

# Quick-Key®

## SPOOL CONVEYOR

# INSTALLATION & OPERATING INSTRUCTION MANUAL

Manufactured in the U.S.A. by



P.O. Box 1086, 2000 E. Leffel Lane • Springfield, Ohio 45501  
Toll Free: 1-800-334-7254 (in U.S.A. & Canada) • Phone: 937-325-1511 • Fax: 937-322-1963

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

## STANDARD CONDITIONS - TERMS OF SALE

Orders are subject to the approval of Sweet Manufacturing Company in writing at Springfield, Ohio, U.S.A., or by shipment of goods. All orders are considered firm contracts. Shipping dates are only our estimate based upon time required for production, and we shall not be liable for any claims for delays beyond our control, nor shall we accept cancellations or suspensions unless agreed upon, at the same time protecting us against loss caused by such cancellation or suspension.

The title and right to possession of the goods covered by order shall remain with Sweet Manufacturing Company until complete and final payment therefore shall have been paid to seller in cash, including any interest or other auxiliary charges provided for. All goods covered by order will be considered as personal property until completely paid for regardless of mechanical attachment to real estate.

No material shall be returned without our authorization. Where written consent of Sweet Manufacturing is given for the return of unused goods, the purchaser will pay a minimum handling charge of fifteen percent (15%) of the original purchase price of the goods returned.

**WARRANTY** - All items manufactured by Sweet Manufacturing Company are warranted against defects in material or workmanship for one (1) year from the date of shipment (but not against damage caused by accident, abuse, or faulty installation). Sweet Manufacturing will replace free of charge (FOB point of supply) all such defective parts if returned to the factory, charges prepaid. All items manufactured by others and resold by Sweet Manufacturing are warranted to the full extent of the warranties furnished by such original manufacturer. No allowances will be made for repairs, alterations or changes unless specifically authorized by us. There are no other warranties, expressed or implied, other than title, freedom from liens, and against patent infringement. SELLER MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

**LIMITATION OF LIABILITY** - Liability of Sweet Manufacturing to the purchaser for damages arising out of the manufacture, sale, delivery, use or resale of the equipment, whether based on warranty, contracts, negligence, or otherwise, shall be limited to and shall not exceed the cost of the repair or replacement of defective part or parts. Upon expiration of the warranty, all such liabilities shall terminate. The seller shall not be liable to the purchaser or user for loss of anticipated profits, loss by reason of plant shutdown, non-operation, increased expenses of operation of other equipment, or other consequential loss or damage of any nature arising from any cause whatsoever by reason of the manufacture, sale, delivery, use, or resale of the equipment covered by this order, quotation or contract.

A minimum charge of Fifty Dollars (\$50.00) net, exclusive of transportation charges, will be made on all orders, unless otherwise noted on invoice for the value of such material as less than this amount.

All prices are F.O.B. Springfield, Ohio, U.S.A., unless otherwise agreed. Additional charges may be made for special handling, extra packing, or unusual services. Open account terms will be extended subject to approval of our Credit Department. Any federal or state taxes, sales, use, or other taxes will be added to invoice when and if assessed. All prices are subject to change without notice.

### Sweet Manufacturing Company

P. O Box 1086  
2000 E. Leffel Lane  
Springfield, OH 45501

Toll Free: 1-800-334-7254  
(U.S.A. & Canada)  
Phone: 937-325-1511  
Fax: 937-325-1963  
E-mail: sales@sweetmfg.com

# Quick-Key®

## TABLE OF CONTENTS

INTRODUCTION .....	1
CHECK AND INSPECT ORDER .....	1
SAFETY .....	2
MODEL IDENTIFICATION & CAPACITY .....	3
CONVEYOR CAPACITY .....	3
GENERAL .....	4
INSTALLATION AND ASSEMBLY OF STANDARD CONVEYORS .....	4
INSTALLATION OF SPOOL IDLERS AND RETURN ROLLS .....	4
BELT INSTALLATION .....	4
DRIVE ASSEMBLY .....	5
MAINTENANCE .....	6
ASSEMBLY DRAWINGS .....	8-10
SPARE PARTS LIST .....	12

Purchase Date \_\_\_\_\_ Model \_\_\_\_\_

Serial Number \_\_\_\_\_

## **INTRODUCTION**

The purpose of this Owner's Manual is to advise and instruct owners of Quick-Key® Spool Conveyor and Accessories in the recommended installation, operation and maintenance of the equipment. You have purchased a product which has been manufactured with utmost care and the finest materials reflecting many years of engineering knowledge.

