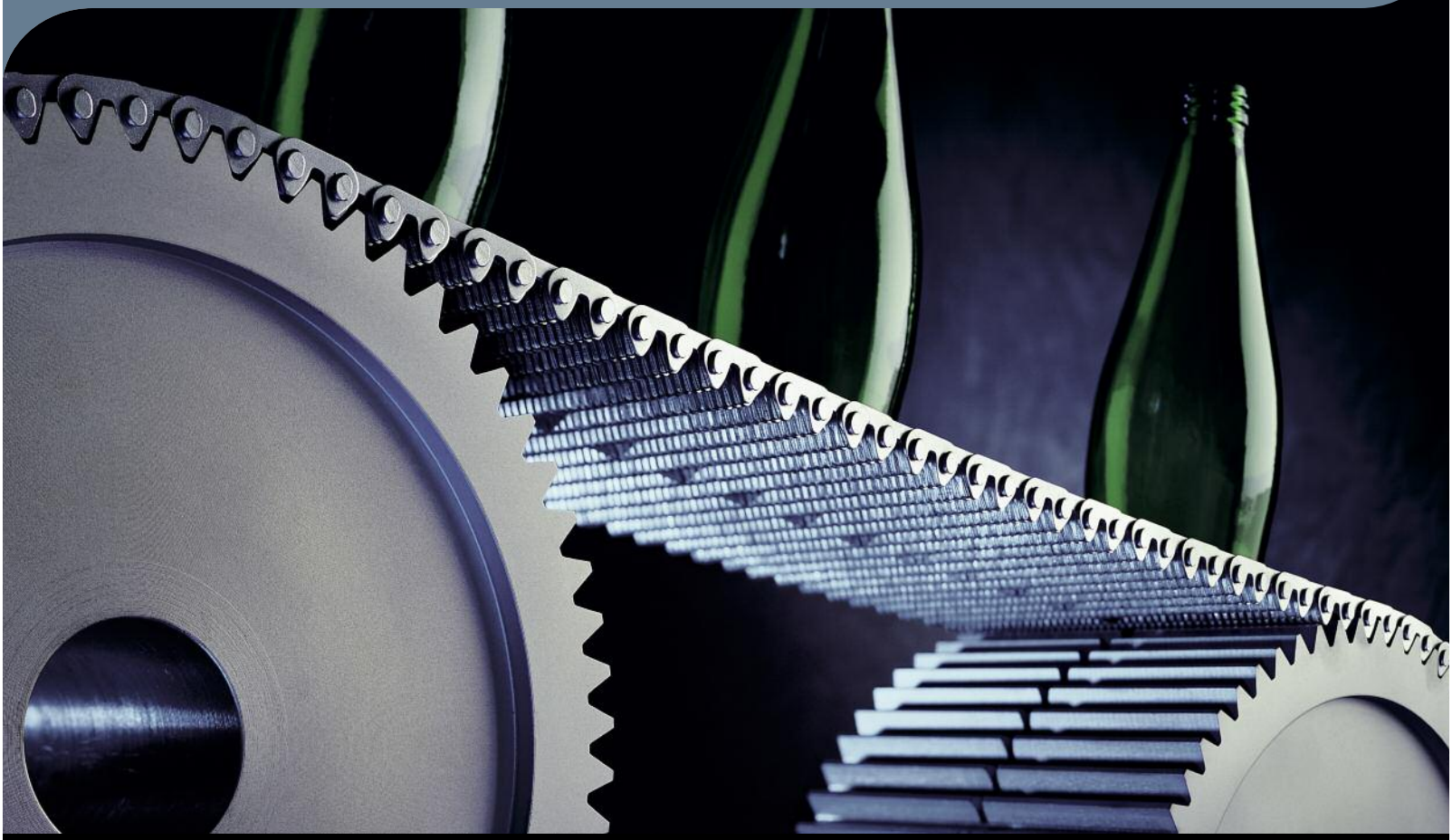
INVERTED TOOTH

conveying chains



FOR THE GLASS INDUSTRY

Ramsey Products®
CORPORATION

Ramsey Conveying Chains

FOR THE GLASS INDUSTRY

Every day you face challenges unique to the glass industry. You need a durable, flat and exceptionally smooth conveying surface for rapid, synchronized transport of fragile products. Yet grit, lack of lubrication and drastic temperature changes from hot-end to cold-end can compromise the performance and life of your conveying chains and drives.

Ramsey Products Corporation designs and manufactures silent or "inverted tooth" chains and sprockets to meet the challenges inherent in transporting glass. We offer an extensive line of standard products, custom-designed chains, as well as replacements for most competitors products. If a job can be done with silent chain, we will find the best chain for the job, at the lowest possible cost.

For over 80 years, Ramsey has focused on silent chain drive products. Today, we remain committed to providing our customers with the world's widest range of top quality products, competitive pricing, and unparalled service. We welcome the opprtunity to assist you in putting silent chain to work in your application

WHY INVERTED TOOTH CHAIN?

For companies that work with glass, silent conveying chains offer many benefits in applications that range from hot-end and cold-end handling to precision inspection and measurement. Ramsey silent conveyor chains are designed and built specifically for these applications.

Durability. Our chains are made from through-hardened steel link plates and case hardened steel pins. Chain designs and materials are chosen to meet the demanding conditions encountered in glass production. Long service life and minimal maintenance helps you minimize costly downtime for conveyor chain replacement.

CONTENTS

Flatness and Uniformity. The flat, uniform surface of Ramsey chain provides trouble-free transport of even the smallest bottles. Consistent chain height allows glassware to be smoothly transferred on and off the conveyor, reducing breakage caused by improper product feeding and tipping. For the ultimate in smooth transport, the chain surface can be ground.

