

# Pennine Premium Silent Chains

PENNINE



INDUSTRIAL  
EQUIPMENT



1968 - 2018



driving  
glass  
forward

***HYPER***drive™

# Introduction

Pennine Industrial Equipment Ltd of Huddersfield, England, has been involved in the manufacture of silent inverted tooth chains for over 40 years.

The company was founded in 1968 and, since the start, it has been heavily involved in supplying services and products to both the power transmission and the conveying industries.

Today, the company exports its leading UK manufactured chains and sprockets to over 50 countries throughout the world.

All our link plates are manufactured in our own press factory here in the UK, Pennine Prostamp LLP, a wholly owned subsidiary based in the West Midlands. The steel used in our high quality Pennine Power Transmission and Pennine Conveying chains is sourced from only 3 selected European steel mills whose quality control and tolerances meet the high standards set out by Pennine Industrial's own quality control department.

The assembly of all Pennine chains, including the very newest development - The Hyperdrive™ Conveyor Chain, takes place in our factory located near Huddersfield in Yorkshire, an area renowned for its development of power transmission products and home to the British Glass Industry.

Over recent years, Pennine has invested heavily in research and development and has recently built a dedicated test facility, which holds custom built test equipment used to simulate the loads and speeds and even the heat that Pennine chains will endure throughout their working life.

Pennine Industrial is proud that its range of chains and sprockets are fully manufactured in the UK using only the highest quality materials, assembled by dedicated staff.



1968

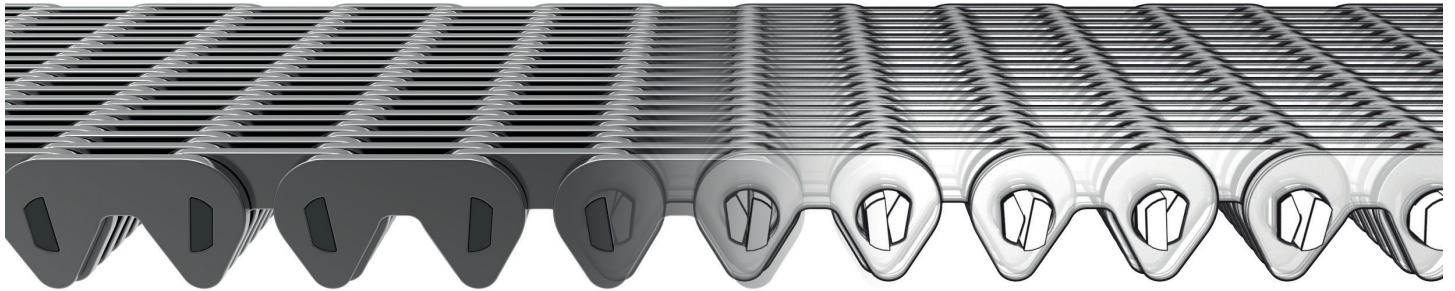


1991



2017

## 2 Pin HYPERdrive™ Chain - HD

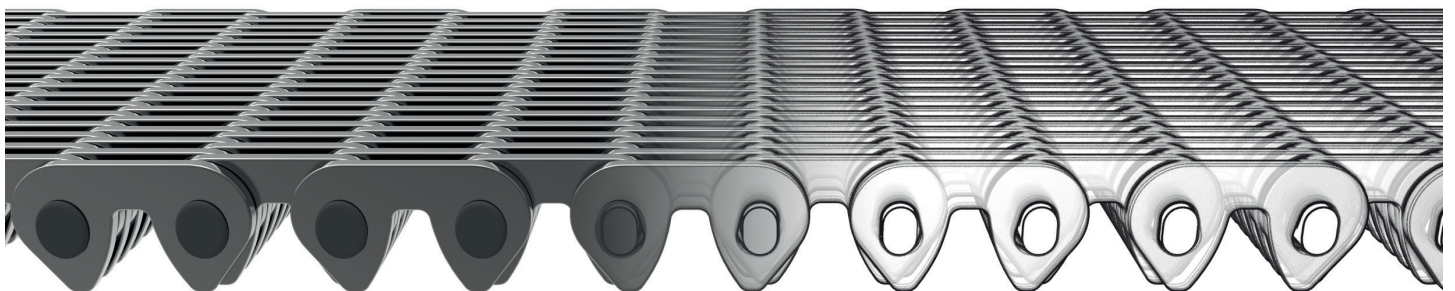


Our most highly engineered chain, with 3 years in development, Pennine 2 Pin HYPERdrive™ chain has been specifically designed for the future of IS machine glass production. HYPERdrive™ chain is designed to excel in the demanding modern environment of high speed production. HYPERdrive™ chain has been engineered to perform at speeds in excess of 60 M/min and resist elongation far more than single pin.

- Highest performing chain for the most demanding environments
- Designed for use in high speed production
- Laser welded pins to prevent pin protrusion
- Direct replacement for any other silent chain
- Less maintenance and elongation than single pin chain
- Only available from Pennine Industrial Equipment

**HYPER**drive™

## Single Pin Chain - P



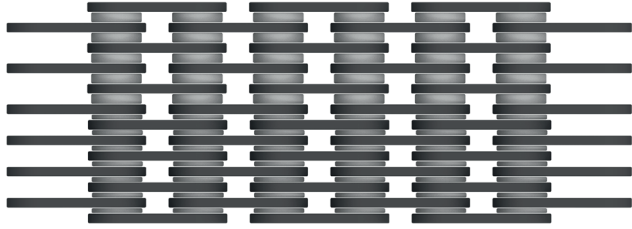
Single pin chain is the original tried and tested design of conveying chains. Proven over the last 80 years it can perform in the harshest and most challenging environments. Pennine have been manufacturing single pin inverted tooth silent chain for over 40 years from our dedicated facilities based in the UK.

- Original tried and tested design
- Designed for use in the majority of environments
- Various Head Protector options
- Direct replacement for any other silent chain
- Quick connection option available through Penn-Lock
- 40 years of manufacturing experience
- Available in 10.2 and extended pitch options



# Assembly Options

## Link & Spacer - **W**

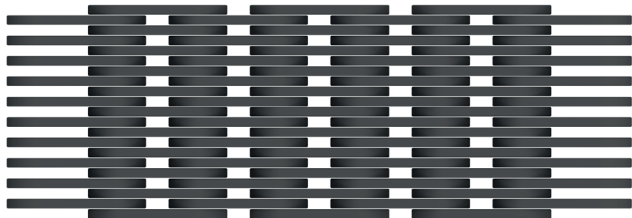


Link and Spacer chains are manufactured by assembling a single washer between each link plate, allowing the overall chain weight to be reduced by approximately 25%. The increased space between the link plates allows carbon and debris to fall through, whilst at the same time allowing for much greater airflow through the chain when under-belt cooling is required.

Thin Spacer chains offer 25-30% more link surface than a normal link and spacer chain giving improved resistance to elongation and link height wear. There is a 50% reduction in the distance between links giving improved stability over normal Link and Spacer Chain.

## Link & Thin Spacer - **TW**

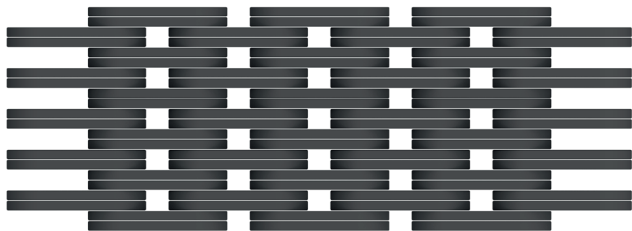
## All Link - **L**



All Link chains are manufactured from 100% links to provide the maximum working surface and provide the smoothest handling of glass containers. The individual link plates are positioned to give the minimum space between each link plate, the result being a chain which gives maximum stability and is suitable for use with very small or unstable glassware.

An additional advantage is that a chain made only from link plates rather than the Link and Spacer assembly will give the user considerably less elongation at higher conveyor speeds due to the fact there are 100% more points of contact on the driving pins.

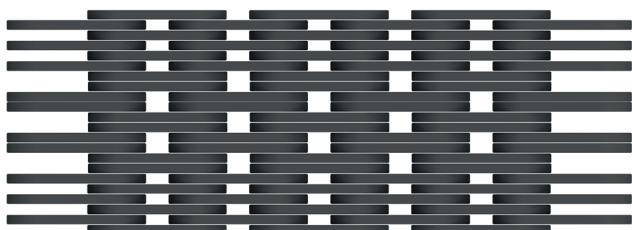
## Double Assembly - **DA**



These chains incorporate two factors which are important in today's modern high speed glass container manufacturing, that of bottle stability and under belt cooling. By using the Double Assembly instead of Link and Spacer design, the spacing is reduced from 4.5mm to 3mm, resulting in a chain with much improved and all-important bottle stability when compared with the original Link and Spacer design of chains.

Double Assembly chains are manufactured with 100% more links than the original Link and Spacer chain, resulting in a stronger chain with a greater load bearing surface giving longer chain life whilst still offering excellent air flow where under belt cooling is required.

## Special Assembly - **DACS**

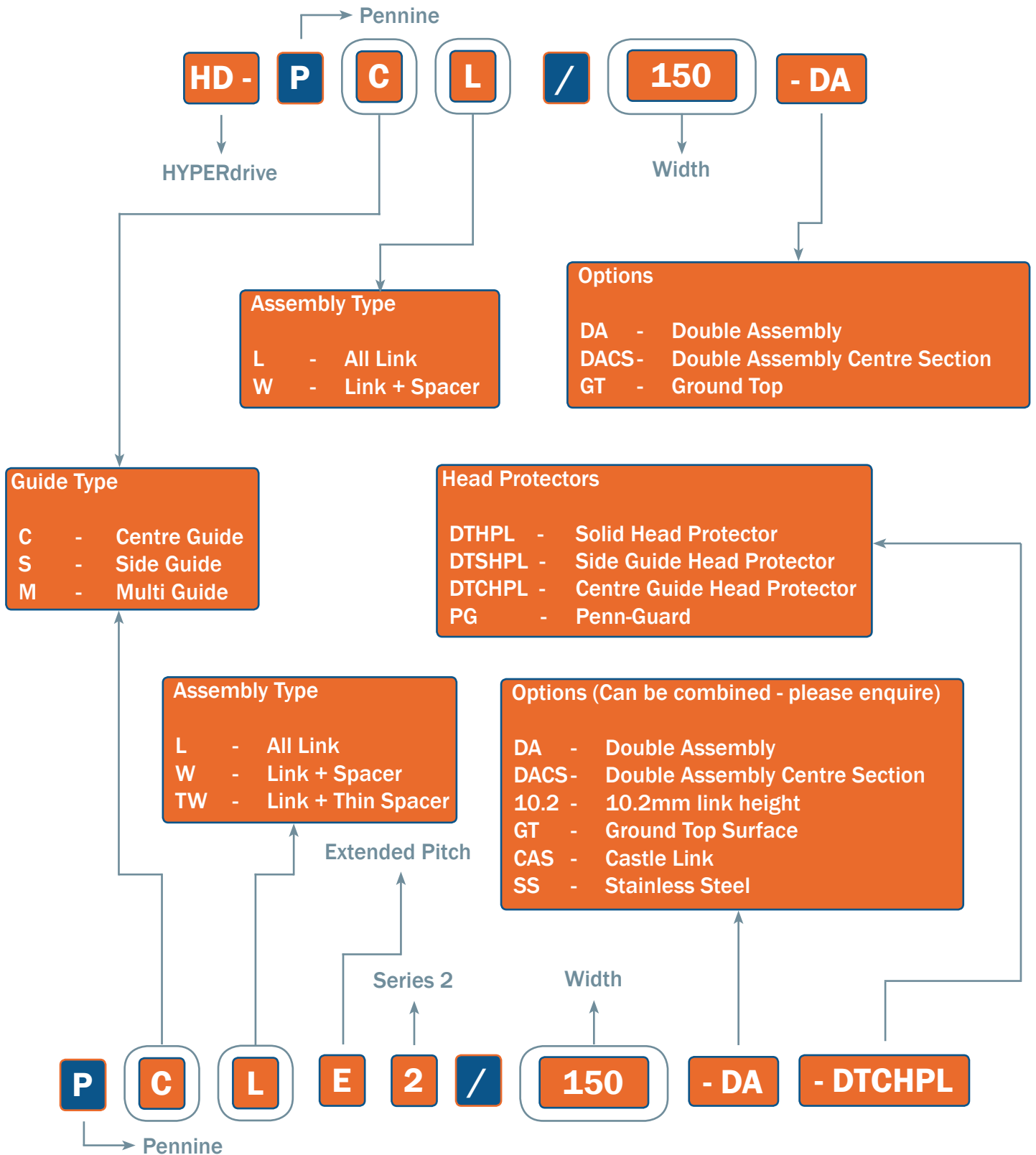


Pennine offer a range of custom made Conveyor Chains designed to meet the customers' individual requirements. Individual rows of washers can be built into All Link Chain, which results in targeted under-belt cooling whilst still giving maximum stability over the remainder of the chain's working surface.

Also, a very popular option is the Double Assembly Centre Section (DACS) chain, which is made up from a large centre section of Double Assembly links to give excellent under belt cooling, but edged with rows of all link assembly to give maximum stability at the point of product transfer.

# Part Number Guide

## HYPERdrive™ part numbers

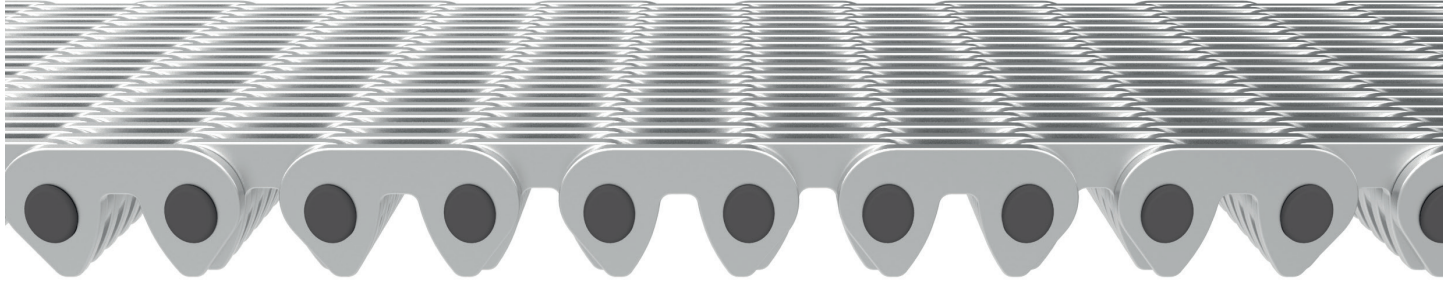


## Single pin part numbers



# Stainless Steel + Castle Link

## Stainless Steel Chain - **SS**

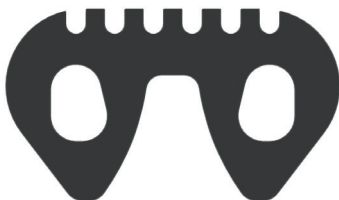
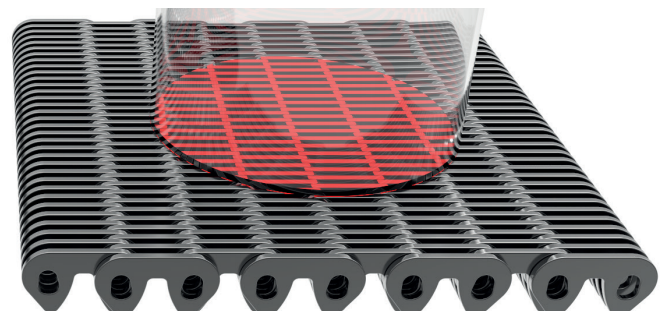
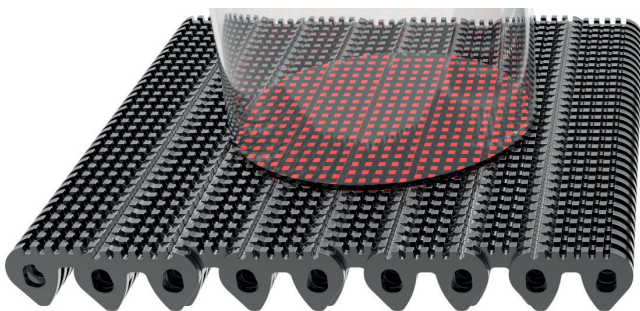


The thermal properties of STAINLESS STEEL reduce the risks of thermal checking by retaining more heat energy than regular carbon steel chains:

- Reducing or eliminating the need for gas burners.
- Reducing operating and maintenance costs.