Although the equipment is now in your hands, we feel our responsibility does not end. You now have the task of installing your equipment either by yourself, under your supervision, or hiring it done. Regardless of who does the installation, this manual is designed for you. The instructions and drawings give step-by-step method of recommended installation procedures. Methods will vary among millwrights, but if you are not sure which is best, we suggest that you follow instructions in the manual.

THE FOLLOWING INFORMATION WILL AID YOU IN THE INSTALLATION AND OPERATION OF YOUR NEW QUICK-KEY® SPOOL CONVEYOR. TO INSURE LONG LIFE AND TROUBLE FREE OPERATION, YOU SHOULD READ THESE INSTRUCTIONS AND PROVIDE REGULAR PERIODIC MAINTENANCE. IT IS THE INSTALLERS RESPONSIBILITY TO BE AWARE OF AND COMPLY WITH ALL FEDERAL, STATE, AND SAFETY CODES, BUT NOT LIMITED TO SAFETY AND ELECTRICAL CODES.

## **CHECK & INSPECT YOUR ORDER**

Each order or shipment is double checked before leaving the factory. All parts, pieces, and components are listed item by item on our packing list which accompanies each order. The number and description of each item, package, container, skid, etc., is listed on the bill of lading. In signing the bill of lading, the carrier assumes full responsibility for safe delivery of all goods to destination in the same order as carrier was tendered by the shipper. In the event of damage or shortage, have the transportation company note the tendered by the shipper. In the event of damage or shortage, have the transportation company note the same on the freight bill. You should then file claim against the carrier for such loss and/or damage.

You will find a packing list attached to one of the items in the shipment. Check each item against the list. Check by description, specification, quantity, or count, etc. Should there be any discrepancies, notify us immediately. If an order or shipment includes more than one Quick-Key®, the parts for each conveyor will be keyed or marked on the packing list for easy identification.

Small parts and items, such as bolts, washers, bushings, and keys are just as important to an installation as the larger ones. Make sure these are located and checked before disposing of any containers or packing. We cannot be responsible for loss of items that are listed and included on our packing list.

Should there be some delay between the time an order is received and ensuing installation, store parts in a protected area so they may be easily located and identified. Retain packing lists for this reason as well as for future parts reference.

## **SAFETY**

Your conveyor has been designed to comply with CEMA safety standards. These safety standards can be obtained through the American Society of Mechanical Engineers as ASME B20.1 (1993). These standards should be consulted before installation and operation of the conveyor.

Operating and maintenance personnel should be thoroughly trained in safe operating procedures, recognition of possible hazards, and maintenance of a safe area surrounding the conveyor.

Shown below is an example of the warning label attached to the conveyor covers.



The following safety guidelines should be followed:

**THESE ARE GUIDELINES ONLY AND COMPLIANCE WITH SAFETY STANDARDS - LOCAL, STATE AND FEDERAL, INCLUDING OSHA - IS THE RESPONSIBILITY OF THE USER.**

1. Maintain a safety program for all operating personnel.
2. All operating personnel should be advised of the location of all emergency controls and devices.
3. Good lighting, housekeeping, and maintenance contribute to a safe work area.
4. Frequent inspections should be made of all conveyor equipment, and all safety devices should be in position and in proper working order.
5. Conduct a pre-startup safety check of all conveyor equipment to determine that the machinery and area are safe for operation and that guards and warning devices are in place.
6. There should be absolutely no reckless actions or horseplay in the vicinity of conveyors. Most accidents are caused by lack of proper safety training, carelessness, horseplay, and lack of awareness of possible hazards.
7. Conveyors should not be operated unless the conveyor housing completely encloses the moving elements and power transmission guards are in place. If the conveyor cover or housing is to be opened, the motor must be locked out / tagged out electrically in such a way that it cannot be restarted by anyone in the vicinity or remote from the conveyor. Overflow cover sections or doors should not be opened while the conveyor is operating.
8. If, because of its application, the conveyor must have open housing, then the entire conveyor must be separated from personnel areas by a fence and warning signs posted.
9. Open feed hoppers or spouts for shovel, front end loaders or their manual or mechanical loading must incorporate a grating. If the characteristics of the material being handled are such that a grating cannot be used, then the exposed portion of the conveyor must be guarded by a fence and warning signs posted.
10. Do not walk or stand on conveyor cover, grating, or power transmission guards.

