

Tudor

THE INTERNATIONAL
EONet
CERTIFICATION NETWORK
ISO 9001

Baterías de Tracción Traction Batteries



Tudor

**Ofrece la batería óptima para
todas las aplicaciones**

**Presents you the optimum battery
for all your needs**

Las siguientes gamas de elementos, se
encuentran disponibles en todos los mercados:

Available in most markets
in the following cell ranges:

Elementos DIN

DIN traction cell

PzS TS TM

Elementos alto rendimiento, tecnología CSM High performance in CSM technology

CSM H (cobre expandido) (copper stretch metal technology)

Baterias sin mantenimiento

Maintenance free batteries

PzV

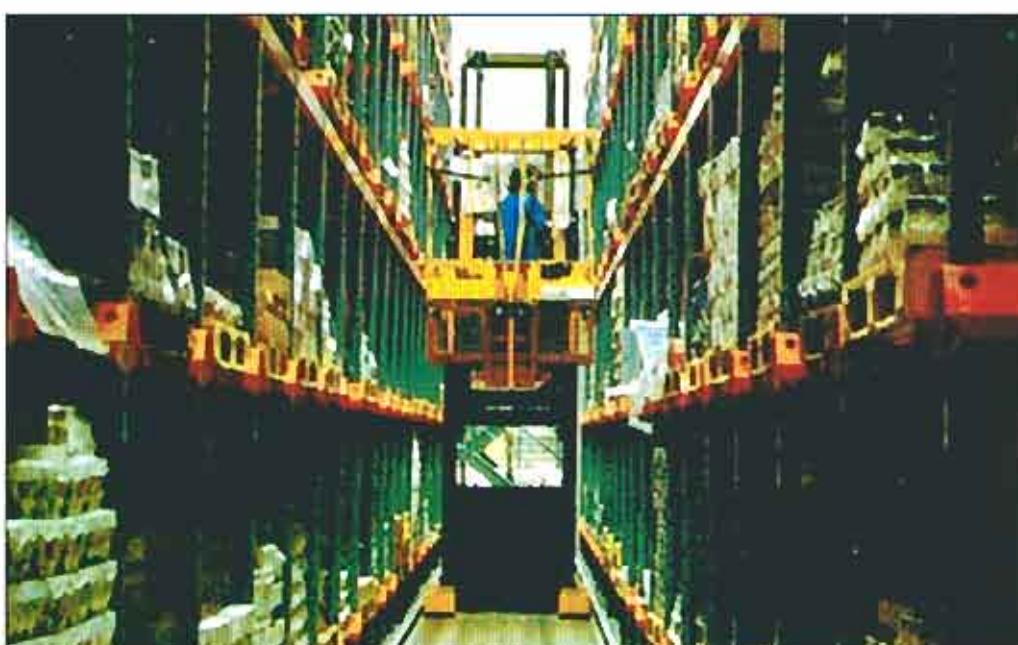
Series british standard

British Standard series

SX **CSM B** (Tecnología CSM) (CSM technology)

Mediante esta amplia gama de elementos, Tudor
puede suministrar la batería más adecuada para
satisfacer cualquier especificación, al tiempo
que proporciona el diseño más indicado para
obtener un rendimiento óptimo y unos costes
operativos más reducidos.

This wide range of cells allows us to deliver the
right battery for a specific requirement, while
efficient design provides optimal reliability and
reduced operating costs.



Características optionales



Terminales "Patent-pole"

Ventajas:

- Cierre estanco que mantiene limpios y secos los polos, conexiones y tapas.
- Inserto de latón que mejora la conductividad.
- Unión mecánicamente estable entre tapa y polo.
- Permite conexiónado muy seguro.

Special features (optional)

Patent-pole terminals

Advantages:

- Permanently leak proof terminal remain poles connectors and lids clean and dry.
- Brass insert improves the conductivity of pole.
- The connection between pole and lid is mechanically stable.
- Electrically safe connections

Sistema automático de llenado

Cada elemento de la batería dispone de un tapón especial que controla el nivel del electrolito durante el proceso de llenado. Los tapones se interconectan mediante tubos para formar un circuito en serie que termina en un conector. Cuando se conecta la batería a la unidad de llenado, circula el agua a través del sistema hasta que todos los elementos quedan a su nivel correcto.



Automatic refill system

Each cell in the battery is fitted with an autofill plug which controls the level of electrolyte, during the topping-up process. The autofill plugs are connected by tubing to form a series circuit which terminates at each end with a connector block. When connected to the battery the topping-up unit draws water through the system until all cells are topped-up to their correct levels.

Sistema de circulación del electrolito

Para reducir el factor de carga optimizando por consiguiente el proceso, existe un dispositivo (ver gráfico) que insufla aire en el interior del elemento y produce agitado del electrolito.

Electrolyte acid-circulation system

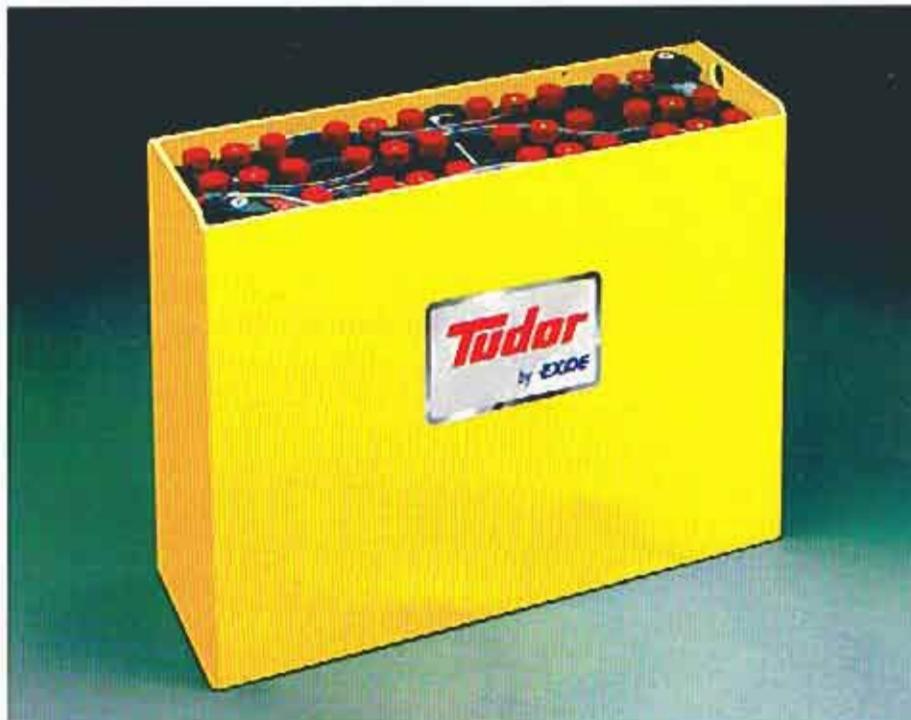
In order to reduce the charging factor and to improve all the process it exists an appropriate moving electrolyte system by air injection (see fig.).