The corrosion resistance of STAINLESS STEEL Conveyor Chain also prevents any oxidation marks common with carbon steel Conveyor Chain marking the bottom of the glass container, especially important in the high quality Cosmetic Industry. Pennine Industrial have selected 420 grade stainless steel for its excellent mechanical properties and because it can be hardened. This means that our STAINLESS STEEL chain has EXACTLY the same wear resistance as our carbon steel chain. As the pins never come into contact with the glass all Pennine STAINLESS STEEL chains will be supplied with our tried and tested hardened carbon steel pins.

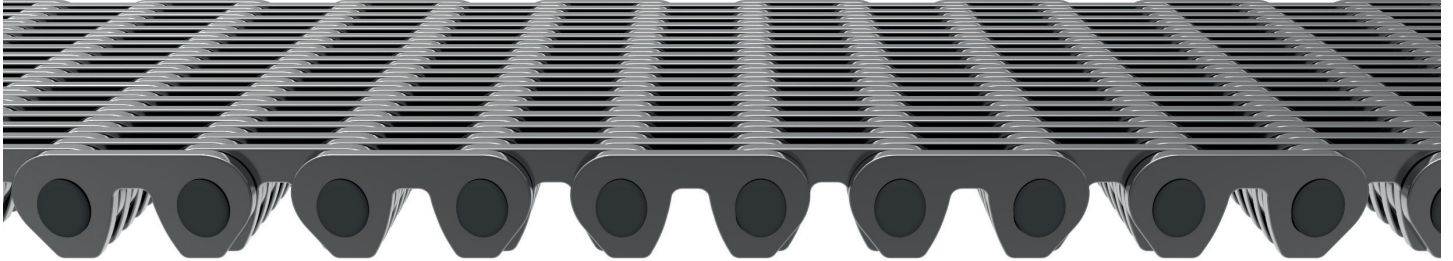
## Castle Link Chain - **CAS**



Pennine castle chain uses a specially designed link with a “castle” profile, reducing the contact area with the glass. This causes less heat transfer which reduces thermal shock especially on the base of flat, thick bottomed glass containers used in the cosmetic industry. Due to the design of the castle chain it is only recommended for use with glass containers without stippling to prevent stability issues. Castle chain can be supplied in all guide and assembly types and can be partnered with the Pennine HPL (Head Protector Link) system for maximum pin head protection. If stability is an issue, the castle link chain can also be supplied with a ground top surface. There is also a 10.2mm link height option available.

# 10.2 Low Profile + Ground Top

## 10.2 Low Profile Chain - 10.2



Pennine's Low Profile chain is the only Low Profile Chain available which benefits from the advantages of our Premium Conveyor Chain, incorporating links that are super flat and having link apertures with clean cut sides for reduced elongation and long life.

The advantages of Low Profile chains are flatter link bottoms which increase the surface contact with the wear plates; this reduces the speed at which the link height changes during its life.

10.2 Chains are regularly supplied as standard on some Italian produced IS machines and cross conveyors.

Low Profile 10.2mm high Chain is available in all designs of Centre Guide, Side Guide and Multi-Guide in All Link, Link and Spacer and Double Assembly options. The part numbers for all Low Profile chains will have a suffix of 10.2.

## Ground Top Chain - GT



In addition to our standard range of chains, Pennine can also offer chains which are ground on one or both faces. The main versions of this type of chain are shown in the table below, the main reasons for choosing a particular type of chain being as follows: -

'GT' - To produce an even smoother, flatter surface for the transfer of glassware. This type of chain is especially good for small items such as perfume bottles.

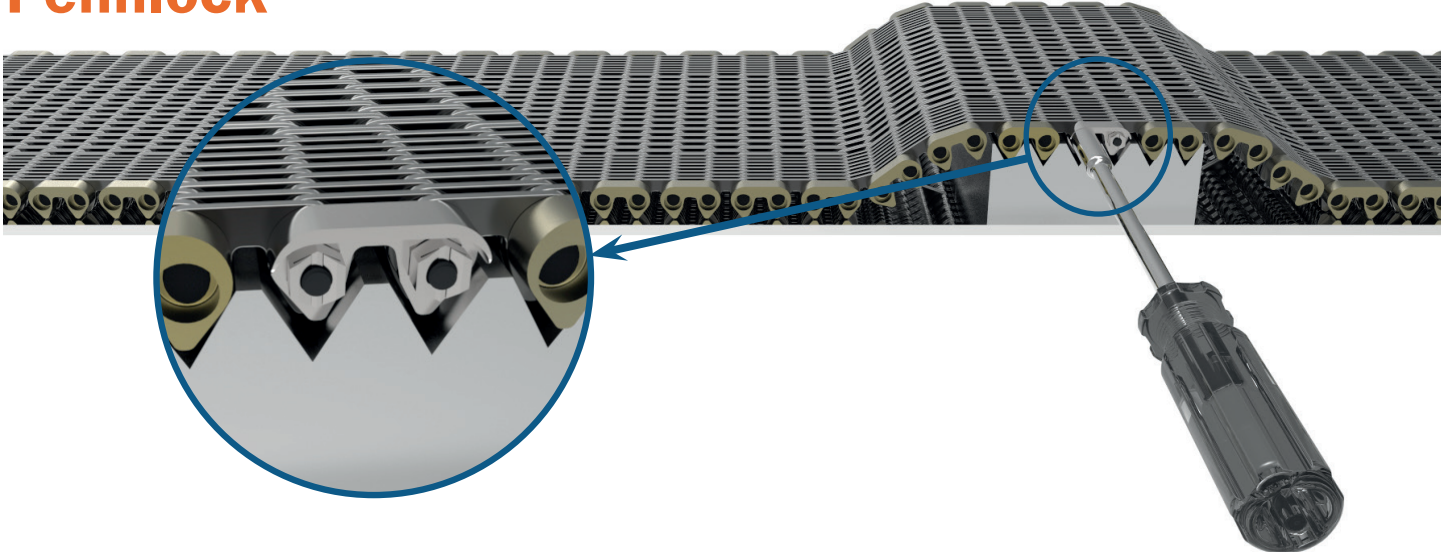
'GTB' - To give a very accurate, constant, chain link height which is especially important when the chain is used on measuring, testing and inspection equipment, at the cold end of production.

Suffix	Description	Height after grinding
GT	Ground Top Standard 12.57mm Chain	12.30mm
GT	Ground Top Standard 10.2mm Chain	10.00mm
GTB	Ground Top and Bottom Standard 12.57mm Chain	Between 10.00mm and 12.30mm



# Pennlock + PennGuard

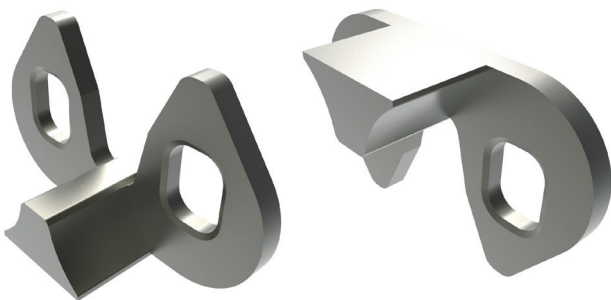
## Pennlock



Pennlock is an industry first rapid connecting system designed to reduce the time taken to join the chain while it is on the machine. Pennlock is suitable for any type of chain fitted with Thicker Type Head Protectors and offers a consistent chain running surface.

Pennlock can be purchased as a complete kit including hex nut driver, 10 pins, 10 special nuts and 5 caps, spares are also available.

## PennGuard - PG



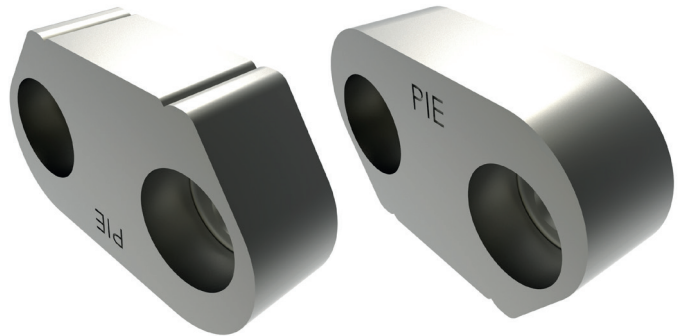
PennGuard is an optional extra that can be used with any of the Head Protector Links. PennGuard provides a completely flat running surface to provide seamless transfer of small and or unstable ware. PennGuard is often combined with Ground Top for the most demanding of applications.



# Head Protector Links

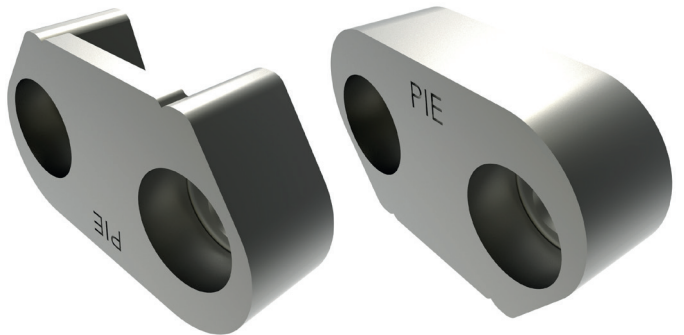
## Solid THPL - DTHPL

The original THPL has been improving the performance of conveyor chain since 2002. THPLs can be fitted to one or both sides of Multi Guide chain of any assembly and can be fitted to centre guide chains with modified sprockets. Compatible with Pennlock



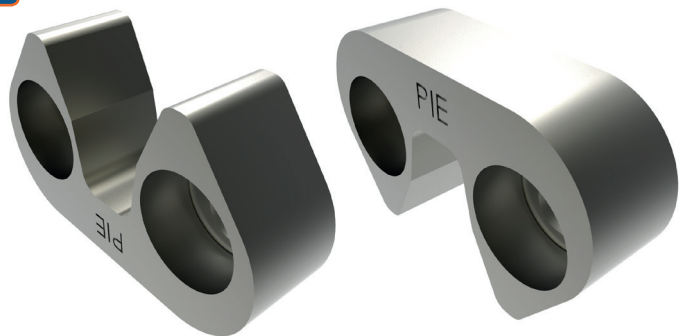
## Side Guide THPL - DTSHPL

Designed for use with Side Guide chains. With the TSHPL there is no need to modify existing Side Guide sprockets. TSHPLs can be fitted to one or both sides of side guide chains of any assembly type. Compatible with Pennlock



## Centre Guide THPL - DTCHPL

Designed for use with Centre Guide chains. There is no need to modify existing Centre Guide sprockets. TCHPLs can be fitted to one or both sides of Centre Guide chain of any assembly type. Compatible with Pennlock



The ORIGINAL Head Protection System designed by Pennine Industrial Equipment. Protect your chain with one of the many Head Protector Links available from Pennine Industrial Equipment.

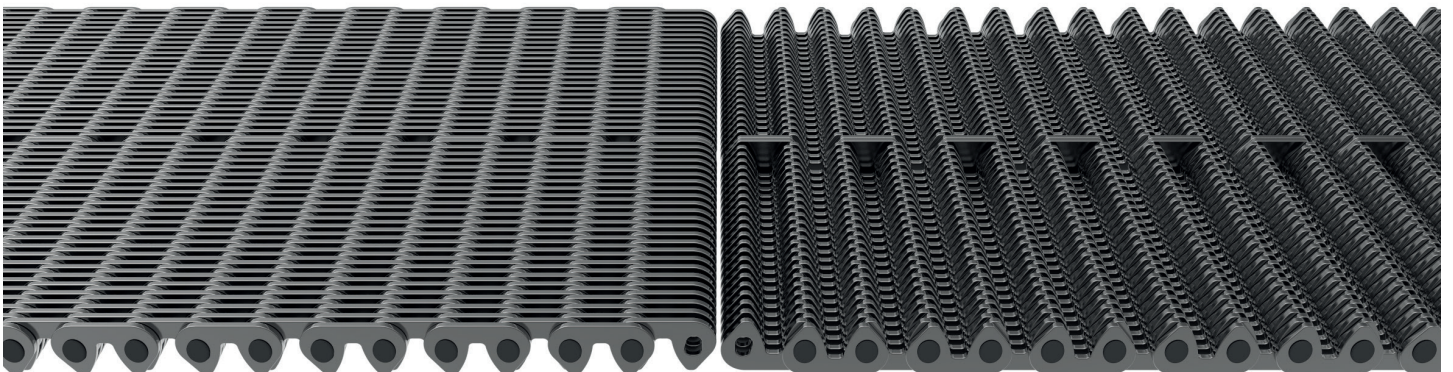
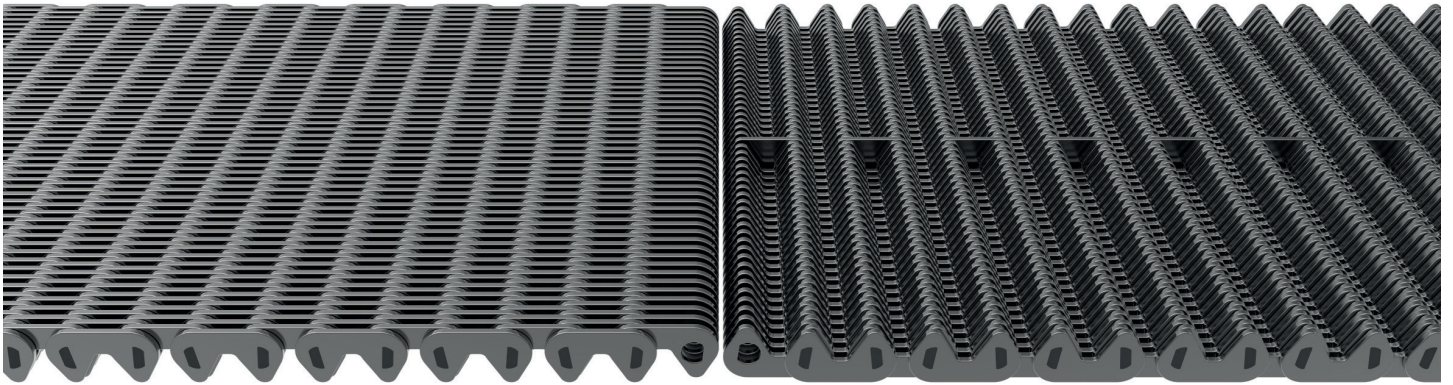
UK Patent No. 1241117

Head protectors can be fitted to one or both sides of all single pin conveyor chains, please contact Pennine Industrial Equipment or your local representative for more information.

