



# VORTEX

De-pollution & recycling equipment

## Product Catalog



Vortex De-pollution (USA) LLC, 12445 E.39th Ave, Suite 507-510, Denver, CO 80239

T. 303 900 4040 Email [sales@vortexdepollution.com](mailto:sales@vortexdepollution.com) web [www.vortexdepollution.com](http://www.vortexdepollution.com)

# Contents

<b>Page 4-5</b>	<b>Vortex Tools</b>
<b>Page 6-7</b>	<b>Optional Extras for systems</b>
<b>Page 8-9</b>	<b>Combi System</b>
<b>Page 10-11</b>	<b>Catwalk Systems</b>
<b>Page 12-13</b>	<b>Tower &amp; High Volume tools</b>
<b>Page 14-15</b>	<b>Mobile Systems for Full Service Auto Parts</b>
<b>Page 16-17</b>	<b>Under Hood Tools , A/C and Cat cutters</b>
<b>Page 18-19</b>	<b>Tanks &amp; Compressors</b>
<b>Page 20-21</b>	<b>Vulture Vehicle dismantler and Auto Grab</b>
<b>Page 22-23</b>	<b>The Engine Cracker</b>
<b>Page 24-25</b>	<b>Catalytic Converter Processing</b>
<b>Page 26-27</b>	<b>Alligator shears</b>
<b>Page 28-29</b>	<b>Can / Light metal Balers &amp; Lid Balers</b>
<b>Page 30-31</b>	<b>Shear Balers &amp; Vehicle / Metal Balers</b>
<b>Page 32-33</b>	<b>ZDAS Horizontal Shears</b>
<b>Page 34-35</b>	<b>Cable Strippers &amp; Aluminum Casting Machines</b>
<b>Page 36-37</b>	<b>Shredders and Hammer Mills</b>
<b>Page 38-39</b>	<b>Cable Granulators</b>
<b>Page 40</b>	<b>Container Loaders</b>
<b>Page 41</b>	<b>Metal Analyzers</b>

# 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 range of products that help our customers increase the value from the scrap hulk of a vehicle as well as metal processing equipment.

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 Vulture Vehicle dismantler can be used to literally rip valuable parts out of vehicles
- 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 99% 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 now partner exclusively with FORREC for a full solution to customers shredding and processing needs, for example tire processing lines or esrap processing, we can now provide the solution by working with you on your whole project.

The ZDAS range of horizontal shears 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 and provide back up engineering services here in the USA so you are assured of equipment that meets US standards and is built for the US market.

# 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.

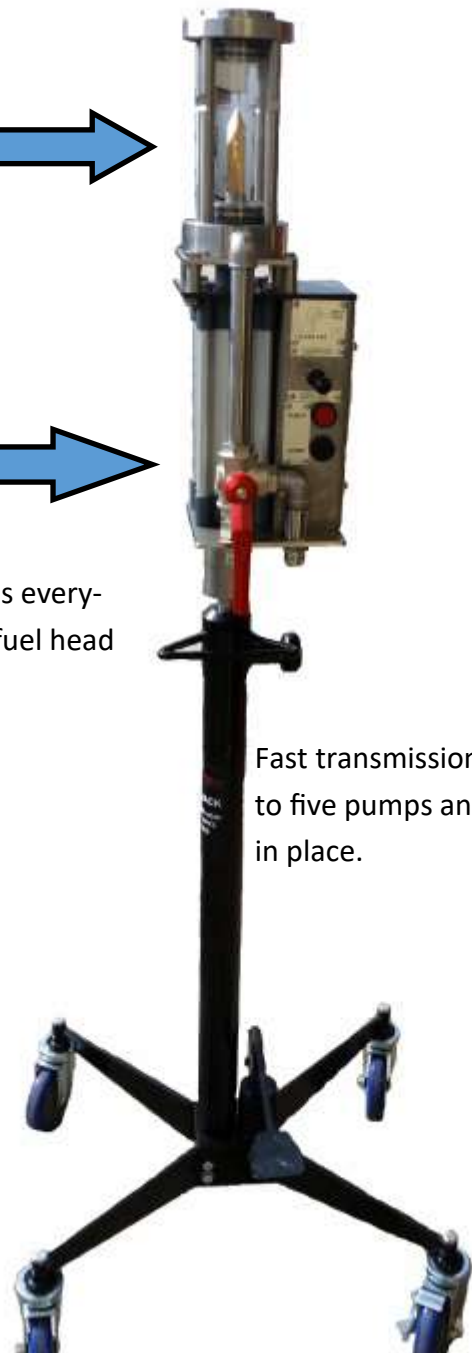
The beryllium spike is designed to rip the tank back down on its way out.



The operator controls everything directly at the fuel head



The hole after punching a plastic gas tank.



