

# Instructions for Storage and Installation

## STORING A DRY-CHARGED BATTERY

1. After unpacking the battery, carefully check whether there is any visible damage.
2. The new battery must not be exposed to high temperatures and/or fluctuating temperature condition. Store battery in a dry, cool, dark place, and it is strongly suggested to use the battery with earliest manufacture date.

## INSTALLING A NEW BATTERY

1. When replacing a car battery, positive and negative terminals must be identified correctly.
2. Remove "Ground" terminal first, which is connected to the car body, to avoid short-circuit.
3. Inspect cables and terminals thoroughly. If the terminals are corroded, brush gently using a wire brush.
4. Clean the cable and ground-line ends to secure perfect electrical conduction.
5. The new replacement battery should be fully charged to ensure high performance.
6. Fit the battery on the cradle perfectly to prevent it from moving.
7. The cable connected to the battery terminal should be long enough to remain slack.
8. Prior to connecting the terminals, make sure that the positive and the negative terminals are not reversed. Note that the diameter of the top tapered positive terminal is about 1.5 mm wider than the negative terminal. Individual cable terminal are designed to match only the appropriate battery terminal. This might help in reducing the risk of plugging wrong cable terminals.
9. Battery terminals should be polished and coated with rust-proof grease sufficiently before connected to the cable terminals.
10. Connect the ground terminal.
11. To make sure that the positive and negative terminals are connected correctly, switch on the head lights before cranking the engine.

## General Information of Battery Safety

- **Battery Acid is Corrosive and May Cause Burns.**  
Avoid contact of electrolyte with eyes, skin, and clothing. If it is spilled to your skin or clothing, neutralize it with a solution of baking soda and water. If it is splashed into eyes, gently open and wash with running cool and clean water for 5 minutes, and see a doctor for further treatment.
- **If electrolyte is swallowed**  
Drink a large quantity of water or milk, following by milk of magnesia, beaten eggs, or vegetable oil, and see a doctor for further treatment.
- **When it is necessary to refill electrolyte**  
Refill the electrolyte in the battery when it approaches lower level. Do not refill exceeding the upper level to avoid any damage. Always refill with distilled water. Never refill with sulfuric acid or any other liquids.
- **Exploding battery**  
Batteries generate explosive gases during vehicle operation and when charged separately. Flames, sparks, burning cigarettes or other ignition sources must be kept away at all times.
- **Caution, always shield eyes when working near battery**  
When charging batteries, work in well ventilated area, never in a closed room. Make sure to turn off the battery charger before disconnecting the battery.

## CAUTION



Please put empty bottle into trash can.



## MAINTENANCE



### CLEANING

Keep the battery top cover dry clean and free from corrosion. Examine vent holes and exhaust tube to ascertain they are free from dirt or fold



### ADDING DISTILLED WATER

If electrolyte level is lower than the "LOWER LEVEL" add some distilled water until reaches the "UPPER LEVEL" Mark.



### WHEN IS ADDITIONAL CHARGING REQUIRED?

If the gravity of electrolyte is lower than 1.220 or if the battery is stored for more than one



# OHAYO



## POWERFULL BATTERY



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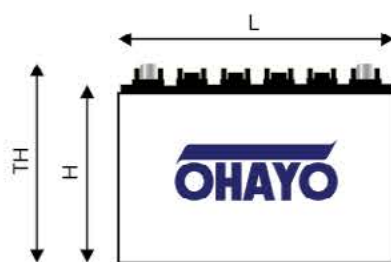
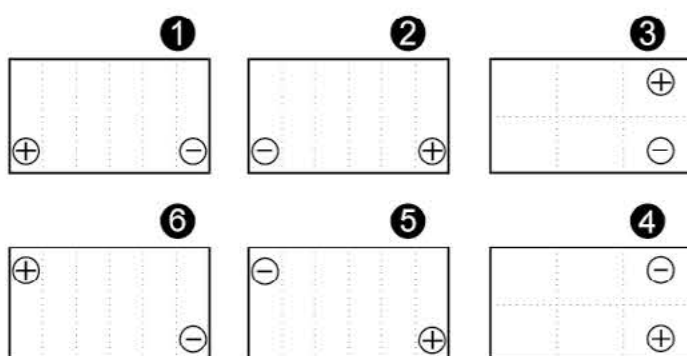
## PRODUCT



## CERTIFICATION



### Lay Out Terminal



## ADVANTAGES

### MAINTENANCE FREE



NEW DESIGN



NEW PACKAGING

### Calcium technology

### Long-lasting Current

### High Power

### Extra Durable

### Ready To Use

### Corrosion Free



### The using of indicator



An electrolyte liquid shortage may result in shorter battery life time. It can also cause explosion when the battery runs out completely of the electrolyte. Each OHAYO Maintenance free battery comes with an electrolyte level indicator which allow a simple way of checking the battery. This feature applied to ensure customer's safety.



