

Glass cloth impregnated with TFE for conveyor belts

Identification code for conveyor belts

Standard types of glass cloth impregnated with TFE normally used for special conveyor belts are listed below. The use of these materials is essential in any cases where normal conveyor belts are not capable to carry out simultaneously the required functions of conveyance and work either at temperatures very different from the ambient or in the presence of substances and/or gases associated with a particular treatment.

The following table indicates, for each type, the appropriate weight and the breaking strength, as supplied by the manufacturers.

Special glass cloth impregnated with TFE for conveyor belts

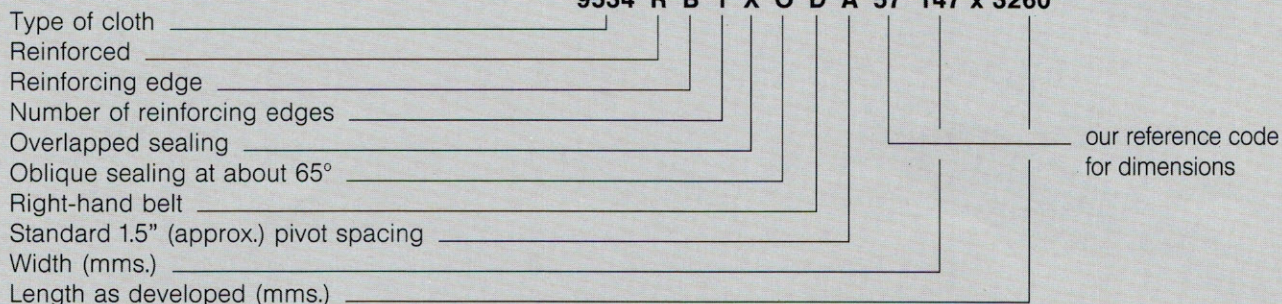
Type	Nominal thickness		Approx. weight gr/m ²	Breaking strength ASTM
	mils	mms.		
3534	3	0,076	146	70
4534	4	0,101	197	120
6534	5	0,127	216	120
9534	6	0,152	260	120
2634	8	0,202	374	250
4634	10	0,254	487	250
9634	14	0,355	525	350
1734	15	0,381	785	250
4734	16	0,404	-	-
7734	18	0,457	-	-
9734	20	0,508	-	-
6834	22	0,558	-	-
0934	25	0,635	769	-
6934	27	0,685	922	-



For the exact identification of the type of conveyor belt, its construction and dimensions it has now been in use for years an alphanumeric code which is recorded on the whole documentation and is memorized by the computer.

For example:

9534 R B 1 X O D A 57 147 x 3260



Technicians are kindly asked to refer, in compiling their requests for supply, to the above type of coding; this will avoid errors and will permit us to furnish exactly the same characteristics at subsequent supplies.

Conveyor belts for special applications



The conveyor belts shown on this page find irreplaceable application whenever it is necessary to convey articles or materials in a solid or plastic form which, due to their nature or in consequence of physical transformations in-being, may, whilst being conveyed, tend to adhere to the conveyor belt itself. Very satisfactory results have been obtained in those cases where the articles being conveyed were to be subjected, during their transport, to a treatment such as a drying process, dehydration, cooking, refrigeration, sintering, vulcanization, fusion, etc.

These belts are normally produced in dimensions which can reach 2500 mms. in width and 25 to 30 mts. in length.

Belts for this specific application consist of a special glass cloth either impregnated or coated with TFE which guarantee a clean transport because of their particular antistick properties. The repellent nature of TFE does not allow that the belt retains any particles of the article conveyed; in addition, because of their good thermal conductivity, these belts are widely employed as heat-sealing conveyors in the automatic packaging machines.

The photograph shows a few examples of conveyor belts of normal production for the manufacture of which cloths of different weft, thickness and width were used. Thicknesses may range from a minimum of 0,076 mms. to a maximum of 0,685 mms. approx.; for greater thicknesses it is necessary to resort to belts of composite type which can be supplied on request.

For special applications we can supply belts closed into ring-shape without double thickness in way of the joint.

Belts may be prepared in any width and length; the type of splicing for the two ends varies depending not only on the service requirements but also on the type of machine, on the size of the belt, etc.

Belts of a certain size are reinforced at their edges by sealing an extra thickness of PTFE, particularly when, as in some cases, they are intended to be fitted either with positioning pivots or with fastening holes.

The table on page 4 indicates the type of cloth commonly available for supply together with the relevant references and identification codes.