## **ELECTRICAL EQUIPMENT**

Emergency stop switches, safety shut-off switches, zero speed switches, overflow and overload devices and other electrical controls are all necessary considerations for a safe conveyor installation. (Conveyor user usually furnishes controls and switches).

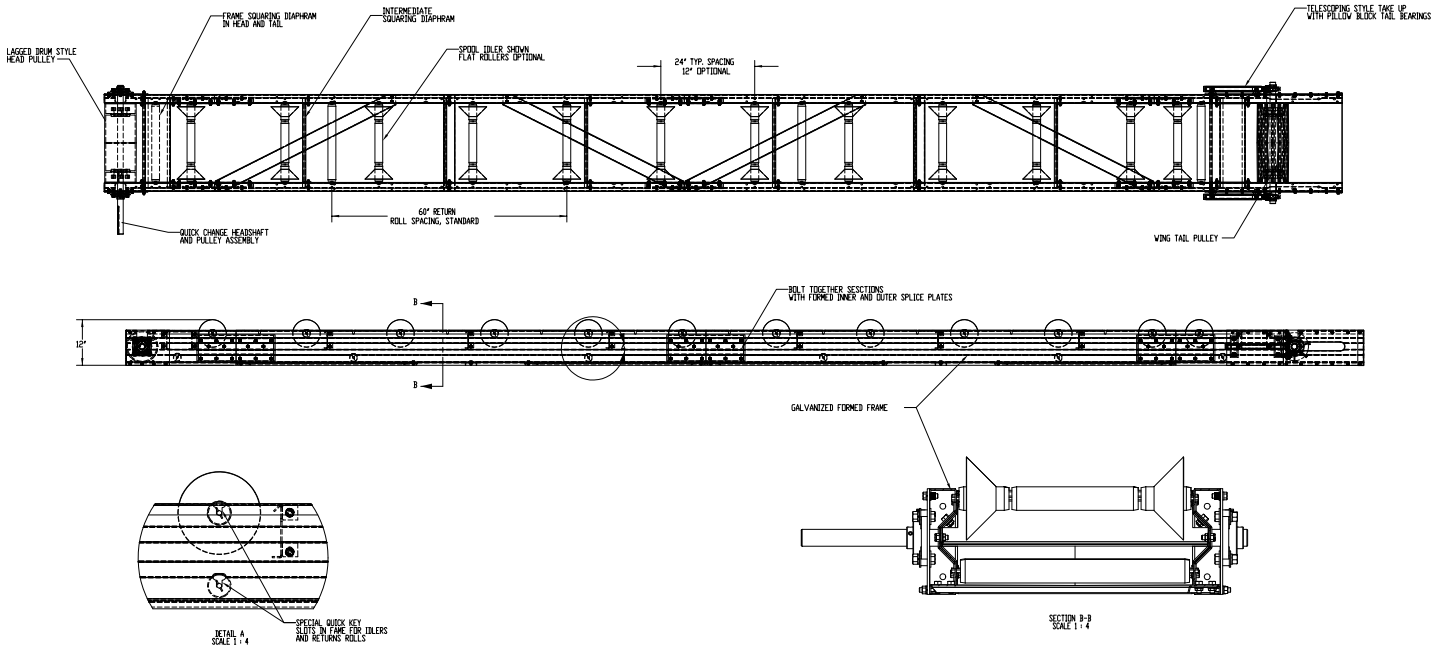
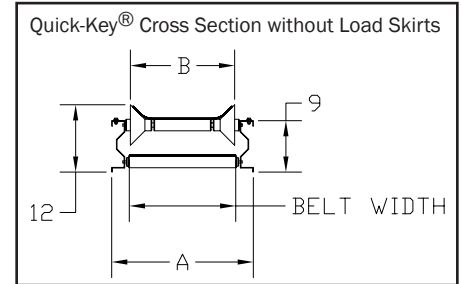
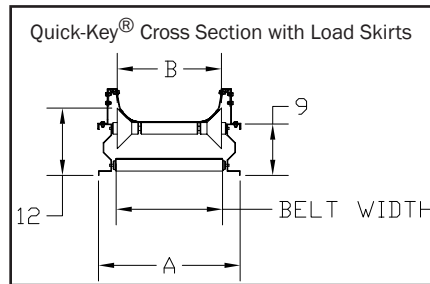
# MODEL IDENTIFICATION

Use chart below to identify the model of Quick-Key® to select the proper procedures and dimensions to use in installation.