OK



RECHARGE  
BATTERY



REPLACE  
BATTERY

## FOR JAPANESE VEHICLES (JIS)



### Dry Charged Specification

| BATTERY TYPE |              | VOLT (V) | CAPACITY  |          | CCA (A) | RC (@ 25A) (Min) | DIMENSION (mm) |     |     |     | ACID VOL. APPROX (Liters) | LAY OUT | TERMINAL TYPE |
|--------------|--------------|----------|-----------|----------|---------|------------------|----------------|-----|-----|-----|---------------------------|---------|---------------|
| OLD JIS TYPE | NEW JIS TYPE |          | 20HR (AH) | 5HR (AH) |         |                  | L              | W   | H   | TH  |                           |         |               |
| 12N24-3      | 26A19L       | 12       | 26        | 21       | 211     | 29               | 187            | 127 | 162 | 184 | 1.8                       | 2       | C             |
| 12N24-4      | 26A19R       | 12       | 26        | 21       | 211     | 29               | 187            | 127 | 162 | 184 | 1.8                       | 1       | C             |
| NS40         | 32B20R       | 12       | 32        | 26       | 243     | 36               | 197            | 129 | 203 | 227 | 2.7                       | 1       | B             |
| NS40(S)      | 32B20R(S)    | 12       | 32        | 26       | 243     | 36               | 197            | 129 | 203 | 227 | 2.7                       | 1       | A             |
| NS40L        | 32B20L       | 12       | 32        | 26       | 243     | 36               | 197            | 129 | 203 | 227 | 2.7                       | 2       | B             |
| NS40L(S)     | 32B20L(S)    | 12       | 32        | 26       | 243     | 36               | 197            | 129 | 203 | 227 | 2.7                       | 2       | A             |
| NS40Z        | 36B20R       | 12       | 35        | 28       | 288     | 39               | 197            | 129 | 203 | 227 | 2.6                       | 1       | B             |
| NS40ZL       | 36B20L       | 12       | 35        | 28       | 288     | 39               | 197            | 129 | 203 | 227 | 2.6                       | 2       | B             |
| NS40Z(S)     | 36B20R(S)    | 12       | 35        | 28       | 288     | 39               | 197            | 129 | 203 | 227 | 2.6                       | 1       | A             |
| NS40ZL(S)    | 36B20L(S)    | 12       | 35        | 28       | 288     | 39               | 197            | 129 | 203 | 227 | 2.6                       | 2       | A             |
| N40          | 32C24R       | 12       | 40        | 32       | 249     | 40               | 238            | 129 | 203 | 227 | 3.2                       | 1       | A             |
| N40L         | 32C24L       | 12       | 40        | 32       | 249     | 40               | 238            | 129 | 203 | 227 | 3.2                       | 2       | A             |
| NS60         | 46B24R       | 12       | 45        | 36       | 341     | 56               | 238            | 129 | 203 | 227 | 3.0                       | 1       | B             |
| NS60L        | 46B24L       | 12       | 45        | 36       | 341     | 56               | 238            | 129 | 203 | 227 | 3.0                       | 2       | B             |
| NS60(S)      | 46B24R(S)    | 12       | 45        | 36       | 341     | 56               | 238            | 129 | 203 | 227 | 3.0                       | 1       | A             |
| NS60L(S)     | 46B24L(S)    | 12       | 45        | 36       | 341     | 56               | 238            | 129 | 203 | 227 | 3.0                       | 2       | A             |
| N50          | 48D26R       | 12       | 50        | 40       | 278     | 72               | 260            | 173 | 204 | 225 | 5.3                       | 1       | A             |
| N50L         | 48D26L       | 12       | 50        | 40       | 278     | 72               | 260            | 173 | 204 | 225 | 5.3                       | 2       | A             |
| N50Z         | 55D26R       | 12       | 60        | 48       | 365     | 82               | 260            | 173 | 204 | 225 | 5.1                       | 1       | A             |
| N50ZL        | 55D26L       | 12       | 60        | 48       | 365     | 82               | 260            | 173 | 204 | 225 | 5.1                       | 2       | A             |
| 55D23R       | 55D23R       | 12       | 60        | 48       | 373     | 74               | 232            | 173 | 204 | 225 | 4.2                       | 1       | A             |
| 55D23L       | 55D23L       | 12       | 60        | 48       | 373     | 74               | 232            | 173 | 204 | 225 | 4.2                       | 2       | A             |
| NS70         | 65D26R       | 12       | 65        | 52       | 433     | 89               | 260            | 173 | 204 | 225 | 4.9                       | 1       | A             |
| NS70L        | 65D26L       | 12       | 65        | 52       | 433     | 89               | 260            | 173 | 204 | 225 | 4.9                       | 2       | A             |
| NX110-5      | 80D26R       | 12       | 68        | 55       | 490     | 103              | 260            | 173 | 204 | 225 | 4.7                       | 1       | A             |
| NX110-5L     | 80D26L       | 12       | 68        | 55       | 490     | 103              | 260            | 173 | 204 | 225 | 4.7                       | 2       | A             |
| N70          | 65D31R       | 12       | 70        | 56       | 408     | 97               | 306            | 173 | 204 | 225 | 6.0                       | 1       | A             |
| N70L         | 65D31L       | 12       | 70        | 56       | 408     | 97               | 306            | 173 | 204 | 225 | 6.0                       | 2       | A             |
| N70Z         | 75D31R       | 12       | 75        | 60       | 469     | 116              | 306            | 173 | 204 | 225 | 5.7                       | 1       | A             |
| N70ZL        | 75D31L       | 12       | 75        | 60       | 469     | 116              | 306            | 173 | 204 | 225 | 5.7                       | 2       | A             |
| NX120-7      | 95D31R       | 12       | 80        | 64       | 653     | 125              | 306            | 173 | 204 | 225 | 5.2                       | 1       | A             |
| NX120-7L     | 95D31L       | 12       | 80        | 64       | 653     | 125              | 306            | 173 | 204 | 225 | 5.2                       | 2       | A             |
| 105D31R      | 105D31R      | 12       | 90        | 72       | 710     | 132              | 306            | 173 | 204 | 225 | 5.0                       | 1       | A             |
| 105D31L      | 105D31L      | 12       | 90        | 72       | 710     | 132              | 306            | 173 | 204 | 225 | 5.0                       | 2       | A             |
| N100         | 95E41R       | 12       | 100       | 80       | 537     | 150              | 410            | 176 | 213 | 234 | 8.1                       | 1       | A             |
| N100L        | 95E41L       | 12       | 100       | 80       | 537     | 150              | 410            | 176 | 213 | 234 | 8.1                       | 2       | A             |
| N120         | 115F51       | 12       | 120       | 96       | 669     | 180              | 505            | 182 | 213 | 257 | 9.6                       | 3       | A             |
| N150         | 145G51       | 12       | 150       | 120      | 791     | 240              | 508            | 222 | 213 | 257 | 12.6                      | 3       | A             |
| 165G51       | 165G51       | 12       | 170       | 136      | 933     | 300              | 508            | 222 | 213 | 257 | 12.1                      | 3       | A             |
| N200         | 190H52       | 12       | 200       | 160      | 1100    | 370              | 521            | 278 | 220 | 270 | 16.8                      | 3       | A             |

