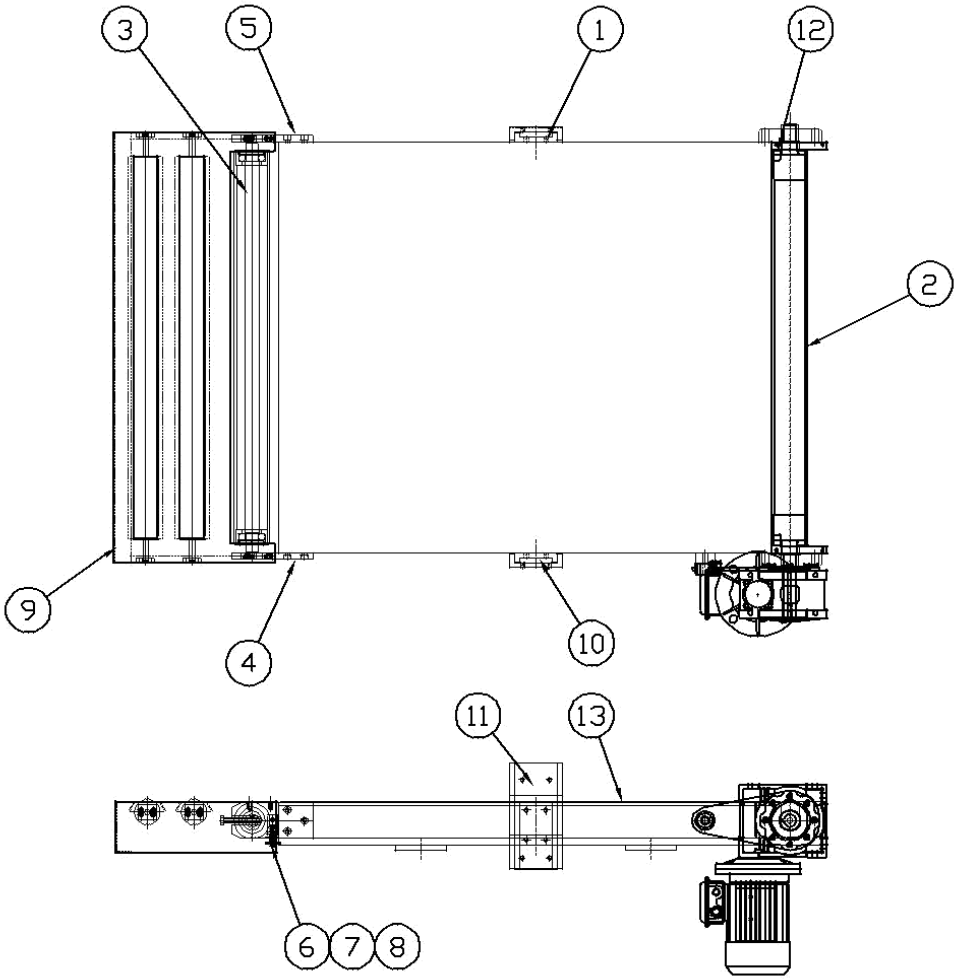
ITEM NO	Number	Description	Quantity
1	GCPX4-1074900	REDUCER BRACKET, BED OPENING	1
2	GCPA1-0301	GEAR MODUCER, BED OPENING	1
3	GCPA1-0282-1	MOTOR	1
4	GCPC4-1055300	SPROCKET	1
5	GCPX4-1055400	HAND WHEEL	1
6	GCPS1-0220-1	KEY	1

UNITS	mm	DATE	NUMBER	GCP-7390043006
SCALE	1 : 5	09-25-2012		
TITLE	ASSEMBLY,CONVEYOR LIFT GEARING		Number of drawing sheets: 1	REV: 00



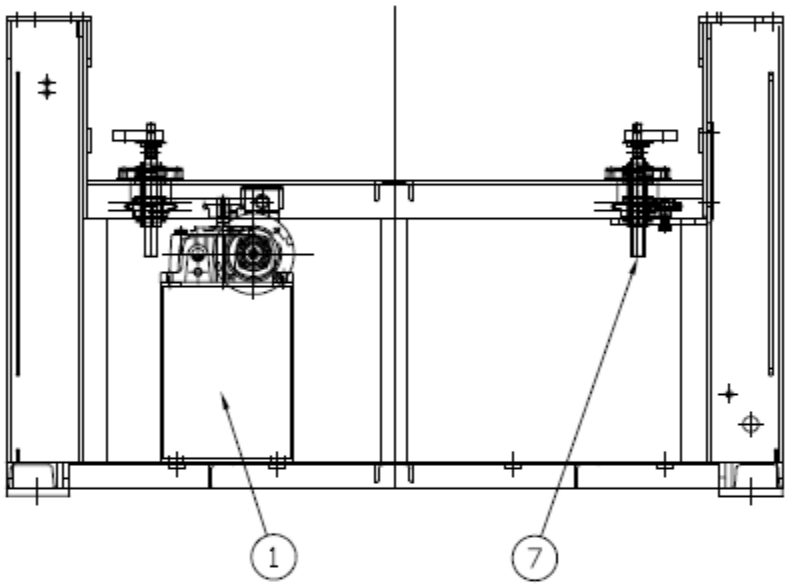
ITEM NO	Number	Description	Quantity
1	GCPM-1106700	COVER, LIMIT SWITCH	1
2	GCPX-1060201	STOP, LIMIT SWITCH	1
3	GCPAL-0118	LIMIT SWITCH	1
4	GCPAL-0118	LIMIT SWITCH	1

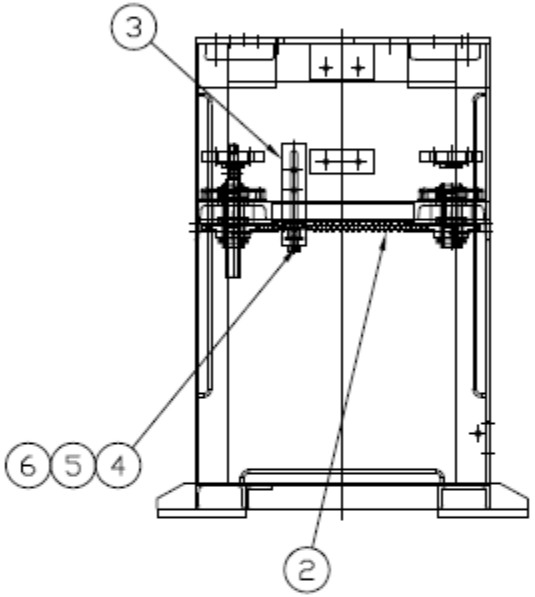
UNITS	mm	DATE	NUMBER	GCP-7390065004
SCALE	1 : 4	09-28-2012		
TITLE	LIMIT SWITCH ASSY, CONV BED HEIGHT		Number of drawing sheets: 1	REV: 00



ITEM NO	Number	Description	Quantity
1	GCPX3-1187500	CONVEYOR BED	1
2	GCP-7390007018	FEED DRIVE ASSY	1
3	GCP-7390005008	TAKE UP ROLL ASSY	1
4	GCPT3-1068500	IB BRACKET, INFEED ROLL	1
5	GCPT3-1068600	OB BRACKET, INFEED ROLL	1
6	GCPX4-1106500	BRACKET, BELT GUIDE ROLLER	2
7	GCPR4-1068800	BELT GUIDE ROLLER	2
8	GCPX4-1053700	SPACER	4
9	GCP-7390058008	INFEED GUARD ASSY	1
10	GCPT3-1053800	INNER SLIDER	2
11	GCPT3-1053900	OUTER SLIDER	2
12	GCPP4-1106800	guard,drive roll	2
13		conveyor belt 915Wx2800Lx5t	1

