

## **5 Belt Cleaners**



## **5** Belt cleaners

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### 5.1 - Introduction

The problem of conveyed material adhering to the conveyor belt, occurs frequently with wet or sticky material, resulting in frequent downtime for maintenance, and clean up, with consequent loss of production.

The problems of belt cleaning have increased in parallel with the development of conveyors of ever increasing lengths, speed and belts widths, necessary to satisfy the need to maximise load capacities.

Therefore, the use of cleaning equipment has become an indispensable requirement to assure general plant efficiency and to reduce the periods of service needed for maintenance.

There has been a notable development of this equipment in recent time for differing reasons : prolonging the life of the conveyor ; limiting the deterioration of the belt, improving the energy efficiency of the installation, reducing loss of material thereby increasing the load capacity, eliminating a major cause of wear on the return rollers.



## 5 Belt cleaners



### 5.2 - Selection criteria

The choice of a belt cleaner depends on the efficiency that is desired to obtain from the conveyor ; the material itself ; and the environmental conditions prevailing.

However the adoption of a cleaning system should be considered early in the conveyor project design phase.

It may prove to be very difficult to achieve an average degree of efficiency by retrofitting cleaning system into an existing plant ; moreover, this operation may necessitate expensive modification to the plant structure.

Where high standard of cleaning is requested, and for particularly difficult applications, it is advisable to employ more than one cleaning system combining them in a way that increases the overall system efficiency.

It is however good practice that the user scrupulously observes the function and maintenance of the cleaners in use, to assure their maximum and continuous efficiency.

The belt cleaners proposed in this catalogue may be used for each type of application. They are well known for their efficiency, for ease of installation, for their project simplicity and economy of use.

There may be irregularities on the belt surface, such as metal clips, removed or lacerated sections of parts of the belt cover layers this may create abnormal wear in the components of the chosen scraper and lead to even further irregularities as mentioned above.

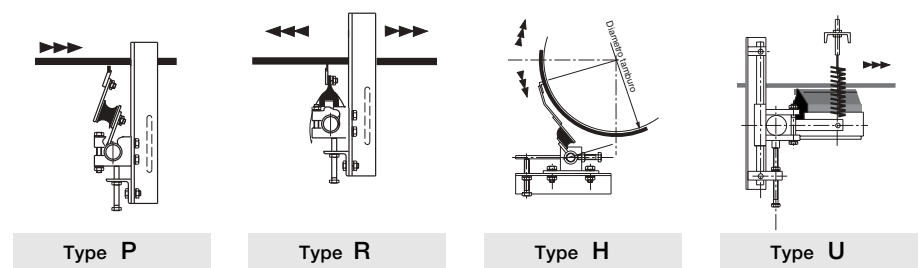
In this catalogue several different cleaners are proposed.

On request other types may be supplied other than the standard to facilitate installation and to extend the use for special applications.

### 5.3 - Programme

Cleaner type	For belt width mm	Characteristics
<b>P</b>	350 ÷ 2200	For uni-directional belts
<b>R</b>	350 ÷ 2200	For reversible belts
<b>H</b>	350 ÷ 2200	For reversible belts and tangential applications
<b>U</b>	350 ÷ 2200	For uni-directional belts

On request belt widths larger than those indicated or for special applications may be supplied.



## 5 Belt cleaners series P



### 5.3.1 - Belt cleaners series P for uni-directional belts

The proposed cleaner is a blade of multiple scrapers mounted on an intermediate flexible support which allows the blade an independent movement and assures a continuous and efficient cleaning of the belt.

They are principally applied to the removal of wet or sticky material in belts with a single movement direction.

#### Characteristics and indications of use:

The cleaners, series P, are characterised by scraper components (TIPS) attached to flexible and very resistant rubber components mounted onto a tubular frame.

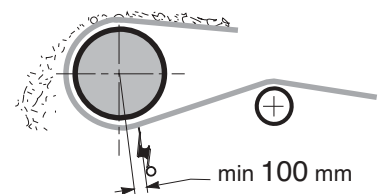
These supports, which act as anchors for the scrapers, give the correct balance between the frictional force and the necessary force needed to remove the residual scale on the belt surface.