## EXPORT PACKING STANDARD FOR JIS TYPE

| BATTERY SERIES | NEW JIS SERIES | WEIGHT / Pcs (kg) |          | VOLUME (M³) | PALLET SIZE | BATTERY PER PALLET | WEIGHT / PALLET (kg) |       | VOLUME (M³) |
|----------------|----------------|-------------------|----------|-------------|-------------|--------------------|----------------------|-------|-------------|
|                |                | Nett *            | Gross ** |             |             |                    | Nett                 | Gross |             |
| 12N24          | 26A19          | 4.78              | 4.90     | 0.005       | S           | 120                | 574                  | 612   | 0.867       |
|                |                |                   |          |             | L           | 160                | 765                  | 809   | 1.092       |
| NS40           | 32B20          | 5.77              | 5.90     | 0.007       | S           | 120                | 692                  | 732   | 1.002       |
|                |                |                   |          |             | L           | 160                | 923                  | 969   | 1.273       |
| NS40(S)        | 32B20(S)       | 5.77              | 5.90     | 0.007       | S           | 120                | 692                  | 732   | 1.002       |
|                |                |                   |          |             | L           | 160                | 923                  | 969   | 1.273       |
| NS40Z          | 36B20          | 6.56              | 6.69     | 0.007       | S           | 120                | 787                  | 827   | 1.002       |
|                |                |                   |          |             | L           | 160                | 1,050                | 1,095 | 1.273       |
| NS40Z(S)       | 36B20(S)       | 6.56              | 6.69     | 0.007       | S           | 120                | 787                  | 827   | 1.002       |
|                |                |                   |          |             | L           | 160                | 1,050                | 1,095 | 1.273       |
| N40            | 32C20          | 6.85              | 7.00     | 0.008       | S           | 96                 | 658                  | 696   | 1.002       |
|                |                |                   |          |             | L           | 128                | 877                  | 921   | 1.273       |
| NS60           | 46B24          | 7.85              | 8.00     | 0.008       | S           | 96                 | 754                  | 792   | 1.002       |
|                |                |                   |          |             | L           | 128                | 1,005                | 1,049 | 1.273       |
| NS60(S)        | 46B24(S)       | 7.85              | 8.00     | 0.008       | S           | 96                 | 754                  | 792   | 1.002       |
|                |                |                   |          |             | L           | 128                | 1,005                | 1,049 | 1.273       |
| N50            | 48D26          | 8.20              | 8.40     | 0.012       | S           | 72                 | 590                  | 629   | 1.005       |
|                |                |                   |          |             | L           | 96                 | 787                  | 831   | 1.277       |
| N50Z           | 55D26          | 9.70              | 9.90     | 0.012       | S           | 72                 | 698                  | 737   | 1.005       |
|                |                |                   |          |             | L           | 96                 | 931                  | 975   | 1.277       |
| 55D23          | 55D23          | 10.01             | 10.20    | 0.010       | S           | 72                 | 721                  | 758   | 0.996       |
|                |                |                   |          |             | L           | 96                 | 961                  | 1,004 | 1.264       |
| NS70           | 65D26          | 10.20             | 10.40    | 0.012       | S           | 72                 | 734                  | 773   | 1.005       |
|                |                |                   |          |             | L           | 96                 | 979                  | 1,023 | 1.277       |
| NX110-5        | 80D26          | 10.40             | 10.60    | 0.012       | S           | 72                 | 749                  | 787   | 1.005       |
|                |                |                   |          |             | L           | 96                 | 998                  | 1,043 | 1.277       |
| N70            | 65D31          | 10.88             | 11.10    | 0.013       | S           | 63                 | 685                  | 723   | 0.999       |
|                |                |                   |          |             | L           | 84                 | 914                  | 957   | 1.268       |
| N70Z           | 75D31          | 12.18             | 12.40    | 0.013       | S           | 63                 | 767                  | 805   | 0.999       |
|                |                |                   |          |             | L           | 84                 | 1,023                | 1,067 | 1.268       |
| NX120-7        | 95D31          | 13.78             | 14.00    | 0.013       | S           | 63                 | 868                  | 906   | 0.999       |
|                |                |                   |          |             | L           | 84                 | 1,158                | 1,201 | 1.268       |
| 105D31         | 105D31         | 13.98             | 14.20    | 0.013       | S           | 63                 | 881                  | 919   | 0.999       |
|                |                |                   |          |             | L           | 84                 | 1,174                | 1,218 | 1.268       |
| N100           | 95E41          | 14.98             | 15.20    | 0.019       | S           | 42                 | 629                  | 662   | 1.032       |
|                |                |                   |          |             | L           | 56                 | 839                  | 876   | 1.312       |
| N120           | 115F51         | 18.38             | 18.60    | 0.025       | L           | 36                 | 662                  | 695   | 1.071       |
| N150           | 145G51         | 22.58             | 22.80    | 0.031       | L           | 30                 | 677                  | 709   | 1.071       |
| 165G51         | 165G51         | 23.88             | 24.10    | 0.031       | L           | 30                 | 716                  | 748   | 1.075       |
| N200           | 190H52         | 30.68             | 30.90    | 0.043       | L           | 24                 | 736                  | 767   | 1.075       |

