

Serrande in alluminio di regolazione ed espulsione aria.

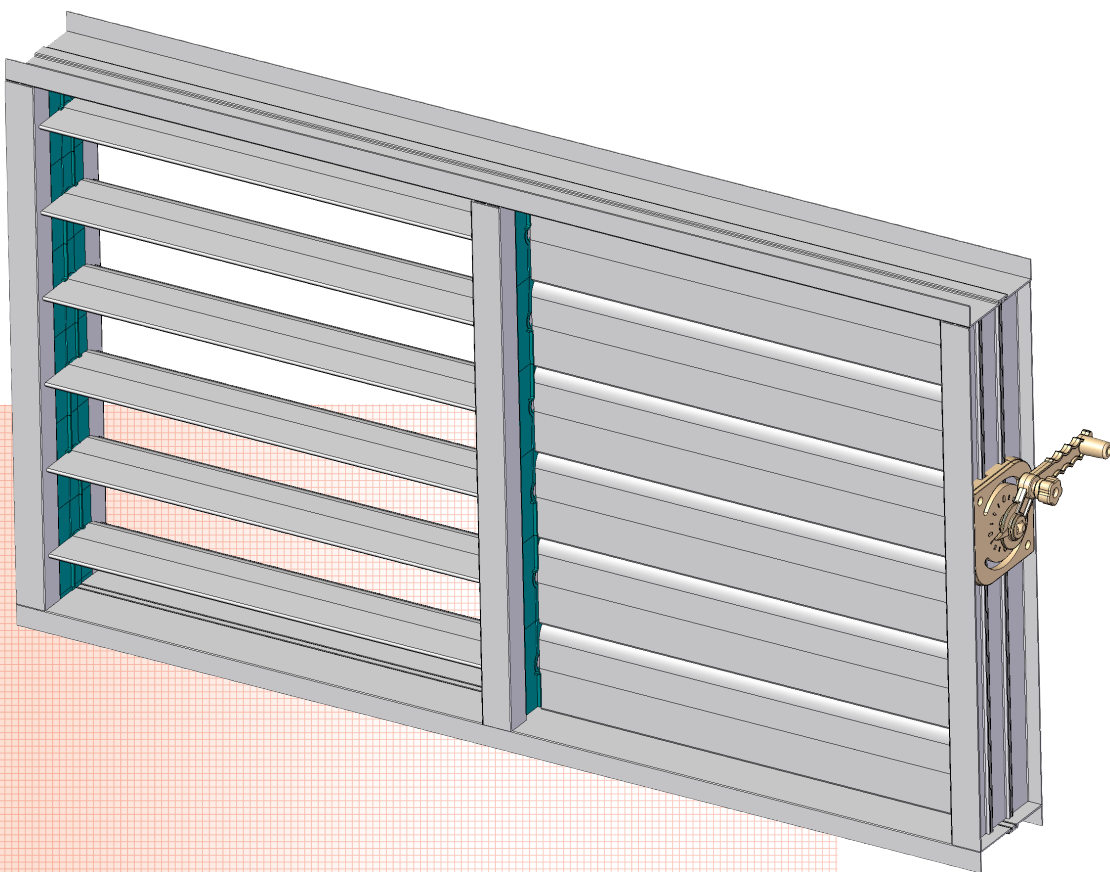
Aluminium overpressure and airflow regulation dampers.

Volets an alu pour la régulation et l'expulsion de l'air.

Compuertas de sobrepresión y de regulación de aire en aluminio.

Aluminiumdämpfer.

铝闸。



Sezione  
Section  
Section  
Sección  
Teil  
第07号

07

This section deals with positive air pressure dampers and single/double dampers.

The overpressure damper has a solid aluminium frame that is assembled by connecting the profiles to die-cast aluminium corners, meanwhile the nylon spacers determine the blade position. This system is quick to assemble and avoid any kind of drilling thanks to nylon spacers that determine the position of the blades. The blades shape work as a barrier itself that always let the inner side completely separated from the outer one and the water is always kept outside the unit.

The 100 mm and 50 mm pitch damper is entirely made of aluminium profiles with nylon accessories reinforced in fiberglass.

The predominant characteristic is the assembly method which is extremely simple and fast. The blades of this damper are controlled by nylon gears that are spaced out by a nylon spacer. This means that the damper's frame does not need drilling to make holes for the blades' pins because distance and position are automatically determined by nylon spacers.

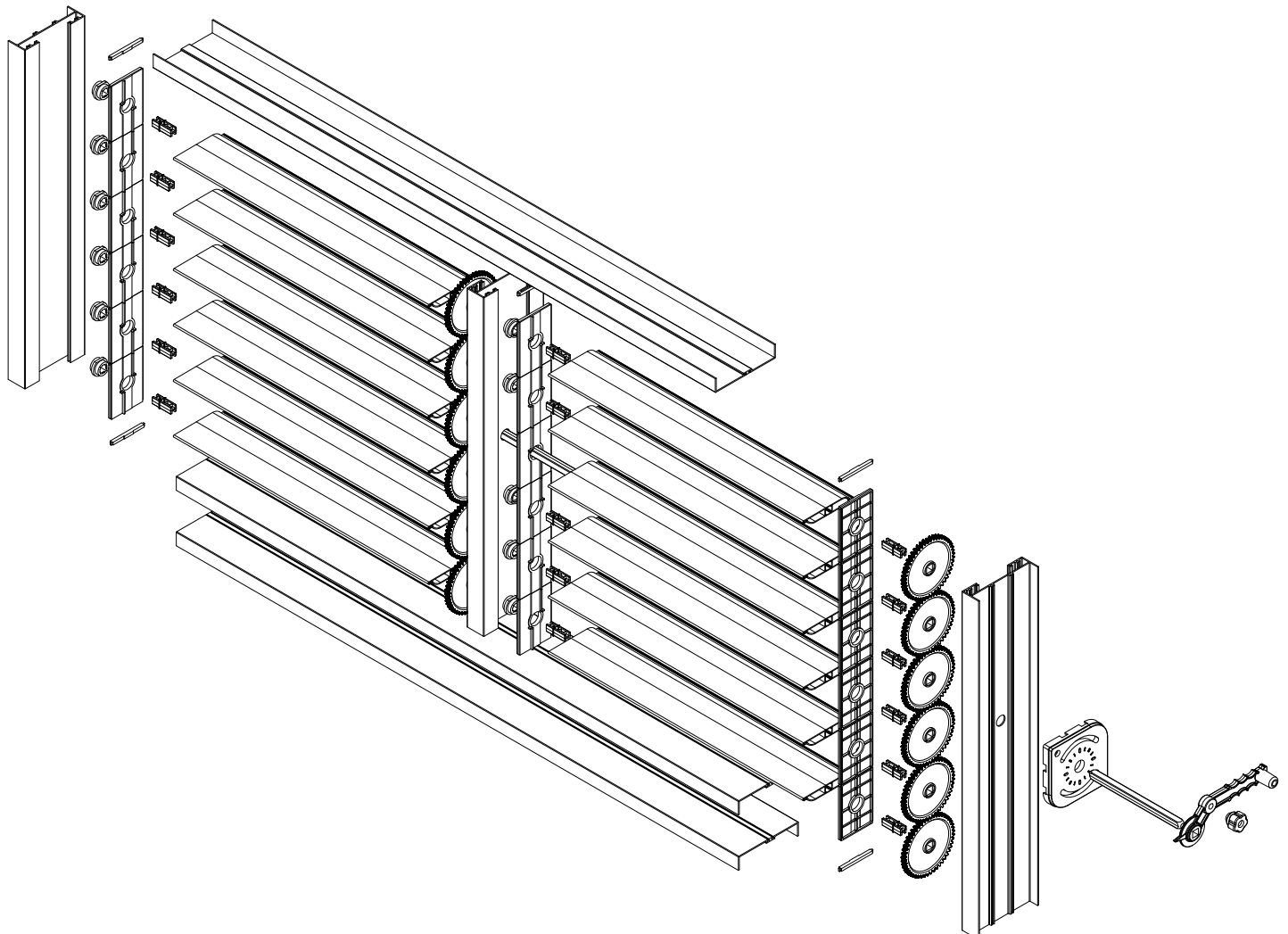
This damper is light, as it is made of aluminium, and yet extremely strong because of its carefully-engineered design.

Double dampers can be equipped with intermediate support profiles in order to give more strength to the whole structure. The dampers can also be assembled with a closed side and an open side when two different airflows are required.

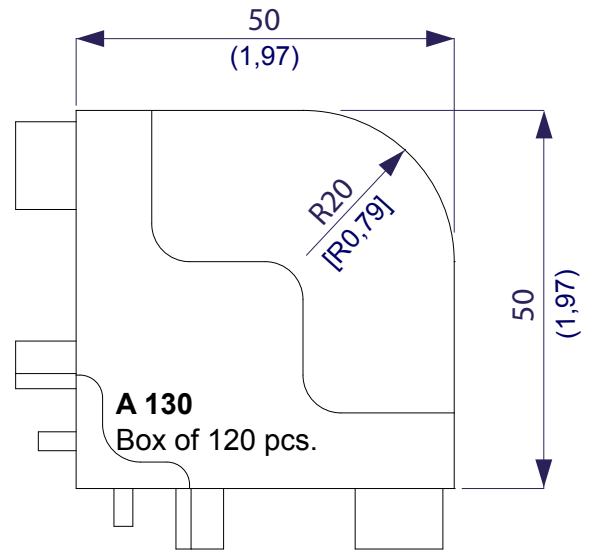
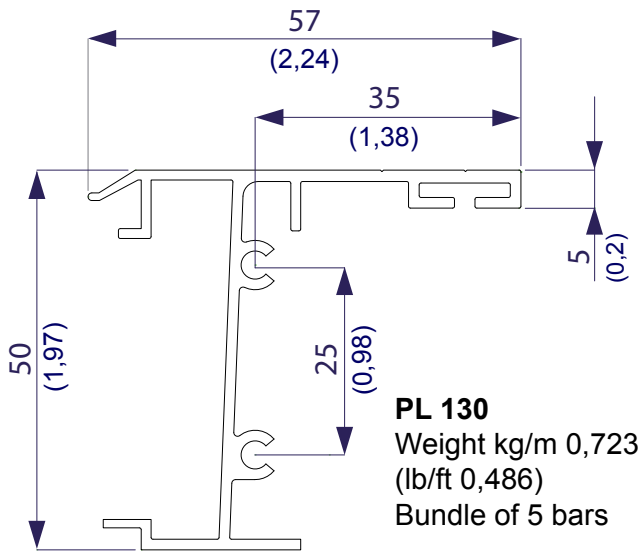
These dampers can be controlled by hand with an aluminium/galvanized steel/nylon handle or by electrical motor with aluminium pin.

The damper's tightness is enhanced by gaskets inserted in the blades and gaskets inserted in the frame.

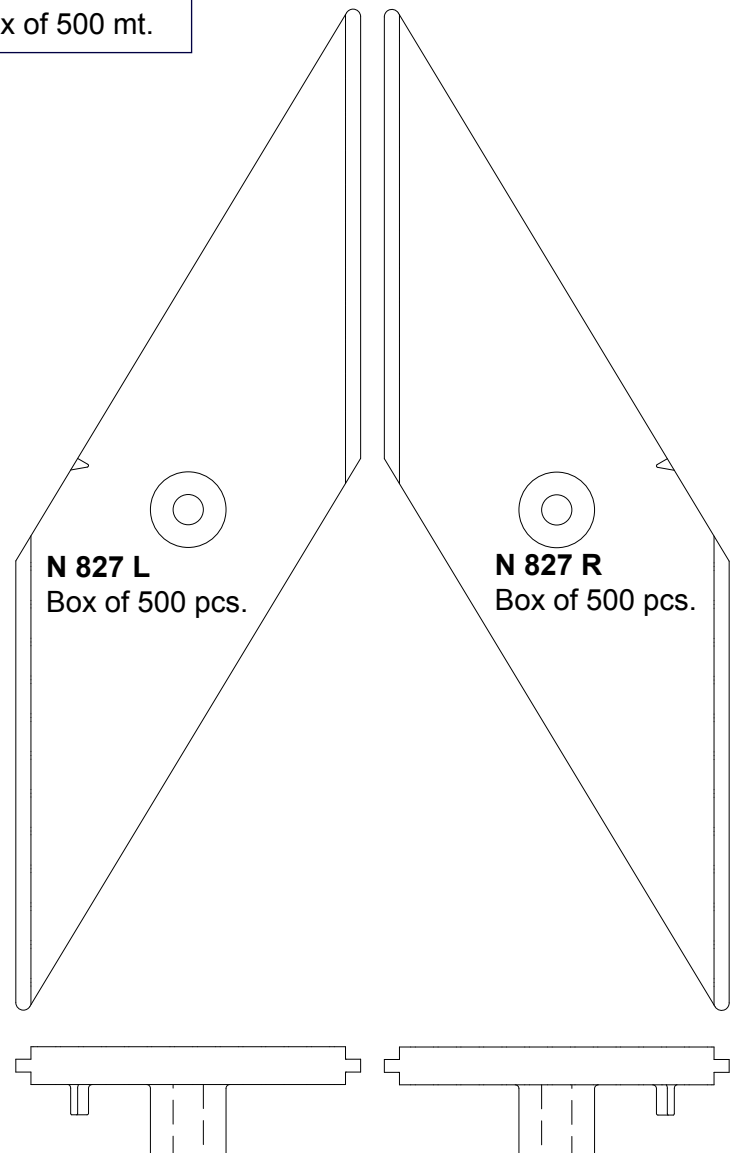
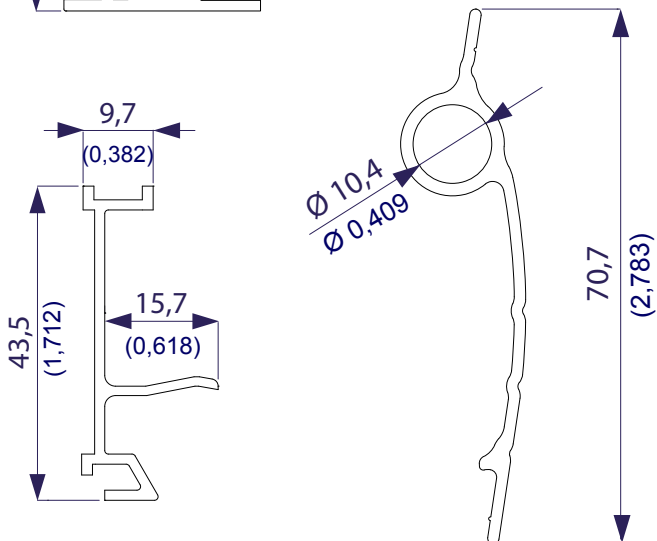
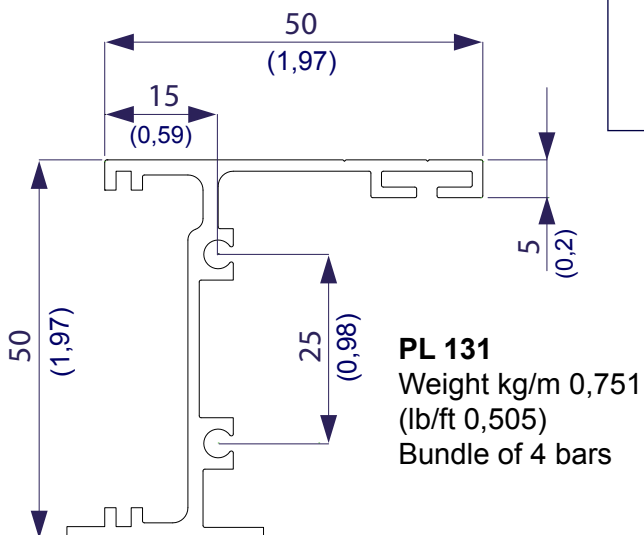
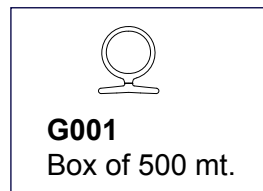
This section contains assembly instruction for the damper together with a table for calculating optimum weight to size ratio for dampers of standard dimensions.



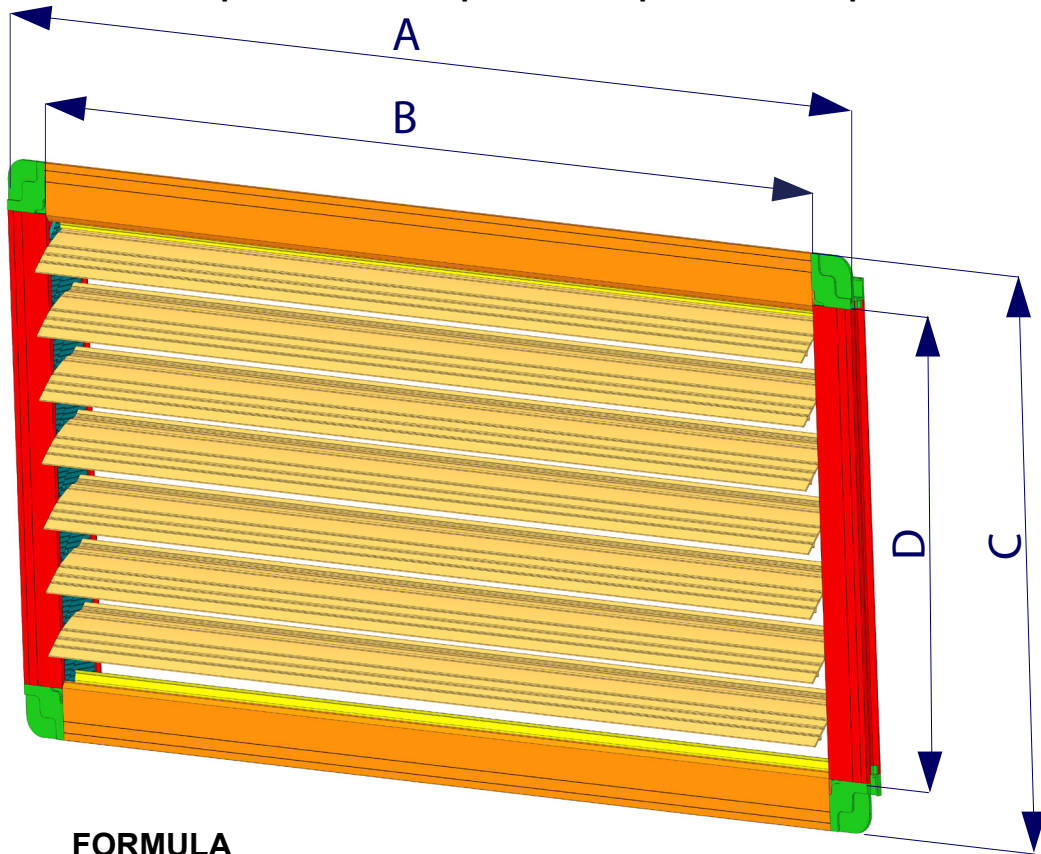
Profiles and accessories for positive air pressure damper



GASKET



**3D representation of positive air pressure damper**



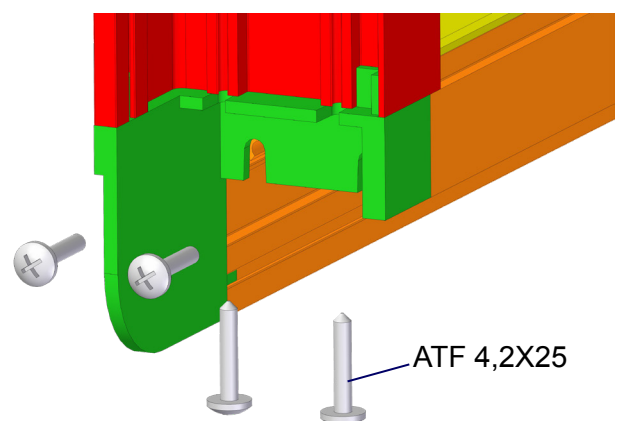
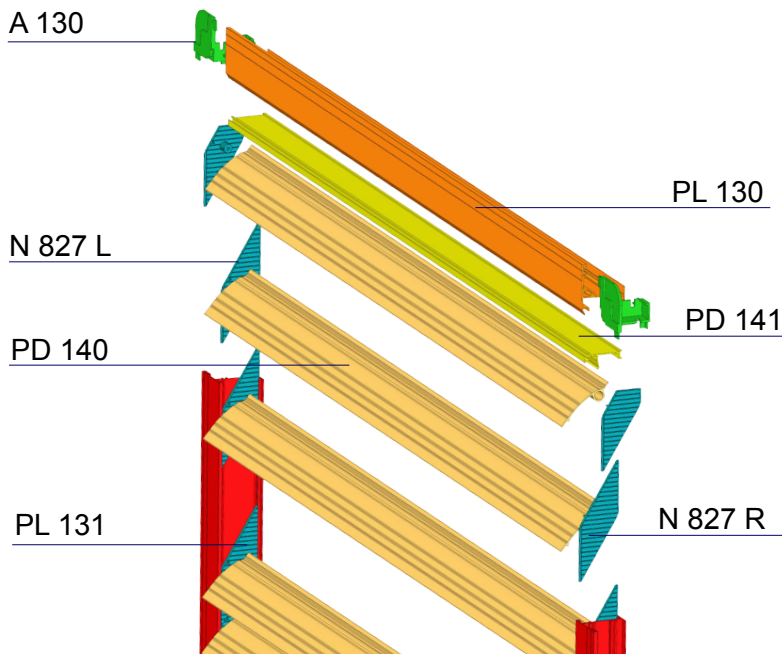
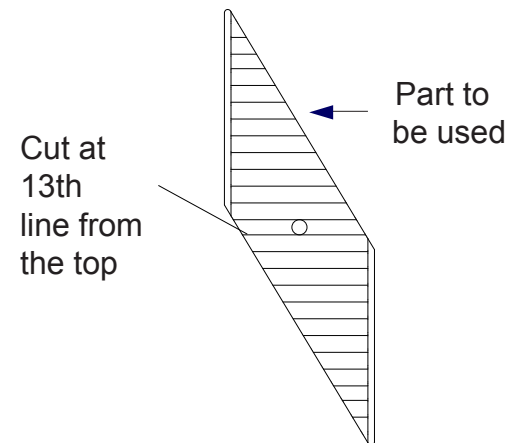
**FORMULA**

$B \text{ (PL 130 / PD 141)} = A - 100$   
 $D \text{ (PL 131)} = C - 100$   
 Length of blades (PD 140) =  $A - 102$   
 $C = [(N^\circ \text{ blades} - 1) \times 62] + 164$

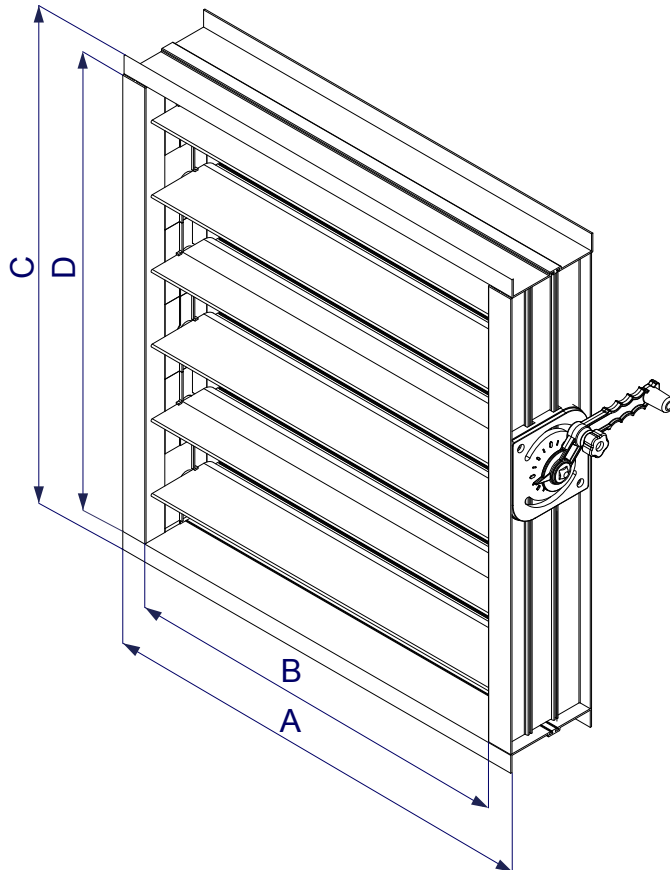
**DIRECT FORMULA**

Length of blades =  $(C - 100) : 62$   
 if decimal result  $>0,3$  add L-profile to avoid clearance

Cut of the spacer N 827 for placing the first blade



3D representation of single damper



FORMULA SINGLE DAMPER

STANDARD

$A = B + 70 \text{ mm}$

Length of BLADES =  $B - 3 \text{ mm}$

Length of BLADES NG007 A\_B =  $B - 10,5 \text{ mm}$

$C = D + 50 \text{ mm}$

$D = \text{See table below}$

LIGHT

$A = B + 60 \text{ mm}$

Length of BLADES =  $B - 3 \text{ mm}$

Length of BLADES NG007 A\_B =  $B - 10,5 \text{ mm}$

$C = D + 40 \text{ mm}$

$D = \text{See table below}$

REINFORCED

$A = B + 60 \text{ mm}$

Length of BLADES =  $B - 3 \text{ mm}$

Length of BLADES NG007 A\_B =  $B - 10,5 \text{ mm}$

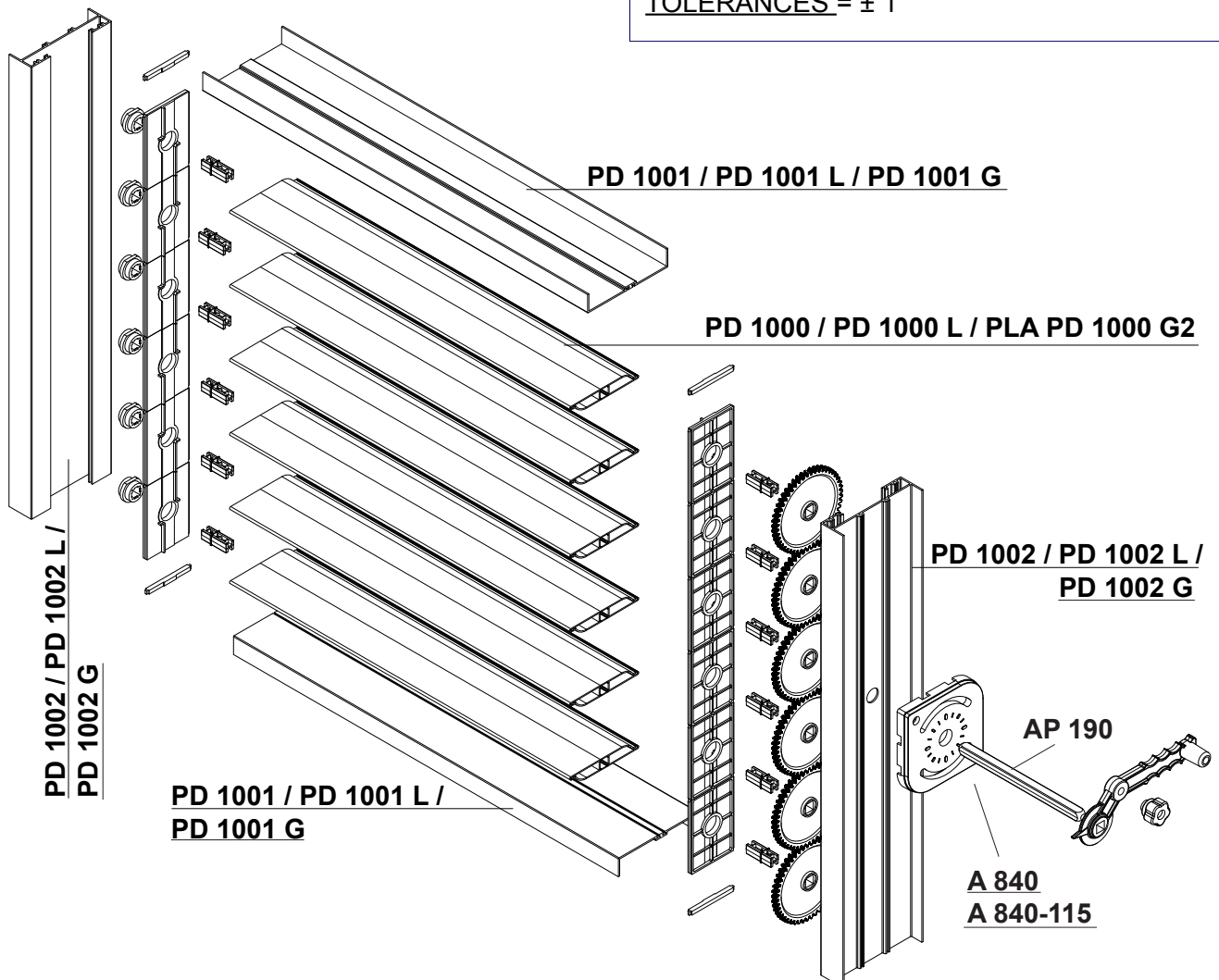
$C = D + 30 \text{ mm}$

$D = \text{See table below}$

**DIMENSION FOR PROFILE "D"**

$L = \text{N}^\circ \text{ blades} \times 100 \text{ mm} + 10 \text{ mm} + \text{TOLERANCES}$

TOLERANCES =  $\pm 1$



3D representation of double damper

DOUBLE DAMPER FORMULAS

STANDARD

$A = B + 70 \text{ mm}$

$B1 = B2 = (B - 35) / 2$

BLADE length =  $B1 - 3 \text{ mm} = B2 - 3 \text{ mm}$

BLADE length NG007 A\_B =  $B1 - 10.5 \text{ mm}$   
 $= B2 - 10.5 \text{ mm}$

$C = D + 50 \text{ mm}$

D = See table on page. 04

LIGHT

$A = B + 60 \text{ mm}$

BLADE length =  $B - 3 \text{ mm}$

BLADE length NG007 A\_B =  $B1 - 10.5 \text{ mm}$   
 $= B2 - 10.5 \text{ mm}$

$C = D + 40 \text{ mm}$

D = See table on page. 04

REINFORCED

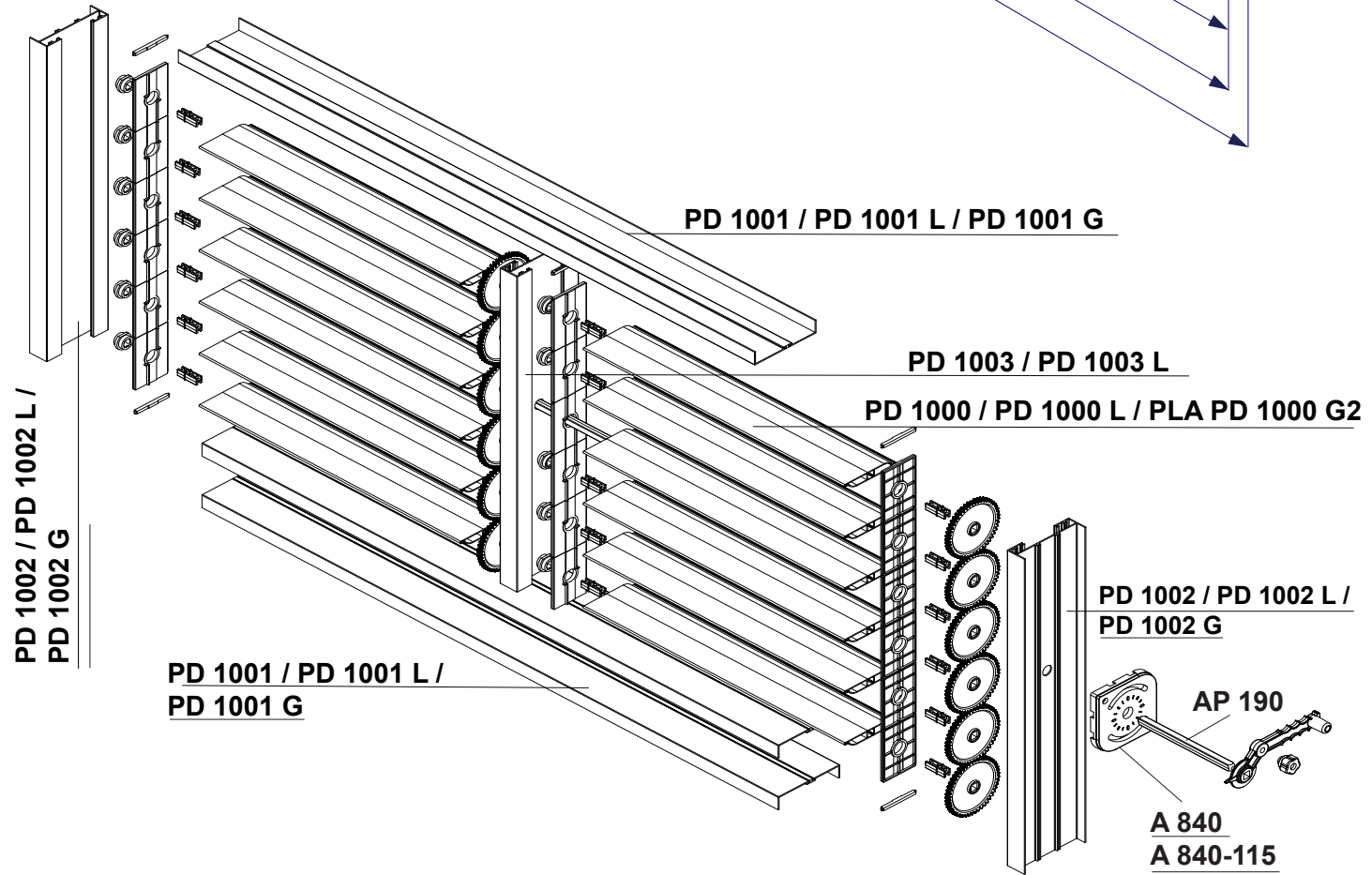
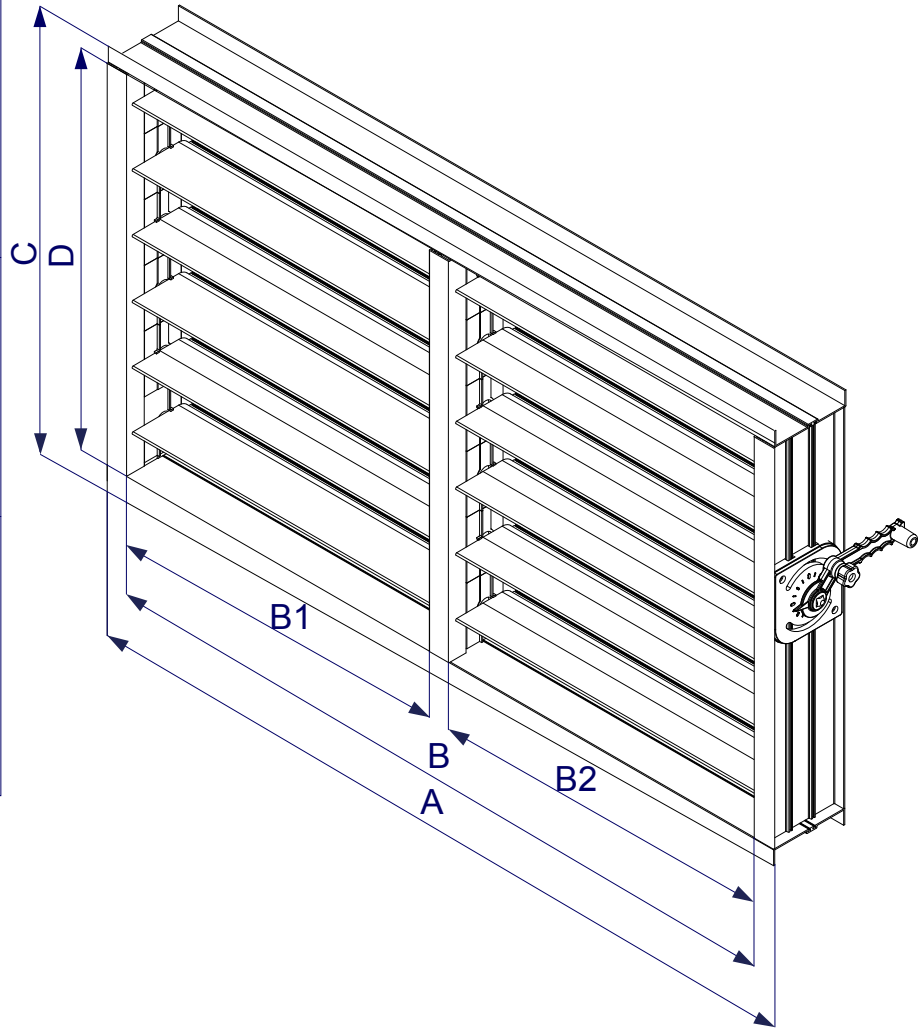
$A = B + 60 \text{ mm}$

