

PBA

anchor plate

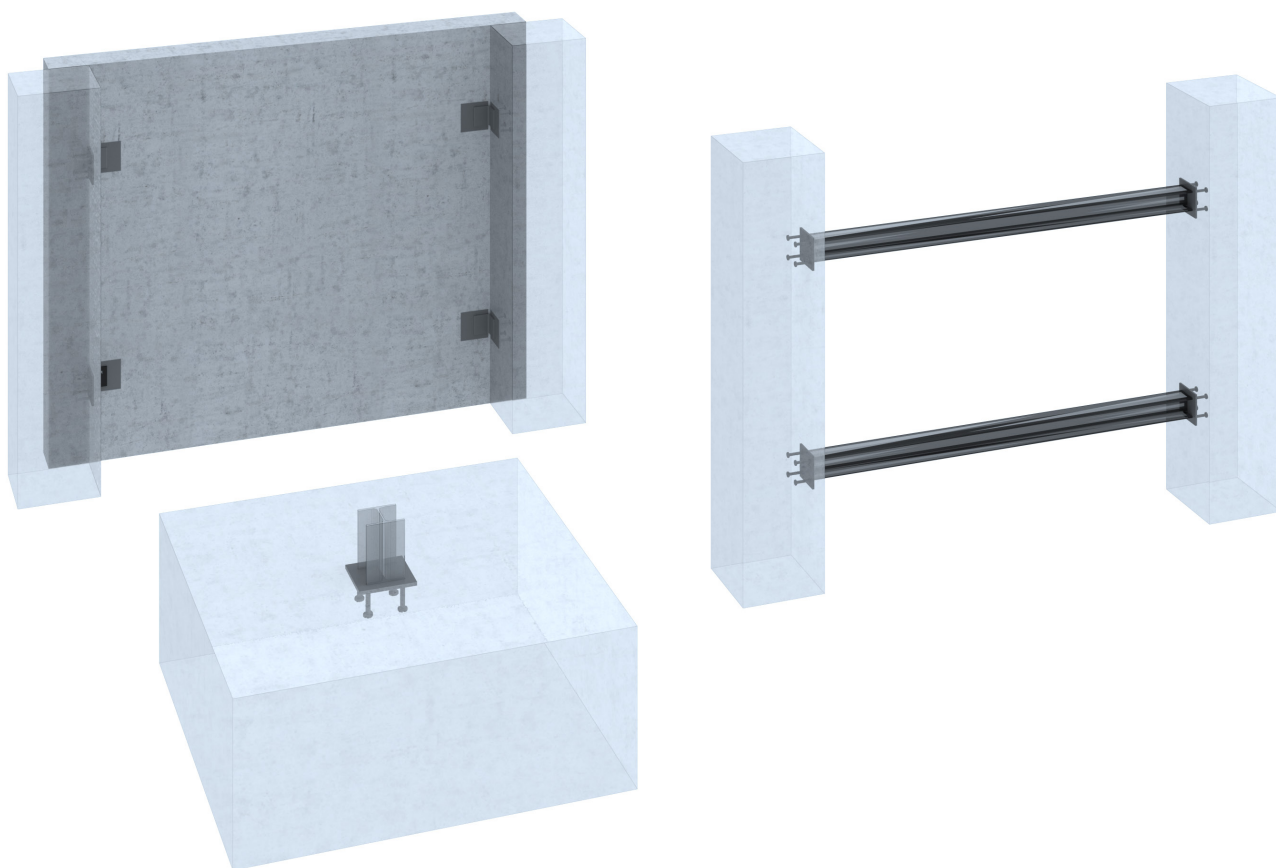


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PBA *anchor plate*

PBA anchor plates are designed to connect structural elements by means of welding. In this way, it is obtained a simple and fast connection between elements.