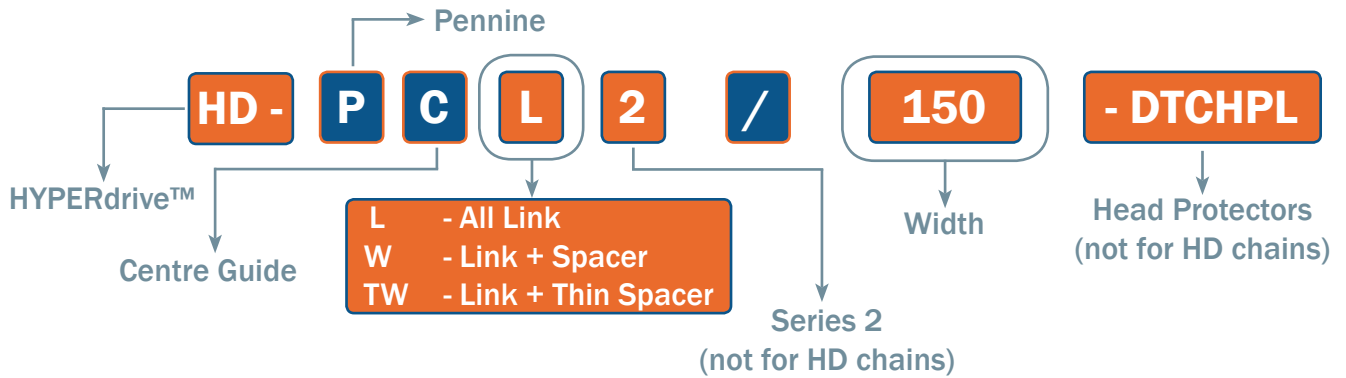


# Centre Guide Chain - All Link

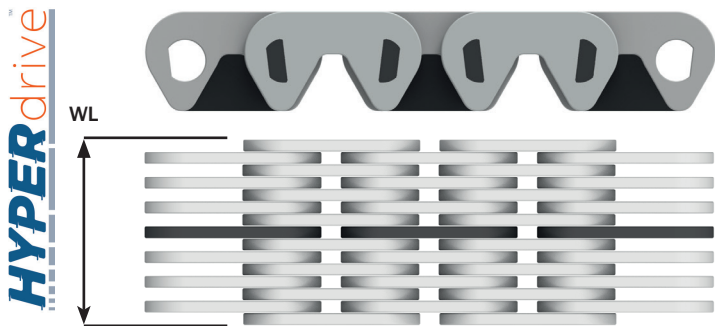
One of the popular options to guide Pennine 'PREMIUM' Conveyor Chain is Centre Guide. The double guide link plates in the centre of the chain fit into the groove in the centre of the sprocket teeth, keeping the chain aligned during operation. Single guide link chains are also available when required and supplied as standard on HYPERdrive™ chains. Centre Guide chains are available in a variety of standard widths from 100mm (4") up to 400mm (16"). Special width chains can be made to suit customers' individual requirements from 12mm (½") wide. Centre Guide chain is also available in Link and Spacer, Double Assembly and Special Assembly versions.



## Centre Guide Part Numbering:

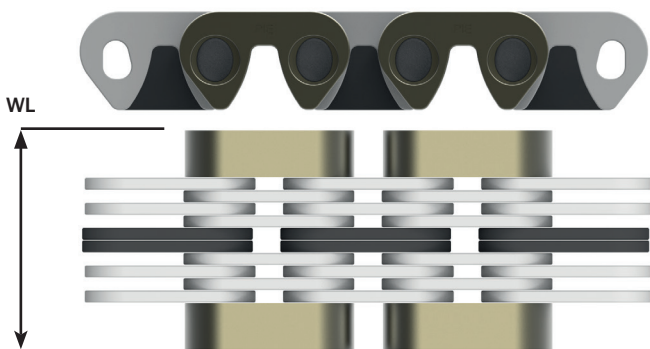


## HYPERdrive™ Laser Welded Chain:



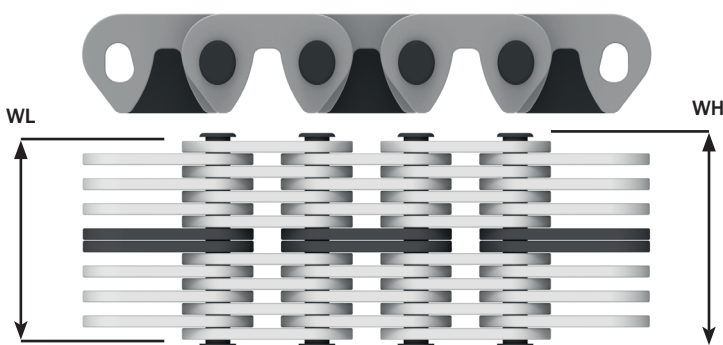
Part No:	WL min mm	WL max mm	Weight kg/m
HD-PCL/100	99.5	100.0	6.0
HD-PCL/120	119.5	120.0	6.9
HD-PCL/125	124.5	125.0	7.2
HD-PCL/140	139.5	140.0	7.9
HD-PCL/150	149.5	150.0	8.6
HD-PCL/180	179.5	180.0	10.1
HD-PCL/200	199.5	200.0	11.6
HD-PCL/250	249.5	250.0	14.6
HD-PCL/300	299.5	300.0	17.3

## Single Pin Chain with DTCHPL:



Part No:	WL min mm	WL max mm	Weight kg/m
PCL2/100-DTCHPL	98.1	100.6	5.8
PCL2/120-DTCHPL	114.2	116.7	6.7
PCL2/125-DTCHPL	120.3	122.8	7.0
PCL2/140-DTCHPL	132.2	134.7	7.7
PCL2/150-DTCHPL	144.2	146.7	8.4
PCL2/180-DTCHPL	171.6	174.1	9.9
PCL2/200-DTCHPL	196.2	198.7	11.3
PCL2/250-DTCHPL	248.8	251.3	14.3
PCL2/300-DTCHPL	297.0	299.5	17.0

## Single Pin Chain:

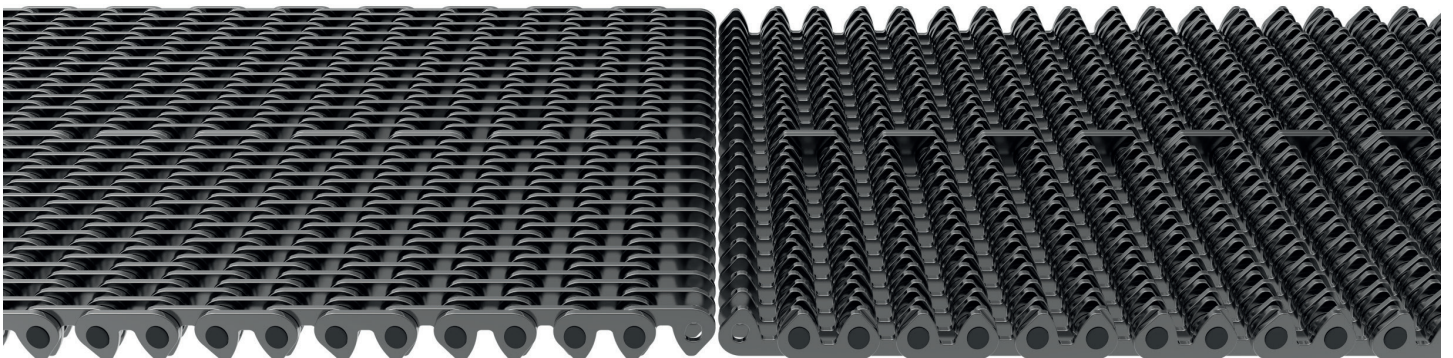


Part No:	WH max mm	WL max mm	Weight kg/m
PCL2/100	103.5	100.6	5.8
PCL2/120	119.6	116.7	6.7
PCL2/125	125.7	122.8	7.0
PCL2/140	137.6	134.7	7.7
PCL2/150	149.6	146.7	8.4
PCL2/180	177.0	174.1	9.9
PCL2/200	201.6	198.7	11.3
PCL2/250	254.2	251.3	14.3
PCL2/300	302.4	299.5	17.0

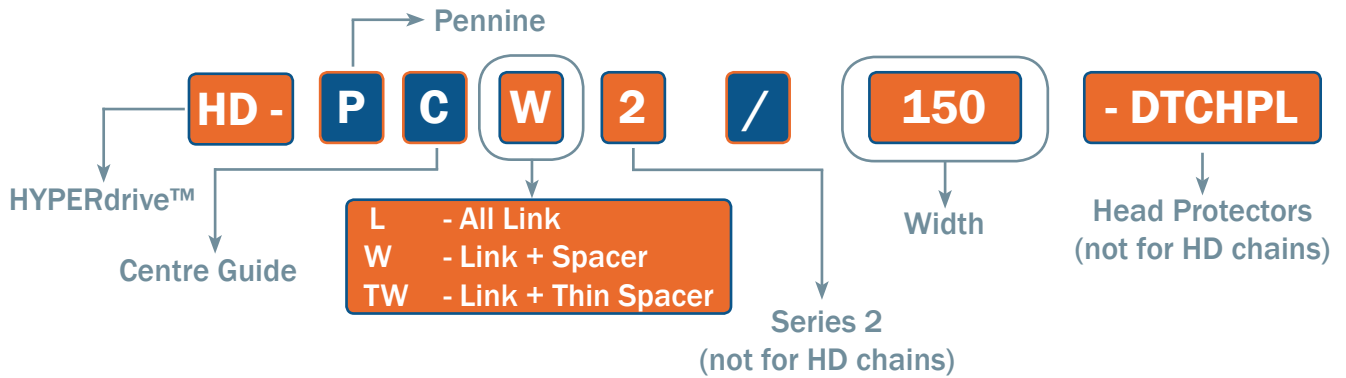


# Centre Guide Chain - Link and Spacer

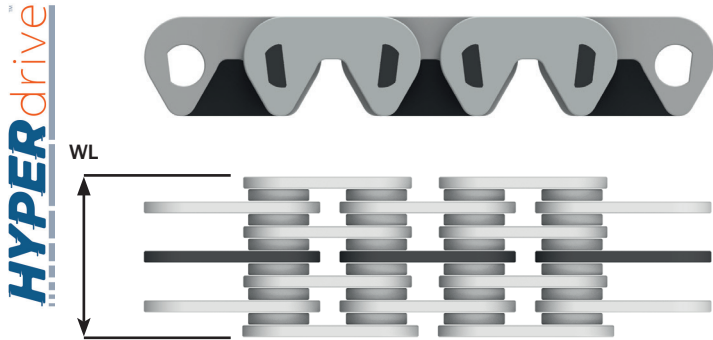
One of the popular options to guide Pennine 'PREMIUM' Conveyor Chain is Centre Guide. The double guide link plates in the centre of the chain fit into the groove in the centre of the sprocket teeth, keeping the chain aligned during operation. Single guide link chains are also available when required and supplied as standard on HYPERdrive™ chains. Centre Guide chains are available in a variety of standard widths from 100mm (4") up to 400mm (16"). Special width chains can be made to suit customers' individual requirements from 12mm (½ ") wide. Centre Guide chain is also available in All Link, Double Assembly and Special Assembly versions. Thin washer link and spacer chain is not available when the HYPERdrive™ option has been selected.



### Centre Guide Part Numbering:

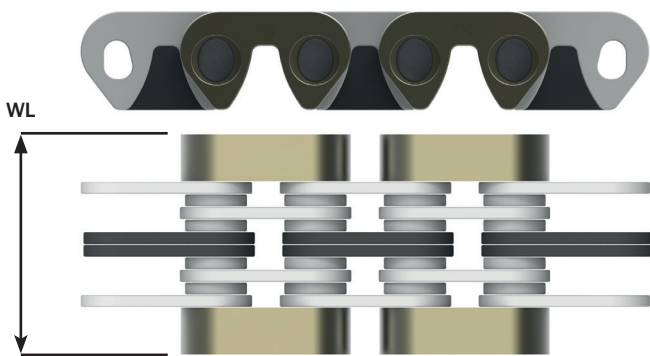


### HYPERdrive™ Laser Welded Chain:



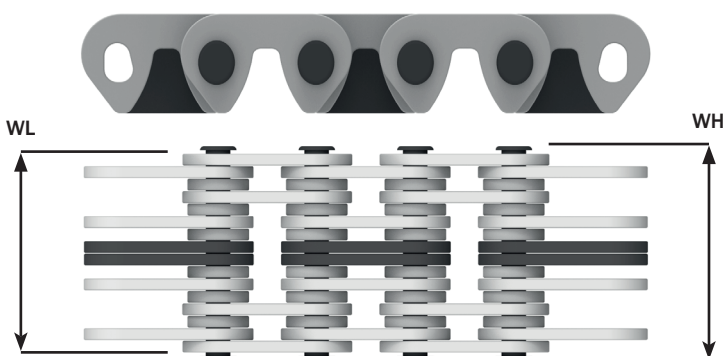
Part No:	WL min mm	WL max mm	Weight kg/m
HD-PCW/100	99.5	100.0	4.5
HD-PCW/120	119.5	120.0	4.7
HD-PCW/125	124.5	125.0	5.5
HD-PCW/140	139.5	140.0	6.0
HD-PCW/150	149.5	150.0	6.5
HD-PCW/175	174.5	175.0	7.4
HD-PCW/180	179.5	180.0	7.6
HD-PCW/200	199.5	200.0	8.7
HD-PCW/250	249.5	250.0	10.9

### Single Pin Chain with DTCHPL:



Part No:	WL min mm	WL max mm	Weight kg/m
PCW2/100-DTCHPL	98.1	100.6	4.3
PCW2/120-DTCHPL	114.2	116.7	5.0
PCW2/125-DTCHPL	120.3	122.8	5.3
PCW2/140-DTCHPL	132.2	134.7	5.8
PCW2/150-DTCHPL	144.2	146.7	6.3
PCW2/180-DTCHPL	171.6	174.1	7.4
PCW2/200-DTCHPL	196.2	198.7	8.4
PCW2/250-DTCHPL	248.8	251.3	10.6
PCW2/300-DTCHPL	297.0	299.5	12.6

