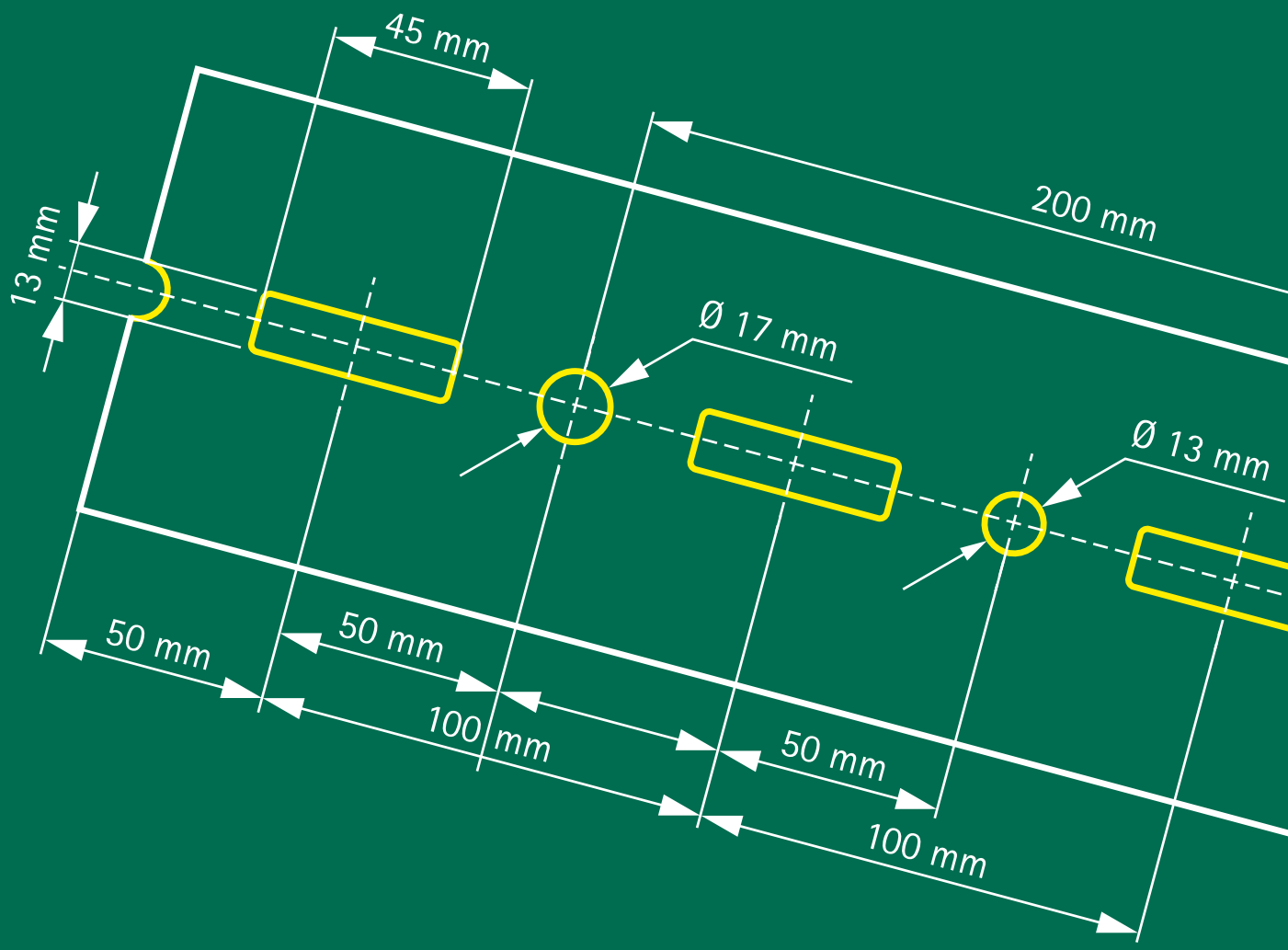
walraven

Technical Information

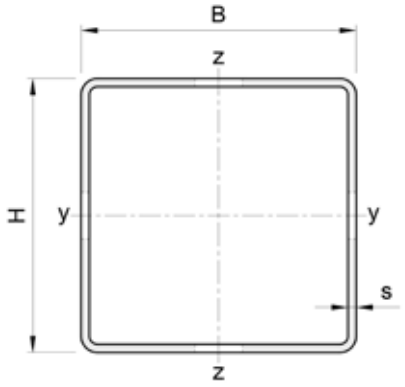


Technical Handbook
Walraven Maxx
Heavy Profiles Support System

Table of Content

Walraven Maxx Heavy Profiles Support System

Table of profile section properties



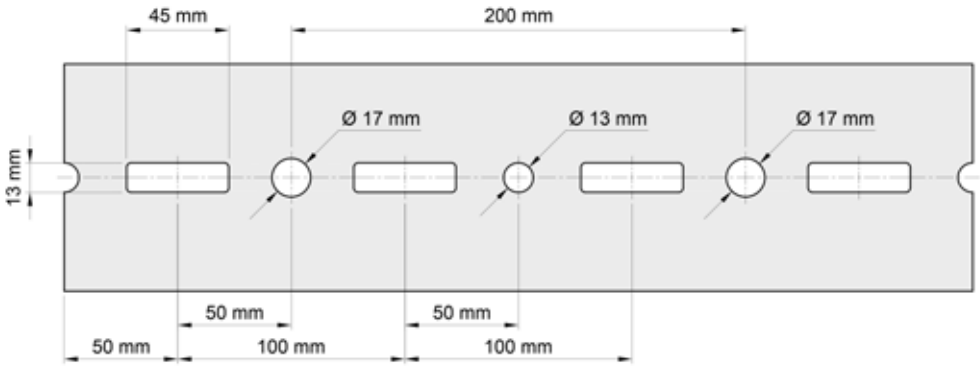
Profile size			Unit Weight	Cross Section Area	Geometrical Moment of Inertia		Geometrical Section Modulus	
H	B	s		A	I_y	I_z	W_y	W_z
mm	mm	mm	kg	mm^2	cm^4	cm^4	cm^3	cm^3
80.00	80.00	3.00	6.64	809.02	80.92	80.92	20.23	20.23
100.00	100.00	3.00	8.60	1,049.02	166.13	166.13	33.23	33.22
120.00	100.00	4.00	12.43	1,532.39	327.68	248.97	54.61	49.79
150.00	100.00	4.00	14.38	1,772.36	561.82	304.30	74.91	60.86

Perforation pattern of profiles

Distance between profile end and first hole is always equal.

Walraven Maxx Profile

- MX80 (80 x 80 x 3 mm)
- MX100 (100 x 100 x 3 mm)
- MX120 (120 x 100 x 4 mm)
- MX150 (150 x 100 x 4 mm)



Profile length & Prefab

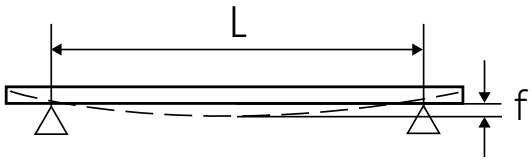
The standard length of profiles on stock is 6 meters. Custom length such as shorter or longer profiles up to 8 meters or project specific length can be manufactured on request.

Please contact our Technical Sales Support with such requests.

Calculation method

The published safe working loads are calculated with perforated (slotted) profile.

Loads are calculated with the maximum deflection (f) of L/200 (according to RAL-GZ 655/B), safety factor "λ" = 1.54, yield strength fy = 235 N/mm², E-Module 210,000 N/mm² (see picture 1).



Picture 1

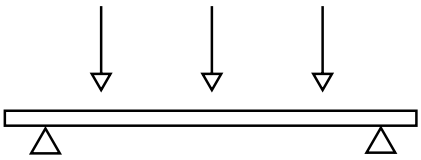
The weight of the product is always included.
1 N (Newton) = 0.102 kg
1 kg = 9.8 N (Newton)

Fixing of profiles to walls or ceilings

The strength of the anchoring of the profile is not taken into account. The installer must verify if the bolts and wall plugs used are suitable when the profile is used under its maximum load.

Reading the profile loading tables

The stated values are only valid for the fixing profile itself (profile safe load table) and for the combination of Baseplate / Profile as cantilever arm application (cantilever arm safe load table). The maximum safe load of all other construction parts has to be verified. The stated maximum safe load is calculated for a static load at free bending support (see picture 2).



Picture 2

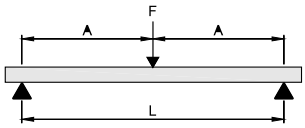
Special conditions

In the case of doubt or special conditions that are not stated in the loading tables, please do not hesitate to contact our Technical Sales Support.

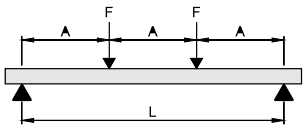
Walraven Maxx Heavy Profile MX80

L	Walraven Maxx Heavy Profile MX80 (80 x 80 x 3)			
	1 x F	2 x F	3 x F	q
(mm)	(N)	(N)	(N)	(N)
2,000	6,109	4,587	3,054	12,218
2,250	5,415	4,067	2,707	10,830
2,500	4,858	3,650	2,429	9,716
2,750	4,400	3,099	2,200	8,449
3,000	4,018	2,588	1,856	7,055
3,250	3,693	2,188	1,570	5,966
3,500	3,186	1,870	1,341	5,099
3,750	2,747	1,612	1,156	4,396
4,000	2,386	1,400	1,004	3,818
4,250	2,085	1,223	877	3,336
4,500	1,830	1,074	770	2,929
4,750	1,614	947	679	2,582
5,000	1,427	838	601	2,284
5,250	1,266	743	533	2,025
5,500	1,124	660	473	1,799
5,750	999	586	420	1,599
6,000	888	521	374	1,422

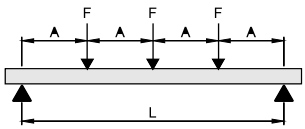
Suspension on 1 point



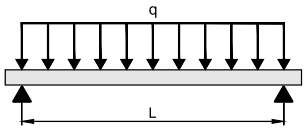
2 equal loads



3 equal loads



Uniformly distributed load



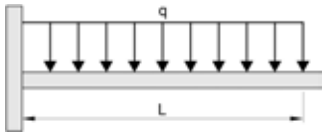
Max. allowed load in N per suspension point (F), or per uniformly distributed load (q).
The stated values are only valid for fixing profile. The maximum safe load of all other construction parts has to be verified.

