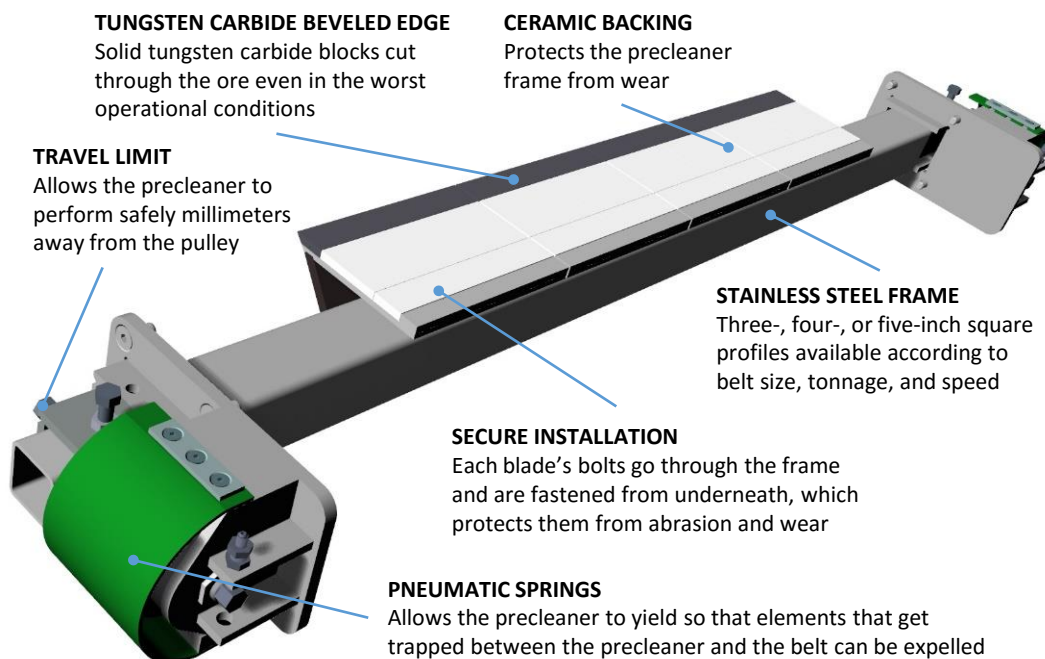


# PRECLEANER

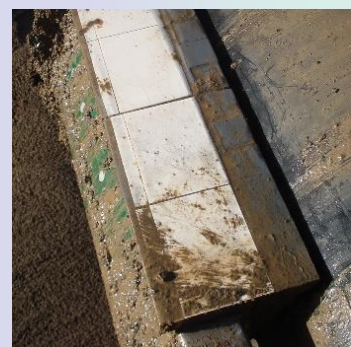


When the conveyed ore is so sticky that it doesn't fly off at the discharge pulley, normal scraper systems struggle to remove it from the belt. This usually means that the whole conveyor belt system gets clogged with carryback, and ends up with an unscheduled stop for cleaning. **Tecnipak** has developed a **specialty precleaner** that has been designed to cut through the thick layer of ore, releasing the bulk of the material from the belt, and allowing it to continue its journey through the chute.

The cleaning edge is composed of several blades placed next to each other, each of which have a beveled attack edge made from solid tungsten carbide blocks and a ceramic layer that protects the frame of the precleaner from wear. There is no other cleaner in existence capable of dealing with the impact and abrasion that results from the removal of the bulk of the conveyed ore.



- **Specialty cleaner.** Designed to improve cleaning when the bulk of the conveyed ore doesn't fly off the discharge pulley, the precleaner cuts through the bulk and allows for the primary cleaner to perform in normal conditions. Highly favored in leaching operations where the ore is particularly cohesive and sticky, there is no other cleaner that works as efficiently and reliably in these conditions.
- **Tough.** The frame is made from a three-, four-, or five-inch stainless steel square profile with thicknesses from 1/4" to 3/8". Tecnipak guarantees that it will withstand even the most aggressive mine duty.
- **Pneumatic springs safety mechanism.** The precleaner works millimeters away from the discharge pulley and has pneumatic springs that allow it to yield so that any elements that get trapped between the belt and the precleaner are expelled.
- **Remote adjustment.** The adjustment controls can be installed in a safe place, away from the hazard zone, which allows the precleaner to be adjusted while the belt is running.
- **All-around reliability.** Every part has been designed and developed to perform with minimal maintenance and a wide tolerance to changes in the working conditions.



## SPECIFICATIONS:

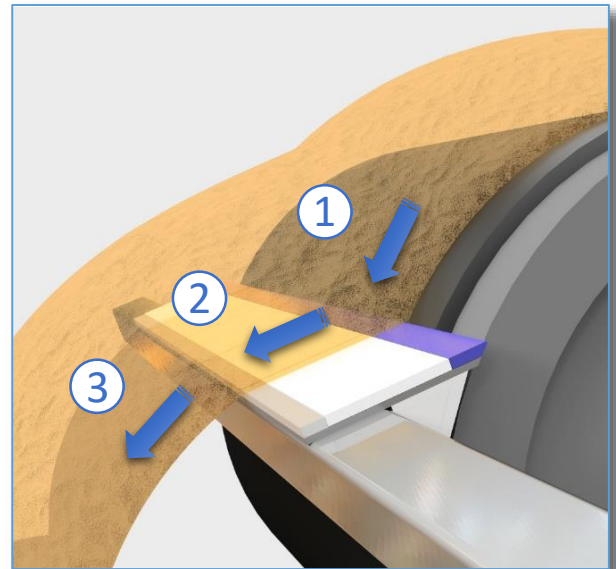
- ✓ Belt speeds up to 7.5 m/s (1,450 fpm)
- ✓ Belt widths from 900 mm up to 3,150 mm (36" up to 124")
- ✓ Pulley diameters from 800 mm up to 3,000+ mm (32" up to 118+")



**Watch it in action!**

## WORKING PRINCIPLE

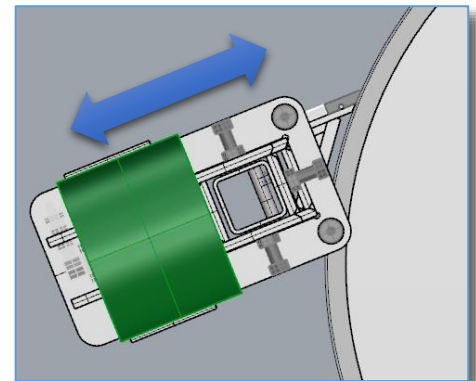
1. The cleaning edge is composed of several blades, each with a tungsten carbide beveled edge that is adjusted so as to be a few millimeters away from the pulley. When the moving ore encounters the precleaner, the cleaning edge cuts through the ore and hence detaches the bulk of the conveyed material so it can be driven into the chute.
2. Once the bulk of the ore has been detached, the precleaner has to redirect the ore over the pulley and into the chute. This exerts a great force on the surface of the blades, which also generates an important abrasion stress. Ceramic tiles withstand the abrasion while at the same time pass down the force onto the frame being held by the adjustment consoles through the pneumatic springs.
3. Finally, the ore is clear from the precleaner and continues its journey through the chute. Over the belt remains a thin layer of ore, which is later removed by the primary and secondary cleaners.



## PNEUMATIC SPRINGS SAFETY MECHANISM

In cases where a rock gets jammed between the precleaner's cleaning edge and the pulley, it is necessary that the rock can be released to avoid damage to the belt.