### Single Pin Chain:

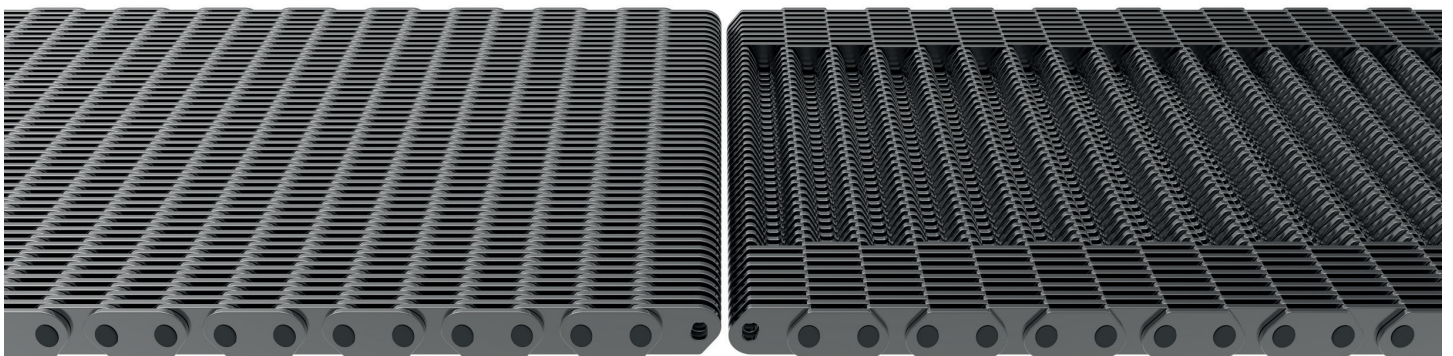
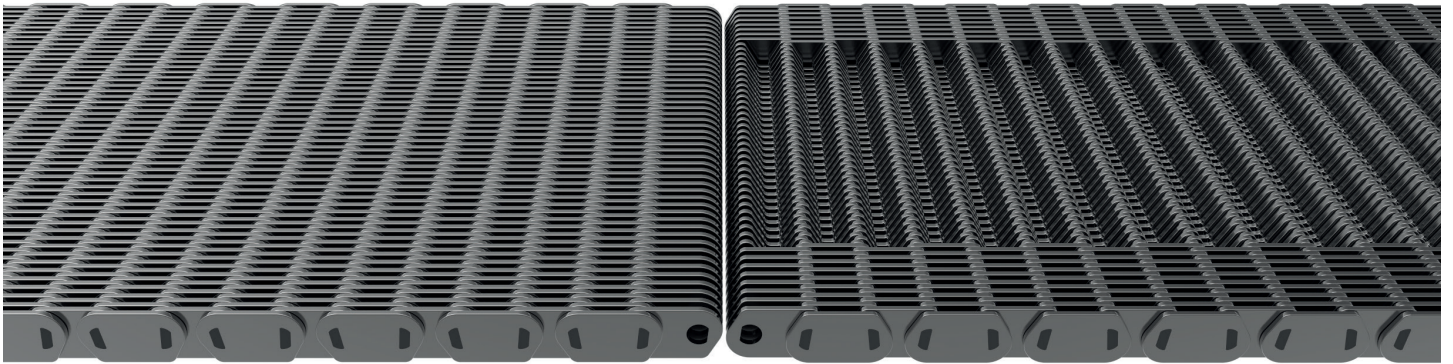


Part No:	WH max mm	WL max mm	Weight kg/m
PCW2/100	103.5	100.6	4.3
PCW2/120	119.6	116.7	5.0
PCW2/125	125.7	122.8	5.3
PCW2/140	137.6	134.7	5.8
PCW2/150	149.6	146.7	6.3
PCW2/180	177.0	174.1	7.4
PCW2/200	201.6	198.7	8.4
PCW2/250	254.2	251.3	10.6
PCW2/300	302.4	299.5	12.6

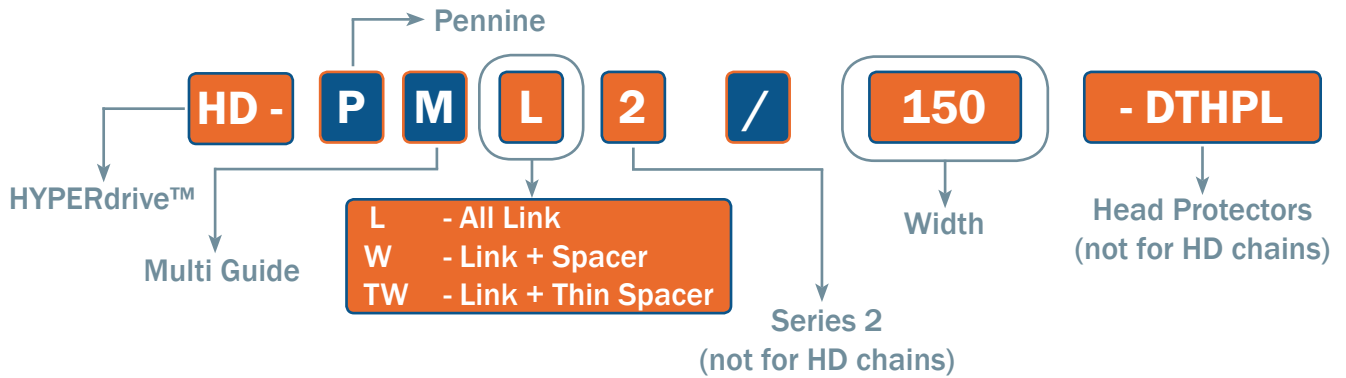


# Multi Guide Chain - All Link

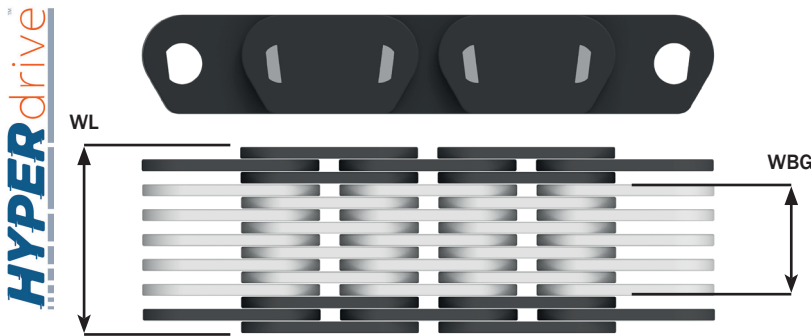
Multi-Guide chains have been designed for 'Stackers' and 'Cross Conveyors', although they are also found in other glass handling applications. Each side of the chain is built up of a large number of guide links, typically about 25mm (1") on each side. Multi-Guide chains are available in a variety of standard widths from 100mm (4") up to 400mm (16"). Multi-Guide also has advantages when a greater surface area is required to be in contact with the support plates. Multi-Guide chains are available in all assembly options shown throughout this catalogue.



### Multi Guide Part Numbering:

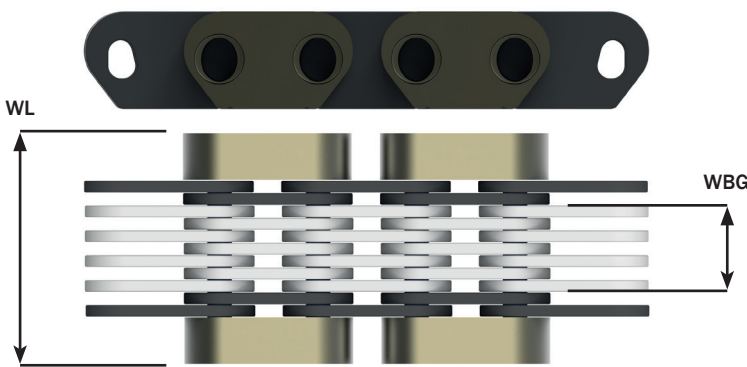


### HYPERdrive™ Laser Welded Chain:



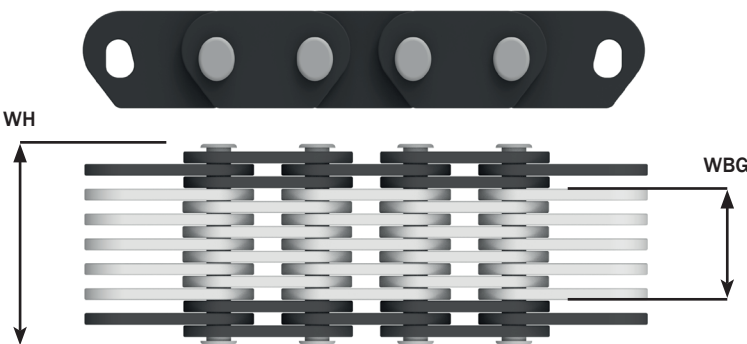
Part No:	WL max mm	WBG max mm	Weight kg/m
HD-PML/100	100.0	71.5	6.3
HD-PML/125	125.0	99.1	7.8
HD-PML/150	150.0	99.1	9.5
HD-PML/151	151.0	102.8	9.6
HD-PML/200	200.0	148.1	12.2
HD-PML/250	250.0	198.7	15.4
HD-PML/300	300.0	247.7	18.3

### Single Pin Chain with DTHPL:



Part No:	WL max mm	WBG max mm	Weight kg/m
PML2/100/DTHPL	101.6	71.5	6.1
PML2/125/DTHPL	125.9	99.1	7.5
PML2/150/DTHPL	150.2	99.1	9.3
PML2/151/DTHPL	150.4	102.8	9.4
PML2/200/DTHPL	199.8	148.1	12.0
PML2/250/DTHPL	250.6	198.7	14.9
PML2/300/DTHPL	300.2	247.7	17.7

### Single Pin Chain:



Part No:	WH max mm	WBG max mm	Weight kg/m
PML2/100	102.5	69.5	6.1
PML2/125	126.8	97.1	7.5
PML2/150	151.1	97.1	9.3
PML2/151	151.4	100.8	9.4
PML2/200	200.7	146.1	12.0
PML2/250	251.5	196.7	14.9
PML2/300	301.1	245.7	17.7

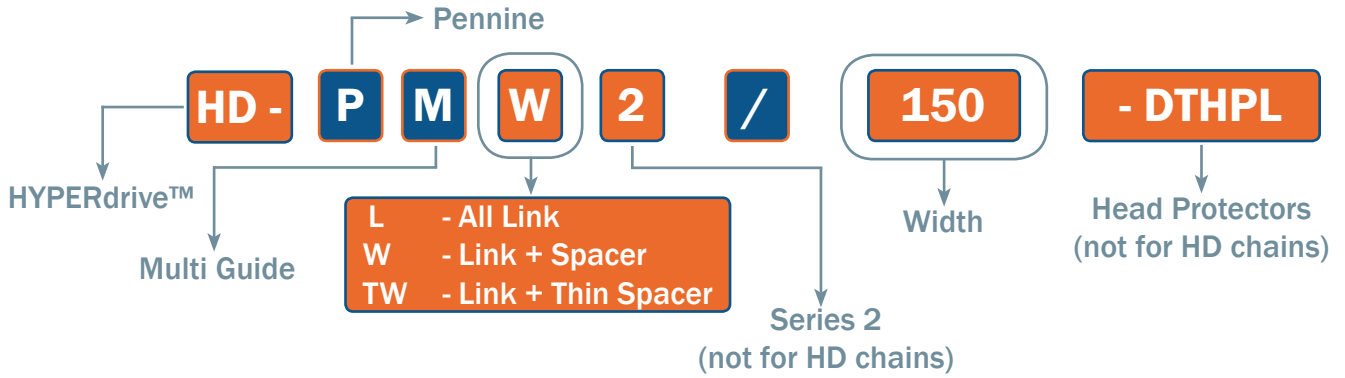
# Multi Guide Chain - Link and Spacer

Multi-Guide chains have been designed for 'Stackers' and 'Cross Conveyors', although they are also found in other glass handling applications. Each side of the chain is built up of a large number of guide links, typically about 25mm (1") on each side. Multi-Guide chains are available in a variety of standard widths from 100mm (4") up to 400mm (16"). Multi-Guide also has advantages when a greater surface area is required to be in contact with the support plates. Multi-Guide chains are available in all assembly options shown throughout this catalogue. Thin washer link and spacer chain is not available when the HYPERdrive™ option has been selected.

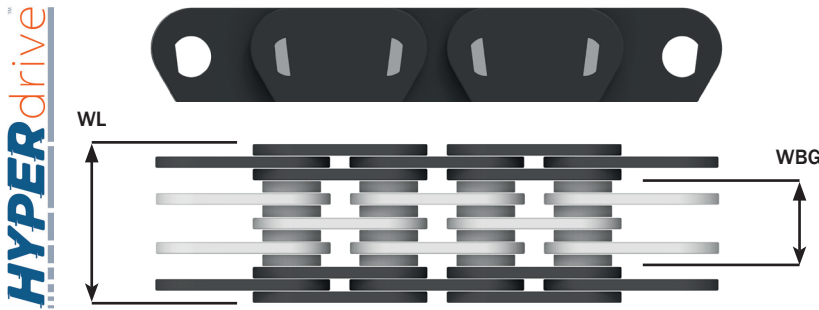




### Multi Guide Part Numbering:

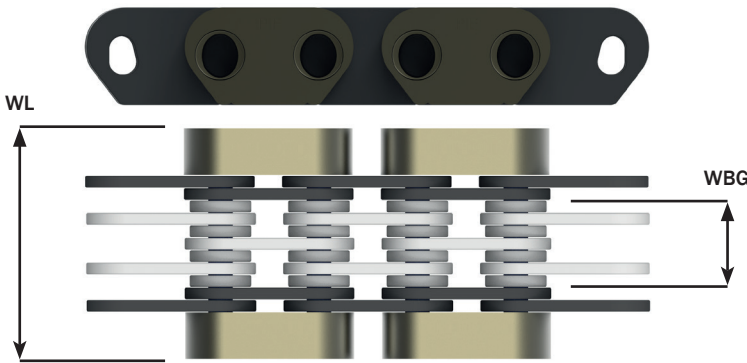


### HYPERdrive™ Laser Welded Chain:



Part No:	WL max mm	WBG max mm	Weight kg/m
HD-PMW/100	100	71.5	5.0
HD-PMW/125	125	99.1	5.9
HD-PMW/150	150	99.1	7.3
HD-PMW/151	151	102.8	7.4
HD-PMW/200	200	148.1	9.4
HD-PMW/250	250	198.7	11.5
HD-PMW/300	300	247.7	13.9

### Single Pin Chain with DTHPL:



Part No:	WL max mm	WBG max mm	Weight kg/m
PMW2/100/DTHPL	101.6	71.5	4.8
PMW2/125/DTHPL	125.9	99.1	5.7
PMW2/150/DTHPL	150.2	99.1	7.1
PMW2/151/DTHPL	150.4	102.8	7.2
PMW2/200/DTHPL	199.8	148.1	9.1
PMW2/250/DTHPL	250.6	198.7	11.1
PMW2/300/DTHPL	300.2	247.7	13.4

