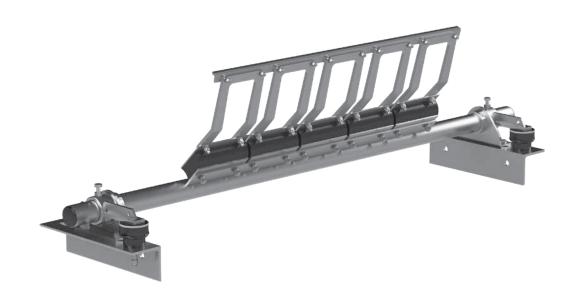
# H-Type® Primary Cleaner with V-Tips and Air Tensioner

# Installation, Operation and Maintenance Manual





# H-Type® Primary Cleaner with V-Tips and PAT Air Tensioner

Purchase Date:
Purchased From:
Installation Date:

This information will be helpful for any future inquiries or questions about belt cleaner replacement parts, specifications or troubleshooting.

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### **Section 1 – Important Information**

#### 1.1 General Introduction

We at Flexco are very pleased that you have selected an H-Type® Primary Cleaner with V-Tips and PAT Air Tensioner for your conveyor system.

This manual will help you to understand the operation of this product and assist you in making it work up to its maximum efficiency over its lifetime of service.

It is essential for safe and efficient operation that the information and guidelines presented be properly understood and implemented. This manual will provide safety precautions, installation instructions, maintenance procedures and troubleshooting tips.

If, however, you have any questions or problems that are not covered, please visit our web site or contact our Customer Service Department:

**Customer Service: 612-8818-2000** 

Visit www.flexco.com for other Flexco locations and products.

Please read this manual thoroughly and pass it on to any others who will be directly responsible for installation, operation and maintenance of this cleaner. While we have tried to make the installation and service tasks as easy and simple as possible, it does however require correct installation and regular inspections and adjustments to maintain top working condition.

### 1.2 User Benefits

Correct installation and regular maintenance will provide the following benefits for your operation:

- Reduced conveyor downtime
- Reduced man-hour labor
- Lower maintenance budget costs
- Increased service life for the belt cleaner and other conveyor components

### 1.3 Service Option

The H-Type Primary Cleaner with V-Tips and PAT Air Tensioner is designed to be easily installed and serviced by your on-site personnel. However, if you would prefer complete turn-key factory service, please contact your local Flexco Field Representative.

# **Section 2 – Safety Considerations and Precautions**

Before installing and operating the H-Type® Primary Cleaner with V-Tips and PAT Air Tensioner, it is important to review and understand the following safety information.

There are set-up, maintenance and operational activities involving both **stationary** and **operating** conveyors. Each case has a safety protocol.

### 2.1 Stationary Conveyors

The following activities are performed on stationary conveyors:

- Installation Blade replacement Repairs
- Tension adjustments Cleaning

#### **A** DANGER

It is imperative that Lockout/Tagout (LOTO) regulations, be followed before undertaking the preceding activities. Failure to use LOTO exposes workers to uncontrolled behavior of the belt cleaner caused by movement of the conveyor belt. Severe injury or death can result.

#### Before working:

- Lockout/Tagout the conveyor power source
- Disengage any takeups
- Clear the conveyor belt or clamp securely in place

### **A** WARNING

**Use Personal Protective Equipment (PPE):** 

- · Safety eyewear
- Hardhats
- Safety footwear

Close quarters, springs and heavy components create a worksite that compromises a worker's eyes, feet and skull.

PPE must be worn to control the foreseeable hazards associated with conveyor belt cleaners. Serious injuries can be avoided.

### 2.2 Operating Conveyors

There are two routine tasks that must be performed while the conveyor is running:

- Inspection of the cleaning performance
- Dynamic troubleshooting

### **A** DANGER

Every belt cleaner is an in-running nip hazard. Never touch or prod an operating cleaner. Cleaner hazards cause instantaneous amputation and entrapment.

### **A** WARNING

Belt cleaners can become projectile hazards. Stay as far from the cleaner as practical and use safety eyewear and headgear. Missiles can inflict serious injury.

### **A** WARNING

Never adjust anything on an operating cleaner. Unforseeable belt projections and tears can catch on cleaners and cause violent movements of the cleaner structure. Flailing hardware can cause serious injury or death.

### 2.3 Air Tank Hazard Level

The PAT Air is rated for 1064kPa (1 MPa) with a volume of approximately 11.4 liters, and designed for and compressed air under 65°C with a PV less than 100,000 MPa.L under Australia Standard (AS) 4343:2014 has been designated with Hazard Level E and therefore does not require registration.



# **Section 3 – Pre-installation Checks and Options**

# 3.1 Checklist

- Check that the cleaner size is correct for the beltline width
- Check the belt cleaner carton and make sure all the parts are included
- Review the "Tools Needed" list on the top of the installation instructions
- Check the conveyor site:
  - Will the cleaner be installed on a chute
  - Is the install on an open head pulley requiring mounting structure
  - Are there obstructions that may require cleaner location adjustments

# Section 3 - Pre-Installation Checks and Options (cont.)

### 3.2 Cleaner Location Adjustments

In certain applications it is necessary to modify the location of the precleaner pole due to permanent obstacles that obstruct the desired location. Relocating the pole location can be done easily and does not hinder the performance of the cleaner as long as the "C" dimension is maintained.

**NOTE:** In the following example we will be lowering the pole location in the "Y" direction, but the same method could also be applied in the "X" direction.

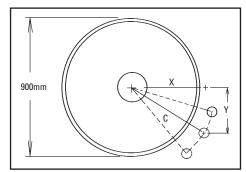
Conveyor situation:

Pulley Diameter: 900mm

X = 301mm

Y = 478mm

C = 565 mm



- 1. Determine the given location dimensions and define the change needed. After laying out the given X & Y dimensions, determine the distance of the modification required for adequate clearance of the pole and tensioning system. (In the example we decide to lower the pole 50mm to clear the support structure).
- 2. Write down known dimensions. We can now determine two of the three required dimension which will allow us to find the third. We know we cannot alter the "C" dimension, so this will remain the same. Also we are required to lower the unit in the "Y" dimension 50mm, so we add 50mm to the given "Y" dimension.

X = ?"

Y = 478 + 50 + 528mm

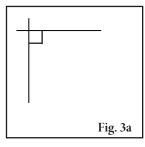
C = 565 mm

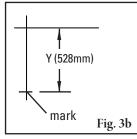
3. Determine final dimension. On a flat vertical surface, using a level, draw one horizontal line and one vertical line creating a right triangle (Fig 3a). Measure down from the intersection the determined "Y" dimension and mark (Fig 3b). With the tape measure starting at the modified "Y" mark, swing the tape across the "X" line and mark at the "C" dimension where it crosses the "X" line (Fig 3c). Measure from the intersection to the "C" intersection and this will be your new "X" dimension (Fig. 3d).

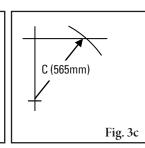
X = 201 mm

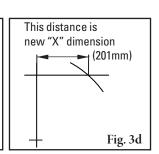
Y = 528mm

C = 565 mm

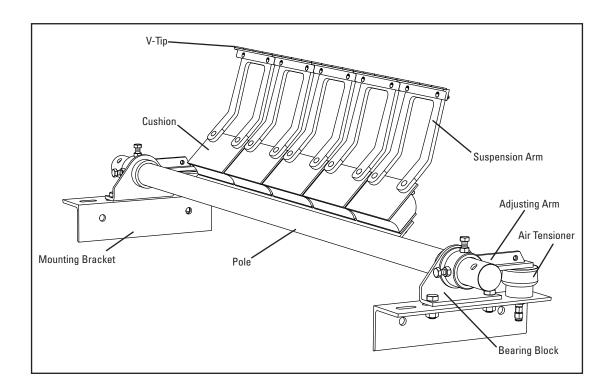








# 4.1 H-Type Primary Cleaner with V-Tips and Air Tensioner



Physically lock out and tag the conveyor at the power source before you begin cleaner installation.

