Circle breath system (Medical Equipment)

PREFACE

This manual gives most of the design data necessary to manufacture the **Circle Breath Assembly** including detailed components drawings, assembly drawings, material standards Etc: -. It is necessary to study all the drawings & cost sheet, before start manufacturing the unit. If there is any mistakes/ doubts, they are to be corrected / clarified.

These drawings and other information necessary to manufacture the unit are framed from the information collected from Internet, discussions, data & sample furnished by the **Erkadi Systems.** The product under development is from scratch. It is necessary to develop a few prototypes before undertaking regular production.

The tolerances and fits stipulated on components drawings are fixed based on the function of each component. Initially, a pilot batch production should be taken up. Hence, it is necessary to exercise at most care in manufacturing the components. All the drawings are prepared in **AutoCAD.** The soft copies of drawings are available in CD. Prints can be obtained whenever necessary of any convenient size.

Unlimited tolerances conform to IS **– 2102. Screw threads conform to ISO metric screw threads as per IS 4218. Dimensions are all in millimeters.**

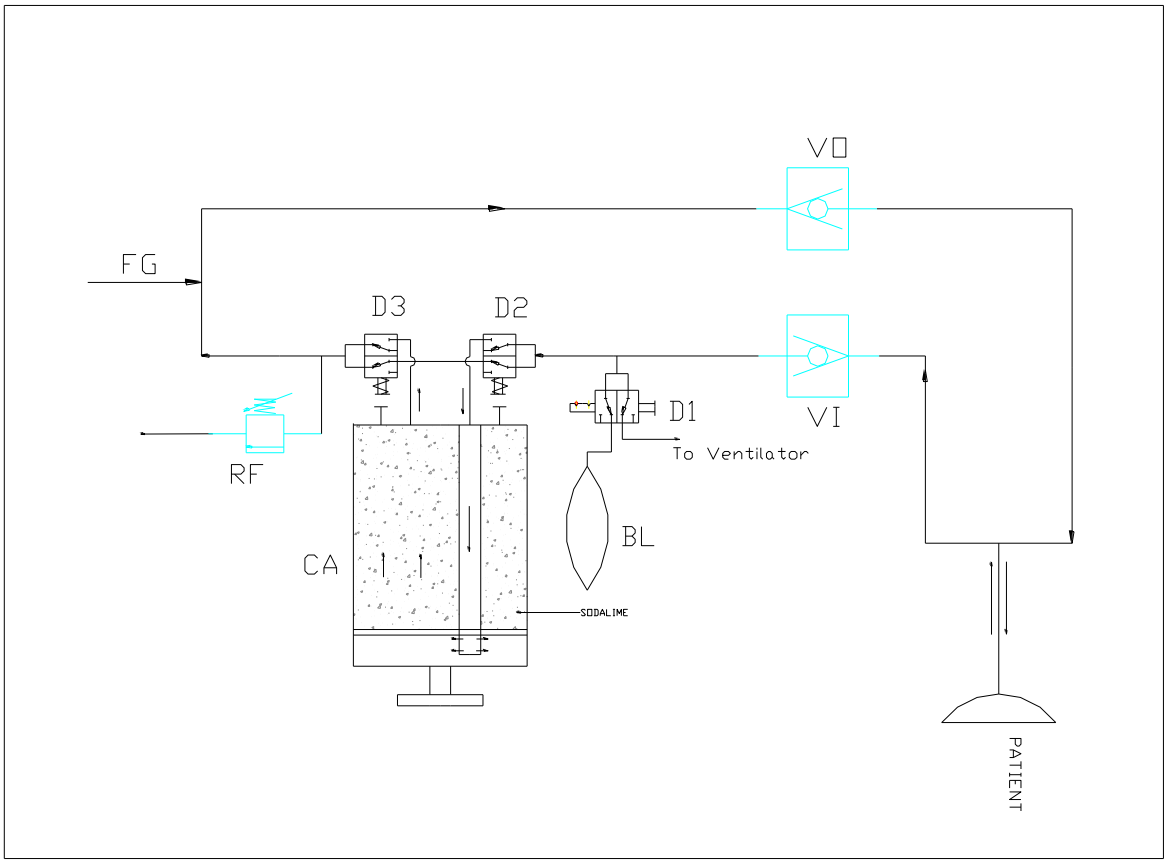
Each component of the assembly is to be inspected for its correctness, both material property & geometrical dimensions. Any deviation would affect the performance the unit.

It is suggested to study the function of the unit before start manufacturing. Bill of material clearly depicts the nature of raw material and quantity required per piece. Each drawing should be studied thoroughly before finalizing the purchase order on vendors/suppliers. It is suggested to select vendors from Bangalore for easy follow up. It is necessary to obtain quotation from at least three suppliers. Purchase orders should be finalized based on the quality and economy.

The manual also contains the cost estimation sheet that is prepared based on components' drawings. This is estimation. Actual cost will be known, once you produce the pilot batch. As far as possible, the cost of each component should be controlled with the estimated cost. In case of variation, it should be discussed with the concerned persons and suitable decision should be taken. Keep a record of actual cost of each component. Delivery time of each component should be decided based on the committed delivery of end product. It is suggested to prepare a bar chart for the individual activity of manufacture.

The estimated cost is for pilot batch production. It may come down in regular production.

CIRCLE BREATHING SYSTEM-SCHEMATIC



VO= Non-return Valve – Out let. VI= Non-return Valve – In let. CA=Canister. FG= Fresh gas inlet. BL=Bladder. D1, = Two position, three-way, detent directional control valves. D2 & D3 = Two position, three-way, spring return directional control valves. RF= Relief Valve.
Note:- Arrow mark shows the direction of gas flow.

