Lane
wire belts

INNOVATORS IN WIRE CONVEYOR BELTING

Lane
wire belts

LEHR BELTS

■ SPECIFICATION DETAILS

BELT SPECIFICATION

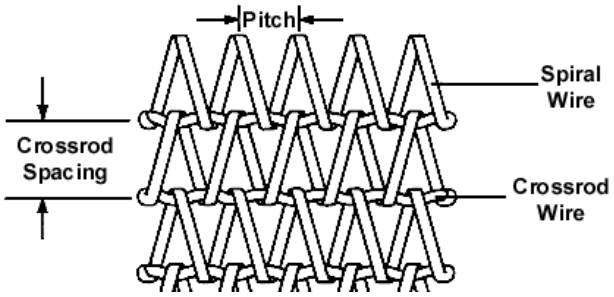
Wire Conveyor Belt specifications consist of four numbers:

1) The spiral pitches in mm.

2) The crossrods spacing in mm.

3) The diameter of the spiral wire in mm.

4) The diameter of the crossrod wire in mm.



Note: The spiral wire could also be a flat specification. i.e. 3.0 x 2.0mm or 3.0 x 1.5mm etc.

MATERIALS

Lehr Belts are usually made in either Chrome Molybdenum or Stainless Steel materials, the widely used specifications being:

3% Chrome Molybdenum Steel Wire	
Carbon	0.07 - 0.15%
Chromium	2.75 - 3.25%
Molybdenum	0.45 - 0.65%
Silicon	1.00 -1.40%

Chrome Molybdenum steels are available with Chromium contents of either 3% or 5%. The combination of the non-Chromium elements within these compounds varies greatly, most notably in the content of Silicon which has a significant effect upon their tensile strength. The Silicon content in 3% Chr.Mo. is much greater than in 5% Chr.Mo. Currently there is no evidence that 5% Chrome Molybdenum is in any way superior to 3% Chrome Molybdenum, which is an excellent material for most Annealing and Decorating Lehr Belts.

Type 430 Stainless Steel Wire	
Chromium	15.50 – 17.50%
Silicon	1.00% Max
Carbon	0.08% Max
Manganese	1.0% Max
Nickel	Trace

Type 304 Stainless Steel Wire	
Nickel	8.0 – 12%
Chromium	17.0 – 19.0%
Silicon	1.00% Max
Manganese	2.0% Max
Carbon	0.06% Max

The most used Stainless Steels are Types 430, 304 and 321. Type 304 tends to have the general usage for temperatures upto approx.750ºC and is common for Decorating Lehrs. Type 321 Stainless Steel includes a small quantity of titanium in its composition, which stabilizes it against the Sigma Phase Embrittlement and is common for slightly higher temperatures upto approx.850ºC. Type 430 is becoming more common as a replacement for 3% Chr. Mo in Annealing Lehrs due to it's high Chromium content and hence anti corrosive qualities, but due to its lack of Nickel only use for temperatures upto 650ºC max.

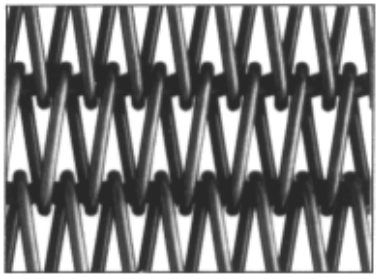
OTHER BELT SPECIFICATIONS AND PATTERNS

The specifications shown in this leaflet are those most usually found in Glassworks. They represent only a small part of our very extensive range of belts which are used in manufacturing processes throughout industry.

