



mühendislik zincir ve makina san. tic. ltd. şti.



GIDA SANAYİ ZİNCİRLERİ

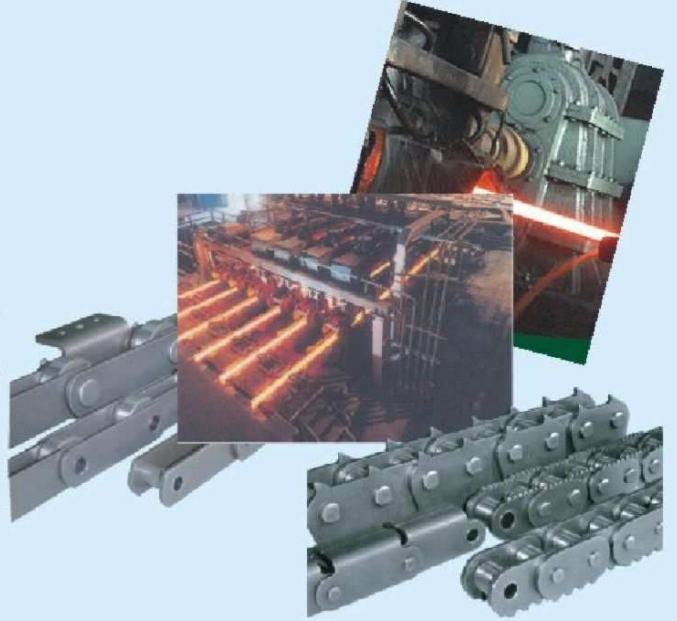
FOOD INDUSTRY CHAINS

- Konserve Fabrikaları (Canned Food Industry)
- Makarna Fabrikaları (Pasta / Macaroni Industry)
- Paketleme (Packaging Industry)
- Şişeleme (Bottling Industry)
- Sebze Meyve Üretim / İşleme Tesisleri (Vegetable / Fruit Processing Industry)
- Şeker Fabrikaları (Sugar Processing Industry)
- Et , Kütmes Hayvancılığı, Balıkçılık Tesisleri (Meat, Poultry , Fish Processing Industry)

AĞIR SANAYİ ZİNCİRLERİ

HEAVY DUTY INDUSTRY CHAINS

- Demir Çelik Sanayi (Steel Industry)
- Makine İmalatı (Machinery Industry)
- Çimento Sanayi (Cement Industry)
- Ağaç İşleme Sanayi (Wood Processing Industry)
- Seramik Sanayi (Ceramic Industry)
- Madencilik Sanayi (Mineral Processing Industry)



OTOMOTİV SANAYİ ZİNCİRLERİ

AUTOMATIVE INDUSTRY CHAINS

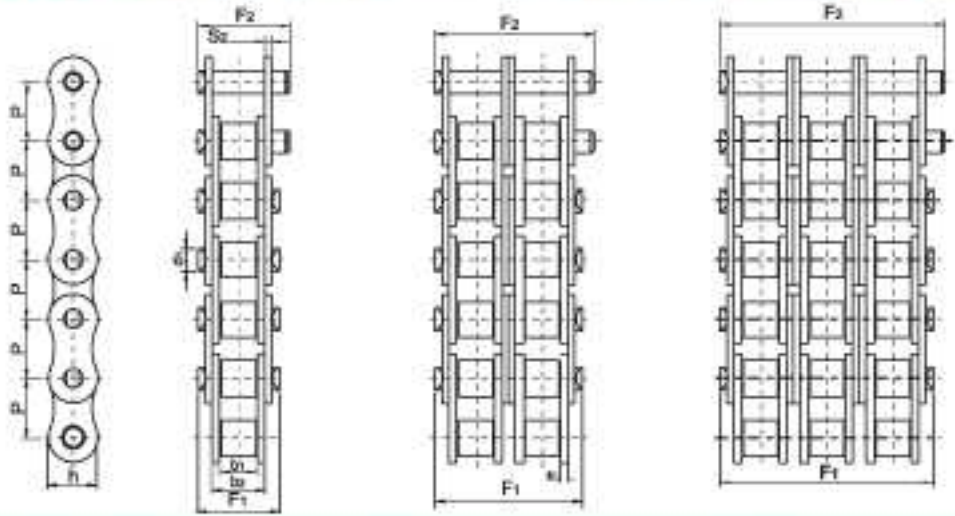
- İş Makineleri (Work Machine)
- Elektronik Beyaz Eşya Sanayi (Electronics- White Goods Industry)

TARIM MAKİNELERİ ZİNCİRLERİ

AGRICULTURAL CHAINS

- Pancar Sökme/ Toplama Makineleri (Beet Extracting Machines)
- Mısır Toplama Makineleri (Corn Collecting Machines)
- Ekme Bıçma Makineleri (Plant - Cutout Machines)
- Hasat Makineleri (Harvest Machines)
- Balya Makineleri (Bale Machines)

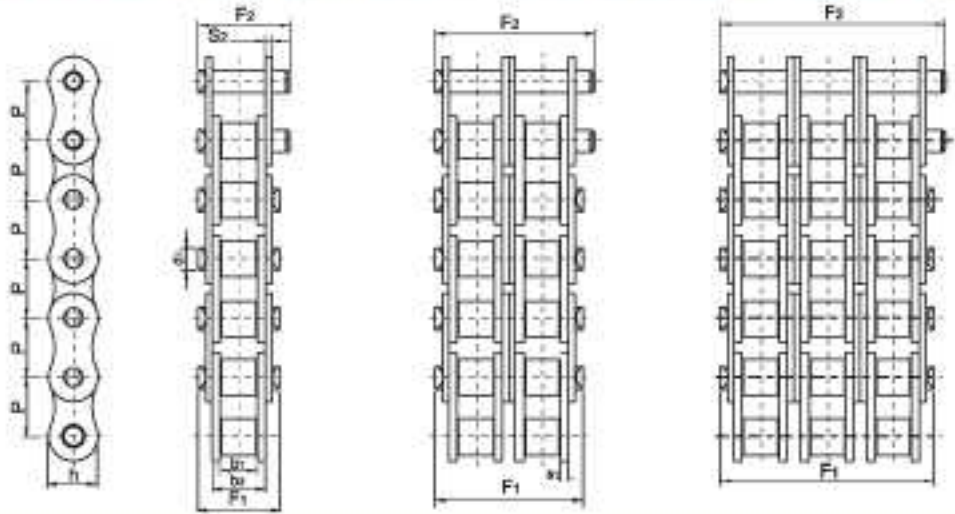




MAKELSAN NO.	ISO Nr	P mm	b1 mm	d1 mm	d2 mm	F1 mm	F2 mm	h mm	S1/S2 mm	f cm ²	Q kN	q kg/m
MK1.8187.0952	06B-1	9.52	5.72	3.28	6.35	13.50	16.8	8.26	1.30/1.30	0.26	5.0	0.41
MK1.8187.0081	081-1	12.70	3.30	3.66	7.75	10.20	11.7	9.91	1.00/1.00	0.21	9.0	0.28
MK1.8187.0084	084-1	12.70	4.88	4.09	7.75	14.80	16.3	11.15	1.95/1.80	0.35	9.0	0.59
MK1.8187.0127	08B-1	12.70	7.75	4.45	8.51	17.00	20.90	11.81	1.60/1.60	0.50	18.0	0.70
MK1.8187.1587	10B-1	15.87	9.65	5.08	10.16	19.60	23.7	14.73	1.60/1.60	0.67	22.4	0.95
MK1.8187.1905	12B-1	19.05	11.68	5.72	12.07	22.70	27.3	16.13	1.80/1.80	0.89	29.0	1.25
MK1.8187.0254	16B-1	25.40	17.02	8.28	15.88	36.10	41.5	21.08	4.00/3.10	2.10	60.0	2.70
MK1.8187.3175	20B-1	31.75	19.56	10.19	19.05	43.20	49.3	26.42	4.50/3.50	2.95	95.0	3.60
MK1.8187.0381	24B-1	38.10	25.40	14.63	25.40	53.40	60.0	33.40	5.50/5.00	5.54	160.0	6.70
MK1.8187.4445	28B-1	44.45	30.99	15.90	27.94	65.10	72.5	37.08	7.50/6.50	7.40	200.0	8.30
MK1.8187.0508	32B-1	50.80	30.99	17.81	29.21	67.40	75.3	42.29	7.00/6.00	8.11	250.0	10.5
MK1.8187.0635	40B-1	63.50	38.10	22.89	39.37	82.60	92.8	51.96	8.50/8.00	12.76	355.0	16.0
MK1.8187.0762	48B-1	76.20	45.72	29.24	48.28	99.10	109.8	63.88	12.00/10.00	20.63	560.0	25.0
MK1.8187.0889	56B-1	88.90	53.34	34.32	53.98	114.60	126.3	77.85	13.00/12.00	27.91	850.0	35.0
MK1.8187.1016	64B-1	101.60	60.96	39.40	63.50	130.90	143.9	90.17	14.00/13.00	36.25	112.0	60.0
MK1.8187.1143	72B-1	114.30	68.58	44.48	72.39	147.40	161.7	103.63	17.00/15.00	46.17	1400.0	80.0

MAKELSAN NO.	ISO Nr	P mm	b1 mm	d1 mm	d2 mm	F1 mm	F2 mm	h mm	S1/S2 mm	f cm ²	Q kN	q kg/m
MK2.8187.0952	06B-2	9.52	5.72	3.28	6.35	23.8	27.1	8.26	1.30/1.30	10.24	16.4	0.78
MK2.8187.0127	08B-2	12.70	7.75	4.45	8.51	31.0	34.9	11.81	1.60/1.60	13.92	32.0	1.35
MK2.8187.1587	10B-2	15.87	9.65	5.08	10.16	36.2	40.3	14.73	1.60/1.60	16.59	44.5	1.85
MK2.8187.1905	12B-2	19.05	11.68	5.72	12.07	42.2	48.8	16.13	1.80/1.80	19.46	57.8	2.50
MK2.8187.0254	16B-2	25.40	17.02	8.28	15.88	68.0	73.4	21.08	4.00/3.10	31.88	108.0	5.40
MK2.8187.3175	20B-2	31.75	19.56	10.19	19.05	79.7	85.8	26.42	4.50/3.50	36.45	170.0	7.20
MK2.8187.0381	24B-2	38.10	25.40	14.63	25.40	101.8	108.4	33.40	5.50/5.00	48.36	280.0	13.50
MK2.8187.4445	28B-2	44.45	30.99	15.90	27.94	124.7	132.1	37.08	7.50/6.50	59.56	360.0	16.60
MK2.8187.0508	32B-2	50.80	30.99	17.81	29.21	126.0	133.9	42.29	7.00/6.00	58.55	450.0	21.00
MK2.8187.0635	40B-2	63.50	38.10	22.89	39.37	154.9	165.1	51.96	8.50/8.00	72.29	630.0	32.00
MK2.8187.0762	48B-2	76.20	45.72	29.24	48.28	190.4	200.9	63.88	12.00/10.00	91.50	1000.0	50.00
MK2.8187.0889	56B-2	88.90	53.34	34.32	53.98	221.2	232.9	77.85	13.00/12.00	106.6	1600.0	70.00
MK2.8187.1016	64B-2	101.60	60.96	39.40	63.50	250.8	263.8	90.17	14.00/13.00	119.89	2000.0	120.00
MK2.8187.1143	72B-2	114.30	68.58	44.48	72.39	283.5	296.0	103.63	17.00/15.00	136.27	2500.00	160.00

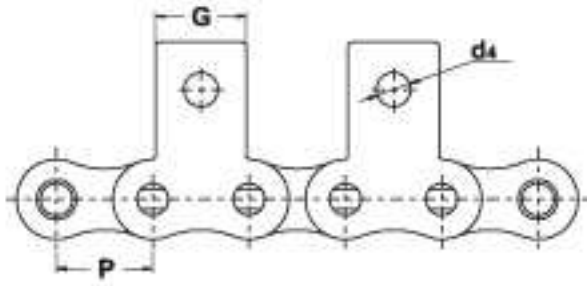
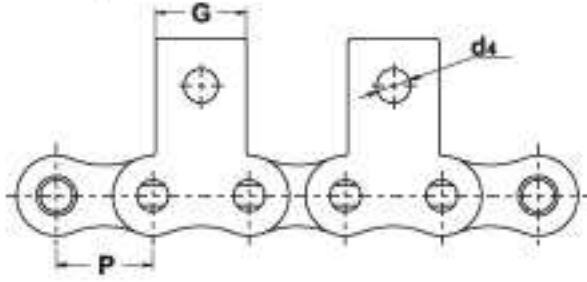
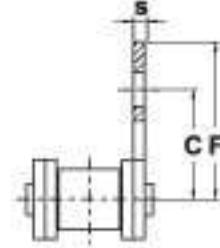
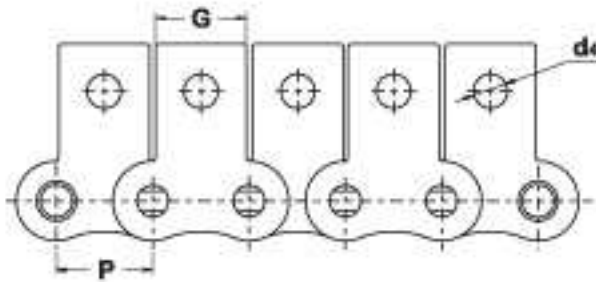
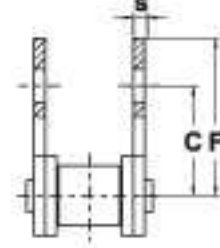
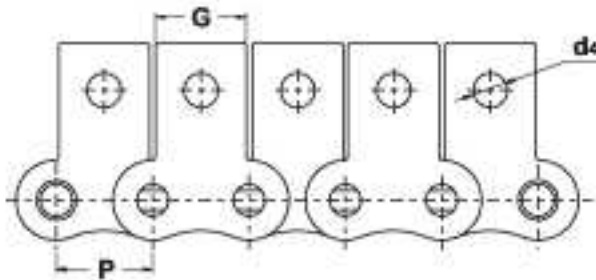
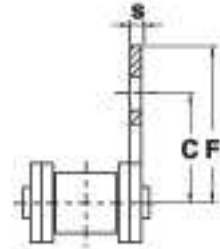
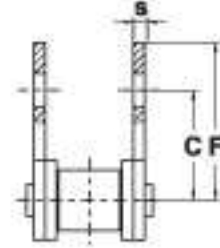
MAKELSAN NO.	ISO Nr	P mm	b1 mm	d1 mm	d2 mm	F1 mm	F2 mm	h mm	S1/S2 mm	f cm ²	Q kN	q kg/m
MK3.8187.0952	06B-3	9.52	5.72	3.28	6.35	34.00	37.3	8.26	1.30/1.30	5.84	24.9	1.2
MK3.8187.0127	08B-3	12.70	7.75	4.45	8.51	44.9	48.8	11.81	1.60/1.60	10.24	47.5	2.0
MK3.8187.1587	10B-3	15.87	9.65	5.08	10.16	52.8	56.9	14.73	1.60/1.60	13.92	66.7	2.8
MK3.8187.1905	12B-3	19.05	11.68	5.72	12.07	61.7	66.3	16.13	1.80/1.80	16.59	88.7	3.8
MK3.8187.0254	16B-3	25.40	17.02	8.28	15.88	99.9	105.3	21.08	4.00/3.10	19.46	160.0	8.0
MK3.8187.3175	20B-3	31.75	19.56	10.19	19.05	116.1	122.2	26.42	4.50/3.50	31.88	250.0	11.0
MK3.8187.0381	24B-3	38.10	25.40	14.63	25.40	150.2	156.8	33.40	5.50/5.00	36.45	425.0	21.0
MK3.8187.4445	28B-3	44.45	30.99	15.90	27.94	184.3	191.7	37.08	7.50/6.50	48.36	53.0	25.0
MK3.8187.0508	32B-3	50.80	30.99	17.81	29.21	184.5	192.4	42.29	7.00/6.00	58.56	670.0	32.0
MK3.8187.0635	40B-3	63.50	38.10	22.89	39.37	227.2	237.4	51.96	8.50/8.00	58.55	950.0	48.0
MK3.8187.0762	48B-3	76.20	45.72	29.24	48.28	261.6	282.1	63.88	12.00/10.00	72.29	1500.0	75.0
MK3.8187.0889	56B-3	88.90	53.34	34.32	53.98	339.0	341.7	77.85	13.00/12.00	91.21	2240.0	105.0
MK3.8187.1016	64B-3	101.60	60.96	39.40	63.50	370.7	383.7	90.17	14.00/13.00	160.6	3000.0	180.0
MK3.8187.1143	72B-3	114.30	68.58	44.48	72.39	420.0	434.3	103.63	17.00/15.00	119.89	3750.0	240.0