Function of the System: When patient breaths out non-return valve, VO closes & VI opens, allowing the gas to flow in to bladder or in to ventilator, depending the position of DC valve D1. A "push pull knob" operates D1. At the same time gas also flows through DC valve D2, either to canister, CA or bye passed. The Valve D2 & D1 are connected to the Canister by pushpins, which presses the spring return spools to connect the gas passage to Canister.
When canister is connected, gas flows through the tube to the bottom of canister and then comes out through holes provided in the tube. Now gas passes through a metallic mesh and comes in contact with soda lime. Soda lime absorbs CO2. Then remaining gas comes out through canister in to the valve D2. If the pressure is higher than the set value at relief valve, (RF) pressure is relieved. The relief valve, RF can set the pressure between 0- 100 mbars.

The gas thus relieved to the set pressure, now mixed with fresh gas FG & passed to the patient through valve VI, when patient breaths-in.

Construction of the system:- The system comprises of following sub-assembly.
1) Main Valve Assembly: Houses two spring return DC valves (D2&D3). The valves are operated by the pushpins when canister is fitted to the valve assembly.
2) Canister assembly: - The is a polycarbonate construction and contains soda lime and a metallic mesh. Gas enters the vessel at the top and travels to the bottom of the vessel and passes through soda lime and exit at the top.
3) Inlet Valve Assembly:- This assembly houses non-return valve through which patient breaths out. To this assembly is fitted the selector valve assembly.
4) Outlet Valve assembly:- This assembly houses a non-return valve through which patient breaths-in. A relief valve fitted to this assembly. There is a provision for the fresh gas to mix up with the breath-out gas.
5) Relief Valve Assembly:- This assembly houses a valve, which controls the pressure & relieves excess pressure developed by breath-out gas & by fresh gas entry.
6) Selector Valve Assembly:- This is a three-way valve, which connects either to the bladder or to the ventilator, so that the breath-out gas may pass to any one of them at a time. A knob will operate the valve by pulling & pushing. A detent will retain the valve at any one of the positions till other position is selected by pulling or pushing the knob.

NOTE: The system should be installed vertically such that the non-return valves (Mica sheet valves) rests on valve seat by gravity, for proper functioning.

Material of construction of the various components of the system is carbon steel, aluminum alloy & Polycarbonate. The non-return valves are of Mica or any suitable material having very light weight, because it has to operate on gas pressure developed by patient's breathing.
The intention of using aluminum alloy is to keep the weight of the assembly as low as possible. By adapting better quality of aluminum alloy, it is possible to change all most all carbon steel. Here below, certain aluminum alloys, which can be, substitute Carbon steel.

Alternate Aluminum alloys: 1) USA Std, 2024 T3 Condition
2) USA Std 2024
The alloy 2024 is used in aircraft industries and to be imported. This is available in bars. The alloy has good strength and all the carbon steels in this application can be replaced, besides changing Al to IS:737, except Selector valve assembly & Main valve assembly spools
The alloy 2014 is available in India. Here once again most of the carbon steels can be replaced.
However, you have to examine cost implication before taking the decision.

Fitness Machine

This manual gives most of the design data necessary to manufacture the **resistance mechanism for the fitness machine** including detailed components drawings, assembly drawings, material used to manufacture the system. It is necessary to study all the drawings & bill of material before start manufacturing the unit. If there are any mistakes/ doubts, they are to be corrected / clarified.

These drawings and other information necessary to manufacture the unit are framed from the information provided by client & data collected from internet. The product under development is from scratch. It is necessary to develop a prototype & test the prototype before undertaking regular production. It is recommended to have a batch of five for prototype.

The dimensions, tolerances and fits stipulated on components drawings are fixed based on the function of each component. Initially, a pilot batch production should be taken up. Hence, it is necessary to exercise at most care in manufacturing the components.

Unlimited tolerances conform to the data furnished in the drawing template**. Dimensions are all in millimeters.**

Each component of the assembly is to be inspected for its correctness, both material property & geometrical dimensions. Any deviation would affect the performance the unit.

It is suggested to study the function of the unit before start manufacturing. Bill of material (Excel File) clearly depicts the nature of raw material and quantity required per piece. Each drawing should be studied thoroughly before finalizing the purchase order on vendors/suppliers. It is suggested to select vendors from known source nearer to manufacturing plant for easy follow up. It is necessary to obtain quotation from at least three suppliers. Purchase orders should be finalized based on the quality and economy.

Actual cost will be known, once you produce the pilot batch. Keep a record of actual cost of each component. Delivery time of each component should be decided based on the committed delivery of end product. It is suggested to prepare a bar chart for the individual activity of manufacture.

Resistance Mechanism

Purpose of the system: - The purpose of the system is to create a resistance while a person doing exercise. Basically the exercise here consists of a person sitting on his back resting on the back rest or his chest resting on the back rest. And then apply a force on the back rest that depends of the person's stamina. Against this force a hydraulic resistance is created. The person thus swings on by applying the force from his chest or back. The swing is from 60 deg to 110 deg. The range of force applied is 30 – 300 lbs.
The force is adjustable through resistance mechanism. Refer the drawings nos