Thanks to the pneumatic spring safety mechanism, when a rock gets stuck and the pulley pushes it further between the pulley and the cleaning edge, the frame of the precleaner yields. The pneumatic springs absorb the displacement of the precleaner until the rock is expelled, at which point the springs restore the precleaner to the working position. All of this happens in a fraction of a second, so the cleaning quality is never impaired.



Type	Workload	Blade height [mm]	Maximum belt speed [m/s]	Belt width [mm]		Head pulley diameter [mm]	
				Min	Max	Min	Max
CDP1	Normal	215	6.5	900	1,500	800	3,000+
CDP2	Heavy	285	7.5	1,200	2,100		
CDP3	Extra Heavy	308	7.5	1,500	3,150		

Precleaner part number	Belt width [in]	Number of blades required	Blade part number	Blade weight [kg]	Consoles weight [kg]	Frame weight [kg]	Stainless profile [in]	Standard frame length [mm]
CDP1-120-00C	42	4	CEP1-030-KHX	7.5	44	52	3 x 1/4	1,800
CDP1-150-00C	48	5	CEP1-030-KHX	7.5	44	61	3 x 1/4	2,000
CDP2-180-00C	60	6	CEP2-030-KHX	9.5	61	144	4 x 3/8	2,400
CDP2-210-00C	72	7	CEP2-030-KHX	9.5	61	170	4 x 3/8	2,800
CDP3-200-00C	72	8	CEP3-025-BHX	35	90	280	5 x 3/8	2,800

**Which precleaner size should I choose?** The precleaner should wipe the entire width of the belt, so it should have the same width as the belt.

**At what angle should the precleaner be installed?** The precleaner must be installed with an installation drawing supplied by Tecnipak for each particular installation. However, it is desirable that it operates between 25 to 45 degrees from a horizontal plane.

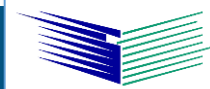
**The blades in the center wear out faster than the ones on the sides. What should I do?** This behavior is normal and should be expected, because the bulk of the load travels centered on the belt and this wears down the blades on the center faster. To make the blades last longer, when the center blades are worn, a rotation should be performed in which the center blades take the place of the outer blades and vice versa. For more information, please review the manual or give us a call.

**Official dealer:**

**SAFETY WARNING:** the installation of a precleaner demands that the belt has fully operational return cleaners. The pulley should be centered and its lagging should be in good shape; and the belt must not have mechanical splices, protruding splices, protruding cords, or other protruding elements. Dismissing this safety warning may cause damage to the belt, other equipment, or people.

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# PRIMARY BELT CLEANER



# TECNIPAK

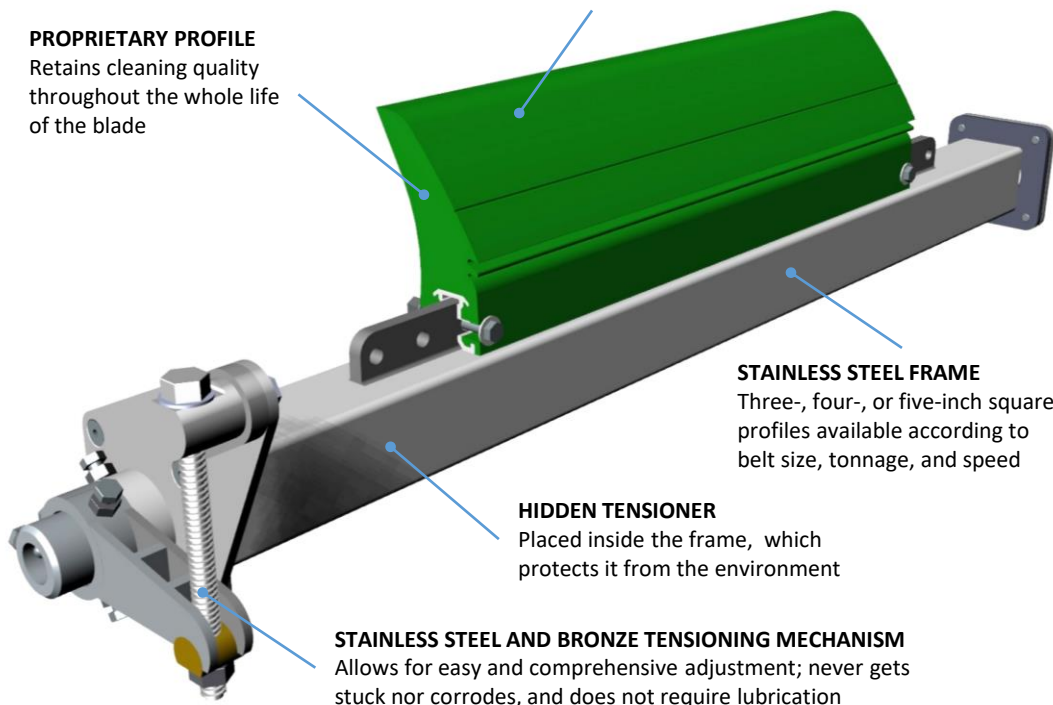
Tecnipak's primary belt cleaner is designed to remove the thick layer of carryback material that remains stuck to the conveyor belt after its discharge. This is the sturdiest and toughest primary belt cleaner available, developed after years of experience in the harshest operational conditions in the Chilean mining industry. The cleaning blade is made out of a polyurethane formulation with the best combination of wear, tear, and corrosion resistance.

## ONE-PIECE CLEANING BLADE

Prevents trapping of debris between segments, avoiding any compromise of the belt cover

## PROPRIETARY PROFILE

Retains cleaning quality throughout the whole life of the blade



## STAINLESS STEEL FRAME

Three-, four-, or five-inch square profiles available according to belt size, tonnage, and speed

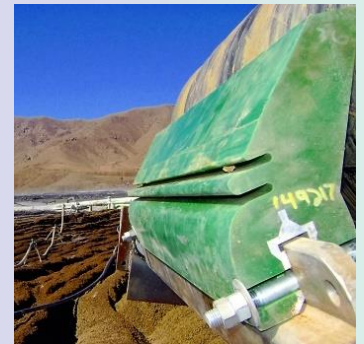
## HIDDEN TENSIONER

Placed inside the frame, which protects it from the environment

## STAINLESS STEEL AND BRONZE TENSIONING MECHANISM

Allows for easy and comprehensive adjustment; never gets stuck nor corrodes, and does not require lubrication

- **Toughest cleaner available.** The frame is made from a three-, four-, or five-inch stainless steel square profile with thicknesses from 1/4" to 3/8". Tecnipak guarantees that it will withstand even the most aggressive mine duty while delivering excellent cleaning performance.
- **Single-side tension adjustment.** The tensioner relies on a simple, easy-to-understand mechanism that is adjusted from just one side, reducing the time needed for cleaner setup. Built entirely in stainless steel and bronze, the mechanism doesn't get stuck, corrode, or need lubrication.
- **Installation closer to the pulley.** Tecnipak's proprietary blade profile allows for an installation closer to the head pulley, reducing the risk for the cleaner to flip over when the cleaning blade is wearing out.
- **Wear-, tear-, and acid-resistant polyurethane.** The formulation for our 83 Shore A hardness polyurethane blade offers the best compromise between wear, tear, and corrosion resistance. Tecnipak can also supply different formulations for specific conditions.
- **All-around reliability.** Every part has been designed and developed to perform with minimal maintenance and a wide tolerance to changes in the working conditions.