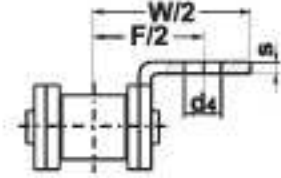
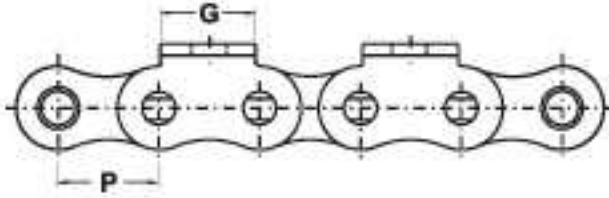
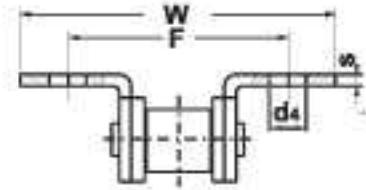
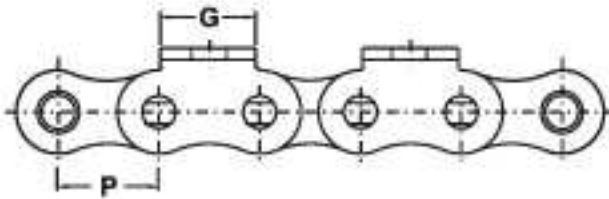
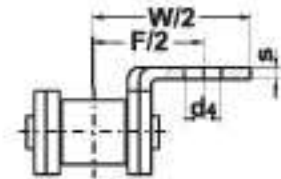
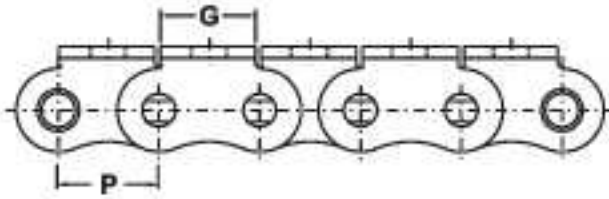
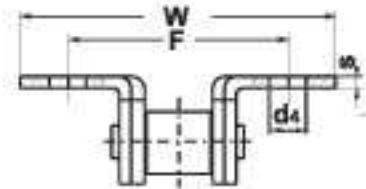
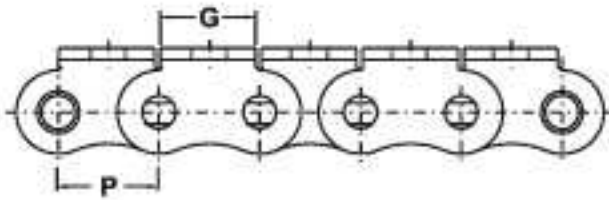
MAKELSAN NO.	ISO Nr	P mm	b ₁ mm	d ₁ mm	d ₃ mm	F ₁ mm	F ₂ mm	h mm	S ₁ /S ₂ mm	f cm ²	Q kN	q kg/m
MK1.8188.1270	08A1	12.70	7.95	3.96	7.92	17.80	21.70	12.07	1.60	0.44	14.1	0.60
MK1.8188.1587	10A-1	15.875	9.53	5.08	10.16	21.80	25.90	15.09	2.00	0.70	22.2	1.01
MK1.8188.1905	12A-1	19.05	12.70	5.94	11.91	26.90	31.50	18.08	2.40	1.06	31.8	1.47
MK1.8188.1588	16A-1	25.40	15.88	7.92	15.88	33.50	38.90	24.13	3.20	1.79	56.7	2.57
MK1.8188.3175	20A-1	31.75	19.05	9.53	19.05	41.10	47.20	30.18	4.20	2.62	88.5	3.73
MK1.8188.3810	24A-1	38.10	25.40	11.10	22.23	50.80	57.40	36.20	5.00	3.94	127.0	5.50
MK1.8188.4445	28A-1	44.45	25.40	12.70	25.40	54.90	62.30	42.24	5.50	4.72	172.4	7.50
MK1.8188.5080	32A-1	50.80	31.75	14.27	28.58	65.50	73.40	48.26	6.30	6.50	226.8	9.70
MK1.8188.6350	40A-1	63.50	38.10	19.84	39.68	80.30	90.50	60.33	8.00	10.90	353.8	15.80
MK1.8188.7620	48A-1	76.20	47.63	23.80	47.63	95.50	106.00	72.39	10.00	16.10	510.3	22.60

MAKELSAN NO.	ISO Nr	P mm	b ₁ mm	d ₁ mm	d ₃ mm	F ₁ mm	F ₂ mm	h mm	S ₁ /S ₂ mm	f cm ²	Q kN	q kg/m
MK1.8188.1270	08A-2	12.70	7.95	3.96	7.92	32.30	36.20	12.07	1.60	0.88	28.2	0.60
MK1.8188.1587	10A-2	15.875	9.53	5.08	10.16	39.90	44.00	15.09	2.00	1.40	44.4	1.01
MK1.8188.1905	12A-2	19.05	12.70	5.94	11.91	49.80	54.40	18.08	2.40	2.12	63.6	1.47
MK1.8188.2540	16A-2	25.40	15.88	7.92	15.88	62.70	68.10	24.13	3.20	3.58	113.4	2.57
MK1.8188.3175	20A-2	31.75	19.05	9.53	19.05	77.00	83.10	30.18	4.20	5.24	177.0	3.73
MK1.8188.3810	24A-2	38.10	25.40	11.10	22.23	96.30	102.90	36.20	5.00	7.88	254.0	5.50
MK1.8188.4445	28A-2	44.45	25.40	12.70	25.40	103.60	111.00	42.24	5.50	9.44	344.8	7.50
MK1.8188.5080	32A-2	50.80	31.75	14.27	28.58	124.20	132.10	48.26	6.30	13.00	453.6	9.70
MK1.8188.6350	40A-2	63.50	38.10	19.84	39.68	151.90	162.10	60.33	8.00	21.80	707.6	15.80
MK1.8188.7620	48A-2	76.20	47.63	23.80	47.63	183.40	193.90	72.39	10.00	32.20	1020.6	22.60

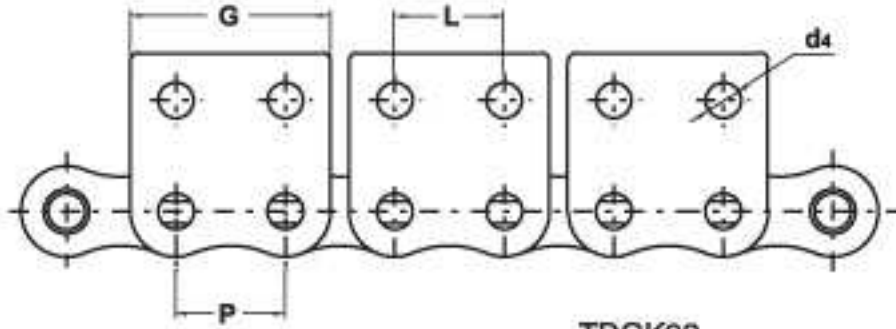
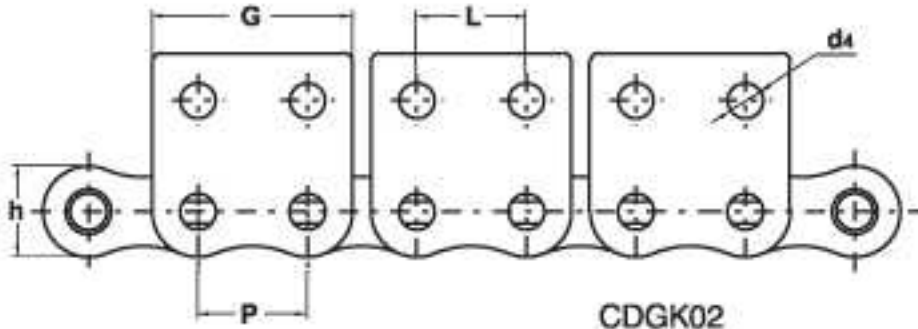
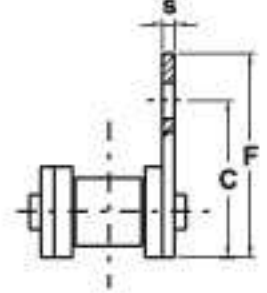
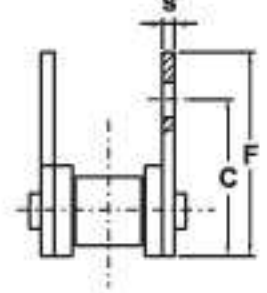
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MK1.8188.1270	08A-3	12.70	7.95	3.96	7.92	46.70	50.60	12.07	1.60	1.32	42.3	1.78
MK1.8188.1587	10A-3	15.875	9.53	5.08	10.16	57.90	62.00	15.09	2.00	2.10	66.6	2.89
MK1.8188.1905	12A-3	19.05	12.70	5.94	11.91	72.60	77.20	18.08	2.40	3.18	95.4	4.28
MK1.8188.2540	16A-3	25.40	15.88	7.92	15.88	91.70	97.10	24.13	3.20	5.37	170.1	7.47
MK1.8188.3175	20A-3	31.75	19.05	9.53	19.05	113.00	119.10	30.18	4.20	7.88	265.5	11.01
MK1.8188.3810	24A-3	38.10	25.40	11.10	22.23	141.70	148.30	36.20	5.00	11.82	381.0	16.50
MK1.8188.4445	28A-3	44.45	25.40	12.70	25.40	152.40	159.80	42.24	5.50	14.16	517.2	21.70
MK1.8188.3175	32A-3	50.80	31.75	14.27	28.58	182.90	190.80	48.26	6.30	19.50	680.4	28.30
MK1.8188.6350	40A-3	63.50	38.10	19.84	39.68	225.50	233.70	60.33	8.00	32.70	1061.4	48.00
MK1.8188.7620	48A-3	76.20	47.63	23.80	47.63	271.30	281.80	72.39	10.00	48.30	1530.9	66.00


TDK02

CDK02

TDK01

CDK01


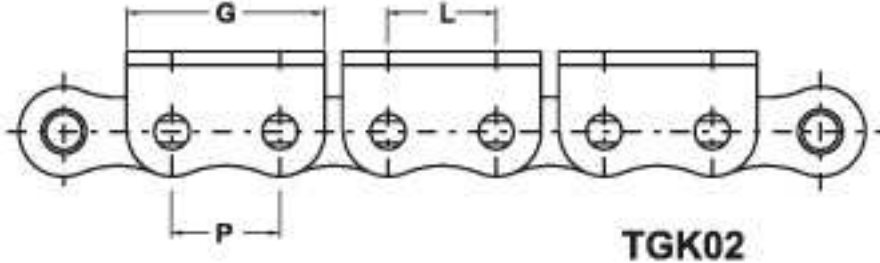
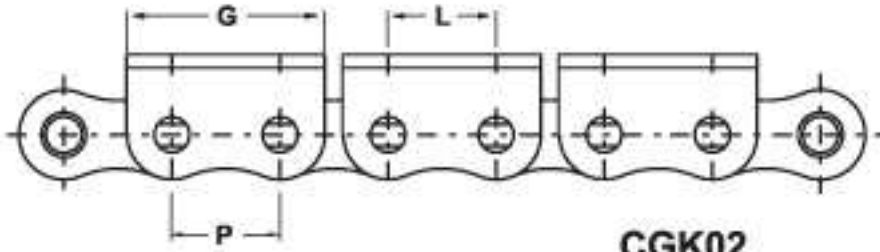
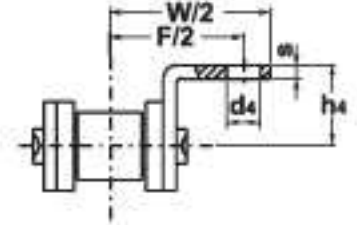
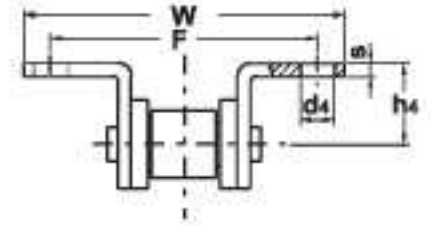
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MK.010B	15.875	15.0	17.2	26.7	1.7	5.5
MK.012B	19.05	18.5	18.7	29.0	1.8	6.6
MK.016B	25.40	25.0	28.6	41.5	3.0	9.0
MK.020B	31.75	35.0	30.5	45.7	4.0	9.0
MK.024B	38.10	38.0	41.0	60.0	5.0	11
MK.028B	44.45	45.0	52.5	75.5	6.0	14
MK.032B	50.80	50.0	53.5	77.0	6.0	14

TKK-02

CKK-02

TKK-01

CKK-01


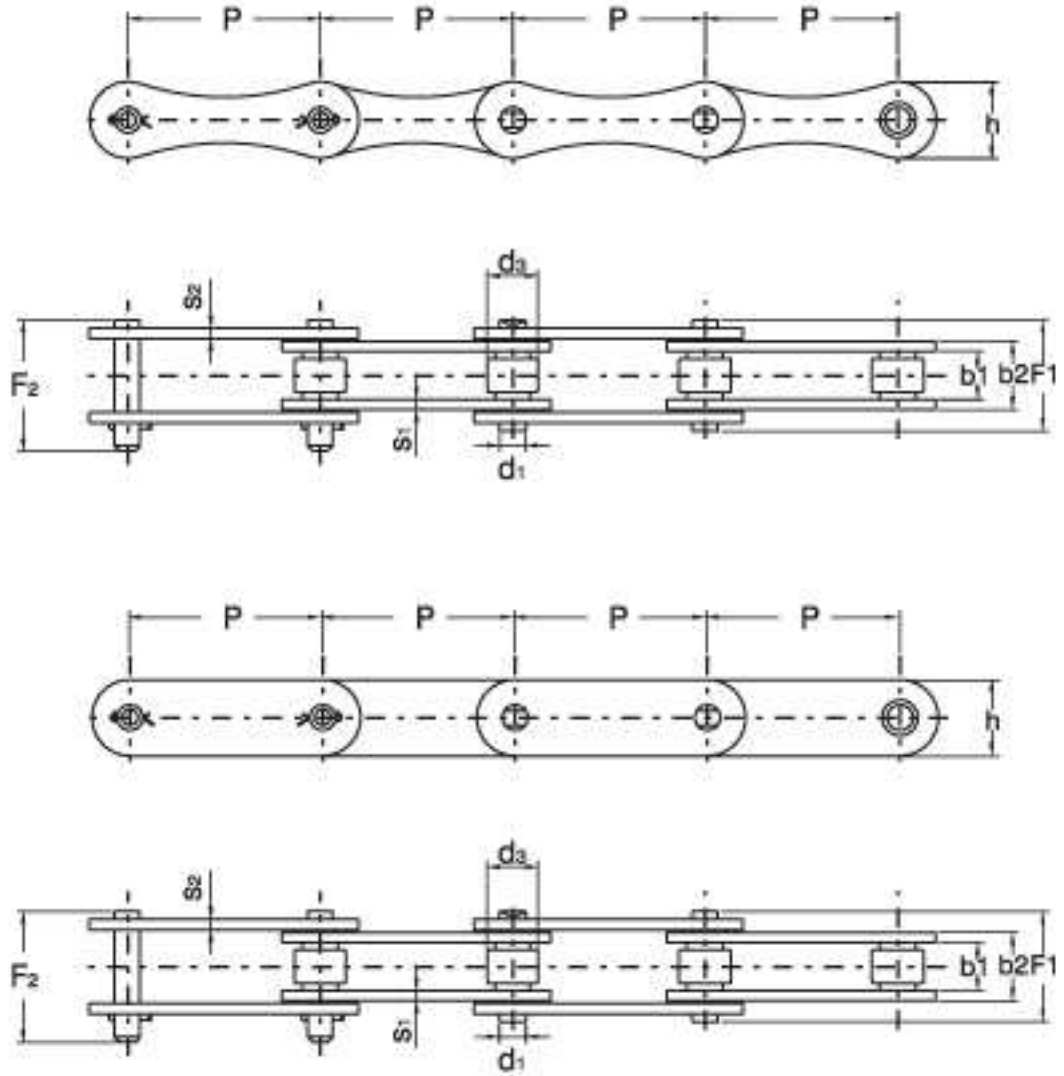
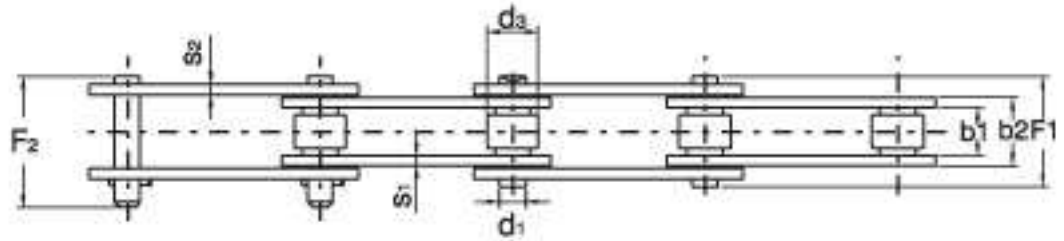
MAKELSAN NO.	P mm	G mm	W mm	F mm	S mm	d ₄ mm
MK.008B	12.70	9.5	26.2	20.3	1.6	4.5
MK.010B	15.875	15.0	33.4	26.7	1.7	5.5
MK.012B	19.05	18.5	37.2	29.0	1.8	6.6
MK.016B	25.40	25.0	57.8	41.5	3.0	9.0
MK.020B	31.75	35.0	66.8	45.7	4.0	9.0
MK.024B	38.10	38.0	88.0	60.0	5.0	11
MK.028B	44.45	45.0	108.0	75.5	6.0	14
MK.032B	50.80	50.0	108.0	77.0	6.0	14


