



# VORTEX

De-pollution & recycling equipment

## Product Catalog



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# Introduction

Thank you for taking the time to look at the Vortex equipment brochure.

Primarily Vortex is a manufacturer of vehicle drain systems or De-Pollution systems , but we also distribute a value added range of products that help our customers increase the value from the scrap hulk of a vehicle.

Once a vehicle has been drained on one of our many systems and the catalytic converter removed, we can add value with the following equipment;

- Catalytic converter processing, we make a Cat Guillotine which efficiently cuts the converters in half for the safe recovery of the material which contains the platinum group metals, this can then be sold based on the assay value and cuts out a layer of middle traders who all take a percentage of your material as their profit. This will allow you to deal directly with a smelter to ensure the highest prices are paid to you.
- The Engine Cracker will break up to 20 engine and gearbox combos per hour and separate the A380 aluminum from the steel and other material, rates vary with the fluctuations in metal pricing, but with our ROI calculator we will show you making an extra 30% profit against selling your engines by the piece.
- We sell MG Wire harness granulators which will process from 130-2640lbs per hour, giving you 98% pure bright chopped copper, more than doubling the value you would get from just selling unprocessed harnesses.

The natural progression of vehicle processing leads us to scrap metal processing equipment and we have added a range of products that can have a cross over between auto salvage and the scrap industry, for example we are the US distributor for Rotor Balers which provides a very cost effective vehicle logger baler allowing you to get more vehicles per shipment, which is preferable to flattening in areas further away from an auto shredder.

We are also the sole distributor for North America for the McIntyre range of products, they are best known for their Alligator Shears, which are ideal for trimming scrap radiators, exhaust pipes and many other scrap applications. McIntyre also make non ferrous and can balers, cat processing equipment, wire and cable strippers and aluminum casting machines all of which are in our product offering.

For companies who ship materials in containers, we offer container loading solutions from A-Ward out of New Zealand, who offer a range of tilters and straight loading machines.

We sell a range of Shredders from various manufacturers, this gives us the capability to work with whichever company has the best solution to suit your needs.

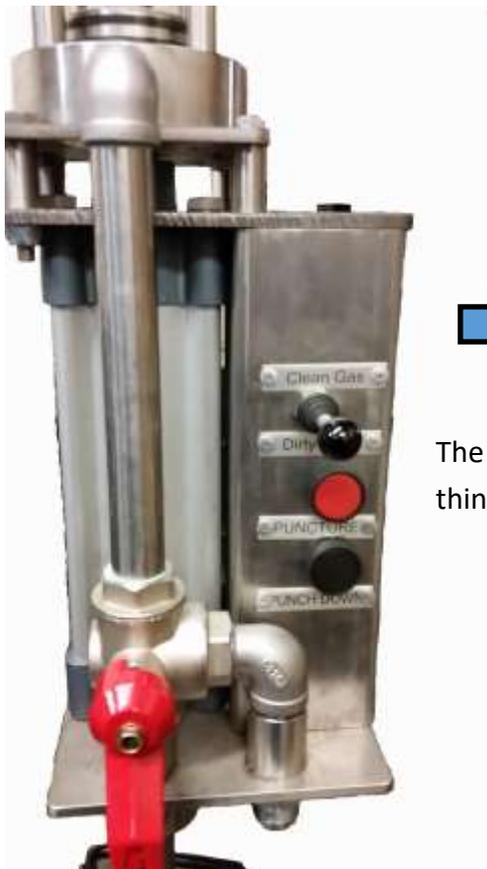
Finally we have just added the ZDAS range of horizontal shears to our offering, these are high quality heavy duty shears designed to cut I beams and skeleton plate with ease, reducing the need for torching, reducing cost and manpower.

Whatever sector you are in, Vortex offers exceptional service to our customers and a range of the best quality equipment in the market, we manufacture here in the USA so you are assured of equipment that meets US standards and is built for US vehicles with US sized parts.

# Vortex Fuel Tool Punch

The fuel tool punch is the central component of any of our systems that remove fuel from the vehicle. It is designed to seal against the gas tank so that no liquids or fumes escape while it is in place. It works by the operator jacking the unit in to place using the rapid transmission jack, (usually about 5 pumps) It seals on the lowest corner or edge of the tank. (our stands and systems have tilt blocks to achieve a low point and aid fuel recovery) Once sealed and in the correct place the operator pushes the punch button, the air powered Beryllium spike is then pushed up into the tank creating a 3/4" hole. The punch has been recessed on the corners, so when the operator pushes the tool down button the tank is pulled back down to flat removing the indent. The gas then fills the sight glass and the operator can decide if it is clean or dirty gas and switch on the correct pump to recover the gas and send it to the correct storage tank.

The beryllium spike is designed to rip the tank back down on its way out.



The operator controls everything directly at the fuel head



Fast transmission jack, three to five pumps and the head is in place.



The hole after punching a plastic gas tank.

# The Vortex Oil Drain Arms

The next part of our system is the oil draining system, these are drain arms on our systems or mounted to a transmission jack on our mobile unit. We have two drain funnels so that the engine and transmission can be drained at the same time. Our drain arms are designed not to clog, we use double strainers on the openings to a two inch tube which will lift the funnels up to the oil pans to reduce the risk of spillage. Our arms are connected to a 1" double diaphragm pump . This pumps the oil away and to your storage tanks spill free, keeping your workspace clean.



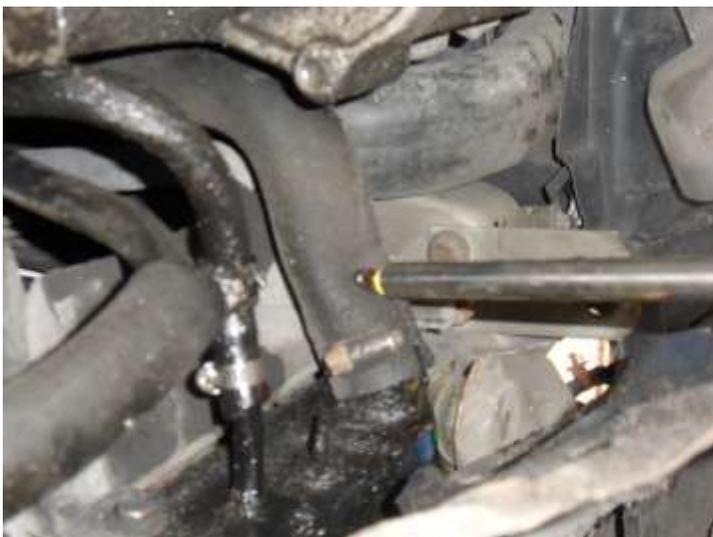
Double strainers fit in the funnels to prevent clogging, made of stainless steel, they are cleanable and will last.



Raisable funnels sit up to the oil and transmission pans to prevent spillage

# The Vortex Coolant Spike

Designed to pierce the bottom of the radiator hose and suck out the coolant from the vehicle with minimal mess. Once the spike is in place it will hold in and seal on its own and extract the fluids. It has replaceable tips for extended durability. It is on all of our full systems and part of the mobile oil and coolant tool. We have also made it a stand alone unit with its own pump and wheel around cart.



# Optional Extras for Systems

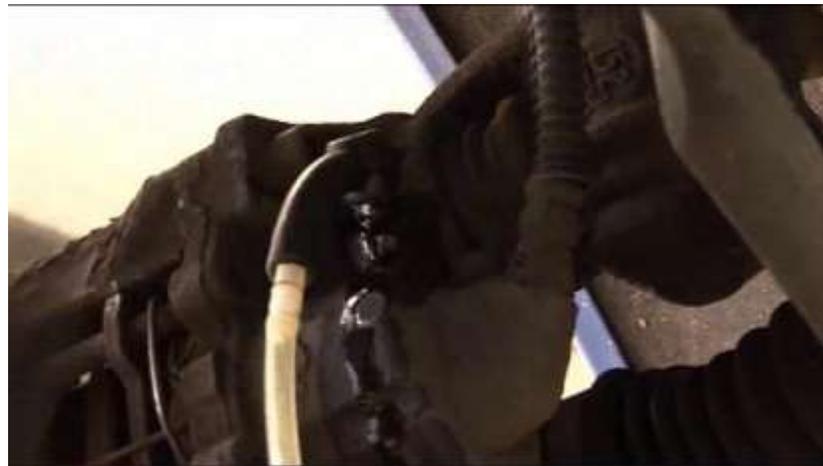
## Rear Differential oil drainer arm



The differential / rear axel drainer arm is designed for yards wishing to recover the oil from rear axels before crushing or shredding the vehicle.

## Brake fluid drain kit

Designed to suck the brake fluid from the bleed nipples on the brake system, this connects to the oil pump to provide the suction to recover fluid from the whole brake system.



Sometimes our customers know exactly what they want. To satisfy the demand from customers that want a drill instead of a punch we have developed a drill head, but added our customary sight glass so you can see the quality of the fuel as it comes out, just like our signature punch tool. The drill is now available on all of our systems and as part of our mobile range. It can also come with a control box mounted on the head so you can switch on the clean or dirty gas pump.



## The Vortex Drain Rack Stand

Over the years the stand part of our system has evolved, it has always had to be able to break down to ship on a pallet and be easily re-built on site, but it has to be strong too. Many customers ask if it will bend when the operator hits it with a loader, all I can say to that is we haven't bent one yet. The racks are built out of 6' x 4" x 3/8 steel rectangular tube, with reinforcing in critical places and all leg joints. We have the design calculations available if you need to view them, but when tested with an 11,200lb load evenly distributed as a vehicle would be, the safety factor of the rack was 17.8471:1 which means to bend it you would have to load it with 199,887.52LBS or nearly 100 tons. It was designed to be tough enough to deal with the harsh working environment of our industry.



