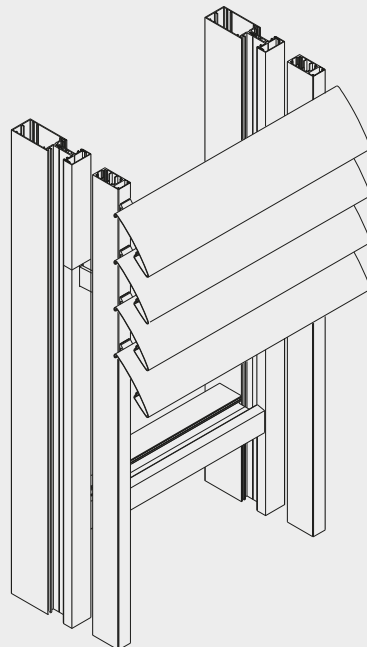
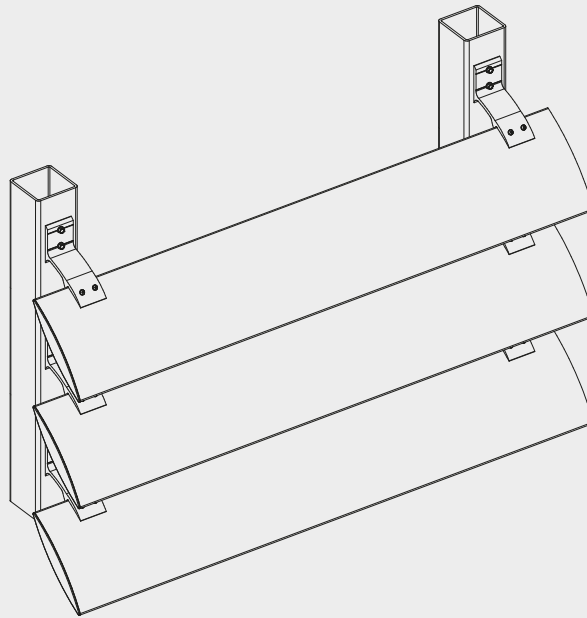
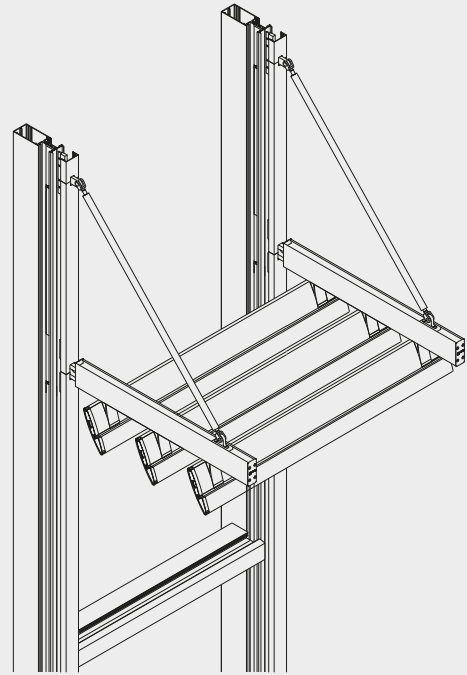


SUNEAL TL

DESIGN - FABRICATION

5331.005



SUNEAL

Edition April 2018

TL

Design

P. 2

Fabrication

P. 66

SUNEAL

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Product concept

THE CONCEPT

The fixed or mobile brise soleil, or sun shade, is a contemporary architectural feature. Incorporating such a system improves the comfort of occupants while reducing energy consumption in buildings by reducing the need for air conditioning in the summer and heating in the winter.

Attached directly to the curtain wall, a rooflight, or an independent framework, SUNEAL provides a maximum benefit through multiple solutions :

- Horizontal or vertical
- Canopy
- Fixed or movable

COMPONENTS

SUNEAL is a complete system comprising :

- 2 blades, measuring 100 and 150 mm wide to be clipped
- 7 one-piece elliptical blades, measuring 100 to 300 mm wide
- 5 composite elliptical blades, 350 to 600 mm wide
- 1 rectangular blade 300 mm wide
- 4 designs of semi-elliptical blades, 175 to 300 mm wide
- A louver range for incorporation in the cladding
- An aluminium cladding system

Systems for anchoring to the curtain wall, in the form of aluminium lugs with four angles of inclination (15° / 30° / 45° / 60°).

Systems for attaching to an independent structure, in the form of aluminium lugs with four angles of inclination (0° / 15° / 30° / 45°) or aluminium flanges and blocks.

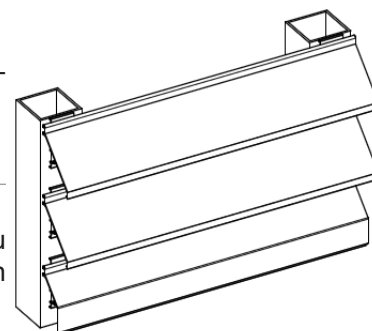
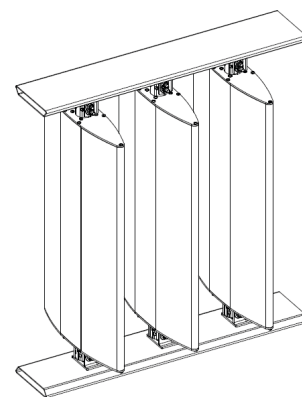
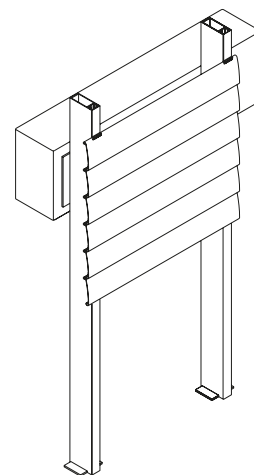
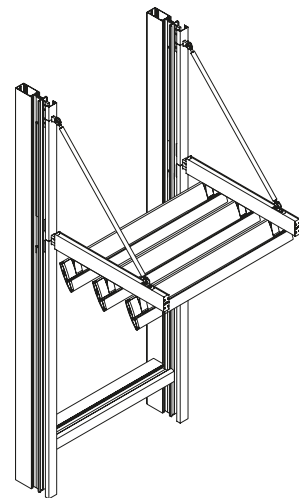
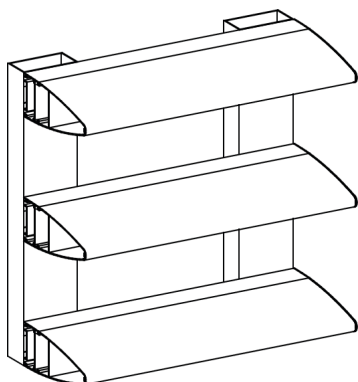
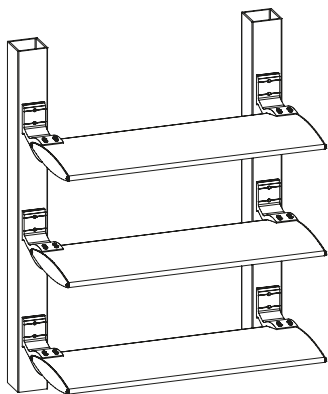
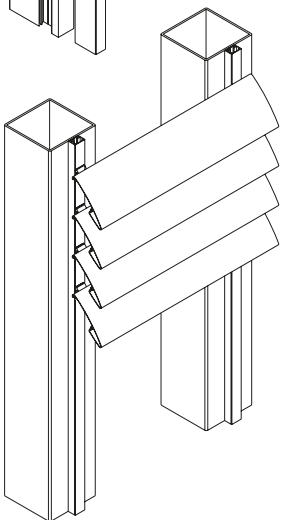
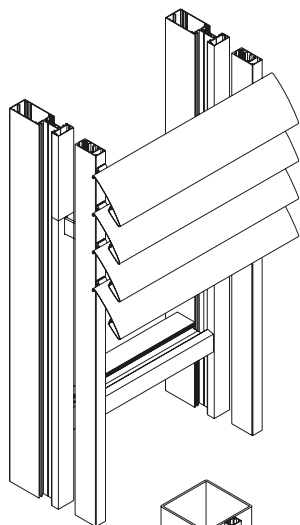
ALUMINIUM

The aluminium of Technal's SUNEAL brise soleil is certified :

- "6060 building" aluminium alloy
- polyester stoved powder-coating finish, QUALICOAT label
- anodized finish, QUALANOD label
- marine quality for sites with a marine or aggressive atmosphere.

DIMENSIONING GRAPHS

This Technal catalogue provides graphs to help you determine the size of brise soleil needed based on location, wind pressure, and snow load.



TECHNAL®

Performance

Sizing and graphs

How to use the graphs for 100 mm and 150 mm clipped blades



For blades **560001** and **560002**, the SUNEAL graphs take the form of triple-entry tables.

To use them, you need to know:

- wind zone in the place under consideration
- the height of the building
- the category of the terrain of the place under consideration (see below)

Using the SUNEAL graphs, you can determine:

- the maximum span of continuous blades for all brise-soleil applications
- the number of fixing lugs needed in the case of a vertical brise-soleil system
- the maximum length of beams in the case of a horizontal brise-soleil system

The dimensional limits shown in these graphs take into account the extreme wind loads provided for in the W50 Eurocodes and were drawn up according to two criteria: the mechanical strength of the different fixing systems and maximum deflection of 1/100 with respect to span.

For any non-standard load, or for any building more than 100 metres tall, a special dimensioning operation would have to be performed.

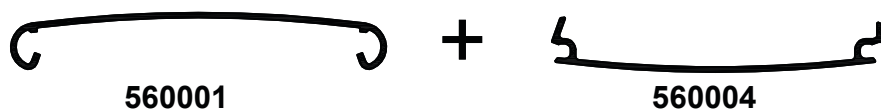
Site Categories

Categories	Terrain Description
0	Sea or coastal zone exposed to sea breezes, lakes and stretches of water exposed to winds over a distance of 5 km or more
II	Flat country with or without a few isolated obstacles (trees, buildings, etc.) separated from each other by at least 40 times their own height
IIIa	Countryside with hedges, vineyards, scattered woodland, dispersed habitat
IIIb	Urbanized or industrial zones, dense woodland, orchards
IV	Urban zones of which 15% or more of the surface area is covered with buildings of over 15m average height, forest

Performance

Sizing and graphs

Maximum distance in millimetres between two fixing lugs for the 100 mm blade



Wind speed [m/s]	Associated pressure [Pa]	Altitude of the brise-soleil					Situation*
		Less than 6 m	6 to 18 m	18 to 28 m	28 to 50 m	50 to 100 m	
22	296,45	2245	2184	2050	1903	1757	IV
		2208	2013	1903	1793	1671	IIIb
		2123	1867	1793	1696	1598	IIIa
		1928	1745	1684	1610	1537	II
		1769	1647	1598	1549	1488	0
24	352,8	2111	2062	1928	1793	1659	IV
		2086	1891	1793	1684	1574	IIIb
		2001	1769	1684	1598	1513	IIIa
		1818	1647	1586	1525	1452	II
		1671	1549	1513	1464	1403	0
26	414,05	2001	1952	1830	1696	1574	IV
		1976	1793	1708	1598	1501	IIIb
		1903	1671	1598	1513	1427	IIIa
		1720	1562	1513	1440	1379	II
		1586	1476	1440	1391	1330	0
28	480,2	1903	1854	1745	1610	1501	IV
		1879	1708	1623	1525	1427	IIIb
		1806	1586	1525	1440	1366	IIIa
		1647	1488	1440	1379	1305	II
		1513	1403	1366	1318	1269	0
34	708,05	1671	1635	1525	1415	1318	IV
		1659	1501	1427	1342	1244	IIIb
		1586	1403	1342	1269	1196	IIIa
		1440	1305	1257	1208	1147	II
		1330	1244	1196	1159	1110	0

* : Refer to the categories table to determine the category for the site under consideration.

Note: Calculations were made based on the inertia of the "blade + blade cover". For an installation without a blade cover, the calculations would need to be redone.

Example:

Data:

- wind speed: 26m/s → Length: 1793 mm
- building height: 10 m
- terrain location: IIIb

This length corresponds to variable L, used in the application parts list.

Performance

Sizing and graphs

Maximum distance in millimetres between two fixing lugs for the 150 mm blade



Wind speed [m/s]	Associated pressure [Pa]	Altitude of the brise-soleil					Situation*
		Less than 6 m	6 to 18 m	18 to 28 m	28 to 50 m	50 to 100 m	
22	296,45	3000	3000	3000	2989	2769	IV
		3000	3000	3000	2818	2635	IIIb
		3000	2940	2818	2672	2513	IIIa
		3000	2745	2647	2538	2416	II
		2794	2586	2525	2440	2342	0
24	352,8	3000	3000	3000	2818	2611	IV
		3000	2989	2830	2660	2489	IIIb
		3000	2782	2660	2513	2379	IIIa
		2867	2599	2501	2391	2281	II
		2635	2440	2379	2306	2220	0
26	414,05	3000	3000	2879	2672	2477	IV
		3000	2830	2684	2513	2355	IIIb
		2989	2635	2513	2391	2257	IIIa
		2708	2452	2367	2269	2159	II
		2489	2318	2257	2184	2098	0
28	480,2	3000	2916	2733	2550	2355	IV
		2965	2696	2550	2391	2245	IIIb
		2843	2501	2391	2269	2147	IIIa
		2586	2342	2257	2159	2062	II
		2379	2208	2147	2074	2001	0
34	708,05	2635	2562	2403	2233	2074	IV
		2599	2367	2245	2111	1964	IIIb
		2501	2196	2098	2001	1879	IIIa
		2269	2050	1989	1903	1806	II
		2086	1940	1891	1818	1757	0

* : Refer to the categories table to determine the category for the site under consideration.

Note: Calculations were made based on the inertia of the “blade + blade cover” set. For an installation without a blade cover, the calculations would need to be redone.

Example:

Data:

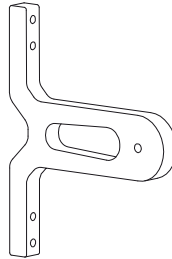
- wind speed: 26m/s → Length: 2830 mm
- building height: 10 m
- terrain location: IIIb

This length corresponds to variable L, used in the application parts list.

Performance

Sizing and graphs

Number of blades that can be supported by a fixing cleat 780008



Wind speed [m/s]	Associated pressure [Pa]	Altitude of the brise-soleil					Situation*
		Less than 6 m	6 to 18 m	18 to 28 m	28 to 50 m	50 to 100 m	
22	296,45	20	19	17	14	12	IV
		20	16	14	13	11	IIIb
		18	14	13	11	10	IIIa
		15	12	11	10	9	II
		13	11	10	10	9	0
24	352,8	18	17	15	13	11	IV
		17	14	13	11	10	IIIb
		16	12	11	10	9	IIIa
		13	11	10	9	8	II
		11	10	9	9	8	0
26	414,05	16	15	13	12	10	IV
		16	13	12	10	9	IIIb
		14	11	10	9	8	IIIa
		12	10	9	8	8	II
		10	9	8	8	7	0
28	480,2	15	14	12	10	9	IV
		14	12	11	9	8	IIIb
		13	10	9	8	7	IIIa
		11	9	8	8	7	II
		9	8	7	8	6	0
34	708,05	11	11	9	8	7	IV
		11	9	8	7	6	IIIb
		10	8	7	6	6	IIIa
		8	7	6	6	5	II
		7	6	6	5	5	0

* : Refer to the categories table to determine the category for the site under consideration.

Example:

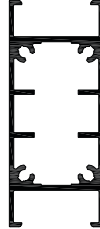
For wind speed 26m/s, a building height of 10 m and a terrain location in category IIIb, we read “13” in the table. This means that each fixing cleat **780008** can support up to 13 blades. This value corresponds to the variable K, used in the parts list, and it will determine the number of cleats **780008** to be used in the application under consideration.

Performance

Sizing and graphs

TECHNAL®

Maximum section cut support 560002 for horizontal brise soleil
(expressed in millimetres)



Wind speed [m/s]	Associated pressure [Pa]	Altitude of the brise-soleil					Situation*
		Less than 6 m	6 to 18 m	18 to 28 m	28 to 50 m	50 to 100 m	
22	296,45	1810	1810	1570	1450	1210	IV
		1810	1570	1450	1330	1090	IIIb
		1690	1330	1330	1210	1090	IIIa
		1450	1210	1210	1090	970	II
		1210	1090	1090	970	970	0
24	352,8	1690	1570	1450	1330	1090	IV
		1690	1450	1330	1210	1090	IIIb
		1570	1210	1210	1090	970	IIIa
		1330	1090	1090	970	970	II
		1090	970	970	970	850	0
26	414,05	1570	1450	1330	1210	1090	IV
		1570	1330	1210	1090	970	IIIb
		1450	1090	1090	970	850	IIIa
		1210	970	970	850	850	II
		1090	970	850	850	850	0
28	480,2	1450	1330	1210	1090	970	IV
		1450	1210	1090	970	850	IIIb
		1330	1090	970	850	850	IIIa
		1090	970	850	850	730	II
		970	850	850	850	730	0
34	708,05	1210	1090	970	850	730	IV
		1090	970	850	850	730	IIIb
		1090	850	850	730	730	IIIa
		850	730	730	730	610	II
		730	730	610	610	610	0

* : Refer to the categories table to determine the category for the site under consideration.

Example:

For wind speed 26m/s, a building height of 10 m and a terrain location in category IIIb, we read “1330 mm” in the table.

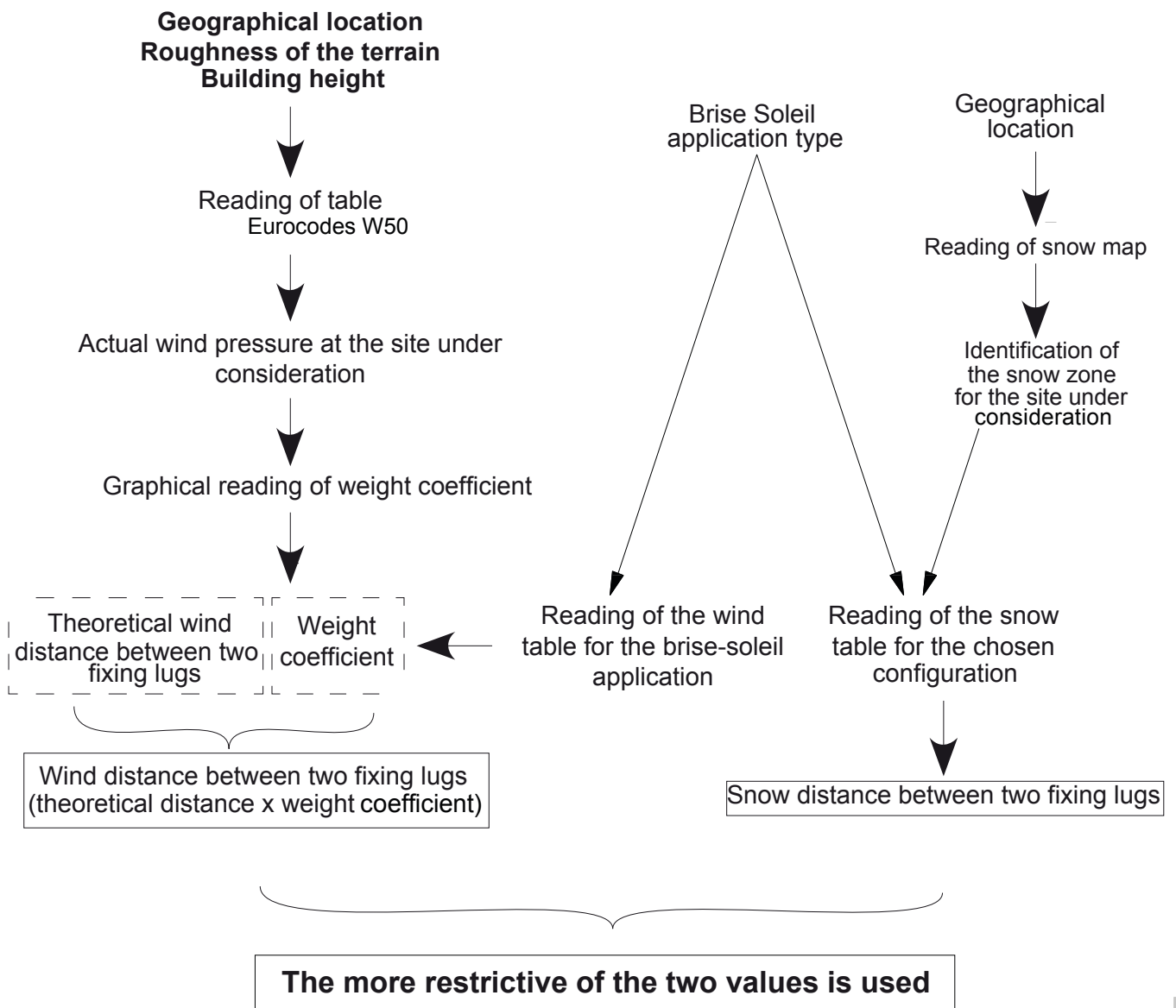
This means that the maximum length for the horizontal beams in the horizontal brise-soleil is 1330 mm.

Performance

Sizing and graphs

How to use the graphs for one-piece elliptical fixed blades and composite blades

The size of brise-soleil blades is determined based on physical parameters (geographical location and roughness of the installation site, building height, etc.). These parameters are used to determine the snow load and wind pressure at the site, through which we can then calculate two distances between fixing lugs: a distance based on snow and a distance based on wind. The more restrictive of these two distances is then used.



Note: This method is not applicable for “louver” and “semi-elliptical blades” installations.

We have:

- maximum centre distance for semi-elliptical blades: 2500 mm
- maximum centre distance for 100 mm louvers: 1100 mm
- maximum centre distance for 115 mm louvers: 1500 mm

Note: The calculations for snow do not take into account any unusual snow accumulations.

Performance

Sizing and graphs

Load values

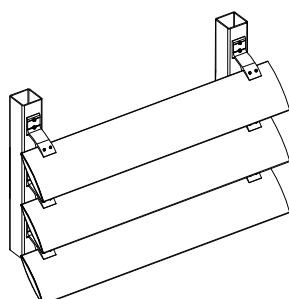
They are determined according to the region and the altitude.

Regions

Up to 200 m of altitude, the usual p_{n0} and extreme p'_{n0} vertical loads regularly distributed due to the snow, horizontal application values are on the following table.

Unit: daN/m ²	Regions							
	A1	A2	B1	B2	C1	C2	D	E
Usual load p_{n0}	35	35	45	45	55	55	80	115
Extreme load p'_{n0}	60	60	75	75	90	90	130	190
Fortuitous load	-	80	80	108	-	108	144	-

Snow table :
Continuous blade configuration



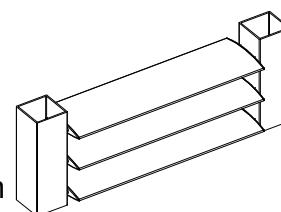
Blade		120	180	240	270	
Reference		TL2604	TL2603	TL2602	TL2601	
SNOW ZONE	A1 - A2	Inclination	0°	15°	30°	45°
			2375	3139	3881	4649
			2406	3180	3936	4715
			2508	3314	4112	4929
	B1 - B2	Inclination	0°	15°	30°	45°
			2242	2962	3881	4649
			2271	3001	3936	4715
			2365	3125	4112	4929
	C1 - C2	Inclination	0°	15°	30°	45°
			2134	2819	3514	4215
			2161	2856	3561	4272
			2250	2972	3714	4456
D	Inclination	0°	15°	30°	45°	
		1934	2555	3202	3844	
		1958	2587	3243	3894	
		2036	2690	3377	4056	
E	Inclination	0°	15°	30°	45°	
		1685	2226	2805	3371	
		1706	2253	2840	3413	
		1772	2341	2953	3550	
	1902	2511	3174	3817		

Performance

Sizing and graphs

Snow table

Blades between load-bearing walls configuration



Blade		100	120	180	240	270	300	300R	350	400	450	500	600	
Reference		530202	TL2604	TL2603	TL2602	TL2601	530208	530209	530228	530229	530230	530231	530232	
SNOW ZONE	A1 - A2	Inclination 0°	2648	2375	3139	3881	4649	4549	4596	6000	6000	6000	6000	6000
		15°	2685	2406	3180	3936	4715	4613	4662	6000	6000	6000	6000	6000
		30°	2803	2508	3314	4112	4929	4820	4873	6000	6000	6000	6000	6000
		45°	3032	2705	3575	4453	5341	5221	5281	6000	6000	6000	6000	6000
		60°	3453	3070	4055	5082	6000	5959	6000	6000	6000	6000	6000	6000
		90°	3971	3531	4664	5844	6000	6000	6000	6000	6000	6000	6000	6000
	B1 - B2	Inclination 0°	2507	2242	2962	3881	4649	4549	4313	5887	5824	5789	5860	5884
		15°	2541	2271	3001	3936	4715	4613	4372	5970	5906	5871	5943	5968
		30°	2650	2365	3125	4112	4929	4820	4563	6000	6000	6000	6000	6000
		45°	2861	2547	3365	4453	5341	5221	4934	6000	6000	6000	6000	6000
		60°	3251	2886	3811	5082	6000	5959	5616	6000	6000	6000	6000	6000
		90°	3739	3318	4383	5844	6000	6000	6000	6000	6000	6000	6000	6000
	C1 - C2	Inclination 0°	2392	2134	2819	3514	4215	4120	4167	5633	5570	5538	5607	5632
		15°	2423	2161	2856	3561	4272	4175	4224	5711	5646	5615	5685	5710
		30°	2526	2250	2972	3714	4456	4354	4406	5961	5893	5861	5935	5962
		45°	2724	2421	3198	4009	4813	4701	4759	6000	6000	6000	6000	6000
		60°	3090	2739	3617	4554	5472	5340	5411	6000	6000	6000	6000	6000
		90°	3553	3149	4160	5237	6000	6000	6000	6000	6000	6000	6000	6000
	D	Inclination 0°	2175	1934	2555	3202	3844	3754	3801	5147	5086	5061	5125	5150
		15°	2203	1958	2587	3243	3894	3803	3851	5216	5154	5128	5193	5219
		30°	2293	2036	2690	3377	4056	3960	4011	5436	5370	5344	5413	5440
		45°	2468	2188	2890	3638	4371	4266	4322	5864	5791	5764	5838	5869
		60°	2792	2470	3262	4120	4953	4832	4898	6000	6000	6000	6000	6000
		90°	3211	2841	3751	4738	5696	5557	5633	6000	6000	6000	6000	6000
E	Inclination 0°	1902	1685	2226	2805	3371	3289	3289	4524	4467	4446	4504	4528	
	15°	1926	1706	2253	2840	3413	3331	3331	4581	4523	4503	4561	4586	
	30°	2002	1772	2341	2953	3550	3464	3464	4767	4706	4686	4747	4773	
	45°	2151	1902	2511	3174	3817	3723	3723	5128	5061	5040	5106	5135	
	60°	2427	2143	2829	3584	4311	4203	4203	5798	5721	5698	5773	5807	
	90°	2791	2464	3254	4121	4958	4834	4834	6000	6000	6000	6000	6000	

Performance

Sizing and graphs

Wind pressure W50

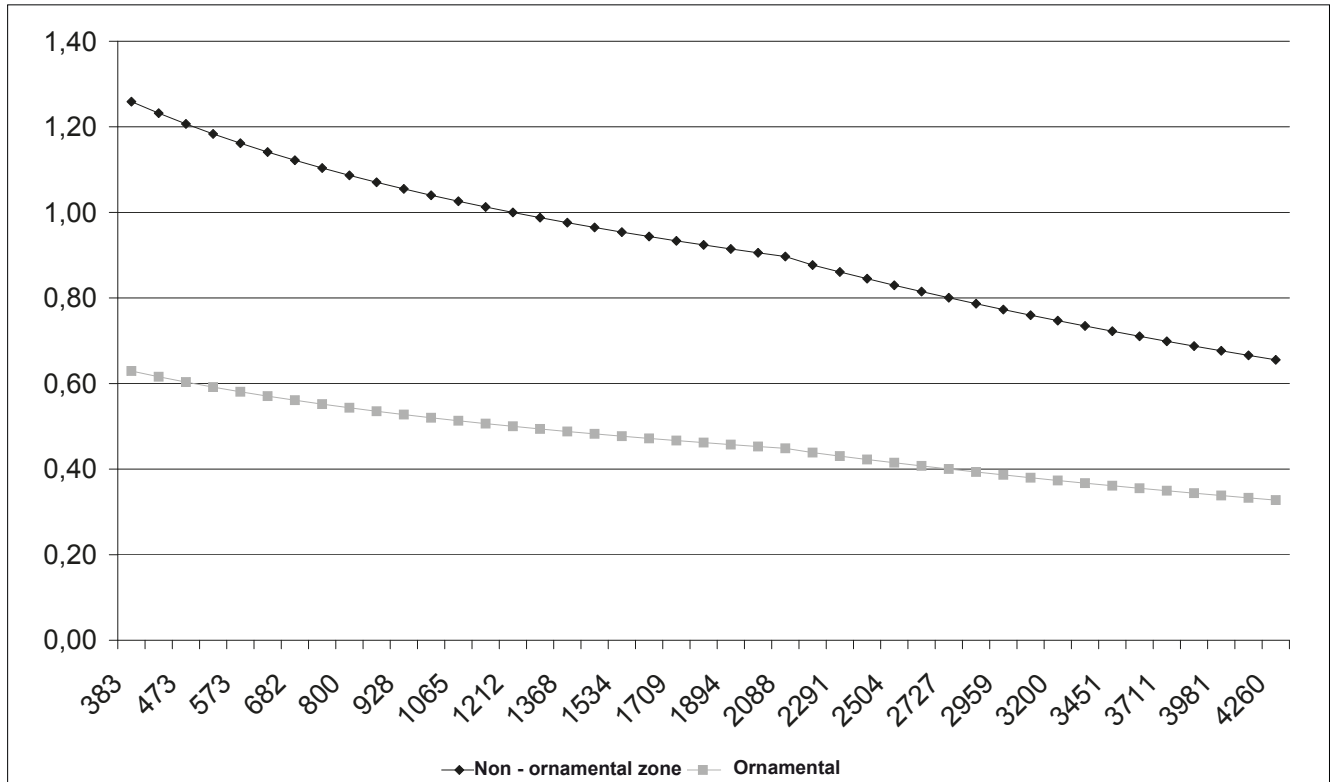
Wind speed (m/s)	Associated pressure (Pa)	Altitude of the brise-soleil					Location*
		less than 6 m	6 to 18 m	18 to 28 m	28 to 50 m	50 to 100 m	
22	296.45	383	417	505	630	793	IV
		399	532	623	753	920	IIIb
		451	660	753	883	1050	IIIa
		602	810	900	1026	1185	II
		774	964	1046	1158	1298	0
24	352.8	456	497	601	750	944	IV
		475	633	742	896	1095	IIIb
		536	786	897	1051	1250	IIIa
		717	963	1071	1221	1410	II
		922	1148	1245	1378	1545	0
26	414.05	535	583	705	880	1108	IV
		558	743	871	1051	1285	IIIb
		629	922	1052	1234	1467	IIIa
		841	1131	1257	1433	1655	II
		1082	1347	1461	1617	1813	0
28	480.2	620	676	818	1020	1285	IV
		647	861	1010	1219	1491	IIIb
		730	1070	1220	1431	1701	IIIa
		975	1311	1458	1661	1919	II
		1255	1562	1694	1875	2102	0
34	708.05	915	997	1206	1504	1895	IV
		953	1270	1489	1798	2198	IIIb
		1076	1577	1800	2110	2509	IIIa
		1438	1934	2150	2450	2830	II
		1850	2303	2498	2765	3100	0

* : Refer to the categories table to determine the category for the site under consideration.

Performance

Sizing and graphs

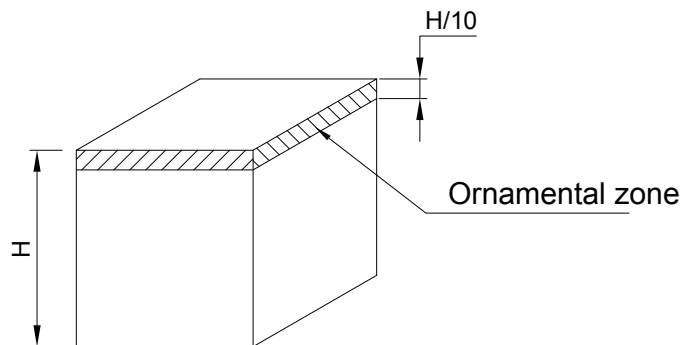
Wind weight coefficient



Note: The building's ornamental area is the top part of the facade, at 10% of the height.

Correspondence between pressure
(P in Pascals) and wind speed (V in km/h)

$$V = \left[\frac{16.3 \times P}{0.7728} \right]^{0.5}$$



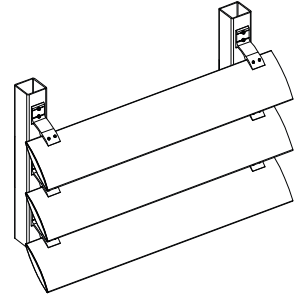
Performance

Sizing and graphs

Theoretical wind distance
Results validated by CSTB tests

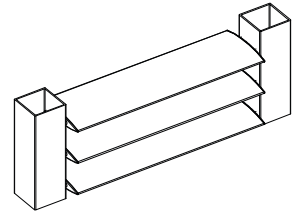
Wind Table – One-piece continuous blades configuration

	Blade	120	180	240	270
	Reference	TL2604	TL2603	TL2602	TL2601
Inclination	0°	2000	2100	2800	1800
	15°	2100	2300	3100	2100
	30°	2000	2200	2900	2400
	45°	1800	2000	3000	2500



Wind Table – One-piece blades between load-bearing walls configuration

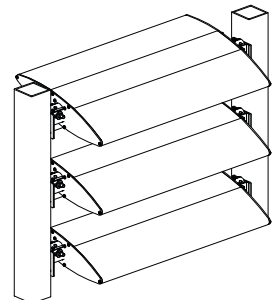
	Blade	100	120	180	240	270	300	300R
	Reference	530202	TL2604	TL2603	TL2602	TL2601	530208	530209
Inclination	0°	2500	2300	2700	4200*	4200*	4200*	4200*
	15°	2257	2078	2400	3138	3778	3681	3681
	30°	2082	1917	2175	2894	3478	3394	3394
	45°	2149	1979	2225	2987	3591	3500	3503
	60°	2086	1921	2150	2900	3400	3400	3611
	90°	1700	1500	1700	2400	2895	2820	2820



* Values limited by the length of the vein test. Contact us for more information.

Wind Table – Composite blades between load-bearing walls configuration

	Blade	350	400	450	500	600
	Reference	530228	530229	530230	530231	530232
Inclination	0°	4300*	4300*	4300*	4300*	4300*
	15°	4234	4190	4175	4232	4200*
	30°	4044	3896	3880	3931	3895
	45°	4000	4018	4002	4055	3899
	60°	4191	4134	4118	4173	4198
	90°	3255	3209	3199	3242	3263



* Values limited by the length of the vein test. Contact us for more information.

Performance

Sizing and graphs

How to use the graphs for one-piece movable elliptical blades

Note:

- Because the blades are movable, there is no accounting for the inclination of the blades.
- The sizing is the same for manual and motorised movable blades.
- The sizing is valid for all geographical locations.
- The sizing is the same for horizontal and vertical blades.

The sizing is based on two criteria:

- maximum length of the blade, as L_{max} , determined by calculating the blade deflection.
We should have: $L_{blades} \leq L_{max}$.

- A maximum linear of blades, as $Linear\ maxi$, corresponding to the blade's number of linear metres by movement system and determined by admissible efforts in the cylinder or index.

We should have: $L_{blades} \times \text{number of blades} \leq Linear\ maxi$.

Results validated by official CSTB tests:
(EN-11.113C test n°)

180 mm blades:

$L_{max} = 1900\text{ mm}$

$Linear\ maxi = 25\ 000\text{ mm/system}$

210 mm blades:

$L_{max} = 1750\text{ mm}$

$Linear\ maxi = 21,430\text{ mm/system}$

240 mm blades:

$L_{max} = 2400\text{ mm}$

$Linear\ maxi = 18,750\text{ mm/system}$

270 mm blades:

$L_{max} = 2700\text{ mm}$

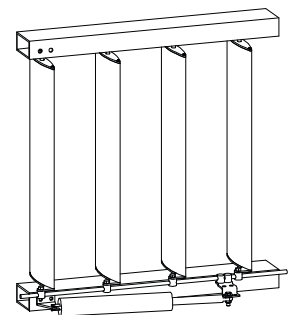
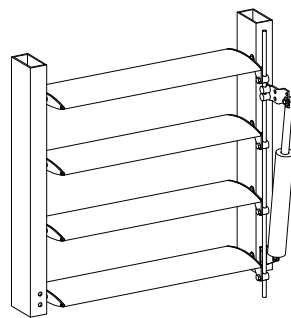
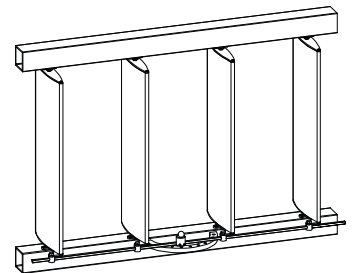
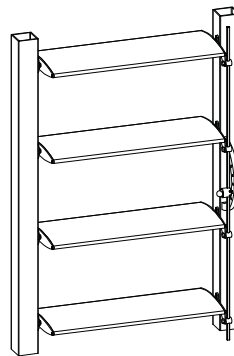
$Linear\ maxi = 16,670\text{ mm/system}$

300 mm blades:

$L_{max} = 2700\text{ mm}$

$Linear\ maxi = 15,000\text{ mm/system}$

Note: The 300 mm blades are available only in a motorised version.



The rods provided have a length of 3 metres.

Additional information on motorisation

The tests were performed with an ELERO brand Veco motor.




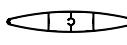
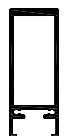
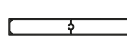
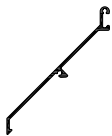




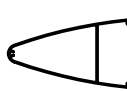

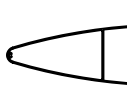

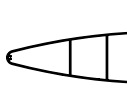

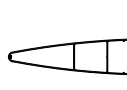
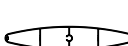
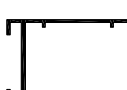
Static power of the cylinder: 2.4 kN

Dynamic power of the cylinder: 1.6 kN

Inertia




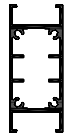
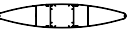
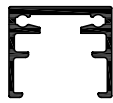
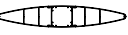
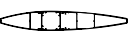
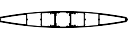



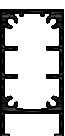
Inertia values

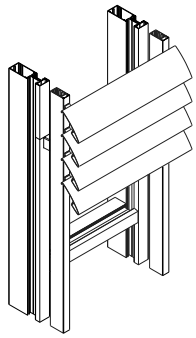
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	Ref.	I_{xx}' (cm ⁴)	I_{yy}' (cm ⁴)	I_{xx}'/v (cm ³)	I_{yy}'/v (cm ³)		Ref.	I_{xx}' (cm ⁴)	I_{yy}' (cm ⁴)	I_{xx}'/v (cm ³)	I_{yy}'/v (cm ³)
	330011	8.79	1.46	3.38	1.13		TL2602	541.82	22.54	45.1	11.2
	330012	11.83	56.93	6.96	11.48		TL2614	1601.26	56.41	106.72	28.2
	530200	23.71	27.45	5.41	5		530208	1082.1	45.5	72.18	18.2
	530201	10.28	36.03	3.26	5.72		530210	42.13	12.67	11.2	4.61
	530202	34.26	2.88	6.85	2.30		530213	95.52	34.7	14	9.6
	TL2604	62.09	2.37	10.3	2.06		530214	158.5	41.38	19.3	11.5
	TL2603	215.3	8.18	23.9	5.45		530215	244.43	50.15	25.6	13.9
	530205	202.33	6.48	19.6	4.32		530216	85.7	760.2	23.7	56.8
	TL2601	888.05	44.29	65.8	17.7		530217	40.95	21.17	10.9	8.47

Inertia

Inertia values

	Ref.	I_{xx}' (cm ⁴)	I_{yy}' (cm ⁴)	I_{xx}'/V (cm ³)	I_{yy}'/V (cm ³)		Ref.	I_{xx}' (cm ⁴)	I_{yy}' (cm ⁴)	I_{xx}'/V (cm ³)	I_{yy}'/V (cm ³)
	530228	140.7	266.2	38.2	43.7		560022	10.44	31.59	6.14	7.70
	530229	154.1	392.2	42	54.3		560043	4.3	1.9	2.5	0.9
	530230	3610.6	171.6	160.5	45.7						
	530231	173.4	977.6	47.6	83.8						
	530232	221.9	1625.5	61	124.4						
	560001	0.32	19.85	0.30	3.99						
	560002	2.73	70.68	1.59	8.68						
	560004	13.7	0.18	2.96	0.16						
	560021	9.98	27.19	5.87	7.01						



Applications

560001 and 560002 blades on a Geode curtain wall

Horizontales blades, continuous pressure plate

PROFILES

Ref.	Profiles	Sections	Quantities		Dimensions
560002 or 560001		90°/90°	outer blade	2 x (C + 1)	M x L + 23
			inner blade	(N - 2) x (C + 1)	M x L - 10
560004		90°/90°	outer cover	2 x (C + 1)	M x L - 55
			inner cover	(N - 2) x (C + 1)	M x L - 70
560021		90°/90°	N + 1		H
TL2501		90°/90°	outer spacer	(N + 1) x 2	(H - C x E - 30) / 2
			intermediate spacer	C x (N + 1)	E - 30

GASKETS

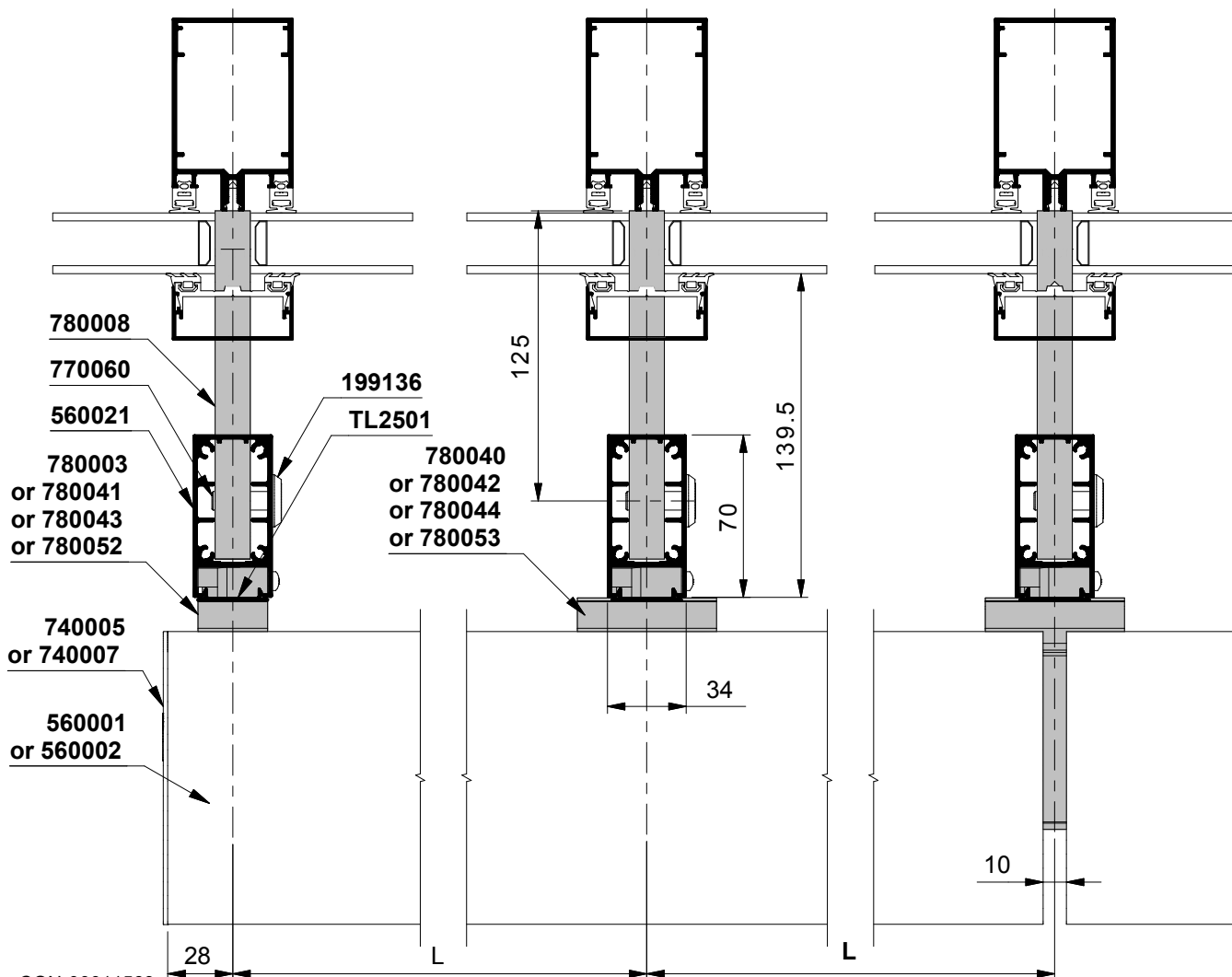
Ref.	Description	Dimension
AS0114	Gasket for blade cap	(L / 2) x N x (C + 1)

- E = spacing of blades (mm)
- N = number of frames
- L = frame (mm) (see graphs)
- H = height of the brise soleil (mm)
- K = number of blades by cleats (see graphs)

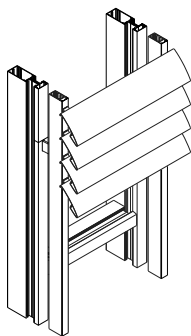
C = (entire portion of H / E) - 1
Example : if H = 6000 mm and E = 130 mm, then H / E = 46,15 therefore C = 45

J = number of cleats per support section = rounded up (C+1) / K
Example : if K = 12 and C = 45, then (C+1) / K = 46/12 = 3,83 and J = 4

M = rounded down (6000/L)
Example : L = 1350 mm, then 6000 / L = 6000/1350 = 4,44 and M = 4



CON-00011569



Applications

560001 and 560002 blades on a Geode curtain wall

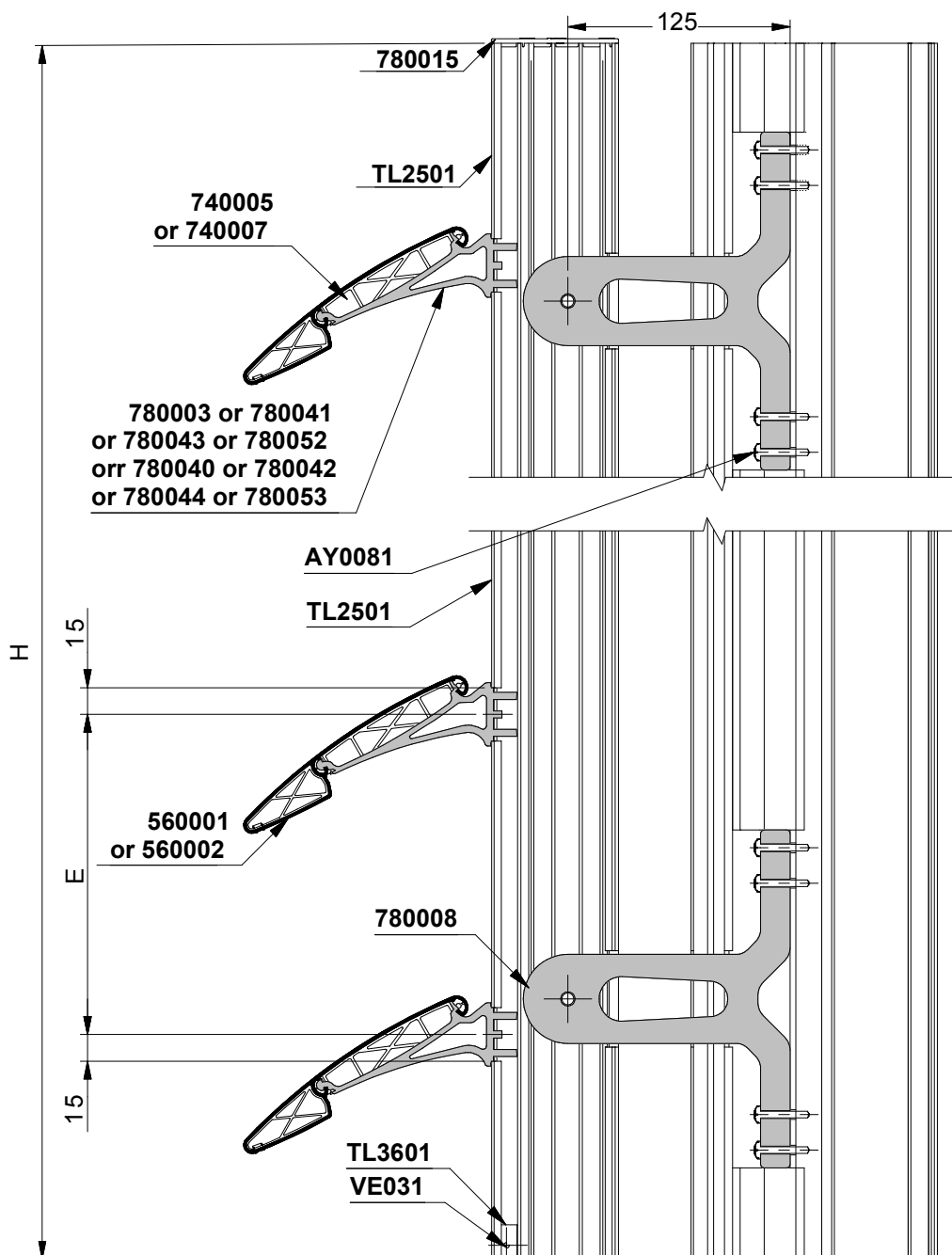
Horizontales blades, continuous pressure plate

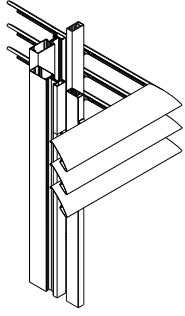
ACCESSORIES

Ref.	Description	Quantity
740005 or 740007	150 mm end cap or 100 mm end cap	C + 1 or 2 x (C + 1)
780003 or 780041 or 780043 or 780052	Blade holder (30 mm)	2 x (C + 1)
780040 or 780042 or 780044 or 780053	Blade holder (60 mm)	(N - 1) x (C + 1)
1831	Self tapping stainless screw	4 x (C + 1)
199136	Washer with collar	J x (N + 1)

ACCESSORIES (continued)

Ref.	Description	Quantity
770060	Countersink screw M8 x 30	J x (N + 1)
780008	Mounting bracket BS on MX	J x (N + 1)
780015	End cap for vertical BS prof 70 mm	N + 1
AY0081	Self tapping pan head screw ST 5,5 x 32 C	4 x J x (N + 1)
TL3601	Spacer/fitting part	N + 1
VE031	Self tapping screw 4.2 x 16	N + 1
VE106	Screw FX ST 4.8x16	4 x (N + 1)





Applications

560001 and 560002 blades on a Geode curtain wall

Horizontales blades, 90° angle, punctual pressure plate

PROFILES

Ref.	Profiles	Sections	Quantities		Dimensions
560002 or 560001		90°/45°	outer blade	2 x (C + 1)	M x L - 5 + P
		90°/90°	inner blade	(N - 2) x (C + 1)	M x L - 10
560004		90°/45°	outer cover	2 x (C + 1)	P - 40
		90°/90°	inner cover	(N - 1) x (C + 1)	M x L - 70
560021		90°/90°	N + 1		H
TL2501		90°/90°	outer espacer	(N + 1) x 2	(H - C x E - 30) / 2
			intermediate spacer	C x (N + 1)	E - 30

GASKETS

Ref.	Description	Dimension
AS0114	Gasket for blade cap	(L / 2) x N x (C + 1)

Note : The parts listed here are valid for a horizontal brise soleil with a 90° angle at each en.