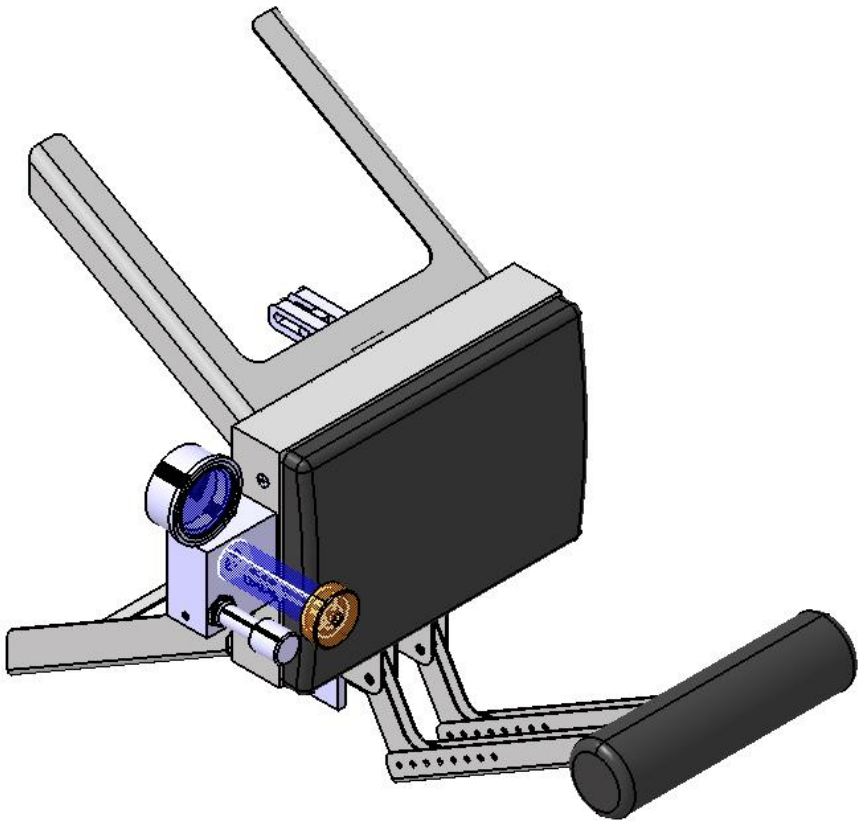
Construction & design of the system: -

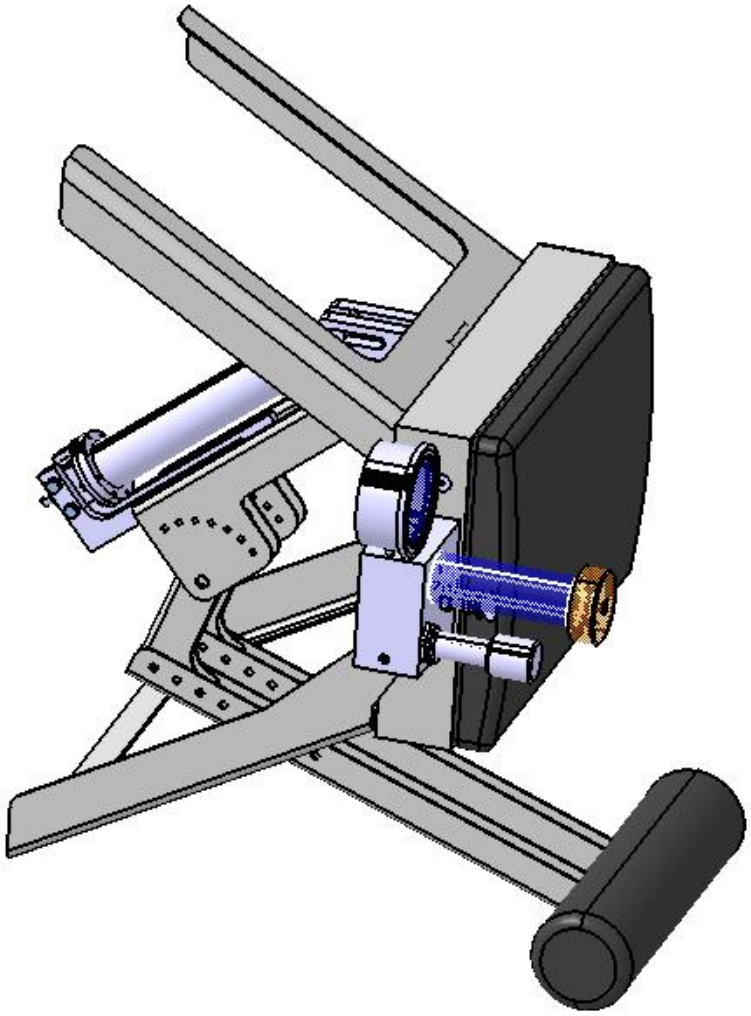
The system has two portions. The machine & The resistance mechanism.
The machine comprises of a chair of steel structure to which is attached a back rest arm.
The basic machine is steel fabrication & not designed in this scope. However, the original is modified to incorporate resistance mechanism.
This arm swings on the horizontal axis of an axle. The amount of swing is around 60 to 110 degrees. To the swing arm is connected a hydraulic cylinder that is actuated by oil pressure. The piston rod is fixed to the main housing. As the person swings the oil in the cylinder under pressure is pushed to rod end of cylinder via manifold assembly.
A compression spring is housed inside cylinder. The function of the spring is to return the swing arm to start position in a controlled way.
The hydraulic pressure is adjustable from around 0-80 bars . Maximum force a person can apply is around 300 lbs when maximum pressure set (around 80 bras)
All other working methods & construction is clearly understood from the PDF drawings provided.
It may or may not be necessary to modified relief valve range & compression spring depending on the function of prototypes.