## Rack Widening Spacers

The standard Vortex rack is 5ft 4in between the insides of the frame. This is designed to fit the smallest car with wheels on. We can however extend the width by either 4" or 8" by fitting spacer blocks to the unit.

## Under Hood Draining Tools

The under hood draining tools can be added to the Combi System to allow the fluids from under the hood to be drained from a vehicle by setting it next to the Combi Rack, the tools connect to the same pumps being used in the Combi. The oil pump sucks out brake and power steering fluid, while the coolant pump sucks out the coolant, the windshield washer fluid can be recovered using its own additional pump if it is being sold separately or with the coolant if it is going to be disposed of.



## Combi Fluid Recovery System

The Combi System was designed as a combination of our fuel tool and oil and coolant system, combined with a heavy duty drain rack. The rack has sliding bars on top that tilt the vehicle to one side, this allows the gasoline to run to the lowest part of the tank for improved recovery, the other benefit is that it allows for easy access and removal of the catalytic converter.

Gasoline is recovered by using the fast jack to pump the tools top seal against the gas tank on the lowest corner or edge, the tool is activated by pressing the puncture button, this punches a hole in the gas tank, the gas pours in to the sight glass where the operator can see if it is clean or dirty, they then use the switch on the head to activate either the clean or dirty pump to send the gas to the correct storage tank, the fuel is vacuumed from the tank.

Oil is recovered from the engine sump and transmission pan into the raiseable rubber funnels, the pump is switched on and the oil is sucked out and into the storage tanks.

Differential oil can be drained using the diff drainer arm with another raiseable funnel, this is an optional extra.

Brake fluid can also be drained via four clip on drainage rubbers that fit over the opened brake nipples, this will vacuum out the brake fluid after the reservoir, this is also an optional extra.

Coolant is recovered by use of the Coolant Spike, this is used to lance the lower radiator hose and vacuum out the anti-freeze from the whole system, we recommend setting the heater to full to recover the maximum fluids.

For recovering fluids from under the hood, we can fit, as an optional extra, 3 hoses from the side of the system to recover the following fluids, brake, power steering, coolant from the expansion tank and windshield washer fluid. The coolant and windshield fluid can either be pumped in to one tank for disposal, or, with the addition of an extra pump can be separated so they can be resold ,

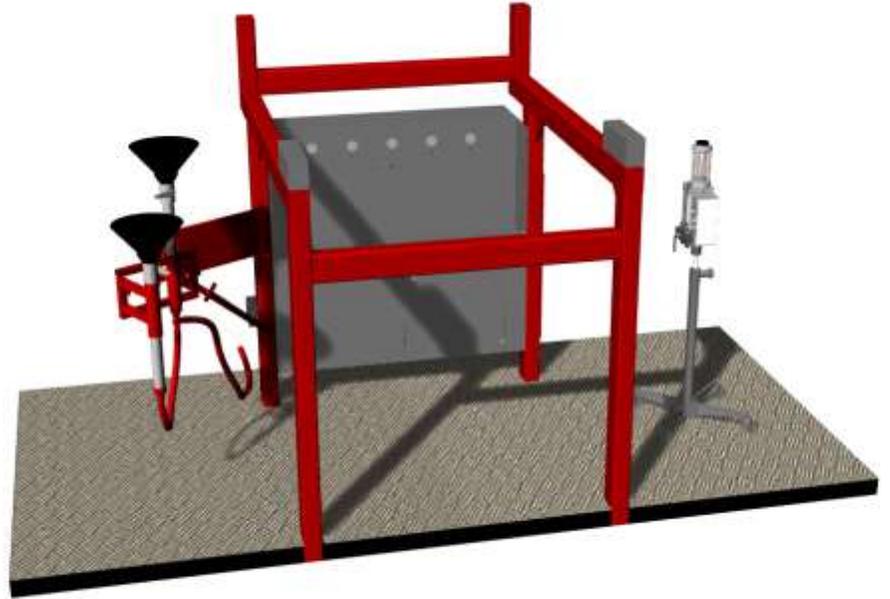
Because of the design of our custom tools, spillage is kept to a minimum, enabling operators to use a standard spill kit to quickly clean up any accidental drips from the concrete pad.



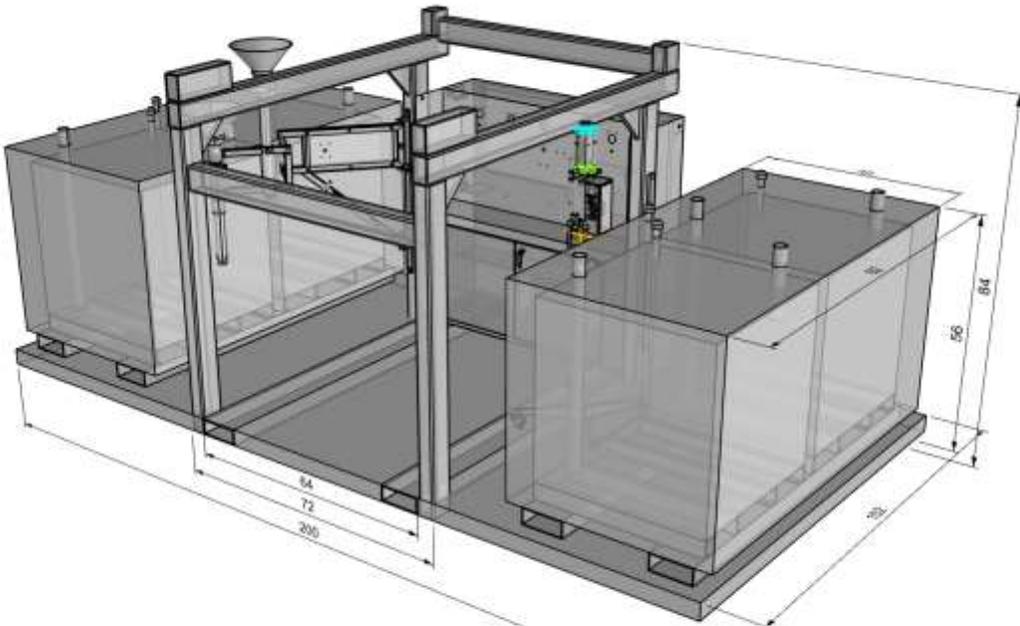
## The Mobile Combi System

The Mobile Combi System has been designed to be moved around between yards where it may not be viable to have a drain system permanently on site. It has loader slots to allow it to be picked up and moved and to be put on to a flat topped trailer for easy transport.

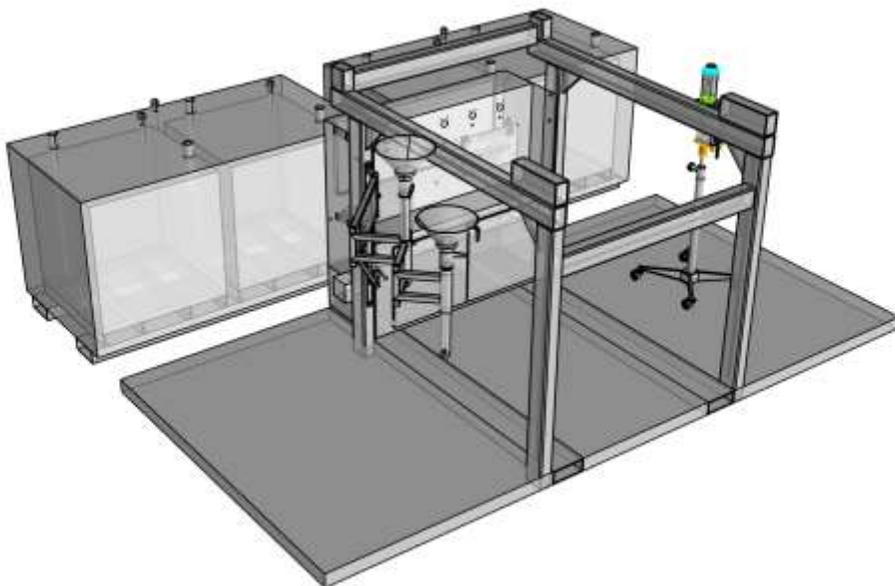
It has all the options of our standard Combi mentioned on the previous page.



## Mobile Combi Tank option



Because the unit is mobile storage tanks were designed to fit on the rack base during transit. We have had them built to UL142 standards by a member of the Steel Tank Institute, so they conform to most local specifications, we even have a modified version to meet Californian CARB regulations.



The tanks should be unloaded from the rack and set behind where the rack will be placed, then the rack can be lifted in to place and connected to the tanks. If a suitable air supply of 32 cfm at 110 psi is not available on the site we can also supply the unit with a portable compressor.

## The Vortex Catwalk Systems

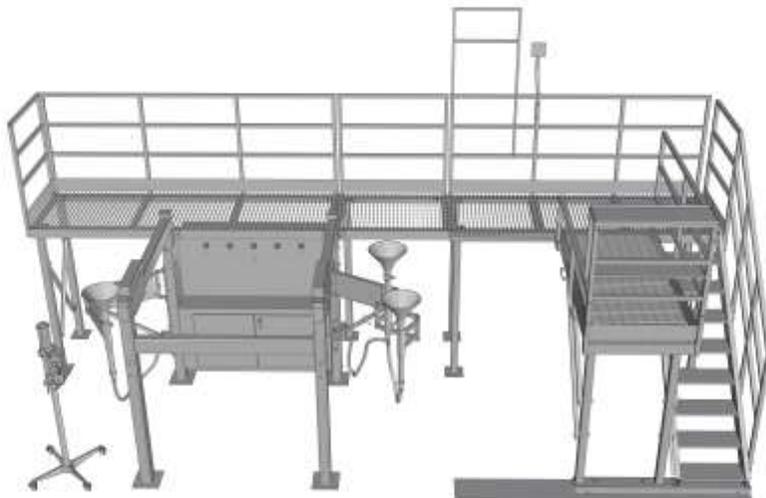
All of these systems contain the tooling you saw at the beginning of this brochure. They have been developed as a way of lifting the vehicle on to a rack where it has every process done to the vehicle, touching the vehicle only once with the loader or fork lift. Once in place the full vehicle can be processed at the same time, the fluids recovered from under the vehicle at the same time as the fluids from under the hood, the cat can be cut off and the trash taken out of the vehicle. With the full catwalk systems the wheels can be removed on the rack as well. These systems can be built as single rack systems or double rack systems and any multiple from there. They come with multiple layout options from just the front slider to access the engine bay through to all round catwalks with collapsible front rails for loading. We have had customers processing up to 48 vehicles a day on a single rack system and others who take more time and care as the cars are going in to a self service yard.

