



OWNER'S MANUAL



Reciprocating Vertical Conveyor Model RVC

DO NOT OPERATE BEFORE READING THIS HANDBOOK
KEEP IN A SAFE PLACE -- DO NOT DISCARD

TECH HANDBOOK FOR RVC

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 **WARNING**


**DO NOT OPERATE BEFORE READING THIS MANUAL!
KEEP IN SAFE PLACE--DO NOT DISCARD!**


SAFETY INFORMATION


IMPORTANT SAFETY GUIDELINES


WARNING


WARNING: All personnel coming in contact with this conveyor should be aware of the following safety guidelines **BEFORE USING OR WORKING AROUND CONVEYOR.** **NOTE:** ALWAYS notify Roach Manufacturing® whenever any conveyor is used in an application or condition other than was originally intended. Failure to notify Roach® may allow conveyor to be operated in a hazardous operating condition. Injuries resulting from negligence or violation of safety instructions hereby removes responsibility of product liability claims from Roach®.


 Do not operate conveyor with protective guards removed. This includes chain guards, belt guards, snub roller guards, center drive guards and any other safety guard.


 Do not walk, ride, climb, or touch moving parts on a conveyor in operation.


 Do not wear loose clothing or uncovered hair around conveyor.


 Do not work near conveyor without knowing how & where to shut power "OFF" and lock out power source.

 Do not remove jammed product with conveyor running.


 Do not replace parts or perform maintenance on conveyor, or moving conveyor parts, without first shutting "OFF" power to conveyor and locking out power source.


 Do not connect gravity to powered conveyor without safety gravity connector brackets.

 To prevent electrical shock, conveyor must be grounded, and have proper electrical connections in accordance with federal, state, and local codes.

 Safety pop out rollers in conveyors installed above 7'-0" elevation must be retained by guard rail, clips, etc. Safety pop out rollers must be allowed to pop out

when conveyors are installed at or below 7'-0" elevation.

 It is the responsibility of conveyor end-user to comply with all safety standards including OSHA and other federal, state, and local codes or regulations. Install protective guarding and other related safety precautionary equipment to eliminate hazardous operating conditions which may exist when two or more vendors supply machinery for related use.

 Any violation of above safety instructions hereby removes all product liability claims from Roach Manufacturing Corporation®.

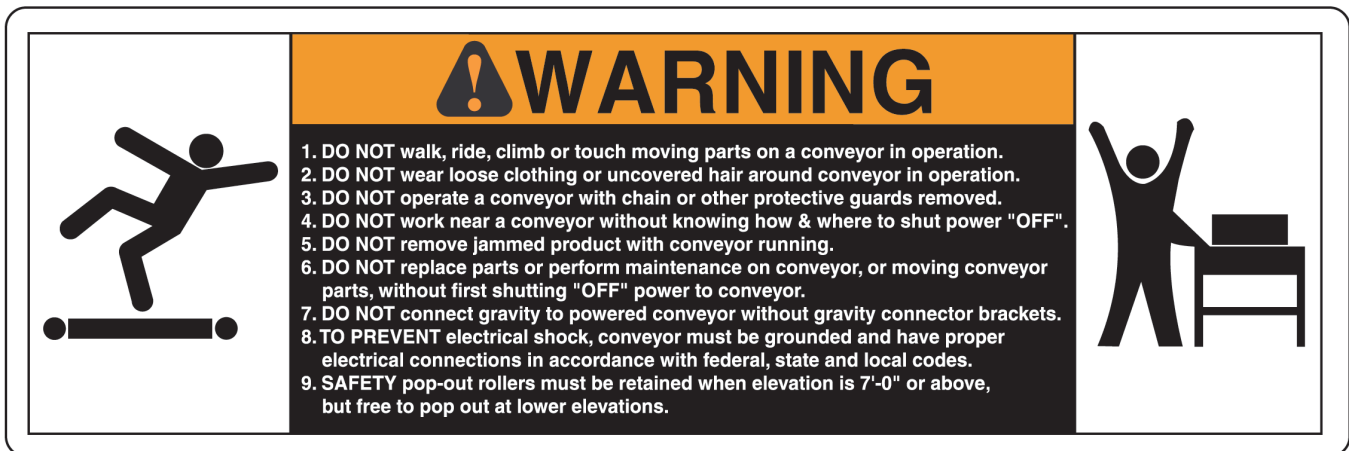
WARNING LABELS



ABOVE: Label attached to all protective guards (drives, roller guards, etc.)



