



**MIDWEST
CUSTOM
SOLUTIONS**
PRECISION QUALITY INTEGRITY



**PRODUCT CATALOG &
CAPABILITIES PROSPECTUS**



**"MADE IN AMERICA" REAWAKENED
FORGED IN THE CRUCIBLE OF LIBERTY
POWERED BY THE FUEL OF FREEDOM**

REV. 1.0 07242023

"MADE IN AMERICA" REAWAKENED

Your Most Trusted Partner in Industrial Dehydration.

Our mission is to apply proven solutions to the complex issues which you experience in your daily operations.

The industry in which you conduct business is quite complex and you need a trusted partner to ensure your operations are profitable with consistent, precise and predictable equipment performance. Midwest Custom Solutions is here to take the worry out of your mass production dehydration requirements with our proven solutions, years of industry experience and resolute integrity to keep your interests first and foremost.

Our Technical Team will develop a custom plan for your specific dehydration and drying requirements.

Listening to your precise operational requirements and business objectives to ensure we thoroughly understand your specific product parameters is our first goal. We then develop exacting engineered solutions to establish your profitability the moment your equipment is completed with the highest overall efficiencies, lowest product loss and the most outstanding financial returns on your initial equipment investment.

MCS Team Members possess decades of extraordinarily specialized professional experience.

Our Technical Team will develop a custom plan for your specific dehydration equipment requirements, air handling demands, material sorting and delivery concerns, cooling needs, and particle separation essentials. We are unwaveringly dedicated and purposefully determined to "design you industrial dehydration equipment better than anyone else in our industry" - that is our personal commitment to your professional success.

Our "WHY"

We diligently strive to make all we interact with on a daily basis better through thoughtful implementation of innovative design, attention to detail for improved efficiencies, and studied practices for increased profitability with decreased expenses for our customers and clients.

Sound like a lofty business endeavor? It is. However, we're up to the challenge and look forward to serving our clients, customers, and industry with equipment, products and service which proves such a bold statement true.

Our "VISION"

We endeavor to design and manufacture innovative, quality, precision equipment which positively impacts our customers and clients, our community, our industry, our country, and our world.

There is an old axiom which states: "It isn't bragging if you can do it." We fully intend to honor this truism understanding the impact our products and equipment have on our industry and your bottom-line. The responsibility is not one we take lightly and we will continually aspire to fulfill your highest expectations.

Our "VALUES" PRECISION...

... because you **NEED** it for timely equipment installs, improved operational efficiencies, and increased profits in your business practices. We know you expect **PRECISION** from your equipment suppliers, machinery acquisitions, and gear selections.

QUALITY...

... because you **WANT** your equipment expenditures to last over time with worry-free operation and limited down-time in costly maintenance. We know you expect **QUALITY** when investing in equipment for your business and operating processes.

INTEGRITY...

... because you **ENJOY** sporting this personal trait yourself and appreciate your interactions with business partners who exemplify a high degree of honor and respect in their daily practices. We know you expect **INTEGRITY** in your daily business relationships where trust is pivotal to your profitable operations.

We invite you to visit our website to witness first-hand how we are steadfast in our focus to the "Reawakening of 'Made in America.'" Our Team Members eagerly await the opportunity to help you conquer the most worrisome processing obstacles in your daily business and operating practices - we look forward to speaking with you!

So what does all this mean to you?

There is an old axiom which states: "If one can be trusted with the 'small stuff,' how much more can that same individual be trusted with the 'big stuff.'"

It's the same philosophy we implement in the design and manufacture of all our products and equipment. We know and understand that even the most minute detail or inconsequential component could be the difference between tremendous success or catastrophic failure for our clients.

Take this "accessory mounting fixture," for example. To some, it might appear to be a non-critical component to the overall functionality of this piece of equipment.

To us, however, we know how much you depend on our attention to detail in providing appropriate durability in all aspects of our product design and extraordinary ruggedization where it matters most in our manufactured equipment.



It's just as simple as that.

Oh, sure, we could take some short-cuts to speed-up our engineering processes and production procedures, however, we would be falling short of not only our expectations but, more importantly, yours.

That's just not "who we are."

Who we are is a small group of highly specialized professionals with decades of theoretical and applied experience driven by our "pioneering spirit" to propel us to the forefront of our industry.

We're fiercely and adamantly determined to "do it better" than anyone else within our sphere of influence. Our work ethic and business approach may be "old-school," however, our products and services are "cutting-edge."

What you get is the "best of both worlds." We think you'll approve and enjoy your business experience with us - give us a call or drop us an email to savor the Reawakening of "Made in America."

[Click below for a Media Introduction to MCS....](#)





YESTERDAY'S WASTE.
TOMORROW'S WONDER.



BECAUSE CARBON IS LIFE

Let's face it, friends; we've got a problem and it's a BIG one...

WASTE MATERIAL and a lot of it!

Unfortunately, we've done a very poor job at managing our waste output during the past several decades. It seems we've adopted an "out-of-sight/out-of-mind" attitude in processing many of the byproducts of everyday "life" since most of these waste materials are buried in landfills which are quickly filling to beyond capacity.

Not only that, but we've also exacerbated the issue with other mass production processes which yield byproduct volumes and materials not suited for landfill disposal. Product volumes from agricultural, industrial and food processing have reached proportions in which our population is having difficulty dealing with in a sustainable fashion with antiquated means.

So... what's the answer to this difficult question of **MANAGING WASTE** while being a **GOOD STEWARD OF OUR ENVIRONMENT** which includes the **RESPONSIBLE USE OF ENERGY** while **PRODUCING A VALUABLE PRODUCT?**

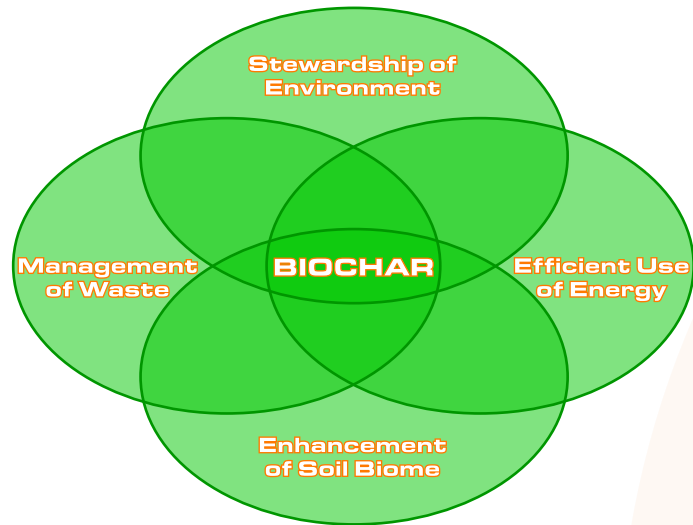
The answer is simple... **BIOCHAR.**



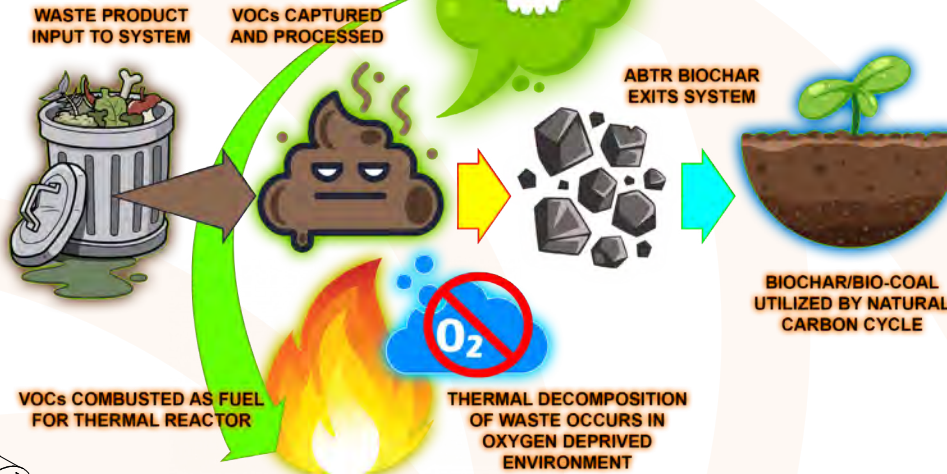
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Anaerobic Biomass Thermal Reaction - 101

Yeah, we get it... "Anaerobic Biomass Thermal Reaction" (ABTR) for Biochar Production sounds like a complicated process, huh? However, the concept is really quite simple once the basics are explained and understood.



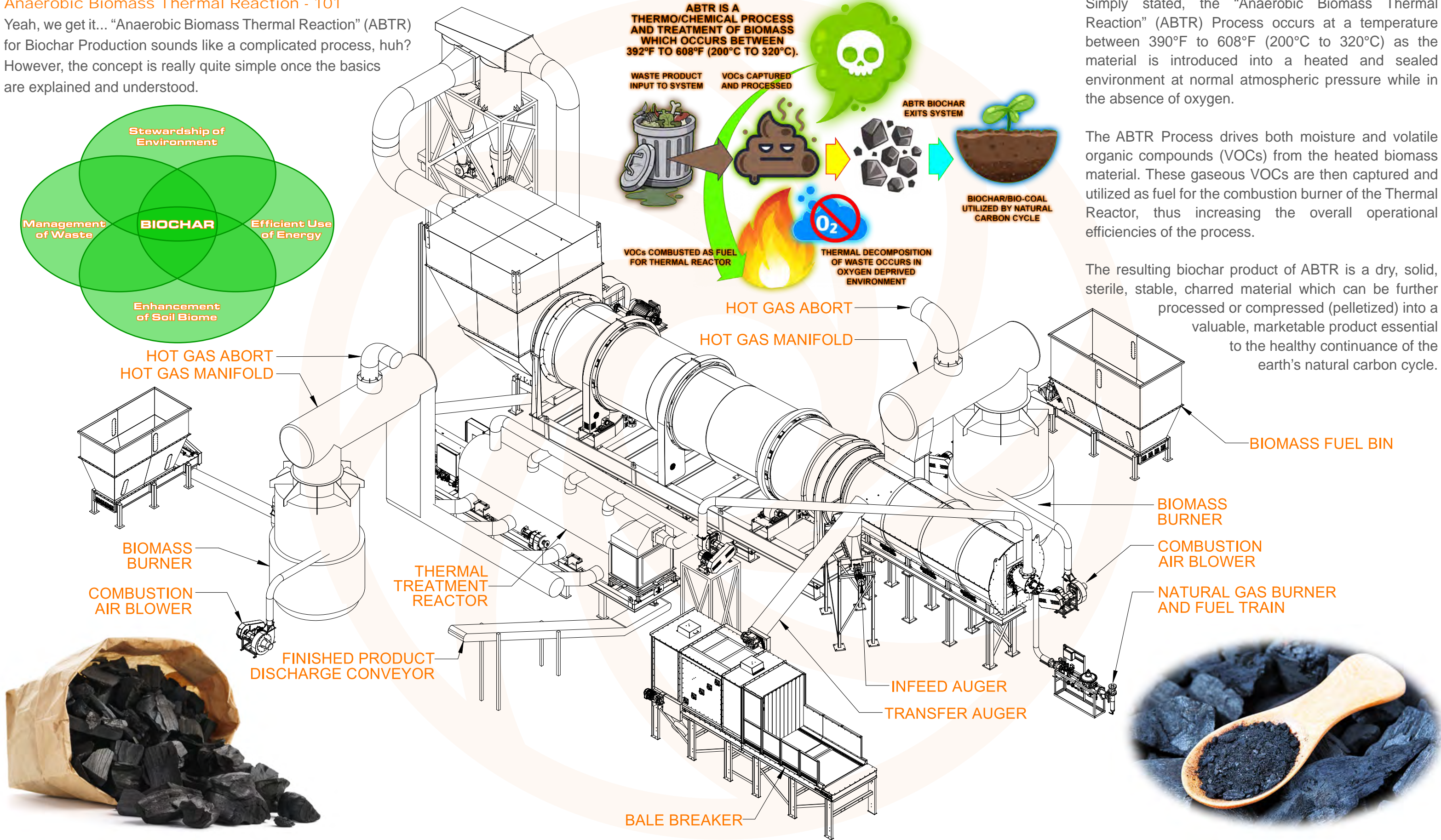
ABTR IS A THERMO/CHEMICAL PROCESS AND TREATMENT OF BIOMASS WHICH OCCURS BETWEEN 392°F TO 608°F (200°C TO 320°C).



Simply stated, the "Anaerobic Biomass Thermal Reaction" (ABTR) Process occurs at a temperature between 390°F to 608°F (200°C to 320°C) as the material is introduced into a heated and sealed environment at normal atmospheric pressure while in the absence of oxygen.

The ABTR Process drives both moisture and volatile organic compounds (VOCs) from the heated biomass material. These gaseous VOCs are then captured and utilized as fuel for the combustion burner of the Thermal Reactor, thus increasing the overall operational efficiencies of the process.

The resulting biochar product of ABTR is a dry, solid, sterile, stable, charred material which can be further processed or compressed (pelletized) into a valuable, marketable product essential to the healthy continuance of the earth's natural carbon cycle.



YESTERDAY'S WASTE. TOMORROW'S WONDER.



Production Waste Management

Waste Biomass from high-volume production, agricultural or materials processing has introduced additional pressures into our waste management systems. Furthermore, this type of biomass often contains volatiles or biopolymers which may be hazardous if released into the environment or atmosphere.

Cellulose, hemicellulose and lignin partially decompose during the Anaerobic Biomass Thermal Reaction process, however, these VOCs are entrapped, collected and eradicated as fuel via the ABTR burner system.

