SOLUTIONS
for the
FOUNDRY INDUSTRY
Conveyors and Feeders

We Make Your Work Flow
Carrier
Vibrating Equipment, Inc.
WE MAKE YOUR WORK FLOW

Since our origin in 1950, Carrier has been recognized as the industry leader in designing and building foundry equipment. Our unique capabilities have served metalcasters around the world longer than any other full line vibrating equipment manufacturer. We're innovators, holding multiple patents and we specialize in modern applied technology for the most efficient and reliable foundry equipment.

NATURAL-FREQUENCY

CARRIER'S NATURAL-FREQUENCY vibrating equipment utilizes a drive tuned in resonance with the spring-supported weight system. Most of the force required to vibrate the trough is alternately stored and released by springs. Once this simple harmonic motion is initiated, the springs are the driving medium to maintain constant motion under heavy loads. POWER REQUIREMENTS ARE MINIMUM.

CARRIER'S NATURAL-FREQUENCY designs distribute drive forces uniformly over the entire conveying path. Our drive systems, designed especially for foundry service, compensate for load fluctuations. Low stresses mean LOW MAINTENANCE.

Features include: heavy duty coil springs, cast rocker arm stabilizers replaceable decks, liners, screens, grizzlies, gates, covers, hoods, heat blankets, hot air plenums, vibration isolation and dynamic balancing.

CARRIER PIONEERED THE NATURAL FREQUENCY PRINCIPLE OF OPERATION

TOTAL ENERGY IS REPRESENTED BY TOTAL AREA UNDER THE CURVE

TOTAL ENERGY REQUIRED TO VIBRATE SPRING AND WEIGHT

LESS ENERGY SUPPLIED BY SPRING AT NATURAL FREQUENCY

EQUALS ENERGY SUPPLIED BY DRIVE WHEN OPERATING AT NATURAL FREQUENCY

WE CAST PRODUCTIVITY

SOLUTIONS DESIGNED TO ORDER

We'll work with you to interpret specific requirements. We can arrange lab and field testing. We'll help you with supports, layouts, and match-ups to on-line equipment. As a result of this problem-solving approach, equipment is designed to withstand your most demanding specifications. You can be assured of the equipment solution that fits precisely into your operation.

Carrier offers complete research and development capabilities for unusual requirements. We recognize that installing new handling and processing equipment is an important investment. That is why we spend the time to study your requirements, work with your engineering team, and tailor each piece of equipment to match your needs.

WE PUT YOUR PROJECT TO THE TEST

Conveying rates, retention times, temperature control, and moisture analysis are just a few of the tests conducted in our comprehensive in-house laboratory.

On-site product testing is available for specific applications.

PUT CARRIER TO THE TEST

Whether you need new equipment designs, processes, methods, or improved efficiencies of existing lines with analysis of material behavior - our engineering creativity combines with technology to make your work flow.

This brochure details some of our SOLUTIONS for improved casting production. Let us show you how Carrier can make things flow better for you.
MOLD DUMP AND TRANSFER

Mold dump conveyor scalps sand from castings. Sand return with counter-flow pan.

Inclined unit with heat blankets feeds rotary shakeout.

Hot air plenum minimizes sand sticking. Bolted hoods for dust containment.

Interfacing Carrier feeders with rotary shakeouts and drums provides positive feed and eliminates spillage and jamming.
EXTENDED SHAKEOUT CONVEYOR SYSTEMS

USERS REPORT DRAMATIC IMPROVEMENTS IN PRODUCTION OF SUPERIOR QUALITY CASTINGS

Carrier's special blend of design skills and foundry application technology come together in an integrated package for

EFFICIENT MOLD SAND SEPARATION
WITHOUT CASTING DAMAGE

These systems are uniquely engineered to provide shuffle action vibratory conveying to:

EFFICIENTLY REMOVE MOLD SAND for IMPROVED CASTING COOLING.

