

DROP FORGED CHAINS & SPROCKETS



Drop Forged
Sprocket
Chain installation & maintenance guide
Chain and Sprocket measuring table



scanchain.net



About ScanChain

Most providers of industrial chains in the Nordic market sees chains as a commodity where there is more focus on trade than on the advice when choosing the correct product.

The philosophy behind ScanChain is that we believe it is important to challenge our customers with new solutions in addition to the solutions that they are accustomed to. In this way, our customers always have best options to get the right solution for each project.

The people behind the ScanChain has solid experience from the transmission and bulk industry.

ScanChain produces a large variety of conveyor chain products, and with their own workshop we can provide a chain solution to suit specific customer requirements and wishes.

Combined with contracts with the best suppliers in the market, all of which use the latest technology in manufacturing of chains, we have the conditions to live up to this philosophy.

Kaare Söderberg

Sales Director, Owner

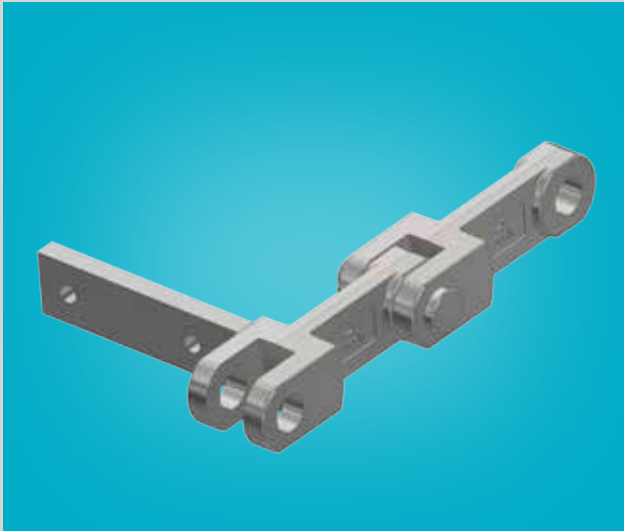
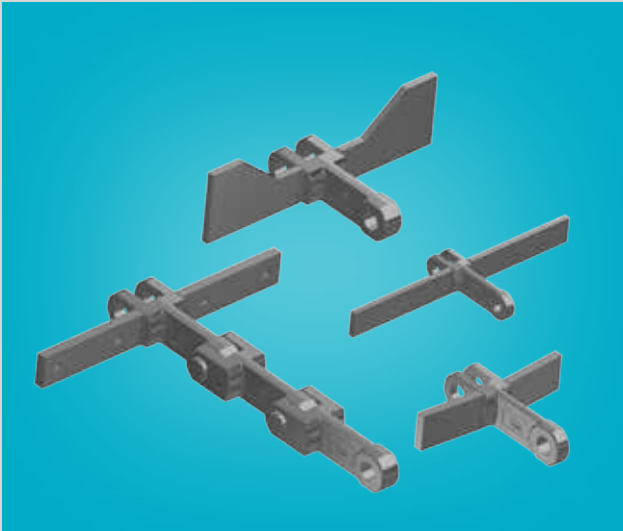
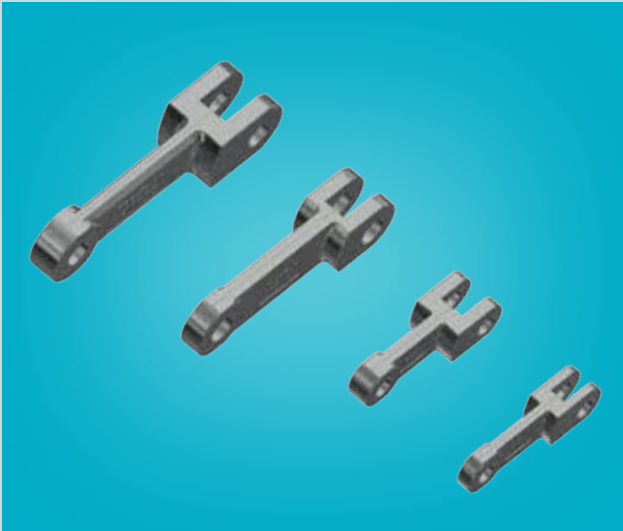
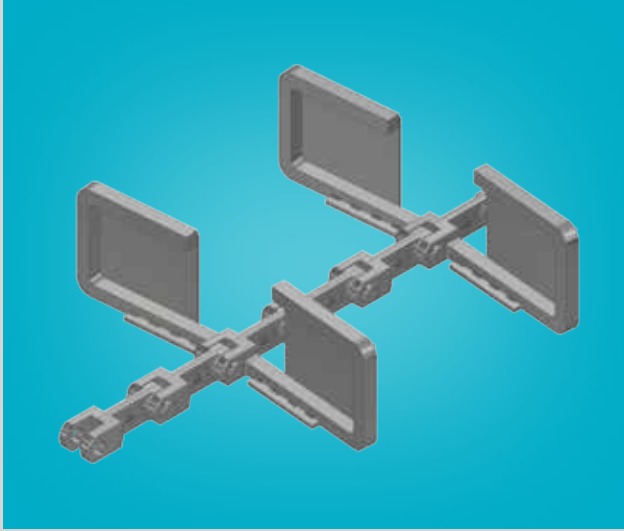
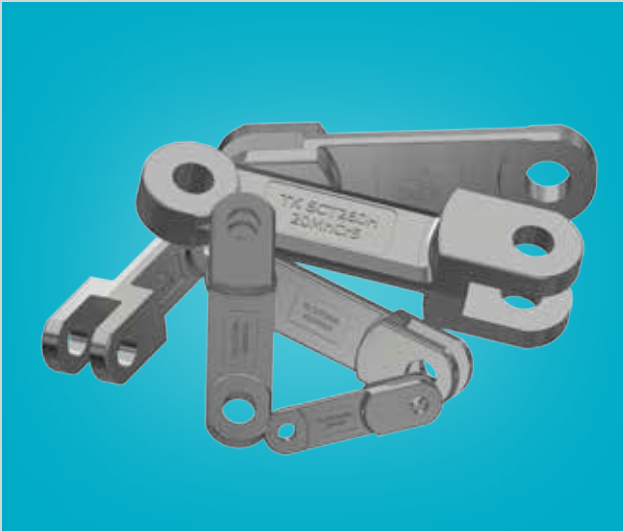
At ScanChain we go far for quality. We are actually so sure that our conveyor chains are the best that we dare explain why.

Not just a single item must be present to ensure a high and uniform quality.

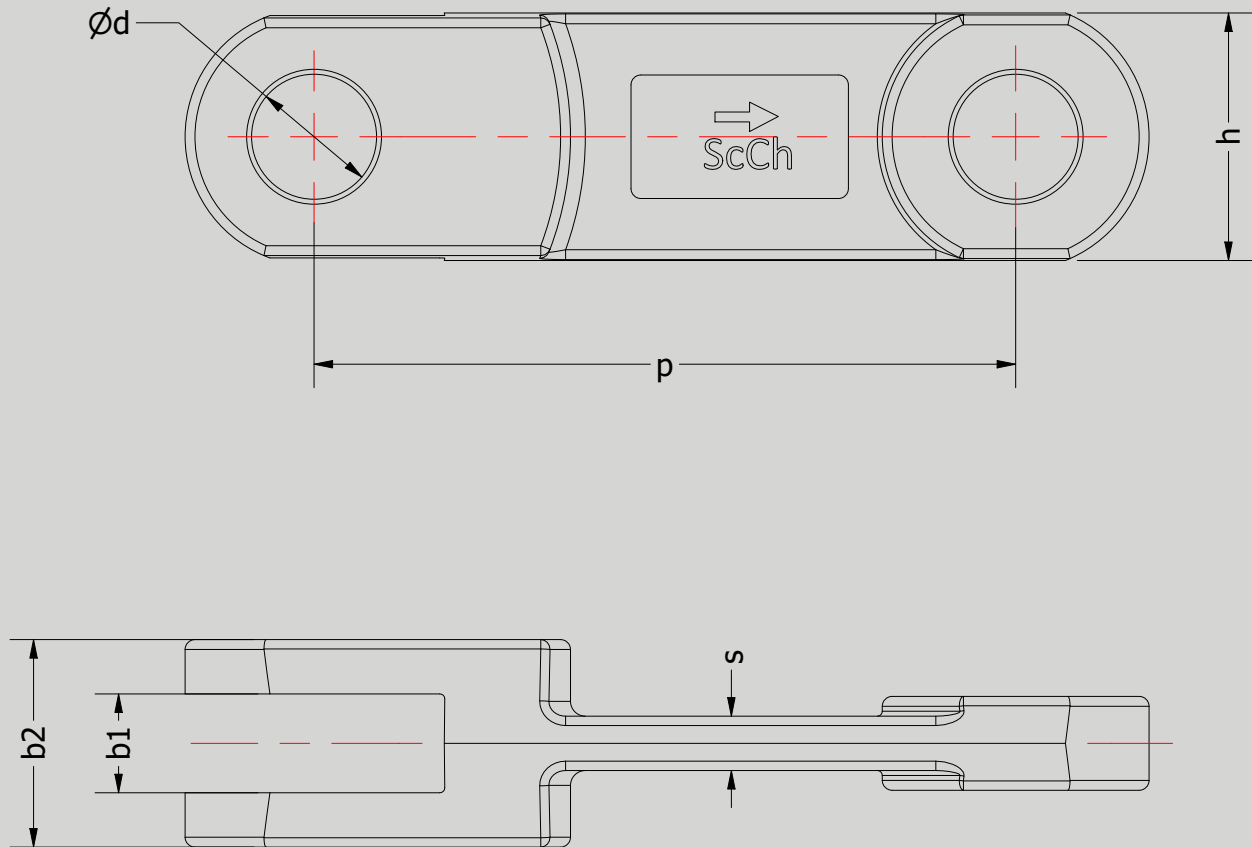
What makes a ScanChain.