## The Midi Catwalk System



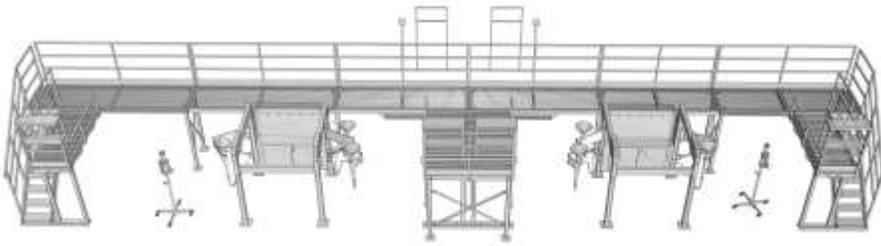
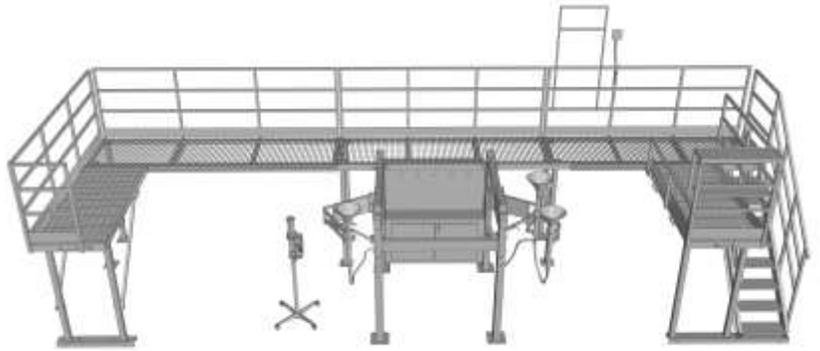
This is the base level catwalk system, available in left or right hand stairs to suit your specification

- Vehicle top and bottom one touch de-pollution station
- Four or five 1" double diagram pumps with strainers, clean gas, dirty gas, oil, coolant & windshield wash fluid.
- Fuel head with beryllium punch, inspection glass and controls to separate clean and dirty gasoline
- Two oil funnels to drain engine and transmission oil simultaneously
- Oil Funnels to drain rear differential (Optional)
- Coolant spike for below vehicle extraction
- Oil suction hose for above engine extraction of brake and power steering fluid.
- Water suction hose for above engine extraction
- Movable front catwalk and safety rails to enable operator safe access to engine bay and vehicle side



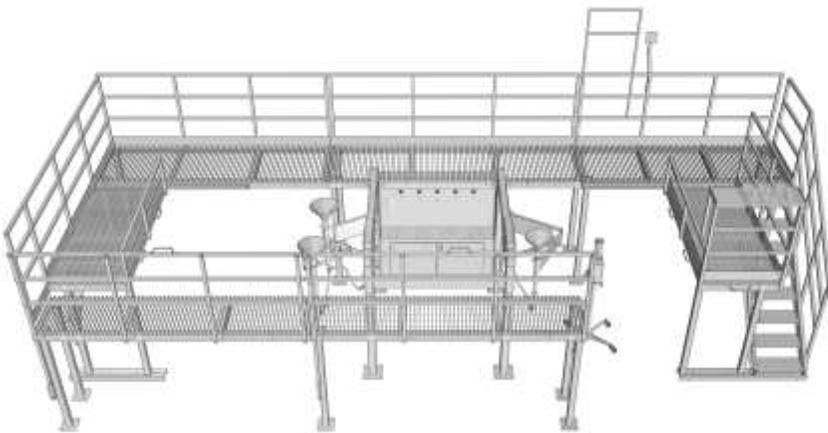
## The Midi Catwalk System with front and rear sliding platforms

This system works exactly the same as the Midi system but it has an adjustable rear platform to allow the operator access to the trunk, this will fit everything from a Mini to a one ton truck.



**Double Midi Catwalk System with central expanding platform**

## The Single Mega Catwalk System

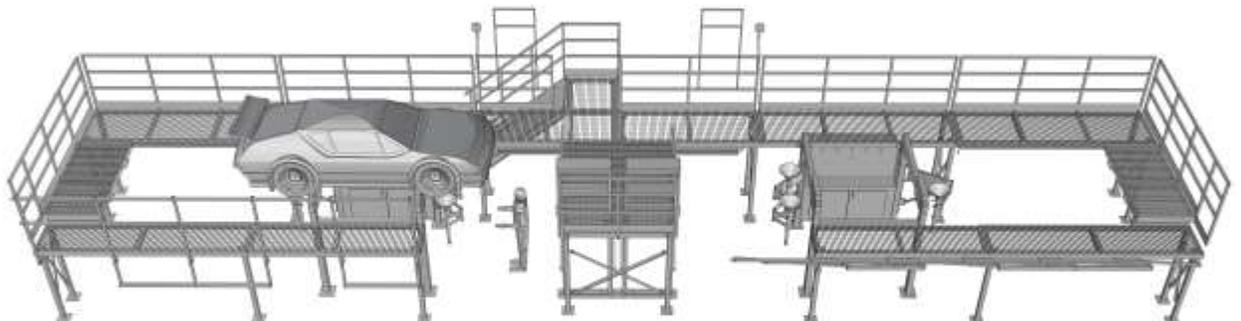


The Mega Catwalk systems add another catwalk to the front of the system, it has a unique collapsible guard rail for operator safety that drops below the line of the front catwalk, allowing the loader to load over the top. This gives all round access to the vehicle and allows the removal of wheels on the rack, all while keeping the operator safe from any falls.

## The Double Mega Catwalk System

The Double Mega Catwalk system allows two vehicles to be processed together with one operator up top the other down below. The top operator can work from a central extending platform to access under the hood, as well as having all round access to the vehicle.

The design layout of the catwalk system can be modified to suit individual needs.



## Tower De-Pollution System

The tower system is designed to fit and work with customers own racks or vehicle lifts, It is a 4 pump system with the fuel tool, oil arms and coolant spike to remove fluids under the vehicle with tools attached for removing the fluids from under the hood.



Vehicle top and bottom de-pollution station that can be used in conjunction with lifts or fixed stands  
Four 1" double diagram pumps with strainers  
Fuel head with beryllium punch, inspection glass and controls to separate clean and dirty gasoline  
Two oil funnels to drain engine and transmission oil simultaneously  
Coolant spike for below vehicle extraction  
Oil suction hose for above engine extraction  
Water suction hose for above engine extraction



## High Volume Fuel Tool

The Vortex Fuel tool was the original pump based fuel tool we developed back in 2005, it has undergone many changes since then, but it is still a popular choice for companies just wanting to recover the gasoline from vehicles or to use it as part of a set with the pumped oil and coolant tool.



The Head is raised to the gas tank and makes a vacuum seal.

The non sparking beryllium spike punches a hole.

The quality of the gas is determined in the sight glass

The operator selects either clean or dirty gas.

Fuel is pumped to the correct storage tank

Two 1" Double diaphragm pumps are used to power the system

The gas is recovered at around 15 gallons per minute.

The unit can also be supplied as a double headed version to enable two vehicles at once to be drained.



## The Vortex Oil & Coolant Drainer



An easy to use system that will quickly drain used engine and transmission oils then pump the oil away to storage tanks. This avoids moving open tanks or drainers on wheels around the yard to empty them.

Supplied with a full set of sockets and a ratchet all tooling is to hand to ensure the operation is carried out as quickly as possible.

The Coolant Spike penetrates the lower radiator hose and coolant is pumped away to storage tanks to speed up the process and avoid blockages.

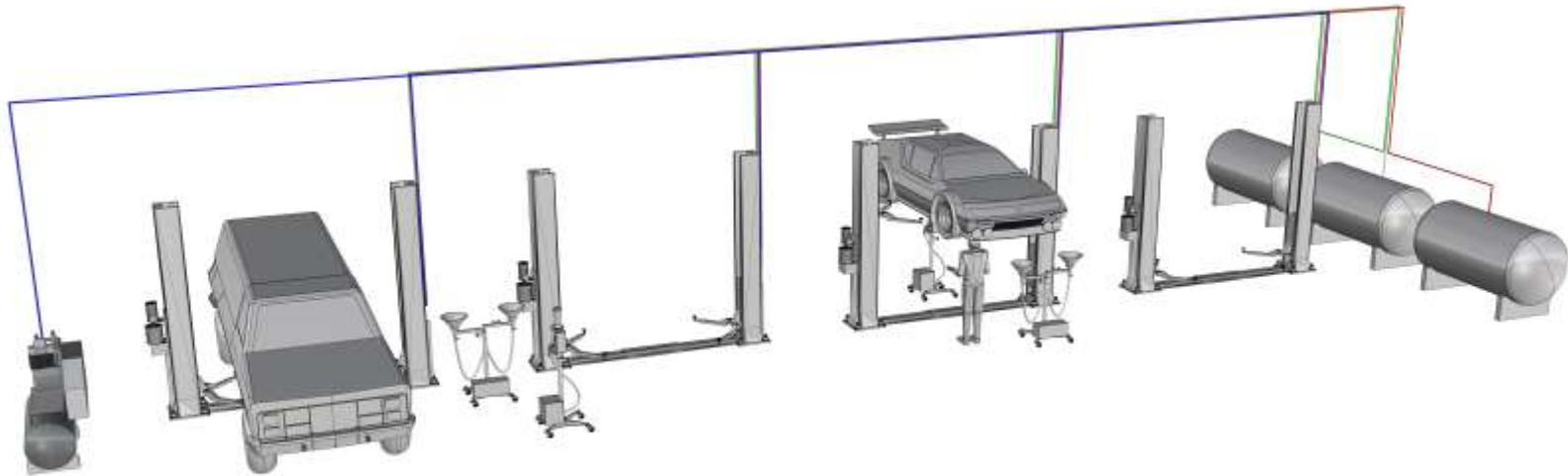
All pumps are fitted with pre strainers to protect them from any debris which may get through.

