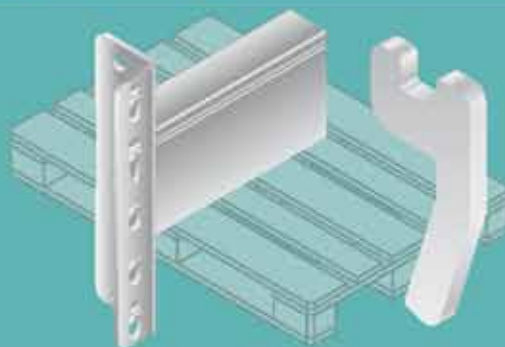
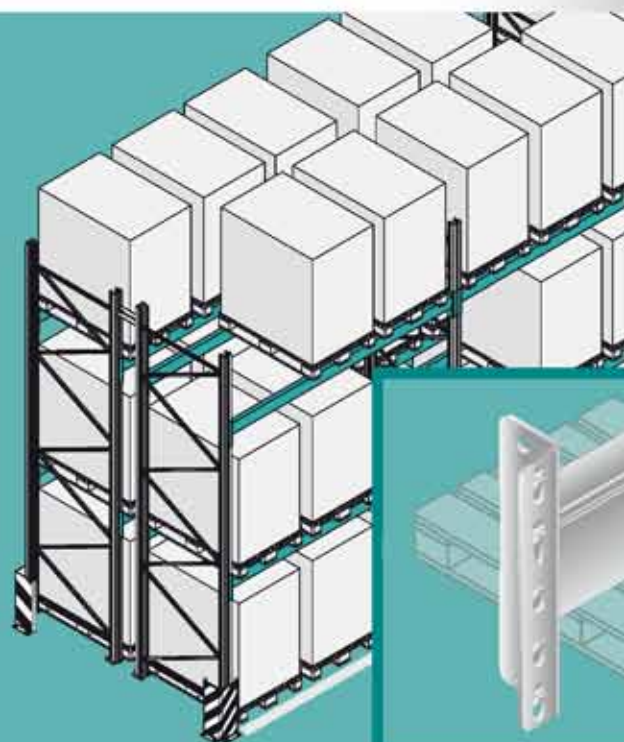


Innovative Lagerlösungen
Innovative Storage Solutions

Palettenregal System PRO Pallet racking system PRO

02-2009

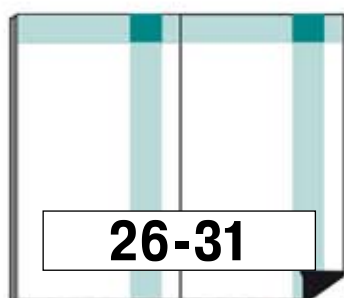
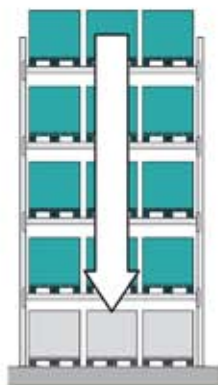
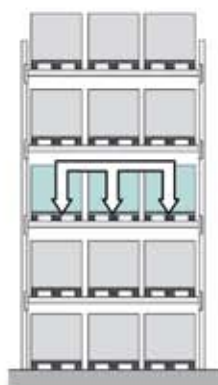
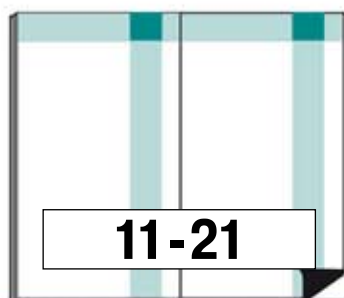
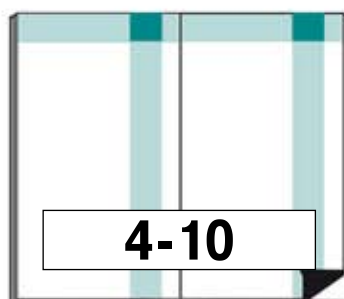
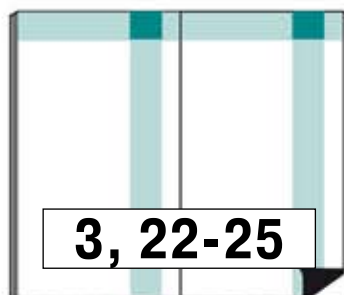


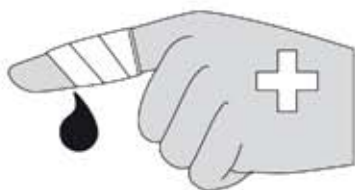
- DE Aufbau- und Bedienanleitung
- GB Instructions for assembly and use
- FR Instructions de montage et d'utilisation
- BE Richtlijnen en montagehandleiding
- ES Instrucciones de montaje y manejo
- PT Instruções de montagem e de serviço
- IT Istruzioni per il montaggio e l'impiego
- DK Montage- og betjeningsvejledning
- HU összeállítási és kezelési útmutató
- PL Instrukcja montażu i użytkowania
- CZ Návod k montáži a obsluze
- SK Návod na montáž a použitie
- RO Instrucțiuni de asamblare și utilizare



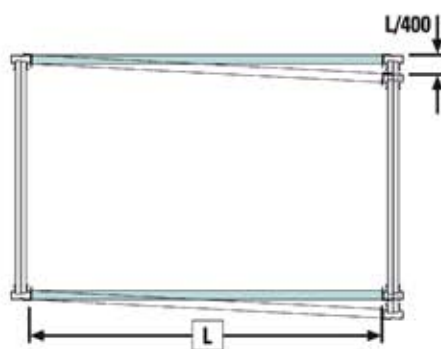
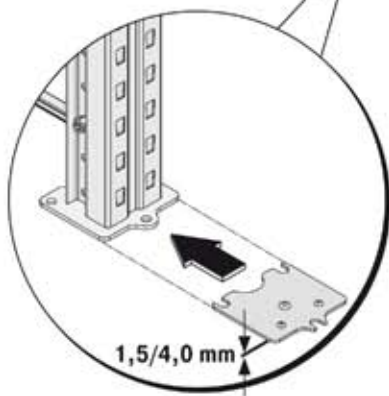
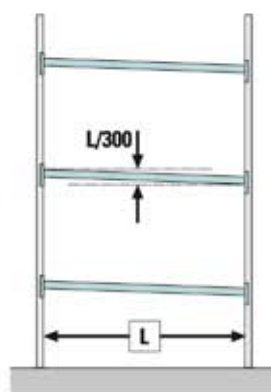
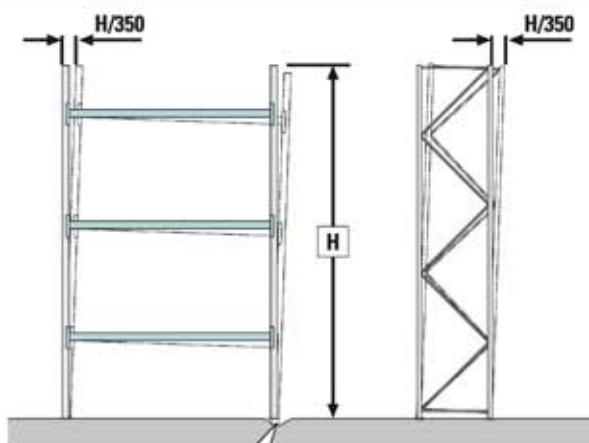
DIN EN ISO 9001:2008

PL-PRO





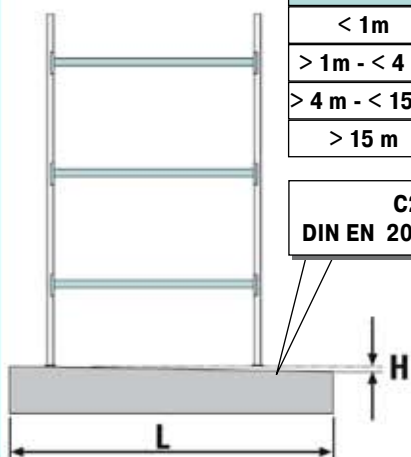
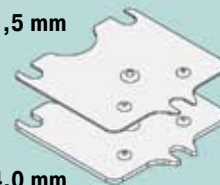
BGR 234
(ZH 1/428)



pr EN 15620

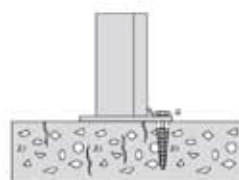
1,5 mm

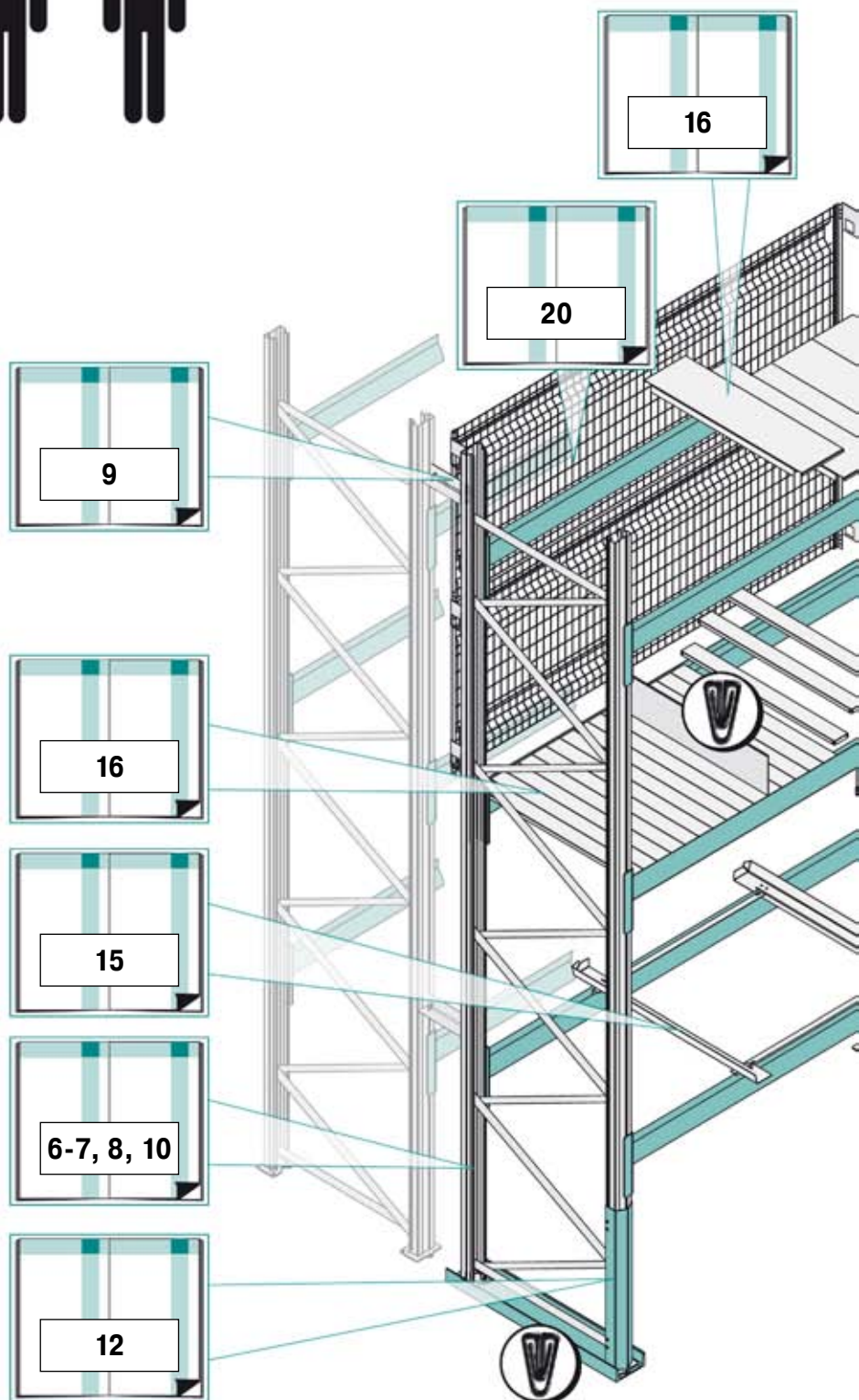
4,0 mm

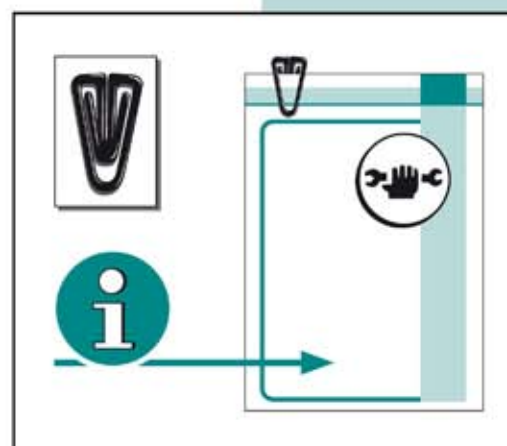
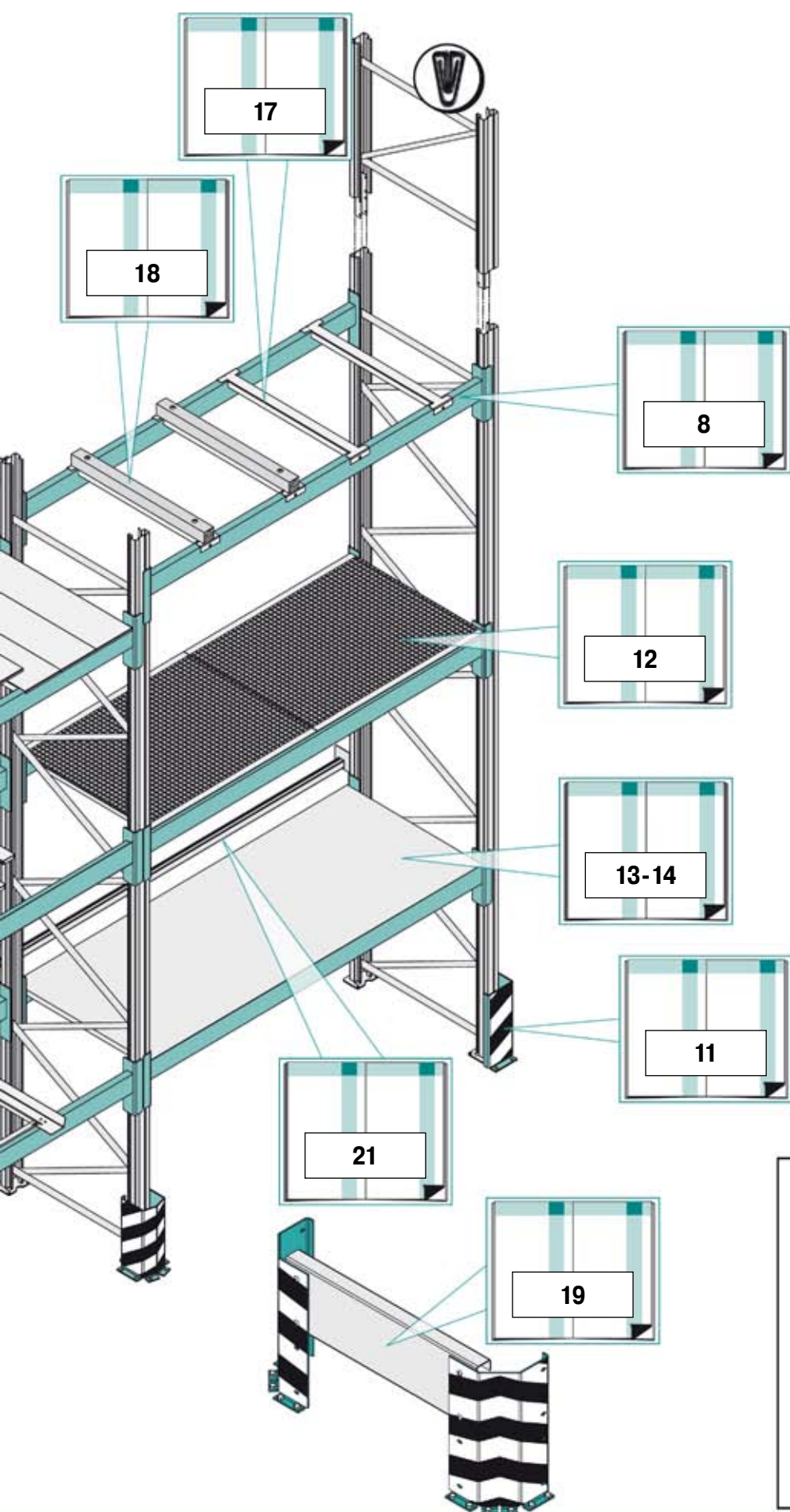