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



# 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.

## Drill Head





## 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.

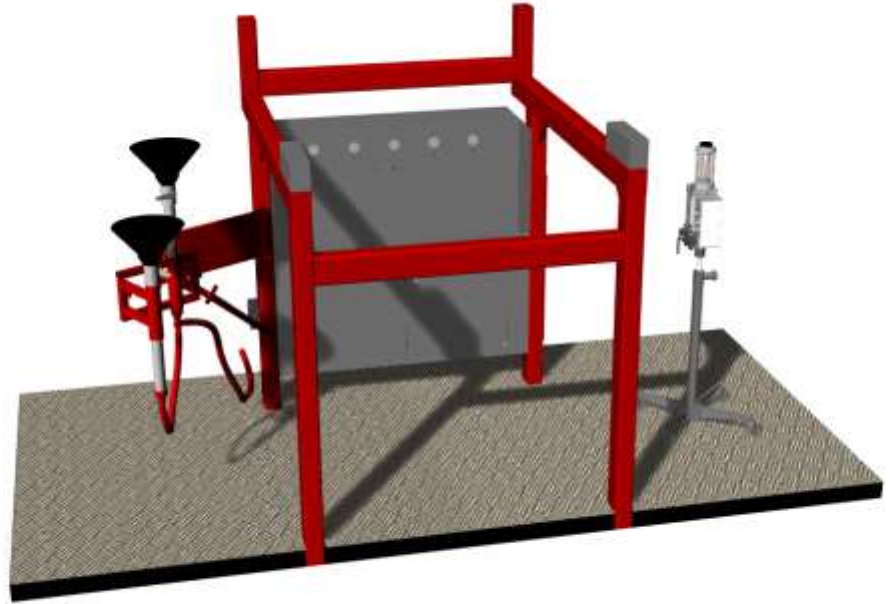




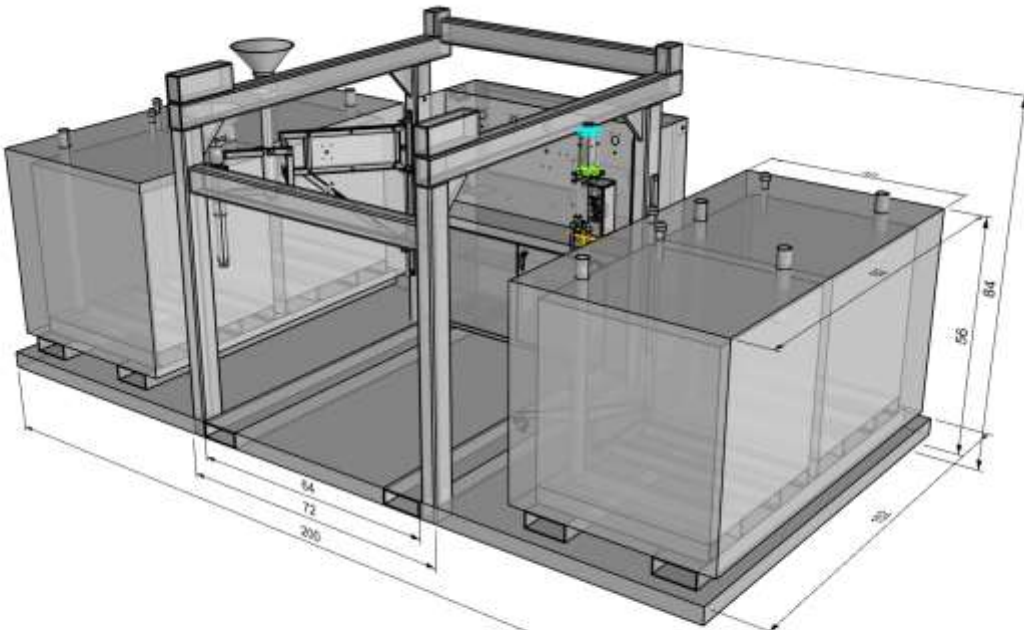
## The Mobile Combi System

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.

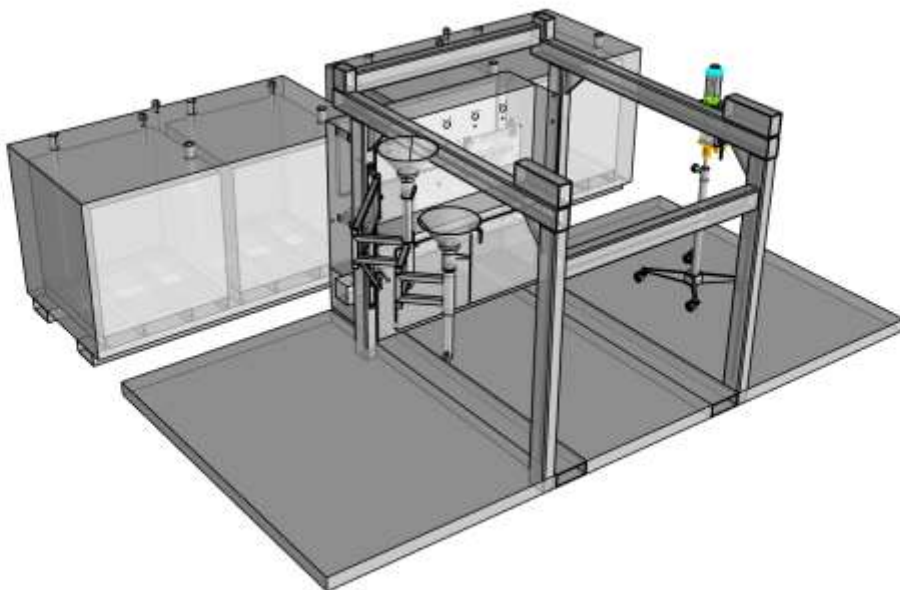
It has all the options of our standard Combi mentioned on the previous page.



