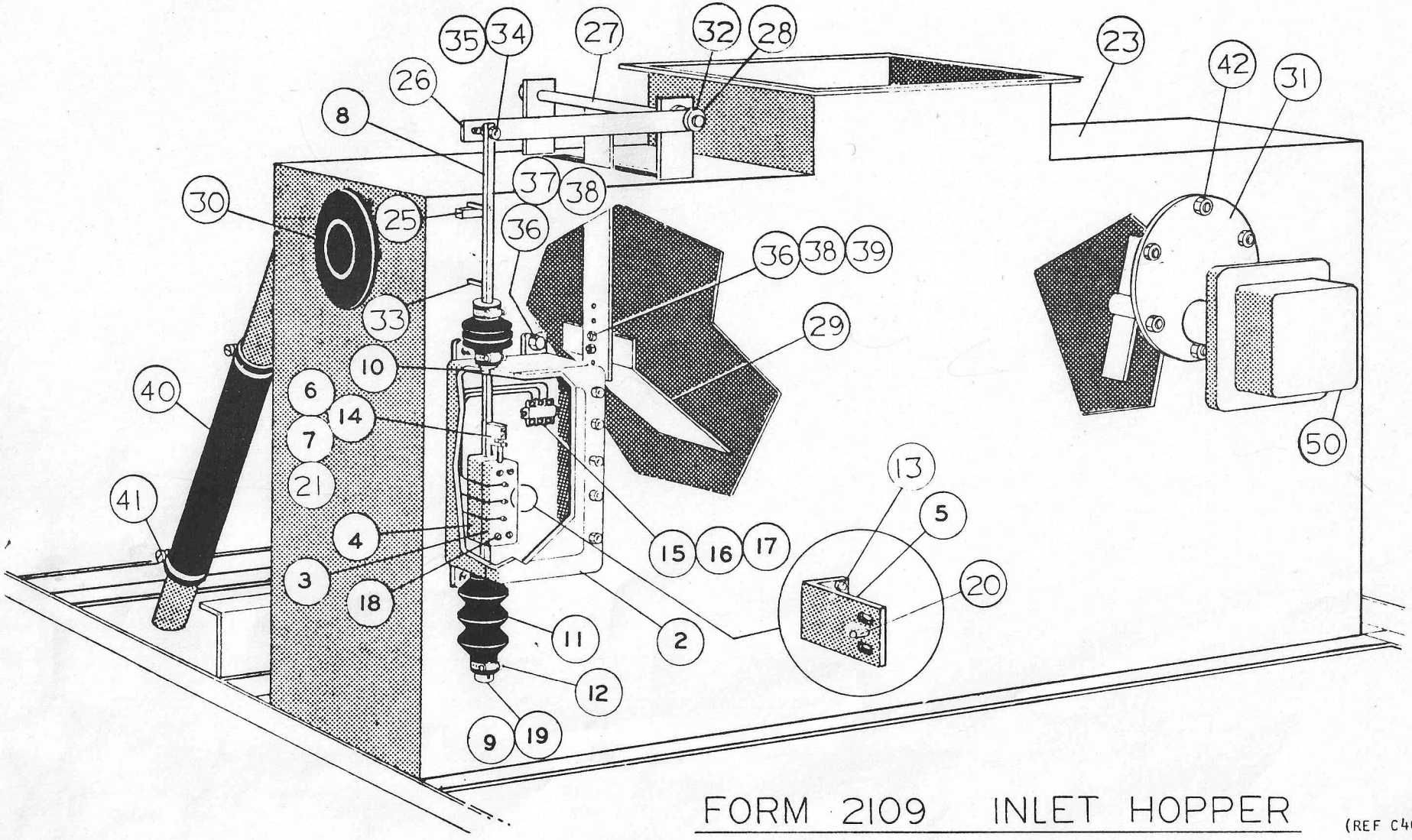
Parts List Continued . . . . INLET HOPPER

PC. NO.	QTY	PART NO.	DESCRIPTION	CODE NUMBER
17	2	None	Screw, Drive No. 4 x 5/16 Stl.	None
18	4	None	Screw, Rd. Hd. Mach. No. 1-72 NF x 5/8 lg. Stl.	None
19	2	None	Screw, Soc. Hd. Set. No. 8 x 1/4 cup pt. Stl.	None
20	1	None	Pin, Roll, 1/8 dia. x 1/2 lg., Stl.	None
21	1	None	Nut, Hex No. 5-40NC, Stl.	None
23	1	D3869-111-00	Hopper, inlet, 5' wide units only.	D08 012 056
23	1	D3869-109-00	Hopper, inlet, 7' wide units only.	None
25	1	A2375-060/3	Keystock, 1/2 x 1/2 x 1 CFS910.23	None
26	1	B665-117-00	Arm, Control	D01 007 051
27	1	B665-116-00	Vane, Level Control	D24 003 007
28	2	None	Collar, Turned 1/2 ID, Stl.	D03 023 003
29	1	B665-101/1	Vane Extension	D05 006 022
30	2	A2605-000/1	Cap, Inspection	D03 006 075
31	1	B665-102-00	Plate, Bindicator Mounting	D16 015 754
32	1	None	Pin, Roll 1/4 x 1, Stl.	None
33	2	None	Pin, Roll 1/4 x 1-1/2, Stl.	None
34	1	None	Screw, Round Hd. Mach. 5/16 x 1-1/2, Stl.	None
35	2	None	Nut, Hex 5/16, Stl.	None
36	6	None	Bolt, Hex Hd. 3/8 x 3/4, 18-8 SST	None
37	4	None	Washer, Lock 3/8, 18-8 SST	None

Parts List Continued . . . . INLET HOPPER

PC. NO.	QTY	PART NO.	DESCRIPTION	CODE NUMBER
38	6	None	Nut, 3/8 Flexlock, 18-8 SST	None
39	2	None	Washer, Plain 3/8, 18-8 SST	None
40	1	None	Hose, 2 ID x 16-1/2, Goodrich Type 96 Wire Reinforced, Rubber	None
41	2	None	Clamp, Hose No. M40S 2-1/16 to 3 dia., SST	None
42	6	None	Nut, Hex 1/4 Stl.	
50	1	None	Roto-Bindicator Power Pack Unit RX4, SP/DT, 110/120 volt	None



