



CHEMCUT PARTS IDENTIFICATION GUIDE

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| 3. Chemcut Nomenclature |
| 4. Chemcut Gears |
| 5. Components And Materials |

Chemcut Corp.
500-1 Science Park Road.
State College, Pa. 16803-2299





Identify System Serial Number

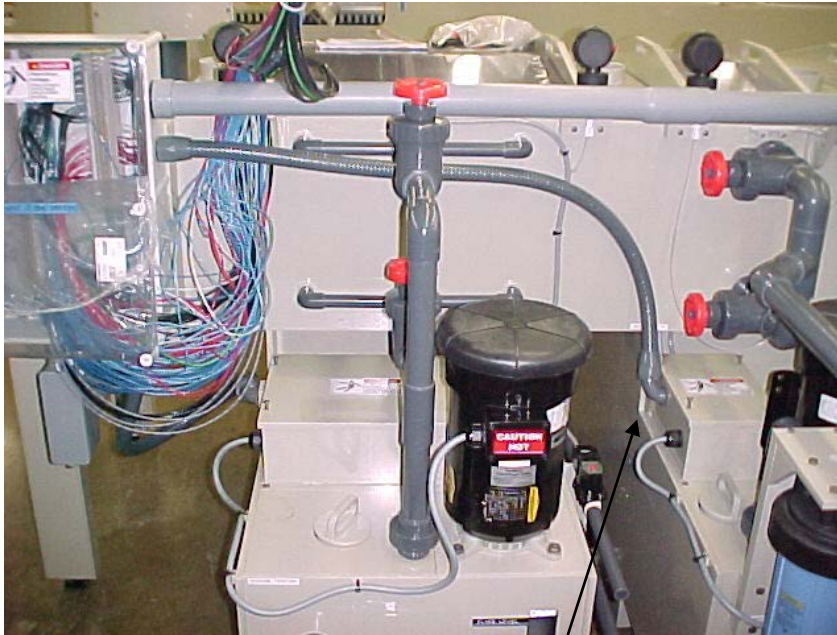
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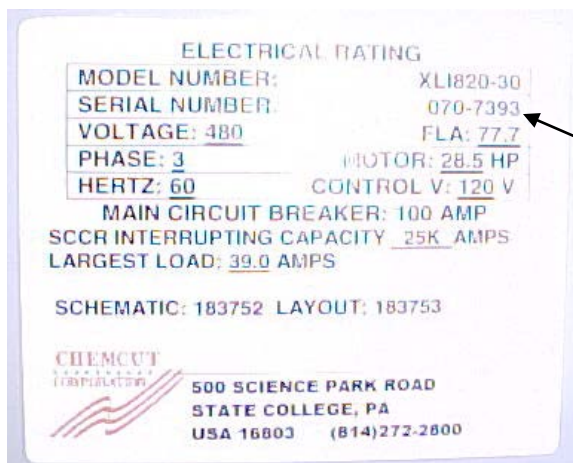
Identify System Serial Number:

The first three numbers determine the conveyor width of system, then it's followed by a dash and then a series of either three or four numbers. These numbers are located at the rear of the system and on each Module, also it is located on the system Electrical Enclosure Rating Tag.



Serial Number

Serial Number Locations on Rear of Machine (Photo)



Rating Tag
Serial #
Located on Electrical
Enclosure





Identify System Serial Number:

The first three numbers determine the conveyor width of system, then it's followed by a dash and then a series of either three or four numbers. These numbers are located at the rear of the system and on each Module, also it is located on the system Electrical Enclosure.

Electrical Enclosure
Rating Tag



Serial Number Locations on Electrical Enclosure (Photo)





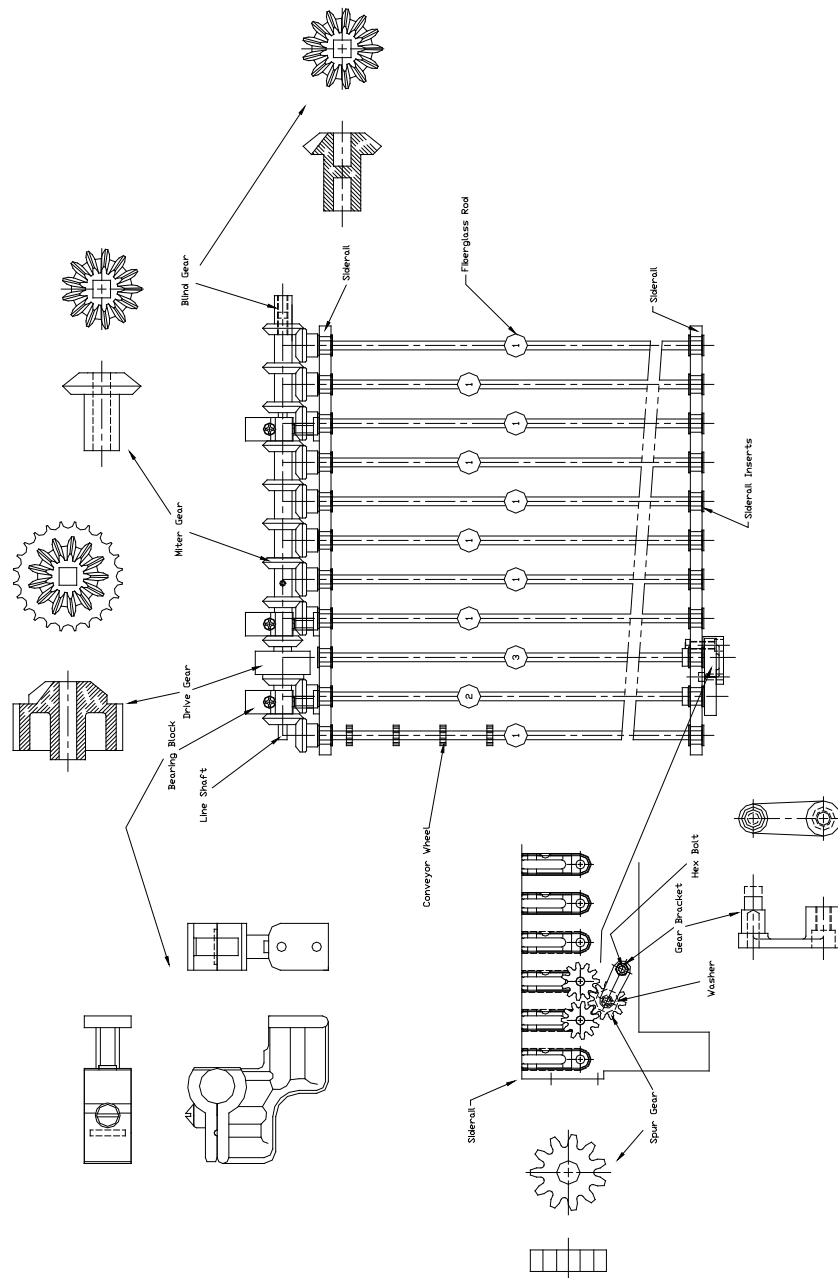
Parts Identifier

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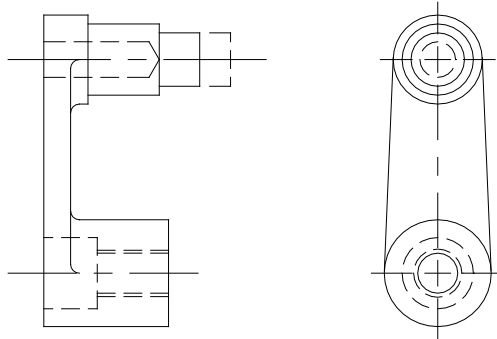


Standard Conveyor

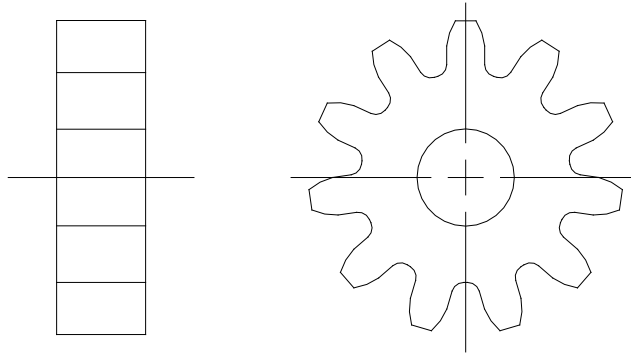




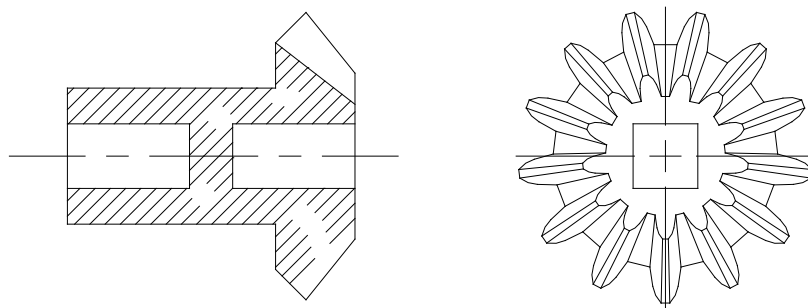
Gear Bracket



Spur Gear

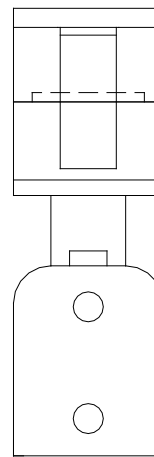
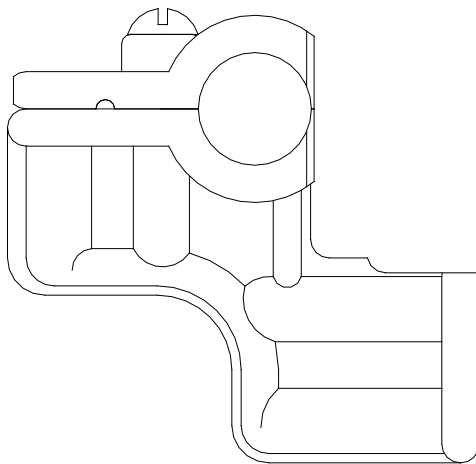
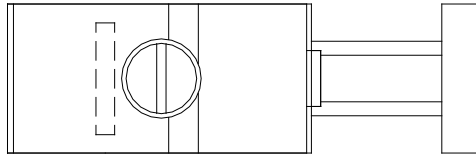