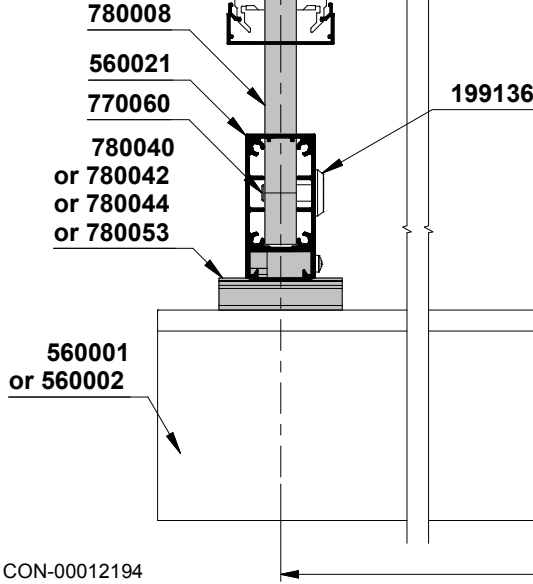
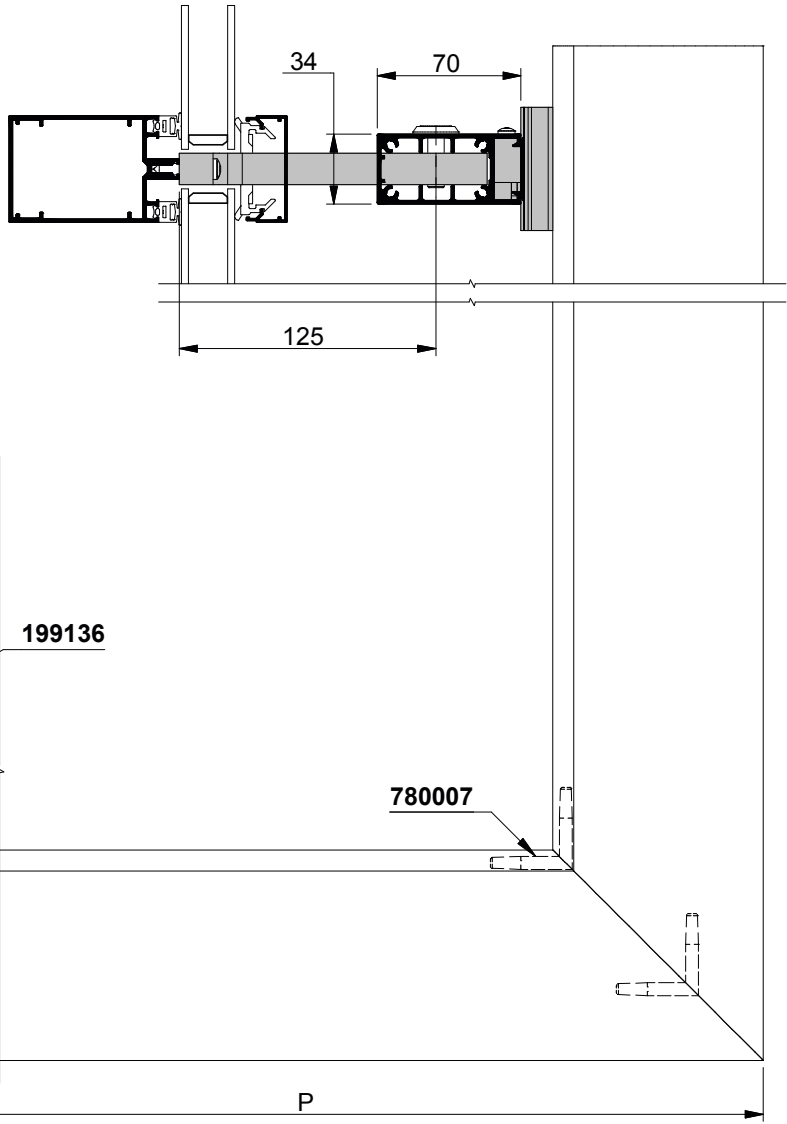
E = spacing of blades (mm)
N = number of frames
L = frame (mm) (see graphs)
H = height of the brise soleil (mm)
K = number of blades by cleats (see graphs)
P = blade overhang (mm)

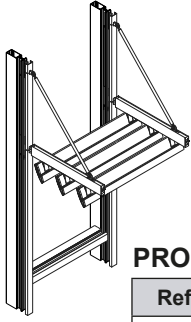
C = (entire portion of H / E) - 1
Example : if H = 6000 mm and E = 130 mm, then H / E = 46,15 therefore C = 45

J = number of cleats per support section = rounded up (C+1) / K
Example : if K = 12 and C = 45, then (C+1) / K = 46/12 = 3,83 and J = 4

M = rounded down (6000/L)
Example : L = 1350 mm, then 6000 / L = 6000/1350 = 4,44 and M = 4

! $P \leq L / 2,7$





Applications

560001 and 560002 blades on a Geode curtain wall

Horizontales blades, canopy, continuous pressure plate

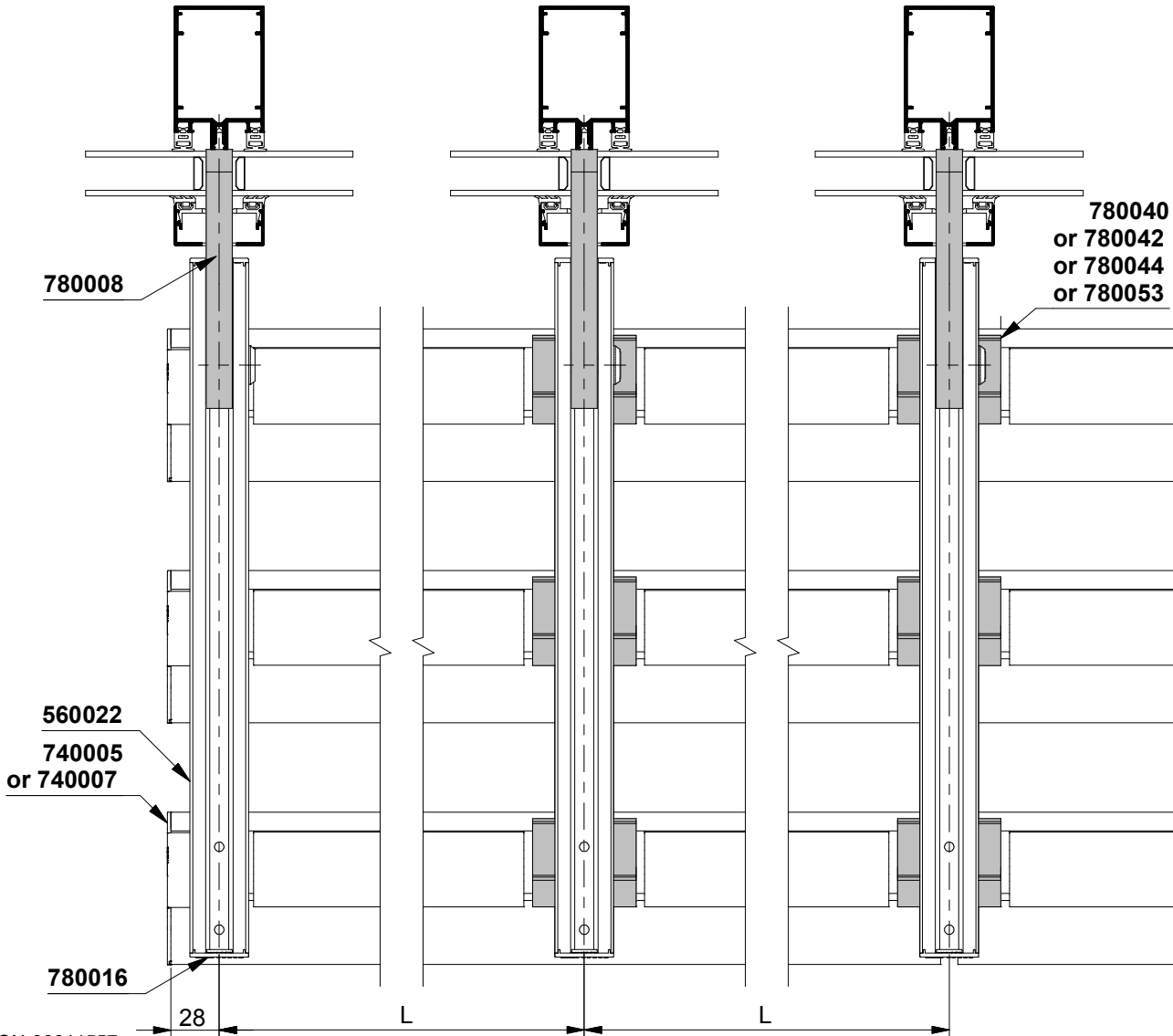
PROFILES

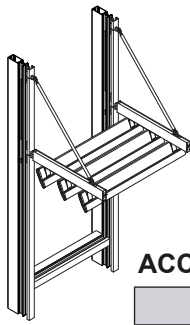
Ref.	Profiles	Sections	Quantities		Dimensions
560002 or 560001		90°/90°	outer blade	2 x (C + 1)	M x L + 23
			inner blade	(N - 2) x (C + 1)	M x L - 10
560004		90°/90°	outer cover	2 x (C + 1)	M x L - 55
			inner cover	(N - 2) x (C + 1)	M x L - 70
560022		90°/90°	N + 1		L1
TL2501		90°/90°	outer spacer	(N + 1) x 2	(L1 - CxE - 30) / 2
			intermediate spacer	C x (N + 1)	E - 30
			outer 560022	N + 1	L1 - 72
FM181		90°/90°	N + 1		L2

E = spacing of blades (mm)
 N = number of frames
 L = frame (mm) (see graphs)
 L₁ = total length of the brise soleil (mm)

C = (entire portion of L1 / E) - 1
Example : if H = 1000 mm and E = 130 mm, then L1 / E = 7,69 therefore C = 6

M = rounded down (6000/L)
Example : L = 1350 mm, alors 6000 / L = 6000/1350 = 4,44 et M = 4





Applications

560001 and 560002 blades on a Geode curtain wall

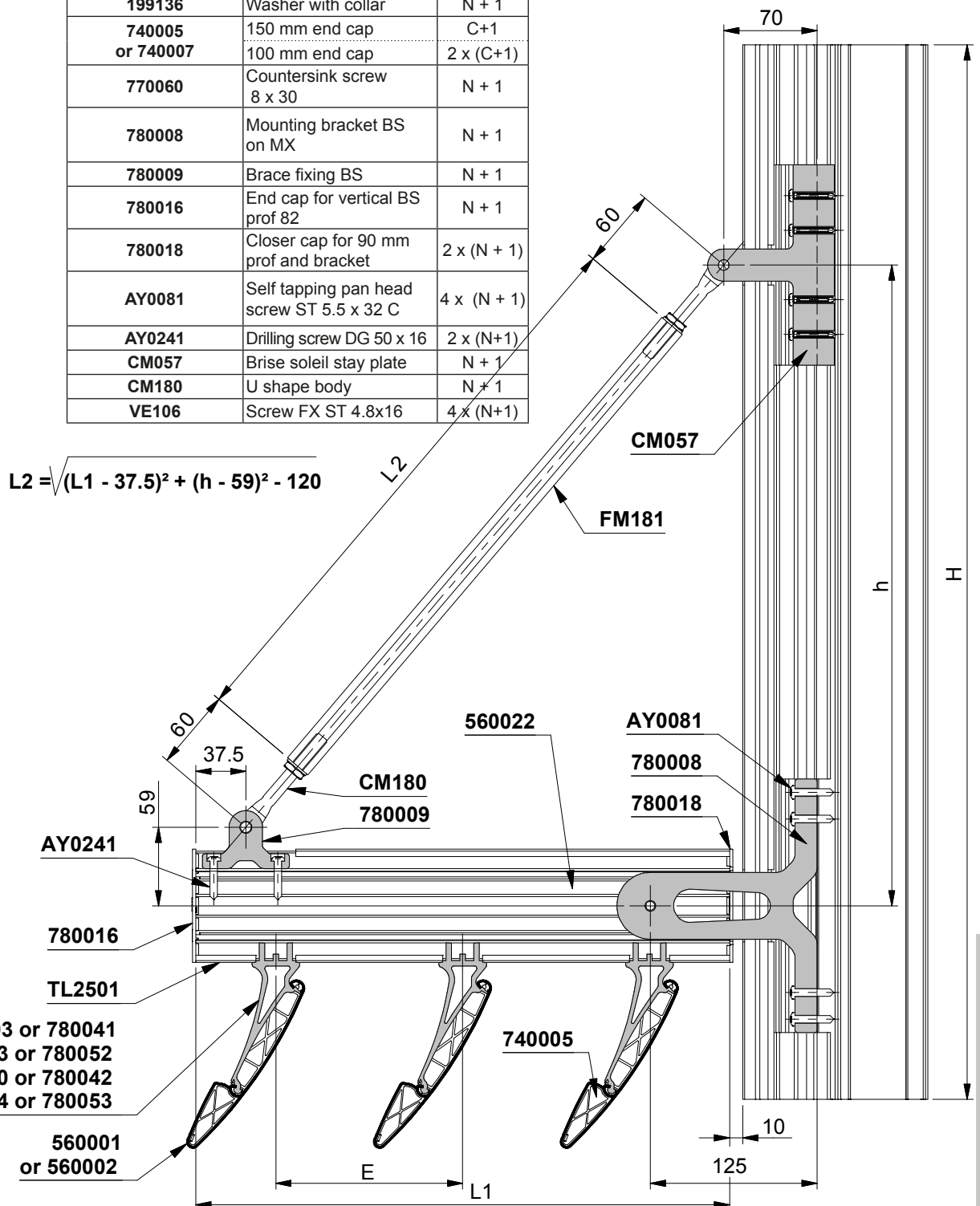
Horizontales blades, canopy, continuous pressure plate

ACCESSORIES

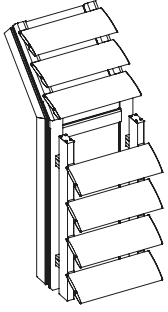
Ref.	Description	Quantities
780003 or 780041 or 780043 or 780052	Blade holder (30 mm)	2 x (C+1)
780040 or 780042 or 780044 or 780053	Blade holder (60 mm)	(N-1) x (C+1)
1831	Self tapping stainless screw	4 x (C + 1)
199136	Washer with collar	N + 1
740005 or 740007	150 mm end cap	C+1
	100 mm end cap	2 x (C+1)
770060	Countersink screw 8 x 30	N + 1
780008	Mounting bracket BS on MX	N + 1
780009	Brace fixing BS	N + 1
780016	End cap for vertical BS prof 82	N + 1
780018	Closer cap for 90 mm prof and bracket	2 x (N + 1)
AY0081	Self tapping pan head screw ST 5.5 x 32 C	4 x (N + 1)
AY0241	Drilling screw DG 50 x 16	2 x (N+1)
CM057	Brise soleil stay plate	N + 1
CM180	U shape body	N + 1
VE106	Screw FX ST 4.8x16	4 x (N+1)

GASKETS

Ref.	Description	Dimension
AS0114	Gasket for blade cap	(L / 2) x N x (C + 1)



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Applications

560001 and 560002 blades on a Geode rooflight

Horizontal blades on a rooflight

PROFILES

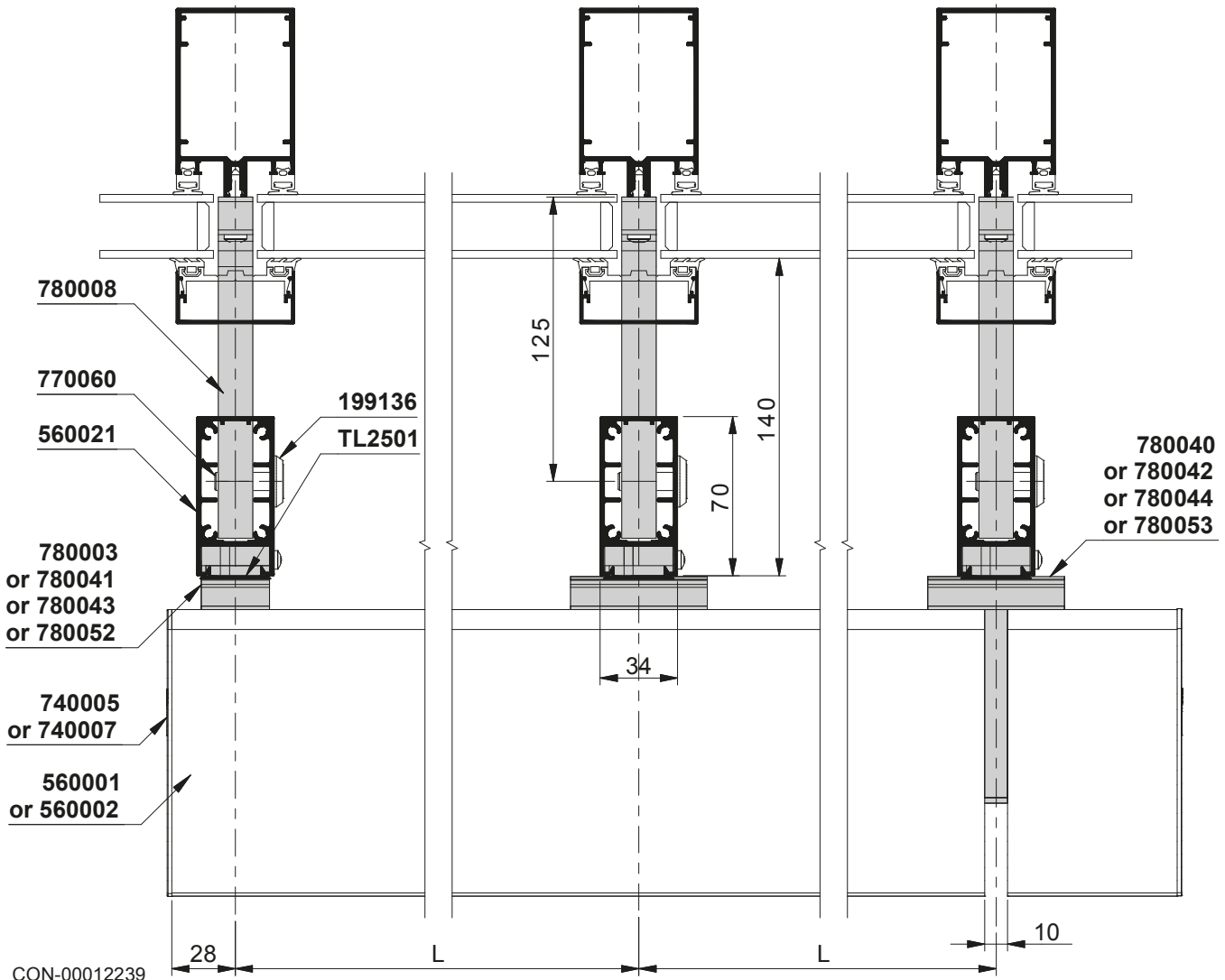
Ref.	Profiles	Sections	Quantities		Dimensions
330011		90°/90°	N + 1		
560002 or 560001		90°/90°	outer blade	2 x (C + 1)	M x L + 23
			inner blade	(N - 2) x (C + 1)	M x L - 10
560004		90°/90°	outer cover	2 x (C + 1)	M x L - 55
			inner cover	(N - 2) x (C + 1)	M x L - 70
TL2501		90°/90°	outer spacer	(N + 1) x 2	(H - C x E - 30) / 2
			intermediate spacer	C x (N + 1)	E - 30

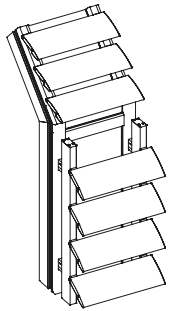
E = spacing of blades (mm)
N = number of frames
L = frame (mm) (see graphs)
L = height rooflight (mm)

C = (entire portion of H / E) - 1
Example : if H = 6000 mm and E = 130 mm, then H / E = 46,15 therefore C = 45

M = rounded down (6000/L)
Example : L = 1350 mm, then 6000 / L = 6000/1350 = 4,44 and M = 4

Note : For continuous blades on multiple frames, the blades must be coupled on posts with double blade supports.





Applications

560001 and 560002 blades on a Geode rooflight

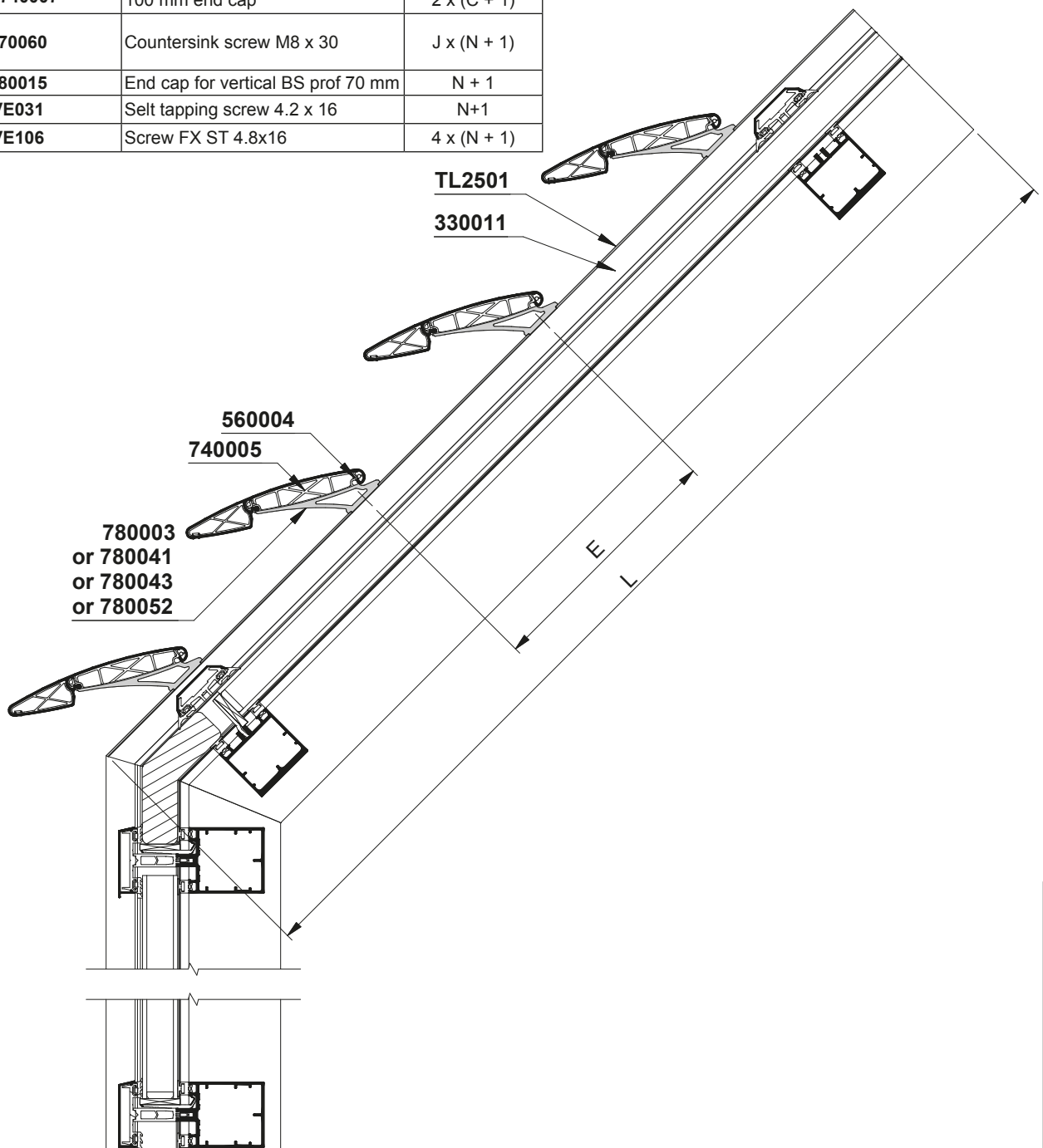
Horizontal blades on a rooflight

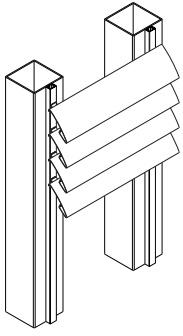
ACCESSORIES

Ref.	Description	Quantity
780003 or 780041 or 780043 or 780052	Blade holder (30 mm)	$2 \times (C + 1)$
780040 or 780042 or 780044 or 780053	Blade holder (60 mm)	$(N - 1) \times (C + 1)$
1831	Self tapping stainless screw	$4 \times (C + 1)$
740005 or 740007	150 mm end cap	$C + 1$
	100 mm end cap	$2 \times (C + 1)$
770060	Countersink screw M8 x 30	$J \times (N + 1)$
780015	End cap for vertical BS prof 70 mm	$N + 1$
VE031	Self tapping screw 4.2 x 16	$N + 1$
VE106	Screw FX ST 4.8x16	$4 \times (N + 1)$

GASKETS

Ref.	Description	Dimension
AS0114	Gasket for blade cap	$(L / 2) \times N \times (C + 1)$





Applications

560001 and 560002 blades on an independent supporting structure

30 mm load-bearing wall

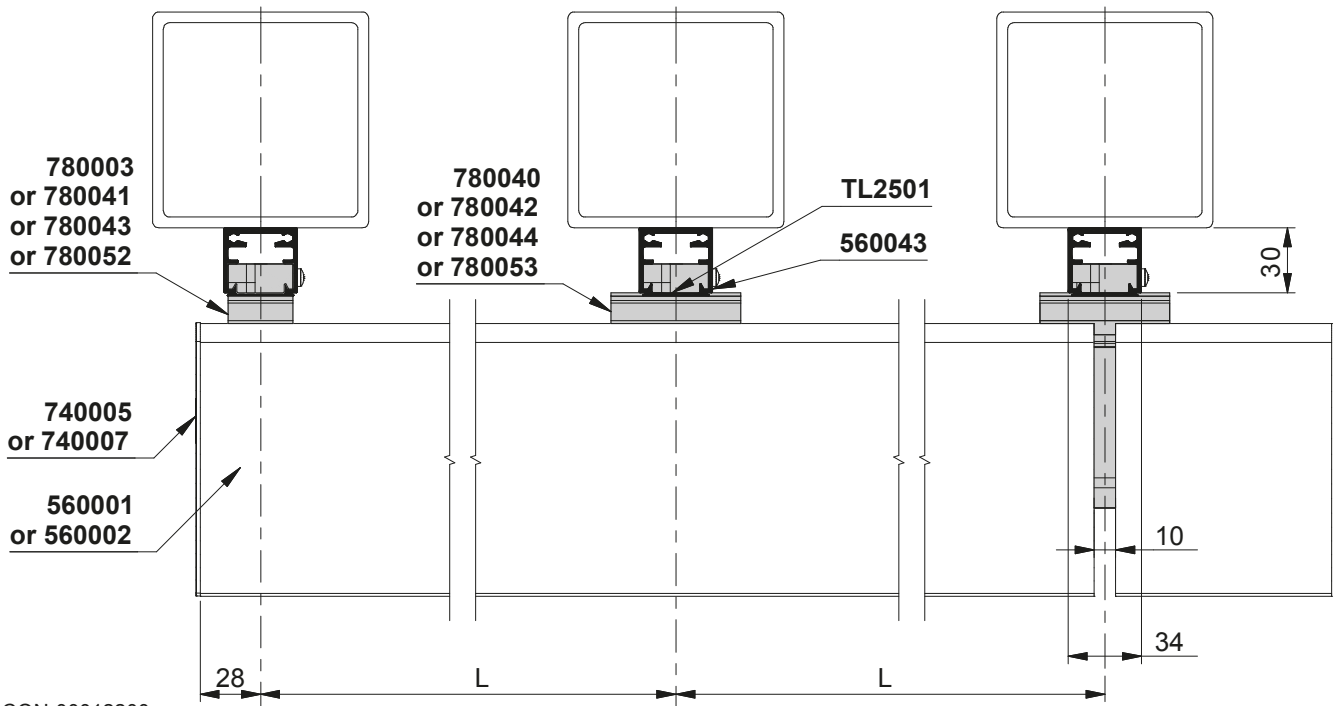
PROFILES

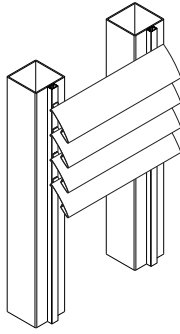
Ref.	Profiles	Sections	Quantities		Dimensions
560002 or 560001		90°/90°	outer blade	2 x (C + 1)	M x L + 23
			inner blade	(N - 2) x (C + 1)	M x L - 10
560004		90°/90°	outer cover	2 x (C + 1)	M x L - 55
			inner cover	(N - 2) x (C + 1)	M x L - 70
560043		90°/90°	N + 1		H
TL2501		90°/90°	outer spacer	(N + 1) x 2	(H - C x E - 30) / 2
			intermediate spacer	C x (N + 1)	E - 30

E = spacing of blades (mm)
N = number of frames
L = frame (mm) (see graphs)
H = height of the brise soleil (mm)
K = number of blades by cleats (see graphs)

C = (entire portion of H / E) - 1
Example : if H = 6000 mm and E = 130 mm, then H / E = 46,15 therefore **C = 45**

M = rounded down (6000/L)
Example : L = 1350 mm, then **6000 / L = 6000/1350 = 4,44** and **M = 4**





Applications

560001 and 560002 blades on an independent supporting structure

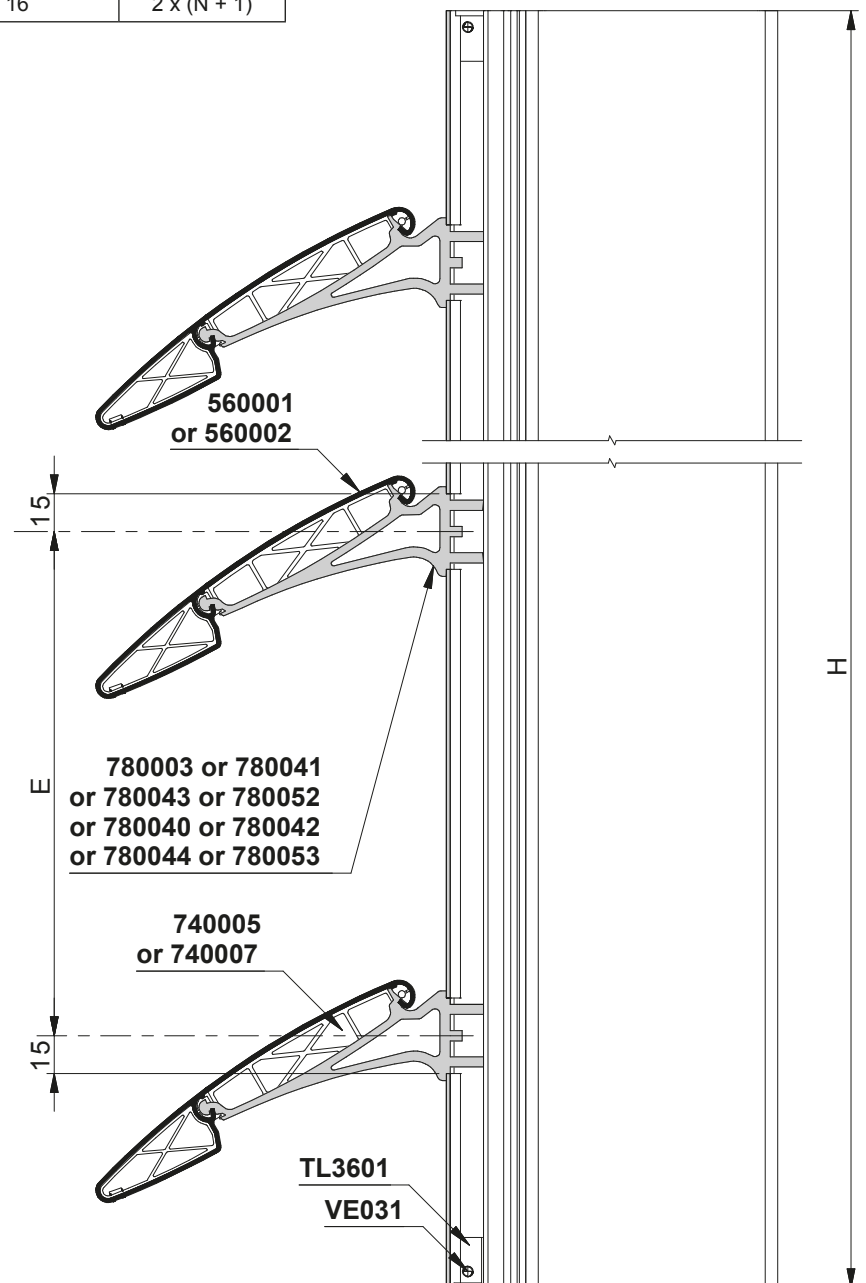
30 mm load-bearing wall

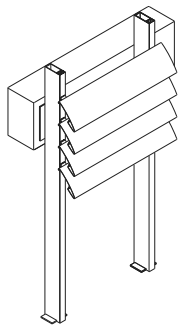
ACCESSORIES

Ref.	Description	Quantity
780003 or 780041 or 780043 or 780052	Blade holder (30 mm)	2 x (C + 1)
780040 or 780042 or 780044 or 780053	Blade holder (60 mm)	(N - 1) x (C + 1)
1831	Self tapping stainless screw	4 x (C + 1)
740005 or 740007	150 mm end cap	C + 1
	100 mm end cap	2 x (C + 1)
TL3601	PSpacer/ fitting spart	2 x (N + 1)
VE031	Self tapping screw 4.2 x 16	2 x (N + 1)

GASKETS

Ref.	Description	Dimension
AS0114	Gasket for blade cap	(L / 2) x N x (C + 1)





Applications

**560001 and 560002 blades
on an independent supporting structure**

90 mm load-bearing wall

PROFILES

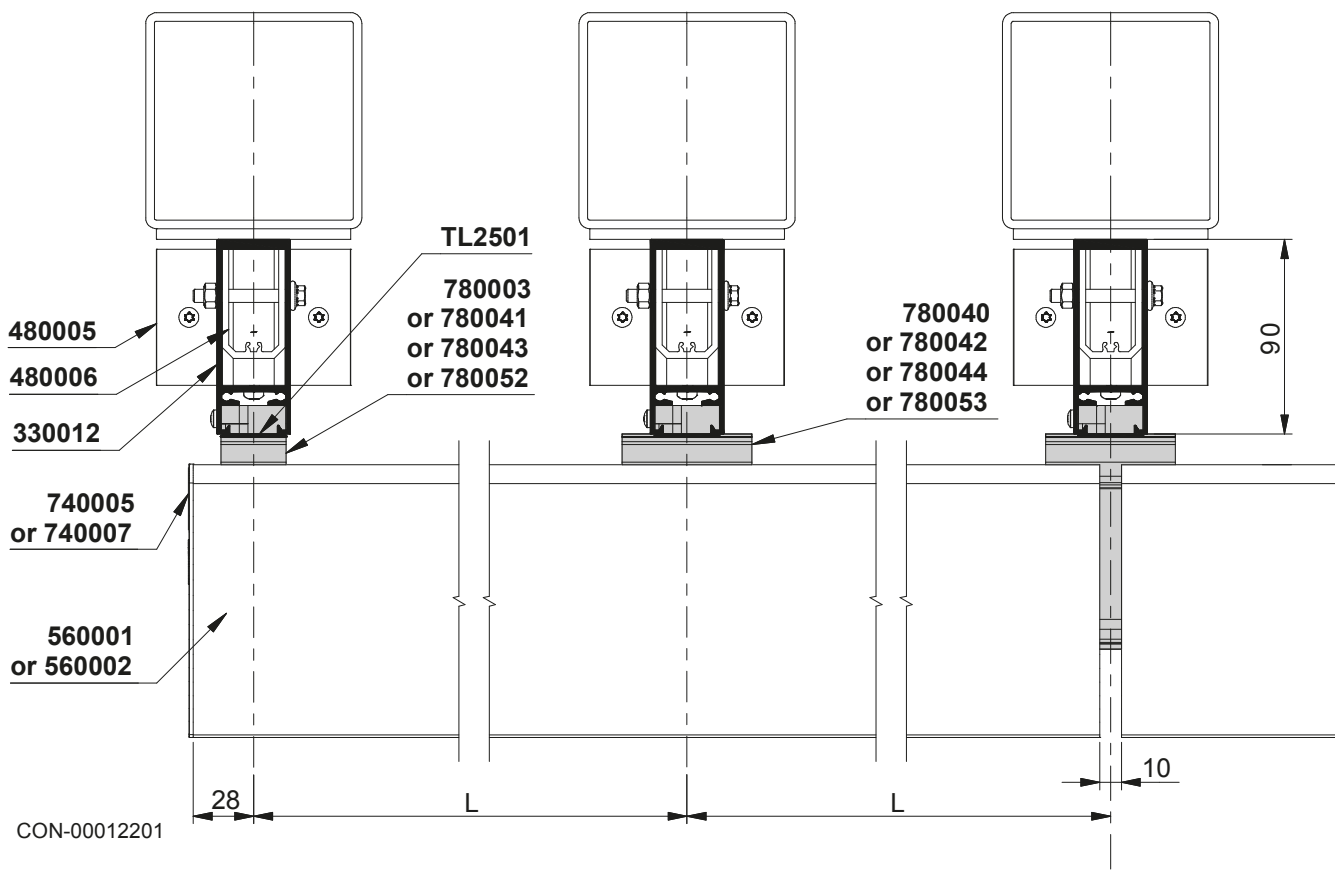
Ref.	Profiles	Sections	Quantities		Dimensions
560002 or 560001		90°/90°	outer blade	2 x (C + 1)	M x L + 23
			inner blade	(N - 2) x (C + 1)	M x L - 10
560004		90°/90°	outer cover	2 x (C + 1)	M x L - 55
			inner cover	(N - 2) x (C + 1)	M x L - 70
330012		90°/90°	N + 1		H
TL2501		90°/90°	outer spacer	(N + 1) x 2	(H - C x E - 30) / 2
			intermediate spacer	C x (N + 1)	E - 30

E = spacing of blades (mm)
N = number of frames
L = frame (mm) (see graphs)
H = height of the brise soleil (mm)
K = number of blades by cleats (see graphs)

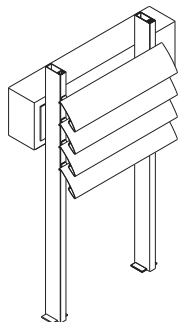
C = (entire portion of H / E) - 1
Example : if H = 6000 mm and E = 130 mm, then H / E = 46,15
 therefore C = 45

M = rounded down (6000/L)
Example : L = 1350 mm, then 6000 / L = 6000/1350 = 4,44 and M = 4

Y : number of 480006 fastenings
Y = rounded up H / 3000, and if H < 3000, then Y = 2



CON-00012201



Applications

560001 and 560002 blades on an independent supporting structure

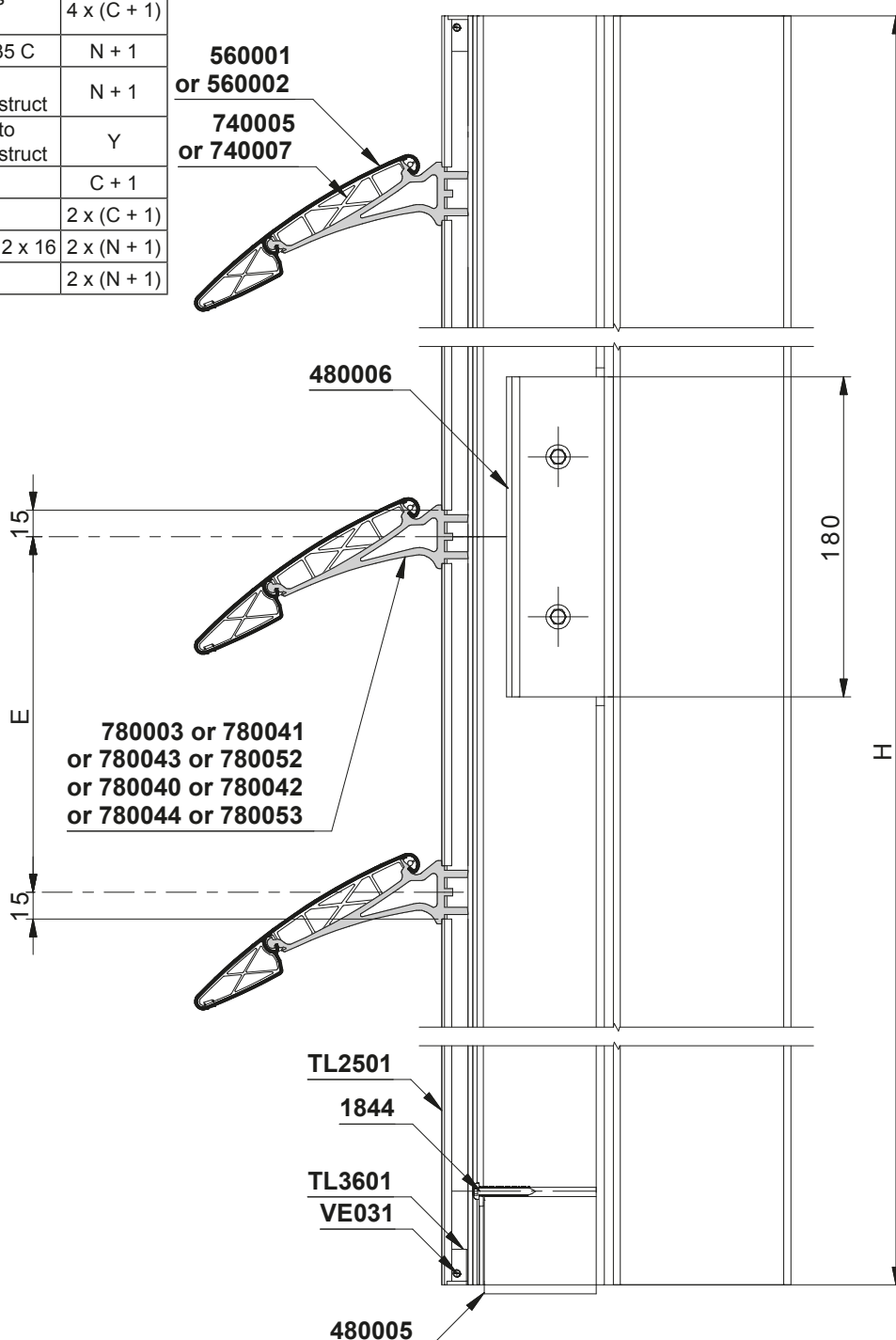
90 mm load-bearing wall

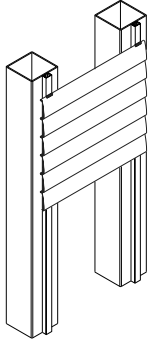
ACCESSORIES

Ref.	Description	Quantity
780003 or 780041 or 780043 or 780052	Blade holder (30 mm)	2 x (C + 1)
780040 or 780042 or 780044 ou 780053	Blade holder (60 mm)	(N - 1) x (C + 1)
1831	Self tapping stainless screw	4 x (C + 1)
1844	Stainless screw 4 x 35 C	N + 1
480005	Base fixing spigot to independent 90 mm struct	N + 1
480006	Vertical fixing spigot to independent 90 mm struct	Y
740005 or 740007	150 mm end cap 100 mm end cap	C + 1 2 x (C + 1)
VE031	Self tapping screw 4,2 x 16	2 x (N + 1)
TL3601	Spacer/ fitting part	2 x (N + 1)

GASKETS

Ref.	Description	Dimension
AS0114	Gasket for blade cap	(L / 2) x N x (C + 1)





Applications

560001 blade

on an independent supporting structure

Cladding on 30 mm load-bearing wall

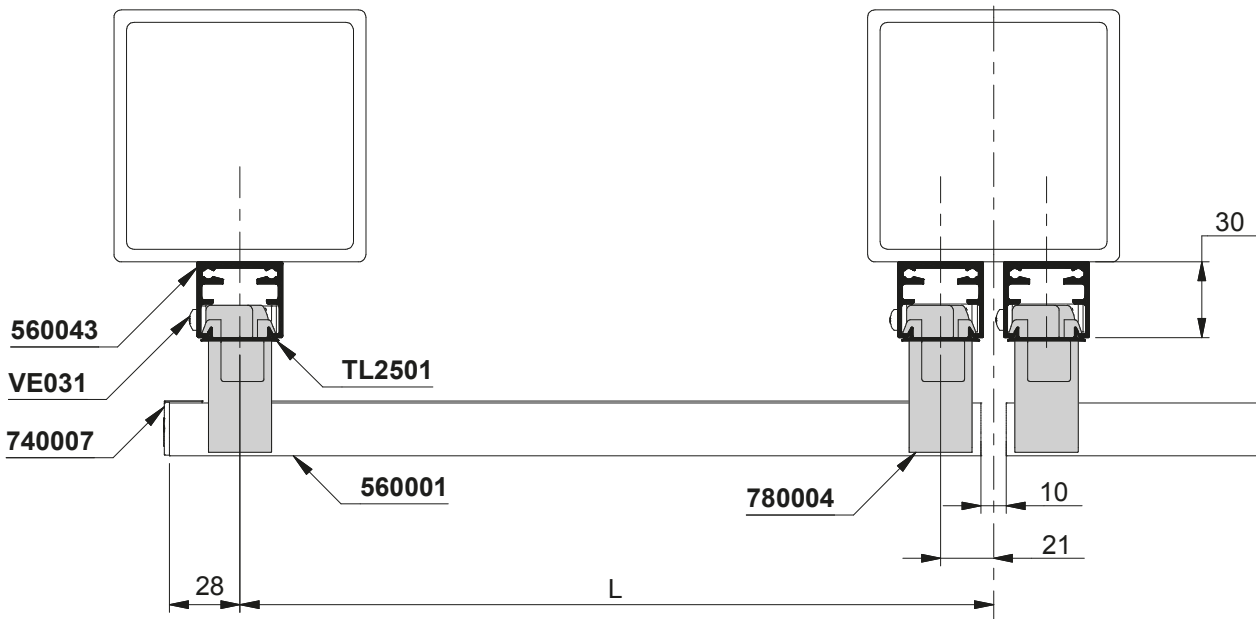
PROFILES

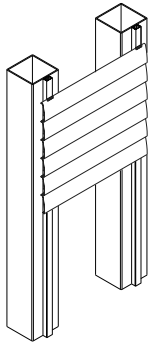
Ref.	Profiles	Coupes	Quantities		Dimensions
560001		90°/90°	outer blade	2 x C	L + 25
			inner blade	(N - 2) x C	L - 10
560004		90°/90°	outer cover	2 x C	L - 85
			inner cover	(N - 2) x C	L - 79
560043		90°/90°	2 x N		H
TL2501		90°/90°	outer spacer	4 x N	[H - (C + 1) x 100] / 2

N = number of frames
L = frame (mm) (see graphs)
H = height of the brise soleil (mm)

C = (entire portion of H / 100) - 2
Example : if H = 2580 mm → H / 100 = 25,8
 therefore C = 23

Note : For a cladding width that is greater than the frame, the support section must be doubled.





