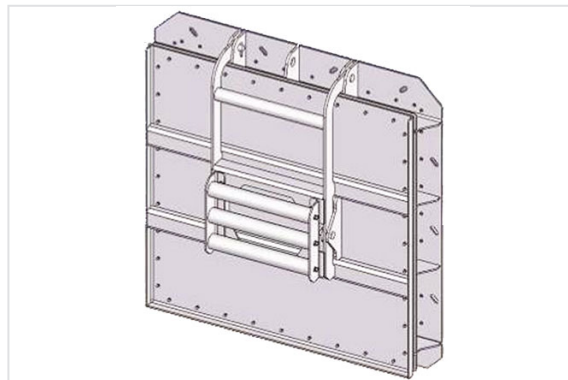
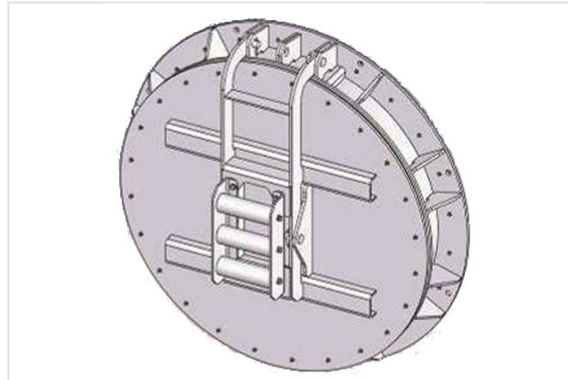


## Stainless steel 304L Flap Valve



### Description

The stainless steel 304L flap valves are mechanical equipment with an horizontal axis with a gate. They are designed for control downstream and upstream flows.

The range is available in round version and square version. Round version: DN80 to 2000 (on concrete wall or with flanges), square version L=80x80 to L=2000x2000.

The round valve can be installed on flange PN10 or on a concrete wall. The square valve can be installed directly on the concrete wall.

### Field of use

These valves are designed for supply of clean water, raw water, sewage and irrigation.

For other dimensions, junctions, material, coatings or fields of use (sea water with special coating and bolts), please consult us.

## Operation

The flap valves are manufactured starting from a stainless steel plate; it is provided with a horizontal hinge on the higher side. The tightness seal between the gate and the framework is maintained by a bolt flange (see picture 1). It consists of a neoprene strip retained on the framework by a stainless steel ring (see picture 2).

For the higher sections, the valves are manufactured starting from a reinforced stainless steel plate maintained to the framework by means of two adjustable and articulated arms. A tightness seal of extruded soft neoprene is fixed on the framework by means of a stainless steel ring.

Round Flap Valve with universal flange (installation on concrete wall)