TDGK02

CDGK02


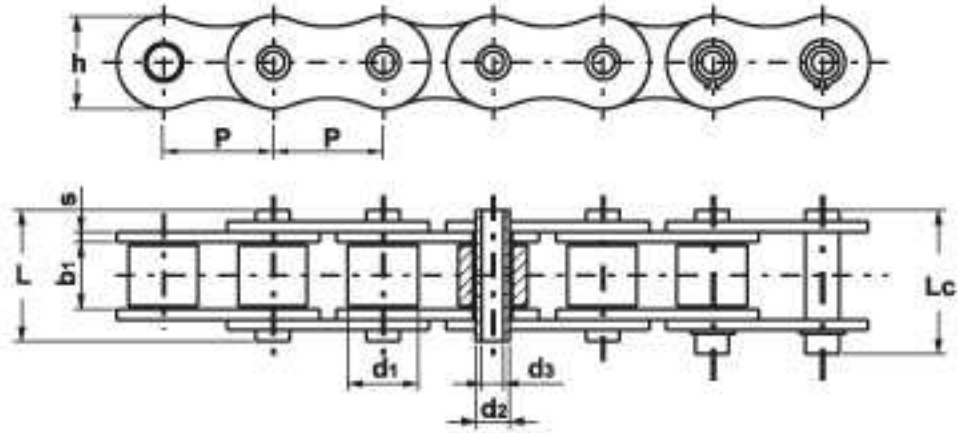
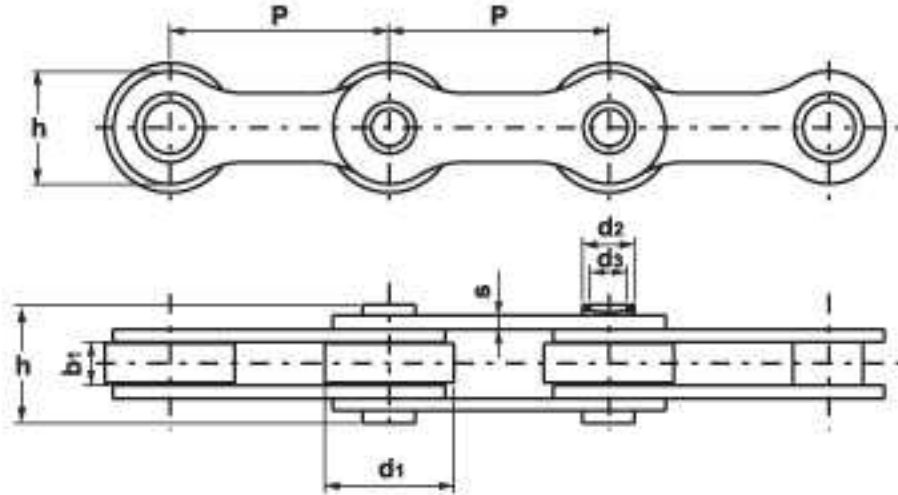
MAKELSAN NO.	DIN/ISO NO	P mm	G mm	L mm	C mm	F mm	S min	d4 mm
MK.06C1	06C	9.525	17.32	9.525	9.50	11.55	1.30	2.8
MK.08A1	08A	12.70	23.00	12.70	12.70	15.40	1.50	3.4
MK.08A1	085	12.70	22.30	12.70	11.85	16.55	1.30	4.85
MK.10A1	10A	15.87	28.80	15.875	15.90	23.05	2.03	5.5
MK.12A1	12A	19.05	34.65	19.05	18.30	26.86	2.42	5.5
MK.16A1	16A	25.40	45.90	25.40	24.60	35.45	3.25	6.8
MK.20A1	20A	31.75	57.65	31.75	31.80	44.00	4.00	9.2
MK.24A1	24A	38.10	69.30	38.10	36.50	51.60	4.80	9.8
MK.28A1	28A	44.45	80.45	44.45	44.50	62.00	5.60	11.4
MK.32A1	32A	50.80	92.00	50.80	50.80	69.85	6.40	13.1
MK.40A1	40A	63.50	115.5	63.50	63.50	88.90	8.00	16.3
MK.08B1	08B	12.70	24.00	12.70	13.35	18.90	1.60	4.3
MK.10B1	10B	15.87	29.58	15.875	16.50	22.95	1.70	5.3
MK.12B1	12B	19.05	34.05	19.05	21.45	28.60	1.85	6.4
MK.16B1	16B	25.40	46.40	25.40	23.15	34.00	3.10	6.4
MK.20B1	20B	31.75	58.10	31.75	30.50	45.70	3.50	9.0


TGK02

CGK02


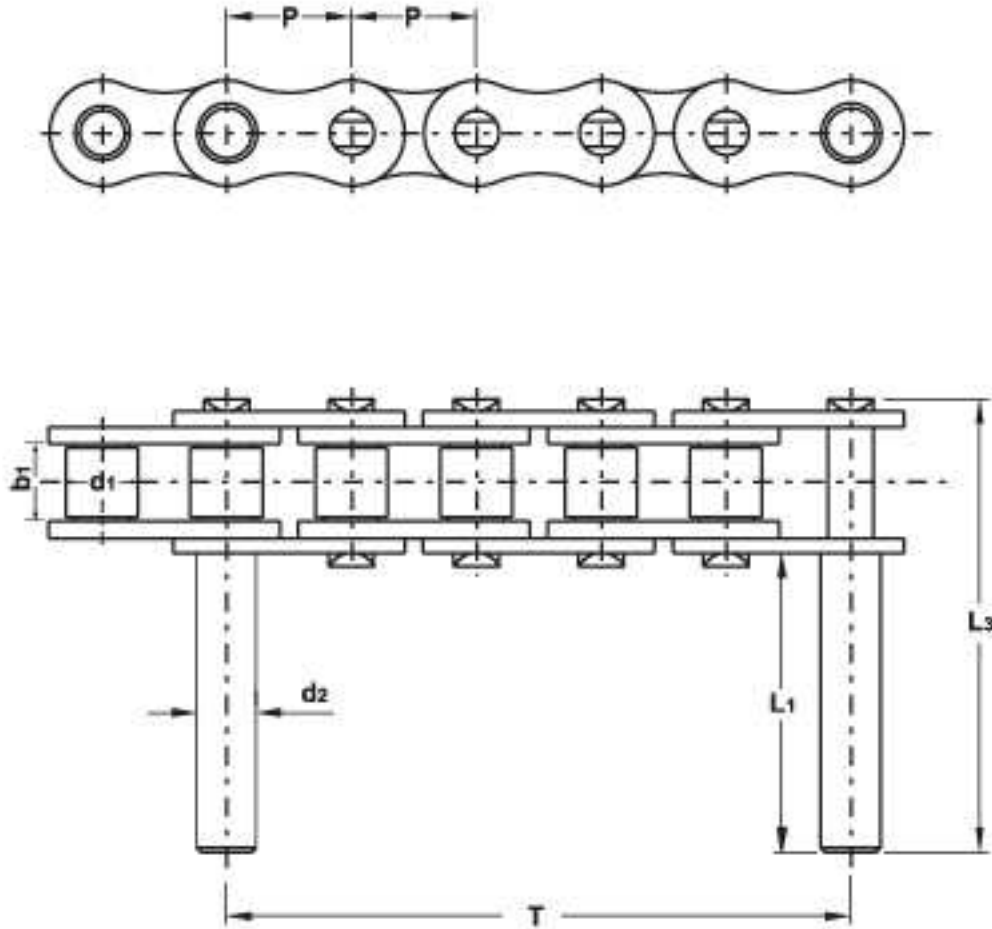
MAKELSAN NO.	DIN/ISO NO	P mm	G mm	L mm	F mm	W mm	S mm	h_4 mm	d_4 mm
MK.06C1	06C	9.525	17.32	9.525	19.00	28.6	1.30	6.35	2.8
MK.08A1	08A	12.70	23.00	12.70	25.40	35.6	1.50	7.90	3.4
MK.85A1	085	12.70	22.30	12.70	24.00	35.0	1.30	7.20	4.85
MK.10A1	10A	15.875	28.80	15.875	31.75	46.8	2.03	10.30	5.5
MK.12A1	12A	19.05	34.65	19.05	38.10	56.4	2.42	11.90	5.5
MK.16A1	16A	25.40	45.90	25.40	50.80	73.2	3.25	15.90	6.8
MK.20A1	20A	31.75	57.65	31.75	63.50	89.8	4.00	19.80	9.2
MK.24A1	24A	38.10	69.30	38.10	76.20	108.8	4.80	23.00	9.8
MK.28A1	28A	44.45	80.45	44.45	88.90	123.0	5.60	28.60	11.4
MK.32A1	32A	50.80	92.00	50.80	101.60	142.8	6.40	31.75	13.1
MK.40A1	40A	63.50	115.5	63.50	127.00	179.0	8.00	42.88	16.3
MK.08B1	08B	12.70	24.00	12.70	25.40	36.4	1.60	8.90	4.3
MK.10B1	10B	15.875	29.58	15.875	31.80	44.6	1.70	10.31	5.3
MK.12B1	12B	19.05	34.05	19.05	38.10	52.4	1.85	13.46	6.4
MK.16B1	16B	25.40	46.40	25.40	50.80	72.6	3.10	15.88	6.4
MK.20B1	20B	31.75	58.10	31.75	63.00	100.5	3.50	19.80	9.0
MK.24B1	24B	38.10	71.30	38.10	76.20	108.4	4.80	26.67	10.5
MK.28B1	28B	44.45	81.1	44.45	88.90	123.0	6.00	28.58	13.1
MK.32B1	32B	50.80	92.8	50.80	101.60	142.8	6.00	31.75	13.1

TİP-A

TİP-C


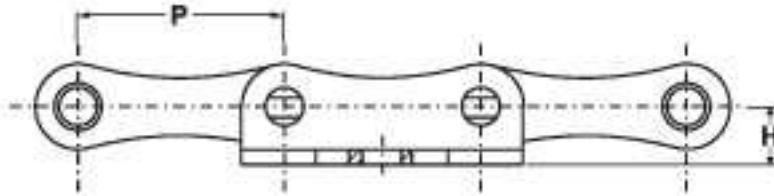
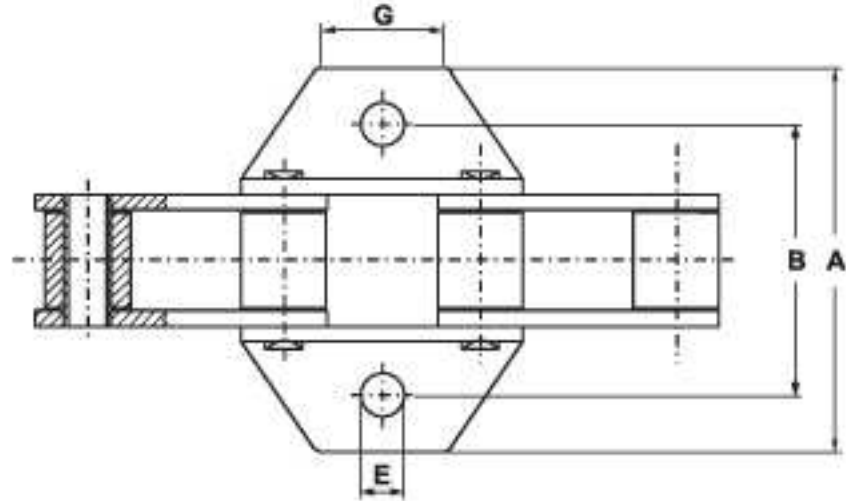
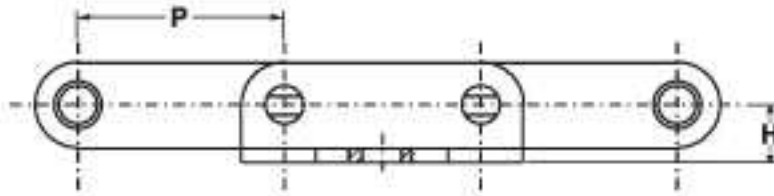
MAKELSAN NO.	P mm	b1 mm	d1 mm min.	d3 mm max.	h mm	S1 mm	S2 mm	F1 mm max.	F2 mm max.	Q N	q kg/m
MK.8181.2040	25.4	7.95	3.96	7.92	12.1	1.6	1.6	17.8	21.7	14.100	0.49
MK.8181.2050	31.75	9.53	5.08	10.16	15.1	2.0	2.0	21.8	25.9	22.200	0.66
MK.8181.2060	38.1	12.70	5.94	11.91	18.1	2.4	2.4	26.9	31.5	31.800	0.96
MK.8181.2080	50.8	15.88	7.92	15.88	24.1	3.2	3.2	33.5	38.9	56.700	1.70
MK.8181.2100	63.5	19.05	9.53	19.05	30.2	4.2	4.2	41.1	47.2	88.500	2.55
MK.8181.2120	76.2	25.40	11.10	22.23	36.2	5.0	5.0	50.8	57.4	127.000	4.30

FORM A

FORM B


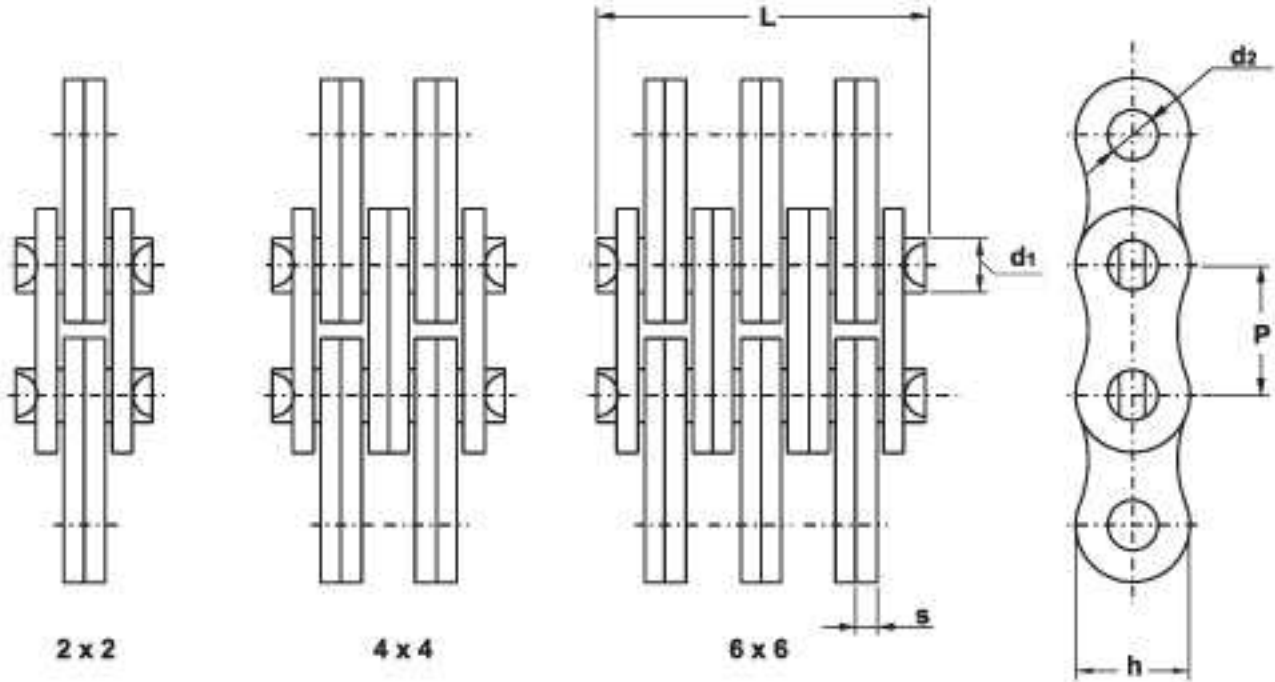
MAKELSAN NO.	P	d ₁	b ₁	d ₂	d ₃	L	L _c	h	s	Q	q	FORM
		max	min	max	min	max	max	max	max	min		
		mm	mm	mm	mm	mm	mm	mm	mm	kN	Kg/m	
MKA.00HP:1270	12.07	8.51	7.75	6.55	4.50	16.4	17.6	11.80	1.60	11.1	0.86	A
MKA.01HP:1587	15.87	10.16	9.65	7.02	5.13	19.5	20.5	14.70	1.70	10.0	1.09	A
MKA.02HP:1950	19.050	12.07	11.68	8.09	6.00	22.7	23.9	16.10	1.85	14.00	1.35	A
MKA.03HP:2540	25.04	15.88	15.75	11.40	8.05	32.5	33.8	24.00	3.25	45.00	2.28	B
MKB.04HP:5000	50.000	31.00	15.00	13.20	10.20	36.5	38.0	25.00	4.00	40.00	3.40	B
MKB.05HP:3810	38.100	20.00	8.00	8.00	5.30	19.6	20.7	17.30	2.03	28.00	0.98	B
MKB.06HP:3810	38.100	20.00	18.00	10.50	5.10	39.0	40.3	22.00	4.00	60.00	2.59	B
MKB.07HP:5080	50.800	30.00	10.50	11.40	8.20	27.4	28.6	26.00	3.10	50.00	2.56	B
MKB.08HP:5000	50.000	30.00	10.50	11.40	8.20	27.4	28.6	26.00	3.10	50.00	2.23	B
MKB.09HP:6350	63.500	30.00	10.00	11.40	8.10	26.7	28.1	26.50	3.10	50.00	2.07	B
MKB.10HP:6350	63.500	40.00	10.00	11.40	8.10	26.7	28.1	26.50	3.10	50.00	2.27	B
MKB.11HP:6350	63.500	40.00	20.00	11.40	8.10	36.7	38.1	26.50	3.10	50.00	3.20	B
MKB.12HP:6350	63.500	40.00	15.00	11.40	8.20	35.6	37.0	26.50	4.00	35.00	3.90	B
MKB.13HP:1000	10.000	30.00	10.50	11.40	8.20	27.4	28.6	26.00	3.10	50.00	1.56	B



