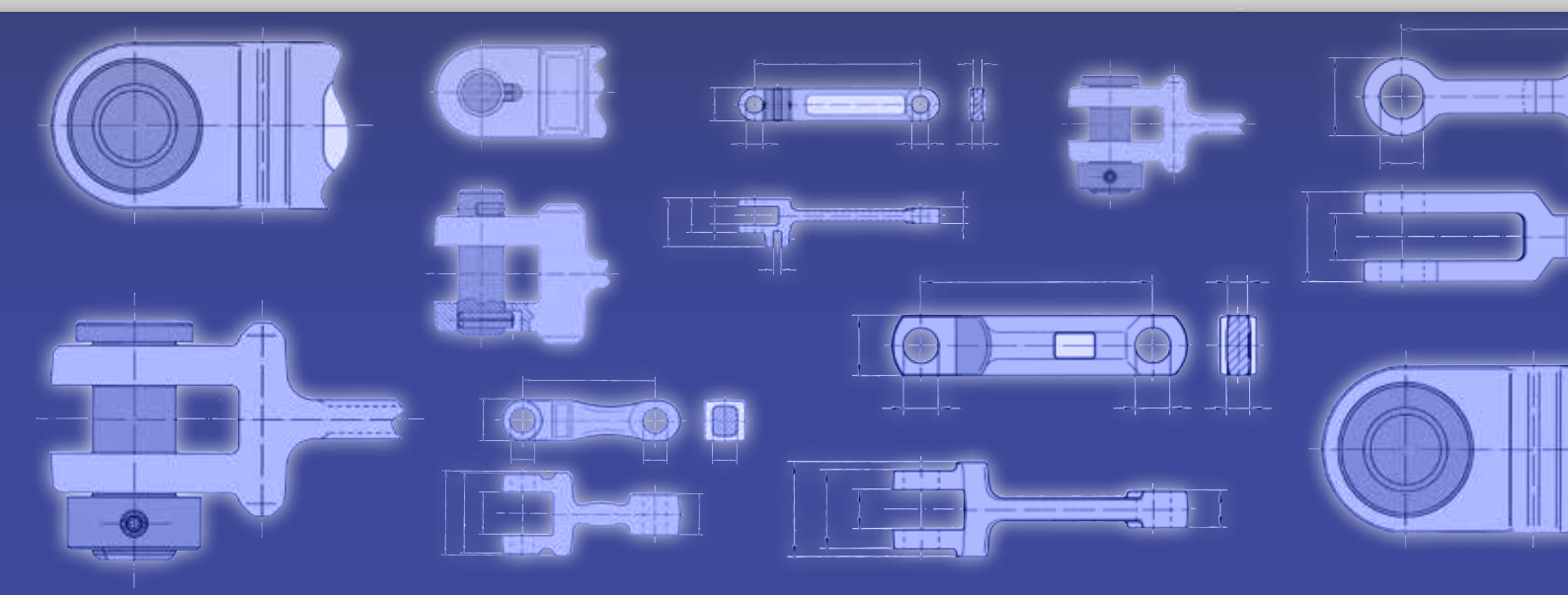
THIELE®



Forged Link Chains

CHANGE®
for Success

THIELE – Quality Philosophy

DNV

DNV BUSINESS ASSURANCE

MANAGEMENT SYSTEM CERTIFICATE

Certificate No.: 110032-2012-AQ-GER-TGA

This is to certify that

THIELE

Thiele GmbH & Co. KG

Werkstrasse 3
58640 Iserlohn / Kalthof - Germany

has been found to conform to the Management System Standard

ISO 9001:2008

This certificate is valid for the following product or service ranges:

Design, Development, Production, Service of welded, cold and hot formed safety-components, parts for conveying technology, link chains made from alloyed special steel, austenitic, ferritic and duplex material

Initial Certification date: 08.02.1994
This certificate is valid until:
The audit has been performed under the supervision of
Jürgen Weißbauer
Lead Auditor

TGA-ZM-04-92-00

Place and date: Essen, 01.05.2012
for the Accredited Unit:
Nikolaus Kim
Management Representative

DNV

DET NORSKE VERITAS

MANAGEMENT SYSTEM CERTIFICATE

Certificate No.: 91891-2011-AE-GER-TGA

This is to certify that

THIELE

Thiele GmbH & Co. KG

Werkstrasse 3
58640 Iserlohn / Kalthof - Germany

has been found to conform to the Management System Standard

ISO 14001:2004

This certificate is valid for the following product or service ranges:

Design, Development, Production, Service of welded, cold and hot formed safety-components, parts for conveying technology, link chains made from alloyed special steel, austenitic, ferritic and duplex material

Initial Certification date: 16.08.2011
This certificate is valid until:
The audit has been performed under the supervision of
Andreas Meyer
Lead Auditor

TGA-ZM-04-92-00

Place and date: Essen, 16.08.2011
for the Accredited Unit:
Nikolaus Kim
Management Representative

Our Quality Philosophy

- customer satisfaction
- fulfilling the high quality-, environmental- and safety standards with our products
- constant and sustained development of our company operations
- fulfilling the quality assurance system standards according to ISO 9001
- fulfilling the environmental management system standards according to ISO 14001
- fulfilling the energy management system standards according to ISO 50001
- due to CIP (Continuous Improvement Process), we guarantee long lasting and high quality products

AEO

certified trading partner

MADE IN GERMANY

Contents

THIELE – company profile

The THIELE company

The THIELE Company was founded more than 75 years ago and is now one of the world's foremost chain manufacturers. THIELE's product line includes round-link chains, bush conveyor chains, forged link chains and a full range of fittings and accessories. THIELE's know-how has been built up over many years of designing and producing complete chain systems and our highly skilled workforce and modern, high-performance production facilities stand guarantee for products of the finest quality.

Consulting and product development

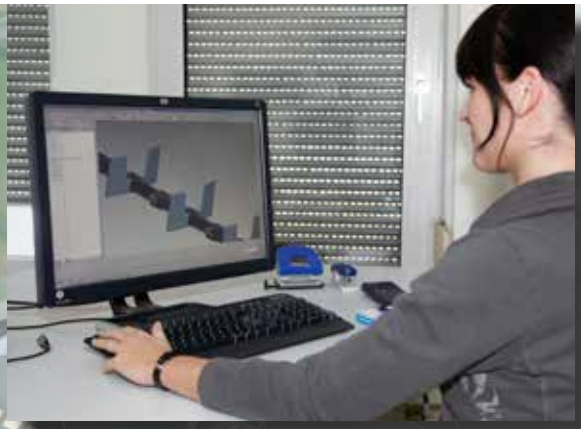
THIELE specialises in chain systems for lifting and conveying. THIELE engineers provide an on-site consulting service and work alongside the client to analyse the technical requirements before planning and sizing up the moving chain assembly. Customised solutions are then worked out in-house in THIELE's own design department.

Chain production

All our chains and components are manufactured in-house. Our production facilities include equipment for welding, laser-, plasma- and gas-cutting, solid forming, heat treatment and mechanical processing using the latest CNC lathes and multi-spindle milling machines.

Quality

High-integrity production methods are used to ensure that all products leaving the THIELE factory are of the finest quality, as confirmed by continuous monitoring in our laboratory and testing house. THIELE is one of the world's first chain producing companies to meet the DIN EN ISO 9001 quality management standard.



Development, CAD design, chain dimensioning

All product development takes place in our own technical department, where the latest 3D CAD programs are used in designing the forked links and forging dies. Precise volume calculations enable us to reduce material costs during forging. 3D CAD programs are also used to simulate complex chain routings over sprocket wheels and in conveyor installations.

Product line – forged link chains

THIELE can boast a wide product portfolio of over 50 types of forked links for single-strand and twin-strand chain assemblies. As forging is done in-house we can match individual materials to specific operating requirements. Careful heat treatment makes for an optimum service life combined with high component reliability, even when operating at high temperatures and when handling abrasive materials.

Service

The company operates a mobile chain testing service whereby accredited technicians are able to carry out chain testing in-situ. We can offer a full inspection programme for chain conveyors and also carry out chain wear measurements on request. Specialists are also available to oversee chain assembly and commissioning on your conveyor systems.

THIELE – drop forging

Forgings weighing between 0.1 kg and 60 kg, and measuring up to 1000 mm, are produced on three forging hammers – 31.5 kJ, 40 kJ and 100 kJ (10 kJ is equivalent to an impact energy of 1 tonne from a 1 m height of drop) – and a 1,600-tonne forging press. The feedstock comprises square billets with edge lengths of between 20 and 120 mm or round billets 18.5 to 60 mm in diameter.

The material is first cut to size by cropping or sawing before the individual segments are heated in an induction unit assigned to the respective forging machine. The heated blanks are then reshaped in a die by means of pneumatically generated impact energy or by a forming force applied via a centrifugal mass. Finally, the flash is removed from the finished piece. The forming process often involves working to extremely very fine tolerances.

After forging the components undergo careful heat treatment in order to fine-tune their final properties.

At THIELE we make all our dies and trimming and forging tools in-house. We also employ program-controlled machines that can produce shapes using the latest technology, including high-speed cutting.

Forging with quality assurance

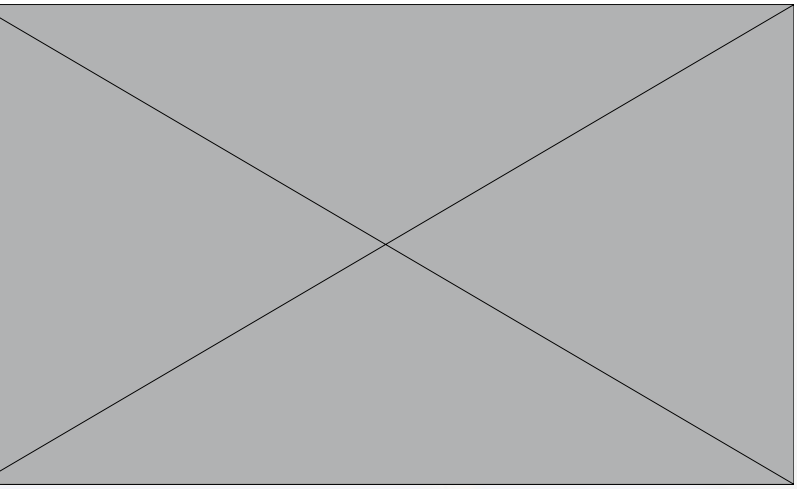
An experienced workforce combined with reliable production methods are the key to real quality assurance.

All key product characteristics are continuously monitored in a series of elaborate routines that are carried out at THIELE's in-house testing and laboratory facilities.
This includes comprehensive crack testing of all forged links.

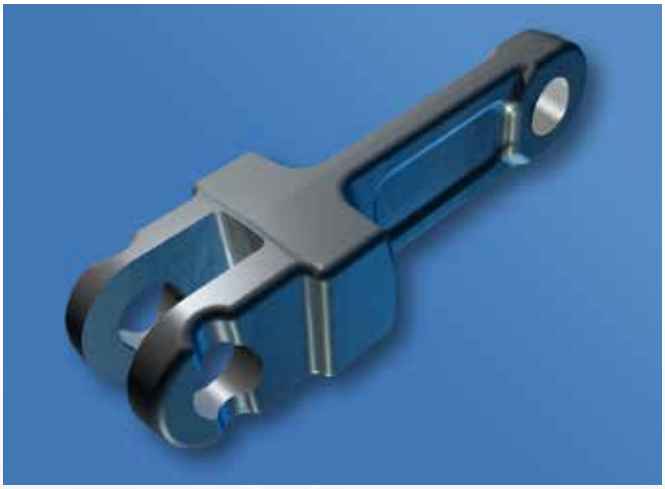
Benefits:

- FEM-optimised forged link design
- anatomical 'dogbone' web profile
- drop forged according to grain direction
- accurate machining
- large range of types and product options

Overview of single-strand forged links



Example of a single-strand chain with welded lobes



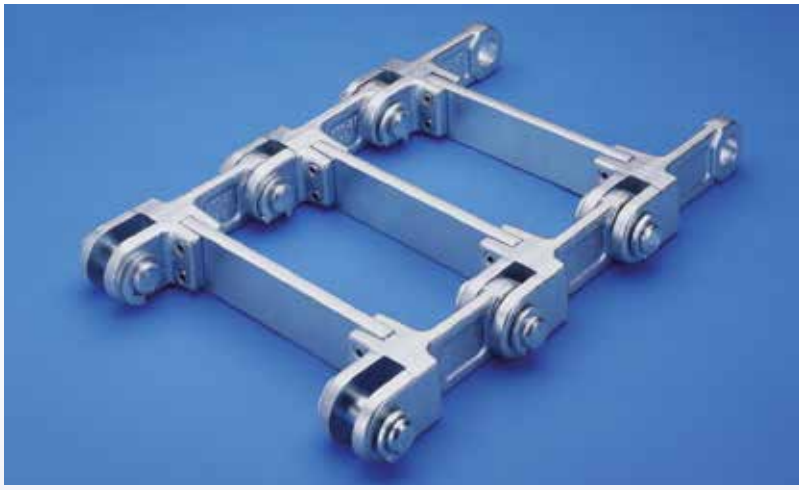
Example of a single-strand forged link

Ident no.	Dimensions (in mm)	Page
072 xx	102 x 35 x 10	10
046 xx 546 xx	142 x 40 x 19	11
541 xx	142 x 40 x 29	12
266 xx	142 x 45 x 44	12
996 xx 999 xx	142 x 50 x 19	13
990 xx 994 xx 995 xx	142 x 50 x 22	14 - 15
424 xx 728 xx	142 x 50 x 25	15 - 16
128 xx 325 xx 729 xx	142 x 50 x 29	16 - 17
445 xx	142 x 50 x 31	18
084 xx	160 x 50 x 25	18

Ident no.	Dimensions (in mm)	Page
986 xx 987 xx	200 x 50 x 22	19
985 xx	200 x 52 x 32	20
217 xx 677 xx	200 x 60 x 30	20 - 21
443 xx	220 x 65 x 29	21
068 xx	230 x 90 x 50	22
113 xx 513 xx	250 x 60 x 30	22 - 23
455 xx 955 xx	250 x 70 x 30	23 - 24
126 xx	250 x 70 x 45	24
125 xx 700 xx 777 xx	250 x 80 x 38	25 - 26
326 xx	260 x 75 x 30	26

Overview of twin-strand forged links

Example of a twin-strand forged link



Example of a twin-strand chain with flight bars

Ident no.	Dimensions (in mm)	Page
870 xx	142 x 50 x 19	28
890 xx	142 x 50 x 29	29
915 xx	175 x 60 x 30	29
703 xx	200 x 40 x 20	30
065 xx 701 xx	200 x 50 x 25	30 - 31
064 xx 218 xx 964 xx 970 xx	200 x 60 x 30	31 - 33
070 xx	200 x 60 x 34	33

Ident Nr.	Dimensions (in mm)	Page
100 xx	216 x 62 x 28,5	34
622 xx 922 xx	250 x 50 x 25	34 - 35
098 xx 961 xx	250 x 60 x 30	35 - 36
219 xx	250 x 70 x 30	36
132 xx	250 x 70 x 45	37
978 xx	250 x 80 x 43	37

Single-strand forged links – technical data

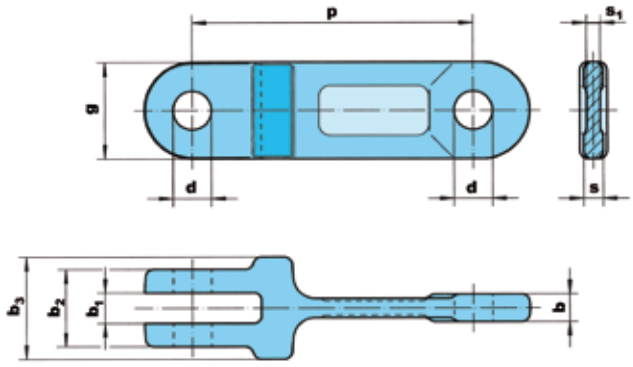
Quality

All THIELE forged links are produced in the company's own drop forging shop.
The general dimensions of the links correspond to the die-forging tolerances laid down in DIN EN 10243, F.
The mating dimensions are finely calibrated and each forged link is provided with a die number, material reference and batch reference.
Example: 07208 XYZ
07208 die number
072**08** material reference
XYZ batch reference

Products

The following pages present the technical specifications of THIELE single-strand forged links. The different types of locking pin are shown on pages 38 and 39:
Type A = with anti-rotation device,
Type B = without anti-rotation device.
The tables on pages 44 and 45 provide detailed information on the feedstock materials.
THIELE specialists are always available to discuss your specific requirements.

