



# *Vibratory Conveyors*

*Vibrating Conveyance of Granular and Bulk Materials*

*Custom Engineered*

*Low Frequency*

*Robust Design*

*Greater Life Expectancy*

*Scalping/Screen Decks*



# **RENOLD**

*Superior Technology*

[www.renold.com](http://www.renold.com)

For more than 50 years Renold AJAX Vibrating conveyors have been used in a variety of industry applications for transferring many types of granular and bulk materials. Renold Ajax conveyor systems can also be modified to perform other functions such as screening, scalping, drying, cooling, grading and dewatering. Renold custom designs each unit to meet the specific needs of each customer's application. Renold Ajax conveyors are designed for rugged heavy-duty applications and will perform for years of continuous trouble-free operation.

Renold engineers can design a conveyor to meet your specific needs in widths from 6" to 60" and in lengths of up to 70 feet. Each conveyor design starts with an existing standardized design stored on our PRO E system. This allows Renold engineers to select the closest standard conveyor design and modify it to custom specifications. Customers are supplied with approval prints quicker, thus reducing overall delivery time.

## Typical Materials Handled in AJAX Conveyors

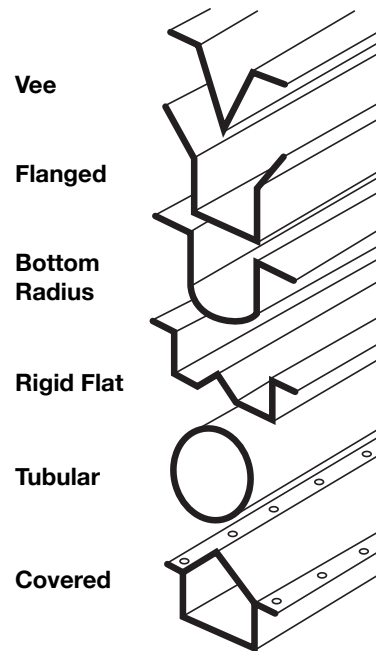
- Aggregate
- Abrasives
- Chemicals
- Ceramics
- Coal
- Castings
- Hot Dross
- Metal Parts, Stampings
- Hazardous Materials
- Explosives
- Food Products
- Fruit/ nuts
- Vegetables
- Foundry Sand
- Crushed Glass, Cullet
- Scrap Metal
- Tobacco
- Plastics

## Custom Features:

- One piece modular assemblies up to 70 feet long
- Variety of trough designs
- Quiet Operation (67-69 dBA @ 5 feet)
- Solid, heavy duty designs
- Variable force output shakers

Troughs can be fabricated of mild steel, stainless steel and aluminum. Replaceable liners are available including: AR steel, polyurethane and neoprene to enhance the life of the trough shell.

## Custom Trough Designs



## Principle of Conveyor Operations

Renold AJAX conveyors utilize either one of two types of shaker drives to produce the desired straight line mechanical force. Shaker selection is based on application and the environment the conveyor will operate.

### AJAX Shaker Drive

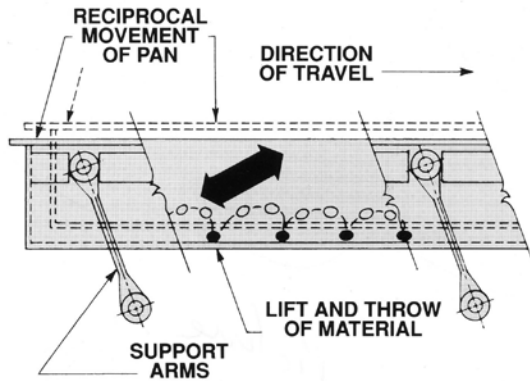
A Traditional mechanical shaker drive produces a force output by means of geared oppositely rotating eccentric weights. This unit is extremely rugged and operates well in severe, dusty and harsh environments.



### QE Vibrator

This geared mechanical unit is extremely quiet and features non-lube construction including steel polyamide gearset. The eccentric weights can be changed without removing the housing from the trough. This unit is often specified in food applications or when quiet operation is desired (67-69 dBA).





The pan arm provides the necessary linkage to support and isolate the trough between the base structure. The shaker mounts to the trough or base to develop a reciprocating motion to lift and throw the material forward creating a flow rate measured in feet per minute (FPM).

