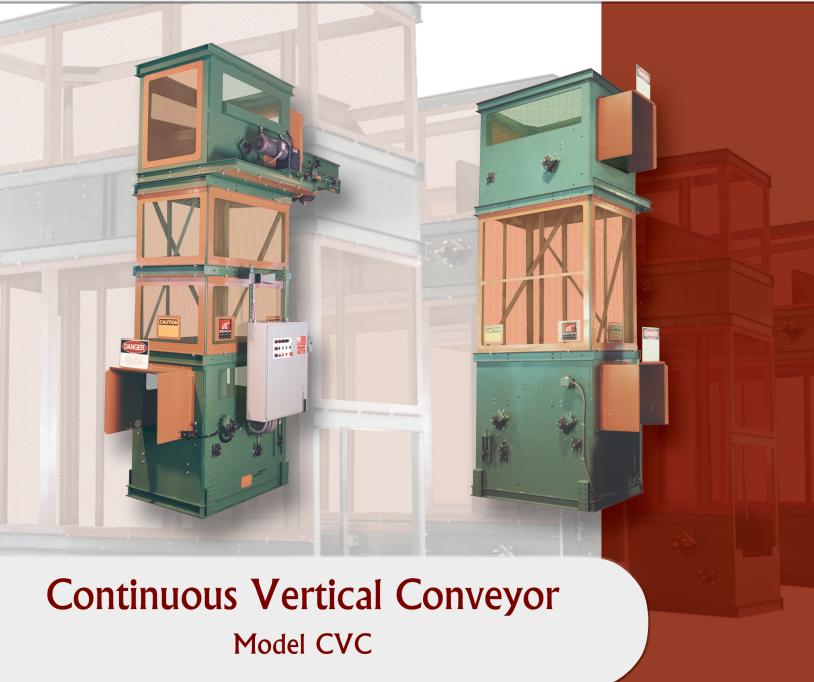


OWNER'S MANUAL



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

TECH HANDBOOK FOR CVC TABLE OF CONTENTS

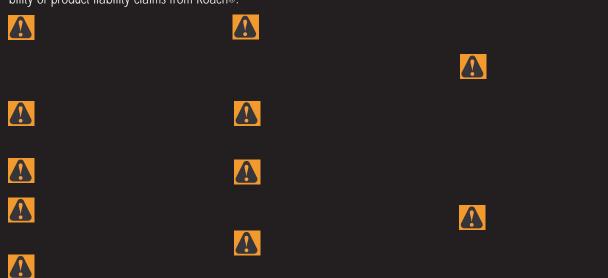
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AWARNING

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

AWARNING

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®.



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)



CAUTIONS, WARNINGS AND HAZARDS CAUTION SIGNAGE

The importance of maintaining a safe environment for operators and those coming in contact with model CVC, continuous vertical conveyors, simply cannot be overstated. Therefore, caution and danger signage shall be prominently displayed on all model CVC'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 CVC, contact Roach Manufacturing Corporation by telephone at 870-483-7631, by fax at 870-483-7049, by email at info@roachconveyors.com, or by visiting the Roach web site at http://www.roachconveyors.com and click on the email button on the home page.

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

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

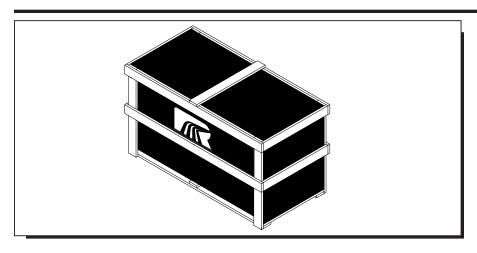
As previously noted, thorough periodic inspections should always include confirmation of danger signage (see below and caution signage previous page).

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, or by visiting the Roach web site at http://www.roachconveyors.com and click on the email button on the home page.



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



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.

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.

UNCRATING AND STORAGE



MODEL CVC C-FLOW



MODEL CVC Z-FLOW

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.

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

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

START-UP PROCEDURES ® GEAR REDUCER WITH POSIVENT



NOTE

The gear reducer is supplied with a "PosiVent®". No vent plugs are required.

PosiVent Unique design incorporates a single seam construction. Factory filled with synthetic lubrication for universal mounting. Lubed for life, no oil changes are required.

PRFPARING FOR INITIAL START-UP



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.

Provisions must be in order to instruct all personnel coming in contact with conveyor on the location of emergency stops, pull cords, etc.

A routine maintenance program should be implemented before unit is placed into operation so that fundamental unit components are attended to. This maintenance program should include an inspection to ensure that any dangerous or hazardous operating conditions are noted and IMMEDIATELY corrected, as well as

A DANGER

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

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.

including electrical and mechanical unit inspections and corrections.

Finally, when conveyor is initially started, an immediate visual inspection should include motor, gear reducer, belt tracking (discussed in following section under "Belt Tracking") and related adjustments noted in handbook for unit/component corrections.

START-UP PROCEDURES OPERATOR CONTROLS DETAIL

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.

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.

INFEED 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 automatically 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

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 CVC, 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

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.