\* Nett = Battery + Vent Plug    \*\* Gross = Battery + Vent Plug + Carton Box + Styrofoam

## FOR EUROPEAN VEHICLES (DIN)



### Dry Charged Specification

| BATTERY TYPE | VOLT (V) | CAPACITY 20HR (Ah) | CCA DIN (A) | DIMENSION |        |        |         | ACID VOL. APPROX (Liters) | LAY OUT | TERMINAL TYPE | HOLD DOWN | REMARK  |
|--------------|----------|--------------------|-------------|-----------|--------|--------|---------|---------------------------|---------|---------------|-----------|---------|
|              |          |                    |             | L (mm)    | W (mm) | H (mm) | TH (mm) |                           |         |               |           |         |
| 544-59       | 12       | 44                 | 210         | 208       | 175    | 190    | 190     | 3.4                       | 2       | A             | B3        | C/V     |
| 544-65       | 12       | 44                 | 210         | 208       | 175    | 190    | 190     | 3.4                       | 1       | A             | B3        | C/V     |
| 545-19       | 12       | 45                 | 220         | 249       | 175    | 175    | 175     | 4.1                       | 2       | A             | B4        | C/V     |
| 555-59       | 12       | 55                 | 255         | 246       | 175    | 190    | 190     | 4.4                       | 2       | A             | B3        | C/V     |
| 555-65       | 12       | 55                 | 255         | 246       | 175    | 190    | 190     | 4.4                       | 1       | A             | B3        | C/V     |
| 562-19       | 12       | 62                 | 280         | 249       | 175    | 190    | 190     | 3.3                       | 2       | A             | B3        | C/V     |
| 566-38       | 12       | 66                 | 300         | 306       | 175    | 190    | 190     | 5.4                       | 2       | A             | B3        | C/V R/H |
| 574-12       | 12       | 74                 | 300         | 306       | 175    | 190    | 190     | 4.0                       | 2       | A             | B3        | C/V     |
| 580-24       | 12       | 80                 | 300         | 306       | 175    | 190    | 190     | 4.0                       | 2       | A             | B3        | C/V R/H |
| 588-27       | 12       | 88                 | 395         | 377       | 175    | 190    | 190     | 5.6                       | 2       | A             | B3        | C/V     |
| 600-38       | 12       | 100                | 450         | 381       | 175    | 190    | 190     | 5.5                       | 2       | A             | B3        | C/V     |
| 650-38       | 12       | 150                | 700         | 512       | 213    | 194    | 220     | 12.0                      | 4       | A             | -         | R/H     |
| 670-18       | 12       | 170                | 700         | 512       | 213    | 194    | 220     | 11.8                      | 4       | A             | -         | R/H     |
| 620-34       | 12       | 120                | 575         | 512       | 190    | 194    | 220     | 10.0                      | 4       | A             | -         | R/H     |
| 700-27       | 12       | 200                | 900         | 517       | 274    | 214    | 240     | 15.2                      | 4       | A             | -         | R/H     |

C/V Central Ventilation

R/H Rope Handle

## Deep Cycle Battery

| BATTERY TYPE | VOLT (V) | CAPACITY  |          | DIMENSION (mm) |     |     |     | ACID VOL. APPROX (Liters) | LAYOUT | TERMINAL | OPTIONAL                     |
|--------------|----------|-----------|----------|----------------|-----|-----|-----|---------------------------|--------|----------|------------------------------|
|              |          | 20HR (Ah) | 5HR (Ah) | L              | W   | H   | TH  |                           |        |          |                              |
| N70T         | 12       | 70        | 56       | 306            | 173 | 204 | 225 | 5.7                       | 1      | A        | FOLDLUG TERMINAL (D), HANDLE |
| N100T        | 12       | 100       | 80       | 410            | 176 | 213 | 234 | 8.1                       | 1      | A        | FOLDLUG TERMINAL (D), HANDLE |
| N150T        | 12       | 150       | 120      | 508            | 222 | 213 | 257 | 12.6                      | 3      | A        | FOLDLUG TERMINAL (D), HANDLE |
| N200T        | 12       | 200       | 160      | 521            | 278 | 220 | 270 | 16.8                      | 3      | A        | FOLDLUG TERMINAL (D), HANDLE |

## Golf Car Battery

| BATTERY TYPE | VOLT (V) | CAPACITY  |          | RESERVE CAPACITY |             |             | DIMENSION (mm) |     |     |     | ACID VOL. APPROX (Liters) | LAYOUT | TERMINAL |
|--------------|----------|-----------|----------|------------------|-------------|-------------|----------------|-----|-----|-----|---------------------------|--------|----------|
|              |          | 20HR (Ah) | 5HR (Ah) | @25A (Mint)      | @56A (Mint) | @75A (Mint) | L              | W   | H   | TH  |                           |        |          |
| 6D115        | 6        | 225       | 171      | 450              | -           | 115         | 264            | 181 | 244 | 283 | 6.1                       | 5      | E        |
| 6D135        | 6        | 235       | 192      | 490              | -           | 135         | 264            | 181 | 244 | 283 | 5.6                       | 5      | E        |
| 8D90         | 8        | 165       | 150      | 340              | 135         | 90          | 264            | 181 | 244 | 283 | 6.1                       | 6      | E        |