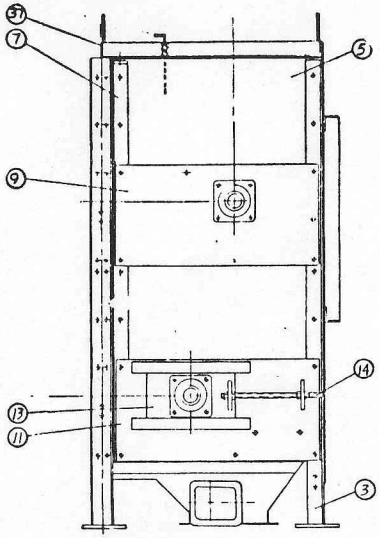
FORM 2109 INLET HOPPER (REF C4000-240)

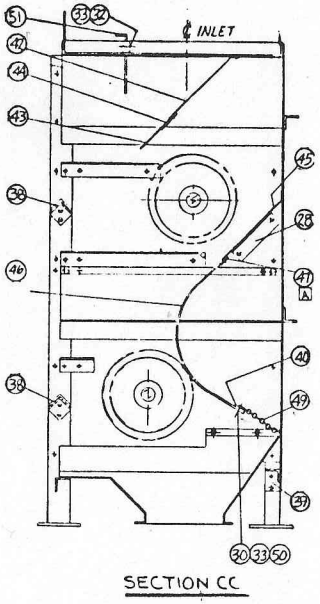
PARTS LIST

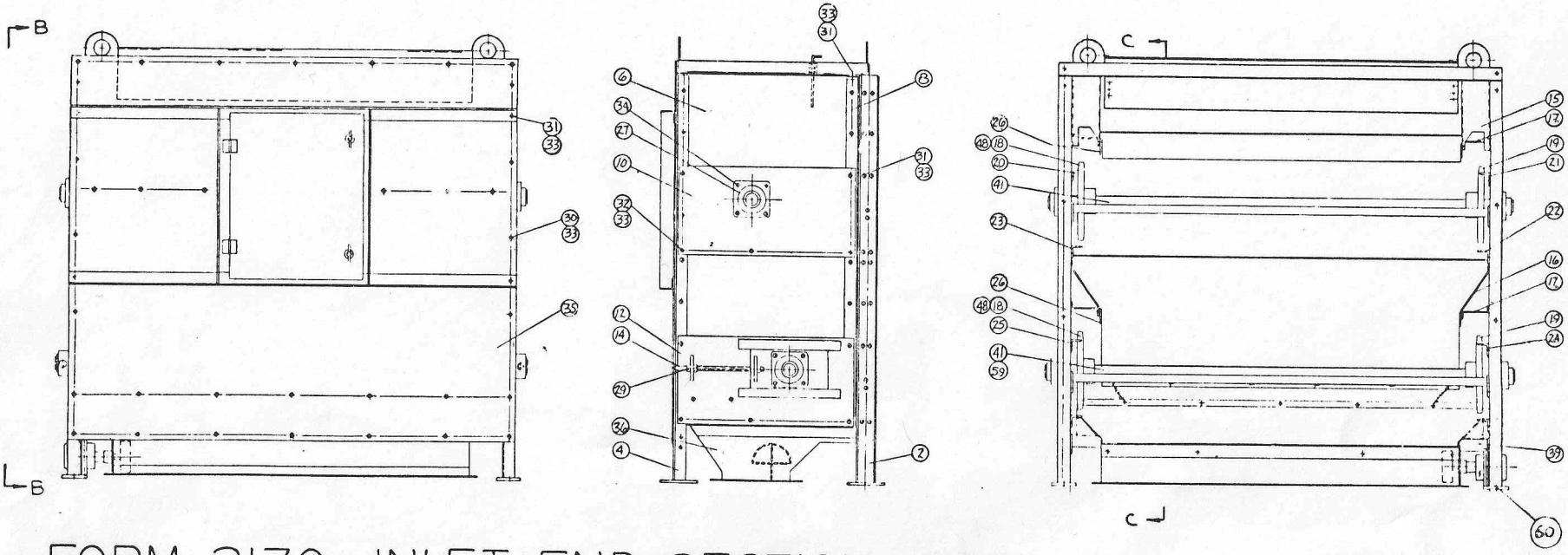
Inlet End Section - DP-5

PER FORM 2130

PC. NO.	QTY	PART NO.	DESCRIPTION	CODE NUMBER
2	2	C3811-000-00	Support Column	D21 052 157
3	1	C3811-001-00	Support Column	D21 052 220
4	1	C3811-002-00	Support Column	D21 052 239
5	1	D3860-000/1	Side Panel	D16 006 076
6	1	D3860-000/2	Side Panel	D16 006 077
7	1	B3728-007-00	Side Panel Angle, L.H.	D01 003 058
8	1	B3728-006-00	Side Panel Angle, R.H.	D01 003 057
9	1	C3819-003-00	Upper Bearing Plate, L.H.	D16 015 711
10	1	C3819-006-00	Upper Bearing Plate, R.H.	D16 015 712
11	1	C3819-004-00	Lower Bearing Plate, L.H.	D16 015 599
12	1	C3819-005-00	Lower Bearing Plate, R.H.	D16 015 598
13	2	C3819-007-00	Bearing Slide	D21 027 036
14	2	B3735-000/1	Adj. Carrier Rod	D21 011 144
15	2	C3812-004/1	Top Shield	D21 017 031
16	2	C3812-005/1	Bottom Shield	D21 017 033
17	4	C3812-005/2	Shield Support	D21 052 200
18	2	B3733-000/1	Carrier Sprocket, w/Kwy	H2331 3 001
19	2	B3733-001-00	Carrier Sprocket, Less Kwy	D21 035 038
20	1	B3726-001/1	Carrier Sprocket	D21 052 259
21	1	B3726-002/1	Carrier Sprocket	D21 052 260
22	1	B3726-003/1	Carrier Sprocket	D21 052 192
23	1	B3726-008/1	Carrier Sprocket	D21 052 195
24	1	B3726-005/1	Carrier Sprocket	D21 052 193
25	1	B3726-006/1	Carrier Sprocket	D21 052 194
26	4	B3727-003-00	Adj. Guard	D07 008 275
27	4	-----	Brg., 1-15/16 Fafnir LCJ	G107 00 017
28	2	B3739-000/1	Lower Seal Guide Support	D21 052 261
35	1	D3859-001-00	End Panel	D16 006 087
36	1	D3858-000-00	Discharge Spout	D21 032 149
37	1	D3857-101-00	Top Cover - Inlet End	D03 034 476
38	2	B3725-000-00	Support Column Brace	D02 018 014
39	1	B3725-001-00	Support Column Brace	D02 018 015
40	1	B3738-003/1	Clamp Bar	D02 005 174
41	2	B3734-002/1	Lower Carrier Shaft	D21 012 425
42	1	B3736-010-00	Upper Seal Guide	D07 010 052
43	1	B3737-011/1	Upper Seal	D21 008 103
44	1	B3738-001/1	Upper Seal Clamp Bar	D02 005 173
45	1	B3736-000-00	Lower Seal Guide	D21 008 086
46	1	B3737-010/1	Lower Seal	D21 008 102
47	1	B3738-000/1	Lower Seal Clamp Bar	D02 005 215
48	2	-----	Key, 1/2 x 1/2 x 3-1/8, Rd. End.	B108 25 006
49	2	-----	No. 14 Single Jack Chain, 8" lg. w/S" Hook	D03 011 018
51	1	B665-104/1	Bed Depth Gate	D07 002 019
60	1	None	Roto-Bindicator Power Pack Unit RX4, SP/DT, 110/120 volt	None