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



CAUTION: Continuous Vertical
Conveyors, model CVC, are designed to
operate "continuously" and not be subjected to repeated starts and stops. If the
CVC is started and stopped depending
on product flow rate, premature replacement of chains and sprockets will result.

Continuous Vertical Conveyors, model CVC, are designed to operate "continuously" and not be subjected to repeated starts and stops. If the CVC is started and stopped depending on product flow rate, premature replacement of chains and sprockets will result.

When using a continuous vertical conveyor, the discharge conveyor (or other

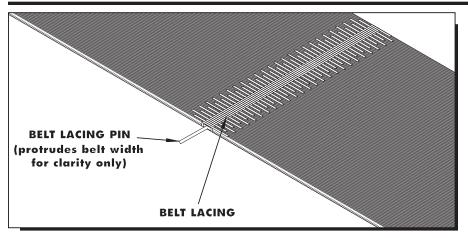
source) must be monitored to allow an acceptable number of loads to enter the CVC, which in turn, can be conveyed to the output conveyor (or other source) by the continuous vertical conveyor.

A sensor is mounted on the discharge conveyor to detect full line loading conditions. The CVC is then allowed to discharge all loads and continue running.

Once the discharge conveyor sensor is clear, additional loads may enter the CVC through the CVC feeder conveyor.

Additional sensors are also 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.

FEEDER CONVEYOR BELTING REPLACING BELT



CAUTION: Belt lacing must be kept in good condition for safe work environment.

Feeder conveyor belting is cut to proper length, laced and assembled on feeder conveyor at the factory. It is set up, test run with the continuous vertical conveyor and inspected before it is shipped to its final destination.

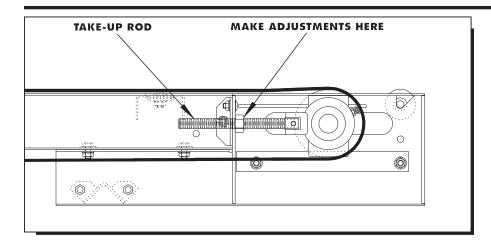
Should belt require replacement in future, determine correct side to be placed down. One of the most common prob-

lems associated with belt replacement involves placing the incorrect side down. If belting is supplied as cover one side, the opposite side, a friction surface, should be placed down for decreased friction and improved conveyability. The friction side will be a lighter shade of color than the cover side. ALWAYS

place the friction side down against the conveyor bed.

To replace belting, loosen threaded take-up rods (see illustration below) at take-up pulley equal amount on both sides and re-adjust when belt is installed keeping pulley square with conveyor bed.

MAINTAINING PROPER BELT TENSION ON FEEDER CONVEYOR



CAUTION: Belt lacing must be kept in good condition for safe work environment. Also, do not operate unit with improper belt tension. Unit is subject to abnormal wear and maintenance when operated with belt incorrectly adjusted.

Maintaining proper belt tension is vital to feeder conveyor operation. Enough tension should be maintained so that drive pulley does not slip during operation.

To adjust feeder conveyor take-up, adjust position of take-up rod (see illustration above) as required. Equally adjust both sides to hold take-up pulley square

(to maintain unit squareness for belt tracking).

Operating feeder conveyor with slipping belt will decrease life of both belting and pulley lagging. Also, do not operate unit with too much tension on belt. This will decrease belt life and may harm unit drive and take-up bearings.

Over-tensioning belt requires additional horsepower from unit drive.

NOTE: It is perfectly normal for a belt to stretch (in varying climatic conditions) under rated loading. Adjust take-up as needed to properly tension belting.

MAINTENANCE SAFETY PRECAUTIONS BEFORE PERFORMING MAINTENANCE

CAUTION:

One of the most important guidelines for maximizing conveyor 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 continuous 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 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 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 or visit Roach web site at http://www.roachconveyors.com and click on the email button on the home page to request new caution labels or caution or danger signage. 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 conveyor until all personnel are clear. When maintenance is completed, only authorized personnel shall be permitted to start conveyor following maintenance or other emergency shut-off.

MODEL	NO	•	

WEEKLY RECOMMENDED MAINTENANCE SCHEDULE*			
COMPONENT	DETAIL OF MAINTENANCE		
Belting	Inspect belt tracking.		
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.		

PERIODIC RECOMMENDED MAINTENANCE SCHEDULE*		
COMPONENT	DETAIL OF MAINTENANCE	
Gear Reducer	Check for leaks.	
Drive Chain Clean (brush in solvent) & re-lubricate by applying lubricant to inside 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.

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.

REPORT ON MAINTENANCE			
CONVEYOR MARK NO.	REPAIRED BY	INSPECTION DATE	DETAIL OF MAINTENANCE COMPLETED (OR INSPECTION) LIST PARTS REPLACED OR REPAIRS
Wir date 140.	D1	DATE	EST TARTS RELEASED ON RELATION

TROUBLE SHOOTING			
TROUBLE	PROBABLE CAUSE	REMEDY	
Motor & gear reducer running excessively hot, or hard to start	A. Drag on conveyor B. Lack of lubricant C. Frozen sprocket D. Frozen roller E. Overload F. Electrical	 A. Inspect entire conveyor 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 reduc- er 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. Re place 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	A. Normal wear	A. Expect rapid chain growth in first two weeks of opera-	



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

tion. B. Adjust chain tension as specified in the manual.