ABOVE: Label placed near all pulleys (center drives, end drives, tail pulleys)



ABOVE: Label placed near all drive assemblies and at 30' intervals

CAUTIONS, WARNINGS AND HAZARDS

CAUTION SIGNAGE

The importance of maintaining a safe environment for operators and those coming in contact with model RVC, continuous vertical conveyors, simply cannot be overstated. Therefore, caution and danger signage shall be prominently displayed on all model RVC's.

A thorough inspection should always note that caution and danger signage (see caution signage below and danger sig-

nage on following page) remains readily visible. To get information on replacement signage for model RVC, contact Roach Manufacturing Corporation by telephone at 870-483-7631, by fax at 870-483-7049, by email at info@roachconveyors.com.

CAUTION

DO NOT PERFORM MAINTENANCE WITHOUT ELECTRICAL LOCKED OUT.

DO NOT OPERATE A CONVEYOR WITH CHAIN OR OTHER PROTECTIVE GUARDS REMOVED.

DO NOT WALK, RIDE, CLIMB, OR TOUCH MOVING PARTS ON A CONVEYOR IN OPERATION.

DO NOT WEAR LOOSE CLOTHING OR UNCOVERED HAIR AROUND CONVEYOR IN OPERATION.

DO NOT WORK NEAR CONVEYOR WITHOUT KNOWING HOW AND WHERE TO SHUT POWER OFF.

DO NOT REMOVE JAMMED PRODUCT WITH CONVEYOR RUNNING.

CAUTIONS, WARNINGS AND HAZARDS

DANGER SIGNAGE

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Danger signage is prominently displayed on all model RVC's to promote a safe environment for all personnel coming in contact with this conveyor.

For replacement signage, contact Roach Manufacturing Corporation by telephone at 870-483-7631, by fax at 870-483-7049, by email at info@roachconveyors.com.

As previously noted, thorough periodic inspections should always include confirmation of danger signage (see below and caution signage previous page).

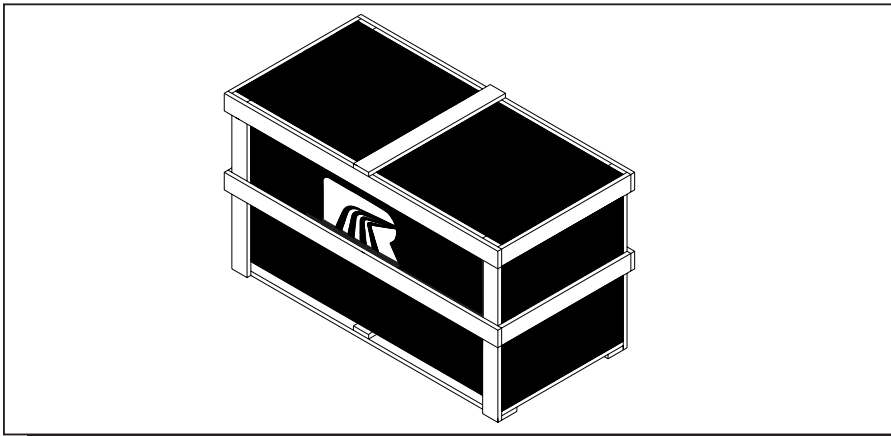


DANGER

DO NOT ENTER

**THIS VERTICAL CONVEYOR IS FOR
MOVEMENT OF MATERIAL ONLY
PERSONNEL STRICTLY FORBIDDEN
DO NOT PERFORM MAINTENANCE
WITHOUT ELECTRICAL LOCKED
OUT AND LIFT IN LOWER
SCOTCHED POSITION**

RECEIVING AND INSPECTION SHORTAGES, DAMAGES AND RETURN AUTHORIZATIONS



NOTE: Do not return goods to factory without prior, written return authorization. Unauthorized returns are subject to refusal at factory.

Before uncrating, check quantity of items received against bill of lading to confirm that all material has been received. Examine the condition of equipment to determine if any damage has occurred.

Also, it is possible that some items may become separated from the original shipment. Therefore, when receiving goods, it is imperative that the bill of lading (or,

accompanying freight documentation) be checked to ensure receipt of ALL units ordered including ALL accessories.