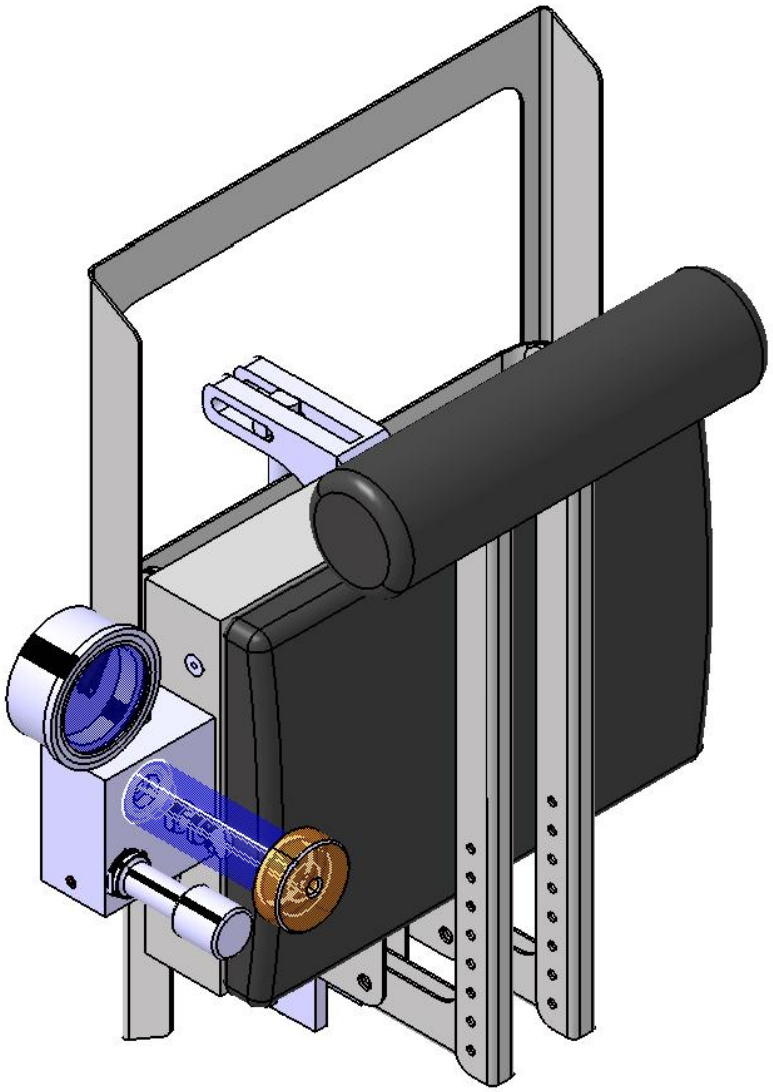
Manufacturing Process: The components' drawings are provided with detail dimensions only for resistance mechanism. In case of machine dimensions are provided wherever changes are made. The manufacturer is at liberty to modify if required of ease of manufacture. However manufacturer should get consent from the design section. Basically the manufacture of the system involves fabrication & machining. The hydraulic elements, seals, gage fasteners etc:- are purchase items. In the bill of materials only one supplier is selected. It is at the option of the manufacturer to select alternate manufacturers. Then manufacturer should ensure that parts manufactured are compatible with purchase items.

Testing of the prototype: All the parts are checked for dimension accuracy. Material is to be procured from a reliable source for good quality. Wherever necessary visual inspection to be carried out. The pressure gage is to be calibrated to measure the load in lbs/kgs. Only after satisfactory performance of prototype model regular production to be started.

Here below three images of the machine is printed. Another important feature of the machine, is it is foldable. The image in the folding condition is printed below.







Green Grease
Residential Grease Can

This manual gives most of the design data necessary to manufacture the **Residential Grease Can** including detailed components drawings, assembly drawings, material used to manufacture the system. It is necessary to study all the drawings & bill of material before start manufacturing the unit. If there are any mistakes/ doubts, they are to be corrected / clarified.

These drawings and other information necessary to manufacture the unit are framed from the information provided & data collected from internet. The product under development is from scratch. It is necessary to develop a prototype & test the prototype before undertaking regular production.

The dimensions, tolerances and fits stipulated on components drawings are fixed based on the function of each component. Initially, a pilot batch production should be taken up. Hence, it is necessary to exercise at most care in manufacturing the components. All the drawings sent in PDF format.

Unlimited tolerances conform to the data furnished in the drawing template**. Dimensions are all in millimeters.**

Each component of the assembly is to be inspected for its correctness, both material property & geometrical dimensions. Any deviation would affect the performance the unit.

It is suggested to study the function of the unit before start manufacturing. Bill of material (Excel File) clearly depicts the nature of raw material and quantity required per piece. Each drawing should be studied thoroughly before finalizing the purchase order on vendors/suppliers. It is suggested to select vendors from known source nearer to manufacturing plant for easy follow up. It is necessary to obtain quotation from at least three suppliers. Purchase orders should be finalized based on the quality and economy.

Actual cost will be known, once you produce the pilot batch. Keep a record of actual cost of each component. Delivery time of each component should be decided based on the committed delivery of end product. It is suggested to prepare a bar chart for the individual activity of manufacture.

Residential Grease Can

Purpose of the system:- The purpose is to dispose off spent grease produced as waste in residential kitchen, instead of let it go in the sink. If allowed to flow in to the sink, it not only blocks the path, but also causes environmental hazard. One the can is full it gives alarm/signal to collect & dispose of the spent the grease . The grease can is designed to house underneath kitchen sink, so that for the person in work can easily& immediately dump the spent grease in the can.

Construction of the system: - Basically the grease can is a container meant to dump the waste. The can is made of aluminum fabrication. Fasteners are of steel. There are certain electrical& electronic items & all of them are bought out.
In this design the can has an auxiliary can that is housed inside the main can. This can is made of plastic of 1mm thick. Spent grease fall in to this plastic can. Once it is full this container could be removed for disposal of spent grease & immediately replaced by new one.
The plastic cans are interchangeable.
The main can on the top is covered by a colander in order to avoid any bigger particle other than spent grease is dumped. Besides there would be another SS mesh inserted in the rectangular slot of colander. The plastic goes below the colander.
The can has a lid/cover that is normally closed by spring force. An electric lock latch holds to retain the lid against spring torque. The lid could be opened by electric signal or manually by a push button. The electric control circuit is given in the drawing explains the function.
There is also photoelectric sensor that signals the filling of the can. The photoelectric signal would be sensed by a wireless receive/transmitter and other control system.
The grease can assembly is suspended to base frame. It can roll on the tracks, so that it can project out of the underneath kitchen sink when required.
For further detail construction, refer the assembly & part drawings.