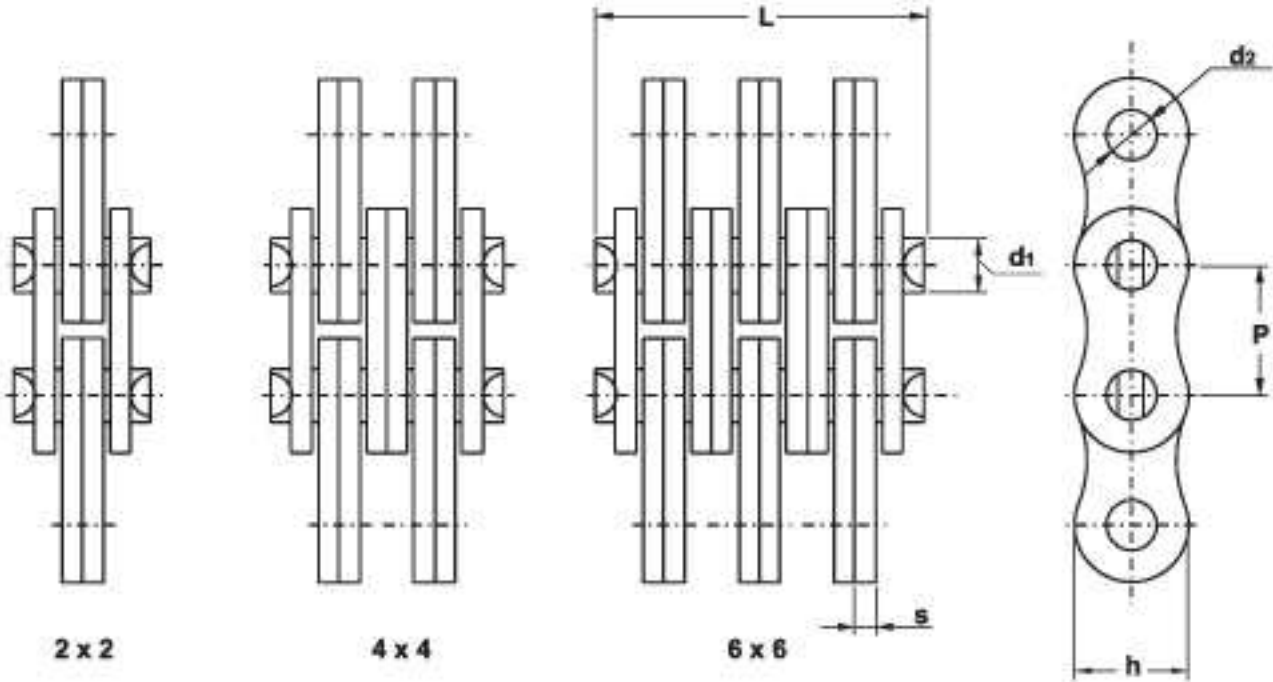
MAKELSAN NO.	P mm	b ₁ mm	d ₁ mm	d ₂ mm	L ₁ mm	L ₃ mm
MK.08EP1270	12.7	7.75	4.45	8.51	11.0	15
MK.10EP1587	15.875	9.65	5.08	10.36	13.2	16
MK.12EP1905	19.05	11.68	5.72	12.07	16.1	19
MK.16EP2540	25.4	17.02	8.27	15.88	21.0	18
MK.20EP3175	31.75	19.56	8.27	15.88	21.0	18

FORM - A

FORM - C


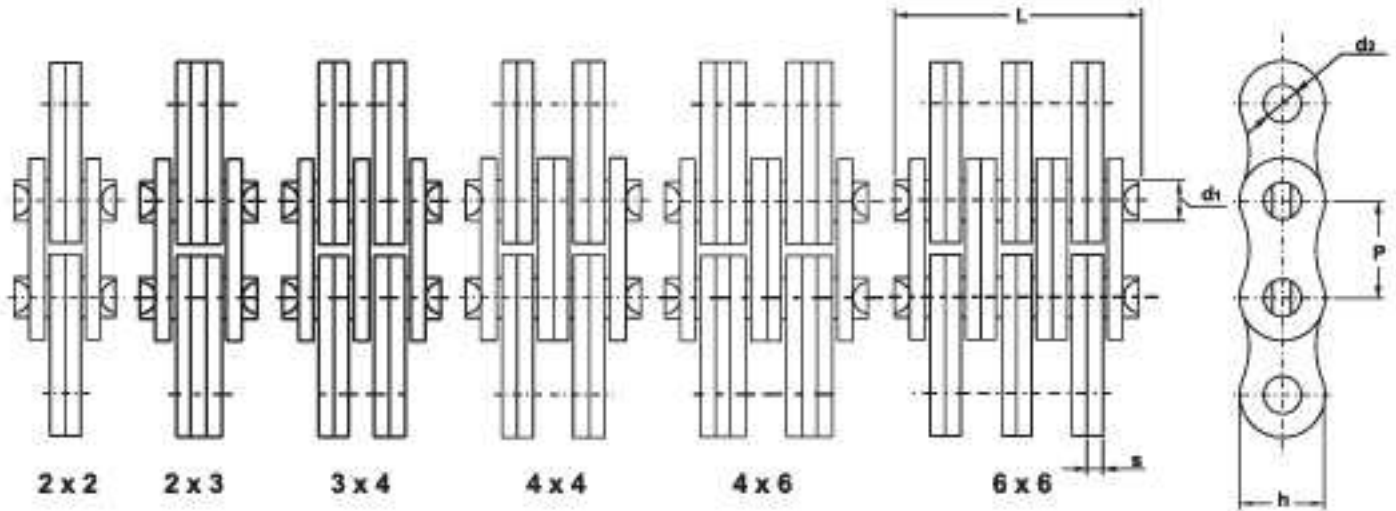
MAKELSAN NO.	P mm	A mm	B max	B min	C mm	D mm	E mm	G mm	H mm
MK.8189.KS32	29.21	61.0	44.4	41.3	14.6	14.0	5.3	24.4	8.6
MK.8189.KS42	34.93	74.9	57.2	50.8	17.5	17.8	8.3	31.8	14.0
MK.8189.KS51	38.10	76.0	52.0	51.0	19.1	23.0	8.5	26.2	14.8
MK.8189.KS52	38.10	77.5	60.3	57.2	19.1	19.0	8.3	35.1	11.4
MK.8189.KS55	41.40	74.9	57.2	50.8	20.7	20.3	8.3	35.1	11.4
MK.8189.KS62	41.91	95.3	73.0	60.3	21.0	21.0	8.3	38.1	11.4
MK.8189.KS77	58.34	101.6	79.4	73.0	29.2	25.4	8.3	40.1	20.8
MK.8189.KS88	66.27	119.4	98.4	95.3	33.1	31.8	8.3	46.5	20.8



MAKELSAN NO.	ISO No	P mm	DİZİM ŞEKLİ	s mm	h mm	d1 mm	L mm	Q N	q kg/m
MK.00LL.0822	LL.0822	12.70	2X2	1.69	10.70	4.45	8.9	21000	0.41
MK.00LL.0844	LL.0844	12.70	4X4	1.69	10.70	4.45	15.9	42000	0.81
MK.00LL.0866	LL.0866	12.70	6X6	1.69	10.70	4.45	22.8	64000	1.20
MK.00LL.1022	LL.1022	15.875	2X2	1.55	12.80	5.08	9.0	22700	0.44
MK.00LL.1044	LL.1044	15.875	4X4	1.55	12.80	5.08	15.6	45400	0.8
MK.00LL.1066	LL.1066	15.875	6X6	1.55	12.80	5.08	22.2	68100	1.30
MK.00LL.1222	LL.1222	19.05	2X2	1.81	14.80	5.72	10.0	32000	0.65
MK.00LL.1244	LL.1244	19.05	4X4	1.81	14.80	5.72	17.8	64000	1.29
MK.00LL.1266	LL.1266	19.05	6X6	1.81	14.80	5.72	24.8	96000	1.90
MK.00LL.1622	LL.1622	25.40	2X2	3.06	20.20	8.27	15.5	72000	1.32
MK.00LL.1644	LL.1644	25.40	4X4	3.06	20.20	8.27	28.1	114000	2.60
MK.00LL.1666	LL.1666	25.40	6X6	3.06	20.20	8.27	40.5	216000	3.87
MK.00LL.2022	LL.2022	31.75	2X2	3.56	25.30	10.17	18.9	95000	1.802
MK.00LL.2044	LL.2044	31.75	4X4	3.56	25.30	10.17	33.4	190000	3.50
MK.00LL.2066	LL.2066	31.75	6X6	3.56	25.30	10.17	47.9	285000	5.30
MK.00LL.2422	LL.2422	38.1	2X2	5.08	30.70	14.63	25.4	170000	3.50
MK.00LL.2444	LL.2444	38.1	4X4	5.08	30.70	14.63	46.8	340000	6.90
MK.00LL.2466	LL.2466	38.1	6X6	5.08	30.70	14.63	68.2	510000	10.20
MK.00LL.2822	LL.2822	44.45	2X2	6.55	33.50	15.92	31.7	235000	6.00
MK.00LL.2844	LL.2844	44.45	4X4	6.55	33.50	15.92	58.0	470000	1200
MK.00LL.2866	LL.2866	44.45	6X6	6.55	33.50	15.92	84.2	705000	1700
MK.00LL.3222	LL.3222	50.8	2X2	6.20	42.30	17.83	30.7	270000	6.50
MK.00LL.3244	LL.3244	50.8	4X4	6.20	42.30	17.83	30.7	270000	6.50
MK.00LL.3266	LL.3266	50.8	6X6	6.20	42.30	17.83	80.5	810000	1900



MAKELSAN NO.	ISO No	P mm	DİZİM ŞEKLİ	s mm	h mm	d1 mm	d2 mm	L mm	Q N	q kg/m
MK.00AL.0422	AL 422	12.70	2X2	1.55	9.7	3.97	4.02	8.0	17000	0.40
MK.00AL.0444	AL 444	12.70	4X4	1.55	9.7	3.97	4.02	14.8	34000	0.70
MK.00AL.0466	AL 466	12.70	6X6	1.55	9.7	3.97	4.02	21.1	51000	1.10
MK.00AL.0544	AL 522	15.875	2X2	2.04	12.8	5.08	5.13	18.8	58000	1.10
MK.00AL.0566	AL 544	15.875	4X4	2.04	12.8	5.08	5.13	27.2	90000	1.70
MK.00AL.0588	AL 566	15.875	6X6	2.04	12.8	5.08	5.13	36.0	116000	2.20
MK.00AL.0622	AL 622	19.05	2X2	2.45	15.3	5.95	6.00	12.6	40000	0.75
MK.00AL.0644	AL 644	19.05	4X4	2.45	15.3	5.95	6.00	22.4	80000	1.66
MK.00AL.066	AL 666	19.05	6X6	2.45	15.3	5.95	6.00	32.5	120000	2.48
MK.00AL.0822	AL 822	25.40	2X2	3.06	20.2	7.93	7.97	15.6	73000	1.45
MK.00AL.0844	AL 844	25.40	4X4	3.06	20.2	7.93	7.97	28.2	145000	2.99
MK.00AL.0866	AL 866	25.40	6X6	3.06	20.2	7.93	7.97	40.8	200000	4.37
MK.00AL.1022	AL 1022	31.75	2X2	4.02	25.3	9.53	9.57	20.95	107000	2.52
MK.00AL.1044	AL 1044	31.75	4X4	4.02	25.3	9.53	9.57	36.6	200000	4.51
MK.00AL.1066	AL 1066	31.75	6X6	4.02	25.3	9.53	9.57	53.0	300000	6.73
MK.00AL.1222	AL 1222	38.10	2X2	4.86	30.7	11.10	11.14	24.45	146000	3.48
MK.00AL.1244	AL 1244	38.10	4X4	4.86	30.7	11.10	11.14	43.4	245000	6.74
MK.00AL.1266	AL 1266	38.10	6X6	4.86	30.7	11.10	11.14	65.3	368000	10.10
MK.00AL.1422	AL 1422	44.45	2X2	5.50	36.4	12.70	12.80	28.38	198000	4.79
MK.00AL.1444	AL 1444	44.45	4X4	5.50	36.4	12.70	12.80	51.3	380000	10.34
MK.00AL.1466	AL 1466	44.45	6X6	5.50	36.4	12.70	12.80	74.6	570000	15.16
MK.00AL.1622	AL 1622	50.80	2X2	6.50	41.6	14.20	14.30	31.95	257000	5.98
MK.00AL.1644	AL 1644	50.80	4X4	6.50	41.6	14.20	14.30	58.0	480000	12.98
MK.00AL.1666	AL 1666	50.80	6X6	6.50	41.6	14.20	14.30	84.5	720000	19.41



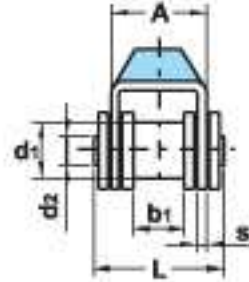
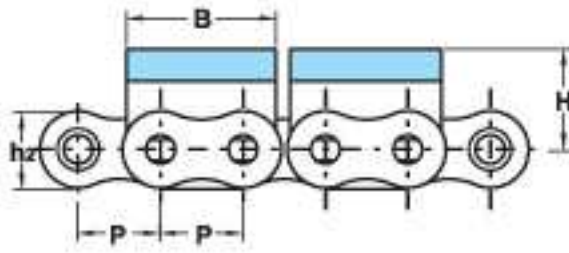
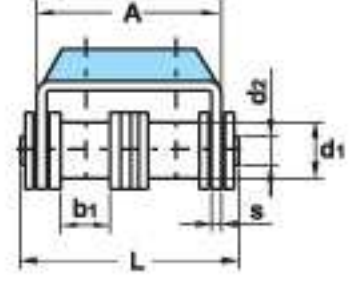
MAKELSAN NO.	ISO No	P mm	DİZİM ŞEKLİ	s mm	h mm	d ₁ mm	d ₂ mm	L mm	Q N	q kg/m
MK.00LH.0823	LH.0823	12.70	2x3	2.0	12.1	5.08	5.13	13.1	22200	0.75
MK.00LH.0834	LH.0834	12.70	3x4	2.0	12.1	5.08	5.13	17.4	34000	1.04
MK.00LH.0844	LH.0844	12.70	4x4	2.0	12.1	5.08	5.13	19.5	58000	1.20
MK.00LH.0846	LH.0846	12.70	4x6	2.0	12.1	5.08	5.13	23.2	58000	1.46
MK.00LH.0866	LH.0866	12.70	6x6	2.0	12.1	5.08	5.13	28.0	90000	1.74
MK.00LH.1023	LH.1023	15.875	2x3	2.5	15.1	5.96	6.00	14.9	40106	1.05
MK.00LH.1034	LH.1034	15.875	3x4	2.5	15.1	5.96	6.00	20.3	60000	1.47
MK.00LH.1044	LH.1044	15.875	4x4	2.5	15.1	5.96	6.00	22.4	78000	1.69
MK.00LH.1046	LH.1046	15.875	4x6	2.5	15.1	5.96	6.00	27.1	78000	2.07
MK.00LH.1066	LH.1066	15.875	6x6	2.5	15.1	5.96	6.00	32.5	120000	2.67
MK.00LH.1223	LH.1223	19.05	2x3	3.0	18.2	7.93	7.97	20.0	60000	1.84
MK.00LH.1234	LH.1234	19.05	3x4	3.0	18.2	7.93	7.97	26.3	101500	2.58
MK.00LH.1244	LH.1244	19.05	4x4	3.0	18.2	7.93	7.97	29.6	126000	2.95
MK.00LH.1246	LH.1246	19.05	4x6	3.0	18.2	7.93	7.97	36.5	126000	3.70
MK.00LH.1266	LH.1266	19.05	6x6	3.0	18.2	7.93	7.97	44.2	190000	4.30
MK.00LH.1622	LH.1622	25.40	2x2	4.0	23.2	9.53	9.57	20.2	93000	2.55
MK.00LH.1623	LH.1623	25.40	2x3	4.0	23.2	9.53	9.57	24.2	93000	2.55
MK.00LH.1634	LH.1634	25.40	3x4	4.0	23.2	9.53	9.57	32.6	138000	3.56
MK.00LH.1644	LH.1644	25.40	4x4	4.0	23.2	9.53	9.57	36.8	186000	4.10
MK.00LH.1646	LH.1646	25.40	4x6	4.0	23.2	9.53	9.57	44.1	186000	5.10
MK.00LH.1666	LH.1666	25.40	6x6	4.0	23.2	9.53	9.57	53.4	285000	6.20
MK.00LH.2022	LH.2022	31.75	2x2	5.0	29.6	11.11	11.14	24.0	118000	3.76
MK.00LH.2023	LH.2023	31.75	2x3	5.0	29.6	11.11	11.14	28.2	118000	4.25
MK.00LH.2034	LH.2034	31.75	3x4	5.0	29.6	11.11	11.14	38.9	205000	6.01
MK.00LH.2044	LH.2044	31.75	4x4	5.0	29.6	11.11	11.14	43.6	284000	6.8
MK.00LH.2046	LH.2046	31.75	4x6	5.0	29.6	11.11	11.14	53.5	284000	8.4
MK.00LH.2066	LH.2066	31.75	6x6	5.0	29.6	11.11	11.14	63.4	417000	10.20



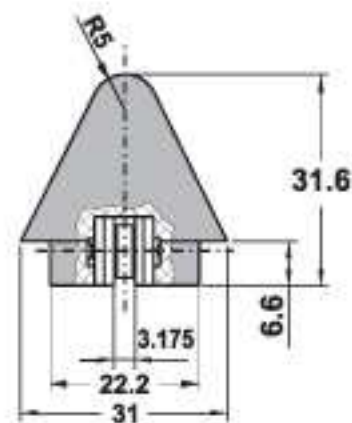
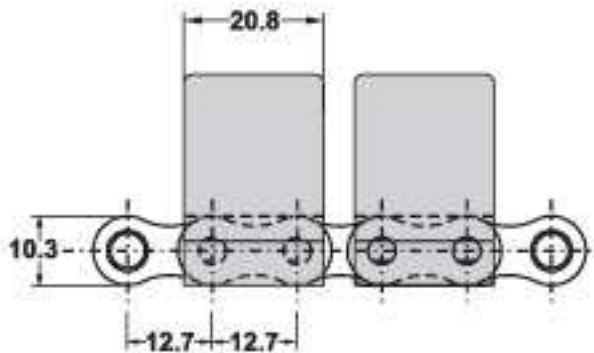
Numune ve Teknik Resim esaslı her türlü özel zincir üretimi yapılır.
Production based on a given sample or a technical drawing.