FORM 2130 INLET END SECTION--DP5

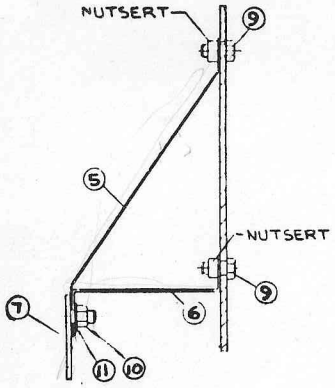
(REF. D3861-101)

PARTS LIST

Cooling Section Assembly for DP-5

PER FORM 2131

PC. NO.	QTY	PART NO.	DESCRIPTION	CODE NUMBER
3	2	C3811-000-00	Support Column	D21 052 157
4	6	B3726-000-00	Carrier Support	D21 052 175
5	4	C3812-003-00	Shield Assembly	D21 017 024
6	4	C3812-003-01	Shield Support Assembly	D21 052 156
7	4	B3727-002-00	Adj. Guard	D07 008 246
12	2	C3814-000/1	Side Panel	D16 006 058
13	2	B3728-000/1	Side Panel Angle, R.H.	D01 003 046
14	2	B3728-001/1	Side Panel Angle, L.H.	D01 003 047
15	2	C3815-000-00	Carrier Guard	D07 008 247
16	2	B3725-000-00	Support Column Brace	D02 018 014
18	1	C3813-000-00	Fines Pan	D16 005 009



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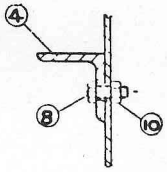
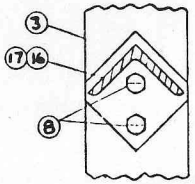
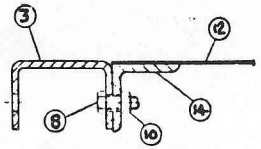


DETAIL B



SECTION CC



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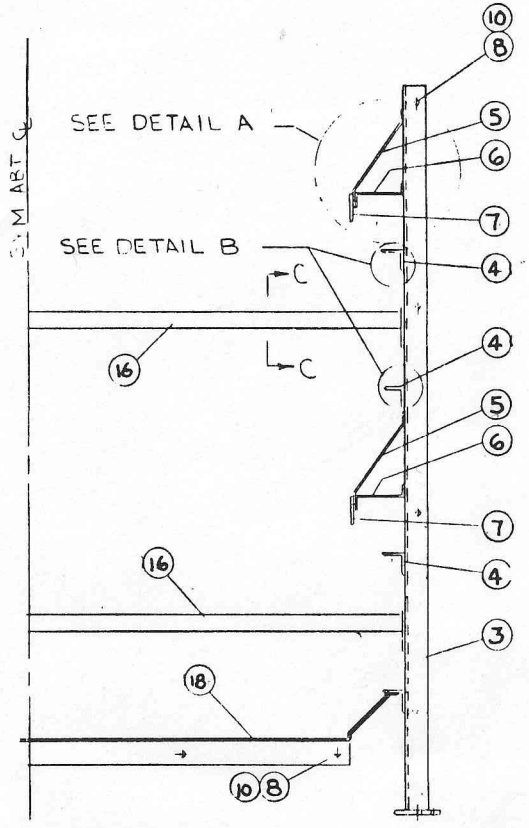
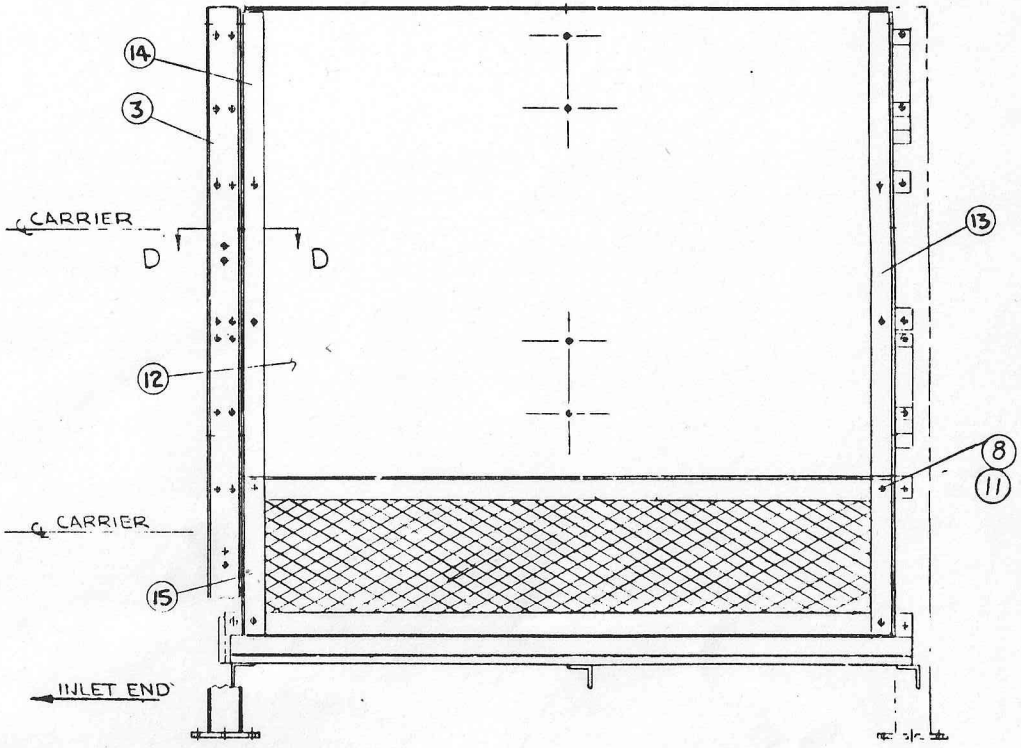