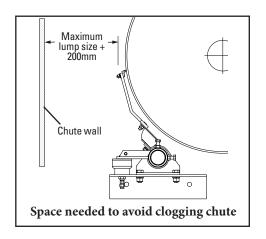
### **Before You Begin:**

- Installation specs and instructions are based on the assumption that the conveyor is in its working position (angle). If the conveyor angle will be different, the cleaner should be installed per the final position.
- Choose instructions for chute mounting or open head mounting. For chute mounting it may be necessary to cut an access hole to allow for installation and inspections. (See dimensions in Step 7 under Chute Mounting.)
- Follow all safety precautions when using a cutting torch.
- If welding, protect all fastener threads from weld spatter.

V-Tip Size	Pulley Diameter + Belt and Lagging
SS	up to 499mm
S	500-799mm
M	800-999mm
L	1000-1199mm
LL	1200-1700mm

#### Tools Needed

- Tape Measure
- 19mm Wrench
- Ratchet With 19mm Socket
- Adjustable Wrench
- Cutting Torch and/or Welder
- (2) 150mm C-Clamps (For Temporary Positioning of Mounting Brackets)
- 600mm Level
- · Marking Pen

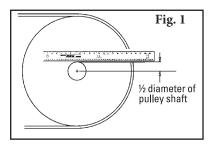


# 4.1 H-Type Primary Cleaner with V-Tips and Air Tensioner

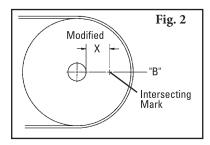
### **Chute Mounting**

1. **Find X and Y measurements.** Find the X and Y measurement specifications for the pulley diameter. See charts on pages 14, 15 and 16. The pulley diameter measurement should include lagging and belt.

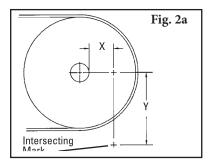
Pulley Diameter  $_$  mm;  $X = _$  mm;  $Y = _$  mm Using the correct X and Y coordinates will position the cleaner at 15° below the horizontal plane on the head pulley.



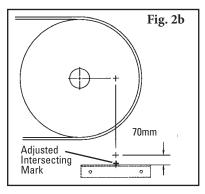
- **2a. Measure head pulley shaft.** Determine the diameter of the pulley shaft and divide by 2.
- **2b.** Put a level on top of the pulley shaft and draw a horizontal line A. Measure down from Line A half the diameter of the pulley shaft and draw Line B parallel from the pulley shaft (Fig. 1).



**3a. Mark X dimension.** Subtract the above dimension (Step 2a) from the selected X dimension to establish the modified X dimension. With this new X dimension measure horizontally from the front of the pulley shaft forward on Line B and mark on the chute (Fig. 2).



**3b. Determine** Y **dimension.** From the horizontal X mark, drop a line vertically down to the selected Y dimension and draw an intersecting mark (Fig. 2a). This is the correct position of the centre of the pole.

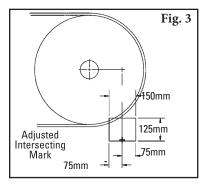


**4. Locate mounting bracket position (horizontal position).** To locate the position of the cleaner mounting bracket, add 70mm to the intersecting mark (Fig. 2b). This mark indicates the top centre of the mounting bracket.

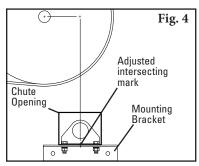


# 4.1 H-Type Primary Cleaner with V-Tips and Air Tensioner (cont.)

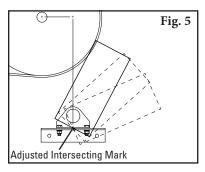
### **Chute Mounting (cont.)**



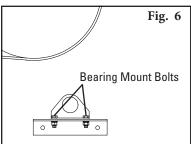
**5. Cut chute opening.** Using the adjusted intersecting mark ("+") established in Step 4, layout and cut the required opening 125x150mm on the chute (Fig. 3). If access hole is required, see Step 7.



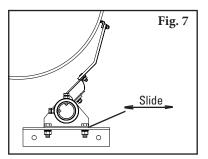
**6. Install the mounting brackets.** Centre the mounting bracket on the bottom of the opening. Bolt or weld in position (Fig 4). Repeat process on opposite side.



7. Cutting the access hole. Cut access hole, centreing the bottom edge on the adjusted intersecting mark ("+") established in Step 4. Width of hole should be 175mm; height should be 325mm for extra small arms, 375mm for small arms, 420mm for medium arms, 450mm for large arms or 555mm for extra large arms. Access hole may be oriented within the range shown (Fig. 5), provided bottom edge is still centreed as described above.



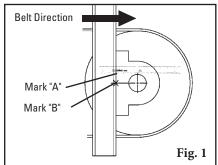
**8. Install the pole.** Remove the two bearing mount bolts from one of the bearing mounts (Fig. 6). (If chute mount, remove from the side with access hole.) Slide the pole across the pulley and into the bearing mount on other side and allow tips to hang down. Install the removed bearing mount on the pole and reattach to the mounting bracket. Do not tighten; leave finger tight.



**9. Position the pole.** Rotate pole upward to bring tips into contact with head pulley (Fig. 7). Centre the tips across the belt. While applying light pressure on the centre tip, shift loosened bearing mount until tips are contacting belt evenly across full width. Lock cleaner into this position by tightening bearing mount bolts.

# 4.2 H-Type Primary Cleaner with V-Tips and Air Tensioner

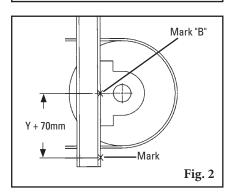
### **Open Head Mounting**



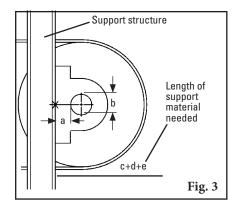
1. **Find X and Y measurements.** Find the X and Y measurement specifications for the pulley diameter. See charts on pages 12 and 13. The pulley diameter measurement should include lagging and belt.

Pulley Diameter\_\_\_\_mm X\_\_\_mm Y\_\_\_mm

Using the correct X and Y coordinates will position the cleaner at 15° below the horizontal plane on the head pulley.



- **2a. Locate Y location.** Determine the diameter of the pulley shaft and divide by 2.
- **2b.** Put a level on top of the pulley shaft and mark A at the structure. Measure down from Mark A half the diameter of the pulley shaft and mark B, locating the shaft centreline (Fig. 1).
- **2c. Measure down the given Y dimension plus 70mm and mark (Fig. 2).** This mark indicates the top location of support material to be added for installing the cleaner mounting brackets.



a) shaft to structure			-
b) pulley shaft diameter ÷	2		+
c) pulley shaft centre line to structure	=		_
d) add X measurement from chart			+
centre of pole from structure	=		-
e) add 175mm (half length of mounting bracket)		175mm	+
length of support material needed	=		-

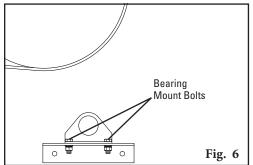
#### 3. Locate X location.

- a.) Measure from the back of the pulley shaft to the support structure (Fig. 3).
- b.) Pulley shaft diameter divided by 2.
- c.) Add dimensions from a) and b). This dimension is the pulley shaft centreline to the support structure.
- d.) Add the given X dimension to c). The sum indicates the distance from the centre of the pole to the support structure.
- e.) Add 175mm (half the length of the mounting bracket). The sum is the total length of support material needed to correctly locate the mounting brackets.
- **4. Secure mounting support pieces to the support structure.** Weld support pieces to the support structure. 75x75mm angle works well for these support pieces.
- **5. Prepare the support pieces for the cleaner mounting brackets.** Clamp the mounting bracket on the support piece. Mark and drill holes for mounting or weld.

