

## **Hartvigsen-Hydro** **Components for microhydro systems**

Hartvigsen-Hydro  
Joseph Hartvigsen  
1529 South 400 East  
Kaysville, UT 84037 USA  
[joe@h-hydro.com](mailto:joe@h-hydro.com)



**Custom Turgo  
Runners**  
**Sized for your site.**  
**Use these tables to  
pick from 36+ different  
runners.**  
**(match runner  
diameter, site head,  
spoon material and  
target rpm)**  
**[spreadsheet file](#) or [pdf](#)  
[file](#)**

Click on image for larger picture

## Hartvigsen-Hydro Components for microhydro system builders



Injection molded plastic **bluespoons** for use with nozzles up to 5/8" (16mm) bore.

3.24" (82 mm) pitch diameter 20 bluespoon runner.

\$120 Assembled runner **includes basic arbor**, hub and 20 blue spoons

3.69" (94 mm) pitch diameter 24 bluespoon runner.

\$150 Assembled runner **includes choice of custom or basic arbor**, hub and 24 blue spoons

3.91" (99 mm) pitch diameter 26 bluespoon runner.

\$160 Assembled runner **includes choice of custom or basic arbor**, hub and 26 blue spoons

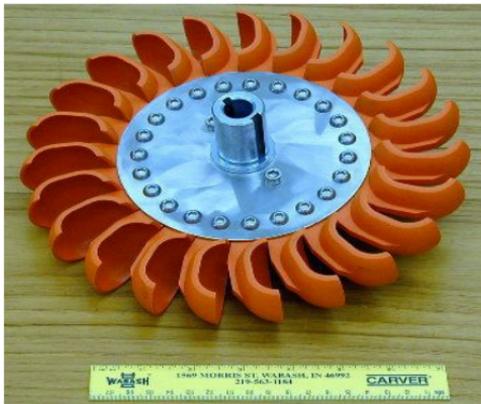
## Hartvigsen-Hydro Components for microhydro system builders



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### Precision cast stainless bluespoon size

- \$240  
**NEW** 3.24" (82 mm) pitch diameter 18 cast **stainless** runner.  
Assembled runner **includes choice of custom or basic arbor**, hub and 18 stainless spoons.
- \$300  
**NEW** 3.69" (94 mm) pitch diameter 22 cast **stainless** runner.  
Assembled runner **includes choice of custom or basic arbor**, hub and 22 stainless spoons.
- \$320  
**NEW** 3.91" (99 mm) pitch diameter 24 cast **stainless** runner.  
Assembled runner **includes choice of custom or basic arbor**, hub and 24 stainless spoons.



**Injection molded plastic orangespoons for nozzles to 1-1/8" (29 mm) bore.**

## Hartvigsen-Hydro Components for microhydro system builders

- \$240 Custom orangespoon runners for use with nozzles up to 1-1/8" (29mm) diameter.  
Assembled runner **includes choice of custom or basic arbor**, stainless hub and from 16 to 24 orange spoons ( 5.9-7.8" or 149-198mm pitch diameter )  
Pitch Diameter:  $D_p = \text{spoons} * 0.242" + 2"$  or  $D_p = \text{spoons} * 6.15 \text{ mm} + 51 \text{ mm}$   
Runners with more than 24 spoons are available at a cost of \$10\*spoon count.  
Custom center hole and mounting bolt circle for your shaft flange available with no extra charge.
- \$480 Custom runners using a **precision cast stainless steel** **NEW orange spoon replica**. Price shown for runners from 16 to 24 spoon. Runners with more than 24 spoons are available at a cost of \$20 per spoon. Runner pitch diameter matches orange spoon runners.

### Turgo Spoons: Build your own turgo runner.

Hub [drawings or templates](#) available.

- \$3 Blue spoons to build your own runner.  
Made in Sweden.  
Turgo spoons for use with nozzles up to 1/2" (13mm) diameter.
- \$4 Orange spoons to build your own runner. Made in Sweden.  
Turgo spoons for use with nozzles up to 1" (26mm) diameter.
- \$10 Precision cast stainless steel replica of the bluespoon.  
(Credit of \$3/spoon for upgrade of plastic bluespoons or bluespoon runners ).

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\$16 Precision cast stainless steel replica  
**NEW** of the Orange spoon.  
(Credit of \$4/spoon for upgrade of  
plastic Orange spoons or Orange  
spoon runners ).

### Nozzles



Standard nozzle sizes and flow rate  
[table \(.pdf\)](#) or [spreadsheet \(.xls\)](#).

Information on [nozzle alignment](#) for  
turgo runners

\$9 Series 70 (3/8" NPT) nozzles.

\$18 Series 80 (3/4" NPT) nozzles.

Series 125 (1-1/4" NPT) nozzles,

\$60 custom machined brass in 3/4", 7/8",  
1", or 1-1/8" bore.

### Turgo and Pelton Arbors



\$15 Basic arbor to fit motor/generator shaft  
and mount 1/2" ID impulse runner.  
Shaft sizes 3/8", 1/2", 5/8", and 5/8"  
with keyway. Will also fit ES&D pelton.  
Specify RH or LH thread. Use LH  
thread with turgo spoons above to  
direct water away from generator.  
Pelton may use either.

## Hartvigsen-Hydro Components for microhydro system builders

- \$25 Custom arbor to fit 7/8", 1-1/8" keyed shaft (shaft coupling required), or threaded to fit most Ford or GM alternators. Specify RH or LH thread for arbor shaft (1/2-20RH or 1/2-20LH).
- \$25 Shaft coupling for 7/8" or 1-1/8" arbors.

### Technical Information

## [Example Turgo System, Spreadsheets & Drawings](#)

## [Photo Tour of My Microhydro Site](#)

### Ordering Information

#### Shipping:

\$6 USA, \$15-\$20 International for spoons & blue runners

\$15 USA, \$25-\$35 International for orange spoon runners

I now offer inverters, PV, wind turbines, controllers, etc. to complete your system

Now Accepting Visa & MasterCard !



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**Ordering and ProPay  
Instructions**

Para informacion y venta en España [contactar  
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