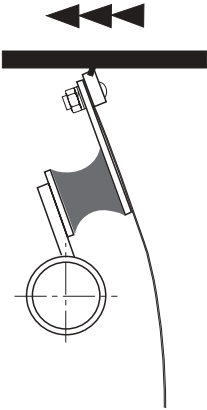
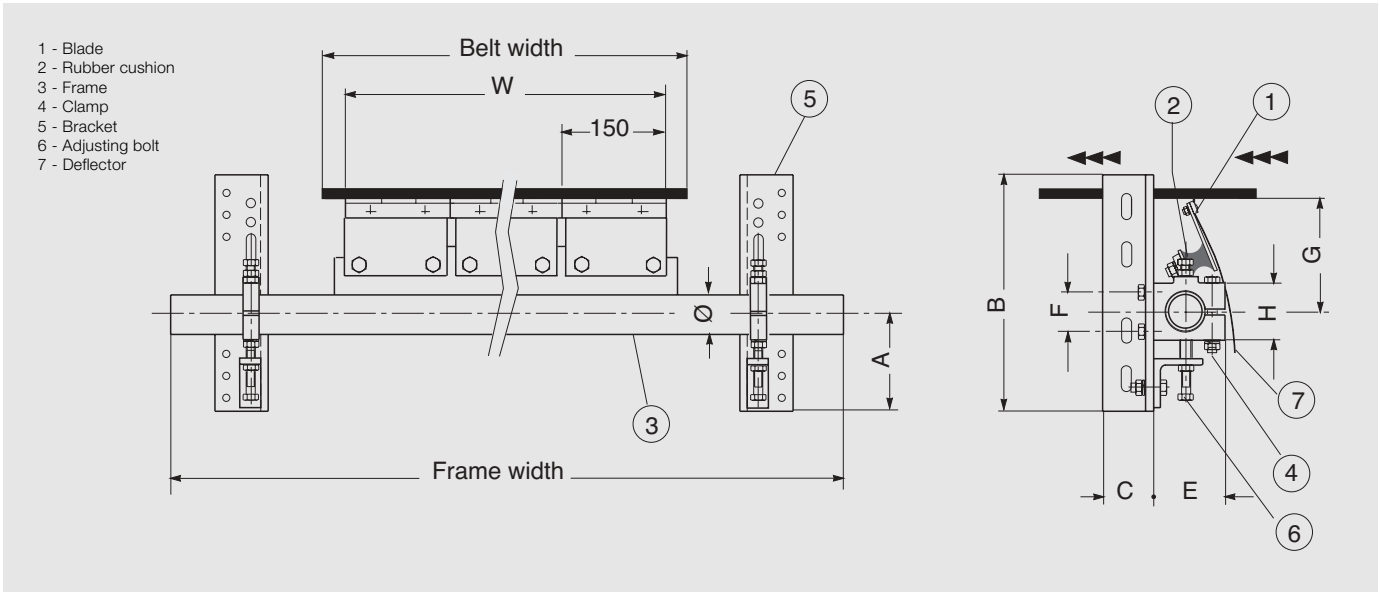
For its correct function the pressure of blade application is very low. It is however possible to control it by changing the position of an opposing screw from the moveable support onto the support frame.

These cleaners, especially because of their simplicity of construction, may be installed very easily with extremely controlled service and maintenance costs.

The excellent quality of the material used and the strength of the components, sized to meet overload conditions, lead to an assurance of prolonged and efficient life.

In addition to the standard types, special versions may be supplied for food or chemical environments.