Material of construction: - The container is fabricated out of aluminum sheet. In the design sheet thickness considered 3 mm. But if need arises for a better strength we can use 5 mm thick sheet. Colander sheet & mesh are made of SS or aluminum. In case you decide to use SS the thickness could be 1.5 mm.
The roller tracks are also of aluminum, of better strength. Rollers, springs, hinge pins are all of Steel material.

Manufacturing Process: The process drawings & components' drawings are provided with detail dimensions. The manufacturer is at liberty to modify if required of ease of manufacture. All the process provided in the drawing is applicable to convention manufacture & to prototype only. In case for mass production after approval of prototype, the process needs to be changed.

Testing of the prototype: All the parts are checked for dimension accuracy. Material is to be procured from a reliable source for good quality. Wherever necessary visual inspection to be carried out. Electrical functioning is also checked. Only after satisfactory performance of prototype model regular production to be started.

I-Group/Smart Rotating Bin

This manual gives most of the design data necessary to manufacture the **Smart Rotating Bin** including detailed components drawings, assembly drawings, material used to manufacture the system. It is necessary to study all the drawings & bill of material before start manufacturing the unit. If there are any mistakes/ doubts, they are to be corrected / clarified.

These drawings and other information necessary to manufacture the unit are framed from the information provided & data collected from internet. The product under development is from scratch. It is necessary to develop a prototype & test the prototype before undertaking regular production.

The dimensions, tolerances and fits stipulated on components drawings are fixed based on the function of each component. Initially, a pilot batch production should be taken up. Hence, it is necessary to exercise at most care in manufacturing the components. All the drawings sent in PDF format.

Unlimited tolerances conform to the data furnished in the drawing template**. Dimensions are all in millimeters.**

Each component of the assembly is to be inspected for its correctness, both material property & geometrical dimensions. Any deviation would affect the performance the unit.

It is suggested to study the function of the unit before start manufacturing. Bill of material (Excel File) clearly depicts the nature of raw material and quantity required per piece. Each drawing should be studied thoroughly before finalizing the purchase order on vendors/suppliers. It is suggested to select vendors from known source nearer to manufacturing plant for easy follow up. It is necessary to obtain quotation from at least three suppliers. Purchase orders should be finalized based on the quality and economy.

Actual cost will be known, once you produce the pilot batch. Keep a record of actual cost of each component. Delivery time of each component should be decided based on the committed delivery of end product. It is suggested to prepare a bar chart for the individual activity of manufacture.

Smart Rotating Bin

Purpose of the system: - The purpose is to dispose of different kinds of garbage in one set up. For simplicity garbage is classified in to 5 groups. 1. Paper 2. Plastic 3. Glass 4. Cans 5. Bottle.

These five kinds are separately dumped in to separate Bins. These bins are arranged in circular pattern, with one opening to dump the garbage. These bins are rotating on a shaft. There would be a touch screen on top of rotating bin assembly. There would be five pads are labeled as PAPER, PLASTIC, GLASS, CANS & BOTTLES. The person who wants to dump the garbage will depress one of the five pads, depending on which kind of garbage one needs to dump. Then one of the bins that are labeled as the kind of garbage to be dumped will index & align just below the opening.

In order to index the bins, a stepper motor is used, that is housed at the axis of rotation of bins below.

The entire assembly is covered with circular drum with a slide door on the circumference. The purpose of the slide door is to empty the bins when they are full.

To understand clearly please see the 3D drawings.

Construction & design of the system: -

This is a circular construction. The heart of the machine is the stepper motor located at the center below on the axis of rotating. This motor drives the entire five plastic cans assembly on its axis. Motor function is to index the can & align with dump opening.

The motor is programmed to drive as per the signal it gets from the touch screen housed inside the control box on top on tapered portion of top sheet cover.

The electrical & electronic controls & related programs are not described in the document.

It should be planned & designed separately. The electrical power is from a continuous source.

Material of construction: - The rotating bin assembly has following sub-assemblies.

1. Drive Assembly 2. Door Assembly. 3 Outer enclosure assemblies.

   Drive assembly houses stepper motor to which keyed drive shaft. The drive shaft drives the five cans housed in circular pattern on a bottom plate. The bottom plate is driven by drive shaft.

   Door Assembly is located on the tapered top sheet. Door would open by pressing a button. Door is spring actuated. This is the opening to dump the garbage.

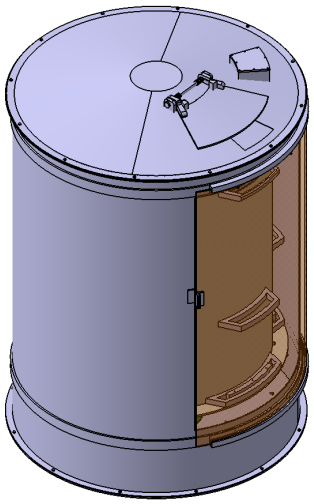
   On right side there would be touch screen box that houses all operating controls

   The outer enclosure encloses the cans, stepper motors, drive shaft Etc- Nothing would be seen outside.

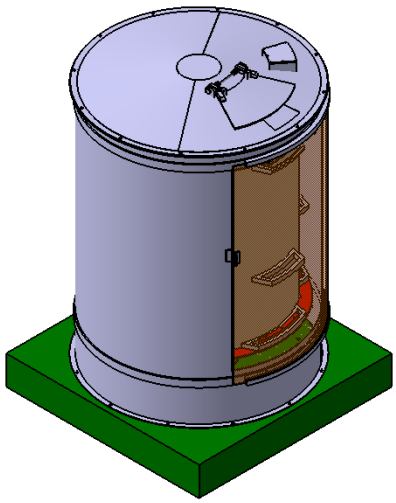
   Materials used in this assembly are, Aluminum Sheets, Nylon, Steel plated, Plastic, Stepper motor (purchase item) & Steel fasteners.