102 x 35 x 10



Single-strand forged link
102 x 35 x 10

- with welded lobes
- with anti-rotation option: A4, see page 38

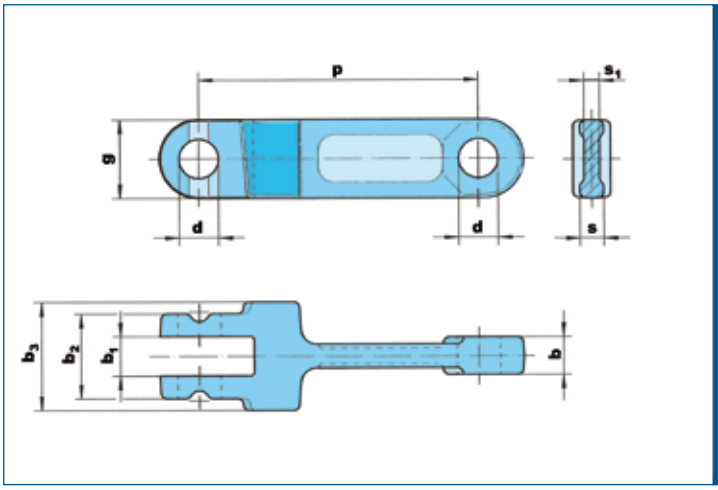
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
102	35	10	11	28	37	14	7	5

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
072 08	F28020	1.0412	27MnSi5	tempered	160	-	0,42
072 08	F28020B	1.0412	27MnSi5	tempered	-	115	0,42
072 42	F28021	1.6758	23MnNiMoCr54	tempered	205	-	0,42
072 42	F28021B	1.6758	23MnNiMoCr54	tempered	-	150	0,42
072 31	F28089	1.7147	20MnCr5	case-hardened	115	-	0,42

Single-strand forged link
142 x 40 x 19

- with welded lobes
- with anti-rotation option: A1, see page 38



All dimensions given in mm

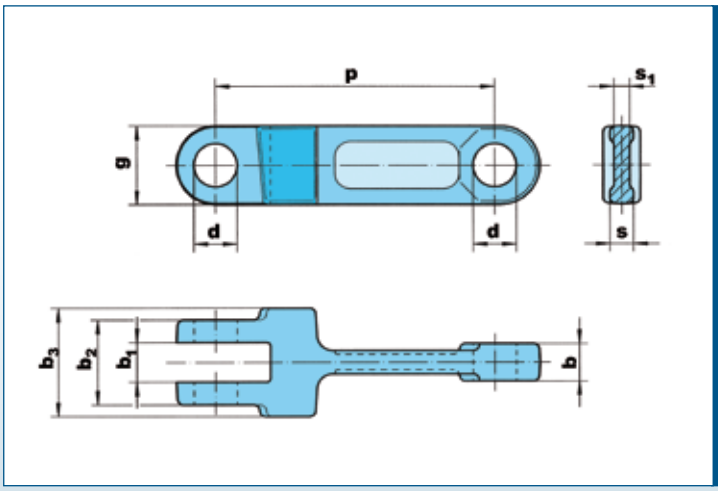
p	g	b	b_1	b_2	b_3	d	s	s_1
142	40	19	20	43	55	20	12	8

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
046 08	F28060	1.0412	27MnSi5	tempered	270	-	1,0
046 08	F28060B	1.0412	27MnSi5	tempered	-	235	1,0
046 42	F28069	1.6758	23MnNiMoCr54	tempered	345	-	1,0
046 42	F28069B	1.6758	23MnNiMoCr54	tempered	-	305	1,0
046 31	F28070	1.7147	20MnCr5	case-hardened	175	-	1,0

142 x 40 x 19

Single-strand forged link
142 x 40 x 19

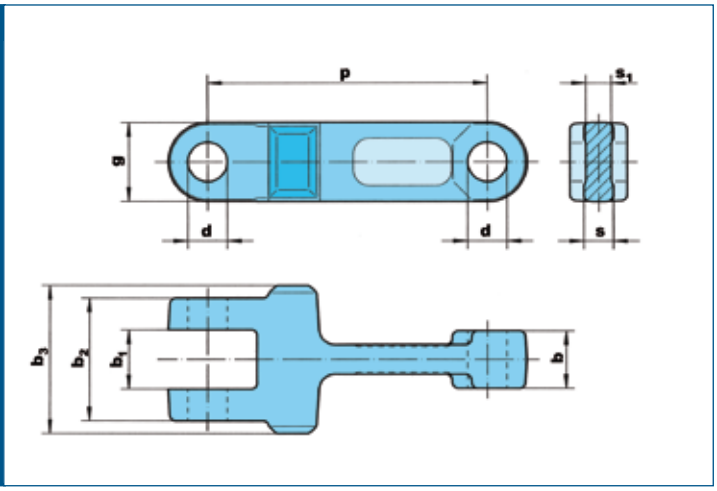
- with welded lobes
- with anti-rotation option: A4, see page 38



All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	40	19	20	43	55	20	12	8

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
546 08	F28066	1.0412	27MnSi5	tempered	330	-	1,0
546 08	F28066B	1.0412	27MnSi5	tempered	-	235	1,0
546 42	F28232	1.6758	23MnNiMoCr54	tempered	420	-	1,0
546 42	F28232B	1.6758	23MnNiMoCr54	tempered	-	305	1,0
546 31	F28231	1.7147	20MnCr5	case-hardened	265	-	1,0



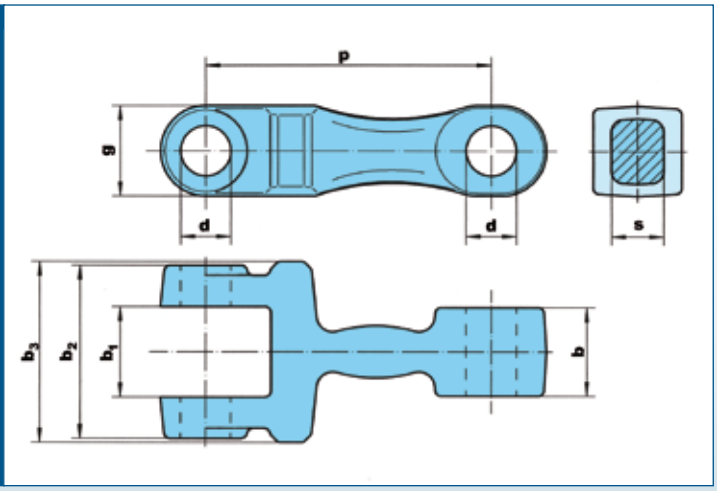
Single-strand forged link
142 x 40 x 29

- with welded lobes
- with anti-rotation option: A4, see page 38

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	40	29	30	62	75	20	15	13

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
541 08	F28233	1.0412	27MnSi5	tempered	330	-	1,2
541 08	F28233B	1.0412	27MnSi5	tempered	-	265	1,2
541 42	F28234	1.6758	23MnNiMoCr54	tempered	420	-	1,2
541 42	F28234B	1.6758	23MnNiMoCr54	tempered	-	340	1,2
541 31	F28134	1.7147	20MnCr5	case-hardened	265	-	1,2



Single-strand forged link
142 x 45 x 44

- with welded lobes
- with anti-rotation option: A4, see page 38

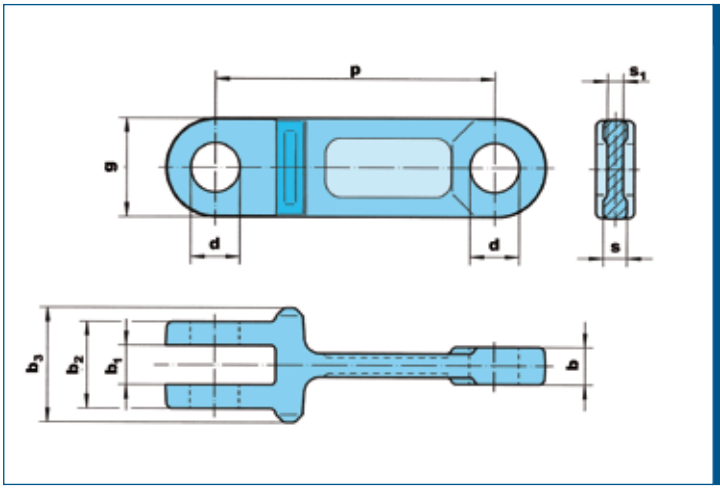
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	45	44	46	86	90	25	26	-

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
266 08	F28090	1.0412	27MnSi5	tempered	520	-	2,0
266 08	F28090B	1.0412	27MnSi5	tempered	-	440	2,0
266 42	F28236	1.6758	23MnNiMoCr54	tempered	665	-	2,0
266 42	F28236B	1.6758	23MnNiMoCr54	tempered	-	560	2,0
266 31	F28235	1.7147	20MnCr5	case-hardened	440	-	2,0

Single-strand forged link
142 x 50 x 19

- with welded lobes
- with anti-rotation option: A4, see page 38



All dimensions given in mm

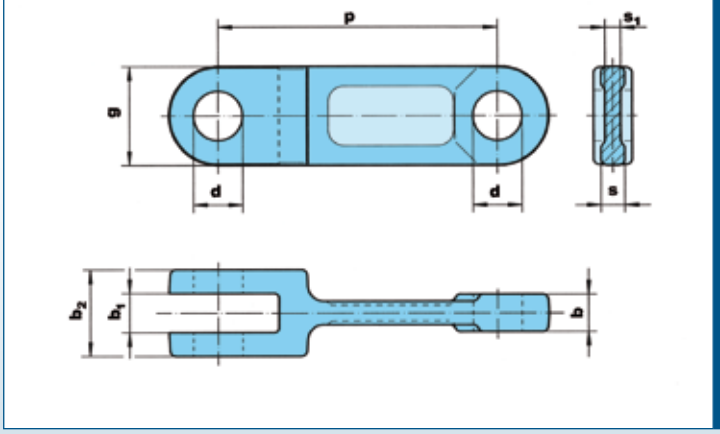
p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	19	20	44	58	25	12	8

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
996 08	F28166	1.0412	27MnSi5	tempered	425	-	1,2
996 08	F28166B	1.0412	27MnSi5	tempered	-	305	1,2
996 42	F28167	1.6758	23MnNiMoCr54	tempered	545	-	1,2
996 42	F28167B	1.6758	23MnNiMoCr54	tempered	-	390	1,2
996 31	F28165	1.7147	20MnCr5	case-hardened	355	-	1,2

142 x 50 x 19

Single-strand forged link
142 x 50 x 19

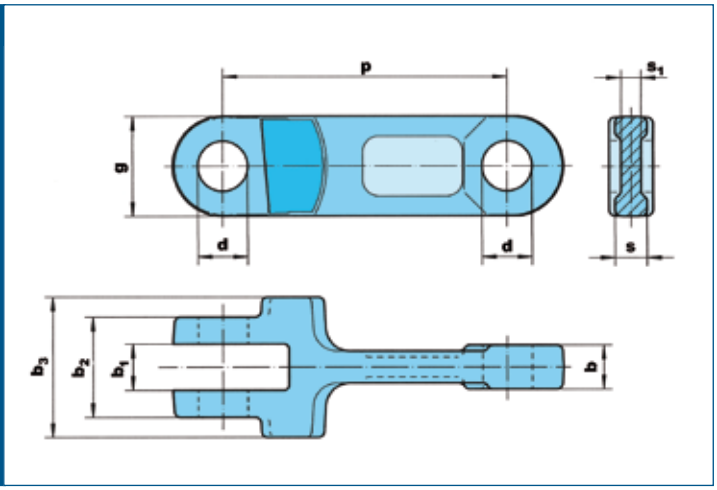
- with anti-rotation option: A4, see page 38



All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	19	20	44	-	25	12	8

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
999 08	F28169	1.0412	27MnSi5	tempered	425	-	1,1
999 08	F28169B	1.0412	27MnSi5	tempered	-	305	1,1
999 42	F28237	1.6758	23MnNiMoCr54	tempered	545	-	1,1
999 42	F28237B	1.6758	23MnNiMoCr54	tempered	-	390	1,1
999 31	F28164	1.7147	20MnCr5	case-hardened	355	-	1,1



Single-strand forged link
142 x 50 x 22

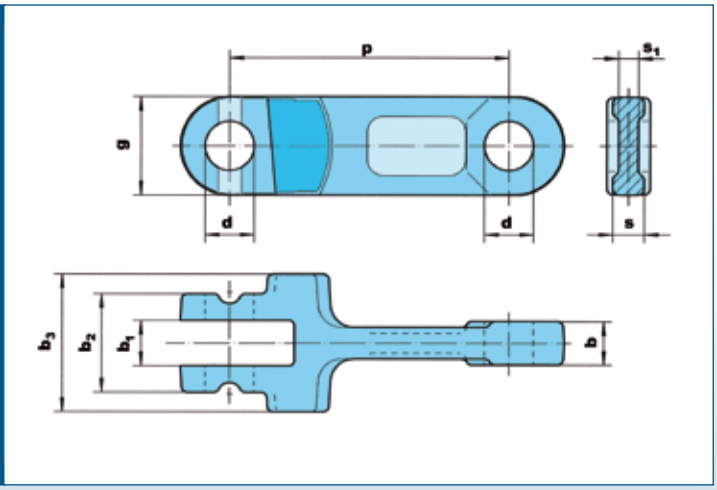
- with welded lobes
- with anti-rotation option: A4, see page 38
- reversible

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	22	23	50	70	25	16	10

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
990 08	F28960	1.0412	27MnSi5	tempered	495	-	1,6
990 08	F28960B	1.0412	27MnSi5	tempered	-	355	1,6
990 42	F28385	1.6758	23MnNiMoCr54	tempered	630	-	1,6
990 42	F28385B	1.6758	23MnNiMoCr54	tempered	-	455	1,6
990 31	F28239	1.7147	20MnCr5	case-hardened	420	-	1,6

142 x 50 x 22



Single-strand forged link
142 x 50 x 22

- with welded lobes
- with anti-rotation option: A1, see page 38
- reversible

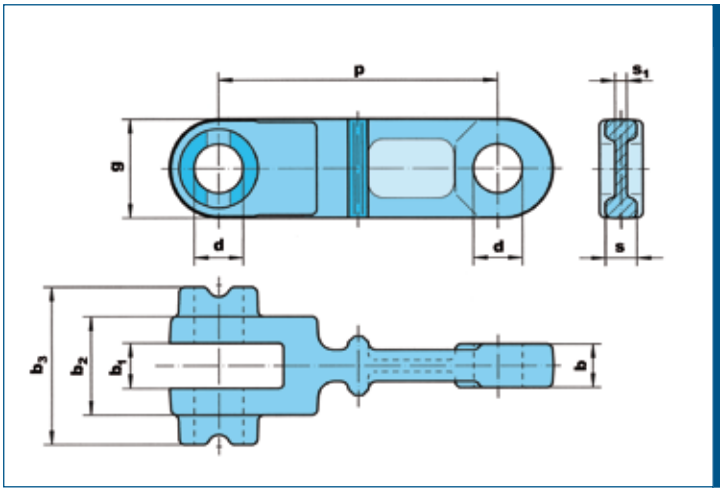
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	22	23	50	70	25	16	10

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
994 08	F28100	1.0412	27MnSi5	tempered	380	-	1,6
994 08	F28100B	1.0412	27MnSi5	tempered	-	355	1,6
994 42	F28386	1.6758	23MnNiMoCr54	tempered	485	-	1,6
994 42	F28386B	1.6758	23MnNiMoCr54	tempered	-	455	1,6
994 31	F28104	1.7147	20MnCr5	case-hardened	270	-	1,6

Single-strand forged link
142 x 50 x 22

- with welded lobes
- with anti-rotation option: A1, see page 38
- reversible



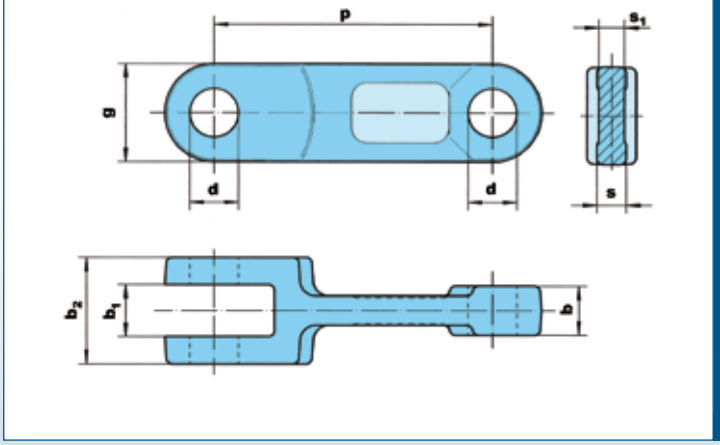
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	22	23	50	80	25	16	6

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
995 08	F28120	1.0412	27MnSi5	tempered	495	-	1,8
995 08	F28120B	1.0412	27MnSi5	tempered	-	355	1,8
995 42	F28238	1.6758	23MnNiMoCr54	tempered	630	-	1,8
995 42	F28238B	1.6758	23MnNiMoCr54	tempered	-	455	1,8
995 31	F28124	1.7147	20MnCr5	case-hardened	420	-	1,8

Single-strand forged link
142 x 50 x 25

- with welded lobes
- with anti-rotation option: A4, see page 38

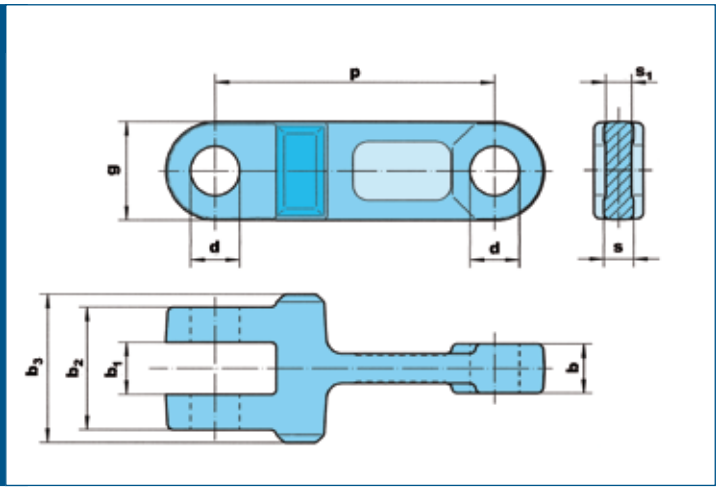


All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	25	26	54	-	25	15	13

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
424 08	F28389	1.0412	27MnSi5	tempered	520	-	1,3
424 08	F28389B	1.0412	27MnSi5	tempered	-	405	1,3
424 42	F28390	1.6758	23MnNiMoCr54	tempered	665	-	1,3
424 42	F28390B	1.6758	23MnNiMoCr54	tempered	-	515	1,3
424 31	F28138	1.7147	20MnCr5	case-hardened	440	-	1,3