Our Technical Office is at disposal of the Clients for providing more detailed information as necessary.



Conveyor and sealing belts in TFE coated with positioning pivots

The conveyor belts described in this page are made in most cases of the same fabrics as shown in the table on pag 4. They are however provided with special pivots which ensure the constant alignment of the belt in its operating position even if working in a position other than horizontal.

The tapes shown in the photograph operate usually both as conveyor and sealing belts. Sealing of thermosealable film wrappers takes place by means of heating plates, the TFE layer guaranteing an easy detachment of the sealed film; this detachment is accelerated by refrigerating plates in sequence to the heating plates. Fig. 1 shows the technique adopted for the simultaneous sealing of the two opposite ends of the wrappers.

When thin fabric is used or significant mechanical stresses are involved, the belt is edge reinforced as can be seen in some conveyor belts shown on the photograph.

Conveyor belts, which are shaped as endless belts, are normally tensioned by spring-loaded cylinders as shown in fig. 2.

The use of cylinders with convex profile or retaining side flanges is discouraged as it may result in an early deterioration of the belt.

When heat-sealing belts are imposed also with the onerous action of conveying one or more articles and tend to slip on the driving cylinder, it is suggested that the new belts illustrated on page 10 be adopted.

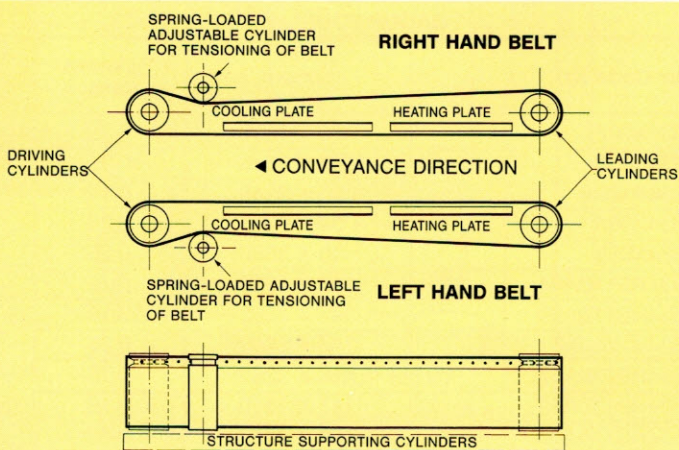


Fig. 1

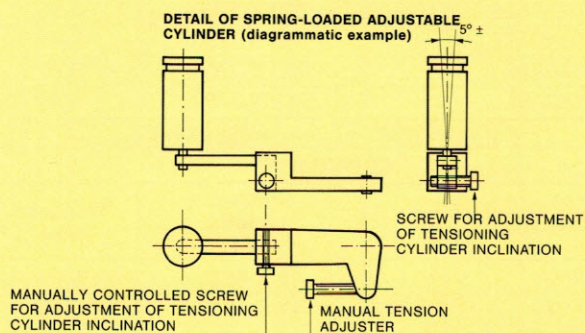


Fig. 2

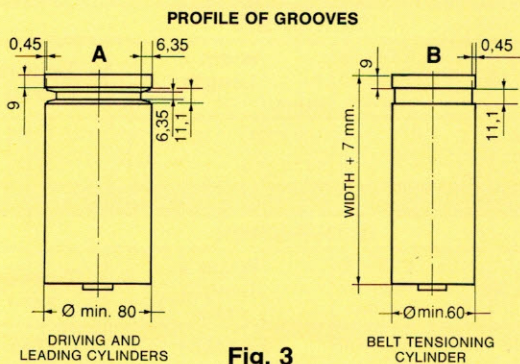


Fig. 3

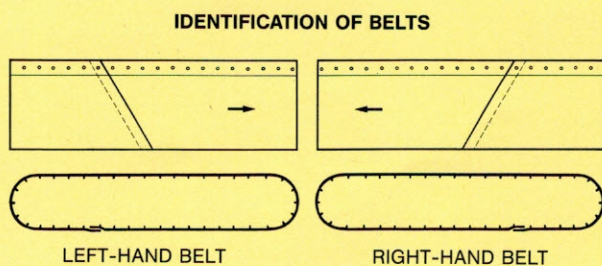
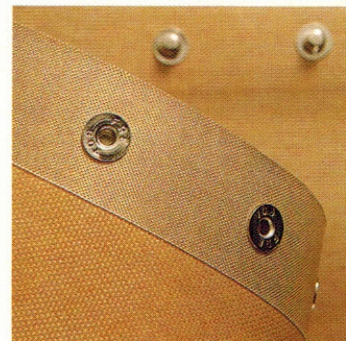


Fig. 4

The pivots match into suitable grooves made in the pulleys (see Fig. 3A & B) or, if necessary, in tracking guides pre-arranged on the machine.



