INSTALLATION AND SERVICE MANUAL

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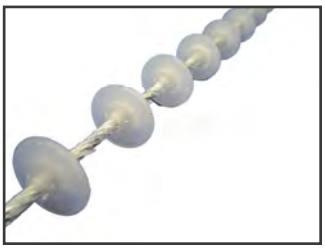
INSTALLATION AND SERVICE MANUAL



INSTALLATION AND SERVICE MANUAL

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HISTORY

Intraco, Inc. was founded December 22, 1971 as an import/export company for agricultural equipment. During the early years, Intraco, Inc. began distributing many lines of equipment both in the U.S.A. and many foreign markets.

The intense desire to satisfy the needs of the agriculture industry gave Intraco, Inc. a chance to improve a sector of the industry that was lacking efficiency - the feeding system. Intraco, Inc. decided to manufacture and market its own line of feed conveying equipment with the trade name CABLEVEY.

The first CABLEVEY system was installed in Ontario, Canada in 1974. Extensive research and marketing of the CABLEVEY feeding system began later that year, involving shipments to Canada, Australia and England. Since that time, thousands of CABLEVEY systems have been manufactured and installed in 47 states and 35 foreign countries. The component parts of the CABLEVEY system, totaling over 470, are manufactured and fabricated by 50 suppliers located throughout the Midwest U.S.A.

Over 300 people are involved in the CABLEVEY systems fabricating and marketing chain, including manufacture, assembly, packing, crating, shipping, sales, service, office and administrative personnel.

Intraco's percentage of exports to total sales has grown from 25% in 1974 to 50% at the present time.

Intraco, Inc. was presented the President's "E" Award, a certificate signed in the name of the President of the United States by the Secretary of Commerce, at a special ceremony held in conjunction with a World Livestock & Poultry Seminar in August of 1979.

In 1985, Intraco applied it's knowledge obtained from agriculture conveying and began to develop products for the industrial markets. 1990 was the first installation of the 4" diameter tubular conveyor now being used for a wide variety of materials and installed in various applications.

A natural progression was the design of the 2" diameter tubular conveyor system for industrial applications.

Representatives of Intraco, Inc. have been involved with trade delegations going to underdeveloped and emerging countries coordinated by the United States Department of Commerce.

Intraco, Inc. will continue to be a leader in the industrial and agriculture markets with an aggressive approach to the manufacturing, marketing and distribution of CABLEVEY along with many other products serving the entire world.

WARRANTY

INTRACO, INC. warrants its CABLEVEY Feed Conveying System components, when installed within its recommended limitations, to be free from defects in material and workmanship under normal use and service for which intended, for a period of one year from date of purchase.

Any parts, which are proven defective, and the company's inspection and examination shall disclose to have been thus defective will be replaced or repaired free of charge, f.o.b. Oskaloosa, Iowa. Any defective part must be returned to INTRACO prepaid for examination and inspection. INTRACO's responsibility covers cost of replacement parts only and does not include repair or replacement caused by misuse, abuse or normal wear and tear.

No claim of any kind, whether as to goods delivered or for non-delivery of goods shall be greater in amount than the purchase price of the goods in respect of which such damages are claimed; and failure to give notice of claim within (30) days from date of delivery or the date fixed for delivery, as the case may be, shall constitute a waiver by Buyer of all claims in respect of such goods. The remedy hereby provided shall be the exclusive and sole reedy of the Buyer and any right of the Buyer to consequential and incidental damages is excluded.

INTRACO, INC. will use all reasonable means to deliver the property sold hereunder within the terms and the time specified, but will not be liable for any loss, damage, detention or delay caused by accident, strike, walkout, fire, explosion, theft, lightning, windstorm, earthquake, flood, riot, civil commotion, malicious mischief, act of God or any other cause beyond its reasonable control, whether or not the same is herein specified and in any event, INTRACO, INC. SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INDIRECT DAMAGE ARISING FROM ANY DELAY.

This guarantee is made expressly in place of all other guarantees or warranties, expressed or implied, with respect to quality, merchantability of fitness for a particular purpose.

LENGTH, CAPABILITIES AND MATERIAL RECOMMENDATIONS

Maximum recommendations vary with the configuration of the system, cable speed and the material being transported. As noted below, the numbers of corners influences the maximum recommended length of the system. In most cases, the lower the bulk density of the material, the farther it can be moved.

Figures are given based on 40 pounds per cubic foot (641 kgs/cu meter) material and cable speed of 82 feet (25m) per minute.

No circuit should exceed maximum lengths as show below.
All lengths are based on total circuit lengths.
We recommend that all applications (excluding poultry) should use the 2" (50) System.
All inclines and declines in heights should be 45° or less.

1 1/2" (38) System rated at 20 pounds per minute at 40 pounds per cubic foot.
2" (50) System rated at 35 pounds per minute at 40 pounds per cubic foot.

Air Trippers can open maximum 200 Drops.
Hand Trippers can open maximum 100 Drops.

SYSTEM	GROUND (MASH)	MAXIMUM	PELLETS	MAXIMUM
1 1/2" (38) System	Up to 900' (275m)	4 Corners	Up to 900' (275m)	4 Corners
	Up to 800' (245m)	8 Corners	Up to 800' (245m)	8 Corners
	Up to 600' (185m)	14 Corners	Up to 600' (185m)	12 Corners
2" (50) System	Up to 900' (275m)	4 Corners	Up to 900' (275m)	4 Corners
	Up to 800' (245m)	10 Corners	Up to 800' (245m)	8 Corners
	Up to 500' (185m)	16 Corners	Up to 500' (185m)	10 Corners
	Up to 300' (90m)	18 Corners	Up to 300' (90m)	12 Corners

LENGTH, CAPABILITIES AND MATERIAL RECOMMENDATIONS

MATERIAL RECOMMENDATIONS

The CABLEVEY system will handle a variety of materials. Limitations of the system in transporting materials depend upon many factors, such as moisture content, friction qualities and size. Examples of these are cohesive materials such as molasses, large particles such as sow cubes, or high friction materials such as sand. Any material about which there is a question should be sent to us in an adequate amount for testing. MSDS sheets must be provided for materials to be tested.

CAPACITIES

The capacity of a CABLEVEY system varies with the speed of the cable and the density of the material being transported. Figures given are based on 40 pounds per cubic foot (641 kgs/cu meter) material and cable speed of 82 feet (25m) per minute.

1 1/2” (38) System	1200 pounds (540kg) per hour
2” (50) System	2100 pounds (950kg) per hour

With certain materials, it may be necessary to use a lower cable speed to reduce carryover of material past the intended drop. The cable speed is altered by changing ratio of the belt drive on the drive unit. The capacity will vary with type and moisture content of materials being transported.

CABLE SPEED		*MOTOR PULLEY*	*BELT*
FT./MIN	METER/MIN		
63	19.2	01291C (AK27)	01259 (4L280)
69	21	01292C (AK30)	01259 (4L280)
82	25	01293C (AK34)	01259 (4L280)
88	26.8	01294C (AK39)	01260 (4L290)
101	30.8	01295C (AK44)	01260 (4L290)

PROPER V-BELT TENSION

Push on belt between the sheaves. The force required to deflect the belt 1/8” (3mm) should be between 4 lbs. (1.81 kg.) and 8 lbs. (3.62 kg.).
A new belt should be tensioned to require near 8 lbs. (3.62 kg.), force for 1/8” deflection.
A 4 lb. (1.81 kg.) force is adequate for a belt that has operated over 50 hours.

OVERTENSIONING CAN CAUSE GEAR REDUCER BEARING DAMAGE.

THE NEW CABLEVEY FEEDING AND CONVEYING SYSTEM

CABLEVEY is a registered trademark of a feeding and conveying system produced and marketed by INTRACO, INC. of Oskaloosa, Iowa U.S.A.

The NEW CABLEVEY system use a simple principle. Material is moved through a tube with an air craft cable that has plastic discs molded to the cable at regular intervals. The cable moves at high speed in a continuous circuit carrying the material with it at the same speed, this reduces the grinding action and seperation.

The flexibility of the cable enables it to be installed in almost any configuration, with the use of corner assemblies having an idler to reduce friction, wear and pull requirements.

The material is introduced into the system by means of a hopper which helps keep the material flowing.

The cable is pulled through the circuit by a drive unit having an automatic cable tensioning device.

The material can be discharged from the circuit at any desired location by placing a hole in the bottom of the tube. Any of a variety of styles of drops can be installed on the tube under the hole -- the style used will depend on the fuction to be performed. The drop styles and functions are described later in this manual.

NOTE: All electrical connections are to be made by a qualified electrician, in compliance with all local, state and national codes.

DESIGNING and INSTALLING OF A CABLEVEY SYSTEM

INSTALLATION AND PREPLANNING:

A well-designed and properly installed system will help insure quality and long life of the CABLEVEY feeding system.

1. Conference with customer before installation. Visually inspect the CABLEVEY installa tion site, gathering the following information.

    a) Identify and obstructions.
    b) Check for hanger supports, advise if necessary to recess ceilings.
    c) Determine height at which tubing will be installed.
    d) Location of bulk bin and/or feed container source or fill auger system.

e) Determine direction of feed flow.
f) Select Drive Unit location -- Preferably install on return line after last drop -- and allow for ad equate support of the Drive Unit.

2. Sketch proposed system. Several rough sketches will help establish the best system layout. If not using fill auger, set the builk tank at different locations and rotate the hopper 90 degrees at each of these loca tions. Keep the incoming feed line angle as gradual as possible (maximum 45 degrees). The number of corners should be kept to a minimum to increase the cable life.

Consider weather protection, serviceability, electrical hookup and recycling of feed in locating the Drive Unit. Place Drive Unit directly after the last drop, if possible.

INSTALLATION OF THE SYSTEM:

1. Lay out open tubing end-to-end in aisles or over pens. Locate and punch at desired locations. Note location of holes for AccuDial drops are different than for volumetric drops. Support tube on both ends to prevent burred and jagged edges surrounding the hole from catching cable. File all tubes -- make sure there are no burrs or rough edges.

2. Hang the tubing:

a) Locate the cup hooks for attaching the tube hangers -- every 8’ for all systems.
b) Support tubing close to either side of the tube joint and each corner to keep lines leve.
c) Level tubing.
d) Open tube feed lines, from hopper into building

3. Install 90 Degree Corners and Connect System. Place supports close to either side of Corner so Corner does not sag.

4. Large Drive Unit - Installation Instructions:

a) Determine Location: This Drive Unit can be located almost anywhere in the circuit, but if pos sible, it should be located inside the building on the return line of the system. Consider ease of service when locating it, remembering that the cable travels from left to right and the sprocket turns counterclockwise.
b) Install Port: Mount port to outlet on right end of drive frame. Install breather in Gear Reducer by replacing top plug.
c) Mount Drive Unit: Unit can be suspended from chains by using eyebolts attached to mounting angle.
d) Install Motor: Attach motor to motor base and secure pulley to motor shaft. Thread adjusting bolt through motor base and into nut. Attach this assembly to Drive Unit with pivot rod and cotter pins.
e) Install Belt: Align belt by moving motor pulley. Check pulleys, make sure they are tight. Adjust belt tension by moving the adjusting bolt.
f) Install Belt Guard: Position belt guard in place between the guard clip and the drive unit frame. Snap into place, insert two #10 x 3/8” sheet metal screws into belt guard through drive unit frame.

g) Electrical Connection: Have qualified electrician wire power supply to drive safety switch and motor. Check direction of motor, sprocket must turn counterclockwise.
h) Attach Cover: Slip cover into place behind spring-covers.
i) Provide good, secure support for unit - either suspended from ceiling or place on floor or drive unit stand.

5. Proximity Recycler Feed Sensor: **Never** install on return side of drive unit.

6. Installation of Hopper:

a) Determine the direction in which the feed cable will be traveling.
b) Position hopper so the cable enters the hopper into the recycler unit and exits the hopper through the restrictor port under the motor. Make sure the feed line going through hopper is level and the holddowns are on each side of the hopper.
c) The slide gate under the hopper must be opened to let feed flow out. Open slowly until feed tube is 2/3 to 3/4 full.
d) VERY IMPORTANT: The ports and the trough bottom MUST line up evenly so they will not cause the cable to catch or slip.
e) Run feed in the CABLEVEY system. Watch feed level in the tube and the rotor on the hopper. When the tube come back at 2/3 to 3/4, the recycler switch should shut the hopper off.

7. Install Cable:

a) Block Idler Wheel on tension take-up assembly in Large Drive Unit forward a few inches with a short piece of open tube.
b) Feed cable under Idler Wheel and push around system with (01602HW) cable pushing tool. Stay near the front end of cable while pushing, DO NOT force or kink cable.
c) Prestretch cable using (01604HW) cable lock tool.
d) Connect cable, using (C38208) cable connector kit, (01275) cable cutters and instructions on Page 33-35 of Installation and Service Manual.
e) Adjust Cable Tension: After cable has been installed, turn the drive unit by hand with the “V” belt, observing the disc leaving the tube just before it enters the sprocket. This disc should be approximately 1/16” off the tube bottom. If it contacts the tube bottom it can “snap” off the end of the tube, causing wear and excessive drag. If it is too high, feed can accumulate on the tue bottom. If adjustment is required, slightly loosen the bolts holding the mount bracket to the frame, adjust as necessary and retighten.

8. Install Drops:

a) Mount the drops in proper position over holes.

9. Positive Close Installantion

   a) Attach all drop door wires to the channel. If holes do not line up with wires on doors, move forward (toward tripper) to next closest hole.
   b) Attach flared end of channel to narrow end of next piece of channel. If attachment comes up on wire for door, shorten the narrow end of channel enough to get the attachment before the wire on the door.
   c) Continue to attach wires from drop doors until line is complete to the end of the row.
   d) Spring at end of channel should not have tension on it until drop doors begin to open. After the spring is attached, cut channel at proper length and attach.
   e) If drops are more than 4' apart, install channel support J-Brackets.

10. Tripping System Installation:

   a) Mount Air Trip Cylinder in proper location on the open tube. Cylinder must pull on the channel to open drop doors. Tube Mount Tripper will bolt directly to open tube over tube cover. Support frame with "S" hooks & chains. Bolt rod to channel with cylinder rod extended.
   b) Hand Trip: Handle to be mounted to the wall and cabled to the channel through pulleys.

11. Connect Power

   Control Panels are available for most applications. Wiring diagrams are available for systems not using control panels. Have qualified electrician connect power in compliance with all Local, State and National Codes. New CABLEVEY Conveying Panel and Dispensing Panel.

12. Observe System in Operation

   a) Operate system to check performance.
   b) Introduce feed into system and adjust feed flow to proper level by viewing feed flow through Inspection Section.
   c) Set Recycle Unit.

13. Cleanup - Installation crew is to leave installation site free of all boxes, packing materials, etc. brough by the installer.

14. Review CABLEVEY Feeding System operating procedure with the customer of his representative.

   a) How to connect the cable.
   b) Cable Connector's position on sprocket.
   c) Review maintenance schedule.
   d) Adjusting recycle switch.
   e) Scan the Installation & Service Manual, identifying sections relevant to customer's CABLEVEY system.
   f) Help the customer complete his CABLEVEY information card to be mailed to the factory.

C50100TM 2” (50 SYSTEM) 1 HP W/ METAL COVER
C50100TMK 2” (50 SYSTEM) 1 HP W/ METAL COVER & LIGHT KIT

INSTALLATION

1. **DETERMINE LOCATION**: This Drive Unit can be located almost anywhere in the circuit, but if possible, it should be located inside the building on the return line of the system. Consider ease of service when locating it, remembering that the cable travels from left to right and the sprocket turns counterclockwise.
2. **INSTALL PORT**: Mount port (Item 28) to outlet on right end of the drive frame. Install breather in Gear Reducer by replacing top plug.
3. **MOUNT DRIVE UNIT**: Unit can be suspended from chains by using eyebolts attached to mounting angle (Item 22).
4. **INSTALL MOTOR**: Attach motor to motor base (Item 19) and secure pulley to motor shaft. Thread adjusting bolt (Item 49) through motor base and into nut (Item 39). Attach this assembly to Drive Unit with pivot rod (Item 20) and cotter pins (included in bag kit). (See figure A)
5. **INSTALL BELT**: Align belt by moving motor pulley. Check pulleys, make sure they are tight. Adjust belt tension (see page 4 for proper tension) by moving the adjusting bolt (Item 49).
6. **INSTALL BELT GUARD**: Position belt guard (Item 12) in place between the guard clip (Item 13) and the drive unit frame. Snap into place, insert two #10 x 3/8” sheet metal screws (provided in bag kit) into belt guard through drive unit frame.
7. **ELECTRICAL CONNECTION**: Have qualified electrician wire power supply to Drive Unit Safety Switch (Roller) (Item 57) and motor. Check direction of motor, sprocket must turn counterclockwise.
8. **ATTACH COVER**: Slip cover (Item 9) into place behind spring-covers (Item 21).

FUNCTION

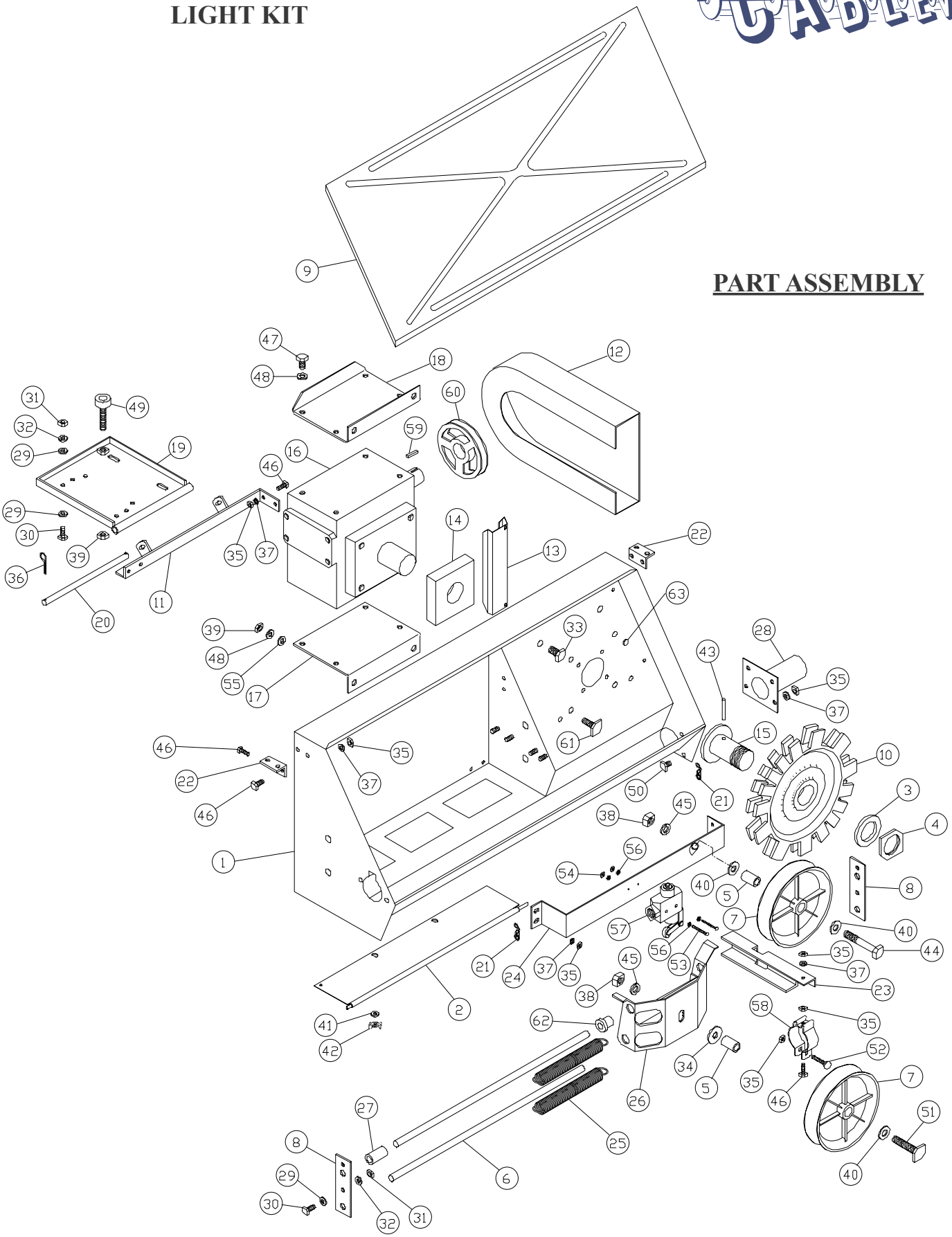
The ***Drive Unit*** is the mechanism which pulls the cable through the system. The cable is pulled through the Drive Unit by a sprocket driven by a 1 HP electric power motor and Gear Reducer.

The cable enters the left end of the Drive Unit, travels around the sprocket and is picked up by two Idler Wheels, which guide it to the outlet on the right end of the Drive Unit. The outgoing cable travels under the incoming cable, allowing material brought into the Drive Unit to drop onto the outgoing cable and be carried out returning it to the system.

One of the two Idler Wheels is spring-loaded to act as an automatic tensioning device, removing slack from the cable. If the slack becomes excessive, or if the tension becomes too high, a Drive Unit Safety (Roller) Switch will shut off the Drive Unit.