Nearly constant surface velocity. Ramsey carefully controls chain pitch and lot uniformity during chain manufacture to ensure consistent chain surface velocity throughout the conveyor. Uniform velocity reduces breakage associated with irregular spacing and misfeeds. Also, as the chain wears, the pitch increases uniformly throughout the chain, and velocity remains constant.

Heat resistance. We manufacture our chain from hardened steel components to withstand the temperatures associated with hot-end handling. Heat transfer from transported glassware and heating torches does not affect the uniformity of the conveyor surface.

Economy. Because it lasts for years, improves product handling, and requires little or no maintenance, Ramsey chain provides a cost-effective means for conveying glassware in high-speed production lines. The right chain can help reduce breakage and machine downtime.

COMPONENTS

A Ramsey inverted tooth chain drive consists of a chain and two or more 1/2" pitch sprockets (see page 13) to drive and guide the chain. Chain is available in a wide variety of types and assemblies. Depending on the type, a chain contains some or all of the following component parts:

Driving Links: Driving links, also known as plain links, engage with sprocket teeth to drive the chain. They are typically the most common component in the chain.

Guide Links: Guide links maintain proper tracking of the chain on sprockets. They can be positioned on the outer edges of the chain in side guide and multiguide chain or in the center, with center guide chain.

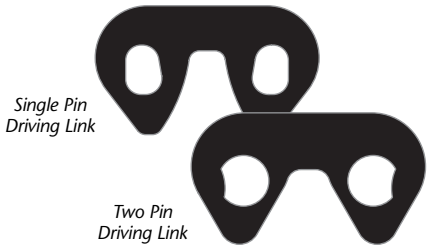
Spacers: Spacers are often placed between link plates in order to reduce chain weight and thermal mass, lessen the resistance to air flow through the chain, and allow the passage of debris.

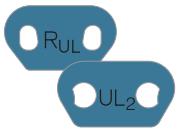
Pins: Pins allow the chain joint to flex and hold the assembled chain together. Chains may have a single pin in each joint or two pins, depending on the chain type.

Chain Type

Ramsey manufactures four basic types of conveyor chain: Ultralife (available in single pin or two pin joint types), Standard, Lo-Profile and Extended Pitch.

ULTRALIFE





Single Pin (top) and Two Pin (below) Guide Links

UltraLife is Ramsey's best quality conveyor chain. It was designed in cooperation with major glassware manufacturers for high-speed production lines and field tested in glass plants around the world. UltraLife chain has been proven to last longer than any other conveyor chain we have tested.

ULTRA LIFE

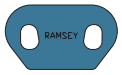
The improved performance of UltraLife is the result of Ramsey's proprietary link and chain production techniques. These techniques produce driving links that are flat and uniform, with straight-edged, burr-free apertures.

The straight edge of the aperture maximizes the link area contacting the pins and reduces joint bearing stresses and wear. Process controls throughout component manufacture and chain assembly ensure consistent chain pitch and quality. Consistent pitch results in very little fluctuation in chain velocity and uniform wear throughout the life of the chain.

Single Pin Assembly

Two Pin Assembly

STANDARD



Single Pin Guide Link

First introduced more than 30 years ago, Ramsey standard conveyor has become the chain most often used in glass plants around the world. By using an oval pin joint designed specifically for the glass industry, standard conveyor provides trouble-free operation in most production settings. Produced exclusively by Ramsey, it includes many of the features of UltraLife but at a reduced price.

Single Pin Assembly

LO-PROFILE

Single Pin Driving Link

Single Pin Guide Link

Produced to the same quality standards as standard conveyor, Ramsey Lo-Profile conveyor has a reduced overall link height and larger flats on link points. The increased surface area on the bottom of the chain serves to reduce bearing stress on wear plates, effectively reducing link wear and resistance to sliding. It works well where a more compact chain is needed.