Blind Gear





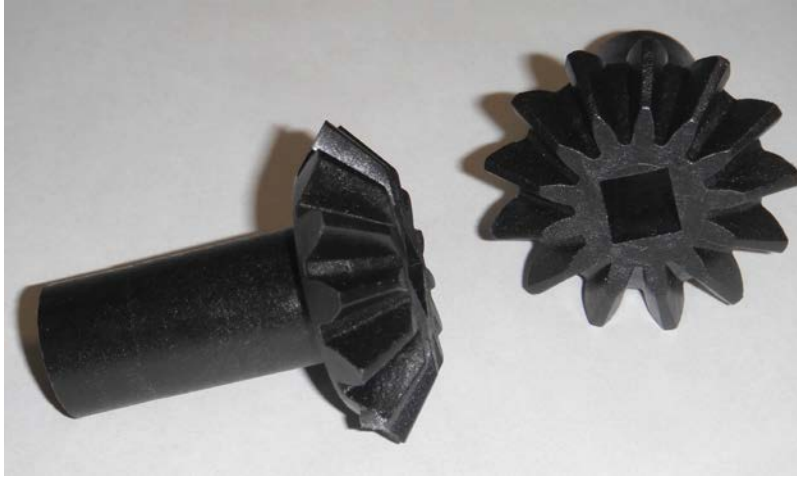
Bearing Block





MITER GEARS

P/N 170000 MITER GEAR



P/N 170000 GEAR,M,0813375,2.0,RPE 08 PITCH,13 TOOTH,.375 SQ
SHAFT, 2.0 LG
Product Lines: CS2000

P/N 179875 MITER GEAR

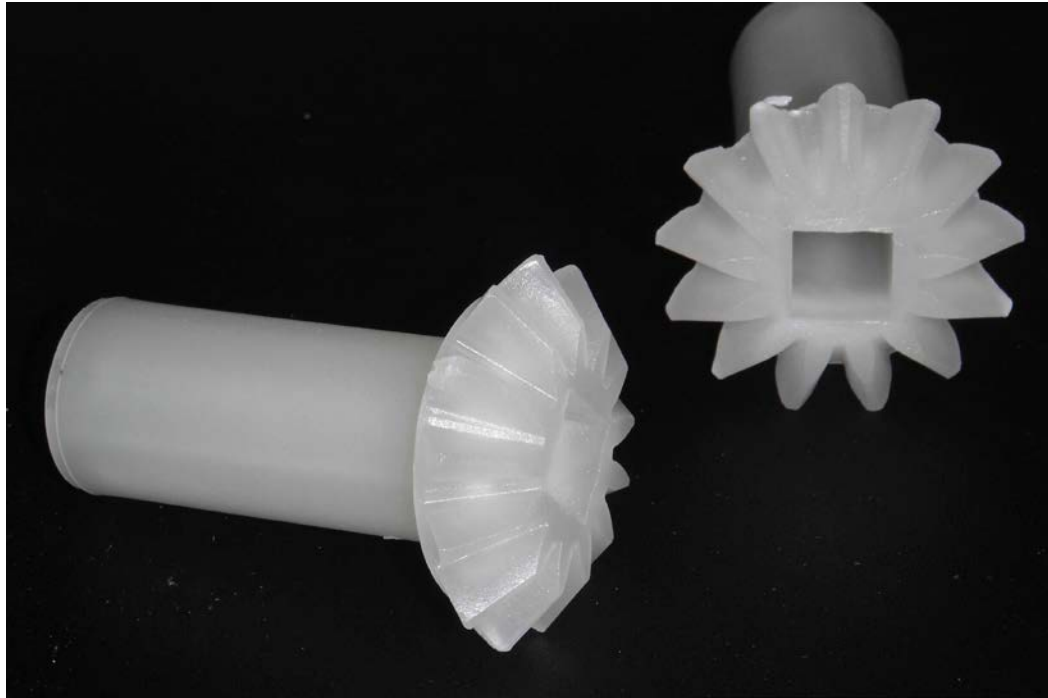


P/N 179875 GEAR,M,0813375,2.0,PVDF 08 PITCH, 13 TOOTH, .375
SQ SHAFT,2.0 LG
Product Lines: GSK – XL – XLI – 2300 Series





P/N 044641 MITER GEAR

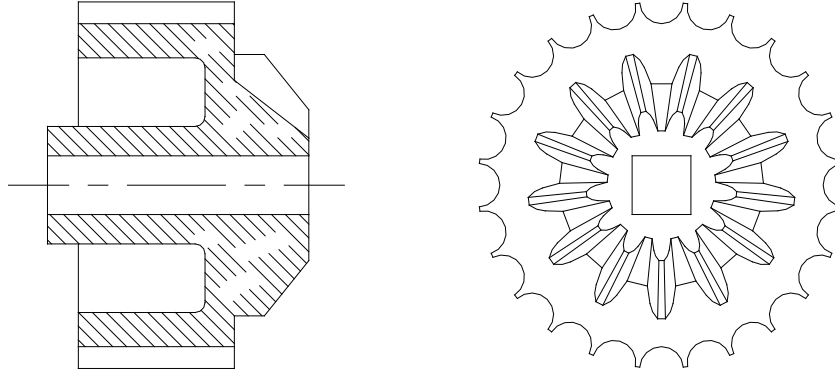


P/N 044641 GEAR,M,1013375,2.0,RPP, .750HUB 10 PITCH,13
TOOTH,.375 SQ SHAFT,2.0 LG
Product Lines: 547





Drive Gear



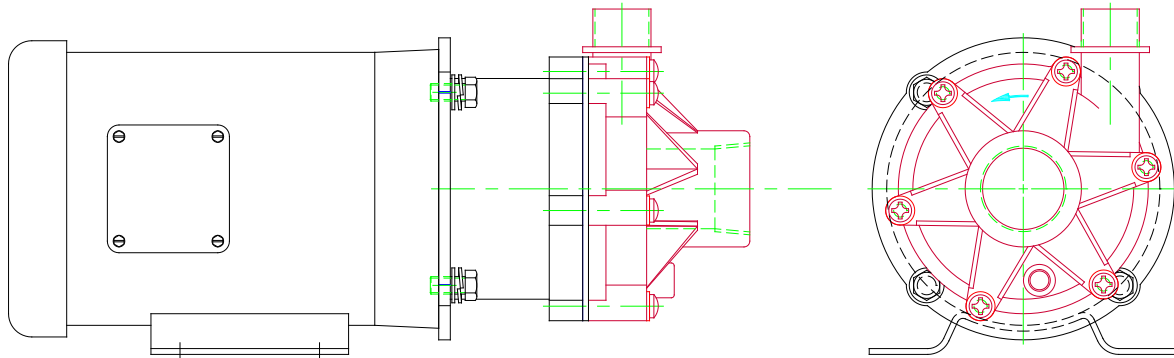
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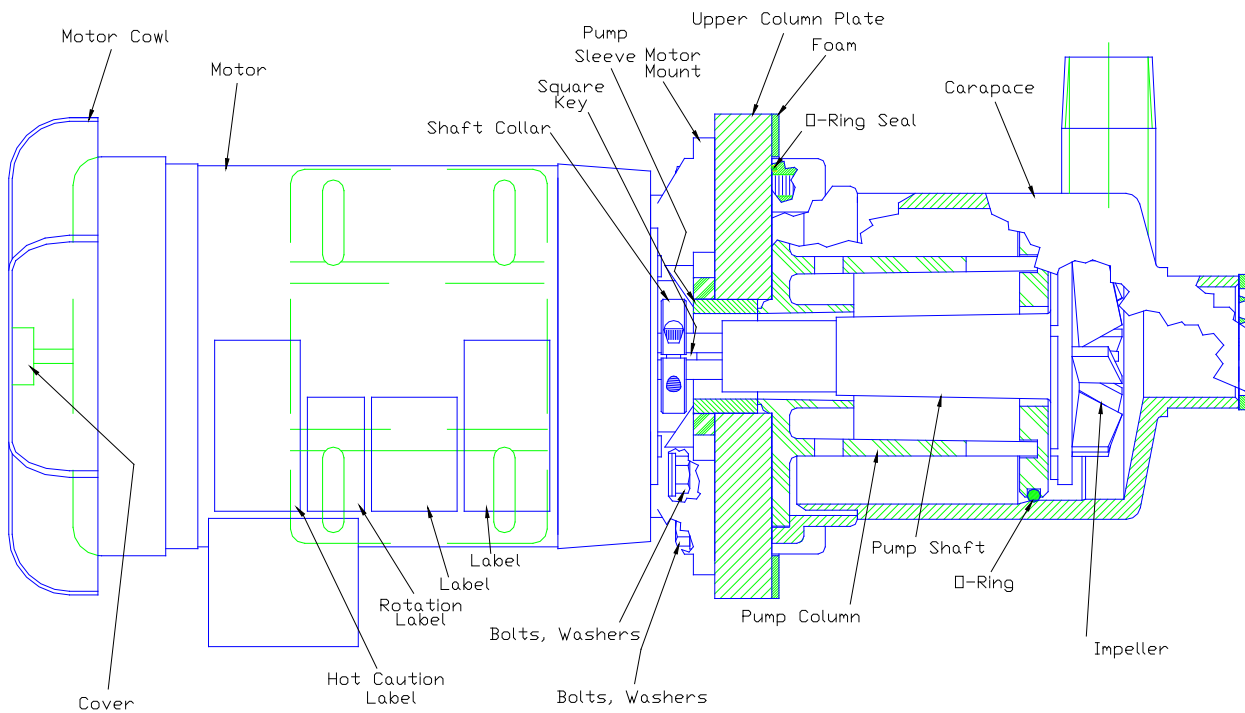