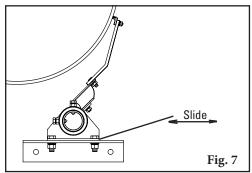


# 4.2 H-Type Primary Cleaner with V-Tips and Air Tensioner (cont.)

### **Open Head Mounting (cont.)**

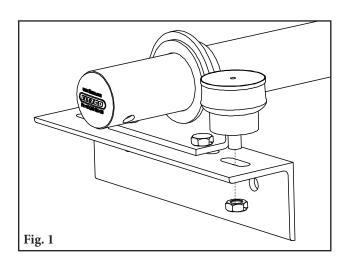


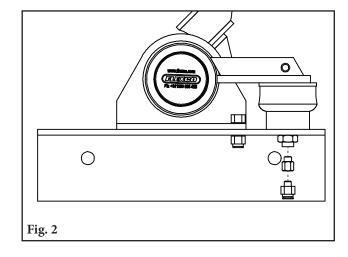
6. Install the pole. Remove the two bearing mount bolts from one of the bearing mounts (Fig. 6). (If chute mount, remove from the side with access hole.) Slide the pole across the pulley and into the bearing mount on other side and allow tips to hang down. Install the removed bearing mount on the pole and reattach to the mounting bracket. NOTE: Do not tighten; leave finger tight.



7. **Position the pole.** Rotate pole upward to bring tips into contact with head pulley (Fig. 7). Centre the tips across the belt. While applying light pressure on the centre tip, shift loosened bearing mount until tips are contacting belt evenly across full width. Lock cleaner into this position by tightening bearing mount bolts.

### 4.3a Cushion/Shield Design





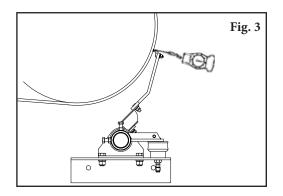
- **8a. Insert the air cushion in the slotted hole** in the support bracket and tighten the lock nut on the underside. (Fig. 1).
- **8b. Install the connector** and push-in fitting to the air cushion. **CAUTION:** do not over tighten as it may cause damage to the air cushion stem (Fig. 2).
- 8a. This to be the same as 8a.

# 4.2 H-Type Primary Cleaner with V-Tips and Air Tensioner (cont.)

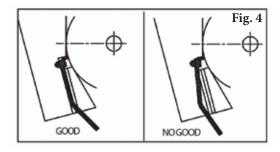
Check for correct tip tension. Place a Tip Tension Gauge between the tip and the belt on the centre tip (or tips) (Fig. 3). While pulling in a straight motion, read the tension required to break contact between the tip and belt. 8kg is recommended. Also check tension on both outer tips. Make tension adjustments if needed.

H-Type with V-Tips with 10mm Tip Air Tensioner Settings

Belt Width	S	S		S	N	Л	I	L	L	L
Deit Wiutii	kPa	PSI								
450	45	10	55	10	60	10	65	10	80	15
600	65	10	80	15	90	15	95	15	120	20
750	65	10	80	15	90	15	95	15	120	20
900	85	15	105	15	115	20	125	20	155	25
1050	105	20	130	20	145	25	155	25	195	30
1200	125	20	155	25	175	25	185	30	235	35
1500	145	25	180	30	200	30	220	35	275	40
1600	170	25	205	30	230	35	250	40	310	45
1800	185	30	225	35	255	40	275	40	345	50
2100	205	30	250	40	285	45	305	45	385	60
2400	245	40	300	45	340	50	365	55	460	70
2600	265	40	325	50	370	55	395	60	500	75
3000	305	45	370	55	425	65	455	70	575	85
3000	305	45	370	55	425	65	455	70	575	85



**10.** Check tip alignment with gauge provided. Align the gauge against the head pulley and move down until the gauge contacts the top of the blade. The suspension arm should align with lines marked on gauge (Fig. 4). If the alignment is not correct, loosen both bearing block bolts and slide pole to gain correct alignment. Correct one side at a time. Tighten bolts and repeat Step 5.

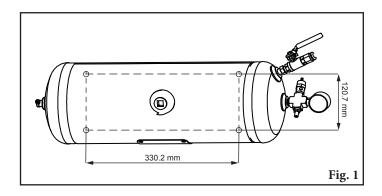


**11. Test run cleaner and inspect operation.** If vibration occurs or more cleaning efficiency is desired, increase tip tension by making a 1/2 turn on each adjustment bolt.

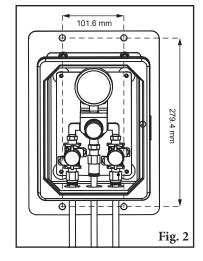


#### 4.3 PAT Air Tank and Control Panel Installation

Mounting PAT Air Tank. Find a sturdy/durable location to mount the tank vertically within 10' (3m) of the PAT Control panel(s). Drill four (4), Ø11mm holes on the holes centers show in Fig. 1, and secure the tank using four (4) M10 bolts. Position the tanks such that the pressure gauge can be easily read as well as accessing the isolation valve.

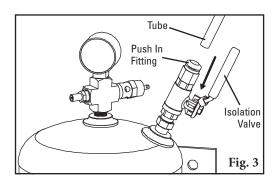


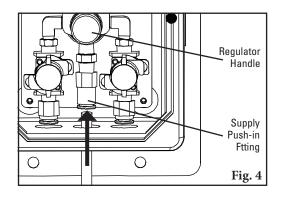
2. Mounting PAT Control Box. Find a sturdy/durable location to mount the control panel within 10' (3m) of the PAT Air Tank and with 10' (3m) of the longest run to the cleaner's tensioner air bag connection. Drill four (4), Ø10 holes on the hole centers show in Fig. 2, and secure the tank using four (4) M8 bolts. Position the PAT Control Panel door can be opened without obstruction, the pressure gauge can be easily read, and both the isolation values and regulator valve handles can be accessed.



3. Connect PAT Air Tank to PAT Control Panel. Ensure that both the PAT Air Tank isolation value is closed and the Control Panel regulator handle has been wound back to full closed. The PAT Air System uses 10mm push-in connections fittings, before connection ensure that tube end and fitting and are clean and free of debris. Use the 10mm nylon black tube provided with the PAT Air Tension System to connect the tank to panel by firstly inserting the tube into the Air Tanks Fig 3.

Unwind the tube to the length required to connect the PAT Control Panel and cut square and pushing the tube in to the center supply push-in fitting refer Fig. 4.



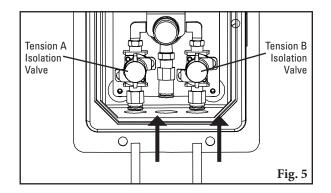


# 4.3 PAT Air Tank and Control Panel Installation (cont.)

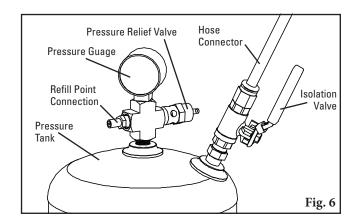
4. Connect PAT Control Panel to Cleaner Tensioner.

Ensure that the PAT Control Panel tension valves are in the closed position. Measure out the approximately length of 10mm nylon black tube provided with the PAT Air Tension to reach from the control panel to each cleaner tensioner and cut to length ensuring the tube ends are square.

Connect one end of each tube to the control panel outlet fittings refer Fig. 5. Connect the other end of the tube to the cleaners tensioner (refer to specific cleaner IOM for setup and connection requirements).



5. Mounting the tube runs. Secure the connection tube runs securely to structure or alike so that hose runs are lose or free to move around. Ensure that when securing the tube runs not to bend or kink the tubes and avoid any sharp edges that might cause cutting of the tube during operation. It recommended that tubes runs be protected with Flexco spiral wrap provided with the PAT System.