C50100TM **2” (50 SYSTEM) 1 HP W/ METAL COVER**
C50100TMK **2” (50 SYSTEM) 1 HP W/ METAL COVER & LIGHT KIT**

PART ASSEMBLY



C50100TM 2” (50 SYSTEM) 1 HP W/ METAL COVER
C50100TMK 2” (50 SYSTEM) 1 HP W/ METAL COVER & LIGHT KIT

PARTS LIST

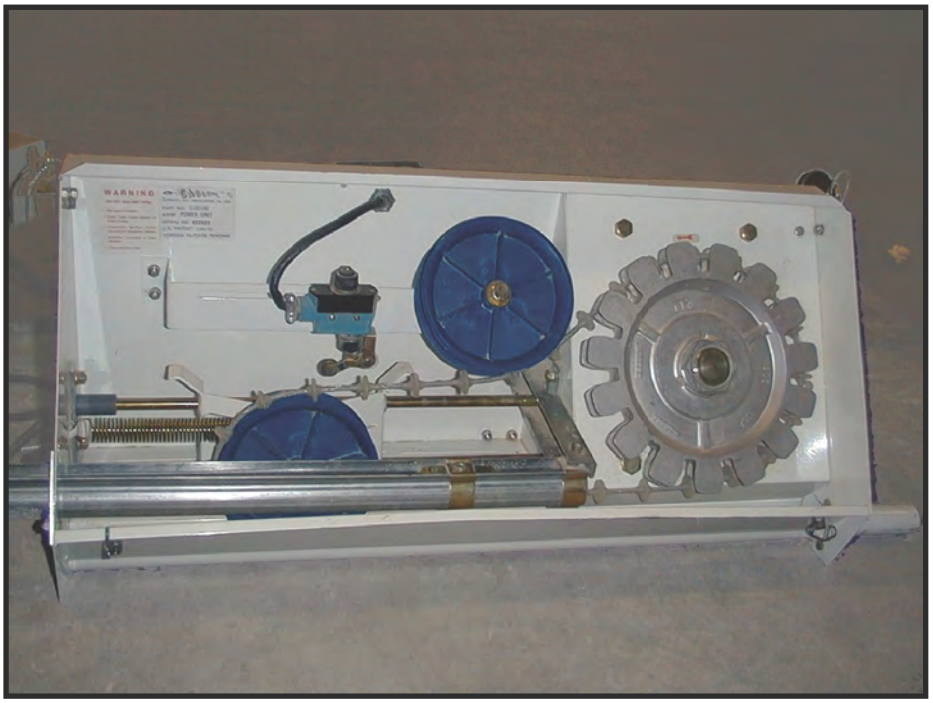
ITEM	PART NUMBER	DESCRIPTION	QTY
1	100001P	DRIVE FRAME	1
2	100002P	CLEANOUT COVER	1
3	100005	WASHER, ADAPTOR	1
4	100006	NUT, ADAPTOR	1
*5	100007	AXLE, IDLER	2
*6	100015	GUIDE RODE	2
*7	100017A	IDLER WHEEL	2
8	100019	MOUNTING BLOCK	2
9	100023	CLEAR COVER *OR*	1
	100023MP	METAL COVER	1
10	100026	SPROCKET	1
11	100027P	MOTOR MOUNT	1
12	100035	BELT GUARD	1
13	100036	GUARD CLIP	1
14	100003	FOAM SEAL	1
15	100004	SPROCKET ADAPTOR	1
16	100050	GEAR REDUCER	1
17	100051P	LOWER MOUNT GEARBOX	1
18	100052P	UPPER MOUNT GEARBOX	1
19	100021P	MOTOR BASE	1
20	100022	PIVOT ROD	1
21	100069	SPRING COVER	2
22	100070	MOUNTING ANGLE	2
23	100108	MOUNT BRACKET TUBE SUPPORT	1
*24	100111P	BAFI IDLER BRACKET	1
*25	100112	DRIVE SPRING	2
*26	100113P	IDLER / SHUT OFF FRAME	1
*27	100114	DRIVE STOP SLEEVE	1
28	100502P	2” DRIVE PORT	1
29	01001	5/16 FLAT WASHER	12
30	01002	HEX HEAD SCREW	8
31	01003	HEX NUT, YELLOW	8
32	01004	5/16 LOCKWASHER	8
33	01006	HEX HEAD SCREW	2
*34	01007	1/2” FLAT WASHER	1
35	01011S	1/4 – 20 HEX NUT S.S.	37
36	01013	3/32 x 1 COTTER KEY	2
37	01018	1/4 LOCKWASHER	25
38	01019	1/2 – 13 HEX NUT	4
39	01020	3/8 – 16 HEX NUT	3
*40	01021	1/2” SAE WASHER	3
41	01023	1/4” SAE WASHER	6
42	01024	1/4 – 20 WING NUT	2
43	01025	SHEAR PIN	1
*44	01026L	1/2 – 13 x 3/4 HEX HEAD SCREW	1
45	01027	1/2 LOCKWASHER	4
46	01028S	1/4 – 20 x 3/4 HEX CAP SCREW S.S.	11
47	01033	3/8 – 16 x 3/4 HEX HEAD SCREW	8
48	01034	3/8 LOCKWASHER	10

PARTS LIST CONT’D

49	01035	TENSION BOLT FB-3348	1
50	01037S	1/4 – 20 x 1/2 HEX HEAD SCREW	12
51	01038	LEVELER 1/2 – 13 x 2 1/2	1
52	01039	1/4 – 20 x 1 1/4 CARRIAGE BOLT	1
53	01044	#6 – 32 x 1 1/2 ROUND HEAD SCREW	2
54	01049	#6 – 32 HEX NUT	2
55	01086	3/8 SAE GAUGE WASHER	2
56	01094	#8 LOCKWASHER	6
57	01101R	ROLLER SWITCH FOR DRIVE	1
58	01142	2” CONDUIT HANGER	1
59	01112	3/16 SQUARE KEY x 1”	1
60	01297C	SHEAVE AK46 – 3/4	1
61	01029	LEG LEVELER SCREW	2
62	100016	BEARING SMALL	4

SPECIAL NOTE

ADJUST CABLE TENSION: After cable has been installed, turn the drive unit by hand with the “V” belt, observing the disc leaving the tube just before it enters the sprocket. The disc should be approximately 1/16” off the tube bottom. If it contacts the tube bottom it can “snap” off the end of the tube, causing wear and excessive drag. If it too high, feed can accumulate on the tube bottom. If adjustment is required, slightly loosen the bolts holding the mount bracket (Item 23) to the frame, adjust as necessary and retighten.



DRIVE UNIT - TROUBLE SHOOTING

1. **UNIT WILL NOT START**

Check Electrical Supply
Reset Drive Unit Roller Switch (Item 57)
Check Control Switch
Check Motor Reset
Check Door Switch

2. **UNIT TRIES TO START BUT CAN'T**

System Overloaded and Tension Incorrect
Motor Defective
Gear Reducer Defective (Item 16)
Reset Drive Unit Roller Switch (Item 57)

3. **MOTOR RUNS, SPROCKET DOES NOT TURN**

Check Belt
Check Shear Pin (Item 43)
Sprocket Loose (Item 10)
Gear Reducer Defective (Item 16)

4. **UNIT SHUTS OFF**

System Overfull
Cable Tension Incorrect
Foreign Object in Hopper
Foreign Object in Corner
Foreign Object in Drop Opening
Cable Broken
Control Device Malfunction

5. **CABLE COMES OFF SPROCKET**

Check Cable Connector Positioning
Sprocket Worn - Flip Sprocket Over or Replace (Item 10)
Broken Buttons
System Doesn't Shut Off From Excess Slack
Feed Build Up Behind Tensioner

6. **UNIT RUNS JERKILY**

Foreign Object in Corner
Obstruction in System
Tubing Not Straight
Circuit Too Long
Misaligned Corner
Feed Buildup in Drive Unit
Idler (Item 7) in Wrong Bracket (Item 26) Hole.
Top Hole for 2" System (1 1/2" Disc)
Middle Hole for 2" System (1 1/4" Disc)
Bottom Hole for 1 1/2" System (1" Disc)

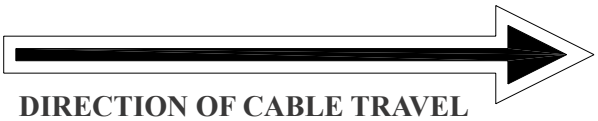
7. **WORN IDLERS**

Cable Too Short

NOTE: Disconnect power before Servicing. Keep cover in place when unit is operating. Keep hands and loose clothing away from moving parts. Be sure belt guard is in place before operating unit.

MOTORIZED HOPPERS W/ PROXIMITY RECYCLER FEED SENSOR

C50108HWPR - POWER HOPPER 110 W/PROX RECYCLER
C50108HWPRK - POWER HOPPER 110 W/PROX RECYCLER KLAUBER
C501082HWPR - POWER HOPPER 220 W/PROX RECYCLER
C501082HWPRK - POWER HOPPER 220 W/PROX RECYCLER KLAUBER



DIRECTION OF CABLE TRAVEL

FUNCTION

The ***Motorized Hopper*** is a metering device and transition for product to flow from the source (Auger) in the the conveying system. Hopper features include slide gate, a paddle rotor, and an observation window.

INSTALLATION

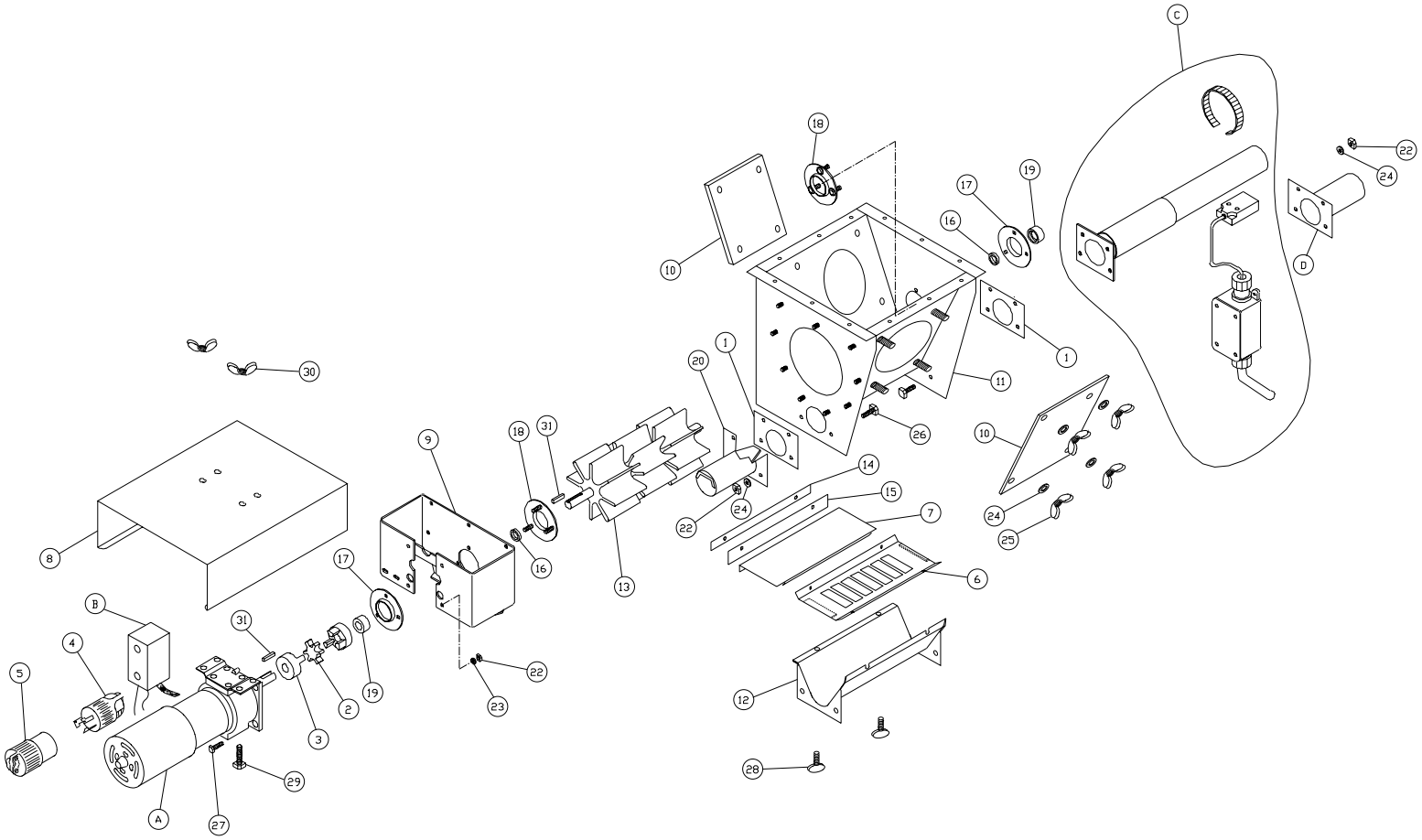
1. Determine the direction in which the feed cable will be traveling.
2. Position Motorized Hopper so the cable enters the hopper into the recycler switch and exits the hopper through the restrictor port under the motor (see photo above). Make sure the feed line going through the Motorized Hopper is level and the holddowns are on each side of the hopper.

Run feed in the CABLEVEY system. Watch feel level in the tube and the rotor on the Motorized Hopper. When the tube comes back at 2/3 to 3/4 full, the recycler switch should shut the hopper rotor off. If it does not shut off or if it shuts off too soon the sensitivity of the Proximity Recycler may need to be adjusted (see Proximity Recycler for these instructions).

MOTORIZED HOPPERS W/ PROXIMITY RECYCLER FEED SENSOR

C50108HWPR - POWER HOPPER 110 W/PROX RECYCLER
C50108HWPRK - POWER HOPPER 110 W/PROX RECYCLER KLAUBER
C501082HWPR - POWER HOPPER 220 W/PROX RECYCLER
C501082HWPRK - POWER HOPPER 220 W/PROX RECYCLER KLAUBER

PARTS ASSEMBLY



MOTORIZED HOPPERS W/ PROXIMITY RECYCLER FEED SENSOR

C50108HWPR - POWER HOPPER 110 W/PROX RECYCLER
C50108HWPRK - POWER HOPPER 110 W/PROX RECYCLER KLAUBER
C501082HWPR - POWER HOPPER 220 W/PROX RECYCLER
C501082HWPRK - POWER HOPPER 220 W/PROX RECYCLER KLAUBER

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	107382	GASKET 1/16 (.046-.076) 40+DURO	2
2	108014	SPIDER 2X814	1
3	108015	COUPLING BODY 4X182 5/8 BORE	2
4	108016	MALE PLUG 4721 (AVAILABLE SEPERATELY)	1
5	108017	CONNECT FEMALE 4731 (AVAILABLE SEPERATELY)	1
6	108020P	PAINTED GRATE 3/4	1
7	108021P	PAINTED SLIDE GATE	1
8	108023P	PAINTED MOTOR COVER	1
9	108024P	PAINTED MOTOR BEARING KIT	1
10	108026	WINDOW	2
11	108027P	PAINTED HOPPER FRAME	1
12	108029P	2 IN. TROUGH BOTTOM	1
13	108047	3 SEGMENT ROTOR ASSEMBLY	1
14	108037P	PAINTED RUBBER RET STRAP	1
15	108038	RUBBER SEAL FOR HOPPER	1
16	108391	BALL BEARING 5/8 IN.	2
17	108392	BEARING FLANGETTE HW	2
18	108392A	FLANGETTE BEARING & BOLT	2
19	108393	BEARING LOCKING COLLAR 5/8 IN.	2
20	800160HWP	PAINTED 2 IN. REST PORT	1
21	01001	5/16 FLAT WASHER	2
22	01011S	1/4 – 20 HEX NUT STAINLESS	20
23	01018	1/4 LOCK WASHER	4
24	01023	1/4 SAE WASHER	16
25	01024	1/4 – 20 WING NUT, YELLOW CHROME	8
26	01028S	1/4 – 20 x 3/4 HEX CAP BOLT S.S.	8
27	01041	1/4 – 20 x 1 HEX HEAD BOLT (USE 01028S WITH KLAUBER)	4
28	01083	1/4 – 20 x 3/4 THUMBSCREW BOLT	2
29	01936	5/16 SELF THREADING BOLT	2
30	01937	5/16 WING NUT	2
31	01112	3/16 SQ. KEY x ¾	1

MOTORIZED HOPPERS W/ PROXIMITY RECYCLER FEED SENSOR

C50108HWPR - POWER HOPPER 110 W/PROX RECYCLER
C50108HWPRK - POWER HOPPER 110 W/PROX RECYCLER KLAUBER
C501082HWPR - POWER HOPPER 220 W/PROX RECYCLER
C501082HWPRK - POWER HOPPER 220 W/PROX RECYCLER KLAUBER

PARTS LIST CONTINUED FROM PREVIOUS PAGE

C50108HW 110 VOLT W/PORT

ITEM	PART NUMBER	DESCRIPTION	QTY
A	108011	1/40 6RPM GEARMOTOR 3M327 *OR*	1
	108011B	7.6 RPM, 1/15 H.P. GEARMOTOR	1
B	01173	CARLON F.S. BOX (E980C)	1
B	01174-1	BLANK COVER F.S. BOX (E980C) 3E	1
D	107501P	PAINTED 2 IN. HOPPER PORT	1

C50108HWPR 110 VOLT W/PROX. RECYCLER

ITEM	PART NUMBER	DESCRIPTION	QTY
*A	108011KL	1/40 6RPM GEARMOTOR 3M327 *OR*	1
	108011B	7.6 RPM, 1/15 H.P. GEARMOTOR	1
B	01173-2	59247 SCEPTER BOX FXC15 PLASTIC BOX	1
B	01174	BLANK COVER F.S. BOX (E980C)	1
C	C50120	2 IN. PROXIMITY RECYCLER, 110 VOLT	1

*** 108011KL IS OBSOLETE, REPLACE WITH 108011B**

C501082HW 220 VOLT W/PORT

ITEM	PART NUMBER	DESCRIPTION	QTY
A	108012B	220 VOLT GEARMOTOR F/HOPPER W/O RECYCLER	1
	108011BB-220	7.6 RPM, 1/15 H.P., 220 VOLT GEARMOTOR	1
B	01173	CARLON F.S. BOX (E980C)	1
B	01174-1	BLANK COVER F.S. BOX (E980C) 3E	1
D	107501P	PAINTED 2 IN. HOPPER PORT	1

C501082HWPR 220 VOLT W/PROX. RECYCLER

ITEM	PART NUMBER	DESCRIPTION	QTY
A	108012B	220 VOLT GEARMOTOR F/HOPPER W/O RECYCLER	1
	108011BB-220	7.6 RPM, 1/15 H.P., 220 VOLT GEARMOTOR	1
B	01173-2	59247 SCEPTER BOX FSC15 PLASTIC BOX	1
B	01174	BLANK COVER F.S. BOX (E980C)	1
C	C50120-220	2 IN. PROXIMITY RECYCLER, 220 VOLT	1

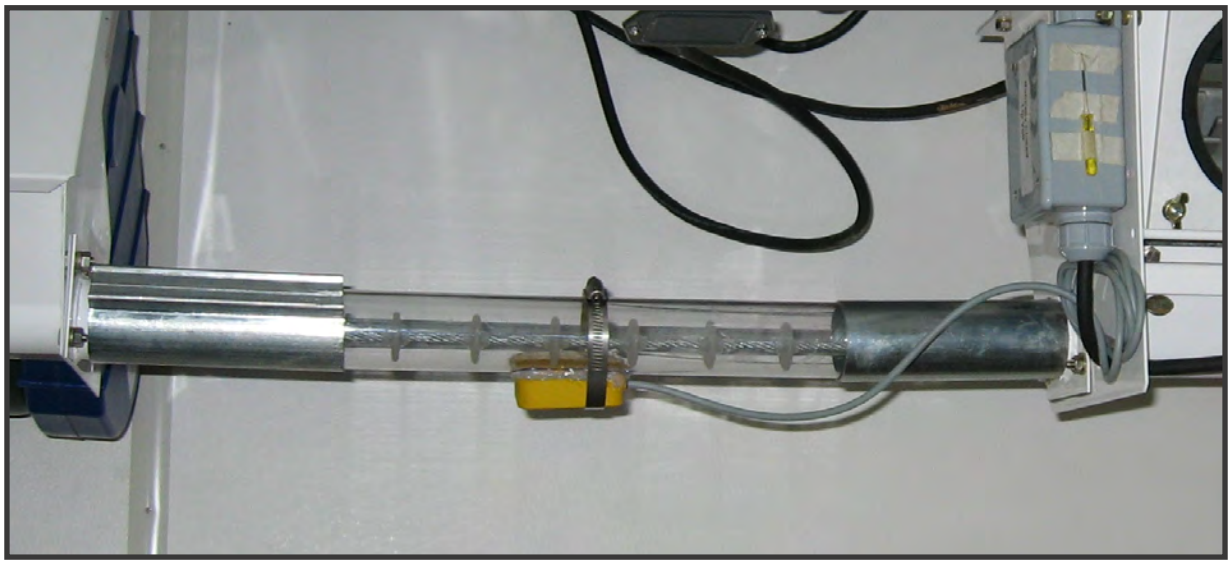
NOTE: The slide gate under the hopper must be opened to let feed flow out. Open slowly until feed tube is 2/3 to 3/4 full.

VERY IMPORTANT: The ports and the trough bottom MUST line up evenly so they will not cause the cable to catch or slip.

CAUTION: Never operate system with space between discs more than 2/3 to 3/4 full.

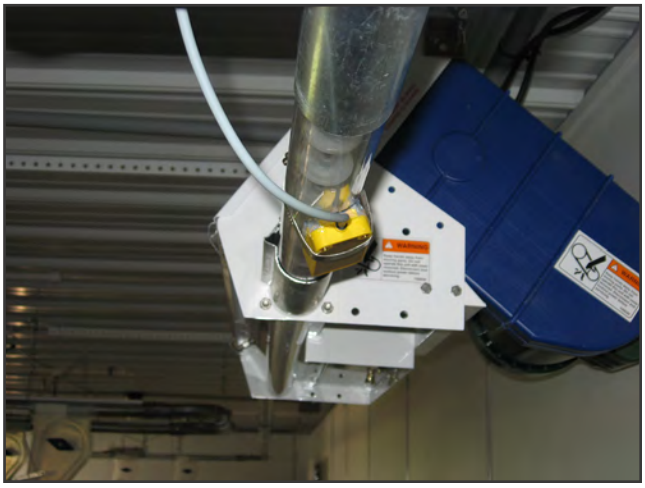
2” PROXIMITY RECYCLER FEED SENSOR

C50120 - 110 VOLT
C50120 220 - 220 VOLT
C50120 220 (CANADA) - 220 VOLT



LOOKING AT MOTORIZED HOPPER

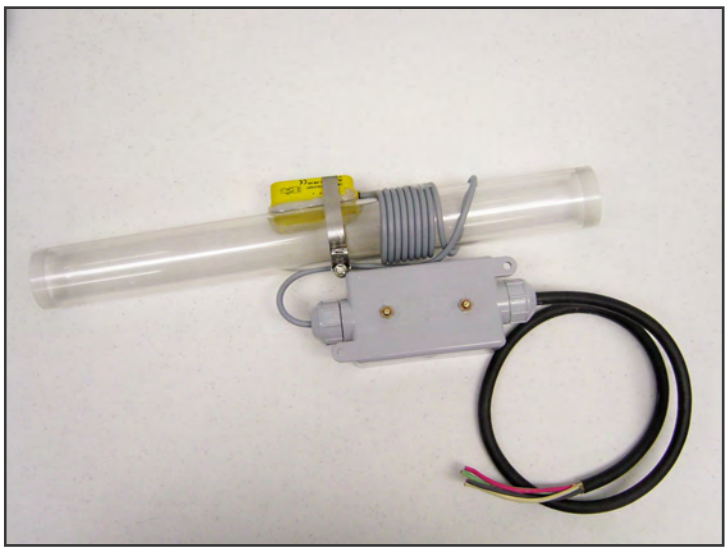
LOOKING AT DRIVE UNIT



2” PROXIMITY RECYCLER FEED SENSOR

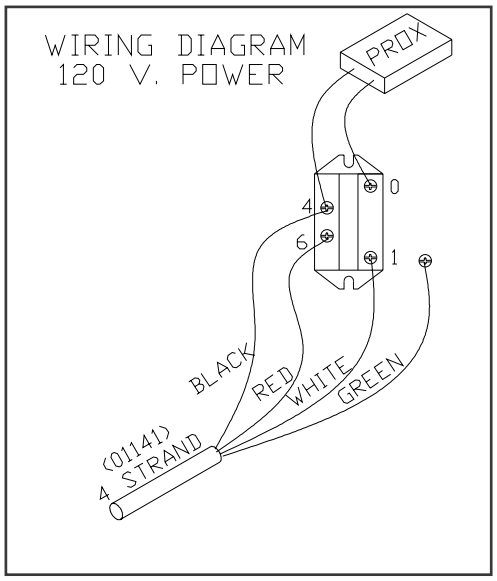
C50120 - 110 VOLT
C50120 220 - 220 VOLT
C50120 220 (CANADA) - 220 VOLT

To adjust sensitivity on switch use a precision screwdriver to turn screw (between the - and +) slightly to the right of left.