Standard series



Measurement



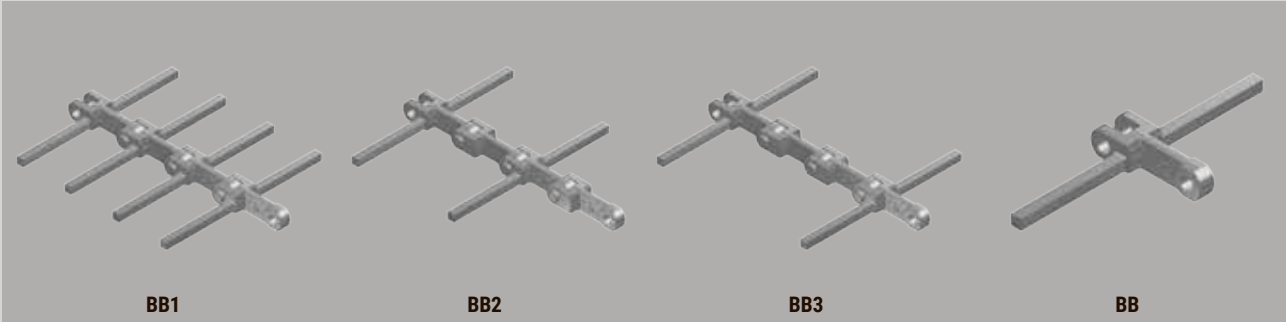
Chain No.	Pitch P [mm]	Inner width b1 [mm]	Hole d [mm]	Body thickness s [mm]	Link height h [mm]	Link head width b2 [mm]	Breaking loads [kN]	
							MC*	CM*
T101,6	101,6	10	14	6	36	24	120	130
T101,6H	101,6	14	14	9	36	30	190	205
T142	142,0	20	25	11	50	42	300	330
T142H	142,0	30	25	15	50	62	450	480
T160	160,0	24	22	13	46	46	330	352
T160H	160,0	25	25	15	53	50	380	410
T200	200,0	27	25	18	50	60	390	420
T200H	200,0	32	30	20	60	66	510	550
T216H	216,0	28	35	20	72	64	595	640
T260	260,0	33	32	20	75	70	850	910
T260H	260,0	38	32	22	75	79	940	1010

* MC - Manganese Chrome Alloy Steel (20MnCr5)
CM - Chrome Moly Alloy Steel (42CrMo4)

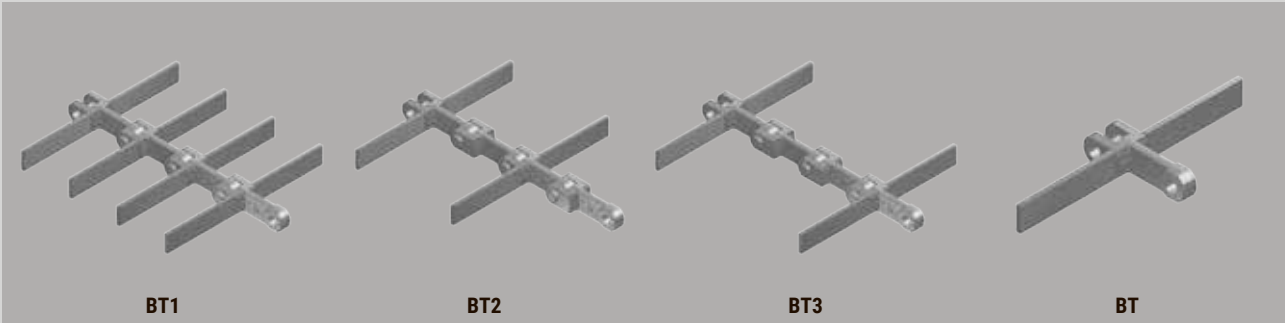


Flight attachment options

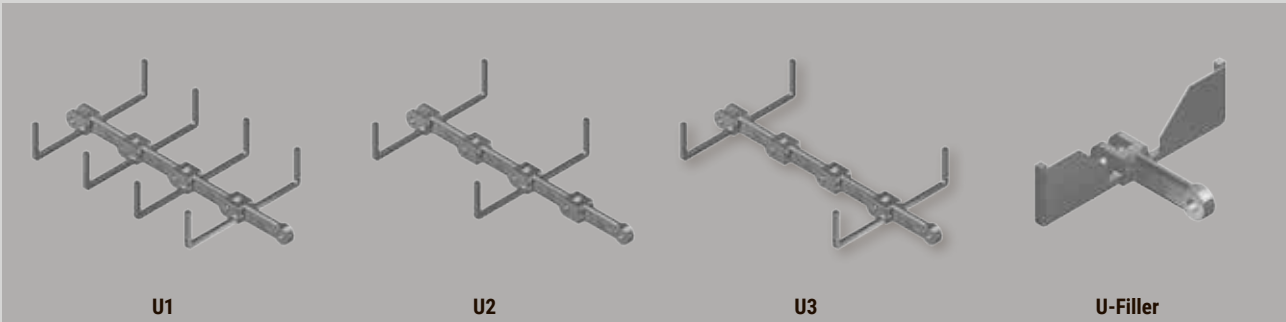
Square flights "B_B" type



Flat flights "BT" type

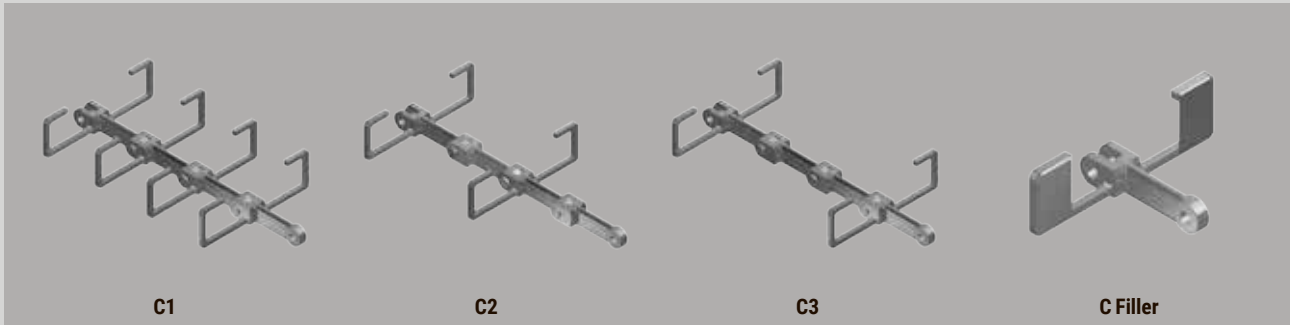


Square bended flights "U" type

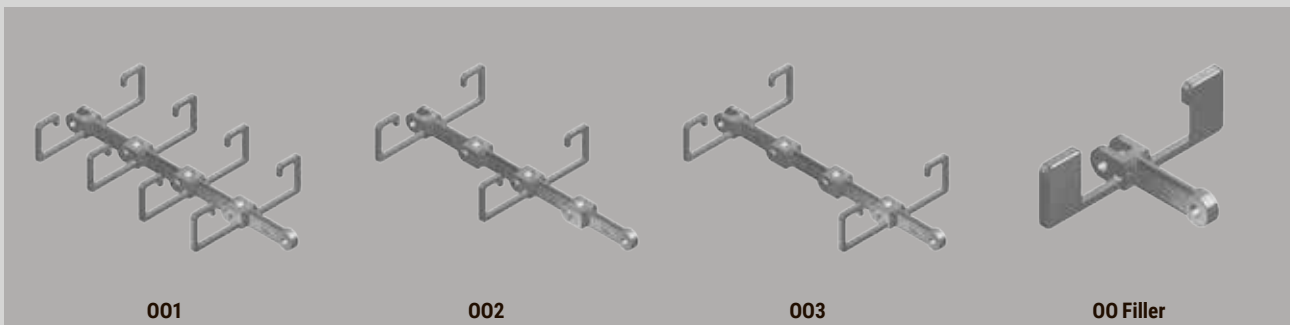


Flight attachment options

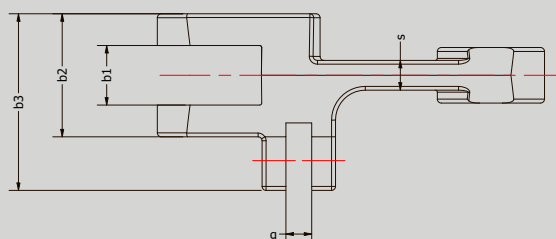
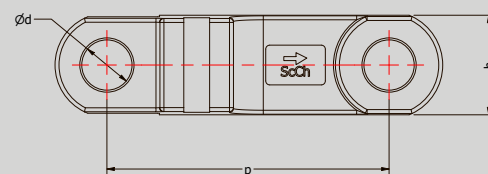
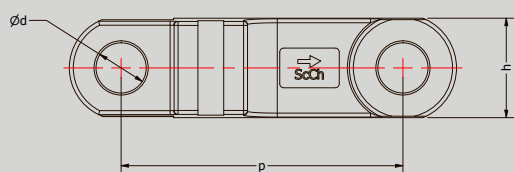
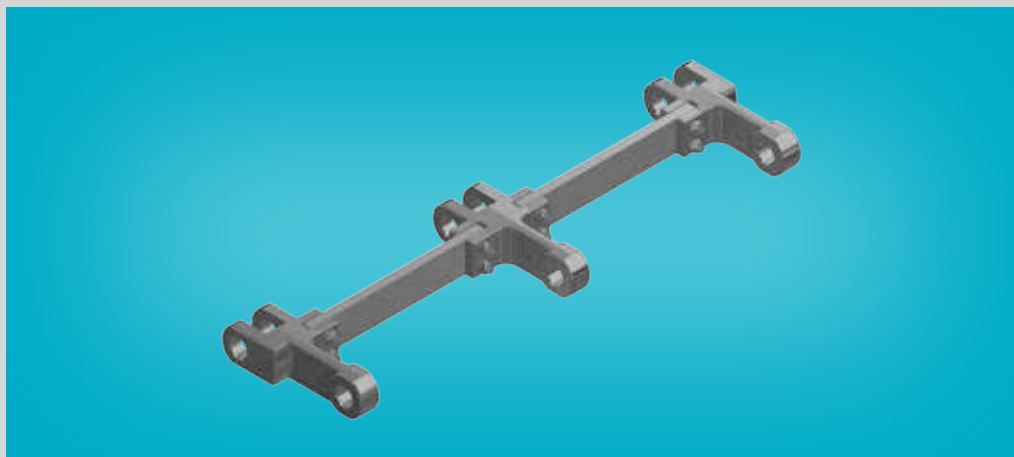
Square bended flights "C" type