## 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

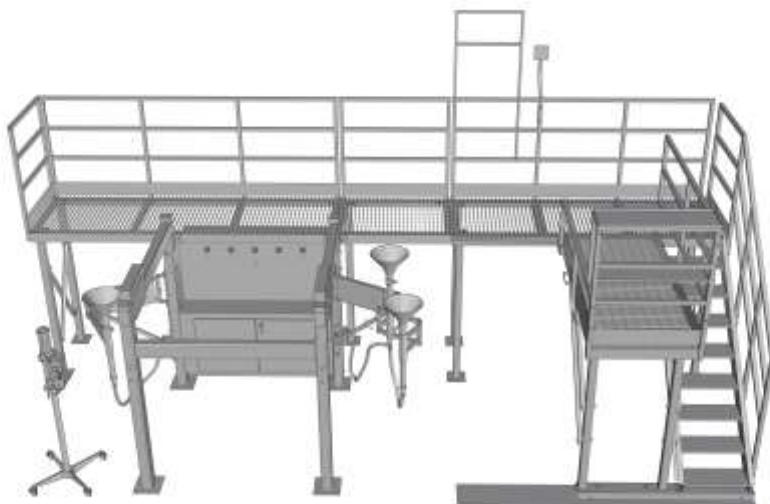
All of these systems contain the tooling you saw at the beginning of this brochure. They have been developed as a way of lifting the vehicle on to a rack where it has every process done to the vehicle, touching the vehicle only once with the loader or fork lift. Once in place the full vehicle can be 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



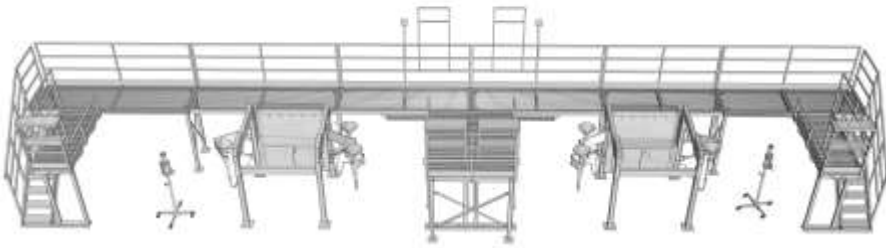
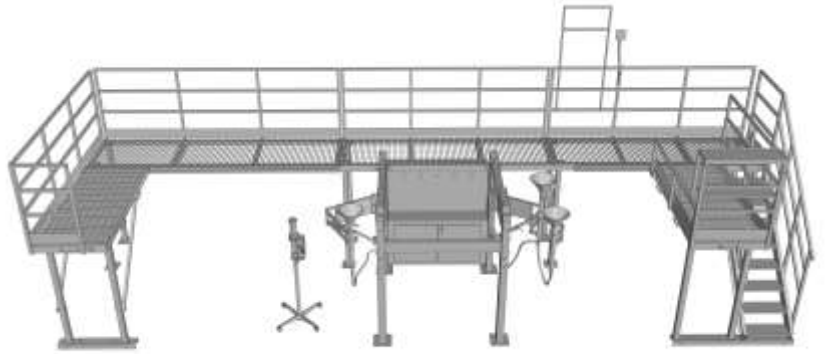
This is the base level catwalk system, available in left or right hand stairs to suit your specification

- 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



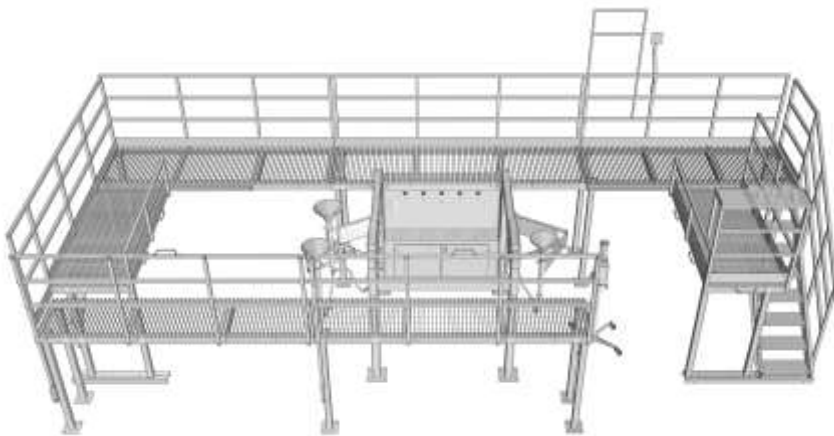
## The Midi Catwalk System with front and rear sliding platforms