BLADE length =  $B1 - 3 \text{ mm} = B2 - 3 \text{ mm}$

BLADE length NG007 A\_B =  $B1 - 10.5 \text{ mm}$   
 $= B2 - 10.5 \text{ mm}$

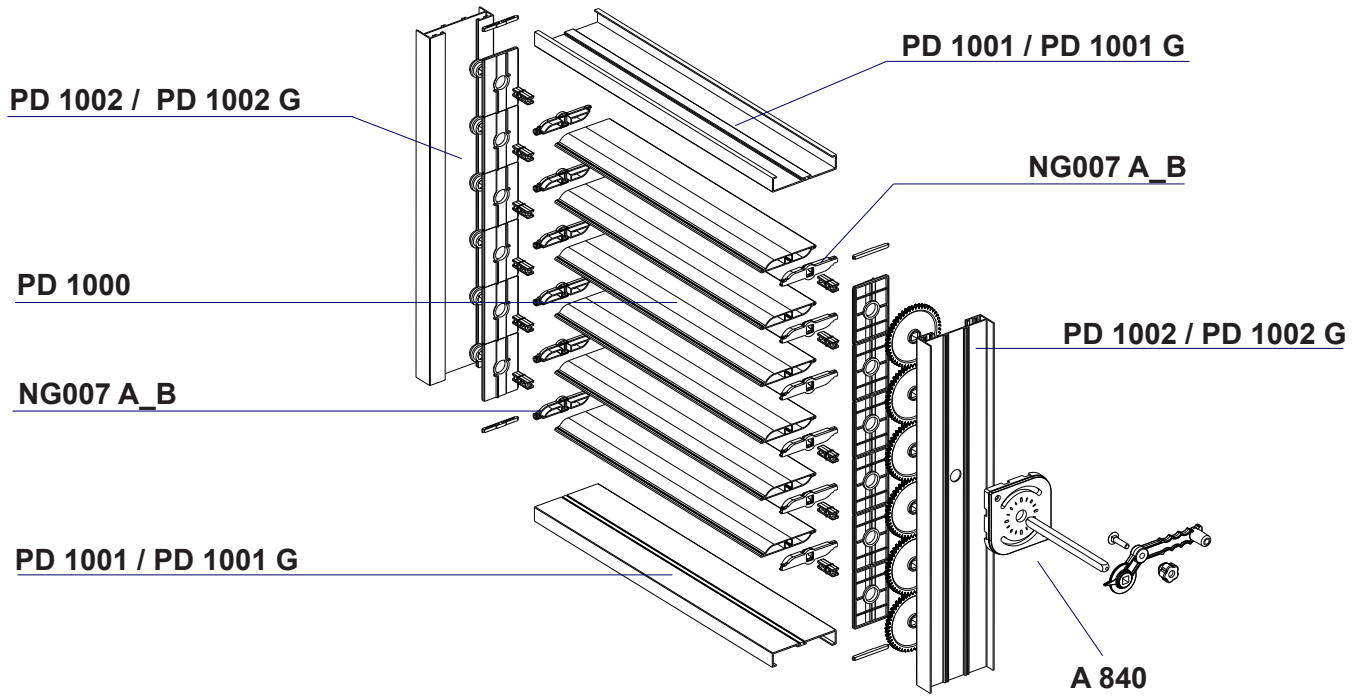
$C = D + 30 \text{ mm}$

D = See table on page. 04

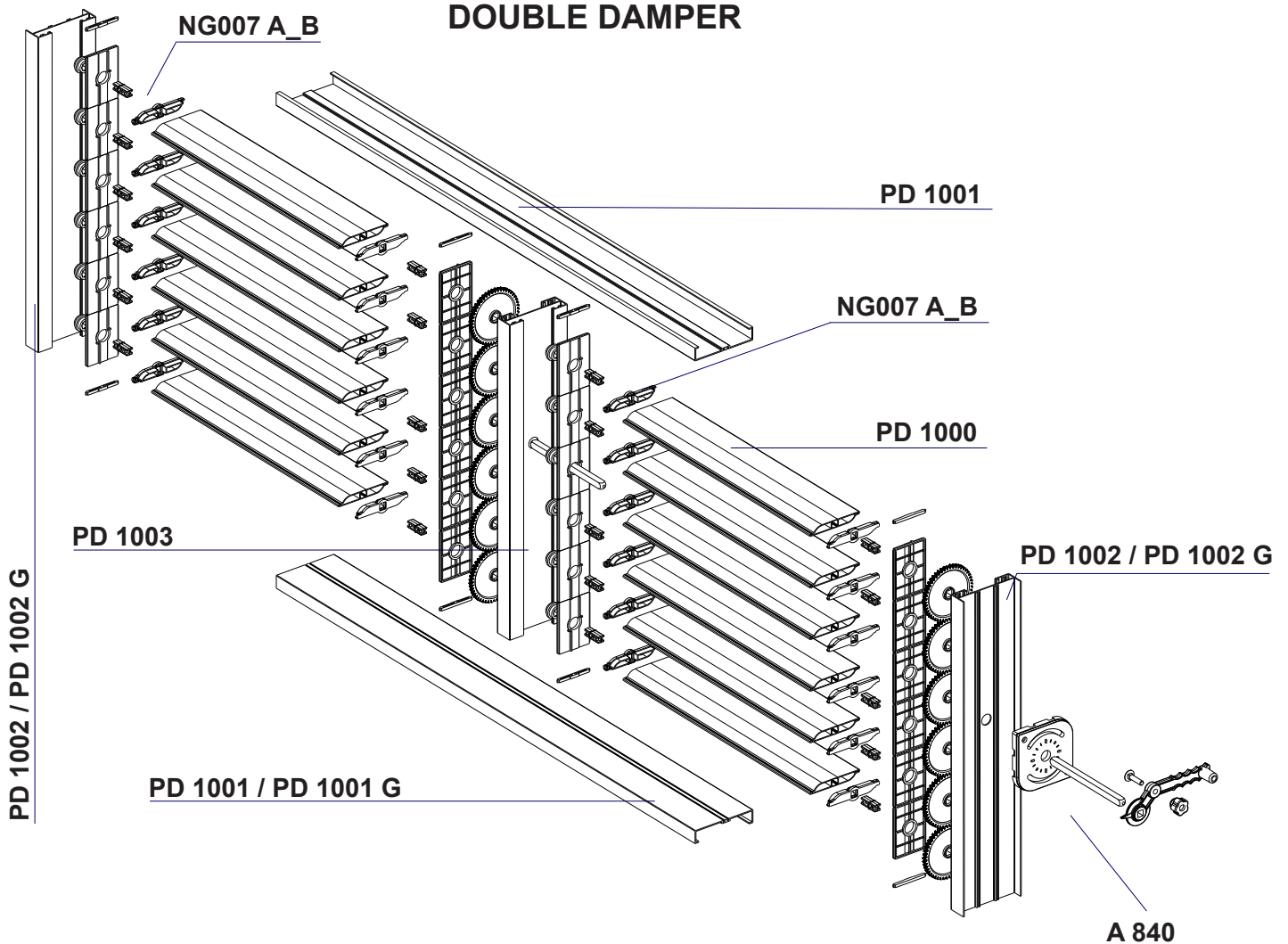


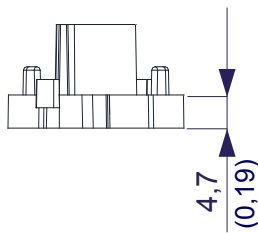
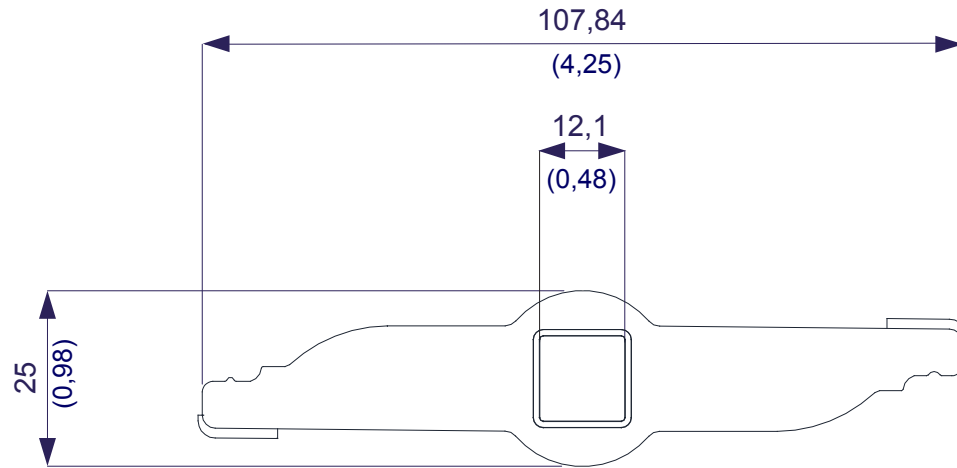
COMPLIANT TO **UNI EN 1751:2014**

**SINGLE DAMPER**

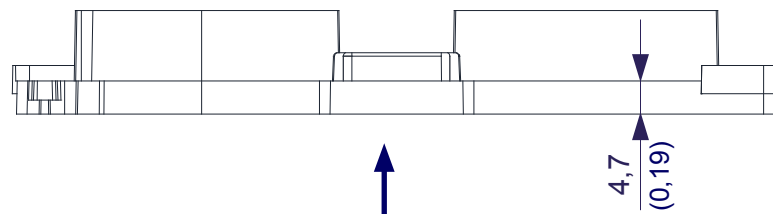


**DOUBLE DAMPER**



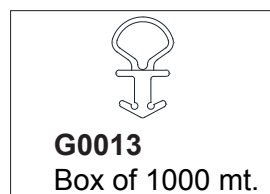


**BLADE PLUGS**  
**NG007 A\_B**  
Box of 400 pcs.



**FLOCKED FINISHING**

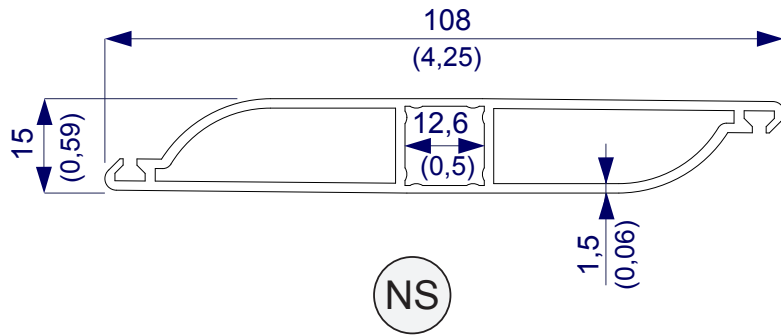
**GASKET**



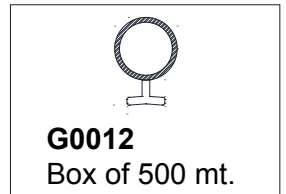
STANDARD

**PD 1000**

Weight kg/m 1,013  
(lb/ft 0,681)  
Bundle of 3 bars

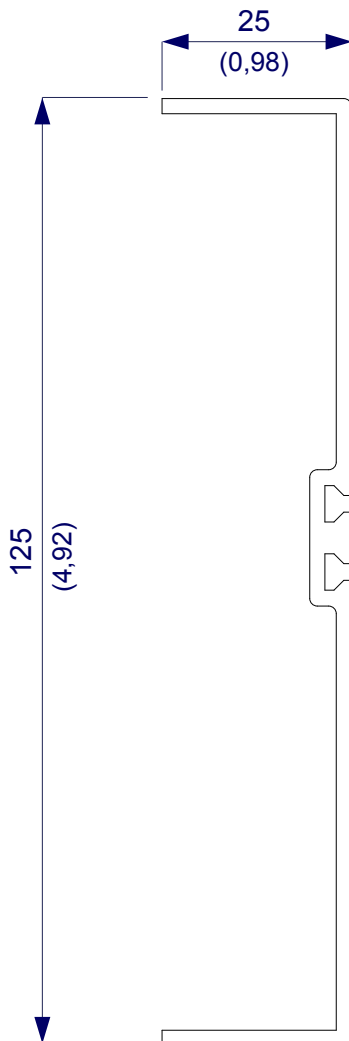
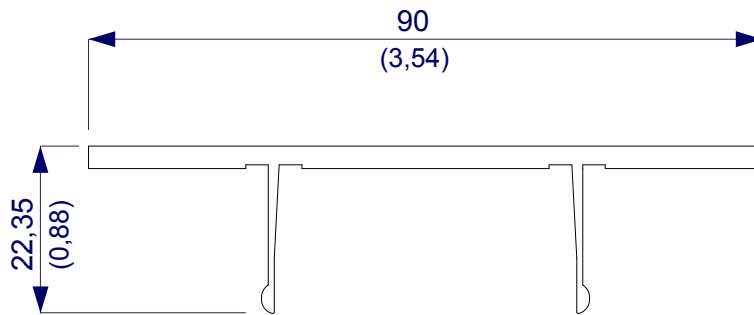


**GASKET**



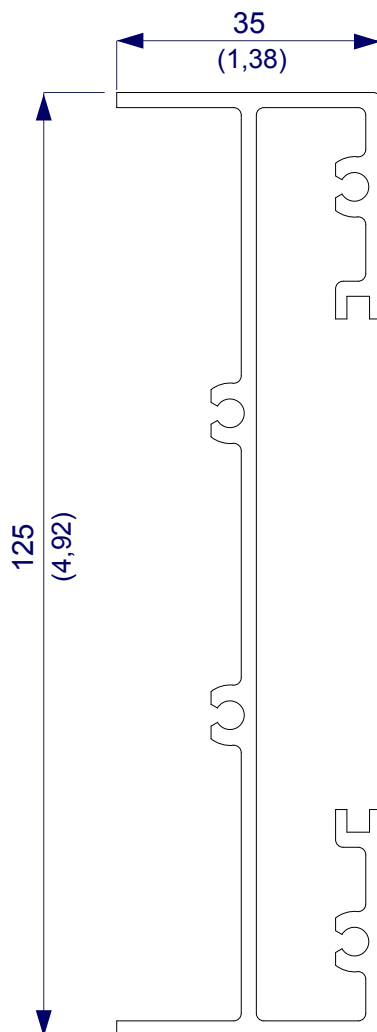
**PD 1008**

Weight kg/mt 0,842  
(lb/ft 0,566)  
Bundle of 2 bars



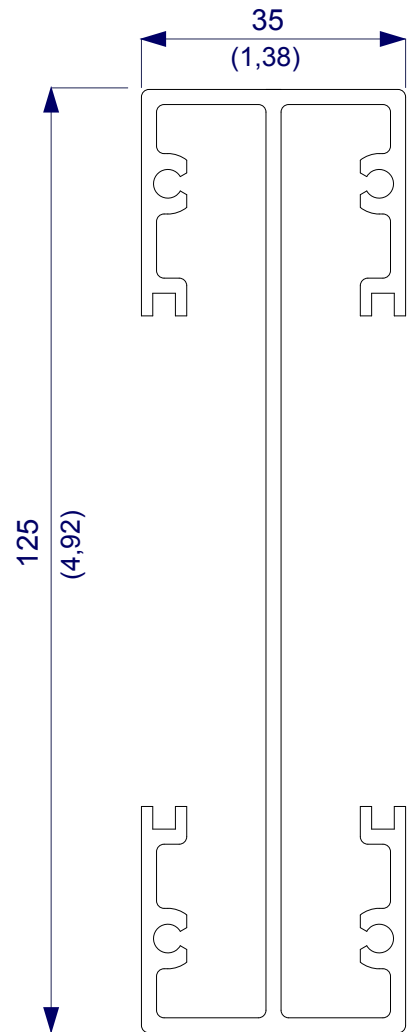
**PD 1001**

Weight kg/m 1,049  
(lb/ft 0,705)  
Bundle of 6 bars



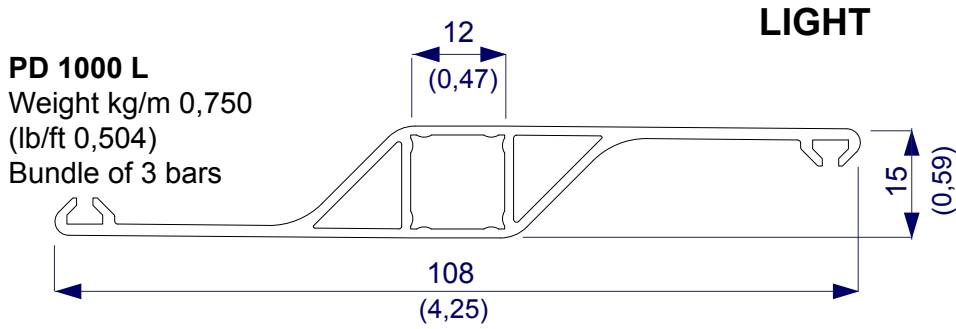
**PD 1002**

Weight kg/m 1,625  
(lb/ft 1,092)  
Bundle of 4 bars

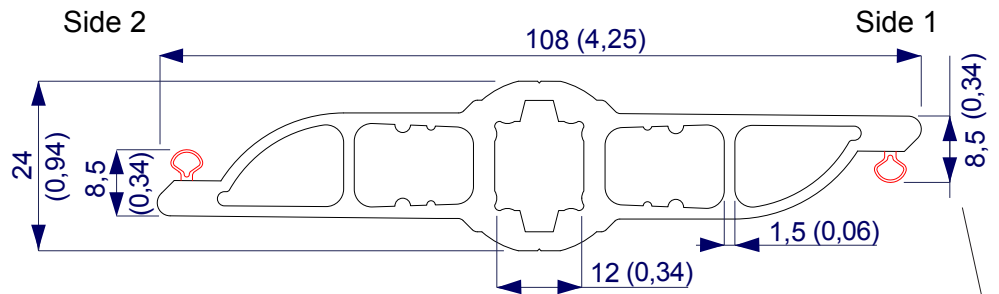


**PD 1003**

Weight kg/m 1,994  
(lb/ft 1,340)  
Bundle of 3 bars



**PLA PD 1000 G2**  
with gaskets on both sides  
Weight kg/m 0,752  
(lb/ft 0,505)  
Bundle of 3 bars

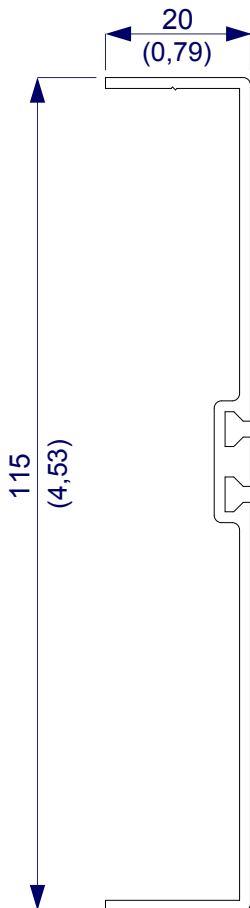


**PLA PD 1000 G1**  
with gasket on side 1  
Weight kg/m 0,752  
(lb/ft 0,505)  
Bundle of 3 bars

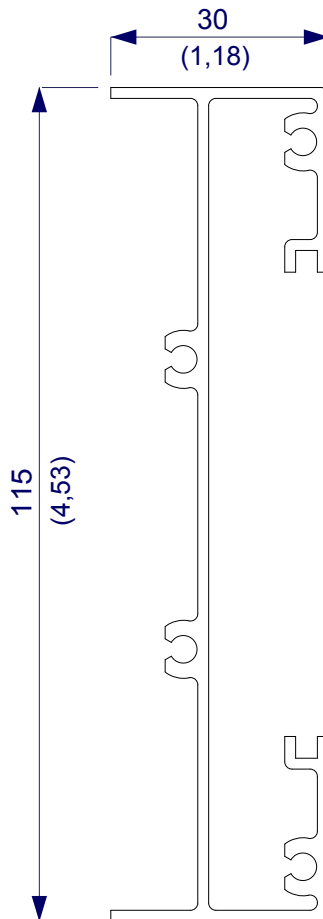
With co-extruded gasket

**PLA PD 1000 G0**  
without gasket  
Weight kg/m 0,752  
(lb/ft 0,505)  
Bundle of 3 bars

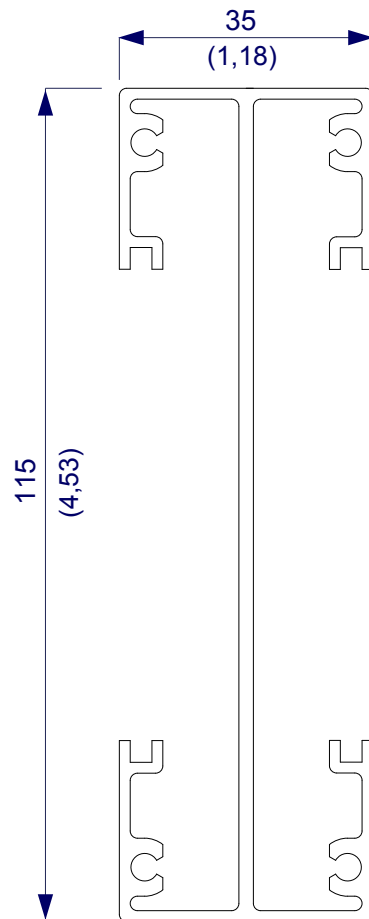
**PD 1008**  
See page 8



**PD 1001 L**  
Weight kg/m 0,717  
(lb/ft 0,482)  
Bundle of 6 bars



**PD 1002 L**  
Weight kg/m 1,208  
(lb/ft 0,812)  
Bundle of 4 bars

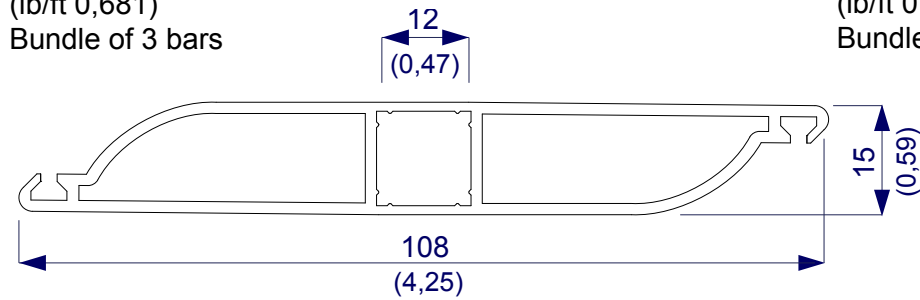


**PD 1003 L**  
Weight kg/m 1,656  
(lb/ft 1,113)  
Bundle of 3 bars

**REINFORCED**

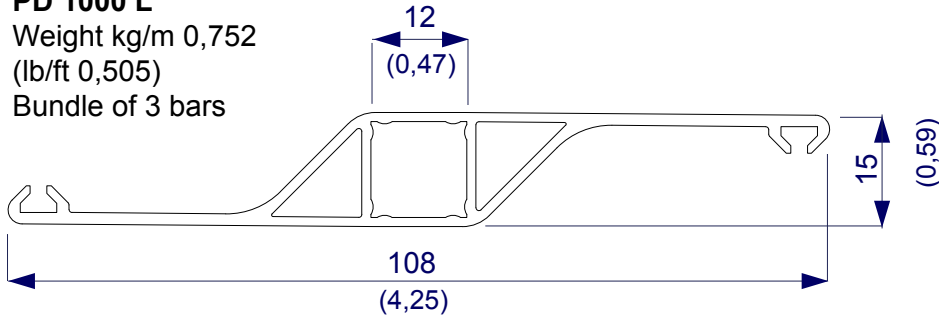
**PD 1000**

Weight kg/m 1,013  
(lb/ft 0,681)  
Bundle of 3 bars



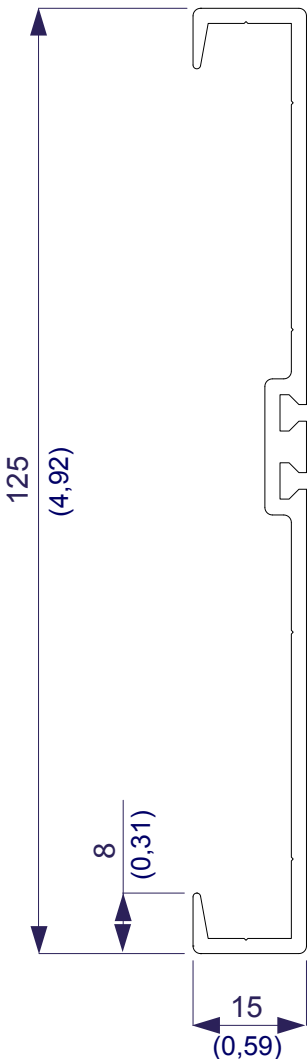
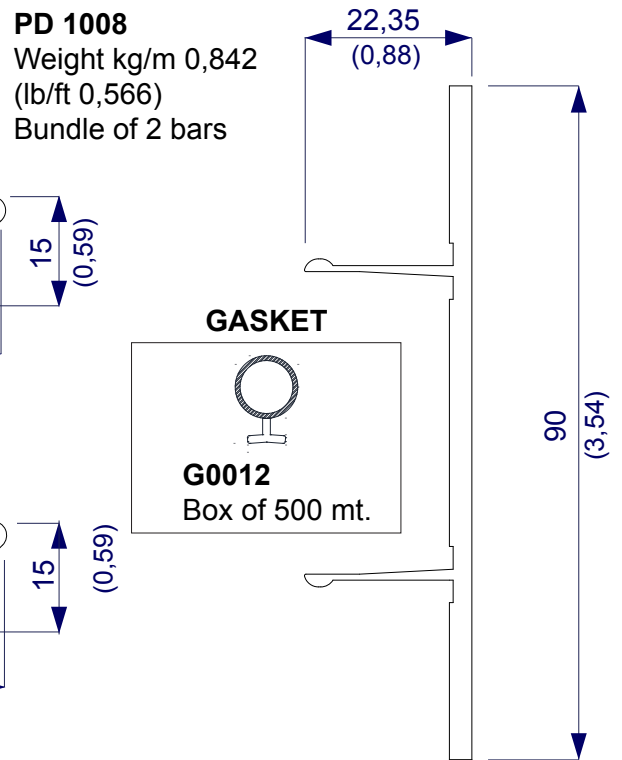
**PD 1000 L**

Weight kg/m 0,752  
(lb/ft 0,505)  
Bundle of 3 bars



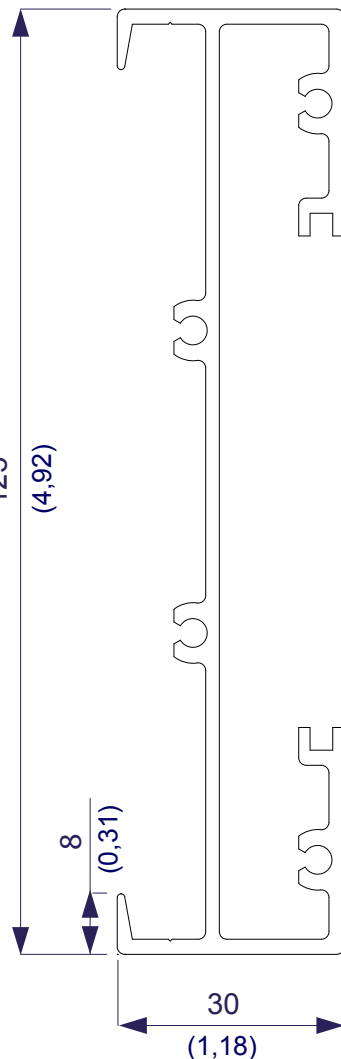
**PD 1008**

Weight kg/m 0,842  
(lb/ft 0,566)  
Bundle of 2 bars



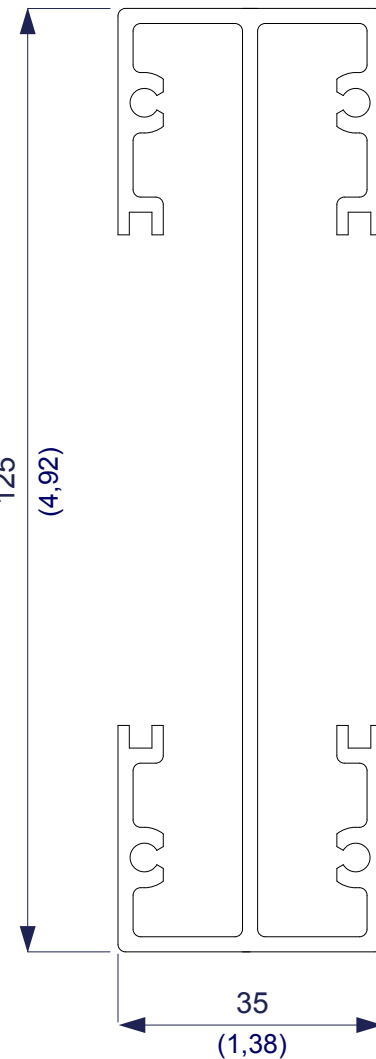
**PD 1001 G**

Weight kg/m 0,975  
(lb/ft 0,655)  
Bundle of 6 bars



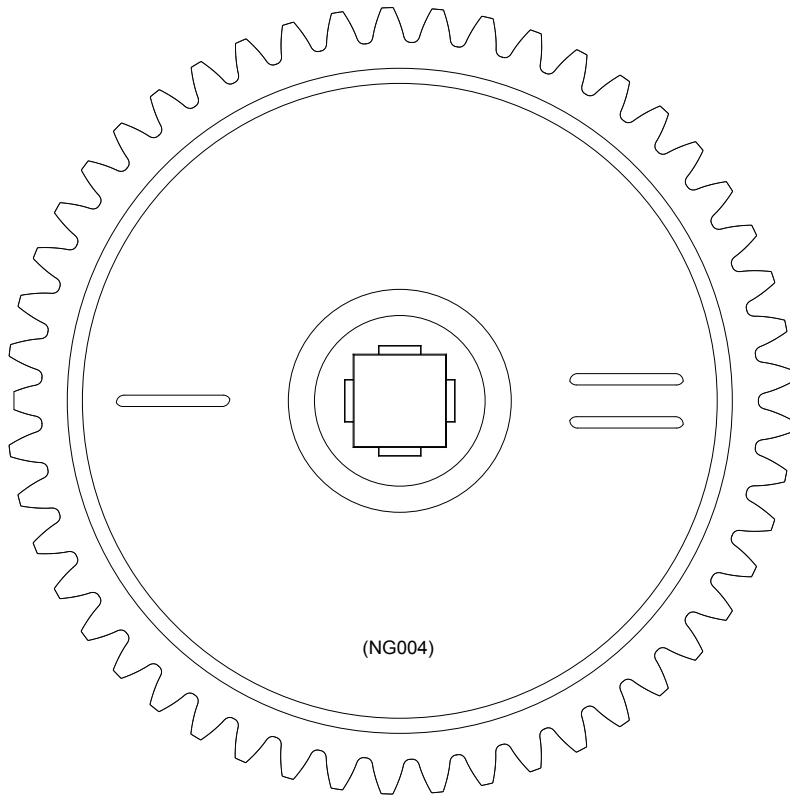
**PD 1002 G**

Weight kg/m 1,548  
(lb/ft 1,040)  
Bundle of 4 bars

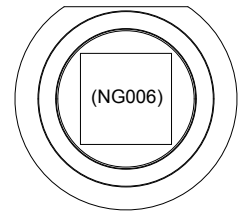
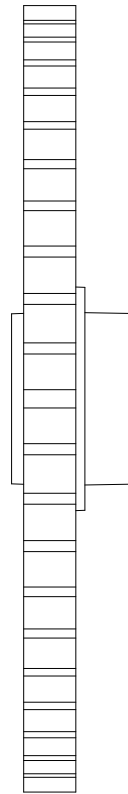


**PD 1003**

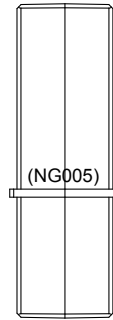
Weight kg/m 1,994  
(lb/ft 1,340)  
Bundle of 3 bars



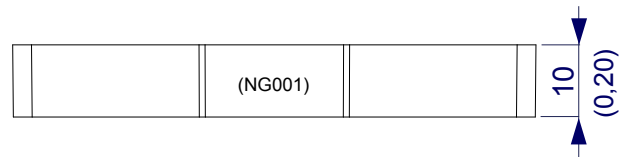
(NG004)



(NG006)



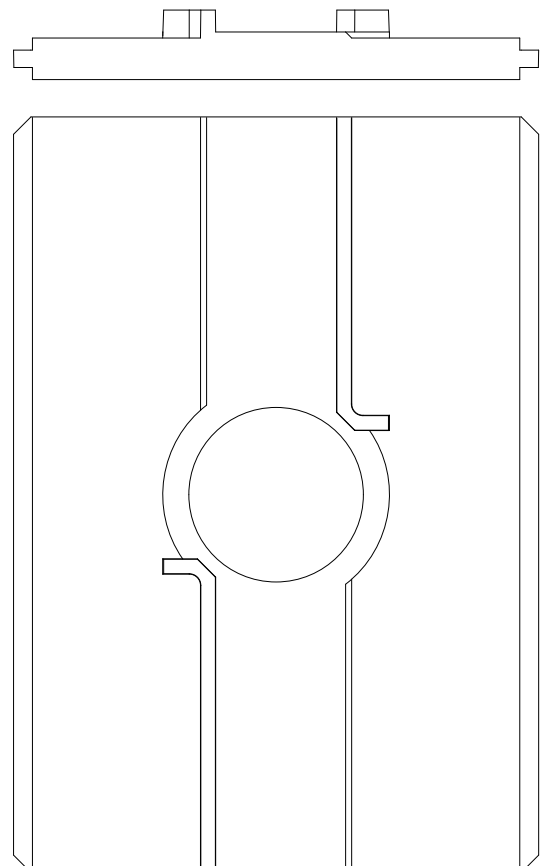
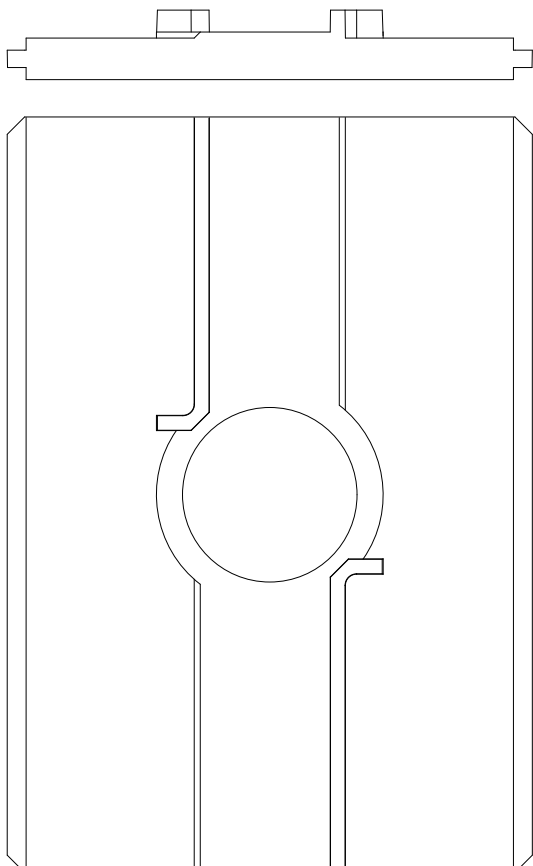
(NG005)



(NG001)

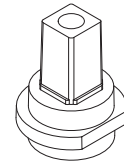
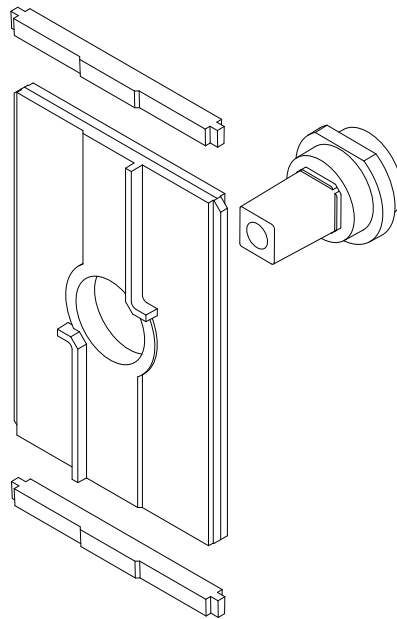
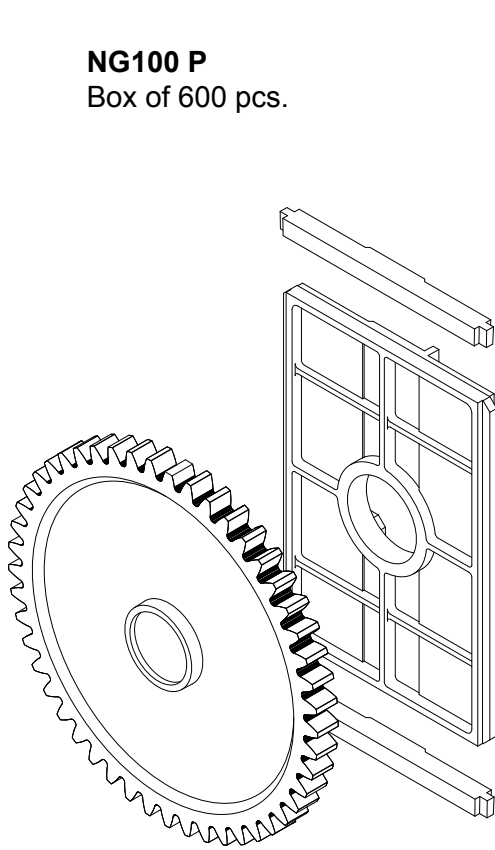
10  
(0,20)

**NG100**  
Box of 600 pcs.



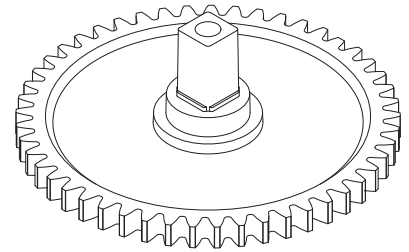
**NG100 P**

Box of 600 pcs.