Walraven Maxx Baseplate with Maxx Profile MX80 (Cantilever Arm Application)

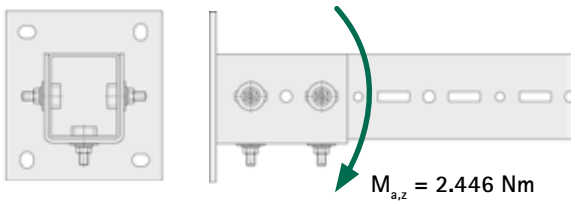
L	Walraven Maxx Heavy Profile MX80 (80 x 80 x 3)	
	1 x F	q
(mm)	(N)	(N)
500	4,877	9,754
550	4,430	8,861
600	4,058	8,116
650	3,742	7,485
700	3,472	6,944
750	3,237	6,475
800	3,032	6,064
850	2,850	5,701
900	2,689	5,378
950	2,544	5,088
1,000	2,414	4,828
1,050	2,286	4,591
1,100	2,079	4,376
1,200	1,740	3,999
1,300	1,476	3,679
1,400	1,266	3,376
1,500	1,096	2,923

Suspension on 1 point at the end

Uniformly distributed load



Application



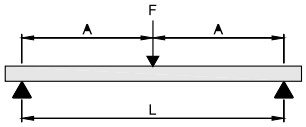
Max. allowed load in N per suspension point (F), or per uniformly distributed load (q).
The stated values are only valid for the cantilever arm application, using Walraven Maxx Baseplate and Maxx Profiles, connected by Maxx Hammerfix.

For all load specifications for cantilever arm application, the maximum allowed Moment ($M_{a,z}$) of the Walraven Maxx Baseplate was considered with 2,446 Nm. The maximum safe load of all other construction parts has to be verified.

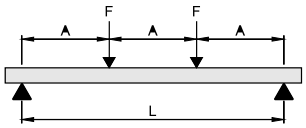
Walraven Maxx Heavy Profile MX100

L	Walraven Maxx Heavy Profile MX100 (100 x 100 x 3)			
	1 x F	2 x F	3 x F	q
(mm)	(N)	(N)	(N)	(N)
2,000	10,056	7,549	5,028	20,112
2,250	8,919	6,697	4,459	17,838
2,500	8,007	6,014	4,003	16,014
2,750	7,259	5,453	3,629	14,518
3,000	6,633	4,985	3,316	13,267
3,250	6,103	4,552	3,051	12,206
3,500	5,647	3,903	2,800	10,641
3,750	5,250	3,378	2,423	9,210
4,000	4,901	2,947	2,114	8,035
4,250	4,411	2,589	1,857	7,058
4,500	3,897	2,287	1,641	6,236
4,750	3,460	2,031	1,457	5,536
5,000	3,085	1,811	1,299	4,936
5,250	2,761	1,620	1,162	4,417
5,500	2,477	1,454	1,043	3,964
5,750	2,229	1,308	938	3,566
6,000	2,009	1,179	846	3,215
6,500	1,639	962	690	2,622
7,000	1,339	786	564	2,143
7,500	1,093	641	460	1,748
8,000	886	520	373	1,418

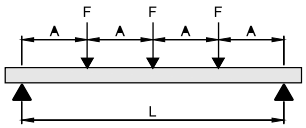
Suspension on 1 point



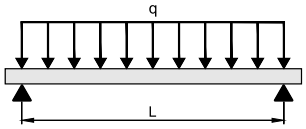
2 equal loads



3 equal loads



Uniformly distributed load

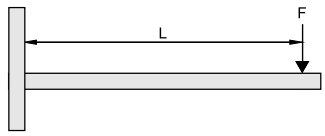


Max. allowed load in N per suspension point (F), or per uniformly distributed load (q).
The stated values are only valid for fixing profile. The maximum safe load of all other construction parts has to be verified.

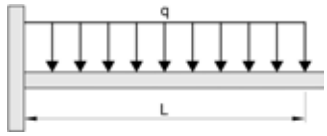
Walraven Maxx Baseplate with Maxx Profile MX100 (Cantilever Arm Application)

L	Walraven Maxx Heavy Profile MX100 (100 x 100 x 3)	
	1 x F	q
(mm)	(N)	(N)
500	6.963	13.926
550	6.325	12.651
600	5.794	11.589
650	5.344	10.689
700	4.959	9.918
750	4.624	9.248
800	4.331	8.662
850	4.072	8.144
900	3.842	7.684
950	3.635	7.271
1.000	3.449	6.899
1.050	3.281	6.562
1.100	3.128	6.256
1.200	2.859	5.718
1.300	2.631	5.262
1.400	2.435	4.870
1.500	2.264	4.529

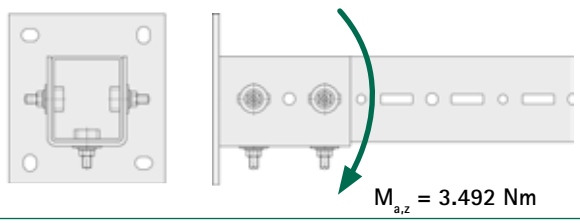
Suspension on 1 point at the end



Uniformly distributed load



Application



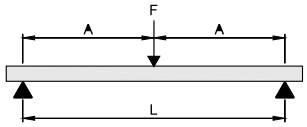
Max. allowed load in N per suspension point (F), or per uniformly distributed load (q).
The stated values are only valid for the cantilever arm application, using Maxx Baseplate and Maxx Profiles, connected by Maxx Hammerfix.

For all load specifications for cantilever arm application, the maximum allowed Moment (Ma,z) of the Maxx Baseplate was considered with 3.492 Nm.
The maximum safe load of all other construction parts has to be verified.

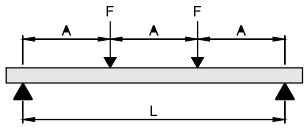
Walraven Maxx Heavy Profile MX120

L	Walraven Maxx Heavy Profile MX120 (120 x 100 x 4)			
	1 x F	2 x F	3 x F	q
(mm)	(N)	(N)	(N)	(N)
2,000	16,545	12,419	8,272	33,091
2,250	14,678	11,020	7,339	29,356
2,500	13,181	9,898	6,590	26,363
2,750	11,954	8,979	5,977	23,908
3,000	10,928	8,211	5,464	21,857
3,250	10,058	7,560	5,029	20,117
3,500	9,310	7,000	4,655	18,621
3,750	8,660	6,514	4,330	17,321
4,000	8,089	5,879	4,044	16,027
4,250	7,584	5,176	3,713	14,111
4,500	7,133	4,585	3,289	12,500
4,750	6,728	4,083	2,929	11,132
5,000	6,224	3,653	2,621	9,959
5,250	5,591	3,282	2,354	8,946
5,500	5,040	2,958	2,122	8,064
5,750	4,556	2,674	1,918	7,291
6,000	4,130	2,424	1,739	6,608
6,500	3,413	2,003	1,437	5,461
7,000	2,836	1,665	1,194	4,539
7,500	2,364	1,387	995	3,783
8,000	1,970	1,156	829	3,153

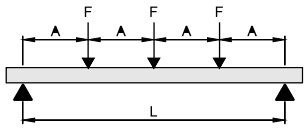
Suspension on 1 point



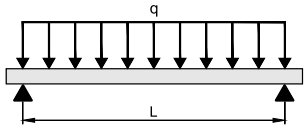
2 equal loads



3 equal loads



Uniformly distributed load

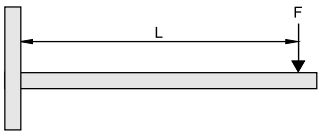


Max. allowed load in N per suspension point (F), or per uniformly distributed load (q).
The stated values are only valid for fixing profile. The maximum safe load of all other construction parts has to be verified.

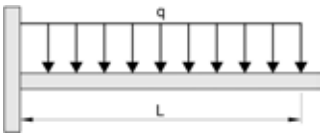
Walraven Maxx Baseplate with Walraven Maxx Profile MX120 (Cantilever Arm Application)

L	Walraven Maxx Heavy Profile MX120 (120 x 100 x 4)	
	1 x F	q
(mm)	(N)	(N)
500	7,826	15,653
550	7,109	14,218
600	6,511	13,022
650	6,004	12,008
700	5,569	11,139
750	5,192	10,384
800	4,861	9,723
850	4,570	9,140
900	4,310	8,620
950	4,077	8,154
1,000	3,867	7,735
1,050	3,677	7,354
1,100	3,504	7,008
1,200	3,200	6,401
1,300	2,942	5,885
1,400	2,720	5,441
1,500	2,527	5,055

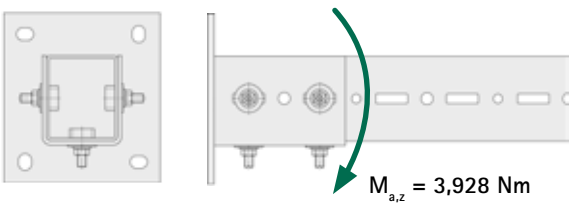
Suspension on 1 point at the end



Uniformly distributed load



Application



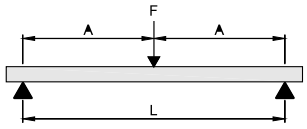
Max. allowed load in N per suspension point (F), or per uniformly distributed load (q). The stated values are only valid for the cantilever arm application, using Walraven Maxx Baseplate and Walraven Maxx Profiles, connected by Walraven Maxx Hammerfix.

For all load specifications for cantilever arm application, the maximum allowed Moment (Ma,z) of the Walraven Maxx Baseplate was considered with 3.928 Nm. The maximum safe load of all other construction parts has to be verified.

