



**SUPPORTING  
POINTS**



## FLEXIBLE SUSPENSION

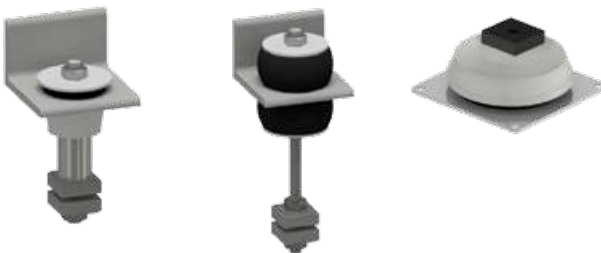
### Noise and Vibrations

In an exhaust system for diesel engines, there will be vibrations caused by the engine. While these vibrations travel through the exhaust system they can cause disturbing noise as well as vibrations to be emitted through the entire structure of the vessel or building. Together with the client, Axces is able to design an exhaust system which will reduce these vibrations and noise emissions as much as possible. Axces does this by flexibly mounting the exhaust gas system with flexible suspension. These flexible suspension elements are made from a rubber-metal combination which dampen the vibrations and thus reduce noise emitted by vibrations. By carefully designing and positioning the rubber-metal elements it is possible to obtain a reduction of 8 to 10 dB (A) across the majority of the frequency range of 63 to 4000 Hz. Every installation takes into account the weight of the appropriate section of the system. Axces uses two different types of flexible suspension, Fixed Supporting Points and Sliding Supporting Points to obtain the optimum mounting.



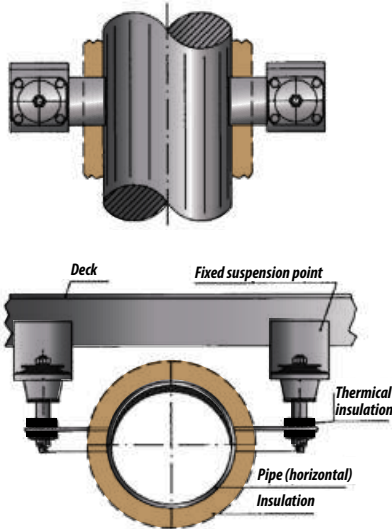
Fixed Supporting Points take the static and dynamic forces and determine the direction of the expansion in the exhaust system.

Sliding Supporting Points allow the thermal expansion movements caused by the high exhaust temperature which is transferred to the exhaust piping to be controlled. When an exhaust pipe is installed in a horizontal direction, the sliding supporting points also carry the weight of the exhaust pipe.