FORM 2131 COOLING SECTION--DP5

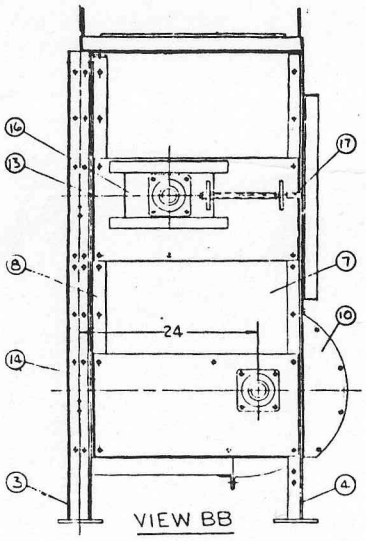
(REF. D3849-002)

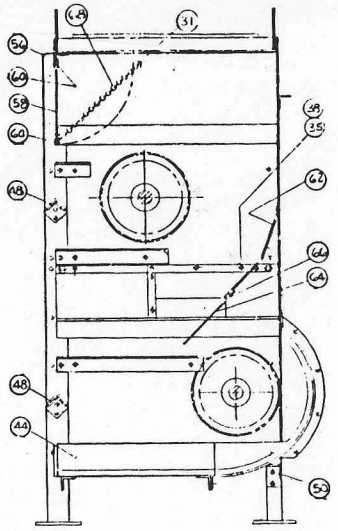
PARTS LIST

Tail End Section Assembly - DP-5

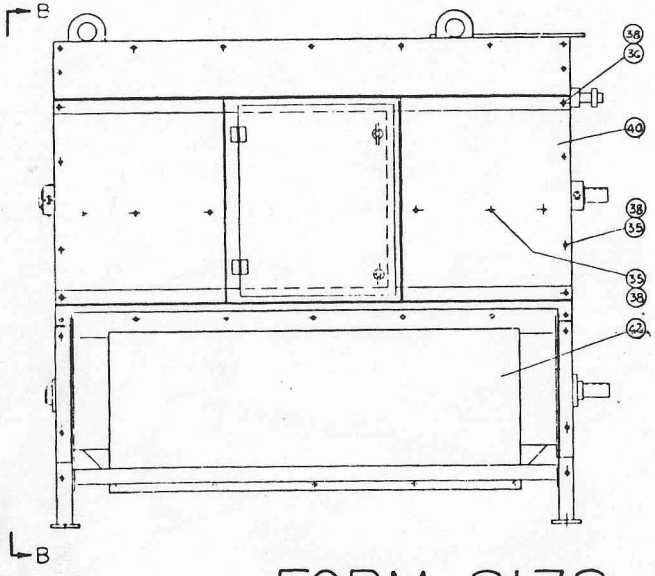
PER FORM 2132

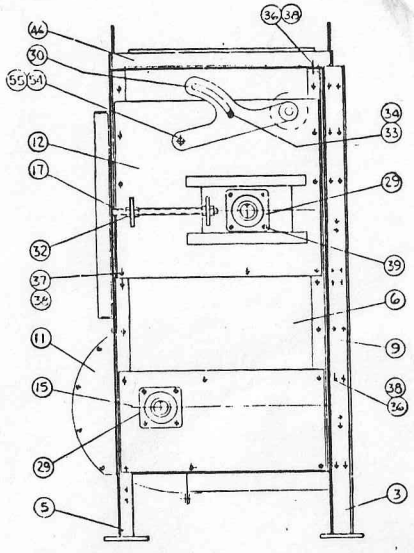
PC. NO.	QTY.	PART NO.	DESCRIPTION	CODE NUMBER
3	2	C3811-000-00	Support Column	D21 052 157
4	1	C3811-001-00	Support Column	D21 052 220
5	1	C3811-002-00	Support Column	D21 052 239
6	1	D3860-001/1	Side Panel, L.H.	D16 006 080
7	1	D3860-001/2	Side Panel, R.H.	D16 006 081
8	1	B3728-007-00	Side Panel Angle, L.H.	D01 003 058
9	1	B3728-006-00	Side Panel Angle, R.H.	D01 003 057
10	1	B3740-000/1	Fines Return Side Panel,R.H.	D16 006 062
11	1	B3740-000/2	Fines Return Side Panel,L.H.	D16 006 063
12	1	C3819-000-00	Upper Brg. Pl. Drive Side	D16 015 727
13	1	C3819-004-00	Upper Brg. Pl.	D16 015 599
14	1	C3819-001-00	Lower Bearing Plate,R.H.	D16 015 600
15	1	C3819-002-00	Lower Bearing Plate,L.H.	D16 015 601
16	2	C3819-007-00	Bearing Slide	D21 027 036
17	2	B3735-000/1	Carrier Adj. Rod	D20 011 144
18	2	C3812-004/1	Top Shield	D21 017 031
19	2	C3812-005/1	Bottom Shield	D21 017 033
20	4	C3812-005/2	Shield Support	D21 052 200
21	4	B3733-000/1	Carrier Sprocket w/Kwy	H2331 3 001
22	1	B3726-006/1	Carrier Support, L.H.	D21 052 194
23	1	B3726-005/1	Carrier Support, R.H.	D21 052 193
24	1	B3726-004/1	Carrier Support, R.H.	D21 052 240
25	1	B3726-007/1	Carrier Support, L.H.	D21 052 241
26	1	B3726-003/1	Carrier Support, L.H.	D21 052 192
27	1	B3726-008/1	Carrier Support, R.H.	D21 052 195
28	4	B3727-003-00	Adj. Guard	D07 008 275
29	4	-----	Brg., 1-15/16 Fafnir LCJ	G107 00 017
30	1	-----	Chain Tightener-Link Belt-B2	E120 00 030
40	1	D3859-003-00	End Panel	D16 006 082
42	1	D3854-000/1	Fines Return Section	D21 062 001
44	1	C3813-002-00	Fines Pan	D16 005 011
46	1	D3857-000-00	Top Cover - Drive End	D03 034 434
48	2	B3725-000-00	Support Column Brace	D02 018 014
50	1	B3725-001-01	Support Column Brace	D02 018 015
52	1	B3734-000/1	Carrier Shaft - Drive	D21 012 403
56	1	D3736-011/1	Upper Seal Guide	D07 010 042
58	1	B3736-012/1	Upper Seal	D21 008 057
60	3	B3738-003/1	Upper Seal Clamp Bar	D02 005 174
62	1	B3736-012-00	Lower Seal Guide	D07 010 045
64	1	B3737-014/1	Lower Seal	D21 008 104
66	1	B3738-002/1	Lower Seal Clamp Bar	D02 005 207
68	2	-----	Chain Coil Twist Link 4 x 18" lg.	D03 011 003
69	4	-----	Key,1/2x1/2x3-1/8 RD.End	B108 25 006
70	1	C3812-006/1	Adapter, Shield to Seal,R.H.	D01 001 105
71	1	C3812-007/1	Adapter, Shield to Seal,L.H.	D01 001 106