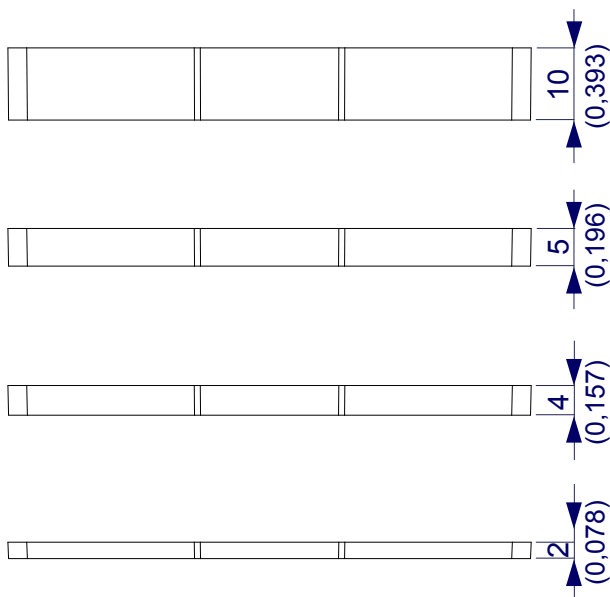
**NG006P**

Bushing with integrated pin



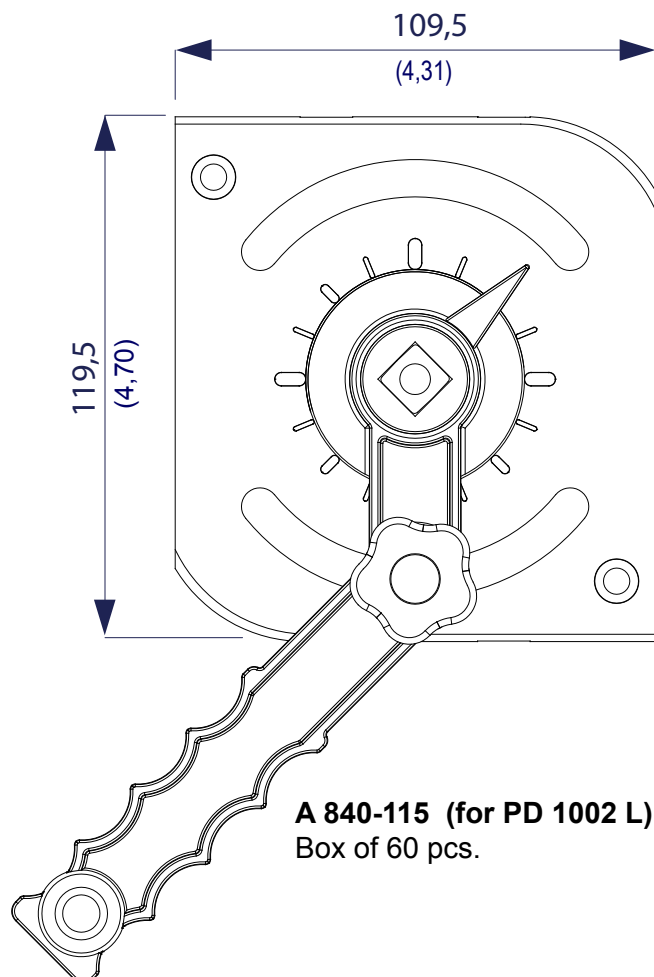
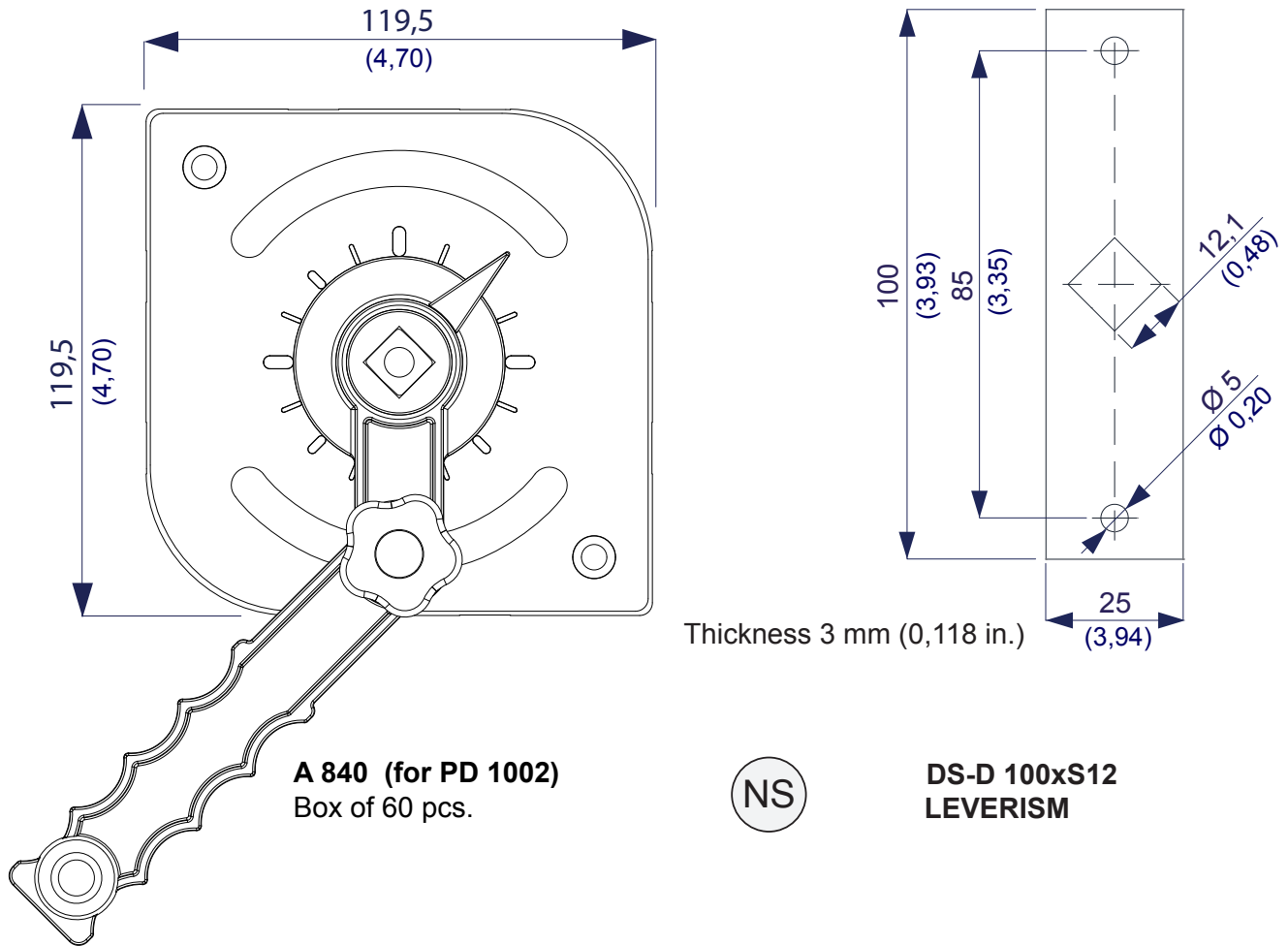
**NG004P**

Gear with integrated pin



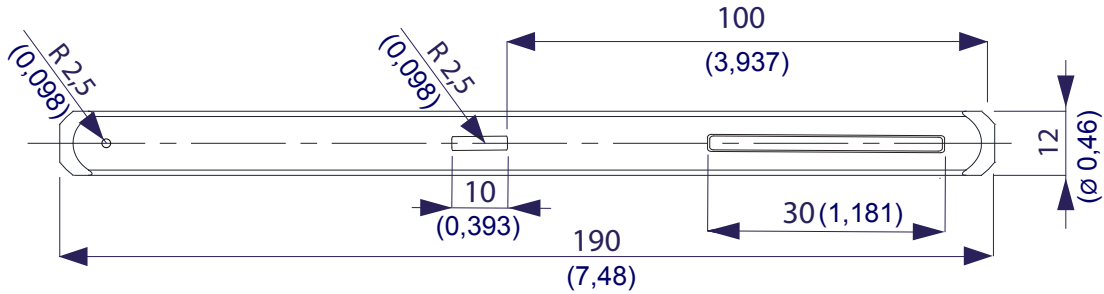
**NG001**

Available different spacer thickness



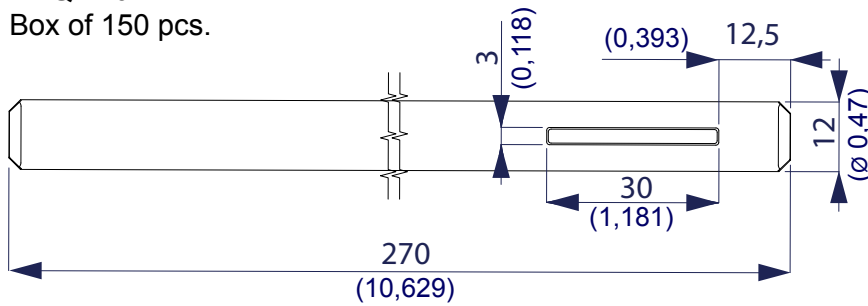
**AP 190**

Box of 150 pcs.



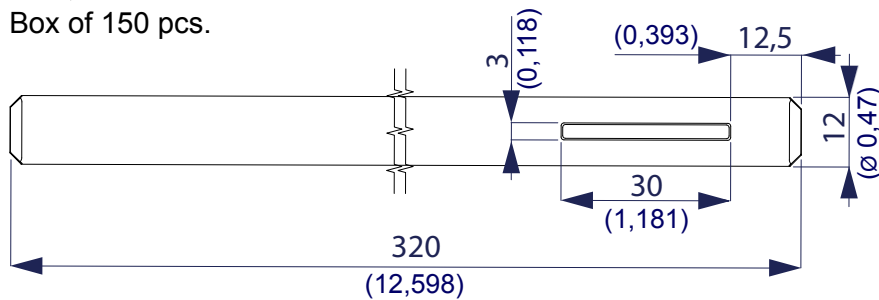
**APQ 270**

Box of 150 pcs.



**APQ 320**

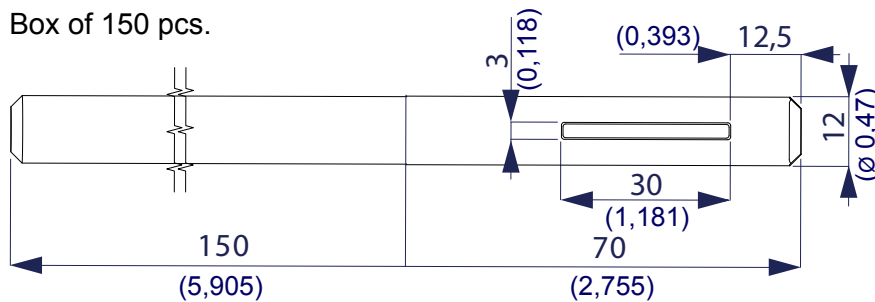
Box of 150 pcs.



NS

**APT 220**

Box of 150 pcs.



3D Representation of single damper pitch 50 mm

FORMULA PITCH 50 mm

SINGLE DAMPER

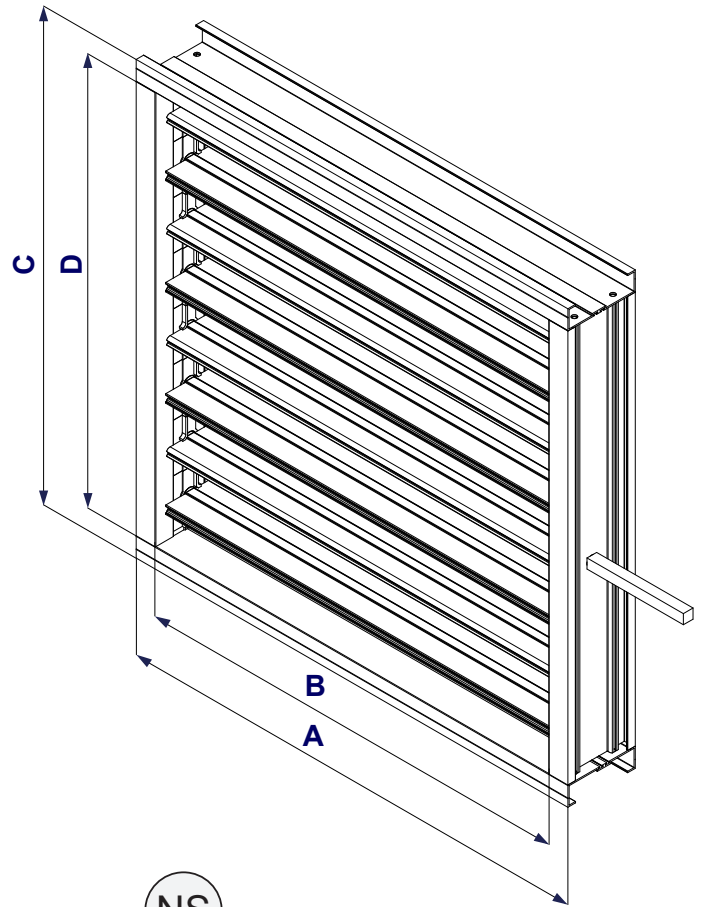
$$A = B + 40 \text{ mm}$$

$$\text{Length of BLADES} = B - 2 \text{ mm}$$

$$\text{Length of BLADES NG007-50} = B - 10,5 \text{ mm}$$

$$C = D + 40 \text{ mm}$$

D = See table below



DIMENSION FOR PROFILE "D"

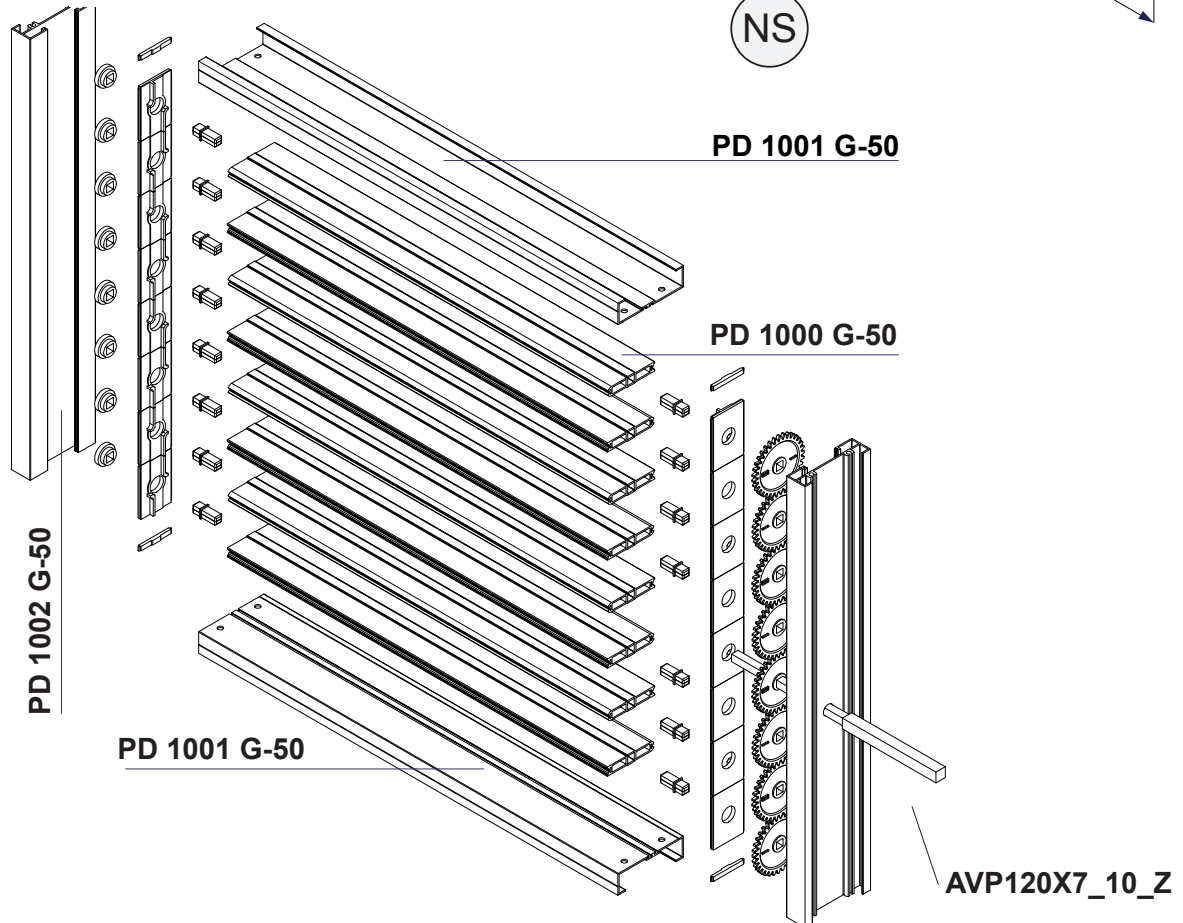
$$L = N^\circ \text{ blades} \times 50 \text{ mm} + 8 \text{ mm} + \text{TOLERANCES}$$

TOLERANCES

from 105 mm to 305 mm = 1 mm

from 305 mm to 705 mm = 1,5 mm

from 705 mm to 1105 mm = 2 mm



**3D Representation of double damper pitch 50 mm CLASS 2**

**FORMULA PITCH 50 mm**

**DOUBLE DAMPER**

$$A = B + 40 \text{ mm}$$

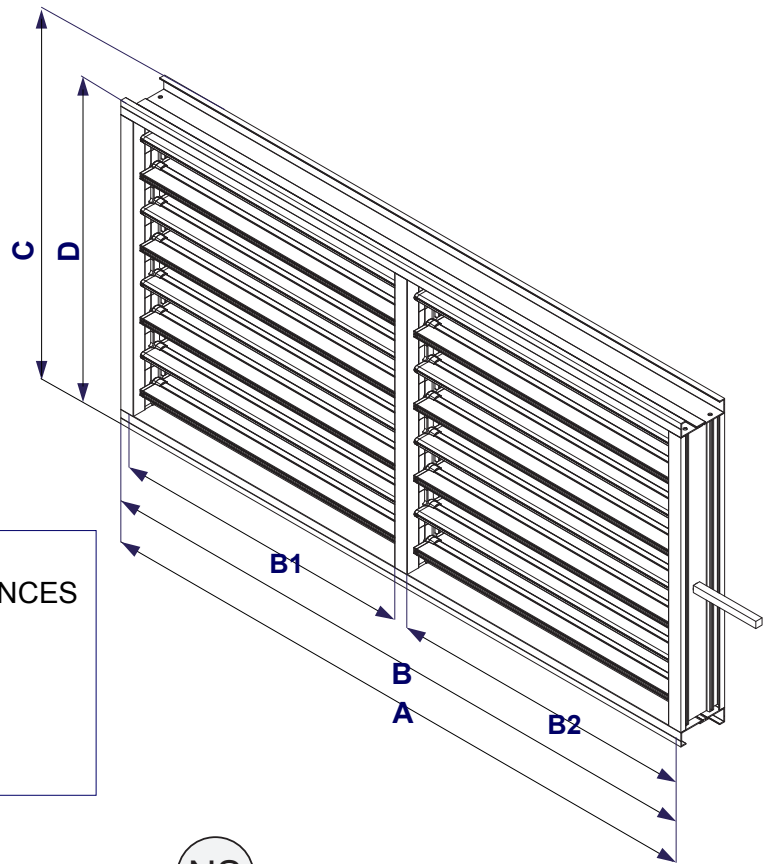
$$B1 = B2 = (B - 20 \text{ mm})/2$$

$$\text{BLADE length} = B1 - 2 \text{ mm} = B2 - 2 \text{ mm}$$

$$\begin{aligned} \text{BLADE length NG007-50} &= B1 - 10.5 \text{ mm} \\ &= B2 - 10.5 \text{ mm} \end{aligned}$$

$$C = D + 40 \text{ mm}$$

$$D = \text{see table on page 13}$$



**"D" SHOULDER PROFILE SIZING**

$$L = \text{No. of blades} \times 50 \text{ mm} + 8 \text{ mm} + \text{TOLERANCES}$$

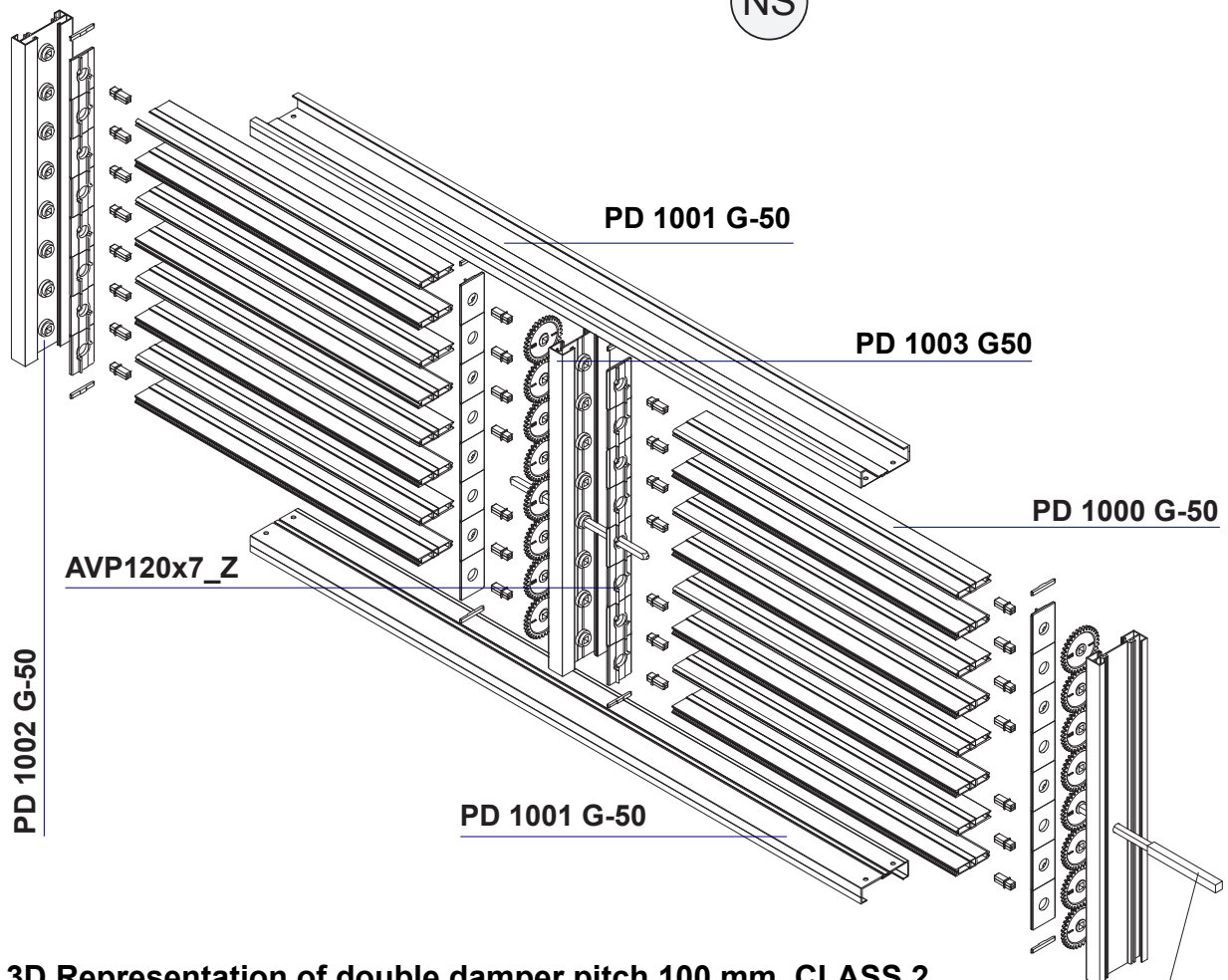
**TOLERANCES**

from 105 mm to 305 mm = 1 mm

from 305 mm to 705 mm = 1.5 mm

from 705 mm to 1105 mm = 2 mm

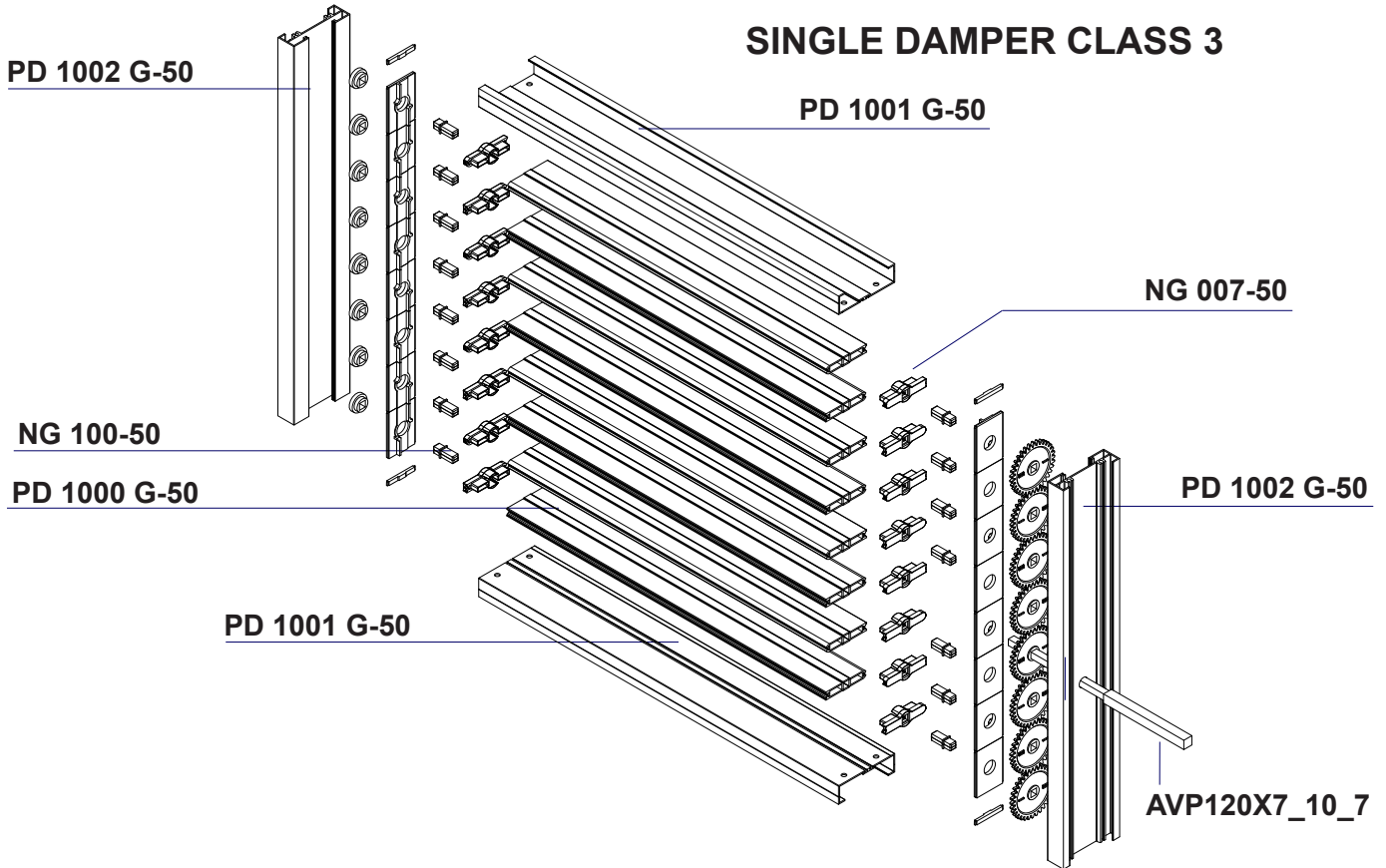
NS



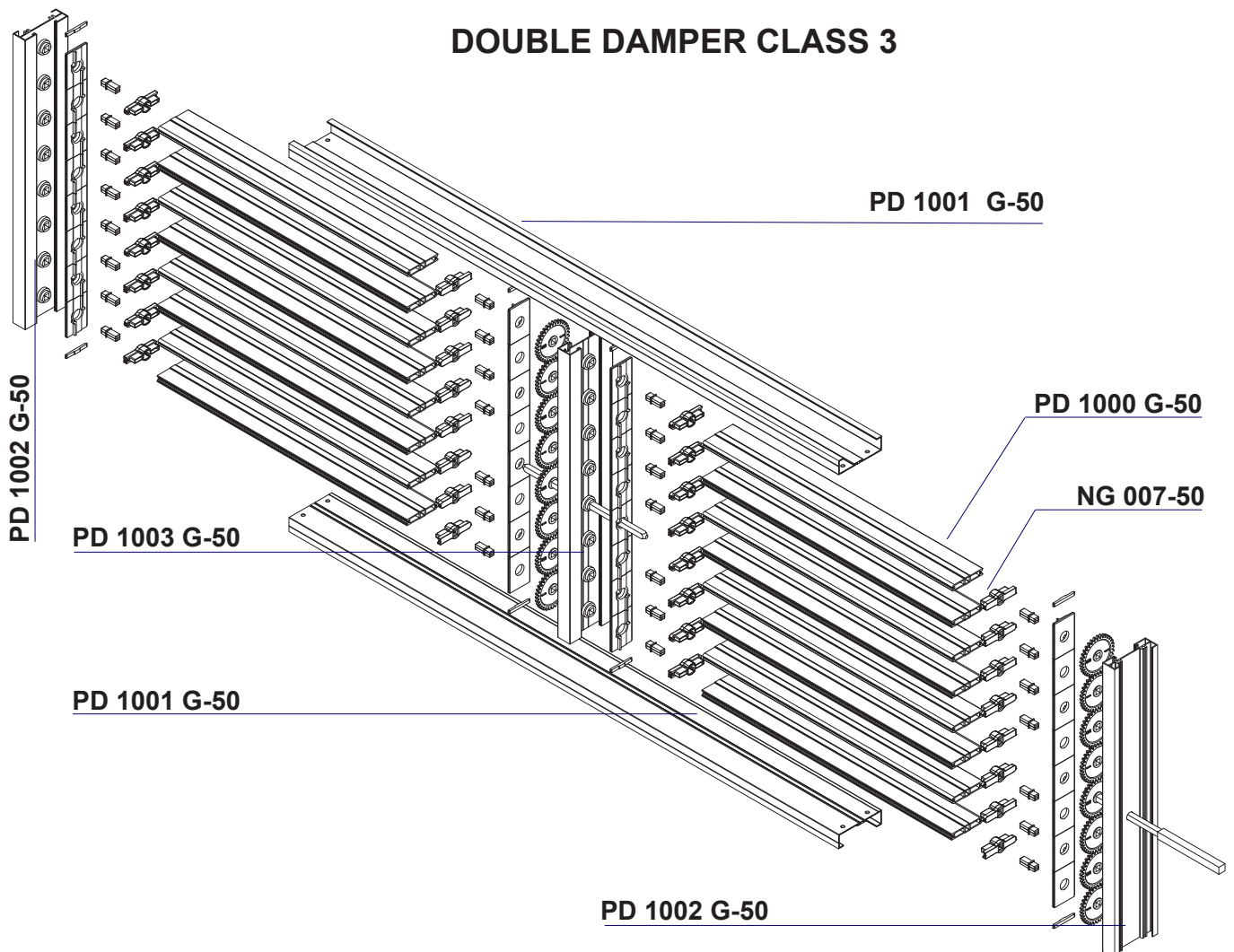
**3D Representation of double damper pitch 100 mm. CLASS 2**

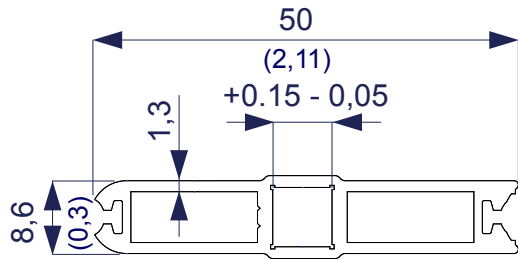
AVP120X7\_10Z

**SINGLE DAMPER CLASS 3**

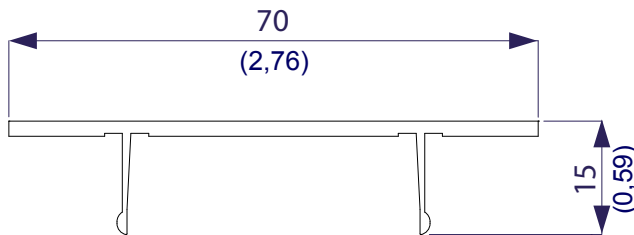


**DOUBLE DAMPER CLASS 3**



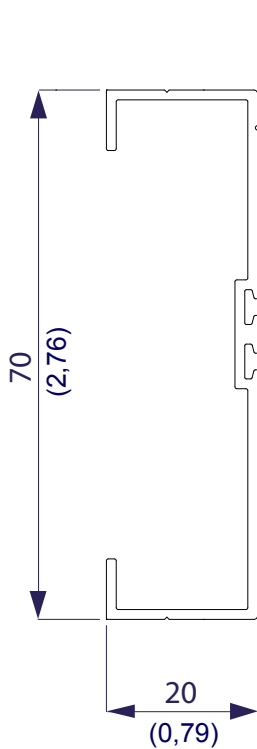
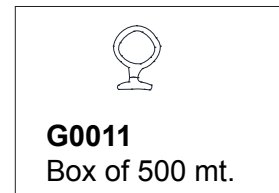


**PD 1000 G-50**  
Weight kg/m 0,428  
(lb/ft 0,288)  
Bundle of 4 bars

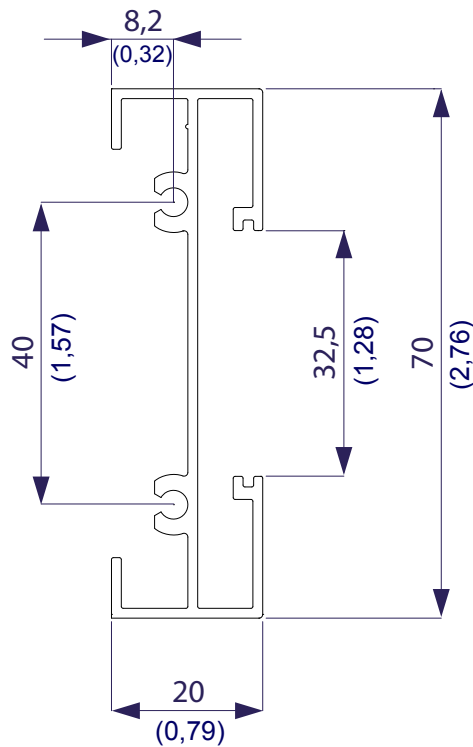


**PD 1008 G-50**  
Weight kg/m 0,439  
(lb/ft 0,295)  
Bundle of 2 bars

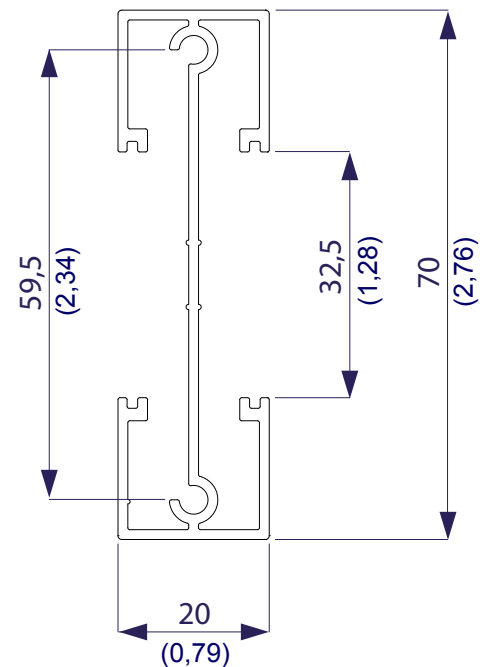
**GASKET**



**PD 1001 G-50**  
Weight kg/m 0,465  
(lb/ft 0,310)  
Bundle of 6 bars

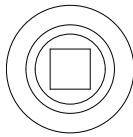
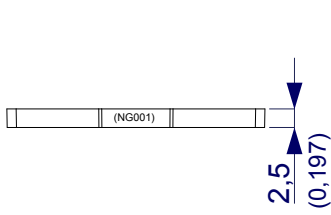
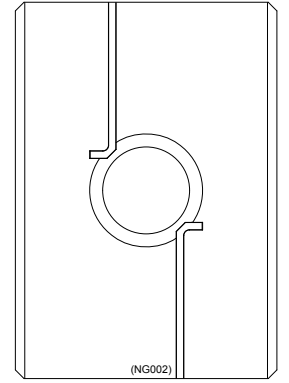
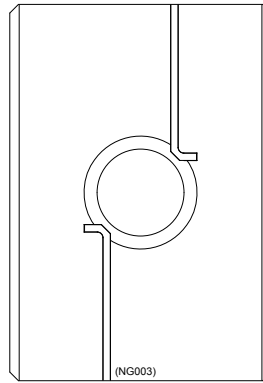
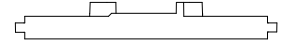
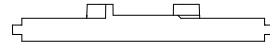
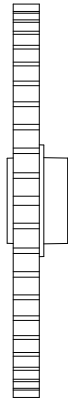
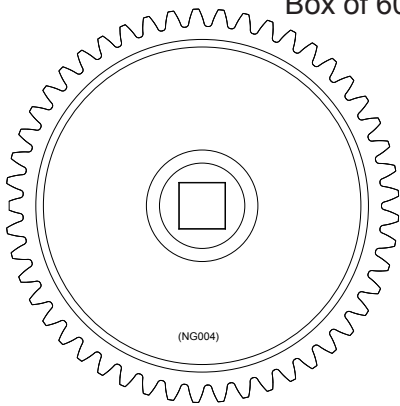