Damage and/or shortage in shipment should be reported immediately to both vendor and carrier. Obtain a signed damage report from carrier agent and send copy to vendor. Do not repair any damage before obtaining this report.

For damaged shipments, consult factory to determine if entire shipment must be returned to factory for repair or if an immediate order should enter production to produce a new, replacement shipment.

UNCRATING AND STORAGE



NOTE: Safety pop out rollers, guard rails, misc. hardware and accessories are often packaged and shipped in boxes and attached (or 'banded') to crating material. Save all hardware for subsequent use by installation personnel.

After receipt and initial inspection is completed, carefully remove crating and look for essential components and specific accessories that may have been boxed and attached (or 'banded') to crating material. Safety pop out rollers, guard rails and hardware are often packaged and shipped

in this manner. Save all hardware for subsequent use by installation personnel.

Generally, feeder conveyors are shipped assembled. The feeder drive section and belting will be shipped mounted.

etc.) may be shipped direct from their manufacturer to final destination. Thus, the conveyor may consist of two or more separate shipments.

Some items (electric motors, gearbox,

START-UP PROCEDURES

OPERATOR CONTROLS DETAIL



WARNING: Electrical controls must be designed by a qualified electrical engineer to ensure that appropriate safety features (emergency stops, pull cords, switches, etc.) are installed on unit for safe operation. Before conveyor start-up, all operators and other personnel coming in contact with unit must be properly trained and must have read accompanying Tech Handbook. To avoid personal injury, all guards must be in place before operating.

THE FOLLOWING OPERATOR CONTROLS DETAIL MUST BE READ BY ALL OPERATORS AND OTHERS COMING IN CONTACT WITH CONTINUOUS VERTICAL CONVEYORS AND/OR FEEDER CONVEYORS AND ALL MUST BE FAMILIAR WITH EACH OF THE FOLLOWING CONTROL FEATURES PRIOR TO USAGE OF CONTINUOUS VERTICAL CONVEYORS AND/OR FEEDER CONVEYORS.

MAIN POWER DISCONNECT controls main power supply and is located in the upper right hand corner of the enclosure. In up position, power is on; in down position, power is off.

EMERGENCY STOP pushbutton is used to stop conveyor(s) should an emergency condition arise. NOTE: Conveyors will not start automatically when button is reset.

POWER ON applies power to the vertical conveyor when pressed. The **POWER ON** indicator lamp is illuminated once this pushbutton is pressed.

POWER OFF removes control power to the vertical conveyor.

SYSTEM START will start vertical conveyor. Hold this button down until conveyor starts running.

SYSTEM STOP will stop vertical conveyor. Pressing this button stops conveyor.

AUTO/JOG selector switch is used to determine operating mode of vertical conveyor.

LIFT JOG will run vertical conveyor as long as this button is pushed, provided **AUTO/JOG** selector switch is in **JOG**

mode.

RESET will reset vertical conveyor after faulting IF fault has been cleared.

SYSTEM RUNNING indicator lamp illuminates when vertical conveyor is running.

PRODUCT JAM indicator lamp confirms that there is a product jam in the vertical conveyor. If conveyor flow is "up", product jam is at top; with "down" flow, product jam is at bottom of vertical conveyor. If lamp illumination is steady, condition still exists. If lamp is flashing, product jam has been cleared but conveyor has not been reset.

PRODUCT OVERSIZE indicator lamp alerts that product going into vertical conveyor is too long for carrier platform or that product is not properly positioned on (or "hanging off") platform. If lamp illumination is steady, condition still exists. If lamp is flashing, product positioning is corrected but conveyor has not been reset.

INFEEED SPACING indicator lamp indicates that product spacing entering vertical conveyor is too close. If lamp illumination is steady, condition still exists. Infeed (or "feeder") conveyor will auto-

atically restart when spacing has been corrected.

FULL LINE indicator lamp shows that discharge conveyor is full. If lamp illumination is steady, condition still exists.

START-UP PROCEDURES

START-UP / SHUT DOWN



WARNING:
WARN ALL
PERSONNEL
TO KEEP
CLEAR OF
CONVEYOR
DURING UNIT
START-UP

WARNING: Electrical controls must be designed by a qualified electrical engineer to ensure that appropriate safety features (emergency stops, pull cords, switches, etc.) are installed on unit for safe operation. Before conveyor start-up, all operators and other personnel coming in contact with unit must be properly trained and must have read accompanying Tech Handbook. To avoid personal injury, all guards must be in place before operating.