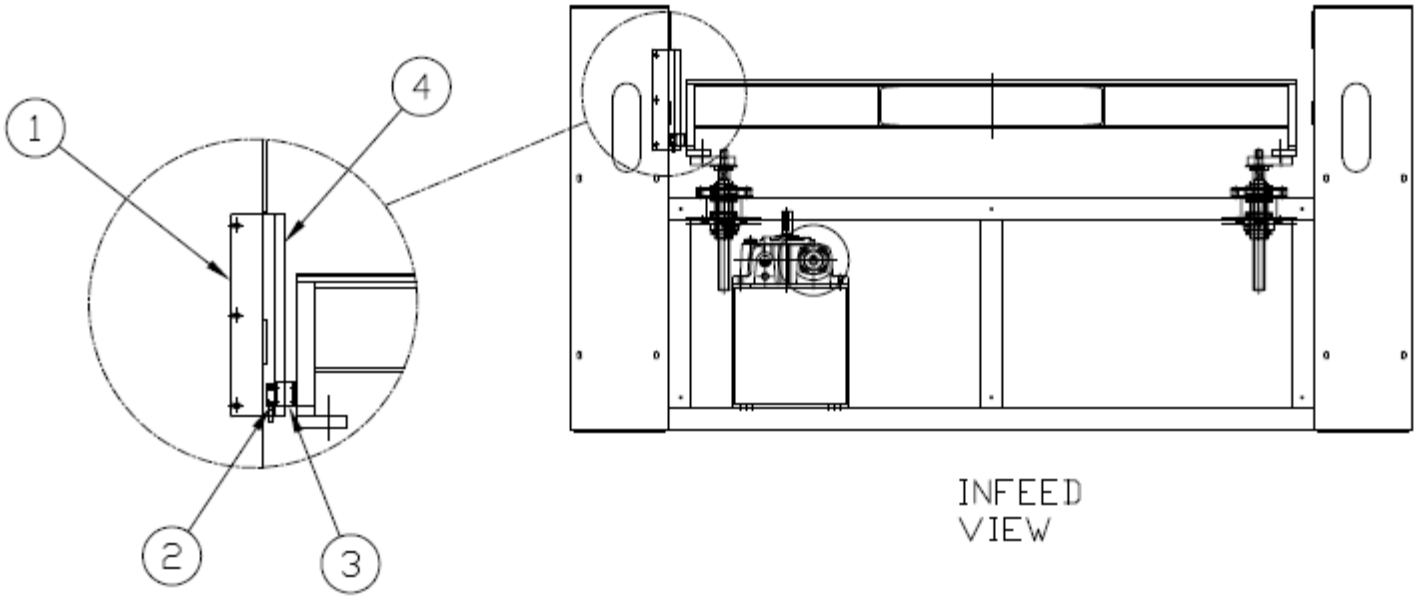
UNITS	mm	DATE	NUMBER	GCP-7390006046
SCALE	1 : 16	12-28-2016		
TITLE	CONVEYOR ASSY		Number of drawing sheets: 1	REV: 00





ITEM NO	Number	Description	Quantity
1	GCP-7390043006	gear reducer, bed opening	1
2	GCPD1-0281	chain	1
3	GCPP4-1052500	bracket, idler roll	1
4	GCPX4-1052600	idler roll shaft	1
5	GCPC3-1052700	idler roll	1
6	GCPD1-0250	bearing	1
7	GCP-7390044006	jack assy	1

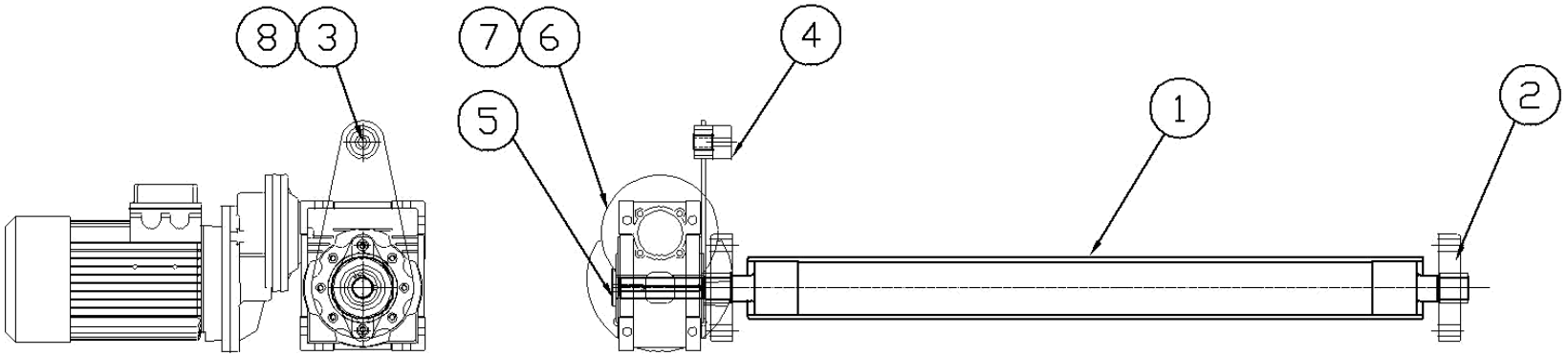
UNITS	mm	DATE	NUMBER	GCP-7390004011
SCALE	1 : 13	09-25-2012		
TITLE	CONVEYOR SUPPORT ASSY		Number of drawing sheets: 1	REV: 00



INFEED
VIEW

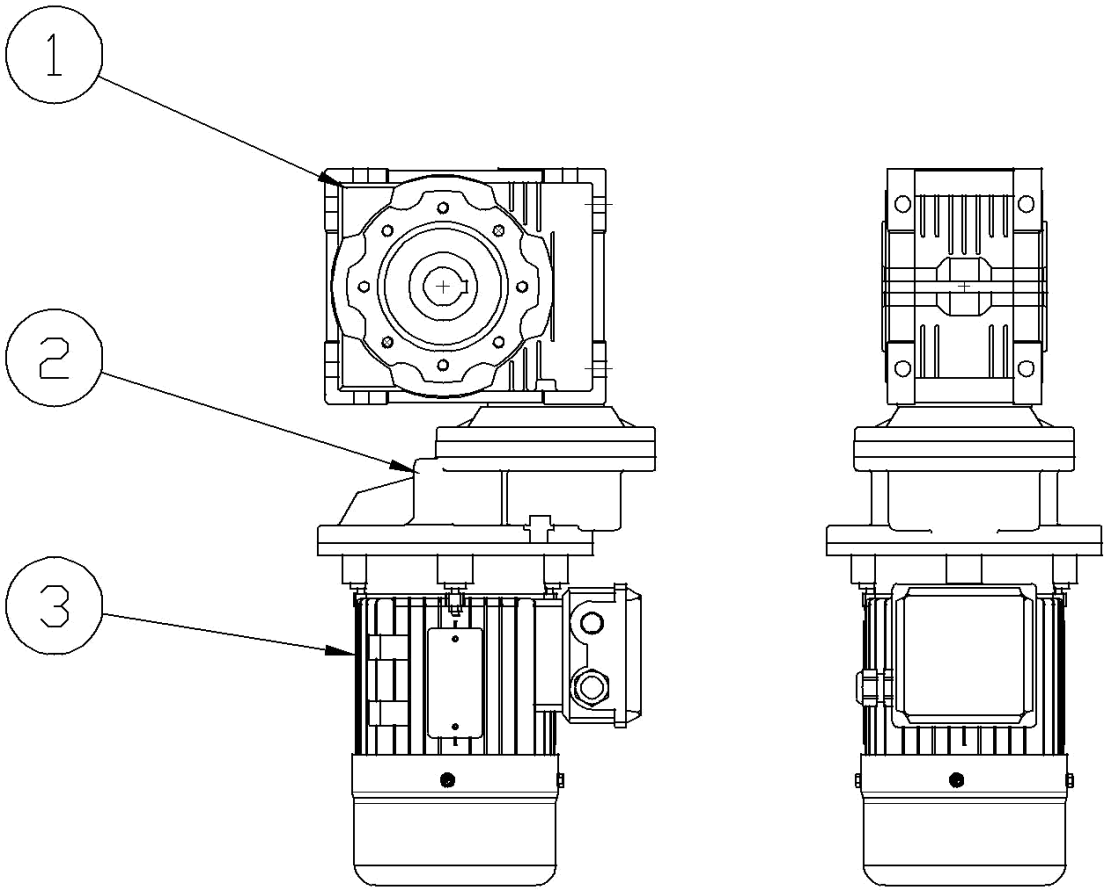
ITEM NO	Number	Description	Quantity
1	GCPP4-1055000	PLATE, SENSOR STRIP	1
2	M15S	DIGITAL READOUT	1
3	GCPP4-1097300	SENSOR MTG. BRACKET	1
4	DIGITAL-xx	MAGNETIC SENSOR STRIP	1

UNITS	mm	DATE	NUMBER	GCP-7390031003
SCALE	1 : 15	08-03-2011		
TITLE	DIGITAL READOUT ASSY		Number of drawing sheets: 1	REV: 00