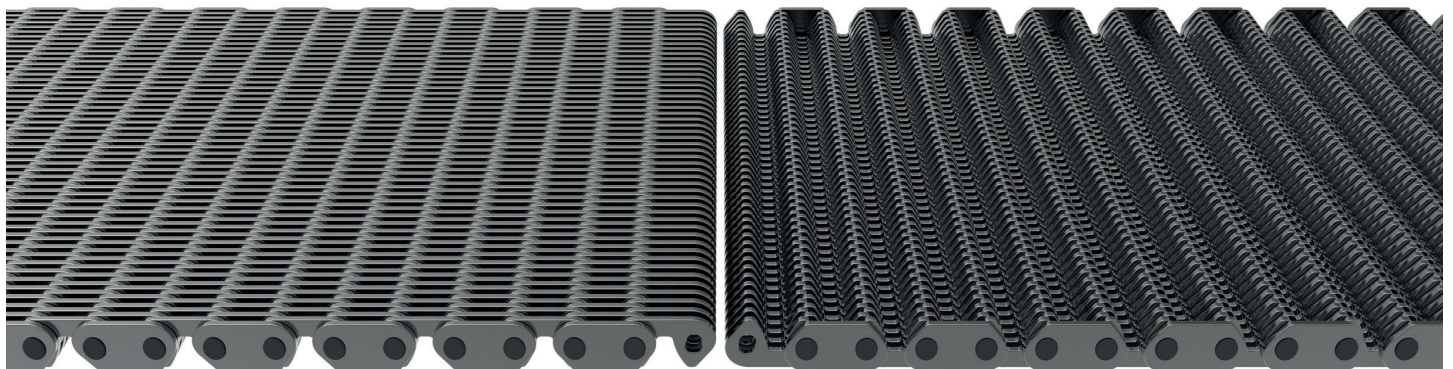
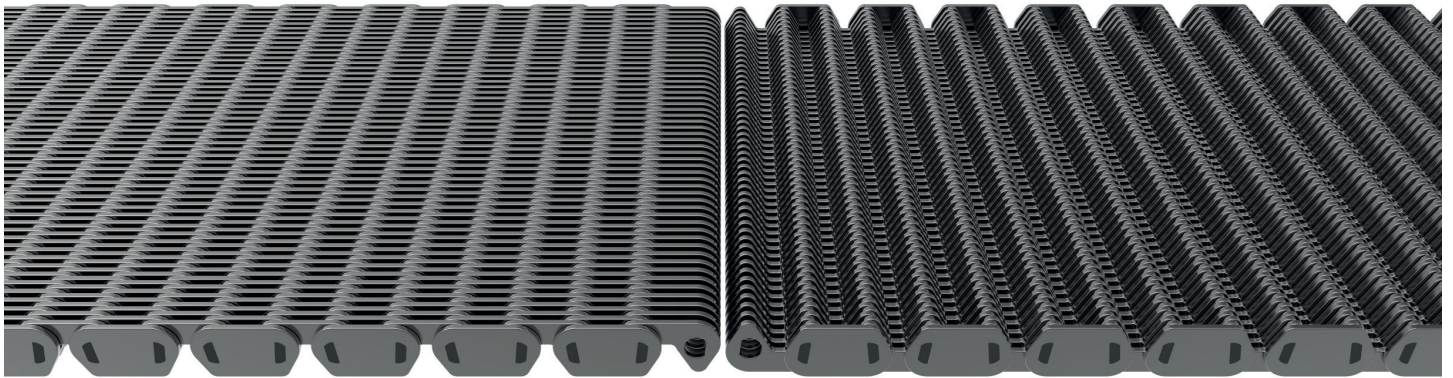
### Single Pin Chain:



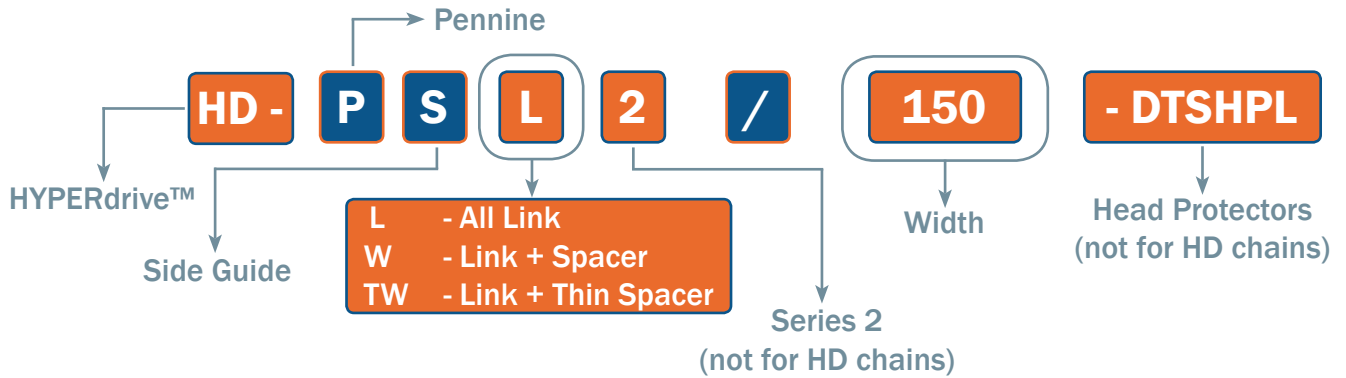
Part No:	WH max mm	WBG max mm	Weight kg/m
PMW2/100	102.5	69.5	4.8
PMW2/125	126.8	97.1	5.7
PMW2/150	151.1	97.1	7.1
PMW2/151	151.4	100.8	7.2
PMW2/200	200.7	146.1	9.1
PMW2/250	251.5	196.4	11.1
PMW2/300	301.1	245.7	13.4

# Side Guide Chain - All Link

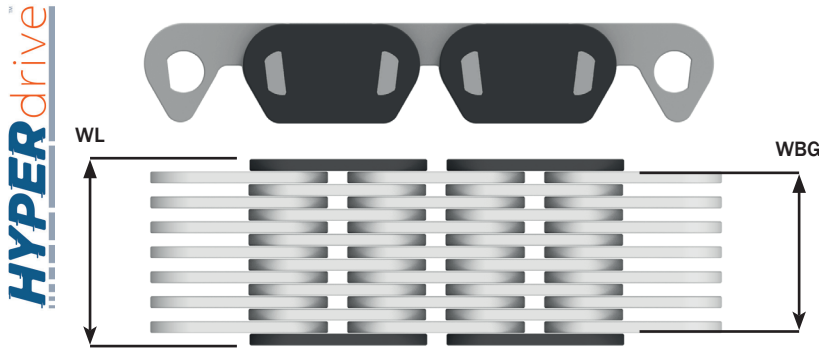
Another popular method for guiding Pennine 'PREMIUM' Conveyor Chain is the Side Guide option. The guide links are fitted to each side of the chain and the sprocket fits between them, keeping the chain aligned during operation. Side Guide chains are available in a variety of standard widths from 100mm (4") up to 300mm (12"). Special width chains are also available on request, starting from 12mm (½") wide. Side Guide chains are available in all assembly versions; additional information on these designs of chain can be found throughout this catalogue.



## Side Guide Part Numbering:

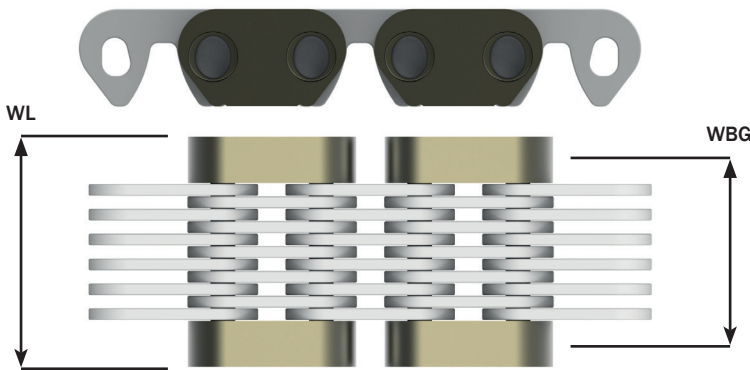


## HYPERdrive™ Laser Welded Chain:



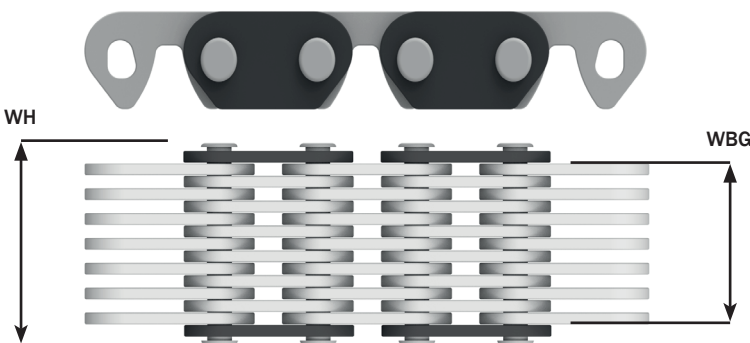
Part No:	WL max mm	WBG max mm	Weight kg/m
HD-PSL/107	104.2	101.2	6.3
HD-PSL/120	117.7	114.7	7.0
HD-PSL/131	128.9	125.9	7.7
HD-PSL/142	139.5	136.5	8.3
HD-PSL/156	153.8	150.8	9.4
HD-PSL/178	175.5	172.5	10.6
HD-PSL/179	176.2	173.2	10.6
HD-PSL/207	204.2	201.2	12.2

## Single Pin Chain with DTSHPL:



Part No:	WL max mm	WBG max mm	Weight kg/m
PSL2/4.00I-DTSHPL	106.2	103.2	6.1
PSL2/4.75I-DTSHPL	119.7	116.7	6.8
PSL2/5.00I-DTSHPL	130.9	127.9	7.5
PSL2/5.50I-DTSHPL	141.5	138.5	8.1
PSL2/6.00I-DTSHPL	155.8	152.8	9.0
PSL2/7.00I-OI-DTSHPL	177.5	174.5	10.2
PSL2/7.00I-DTSHPL	178.2	175.2	10.2
PSL2/8.00I-DTSHPL	206.2	203.2	11.8

## Single Pin Chain:



Part No:	WH max mm	WBG max mm	Weight kg/m
PSL2/4.00I	107.1	101.2	6.1
PSL2/4.75I	120.6	114.7	6.8
PSL2/5.00I	131.8	125.9	7.5
PSL2/5.50I	142.4	136.5	8.1
PSL2/6.00I	156.7	150.8	9.0
PSL2/7.00I-OI	178.4	172.5	10.2
PSL2/7.00I	179.1	173.2	10.2
PSL2/8.00I	207.1	201.2	11.8

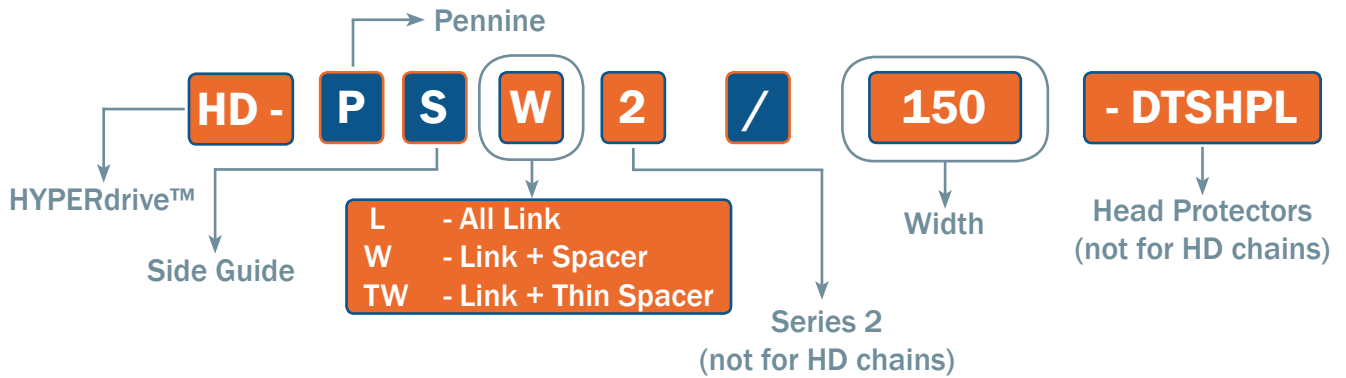


# Side Guide Chain - Link and Spacer

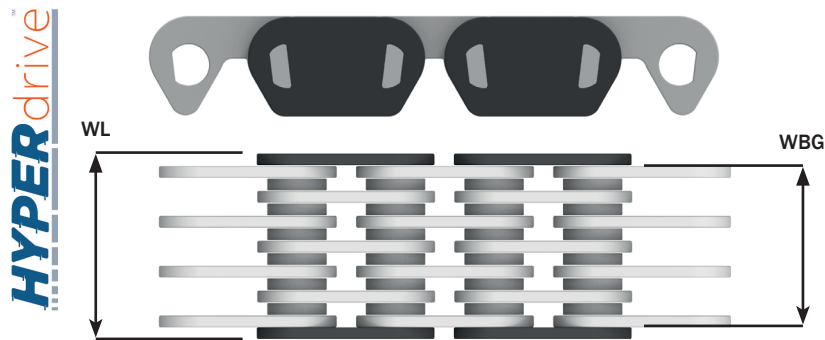
Another popular method for guiding Pennine 'PREMIUM' Conveyor Chain is the Side Guide option. The guide links are fitted to each side of the chain and the sprocket fits between them, keeping the chain aligned during operation. Side Guide chains are available in a variety of standard widths from 100mm (4") up to 300mm (12"). Special width chains are also available on request, starting from 12mm (½") wide. Side Guide chains are available in all assembly versions; additional information on these designs of chain can be found throughout this catalogue. Thin washer link and spacer chain is not available when the HYPERdrive™ option has been selected.