The flow rate at which the material travels depends upon several factors:

- Frequency (RPM of shaker drive)
- Design dynamics of pan arms and booster spring isolation system
- Material Characteristics – bulk density, particle size, moisture content and metering

The reciprocal motion (peak to peak) is also defined as the stroke of the unit. It can be calculated in the following formula:

$$\text{Stroke} = \frac{\text{force output} \times 70470.91}{\text{Total vibrated weight} \times \text{frequency}^2}$$

The rate at which the material flows is defined in TPH, (Tons per Hour) and also can be calculated where:

60 = seconds (constant)

1.0 = flow factor (1.0 = free flowing;  
0.7 = sluggish)

Width = effective trough width

Depth = dynamic depth of material in the trough

Fpm = flow rate, feet per minute

Ppcf = material bulk density, pounds per cubic foot

$$\text{TPH} = \frac{60 \times 1.0 \times \text{width} \times \text{depth} \times \text{fpm} \times \text{ppcf}}{144 \times 2000}$$

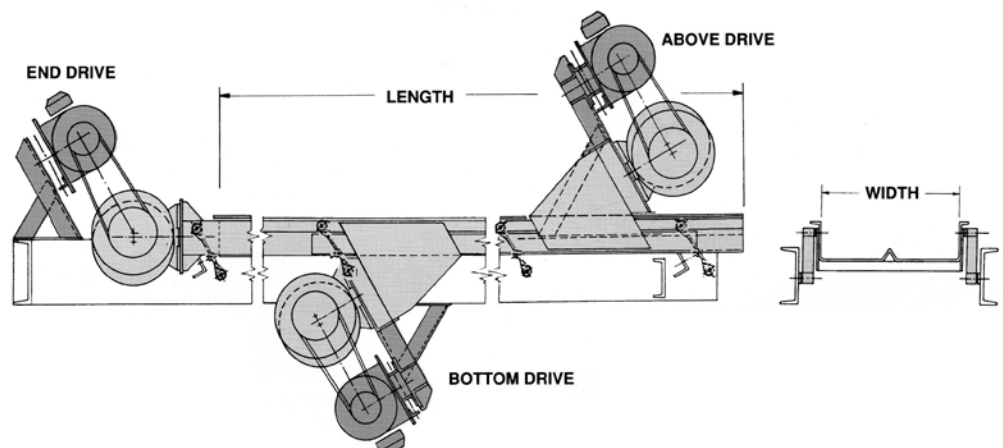
The product of width and depth equate to the dynamic cross sectional area of material in the trough. Increasing that area will increase TPH. Ajax conveyors are designed to meet the specified flow rate of your defined material.

When requesting a quotation, specify the type of material, bulk density (ppcf); flow rate (TPH or Lbs/ hour); trough design (open, covered); environment (hot, ambient, dusty).

## LC Leaf Spring Electro-Mechanical Conveyor

Powered by AJAX Shaker or Quadra- Eccentric Vibrator

- Designed for new or existing applications
- Pan arm or fiberglass isolation
- Low frequency, heavy-duty design for greater life expectancy
- Above, below or end mounted drives
- Transports all types of bulk/ solid materials in hot, cold and ambient environments



## Open Conveyor

Incorporates a low profile end or above mounted drive. This design can be situated in tight places under existing machines or fit onto existing support structures.



## Long Conveyor

Originally designed to allow foundry sand to dump at various points along the length to be transferred to downstream equipment.



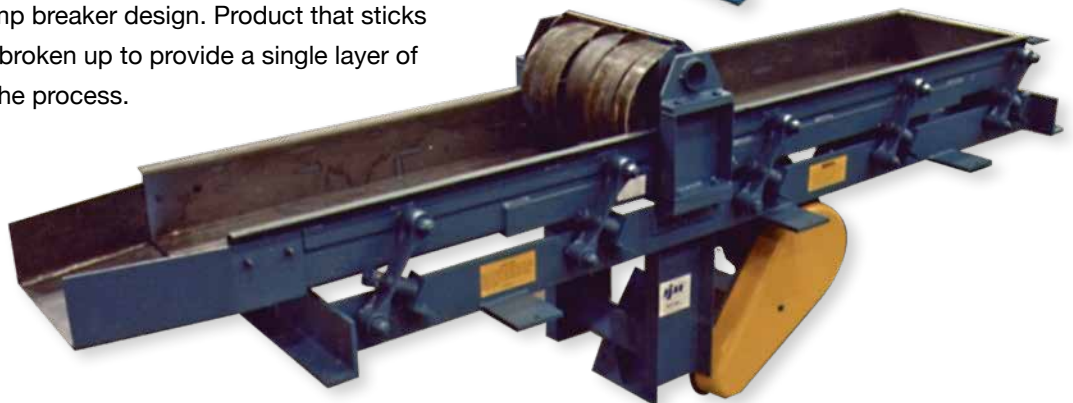
## Flared Pan Arm Conveyor

The flanged trough design of this conveyor allows material to be centered into the trough and prevents spillage over the sides.