Likewise, as any animal waste products (manures) are heated, the naturally occurring off-gassing of VOCs contained within these materials during the ABTR Process is captured and consumed as fuel by the Thermal Reactor's burner combustion.



Landfill Waste Management

ABTR Processing of Landfill Waste is of particular concern as we are rapidly consuming the dwindling space within these strained facilities. Those who endeavor to create a valuable product from this waste material will be considered the true pioneers of waste management in the future.

After this biomass has been processed via ABTR, it may be further densified (refined into pellets or briquettes) for utilization in countless endeavors involving energy consumption. Biochar created by the ABTR Process has an energy density approaching that of natural anthracite coal in total BTU content and value.

Biochar is the transformation of yesterday's waste into tomorrow's wonder and we're here to help you squeeze valuable profit from burdensome refuse.



What about that "other waste."

Yeah, the kind of waste material that no one wants to talk about but is piling up fast with fewer and fewer places to put it. Agricultural waste products are a rapidly growing concern for all, including those who don't actually "till the ground."

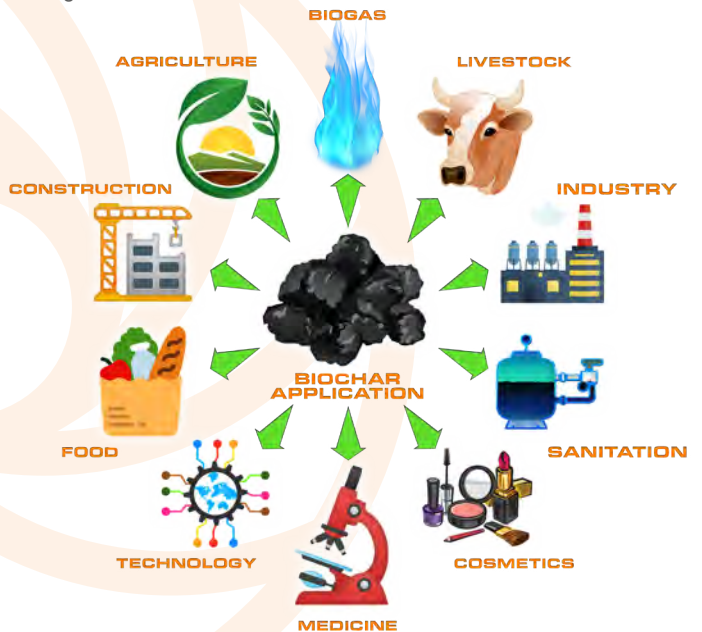
Anaerobic Biomass Thermal Reaction is ideal for manures and waste animal bedding products since the temperatures integral to the biochar process eliminate the naturally occurring organics present in this type of waste material.

So... what does this mean? Well, should the ABTR processed manures ever become wet post-processing, the odor and health hazards of the original materials have been completely eliminated and removed from the sterile biochar which may now be marketed as a viable and valuable product with a multitude of applications.

Biochar Applications

The most common and current uses and applications for biochar cover a broad spectrum of possibilities. As we've all been called to be responsible caretakers and stewards of our earth and our environment which are carbon-based, a diverse and expanding number of biochar applications is currently in use or being developed to assist us in these noble endeavors.

So, just what can be done with biochar after it is produced via ABTR? As seen in the graphic below, the possibilities are almost endless since the world in which we live in is carbon-based. Simply stated, the carbon is being returned to its origination point with a responsible use of energy in management of our waste material.



Biochar Just Makes Good Sense... both for your business operations and in being a good steward of natural resources.

- ⊗ **Energy** - Biocoal, Biogas, Syngas and other synthetic fuel possibilities may be derived from the biochar and ABTR processes.
- ⊗ **Agriculture**: The "soil biome" is enriched with the use of biochar which aids in moisture retention and facilitates water drainage.
- ⊗ **Construction**: Synthetic building materials utilizing biochar products are far superior in strength and longevity to conventional materials.
- ⊗ **Food Production**: Utilizing biochar in the soil reduces acidity while improving microbial properties and electrical conductivity of surrounding soil biome for increased flora productivity.
- ⊗ **Technology**: Biochar utilization in technology includes applications for semi conductors, batteries and electromagnetic shielding.
- ⊗ **Medicine**: May be used in detoxification or as a carrier for active pharmaceutical ingredients, cataplasms or poultices, insect bites, abscesses or eczema.
- ⊗ **Cosmetics**: Biochar is currently being used in soaps, skin cream and therapeutic bath additives.
- ⊗ **Sanitation**: Current applications include exhaust filters for controlling emissions, room air filters, micro-filters and macro-filters for water purification.
- ⊗ **Industry**: Industrial materials such as carbon filters, plastics, paints, fabrics and thermal insulation are being employed today.
- ⊗ **Livestock**: Numerous applications for livestock enrichment are possible including a silage agent, litter additive and water treatment products.



**FIRM PROFITS IN
FORCED CONVECTION.**

XT Series

XT-12.4 TRAY DRYER

Proven Technology for Efficient
Dehydration of Large Volumes.

**An Effective and Enduring Equation...
Time + Temperature + Convection =
Operational Success and High Profits**

While the technology may not be new, Midwest Custom Solutions will help you design, engineer and build your next forced convection, continuous conveyance Tray Drying System specifically created for your own product's unique operational requirements and dehydration essentials.

Simply explained, "Forced Convection" consists of large-volumes of controlled, heated air circulated over and through the process material which has a high-moisture content. As the dry, heated air is moving around the material, moisture is drawn out of the product in the form of water vapor or steam. The water-saturated air is then removed from the dryer via a process air exhausting system.

This simple dehydration technique has been utilized for eons, however, when large volumes of valuable product material like yours requires precise, specific results, MCS is here to partner with you in providing a custom solution perfect for your individual critical needs and operational requirements.



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FIRM PROFITS IN FORCED CONVECTION.

As with all systems and products manufactured by Midwest Custom Solutions, we've selected only the highest-quality components and materials for our XT Series Tray Dryers including industry-leading bearings, burners, motors and drive mechanisms for the perforated tray conveyor assembly.

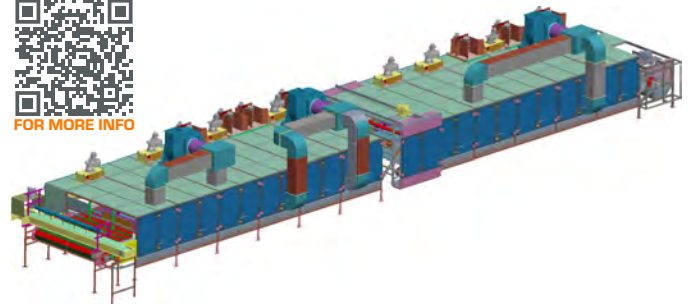
Each frame section of our XT Series Tray Dryer System is constructed of high-quality steel tubing and precision assembled by our highly-skilled fabrication technicians. All welds are meticulously placed with artisan craftsmanship and intent yielding high material penetration which guarantees countless hours and many years of worry-free processing.

Burner assemblies and Burner Management Systems (BMS) for our XT Series Dryers are only selected from industry-leading manufacturers and suppliers for their high-efficiency operation and extreme durability delivering controlled, precise and extraordinarily-efficient service air to your dehydration operations.



Trays for the XT Series Dryer Conveyor System may be customized to your individual needs and requirements. Material selections, tray formation and tray perforation size and placement are critically essential to the success your unique processing requirements.

At MCS, we know it's not just about how process air moves through the dryer, but how process air is moved through your product to provide the most thorough, complete and precise moisture content when material exits the dryer.



Stainless Steel is used throughout the XT design to provide extreme durability in harsh or acidic environments. Exterior panels, access doors, trays and all critical components are engineered and built with durability and longevity as key, essential criteria.

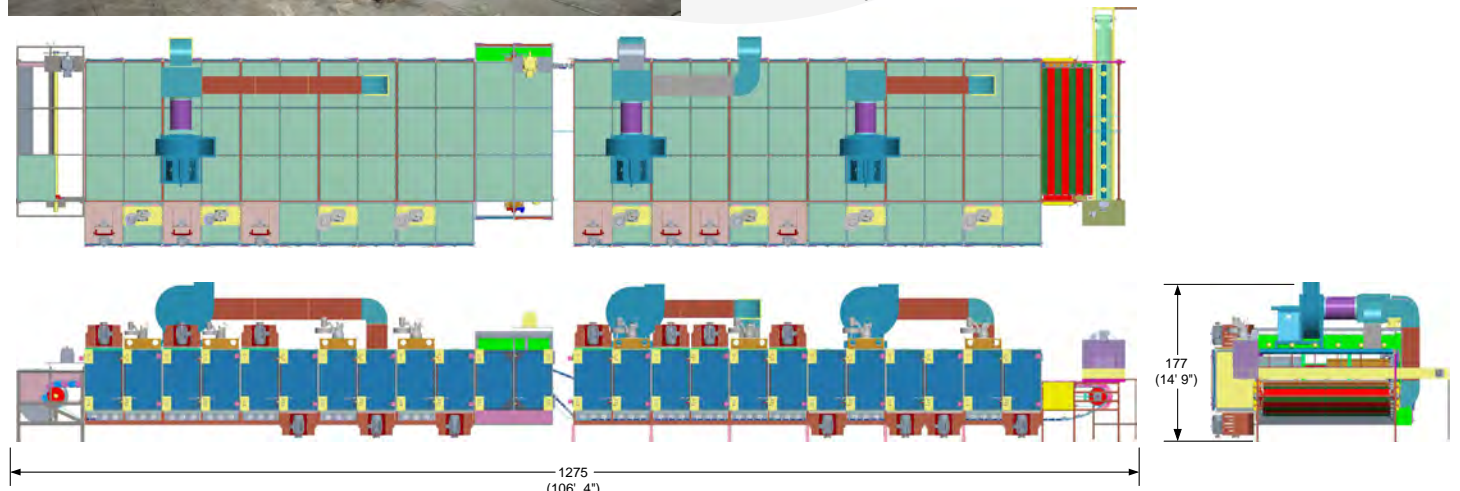


Fan assemblies and frames are precision engineered and assembled which feature balanced rotor spools for smooth, quiet, dependable movement of large volumes of air. Our fans are designed with personal protection of your technicians in mind since your operator's safety will always remain our top priority at MCS.

We've strategically incorporated lifting lugs and pick-points into the XT Series design for easy, quick and worry free movement and lifting of heavy components - something few consider until several thousand pounds of steel are hanging in the air from the boom of a crane.

As with all of the products manufactured at Midwest Custom Solutions, our XT Series Tray Dryers are finely finished with high-quality, industry-leading paints, coatings and sealing products.

We diligently strive to build value into every facet of our products, ensuring all of our equipment provides the longest-lasting, greatest value for your investment dollars.





**MOISTURE REMOVED
IS PROFIT GAINED.**

XD Series

XD-36 ROTARY DRUM DRYER

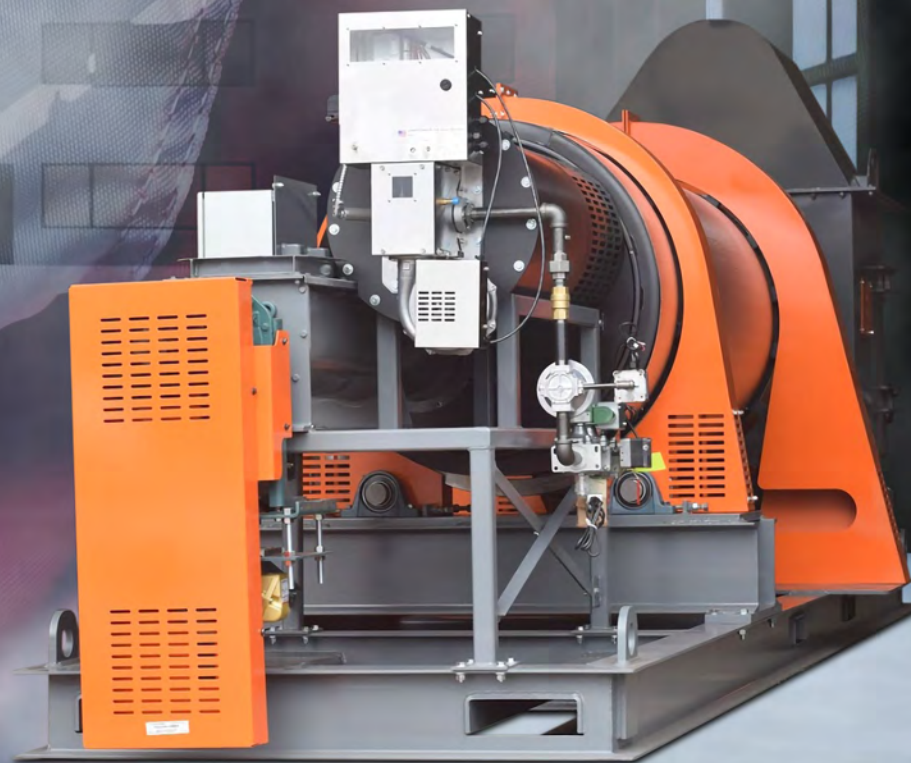
Designed to last. Built like a tank.

Our XD-36 will be your most valued equipment investment.

Simple. Efficient. Effective. Dependable.
Bulk Dehydration at it's finest...
it just doesn't get any better.

As with all our products engineered and manufactured by Midwest Custom Solutions, the XD-36 Rotary Drum Dryer is expressly built in the premise of providing you with the most efficient, durable, dependable, rugged piece of industrial dehydration equipment for your investment dollars. We know you have high expectations of your operating assets - at MCS, we strive to meet and exceed those expectations on a daily basis.