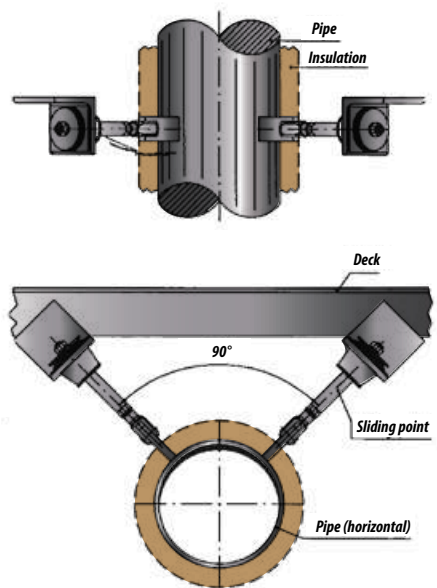


## MOUNTING INSTRUCTIONS

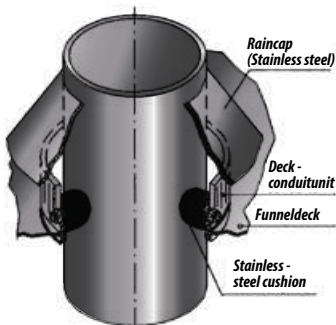
### Fixed suspension points



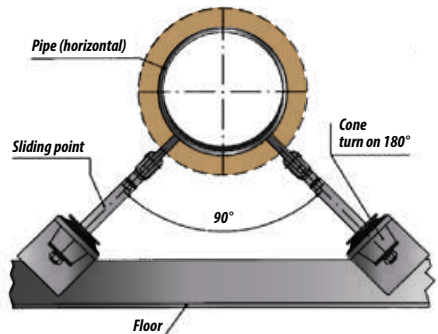
### Sliding points



### Deck conduit unit

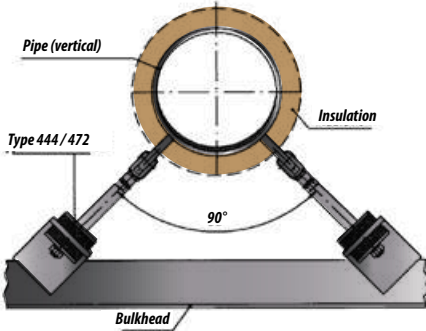


### Slidingpoints for supporting

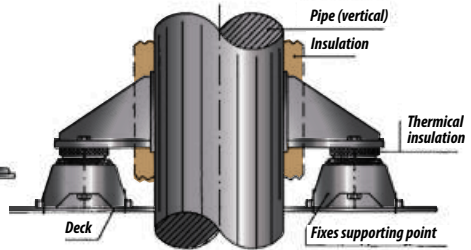
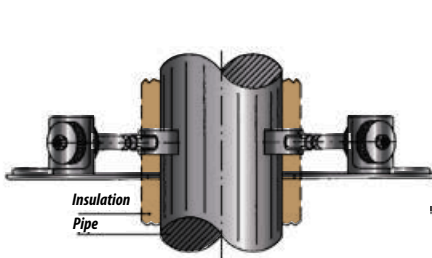
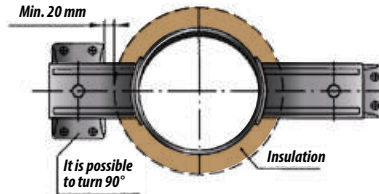


