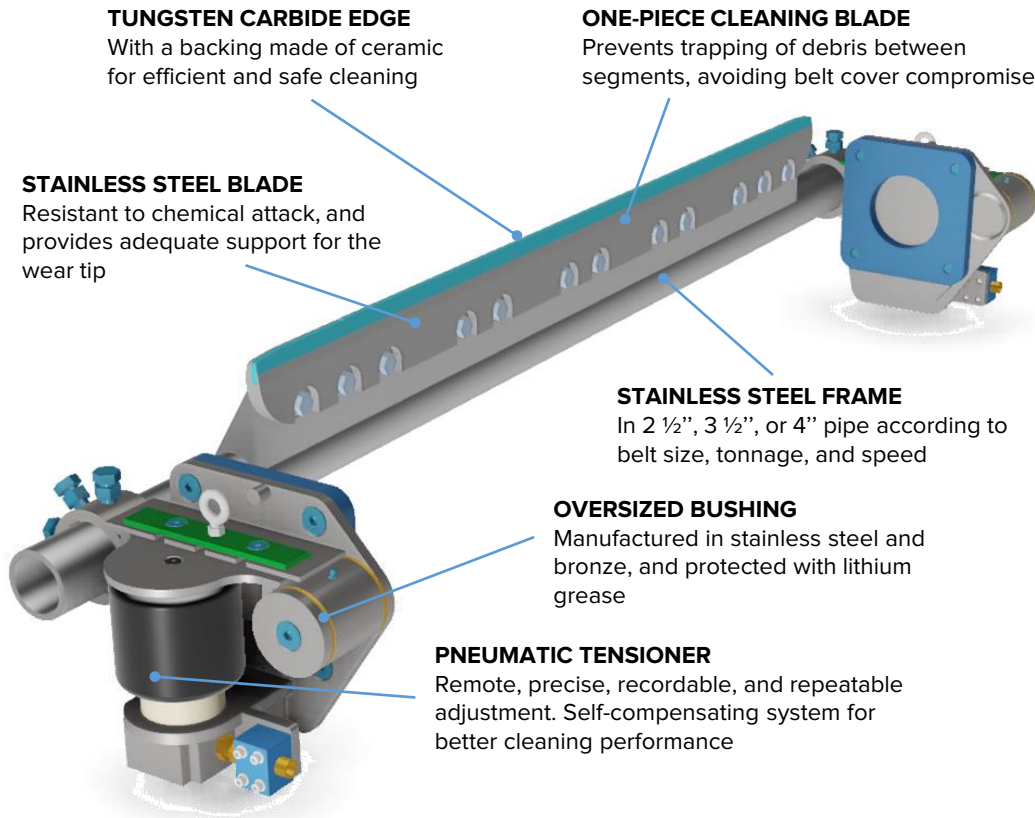


Secondary Belt Cleaner

Developed by Tecnipak, this 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. 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.
- **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.
- **High performance cleaners.** In partnership with Tecnipak, the secondary cleaner frames are manufactured in 2 1/2", 3 1/2", and 4" pipe.
- **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.

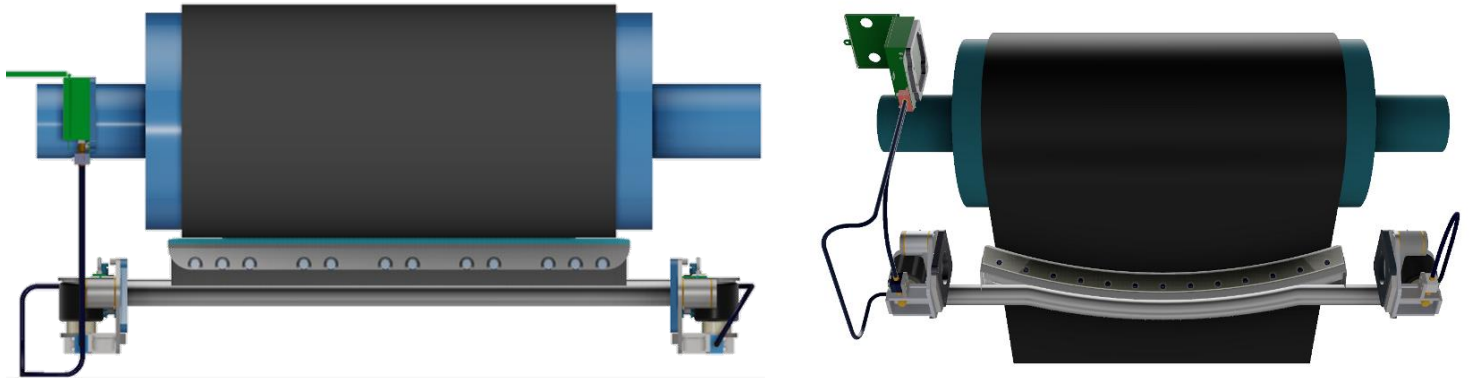
SPECIFICATIONS:

- ✓ 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 Cleaner



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.