With this lofty goal in mind, we've selected only the highest quality materials for our XD Series of Dryers. Our highly skilled fabrication technicians have years of experience in their craft and know how to do things "the right way." You can see their craftsmanship in each and every piece of equipment that leaves the MCS facilities.



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MOISTURE REMOVED IS PROFIT GAINED.

We've selected only the highest-quality components for our XD Series Dryers including industry-leading bearings, idler roller wheels and power mechanism for the trommel drive assembly.

All flights within the trommel are precision engineered, laser cut, artfully machined and skillfully installed to ensure effective material movement and efficient product drying in addition to providing long-lasting wear surfaces.

Burner assemblies for our XD Series Dryers are stainless steel in construction and selected for their high-efficiency operation and extreme durability providing countless hours of safe, worry-free service in your processing operations.

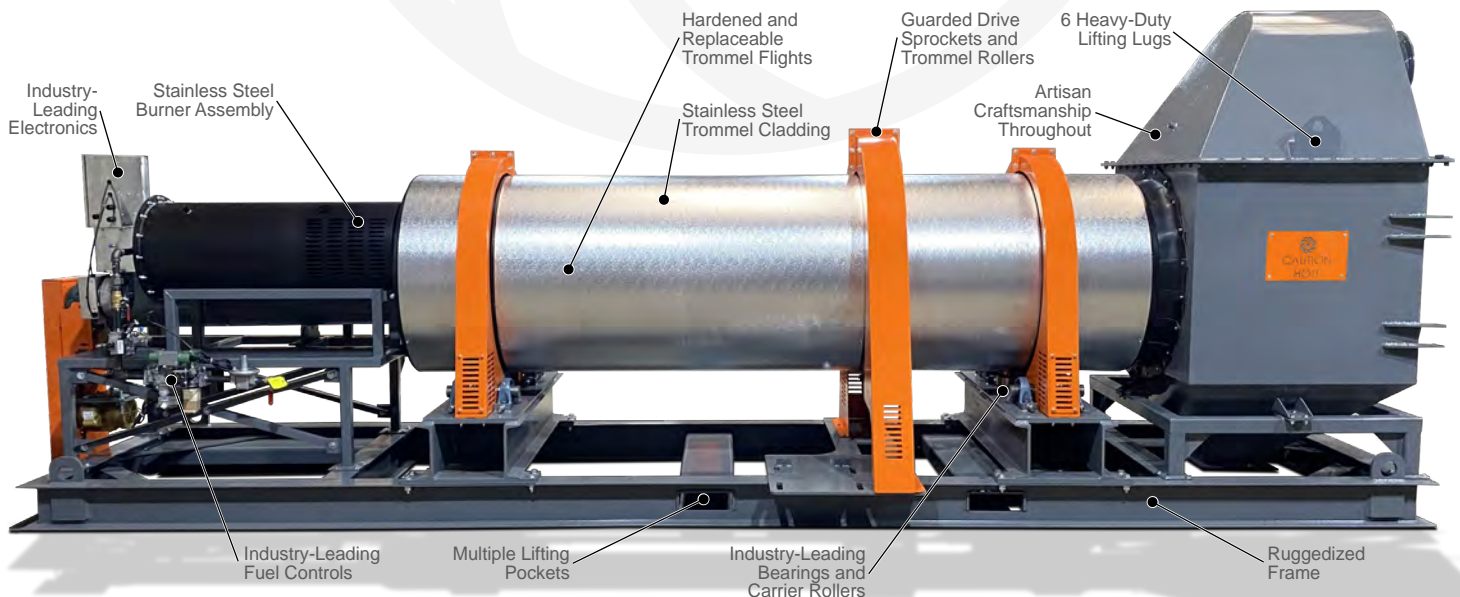
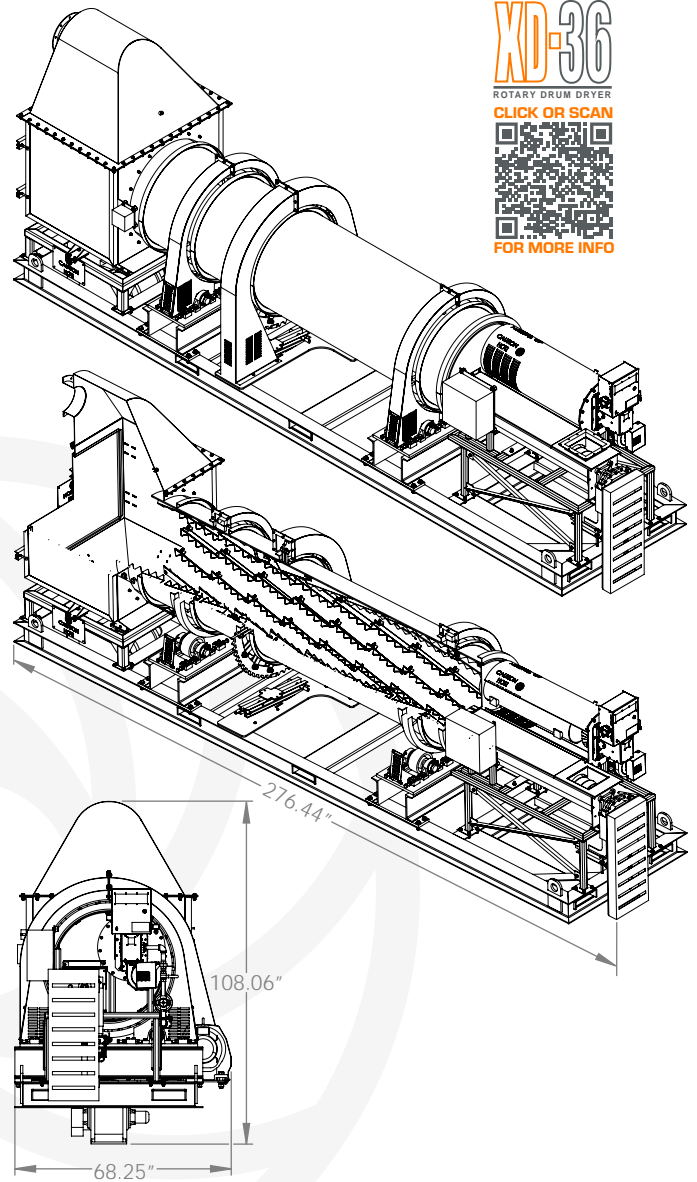
Our current engineering utilizes natural gas as a fuel source, however, speak with our sales and technical support staff should propane be desired as your fuel of choice.

We've strategically incorporated lifting pockets and pick-points into the XD Series design for easy, quick and worry free movement and lifting - something few consider until several thousand pounds of steel are hanging in the air from the boom of a crane.

Trommel drive mechanism and pinch-point guards, burner heat shields and warning placards are mindfully placed with personal protection in mind since your operator's safety will always remain our top priority at Midwest Custom Solutions.

As with all of the products manufactured at Midwest Custom Solutions, our XD Series Dryers are finely finished with high-quality, industry-leading paints, coatings and sealing products.

We diligently strive to build value into every facet of our products, ensuring all of our equipment provides the longest-lasting, greatest value for your investment dollars.





**MOISTURE REMOVED
IS PROFIT GAINED.**

XD Series

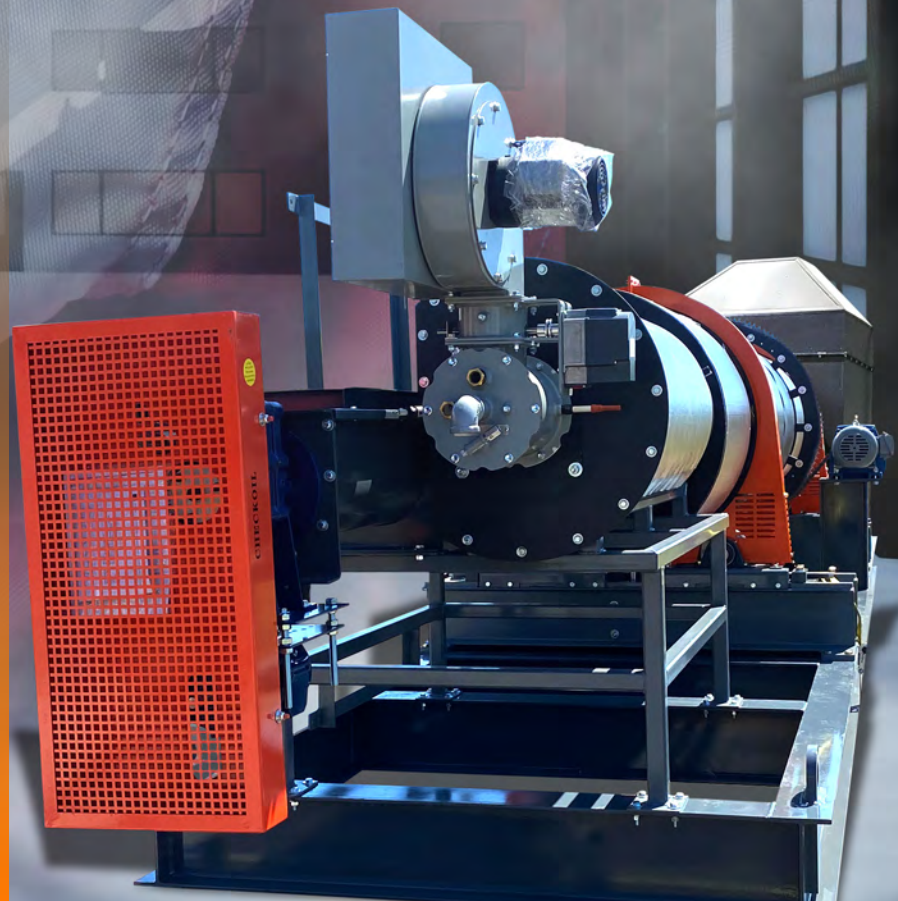
XD-36 Mk.2 ROTARY DRUM DRYER

Designed to last. Built like a tank.
Our XD-36 Mk.2 will be your most
valued equipment investment.

Simple. Efficient. Effective. Dependable.
Bulk Dehydration at its finest...
it just doesn't get any better.

As with all our products engineered and manufactured by Midwest Custom Solutions, the XD-36 Mk.2 Rotary Drum Dryer is expressly built in the premise of providing you with the most efficient, durable, dependable, rugged piece of industrial dehydration equipment for your investment dollars. We know you have high expectations of your operating assets - at MCS, we strive to meet and exceed those expectations on a daily basis.

With this lofty goal in mind, we've selected only the highest quality materials for our XD Series of Dryers. Our highly skilled fabrication technicians have years of experience in their craft and know how to do things "the right way." You can see their craftsmanship in each and every piece of equipment which leaves the MCS manufacturing facilities.



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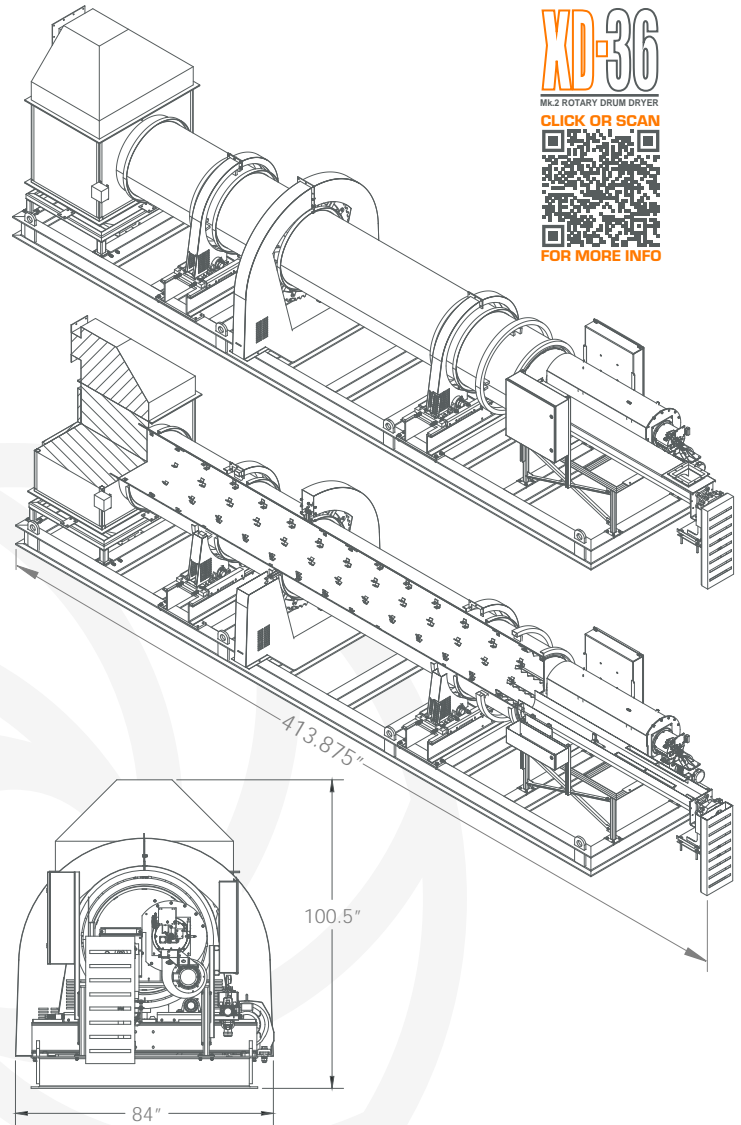
MOISTURE REMOVED IS PROFIT GAINED.

We've selected only the highest-quality components for our XD Series Dryers including industry-leading bearings, idler roller wheels and power mechanism for the trommel drive assembly.