Baterías Anti-Ex

Elementos y cofres especialmente diseñados y homologados "Ex" según (EN 50.014; EN 50.019) para baterías de seguridad aumentada, minas, etc.

Ex-protected batteries

Special designed and Ex-homologated cells and trays for mining and other applications (EN 50.014; EN 50.019)



CSM H**PzV****PzS**

| Tipo Type | Cap. Ah · Sh | Exter. dimens. (mm) | | | | Peso Weight kg | Tipo Type | Cap. Ah · Sh | Exter. dimens. (mm) | | | | Peso Weight kg | Tipo Type | Cap. Ah · Sh | Exter. dimens. (mm) | | | | Peso Weight kg |
|--------------|-----------------|---------------------|-----|-----|-----|----------------------|--------------|-----------------|---------------------|-----|-----|-----|----------------------|--------------|-----------------|---------------------|-----|-----|-----|----------------------|
| | | L | W | H1 | H2 | | | | L | W | H1 | H2 | | | | L | W | H1 | H2 | |
| 02 CSM H 370 | 128 | 45 | 196 | 340 | 370 | 8,6 | 02 PzV 110 | 110 | 47 | 200 | 342 | 370 | 9,4 | 02 PzS 110 | 110 | 45 | 196 | 340 | 370 | 8,6 |
| 03 CSM H 370 | 192 | 63 | 196 | 340 | 370 | 12 | 03 PzV 165 | 165 | 65 | 200 | 342 | 370 | 12,9 | 03 PzS 165 | 165 | 63 | 196 | 340 | 370 | 12 |
| 04 CSM H 370 | 258 | 81 | 196 | 340 | 370 | 15,4 | 04 PzV 220 | 220 | 83 | 200 | 342 | 370 | 16,7 | 04 PzS 220 | 220 | 81 | 196 | 340 | 370 | 15,4 |
| 05 CSM H 370 | 320 | 99 | 196 | 340 | 370 | 18,8 | 05 PzV 275 | 275 | 101 | 200 | 342 | 370 | 20,3 | 05 PzS 275 | 275 | 99 | 196 | 340 | 370 | 18,8 |
| 06 CSM H 370 | 384 | 118 | 197 | 340 | 370 | 22,3 | 06 PzV 330 | 330 | 119 | 200 | 342 | 370 | 24,1 | 06 PzS 330 | 330 | 118 | 197 | 340 | 370 | 22,3 |
| 07 CSM H 370 | 448 | 136 | 197 | 340 | 370 | 25,8 | 07 PzV 385 | 385 | 137 | 200 | 342 | 370 | 28,5 | 07 PzS 385 | 385 | 136 | 197 | 340 | 370 | 25,8 |
| 08 CSM H 370 | 512 | 154 | 197 | 340 | 370 | 29,3 | 08 PzV 440 | 440 | 155 | 200 | 342 | 370 | 32,2 | 08 PzS 440 | 440 | 154 | 197 | 340 | 370 | 29,3 |
| 09 CSM H 370 | 576 | 173 | 198 | 340 | 370 | 32,8 | | | | | | | | 09 PzS 495 | 495 | 172 | 197 | 340 | 370 | 32,7 |
| 10 CSM H 370 | 640 | 191 | 198 | 340 | 370 | 36,3 | | | | | | | | 10 PzS 550 | 550 | 190 | 197 | 340 | 370 | 36,1 |
| 02 CSM H 430 | 164 | 45 | 196 | 400 | 430 | 10,2 | 02 PzV 140 | 140 | 47 | 200 | 402 | 430 | 11,0 | 02 PzS 140 | 140 | 45 | 196 | 400 | 430 | 10,2 |
| 03 CSM H 430 | 246 | 63 | 196 | 400 | 430 | 14,4 | 03 PzV 210 | 210 | 65 | 200 | 402 | 430 | 15,8 | 03 PzS 210 | 210 | 63 | 196 | 400 | 430 | 14,4 |
| 04 CSM H 430 | 328 | 81 | 196 | 400 | 430 | 18,6 | 04 PzV 280 | 280 | 83 | 200 | 402 | 430 | 20,0 | 04 PzS 280 | 280 | 81 | 196 | 400 | 430 | 18,6 |
| 05 CSM H 430 | 410 | 99 | 196 | 400 | 430 | 22,8 | 05 PzV 350 | 350 | 101 | 200 | 402 | 430 | 24,6 | 05 PzS 350 | 350 | 99 | 196 | 400 | 430 | 22,8 |
| 06 CSM H 430 | 492 | 118 | 197 | 400 | 430 | 27 | 06 PzV 420 | 420 | 119 | 200 | 402 | 430 | 29,6 | 06 PzS 420 | 420 | 118 | 197 | 400 | 430 | 27 |
| 07 CSM H 430 | 574 | 136 | 197 | 400 | 430 | 31,2 | 07 PzV 490 | 490 | 137 | 200 | 402 | 430 | 34,5 | 07 PzS 490 | 490 | 136 | 197 | 400 | 430 | 31,2 |
| 08 CSM H 430 | 656 | 154 | 197 | 400 | 430 | 35,4 | 08 PzV 560 | 560 | 155 | 200 | 402 | 430 | 39,0 | 08 PzS 560 | 560 | 154 | 197 | 400 | 430 | 35,4 |
| 09 CSM H 430 | 738 | 173 | 198 | 400 | 430 | 39,6 | | | | | | | | 09 PzS 630 | 630 | 172 | 197 | 400 | 430 | 39,6 |
| 10 CSM H 430 | 820 | 191 | 198 | 400 | 430 | 43,8 | | | | | | | | 10 PzS 700 | 700 | 190 | 197 | 400 | 430 | 43,8 |
| 02 CSM H 505 | 200 | 47 | 198 | 475 | 505 | 12 | 02 PzV 160 | 160 | 47 | 200 | 472 | 500 | 12,6 | 02 PzS 160 | 160 | 47 | 198 | 470 | 500 | 12 |
| 03 CSM H 505 | 300 | 65 | 198 | 475 | 505 | 17 | 03 PzV 240 | 240 | 65 | 200 | 472 | 500 | 18,0 | 03 PzS 240 | 240 | 65 | 198 | 470 | 500 | 17 |
| 04 CSM H 505 | 400 | 83 | 198 | 475 | 505 | 22 | 04 PzV 320 | 320 | 83 | 200 | 472 | 500 | 23,5 | 04 PzS 320 | 320 | 83 | 198 | 470 | 500 | 22 |
| 05 CSM H 505 | 500 | 101 | 198 | 475 | 505 | 27 | 05 PzV 400 | 400 | 101 | 200 | 472 | 500 | 28,8 | 05 PzS 400 | 400 | 101 | 198 | 470 | 500 | 27 |
| 06 CSM H 505 | 600 | 119 | 198 | 475 | 505 | 32 | 06 PzV 480 | 480 | 119 | 200 | 472 | 500 | 34,8 | 06 PzS 480 | 480 | 119 | 198 | 470 | 500 | 32 |
| 07 CSM H 505 | 700 | 137 | 198 | 475 | 505 | 37 | 07 PzV 560 | 560 | 137 | 200 | 472 | 500 | 40,0 | 07 PzS 560 | 560 | 137 | 198 | 470 | 500 | 37 |
| 08 CSM H 505 | 800 | 155 | 198 | 475 | 505 | 42 | 08 PzV 640 | 640 | 155 | 200 | 472 | 500 | 45,1 | 08 PzS 640 | 640 | 155 | 198 | 470 | 500 | 42 |
| 09 CSM H 505 | 900 | 173 | 198 | 475 | 505 | 47 | | | | | | | | 09 PzS 720 | 720 | 173 | 198 | 470 | 500 | 47 |
| 10 CSM H 505 | 1000 | 191 | 198 | 475 | 505 | 52 | 10 PzV 800 | 800 | 193 | 200 | 472 | 500 | 56,3 | 10 PzS 800 | 800 | 191 | 198 | 470 | 500 | 52 |