142 x 50 x 25



Single-strand forged link
142 x 50 x 25

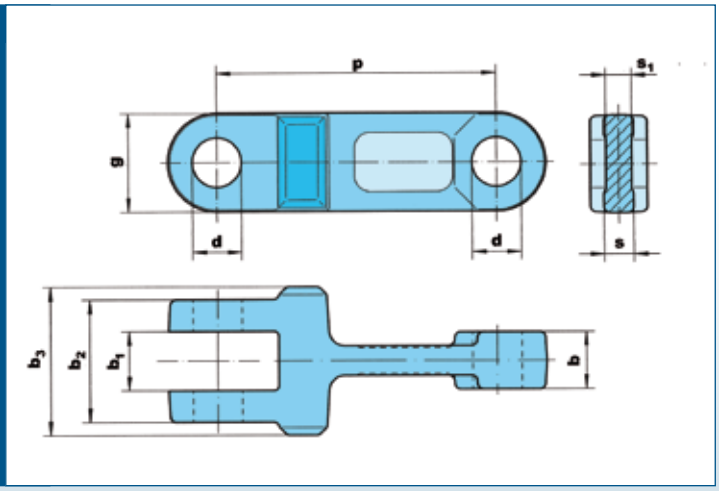
- with welded lobes
- with anti-rotation option: A4, see page 38

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	25	26	62	75	25	15	13

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
728 08	F28387	1.0412	27MnSi5	tempered	520	-	1,9
728 08	F28387B	1.0412	27MnSi5	tempered	-	405	1,9
728 42	F28388	1.6758	23MnNiMoCr54	tempered	665	-	1,9
728 42	F28388B	1.6758	23MnNiMoCr54	tempered	-	515	1,9
728 31	F28146	1.7147	20MnCr5	case-hardened	440	-	1,9

142 x 50 x 29



Single-strand forged link
142 x 50 x 29

- with welded lobes
- with anti-rotation option: A4, see page 38

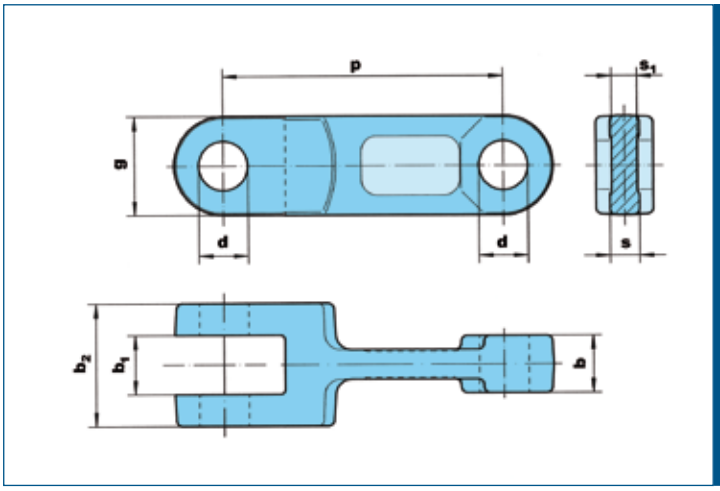
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	29	30	62	75	25	15	13

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
128 08	F28140	1.0412	27MnSi5	tempered	520	-	1,9
128 08	F28140B	1.0412	27MnSi5	tempered	-	440	1,9
128 42	F28141	1.6758	23MnNiMoCr54	tempered	665	-	1,9
128 42	F28141B	1.6758	23MnNiMoCr54	tempered	-	560	1,9
128 31	F28144	1.7147	20MnCr5	case-hardened	440	-	1,9

Single-strand forged link
142 x 50 x 29

- with anti-rotation option: A4, see page 38
- reversible



All dimensions given in mm

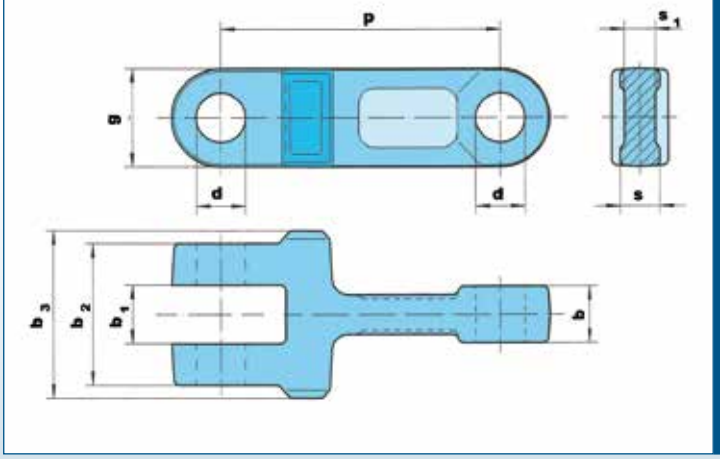
p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	29	30	62	-	25	15	13

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
325 08	F28150	1.0412	27MnSi5	tempered	520	-	1,8
325 08	F28150B	1.0412	27MnSi5	tempered	-	440	1,8
325 42	F28151	1.6758	23MnNiMoCr54	tempered	665	-	1,8
325 42	F28151B	1.6758	23MnNiMoCr54	tempered	-	560	1,8
325 31	F28154	1.7147	20MnCr5	case-hardened	440	-	1,8

142 x 50 x 29

Single-strand forged link
142 x 50 x 29

- with welded lobes
- with anti-rotation option: A4, see page 38

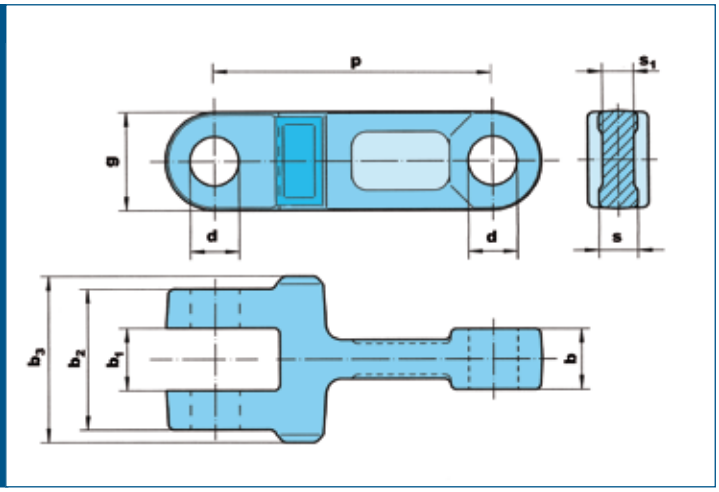


All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	29	30	72	85	25	20	16

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
729 08	F28391	1.0412	27MnSi5	tempered	520	-	2,1
729 08	F28391B	1.0412	27MnSi5	tempered	-	440	2,1
729 42	F28149	1.6758	23MnNiMoCr54	tempered	665	-	2,1
729 42	F28149B	1.6758	23MnNiMoCr54	tempered	-	560	2,1
729 31	F28392	1.7147	20MnCr5	case-hardened	440	-	2,1

142 x 50 x 31



Single-strand forged link
142 x 50 x 31

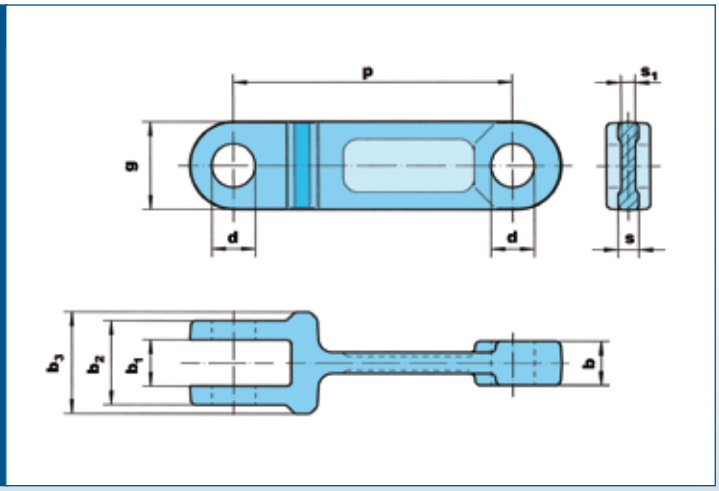
- with welded lobes
- with anti-rotation option: A4, see page 38

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	31	33	72	85	25	20	15

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
445 08	F28393	1.0412	27MnSi5	tempered	520	-	2,2
445 08	F28393B	1.0412	27MnSi5	tempered	-	440	2,2
445 42	F281491	1.6758	23MnNiMoCr54	tempered	665	-	2,2
445 42	F281491B	1.6758	23MnNiMoCr54	tempered	-	560	2,2
445 31	F28245	1.7147	20MnCr5	case-hardened	440	-	2,2

160 x 50 x 25



Single-strand forged link
160 x 50 x 25

- with welded lobes
- with anti-rotation option: A4, see page 38

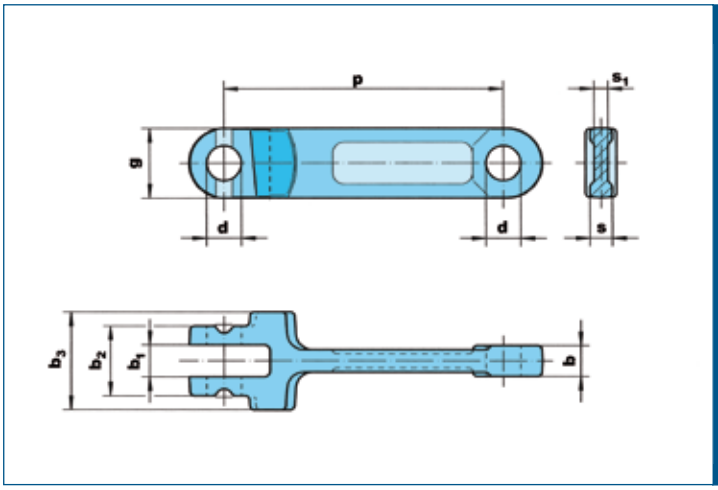
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
160	50	25	26	48	58	25	12	8

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
084 08	F28220	1.0412	27MnSi5	tempered	495	-	1,3
084 08	F28220B	1.0412	27MnSi5	tempered	-	405	1,3
084 42	F28224	1.6758	23MnNiMoCr54	tempered	630	-	1,3
084 42	F28224B	1.6758	23MnNiMoCr54	tempered	-	515	1,3
084 31	F28225	1.7147	20MnCr5	case-hardened	315	-	1,3

Single-strand forged link
200 x 50 x 22

- with welded lobes
- with anti-rotation option: A1, see page 38
- reversible



All dimensions given in mm

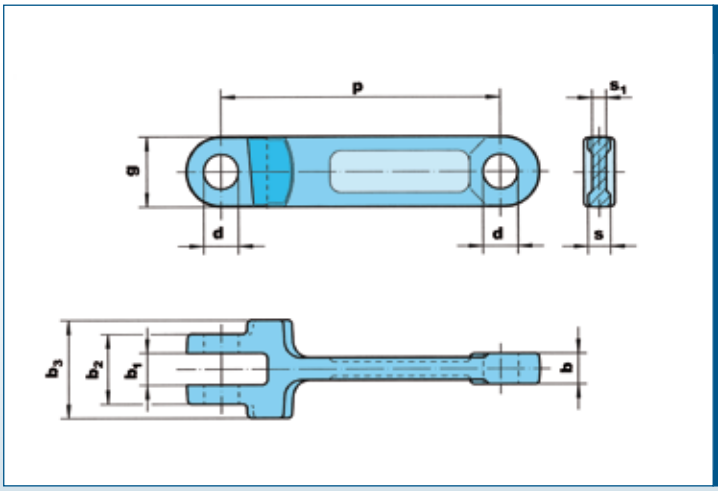
p	g	b	b_1	b_2	b_3	d	s	s_1
200	50	22	23	50	70	25	16	10

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
986 08	F28360	1.0412	27MnSi5	tempered	380	-	1,9
986 08	F28360B	1.0412	27MnSi5	tempered	-	355	1,9
986 42	F28246	1.6758	23MnNiMoCr54	tempered	485	-	1,9
986 42	F28246B	1.6758	23MnNiMoCr54	tempered	-	455	1,9
986 31	F28206	1.7147	20MnCr5	case-hardened	270	-	1,9

200 x 50 x 22

Single-strand forged link
200 x 50 x 22

- with welded lobes
- with anti-rotation option: A4, see page 38
- reversible

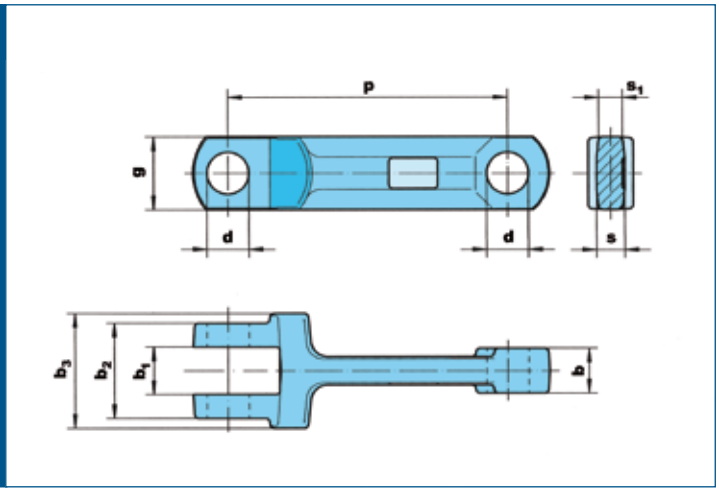


All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	50	22	23	50	70	25	16	10

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
987 08	F28247	1.0412	27MnSi5	tempered	495	-	2,0
987 08	F28247B	1.0412	27MnSi5	tempered	-	355	2,0
987 42	F28249	1.6758	23MnNiMoCr54	tempered	630	-	2,0
987 42	F28249B	1.6758	23MnNiMoCr54	tempered	-	455	2,0
987 31	F28248	1.7147	20MnCr5	case-hardened	420	-	2,0

200 x 52 x 32



Single-strand forged link
200 x 52 x 32

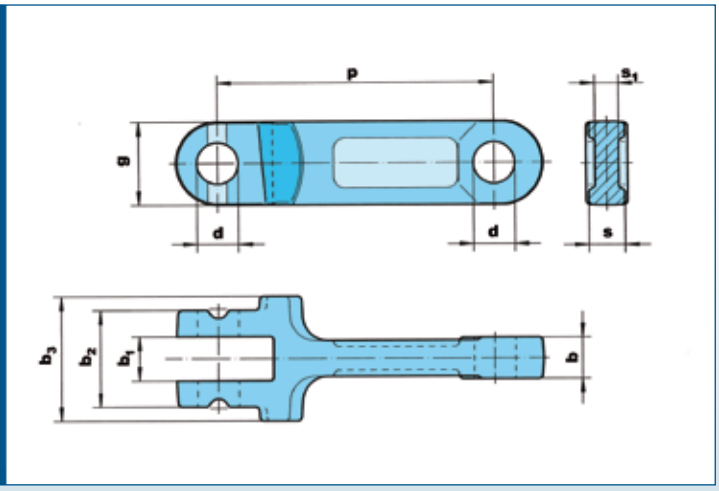
- with welded lobes
- with anti-rotation option: A4, see page 38
- reversible

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	52	32	34	68	82	30	20	17

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
985 08	F28250	1.0412	27MnSi5	tempered	630	-	2,5
985 08	F28250B	1.0412	27MnSi5	tempered	-	400	2,5
985 42	F28410	1.6758	23MnNiMoCr54	tempered	805	-	2,5
985 42	F28410B	1.6758	23MnNiMoCr54	tempered	-	515	2,5
985 31	F28251	1.7147	20MnCr5	case-hardened	540	-	2,5

200 x 60 x 30



Single-strand forged link
200 x 60 x 30

- with welded lobes
- with anti-rotation option: A4, see page 38
- reversible

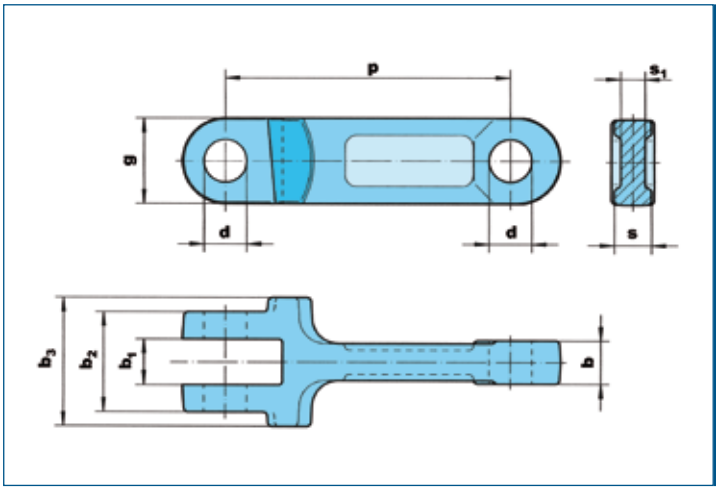
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	60	30	32	70	90	30	26	17