All flights within the trommel are precision engineered, laser cut, artfully machined and skillfully installed to ensure effective material movement and efficient product drying in addition to providing long-lasting wear surfaces.

Burner assemblies for our XD Series Dryers are stainless steel in construction and selected for their high-efficiency operation and extreme durability providing countless hours of safe, worry-free service in your processing operations.

Fuel sources for the XD-36 Mk.2 may be customized to your unique operational and processing requirements. Be sure to speak with our sales and technical support staff regarding your fuel of choice or one which is most appropriate and suitable for your product.

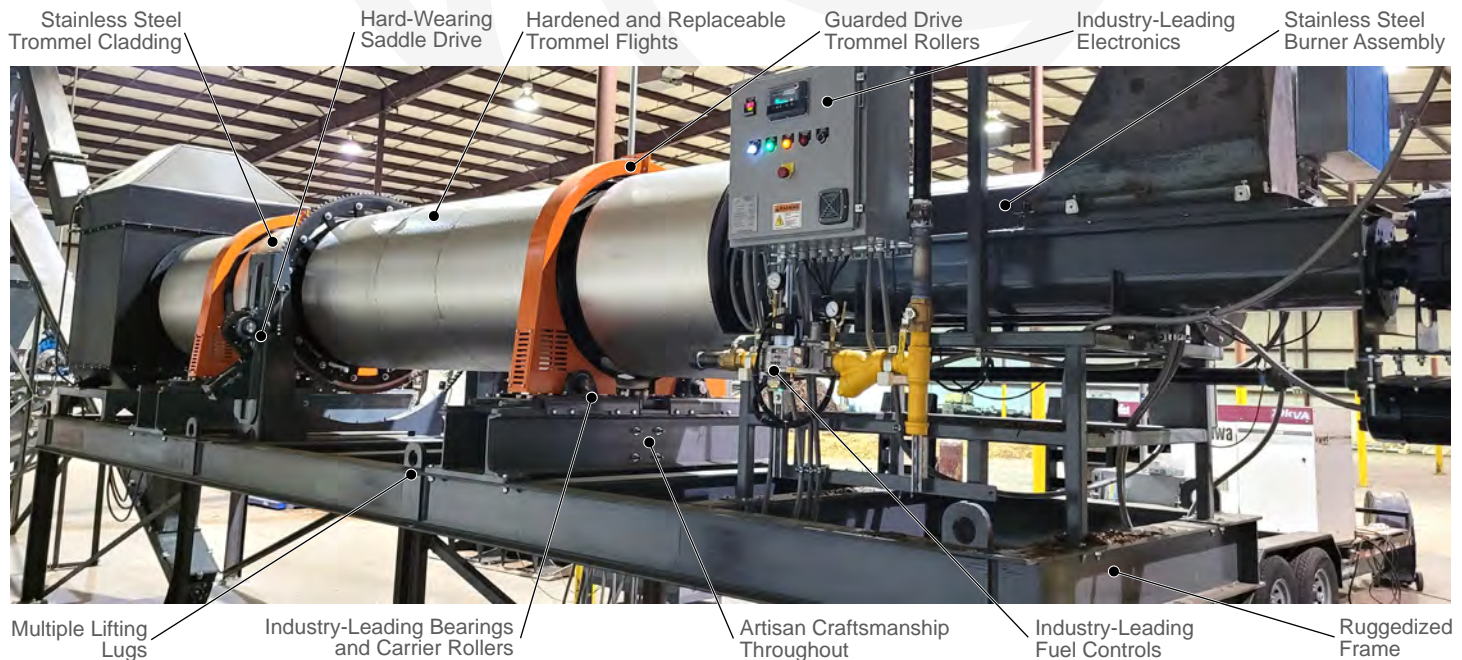


We've strategically incorporated lifting lugs and pick-points into the XD Series design for easy, quick and worry free movement and lifting - something few consider until several thousand pounds of steel are hanging in the air from the boom of a crane.

Trommel drive mechanism and pinch-point guards, burner heat shields and warning placards are mindfully placed with personal protection in mind since your operator's safety will always remain our top priority at Midwest Custom Solutions.

As with all of the products manufactured at Midwest Custom Solutions, our XD Series Dryers are finely finished with high-quality, industry-leading paints, coatings and sealing products.

We diligently strive to build value into every facet of our products, ensuring all of our equipment provides the longest-lasting, greatest value for your investment dollars.





**HIGH VELOCITY.
LOW RETENTION.**

XFD Series

XFD-48 FLASH DRYER

High Efficiency. Low Retention Time.

Large Capacity. Small Footprint.

Who could ask for more?

Our XFD Series Flash Dryers offer a cost-effective means of drying many high-moisture materials.

MCS Flash Dryers may just be the simple solution to your complex Industrial Dehydration System equation.

The process of "Flash Drying" involves the controlled introduction of wet product into a high-velocity, high-temperature stream of gas in which the moisture is "flashed" off or quickly driven out of the material being dehydrated. While the process may seem simple in theory, Midwest Custom Solutions is here to ensure it also works for you in application.

Knowing and understanding the rigorous operating conditions and strenuous processing environments that Industrial Flash Drying imposes on the processing equipment involved, MCS has engineered durability, strength and longevity into the XFD-48 design, and our artisan manufacturing technicians build hardwearing durability into every aspect of your new drying system.



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HIGH VELOCITY. LOW RETENTION.

The aft bulkhead and burner mount have been structurally reinforced to withstand the unseen forces of thermal cycling, and the entire dryer assembly is mounted on a muscle-bound piece of structural artwork to ensure your product investment is resolutely protected.

All stress-points and thermal concerns have been arduously hardened against the harsh material processing demands of your unique dehydrating operations.

Burner assemblies for our XFD Series Dryers are selected for their high-efficiency operation and extreme durability providing countless hours of safe, worry-free service in your processing operations.

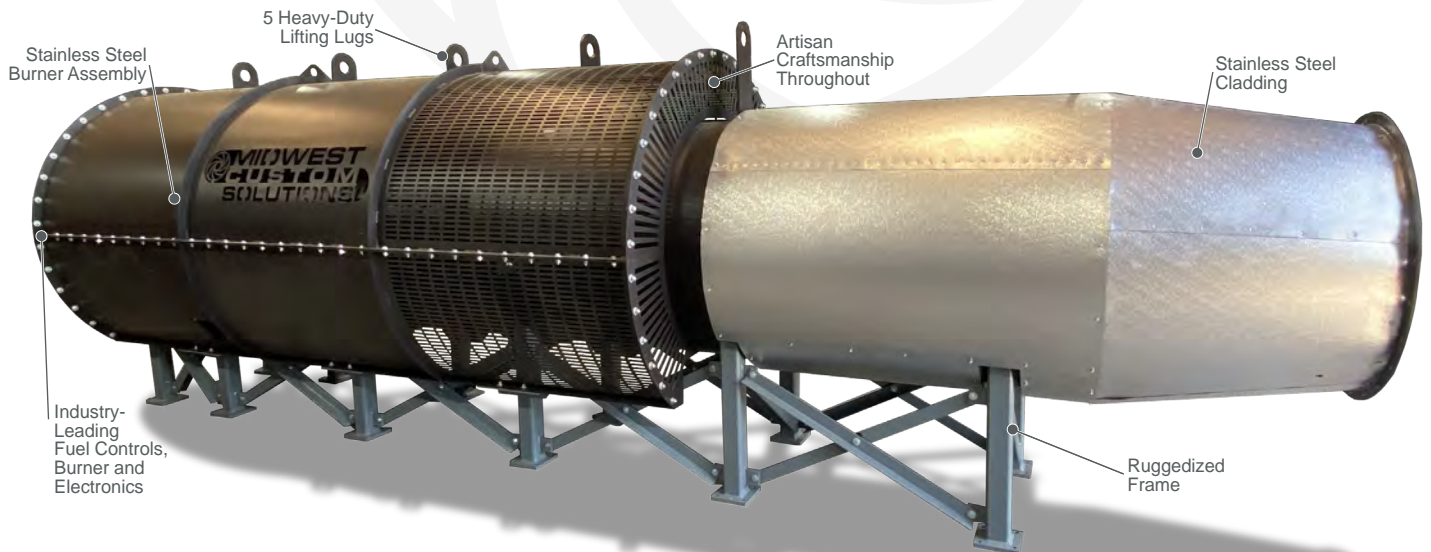
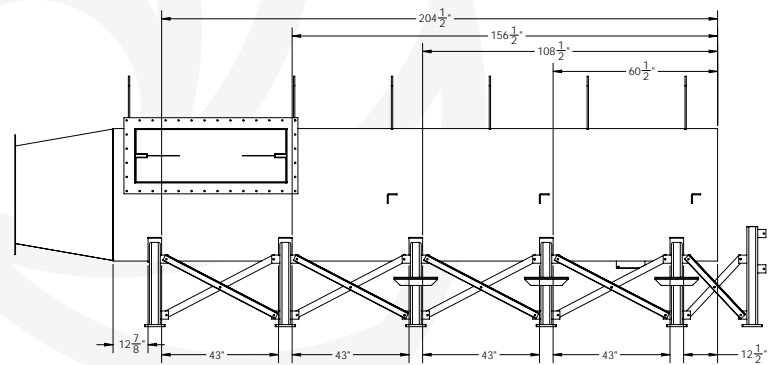
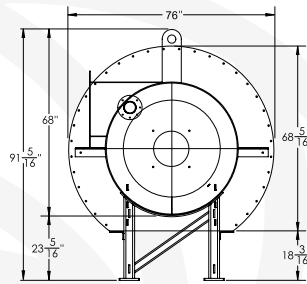
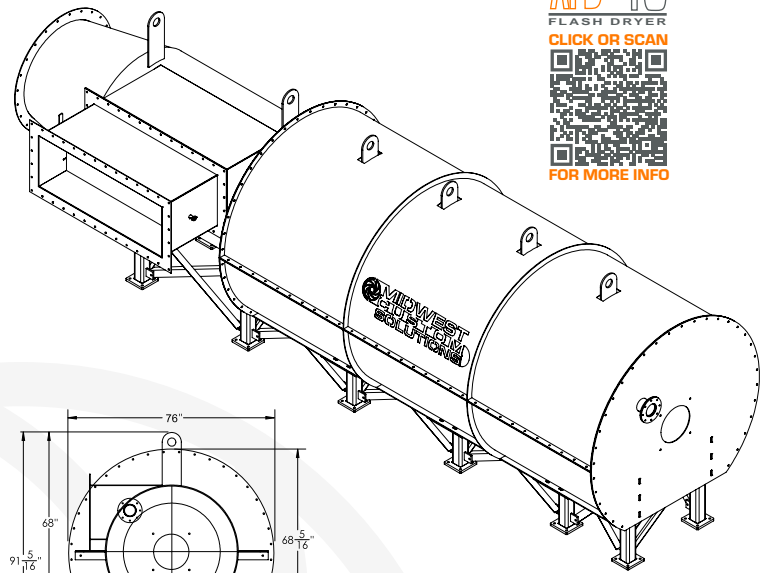
Burner Assemblies are selected only from industry-leading suppliers since MCS will *never* compromise on sub-system installations.

We've strategically incorporated lifting lugs and pick-points into the XFD Series design for easy, quick and worry free movement and lifting - something few consider until several thousand pounds of steel are hanging in the air from the boom of a crane.

Hot Surfaces are heat shielded and protected with high-temperature coatings while the flash dryer's outlet is shrouded with mineral-fiber insulation with an overlay of stainless steel cladding. Your operator's safety and well-being will always remain our top priority at Midwest Custom Solutions.

As with all of the products manufactured at Midwest Custom Solutions, our XFD Series Flash Dryers are finely finished with high-quality, industry-leading paints, coatings and sealing products.

We diligently strive to build value into every facet of our products, ensuring all of our equipment provides the longest-lasting, greatest value for your investment dollars.





PERFECT PELLETS.
EVERY TIME.

XC Series

DRYER/COOLER

A new era in cooling innovation has arrived. Introducing the most advanced pellet cooling technology available on the market today: The VertiCool XC Series Dryer/Coolers from Midwest Custom Solutions are ready to stand up to your toughest pellet processing challenges with the safest, most efficient design offered in our industry. Not only do our XC Series Dryer/Coolers have the cutting-edge, reliable, rugged design you've come to expect, but also provides 50% more throughput of finished product per square foot of floor space than other coolers on the market today. Are you ready to spend less on every ton of perfect pellets?

Your Pellets. Our Priority.

- ❖ Accelerated Drying/Cooling Times
- ❖ Production Data Available
- ❖ PLC Controlled Throughput
- ❖ Improved Safety
- ❖ Proactive Audit Awareness
- ❖ Curtailed Emissions
- ❖ Continuous Moisture Monitoring Available



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XC Series

DRYER/COOLER



Heavy-duty canvas seals ride on all air intake slats providing increased efficiency and air control through the pellet cooling columns. As pellets are dried, cooled and move through the columns, weight of the processed product opens the slats as cooling air is required. We've even engineered accommodations for optional exhaust air connections on either side of our XC Series Dryer/Coolers.



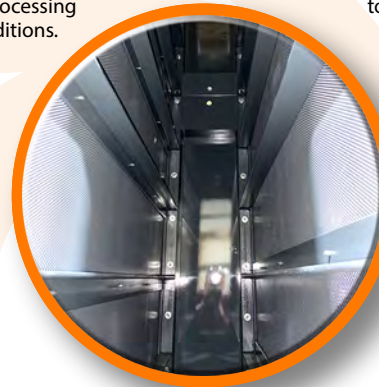
Heavy-gauge outflow vanes deliver a precise, metered, gentle and predictable flow of processed pellets through the XC's individual cooling columns. Engineered for dependability, durability and corrosion-resistance, the vanes rotate on precision milled shafts, long-wearing bushings and industry-leading, serviceable bearings coupled to a powerful actuation drive. Our outflow vanes are what set the XC Series Dryer/Coolers apart from antiquated systems.