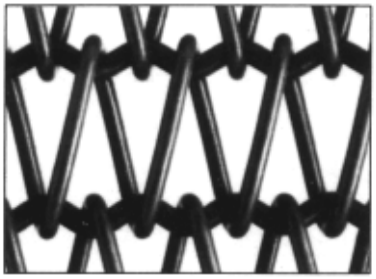
LEHR BELTS

■ ROUND WIRE SPIRALS

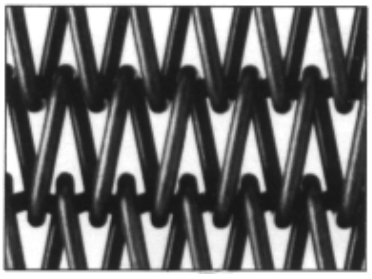
SPECIFICATION	PITCH		NOMINAL REACH		APPROX WEIGHT		CROSS SECTIONAL AREA	
	ins.	mm.	ins.	mm.	Lbs./ft.²	kgs./ m.²	Ins.²	cm.²
48-24/14-12	0.25	6.35	0.50	12.70	3.10	15.14	0.483	3.02
48-20/14-12	0.25	6.35	0.60	15.24	2.85	14.40	0.483	3.02
48-20/14-10	0.25	6.35	0.60	15.24	3.15	16.11	0.483	3.02
36-20/12-12	0.33	8.47	0.60	15.24	3.75	18.31	0.635	3.94
36-20/12-10	0.33	8.47	0.60	15.24	4.05	19.77	0.635	3.94
36-18/12-12	0.33	8.47	0.67	17.02	3.58	17.48	0.635	3.94
36-18/12-10	0.33	8.47	0.67	17.02	3.88	18.94	0.635	3.94
36-16/12-12	0.33	8.47	0.75	19.05	3.35	16.36	0.635	3.94
36-16/12-10	0.33	8.47	0.75	19.05	3.60	17.58	0.635	3.94
32-22/12-12	0.38	9.53	0.55	13.85	3.65	17.82	0.565	3.50
32-22/12-10	0.38	9.53	0.55	13.85	4.10	20.02	0.565	3.50
32-15/12-12	0.38	9.53	0.80	20.32	3.00	14.65	0.565	3.50
32-15/12-10	0.38	9.53	0.80	20.32	3.25	15.87	0.565	3.50
30-20/12-12	0.40	10.16	0.60	15.24	3.10	15.14	0.529	3.28
30-20/12-10	0.40	10.16	0.60	15.24	3.45	16.84	0.529	3.28
30-18/12-12	0.40	10.16	0.67	17.02	2.96	14.45	0.529	3.28
30-18/12-10	0.40	10.16	0.67	17.02	3.25	15.87	0.529	3.28
30-15/12-12	0.40	10.16	0.80	20.32	2.75	13.43	0.529	3.28
30-15/12-10	0.40	10.16	0.80	20.32	3.00	14.65	0.529	3.28
24-22/12-12	0.50	12.70	0.55	13.85	2.68	13.09	0.424	2.62
24-22/12-10	0.50	12.70	0.55	13.85	3.00	14.65	0.424	2.62
24-20/12-12	0.50	12.70	0.60	15.24	2.60	12.69	0.424	2.62
24-20/12-10	0.50	12.70	0.60	15.24	2.90	14.16	0.424	2.62
24-18/12-12	0.50	12.70	0.67	17.02	2.47	12.06	0.424	2.62
24-18/12-10	0.50	12.70	0.67	17.02	2.75	13.43	0.424	2.62
24-15/12-12	0.50	12.70	0.80	20.32	2.30	11.23	0.424	2.62
24-15/12-10	0.50	12.70	0.80	20.32	2.55	12.45	0.424	2.62
18-16/12-12	0.67	17.02	0.75	19.05	1.85	9.03	0.318	1.97
18-16/12-10	0.67	17.02	0.75	19.05	2.10	10.25	0.318	1.97