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
217 08	F28400	1.0412	27MnSi5	tempered	700	-	3,5
217 08	F28400B	1.0412	27MnSi5	tempered	-	590	3,5
217 42	F28254	1.6758	23MnNiMoCr54	tempered	895	-	3,5
217 42	F28254B	1.6758	23MnNiMoCr54	tempered	-	755	3,5
217 31	F28405	1.7147	20MnCr5	case-hardened	570	-	3,5

Single-strand forged link
200 x 60 x 30

- with welded lobes
- with anti-rotation option: A4, see page 38
- reversible



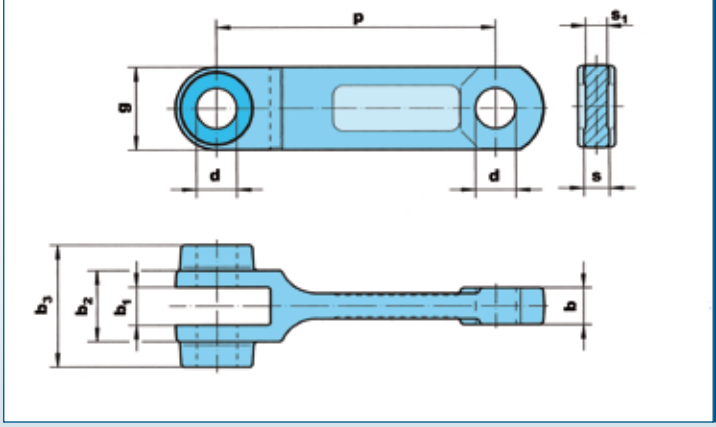
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	60	30	32	70	90	30	26	17

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
677 08	F28252	1.0412	27MnSi5	tempered	750	-	3,5
677 08	F28252B	1.0412	27MnSi5	tempered	-	590	3,5
677 42	F28407	1.6758	23MnNiMoCr54	tempered	960	-	3,5
677 42	F28407B	1.6758	23MnNiMoCr54	tempered	-	755	3,5
677 31	F28253	1.7147	20MnCr5	case-hardened	655	-	3,5

Single-strand forged link
220 x 65 x 29

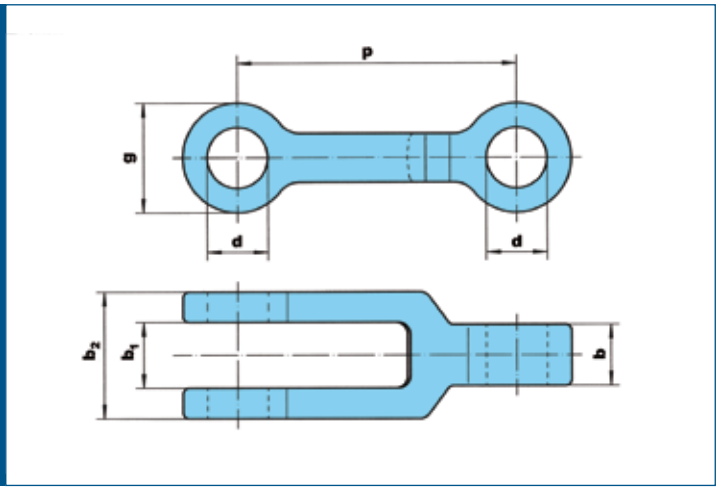
- with welded lobes
- with anti-rotation option: A4, see page 38
- reversible



All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
220	65	29	30	56	96	32	20	17

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
443 08	F28255	1.0412	27MnSi5	tempered	770	-	3,8
443 08	F28255B	1.0412	27MnSi5	tempered	-	650	3,8
443 42	F28603	1.6758	23MnNiMoCr54	tempered	985	-	3,8
443 42	F28603B	1.6758	23MnNiMoCr54	tempered	-	830	3,8
443 31	F28600	1.7147	20MnCr5	case-hardened	635	-	3,8



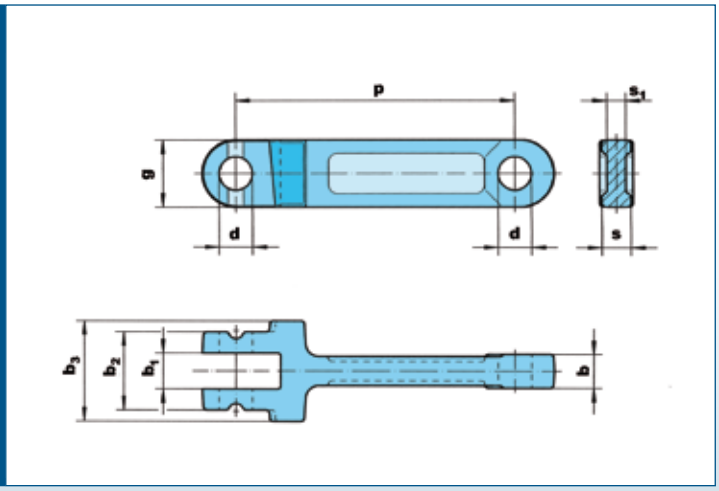
Single-strand forged link
230 x 90 x 50

- with anti-rotation option: A4, see page 38
- can also be used as a twin-strand chain on apron conveyors

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
230	90	50	54	104	-	50	-	-

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
068 08	F28660	1.0412	27MnSi5	tempered	1800	-	5,7
068 08	F28660B	1.0412	27MnSi5	tempered	-	1350	5,7
068 42	F28275	1.6758	23MnNiMoCr54	tempered	2300	-	5,7
068 42	F28275B	1.6758	23MnNiMoCr54	tempered	-	1725	5,7
068 31	F28079	1.7147	20MnCr5	case-hardened	1655	-	5,7



Single-strand forged link
250 x 60 x 30

- with welded lobes
- with anti-rotation option: A1, see page 38

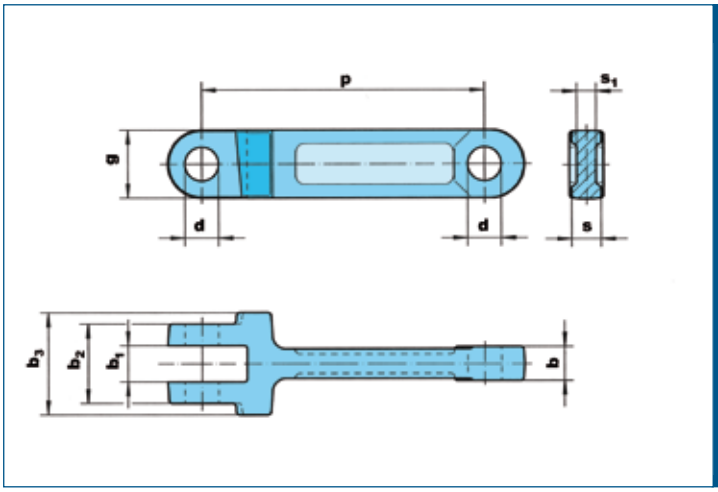
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	60	30	32	70	90	30	26	17

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
113 08	F28720	1.0412	27MnSi5	tempered	700	-	4,0
113 08	F28720B	1.0412	27MnSi5	tempered	-	590	4,0
113 42	F28258	1.6758	23MnNiMoCr54	tempered	895	-	4,0
113 42	F28258B	1.6758	23MnNiMoCr54	tempered	-	755	4,0
113 31	F28724	1.7147	20MnCr5	case-hardened	570	-	4,0

Single-strand forged link
250 x 60 x 30

- with welded lobes
- with anti-rotation option: A4, see page 38



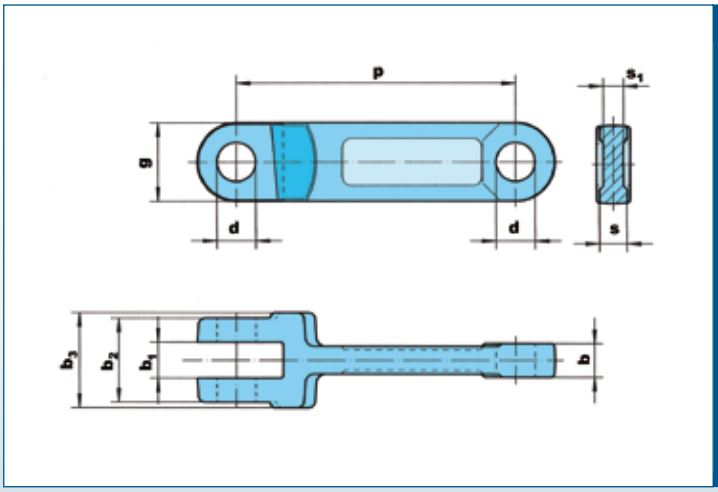
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	60	30	32	70	90	30	26	17

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
513 08	F28725	1.0412	27MnSi5	tempered	750	-	4,0
513 08	F28725B	1.0412	27MnSi5	tempered	-	590	4,0
513 42	F28257	1.6758	23MnNiMoCr54	tempered	960	-	4,0
513 42	F28257B	1.6758	23MnNiMoCr54	tempered	-	755	4,0
513 31	F28256	1.7147	20MnCr5	case-hardened	655	-	4,0

Single-strand forged link
250 x 70 x 30

- with welded lobes
- with anti-rotation option: A4, see page 38
- reversible

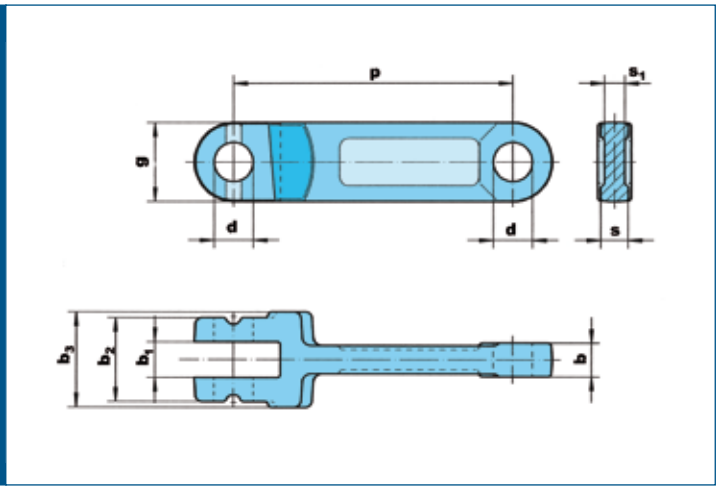


All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	70	30	32	75	85	35	25	18

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
455 08	F28260	1.0412	27MnSi5	tempered	945	-	4,9
455 08	F28260B	1.0412	27MnSi5	tempered	-	755	4,9
455 42	F28128	1.6758	23MnNiMoCr54	tempered	1205	-	4,9
455 42	F28128B	1.6758	23MnNiMoCr54	tempered	-	965	4,9
455 31	F28261	1.7147	20MnCr5	case-hardened	865	-	4,9

250 x 70 x 30



Single-strand forged link
250 x 70 x 30

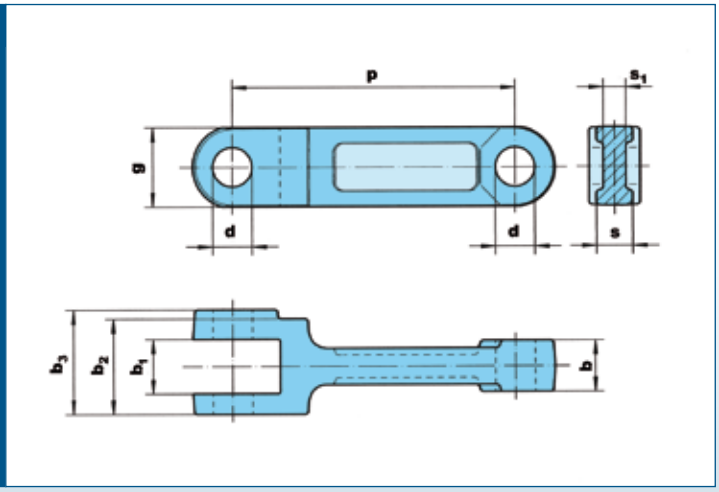
- with welded lobes
- with anti-rotation option: A1, see page 38
- reversible

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	70	30	32	75	85	35	25	18

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
955 08	F28740	1.0412	27MnSi5	tempered	945	-	4,7
955 08	F28740B	1.0412	27MnSi5	tempered	-	755	4,7
955 42	F28259	1.6758	23MnNiMoCr54	tempered	1205	-	4,7
955 42	F28259B	1.6758	23MnNiMoCr54	tempered	-	965	4,7
955 31	F28744	1.7147	20MnCr5	case-hardened	835	-	4,7

250 x 70 x 45



Single-strand forged link
250 x 70 x 45

- with anti-rotation options: A2, A4, see page 38

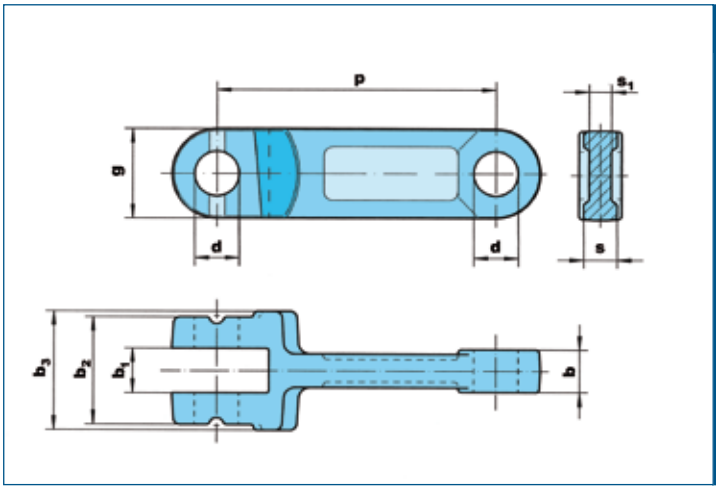
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	70	45	47	84	92	35	32	20

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
126 08	F28262	1.0412	27MnSi5	tempered	1025	-	5,6
126 08	F28262B	1.0412	27MnSi5	tempered	-	910	5,6
126 42	F28869	1.6758	23MnNiMoCr54	tempered	1310	-	5,6
126 42	F28869B	1.6758	23MnNiMoCr54	tempered	-	1165	5,6
126 31	F28263	1.7147	20MnCr5	case-hardened	910	-	5,6

Single-strand forged link
250 x 80 x 38

- with welded lobes
- with anti-rotation option: A1, see page 38
- reversible



All dimensions given in mm

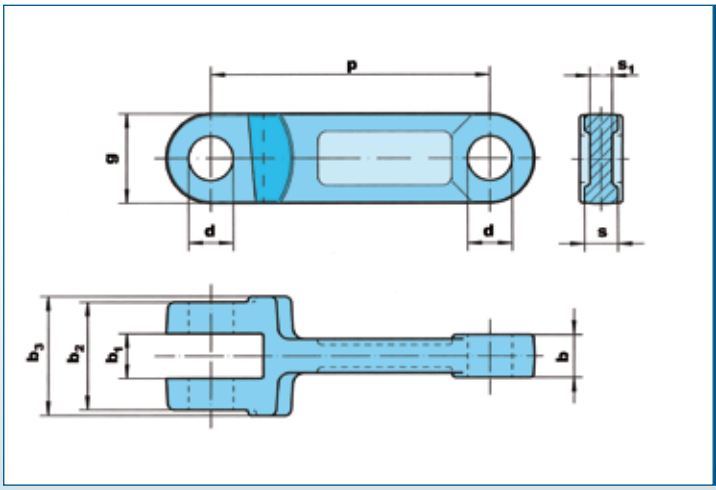
p	g	b	b_1	b_2	b_3	d	s	s_1
250	80	38	40	96	106	40	30	20

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
125 08	F28730	1.0412	27MnSi5	tempered	1340	-	6,7
125 08	F28730B	1.0412	27MnSi5	tempered	-	1025	6,7
125 42	F28735	1.6758	23MnNiMoCr54	tempered	1715	-	6,7
125 42	F28735B	1.6758	23MnNiMoCr54	tempered	-	1310	6,7
125 31	F28105	1.7147	20MnCr5	case-hardened	1210	-	6,7

250 x 80 x 38

Single-strand forged link
250 x 80 x 38

- with welded lobes
- with anti-rotation option: A4, see page 38
- reversible

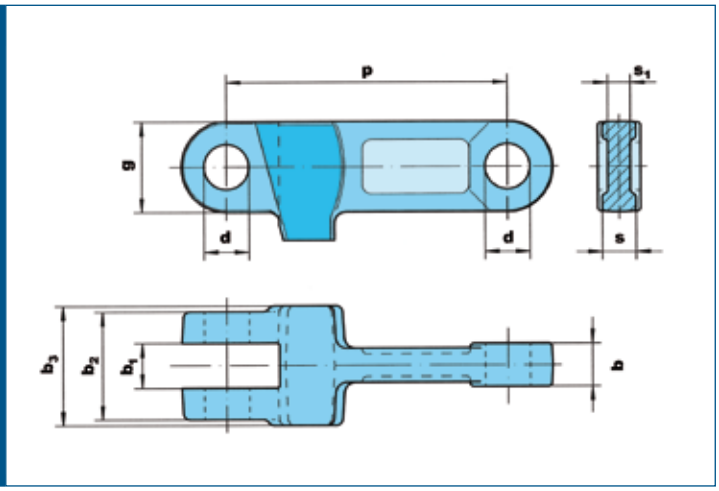


All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	80	38	40	96	106	40	30	20