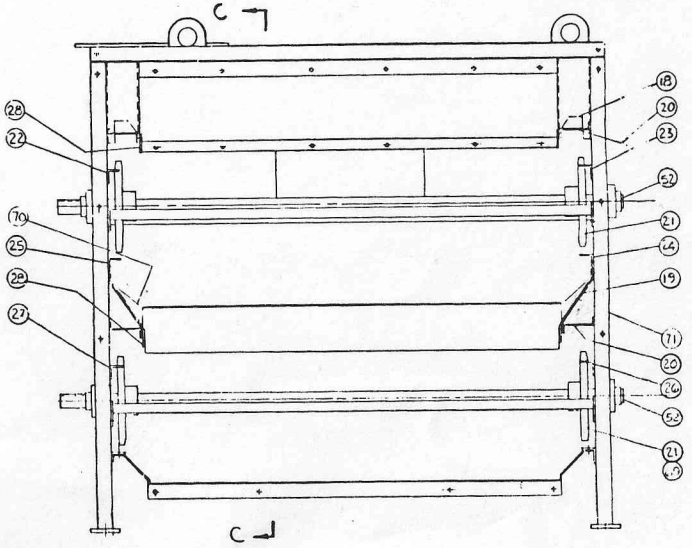




SECTION CC



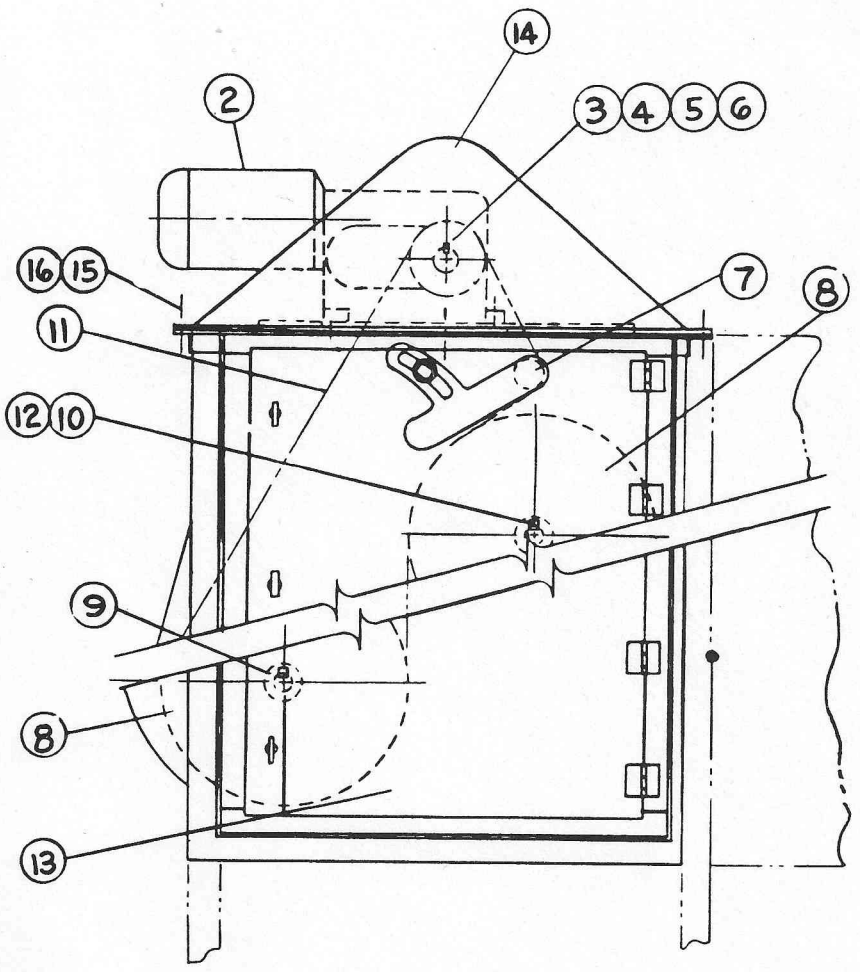




FORM 2132 TAIL END SECTION--DP5

(REF. D3861-006)

PC. NO.	QTY.	DESCRIPTION
2	1	Gearmotor
3	1	Sprocket, Shear Key Drive
4	1	Screw, Cap, No. 10-24 x 5/8 lg., Soc. Hd. Stl.
5	1	Key, Shear
6	2	Collar, Turned
7	1	Sprocket, Idler
8	2	Sprocket, Roller Chain, Single Strand
9	2	Bushing
10	2	Key, 1/2 x 1/2 x 3-1/8 lg., C1018 Stl.
11	1	Chain, Roller, Single Strand, 15 ft. lg.
12	1	Link, Connecting
13	1	Guard, Drive, Lower Section, Per D3872-000-00
14	1	Guard, Drive, Top Section Per Dwg. D3872-001-00
15	7	Bolt, Hex Hd. 3/8 x 3/4 lg., Stl.
16	7	Nut, 3/8 Huglock, Stl.



FORM 2133 DRIVE (DOUBLE PASS)

(REF B3700-064)

Controller as shown on the left-hand side of this drawing.

Refer to the Parajust instruction manual located at the rear of this manual.

Note that a conventional voltmeter will read only approximately 210 volts instead of 230 volts across the output leads from TB-3. This is because the output of the Parajust is a special modulated square-wave type signal.

C. Mechanical Cleanout Speed-Control (Form 2107)

During normal operation speed is controlled automatically by the potentiometer on the inlet hopper. Cleanout speed must be controlled either mechanically or electrically. We recommend mechanical control.