## SPECIFICATIONS:

- ✓ Belt speeds up to 7.5 m/s (1,450 fpm)
- ✓ Belt widths from 600 mm up to 3,000 mm (24" up to 120")
- ✓ Pulley diameters from 400 mm up to 3,000+ mm (16" up to 120+")



**Watch it in action!**



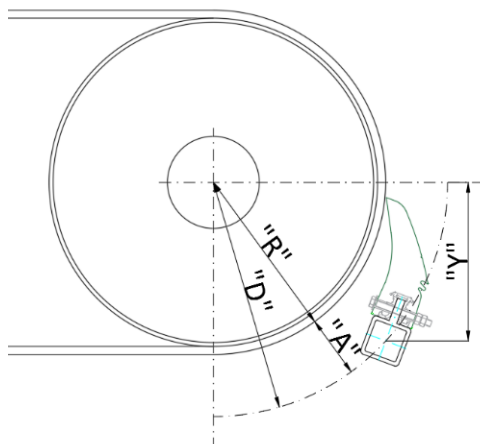
# PRIMARY BELT CLEANER

# datasheet

Type	Workload	Stainless profile [in]	Blade height [mm]	Maximum belt speed [m/s]	Belt width [mm]		Head pulley diameter [mm]	
					Min	Max	Min	Max
QHD	Normal	3 x 1/4	215	4,0	450	1,500	400	1,000
QCX	Heavy	4 x 3/8	285	6,0	900	1,800	580	1,800
QS	Extra Heavy	5 x 3/8	431	7,5	1,500	3,150	760	3,000

## Primary Belt Cleaner Placement:

1. Determine the distance "R" from the pulley axis to the outside of the belt.
2. Locate distance "A" on the reference table (right).
3. Add distance "A" to distance "R" to obtain the **installation distance "D"**.
4. Trace "D" as a radius centered on the pulley axis.
5. Install the cleaner with its axis over this radius, being careful not to go outside the vertical threshold "Y".



Outside radius "R" [mm]	Distance "A" [mm]	Outside radius "R" [mm]	Distance "A" [mm]	
			QCX	QS
200 – 239	120	290 – 329	175	-
240 – 279	110	330 – 369	165	-
280 – 319	100	370 – 409	160	200
320 – 359	95	410 – 449	155	192
360 – 420	95	450 – 509	150	185
		510 – 569	145	180
		570 – 629	141	177
		630+	138	175

Type	Threshold "Y" [mm]
QHD	250 - 450
QCX	350 - 600
QS	350 - 600

Primary cleaner part number	Belt width [in]	Suggested blade width [in]	Suggested blade part number	Suggested blade weight [kg]	Tensioner weight [kg]	Frame weight [kg]	Standard frame length [mm]
CD-QHD18-00C	18	12	CE-QHD12-G83	4	34	16	1,000
CD-QHD24-00C	24	18	CE-QHD18-G83	7	34	20	1,200
CD-QHD27-00C	27	21	CE-QHD21-G83	8	34	23	1,400
CD-QHD30-00C	30	24	CE-QHD24-G83	9	34	23	1,400
CD-QHD36-00C	36	27	CE-QHD27-G83	10	34	27	1,600
CD-QHD42-00C	42	30	CE-QHD30-G83	11	34	30	1,800
CD-QHD48-00C	48	36	CE-QHD36-G83	13	34	34	2,000
CD-QHD54-00C	54	42	CE-QHD42-G83	15	34	37	2,200
CD-QHD60-00C	60	48	CE-QHD48-G83	18	34	41	2,400
CD-QCX30-00C	30	24	CE-QCX24-G83	18	70	47	1,400
CD-QCX36-00C	36	30	CE-QCX30-G83	22	70	54	1,600
CD-QCX42-00C	42	36	CE-QCX36-G83	27	70	61	1,800
CD-QCX48-00C	48	36	CE-QCX36-G83	27	70	68	2,000
CD-QCX54-00C	54	42	CE-QCX42-G83	31	70	75	2,200
CD-QCX60-00C	60	48	CE-QCX48-G83	35	70	82	2,400
CD-QCX66-00C	66	54	CE-QCX54-G83	40	70	89	2,600
CD-QCX72-00C	72	60	CE-QCX60-G83	44	70	96	2,800
CD-QS060-00C	60	48	CE-QCX48-G83	35	72	101	2,400
CD-QS072-00C	72	60	CE-QCX60-G83	44	72	118	2,800
CD-QS096-00C	96	84	CE-QCX84-G83	62	72	152	3,600
CD-QS126-00C	126	114	CE-QCX84-G83	84	72	195	4,600

**Which blade length should I choose?** The blade width normally ranges from 75% to 80% of the belt width. On occasions, a larger or smaller size should be used, matching the width of the ore path on the belt cover. A blade that is too small will let ore pass through the sides. A blade that is too large will wear only in the midsection and not on its edges.

**As the blade wears out my belt cleaner flips over. What is the problem?** The cleaner is installed too far away from the pulley. It is necessary to check the positioning, relocate and reinstall.

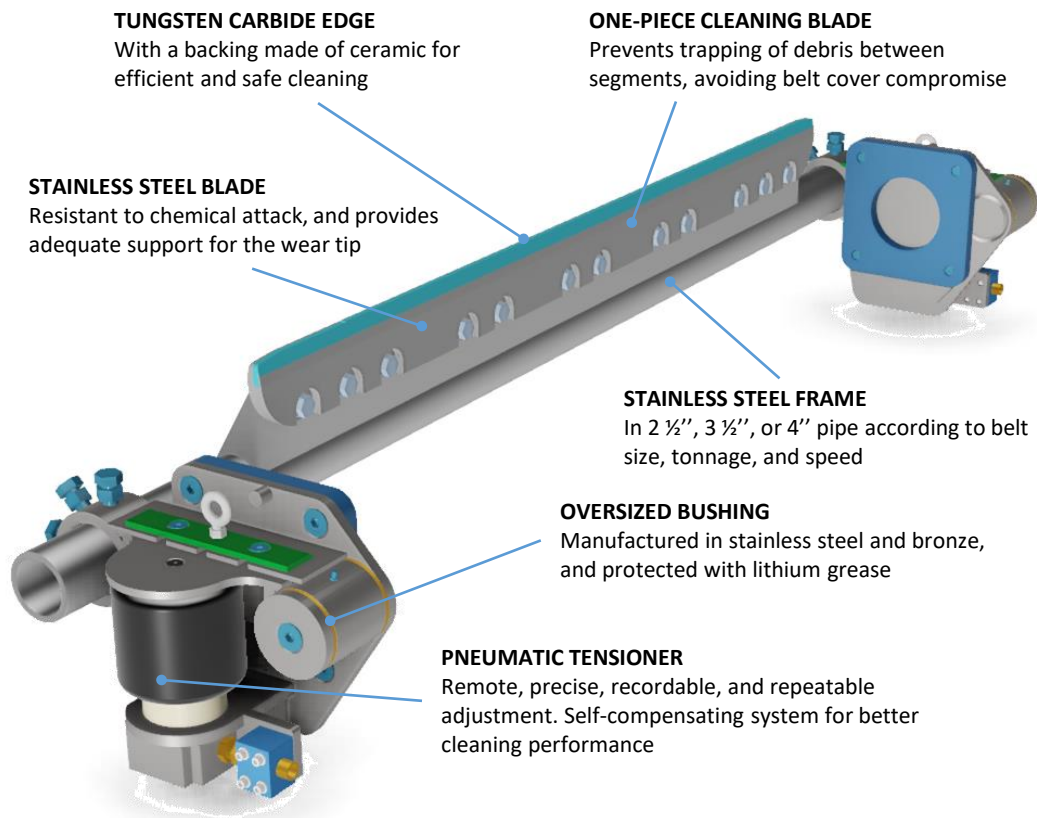
**The cleaning blade lasts less than 15 days. What can I do?** Contact Tecnipak. It is likely that you are facing a special condition where the ore does not fly off the belt when it reaches the head pulley, but rather sticks to the belt. In this particular case it might be necessary to install a **Tecnipak precleaner** above the primary cleaner.