Applications

560001 blade **on an independent supporting structure**

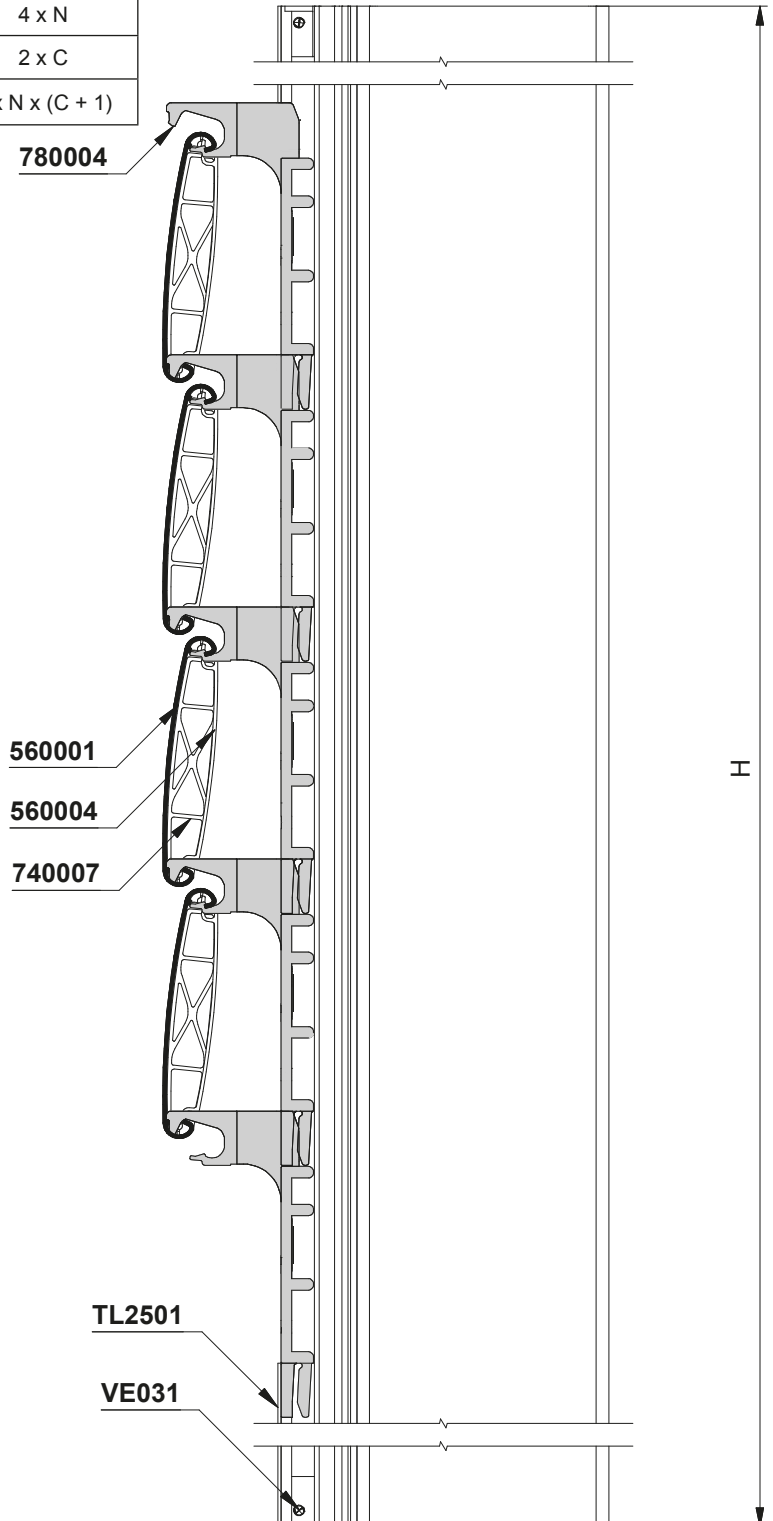
Cladding on 30 mm load-bearing wall

ACCESSORIES

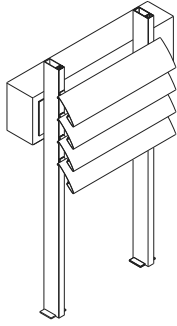
Ref.	Description	Quantity
1831	Self tapping stainless screw	4 x C x N
1844	Stainless screw 4 x 35	4 x N
740007	100 mm end cap	2 x C
780004	Holder for wall cladding	2 x N x (C + 1)

GASKETS

Ref.	Description	Dimension
AS0114	Gasket for blade cap	(L / 2) x N x (C + 1)



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Applications

560001 blade

on an independent supporting structure

Cladding on 90 mm load-bearing wall

PROFILES

Ref.	Profiles	Sections	Quantities		Dimensions
560001		90°/90°	outer blade	2 x C	L + 25
			inner blade	(N - 2) x C	L - 10
560004		90°/90°	outer cover	2 x C	L - 100
			inner cover	(N - 2) x C	L - 131
330012		90°/90°	2 x N		H
TL2501		90°/90°	outer spacer	4 x N	[H - (C + 1) x 100] / 2

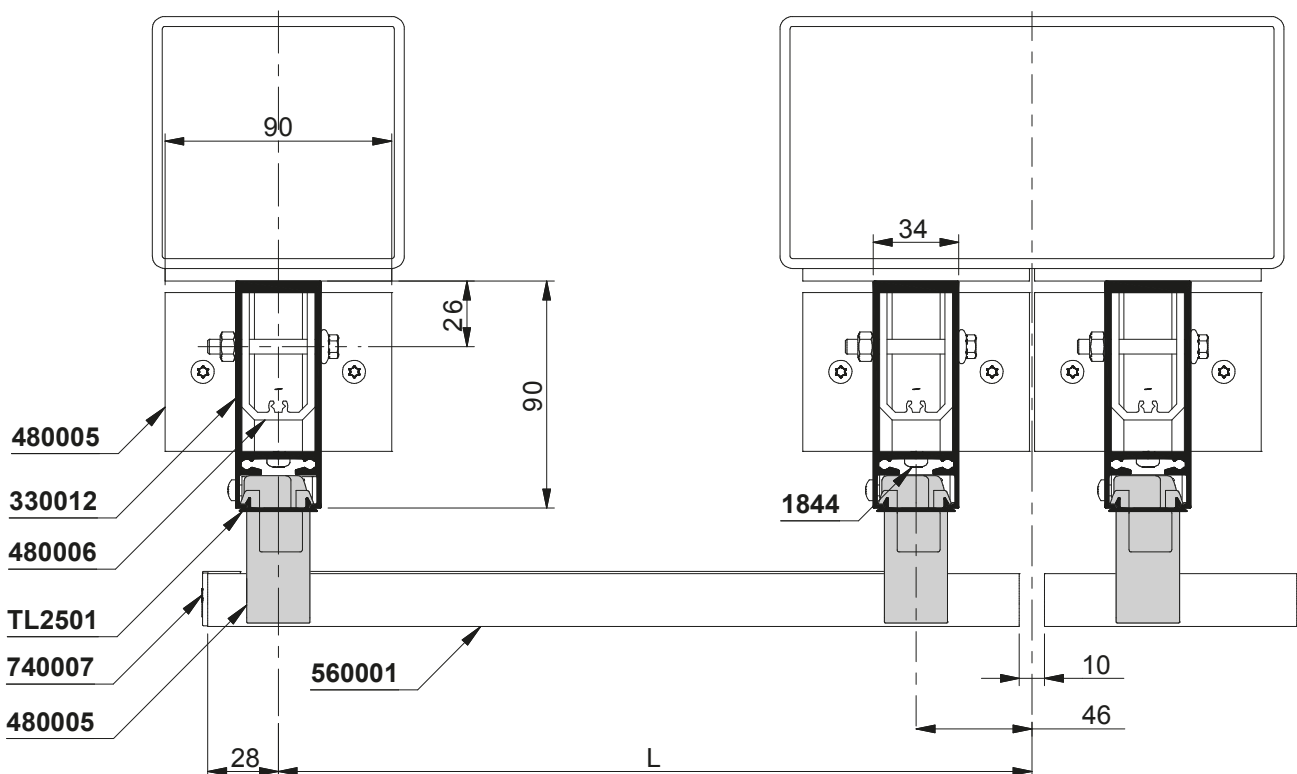
N = number of frames
L = frame (mm)(see graphs)
H = height of the brise soleil (mm)

C = (entire portion of H / 100) - 2
Example : if H = 2580 mm → H / 100 = 25,8
 therefore C = 23

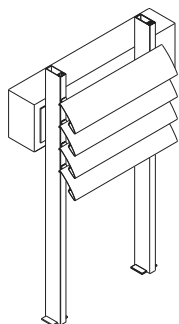
Y : number of 480006 fastenings
Y = rounded up H / 3000, and if H < 3000, then Y = 2

Note : For a cladding width that is greater than the frame, the support section must be doubled.

Note : The application requires a vertical 480006 fastener every three metres of height.



CON-00012214



Applications

560001 blade **on an independent supporting structure**

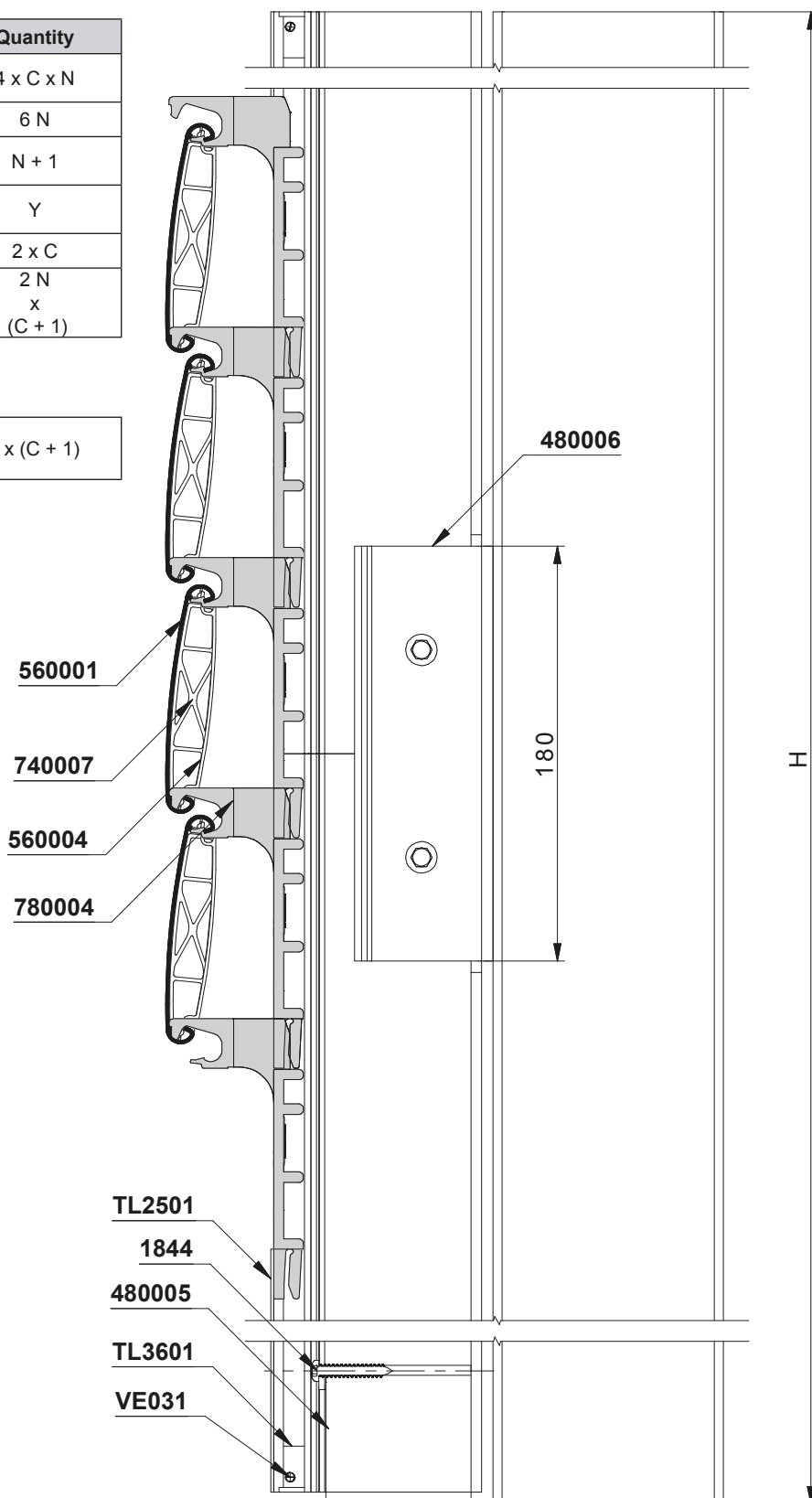
Cladding on 90 mm load-bearing wall

ACCESSORIES

Ref.	Description	Quantity
1831	Self tapping stainless screw	4 x C x N
1844	Stainless screw 4 x 35	6 N
480005	Base fixing spigot to independent 90 mm structure	N + 1
480006	Vertical fixing spigot to independent 90 mm structure	Y
740007	100 mm end cap	2 x C
780004	Holder for wall cladding	2 N x (C + 1)

GASKETS

AS0114	Gasket for blade cap	(L / 2) x N x (C + 1)
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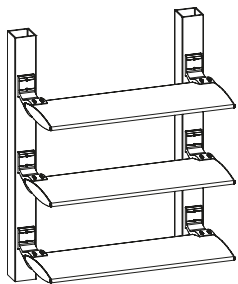


Applications

One-piece fixed blades
on an independent supporting structure

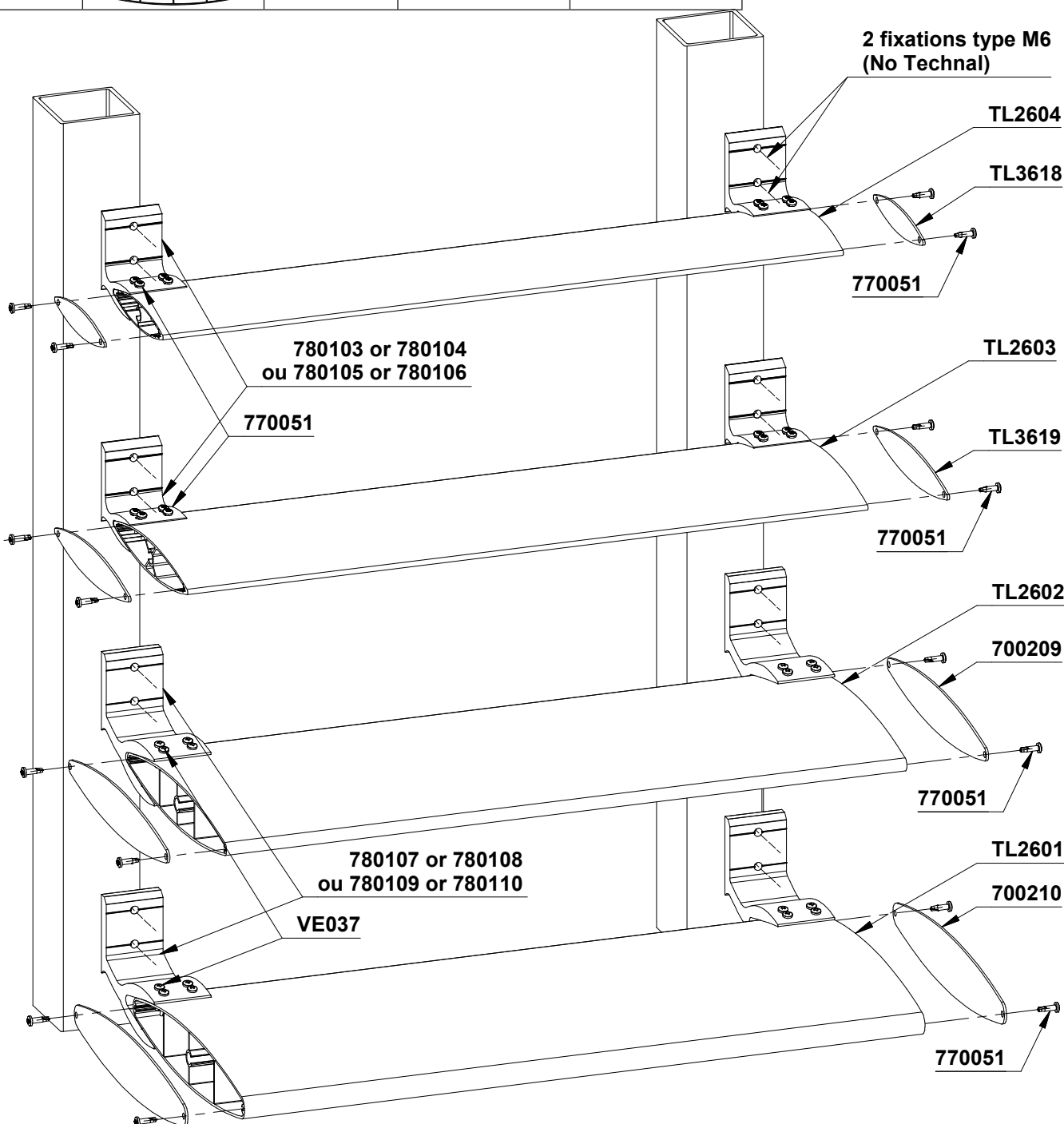
Continuous horizontal blades, 120 mm to 270 mm

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PROFILES AND ACCESSORIES

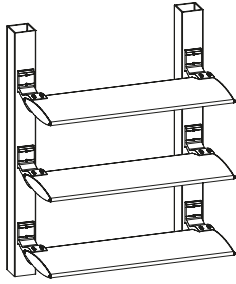
Ref.	Profile	Description	End flange	Clip/ blade screws
TL2604		Blade 120x25	TL3618	770051
TL2603		Blade 180x30	TL3619	
TL2602		Blade 240x40	700209	VE037
TL2601		Blade 270x50	700210	



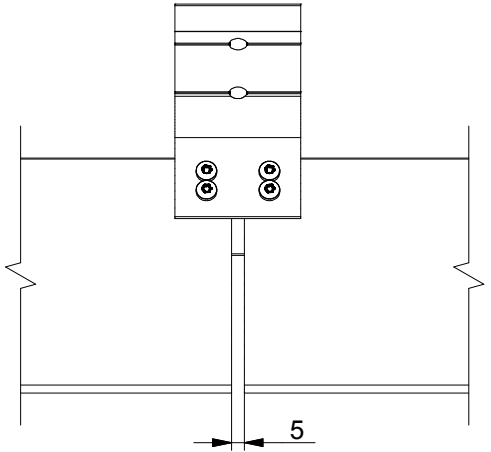
Applications

One-piece fixed blades on an independent supporting structure

Continuous horizontal blades, 120 to 270 mm



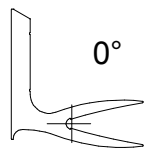
For a blade coupling



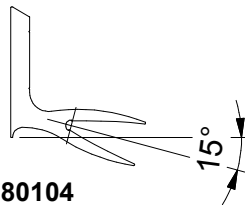
CLIP SELECTION

Angle of clip	Reference	
	For blades sized 120 and 180 mm	For blades sized 240 and 270 mm
Pince à 0°	780103	780107
Pince à 15°	780104	780108
Pince à 30°	780105	780109
Pince à 45°	780106	780110

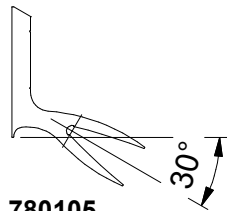
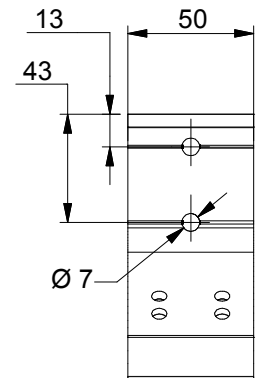
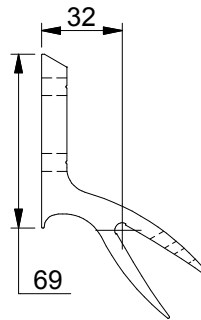
Clips for blades sized 120 and 180 mm



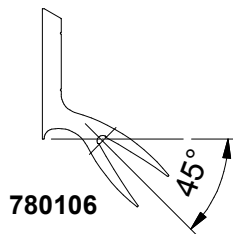
780103



780104

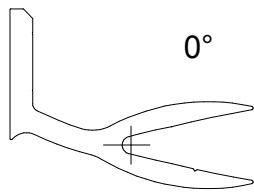


780105

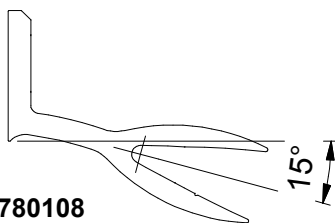


780106

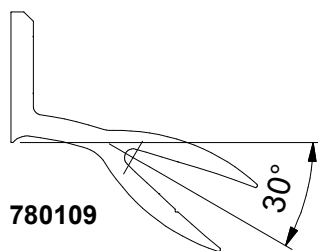
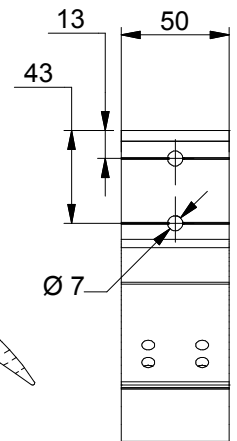
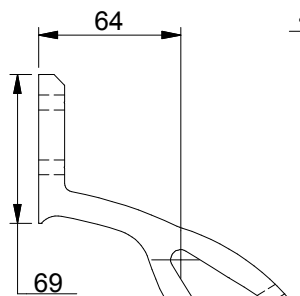
Clips for blades sized 240 and 270 mm



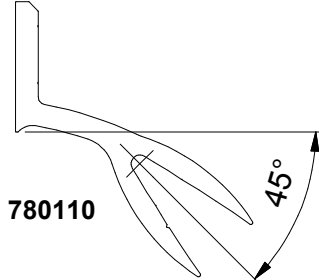
780107



780108



780109

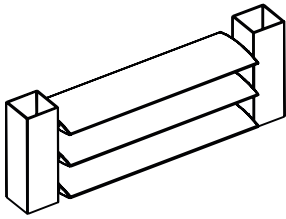


780110

Applications

One-piece fixed blades on an independent supporting structure

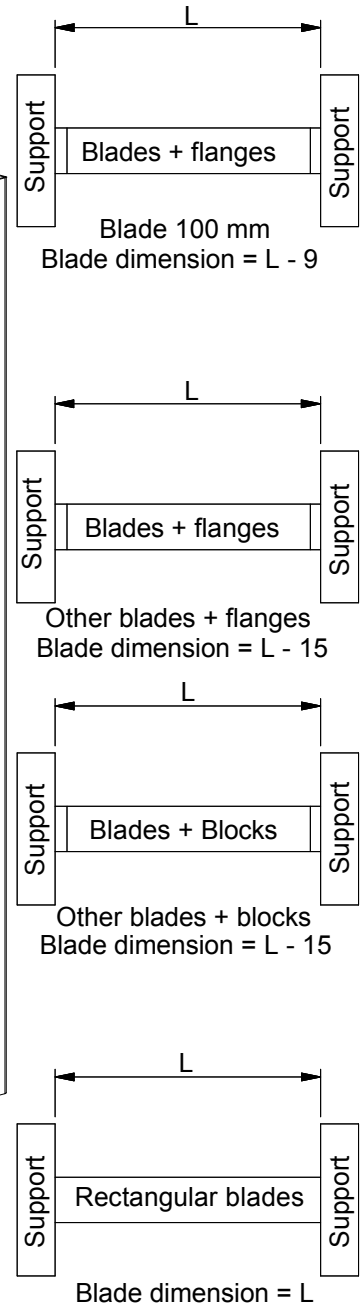
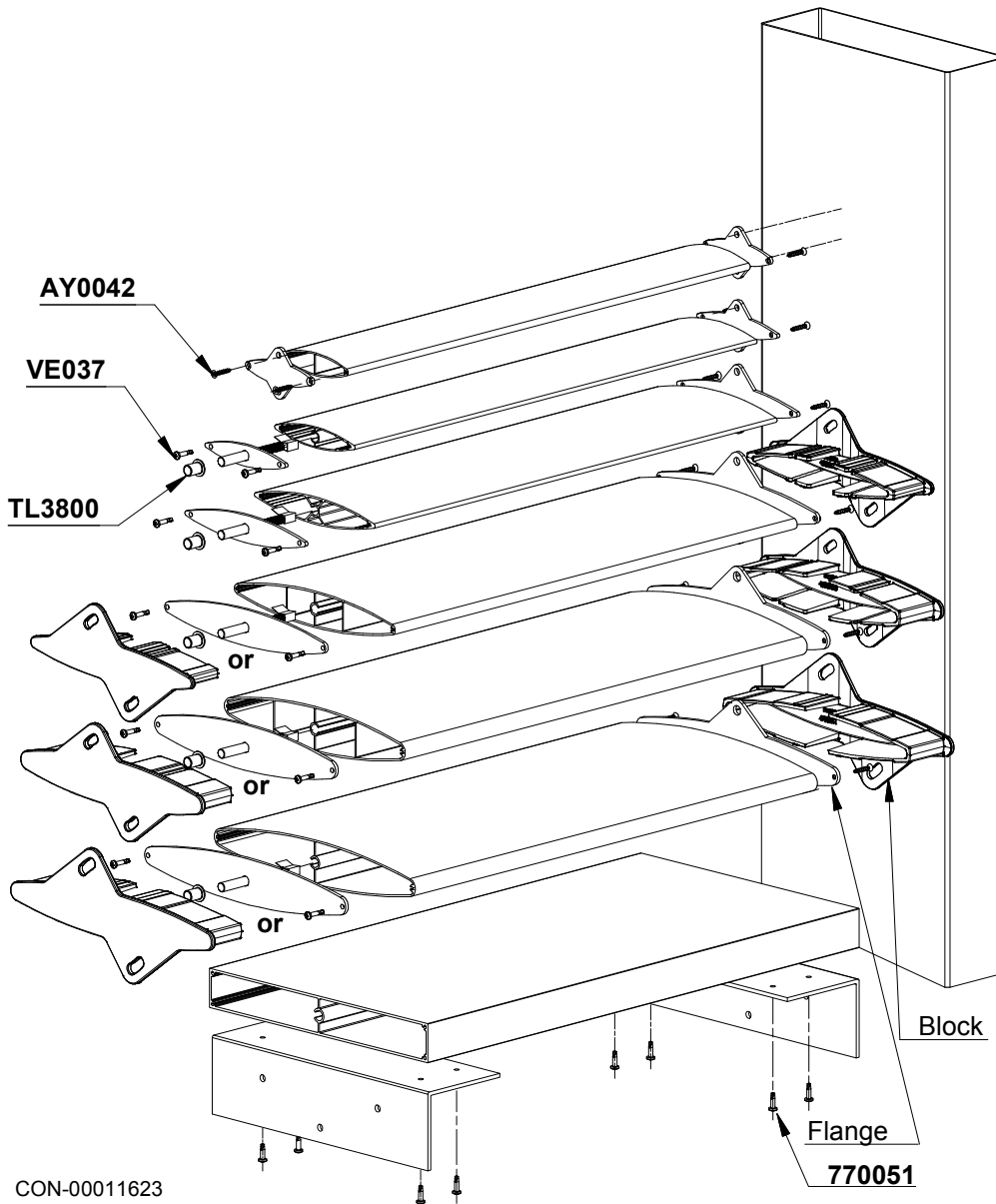
*Horizontal blades between 100 mm to 300 mm
load-bearing walls*

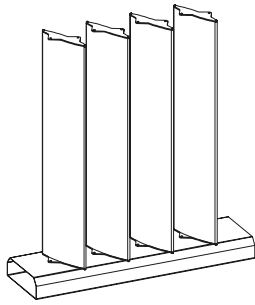


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PROFILES AND ACCESSORIES

Ref	Profile	End part	Blade/ end piece screws
530202		Flanges TL3617	AY0042
TL2604		Flanges TL3616 and TL3629	AY0042 + VE037
TL2603		Flanges TL3615 and TL3627	AY0042 + VE037
TL2602		Flanges TL3613 and 700223	AY0042 + VE037
		or blocks TL3622 and TL3623	Nested
TL2601		Flanges TL3612 and 700224	AY0042 + VE037
		or blocks TL3624 and TL3625	Nested
530208		Flanges TL3614 and 700225	AY0042 + VE037
		or blocks 700240 and 700241	Nested
TL2614		Cleats 700242	770051





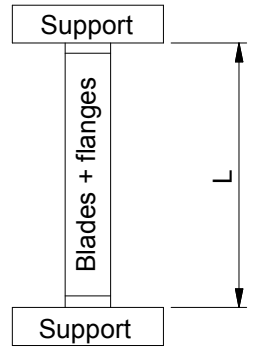
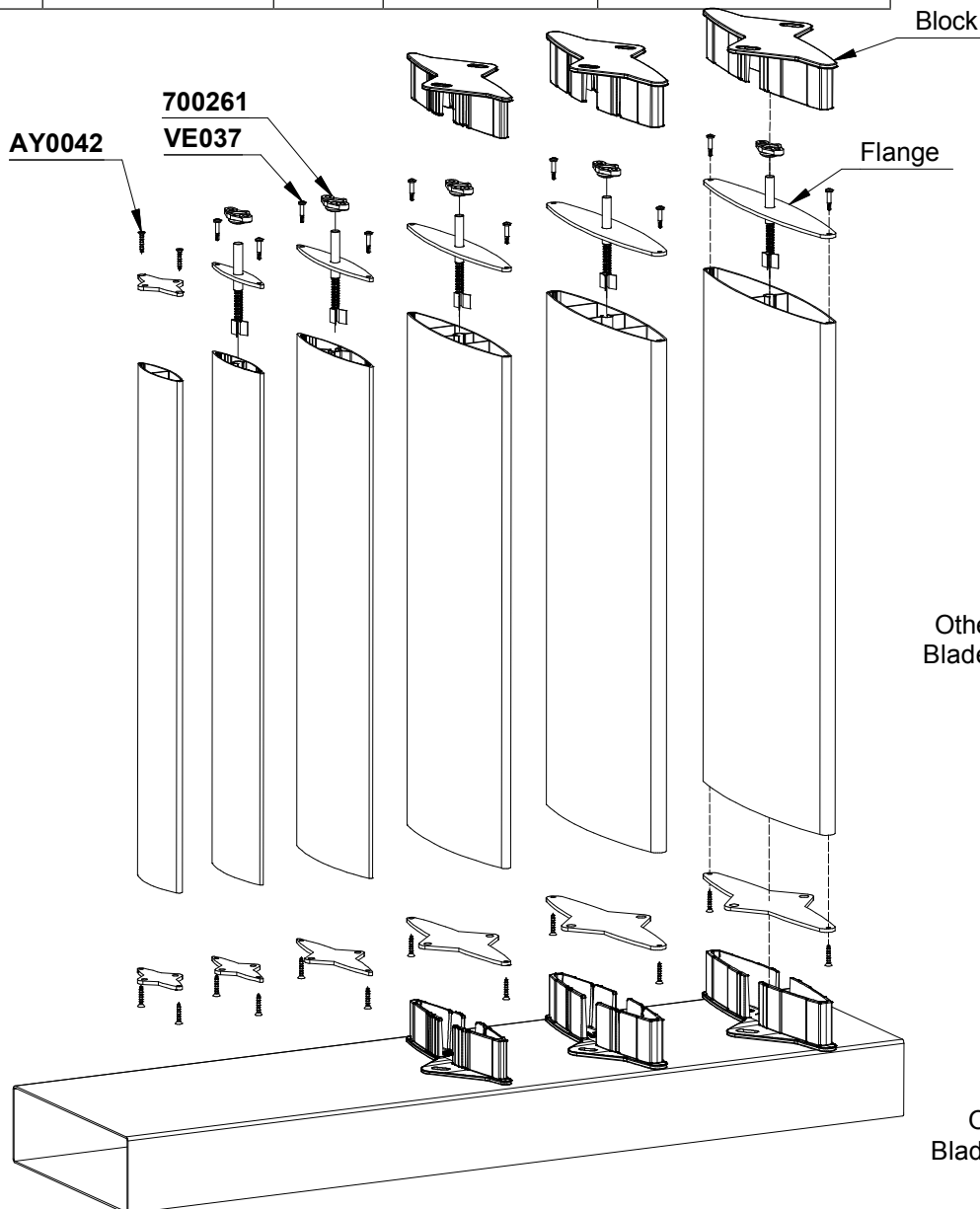
Applications

One-piece fixed blades on an independent supporting structure

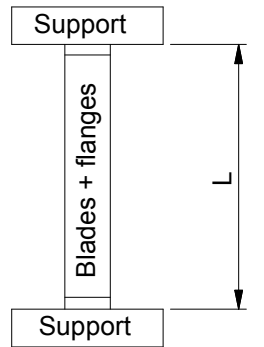
Vertical blades between 100 mm to 300 mm load-bearing walls

PROFILES AND ACCESSORIES

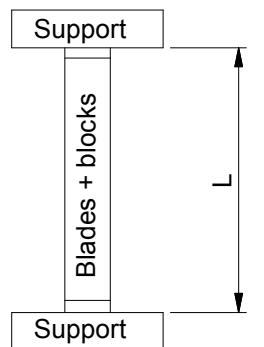
Ref	Profile	End part		Blade/ end piece screws
530202		Flanges	TL3617	AY0042
TL2604		Flanges	TL3616 and TL3629	AY0042 + VE037
TL2603		Flanges	TL3615 and TL3627	AY0042 + VE037
TL2602		Flanges	TL3613 and 700223	AY0042 + VE037
		Blocks	TL3622 and TL3623	Nested
TL2601		Flanges	TL3612 and 700224	AY0042 + VE037
		Blocks	TL3624 and TL3625	Nested
530208		Flanges	TL3614 and 700225	AY0042 + VE037
		Blocks	700240 and 700241	Nested



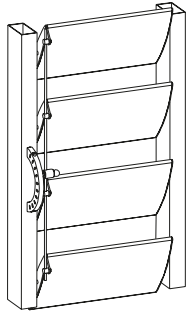
Blade 100 mm
Blade dimension = L - 9



Other blades + flangess
Blade dimension = L - 15



Other blades + blocks
Blade dimension = L - 15



Les applications

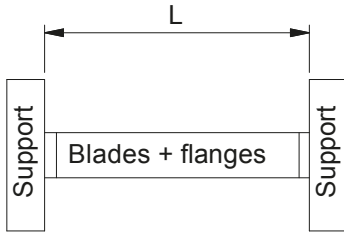
One-piece movable blades on an independent supporting structure

*Horizontal blades from 180 mm to 270 mm
manual positioning*

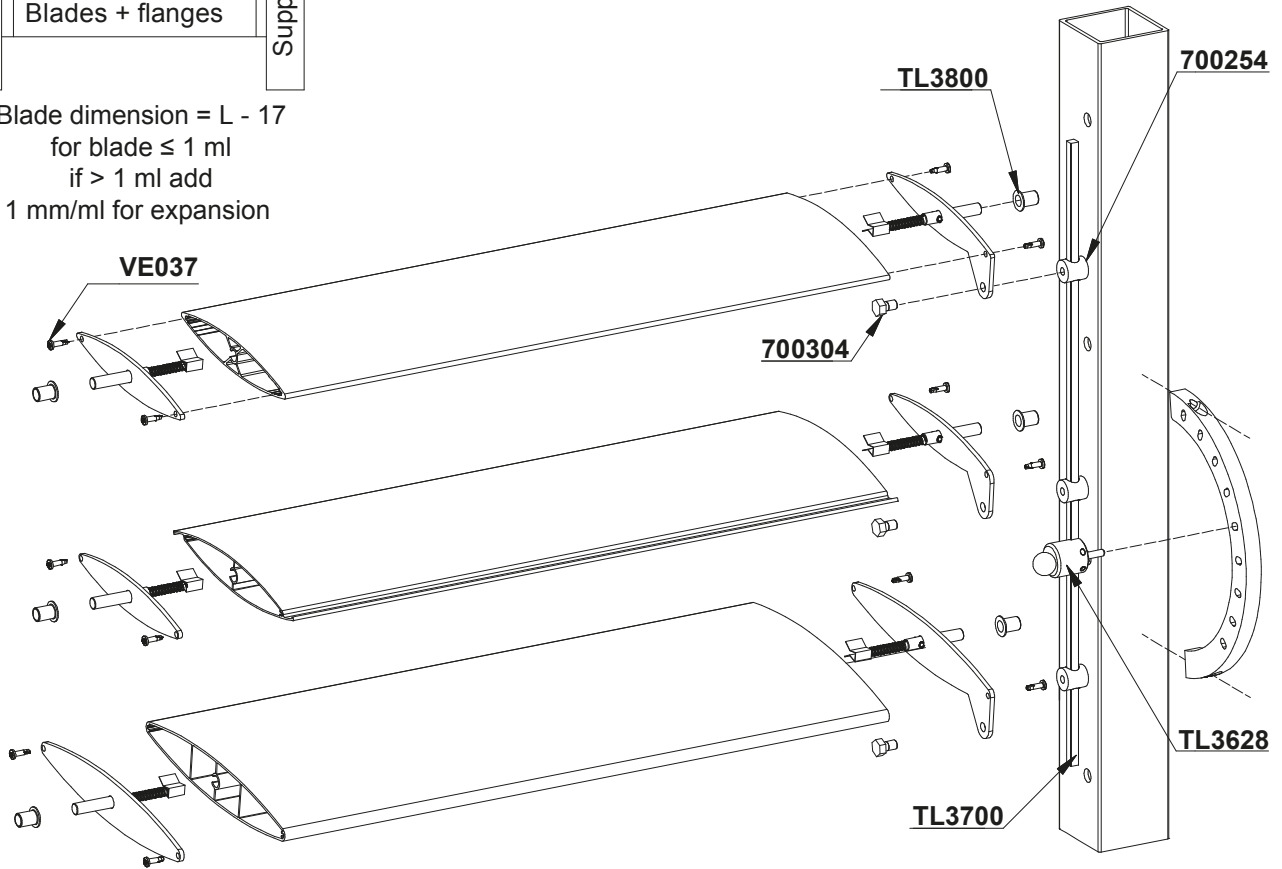
PROFILES AND ACCESSORIES

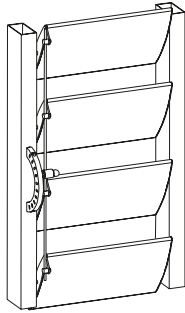
Ref.	Profile	Pivoting flange	Pivoting flange with lug	Arc
TL2603		TL3627	TL3626	970100
530205		700222	700213	970100
TL2602		700223	700214	970102

Note : The 300 mm blade is not available in a manual movable version.



Blade dimension = L - 17
for blade ≤ 1 ml
if > 1 ml add
1 mm/ml for expansion

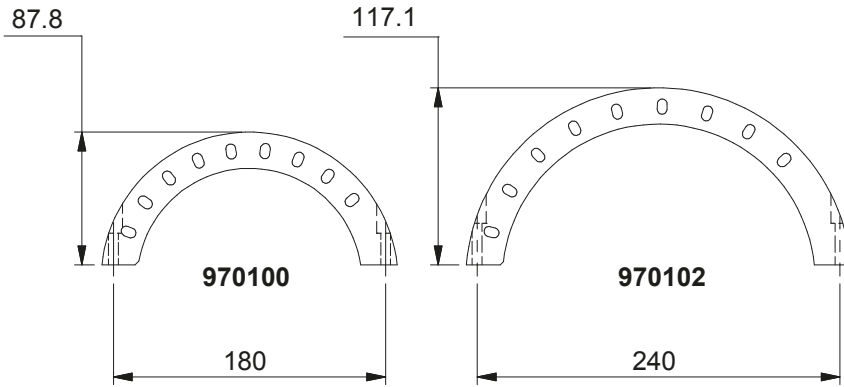




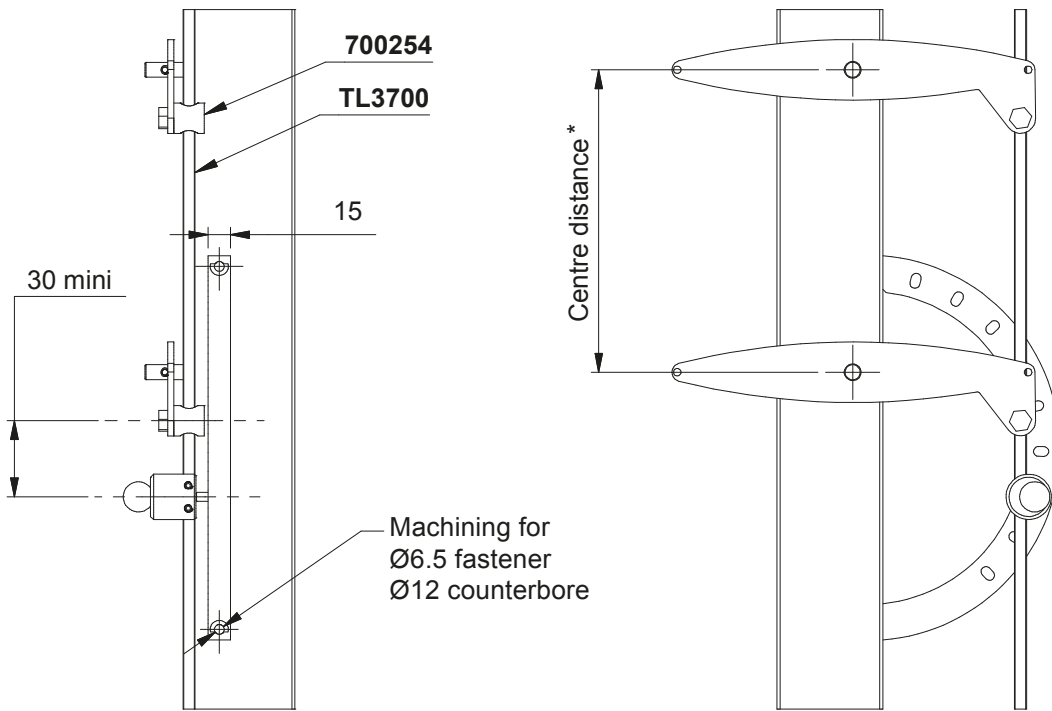
Applications

One-piece movable blades on an independent supporting structure

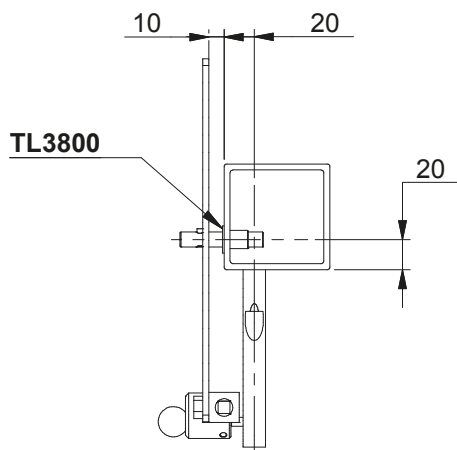
Horizontal blades from 180 mm to 270 mm
manual positioning



Note : The **970100** arc uses 180 mm and 210 mm blades.