Belt Cleaner type	Width belt mm	Tips n.	W mm	Width frame mm	A		B	C	Ø	E	F	G	H	Weight Kg
					min.	max.								
<b>P</b>	<b>300/400</b>	2	300	900										20
	<b>450/500</b>	3	450	1050										25
	<b>600/650</b>	4	600	1200										30
	<b>750/800</b>	5	750	1350										35
	<b>900/1000</b>	6	900	1550	120	200	320	70	54.0	98	56	154	80	40
	<b>1050</b>	7	1050	1700										44
	<b>1200</b>	8	1200	1900										48
	<b>1400</b>	9	1350	2100										54
	<b>1500/1600</b>	10	1500	2350										62
	<b>1800</b>	12	1800	2600										75
	<b>2000</b>	13	1950	2800	152	232	400	80	76.3	120	70	165	100	100
	<b>2200</b>	14	2100	3100										110

On request different dimensions to W as indicated may be supplied.

**Example of ordering**

Cleaner type P, 800



## 5 Belt cleaners series R



### 5.3.2 - Belts cleaners series R for reversible belts

This type of cleaner has been developed to function with reversible belts.

Its arrangement of multiple scraper blades of straight forward construction, is unique of its type, resulting in excellent efficiency.

#### Characteristics and indication of use

The characteristics of the cleaner series R is also that it uses a tubular member, with scraper blade components positioned on its structure and fixed between intermediate rubber supports as in the series P.

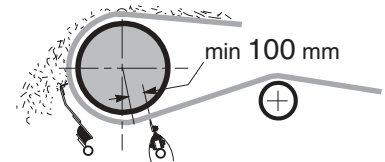
The rubber components are cleverly profiled and allow the application of the scraper blades on both senses of rotation Fig. A.

The blade may then flex in both directions without damaging or promoting damage to the belt in case of unforeseen pressures.

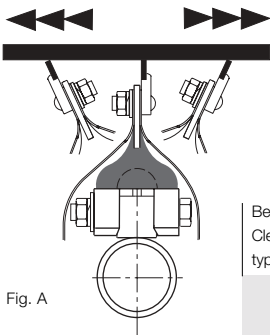
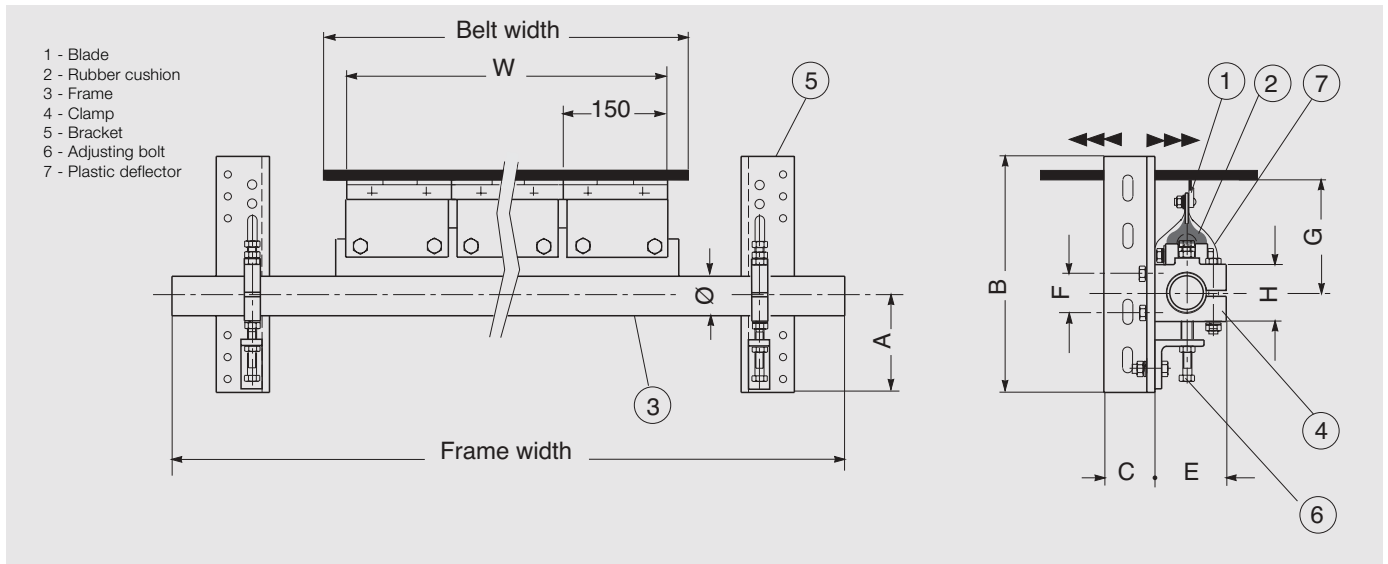
The scraper blade is positioned perpendicular to the belt which is different to that of the position of belt cleaner P.