**Table # 1**

Belt Width	A	B
12"	19"	12.5"
18"	25"	18.5"
24"	31"	24.5"

## Typical Conveyor Cross Sections



# CONVEYOR CAPACITIES - SPOOL IDLERS

## Specifications

\*Capacities in tons per hour / Belt speed in feet per minute

Belt Width	Lbs./ Ft.3	100	150	200	250	300	350	400
12"	15	3	4	5	6	8	9	10
	30	5	8	10	13	15	18	20
	50	9	13	17	21	25	29	33
18"	15	6	9	12	15	17	20	23
	30	12	18	23	29	35	41	46
	50	20	29	39	49	58	68	77
24"	15	10	16	21	26	31	36	41
	30	21	31	41	52	62	72	82
	50	35	52	69	86	103	120	137

\* Other CEMA idlers available. NOTE: All dimensions subject to change without notice.

## GENERAL

Only proper installation can offer the performance intended by the manufacturer. A good installation, therefore, should be of prime concern to the customer and to the construction firm responsible for the same. A manufacturer cannot be responsible for the installation of a conveyor. The suggestions and information contained herein are offered solely as a convenience, for we assume no liability to installation, either expressed or implied.

When the Quick-Key® is used to feed a bucket elevator or another conveyor, provision must be made for proper clearances to allow for drives, discharges, valves, etc., on all the equipment. Also, enough clearance should be provided to allow proper maintenance of equipment after it has been installed. Thought given to such matters prior to installation can prevent later problems in the flow plan and avoid possible “bottlenecks.”

It is important that a firm, level foundation or support be provided to mount the Quick-Key®. This support should be ample to carry the fully loaded conveyor.

## INSTALLATION AND ASSEMBLY OF STANDARD CONVEYORS

Lay out the unit as it is to be used, including the head and tail section. Do not lift intermediate lengths greater than 40' with a maximum of 20' between lift points. Supports should be located under the conveyor frame. Support centers should not exceed 20' (6 meters).

See DRAWING 0364400 for typical intermediate splice connections. NOTE: Inner and outer splice plates resemble each other but are slightly different.

Loosely install the bolts and nuts, but do not tighten. Then use a wire or line to make sure that the conveyor is straight horizontally. Shim supports as required to get correct alignment. Tighten the connecting hardware making sure that the bottom of each section is not higher than the previous section. At this time, check the tightness of all the hardware in the conveyor to insure that all are properly tightened (such as the set screws in the bearings and pulleys).

## INSTALLATION OF SPOOL IDLERS AND RETURN ROLLS

Locate return rolls (plain) in key slots near the bottom of the frame on five foot centers by aligning slots in the idler shaft with those in the frame. NOTE: The shaft may have a snug fit.

Locate spool (carry) idlers in key slots at the top of the frame as mentioned above. Standard spool spacing is two feet on center starting with the key slot nearest the head (drive) pulley. Additional spool idlers may be added for one foot centers to carry heavier loads (optional).

## BELT INSTALLATION

### Belt Types

- **Rubber COS (Cover One Side)** - Install with fabric surface toward pulley face.
- **Rubber CBS (Cover Both Sides)** - Install with thinnest rubber surface toward pulley.
- **PVC Crescent Top** - Install with molded crescents away from pulley face and open ends of crescent toward head pulley.
- **Other Belts** — Consult Factory.

Pull belt through conveyor frame across return rolls toward and around tail pulley, then back across spools toward head pulley.

See instructions provided with belt splice kit for installation of lacing.

On longer conveyors, belt guide assemblies may be provided. The guides should be placed equally between the head and tail pulleys. (See Drawing REF 143) for installation detail.

When installing the Quick-Key® belt, the take up (tail) pulley should be in its' most forward position to the head pulley. After splicing the belt ends together, turn the adjusting threaded rods of the take up assembly to tighten belt. Upon running the conveyor, track the belt to the center of the tail pulley by turning the take up threaded rods a quarter of a turn until the belt centers on the take up pulley.

## DRIVE ASSEMBLY

The typical drive assembly includes a shaft-mount reducer with torque-arm, motor mount, sheaves with bushings, V-belts and belt guard. Also provided is a torque-arm mounting channel (see Figure B) which bolts to the conveyor frame just behind the head section. The standard drive is provided to mount on the left hand side of the head section (when viewing from the tail section). Provisions for right hand drive can be made at the factory, if so ordered.

Proper installation of the speed reducer is essential to provide efficient economical operation and long-life.