48-20/ 14-10



24-15/ 12-10



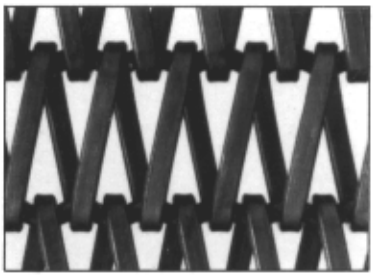
36-20/ 12-12

Belt patterns shown actual size

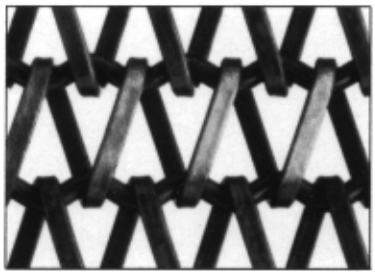
LEHR BELTS

■ FLAT WIRE SPIRALS

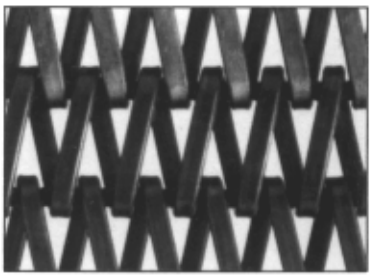
SPECIFICATION	PITCH ins.	PITCH mm.	NOMINAL REACH ins.	NOMINAL REACH mm.	APPROX WEIGHT lbs./ ft.²	APPROX WEIGHT kgs./m.²	CROSS SECTIONAL AREA ins.²	CROSS SECTIONAL AREA cm.²
36-20/F-12	0.33	8.47	0.60	15.24	3.25	15.87	0.576	3.72
36-20/F-10	0.33	8.47	0.60	15.24	3.60	17.58	0.576	3.72
36-18/F-12	0.33	8.47	0.67	17.02	3.18	15.53	0.576	3.72
36-18/F-10	0.33	8.47	0.67	17.02	3.47	16.94	0.576	3.72
36-16/F-12	0.33	8.47	0.75	19.05	2.90	14.16	0.576	3.72
36-16/F-10	0.33	8.47	0.75	19.05	3.20	15.62	0.576	3.72
32-22/F-12	0.38	9.53	0.55	13.85	3.12	15.23	0.512	3.31
32-22/F-10	0.38	9.53	0.55	13.85	3.55	17.33	0.512	3.31
32-15/F-12	0.38	9.53	0.80	20.32	2.60	12.69	0.512	3.31
32-15/F-10	0.38	9.53	0.80	20.32	2.87	14.01	0.512	3.31
30-20/F-12	0.40	10.16	0.60	15.24	2.80	13.67	0.480	3.10
30-20/F-10	0.40	10.16	0.60	15.24	3.05	14.89	0.480	3.10
30-18/F-12	0.40	10.16	0.67	17.02	2.67	13.04	0.480	3.10
30-18/F-10	0.40	10.16	0.67	17.02	2.92	14.26	0.480	3.10
30-15/F-12	0.40	10.16	0.80	20.32	2.48	12.11	0.480	3.10
30-15/F-10	0.40	10.16	0.80	20.32	2.74	13.38	0.480	3.10
24-22/F-12	0.50	12.70	0.55	13.85	2.32	11.33	0.384	2.48
24-22/F-10	0.50	12.70	0.55	13.85	2.68	13.09	0.384	2.48
24-20/F-12	0.50	12.70	0.60	15.24	2.25	10.99	0.384	2.48
24-20/F-10	0.50	12.70	0.60	15.24	2.60	12.69	0.384	2.48
24-18/F-12	0.50	12.70	0.67	17.02	2.15	10.50	0.384	2.48
24-18/F-10	0.50	12.70	0.67	17.02	2.48	12.11	0.384	2.48
24-15/F-12	0.50	12.70	0.80	20.32	2.05	10.01	0.384	2.48
24-15/F-10	0.50	12.70	0.80	20.32	2.30	11.23	0.384	2.48
18-16/F-12	0.67	17.02	0.75	19.05	1.70	8.30	0.288	1.86
18-16/F-10	0.67	17.02	0.75	19.05	2.00	9.77	0.288	1.86



32-15/ F-12



24-20/ F-10



36-20/ F-12

Belt patterns shown actual size

■ GENERAL INFORMATION

■ APPLICATION OF THEORY

It is not possible to calculate an ideal belt specification - the criteria on belt selection are very varied and often contradictory. A belt specification will 'evolve' with experience and correct interpretation of the reasons for belt replacement.

During its life a belt will encounter cullet, will be damaged by the structure, or subjected to abnormal heat. Whilst any one of these factors can ruin a belt within a short timespace, belts should be sufficiently robust to withstand a little mechanical damage, and therefore the adoption of belts made in small diameter wires to minimise belt weight should be approached with extreme caution.

■ CROSSROD STRENGTH

The Tensile Strength of a belt is dependent upon both the cross-sectional area of its spiral wires and the diameter and unsupported length of the crossrod wire. A reduction in pitch from 24 to 36 spirals per foot width greatly reduces the shear forces exerted upon the crossroad, and can often be accompanied by a reduction in crossroad diameter with a subsequent saving in belt weight.