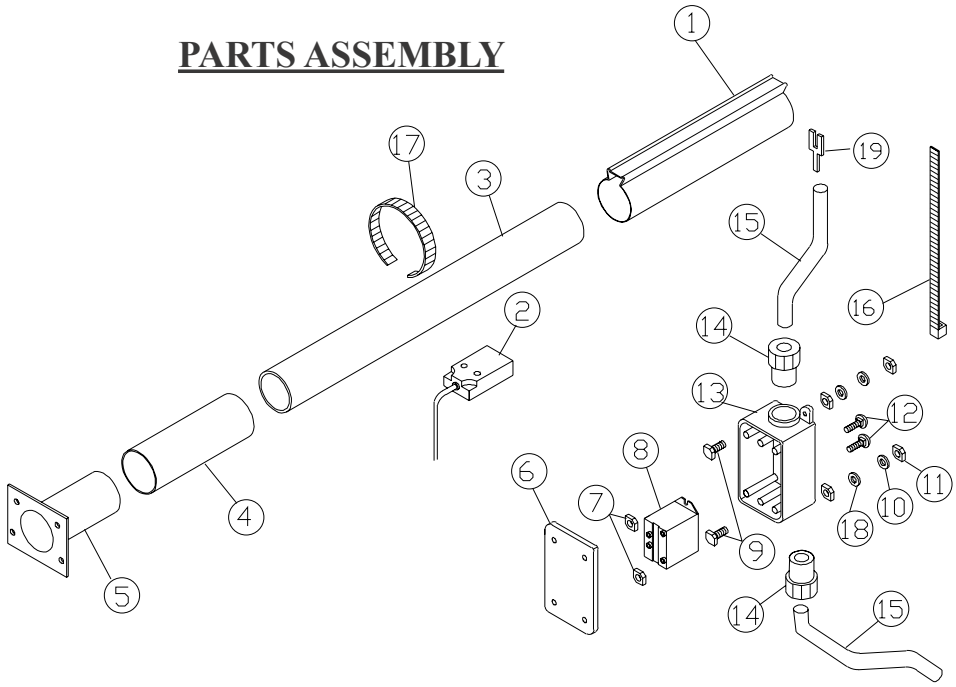


2” PROXIMITY RECYCLER FEED SENSOR

C50120 - 110 VOLT
C50120 220 - 220 VOLT
C50120 220 (CANADA) - 220 VOLT



PARTS ASSEMBLY

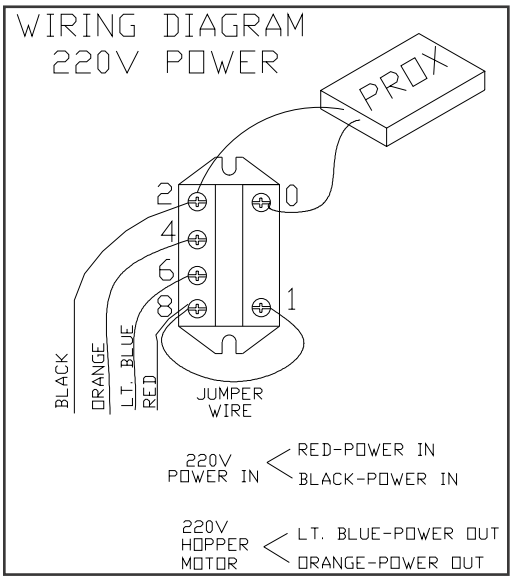


PARTS LIST

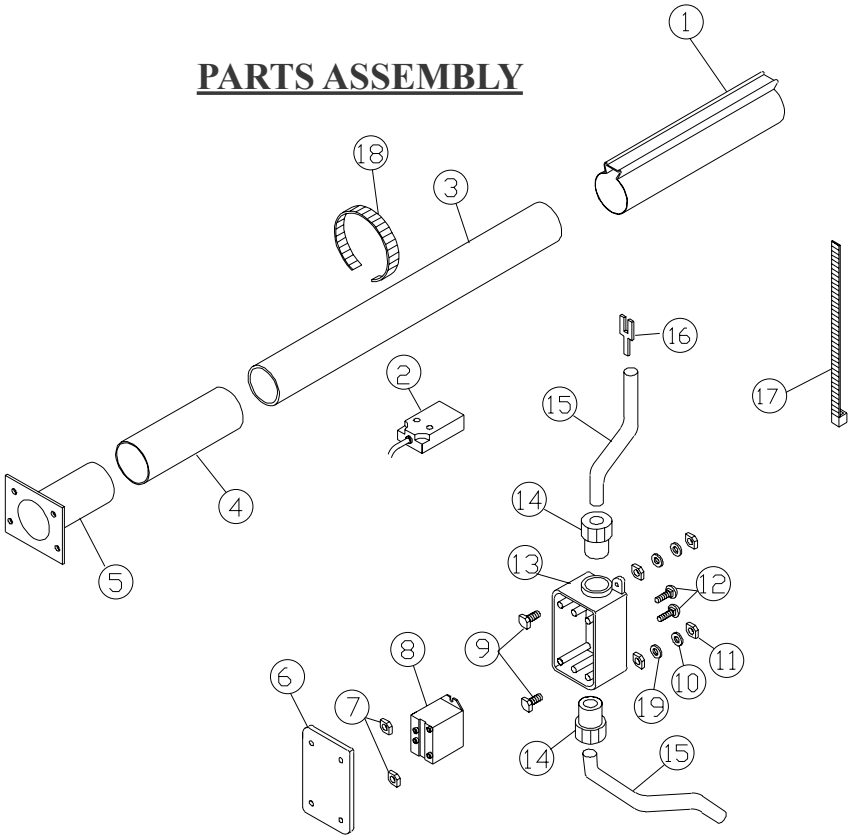
ITEM	PART NUMBER	DESCRIPTION	QTY
1	C50204	OPEN TUBE CONNECTOR 6 IN.	1
2	01647	FLATPACK PROX SENSOR 20-250VAC, N.C.	1
3	120003	2” O.D. x 1 3/4” I.D. x 18” POLYCARB TUBE	1
4	C50203	CLOSED TUBE CONNECTOR	1
5	107501P	PAINTED 2 IN. HOPPER PORT	1
6	01174	BLANK COVER F.S. BOX (E980C)	1
7	01015	#10-24 HEX NUT	2
8	01650	RELAY 120V 1 POLE NORMALLY OPEN	1
9	01041	1/4 – 20 x 1 HEX HEAD BOLT	2
10	01018	1/4 LOCK WASHER	2
11	01011	1/4 – 20 HEX NUT	4
12	01012	#10 – 24 x 3/4 ROUND HEAD CARRIAGE BOLT	2
13	01173-2	CARLON F.S. BOX (H978E)	1
14	01175	STRAIN RELIEF CONNECTOR (H980E)	2
15	01141	COPPER 14/4 SJ CORD	3 FT.
16	01197L	11 IN. WIRE TIE	1
17	01925	S.S. HOSE CLAMP, 2 9/16” – 3 1/2”	1
18	01023	1/4 SAE WASHER	2
19	01139	TERMINAL 14RB-8F	2

2” PROXIMITY RECYCLER FEED SENSOR

C50120 - 110 VOLT
C50120 220 - 220 VOLT
C50120 220 (CANADA) - 220 VOLT



PARTS ASSEMBLY

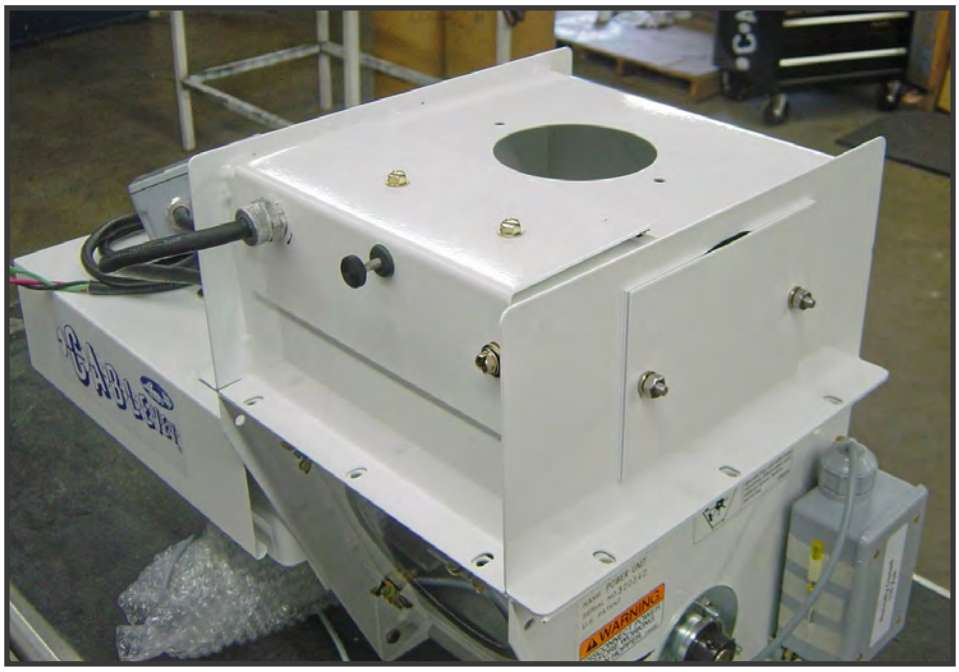


PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	C50204	OPEN TUBE CONNECTOR 6 IN.	1
2	01647	FLATPACK PROX SENSOR 20-250VAC, N.C.	1
3	120003	2” O.D. x 1 3/4” I.D. x 18” POLYCARB TUBE	1
4	C50203	CLOSED TUBE CONNECTOR	1
5	107501P	PAINTED 2 IN. HOPPER PORT	1
6	01174	BLANK COVER F.S. BOX (E980C)	1
7	01015	#10-24 HEX NUT	2
8	01649	RELAY 240V 2 POLE NORMALLY OPEN	1
9	01041	1/4 – 20 x 1 HEX HEAD BOLT	2
10	01018	1/4 LOCK WASHER	2
11	01011	1/4 – 20 HEX NUT	4
12	01012	#10 – 24 x 3/4 ROUND HEAD CARRIAGE BOLT	2
13	01173-2	CARLON F.S. BOX (H978E)	1
14	01175	STRAIN RELIEF CONNECTOR (H980E)	2
15	01172	SDT CONTROL CABLE V144	3 FT.
16	01139	TERMINAL 14RB-8F	2
17	01197L	11 IN. WIRE TIE	1
18	01925	S.S. HOSE CLAMP, 2 9/16” – 3 1/2”	1
19	01023	1/4 SAE WASHER	2

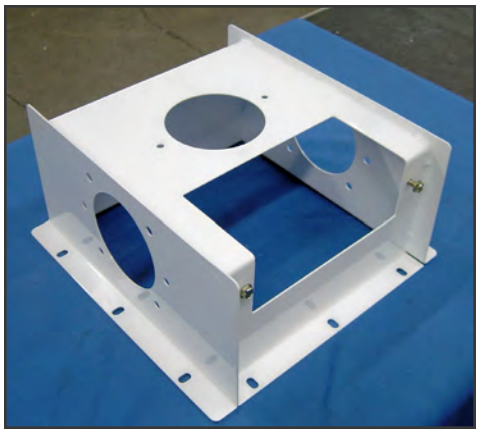
CONTROL HOPPER / AUGER CAP

C00161

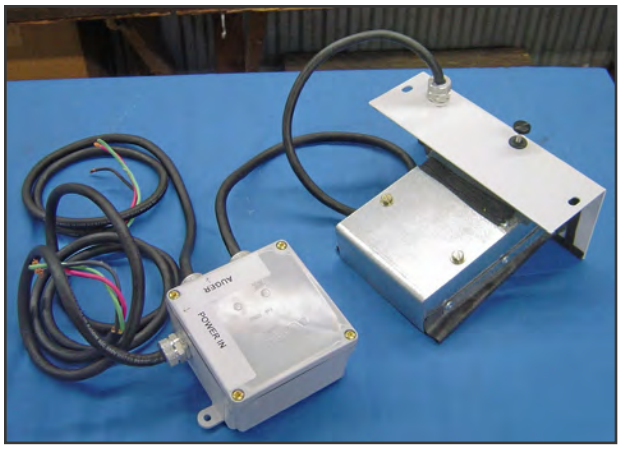


FUNCTION

The ***Control Hopper/Auger Cap*** mounts on top of the CABLEVEY Hoppers to receive materials from alternative fill systems. It allows hoppers to be mounted closer to the ceiling and can eliminate the need for hopper extensions in certain applications. The Control Hopper/Auger Cap increases waterproofing benefits.



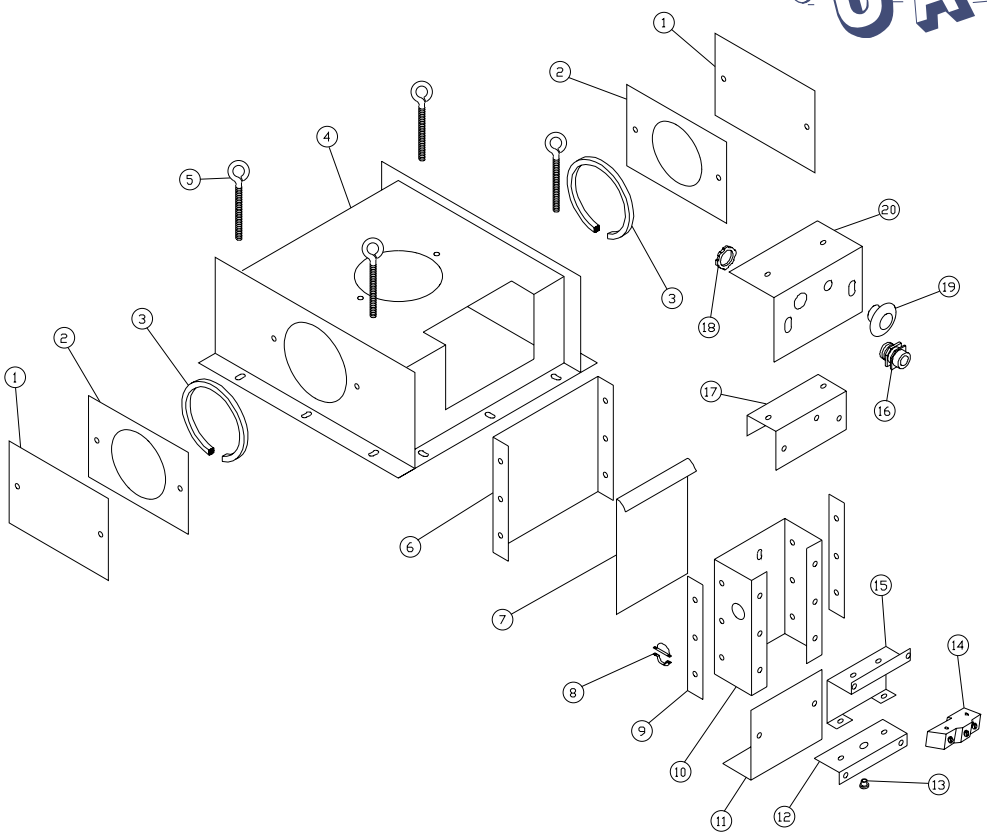
108396P



C00708C

CONTROL HOPPER / AUGER CAP

C00161

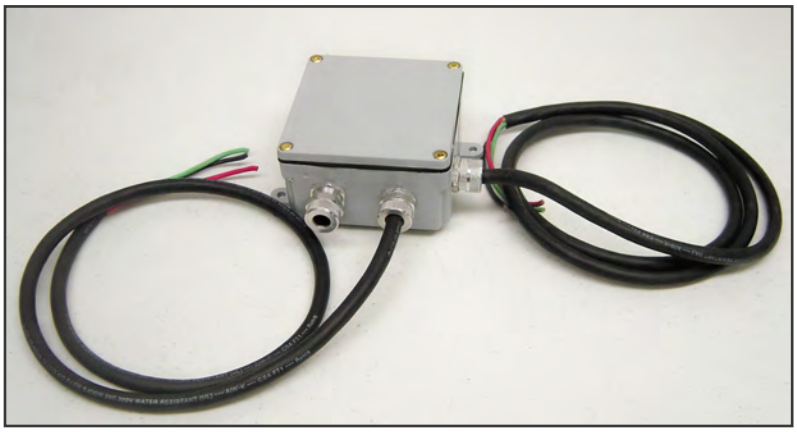


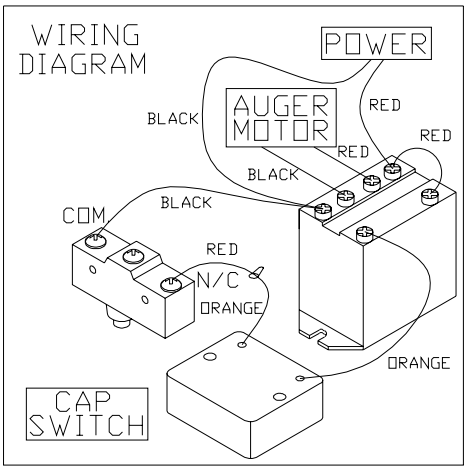
ITEM	PART NUMBER	DESCRIPTION	QTY
1	108396P	COVER PLATE FOR AUGER CAP	2
2	108395P	3” HOLE PLATE FOR AUGER CAP	2
3	01944	PROTECTIVE EDGE TRIM	2
4	108398P	HOPPER CAP / PRESSURE SWITCH	1
5	01078L	EYEBOLT 1/4 x 20 3” THREAD 2 3/4”	4
6	708008	GASKET, SWITCH	1
7	708003	PADDLE, PRESSURE SWITCH	1
8	01113	1/2” CONNECTOR (RACO #2711)	1
9	708007	STRAP, GASKET	2
10	708001	FRAME, PRESSURE SWITCH	1
11	108405	LOWER COVER PRESSURE SWITCH	1
12	108404	FRAME MOUNT / HOPPER CAP	1
13	01953	5/8 I.D. x 1 1/8 RUBBER GOMMET	1
**14	01952	3-10 SEC. TIME DELAY 110 VOLT	1
**14	01952 220	3-10 SEC. TIME DELAY 220 VOLT	1
15	01138	MICRO SWITCH	1
16	708005	SWITCH MOUNT BRACKET	1
17	01141	14 / 4 SJ CORD	1
18	01113-2	CONNECTOR RSR-1007	1
19	108403	COVER SWITCH / HOPPER CAP	1
20	01414	1/2” ELECT. LOCKNUT	1
21	01954	HOPPER CAP POLY PLUG	1
22	108402P	PAINTED HOPPER / AUGER CAP SW	1
23	C00161 1	220 VOLT ELECT. CONTROL BOX	1

** REPAIR ITEMS ONLY - REPLACED BY ITEM 23

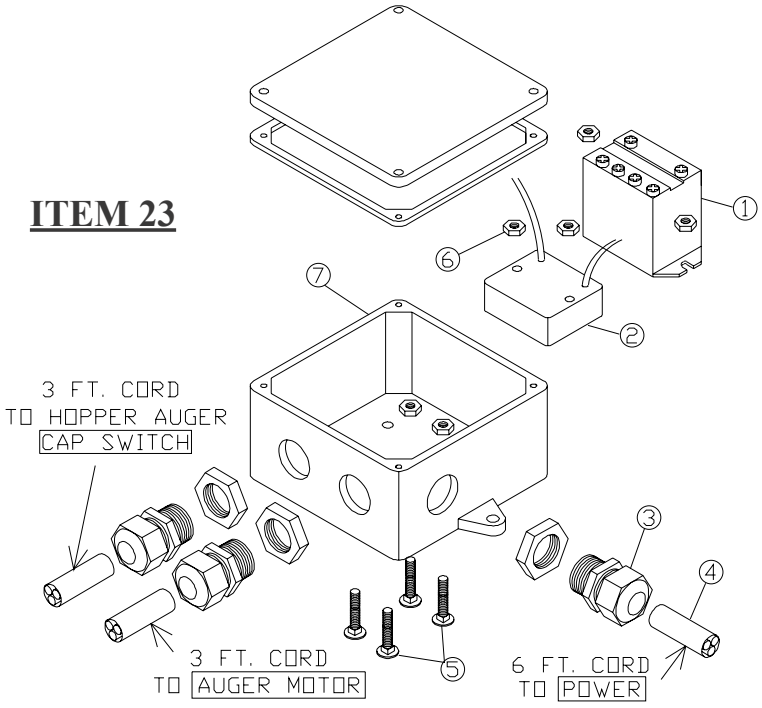
CONTROL HOPPER / AUGER CAP

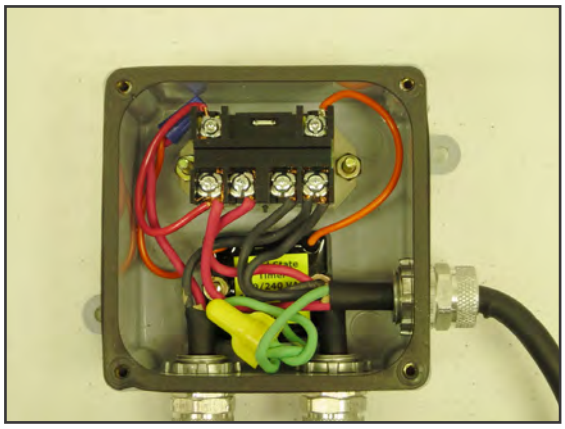
C00161 1 - 220V ELECTRIC CONTROL BOX
HOPPER AUGER CONTROL CAP





ITEM 23





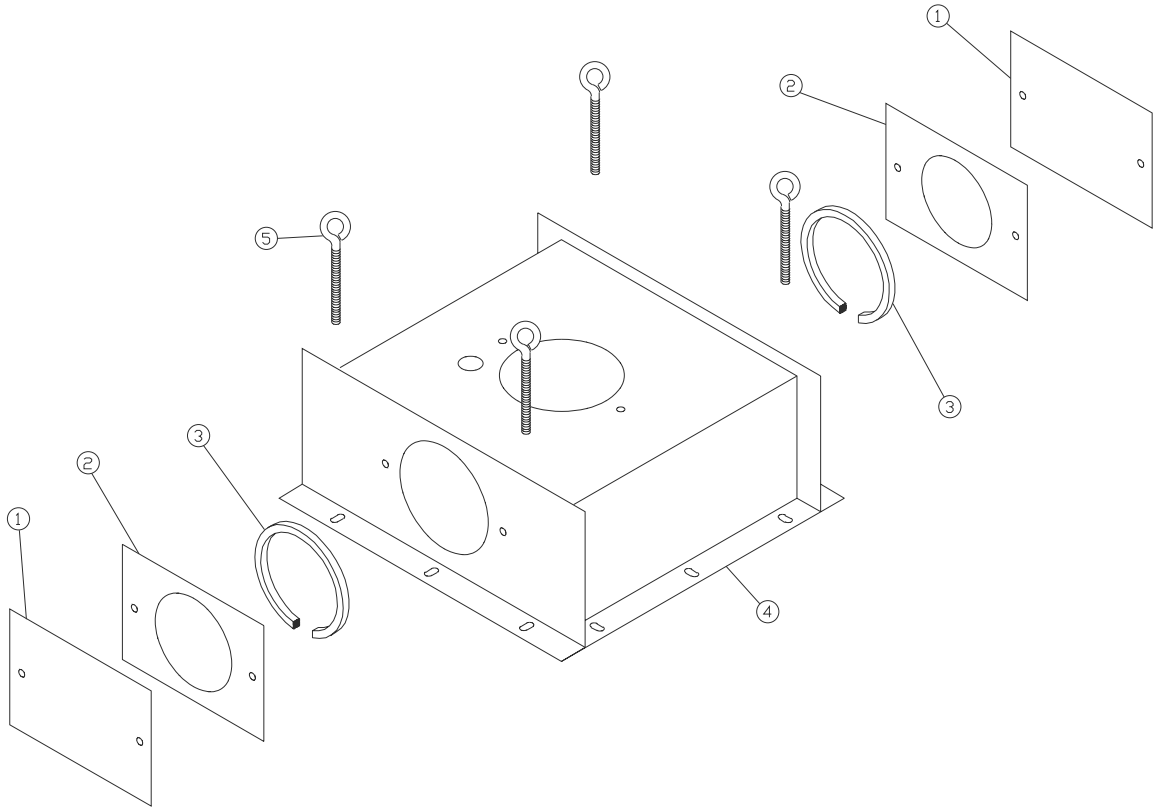
LABELING CORDS

BLACK - 110 VOLT LINE
RED - 110 VOLT LINE
GREEN - GROUND

ITEM	PART NUMBER	DESCRIPTION	QTY
1	01649	RELAY 240V 2 POLE NORMALLY OPEN	1
2	108408	120/240 VOLT 10 SECOND TIMER	1
3	01113 2	CONNECTOR RSR-1007	3
4	01143	COPPER 14/3 SJ CORD	12 FT.
5	01036	#10 – 24 x 1 CARRIAGE BOLT, PLATED	4
6	01015	#10 – 24 HEX NUT	6
7	108407	4 x 4 x 2 PVC JUNCTION BOX	1