**PD 1002 G-50**  
Weight kg/m 0,702  
(lb/ft 0,472)  
Bundle of 4 bars

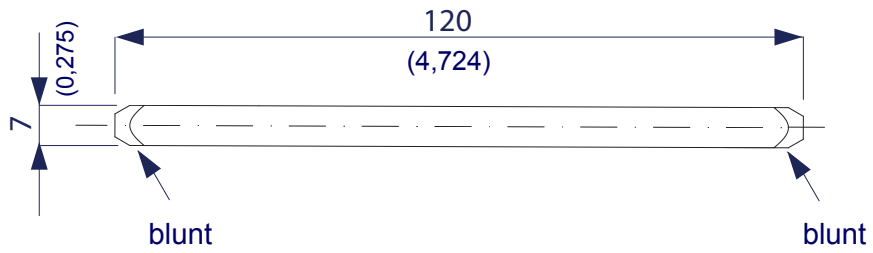


**PD 1003 G-50**  
Weight kg/m 0,750  
(lb/ft 0,504)  
Bundle of 3 bars

**NG100-50**  
Box of 600 pcs.

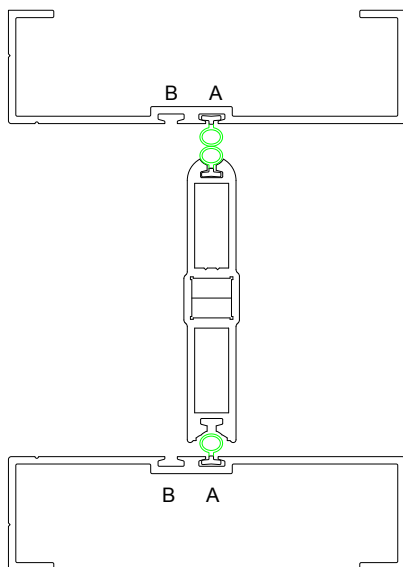


**AVP120X7\_Z**

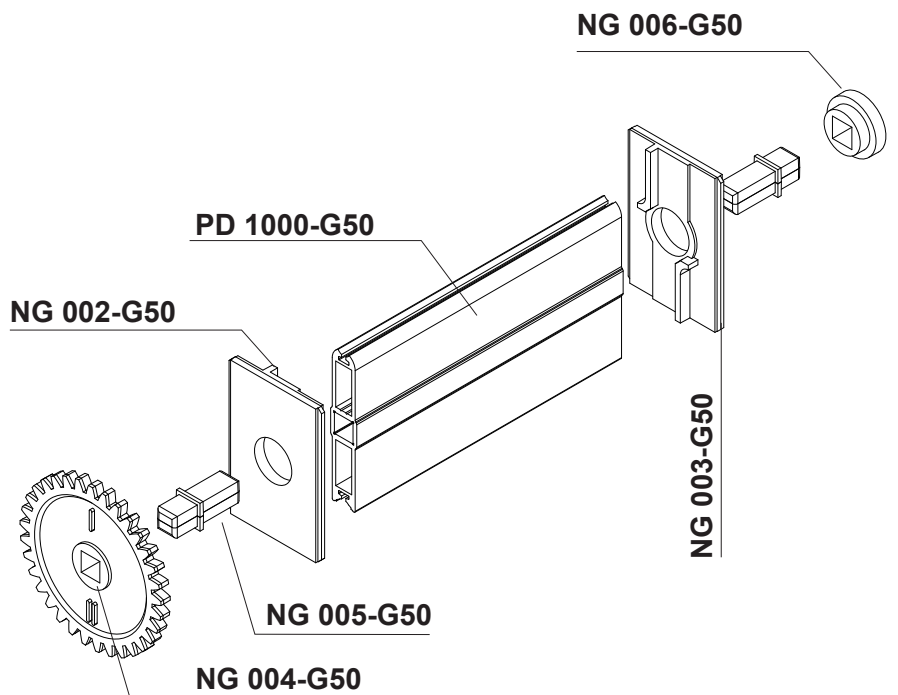


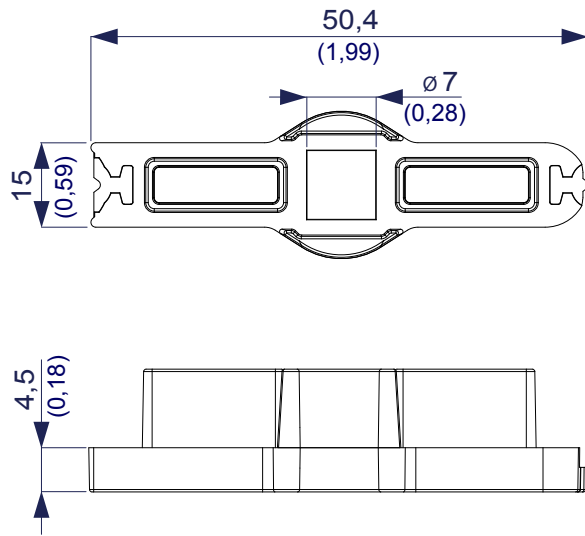
**GASKET LAYOUT**

Assembly arrangement



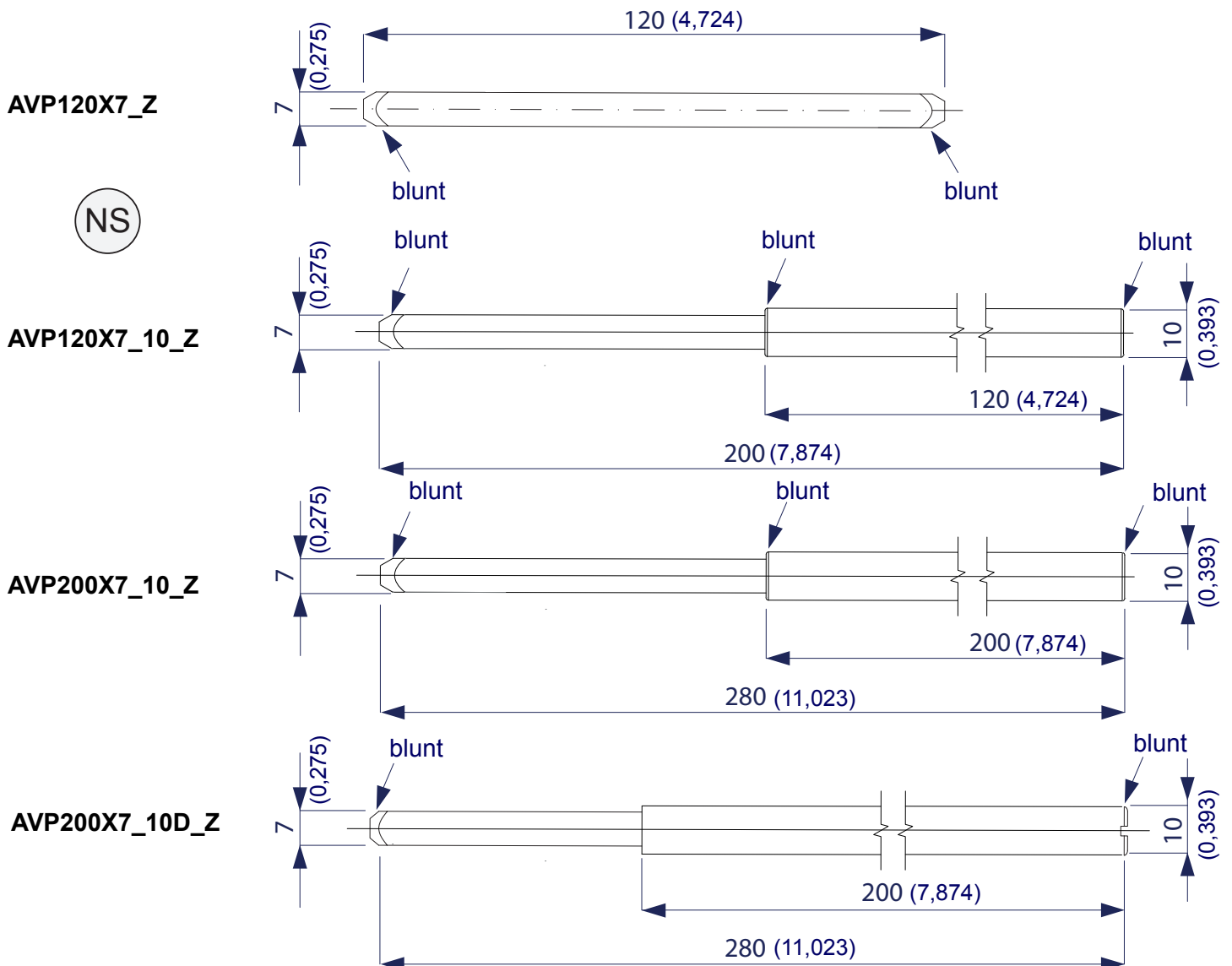
**BLADE ASSEMBLING**



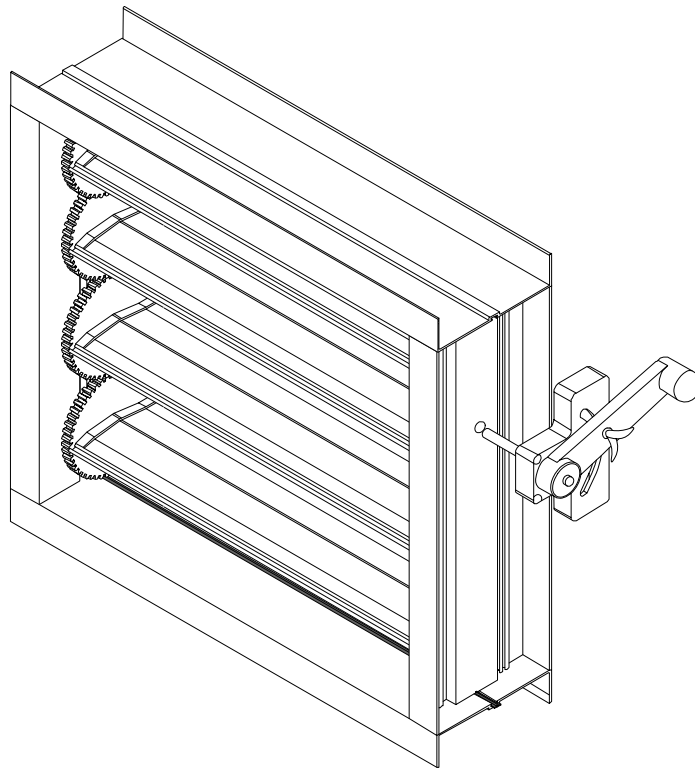


NS

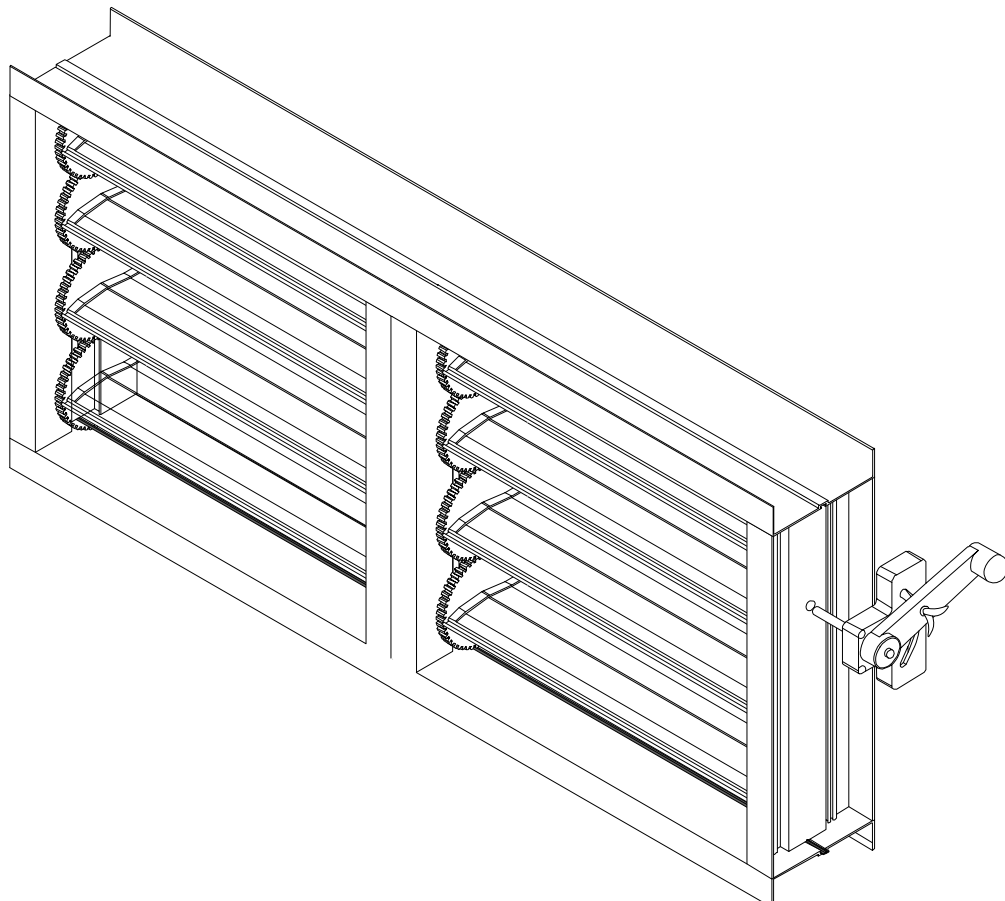
**BLADE PLUGS CLASS 3**  
**NG007-50**  
Box of 400 pcs.



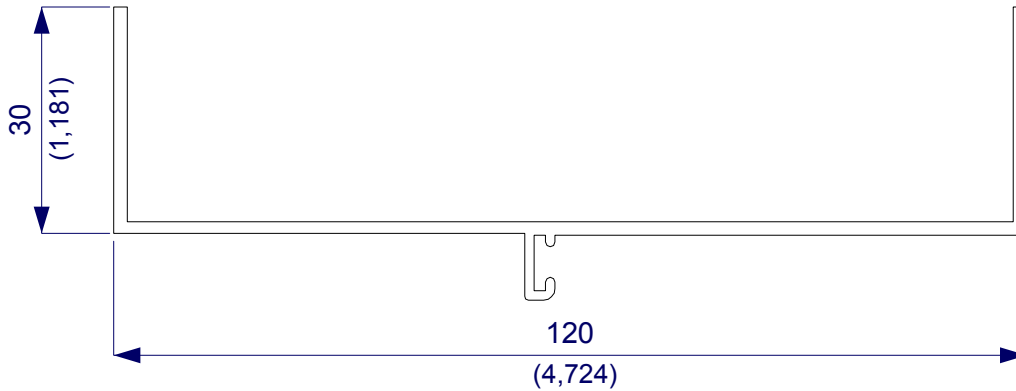
**3D Representation of single damper**



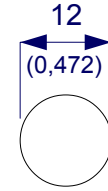
**3D Representation of double damper**



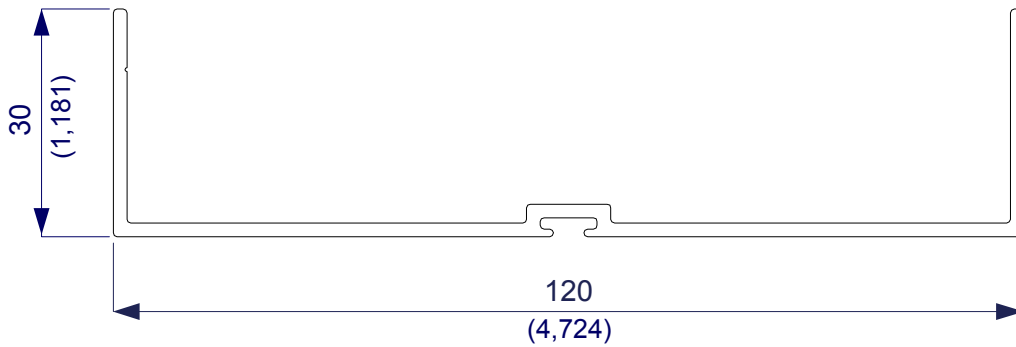
Aluminium profiles for single and double damper



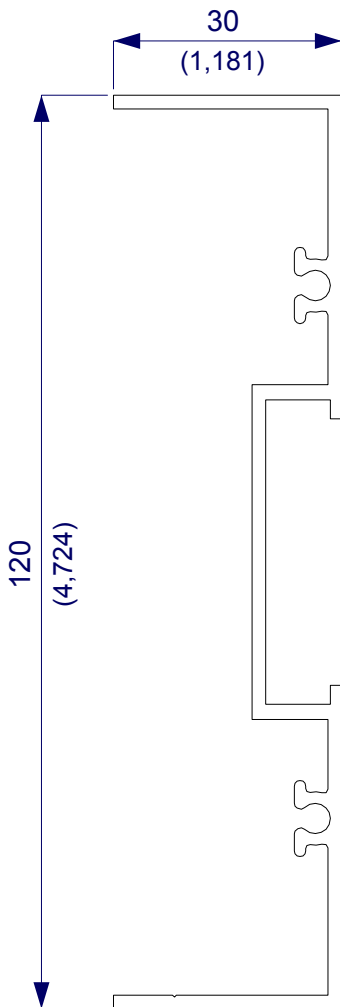
**P 127**  
Weight kg/m 0,873  
(lb/ft 0,587)  
Bundle of 6 bars



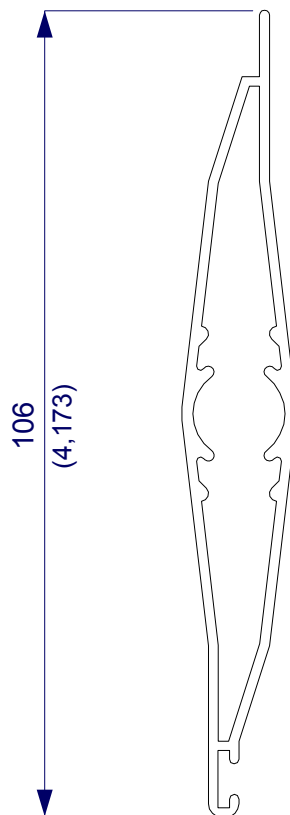
**P 12**  
Weight kg/m 0,312  
(lb/ft 0,210)  
Bundle of 10 bars



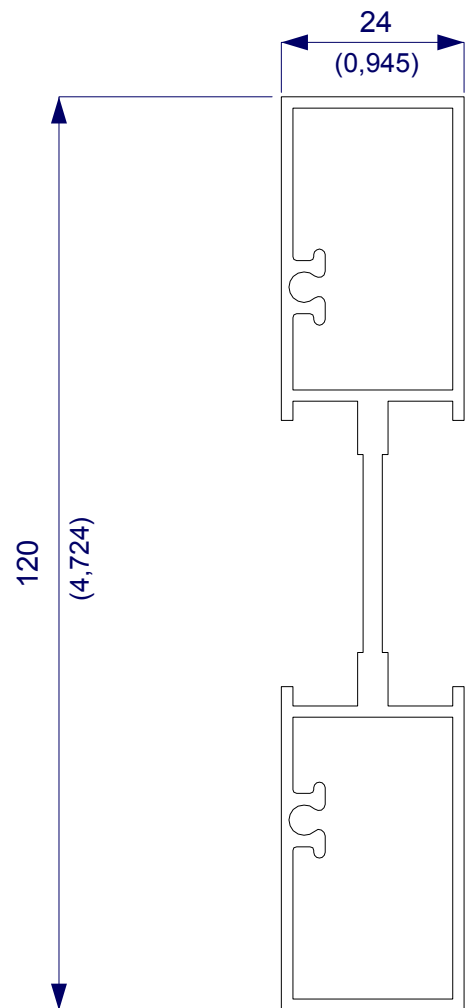
**P 118**  
Weight kg/m 0,917  
(lb/ft 0,616)  
Bundle of 6 bars



**P 125**  
Weight kg/m 1,062  
(lb/ft 0,718)  
Bundle of 6 bars

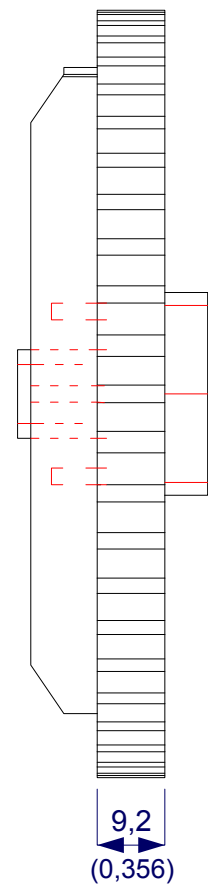
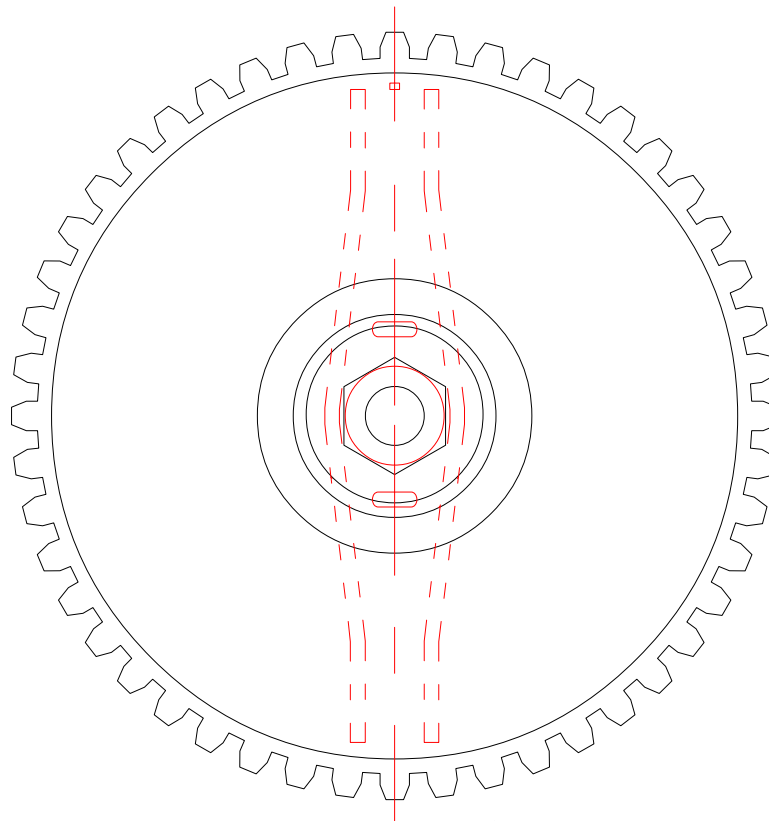
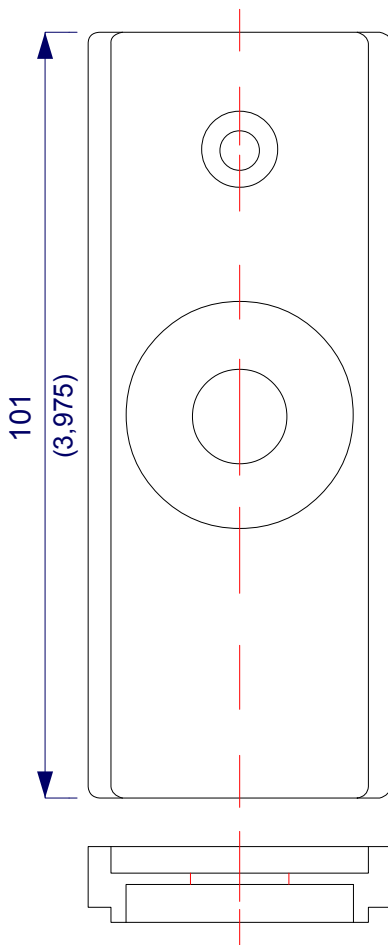


**P 126**  
Weight kg/m 0,842  
(lb/ft 0,566)  
Bundle of 4 bars



**P 128**  
Weight kg/m 1,546  
(lb/ft 1,039)  
Bundle of 4 bars

**Accessories for single and double damper**

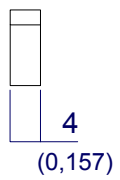


**N 830**  
 Box of 240 pcs.

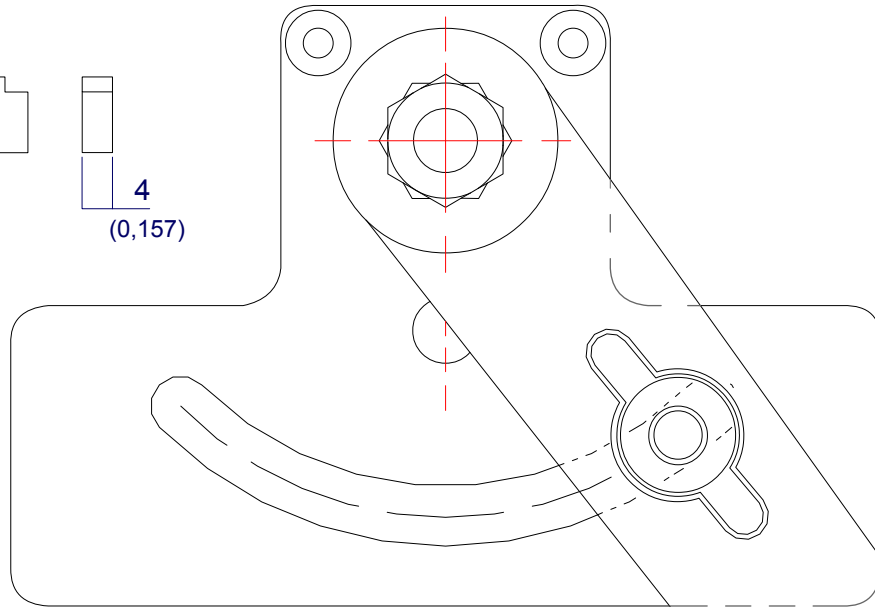
9,2  
 (0,356)



**N 850**  
 Box of 1.500 pcs.





4  
 (0,157)

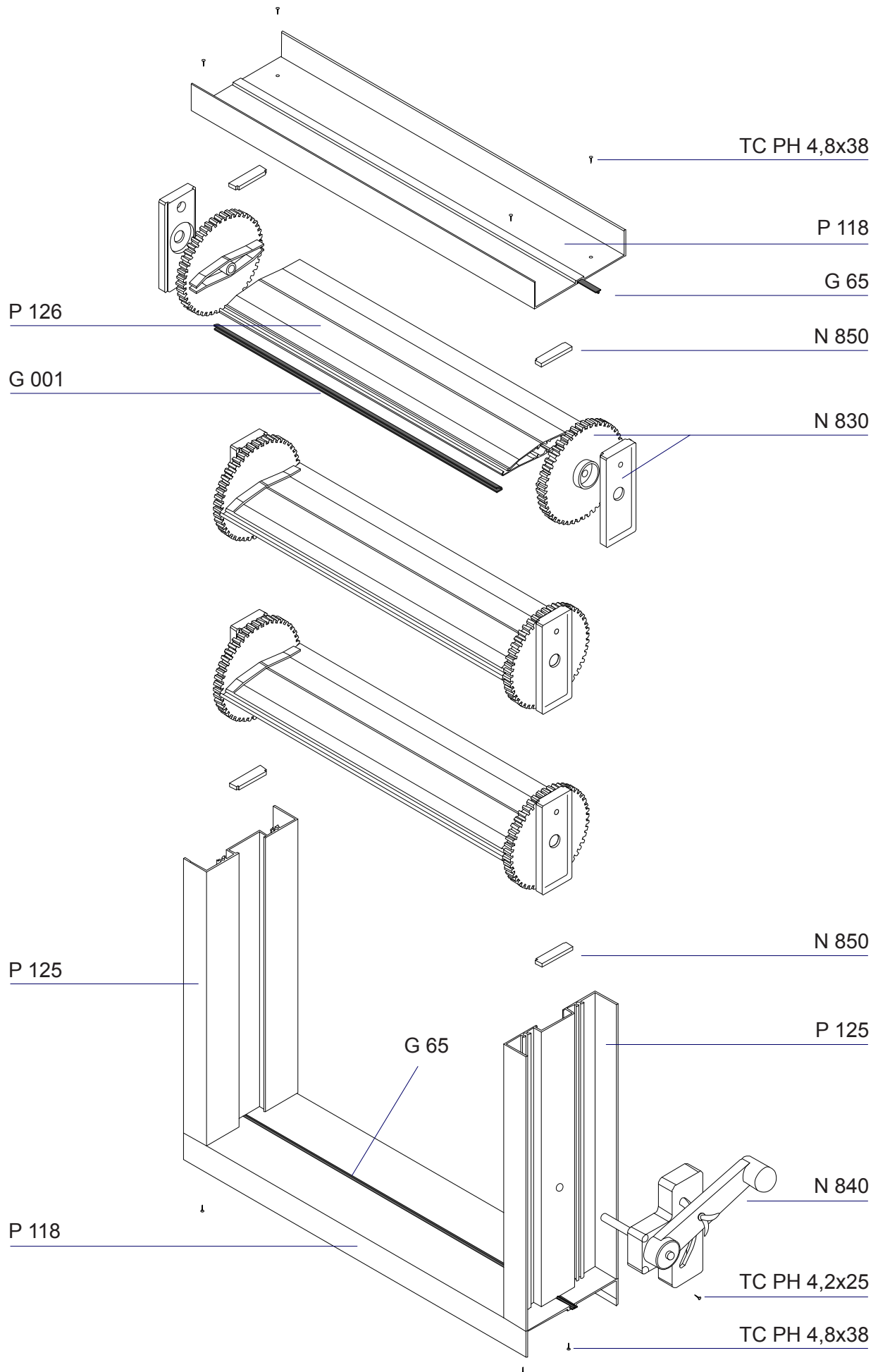


**N 840**  
 Box of 50 pcs.

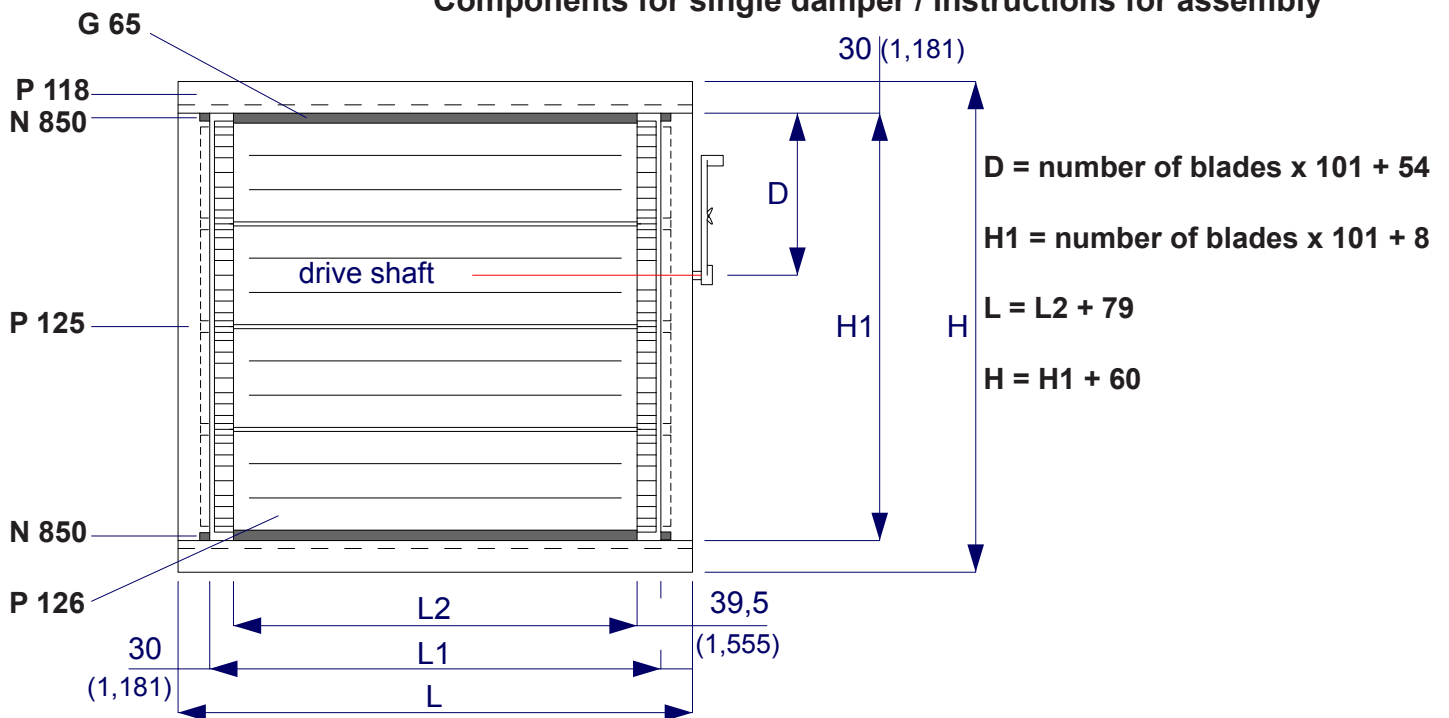
**GASKET**


<p><b>G001</b>                  Box of 500 mt.</p>

<p><b>G65</b>                  Box of 400 mt.</p>

**3D representation of single damper**

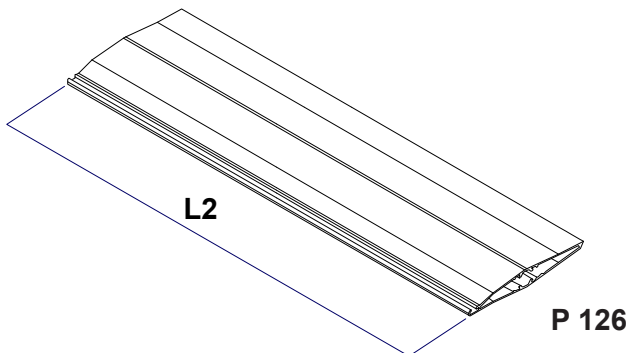


**Components for single damper / Instructions for assembly**



**1**

Depending on the size of the ventilation opening, determine the width **L2** and the number of blades **P 126**



**3**

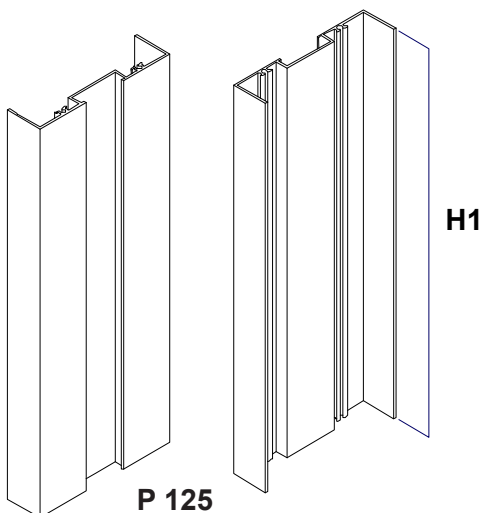
Cut 2 end pieces **P 118** (top and bottom) to a length of:

**L = L2 + 79**

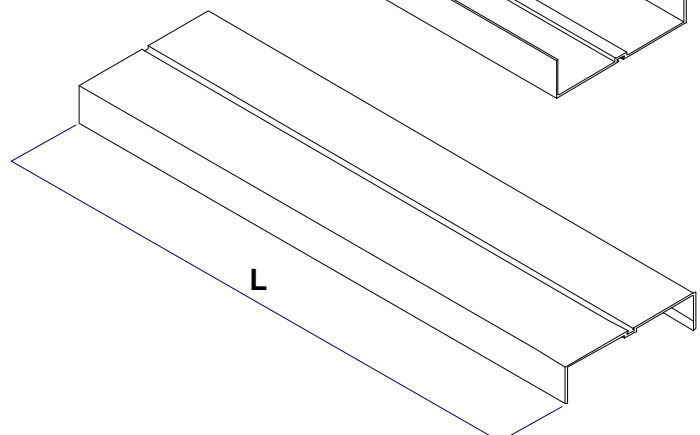
**2**

Cut 2 upright **P 125** to a size of:

**H1 = number of slats x 101 + 8**



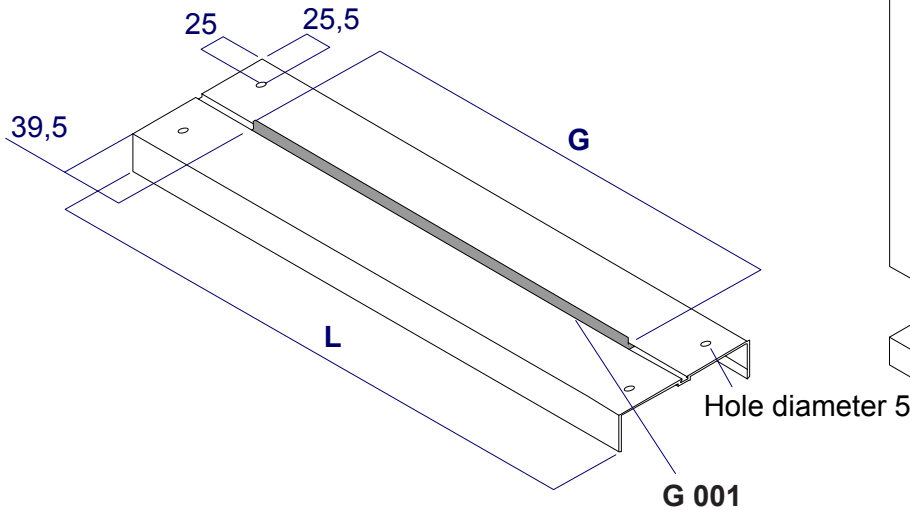
**P 118**



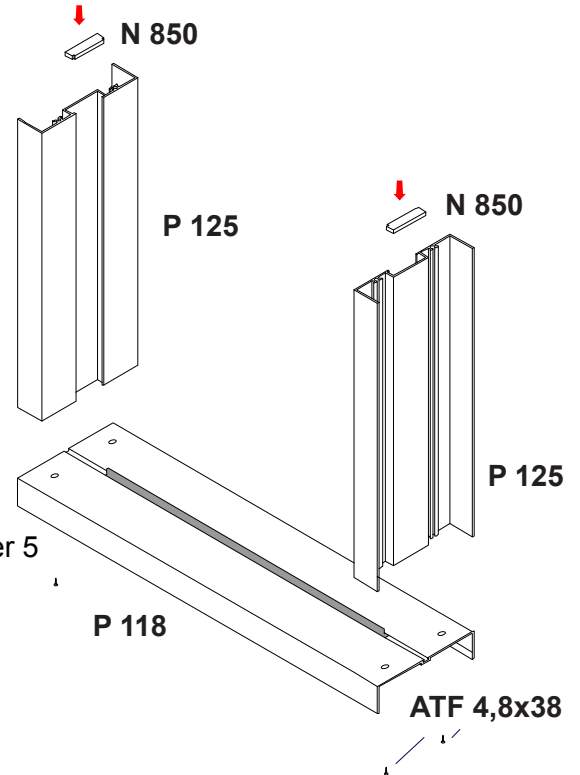
**Components for single damper / Instructions for assembly**

**4** Drill 4 holes  $\varnothing$  5 mm on both ends of **P 118** as shown in the picture, then insert gasket **G 65** which should have a length of:

$$G = L - (39,5 \times 2)$$

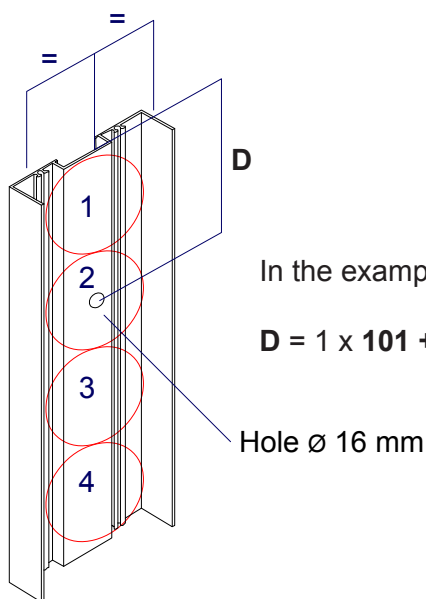


**6** Using 4 self-tapping screws **ATF 4,8x38** fit bottom bar **P 118** to the 2 uprights **P 125**. Remember to insert **N 850** 4 mm thick.