## MOUNTING INSTRUCTIONS

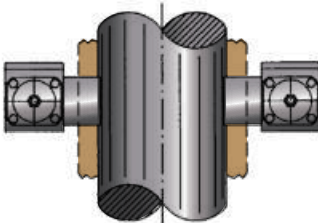
### Sliding points 444/472



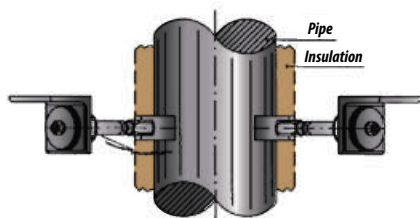
### Fixed supporting points



### Fixed suspension points

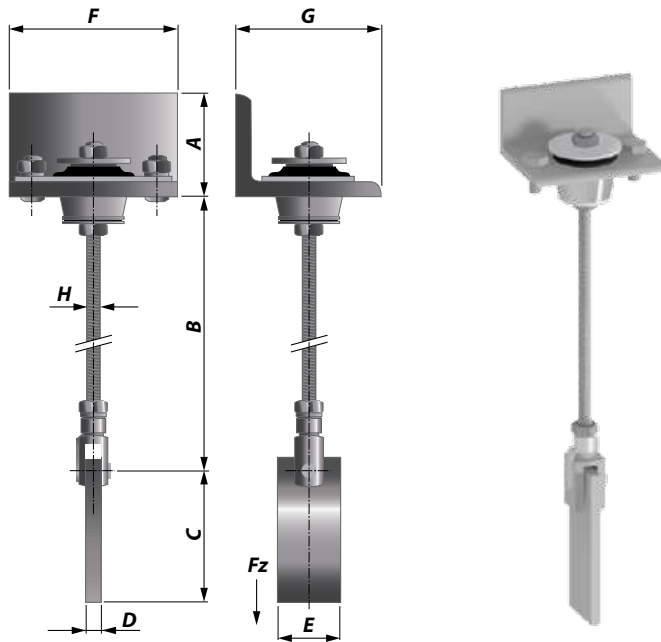


### Sliding points



## SLIDING SUPPORTING POINTS

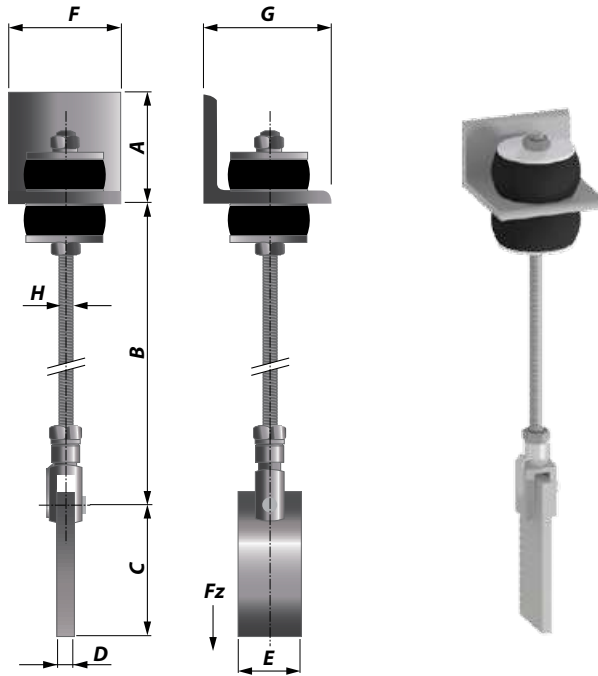
PAX-90



| Type         | Article No.  | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H   | Weight (kg) | Fz max (kg) | Hardness |
|--------------|--------------|--------|--------|--------|--------|--------|--------|--------|-----|-------------|-------------|----------|
| PAX 90 - 45° | 430104510009 | 50     | 320    | 118    | 8      | 50     | 95     | 75     | M10 | 1.4         | 50          | 45°      |
| PAX 90 - 60° | 430106010009 | 50     | 320    | 118    | 8      | 50     | 95     | 75     | M10 | 1.4         | 90          | 60°      |

## SLIDING SUPPORTING POINTS

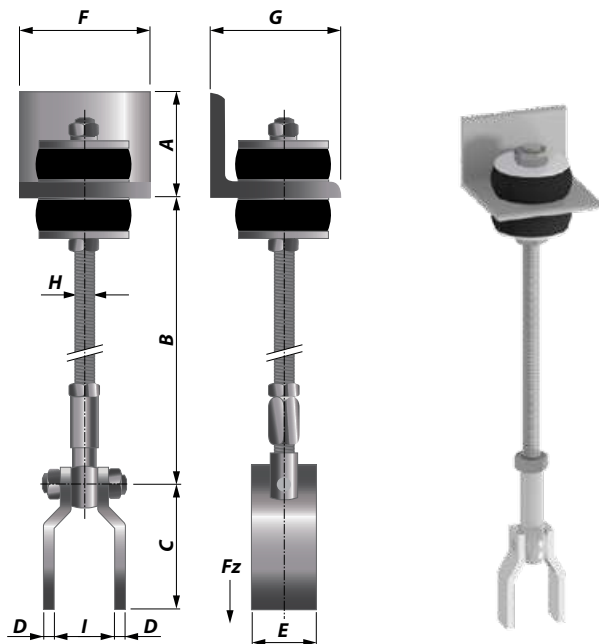
PAX-300/PAX-450



| Type          | Article No.  | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H   | Weight (kg) | Fz max (kg) | Hardness |
|---------------|--------------|--------|--------|--------|--------|--------|--------|--------|-----|-------------|-------------|----------|
| PAX 300 - 45° | 430104512030 | 65     | 300    | 135    | 10     | 60     | 100    | 100    | M12 | 2.6         | 175         | 45°      |
| PAX 300 - 60° | 430106012030 | 65     | 300    | 135    | 10     | 60     | 100    | 100    | M12 | 2.6         | 250         | 60°      |
| PAX 450 - 45° | 430104516045 | 80     | 470    | 130    | 15     | 70     | 120    | 120    | M16 | 5.0         | 300         | 45°      |
| PAX 450 - 60° | 430106016045 | 80     | 470    | 130    | 15     | 70     | 120    | 120    | M16 | 5.0         | 450         | 65       |