Endless conveyor belts are usually supplied except when the machine structure or the type of production does not permit their assembly; in such cases opening type splices are adopted and these are arranged whilst manufacturing the conveyor belts. Designers are however advised to adopt, as far as practicable, seamless bonded belts as they ensure a more uniform conveyance, a continuous surface and a longer belt life.

Of course machines will have to be suitably designed to allow the assembly and replacement of endless belts.

When conveyor belts operate in pairs, as shown in Fig. 1, they are sealed with different overlaps so that the edge of the seams does not foul the heating or refrigerating plates. The right hand and left hand belts will then be identifiable as shown in Fig. 4.

It is pointed out that incorrect positioning of the belts will result in a considerably shorter belt life.

Designers are recommended to give particular attention to the correct calculation of the springs to be employed in the tensioning devices (fig. 2).

Sealing belts represent in all automatic packaging machines the key point of the entire system as the satisfactory output of the machine depends entirely on their correct operation. Particular care shall therefore be given to the correct distribution of stresses imposed on the belts.

The experience we have acquired in more than 20 years of production of reinforced belts with positioning pivots and in having followed closely the activity of both the manufacturers of automatic packaging machines and their direct users, also the fact of having on several occasions observed the delicate points associated with this solution, have enabled us to create a new type of belt of very sound conception which is illustrated on page 10 of this catalogue.

For standard dimensions of the belts produced for all the machines at present available on the market, please refer to the following page.

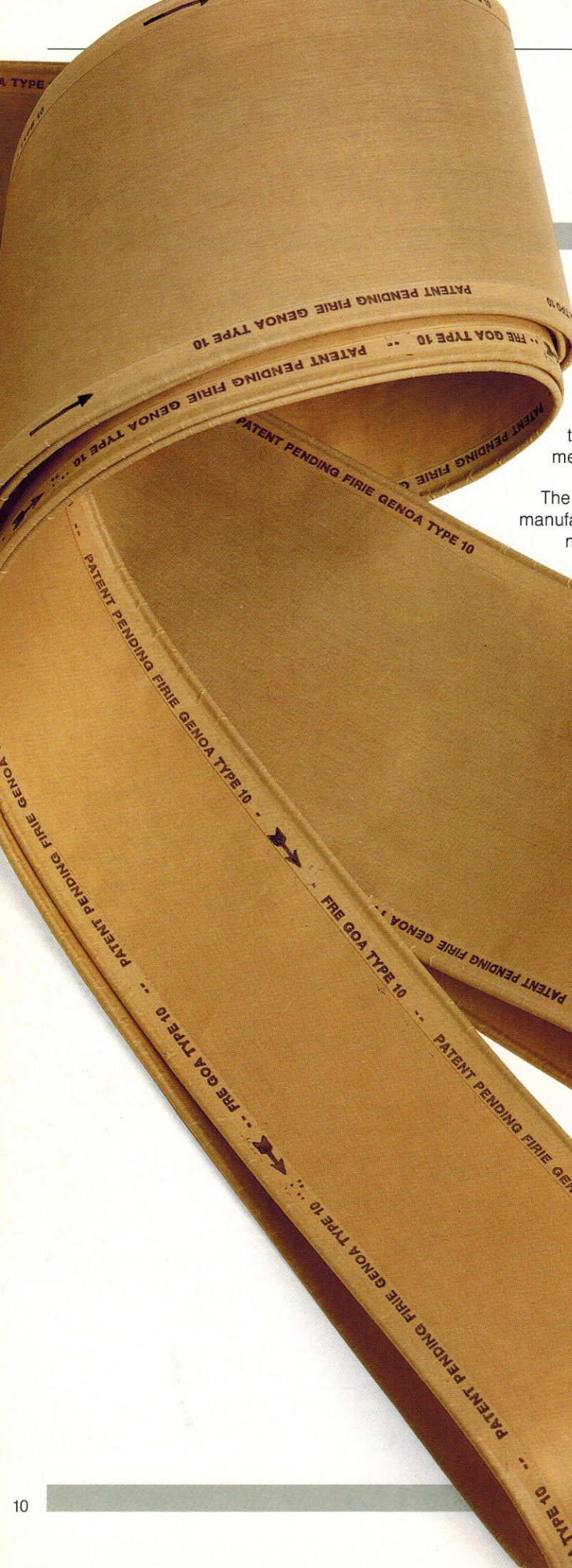
Belts of new design in PTFE (for automatic Packaging machines)

With the progress of packaging techniques, it has emerged that the success of a system for heat-sealing wrappers by means of a conveyor and/or sealing belt in TFE impregnated glass cloth, through which the heat is transmitted to the thermosealable wrapper, depends mainly on its capacity to carry out the sealing process in the shortest possible time. It is this time that rules normally the production speed of the machine and, consequently, measures the degree of efficiency of the system.