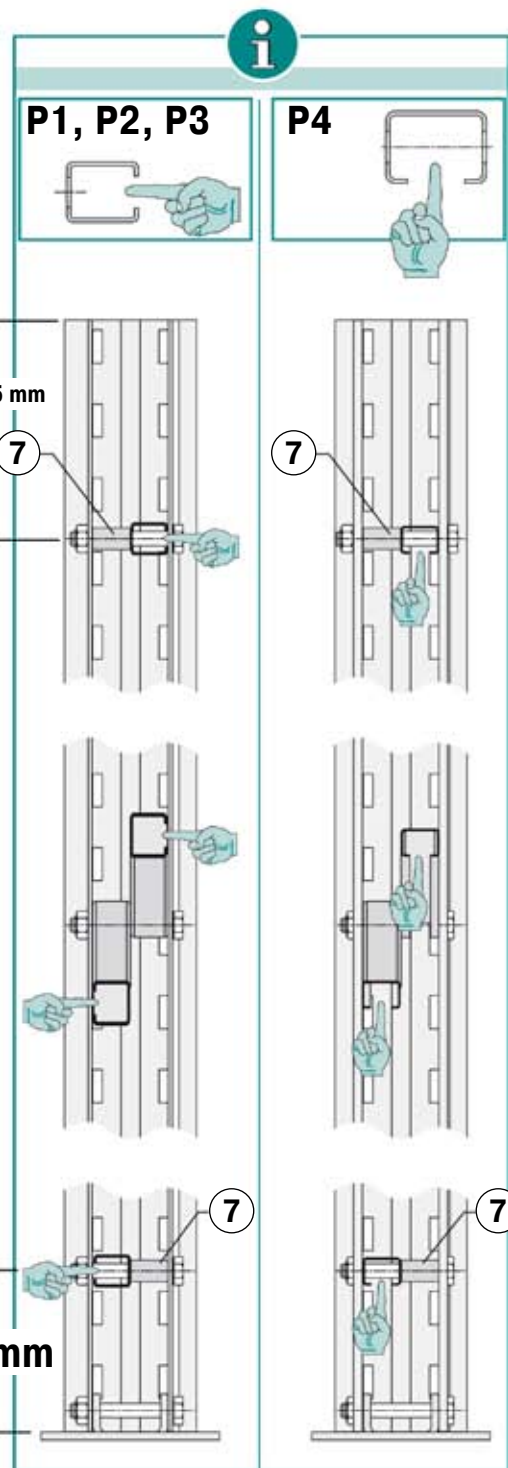
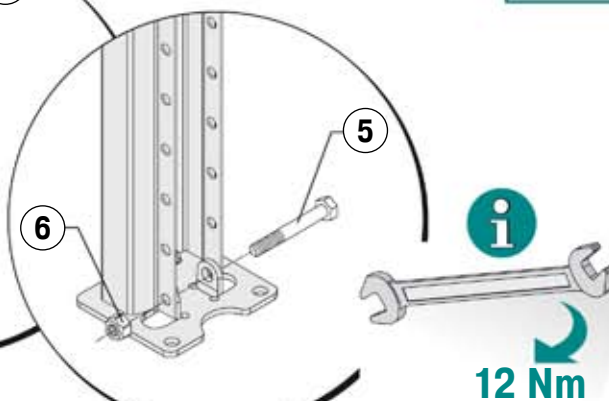
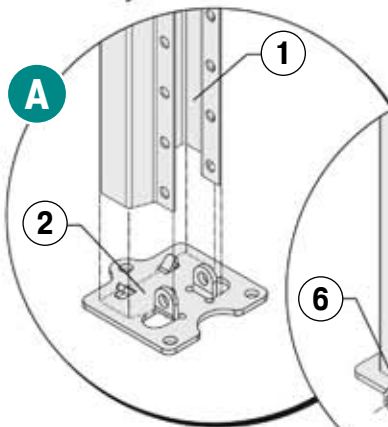
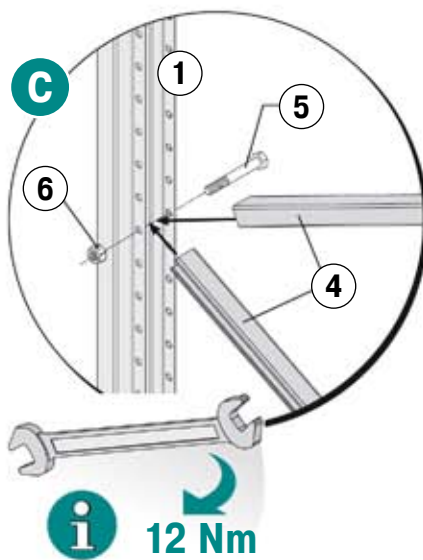
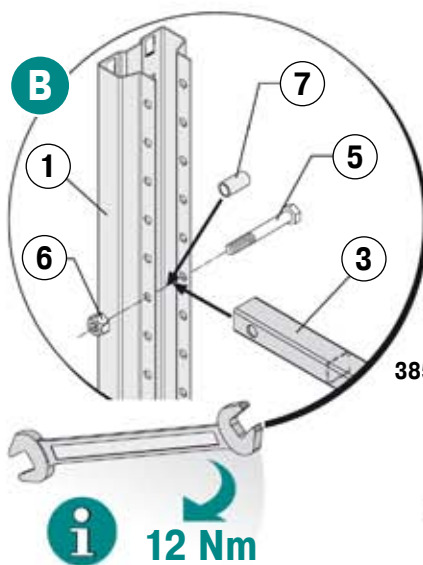
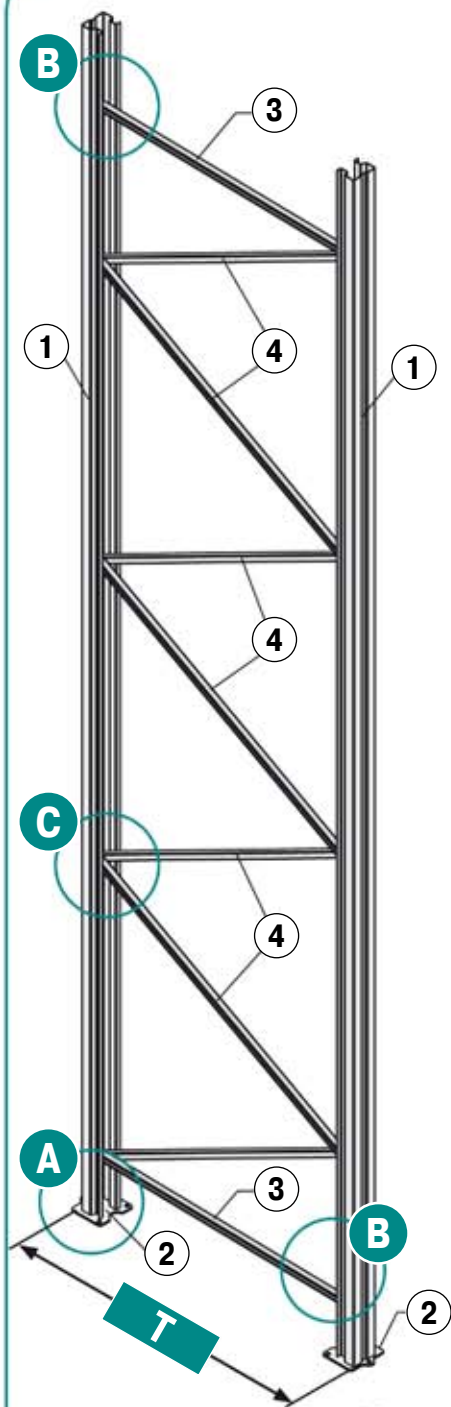
L	H
< 1m	max. 4 mm
> 1m - < 4 m	max. 10 mm
> 4 m - < 15 m	max. 12 mm
> 15 m	max. 15 mm

C20/C25
DIN EN 206-1/DIN 1045-2



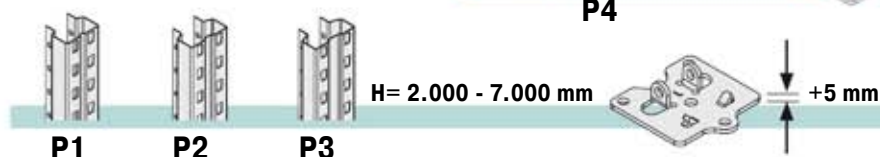
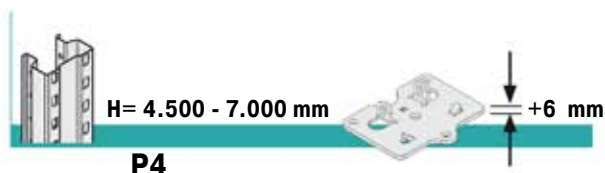
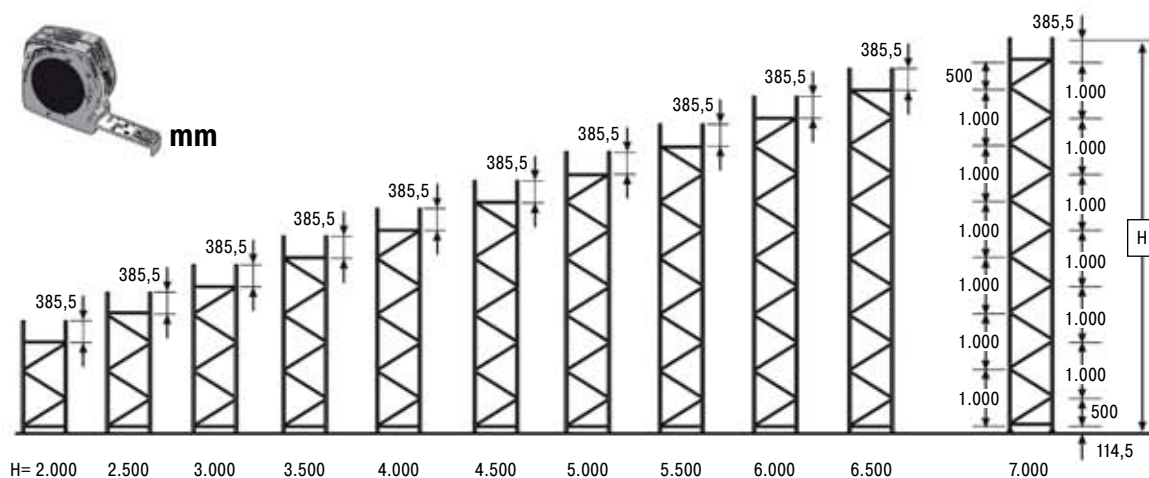


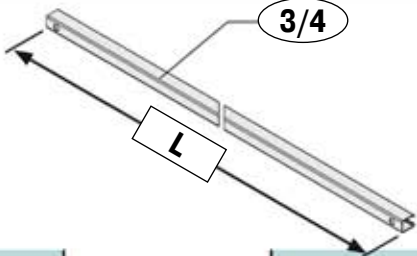


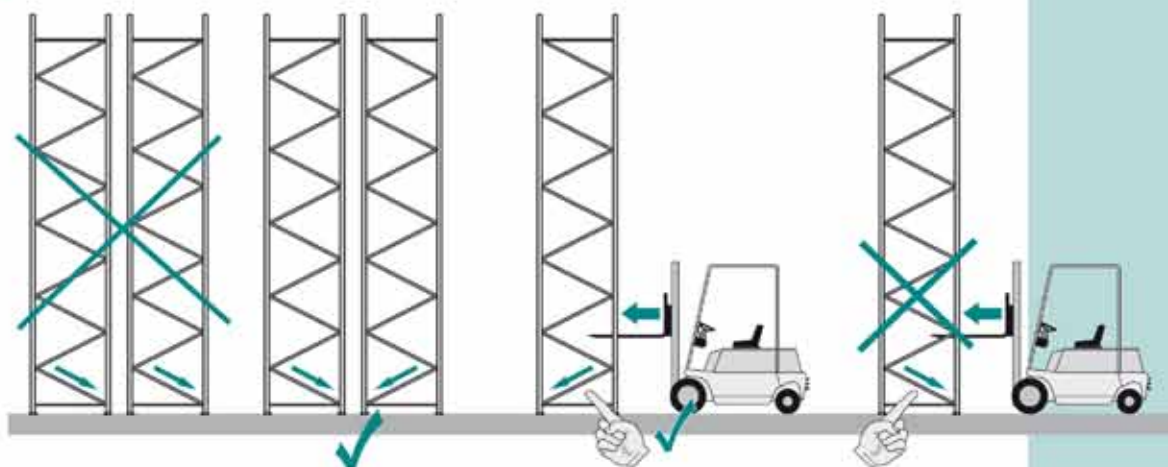
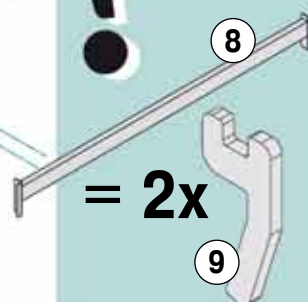
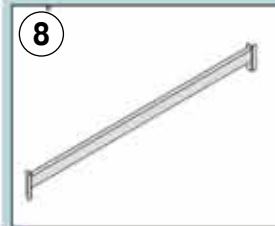
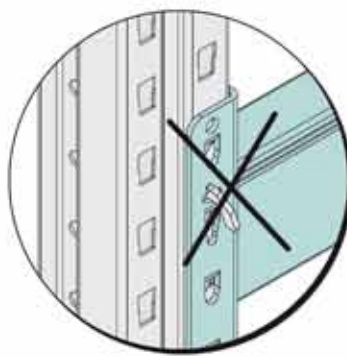
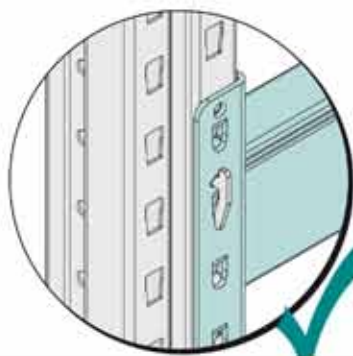
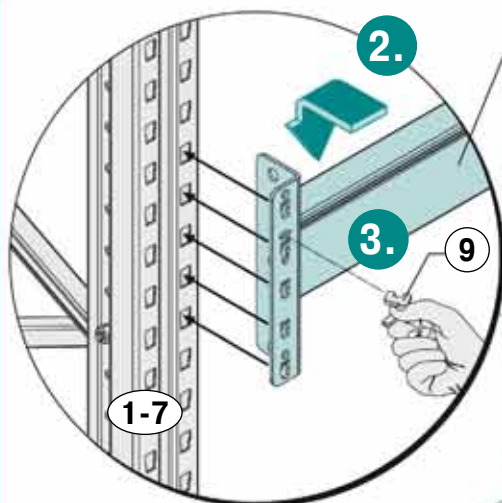


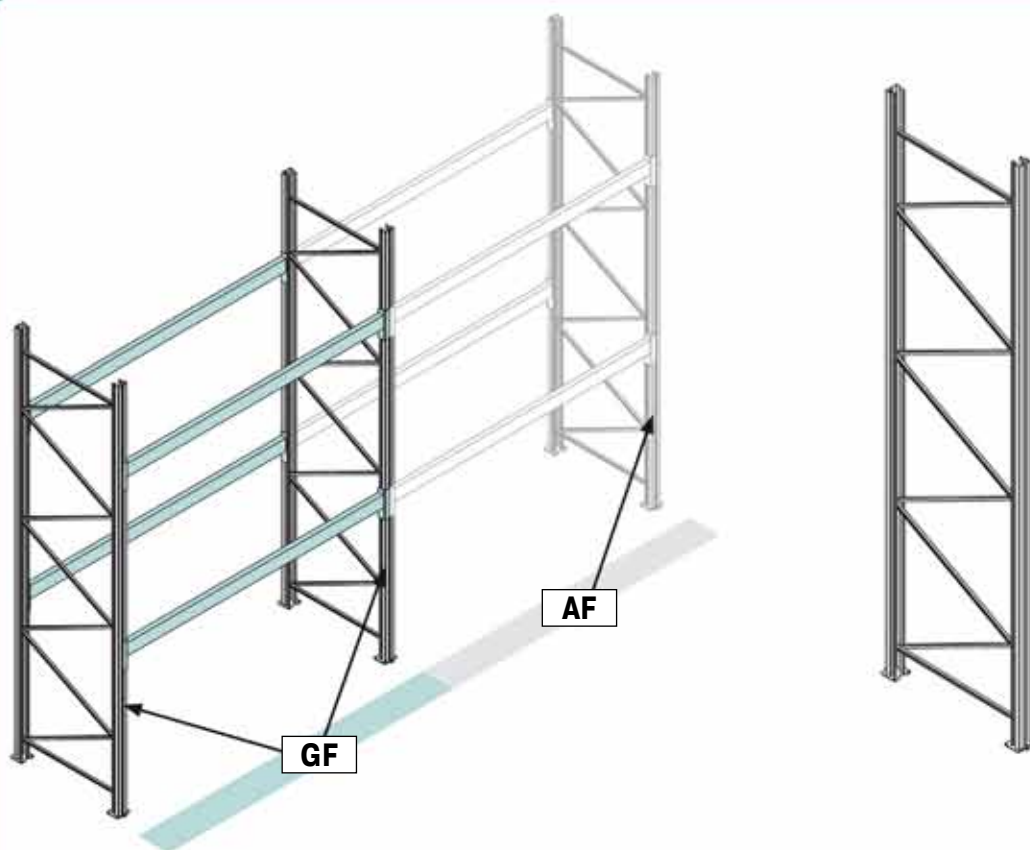
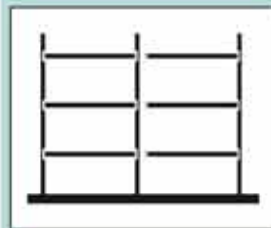


P1, P2, P3, P4

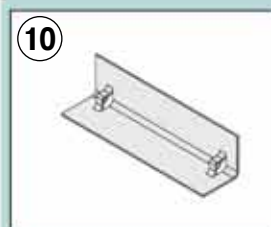
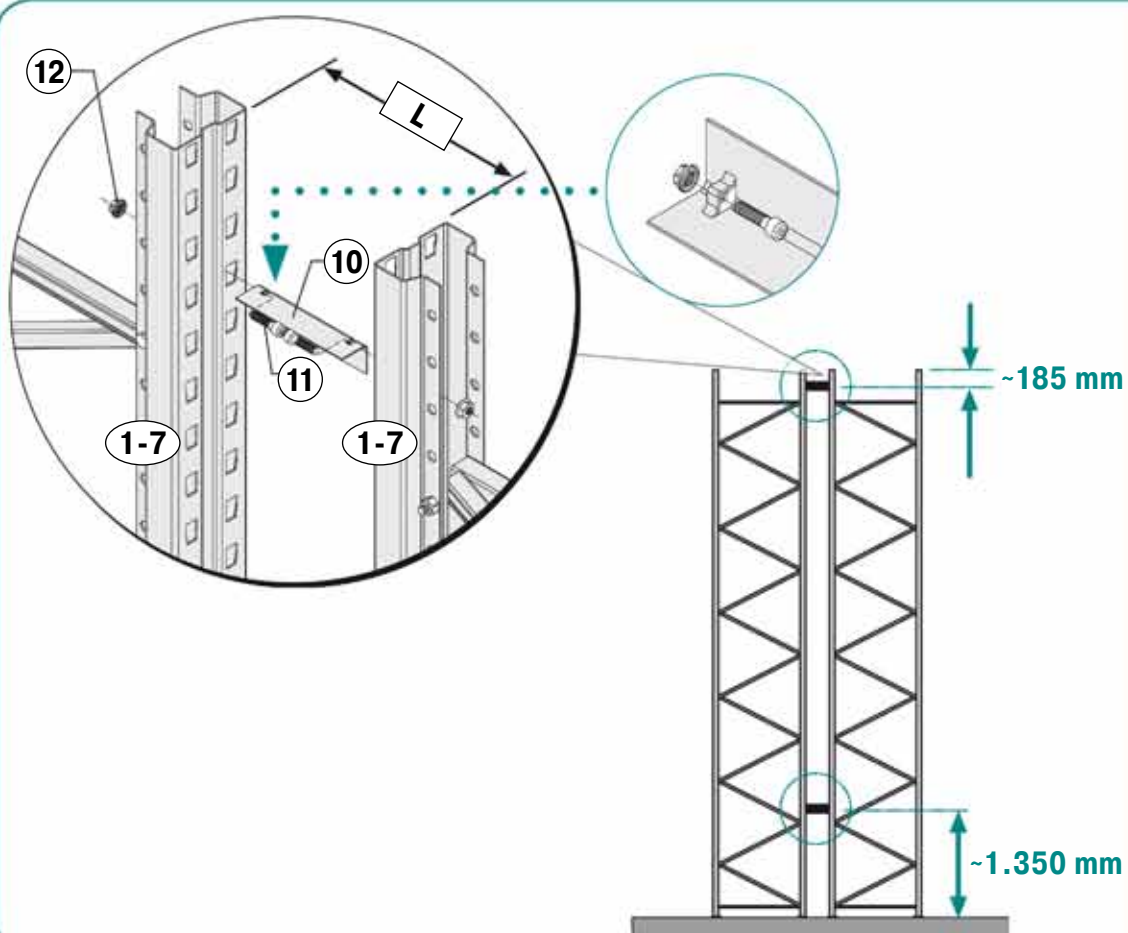