| DN (mm) | Opening Ø (mm) | ØD (mm) | ØK (mm) | Ød (mm) | N (mm) | A (mm) | B (mm) | C (mm) | J (mm) | R (mm) | Mass (kg) | References |
|---------|----------------|---------|---------|---------|--------|--------|--------|--------|--------|--------|-----------|------------|
| 80      | 80             | 200     | 160     | 10      | 4      | 128    | 170    |        |        | 195    | 7.50      | 232179     |
| 100     | 100            | 220     | 220     | 10      | 4      | 128    | 170    |        |        | 215    | 8.50      | 232181     |
| 150     | 150            | 285     | 240     | 10      | 4      | 128    | 208    |        |        | 260    | 15.00     | 232182     |
| 200     | 200            | 340     | 295     | 10      | 4      | 128    | 208    |        |        | 325    | 20.00     | 232183     |
| 250     | 250            | 395     | 350     | 10      | 6      | 128    | 208    |        |        | 355    | 26.00     | 232184     |
| 300     | 300            | 445     | 400     | 10      | 6      | 128    | 208    |        |        | 405    | 32.00     | 232187     |
| 350     | 350            | 505     | 460     | 10      | 6      | 128    | 208    |        |        | 470    | 38.00     | 232188     |
| 400     | 400            | 565     | 515     | 10      | 6      | 128    | 228    | 50     |        | 510    | 46.00     | 232190     |
| 450     | 450            | 615     | 565     | 12      | 8      | 128    | 228    | 50     |        | 570    | 62.00     | 232192     |
| 500     | 500            | 670     | 620     | 12      | 8      | 128    | 228    | 50     |        | 610    | 74.00     | 232193     |
| 600     | 600            | 780     | 725     | 12      | 8      | 128    | 228    | 50     | 20     | 725    | 84.00     | 232195     |
| 700     | 700            | 895     | 840     | 12      | 8      | 128    | 228    | 50     | 20     | 815    | 106.00    | 232198     |
| 800     | 800            | 1015    | 950     | 12      | 8      | 128    | 228    | 80     | 20     | 920    | 124.00    | 232200     |
| 900     | 900            | 1115    | 1050    | 14      | 12     | 128    | 248    | 80     | 20     | 1035   | 155.00    | 232203     |
| 1000    | 1000           | 1230    | 1160    | 14      | 12     | 128    | 248    | 80     | 20     | 1125   | 185.00    | 232238     |
| 1100    | 1100           | 1340    | 1270    | 14      | 12     | 128    | 248    | 80     | 20     | 1230   | 225.00    | 232255     |
| 1200    | 1200           | 1455    | 1380    | 14      | 12     | 128    | 248    | 100    | 20     | 1320   | 255.00    | 232767     |
| 1300    | 1300           | 1565    | 1485    | 14      | 16     | 148    | 268    | 100    | 20     | 1445   | 267.00    | 232875     |
| 1400    | 1400           | 1675    | 1590    | 14      | 16     | 148    | 268    | 100    | 20     | 1550   | 297.00    | 232922     |
| 1500    | 1500           | 1785    | 1695    | 14      | 16     | 148    | 268    | 120    | 20     | 1645   | 327.00    | 232923     |
| 1600    | 1600           | 1915    | 1820    | 14      | 20     | 148    | 288    | 120    | 20     | 1750   | 360.00    | 232925     |
| 1800    | 1800           | 2115    | 2020    | 14      | 20     | 148    | 288    | 120    | 20     | 1960   | 429.00    | 232927     |
| 2000    | 2000           | 2325    | 2230    | 14      | 20     | 148    | 308    | 120    | 20     | 2145   | 505.00    | 232929     |

(\* References include necessary bolts. Counterweights are not included.

## Round Flap Valve for PN10 flange connection

| DN (mm) | Opening Ø | ØD (mm) | ØK (mm) | Bolts   | N (mm) | A (mm) | B (mm) | C (mm) | J (mm) | R (mm) | Mass (kg) | References |
|---------|-----------|---------|---------|---------|--------|--------|--------|--------|--------|--------|-----------|------------|
| 80      | 80        | 200     | 160     | M10x55  | 4      | 128    | 170    |        | 20     | 195    | 8.00      | 236139     |
| 100     | 100       | 220     | 180     | M10x55  | 8      | 128    | 170    |        | 20     | 220    | 9.00      | 236140     |
| 150     | 150       | 285     | 240     | M10x60  | 8      | 128    | 208    |        | 22     | 260    | 16.00     | 236151     |
| 200     | 200       | 340     | 295     | M10x60  | 8      | 128    | 208    |        | 24     | 325    | 21.00     | 236152     |
| 250     | 250       | 395     | 350     | M12x70  | 12     | 128    | 208    |        | 26     | 355    | 35.00     | 235838     |
| 300     | 300       | 445     | 400     | M12x70  | 12     | 128    | 208    |        | 26     | 405    | 33.00     | 236154     |
| 350     | 350       | 505     | 460     | M12x70  | 16     | 128    | 208    |        | 28     | 470    | 40.00     | 236155     |
| 400     | 400       | 565     | 515     | M12x70  | 16     | 128    | 228    | 60     | 32     | 515    | 48.00     | 236156     |
| 450     | 450       | 615     | 565     | M12x80  | 20     | 128    | 228    | 60     | 38     | 570    | 62.00     | 236157     |
| 500     | 500       | 670     | 620     | M12x80  | 20     | 128    | 228    | 60     | 38     | 610    | 74.00     | 236158     |
| 600     | 600       | 780     | 725     | M12x80  | 20     | 128    | 228    | 60     | 38     | 725    | 84.00     | 236160     |
| 700     | 700       | 895     | 840     | M16x90  | 24     | 128    | 228    | 60     | 40     | 815    | 106.00    | 236161     |
| 800     | 800       | 1015    | 950     | M16x90  | 24     | 145    | 245    | 80     | 44     | 920    | 136.00    | 236162     |
| 900     | 900       | 1115    | 1050    | M16x90  | 28     | 145    | 245    | 80     | 48     | 1020   | 155.00    | 236163     |
| 1000    | 1000      | 1230    | 1160    | M16x100 | 28     | 145    | 245    | 80     | 50     | 1120   | 185.00    | 236164     |
| 1100    | 1100      | 1340    | 1270    | M16x100 | 32     | 145    | 245    | 80     | 50     | 1220   | 225.00    | 236142     |
| 1200    | 1200      | 1455    | 1380    | M16x100 | 32     | 145    | 245    | 100    | 52     | 1320   | 255.00    | 236143     |
| 1300    | 1300      | 1565    | 1485    | M16x100 | 36     | 145    | 245    | 100    | 52     | 1420   | 267.00    | 236144     |
| 1400    | 1400      | 1675    | 1590    | M16x100 | 36     | 145    | 245    | 100    | 52     | 1520   | 297.00    | 236145     |
| 1500    | 1500      | 1785    | 1695    | M16x100 | 36     | 165    | 285    | 120    | 52     | 1635   | 327.00    | 236146     |
| 1600    | 1600      | 1915    | 1820    | M18x110 | 40     | 165    | 285    | 120    | 52     | 1735   | 360.00    | 236147     |
| 1800    | 1800      | 2115    | 2020    | M18x110 | 44     | 165    | 285    | 120    | 54     | 1935   | 429.00    | 236148     |
| 2000    | 2000      | 2325    | 2230    | M18x110 | 48     | 165    | 285    | 120    | 58     | 2135   | 505.00    | 236149     |