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
700 08	F28266	1.0412	27MnSi5	tempered	1340	-	6,9
700 08	F28266B	1.0412	27MnSi5	tempered	-	1025	6,9
700 42	F28737	1.6758	23MnNiMoCr54	tempered	1715	-	6,9
700 42	F28737B	1.6758	23MnNiMoCr54	tempered	-	1310	6,9
700 31	F28736	1.7147	20MnCr5	case-hardened	1210	-	6,9

250 x 80 x 38



Single-strand forged link
250 x 80 x 38

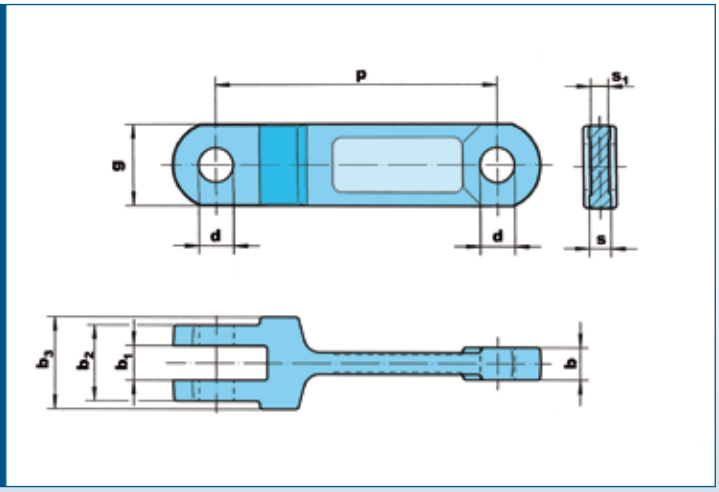
- with welded lobes
- with anti-rotation option: A4, see page 38
- reversible

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	80	38	40	96	106	40	30	20

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
777 08	F28264	1.0412	27MnSi5	tempered	1340	-	9,7
777 08	F28264B	1.0412	27MnSi5	tempered	-	1025	9,7
777 42	F28738	1.6758	23MnNiMoCr54	tempered	1715	-	9,7
777 42	F28738B	1.6758	23MnNiMoCr54	tempered	-	1310	9,7
777 31	F28265	1.7147	20MnCr5	case-hardened	1210	-	9,7

260 x 75 x 30



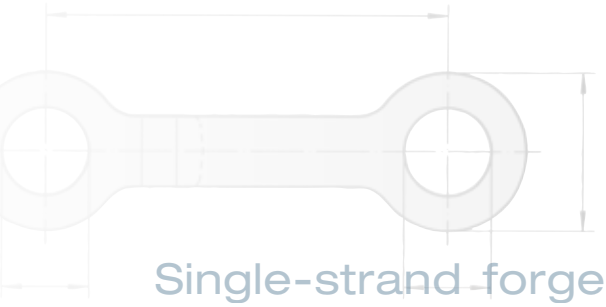
Single-strand forged link
260 x 75 x 30

- with welded lobes
- with anti-rotation option: A4, see page 38

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
260	75	30	32	70	85	32	20	16

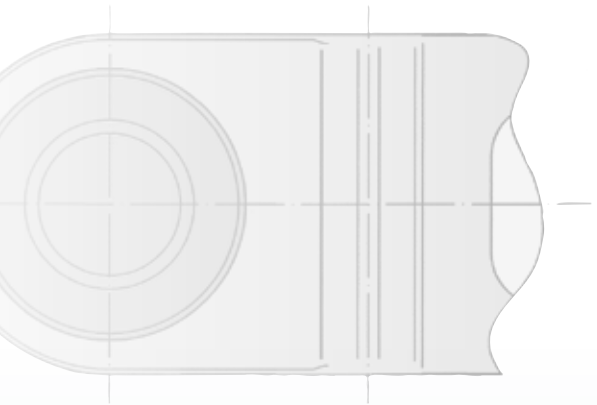
Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
326 08	F28890	1.0412	27MnSi5	tempered	855	-	4,9
326 08	F28890B	1.0412	27MnSi5	tempered	-	750	4,9
326 42	F28891	1.6758	23MnNiMoCr54	tempered	1095	-	4,9
326 42	F28891B	1.6758	23MnNiMoCr54	tempered	-	960	4,9
326 31	F28895	1.7147	20MnCr5	case-hardened	750	-	4,9



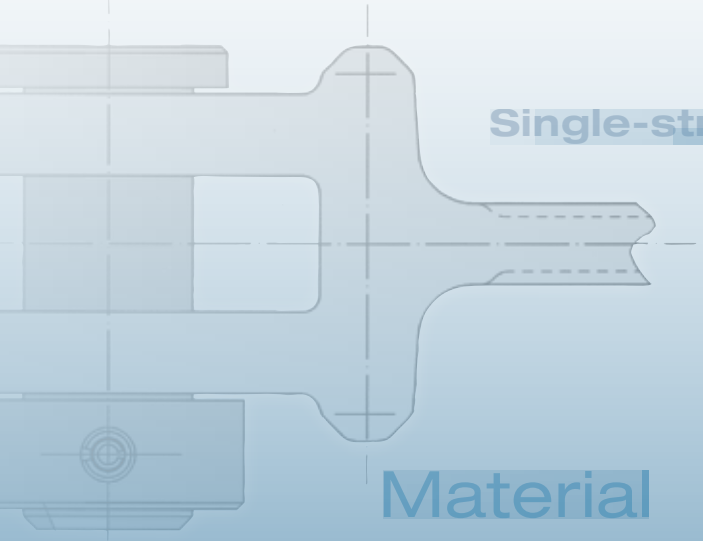
Single-strand forged link

Bushing

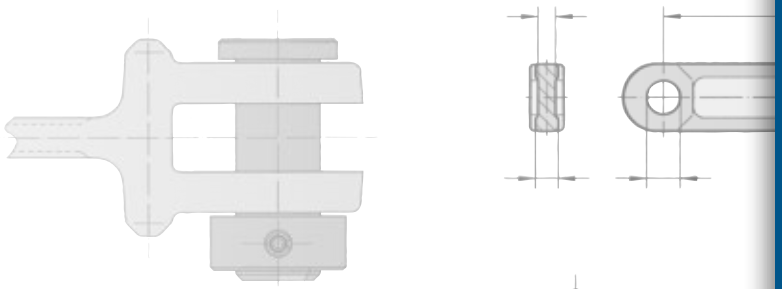
anti-rotation option

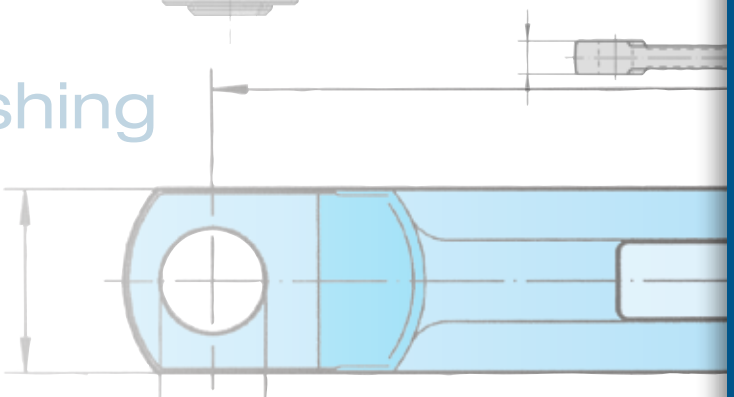


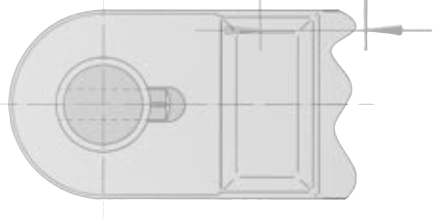
welded lobes

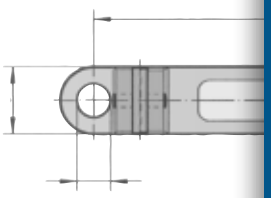


Material

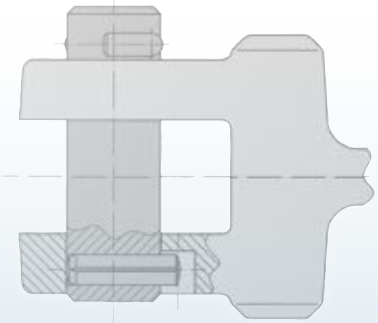


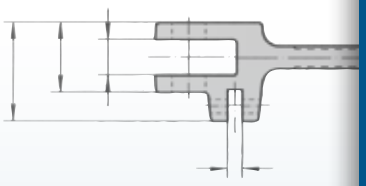






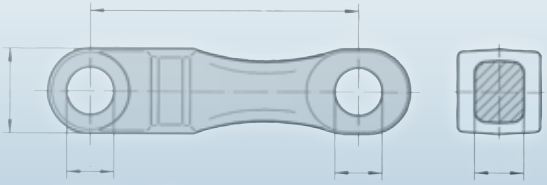
Twin-strand chain

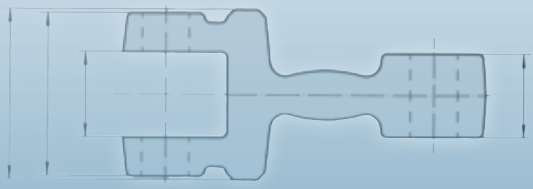




Breaking Force

Single-strand chain





Twin-strand forged links – Technical data

Quality

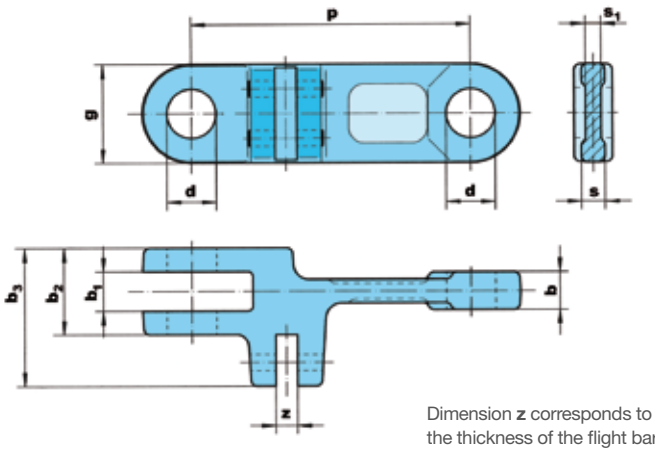
All THIELE forged links are produced in the company's own drop forging shop.
The general dimensions of the links correspond to the die-forging tolerances laid down in DIN EN 10243, F.
The mating dimensions are finely calibrated and each forged link is provided with the die number, material reference and batch reference.
Example: 07208 XYZ

07208 die number
072**08** material reference
XYZ batch reference

Products

The following pages present the technical specifications of THIELE twin-strand forged links. The different types of locking pin are shown on pages 38 and 39:
Type A = with anti-rotation device,
Type B = without anti-rotation device.
The tables on pages 44 and 45 provide detailed information on the feedstock materials.
THIELE specialists are always available to discuss your specific requirements.

142 x 50 x 19



Dimension **z** corresponds to the thickness of the flight bar

Twin-strand forged link
142 x 50 x 19

- with side slot
- with anti-rotation option: A4, see page 38

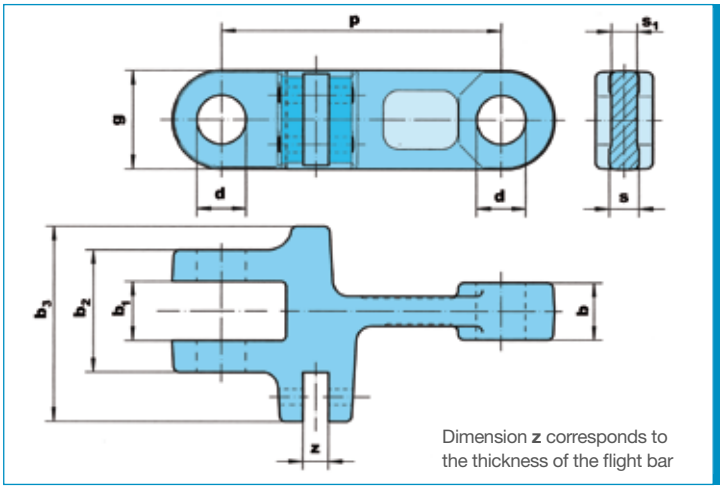
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	19	20	44	70	25	12	8

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
870 08	F28267	1.0412	27MnSi5	tempered	425	-	1,5
870 08	F28267B	1.0412	27MnSi5	tempered	-	305	1,5
870 42	F28186	1.6758	23MnNiMoCr54	tempered	545	-	1,5
870 42	F28186B	1.6758	23MnNiMoCr54	tempered	-	390	1,5
870 31	F28185	1.7147	20MnCr5	case-hardened	355	-	1,5

Twin-strand forged link
142 x 50 x 29

- with side slot
- with anti-rotation option: A4, see page 38



Dimension **z** corresponds to the thickness of the flight bar

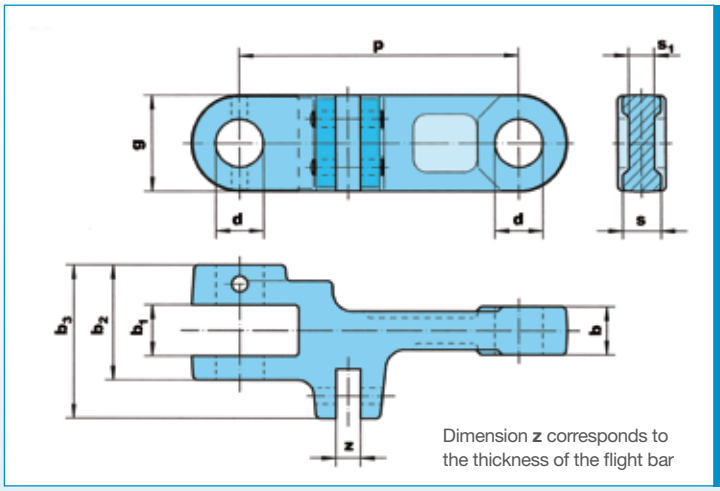
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
142	50	29	30	62	99	25	15	13

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
890 08	F28268	1.0412	27MnSi5	tempered	520	-	2,1
890 08	F28268B	1.0412	27MnSi5	tempered	-	440	2,1
890 42	F28214	1.6758	23MnNiMoCr54	tempered	665	-	2,1
890 42	F28214B	1.6758	23MnNiMoCr54	tempered	-	560	2,1
890 31	F28269	1.7147	20MnCr5	case-hardened	440	-	2,1

Twin-strand forged link
175 x 60 x 30

- with side slot
- with anti-rotation options: A2, A4, see page 38



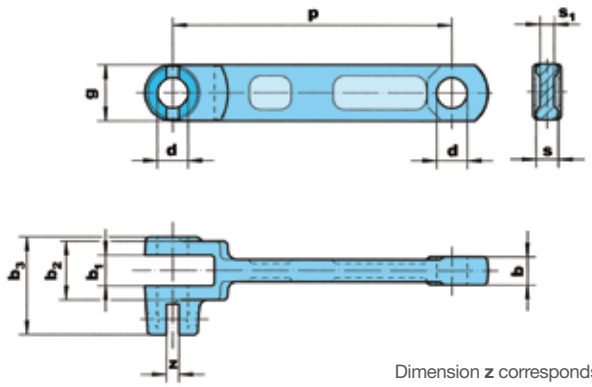
Dimension **z** corresponds to the thickness of the flight bar

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
175	60	30	32	72	96	30	24	16

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
915 08	F28320	1.0412	27MnSi5	tempered	750	-	3,3
915 08	F28320B	1.0412	27MnSi5	tempered	-	590	3,3
915 42	F28324	1.6758	23MnNiMoCr54	tempered	960	-	3,3
915 42	F28324B	1.6758	23MnNiMoCr54	tempered	-	755	3,3
915 31	F28325	1.7147	20MnCr5	case-hardened	655	-	3,3

200 x 40 x 20



Dimension **z** corresponds to the thickness of the flight bar

Twin-strand forged link
200 x 40 x 20

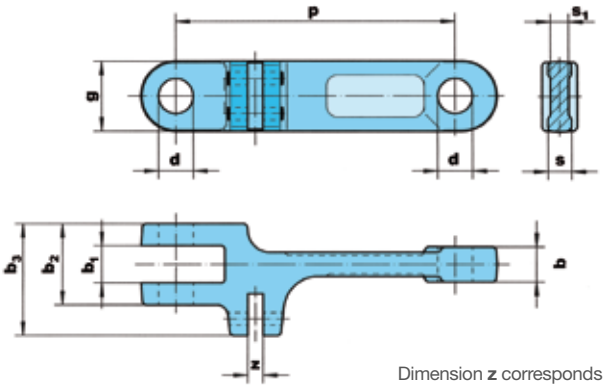
- with side slot
- with anti-rotation option: A3, see page 38
- reversible

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	40	20	21	42	70	22	16	10

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
703 08	F28440	1.0412	27MnSi5	tempered	320	-	1,1
703 08	F28440B	1.0412	27MnSi5	tempered	-	215	1,1
703 42	F28446	1.6758	23MnNiMoCr54	tempered	410	-	1,1
703 42	F28446B	1.6758	23MnNiMoCr54	tempered	-	275	1,1
703 31	F28448	1.7147	20MnCr5	case-hardened	250	-	1,1