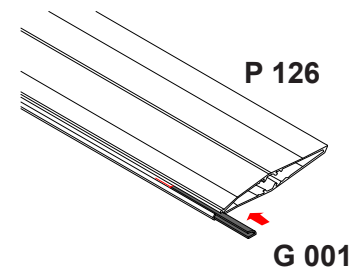


**5** Drill 1 hole  $\varnothing$  16 mm on upright **P 125** at a distance of:

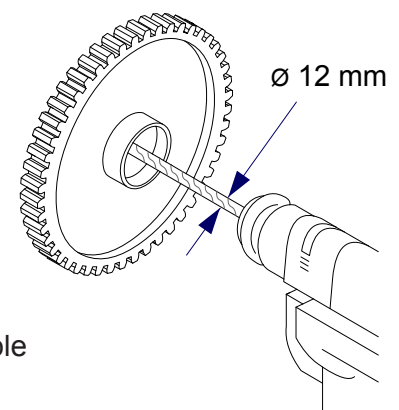
**D = number of slats from which to position the hole x 101 + 54**



**7** Insert gasket **G 63** into blades **P 126**.



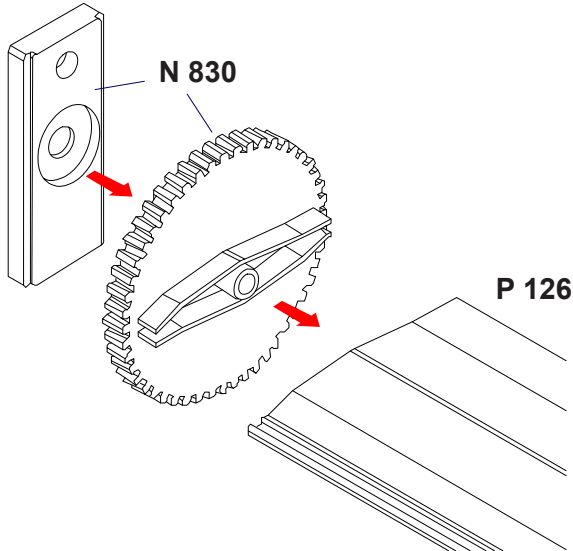
**8** Drill 1 hole  $\varnothing$  12 mm in one of the gears.  
**NOTE:** During assembly, position the gear so that the hole  $\varnothing$  12 mm coincides with the hole  $\varnothing$  16 mm on upright **P 125**.



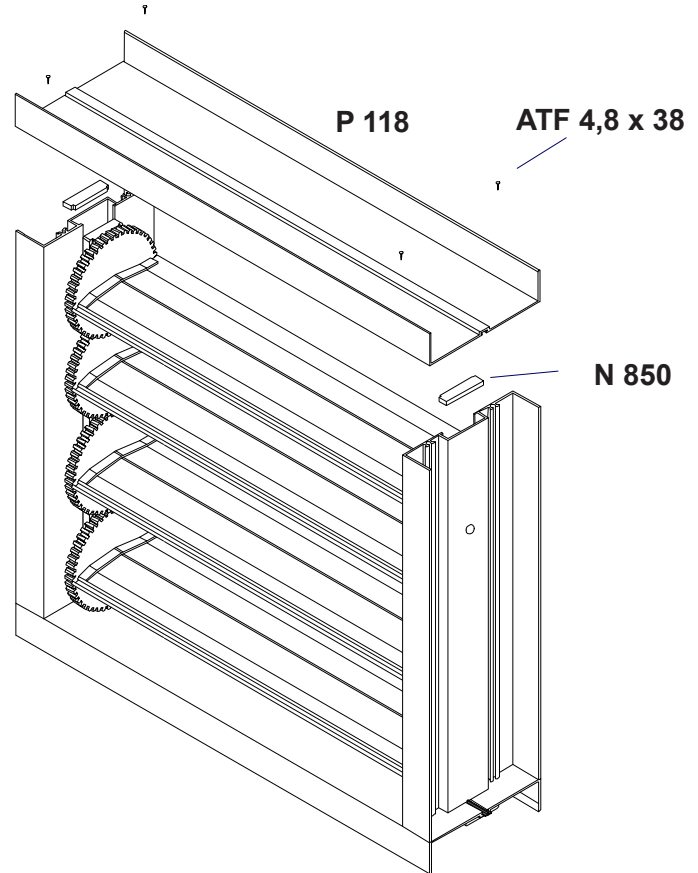
**NOTE:** It is advisable to keep the control mechanism as central as possible

Components for single damper / Instructions for assembly

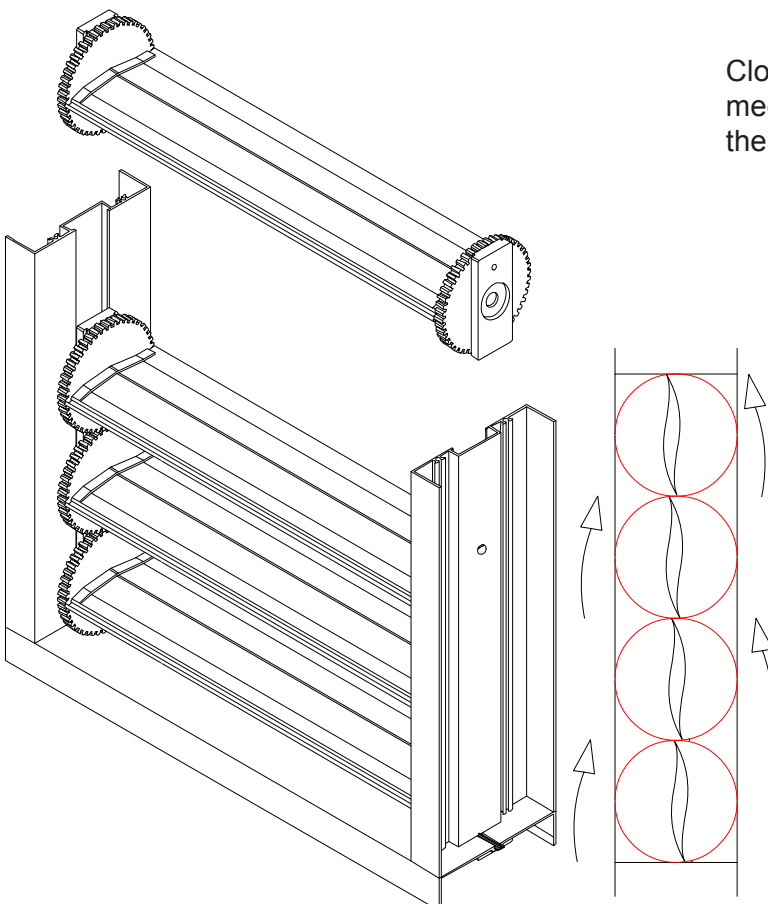
- 9** Insert the nylon gears in the tracks of the slats **P 126**, then mount **N 830** on the gears inspecting that they'll turn without effort.



- 11** Insert nylon spacer **N 850** as end of the pieces **N 830**. Then fasten top rail **P 118** with 4 self-tapping screws **ATF 4,8 x 38**

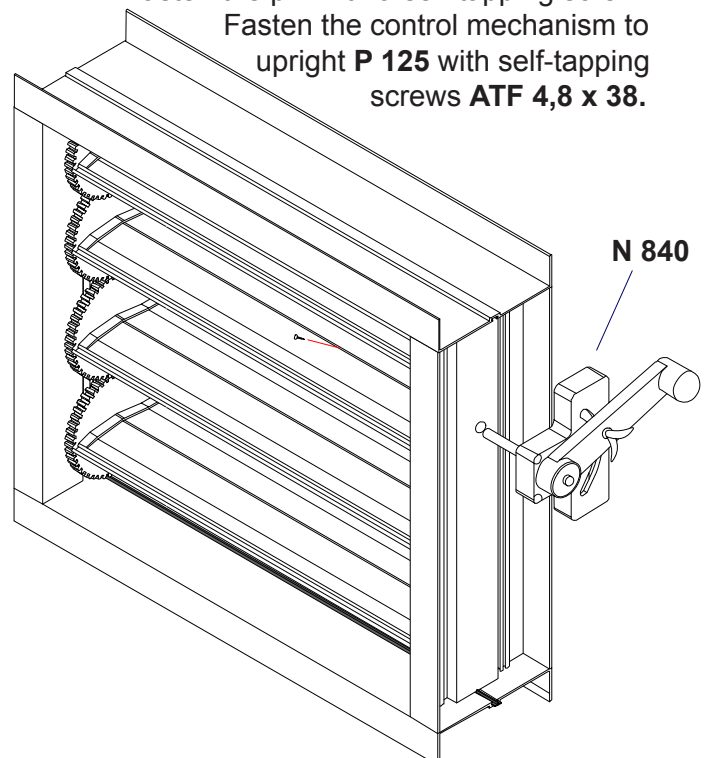


- 10** Insert the blade-spacer-gear assembly in the grooves of upright **P 125**. The gears should be coupled so that all the slats are oriented in the same position. Distanzhalter

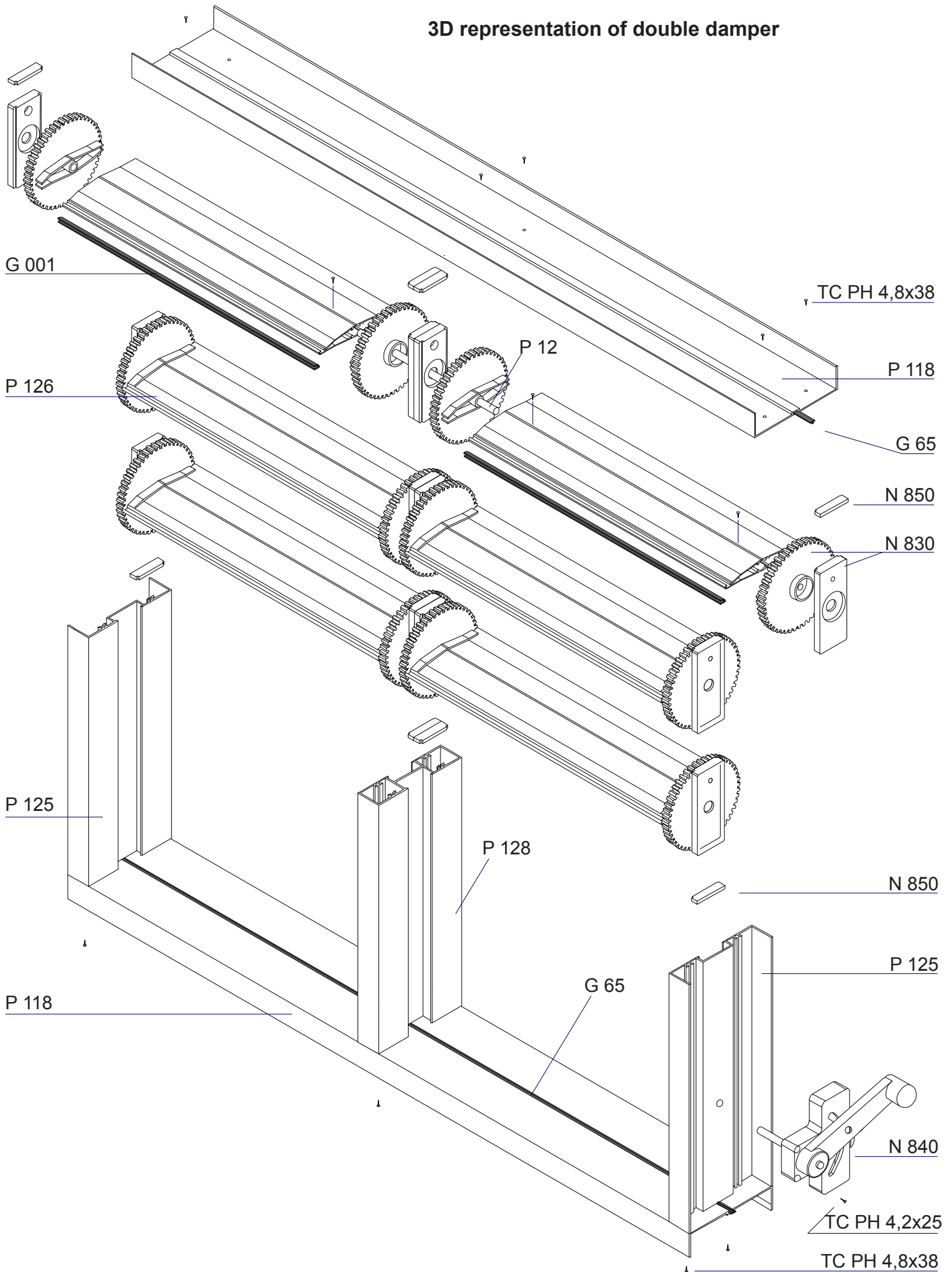


**12**

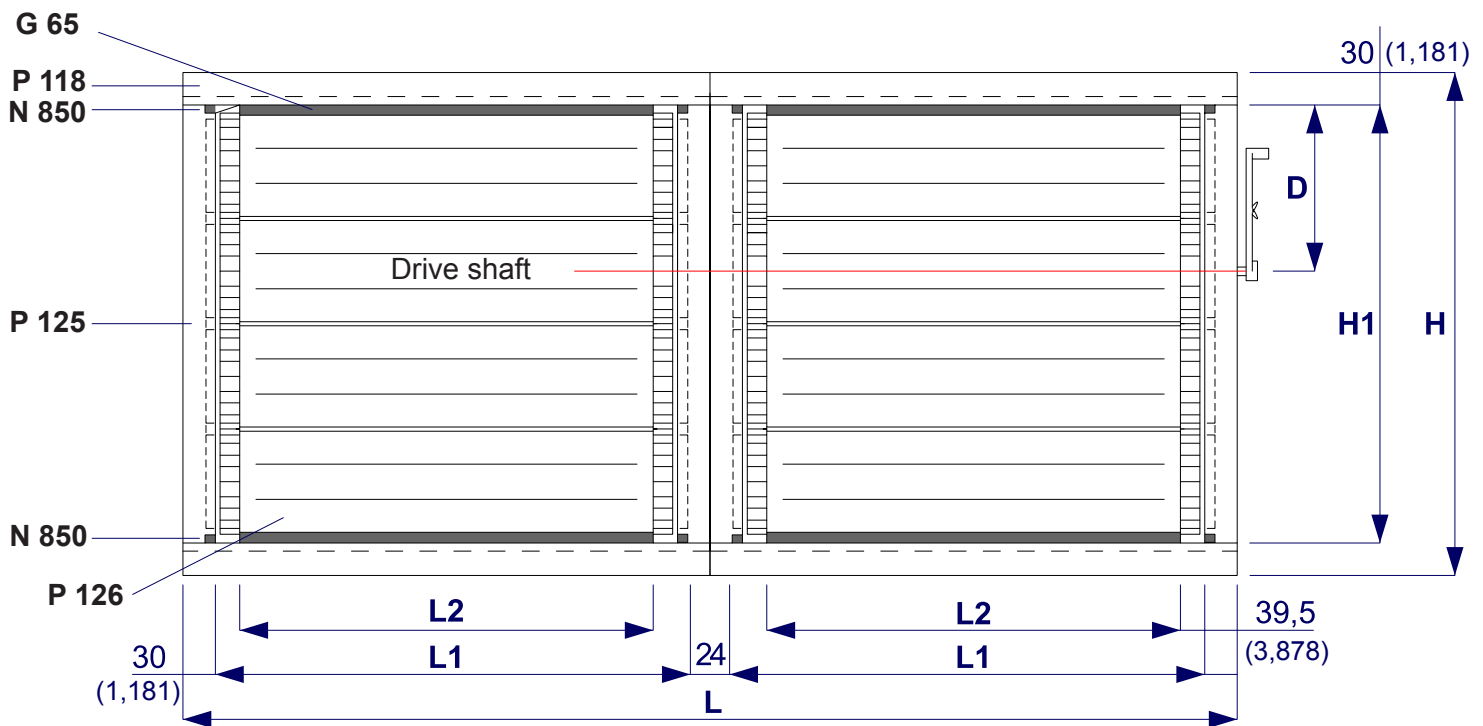
- Close the shutter slats by hand. Set the shutter control mechanism **N 840** in the closed position and introduce the pin into blades **P 126**. Drill 1 hole in slat **P 126** and fasten the pin with a self-tapping screw. Fasten the control mechanism to upright **P 125** with self-tapping screws **ATF 4,8 x 38**.



**3D representation of double damper**



**Components for double damper / Instructions for assembly**



$D = \text{number of blades} \times 101 + 54$

$H1 = \text{number of blades} \times 101 + 8$

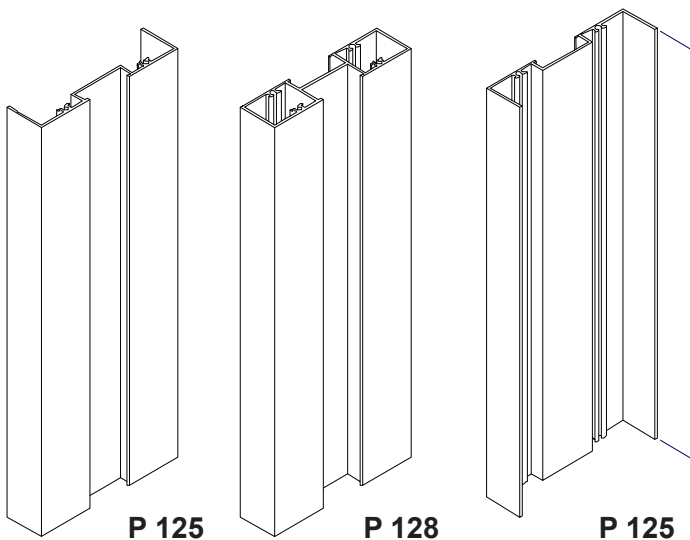
$L = [(L2 + 39,5) \times 2] + 43$

$H = H1 + 60$

Carry out the operations described for the single shutter with the following variations:

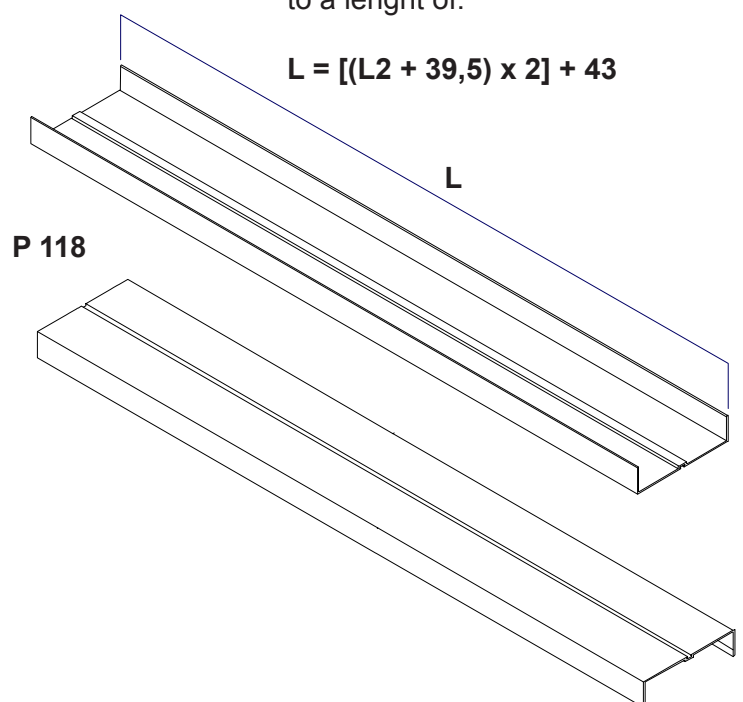
- 1** Cut 2 uprights **P125** and 1 upright **P128** to a length of:

$H1 = \text{number of slats} \times 101 + 8$



- 2** Cut 2 uprights **P118** (top and bottom) to a length of:

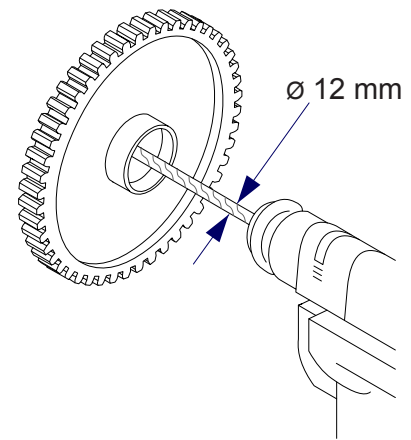
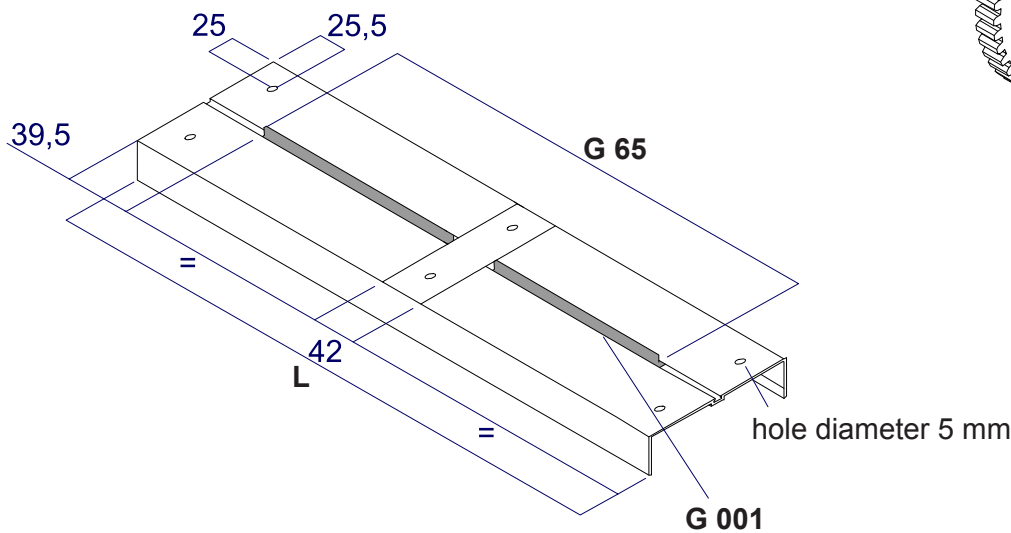
$L = [(L2 + 39,5) \times 2] + 43$



**Components for double damper / Instructions for assembly**

**3** Drill 6 holes  $\varnothing$  5 mm on both ends of **P 118** and insert gasket **G 65** as shown in the picture.

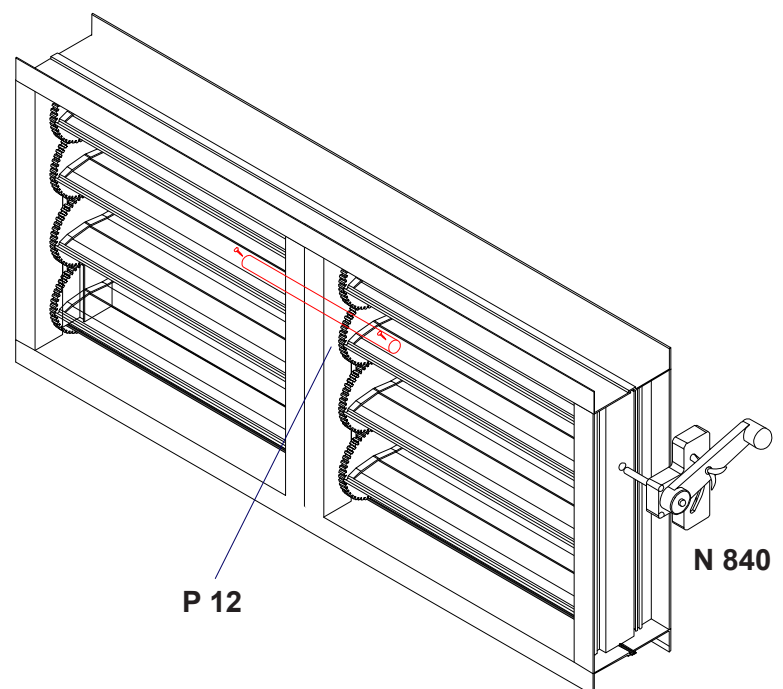
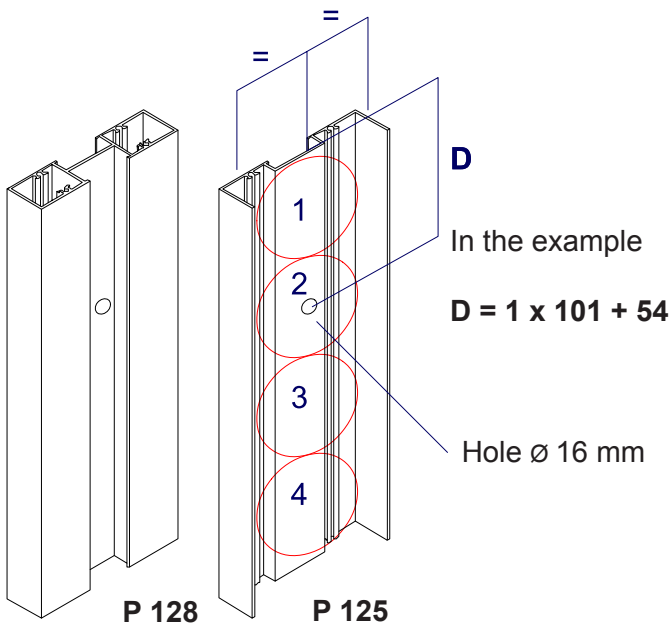
**5** Drill 1 hole  $\varnothing$  12 mm. in the 3 gears.



**4** Drill 1 hole  $\varnothing$  16 mm on **P 125** and **P 128** uprights at a distance of:

**6** Mount shutter opening-closing control **N 840** and connect the two sets of slats together with pin **P 12** and fasten it with two self-tapping screws.