## SLIDING SUPPORTING POINTS

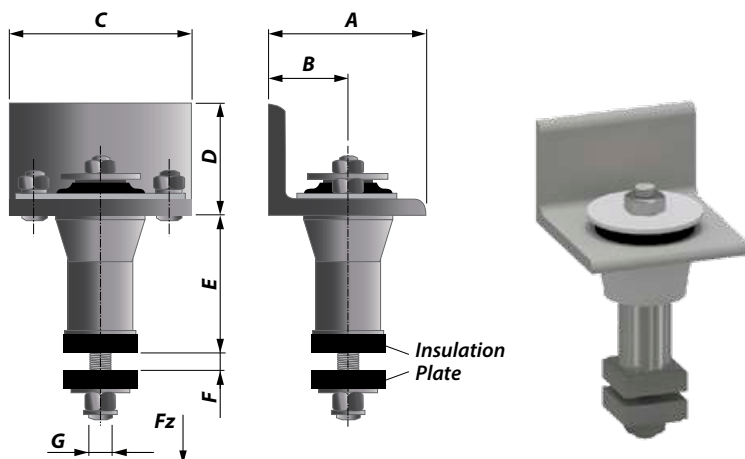
PAX-900/PAX-2000/PAX-3600



| Type           | Article No.  | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H   | Weight (kg) | Fz max (kg) | Hardness |
|----------------|--------------|--------|--------|--------|--------|--------|--------|--------|-----|-------------|-------------|----------|
| PAX 900 - 45°  | 430104524090 | 100    | 530    | 115    | 10     | 40     | 150    | 150    | M24 | 70          | 650         | 45°      |
| PAX 900 - 60°  | 430106024090 | 100    | 530    | 115    | 10     | 40     | 150    | 150    | M24 | 70          | 900         | 60°      |
| PAX 2000 - 45° | 430104530200 | 100    | 530    | 130    | 10     | 50     | 180    | 200    | M30 | 80          | 1000        | 45°      |
| PAX 2000 - 60° | 430106530200 | 100    | 530    | 130    | 10     | 50     | 180    | 200    | M30 | 80          | 2000        | 65°      |
| PAX 3600 - 45° | 430104536360 | 100    | 555    | 215    | 15     | 65     | 230    | 200    | M36 | 140         | 1800        | 45°      |
| PAX 3600 - 60° | 430106536360 | 100    | 555    | 215    | 15     | 65     | 230    | 200    | M36 | 140         | 3600        | 65°      |

## HANGING SUPPORTING POINTS

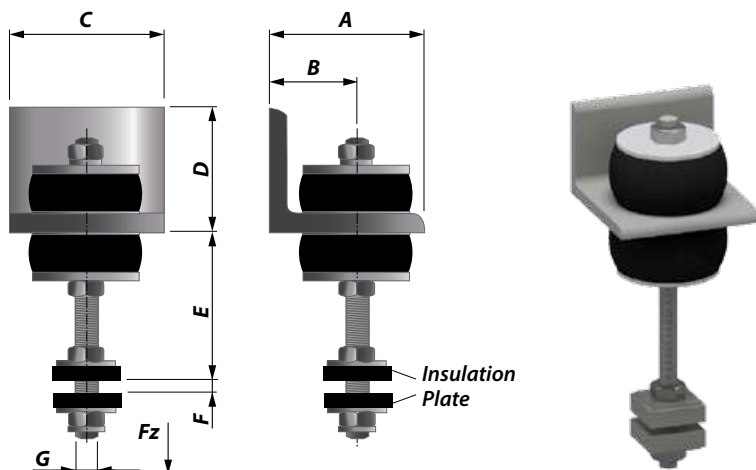
VOAX-90/VOAX-520/VOAX-950



| Type         | Article No.  | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm)  | G (mm) | Insulation Plate (mm) | Weight (kg) | Fz max (kg) | Hardness |
|--------------|--------------|--------|--------|--------|--------|--------|---------|--------|-----------------------|-------------|-------------|----------|
| VOAX 90-45°  | 430204510009 | 75     | 40     | 95     | 50     | 50     | Max. 20 | M10    | 35x35x12              | 0.9         | 50          | 45°      |
| VOAX 90-60°  | 430206010009 | 75     | 40     | 95     | 50     | 50     | Max. 20 | M10    | 35x35x12              | 0.9         | 90          | 60°      |
| VOAX 520-45° | 430204512052 | 100    | 55     | 110    | 65     | 88     | Max. 15 | M12    | 40x40x12              | 2.1         | 230         | 45°      |
| VOAX 520-60° | 430206012052 | 100    | 55     | 110    | 65     | 88     | Max. 15 | M12    | 40x40x12              | 2.1         | 420         | 60°      |
| VOAX 520-70° | 430207012052 | 100    | 55     | 110    | 65     | 88     | Max. 15 | M12    | 40x40x12              | 2.1         | 520         | 70°      |
| VOAX 950-45° | 430204516950 | 120    | 68     | 135    | 80     | 97     | Max. 20 | M16    | 50x50x12              | 3.8         | 400         | 45°      |
| VOAX 950-60° | 430206016950 | 120    | 68     | 135    | 80     | 97     | Max. 20 | M16    | 50x50x12              | 3.8         | 620         | 60°      |
| VOAX 950-70° | 430207016950 | 120    | 68     | 135    | 80     | 97     | Max. 20 | M16    | 50x50x12              | 3.8         | 950         | 70°      |