Only high-quality finishes, paints, seals and fasteners are used in our XC Series, ensuring you receive countless hours of worry-free service and operation while combating equipment corrosion and deterioration in your most harsh of operating environments and processing conditions.



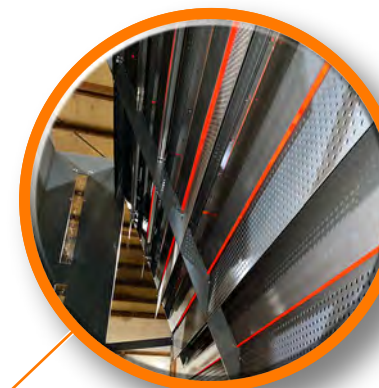
Viewing Ports have been engineered into the XC Series product drying column providing your technicians with real-time visual reference of processing volumes. Avoiding time-consuming downtime due to equipment overfill is a costly inefficiency we're here to help you avoid and prevent.



Heavy-gauge steel framing members and cooling column panel sections have been selected for our XC Series design to further ensure your new Dryer/Cooler provides the highest returns while operating in environments where moisture and corrosion will attack your equipment investment most aggressively.



All of our XC Series Dryer/Coolers feature a muscle-bound actuation system providing for a powerful, yet, precise movement of the outflow vanes below the cooling columns. We know that equipment placement within your processing operations isn't always conducive to regular maintenance, so we build strength into your investment for added "piece of mind" and operational assurance.



Our XC Series design allows for quick opening of the dryer/cooler for inspection of all perforated panel sections, ensuring your maintenance and cleaning duties are simple, easy and time-effective. We know that keeping your equipment in top-working order and meticulously clean is an important focus to your processing operations with improved operational efficiencies, increased airflow across the product column and improved safety with reduced processing residue build-up.



Only industry-leading serviceable and sealed bearings, precision-milled shafts and locking collars are utilized in the construction of our XC Series Dryer/Coolers. At MCS, we know you expect to receive the highest returns for your investment dollar, therefore we use the only the highest-quality components in the construction of ALL of our products, providing you with countless hours of predictable, reliable and durable service in your processing operations.

PERFECT PELLETS. EVERY TIME.

We proudly present to you a better way to achieve precision in the art of pelleting. Your endeavor of achieving perfect pellets every time is closer than you may have imagined.

Are you guessing or do you know the exact moment your product is cool?

The name of your game is "efficiency," and we know exactly how to play. The XC Series Dryer/Coolers from Midwest Custom Solutions offer a fully automated control system with complete monitoring of product moisture and temperature levels throughout the pellet cooling process. This means you maximize your product throughput and minimize your process energy consumption to achieve the greatest operational efficiencies possible.

Are you running the perfect CFM/ton?

Incomplete drying and cooling is an integral function of the pellet system ahead of the cooler, but how do you currently know you have a problem? Processing your pellets inefficiently means you're wasting money consuming time, electrical power and cooling air needlessly. The XC Series design is specifically engineered to utilize the precise amount of CFM to automatically match the product throughput of your equipment. Our sensor system will immediately alert you to conditions which may be addressed before they grow into rejected loads. With our XC Series you'll have precise measurement and control over moisture levels at the cooler.

Are you over-drying your pellets in the cooler, and thereby giving away product weight and income?

The moisture content of your processed pellets is a delicate balance. The XC Series Dryer/Coolers are explicitly designed to provide precise control over your pellet moisture content and temperature levels, thus eliminating under-processing AND over-processing. Our equipment doesn't use any more air than is necessary to cool your product. Once cooled, processed pellets are discharged automatically.

Do you have data points for verification of a safe, cool and dry product? Are you guessing or tracking?

We offer an optional PLC Panel control for our XC Series Dryer/Coolers to ensure your operations are even easier and more precise. Industry-leading temperature and moisture sensors in our design are installed as standard features to eliminate the "guesswork" which is costing you money in inefficient operations.

What wasted CFM are you paying to filter?

The air we breathe is plentiful, but the filtration of your processing air is not.

Pinpointing the amount of energy to accomplish your moisture and temperature goals is the only way to win in the battle of efficiencies.

What extra processing emissions are you sending into the atmosphere?

Emissions play a major role in pellet processing and are a growing concern in all process plants today. Our XC Series Dryer/Coolers stand at the forefront of caring about the air we breathe and the safety of the communities we serve. Applying the equipment's design efficiencies will allow you to use just the right amount of air to achieve your desired moisture content and temperature levels. Other designs use excess air inefficiently to guess at your desired targets.

What does a cooler fire cost you?

We mitigate and diligently strive to eliminate those concerns. The XC Series technology continuously monitors the temperature level and moisture content to mitigate any fire risks. Hot spots are a thing of the past with the equipment's advanced detection and fire suppression control. Ease of cleaning has also been engineered into our XC Series product line with hinged louver panels which swing-out providing simple access to critical components for maintenance and debris removal.

Do you have a camera system for monitored safety inside your existing cooler?

Midwest Custom Solutions offers an optional camera installation to ensure automated cleaning is being performed appropriately and thoroughly. Rapid identification of processing residues is quickly provided, and preventative maintenance is easily verified by all in your operations.

Can you get more throughput out of your cooler?

If you're using antiquated processing techniques, the answer is: "probably not." We offer five versions of our XC Series Dryer/Coolers to accommodate your unique equipment setup or individual processing requirements. When operational size restrictions present installation concerns, one of the XC options will provide 50% more throughput of finished product while occupying the same footprint.

Only high-quality materials are used throughout our products to ensure years of carefree, efficient operation, and we are here to partner with you to help your business grow to the next level.

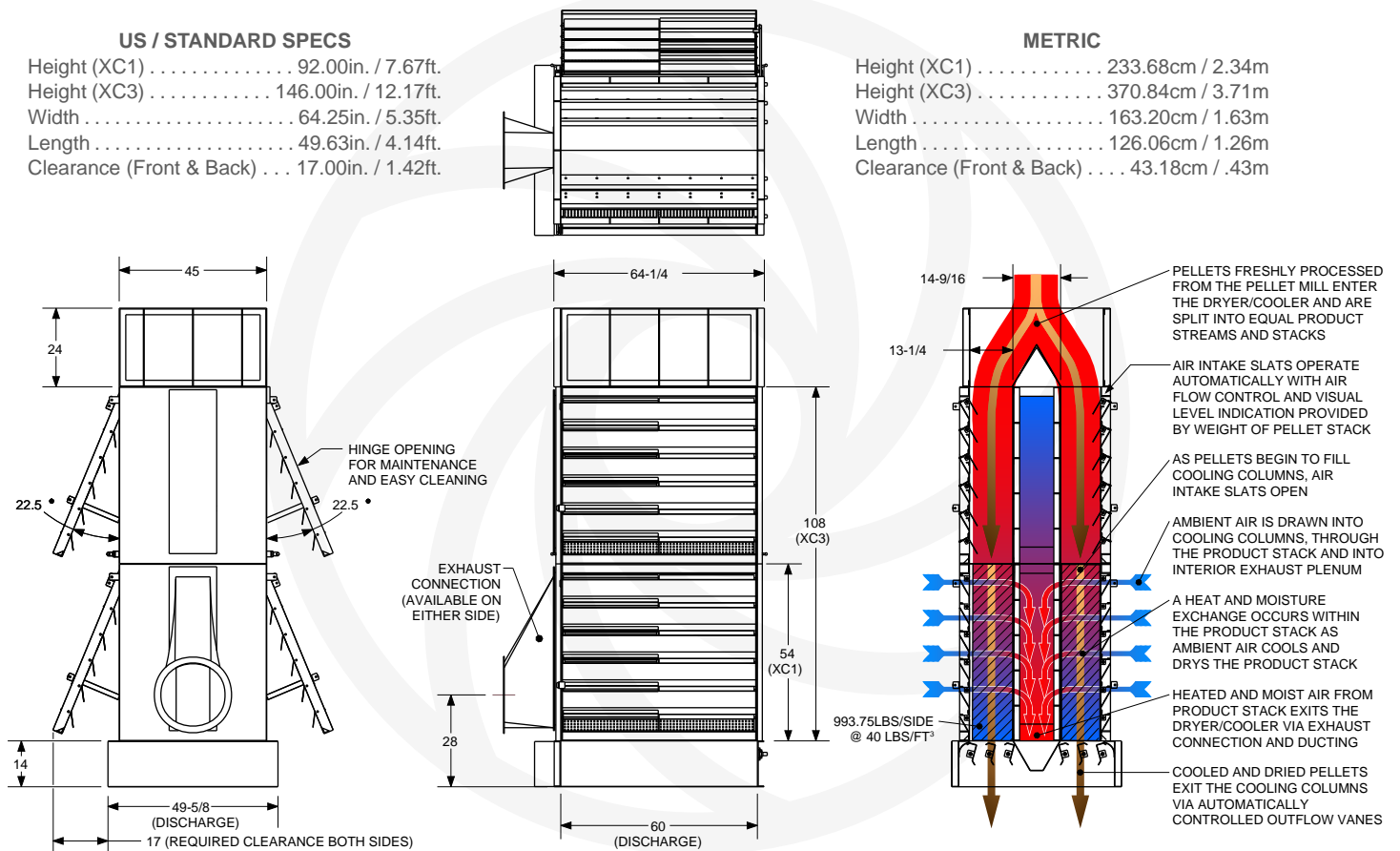
Contact us today to experience how our equipment will help your business thrive.

US / STANDARD SPECS

Height (XC1) 92.00in. / 7.67ft.
 Height (XC3) 146.00in. / 12.17ft.
 Width 64.25in. / 5.35ft.
 Length 49.63in. / 4.14ft.
 Clearance (Front & Back) ... 17.00in. / 1.42ft.

METRIC

Height (XC1) 233.68cm / 2.34m
 Height (XC3) 370.84cm / 3.71m
 Width 163.20cm / 1.63m
 Length 126.06cm / 1.26m
 Clearance (Front & Back) ... 43.18cm / .43m



To get a perfect one of these...



...you first need a perfect bunch of these.



Are your hops up to the challenge?

Controlling the temperature and moisture content of pellets during hop processing will always be a primary concern while managing your harvest.

We know the essential oils contained within each of these little cones is quite volatile and extraordinarily delicate. Failure to control temperature, moisture content and oxidation during your hop pelletization process could degrade the flavors and aromas of these tiny wonders... something you've worked so hard to nurture and maintain during your growing season.

Utilizing the **XC Series Dryer/Coolers** from Midwest Custom Solutions is the perfect way to eliminate those concerns. Our **XC Series** simultaneously reduce temperature and moisture content within processed pelletized hops while protecting and preserving delicate essential oils like humulene and myrcene.

Five versions of our **XC Series Dryer/Coolers** have been designed and engineered to accommodate a variety of processing and operational height limitations. All feature an innovative, rugged design which offers 50% more finished product throughput per square foot of floor space than other coolers on the market today.

Processed hop pellets are gravity fed and gently moved through the unit with automatic control of flow and discharge. Additionally, an optional touchscreen control panel is offered to ensure your operations are even easier and more precise. Industry-leading temperature and moisture sensors in our **XC Series** design are installed as standard features.

You work hard for your crop harvest. We're here to help ensure you get the most from it. Your Pellets. Our Priority.




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Working with one
of these is good
for your body.

Warming by some
of these is good
for your soul.

Heating with a bunch of these is good
for your peace of mind and bottom line.

Are your wood pellets up to the challenge?

The economic benefits of heating with wood pellets are difficult to deny with operating efficiencies of over 85%. However, those cost savings rapidly decrease depending on the overall finished quality of this unique fuel product.

Controlling the temperature and moisture content of wood pellets during processing and packaging will always be a primary concern while managing your production.

Failure to remedy pellet moisture content and temperature may lead to condensation during packaging or bulk storage promoting absorption or freezing with subsequent breakdown of product and reduction of operating efficiencies being the end result... something you've worked diligently to minimize.

The **XC Series Dryer/Coolers** from Midwest Custom Solutions are the perfect solution to eliminate those concerns, simultaneously reducing and conditioning pellet temperature while precisely metering the moisture content within processed wood pellets.

The gentle, efficient functionality engineered into our **XC Series Dryer/Coolers** protects and ensures the precise amount of moisture remains in your product investment while adjusting pellet temperatures to your exacting standards.

Over-drying and inefficient processing typical with antiquated, harsh processing techniques and methods are eliminated with our novel, intuitive monitoring systems supplemented by an innovative, cutting-edge, ruggedized design.

Processed wood pellets are gravity fed and gently moved through the unit with automatic control of flow and discharge. Additionally, an optional touchscreen control panel is offered to ensure your operations are even easier and more precise. State-of-the-art temperature and moisture sensors in the **XC Series** design are installed as standard features.

Screen cleaning and "hot spot" suppression control have also been incorporated into the design, and optional cameras may be installed to ensure automated cleaning is being performed appropriately and completely.

Five versions of our **XC Series Dryer/Coolers** have been designed and engineered to accommodate a variety of processing and operational height limitations while featuring an industry-leading innovative, rugged design which offers 50% more throughput while occupying the same footprint.

You work hard to provide a valued product to your customers efficiently. We're here to help make your job easier.



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To get a perfect one of these...



...you first need a perfect bunch of these.