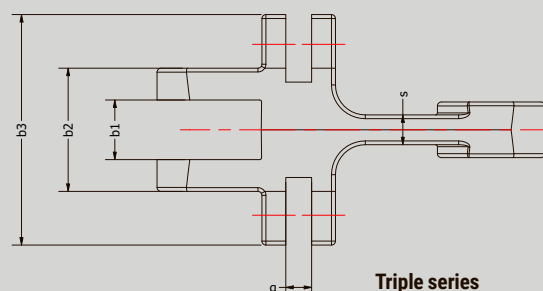
Square bended flights "OO" type



Double and triple series



Double series



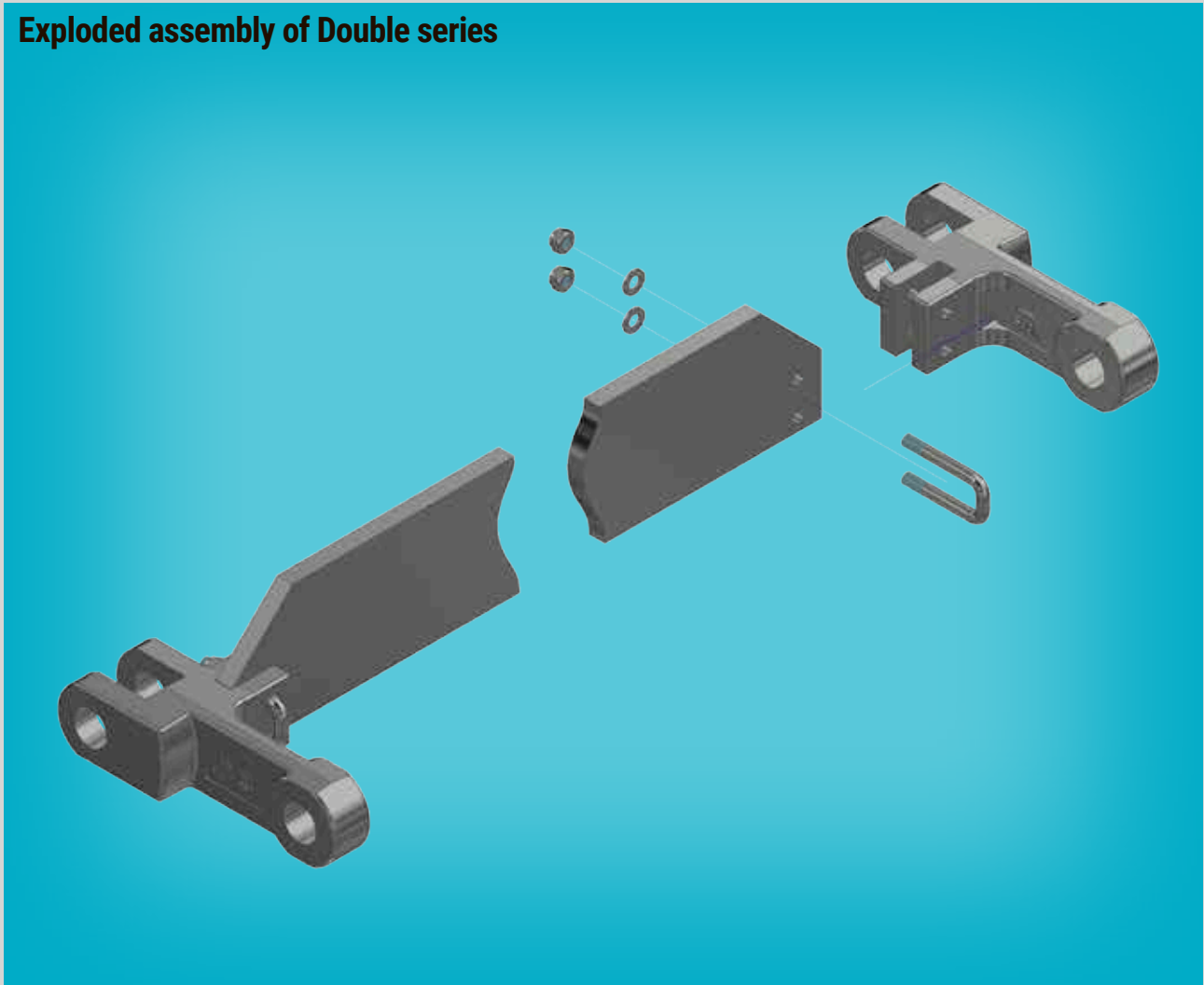
Triple series

Chain No.	Pitch P [mm]	Inner width b1 [mm]	Hole d [mm]	Body thickness s [mm]	Link height h [mm]	b3 [mm]	g [mm]	Link head width b2 [mm]	Breaking loads [kN]	
									MC*	CM*
T142-2	142,0	20	25	11	50	70	13	42	300	330
T142-2 H	142,0	30	25	15	50	87	13	62	450	480
T200-2	200,0	27	25	18	50	81	12	60	390	420
T200-2 H	200,0	32	30	20	60	95	13	70	550	590
T142-3	142,0	20	25	11	50	92	13	42	300	330
T142-3 H	142,0	30	25	15	50	112	13	62	450	480
T200-3	200,0	27	25	18	50	102	12	60	390	420
T200-3 H	200,0	32	30	20	60	120	13	70	550	590

* MC - Manganese Chrome Alloy Steel (20MnCr5)
CM - Chrome Moly Alloy Steel (42CrMo4)