The most important factors for the efficient system function are the correct installation and the precise regulation of the belt cleaner.

These instructions are described in a related booklet attached to the cleaner itself on delivery.







Belt Cleaner type	Width belt mm	Tips n.	W mm	Width frame mm	A		B	C	Ø	E	F	G	H	Weight Kg
					min.	max.								
<b>R</b>	<b>300/400</b>	2	300	900										20
	<b>450/500</b>	3	450	1050										25
	<b>600/650</b>	4	600	1200										30
	<b>750/800</b>	5	750	1350										35
	<b>900/1000</b>	6	900	1550	120	200	320	70	54.0	98	56	145	80	40
	<b>1050</b>	7	1050	1700										44
	<b>1200</b>	8	1200	1900										48
	<b>1400</b>	9	1350	2100										54
	<b>1500/1600</b>	10	1500	2350										62
	<b>1800</b>	12	1800	2600										75
	<b>2000</b>	13	1950	2800	152	232	400	80	76.3	120	70	156	100	100
	<b>2200</b>	14	2100	3100										110

On request different dimensions to W as indicated may be supplied.

**Example of ordering**

Cleaner type R, 1200

## 5 Belt cleaners series H



### 5.3.3 - Belt cleaners series H for reversible and uni-directional belts for tangential applications

This cleaning device has been developed principally as a scraper, capable of removing the majority of residual material from the belt surface.

The complete system of cleaning the belt may be made by utilising successive cleaners, chosen for example, from the range in series P or R.

May be installed where it is not always possible to install other types.

#### Characteristics and indications of use

The belt cleaner series H, has similar characteristics to the preceding series, in using a tubular member. The multiple scraper blades are positioned on this structure and themselves fixed by means of supporting arms proportional in size to the diameter of the drum and anchored finally in rubber supports.

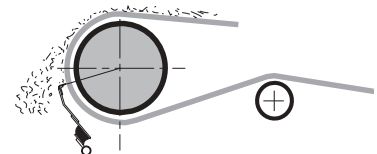
The construction characteristic of the system, allows in this case the use of extremely low functional pressure, precisely controlled by means of an appropriate regulating screw.

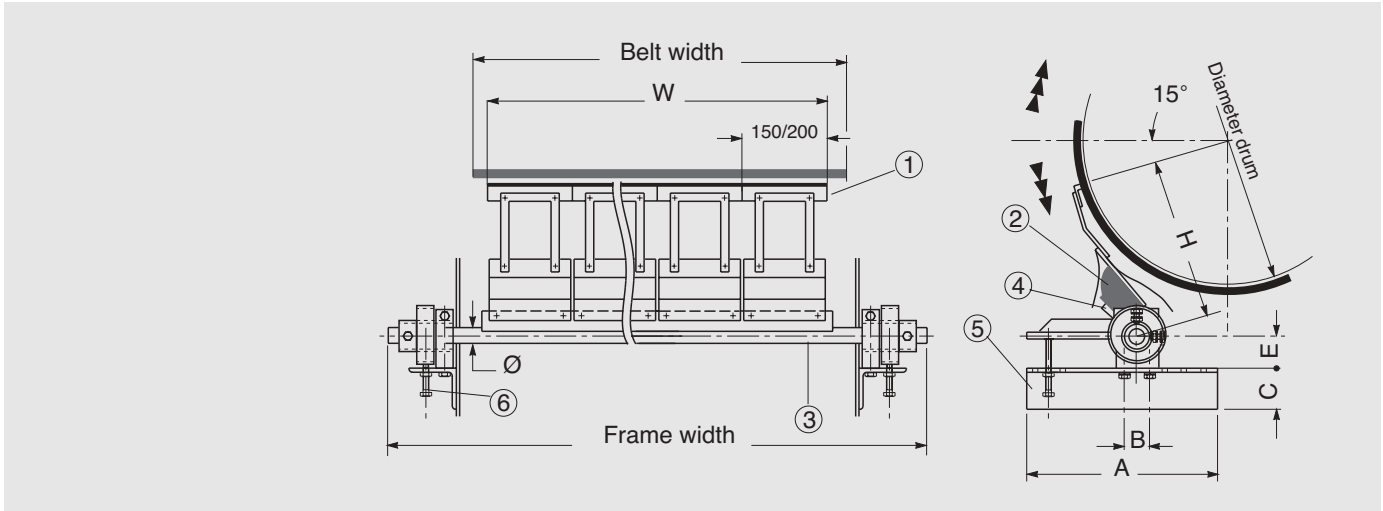
The belt cleaner employs a tangential action and is therefore applied to the external front part of the pulley.