## EXPORT PACKING STANDARD FOR DIN TYPE

| BATTERY SERIES | WEIGHT / Pcs (kg) |          | VOLUME Per Pcs (M³) | PALLET SIZE | BATTERY Per PALLET | WEIGHT / PALLET (kg) |       | VOLUME Per PALLET (M³) |
|----------------|-------------------|----------|---------------------|-------------|--------------------|----------------------|-------|------------------------|
|                | Nett *            | Gross ** |                     |             |                    | Nett                 | Gross |                        |
| 544            | 7.60              | 7.78     | 0.009               | S           | 72                 | 547                  | 584   | 0.895                  |
|                |                   |          |                     | L           | 96                 | 730                  | 772   | 1.194                  |
| 555            | 9.06              | 9.24     | 0.010               | S           | 72                 | 652                  | 689   | 0.899                  |
|                |                   |          |                     | L           | 96                 | 870                  | 912   | 1.198                  |
| 562            | 9.88              | 10.06    | 0.010               | S           | 72                 | 711                  | 748   | 0.899                  |
|                |                   |          |                     | L           | 96                 | 948                  | 991   | 1.198                  |
| 566            | 10.43             | 10.64    | 0.013               | S           | 63                 | 657                  | 694   | 0.899                  |
|                |                   |          |                     | L           | 84                 | 876                  | 919   | 1.198                  |
| 574            | 11.34             | 11.55    | 0.012               | S           | 63                 | 714                  | 752   | 0.899                  |
|                |                   |          |                     | L           | 84                 | 953                  | 995   | 1.198                  |
| 580            | 12.26             | 12.47    | 0.012               | S           | 63                 | 772                  | 810   | 0.899                  |
|                |                   |          |                     | L           | 84                 | 1,030                | 1,072 | 1.198                  |
| 588            | 13.30             | 13.54    | 0.016               | S           | 42                 | 559                  | 593   | 0.899                  |
|                |                   |          |                     | L           | 56                 | 745                  | 783   | 1.198                  |
| 600            | 15.70             | 15.96    | 0.016               | S           | 42                 | 659                  | 694   | 0.899                  |
|                |                   |          |                     | L           | 56                 | 879                  | 919   | 1.198                  |
| 650            | 27.50             | 28.10    | 0.031               | L           | 30                 | 825                  | 867   | 1.071                  |
| 670            | 30.20             | 30.80    | 0.031               | L           | 30                 | 906                  | 948   | 1.071                  |
| 620            | 22.00             | 22.60    | 0.025               | L           | 36                 | 792                  | 839   | 1.071                  |
| 700            | 35.70             | 36.30    | 0.043               | L           | 24                 | 857                  | 896   | 1.075                  |

\* Nett = Battery + Vent Plug

\*\* Gross = Battery + Vent Plug + Carton Box + Styrofoam

## EXPORT PACKING STANDARD Deep Cycle Battery

| BATTERY SERIES | WEIGHT / Pcs (kg) | PALLET SIZE | BATTERY Per PALLET | NETT WEIGHT | GROSS WEIGHT | VOLUME Per PALLET |
|----------------|-------------------|-------------|--------------------|-------------|--------------|-------------------|
|                |                   |             |                    | (kg)        | (kg)         | (M³)              |
| N70T           | 13.5              | S           | -                  | -           | -            | -                 |
|                |                   |             | 84                 | 1,134       | 1,177        | 1.409             |
| N100T          | 17.5              | S           | -                  | -           | -            | -                 |
|                |                   |             | 56                 | 979         | 1,024        | 1.181             |
| N150T          | 26.2              | L           | 30                 | 788         | 825          | 1.071             |
| N200T          | 35.0              | L           | 24                 | 840         | 884          | 1.075             |

## EXPORT PACKING STANDARD Golf Car Battery

| BATTERY SERIES | WEIGHT / Pcs (kg) | PALLET SIZE | BATTERY Per PALLET | NETT WEIGHT | GROSS WEIGHT | VOLUME Per PALLET |
|----------------|-------------------|-------------|--------------------|-------------|--------------|-------------------|
|                |                   |             |                    | (kg)        | (kg)         | (M³)              |
| 6D115          | 19.6              | S           | 60                 | 1.175       | 1.225        | 0.982             |
| 6D135          | 21.7              | S           | 60                 | 1.305       | 1.355        | 0.982             |
| 8D90           | 23.4              | S           | 60                 | 1.406       | 1.456        | 0.982             |