**Official dealer:**

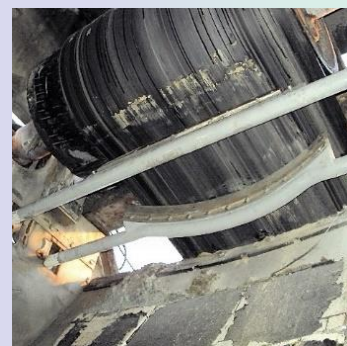
# SECONDARY BELT CLEANERS



Tecnipak's **secondary straight belt cleaner** is placed right after the primary cleaner, underneath the head pulley, and is designed to clean fine particles off the conveyor belt. It is supported by pneumatic tensioners that work alongside the most durable cleaning blade in the industry so as to deliver the best cleaning quality, bar none. Additionally, for conveyor belts particularly long and fast, we've also developed a **secondary parabolic belt cleaner** that allows for focused cleaning performance.



- **Safe for the conveyor belt.** The one-piece cleaning blade avoids debris getting trapped, and its surface acquires a mirror-finish quality as it wears out so there is no danger of damaging the conveyor belt.
- **Unique wear parts.** Tungsten carbide with great hardness and toughness, of our own formulation, working with a black ceramic backing. This combination delivers exceptional and long-lasting cleaning performance.
- **Toughest cleaners available.** Tecnipak manufactures the frame of our secondary cleaners in 2 ½", 3 ½", and 4" pipe. They are the toughest belt cleaners available and because they are made from stainless steel, we can guarantee their performance even in the worst conditions.
- **Pneumatic tensioners.** The tensioners share the same pneumatic circuit so they are self-compensating (if one side is more demanded, the opposite side adjusts automatically to compensate). The cleaner's adjustment is simple and because it can be narrowed down to a pressure reading, it is precise, reliable, recordable, and repeatable.
- **Remote adjustment.** The remote adjustment box can be installed in a safe place, away from the hazard zone, which allows the belt cleaner to be adjusted while the belt is running.



## SPECIFICATIONS:

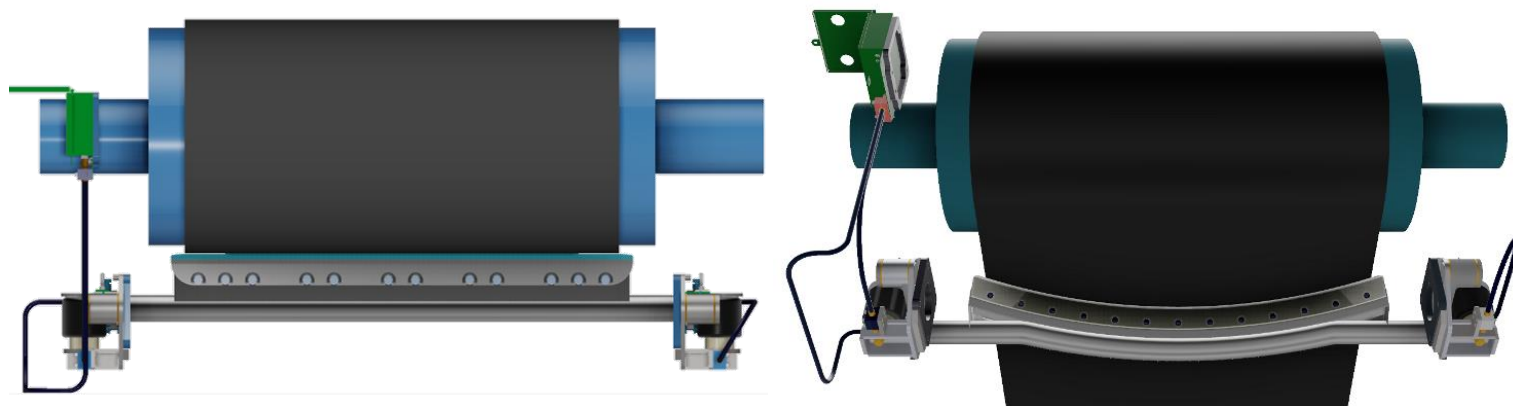
- ✓ Belt speeds up to 7,5 m/s (1.450 fpm)
- ✓ Belt widths from 600 mm up to 3.150 mm (24" up to 124")
- ✓ Pulley diameters from 400 mm up to 1.800 mm and above (16" up to 72"+)



**Watch it in action!**

# SECONDARY BELT CLEANERS

# datasheet



**WORKING PRINCIPLE.** The **secondary straight belt cleaner** is the main belt cleaning agent, and should be installed immediately after the point where the conveyor belt no longer touches the head pulley. It is at that spot that the maximum cleaning performance is achieved, while at the same time it is also the place where the removed material is most easily conveyed through the chute onto the next belt.

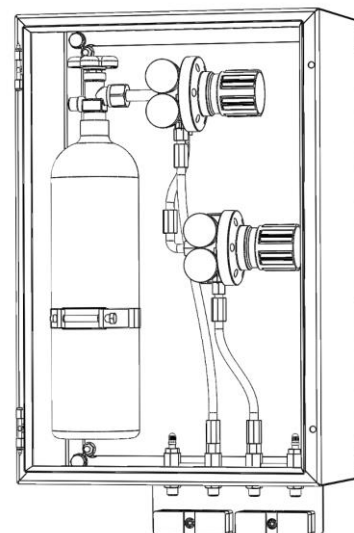
Tecnipak's secondary cleaners, through their pneumatic tension system, keep the cleaning blade in contact with the belt at all times while exerting an even, constant force against it. The pneumatic springs deliver the pressure that creates the force against the belt, and because they share the same pneumatic circuit, they are self-compensating: when the working conditions change, both sides work together to adjust to the new condition. The force that the tensioners exert on the belt is simple to calculate since it is just a function of the pressure of the pneumatic springs (as can be seen in the adjacent chart), and this makes it easy to work with the cleaner because you only need a single parameter that is recordable and repeatable to set up the cleaner. The adjustment controls are to be installed away from the hazard zone, which allows for the cleaner to be adjusted on-the-fly, even if the belt is running.