Pumps

Horizontal Mfg. Drive Pump

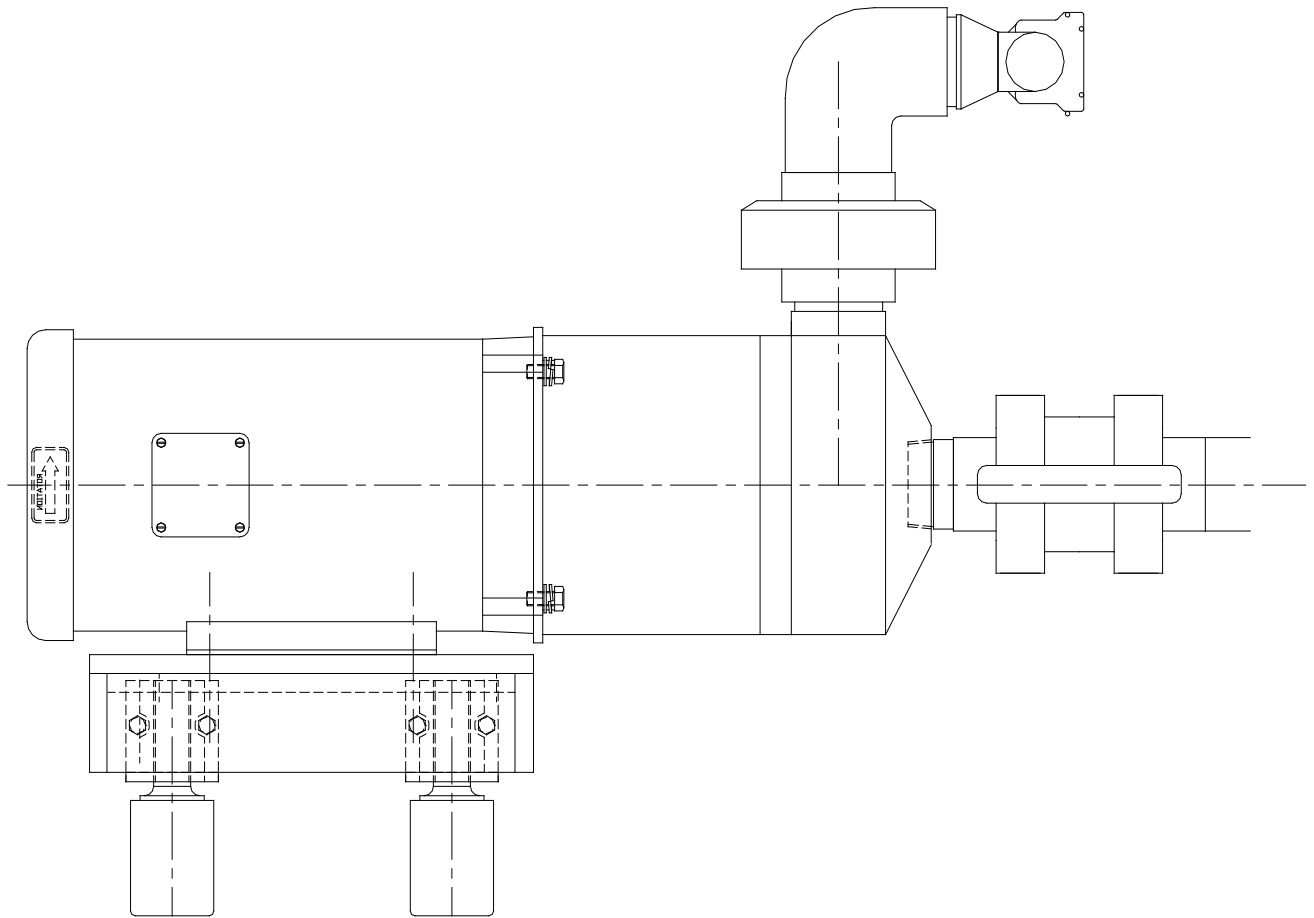


Vertical Sealess Pump





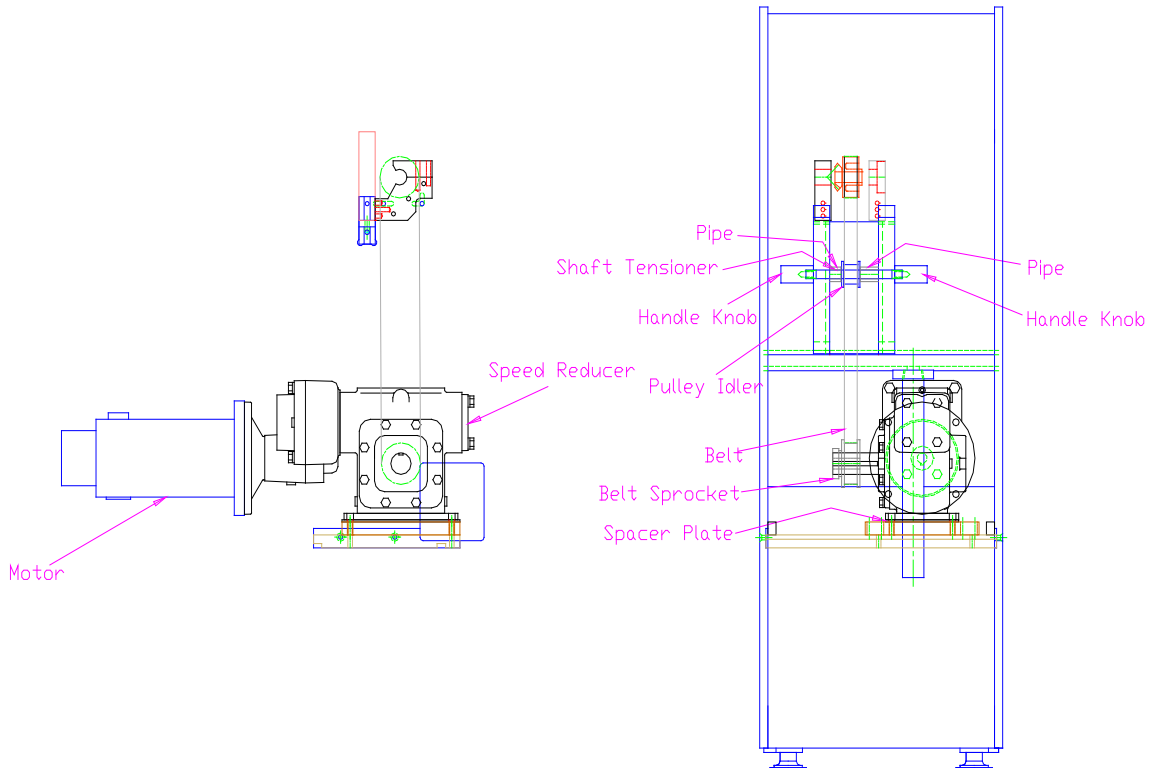
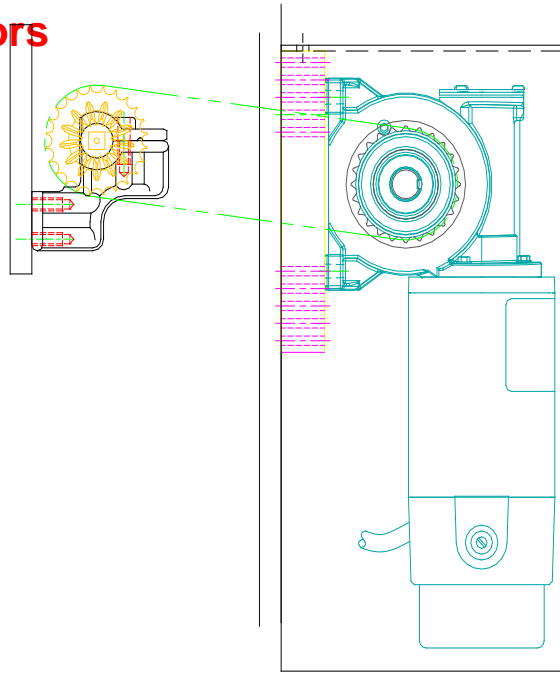
Recirculating Mag Drive Pump