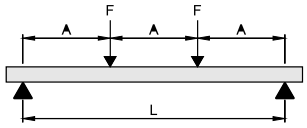
Walraven Maxx Heavy Profile MX150

L	Walraven Maxx Heavy Profile MX150 (150 x 100 x 4)			
	1 x F	2 x F	3 x F	q
(mm)	(N)	(N)	(N)	(N)
2,000	22,721	17,052	11,360	45,442
2,250	20,163	15,135	10,081	40,326
2,500	18,113	13,599	9,056	36,226
2,750	16,433	12,340	8,216	32,866
3,000	15,029	11,290	7,514	30,059
3,250	13,839	10,398	6,919	27,679
3,500	12,817	9,633	6,408	25,634
3,750	11,928	8,968	5,964	23,857
4,000	11,148	8,385	5,574	22,297
4,250	10,458	7,869	5,229	20,917
4,500	9,843	7,409	4,921	19,687
4,750	9,291	6,996	4,645	18,582
5,000	8,792	6,389	4,396	17,417
5,250	8,339	5,758	4,130	15,696
5,500	7,925	5,209	3,737	14,201
5,750	7,546	4,729	3,392	12,891
6,000	7,197	4,306	3,089	11,738
6,250	6,697	3,931	2,820	10,716
6,500	6,128	3,597	2,580	9,806
6,750	5,619	3,298	2,366	8,991
7,000	5,161	3,029	2,173	8,258
7,250	4,747	2,786	1,999	7,596
7,500	4,372	2,566	1,841	6,996
7,750	4,031	2,366	1,697	6,449
8,000	3,719	2,182	1,565	5,950

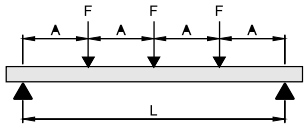
Suspension on 1 point



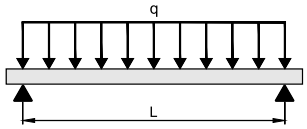
2 equal loads



3 equal loads

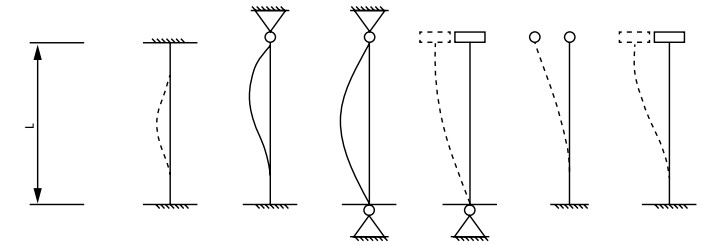


Uniformly distributed load



Max. allowed load in N per suspension point (F), or per uniformly distributed load (q).
The stated values are only valid for fixing profile. The maximum safe load of all other construction parts has to be verified.

Walraven Maxx Heavy Profile: buckling load



	Translation Free	Translation Fixed
Rotation Free		
Rotation Fixed		

Lcr (mm)	MX80 (kN)	MX100 (kN)	MX120 (kN)	MX150 (kN)
200	123.45	160.08	233.84	270.46
400	123.45	160.08	233.84	270.46
600	123.33	160.08	233.84	270.46
800	119.10	158.93	232.48	269.68
1,000	114.85	154.58	226.21	262.62
1,200	110.51	150.21	219.91	255.54
1,400	106.03	145.77	213.53	248.38
1,600	101.36	141.24	207.00	241.08
1,800	96.51	136.57	200.29	233.58
2,000	91.48	131.76	193.38	225.86
2,200	86.33	126.79	186.24	217.90
2,400	81.11	121.67	178.89	209.70
2,600	75.92	116.42	171.35	201.29
2,800	70.83	111.09	163.67	192.70
3,000	65.93	105.71	155.92	184.00
3,500	54.83	92.44	136.73	162.30
4,000	45.63	80.07	118.72	141.67
4,500	38.22	69.11	102.67	123.06
5,000	32.32	59.73	88.87	106.88
5,500	27.60	51.84	77.22	93.10
6,000	23.80	45.24	67.45	81.48
6,500	20.71	39.73	59.27	71.71
7,000	18.17	35.11	52.40	63.48
7,500	16.06	31.21	46.61	56.51
8,000	14.29	27.91	41.69	50.59
Recommended buckling length (mm)	6,000	8,000	8,000	8,000

Lcr = Buckling Length
Buckling force calculation according to EC3.
Buckling safe loads valid only for pure compression load.
Safety factor considered 1.54 according to RAL (represents 1.1 from material and 1.4 for combination of actions).
Buckling safe loads have been calculated according the minimum inertia direction (worse case scenario).

Load values for "Lcr" above recommended; not recommended without previous consultation.

Example

- Profile type: MX100
- Profile length: 1,4 m
- 1 support with rotation and translation fixed and 1 support with rotation and translation free

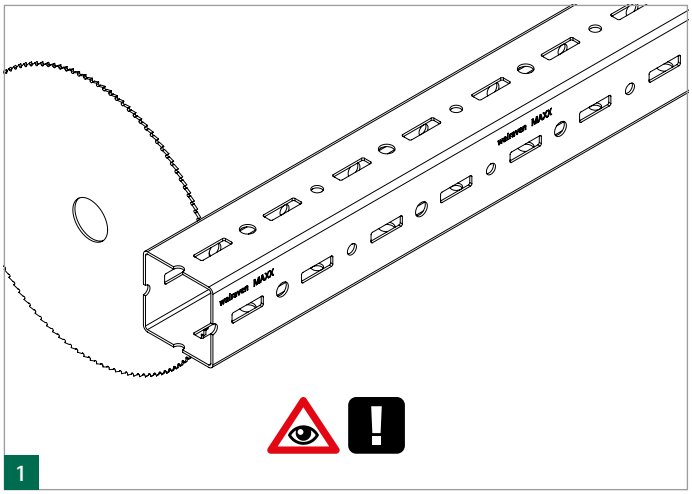
- n = 2
- Lcr = 1400 x 2 = 2800 mm
- Buckling load = 111.09 kN

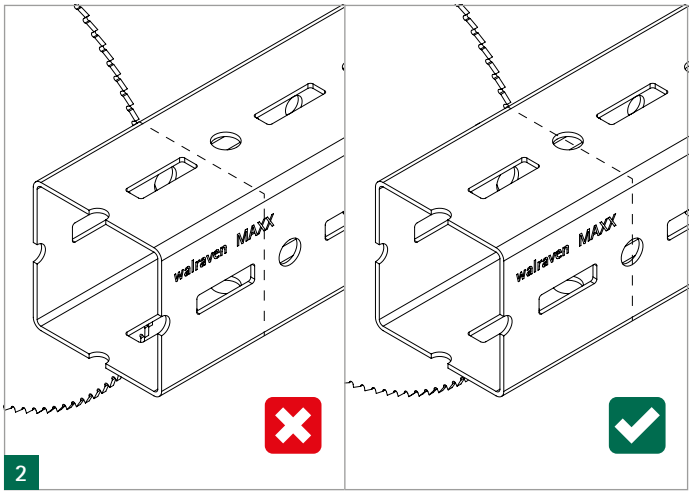
Walraven Maxx Heavy Profiles Support System

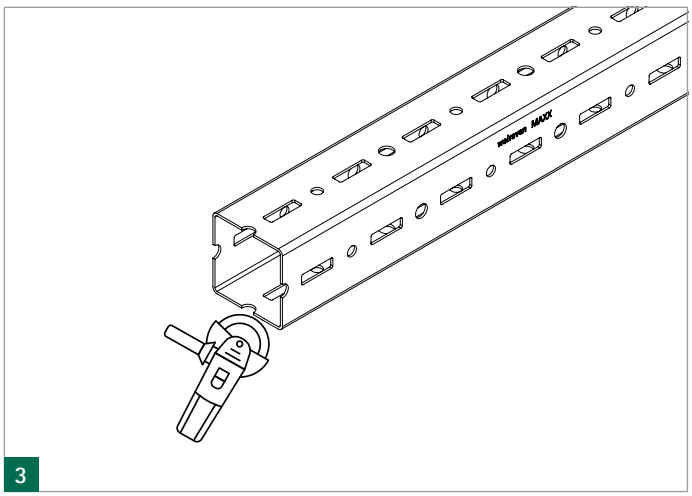
Maxx Profiles MX80 – MX100 – MX120 – MX150
(Art.nr. 65019618, 65019620, 65019622, 65019625)

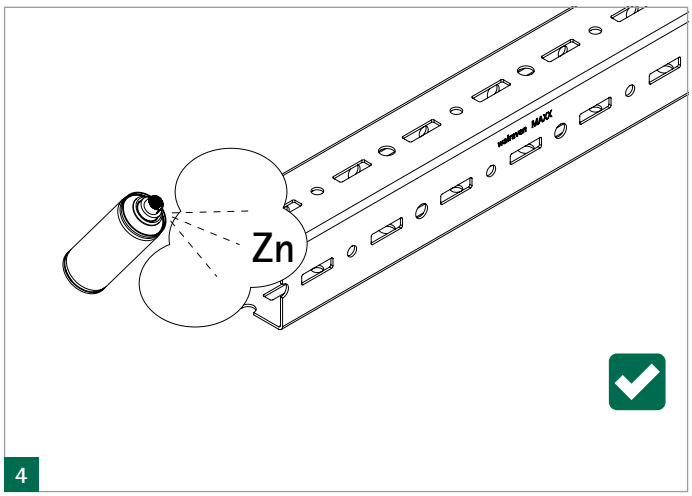
Application / how to use

Dimension	Type	L=6m	L=8m
80 x 80 x 3 mm	MX80	65019618	-
100 x 100 x 3 mm	MX100	65019620	65019820
100 x 120 x 4 mm	MX120	65019622	65019822
100 x 150 x 4 mm	MX150	65019625	65019825





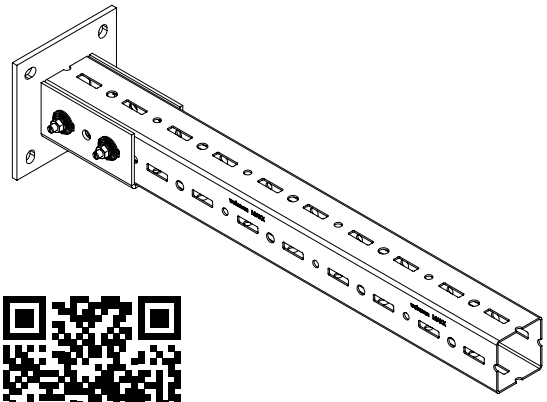




Walraven Maxx Heavy Profiles Support System

Maxx Baseplate BP80 – BP100 – BP120 (Art.nr. 6581818, 6581820, 6581821)