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

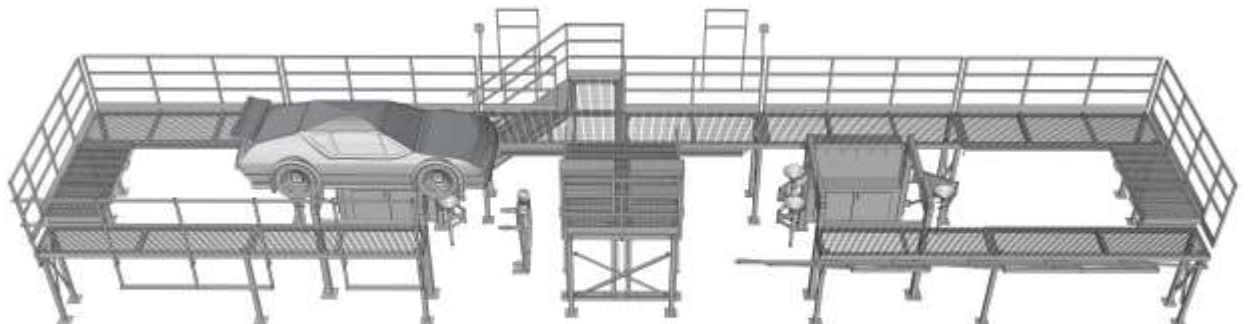


The Mega Catwalk systems add another catwalk to the front of the system, it has a unique collapsible guard rail for operator safety that drops below the line of the front catwalk, allowing the loader to load over the top. This gives all round access to the vehicle and allows the removal of wheels on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

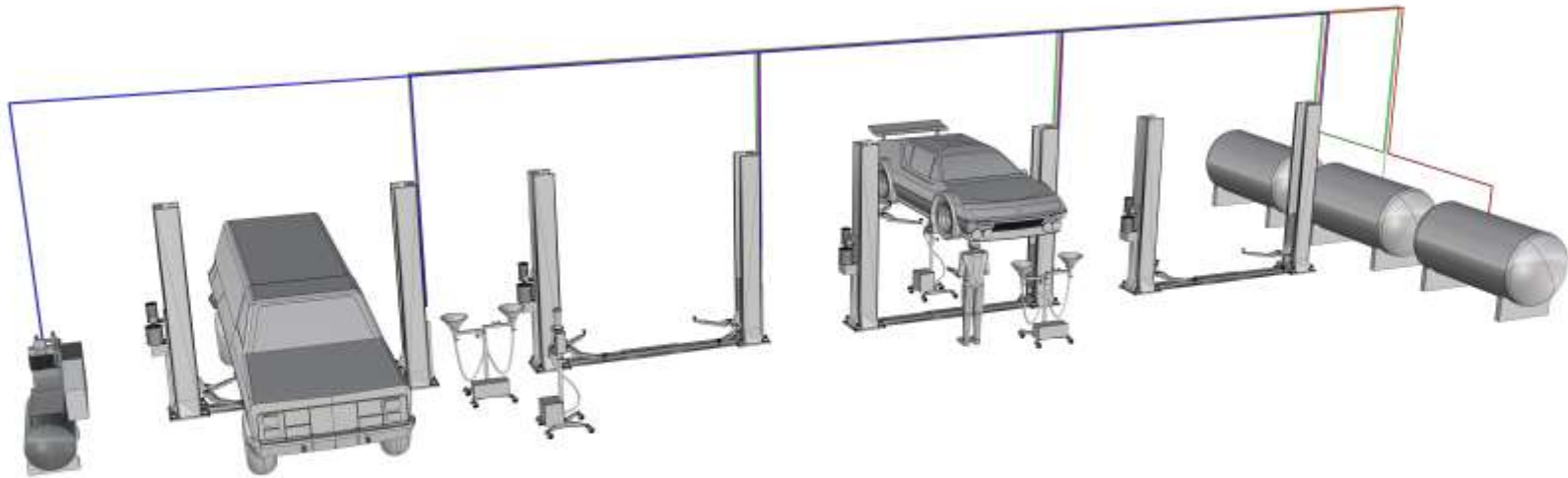
All pumps are fitted with pre strainers to protect them from any debris which may get through.

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



## Hand Held Catalytic Converter Cutters

As the master distributor for the whole range of Edilgrappa equipment we have multiple options for tools to cut catalytic converters from a vehicle. These robust tools offer excellent performance for high volume processing yards.

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



We offer two battery powered options, the most popular is the pistol grip option, it weighs 30.5lbs but the grip helps stabilize the weight. It uses a DeWalt 18v battery.

The upper grip option utilizes the DeWalt Flex Volt battery to power its 54v motor, this does make the unit 35lbs.



The fastest option for cutting the cats is the 110v electric hydraulic powered cutter. The head weighs 27lbs and comes with 18ft hoses, a power pack and cart for storage

## 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, this is a really easy to operate safety item that keeps the operator safe from injuries associated with falling of swinging converters after they have been cut.



## 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



## The Vulture Vehicle Dismantler



Once the vehicle is drained then extra value can be recovered by pulling out more valuable parts from the vehicle. The Engines can give you a 30-35% recovery of aluminum when used with our engine cracker or its higher value by weight by selling it separately. The average vehicle contains around 55lbs of copper wire in its harness, this is easily removed and cleaned using the Vulture's rotating claw and unique stripping tool located on the hold down leg. Aluminum radiators can be pulled and sold separately at higher values. Finally parts like rear axels and sub frames can be separated and sold as heavy melt steel at a higher price.