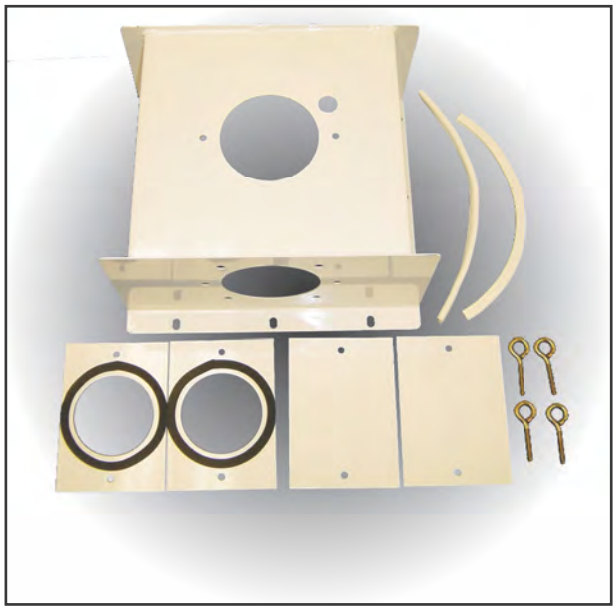
CONTROL HOPPER / AUGER CAP ASSEMBLY

C00155



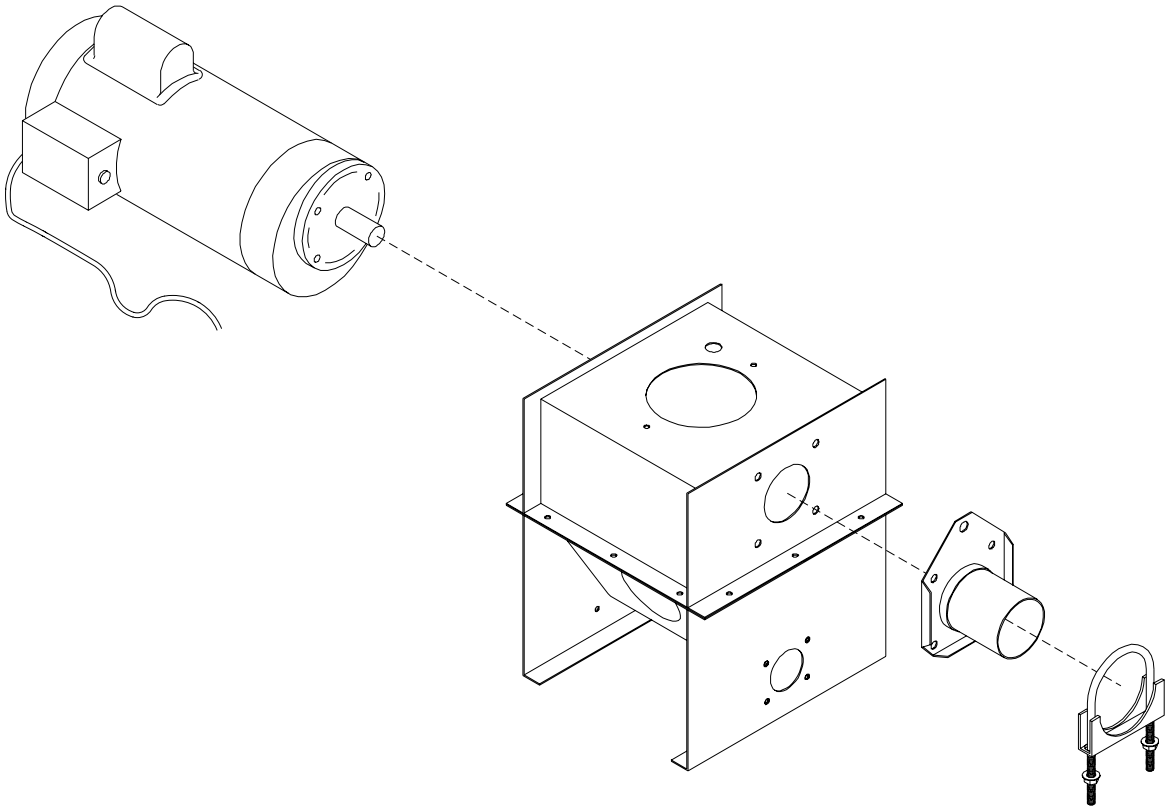
ITEM	PART NUMBER	DESCRIPTION	QTY
1	108396P	COVER PLATE	2
2	108395P	3" AUGER PLATE ADAPTOR	2
3	01944	EDGE TRIM	2
4	108394P	HOPPER COVER FRAME	1
5	01078	1/4 – 20 x 1 1/2 EYEBOLT	4

The ***HOPPER/AUGER CAP ASSEMBLY*** is used as a supplemental component with the Control Hopper Auger Cap.



CONTROL HOPPER / AUGER CAP ASSEMBLY

WIRING FOR C00161-220 AUGER



WIRING FOR C00161-220 AUGER:

BLACK JUMPER TO NORMALLY CLOSED AND TO T1, ON TIME DELAY BLACK WIRE FROM CORD TO COMMON, AND RED FROM CORD TO T2 TIME DELAY, GREEN GROUNDS UNDER SCREW HOLDING SWITCH. SET TIME DEALY SWITCH TO TEN SECONDS.

TESTING:

BLACK FROM AUGER CAP TO WHITE FROM 220 GRAY CORD. WHITE FROM CAP TO BLACK FROM 220 GRAY CORD, ALSO BLACK FROM MOTOR.

LABELING CORDS:

BLACK - 110 VOLT LINE
RED - 110 VOLT LOAD
GREEN - GROUND

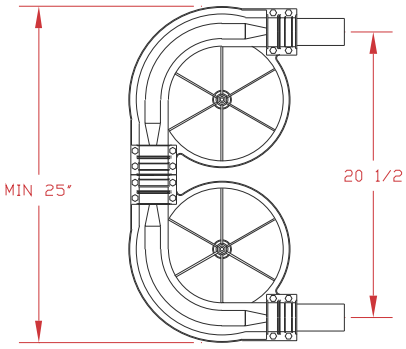
C50300TWPS - 2” MECHANICAL CORNER

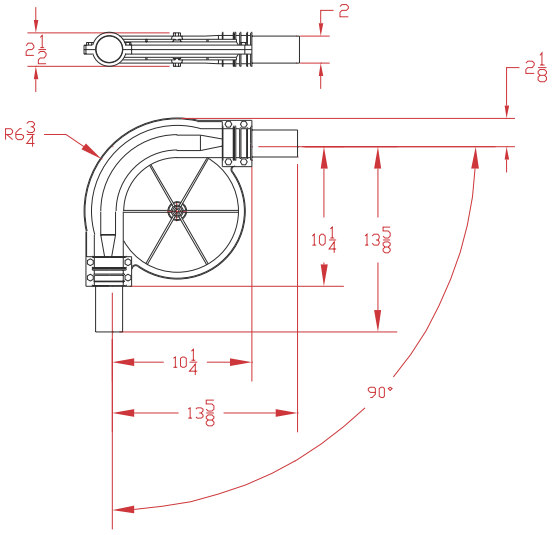
FUNCTION

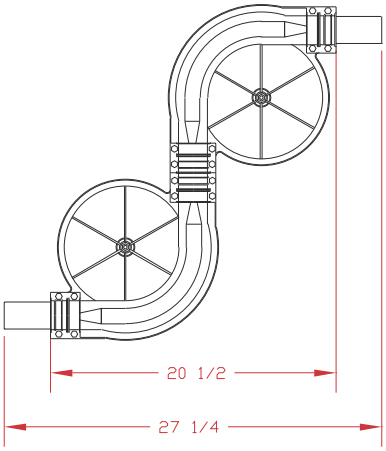
The ***CORNERS*** are used to change the directions of cable travel. The corners are specially designed to transfer the conveyed material from one tube to the other and reduce drag on the system. This is accomplished by means of an idler wheel mounted on bronze bushings.

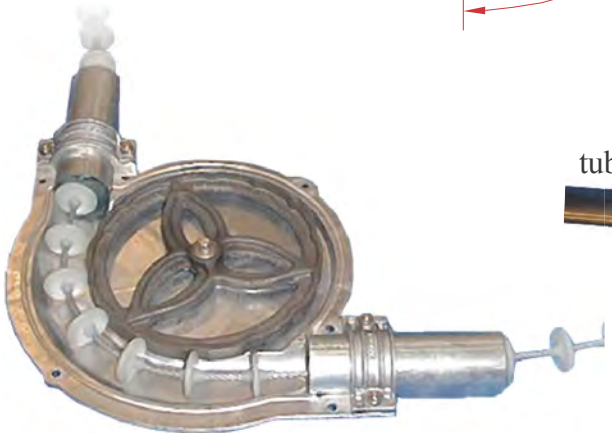
The idler wheel is formed to reduce buildup of material inside the aluminum housing by forcing it to the outside as the idler turns, allowing the cable to carry it away.

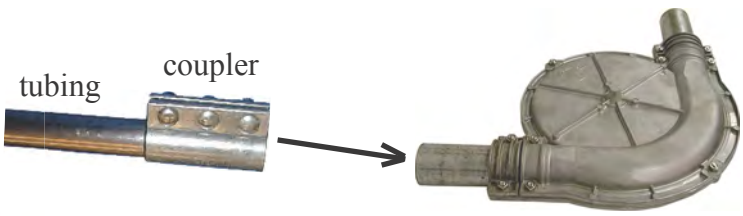
The aluminum housing is structured so that it can be waterproofed and so that it will hold tubes rigidly in line with itself. All corners for the 2” (50) system are now weatherproofed.



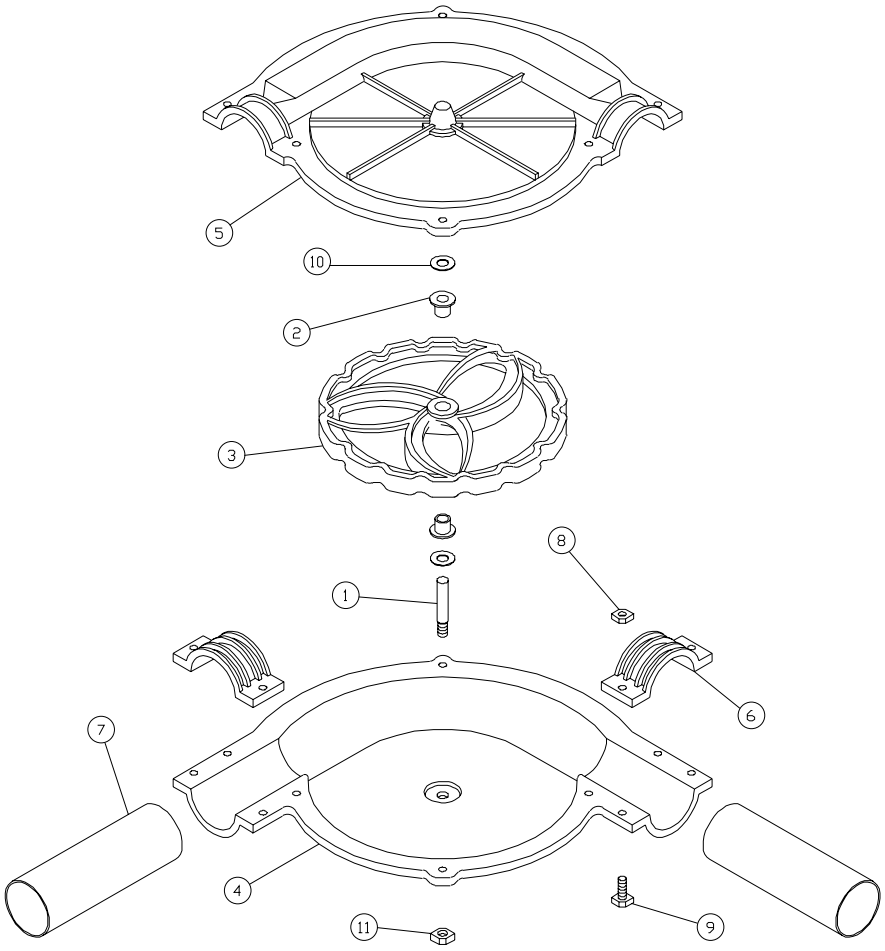








C50300TWPS - 2” MECHANICAL CORNER

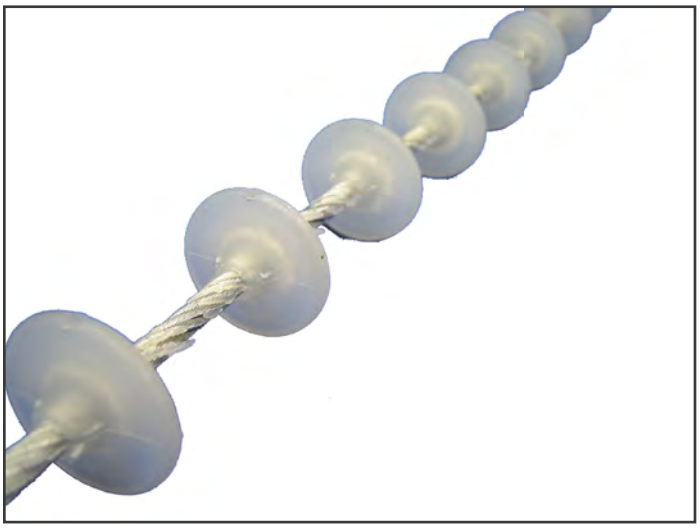


ITEM	PART NUMBER	DESCRIPTION	QTY
1**	300005H	HARDENED AXLE FOR CORNER IDLER	1
2* **	300006B	BRONZE CORNER BUSHING	2
3*	300384A	CORNER IDLER 38 BIDIRECTION W/ HOLE	1
4	300501 1	BOTTOM PLATE 2 IN. CORNER	1
5	300502 1	TOP PLATE 2 IN. CORNER	1
6	300503 1	CLAMP 90 CORNER 2 IN.	2
7	C50211	2 IN. CORNER TUBE	2
8	01011S	1/4 – 20 HEX NUT STAINLESS	10
9	01028S	1/4 – 20 x ¾ HEX CAP BOLT S.S.	10
10	01084	54233-2 SPACER THIN.	2
11	01087	8MM METRIC NUT, PLATED	1

REPLACEMENT PARTS AVAILABLE:
* 300385A - CORNER IDLER 38 BIDIRECTION WITH BRONZE BUSHINGS INSTALLED.
** 300005HK - INNER CORNER REPLACEMENT KIT (1 HARDENED AXLE & 2 BRONZE BUSHINGS).
300007 - CORNER WEATHERPROOF KIT.

NOTE: ALWAYS BE SURE CORNER IS WELL SUPPORTED. NEVER PLACE CORNER VERTICALLY IF MATERIAL IS TO PASS THROUGH IT.

CABLE
C38201 - Galvanized Cable w/ 1 1/4” Discs



FUNCTION

The ***CABLE*** is the heart of the CABLEVEY systems. As the cable is pulled through the circuit, it carries conveyed material with it.

The cable is an aircraft quality steel cable with specially designed plastic discs spaced at regular intervals. The discs are sized to transfer the highest quantity of material with the least amount of friction.

INSTALLATION INSTRUCTIONS

Mount spool of cable on an axle and thread end over lower idler and out right end port of large drive unit (See Photo A). Push cable from one corner to the next through tube. As soon as the cable has passed a corner fasten the cover in place.

When both ends of cable are in drive unit hook 3 or 4 discs of one end in sprocket and pull slack from system by hand, pulling the opposite end. Place discs in sprocket to hold cable in this position.

Cut cable using (01275) Cable Cutter and attach connector according to cable connector installation instructions.

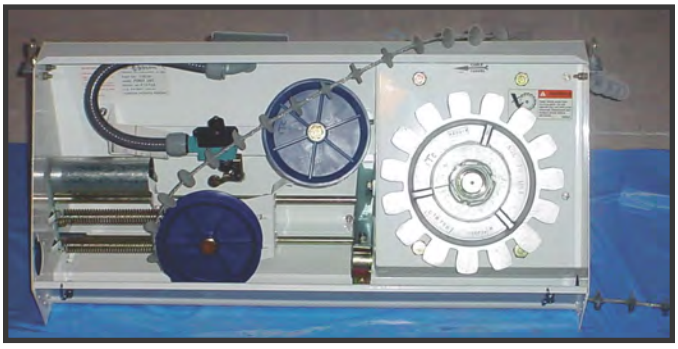
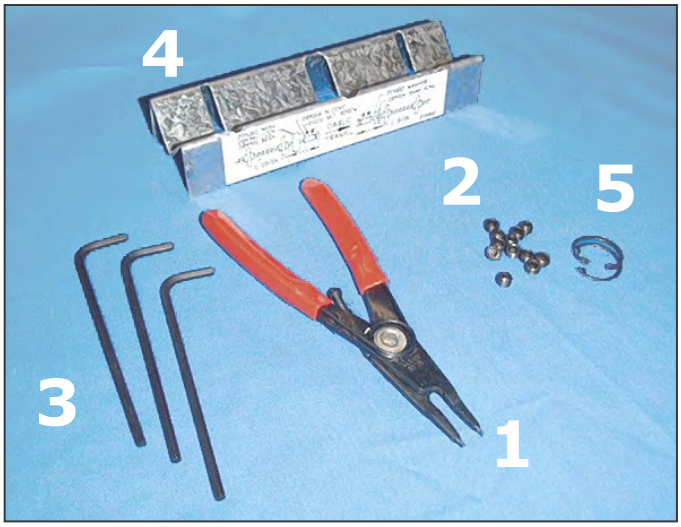


Photo A



C38208 Cable Connector Kit

ITEM	PART NUMBER	DESCRIPTION	QTY
1	01105	SNAP RING PLIERS	1
2	01022	SOCKET SET SCREWS	12
3	01104L	LONG ALLEN KEY	3
4	C38219	CABLE CONNECTOR TEMPLATE	1
5	209004	SNAP RING CONNECTOR	2

01275 Cable Cutter

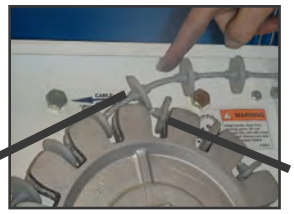
CABLE CONNECTOR
C38209

FUNCTION

The ***CABLE CONNECTOR*** attaches the two ends of the cable together to complete the loop. The two-piece metal connector is joined together with an internal snap ring, which allows any rotational twist in the cable to be self-correcting.

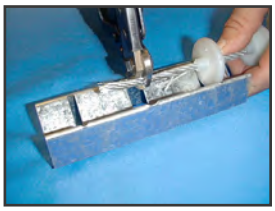
INSTALLATION

1. With cable meshed in sprocket after removing slack, mark discs to be replaced by connector.



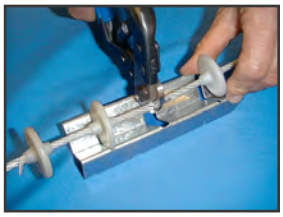
NOTE: NINE INCHES BETWEEN THE IDLER SHUT OFF FRAME AND LEFT END OF DRIVE UNIT FRAME (STEP 5)

2. Remove cable from sprocket. Hold disc to be removed with vise grips and cut with hacksaw. Cut ***TO*** cable; ***do not cut cable.*** Turn cable over and make another cut 180 degrees from last cut. Pull disc halves from cable.

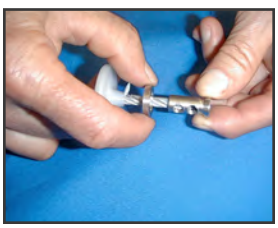


3. Place cable coming from right side of sprocket (with disc removed) in cable connector gauge. Be sure now on gauge is pointing in same direction as cable travel arrow on drive unit. Cut cable with cable cutters 1/16 in. (1.5 mm) off the center of the large slot toward the disc in the gauge. (If the cable is cut directly at the center of the large slot, cable wires may extend beyond the cable sleeve end causing interference)

4. Slide **BODY** of connector over end of cable (cable cut in step 3). Thread **SLEEVE** onto cable, turn counterclockwise until end of cable is flush with end of **SLEEVE**. Slide **BODY** to outer end of **SLEEVE** and insert two **SET SCREWS**. Care must be taken to avoid cross threading. Do not completely tighten set screws yet.



5. Place cable coming from the left side of the sprocket (with disc removed) in cable connector gauge with empty spot over center slot in gauge. Again, be ure arrow on gauge is pointing in same direction as cable travel arrow on the drive unit. Cut cable with cable cutters 1/16 in. (1.5mm) off the center of the large slot toward the disc in the gauge. (If the cable is cut directly at the center of the large slot, cable wires may extend beyond the cable sleeve end causing interference)



6. Slide washer onto cable (cable cut in step 5) with beveled edge toward end of cable. Thread sleeve on cable until flush. Slide washer to end of sleeve and insert set screws. Care must be taken to avoid cross threading. Do not com pltely tighten set screws yet.

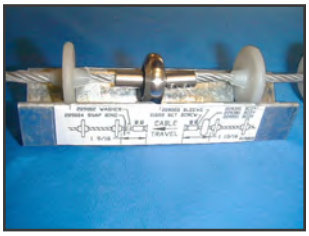
(CONTINUED ON FOLLOWING PAGE)

CABLE CONNECTOR INSTALLATION (CONTINUED)
C38209

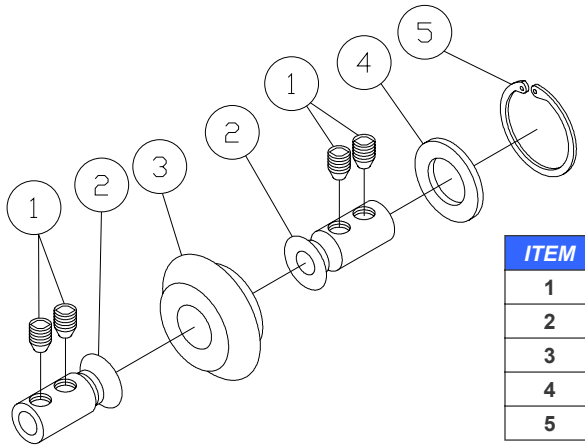
7. Fit two ends of connector together and insert snap ring into groove of body. Rotate the snap ring in the groove to be certain that it is seated.

NOTE: Snap ring must be inserted with sharp edge out. (Round Side Down)

8. Place connected cable in gauge under slight tension with connector in center slot. If it goes into place easily, connector spacing is correct and the set screws can now be tightened. If connector is not centered on the slot, loosen the four set screws and move the connector. Now, tighten the set screws to 50-60 inch lbs. of torque which is a 15 lb. pull on the end of the 4 in. Long Al len Key (01104L).

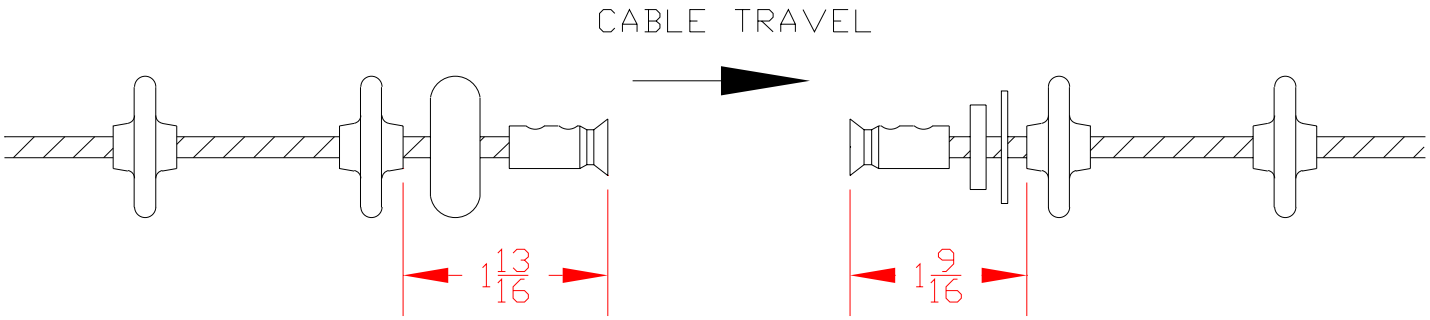


NOTE: Do not reuse set screws after they have been tightened. Used set screws will not sufficiently clamp to the cable.