NOTE: Some drive components (i.e., reducer, motor mount backstop, etc.) include additional instruction sheets for your reference. Watch for these when opening cartons.

1. Make certain that the driven shaft, on which the reducer is to be mounted is clean and free from burrs. Remove any protective coating on the driven shaft and in the hollow bore of the speed reducer. Coatings may be removed by using a non-flammable solvent.
2. Inspect and locate machine key in driven shaft.

**CAUTION: For safe handling of the reducer, use only proper lifting equipment having ample load carrying capacity. Hand lifting is dangerous. It is good practice to avoid excessive overhang on both driven shaft and input shaft by mounting reducer as close as possible to bearing support, and V-belt sheaves as close as possible to the reducer. Do not force reducer when mounting on shaft. You may damage bearings.**

3. Install motor mount on reducer per instruction note as to position and height.
4. Slide the drive assembly (reducer and motor mount) onto the head shaft.
5. When reducer has been properly positioned, secure bushings or set screws against driven shaft. Stake key-seat in driven shaft to prevent key from moving. (See bushing instructions for proper bolt torque).
6. Install the torque-arm on the torque-arm channel on the first frame section as shown in Figure B.

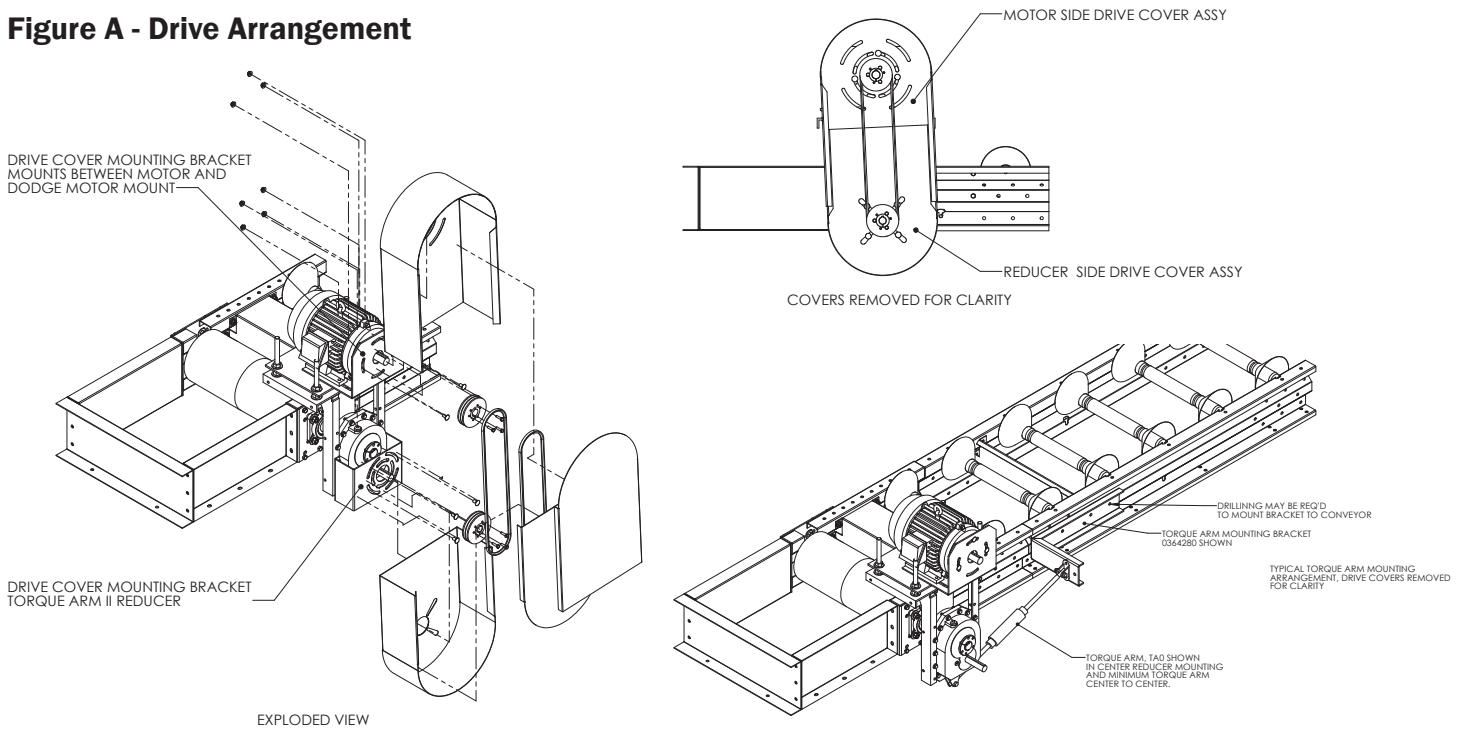
**CAUTION: Speed reducers are shipped without oil. Be sure to lubricate properly before operation. Refer to nameplate and service manual for lubrication instruction.**