Belt width	Tare weight pressure	Recommended initial adjustment according to belt speed				
		2,0 m/s	3,1 m/s	4,3 m/s	5,6 m/s	7,0 m/s
36"	8 psi	35 psi / 135 kg	38 psi / 161 kg	44 psi / 180 kg	53 psi / 225 kg	65 psi / 288 kg
42"	10 psi	41 psi / 168 kg	46 psi / 179 kg	52 psi / 210 kg	62 psi / 263 kg	77 psi / 336 kg
48"	11 psi	47 psi / 180 kg	52 psi / 204 kg	59 psi / 240 kg	71 psi / 300 kg	88 psi / 384 kg
54"	14 psi	54 psi / 203 kg	60 psi / 230 kg	68 psi / 270 kg	81 psi / 338 kg	100 psi / 432 kg
60"	16 psi	61 psi / 225 kg	67 psi / 255 kg	76 psi / 300 kg	91 psi / 375 kg	-
63"	10 psi	35 psi / 240 kg	39 psi / 272 kg	44 psi / 320 kg	52 psi / 400 kg	64 psi / 512 kg
72"	13 psi	42 psi / 270 kg	46 psi / 306 kg	51 psi / 360 kg	61 psi / 450 kg	74 psi / 576 kg
78"	14 psi	45 psi / 293 kg	49 psi / 332 kg	55 psi / 390 kg	65 psi / 488 kg	80 psi / 624 kg
84"	15 psi	49 psi / 315 kg	53 psi / 357 kg	60 psi / 420 kg	71 psi / 525 kg	86 psi / 672 kg
96"	21 psi	59 psi / 360 kg	64 psi / 408 kg	72 psi / 480 kg	84 psi / 600 kg	102 psi / 768 kg
108"	28 psi	70 psi / 405 kg	76 psi / 459 kg	85 psi / 540 kg	99 psi / 675 kg	-
120"	30 psi	78 psi / 450 kg	84 psi / 510 kg	93 psi / 600 kg	-	-

The **secondary parabolic belt cleaner** is used on long and fast conveyor belts, where the conveyed ore sticks strongly particularly on the center of the conveyor belt cover because of the troughing angle of the idlers. Because of this, it is necessary to add an extra belt cleaner capable of performing a cleaning job focused on the center of the belt. Thanks to its parabolic shape and the pivoting motion of the tensioner, the force on the center of its blade, effectively delivering a focused cleaning job where it is most needed.

**CLEANING BLADES TECHNOLOGY.** Our standard cleaning blades are manufactured with a stainless steel body onto which the wear elements are affixed. The wear tip is made out of tungsten carbide and black ceramic: the carbide offers hardness, toughness, and guarantees a sharp edge for great cleaning quality, and the ceramic complements the carbide by increasing the contact area, which enhances durability and makes for a safer operation. Besides our standard carbide-ceramic blade, we offer other formulations such as a carbide-only blade, a ceramic-only blade, or a polyurethane-blade, the latter of which is fully manufactured in Shore 83 A hardness polyurethane, for use in belts with cover damage or mechanical splices. All of our blades are fixed to the frame with standard stainless steel bolts, for installation and removal without the need for special tools.

**PRESSURE ADJUSTMENT SYSTEMS.** Our cleaners are supplied with a remote pressure adjustment box that can serve up to two cleaners. To inflate the pneumatic tensioners, it is necessary to have either a pneumatic circuit available with sufficient pressure or a portable wireless air compressor (supplied as standard). Alternatively, we can supply a box with a high-pressure cylinder that also serves up to two cleaners, thanks to which bringing the cleaners to working pressure after maintenance is almost instantaneous. It also absorbs the small leaks inherent to every pneumatic system, thus decreasing the maintenance frequency. This system can also be connected to an online platform, so that the monitoring and operation of the scrapers can be done remotely.





# SECONDARY BELT CLEANERS

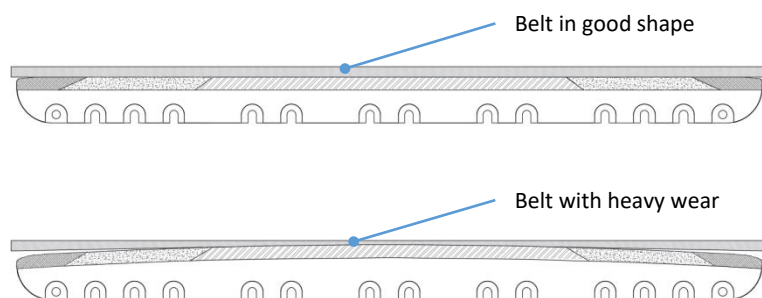
## datasheet

**ADDITIONAL ALTERNATIVES.** Tecnipak is continuously working on improving our scraper systems. We offer various alternatives to suit your particular working conditions, and we are experts in the design, development, manufacturing, and implementation of tailor-made solutions. Some of these solutions have become widely recognized by our customers, and we offer them as alternatives designed to suit specific requirements.

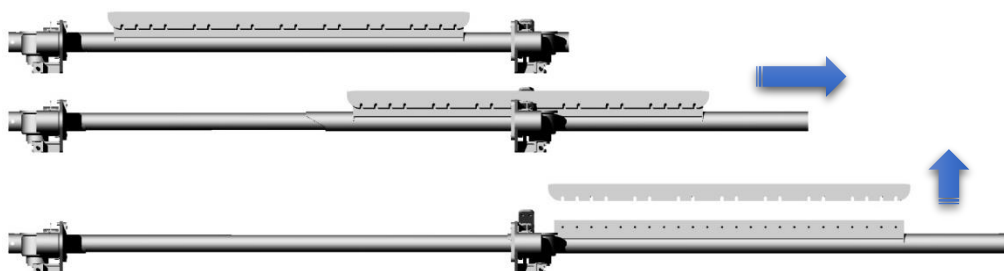
**FULLY MECHANICAL TENSIONERS.** For those customers who favor mechanical adjustment tensioners, Tecnipak has developed a **tensioner with full mechanical operation**. The frame is supported by a swing arm system which in turn slides along an ACME screw for regulation. Adjusting the tensioner is as easy as turning a nut and the swing arm system will slide up or down. The tension is delivered by a square-in-square torsional elastomer that acts both as a spring and damper, so that the scraper will not achieve resonance when it is subjected to the vibrations inherent in a conveyor system. The construction of the tensioner is in full stainless steel with the exception of the bushing of the thread, which is manufactured in brass to prevent the mechanism from getting stuck. All of the above guarantees that the tensioner is extremely reliable.



**PROFILE BLADE.** Tecnipak's standard straight blade delivers stunning cleaning quality on most conditions; however, when the lining of the head pulley is very worn, when the belt shows heavy wear on its center, or when the belt has too much "memory" and is not straight enough after going through the head pulley, the standard straight blade may have problems delivering a good cleaning. To correct this situation, Tecnipak recommends the use of a **profile blade** which compensates for these deviations, and ensures that the blade makes appropriate contact with the belt. The exact shape and rise of the profile will depend on the conditions of each conveyor system, so Tecnipak first gathers the necessary information from the conveyor system and then proceeds to make a tailored design and manufacture a specific profile blade for the application.



**SPEED-CHANGE SECONDARY SCRAPER.** For customers who value safety and efficiency, Tecnipak manufactures a **speed-change secondary scraper** that enables the customer to quickly and efficiently replace a worn blade. Designed to save time and ensure a safer operation, this equipment prevents maintenance teams from getting inside the chute to change blades, where the working conditions are harder and with greater exposure to risk. Instead, after the tension has been removed, the scraper is released and pulled from the side of the chute and slides to a safe maintenance position. This whole maneuver is carried out from outside the chute, and allows for the maintenance staff to perform a blade replacement in a comfortable and safe manner. Once the blade replacement is done, the scraper slides back into working position, is properly secured, and the tension is reapplied so that the scraper can continue its operation.



**POLYURETHANE COATING.** In places where the acidity in the conveyed ore is extreme, there is the possibility that even stainless steel does not offer adequate protection from corrosion. For these conditions, Tecnipak can coat the frames of its scrapers with a **polyurethane coating**. Thus the scraper's frame gets an additional layer of protection against acid, increasing the life span of the equipment in these adverse conditions.