02 CSM H 575 226 47 198 545 575 14,2
 03 CSM H 575 339 65 198 545 575 20,1
 04 CSM H 575 452 83 198 545 575 25,9
 05 CSM H 575 565 101 198 545 575 31,8
 06 CSM H 575 678 119 198 545 575 37,6
 07 CSM H 575 791 137 198 545 575 43,5
 08 CSM H 575 904 155 198 545 575 49,3
 09 CSM H 575 1017 173 198 545 575 55,2
 10 CSM H 575 1130 191 198 545 575 61,1

02 CSM H 595 240 47 198 570 600 15 02 PzV 200 200 47 200 563 595 15,1 02 PzS 200 200 47 198 565 595 14,8
 03 CSM H 595 360 65 198 570 600 21 03 PzV 300 300 65 200 563 595 22,2 03 PzS 300 300 65 198 565 595 20,9
 04 CSM H 595 480 83 198 570 600 27 04 PzV 400 400 63 200 563 595 28,5 04 PzS 400 400 83 198 565 595 27
 05 CSM H 595 600 101 198 570 600 33 05 PzV 500 500 101 200 563 595 35,2 05 PzS 500 500 101 198 565 595 33,1
 06 CSM H 595 720 119 198 570 600 39 06 PzV 600 600 119 200 563 595 41,6 06 PzS 600 600 119 198 565 595 39,2
 07 CSM H 595 840 137 198 570 600 45 07 PzV 700 700 137 200 563 595 48,4 07 PzS 700 700 137 198 565 595 45,3
 08 CSM H 595 960 155 198 570 600 51 08 PzV 800 800 155 200 563 595 56,2 08 PzS 800 800 155 198 565 595 51,4
 09 CSM H 595 1080 173 198 570 600 56 09 PzV 900 900 174 200 563 595 63,5 09 PzS 900 900 173 198 565 595 57,5
 10 CSM H 595 1200 191 198 570 600 64 10 PzV 1000 1000 192 200 563 595 72,0 10 PzS 1000 1000 191 198 565 595 63,8

02 CSM H 750 300 47 198 710 740 19 02 PzS 240 240 47 198 710 740 18,5
 03 CSM H 750 450 65 198 710 740 26 03 PzV 360 360 65 200 718 750 28,0 03 PzS 360 360 65 198 710 740 26,2
 04 CSM H 750 600 83 198 710 740 34 04 PzV 480 480 63 200 718 750 38,1 04 PzS 480 480 83 198 710 740 33,9
 05 CSM H 750 750 101 198 710 740 42 05 PzV 600 600 101 200 718 750 43,0 05 PzS 600 600 101 198 710 740 41,8
 06 CSM H 750 900 119 198 710 740 49 06 PzV 720 720 119 200 718 750 51,1 06 PzS 720 720 119 198 710 740 49,3
 07 CSM H 750 1050 137 198 710 740 57 07 PzV 840 840 137 200 718 750 60,7 07 PzS 840 840 137 198 710 740 57
 08 CSM H 750 1200 155 198 710 740 65 08 PzV 960 960 155 200 718 750 68,9 08 PzS 960 960 155 198 710 740 64,7
 09 CSM H 750 1350 173 198 710 740 72 09 PzV 1080 1080 173 200 718 750 76,1 09 PzS 1080 1080 173 198 710 740 72,4
 10 CSM H 750 1500 191 198 710 740 80 10 PzV 1200 1200 192 200 718 750 85,1 10 PzS 1200 1200 191 198 710 740 80,1