It is then engaged in the task of cleaning the belt on the pulley using a perpendicular or square application.

The simplicity of design of this series assures excellent function over time and economies are found both in management costs and the consequent reduction of labour costs involved in maintenance.

May be easily installed on the belt conveyor structure, reversible, to suit extendible and other types of conveyors.

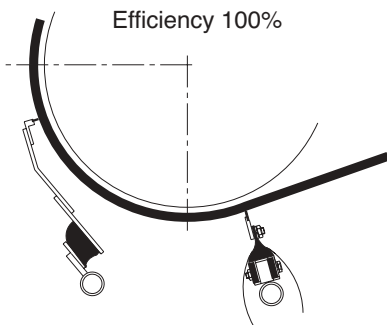




- 1 - Scraper tips
- 2 - Rubber cushion
- 3 - Frame
- 4 - Clamp
- 5 - Support
- 6 - Regulating screw

Cleaner type	Width belt mm	Tips mm	n.	W mm	Width frame mm	A	B	C	Ø	E	Weight Kg
H	300/400	150	2	300	1000	320	56	70	54.0	60	23
H	450/500	150	3	450	1000	320	56	70	54.0	60	25
H	600/750	200	3	600	1300	320	56	70	54.0	60	30
H	800/900	200	4	800	1500	320	56	70	54.0	60	35
H	1000/1050	200	5	1000	1650	320	56	70	54.0	60	45
H	1200	200	6	1200	1900	320	56	70	54.0	60	60
H	1400/1500	200	7	1400	2150	320	56	70	54.0	60	75
H	1600	200	8	1600	2300	320	56	70	54.0	60	90
H	1800	200	9	1800	2600	320	76	70	76.3	60	105
H	2000	200	10	2000	3000	320	76	70	76.3	60	120
H	2200	200	11	2200	3200	320	76	70	76.3	60	135

On request different dimensions to W as indicated may be supplied.



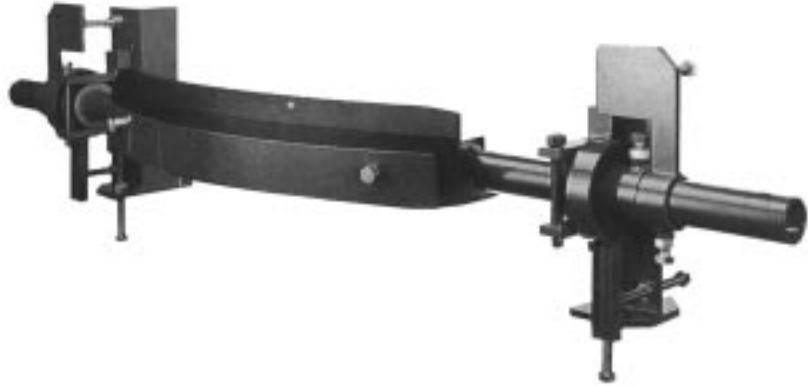
To order belt cleaner series H it is necessary to complete the type code with a model code which relates to the diameter of the pulley using the following table.