## FOR JAPANESE VEHICLES (JIS)

| BATTERY TYPE |              | VOLT<br>(V) | CAPACITY    |              | CCA<br>(A) | RC<br>(Min) | DIMENSION (mm) |     |     |     | HOLD<br>DOWN | LAY<br>OUT | TERMINAL<br>TYPE |
|--------------|--------------|-------------|-------------|--------------|------------|-------------|----------------|-----|-----|-----|--------------|------------|------------------|
| OLD JIS TYPE | NEW JIS TYPE |             | 5Hr<br>(Ah) | 20Hr<br>(Ah) |            |             | L              | W   | H   | TH  |              |            |                  |
| MF 12N24-3   | MF 26A19L    | 12          | 21          | 26           | 275        | 29          | 185            | 126 | 154 | 172 | -            | 2          | C                |
| MF 12N24-4   | MF 26A19R    | 12          | 21          | 26           | 275        | 29          | 185            | 126 | 154 | 172 | -            | 1          | C                |
| MF NS40      | MF 32B20R    | 12          | 26          | 32           | 300        | 36          | 195            | 127 | 201 | 225 | -            | 1          | B                |
| MF NS40L     | MF 32B20L    | 12          | 26          | 32           | 300        | 36          | 195            | 127 | 201 | 225 | -            | 2          | B                |
| MF NS40(S)   | MF 32B20R(S) | 12          | 26          | 32           | 300        | 36          | 195            | 127 | 201 | 225 | -            | 1          | A                |
| MF NS40L(S)  | MF 32B20L(S) | 12          | 26          | 32           | 300        | 36          | 195            | 127 | 201 | 225 | -            | 2          | A                |
| MF NS40Z     | MF 36B20R    | 12          | 28          | 35           | 350        | 39          | 195            | 127 | 201 | 225 | -            | 1          | B                |
| MF NS40ZL    | MF 36B20L    | 12          | 28          | 35           | 350        | 39          | 195            | 127 | 201 | 225 | -            | 2          | B                |
| MF NS40Z(S)  | MF 36B20R(S) | 12          | 28          | 35           | 350        | 39          | 195            | 127 | 201 | 225 | -            | 1          | A                |
| MF NS40ZL(S) | MF 36B20L(S) | 12          | 28          | 35           | 350        | 39          | 195            | 127 | 201 | 225 | -            | 2          | A                |
| MF N40       | MF 32C24R    | 12          | 32          | 40           | 360        | 40          | 236            | 127 | 201 | 225 | -            | 1          | A                |
| MF N40L      | MF 32C24L    | 12          | 32          | 40           | 360        | 40          | 236            | 127 | 201 | 225 | -            | 2          | A                |
| MF NS60      | MF 46B24R    | 12          | 36          | 45           | 370        | 56          | 236            | 127 | 201 | 225 | -            | 1          | B                |
| MF NS60L     | MF 46B24L    | 12          | 36          | 45           | 370        | 56          | 236            | 127 | 201 | 225 | -            | 2          | B                |
| MF NS60(S)   | MF 46B24R(S) | 12          | 36          | 45           | 370        | 56          | 236            | 127 | 201 | 225 | -            | 1          | A                |
| MF NS60L(S)  | MF 46B24L(S) | 12          | 36          | 45           | 370        | 56          | 236            | 127 | 201 | 225 | -            | 2          | A                |
| MF 55D23R    | MF 55D23R    | 12          | 48          | 60           | 465        | 74          | 230            | 171 | 200 | 225 | B6           | 1          | A                |
| MF 55D23L    | MF 55D23L    | 12          | 48          | 60           | 465        | 74          | 230            | 171 | 200 | 225 | B6           | 2          | A                |
| MF 75D23R    | MF 75D23R    | 12          | 52          | 65           | 500        | 95          | 230            | 171 | 200 | 225 | B6           | 1          | A                |
| MF 75D23L    | MF 75D23L    | 12          | 52          | 65           | 500        | 95          | 230            | 171 | 200 | 225 | B6           | 2          | A                |
| MF N50       | MF 48D26R    | 12          | 40          | 50           | 430        | 72          | 257            | 171 | 200 | 225 | B6           | 1          | A                |
| MF N50L      | MF 48D26L    | 12          | 40          | 50           | 430        | 72          | 257            | 171 | 200 | 225 | B6           | 2          | A                |
| MF N50Z      | MF 55D26R    | 12          | 48          | 60           | 480        | 82          | 257            | 171 | 200 | 225 | B6           | 1          | A                |
| MF N50ZL     | MF 55D26L    | 12          | 48          | 60           | 480        | 82          | 257            | 171 | 200 | 225 | B6           | 2          | A                |
| MF NS70      | MF 65D26R    | 12          | 52          | 65           | 530        | 89          | 257            | 171 | 200 | 225 | B6           | 1          | A                |
| MF NS70L     | MF 65D26L    | 12          | 52          | 65           | 530        | 89          | 257            | 171 | 200 | 225 | B6           | 2          | A                |
| MF NX110-5   | MF 80D26R    | 12          | 55          | 68           | 595        | 103         | 257            | 171 | 200 | 225 | B6           | 1          | A                |
| MF NX110-5L  | MF 80D26L    | 12          | 55          | 68           | 595        | 103         | 257            | 171 | 200 | 225 | B6           | 2          | A                |
| MF 90D26     | MF 90D26R    | 12          | 57          | 72           | 600        | 108         | 257            | 171 | 200 | 225 | B6           | 1          | A                |
| MF 90D26L    | MF 90D26L    | 12          | 57          | 72           | 600        | 108         | 257            | 171 | 200 | 225 | B6           | 2          | A                |
| MF N70       | MF 65D31R    | 12          | 56          | 70           | 555        | 97          | 303            | 171 | 198 | 219 | B7           | 1          | A                |
| MF N70L      | MF 65D31L    | 12          | 56          | 70           | 555        | 97          | 303            | 171 | 198 | 219 | B7           | 2          | A                |
| MF N70Z      | MF 75D31R    | 12          | 60          | 75           | 610        | 116         | 303            | 171 | 198 | 219 | B7           | 1          | A                |
| MF N70ZL     | MF 75D31L    | 12          | 60          | 75           | 610        | 116         | 303            | 171 | 198 | 219 | B7           | 2          | A                |
| MF NX120-7   | MF 95D31R    | 12          | 64          | 80           | 700        | 125         | 303            | 171 | 198 | 219 | B7           | 1          | A                |
| MF NX120-7L  | MF 95D31L    | 12          | 64          | 80           | 700        | 125         | 303            | 171 | 198 | 219 | B7           | 2          | A                |
| MF 105D31R   | MF 105D31R   | 12          | 72          | 90           | 730        | 132         | 303            | 171 | 198 | 219 | B7           | 1          | A                |
| MF 105D31L   | MF 105D31L   | 12          | 72          | 90           | 730        | 132         | 303            | 171 | 198 | 219 | B7           | 2          | A                |
| MF 115D31R   | MF 115D31R   | 12          | 80          | 100          | 750        | 132         | 303            | 171 | 198 | 219 | B7           | 1          | A                |
| MF 115D31L   | MF 115D31L   | 12          | 80          | 100          | 750        | 132         | 303            | 171 | 198 | 219 | B7           | 2          | A                |
| MF N100R     | MF 95E41R    | 12          | 80          | 100          | 600        | 150         | 410            | 176 | 213 | 234 | -            | 1          | A                |
| MF N100L     | MF 95E41L    | 12          | 80          | 100          | 600        | 150         | 410            | 176 | 213 | 234 | -            | 2          | A                |
| MF N120      | MF 115F51    | 12          | 96          | 120          | 815        | 180         | 505            | 182 | 213 | 257 | -            | 3          | A                |
| MF N150      | MF 145G51    | 12          | 120         | 150          | 980        | 240         | 508            | 222 | 213 | 257 | -            | 3          | A                |
| MF N200      | MF 190H52    | 12          | 160         | 200          | 1160       | 370         | 521            | 278 | 220 | 270 | -            | 3          | A                |