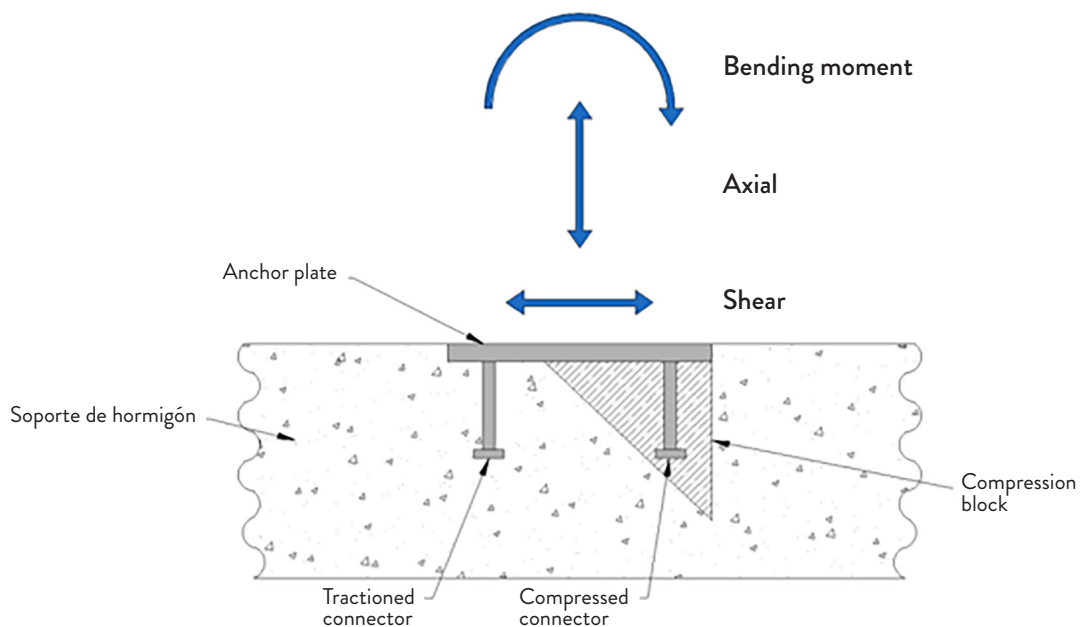


Description of the system

PBA anchor plates are structural elements with shear connectors that are embedded in the precast concrete element. The plate's surface must be aligned with the concrete element. In this way, it is possible to weld any metallic element on it. The geometry of the shear connectors, permits to transmit the loads applied on the plate to the precast concrete element.

Structural behaviour

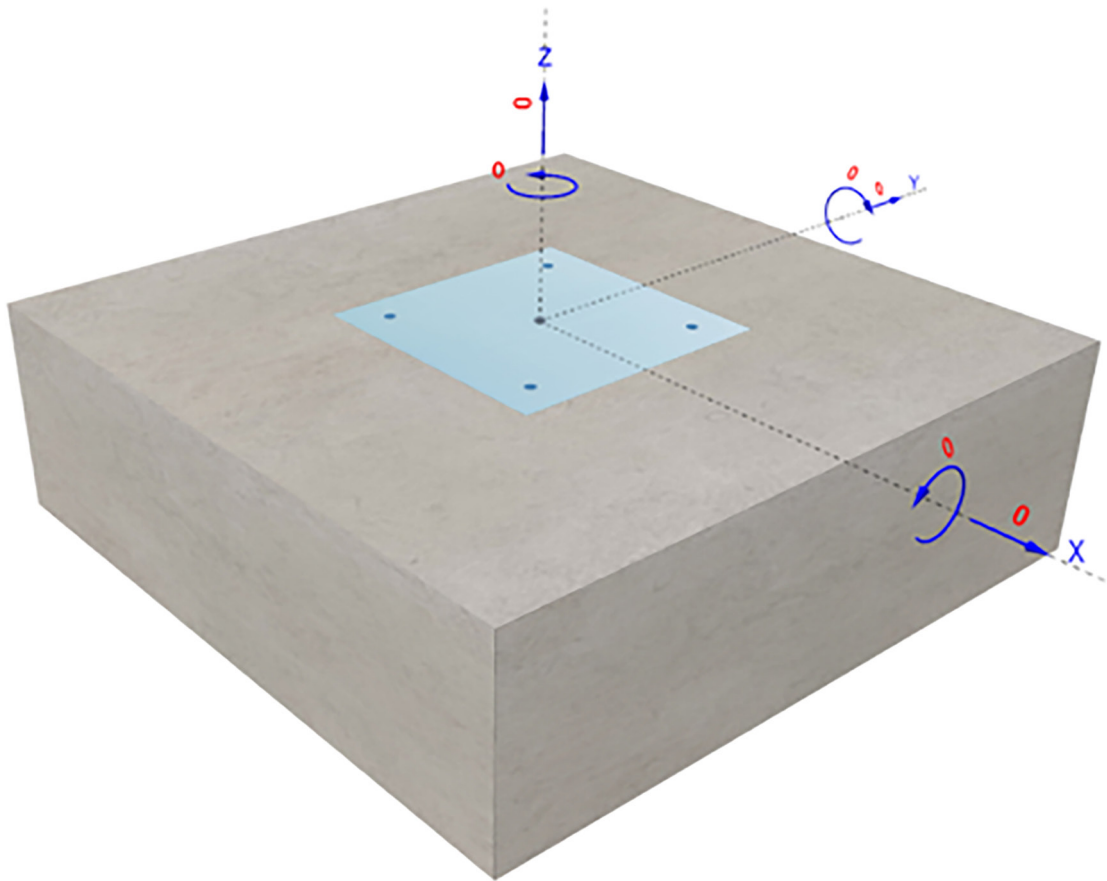
As it has been said previously, the loads applied on the PBA anchor plate are transmitted to the structural element through the shear connectors.