200 x 50 x 25



Dimension **z** corresponds to the thickness of the flight bar

Twin-strand forged link
200 x 50 x 25

- with side slot
- with anti-rotation option: A3, see page 38

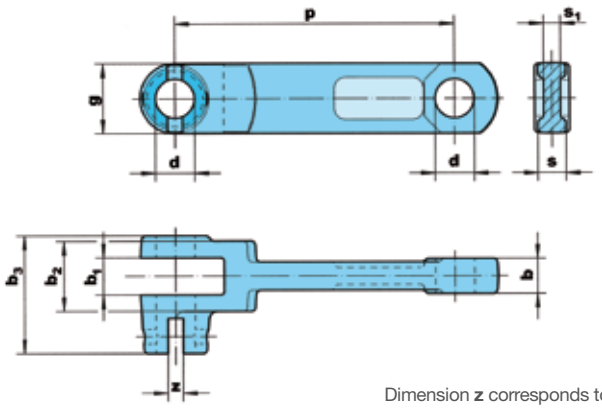
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	50	25	26	58	80	25	17	13

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
065 08	F28480	1.0412	27MnSi5	tempered	520	-	2,5
065 08	F28480B	1.0412	27MnSi5	tempered	-	405	2,5
065 42	F28077	1.6758	23MnNiMoCr54	tempered	665	-	2,5
065 42	F28077B	1.6758	23MnNiMoCr54	tempered	-	515	2,5
065 31	F28484	1.7147	20MnCr5	case-hardened	440	-	2,5

Twin-strand forged link
200 x 50 x 25

- with side slot
- with anti-rotation option: A3, see page 38
- reversible



Dimension **z** corresponds to the thickness of the flight bar

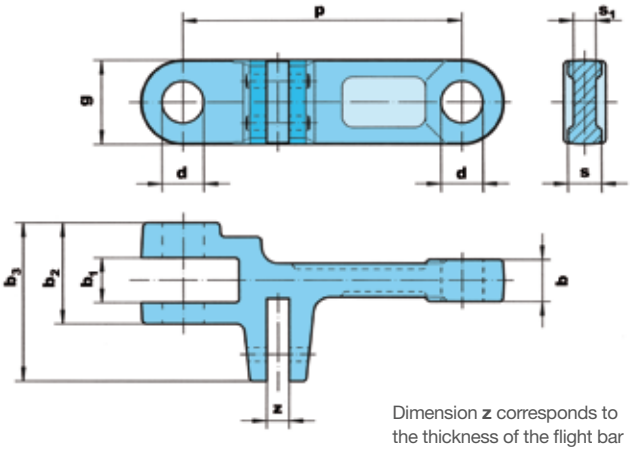
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	50	25	26	50	84	28	20	12

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
701 08	F28460	1.0412	27MnSi5	tempered	495	-	2,2
701 08	F28460B	1.0412	27MnSi5	tempered	-	335	2,2
701 42	F28466	1.6758	23MnNiMoCr54	tempered	630	-	2,2
701 42	F28466B	1.6758	23MnNiMoCr54	tempered	-	430	2,2
701 31	F28177	1.7147	20MnCr5	case-hardened	410	-	2,2

Twin-strand forged link
200 x 60 x 30

- with side slot
- with anti-rotation options: A2, A4, see page 38

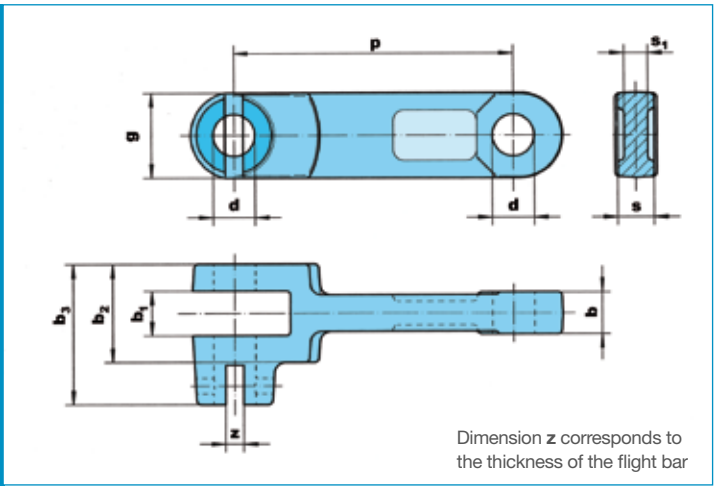


Dimension **z** corresponds to the thickness of the flight bar

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	60	30	32	72	113	30	24	16

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
064 08	F28500	1.0412	27MnSi5	tempered	750	-	3,4
064 08	F28500B	1.0412	27MnSi5	tempered	-	590	3,4
064 42	F28075	1.6758	23MnNiMoCr54	tempered	960	-	3,4
064 42	F28075B	1.6758	23MnNiMoCr54	tempered	-	755	3,4
064 31	F28505	1.7147	20MnCr5	case-hardened	655	-	3,4



Dimension **z** corresponds to the thickness of the flight bar

Twin-strand forged link
200 x 60 x 30

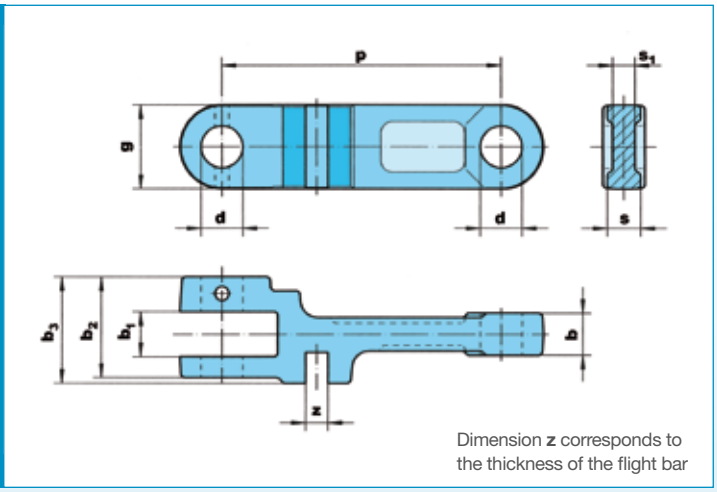
- with side slot
- with anti-rotation option: A3, see page 38
- reversible

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	60	30	32	70	100	30	26	17

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
218 08	F28520	1.0412	27MnSi5	tempered	750	-	3,7
218 08	F28520B	1.0412	27MnSi5	tempered	-	590	3,7
218 42	F28133	1.6758	23MnNiMoCr54	tempered	960	-	3,7
218 42	F28133B	1.6758	23MnNiMoCr54	tempered	-	755	3,7
218 31	F28525	1.7147	20MnCr5	case-hardened	655	-	3,7

200 x 60 x 30



Dimension **z** corresponds to the thickness of the flight bar

Twin-strand forged link
200 x 60 x 30

- with side slot
- with anti-rotation options: A2, A4, see page 38

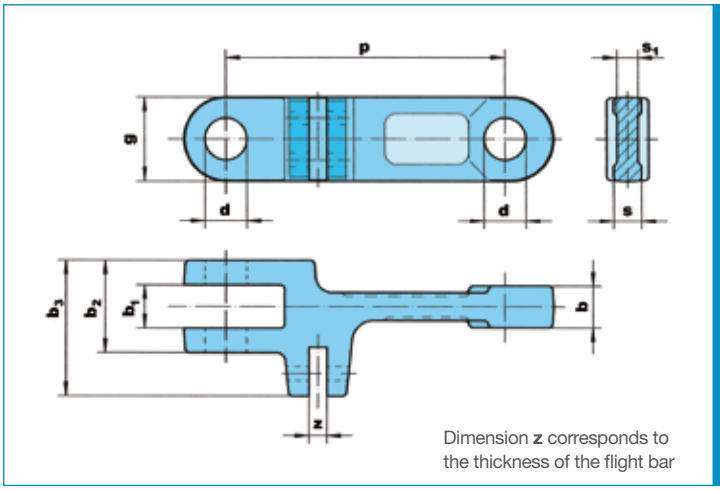
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	60	30	32	72	76	30	24	16

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
964 08	F28272	1.0412	27MnSi5	tempered	750	-	3,4
964 08	F28272B	1.0412	27MnSi5	tempered	-	590	3,4
964 42	F28198	1.6758	23MnNiMoCr54	tempered	960	-	3,4
964 42	F28198B	1.6758	23MnNiMoCr54	tempered	-	755	3,4
964 31	F28507	1.7147	20MnCr5	case-hardened	655	-	3,4

Twin-strand forged link
200 x 60 x 30

- with side slot
- with anti-rotation option: A4, see page 38



Dimension **z** corresponds to the thickness of the flight bar

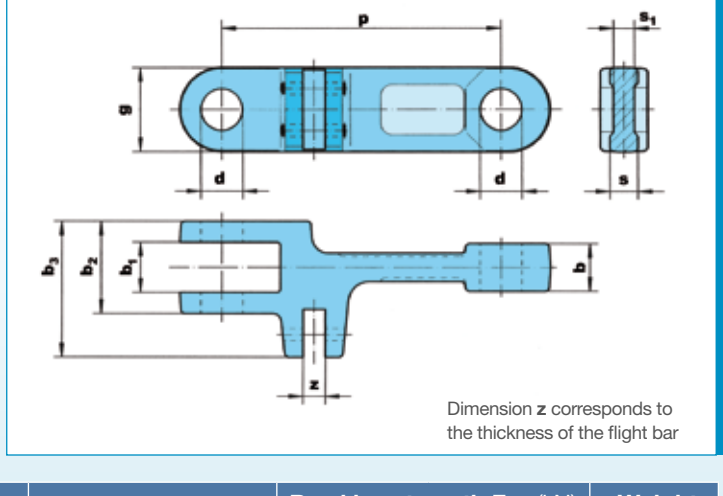
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	60	30	32	66	97	30	20	15

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
970 08	F28270	1.0412	27MnSi5	tempered	750	-	3,5
970 08	F28270B	1.0412	27MnSi5	tempered	-	590	3,5
970 42	F28271	1.6758	23MnNiMoCr54	tempered	960	-	3,5
970 42	F28271B	1.6758	23MnNiMoCr54	tempered	-	755	3,5
970 31	F28548	1.7147	20MnCr5	case-hardened	655	-	3,5

Twin-strand forged link
200 x 60 x 34

- with side slot
- with anti-rotation option: A4, see page 38

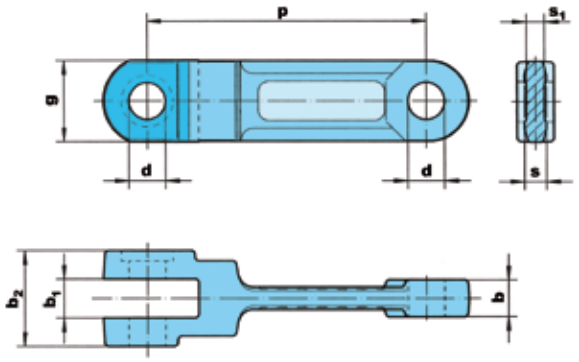


Dimension **z** corresponds to the thickness of the flight bar

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
200	60	34	36	66	97	30	20	15

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
070 08	F28540	1.0412	27MnSi5	tempered	750	-	3,5
070 08	F28540B	1.0412	27MnSi5	tempered	-	655	3,5
070 42	F28550	1.6758	23MnNiMoCr54	tempered	960	-	3,5
070 42	F28550B	1.6758	23MnNiMoCr54	tempered	-	835	3,5
070 31	F28544	1.7147	20MnCr5	case-hardened	655	-	3,5



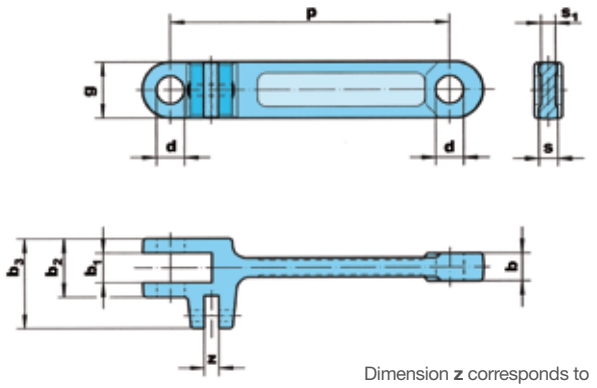
Twin-strand forged link
216 x 62 x 28,5

- with anti-rotation option: A4, see page 38

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
216	62	28,5	30	74	-	30	17	14

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
100 08	F28273	1.0412	27MnSi5	tempered	750	-	3,9
100 08	F28273B	1.0412	27MnSi5	tempered	-	615	3,9
100 42	F28595	1.6758	23MnNiMoCr54	tempered	960	-	3,9
100 42	F28595B	1.6758	23MnNiMoCr54	tempered	-	785	3,9
100 31	F28274	1.7147	20MnCr5	case-hardened	655	-	3,9



Dimension **z** corresponds to the thickness of the flight bar

Twin-strand forged link
250 x 50 x 25

- with side slot
- with anti-rotation option: A4, see page 38

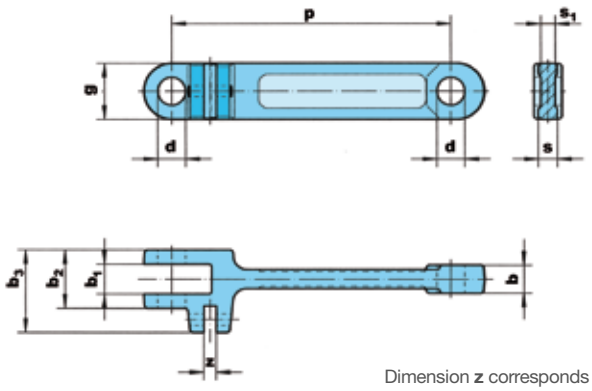
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	50	25	26	52	80	25	17	13

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
622 08	F28276	1.0412	27MnSi5	tempered	520	-	2,4
622 08	F28276B	1.0412	27MnSi5	tempered	-	405	2,4
622 42	F28277	1.6758	23MnNiMoCr54	tempered	665	-	2,4
622 42	F28277B	1.6758	23MnNiMoCr54	tempered	-	515	2,4
622 31	F28790	1.7147	20MnCr5	case-hardened	440	-	2,4

Twin-strand forged link
250 x 50 x 25

- with side slot
- with anti-rotation option: A4, see page 38



Dimension **z** corresponds to the thickness of the flight bar

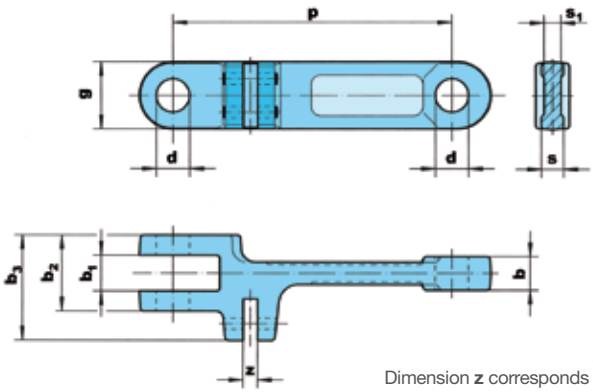
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	50	25	26	52	73,5	25	17	13

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
922 08	F28780	1.0412	27MnSi5	tempered	520	-	2,4
922 08	F28780B	1.0412	27MnSi5	tempered	-	405	2,4
922 42	F28786	1.6758	23MnNiMoCr54	tempered	665	-	2,4
922 42	F28786B	1.6758	23MnNiMoCr54	tempered	-	515	2,4
922 31	F28230	1.7147	20MnCr5	case-hardened	440	-	2,4

Twin-strand forged link
250 x 60 x 30

- with side slot
- with anti-rotation option: A4, see page 38



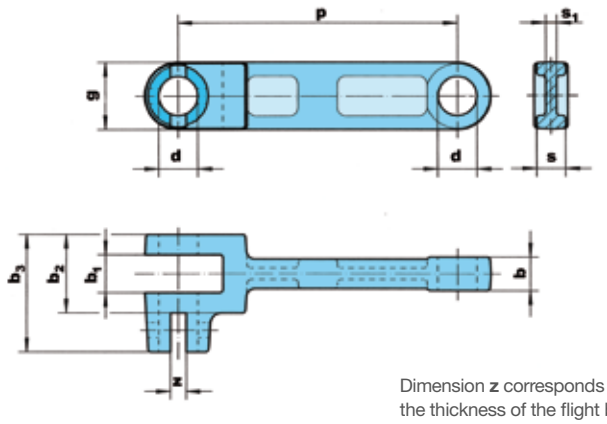
Dimension **z** corresponds to the thickness of the flight bar

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	60	30	32	68	94	30	20	15

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
098 08	F28800	1.0412	27MnSi5	tempered	750	-	3,9
098 08	F28800B	1.0412	27MnSi5	tempered	-	590	3,9
098 42	F28097	1.6758	23MnNiMoCr54	tempered	960	-	3,9
098 42	F28097B	1.6758	23MnNiMoCr54	tempered	-	755	3,9
098 31	F28804	1.7147	20MnCr5	case-hardened	655	-	3,9

250 x 60 x 30



Dimension **z** corresponds to the thickness of the flight bar

Twin-strand forged link
250 x 60 x 30

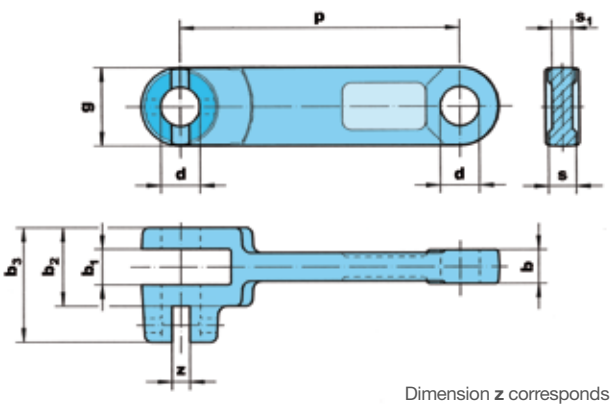
- with side slot
- with anti-rotation option: A3, see page 38

