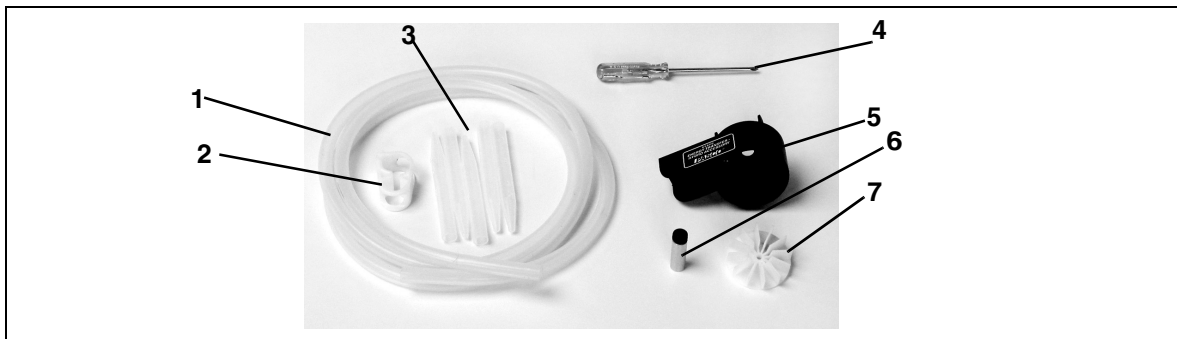


# Energy Transfer - Hydro Accessory

Model No. ET-8772

## Equipment List



Included Equipment	Replacement Model Number*
1. Plastic tubing, 6.56 feet, 1/4" inner diameter x 3/8" outer diameter (1)	640-012
2. Tube Clamp, 1/4-1/2" (1)	640-075
3. Nozzle (5)	648-08434
4. Screwdriver, #0 Phillips (1)	855-005
5. Impeller Housing (1)	650-08392
6. Nut, standoff, 3/8x6-32x1/2, stainless steel (1)	615-236
7. Impeller(1)	648-08439

\*Use Replacement Model Numbers to expedite replacement orders.

Additional Equipment Required	Model Number
Energy-Transfer Generator	ET-8771
Water Reservoir	ME-8594
PASCO computer interface ( <i>ScienceWorkshop</i> <sup>®</sup> or <i>PASPORT</i> <sup>™</sup> interface)	Various (See PASCO catalog)
DataStudio <sup>®</sup> software	Various (See PASCO catalog)

## Introduction

The Energy Transfer Hydro Accessory (ET-8772) is used for demonstrating hydroelectric power generation and was designed for use with the ET-Generator (ET-8771).

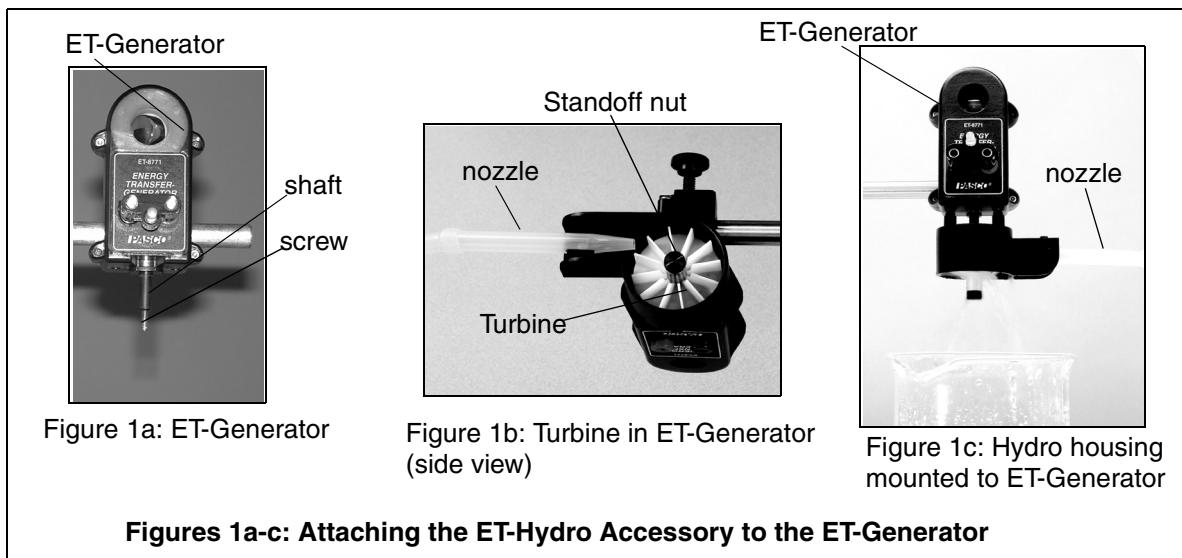
The impeller fits into the Hydro Accessory housing. The nozzle fits into a spring clip on the underside of the impeller housing. The nozzle can be connected to a piece of plastic tubing and external water source.

When the nozzle is connected to an external water source, water runs through the nozzle and turns the impeller, making the accessory ideal for the study of hydroelectric power generation.