GENTLE ACTION:
PROTECTS CASTING QUALITY.
LOWERS NOISE LEVELS

And we don't stop there! Return sand pans can be incorporated. We can design around existing equipment - or provide new layouts to simultaneously cool the castings.

Carrier's extensive research program led to the development of the EXTENDED SHAKEOUT CONVEYOR SYSTEM... the solution to your casting damage problem.

Carrier engineers tailor each system by selecting the proper stroke, frequency, angle of attack and deck design.
CASTING ACCUMULATING AND COOLING

CARRIER'S ACCUMULATOR CONVEYORS ALLOW REQUIRED RETENTION TIME TO COOL HEAVY CASTINGS TO DESIRED TEMPERATURE.

Automated continuous cooling systems cool 60 TPH of iron castings.

Largest casting cooler ever built accumulates 75 tons of steel castings.

Heavy duty accumulator sympathetically drives "Quarter-Round" section . . . only 1 drive required.

Special high temperature construction permits thermal expansion.
CASTINGS TRANSFER • DESPRUE • SEPARATE • ORIENT

Castings orient and convey from hopper.

Transfer conveyor orients and conveys large engine I-blocks.

Units can be specially designed to interface with molding or other conveying equipment.

Balanced conveyor transports 50 TPH sprue up steep incline.

Thermal expansion decks for high temperature applications.
SORTING CONVEYORS

Varied sizes of castings are conveyed on this 90' unit with diverters and multiple discharge points.

164' long conveyor accommodates multiple sorting points for various sizes of castings. Noise abatement liners.

Heavy duty sorting unit conveys castings @ 30 TPH.

Sorting and Picking conveyor.
"Half-Rounder" conveyor includes heavy structural expansion design for hot sand and castings.

Circular units provide continuous sorting of castings.

6' wide unit incorporates heavy duty replaceable pan.

Divided trough separates casting and sprue.

Heavy castings turn 90° corners with ease.
CLEANING ROOM SYSTEMS

Carrier conveyor feeds continuous shot blast.

FEED AND DISCHARGE EQUIPMENT
FOR ALL BLAST CLEANING SYSTEMS

Natural Frequency units on traversing “smart cars” feed castings to multiple blast cabinets.

Casting feeder system splits 70 TPH castings to twin continuous blast drums.

FEATURES INCLUDE:
- replaceable wear liners.
- noise abatement decks and liners
- shot scalping sections

Batch blast takeaway unit incorporates replaceable liners and scalping section for shot reclamation.

Extended blast takeaway conveyor is used for sorting.
SAND CONVEYORS

Flex-Belt Sand Conveyor Under Casting Cooler

Flex-Belt Liners Prevent Sticking

Counterflow unit scalps return carryover sand from shakeout.

Bolted pans can be replaced without disturbing the pan support spring system.

Unique counterflow unit conveys sand from 2 mold lines. Computer controlled gates return a proper amount of sand to each mold line.

Hoods aid in dust containment.
**PREHEAT**

Preheat systems heat scrap to 1200°F.

Weigh feeder and high temperature conveyor in preheat installation.

Carrier weigh feeder charges scrap to preheat conveyor.

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**FURNACE AND CUPOLA CHARGE**

Metal alloy feeders with abrasive resistant liners and adjustable feed rate controls.

Load cells provide accurate batch weights. Charge feeders can be furnished on retractable carriages.

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**SCRAP HANDLING**

Inclined balanced and isolated units fit minimum space to elevate scrap. Furnished with supports.

Natural Frequency conveyor charges brass scrap to shear.

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Slag quenches in water pools for easy recycling.

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Check out the CARRIER ADVANTAGE!
Before you put together your new or revised foundry system, let our experienced engineers save your time and money by matching your ideas with ours for greater productivity.
THE STANDARD OF EXCELLENCE IN BULK MATERIAL HANDLING AND PROCESSING EQUIPMENT

Fluid Bed Dryer/Cooler Systems, Conveyors, Spiral Elevators, Feeders, Shakeouts
Screens, Bin Activators, Pile Dischargers

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