■ PRODUCT STABILITY

Ware stability can only be obtained where there are adequate support wires beneath the product. This only usually becomes critical when phials or pharmaceutical bottles are to be carried.

■ ANNEALING LEHR /DECORATING LEHR

Although outwardly similar, and often carrying ware on a similar belt, it is important that one is aware of the different Tensile requirements for belts on Annealing and Decorating Lehrs.

The Annealing Lehr is loaded with hot glassware and achieves its maximum temperature within a comparatively short distance from the loading end: the Decorating Lehr is loaded with cold glassware and requires a greater distance to achieve its maximum temperature.

The tensile requirements of the belt are closely related to these different heating lengths, and where product load is similar the tensile requirement for the Decorating Lehr is greater than in the Annealing Lehr.

■ BUILD QUALITY

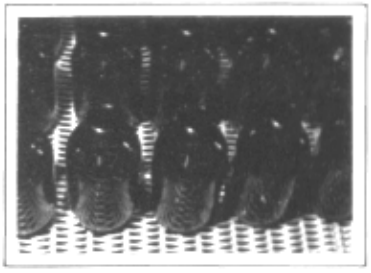
Quality belts are those which receive the most attention to detail during their manufacture - spirals must be made as thin as possible (to prevent excessive stretch during use and also minimise the risk of spirals 'rolling') and of consistent thickness to provide the smoothest carrying surface possible, minimise product marking and the concentration of abrasion. Crossrods must be crimped in a symmetrical fashion to optimise the straight-running characteristics of a Balanced Spiral belt.

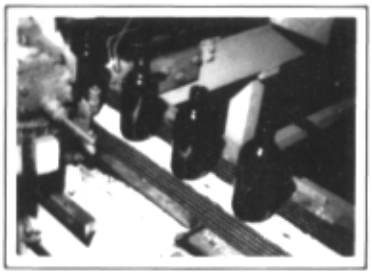
■ OPTIMUM PERFORMANCE

Lane Wire Belts produce Lehr Belts that offer the best quality and value available, achieved by the continual pursuit of perfection.

■ FURTHER INFORMATION

For further information on any of the items listed in this leaflet or for any special belt requirements, please send full details or specifications.





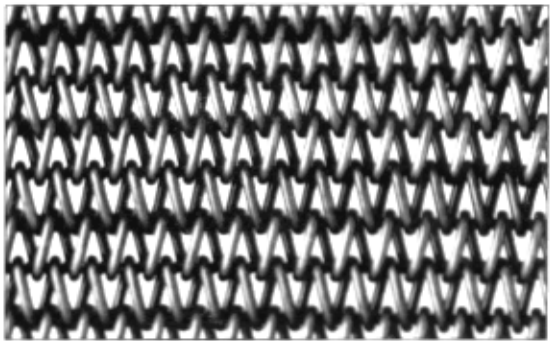
CROSS CONVEYOR BELTING

Transfer Belts are available in either the 60-48/16-16 BS or 36-85/16-16 CW4 patterns illustrated, and manufactured to a nominal 0.25” thickness (6.35 mm).

Usually both patterns are made in Carbon Steel, although 3% Chrome Molybdenum or Stainless Steel can be supplied upon request.

STANDARD WIDTHS	4.875”	123.8 mm.
	5.875”	149.2 mm.
	7.875”	200.0 mm.

36-85/16-16 CW4



60-48/16-16 BS

Belt patterns shown actual size

© George Lane & Sons Ltd.
Bannerley Road
Garretts Green
Birmingham
England B33 0SL

Tel: **+44 121 784 5525**
Fax: **+44 121 783 6988**
Email: **info@georgelane.co.uk**
Web: **www.georgelane.co.uk**

LANE REFERENCE LIST (Nov. 2008)

Lehr Manufacturers

- Ernst Pennekamp GmBH & Co
- E W Bowman Incorporated
- Sklarske Stroje Znojmo s.r.o
- Smit Ovens B.V
- S.A.S
- Cnud-Efco International
- Logicon Engineers PVT Ltd

Glass Manufacturers

- O-I Manufacturing
- Ardagh Glass
- Stolzle Flacconage
- ZAO Veda Pak
- San Miguel
- Quinn Glass
- Sotancro
- Gulf Glass
- MSG Industry
- Malaya Glass