The supplied nozzles can be cut to a variety of orifice sizes and used for hydroelectric efficiency studies. The angle where the water stream hits the fin of the turbine is also adjustable and has an effect on the hydroelectric efficiency.

## Setup Procedure

1. Attach the ET-Hydro Accessory housing to the shaft of the ET-Generator (ET-8771) using the two captured screws and the supplied screwdriver (Figures 1a-c).
2. Slide the housing with turbine (impeller) over the long shaft screw molded to the Generator. Hold the shaft to prevent it from spinning (Figure 1b).
3. Slide the stand-off nut over the shaft screw and tighten.



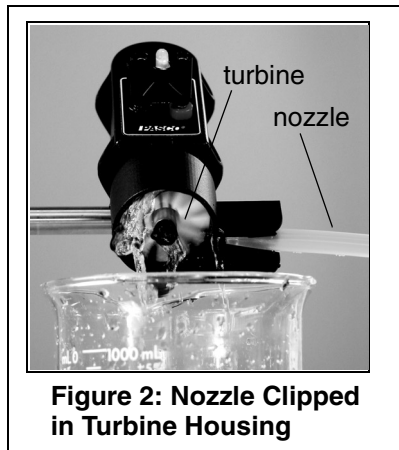
4. Insert the pointed end of a plastic nozzle into the spring clip underneath the housing (Figure 1b).

**Note:** The clip is spring loaded and can turn to adjust where the water stream hits the turbine. To increase the water flow, cut (trim) the nozzle end.

5. Connect the nozzle to a piece of tubing connected to an external water supply. (See section below and Figure 3).

**Note:** Have a beaker or container below the housing to collect water exiting the turbine (Figure 2).

6. Run the water supply through the nozzle of the turbine and watch the turbine spin.

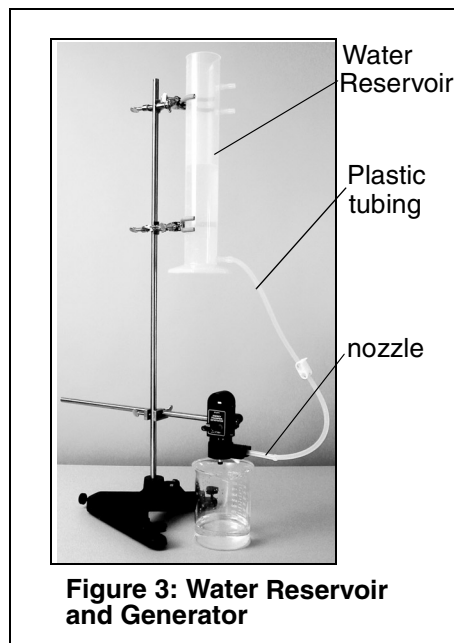


**Figure 2: Nozzle Clipped in Turbine Housing**

### Using the ET-Hydro Accessory with the Water Reservoir

PASCO's Water Reservoir (ME-8594) is recommended for holding and supplying the water to the Hydro Accessory.

1. Connect a tube from the bottom hose fitting of the Water Reservoir to the nozzle on the ET-Hydro Accessory (Figure 3). Clamp the tube.
2. To allow water flow into the ET-Hydro Accessory, open the clamp to the bottom tube. Water will run through the nozzle and turn the impeller.



**Figure 3: Water Reservoir and Generator**

For more information on setting up the ME-8594 Water Reservoir with the ET-Hydro Accessory, see the instruction sheet for the Water Reservoir. For suggested experiments with the ET-Hydro Accessory, see the ET-8771 ET-Generator manual.

## Technical Support

For assistance with the ET-8772 Hydro Accessory or any other PASCO products, contact PASCO as follows:

Address: PASCO scientific  
10101 Foothills Blvd.  
Roseville, CA 95747-7100

Phone: (916) 786-3800

FAX: (916) 786-3292

Web: [www.pasco.com](http://www.pasco.com)

Email: [techsupp@pasco.com](mailto:techsupp@pasco.com)

## Copyright and Warranty Information

### Copyright Notice

The PASCO scientific 012-08446A *ET-Hydro Accessory Manual* is copyrighted and all rights reserved. However, permission is granted to non-profit educational institutions for reproduction of any part of the 012-08446A *ET-Hydro Accessory Manual*, providing the reproductions are used only for their laboratories and are not sold for profit. Reproduction under any other circumstances, without the written consent of PASCO scientific, is prohibited.

### Limited Warranty

PASCO scientific warrants the product to be free from defects in materials and workmanship for a period of one year from the date of shipment to the customer. PASCO will repair or replace, at its option, any part of the product which is deemed to be defective in material or workmanship. The warranty does not cover damage to the product caused by abuse or improper use. Determination of whether a product failure is the result of a manufacturing defect or improper use by the customer shall be made solely by PASCO scientific. Responsibility for the return of equipment for warranty repair belongs to the customer. Equipment must be properly packed to prevent damage and shipped postage or freight prepaid. (Damage caused by improper packing of the equipment for return shipment will not be covered by the warranty.) Shipping costs for returning the equipment after repair will be paid by PASCO scientific.