**D = number of blades from which to position the hole x 101 + 54**

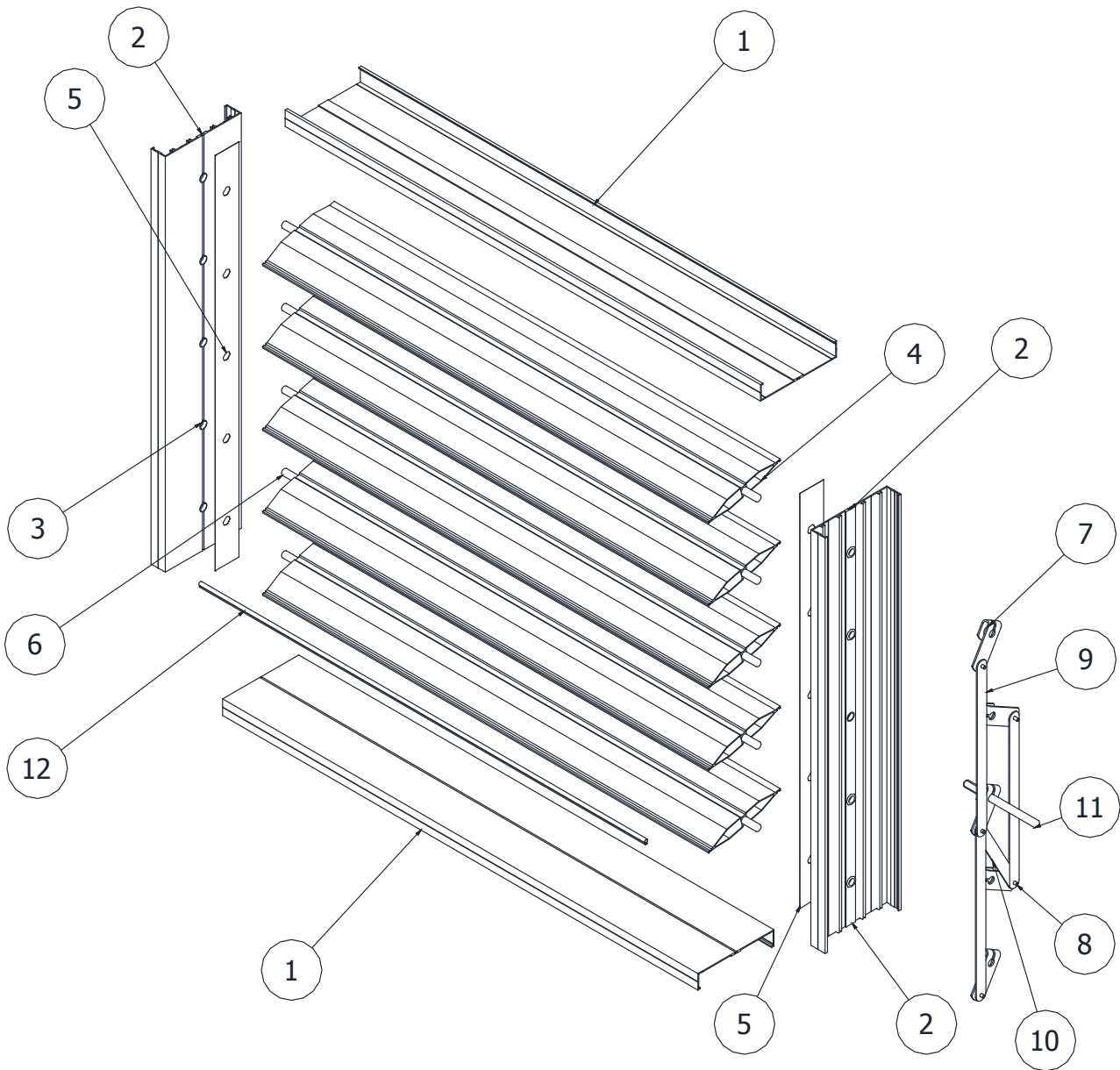


**NOTE:** It is advisable to keep the control mechanism as central as possible.

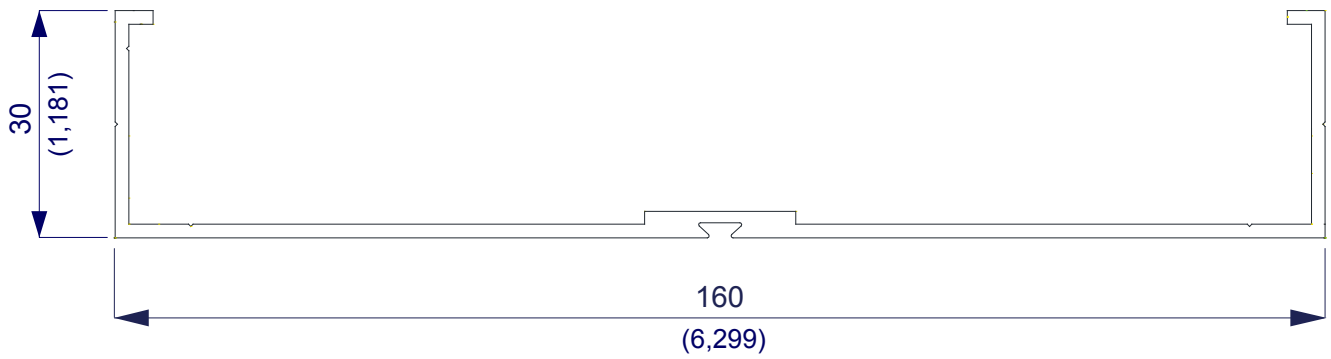
WEIGHT TABLE

H1	/P125	Single damper																Double damper								N830	N830	N830	N830																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		1.27	1.45	1.62	1.80	1.97	2.15	2.33	2.50	2.68	2.86	3.04	3.21	3.39	3.57	3.75	3.92	4.10	4.28	4.45	4.63	4.81	4.98	5.16	5.34					5.52	5.70	5.88	6.06	6.24	6.42	6.60	6.78	6.96	7.14	7.32	7.50	7.68	7.86	8.04	8.22	8.40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
210	1.27	1.45	1.62	1.80	1.97	2.15	2.33	2.50	2.68	2.86	3.04	3.21	3.39	3.57	3.75	3.92	4.10	4.28	4.45	4.63	4.81	4.98	5.16	5.34	5.52	5.70	5.88	6.06	6.24	6.42	6.60	6.78	6.96	7.14	7.32	7.50	7.68	7.86	8.04	8.22	8.40	8.58	8.76	8.94	9.12	9.30	9.48	9.66	9.84	10.02	10.20	10.38	10.56	10.74	10.92	11.10	11.28	11.46	11.64	11.82	12.00	12.18	12.36	12.54	12.72	12.90	13.08	13.26	13.44	13.62	13.80	13.98	14.16	14.34	14.52	14.70	14.88	15.06	15.24	15.42	15.60	15.78	15.96	16.14	16.32	16.50	16.68	16.86	17.04	17.22	17.40	17.58	17.76	17.94	18.12	18.30	18.48	18.66	18.84	19.02	19.20	19.38	19.56	19.74	19.92	20.10	20.28	20.46	20.64	20.82	21.00	21.18	21.36	21.54	21.72	21.90	22.08	22.26	22.44	22.62	22.80	22.98	23.16	23.34	23.52	23.70	23.88	24.06	24.24	24.42	24.60	24.78	24.96	25.14	25.32	25.50	25.68	25.86	26.04	26.22	26.40	26.58	26.76	26.94	27.12	27.30	27.48	27.66	27.84	28.02	28.20	28.38	28.56	28.74	28.92	29.10	29.28	29.46	29.64	29.82	30.00	30.18	30.36	30.54	30.72	30.90	31.08	31.26	31.44	31.62	31.80	31.98	32.16	32.34	32.52	32.70	32.88	33.06	33.24	33.42	33.60	33.78	33.96	34.14	34.32	34.50	34.68	34.86	35.04	35.22	35.40	35.58	35.76	35.94	36.12	36.30	36.48	36.66	36.84	37.02	37.20	37.38	37.56	37.74	37.92	38.10	38.28	38.46	38.64	38.82	39.00	39.18	39.36	39.54	39.72	39.90	40.08	40.26	40.44	40.62	40.80	40.98	41.16	41.34	41.52	41.70	41.88	42.06	42.24	42.42	42.60	42.78	42.96	43.14	43.32	43.50	43.68	43.86	44.04	44.22	44.40	44.58	44.76	44.94	45.12	45.30	45.48	45.66	45.84	46.02	46.20	46.38	46.56	46.74	46.92	47.10	47.28	47.46	47.64	47.82	48.00	48.18	48.36	48.54	48.72	48.90	49.08	49.26	49.44	49.62	49.80	49.98	50.16	50.34	50.52	50.70	50.88	51.06	51.24	51.42	51.60	51.78	51.96	52.14	52.32	52.50	52.68	52.86	53.04	53.22	53.40	53.58	53.76	53.94	54.12	54.30	54.48	54.66	54.84	55.02	55.20	55.38	55.56	55.74	55.92	56.10	56.28	56.46	56.64	56.82	57.00	57.18	57.36	57.54	57.72	57.90	58.08	58.26	58.44	58.62	58.80	58.98	59.16	59.34	59.52	59.70	59.88	60.06	60.24	60.42	60.60	60.78	60.96	61.14	61.32	61.50	61.68	61.86	62.04	62.22	62.40	62.58	62.76	62.94	63.12	63.30	63.48	63.66	63.84	64.02	64.20	64.38	64.56	64.74	64.92	65.10	65.28	65.46	65.64	65.82	66.00	66.18	66.36	66.54	66.72	66.90	67.08	67.26	67.44	67.62	67.80	67.98	68.16	68.34	68.52	68.70	68.88	69.06	69.24	69.42	69.60	69.78	69.96	70.14	70.32	70.50	70.68	70.86	71.04	71.22	71.40	71.58	71.76	71.94	72.12	72.30	72.48	72.66	72.84	73.02	73.20	73.38	73.56	73.74	73.92	74.10	74.28	74.46	74.64	74.82	75.00	75.18	75.36	75.54	75.72	75.90	76.08	76.26	76.44	76.62	76.80	76.98	77.16	77.34	77.52	77.70	77.88	78.06	78.24	78.42	78.60	78.78	78.96	79.14	79.32	79.50	79.68	79.86	80.04	80.22	80.40	80.58	80.76	80.94	81.12	81.30	81.48	81.66	81.84	82.02	82.20	82.38	82.56	82.74	82.92	83.10	83.28	83.46	83.64	83.82	84.00	84.18	84.36	84.54	84.72	84.90	85.08	85.26	85.44	85.62	85.80	85.98	86.16	86.34	86.52	86.70	86.88	87.06	87.24	87.42	87.60	87.78	87.96	88.14	88.32	88.50	88.68	88.86	89.04	89.22	89.40	89.58	89.76	89.94	90.12	90.30	90.48	90.66	90.84	91.02	91.20	91.38	91.56	91.74	91.92	92.10	92.28	92.46	92.64	92.82	93.00	93.18	93.36	93.54	93.72	93.90	94.08	94.26	94.44	94.62	94.80	94.98	95.16	95.34	95.52	95.70	95.88	96.06	96.24	96.42	96.60	96.78	96.96	97.14	97.32	97.50	97.68	97.86	98.04	98.22	98.40	98.58	98.76	98.94	99.12	99.30	99.48	99.66	99.84	100.02	100.20	100.38	100.56	100.74	100.92	101.10	101.28	101.46	101.64	101.82	102.00	102.18	102.36	102.54	102.72	102.90	103.08	103.26	103.44	103.62	103.80	103.98	104.16	104.34	104.52	104.70	104.88	105.06	105.24	105.42	105.60	105.78	105.96	106.14	106.32	106.50	106.68	106.86	107.04	107.22	107.40	107.58	107.76	107.94	108.12	108.30	108.48	108.66	108.84	109.02	109.20	109.38	109.56	109.74	109.92	110.10	110.28	110.46	110.64	110.82	111.00	111.18	111.36	111.54	111.72	111.90	112.08	112.26	112.44	112.62	112.80	112.98	113.16	113.34	113.52	113.70	113.88	114.06	114.24	114.42	114.60	114.78	114.96	115.14	115.32	115.50	115.68	115.86	116.04	116.22	116.40	116.58	116.76	116.94	117.12	117.30	117.48	117.66	117.84	118.02	118.20	118.38	118.56	118.74	118.92	119.10	119.28	119.46	119.64	119.82	120.00	120.18	120.36	120.54	120.72	120.90	121.08	121.26	121.44	121.62	121.80	121.98	122.16	122.34	122.52	122.70	122.88	123.06	123.24	123.42	123.60	123.78	123.96	124.14	124.32	124.50	124.68	124.86	125.04	125.22	125.40	125.58	125.76	125.94	126.12	126.30	126.48	126.66	126.84	127.02	127.20	127.38	127.56	127.74	127.92	128.10	128.28	128.46	128.64	128.82	129.00	129.18	129.36	129.54	129.72	129.90	130.08	130.26	130.44	130.62	130.80	130.98	131.16	131.34	131.52	131.70	131.88	132.06	132.24	132.42	132.60	132.78	132.96	133.14	133.32	133.50	133.68	133.86	134.04	134.22	134.40	134.58	134.76	134.94	135.12	135.30	135.48	135.66	135.84	136.02	136.20	136.38	136.56	136.74	136.92	137.10	137.28	137.46	137.64	137.82	138.00	138.18	138.36	138.54	138.72	138.90	139.08	139.26	139.44	139.62	139.80	139.98	140.16	140.34	140.52	140.70	140.88	141.06	141.24	141.42	141.60	141.78	141.96	142.14	142.32	142.50	142.68	142.86	143.04	143.22	143.40	143.58	143.76	143.94	144.12	144.30	144.48	144.66	144.84	145.02	145.20	145.38	145.56	145.74	145.92	146.10	146.28	146.46	146.64	146.82	147.00	147.18	147.36	147.54	147.72	147.90	148.08	148.26	148.44	148.62	148.80	148.98	149.16	149.34	149.52	149.70	149.88	150.06	150.24	150.42	150.60	150.78	150.96	151.14	151.32	151.50	151.68	151.86	152.04	152.22	152.40	152.58	152.76	152.94	153.12	153.30	153.48	153.66	153.84	154.02	154.20	154.38	154.56	154.74	154.92	155.10	155.28	155.46	155.64	155.82	156.00	156.18	156.36	156.54	156.72	156.90	157.08	157.26	157.44	157.62	157.80	157.98	158.16	158.34	158.52	158.70	158.88	159.06	159.24	159.42	159.60	159.78	159.96	160.14	160.32	160.50	160.68	160.86	161.04	161.22	161.40	161.58	161.76	161.94	162.12	162.30	162.48	162.66	162.84	163.02	163.20	163.38	163.56	163.74	163.92	164.10	164.28	164.46	164.64	164.82	165.00	165.18	165.36	165.54	165.72	165.90	166.08	166.26	166.44	166.62	166.80	166.98	167.16	167.34	167.52	167.70	167.88	168.06	168.24	168.42	168.60	168.78	168.96	169.14	169.32	169.50	169.68	169.86	170.04	170.22	170.40	170.58	170.76	170.94	171.12	171.30	171.48	171.66	171.84	172.02	172.20	172.38	172.56	172.74	172.92	173.10	173.28	173.46	173.64	173.82	174.00	174.18	174.36	174.54	174.72	174.90	175.08	175.26	175.44	175.62	175.80	175.98	176.16	176.34	176.52	176.70	176.88	177.06	177.24	177.42	177.60	177.78	177.96	178.14	178.32	178.50	178.68	178.86	179.04	179.22	179.40	179.58	179.76	179.94	180.12	180.30	180.48	180.66	180.84	181.02	181.20	181.38	181.56	181.74	181.92	182.10	182.28	182.46	182.64	182.82	183.00	183.18	183.36	183.54	183.72	183.90	184.08	184.26	184.44	184.62	184.80	184.98	185.16	185.34	185.52	185.70	185.88	186.06	186.24	186.42	186.60	186.78	186.96	187.14	187.32	187.50	187.68	187.86	188.04	188.22	188.40	188.58	188.76	188.94	189.12	189.30	189.48	189.66	189.84	189.98	190.16	190.34	190.52	190.70	190.88	191.06	191.24	191.42	191.60	191.78	191.96	192.14	192.32	192.50	192.68	192.86	193.04	193.22	193.40	193.58	193.76	193.94	194.12	194.30	194.48	194.66	194.84	195.02	195.20	195.38	195.56	195.74	195.92	196.10	196.28	196.46	196.64	196.82	197.00	197.18	197.36	197.54	197.72	197.90	198.08	198.26	198.44	198.62	198.80	198.98	199.16	199.34	199.5

**3D Representation of single damper pitch 150 mm**



PART LIST	
ITEM	PART NUMBER
1	PD 2001
2	PD 2002
3	80VM000072
4	PD 2000
5	30VM000585
6	30VM000556
7	80VM000036
8	60VM000024
9	80VM000043
10	80VM000044
11	30VM000558
12	G001 / G0014

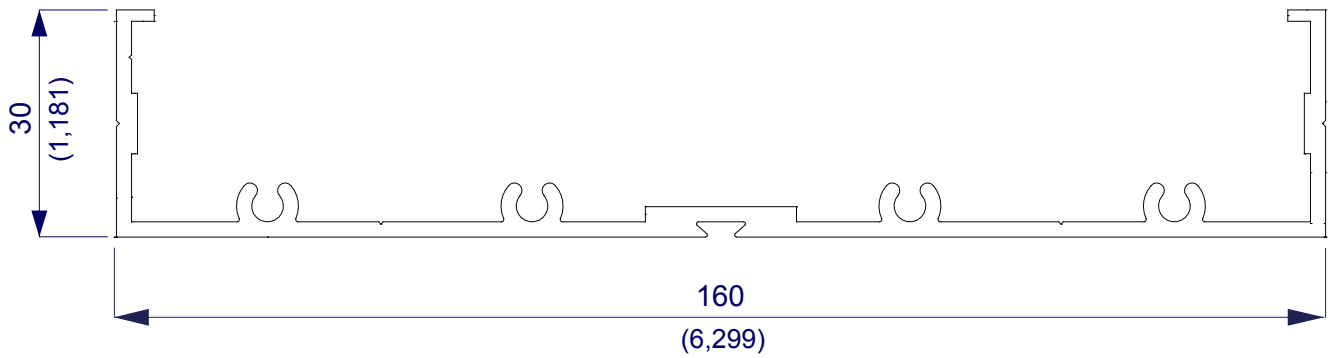


**PD 2001**

Weight kg/m 1,167

(lb/ft 0,784)

Bundle of 2 bars

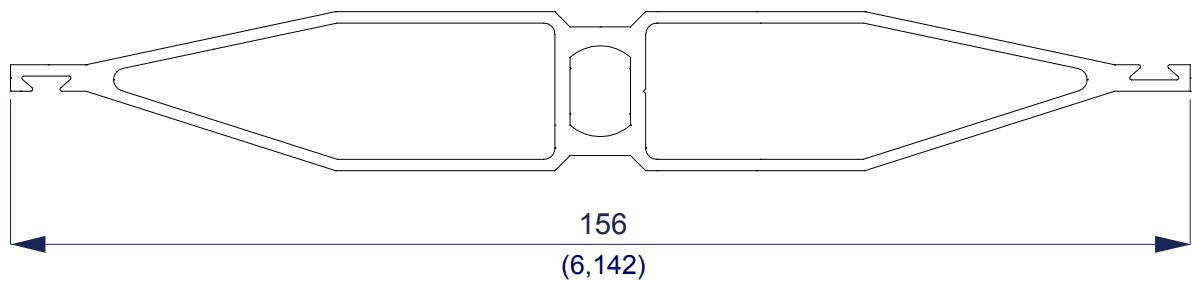


**PD 2002**

Weight kg/m 1,565

(lb/ft 1,052)

Bundle of 2 bars

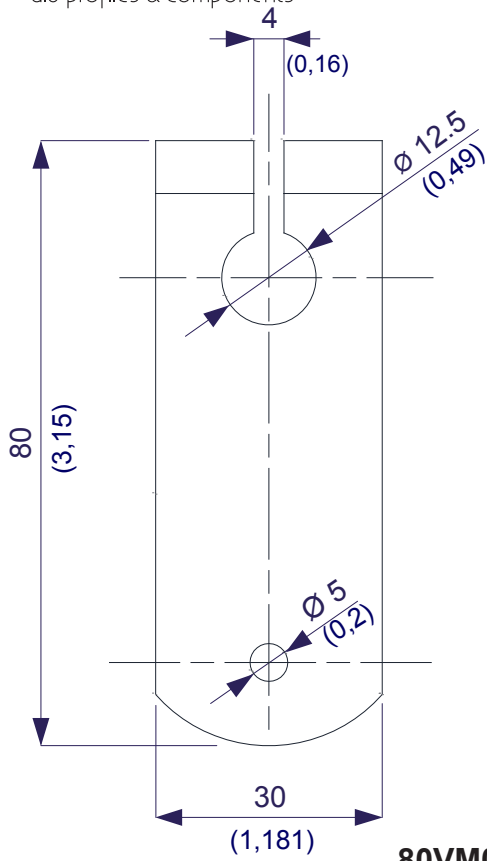


**PD 2000**

Weight kg/m 1,549

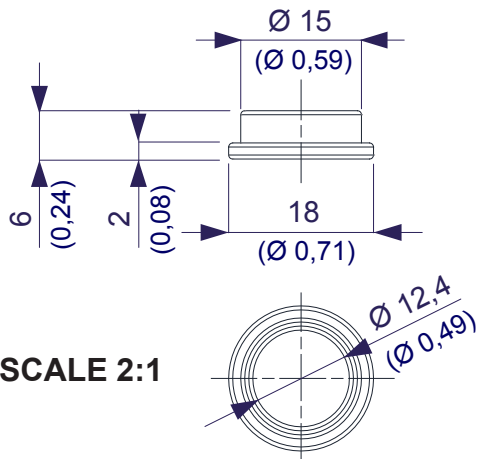
(lb/ft 1,041)

Bundle of 2 bars

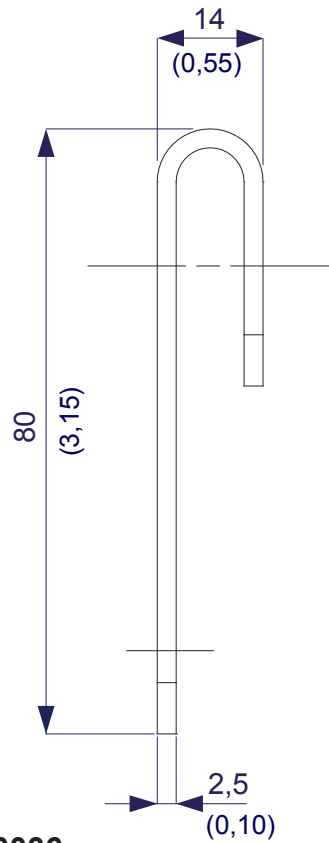


**80VM000036**  
Box of 50 pcs.

**GASKET**

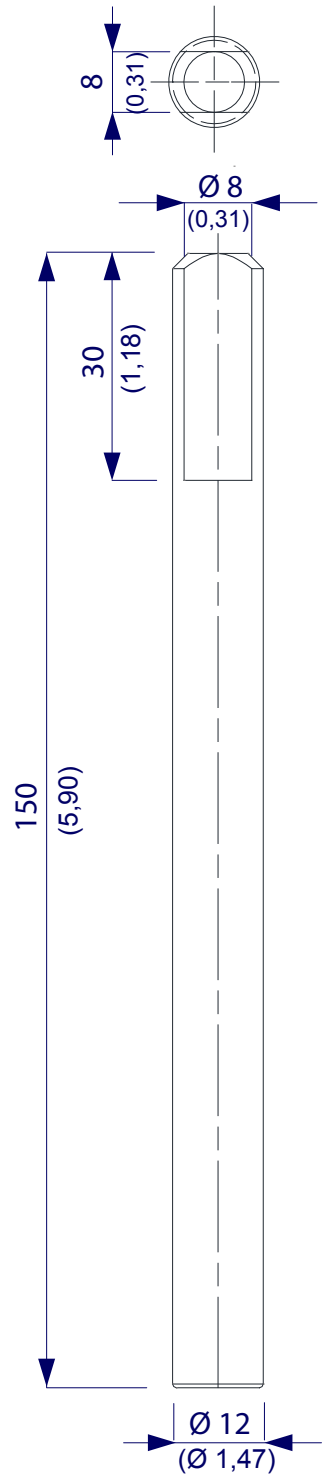


**80VM000072**  
Box of 500 pcs.



**30VM000556**  
Box of 300 pcs.

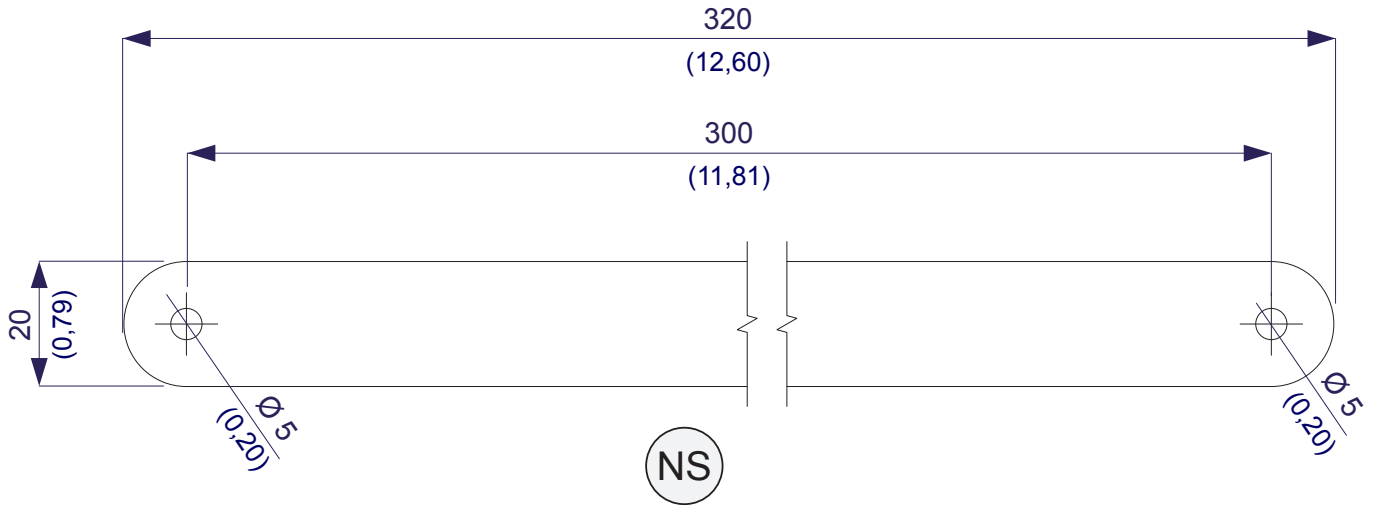
**LEVERISM**



**30VM000558**  
Box of 300 pcs.

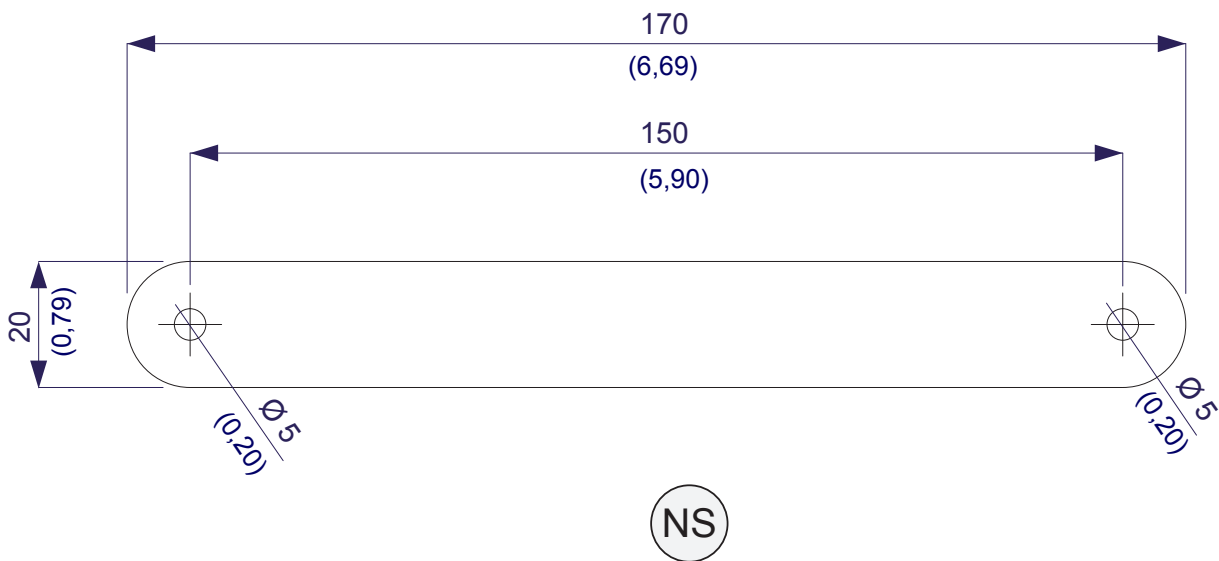
**80VM000044**

Box of 50 pcs.



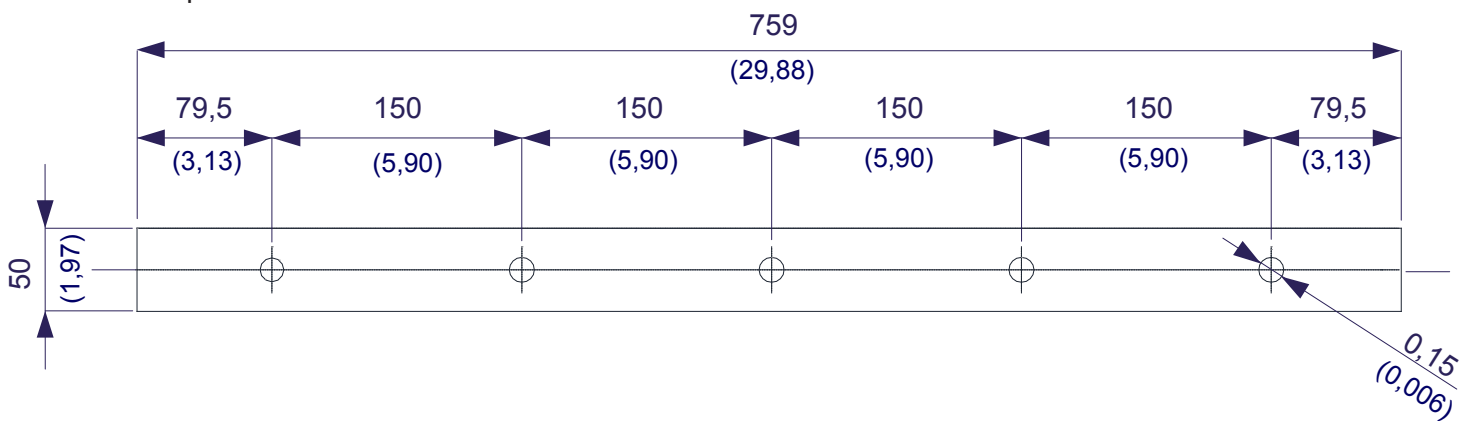
**80VM000043**

Box of 50 pcs.

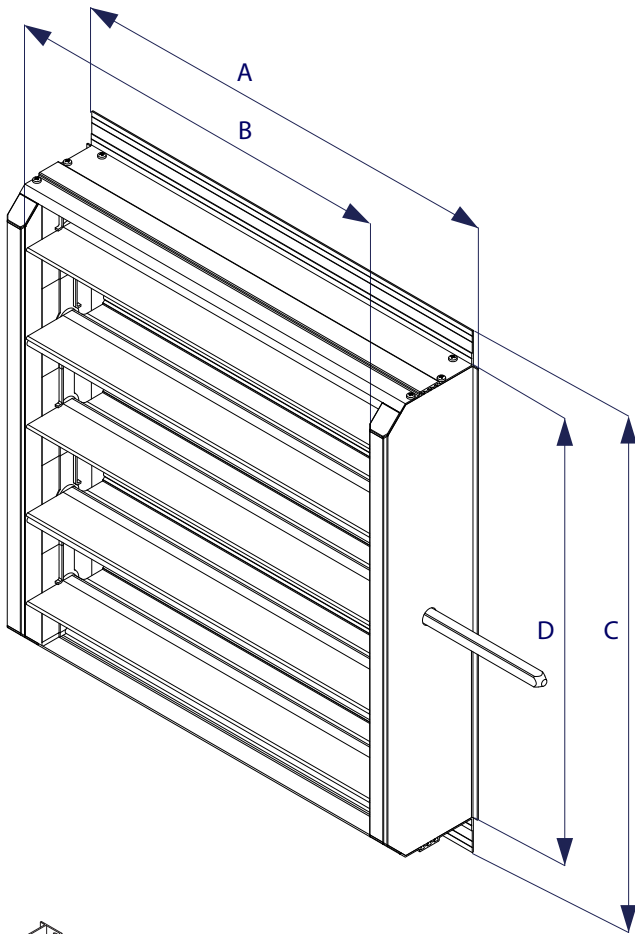


**30VM000585**

Box of 50 pcs.



3D representation of double damper



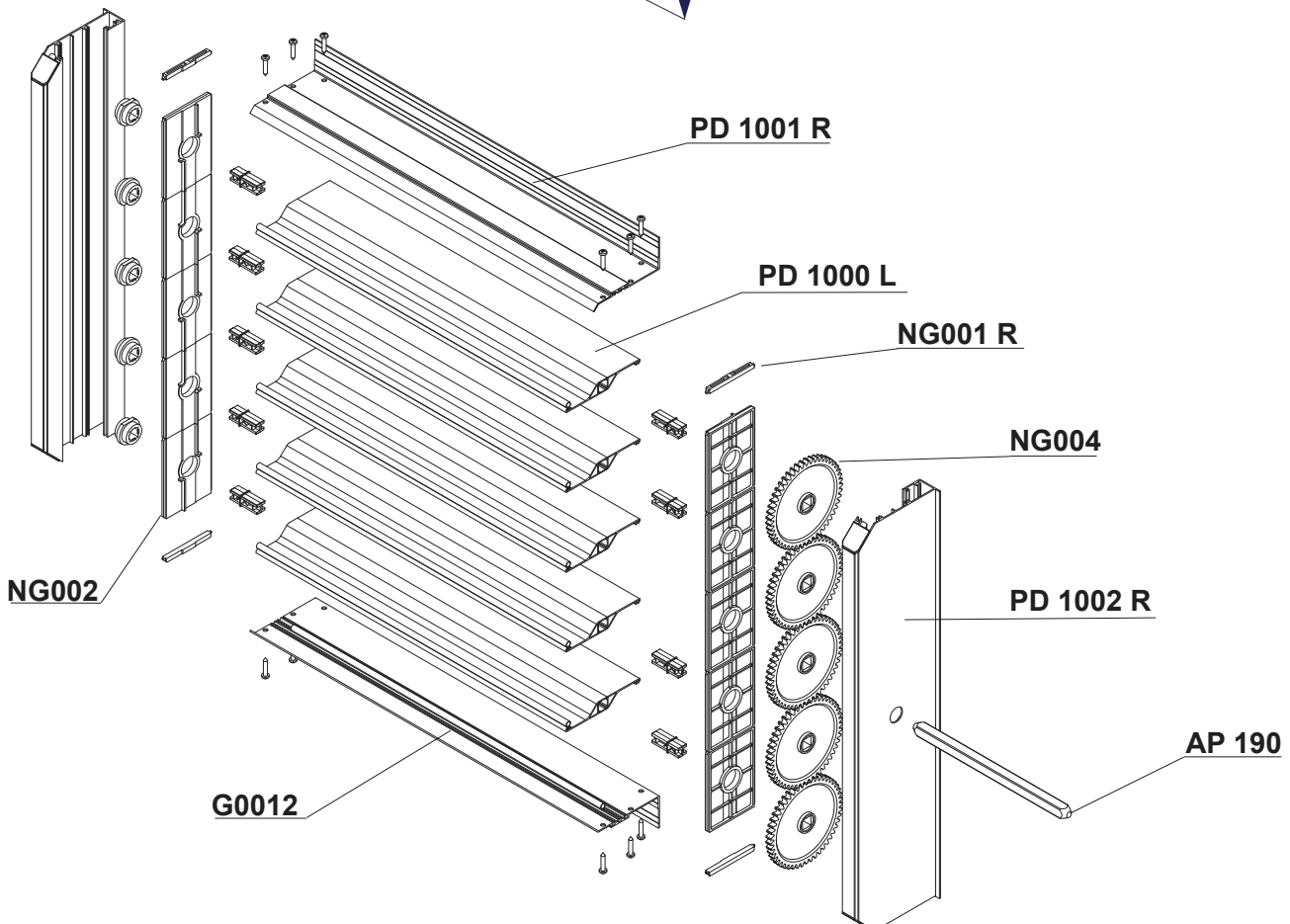
**SINGLE DAMPER FORMULA**

SINGLE DAMPER  
 $A = B - 60 \text{ mm}$   
 BLADE length =  $B - 3 \text{ mm} / 2 \text{ mm}$   
 $C = D - 80 \text{ mm}$   
 D = see table below

**DIMENSION FOR PROFILE "D"**

$L = N^{\circ} \text{ blades} \times 100 \text{ mm} + 10 \text{ mm} + \text{TOLERANCES}$

TOLERANCES =  $\pm 1$



3D representation of double damper

**DOUBLE DAMPER FORMULA**

DOUBLE DAMPER

$B = A - 60 \text{ mm}$

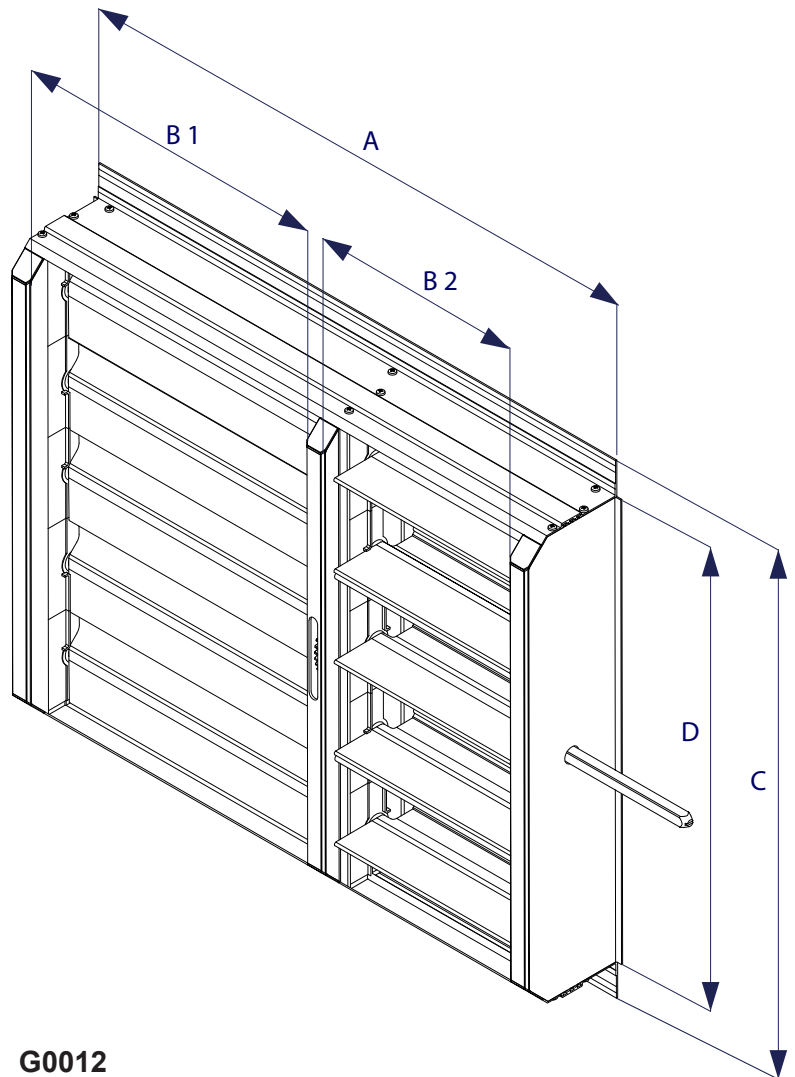
$B1 = B - (B2 + 32.5 \text{ mm})$

$B2 = B - (B1 + 32.5 \text{ mm})$

BLADE length =  $B1 - 2 \text{ mm}$   
 $B2 - 2 \text{ mm}$

$C = D - 80 \text{ mm}$

D = see table below

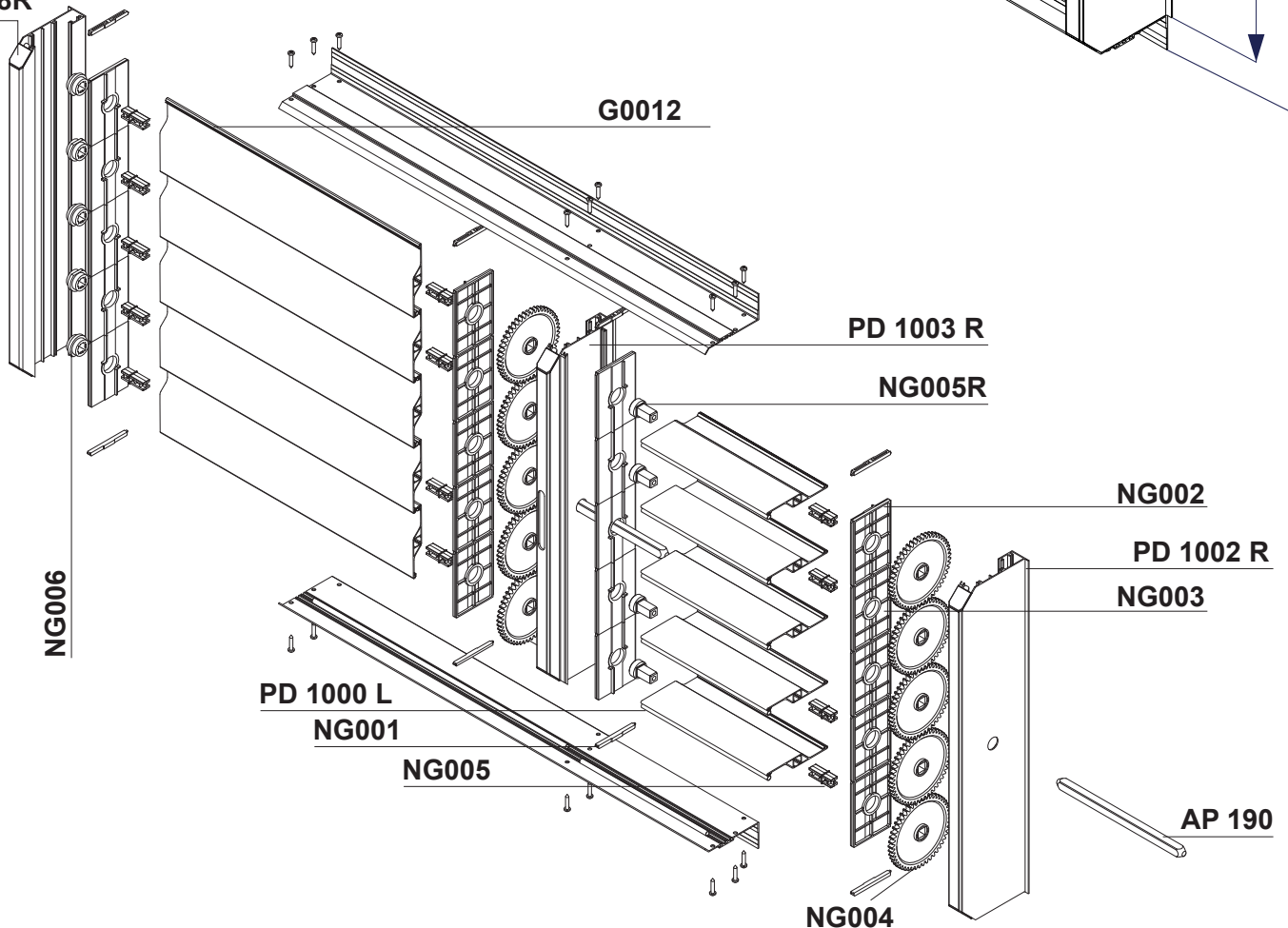


**DIMENSION FOR PROFILE "D"**

$L = \text{N}^\circ \text{ blades} \times 100 \text{ mm} + 10 \text{ mm} + \text{TOLERANCES}$