Single Pin Assembly

EXTENDED PITCH

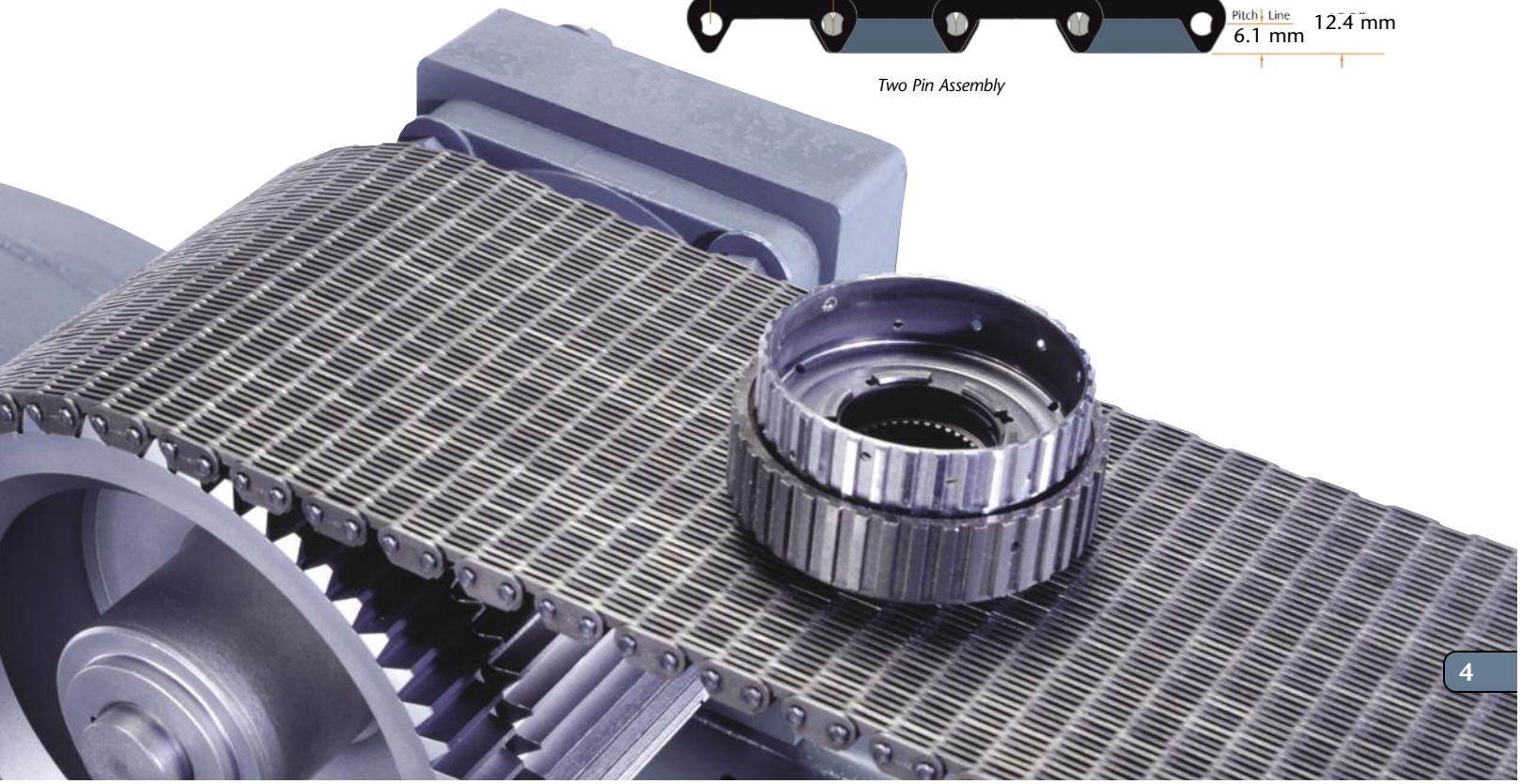
Single Pin Driving Link

Single Pin Guide Link

Extended pitch conveyor was developed in cooperation with glass industry engineers looking for a lightweight, long-lasting chain that would operate on existing 1/2" pitch sprockets. The resulting 1"pitch chain has less mass than a comparable width standard conveyor. With fewer joints per foot, it is also less susceptible to joint fouling and wear.

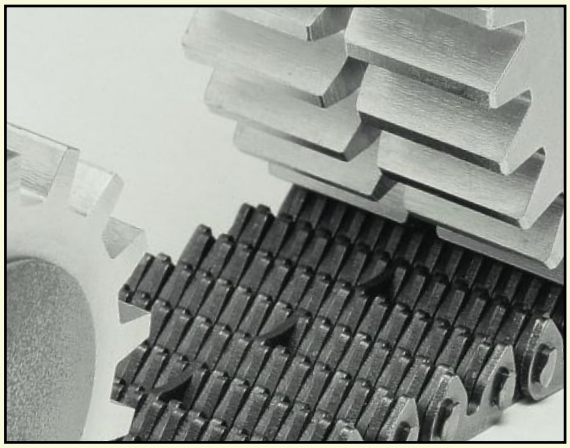
Single Pin Assembly

Two Pin Assembly



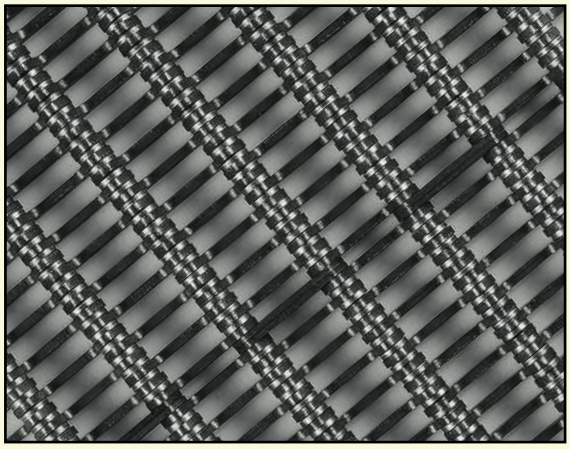
Specifying A Chain

When specifying an inverted tooth chain, you must consider appropriate guide type, build type and joint type.



GUIDE TYPE

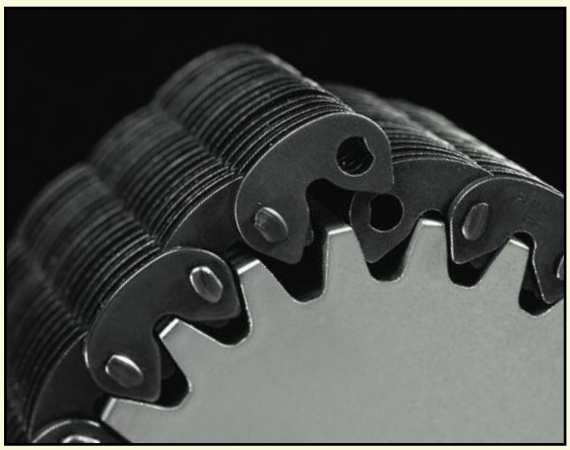
Do you need a center guide, side guide or multi-guide chain? On Ramsey ordering charts, guide type is designated as follows: (C) for center, (S) for side or (M) for multiguide. Remember that sprocket guide type must be compatible with your chain (see Specifying A Sprocket section, p.13).



BUILD TYPE

Inverted tooth conveyor chains are available in two basic build types: all-link, identified with an (L) in Ramsey ordering charts, and link-spacer, identified with an (S).