Manufactured in Colorado the Oil Drainer arm can be easily reengineered to suit specific customer requirements.

## Vortex Mobile Tools

Designed for the full service auto parts industry, they are designed to be moved between vehicle lifts to drain all the fluids from under the vehicle and the engine bay before the vehicle is dismantled.

With the correct plumbing system, which we can install, the tools simply plug in to the outlet ports on each leg of the pipework and the onboard pumps move the recovered fluids out of your building to outside storage tanks. One set of tools is normally enough to cover 4 vehicle lifts.



## Vortex Mobile Fuel Tool



The Vortex Fuel Tool powered by compressed air punches through the fuel tank.

On our punch there is a complete seal around the fuel tool head and this solution allows fuel to be inspected for dirt or contamination.

We can fit the fuel tool with a manual fuel diverter option to separate clean and dirty gas for pumping to a tank or other gas collection vessel.

Our proven fuel punch head is connected to the on-board pump.

The pump is a hi-speed air powered double diaphragm pump to EX UL specification used in the system for a safe, reliable & speedy extraction of fuel.

Ideal for full-service auto recycling yards to move between bays for fuel extraction.

## Vortex Mobile Gas Tank Drill

The Vortex Gas Tank Drill allows us to supply our customers whatever their preference. The drill is fully air powered and is manufactured here in the US at our Denver facility. The head lifts up to the gas tank with the help of a powerful gas strut mounted inside the stand. This pushes the seal against the tank. The main stand is then locked in place with a simple screw knob. The drill is operated and a foot pedal used to push the drill through the tank. Our drill is fitted with a sight glass so that the operator can tell if it is clean or dirty gas and send it to the current tank, the sight glass also easily shows the operator when the tank is empty.

All the controls are within the operators reach and the system easily connects to our design for a plumbing system.



## Vortex Mobile Oil and Coolant Drainer



The Vortex Mobile Pumped Oil Drainer for fast draining of engine/gear box/differential oil.

Based on our successful fixed oil and coolant drainer using the same rubber collection funnels mounted on a fast acting mobile jack with braked castors. Oil is pumped away using ½" Air Operated Diaphragm pump.

Included in the oil system is a separate hose to remove under hood brake and PAS fluid.

In addition the tool is also fitted with Water Pump and coolant spike to remove coolant water from the bottom radiator hose or under-hood reservoirs.

## Mobile Fuel Filtration System

Developed to allow yards to reuse gasoline with confidence, the unit has two filter systems, the first screening out larger particles of dirt and contamination to 250 microns, the second post pump filtering the finished gasoline down to 5 microns and removing any water from the gasoline.

This mobile system can be used for emptying tanks as they are lowered from the vehicle or from a storage tank directly into your vehicle



## Under Hood Fluid Recovery Options

As well as recovering fluids from under the vehicle, fluids from under the hood need to be recovered as part of a full process, this usually occurs when the battery and AC are recovered and the vehicle checked for Mercury switches. Vortex make various options for this part of the process, all of our larger systems are set up for draining under the hood, even the Combi can come with the option of under hood draining tools. However some companies view this stage as a separate part of the process and either stage multiple vehicles or process one at a time. We have solutions that will help with any option.



The unit is shown here working with our vehicle low stand.

Designed to easily and safely recover fluids from the engine compartment of the vehicle, the recovery lances pump brake fluid and PAS fluid directly to the waste oil tank and the other pumps directly to the coolant tank, these can be modified to suit any number of pumps depending how far you want to go with fluid separation. The unit also has a built in shelf to mount the Freon recovery machine, extra shelves can be added.

## Vortex Catalytic Converter Cutter



Edilgrappa manufacture cutters specifically designed for cutting valuable catalytic converters off of vehicles, they have specially designed blades to cut even the toughest exhaust pipe.

The head is standard to all the hydraulic powered cutters, they come with options for the power pack, you can choose between 115v electric motor or a battery powered unit



## The Vortex Cat Catcher Stand

The Cat Catcher lifts up under the cat before it is cut to prevent it dropping to the ground or injuring the operator



## Air conditioning refrigerant extraction unit

The Vortex AC recovery unit comes on its own or can be supplied with high and low connections, hoses, manifold, scales, and cylinder. The recovery system that we distribute is simple to set up and operate with easy to read gauges that show both suction and tank pressure so you can see when the air con system is drained, the unit runs on a simple 2 valve control for easy changeover from liquid to vapour to purge. We also supply scales, recovery bottles and the easy gauge air con tester to see if the system is full or empty.

The Vortex Duel has a 1hp duel piston compressor providing industry leading recovery rates.



## Storage Tanks

Safe storage of the fluids that are recovered from vehicles is an important part of setting up a safe and compliant system, most local codes call for a secondary containment for storage tanks, particularly those containing gasoline and oil, this can be a separate containment wall, or it can be within the tanks themselves by having a double wall. Most codes call for a UL142 specification tank as standard. To meet these specifications the tanks must also have safety vents on both the inner and outer spaces to allow for heat expansion and the possibility of an internal leak, they must also be fitted with a safety working vent, which in the case of gasoline must be at least 10ft off the ground. In California all these fittings have to conform to the CARB regulations. Vortex works with an STI registered manufacturer to supply the highest quality tanks that will conform to your local codes and requirements. Tanks can be fitted with dispensing pumps and filter to clean the gasoline as it enters the tank. With our systems we recommend tanks for clean gasoline, dirty gasoline, oil and coolant.

### Gasoline, Oil, Coolant Storage Tanks 250 / 500 / 1,000 / 2,000 / 5000 Gallons



This was an installation of mixed tanks, a 1000 gallon Flameshield for clean gas, a 500 gallon Flameshield for dirty gas and two 500 gallon UL142 tanks for oil & coolant.



Every Flameshield is manufactured to stringent STI specifications and is subject to the Steel Tank Institutes' Quality Assurance program. These tanks are available in either horizontal, vertical or rectangular designs with available full length box skids or saddles.

#### The features associated with a Flameshield are:

1. 2 hour 2000\* fire-test as required by Southwest Research Institute Standard SwRI 97-04, validates performance of non-insulated tanks
  2. Primary storage tank and secondary containment compatible with a wide range of fuels and chemicals
  3. Support designs available for all seismic requirements.
- Capacities up to 50,000 gallons available.



A UL2085 **Fireguard tank** is a tank registered with the Steel Tank Institute and only available from a STI member. The Fireguard tank is a double wall tank that contains insulation between the inner and outer tank protecting the product from ambient temperature variations and exceeds the UL 2-hour fire test.

## Ingersoll Rand Air Compressors

Vortex are partners with Ingersoll Rand to supply the quality air systems needed for running Vortex equipment. If you want a quality air installation then vortex can work with you to specify and install the right system to suit your needs, Vortex supplies both reciprocating and rotary style compressors from Ingersoll Rand. Ranging in size from 25cfm to 30,000 cfm, Vortex can customize your compressor solution to fit all of our equipment. All air compressors can and should be fitted with additional drying and filtration components to ensure the system is operating with ideal clean, dry air. When professional performance is required, Ingersoll Rand air compressors provide maximum operating pressure, increased air flow, and extended duty.

### Reciprocating Compressor



Refrigerant Dryer

### Rotary Screw Compressor



## High Stand



Vortex De-pollution manufacture and supply a high stand suitable for use with our fuel tools and oil and water drainers The Vortex High Stand is a rugged alternative to a lift. Capable of supporting 20,000 lbs the high stand can safely support the largest vehicle likely to be encountered at a safe working height for fuel extraction, draining engine and gearbox oils and removal of coolant water.

Unlike a lift the Vortex High Stand has been designed with blocks at each side to ensure the vehicle sits at the best angle to ensure the maximum amount of fuel and oil is recovered from the vehicle in the shortest time possible.

Engineered in the USA the Vortex High Stand is a maintenance free alternative to a lift based system for under vehicle operations.

## Low stand with drip collection raised walkway



The low prep-stand is designed to make the job of removal of under hood fluids i.e. brake fluid, PAS, coolant water, screen wash and air con refrigerant easier and safer. The stand puts the vehicle at the correct height to safely remove wheels at this point. The galvanized spill tray is a useful addition to ensure the operative is at the right height to carry out all under-hood operations such as battery removal, brake fluid/PAS and windshield wash fluid, The wheels could be removed at this point using air tools connected to the overhead air supply.

## Tilting low stand



The side tip vehicle stand tilts the vehicle back hydraulically for the easy recovery of parts from the underside of the vehicle. The unit supports the vehicle to prevent it falling backwards off the stand. It makes the task of accessing under the vehicle much easier and quicker than putting it on a lift.

## Single Post Vehicle Lift

The Single post lift is suitable for vehicles up to 6,000 lbs.

For vehicle de-pollution it is ideal because it can be side loaded. When raised it has no obstructions like you would get with scissor lifts, making it safer and easier for the operators to do their job.