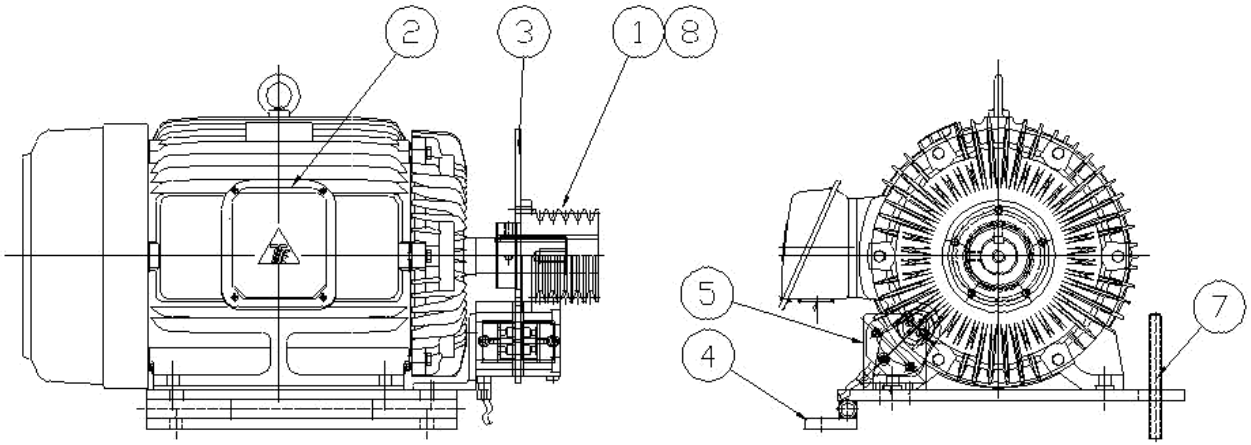
ITEM NO	Number	Description	Quantity
1	GCPR4-1118400	FEED DRIVE ROLL	1
2	GCPD1-0268	BEARING	2
3		ADJ ARM	1
4	GCPX4-1110900	SPACER, GEAR REDUCER	1
5	GCPX4-1022900	GUARD, REDUCER	1
6	GCPB1-0420-7	KEY	1
7	GCP-7390029017	GEARMOTOR	1
8	GCPX4-1111000	RING	1

UNITS	mm	DATE	NUMBER	GCP-7390007018
SCALE	1 : 9	12-27-2016		
TITLE	DRIVE ASSEMBLY,CONV		Number of drowing sheets: 1	REV: 00



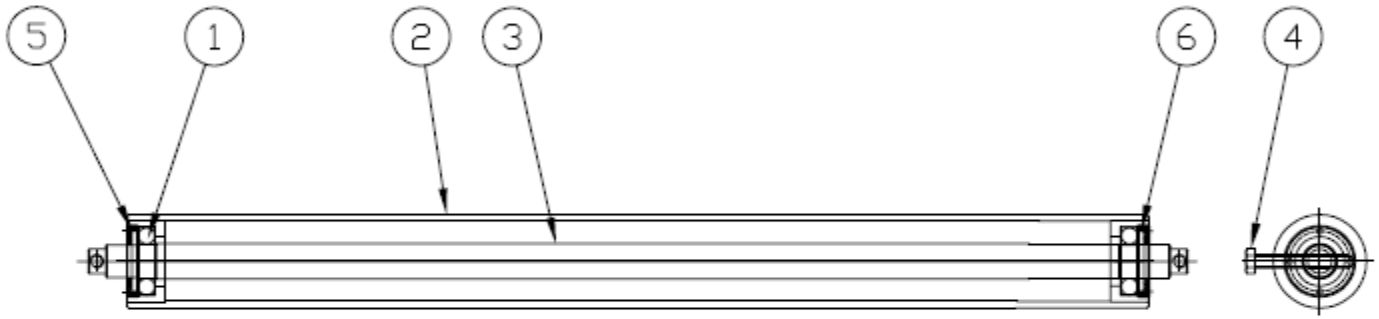
ITEM NO	Number	Description	Quantity
1	GCPA1-0356-1	GEAR REDUCER	1
2	GCPA1-0355	REDUCER	1
3	GCPA1-0297-4	MOTOR	

UNITS	mm	DATE	NUMBER	GCP-7390029017
SCALE	1 : 8	08-04-2014		
TITLE	GEARMOTOR,NMRV075 1HP 120 : 1 460V		Number of drawing sheets: 1	REV: 00



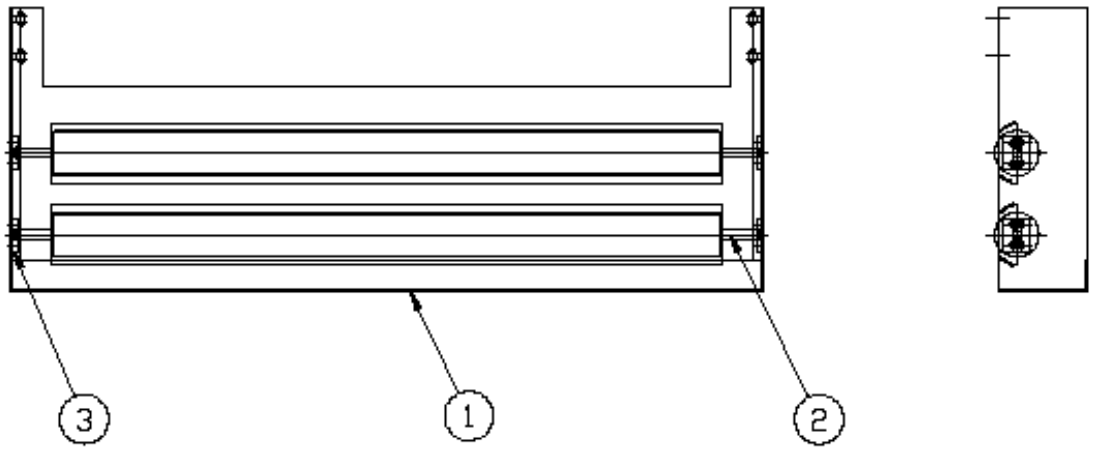
ITEM NO	Number	Description	Quantity
1	GCPV4-1183700	MOTOR SHEAVE(170mm)	1
2		MOTOR	1
3	GCPX4-1067900	BRAKE DISC	1
4	GCPX4-1188700	MOTOR BASE	1
5	GCPF4-1052300	LEFT BRACKET, BRAKE CALIPER	1
6			
7	GCPX4-1112000	ADJ BOLT, MOTOR BASE	2
8		V-BELT	5
9			

UNITS	mm	DATE	NUMBER	GCP-7390003052
SCALE	1 : 8	12-28-2016		
TITLE	ASSY,MOTOR PLATE, DRUM HEAD		Number of drawing sheets: 1	REV: 00