Manufacturing Process: The components' drawings are provided with detail dimensions. The manufacturer is at liberty to modify if required of ease of manufacture. However manufacturer should get consent from the design section. Basically this is a fabrication work with certain parts to be machined. The main item, stepper is purchase items. Most of the items fabricated are Aluminum & welding is involved. The plastic can is to be molded & not fabricated items. This has to be separately vendor developed.

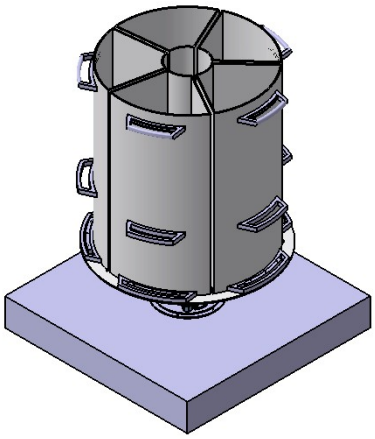
Testing of the prototype: All the parts are checked for dimension accuracy. Material is to be procured from a reliable source for good quality. Wherever necessary visual inspection to be carried out. Electrical functioning is also checked. Only after satisfactory performance of prototype model regular production to be started.



Smart Rotating Bin Assembly
Size : Diameter = 95mm
Height = 1500mm



Smart Rotating Bin Assembly on Foundation.
Size :- 1000mmx1000mmx1500mm



Smart Rotating Bin assembly enclosure removed.

STORAGE SYSTEM

This manual gives most of the design data necessary to manufacture the **Storage system** including detailed components drawings, assembly drawings, material used to manufacture the system. It is necessary to study all the drawings & bill of material before start manufacturing the unit. If there are any mistakes/ doubts, they are to be corrected / clarified.

These drawings and other information necessary to manufacture the unit are framed from the information from discussions, data collected from internet. The product under development is from scratch. It is necessary to develop a prototype & test the prototype before undertaking regular production.

The dimensions, tolerances and fits stipulated on components drawings are fixed based on the function of each component. Initially, a pilot batch production should be taken up. Hence, it is necessary to exercise at most care in manufacturing the components. All the drawings sent in PDF format.

Unlimited tolerances conform to the data furnished in the drawing template**. Dimensions are all in millimeters.**

Each component of the assembly is to be inspected for its correctness, both material property & geometrical dimensions. Any deviation would affect the performance the unit.

It is suggested to study the function of the unit before start manufacturing. Bill of material clearly depicts the nature of raw material and quantity required per piece. Each drawing should be studied thoroughly before finalizing the purchase order on vendors/suppliers. It is suggested to select vendors from known source nearer to manufacturing plant for easy follow up. It is necessary to obtain quotation from at least three suppliers. Purchase orders should be finalized based on the quality and economy.

Actual cost will be known, once you produce the pilot batch. Keep a record of actual cost of each component. Delivery time of each component should be decided based on the committed delivery of end product. It is suggested to prepare a bar chart for the individual activity of manufacture.

STORAGE SYSTEM

Purpose of the system:- The storage vessel is could be used by common man for residential purposes, to keep the food items , cooked or not cooked, grocery, cereals etc:- afresh for longer time at an weather condition, without use of electric power.

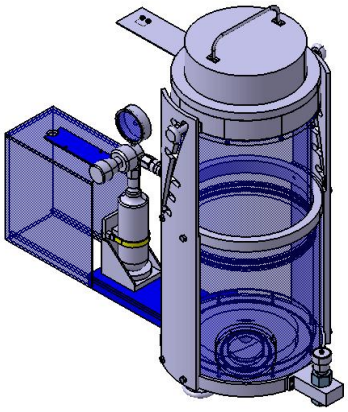
Basic principle: The air & moisture in the atmosphere is the main reason for spoilage of food & grocery. In the system, the air is flushed out from the container where items are stored & replaced by Nitrogen gas, which is an insert gas. The container is leak free & does not allow external enters the container. Nitrogen stays in the container longer time. Nitrogen is free from moisture.

Construction of the system: - The system has four assemblies. **N2 cylinder assembly, Gas inlet assembly, Container assembly & Bleed of f/ Valve assembly**.
Nitrogen cylinder is a rented/hired item. N2 is under pressure of 3000 psi. N2 gas pressure controlled by regulator. The regulator reduces the pressure to 00.5- 1.00 bar (gage).
N2 gas at 1.0 bar enters the container through inlet assembly. The hand control valve is a shut off valve that can be closed when required.
N2 gas entering the container at pressure of around 1.0 – 1.2 bars replaces the existing air inside the vessel. Since air is slightly heavier than N2 gas a bleed off/safety valve provided at the bottom flushes the air present in the container.
The valve also acts as a safety valve. Air (& small quantity of N2) exists thru' an orifice & makes a whistle. By whistle indication, the hand valve at inlet assembly is closed. This avoids excess N2 entering the cylinder.
The container is an assembly of two co-axial cylinders one sliding in the other. The bottom cylinder is fixed & top one slide & maintains the leak free for the gas passage.
The purpose is to vary the length of container, depending on the size of the object stored in it. The top sliding portion can be fixed between, six different position between the maximum & minimum position.

Material of construction: - The container is made of polycarbonate of tensile strength of around 600 kg/cm2. The base & Rim of container is of aluminum. Sealing material is rubber of polyurethane. Fasteners are of high tensile steel. Valve, valve pin, is of carbon steel.
At some places nylon/plastic is used. Depending on the availability, any suitable material could be used.