*** Note :** recommended centre distance = blade width + minimum 5 mm



TL3700 rod length = 3000 mm

700254



Securing eye
for TL3700 rod

700304



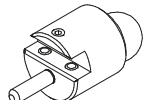
Stainless steel
screw for securing
eye

TL3800



Bearing

TL3628



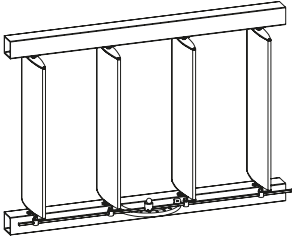
Spring index

Applications

One-piece movable blades on an independent supporting structure

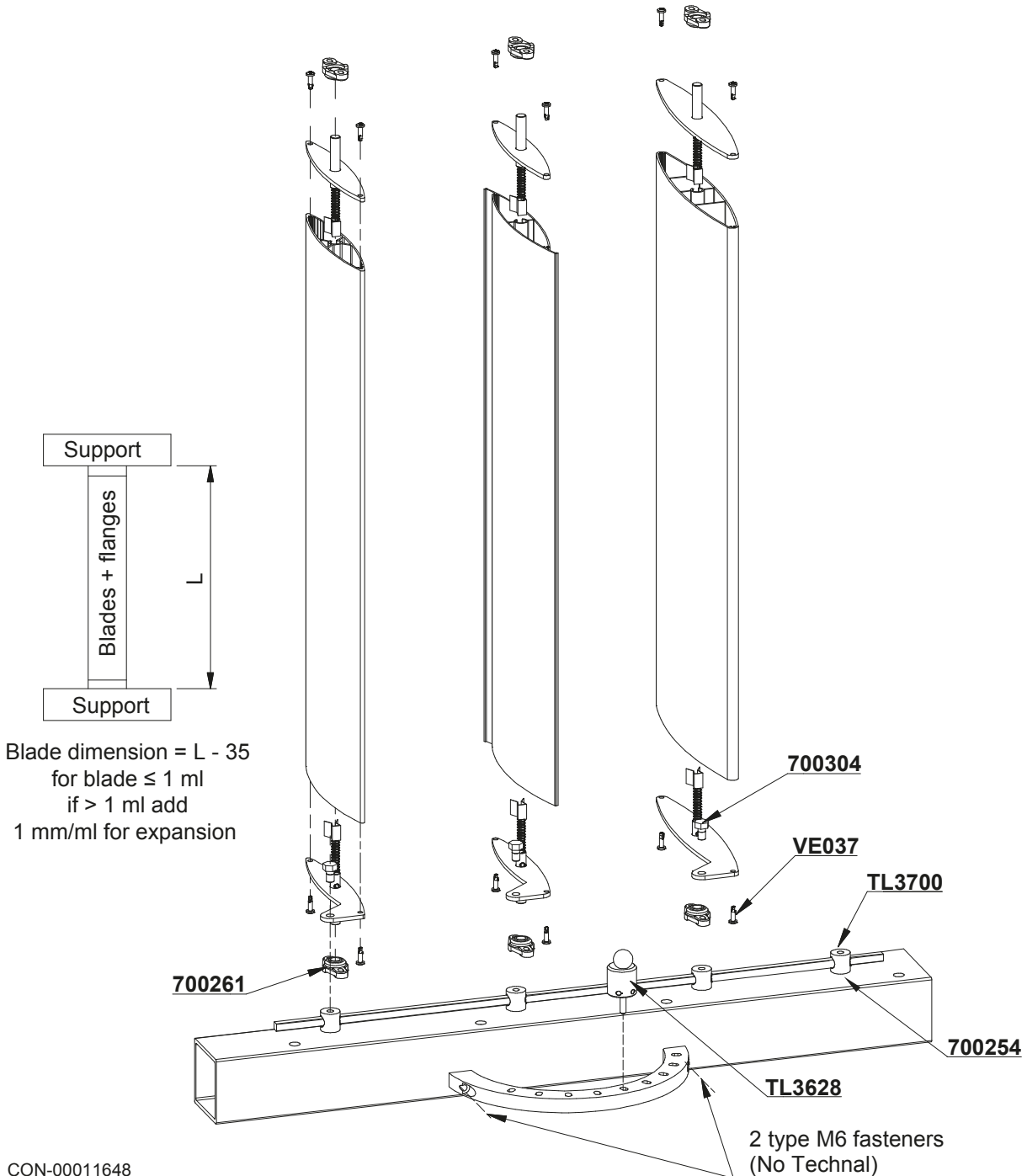
Vertical blades from 180 mm to 270 mm manual positioning

TECHNAL®

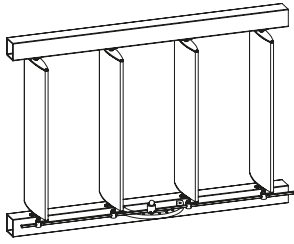


PROFILES AND ACCESSORIES

Ref.	Profile	Pivoting flange	Pivoting flange with lug	Arc
TL2603		TL3627	TL3626	970100
530205		700222	700213	970100
TL2602		700223	700214	970102

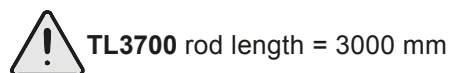
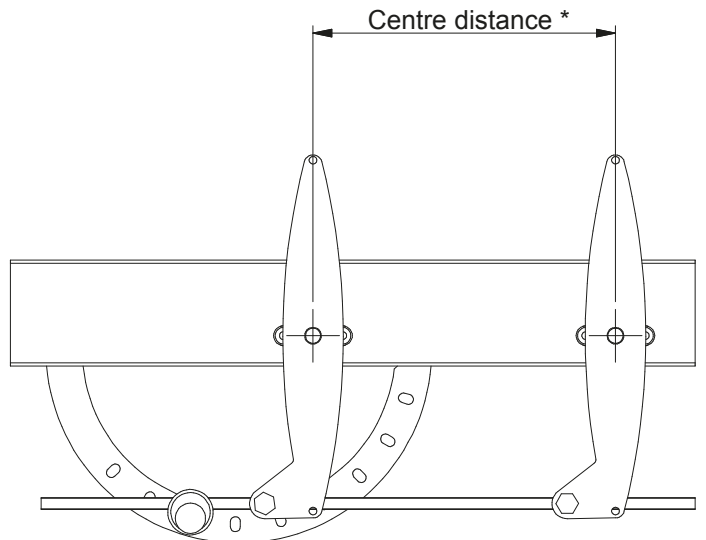
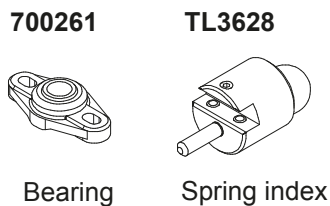
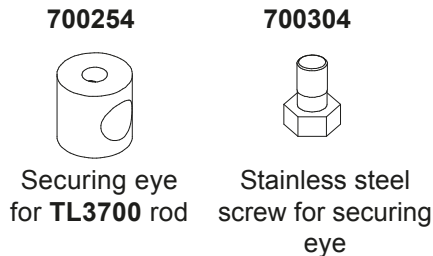
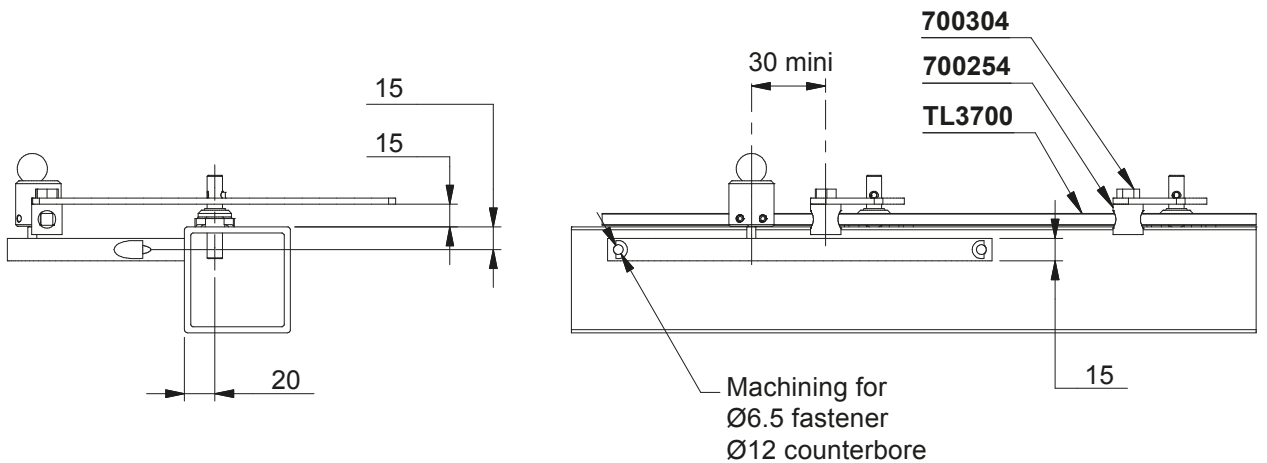
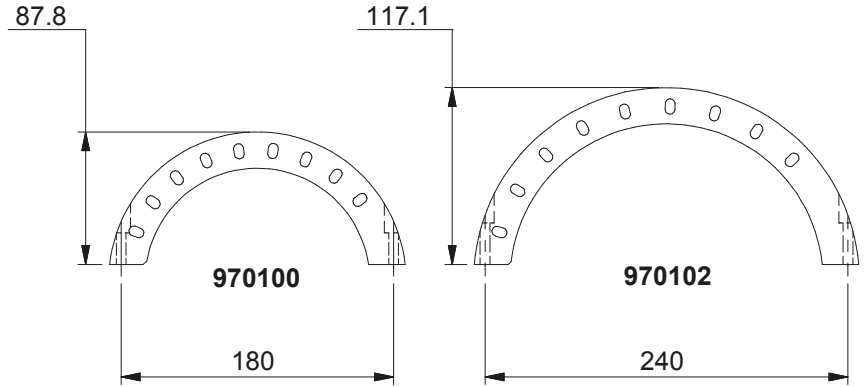


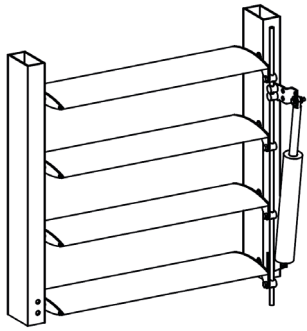
Applications



One-piece movable blades on an independent supporting structure

Vertical blades from 180 mm to 270 mm
manual positioning





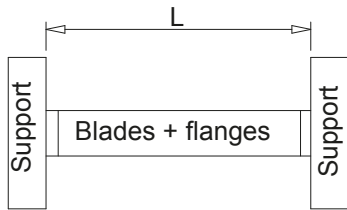
Applications

**One-piece movable blades
on an independent supporting structure**

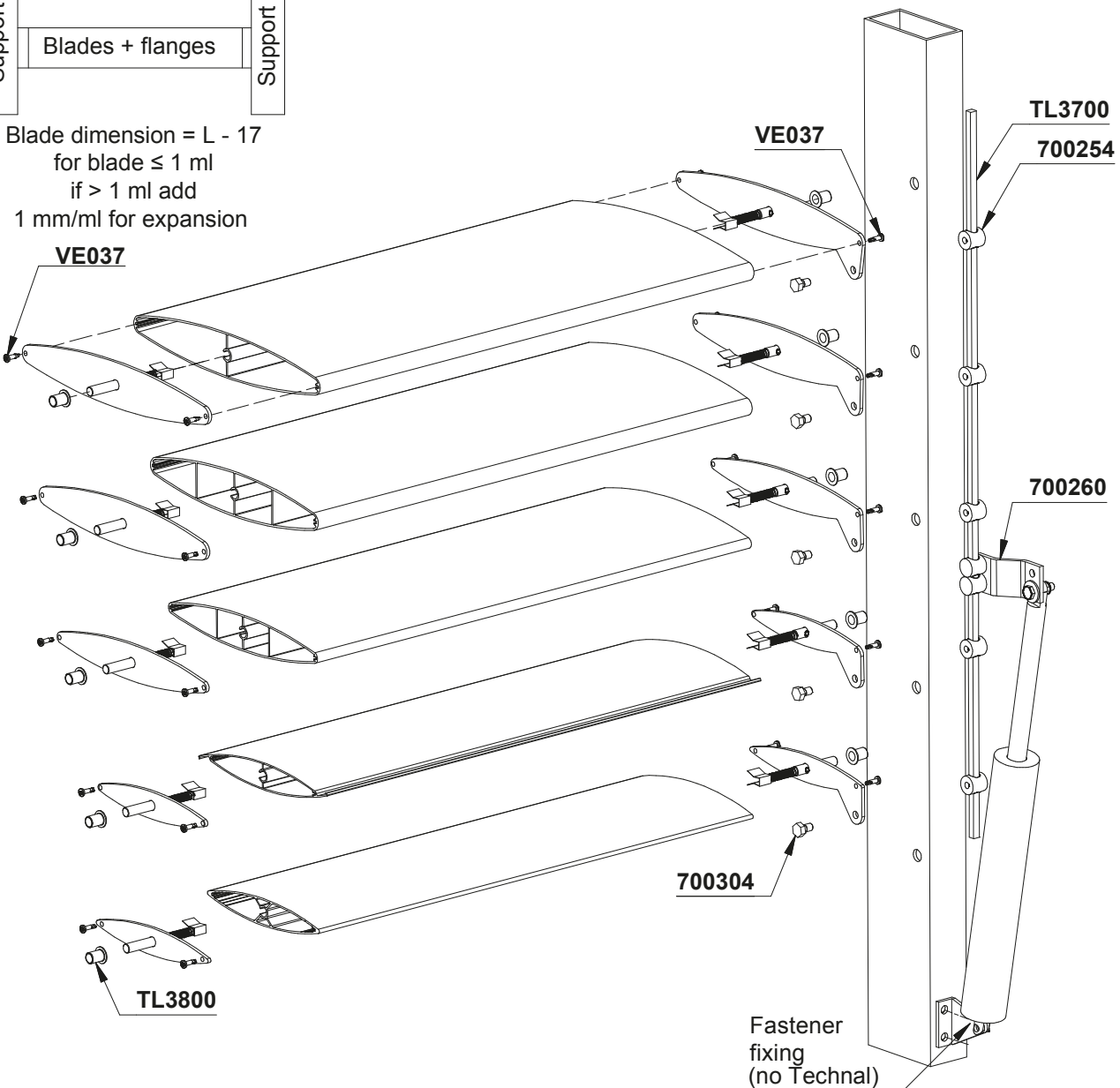
*Horizontal blades from 180 mm to 300 mm
motorised positioning*

PROFILES AND ACCESSORIES

Ref.	Profile	Pivoting flange	Pivoting flange with lug
TL2603		TL3627	TL3626
530205		700222	700213
TL2602		700223	700214
TL2601		700224	700215
530208		700225	700216

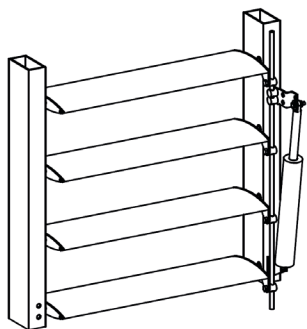


Blade dimension = $L - 17$
for blade ≤ 1 ml
if > 1 ml add
1 mm/ml for expansion

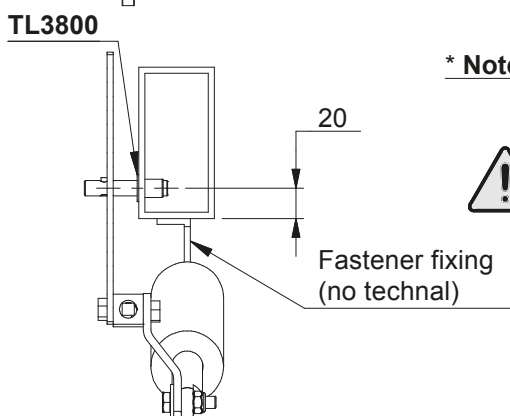
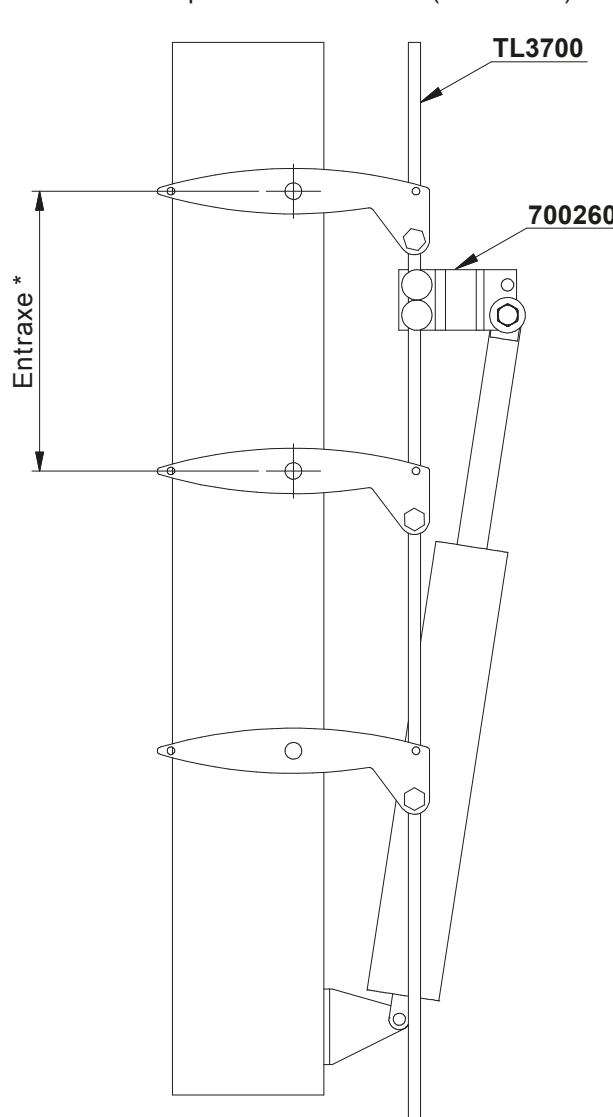
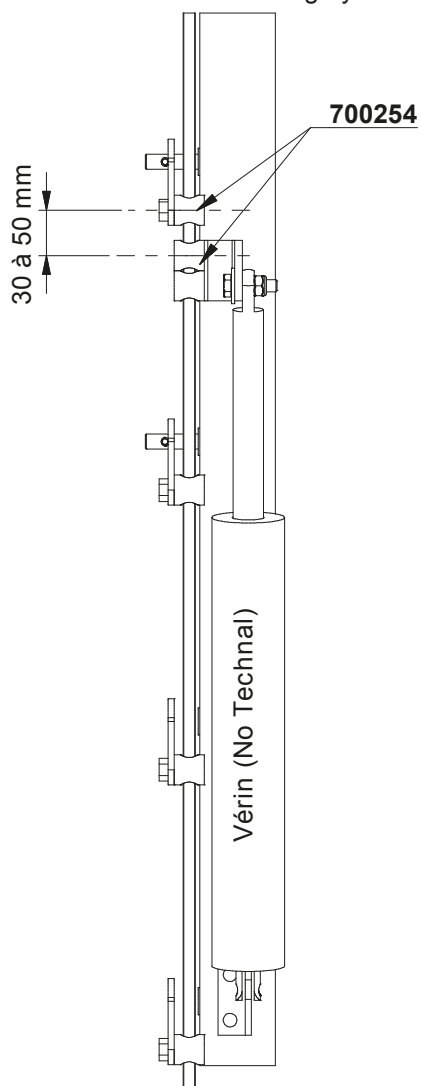
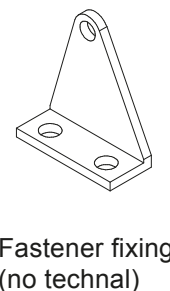
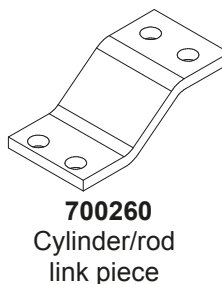


Applications

One-piece movable blades on an independent supporting structure



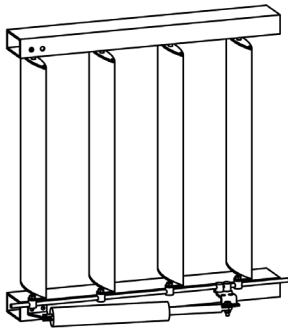
*Horizontal blades from 180 mm to 300 mm
motorised positioning*



* **Note** : recommended centre distance = blade width + minimum 5 mm



TL3700 rod length = 3000 mm



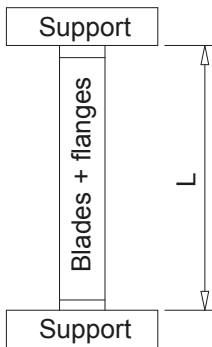
Applications

**One-piece movable blades
on an independent supporting structure**

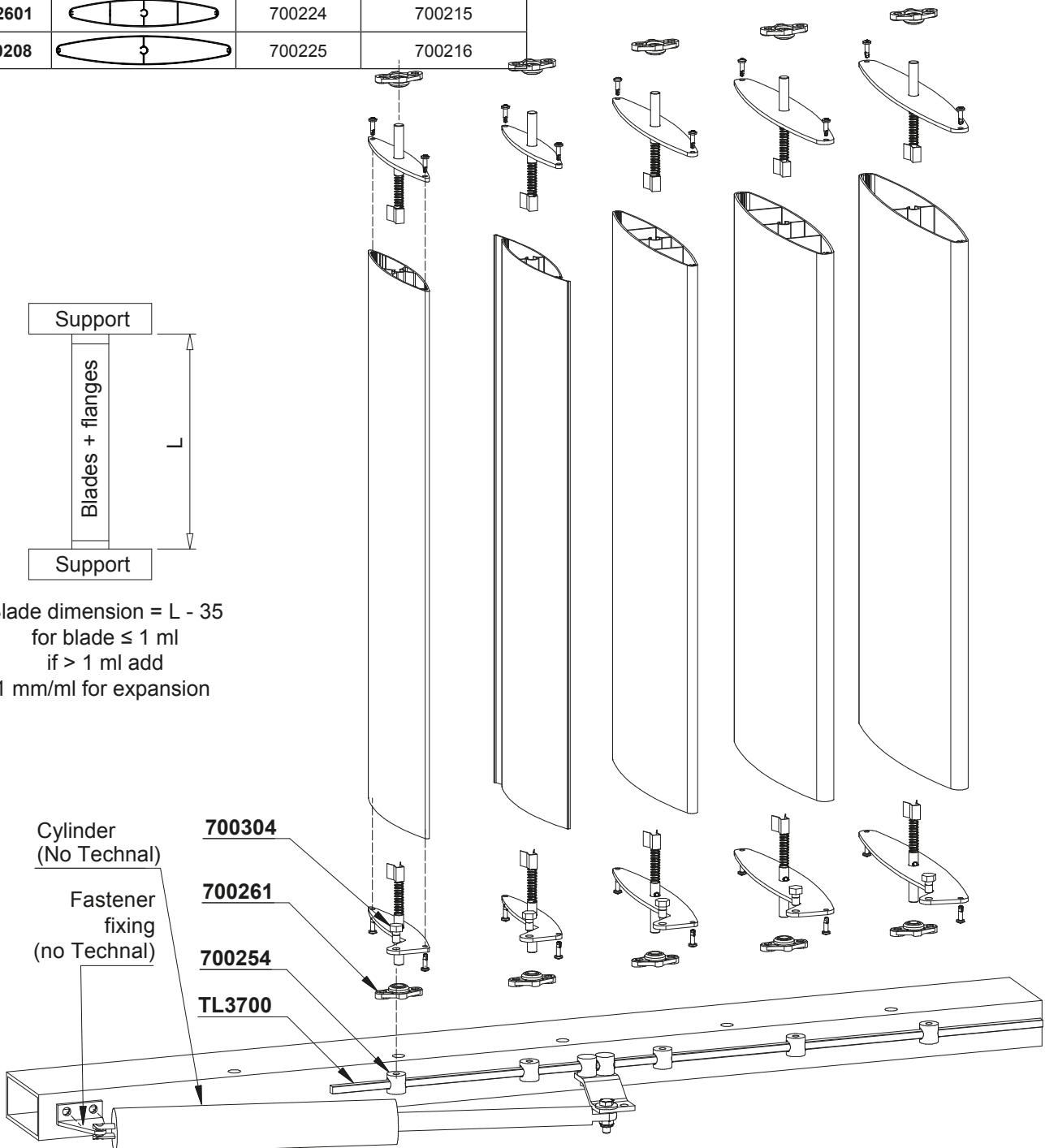
*Vertical blades from 180 mm to 300 mm
motorised positioning*

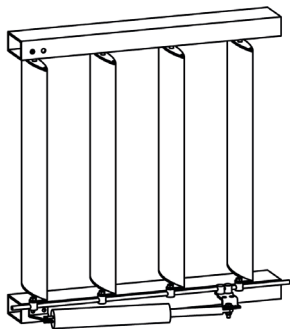
PROFILES AND ACCESSORIES

Ref.	Profile	Pivoting flange	Pivoting flange with lug
TL2603		TL3627	TL3626
530205		700222	700213
TL2602		700223	700214
TL2601		700224	700215
530208		700225	700216



Blade dimension = L - 35
for blade ≤ 1 ml
if > 1 ml add
1 mm/ml for expansion

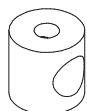




Applications

One-piece movable blades on an independent supporting structure

*Vertical blades from 180 mm to 300 mm
motorised positioning*



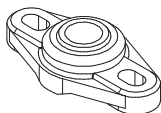
700254

Oeillette pour tringle TL3700



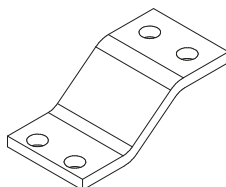
700304

Stainless steel screw for securing eye



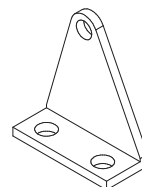
700261

Bearing

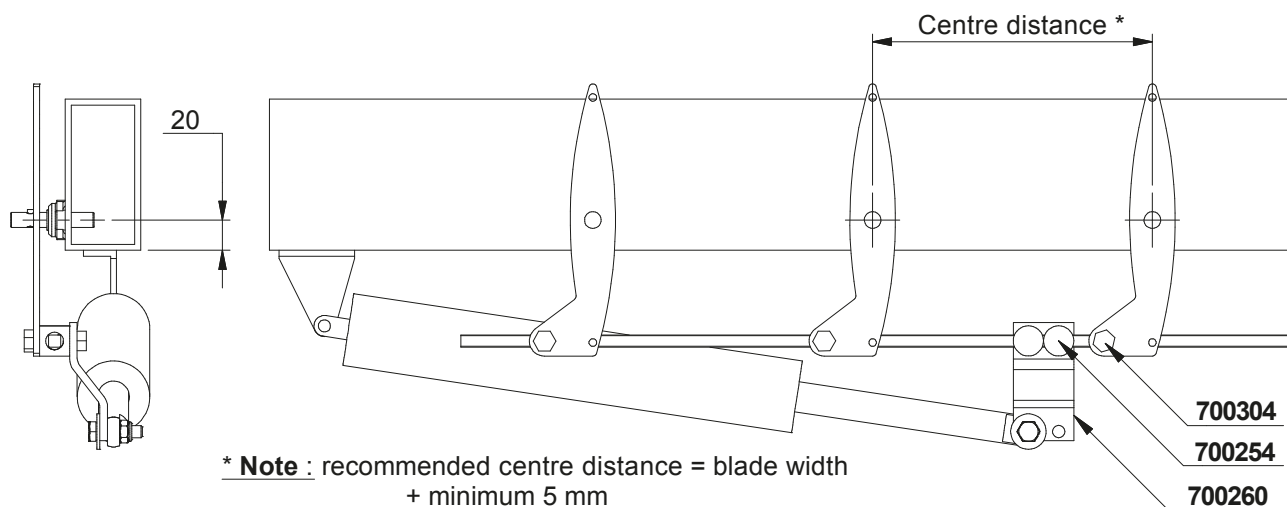
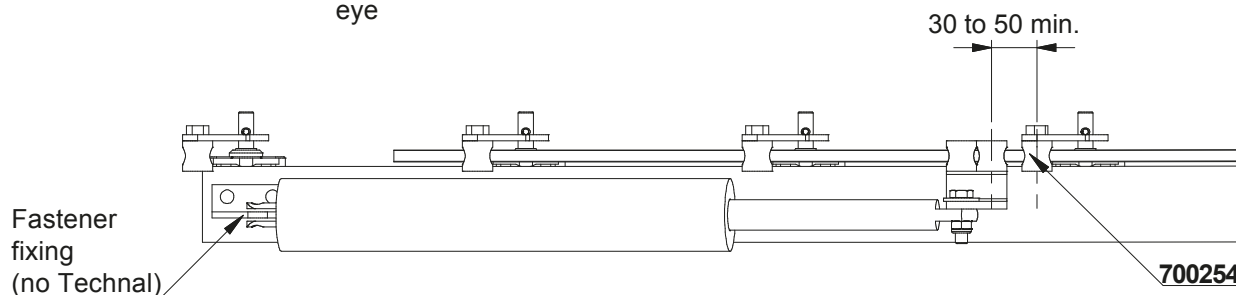


700260

Cylinder/rod link piece



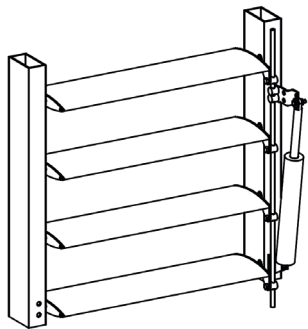
Fastener fixing (no Technal)



* **Note** : recommended centre distance = blade width + minimum 5 mm



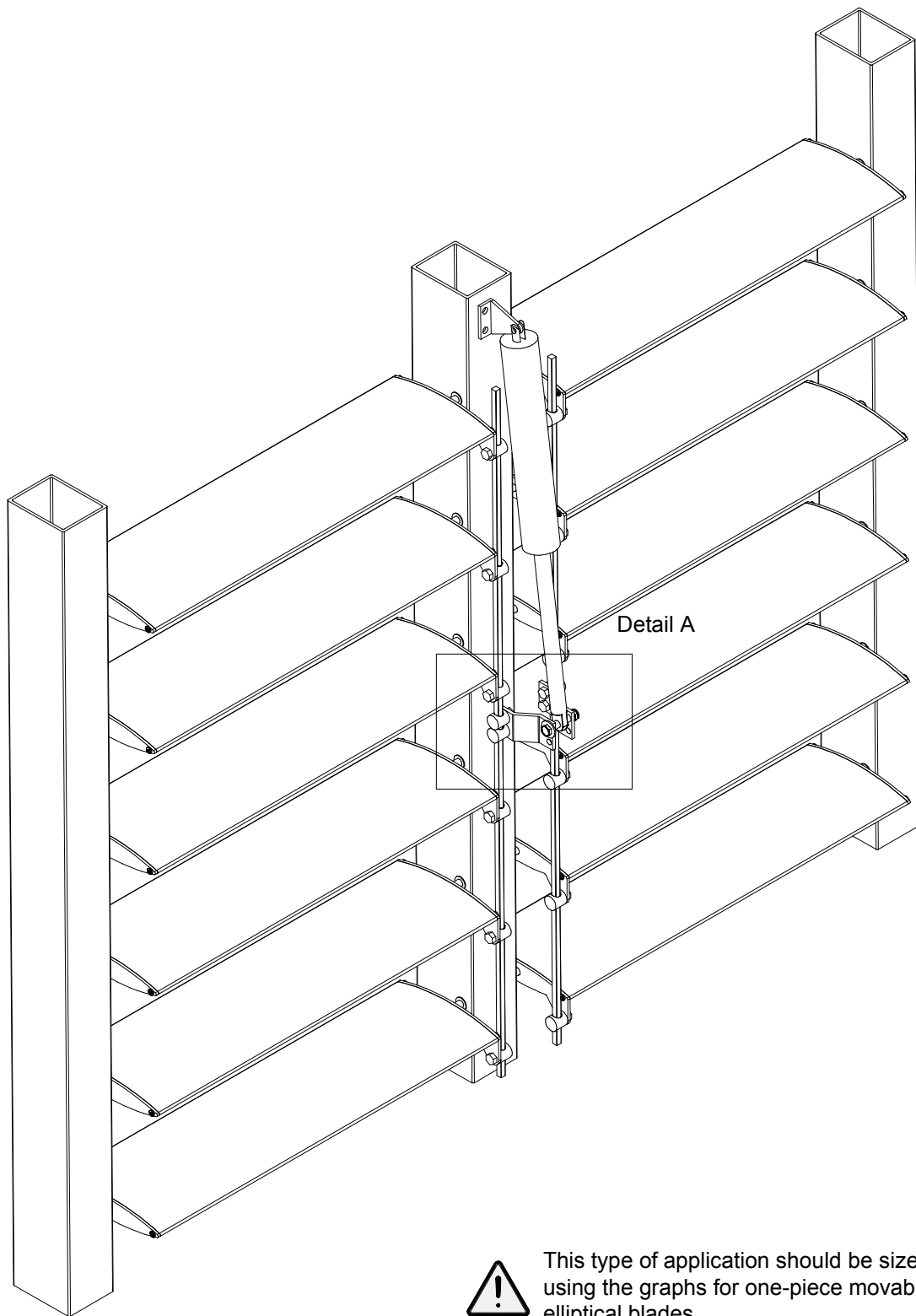
TL3700 rod length = 3000 mm



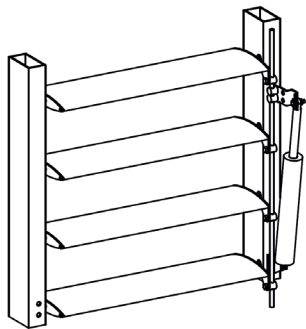
Applications

One-piece movable blades **on an independent supporting structure**

Motorisation of two frames with a single cylinder



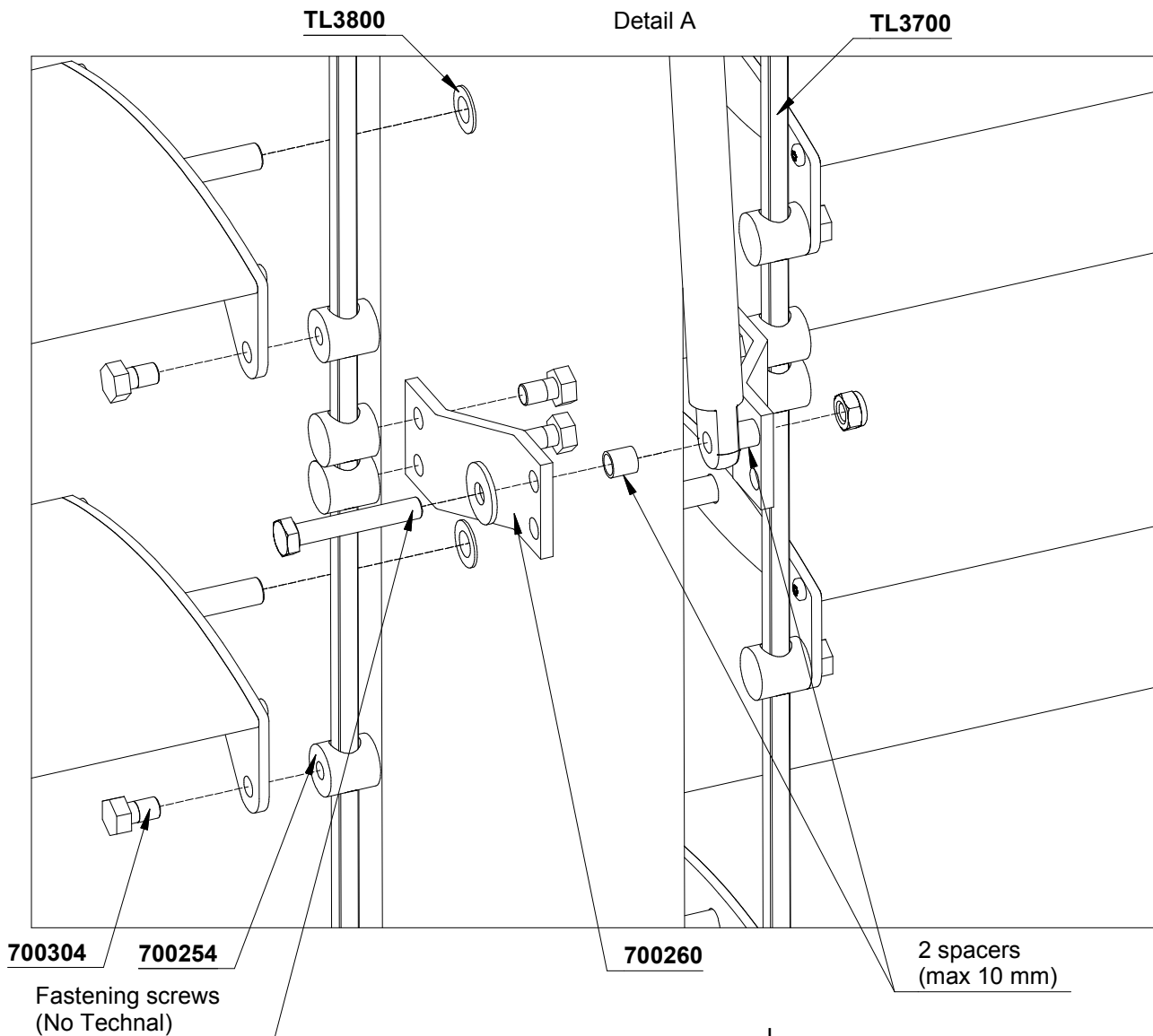
This type of application should be sized using the graphs for one-piece movable elliptical blades.



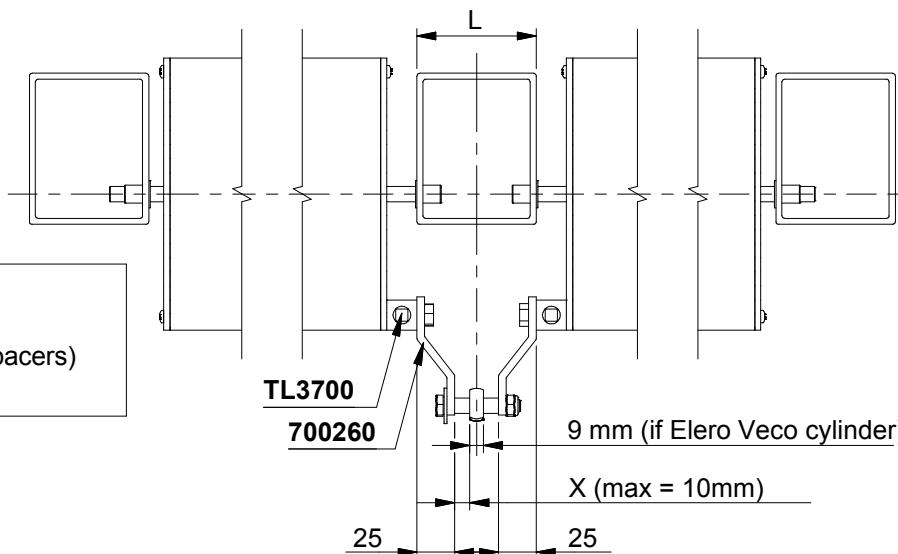
Applications

One-piece movable blades
on an independent supporting structure

Motorisation of two frames with a single cylinder



Support length : _____
 L max = 9 + 50 + 2 x X (with 2 spacers)
 L min = 9 + 50 (without spacer)



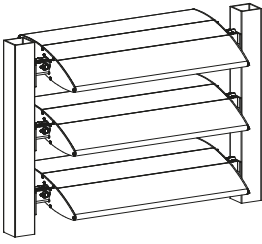
TECHNAL®

Applications

Composite blades on an independent supporting structure

Horizontal blades between fixed 350 mm to 600 mm load-bearing walls

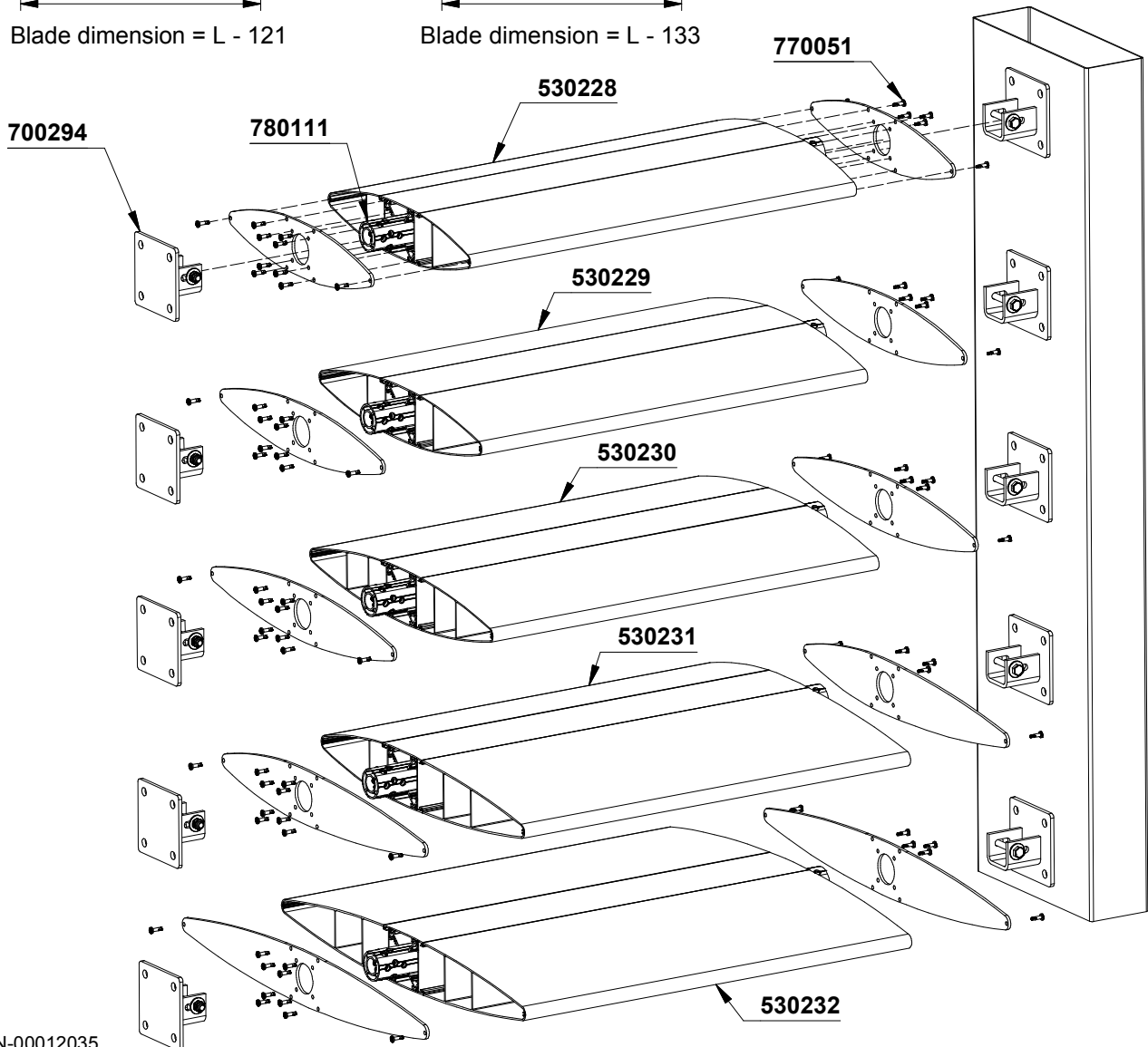
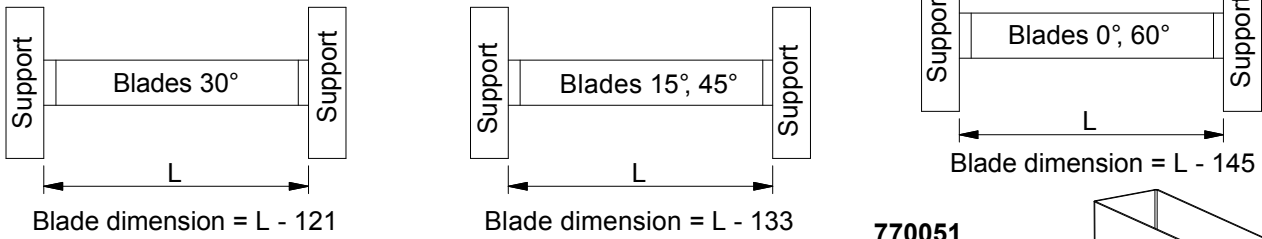
TECHNAL®



PROFILES AND ACCESSORIES

Ref.	Profile	Description	End flange	Screws flange / sleeve / blade
530228		Blade 350x75	700281	770051
530229		Blade 400x75	700282	
530230		Blade 450x75	700283	
530231		Blade 500x75	700284	
530232		Blade 600x75	700285	

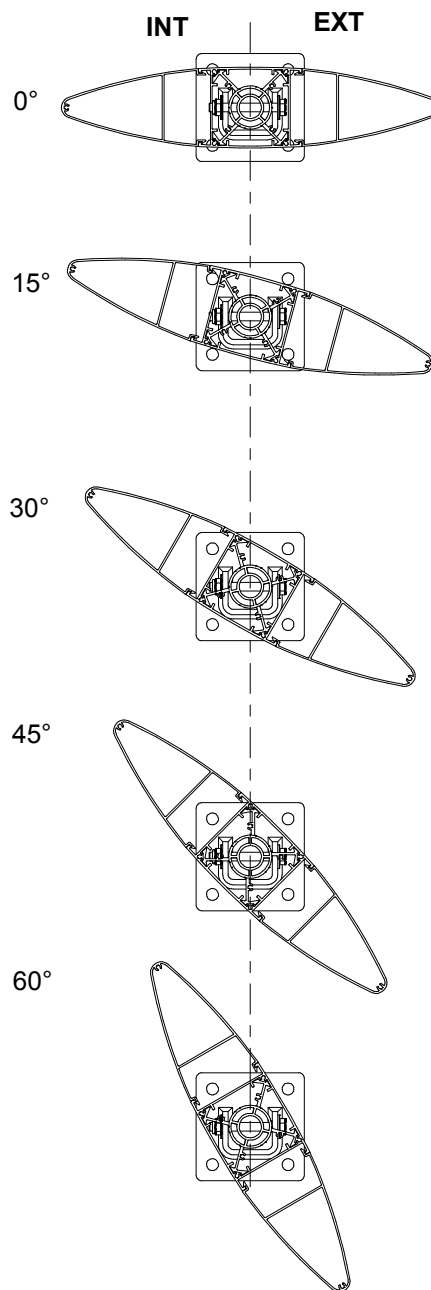
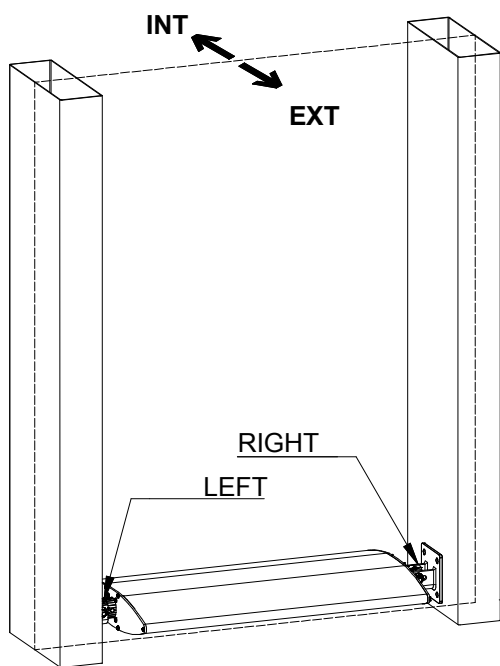
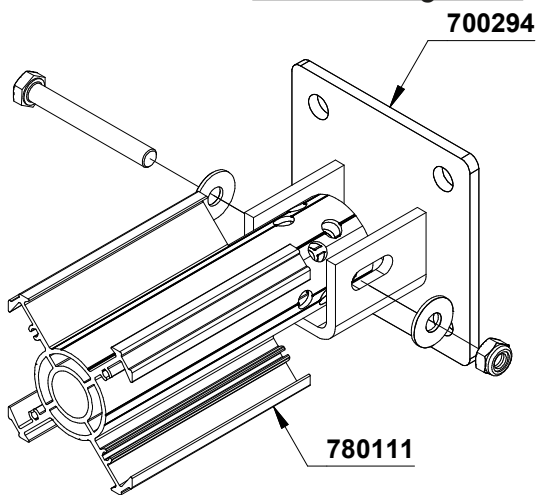
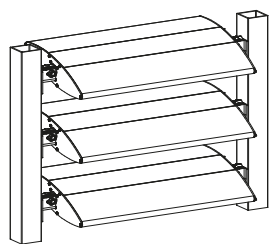
Nota : The cuts vary according to the inclination



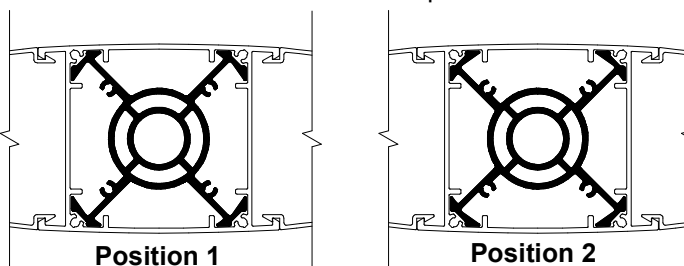
Applications

Composite blades on an independent supporting structure

Horizontal blades between fixed 350 mm to 600 mm load-bearing walls



Note : Depending on its positioning (left or right) in the assembly and the direction of the blades, the sleeve must be inserted into the blade in different positions.



Direction of blades and positioning of sleeves

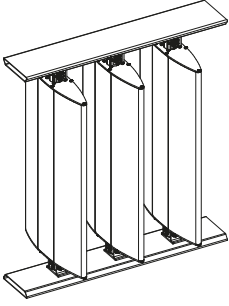
	0°	15°	30°	45°	60°
LEFT	Position 1	Position 1	Position 2	Position 2	Position 1
RIGHT	Position 1	Position 2	Position 2	Position 1	Position 1

Applications

Composite blades on an independent supporting structure

Vertical blades between fixed 350 mm to 600 mm load-bearing walls

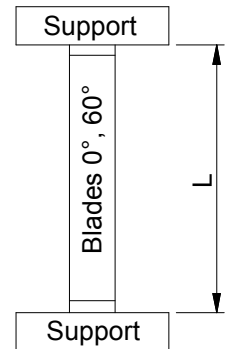
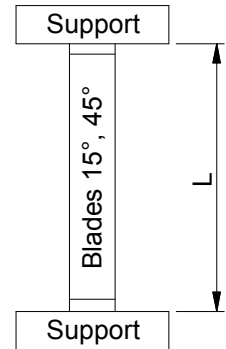
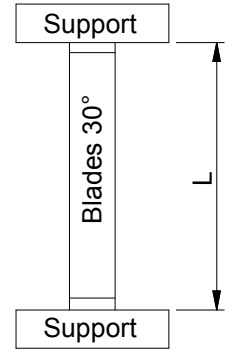
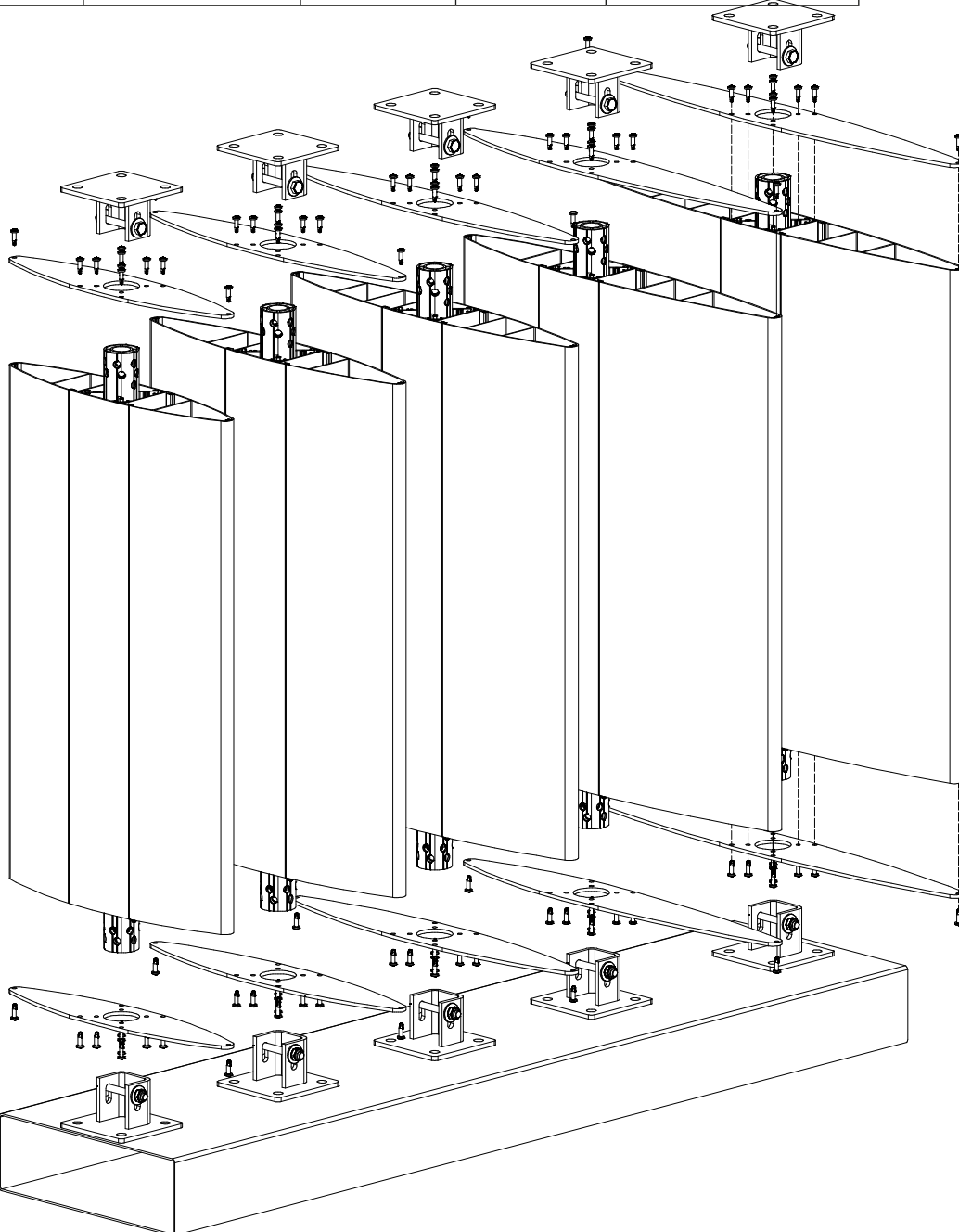
TECHNAL®



PROFILES AND ACCESSORIES

Ref.	Profile	Description	End flange	Screws flange / sleeve / blade
530228		Blade 350x75	700281	770051
530229		Blade 400x75	700282	
530230		Blade 450x75	700283	
530231		Blade 500x75	700284	
530232		Blade 600x75	700285	

Note : The cuts vary accord to the inclination

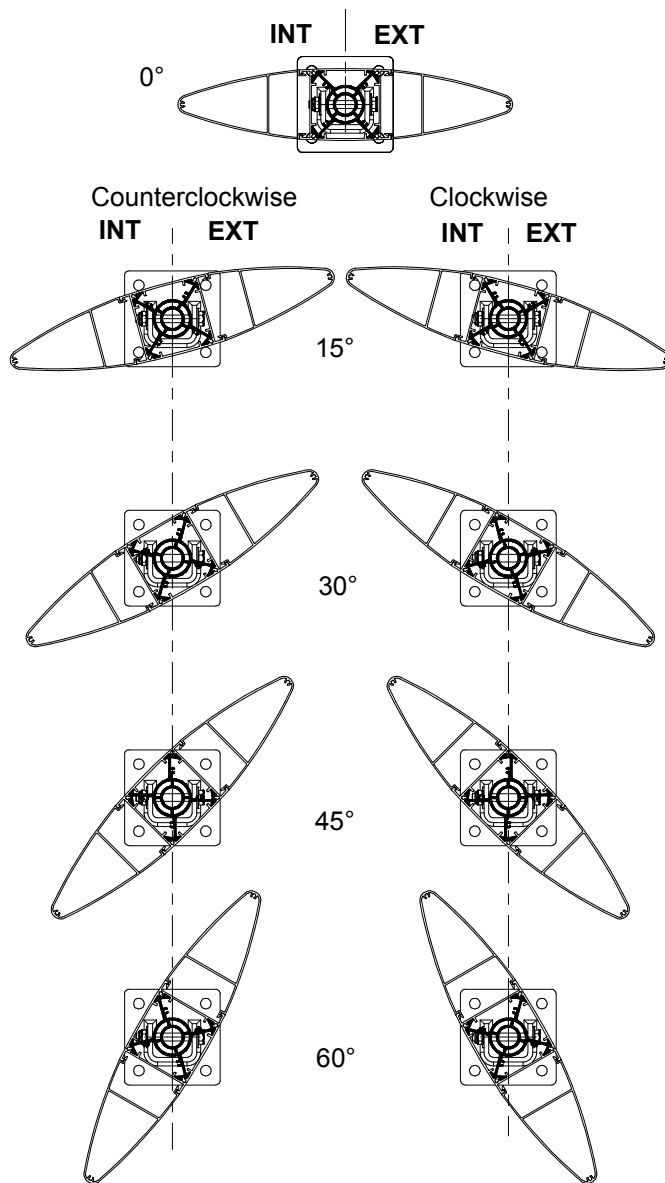
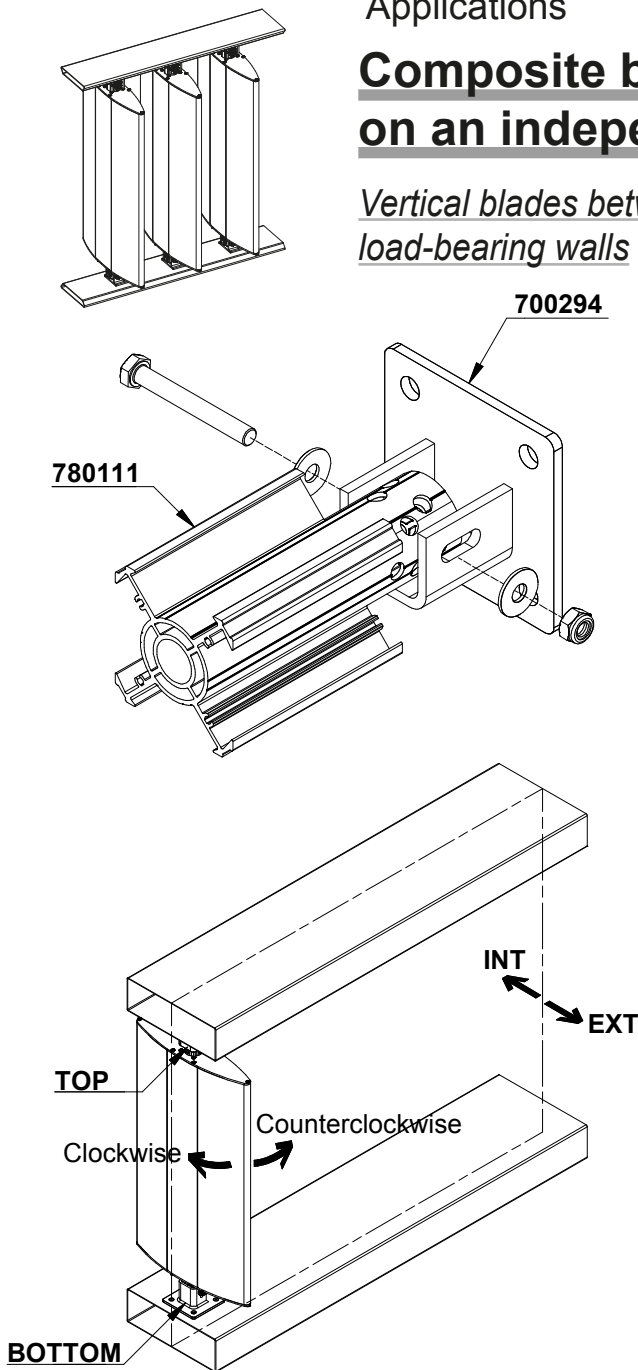


Blade dimension = L - 145

Applications

Composite blades on an independent supporting structure

Vertical blades between fixed 350 mm to 600 mm load-bearing walls

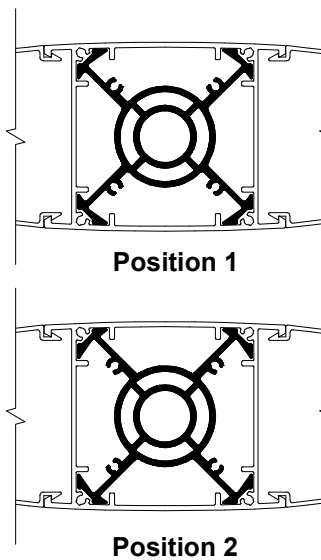


Note : Depending on its positioning (top or bottom) in the assembly and the direction of the blades, the sleeve must be inserted into the blade in different positions.