TS**TM**

| Tipo Type | Cap. Ah - Sh | Cell external dimens. (mm) | | | | Peso Weight kg |
|--------------|-----------------|----------------------------|-----|-----|-----|----------------------|
| | | L | W | H1 | H2 | |
| 02 TS 370 | 120 | 45 | 196 | 340 | 370 | 9 |
| 03 TS 370 | 180 | 63 | 197 | 340 | 370 | 13 |
| 04 TS 370 | 240 | 82 | 197 | 340 | 370 | 16.5 |
| 05 TS 370 | 300 | 101 | 198 | 340 | 370 | 21 |
| 06 TS 370 | 360 | 119 | 198 | 340 | 370 | 24 |
| 07 TS 370 | 420 | 137 | 198 | 340 | 370 | 28.5 |
| 08 TS 370 | 480 | 155 | 198 | 340 | 370 | 32.5 |
| 09 TS 370 | 540 | 173 | 198 | 340 | 370 | 36.5 |
| 10 TS 370 | 600 | 191 | 198 | 340 | 370 | 40.5 |
| 02 TS 430 | 160 | 47 | 196 | 400 | 430 | 11 |
| 03 TS 430 | 240 | 63 | 197 | 400 | 430 | 15.5 |
| 04 TS 430 | 320 | 82 | 197 | 400 | 430 | 20 |
| 05 TS 430 | 400 | 101 | 198 | 400 | 430 | 24.5 |
| 06 TS 430 | 480 | 119 | 198 | 400 | 430 | 28.5 |
| 07 TS 430 | 560 | 137 | 198 | 400 | 430 | 34 |
| 08 TS 430 | 640 | 155 | 198 | 400 | 430 | 39 |
| 09 TS 430 | 720 | 173 | 198 | 400 | 430 | 44 |
| 10 TS 430 | 800 | 191 | 198 | 400 | 430 | 49.5 |
| 02 TS 505 | 180 | 45 | 196 | 475 | 505 | 13 |
| 03 TS 505 | 270 | 63 | 197 | 475 | 505 | 18 |
| 04 TS 505 | 360 | 82 | 197 | 475 | 505 | 23.5 |
| 05 TS 505 | 450 | 101 | 198 | 475 | 505 | 28.5 |
| 06 TS 505 | 540 | 119 | 198 | 475 | 505 | 34 |
| 07 TS 505 | 630 | 137 | 198 | 475 | 505 | 40 |
| 08 TS 505 | 720 | 155 | 198 | 475 | 505 | 45 |
| 09 TS 505 | 810 | 173 | 198 | 475 | 505 | 50.5 |
| 10 TS 505 | 900 | 191 | 198 | 475 | 505 | 56 |
| 02 TS 545 | 204 | 45 | 196 | 515 | 545 | 14 |
| 03 TS 545 | 306 | 63 | 197 | 515 | 545 | 20.5 |
| 04 TS 545 | 408 | 82 | 197 | 515 | 545 | 25 |
| 05 TS 545 | 510 | 101 | 198 | 515 | 545 | 31 |
| 06 TS 545 | 612 | 119 | 198 | 515 | 545 | 37 |
| 07 TS 545 | 714 | 137 | 198 | 515 | 545 | 43.5 |
| 08 TS 545 | 816 | 155 | 198 | 515 | 545 | 49 |
| 09 TS 545 | 918 | 173 | 198 | 515 | 545 | 56 |
| 10 TS 545 | 1020 | 191 | 198 | 515 | 545 | 61 |
| 02 TS 575 | 214 | 45 | 196 | 545 | 575 | 14.5 |
| 03 TS 575 | 321 | 63 | 197 | 545 | 575 | 21.5 |
| 04 TS 575 | 428 | 82 | 197 | 545 | 575 | 26.5 |
| 05 TS 575 | 535 | 101 | 198 | 545 | 575 | 33 |
| 06 TS 575 | 642 | 119 | 198 | 545 | 575 | 39.5 |
| 07 TS 575 | 749 | 137 | 198 | 545 | 575 | 46.5 |
| 08 TS 575 | 856 | 155 | 198 | 545 | 575 | 54.5 |
| 09 TS 575 | 963 | 173 | 198 | 545 | 575 | 61 |
| 10 TS 575 | 1070 | 191 | 198 | 545 | 575 | 68 |
| 02 TS 595 | 220 | 47 | 198 | 565 | 595 | 15 |
| 03 TS 595 | 330 | 63 | 198 | 565 | 595 | 22 |
| 04 TS 595 | 440 | 82 | 198 | 565 | 595 | 27.5 |
| 05 TS 595 | 550 | 101 | 198 | 565 | 595 | 34 |
| 06 TS 595 | 660 | 119 | 198 | 565 | 595 | 41 |
| 07 TS 595 | 770 | 137 | 198 | 565 | 595 | 48 |
| 08 TS 595 | 880 | 155 | 198 | 565 | 595 | 56 |
| 09 TS 595 | 990 | 173 | 198 | 565 | 595 | 62 |
| 10 TS 595 | 1100 | 191 | 198 | 565 | 595 | 68 |
| 02 TS 720 | 260 | 47 | 196 | 690 | 720 | 17 |
| 03 TS 720 | 390 | 65 | 198 | 690 | 720 | 24.5 |
| 04 TS 720 | 520 | 83 | 198 | 690 | 720 | 32 |
| 05 TS 720 | 650 | 101 | 198 | 690 | 720 | 39 |
| 06 TS 720 | 780 | 119 | 198 | 690 | 720 | 46.5 |
| 07 TS 720 | 910 | 137 | 198 | 690 | 720 | 55 |
| 08 TS 720 | 1040 | 155 | 198 | 690 | 720 | 62.5 |
| 09 TS 720 | 1170 | 173 | 198 | 690 | 720 | 70 |
| 10 TS 720 | 1300 | 191 | 198 | 690 | 720 | 78 |
| 02 TS 750 | 300 | 47 | 198 | 720 | 750 | 18 |
| 03 TS 750 | 450 | 65 | 198 | 720 | 750 | 26 |
| 04 TS 750 | 600 | 83 | 198 | 720 | 750 | 34 |
| 05 TS 750 | 750 | 101 | 198 | 720 | 750 | 41.5 |
| 06 TS 750 | 900 | 119 | 198 | 720 | 750 | 49 |
| 07 TS 750 | 1050 | 137 | 198 | 720 | 750 | 59 |
| 08 TS 750 | 1200 | 155 | 198 | 720 | 750 | 67 |
| 09 TS 750 | 1350 | 173 | 198 | 720 | 750 | 76 |
| 10 TS 750 | 1500 | 191 | 198 | 720 | 750 | 83.5 |