PBA anchor plates admit any type of loads such as axial (compression or tensile), shear and bending moments in any direction and torsion.

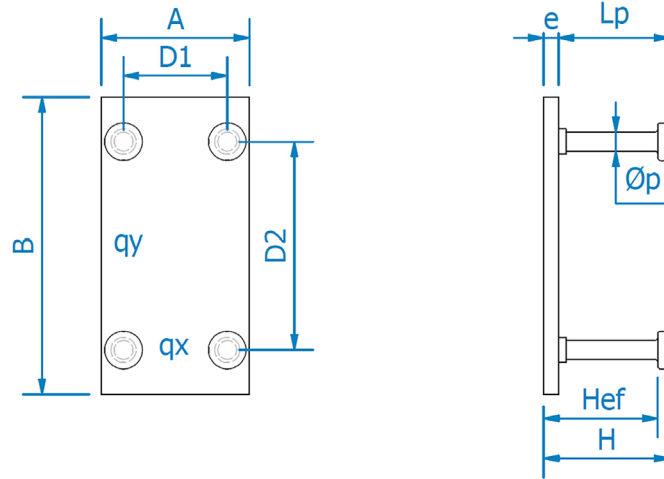
Referring to the next figure, the direction of the loads and moments are defined:

- Axial (Z axis)
- Shear (X and Y axis)
- Bending moments (X and Y axis)
- Torsion (Z axis)



Orientation, loads and moments axis applied on the PBA anchor plate.

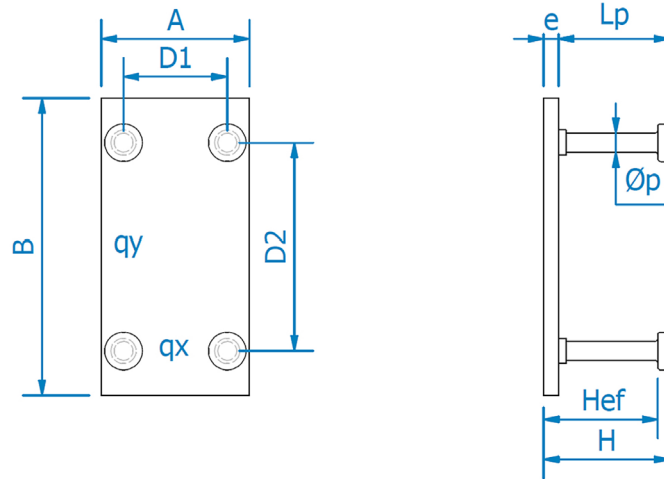
PBA dimensions



Anchor code	A	B	e	H	Hef	D1	D2	Øp	Lp	qx*	qy*
PBA.B.e-P	(mm)										
PBA100.50.8-1	100	50	8	58	51	60	0	10	50	2	1
PBA100.50.8-3	100	50	8	108	101	60	0	10	100	2	1
PBA100.100.8-1	100	100	8	58	51	60	60	10	50	2	2
PBA100.100.8-3	100	100	8	108	101	60	60	10	100	2	2
PBA100.100.10-1	100	100	10	61	53	60	60	10	50	2	2
PBA100.100.10-3	100	100	10	110	103	60	60	10	100	2	2
PBA100.100.10-6	100	100	10	60	52	70	70	13	50	2	2
PBA100.100.10-7	100	100	10	85	77	70	70	13	75	2	2
PBA100.100.10-8	100	100	10	110	102	70	70	13	100	2	2
PBA150.100.8-1	150	100	8	58	51	60	60	10	50	2	2
PBA150.100.8-3	150	100	8	108	101	60	60	10	100	2	2
PBA150.100.10-1	150	100	10	61	53	60	60	10	50	2	2
PBA150.100.10-3	150	100	10	110	103	60	60	10	100	2	2