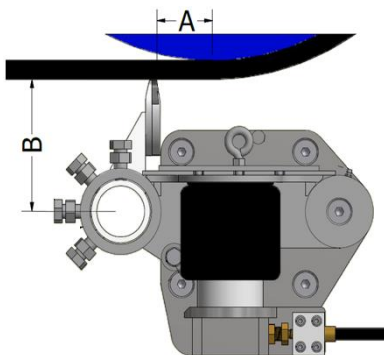


# SECONDARY BELT CLEANERS

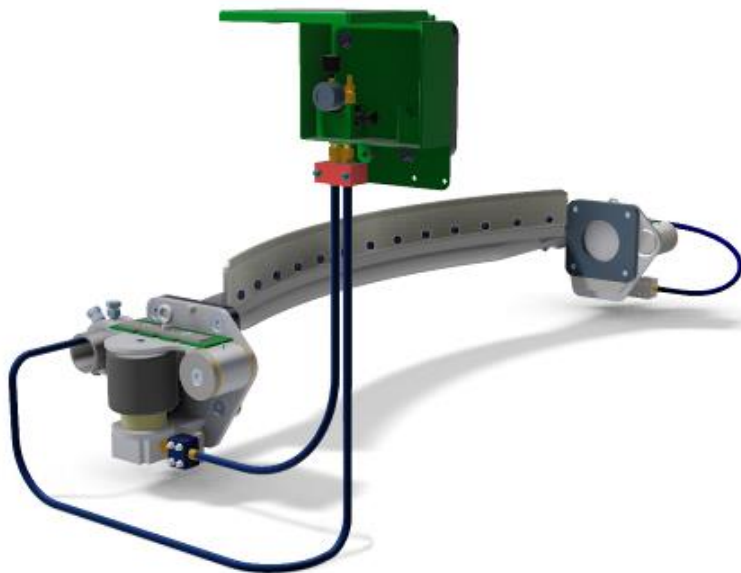
# datasheet

## Belt cleaner placement:

1. Determine the belt width.
2. Locate distances "A" and "B" from the reference table (right).
3. Identify the point at which the belt no longer touches the head pulley and from that point, measure distance "A" in the direction of the belt (a range is allowed to avoid inferences, as indicated on the table).
4. Trace distance "B" perpendicular to the belt. This is the distance between the belt cover and the axis of the frame.
5. Install the tensioner with its arm parallel to the belt, as shown.



Belt width [mm]	Distance "A" [mm]	Distance "B" [mm]
900 – 1600	40 – 120	120
1800 – 2400	50 – 150	170
2700 – 3000	60 – 180	185



STRAIGHT secondary cleaner	Secondary cleaner part number	Belt width [in]	Cleaning blade part number	Cleaning blade weight [kg]	Tensioner weight [kg]	Frame weight [kg]	Frame pipe	Standard frame length [mm]
	CSS7-090-00C	36	CTS7-090-KHX	10	53	27	2,5" SCH 40	1800
	CSS7-105-00C	42	CTS7-105-KHX	12	53	37	2,5" SCH 80	2000
	CSS7-120-00C	48	CTS7-120-KHX	14	53	41	2,5" SCH 80	2200
	CSS7-135-00C	54	CTS7-135-KHX	16	53	52	2,5" SCH 40 + 2" SCH 40	2400
	CSS7-150-00C	60	CTS7-150-KHX	18	53	61	2,5" SCH 40 + 2" SCH 40	2600
	CSS7-160-00C	63	CTS7-160-KHX	19	88	77	2,5" SCH 40 + 2" SCH 80	2800
	CSS7-180-00C	72	CTS7-180-KHX	22	88	106	3,5" SCH 80	3000
	CSS7-195-00C	78	CTS7-195-KHX	14	88	110	3,5" SCH 80	3200
	CSS7-210-00C	84	CTS7-210-KHX	26	88	121	3,5" SCH 80	3400
	CSS7-240-00C	96	CTS7-240-KHX	29	88	176	3,5" SCH 40 + 3" SCH 80	3800
	CSS7-270-00C	108	CTS7-270-KHX	32	88	230	4" SCH 40 + 3,5" SCH 80	4200
PARABOLIC secondary cleaner	Secondary cleaner part number	Belt width [in]	Cleaning blade part number	Cleaning blade weight [kg]	Tensioner weight [kg]	Frame weight [kg]	Frame pipe	Standard frame length [mm]
	CPS7-090-00C	36	CRS7-090-KHX	10	53	29	2,5" SCH 40	1.800
	CPS7-105-00C	42	CRS7-105-KHX	13	53	40	2,5" SCH 80	2.000
	CPS7-120-00C	48	CRS7-120-KHX	15	53	44	2,5" SCH 80	2.200
	CPS7-135-00C	54	CRS7-135-KHX	17	53	56	2,5" SCH 40 + 2" SCH 40	2.400
	CPS7-150-00C	60	CRS7-150-KHX	19	53	66	2,5" SCH 40 + 2" SCH 40	2.600
	CPS7-160-00C	63	CRS7-160-KHX	20	88	83	2,5" SCH 40 + 2" SCH 80	2.800
	CPS7-180-00C	72	CRS7-180-KHX	23	88	114	3,5" SCH 80	3.000
	CPS7-200-00C	80	CRS7-200-KHX	27	88	127	3,5" SCH 80	3.300

**Which blade size to use?** Each cleaner has its own blade. The length of the blade should match the width of the belt, as a shorter blade will not be able to clean the far ends of the belt and a longer blade will not wear out on its ends, which could damage the belt.

**The belt is coming out clean on one side but dirty on the other. What can I do?** Uneven cleaning is the result of the cleaner being unevenly applied on the belt. Check that the movement of the cleaner is unencumbered and that its travelling path is clear. If that does not resolve the issue, check the position of the tensioners to ensure that the belt cleaner is properly aligned.

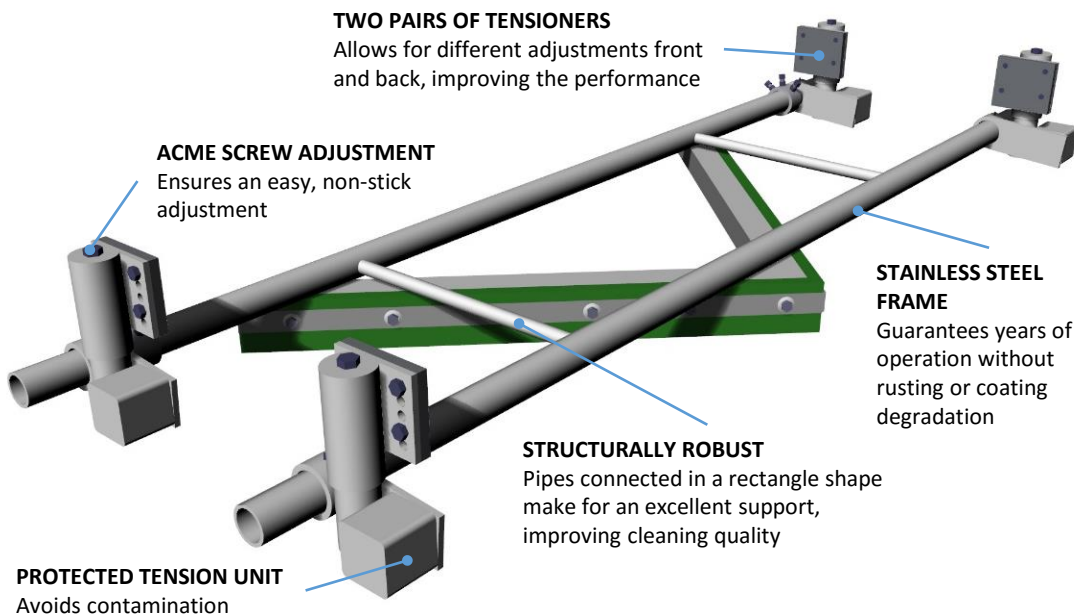
**Official dealer:**



# RETURN BELT CLEANERS



**Tecnipak's return belt cleaners** are installed immediately before the tail pulley and directly over the return belt. They operate by removing the material that has landed on the inside of the belt before it reaches the tail pulley, thereby avoiding material getting trapped between the belt and the pulley and contaminating the conveyor belt system. Thanks to their telescopic tensioners, these cleaners can be pushed directly onto the belt, which is why their cleaning quality is dramatically better than that of other return belt cleaners that only rest over the belt because of their weight.



