



EAST PENN manufacturing co., inc.

LYON STATION, PA 19536 • 610-682-6361

Congratulations on your choice of a new Deka industrial battery. The complete line of Deka industrial batteries incorporates every feature required by today's user of electric industrial trucks. Designed with East Penn engineering technology and built by master battery craftsmen according to strict quality assurance guidelines, Deka industrial batteries are the finest available to meet today's material handling requirements. Deka precision construction provides new equipment performance throughout a long life. This battery has been inspected prior to shipment to insure that it meets your specifications as ordered. By following the operating and maintenance instructions, you will be insuring optimum life and performance of your new Deka industrial battery.

OPERATING INSTRUCTIONS

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| ⚠ DANGER | | | |
| HIGH VOLTAGE... RISK OF SHOCK. DO NOT TOUCH UNINSULATED TERMINALS OR CONNECTORS. | SHIELD EYES. EXPLOSIVE GASES CAN CAUSE BLIND- NESS OR INJURY. | NO • SPARKS • FLAMES • SMOKING | SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS. |
| FLUSH EYES IMMEDIATELY WITH WATER. | | GET MEDICAL HELP FAST. | |
| KEEP VENT CAPS TIGHTLY IN PLACE. | | VENTILATE WELL WHEN IN AN ENCLOSED SPACE AND WHEN CHARGING. | |
| SEE INSTALLATION, MAINTENANCE AND OPERATION INSTRUCTIONS FOR IMPORTANT SAFETY PRECAUTIONS. | | REPAIR SHOULD BE PERFORMED ONLY BY A QUALIFIED SERVICE TECHNICIAN. | |

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| CALIFORNIA Proposition 65 Warning | Battery posts, terminals and related accessories contain lead and lead compounds, and other chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling. |
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| BATTERIES AND RELATED PARTS CONTAIN LEAD |
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| WASH HANDS AFTER HANDLING! |
| <small>CALIFORNIA PROPOSITION 65 WARNING: Batteries, battery posts, terminals and related accessories contain lead and lead compounds, and other chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.</small> |
| <small>California Proposition 65 Workplace Warning Sign 7/04 Must be posted in workplace near batteries.</small> |

1. Upon receipt of the battery, if there are signs of rough handling or of electrolyte leakage, file a claim with the carrier and advise your East Penn representative.
The electrolyte level should normally be above the perforated separator protector, which can be seen in the cell when the vent caps are removed. However vibrations during shipping often shake enough gas out of the cell that the electrolyte level may drop below the separator protector, especially on taller cells. If the electrolyte level is still above the top of the plates and can be seen with a flashlight through the holes in the separator protector, the battery may be given its initial charge without adjusting the electrolyte level.
If the electrolyte level is not visible or is below the top of the plates, check again for leaking cells and call your East Penn representative before charging the battery.
2. Check the nameplate of your charger against the nameplate of the battery to make sure they both show the same voltage and that the six-hour ampere hour capacity of the battery falls within the eight-hour recharge range of the charger.
3. The "Battery Type Identification" shown on the battery (E, EO, EE, EX) should match the "Battery Type Identification" specified on the truck nameplate.
4. Make sure that the battery "SERVICE WEIGHT," which is stamped below the lifting hole in the steel tray, falls within the battery weight range shown on the truck nameplate. East Penn Manufacturing Co., Inc. cannot be responsible for determining that the battery weight is sufficient to counterbalance your particular truck.
5. Prior to placing the battery in service, it should be given an equalizing charge. Near the end of the charge, check to make sure

- that the electrolyte levels of all cells are visible and above the separator protector. The full charge specific gravity is 1.280 to 1.295 when temperature corrected to 77°F (25°C).
6. Upon installation in the truck, battery restraints should be adjusted to restrict movement of the battery to no more than 1/2" in a horizontal direction. An insulated spreader bar should be used any time the battery is lifted or hoisted.
7. Batteries normally should not be discharged more than 80% of their rated capacity for longest service life. Section III of DEKA INDUSTRIAL BATTERY SERVICE MANUAL 0656 gives detailed information for your specific battery type.
8. The battery should be placed on charge upon completion of the work shift and returned to full charge. If at the end of the work shift the specific gravity has not fallen below 1.230, it is advisable to use the battery for another shift. Normally, batteries should not be used for more than two successive shifts before recharging. All vent caps should be kept in place and the steel tray cover or the truck compartment cover kept open while charging.
9. After the daily charge and prior to the start of the workshift, a specific gravity reading should be taken with a hydrometer on at least one cell in order to insure full recharge. The specific gravity should be between 1.280 and 1.295 when temperature corrected to 77°F (25°C).
10. A copy of the DEKA INDUSTRIAL BATTERY SERVICE MANUAL, which gives more detailed information on the Operation and Maintenance of motive power batteries, can be obtained from your Deka representative by asking for form number 0656.