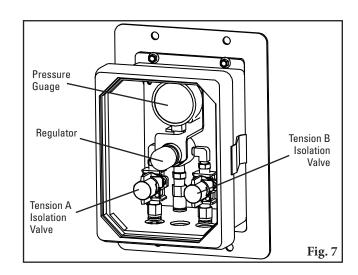


**6. First Time Charging the PAT Air Tank.** Isolate the PAT Air Tank by closing the isolation valve. Using an air compressor or other site supply compressed air supply, set to a pressure of approximately 140 psi. Connect the hose to the tanks refill point (Schrader Valve). Monitor the tank pressure gauge to ensure that pressure does not rise above 150 psi during the filling process. Once fill disconnect from the refill point and open the isolation valve.



# 4.3 PAT Air Tank and Control Panel Installation (cont.)

- 7. First-Time Pressurizing Tensioners. Refer to the specific cleaner instruction manual to note the required tension pressure. Refer Fig. 7, open the tensioner isolation valves to full open position. Slow open the regulator handle in a clockwise direction and monitor the pressure until the required pressure is achieved. Allow the system to rest for 5 minutes and check, if additional pressure is required the regulator until the desired pressure is reached.
- **8.** Check all air connections. Using soapy-water solution, spray all connections and look for foaming bubbles. If present, secure the connection until no leaks are visible.



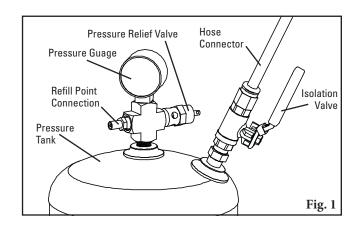
H-Type with V-Tips with 10mm Tip Air Tensioner Settings

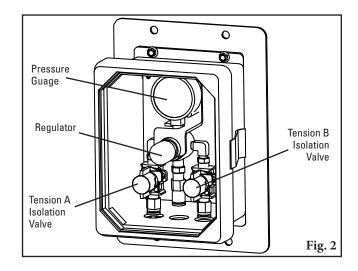
Belt Width	S	S	;	S	N	/	I	Ĺ	L	.L
Deil Wiulii	kPa	PSI								
450	45	10	55	10	60	10	65	10	80	15
600	65	10	80	15	90	15	95	15	120	20
750	65	10	80	15	90	15	95	15	120	20
900	85	15	105	15	115	20	125	20	155	25
1050	105	20	130	20	145	25	155	25	195	30
1200	125	20	155	25	175	25	185	30	235	35
1500	145	25	180	30	200	30	220	35	275	40
1600	170	25	205	30	230	35	250	40	310	45
1800	185	30	225	35	255	40	275	40	345	50
2100	205	30	250	40	285	45	305	45	385	60
2400	245	40	300	45	340	50	365	55	460	70
2600	265	40	325	50	370	55	395	60	500	75
3000	305	45	370	55	425	65	455	70	575	85

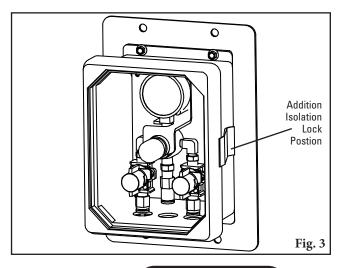
#### Section 5 – Isolation Procedure

The following steps-by-step process is recommended for de-pressurization and isolation of the PAT air system. This document is not intended to supersede any site isolation or lock out regulations which are too followed at all times.

- 1. Isolate PAT Air Tank Supply. Where the PAT Air tank is connected to an external supply sort of pressure, isolate the supply to the tank
- 2. Isolate the PAT Air Tank by closing the isolation valve connected to the top of the tank, refer Fig. 1 (isolation valve) by rotating 90°, and then lock the valve in the closed position with either personal or group isolation locks.
- 3. Remove Air Circuit pressure. Pull out the PAT Control Panel regulator knob, refer Fig. 2 and turn counter-clockwise until stop, exhaust gases should be audible. Confirm that the pressure gauge reads 0 psi. Re-open the regulator to by turning the regulator knob clockwise so residue air in the line between the PAT Air Tank and PAT Control panel is drawn into the circuit. Re-close the regulator as before to exhaust residue air. Complete this 2-3 times to ensure that air pressure is exhausted from the system. Push in the regulator knob to isolate the regulator mechanism.
- **4. Additional Lockout Point.** The PAT Control Panel box can have additional isolation protection by and option to use personal or group isolation locks on the side of the control box itself, refer Fig. 3.

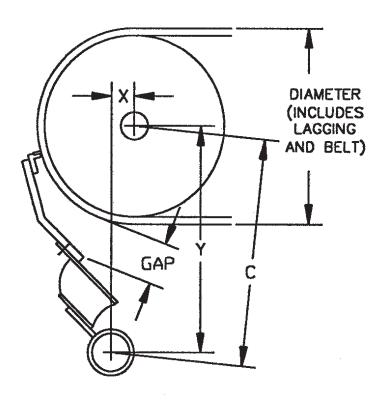






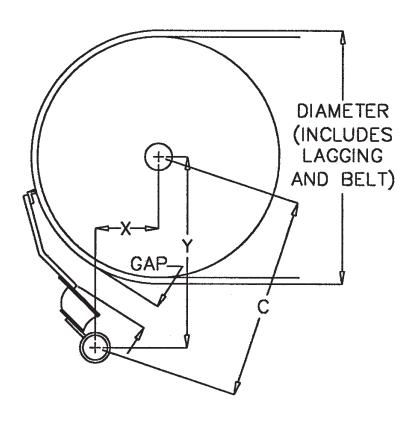
# **Section 6 – Cleaner Pole Location Charts**

# **6.1 Pole Location Charts**



Extra Small (SS) V-Arms for Head Pulley Diameters up to 499mm

Diameter (Over Belt)	Х	Υ	С	Gap
250	28	292	294	56
275	40	295	298	51
300	52	299	303	46
325	64	302	309	43
350	76	305	315	39
375	88	308	321	36
400	100	312	327	33
425	113	315	334	30
450	125	318	342	28
475	137	321	349	25
500	149	325	357	23
525	161	328	365	22
550	173	331	373	20
575	185	334	382	18

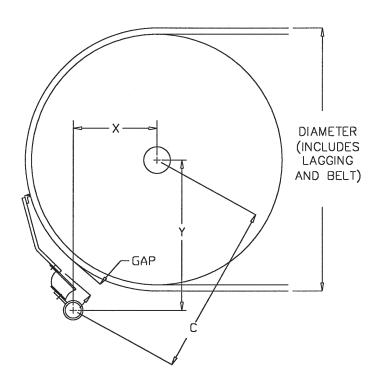


Small (S) V-Arms for Head Pulley Diameters 500-799mm

Diameter (Over Belt)	х	Υ	С	Gap
350	50	361	365	78
375	62	365	370	73
400	74	368	375	68
425	86	371	381	64
450	98	374	387	60
475	110	377	393	56
500	122	381	400	52
525	134	384	407	49
550	146	387	414	46
575	158	390	421	43
600	171	394	429	40
625	183	397	437	38
650	195	400	445	36
675	207	403	453	33
700	219	407	462	31
725	231	410	470	29
750	243	413	479	27
775	255	416	488	26
800	267	420	497	24
825	279	423	507	23
850	291	426	516	21
875	303	429	526	20
900	315	432	535	18

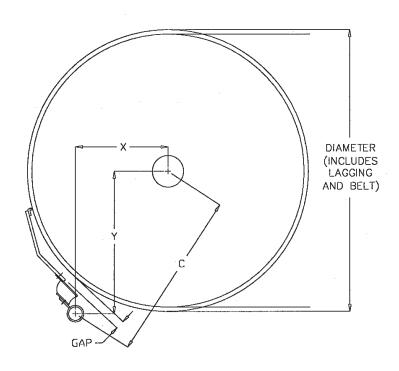
# **Section 6 – Cleaner Pole Location Charts**