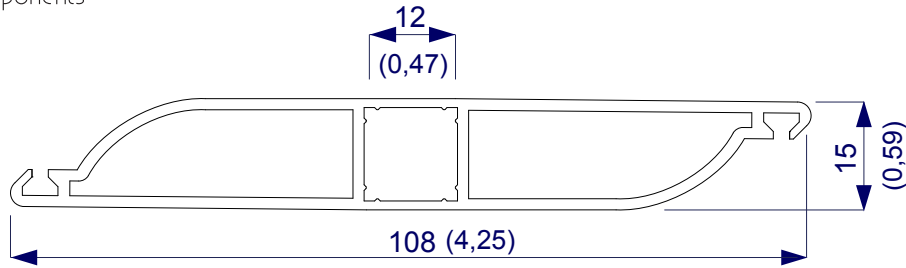
TOLERANCES =  $\pm 1$

NG008R



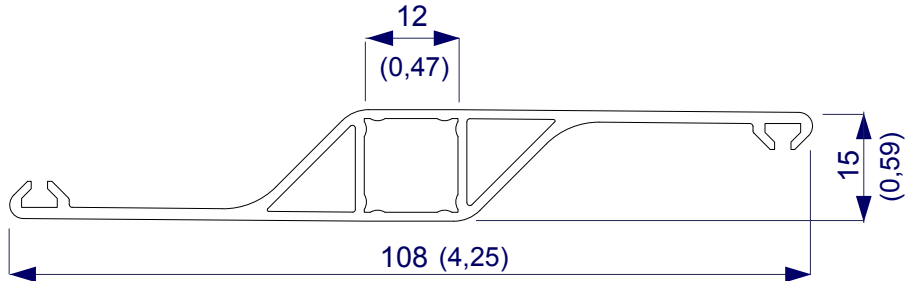
**PD 1000**

Weight kg/m 1,013  
(lb/ft 0,681)  
Bundle of 3 bars



**PD 1000 L**

Weight kg/m 0,752  
(lb/ft 0,505)  
Bundle of 3 bars

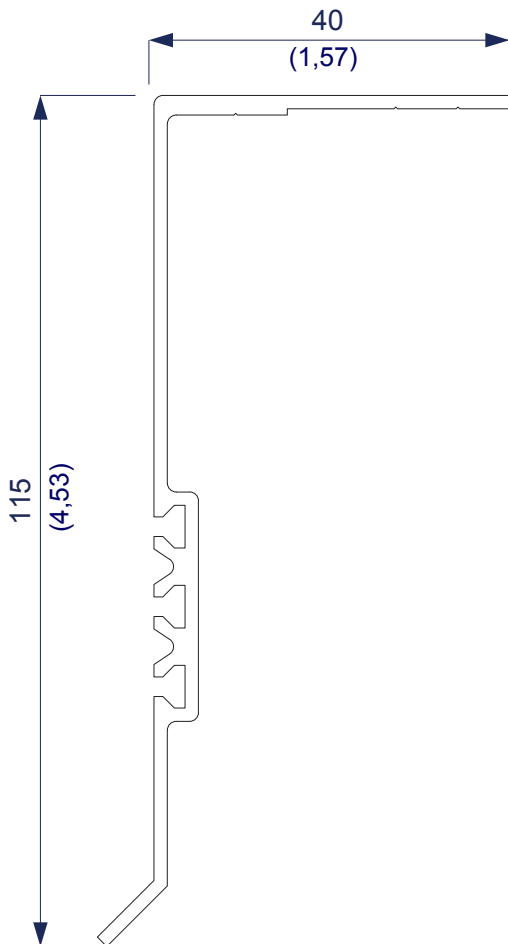
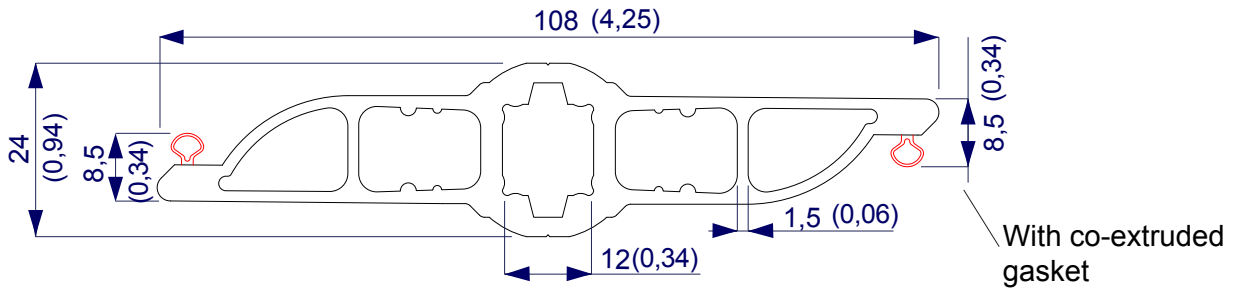


**GASKET**



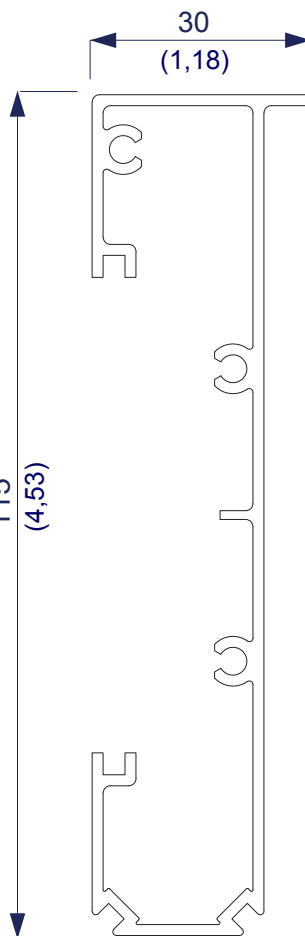
**PLA PD 1000 G2**

Weight kg/m 0,752  
(lb/ft 0,505)  
Bundle of 3 bars



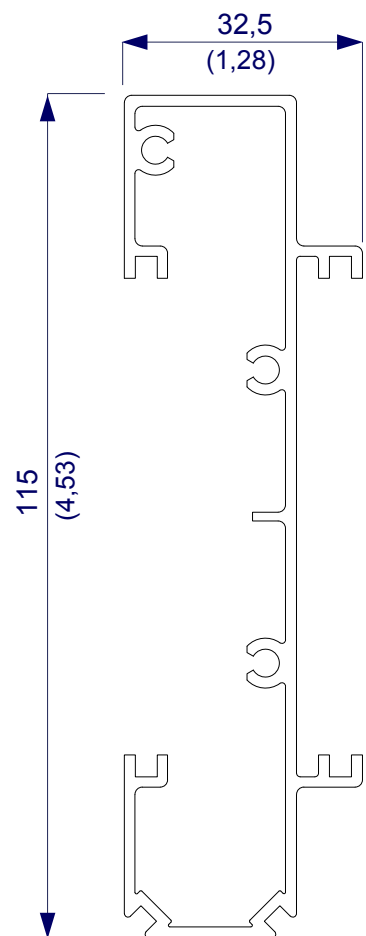
**PD 1001 R**

Weight kg/m 0,691  
(lb/ft 0,463)  
Bundle of 4 bars



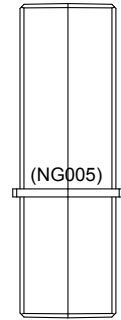
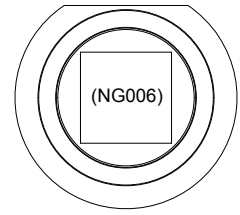
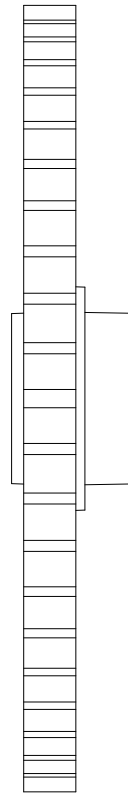
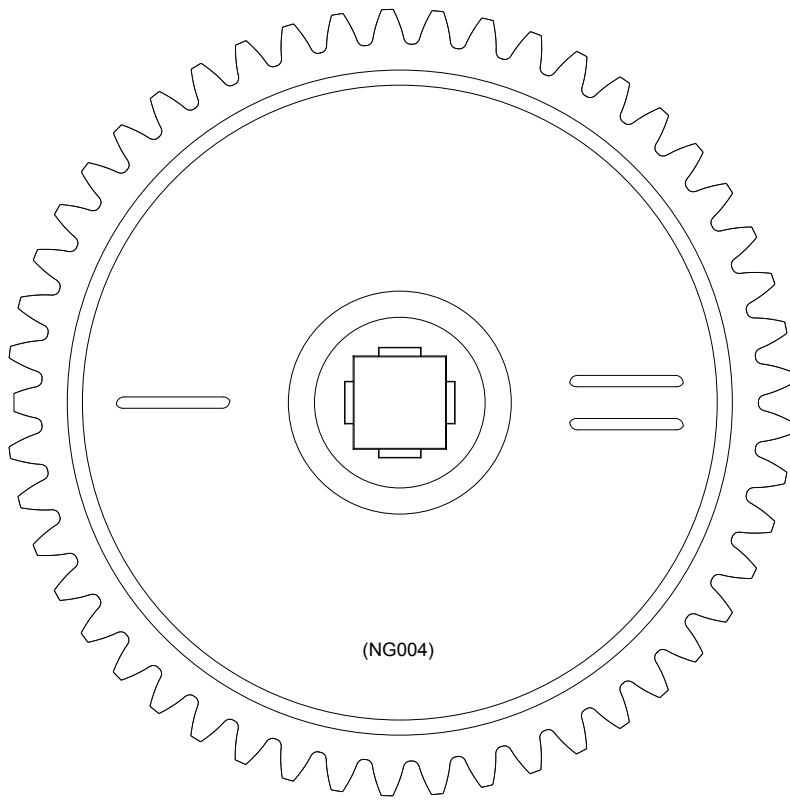
**PD 1002 R**

Weight kg/m 1,110  
(lb/ft 0,746)  
Bundle of 2 bars

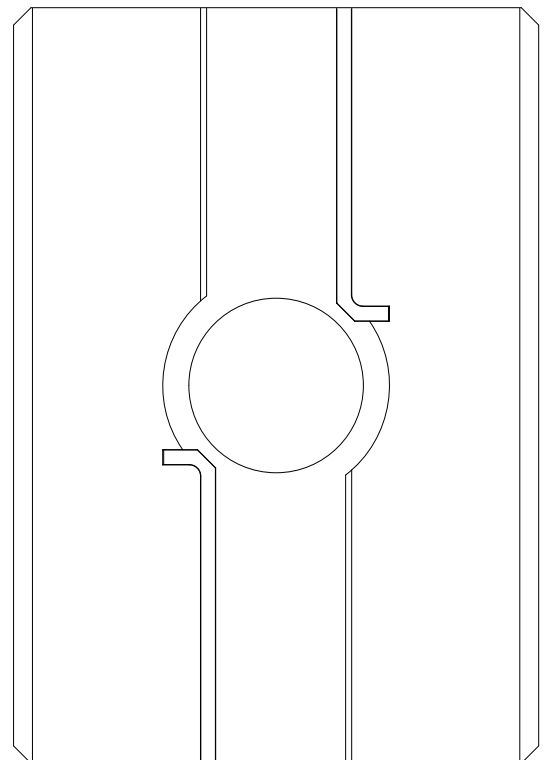
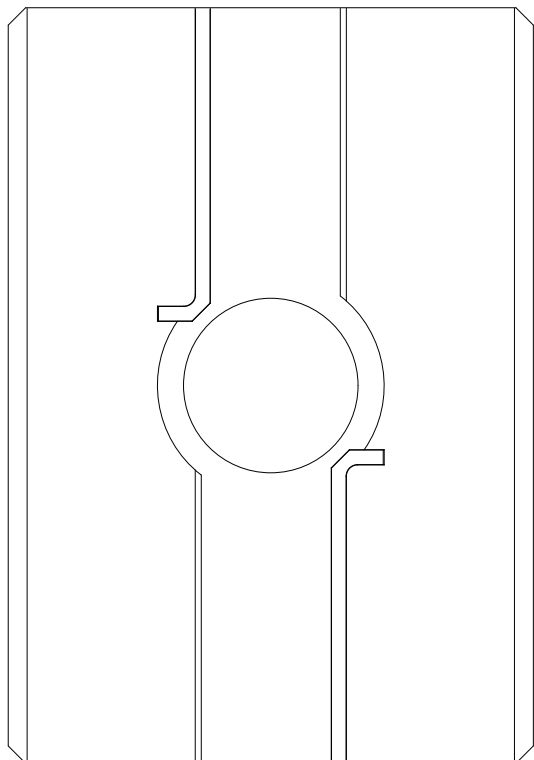
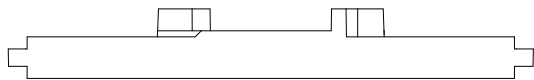
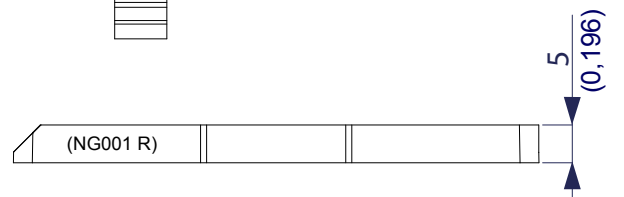


**PD 1003 R**

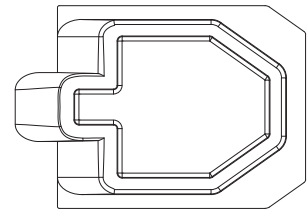
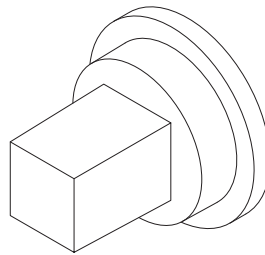
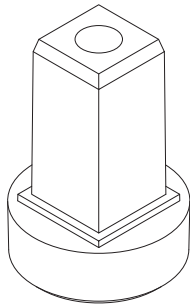
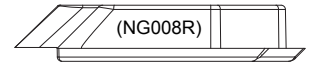
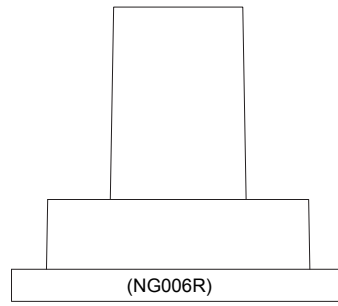
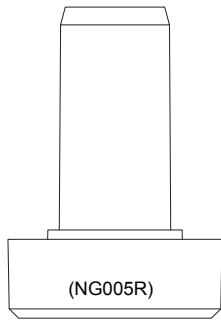
Weight kg/m 1,191  
(lb/ft 0,800)  
Bundle of 2 bars



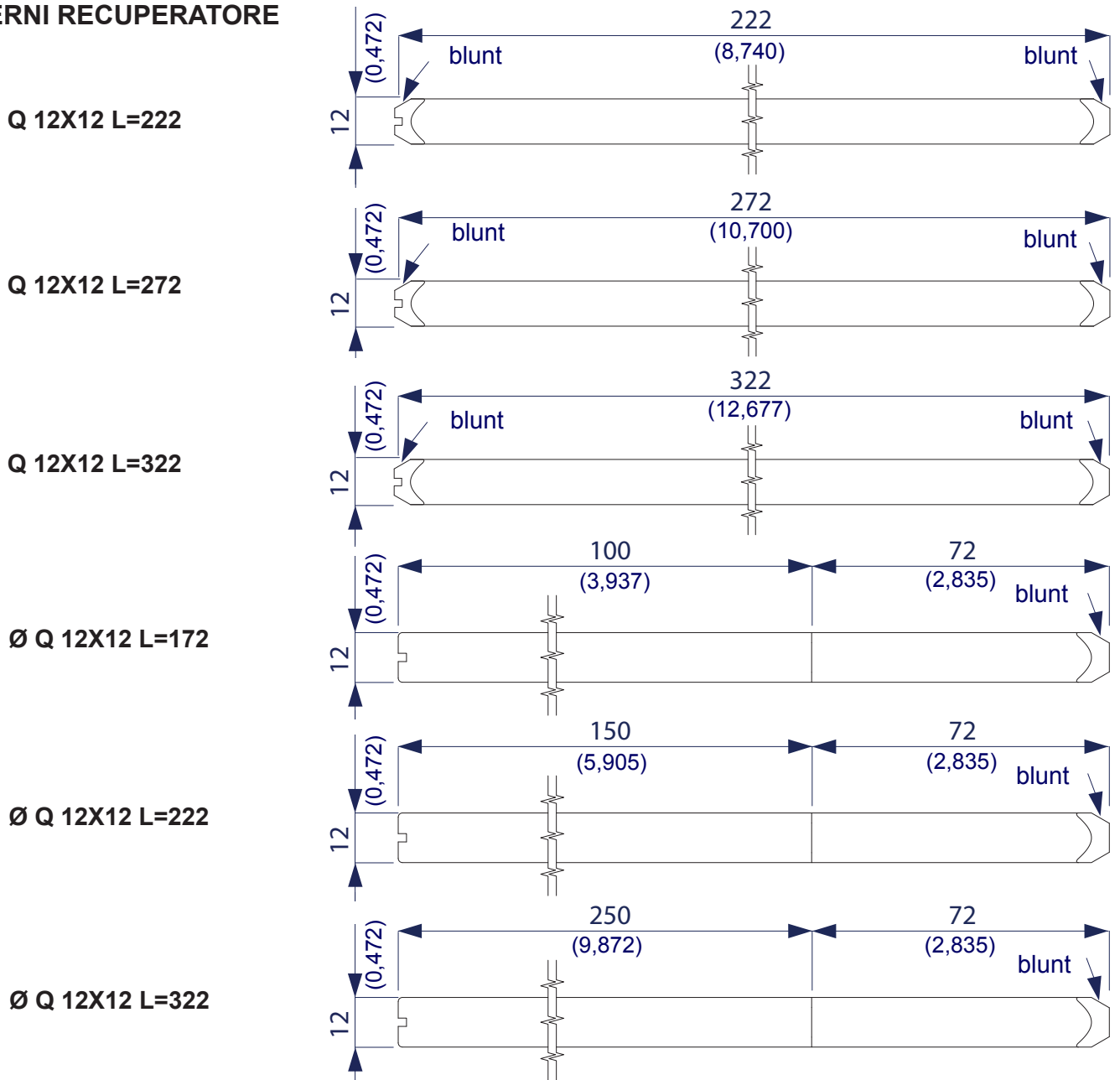
**NG100 R**  
Box of 600 pcs.



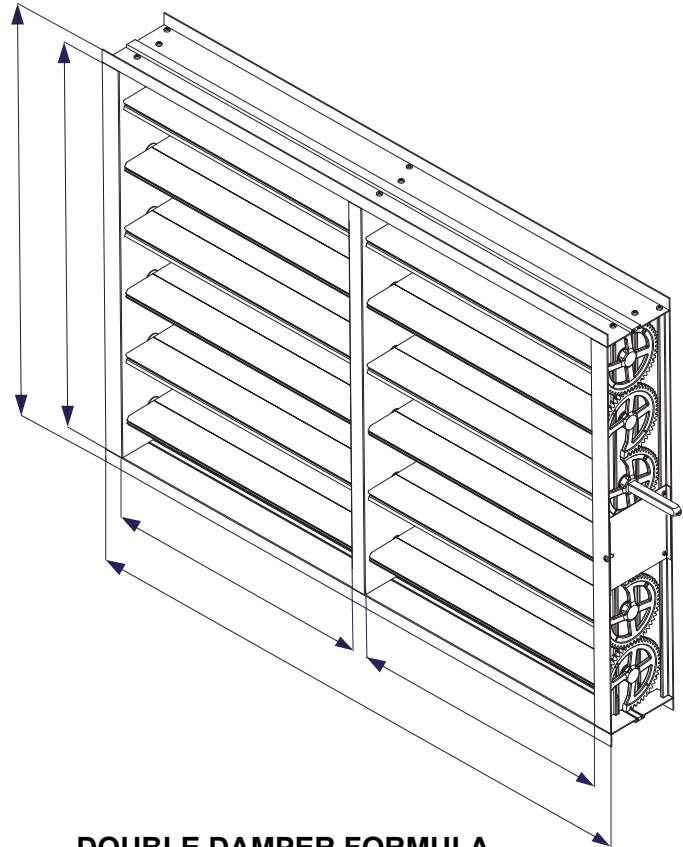
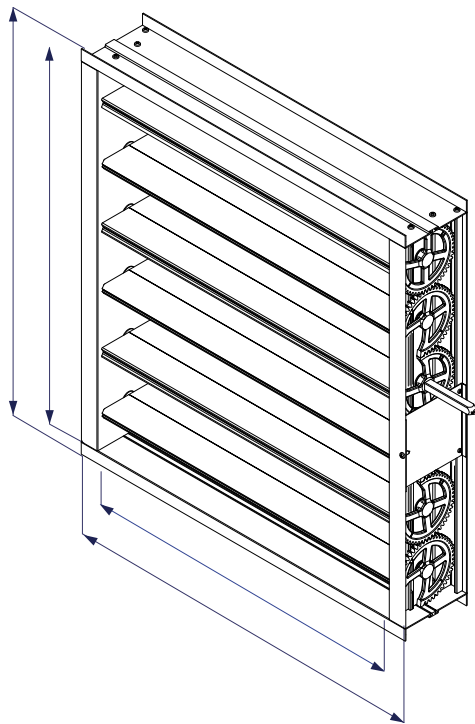
Accessori e perni



PERNI RECUPERATORE



3D representation of double damper

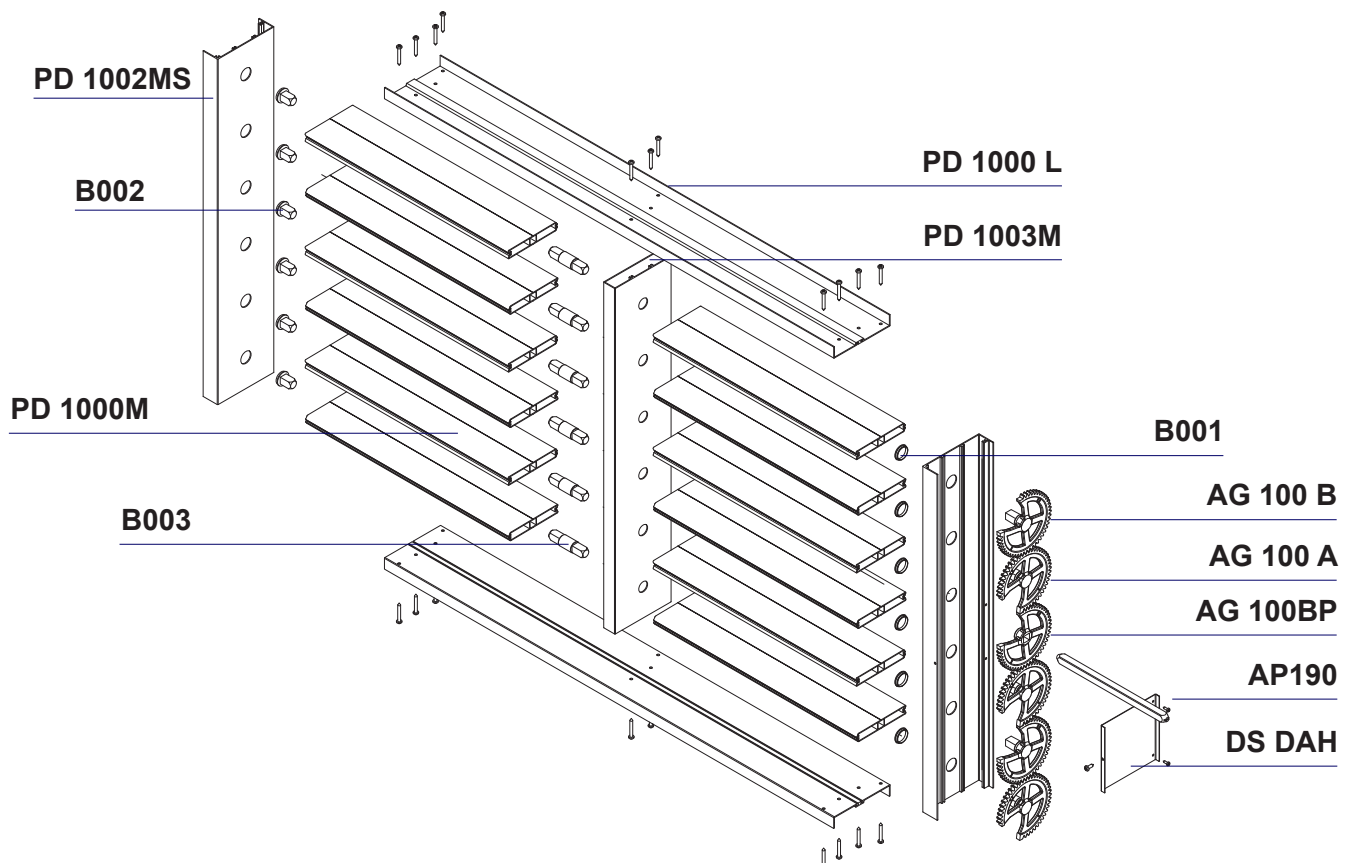


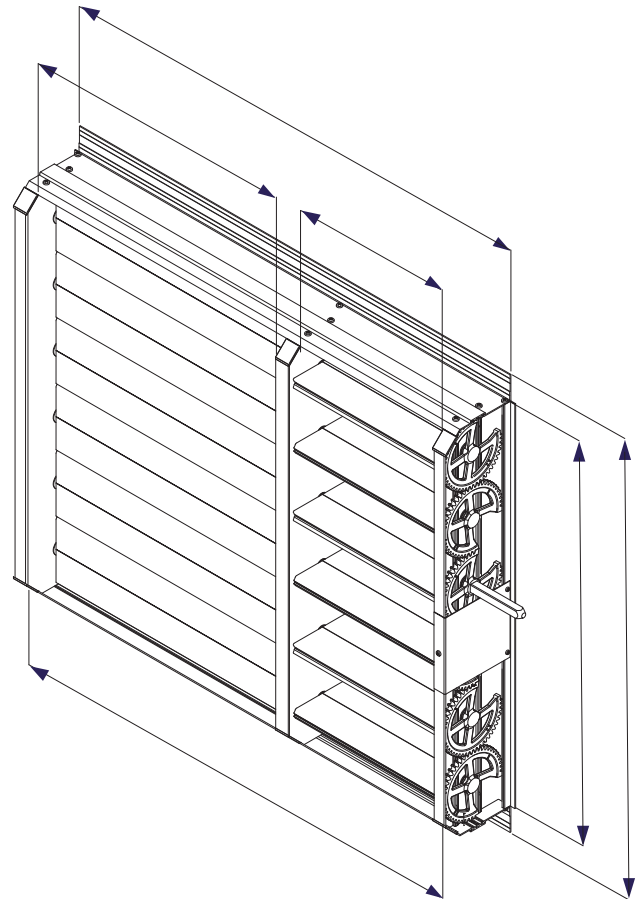
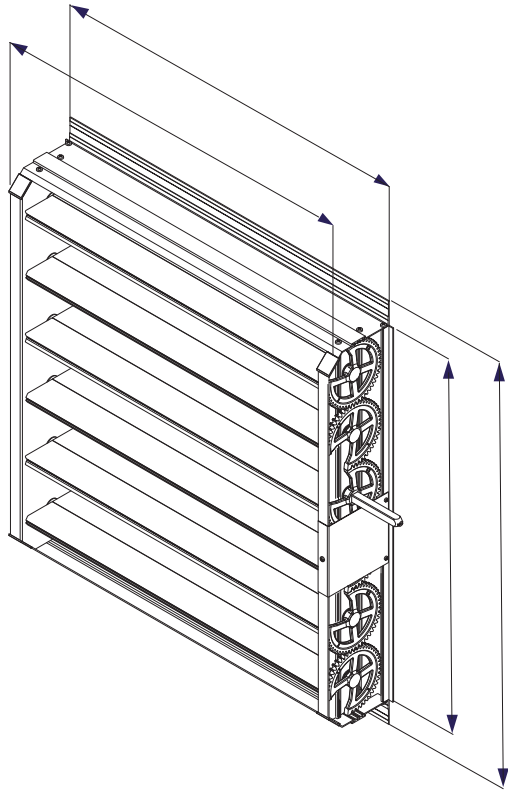
**SINGLE DAMPER FORMULA**

STANDARD  
 $A = B + 60 \text{ mm}$   
 BLADE length =  $B - 2 \text{ mm}$   
 $C = D + 40 \text{ mm}$

**DOUBLE DAMPER FORMULA**

DOUBLE DAMPER  
 $A = B1 + B2 + 60 \text{ mm} + 23.5 \text{ MM}$   
 BLADE length =  $B1 \text{ o } (B2) - 2 \text{ mm}$   
 $C = D + 40 \text{ mm}$





**SINGLE DAMPER FORMULA**

**RECUPERATOR**

$A = B + 60 \text{ mm}$

BLADE length =  $B - 2 \text{ mm}$

$C = D + 40 \text{ mm}$

“D” SHOULDER PROFILE SIZING

$L = N^\circ \text{ of blades} \times 100 \text{ mm} + 10 \text{ mm}$

**DOUBLE DAMPER FORMULA**

**RECOVERY**

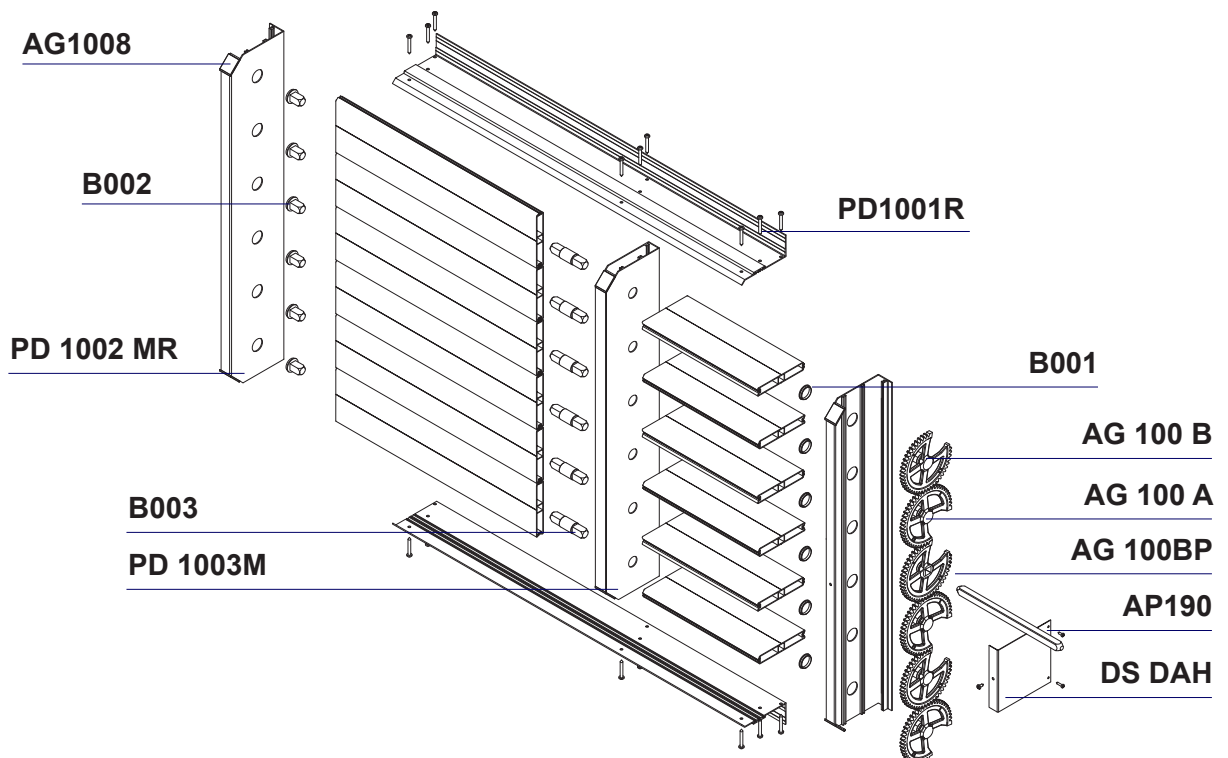
$A = B1 + B2 + 60 \text{ mm} + 23.5 \text{ MM}$