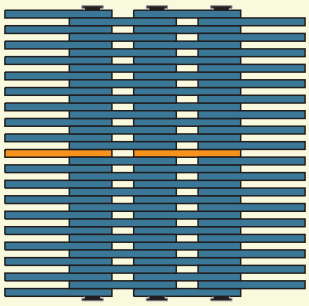
Each assembly has its advantages. Some of our glass industry customers prefer one chain build over another. When replacing a chain, we usually recommend that you select the build that has been used successfully at your company in the past. If you are uncertain which build you need, consult Ramsey or your equipment manufacturer.



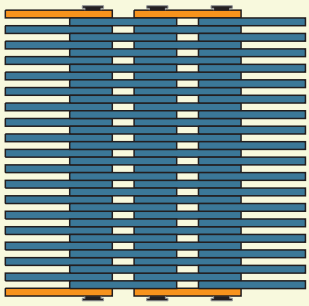
JOINT TYPE

Inverted tooth chains are available in two distinct joint types: single pin and two pin. In some applications one joint type may provide distinct advantages over the other. However, in many cases, either joint type will provide satisfactory results and it is simply a matter of customer preference.

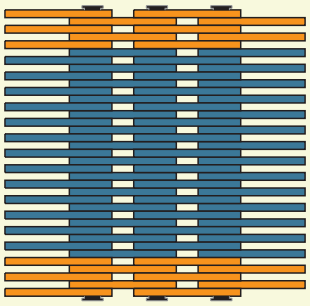
Ramsey manufactures both styles of chain and we can supply you with whichever style you prefer. Contact Ramsey if you are uncertain about the best choice for your application.



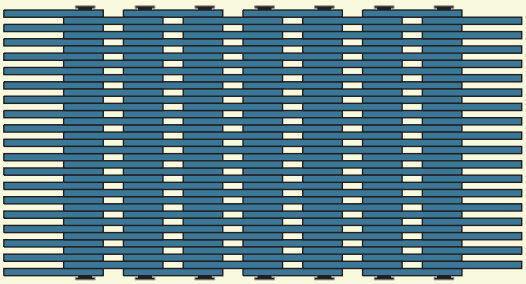
Center Guide (C) Guide links in the center of the chain align with a groove in the center of the sprocket.



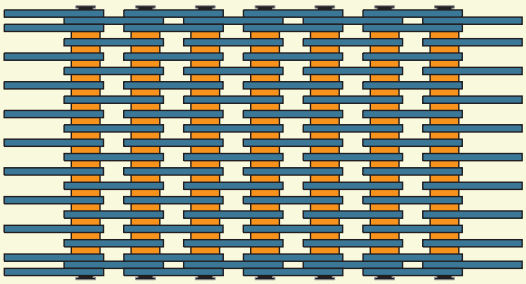
Side Guide (S) Guide links are on the outer edges of the chain and sprockets fit between them.



MultiGuide (M) Multiple guide links on the chain's outer edge surround the sprocket and provide increased area for chain support on a wear strip.



All-Link (L) Composed entirely of links, all-link chain provides maximum surface area and is often preferred for transporting small glassware. All-Link chain has the greatest thermal mass and the smallest inter-link air spaces, so it provides the greatest resistance to induced heating or cooling.



Link-Spacer (S) In this assembly type, spacers are placed between link plates to decrease weight, reduce surface area and increase airflow through the chain. Larger inter-link air spaces also allow passage of debris through the chain.

Single Pin Single pin joints provide a durable, smooth acting joint, satisfactory life, and are more easily installed than two pin joints. Ramsey's single pin joint was developed specifically for the glass industry, and is the joint type most commonly used in glass conveyor chain.

Two Pin Two pin joints were originally developed for use in power transmission chains and have been adapted for use in conveying chains. They offer many of the same advantages in conveyor chain as in transmission chain, including low friction, high efficiency and long life.

Ordering Charts

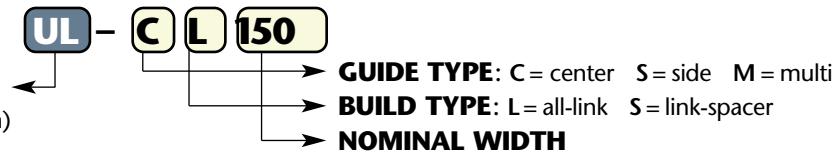
IDENTIFYING YOUR CONVEYOR CHAIN

Ramsey uses a four-part numbering system for identifying conveyor assemblies. The first segment of each part number shows chain type, the second guide type, the third build type and the fourth nominal width. The last five characters of the numbering system are also referred to as the Assembly Number.

CHAIN TYPE

UL = UltraLife single pin
UL_2 = UltraLife two pin
ST = Standard
LP = Lo-Profile
EP = Extended Pitch (single pin)
EP_2 = Extended Pitch (two pin)

ASSEMBLY NO.



In this example the part number UL-CL150, describes an UltraLife single pin, center guide chain, all-link build, 150mm nominal width. When ordering simply provide the appropriate chain type and Assembly Number (see ordering guide below).

Note that there are many chain widths and assemblies not included in this brochure.

ADDITIONAL CHAIN OPTIONS

From time to time, our glass industry customers need a chain that is different from our typical specifications. We are set up to make custom orders as efficiently and cost-effectively as most common chain, and we welcome such inquiries.

Chain Grinding Any chain in the following charts can be ground. To achieve an ultra-smooth surface Ramsey can grind the top, bottom, or both sides of a chain to the customer's desired dimensions. To order, simply specify the chain type and assembly number and include your grinding requirements. It is important to specify the amount of material to be ground off each surface and the desired finished dimensions of the chain.