The Vulture is an exciting development for maximizing your return from scrap vehicles. With over 12 years' experience in this field and with many thousands of vehicles processed the Vulture team have perfected this grab design and improved every step of the way to give you greater productivity, with the fast removal of engines, wire harness, aluminum parts and HMS 1 & 2. The wire harness stripper which attaches to the hold down leg, easily helps you clean of the fuse boxes and other items that devalue your harness wire. Experienced users who are changing to the Vulture have commented on the ease of use and precision of the two ram pincers, saying, it is just like pliers on the component you want to remove. The grab is built to be very tough, utilizing many components from the brutal crushing industry. Yet developed to be strong reliable and precise for the hard used in the

vehicle salvage and scrap industries. The unit has an over specification rotator unit making it incredibly strong and quick in operation, essential for fast continuous use in this industry.

One of the unique features of this system is the ability to buy the unit as a kit which can be fitted in a matter of hours. The Vulture 25 Kit comprises of the special grab and a set of hold down legs which are fitted to the blade of the machine.



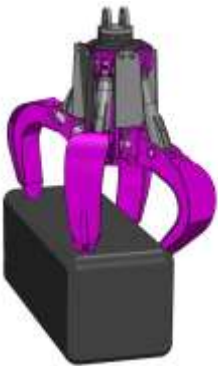
## The Vulture Auto Grab



The offset design of the grab legs allows the grab to clear the full width of the vehicle.



The design also allows the grab to fit with the chassis which is useful for pulling out engines.



Lifting bales out of the baler becomes a simpler task with the offset grab, it can be manipulated to always keep one side of the bale clear for easy stacking or loading the bales.



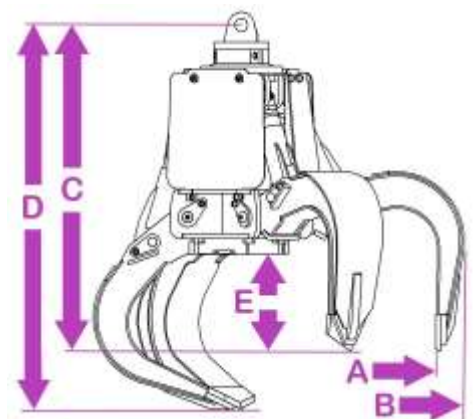
The well guarded hydraulic cylinders produce excessive gripping forces which make the Auto Grab ideal for removing engines.



Fully closed leg tips allow for precision removal of easily accessible wire harnesses from a vehicle.



The Vulture Auto Grab is manufactured from a mix of high yield and wear resistant steels designed to give the Auto Grab strength flexibility and to be extremely durable in the tough environment of a Auto processing or metal recycling facility.



A = 71.25"

B = 81.69"

C = 59"

D = 69.7"

E = 17.7"

Wgt 2530 Lbs

## 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 sizing 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 the option of a 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.



Sizing door



Material is being picked off the conveyor before passing under the over belt magnet to remove any steel components.

There is an option for a larger vibrating table and magnets can be a fixed magnet with a belt or the upgrade option is an electro magnet with a hard slat conveyor which is harder wearing and much more powerful.



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



The Boss 1300 Cracker is available with a variety of sorting options, the most popular configuration is a vibrating discharge table that will feed the broken material on to a slow moving (variable speed) picking conveyor. On the conveyor large items such as torque converters and gear trains can be removed. Any large items that contain steel and aluminum can also be picked out for re-cracking. There will also be rubber hoses and wires and plastic parts that can be picked off, that won't be picked up by the magnet. There are two options of vibrating table sizes and two options of over belt magnets available depending on your budget. We also have an option to include an eddy current separator at the end of the line to ensure perfectly separated A380.



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 processing your catalytic converters. From de-canning to recover the valuable PGM bearing contents to milling and homogenizing those contents then sampling and analyzing them with the latest XRF technology to identify how much PGM's your material contains.

Ultimately the converter market is a maze of middle men 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 be maximizing the value of. The only way you can be as sure as possible of the value of your converters is to De-Can them yourself and identify what you have, then deal as closely as possible with a company that will smelt the material themselves. There are only a few of these companies and most will want over 1000lbs of material at a time.

### 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 cans per hour, including large truck cats. The cutting cabinet is under constant vacuum to ensure none of the valuable 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 is capable of processing 60 converters per hour while our larger systems can handle 400



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



## Catalytic Converter Milling



The KM Range of grinder / homogenizers offer from 10 to 100lbs of processing capacity per load. They are ideal for sampling individual cats, right up to larger loads. They break down and mix the material to give an even mix with the correct size particle to analyze. We also offer a foil crushing system to process your foil cats



### Catalyst XRF Analysis

As part of our range of Hitachi analyzers we carry the X-MET8000 XRF analyzer coded for Platinum Group Metals.

This will give you an accurate parts per million reading for Platinum, Palladium and Rhodium, so you will understand the true value of your material.