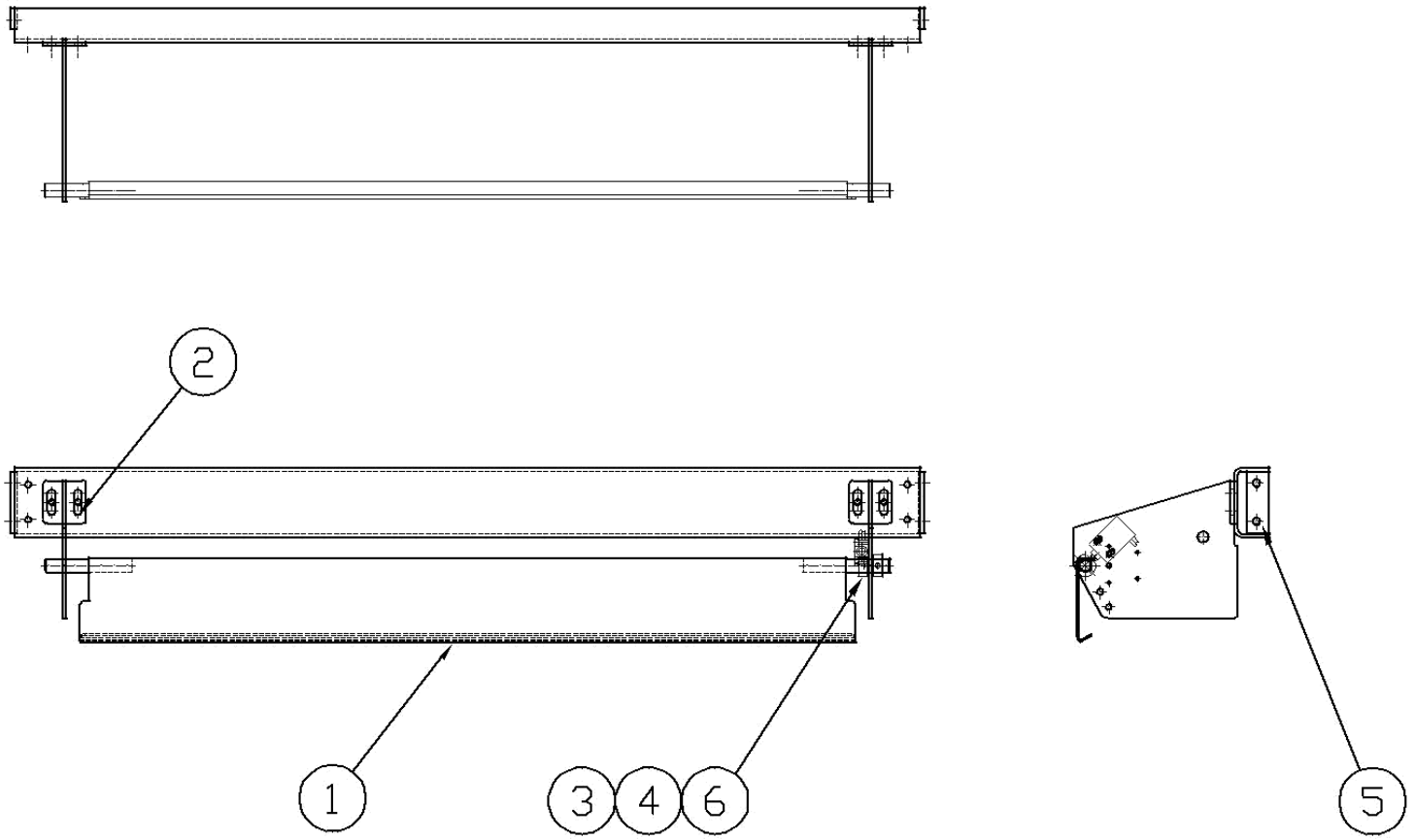
ITEM NO	Number	Description	Quantity
1	GCPD1-0254	BEARING	2
2	GCPS3-1118200	TAKE UP ROLL	1
3	GCPR3-1118300	TAKE UP ROLL SHAFT	1
4	GCPX4-1068200	ADJ BOLT, CONVEYOR BELT	2
5	GCPX4-1068300	IB BEARING COVER, TAKE UP ROLL	1
6	GCPX4-1068400	OB BEARING COVER, TAKE UP ROLL	1

UNITS	mm	DATE	NUMBER	GCP-7390005008
SCALE	1 : 6	10-11-2012		
TITLE	TAKE UP ROLL ASSY		Number of drawing sheets: 1	REV: 00



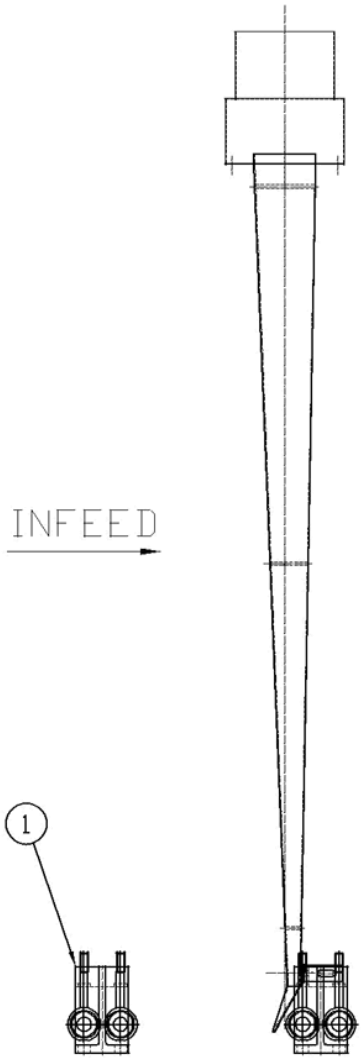
ITEM NO	Number	Description	Quantity
1	GCPP4-1092600	guard, infeed	1
2	GCPR3-1118500	roller, infeed	2
3	GCPL-1072300	fix bracket, infeed roller	4

UNITS	mm	DATE	NUMBER	GCP-7390058008
SCALE	1 : 8	10-11-2012		
TITLE	INFEED GUARD ASSY		Number of drawing sheets 1	REV: 00

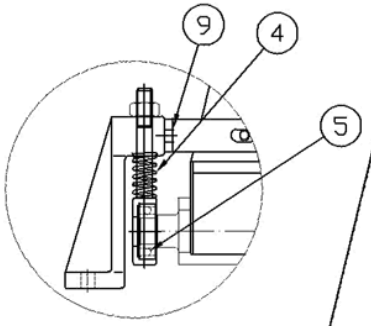


ITEM NO	Number	Description	Quantity
1	GCPP4-1092400	OVER THICKNESS TRIP BAR	1
2	GCPP4-1078601	FIX BRACKET	2
3	GCPX4-1018700	RING	2
4	GCPX4-1018400	RING	1
5	GCPX4-1092200	INFEED FRAME	1
6	GCPTSE-055	LIMIT SWITCH	1
7			

UNITS	mm	DATE	NUMBER	GCP-7390034009
SCALE	1 : 8	10-11-2012		
TITLE	TRIP BAR ASSY OVERTHICK		Number of drawing 1	REV: 00



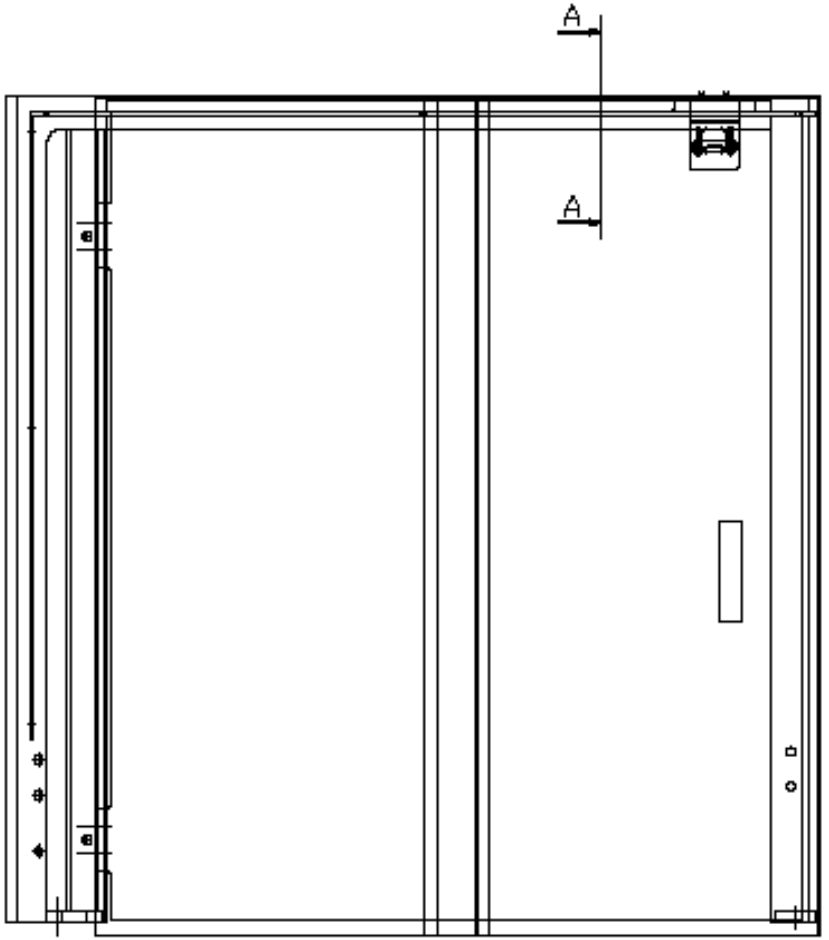
INFEED

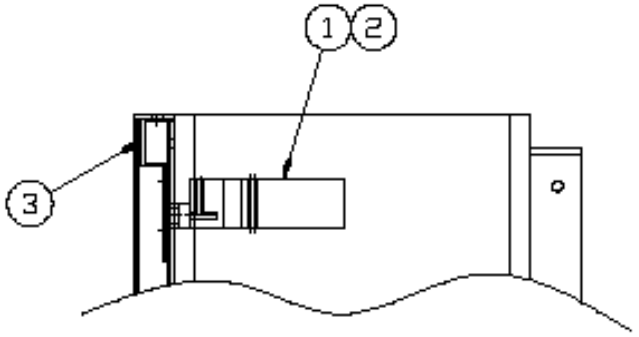


DETAIL A

ITEM NO	Number	Description	Quantity
1	GCPF3-1054500	bracket, pinch roll	4
2	GCPX4-1054600	bearing holder, pinch roll	8
3	GCPR3-1456	pinch roll	4
4	GCPLA-1054800	spring, pinch roll	8
5	GCPD[illegible]-0251	bearing, pinch roll	8
6	GCPP4-1205400	DUST HOOD OUTLET	1
7	GCPP4-1093900	dust hood	1
8			
9	GCPP4-1060600	bracket,dust hood	2