## 4 Post Vehicle Processing Lift



The TSL9SL is an economical side load lift with a 276" opening on long side for loading

2 10' Loading Beams

Truck and Van Screw Type and I-Beam Type

Lifting capacity 9,000 lbs.

Adjustable support beams and cross beams

Overall lift height: 98 inches

Overall lift width: 137" inches

Overall lift length: 296 inches

Lifting height: 72 inches

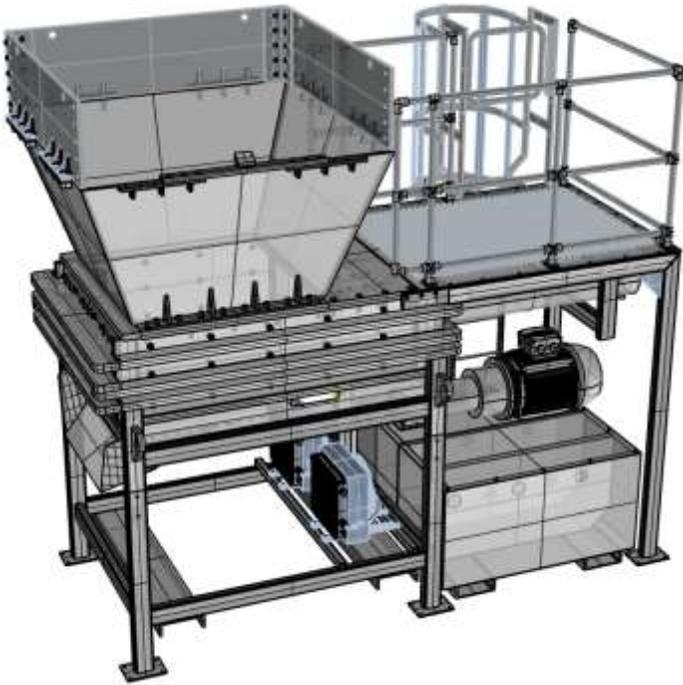
Power unit: 2 hp, 220 v., Single Phase

Single point safety release with automatic reset when lift is raised from any point

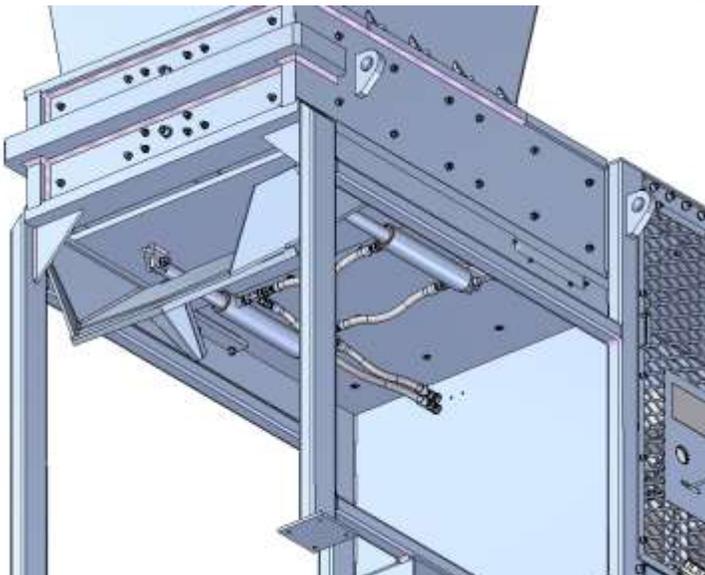
## Boss 1300 Engine Cracker

This is the third generation Engine Cracker, designed specifically for use in the US, it is the largest cracker we have built. It is designed to take a whole engine and transmission combination and using its massive 210 ton crushing force generated by twin 10" hydraulic cylinders, break the engine into fragments between the five crushing plates and spit them out of the front sizer door to be sorted.

This machine makes you a considerable return on investment and we have devised an interactive spreadsheet so you can use your own figures to see how it would work for you.

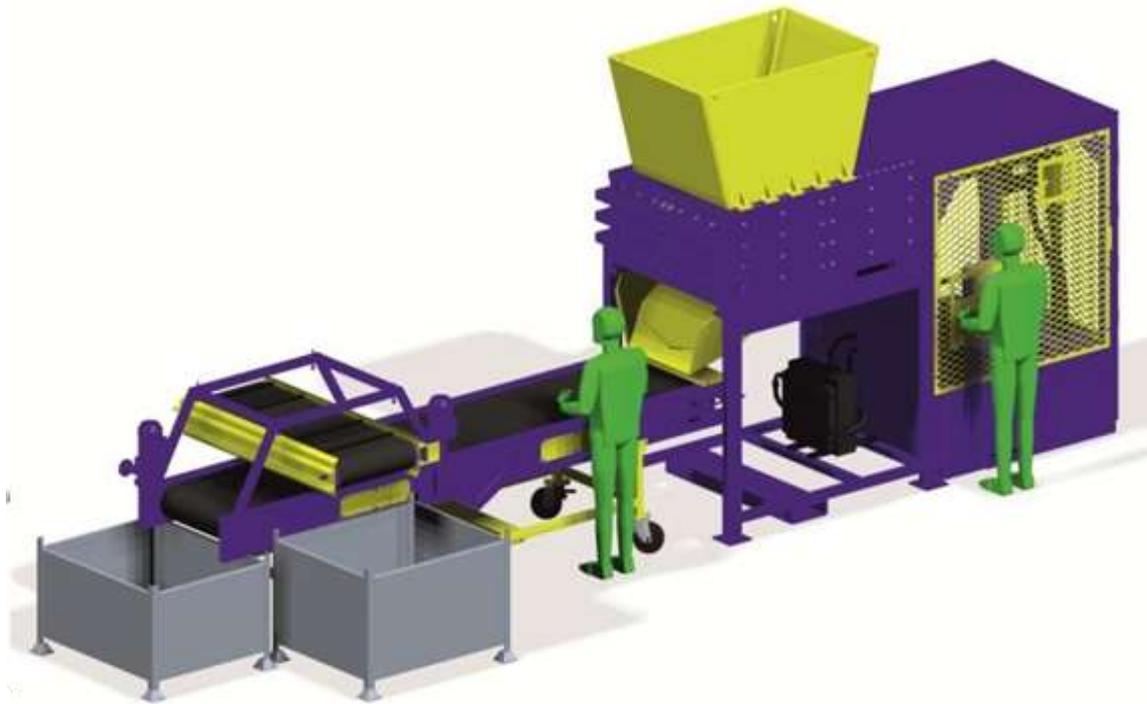


The unit comes with a complete oil collection tray that sits under the whole machine. Oil is collected on the outlet chute and a couple of other areas and can be directed to a storage tank if required. This keeps the area as clean as possible when dealing with this type of product.



Hydraulic rams open and close the door and help determine the size of the pieces to be sorted.

The Cracker can be supplied as a stand alone unit or it can come with a sorting line with magnetic separation



For the best operation we recommend having an operator working on the picking conveyor. Our top system has a vibrating discharge table where the broken parts fall out of the machine, they are then evenly vibrated on to the conveyer so that the operator can pick off larger steel items such as gear trains and crankshafts as well as electrical wires and hoses. Any bits that come out with aluminum still attached can be re run.

Once picked the steel is pulled off using a cross belt magnet and you are left with a clean stream of A380 Aluminum.



An Engine Cracker being loaded with an SAS Scorpion Engine Puller.

Ask for our ROI Calculations to see how much more you could be making by processing your engines.

## Catalytic Converter Processing

Vortex offers a variety of options for de canning catalytic converters to recover the valuable PGM bearing contents. Ultimately the converter market is a maze of middle men and women trying to make a profit on the material in converters, some just collect, some de-can others offer assay based buying to tell you exactly what is in your load. All of them will make a profit from material that you could maximize the value of. The only way you can be as sure as possible of maximizing the value of your converters is to De-Can them yourself and deal as closely as possible with a company that will assay the material and smelt themselves. There are only a few of these companies and most will want over 1000lbs of material.

### Vortex Cat Guillotine

The Vortex Cat Guillotine is the ideal solution for cutting of catalytic converters to recover the valuable PGM loaded catalyst found inside. With safety at its core, the operator will be protected behind an easy to move safety door that will stop if opened while the blade is moving down. The Single Cat Guillotine is capable of processing up to 60 converters per hour, cut directly into a super sack to improve shipping efficiency. Our largest system pictured below is capable of de canning up to 400 per hour, including large truck cats. The cutting cabinet is under constant vacuum to ensure none of the valuable PGM loaded dust is lost in the process, adding even more value to the load. This process also allows for sale of the converter cans, adding even more additional value. Vortex has customized single, double and high volume converting cutting systems, designed to fit all volume operations.



The single Cat Guillotine, capable of processing 60 converters per hour



The double blade guillotine with 4 or 6 opening stations is capable of processing between to 400 & 500 converters an hour and has powerful dust collection systems to ensure none of the valuable dust is lost.

## The McIntyre Cat Comrade



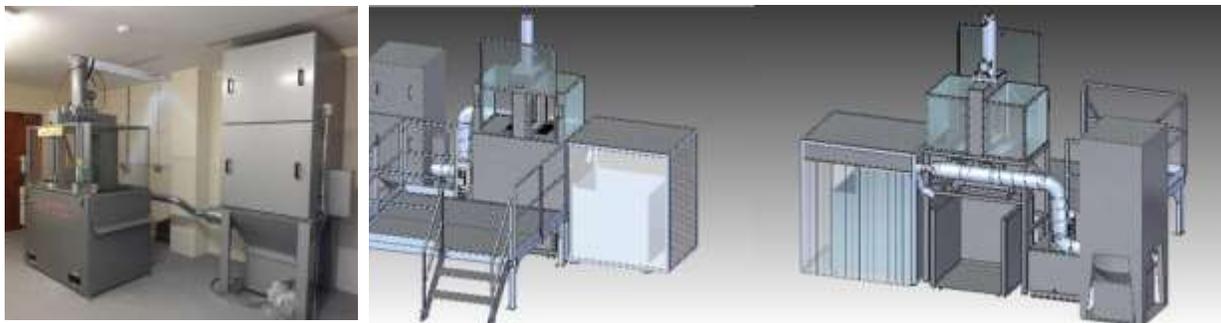
The Cat Comrade provides a complete platform based de canning solution for the processing of catalytic converters. This robust platform has an integrated dust filtration plant and is supplied with your choice of Vortex catalytic converter Alligator shears. The high specification dust extraction unit prevents escape of product to the elements, thereby ensuring the maximum possible recovery of precious metals. The platform is designed to incorporate two full-sized bins at the optimum height to allow processed materials to fall into a drum or bag. Use of the platform and associated conveyors will increase the productivity of your operators, and the incorporation of a quality McIntyre shear from Vortex will improve cutting speed and performance.