Is your hemp up to the challenge?

Controlling the temperature and moisture content of pellets during hemp processing will always be a primary concern while managing your harvest.

We know the essential oils contained within your crop is quite volatile and extraordinarily delicate. Failure to control temperature and moisture content during your hemp pelletization process could degrade the overall effectiveness and unique properties of your finished product... something you've worked diligently to nurture and maintain during the growing season.

The **XC Series Dryer/Coolers** from Midwest Custom Solutions are the perfect solution to eliminate those concerns, simultaneously reducing and conditioning pellet temperature while precisely metering the moisture content within processed pelletized hemp.

The gentle, efficient functionality engineered into our **XC Series Dryer/Coolers** protects and preserves the delicate essential oils of your harvest investment.

Terpenes and trichomes which could be degraded with antiquated, harsh processing techniques and methods are preserved with our novel, intuitive monitoring sensors supplemented by an innovative, cutting-edge design.

Processed hemp pellets are gravity fed and gently moved through the unit with automatic control of flow and discharge. Additionally, an optional touchscreen control panel is offered to ensure your operations are even easier and more precise. State-of-the-art temperature and moisture sensors in the **XC Series** design are installed as standard features.

Three versions of our **XC Series Dryer/Coolers** have been designed and engineered to accommodate a variety of processing and operational height limitations while featuring an industry-leading innovative, rugged design which offers 50% more throughput while occupying the same footprint.

You work hard for your crop harvest. We're here to help ensure you get the most from it.



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To get a perfect one of these...



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Are your feed pellets up to the challenge?

The health benefits of providing livestock a nutritionally balanced diet including feed pellets are difficult to deny. However, those same dietary gains rapidly decrease when processing of this superior food source is not carefully managed and regulated.

Controlling the temperature and moisture content of livestock feed pellets during processing and packaging will always be a primary concern while accomplishing your production goals.

Failure to remedy pellet moisture content and temperature may lead to condensation during packaging or bulk storage promoting absorption or freezing with subsequent spoilage and breakdown of the product. The end result being a reduction of quality and palatability of the food source... something you've worked so diligently to minimize and carefully avoid.

The **XC Series Dryer/Coolers** from Midwest Custom Solutions are the perfect solution to eliminate those concerns, simultaneously reducing and conditioning pellet temperature while precisely metering the moisture content within your processed feed pellets.

The gentle, efficient functionality engineered into our **XC Series Dryer/Coolers** protects and ensures the precise amount of moisture remains in your product investment while adjusting pellet temperatures to your exacting standards.

Over-drying and inefficient processing typical with antiquated, harsh production techniques and methods are eliminated with our novel, intuitive monitoring systems supplemented by an innovative, cutting-edge, ruggedized design.

Processed feed pellets are gravity fed and gently moved through the unit with automatic control of flow and discharge. Additionally, an optional touchscreen control panel is offered to ensure your operations are even easier and more precise. State-of-the-art temperature and moisture sensors in the **XC Series** design are installed as standard features.

Screen cleaning and "hot spot" suppression control have also been incorporated into the design, and optional cameras may be installed to ensure automated cleaning is being performed appropriately and completely.

Five versions of our **XC Series Dryer/Coolers** have been designed and engineered to accommodate a variety of processing and operational height limitations while featuring an industry-leading innovative, rugged design which offers 50% more throughput while occupying the same footprint.

You work hard to provide a healthy, superior feed product to your customer's animals and livestock efficiently. We're here to help make your job easier.



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Are your feed pellets up to the challenge?

The health benefits of providing dairy herds a nutritionally balanced diet including feed pellets are difficult to deny. However, those same dietary gains rapidly decrease when processing of this superior food source is not carefully managed and regulated.

Controlling the temperature and moisture content of livestock feed pellets during processing and packaging will always be a primary concern while accomplishing your production goals.

Failure to remedy pellet moisture content and temperature may lead to condensation during packaging or bulk storage promoting absorption or freezing with subsequent spoilage and breakdown of the product. The end result being a reduction of quality and palatability of the food source... something you've worked so diligently to minimize and carefully avoid.

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You work hard to provide a healthy, superior feed product to your customer's dairy herds efficiently. We're here to help make your job easier.



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Are your feed pellets up to the challenge?

The health benefits of providing poultry flocks a nutritionally balanced diet including feed pellets are difficult to deny. However, those same dietary gains rapidly decrease when processing of this superior food source is not carefully managed and regulated.

Controlling the temperature and moisture content of poultry feed pellets during processing and packaging will always be a primary concern while accomplishing your production goals.

Failure to remedy pellet moisture content and temperature may lead to condensation during packaging or bulk storage promoting absorption or freezing with subsequent spoilage and breakdown of the product. The end result being a reduction of quality and palatability of the food source... something you've worked so diligently to minimize and carefully avoid.

The **XC Series Dryer/Coolers** from Midwest Custom Solutions are the perfect solution to eliminate those concerns, simultaneously reducing and conditioning pellet temperature while precisely metering the moisture content within your processed feed pellets.

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Five versions of our **XC Series Dryer/Coolers** have been designed and engineered to accommodate a variety of processing and operational height limitations while featuring an industry-leading innovative, rugged design which offers 50% more throughput while occupying the same footprint.

You work hard to provide a healthy, superior feed product to your customer's flocks and poultry broods efficiently. We're here to help make your job easier.



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Are your feed pellets up to the challenge?

The health benefits of providing your horses a nutritionally balanced diet including feed pellets are difficult to deny. However, those same dietary gains rapidly decrease when processing of this superior food source is not carefully managed and regulated.

Controlling the temperature and moisture content of equine feed pellets during processing and packaging will always be a primary concern while accomplishing your production goals.

Failure to remedy pellet moisture content and temperature may lead to condensation during packaging or bulk storage promoting absorption or freezing with subsequent spoilage and breakdown of the product. The end result being a reduction of quality and palatability of the food source... something you've worked so diligently to minimize and carefully avoid.

The **XC Series Dryer/Coolers** from Midwest Custom Solutions are the perfect solution to eliminate those concerns, simultaneously reducing and conditioning pellet temperature while precisely metering the moisture content within your processed equine feed pellets.

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You work hard to provide a healthy, superior feed product to your customer's equine herds efficiently. We're here to help make your job easier.



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Are your feed pellets up to the challenge?

The health benefits of providing poultry flocks a nutritionally balanced diet including feed pellets are difficult to deny. However, those same dietary gains rapidly decrease when processing of this superior food source is not carefully managed and regulated.

Controlling the temperature and moisture content of poultry feed pellets during processing and packaging will always be a primary concern while accomplishing your production goals.

Failure to remedy pellet moisture content and temperature may lead to condensation during packaging or bulk storage promoting absorption or freezing with subsequent spoilage and breakdown of the product. The end result being a reduction of quality and palatability of the food source... something you've worked so diligently to minimize and carefully avoid.

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Are your feed pellets up to the challenge?

The health benefits of providing swine herds and poultry flocks a nutritionally balanced diet including feed pellets are difficult to deny. However, those same dietary gains rapidly decrease when processing of this superior food source is not carefully managed and regulated.

Controlling the temperature and moisture content of livestock feed pellets during processing and packaging will always be a primary concern while accomplishing your production goals.

Failure to remedy pellet moisture content and temperature may lead to condensation during packaging or bulk storage promoting absorption or freezing with subsequent spoilage and breakdown of the product. The end result being a reduction of quality and palatability of the food source... something you've worked so diligently to minimize and carefully avoid.

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VOLUME YOU NEED.
QUALITY YOU WANT.

XF Series

HIGH EFFICIENCY FANS

Our XF Series High Efficiency Centrifugal Fans are precision engineered, built, balanced and finished to provide you with maximum service life while moving air in your most demanding operational conditions.

At Midwest Custom Solutions, we know you expect to get the most from your equipment investment dollars. It's for this reason we refuse to compromise on material selections, manufacturing processes or finishing standards. We know how much you depend on your equipment... providing a long-lasting, worry-free product investment is our primary goal.

- ❖ Serviceable Bearings
- ❖ AR 235 Construction Standard
- ❖ Precision Balanced Rotors
- ❖ Optional Fan Rotation Direction
- ❖ Precision Machined Rotor Shafts
- ❖ Optional Material Selections
- ❖ Industry-Leading Finishes



"MADE IN AMERICA" REAWAKENED
FORGED IN THE CRUCIBLE OF LIBERTY
POWERED BY THE FUEL OF FREEDOM

VOLUME YOU NEED. QUALITY YOU WANT.

Your high expectations of the equipment you invest in are why we install only industry-leading serviceable bearings on all of our fans for a smooth-running means of air movement coupled with countless hours of worry-free run time.

Our XF Series fan rotors are constructed from Abrasion Resistant AR235 material standard, incorporating engineered designs and strict manufacturing practices to ensure this critical component is able to safely withstand the rigors of your most demanding operational environments. MCS is also able to provide rotors manufactured in T1A, AR235, AR400, AR500, 304SS, 316SS and Hardox or as specified by the client.

We also ensure that each and every one of our fan rotors is precision balanced for vibration-free, quiet performance and years of service in your most demanding operational environments. Vibration-free operation also means less operational stress placed on support structures and adjacent equipment.

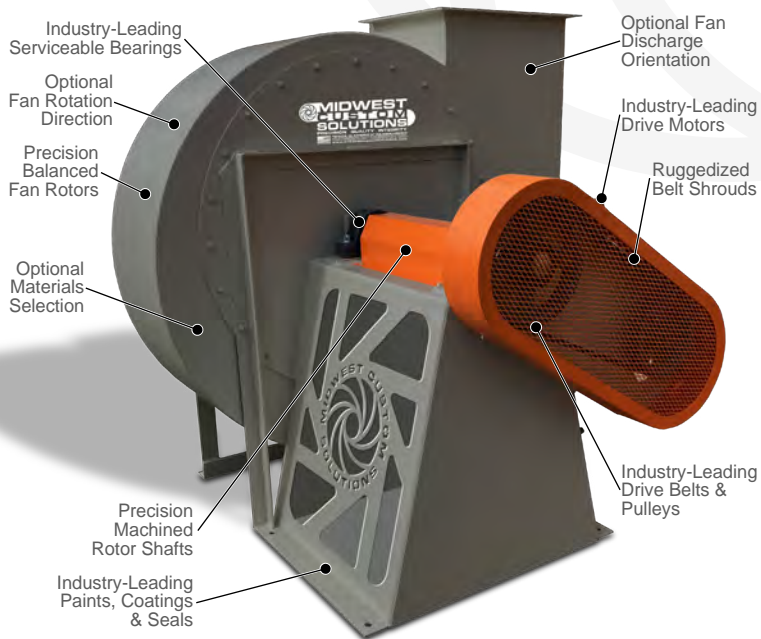
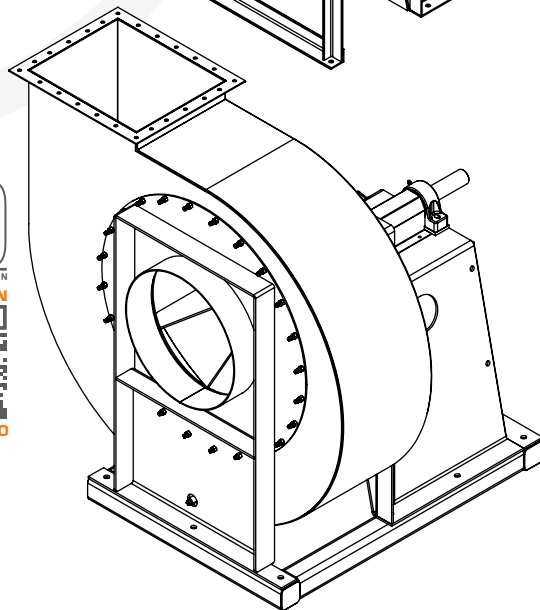
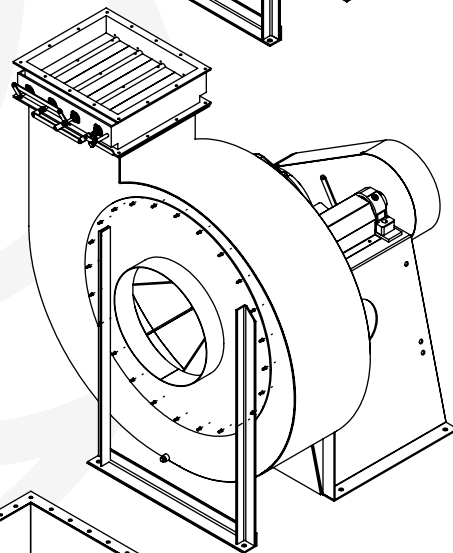
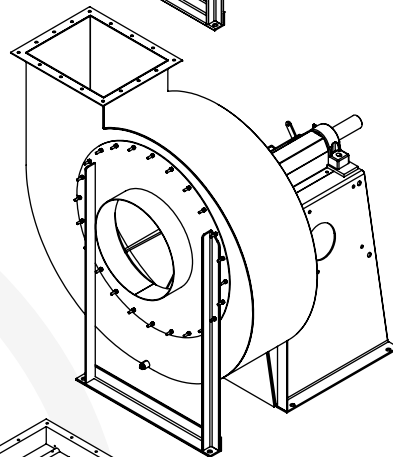
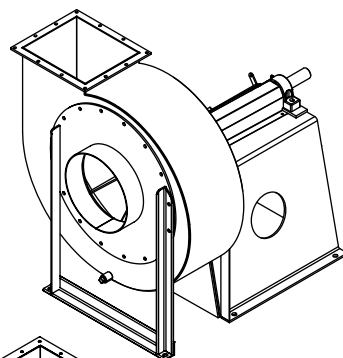
Each of our fans is offered with optional fan rotation direction and discharge orientation. We know that not all equipment performance requirements will be the same, so be sure to speak with our sales team to ensure we make your installation care-free.