The long experience which our firm has built up with the manufacture of the traditional belts for the designers of the machines and then following the performance of these machines at the firms of numerous users both in this country and abroad, has enabled us to study and to finalize the design of a new type of belt which is unique in its kind.

The new belts are characterized by an enlarged guiding bead specially created on both longitudinal edges of the belt by folding over these edges transversely and then sealing same in such a manner as to create a tubular cavity along each longitudinal edge for accomodating a coiled steel wire. These belts, suitably closed into ring-shape by appropriate systems, have the fundamental advantage of being self-guiding in an absolutely balanced manner as the very consequence of the double reinforcement and guide track. They offer the following additional advantages:

- 1) The total absence of metallic positioning pivots eliminates the necessity of creating calibrated grooves in all the cylinders which come in contact with the belt.
- 2) The double longitudinal reinforcement, in addition to fulfilling the necessary function of a balanced guide, allows the use of thinner cloth to the full advantage of the sealing process and of its speed.



TFE) impregnated glass cloth

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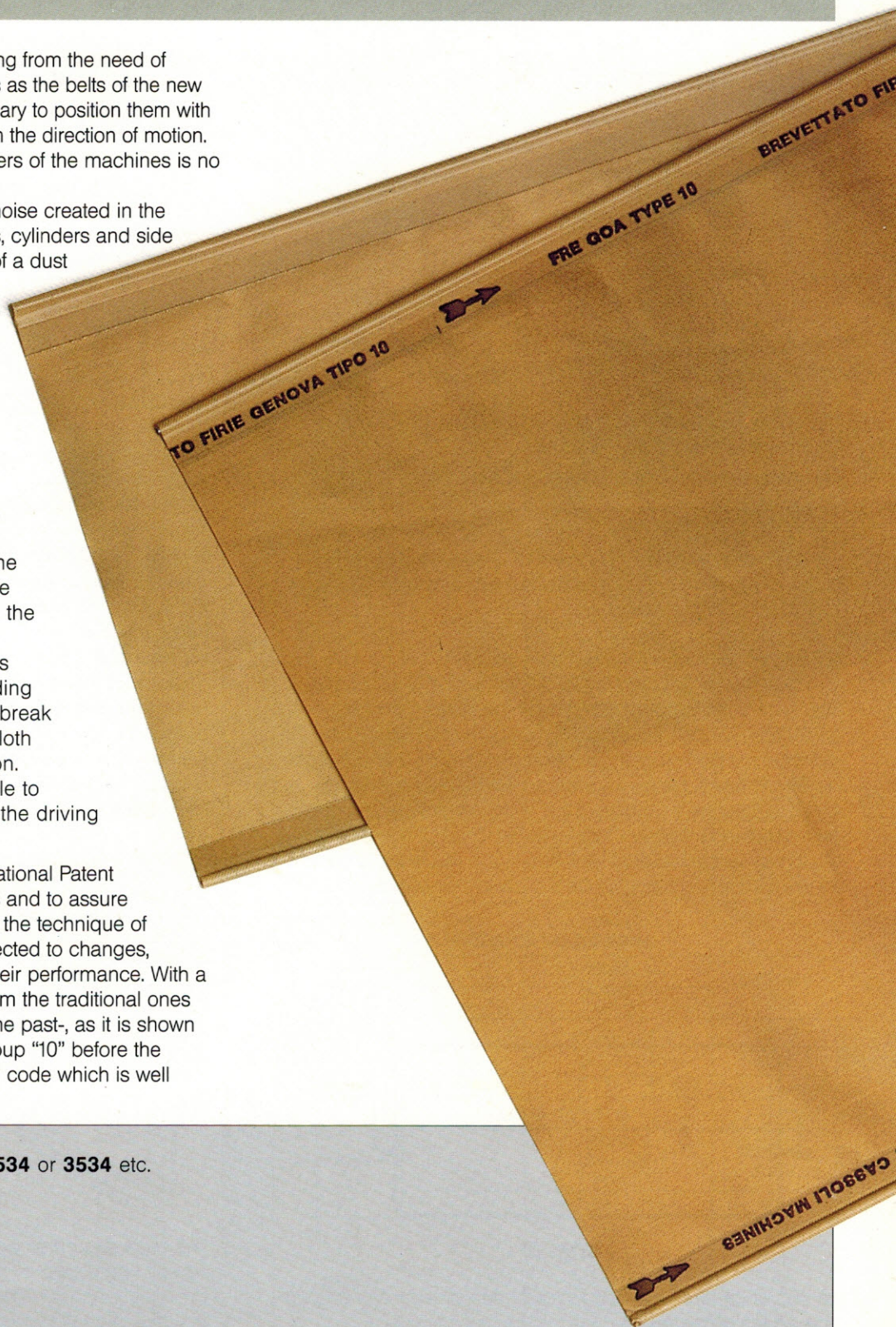