The X-MET8000 is available as a stand alone gun or with a bench top stand that will make life easier for the operator .

## The McIntyre Cat Guillotine



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

## The McIntyre Cat Mate



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 and scrap processing, their world wide demand makes them the market leaders in the metal recycling industry. 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, and we can custom build equipment to meet your needs.

McIntyre has been a trusted name in recycling since 1872, They have been designing solutions for the scrap industry and their own recycling yard since 1975 and have over 27,000 machine installations worldwide. They hold a comprehensive stock of spare parts ready for shipping. At Vortex we also have a growing stock of shear parts held at our Denver facility.



### The 150 6" Alligator Shear

The 150 is the baby of the range, but it has a powerful 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 Shear

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 220 or 480V 32/64 Amps 60Hz  
Power Rating 10hp



### 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. This is the most popular model in the USA  
90 tons cutting force  
8.8" Tip to tip opening  
Standard electrical 3 Phase 220 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 .

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 hydraulic hold down as shown.

120 Tons Cutting force

10.4" 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 1/4" round bar



### **610 24" 180T Alligator Shear**

The 610HD is the little brother of the 640-180T and fills the gap for a more powerful and cost effective 24" shear.

180 tons of cutting force

10.4" Tip to tip opening

15hp 3ph 240 or 480v

### **The 640 Alligator Shear with either 180T or 240T**



The 640 range is the next jump up in size and power

180 or 240 tons cutting force

13" Tip to tip opening

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

Power Rating 15hp or 25hp Electric or Diesel engine.

Cuts up to 3" or 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





## 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, M20 and M40 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. The M10 produces 880lbs per hour and the M20 produces 1650lbs per hour. The M40 produces upto 2600lbs per hour.

### 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.





## Metal Lid 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



## 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

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

## 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 Rotor 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

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



## ZDAS CNS400K Horizontal Scrap Shears



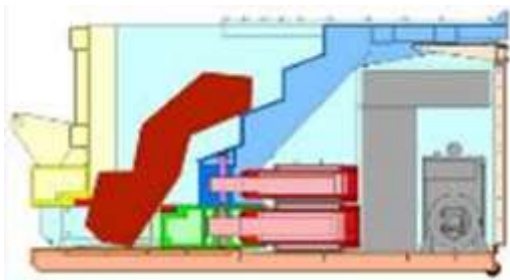
The ZDAS CNS400K Horizontal Scrap Shear is designed to shipping container dimensions for easy transport. It is a self contained machine with a built in diesel engine powered hydraulic power pack.

- **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**

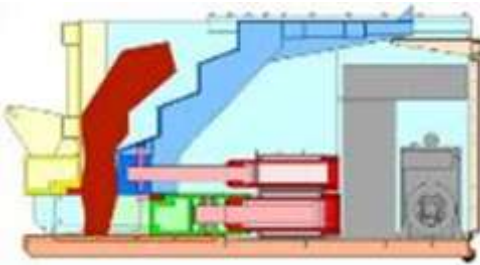
The shears are equipped with sensors for monitoring bottom deflection in the course of the shears operation The shears are equipped with a tier 5 123hp **diesel engine unit complying emission limits**



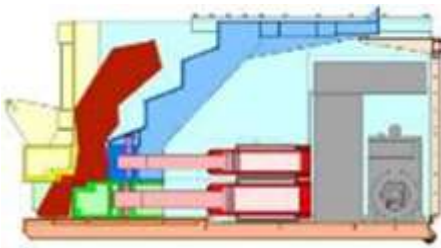
Description of the process



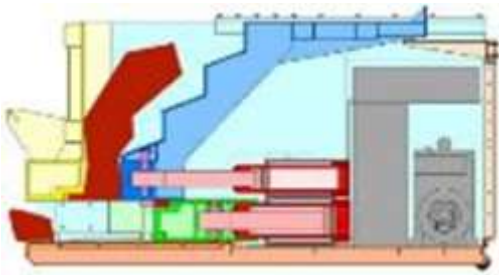
Position of blades and holder before processing scrap



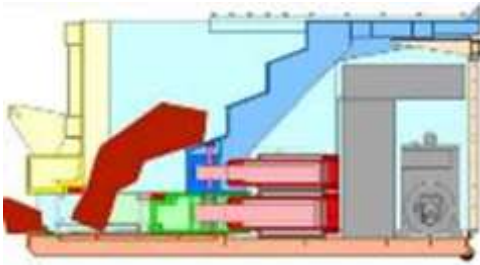
Holder in forward position, scrap is pressed and held.



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.



## Shredders

Vortex are the US partner for FOR REC shredders who offer a range of shredding solutions. Obviously shredders require a detailed conversation so we can understand exactly what you need from your plant, we can also offer full systems with all the add on parts such as full tire recycling plants. This page offers a visual of the many different options for many different industries. Please call us to discuss your requirement.

### Primary Double Shaft Shredders.



**Double shaft shredder (TB)** perfectly adapt to treatments that require volume reduction and grinding with partial output size control. High material flows can be treated when operated without a screen. The exclusive and innovative cutting chamber design allows for quick shaft extraction and replacement complete with blades, drastically reducing maintenance time.