Before conveyor start-up, all operators and other personnel coming in contact with unit must be properly trained and must have read accompanying Tech Handbook.

To start model RVC, turn the MAIN POWER DISCONNECT switch to the ON position. Next, press POWER ON pushbutton. The POWER ON indicator lamp

will illuminate. If the indicator lamp does not illuminate, check EMERGENCY STOP pushbuttons.

Once the POWER ON indicator lamp illuminates, confirm that AUTO/JOG selector switch is in the AUTO position. Finally, push and hold SYSTEM START pushbutton. After warning horn sounds for

five seconds, the continuous vertical conveyor begins operating.

To shut down, press SYSTEM STOP pushbutton, POWER OFF pushbutton and turn the MAIN POWER DISCONNECT switch to the off position.

SENSORS



TYPICAL FULL LINE SENSOR

CAUTION: Reciprocating Vertical Conveyors, model RVC, are subjected to repeated starts and stops.

Reciprocating Vertical Conveyors, model RVC, are designed to operate with repeated starts and stops.

When using a Reciprocating vertical conveyor, the discharge conveyor (or other source) must be monitored to allow an acceptable number of loads to enter the RVC, which in turn, can be conveyed to the output conveyor (or other source) by

the Reciprocating vertical conveyor.

Additional sensors are provided to stop "up" or "down" travel in the unlikely event of a product overhanging the carrier platform "safe" area. See page in manual on "Operator Controls Detail" for more information.

MAINTENANCE SAFETY PRECAUTIONS BEFORE PERFORMING MAINTENANCE

CAUTION: Only trained personnel shall perform maintenance functions. Before maintenance operations are performed, reciprocating vertical conveyor must be shut "OFF" and disconnects locked in the "OFF" position to prevent unit from unauthorized start-up.

One of the most important guidelines for maximizing reciprocating vertical conveyors operation and personnel safety is to implement a regular maintenance schedule and train personnel on the appropriate needs of the specific unit.

Only trained personnel shall perform maintenance functions. Before maintenance operations are performed, conveyor must be shut "OFF" and disconnects locked in the "OFF" position to prevent unit from unauthorized start-up during maintenance. All personnel should be informed of the safety procedures associated with continuous vertical conveyors maintenance and performance.

Do not perform any work on reciprocating vertical conveyors or conveyor system while in operation unless it is impossible to otherwise conduct adjustment, lubrication or other maintenance function. Only experienced, trained personnel possessing advanced hazards-training should attempt such critical operations.

MAINTENANCE AND FOLLOW-UP DETAILS

CAUTION: Only trained personnel shall perform maintenance functions. When maintenance is completed, only authorized personnel shall be permitted to start reciprocating vertical conveyor following maintenance or other emergency shut-off.

While performing maintenance do not wear loose clothing or uncovered hair. Immediately report any hazardous conditions-sharp edges, pinch (or nip) points or other conditions that may result when several manufacturers supply machinery which may create operating hazards.

When using mechanical aids such as hoists, cables, or cranes exercise extreme caution to prevent damage to conveyors or other integrated machinery which may create a working hazard when maintenance is completed and units are in operation.

Clean up any spilled lubricants or other materials used in the maintenance process or those which may be deposited during unit operation. Eliminating poor housekeeping practices increases unit efficiency while creating safer personnel working conditions.

After maintenance, conduct visual inspection to ensure that all safety devices and guards have been replaced. Confirm that all

units are clear of tools, debris or other items. Before starting reciprocating vertical conveyor, check condition of unit caution and danger signage and or caution labels. If labels or signage have been destroyed or are not clearly legible, call 870-483-7631, fax to 870-483-7049, email to info@roachconveyors.com. Placement of caution labels is critical to avoid unauthorized unit operation which may result in hazardous working conditions for all related personnel coming in contact with conveyor.

Warn personnel that conveyor is being prepared for start-up and to stay clear of unit. Do not start until all personnel are clear. When maintenance is completed, only authorized personnel shall be permitted to start reciprocating vertical conveyor following maintenance or other emergency shut-off.

MAINTENANCE AND LUBRICATION

MAINTENANCE SCHEDULES

MODEL NO. _____

WEEKLY RECOMMENDED MAINTENANCE SCHEDULE *	
COMPONENT	DETAIL OF MAINTENANCE
Pillow Block/Flange Bearings	Lubricate in dirty, dusty or moist/wet conditions.
Unit Safety Check	Confirm placement of all guards including safety finger guards, pop-out rollers, warning labels. Check for loose bolts, nip points & other hazards.