Direction of blades and positioning of sleeves

	0°	15°	30°	45°	60°	
Clockwise	BOTTOM	Position 1	Position 2	Position 2	Position 1	Position 1
	HAUT	Position 1	Position 1	Position 2	Position 2	Position 1

	0°	15°	30°	45°	60°	
Counter clockwise	BOTTOM	Position 1	Position 1	Position 2	Position 2	Position 1
	HAUT	Position 1	Position 2	Position 2	Position 1	Position 1

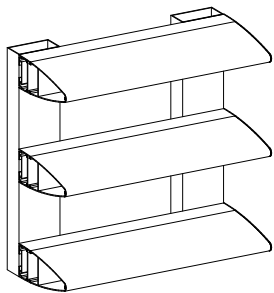


Applications

Composite blades on an independent supporting structure

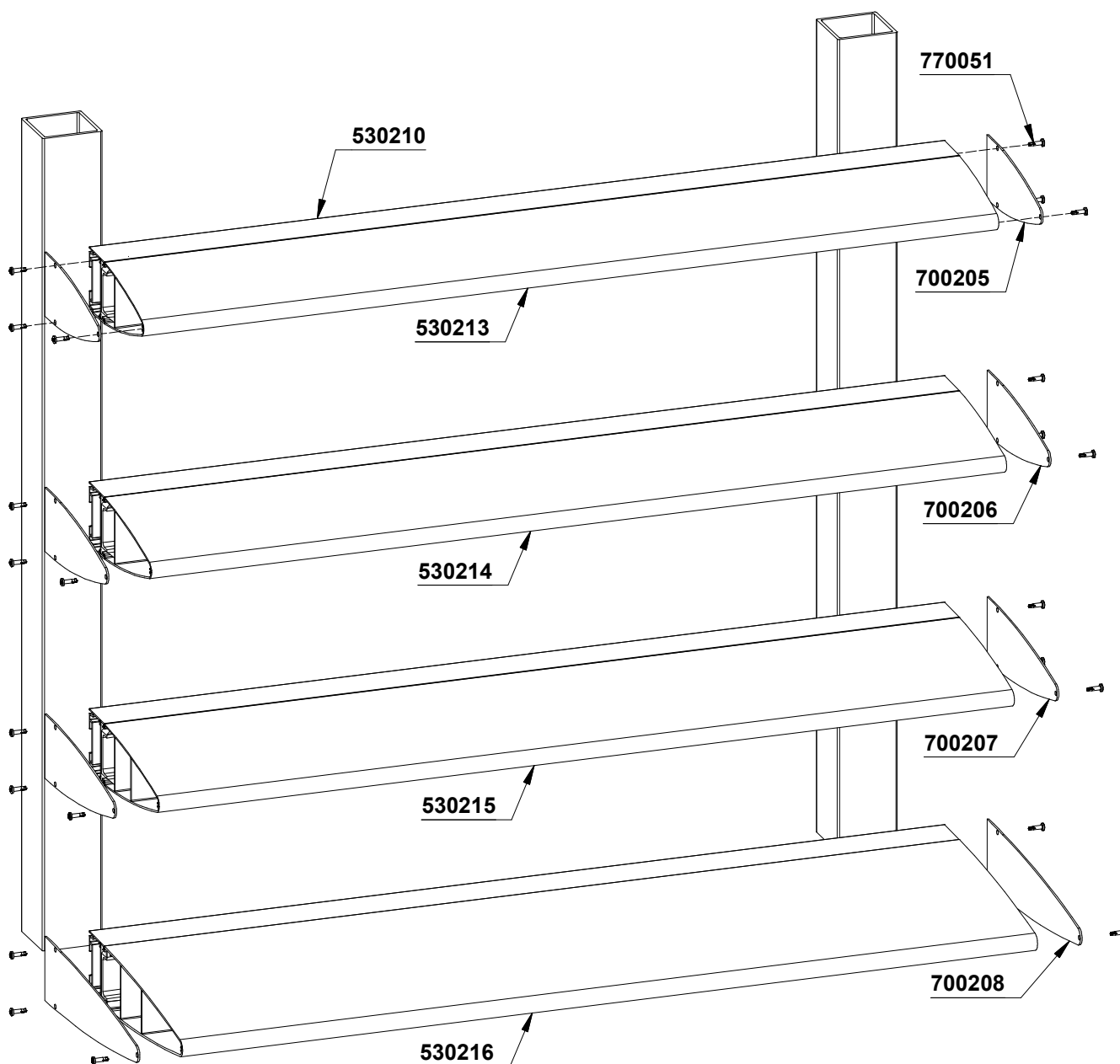
Horizontal semi-elliptical blades

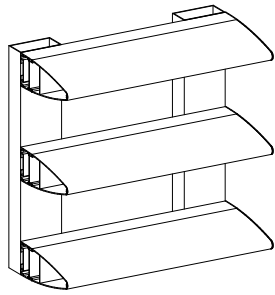
TECHNAL®



PROFILES

Description	Profile	Nose profile	Support profile
Blade 175 mm		530213	530210
Blade 200 mm		530214	
Blade 225 mm		530215	
Blade 300 mm		530216	





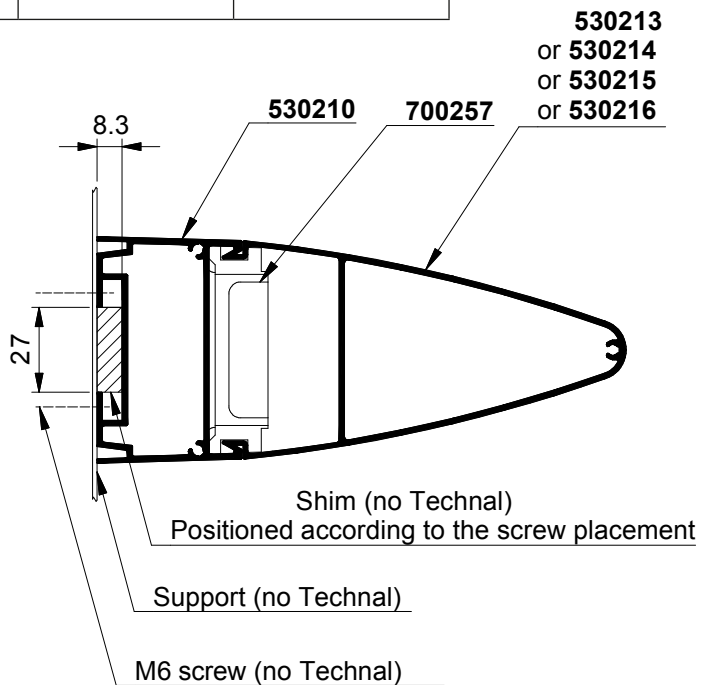
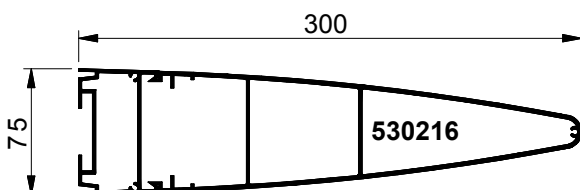
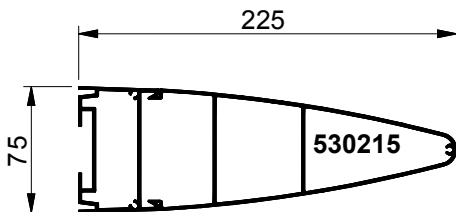
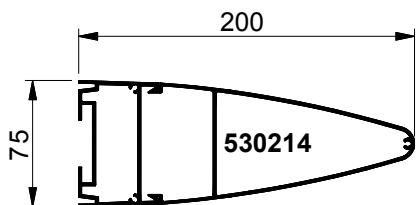
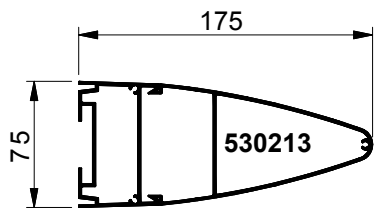
Applications

**Composite blades
on an independent supporting structure**

Horizontal semi-elliptical blades

ACCESSORIES

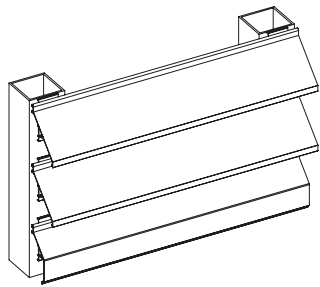
Description	Profile	End flange	Screws flange / profile	Clip locking block
Lame 175 mm		700205	770051	700257 1 shim at each end + 1 shim every 3 metres
Lame 200 mm		700206		
Lame 225 mm		700207		
Lame 300 mm		700208		



Applications

Louvers

Louvers on independent supporting structure

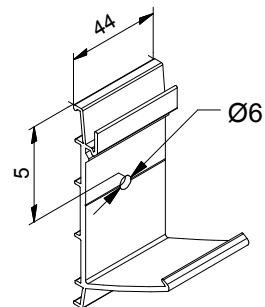


PROFILES

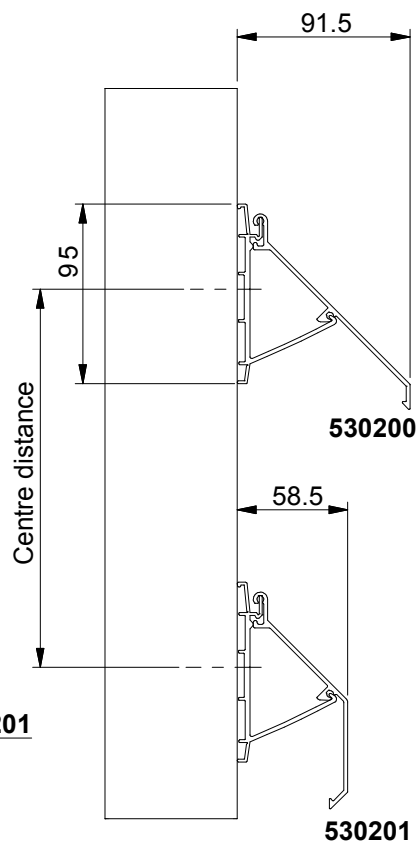
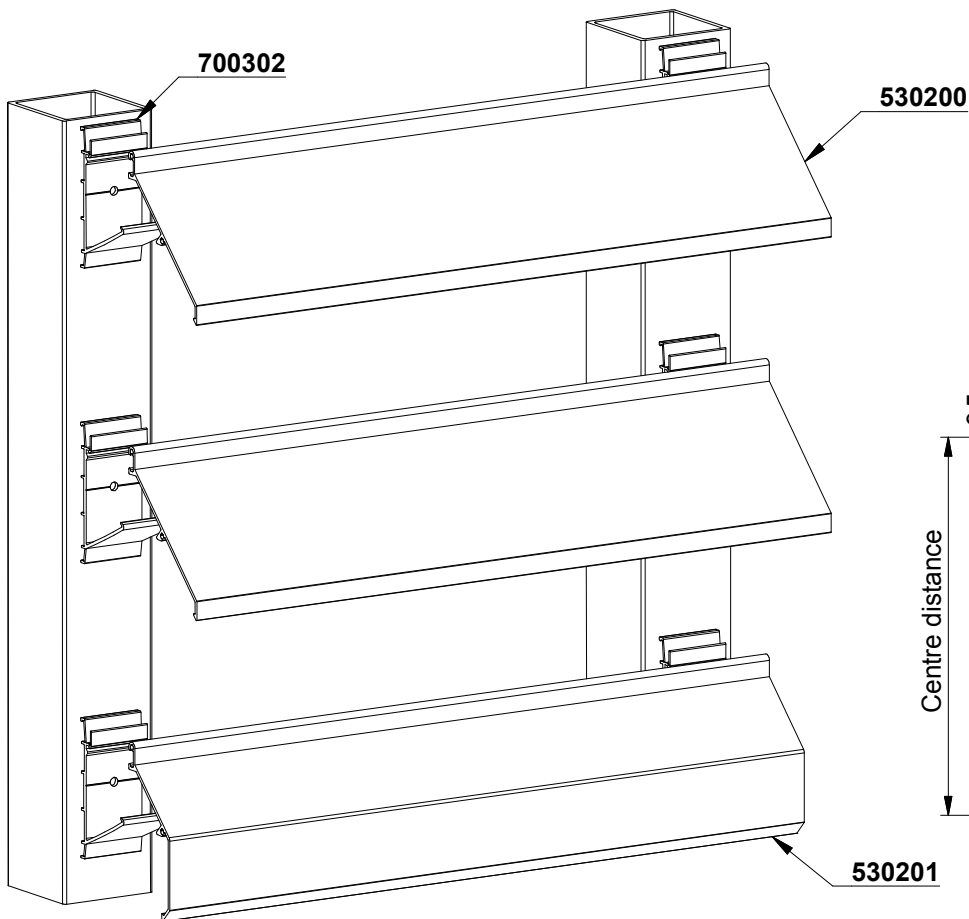
Ref.	Profile	Description
530200		100 Louver profile
530201		115 Louver profile

ACCESSORIES

Reference	Description	Screws for assembly
700302	Louver clip	No Technal



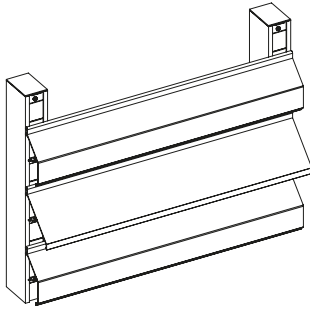
700302 - Louver clip



Applications

Louvers

Louvers on supporting profile 530217

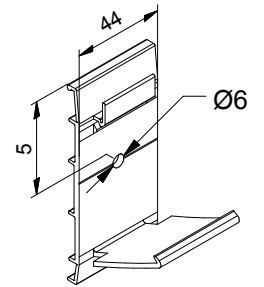
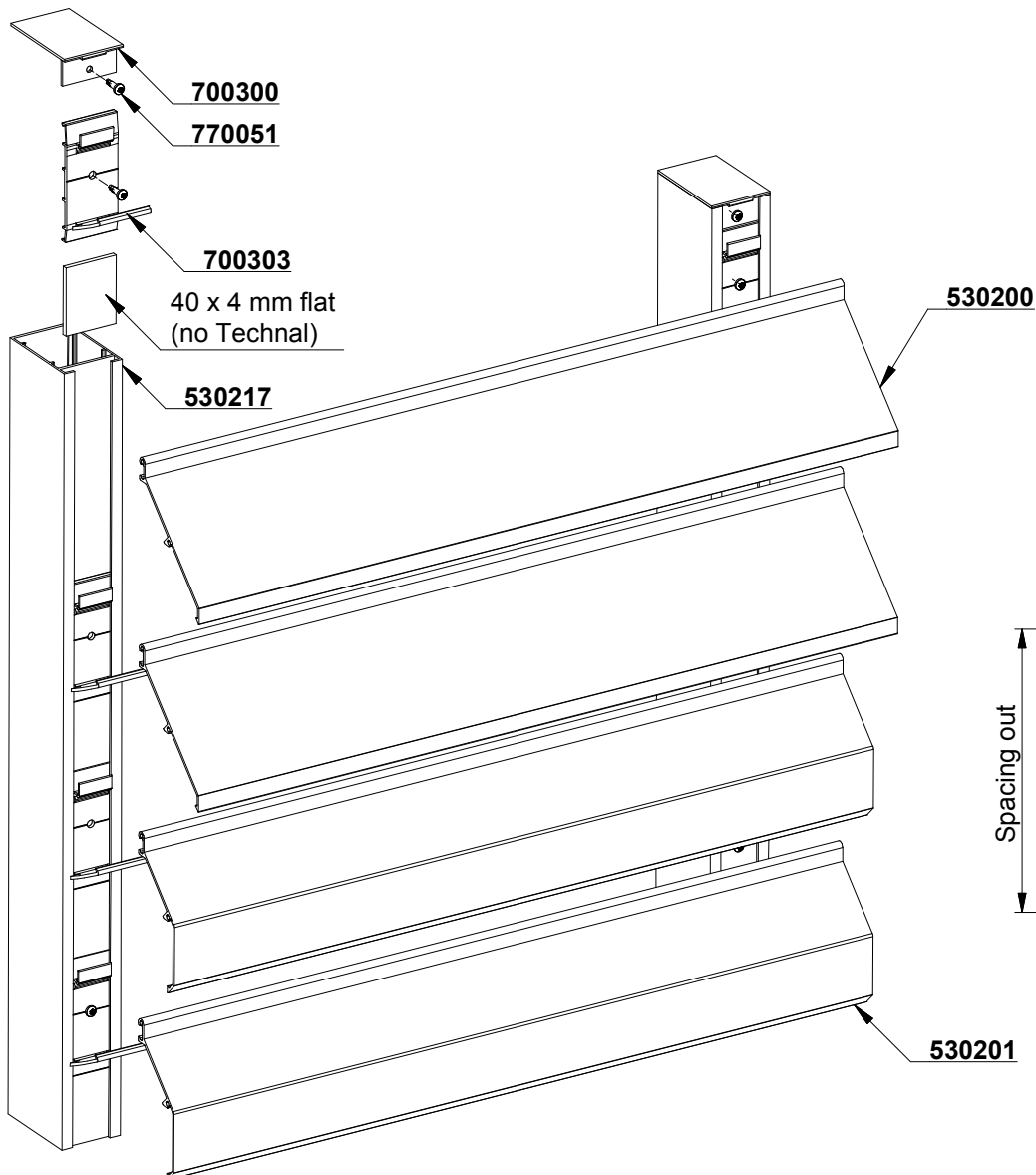


PROFILES

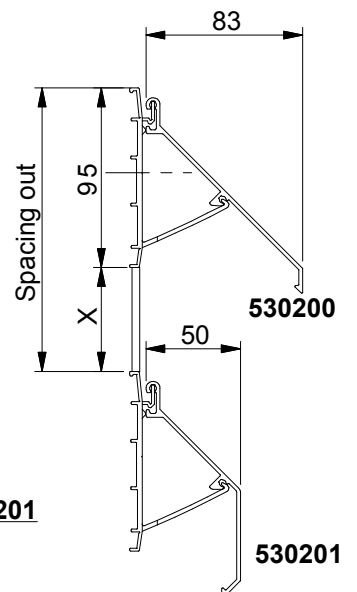
Ref.	Profile	Description
530200		100 louver profile
530201		115 louver profile
530217		120 mm mullion louver clip

ACCESSORIES

Reference	Description	Screws for assembly
700300	Bouchon montant ventelles	770051
700303	Clip montant ventelle	770051



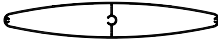

700303 - Mullion louver clip

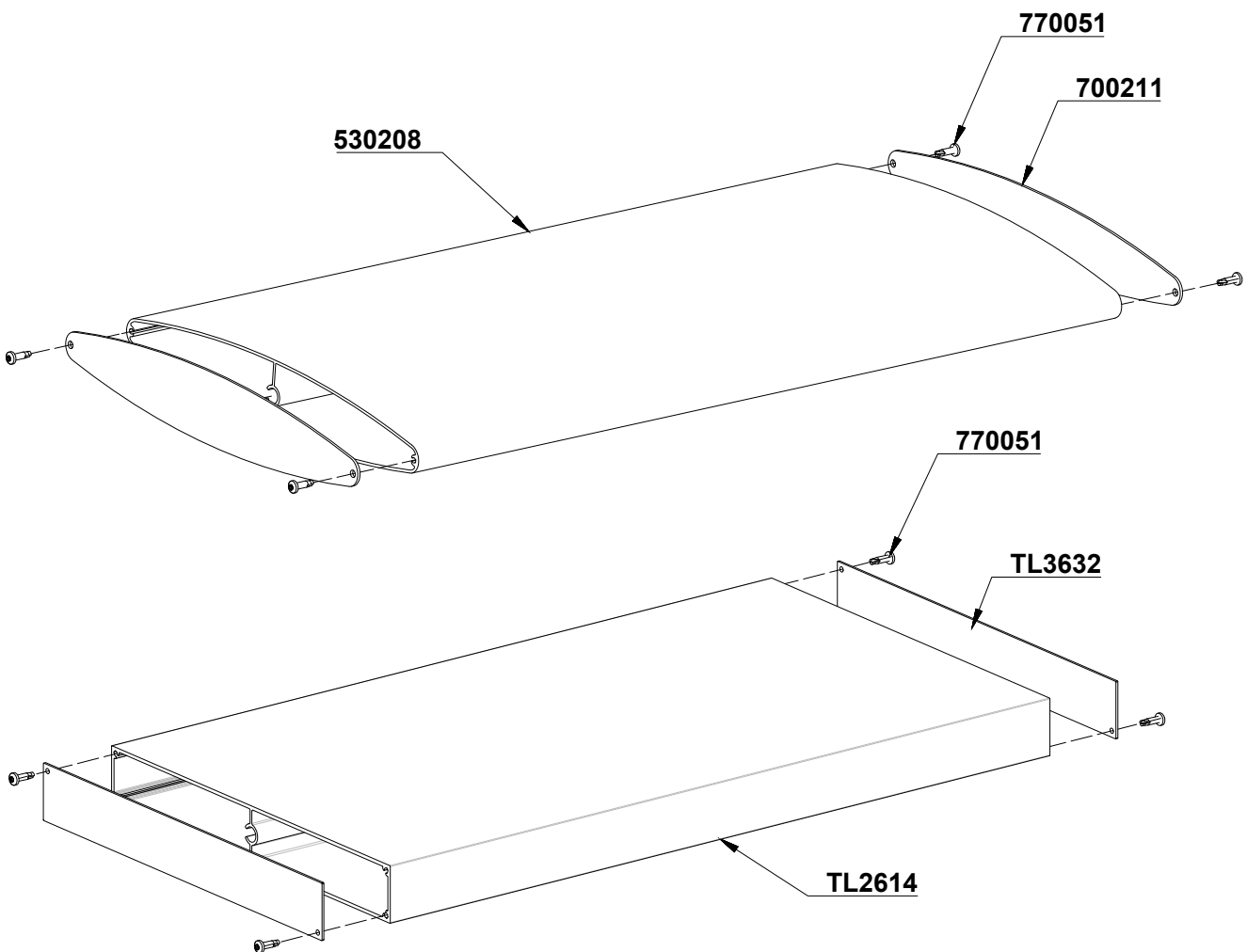


Applications

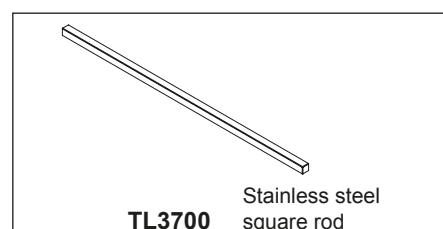
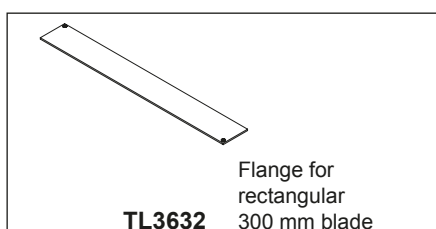
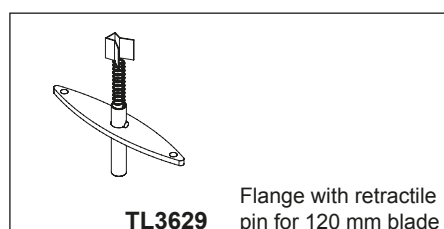
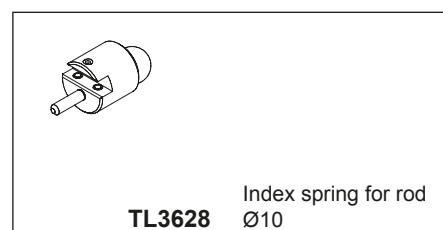
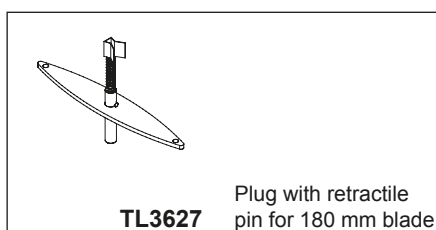
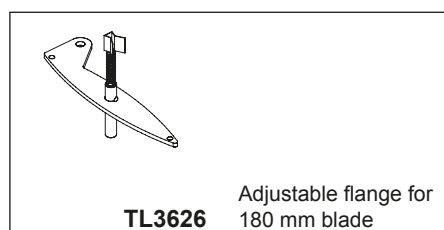
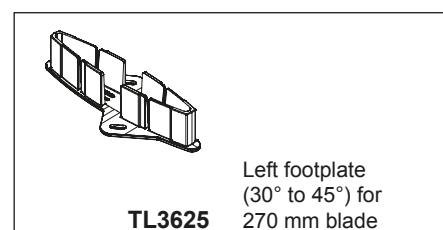
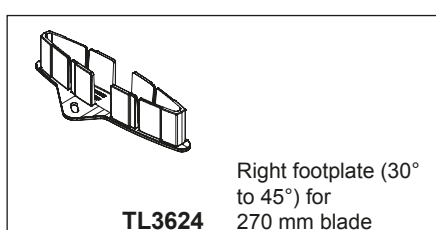
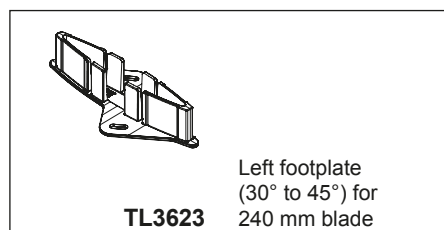
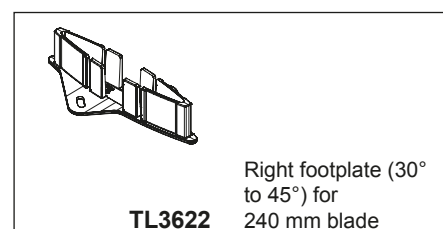
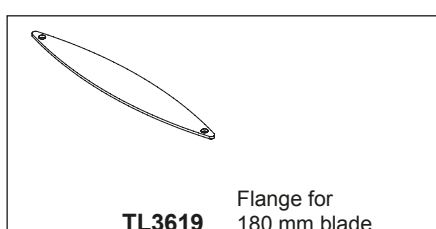
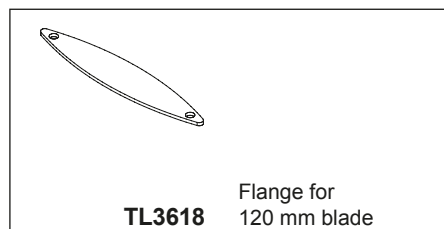
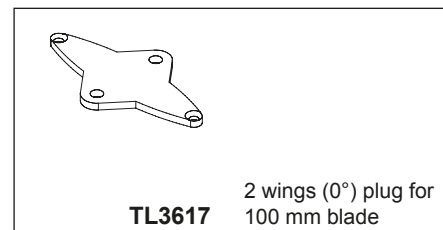
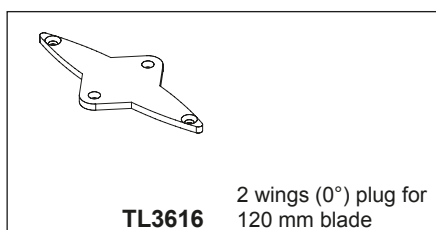
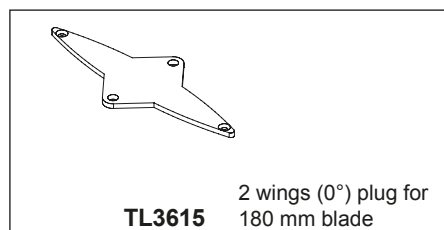
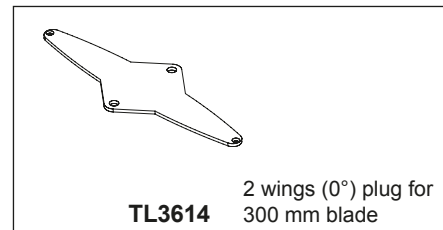
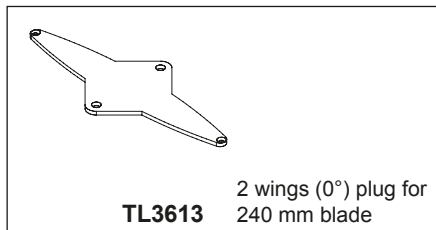
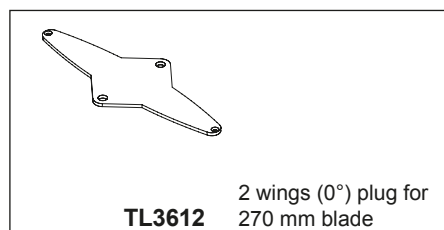
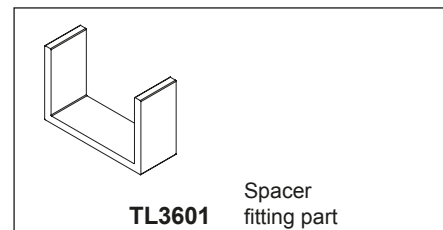
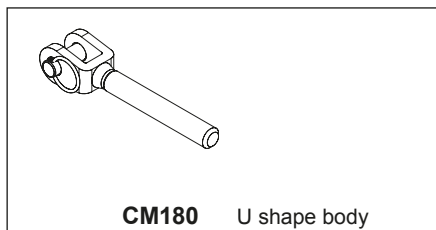
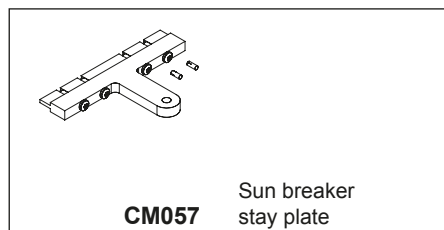
Other available accessories

PROFILÉS AND ACCESSORIES

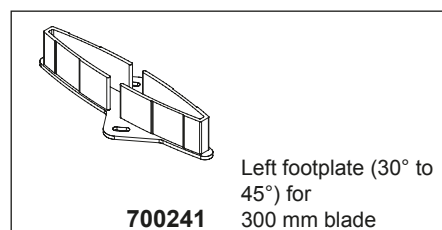
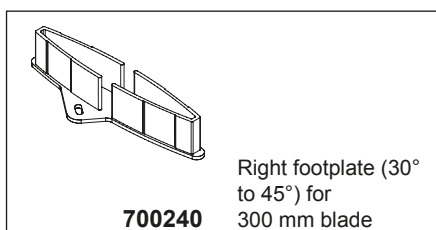
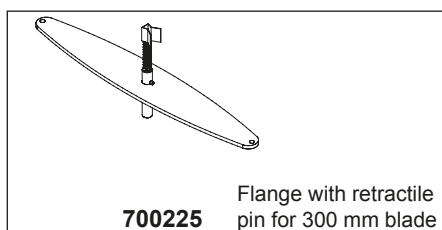
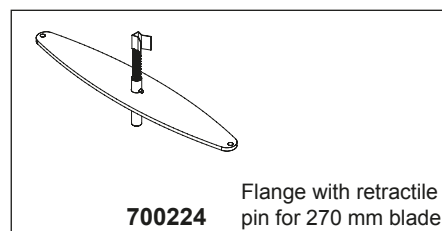
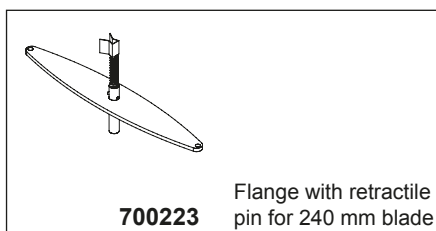
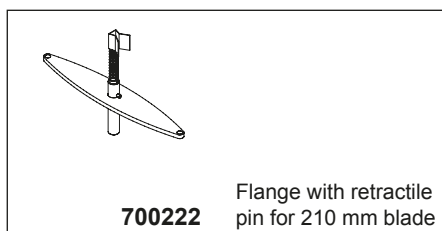
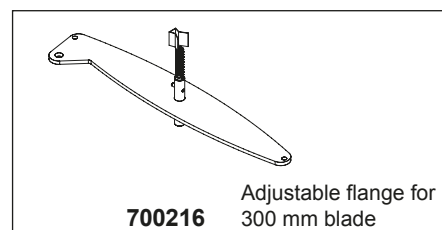
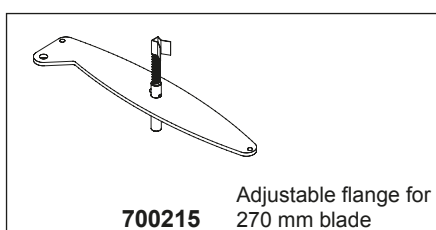
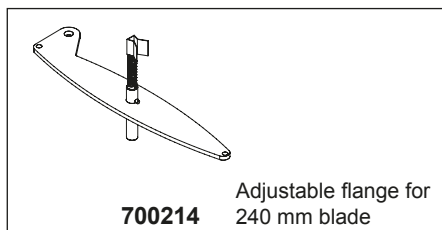
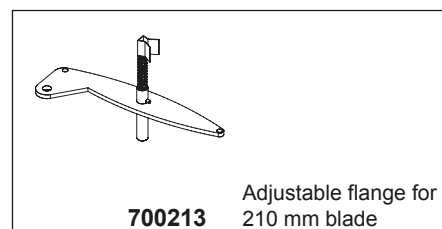
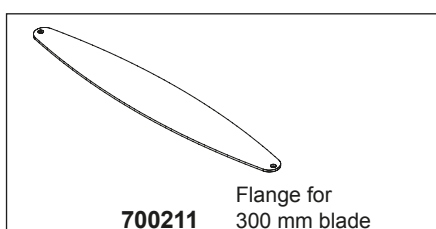
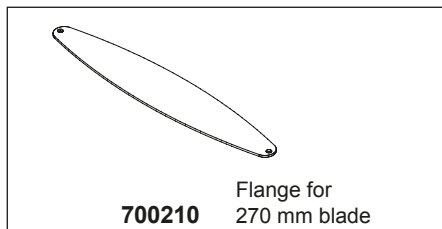
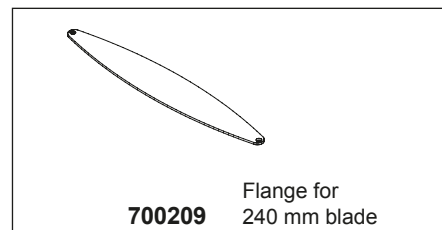
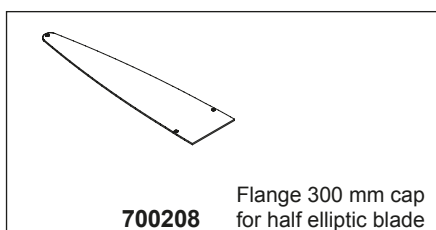
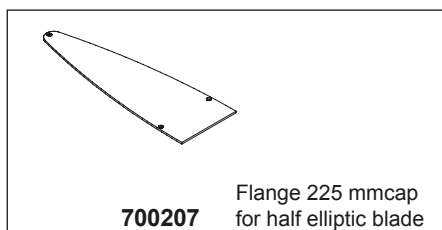
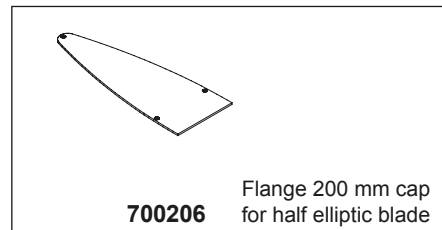
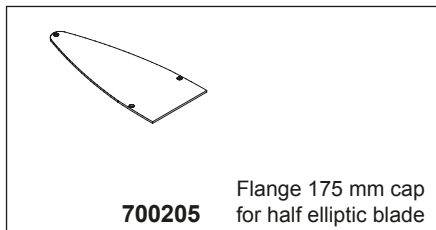
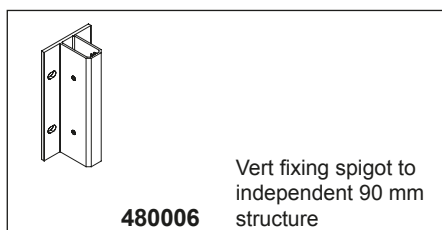
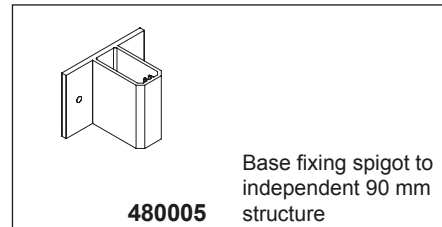
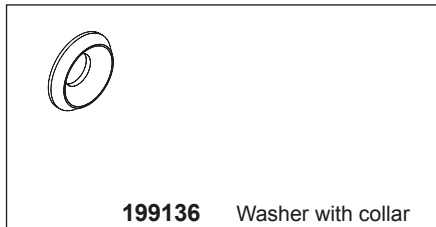
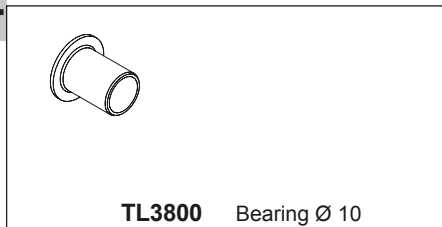
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530208		Blade 300x50	700211	770051
TL2614		Blade 300x40	TL3632	



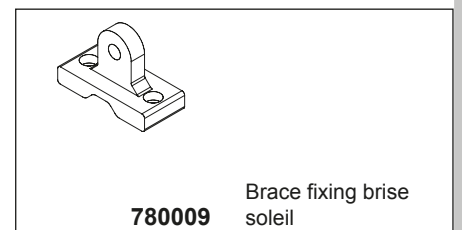
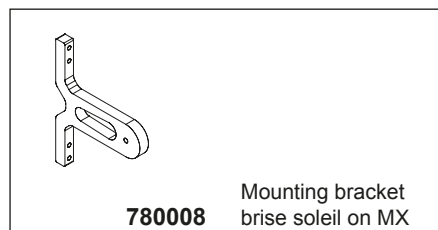
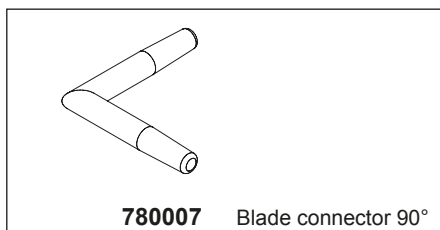
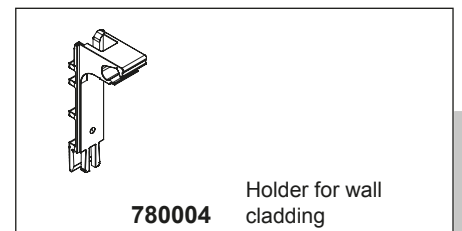
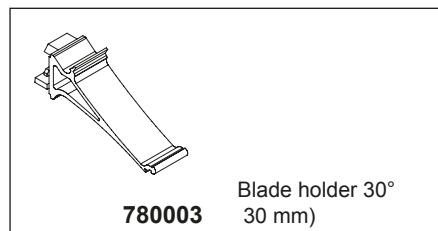
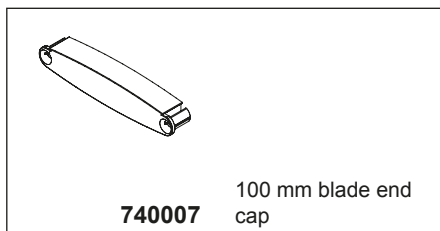
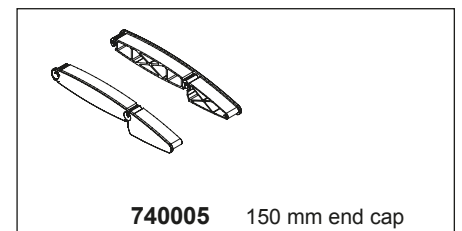
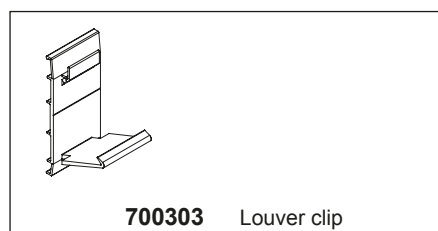
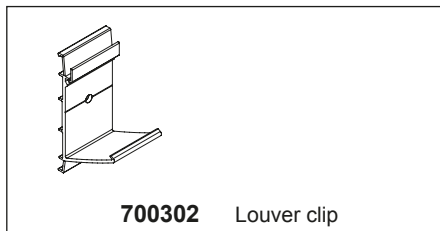
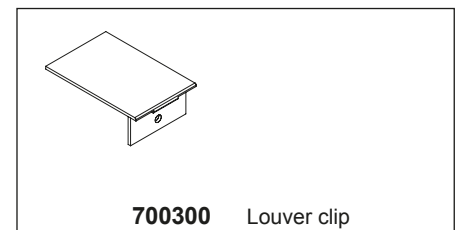
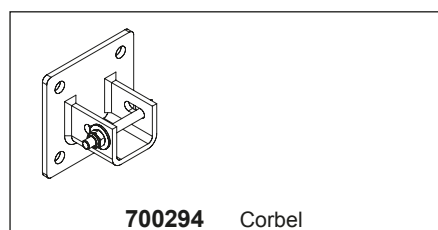
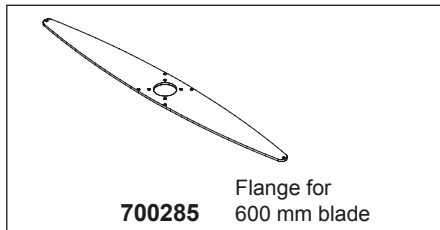
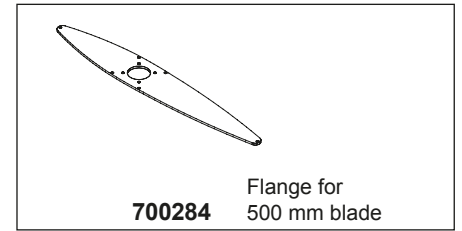
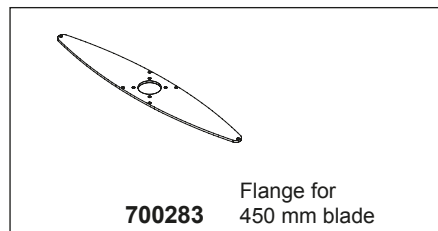
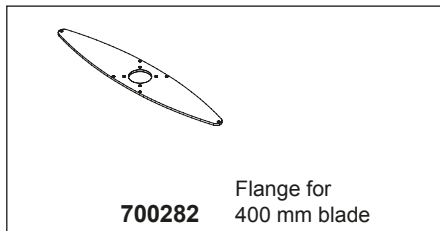
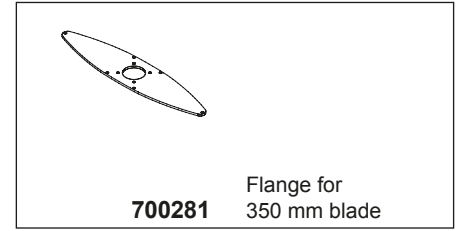
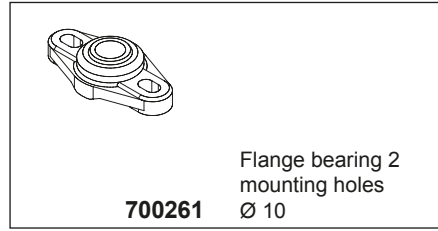
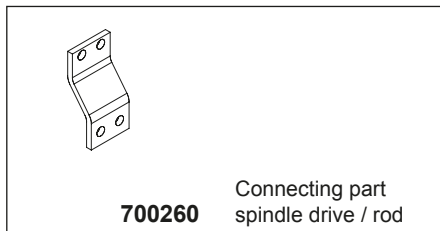
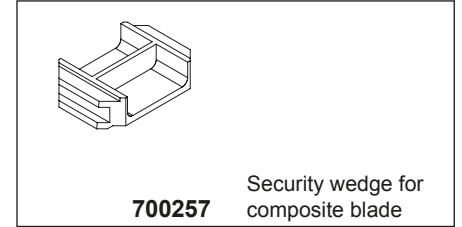
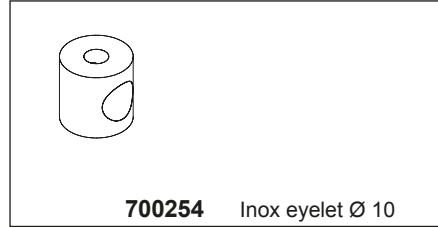
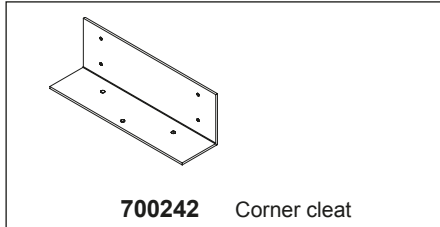
Accessories summary



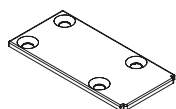
Accessories summary



Accessories summary



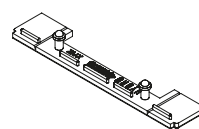
Accessories summary



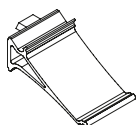
780015 End cap for vertical
BS prof 70 mm



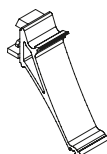
780016 End cap for vertical
BS prof 82 mm



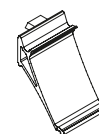
780018 Closer cap for 90
mm prof and bracket



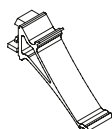
780040 Blade holder
30° (60 mm)



780041 Blade holder 60°
(60 mm)



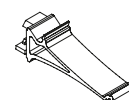
780042 Blade holder 60°
(60 mm)



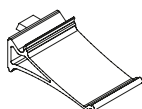
780043 Blade holder
45° (30 mm)