Testing of the prototype: All the joints are checked for gas leakage. Soap bubble method may be used. All the components to be checked for their geometrical conformity. The bleed off/safety valve should open at around 1.0 to 1.1 bars. While closing it should come down slowly. The valve operated by weight of valve housing & valve. Hence it is necessary the container should be installed in the vertical position.

STORAGE SYSTEM - IMAGE



KITCHEN CABINET

Stain less Steel Design

This manual gives most of the design data necessary to manufacture the **Kitchen Cabinet** including detailed components drawings, assembly drawings, material used to manufacture the system. It is necessary to study all the drawings & bill of material before start manufacturing the unit. If there are any mistakes/ doubts, they are to be corrected / clarified.

These drawings and other information necessary to manufacture the unit are framed from the information provided by the client & a few data collected from internet. The product under development is from scratch. It is necessary to develop a prototype & test the prototype before undertaking regular production.

The dimensions, tolerances and fits stipulated on components drawings are fixed based on the function of each component. Initially, a pilot batch production should be taken up. Hence, it is necessary to exercise at most care in manufacturing the components. All the drawings sent in PDF format.

Unlimited tolerances conform to the data furnished in the drawing template**. Dimensions are all in millimeters.**

Each component of the assembly is to be inspected for its correctness, both material property & geometrical dimensions. Any deviation would affect the performance the unit.

It is suggested to study the function of the unit before start manufacturing. Bill of material (Excel File) clearly depicts the nature of raw material and quantity required per piece. Each drawing should be studied thoroughly before finalizing the purchase order on vendors/suppliers. It is suggested to select vendors from known source nearer to manufacturing plant for easy follow up. It is necessary to obtain quotation from at least three suppliers. Purchase orders should be finalized based on the quality and economy.

Actual cost will be known, once you produce the pilot batch. Keep a record of actual cost of each component. Delivery time of each component should be decided based on the committed delivery of end product. It is suggested to prepare a bar chart for the individual activity of manufacture.

KITCHEN CABINET

Purpose of the system: The appliance is a sheet metal cabinet assembly, having storage space below the platform. The platform is equipped with appliance to serve liquor in a shop or in a residential party/function. The system is on wheels & can be moved to any place.

Construction of the system: - This is a tubular construction system. Material used is SS or at the options of the client. In some places MS can be used. This is clear from the drawing. The system rolls on wheels.

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Material of construction: - The appliance is a sheet metal fabrication. Mostly welding is used. The material of construction would be rectangular tubes as a structure & is covered with the sheet metal sheets. The tube used is mostly 50x25x1mm. Sheets used are 1mm thick. The major components of the system are:-

1) Tubular welded structure 2) Sheet metal fabrication 3) Sliding doors 4) Hinge doors having louvers for air circulation. 5) Caster wheels, two swivels & two rigid. The swivel serves steering. This wheel assembly is purchased from any reputed manufacturer. 6) Plumbing for potable water & Drainage water from sinks. 7) Three Sinks of SS fabrication is provided. 8) Electrical sockets & switches are provided for the operation of a refrigerator & a mixer blender.

Manufacturing Process: The process drawings & components' drawings are provided with detail dimensions. The manufacturer is at liberty to modify if required of ease of manufacture. All the process provided in the drawing is applicable to convention manufacture & to prototype only. In case for mass production after approval of prototype, the process may need to be changed.

It should be noted that manufacturing allowance is to be decided by the manufacturer. The sizes are all stipulated are finish size. However, if necessary alteration could be made, but the design department should be informed & get approval.

This is a sheet metal fabrication. The bending radius should as minimum as possible. For a good finish Mechanical/Hydraulic presses & press brakes are to be used to get a good level surfaces & a good aesthetic appearance.

The Sheet required to fabricate the component is to be calculated by the shop floor engineer.

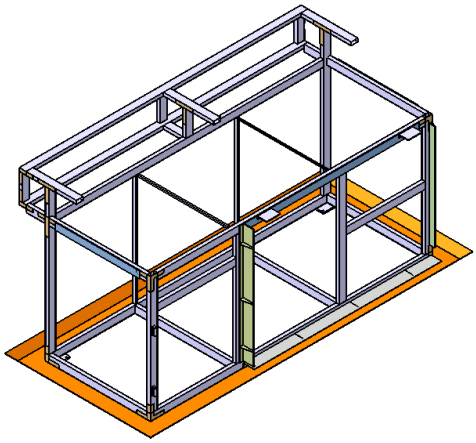
Testing of the prototype: All the parts are checked for dimension accuracy. Material is to be procured from a reliable source for good quality. Wherever necessary visual inspection to be carried out. Electrical functioning is also checked. Only after satisfactory performance of prototype model regular production to be started.

Relevant Zip files:

1) StructProcess: Tubular Structural Drawing process ((PDF)
2) CabinetAsslyProcess: Assembly drawings of Beer Bar (PDF)

3) Doc.zip: BOM- excel file & Word File(doc &xls)
4) Catalogs.zip : A few catalogs related to bought out. (PDF)

A few images of the system designed & to be manufactured.