Double series

Exploded assembly of Double series



Standard Flight U-Clip



Deep style U-Clip

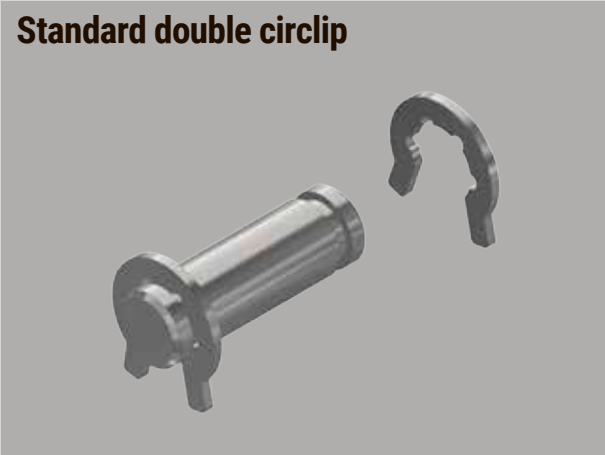




Pin & assembly

C_C

Standard double circlip



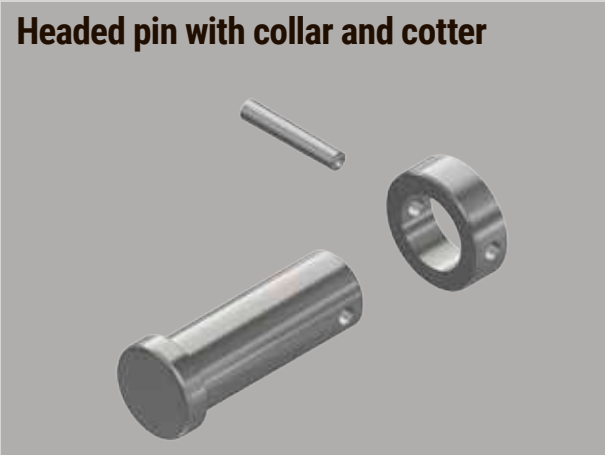
H_C

Headed pin with standard circlip



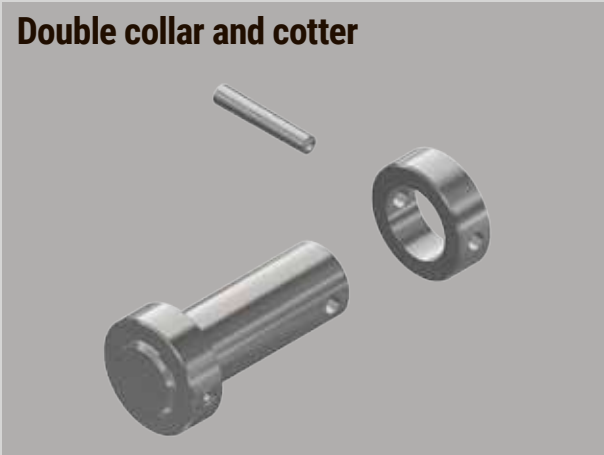
H_C+C

Headed pin with collar and cotter



C+C_C+C

Double collar and cotter



H_W+C

Headed pin with washer and cotter



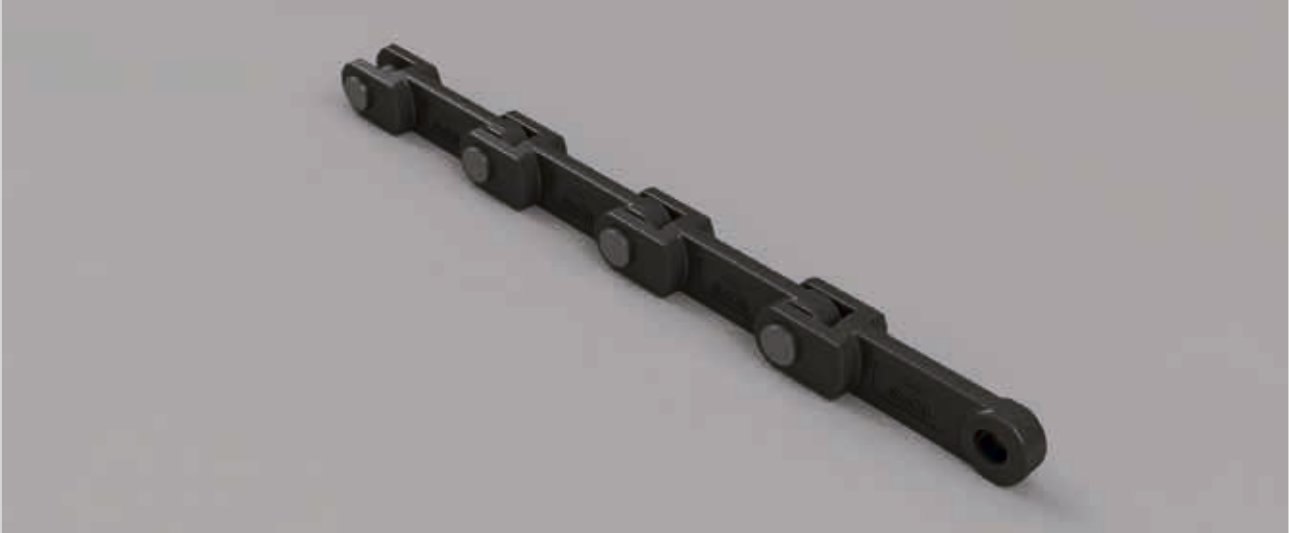
W+C_W+C

Double washer and cotter

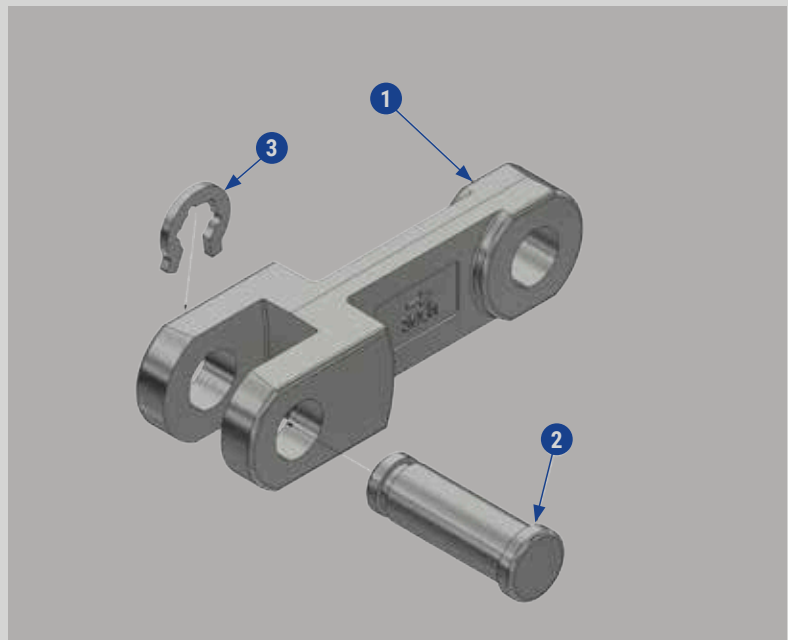


Drop Forged Chain Wear and inspection Guide

The information below is for guidance only. Always follow the equipment manufacturer's safety, installation, and maintenance instructions if such is provided with the conveyor.

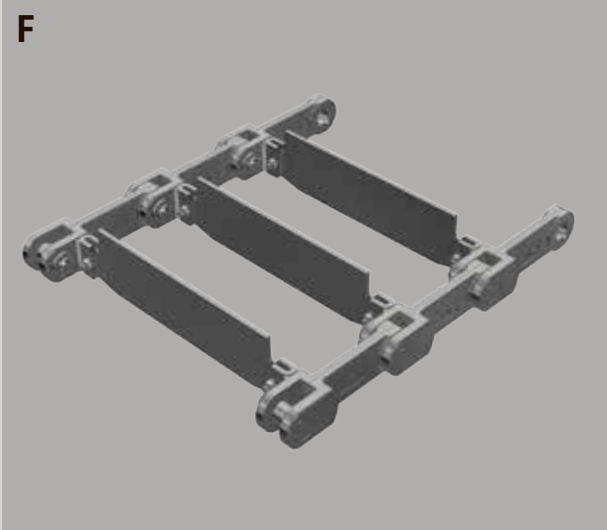
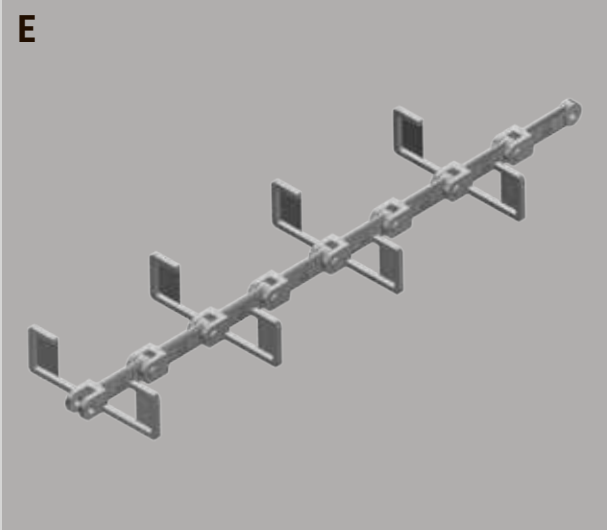
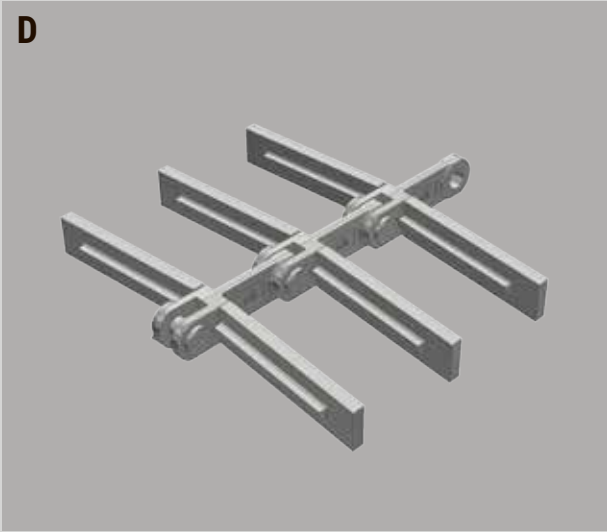
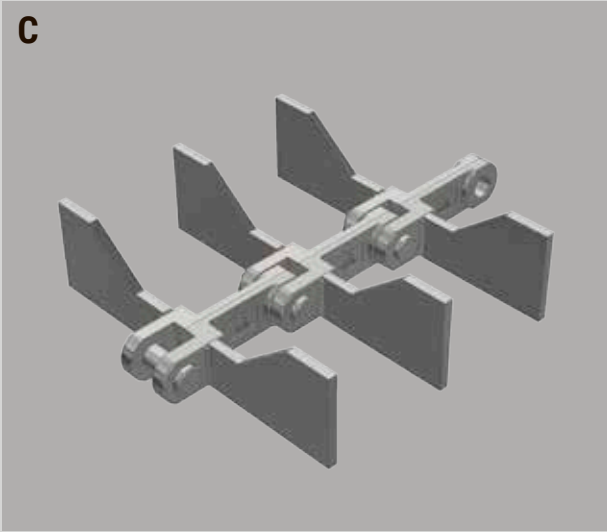
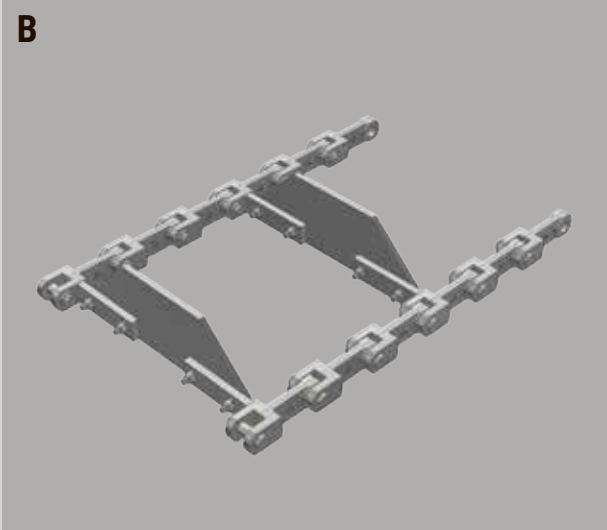
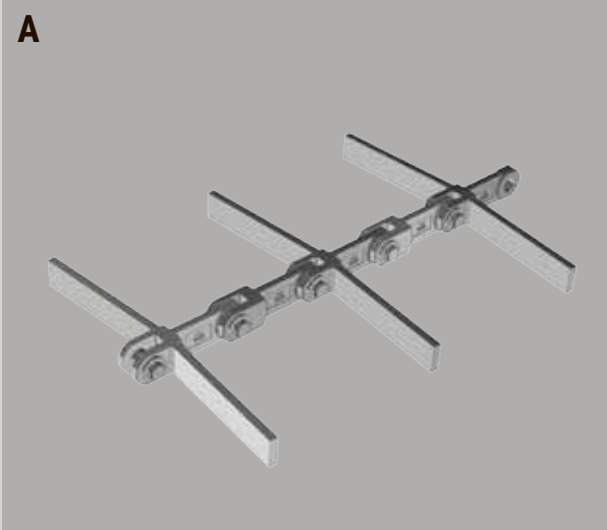