											
1	2	T= 600 mm		T= 800 mm		T= 1.100 mm		5	6	7	
		3	4	3	4	3	4				
 80 mm	 120 x 105 x 5 mm	L= 530 mm	L= 740 mm	L= 730 mm	L= 892 mm	L= 1.030 mm	L= 1.149 mm	M10 x 65 mm DIN 933	M10 DIN 985	ø 14 x 1,5 LH= 25 mm	
 90 mm											
 100 mm											
 120 mm	 150 x 105 x 6 mm	L= 520 mm	L= 733 mm	L= 720 mm	L= 884 mm	L= 1.020 mm	L= 1.140 mm	M10 x 90 mm DIN 933	M10 DIN 985	ø 14,0 x 1,5 LH= 34 mm	





GF = 2x
AF = 1x



10 2x
50 x 50 x L mm

11 4x
M10 x 40 mm
DIN EN ISO 4762

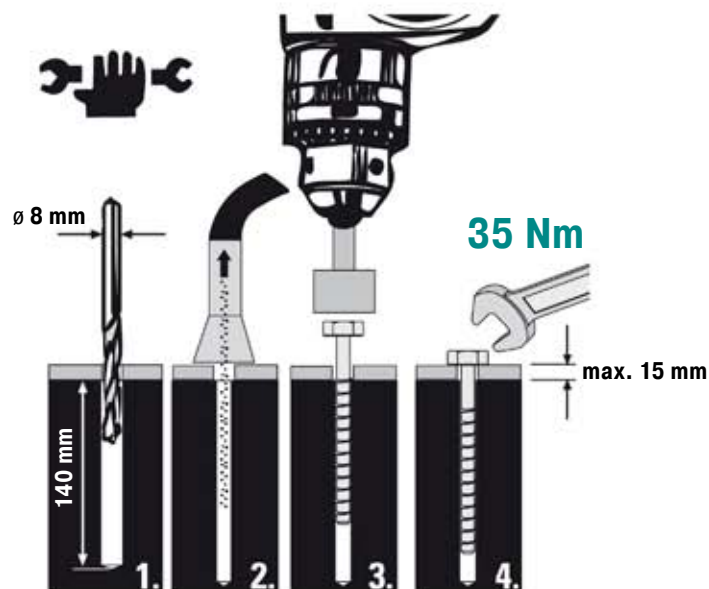
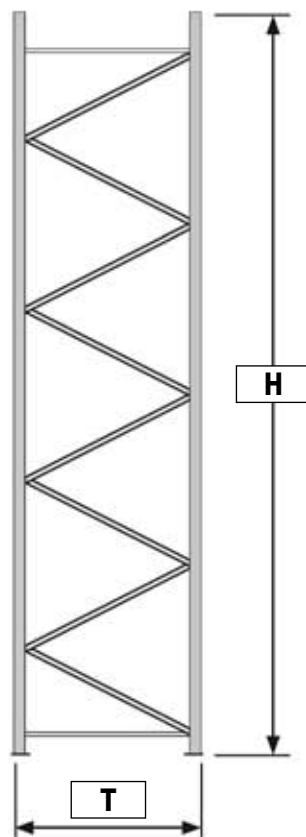
12 4x
M10



13

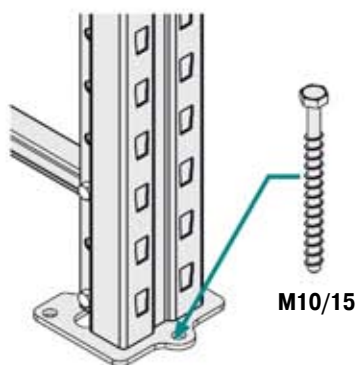


M10/15



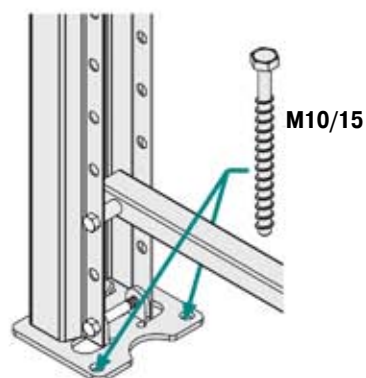
A

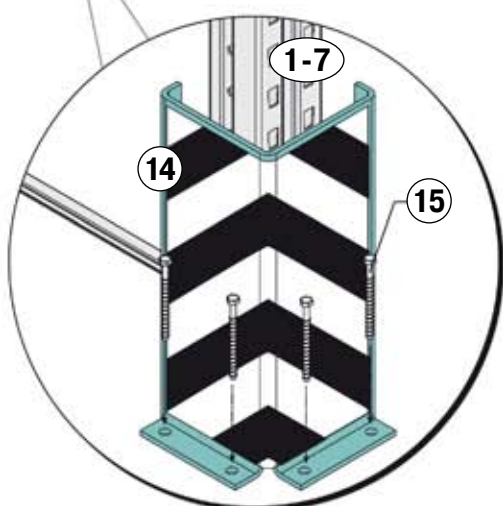
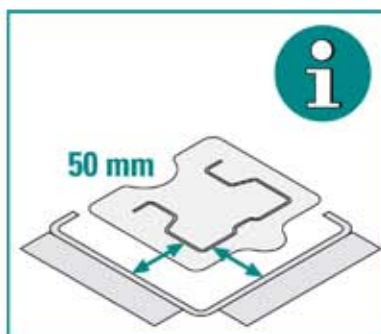
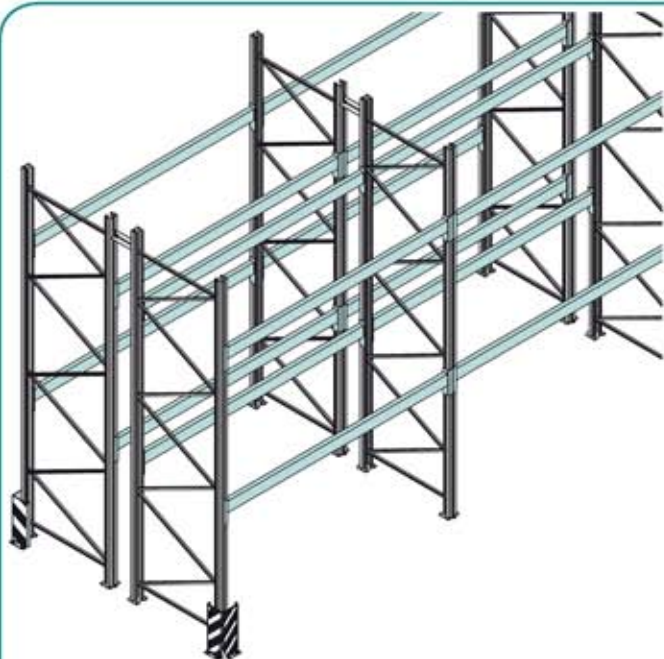
T	H	M10/15
$\geq 1.100 \text{ mm}$	$\leq 8.750 \text{ mm}$	2x



B

T	H	M10/15
$< 1.100 \text{ mm}$	-	4x
$\geq 1.100 \text{ mm}$	$> 8.750 \text{ mm}$	





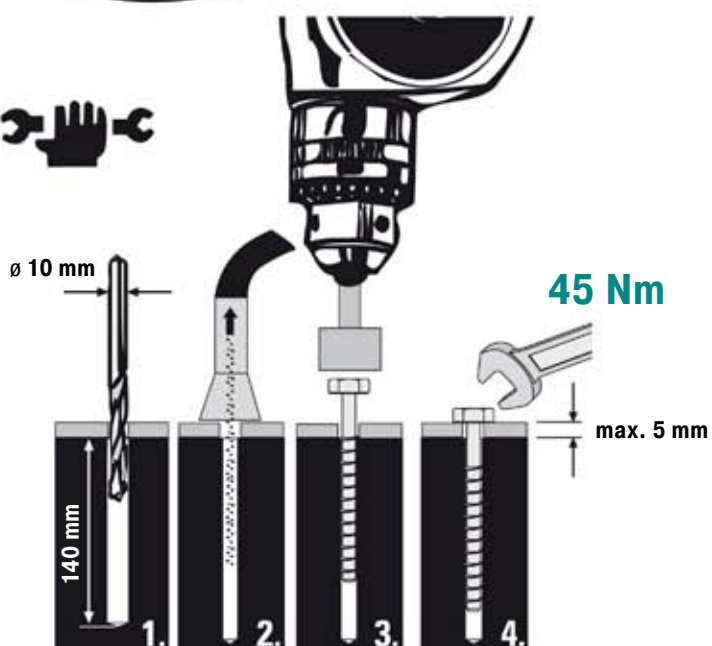
14

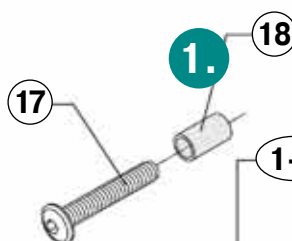
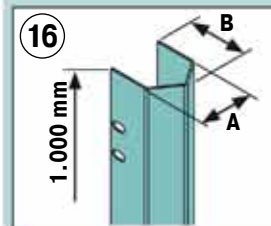
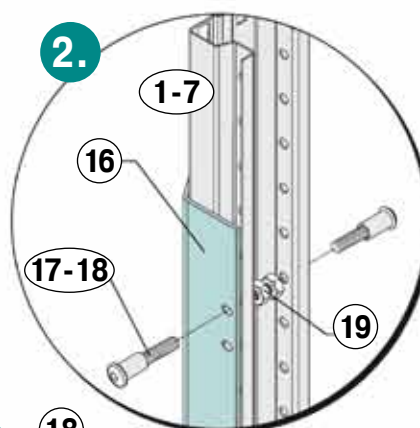
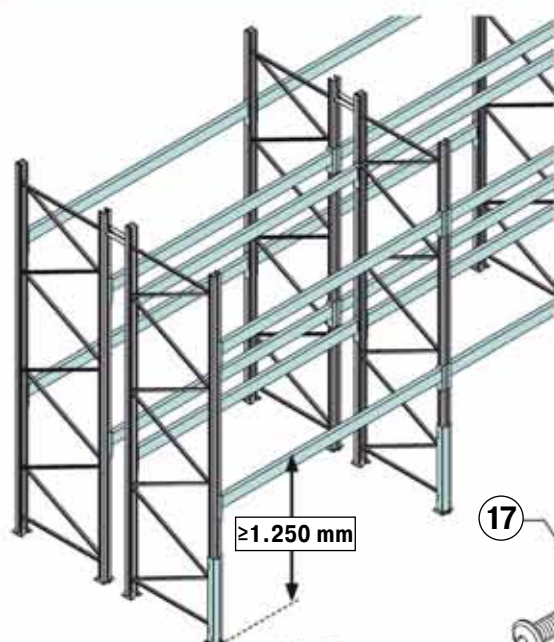


15
6x
M12/5

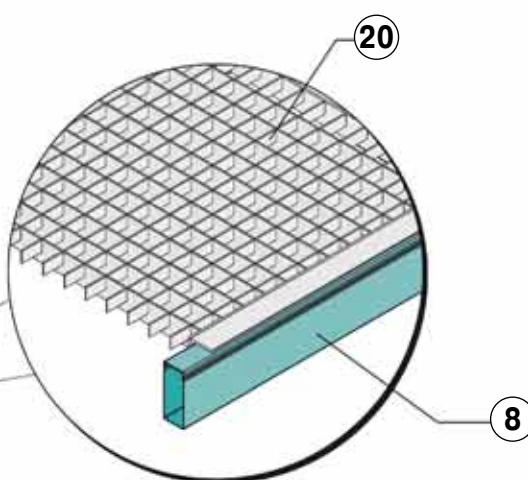


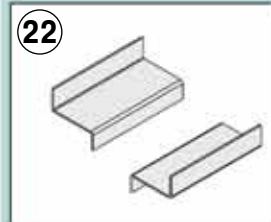
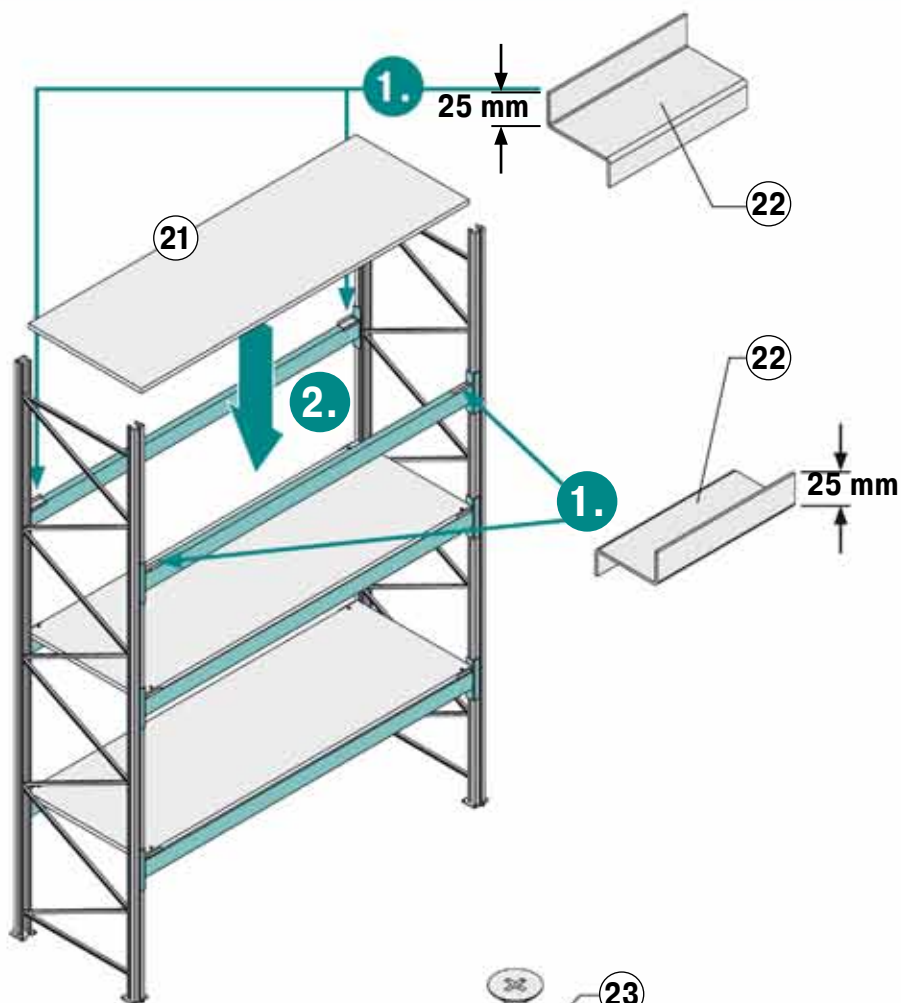
15
4x
M12/5





	1-7	16	17	19	18
		(A x B)	1x	4x	4x
P1	81,5 x 110 mm	M10 x 35	M10	14 x 1,5 x 16 mm	
P2	91,5 x 105 mm	M10 x 35	M10	14 x 1,5 x 21 mm	
P3	101,5 x 101,5 mm	M10 x 40	M10	14 x 1,5 x 25 mm	
P4	121,5 x 125,5 mm	M10 x 40	M10	14 x 1,5 x 25 mm	