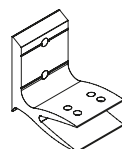
780044 Blade holder 45°
(60 mm)



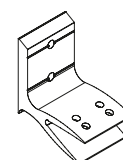
780052 Blade holder 15°
(30 mm)



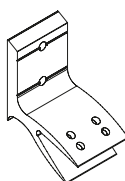
780053 Blade holder
15° (60 mm)



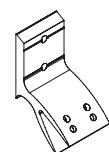
780103 Pliers 0° for blades
120 and 180 mm



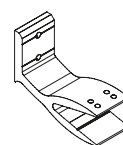
780104 Big pliers 15° for
blades 120 and 180
mm



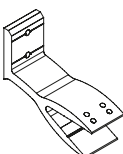
780105 Pliers 15° for blades
120 and 180 mm



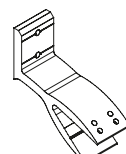
780106 Pliers 45° for blades
120 and 180 mm



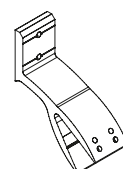
780107 Big pliers 0° for
blades 240 and 270
mm



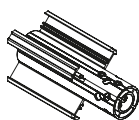
780108 Big pliers 15° for
blades
240 and 270 mm



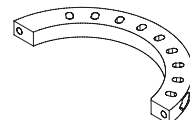
780109 Big pliers 30° for
blades 240 and 270
mm



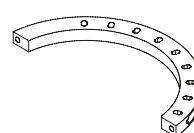
780110 Big pliers 45° for
blades 240 and 270
mm



780111 Swivelling aluminium
corbel 0° to 60° right

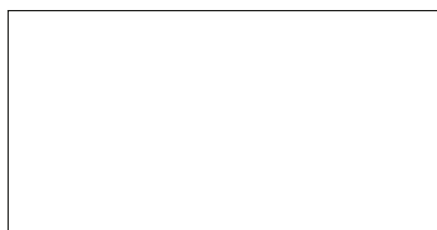
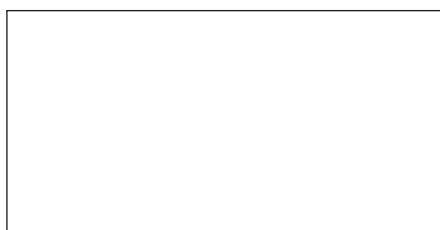
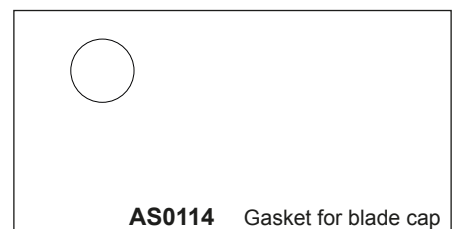
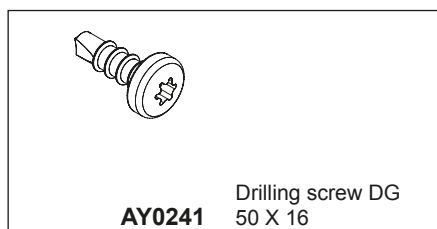
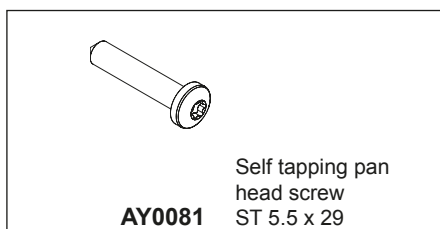
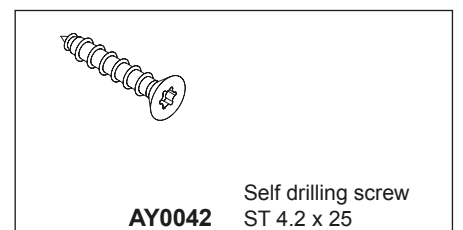
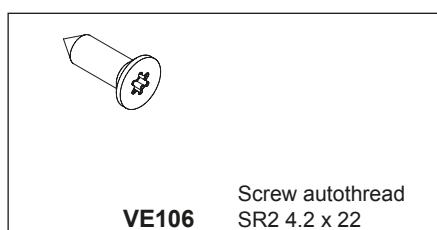
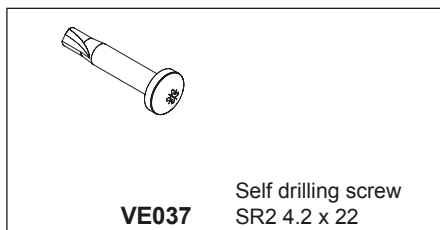
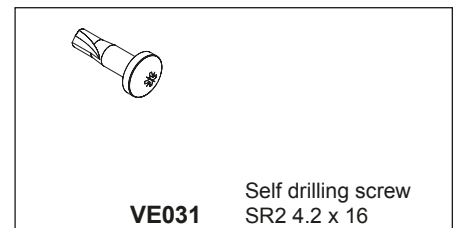
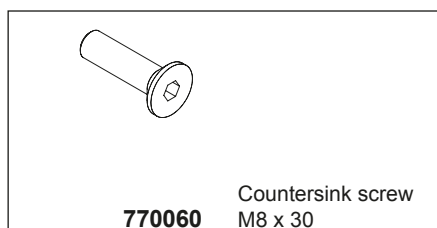
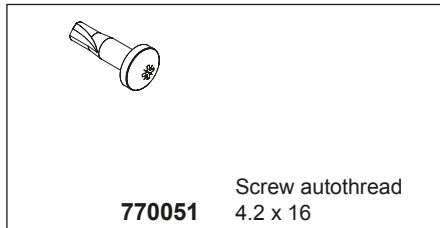
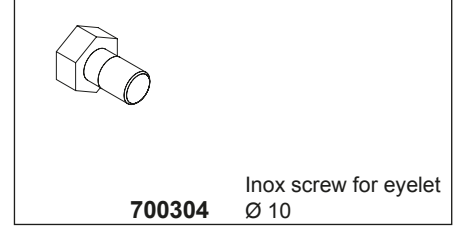
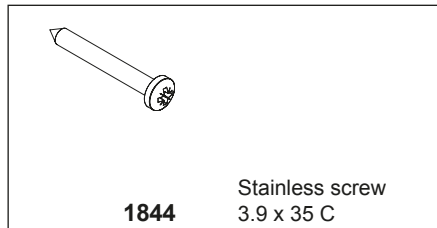
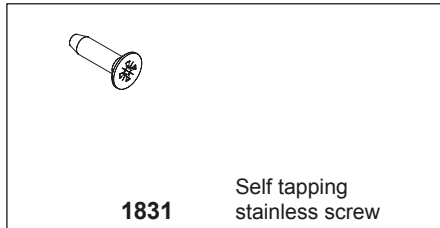


970100 Protactor for blade
180 mm



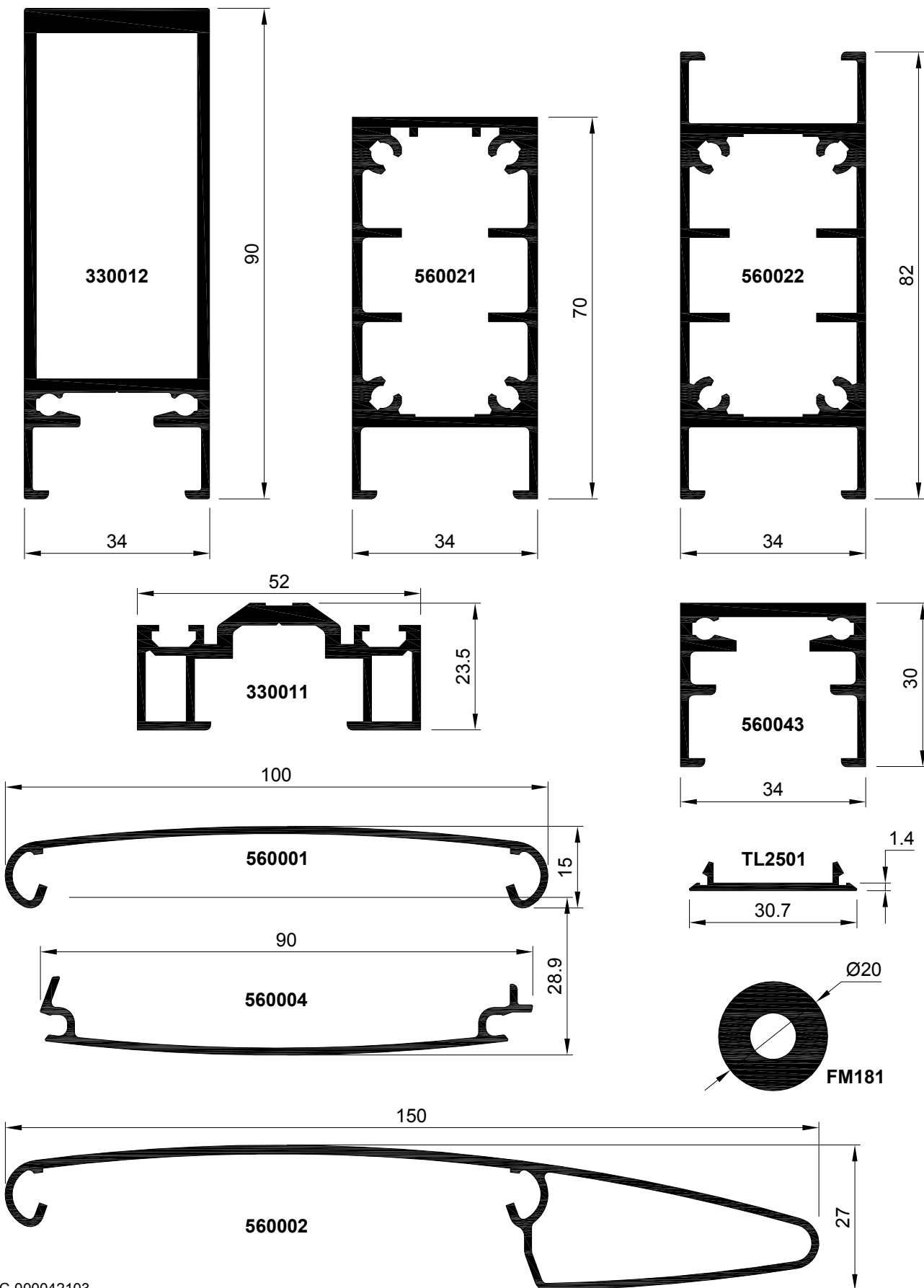
970102 Protactor for blade
240 mm

Screws and gasket summary

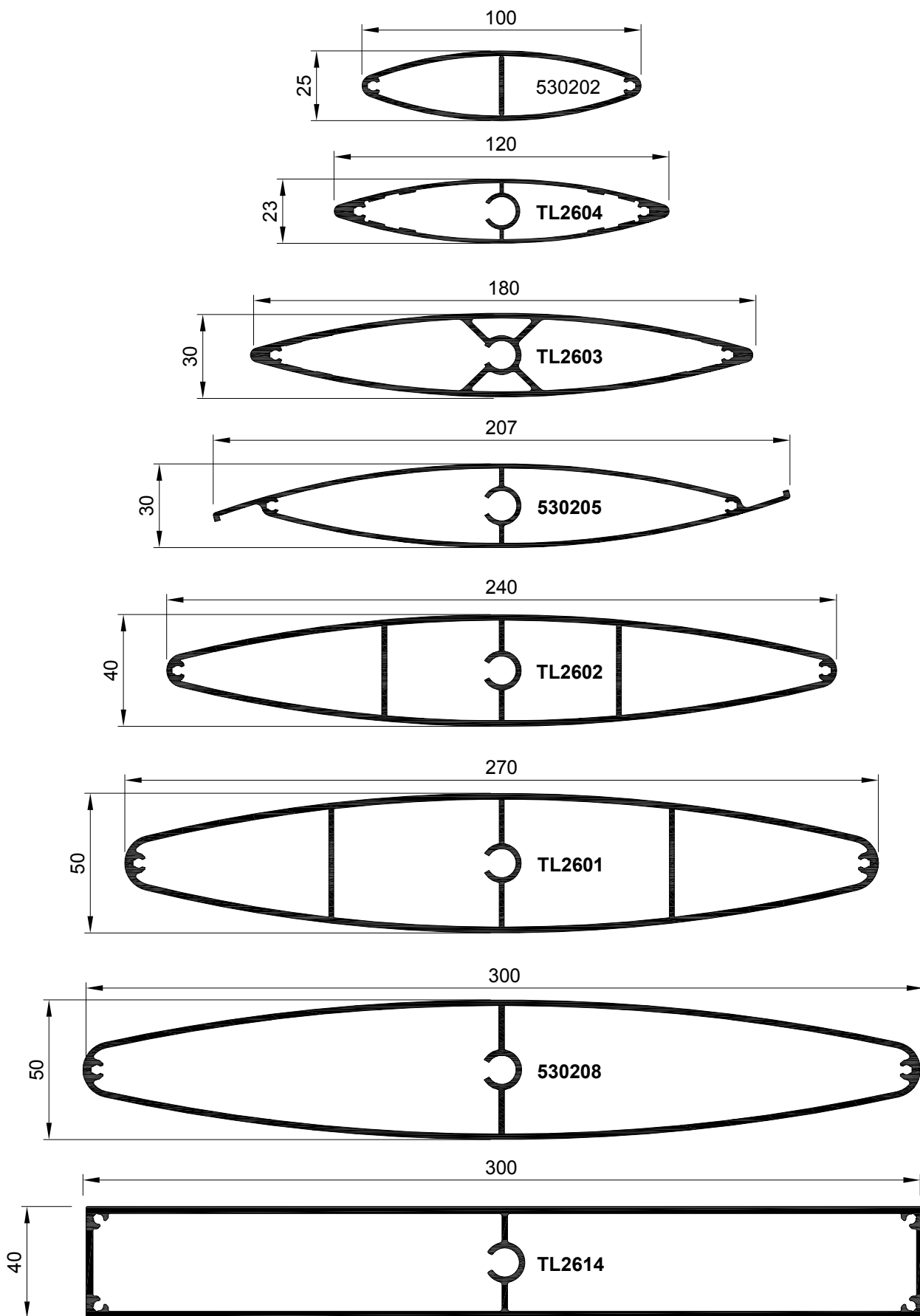


Profiles summary

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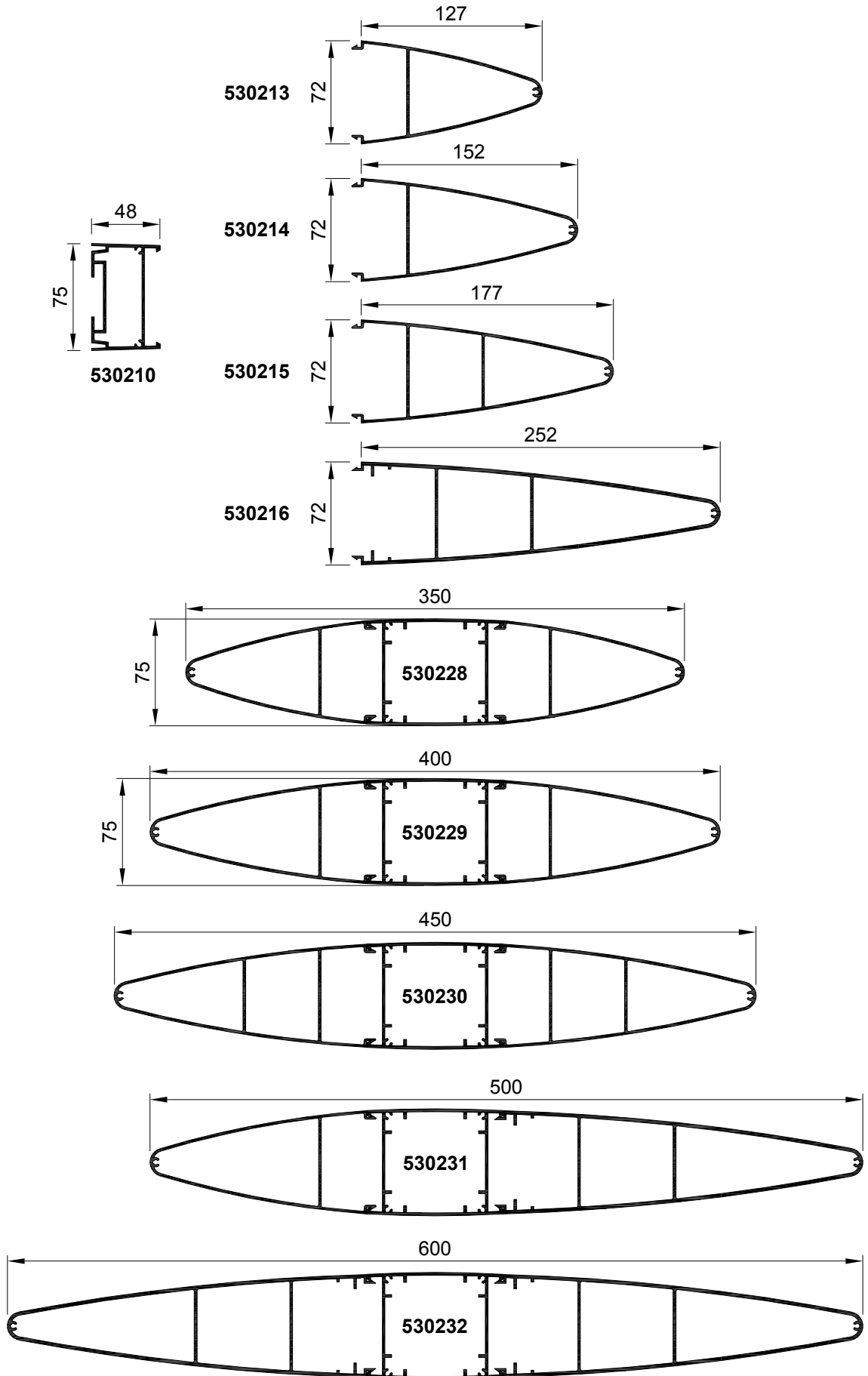


Profiles summary

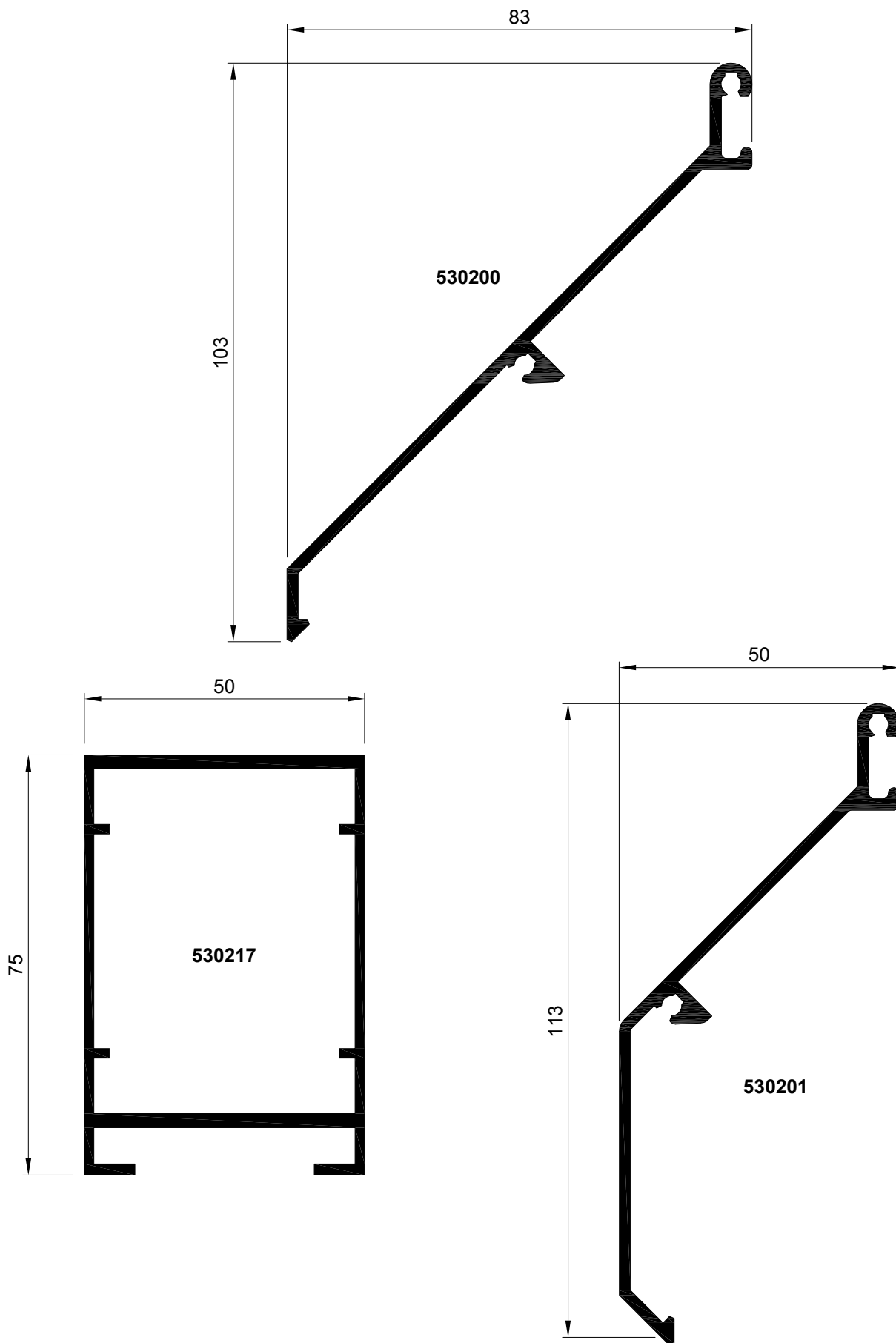


SEC-000042100

Profiles summary



Profiles summary



SEC-000042102

SUNEAL

TL

Fabrication

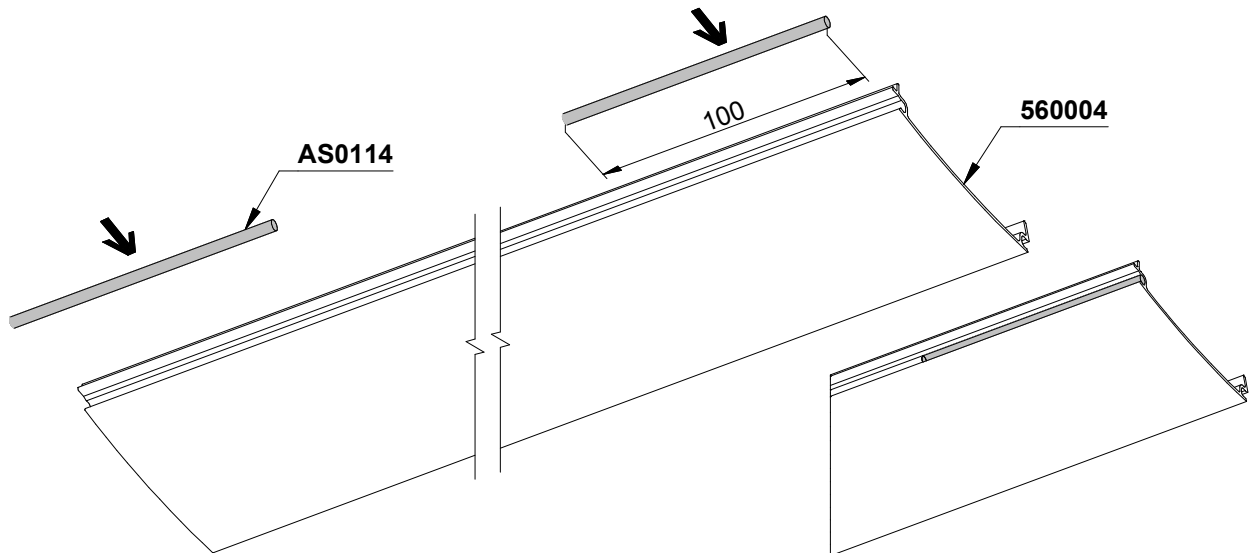
- **Clipped blades 100 et 150 mm** **P. 67**
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Clipped blades 100 and 150 mm

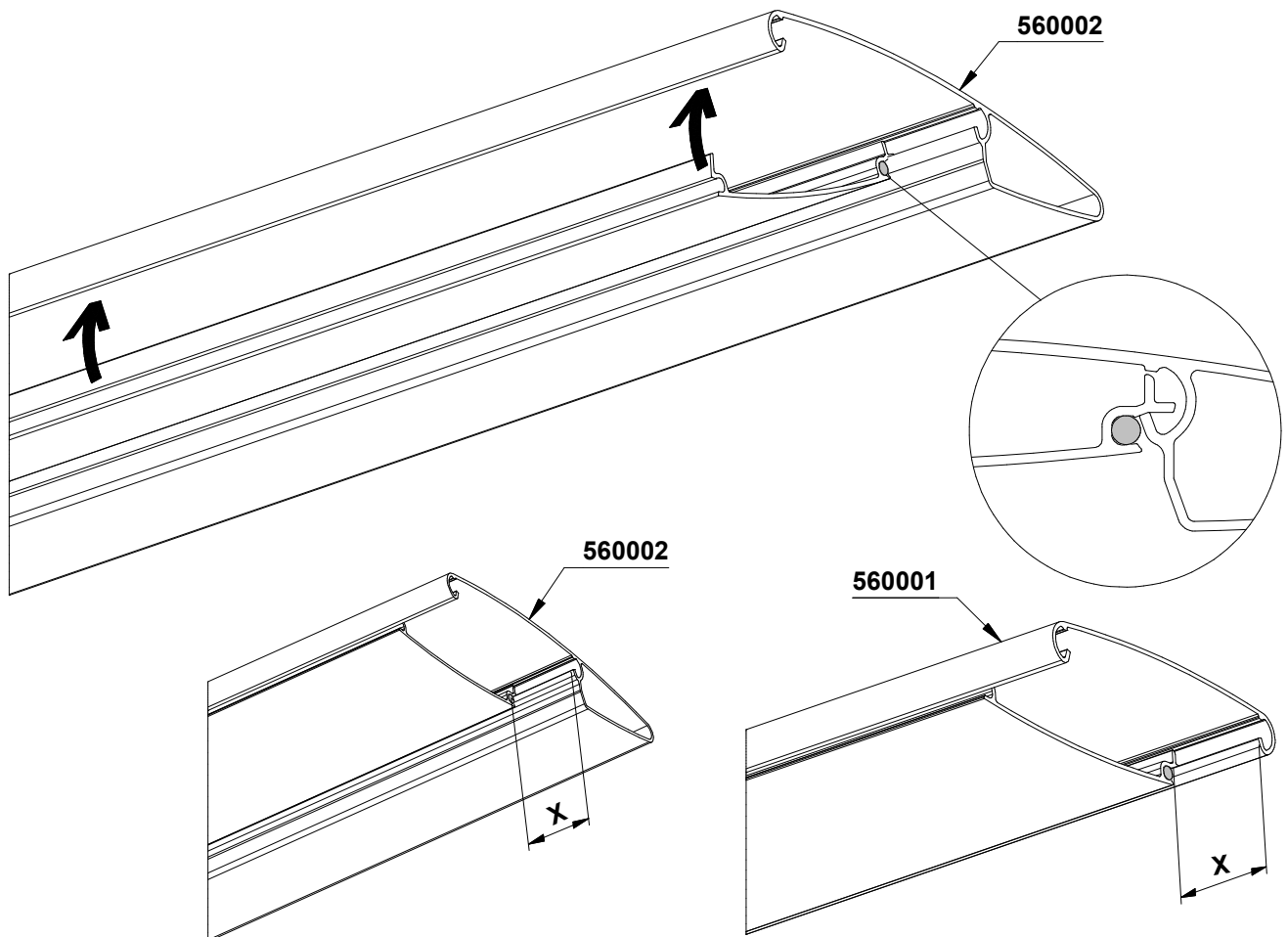
Manufacturing blades

Assembly sequence :

1. Insert the lengths from 100 mm AS0114 coupling every 300 mm in the groove in front of the blade cover.



2. Engage the cover into the clipping groove of the blade, as shown below. Twist the cover to clip it to the blade's second groove.



Note : The cover's offset value **X** (compared to the blade) is determined based on the theoretical position of the fastening supports, given a planned 5 mm between the cover and each of its supports.

Clipped blades 100 and 150 mm

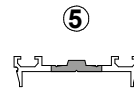
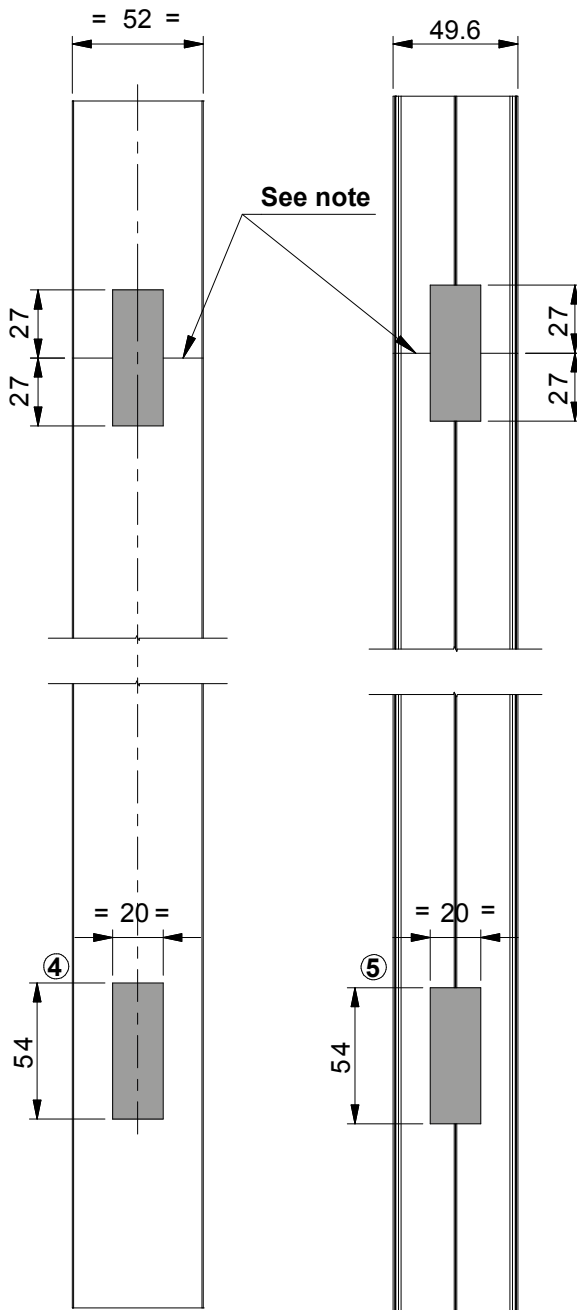
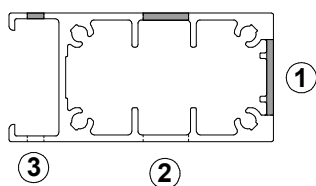
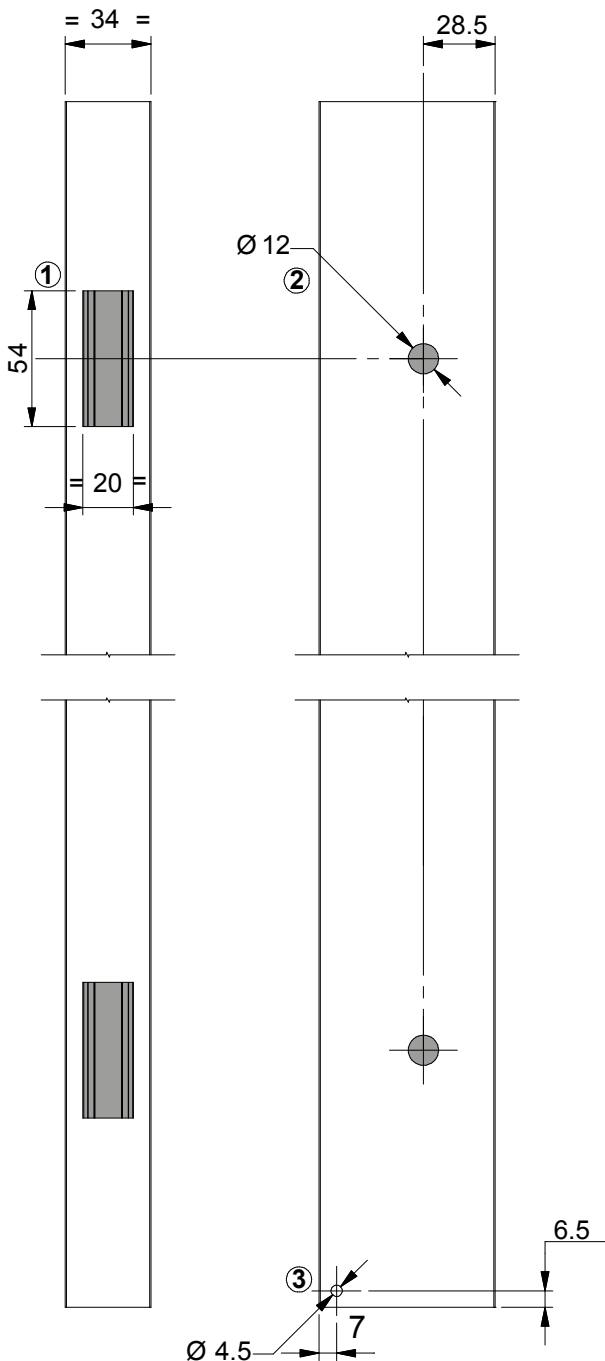
Machining profiles for assembly with continuous pressure plate

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Profile machining 560021

Profile machining 6617

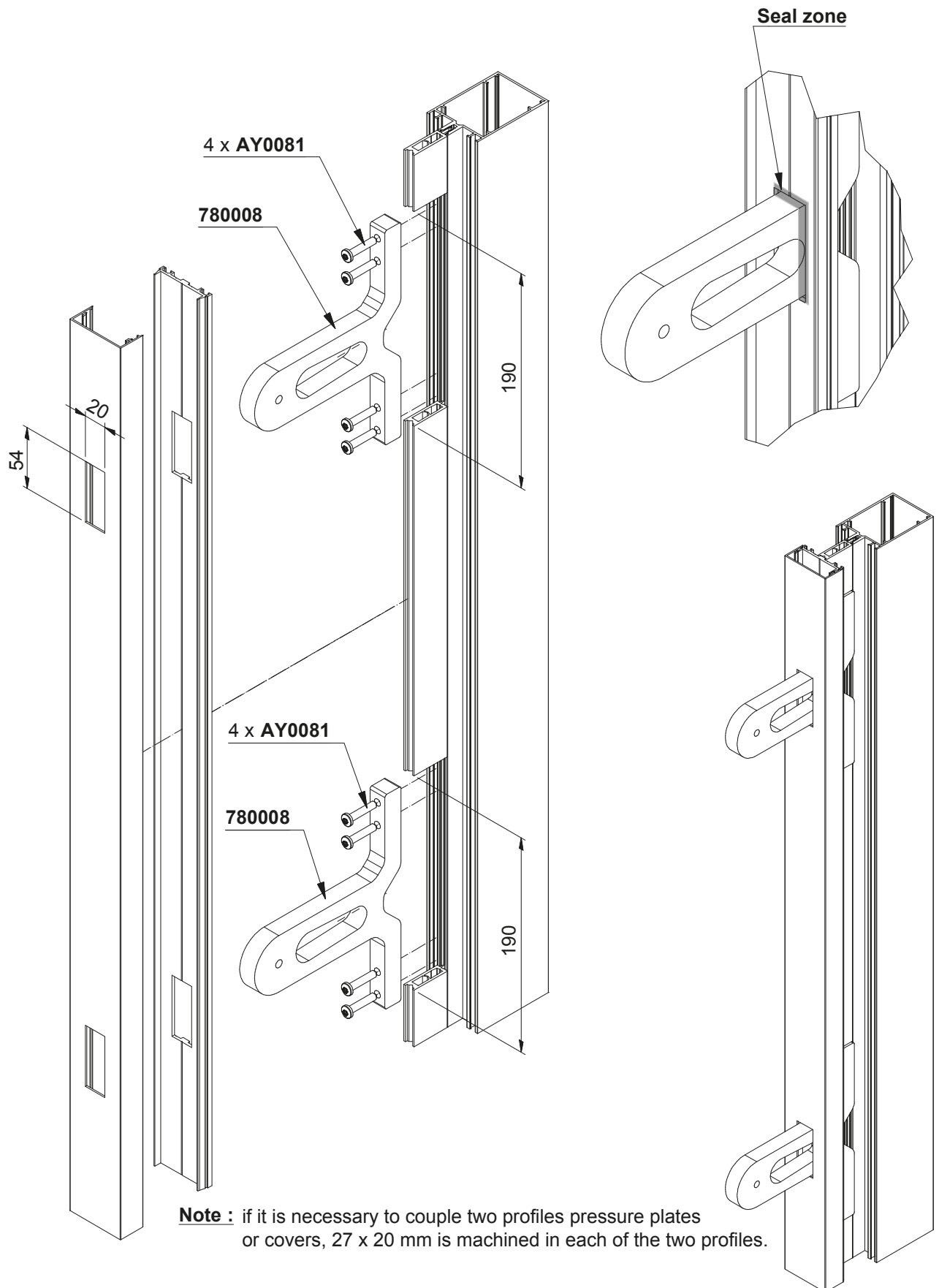
Profile machining FM221



Note : In cases where it is necessary to couple two profiles, it is essential to leave expansion clearance of at least 5 mm.

Clipped blades 100 and 150 mm

Assembly of the vertical support section with continuous pressure plate

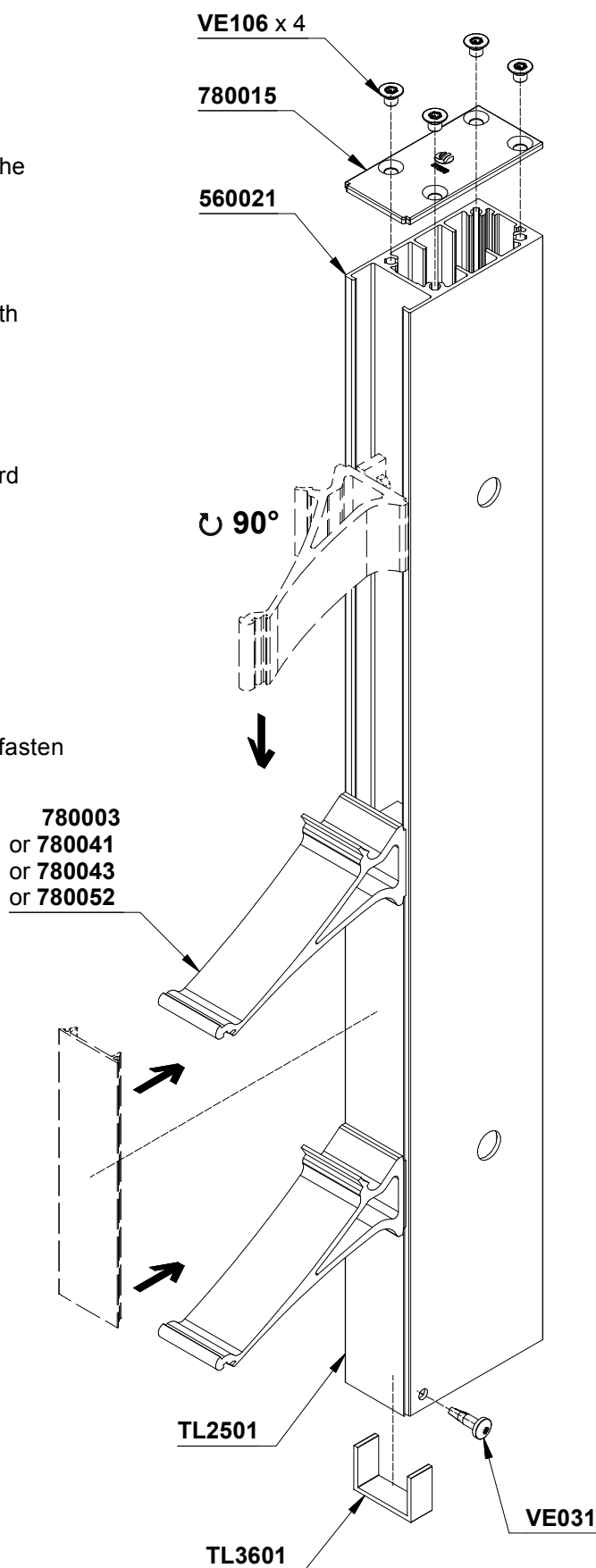


Clipped blades 100 and 150 mm

Assembly of blade support profile 560021

Assembly sequence :

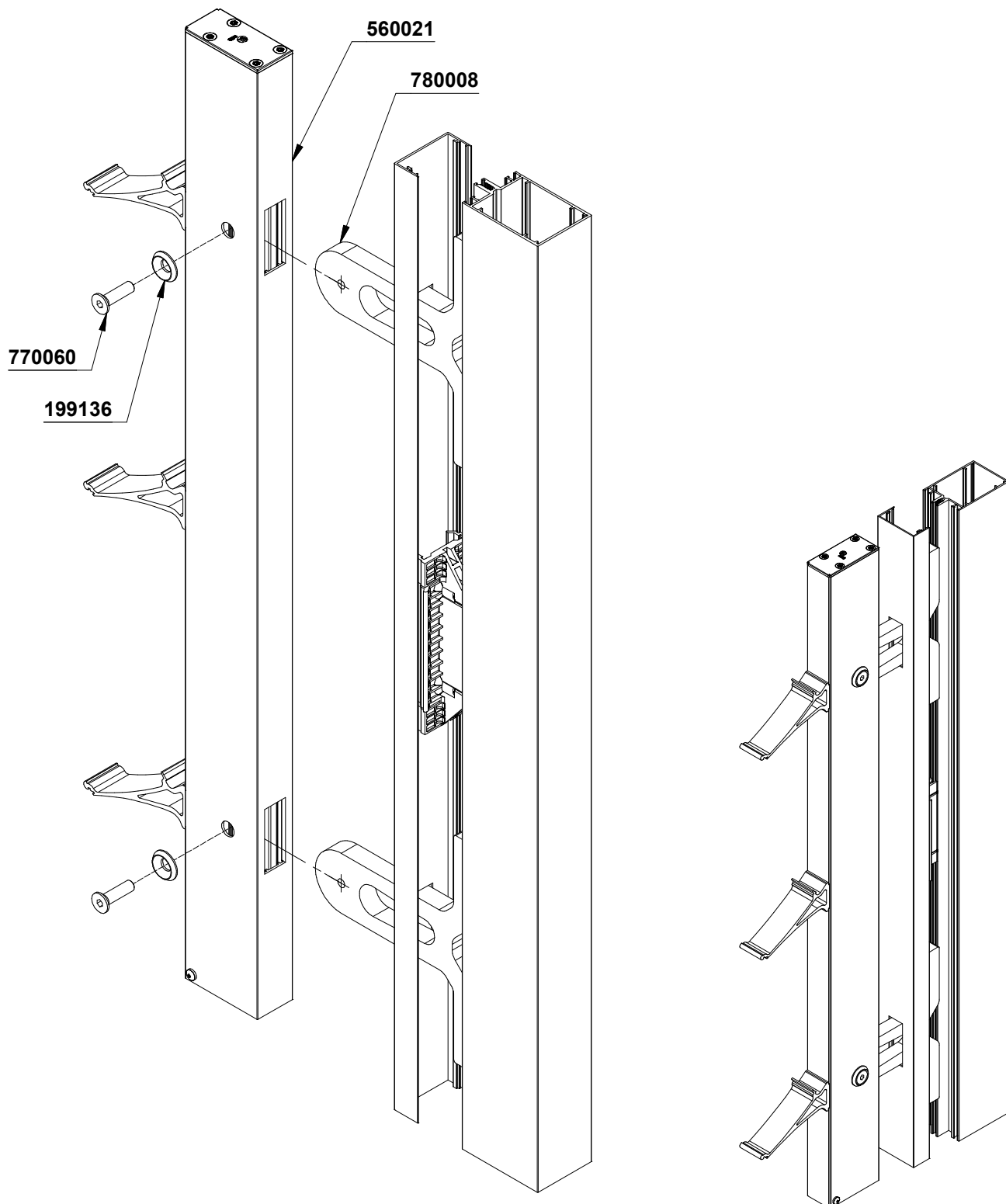
1. Slice a first spacer **TL2501** and clip it to the groove of the support rail at the bottom end
2. Install the **TL3501** low spacer fastener and fasten it with the **VE031** screw.
3. Position the fastening lug at a 90° incline in the groove. Turn it 90° to guide it into its final position. Slide it toward the bottom until it reached the spacer.
4. Click the spacer that will block the fastening lug from the top. Repeat steps 3 and 4 as many times as necessary.
5. Put the **780015** plug at the top end of the profile and fasten it on with four **VE106** screws.



Clipped blades 100 and 150 mm

Assembly of blade support on vertical support profile

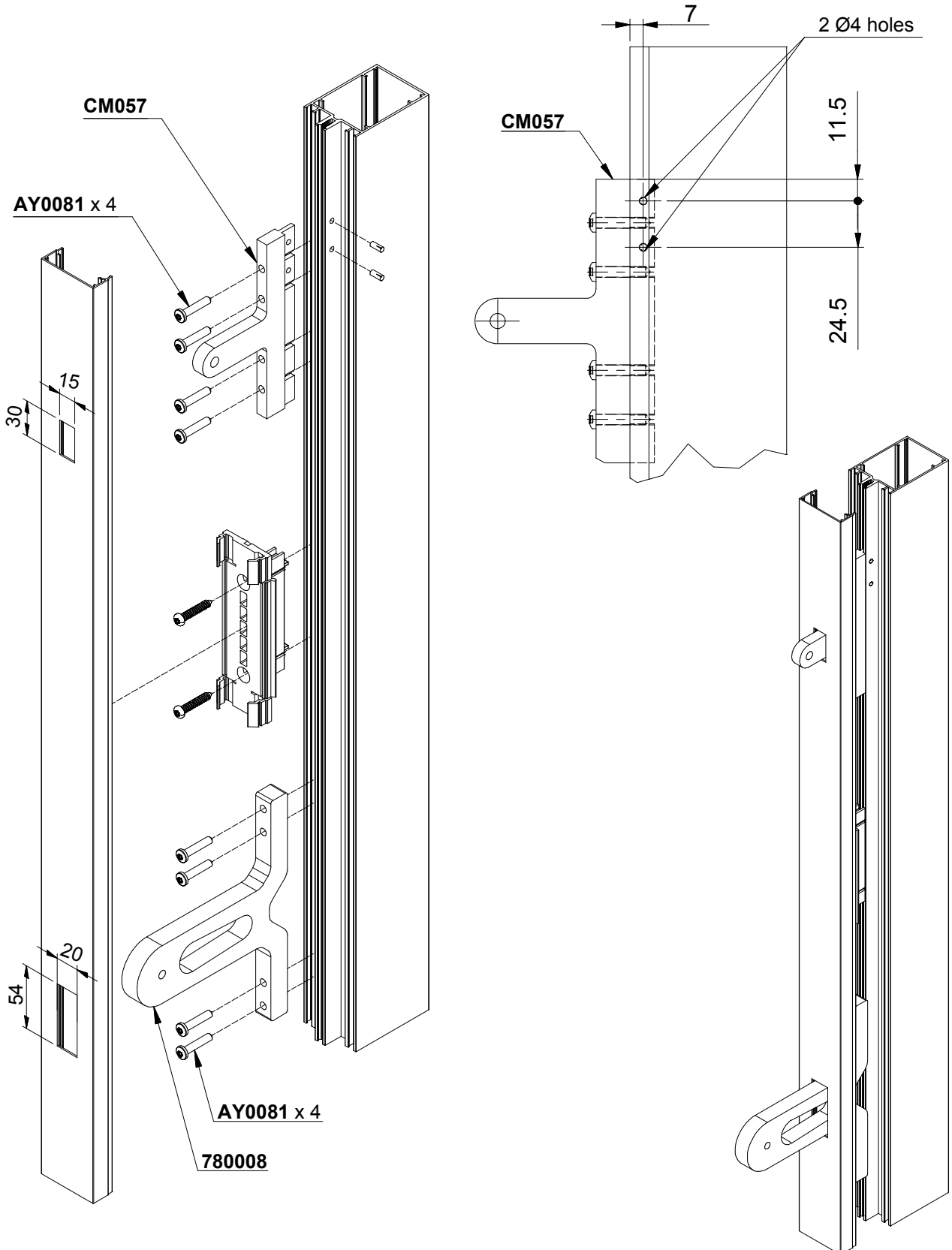
Engager the **560021** profile on the **780008** cleats near the rectangular machining and then assemble them using screw **770060** with washer **199136**.