# **6.1 Pole Location Charts (cont.)**



Medium (M) V-Arms for Head Pulley Diameters 800-999mm

Diameter (Over Belt)	х	Υ	С	Gap
650	180	445	480	63
675	192	449	488	60
700	204	452	496	57
725	216	455	504	54
750	228	458	512	54
775	240	462	520	50
800	252	465	529	47
825	264	468	538	45
850	277	471	546	43
875	289	475	555	41
900	301	478	565	39
925	313	481	574	37
950	325	484	583	36
975	337	487	593	34
1000	349	491	602	32
1025	361	494	612	31
1050	373	497	622	29
1075	385	500	632	28
1100	397	504	641	27
1125	409	507	652	26

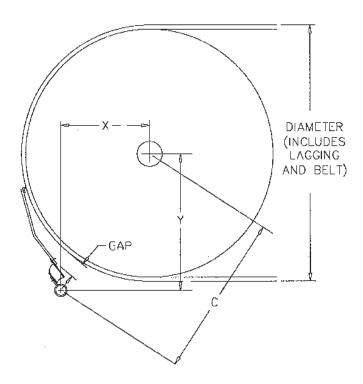


Large (L) V-Arms for Head Pulley Diameters 1000-1199mm

1000-1199m	1000-1199mm						
Diameter (Over Belt)	х	Υ	С	Gap			
850	253	494	556	46			
875	265	498	564	43			
900	278	501	573	41			
925	290	504	581	39			
950	302	507	590	37			
975	314	511	599	35			
1000	326	514	608	33			
1025	338	517	618	31			
1050	350	520	627	29			
1075	362	524	637	27			
1100	374	527	646	26			
1125	386	530	656	24			
1150	398	533	666	22			
1175	410	537	675	21			
1200	422	540	685	20			

# **Section 6 – Cleaner Pole Location Charts**

# 6.1 Pole Location Charts (cont.)



Extra Large (XL) V-Arms for Head Pulley Diameters 1200-1700mm

Diameter (Over Belt)	х	Υ	С	Gap
1200	414	650	771	79
1225	426	653	780	76
1250	438	657	789	74
1275	450	660	799	72
1300	462	663	808	70
1325	474	666	818	68
1350	486	670	827	66
1375	498	673	837	64
1400	510	676	847	62
1425	522	679	857	60
1450	534	683	867	59
1475	546	686	877	57
1500	558	689	887	55
1525	570	692	897	54
1550	583	695	907	52
1575	595	699	917	51
1600	607	702	928	49
1625	619	705	938	48
1650	631	708	949	47
1675	643	712	959	45
1700	655	715	970	44

# Section 7 – Pre-Operation Checklist and Testing

# 7.1 Pre-Op Checklist

- Recheck that all fasteners are tightened properly.
- Add pole caps.
- Apply all supplied labels to the cleaner .
- Check the blade location on the belt.
- Be sure that all installation materials and tools have been removed from the belt and the conveyor area.

### 7.2 Test Run the Conveyor

- Run the conveyor for at least 15 minutes and inspect the cleaning performance.
- Check to make sure the air pressure is set to the correct set point for recommended cleaner size (proper tensioning).
- Make adjustments as necessary.

**NOTE:** Observing the cleaner when it is running and performing properly will help to detect problems or when adjustments are needed later.



Flexco belt cleaners are designed to operate with minimum maintenance. However, to maintain superior performance some service is required. When the cleaner is installed a regular maintenance program should be set up. This program will ensure that the cleaner operates at optimal efficiency and problems can be identified and fixed before the cleaner stops working.

All safety procedures for inspection of equipment (stationary or operating) must be observed. The H-Type® Primary Cleaner operates at the discharge end of the conveyor and is in direct contact with the moving belt. Only visual observations can be made while the belt is running. Service tasks can be done only with the conveyor stopped and by observing the correct lockout/tagout procedures.

### 8.1 New Installation Inspection

After the new cleaner has run for a few days a visual inspection should be made to ensure the cleaner is performing properly. Make adjustments as needed.

### 8.2 Routine Visual Inspection (every 2-4 weeks)

A visual inspection of the cleaner and belt can determine:

- If the spring length is the correct length for optimal tensioning.
- If the belt looks clean or if there are areas that are dirty.
- If the blade is worn out and needs to be replaced.
- If there is damage to the blade or other cleaner components.
- If fugitive material is built up on the cleaner or in the transfer area.
- If there is cover damage to the belt.
- If there is vibration or bouncing of the cleaner on the belt.
- If a snub pulley is used, a check should be made for material buildup on the pulley.

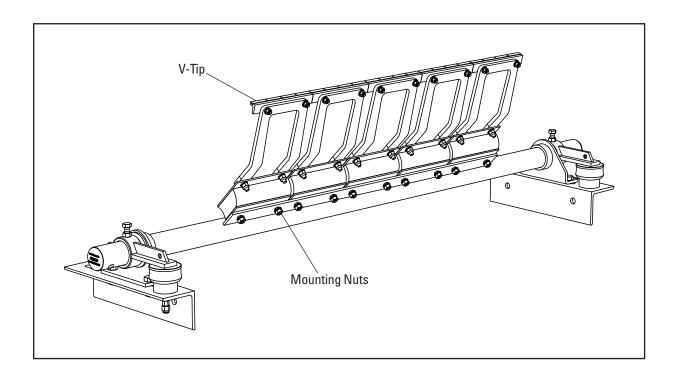
If any of the above conditions exist, a determination should be made on when the conveyor can be stopped for cleaner maintenance.

### 8.3 Routine Physical Inspection (every 6-8 weeks)

When the conveyor is not in operation and properly locked and tagged out a physical inspection of the cleaner to perform the following tasks:

- Clean material buildup off the cleaner blade and pole.
- Closely inspect the blade for wear and any damage. Replace if needed.
- Check both blade pins for proper installation and condition. Replace if needed.
- Ensure full blade to belt contact.
- Inspect the cleaner pole for damage.
- Inspect all fasteners for tightness and wear. Tighten or replace as needed.
- Replace any worn or damaged components.
- Check the tension of the cleaner blade to the belt. Adjust the tension if necessary.
- When maintenance tasks are completed, test run the conveyor to ensure the cleaner is performing properly.

# 8.4 Blade Replacement Instructions



Physically lock out and tag the conveyor at the power source before you begin cleaner installation.

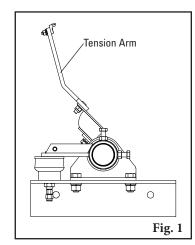
#### **Tools Needed**

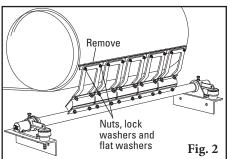
- Tape measure
- Wire brush (for cleaning pole)
- (1) 17mm wrench
- Small putty knife (for cleaning pole)
- (2) 38mm wrenches or crescent wrenches
- 1. Remove the tension. Using the Air Control panel, remove isolate the incoming air support and using the pressure control value release all pressure from the Air Cushions.

Refer to Air Control Instruction and Operations Manual for detail instructions.

Remove the tension arm (fig. 1), this releases the tension of the blade on the belt.

2. Remove the worn tips. Remove the nuts on each tip and remove the tips from the cushion (Fig. 2). Clean all fugitive material from the pole. NOTE: If tips are hard to remove use a screwdriver or hammer to loosen it and then remove.



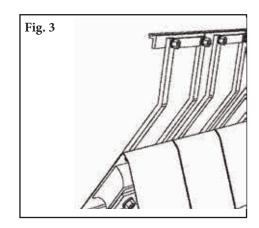




# 8.4 Blade Replacement Instructions

- **3. Install the new tips.** Locate each tip onto each suspension arm, then install the hardware to fasten the tip to the suspension arm (Fig. 3).
- 4. Reset the correct blade tension. Re-install the tension arm and rotate the cleaner so that the tips are in contact with the belt, lock the tension arm locking bolts and allow it to seat on the air cushion. Complete on both sides of the cleaner. Using the air control panel value, increase pressure until the set point pressure is reach to re-tension the cleaner.