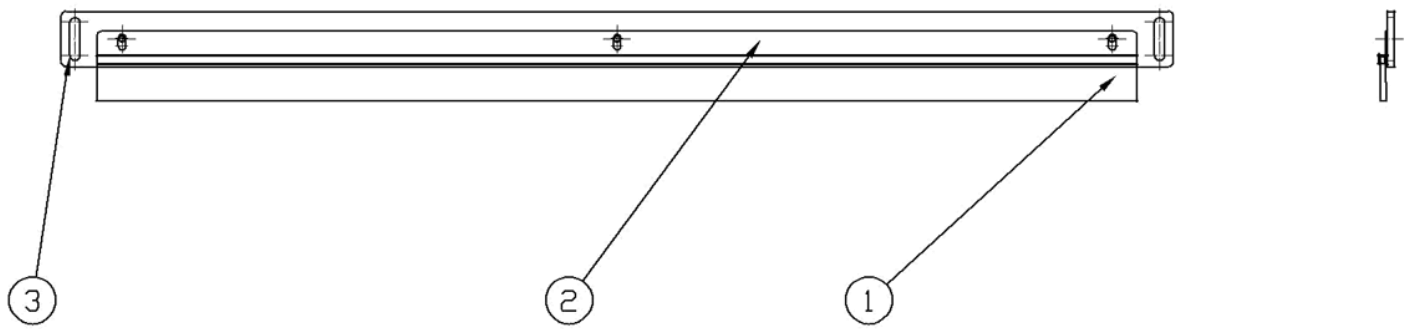
UNITS	mm	DATE	NUMBER	GCP-7390008037
SCALE	1 : 10	10-20-2017		
TITLE	Hold Down Rolls Assembly		Number of drawing sheets: 1	REV: 00





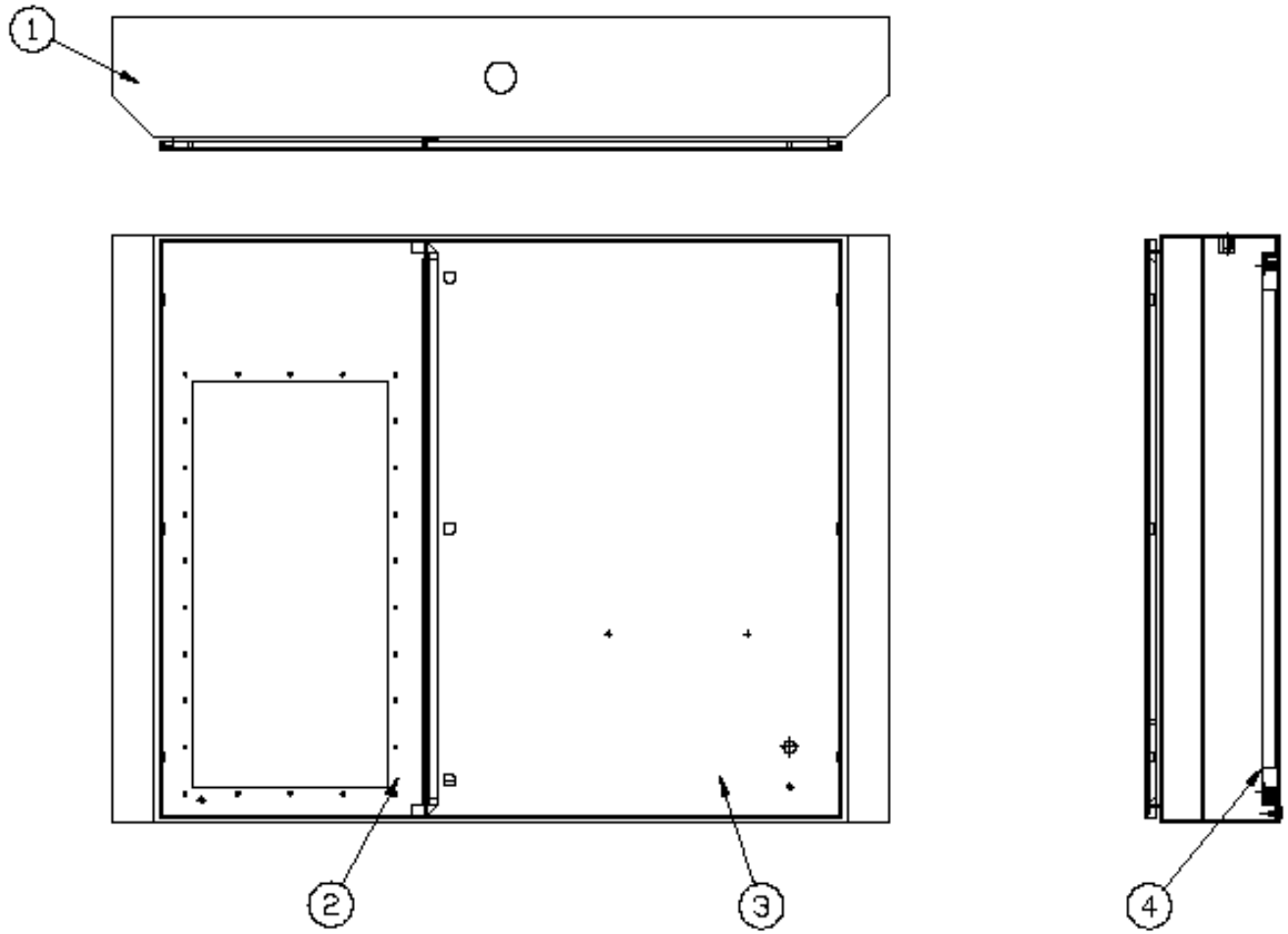
ITEM NO	Number	Description	Quantity
1	GCPA1-0110-6	DOOR SAFETY SWITCH	1
2	GCPA1-0110-5	KEY	1
3	GCPP4-1041001	BRACKET	1

UNITS	mm	DATE	NUMBER	GCP-7390033004
SCALE	1 : 8	02-22-2012		
TITLE	SWITCH ASSY,DOOR		Number of drawing sheets: 1	REV: 00