Cleaner type	Model	Pulley Ø mm	H mm ~
H	SS	less than 500	270
H	S	500 ÷ 800	330
H	M	700 ÷ 1100	390
H	L	1000 ÷ 1200	420
H	LL	greater than 1200	520

**Example of ordering**

Cleaner type HS, 1000

## 5 Belt cleaners series U



### 5.3.4 - Belt cleaners series U patented for uni-directional belts

Awareness of improved savings by utilising belt cleaning systems has resulted in requests for simplified equipment but with ever increasing efficiency.

The conception of this proposed cleaner is certainly revolutionary.

#### Characteristics and indications of use:

The cleaner type U is characteristic of a new patented technology.

It consists of a series of carbon steel blades, welded to a flexible rubber support. The assembly constitutes a unique scraper blade, inserted into a strong structural arc mounted on special bearings.

Although there is vertical regulation, the system is under spring pressure which acts to rotate the curved structure as a whole. The pressure of the blade is therefore stronger at the centre. The pressure is however controlled by a regulating screw.

The cleaning effect is therefore correspondingly higher in the central part, where there is normally the most residue of material to remove, and becomes less as it decreases towards the edge.

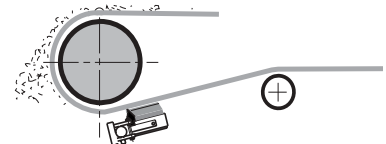
In this way the scraper is acting at its most efficient where the areas of high wear are normally encountered on the blade and the belt.

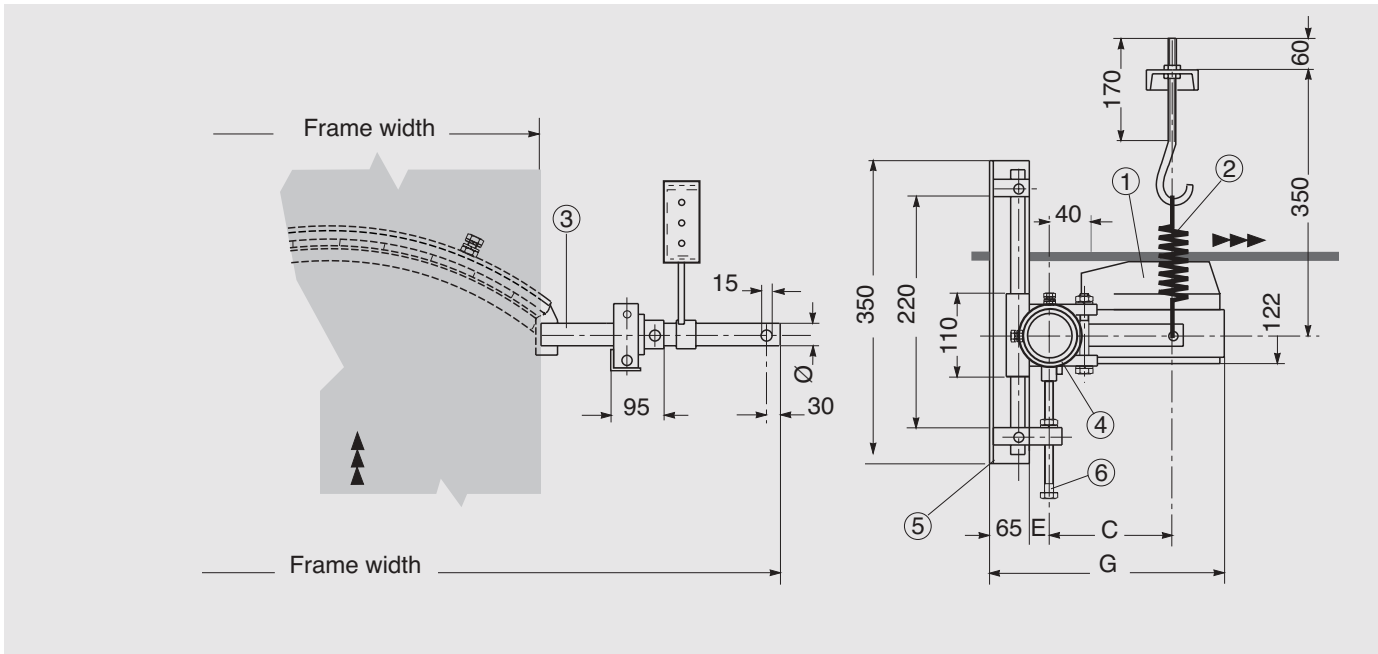
Thanks to the scraper and unique blade being formed into an arc the material that is removed has no tendency to build up or to block the cleaning action itself.