MONTHLY RECOMMENDED MAINTENANCE SCHEDULE *	
COMPONENT	DETAIL OF MAINTENANCE
Gear Reducer	See SEW Eurodrive Operating Instructions (01-805--52-US) Included in the back for the Tech book.
Pillow Block/Flange Bearings	Lubricate (normal conditions)
Drive Chain	Check for proper operating tension & for overall wear & lubricate.
Drive Sprockets	Check for overall wear & re-tighten set screws.

PERIODIC RECOMMENDED MAINTENANCE SCHEDULE *	
COMPONENT	DETAIL OF MAINTENANCE
Gear Reducer	See SEW Eurodrive Operating Instructions (01-805--52-US) Included in the back for the Tech book.
Drive Chain	Clean (brush in solvent) & re-lubricate by applying lubricant to inside of chain with brush or spout can at 2000 hour intervals.
Motor	Check & clear motor ventilation openings at 500 hour intervals Check miscellaneous operating conditions (normal heat & noise).

*All charts are for guidelines in normal operating or 'as noted' conditions. Severe applications may warrant additional maintenance.

MAINTENANCE AND LUBRICATION

RECOMMENDED LUBRICANTS

MISC. LUBRICANTS	
LUBRICANT	BRAND/DESCRIPTION
General Purpose Grease (For -30°F to 300° operation)*	Shell Dolium R (Shell Oil Co.) (or Suitable equivalent)
For extreme Temperature Operation (-90°F to 350°F operation)*	Mobiltemp SHC-32 (Mobil Oil Corp.) (or suitable equivalent)
Washdown Application* (-30°F to 225°F operation) (May require special consideration -- consult factory)	Shell Alvania No. 3 (Shell Oil Co.) (or suitable equivalent)
General Purpose Oil	SAE 10; SAE 20 or SAE 30

*NOTE: Temperatures listed indicate the nominal operational temperature for the specific lubricant listed. This does not imply that the bearing housing, seals or any other conveyor unit component is rated to operate in this specific temperature range or environment. 250°F is the maximum operating temperature for standard bearing lubricants and bearing components. Although various lubricants may enhance bearing operation, special-order bearings may be required to achieve optimal bearing performance. For additional information, consult factory.

TROUBLE SHOOTING AND REPLACEMENT PARTS

TROUBLE SHOOTING / SERIAL PLATE

TROUBLE SHOOTING		
TROUBLE	PROBABLE CAUSE	REMEDY
Motor & gear reducer running excessively hot, or hard to start*	A. Drag on RVC B. Lack of lubricant C. Frozen sprocket D. Frozen roller E. Overload F. Electrical	A. Inspect entire RVC for obstruction causing drag on chain. B. Check for leaks. C. Check and inspect all sprockets and bearings. Replace sprockets failing to rotate or that are difficult to rotate. D. Check all rollers for rotation. E. Reduce cause and/or increase motor horsepower. F. Check wiring and circuits, take ampere reading, replace motor if necessary.
Motor & gear reducer makes excessive noise*	A. Lack of lubrication B. Damaged Gears C. Faulty Bearing	A. Check for leaks. B. Replace unit. C. Replace bearing.
Drive chain, conveying chain or sprockets experience excessive wear	A. Excessive chain tension B. Sprockets misaligned C. Chain not lubricated D. Damaged sprocket or chain E. Misalignment of chain guard F. Dirty chain	A. Reduce chain tension. B. Realign with straight edge across sprocket faces. C. Lubricated chain with approved lubricant, wipe away excess lubricant. D. Replace Damaged Component. E. Adjust chain guard assembly as necessary. F. Clean thoroughly and lubricate with approved lubricant.
Drive chain, conveying chain or sprockets make excessive noise	A. Insufficient chain tension B. Chain not adequately lubricated C. Sprockets misaligned	A. Adjust chain tension. B. Lubricate chain with approved lubricant, wipe away excess lubricant. C. Realign sprockets with straight edge across sprocket faces.
Pulsating chain	A. Insufficient chain tension B. Misalignment of chain guard C. Overload	A. Adjust chain tension. B. Adjust chain guard assembly as necessary. C. Inspect for obstruction to or drag on conveyor.
Broken chain	A. Frozen bearing or sprocket shaft B. Worn or damaged chain C. Obstructed or jam	A. Inspect for damaged bearings, replace if necessary. Replace links as required. B. Replace chain as required. C. Remove obstruction to clear jam.
Sprocket loose on shaft	A. Loose set screws B. Worn or damaged key	A. Realign sprockets with straight edge and tighten set screws. B. Replace with new key.
Excessive slack in chain	A. Normal wear	A. Expect rapid chain growth in first two weeks of operation. B. Adjust chain tension as specified in the manual.