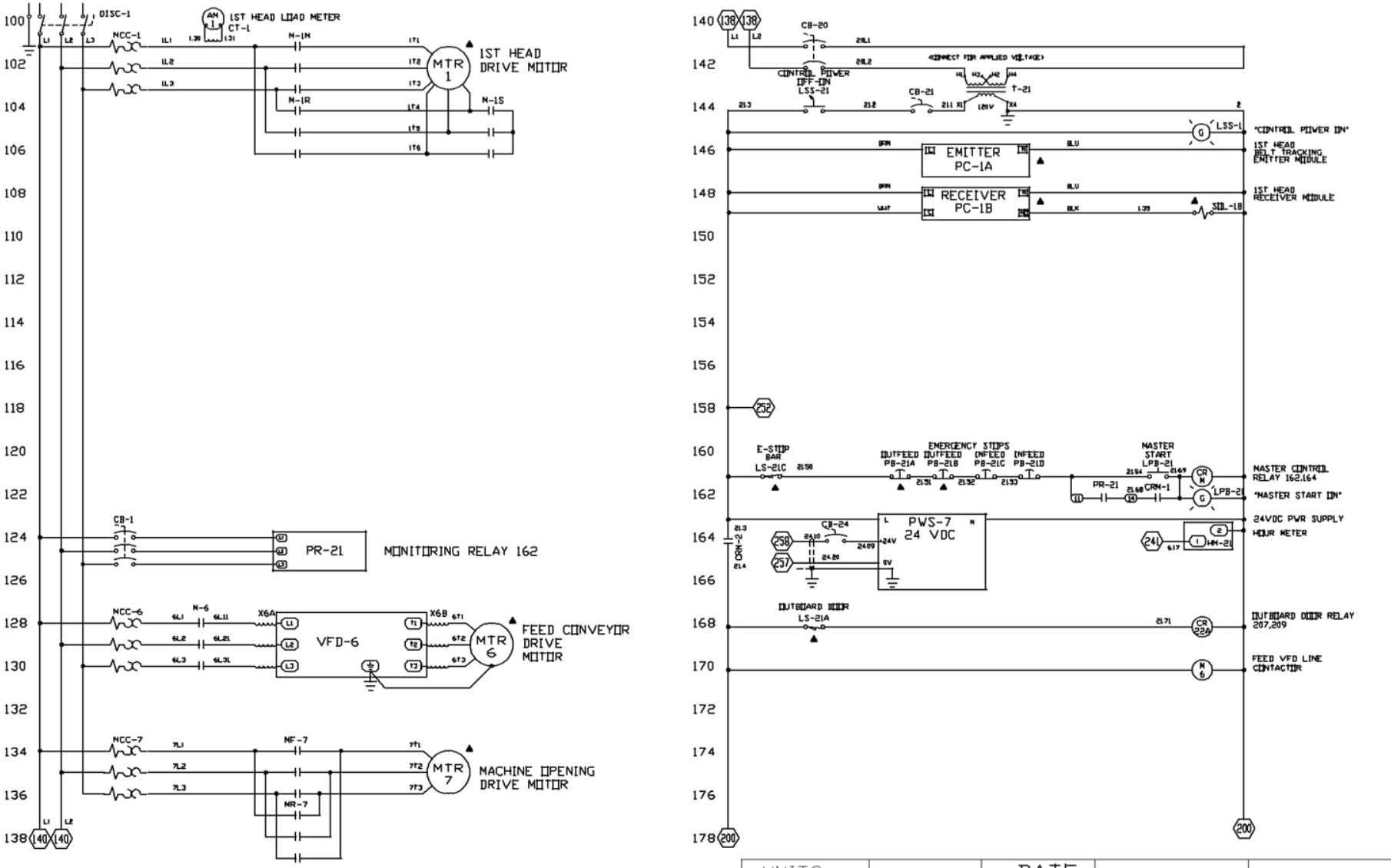
ITEM NO	Number	Description	Quantity
1	GCPX4-1196800	Brush	1
2	GCPX4-1196900	Brush Bracket	1
3	GCPX4-1197200	Bracket,Cleaning brush ASSY	1

UNITS	mm	DATE	NUMBER	GCP-7390097001
SCALE	1 : 12	06-09-2017		
TITLE	Cleaning brush assembly		Number of drawing sheets: 1	REV: 00

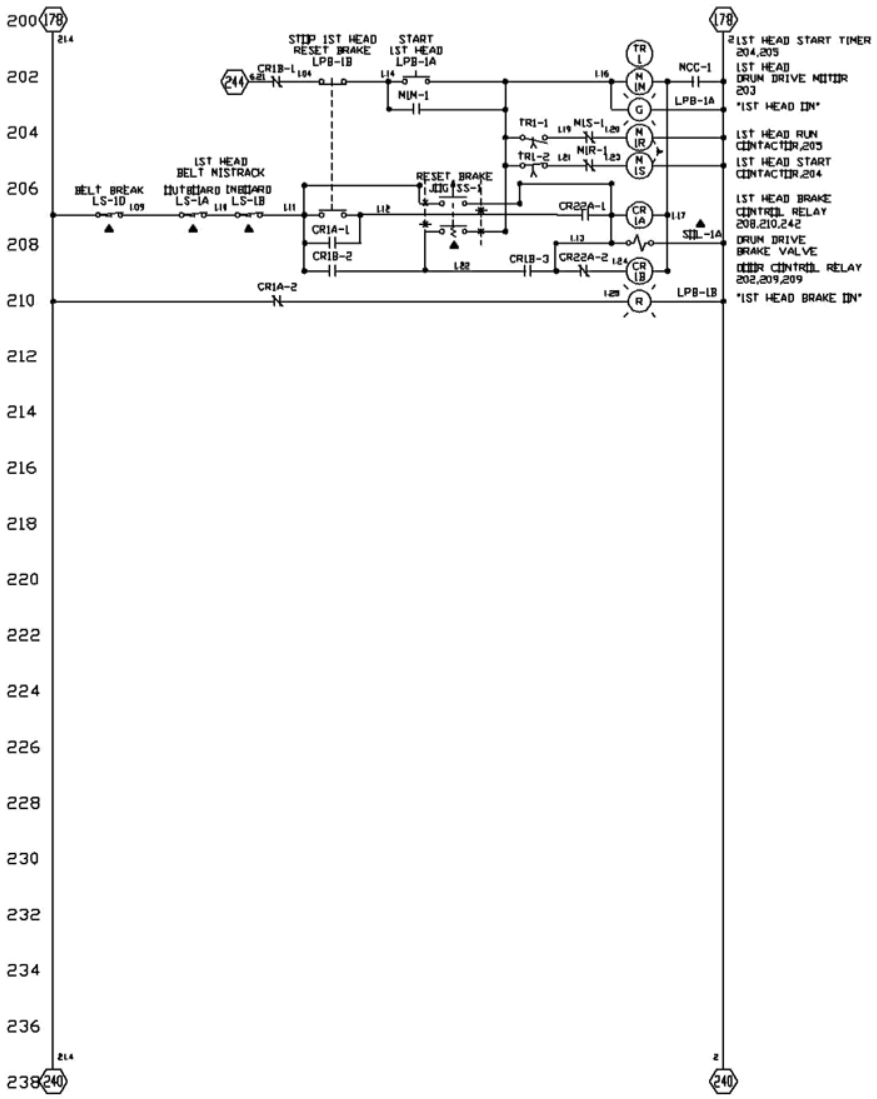


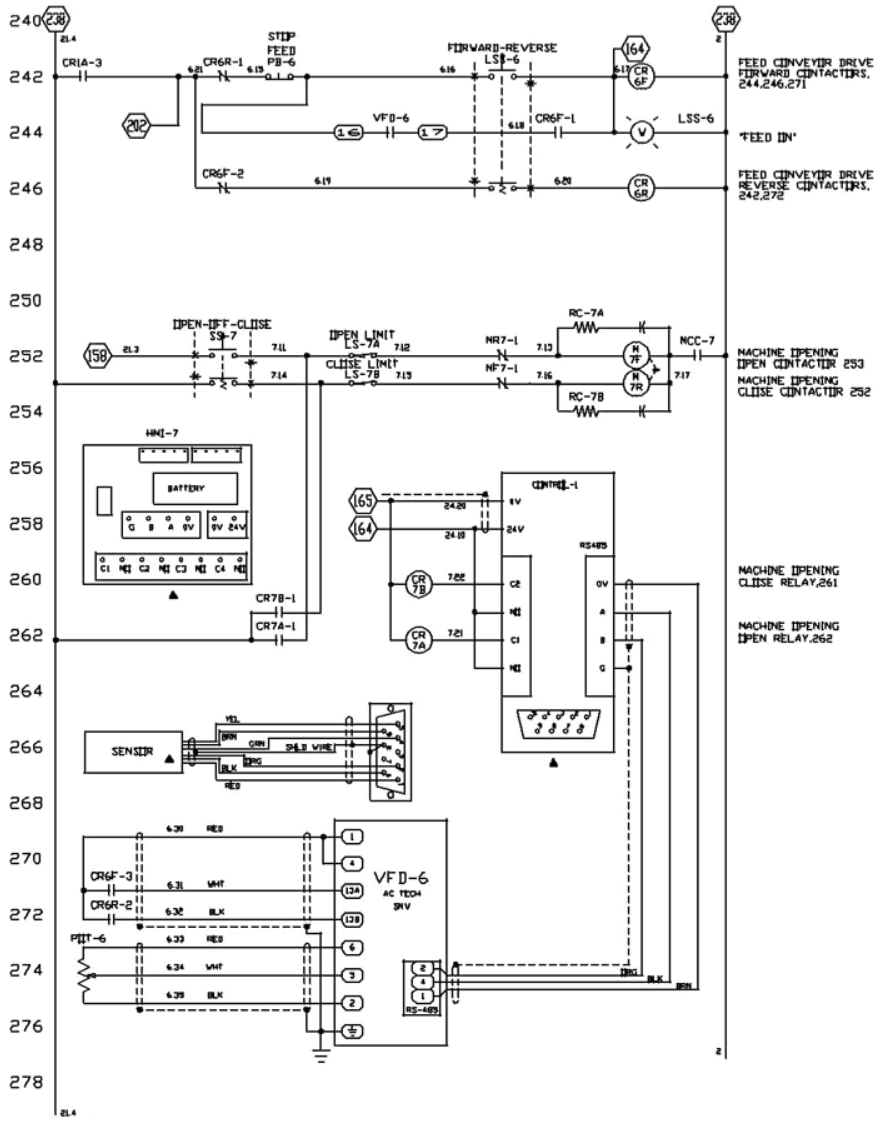
ITEM NO	Number	Description	Quantity
1	GCP24-1091600	ELECTRICAL ENCLOSURE	
2	GCP24-1091100	OD DOOR ENCLOSURE	
3	GCP24-1091500	ID DOOR ENCLOSURE	
4	GCP24-1091300	BACK PANEL	