- **Tensioning consoles.** Tecnipak's return belt cleaners have telescopic tensioning consoles that allow the cleaning blades to be applied directly onto the belt, so that they can really perform and push against the return belt for better cleaning.
- **Polyurethane blade.** The blade is made out of 83 Shore A hardness polyurethane, which has a much lower sliding resistance against the belt than blades made out of rubber that are usually used in these types of cleaners. Because of this, it is friendlier to the conveyor belt system while at the same time improving the cleaning quality.
- **Toughest cleaners available.** Tecnipak manufactures the frame of our return cleaners in 2", 2½", and 3½" pipe. They are the toughest cleaners available, and by making them in stainless steel, we can guarantee their performance even in the worst conditions.
- **Square-in-square elastomer.** The element that delivers the tension is a square-in-square elastomer that acts as a pivot point for the lever arm. This way the tensioner can absorb deviations in the operational conditions, such as splices, misalignment, and repaired belts.
- **ACME screw adjustment.** The tension consoles have an ACME threaded screw that runs on the inside of the telescopic system for adjustment. This enables it to be adjusted easily and without the need for special tools.
- **V-Plow or diagonal.** Install a v-plow cleaner for optimal performance, or a diagonal cleaner if operational conditions require the ore to be removed only towards one side of the belt.
- **All-around reliability.** Every part has been designed and developed to perform with minimal maintenance and a wide tolerance to changes in the working conditions.



## SPECIFICATIONS:

- ✓ Belt speeds up to 7.5 m/s (1,450 fpm)
- ✓ Belt widths from 600 mm up to 3,000 mm (24" up to 120")

# RETURN BELT CLEANERS

# datasheet

## Why are Tecnipak's return belt cleaners more effective?

Return belt cleaners that rest over the belt only exert a force over it because of their weight. This is not effective because the vibrations of the belt make these kind of cleaners vibrate on their own, at times separating them from the belt, which is why they let material through. In addition, they cannot remove ore that has stuck to the belt because they lack the necessary tension to do so. Tecnipak's return belt cleaners have tensioners that allow the cleaners to be applied directly against the belt, so that they can truly clean the return belt cover. This is why even if the belt vibrates, Tecnipak's cleaners will not let ore pass through and will remove ore even if the material is stuck to the belt. It is for these reasons that Tecnipak's return belt cleaners offer dramatically better cleaning quality than those from the competition.

## TELESCOPIC TENSIONING CONSOLES CHARACTERISTICS

### ALLOWS FOR THE CLEANER TO BE DISABLED

The tensioner can lift the cleaner in order to disable it if necessary

### THREE MOUNTING POSITIONS

Enables the initial positioning to be adjusted for ease of operation

### GALVANIZED BODY

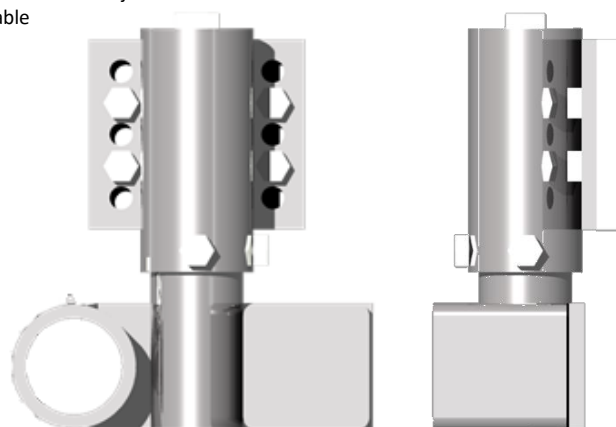
An additional paint coating is applied, providing greater resistance to chemical attack

### ACME ADJUSTMENT SCREW

Ensures an easy, non-stick adjustment

### PROTECTED TENSION ELEMENT

Avoids contamination



Return belt cleaner - V-PLOW	Return cleaner part number	Belt width [in]	Cleaning blade length [mm]	Cleaning blade part number	Cleaning blade weight [kg]	Tensioner weight (2 x cleaner) [kg]	Frame weight [kg]	Frame pipe	Standard frame length [mm]
	CIVP-070-00C	24	1,200	CTVP-120-PUA	7	13	63	1,5" SCH 80	1,400
	CIVP-085-00C	30	1,350	CTVP-135-PUA	8	13	77	1,5" SCH 80	1,600
	CIVP-100-00C	36	1,500	CTVP-150-PUA	9	13	90	1,5" SCH 80	1,800
	CIVP-115-00C	42	1,650	CTVP-165-PUA	10	20	117	2,0" SCH 40	2,000
	CIVP-130-00C	48	1,800	CTVP-180-PUA	11	20	122	2,0" SCH 40	2,200
	CIVP-145-00C	54	2,000	CTVP-200-PUA	12	20	128	2,0" SCH 40	2,400
	CIVP-160-00C	60	2,350	CTVP-235-PUA	14	40	186	2,5" SCH 40	2,600
	CIVP-175-00C	63	2,450	CTVP-245-PUA	14	40	195	2,5" SCH 40	2,800
	CIVP-195-00C	72	2,700	CTVP-270-PUA	16	40	219	2,5" SCH 80	3,000
	CIVP-225-00C	83	3,150	CTVP-315-PUA	19	40	239	2,5" SCH 80	3,200
	CIVP-255-00C	94	3,600	CTVP-360-PUA	21	84	288	3,5" SCH 40	3,400
	CIVP-285-00C	108	4,200	CTVP-420-PUA	25	84	322	3,5" SCH 40	3,600
	CIVP-315-00C	120	4,500	CTVP-450-PUA	27	84	355	3,5" SCH 40	3,800

Return belt cleaner - DIAGONAL	Return cleaner part number	Belt width [in]	Cleaning blade length [mm]	Cleaning blade part number	Cleaning blade weight [kg]	Tensioner weight (2 x cleaner) [kg]	Frame weight [kg]	Frame pipe	Standard frame length [mm]
	CIS7-105-00C	30	1,050	CTS7-105-PUA	6	20	57	2,0" SCH 80	2,000
	CIS7-120-00C	36	1,200	CTS7-120-PUA	7	20	59	2,0" SCH 80	2,200
	CIS7-135-00C	42	1,350	CTS7-135-PUA	8	40	83	2,5" SCH 80	2,400
	CIS7-150-00C	48	1,500	CTS7-150-PUA	9	40	86	2,5" SCH 80	2,600
	CIS7-165-00C	54	1,650	CTS7-165-PUA	10	40	92	2,5" SCH 80	3,000
	CIS7-195-00C	60-63	1,950	CTS7-195-PUA	11	84	117	3,5" SCH 40	3,400
	CIS7-225-00C	72	2,250	CTS7-225-PUA	13	84	157	3,5" SCH 80	3,800
	CIS7-255-00C	83	2,550	CTS7-255-PUA	15	84	168	3,5" SCH 80	4,200
	CIS7-345-00C	108	3,450	CTS7-345-PUA	20	84	195	3,5" SCH 80	5,100

**Should I choose a v-plow or a diagonal return cleaner?** The v-plow is the most efficient cleaner when it comes to protecting the tail pulley from the material that ends up on the inside of the return belt. Thanks to its V shape, the material is pushed quickly to both sides of the belt. The diagonal cleaner, on the other hand, works by pushing the material to just one side of the belt. This is an advantage when pushing the material to both sides is not an option, as can happen in underground mining, for example. So a v-plow should always be favored over a diagonal cleaner, whereas the latter should be installed if a v-plow is not an option.