## Side Guide Part Numbering:

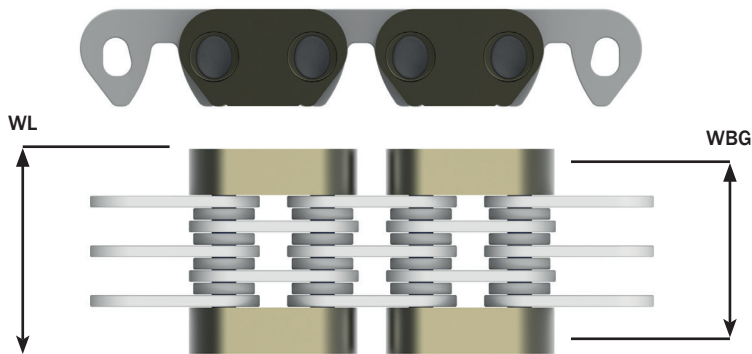


## HYPERdrive™ Laser Welded Chain:



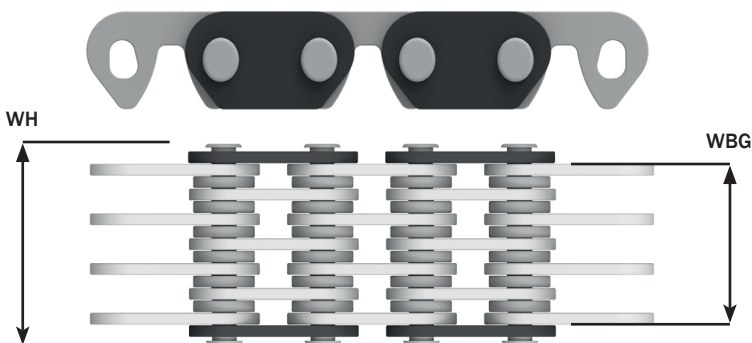
Part No:	WL max mm	WBG max mm	Weight kg/m
HD-PSL/107	104.2	101.2	4.6
HD-PSL/120	117.7	114.7	5.1
HD-PSL/131	128.9	125.9	5.7
HD-PSL/142	139.5	136.5	6.2
HD-PSL/156	153.8	150.8	6.8
HD-PSL/178	175.5	172.5	7.7
HD-PSL/179	176.2	173.2	7.7
HD-PSL/207	204.2	201.2	9.0

## Single Pin Chain with DTSHPL:



Part No:	WL max mm	WBG max mm	Weight kg/m
PSW2/4.00I-DTSHPL	106.2	103.2	4.4
PSW2/4.75I-DTSHPL	119.7	116.7	4.9
PSW2/5.00I-DTSHPL	130.9	127.9	5.5
PSW2/5.50I-DTSHPL	141.5	138.5	5.9
PSW2/6.00I-DTSHPL	155.8	152.8	6.5
PSW2/7.00I-OI-DTSHPL	177.5	174.5	7.4
PSW2/7.00I-DTSHPL	178.2	175.2	7.4
PSW2/8.00I-DTSHPL	206.2	203.2	8.6

## Single Pin Chain:



Part No:	WH max mm	WBG max mm	Weight kg/m
PSW2/4.00I	107.1	101.2	4.4
PSW2/4.75I	120.6	114.7	4.9
PSW2/5.00I	131.8	125.9	5.5
PSW2/5.50I	142.4	136.5	5.9
PSW2/6.00I	156.7	150.8	6.5
PSW2/7.00I-OI	178.4	172.5	7.4
PSW2/7.00I	179.1	173.2	7.4
PSW2/8.00I	207.1	201.2	8.6



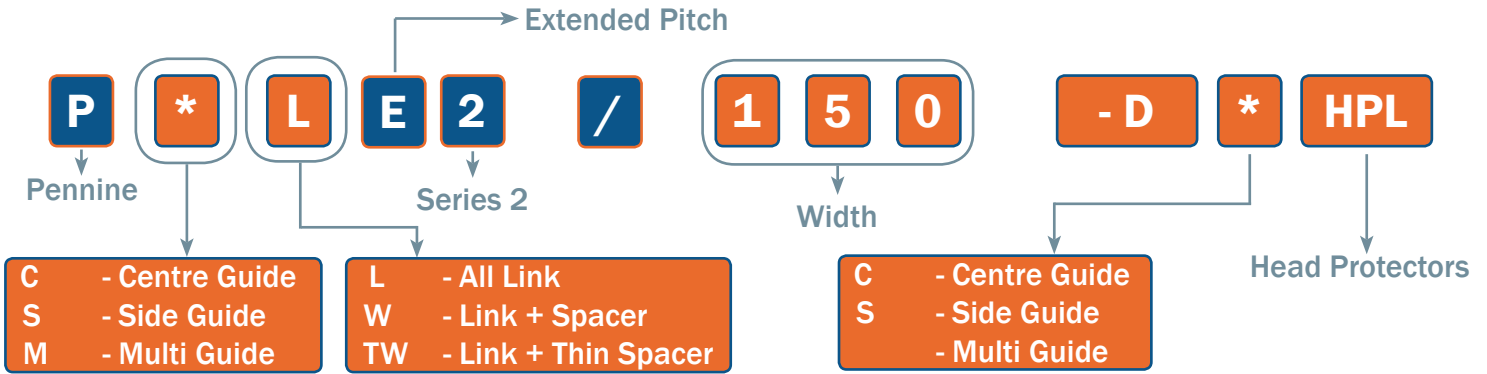
# Extended Pitch - All Link

Extended Pitch Chain was originally designed for Hot End Engineers who required a lightweight Conveyor Chain which would run on their existing  $\frac{1}{2}$ " pitch sprockets. Two main changes made it possible to produce this lighter weight chain. The nominal link thickness was increased from 1.5mm, as used in standard  $\frac{1}{2}$ " pitch chains, to 2.3mm. The chain pitch was extended, hence the name 'Extended Pitch', from  $\frac{1}{2}$ " to 1" pitch. Extended Pitch chain is approximately 35% lighter than standard  $\frac{1}{2}$ " pitch chain.

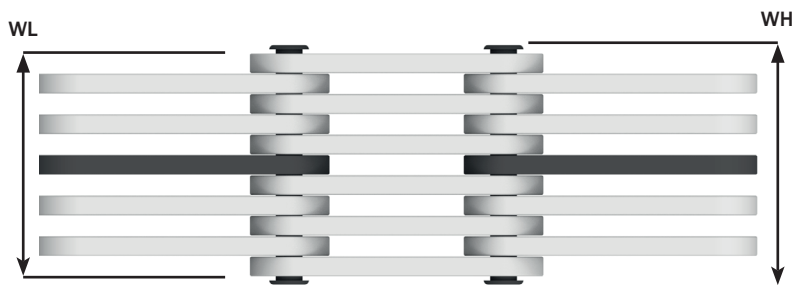
Pennine have further improved Extended Pitch Chain by incorporating the same blanking and manufacturing techniques as utilised in the  $\frac{1}{2}$ " pitch 'PREMIUM' chain.



## Extended Pitch Part Numbering:

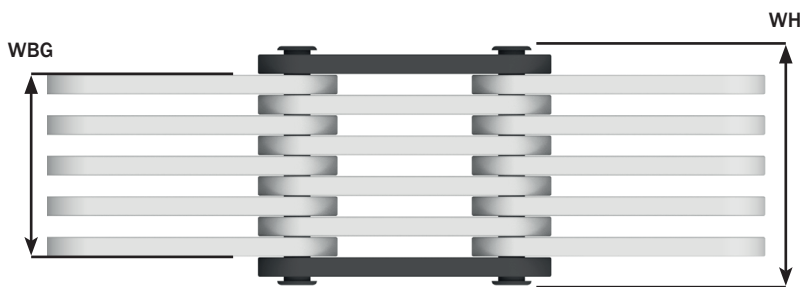


### Centre Guide Extended Pitch



Part No: (Head Protectors)	WH max mm	WL max mm	Weight kg/m
PCLE2/100-(DCHPL)	103.5	100.6	3.3
PCLE2/125-(DCHPL)	125.7	122.8	4.4
PCLE2/140-(DCHPL)	137.6	134.7	4.8
PCLE2/150-(DCHPL)	149.6	146.7	5.2
PCLE2/180-(DCHPL)	177.0	174.1	6.3
PCLE2/200-(DCHPL)	201.6	198.7	7.1
PCLE2/250-(DCHPL)	254.2	251.3	8.9
PCLE2/300-(DCHPL)	302.4	299.5	10.7

### Side Guide Extended Pitch



Part No: (Head Protectors)	WH max mm	WBG max mm	Weight kg/m
PSLE2/4.00I-(DSHPL)	107.1	101.2	3.8
PSLE2/5.00I-(DSHPL)	131.8	125.9	4.7
PSLE2/5.50I-(DSHPL)	142.4	136.5	5.1
PSLE2/6.00I-(DSHPL)	156.7	150.8	5.6
PSLE2/7.00I-0I-(DSHPL)	178.4	172.5	6.4
PSLE2/7.00I-(DSHPL)	179.1	173.2	6.5
PSLE2/8.00I-(DSHPL)	207.1	201.2	7.1
PSLE2/10.00I-(DSHPL)	259.7	253.8	9.1
PSLE2/12.00I-(DSHPL)	306.9	301.0	11.0

### Multi Guide Extended Pitch



Part No: (Head Protectors)	WH max mm	WBG max mm	Weight kg/m
PMLE2/100-(DHPL)	102.3	69.5	4.8
PMLE2/125-(DHPL)	126.8	97.1	5.7
PMLE2/150-(DHPL)	151.1	97.1	7.1
PMLE2/151-(DHPL)	151.4	100.8	7.2
PMLE2/200-(DHPL)	200.7	146.1	9.1
PMLE2/250-(DHPL)	251.3	196.7	11.1
PMLE2/300-(DHPL)	301.1	245.7	13.4



# Extended Pitch - Link and Spacer

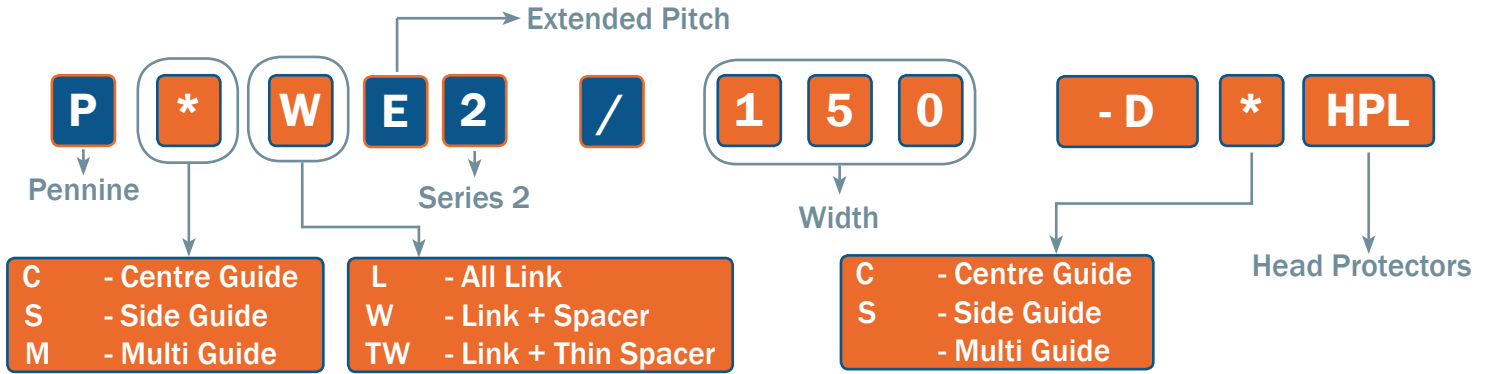
Extended Pitch Chain was originally designed for Hot End Engineers who required a lightweight Conveyor Chain which would run on their existing  $\frac{1}{2}$ " pitch sprockets. Two main changes made it possible to produce this lighter weight chain. The nominal link thickness was increased from 1.5mm, as used in standard  $\frac{1}{2}$ " pitch chains, to 2.3mm. The chain pitch was extended, hence the name 'Extended Pitch', from  $\frac{1}{2}$ " to 1" pitch. Extended Pitch chain is approximately 35% lighter than standard  $\frac{1}{2}$ " pitch chain.

Pennine have further improved Extended Pitch Chain by incorporating the same blanking and manufacturing techniques as utilised in the  $\frac{1}{2}$ " pitch 'PREMIUM' chain.

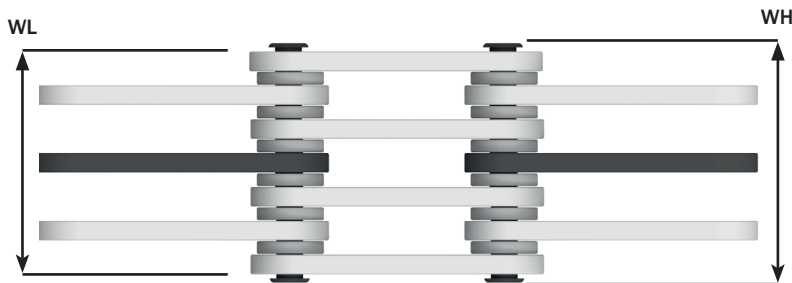




## Extended Pitch Part Numbering:

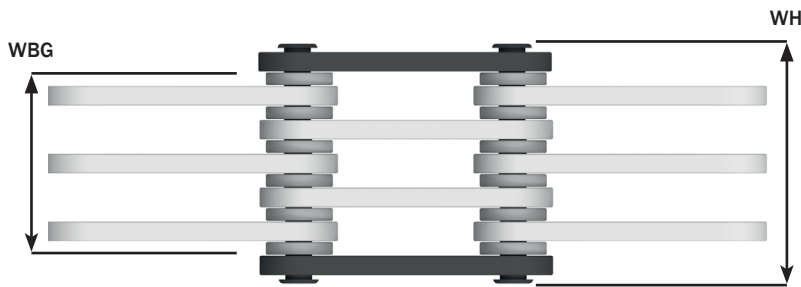


### Centre Guide Extended Pitch



Part No: (Head Protectors)	WH max mm	WL max mm	Weight kg/m
PCWE2/100-(DCHPL)	103.5	100.6	3.3
PCWE2/125-(DCHPL)	125.7	122.8	4.4
PCWE2/140-(DCHPL)	137.6	134.7	4.8
PCWE2/150-(DCHPL)	149.6	146.7	5.2
PCWE2/180-(DCHPL)	177.0	174.1	6.3
PCWE2/200-(DCHPL)	201.6	198.7	7.1
PCWE2/250-(DCHPL)	254.2	251.3	8.9
PCWE2/300-(DCHPL)	302.4	299.5	10.7

### Side Guide Extended Pitch



Part No: (Head Protectors)	WH max mm	WBG max mm	Weight kg/m
PSWE2/4.00I-(DSHPL)	107.1	101.2	3.8
PSWE2/5.00I-(DSHPL)	131.8	125.9	4.7
PSWE2/5.50I-(DSHPL)	142.4	136.5	5.1
PSWE2/6.00I-(DSHPL)	156.7	150.8	5.6
PSWE2/7.00I-OI-(DSHPL)	178.4	172.5	6.4
PSWE2/7.00I-(DSHPL)	179.1	173.2	6.5
PSWE2/8.00I-(DSHPL)	207.1	201.2	7.1
PSWE2/10.00I-(DSHPL)	259.7	253.8	9.1
PSWE2/12.00I-(DSHPL)	306.9	301.0	11.0