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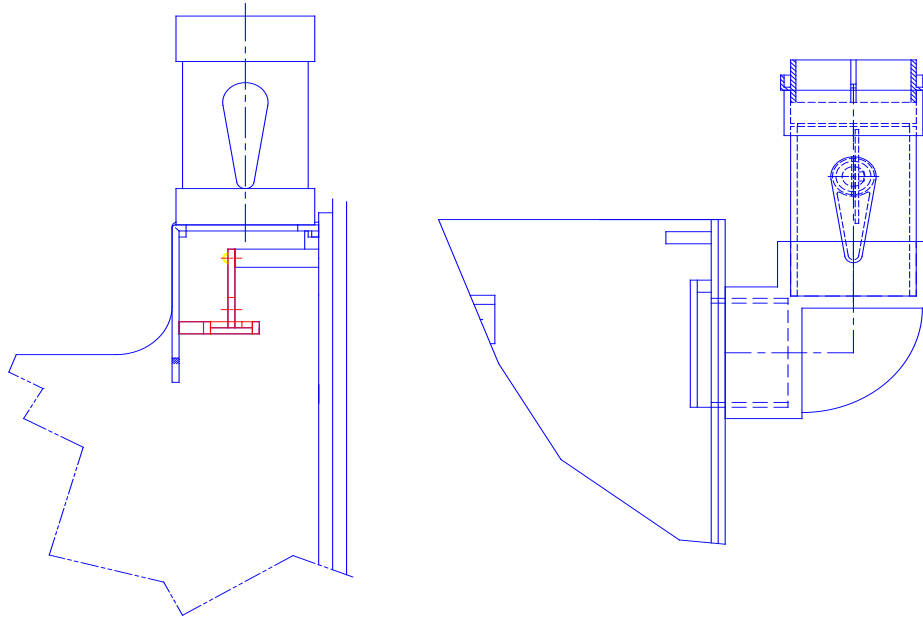


Conveyor Drive Motors

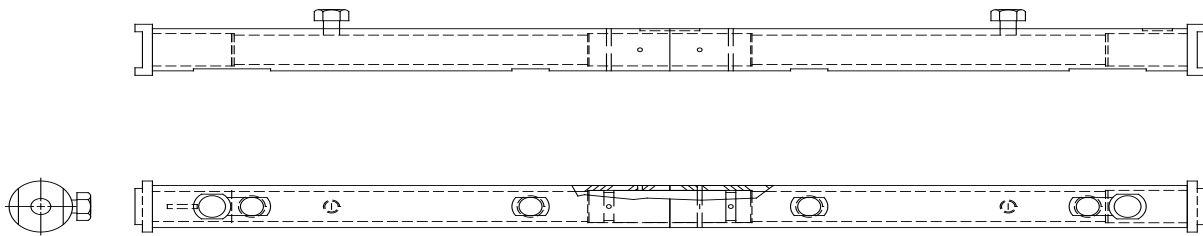




Vents and Damper Assy.

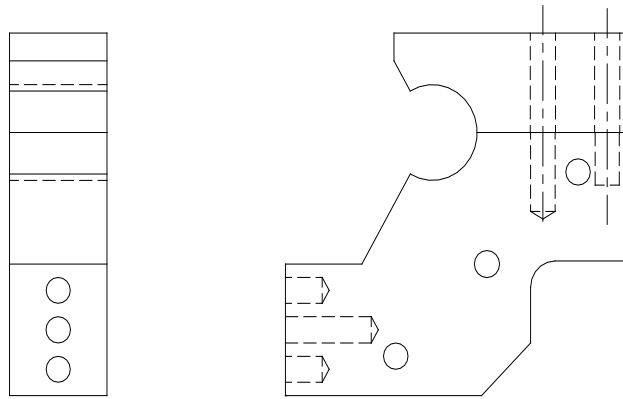
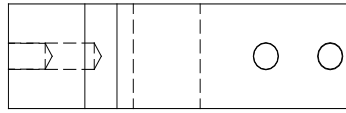


Spraytubes

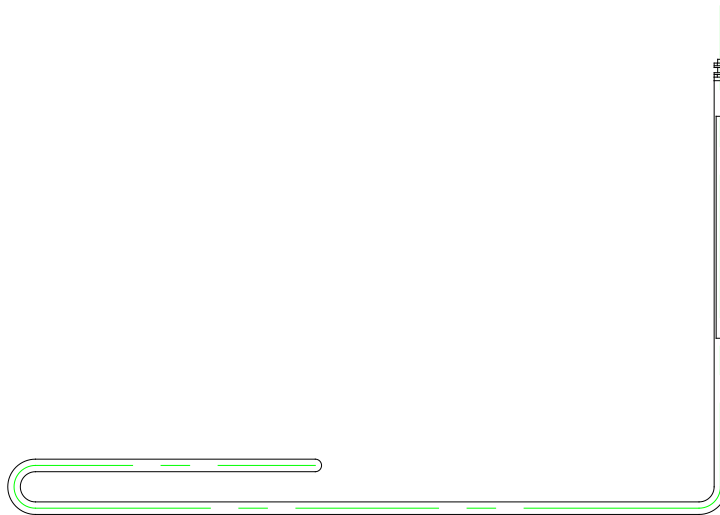
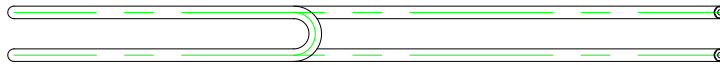




Struts

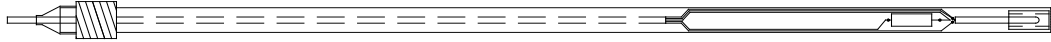


Heater

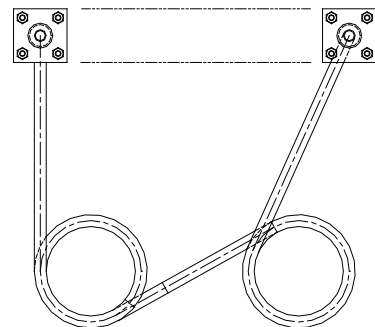
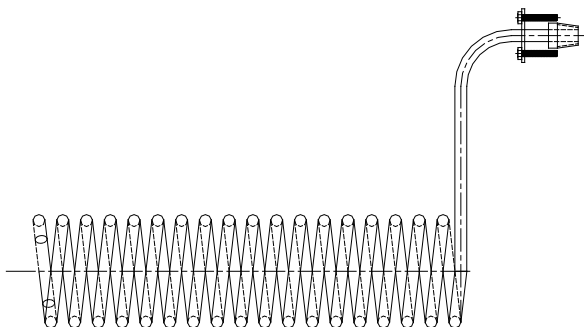
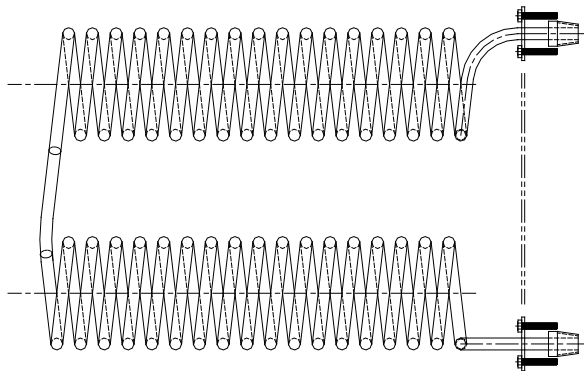