7. Before installing the V-belts and sheaves, install the rear or back side of drive cover and mounting bracket, following the instructions supplied with the drive hardware (see Figure A). Install proper sheaves on motor and reducer. Check packing list and sheave carton for markings and identification. Interchanging sheaves will result in improper belt speed and unsatisfactory conveyor operation.

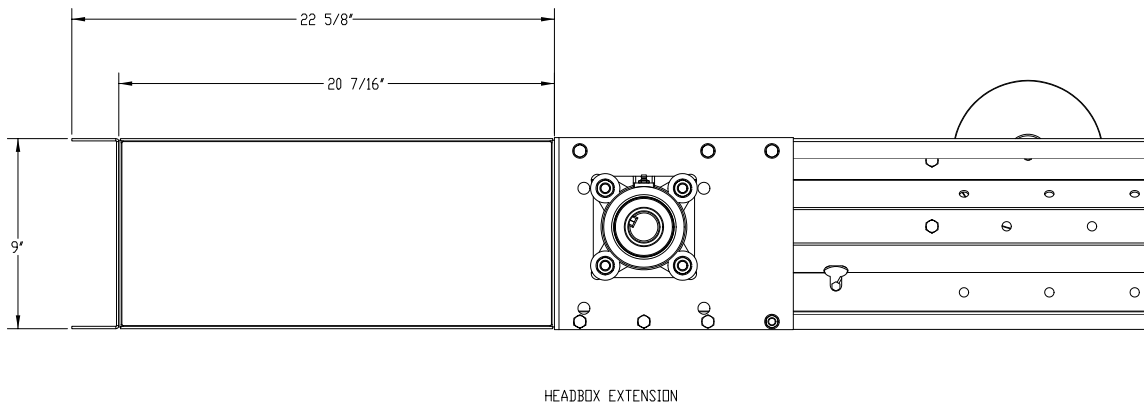
Mount sheaves as close to reducer as possible to prevent overhung loads. Align sheaves by using a straightedge, placed across the outer faces of both sheaves. Be sure keys are properly installed and tighten set screw firmly.



**Figure A - Drive Arrangement**



**NOTE:** The head shaft speed may be improper due to installing the wrong sheaves on motor and reducer. Refer to packing list for proper placement of sheaves.



**Figure B - Head Box Extension**

## MAINTENANCE

After approximately ten (10) hours of use, re-tighten all set screws on the bearings for the head and tail shafts, as well as the bushings on the sheaves and reducer. Check the conveyor belt tension and the V-belt tension in the drive. This should be repeated every fifty (50) hours of operation.

**LUBRICATION! CAUTION! DO NOT START UNIT WITHOUT FIRST FILLING REDUCER WITH OIL!**

**SPEED REDUCER:** The shaft mounted speed reducer is lubricated by an oil reservoir in the housing. The correct amount of oil is important to the proper operation of the reducer. Too much oil may cause leakage or overheating. Too little oil may cause overheating or damage to internal parts. The Speed Reducer Service Instruction Manual gives a list of recommended lubricants and oil change periods.

**DO NOT USE:** Lubricants of the EP (extreme pressure) type, those containing slippery additives, or heavy weight (90-140 wt.) gear lube. It is recommended that oil be drained and housing flushed after the first 150 hours of operation. Change oil every 2500 hours thereafter. Check oil levels occasionally when unit is not operating and add oil as required.

Keep breather holes clear at all times to prevent pressure buildup in reducer.