Application / how to use



Material

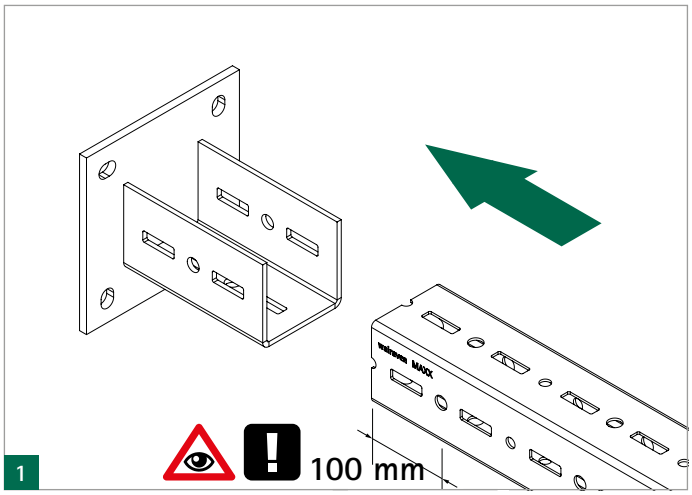
1x 

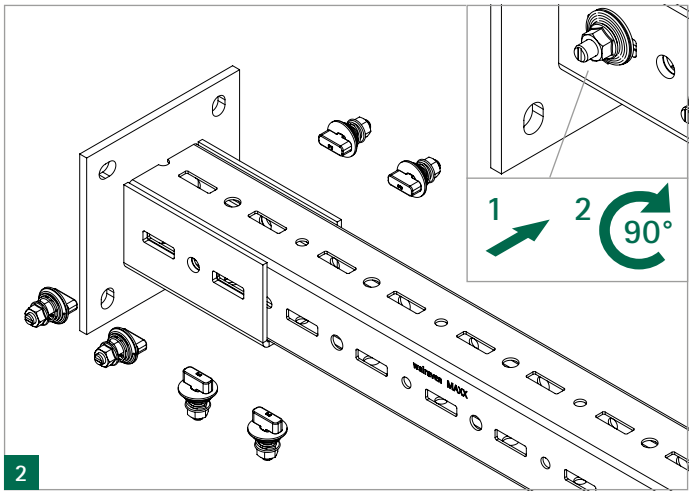
- 6581818 (BP80)
- 6581820 (BP100)
- 6581821 (BP120)

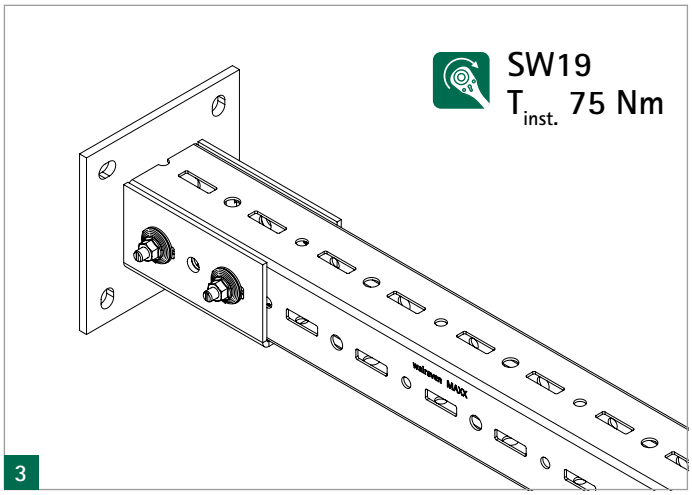
6x 

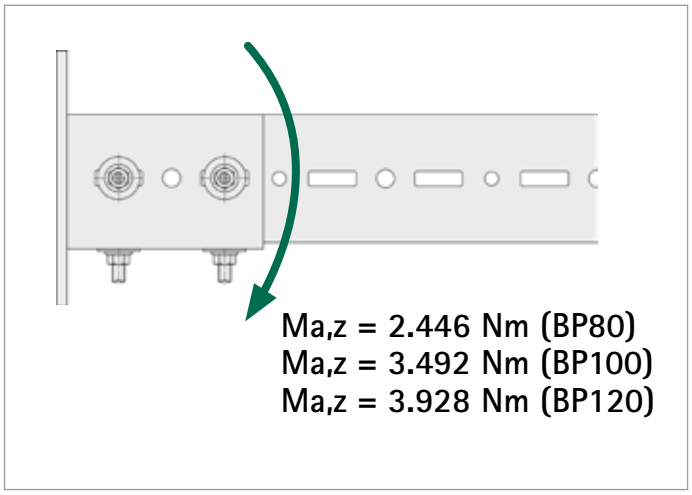
- 65219214

- 65019618 (MX80)
- 65019620 (MX100)
- 65019622 (MX120)





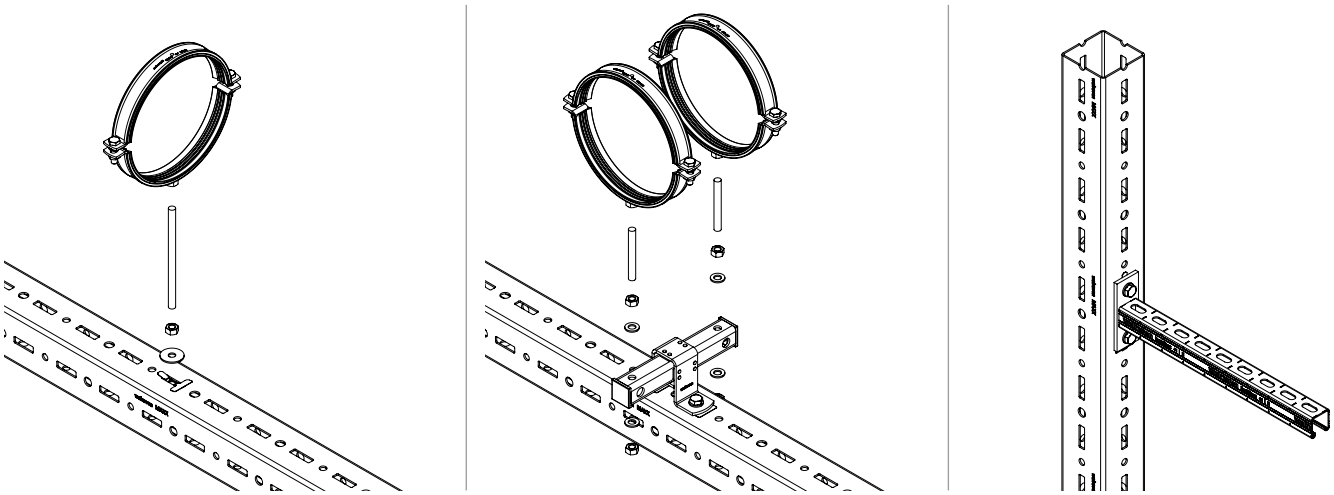


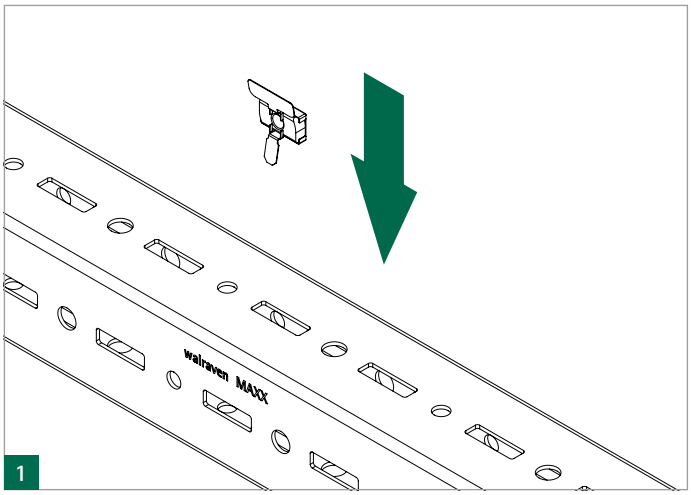


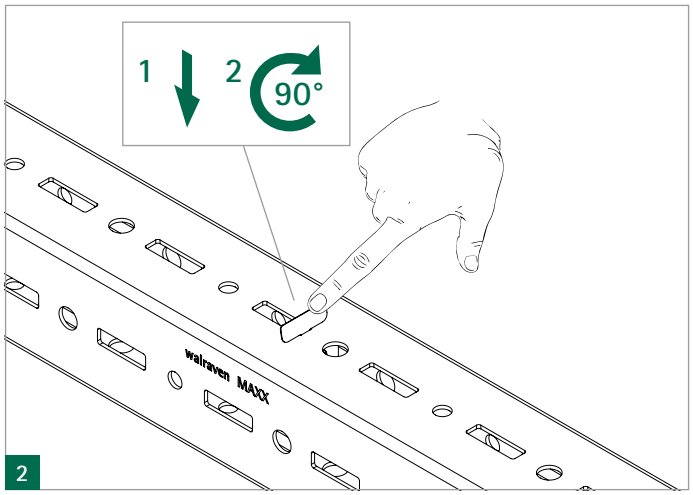
Walraven Maxx Heavy Profiles Support System

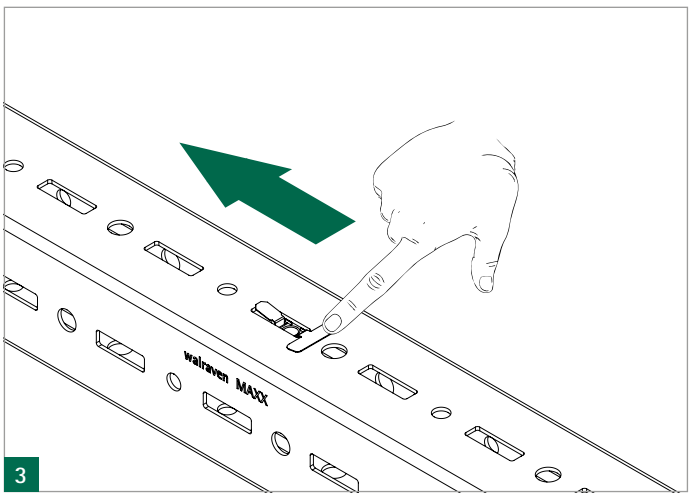
Maxx Wingnut (651867112)