Probe



Cooling Coil

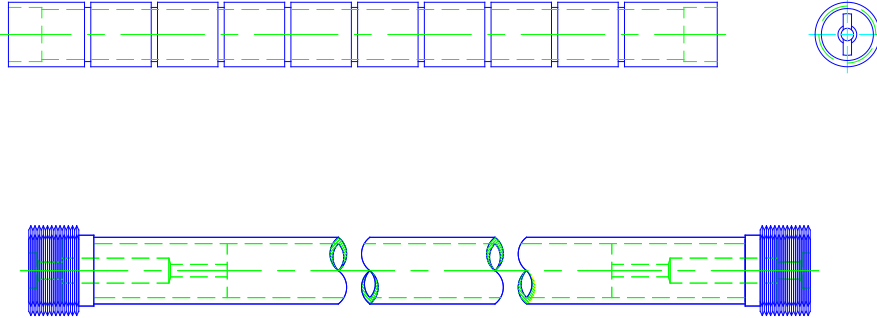


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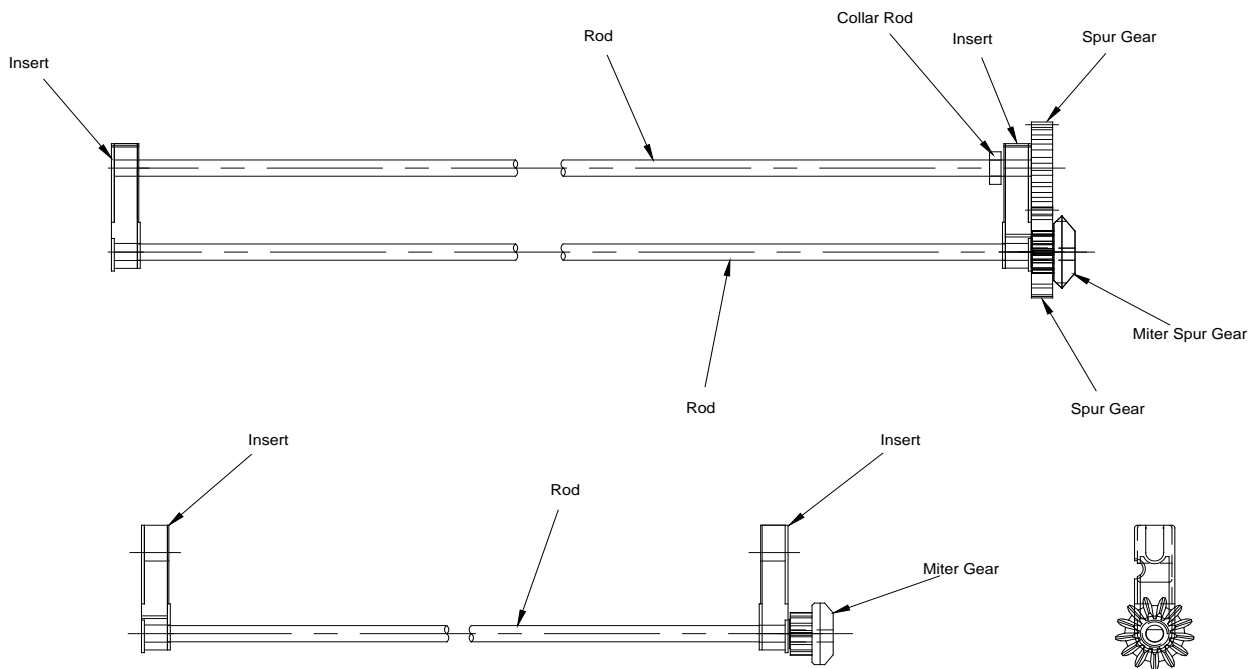


Rollers

Grooved Roller
Roller Assy

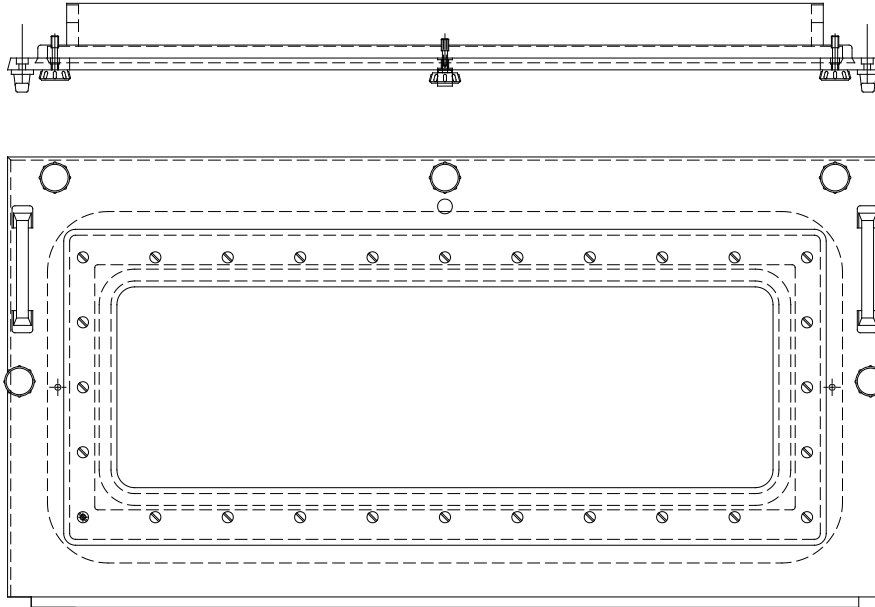


Conveyor Rods





Air Seal Doors

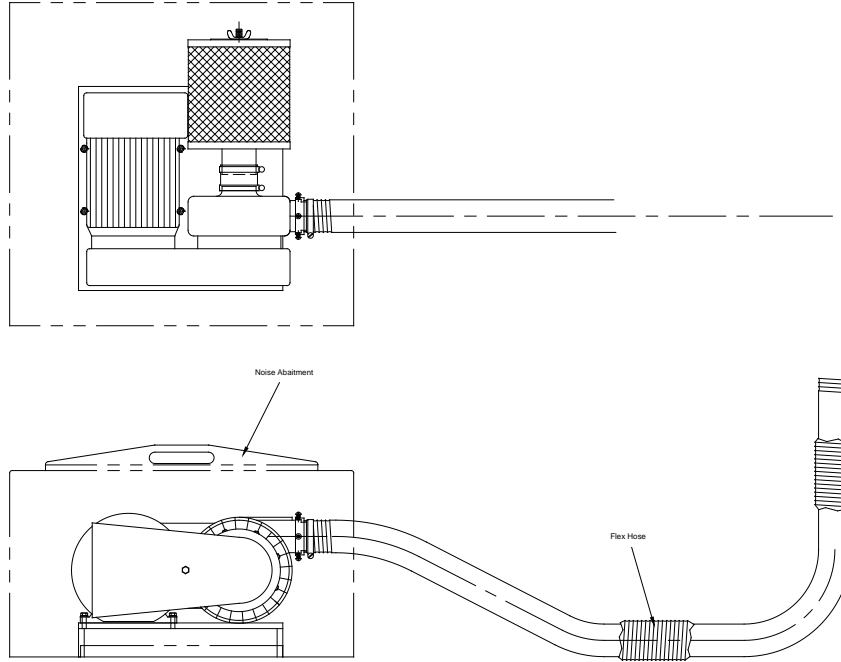


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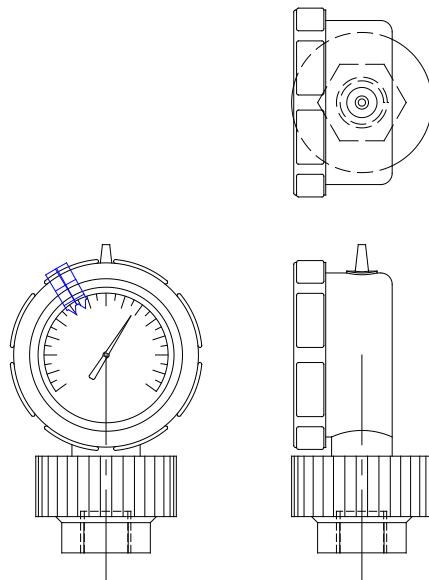
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Blowers