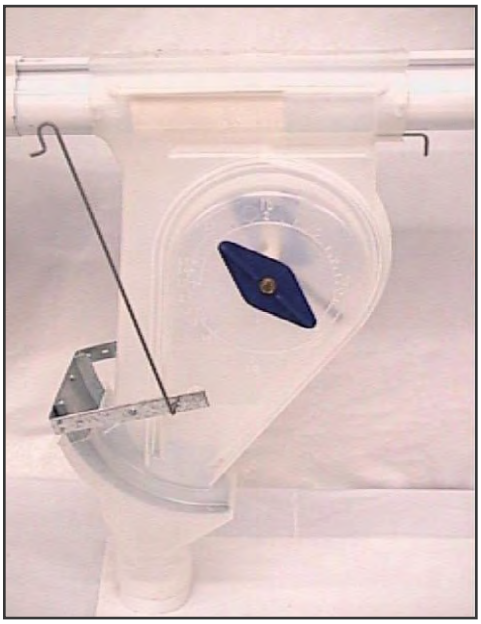
C38209 Cable Connector

ITEM	PART NUMBER	DESCRIPTION	QTY
1	01022	1/4 – 28 x 5/32 SOCKET SET SCREW	10
2	209003	CONNECTOR CLAMP SLEEVE	2
3	209381	BODY – 50 CONNECTOR	1
4	209002	CONNECTOR WASHER PLATED	1
5	209004	CONNECTOR SNAP RING	2

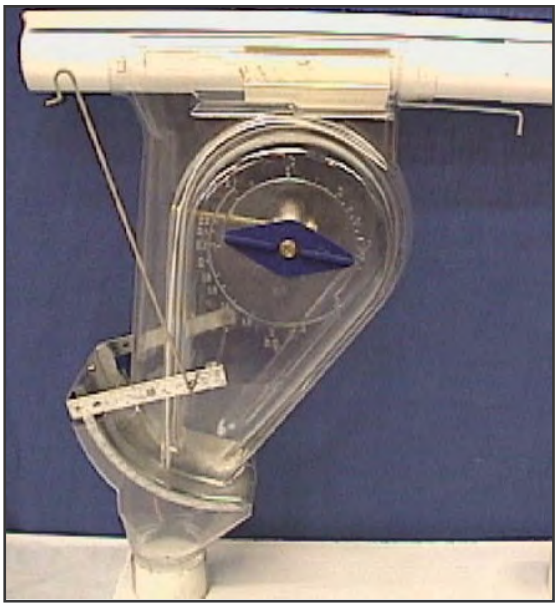


ACCUDIAL FEED DROP

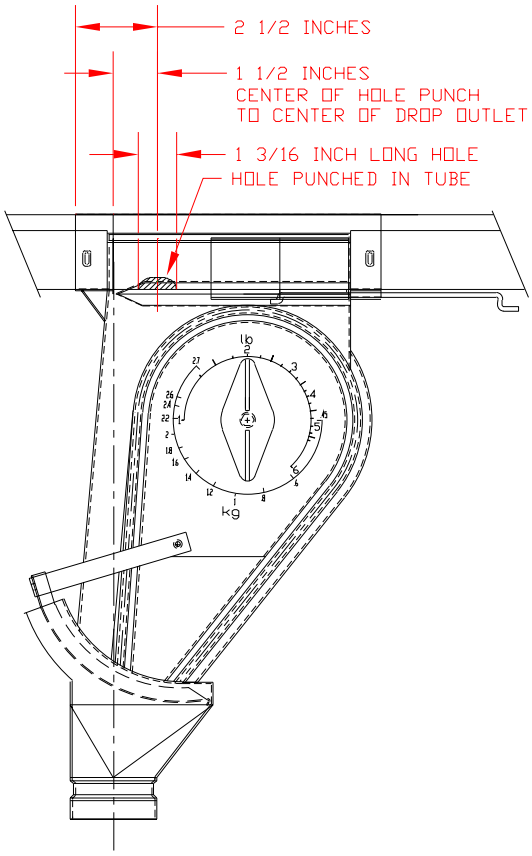
C50605PCL - CONTACT CLEAR VOLUMETRIC DROP
C50606PCL - CLEAR VOLUMETRIC DROP



C50605PCL



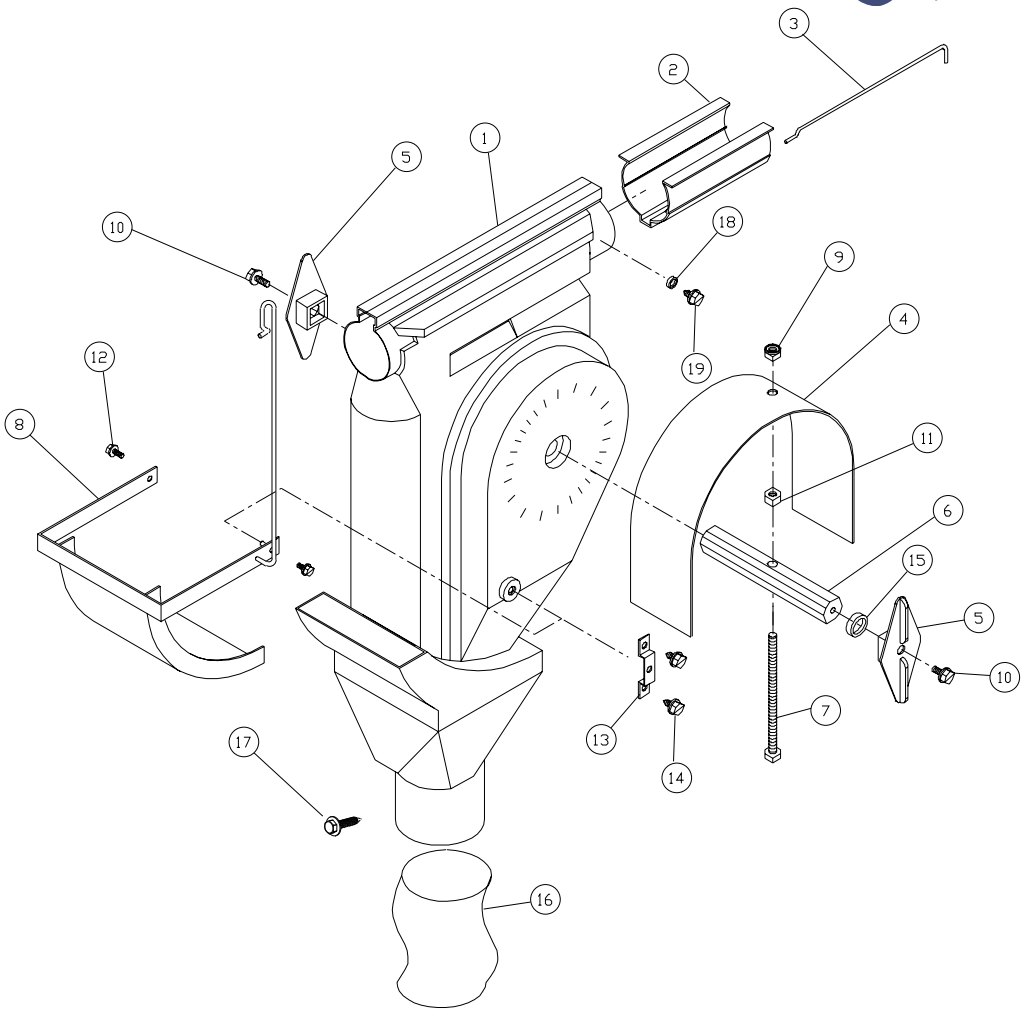
C50606PCL



FUNCTION

Simply dial in your desired feed setting for each drop in either pounds (lb.) or kilograms (kg.). Markings are visible from either side of the Volumetric Drop. Easy to adjust Closure. Patented Positive Close Feed Dispenser guards against feed spills and insures accurate feedings.

2” TEE 8” x 16”
160012SS STAINLESS STEEL



ITEM	PART NUMBER	DESCRIPTION	QTY
1	602009	VOLUMETRIC BODY, 1 TO 6 LBS.	1
2	602011	2” SLIDE CLOSURE, 1 TO 6 LB. VOL. DROP	1
3	602012	CLOSER ROD, 1 TO 6 LB. VOL. DROP	1
4	602013	SLIDE STRIP, 1 TO 6 LB. VOL. DROP	1
5	602014	KNOB, 1 TO 6 LB. VOL. DROP	2
6	602010	PIVOT ROD, 1 TO 6 LB. VOL. DROP	1
7	602016	5/16 – 18 NYLON INSERT JAM NUT	1
**8	602017A	LONG WIRE DOOR WITH PIVOT HOLES	1
9	01960	5/16 – 18 NYLONG INSERT JAM NUT	1
10	01072	#14 x 1/2 HEX HEAD SHEET METAL SCREW TYB.	2
11	01003	5/16 – 18 HEX NUT, YELLOW CHROME FINISH	1
**12	02086S	SS #10 – 24 x 5/8 HEX WASHER HD SCREW	2
*13	105008	HOPPER LOCKING STRAP	1
*14	01966	#10 x 1/4 HWH SCREW PLATED	2
*15	02154	RUBBER O-RING BRAKE SLEEVE	1
*16	C00606R	RUBBER TRANSITION	1
*17	02126	#10 x HEX HEAD SHEET METAL SC/ SEAL WASHER	1
*18	02147	RUBBER WASHER, .062 x .120 x .25 I.D.	1
*19	02148S	SS #6 x 1/4 HEX WASHER HD SHT METAL SCREW	1

* NOT IN B.O.M.

** SHIP 3 PIECES OF (12), 02086S SCREW, WHEN (8), 602017S DOOR IS ORDERED AS A REPAIR PART.

USE (18) & (19) TO ATTACH DROP TO AUGER PVC TUBE

Control Panel Instructions

1. Clock for Conveying
2. Manual Start Switch
3. Manual Stop Switch
4. Green Light
5. Clock for Dispensing
6. Manual Dispensing Switch
7. Manual Cleanout Switch

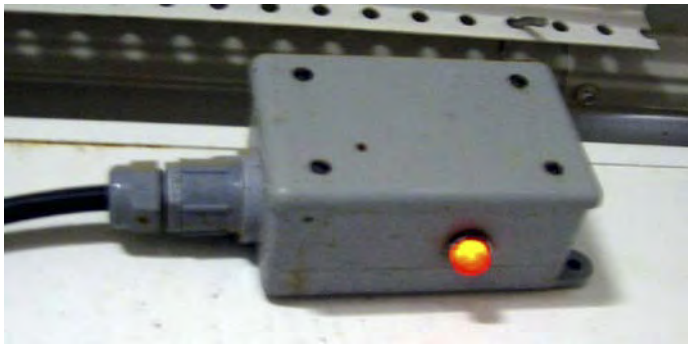


Photo #1 - Red Light on Drive Unit

Photo #2 - Control Drop

Photo #3 - Safety Switch (Roller Switch for Drive)

Photo #4 - Safety Switch (Roller Switch for Drive)

Photo #5 - Air Valve

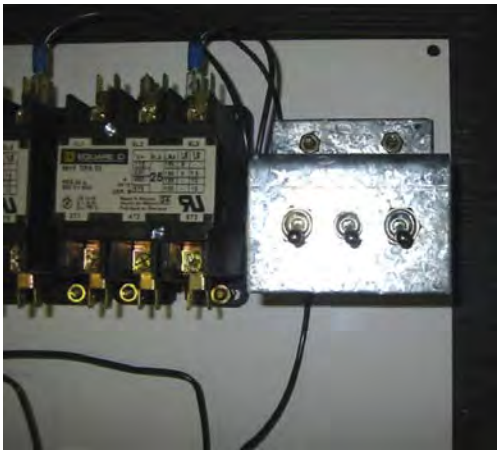


Photo #6 - Manual Bypass Switches

1. **Clock for Conveying** (Item 1)

   A. If the Clock (Item 1) will not start the systems, but the Manual Start Switch (Item 2) will start the systems, the Clock (Part No. 01467TC) will need to be replaced.

   B. If the systems will not run and the Green Light (Item 4) is off:

      1st. Check all Safety Switches (Roller Switches) in Drive Units and reset as necessary. Once the Safety Switches are reset, it will reset the Control Panel and turn the Green Light (Item 4) on. The Red Light on the back of the Drive Unit which needs to be reset will be on (See Photo #1)

      2nd. If none of the Safety Switches (Roller Switches) need to be reset, you will need to check the Control Drop (See Photo #2) to be sure the door is completely closed. The system will not run if the door is open.

      3rd. If resetting the Drive Units and closing the door on the Control Drop do not resolve the problem, you will need to check electrical power to the Control Panel.

      4th. If there is power to the Control Panel, you will need to check the Manual Stop Switch (Item 3). If this is on a qualified electrician will need to open the panel box and place a "jumper wire" from #4 to #5 on the terminal block at the bottom of the Control Panel (see Wiring Diagram included). If the green light does not come on, there is no power to the Control Panel and you must contact a qualified electrician to restore power to the panel. If the green light comes on, then it is one of the Drive Unit Safety Switches (Roller Switches). **The "jumper wire" must be removed before running the system.** The Safety Switch should look like Photo #3. If you can reset the Safety Switch and the system stops again, and it is the same Drive Unit this indicates the cable needs to be shortened. If the Safety Switch looks like Photo #4 it means that the cable needs to be shortened or the system is plugged. To shorten the cable, you will need to remove 3 buttons. See instructions for shortening cable on Page 19 of Installation and Service Manual.

2. **Clock for Dispensing** (Item 5)

   A. If the Clock for Dispensing (Item 5)will not dispense feed, but the Manual Switch (Item 6) will, then the Clock (Part No. 01467TC) will need to be replaced.

   B. If the Manual Switch (Item 6) and the Clock (Item 5) will not open the doors on the drops, you will need to press the small red button on the Air Valve (Photo 5). This should open all the doors. They should stay open as long as the button is depressed and should close when the button is released. If this happens, the air valve is plugged or bad and will need to be cleaned or replaced as necessary (Part No. AS01021K).

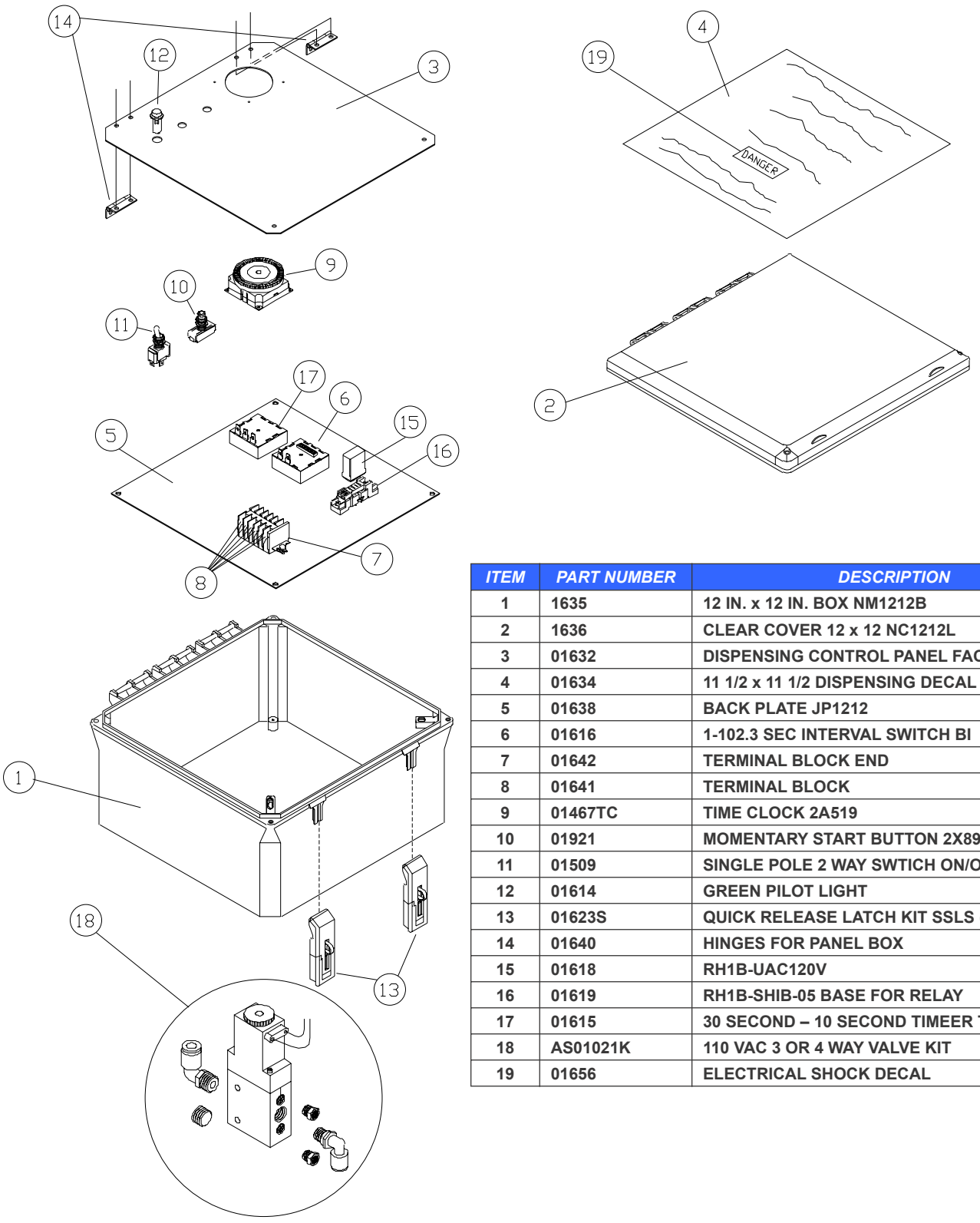
   C. Check the Air Compressor and be sure the water is drained out of it.

3. **Manual Bypass Switches**

   A. The switches, located inside the control box, are to be used **ONLY** if the controller in the panel is not functioning. These manual switches must be turned on and off manually. You MUST turn the switch off if it is ever switched to on.

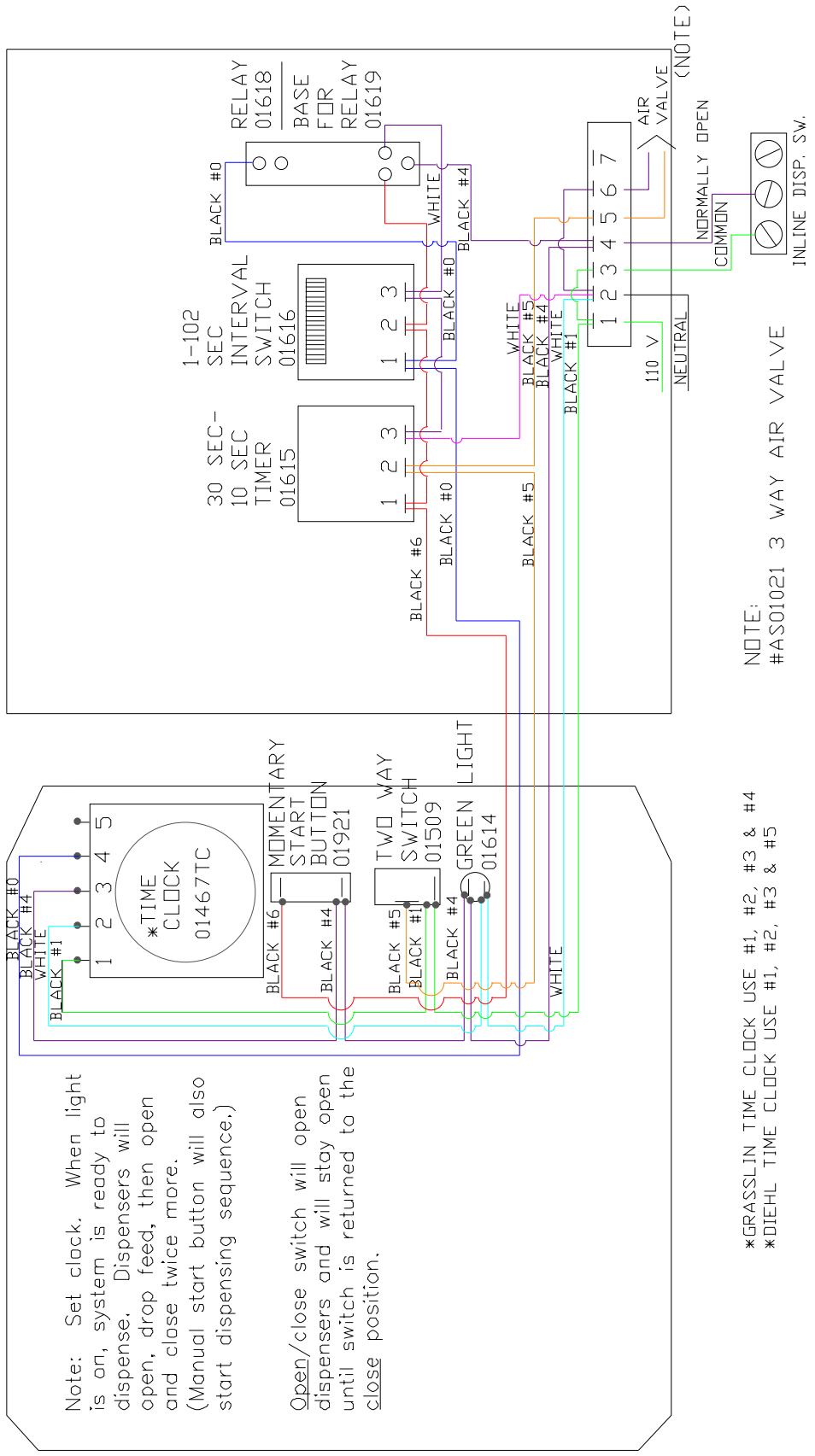
CONTROL PANELS (DISPENSING)

01580 DISPENSING PANEL



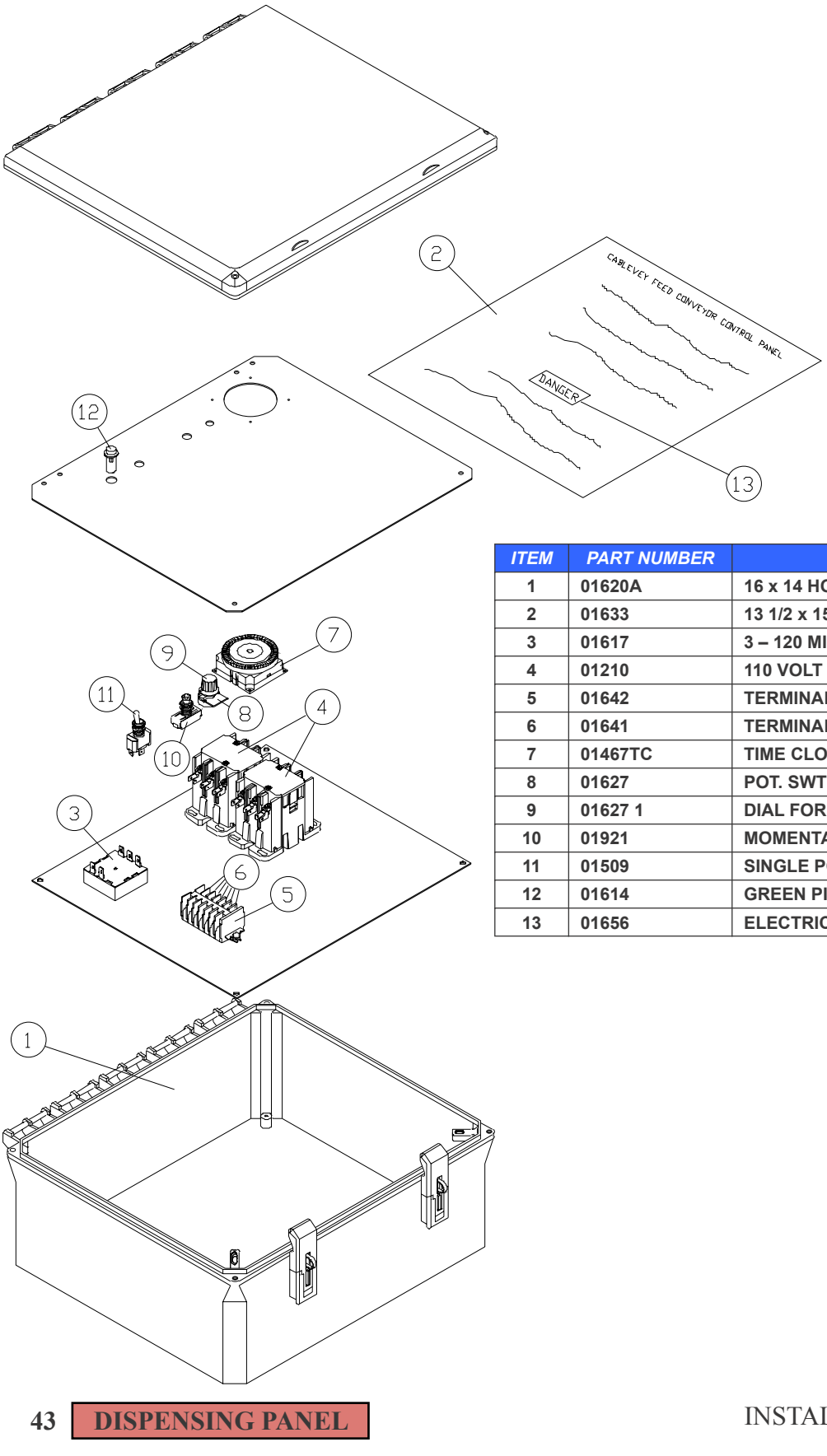
ITEM	PART NUMBER	DESCRIPTION	QTY
1	1635	12 IN. x 12 IN. BOX NM1212B	1
2	1636	CLEAR COVER 12 x 12 NC1212L	1
3	01632	DISPENSING CONTROL PANEL FACE	1
4	01634	11 1/2 x 11 1/2 DISPENSING DECAL	1
5	01638	BACK PLATE JP1212	1
6	01616	1-102.3 SEC INTERVAL SWITCH BI	1
7	01642	TERMINAL BLOCK END	1
8	01641	TERMINAL BLOCK	6
9	01467TC	TIME CLOCK 2A519	1
10	01921	MOMENTARY START BUTTON 2X894	1
11	01509	SINGLE POLE 2 WAY SWTICH ON/OFF	1
12	01614	GREEN PILOT LIGHT	1
13	01623S	QUICK RELEASE LATCH KIT SSLS (STAINLESS)	2
14	01640	HINGES FOR PANEL BOX	2
15	01618	RH1B-UAC120V	1
16	01619	RH1B-SHIB-05 BASE FOR RELAY	1
17	01615	30 SECOND – 10 SECOND TIMEER TRS51130S1	1
18	AS01021K	110 VAC 3 OR 4 WAY VALVE KIT	1
19	01656	ELECTRICAL SHOCK DECAL	1