## EXPORT PACKING STANDARD FOR JIS TYPE

| BATTERY<br>SERIES | NEW JIS<br>SERIES | WEIGHT / Pcs (kg) |          | VOLUME<br>( M³ ) | PALLET<br>SIZE | BATTERY<br>PER<br>PALLET | WEIGHT /<br>PALLET (kg) |       | VOLUME<br>(M³) |
|-------------------|-------------------|-------------------|----------|------------------|----------------|--------------------------|-------------------------|-------|----------------|
|                   |                   | Nett *            | Gross ** |                  |                |                          | Nett                    | Gross |                |
| MF 12N24          | MF 26A19          | 7,48              | 7,60     | 0,005            | S              | 120                      | 898                     | 936   | 0,911          |
| MF NS40           | MF 32B20          | 9,57              | 9,70     | 0,007            | S              | 111                      | 1.062                   | 1.101 | 1,046          |
| MF NS40(S)        | MF 32B20(S)       | 9,57              | 9,70     | 0,007            | S              | 111                      | 1.062                   | 1.101 | 1,046          |
| MF NS40Z          | MF 36B20          | 10,47             | 10,60    | 0,007            | S              | 111                      | 1.162                   | 1.201 | 1,046          |
| MF NS40Z(S)       | MF 36B20(S)       | 10,47             | 10,60    | 0,007            | S              | 111                      | 1.162                   | 1.201 | 1,046          |
| MF N40            | MF 32C20          | 11,45             | 11,60    | 0,008            | S              | 93                       | 1.065                   | 1.103 | 1,046          |
| MF NS60           | MF 46B24          | 12,45             | 12,60    | 0,008            | S              | 93                       | 1.158                   | 1.196 | 1,046          |
| MF NS60(S)        | MF 46B24(S)       | 12,45             | 12,60    | 0,008            | S              | 93                       | 1.158                   | 1.196 | 1,046          |
| MF N50            | MF 48D26          | 15,50             | 15,70    | 0,012            | S              | 66                       | 1.023                   | 1.060 | 1,049          |
| MF N50Z           | MF 55D26          | 16,50             | 16,70    | 0,012            | S              | 66                       | 1.089                   | 1.126 | 1,049          |
| 55D23             | MF 55D23          | 15,51             | 15,70    | 0,010            | S              | 72                       | 1.117                   | 1.154 | 1,040          |
| MF NS70           | MF 65D26          | 17,00             | 17,20    | 0,012            | S              | 66                       | 1.122                   | 1.159 | 1,049          |
| MF 75D23          | MF 75D23          | 15,98             | 16,20    | 0,010            | S              | 72                       | 1.151                   | 1.190 | 1,040          |
| MF N70            | MF 65D31          | 19,48             | 19,70    | 0,013            | S              | 54                       | 1.052                   | 1.088 | 1,043          |
| MF N70Z           | MF 75D31          | 20,48             | 20,70    | 0,013            | S              | 54                       | 1.106                   | 1.142 | 1,043          |
| MF NX110-5        | MF 80D26          | 18,00             | 18,20    | 0,012            | S              | 66                       | 1.188                   | 1.225 | 1,049          |
| MF 90D26          | MF 90D26          | 18,80             | 19,00    | 0,012            | S              | 66                       | 1.241                   | 1.278 | 1,049          |
| MF NX120-7        | MF 95D31          | 21,48             | 21,70    | 0,013            | S              | 54                       | 1.160                   | 1.196 | 1,043          |
| MF N70ZZ          | MF 105D31         | 21,88             | 22,10    | 0,013            | S              | 54                       | 1.182                   | 1.217 | 1,043          |
| MF 115D31         | MF 115D31         | 22,48             | 22,70    | 0,013            | S              | 54                       | 1.214                   | 1.250 | 1,043          |
| MF N100           | MF 95E41          | 24,33             | 24,55    | 0,019            | S              | 42                       | 1.022                   | 1.055 | 1,049          |
| MF N120           | MF 115F51         | 31,18             | 31,40    | 0,024            | S              | 30                       | 935                     | 966   | 1,043          |
| MF N150           | MF 145G51         | 37,72             | 37,94    | 0,031            | S              | 24                       | 905                     | 935   | 1,043          |
| MF N200           | MF 190H52         | 51,61             | 51,83    | 0,043            | S              | 18                       | 929                     | 957   | 1,043          |

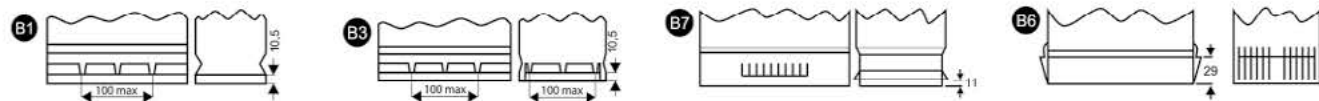
\* Nett = Battery + Vent Plug    \*\* Gross = Battery + Vent Plug + Carton Box + Styrofoam