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.

chain

CVC VERTICAL CONVEYOR Z-FLOW PARTS LIST

Item #	Description	Item #	Description
1	Motor drive assembly		Bearing push plate
2	Taper-lock sprocket w/1-3/8" bore	36	take-up assembly
3	Taper lock sprocket w/1-17/16" bore	37	Free spinning idler sprocket
4	VCJ-1-7/16" bore	38	Platform turn wheel
5	NSTUSXr 1-17/16" bore T-U bearing	39	.209 sprocket spacer
6	Double split collar 1/16" ID	40	O/S chain guide mounting angle
7	Martin 60BS36-1-15/16" ID	41	I/S chain guide mounting angle
8	#40 Gap roller drive chain	42	Platform guide angle assembly
9	Polarized photo-eye assembly	43	Feeder mounting angle (DISCH)
10	A/B #802T-HP limit switch assembly	44	Gap roller assembly
11	Drive shaft layout	45	Gap roller assembly (top)
12	Platform assembly	46	Gap roller assembly (bottom)
13	Lift chain assembly 70-1/2" long	47	Top cover
14	Frame weld assembly	48	Feeder guard w/reflector
15	Support assembly 10.25" tall	49	Side guard adjustment angle
16	Runner crossbrace assembly	50	End guard adjustment angle
17	Bottom return assembly	51	Side guard assembly
18	Bottom runner assembly	52	End guard assembly
19	Platform return guard	53	Bottom end guard assembly
20	Top runner assembly	54	Top end guard assembly
21	Drive mounting channel	55	Photo-eye assembly
22	Motorbase mounting channel assembly	56	7-1/8" limit stitch Mt. (BTM)
23	Drive bottom cover	57	Photo-eye mount assembly
24	Motor drive assembly mount	58	Panel mount assembly
25	Drive chain guard assembly	59	Danger sign mount
26	1-15/16" dia. drive shaft	60	Caution sign mounting plate
27	1-15/16" dia. idler shaft	61	E-stop mounting bracket
28	1-15/16" dia. take-up shaft	62	Elec. slot cover plate
29	O/S chain idler sprocket assembly	63	BTM L/S access cover
30	MOD O/S chain idler sprocket assembly	64	Wiring trough end cover
31	I/S chain idler sprocket assembly	65	22-5/8" wiring trough
32	I/S brg. mount	66	51-1/2" wiring trough
33	O/S brg. mount	67	84-3/8" wiring trough
34	MOD. O/S brg mount		

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

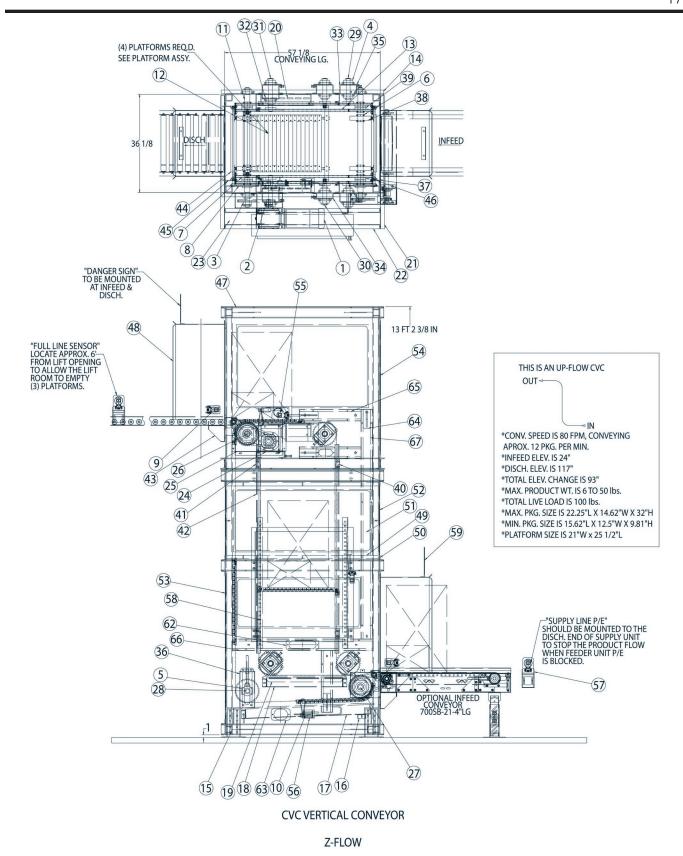
Recommended Spare Parts are shown in red. Charted are item numbers and part descriptions.

When ordering use example below.

Example: Need a replacement Motor drive assemby for a CVC Z-Flow

Part No: SN 123456 - 1 - Motor drive assembly





VERTICAL CONVEYOR DESIGN MAY VARY FROM MODEL SHOWN ABOVE

NOTES

NOTES



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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