CONTROL PANELS (DISPENSING 1 SYSTEM)
01580 ELECTRICAL LAYOUT



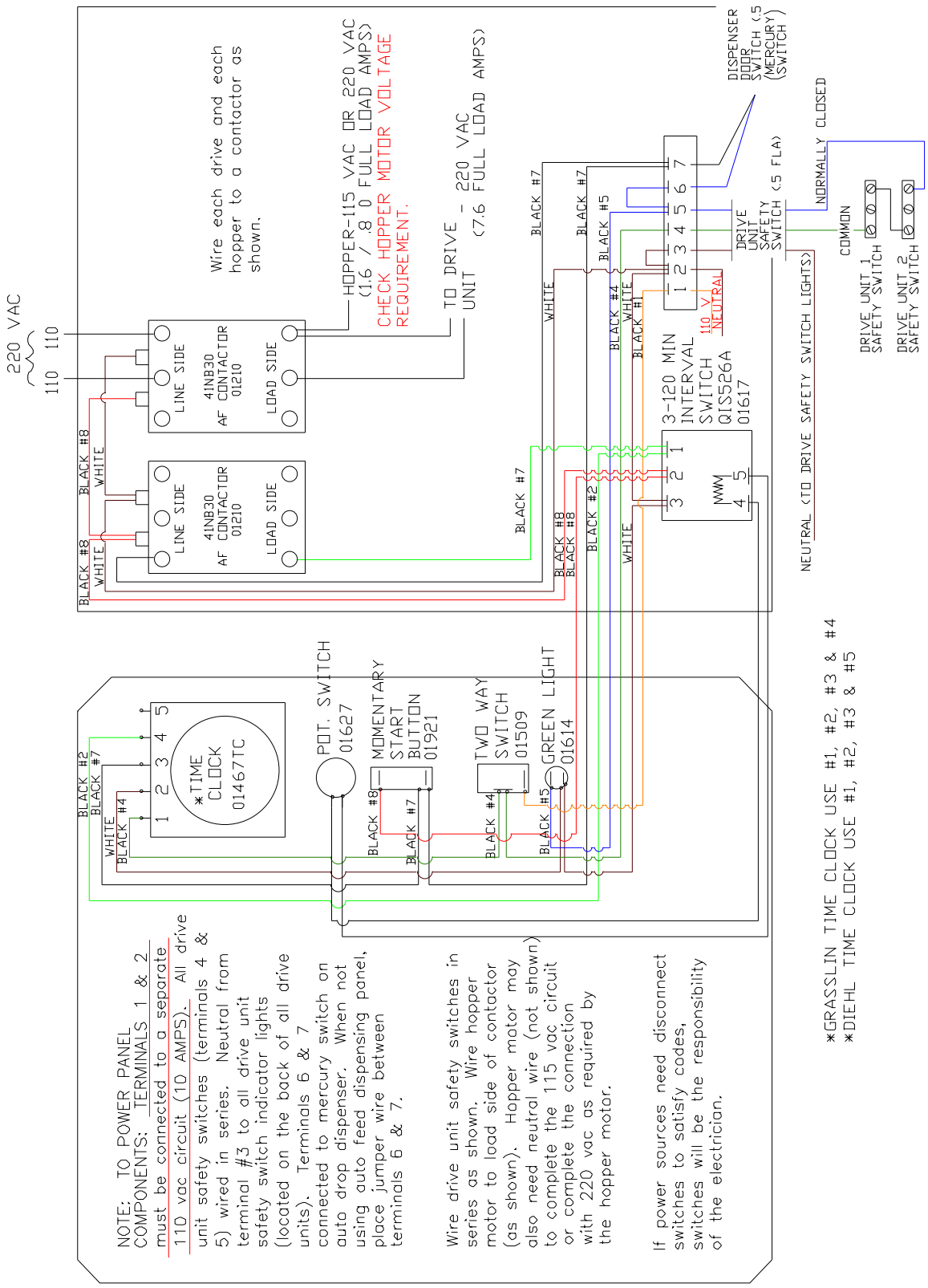
CONTROL PANELS (CONVEYING)

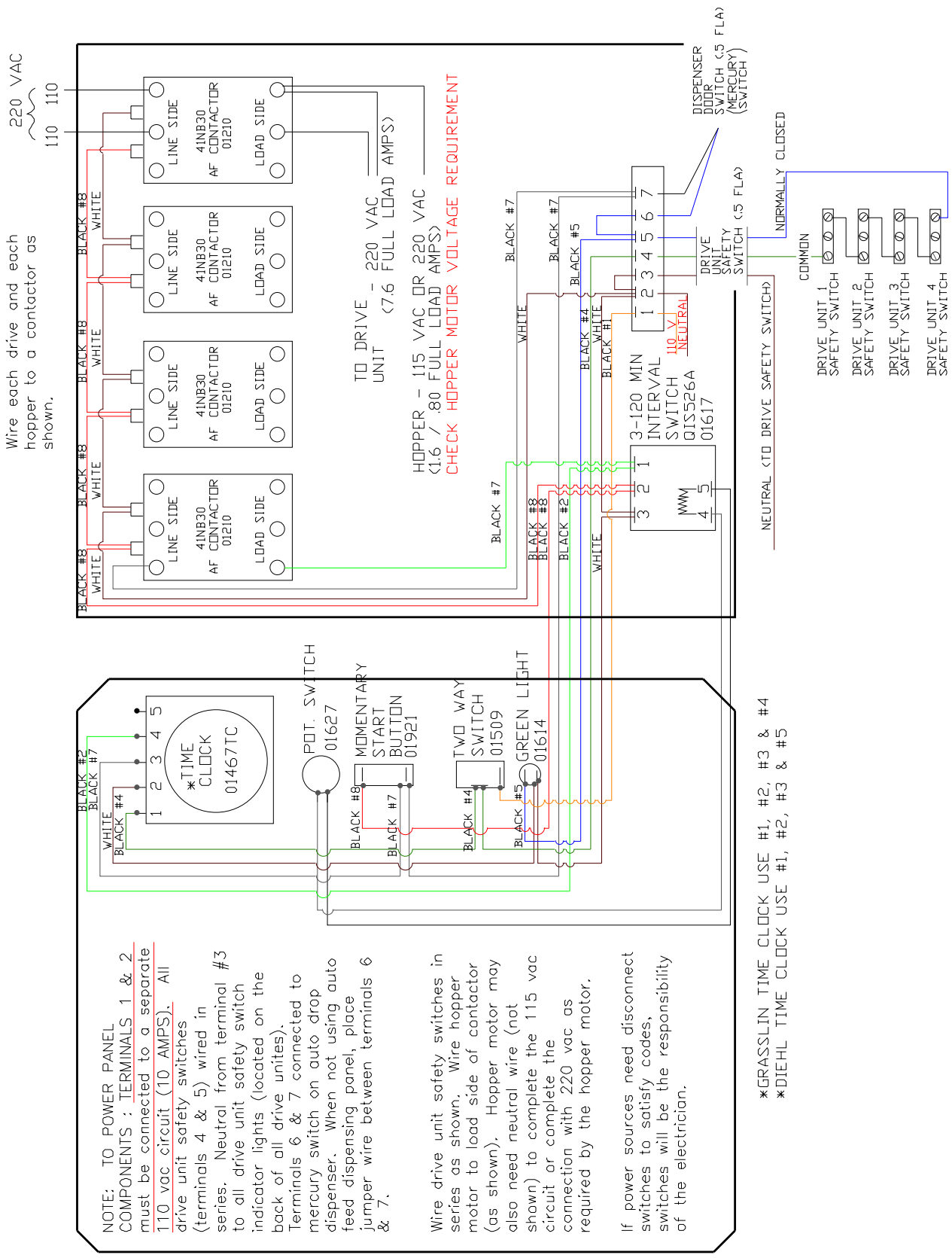
01582 CONVEYING PANEL



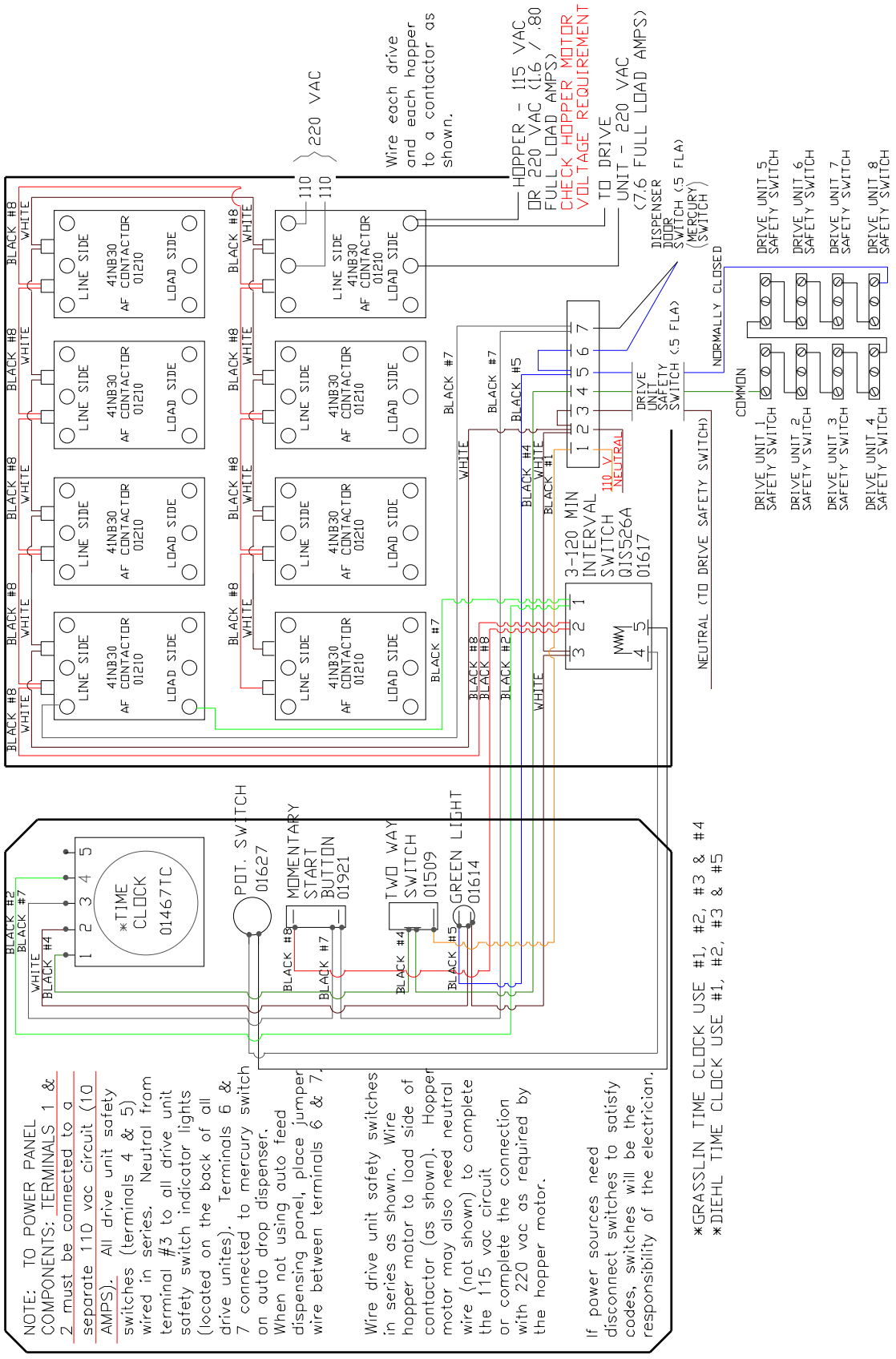
ITEM	PART NUMBER	DESCRIPTION	QTY
1	01620A	16 x 14 HOFFMAN FIBERGLASS BOX	1
2	01633	13 1/2 x 15 CONVEYING DECAL	1
3	01617	3 – 120 MIN INTERVAL SWITCH QUIS5	1
4	01210	110 VOLT CONTACTOR	2
5	01642	TERMINAL BLOCK END	1
6	01641	TERMINAL BLOCK	7
7	01467TC	TIME CLOCK 2A519	1
8	01627	POT. SWTICH	1
9	01627 1	DIAL FOR POT. SWITCH	1
10	01921	MOMENTARY START BUTTON 2X894	1
11	01509	SINGLE POLE 2 WAY SWITCH ON/OFF	1
12	01614	GREEN PILOT LIGHT	1
13	01656	ELECTRICAL SHOCK DECAL	1

CONTROL PANELS (CONVEYING 1-2 SYSTEMS)
01582 ELECTRICAL LAYOUT



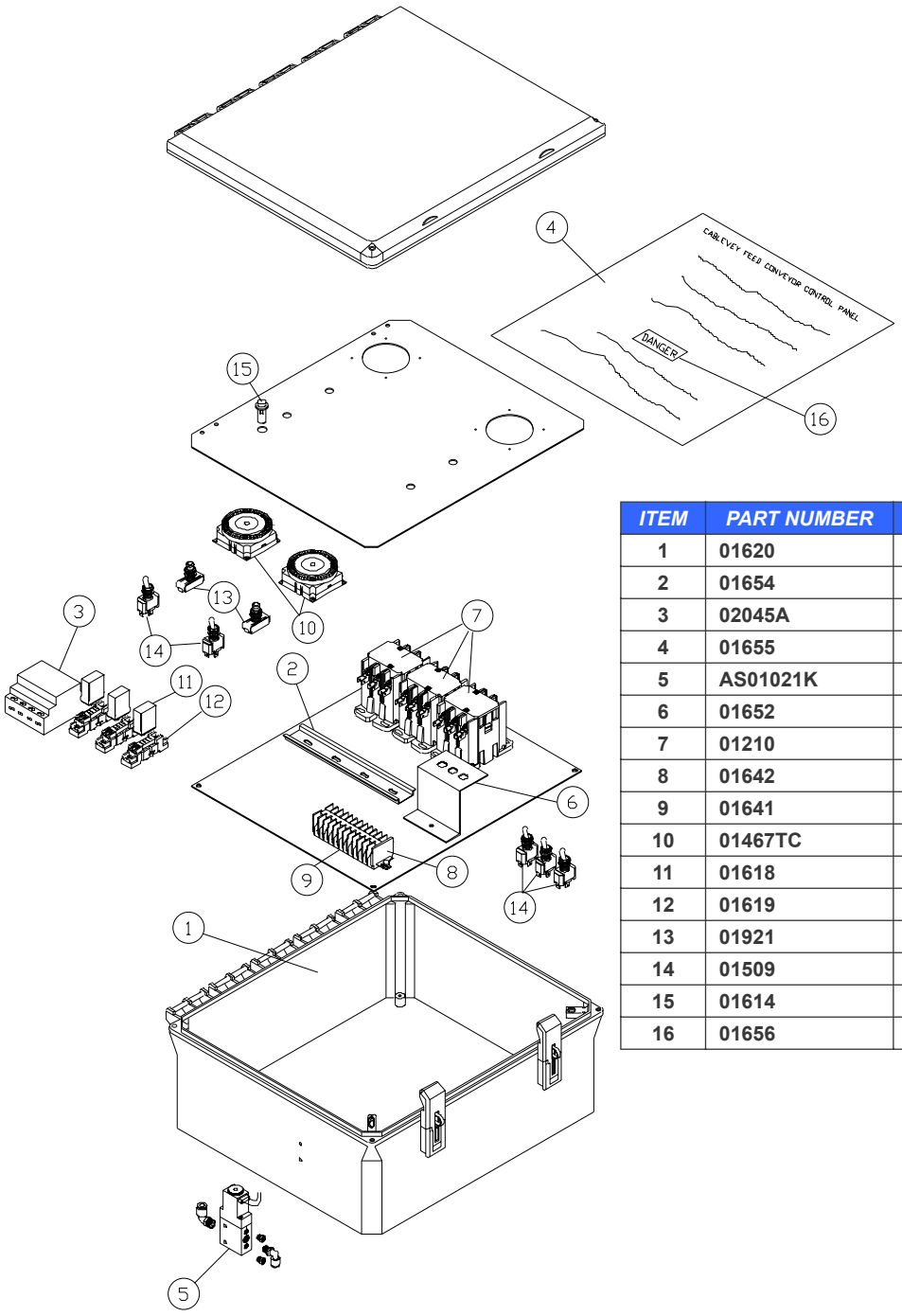

220 VAC
110 110
Wire each drive and each hopper to a contactor as shown.
LINE SIDE
LOAD SIDE
41NB30 AF CONTACTOR 01210
BLACK #8
WHITE
TO DRIVE UNIT - 220 VAC (7.6 FULL LOAD AMPS)
HOPPER - 115 VAC OR 220 VAC (1.6 / .80 FULL LOAD AMPS)
CHECK HOPPER MOTOR VOLTAGE REQUIREMENT
BLACK #7
WHITE
BLACK #5
BLACK #4
BLACK #1
3-120 MIN INTERVAL SWITCH QIS526A 01617
110 V NEUTRAL
DISPENSER DOOR SWITCH (.5 FLA) (MERCURY) (SWITCH)
DRIVE UNIT SAFETY SWITCH (.5 FLA)
NORMALLY CLOSED
COMMON
DRIVE UNIT 1 SAFETY SWITCH
DRIVE UNIT 2 SAFETY SWITCH
DRIVE UNIT 3 SAFETY SWITCH
DRIVE UNIT 4 SAFETY SWITCH
NEUTRAL (TO DRIVE SAFETY SWITCH)
*TIME CLOCK 01467TC
POT. SWITCH 01627
MOMENTARY START BUTTON 01921
TWO WAY SWITCH 01509
GREEN LIGHT 01614
BLACK #2
BLACK #7
WHITE
BLACK
BLACK #4
BLACK #8
BLACK #5
NOTE: TO POWER PANEL COMPONENTS ; TERMINALS 1 & 2 must be connected to a separate 110 vac circuit (10 AMPS). All drive unit safety switches (terminals 4 & 5) wired in series. Neutral from terminal #3 to all drive unit safety switch indicator lights (located on the back of all drive units). Terminals 6 & 7 connected to mercury switch on auto drop dispenser. When not using auto feed dispensing panel, place jumper wire between terminals 6 & 7.
Wire drive unit safety switches in series as shown. Wire hopper motor to load side of contactor (as shown). Hopper motor may also need neutral wire (not shown) to complete the 115 vac circuit or complete the connection with 220 vac as required by the hopper motor.
If power sources need disconnect switches to satisfy codes, switches will be the responsibility of the electrician.
*GRASSLIN TIME CLOCK USE #1, #2, #3 & #4
*DIEHL TIME CLOCK USE #1, #2, #3 & #5

CONTROL PANELS (CONVEYING 5-8 SYSTEMS)
01588 ELECTRICAL LAYOUT

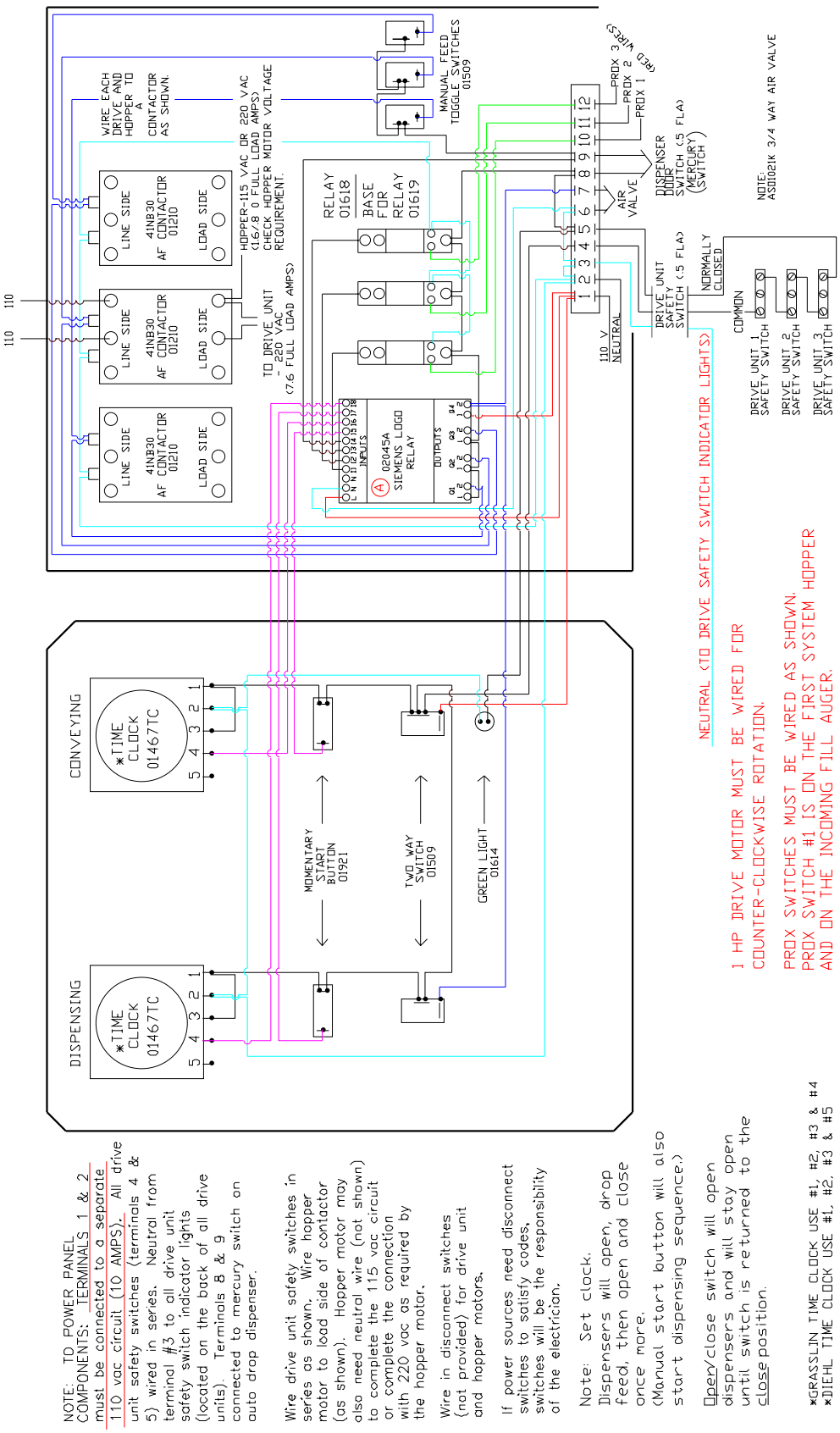


CONTROL PANELS (CONVEY/DISPENSE)

01581 CONVEY/DISPENSE PANEL



ITEM	PART NUMBER	DESCRIPTION	QTY
1	01620	16 x 14 CARLON BOX NM1614B	1
2	01654	DIN RAIL, DISPENSE / CONVEY PANEL	1
3	02045A	SIEMENS LOGO RELAY W/O DISPLAY	1
4	01655	13 1/2 x 15 CONVEYING DECAL	1
5	AS01021K	110 VAC 3/4 WAY AIR VALVE KIT	1
6	01652	SWITCH BRACKET, DISPENSE / CONVEY PANEL	1
7	01210	110 VOLT CONTACTOR	3
8	01642	TERMINAL BLOCK END	1
9	01641	TERMINAL BLOCK	12
10	01467TC	TIME CLOCK 2A519 FOR (01467HW)	2
11	01618	RH1B-UAC120V RELAY	3
12	01619	RH1B-SHIB-05 BASE FOR RELAY	3
13	01921	MOMENTARY START BUTTON 2X894	2
14	01509	SINGLE POLE 2 WAY SWITCH ON/OFF	5
15	01614	GREEN PILOT LIGHT	1
16	01656	ELECTRICAL SHOCK DECAL	1



NOTE: TO POWER PANEL COMPONENTS: TERMINALS 1 & 2 must be connected to a separate 110 vac circuit (10 AMPS). All drive unit safety switches (terminals 4 & 5) wired in series. Neutral from terminal #3 to all drive unit safety switch indicator lights (located on the back of all drive units). Terminals 8 & 9 connected to mercury switch on auto drop dispenser.