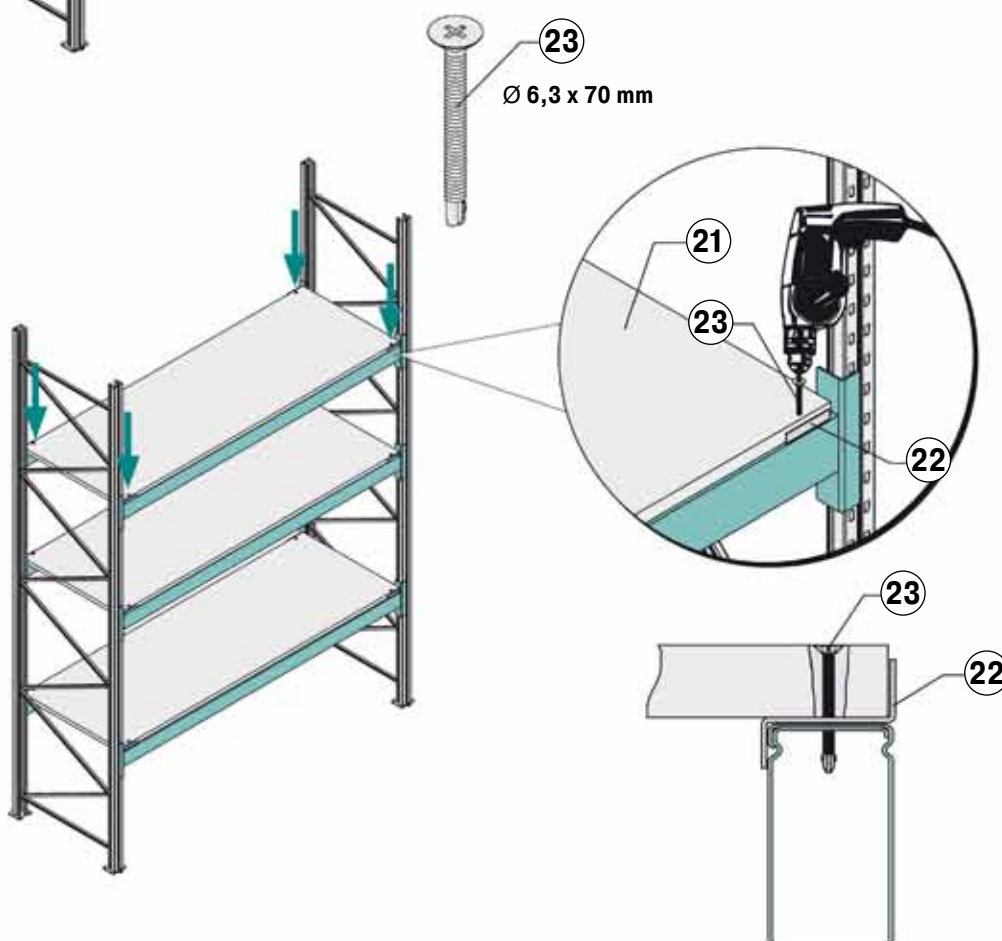


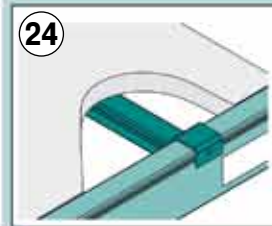
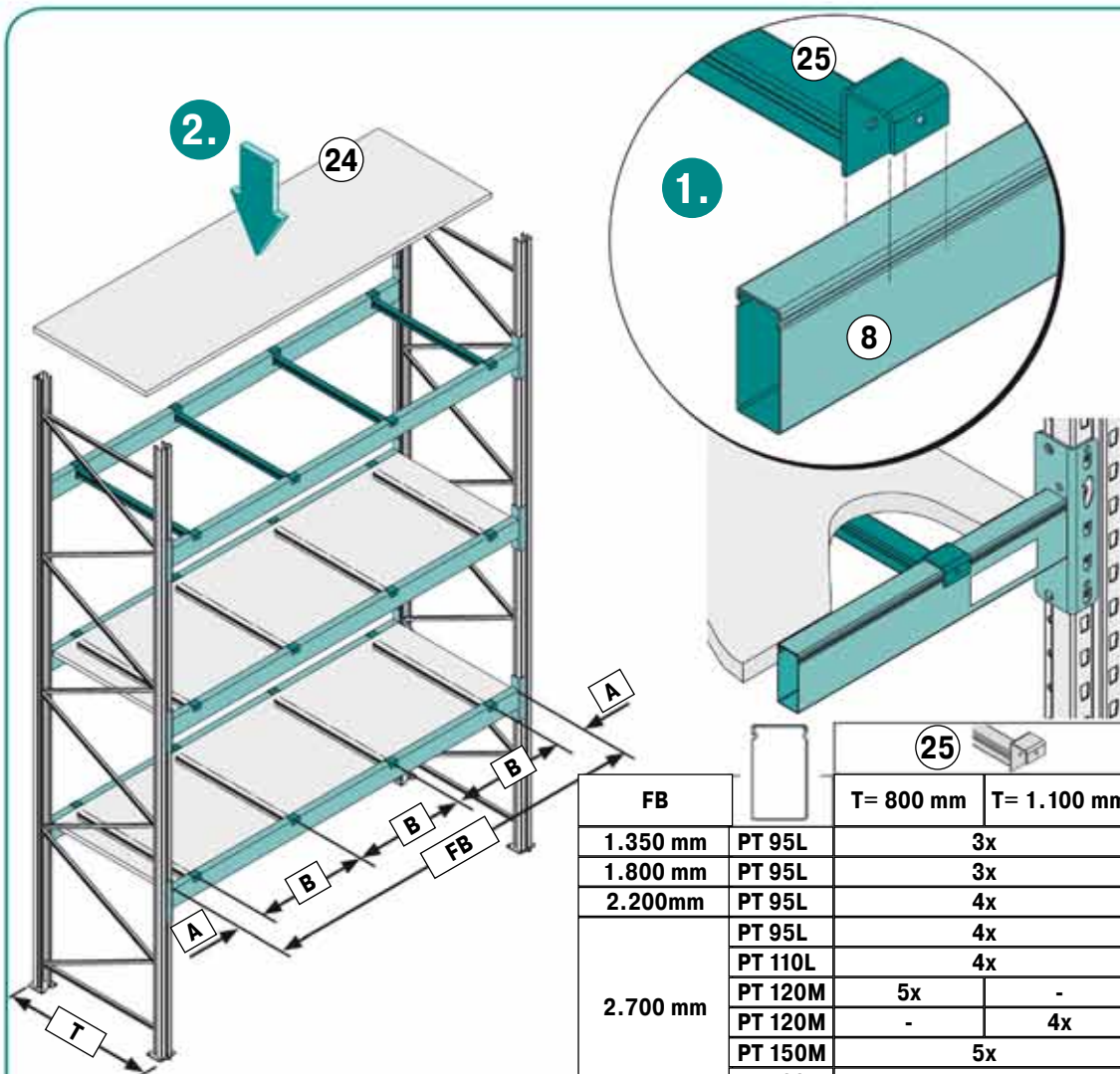
21 1x

22 4x

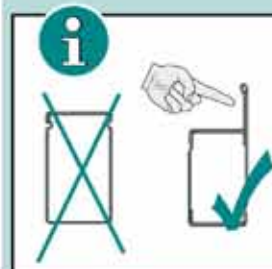
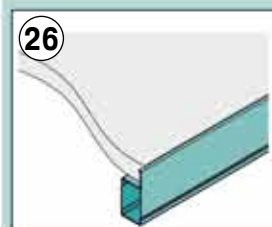
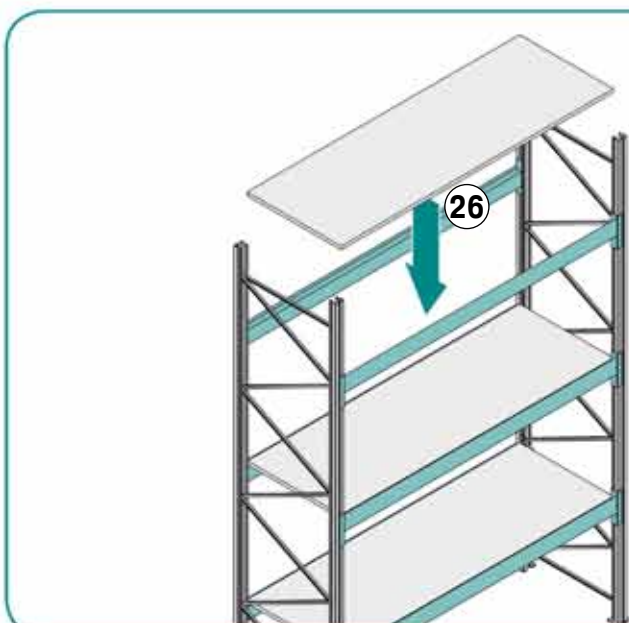
23 4x

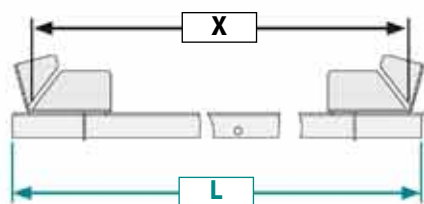
Ø 6,3 x 70 mm



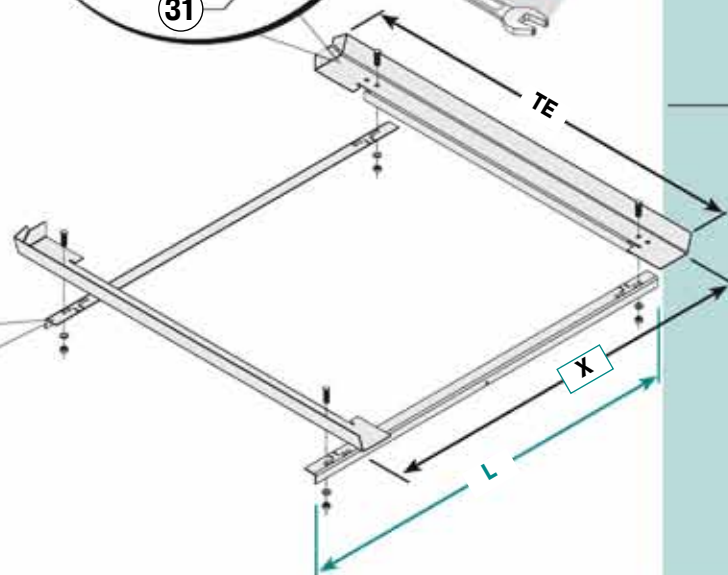
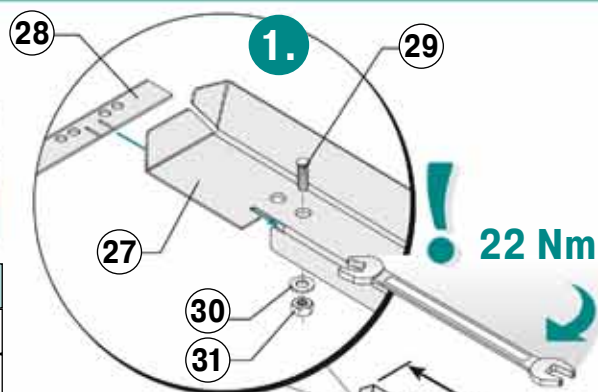
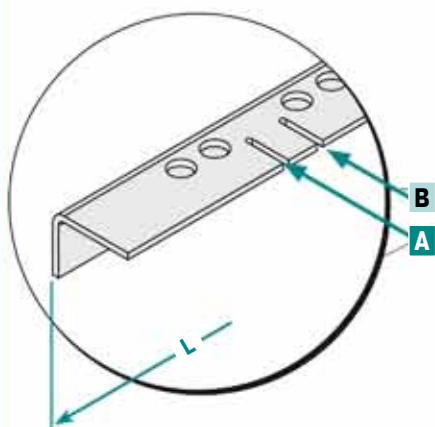


FB		25		A	B
		T= 800 mm	T= 1.100 mm		
1.350 mm	PT 95L	3x		~ 225	450 mm
1.800 mm	PT 95L	3x			675 mm
2.200mm	PT 95L	4x			583 mm
2.700 mm	PT 95L	4x			750 mm
	PT 110L	4x			562 mm
	PT 120M	5x	-		750 mm
	PT 120M	-	4x		712 mm
	PT 150M	5x			787 mm
	PT 160M	5x			
3.300 mm	PT 120M	5x			
	PT 160M				
3.600 mm	PT 130M	5x			
	PT 150M				
	PT 160M				
	PT 170S				





	A	A-B	B
L	X=	X=	X=
890 mm	840 mm	822 mm	804 mm
1.090 mm	1.040 mm	1.022 mm	1.004 mm
1.340 mm	1.240 mm	1.222 mm	1.204 mm



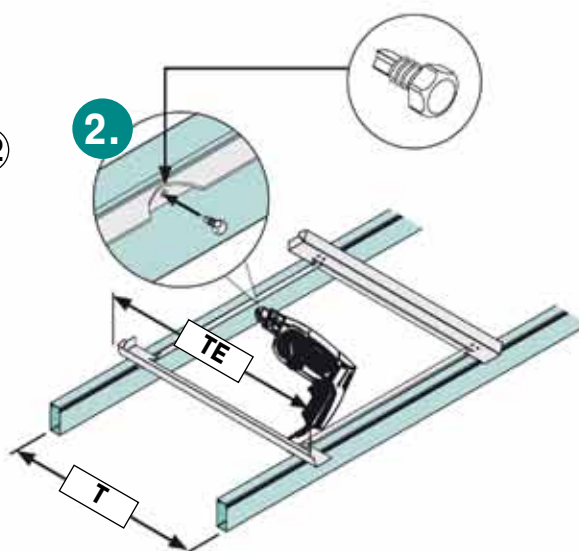
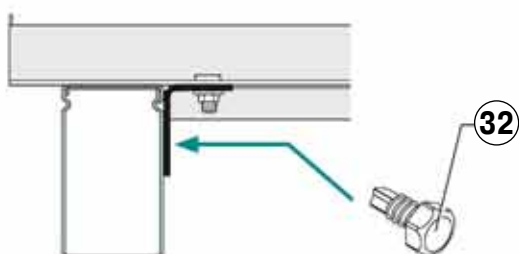
29 4x



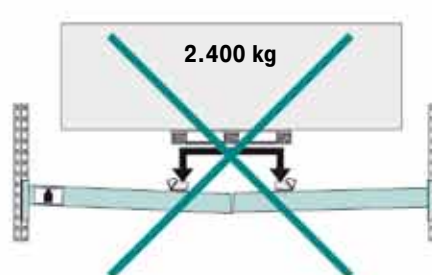
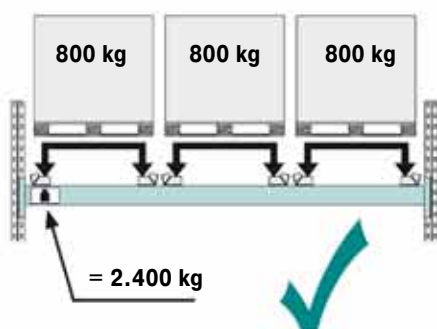
30 4x



31 4x

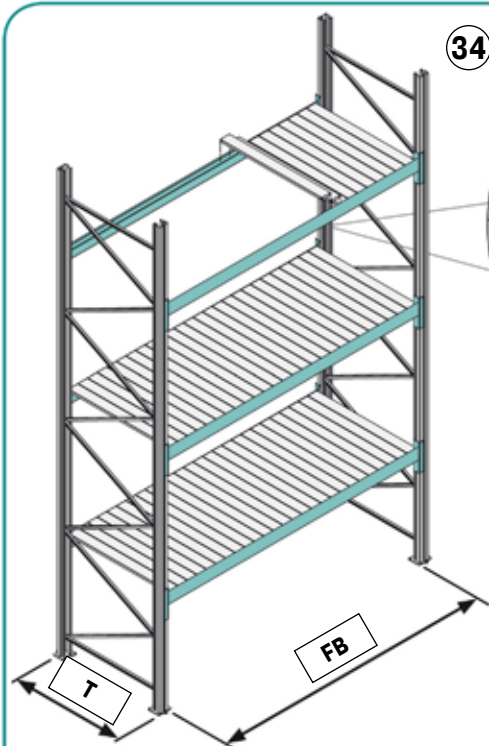


32 1x
Ø 6,3 x 19
DIN 7504

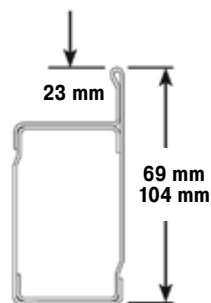
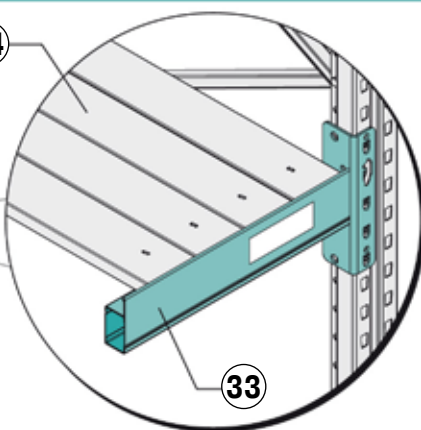


max. 1.000 kg

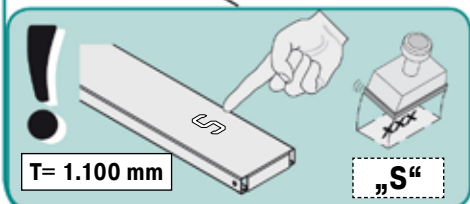
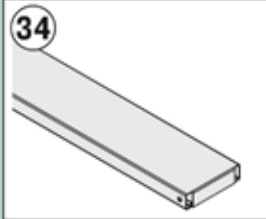
TE	T	
800 mm	800 mm	1.000 kg
1.250 mm	1.100 mm	1.000 kg



34

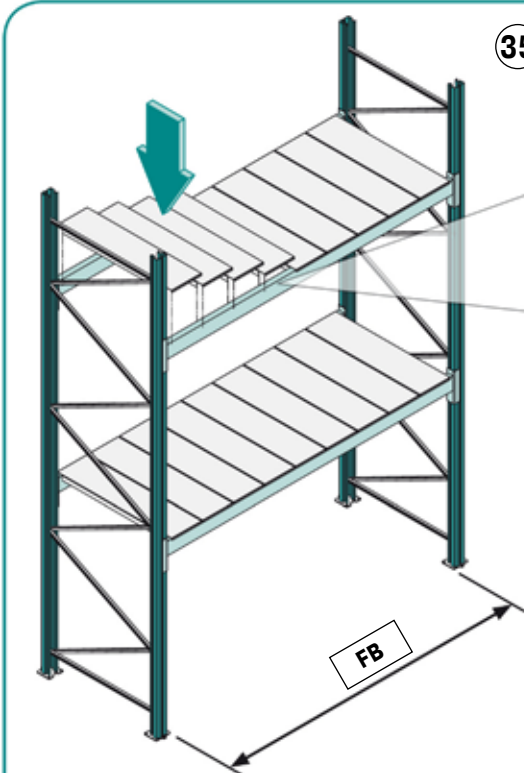
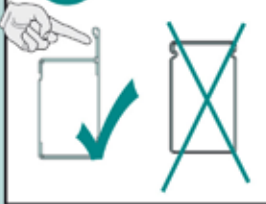


34

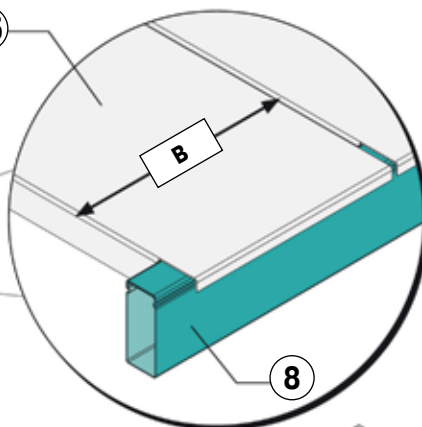


FB			99 mm	73 mm
1.350 mm	600 / 800 mm	-	12	2
	1.100 mm	S		
1.800 mm	600 / 800 mm	-	18	-
	1.100 mm	S		
2.200 mm	600 / 800 mm	-	22	-
	1.100 mm	S		
2.700 mm	600 / 800 mm	-	27	-
	1.100 mm	S		
3.300 mm	600 / 800 mm	-	33	-
	1.100 mm	S		
3.600 mm	600 / 800 mm	-	36	-
	1.100 mm	S		

i



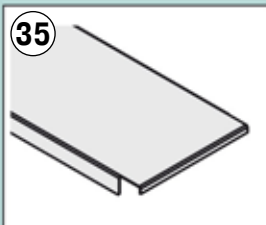
35



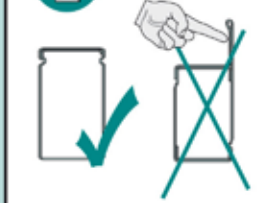
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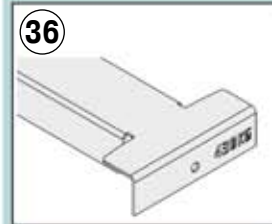
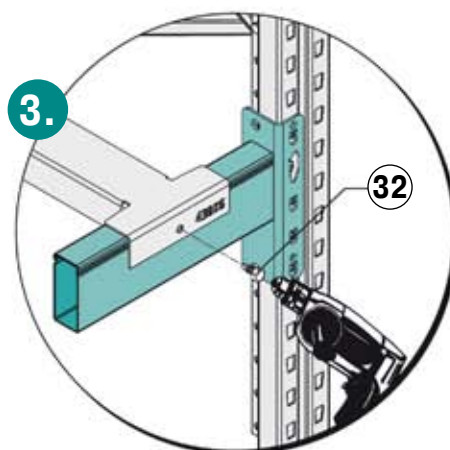
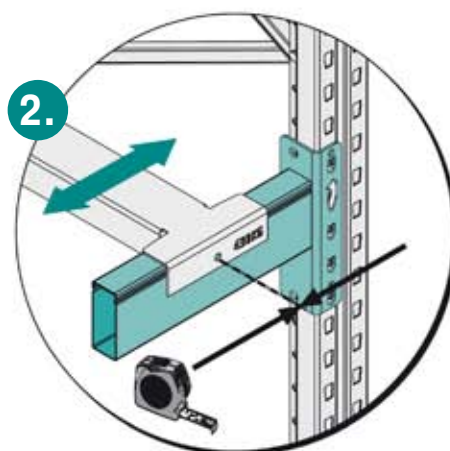
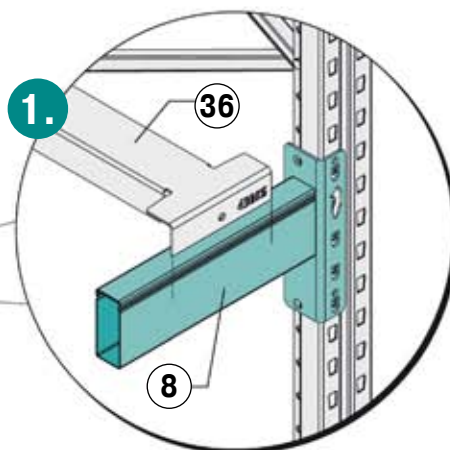
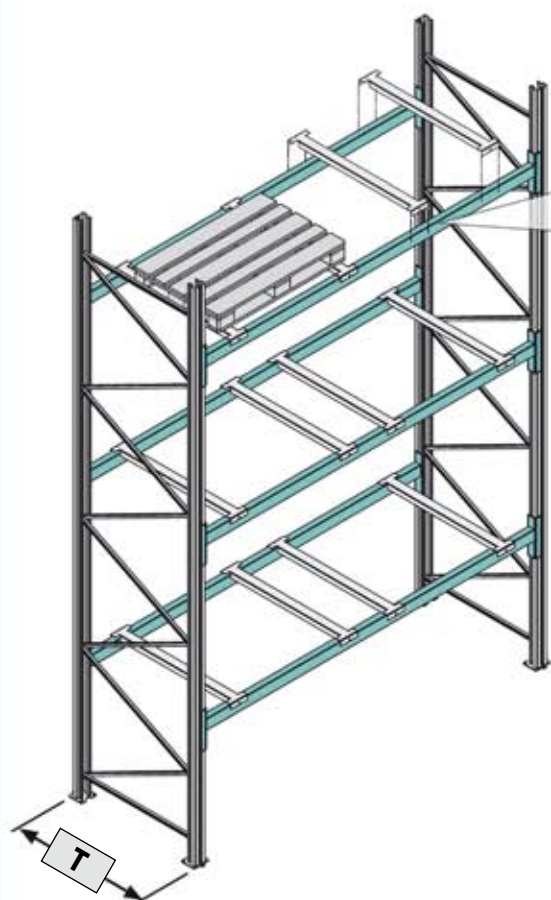
FB	B = 297 mm	B = 149,5 mm	B = 105 mm
1.350 mm	4	1	-
1.800 mm	6	-	-
2.200 mm	7	-	1
2.700 mm	9	-	-
3.300 mm	11	-	-
3.600 mm	12	-	-