## Specialty Conveyor

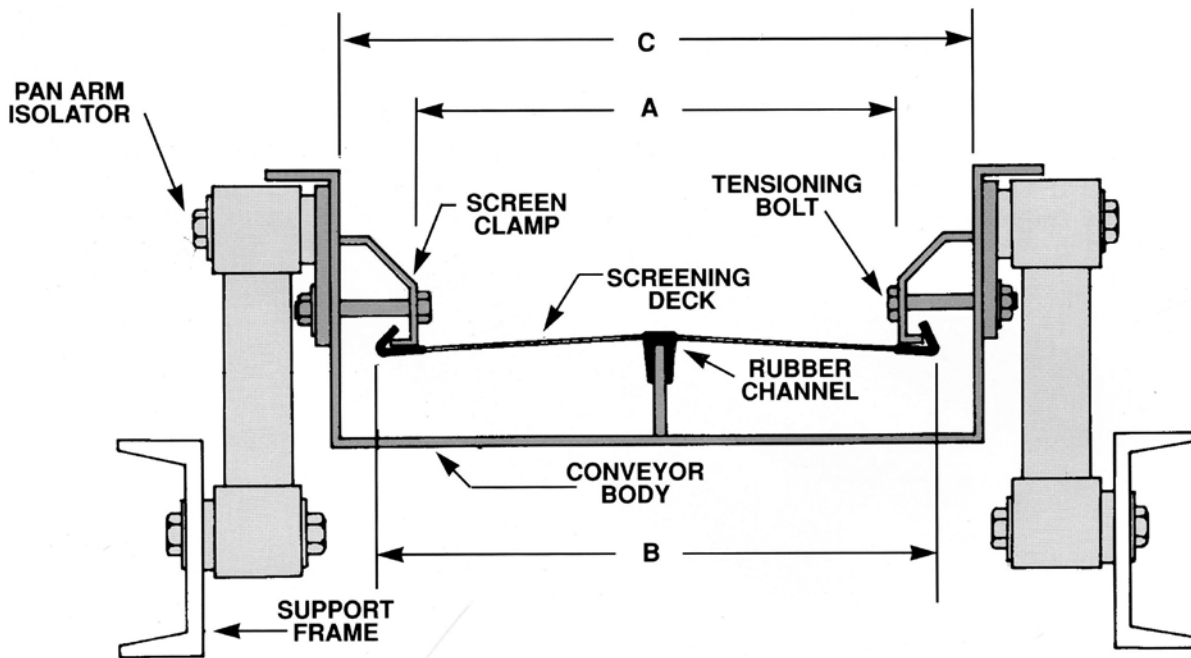
This conveyor utilizes a lump breaker design. Product that sticks together is separated and broken up to provide a single layer of material which is fed into the process.



# LCS Leaf Spring Conveyor Screeners

Powered by AJAX or Quadra- Eccentric Vibrator

- Screens designed for easy removal
- Clamp provides continuous tensioning
- Ball deck or vibrators for anti-blinding devices
- Variety of decks, screens, grizzly bars and perforated plates
- Discharge chutes built to suit
- Applications: Scalping, dewatering, recovery, grading, washing, de-dusting and conveying



- A = Effective screen width
- B = Out-to-out of hooks ( $A + 2 \frac{1}{2}''$ )
- C = Pan width between flanges ( $A + 4 \frac{1}{4}''$ )

## Vibratory Screen Decks

AJAX Conveyors can be modified for screening, scalping, drying, cooling, grading and dewatering of all types of materials. The screening surfaces can be woven wire, perforated plate, grizzly bar and wedge wire. The screen deck is stretched by heavy clamps inside the conveyor body. Tensioning is accomplished by torquing bolts, pulling hand clamps or driving tension wedges outside the conveyor sides. The conveyor is designed so the screen deck can be removed from either the top or pulled from the end of the unit. Multiple decks can be stacked allowing for additional cuts to be made from the material flow. Chutes are custom designed to discharge separated products to various points along the conveyor.