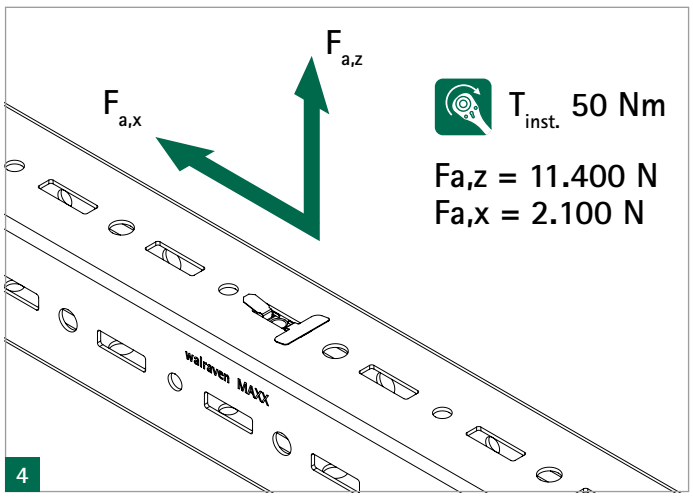
Application / how to use







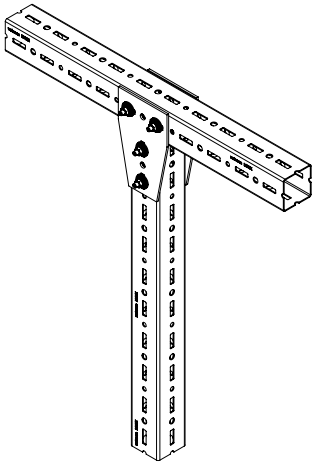




Walraven Maxx Heavy Profiles Support System

Maxx T-Connector TC80 – TC100/120/150(Art.nr. 6589119, 6589911)

Application / how to use



Material

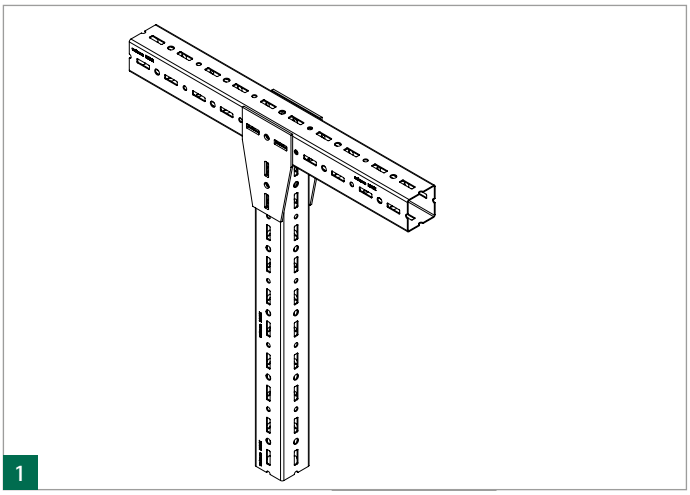
2x 

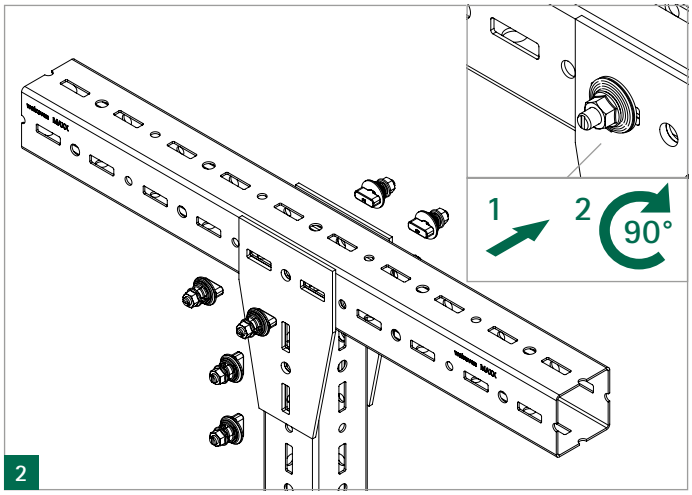
- 6589119 (TC80)
- 6589911 (TC100/120/150)

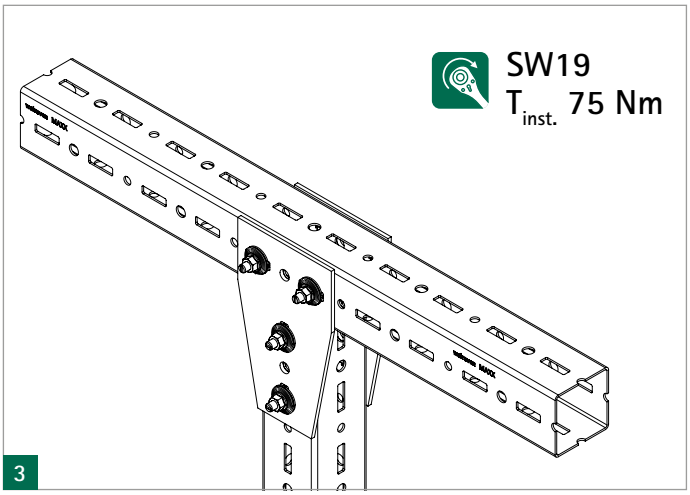
8x 

- 65219214

- 65019618 (MX80)
- 65019620 (MX100)
- 65019622 (MX120)
- 65019625 (MX150)



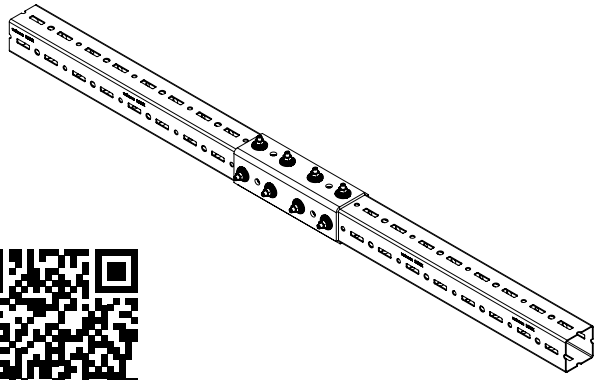




Walraven Maxx Heavy Profiles Support System

Maxx Linear Connector LC100/120(Art.nr. 6589310)

Application / how to use



Material

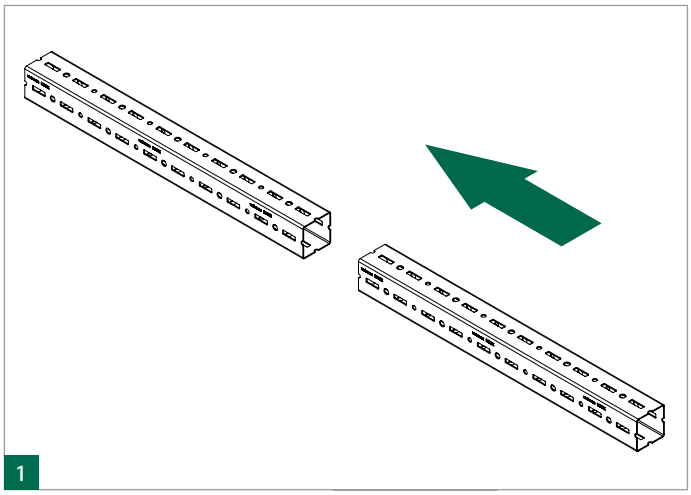
1x 

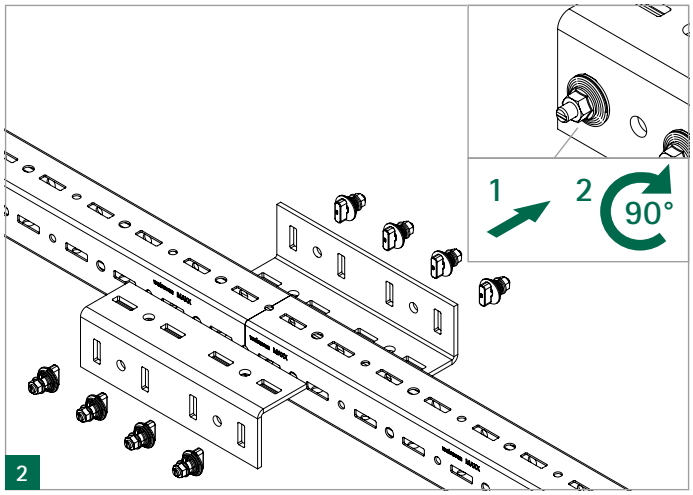
- 6589310 Set of 2 pcs. (LC100/120)

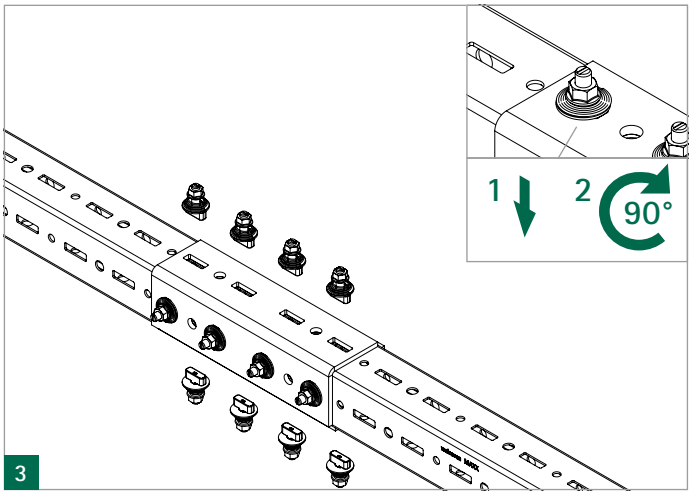
16x 

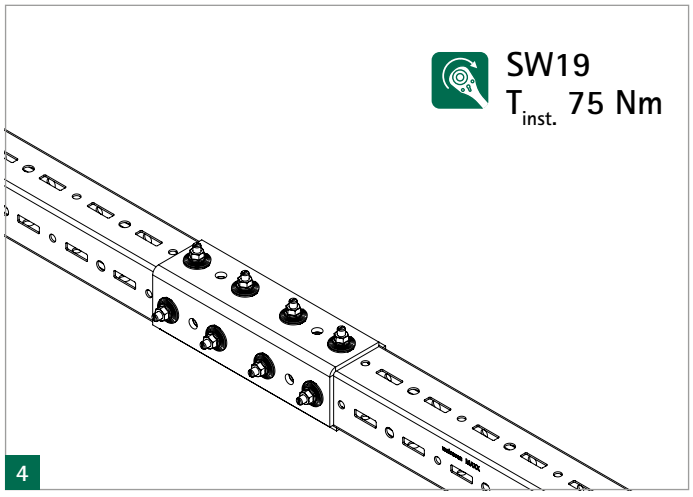
- 65219214

- 65019620 (MX100)
- 65019622 (MX120)