Mechanical cleanout speed-control is accomplished by a cable-pulley system, the lower end being connected to the horizontal control arm on the inlet hopper, and the upper end terminating at the pellet mill operator's station.

By lifting the cable the cooler speed is set to duplicate the speed during a normal run. Speed is determined by reading the voltmeter connected to the motor.

D. Optional Electrical Cleanout Speed-Control (Form 2142)

If mechanical cleanout speed-control is not feasible, electrical cleanout speed-control can be accomplished by using relays to switch the control signal going to TB-1A from the automatically-operated potentiometer on the inlet hopper, over to a second potentiometer controlled by the operator.

The relays used in the speed control circuit (from TB-1A to the potentiometer) must have special low-level contacts, since only approximately 2 ma flows in this circuit (standard contacts may eventually oxidize and fail to conduct the signal).

One such relay is made by Line Electric Company, Parsippany, NJ. It is Model MKP2A, 115 VAC, DPDT. A surface mount, screw terminal type socket is also available, Line Electric No. 1092-0201.

E. Other

Complete all other mechanical connections to and from the cooler, including the air ductwork and attachment of the discharge arrangement.

SECTION IV

START-UP

Assuming your Cooler is now fully assembled and in position, and you are ready to begin operation, STOP for a few minutes and check the following items:

1. Foreign Material

   Thoroughly check the Cooler for forgotten pieces of lumber, wrenches, pieces of steel, etc., which could cause a jam resulting in damage to the perforated metal trays and/or frame.

2. Parajust Controller

   In the lower left-hand section of the unit, on terminal block TB-1A, are two adjustable potentiometers. The upper potentiometer controls the maximum speed setting while the lower one controls the minimum speed. With the system energized and the inlet hopper empty, the Cooler should be running at minimum speed. Adjust the lower control until the voltage to the gearmotor is at least 46 V (measure at terminal of TB 3).

   NOTE: The voltage should never be allowed to go below 46 volts - Damage (overheating) to the motor could occur. A 46 Volt output corresponds to 12 HZ frequency.

The low speed can be adjusted higher than the 46 Volts if conditions warrant.

Move the vane in the inlet hopper all the way back and the motor speed should increase. Adjust the upper control for 230 volt output. This will be the maximum motor speed. (Corresponds to 60 HZ frequency). This speed can be reduced if conditions warrant.

3. Gearmotor

Check the oil level and maintain it as recommended in the name plate data and the instruction manual. A copy of the manual can be found at the rear of this manual.

4. Bearings

Be sure all bearings have grease. Refer to Drwing D3875-_____ for bearing locations. Refer to the Maintenance Section for information on frequency and type of grease.

5. Carrier Chain Tension

Tension on the carrier roller chain should be such that a force of 50 lbs. is required to raise the chain, on the slack side, approximately 2" off the supporting rail. Refer to the Maintenance Section for additional information on the carrier chain.

6. Discharge Bindicator

The Roto-Bindicator located in the discharge transition will sense when material "backs-up" in this area. With the cooler motor energized, carefully stop the Bindicator and be sure the Cooler motor STOPS. If it does not, rewire since this provides protection for your machine in the event of a blockage.

7. Carrier Chain

After checking all of the above items, run the Cooler and observe the action of the carrier chain. A constant gap should be maintained between the support columns and the chain. If this gap varies, it will be necessary to loosen the bolts on both sides of carrier trays in the problem areas, straighten the chain (See Step XII fo the Assembly Procedures), and re-teighten all bolts.

SECTION V

OPERATION

The operation of your Sprout-Waldron Horizontal Cooler is quite simple, requiring possibly only these few following adjustments:

1. BED DEPTH - MAXIMUM 9"

The bed depth is controlled by a manually adjustable gate located just down stream of the inlet hopper. Four holes in either side of the gate allow the depth to be adjusted between 6 in. to 9 in. by 1 in. increments. The actual setting will depend upon your particular requirements. A deep bed increases the retention time, capacity, while a shallow bed reduces both retention time and capacity. If the bed depth is too deep, the Cooler will remain at minimum speed and the distribution across the width of the Cooler will be incomplete. If the bed depth is too shallow, material will build-up in the inlet hopper and the high level alarm will be activated.--Adjust accordingly!

2. INLET HOPPER VANE

The point of activation of the vane should be just above the pellet level which permits good distribution of material to both sides of the inlet

hopper. If positioned too high, the high level bindicator will be activated. Five holes at 1 in. spacing are provided for adjustment. If it is necessary to change the vane height, remove it through the slot in the top of the inlet hopper.

3. BINDICATOR - INLET HOPPER

Adjust the height of the bindicator to just above the maximum normal product level. The bindicator height is varied by turning the mount through 30° increments. Once positioned, carefully flood the inlet hopper to check for proper location and operation.

4. GEARMOTOR SPEED

The minimum and maximum speed limits of the Cooler can be varied by adjusting the potentiometers on TB-1A of the Parajust Motor Controller. The low speed must not be adjusted below 46 Volts output to the gearmotor. Generally, there is no need to adjust the low speed range. However, it may be advantageous to reduce the maximum speed to prevent over-running of the take-away equipment, etc. To reduce the maximum speed, turn the upper potentiometer counter-clockwise. Be sure not to reduce the speed below the normal operating speed of the Cooler.

The following information on retention time and air

volume is given for your reference. These values were used as a guide when your Cooler was originally selected.

TABLE 1 - MINIMUM RETENTION TIMES

PELLET SIZE	RETENTION TIME
10/64" to 12/64"	5 to 6 minutes
1/4"	6 to 8 minutes
3/8"	7 to 8 minutes
1/2"	8 to 10 minutes
3/4"	12 minutes
7/8"	15 minutes
1/4" Alfalfa Pellets	8 minutes
Greater than 10% Molasses	Increase time a minimum of 20%

TABLE 2 - MINIMUM COOLING AIR REQUIREMENTS

PELLET SIZE	AIR REQUIREMENT PER TON PER HOUR OF PELLETS
10/64" to 12/64"	700 CFM
1/4"	800 CFM
3/8"	800 CFM
1/2" to 3/4"	1000 CFM
7/8"	1100 CFM

SECTION VI

OPERATION CHECK LIST

This section has been included to help you with some of the problems that could occur in the operation of your Horizontal Cooler:

I. Possible Causes of Cooling/Drying Problems

1. Excessive amount of fines being produced restricting air flow through the pellets.
2. Leaks in the air system between the cooler and fan.
3. Improper adjustment or lack of air seals within the cooler--air bypasses the pellets.
4. Auxiliary air system may be plugged. Air lines from the fan must be insulated wherever they pass through a cold area to prevent condensation on the inside surface. Dust can stick to the wet pipe and a build-up occur to the point where the line is completely plugged. This same situation can occur within the collector or dust separator.
5. Cooler may be starved for air. This lack of air could be caused by improper location (area without proper ventilation) and/or blocking of carrier guard with debris.
6. Improper fan sizing may cause reduced vacuum. A re-evaluation of the impeller blade, pitch diameter, and speed should remedy this problem. Also, be sure to check for loose and/or worn fan belts.