The scraper blade is the only replaceable component that will exhibit wear in time. It is easily and rapidly replaced without further disassembly of the scraper insitue.

This type of universal belt cleaner is particularly recommended to be used on high speed uni-directional conveyor belts, when the conveyed material is very wet and sticky.

Even greater belt cleaning performance may be obtained by using this cleaner linked with cleaner series H.





- 1 - Scraper blade
- 2 - Tension spring
- 3 - Frame
- 4 - Clamp
- 5 - Support
- 6 - Regulating screw

Cleaner type	Width belt mm	Width frame mm	C	Ø	E	F	G	Weight Kg
U	350	1000	130	42.7	30	134	229	25
U	450	1100	130	42.7	30	134	229	27
U	500	1200	130	42.7	30	134	229	28
U	600/650	1300	130	42.7	30	159	254	30
U	750/800	1500	130	48.6	30	184	279	32
U	900	1700	130	48.6	30	184	279	34
U	1000	1800	130	48.6	30	215	310	38
U	1050	1900	130	48.6	30	215	310	41
U	1200	2100	160	60.5	38	240	343	47
U	1400	2300	160	60.5	38	240	343	50
U	1500	2400	160	60.5	38	240	343	55
U	1600	2500	160	60.5	38	246	357	60
U	1800	2700	160	76.3	46	246	357	67
U	2000	3100	160	76.3	46	246	357	70
U	2200	3300	160	76.3	46	246	357	73



**Example of ordering**

Cleaner type U, 1400



**5 Belt  
cleaners  
series PLG  
VLG - VLP**

**5.3.5 - Simple plough cleaners**

The most economic of cleaners with a scraper made of anti-abrasive rubber. The cleaners are applicable to light belts where the economies in the working conditions are of fundamental importance. Proposed therefore for belt widths from 400 up to 1200 mm.

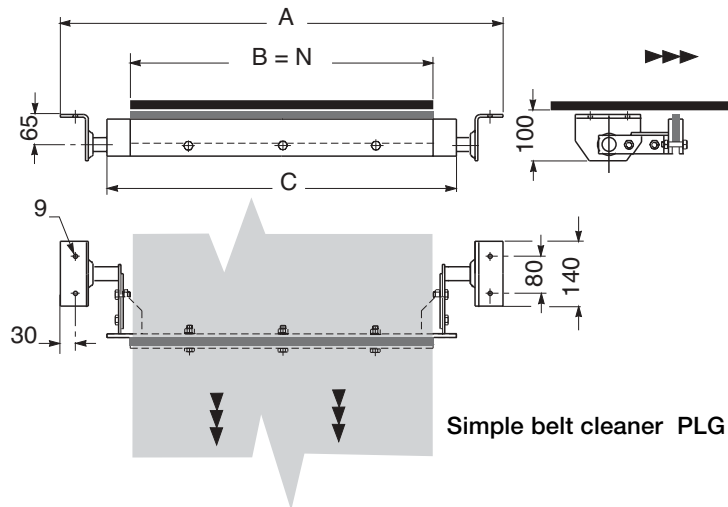
**Simple belt cleaner type PLG**

Comprises a steel structure in which is positioned a blade of anti-abrasive rubber (60 shore) of thickness 15 mm.

Considering the effect of pressure exercised on the belt, this cleaner should be supplied at the time of conveyor installation.

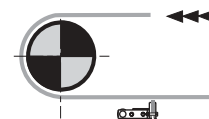


The cleaner PLG is for belt widths of 400, 500 and 650 mm. To be installed near to the drive drum.