## FOR EUROPEAN VEHICLES (DIN)

| BATTERY TYPE | VOLT (V) | CAPACITY  | CCA     | CCA     | DIMENSION (mm) |     |     |     | LAY OUT | TERMINAL TYPE | HOLD DOWN |
|--------------|----------|-----------|---------|---------|----------------|-----|-----|-----|---------|---------------|-----------|
|              |          | 20HR (Ah) | SAE (A) | DIN (A) | L              | W   | H   | TH  |         |               |           |
| MF 544-59    | 12       | 44        | 360     | 190     | 208            | 175 | 190 | 190 | 2       | A             | B3        |
| MF 544-64    | 12       | 44        | 360     | 190     | 208            | 175 | 190 | 190 | 1       | A             | B3        |
| MF 555-30    | 12       | 55        | 430     | 235     | 246            | 175 | 190 | 190 | 2       | A             | B3        |
| MF 555-48    | 12       | 55        | 430     | 235     | 246            | 175 | 190 | 190 | 1       | A             | B3        |
| MF 555-59    | 12       | 55        | 430     | 235     | 246            | 175 | 190 | 190 | 2       | A             | B3        |
| MF 555-65    | 12       | 55        | 430     | 235     | 246            | 175 | 190 | 190 | 1       | A             | B3        |
| MF 560-73    | 12       | 60        | 450     | 250     | 246            | 175 | 190 | 190 | 1       | A             | B3        |
| MF 562-19    | 12       | 62        | 480     | 265     | 246            | 175 | 190 | 190 | 1       | A             | B3        |
| MF 562-21    | 12       | 62        | 480     | 265     | 246            | 175 | 190 | 190 | 2       | A             | B3        |
| MF 566-33    | 12       | 66        | 510     | 280     | 280            | 175 | 190 | 190 | 2       | A             | B3        |
| MF 566-38    | 12       | 66        | 510     | 280     | 280            | 175 | 190 | 190 | 1       | A             | B3        |
| MF 572-29    | 12       | 72        | 550     | 290     | 280            | 175 | 190 | 190 | 2       | A             | B3        |
| MF 572-33    | 12       | 72        | 550     | 290     | 280            | 175 | 190 | 190 | 1       | A             | B3        |
| MF 574-12    | 12       | 74        | 575     | 300     | 280            | 175 | 190 | 190 | 2       | A             | B3        |
| MF 574-13    | 12       | 74        | 575     | 300     | 280            | 175 | 190 | 190 | 1       | A             | B3        |
| MF 575-19    | 12       | 75        | 585     | 320     | 280            | 175 | 190 | 190 | 2       | A             | B3        |
| MF 575-20    | 12       | 75        | 585     | 320     | 280            | 175 | 190 | 190 | 1       | A             | B3        |
| MF 580-24    | 12       | 80        | 600     | 325     | 280            | 175 | 190 | 190 | 2       | A             | B3        |
| MF 588-21    | 12       | 88        | 630     | 350     | 357            | 175 | 190 | 190 | 1       | A             | B3        |
| MF 588-27    | 12       | 88        | 630     | 350     | 357            | 175 | 190 | 190 | 2       | A             | B3        |
| MF 600-38    | 12       | 100       | 710     | 380     | 357            | 175 | 190 | 190 | 2       | A             | B3        |
| MF 720-18    | 12       | 220       | 1250    | 950     | 517            | 274 | 214 | 234 | 4       | A             | -         |

### Base Hold Down



## EXPORT PACKING STANDARD FOR DIN TYPE

| BATTERY SERIES | WEIGHT / Pcs (kg) |          | VOLUME Per Pcs | PALLET SIZE | BATTERY Per PALLET | WEIGHT / PALLET (kg) |       | VOLUME |
|----------------|-------------------|----------|----------------|-------------|--------------------|----------------------|-------|--------|
|                | Nett *            | Gross ** | ( M³ )         |             |                    | Nett                 | Gross | (M³)   |
| MF 544         | 12,42             | 12,60    | 0,008          | S           | 72                 | 908                  | 930   | 0,904  |
| MF 555         | 15,22             | 15,40    | 0,009          | S           | 72                 | 1.105                | 1.127 | 0,904  |
| MF 560         | 15,42             | 15,60    | 0,009          | S           | 72                 | 1.123                | 1.145 | 0,964  |
| MF 562         | 15,62             | 15,80    | 0,009          | S           | 72                 | 1.138                | 1.160 | 0,964  |
| MF 566         | 16,99             | 17,20    | 0,010          | S           | 54                 | 925                  | 947   | 0,904  |
| MF 572         | 17,79             | 18,00    | 0,010          | S           | 54                 | 961                  | 983   | 0,820  |
| MF 574         | 18,09             | 18,30    | 0,010          | S           | 54                 | 972                  | 994   | 0,820  |
| MF 575         | 18,39             | 18,60    | 0,010          | S           | 54                 | 983                  | 1.005 | 0,820  |
| MF 580         | 18,39             | 18,60    | 0,010          | S           | 54                 | 983                  | 1.005 | 0,820  |
| MF 588         | 22,66             | 22,90    | 0,013          | S           | 45                 | 1.032                | 1.054 | 0,904  |
| MF 600         | 23,56             | 23,80    | 0,013          | S           | 45                 | 1.080                | 1.102 | 0,871  |
| MF 720         | 55,55             | 56,40    | 0,033          | S           | 18                 | 1.015                | 1.040 | 1,043  |

\* Nett = Battery + Vent Plug    \*\* Gross = Battery + Vent Plug + Carton Box + Styrofoam

### Terminal