35



i





36

1x

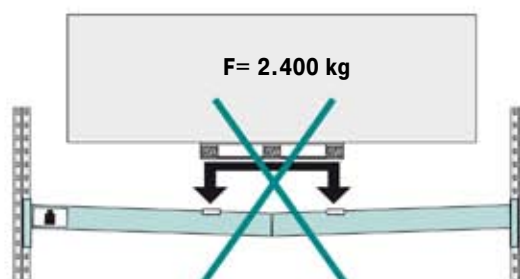
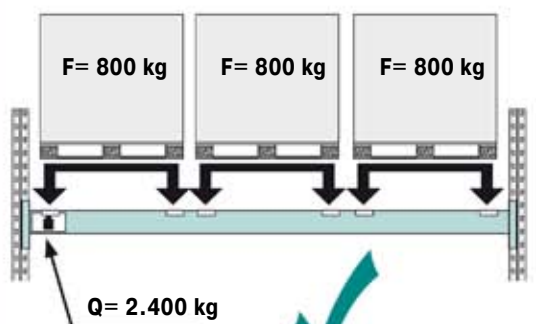
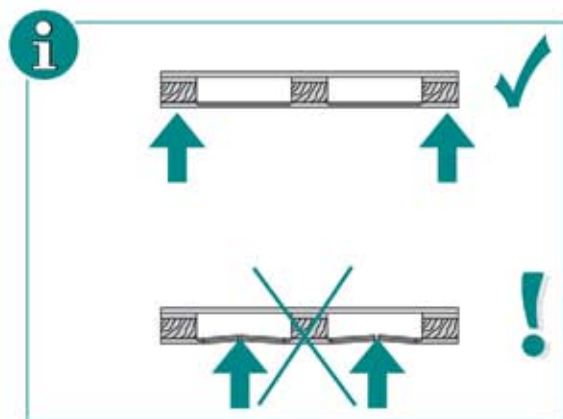
36

32

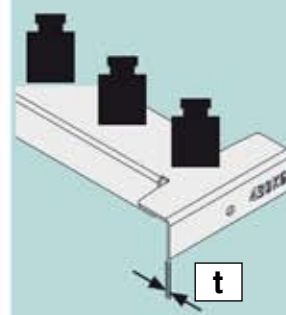
1x



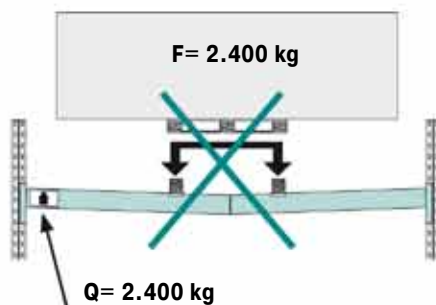
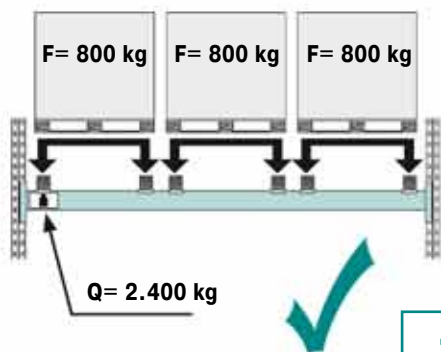
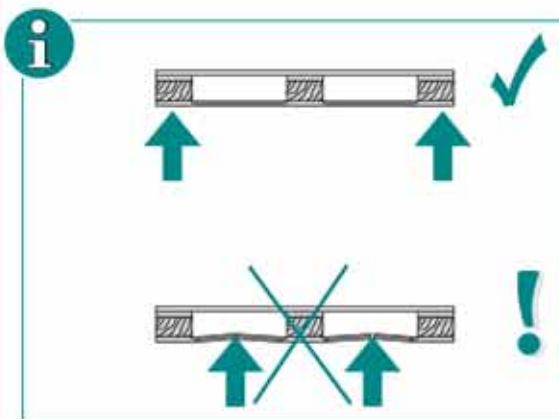
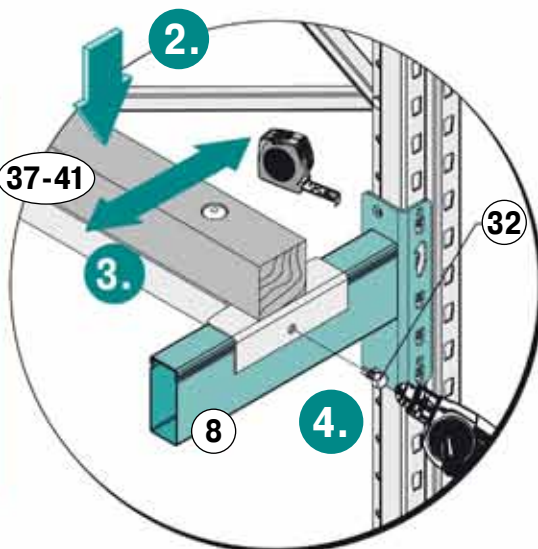
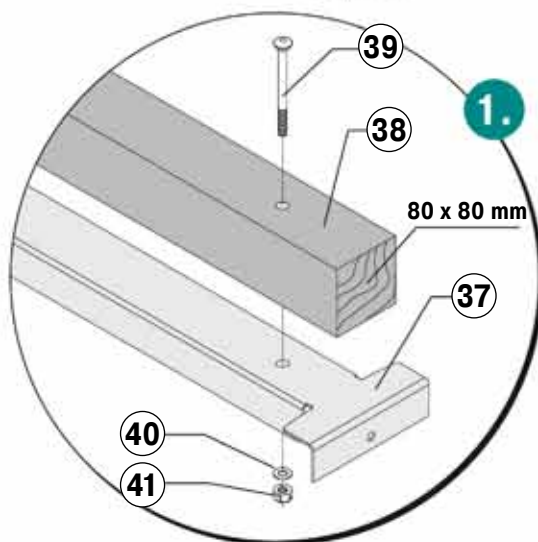
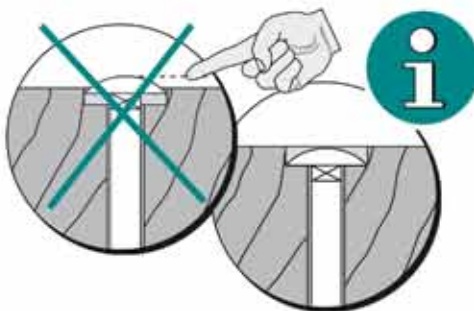
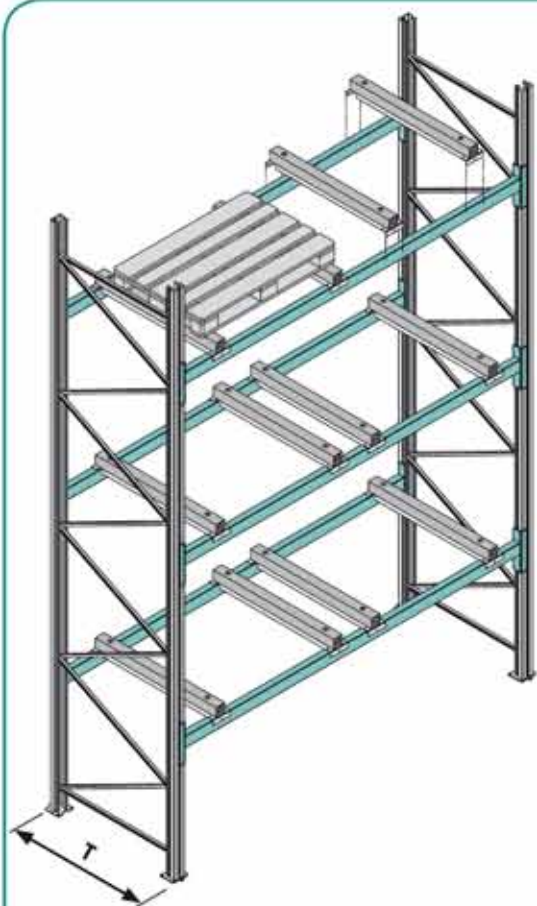
Ø 6,3 x 19
DIN 7504



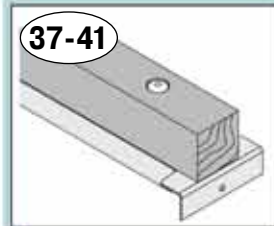
$$\Sigma F \leq Q$$



T	t = 2,5 mm	t = 4,0 mm
800 mm	430 kg	900 kg
1.100 mm	410 kg	630 kg



$$\Sigma F \leq Q$$



32 1x



37 1x

38 1x

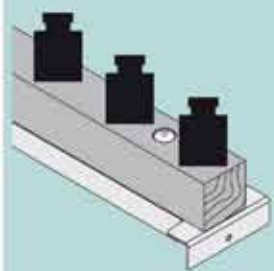
39 2x



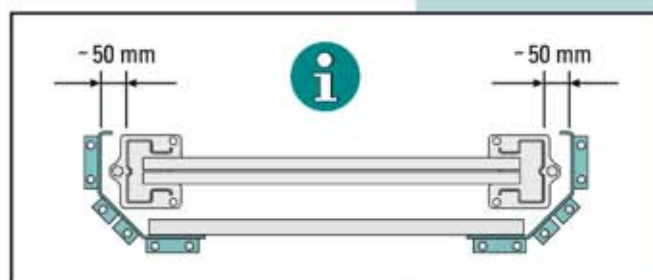
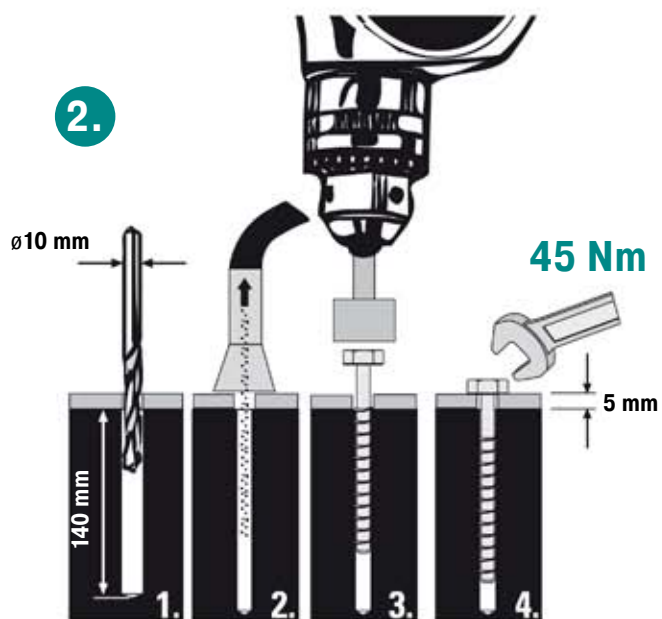
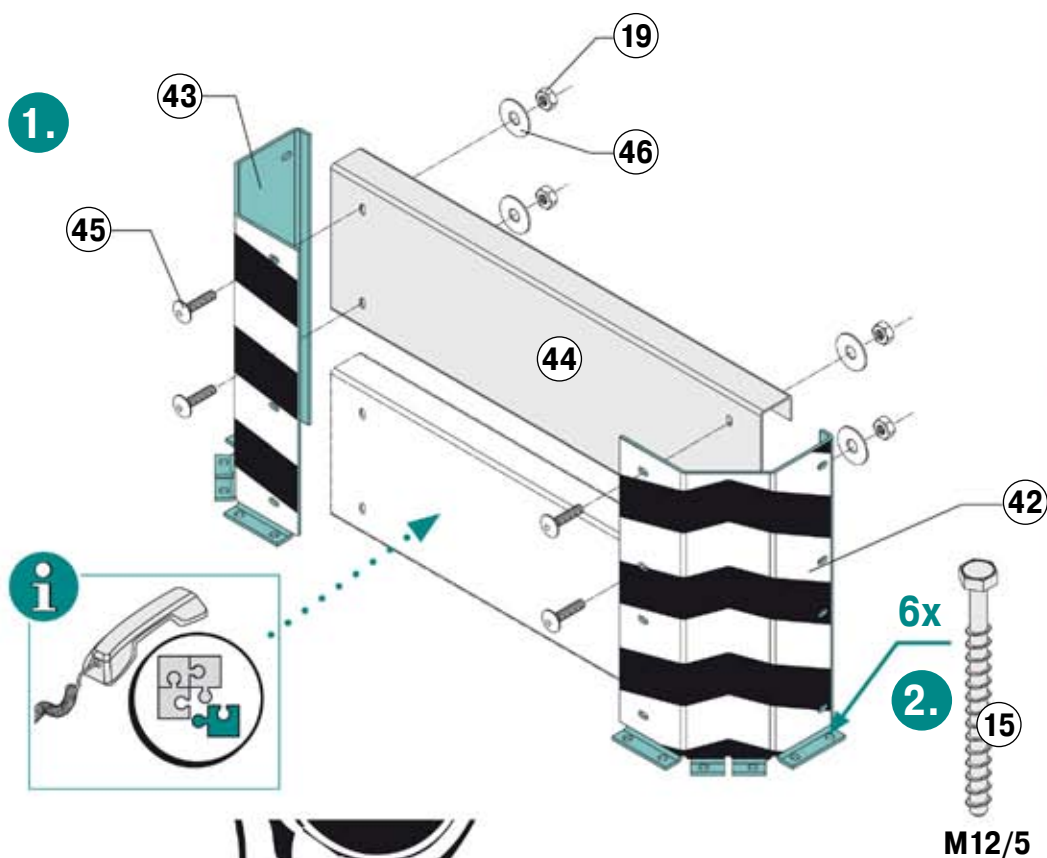
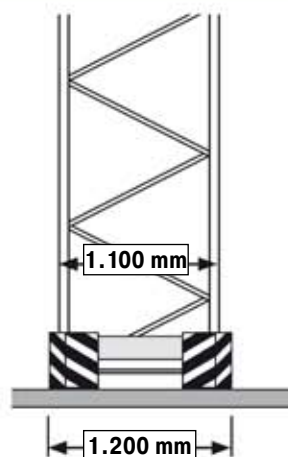
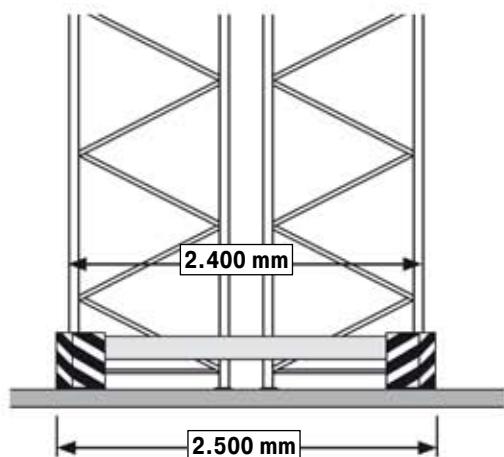
40 2x



41 2x



T	
800 mm	1.500 kg
1.100 mm	1.500 kg



42 1x

43 1x

44 1x (2x)

45 4x (8x)



46 4x (8x)