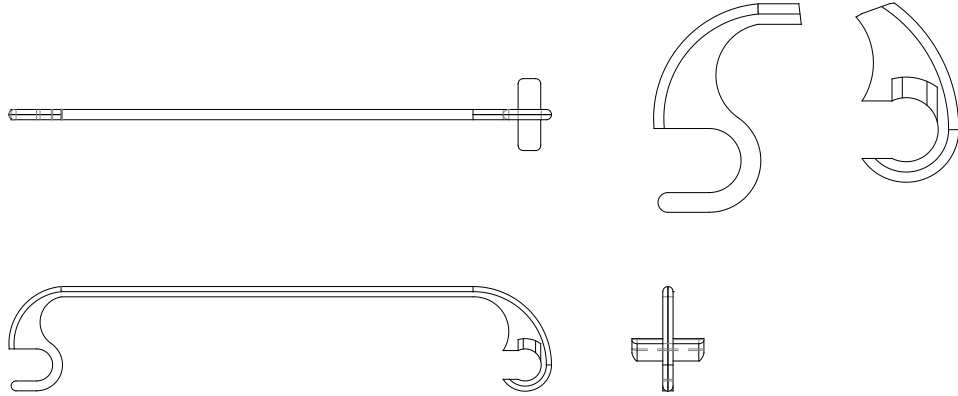


Pressure Gauge

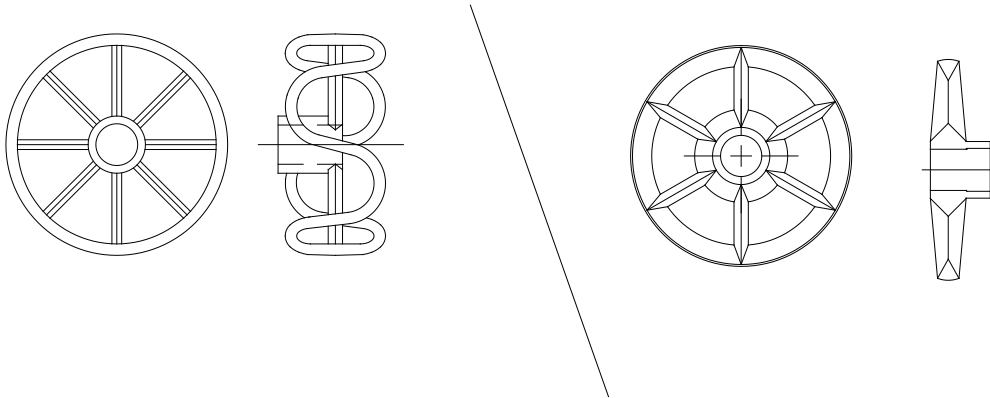




Conveyor Rod Fingers

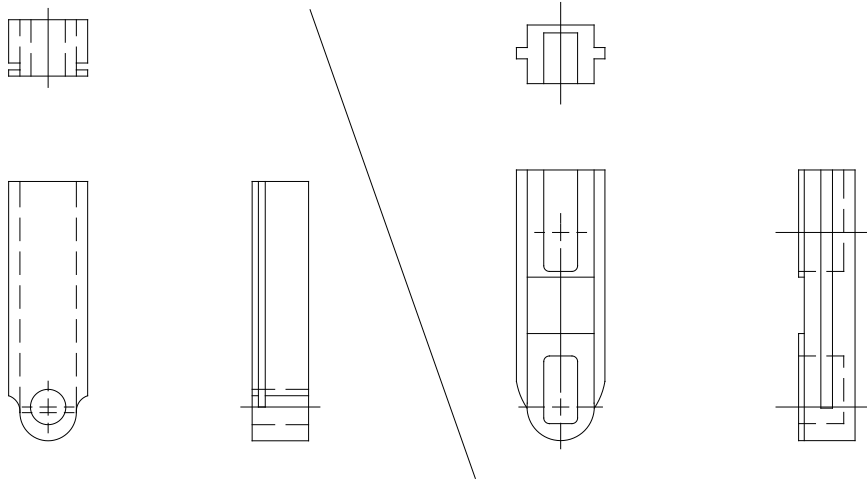


Conveyor Wheels

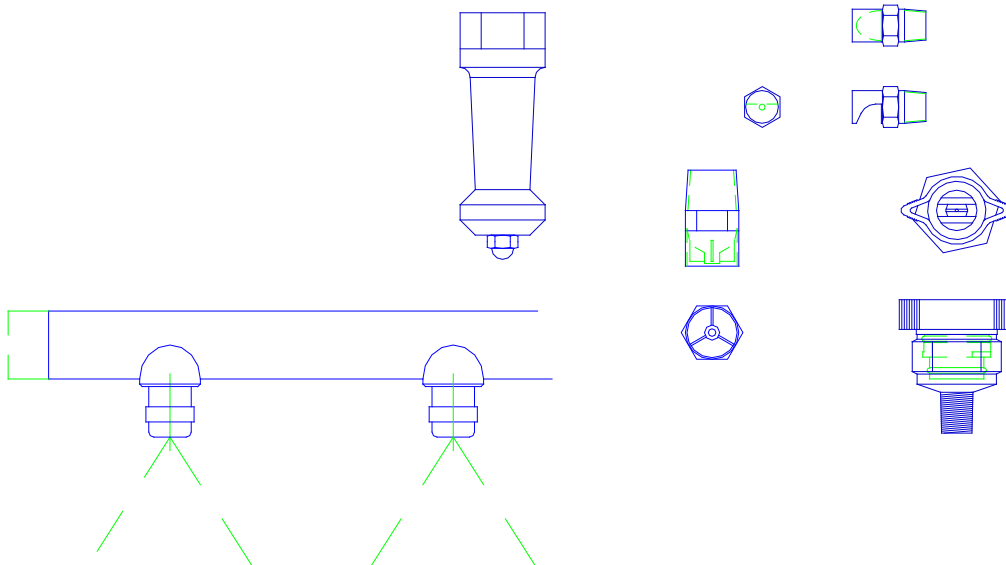




Siderail Inserts

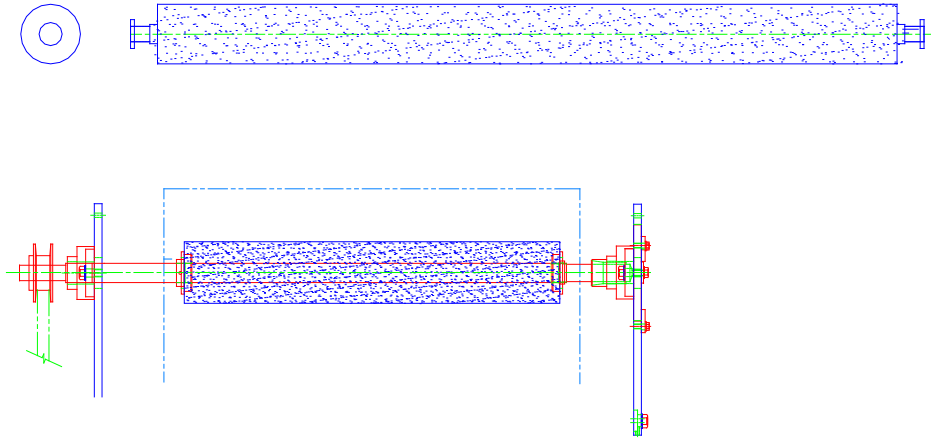


Nozzles

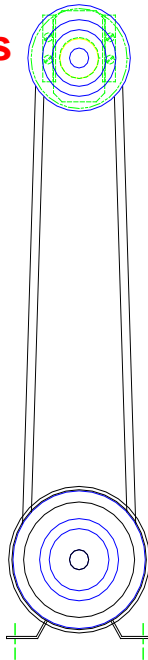




Scrubber Brushes

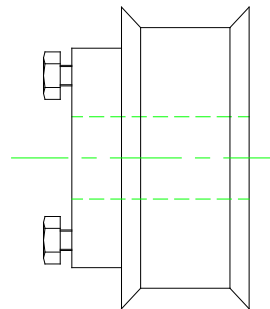
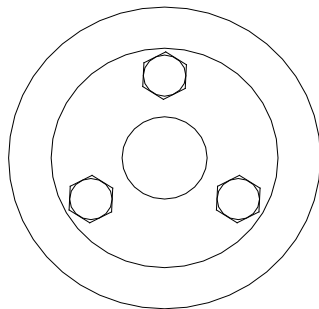
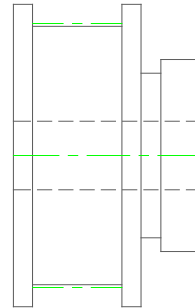
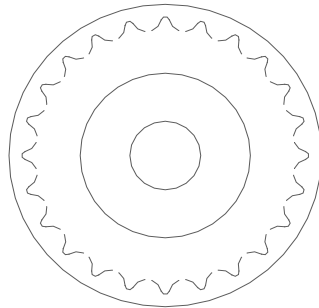


Scrubber Brush Drive Belts





Belt Drive Sprockets



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System Nomenclature

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System

A group of modules sequenced to perform a specific number of chemical/physical applications.

System Number

A unique serial number created when the equipment is built. A tag is affixed to the back side of every module identifying the system number and module.

Module

An individual unit of the entire system.

Conveyor

A series of rods with wheels and rollers used to transport product through our equipment.

Conveyor Wheel

A wheel used on a rod to support the panels as they are conveyed thru the machine. Or a group of wheels on a rod that transports a panel along the conveyor path.

Roller

A cylindrical device used to remove liquids from the panel to reduce fluid transfer to the next process. Prevents carry out and dilution. Commonly referred as Squeegee or Pinch Roller

Line Gear

A miter gear used on the drive shaft which travels through all process stations in the system. Used to drive the individual conveyor rods and rollers.

Drive Gear

A miter gear on the ends of rods and rollers that are driven by the line gear on the shaft.

Blind Gear

A line gear on the drive shaft located at module connections.
A gear that meets a shaft on both ends and plugged in the middle.
Helps to reduce chemical migration from module to module.

Roller Shafts

A short shaft that is affixed into the ends of rollers that drive the roller. Roller shafts can be made from Titanium, SST and a variety of polymer materials dependent on application.





D-Shaft

A shaft that has a flat machined into the shaft. Drive gears mate with molded miter gears with a D-shape socket.

Spur Gear

A gear Used to drive upper driven wheels and rods or rollers. Looks like a spur on a cowboys boot.

Wheel and Roller Sizes Upper and Lower

Lower 7/8" and 2"
Upper 1.4" or 2"

Upper Driven

Wheels and rod or rollers that are driven or powered to assist in the transport of the material being processed. Typically use a spur gear for driven application.

Side Rail Insert

A bearing that supports the conveyor rods and rollers as well as any upper wheel and rod or roller positions.

Side Rail

A machined support that holds the side rail inserts.

Acronyms

PVC

Polyvinyl Chloride

PPL

Polypropylene

PP

Polypropylene

PPN

Polypropylene Natural





FRPP

Flame Retardant Polypropylene

PVDF

Polyvinylidene Fluoride

CPVC

Chlorinated Polyvinyl Chloride

SST

Stainless Steel

TI

Titanium

EPDM

Ethylene Propylene Diene Monomer

TPE

Thermal plastic polymer and EPDM. Hence the “E”
Trade name Santoprene

TPN

Thermal plastic polymer and Nitrile rubber. Hence the “N”
Trade name Geo last

AFD

“Advanced Fluid Delivery”, a form of nozzle used for air and liquids for drying and thru-hole applications.