### Rotary Shearing Machines

**FX series rotary shearing machines** are designed and constructed to process metallic scraps. The special 4 motors settings (2 per shaft), the exclusive special steel interchangeable blade system and sturdy frame ensure excellent work standard with reduced maintenance time. The low rpm generates high torque to process even very difficult materials.



### Four Shaft Shredders



**The use of four-shaft shredders (TQ)** increases the solid waste treatment operating possibilities. In fact, they combine the reliability and power of the double-shaft shredders with the possibility of controlling the output material size.

Built for heavy-duty use, **TQ** series shredders are the result of an innovative design that aim to create efficient and flexible machines. the exclusive and innovative interchangeable shaft system and the use of wear-proof

The **Single shaft shredders** series **AE** and **SR** are suitable for the treatment of light materials and in those applications for low capacities.

The machines allow the defining of an output material in homogeneous dimensions thanks to the presence of a sieve. The exclusive system with interchangeable blades permits to have very fast maintenance with reduced machine stop. The single shafts shredders **AE** and **SR**, with the applied technologies grant **very low power consumption**.



## Granulators



The granulators with rotating blades are designed for the **fine grinding and the reduction of heterogeneous scraps of plastic materials**, coming from molding and injection sector, blowing and thermo-forming. The use of special steels for the construction of the different components makes them ideal with the treatment of the hardest materials and scraps. The special cutting system guarantees an energetic saving and an important reduction of the dusts released during the treatment. Maximum performance, energy saving and simple management.

## Hammer Mills

The hammers mills allow the grinding of heterogeneous materials and the transformation of the metal scraps in small fractions.

**The Forrec Hammers Mills** are designed with a sturdy structure and a very fast access to the parts subject to wear and tear.



## Full Systems Installation— Tire Plant example



Plants that guarantee specific treatment of end-of-life tires.

The correct disposal of end-of-life tires (ELT) is an important and complex issue. FORREC produces systems that guarantee specific treatment of end-of-life tires by processing waste materials designed to obtain three different types of waste reduction as follows:

Reduction in size (shredded tire crumbs): ideal for reducing volumes, facilitating warehousing and producing energy: waste becomes an alternative source of fuel.

Grinding up to 20 mm (chips): separating iron and textile fibers. In this case, the material can be used for thermal treatment or as a substrate in civil and industrial works

Secondary raw materials (crumb rubber 0-4 mm): 99% pure; this material is ideal for application in anti-shock flooring, compounds and mixtures for asphalt, urban furnishings, insulation and sound absorbing panels.

## Copper Wire and Cable chopping systems

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 US partners of 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. Machines can be supplied as stand alone or as a full project specifically to suit your needs.

### Stand alone machines

The range starts with the basic granulator and separator systems, where cable and wire are fed in to the granulator, through a turbo mill and are then separated on a vibrating air table into plastic or copper granules. These machines range in capacity from 130lbs per hour for the smallest in the range to 2-3 tons an hour for the largest.



### Complete Systems and component add on's



To improve the performance and throughput of the stand alone machines it is best practice to reduce the size of the input cable and wire, therefore a pre shredder is critical to the process, this reduces the size so that the granulator can increase its production. The conveyor that runs from the pre shredder to the granulator is speed controlled by the feedback from the granulator to maximize throughput. This is a basic complete system. From here there are many other options. Often in the recycling world the cables don't only contain copper, but also have an amount of Aluminum which you may want to

separate in a single pass, this involves a secondary table to separate the Aluminum from the copper. Also there is a small amount of copper residue that can be left on the plastic, so MG have a vibration sieve that efficiently recovers small particles and drops them on to a separation table. Another aspect to consider is dust control at each part of the process, MG has dust collection systems for all of the equipment. Finally there is the discussion of how to handle the material after processing. MG offers bagging plants for each stream, where the material is transferred from the separation tables to big bags that can sit directly on scales to get accurate weights for each bag.