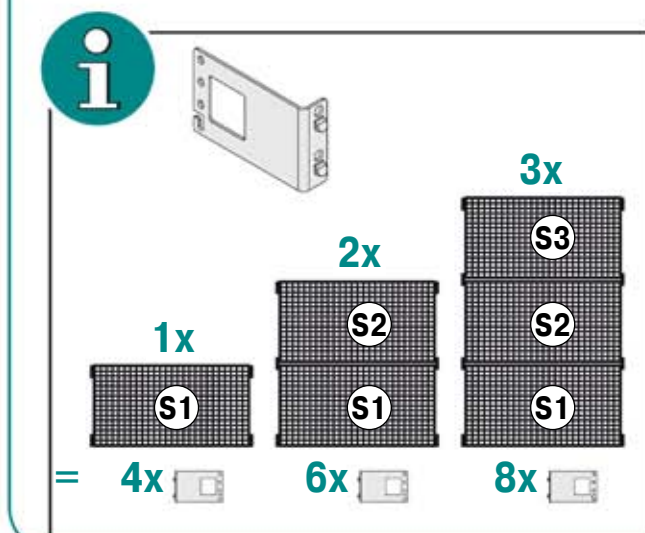
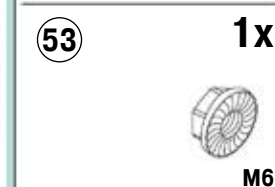
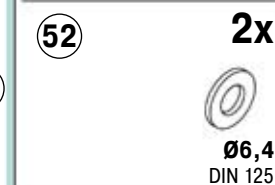
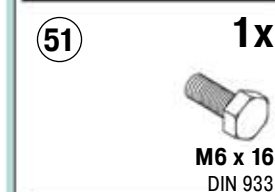
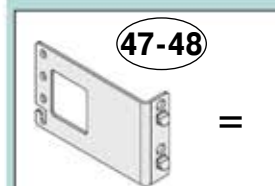
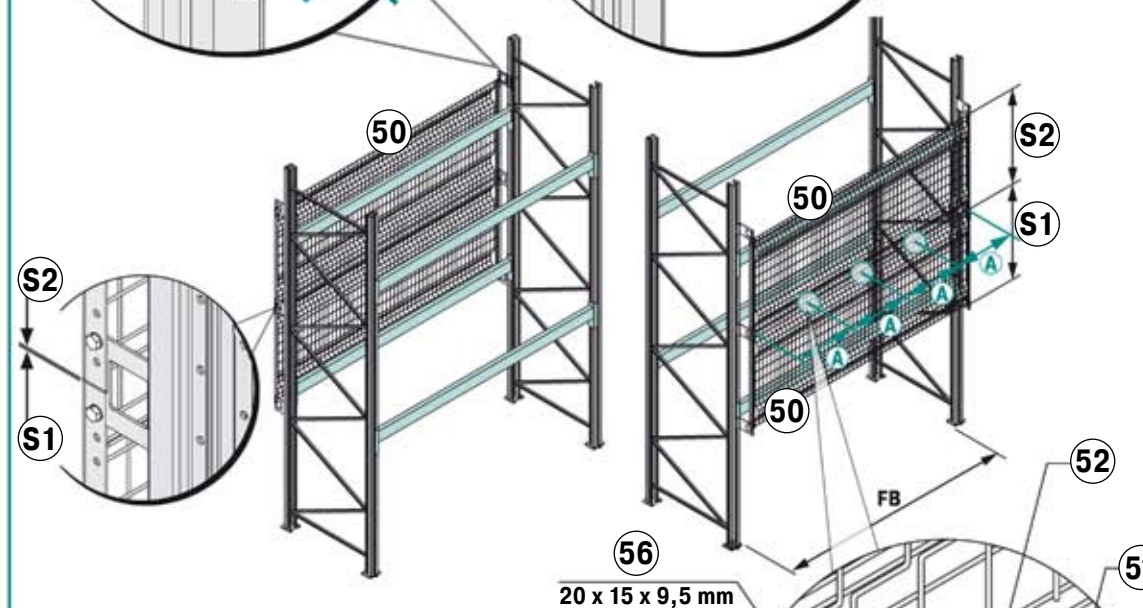
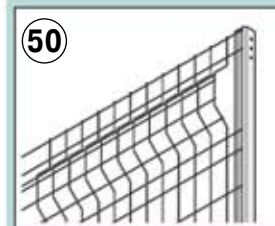
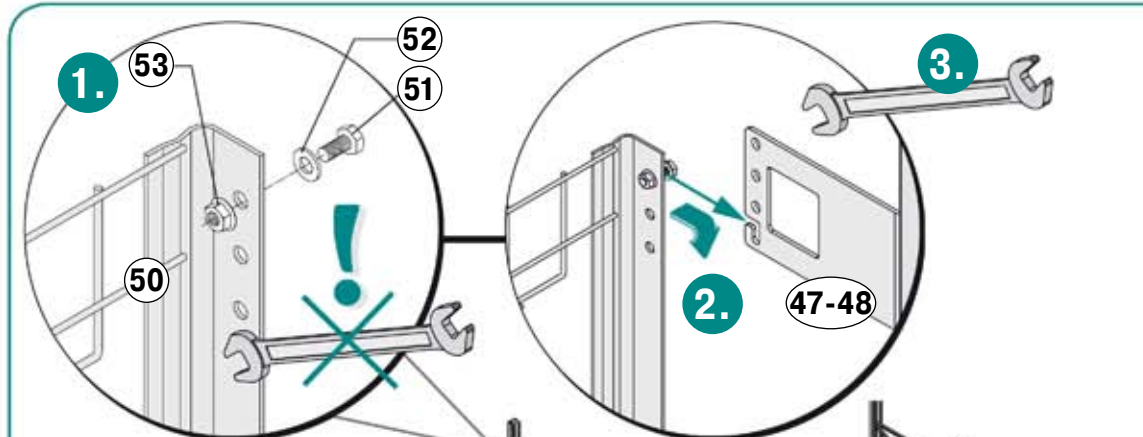
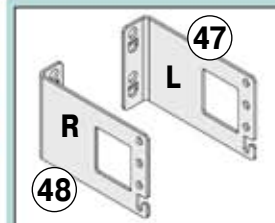
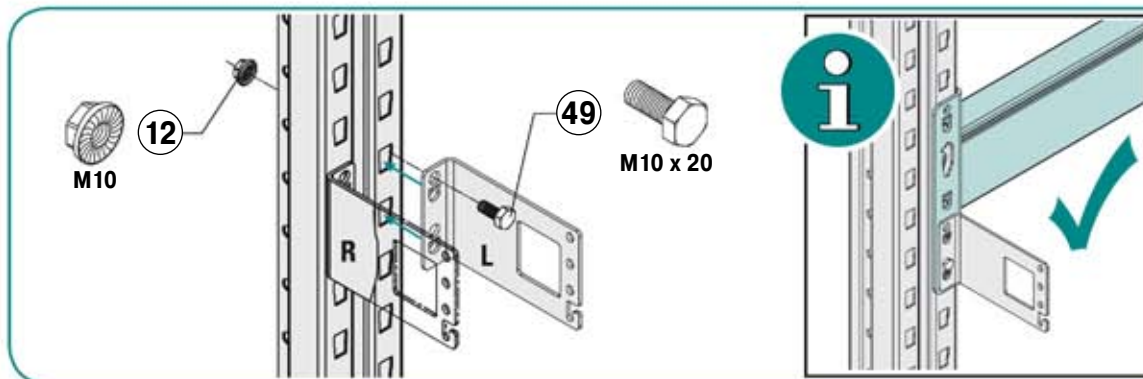


19 4x (8x)

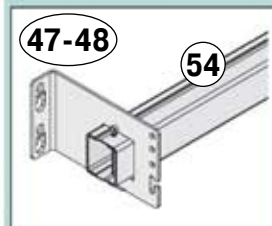
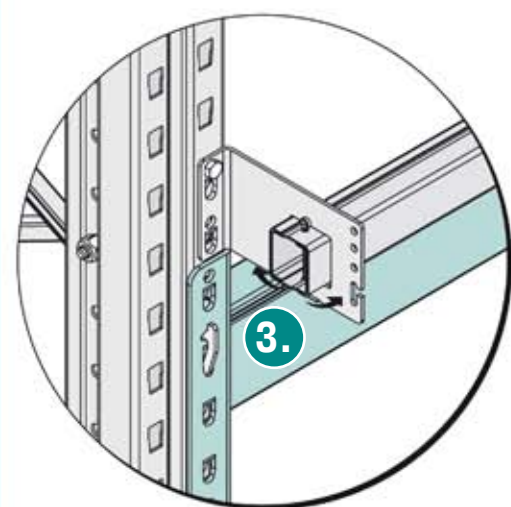
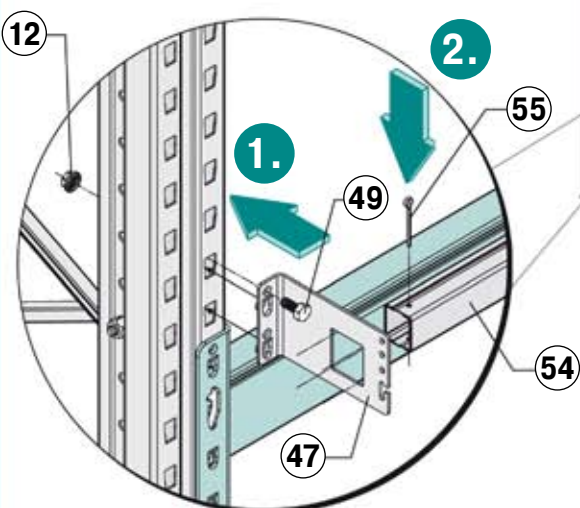
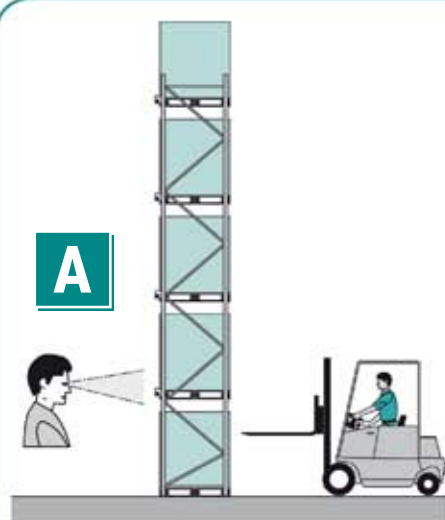


15 12x

M12/5



FB	56	A
1.350 mm	2x	3x (450 mm)
1.800 mm	2x	3x (600 mm)
2.200 mm	3x	4x (550 mm)
2.700 mm	3x	4x (675 mm)
3.300 mm	4x	5x (550 mm)
3.600 mm	5x	6x (600 mm)



47 1x

48 1x

51 2x

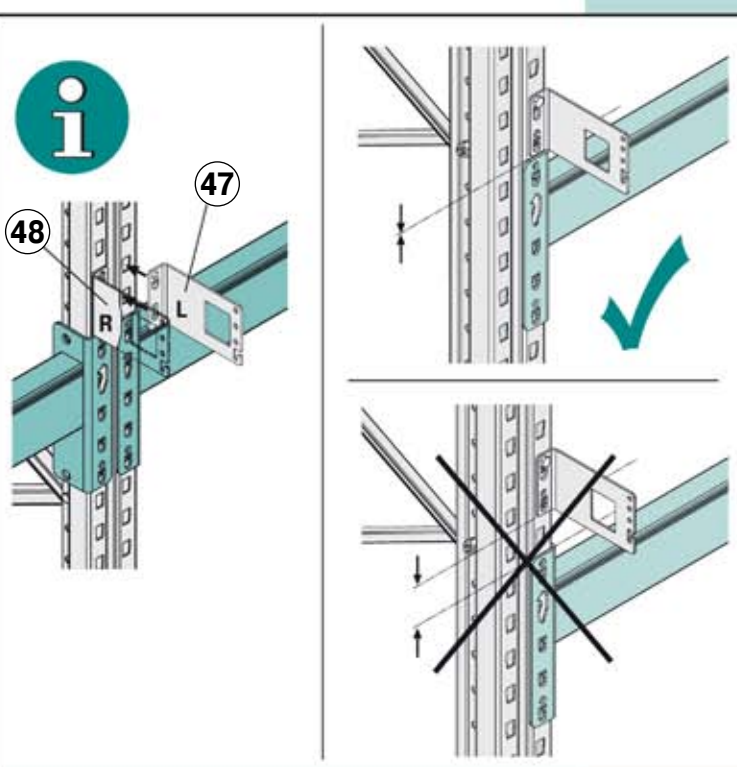


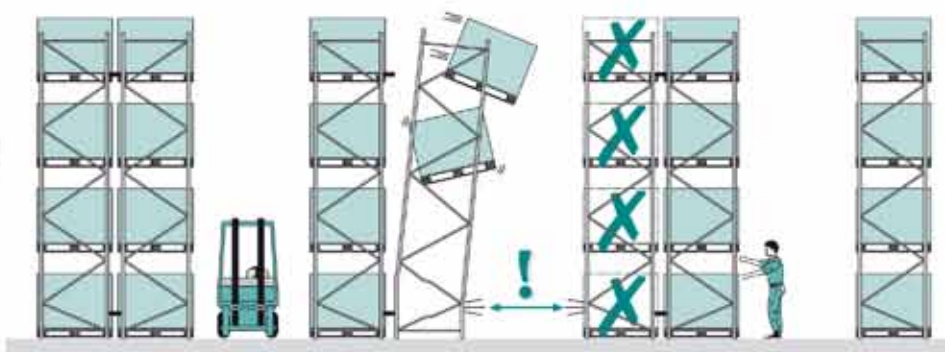
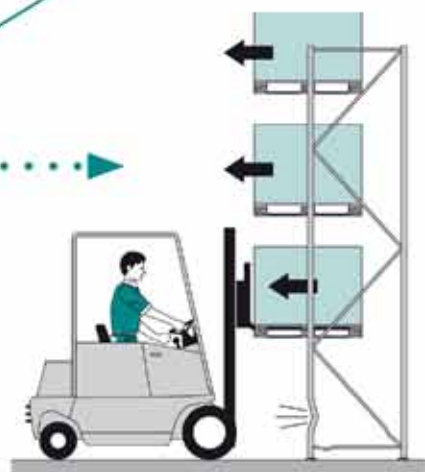
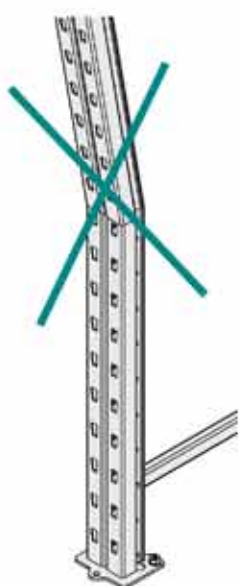
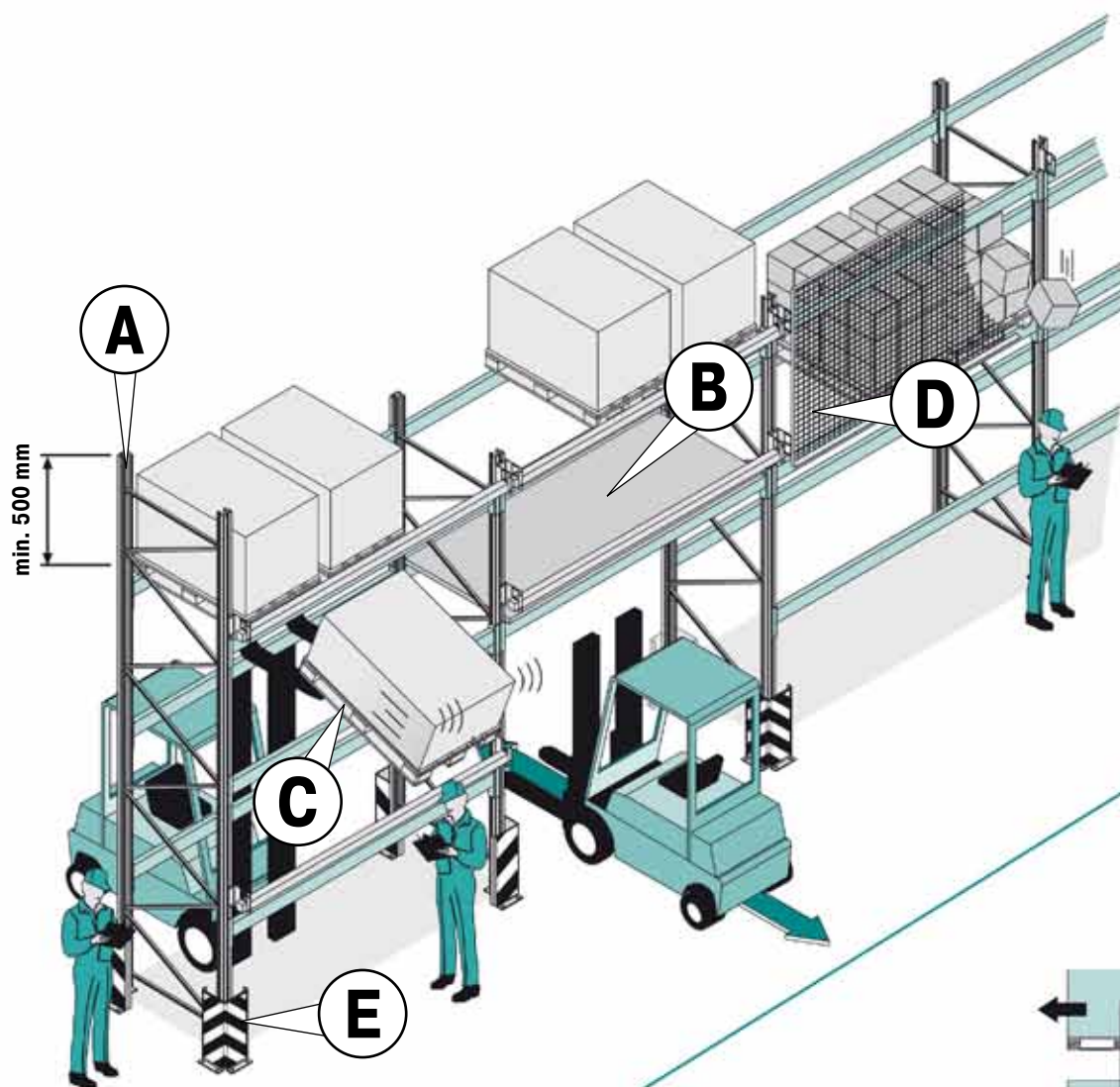
12 2x



54 1x

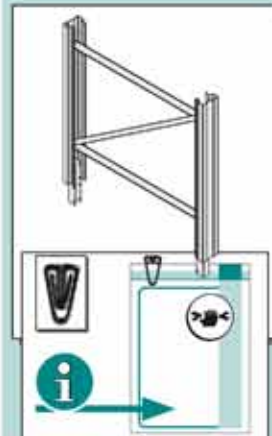
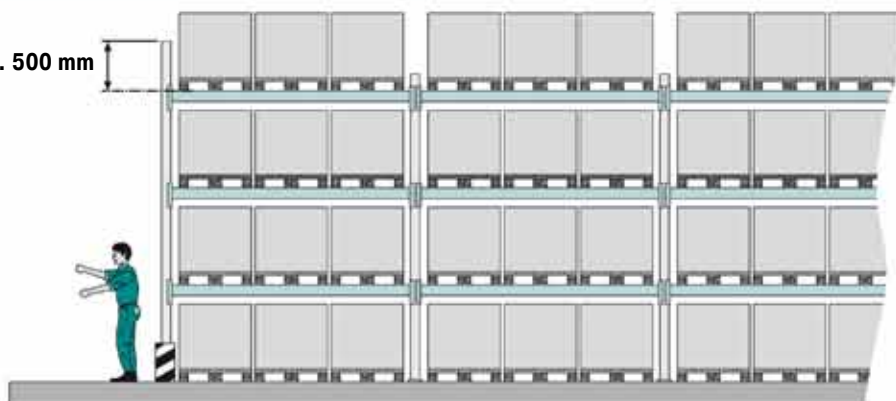
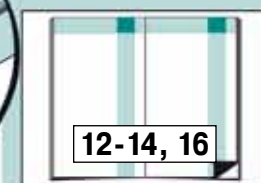
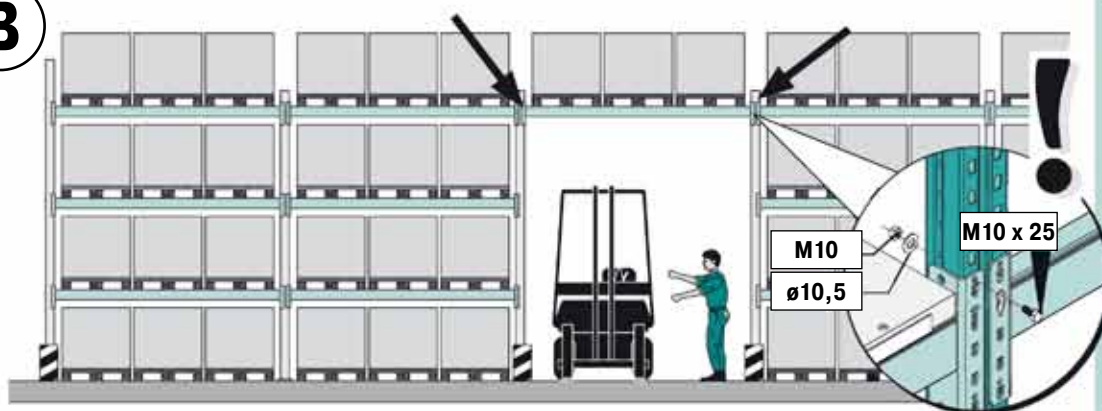
55 2x