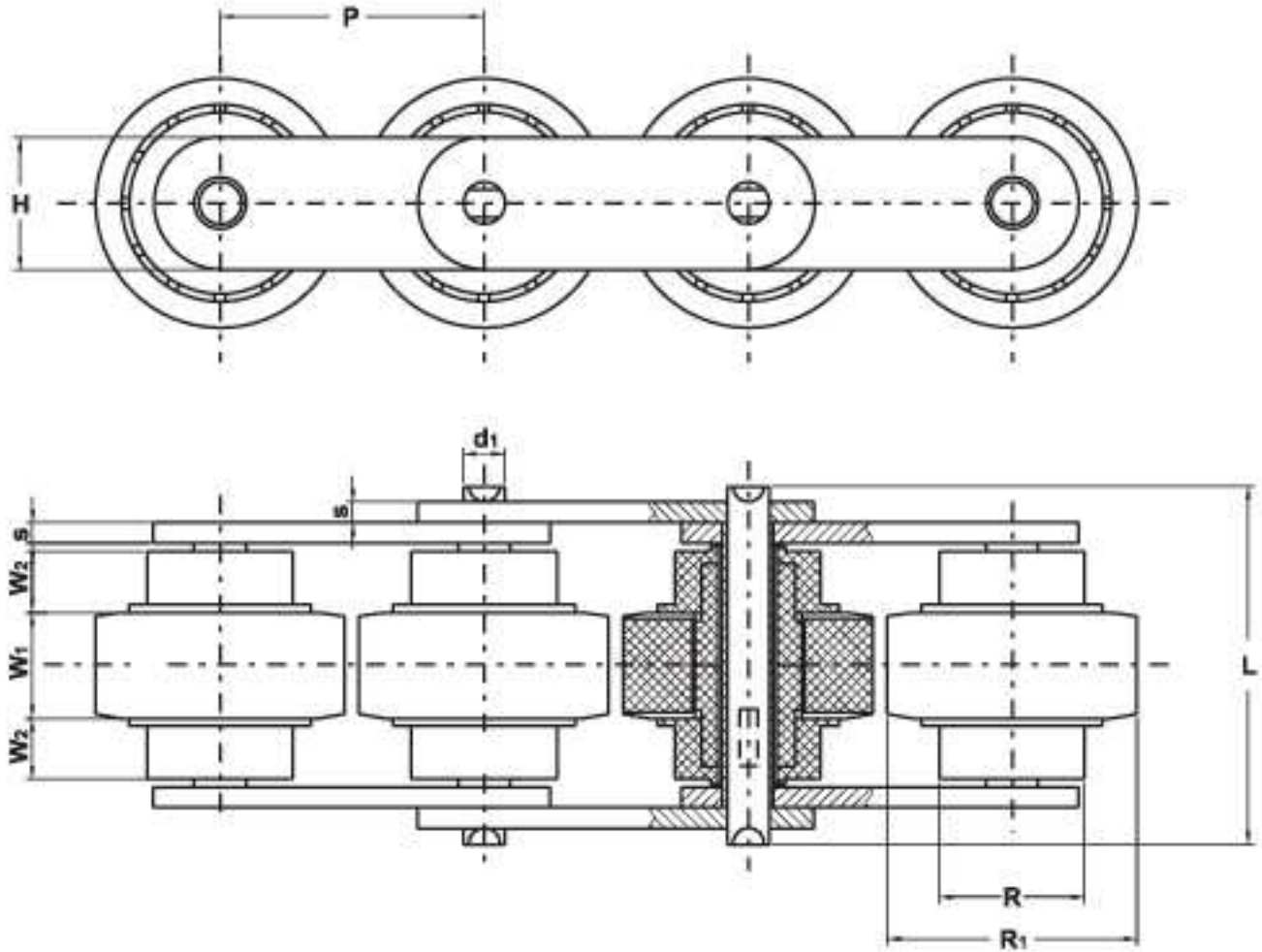



K1

K2

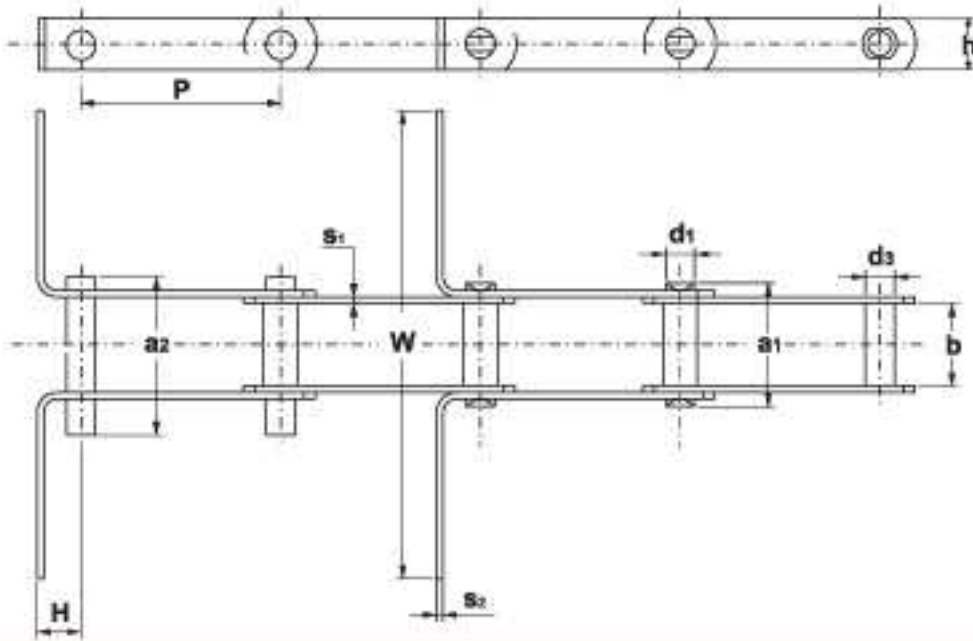
MAKELSAN NO.	P mm	b1 mm	d1 mm	d2 mm	h2 mm	L mm	A mm	B mm	H mm	S mm	Q kN	q kg/mt
MK.008B.K1	12.70	7.75	8.51	4.45	11.8	20.0	14.6	24.2	12.3	1.60	18.04	1.19
MK.008B.K2	12.70	7.75	8.51	4.45	11.8	34.3	28.4	24.2	12.3	1.50	32.0	2.07
MK.010B.K1	15.875	9.65	10.16	5.08	14.7	23.2	16.8	30.0	17.0	1.6	19.0	1.62
MK.010B.K2	15.875	9.65	10.16	5.08	14.7	39.7	33.3	30.0	17.0	1.5	44.5	2.56
MK.012B.K1	19.05	11.68	12.07	5.72	16.0	25.7	19.6	36.0	16.0	1.85	29.0	2.01
MK.012B.K2	19.05	11.68	12.07	5.72	16.0	45.3	39.1	36.0	21.0	1.85	57.8	3.21
MK.016B.K1	25.40	15.75	15.88	7.92	24.0	37.2	27.5	46.0	20.0	2.42	42.0	3.97
MK.016B.K1	25.40	17.02	15.88	8.28	21.0	39.7	29.05	49.6	21.4	1.60	58.0	3.83
MK.020B.K1	31.75	19.56	19.05	10.19	26.4	48.0	36.0	57.0	27.0	3.50	85.0	6.19
MK.024B.K1	38.10	25.40	25.40	14.63	33.2	61.6	47.0	72.6	34.0	4.50	160.0	11.25

**PLASTİK KAPLAMALI ZİNCİRLER
WITH PLASTIC ATTACHMENTS CHAINS**


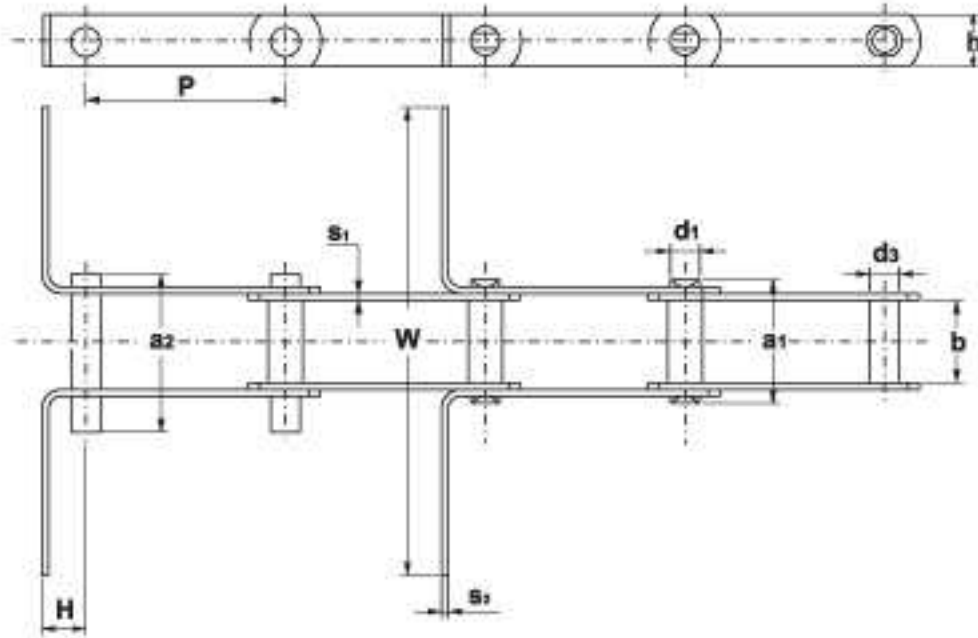
Numune ve Teknik Resim esaslı her türlü özel zincir üretimi yapılır.
Production based on a given sample or a technical drawing.



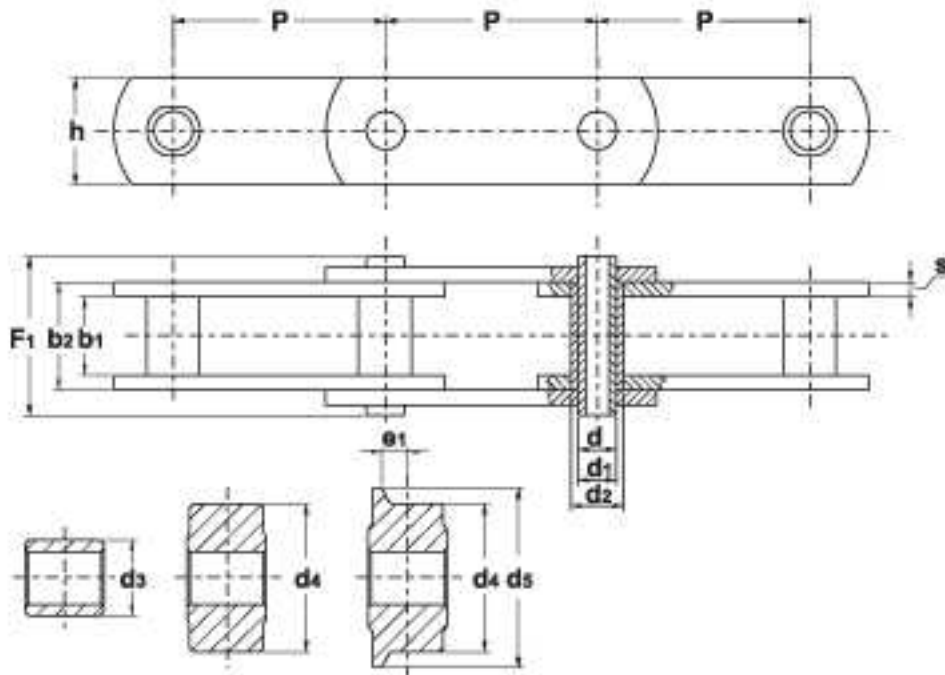
MAKELSAN NO.	P mm	R mm	R ₁ mm	W ₁ mm	W ₂ mm	S mm	H mm	D mm	L mm
MK.1905.183PM	19.05	11.91	18.3	8.0	11.0	1.5	9.0	3.59	25.30
MK.2540.246PM	25.40	15.88	24.6	10.3	13.2	1.6	12.0	3.97	32.8
MK.3175.306PM	31.75	19.05	30.6	13.0	16.1	1.9	15.0	5.09	40.80
MK.3810.366PM	38.10	22.23	36.6	15.5	21.0	1.8	17.2	5.96	50.9
MK.5080.480PM	50.80	28.58	48.0	20.0	21.0	1.8	23.0	7.94	73.8



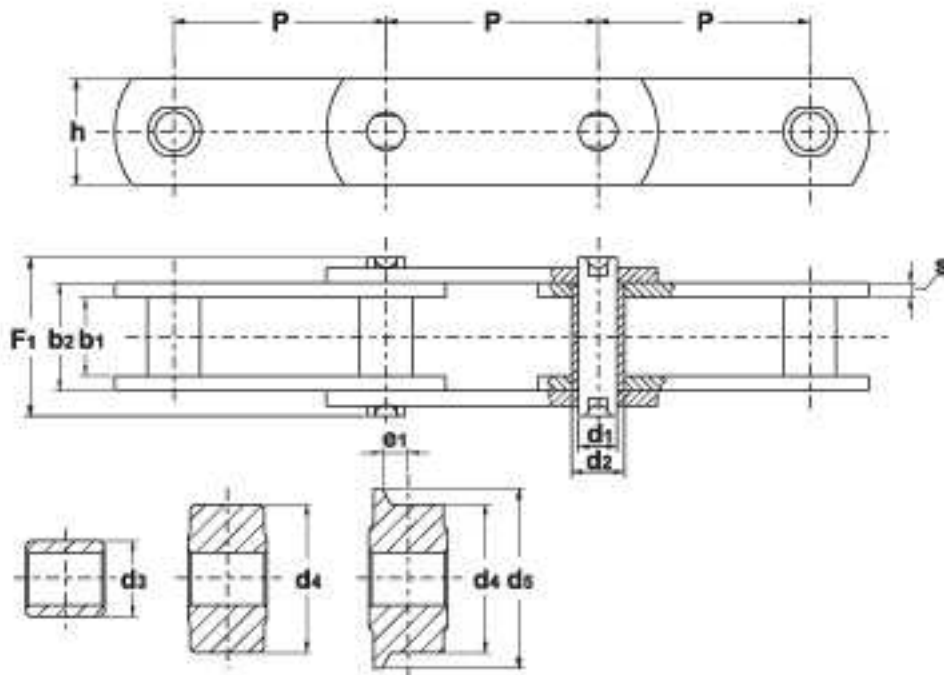
MAKELSAN NO.	ISO NO	P mm	b mm max	d1 mm max	d3 mm max	h mm	s mm	W		a1 mm	a2 mm	Q N
MK.FV040.0063	FV 40	63	18	10	15	26	3	100	150	37	44	40.000
MK.FV040.0080		80										
MK.FV040.0100		100										
MK.FV040.0125		125										
MK.FV040.1250		150										
MK.FV040.0063	FV 63	63	22	12	18	30	4	110	160	46	55	63.000
MK.FV040.0080		80										
MK.FV040.0100		100										
MK.FV040.0125		125										
MK.FV040.0150		150										
MK.FV040.0160	FV 90	160	25	14	20	35	5	130	200	53	62	90.000
MK.FV040.0080		80										
MK.FV040.0100		100										
MK.FV040.0125		125										
MK.FV040.0150		150										
MK.FV040.0160	FV 112	160	30	16	22	40	6	150	220	63	72	112.000
MK.FV040.0175		175										
MK.FV040.0100		100										
MK.FV040.0125		125										
MK.FV040.0150		150										
MK.FV040.0150	FV 140	160	35	18	26	45	6	170	250	68	80	140.000
MK.FV040.0175		175										
MK.FV040.0200		200										
MK.FV040.0100		100										
MK.FV040.0125		125										
MK.FV040.0150	FV 180	150	45	20	30	50	8	180	270	86	100	180.000
MK.FV040.0160		160										
MK.FV040.0175		175										
MK.FV040.0200		200										
MK.FV040.0250		250										
MK.FV040.0125	FV 250	125	55	26	36	60	8	200	300	98	114	250.000
MK.FV040.0150		150										
MK.FV040.0160		160										
MK.FV040.0175		175										
MK.FV040.0200		200										
MK.FV040.0250		250										