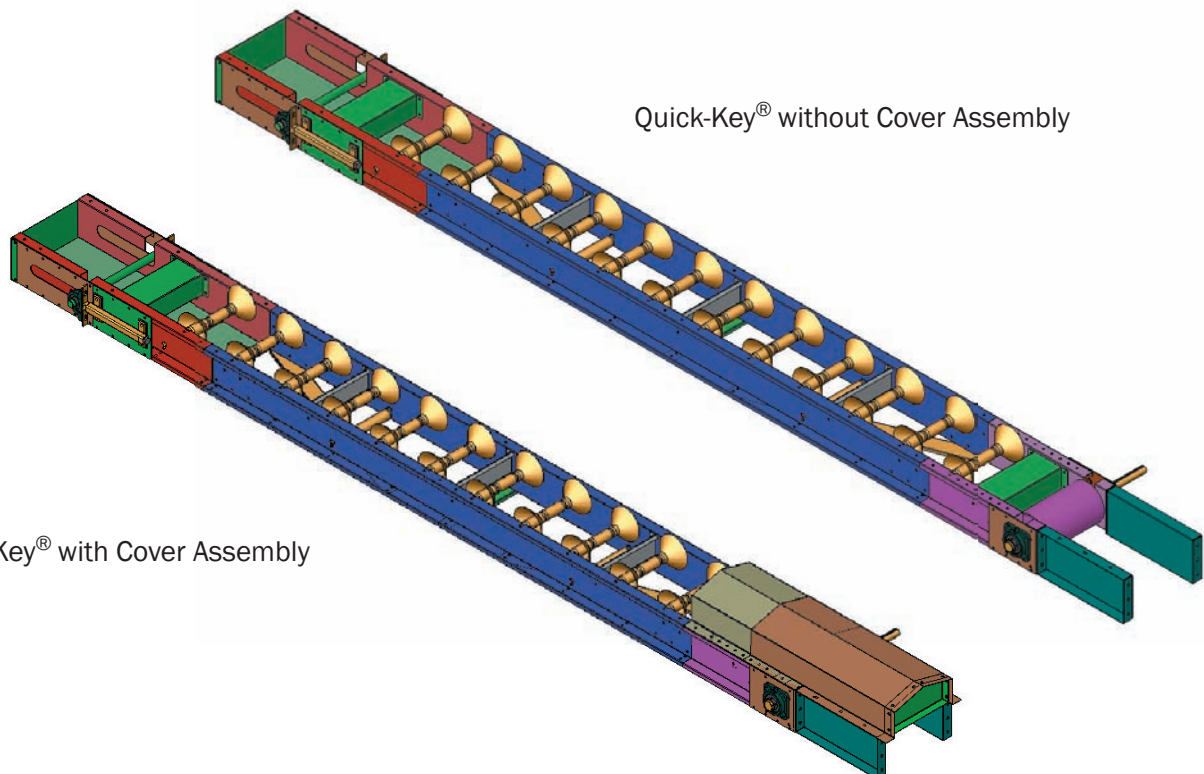
**!WARNING!:** Never remove breather plug or oil level plug while drive is in operation, or personal injury may result. Check these only when drive is not operating.

**INSPECTION:** An inspection schedule should be established in order to insure that the equipment is in good operating condition at all times. Regular inspections will help to reveal little things such as loose bolts, spool idlers, etc., before they become serious and damaging problems. Here are some of the things which should be inspected and maintained regularly.