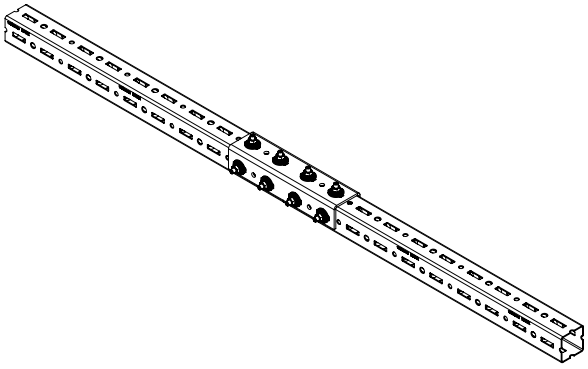




Walraven Maxx Heavy Profiles Support System

Maxx Linear Connector LC80(Art.nr. 6589318)

Application / how to use



Material

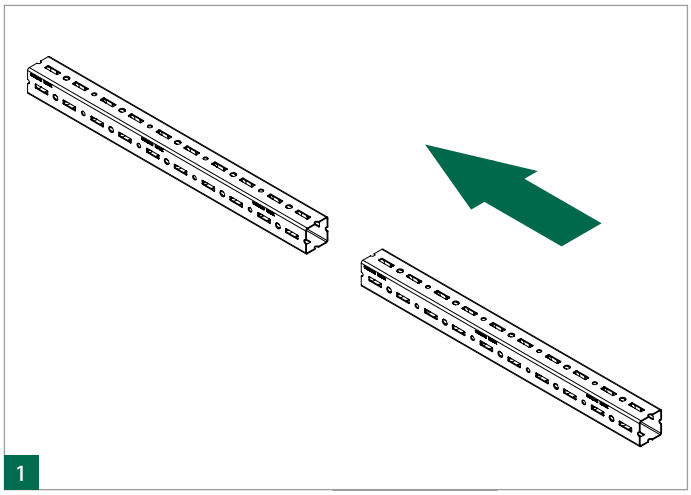
1x 

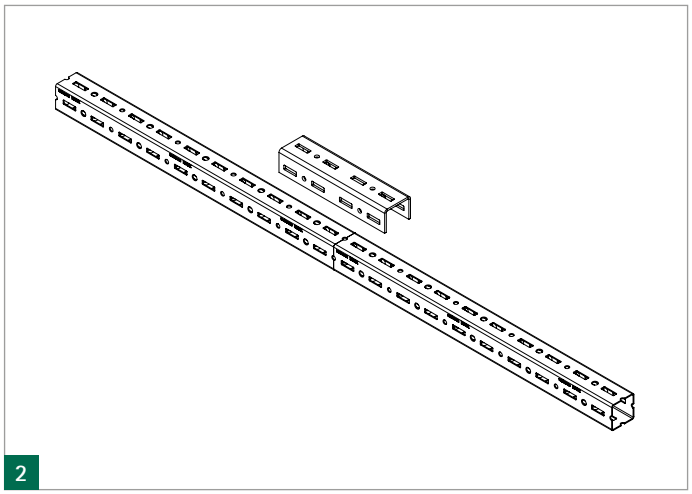
- 6589318 (LC80)

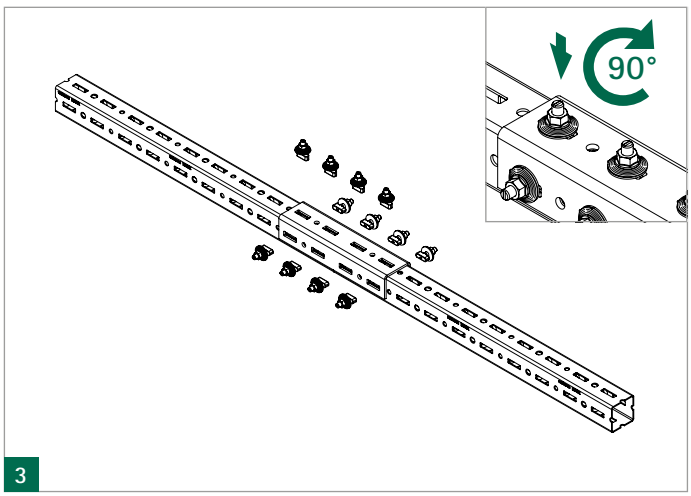
12x 

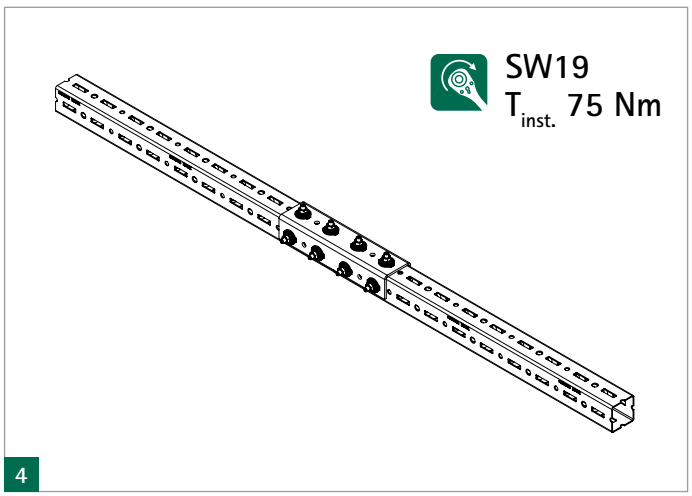
- 65219214

- 65019618 (MX80)





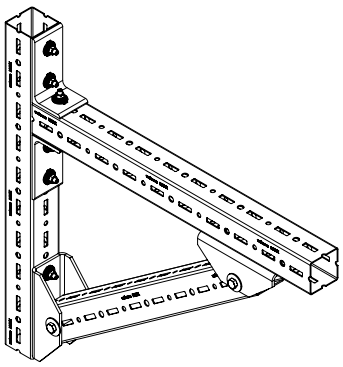




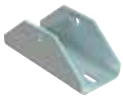
Walraven Maxx Heavy Profiles Support System

Maxx Hinged Connector HC80 – HC100(Art.nr 6581808, 6581815)

Application / how to use



Material

1x 

- 6581808 (HC80)
- 6581815 (HC100)

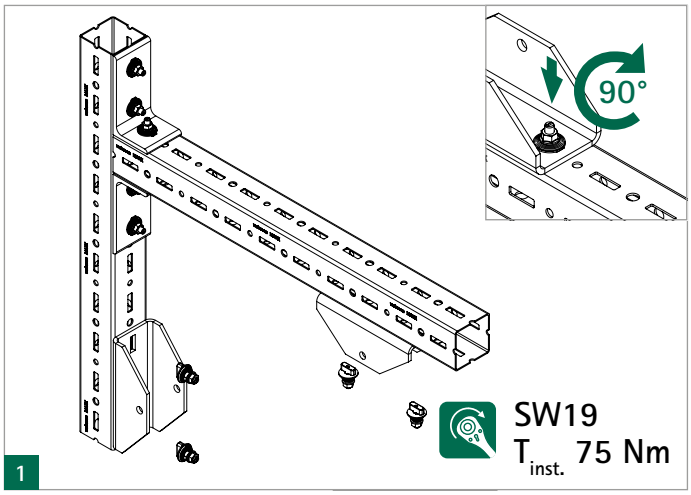
2x 

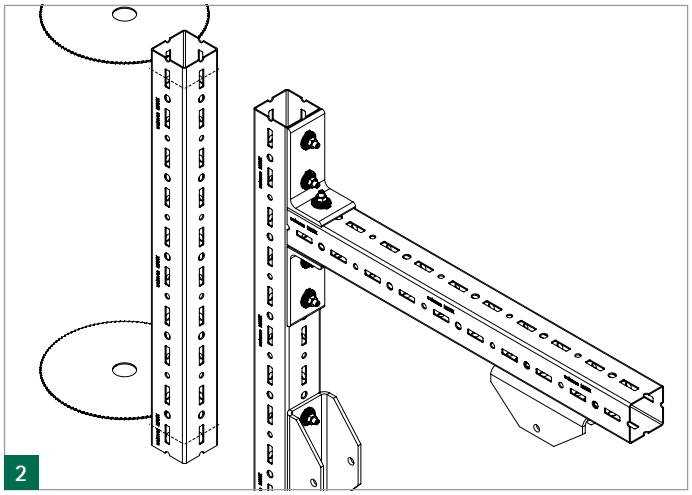
- 65219214

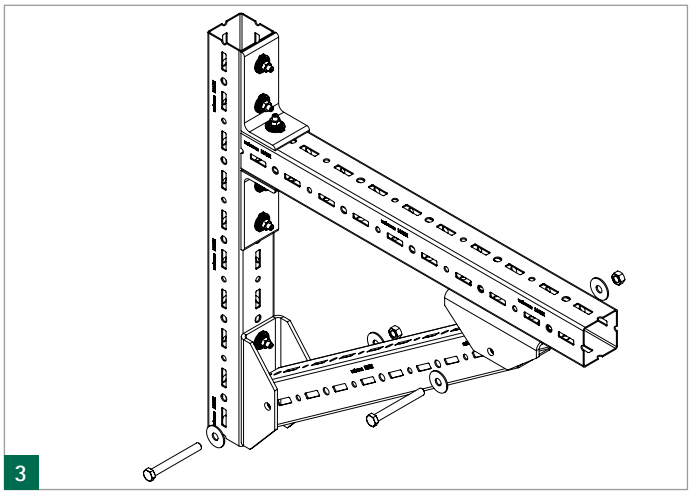
1x 

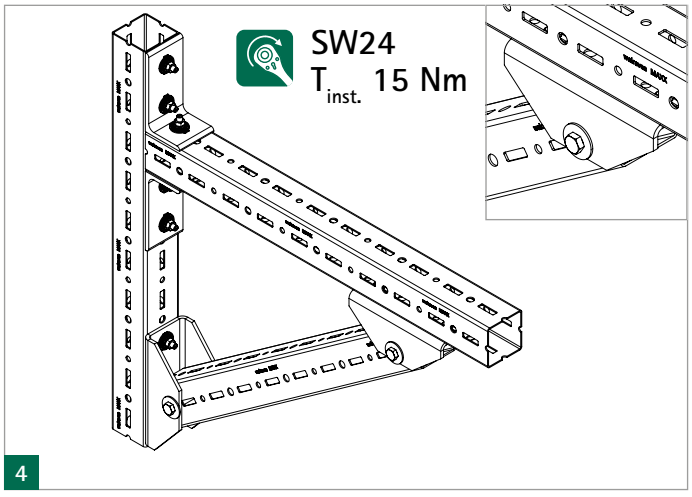
- 614581612 (MX80 – M16x120mm)
- 614581614 (MX100 – M16x140mm)