Note: The minimum amount of grinding required to "clean up" a surface is 0.10mm to 0.015mm. The standard tolerance on grinding is 0.025mm.

Stainless Steel Most chains in the charts are available in stainless steel. Typically, links are made from 316 stainless steel and pins are made from a wear resistant, hardenable grade of stainless. With compatible stainless steel sprockets these chains can operate at temperatures up to 650 C.

Common applications include food processing, parts washing, chemical processing, and pharmaceutical production. Upon request, some chains are available in all 316 stainless constructions .

ALLGUARD FX_{TM} For applications where chains are operated in contact with lateral guides or wear strips Ramsey offers its exclusive ALLGUARD FX chain. ALLGUARD runs flush with lateral guides, immune to the pin head wear that can destroy other chains.

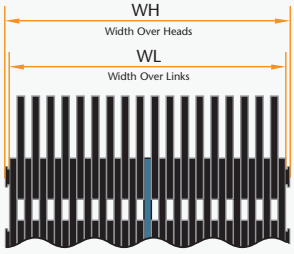
C Center Guide Chain

ULTRALIFE SINGLE PIN & STANDARD

ULTRALIFE TWO PIN

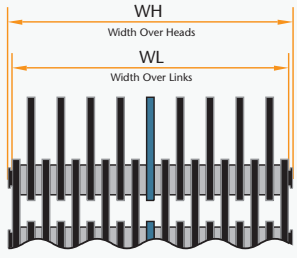
LO-PROFILE

L ALL-LINK ASSEMBLY



				SINGLE PIN		TWO PIN**	
ASSEMBLY NUMBER	NOMINAL WIDTH	WL (MAX)	SPROCKET* WIDTH	WH (MAX)	WEIGHT KG/M	WH (MAX)	WEIGHT KG/M
CL100	100	91.0	100.0	95.0	5.2	94.0	5.6
CL120	120	116.0	120.0	120.0	6.6	119.0	7.1
CL125	125	122.0	125.0	126.0	7.0	125.0	7.5
CL140	140	135.0	140.0	139.0	7.7	138.0	8.2
CL150	150	147.0	150.0	151.0	8.5	150.0	9.1
CL180	180	175.0	180.0	179.0	10.1	178.0	10.8
CL200	200	199.0	200.0	203.0	11.4	202.0	12.2
CL250	250	250.0	250.0	254.0	14.5	253.0	15.5
CL300	300	300.0	300.0	304.0	17.2	303.0	18.4

S LINK-SPACER ASSEMBLY



				SINGLE PIN		TWO PIN**	
ASSEMBLY NUMBER	NOMINAL WIDTH	WL (MAX)	SPROCKET* WIDTH	WH (MAX)	WEIGHT KG/M	WH (MAX)	WEIGHT KG/M
CS100	100	91.0	100.0	95.0	3.5	94.0	3.7
CS120	120	116.0	120.0	120.0	4.5	119.0	4.8
CS125	125	122.0	125.0	126.0	4.7	125.0	5.0
CS140	140	135.0	140.0	139.0	5.2	138.0	5.5
CS150	150	147.0	150.0	151.0	5.6	150.0	5.9
CS180	180	175.0	180.0	179.0	6.7	178.0	7.1
CS200	200	199.0	200.0	203.0	7.6	202.0	8.1
CS250	250	250.0	250.0	254.0	9.6	253.0	10.2
CS300	300	300.0	300.0	304.0	11.4	303.0	12.1

** +0.0/-2.0% Tolerance* *** Available in UltraLife only*
Note: Unless indicated, all dimensions are in millimeters

Ordering Charts

Assemblies for UL UltraLife, ST Standard, UL2 UltraLife Two Pin and LP Lo-Profile

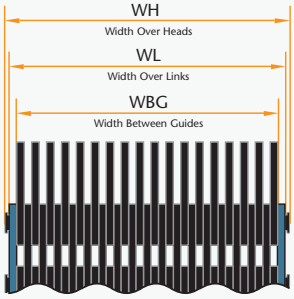
S Side Guide Chain

ULTRALIFE SINGLE PIN & STANDARD

ULTRALIFE TWO PIN

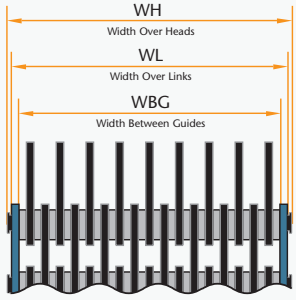
LO-PROFILE

L ALL-LINK ASSEMBLY



ASSEMBLY NUMBER	NOMINAL WIDTH	WL (MIN)	WBG (MIN)	SPROCKET* WIDTH	SINGLE PIN WH (MAX)	SINGLE PIN WEIGHT KG/M	TWO PIN** WH (MAX)	TWO PIN** WEIGHT KG/M
SL100	100	102.2	99.2	97.7	105.9	6.1	105.8	6.5
SL120	120	115.2	112.2	110.7	118.9	6.8	118.8	7.3
SL125	125	128.7	125.7	124.2	132.4	7.5	132.3	8.0
SL140	140	138.7	135.7	134.2	142.4	8.2	142.3	8.8
SL150	150	152.8	149.8	148.3	156.5	9.0	156.4	9.6
SL180	180	174.5	171.5	170.0	178.8	10.2	178.7	10.9
SL200	200	202.7	199.7	198.2	206.4	11.9	206.3	12.7
SL250	250	256.1	253.1	251.6	259.8	15.1	259.7	16.2
SL300	300	303.3	300.3	298.8	307.0	17.8	306.9	19.0