All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	60	30	32	70	105	30	26	10

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
961 08	F28820	1.0412	27MnSi5	tempered	750	-	3,9
961 08	F28820B	1.0412	27MnSi5	tempered	-	590	3,9
961 42	F28278	1.6758	23MnNiMoCr54	tempered	960	-	3,9
961 42	F28278B	1.6758	23MnNiMoCr54	tempered	-	755	3,9
961 31	F28824	1.7147	20MnCr5	case-hardened	655	-	3,9

250 x 70 x 30



Dimension **z** corresponds to the thickness of the flight bar

Twin-strand forged link
250 x 70 x 30

- with side slot
- with anti-rotation option: A3, see page 38
- reversible

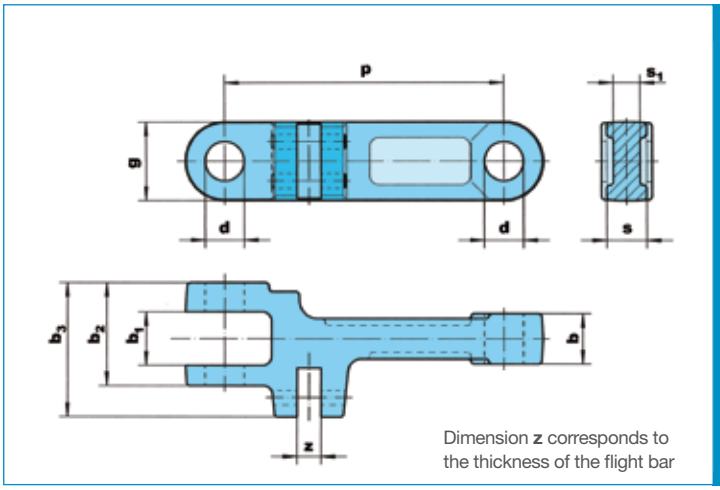
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	70	30	32	70	102	35	25	18

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
219 08	F28279	1.0412	27MnSi5	tempered	945	-	4,7
219 08	F28279B	1.0412	27MnSi5	tempered	-	755	4,7
219 42	F28845	1.6758	23MnNiMoCr54	tempered	1205	-	4,7
219 42	F28845B	1.6758	23MnNiMoCr54	tempered	-	965	4,7
219 31	F28844	1.7147	20MnCr5	case-hardened	865	-	4,7

Twin-strand forged link
250 x 70 x 45

- with side slot
- with anti-rotation options: A2, A4, see page 38



Dimension **z** corresponds to the thickness of the flight bar

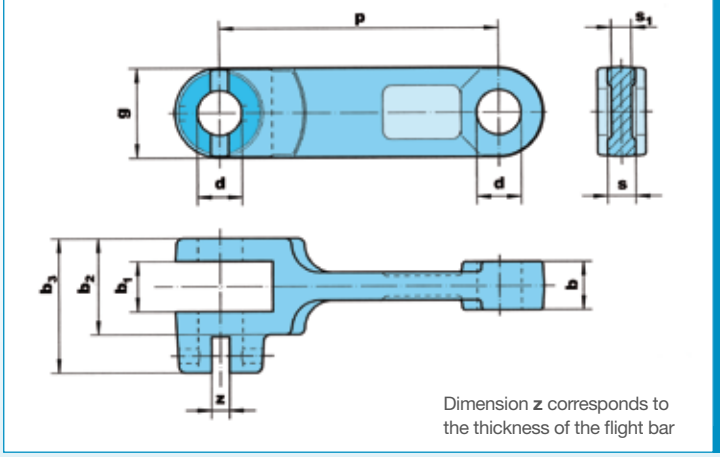
All dimensions given in mm

p	g	b	b_1	b_2	b_3	d	s	s_1
250	70	45	47	92	120	35	36	24

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
132 08	F28860	1.0412	27MnSi5	tempered	1025	-	6,9
132 08	F28860B	1.0412	27MnSi5	tempered	-	910	6,9
132 42	F28866	1.6758	23MnNiMoCr54	tempered	1310	-	6,9
132 42	F28866B	1.6758	23MnNiMoCr54	tempered	-	1165	6,9
132 31	F28108	1.7147	20MnCr5	case-hardened	910	-	6,9

Twin-strand forged link
250 x 80 x 43

- with side slot
- with anti-rotation option: A3, see page 38
- reversible



Dimension **z** corresponds to the thickness of the flight bar

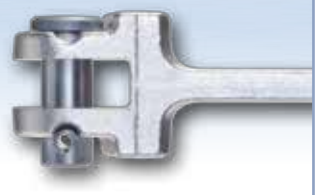
All dimensions given in mm

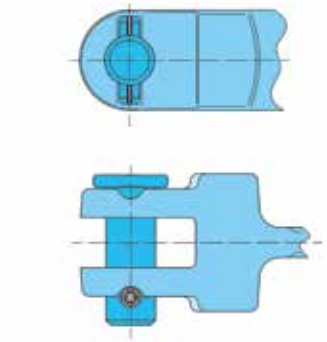
p	g	b	b_1	b_2	b_3	d	s	s_1
250	80	43	45	86	120	40	25	18

Ident no.	Article no.	Material Number	Material Designation	Heat treatment	Breaking strength F_{min} (kN) without bushing	Breaking strength F_{min} (kN) with bushing	Weight (kg)
978 08	F28880	1.0412	27MnSi5	tempered	1340	-	7,2
978 08	F28880B	1.0412	27MnSi5	tempered	-	1160	7,2
978 42	F28885	1.6758	23MnNiMoCr54	tempered	1715	-	7,2
978 42	F28885B	1.6758	23MnNiMoCr54	tempered	-	1480	7,2
978 31	F28202	1.7147	20MnCr5	case-hardened	1210	-	7,2

Pin fixings with anti-rotation device

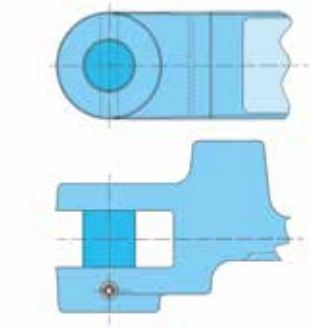
Typ A1





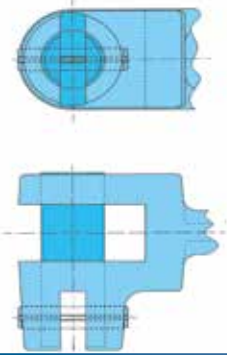
Anti-rotation provided by a spring sleeve inserted through the end of the link pin to create a form-fit with a recess that is forged into each shank of the forged link.

Typ A2



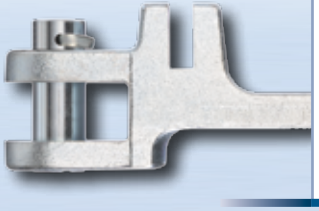
Anti-rotation provided by a spring sleeve that creates a form-fit between the link pin and the enlarged-profile shank of the forged link.

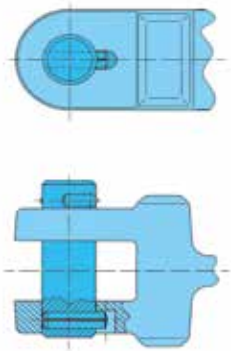
Typ A3



Anti-rotation provided by the slotted link pin creating a form-fit with the integral flight bar.

Typ A4

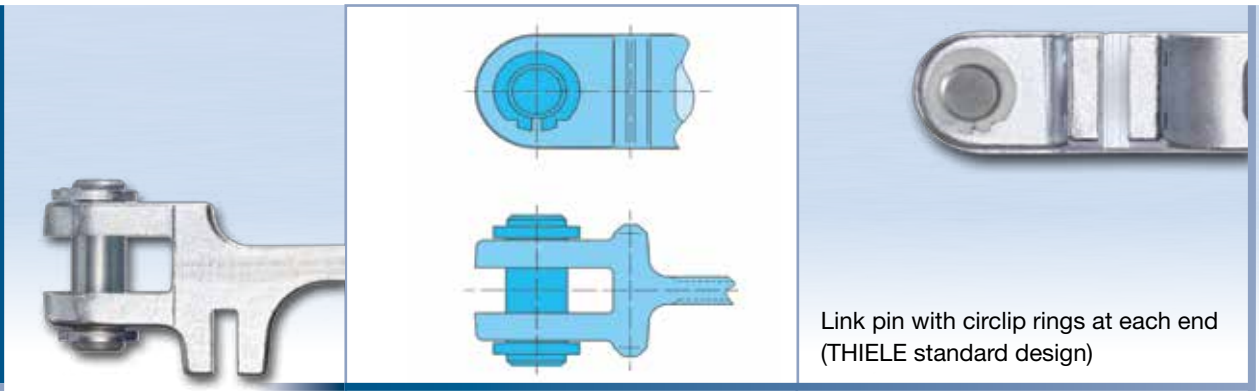




Anti-rotation provided by a dowel pin that creates a form-fit with a matching recess in the shank of the forged link.

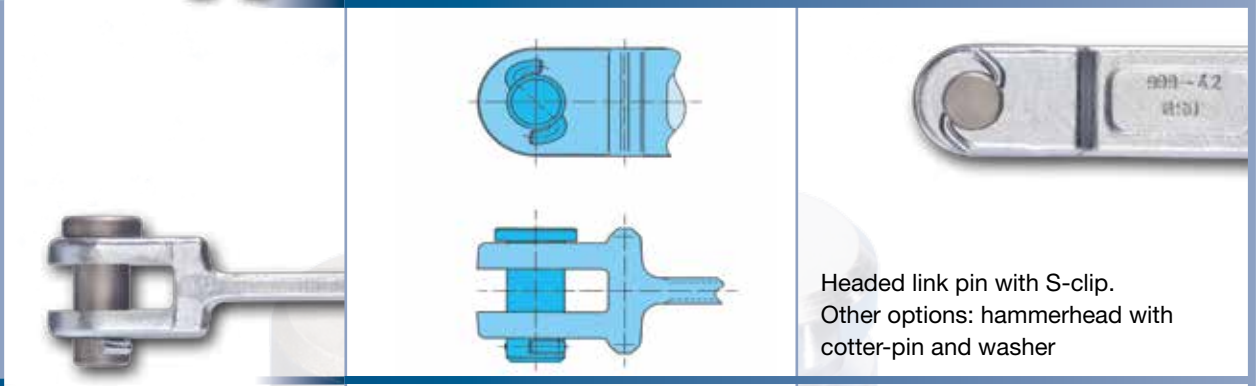
Pin fixings
without anti-rotation device

Typ B1



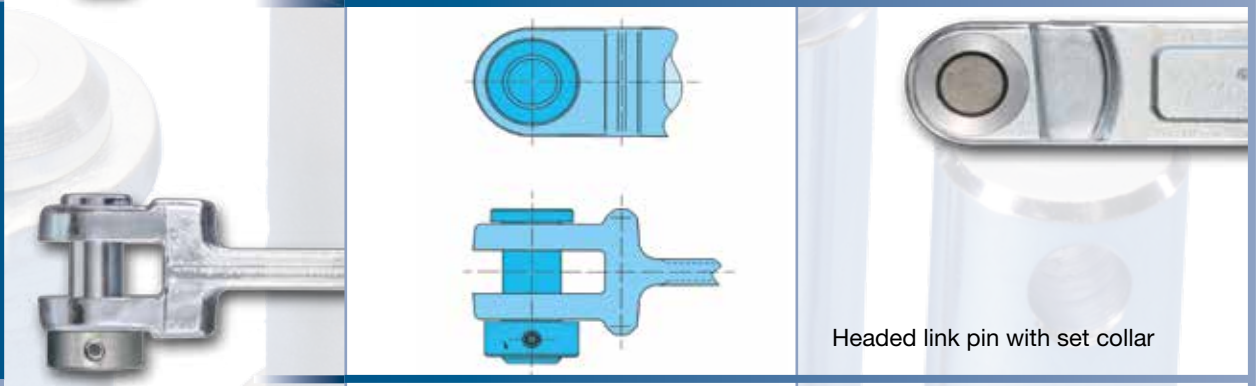
Link pin with circlip rings at each end
(THIELE standard design)

Typ B2



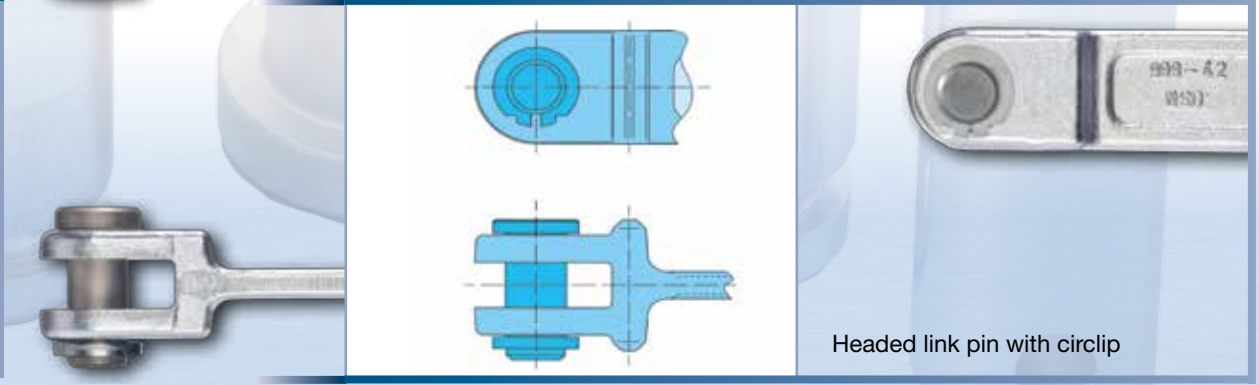
Headed link pin with S-clip.
Other options: hammerhead with
cotter-pin and washer

Typ B3



Headed link pin with set collar

Typ B4



Headed link pin with circlip

Accessory fittings

THIELE's own range of accessories provide the perfect complement to THIELE forged links.

Our forged links can be combined with different accessory fittings to produce a complete chain assembly that is specifically designed for the job. The feedstock material and method of heat treatment used for the fittings are matched to the type of link being used.

Various technical combinations are available for securing the link pin in place. All our link pins can be fitted with anti-rotation devices. Bushing sizes comply with DIN 1498. Circlip rings are manufactured to THIELE's own design standard.

Pin types

Dowel pins

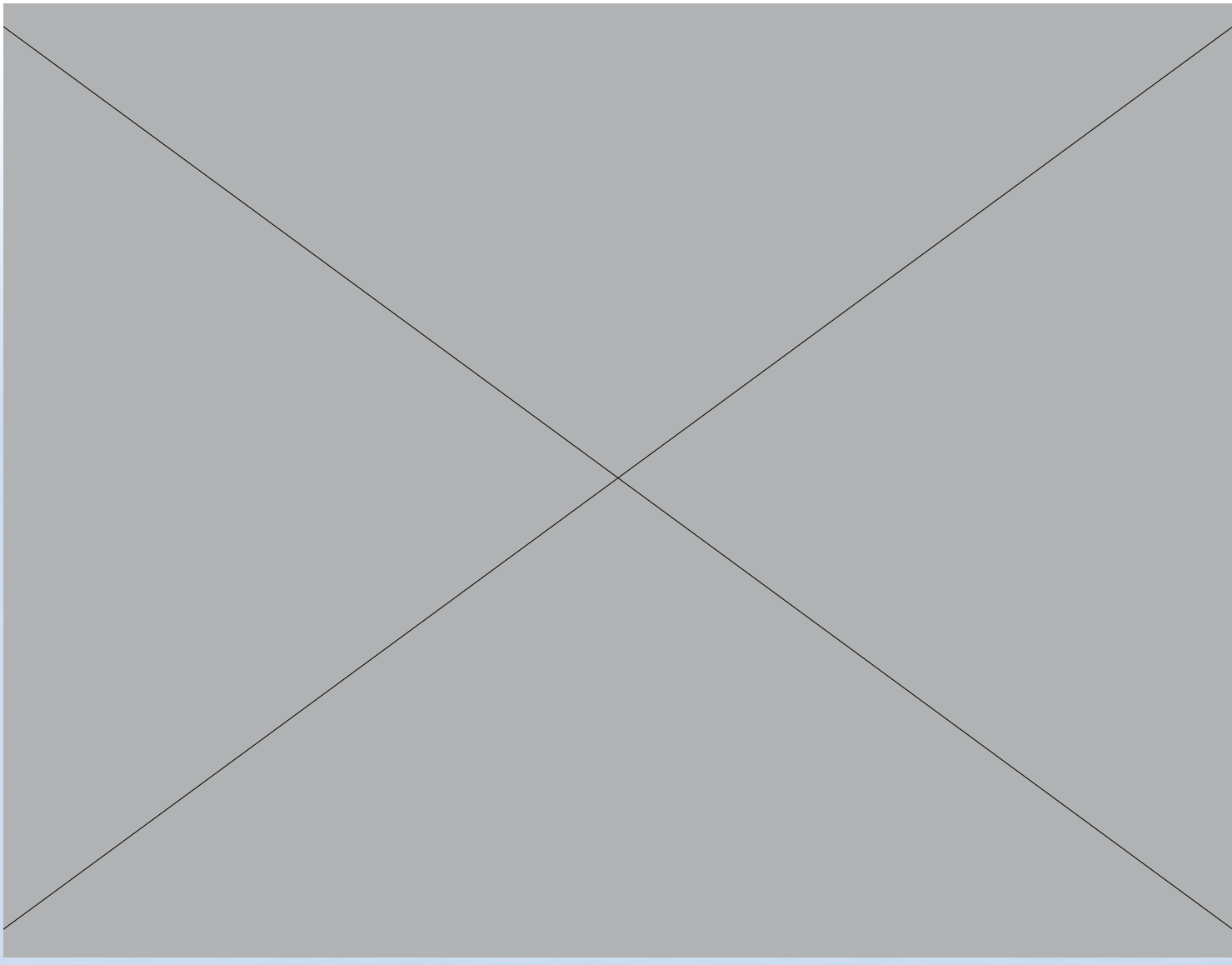
Bushings

Flight bars

THIELE can supply a range of flight bars to suit any type of conveyor.