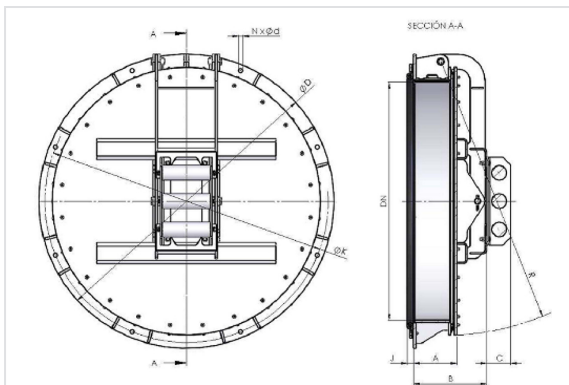
(\* References do not include necessary bolts. Counterweights are not included.

## Square Flap Valve (installation on concrete wall)

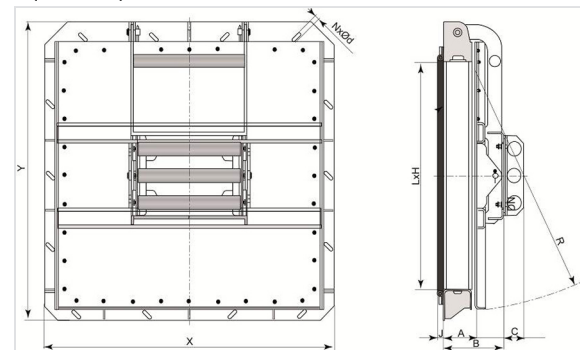
| DN (mm) | Opening Ø | K (mm) | Ød (mm) | N (mm) | A (mm) | B (mm) | C (mm) | J (mm) | R (mm) | Mass (kg) | References |
|---------|-----------|--------|---------|--------|--------|--------|--------|--------|--------|-----------|------------|
| 80      | 80        | 15     | 10      | 4      | 130    | 215    |        |        | 230    | 25.00 kg  | 232768     |
| 100     | 100       | 15     | 10      | 4      | 130    | 215    |        |        | 250    | 30.00 kg  | 232769     |
| 150     | 150       | 15     | 10      | 8      | 130    | 215    |        |        | 300    | 40.00 kg  | 232770     |
| 200     | 200       | 15     | 10      | 8      | 130    | 215    |        |        | 350    | 45.00 kg  | 232772     |
| 250     | 250       | 15     | 12      | 8      | 130    | 215    |        |        | 400    | 50.00 kg  | 232773     |
| 300     | 300       | 15     | 12      | 12     | 130    | 215    |        |        | 450    | 55.00 kg  | 232775     |
| 350     | 350       | 15     | 12      | 12     | 130    | 215    |        |        | 500    | 60.00 kg  | 232777     |