TM

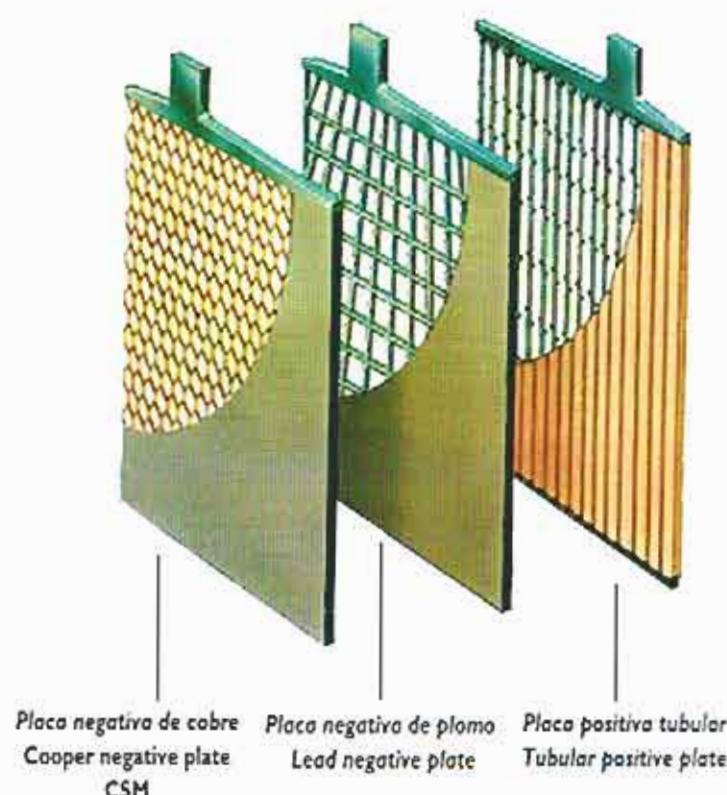
| Tipo Type | Cap. Ah - Sh | Exter. dimens. (mm) | | | | Peso Weight kg |
|--------------|-----------------|---------------------|-----|-----|-----|----------------------|
| | | L | W | H1 | H2 | |
| 02 TM 370 | 132 | 45 | 196 | 340 | 370 | 9 |
| 03 TM 370 | 198 | 63 | 197 | 340 | 370 | 13.5 |
| 04 TM 370 | 264 | 82 | 197 | 340 | 370 | 17 |
| 05 TM 370 | 330 | 101 | 198 | 340 | 370 | 21.5 |
| 06 TM 370 | 396 | 119 | 198 | 340 | 370 | 24.5 |
| 07 TM 370 | 452 | 137 | 198 | 340 | 370 | 29.5 |
| 08 TM 370 | 528 | 155 | 198 | 340 | 370 | 33.5 |
| 09 TM 370 | 594 | 173 | 198 | 340 | 370 | 37.5 |
| 10 TM 370 | 660 | 191 | 198 | 340 | 370 | 41.5 |
| 02 TM 430 | 168 | 45 | 196 | 400 | 430 | 11 |
| 03 TM 430 | 249 | 63 | 197 | 400 | 430 | 16 |
| 04 TM 430 | 332 | 82 | 197 | 400 | 430 | 20.5 |
| 05 TM 430 | 415 | 101 | 198 | 400 | 430 | 25 |
| 06 TM 430 | 496 | 119 | 198 | 400 | 430 | 29 |
| 07 TM 430 | 581 | 137 | 198 | 400 | 430 | 35 |
| 08 TM 430 | 664 | 155 | 198 | 400 | 430 | 40 |
| 09 TM 430 | 747 | 173 | 198 | 400 | 430 | 45 |
| 10 TM 430 | 830 | 191 | 198 | 400 | 430 | 50 |
| 02 TM 505 | 192 | 45 | 196 | 475 | 505 | 13 |
| 03 TM 505 | 288 | 63 | 197 | 475 | 505 | 18.5 |
| 04 TM 505 | 384 | 82 | 197 | 475 | 505 | 24 |
| 05 TM 505 | 480 | 101 | 198 | 475 | 505 | 29 |
| 06 TM 505 | 576 | 119 | 198 | 475 | 505 | 34.5 |
| 07 TM 505 | 672 | 137 | 198 | 475 | 505 | 41 |
| 08 TM 505 | 768 | 155 | 198 | 475 | 505 | 46 |
| 09 TM 505 | 864 | 173 | 198 | 475 | 505 | 51.5 |
| 10 TM 505 | 960 | 191 | 198 | 475 | 505 | 57 |
| 02 TM 545 | 226 | 45 | 196 | 515 | 545 | 14 |
| 03 TM 545 | 324 | 63 | 197 | 515 | 545 | 20.5 |
| 04 TM 545 | 426 | 82 | 197 | 515 | 545 | 25 |
| 05 TM 545 | 524 | 101 | 198 | 515 | 545 | 31 |
| 06 TM 545 | 624 | 119 | 198 | 515 | 545 | 37 |
| 07 TM 545 | 724 | 137 | 198 | 515 | 545 | 43.5 |
| 08 TM 545 | 824 | 155 | 198 | 515 | 545 | 49 |
| 09 TM 545 | 924 | 173 | 198 | 515 | 545 | 56 |
| 10 TM 545 | 1024 | 191 | 198 | 515 | 545 | 61 |
| 02 TM 575 | 228 | 45 | 196 | 545 | 575 | 15 |
| 03 TM 575 | 342 | 63 | 197 | 545 | 575 | 22 |
| 04 TM 575 | 456 | 82 | 197 | 545 | 575 | 27 |
| 05 TM 575 | 570 | 101 | 198 | 545 | 575 | 33.5 |
| 06 TM 575 | 684 | 119 | 198 | 545 | 575 | 40 |
| 07 TM 575 | 798 | 137 | 198 | 545 | 575 | 47.5 |
| 08 TM 575 | 912 | 155 | 198 | 545 | 575 | 55.5 |
| 09 TM 575 | 1026 | 173 | 198 | 545 | 575 | 62 |
| 10 TM 575 | 1140 | 191 | 198 | 545 | 575 | 67 |
| 02 TM 595 | 240 | 47 | 198 | 565 | 595 | 15 |
| 03 TM 595 | 360 | 65 | 198 | 565 | 595 | 22.5 |
| 04 TM 595 | 480 | 83 | 198 | 565 | 595 | 28 |
| 05 TM 595 | 600 | 101 | 198 | 565 | 595 | 34.5 |
| 06 TM 595 | 720 | 119 | 198 | 565 | 595 | 41.5 |
| 07 TM 595 | 840 | 137 | 198 | 565 | 595 | 49 |
| 08 TM 595 | 960 | 155 | 198 | 565 | 595 | 57 |
| 09 TM 595 | 1080 | 173 | 198 | 565 | 595 | 63 |
| 10 TM 595 | 1200 | 191 | 198 | 565 | 595 | 69 |
| 02 TS 720 | 260 | 47 | 196 | 690 | 720 | 17 |
| 03 TS 720 | 390 | 65 | 198 | 690 | 720 | 24.5 |
| 04 TS 720 | 520 | 83 | 198 | 690 | 720 | 32 |
| 05 TS 720 | 650 | 101 | 198 | 690 | 720 | 39 |
| 06 TS 720 | 780 | 119 | 198 | 690 | 720 | 46.5 |
| 07 TS 720 | 910 | 137 | 198 | 690 | 720 | 55 |
| 08 TS 720 | 1040 | 155 | 198 | 690 | 720 | 62.5 |
| 09 TS 720 | 1170 | 173 | 198 | 690 | 720 | 70 |
| 10 TS 720 | 1300 | 191 | 198 | 690 | 720 | 78 |
| 02 TS 750 | 300 | 47 | 198 | 720 | 750 | 18 |
| 03 TS 750 | 450 | 65 | 198 | 720 | 750 | 26 |
| 04 TS 750 | 600 | 83 | 198 | 720 | 750 | 34 |
| 05 TS 750 | 750 | 101 | 198 | 720 | 750 | 41.5 |
| 06 TS 750 | 900 | 119 | 198 | 720 | 750 | 49 |
| 07 TS 750 | 1050 | 137 | 198 | 720 | 750 | 59 |
| 08 TS 750 | 1200 | 155 | 198 | 720 | 750 | 67 |
| 09 TS 750 | 1350 | 173 | 198 | 720 | 750 | 76 |
| 10 TS 750 | 1500 | 191 | 198 | 720 | 750 | 83.5 |
| 02 TM 370 | 300 | 47 | 196 | 340 | 370 | 9 |
| 03 TM 370 | 450 | 65 | 197 | 340 | 370 | 13.5 |
| 04 TM 370 | 600 | 82 | 197 | 340 | 370 | 17 |
| 05 TM 370 | 750 | 101 | 198 | 340 | 370 | 21.5 |
| 06 TM 370 | 900 | 119 | 198 | 340 | 370 | 24.5 |
| 07 TM 370 | 1050 | 137 | 198 | 340 | 370 | 29.5 |
| 08 TM 370 | 1200 | 155 | 198 | 340 | 370 | 33.5 |
| 09 TM 370 | 1350 | 173 | 198 | 340 | 370 | 37.5 |
| 10 TM 370 | 1500 | 191 | 198 | 340 | 370 | 41.5 |
| 02 TM 430 | 168 | 45 | 196 | 400 | 430 | 11 |
| 03 TM 430 | 249 | 63 | 197 | 400 | 430 | 16 |
| 04 TM 430 | 332 | 82 | 197 | 400 | 430 | 20.5 |
| 05 TM 430 | 415 | 101 | 198 | 400 | 430 | 25 |
| 06 TM 430 | 496 | 119 | 198 | 400 | 430 | 29 |
| 07 TM 430 | 581 | 137 | 198 | 400 | 430 | 35 |
| 08 TM 430 | 664 | | | | | |