S LINK-SPACER ASSEMBLY



ASSEMBLY NUMBER	NOMINAL WIDTH	WL (MIN)	WBG (MIN)	SPROCKET* WIDTH	SINGLE PIN WH (MAX)	SINGLE PIN WEIGHT KG/M	TWO PIN** WH (MAX)	TWO PIN** WEIGHT KG/M
SS100	100	102.2	99.2	97.7	105.9	4.0	105.8	4.3
SS120	120	115.2	112.2	110.7	118.9	4.5	118.8	4.8
SS125	125	128.7	125.7	124.2	132.4	5.0	132.3	5.4
SS140	140	138.7	135.7	134.2	142.4	5.4	142.3	5.8
SS150	150	152.8	149.8	148.3	156.5	5.9	156.4	6.3
SS180	180	174.5	171.5	170.0	178.8	6.7	178.7	7.2
SS200	200	202.7	199.7	198.2	206.4	7.8	206.3	8.3
SS250	250	256.1	253.1	251.6	259.8	9.9	259.7	10.6
SS300	300	303.3	300.3	298.8	307.0	11.6	306.9	12.4

** +0.0/-2.0% Tolerance* *** Available in UltraLife only*
Note: Unless indicated, all dimensions are in millimeters

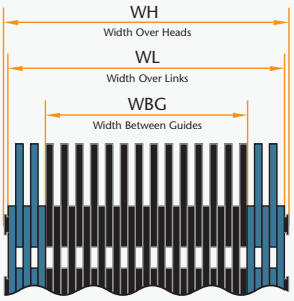
M MultiGuide Chain

ULTRALIFE SINGLE PIN & STANDARD

ULTRALIFE TWO PIN

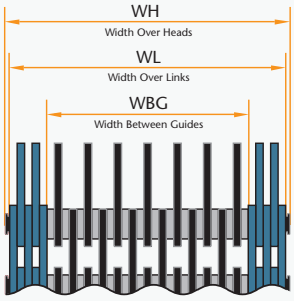
LO-PROFILE

L ALL-LINK ASSEMBLY



ASSEMBLY NUMBER	NOMINAL WIDTH	WL (MIN)	WBG (MIN)	SPROCKET* WIDTH	SINGLE PIN WH (MAX)	SINGLE PIN WEIGHT KG/M	TWO PIN** WH (MAX)	TWO PIN** WEIGHT KG/M
ML100	100	98.5	68.3	66.8	102.2	6.1	102.1	6.7
ML125	125	123.7	96.5	95.0	127.4	7.5	127.3	8.2
ML150	150	150.2	97.3	95.8	153.4	9.1	153.3	10.0
ML200	200	196.7	145.3	143.8	200.4	12.0	200.3	13.1
ML250	250	247.4	196.0	194.5	251.1	14.9	251.0	16.3
ML300	300	299.7	245.3	243.8	303.4	18.0	303.3	19.7

S LINK-SPACER ASSEMBLY



ASSEMBLY NUMBER	NOMINAL WIDTH	WL (MIN)	WBG (MIN)	SPROCKET* WIDTH	SINGLE PIN WH (MAX)	SINGLE PIN WEIGHT KG/M	TWO PIN** WH (MAX)	TWO PIN** WEIGHT KG/M
MS100	100	98.5	68.3	66.8	102.2	4.0	102.1	4.3
MS125	125	123.7	96.5	95.0	127.4	4.9	127.3	5.3
MS150	150	150.2	97.3	95.8	153.4	5.9	153.3	6.4
MS200	200	196.7	145.3	143.8	200.4	7.7	200.3	8.4
MS250	250	247.4	196.0	194.5	251.1	9.6	251.0	10.4
MS300	300	299.7	245.3	243.8	303.4	11.7	303.3	12.7

** +0.0/-2.0% Tolerance* *** Available in UltraLife only*
Note: Unless indicated, all dimensions are in millimeters

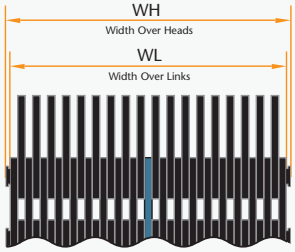
Ordering Charts

Assemblies for EP Extended Pitch

C Center Guide Chain

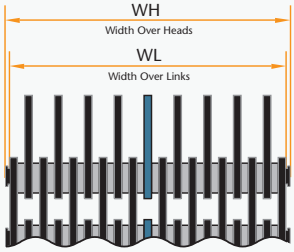
EXTENDED PITCH

L ALL-LINK ASSEMBLY



ASSEMBLY NUMBER	NOMINAL WIDTH	WH (MAX)	WL (MAX)	SPROCKET* WIDTH	WEIGHT KG/M
CL100	100	95.7	92.0	100.0	3.3
CL125	125	126.6	123.0	125.0	4.4
CL140	140	138.5	134.9	140.0	4.8
CL150	150	150.4	146.8	150.0	5.2
CL200	200	199.3	196.1	200.0	7.1
CL300	300	304.3	300.6	300.0	10.7

S LINK-SPACER ASSEMBLY

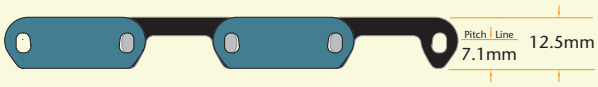


ASSEMBLY NUMBER	NOMINAL WIDTH	WH (MAX)	WL (MAX)	SPROCKET* WIDTH	WEIGHT KG/M
CS100	100	95.7	92.0	100.0	2.4
CS125	125	126.6	123.0	125.0	3.2
CS140	140	138.5	134.9	140.0	3.5
CS150	150	150.4	146.8	150.0	3.8
CS200	200	199.3	196.1	200.0	5.1
CS300	300	304.3	300.6	300.0	7.6