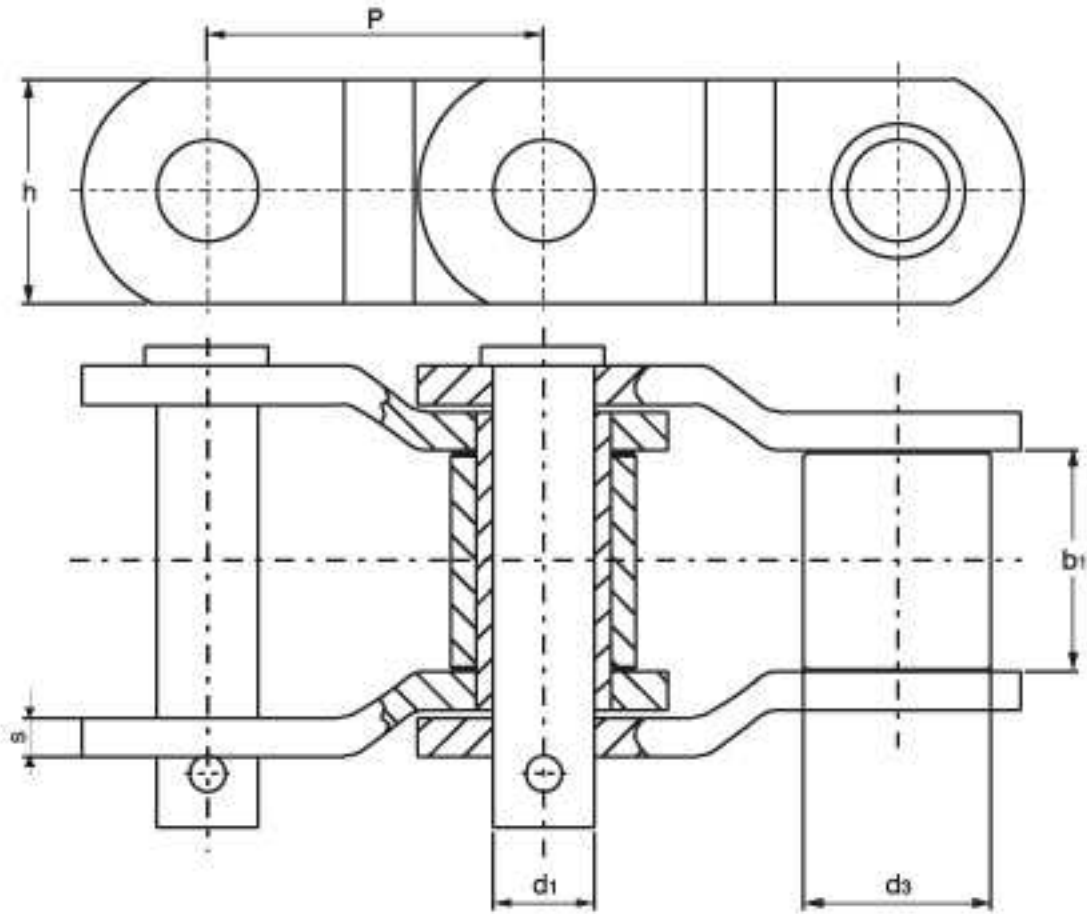
MAKELSAN NO.	ISO NO	P mm	b mm max	d1 mm max	d3 mm max	h mm	s mm	W		a1 mm	a2 mm	Q N
MK.M080.0080	M 80	80	28	12	18	35	5	140	220	62	86	80.000
MK.M080.0100		100										
MK.M080.0125		125										
MK.M080.0160		160										
MK.M080.0200		200										
MK.M112.0800	M 112	80	32	15	21	40	6	150	230	73	101	112.000
MK.M112.0100		100										
MK.M112.0125		125										
MK.M112.0160		160										
MK.M112.0200		200										
MK.M112.0250	M 160	250	37	18	25	50	7	170	250	85	117	160.000
MK.M160.0100		100										
MK.M160.0125		125										
MK.M160.0160		160										
MK.M160.0200		200										
MK.M160.0250	M 224	250	224	21	30	60	8	190	280	98	134	224.000
MK.M224.0125		125										
MK.M224.0160		160										
MK.M224.0200		200										
MK.M224.0250		250										
MK.M315.0160	M 315	160	315	30	36	70	10	210	300	112	154	315.000
MK.M315.0200		200										
MK.M315.0250		250										
MK.M315.0315		315										



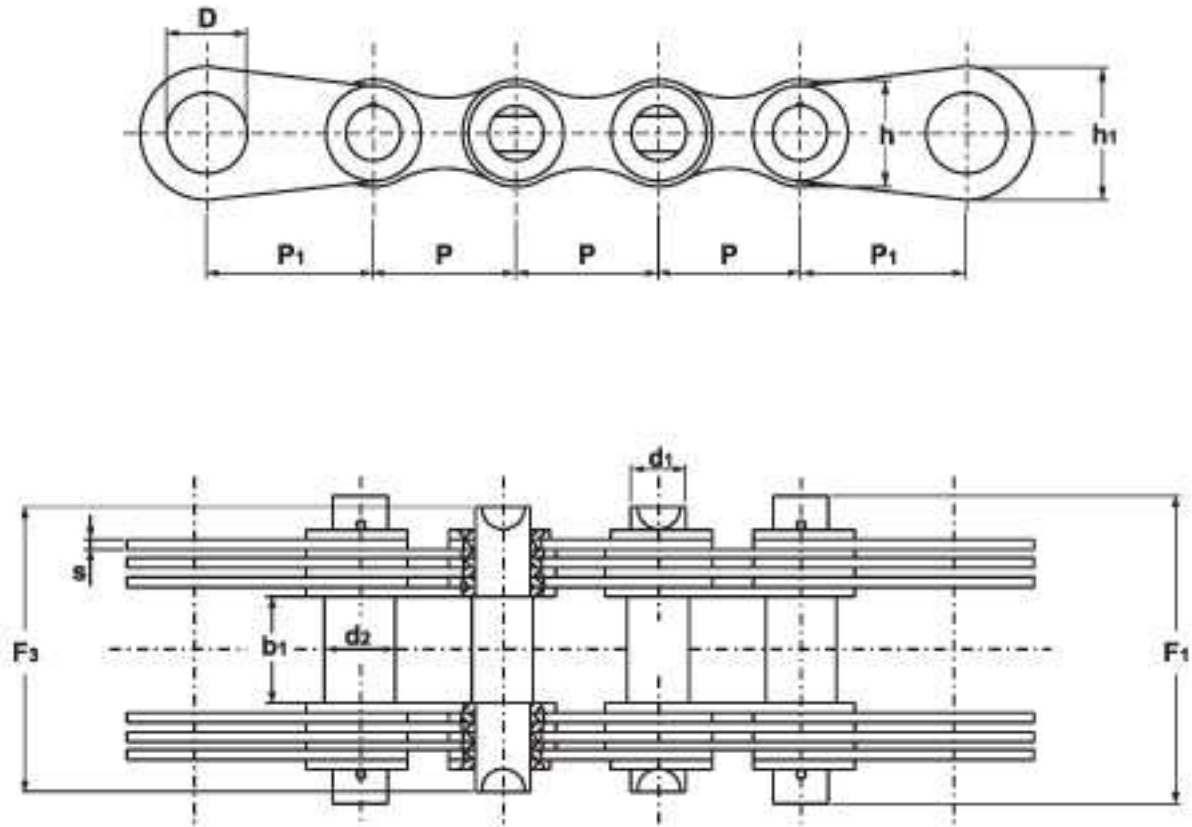
MAKELSAN NO.	ISO NO	P mm	b ₁ mm min	b ₂ mm max.	d ₁ mm	d ₂ mm O	d ₃ mm A	d ₄ mm B	d ₄ /d ₅ mm D	e ₁ mm	F ₁ mm	F ₃ mm	h mm	s mm	f cm ²	F _B N min.
MK.MC28.0100	MC 28	100	37	52	18	25	36	70	70/85	8.5	73.3	88.3	50	7	9.36	160000
		125														
		160														
		200														
		250														
		315														
		400														
MK.MC56.0125	MC 56	500														
		125	43	60	21	30	42	85	85/100	10	86.3	99.3	60	8	12.6	224000
		160														
		200														
		250														
		315														
		400														
MK.MC112.0160	MC 112	500														
		630														
		160	48	70	25	36	50	100	100/120	10.5	100.3	120.3	70	10	17.5	315000
		200														
		250														
		315														
		400														
MK.MC224.0200	MC 224	500														
		630														
		800														
		200	56	82	30	42	60	120	120/140	11.5	117.3	141.3	80	12	24.6	450000
		250														
		315														
		400														



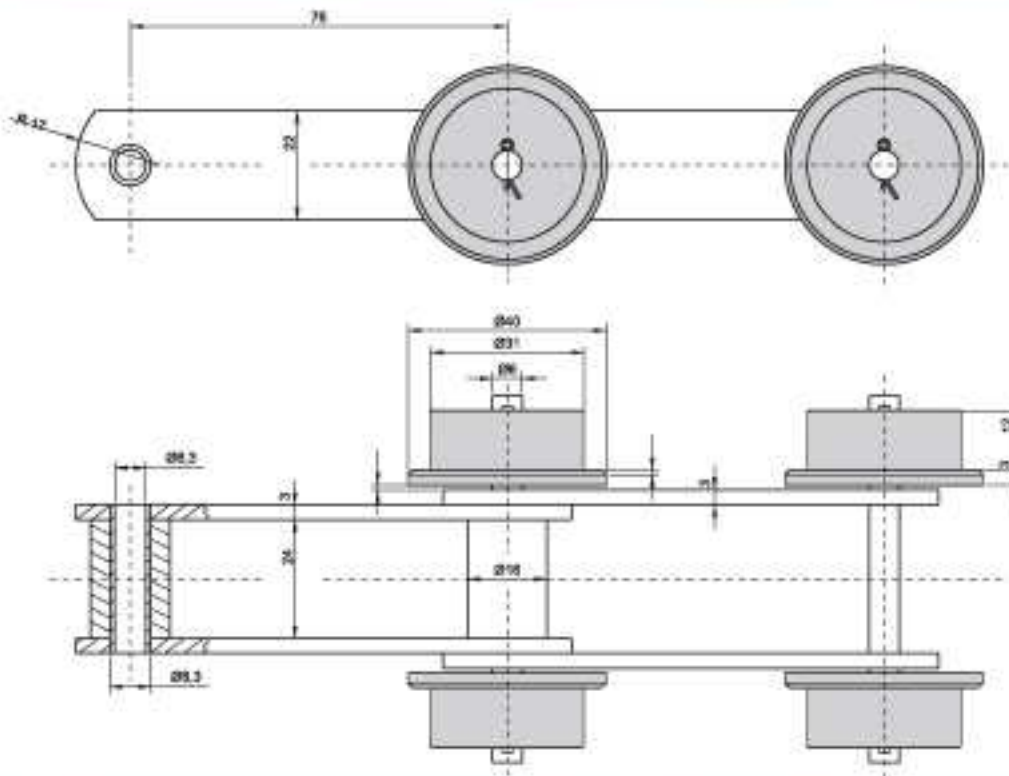
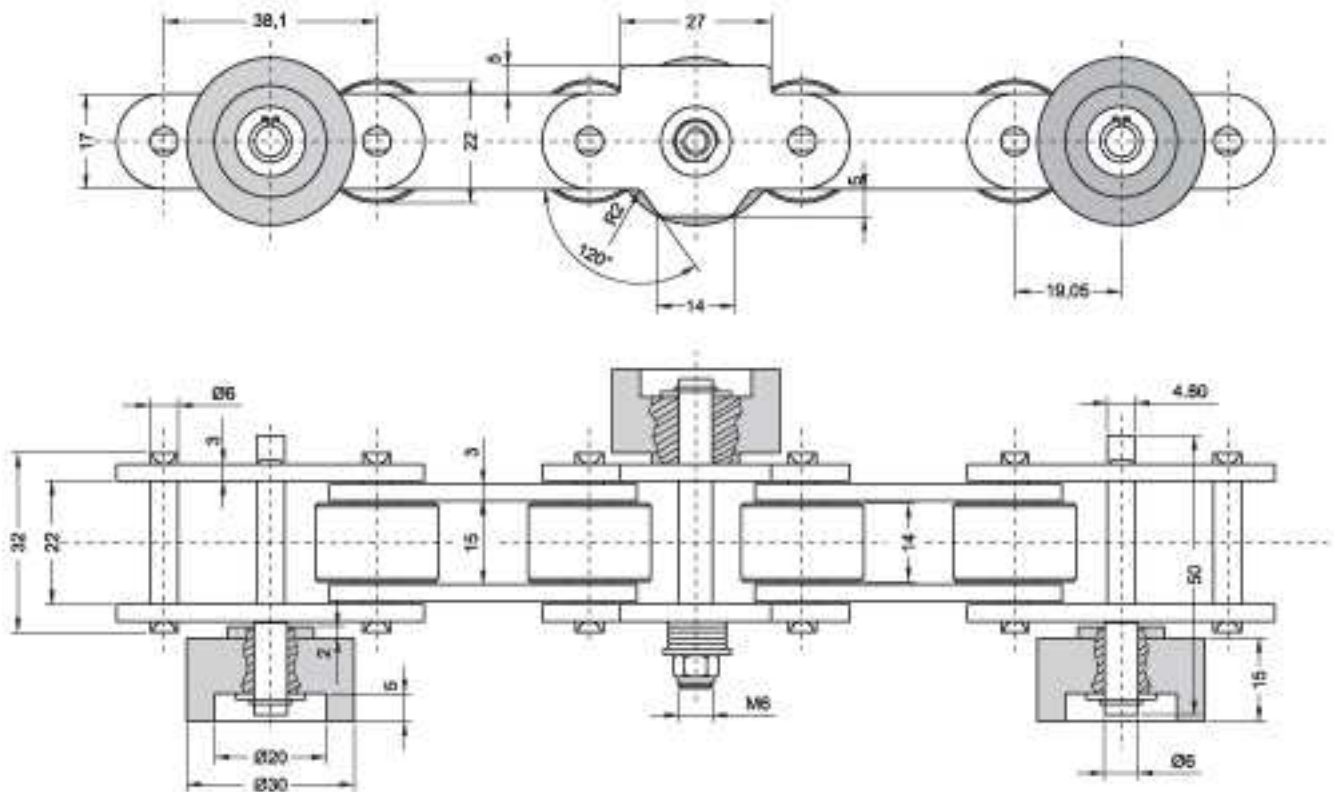
MAKELSAN NO.	ISO NO	P mm	b1 mm min	b2 mm max.	d1 mm	d2 mm	d3 mm A	d4 mm B	d4/d5 mm D	e1 mm	F1 mm	F2 mm	h mm	s mm	f cm ²	Fa N min.
MK.M150.0100	M150	100	37	52	18	25	35	70	70/85	8.5	73.3	88.3	50	7	9.36	150000
		125														
		160														
		200														
		250														
		315														
MK.M224.0125	M224	125	43	60	21	30	42	85	85/100	10	86.3	99.3	60	8	12.6	224000
		160														
		200														
		250														
		315														
		400														
MK.M315.0160	M315	160	48	70	25	38	50	100	100/120	10.5	100.3	120.3	70	10	17.5	315000
		200														
		250														
		315														
		400														
		500														
MK.M450.0200	M450	200	56	82	30	42	60	120	120/140	11.5	117.3	141.3	80	12	24.6	450000
		250														
		315														
		400														
		500														
		630														
MK.M630.0250	M630	250	66	96	38	50	70	140	140/170	14.5	136.3	159.3	100	14	34.56	630000
		315														
		400														
		500														
		630														
		800														
MK.M900.0250	M900	250	78	112	44	60	85	170	170/210	17	157.3	179.3	120	16	49.28	900000
		315														
		400														
		500														
		630														
		800														