*Also refer to SEW Eurodrive Operating Instructions (01-805--52-US) Included in the back for the Tech book.

ORDERING REPLACEMENT PARTS



To order any replacement parts or when calling for assistance with any RVC, ALWAYS provide the unit serial number. Shown at near actual size, this aluminum plate is placed on the RVC frame near location of drive assembly. Generally, RVC serial number is located on engraved signage on the actual RVC conveyor electrical enclosure door.

To order replacement parts or add-on components, contact distributor who originally furnished unit if possible. If this is not possible, contact the national sales office at 870-483-7631 for the name of an authorized Roach distributor in your area. Please have unit serial number BEFORE calling.

RVC VERTICAL CONVEYOR Z-FLOW PARTS LISTS

Item #	Description	Item #	Description
1	Motor drive assembly	27	#80/100 chain guide weld sub assembly
2	Martin #80BS20-1 15/16" bore sprocket	28	Bearing mounting channel
3	1-15/16" ID double split collar	29	drive brace channel
4	Pillow block bearing 1-15/16" bore	30	1-15/16" lifting shaft (stress proof)
5	MC#3099T16 swivel eye block	31	Eurodrive KA77 base assembly
6	MC#3000T52 jaw & eye turnbuckle	32	Feeder mounting channel
7	MC#3561T44 1-4" chain shackle	33	Feeder guard
8	3/8-16" unistrut nut #P1008	34	Reflector mounting plate
9	Limit switch assembly	35	Side mesh guard
10	Ingus "E" chain (Not shown)	36	End mesh guard (40.375" tall)
11	Polarized P/E assembly	37	End mesh guard (30.878" tall)
12	Safety cable assembly	38	Side guard astonishment angle
13	Lift chain assembly	39	End guard adjustment angle
14	#80 top wheel blk. sub. assembly (left hand)	40	Wiring trough assembly 90.75" long
15	#80 top wheel blk. sub. assembly (right hand)	41	Wiring trough assembly 44.5" long
16	Bottom wheel blk. sub assembly	42	Wiring trough end cover
17	Carriage guide assembly	43	48" wire cover channel
18	Safety L/S mount sub assembly (left hand)	44	Limit switch plate (7GA)
19	Safety L/S mount sub assembly (right hand)	45	Carriage L/S striker
20	Frame weld assembly	46	Mounting bracket assembly
21	Floor support assembly	47	danger sign mount
22	carriage weld assembly	48	Caution sign mount
23	Support mounting channel	49	Emergency stop mounting bracket
24	Carriage adjustment angle	50	Lift sprocket guard
25	Carriage stop channel assembly	51	Panel mounting assembly
26	Chain guide wheel mounting angle	52	Solid electrical side guard

Specify Unit Serial Number when ordering replacement parts to ensure proper allocation of components (See Ordering Replacement Parts on page 20).

Recommended Spare Parts are shown in red. Charted are item numbers and part descriptions.