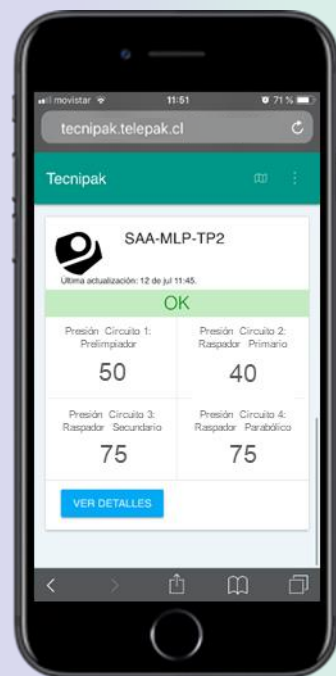
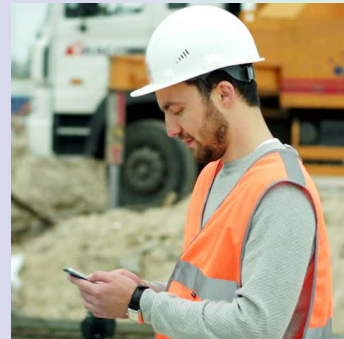
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# AUTONOMOUS PNEUMATIC CONTROL UNIT

The **autonomous pneumatic control unit** is an accessory developed by Tecnipak for the remote control and adjustment of belt scrapers with pneumatic tensioners. This system allows the operator to:

- Monitor & adjust working pressure, or remotely engage and disengage up to four belt scrapers.
- Automatically engage and disengage scrapers through an optional load sensor (intended to disengage scrapers on long, unloaded running intervals).
- Receive alerts about changes in key operating variables, to prevent emergencies.
- Keep record of the operating variables.
- Decrease the amount of time used maintaining optimal working pressure.
- Quickly assess the condition of a scraper.



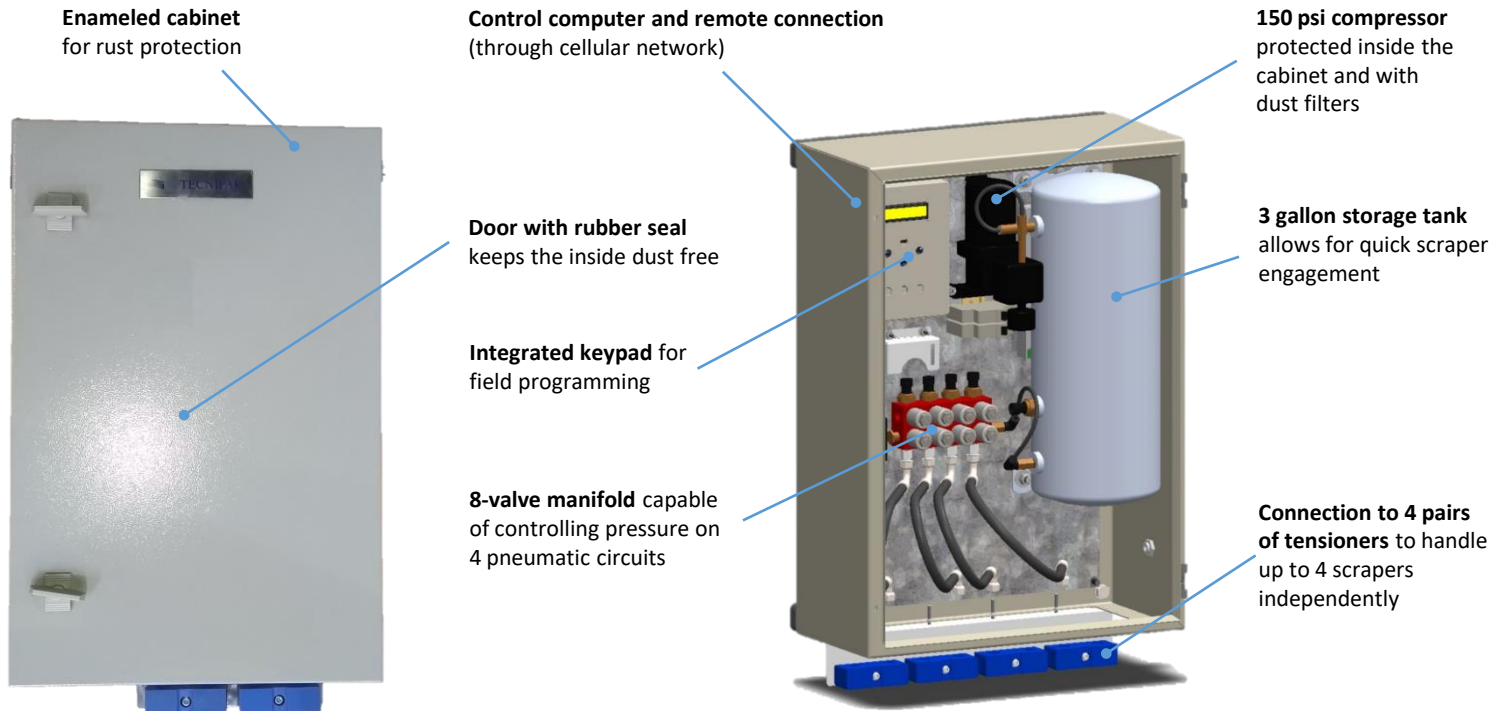
## CAPABILITIES:

- ✓ Up to 4 independent pneumatic circuits.
- ✓ Adjust the equipment on site by means of the keypad or remotely through the Telepak online platform (available separately).
- ✓ Belt load sensor to engage/disengage scrapers automatically (available separately)
- ✓ Minimize interventions in the field for greater safety.





# AUTONOMOUS PNEUMATIC CONTROL UNIT



Each autonomous pneumatic control unit allows monitoring, recording and modifying the pressure of up to 4 belt scrapers with pneumatic tensioners. Each of the 4 circuits is independent, making it possible to adjust the working pressure of each scraper separately.

Pressure can be adjusted from the console inside the cabinet or through the website [telepak.cl](http://telepak.cl), the online platform that continuously records the operating variables and the status of the connected equipment. It is also possible to set up an alert in case the variables deviate from what has been set; in such case the system triggers an alert to the user and early intervention can be adopted to prevent an emergency.

The autonomous pneumatic control unit requires electrical supply and cellular reception, but has backup systems that ensure that the cleaning of the conveyor belt remains unaffected even with intermittent signal or power failure.

In addition, the system can integrate a load sensor, which allows the scrapers to be engaged and disengaged automatically when the belt runs without load, preventing unnecessary wear.