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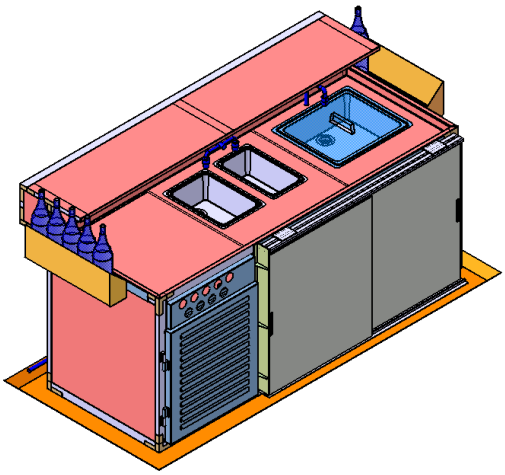
Tubular Structure



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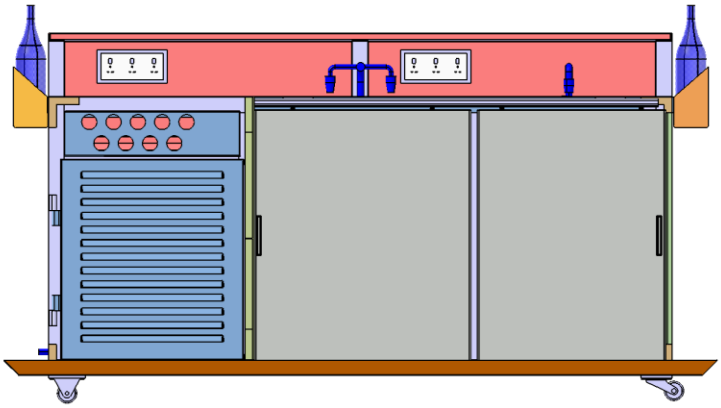
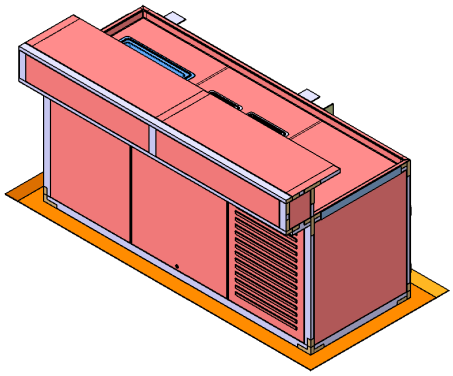
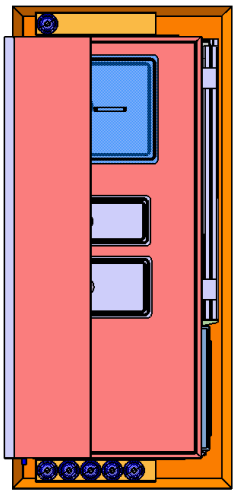


Bar Front View.

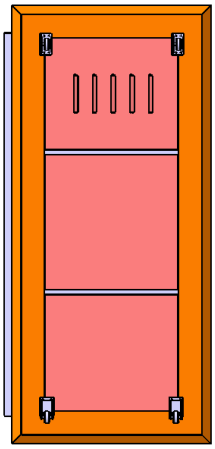


Rear View



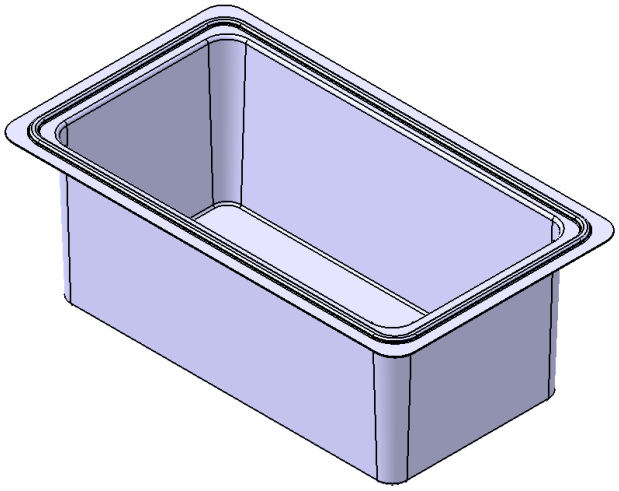
0.0955

Top View



0.087

Bottom View



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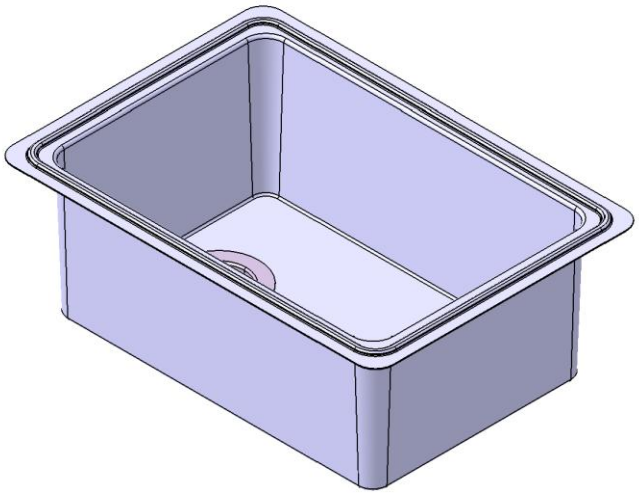
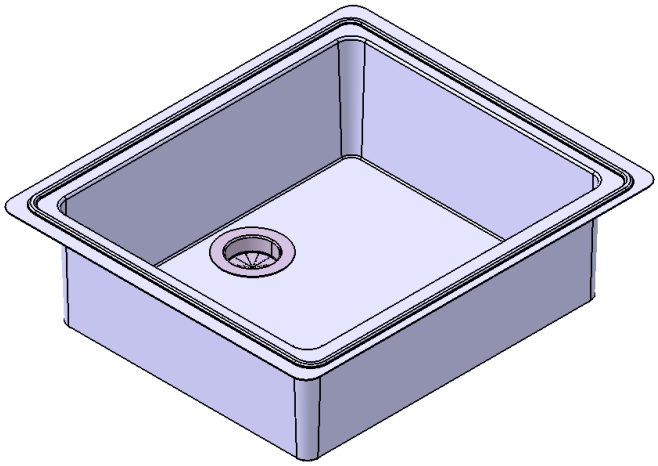
Sink-1



Sink-2



0.428

Sink-3