Clipped blades 100 and 150 mm

Assembly of the vertical support section for the canopy

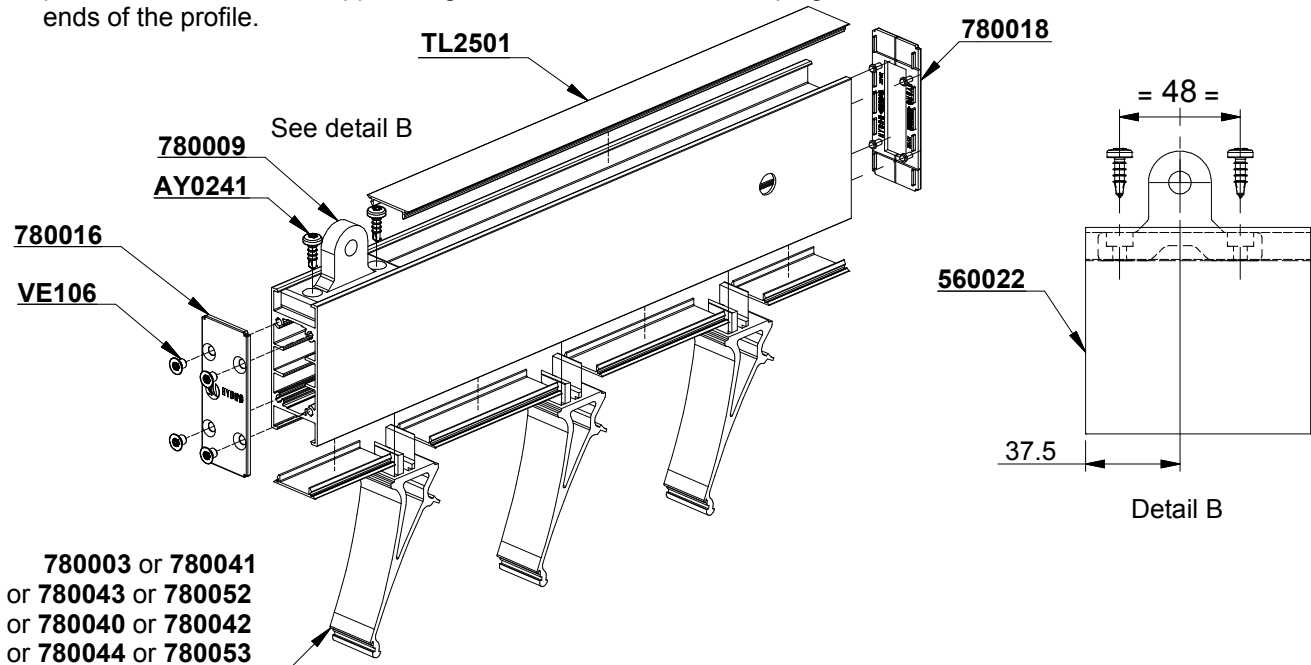
Note : Mount lug **CM057** onto the mullion, and then counterdrill the mullion and the lug. Place the pins.



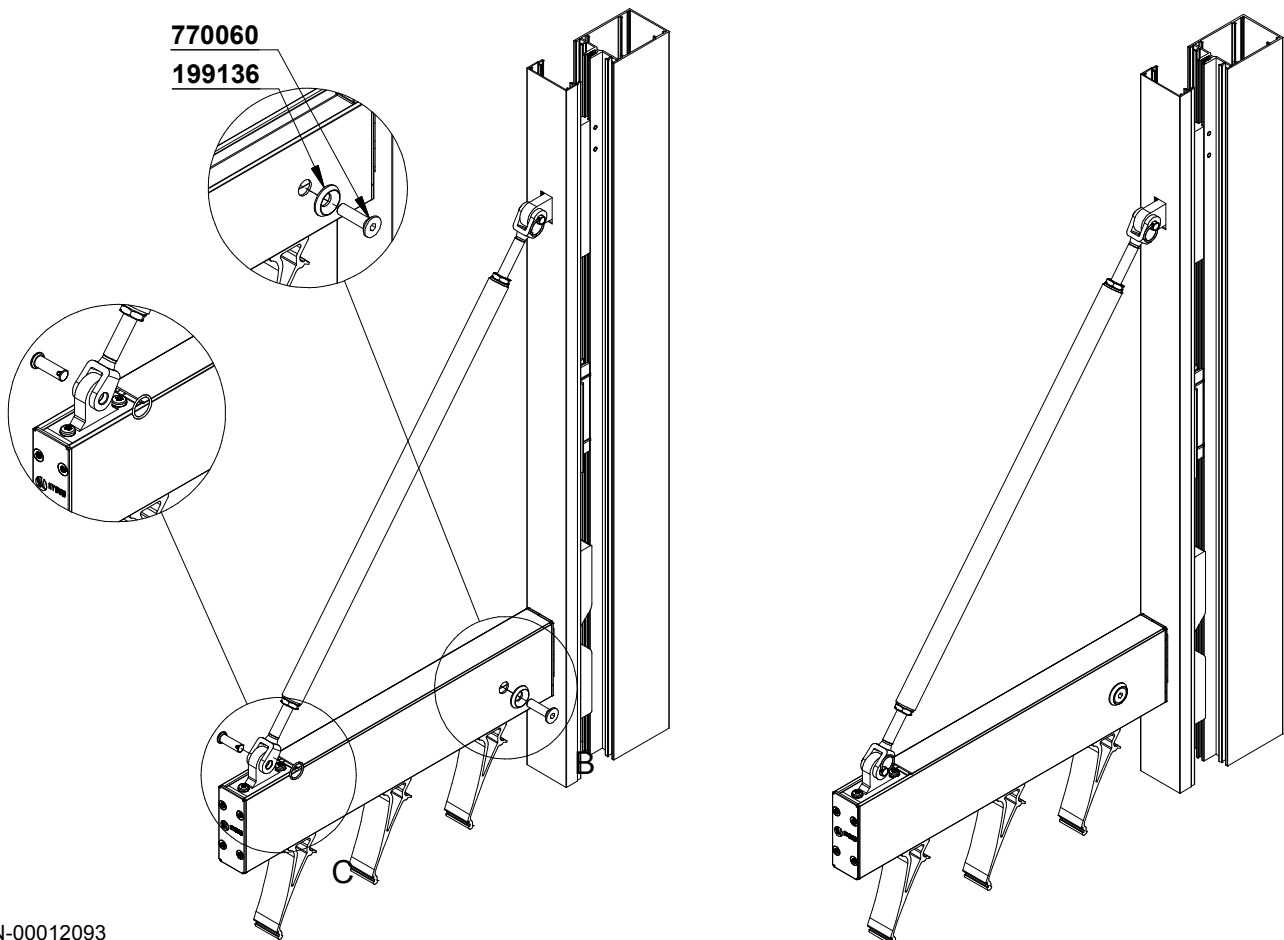
Clipped blades 100 and 150 mm

Assembly of blade support on vertical support profile for the canopy

- 4.** Fasten lug **780009** onto the profile using **AY0241** screws. Next, insert the pieces of the spacer profile **TL2501** and the supports lugs, as described above. Put plugs **780016** and **780018** at the ends of the profile.

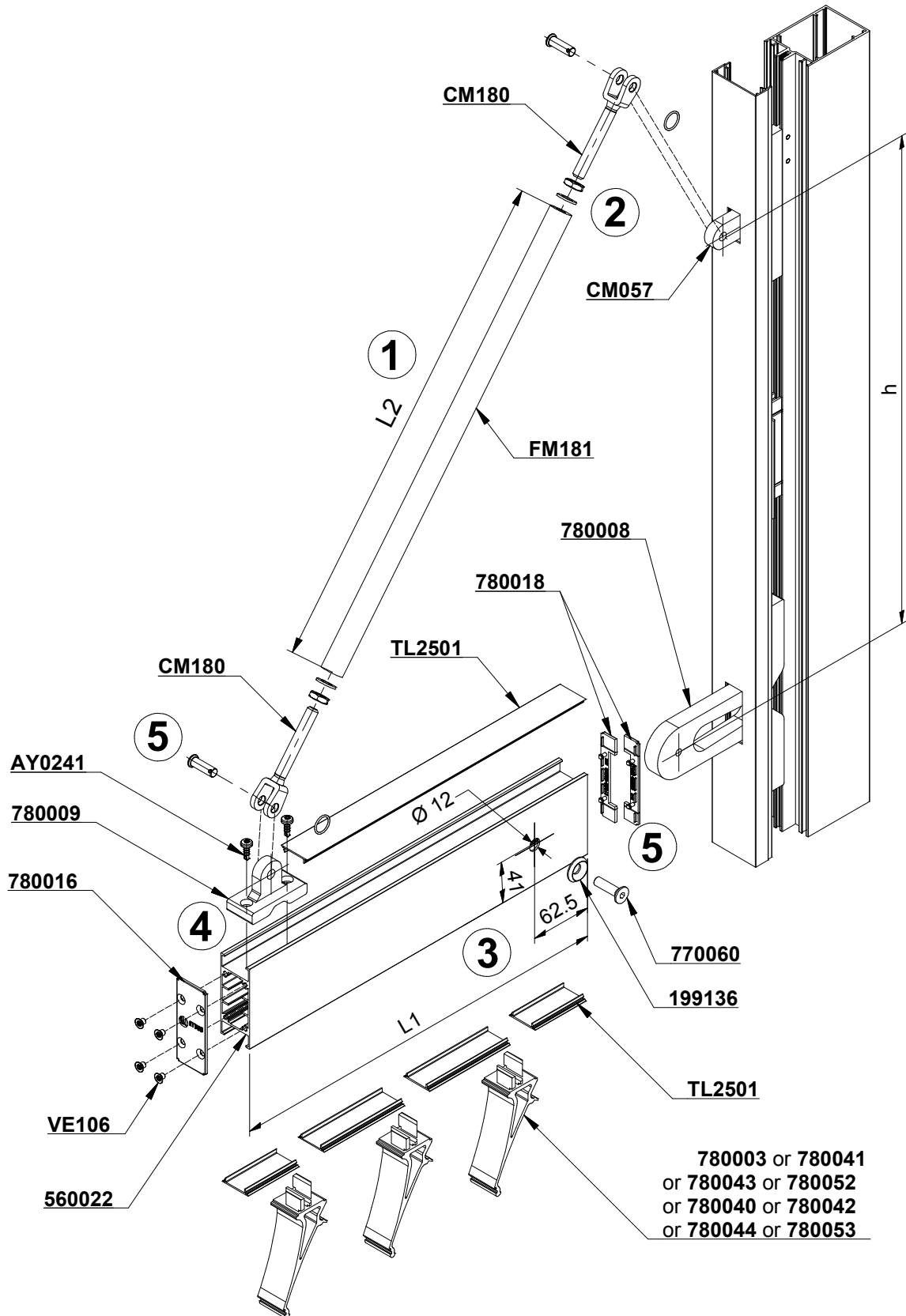


- 5.** Fixer the assembly to the cleat **780008** using screw **770060** with washer **199136**. Then, adjust the screws on the U shape to be able to assembly the inner U shape with lug **780009**.



Clipped blades 100 and 150 mm

Assembly of blade support on vertical support profile for the canopy



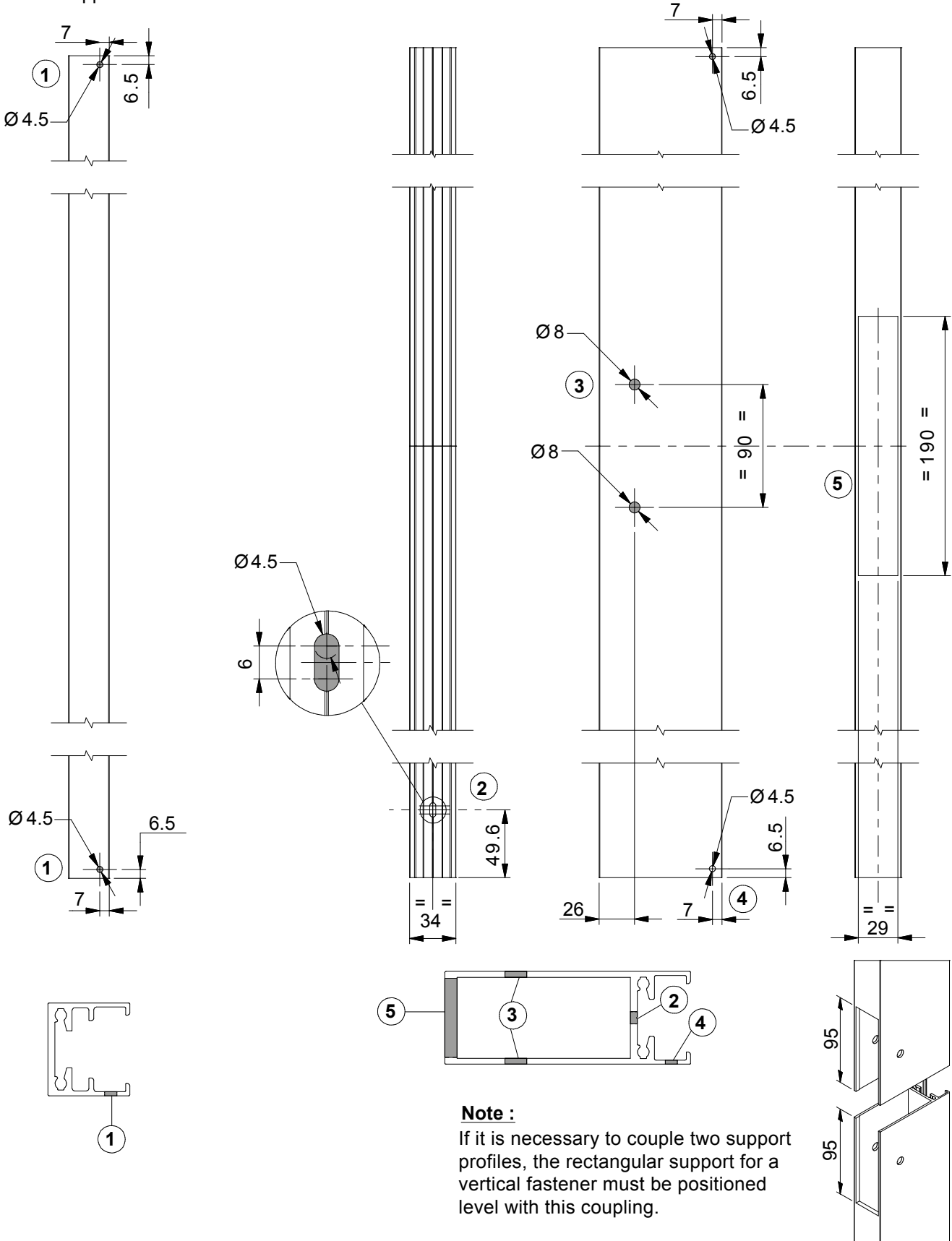
Clipped blades 100 and 150 mm

Machining of support profiles, 30 and 90 mm

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Machined profile **560043**
Profile support 30 mm

Machined profile **330012**
Profile support 90 mm

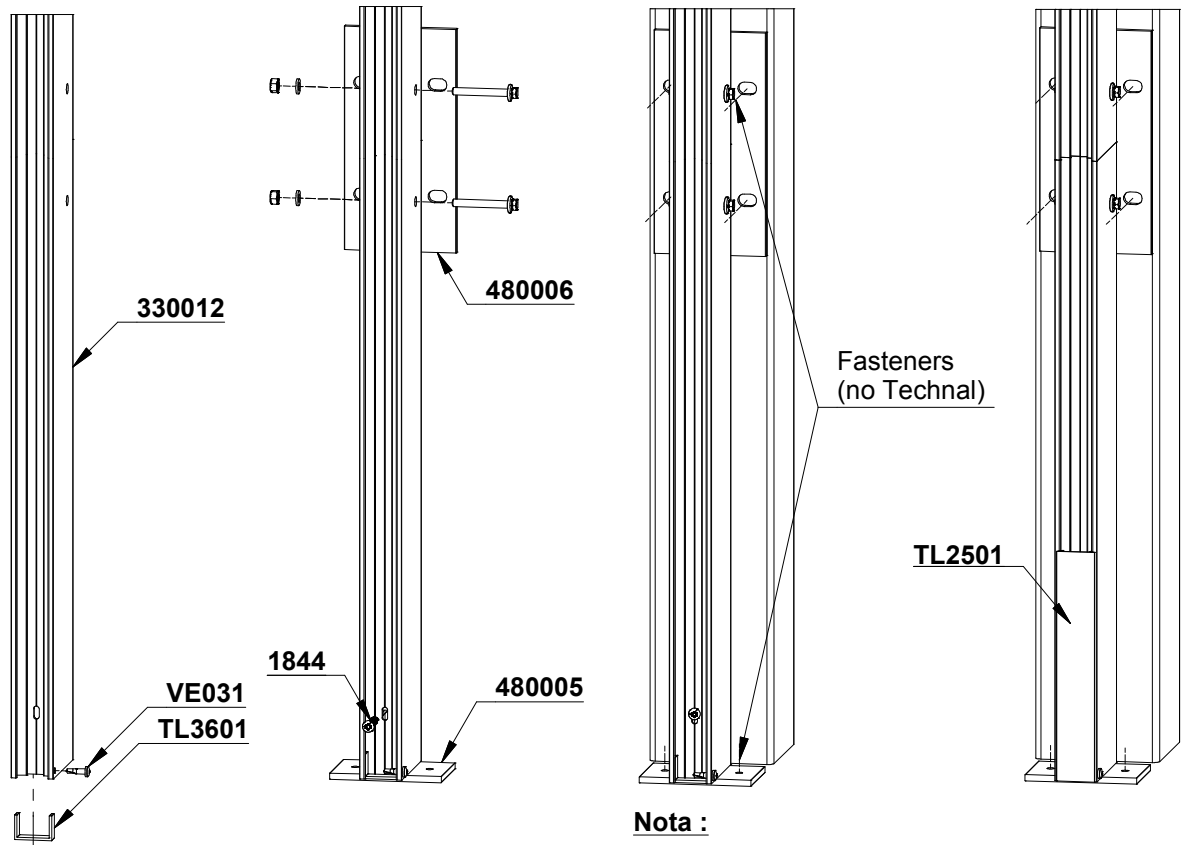


Clipped blades 100 and 150 mm

Assembly of support profiles, 30 and 90 mm

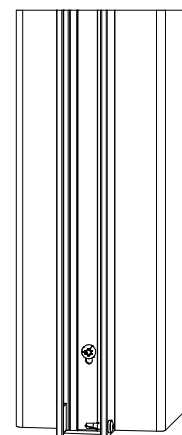
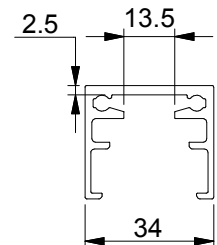
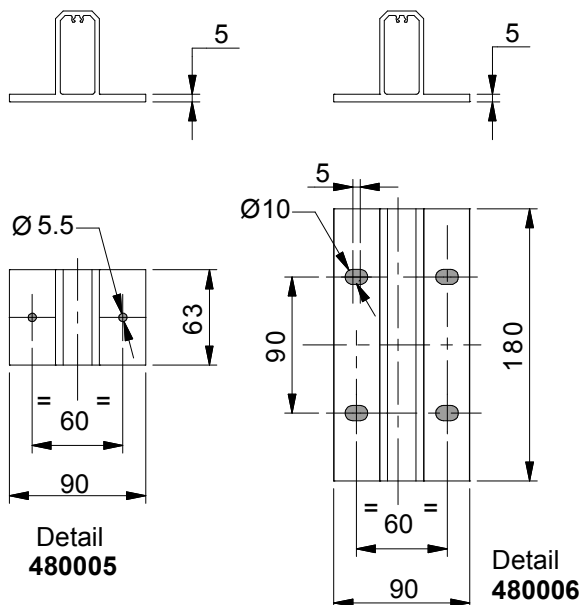
Assembly example : Support profile 90 mm **330012**

- 1.** First, set up the **TL3601** spacer fastener at the low end of **330012** and fasten it with screw **VE031**.
- 2.** Mount fasteners **480005** and **480006** onto the profile.
- 3.** Attach everything to the ground and the vertical structure with the appropriate screws.
- 4.** Click a first piece of the **TL2501** spacer profile.



Nota :

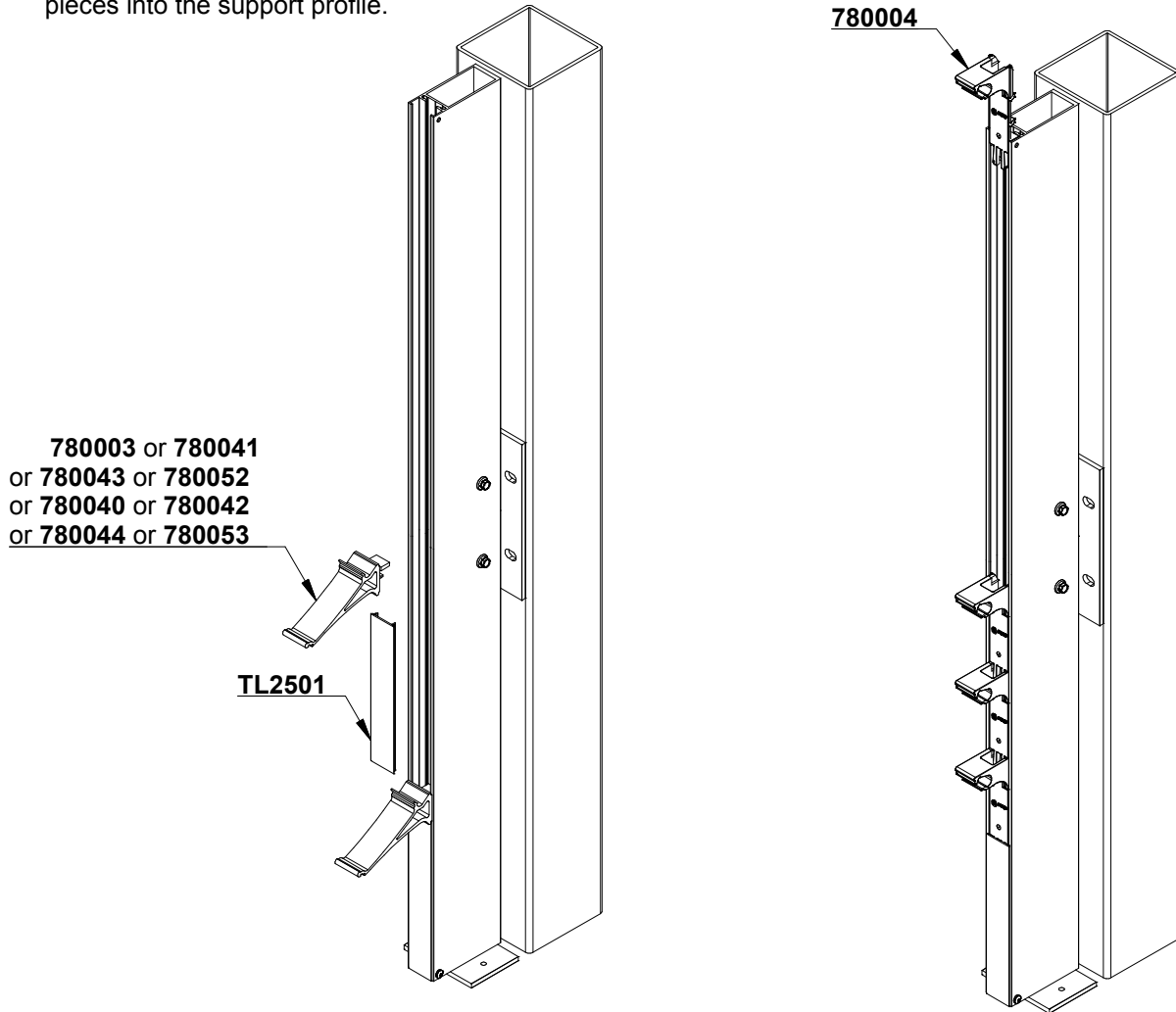
The 30 mm support profile mounting method is similar, except that fastening to the structure is done using suitable screws for the support (not provided by Technal), with three screws per linear meter.



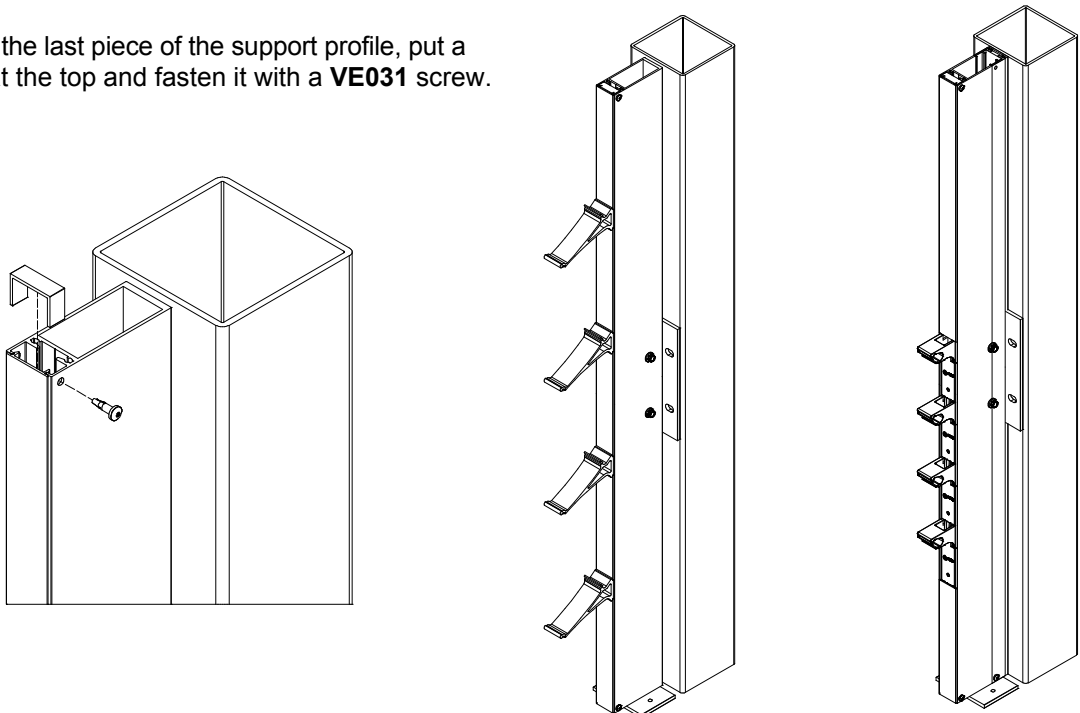
Clipped blades 100 and 150 mm

Assembly of support profiles, 30 and 90 mm

- 5.** Following the chosen blade clipping system, insert the fastening logs and profile spacer pieces into the support profile.



- 6.** After inserting the last piece of the support profile, put a **TL3601** part at the top and fasten it with a **VE031** screw.

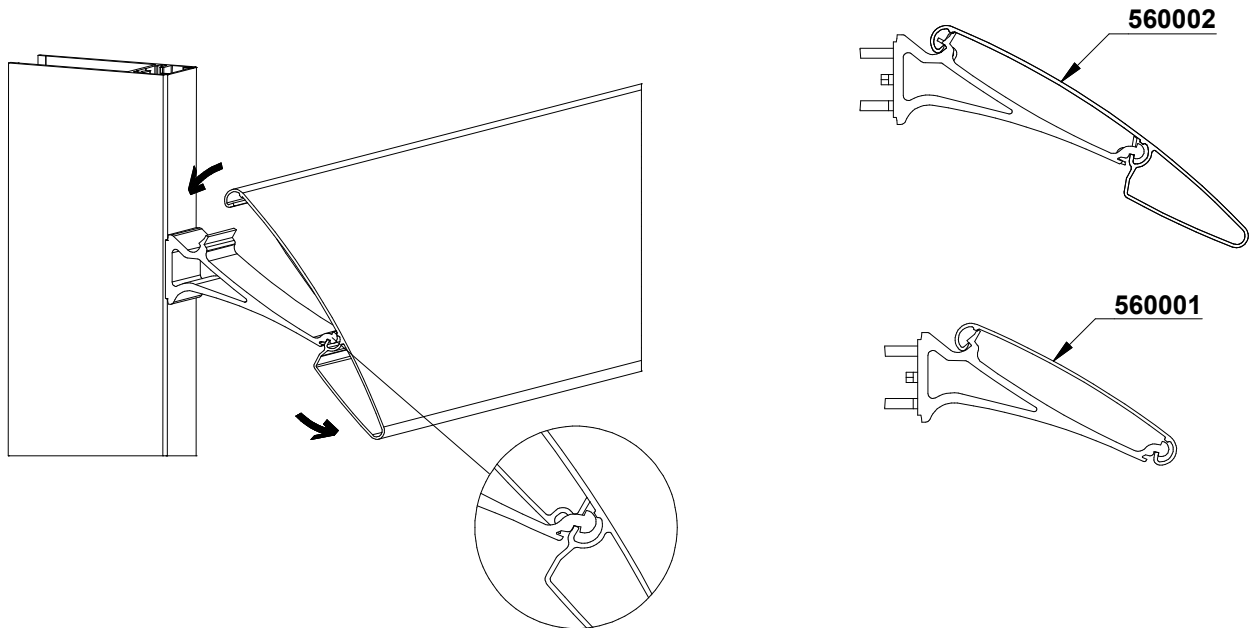


Clipped blades 100 and 150 mm

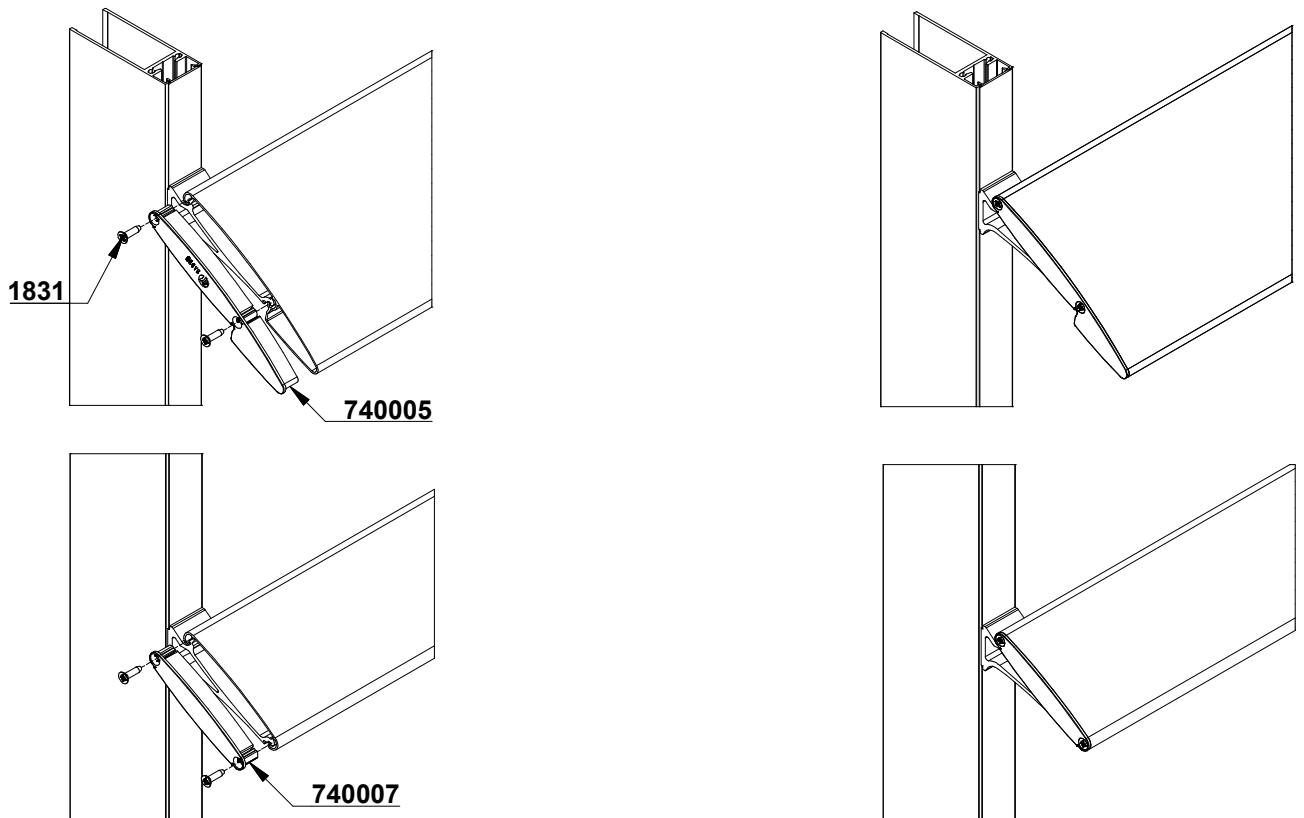
Clipping blades

Assembly sequence :

1. Mount the frames on fastenings lugs, touching the front of the lug to the inner groove on the blade, and then switch them by pressing the rear and lifting the front.



2. Insert plugs at the ends of the blades and tighten them with two 1831 screws.



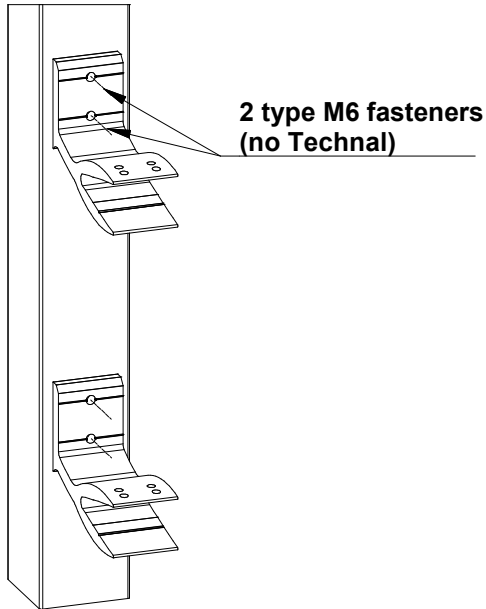
One-pieces blades

Assembly of continuous horizontal one-piece blades

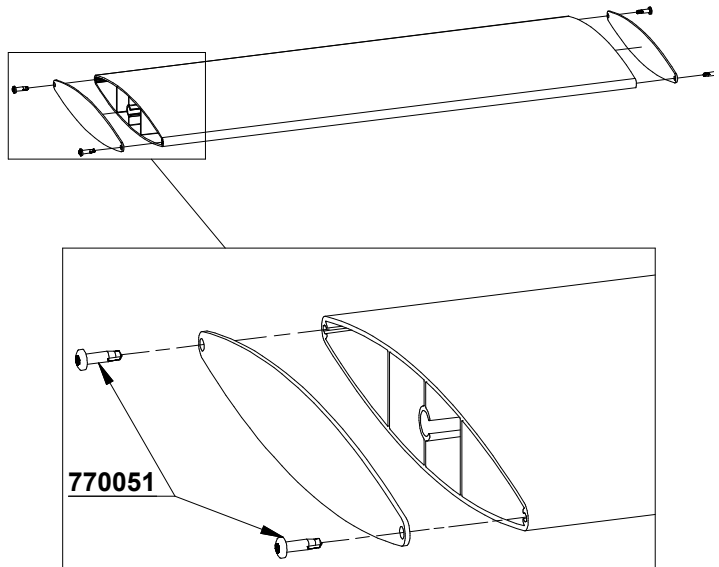
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Assembly sequence :

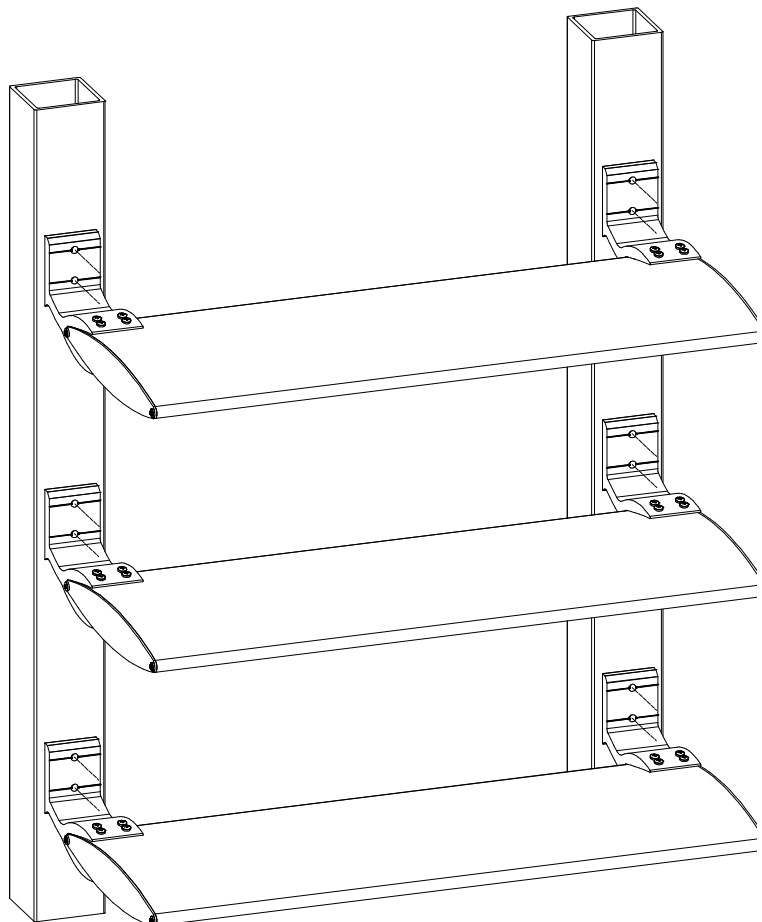
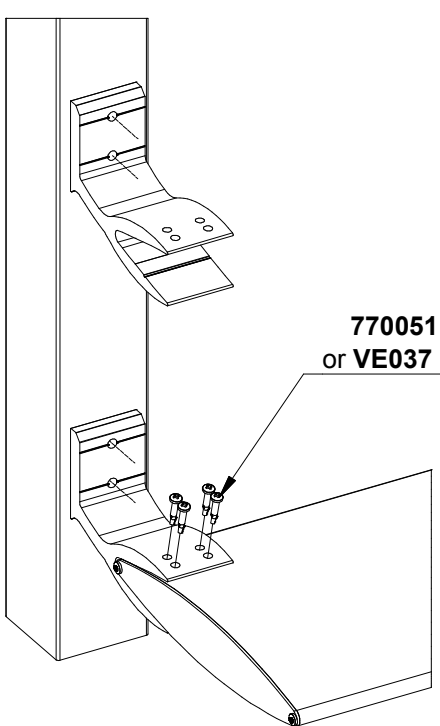
1. Fasten the clips along the support profile.



2. Assemble the end flanges on the blades.



3. Position the blades onto the clips, and fasten them using **770051** screws (120 mm and 180 mm blades) or **VE037** screws (240 and 270 mm blades).



Based on the distance between blades, accessibility to the screws may be limited. If so, be sure to mount the blades started with the bottom row.

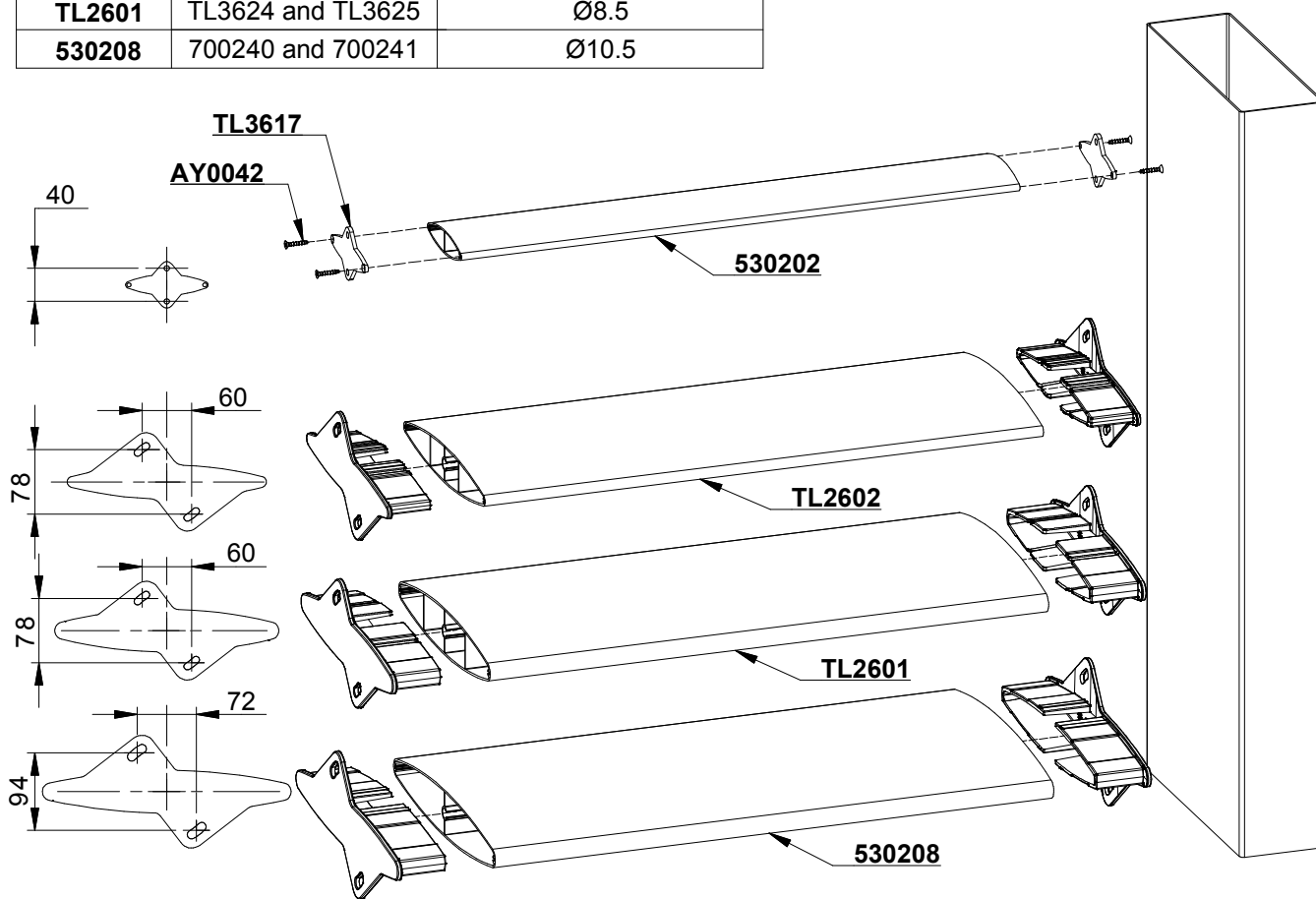
One-pieces blades

Manufacture of fixed one-piece blades between load-bearing walls

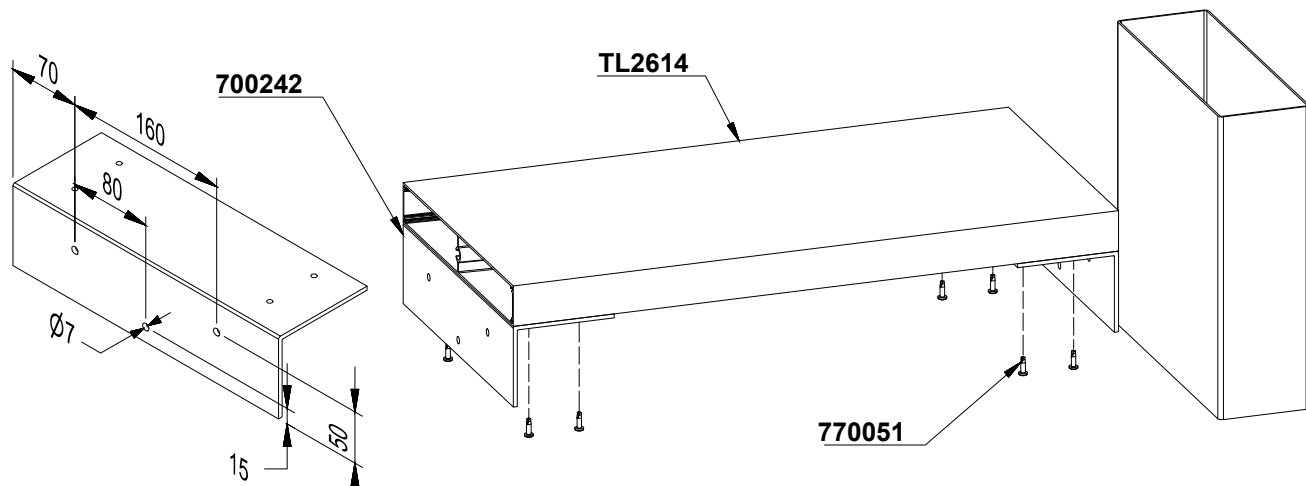
3 types of assembly :

■ WITH FLANGES OR BLOCKS : BLADES 530202, TL2602, TL2 601 AND 530208

Blade	End part	Ø hole for attachment onto load-bearing wall (in mm)
530202	TL3617	Ø6.5
TL2602	TL3622 and TL3623	Ø8.5
TL2601	TL3624 and TL3625	Ø8.5
530208	700240 and 700241	Ø10.5



■ WITH CLEATS : BLADE TL2614

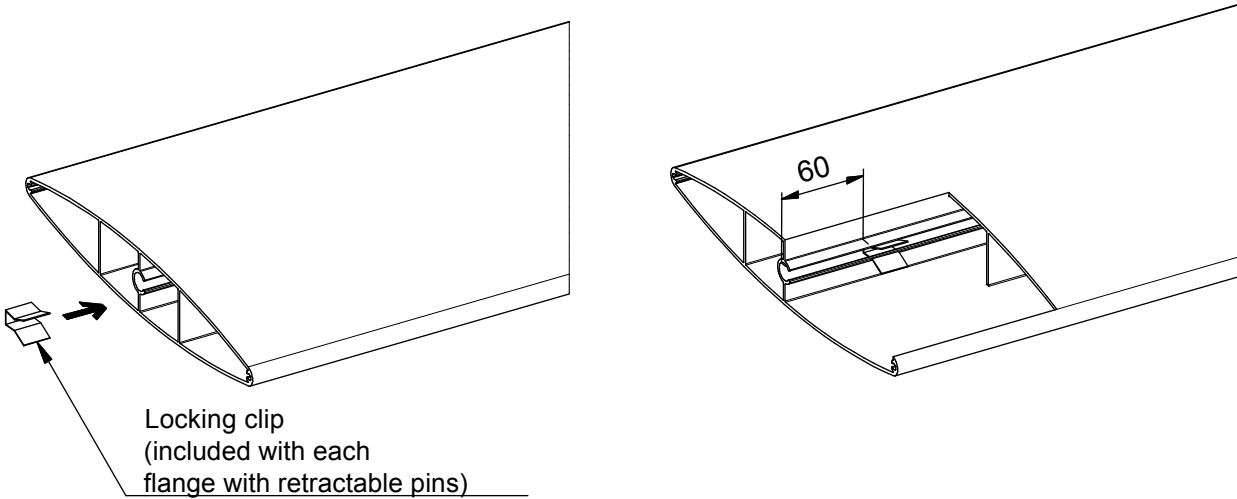


One-pieces blades

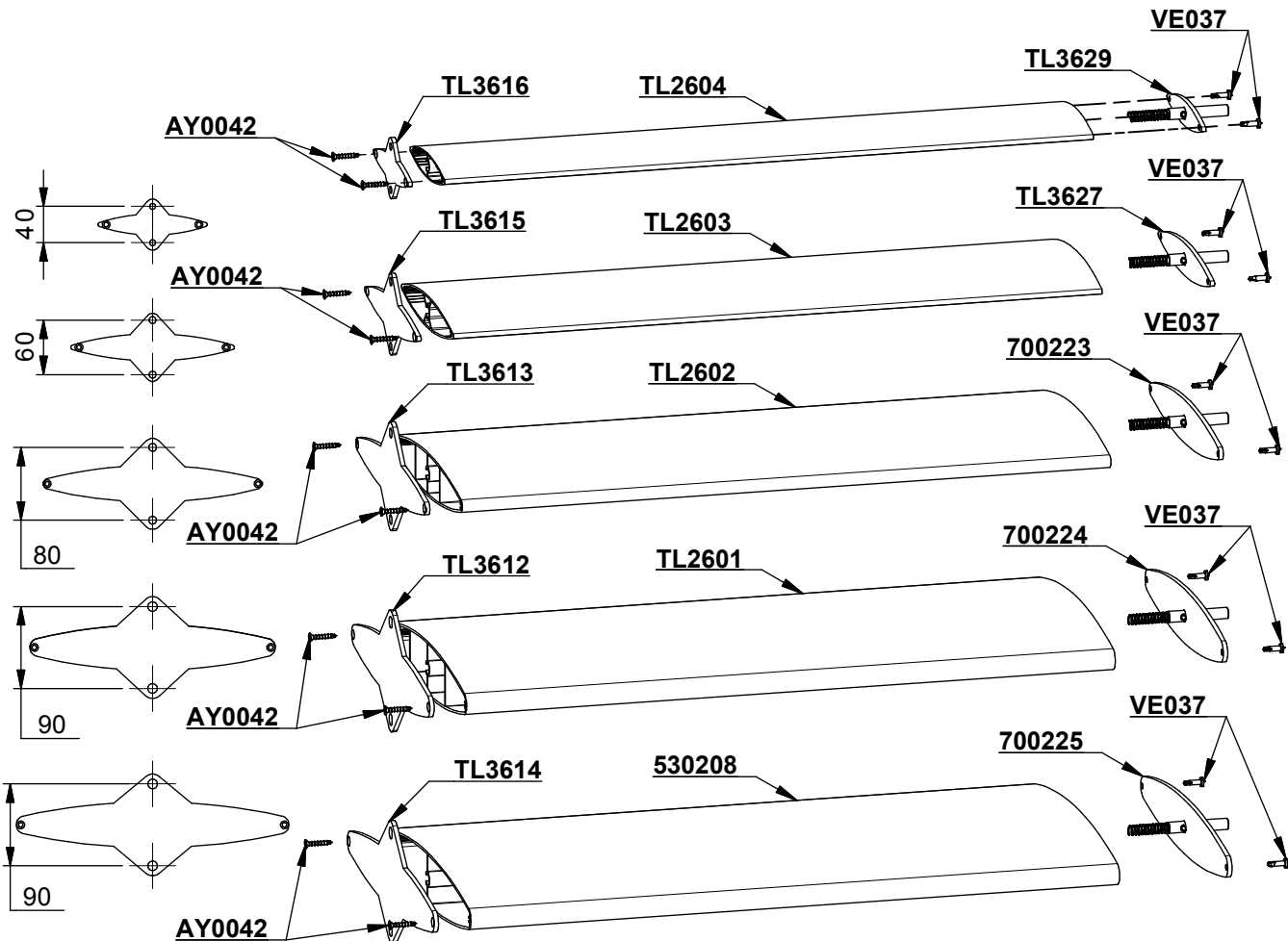
Manufacture of fixed one-piece blades between load-bearing walls

■ AVEC FLANGES AND FLANGES WITH RETRACTABLE PINS : BLADES TL2604, TL2603
TL2602, TL2601 AND 530208

1. Position a locking clip in the blade, at the end where the flange with retractable pins will attach.



2. Screw the flanges to the ends of the blade. Balance the screws on the flanges with retractable pins.



One-pieces blades

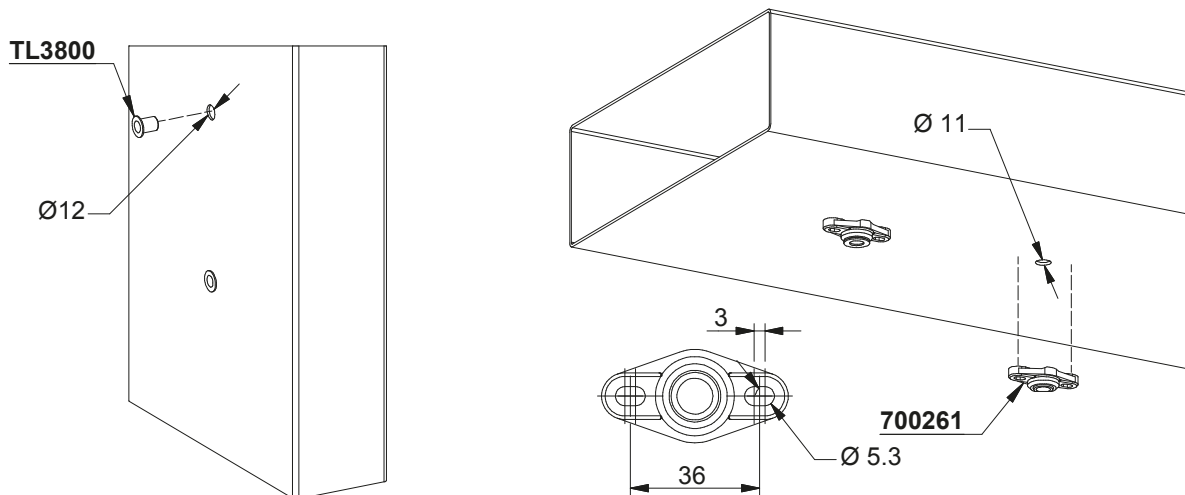
Assembly of one-piece blades between load-bearing walls

Assembly sequence :

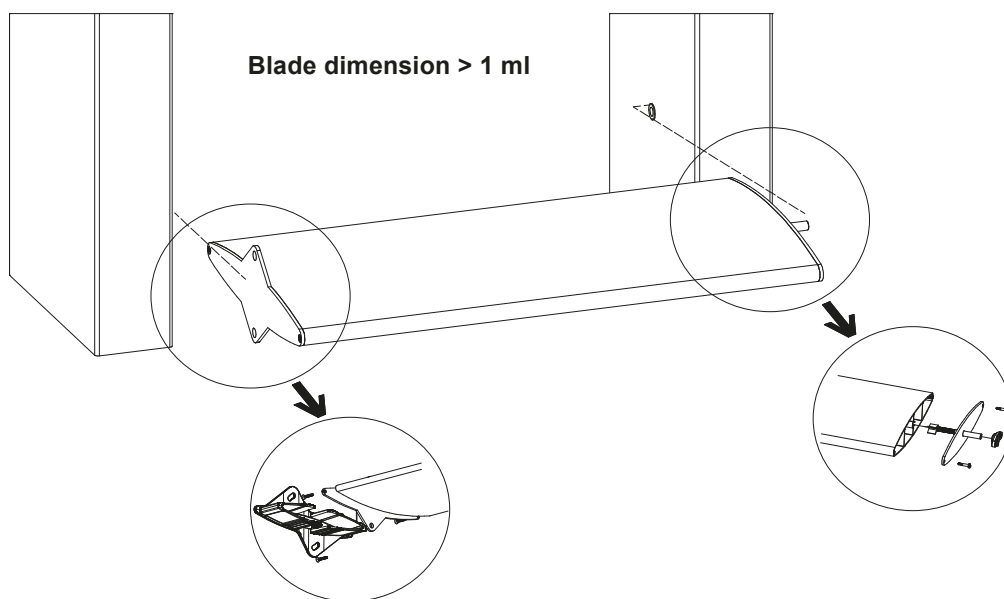
1. Machine the load-bearing wall to accommodate the flanges with pins and attach the bearings according to the chosen blade configuration (horizontal or vertical blades)

Horizontal configuration : holes $\varnothing 12$ + bearings **TL3800**

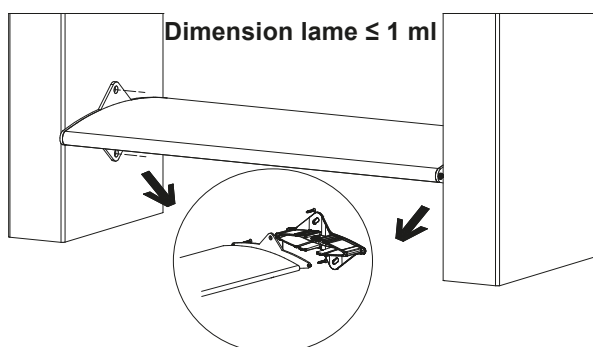
Vertical configuration : holes $\varnothing 11$ + bearings **700261**



2. Hold down the flange's retractable pins so that the blade can be inserted between the supports and insert the pin into the bearing. (It's recommended to use a plug with retractable pin on a side for blade > 1 ml and add 1 mm/ml for the expansion)



3. Finish attaching the blade between the flange and the other load-bearing wall.



End frange	\varnothing hole for attachment onto load-bearing wall (in mm)
TL3616	$\varnothing 6.5$
TL3615	$\varnothing 7.5$
TL3613	$\varnothing 8.5$
TL3612	$\varnothing 10.5$
TL3614	$\varnothing 10.5$



Always check that the axis of the blade is inserted into the bearing **TL3800** or **T700261**. It is a safe room for the view of the blade.