## The McIntyre Cat Mate

Ideal starter unit for cat processing, the powerful shear can deal with all size cats, while a powerful dust recovery system ensures no valuable dust is lost. The catalyst is collected in a removable bin, or we could fit a screw conveyor to take it to a drum or bag.



## The McIntyre Cat Guillotine



McIntyre also produce a cat guillotine in various formations starting with the single floor standing unit , progressing through single unit on a platforms to any multiple of.



## Alligator Shears from McIntyre

Vortex are the official North American distributor of the world renowned McIntyre range of hydraulic Alligator shears. Designed to withstand the rigors of scrapyards use, their strength makes them suitable for many industrial applications for metal cutting. Still the market leaders in the metal recycling industry, McIntyre shears are fully tried and tested in the works before being offered for sale. Blade lengths vary from 6 inches to 36 inches. Shears can be supplied with diesel or electric motors and some larger units can be solenoid controlled to enable them to be incorporated into complete systems. If you have a specific application please let us know, we have a team of design engineers at your disposal and can custom build equipment to meet your needs.

McIntyre has been a trusted name in recycling since 1872, the modern company is still managed by the founding family. They have been designing solutions for the scrap industry and their own scrap yard for many years and have over 27,000 machine installations worldwide. They hold a comprehensive stock of spare parts ready for shipping. Vortex has also been building a stock of shear parts since we became the official distributor.

McIntyre shears are a valuable addition to any non ferrous operation.

### The 150 6" Alligator Shear



The 150 is the baby of the range, but still a powerful machine 25 tons of cutting force.

Tip to tip opening of 4 1/2"

Standard Electrical single phase 230v 13amp 60Hz

Power rating 2hp

Cuts up to 1" round bar

### The 200 8" Alligator Shear

The 200 is a small shear with big cutting capacity.

52 Tons of cutting force

6" Tip to tip opening

Standard Electrical 3 Phase 220 or 480V 32/64 Amps 60Hz

Power Rating 5.5hp

Cuts up to 1 1/2" round bar



### **The 320 12" Alligator**

The 320 is recognized as the workhorse of the industry for this type of shear.

80 Tons of cutting force

6.5" Tip to tip opening

Standard electrical 3 Phase 240 or 480V 32/64 Amps 60Hz

Power Rating 10hp

Cuts up to 2" round bar



### **The 407 16" Alligator Shear**



The 407 is basically the same machine as the 320 but with a different pump and larger jaws, enabling it to do larger cuts

90 tons cutting force

8.8" Tip to tip opening

Standard electrical 3 Phase 240 or 480V 32/64 Amps 60Hz

Power Rating 10hp

Cuts up to 2 1/4" round bar

### **The 500 20" Alligator Shear**

The 500 is the first in the range to come with the option of a hydraulic hold down and as a cat shear version.

120 Tons cutting force

10.2" Tip to tip opening

Standard electrical 3 Phase 240 or 480V 32/64 Amps 60Hz

Power Rating 10hp Electric or diesel engine

Cuts up to 2.5" round bar



### **The 600 24" Alligator Shear**



The 600 shear is large enough to trim radiators in a single cut, it comes with options for a cat shear and a hydraulic hold down as shown.

120 Tons Cutting force

10.4" Tit to Tip opening

Standard electrical 3 Phase 240 or 480V 32/64 Amps 60Hz

Power Rating 10hp Electric or Diesel Engine

Cuts up to 2 1/4" round bar

## The 640-180T Alligator Shear



The 640 range is the next jump up in size and power and is available with infeed and conveyor options suitable for aluminum extrusions

180 tons cutting force

13" Tip to tip opening

Standard electrical 3 Phase 240 or 480V 32/64 Amps 60Hz

Power Rating 15hp Electric or Diesel engine.

Cuts up to 3" round bar

## The 640-240T Alligator Shear

The 640-240T is one of the most powerful shears in the range, it is available with an extended feed in table as shown here

240 tons cutting force

13" Tip to tip opening

Standard electrical 3 Phase 240 or 480V 32/64 Amps 60Hz

Power Rating 25hp Electric or Diesel engine.

Cuts up to 3 1/2" round bar



## The 900 Alligator Shear



The 900 is the largest shear in the range.

240 tons cutting force

18.6" Tip to tip opening

Standard electrical 3 Phase 240 or 480V 32/64 Amps 60Hz

Power Rating 25hp Electric or Diesel engine.

Cuts up to 3 1/2" round bar

## Metal Balers

Vortex supplies a range of metal balers, from small lid balers designed for small non ferrous operations or feed-er yards, through can densifiers and high volume metal balers to full size car and metal balers. We represent several manufacturers, if you don't see what you are looking for here then please ask .

### Lid Balers

Lid Balers are ideal for use in any non ferrous operation, they are extremely powerful and work to shear material in to the collection box where it is then baled in to blocks that can be stacked on to pallets for shipping.

We offer four different models from McIntyre with various options for capacities, speeds, manual or automatic.



#### 2035 Baler

The 2035 is the smallest of the range, but is still a powerful machine and very affordable.

Opening dimensions 27.4" long x 14" wide

Bale size 14" x 8"

Power 10hp

Max Lid Shear Force 88 Tons

Max Compression Force 45 Tons

#### 5025 Baler

The 5025 comes in 2 models, the SB and the Bigfoot.

Opening Dimensions 40" x 20"

Bale size 20" x 10"

Power 15hp on the SB and 2 x 15hp on the Bigfoot

Max Lid Force 48 Tons on the SB and 76 Tons on the Bigfoot

Max Compression force 50 Tons SB and 80 Tons on the Bigfoot



#### Terminator Baler

This model is available as a manual and semi automatic version

Opening dimensions 40" long x 20" wide

Bale size 20" x 10"

Power 2 x 15hp manual and 2 x 20hp semi auto

Max Lid Shear Force 76 Tons

Max Compression Force 80 Tons

#### Hippo Baler

The Hippo is the most powerful lid baler of the McIntyre range.

Opening dimensions 40" long x 24" wide

Bale size 24" x 15.1/2"

Power 2 x 30hp

Max Lid Shear Force 153 Tons

Max Compression Force 146 Tons



## Can Densifiers and Light Metal Balers

Vortex supply the McIntyre range of can densifiers, designed for baling used beverage cans they range from 880lbs up to 1 Ton per hour, enabling both large and small yards to efficiently process UBC's

### M10 and M20 Automatic Metal and Can Baler



The M10 & M20 Baler are not only cost effective systems for cans but can also be used for other applications where automatic volume reduction or product destruction is required. When fed with aluminum drinks cans, the M10 or M20 crushes and locks the material together to produce dense 13 1/4" cubes, weighing approximately 20-24lbs. Such dense bales means that no tying or strapping is needed. The cubes are simply ejected from

the machine and easily handled and ready for transportation. These balers are totally automatic and only require to be fed material. Once started, the operator is free to load or unload the machine as well as attend to other aspects of your business. The M10 produces 880lbs per hour and the M20 produces 1650lbs per hour.

### Alpac 2000 Feed conveyor with magnetic separator



The Alpack 2000 can sorter is fast, durable and reliable, providing an inexpensive way to separate large volumes of steel cans from high value aluminum UBCs. Two versions of this machine are available, one with and one without magnetic separation.

The Alpack 2000 works independently but, coupled with one of our other can balers, will give you a fully integrated baling and sorting system for used drinks cans. The Alpack range is now well established across a range of industries which include scrap metal, food and waste.

### M40 Metallican

Bigger and Stronger! Process up to 1 ton per hour of aluminum cans and 2 tonnes per hour of steel cans. The Metallican is not only a cost effective system for cans but can also be used for many other applications where automatic volume reduction or product destruction is required. When fed with aluminium drinks cans, the Metallican crushes and locks the material together to produce dense 13.5" cubes, weighing approximately 28lbs. Such dense bales means that no tying or strapping is needed. The cubes are simply ejected from the machine and ready for transportation. The M40 can produce 2600lbs of UBC's per hour.



## The Trojan Metal Baler

Presenting the all NEW JMC Trojan fully Automatic Metal Baler which can bale almost anything at rates of up to 2.5 Tonnes of material per hour!

The Trojan is plc controlled and runs fully automatically. Users can select pre-set cycles for baling a variety of metals. This machine can be fed by conveyor onto a hopper with bales exiting via a ramp straight into a dumpster. When fed with Aluminum cans, the Trojan can produce dense bales weighing approximately 44 - 55lbs.

Such dense bales means that no tying or strapping is needed. The cubes are simply ejected from the machine and ready for transportation. The Trojan is a totally automatic system and only requires to be fed material. Once started, the operator is free to load or unload the machine as well as attend to other aspects of your business.



## Roter RA Series Double Compression Balers

The Roter RA series is a constant feed production baler able to process a variety of scrap metal in to very dense bales. They are ideal for tire wire, metal chips and turnings. Depending on the material it can offer a cost effective alternative to a briquetting press. The machines are built to a very high standard, designed to work in tough conditions and provide a very long lifespan.