1. Check for chain elongation by measuring the length of a used strand (10 pitches minimum) and comparing it to the equivalent length of a new strand. Measurements must be taken while chain is in tension. Chain replacement is recommended at 2-4% elongation.
2. Check for chain link **1** wear by measuring the height of the link. Chain replacement is recommended when the original height has worn by 20%.
3. Inspect chain for damaged flights.
4. Inspect connecting pins **2** for damaged or missing retainers **3**.
5. Inspect sprockets for damaged or worn teeth.
6. Inspect groove depth of idler/trailer wheel. Replace if groove is too shallow to maintain chain engaged to idler wheel.
7. Inspect sprockets for material build-up in pockets. Replace or repair sprocket cleaner if necessary.
8. Inspect shaft keys and re-torque hub setscrews and sprocket assembly bolts.
9. Inspect chain rails for damage and wear.
10. Damaged links, pins, retainers and flights **MUST** be replaced; otherwise it may result in further damage to chain, sprockets and conveyor system.

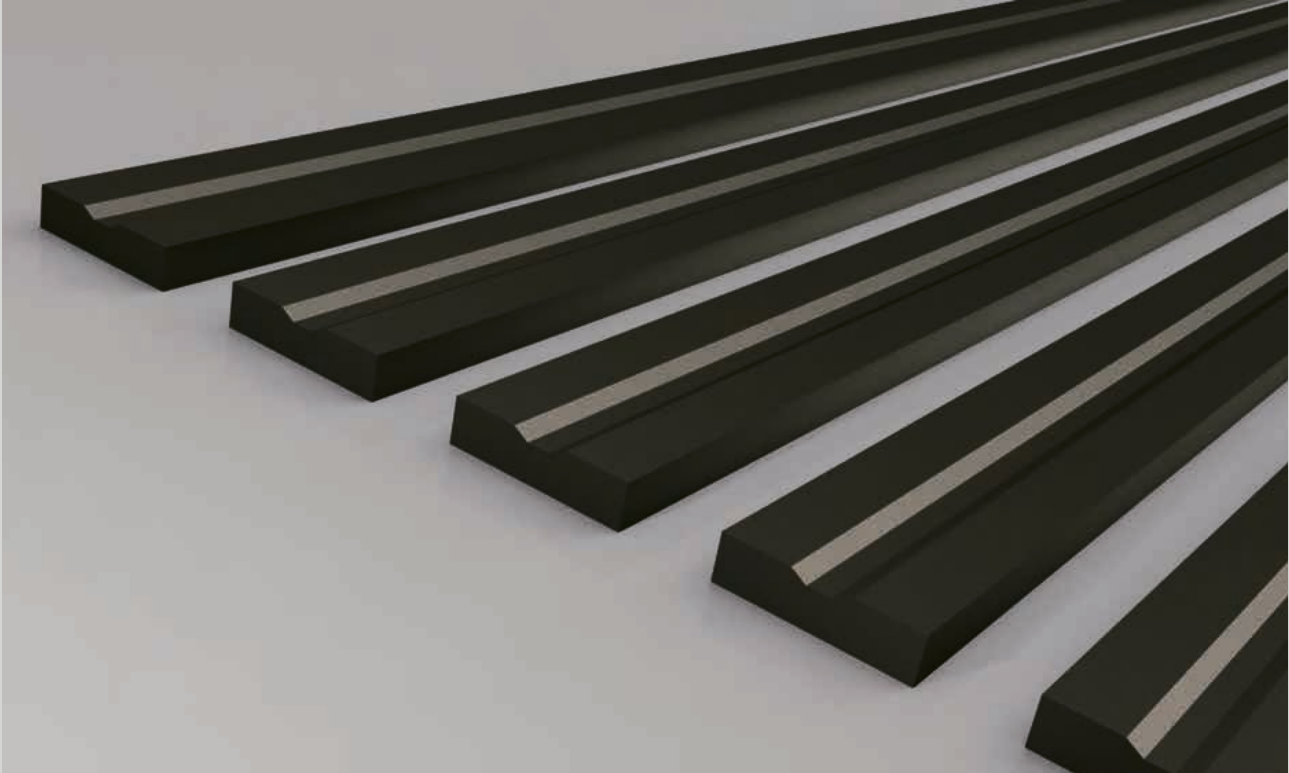




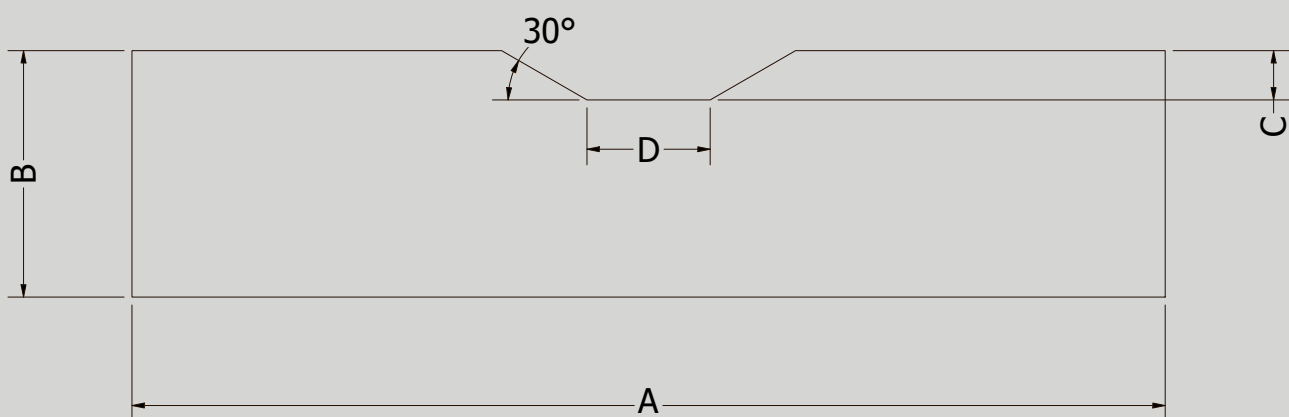
Configurations



Manganese wear rails



Grooved manganese wear rails offer considerable advantages with regard to long chain and conveyor life. Wear rails are offered in lengths of 3 meters. Other sizes and lengths available upon request.

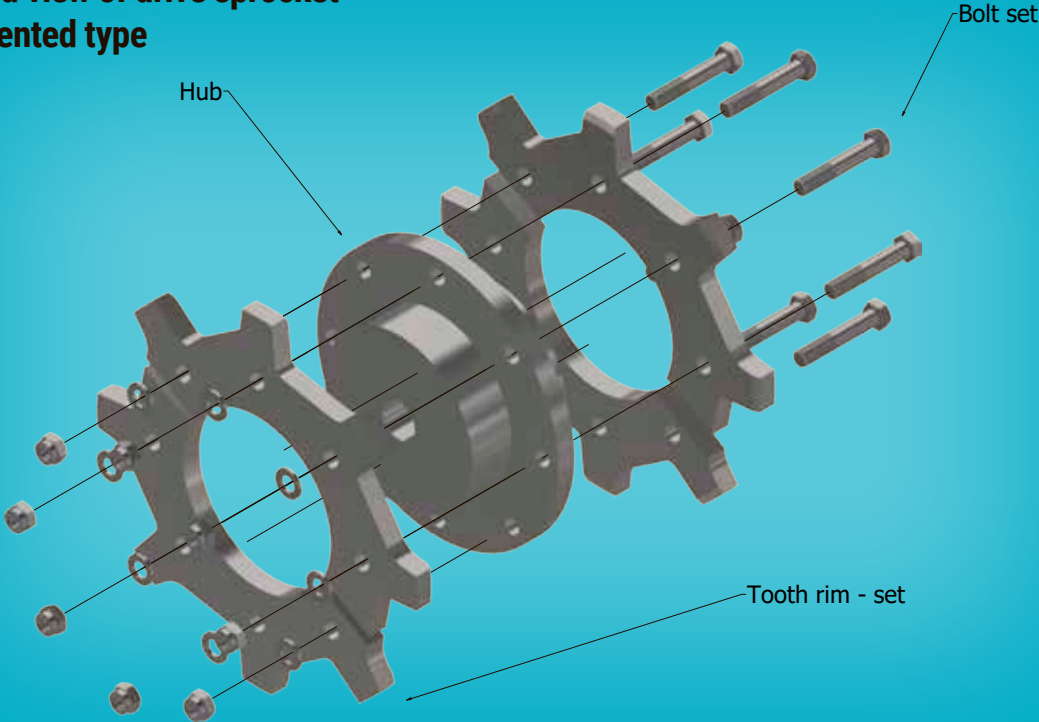


Product code	A [mm]	B [mm]	C [mm]	D [mm]
49/2510	25,0	10	2	5
49/4010	40,0	10	2	5
49/5010	50,0	10	2	5
49/6012	60,0	12	3	6
49/6020	60,0	20	3	6