The flight-bar material is chosen to match the conveyed product. We can supply laser-cut precision flights of all shapes and sizes. The latest semi-automated welding procedures are used throughout.

Hardfacing can be applied to highly stressed faces to produce hardness levels of over 60 HRC. This ensures a prolonged service life even under the toughest operating conditions.

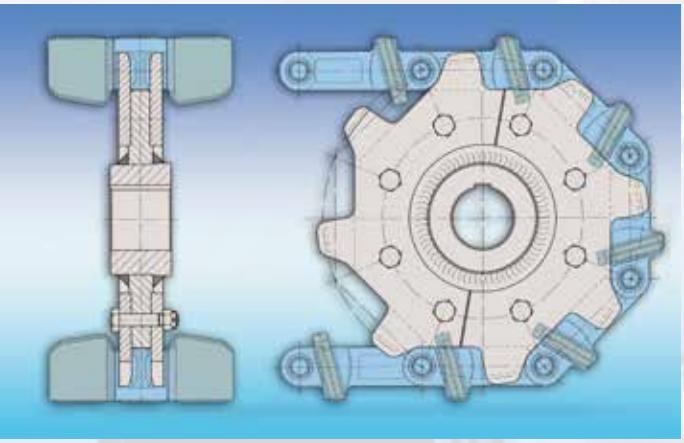


Chain wheels and guide rollers

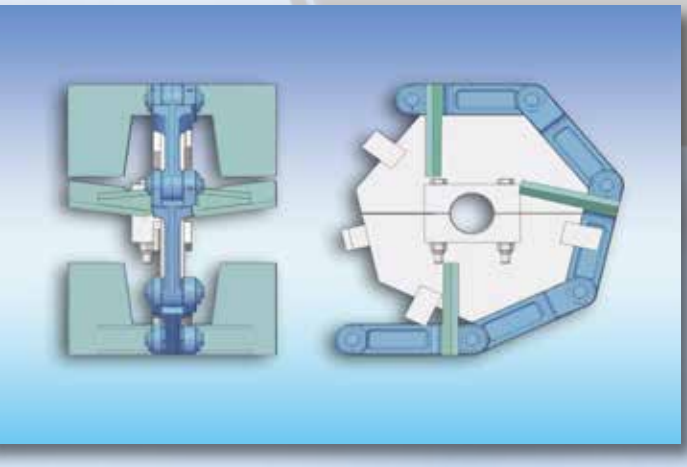
Low-maintenance split-segment chain wheel

To obtain optimum life expectancy from a THIELE chain assembly we strongly recommend fitting new chain wheels as part of the chain replacement process. In many cases this merely involves replacing the worn tooth rings or races.

Interchangeable cogwheel segments are available for all standard wheel sizes. THIELE can also supply complete chain wheels, guide rollers and spindles, if required.



Drive wheel

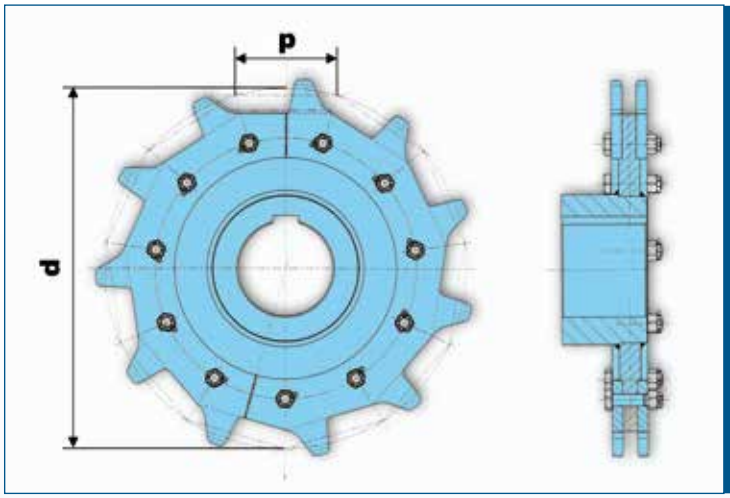


Guide wheel

Specially hardened running surfaces and tooth faces deliver maximum service life

Chain wheels are supplied in a range of pitch sizes to match any link:
d = pitch circle
p = pitch
z = number of teeth

$$d = \frac{p}{\sin \frac{360°}{2 \times z}} \text{ [mm]}$$



z	p = 102	p = 142	p = 160	p = 175	p = 200	p = 220	p = 230	p = 250	p = 260
6	204,00	284,00	320,00	350,00	400,00	440,00	460,00	500,00	520,00
7	235,09	327,28	368,76	403,33	460,95	507,05	530,10	576,19	599,24
8	266,54	371,06	418,10	457,30	522,63	574,89	601,02	653,28	679,41
9	298,23	415,18	467,81	511,70	584,76	643,24	672,48	730,95	760,19
10	330,08	459,52	517,77	566,31	647,21	711,93	744,30	809,02	841,38
11	362,05	504,02	567,91	621,16	709,90	780,88	816,38	887,37	922,86
12	394,10	548,65	618,19	676,15	772,74	850,01	888,65	965,93	1004,56
13	426,22	539,36	668,57	731,25	835,72	919,29	961,07	1044,65	1086,43
14	458,39	638,14	719,03	786,44	898,79	988,67	1033,61	1123,49	1168,43
15	490,59	682,98	769,56	841,70	961,95	1058,14	1106,24	1202,43	1250,53
16	522,83	727,87	820,13	897,02	1025,17	1127,68	1178,94	1281,46	1332,72
17	555,10	772,79	870,75	952,38	1088,44	1197,28	1251,70	1360,55	1414,97
18	587,39	817,75	921,40	1007,78	1151,75	1266,93	1324,52	1439,69	1497,28
19	619,70	862,73	972,09	1063,22	1215,11	1336,62	1397,37	1518,88	1579,64
20	652,03	907,73	1022,79	1118,68	1278,49	1406,34	1470,26	1598,11	1662,04

Material grades for forged links

Component	Material Number	Material Designation	Heat treatment	Maximum surface hardness (HRC)
THIELE standard materials for forged links				
Forged link	1.0412	27MnSi5	tempered	
Forged link	1.6758	23MnNiMoCr5-4	tempered	
Forged link	1.7147	20MnCr5	case-hardened	60 ±3 / 0,6+0,3**
THIELE special materials for forged links				
Forged link rust/acid resistant	1.4571	X6CrNiMoTi17-12-2		
Forged link heat resistant	1.4841	X15CrNiSi25-20		
Forged link	1.6758	23MnNiMoCr5-4	case-hardened	60 ±3
Forged link	1.6758	23MnNiMoCr5-4	induction-hardened	50 ±2

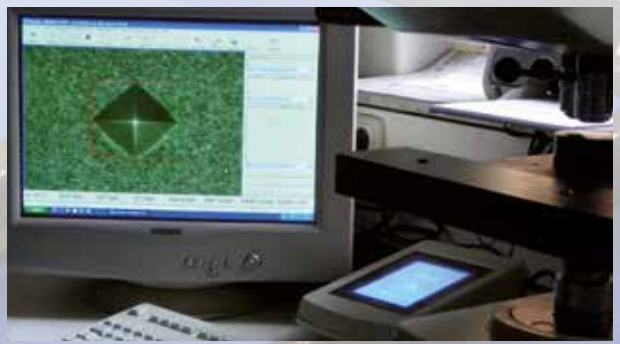
Material grades for fittings

Component	Material Number	Material Designation	Heat treatment	Maximum surface hardness (HRC)
THIELE special material grades for link pins				
Link pin	1.7225	42CrMo4	induction-hardened	56 ±2
Link pin	1.4034	X46Cr13	induction-hardened	55 ±2
THIELE standard material grades for bushings				
Bushing	1.5026	55Si7	tempered	50
Bushing	1.4034	X46Cr13	tempered	50
THIELE standard material grades for chain-wheel segments				
Chain-wheel segment	1.0503	C45	induction-hardened	55 ±2 / 3+2
Chain-wheel segment	1.7225	42CrMo4	induction-hardened	55 ±2 / 3+2
THIELE standard material for guide wheels				
Guide wheel	1.0503	C45	induction-hardened	55 ±2 / 3+2
THIELE standard material grades for flight bars: S235JR, S355J2, S700MC				
THIELE special material grades for flight bars: 400 HB, X5CrNi18-10, X15CrNiSi25-20				

Standard strength (N/mm²)	Standard temperature range	Standard combination pin material Number	Designation
THIELE standard materials for forged links			
700 900	max. 200 °C max. 100 °C	1.7131	16MnCr5 *
1150	max. 250 °C	1.6758	23MnNiMoCr5-4 *
1000	max. 100 °C	1.7131	16MnCr5 case-hardened
THIELE special materials for forged links			
600	max. 100 °C	1.4034	X46Cr13
10 130 650	max. 900 °C max. 600 °C RT	1.4841	X15CrNiSi25-20
1150	max. 100 °C	1.6758	23MnNiMoCr5-4 case-hardened
1000	max. 100 °C	1.6758	23MnNiMoCr5-4

* Forged link with bushing: 16MnCr5 case-hardened, 23MnNiMoCr54 case-hardened
** Deeper hardening depth possible with corresponding reduced breaking strength

Material stores



Effective hardening depth being checked in our laboratory

This overview presents the grades of material used in the production of THIELE forged links and fittings. The breaking strengths listed in the forged-link tables are based on the standard strength values shown here for the different combinations of links and link pin materials. The variety of choices available means that THIELE has exactly the right material for any application.

We will be pleased to advise you on the best possible material grade for your particular requirements.

Sample applications

Due to their compact and robust construction dust-tight trough chain conveyors can operate very effectively as:
- filter-ash conveyors
- silo feeder conveyors
- proportioning conveyors

THIELE forged-link assemblies are widely used by industry, including:
- coal and biomass fired power stations
- coal preparation plants
- cement works and building materials depots
- recycling companies operating waste incineration plants
- water treatment works
- fertiliser producers
- oil and flour mills
- glassworks
- steelworks
- particleboard factories
- saltworks and soda plants

Clinker conveyor operating at a cement works

Forged-link system at a soda plant

Trough chain conveyor

Coal handling conveyor in a power station

A new THIELE chain assembly fitted to a biomass conveyor

Client-specific solutions

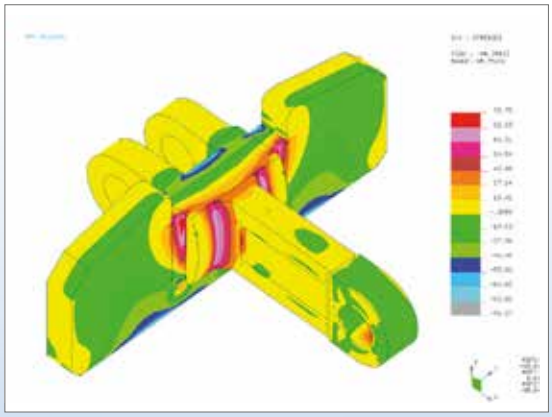
Our expertise stems from years of experience and continuous involvement in developing materials handling solutions for our clients.

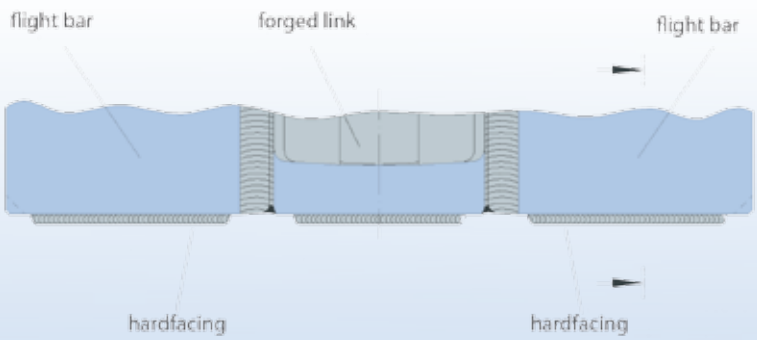
We have a proven track record not only for developing new chains to customer specifications but also for matching and fine tuning all the tribological components that go to make up the trough chain conveyor system.

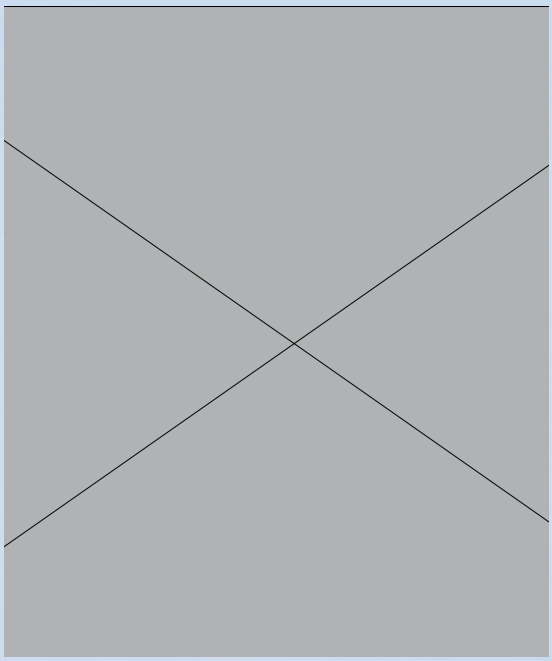
By careful selection of the base material THIELE is able to fit wear-resistant or stainless bushings to its forged-link assemblies without reducing the required breaking strength of the chain.

THIELE can also supply hot-dip galvanized forged-link chains for particularly corrosive operating conditions.

The use of a temper-resistant base material for the links ensures that the chain breaking strength is not affected by the galvanizing process.



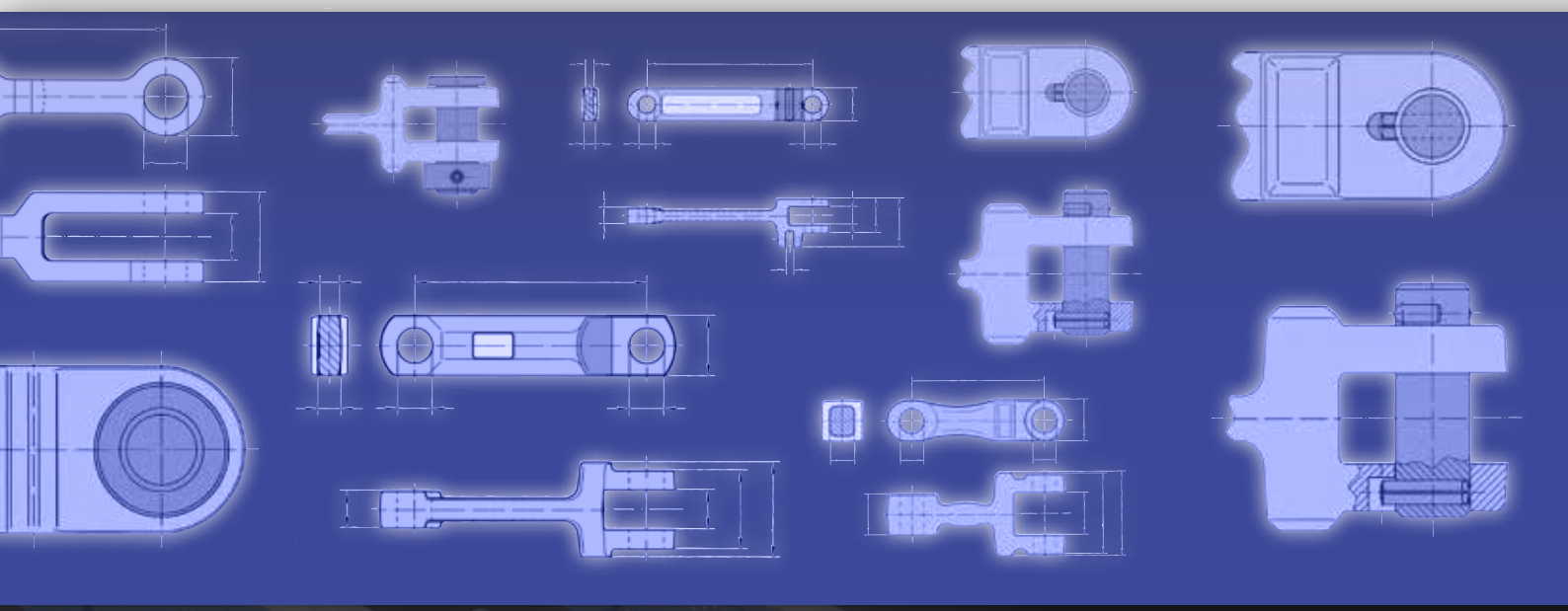




Hardfacing highly stressed areas can often extend component life significantly

Galvanized forged link with bushing and link pin in stainless material

THIELE®



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