| DN (mm) | Opening Ø | K (mm) | Ød (mm) | N (mm) | A (mm) | B (mm) | C (mm) | J (mm) | R (mm) | Mass (kg) | References |
|---------|-----------|--------|---------|--------|--------|--------|--------|--------|--------|-----------|------------|
| 400     | 400       | 15     | 12      | 12     | 130    | 215    | 60     |        | 580    | 65.00 kg  | 232778     |
| 450     | 450       | 15     | 12      | 12     | 130    | 215    | 60     |        | 630    | 70.00 kg  | 232779     |
| 500     | 500       | 25     | 12      | 12     | 130    | 215    | 60     | 20     | 380    | 85.00 kg  | 232780     |
| 600     | 600       | 25     | 12      | 14     | 130    | 215    | 60     | 20     | 890    | 105.00 kg | 232781     |
| 700     | 700       | 25     | 16      | 14     | 130    | 215    | 60     | 20     | 880    | 120.00 kg | 232782     |
| 800     | 800       | 25     | 16      | 14     | 150    | 215    | 80     | 20     | 980    | 135.00 kg | 232783     |
| 900     | 900       | 25     | 16      | 14     | 150    | 215    | 80     | 20     | 1080   | 165.00 kg | 232784     |
| 1000    | 1000      | 25     | 16      | 14     | 150    | 215    | 80     | 20     | 1180   | 195.00 kg | 232785     |
| 1100    | 1100      | 25     | 16      | 18     | 150    | 215    | 80     | 20     | 1280   | 235.00 kg | 232787     |
| 1200    | 1200      | 25     | 16      | 18     | 150    | 215    | 100    | 20     | 1380   | 260.00 kg | 232788     |
| 1300    | 1300      | 25     | 16      | 18     | 150    | 215    | 100    | 20     | 1480   | 280.00 kg | 232931     |
| 1400    | 1400      | 25     | 16      | 18     | 150    | 215    | 100    | 20     | 1580   | 310.00 kg | 232932     |
| 1500    | 1500      | 25     | 16      | 18     | 170    | 255    | 120    | 20     | 1700   | 340.00 kg | 232933     |
| 1600    | 1600      | 25     | 18      | 22     | 170    | 255    | 120    | 20     | 1800   | 380.00 kg | 232934     |
| 1800    | 1800      | 25     | 18      | 22     | 170    | 255    | 120    | 20     | 2000   | 435.00 kg | 232936     |
| 2000    | 2000      | 25     | 18      | 22     | 170    | 255    | 120    | 20     | 2200   | 520.00 kg | 232940     |

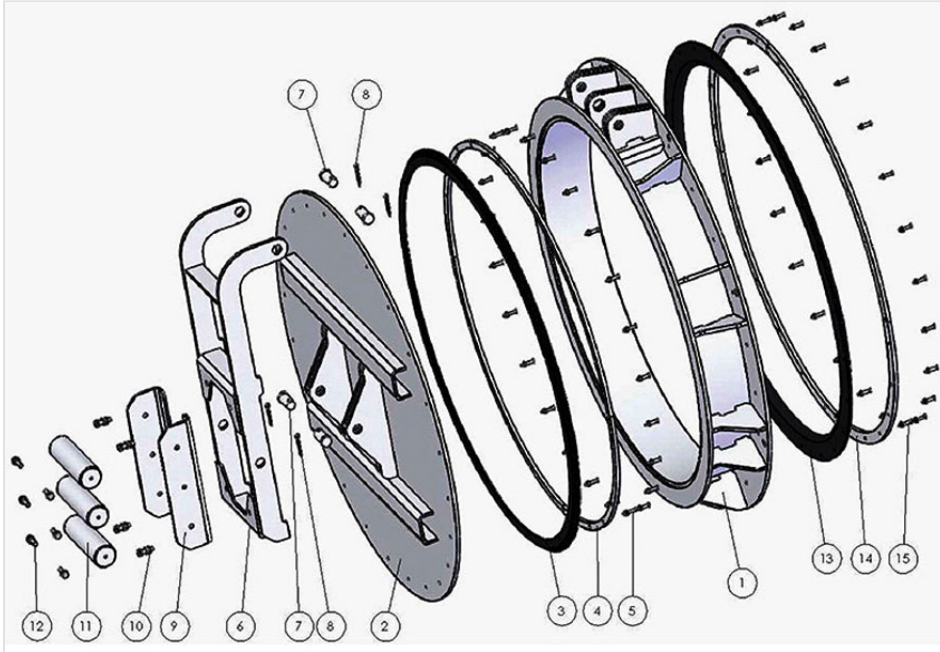
(\*) References include necessary bolts. Counterweights are not included.