Wire drive unit safety switches in series as shown. Wire hopper motor to load side of contactor (as shown). Hopper motor may also need neutral wire (not shown) to complete the 115 vac circuit or complete the connection with 220 vac as required by the hopper motor.

Wire in disconnect switches (not provided) for drive unit and hopper motors.

If power sources need disconnect switches to satisfy codes, switches will be the responsibility of the electrician.

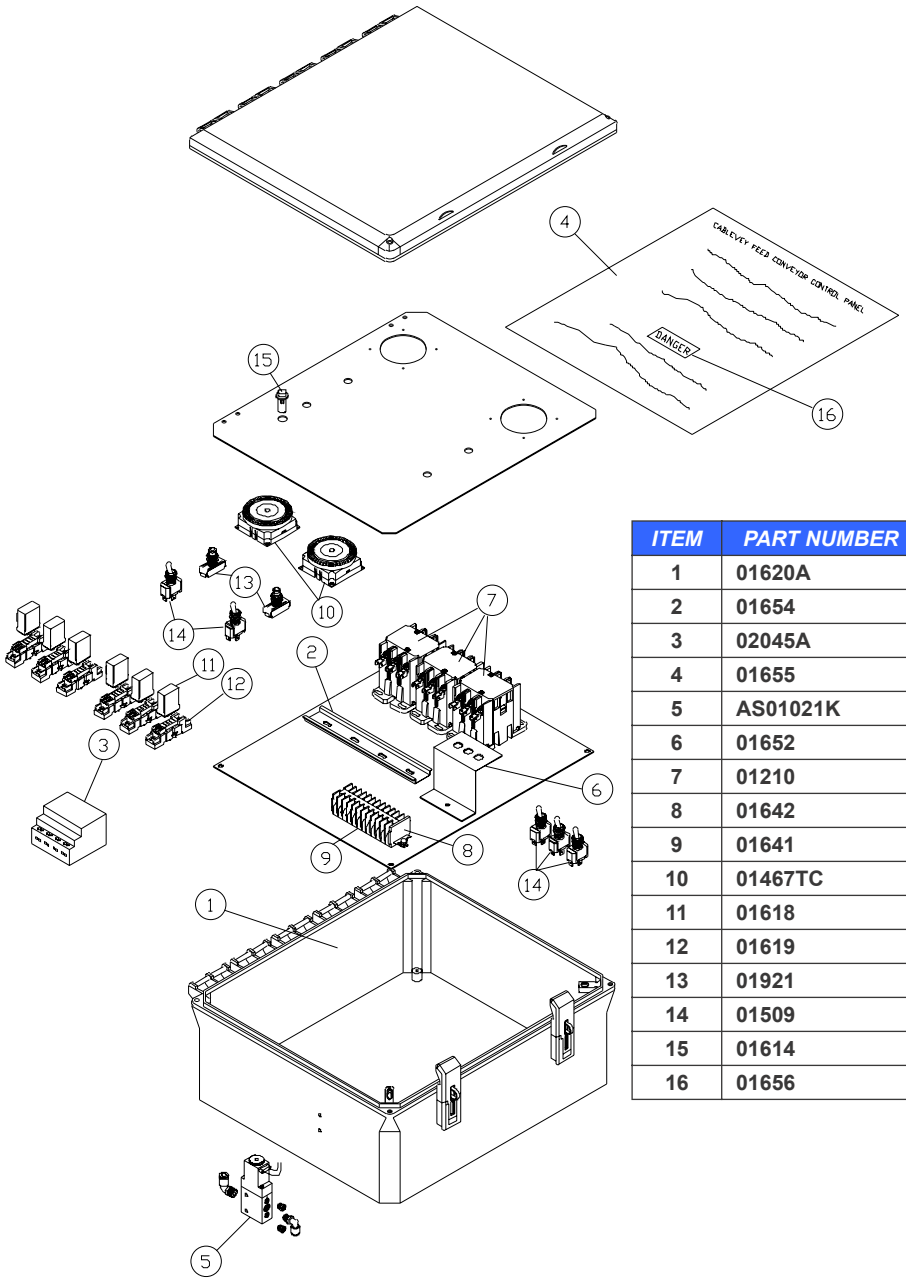
Note: Set clock. Dispensers will open, drop feed, then open and close once more. (Manual start button will also start dispensing sequence.)

Open/close switch will open dispensers and will stay open until switch is returned to the close position.

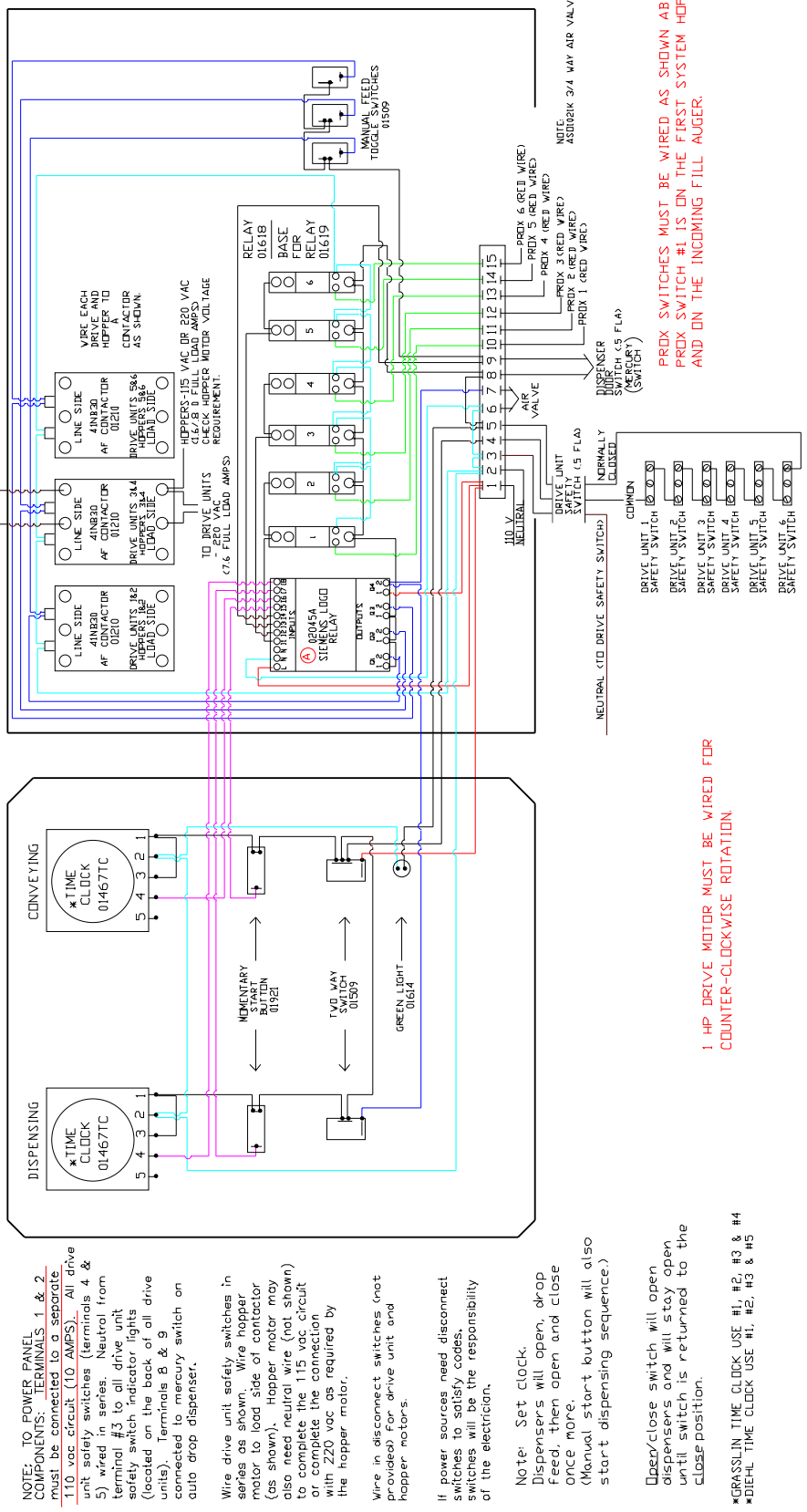
*GRASSLIN TIME CLOCK USE #1, #2, #3 & #4
*DIEHL TIME CLOCK USE #1, #2, #3 & #5

CONTROL PANELS (CONVEY/DISPENSE)

01583 CONVEY/DISPENSE PANEL

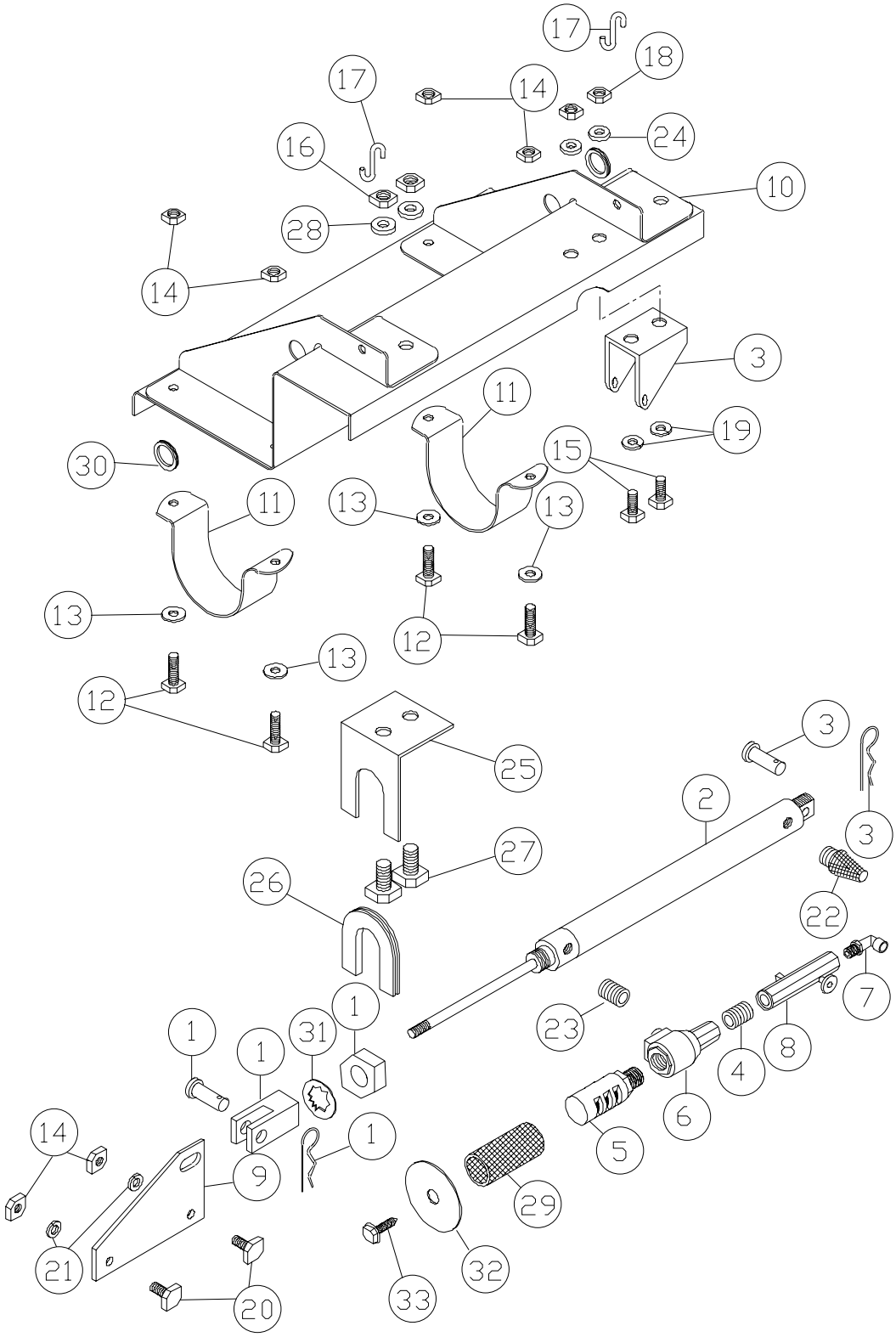


ITEM	PART NUMBER	DESCRIPTION	QTY
1	01620A	16 x 14 HOFFMAN FIBERGLASS BOX	1
2	01654	DIN RAIL, DISPENSE / CONVEY PANEL	1
3	02045A	SIEMENS LOGO RELAY W/O DISPLAY	1
4	01655	13 1/2 x 15 CONVEYING DECAL	1
5	AS01021K	110 VAC 3/4 WAY AIR VALVE KIT	1
6	01652	SWITCH BRACKET, DISPENSE / CONVEY PANEL	1
7	01210	110 VOLT CONTACTOR	3
8	01642	TERMINAL BLOCK END	1
9	01641	TERMINAL BLOCK	15
10	01467TC	TIME CLOCK 2A519 FOR (01467HW)	2
11	01618	RH1B-UAC120V RELAY	6
12	01619	RH1B-SHIB-05 BASE FOR RELAY	6
13	01921	MOMENTARY START BUTTON 2X894	2
14	01509	SINGLE POLE 2 WAY SWITCH ON/OFF	5
15	01614	GREEN PILOT LIGHT	1
16	01656	ELECTRICAL SHOCK DECAL	1


NOTE: TO POWER PANEL COMPONENTS: TERMINALS 1 & 2 must be connected to a separate 110 vac circuit (10 AMPS). All drive unit safety switches (terminals 4 & 5) wired in series. Neutral from terminal #3 to all drive unit safety switch indicator lights (located on the back of all drive units). Terminals 8 & 9 connected to mercury switch on auto drop dispenser.
Wire drive unit safety switches in series as shown. Wire hopper motor to load side of contactor (as shown). Hopper motor may also need neutral wire (not shown) to complete the 115 vac circuit or complete the connection with 220 vac as required by the hopper motor.
Wire in disconnect switches (not provided) for drive unit and hopper motors.
If power sources need disconnect switches to satisfy codes, switches will be the responsibility of the electrician.
Note: Set clock. Dispensers will open, drop feed, then open and close once more. (Manual start button will also start dispensing sequence.)
Open/close switch will open dispensers and will stay open until switch is returned to the close position.
*GRASSLIN TIME CLOCK USE #1, #2, #3 & #4
*DIEHL TIME CLOCK USE #1, #2, #3 & #5
1 HP DRIVE MOTOR MUST BE WIRED FOR COUNTER-CLOCKWISE ROTATION.
PROX SWITCHES MUST BE WIRED AS SHOWN ABOVE. PROX SWITCH #1 IS ON THE FIRST SYSTEM HOPPER AND ON THE INCOMING FILL AUGER.
CONVEYING
DISPENSING
*TIME CLOCK 01467TC
MOMENTARY START BUTTON 01921
TWO WAY SWITCH 01509
GREEN LIGHT 01614
110
110
LINE SIDE
41NB30 AF CONTACTOR 01210
DRIVE UNITS 3&4 HOPPER MOTORS LOAD SIDE
DRIVE UNITS 1&2 HOPPER MOTORS LOAD SIDE
DRIVE UNITS 5&6 HOPPER MOTORS LOAD SIDE
WIRE EACH DRIVE AND HOPPER TO CONTACTOR AS SHOWN.
HOPPERS-115 VAC OR 220 VAC CLOCK HOPPER MOTOR VOLTAGE REQUIREMENT.
10 DRIVE UNITS - 220 VAC (7.6 FULL LOAD AMPS)
(7.6 FULL LOAD AMPS)
G2045A SIEMENS LOGO RELAY
OUTPUTS
INPUTS
RELAY 01618 BASE FOR RELAY 01619
MANUAL FEED TOGGLE SWITCHES 01509
PROX 6 (RED WIRE)
PROX 5 (RED WIRE)
PROX 4 (RED WIRE)
PROX 3 (RED WIRE)
PROX 2 (RED WIRE)
PROX 1 (RED WIRE)
NOTE: ASD102K 3/4 WAY AIR VALVE
AIR VALVE
DISPENSER DOOR SWITCH (5 FLA) (NORMALLY OPEN SWITCH)
110 V NEUTRAL
DRIVE UNIT SAFETY SWITCH (5 FLA)
NORMALLY CLOSED
COMMON
NEUTRAL (TO DRIVE SAFETY SWITCH)
DRIVE UNIT 1 SAFETY SWITCH
DRIVE UNIT 2 SAFETY SWITCH
DRIVE UNIT 3 SAFETY SWITCH
DRIVE UNIT 4 SAFETY SWITCH
DRIVE UNIT 5 SAFETY SWITCH
DRIVE UNIT 6 SAFETY SWITCH

TRIPPING SYSTEM (COMPONENTS)

C00612-13 AIR TRIP TUBE MT 3/4 CYLINDER



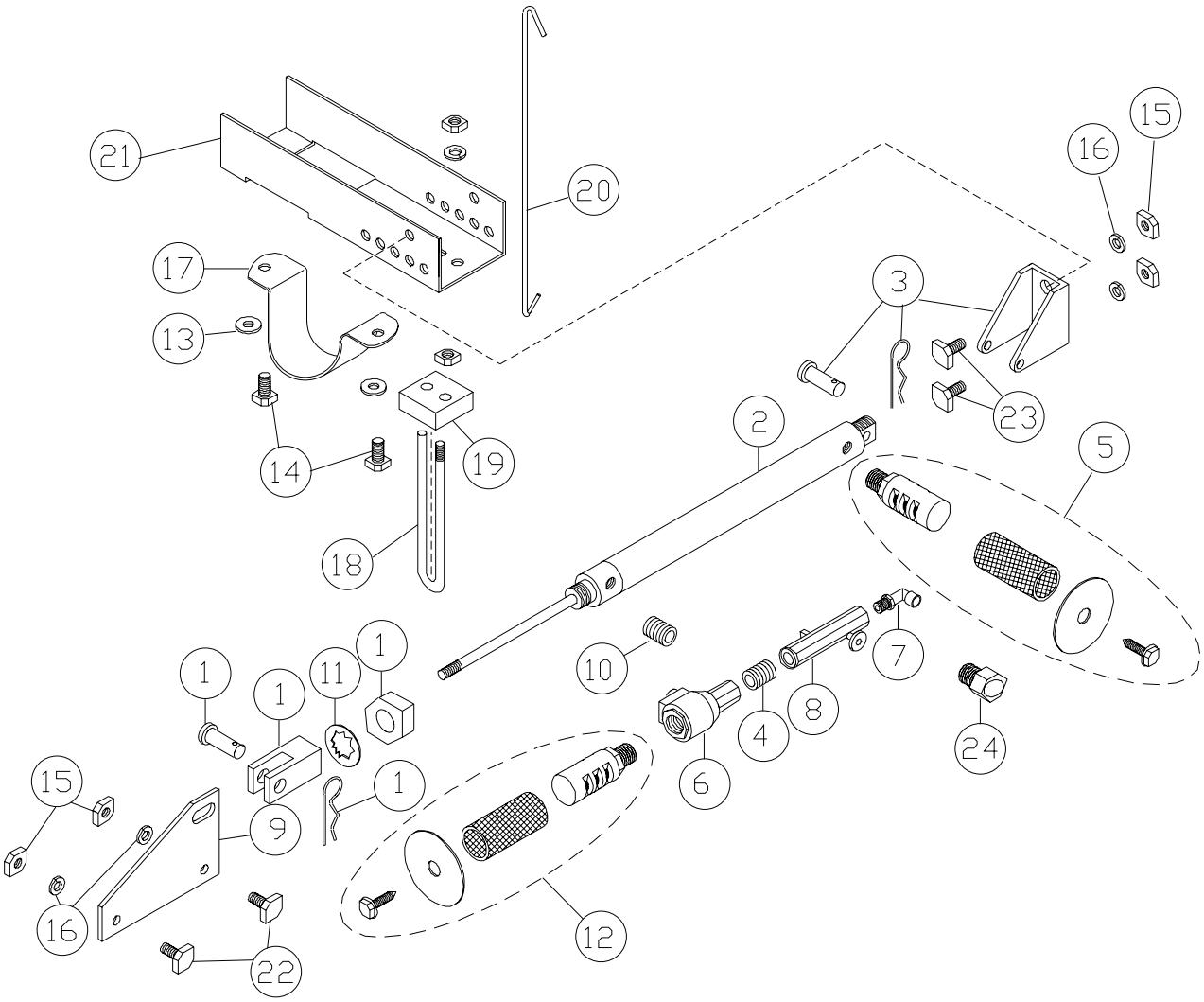
TRIPPING SYSTEM (COMPONENTS)
C00612-13 AIR TRIP TUBE MT 3/4 CYLINDER

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	AS01012	CLEVIS AIR CYLINDER	1
2	AS01059	9" AIR CYLINDER, ¾	1
3	AS01013	PIVOT BRACKET FOR 9" AIR CYLINDER	1
4	AS01945	1/4" PIPE NIPPLE	1
5	AS01041S	STAINLESS MUFFLER 1/4" NPT	1
6	AS01038	QUICK EXHAUST VALVE	1
7	AF01036	90 MALE 3/8" (1 / AIR COMPRESSOR)	1
8	AS01046	FLOW REGULATOR	1
9	612034A	PAINTED AIR TRIP BRACKET	1
10	612036P	POS AIRTRIP LONGWIRE PAINTED FRAME	1
11	600026	SPRING ATTACHMENT CONDUIT CLAMP	2
12	01009	1/4 – 20 x 1 1/4 HEX HEAD SCREW	4
13	01970	9/32 I.D. x 1 O.D. x .125 TK FLATWASHER	4
14	01011	1/4 – 20 HEX NUT	6
15	01028S	1/4 – 20 x 3/4 HEX HEAD CAP SCREW S.S.	2
16	01020	3/8 – 16 HEX NUT	2
17	01137	#8 MED. S HOOK ZINC (79008-35)	2
18	01011S	1/4 – 20 HEX NUT STAINLESS	2
19	01018	1/4 LOCKWASHER	2
20	01028	1/4 – 20 x 3/4 HEX HEAD SCREW	2
21	01018	1/4 LOCKWASHER	2
22	AS01035	1/8" MUFFLER *OR*	1
	AS01066S	STAINLESS MUFFLER 1/8 NPT	1
23	AS01050	1/8" TO 1/4" PIPE NIPPLE	1
24	01023	1/4" SAE WASHER	2
25	612037	TRIPPER ¾ CYLINDER GUIDE	1
26	01944	EDGE TRIM	1
27	01033	3/8 – 16 x 3/4 HEX HEAD SCREW	2
28	01034	3/8 LOCKWASHER	2
29	01929MO	MESH SLEEVE	2
30	01953	5/8 I.D. x 1 1/8 O.D. RUBBER GROMMET	2
31	02022	1/4 S.S. INTERNAL TOOTH WASHER	1
32	02024	S.S. WASHER 13/64 x 1 x 0.47	1
33	01971	#8 x 1/2 SELF TAPPING SCREW	1