Características Generales

- Los elementos constan de placas positivas tubulares y placas negativas planas. Los tubos individuales sostienen la materia activa positiva. La porosidad del material del tubo permite el contacto del ácido con la materia activa.
- Las placas negativas están constituidas por rejillas de plomo/antimonio en cuyas celdas se empasta la materia activa. En las series CSM la rejilla es de cobre expandido. Algunas series se fabrican con placas de bajo contenido de antimonio.
- Entre las placas positivas y negativas se colocan separadores microporosos que permiten el libre acceso del electrolito a las placas y eliminan la posibilidad de cortocircuitos internos.
- El paquete de placas y separadores se monta en recipientes de plástico; éstos se cierran mediante una tapa, también de plástico, sellado térmicamente y con agujeros para salida de los polos y para el relleno de agua así como para permitir el desprendimiento de gases.
- Los elementos y baterías se suministran cargados y con ácido o en seco de acuerdo con lo especificado.
- Los elementos pueden suministrarse sueltos o formando batería completa; en este caso los elementos se colocan en un cofre de chapa de acero, protegida mediante pintura plástica anticorrosión.

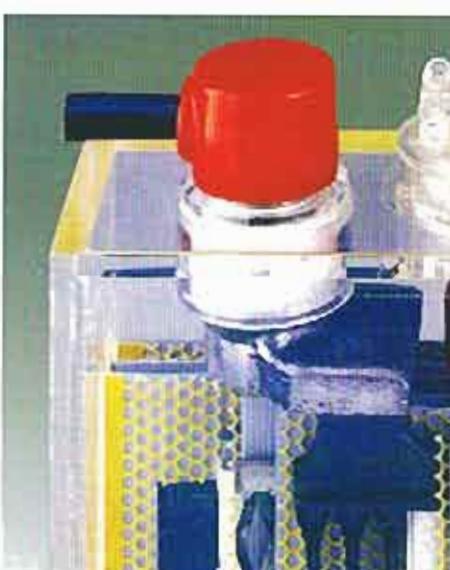
General Characteristics

- Cells of our traction batteries consist of positive iron clad (tubular) plates, and negative flat plates; individual tubes or tube pockets hold the active positive material. The porosity of the tube material allows the free acid access to the active mass.
- Corresponding negative plates consist of grids of antimonial lead in whose gaps the negative mass is pasted. In the CSM construction, grids are made of expanded copper. Low antimony content is a characteristic feature of both positive and negative grid alloys.
- There is a separation between positive and negative plates, allowing unhindered access of the electrolyte to the plates and prevent short circuit risk.
- The whole stack of plates is installed in single-cell containers made of plastic material. The lid of the container is provided with holes for the poles, for degassing and for refilling of purified water.
- Cells and batteries are delivered either dry or wet charged accordingly to specific requirements.
- Cells are supplied separately or put together into complete batteries. Cells making up complete batteries are placed in a special steel trays and covered with a tough anticorrosion plastic.