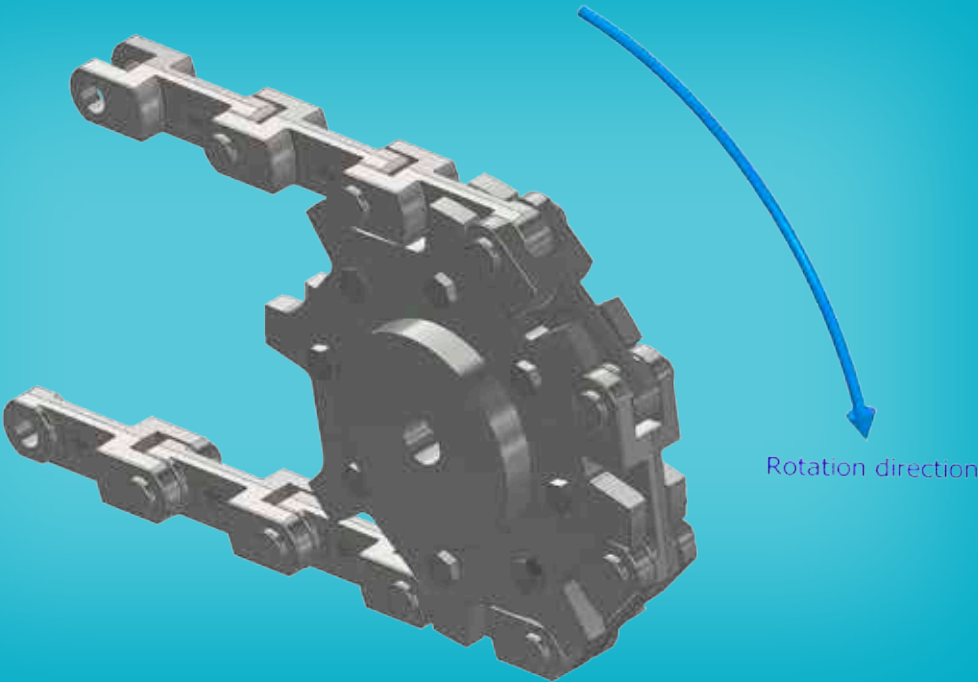


Sprockets

Exploded view of drive sprocket - Segmented type



Assembly with turning direction



Conveyor chain calculation

Pattern for split circle diameter

$$D = Z * \frac{P}{\pi}$$

D split circle diameter [mm]

P pitch [mm]

Z number of teeth

Chain speed

$$v = \frac{Z * P * n}{60.000}$$

v chain speed [$\frac{m}{s}$]

Z number of teeth

P chain pitch [mm]

n rotations per minute [$\frac{rev}{min}$]

Capacity

$$Q = A * v * 3.600$$

Q capacity [$\frac{m^3}{h}$]

A trough width x layer height [m²]

v chain speed [$\frac{m}{s}$]

Material weight on the chain

$$Mass_1 = \frac{E * S}{v * 3,6}$$

$Mass_1$ material weight [kg]

E efficiency [$\frac{t}{h}$]

S length of conveyor [m]

v chain speed [$\frac{m}{s}$]

Power

$$P = \frac{(v * Mass_1 * \mu_1 + Mass_2 * \mu_2) * 9,81}{1.000}$$

P power [Kw]

v chain speed [$\frac{m}{s}$]

$Mass_1$ material weight [kg]

$Mass_2$ total chain weight [kg]

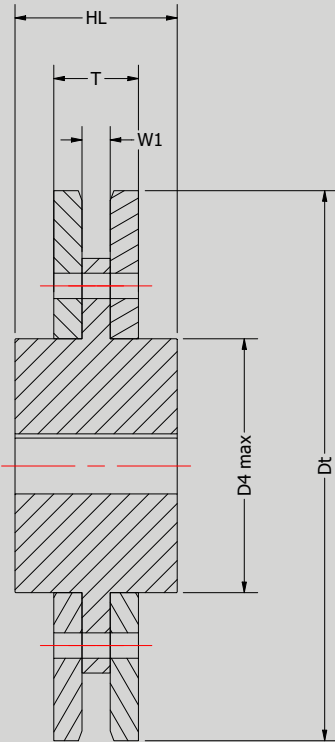
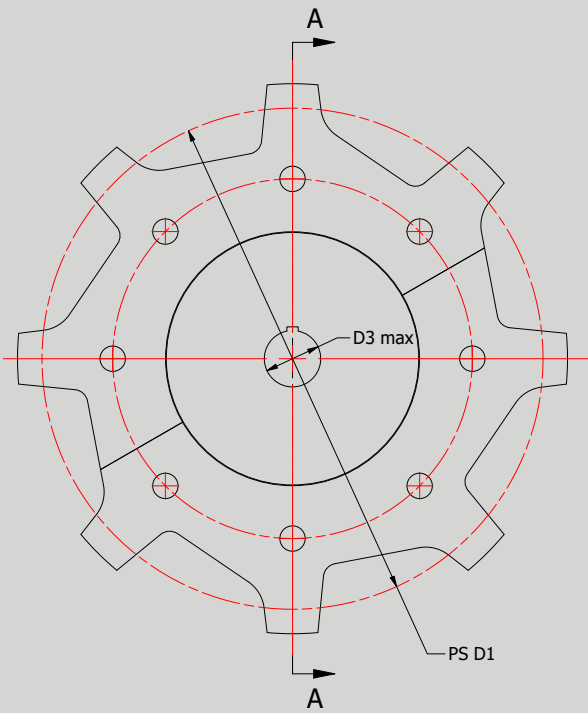
μ_1 friction between steel and the chain
(for a smooth-running product ca. 1,15)

μ_2 friction between steel and the chain
(for steel pushers approx. 0,25 and for plastic pushers approx. 0,15)

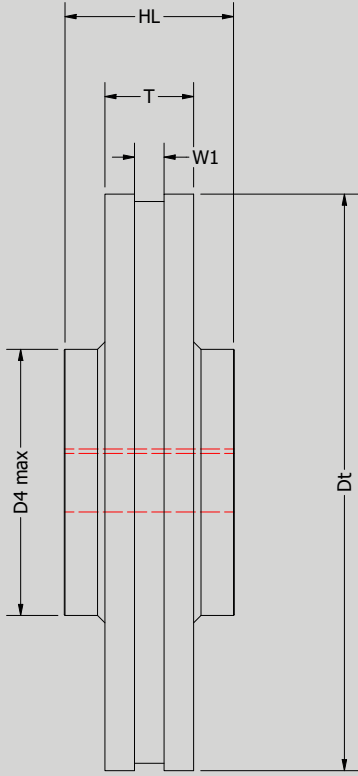
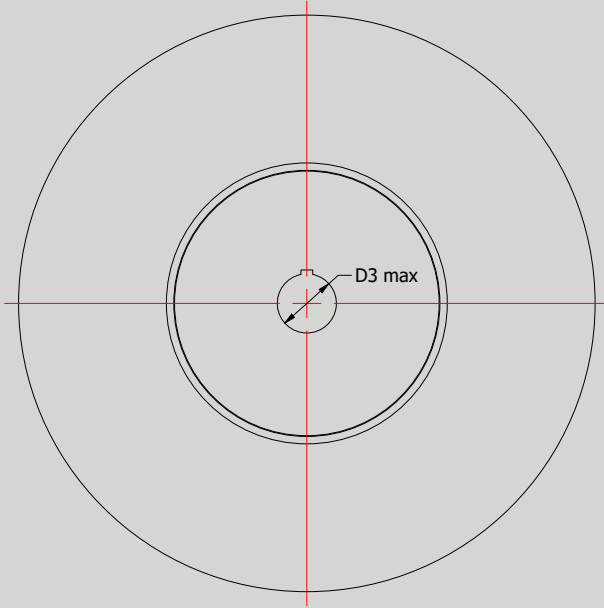


