

*Marine & RV*  
**E-NEX**  
*Link to Your Life*



**ATLAS BX**™

THE POWER COMPANY

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# Characteristics

## What are the points of each Series?

|                       |          | XDC   | DC                                | XV                                 |
|-----------------------|----------|---|-----------------------------------|------------------------------------|
| Service               |          | Deep Cycling & Starting (Semi-Traction)   | Starting + Cycling                | Starting                           |
| Grid                  | Positive | X-Frame   | X-Frame                           | X-Frame                            |
|                       | Negative | X-Frame   | Expanded                          | Expanded                           |
| Active Material       |          | High density Active Material  | High density Active Material      | Starting optimized Active Material |
| Separator             |          | Low resistance Envelope Separator with Glass Mat  | Low resistance Envelope Separator | Low resistance Envelope Separator  |
| Common Characteristic |          | Handle, Maintenance Free, Sealed Cover, Hot-melt, Magic eye Indicator Dual Terminal, Special Tissue |                                   |                                    |

## Which is the best choice?

| Battery Rating Criteria         | XDC | DC | XV |
|---------------------------------|-----|----|----|
| Starting Service Capability     | 2   | 3  | 3  |
| Dual Purpose Service Capability | 2   | 3  | 0  |
| Deep Cycle Service Capability   | 3   | 1  | 0  |
| Floating Service Capability     | 3   | 2  | 1  |
| Maintenance Free                | 3   | 3  | 3  |
| Storage Ability                 | 3   | 3  | 3  |

\* Rating Scale : 0 Poor 1 Good 2 Very Good 3 Excellent

## Marine Application

| Power Usage |                   | XDC | DC | XV |
|-------------|-------------------|-----|----|----|
| Starting    | Trolling/Stand-By |     |    |    |
| Moderate    | None              |     | ✓  | ✓  |
| Moderate    | Moderate          | ✓   | ✓  |    |
| Moderate    | Heavy             | ✓   |    |    |
| Heavy       | None              |     | ✓  | ✓  |
| Heavy       | Moderate          | ✓   | ✓  |    |

# Specification (Marine & RV)

## XDC Series : Deep Cycle & Starting



| Type No. | C20 (AH) | CA (32°F/0°C) | CCA (0°F/-18°C) | RC (Min) | Dimension(mm) |     |     |     | Layout | Terminal     | Hold-down |
|----------|----------|---------------|-----------------|----------|---------------|-----|-----|-----|--------|--------------|-----------|
|          |          |               |                 |          | L             | W   | H   | TH  |        |              |           |
| XDC24MF  | 80       | 625           | 500             | 140      | 257           | 172 | 200 | 220 | FIG.1  | MARINE TWIN  | B1        |
| XDC27MF  | 90       | 750           | 600             | 170      | 302           | 172 | 200 | 220 | FIG.1  | MARINE TWIN  | B1        |
| XDC31MF  | 100      | 810           | 650             | 180      | 330           | 172 | 218 | 242 | FIG.3  | MARINE TWIN* |           |

\* XDC31MF: TOP POST and STUD are available

## DC Series : Dual Purpose (Starting & Cycling)



| Type No. | C20 (AH) | CA (32°F/0°C) | CCA (0°F/-18°C) | RC (Min) | Dimension(mm) |     |     |     | Layout | Terminal    | Hold-down |
|----------|----------|---------------|-----------------|----------|---------------|-----|-----|-----|--------|-------------|-----------|
|          |          |               |                 |          | L             | W   | H   | TH  |        |             |           |
| DC24MF   | 80       | 850           | 680             | 140      | 257           | 172 | 200 | 220 | FIG.1  | MARINE TWIN | B1        |
| DC27MF   | 90       | 920           | 750             | 170      | 302           | 172 | 200 | 220 | FIG.1  | MARINE TWIN | B1        |
| DC31MF   | 100      | 1000          | 800             | 180      | 330           | 172 | 218 | 242 | FIG.3  | MARINE TWIN |           |