- 3) There is no longer the problem arising from the need of supplying right hand and left hand belts as the belts of the new type are now universal; it is only necessary to position them with the arrow marked on the belt pointing in the direction of motion.
- 4) The alignment of the various cylinders of the machines is no longer critical.
- 5) The new type of belt eliminate the noise created in the traditional belts by the contact of pivots, cylinders and side guides; it eliminates also the creation of a dust of metallic particles.
- 6) The use of thinner cloth (type 9534) provides, for the same value of mechanical strength, a reduction in **thermal inertia** which in many cases allows to dispense with the **cooling plates**.
- 7) Our trade mark and an arrow indicating the way of rotation are printed on both the reinforced edges of the belt; on application, there may be printed other data requested by the Client such as, for example, the name of the manufacturers of the machine, the model of the machine, etc.
- 8) The omission of the guiding pivots and, consequently, of the corresponding perforations in the belt avoiding any break in the continuity of the fibres of the cloth warrants greater strength and duration.
- 9) In several cases it may be possible to dispense with the rubber coating on the driving cylinders.

These belts are covered with an International Patent to protect the interests of the designers and to assure Clients of the quality of the product. As the technique of production of these belts may be subjected to changes, we look forward to further improving their performance. With a view to distinguishing the new belts from the traditional ones -which we continue producing as for the past-, as it is shown on pages from 6 to 9, we insert the group "10" before the number of the cloth in the identification code which is well known to our Clients, as follows:

Identification of cloth:	9534 or 3534 etc.
Reinforced _____	R
Overlapped sealing _____	X
Oblique sealing _____	O
Right-angle sealing _____	D
Special sealing _____	S

Each width and length are identified by a three digit number which follows the letter "O" or "D" or "S" as mentioned above. **For example: 10.9534RX0201 (where the number 201 indicates 85x3465 mms).** Our technical staff is available to furnish Clients with any further explanations which may be considered useful for a better use of these belts.



Identification code	Utilizable width "L" mms.	Cylinder bearing Length "H" mms.	Extreme width "E" mms.	Length mms.
10.9534RX0201	60	78,5	85	3465
10.9534RX0206	117	132	139	2110
10.9534RX0207	117	132	139	3260
10.9534RX0209	140	158	165	3260
10.9534RX0210	140	158	165	3277
10.9534RX0212	140	158	165	2360
10.9534RX0215	160	178	184	1100
10.9534RX0280	246	264	270	1566
10.9534RX0282	246	264	270	3260
10.9534RXD291	325	343	349	720
10.9534RX0293	325	343	349	1060
10.9534RX0296	353	375	381	1597
10.9534RX0	180	198	204	
10.9534RX0	210	228	234	
10.9534RX0	271	289	295	
10.9534RX0	300	318	324	
10.9534RX0	400	418	424	

The first portion of the table in this page gives the types and dimensions of the belts which are normalized and in current production, whilst the second portion gives the dimensions of those belts which can be produced only after further investigation at the Firms concerned.

In order to complete the range of the dimensions which are not included in the above tables, we are carrying out a very thorough investigation at the machine manufacturers with a view to ascertaining which dimensions of the new belts may be utilized in the near future. This for the purpose of limiting as far as possible the range of dimensions and reducing, consequently, the necessary production facilities, which may result in considerably lower costs of production.

Clients who are interested in the adoption of the new type of belt but require dimensions which are not included in the above tables, are kindly asked to contact us in order that we can notify to them the additional dimensions in which belts are produced since the date of publication of the present catalogue.