Square Flap Valve (installation on concrete wall)



## Material and coating



| Item | Number of pieces | Designation   | Material                  |
|------|------------------|---|---------------------------|
| 1    | 1                | Framework stainless steel AISI 304L                                     | X2CrNi19-11 acc. EN 10088 |
| 2    | 1                | Gate stainless steel AISI 304L  | X2CrNi19-11 acc. EN 10088 |
| 3    | 1                | Tightness seal between framework and gate                               | EPDM 70 Shore             |
| 4    | 4                | Stainless steel 304L ring for tightness seal between framework and gate | X2CrNi19-11 acc. EN 10088 |
| 5    | S/model          | Kit of bolts and screw DIN7991 M5x30 with nuts and washers              | A2                        |
| 6    | 1                | Kit of support and rotation of the gate                                 | X2CrNi19-11 acc. EN 10088 |
| 7    | 4                | Bolts $\varnothing=25$ mm   | X2CrNi19-11 acc. EN 10088 |
| 8    | 4                | Screw $\varnothing5 \times 40$  | A2                        |
| 9    | 2                | Structure for counterweights  | X2CrNi19-11 acc. EN 10088 |
| 10   | S/model          | Kit of bolts and screw DIN933 M8x30 with nuts and washers               | A2                        |
| 11   | S/model          | Stainless steel counterweights various diameters $\varnothing=50$ mm    | X2CrNi19-11 acc. EN 10088 |
| 12   | S/model          | Kit of bolts and screw DIN 933 M8x25 with nuts and washers              | A2                        |
| 13   | 1                | Tightness seal for frameworks. Lip seal for diameter > 500              | EPDM 70 Shore             |
| 14   | 4                | Stainless steel washer for tightness seal of framework                  | X2CrNi19-11 acc. EN 10088 |
| 15   | S/model          | Stainless steel washer for tightness seal of framework                  | A2                        |

## Standards

The flap valves are in conformity with the American Standard AWWA C561-04 (1,24 L/minute per linear meter of joint) and the European Standard DIN 19569/4 non Return Valves class 3 to 5 for water (the authorized water leakage shall not be higher than 0.01 - 0.05 l per second and per meter of joint).

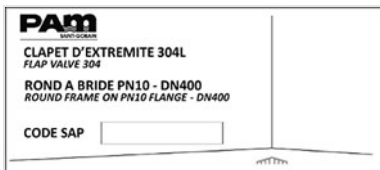
The flap valves supplied by SG PAM comply with the requirements of class 4 for sewage networks conditions.

For clean water, SG PAM flap valves comply with the requirement of class 4.

## Hydraulic characteristics

One-way sealing with 100% guarantee up to 5 mCE. For different heights, thank you to consult us.

## Marking



Flap valve 304 round frame on concrete wall DN400

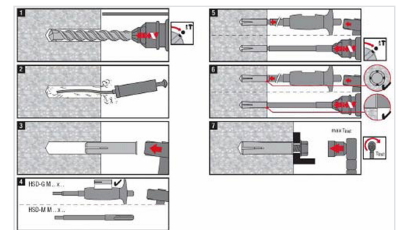


Flap valve 304 round frame on concrete wall DN400



Flap valve 304 square frame on concrete wall DN400

## Installation instructions



The installation of the flap valve must be realized in accordance with these instructions. The fitter is responsible for handling, storage and the assembly of the flap valve.

### Installation on concrete wall

It is necessary to check the flatness and the verticality of the wall where the tightness seal between the valve and the wall will be placed. All irregularities and lacks of flatness will be removed and repaired.

In the case of lack of verticality of the wall, the flap valve will have to be adjusted with the counterweights.