The machine does not require any foundations, just a flat concrete floor, it is equipped with a pre load hopper which is customizable to your application, mounted on a charging box with photoelectric cells to control the feeding and baling cycles, it can be equipped with a weighing system so all bales are the same weight, ideal for tire wire. The 60hp power unit is located safely away from the machine to protect it from the loading area.



## Shear Baler Series RR



RR series shear/balers for scrap metal are the best solution to **compact and shearing all types of steel and ferrous and not ferrous metals.**

They have a **550 tons cutting force** for RR550.5 and RR550.6 models and **715 tons cutting force** for RR715.6 model and are available fixed and semi-mobile version. They are easily suitable to any yard, in fact the machines can be configured with **several options** to suit the customer needs.

Shear force	550/715 tons
Hold down force	150 tons
Box material	Hardox 400/450
Box length	197" or 236"
Open box width	63"
Lids force	200 tons
Main cylinder force	155 tons
Bale size	35" x 26" x Variable
Oil circuit capacity	395 Gallons
Diesel tank capacity	65 Gallons
Engine power	225HP
Shear lubrication	Automatic
Hold down lubrication	Automatic
Cuts per minute	3.5
Min cutting length	6"
Working pressure	3920 / 4480 psi
Weight	42/44/45 tons

<b>Part</b>	<b>Description</b>
<b>RR550.5</b>	<b>Baler 197" (5mtr) Box with Diesel engine and remote control 550 ton</b>
<b>RR550.6</b>	<b>Baler 236" (6mtr) Box with Diesel engine and remote control 550 ton</b>
<b>RR715.6</b>	<b>Baler 236" (6mtr) Box with Diesel engine and remote control 715 ton</b>
<b>EM</b>	<b>Electric motor 120HP Option</b>
<b>LL</b>	<b>Hydraulic lifting legs</b>
<b>PT</b>	<b>Pre load table</b>
<b>CR</b>	<b>Crane with Cabin</b>
<b>G</b>	<b>Grapple with rotator</b>
<b>OC</b>	<b>Cabin for operator</b>
<b>CH</b>	<b>Cabin Heating</b>
<b>CC</b>	<b>Cabin Air conditioning</b>
<b>OH</b>	<b>Hydraulic pre heating</b>
<b>EH</b>	<b>Engine pre heating</b>
<b>CCL</b>	<b>Customized color</b>
<b>CM</b>	<b>Manual in different language (not English or Italian)</b>

## Roter Series RR Car/ Metal Baler



Box Material	Hardox 400/450
Box Length	197" or 236"
Working pressure	3920psi
Lid Force	200 tons
Main Cylinder force	155 tons
Bale size	35" x 26" x Variable
Oil circuit capacity	185 Gallons
Engine power	145HP

The Roter car / metal baler is a robust and powerful machine . It is available in multiple formats in both 16ft and 20ft bale box size. With processing capacity of up to 20 vehicles an hour or 10 tones of scrap metal an hour the Roter RR series is your do it all baler

<b>Part</b>	<b>Description</b>
<b>RR5</b>	<b>Baler 197" (5mtr) Box with Diesel engine and remote control</b>
<b>RR6</b>	<b>Baler 236" (6mtr) Box with Diesel engine and remote control</b>
<b>D</b>	<b>Bale ejection door</b>
<b>EM</b>	<b>Electric motor 120HP</b>
<b>LL</b>	<b>Hydraulic lifting legs</b>
<b>RORO</b>	<b>Roll on / roll off system</b>
<b>MOB</b>	<b>Mobile configuration</b>
<b>CR</b>	<b>Crane with Cabin</b>
<b>G</b>	<b>Grapple with rotator</b>
<b>OC</b>	<b>Cabin for opperator</b>
<b>CH</b>	<b>Cabin Heating</b>
<b>CC</b>	<b>Cabin Air conditioning</b>
<b>OH</b>	<b>Hydraulic pre heating</b>
<b>EH</b>	<b>Engine pre heating</b>
<b>CCL</b>	<b>Customized color</b>
<b>CM</b>	<b>Manual in different language (not English or Italian)</b>

## ZDAS CNS400K Horizontal Scrap Shears

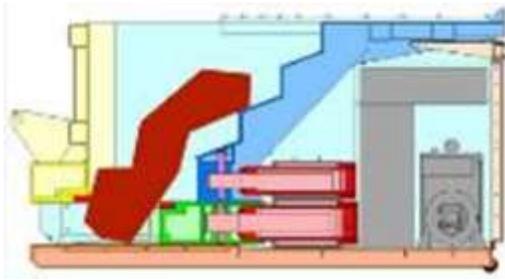


The ZDAS CNS400K Horizontal Scrap Shear is designed to shipping container dimensions for easy transport. It is a self contained machine with a built in diesel engine powered hydraulic power pack.

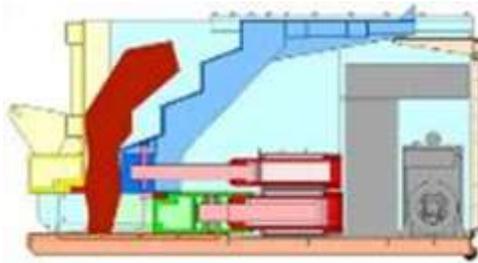
- **Mobility of the machine** It can be transported on a four-axle truck or three-axle towed trailer equipped with the pull-on hydraulic equipment for containers.
- **High performance** shears and low workforce costs – remote control operation means only one person will charge the shears, cut and discharge up to 11 tons of scrap per hour
- **Low energy consumption** - 1 quart of diesel per ton of cut scrap
- Knife guides are equipped with **automatic lubrication system** with minimum maintenance requirements. Low friction coefficient and perfect guiding of the tool-holding slide increases shearing efficiency
- All sliding surfaces that have frictional forces are **machined with minimum clearances**. They are made of **abrasion resistant sheets of hardox 400 HB** with high service life
- The shears can work continuously **for 10 hours in automatic cutting cycle**. After having replenished fuel, it is possible to work for another 10 hours
- The shears are completely **independent of electrical energy**
- For operation, the **shears do not need any foundation**, a hard concrete surface is sufficient
- **Diesel engine unit easy starts** and runs safely **in even in winter conditions**
- Horizontal motion of the tool-holding slide also ensures complete **removal of the cut scrap**

The shears are equipped with sensors for monitoring bottom deflection in the course of the shears operation The shears are equipped with a tier 5 123hp **diesel engine unit complying emission limits**

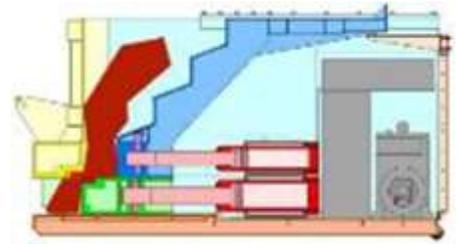
## Description of the process



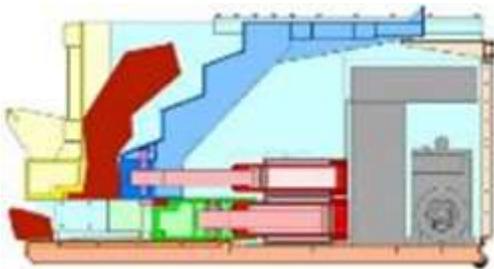
Position of blades and holder before processing scrap



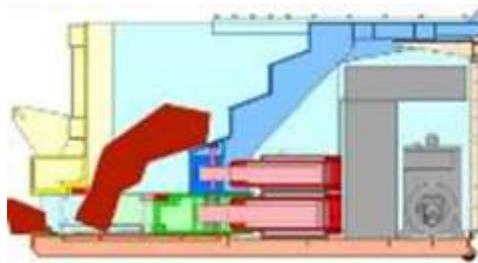
Holder in forward position, scrap is pressed and held.



Blade moves forward, scrap is cut.



Blade moves to back position.



Holder moves back to allow scrap to fall into next cutting position, cycle repeats

Charging chamber width	63"
Charging chamber length	97.6"
Charging chamber height	89"
Blade width	63"
Shear force Max	408 Tons
Max Diameter to be cut (tensile strength 6466 PSI)	4.33"
Max I Beam profile to be cut	15. 3/4"
Hydraulic working pressure	4500 PSI
Diesel engine output	123 hp
Diesel engine RPM	1800
Shear performance	24,000 lbs per hour
Total Weight	55,000 lbs

## Cable Stripping Machines

### ES1000 Cable Stripper

The ES1000 cable stripper has been designed to process fine household and solid cable. It can handle wire cable and wire between 1/16" and 1" in diameter and once set will easily and quickly process up to 50 feet of cable a minute depending on the type of cable. The ES 1000 may be the smallest model in this range of strippers, but it's a great machine which won't let you down.



### ES5000 Cable Stripper



The ES5000 cable stripper will handle most heavy-duty cables including armored and multi-core. It's easy to use and can process cable from 1/8" up to 4" diameter at speeds of up to 138 feet a minute. Adjustment is simple and there is no need for constant setting changes to suit different material sizes.

The ES5000 is designed and built to last and meets all current safety regulations in common with the range of ES cable strippers. It is equipped with twin hard-wearing blades which further improve performance.

## Aluminum Casting Machines

**JMC Casting machines have been developed in their own foundry to give trouble free alloy production.**

Metal is poured from the furnace via a launder, in to the pouring system. The pouring system has been designed to minimise dross formation, ensuring that the ingots produced are of the highest quality.

The adjustable speed control system allows the amount of metal poured into each mould to be accurately controlled, producing ingots of consistent weight and dimensions. The filled moulds travel up the incline, where the ingots cool and solidify.

As the moulds pass around the head sprockets they invert allowing the ingots to fall, assisted by two automatic hammers.