SX

| Tipo Type | Cap. Ah - Sh | Exter. dimens. (mm) | | | | Peso Weight |
|--------------|-----------------|---------------------|-----|-----|-----|----------------|
| | | L | W | H1 | H2 | |
| 02 SX 240 | 43 | 45 | 158 | 216 | 249 | 4 |
| 03 SX 240 | 65 | 61 | 158 | 216 | 249 | 5.3 |
| 04 SX 240 | 86 | 77 | 158 | 216 | 249 | 6.6 |
| 05 SX 240 | 106 | 93 | 158 | 216 | 249 | 8.1 |
| 06 SX 240 | 129 | 109 | 158 | 216 | 249 | 9.5 |
| 07 SX 240 | 151 | 125 | 158 | 216 | 249 | 10.9 |
| 08 SX 240 | 172 | 141 | 158 | 216 | 249 | 12.3 |
| 09 SX 240 | 194 | 157 | 158 | 216 | 249 | 13.7 |
| 10 SX 240 | 215 | 173 | 158 | 216 | 249 | 15.6 |
| 11 SX 240 | 237 | 189 | 158 | 216 | 249 | 17 |
| 12 SX 240 | 258 | 205 | 158 | 216 | 249 | 18.3 |
| 02 SX 285 | 60 | 45 | 158 | 260 | 293 | 4.8 |
| 03 SX 285 | 90 | 61 | 158 | 260 | 293 | 6.4 |
| 04 SX 285 | 120 | 77 | 158 | 260 | 293 | 8.2 |
| 05 SX 285 | 150 | 93 | 158 | 260 | 293 | 9.6 |
| 06 SX 285 | 180 | 109 | 158 | 260 | 293 | 11.7 |
| 07 SX 285 | 210 | 125 | 158 | 260 | 293 | 13.8 |
| 08 SX 285 | 240 | 141 | 158 | 260 | 293 | 15.3 |
| 09 SX 285 | 270 | 157 | 158 | 260 | 293 | 17 |
| 10 SX 285 | 300 | 173 | 158 | 260 | 293 | 19.2 |
| 11 SX 285 | 330 | 189 | 158 | 260 | 293 | 21 |
| 12 SX 285 | 360 | 205 | 158 | 260 | 293 | 22.7 |
| 02 SX 350 | 84 | 45 | 158 | 324 | 357 | 6.1 |
| 03 SX 350 | 126 | 61 | 158 | 324 | 357 | 8.3 |
| 04 SX 350 | 166 | 77 | 158 | 324 | 357 | 10.1 |
| 05 SX 350 | 210 | 93 | 158 | 324 | 357 | 13 |
| 06 SX 350 | 252 | 109 | 158 | 324 | 357 | 15.4 |
| 07 SX 350 | 294 | 125 | 158 | 324 | 357 | 17.1 |
| 08 SX 350 | 336 | 141 | 158 | 324 | 357 | 20.1 |
| 09 SX 350 | 378 | 157 | 158 | 324 | 357 | 22.4 |
| 10 SX 350 | 420 | 173 | 158 | 324 | 357 | 25.1 |
| 11 SX 350 | 462 | 189 | 158 | 324 | 357 | 27.2 |
| 12 SX 350 | 504 | 205 | 158 | 324 | 357 | 29.8 |
| 02 SX 425 | 110 | 45 | 158 | 402 | 435 | 7.4 |
| 03 SX 425 | 165 | 61 | 158 | 402 | 435 | 10.1 |
| 04 SX 425 | 220 | 77 | 158 | 402 | 435 | 13 |
| 05 SX 425 | 275 | 93 | 158 | 402 | 435 | 16 |
| 06 SX 425 | 330 | 109 | 158 | 402 | 435 | 18.9 |
| 07 SX 425 | 385 | 125 | 158 | 402 | 435 | 21.1 |
| 08 SX 425 | 440 | 141 | 158 | 402 | 435 | 24.6 |
| 09 SX 425 | 495 | 157 | 158 | 402 | 435 | 27.1 |
| 10 SX 425 | 550 | 173 | 158 | 402 | 435 | 30.8 |
| 11 SX 425 | 605 | 189 | 158 | 402 | 435 | 33.7 |
| 12 SX 425 | 660 | 205 | 158 | 402 | 435 | 36.6 |



CSM B

SX

CSM B

| Tipo Type | Cap. Ah - Sh | Exter. dimens. (mm) | | | | Peso Weight kg |
|--------------|-----------------|---------------------|-----|-----|-----|----------------------|
| | | L | W | H1 | H2 | |
| 03 CSM B 350 | 150 | 61 | 158 | 342 | 367 | 8,6 |
| 04 CSM B 350 | 200 | 77 | 158 | 342 | 367 | 11,7 |
| 05 CSM B 350 | 250 | 93 | 158 | 342 | 367 | 14,1 |
| 06 CSM B 350 | 300 | 109 | 158 | 342 | 367 | 16,2 |
| 07 CSM B 350 | 350 | 125 | 158 | 342 | 367 | 18,7 |
| 08 CSM B 350 | 400 | 141 | 158 | 342 | 367 | 22,1 |
| 09 CSM B 350 | 450 | 157 | 158 | 342 | 367 | 24,5 |
| 10 CSM B 350 | 500 | 173 | 158 | 342 | 367 | 27,1 |
| 11 CSM B 350 | 550 | 189 | 158 | 342 | 367 | 29,5 |
| 02 SX 480 | 124 | 45 | 158 | 454 | 487 | 8,4 |
| 03 SX 480 | 166 | 61 | 158 | 454 | 487 | 11,6 |
| 04 SX 480 | 248 | 77 | 158 | 454 | 487 | 14,9 |
| 05 SX 480 | 310 | 93 | 158 | 454 | 487 | 18,1 |
| 06 SX 480 | 372 | 109 | 158 | 454 | 487 | 21,4 |
| 07 SX 480 | 434 | 125 | 158 | 454 | 487 | 24,7 |
| 08 SX 480 | 496 | 141 | 158 | 454 | 487 | 28,2 |
| 09 SX 480 | 558 | 157 | 158 | 454 | 487 | 31,5 |
| 10 SX 480 | 620 | 173 | 158 | 454 | 487 | 35 |
| 11 SX 480 | 682 | 189 | 158 | 454 | 487 | 38,3 |
| 12 SX 480 | 744 | 205 | 158 | 454 | 487 | 41,5 |
| 02 SX 540 | 146 | 45 | 158 | 514 | 547 | 9,5 |
| 03 SX 540 | 219 | 61 | 158 | 514 | 547 | 13,2 |
| 04 SX 540 | 292 | 77 | 158 | 514 | 547 | 17 |
| 05 SX 540 | 365 | 93 | 158 | 514 | 547 | 20,8 |
| 06 SX 540 | 438 | 109 | 158 | 514 | 547 | 24,5 |
| 07 SX 540 | 511 | 125 | 158 | 514 | 547 | 28,3 |
| 08 SX 540 | 584 | 141 | 158 | 514 | 547 | 32,3 |
| 09 SX 540 | 657 | 157 | 158 | 514 | 547 | 36 |
| 10 SX 540 | 730 | 173 | 158 | 514 | 547 | 40 |
| 11 SX 540 | 803 | 189 | 158 | 514 | 547 | 43,9 |
| 12 SX 540 | 876 | 205 | 158 | 514 | 547 | 47,6 |
| 02 SX 580 | 172 | 45 | 158 | 568 | 601 | 10,4 |
| 03 SX 580 | 258 | 61 | 158 | 568 | 601 | 14,6 |
| 04 SX 580 | 344 | 77 | 158 | 568 | 601 | 18,7 |
| 05 SX 580 | 430 | 93 | 158 | 568 | 601 | 23,0 |
| 06 SX 580 | 516 | 109 | 158 | 568 | 601 | 27,1 |
| 07 SX 580 | 602 | 125 | 158 | 568 | 601 | 31,3 |
| 08 SX 580 | 688 | 141 | 158 | 568 | 601 | 35,5 |
| 09 SX 580 | 774 | 157 | 158 | 568 | 601 | 39,4 |
| 10 SX 580 | 860 | 173 | 158 | 568 | 601 | 44,3 |
| 11 SX 580 | 946 | 189 | 158 | 568 | 601 | 48,5 |
| 12 SX 580 | 1032 | 205 | 158 | 568 | 601 | 52,6 |
| 02 SX 715 | 198 | 45 | 158 | 687 | 720 | 12,3 |
| 03 SX 715 | 297 | 61 | 158 | 687 | 720 | 17,5 |
| 04 SX 715 | 396 | 77 | 158 | 687 | 720 | 22,5 |
| 05 SX 715 | 495 | 93 | 158 | 687 | 720 | 27,6 |
| 06 SX 715 | 594 | 109 | 158 | 687 | 720 | 32,8 |
| 07 SX 715 | 693 | 125 | 158 | 687 | 720 | 37,8 |
| 08 SX 715 | 792 | 141 | 158 | 687 | 720 | 42,7 |
| 09 SX 715 | 891 | 157 | 158 | 687 | 720 | 45,8 |
| 10 SX 715 | 990 | 173 | 158 | 687 | 720 | 53,6 |
| 11 SX 715 | 1089 | 189 | 158 | 687 | 720 | 55,6 |
| 12 SX 715 | 1188 | 205 | 158 | 687 | 720 | 63,5 |