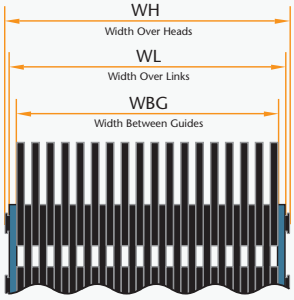
** +0.0/-2.0% Tolerance*
Note: Unless indicated, all dimensions are in millimeters

S Side Guide Chain

EXTENDED PITCH

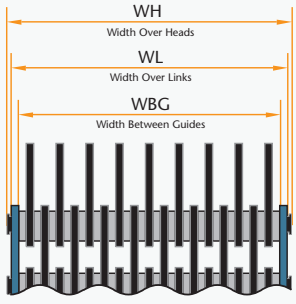


L ALL-LINK ASSEMBLY



ASSEMBLY NUMBER	NOMINAL WIDTH	WH (MAX)	WL (MIN)	WBG (MIN)	SPROCKET* WIDTH	WEIGHT KG/M
SL100	100	105.9	102.2	99.2	97.7	3.8
SL125	125	132.4	128.7	125.7	124.2	4.7
SL140	140	142.4	138.7	135.7	134.2	5.1
SL150	150	156.5	152.8	149.8	148.3	5.6
SL200	200	201.8	196.9	194.5	193.0	7.1
SL300	300	307.0	303.3	300.3	298.8	11.0

S LINK-SPACER ASSEMBLY



ASSEMBLY NUMBER	NOMINAL WIDTH	WH (MAX)	WL (MIN)	WBG (MIN)	SPROCKET* WIDTH	WEIGHT KG/M
SS100	100	105.9	102.2	99.2	97.7	2.5
SS125	125	132.4	128.7	125.7	124.2	3.2
SS140	140	142.4	138.7	135.7	134.2	3.3
SS150	150	153.4	149.7	146.7	145.2	4.0
SS200	200	201.8	196.9	194.5	193.0	4.9
SS300	300	307.0	303.3	300.3	298.8	7.2

** +0.0/-2.0% Tolerance*
Note: Unless indicated, all dimensions are in millimeters

Ramsey Sprockets

All Ramsey conveyor chains operate on 1/2" pitch Ramsey sprockets. Our sprockets are typically manufactured from C-1141 steel and are heat treated to provide hardened tooth surfaces.

Sprockets can be fully machined with finished bore and setscrews, or you can ask that they be supplied with an unfinished bore to allow further machining.

Specialized machining is available to accommodate a customer's exact specifications. Materials, other than steel, are available upon request.

PERFORMANCE GUIDELINES

In general, larger sprocket diameters will provide for smoother chain operation and less vibration, so it is best to avoid very small sprockets in applications that require smooth transport. In most cases, sprockets for UltraLife, Standard, and Lo-Profile chains should have a minimum of 21 teeth. Sprockets for Extended Pitch Chains should have at least 26 teeth.

Sprocket Tooth profiles are cut to established standards to assure proper meshing of the sprocket and chain. Chain and sprocket dimensions must be compatible for proper operation. We recommend purchasing chain and sprockets from the same source.

SPECIFYING A SPROCKET

It is important to choose a sprocket that is compatible with your chain. You should always consider the following:

- Guide type
- Face Width
- Keyway Size
- Hub Projection
- Hub Diameter
- Number of Teeth
- Bore Diameter
- Hub Type

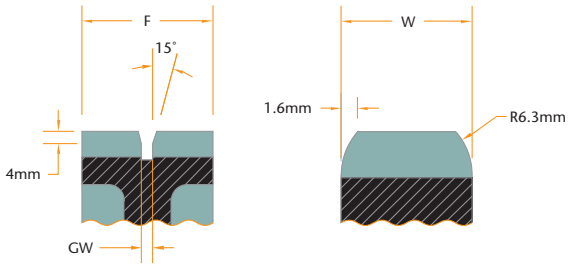
For assistance in selecting a sprocket, please contact us.

GUIDE TYPE

Sprockets can be grouped into two broad categories: *center guide* and *side/multiguide*

Center Guide A groove machined in the center of the sprocket face accepts the chain's center guide link.

Side/MultiGuide The sprocket fits between the chain's side guide plates.



CENTER GUIDE **SIDE/MULTIGUIDE**

CENTER GUIDE DATA

F = same as Nominal Chain Width

GW = Guide Width
= 3mm for F<200mm, uses a single guide link
= 5mm for F≥200mm, uses a double guide link

SIDE/MULTIGUIDE DATA

W = WBG - 1.5mm
(unless otherwise specified)

WBG = Width Between Guides
(See Ordering Charts pgs 7-12 for WBG & W)

PROBLEM SOLVING FOR CONVEYING CHAIN DRIVES

Problem: *Excessive wear on chain guide links*
Action: Check alignment of sprockets. Also, ensure conveyor guides do not force chain to one side of the sprockets.

Problem: *Pin heads worn or chipped*
Action: Check that the chain type is compatible with the guides being used, and that heads are not impacting guides. Inspect wear plate for unusual wear or grooves that cause the chain to run lower relative to the guides. Inspect link tips for excessive wear.

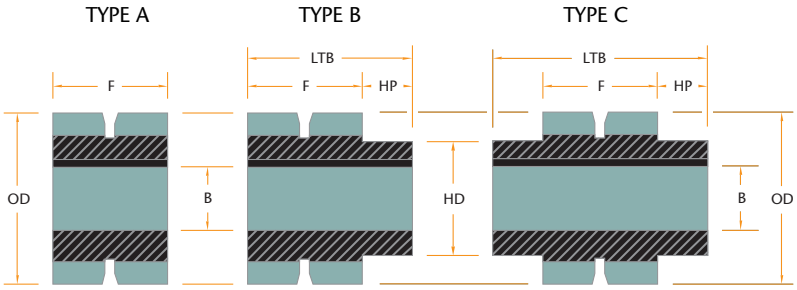
Problem: *Short chain life*
Action: Check for chain overloading that can be caused by over-tensioning or improper guide clearance. Excess debris in the chain may also accelerate wear and reduce life.