Rotor shafts are precision-machined to exacting specs with durability and safety as prime considerations. Rugged and stout belt shrouds are also engineered to provide maximum operational safety for those who work within the equipment's proximity.

All MCS fans are built from quality materials and assembled by skilled technicians. Frames are offered with mild steel construction standard, however, we also provide for a materials selection with specific fan applications or installations in mind.

As with all of the products manufactured at Midwest Custom Solutions, our fans are finely finished with high-quality, industry-leading paints, coatings and sealing products.

We diligently strive to build value into every facet of our products, ensuring all of our equipment provides the longest-lasting, greatest value for your investment dollars.





**PARTICLE SEPARATION
AT ITS VERY FINEST.**

HE Series

CYCLONES

Although there are no actual moving parts in the HE Series Cyclones from Midwest Custom Solutions, we remain steadfast in providing the same attention to detail and quality for each one that leaves our facilities as those products which are far more complex in design and operation.

As with all of our products, we've designed and engineered our HE Series Cyclones with same strength, durability, efficiency and longevity you've come to expect from each and every product manufactured by MCS. We build your equipment as though it were being installed and used in our own facilities.

With this lofty goal in mind, we've selected only the highest quality materials for our HE Series of Cyclones. Our highly skilled fabrication technicians have years of experience in their craft and know how to do things "the right way." You can see their craftsmanship in each and every piece of equipment which leaves the MCS facilities.



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PARTICLE SEPARATION AT ITS VERY FINEST.

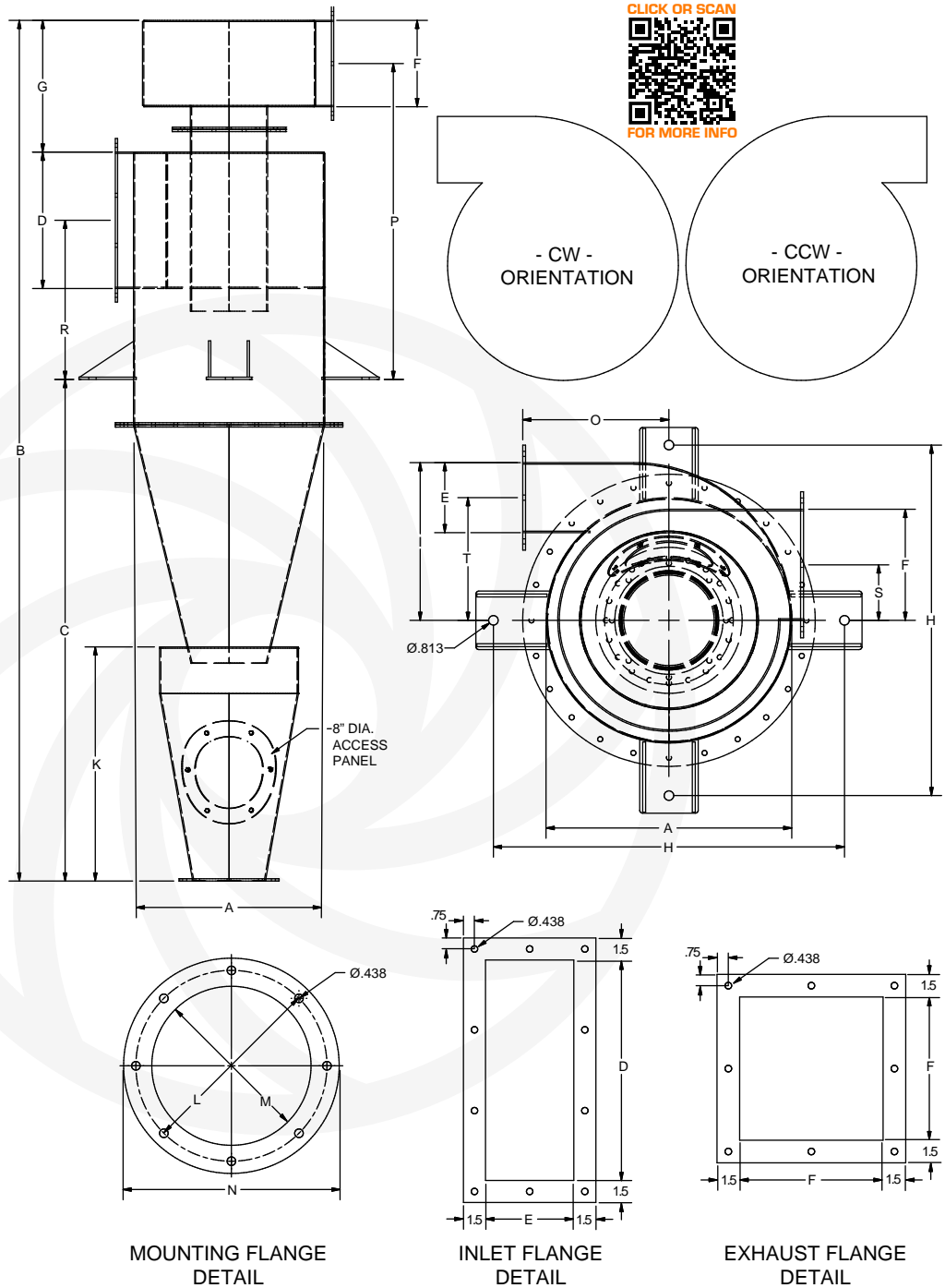
All frame and support structures are built for rugged, continuous, and thorough material processing. Structural framing and cross-supports are all thoughtfully and strategically engineered with ease of access, safety and durability in mind.

Cyclone processing air rotation may be specified by our clients in a clockwise or counterclockwise direction. Inlet and outlet ducting will be manufactured to direct airflow as required to suit your unique operational needs. We also provide for a materials selection with specific Cyclone applications or installations in mind, whether is be in the food, mineral, chemical or agricultural processing industries.

Access Panels for clean-out and interior inspection of expansion chambers come standard in all of the HE Cyclones from Midwest Custom Solutions. Mounting brackets and foot pads are meticulously installed by our technicians who know the importance of proper equipment installation on your site.

All rounded components are precision rolled and continuously welded. Only high-quality fasteners are used in assembly to ensure durability, withstand vibration and provide longevity of use in the field.

As with all of the products manufactured at Midwest Custom Solutions, our HE Series Cyclones are finely finished with high-quality, industry-leading paints, coatings and sealing products. We diligently strive to build value into every facet of our products, ensuring all of our equipment provides the longest-lasting, greatest value for your investment dollars.



SERIES	VOLUME/CFM			WEIGHT (in lbs.)	DIMENSIONS (in inches)																		
	MIN	OPT	MAX		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	R	S	T
HE-21	2,150	2,325	2,500	~325	21	94.69	55.19	15	6	9.5	14.5	30	13.5	19	25.75	9.5	8	11	12.5	34.75	17.5	4.75	10.5
HE-24	2,525	2,875	3,250	~425	24	108.56	61.81	18	6.5	10.75	15.75	33	15.38	21.5	25.75	9.5	8	11	14	41.38	22	5.38	12.13
HE-27	3,275	3,650	4,025	~550	27	120.5	68.5	20	7.25	12	17	36	17.13	24	37.63	11.75	10	13	15.5	46	25	6	13.5
HE-30	4,050	4,475	4,900	~625	30	132.38	75.13	22	8	13.25	18.25	39	19	26.5	37.63	11.75	10	13	17	50.63	28	6.63	15
HE-33	4,925	5,525	6,150	~750	33	144.69	81.69	24	9.25	15	20	42	20.63	30	37.63	11.75	10	13	18.5	55.5	31	7.5	16
HE-36	6,175	6,875	7,600	~850	36	153.63	86.13	25.5	10.75	16.50	21.5	45	23.38	33	37.63	11.75	10	13	20	59.25	33.25	8.25	18
HE-39	7,625	8,225	8,800	~1,025	39	174.19	102.44	27	11.75	17.75	22.75	48	25.38	35.5	49.44	11.75	10	13	21.5	62.88	35.5	8.88	19.5
HE-43	8,825	9,800	10,800	~1,200	43	188.75	109	30	13	19.75	24.75	52	27.75	39.5	49.44	11.75	10	13	23.5	69.88	40	9.88	21.25
HE-47	10,825	11,700	12,600	~1,400	47	202.94	115.69	33	13.75	21.25	26.25	56	30.38	42.5	49.44	11.75	10	13	25.5	76.63	44.5	10.63	23.5



**SIMPLE GRINDING.
SAFELY DELIVERED.**

XM Series

HAMMERMILLS

You demand safety. You need efficiency. You want durability. You hope for quality.

Our XM Series Hammer Mills are designed and engineered to deliver it all... and more.

Your grinding concerns are complex and worrisome. Our grinding solutions are simple and reliable.

Due to the inherent operational concerns involved with any grinding operations, Midwest Customs Solutions has strategically engineered safety elements throughout the entire design of ALL our XM Series Hammer Mill product line. We know that safety is the number one priority in your daily processing endeavors and your technicians are irreplaceable, so we are here to partner with you to achieve your business goals while protecting your most valuable assets.

We've purposefully incorporated extensive use of AR235 wear plates throughout the XM Series' design. In doing so, not only have we provided for armored protection against catastrophic failure, but we have also dramatically increased the overall operational longevity of your equipment investment. These wear plates are also replaceable to further extend your expenditure dollars far into the future - something we know you'll appreciate.



**"MADE IN AMERICA" REAWAKENED
FORGED IN THE CRUCIBLE OF LIBERTY
POWERED BY THE FUEL OF FREEDOM**

SIMPLE GRINDING. SAFELY DELIVERED.

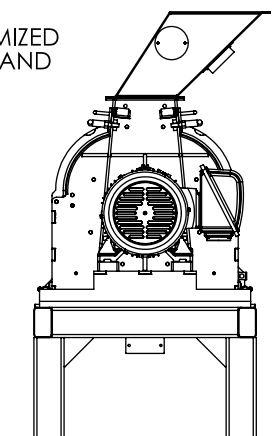
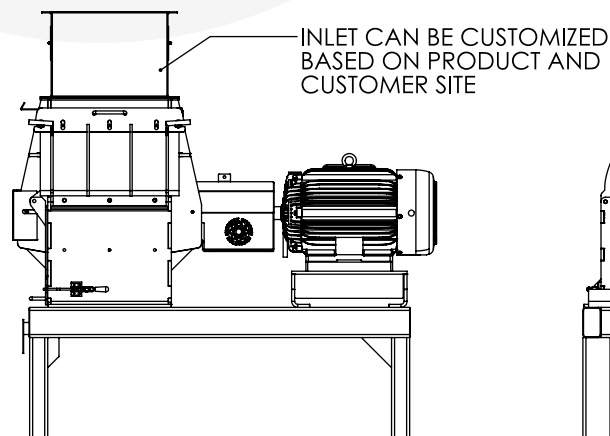
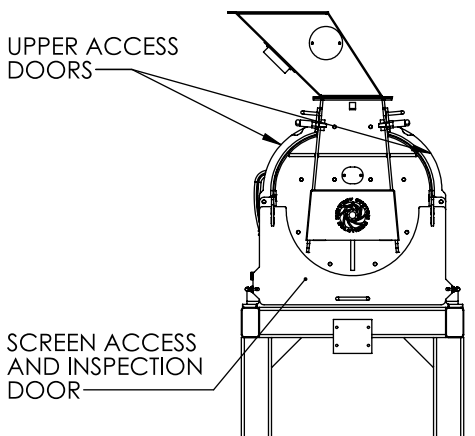
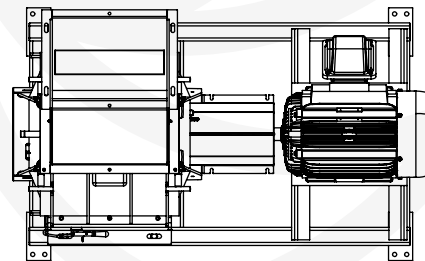
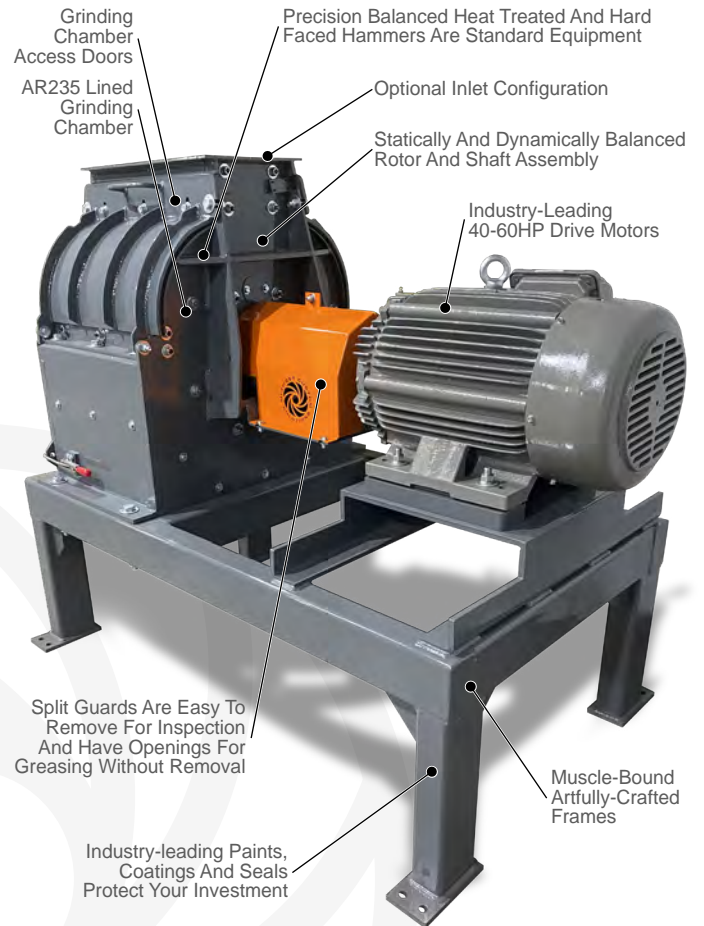
Additionally, the XM Series Hammer Mill's forward-thinking design allows for easy inspection of the grinding chamber, hammers, screen, wear plates and hammer spool. We know how important proper maintenance of your equipment is to you, so we've also engineered effortless and straightforward access of all internal critical grinding chamber components to ensure continued operation for countless hours of worry-free operation.