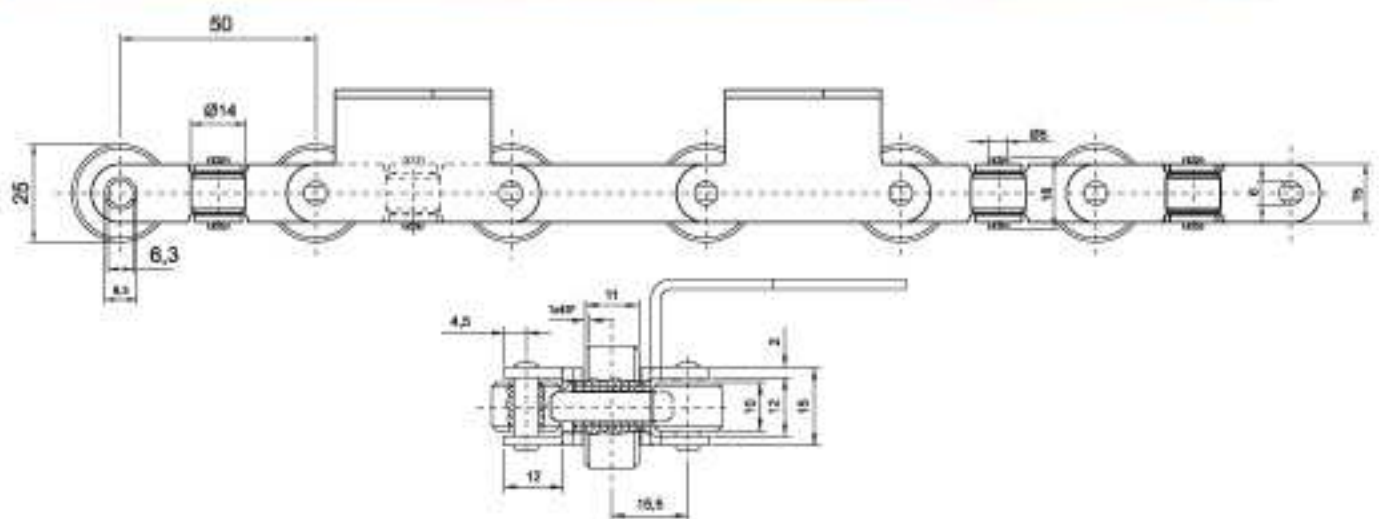
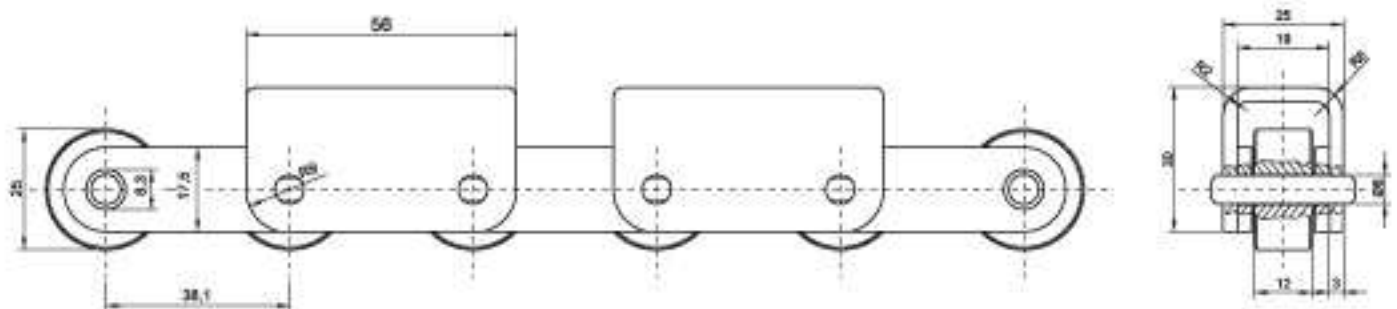
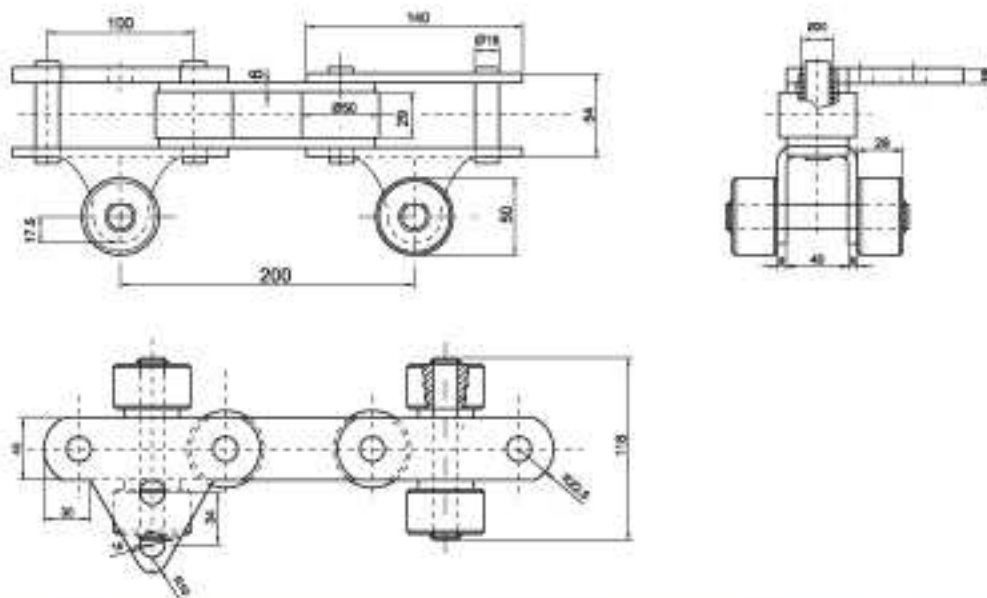


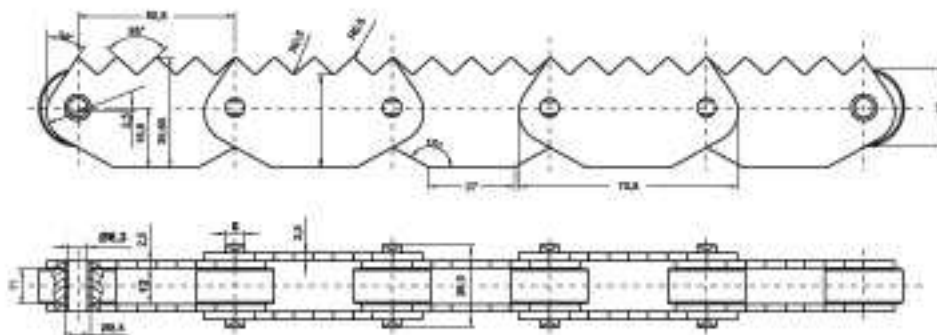
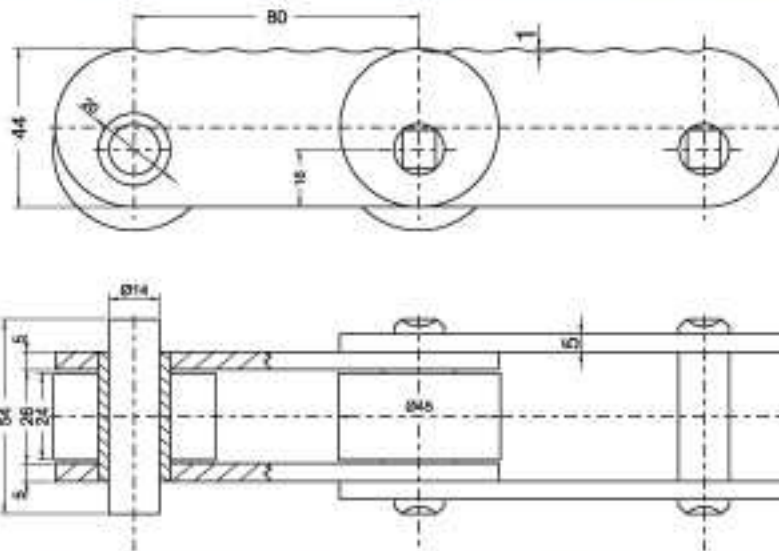
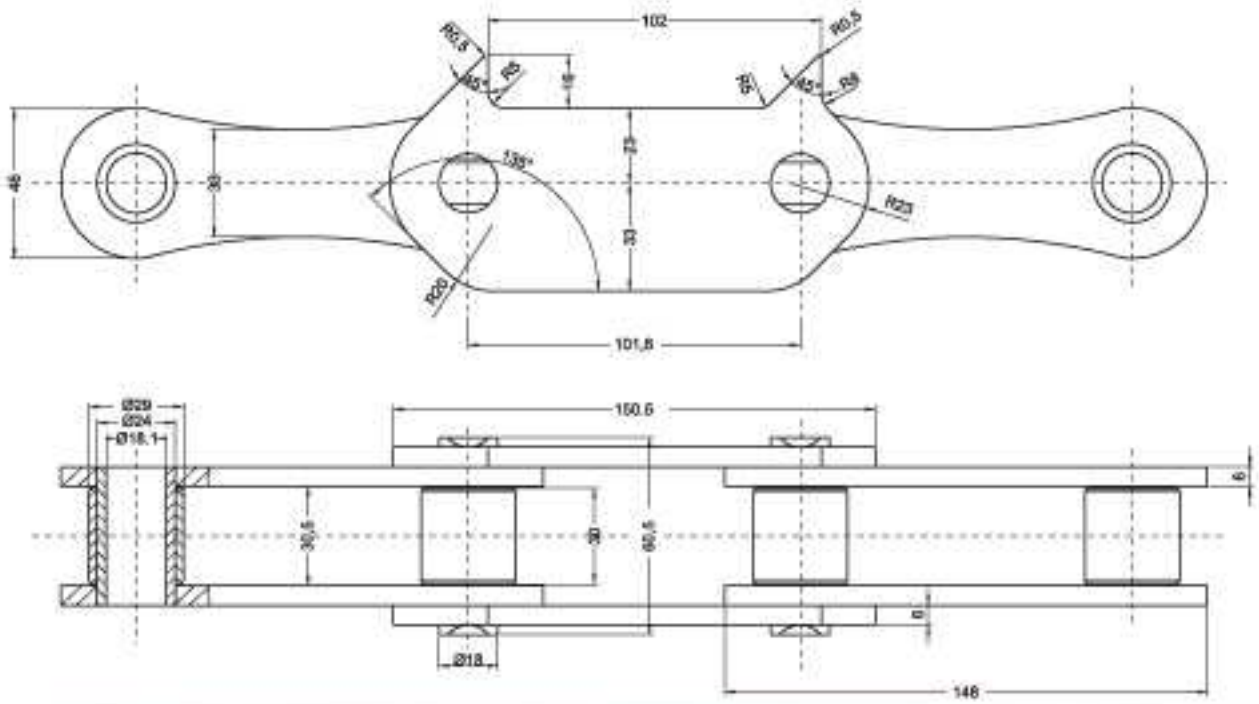
MAKELSAN NO.	P mm	b ₁ min.	b ₃ min.	d ₁ mm	d ₃ mm	h mm	s mm	Q N	q kg/m
MK..8182.3175	31.75	19.05	27.95	9.52	19.05	30	4	109.000	4.35
MK..8182.0508	50.8	31.75	48.75	11.10	22.22	36	5	154.000	5.65
MK..8182.0635	63.5	38.1	54.51	12.70	25.40	42	5.5	208.000	7.51
MK..8182.0508	50.8	31.75	45.75	14.28	28.57	48	6.5	263.000	9.2
MK..8182.0508	50.8	31.75	48.75	15.30	28.57	42	8	295.000	10.4
MK..8182.0635	63.5	38.1	54.51	15.90	31.75	47	8	270.000	13
MK..8182.6627	66.27	38.57	51.57	19.05	38.10	55	9	500.000	17.00
MK..8182.0762	76.2	33.3	52.3	19.05	38.10	55	9	500.000	17
MK..8182.0779	77.9	39.6	59.13	16.00	38.10	60	10	400.000	19
MK..8182.0781	78.1	38.1	55.4	16.00	31.75	40	8	320.000	10
MK..8182.0781	78.1	38.1	55.1	16.00	31.75	40	8	320.000	11.6
MK..8182.0781	78.1	38.1	57.1	16.50	31.75	42	9	365.000	13.2
MK..8182.7937	79.37	41.27	60.27	20.32	41.27	55	9	500.000	16.4
MK..8182.0889	88.9	38.1	65.1	22.00	41.27	55	13	640.000	23.5
MK..8182.0889	88.9	38.1	64.14	22.25	44.45	60	13	600.000	25.5
MK..8182.1032	103.2	49.2	76.8	22	44.45	55	13	620.000	22
MK..8182.1034	103.45	49.3	78.41	23.85	45.24	60	15	700.000	28
MK..8182.1143	114.3	52.3	81.58	27.97	57.15	75	15	860.000	38.5
MK..8182.0127	127	69.8	102.5	31.78	63.6	90	17	1.100.000	52
MK..8182.1524	152.4	76.2	115.21	38.13	76.2	100	20	1.600.000	70
MK..8182.1778	177.8	82.6	127.91	44.48	86.9	130	22	2.100.000	95

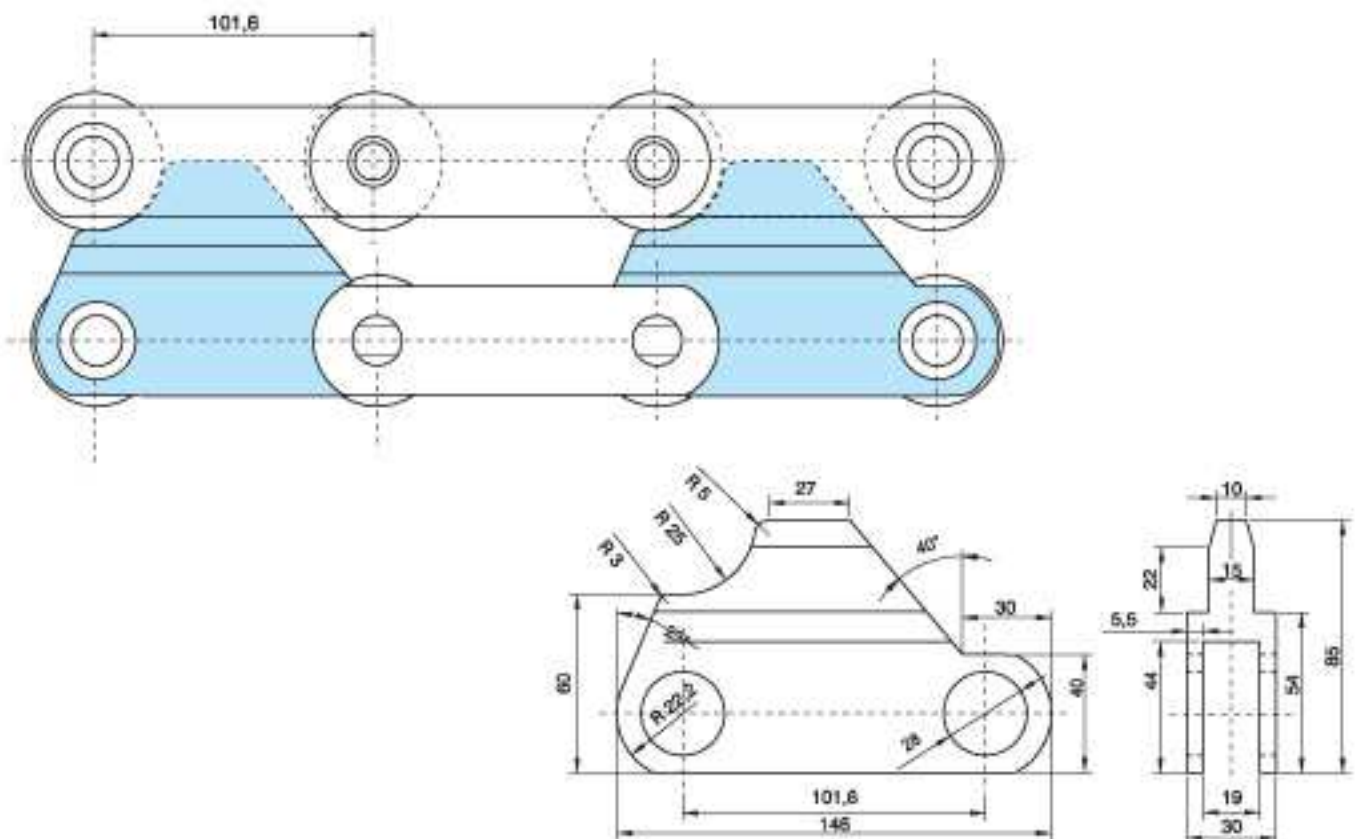
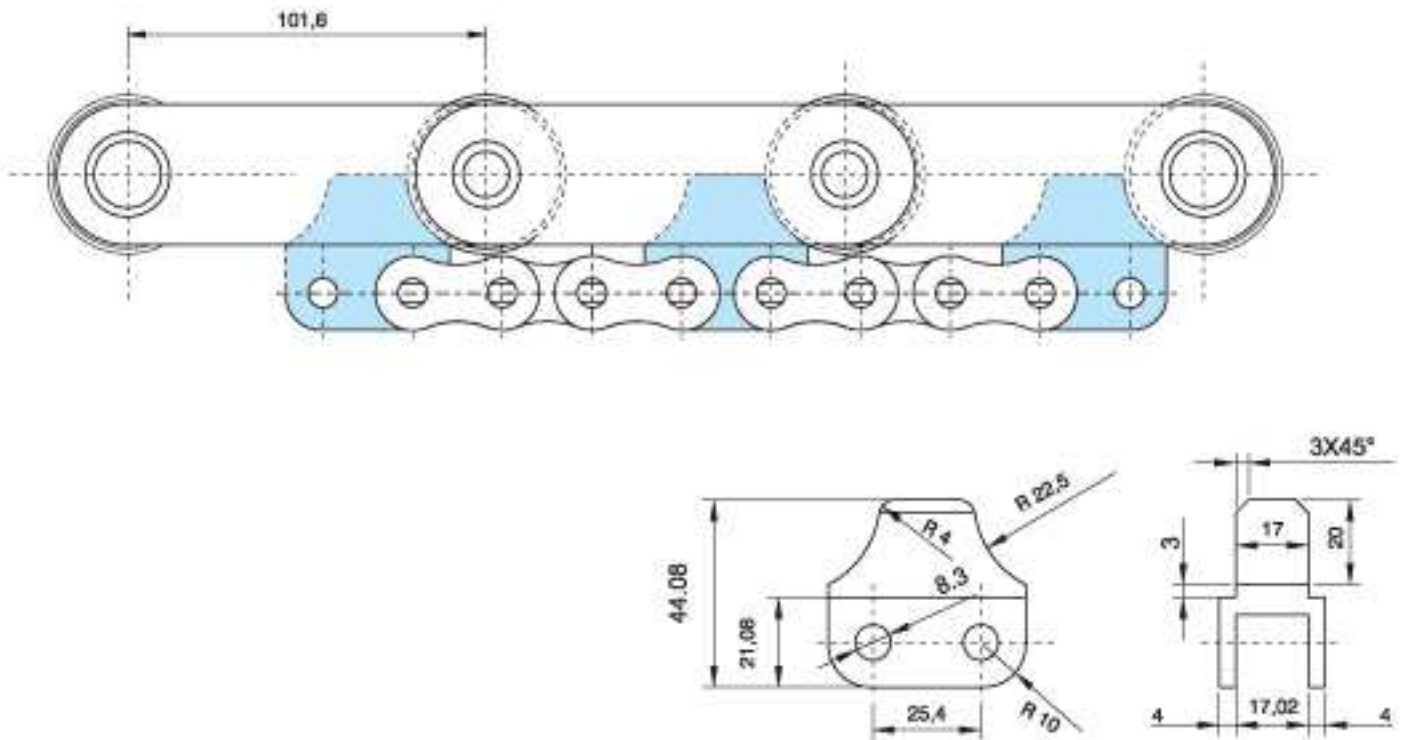