# 8.5 Maintenance Log

Conveyor Name/No		
Date:	Work done by:	Service Quote #:
Activity:		
Data	7A7-ul- danahar	Coming Oceans #
		Service Quote #:
Activity:		
Date:	Work done by:	Service Quote #:
Activity:		
Date:	Work done by:	Service Quote #:
		Service Quote #:
Activity:		
Date:	Work done by:	Service Quote #:
Activity:		
Date:	Work done by:	Service Quote #:
Data	Moule don - b	Sarvina Ovata #
		Service Quote #:
Activity:		



# **8.6 Cleaner Maintenance Checklist**

Site:				Inspected by	<b>/</b> :			Date	e:		
Belt Cleaner: _						Serial	Number:				
Beltline Informa				Belt Condi	tion:						
		□ 600mm (24")		□ 900mm (36")				mm □ 1500n (60")		1800mm (72")	
Head Pulley Dia	ameter (	Belt & Lagg	ging):		Belt	Speed:	s/n	n Belt	Thickn	ess:	_
Belt Splice:		_ Condition	on of Splic	e:	_ Number	of Splices:		☐ Skived	□ Un	skived	
Material convey	yed:										
Days per week	run:		Hou	ırs per day r	un:						
<b>Blade Life</b> : Date blade insta	alled:		Date bla	ade inspecte	ed:	Estir	mated blad	de life:		_	
Is blade making	comple	te contact	with belt?		□ Yes	□ No					
Blade wear:		Left		Mid	ldle		Right	t			
Blade condition	1:	□ Go	od	☐ Grooved	□ Sr	miled	□ Not c	ontacting bel	lt	☐ Damaged	
Measurement o	of spring	:	Require	d	_ Cur	rently					
Was Cleaner Ad	djusted:		□ Yes	□ No							
Pole Condition:		□ God	od [	□ Bent	□ Worn						
Lagging:		Side Lag	□ C	eramic	□ Rubbe	r 🗆	Other	□ None			
Condition of lag	ging:		□Good	□Bad	□ 0t	her					
Cleaner's Overa	all Perfo	rmance:		(Rate the fol	lowing 1 - 5	, 1= very po	oor - 5 = ve	ry good)			
Appearance:		Comments	s:								
Location:		Comments	s:								
Maintenance:		Comments	S:								
Performance:		Comments	S:								
Other comment	s:										

# ${\bf Section~9-Trouble shooting}$

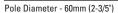
Problem	Possible Cause	<b>Possible Solutions</b>		
	Cleaner under-tensioned	Adjust to correct tension – see spring length chart		
Poor cleaning	Cleaner over-tensioned	Adjust to correct tension – see spring length chart		
performance	Cleaner installed in wrong location	Verify "C" dimension, relocate to correct dimension		
	Cleaner blade worn or damaged	Replace cleaner blade		
	Tension on cleaner too high/low	Adjust to correct tension – see spring length chart		
	Cleaner not located correctly	Check cleaner location for correct dimensions		
Rapid Blade Wear	Blade attack angle incorrect	Check cleaner location for correct dimensions		
	Material too abrasive for blade	Option: switch to alternate cleaner with metal blades		
	Mechanical splice damaging blade	Repair, skive or replace splice		
Centre wear on blade	Blade wider than material path	Replace blade with width to match material path		
(smile effect)	Tension on cleaner too high/low	Adjust to correct tension – see spring length chart		
	Mechanical splice damaging blade	Repair, skive or replace splice		
Unusual wear or damage	Belt damaged or ripped	Repair or replace belt		
to blade	Cleaner not correctly located	Verify "C" dimension, relocate to correct dimension		
	Damage to pulley or pulley lagging	Repair or replace pulley		
	Cleaner not located correctly	Verify "C" dimension, relocate to correct dimension		
	Blade attack angle incorrect	Verify "C" dimension, relocate to correct dimension		
	Blade attack angle incorrect  Verify "C" dimension, relocate to correct dimension of the correct			
Vibration or noise	Cleaner tension too high/low	Adjust to correct tension or slight adjust to diminish		
	Cleaner locking bolts not secure	Check and tighten all bolts and nuts		
	Cleaner not square to head pulley	Verify "C" dimension, relocate to correct dimension		
	Material buildup in chute	Clean up build-up on cleaner and in chute		
	Cleaner tension not set correctly	Ensure correct tension/increase tension slightly		
Cleaner being pushed away from pulley	Sticky material is overburdening cleaner	Increase tension; replace with cleaner with metal tips; replace with larger size cleaner		
	Cleaner not set up correctly	Confirm location dimensions are equal on both sides		
	Leaking Fittings	Using soapy water spray all connections for evidence of bubbles		
Loss of Tank Pressure	Faulty connection hoses	Depressurize the air upstream of the tank isolation valve		
	Incorrectly install connection hoses	n hoses and replace fault hose section  Using soapy water spray all connections for evidence of		
	Leaking Fittings	Using soapy water spray all connections for evidence of bubbles		
Loss of Tension Pressure	Faulty connection hoses	Depressurize the air upstream of the tank isolation valve		
	Incorrectly install connection hoses	and replace fault hose section		
	Faulty or damage air bag	Inspect the airbag for indications of damage.		
Inadequate tensioner	Incorrect Pressure setting	Check control panel pressure gauge for set pressure correct as required		
pressure	Faulty or damage air bag	Inspect the airbag for indications of damage.		

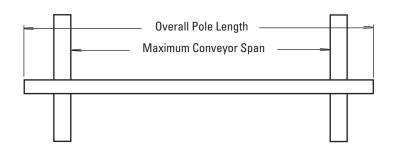


# 10.1 Specifications and Guidelines

#### Pole Length Specifications\*

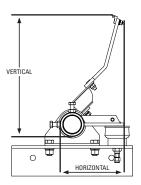
	-				
Cleaner Size		Pole L	ength.		mum or Span
mm	in.	mm	in.	mm	in.
450	18	1650	66	1400	56
600	24	1800	72	1550	62
750	30	1950	78	1700	68
900	36	2100	84	1850	74
1050	42	2250	90	2000	80
1200	48	2400	96	2150	86





#### **Clearance Guidelines for Installation**

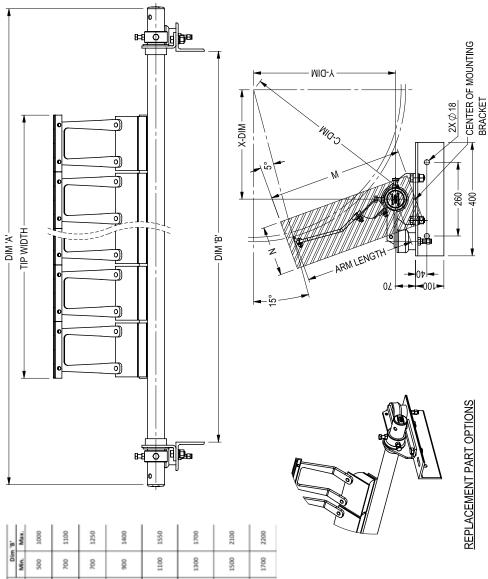
Suspension Arm Size	Clear	ontal rance uired	Vertical Clearance Required		
	mm	in.	mm	in.	
SS	175	7	325	12 13/16	
S	175	7	375	14 3/4	
M	175	7	420	16 9/16	
L	175	7	450	17 3/4	
LL	175	7	555	21 7/8	