II. Possible Causes of Drive Problems

1. Key in drive motor output sheared. Replace only with the specified brass key!
2. High level alarm sounding. Increase bed depth by adjusting position of bed depth gate.

III. Possible Causes of Capacity Problems

1. Significant increase in production rate since the cooler was originally sized. If this problem is severe, additional intermediate cooling sections can be purchased. Consult Muncy for details.

IV. Other Problems

1. Fines remaining in the cooler--adjust height of fines wiper.

SECTION VII

MAINTENANCE & LUBRICATION

MAINTENANCE

Carrier Chain Tension

Periodically inspect and maintain proper tension on the carrier chain by use of the bearing take-ups on the main shaft. When adjusted to the proper tension, it should be possible to raise the chain carrier assembly about 2 in. off the lower support rail with a maximum force of 50 pounds. Too much tension will cause accelerated wear, while too little tension may permit enough slack to develop to allow the chain to "jump" a tooth on the sprocket.

Drive Chain Tension

The drive chain tension (double pass cooler only) can be adjusted by changing the position of the chain tightener. Tension on the slack side should be only enough to insure maximum chain wrap on the sprockets--avoid excessive tension.

Shear Key

Your cooler has been furnished with a special brass shear key located in the motor output shaft (See Drawing D3875-____ for location). This key is specially sized for your particular cooler, and extra keys are provided. If they key should shear, remove the obstruction and replace only with the special brass key.

Using any other key than those specified can cause undue strain on the components when an overload occurs.

Access to Machine

This Horizontal Cooler has been designed so that access to any portion of the machine is a relatively easy operation. Simply unbolt the panel section in question and remove the shield support assembly. Remember that all panel bolts have "blind-nuts' behind them to facilitate their removal and to eliminate the need for a man to enter the cooler. Since all maintenance can be performed outside the cooler, the carrier trays have not been designed for the concentrated load of a man walking on them. If you ever find it necessary to enter the cooler, be sure to put down either larger sheets of plywood or planks to evenly distribute your weight over the trays.

Lubrication

There are 4 bearings on the single pass and 9 bearings on the double pass cooler, with 1/8" Alemite grease fittings (See D3875-____ for their location). These bearings are also itemized on the Parts List for the end sections and are identified on the end section assembly drawings. Use a good grade mineral base bearing grease and lubricated every 1,500 hours.

Typical greases are:

Esso Standard Oil Company	ANDOK "B"
Shell Oil Company	ALVANIA #2
Texaco, Incorporated	MULTIFOK #2

With regards to the lubrication of the Gearmotor, please refer to and follow the motor manufacturer's instructions.

SECTION VIII

PARTS LIST

The following briefly explains our drawing system, and gives specific instructions for ordering replacement parts.

DRAWING SYSTEM:

For the part number of a specific component of the Horizontal Cooler, refer to the General Assembly Drawing or to the particular Assembly Drawing that pertains to the part in question.

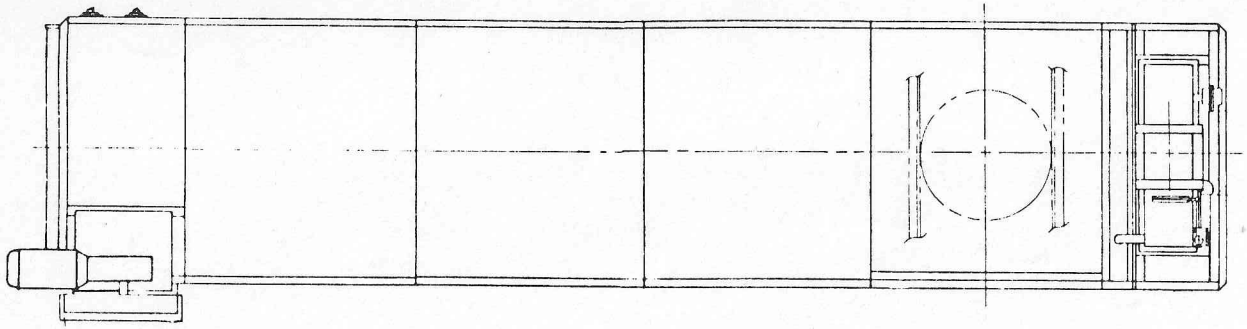
EXAMPLE: Carrier Tray

The carrier tray is found on Horizontal Cooler Assembly Drawing D3870-103, and identified as Pc. No. 12. On the face of the drawing the carrier tray is identified by the number 12 in a circle with a line pointing to the trays. In the parts list, located in the upper-right-hand corner, of the drawing, Pc. No. 12 is described as "TRAY, CARRIER", Part No. B3774-000/1.

ORDERING:

When ordering a replacement part, always refer to the Sprout-Waldron Serial Number listed in front of this manual, and on the machine, for example: Serial No. 70-000. Always specify this Serial Number, the quantity required, and the part number.

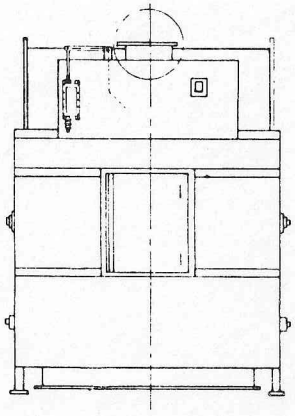
EXAMPLE: 10 - Tray, Carrier, Part No. B3744-000/1 for Horizontal Cooler, Serial No. 70-000.