*qx - Quantity of shear connectors in X axis

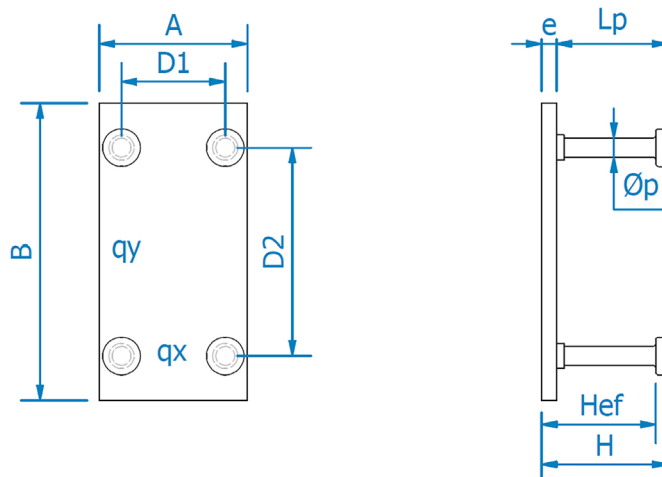
*qy- Quantity of shear connectors in Y axis



Anchor code	A	B	e	H	Hef	D1	D2	Øp	Lp	qx*	qy*
PBA.B.e-P	(mm)										
PBA150.100.10-6	150	100	10	60	52	70	70	13	50	2	2
PBA150.100.10-7	150	100	10	85	77	70	70	13	75	2	2
PBA150.150.10-1	150	150	10	61	53	90	90	10	50	2	2
PBA150.150.10-3	150	150	10	110	103	90	90	10	100	2	2
PBA150.150.10-6	150	150	10	60	52	90	90	13	50	2	2
PBA150.150.10-7	150	150	10	85	77	90	90	13	75	2	2
PBA150.150.10-8	150	150	10	110	102	90	90	13	100	2	2
PBA150.150.10-10	150	150	10	160	152	90	90	13	150	2	2
PBA150.150.12-10	150	150	12	162	154	90	90	13	150	2	2
PBA200.100.10-1	200	100	10	61	53	90	60	10	50	2	2
PBA200.100.10-3	200	100	10	110	103	90	60	10	100	2	2
PBA200.100.10-6	200	100	10	60	52	90	70	13	50	2	2
PBA200.100.10-7	200	100	10	85	77	90	70	13	75	2	2

*qx - Quantity of shear connectors in X axis

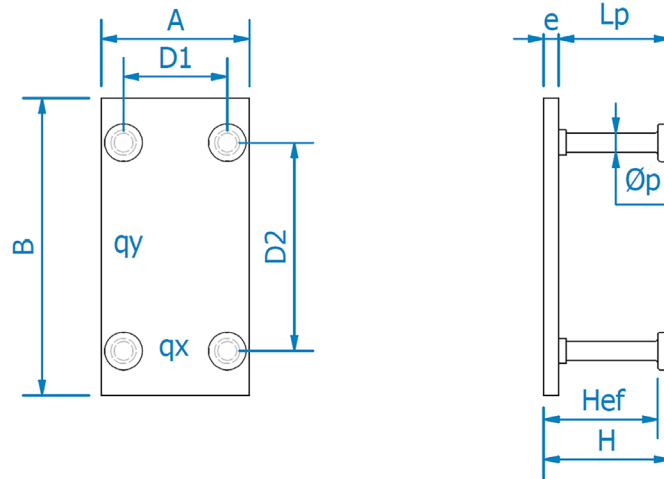
*qy- Quantity of shear connectors in Y axis



Anchor code	A	B	e	H	Hef	D1	D2	Øp	Lp	qx*	qy*
PBA.B.e-P	(mm)										
PBA200.100.10-8	200	100	10	110	102	90	70	13	100	2	2
PBA200.100.10-10	200	100	10	160	152	90	70	13	150	2	2
PBA200.100.12-7	200	100	12	87	79	90	70	13	75	2	2
PBA200.100.12-8	200	100	12	112	104	90	70	13	100	2	2
PBA200.100.12-10	200	100	12	162	154	90	70	13	150	2	2
PBA200.150.12-6	200	150	121	62	54	90	90	13	50	2	2
PBA200.200.10-7	200	200	10	85	77	120	120	13	75	2	2
PBA200.200.10-8	200	200	10	110	102	120	120	13	100	2	2
PBA200.200.10-10	200	200	10	160	152	120	120	13	150	2	2
PBA200.200.12-7	200	200	12	87	79	120	120	13	75	2	2
PBA200.200.12-8	200	200	12	112	104	120	120	13	100	2	2
PBA200.200.12-10	200	200	12	162	154	120	120	13	150	2	2
PBA200.200.12-13	200	200	12	112	104	120	120	16	100	2	2