TRIPPING SYSTEM (COMPONENTS)

C00612-13A AIR TRIP TUBE MT 3/4 CYLINDER



TRIPPING SYSTEM (COMPONENTS)
C00612-13A AIR TRIP TUBE MT 3/4 CYLINDER

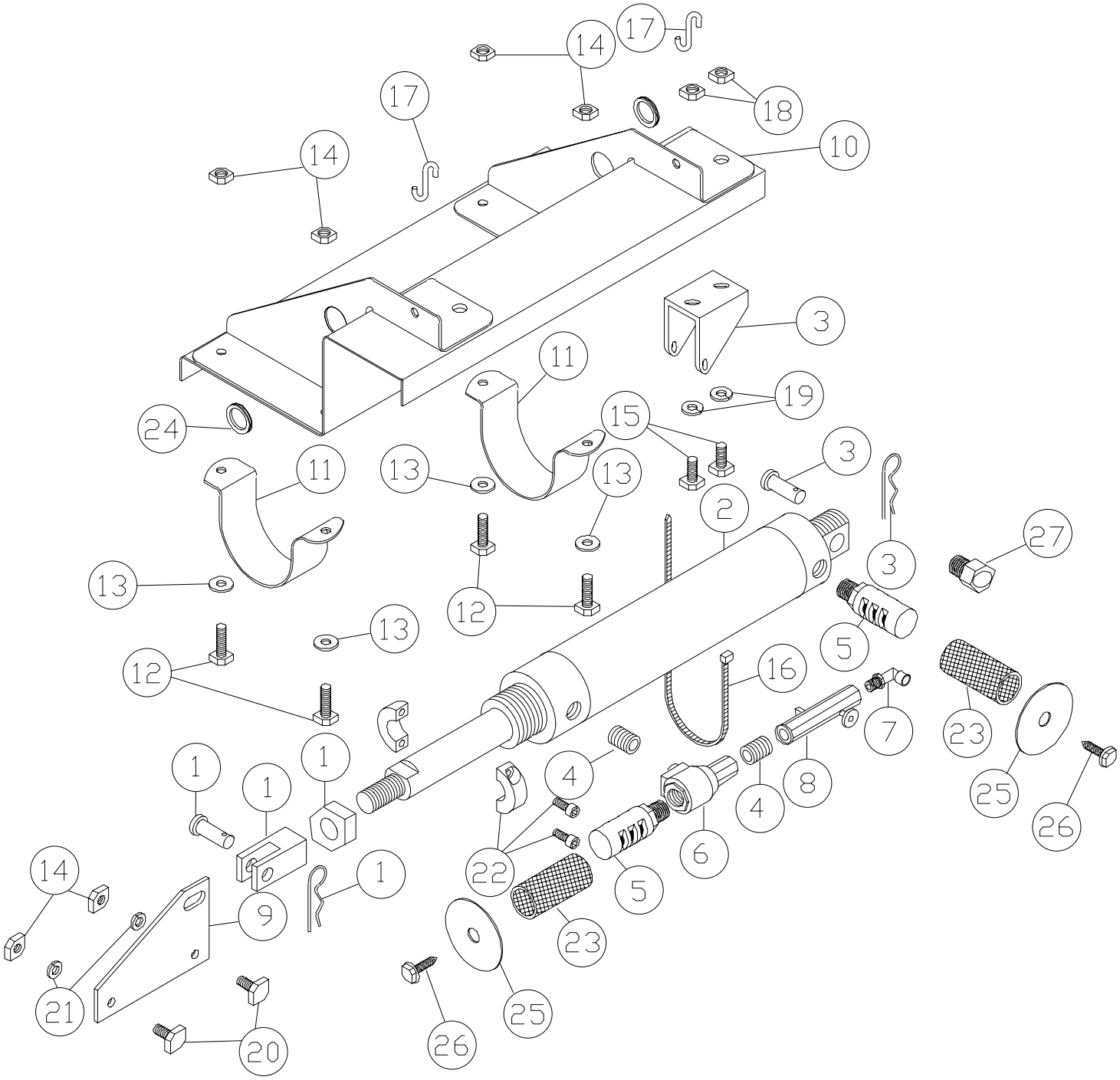
PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	AS01012	CLEVIS AIR CYLINDER	1
2	AS01059	9" AIR CYLINDER, ¾	1
3	AS01013	PIVOT BRACKET FOR 9" AIR CYLINDER	1
4	AS01945	1/4" PIPE NIPPLE	1
5	AS01041S	STAINLESS MUFFLER 1/4" NPT	1
6	AS01038	QUICK EXHAUST VALVE	1
7	AF01036	90 MALE 3/8" (1 / AIR COMPRESSOR)	1
8	AS01046	FLOW REGULATOR	1
9	612034AP	PAINTED AIR TRIP BRACKET	1
10	AS01047	1/8" TO 1/4" PIPE NIPPLE	1
11	02022	1/4 S.S. INTERNAL TOOTH WASHER	1
12	AS01041SK	KIT FOR STAINLESS MUFFLER 1/4" NPT	1
13	01970	9/32 I.D. x 1 O.D. x .125 TK FLATWASHER	2
14	01041	1/4 – 20 x 1 HEX HEAD BOLT	2
15	01011S	1/4 – 20 HEX NUT STAINLESS	6
16	01018	1/4 LOCKWASHER	5
17	600026	SPRING ATTACHMENT CONDUIT CLAMP	1
18	600043	4 1/4 U – BOLT TRIPPER CHANNEL	1
19	612054	PLASTIC CHANNEL GUIDE BLOCK	1
20	600044	SUPPORT BRACKET, DROP LEVELING WIRE	1
21	612057	SUPPORT / CYLINDER BRACKET, TRIPPER CHANNEL	1
22	01028S	S.S. 1/4 – 20 x 3/4 HEX BOLT	2
23	01037S	S.S. 1/4 – 20 x 1/2 HEX BOLT	2
*24	AS01067	CYLINDER 1/8 NPT EXHAUST	

* NOT IN B.O.M.

TRIPPING SYSTEM (COMPONENTS)

C00612-7 GESTATION TRIPPING SYSTEM



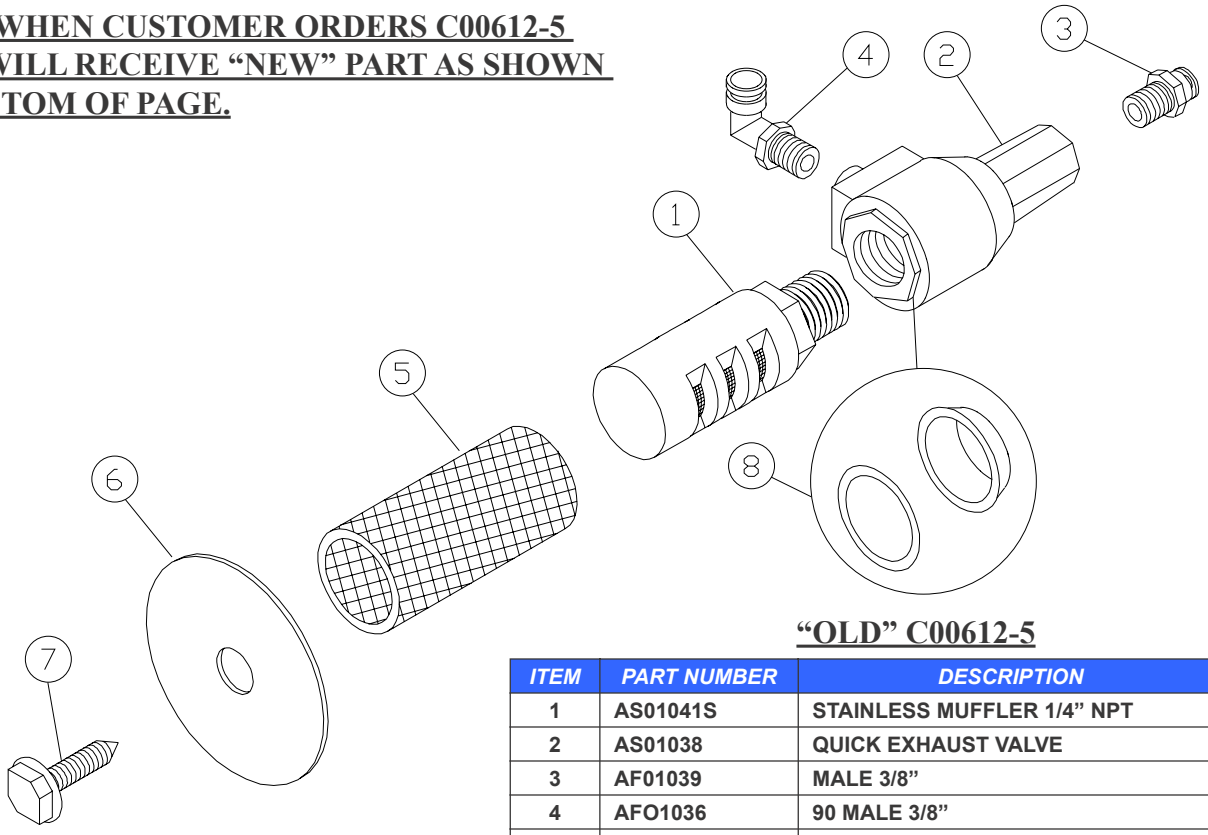
PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	AS01037	ROD CLEVIS, PIN, JAM NUT	1
2	AS01029	AIR CYLINDER 2" BORE 9" STROKE	1
3	AS01036	PIVOT BRACKET AND PIN	1
4	AS01945	1/4" PIPE NIPPLE	2
5	AS01041SK	STAINLESS MUFFLER 1/4 NPT	2
6	AS01038	QUICK EXHAUST VALVE	1
7	AF01036	90 MALE 1/4" (1 / AIR COMPRESSOR)	1
8	AS01046	FLOW REGULATOR	1
9	612034A	PAINTED AIR TRIP BRACKET	1
10	612036P	POS AIRTRIP LONGWIRE PAINTED FRAME	1
11	600026	SPRING ATTACHMENT CONDUIT CLAMP	2
12	01009	1/4 – 20 x 1 1/4 HEX HEAD SCREW	4
13	01970	9/32 I.D. x 1 O.D. x .125 TK FLATWASHER	4
14	01011	1/4 – 20 HEX NUT	6
15	01033	3/8 – 16 x 3/4 HEX HEAD SCREW	2
16	01197L	11" WIRE TIE	1
17	01137	#8 MED. S HOOK ZINC (79008-35)	2
18	01020	3/8 – 16 HEX NUT	2
19	01034	3/8 LOCKWASHER	2
20	01028	1/4 – 20 x 3/4 HEX HEAD SCREW	2
21	01018	1/4 LOCKWASHER	2
*22	600037	5/8" TWO PIECE SHAFT COLLAR TRIPPER CYLINDER	1
23	01929MO	MESH SLEEVE	2
24	01953	5/8 I.D. x 1 1/8 O.D. RUBBER GROMMET	2
25	02024	S.S. WASHER 13/64 x 1 x 0.47	2
26	01971	#8 x 1/2 SELF TAPPING SCREW	2
*27	AS01068	CYLINDER 1/4 NPT EXHAUST	

* NOT IN B.O.M.

TRIPPING SYSTEM (COMPONENTS)
C00612-5 INLINE QUICK EXHAUST

NOTE: WHEN CUSTOMER ORDERS C00612-5 THEY WILL RECEIVE "NEW" PART AS SHOWN AT BOTTOM OF PAGE.



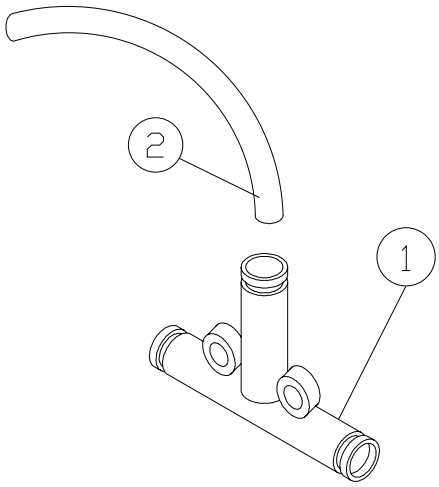
"OLD" C00612-5

ITEM	PART NUMBER	DESCRIPTION	QTY
1	AS01041S	STAINLESS MUFFLER 1/4" NPT	1
2	AS01038	QUICK EXHAUST VALVE	1
3	AF01039	MALE 3/8"	1
4	AFO1036	90 MALE 3/8"	1
5	01929MO	MESH SLEEVE	1
6	02024	S.S. WASHER 13/64 x 1 x .047	1
7	01971	#8 x 1/2 SELF TAPPING SCREW	1
*8	AS01038K	DIAPHRAM AND "O" RING KIT	1

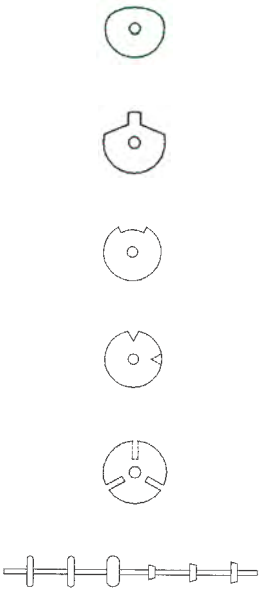
* REPLACEMENT KIT

"NEW" C00612-5

ITEM	PART NUMBER	DESCRIPTION	QTY
1	AS01070	QUICK EXHAUST VALVE	1
2	AS01040	1/4 IN. AIR HOSE	6 IN.



Troubleshooting

Problem:	Questions to Ask / Solution:
Buttons wearing 	**Button wear patterns give clues about system problems:** √ **Oval shaped buttons** - The cable is sliding over the feed and the buttons are pushing up against the inside of the closed tube. Install open tube with holddowns every 4 feet in place of the closed tube. √ **Two "V" notches** - The cable is being pushed up against the inside of the open tube. Add holddowns every 4 feet. √ **A wide "V" notch** - Idlers are seized. Check corner idlers for rotation. Clean out foreign material and grease spindle. If idler plugs with feed consistently, replace idler with corner slide (2" system only). √ **A narrow "V" notch or several narrow "V" notches** - Corners and tubes are sagging causing cable to ride up or down in the corner. Support corners and tubes. √ **Cuts into buttons** - Old style hopper (C00107) cams worn away completely and metal cutting into buttons. Install new cams. The drop has slipped on the tube letting the metal closer inside of the cleanout slot. √ **Buttons tapered after cable connector** - This wear occurs each pass over a corner idler wheel if: √ The cable connector spacing is incorrect. Check spacing with gauge. √ System pulls hard with old style corner idlers. Replace idlers with new beveled timed-notched idlers. √ **Sudden reduction in button size for no apparent reason** - Generally starts with a broken button. Feed rolls past the broken button and bunches especially at inclines, thus, pushing the cable against the top of the tube. Also, the cable is forced to ride up inside the corners, which wears on the corner covers and edges of the idler wheels.
Buttons Broken 	√ **Are the buttons in the hopper and is it a new installation?** The motor is wired backwards. √ **Are the corners sagging?** Support corners and tube, they must be level. √ **Are there foreign objects in the system?** Check for foreign objects (rodents, hardware, etc.) in the system. √ **Is there excessive feed buildup through small drive unit?** Clean out the feed buildup. √ **Is there open tube to closed tube with no holddowns at tube connector?** Install open tube with holddowns every 4 feet in place of closed tube. Make sure there are holddowns in the system at drive unit, hopper and corner connections. √ **Are the tubes in and out of the hopper straight?** Realign the tubes in/out of the hopper. √ **Are there rough edges on tubing?** File off burrs.

Cable connector breaking	√ **Did the cable connector break or pull apart?** If the set screws are not set deep enough into the cable, they will pull apart. Do not reuse the set screws, snap rings or sleeves when putting on a new connector. New set screws with a deeper hex and a longer allen wrench are now available. Tighten the set screw as deeply as you can (50-60 lb. torque inch) using the longer allen wrench. √ **Is the cable connector body touching either side of the drive sprocket teeth?** The connector body should be centered between the drive sprocket teeth when passing around the drive sprocket. √ **Are cable connectors placed too close together in the system?** Cable connectors should be at least 2 feet apart. √ **Was the cable connector gauge used when connectors were installed?** Always use the gauge to put connector together. √ **If it ever breaks, you must change out - sleeve, snap ring and set screws.** New improved set screws with a deeper hex and longer allen wrenches are now available. √ **Is there too much drag/strain on the system?** See "System Plugs" sections for possible causes of drag/strain. √ **Are there more corners in the system than the maximum recommendations?** Too many corners will cause excessive pull on the system. See Maximum Length Recommendations on Page 4. √ **Is the system longer than the maximum recommendations?** Systems which are longer than the maximum recommended length create excessive pull on the system. See Maximum Length Recommendations on Page 4. √ **What type of feed are they feeding?** Pellets put too much of a strain on a 1 ½" system. Consider switching to a 2" system.
Cable jerks and pulls extremely hard	√ **Is the corner idler wheel turning?** Check for foreign object in idler wheel and proper direction of rotation of idler wheel. Remove object. Place idler in correctly. Replace idler wheel with corner slide (2" system only) if feed continues to plug in idler. √ **Are there rough edges on tubing?** File off burrs. √ **Is tubing seated properly in the corners?** Loosen corner clamp and reseat. √ **All reasons given for "System Plugs" can cause the cable to jerk and pull hard.** See "System Plugs" section.
Corners	√ **Which corner idler bushing is most likely to wear out first?** The corner just before the drive unit. The heaviest loaded corner is the one that the cable passes through just before entering the drive. The lightest loaded corner is the one just after the drive unit. √ **Which corner idlers are most likely to plug with feed?** The lightest loaded corners (corners just after the drive unit) at the top of inclines. Usually the second corner after the hopper at the top of an incline will plug before any other corner. (This corner idler is lightly loaded and feed naturally falls back into the idler.)
Drop doors sticking open	√ **Are drop doors sticking open and causing feed spills?** Pull the trip handle more than once (2 or 3 times) - or - change over to the new positive close system.

Feed not moving fast enough	√ **What size system is installed (1½" or 2")?** If a 1½" system, convert to 2" system. Refer to Maximum Length Recommendations on page 4. √ **What size motor pulley and belt are being used?** Check alternative sizes and cable speeds on Maximum Length Recommendations on page 4.
Holddowns	√ **Are holddowns placed properly throughout the system?** Holddowns should be installed every 4 feet/level, every 2 feet/incline and before and after corners, hoppers recyclers and drives.
Hoppers	√ **Are hoppers leaking?** Are they hooked up to the double boot extension? If so, replace it with the new 17" Double Boot Ext. Wldm. C38113W or caulk it until it stops leaking. Use silicone sealant on any seams or metal joints.
Prox. Switch not working - system won't shut off	√ **Is there a control drop?** If proximity switch is on the control drop it should shut off immediately. You can adjust the sensitivity. √ **Is the proximity switch on an inline switch?** The timer may be set wrong if the prox. switch is on an inline switch (this has to be set by length of system and speed of cable).
Prox. Switch trips too fast	√ **Does the proximity switch trip too fast?** Adjust the switch (adjustment screw is by the light).
Recycle Switch	√ **Is there a load on the switch?** Needs FMS time delay (delay to keep it from putting load on switch). √ **Is the paddle hitting the switch?** Put holddown before the recycler to keep the cable from jumping up and down causing the paddle to hit the switch.
Rusting (Feed tube)	√ **Is tubing rusting?** Put a couple of feet of stainless steel or powder coated feed tube on each side of wall coming into and going out of the building (powder coated is a less costly method than stainless steel).
Slack in cable & disc	√ **How many times have you removed stretch?** You shouldn't have to remove stretch more than three times. You get ¼ of 1 percent of stretch for the life of the cable. Most of the construction stretch should be taken out in the first year. √ **Was the cable pre-stretched during installation?** Cable should always be pre-stretched during installations. √ **Was the tube in the tube connectors butted against each other during initial installation?** The tube in the connectors must be butted together when installed or they will work their way together while running and cause slack in the cable due to decreased length of the total circuit.

System Plugs	√ **Is too much feed flowing from the hopper?** Reduce the flow level. The proper level is 2/3 to 3/4 full tubes for most feeds - 1/2 full for high-moisture materials. √ **How steep is the incline of incoming feed tube?** If the incline is too steep, this will cause system plugs. Reduce tube angle and/or add holddowns to open tube to give even flow. √ **Is tube cover properly installed.** Check all tube cover inside and outside to be sure it is securely attached to the tube. √ **Is water getting into the system at hopper, tube connectors or corners?** Keep doors on hoppers. Be sure slide gate is not partially inserted. Tape ends of tube connectors. Seal corners with weatherproofing kits. √ **Is there a foreign object in the system?** (Example: rodents and hardware) They are usually wedged in the corner - remove. √ **Bunching of feed?** Feed roll-by in tube causes bunching of feed. Replace closed tube with open tube and holddowns or add holddowns to existing open tube every 4 feet. √ **Is moisture freezing in tubing in extremely cold climates?** In humid buildings, in extremely cold climates, moisture may freeze in return tubes out of the building. Attach heat tape and insulation around tube. √ **Do tube and/or corners sag?** This allows feed to roll by, thus, causing bunching of feed. Add supports to corners and tubes. √ **Is the control drop working properly?** If the control drop malfunctions and feed cycles through the system, tubes will overload. Fix or replace the control drop. √ **Is there a buildup of fines in the closed tube return feed lines?** High moisture feeds and molasses feeds can close return tubes so that only the cable buttons can squeeze through the tube, causing excessive pull. Replace the closed tube with open tube and holddowns.
Tripping System	√ **If Doors will not open** A. Go to Dispensing and use the Manual Open switch to open all doors. B. If some doors open and some do not, leave the switch and check the line for air leaks C. If none of the doors open, push the red button on the air valve on the bottom of the dispensing panel. D. The air valve on the air cylinders control air flow to open doors. The more air allowed into the line, the faster the door will open. Turn the value to adjust the air flow. √ **If Doors do not close** (The doors close with the release of air through the mufflers and the inline exhaust.) A. Check the springs on the tripping channel to be sure they are attached. B. Check the mufflers on the air cylinders to be sure they are not plugged. C. Check the Inline Exhaust to see if it is plugged.

CABLEVEY FEEDING SYSTEM START UP

FEEDING SYSTEM START UP

1. Be sure all drops on all systems are closed.

2. Turn manual stop switch to on.

3. Check to see if green light is on. If not, check switches in drive units and reset them. This should give you a gree light.

4. Push manual start switch. All systems should come on and run.

5. Check each motorized hopper to be sure it is running. Each proximity switch should have a red and green light at the hopper and it should be running. Green light shows you have power to prox, if red light is on the hopper motor should be running. If red light is not on prox, switch is set to sensitive. Take small screwdriver attached to hopper and turn set screw to the minus until red light comes on and stays on.

6. After all systems are running, start auger and fill hoppers. After hoppers are full, start with #1 system, open slide gate for 20-30 seconds. Close slide gate and let system run. Do this with each system to clean out systems. The systems should run for two hours when the manual start switch is pushed. It does NOT hurt to run system empty.

7. After systems have run, open the last 6 drops on each system and set for 6 lbs. start systems and empty old feed. Then open slide gate on hopper half way. Let system run like this for a few days. Then open slide gate 3/4 open, this should be enough feed for system. **DO NOT** open slide gate all the way.

8. Always start loading crates from auger control end.

CABLEVEY FEEDING SYSTEM START UP

FEEDING SYSTEM START UP FOR TRIPPING

1. Air compressor must be on at least 20 amp breaker.

2. Start compressor, let it build up pressure. Then let pressure off until compressor starts.

3. Hook air line from panel to compressor. Set regulator to 100 PSI. Then you should have air to panel.

4. Check all flow regulator valves at each air cylinder. Regulator closet to panel should be open less than the ones at the end of the system.

5. Flip manual open switch to open. When all doors are open, check for any air leaks. If none are found close switch.

6. Push manual dispensing button. Doors should open and close two times. If some rows of doors do not open all the way, adjust air regulator at air cylinder. If all doors open and close, this means all is ok.