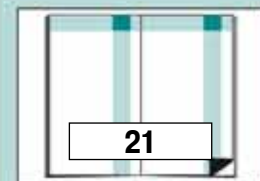
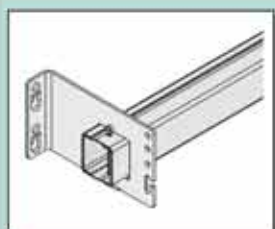
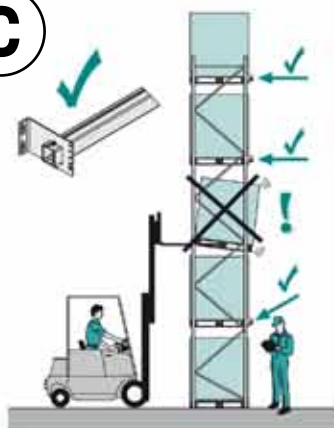


**A**

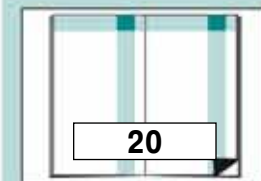
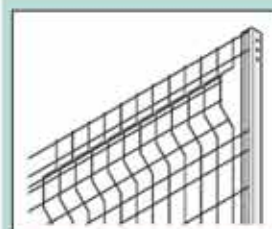
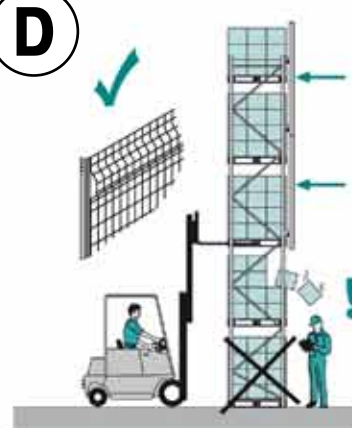
min. 500 mm

**B**

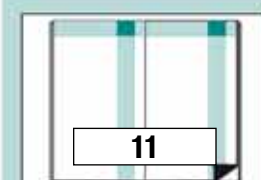
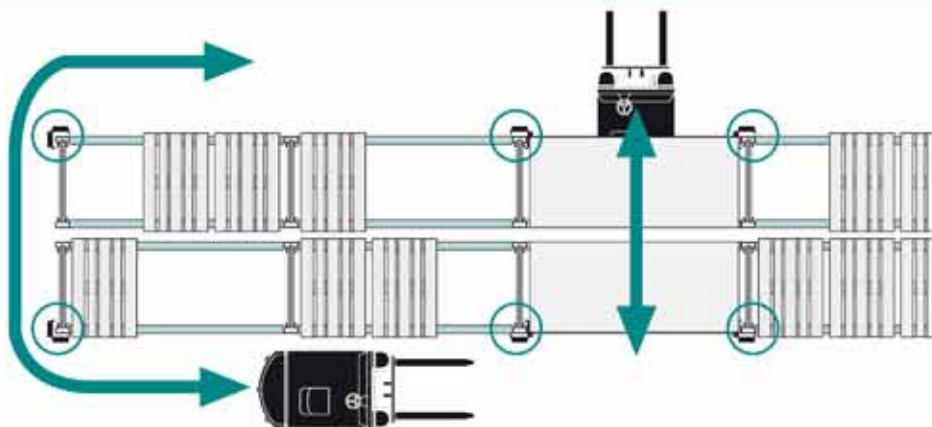
12-14, 16

C

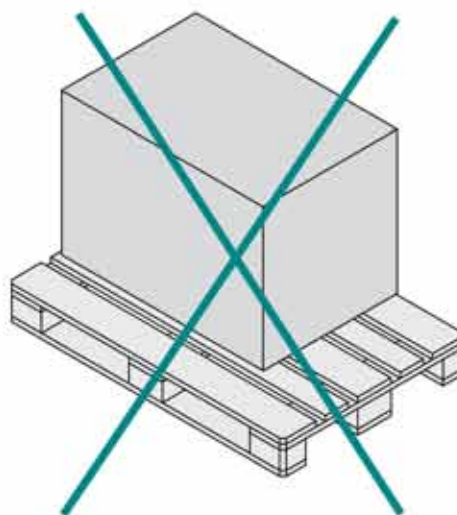
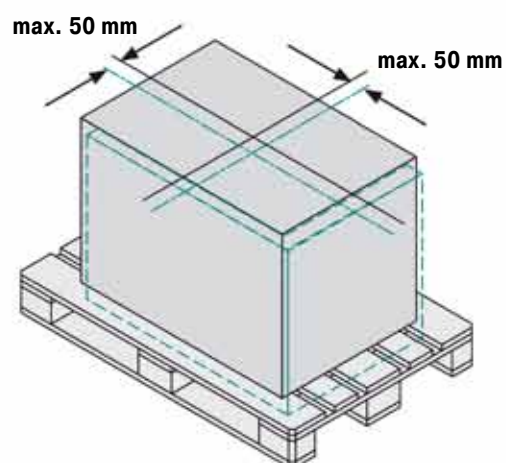
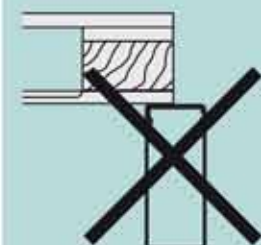
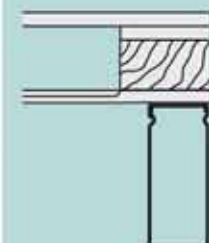
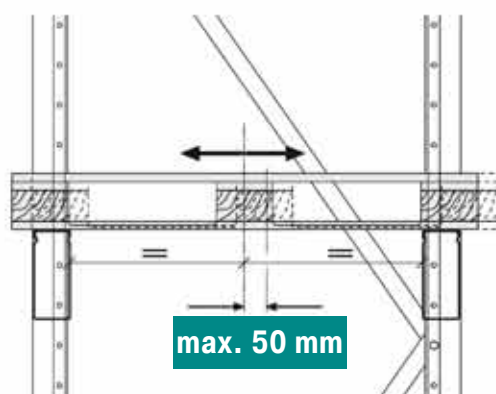
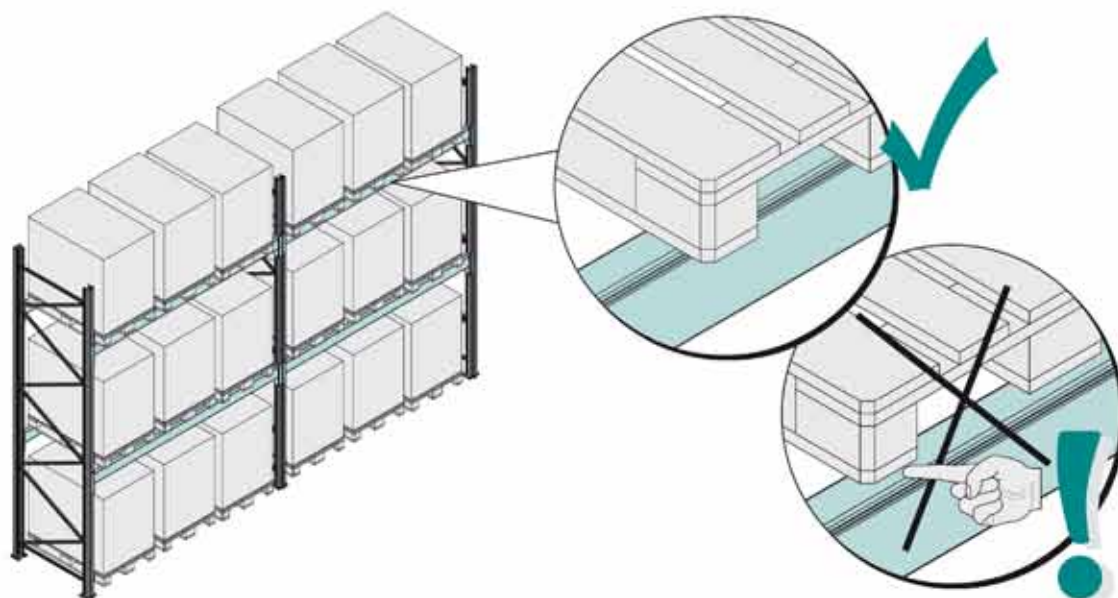
21

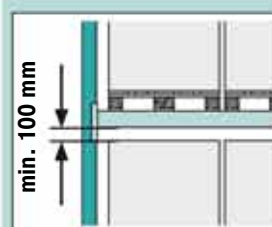
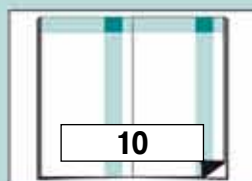
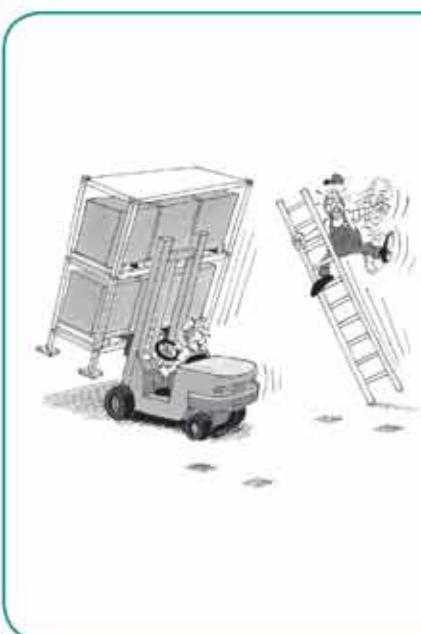
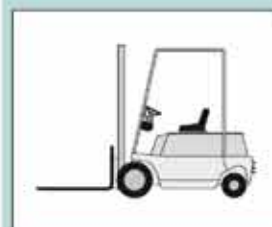
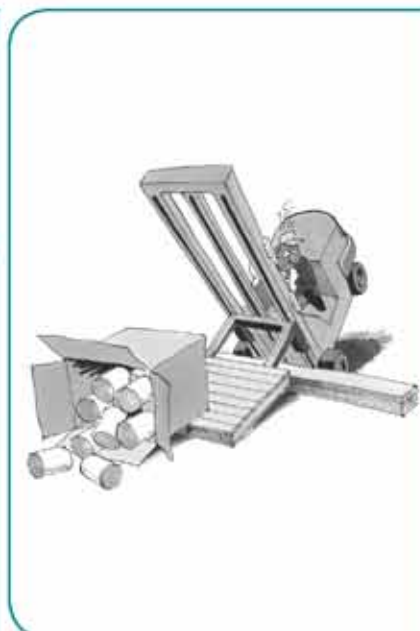
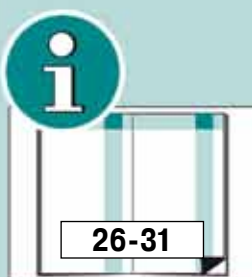
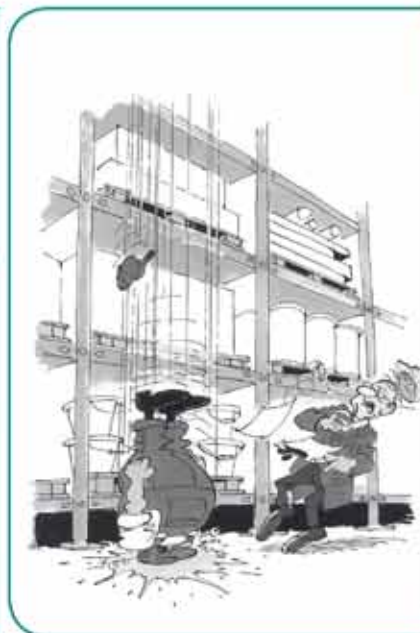
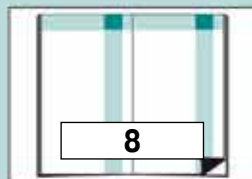
D

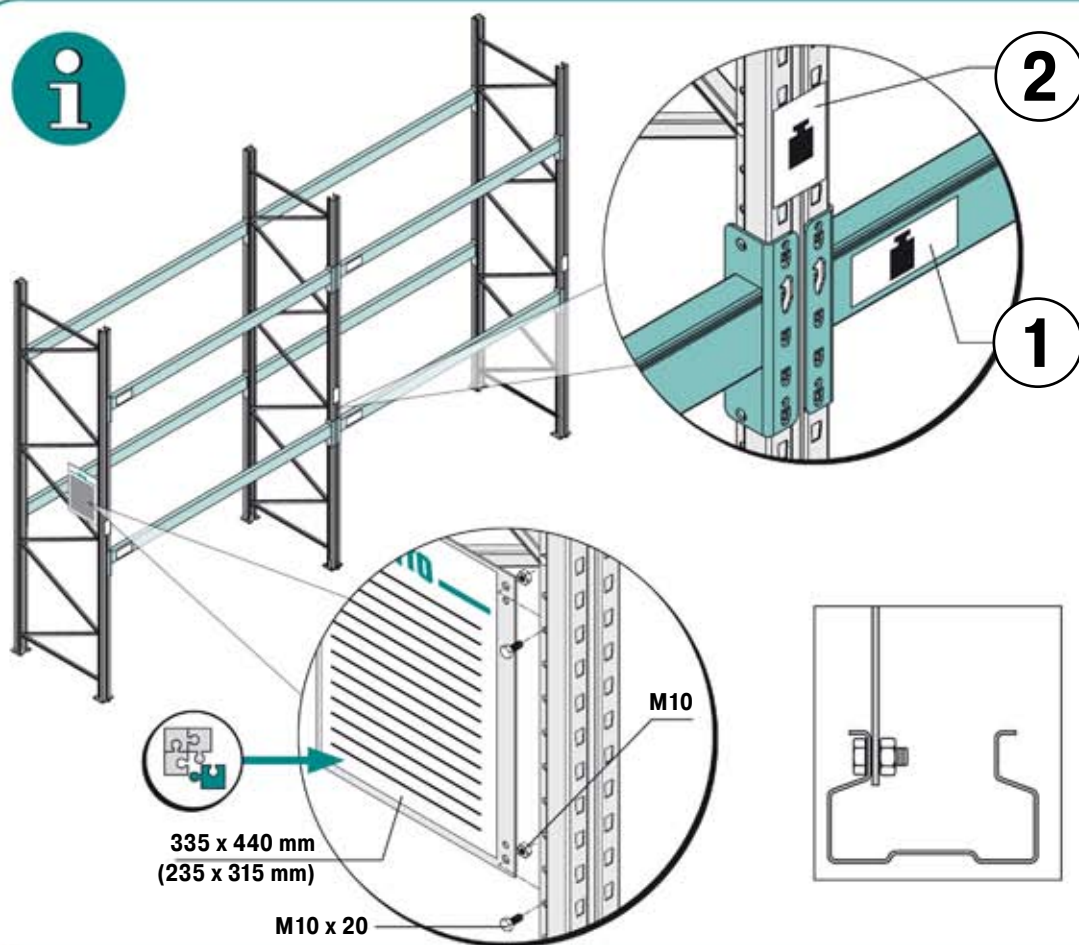
20

E

11



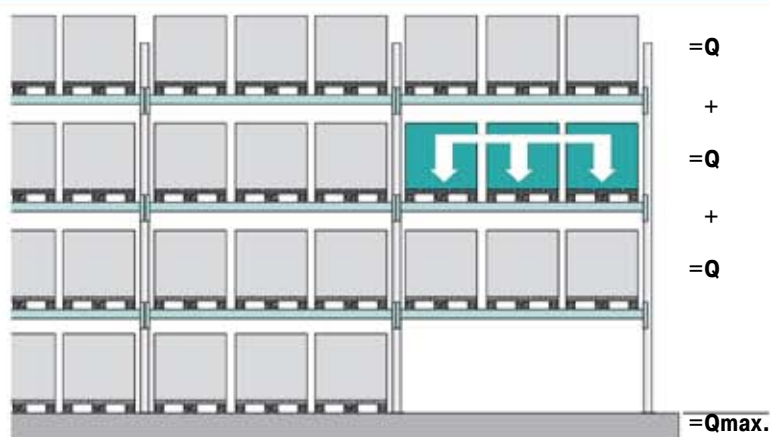




1



2



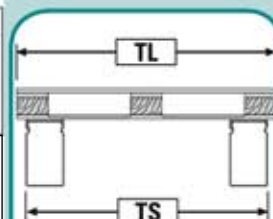
Q

$$\Sigma Q \leq Q_{max.}$$

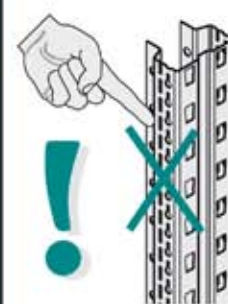
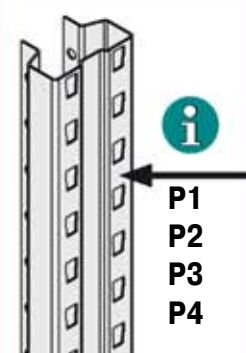




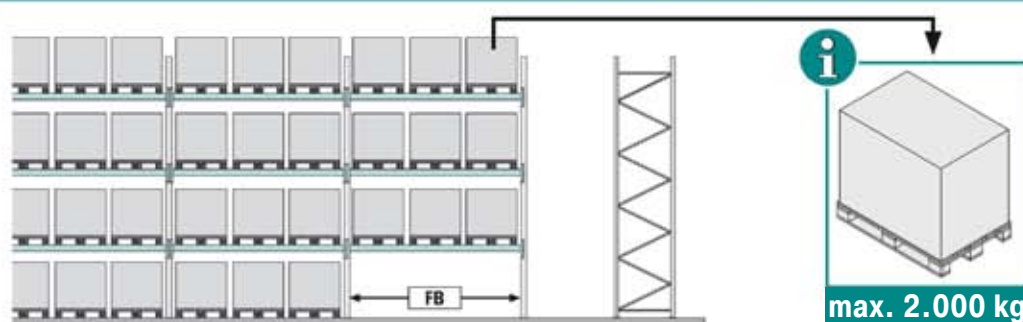
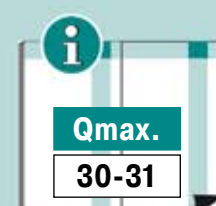
Q