To further enhance the XM Series' design, the framework is a muscle-bound piece of sleek artwork assembled by our artisan technicians. The ruggedized design provides a stalwart backbone for all mounting plates, structural members and grinding chamber components. We know the forces involved in grinding environments are far more strenuous with centrifugal and torsional stresses not experienced by other equipment. Safety, longevity and quality start with an exceptional framework.

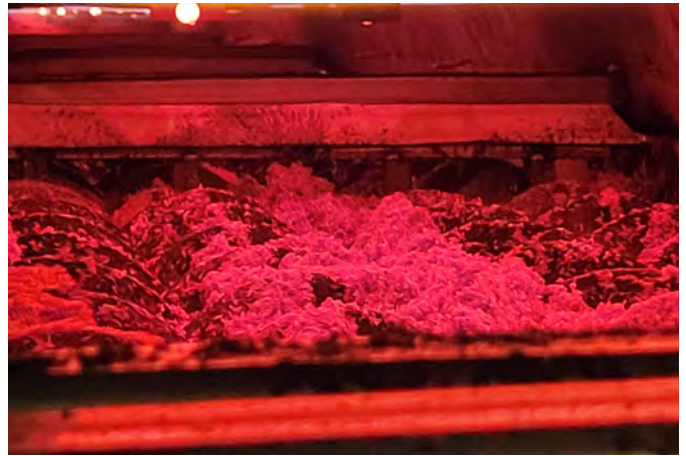
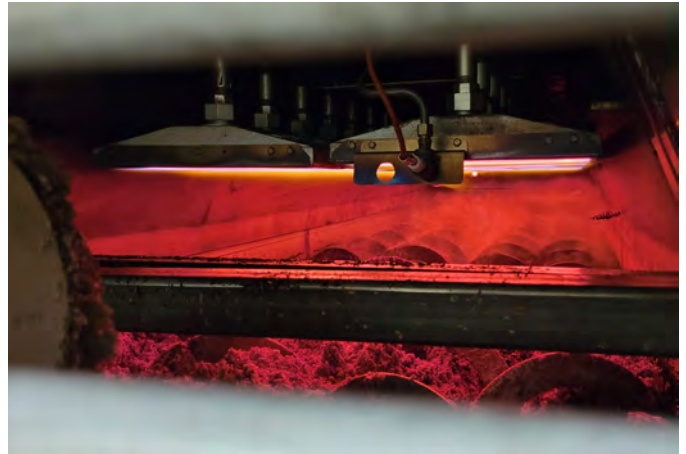
Only industry-leading motors, serviceable bearings along with a statically and dynamically balanced rotor/shaft assembly have been selected for installation on the XM Series Hammer Mills to support any demanding grinding environment you may wish to operate within. At MCS, we know that safety and product longevity do not start with sub-par components - we know you expect more from your equipment investment dollars and remain steadfast to our commitment of delivering the highest quality products within our industry.

As with all of the products manufactured at Midwest Custom Solutions, our hammer mills are finely finished with high-quality, industry-leading paints, coatings and sealing products.

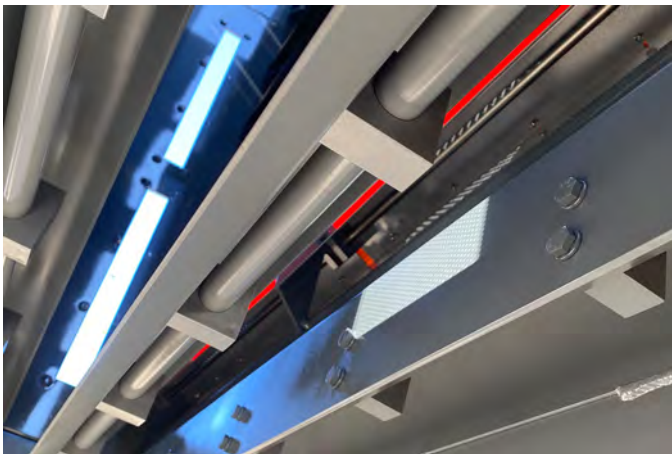
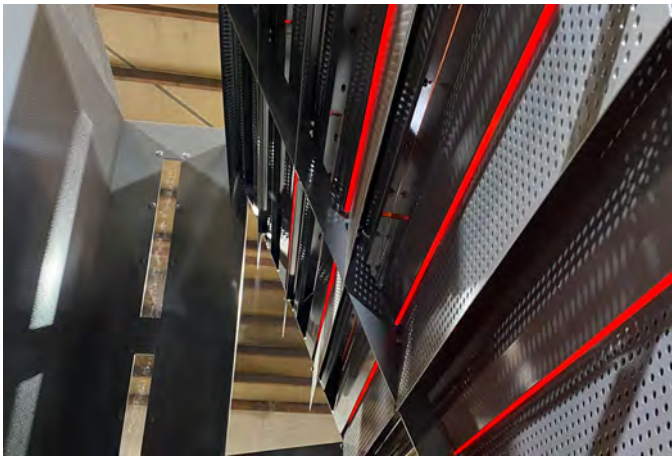
We diligently strive to build value into every facet of our products, ensuring all of our equipment provides the longest-lasting, greatest value for your investment dollars.



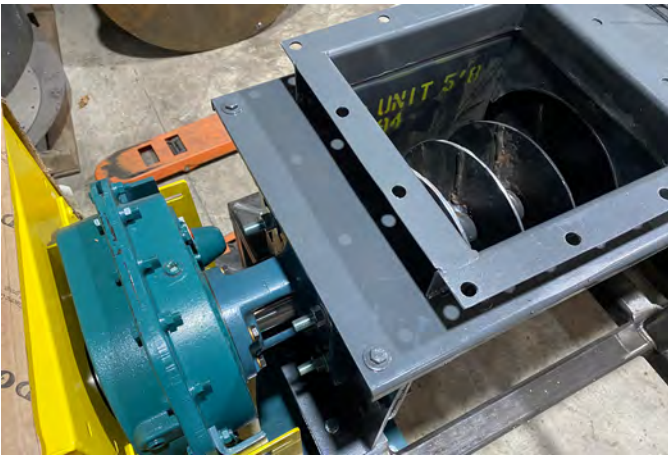
XIR SERIES INFRARED INDUSTRIAL DRYERS



XC SERIES DRYER/COOLER



XD SERIES ROTARY DRUM DRYERS



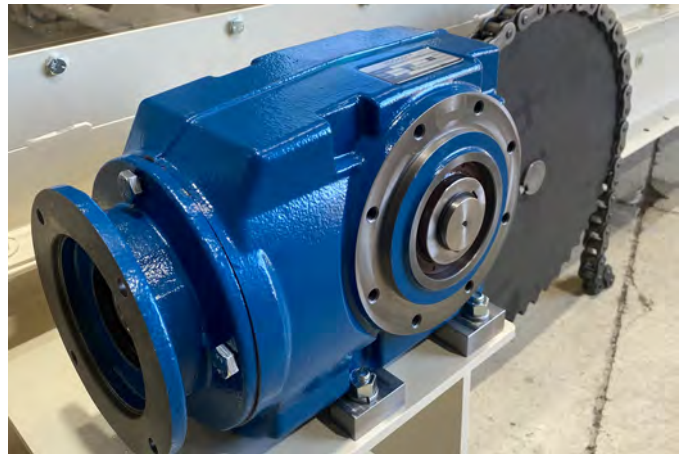
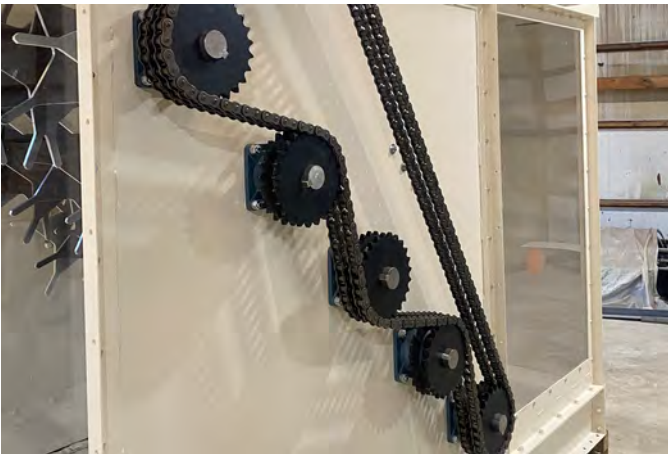
XF SERIES HIGH EFFICIENCY FANS



HE SERIES HIGH EFFICIENCY CYCLONES



XS SERIES BALE SHREDDERS



XB SERIES LIVE BOTTOMS



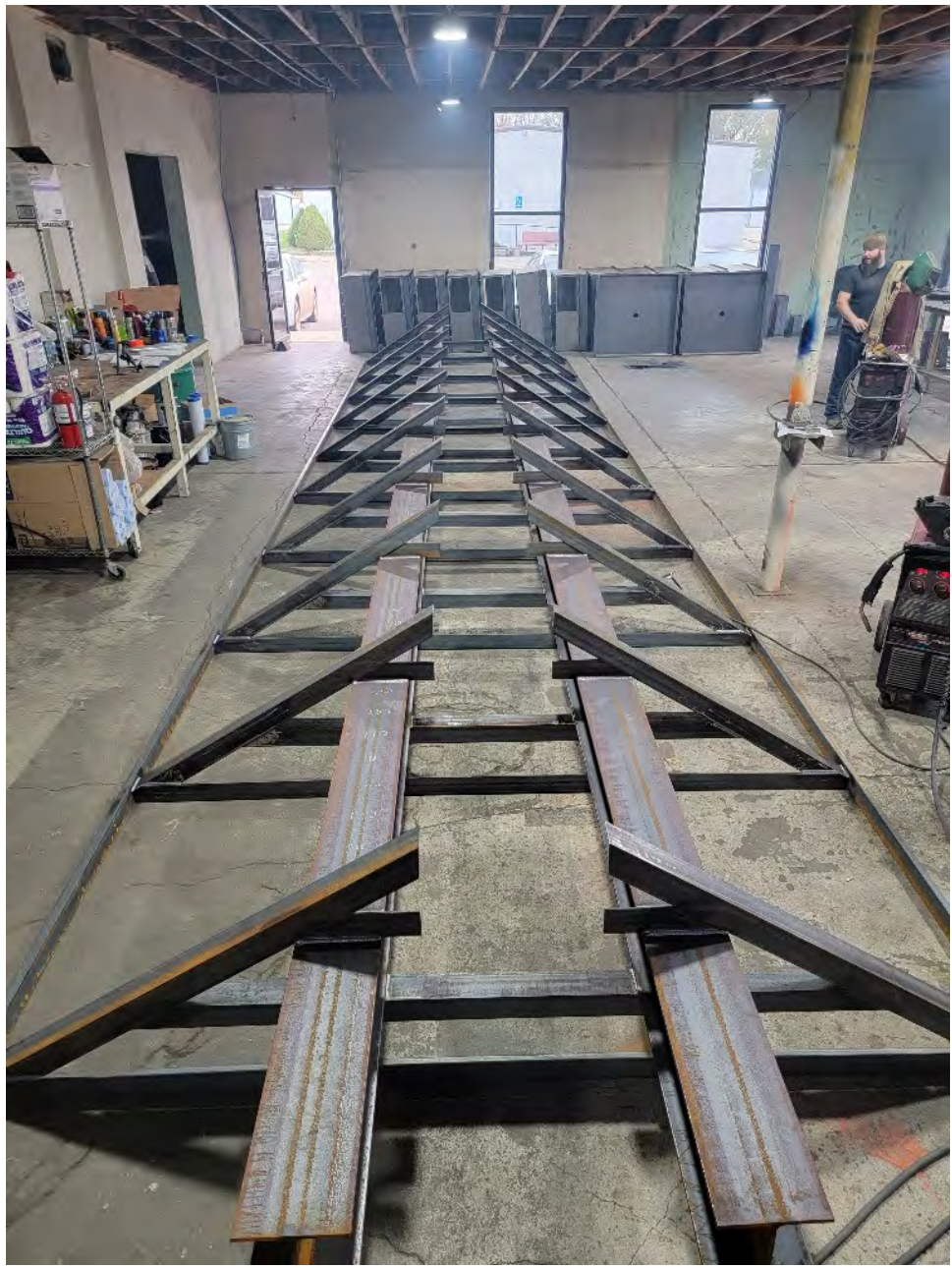
CS SERIES CONVEYOR SYSTEMS



HIGH CAPACITY STORAGE BINS



PARTICULATE COLLECTION HOOD



PARTICULATE COLLECTION HOOD



HIGH CAPACITY PADDLE MIXER