Sprocket measurements

Drive sprocket reference drawing



Return sprocket reference drawing



Sprocket measurements

ScanChain Chain name	Model	Z No. of teeth [pieces]	PS D1 Pitch circle dia [mm]	Dt Outside dia [mm]	D3 Max Standard Prebore [mm]	D4 Max Max outside hub dia [mm]	HL Total width [mm]	W1 Inner width [mm]	T Width of plate [mm]
T101,6L	101,6 Light	6	203,20	216	30	80	90	10	34
T101,6L	101,6 Light	8	265,49	277	30	120	90	10	34
T101,6L	101,6 Light	10	328,78	340	30	160	110	10	34
T101,6L	101,6 Light	12	392,55	404	30	180	115	10	34
T101,6L	101,6 Light	14	456,58	468	30	200	140	10	34
T101,6H	101,6 Heavy	6	203,20	216	30	80	90	12	36
T101,6H	101,6 Heavy	8	265,49	277	30	120	90	12	36
T101,6H	101,6 Heavy	10	328,78	340	30	160	110	12	36
T101,6H	101,6 Heavy	12	392,55	404	30	180	115	12	36
T101,6H	101,6 Heavy	14	456,58	468	30	200	140	12	36
T142L	142 Light	6	284,00	304	40	120	95	15	45
T142L	142 Light	7	327,31	344	40	150	100	15	45
T142L	142 Light	8	371,06	390	40	180	115	15	45
T142L	142 Light	9	415,18	435	40	220	140	15	45
T142L	142 Light	10	459,52	480	40	220	140	15	45
T142L	142 Light	11	504,02	524	40	290	240	15	45
T142L	142 Light	12	548,64	570	40	290	240	15	45
T142L	142 Light	13	593,37	614	40	350	300	15	45
T142L	142 Light	14	638,15	660	40	350	300	15	45
T142L	142 Light	15	682,87	702	40	350	300	15	45
T142L	142 Light	16	727,90	748	40	350	300	15	45
T142H	142 Heavy	6	284,00	304	40	120	95	20	60
T142H	142 Heavy	7	327,31	344	40	150	100	20	60
T142H	142 Heavy	8	371,06	390	40	180	115	20	60
T142H	142 Heavy	9	415,18	435	40	220	140	20	60
T142H	142 Heavy	10	459,52	480	40	220	140	20	60
T142H	142 Heavy	11	504,02	524	40	290	240	20	60
T142H	142 Heavy	12	548,64	570	40	290	240	20	60
T142H	142 Heavy	13	593,37	614	40	350	300	20	60
T142H	142 Heavy	14	638,15	660	40	350	300	20	60
T142H	142 Heavy	15	682,87	702	40	350	300	20	60
T142H	142 Heavy	16	727,90	748	40	350	300	20	60
T160L	160 Light	6	320,00	342	40	120	105	17	57
T160L	160 Light	8	418,10	440	40	220	105	17	57
T160L	160 Light	10	517,77	540	40	290	250	17	57
T160H	160 Heavy	6	320,00	342	40	120	105	25	65
T160H	160 Heavy	8	418,10	440	40	220	105	25	65
T160H	160 Heavy	10	517,77	540	40	290	250	25	65
T200L	200 Light	8	522,40	522	50	280	230	24	64
T200L	200 Light	10	647,40	647	50	350	300	24	64
T200L	200 Light	12	772,80	773	50	370	300	24	64
T200H	200 Heavy	8	522,40	522	50	280	230	25	65
T200H	200 Heavy	10	647,40	647	50	350	300	25	65
T200H	200 Heavy	12	772,80	773	50	370	300	25	65
T216H	216 Heavy	6	432,8	459	50	170	105	25	65
T216H	216 Heavy	7	498,75	525	50	170	105	25	65
T216H	216 Heavy	8	565,48	592	50	280	230	25	65
T216H	216 Heavy	9	632,71	659	50	350	300	25	65
T216H	216 Heavy	10	700,29	726	50	350	300	25	65
T260L	260 Light	8	679,41	709	50	350	300	26	76
T260L	260 Light	10	841,37	870	50	400	340	26	76
T260L	260 Light	12	1.004,56	1.035	50	500	400	26	76
T260H	260 Heavy	8	679,41	709	50	350	300	32	82
T260H	260 Heavy	10	841,37	870	50	400	340	32	82
T260H	260 Heavy	12	1.004,56	1.035	50	500	400	32	82



Material selection for sprockets

Choosing the correct material for sprockets are equally important as the design of the sprocket.

There are many material options but depending on the application, environment and other factors below table offers the best mix of price, wear resistance, corrosion resistance and match with the chain material.

On selected materials each individual tooth profile is induction hardened. This is done to avoid the risk of tooth breaking and add flexibility to the tooth.

Material S355 / 1.0577

Pros	Easy to weld, Low price
Cons	Unable to harden, Low wear resistance
Hardening method	N/A
Hardening depth	N/A
Hardness	N/A

Material C45 / 1.0503

Pros	Can be hardened, High wear resistance, High strength
Cons	Limited weldability
Hardening method	Induction hardening
Hardening depth	3-5mm
Hardness	54 +2 HRC

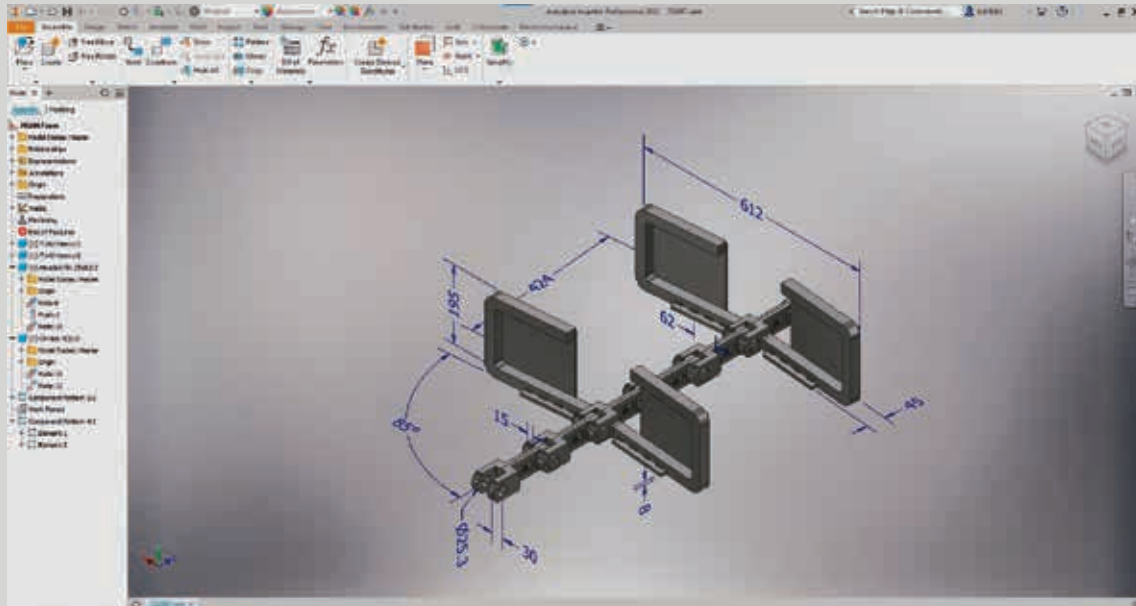
Material 42CrMo4 / 1.7225

Pros	Tough material, High strength, High Carbon content, Higher hardness
Cons	Limited/low weldability, Difficult to harden, Expensive
Hardening method	Induction hardening
Hardening depth	3-5mm
Hardness	58 +2 HRC

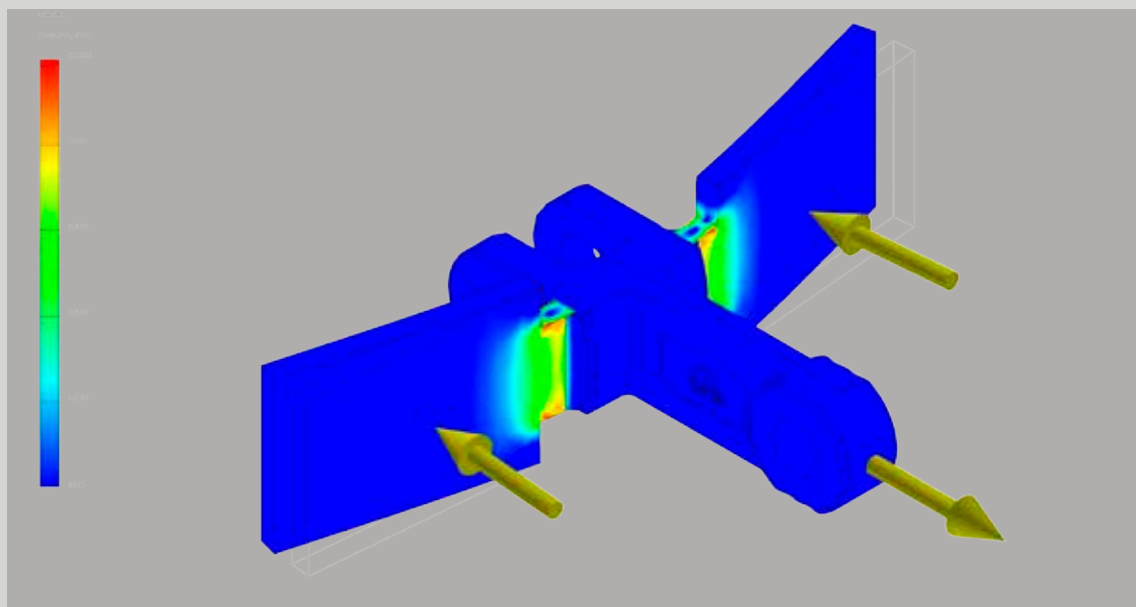
Material Stainless steel

Pros	Used in Abrasive/Corrosive environment, High corrosion resistance
Cons	Expensive, Difficult to machine
Available E.N number	1.4301 / 1.4571 / 1.4122 etc.

Simulation and technical assistance



Our engineers and drawing department provides design, support and technical assistance for the preparation, execution and delivery of your projects.



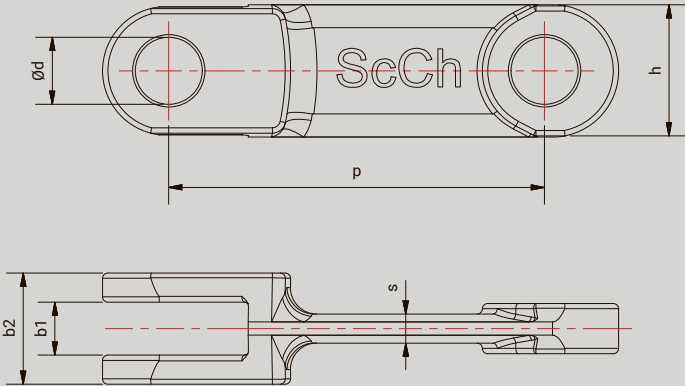
It can result in high costs for repair and replacement of equipment if an intended solution is not tested. Costs that can be avoided by running a simulation of the technical solution before full implementation in the conveyor system. Our trained engineers can simulate, track and document weaknesses in the chain's construction and installation in the conveyor and thus ensure that our customers get the most optimal conditions for their further process.