#### **Specifications:**

- Maximum Belt Speed ...... 5m/s
- Temperature Rating.....-35°C to 204°C
- Usable Blade Wear Length......9mm
- Blade Material......Long Life Tungsten Carbide (for vulcanized belts only)
- Available for Belt Widths ...... 450 to 1200mm.
  - Other sizes available upon request.
- CEMA Cleaner Rating ...... Class 4

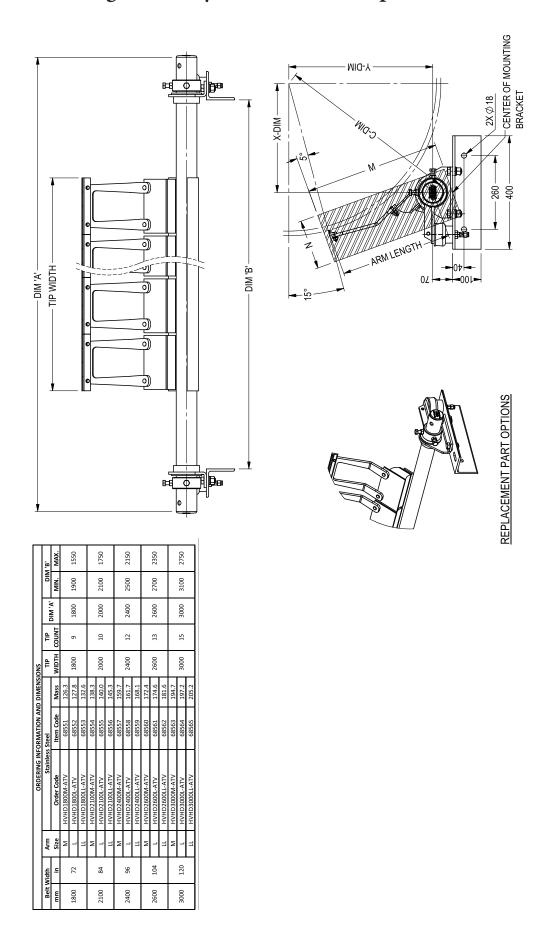
# 10.2 CAD Drawing - Primary Cleaner with V-Tips for Belts up to 1600mm



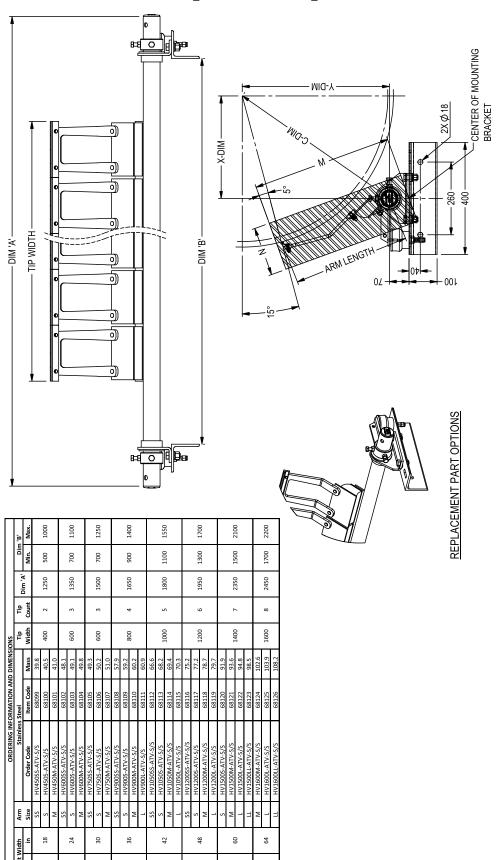
Belt Width	1		and the second of the second of						l	
e e	ē	Arm	Stainle	Stainless Steel		Į,	Τρ	10.00	Dim	.8.
	.s	Size	Order Code	Item Code	Mass	Width	Count	A MID	Min.	Max.
		s	HV45055-ATV	68523	39.8					
84	138	s	HV4505-ATV	68524	40.5	400	N	1250	8	1000
		M	HV450M-ATV	68525	41.0					
		22	HV6005S-ATV	68526	48.1					
009	z	s	HV6005-ATV	68527	49.1	9	m	1350	200	1100
		M	HV600M-ATV	68528	49.8					
		22	HV75055-ATV	68529	49.3					
750	8	s	HV7505-ATV	68530	50.2	9	m	1500	200	1250
		M	HV750M-ATV	68531	51.0					
		88	HV90055-ATV	68532	57.9					
000	26	s	HV900S-ATV	68533	59.2	8	,	0221	8	1400
200	ę,	M	HV900M-ATV	68534	60.2	8	r	1030	8	7400
		7	HV900L-ATV	68535	6009					
		\$5	HV10S0SS-ATV	68536	9.99					
*000	;	s	HV10S0S-ATV	68537	68.2	1000	u	900+		0224
ocor	ž	M	HV1050M-ATV	68538	69.4	3	n	2007	377	1230
		_	HV10S0L-ATV	68539	70.3					
		\$5	HV120055-ATV	68540	75.2					
900	9	s	HV12005-ATV	68541	77.2	1300		1000	1300	1300
207	\$	N	HV1200M-ATV	68542	78.7	***		47.00	200	2
		٦	HV1200L-ATV	68543	79.7					
		s	HV15005-ATV	68544	91.9					
0001	S	M	HV1500M-ATV	68545	93.6	1400	P	2350	9001	2100
7300	3	٦	HV1500L-ATV	685.46	94.8	1400	,	0007	1300	2100
		n	HV1500LL-ATV	68547	98.5					
		×	HV1600M-ATV	68548	102.6					
1600	3	_	HV1600L-ATV	68549	103.9	1600	60	2450	1700	2200
		Ħ	HV1600LL-ATV	68550	108.2					



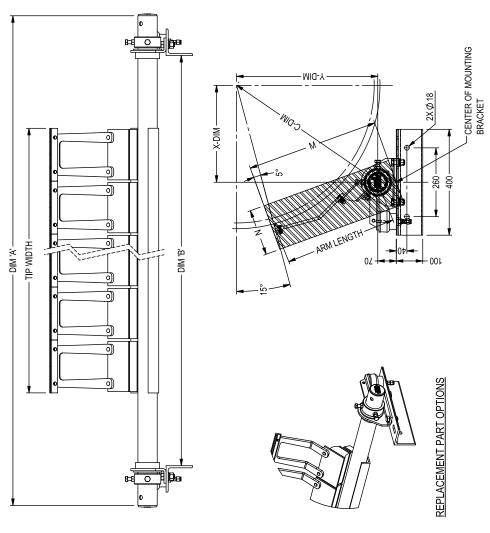
# 10.2 CAD Drawing - Primary Cleaner with V-Tips for Belts over 1800mm



# 10.2 CAD Drawing - Stainless Steel Primary Cleaner with V-Tips for Belts up to 1600mm



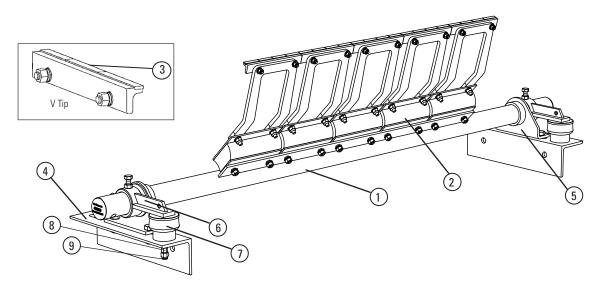
# 10.2 CAD Drawing - Stainless Steel Primary Cleaner with V-Tips for Belts over 1600mm



