

**TELEDYNE BATTERY PRODUCTS
GILL BATTERY WARRANTY**

Each GILL battery manufactured by Teledyne Battery Products (TBP) installed after November 15, 2014 is warranted as follows:

- For a period of six, twelve, or twenty-four months (as applicable), or 300 hours or 600 hours of operation, whichever occurs first after the date of installation, TBP will replace at no charge any battery manufactured or supplied by it which within the applicable six or twelve months or 300-hour period is found to the satisfaction of TBP to be defective in material or workmanship.
- After the expiration of the applicable six or twelve months or 300-hour period described above and before the expiration of the total number of months or number of hours of warranty period applicable to the battery type in question as shown on the chart (see Exhibit A), TBP will replace any battery manufactured or supplied by it which is found to be defective in material or workmanship. When replacement is made under this paragraph, TBP will pay a net price for a new battery which will equal (in the case of i) the purchase price of the replacement battery divided by the total number of months included in the warranty period and then multiplied by the number of months the battery has been in service or ii) the purchase price of the replacement battery divided by the total number of hours included in the warranty period and then multiplied by the number of hours the battery has been in service. In applying the above formula, the number of hours on the replaced battery will be actual logbook hours or recorded tachometer hours from the date of commencement of the warranty period as specified above. See Exhibit A.
- TBP will not assume any responsibility for labor or transportation costs in connection with the replacement of any battery under this warranty.
- This warranty applies only to batteries on which the applicable manufacturer's inspection, maintenance and operating Instructions and recommendation have been complied with. Performance of recommended inspections and maintenance must be documented by appropriate logbook entries.
- This warranty does not apply to any battery manufactured or supplied by TBP which has been subject to misuse, neglect or accident or which has been installed, repaired, maintained, or altered in any way that in the judgment of TBP has adversely affected the condition of the battery or which has been operated beyond factory recommendations.
- This warranty does not apply if electrolyte other than that recommended by TBP has been used; if the manufacturer's code markings have been destroyed; or if the battery is of a smaller size than that specified by the aircraft manufacturer.
- The provisions of this warranty do not apply to routine maintenance service.
- TBP reserves the right to change any battery specifications or prices without incurring any responsibility with regard to batteries previously sold.
- THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY IS LIMITED TO REPLACEMENT AS SPECIFIED ABOVE. THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED. SPECIFICALLY, BUT WITHOUT LIMITATION, THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL TBP BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY DEFECT IN ANY BATTERY, ARISING OUT OF THE FAILURE OF ANY BATTERY TO OPERATE PROPERLY, OR ARISING OUT OF ANY BREACH OF THE WARRANTY MADE HEREIN. No person is authorized to give any other warranty or to assume any additional obligation or liability on behalf of TBP.**
- This warranty is limited to replacement of a GILL Battery only.
- This warranty is limited to the original battery installed in original aircraft from date of installation.
- This warranty is not transferable.

The GILL Battery Log

**RECOMMENDED PRACTICES FOR
TAKING THE BEST POSSIBLE CARE
OF YOUR AIRCRAFT BATTERIES**

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Battery Serial Number

Battery Part # _____

AFFIX BARCODE LABEL HERE

Date _____

In _____

Out _____

Tachometer Time _____

Installed _____

Removed _____

Service Period Hours or Mths	Date	Cell Specific Gravity	Battery Voltage
50	3		
100	6		
150	9		
200	12		
250			
300			
350	12		
400			

Battery Capacity Check

Second

First

Battery Voltage

Maintenance Log

Hours or Mths

Date

Cell Specific Gravity

Battery Voltage

10) This warranty is limited to replacement of a GILL Battery only.

11) This warranty is limited to the original battery installed in original aircraft from date of installation.

12) This warranty is not transferable.

TELEDYNE BATTERY PRODUCTS
840 W. BROCKTON AVENUE
REDLANDS, CA 92374
www.gillbatteries.com

CHARGING BASICS

Correct charging is very important and will affect the overall life of the battery. The charging process is not 100% efficient and will typically be 10% to 20% higher than the amount of capacity removed during discharge. Review charging instruction provided with the battery.

Undercharging of a battery occurs when the required 110% to 120% of the removed capacity is not returned during recharge. If this were to occur repeatedly, residual uncharged lead sulfate will eventually increase in the plates, making it very difficult to recover. In this case the battery will suffer a permanent loss of capacity.

Overcharging a battery repeatedly will corrode the grids in the positive plates and break down the water in the electrolyte to hydrogen and oxygen (electrolysis). This is quite detrimental to the life of valve-regulated ("sealed") lead acid batteries.

Charging efficiency is affected by temperature. Lower temperatures will require higher charging voltages and vice versa for higher temperatures. Please review such conditions with GILL Technical Support.