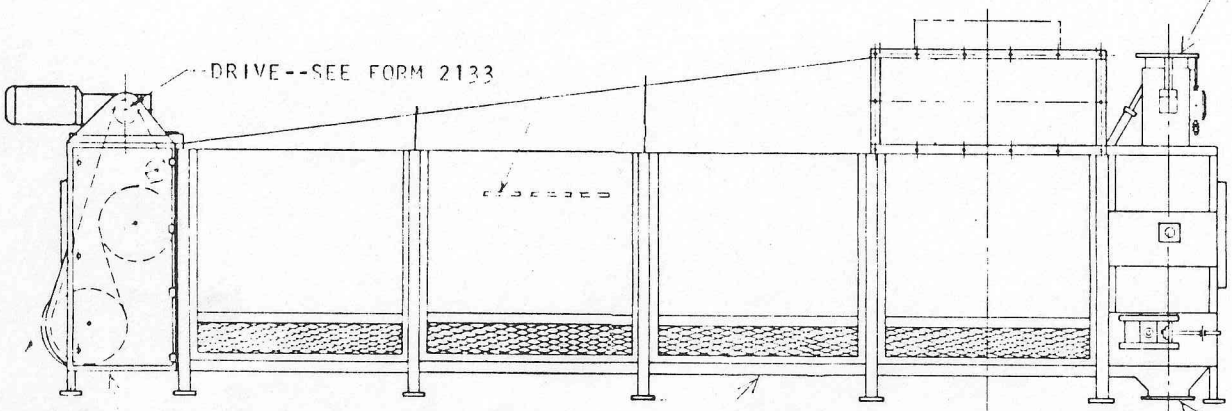


CARRIER TRAY ASSY--SEE FORM 2108

INLET HOPPER ASSY--SEE FORM 2109

℄ INLET & DISCH.





DRIVE--SEE FORM 2133

COOLING SECTION--SEE FORM 2131

TAIL END SECTION--SEE FORM 2132

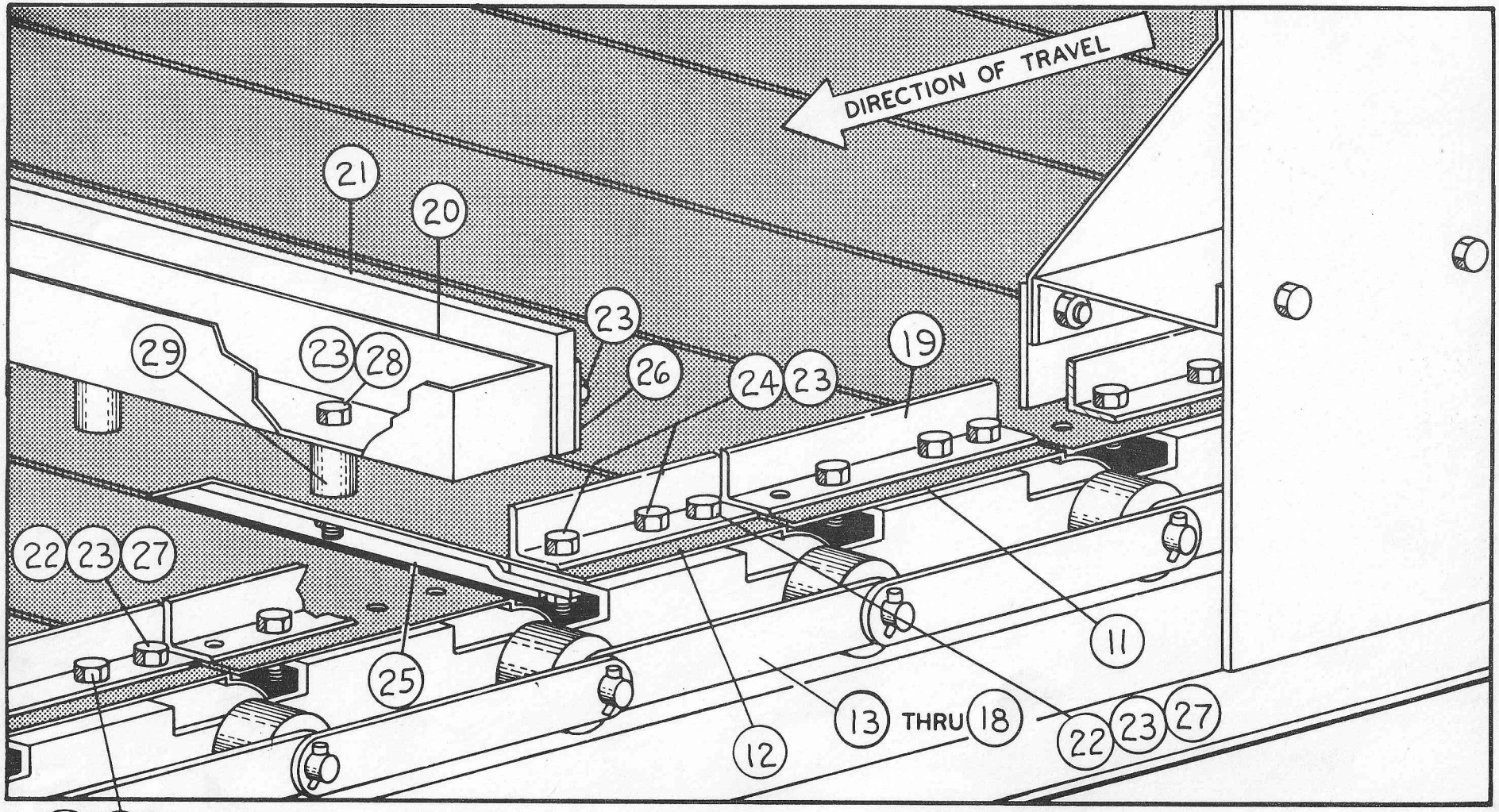
℄ INLET & DISCH.

INLET END SECTION--SEE FORM 2130

FORM 2129--HORIZONTAL COOLER--

DOUBLE PASS

(REF. D3875-211)



Horizontal Cooler Carrier Assy.

FORM 2108

SECTION IX

SPARE PARTS (5' Units)

The following is a list of recommended spare parts for your Horizontal Cooler. Please refer to the Engineering Equipment List for details on the main drive motor and drive components.

SPARES	DESCRIPTION	CODE NUMBER	LOCATION OR USE
2	1-15/16 Fafnir LCJ Flange Bearings	G107 00 017	Carrier Shaft
3'	Carrier Roller Chain Link-Belt LXS 6018 w/A2 Attachment	H2183 0 001	Carrier
10	Brass Shear Key (Part No. _____)	_____	Main Drive Motor
10	Carrier Trays B3744-000/1	D22 018 014	Carrier
4	Fines Wiper B3745-001/1	D25 005 007	Carrier
1	Spare Parts Kit for 1 & 1-1/2 HP Parajust A, Parametrics P/N 680085	None	Electronic Speed Controller