UNITS	mm	DATE	NUMBER	GCP-7390032009
SCALE	1 : 12	10-11-2012		
TITLE	ELECTRICAL ENCLOSURE		Number of drawing sheets: 1	REV: 00



UNITS	mm	DATE	NUMBER	160227-E1
SCALE	1:1	2016-12-08		
TITLE	2037M-D		Number of drawing sheets: 2-1	REV: 00





UNITS	mm	DATE	NUMBER	160227-E2
SCALE	1:1	2016-12-08		
TITLE	2037M-D		Number of drawing sheets: 2-2	REV: 00

230/3/60 **2037M-D(180413)**

ELECTRICAL PARTS LIST

2018-11-28

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DESCRIPTION	SYMBOL	QTY
ELECTRICAL DIAGRAM	**160227-E1~E2**	2
CONTROL POWER (FLA 0.65A)		
CONTROL RELAY, OMRON LY2NJ-AC120	CR-M	1
CONTROL RELAY SOCKET, OMRON PTF08A-E	CR-M	1
CONTROL RELAY, OMRON LY2NJ-AC120	CR-22A	1
CONTROL RELAY SOCKET, OMRON PTF08A-E	CR-22A	1
DISCONNECT SWITCH ABB OT100F3	DISC-1	1
SHAFT, DISCONNECT SWITCH ABB OXP6X360	DISC-1	1
HANDLE, DISCONNECT SWITCH ABB OHB80J6	DISC-1	1
POWER DISTRIBUTION SQ D 9080-LBA363104SP		1
GROUND BAR ENTRELEC PHOENIX CONTACT USLKG50		1
GROUND BAR ENTRELEC PHOENIX CONTACT USLKG 16N		1
PHOENIX CONTACT PT 4 PE		8
PHOENIX CONTACT PT 4 BU		5
PHOENIX CONTACT PIT 4		60
SCHNEIDER C60N 2P D2A-24517-UL1077	CB-20	1
SCHNEIDER C60N 1P C2A-24426-UL1077	CB-21	1
HOUR METER FRITZ KUBLER H57 AC110V	HM-21	1
HOUR METER BRACKET	HM-21	1
SWITCH LIMIT OMRON D4NS-1AF 13.5mm CONDUIT FITTING	LS-21A	1
SWITCH LIMIT KEY OMRON D4DS-K3	LS-21A	1
LIMIT SWITCH TE XCMD2110 1 N.C. + 1 N.O. 3M CABLE	LS-21C	1
MOELLER M22-WLKV-G/K10-LED230-G	LSS-21	1
MOELLER M22-DL-G/K10-LED230-G	LPB-21	1
PB E-STOP MOELLER M22 -PVT/KC01/IY1	PB-21A,B(BOX)	2
PB E-STOP MOELLER M22 -PVT/K01	PB-21C,D	2
XFMR 208-230-460-480-575/110-120 150VA SUENN LIANG	T-21	1
MONITORING RELAY OMRON K8DS-PH1	PR-21	1
SCHNEIDER C60N 3P C4A-24462-UL1077	CB-1	1

HEAD NO. 1 (FLA 54.0A)

20HP,1800,230/3/60	MTR-1	1
SCHNEIDER GV3P65(48-65A)	MCC-1	1
SCHNEIDER GVAE11 (1NO/1NC))	MCC-1	1
SCHNEIDER LC1D32F7 110V (1NO/1NC)	M-1M	1
SCHNEIDER LC1D32F7 110V (1NO/1NC)	M-1R,S	2
SCHNEIDER LAD9R1	M-1R,S	1
SCHNEIDER LAD9P3	M-1S	1
SCHNEIDER LADS2	TR-1	1
TAHSING SR-72 100:5 / TAHSING CURRENT COIL100:5	AM/CT-1	1
CONTROL RELAY, OMRON LY2NJ-AC120	CR-1A	1
CONTROL RELAY,SOCKET, SYE STF-08A	CR-1A	1
CONTROL RELAY, OMRON LY4NJ-AC120	CR-1B	1
CONTROL RELAY,SOCKET, SYE STF-14A	CR-1B	1
MOELLER M22-DL-G/K10-LED230-G	LPB-1A	1
MOELLER M22-DLH-R/K11-LED230-R	LPB-1B	1
MOELLER M22-WK3/K20	SS-1	1
TEND TZ-8167	LS-1A,B	2
TEND TZ-7311	LS-1D	1
OMRON E3JK-TR12-C 2M	PC-1A,B	1
MAC 111B-111BA 120V AC 60HZ	SOL-1A,B	2

MAIN CONVEYOR FEED (FLA 4.2A, VFD 5A)(SET TO 10A)

1HP,1800,230/3/60	MTR-6	1
SCHNEIDER GV2ME14(6-10A)	MCC-6	1
SCHNEIDER LC1D09F7 110V (1NO/1NC)	M-6	1
MOELLER M22-WLK3-W/K20-LED230-W	LSS-6	1
MOELLER M22-DH-R/K01	PB-6	1
MOELLER M22-R10K	POT-6	1
CONTROL RELAY, OMRON LY4NJ-AC120	CR-6F	1
CONTROL RELAY SOCKET, SYE STF-14A	CR-6F	1
CONTROL RELAY, OMRON LY2NJ-AC120	CR-6R	1
CONTROL RELAY SOCKET, SYE STF-08A	CR-6R	1
VFD AC TECH ESV751N02YXB 0.75KW 230V	VFD-6	1
VFD AC TECH ESVZAR0	VFD-6	1
INDUCTOR MICROMETALS T184-26	X-6A	1
INDUCTOR MICROMETALS T184-26	X-6B	1

MOTORIZED LIFT (FLA 1.25A)

1/4HP,1200, 230/3/60	MTR-7	1
SCHNEIDER GV2ME06(1-1.6A)	MCC-7	1
SCHNEIDER GVAE11 (1NO/1NC)	MCC-7	1

SCHNEIDER LC1D09F7 110V (1NO/1NC)	MF-7	1
SCHNEIDER LC1D09F7 110V (1NO/1NC)	MR-7	1
SCHNEIDER LAD9R1	MF-7,MR-7	1
TEND TZ-7311	LS-7A,B	2
MOELLER M22-WK3/K20	SS-7	1
SUPPRESSOR POWERMATION 1uF 120OHM2E 1G20	RC-7A,7B	2

OPENING CONTROL/FEED SPEED INDICATION

MINIKOL M15S WITH AC TECH STYLE VFD MODBUS/CABLE	HMI-7	1
POWER SUPPLY COTEK DN-20-24	PWS-7	1
SCHNEIDER C60N 1P C1A-24425-UL1077	CB-24	1
CONTROL RELAY, OMRON LY1N-DC24	CR-7A,B	2
CONTROL RELAY SOCKET, SYE STF-08A	CR-7A,B	2