BLADE length =  $B1 \text{ O } (B2) - 2 \text{ mm}$

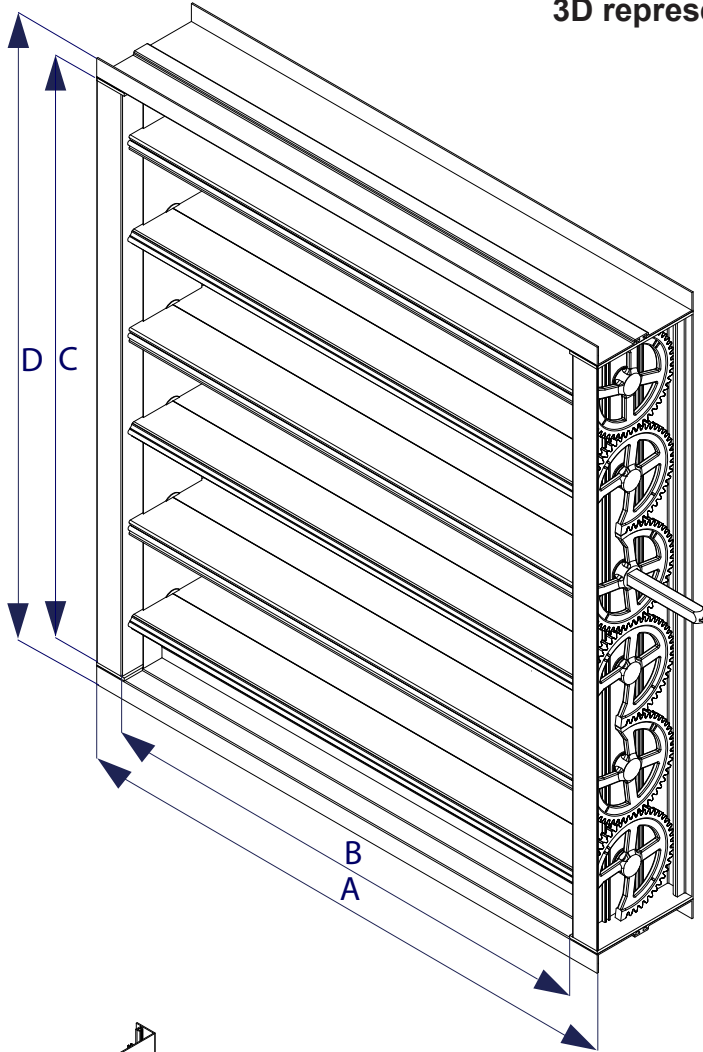
$C = D + 80 \text{ mm}$

“D” SHOULDER PROFILE SIZING

$L = N^\circ \text{ of blades} \times 100 \text{ mm} + 10 \text{ mm}$



3D representation of double damper



**FORMULA PITCH**

SINGLE DAMPER CLASS 4

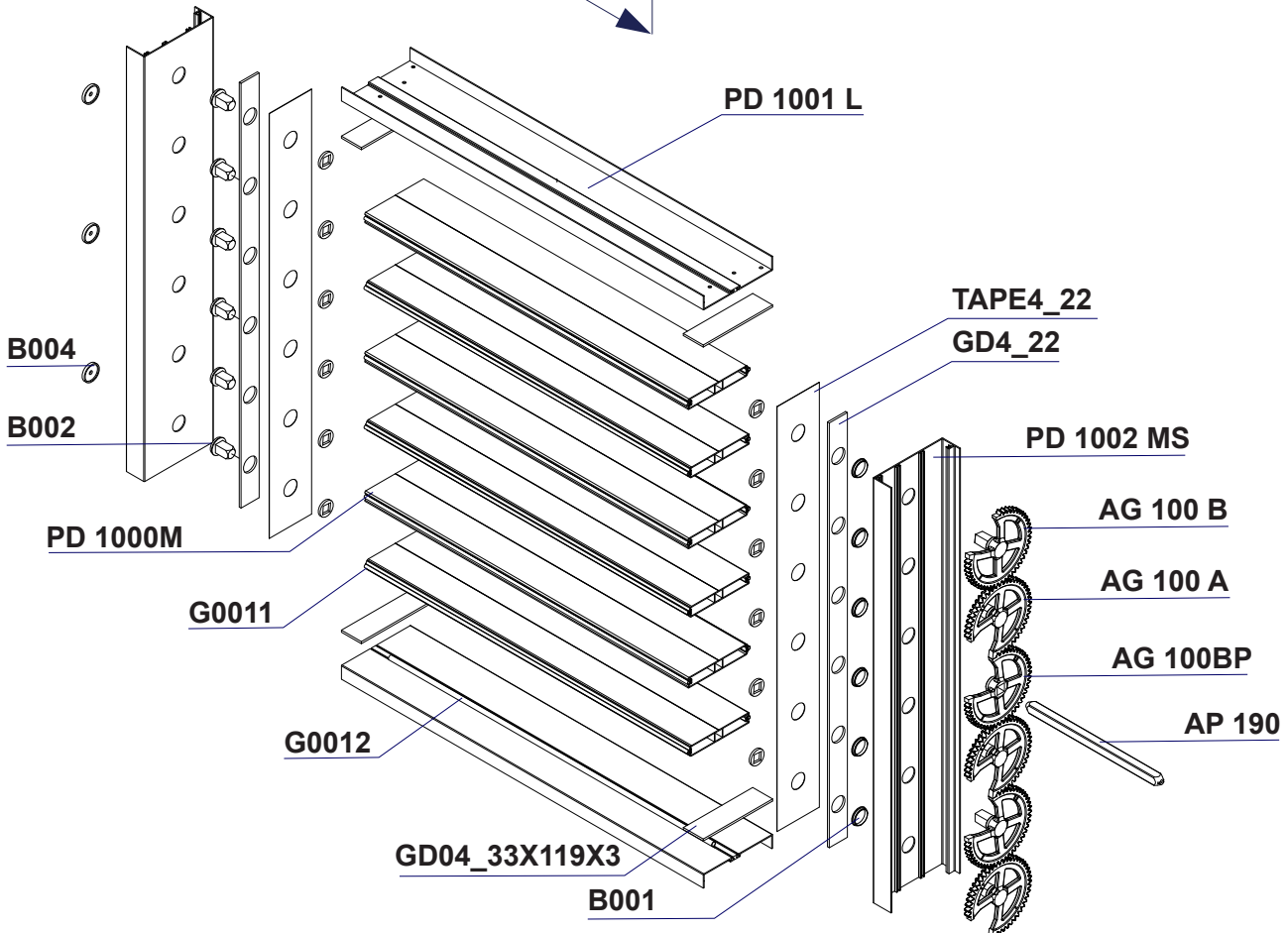
$$A = B + 60 \text{ mm}$$

$$\text{Length of BLADES} = B - 3 \text{ mm}$$

$$C = D + 40 \text{ mm}$$

"D" SHOULDER PROFILE SIZING

$$L = N^\circ \text{ blades pale} \times 100 \text{ mm} + 10 \text{ mm}$$

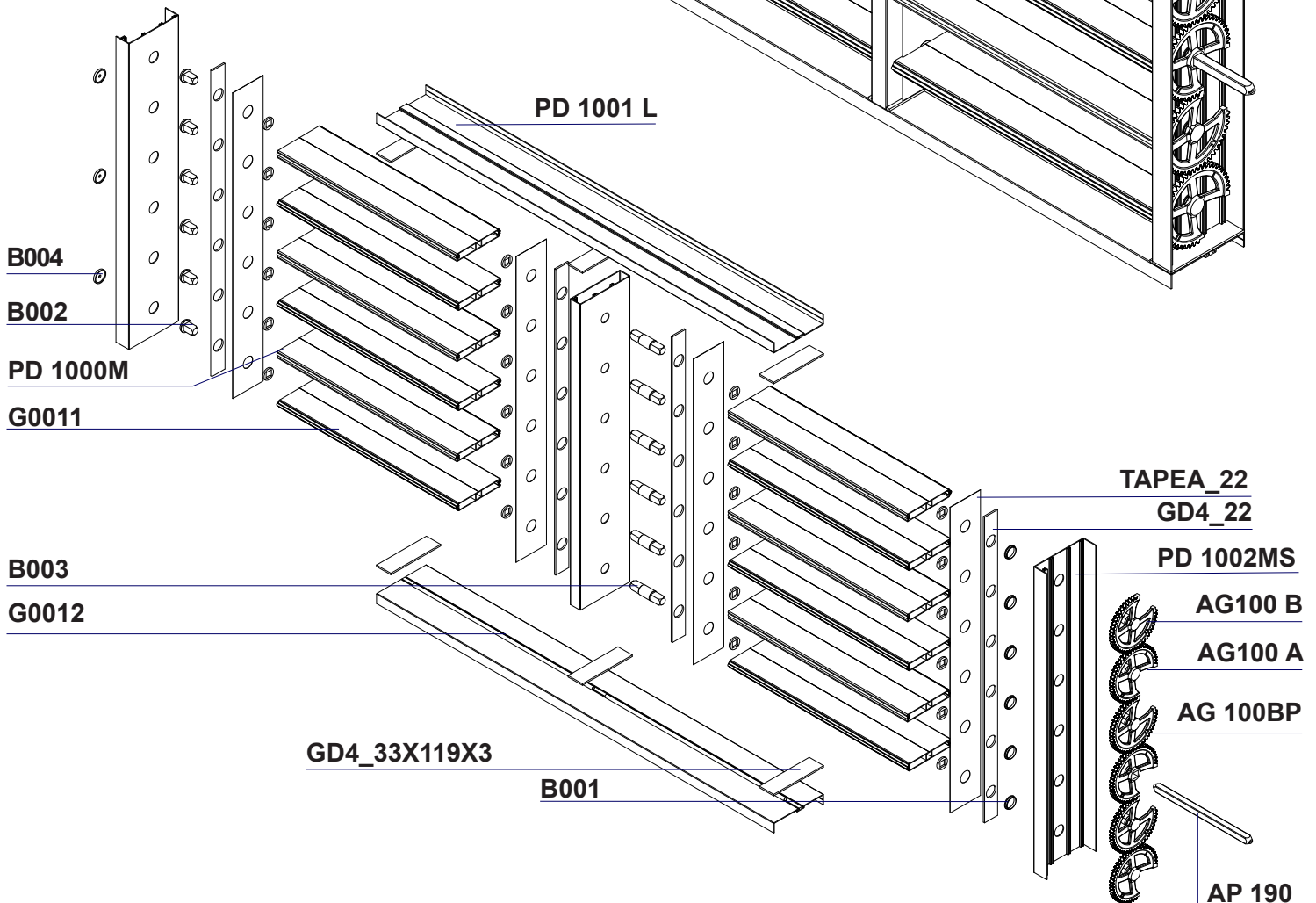
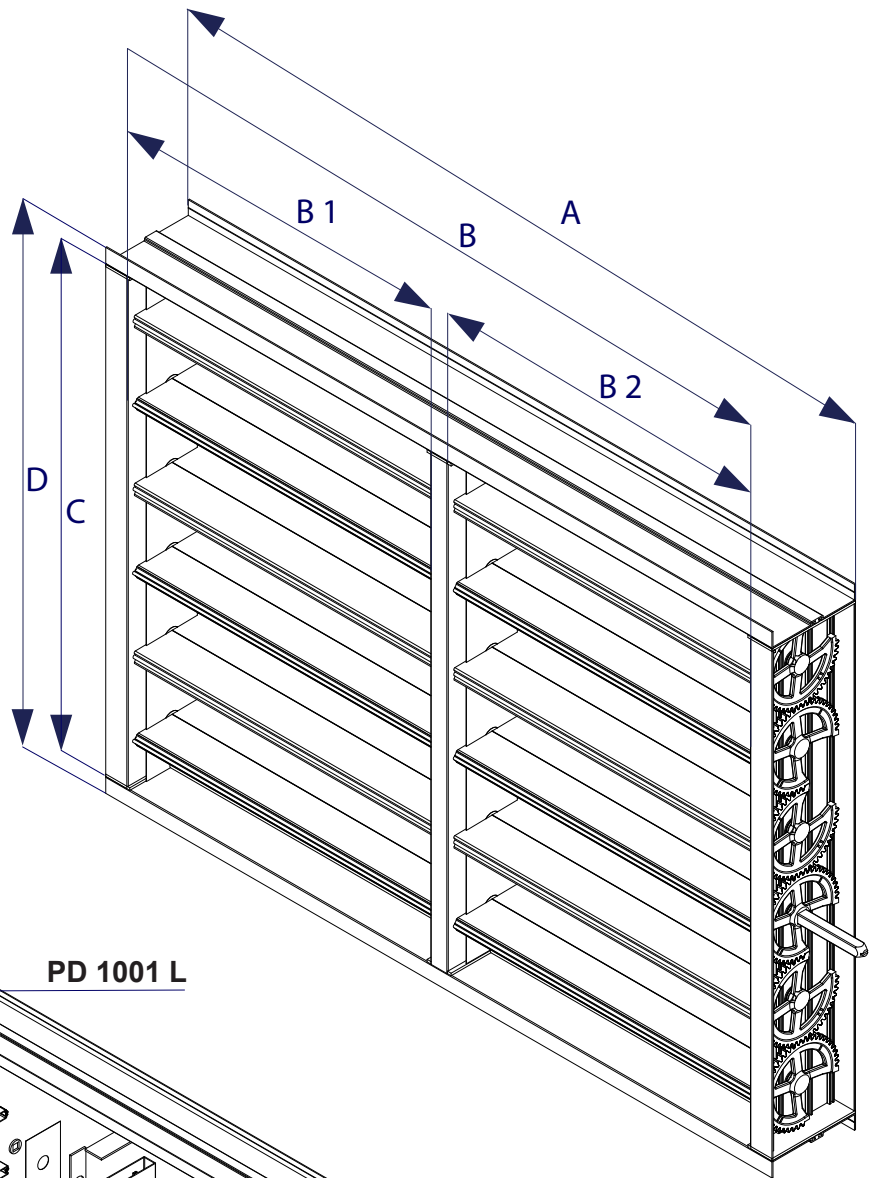


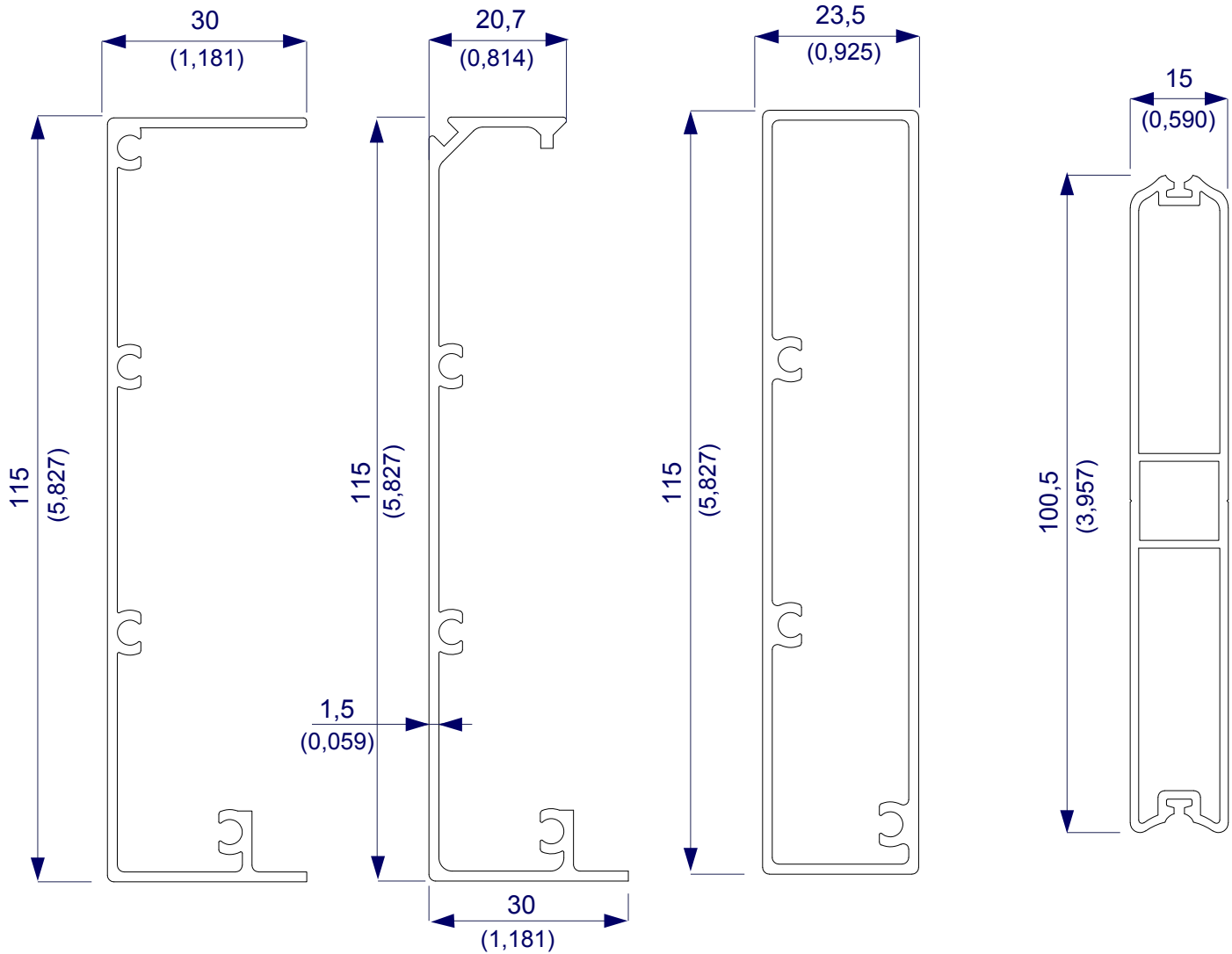
3D representation of double damper

DOUBLE DAMPER FORMULA

DOUBLE DAMPER  
 $A = B - 60 \text{ mm}$   
 $B1 = B2 = (B - 23.5 \text{ mm}) / 2$   
 BLADE length =  $B1 - 4 \text{ mm}$   
                            $B2 - 4 \text{ mm}$   
 $C = D - 40 \text{ mm}$   
 D = see table below

“D” SHOULDER PROFILE SIZING  
 $L = \text{No. of blades} \times 100 \text{ mm} + 10 \text{ mm}$





**PD 1002MS**

Weight kg/m 1,167  
(lb/ft 0,784)  
Bundle of 2 bars

**PD 1002MR**

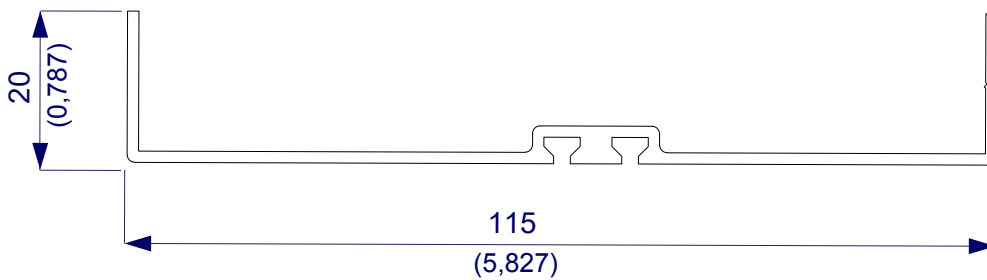
Weight kg/m 0,826  
(lb/ft 0,555)  
Bundle of 2 bars

**PD 1003M**

Weight kg/m 1,167  
(lb/ft 0,784)  
Bundle of 2 bars

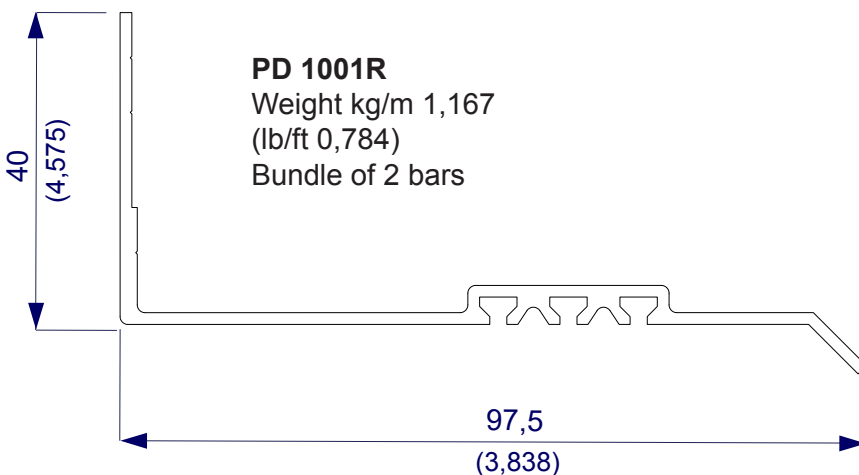
**PD 1000M**

Weight kg/m 1,167  
(lb/ft 0,784)  
Bundle of 2 bars



**PD 1001L**

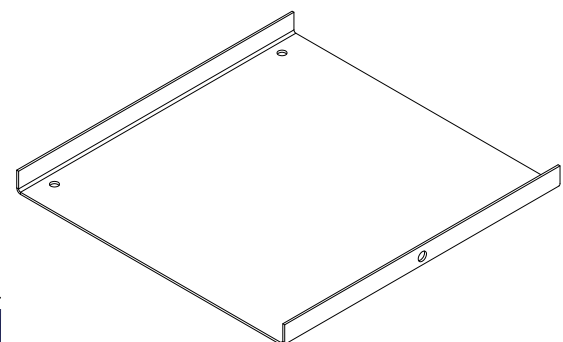
Weight kg/m 1,167  
(lb/ft 0,784)  
Bundle of 2 bars

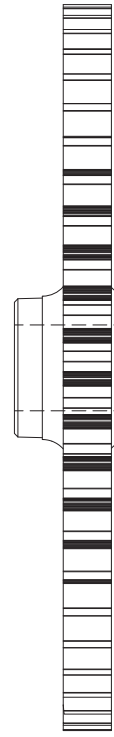
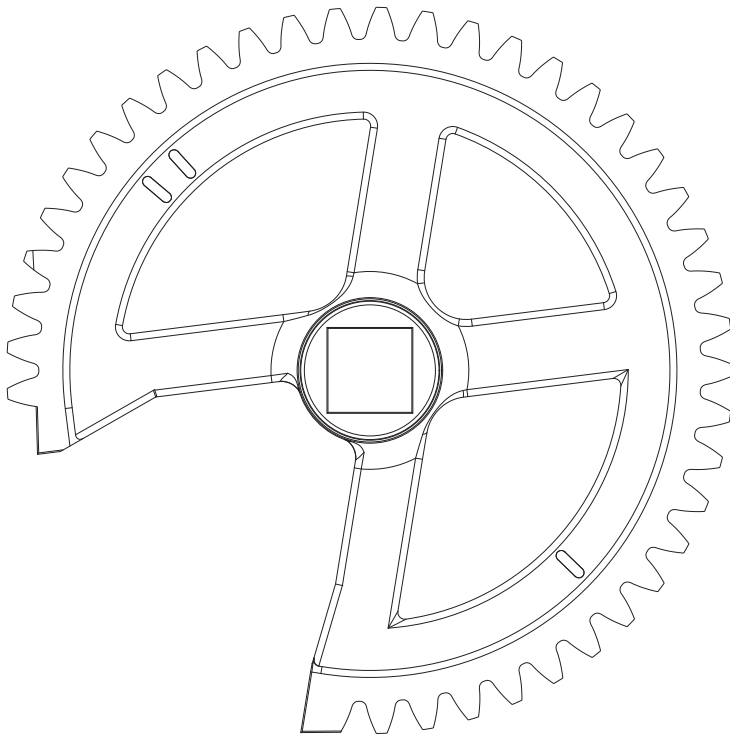


**PD 1001R**

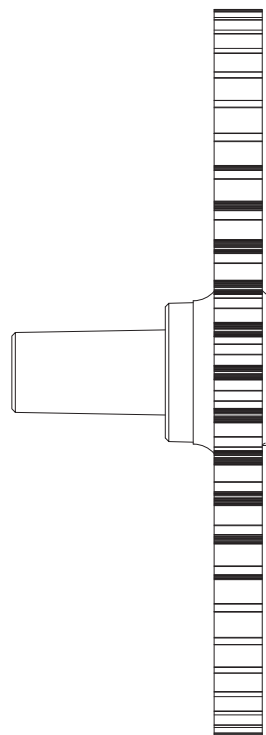
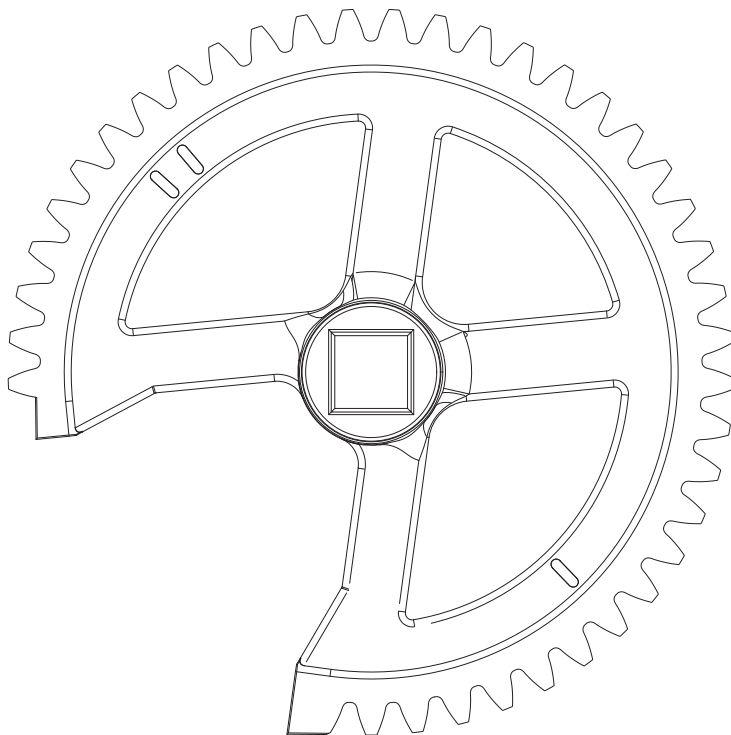
Weight kg/m 1,167  
(lb/ft 0,784)  
Bundle of 2 bars

**ENGINE HOLDER  
DS DAH**

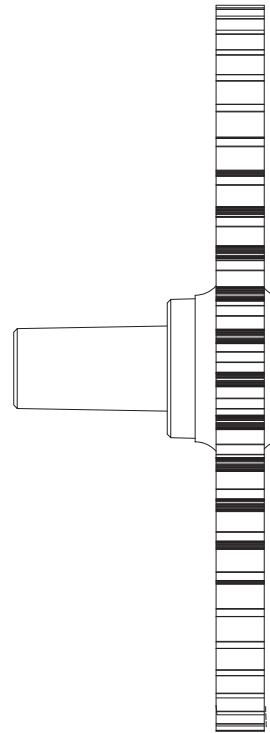
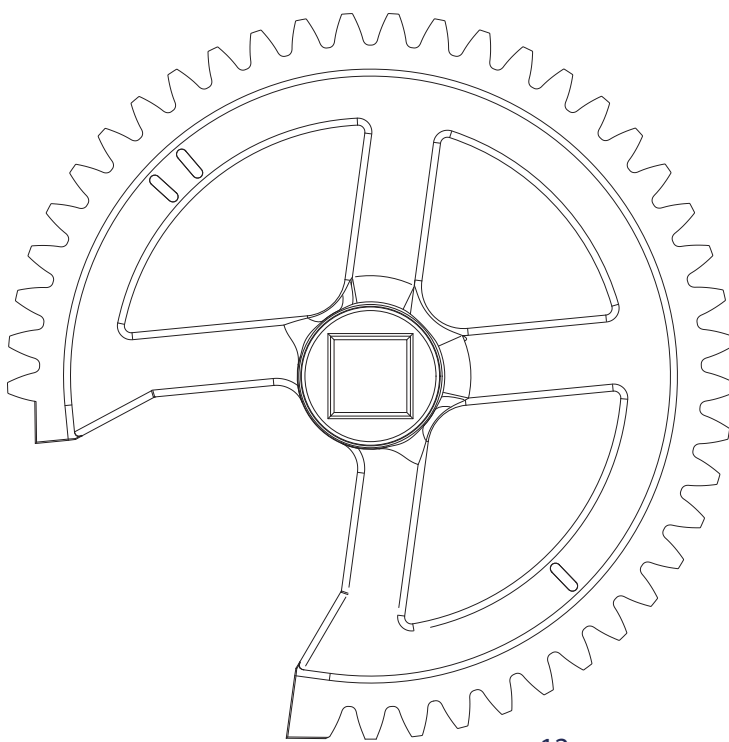




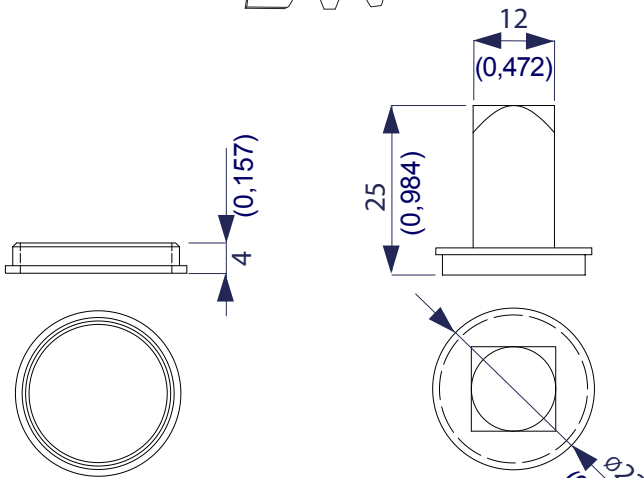
**AG 100BP**  
Boxes of 100 pcs.



**AG 100 A**  
Boxes of 100 pcs.



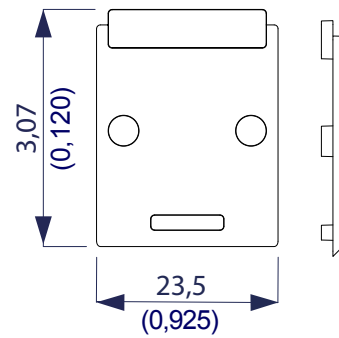
**AG 100 B**  
Boxes of 100 pcs.



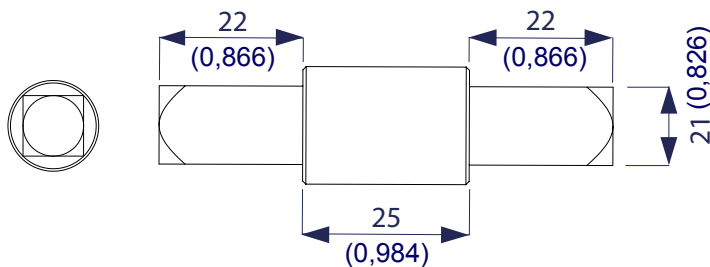
**B001**  
INCLUDED IN  
AG 100BP  
AG 100 A  
AG 100 B

**B002**  
INCLUDED IN  
AG 100BP  
AG 100 A  
AG 100 B

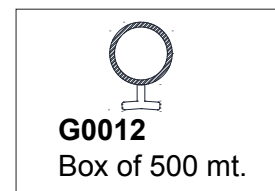
**AG 1008**



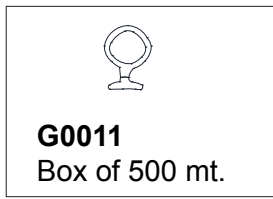
**B003**  
FOR DOUBLE DAMPERS



**GASKET**

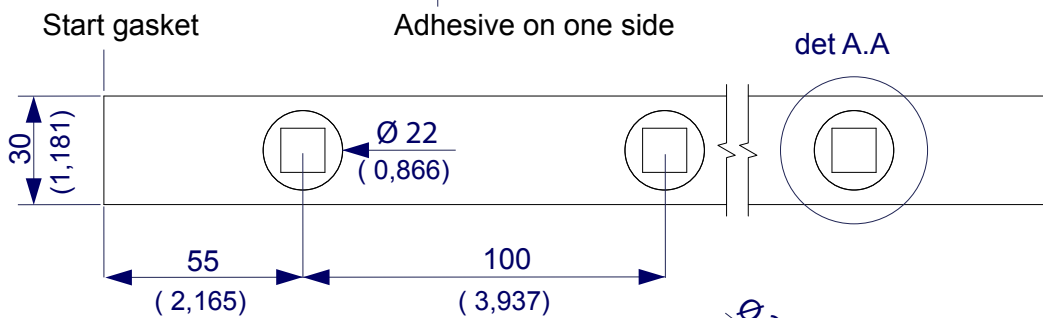
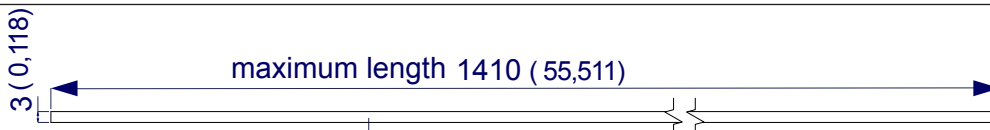
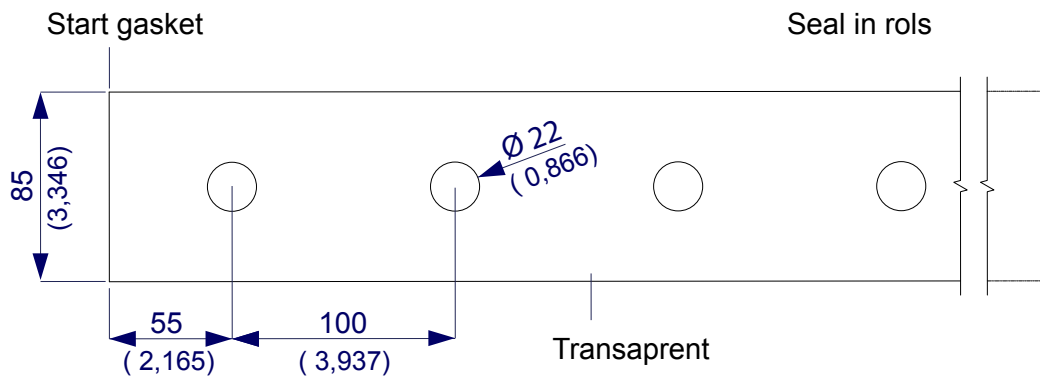


**GASKET**

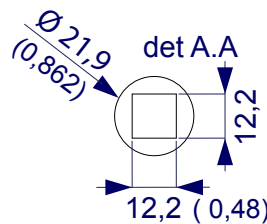


**TAPE4\_22**

1 rol



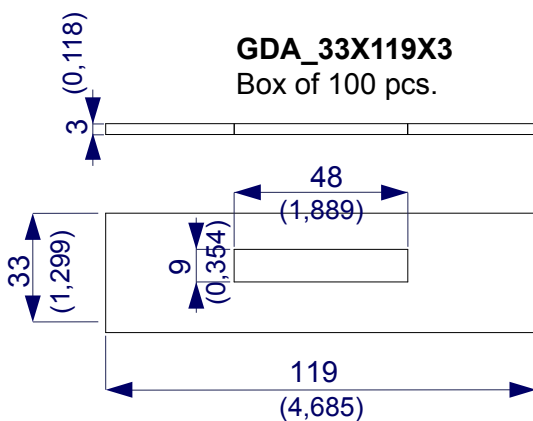
**GDA\_22**  
Box of 500 mt.



Separable washer

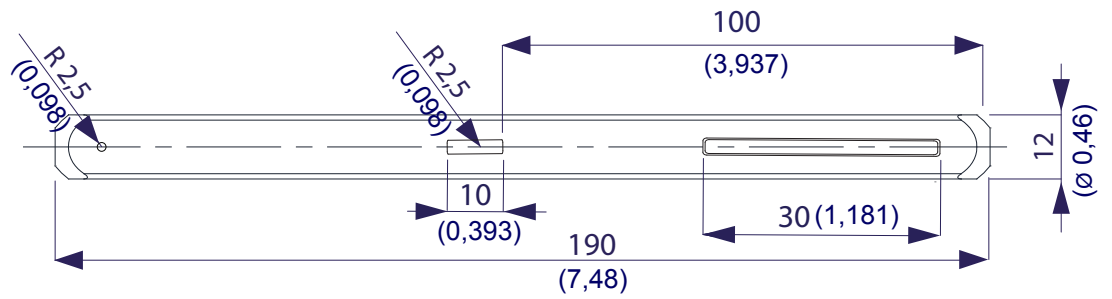
**GDA\_33X119X3**

Box of 100 pcs.



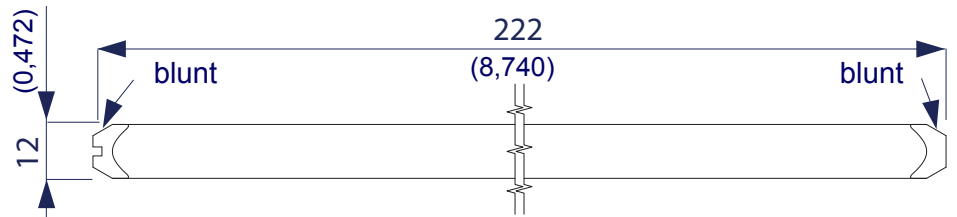
**DAMPER SHAFTS**

**AP 190**  
Box of 150 pcs.

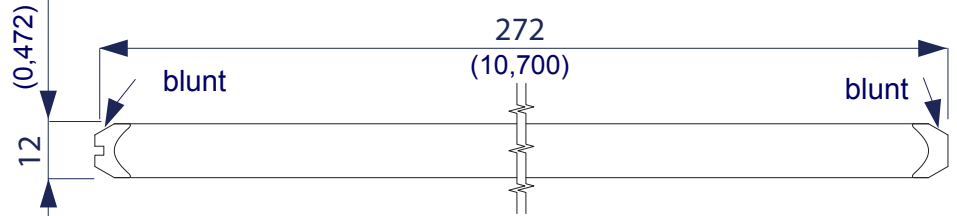


NS

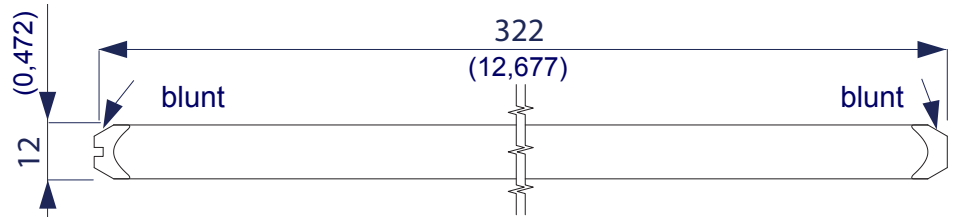
**Q 12X12 L=222**



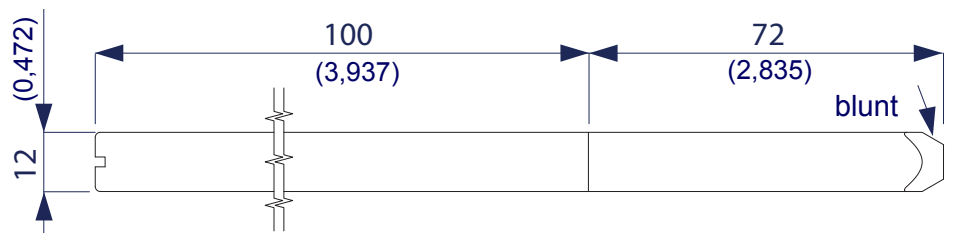
**Q 12X12 L=272**



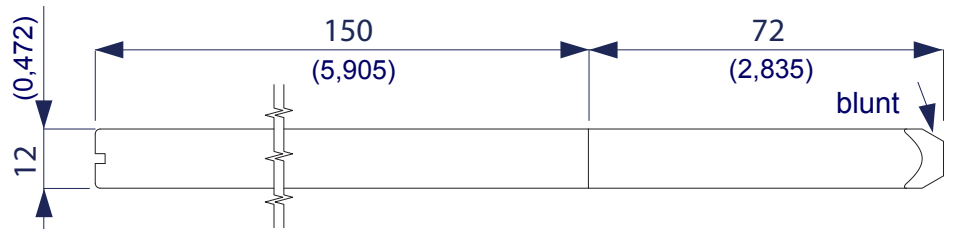
**Q 12X12 L=322**



**Ø Q 12X12 L=172**



**Ø Q 12X12 L=222**



**Ø Q 12X12 L=322**