**Vortex markets this range throughout North and South America, we have a variety of models to suit your specific requirements, listed are some of the models, however we can modify each to suit your exact needs. A full range and specification brochure is available.**



With 56 moulds and a maximum capacity of 1000lbs an hour the Dolphin is our starter model.



The Orca can have either 92 or 120 moulds depending on your requirements. It is capable of producing up to 14,000 lbs an hour depending on its mold format



The Leviathan comes with options for 140 or 180 Moulds and can produce up to 2,200 lbs per hour



## Centaur Aluminum Granule Production

The aluminum is poured into the distribution system. This has multiple apertures containing graphite inserts, through which the aluminum flows. The flow is split into droplets by the automatic hammer system, which together with the variable speed system allows the size of the droplets to be varied. The droplets fall on to a rotating water cooled table where they solidify to form pellets. The pellets are removed from the table with an air knife to a conveyor.

## Wire , Cable and Wire Harness Granulation

Processing your own cable or vehicle wire harness is a great way to add value to your operation. MG is a leading international company designing and manufacturing machines for copper and aluminum recovery. They have been doing this as a family owned business since 1995 .

Patented machines are the result of dedicated investment in research and development and represent the importance to the company of growth and show that they will always be one step ahead of the market demands.

Vortex are agents for MG and work closely with the factory to offer the best solutions for your needs. We offer machines that process from 130lbs an hour up to whatever you need.

### Monster Evo Turbo with Wire harness Pre shredder



#### Technical Data

##### Power

5kw—7.5hp

Turbo 7.5kw –10hp

##### Approximate production

60-80kg/h -130-176lbs/hr

Turbo 80-100kg—176-220lbs/h

##### Dimensions

41" x 55" x 83" High (approx.)

##### Weight

660kg - 1452lbs

700kg - 1540lbs

The Monster Turbo is a compact plant with a powerful System for recovering copper and aluminium for wires and other scrap material through a blade mill and vibrating air separation table for separating clean copper granules.

This can be coupled with the pre shredding and dosing system to enable it to process vehicle wire harnesses.

The Monster Evo is available in two lines, with pulveriser (turbo) or without. This enables you to optimize handling of different types of cable and fine hair wires.

## MG 150 with Pre Shredder Option



The MG 150 is the smallest complete system of MG series for the recycling of copper and aluminium, radiators and electronic board.

The new blade configuration of GR 300 granulator, results in higher production rates at less cost, longer life, lower maintenance and a reduced need for spare parts.

Additionally, the door is sound proofed to reduce noise, plus the cutting chamber is equipped with anti-wear plates.

The complete system is provided with a special loading belt and a pre-shredder with built-in control panel.



### Technical Data

#### Power

20kw—27hp

#### Approximate production

150-200kg/h - 330-440lbs/hr

#### Dimensions

110" x 51" x 106" High (approx.)

#### Weight

1850kg - 4070lbs

## MG 220 With Pre Shredder Option



The MG 220 is the medium complete system for the recycling of copper and aluminium, radiators and electronic board.

The innovation of the new MG 220 consist in a technological granulator, its rotor is especially designed for the treatment of wires and other metal scrap, with more square shape blades in order to offer high and long-lasting performances, less and easier maintenance and a remarkably reduced noise level.

### Technical Data

#### Power

37kw—50hp

#### Approximate production

400-500kg/h - 880 -1040lbs/  
hr

#### Dimensions

140" x 55" x 124" High  
(approx.)

#### Weight

3200kg - 7040lbs

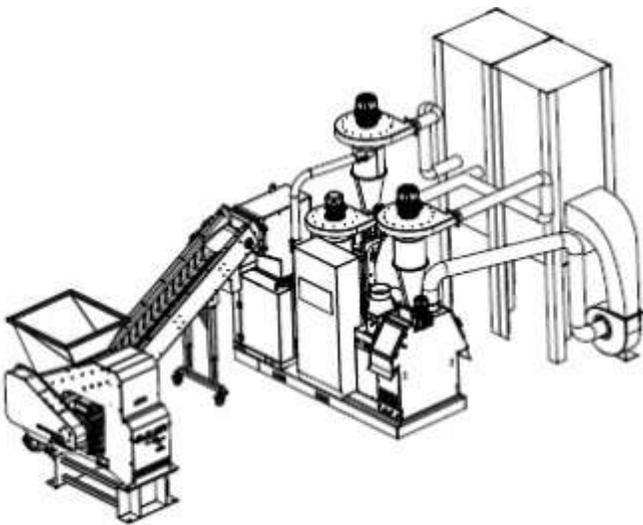
## MG 220ZVT With Pre Shredder Option



The MG 220ZVT is a complete technological system for copper and aluminum recovery from electric cables and other waste materials. 99.9% of clean recovered material can be achieved using the technology of the air separation table after the grinding and pulverising process.

Thanks to the unique zig-zag Turbo system the compact 220ZVT is able to automatically separate the thick and rigid from the household and fine wire through two separate and different slides.

The compact 220ZVT can also be supplied with a magnetic separation conveyor to remove and ferrous parts before grinding, this protects the system for a longer blade life, we can also supply it with a choice of pre shredding options and powder dosing to allow automotive harnesses to be processed



### Technical Data

#### **Power**

58kw—78hp

#### **Approximate production**

500-600kg/h - 1100 –1320lbs/hr

#### **Dimensions**

118" x 78" x 146" High (approx.)

#### **Weight**

2800kg - 6160lbs

## MG 380 VZT with Optional Pre Shredder

### Technical Data

#### Power

90.5kw—120hp

#### Approximate production

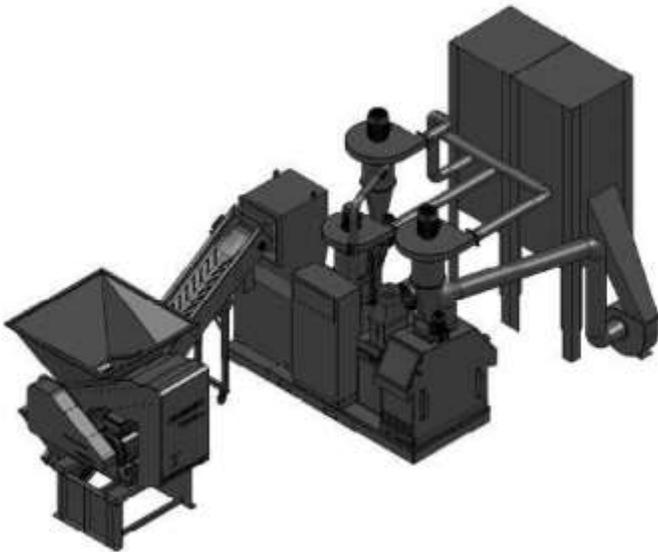
700-1200kg/h - 1540-2640lbs/hr

#### Dimensions

161" x 159" x 152" High (approx.)

#### Weight

4800kg - 10560lbs



The MG 380 VZT is a complete technological system for copper and aluminum recovery from electric cables and other waste materials. 99.9% of clean recovered material can be achieved using the technology of the air separation table after the grinding and pulverising process.

Thanks to the unique zig-zag Turbo system the compact 380VZT is able to automatically separate the thick and rigid from the household and fine wire through two separate and different slides.

The compact 380VZT can also be supplied with a magnetic separation conveyor to remove and ferrous parts before grinding, this protects the system for a longer blade life, we can also supply it with a choice of pre shredding options and powder dosing to allow automotive harnesses to be processed.

## Container Handling Equipment

Dealing with the scrap industry as we do, we noticed many customers loading containers with Bobcats or other equipment to get in to the container to fill it. This is hard on machines and containers, it also does not give you an accurate weight, which is essential to maximize your load. A Ward offer the perfect solution with their range of container loading equipment, either tilted to load from the top or horizontal to load while still on the truck, A-Ward have a solution for loading anything from scrap metal to coffee beans. Give us a call to discuss how effective and time saving a container loader would be for your business.

### A—Ward Container Loaders and Unloaders



MiTilt™ is a revolutionary tilting container loader that allows you to gravity-load your containers to maximum capacity. It combines patented tilting technology with a choice of four different bodies or frames, to suit your type of operation. The MiTilt™ is safely controlled by a single operator and allows you to weigh the container during loading and maximize the fill weight.

MITILT™ IS IDEAL FOR:

Loading both 40ft or 20ft containers to maximum capacity.

Loading a range of materials for faster, cleaner and safer handling. With its gravity-fed design, the MiTilt™ is ideally suited to loose materials such as scrap, minerals, metal, grains, sugar and rice.

HOW IT WORKS

MiTilt™ allows a container to be tipped at your chosen angle – anywhere between -10° to 90°. By loading from above, you have access to 100% of the internal container volume. Shipping containers are inserted either directly with a standard trailer, or from above with a forklift, crane or reach stacker.

## A Ward Mi-Slide Container loaders



The Mi-Slide from A Ward allows you to load scrap, or any other commodity or waste in to the charging bay, this allows you to pre weigh the load before the container even arrives. The container truck simply backs the open container on to the Mi-Slide until it reached the end. The Mi-Slide then powers the load forward in to the container and pushes the truck forward until the container is loaded.



## A—Ward Container Loaders and Unloaders



A-Ward's unique MiTilt™ unloader eliminates the need for scarce and expensive tilting trailers. Whether your material is being unloaded through a grate, over an edge, or directly in the ground, the MiTilt™ enables faster, cleaner and safer unloading.

### HOW IT WORKS:

The MiTilt™ unloader tilts up to a maximum unloading angle of 70 degree, with a 90 degree option available if required. They work in a similar way as our MiTilt™ loaders.

### IT'S IDEAL FOR:

- Unloading a range of materials directly into your storage system, at the speed you want.
- Contamination-free unloading of sensitive or hazardous materials.



# VORTEX

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