Problem: *Chain speed variation or surging*
Action: Check for excessive sprocket or chain wear or debris accumulation on sprocket or chain. It is also caused by connecting used chain sections with unused sections, a practice we discourage.

SPROCKET HUB TYPE

HUB DIMENSION DATA

F = Nominal Chain Width
B = Bore
OD = Outside Diameter
HD = Hub Diameter
LTB = Length Through the Bore
HP = Hub Projection



SPROCKET HUB TYPES

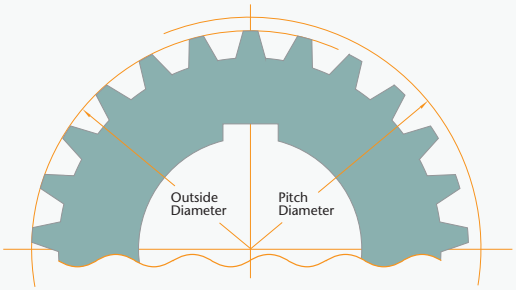
ADDITIONAL INFORMATION

PD Pitch Diamete(mm) = 12.7/sin (180/Z)
GD Gross Wrapped Diameter(mm) = PD+X
V Surface Velocity (M/s) = $2.12x10^{-4}(Z)(N)$
N = Revolutions per Minute
Z = Number of Teeth
X = See chart below

X values in mm (for GD calculation)

Ultralife (1pin)	10.6
Ultralife (2pin)	13.2
Standard	10.6
Lo-Profile	10.2
Extended	10.8

OD=OUTSIDE DIAMETER (in mm)

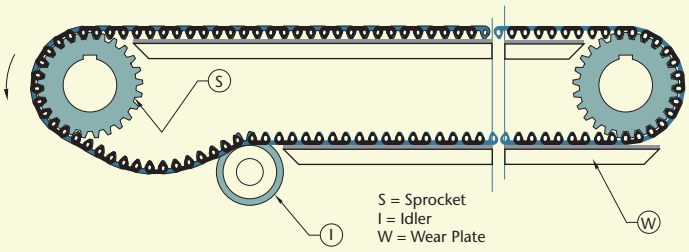


SPROCKET PROFILE

Z*	OD	Z*	OD	Z*	OD
18	71.4	46	185.9	74	299.4
19	75.5	47	190.0	75	303.5
20	79.6	48	193.4	76	307.5
21	83.8	49	198.1	77	311.6
22	87.9	50	202.1	78	315.6
23	92.0	51	206.2	79	319.7
24	96.1	52	210.3	80	323.7
25	100.2	53	214.3	81	327.8
26	104.3	54	218.4	82	331.8
27	108.4	55	222.4	83	335.9
28	112.5	56	226.5	84	339.9
29	116.6	57	230.6	85	344.0
30	120.7	58	234.6	86	348.0
31	124.8	59	238.7	87	352.1
32	128.9	60	242.7	88	356.1
33	133.0	61	246.8	89	360.2
34	137.1	62	250.8	90	364.2
35	141.2	63	254.9	91	368.3
36	145.2	64	258.9	92	372.3
37	149.3	65	263.0	93	376.4
38	154.3	66	267.0	94	380.4
39	157.4	67	271.1	95	384.4
40	161.5	68	275.1	96	388.5
41	165.6	69	279.2	97	392.5
42	169.6	70	283.2	98	396.6
43	173.7	71	287.3	99	400.6
44	177.8	72	291.4	100	404.7
45	181.8	73	295.4		

**Z = Number of Teeth*

Installation & Usage Guidelines



• **Wear Plates** In most installations, the chain is supported by hardened steel wear plates under its full width. It is important that the condition of wear plates be checked periodically, since excessive wear in the plate can cause chain to wear rapidly and non-uniformly. Typically, the plate will wear more quickly in the center of the chain where weight is supported.

• **Tensioning** When removing excess slack, take care not to over tension the chain. Excessive tension will increase chain loading, increase wear, and decrease life.

• **Guide Design** Chain guides on the side of the conveyor have different designs depending on the equipment manufacturer. When replacing a chain it is important to choose a chain type that is compatible with the guides in use. Chain dimensions are shown on pages 7-12 for the various Ramsey chains. Sharp edges should be avoided at the entrance to each guide strip.

• **Guide Placement** Chain guides should not restrict or interfere with the free movement of the chain.

• **Lubrication** In most glass transport applications, Ramsey does not recommend routine lubrication of the chain. During shut downs, a light oil may be applied to prevent seizing. Use of lubricants can cause accumulation of debris that interferes with proper chain action and accelerates wear.

• **Chain Elongation** As chain pitch elongates over the life of the chain, it may be necessary to remove sections of chain. This elongation is sometimes called "stretch", even though it is caused by the wear of parts. When a chain has elongated by 3 to 4%, it is generally recommended that it be replaced.

• **Chain Link Tip Wear** As the tips of links wear, the height of the chain is reduced. When link tips become so worn that the pin heads begin to interfere with conveyor guides, the chain should be replaced.

Catalog# 900-407

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For over 40 years, Ramsey has been supplying chain to the international market. Our goal is to provide the widest range of top quality Inverted tooth chains, unmatched service and competitive prices. Please contact Ramsey and let us show you how we can help enhance your growth and success.