MAKELSAN NO.	P mm	P ₁ mm	b ₁ mm	d ₂ mm	d ₁ mm	D mm	F ₃ min	F ₁ min	h mm	h ₁ mm	s mm	f cm ²	Q N	q kg/m
MK.8150.0015	15	20	12	5	4	9	25	27	12	18	2	0.16	5000	0.7
MK.8150.0020	20	25	15	8	6	10	28	33	15	20	2	0.24	12500	1.1
MK.8150.0025	25	30	18	10	8	12	36	42	18	25	3	0.48	25000	2.8
MK.8150.0030	30	40	20	11	9	14	51	58	20	30	3	1.08	40000	3.4
MK.8150.0035	35	45	22	12	10	16	53	61	26	35	3	1.20	60000	4.5
MK.8150.0040	40	50	25	14	12	18	58	66	30	40	3	1.44	80000	4.7
MK.8150.0045	45	55	30	17	14	22	63	70	35	45	3	1.68	100000	7.0
MK.8150.0050	50	60	35	22	18	26	90	97	38	50	4.5	3.24	150000	11.0
MK.8150.0050	55	65	40	24	21	32	108	115	40	55	6	5.04	200000	16.0
MK.8150.0055	60	70	45	26	23	36	114	120	45	60	6	5.52	250000	18.0
MK.8150.0060	70	85	50	32	28	40	148	157	55	70	6	10.08	375000	34.0
MK.8150.0070	80	100	60	36	32	50	159	171	60	85	6	11.52	500000	39.0
MK.8150.0080	90	120	70	40	36	60	184	200	70	100	7	15.12	750000	53.0
MK.8150.0090	100	140	80	45	40	70	224	234	80	120	7	22.95	1000000	77.0
MK.8150.0100	110	160	90	50	45	80	236	251	90	140	7	25.28	1250000	90.0
MK.8150.0120	120	180	100	55	50	90	262	277	100	160	8	32.00	1500000	112.0



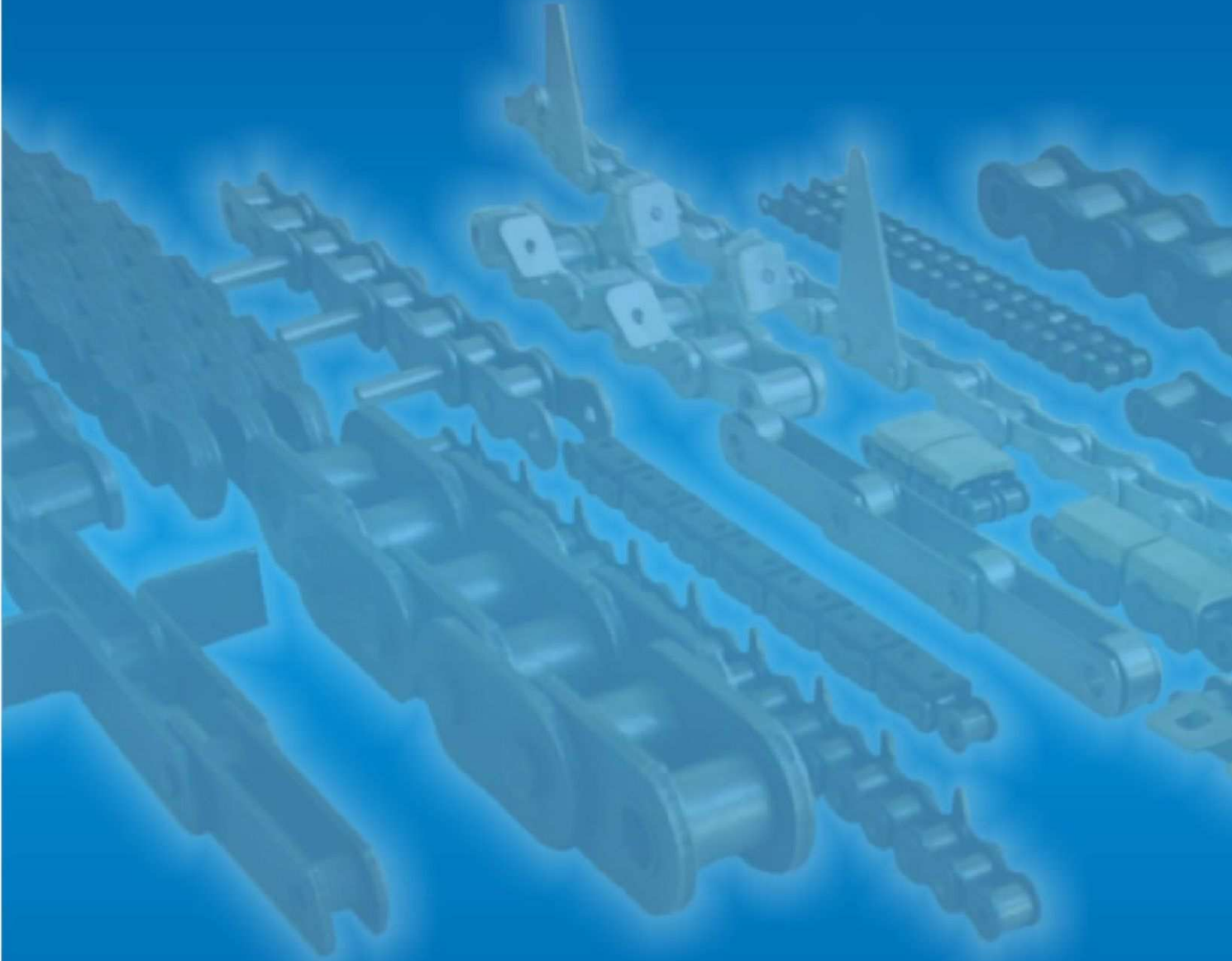






Zincir Hatvelerine Göre Dişlilerin Yaklaşık Dışüstü Çapları CETVEL

ZİNCİR HATVELERİ														
Diş Adedi	8.00	3/8 6.53	1/2 12.70	5/8 15.88	3/4 19.05	1 25.40	1 1/4 31.75	1.5 38.10	1 3/4 44.45	2 50.80	2.5 63.50	3 76.20	3.5 89.00	4 101.60
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
9	28.7	33.5	44.5	56.4	66.1	90.9	114.8	133.9	158.8	186.0	227.9	271.8	320.8	363.7
10	30.7	35.8	47.8	60.5	72.9	97.6	123.2	143.8	170.5	199.2	244.4	291.6	343.9	389.9
11	32.8	38.8	51.3	64.8	78.0	104.4	131.9	154.0	182.4	212.9	261.4	312.2	367.8	417.3
12	35.1	41.2	54.9	69.4	83.3	111.5	140.5	164.6	194.8	226.8	279.2	333.3	392.4	445.8
13	38.4	45.0	60.0	75.5	91.0	121.4	152.9	180.1	212.4	246.2	304.1	363.5	427.2	485.7
14	40.7	47.8	63.8	80.3	96.5	129.1	162.3	191.3	225.3	261.1	322.6	385.8	453.4	515.6
15	43.0	50.6	67.6	84.9	102.1	136.4	171.2	202.7	236.8	276.4	341.6	408.7	479.8	545.9
16	45.5	53.6	71.4	89.7	108.0	144.0	181.1	214.2	252.0	291.6	360.7	431.6	506.5	576.3
17	47.8	56.4	75.2	94.5	113.6	151.9	190.8	225.6	265.5	306.9	379.7	454.4	533.4	607.1
18	50.3	59.2	79.0	99.3	119.4	159.5	200.4	237.3	278.9	322.4	399.3	477.8	560.3	638.1
19	52.6	62.2	82.8	104.2	125.2	167.5	210.1	248.7	292.6	337.9	418.6	500.9	587.5	669.1
20	55.9	66.3	88.4	110.8	133.1	177.8	222.8	265.0	310.7	356.9	444.3	532.4	622.8	710.5
21	58.4	69.1	92.2	115.8	139.2	185.7	232.4	276.8	324.4	372.6	464.1	558.0	650.5	742.0
22	61.0	72.2	96.3	120.7	145.1	193.6	242.3	288.6	338.4	388.6	483.8	587.7	678.2	773.5
23	63.5	75.2	100.1	125.6	150.9	201.4	252.2	300.3	352.1	404.4	503.7	603.3	705.9	805.2
24	65.8	78.3	104.2	130.6	157.0	209.3	262.2	312.2	366.0	420.2	523.0	627.1	733.6	837.0
25	68.4	81.0	108.2	135.7	162.8	217.4	272.1	324.1	380.0	436.2	543.3	651.0	761.5	868.7
26	70.9	84.1	112.0	140.5	168.9	225.3	282.0	336.1	393.7	451.9	563.1	674.9	789.2	900.5
27	73.4	86.9	115.8	145.6	174.8	233.2	292.1	347.8	407.7	468.4	583.2	698.8	817.4	932.5
28	76.0	89.9	119.9	150.4	180.9	241.3	302.0	359.7	421.7	484.1	603.3	722.7	845.3	964.2
29	78.5	93.0	124.0	155.5	186.7	249.2	312.2	371.6	435.6	500.1	623.1	746.5	873.3	996.2
30	81.0	96.0	127.8	160.6	192.8	257.3	322.1	383.8	448.8	516.1	643.2	770.4	901.2	1028.2
31	83.6	99.1	131.9	165.4	198.6	265.2	332.0	395.8	463.6	532.1	663.0	794.5	929.1	1060.2
32	86.1	101.9	135.9	170.5	204.7	273.3	342.2	407.7	477.6	548.1	683.0	818.4	957.1	1092.2
33	88.4	104.9	140.0	175.5	210.8	281.2	352.1	419.6	491.8	564.1	703.1	842.5	985.9	1124.2
34	91.0	108.0	143.8	180.4	216.7	289.3	362.0	431.8	505.7	580.2	723.2	866.4	1013.2	1156.2
35	93.5	111.0	147.9	185.4	222.8	297.2	372.1	443.8	519.7	596.2	743.2	890.5	1041.2	1188.2
36	96.0	114.1	151.9	190.5	228.9	305.3	382.0	455.8	533.7	612.2	763.0	914.7	1069.4	1220.2
37	98.6	116.9	156.0	195.6	234.7	313.2	392.2	467.9	547.7	628.4	783.1	938.8	1097.3	1252.5
38	101.1	119.9	160.0	200.4	240.8	321.3	402.1	479.9	561.9	644.4	803.2	962.7	1125.5	1284.5
39	103.7	123.0	163.8	205.5	246.9	329.2	412.3	491.8	575.9	660.4	823.2	986.8	1153.7	1316.5
40	106.2	126.0	167.9	210.6	252.8	337.3	422.4	503.7	589.8	676.9	843.5	1010.9	1181.9	1348.8
41	108.7	129.0	172.0	215.4	258.9	345.5	432.3	515.6	604.0	692.9	863.6	1035.1	1210.1	1381.0
42	111.3	132.1	175.8	220.5	264.9	353.3	442.5	527.8	618.0	708.9	883.7	1059.2	1238.3	1413.0
43	113.8	134.9	179.8	225.6	270.8	361.5	452.4	539.8	632.2	725.2	903.8	1083.3	1266.5	1445.3
44	116.4	138.0	183.9	230.7	276.9	369.6	462.6	552.0	646.2	741.2	923.8	1107.5	1294.4	1477.3
45	118.9	141.0	188.0	235.7	283.0	377.5	472.7	563.9	660.2	757.2	943.8	1131.6	1322.6	1509.5
46	121.4	144.0	192.0	240.6	289.1	385.6	482.6	576.1	674.4	773.5	964.2	1155.7	1350.8	1540.5
47	124.0	147.1	196.1	245.6	294.9	393.7	492.8	588.0	688.4	789.5	984.2	1179.9	1379.0	1572.8
48	126.5	150.1	199.9	250.7	301.0	401.8	502.7	600.2	702.6	805.5	1004.3	1204.0	1407.2	1605.3
49	129.1	153.2	204.0	255.8	307.1	409.7	512.8	612.2	716.6	821.7	1024.4	1228.1	1435.4	1637.6
50	131.6	156.2	208.0	260.9	313.2	417.9	523.0	624.3	730.8	837.7	1044.5	1252.2	1463.6	1669.8
51	134.1	159.0	212.1	265.7	319.0	425.7	532.9	636.3	744.8	853.7	1064.8	1276.4	1491.5	1702.1
52	136.7	162.1	216.2	270.8	325.1	433.9	543.1	648.5	758.7	870.0	1084.8	1300.5	1519.7	1734.6
53	139.2	165.1	220.2	275.9	331.2	442.0	553.2	660.4	773.0	886.0	1104.9	1324.6	1547.9	1766.8
54	141.8	168.2	224.3	280.9	337.3	450.1	563.2	672.6	786.9	902.2	1125.2	1348.8	1576.1	1799.1
55	144.3	171.2	228.1	286.0	343.4	458.0	573.3	684.6	801.2	918.2	1145.3	1372.9	1604.3	1831.4
56	146.8	174.3	232.2	290.9	349.3	466.1	583.2	696.7	815.1	934.5	1165.4	1397.3	1632.5	1863.9
57	149.4	177.3	236.2	295.9	355.4	474.2	593.4	708.9	829.3	950.5	1185.4	1421.4	1660.9	1896.1
58	152.0	180.4	240.3	301.0	361.5	482.1	603.5	720.9	843.6	966.5	1205.8	1445.5	1689.1	1928.3
59	154.4	183.4	244.4	306.1	367.6	490.2	613.4	733.1	857.5	982.7	1225.8	1469.7	1717.3	1960.6
60	157.0	186.2	248.4	311.2	373.7	498.4	623.8	745.0	871.7	998.7	1245.9	1493.8	1745.5	1993.2
61	159.5	189.3	252.5	316.3	379.5	506.5	633.8	757.2	885.7	1015.0	1266.2	1518.2	1773.7	2025.4
62	162.1	192.3	256.3	321.1	385.6	514.4	643.7	769.4	899.9	1031.0	1286.3	1542.3	1801.9	2057.7
63	164.6	195.4	260.4	326.2	391.7	522.5	653.8	781.3	913.9	1047.3	1306.3	1566.4	1830.1	2089.4
64	167.2	198.4	264.4	331.2	397.8	530.6	664.0	793.5	928.2	1063.3	1326.7	1590.6	1858.3	2121.7
65	169.7	201.4	268.5	336.3	403.9	538.7	674.1	805.7	942.1	1079.5	1346.7	1615.0	1886.5	2153.9
66	172.2	204.5	272.6	341.4	409.7	546.6	684.0	817.6	956.3	1095.5	1367.1	1639.1	1914.7	2186.2
67	174.8	207.5	276.6	346.5	415.8	554.8	694.2	829.8	970.6	1111.8	1387.1	1663.2	1943.1	2218.4
68	177.3	210.6	280.7	351.8	421.9	562.9	704.4	841.8	984.5	1127.8	1407.2	1687.3	1971.3	2050.7
69	179.9	213.6	284.8	356.8	428.0	571.0	714.3	854.0	998.8	1144.0	1427.5	1711.7	1999.5	2283.0
70	182.4	216.7	288.6	361.4	434.1	578.9	724.4	866.2	1012.7	1160.0	1447.6	1735.9	2027.7	2315.2
71	184.9	219.5	292.6	366.5	440.2	587.0	734.6	878.1	1026.9	1176.3	1467.9	1760.0	2055.9	2347.5
72	187.5	222.5	296.7	371.6	446.0	595.1	744.5	890.3	1040.9	1192.3	1487.9	1784.1	2084.1	2380.0
73	190.0	225.6	300.8	376.7	452.1	603.3	754.7	902.5	1055.2	1208.5	1508.0	1808.5	2112.5	2412.3
74	192.5	228.6	304.8	381.8	458.2	611.1	764.8	914.4	1069.4	1224.8	1528.3	1832.6	2140.7	2444.5
75	195.1	231.7	308.9	386.9	464.3	619.3	775.0	926.6	1083.3	1240.8	1548.4	1856.8	2168.9	2476.8
76	197.6	234.7	313.0	391.7	470.4	627.4	784.9	938.8	1097.5	1257.1	1568.7	1881.1	2197.1	2509.0
77	200.2	237.8	317.0	396.8	476.5	635.5	795.0	950.7	1111.5	1273.1	1588.8	1905.3	2225.3	2541.3
78	202.7	240.8	321.1	401.9	482.4	643.7	805.2	962.9	1125.8	1289.3	1609.1	1929.4	2253.8	2573.5
79	205.2	243.9	324.9	406.9	488.6	651.5	815.1	975.1	1140.0	1305.3	1629.2	1953.6	2282.0	2605.8
80	207.8	246.9	329.0	412.0	494.6	659.7	825.5	986.8	1154.0	1321.8	1649.5	1977.9	2310.4	2638.3



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