## XV Series : Marine Starting

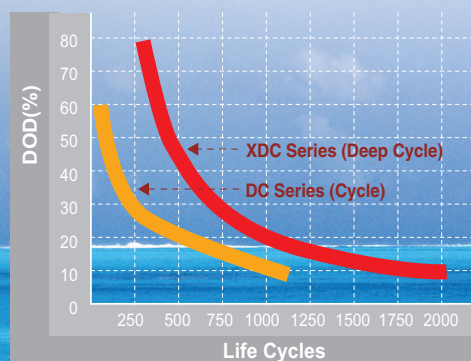


| Type No. | Voltage (V) | CA (32°F/0°C) | CCA (0°F/-18°C) | RC (Min) | Dimension(mm) |     |     |     | Layout | Terminal    | Hold-down |
|----------|-------------|---------------|-----------------|----------|---------------|-----|-----|-----|--------|-------------|-----------|
|          |             |               |                 |          | L             | W   | H   | TH  |        |             |           |
| MV24MF   | 12          | 700           | 560             | 105      | 257           | 172 | 200 | 220 | FIG.1  | MARINE TWIN | B1        |
| CV24MF   | 12          | 750           | 600             | 125      | 257           | 172 | 200 | 220 | FIG.1  | MARINE TWIN | B1        |
| XV24MF   | 12          | 900           | 720             | 140      | 257           | 172 | 200 | 220 | FIG.1  | MARINE TWIN | B1        |
| XV27MF   | 12          | 900           | 720             | 160      | 302           | 172 | 200 | 220 | FIG.1  | MARINE TWIN | B1        |
| XV30HMF  | 12          | 1000          | 800             | 180      | 325           | 172 | 200 | 220 | FIG.1  | STANDARD    | B1        |
| XV31MF   | 12          | 1000          | 800             | 180      | 330           | 172 | 218 | 242 | FIG.3  | MARINE TWIN |           |



B1 Hold\_down : 10.5mm on long sides only

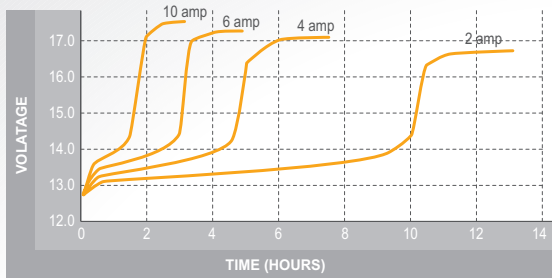
Depth of discharge at 25°C



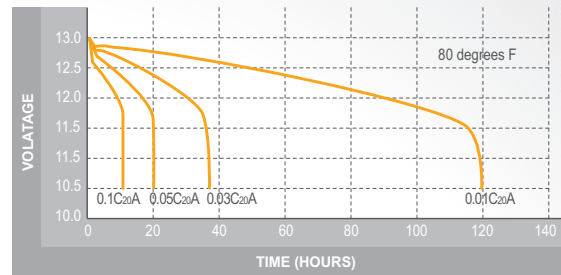
# Charging Instruction and H.U.P

## Charge and Discharge Characteristics

Charge characteristics from 20% DOD, XDC31 MF



Discharge characteristics



## Charging Method

- ※ Batteries should be recharged within 24 hours after each period of use.
- ※ Charging time by various charging rate can be determined by the the SOC(state of charge)

### Method 1 : Constant Voltage Charge(Recommended Method)

| Type                | Voltage setting |
|---------------------|-----------------|
| Daily Cycle Service | 14.4~14.8       |
| Floating Service    | 13.2~13.7       |
| Equalizing          | 15.5            |

\* Unit Average at 77°F (25°C)

- ※ Every 30 to 90days, conduct the equalizing charge.  
Daily cycle service and deep discharging service need more frequent equalizing.

### End of Charge

- Current : below 1.0A during charge.
- Stabilized open circuit voltage : 12.75V or higher.

### Method 2 : Constant Current charge

| Battery |        | XDC24MF | XDC27MF | XDC31MF |
|---------|--------|---------|---------|---------|
| SOC     | OCV    | 4.0A    | 4.5A    | 5.0A    |
| 100%    | 12.75V |         | -       |         |
| 75%     | 12.40V |         | 6Hr     |         |
| 50%     | 12.20V |         | 12Hr    |         |
| 25%     | 12.00V |         | 18Hr    |         |
| 0%      | 11.90V |         | 24Hr    |         |

### End of Charge


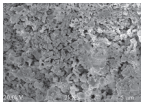

- Maxium voltage output across the battery terminals is maintained at constant level for 2 hours during the charge.
- Stabilized open circuit voltage : 12.75V or higher.

## Hours of Usable Power(H.U.P)

| Hours of Usable Power(H.U.P) |          |         |         |
|------------------------------|----------|---------|---------|
| Amp.Draw                     | 5A       | 15A     | 25A     |
| XDC24MF                      | 15.4hrs. | 4.3hrs. | 2.4hrs. |
| XDC27MF                      | 17.8hrs. | 4.9hrs. | 2.7hrs. |
| XDC31MF                      | 20.0hrs. | 5.6hrs. | 3.1hrs. |