### Multi Guide Extended Pitch



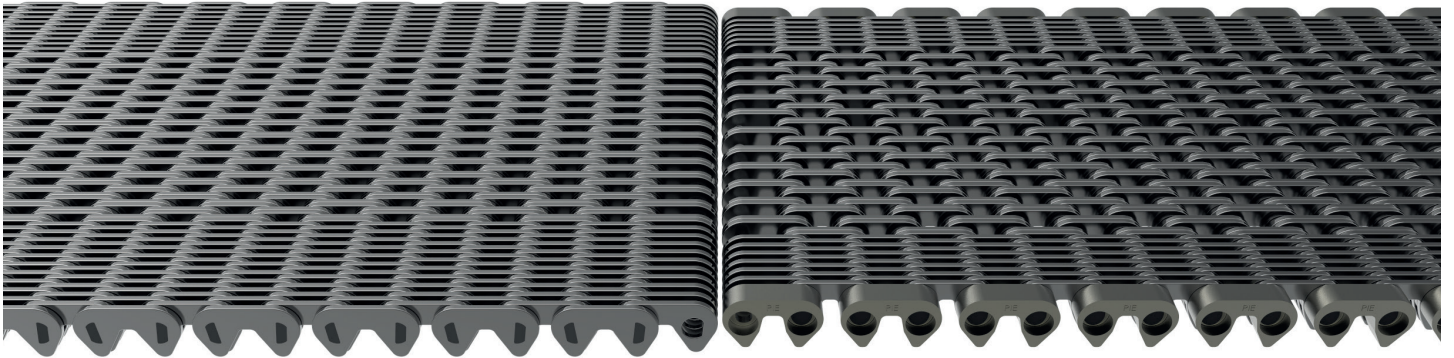
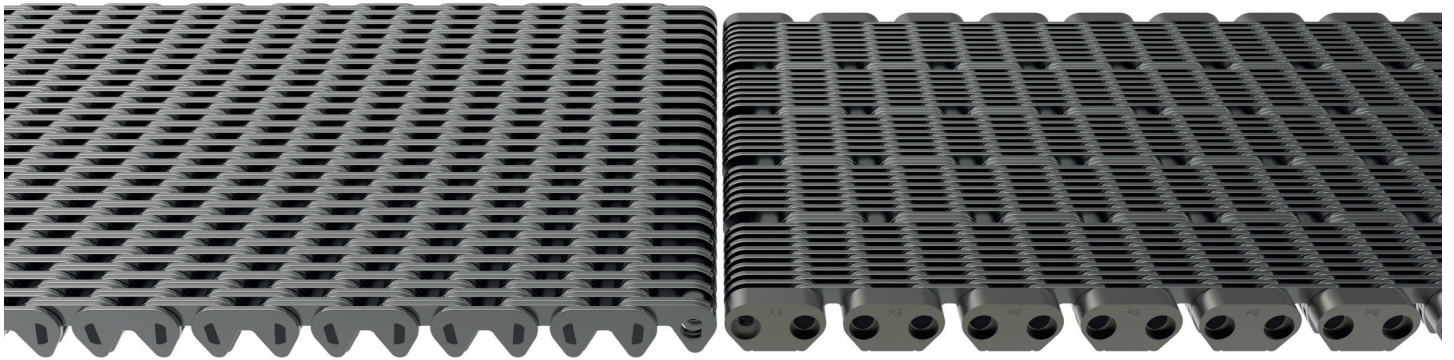
Part No: (Head Protectors)	WH max mm	WBG max mm	Weight kg/m
PMWE2/100-(DHPL)	102.3	69.5	4.8
PMWE2/125-(DHPL)	126.8	97.1	5.7
PMWE2/150-(DHPL)	151.1	97.1	7.1
PMWE2/151-(DHPL)	151.4	100.8	7.2
PMWE2/200-(DHPL)	200.7	146.1	9.1
PMWE2/250-(DHPL)	251.3	196.7	11.1
PMWE2/300-(DHPL)	301.1	245.7	13.4



# Double and Special Assembly

Pennine are able to offer double assembly (DA) and double assembly centre section (DACS) chains to help improve the airflow through the chain when under belt cooling is being used. The links are arranged in pairs which increases the gap between pairs.

It is also possible to produce chains that have targeted cooling holes in the weave of the chain to match up with the cooling outlets that are under the chain. This can assist where large cooling airflow is required. These chains can be produced to any requirement, please contact us for further information.

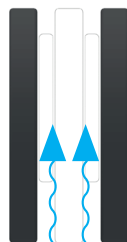


## Airflow Guide

All Link  
1.5mm



Link + Thin Spacer  
3mm

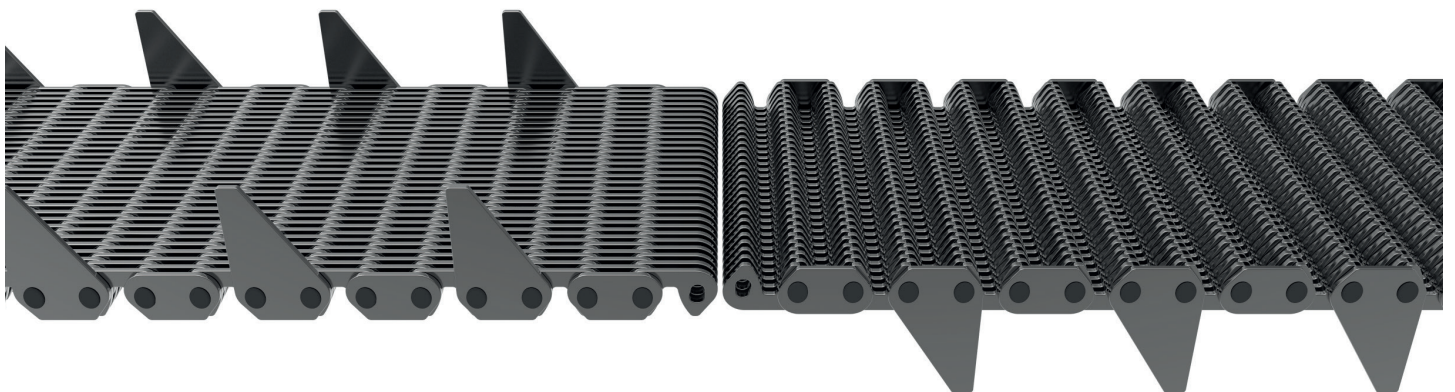


Double Assembly  
3mm



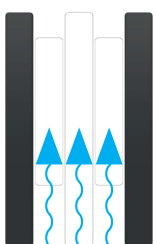
Custom made attachments can be made to suit any individual component and application. Using state of the art CNC machining or Laser cutting it is possible to offer tailor made attachments for even a short conveyor chain. These attachments can be used to hold goods that would otherwise slide or roll, or to transport goods up and down inclines.

Using our own dedicated stamping facility we can also manufacture large quantities of custom designed links for any application, Please contact us to discuss your requirements.



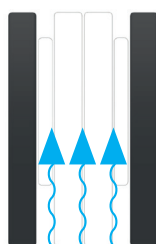
Link and Spacer

4.5mm



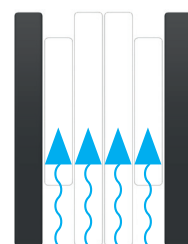
Double Assembly  
with Thin Spacer

4.5mm

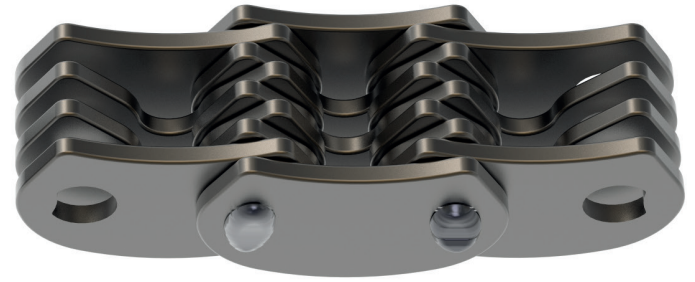
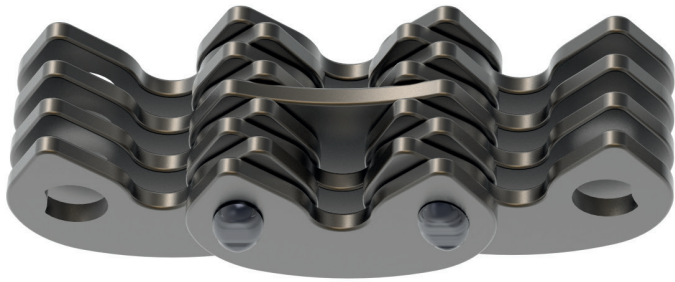


Double Assembly  
with Spacer

6mm

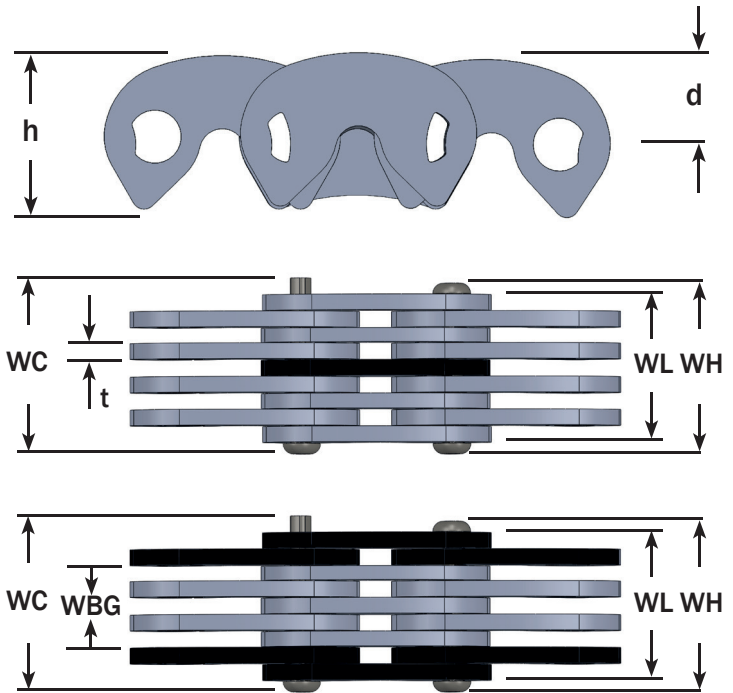


# PP Power Transmission Chains

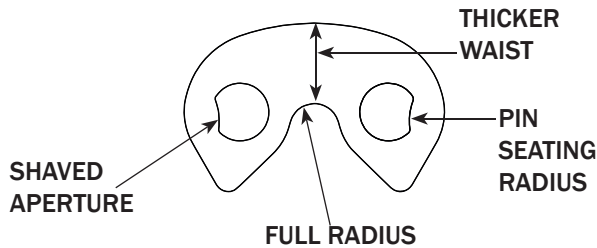


PennPower is a high performance silent chain specifically developed by Pennine Industrial. PennPower chains offer approximately twice the power capacity of standard 'SC' chains yet will run on the same sprockets. PennPower chain is typically used in applications where high loads and speeds must be accommodated in a small amount of space. Available in  $\frac{3}{8}$ " and  $\frac{1}{2}$ " pitch with widths up to 6". Note:

PennPower chain sprockets require a minimum of 21 teeth.



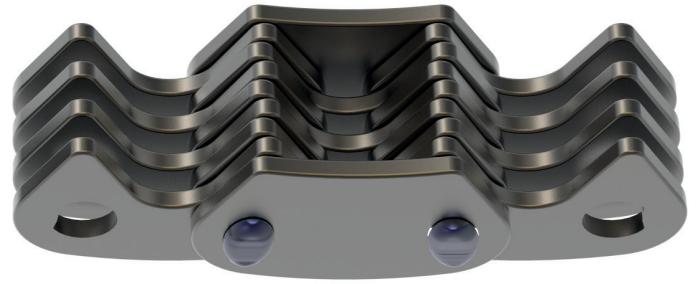
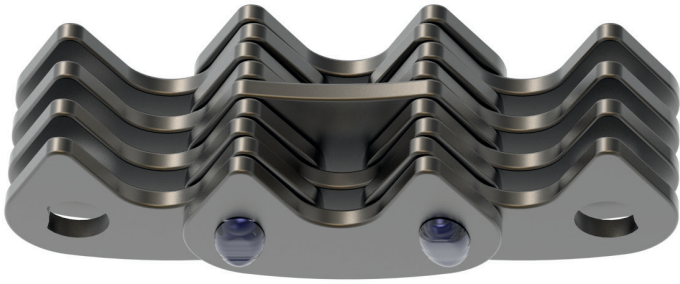
## PennPower Link



Part No.	Pitch		Nominal Width	Guide Type	WH	WL	WBG	WC	h	d	t	Breaking Load	Sprocket Width	Weight
	inches	mm												
PP303			19	CG	22.6	19.6		23.9				25.1	19.1	1.0
PP304			25	CG	29.0	25.7		30.5				33.4	25.4	1.3
PP305			32	CG	35.3	31.8		36.8				41.8	31.8	1.6
PP306			38	CG	41.7	37.6		43.2				50.2	38.1	2.1
PP308			51	CG	54.4	49.8		55.9				66.9	50.8	2.5
PP310	0.375	9.525	64	CG	67.1	62.0		68.8	10.7	5.6	1.5	83.6	63.5	3.3
PP312			76	CG	79.2	73.9		81.5				100.3	76.2	3.7
PP316			102	CG	104.6	98.0		107.2				133.2	101.6	5.1
PPDSG303			19	DSG	21.3	18.0	12.7	22.6				13.2	11.1	0.9
PPDSG304			25	DSG	27.7	24.1	19.1	29.2				17.6	17.5	1.2
PPDSG305			32	DSG	34.0	30.2	25.4	35.6				21.9	23.8	1.3
PPDSG306			38	DSG	40.4	36.3	31.8	41.9				26.3	30.2	1.6
PP403			19	CG	23.9	19.8		25.4				33.4	19.1	1.2
PP404			25	CG	30.0	25.9		32.3				44.6	25.4	1.6
PP405			32	CG	36.3	32.3		38.1				55.7	31.8	2.1
PP406			38	CG	42.7	38.4		44.5				66.9	38.1	2.4
PP408			51	CG	55.4	50.5		57.2				89.2	50.8	3.3
PP410			64	CG	68.1	63.0		70.1				111.5	63.5	4.0
PP412			76	CG	81.8	75.2		82.8				133.8	76.2	4.9
PP414	0.500	12.700	89	CG	93.7	87.6		95.5	14.2	7.6	1.5	156.1	88.9	5.7
PP416			102	CG	106.4	99.8		108.2				178.4	101.6	6.5
PP420			127	CG	132.1	124.5		133.9				223.0	127.0	8.2
PP424			152	CG	156.5	148.8		158.8				267.5	152.4	9.7
PPDSG403			19	DSG	22.1	18.5	12.7	23.9				17.6	11.1	1.2
PPDSG404			25	DSG	28.4	24.6	19.1	30.2				23.4	17.5	1.5
PPDSG405			32	DSG	35.1	30.7	25.4	36.8				29.3	23.8	1.8
PPDSG406			38	DSG	41.4	36.8	31.8	43.2				35.1	30.2	2.2



# PPV Power Transmission Chains

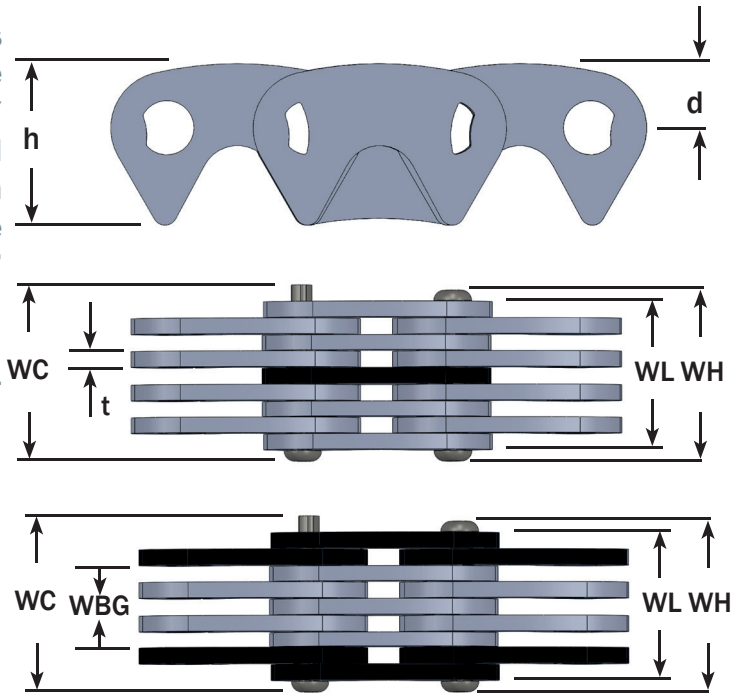
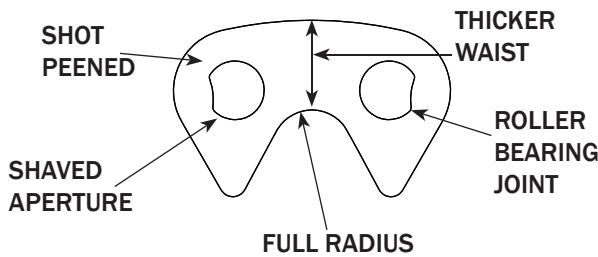


Pennine's 'PPV' line of chain and sprockets redefines high-performance for inverted tooth chains. Capable of speeds and powers in excess of 2000 metres/min, 'PPV' chain has been specifically developed to meet or exceed the capacity of all other high performance chains, and is fully interchangeable with competitors' chains. Available in  $\frac{3}{8}$ " and  $\frac{1}{2}$ " pitch with widths up to 6".