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Constant Current (CC)

Useful in recovering deeply discharged batteries, if performed per GILL Instructions.

This method uses a constant current throughout the charging period. Voltage could be as high as 2.67 volts per cell.

MUST have a functional timer to end charging.

Since the charge rate is constant, prolonged charging using this technique will result in excessive water loss and accelerate battery failure.

Constant Voltage (CV)

Charger output voltage is constant - typically around 2.36 volts per cell.

Initial charge rate is dependent on the charger - could be as high as 10A. The rate will continue to drop as the battery voltage approaches the charger output voltage (battery internal resistance changes).

End of charge is typically determined by the drop in charging rate to less than 0.5 amps.

CONTINUED AIRWORTHINESS TESTING

If the user cannot discharge a battery at the recommended discharge rate, call Teledyne Tech Support for the performance curve for that battery. This curve can be used to determine the discharge time for a known discharge rate to a specified end voltage (1.67 volts per cell).

MANAGING PERIODS OF NON-USE/LIMITED USE

To maximize the life of your GILL battery, Teledyne recommends that the battery be removed from the aircraft during extended periods (more than 30 days) of non-use or repeated short duration - reduced number of flights (typically less than one hour, once or twice a month) and kept on trickle charge or fully recharged prior to the next flight.

All charging should be in accordance with Teledyne Service Instructions. See Service Manual at website for additional information.

BATTERY SAFETY

ALWAYS WEAR ACID RESISTANT GLOVES AND SAFETY GOGGLES WHEN WORKING WITH BATTERIES

Batteries generate explosive gases when charging do not generate any sparks, flames, smoke or introduce any ignition sources around the battery.

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MAKE SURE THERE IS ADEQUATE VENTILATION WHEREVER A BATTERY IS USED.

FOLLOW BATTERY MANUFACTURER'S INSTRUCTIONS AT ALL TIMES

RECYCLE SPENT BATTERIES RESPONSIBLY. CHECK OUR WEBSITE FOR WORLDWIDE RECYCLING RESOURCES.

Please keep the GILL Battery Log with aircraft logbooks at all times.

Keeping it Simple - A Guide to process your Warranty

Please fill form out completely. Battery failure must be reported within 7 days of failure or it will be date reported. **Incomplete forms will be rejected/returned.** User must obtain GILL Warranty Authorization Number from manufacturer. GILL Tech Support can be contacted through our website listed below or at: Within USA (800) 456 0070, or Outside USA (909) 793-3131, press option 3, between 7 am. to 4 pm. PST, Monday through Friday. Do not dispose of battery until Tech Support evaluation is completed. Complete documentation for the GILL Battery including the New GILL Serial Number where indicated. Once warranty is authorized, **submit the GILL Battery Log to any authorized Dealer/ Distributor within 30 days of GILL authorization. GILL authorization remains in effect for 90 days, void thereafter.** Remove Serial Number sticker from battery and affix to form in box above the Maintenance Log. Please make a copy for yourself and submit original form to Dealer/Distributor.

Please allow 30 to 45 days for processing. See website for Dealer/Distributor near you.

Our website address is: www.gillbatteries.com

CALIFORNIA PROPOSITION 65 WARNING

WARNING: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. **Wash hands after handling.**

EXHIBIT A

Battery Type	Warranty Period	Full Coverage Period	Pro-rata Coverage Period
12 Volt Series G-6381E/C	24 Months or 1,200 Hours	First 12 Months or 600 Hours, whichever occurs first	Remainder of 24 Months or 1,200 Hours, whichever occurs first*
G-200 Series	12 Months or 600 Hours	First 6 Months or 300 Hours, whichever occurs first	Remainder of 12 Months or 600 Hours, whichever occurs first*
G-639 Series G-640 Series G-641	12 Months or 600 Hours	First 6 Months or 300 Hours, whichever occurs first	Remainder of 12 Months or 600 Hours, whichever occurs first*
G-88, GE-50 Series	12 Months or 600 Hours	First 6 Months or 300 Hours, whichever occurs first	Remainder of 12 Months or 600 Hours, whichever occurs first*

***PRO-RATA CALCULATION IS BASED ON ACTUAL MONTHS OR ACTUAL HOURS, WHICHEVER IS GREATER**

Date: _____

Owner: _____

Phone Number: _____

E-mail: _____

Distributor: _____

Dealer/Installer: _____

Aircraft Make/Model: _____

New Battery Serial Number: _____

Description of defect: (please check one)

Won't take/hold a charge Dead Cell Other (describe)

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Gill contact: _____

Warranty Authorization #: _____

PLEASE COMPLETE REVERSE SIDE