Measuring table

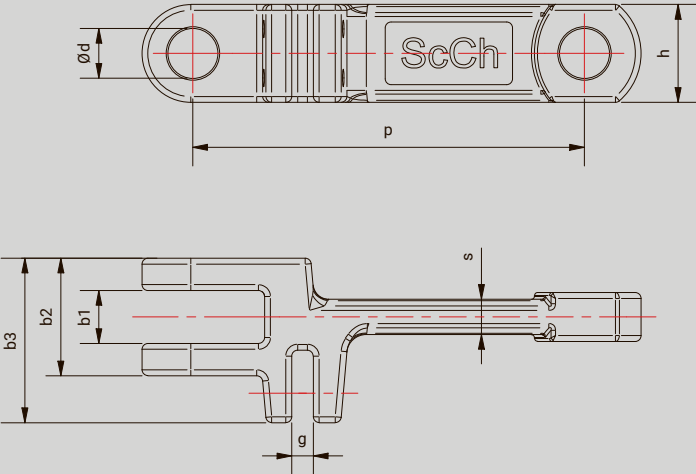
Chain type: **Standard Series** **Double Series**

Standard Series



Pitch p [mm]	Inner width b1 [mm]	Link head width b2 [mm]
Bush d [mm]	Body thickness s [mm]	Link height h [mm]
b3 [mm]	g [mm]	

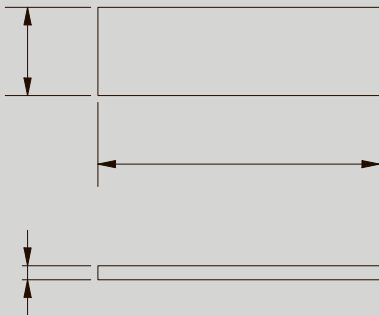
Double Series



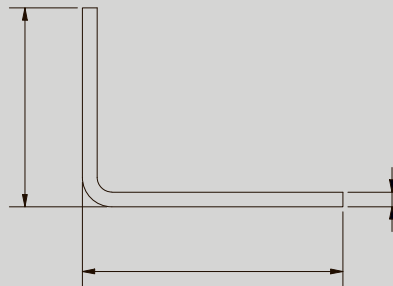
Main draft



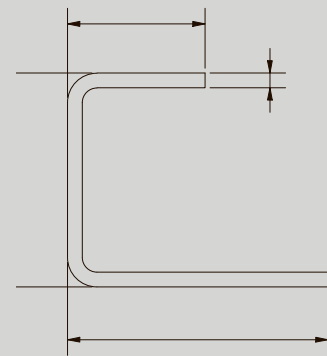
Flat scrapers



Square scrapers
"U" shape
With filler



Square scrapers
"C" shape
With filler

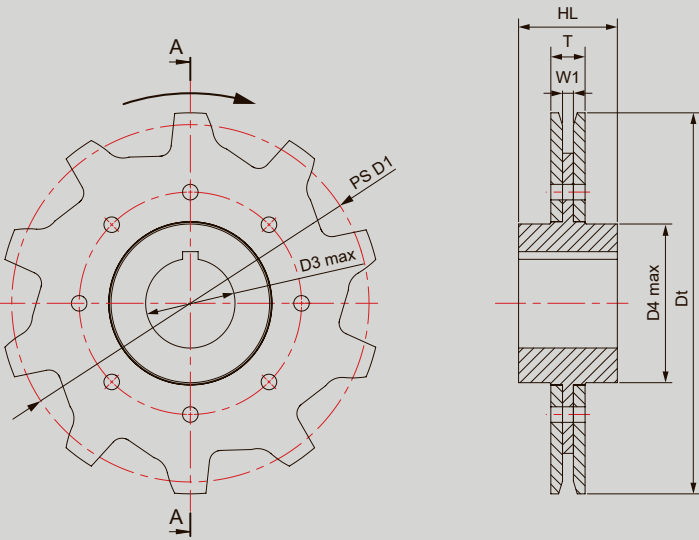




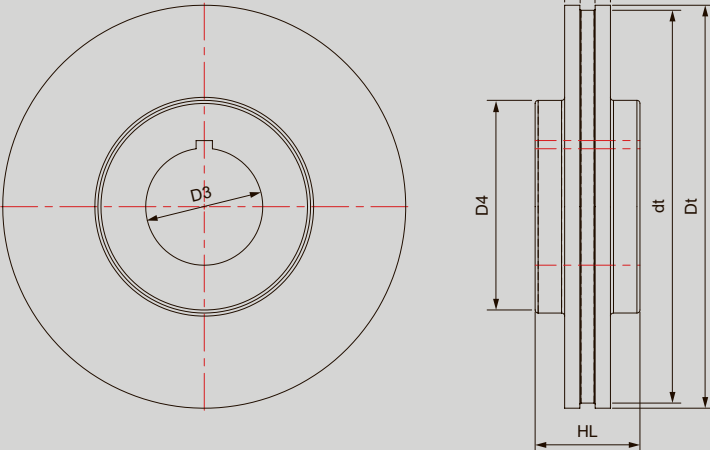
Draft table for Sprockets

Chain number:
Sprocket type Drive **Return**

Drive sprockets



Return sprockets

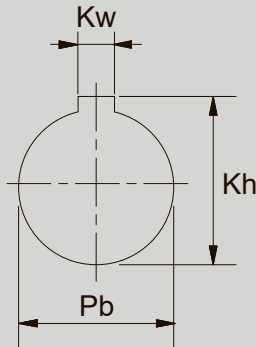


One sided hub

Two sided hub

Keyway

Chain Pitch p [mm]	No. of teeth Z [mm]	Outside dia Dt [mm]
Standard Prebore D3 [mm]	Outside hub dia D4 [mm]	Total width HL [mm]
Inner width W1 [mm]	Width of plate T [mm]	dt [mm]
Pre bore Pb [mm]	Key width Kw [mm]	Key height Kh [mm]





Scanchain PLUS.



At ScanChain we always try to refine what's already working.

The constant search for the best product does not exist only with our customers, but is also rooted in **ScanChain's DNA**.

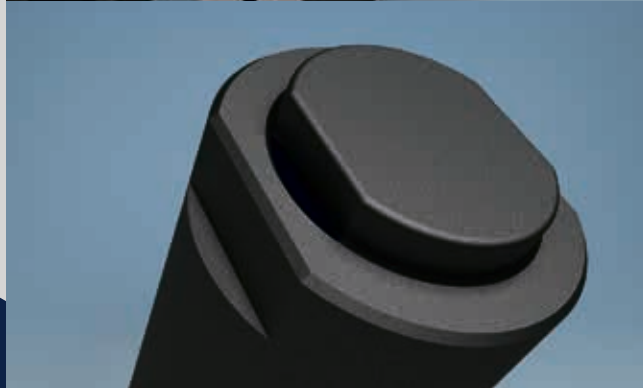
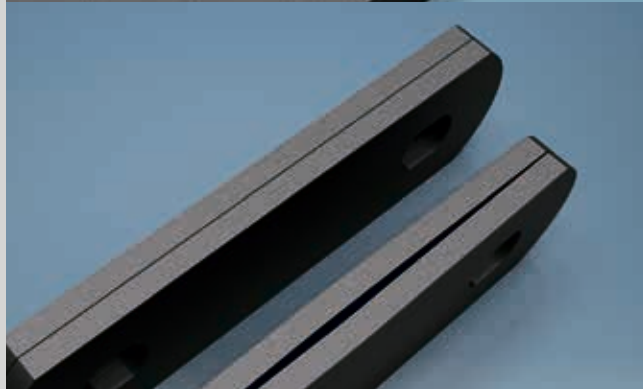
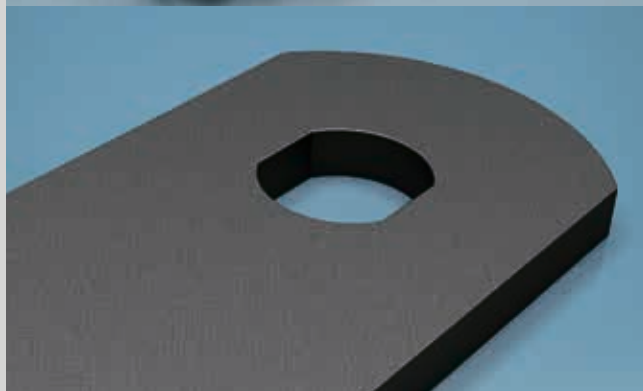
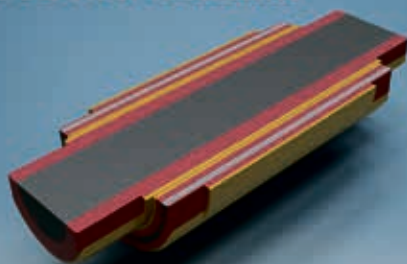
For many years, **ScanChain's** conveyor chains have been considered as **market leaders in quality and durability**.

This includes DIN8165 and DIN8167, also known as the **FV and M series conveyor chains**.

Therefore, it is with great pleasure we present **PLUS**.

PLUS conveyor chains are **refined in every detail**. PLUS Conveyor chains have **longer service life, higher tensile strength and less elongation**, measured over the chain's load and lifetime.

STANDARD DEPTH OF HARDENING
PLUS DEPTH OF HARDENING



To achieve these results, **special materials and hardening methods for the pin and bush are used**, just as the pin is made soft before round riveting. This reduces the risk of breakage of the pin when it is rivetted. **The pin** is round rivetted, ensuring a complete and uniform attachment to the side plate.

The special hardening process of both pin and bush results in **higher hardening depth and softer core hardness** thus resulting in a higher wear resistance on pin and bush and **higher flexibility** in the pin versus normal pins that easily breaks due to brittleness.

Both the pin and the bush have **anti-rotation flatness**, which ensures that neither the pin nor the bush can rotate in the side plate. The match between the pin and the bush in the side plate is also improved by **press-fit**.

When the side plate is cut, it can bend a little bit. To ensure **100% parallelism** in the side plates, they are cut from tempered steel then flatten before mounting of the pin and the bush.

PLUS Conveyor chains are available in DIN8165 (FV) and DIN8167 (M).

Call us at
+45 78 77 95 96

and hear more about
PLUS conveyor chains.

You are also welcome to send us an email at
info@scanchain.dk





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