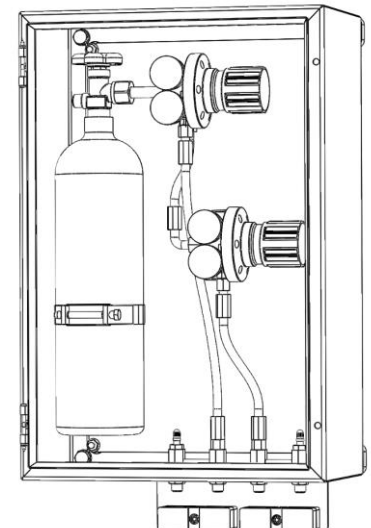
Secondary cleaners, through their pneumatic tension system, keep the cleaning blade in contact with the belt at all times while exerting an even, constant force against it. The pneumatic springs deliver the pressure that creates the force against the belt, and because they share the same pneumatic circuit, 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 centre of the belt. Thanks to its parabolic shape and the pivoting motion of the tensioner, the parabolic cleaner concentrates the force on the centre 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 ensures 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, in partnership with Tecnipak 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 Cleaner

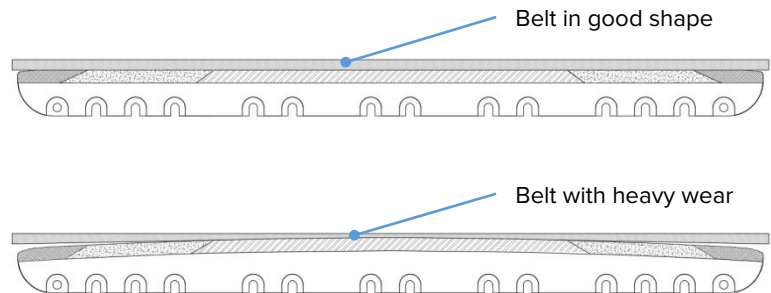
ADDITIONAL ALTERNATIVES. In partnership with Tecnipak we are continuously working on improving our scraper systems. We offer various alternatives to suit your particular working conditions, and we are experts in the design, development, manufacturing, and implementation of tailor-made solutions. Some of these solutions have become widely recognised 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, a tensioner with full mechanical operation has been developed.

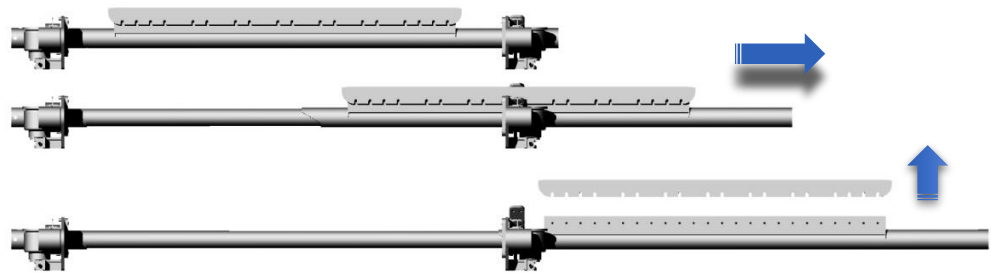
The frame is supported by a swing arm system which in turn slides along an ACME screw for regulation. Adjusting the tensioner is as easy as turning a nut and the swing arm system will slide up or down. The tension is delivered by a square-in-square torsional elastomer that acts both as a spring and damper, 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.



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, we recommend 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, Kinder in partnership with 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, Kinder in partnership with 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.



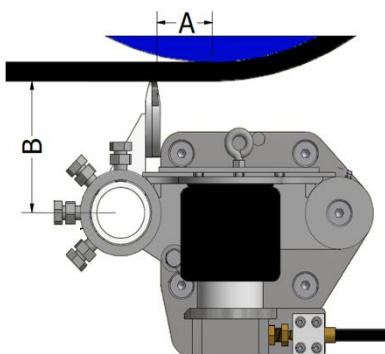
POLYURETHANE COATING. In places where the acidity in the conveyed ore is extreme, there is the possibility that even stainless steel does not offer adequate protection from corrosion. For these conditions, Kinder in partnership with Tecnipak can coat the frames of its scrapers with a polyurethane coating.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



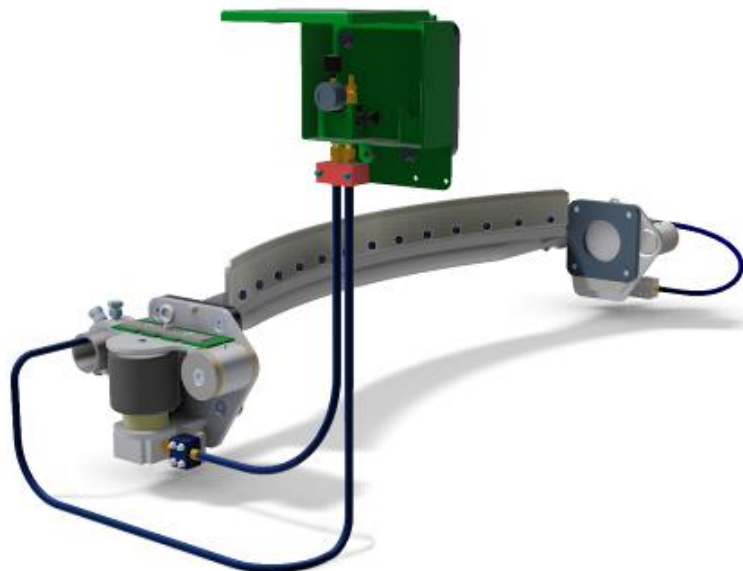
Secondary Belt Cleaner

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
	CSS7-300-00C	120	CTS7-300-KHX	36	88	254	4" SCH 40 + 3,5" SCH 80	4600
CSS7-315-00C	124	CTS7-315-KHX	38	88	266	4" SCH 40 + 3,5" SCH 80	4800	

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