PE

Polyethylene

HDPE – High Density Polyethylene

UHMW – Ultra High Molecular Weight Polyethylene.

Durometer

Standardized measure of hardness of materials primarily plastics.





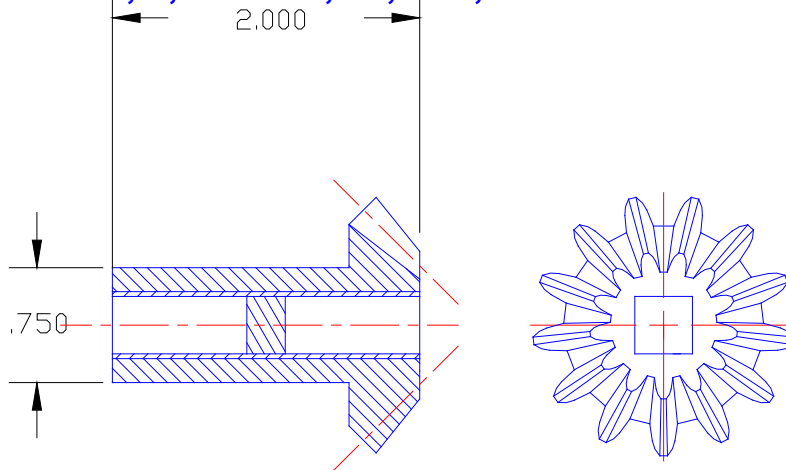
Chemcut Gears (example)

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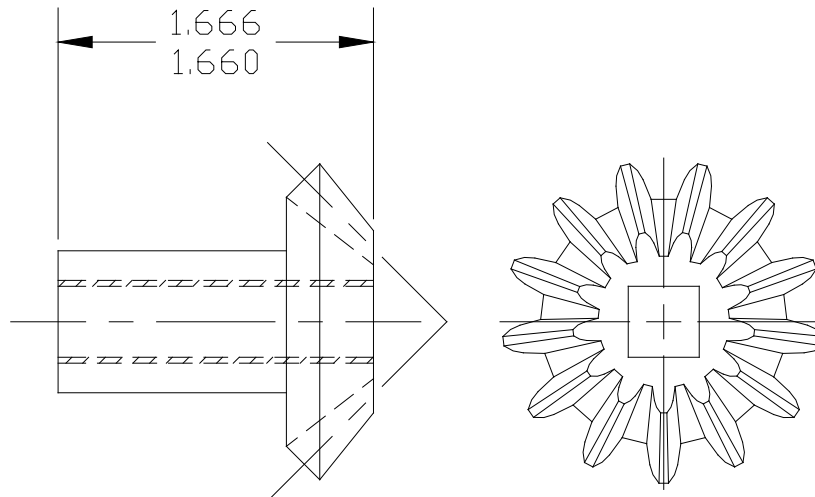




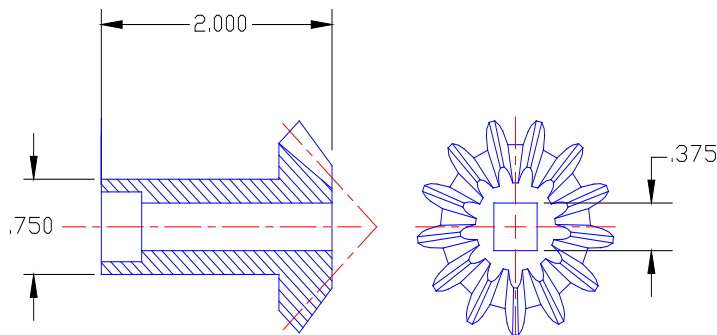
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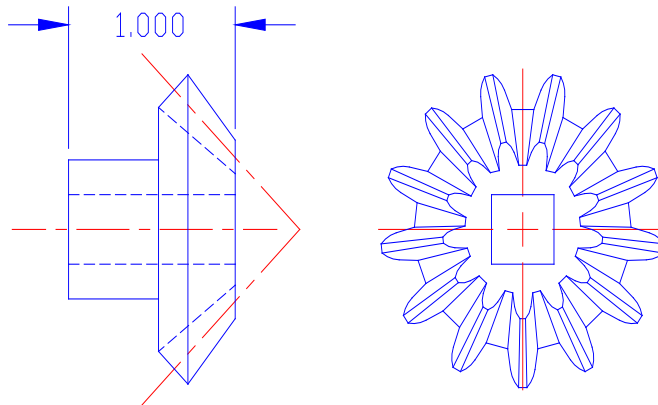


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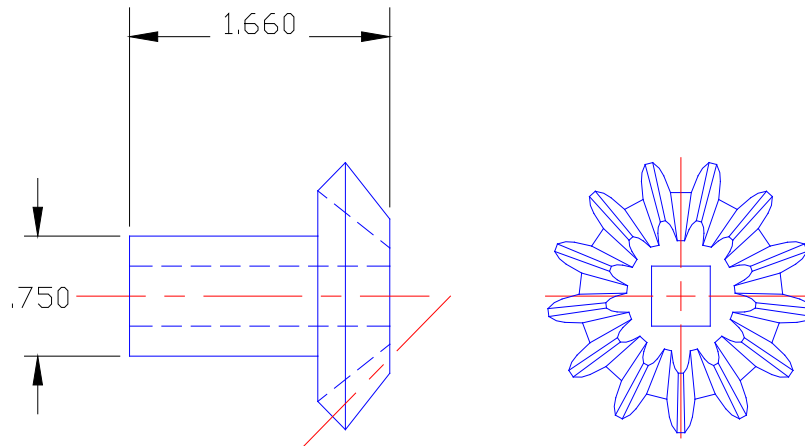




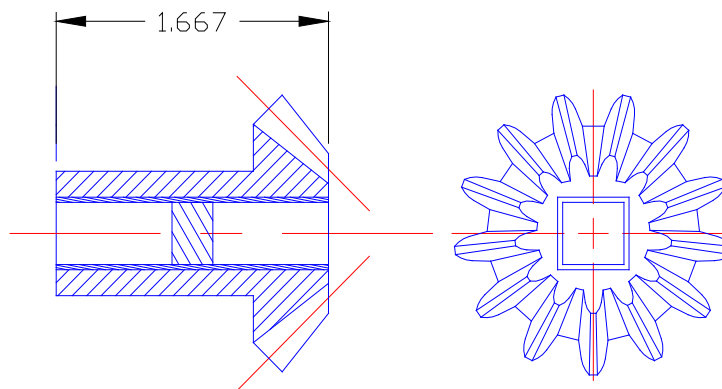
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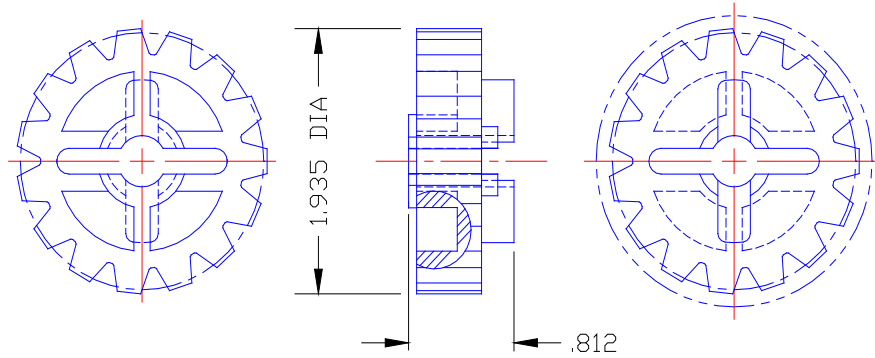


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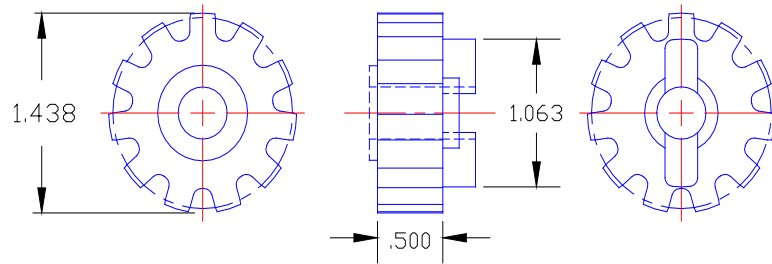




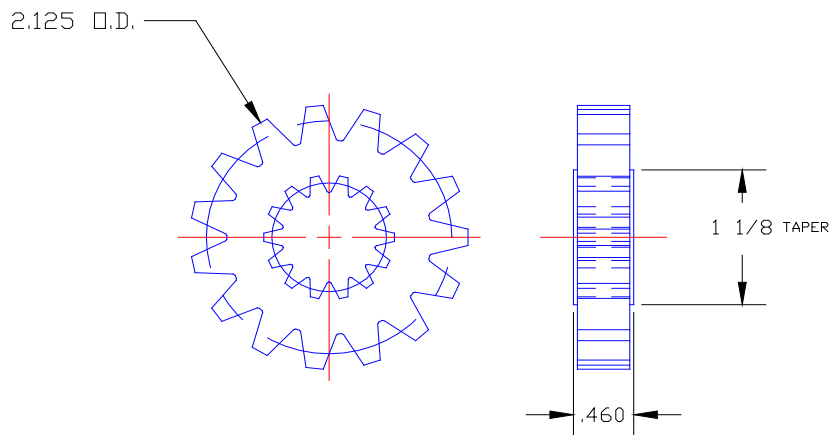
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176531 GEAR, SPUR, 8P, 11T, RPP, ROLLER, M