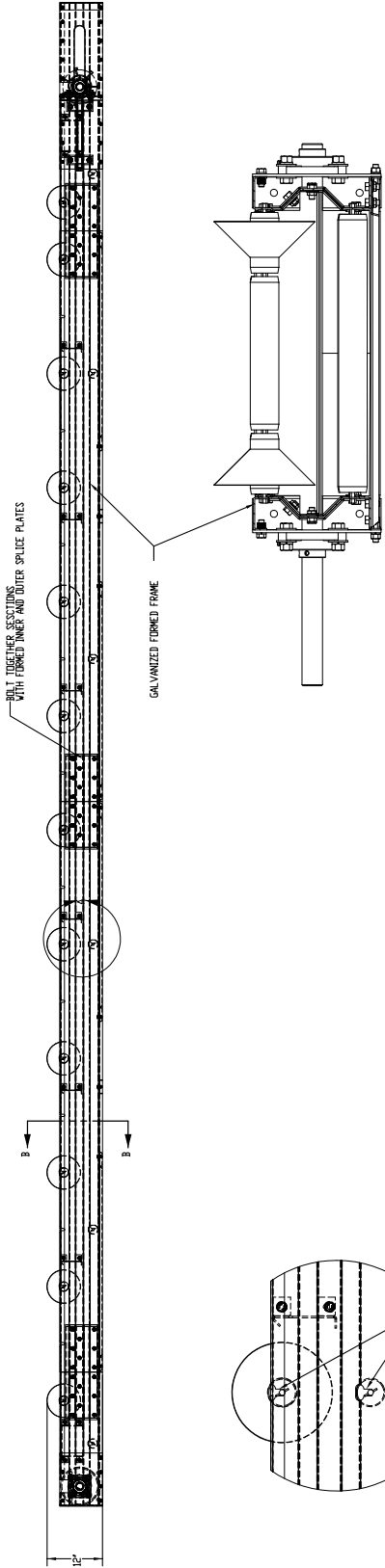
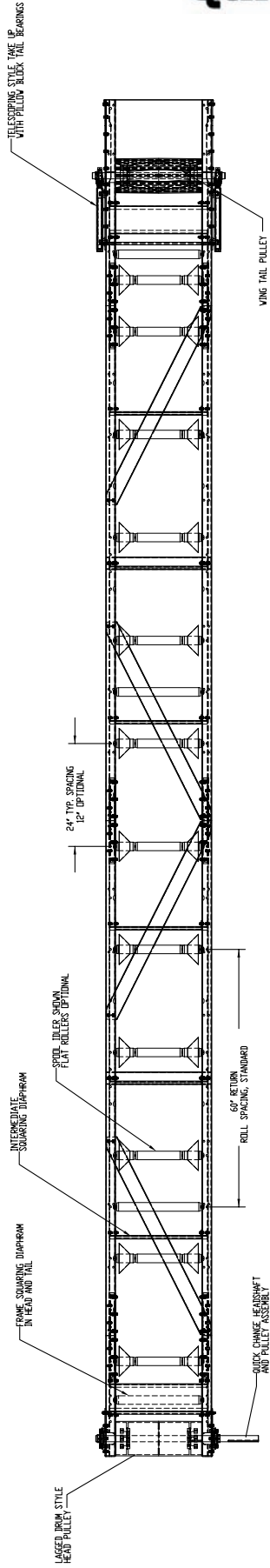
**!WARNING!:** Make inspections when all operations are stopped and lockout and tag out procedures are completed.

1. Inspect belt and splice for damage, wear and general condition.
2. Check belt tension. Re-splice if it cannot be adjusted further.
3. Inspect V-belts for tension and condition. V-belts should be replaced with a MATCHED SET.
4. Check speed reducers regularly for sufficient oil and signs of leakage. Keep BREATHERS CLEAN.
5. Check bearings for sufficient lubrication and evidence of overheating.
6. Check all sheave and drive attaching parts for sufficient tightness.
7. Check all hardware and tighten as required.

**SAFETY:** The importance of exercising EXTREME CARE when installing and maintaining the QUICK-KEY® cannot be over emphasized. Working at heights (following OSHA regulations) reached by even the smallest installations can be hazardous unless SAFETY precautions are taken. In any case, BE CAREFUL, DO NOT HURRY, AND REMEMBER WHERE YOU ARE AT ALL TIMES.



# Quick-Key® SPOOL CONVEYOR



WVSJ PROJECT/DWG: QK-SPB IN QK FOR MINA







## QUICK-KEY® SPARE PARTS LIST

DESCRIPTION	BELT WIDTH		
	12"	18"	24"
Spool Idlers	0361000	0361003	0361005
Return Rolls (Flat Face)	0361010	0361013	0361015
Head Pulley 8" Dia. 8 " Dia. Lagging	0814D20C 0475000	0820D20C 0475003	0826D20C 0475005
Head Pulley 10 "Dia. 10" Dia. Lagging	1014D25C 0475030	1020D25C 0475033	1026D25C 0475035
Tail Pulley 8 " Dia.	0814W20C	0820W20C	0826W20C
Belting - C.O.S. Crescent Top PVC Smooth Top Rubber	0464100 0464030	0464104 0464033	0464106 0464035
Belt Lacing #0467000	2 Required	4 Required	4 Required
Hinge Cable #0467010	1 Required	4 Required	4 Required
Lacing Tool #0467005	1 Required	1 Required	1 Required
Pulley BushingsXTB-20 X 1-7/16 XTB-20 X 1-15/16 XTB-25 X 1-15/16 XTB-25 X 2-7/16	0452151 0452152 0452185 0457245		
Head Bearings1-7/16 "Dia. 1-15/16" Dia. 2-7/16 "Dia.	0450041 0450043 0450045		
Tail Bearings1-7/16 "Dia. 1-15/16 "Dia.	0450050 0450051		



P.O. Box 1086, 2000 E. Leffel Lane • Springfield, Ohio 45501  
Toll Free: 1-800-334-7254 (in U.S.A. & Canada) • Phone: 937-325-1511 • Fax: 937-322-1963