## XDC Series Unique Construction Features & Benefits

| Features  | Benefits  |
|---|---|
| <p><b>Dual Purpose Plate(Starting &amp; Deep Cycling)</b></p> <ul style="list-style-type: none"> <li>- X-Frame (Pos. / Neg.)</li> <li>- Special (Thicker) Plate with High Density Active Material</li> <li>- Calcium + High Tin Alloy</li> <li>- New Special Tissue</li> </ul> <p><b>Vibration Resistant Design</b></p> <ul style="list-style-type: none"> <li>- Low Resistance Envelope Separator with Glass Mat</li> <li>- Hot Melt Glue</li> <li>- Reinforced Container</li> </ul> | <p><b>Longer Life &amp; High Cycle Stability</b></p> <ul style="list-style-type: none"> <li>- Provide high endurance in deep cycle service</li> <li>- Flexible design for semi-traction (deep cycling) and starting</li> <li>- Prevent life shortening internal short circuits</li> <li>- Directs more electric power to terminal posts</li> <li>- Provide the MF endurance by reserving more electrolyte volume over the plate</li> </ul> <p><b>Minimal self-discharge : can be stored safely for longer</b></p> <p><b>Built strong to withstand the pounding and vibration of marine, 4WD and heavy vehicle use</b></p> |

| X-Frame (Pos. / Neg.)   |   |
|---|---|
|    | <p><b>Full Framed Grid (Round edge design)</b></p> <ul style="list-style-type: none"> <li>- Full Framed Grid design restrains grid growth and short –circuits.</li> <li>Benefit: Upgraded quality, and longer life span.</li> </ul> <p><b>Unique designed grid for electric flow</b></p> <ul style="list-style-type: none"> <li>- As punching grids mechanically, it ensures high electric conductivities and strong adhesion of active materials.</li> <li>Benefit: Providing higher starting power, stable structure, and few corrosion.</li> </ul> |
|  | <p><b>Upgraded Active Material</b></p> <ul style="list-style-type: none"> <li>- Provide high endurance in deep cycle service</li> </ul>   |
|  | <p><b>Low Resistance Envelope Separator with Glass Mat</b></p> <ul style="list-style-type: none"> <li>- Prevent internal short between positive and negative plate</li> </ul>   |

## Common Structure & Advantage (Marine & RV)

### 1. Convenience and stability

**Ergonomically Designed Handle** ←

- Provide an easy transportation and installation



**Special Sealed Cover** ←

- Protects from acid leakage and minimizes gassing
- Frame Arrestor prevents an inflow of outside spark



**100% Maintenance Free**

- 'never needs water' design

### 2. Excellent Performance

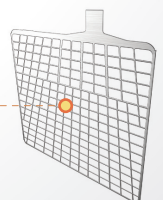
**Hot Melt Glue to resist vibration**

- Ensure resistance to outside impact and vibration, and minimize loss of active materials



**X-Frame** ←

- XDC (Pos. / Neg.)
- DC, XV (Pos.)



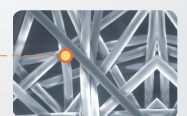
**Magic Eye Indicator** ←

- Easy to check Charging-State



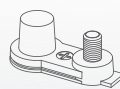
**Special Tissue** ←

- Provide a mechanical support for adhesion of active material during the service

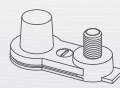


**Marine Twin (Dual=SAE/Wing-Nut) Terminal** ←

- Quick connection
- Compatibility with TOP POST and STUD



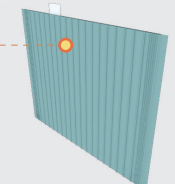
● 5/16 " -18 THREADS



● 5/16 " -18 THREADS

**Low resistance Envelope Separator (DC,XV)** ←

- Protect from short circuits



# Lawn & Garden Specification



| Type No. | Voltage (V) | CA (32°F/0℃) | CCA (0°F/-18℃) | RC (Min) | Dimension(mm) |     |     |     | Layout | Terminal |
|----------|-------------|--------------|----------------|----------|---------------|-----|-----|-----|--------|----------|
|          |             |              |                |          | L             | W   | H   | TH  |        |          |
| U1MF-H   | 12          | 235          | 190            | 27       | 205           | 132 | 160 | 185 | FIG.1  | U1 LUG   |
| U1MF-S   | 12          | 310          | 250            | 32       | 205           | 132 | 160 | 185 | FIG.1  | U1 LUG   |
| U1MF-X   | 12          | 375          | 300            | 40       | 205           | 132 | 160 | 185 | FIG.1  | U1 LUG   |
| U1RMF-H  | 12          | 235          | 190            | 27       | 205           | 132 | 160 | 185 | FIG.2  | U1 LUG   |
| U1RMF-S  | 12          | 310          | 250            | 32       | 205           | 132 | 160 | 185 | FIG.2  | U1 LUG   |
| U1RMF-X  | 12          | 375          | 300            | 40       | 205           | 132 | 160 | 185 | FIG.2  | U1 LUG   |

## Terminal & Layout

| TERMINAL          |          |                      |                       |        |          |
|-------------------|----------|----------------------|-----------------------|--------|----------|
|                   | STANDARD | STUD                 | MARINE TWIN           | U1 LUG | TOP POST |
| Positive Terminal |          | 3/8" -16 THREADS<br> | 5/16" -18 THREADS<br> |        |          |
| Negative Terminal |          | 3/8" -16 THREADS<br> | 5/16" -18 THREADS<br> |        |          |

| LAYOUT |        |        |
|--------|--------|--------|
| fig. 1 | fig. 2 | fig. 3 |
|        |        |        |



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