## Dewatering

This conveyor offers a broad range of screening options including wire mesh, perforated plate or wedge wire.



## Custom

Custom units are available from test lab to full production sizes.



## Vibratory Belt Conveyor

This Vibratory Belt Conveyor will consist of a standard style belt conveyor with an integral vibratory deck. The belt will pass over the vibratory deck which will impart a vibration into the package as it is conveyed across the belt.



## High Temperature

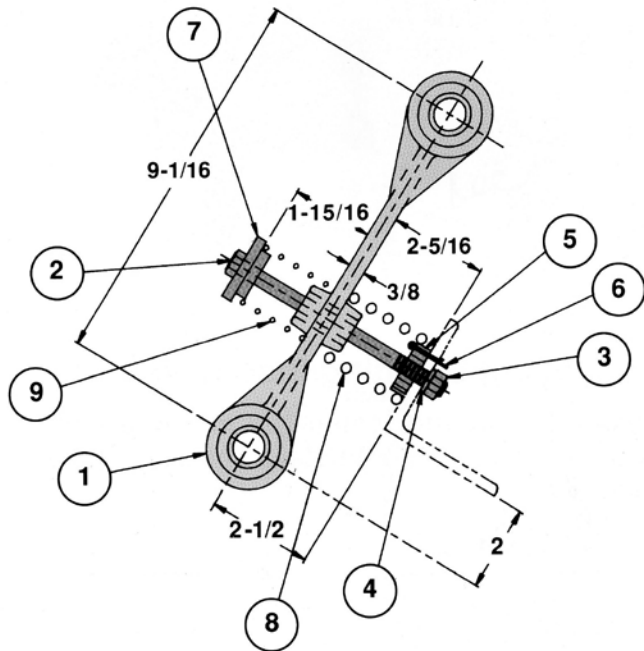
Units can be customized to be used in high temperature environments like this kiln feeding unit.



# Spare Parts

Renold AJAX stocks a variety of replacement parts so repairs to the equipment can be made in the field. Before contacting our application engineers, document the 4 digit serial number from the metal tag on the equipment. This will speed up the identification process of the parts you need.

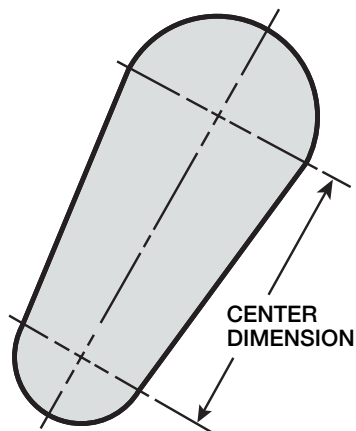
- Shaker drives
- Shaker repair kits
- Pan arm assemblies, leaf springs, booster springs and air mounts
- Sheaves, bushings, belts, belt guards and motors
- Screens and perforated plates
- Hardware, clamps, tension wedges, cylinders and gates
- Variable speed controllers, mechanical and electrical



Item	No. Req'd.	Description	Part Number
1	1	26W-3 Pan Arm	10264
2	1	Bolt	701-037-16-550
3	1	Hex Nut	765-037-16-000
4	1	Lock Washer	775-037-00-000
5	1	Rubber Bushing	10111
6	2	Cotter Pin	789-009-00-150
7	1	Stepped Washer	10207
8	1	Coil Spring	10203
9	1	Coil Spring	10206

# Belt Guard Kits

Renold AJAX stocks three sizes of fiberglass belt guards with metal backs and posts. The metal plate is provided with sufficient clearance holes for the motor and shaker shafts. It requires fitting after the motor/shaker is assembled. A stiffener is then welded to the metal plate and secured to the base. After the sheaves and belts are fitted the fiberglass guard can be bolted to the post.



Drawing	Part Number		Center Dimension	Shaker Sizes
	Mild Steel	304SS		
9W-419	10400	10403	13"	5, 6, 8
9W-420	10401	10404	16-1/2"	10, 12
9W-421	10402	10405	25"	20

**Renold Ajax**

100 Bourne Street  
Westfield, NY 14787-0546  
Toll Free Tel: 1-800-879-2529

**Renold Canada**

622 Rue De Hull  
Ville La Salle  
Quebec, Canada H8R 1V9  
Toll Free Tel: 1-800-265-9970  
Tel: (514) 367-1764  
Fax: (514) 367-4993

***RENOLD***  
*Superior Technology*