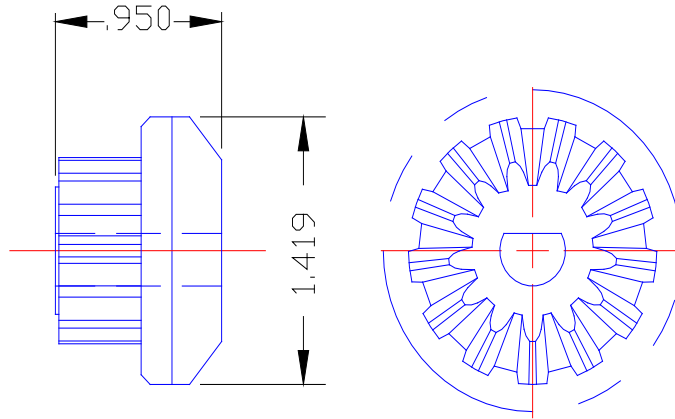


044648 GEAR, SPUR, 8P, 15T, RPE, EXT

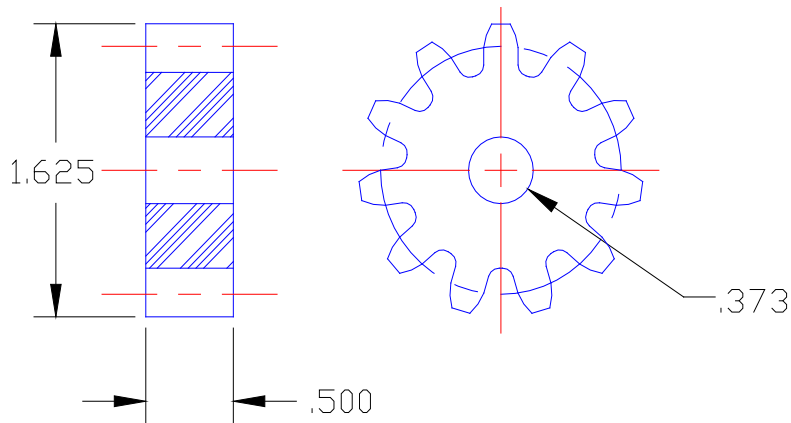




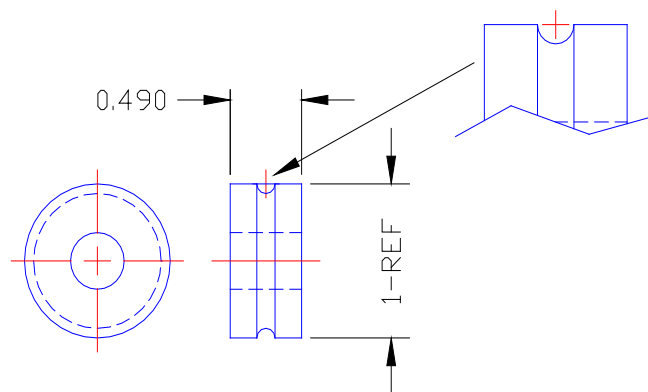
600590 GEAR,MITER/SPUR,RPE,"D",1.419



131371 GEAR,SPUR, 8P,11T,RPP,.373ID



162966 WHEEL,DRIVE,O-RING,CPVC





COMPONENTS AND MATERIALS

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Components and Materials of Construction

Chemcut uses many different materials in the construction of the different modules we offer. Each material is carefully chosen to be compatible with a specific chemical or mechanical application. A list and description of the common materials used by Chemcut is listed below.

PVC (Polyvinyl Chloride)

This is the most common material used in the construction of Chemcut equipment. PVC is one of the strongest plastics available. It has excellent resistance to most acids and bases of 10% concentration or less. PVC is limited in its operating temperatures. The maximum safe operating temperature for PVC is 130° F (54.4° C). Above this temperature softening can occur, with subsequent loss of structural strength. This plastic can either be bonded or welded.

CPVC (Chlorinated Polyvinyl Chloride)

This is a modified form of PVC. This is somewhat stronger than PVC. CPVC is similar in most properties to PVC. It does have a better resistance to stronger acids such as above 10% Sulfuric Acid. Also the maximum temperature for this plastic is 180° F (82° C). This material is used where higher than 130° temperatures are required, and where strong acids are used. This plastic can either be bonded or welded.

TYGON

This is a soft pliable plastic commonly used at Chemcut. Tygon is a form of vinyl resin, with similar chemical and temperature resistances as PVC. Strong acids will cause Tygon to shrink and harden over time. Some bases such as Stripping solutions will cause Tygon to swell. Maximum operating temperature is 130°F (54.4 C). Tygon is usually bonded in place when used.

POLYETHYLENE

Its primary use is Dosing Tanks, Tubing and Packing's.

POLYPROPYLENE

This is a type of plastic also used at Chemcut. It is usually white in color. Occasionally it is used in its Natural color which is transparent off white color. This material is primarily used to build Strippers modules. This material is not as strong as PVC. It has a specific gravity that is less than 1.0, So this material will float in water. This material has good resistance to mild acids, and excellent resistance to mild and strong bases. The temperature limit for this material is 160° F (71.0° C).



This material cannot be bonded, instead it is welded.

EPDM (Ethylene Propylene Diene Monomer)

This is a black rubber like material used at Chemcut. It is primarily used as a Gasket material, Flexible hose, Conveyor Wheels, and Roller covering.

This material has a good chemical resistance to acids and bases. It has a temperature limit of around 300° F. This material will swell when exposed to some semi-aqueous stripping and developing chemistries with high organic solvent content.

TPE (Thermoplastic Elastomer)

This synthetic rubber like material is usually either tan or black in color. It is used to mold Conveyor wheels and roller covering. This material has good resistance to acids and bases. This material also resists attack by organic solvents used in stripping solutions and developing solutions.

UHMW (Ultra High Molecular Weight Polyethylene)

This material is a very dense form of polyethylene. It is white in color. It is used where bearing surface is required, such as conveyor rod bearings.

This material has good chemical resistance to most acids and bases. It is used as a bearing material due to its self lubricating properties.

VITON

This material is a black rubber like material. It is used in high acid conditions.

This material has excellent resistance to strong acids.

RPE (Glass Reinforced Polyethylene)

This material is used to mold various parts in the conveyor system. This material is essentially polyethylene with glass fibers in it to provide added strength. It is usually black in color. It is used in molding drive gears, conveyor bearings, and side rail inserts.

This material has similar properties as polyethylene. It has good resistance to most acids and bases, in mild concentrations. Strong concentration of some chemistries can attack the glass fibers contained in this material.

PHENOLIC

This is a brown, hard synthetic material. It is used as a liner in the heater boxes of dryers. It can be used to make side rails in some special applications.

This material has a good structural strength and good resistance so it is used only in dry applications.



TITANIUM

This is a material used in many of the wet processing machines. This material is commonly used as screws, nuts, bolts, and other hardware used under chemical conditions. Strips and sheets of this product structural support in etchers.

Black oxide modules had titanium tanks, rollers, and gears.

This metal is lightweight, strong metal. Because of a very tight oxide layer this material gives excellent resistance to most chemistries used in Chemcut equipment. It will resist corrosion when exposed to mild acids and strong bases. This material is not compatible to solutions of sulfuric peroxide, or strong acids.

STAINLESS STEEL

This steel alloy is commonly used for structural strength in Chemcut equipment. This material alloy is used in stripping modules, Scrubbers, Deburrers, and other equipment.

Type 316 stainless, most common type used, has good corrosion resistance. It can be used with strong bases, but will corrode when subjected to strong acids.

CARPENTER 20

This is an exotic alloy used by Chemcut for special applications. It is used only where strong acids, such as 98% sulfuric is used.

HASTALLOY C

This is a nickel based alloy used only for special applications. It is similar in properties to titanium, but can easily cast for pump housings, etc. This material has good resistance to acids and free chlorine. This metal is used in black oxide pumps.

FIBERGLASS

This material used in conveyor rods. This material is a light, strong material with good chemical resistance to some chemistries. It does not hold up to strong bases, which is why the stripper modules have stainless steel conveyor rods. Conveyor rods are coated with a sealant to prevent attack on the bonding agent of the fiberglass rod.

CARBON

This material is chemically resistant and require high temperature to react even with oxygen. This material is used in filters, and molds etc.

TEFLON

Teflon is a synthetic fluoropolymer of tetrafluoroethylene that finds numerous applications. This can be used as a tape, O rings, Coated heaters, etc.



Decommissioning

RESIDUAL HAZARDOUS MATERIALS

Before Decommissioning equipment with hazardous or contaminated materials.

Follow all Federal, State, and Local Regulations.

For the disposal of Chemcut equipment "Follow all Federal, State and Local regulations"