*qx - Quantity of shear connectors in X axis

*qy- Quantity of shear connectors in Y axis



Anchor code	A	B	e	H	Hef	D1	D2	Øp	Lp	qx*	qy*
PBA.B.e-P	(mm)										
PBA200.200.12-14	200	200	12	162	154	120	120	16	150	2	2
PBA200.200.15-13	200	200	15	115	107	120	120	16	100	2	2
PBA200.200.15-14	200	200	15	165	157	120	120	16	150	2	2
PBA300.100.15-13	300	100	15	115	107	180	80	16	100	2	2
PBA300.100.15-14	300	100	15	165	157	180	80	16	150	2	2
PBA300.150.10-12	300	150	15	85	77	180	90	16	75	2	2
PBA300.200.15-13	300	200	15	115	107	180	120	16	100	2	2
PBA300.200.15-14	300	200	15	165	157	180	120	16	150	2	2
PBA300.300.15-13	300	300	15	115	107	180	180	16	100	2	2
PBA300.300.15-14	300	300	15	165	157	180	180	16	150	2	2
PBA400.300.15-14	400	300	15	165	157	150	220	16	150	3	2

*qx - Quantity of shear connectors in X axis

*qy- Quantity of shear connectors in Y axis

Apart from the standard models shown previously, is possible to manufacture anchor plates under request according to the client needs. In this case, contact with the technical department.

Tolerances

Dimensional tolerances according to the standard EN1090-2 are:

- Anchor plate edges: $\pm 2\text{mm}$.
- Height, position and diameter of the shear connectors: $\pm 2\text{mm}$.

Surface treatment

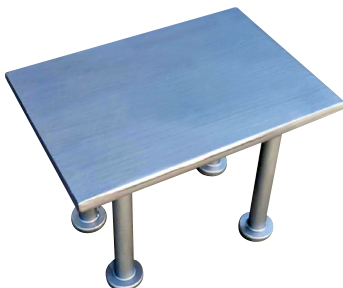
PBA anchor plates are supplied without any surface treatment as standard. There is the possibility to apply different surface treatments such as electroplated zinc coating, hot-dip galvanized or priming according to the client needs.



WITHOUT ADDITIONAL PROTECTION



PRIMING



SURFACE TREATMENT HOT-DIP GALVANIZED

Capacity tables

Anchor code PBA.B.e-P	Support minimum H (mm)	Minimum area* (mm ²)	Shear T _{x,d} (kN)	Shear T _{y,d} (kN)	Tensile N _{z,d} (kN)	Bending M _{x,d} (kN·m)	Bending M _{y,d} (kN·m)	Torsion M _{z,d} (kN·m)
PBA100.50.8-1	90	1256,63	31,00	31,00	11,00	0,32	0,45	0,91
PBA100.50.8-3	140	1256,63	32,00	32,00	10,50	0,32	0,43	0,96
PBA100.100.8-1	90	1256,63	43,00	43,00	16,80	0,48	0,48	1,80
PBA100.100.8-3	140	1256,63	64,00	64,00	16,30	0,49	0,49	2,70
PBA100.100.10-1	90	1256,63	44,50	44,50	22,00	0,75	0,75	1,85
PBA100.100.10-3	140	1256,63	64,00	64,00	24,30	0,73	0,73	2,70
PBA100.100.10-6	90	1256,63	48,20	48,20	22,00	0,72	0,72	2,30
PBA100.100.10-7	115	1256,63	71,00	71,00	21,50	0,72	0,72	3,40
PBA100.100.10-8	140	1256,63	95,50	95,50	21,50	0,72	0,72	4,60
PBA150.100.8-1	90	1256,63	43,00	43,00	17,80	0,50	0,49	1,80
PBA150.100.8-3	140	1256,63	64,50	64,50	17,50	0,50	0,50	2,70
PBA150.100.10-1	90	1256,63	45,00	45,00	21,80	0,76	0,76	1,85
PBA150.100.10-3	140	1256,63	64,50	64,50	25,50	0,74	0,73	2,70
PBA150.100.10-6	90	1256,63	48,00	48,00	21,50	0,74	0,73	2,35
PBA150.100.10-7	115	1256,63	71,00	71,00	23,50	0,74	0,73	3,40
PBA150.150.10-1	90	3848,45	58,00	58,00	25,50	1,30	1,30	3,60
PBA150.150.10-3	140	3848,45	64,50	64,50	28,00	1,32	1,32	4,10
PBA150.150.10-6	90	3848,45	57,60	57,60	23,50	1,34	1,34	3,60
PBA150.150.10-7	115	3848,45	80,50	80,50	30,30	1,32	1,32	5,00
PBA150.150.10-8	140	3848,45	97,00	97,00	30,00	1,32	1,32	6,20
PBA150.150.10-10	190	3848,45	97,00	97,00	29,40	1,32	1,32	6,20
PBA150.150.12-10	200	3848,45	111,00	111,00	39,20	1,90	1,90	7,00
PBA200.100.10-1	90	3848,45	51,00	51,00	22,30	0,90	1,35	2,73
PBA200.100.10-3	140	3848,45	64,50	64,50	31,50	1,13	1,37	3,45
PBA200.100.10-6	90	3848,45	52,50	52,50	22,40	1,15	1,30	2,95
PBA200.100.10-7	115	3848,45	75,00	75,00	32,20	1,16	1,30	4,20