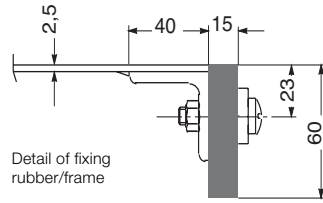
Simple belt cleaner PLG

Width belt mm	A	B	C
400	700	400	500
500	800	500	600
650	950	650	750

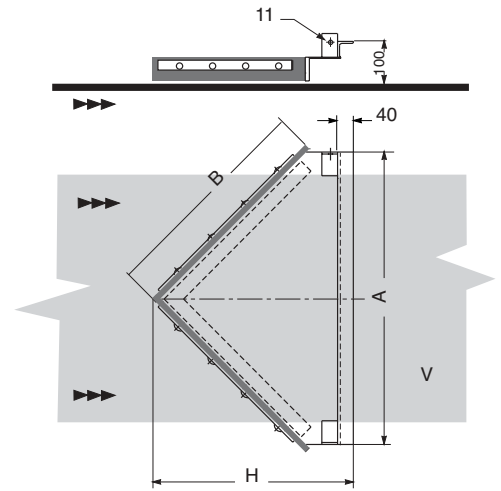
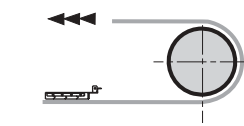


**Example of ordering**

Cleaner type PLG, 400



Detail of fixing rubber/frame



Width belt mm	A	B	H
400	500	350	360
500	600	420	410
650	740	525	480

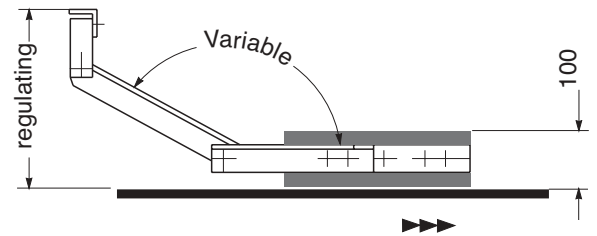
**Belt plough cleaner type VLG - VLP**

This is a system applied to the internal side of the return belt adjacent to the return drum.

Any residual material is deviated and removed by the effective action effect of the "V" design just before it reaches the belt terminal drum.

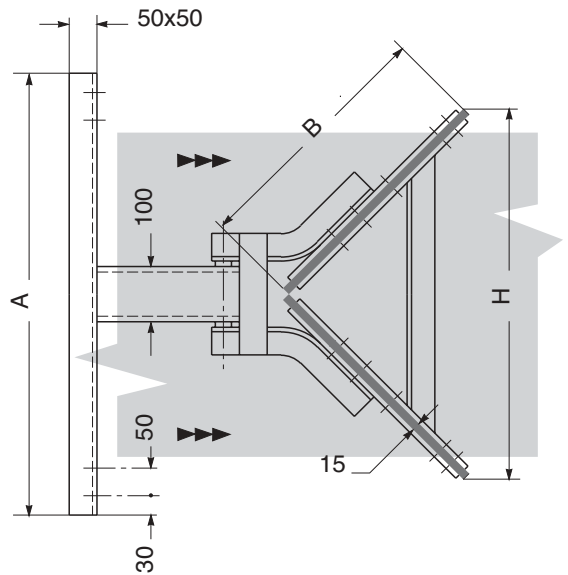
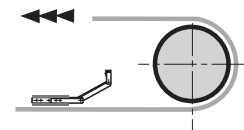
The plough, standard model type VLG, and the pressure regulating version type VLP for heavy applications meet direct customer needs for specific uses.

The belt plough cleaner must be installed at the terminal end to the belt near to the return drum, with the plough positioned in the opposite sense to the direction of movement of the belt.



Width belt mm	A	B	H
800	1100	600	850
1000	1300	750	1060
1200	1550	1030	1260
1400	1750	1030	1460
1600	1950	1170	1660

Plough cleaner type VLP



**Example of ordering**

Cleaner type VLG, 500  
VLP, 650