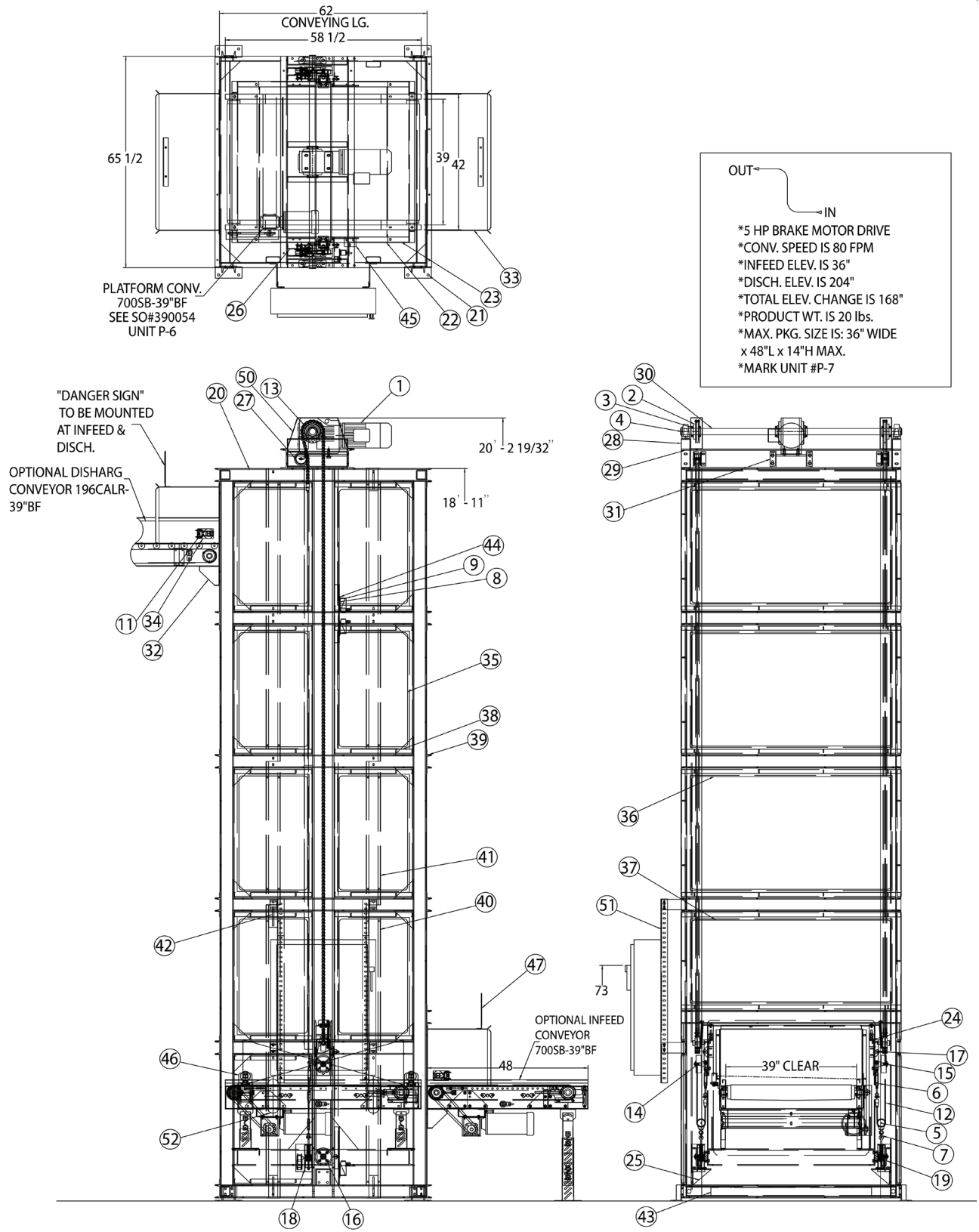
When ordering use example below.

Example: Need a replacement Motor drive assembly for a RVC Z-Flow

Part No: SN 123456 - 1 - Motor drive assembly



RVC VERTICAL CONVEYOR Z-FLOW DRAWINGS



RVC VERTICAL CONVEYOR

Z-FLOW

VERTICAL CONVEYOR DESIGN MAY VARY FROM MODEL SHOWN ABOVE



ROACH CONVEYORS

WARRANTY

- Materials used by Roach Conveyors are of good quality.
- Any part proving to be defective in materials or workmanship upon Roach inspection, will be replaced at NO cost, FOB, Trumann, Arkansas, for one year. Installation expense will be paid by others.
- Roach liability includes furnishing said part or parts; Roach is not liable for consequential damages, such as loss of profit, delays or expenses incurred by failure of said part or parts.
- Failure due to abuse, incorrect adjustments, exposure to corrosive or abrasive environment or operation under damp conditions does not constitute failure due to defects in workmanship or materials.
- Component parts not manufactured by Roach (motors, gear reducers, etc.) will be repaired or replaced at the option of their manufacturer. Contact nearest authorized service center for all warranty claims.

NOTE: Motors or gear reducers tampered with before inspection shall be considered free of ALL Warranty Claims.

--All specifications are subject to change without notice--
--Drawings are intended for illustration ONLY and are not to scale--

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