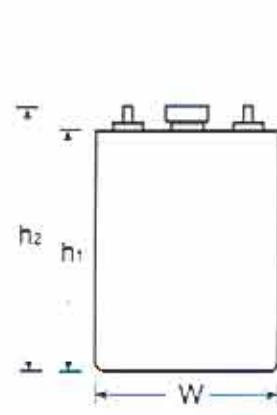
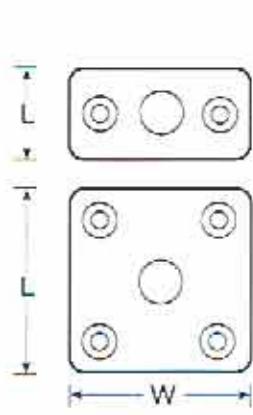
SX

| Tipo Type | Cap. Ah - Sh | Exter. dimens. (mm) | | | | Peso Weight kg |
|--------------|-----------------|---------------------|-----|-----|-----|----------------------|
| | | L | W | H1 | H2 | |
| 03 CSM B 480 | 210 | 61 | 158 | 461 | 486 | 12,2 |
| 04 CSM B 480 | 280 | 77 | 158 | 461 | 486 | 15,9 |
| 05 CSM B 480 | 350 | 93 | 158 | 461 | 486 | 19,1 |
| 06 CSM B 480 | 420 | 109 | 158 | 461 | 486 | 22,8 |
| 07 CSM B 480 | 490 | 125 | 158 | 461 | 486 | 26,1 |
| 08 CSM B 480 | 560 | 141 | 158 | 461 | 486 | 29,3 |
| 09 CSM B 480 | 630 | 157 | 158 | 461 | 486 | 33,5 |
| 10 CSM B 480 | 700 | 173 | 158 | 461 | 486 | 37,3 |
| 11 CSM B 480 | 770 | 189 | 158 | 461 | 486 | 40,9 |
| 02 SX 540 | 146 | 45 | 158 | 514 | 547 | 9,5 |
| 03 CSM B 540 | 240 | 61 | 158 | 518 | 543 | 13,6 |
| 04 CSM B 540 | 320 | 77 | 158 | 518 | 543 | 17,1 |
| 05 CSM B 540 | 400 | 93 | 158 | 518 | 543 | 21,1 |
| 06 CSM B 540 | 480 | 109 | 158 | 518 | 543 | 25,1 |
| 07 CSM B 540 | 560 | 125 | 158 | 518 | 543 | 29,1 |
| 08 CSM B 540 | 640 | 141 | 158 | 518 | 543 | 33,0 |
| 09 CSM B 540 | 720 | 157 | 158 | 518 | 543 | 37,8 |
| 10 CSM B 540 | 800 | 173 | 158 | 518 | 543 | 41,2 |
| 11 CSM B 540 | 880 | 189 | 158 | 518 | 543 | 45,2 |
| 02 SX 580 | 172 | 45 | 158 | 568 | 601 | 10,4 |
| 03 CSM B 580 | 264 | 61 | 158 | 568 | 593 | 15,2 |
| 04 CSM B 580 | 352 | 77 | 158 | 568 | 593 | 19,1 |
| 05 CSM B 580 | 440 | 93 | 158 | 568 | 593 | 23,3 |
| 06 CSM B 580 | 528 | 109 | 158 | 568 | 593 | 27,7 |
| 07 CSM B 580 | 616 | 125 | 158 | 568 | 593 | 31,9 |
| 08 CSM B 580 | 704 | 142 | 158 | 568 | 593 | 37,5 |
| 09 CSM B 580 | 792 | 157 | 158 | 568 | 593 | 41,3 |
| 10 CSM B 580 | 880 | 173 | 158 | 568 | 593 | 45,6 |
| 11 CSM B 580 | 968 | 189 | 158 | 568 | 593 | 50,3 |
| 02 SX 715 | 198 | 45 | 158 | 687 | 720 | 12,3 |
| 03 CSM B 715 | 324 | 61 | 158 | 698 | 723 | 18,1 |
| 04 CSM B 715 | 432 | 77 | 158 | 698 | 723 | 23,4 |
| 05 CSM B 715 | 540 | 93 | 158 | 698 | 723 | 28,3 |
| 06 CSM B 715 | 648 | 109 | 158 | 698 | 723 | 33,8 |
| 07 CSM B 715 | 756 | 125 | 158 | 698 | 723 | 38,7 |
| 08 CSM B 715 | 864 | 142 | 158 | 698 | 723 | 45,7 |
| 09 CSM B 715 | 972 | 157 | 158 | 698 | 723 | 50,5 |
| 10 CSM B 715 | 1080 | 173 | 158 | 698 | 723 | 56,0 |
| 11 CSM B 715 | 1188 | 189 | 158 | 698 | 723 | 60,8 |

Series SX - CSM B

- De conformidad con la "British Standard Specification".
- Las series CSM B tienen tecnología CSM (placa negativa con rejilla de cobre).
- Disponibles en terminal tipo "patent-pole" y conexión atornillada.

- British Standard dimensions.
- Copper negative CSM in CSM B series.
- Available Patentpole and screwed cable connector.



L Largo
Length
 W Ancho
Width
 h Altura
Height
 h2 Altura total
Overall height