The minimum area has been simulated using a steel profile with equivalent diameter.

Example: Minimum area=1256.63 mm² ->Ø40

Reminder: The value of the loads correspond to the Ultimate Limit State (ULS) without combination of loads. In case of combination of loads, contact with the technical department.

Código placa PBA.B.e-P	Support minimum H (mm)	Minimum area* (mm ²)	Shear T _{x,d} (kN)	Shear T _{y,d} (kN)	Tensile N _{z,d} (kN)	Bending M _{x,d} (kN·m)	Bending M _{y,d} (kN·m)	Torsion M _{z,d} (kN·m)
PBA200.100.10-8	140	3848,45	97,00	97,00	32,50	1,16	1,30	5,50
PBA200.100.10-10	190	3848,45	97,00	97,00	32,00	1,15	1,32	5,50
PBA200.100.12-7	200	3848,45	77,00	77,00	34,20	1,63	1,90	4,30
PBA200.100.12-8	190	3848,45	103,00	103,00	43,50	1,62	1,93	5,85
PBA200.100.12-10	200	3848,45	111,00	111,00	42,50	1,60	1,93	6,30
PBA200.150.12-6	115	6361,72	59,00	59,00	27,00	1,74	1,74	3,72
PBA200.200.10-7	115	11309,73	96,00	96,00	38,00	2,55	2,55	8,10
PBA200.200.10-8	140	11309,73	97,00	97,00	41,50	2,52	2,52	8,20
PBA200.200.10-10	190	11309,73	97,00	97,00	40,50	2,50	2,50	8,20
PBA200.200.12-7	140	11309,73	98,00	98,00	41,50	3,50	3,50	8,20
PBA200.200.12-8	190	11309,73	111,00	111,00	53,50	3,40	3,40	9,40
PBA200.200.12-10	200	11309,73	111,00	111,00	54,00	3,40	3,40	9,40
PBA200.200.12-13	190	11309,73	116,00	116,00	50,50	3,60	3,60	9,85
PBA200.200.12-14	200	11309,73	116,00	116,00	58,00	3,55	3,55	9,85
PBA200.200.15-13	190	11309,73	129,00	129,00	57,00	5,40	5,40	10,80
PBA200.200.15-14	200	11309,73	145,00	145,00	81,50	5,40	5,40	12,30
PBA300.100.15-13	165	5026,54	133,00	133,00	35,30	1,85	2,45	13,00
PBA300.100.15-14	200	5026,54	145,50	145,50	34,50	1,83	2,45	14,30
PBA300.150.10-12	115	7853,98	94,00	94,00	28,50	1,53	1,70	9,40
PBA300.200.15-13	165	11309,73	134,00	134,00	49,50	3,80	4,73	14,40
PBA300.200.15-14	200	11309,73	145,20	145,20	66,80	4,75	4,70	15,80
PBA300.300.15-13	165	25446,90	151,50	151,50	61,00	7,40	7,40	18,50
PBA300.300.15-14	200	25446,90	146,00	146,00	87,00	8,40	8,40	18,60
PBA400.300.15-14	200	25446,90	219,00	219,00	65,00	7,30	7,15	32,00

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