## HANGING SUPPORTING POINTS

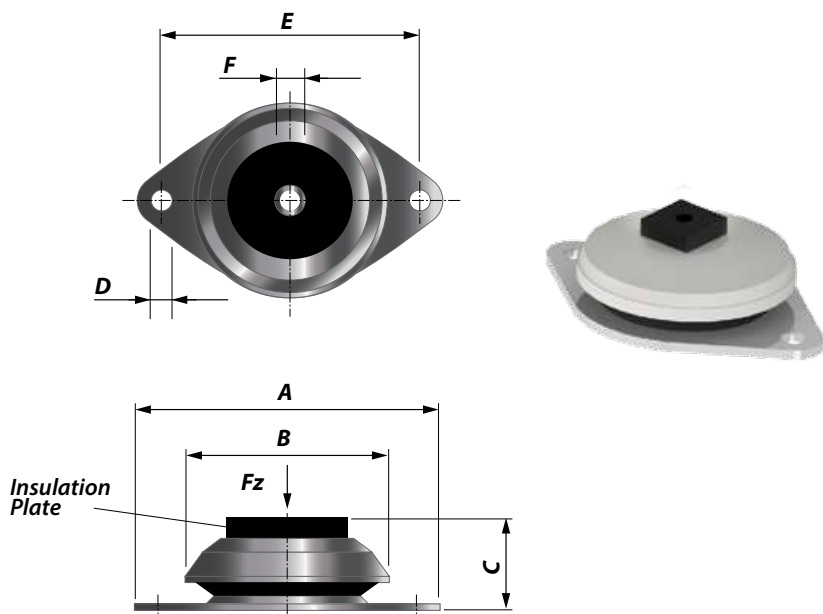
VOAX-300/VOAX-450/VOAX-900/VOAX-2000/VOAX-3400



| Type          | Article No.  | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | G (mm) | Insulation Plate (mm) | Weight (kg) | Fz max (kg) | Hardness |
|---------------|--------------|--------|--------|--------|--------|--------|--------|-----------------------|-------------|-------------|----------|
| VOAX 300-45°  | 430204512030 | 100    | 55     | 65     | 50     | 105    | M12    | 40x40x12              | 1.9         | 175         | 45°      |
| VOAX 300-60°  | 430206012030 | 100    | 55     | 65     | 50     | 105    | M12    | 40x40x12              | 1.9         | 250         | 60°      |
| VOAX 450-45°  | 430204516045 | 120    | 65     | 80     | 65     | 100    | M16    | 50x50x12              | 3.5         | 300         | 45°      |
| VOAX 450-60°  | 430206016045 | 120    | 65     | 80     | 65     | 100    | M16    | 50x50x12              | 3.5         | 450         | 60°      |
| VOAX 900-45°  | 430204524090 | 150    | 80     | 100    | 65     | 130    | M24    | 60x60x12              | 7.3         | 650         | 45°      |
| VOAX 0900-60° | 430206024090 | 150    | 80     | 100    | 80     | 130    | M24    | 60x60x12              | 7.3         | 900         | 60°      |
| VOAX 2000-45° | 430204530200 | 200    | 110    | 100    | 65     | 130    | M30    | 70x70x12              | 10.1        | 1000        | 45°      |
| VOAX 2000-65° | 430206530200 | 200    | 110    | 100    | 80     | 130    | M30    | 70x70x12              | 10.1        | 2000        | 60°      |
| VOAX 3400-45° | 430104536340 | 200    | 110    | 100    | 80     | 155    | M36    | 80x80x12              | 17.0        | 1700        | 45°      |
| VOAX 3400-65° | 430106536340 | 200    | 110    | 100    | 80     | 155    | M36    | 80x80x12              | 17.0        | 3400        | 60°      |