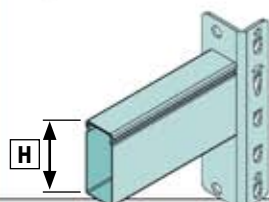
$$TL / TS \leq 1,12$$



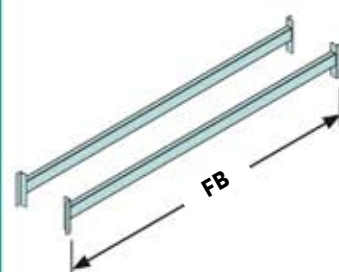
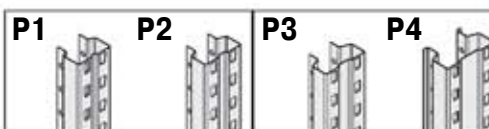
$$\Sigma Q \leq Q_{max.}$$



max. 2.000 kg



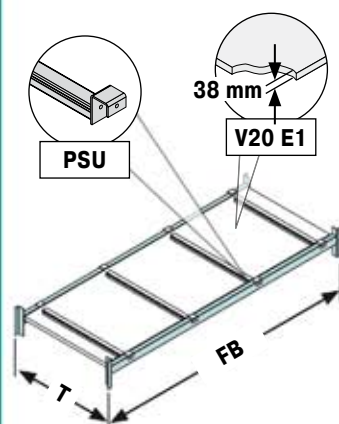
PT



max. ~~2.400~~ kg
max. 2.300 kg ✓

FB= (mm)		H= (mm)	Q= max. (kg)	Q= max. (kg)
1.350	PT 95L	95	2.000	2.000
1.500	PT 95L	95	2.000	2.000
1.800	PT 95L	95	2.500	2.500
2.200	PT 95L	95	2.100	2.250
2.700	PT 95L	95	1.800	1.900
	PT 110L	110	2.400*	2.400
	PT 120M	120	3.050	3.175
	PT 150M	150	4.250	4.350
	PT 160M	160	4.250	4.350
3.300	PT 120M	120	2.350	2.500
	PT 150M	150	3.500	3.650
	PT 160M	160	3.500	3.650
3.600	PT 130M	130	2.400	2.500
	PT 150M	150	3.200	3.350
	PT 160M	160	3.200	3.350
	PT 170S	170	4.000	4.150

T= 800, 1.100 (mm)



FB= (mm)		H= (mm)	T= 800 mm Q= max. (kg)	PSU	T= 1.100 mm Q= max. (kg)	PSU
1.350	PT 95L	95	1.500	3	1.500	3
1.800	PT 95L	95	1.800	3	2.200	3
2.200	PT 95L	95	2.100	4	2.100	4
2.700	PT 95L	95	1.800	4	1.800	4
	PT 110L	110	2.200	4	2.400	4
	PT 120M	120	3.000	5	3.000	4
	PT 150M	150	3.000	5	4.000	5
	PT 160M	160	3.000	5	4.000	5
3.300	PT 120M	120	2.400	5	2.400	5
	PT 150M	150	2.800	5	3.300	5
	PT 160M	160	2.800	5	3.300	5
3.600	PT 130M	130	2.300	5	2.400	5
	PT 150M	150	2.300	5	3.250	5
	PT 160M	160	2.300	5	3.250	5
	PT 170S	170	2.300	5	3.300	5

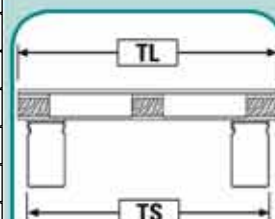


Q

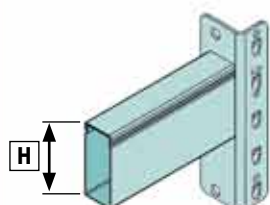
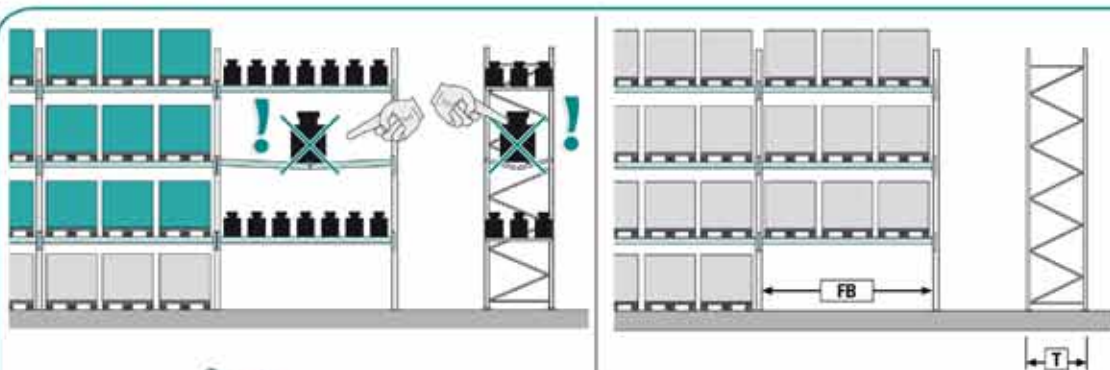
$$\Sigma Q \leq Q_{\max.}$$

i

Q_{max.}
30-31



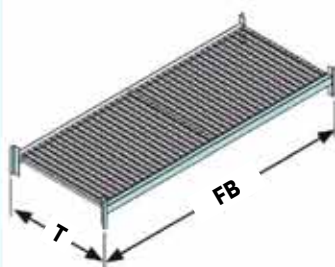
$$TL / TS \leq 1,12$$



PT

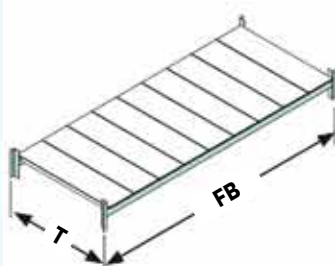
T= 800, 1.100 (mm)

FB= (mm)		H= (mm)	T= 800/1.100 mm Q= max. (kg)
1.350	PT 95L	95	2.000
1.800	PT 95L	95	2.500
2.200	PT 95L	95	2.100
2.700	PT 95L	95	1.800
	PT 110L	110	2.400
	PT 120M	120	3.000
	PT 150M	150	4.000
	PT 160M	160	4.000
3.300	PT 120M	120	2.400
	PT 150M	150	3.300
	PT 160M	160	3.300
3.600	PT 130M	130	2.400
	PT 150M	150	3.250
	PT 160M	160	3.250
	PT 170S	170	4.000



T= 800, 1.100 (mm)

FB= (mm)		H= (mm)	T= 800/1.100 mm Q= max. (kg)
1.350	PT 95L	95	1.500
1.800	PT 95L	95	2.040
2.200	PT 95L	95	2.100
2.700	PT 95L	95	1.800
	PT 110L	110	2.400
	PT 120M	120	3.060
	PT 150M	150	3.060
	PT 160M	160	3.060
3.300	PT 120M	120	2.400
	PT 150M	150	3.300
	PT 160M	160	3.300
3.600	PT 130M	130	2.400
	PT 150M	150	3.250
	PT 160M	160	3.250
	PT 170S	170	4.000





Q

$$\Sigma Q \leq Q_{\max.}$$

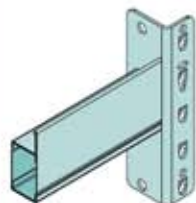
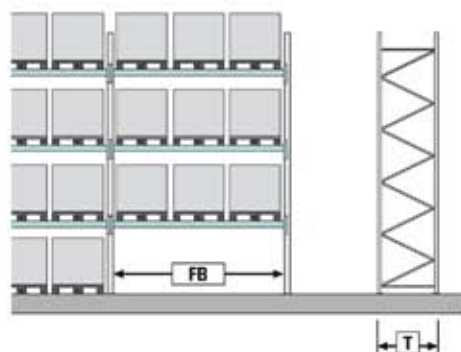


Q_{max.}

30-31



$$TL / TS \leq 1,12$$



PST 69L
PST 104L
PST 117L
PST 119L

23 mm

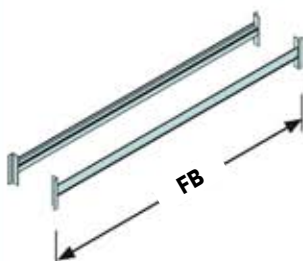
69 / 104 mm

38 mm

117 mm

38 mm

119 mm



FB=
(mm)

PST 69L

PST 104L

PST 117L

PST 119L

Q= max. kg

Q= max. kg

Q= max. kg

Q= max. kg

1.350

1.200

2.000

1.200

2.000

1.800

1.000

2.275

-

2.360

2.200

870

1.900

-

2.000

2.700

700

1.600

-

1.650

3.300

500

1.350

-

1.400

3.600

430

1.250

-

1.300

T= 600, 800, 1.100 (mm)

23 mm

69 mm

23 mm

104 mm

PST 69L

PST 104L

FB=
(mm)

Q= max. kg

Q= max. kg

1.350

975

975

1.800

1.000

1.260

2.200

870

1.540

2.700

700

1.600

3.300

500

1.350

3.600

430

1.250

T= 800, 1.100 (mm)

38 mm

117 mm

38 mm

119 mm

PST 117L

PST 119L

FB=
(mm)

Q= max. kg

Q= max. kg

T= 800 mm

T= 1.100 mm

T= 800 mm

T= 1.100 mm

1.350

1.200

650

1.200

650

1.800

-

-

1.600

900

2.200

-

-

1.950

1.100

2.700

-

-

1.650

1.350

3.300

-

-

1.400

1.400

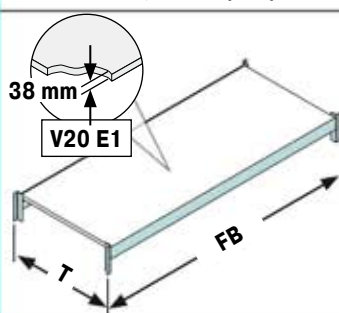
3.600

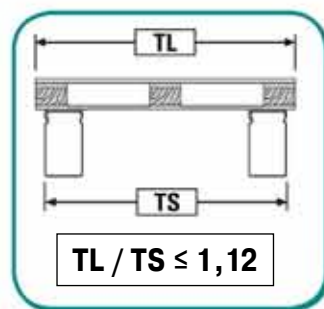
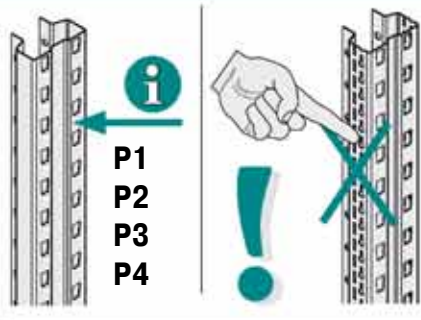
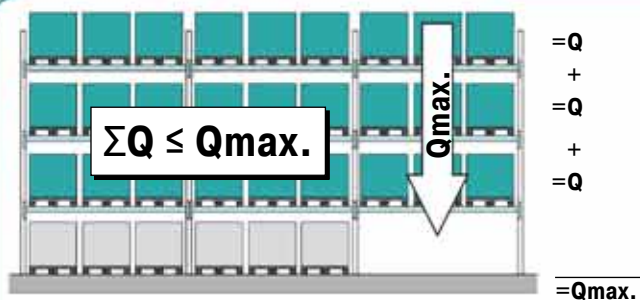
-

-

1.300

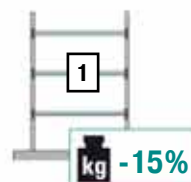
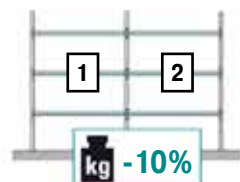
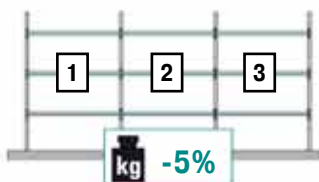
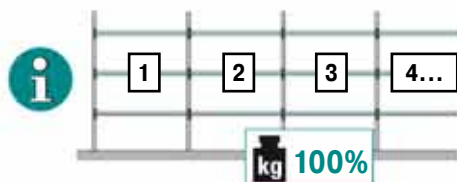
1.300



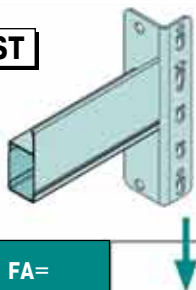


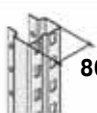
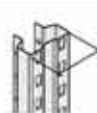
Qmax.

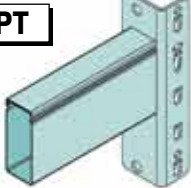
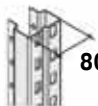
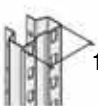
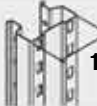
ΣQ ≤ Qmax.



PST



		P1  80 mm		P2  90 mm		P3  100 mm		P4  120 mm	
		Qmax. (kg)		Qmax. (kg)		Qmax. (kg)		Qmax. (kg)	
FA= (mm)		FB ≤ 2.700 mm	FB ≤ 3.600 mm	FB ≤ 2.700 mm	FB ≤ 3.600 mm	FB ≤ 2.700 mm	FB ≤ 3.600 mm	FB ≤ 2.700 mm	FB ≤ 3.600 mm
1.000	PST 69L	4.900	3.860	5.660	4.780	5.420	5.040	6.120	5.760
1.250		3.180	3.100	4.640	3.780	4.760	4.080	4.880	4.300
1.500		2.440	2.200	3.780	3.100	3.860	3.480	4.500	3.620
1.750		2.280	1.880	3.280	2.640	3.480	2.840	3.740	2.980
2.000		-	-	-	-	-	-	-	-
2.500		-	-	-	-	-	-	-	-
1.000	PST 104L	6.000	6.000	9.360	8.941	12.160	11.880	14.860	13.640
1.250		6.000	6.000	8.760	8.560	11.320	10.320	13.580	11.620
1.500		6.000	5.940	8.220	7.920	10.180	8.840	11.900	9.420
1.750		5.820	5.680	7.500	6.660	8.860	7.620	9.840	8.100
2.000		5.140	5.260	6.800	5.440	7.580	6.500	8.740	6.880
2.500		4.160	4.060	5.440	4.020	5.860	5.160	6.500	5.420
1.000	PST 119L	6.000	6.000	9.360	8.941	12.160	11.880	14.860	13.640
1.250		6.000	6.000	8.760	8.560	11.320	10.320	13.580	11.620
1.500		6.000	5.940	8.220	7.920	10.180	8.840	11.900	9.420
1.750		5.820	5.680	7.500	6.660	8.860	7.620	9.840	8.100
2.000		5.140	5.260	6.800	5.440	7.580	6.500	8.740	6.880
2.500		4.160	4.060	5.440	4.020	5.860	5.160	6.500	5.420

PT 		P1  80 mm		P2  90 mm		P3  100 mm		P4  120 mm	
		Qmax. (kg)		Qmax. (kg)		Qmax. (kg)		Qmax. (kg)	
FA= (mm)		FB=		FB=		FB=		FB=	
		≤ 2.700 mm	≤ 3.600 mm	≤ 2.700 mm	≤ 3.600 mm	≤ 2.700 mm	≤ 3.600 mm	≤ 2.700 mm	≤ 3.600 mm
1.000	PT 95L	6.000	6.000	9.500	8.941	12.837	12.202	16.194	14.140
1.250		6.000	6.000	9.339	8.941	12.480	11.840	14.980	13.200
1.500		6.000	6.000	8.860	8.500	11.720	10.280	13.900	11.520
1.750		5.800	5.660	7.840	7.780	10.400	8.880	11.920	9.440
2.000		5.560	5.360	7.460	6.940	8.900	7.520	10.360	8.080
2.500		4.580	4.100	5.920	5.160	6.660	5.400	7.680	6.460
1.000	PT 110L	6.000	6.000	9.500	8.941	12.837	12.202	16.194	16.194
1.250		6.000	6.000	9.339	8.941	12.480	12.202	15.973	15.740
1.500		6.000	6.000	8.860	8.840	11.720	12.040	15.260	14.500
1.750		6.000	6.000	8.500	8.340	10.400	10.420	14.240	12.380
2.000		5.720	5.440	7.460	7.020	8.900	9.120	12.620	10.720
2.500		4.880	4.560	6.200	5.560	6.660	6.900	9.720	8.200
1.000	PT 120M	6.000	6.000	9.500	8.941	12.837	12.202	16.194	16.194
1.250		6.000	6.000	9.339	8.941	12.691	12.202	15.973	15.973
1.500		6.000	6.000	9.177	8.840	12.100	12.202	15.751	15.440
1.750		6.000	6.000	8.700	8.540	11.740	11.500	14.840	14.460
2.000		6.000	5.720	7.680	7.220	10.240	10.060	14.000	13.240
2.500		4.880	4.560	6.820	6.220	9.140	8.340	11.780	10.200
1.000	PT 130M	6.000	6.000	9.500	8.941	12.837	12.202	16.194	16.194
1.250		6.000	6.000	9.339	8.941	12.691	12.202	15.973	15.973
1.500		6.000	6.000	9.177	8.941	12.544	12.202	15.751	15.751
1.750		6.000	6.000	8.700	8.540	11.580	11.500	15.280	14.720
2.000		6.000	5.720	7.680	8.140	9.780	10.800	14.220	13.780
2.500		4.880	4.900	7.000	6.220	8.580	8.340	12.500	11.840
1.000	PT 150M	6.000	6.000	9.500	8.941	12.837	12.202	16.194	16.194
1.250		6.000	6.000	9.339	8.941	12.691	12.202	15.973	15.973
1.500		6.000	6.000	9.177	8.941	12.544	12.202	15.751	15.751
1.750		6.000	6.000	9.016	8.540	12.280	12.040	15.530	15.420
2.000		6.000	5.920	8.460	8.140	11.060	10.800	14.960	14.620
2.500		4.880	4.900	7.000	6.460	9.840	9.560	13.060	12.600
1.000	PT 160M	6.000	6.000	9.500	8.941	12.837	12.202	16.194	16.194
1.250		6.000	6.000	9.339	8.941	12.691	12.202	15.973	15.973
1.500		6.000	6.000	9.177	8.941	12.544	12.202	15.751	15.751
1.750		6.000	6.000	9.016	8.880	12.398	12.060	15.530	15.530
2.000		6.000	5.920	8.460	8.140	11.060	10.800	15.100	14.800
2.500		4.880	4.900	7.000	6.460	9.900	9.580	13.240	12.840
1.000	PT 170S	6.000	6.000	9.500	8.941	12.837	12.202	16.194	16.194
1.250		6.000	6.000	9.339	8.941	12.691	12.202	15.973	15.973
1.500		6.000	6.000	9.177	8.941	12.544	12.202	15.751	15.751
1.750		6.000	6.000	9.016	8.941	12.398	12.202	15.530	15.530
2.000		6.000	5.920	8.460	8.460	11.640	11.480	15.240	14.480
2.500		4.880	4.900	7.000	6.720	9.900	9.760	13.860	13.380

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