MAINTENANCE

1. Once each week the electrolyte level should be checked in every cell. It may be necessary to add water to the battery on a weekly to a monthly basis, depending on the type of battery and the type of service for which it is used.
2. Only distilled, deionized or approved water should be added to the battery. Water should be added only near the end of the charge to raise the electrolyte level to the bottom of the vent well. Water should be stored in a clean non-metallic container as impurities, even in small amounts, may be harmful to battery life.
3. Depending on the type of service, it will be necessary to give the battery an equalizing charge every one to four weeks. Set the charger to the equalize position.
4. Specific gravity readings should be recorded for all cells once each month immediately after an equalizing charge. If the readings average below 1.265, the charger output should be checked. If two successive monthly readings indicate more than 20 points deviation in any cell from the average specific gravity, you should contact your Deka representative.
5. The top of the battery should be kept clean and dry at all times. When required, the top of the battery should be neutralized, after removing the shrouds, with a non-corrosive water based neutralizing solution. Make sure vent caps are securely in place to prevent any solution from entering cells. After the battery has been neutralized, rinse thoroughly with clear water, dry and then reinstall the cleaned shrouds.
6. The cables and connectors should be inspected monthly for exposed copper wires, fraying or cracked insulation, loose connections, or pitted contacts, and repaired as required.
7. Be especially careful to keep metallic objects off the top of the battery, as any metal touching two or more connectors may cause a short circuit resulting in an arc or spark which could ignite battery gasses explosively.
8. The output rate of the charger should be checked periodically. The starting rate should correspond to the starting rate shown on the charger nameplate. The following chart shows the ampere hour capacity at the six-hour rate, as well as the recommended finish rate for every cell size in the Deka D-Series manufactured by East Penn Manufacturing Co., Inc.

| TYPE | PLATES PER CELL | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 |
|-------------|-------------------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|
| D35 | 6 HR. A.H. RATING | 70 | 105 | 140 | 175 | 210 | 245 | 280 | 315 | 350 | 385 | 420 | 455 | 490 | 525 | 560 |
| | FINISH RATE—AMPS | 4 | 5 | 7 | 9 | 10 | 12 | 14 | 16 | 18 | 19 | 21 | 23 | 24 | 26 | 28 |
| D45 | 6 HR. A.H. RATING | 90 | 135 | 180 | 225 | 270 | 315 | 360 | 405 | 450 | 495 | 540 | 585 | 630 | 675 | 720 |
| | FINISH RATE—AMPS | 4 | 7 | 9 | 11 | 14 | 16 | 18 | 20 | 22 | 25 | 27 | 29 | 32 | 34 | 36 |
| D55 | 6 HR. A.H. RATING | 110 | 165 | 220 | 275 | 330 | 385 | 440 | 495 | 550 | 605 | 660 | 715 | 770 | 825 | 880 |
| | FINISH RATE—AMPS | 6 | 8 | 11 | 14 | 16 | 19 | 22 | 25 | 28 | 30 | 33 | 36 | 38 | 41 | 44 |
| D65 | 6 HR. A.H. RATING | 130 | 195 | 260 | 325 | 390 | 455 | 520 | 585 | 650 | 715 | 780 | 845 | 910 | 975 | 1040 |
| | FINISH RATE—AMPS | 6 | 10 | 13 | 16 | 20 | 23 | 26 | 29 | 32 | 36 | 39 | 42 | 46 | 49 | 52 |
| D75 | 6 HR. A.H. RATING | 150 | 225 | 300 | 375 | 450 | 525 | 600 | 675 | 750 | 825 | 900 | 975 | 1050 | 1125 | 1200 |
| | FINISH RATE—AMPS | 8 | 11 | 15 | 19 | 22 | 26 | 30 | 34 | 38 | 41 | 45 | 49 | 52 | 56 | 60 |
| D85 | 6 HR. A.H. RATING | 170 | 255 | 340 | 425 | 510 | 595 | 680 | 765 | 850 | 935 | 1020 | 1105 | 1190 | 1275 | 1360 |
| | FINISH RATE—AMPS | 8 | 13 | 17 | 21 | 26 | 30 | 34 | 38 | 42 | 47 | 51 | 55 | 60 | 64 | 68 |
| D100 | 6 HR. A.H. RATING | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 |
| | FINISH RATE—AMPS | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |
| D110 | 6 HR. A.H. RATING | 220 | 330 | 440 | 550 | 660 | 770 | 880 | 990 | 1100 | 1210 | 1320 | 1430 | 1540 | 1650 | 1760 |
| | FINISH RATE—AMPS | 11 | 16 | 22 | 28 | 33 | 38 | 44 | 50 | 55 | 60 | 66 | 72 | 77 | 82 | 88 |
| D125 | 6 HR. A.H. RATING | 250 | 375 | 500 | 625 | 750 | 875 | 1000 | 1125 | 1250 | 1375 | 1500 | 1625 | 1750 | 1875 | 2000 |
| | FINISH RATE—AMPS | 12 | 19 | 25 | 31 | 38 | 44 | 50 | 56 | 62 | 69 | 75 | 81 | 88 | 94 | 100 |
| D150 | 6 HR. A.H. RATING | | | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | | | | | | |
| | FINISH RATE—AMPS | | | 30 | 38 | 45 | 52 | 60 | 68 | 75 | | | | | | |
| D160 | 6 HR. A.H. RATING | | | 640 | 800 | 960 | 1120 | 1280 | 1440 | 1600 | | | | | | |
| | FINISH RATE—AMPS | | | 32 | 40 | 48 | 56 | 64 | 72 | 80 | | | | | | |