## STANDING SUPPORTING POINTS

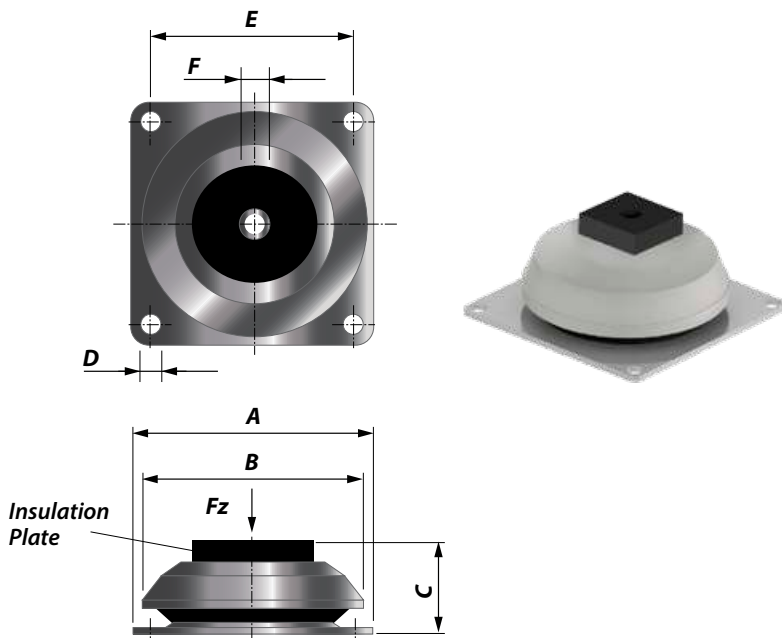
OAX-225/OAX-475



| Type        | Article No.  | A (mm) | B (mm) | C (mm) | D (mm)  | E (mm) | F (mm) | Insulation Plate (mm) | Weight (kg) | Fz max (kg) | Hardness |
|-------------|--------------|--------|--------|--------|---------|--------|--------|-----------------------|-------------|-------------|----------|
| OAX 225-45° | 430304512022 | 134    | 82     | 45     | 11 (2x) | 105    | M12    | 40x40x12              | 0.5         | 85          | 45°      |
| OAX 225-55° | 430305512022 | 134    | 82     | 45     | 11 (2x) | 105    | M12    | 40x40x12              | 0.5         | 160         | 55°      |
| OAX 225-65° | 430306512022 | 134    | 82     | 45     | 11 (2x) | 105    | M12    | 40x40x12              | 0.5         | 225         | 65°      |
| OAX 475-45° | 430304512047 | 170    | 113    | 55     | 13 (2x) | 140    | M12    | 40x40x12              | 1.1         | 375         | 45°      |
| OAX 475-55° | 430305512047 | 170    | 113    | 55     | 13 (2x) | 140    | M12    | 40x40x12              | 1.1         | 500         | 55°      |
| OAX 475-65° | 430306512047 | 170    | 113    | 55     | 13 (2x) | 140    | M12    | 40x40x12              | 1.1         | 560         | 65°      |

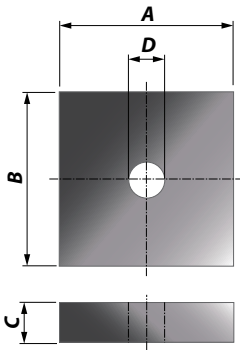
## STANDING SUPPORTING POINTS

OAX-1400/OAX-3600



| Type         | Article No.  | A (mm) | B (mm) | C (mm) | D (mm)  | E (mm) | F (mm) | Insulation Plate (mm) | Weight (kg) | Fz max (kg) | Hardness |
|--------------|--------------|--------|--------|--------|---------|--------|--------|-----------------------|-------------|-------------|----------|
| OAX 1400-45° | 430304516140 | 168    | 150    | 66     | 13 (4x) | 132    | M16    | 80x80x12              | 2.2         | 750         | 45°      |
| OAX 1400-55° | 430305516140 | 168    | 150    | 66     | 13 (4x) | 132    | M16    | 80x80x12              | 2.2         | 930         | 55°      |
| OAX 1400-65° | 430306516140 | 168    | 150    | 66     | 13 (4x) | 132    | M16    | 80x80x12              | 2.2         | 1180        | 65°      |
| OAX 3600-45° | 430304520360 | 220    | 206    | 94     | 18 (4x) | 180    | M20    | 100x100x20            | 5.4         | 2650        | 45°      |
| OAX 3600-55° | 430305520360 | 220    | 206    | 94     | 18 (4x) | 180    | M20    | 100x100x20            | 5.4         | 3550        | 55°      |
| OAX 3600-65° | 430306520360 | 220    | 206    | 94     | 18 (4x) | 180    | M20    | 100x100x20            | 5.4         | 5200        | 65°      |

## INSULATION PLATES



| Article No.  | A (mm) | B (mm) | C (mm) | D (mm) |
|--------------|--------|--------|--------|--------|
| 430000000001 | 40     | 40     | 12     | 13     |
| 430000000002 | 50     | 50     | 12     | 13     |
| 430000000003 | 50     | 50     | 12     | 17     |
| 430000000004 | 80     | 80     | 12     | 17     |