230/3/60 **2037M-D(180413)**

VFD PARAMETER TABLES

2018-11-28

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	PARAM	SETTING	PARAMETER DESCRIPTION
		225	PASSWORD
	P199	**3**	RESET TO 60HZ DEFAULTS SETTINGS
	P100	**1**	START/STOP FROM TERMINAL STRIP
	P101	**1**	0-10VDC SPEED REFERENCE
FEED VFD	P103	**90**	MAX FREQ
VFD-6	P104	**6.0**	ACCEL TIME
AC TECH	P105	**1.0**	DECEL TIME
SMV	P108	**70**	**(MOTOR AMPS / VFD RATED OUTPUT AMPS) X 100 %**
OUT PUT	P111	**2**	RAMP TO STOP
3/PE AC	P112	**1**	Forward and Revrse
0-230V	P121	**13**	TB-13A INPUT
4.2A	P122	**14**	TB-13B INPUT
0.75KW/1HP	P140	**3**	RELAY IS ENERGIZED WHEB DRIVE IS NOT FAULTED
0-500HZ	P160	**22**	MIN FREQ AT 0V POT INPUT
5-20 FPM	P161	**90**	MAX FREQ AT 10V POT INPUT
122.5:1	P170	**3.9**	**(1800 - NAMEPLATE SPEED / 1800) x 100 = SLIP (%)**
95mm	P400	**2**	NETWORK PROTOCOL - MODBUS RTU
1800RPM MOTOR	P402	**3**	READ ONLY "3" INDICATES ONLINE COMM WORKING PROPERLY
	P404	**0**	IGNORE - MODULE TIMEOUT ACTION

		230/3/60 MINIKOL PARAMETER TABLES **2018-11-28** **Leo**	**2037M-D(180413)**
	PARAM	SETTING	PARAMETER DESCRIPTION
M15S	F1	**- DIR OR (DIR-)**	COUNTING DIRECTION
	F4	**|-----**	POSITIONING MODE
	F10	**0.000 INCH**	SOFTWARE LIMIT LOW
	F11	**5.000 INCH**	SOFTWARE LIMIT HIGH
	F16	**AC TECH**	DELTA, TE, AC TECH, AC 1000
	F17	**0.001 INCH**	GO TO TOLERANCE
	F19	**1**	SLOW SPEED LIMIT

ENTER VOLTAGE	**230**
ENTER LARGEST MOTOR FLA	**54**
CALCULATION RESULTS	
Time delay fuse	101.4
Inverse time breaker	141.9

Apex Machine Group
Minneapolis, Minnesota USA

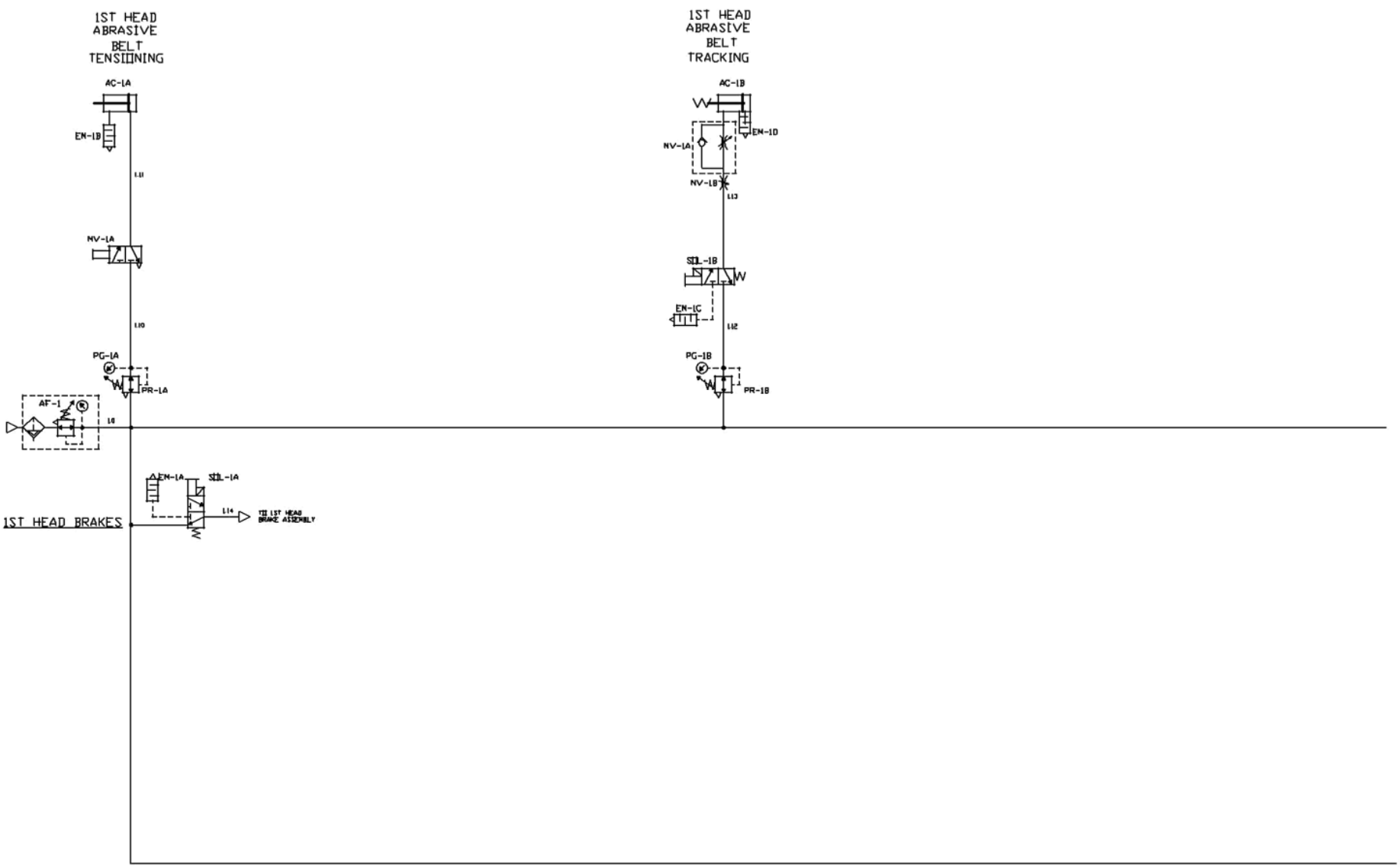
Model: **2037M-D** Serial No. **180413** Voltage: **230**

MTR-1:	20	HP	FLA:	54	Amps
VFD-6:	1	HP	FLA:	5	Amps
MTR-7:	0.25	HP	FLA:	1.25	Amps
T-21:	150	VA	FLA:	0.65	Amps

Total Full Load Amps: 60.9 Amps

MAIN CIRCUIT: 74.4 Amps
MAIN GROUND: 141.9 Amps

Short circuit current rating: 5KA rms symetrical @230V



UNITS	mm	DATE	NUMBER	160227-P
SCALE	1:1	2016-12-08		
TITLE	2037M-D		Number of drawing sheets: 1-1	REV: 00

230/3/60 **2037M-D(180413)**

PNEUMATIC PARTS LIST

2018-11-28

Leo

DESCRIPTION	SYMBOL	QTY
PNEUMATIC SCHEMATIC	**160227-P**	1
MAIN AIR		
AIR FILTER/REG PARKER P31EA12EGBBNNP- P31KA00MW	AF-1	1
PRESSURE GAUGE SM P/N D1-0040-5, 2" , 150 PSI, 1/4" NPT	PG-1A,B	2
PRESSURE REG SM P/N D1-0043-2, KAO-LU CT-20R, 7-128 PSI	PR-1A,B	2
HEAD NO.1		
AIR CYLINDER,D1-0201-2 SF AS § 63x30	AC-1A	1
AIR CYLINDER,D1-0229-21 MSR 32x10	AC-1B	1
EXHAUST MUFFLER 1/8" NPT, OR SM P/N D1-0055-5 COPOR	EM-1A,C	2
EXHAUST MUFFLER COPOR SM P/N D1-0055-3	EM-1B	1
MANUAL VALVE ISAVBH3-1/2-S-2N H3-1/8-S-N2	MV-1A	1
FLOW FITTING, SM P/N D1-0049-11 MINDMAN MSC200-6A-PT 1/8"	NV-1A	1
FLOW FITTING, SM P/N D1-0049-2 PISCO JSC6-01 1/8"	NV-1B	1
EXHAUST MUFFLER, 1/8" NPT, SM P/N D1-0055-5	EM-1D	1
MAC 111B-111BA 120V AC 60HZ	SOL-1A,B	2