- 65019618 (MX80)
- 65019620 (MX100)





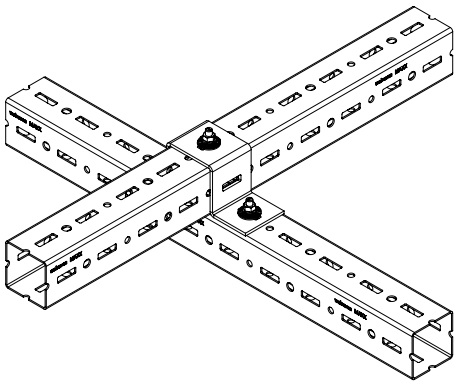




Walraven Maxx Heavy Profiles Support System

Maxx Cross Connector CC80 – CC100(Art.nr 6589118, 6589111)

Application / how to use



Material

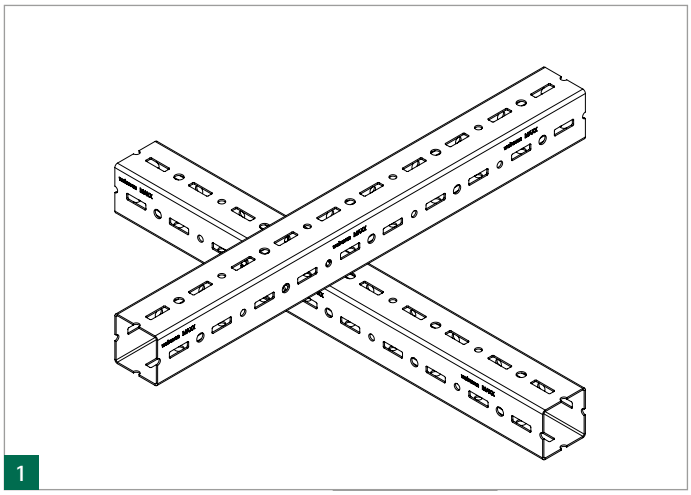
1x 

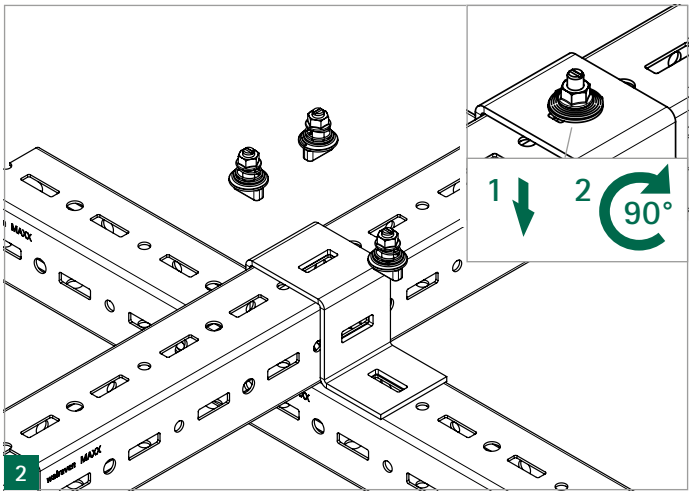
- 6589118 (CC80)
- 6589111 (CC100)

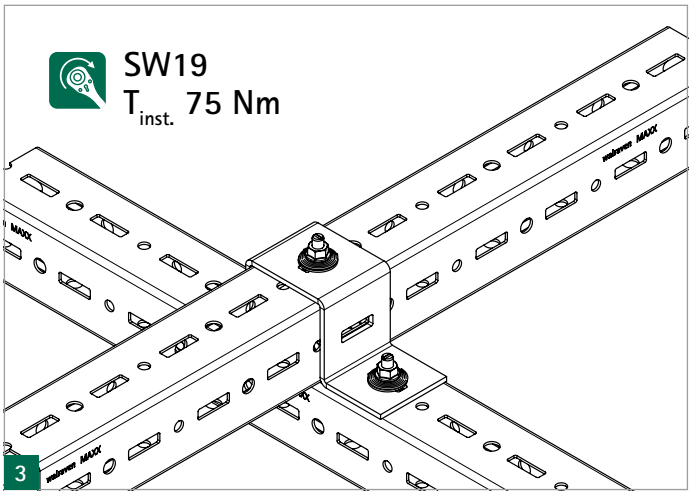
3x 

- 65219214

- 65019618 (MX80)
- 65019620 (MX100)



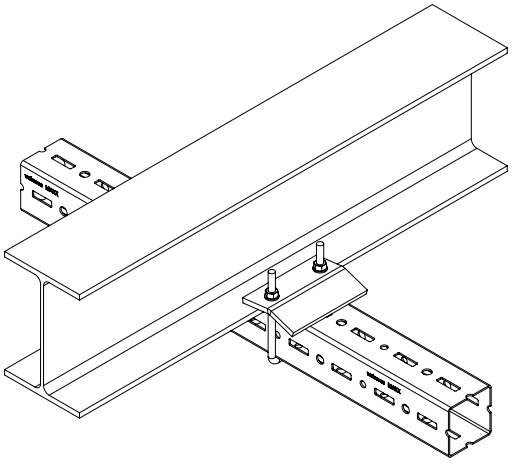




Walraven Maxx Heavy Profiles Support System

Maxx Beam Clamp BC80 – BC100/120 – BC150(Art.nr 6589109, 6589110, 6589115)

Application / how to use

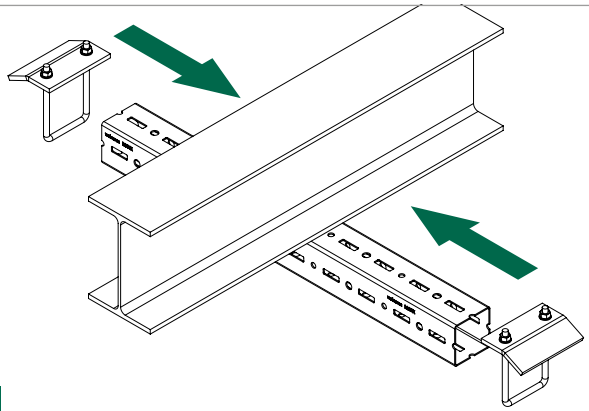


Material

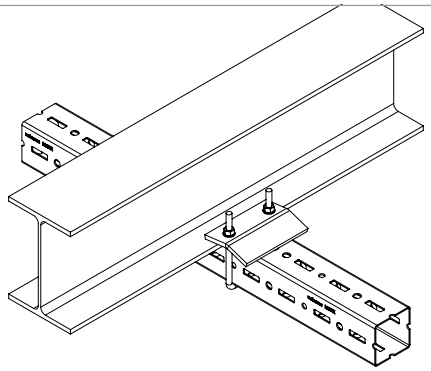
2x 

- 6589109 (BC80)
- 6589110 (BC100/120)
- 6589115 (BC150)

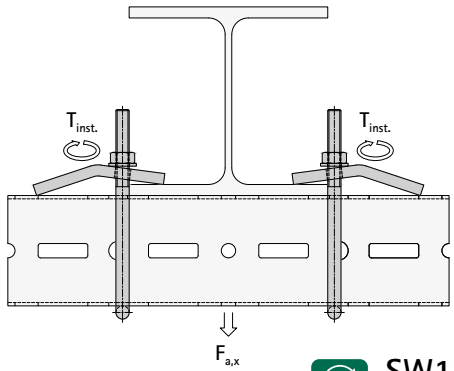
- 65019618 (MX80)
- 65019620 (MX100)
- 65019622 (MX120)
- 65019625 (MX150)



1



2



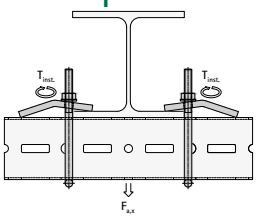
SW17
$T_{inst.}$ 40 Nm

3

Application with angled beam clamp
(minimum flange thickness of 10mm)

Part No.	Type	Safe Load [kN]
6589109	BC80	11.2
6589110	BC100/120	12.4
6589115	BC150	12.4

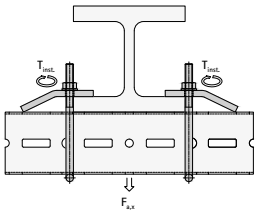
Safety factor γ =1.4



Application with straight beam clamp
(maximum flange thickness of 25mm)

Part No.	Type	Safe Load [kN]
6589109	BC80	16.2
6589110	BC100/120	16.2
6589115	BC150	16.2

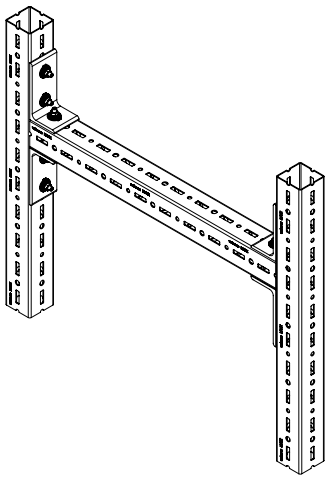
Safety factor γ =1.4



Walraven Maxx Heavy Profiles Support System

Maxx Angle Connector AC80/90-3 – AC100/90-3(Art.nr 6681018, 6681020)