Note:

PennPower chain sprockets require a minimum of 21 teeth.

## PennPower PPV Link



Part No.	Pitch		Nominal Width	Guide Type	WH	WL	WBG	WC	h	d	t	Breaking Load	Sprocket Width	Weight
	inches	mm												
PPV303			19	SG	22.9	20.6	17.5	26.2				27.6	16.8	1.0
PPV304			25	SG	29.2	26.7	23.6	32.5				36.8	22.9	1.3
PPV305			32	SG	35.8	33.1	30.1	36.2				46.0	29.5	1.6
PPV306			38	SG	41.9	39.4	36.3	45.3				55.2	35.6	1.9
PPV308			51	SG	54.9	52.1	49.0	58.2				73.6	48.3	2.7
PPV312	0.375	9.525	76	SG	80.3	77.5	74.4	83.6	10.9	4.3	1.5	110.4	73.7	3.9
PPV3-025			25	CG	32.5	27.2	-	33.8				38.4	30	1.4
PPV3-030			30	CG	38.6	33.5	-	40.1				47.8	35	1.7
PPV3-040			40	CG	45.2	40.1	-	46.7				56.5	45	2.0
PPV3-050			50	CG	57.7	52.6	-	59.7				74.6	55	2.6
PPV3-065			65	CG	70.1	65.0	-	72.1				92.7	70	3.2
PPV404			25	SG	29.2	26.7	23.6	32.5				49.1	22.9	1.8
PPV405			32	SG	35.6	32.9	29.8	38.1				61.3	29.2	2.3
PPV406			38	SG	41.9	39.4	36.3	45.2				73.6	35.6	2.6
PPV408			51	SG	54.9	52.1	49.0	58.2				98.1	48.3	3.5
PPV412			76	SG	80.3	77.5	74.4	83.6				147.2	73.7	5.2
PPV416	0.500	12.700	102	SG	105.7	102.9	99.8	109.0	14.5	5.8	1.5	196.2	99.1	7.0
PPV4-325			25	CG	33.0	27.7	-	35.6				51.2	30.0	1.8
PPV4-330			30	CG	39.1	34.0	-	41.4				63.7	35.0	2.2
PPV4-340			40	CG	46.2	40.6	-	47.8				75.3	45.0	2.6
PPV4-350			50	CG	58.7	53.1	-	60.2				99.5	55.0	3.4
PPV4-365			65	CG	70.6	66.0	-	72.4				123.6	70.0	4.2
PPV4-375			75	CG	84.6	79.2	-	86.4				148.7	80.0	5.0
PPV4-3100			100	CG	109.2	105.2	-	111.3				197.0	105.0	6.6



# Sprockets

Pennine have specialised in the manufacture of Silent Chain Sprockets for over 40 years and offer a wide range, all of which are produced in our own workshop. Pennine can manufacture sprockets with teeth ranging from 17-84 and any suitable bore size. Unless otherwise specified, all Pennine sprockets are cut with either an ANSI standard or Pennine involute tooth profile. Sprockets are manufactured from 080M40 or 080A42 carbon steel with flame or induction hardened teeth, or from SG600 Cast Iron. There are three main types of sprocket available:-

Centre guide sprockets are supplied with a 3mm or 5mm wide groove in the centre of the sprocket tooth width to locate the guide links, and have a 15 degree angle on each side of the groove to improve the entry of the guide links into the groove.

Side guide sprockets have no grooves but the outer edge of the teeth have a 15 degree angle on them to improve entry.

Multi guide sprockets can either have bosses on both sides of the teeth, or be cut to fit between the guide plates. Both styles incorporate a 15 degree angle on the edge of the teeth to improve entry.

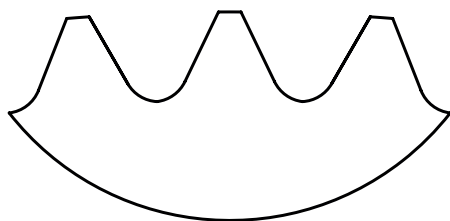
To maintain a long and trouble free chain life it is essential that sprockets are correctly aligned and have the correct tooth form. If the sprockets being used are not manufactured by Pennine, then we cannot guarantee chain life or honour any warranties.

## Specifying a Sprocket

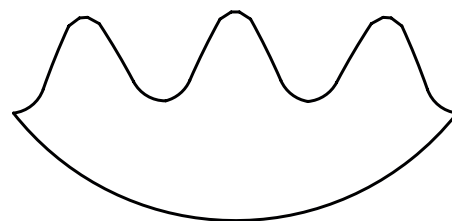
It is important to choose a sprocket that is compatible with your chain. Please consider the following when making your choice.

- Guide type (Centre, Side or Multi-Guide)
- Keyway size
- Boss Diameter
- Bore Diameter
- Face width
- Boss Projection
- Number of Teeth
- Boss Type

Pennine strongly recommend that all HYPERdrive™ chains are run on Pennine manufactured involute sprockets. This type of sprocket improves the running performance and potentially the life of the chain.



**Standard tooth**



**Involute tooth**

The involute tooth form allows the chain to roll in and out of the tooth providing a constant pressure angle. This results in smooth running and less stress transferred to the chain, preventing elongation. Involute toothed sprockets are compatible with both HYPERdrive™ and single pin Pennine chain of all guide and assembly types.

# Sprocket Part Number Guide

**P** **Z** **42** **A** **S** **-** **205** **-** **96** **-** **45** **K14** **-** **G**

**42i**

**P** Pennine

Z SNG600/3  
 Y EN8D  
 X EN24T  
 W Cast iron

**42** Number of Teeth

**42i** Number of teeth (involute)

A Flat sided  
 B Boss one side  
 C Casting  
 D Boss both sides  
 E Recessed both sides  
 F Bearing bore both sides

B Bobbin Sprocket  
 C Centre guide  
 S Side guide  
 M Multi guide

**205** Effective length

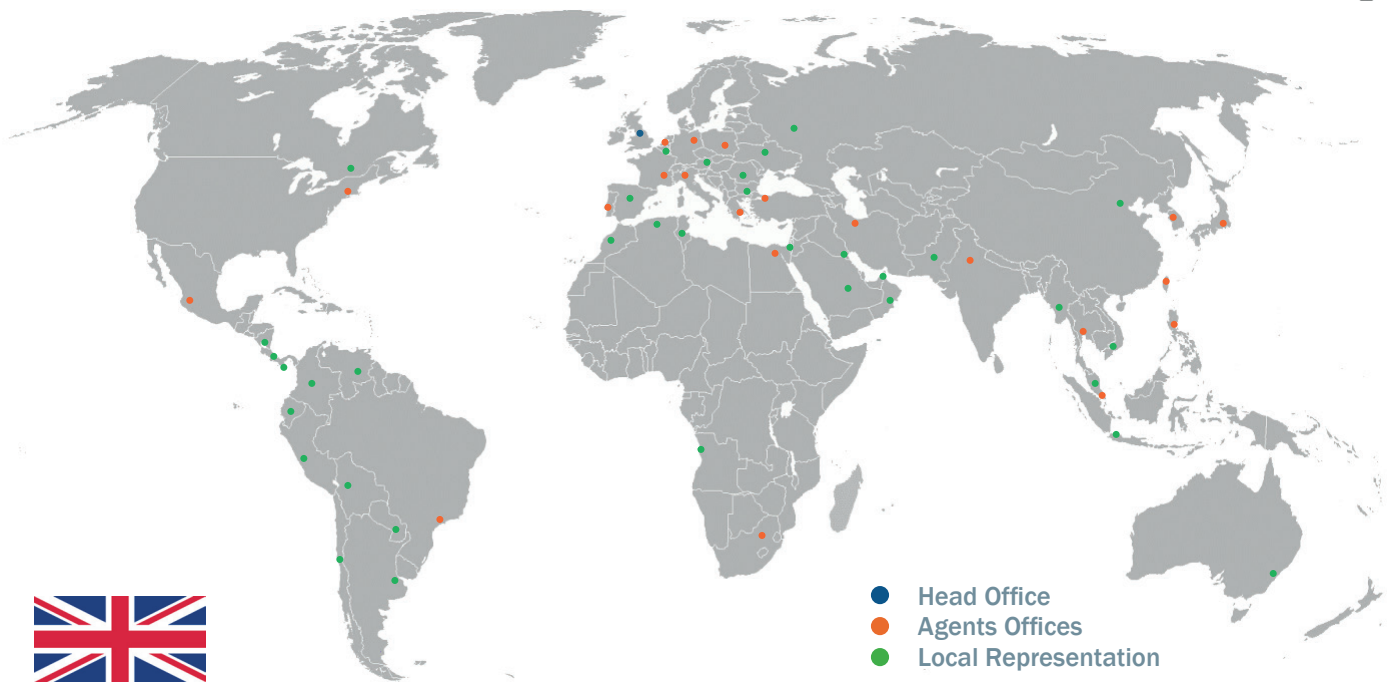
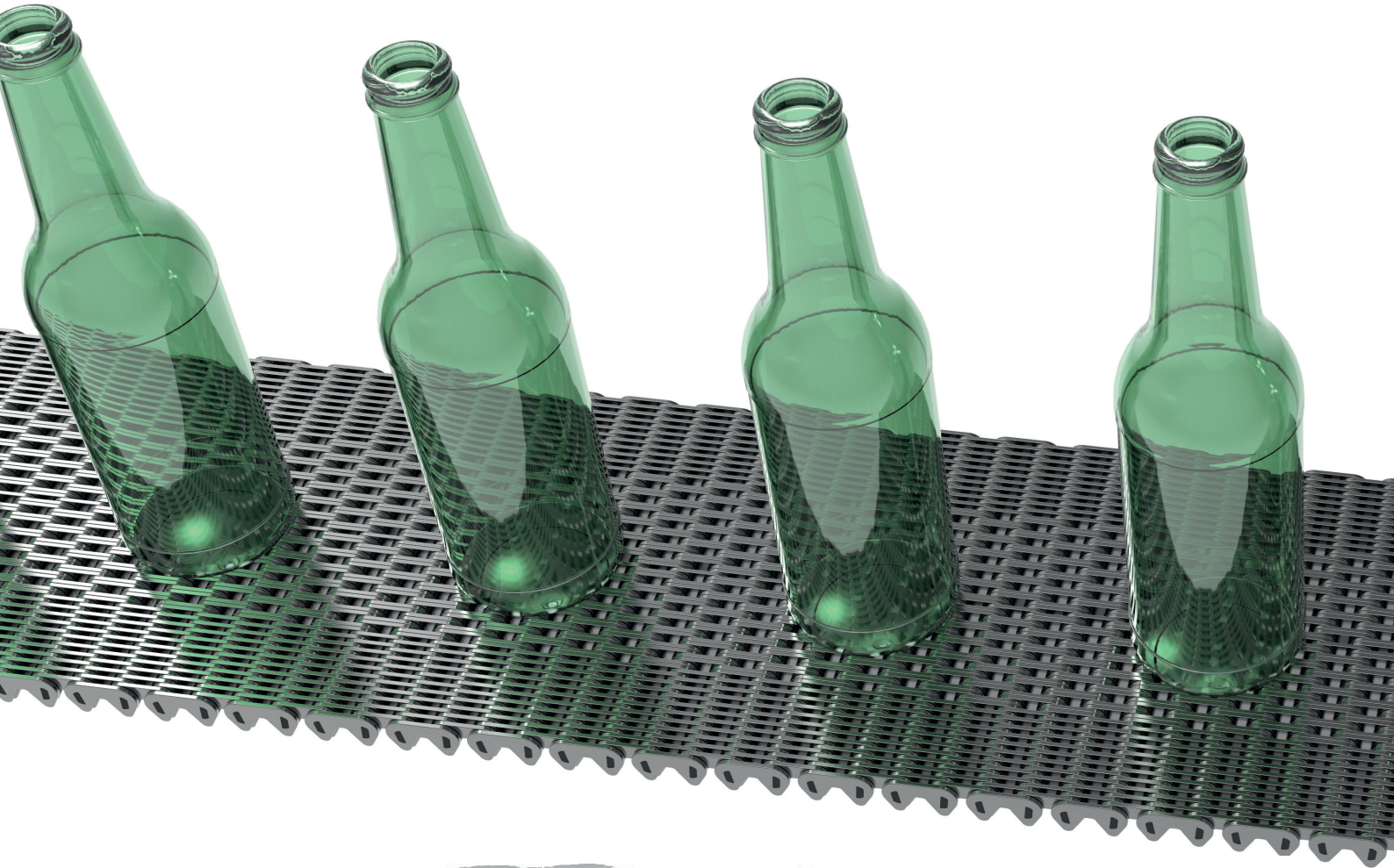
**96** Tooth length

**45** Bore

K14 Keyway  
 S40 Integrated shaft

**G** Grub screw





- Head Office
- Agents Offices
- Local Representation

Manor Croft Works - Commercial Road - Skelmanthorpe - Huddersfield - HD8 9DT - UK