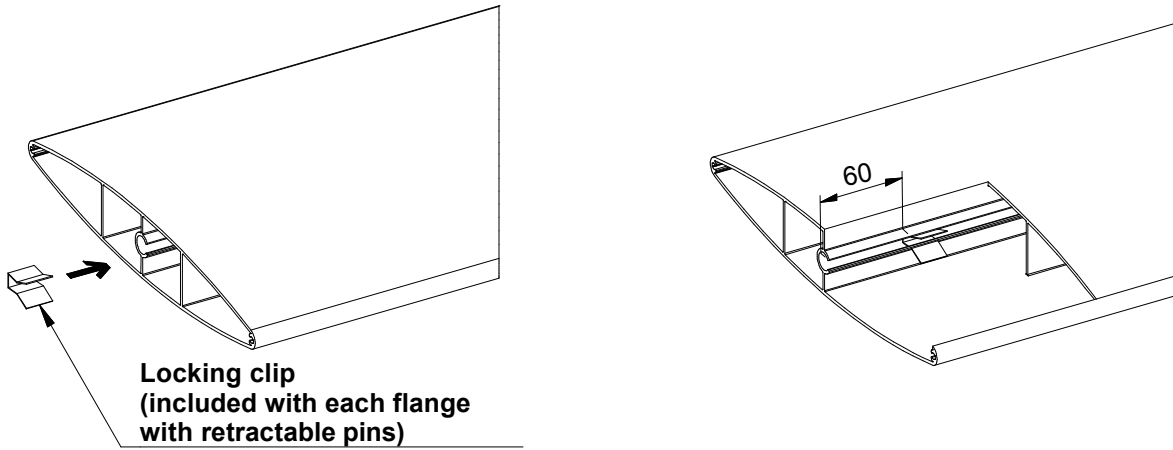
One-pieces blades

Manufacture of movable one-piece blades

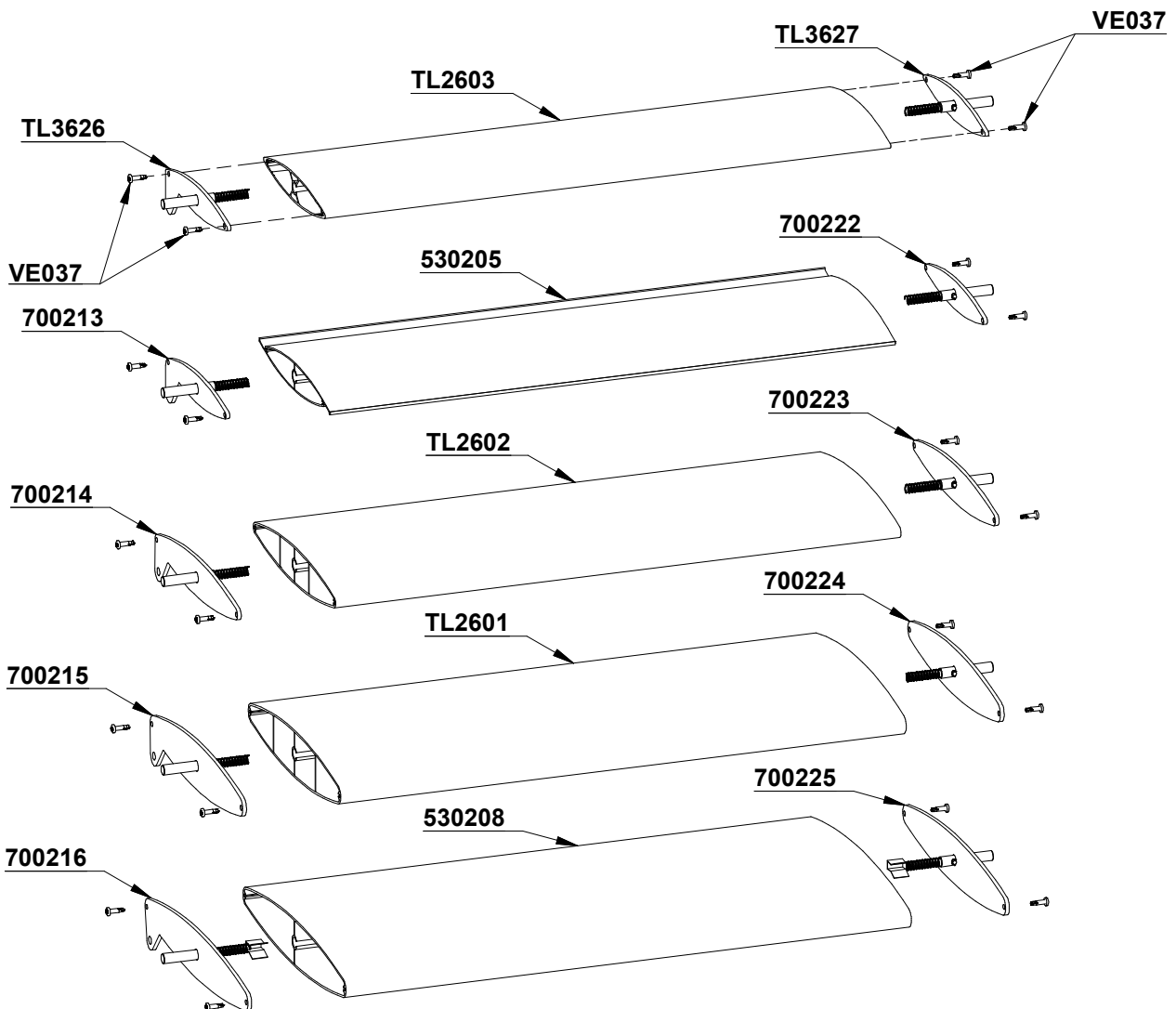
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Note : Manufacturing one-piece movable blades is the same for horizontal and vertical blade configurations.

1. Position a locking clip at each end of the blade.



2. Screw the flanges into the ends of the blade, with a flange at one end with a retractable lug and a flange at the other end with a simple retractable pin. Balance the screws on all flanges.



One-pieces blades

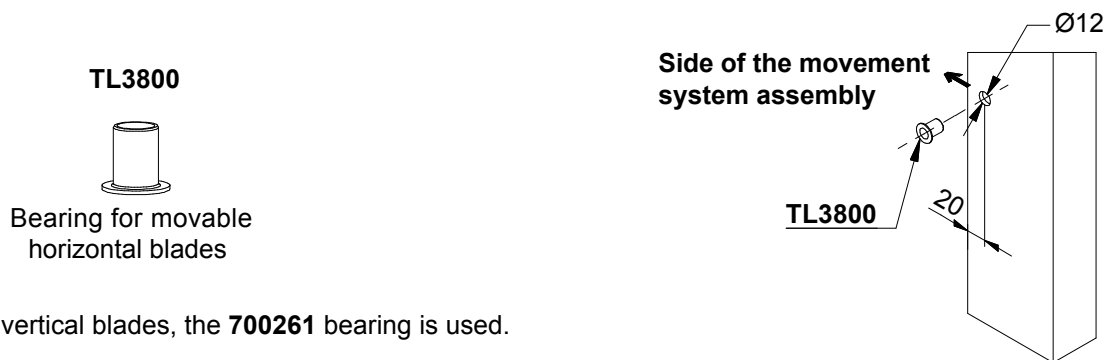
Assembly of movable horizontal one-piece blades with motorised direction

Assembly sequence :

1. Attach the flanges to the blades, as explained earlier.

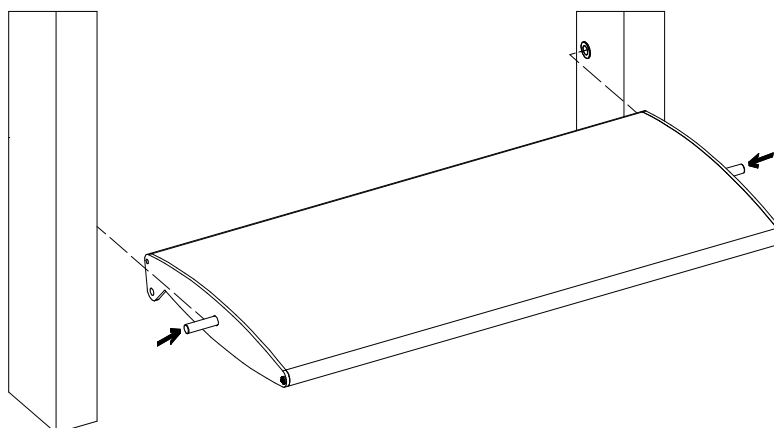
Note : Every blade is equipped with one plug, positioned at the side of the rod.

2. Perçer des trous de Ø12 dans les porteurs et y insérer les paliers TL3800.

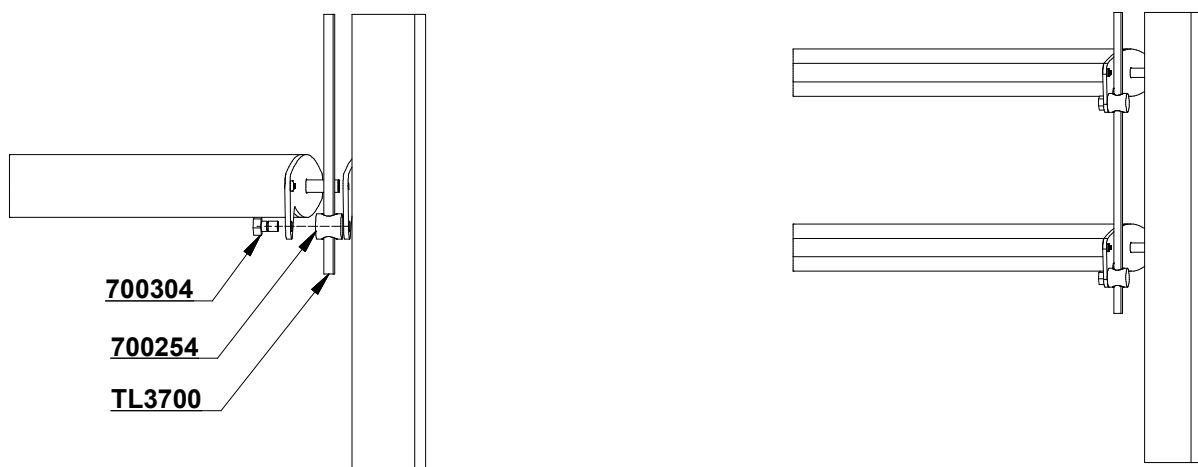


Note : For vertical blades, the **700261** bearing is used.

3. Hold down the retractable pins on the blade to insert it into the bearings.



4. Slide the eyelets onto the rod, and then attach them to the plugs using securing eye screws.



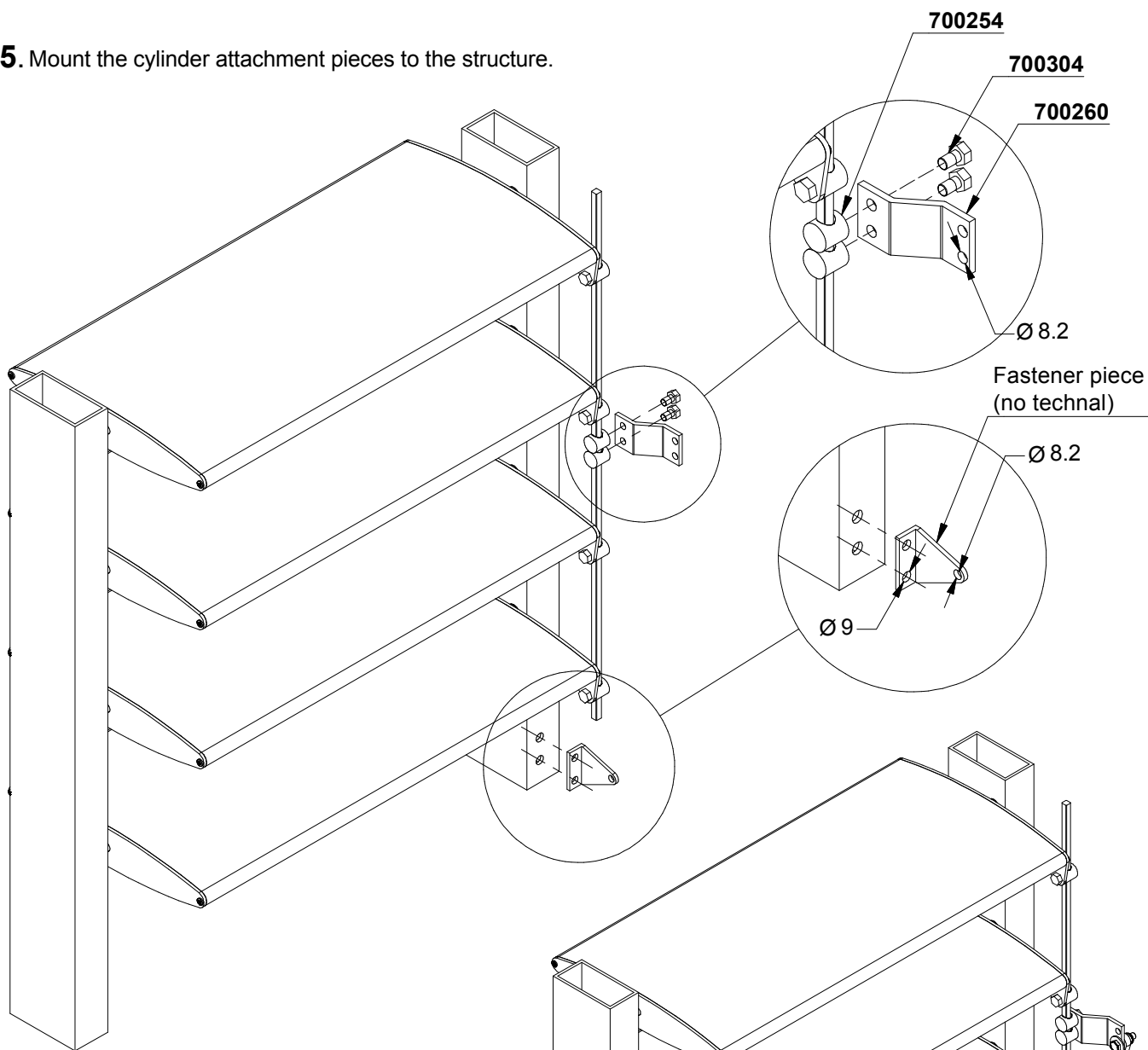
Note : Remember to slide the two securing eye screws, which are needed to hold the cylinder attachment piece.

One-pieces blades

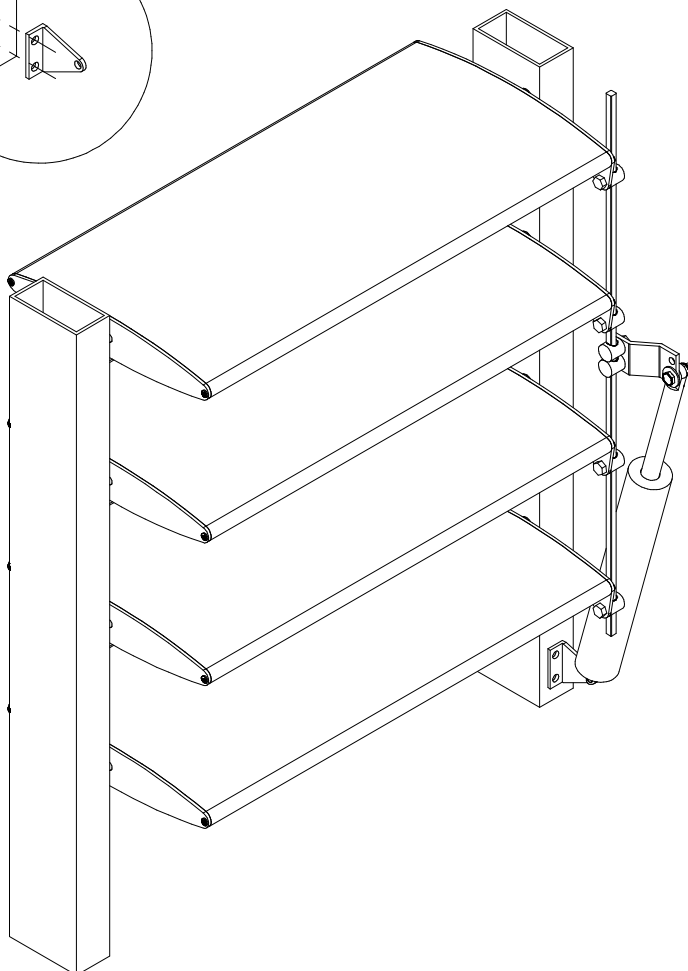
Assembly of movable horizontal one-piece blades with motorised direction

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5. Mount the cylinder attachment pieces to the structure.



6. Put the cylinder in place.



One-pieces blades

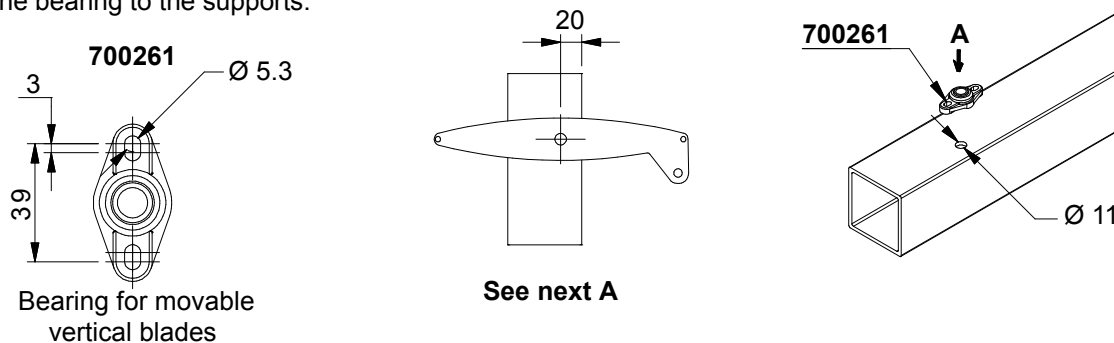
Assembly of movable vertical one-piece blades with manual direction

Assembly sequence :

1. Attach the flanges to the blades, as explained earlier.

Note : Every blade comes with a plug, positioning on the same side for all blades.

2. Attach the bearing to the supports.

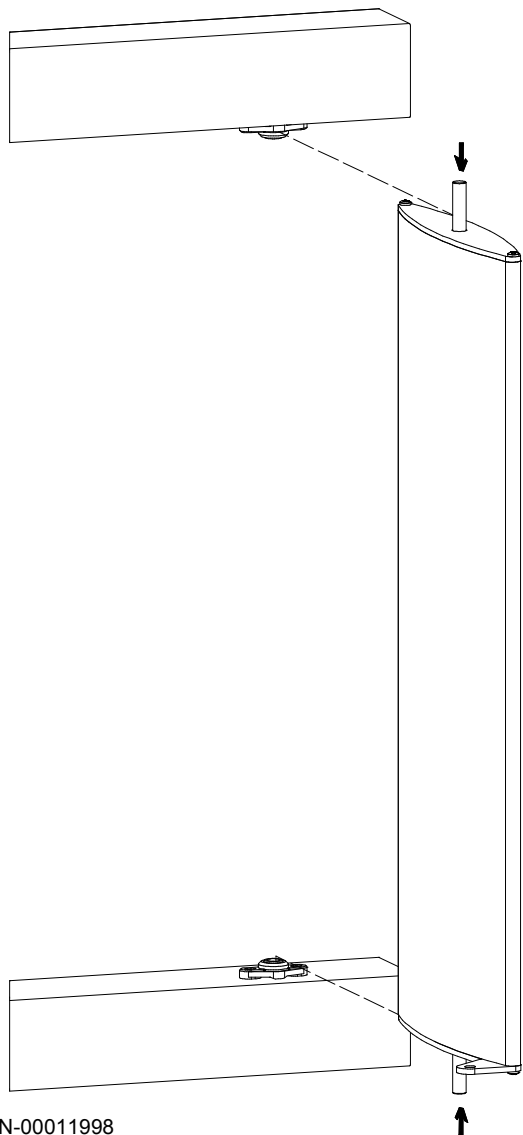


See next A

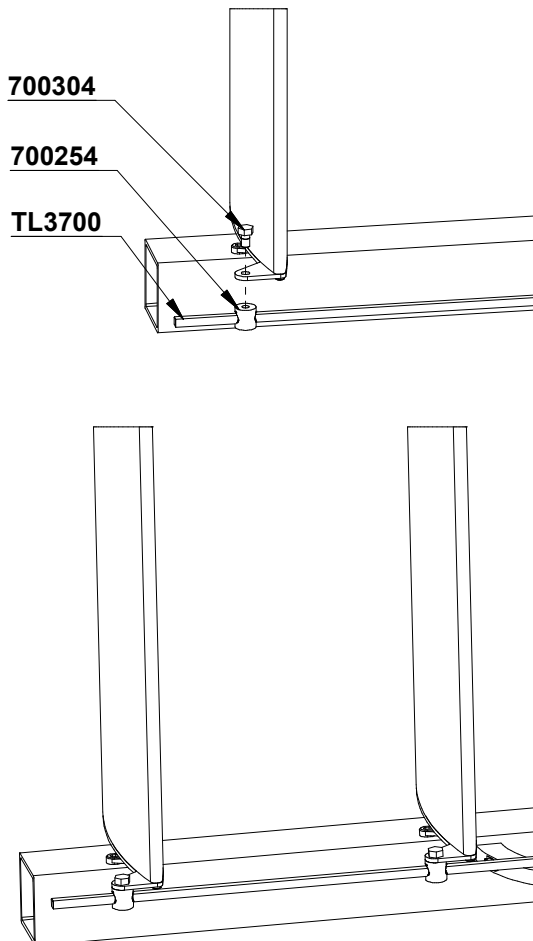
Note : For horizontal blades, the **TL3800** bearing is used.

3. Hold down the retractable pins on the blade to insert it into the bearings.

4. Slide the eyelets onto the rod, and then attach them to the plugs using securing eye screws..



CON-00011998



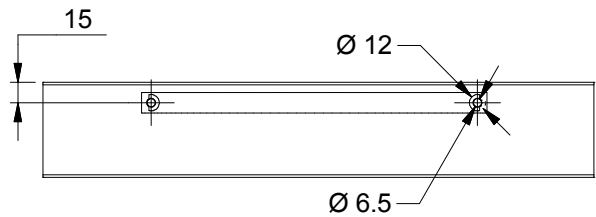
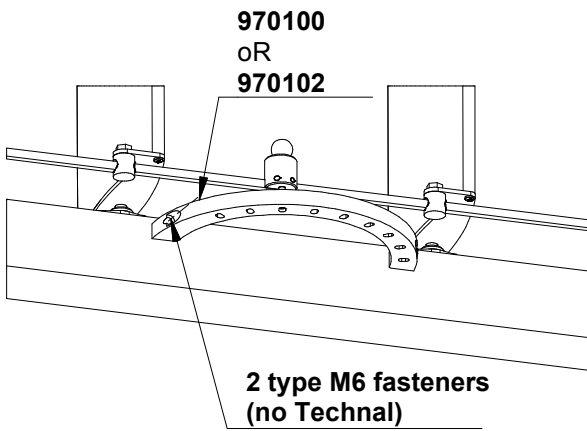
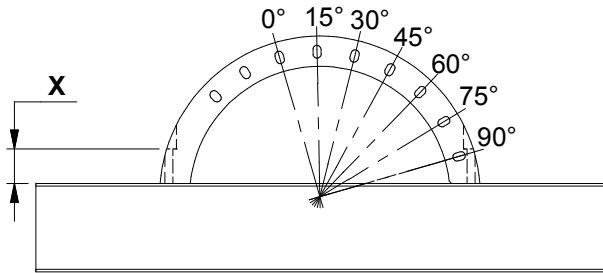
One-pieces blades

Assembly of movable vertical one-piece blades with manual direction

TECHNAL®

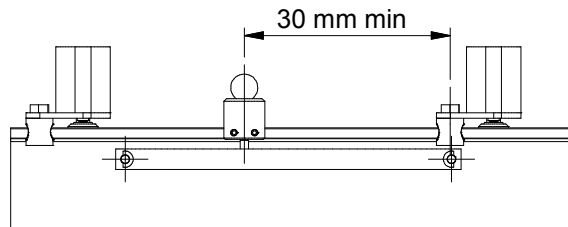
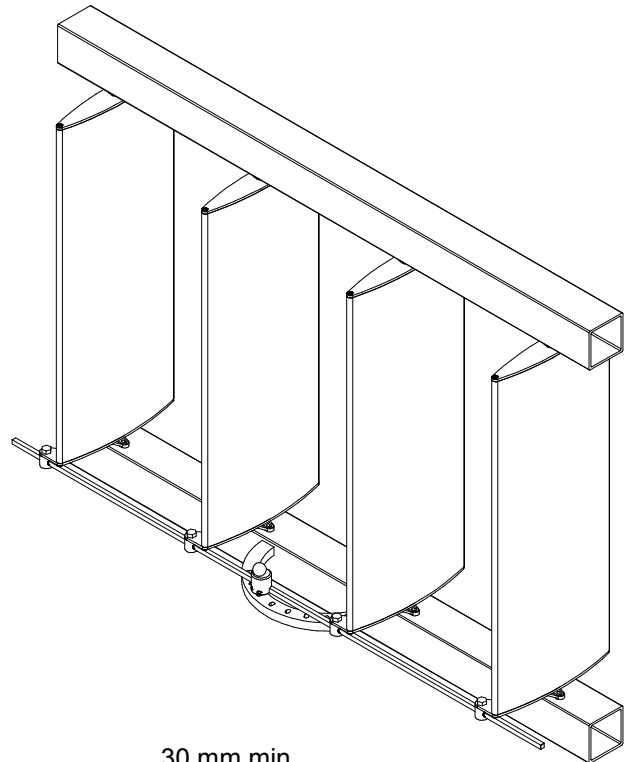
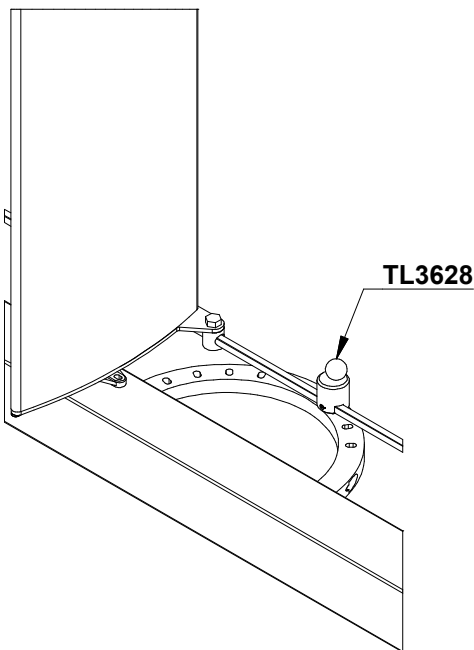
5. Attach the arc to the support on the side of the rod.

Blade	Arc	X (in mm)
TL2603 and 530205	970100	21
TL2602	970102	27.6



6. Place the spring index on the rod and tighten the three pressure screws.

Note : These screws are coated with threadlock.



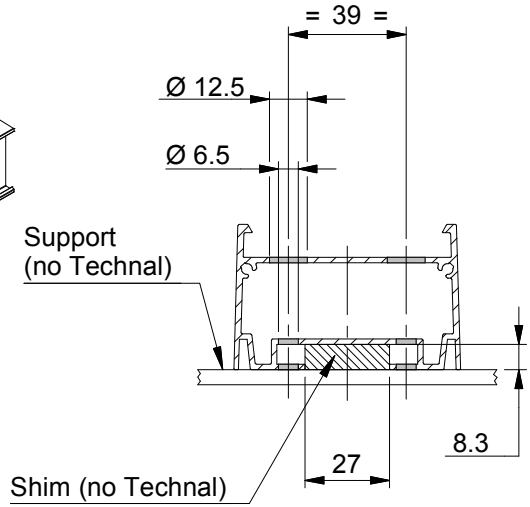
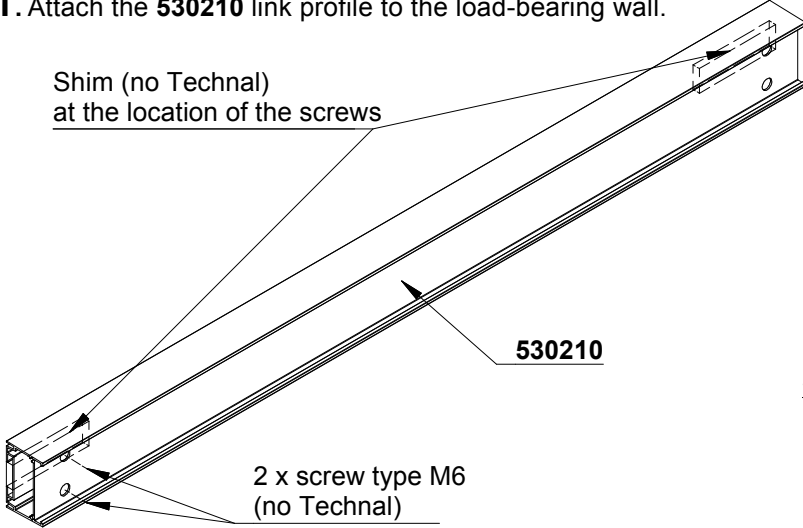
Composite blades

Assembly of semi-elliptical blades on an independent structure

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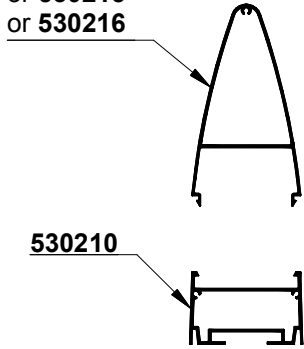
Assembly sequence :

1. Attach the **530210** link profile to the load-bearing wall.

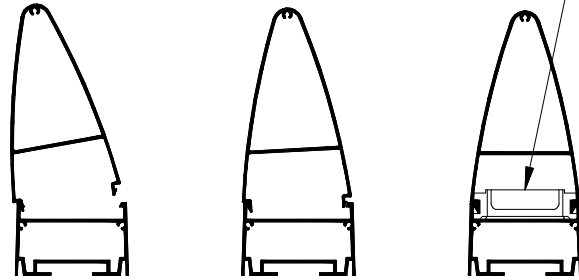


2. Clip the semi-elliptical blade profile to the link profile, and clip-locking blocks **700257** (1 block at each end + 1 block every 3 meters).

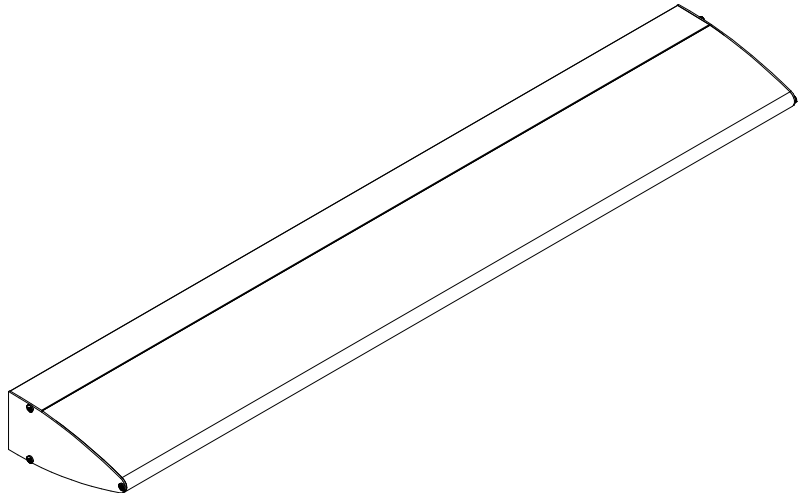
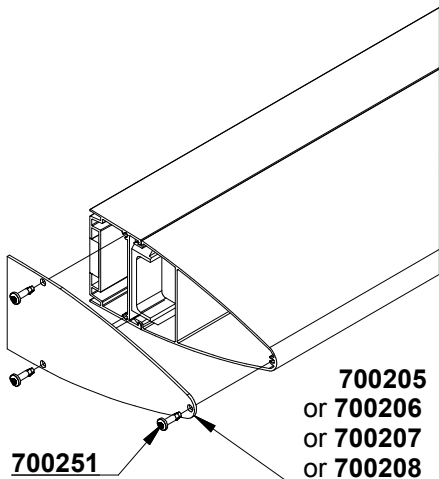
530213
or **530214**
or **530215**
or **530216**



700257
(1 shim at each end + 1 shim every 3 meters)



3. Attach a flange to each end of the blade using **770051** screws.

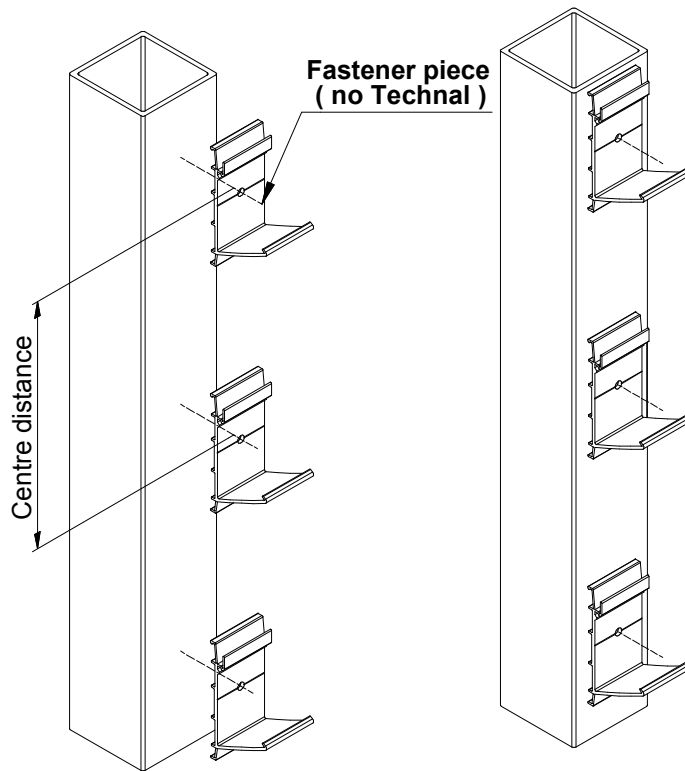
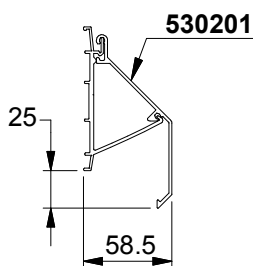
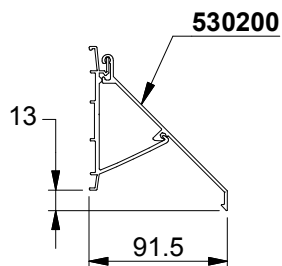
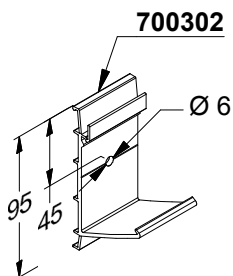


Louvers

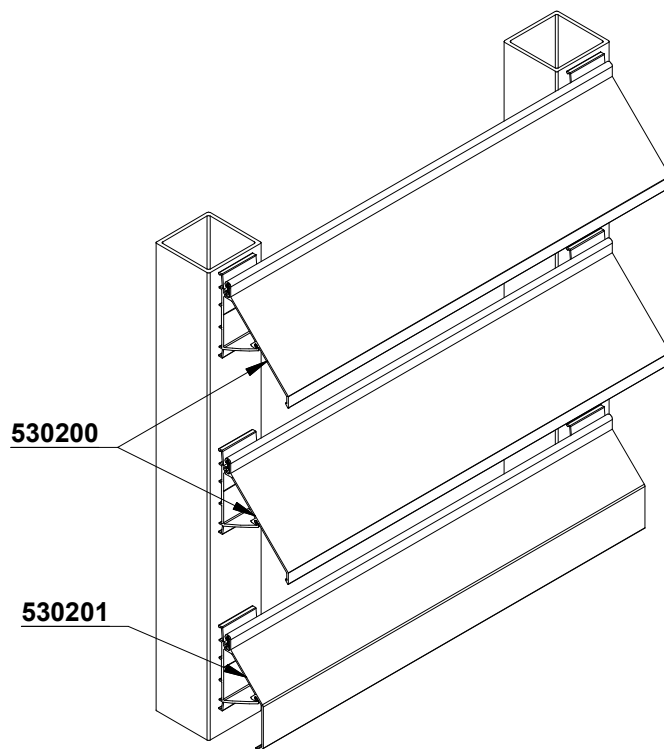
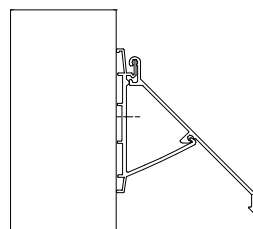
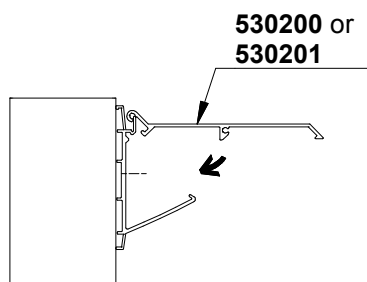
Assembly of louvers on an independent structure

Assembly sequence :

1. Screw **700302** clips to each support.



2. Clip the louver support.



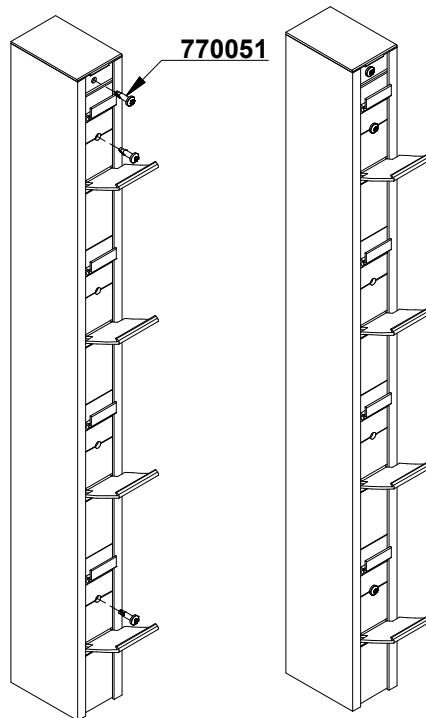
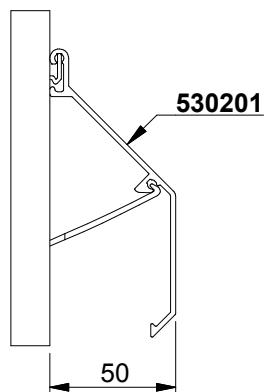
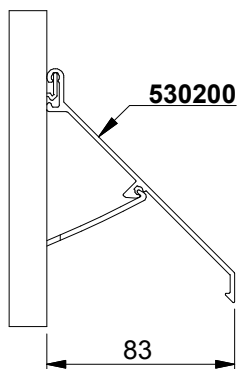
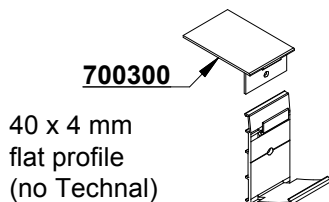
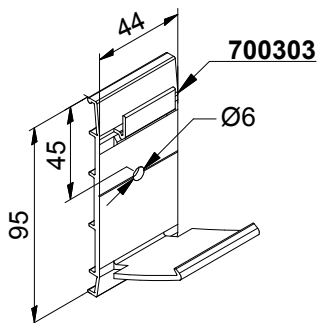
Louvers

Assembly of louvers on a supporting profile 530217

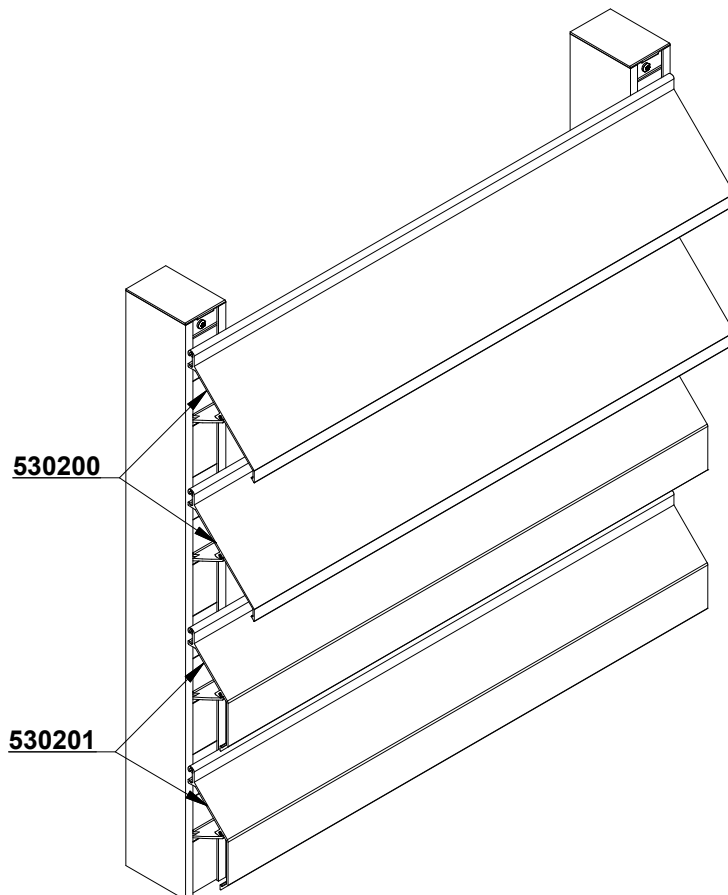
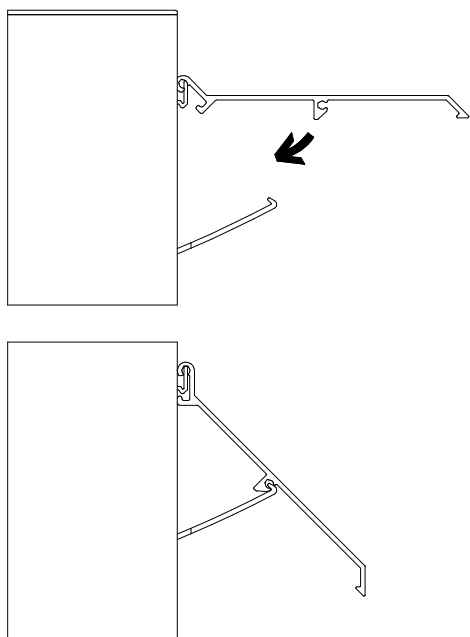
TECHNAL®

Assembly sequence :

1. Do the assembling on the supporting profile **530217** by alternating a **700303** clip with a piece of 40 x 4 mm flat profile. Finalize the mullion assembling with a **700300** end plug in top position, then fasten the last one and clips to the ends with the **770051** screws.



2. Clip the louver support.



Summary modifications

Version	Description	Date
004	<ul style="list-style-type: none"> - Modification dimensions : Pages 22 - 23 - 73 (see e>volution TL SUNEAL n°1 - 1 December 2013) - Modification blade dimension : Pages 38 - 40 - 42 - 44 (see e>volution TL SUNEAL n°1 - 2 / 1 - 3 December 2013) - Add advices for the installation : Page 83 (see e>volution TL SUNEAL n°1 - 4 December 2013) - Replacement of the blade profile 530209 by TL2614 - Replacement of the 700212 flange by TL3632 Pages 16 - 36 - 56 - 57 - 58 - 63 - 81 (see e>volution TL SUNEAL n°2 - 1 September 2014) - Deletion of the wedge profile 530218 : Pages 17 - 55 - 65 - 92 (see e>volution TL SUNEAL n°03 - November 2017) - Deletion of the cylinder/frame link piece 700259 : Pages 42 - 43 - 45 - 59 - 86 (see e>volution TL SUNEAL n°04 - November 2017) - Deletion of the protactor for blade 270 mm 970103 : Pages 38 - 39 - 40 - 41 - 61 - 88 (see e>volution TL SUNEAL n°05 - November 2017) 	11/2017



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