Application / how to use



Material

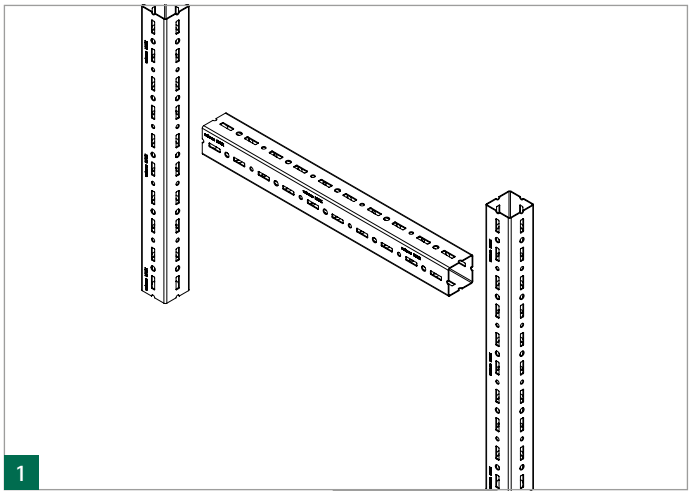
1x 

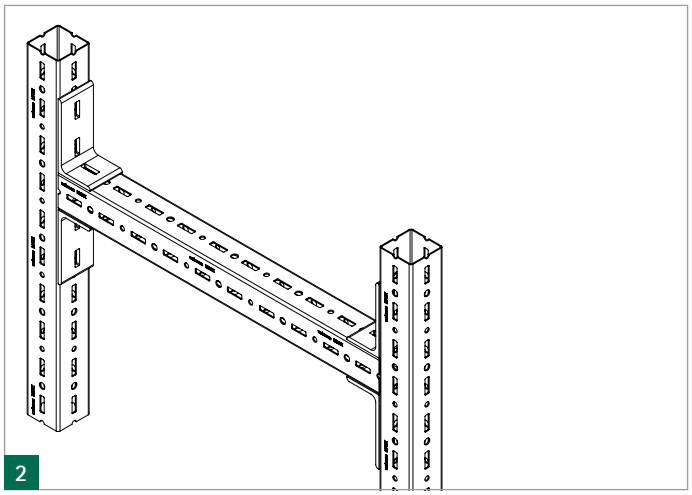
- 6681018 (AC80/90-3)
- 6681020 (AC100/90-3)

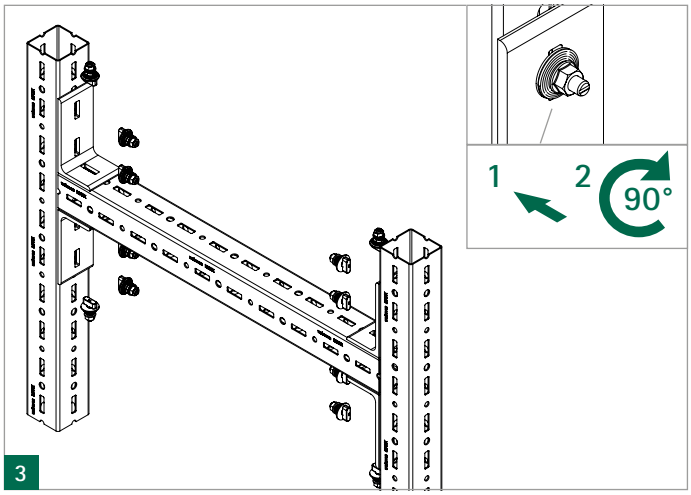
3x 

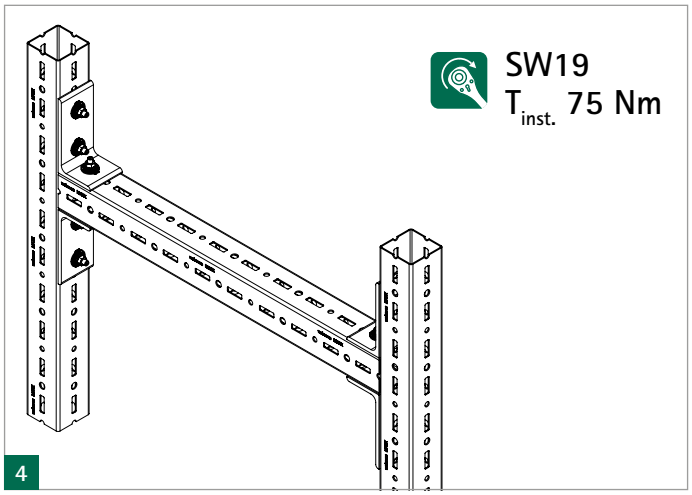
- 65219214

- 65019618 (MX80)
- 65019620 (MX100)
- 65019622 (MX120)
- 65019625 (MX150)





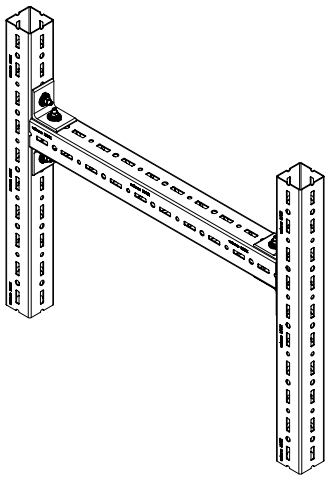




Walraven Maxx Heavy Profiles Support System

Maxx Angle Connector AC80/90-2(Art.nr 6681010)

Application / how to use



Material

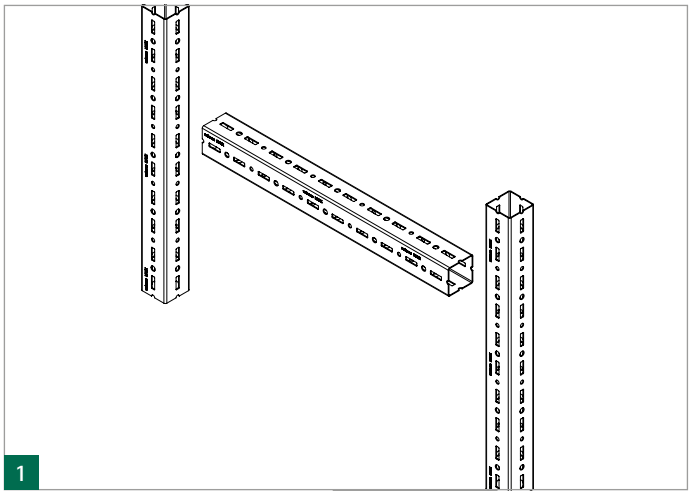
1x 

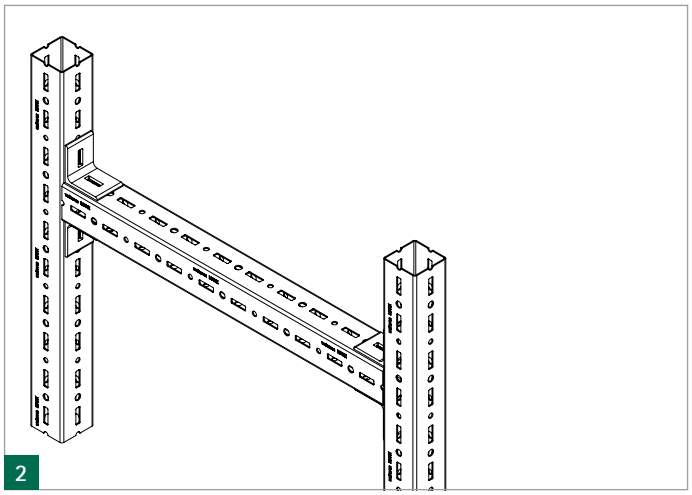
- 6681010 (AC80/90-2)

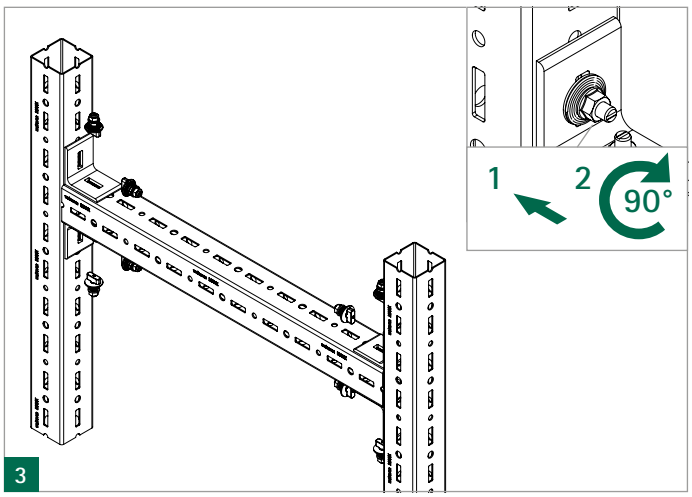
2x 

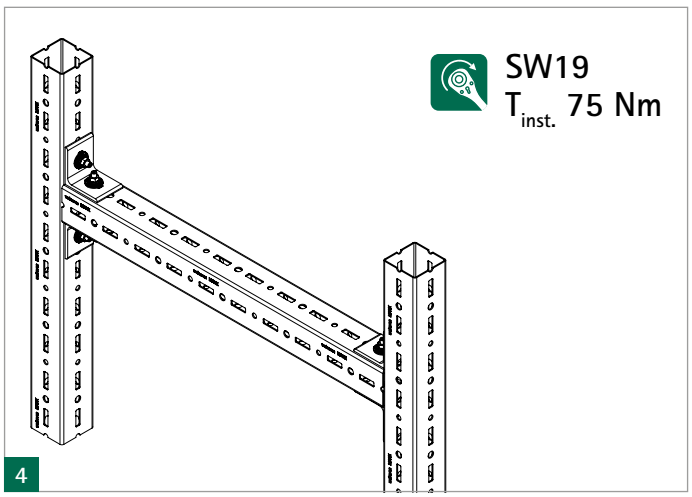
- 65219214

- 65019618 (MX80)









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Find out how we can support you

Would you like to find out more about any of the solutions described in this Technical Data Sheet? Or would you like to discuss how we could help you find the best possible solution for your project? Get in touch today!

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