			ORDERING INF	CRDERING INFORMATION AND DIMENSIONS	D DIMENS	SNO				
Belt v	Belt Width	Arm	Stainless Steel	Steel		ďΕ	ĝ.	AL PROPERTY	.8. WIG	.8.
mm	ų	Size	Order Code	Bem Code	Mass	мирти	COUNT		MIN.	MAX.
		M	HVHD1800M-ATV-5/5	68127	126.3			Г		
1800	72	-	HVHD1800L-ATV-5/5	68128	127.8	1800	ø	1800	1900	1550
		n	HVHD1800U-ATV-5/5	68139	132.6					
		M	HVHD2100M-ATV-5/5	68130	138.3					
2100	2	_,	HVHD2100L-ATV-5/5	68131	140.0	2000	01	2000	2100	1750
		n	HVHD2100LL-ATV-5/5	68132	145.3					
		M	HVHD24D0M-ATV-5/5	(8133	159.7					
2400	95	-,	HVHD2400L-ATV-S/S	68134	161.7	2400	12	2400	2500	2150
		п	HVHD2400LL-ATV-5/5	68135	168.1					
		M	HVHD2600M-ATV-5/5	68136	172.4			Г		
2600	50	_	HVHD2600L-ATV-5/S	68137	174.6	2600	2	5600	2700	2350
		Ħ	HVHD2600LL-ATV-5/5	68138	181.6					
		M	HVHD3000M-ATV-5/5	68139	194.7					
3000	120	_	HVHD3000L-ATV-S/S	68140	197.2	3000	22	3000	3100	2750
		n	HVHD3000LL-ATV-5/5	68141	205.2					

# **Section 11 – Replacement Parts**

# 11.2 Cleaner Replacement Parts



REPL	ACEMENT PARTS			POWD	ER COATI	D	STAINLESS ST	EEL
REF	DESCRIPTION	BELT WIDTH	POLE LENGTH	ORDERING NUMBER	ITEM CODE	WT. KGS.	ORDERING NUMBER	ITEM CODE
		450	1250	HP450	73027	10.0	HP450-S/S	75373
		600	1350	HP600	73029	11.0	HP600-S/S	75374
	H-Type Pole Standard-	750	1500	HP750	73031	13.0	HP750-S/S	75375
	60 mm Pole Diameter	900	1650	HP900	73033	15.0	HP900-S/S	75376
		1050	1800	HP1050	73035	20.0	HP1050-S/S	75377
1		1200	1950	HP1200	73037	22.0	HP1200-S/S	75378
	H-Type Pole Standard –	1500	2350	HP1500	73066	24.0	HP1500-S/S	75379
	73 mm Pole Diameter	1600	2450	HP1600	73739	27.0	HP1600-S/S	75380
	H-Type Pole Heavy-Duty –	1800	2650	HPHD1800	74601	34.0	HPHD1800-S/S	A2063
	73 mm Pole Diameter	2000	2950	HPHD2000	74547	39.0	HPHD2000-S/S	A1783
	Braced and Gussetted	2400	3250	HPHD2400	74548	43.5	HPHD2400-S/S	A2958
2	Cushion			HSA	73486	2.0	HVC-S/S	73494
	Heavy-Duty Cushion			HSHD	73483	2.0	HSHS-S/S	76467
-	H Polyshield (Not shown)			HPS8	73050	1.0	HSTSS	74771
3	V-Tip			HSA200	73489	0.5	HVT8-S/S	75419
							HVPT-S/S	73631
4	Air Primary Mount Bracket Stainle	ess Steel					AIR HDMRK S/S	62034
5	Bearing Repair Kit 60mm						HBRK-S/S-60	75422
υ	Bearing Repair Kit 73mm						HBRK-S/S -73	76246
6	Air Primary Adjust Arm 60mm						AIR HARK-S/S-60	62035
O	Air Primary Adjust Arm 73mm						AIR HARK-S/S-73	64175
7	Air Bag Primary						AIR BAG P	62036
8	Hex Nut			HEX NUT	G1211	0.1	HEX NUT	G1211
9	Air Line Adapter			ATV-NIP	62037	0.1	ATV-NIP	62037
_	Primary Air Tension Kit 60mm (incl. HDMRK S/S, HBRK-S/S-60, AIR HARK- HEX NUT, ATV-NIP)						HATDMK-S/S	63861
-	Primary Air Tension Kit 73mm (incl. HDMRK S/S, HBRK-S/S-73, AIR HARK- HEX NUT, ATV-NIP)						HDATDMK-S/S	63862

Shaded items are made to order. Call for lead time.

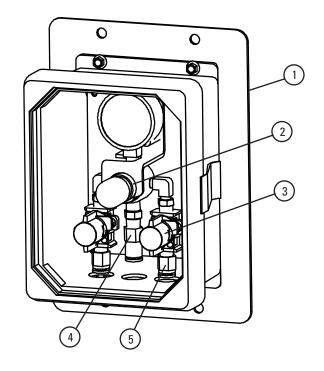


# **Section 11 – Replacement Parts**

# 11.2 PAT Control Panel Replacement Parts

#### **Replacement Parts**

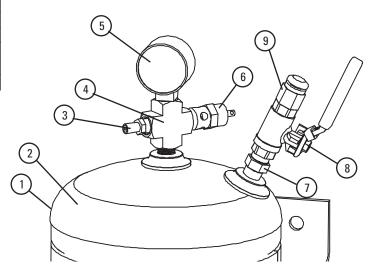
REF	DESCRIPTION	ORDERING NUMBER	ITEM CODE
1	PAT Control Panel	PACB100	66055
2	Regulator /w Pressure Gauge	PAT-100-R	65566
3	Self-Exhausting Valve	PAT-EXV	65566
4	Female Push-In Fitting 10mm x 1/4"	PAT-FPF10	65663
5	Male Push-In Fitting 10mm x 1/4"	PAT-MPF-10	65662



# 11.2 PAT Air Tank Replacement Parts

#### **Replacement Parts**

REF	DESCRIPTION	ORDERING NUMBER	ITEM CODE
1	PAT Air Tank	PAT1	65571
2	Air Tank	PAT-TANK	68151
3	Fill Point Valve (Scharder Valve)	PAT-FP	68152
4	Cross Adaptor	PAT-CR	68153
5	Pressure Gauge 0-160 psi	PAT-PG	68154
6	Relief Valve 150 psi	PAT-RV	68155
7	Male Adaptor	PAT-MA	65568
8	Lockable Ball Valve	PAT-BVL	65565
9	Male Push-In Fitting 10mm x 1/4"	PAT-MPF-10	65663



### **Section 12 – Other Flexco Conveyor Products**

Flexco provides many conveyor products that help your conveyors to run more efficiently and safely. These components solve typical conveyor problems and improve productivity. Here is a quick overview on just a few of them:

#### Rockline® EZP1 Primary Cleaner



- Patented ConShear™ blade renews its cleaning edge as it wears
- Visual Tension Check™ for optimal blade tensioning and simple retensioning
- Quick and easy one-pin blade replacement Material Path Option™ for optimal cleaning and reduced maintenance

#### **MHS SAC Secondary Cleaner**



- Long-wearing tungsten carbide blades for superior cleaning efficiency
- Patented PowerFlex<sup>™</sup> cushions, the proven design found on our industry-leading MHS Secondary Cleaner
- Service Advantage Cartridge can be easily removed and replaced, even in the dirtiest conditions
- Works with Flexco mechanical belt splices

### **Flexco Specialty Belt Cleaners**



- "Limited space" cleaners for tight conveyor applications
- Cleaners for severe, high heat applications
- A rubber fingered cleaner for chevron and raised rib belts
- Multiple cleaner styles in stainless steel for corrosive applications

#### Flexco Slider/Impact Beds



- Adjusting troughing angles for easy installation and adjustability
- Long-wearing UHMW for sealing the load zone
- Offered in both Light & Medium duty designs to affordably fit your application

#### PT Max™ Belt Trainer



- Patented "pivot & tilt" design for superior training action
- Dual sensor rollers on each side to minimise belt damage
- Pivot point guaranteed not to freeze or seize up
- Available for topside and return side belts

#### **Belt Ploughs**



- A belt cleaner for the tail pulley
- Exclusive blade design quickly spirals debris off the belt
- · Economical and easy to service
- Available in vee or diagonal models