Double bagging system

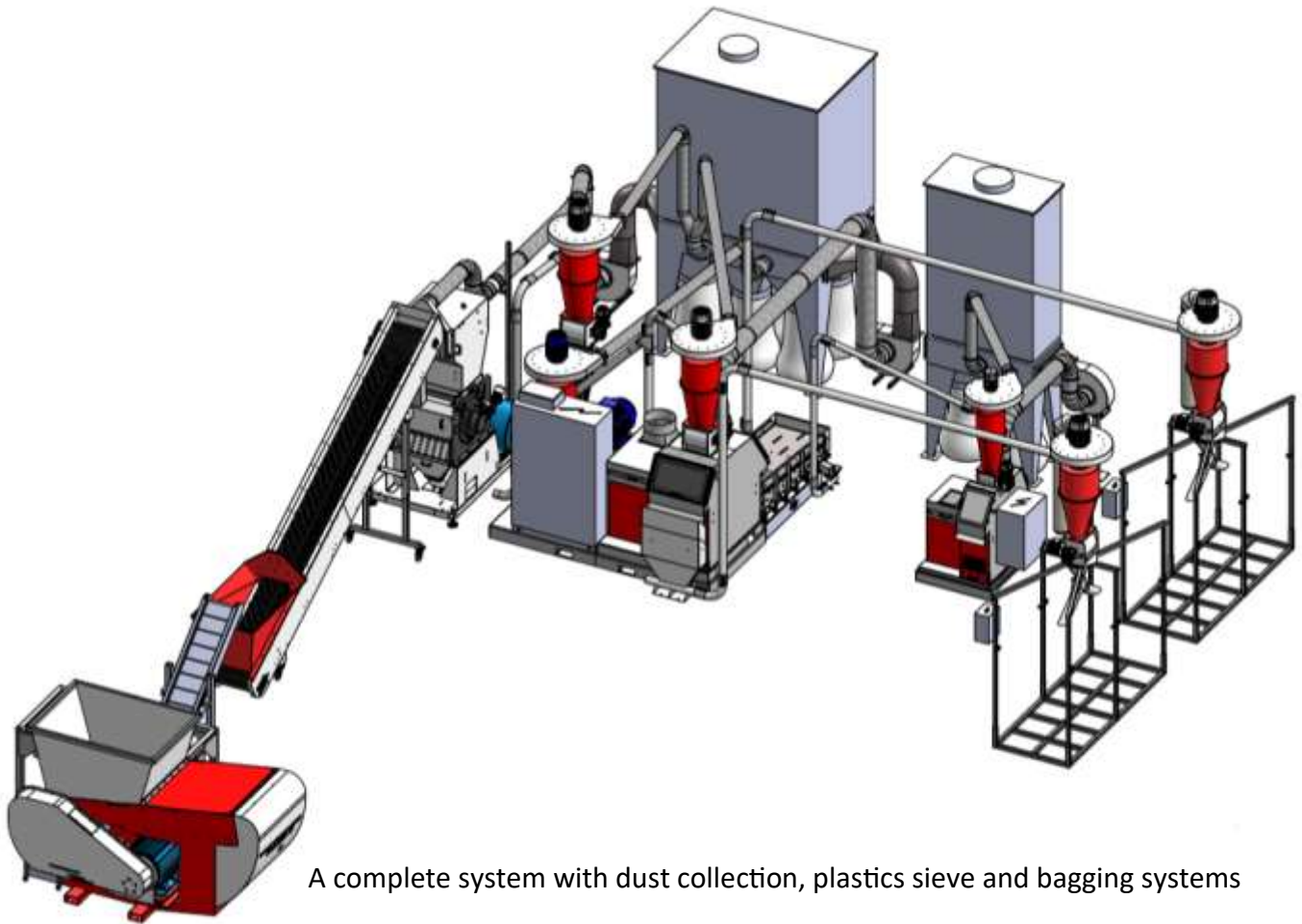


Plastics Sieve system



Copper Aluminum separator





A complete system with dust collection, plastics sieve and bagging systems

Model	Power hp	Production lbs per hour	Dimensions inches
Evo Turbo	10hp	130—176	41 x 55 x 83
150	27hp	330—440	110 x 51 x 106
220	50hp	880—1040	140 x 55 x 124
220VZT	78hp	1100— 1320	118 x 78 x 146
380VZT	120hp	1540—2640	161 x 159 x 152
610VZT	323hp	3200—4400	136 x 226 x 205

## 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.

## Hitachi Metal Analyzers

### X-Met 8000 XRF Analyzer

The X-Met 8000 is the perfect tool when you need accurate on site alloy identification and chemistry in your metal recycling facility.. Use it for the analysis of light elements and most commercial alloys including Aluminum, Titanium, bronze and high temperature alloys. The X-Met can also be programed to accurately test auto catalyst and can be fitted to a desktop unit.

The X-Met 8000 helps you maximize your profits.



### Vulcan LIBS Analyzer



The Vulcan is one of the fastest metal analyzers in the world. After you pull the trigger you have answers in just one second. This laser analyzer is also built tough to withstand the daily life in the toughest of metal recycling facilities. The Vulcan allows you to identify and analyze a wide range of alloys, giving you accurate results on Aluminum, magnesium, titanium, cobalt, nickel and copper alloys as well as stainless steels, tool steels, low alloy steel and more. The benefits of the Vulcan make it a perfect tool for the job.

- Simple to use—Ready to go out of the box
- Practical—at 3lbs it is light and compact with an easy to read screen, even in direct sunlight.
- Built to last— Optics are built from sapphire glass, one of the toughest materials available and it complies with military grade standards for ruggedness.
- Saves time—1 second test times. 10x faster than XRF
- Low cost of ownership—Lower cost than XRF which requires licenses and radiation safety training classes.
- Latest technology—Share and store results and generate reports, you can also use directly to your mobile phone and add pictures to share results instantly.





# VORTEX

De-pollution & recycling equipment



## McIntyre

The gold standard in recycling systems



RECYCLING SYSTEMS

## EDILGRAPPA

MANUFACTURERS SINCE 1977



## ROTER

R E C Y C L I N G



## A-WARD

## ZDAS

Vortex De-Pollution (USA) LLC

12445 E 39th Ave Units 507-510, Denver , Colorado, 80239

Tel 303 900 4040

email [sales@vortexdepollution.com](mailto:sales@vortexdepollution.com)