Before the installation on the wall, it is necessary to prepare a gauge of the anchoring flange on the concrete wall. The gauge can be obtained from the flange of the flap valve. All dimensions and drillings of the flange must be strictly identical with the gauge (paperboard, plastic,...). It allows to easily find the position of the flap valve (dimensions of the universal flange with drillings) on the concrete wall compared to the end of the pipe to be insulated.

To center the gauge on the wall compared to the pipe to insulate, locate the points of drilling of the flange and to mark them on the wall. It is essential to correctly position the perpendicular and horizontal axes of the valve. The spindle of the hinge must be imperatively horizontal.

SG PAM recommends two types of solutions:

- Chemical Anchoring (with a bi-component epoxydic) or
- Mechanical Anchoring by "impact" (see the instructions of assembly of the various manufacturers).

To drill the concrete wall with the drilling machine (position drilling/hammer) on the points indicated by the gauge. The drill recommended is out of carbide and the diameter is indicated below:

Chemical Solution: M8=Ø14mm. M10=Ø18mm. M12=Ø22mm. M16=Ø28mm. M20=Ø32mm.

To clean the dust and dirt from the drilling (with compressed air).

#### Installation of the tie-rods:

- For the chemical solution type HIT-RE M:
  - To insert the cartridge in the carry-cartridges and to go up on the gun. To ensure the homogeneity of the mixture by the agitation of the gun.
  - The application must start from the bottom towards outside without creating in-drafts. It is necessary to fill approximately 2/3 the length of the bored hole.
  - To introduce the steel tie-rod and to let dry during one hour (1 H). The steel tie should not be touched or handled during this period!!!
  - Maximum tightening of the nut: M8=10 Nm, M10=20 Nm, M12=40 Nm, M16=80 Nm, M20=150 Nm.
- To ensure the sealing between the valve and the concrete wall it is recommended to apply a special mastic (recommendation Sikaflex PRO 2 HP) on the perimeter of the wall where the tightness seal of the valve will be installed.

To place the flap valve on the tie-rods anchored to the wall and pre-tighten the nuts in circular order. A regular tightening must be carried out in diagonal in order not to deform the framework of the valve.

If the wall is not sufficiently straight, it is necessary to control the tightening torque and to check the framework to avoid its deformation. If a deformation of the framework takes place, it is necessary to loosen the nuts and to repair the wall with expansive mortar. After drying it is necessary to reinstall the valve.

After checking of the assembly and absence of leakage, the final tightening of the nuts and bolts will be done in diagonal.

## Installation on flange PN10

It is necessary to check the flatness and the verticality of the flange PN10. In the case of lack of verticality it will be necessary to use counterweights.

To check the positioning of the drillings of the flange. The holes must be perfectly symmetrical compared to the vertical axis. In case of bad positioning of the flange of the pipe, the horizontality of the hinge axis is not correct. If the asymmetry of the flange of the pipe is important, it is recommended to make again the holes in the flange of the pipe.

To install the valve with two screws to ensure the centering and the positioning of the horizontal axis of the hinge.

To place the tightness seal between the two flanges of the valve and the end of the pipe to be insulated.

To assemble the nuts and bolts (pre-tightening) while following the perimeter of the valve (in circle). The tightening must be done in diagonal.

After checking of the assembly and absence of leakage, the final tightening of the nuts and bolts will be done in diagonal.

## Maintenance

### Tightness seal

It is recommended to make a visual inspection once a year of the two tightness seals of the flap valve to check the absence of crack. If the joints are in good condition they should only be lubricated with silicone in spray. Otherwise they will have to be changed.

The tightness seals are connected to the body with stainless steel 304L plates and bolts. If the defective tightness seal is changed, plates, bolts and nuts can be re-used.

To guarantee an optimal operation, it is recommended to use the joints certified by SGPAM.

### Kit « hinge »

To check that the rotating pieces are in good condition, it is recommended to test the hinge in all the angular amplitude (0° - 180°) at least once a year.



# CHECK VALVES AND STRAINERS PROTECTION EQUIPMENT FOR RESERVOIRS DN 80 - 2000

06/06/2026  
VSVCH28EXT100

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*The information on this sketch is, to the best of our knowledge correct at the time of printing. However Saint-Gobain are constantly looking at ways of improving their products and services therefore reserve the right to change without prior notice, any of the data shown. Any orders placed will be subject to our Standard Conditions of Sale, available on request.*