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# products-for-infinity-turbine-renewal-energy-systems



Infinity Turbine  
LLC

Products of Infinity Turbine

## Structured Data

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Company Name: Infinity Turbine LLC  
 Product: Waste Heat to Energy Systems and Technology  
 Working Fluid: Refrigerants, water, CO2, compressed air, R245fa  
 Machine: ORC and ROT Radial Outflow Turbine System  
 Payment: USD, NFT, Crypto  
 Industry: Energy  
 Applications: Waste heat to power, utilities, server farms, hot geothermal  
 High Technology Uses: Converting waste heat starting 30C to power.  
 Machine Features: One moving part and solid state turbine technology.  
 Machine Runs On: Single phase 220V power and liquid CO2.  
 Other Technology: Tribo effect power, hydrodynamic cavitation hot water power and extraction. Modular block technology. Gas leverage turbine for production of fuels from liquid CO2.

PDF Version of the webpage (first pages)

<https://infinityturbine.com/products-for-infinity-turbine-renewal-energy-systems.html>

## ROT24 Radial Outflow Turbine AC Induction Generator Plans and Blueprints

ROT 24 can be used for IT50 and IT250. With dual configuration can be used for 600 kW or larger.

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## IT50 System Plans

Infinity offers both the ROT turbine plans and the IT50 system plans as a separate package.

We recommend the ROT24 for the IT50, even if it is derated.

Design Heat Exchangers ASME Rated Pressure - Evaporator R-245fa: 450 psi at 300 F shell side, and 150 psi 300 F on tube side. Welding procedures included. Condenser R-245fa: 450 psi at 250 F shell side, and 150 psi 250F on tube side.

Turbine may be used most efficiently at 50 kW, but may also be used for a range of turbines from 30 kW to over 100 kW.

IT50 Revenue based on gross sales or savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT50 (24 hours x 365 days per year x 50 kWh = 438,000 kWh per year):

at \$.20 per kWh = \$87,600 USD per year

at \$.50 per kWh = \$219,000 USD per year

at \$1.00 per kWh = \$438,000 USD per year

## Infinity Turbine IT50 System for AC Power from Waste Heat

The IT50 is designed to produce 50 kW of AC power (typically configured for a Grid-Tie connection). We have produced several IT50 systems in the past few years. They take about 6 months to complete, and can be shipped in a standard 20 ft. shipping container.

Currently we can complete this build through our sub-contractor who builds ASME certified pressure tested heat exchangers in Toronto, Canada, and ship anywhere in the world.

Design Heat Exchangers ASME Rated Pressure - Evaporator R-245fa: 450 psi at 300 F shell side, and 150 psi 300 F on tube side. Welding procedures included. Condenser R-245fa: 450 psi at 250 F shell side, and 150 psi 250F on tube side.

Turbine may be used most efficiently at 50 kW, but may also be used for a range of turbines from 30 kW to over 100 kW.

IT50 Revenue based on gross sales or savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT50 (24 hours x 365 days per year x 50 kWh = 438,000 kWh per year):

at \$.20 per kWh = \$87,600 USD per year

at \$.50 per kWh = \$219,000 USD per year

at \$1.00 per kWh = \$438,000 USD per year

## IT250 System Plans

Infinity offers both the ROT turbine plans and the IT250 system plans as a separate package.

We recommend the ROT24 for the IT250.

Design Heat Exchangers ASME Rated Pressure - Evaporator R-245fa: 450 psi at 300 F shell side, and 150 psi 300 F on tube side. Welding procedures included. Condenser R-245fa: 450 psi at 250 F shell side, and 150 psi 250F on tube side.

IT250 Revenue based on gross sales or savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT250 (24 hours x 365 days per year x 250 kWh = 2,190,000 kWh per year):

at \$.20 per kWh = \$438,000 USD per year

at \$.40 per kWh = \$876,000 USD per year

at \$.80 per kWh = \$1,752,000 USD per year

## IT250 250-300 kW Waste Heat to Energy System

The IT250 is designed to produce 250 kW net AC power (typically configured for a Grid-Tie connection). We have produced one IT250 system in the. They take about 6-12 months to complete, and can be shipped in a open top 20 ft. shipping container.

Currently we can complete this build through our sub-contractor who builds ASME certified pressure tested heat exchangers in Toronto, Canada, and ship anywhere in the world.

IT250 Revenue based on gross sales or savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT250 (24 hours x 365 days per year x 250 kWh = 2,190,000 kWh per year):

at \$.20 per kWh = \$438,000 USD per year

at \$.40 per kWh = \$876,000 USD per year

at \$.80 per kWh = \$1,752,000 USD per year

# ROT06 Turbine Generator Plans and Blueprints

Pricing: Please refer to price list or email.

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# ROT15 Radial Outflow Turbine AC Induction Generator Plans and Blueprints

Perfect for IT10 and higher.

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## Axial Turbine

### Plans Download:

The plans include images of each component in (jpg/png) and .pdf views.

The machine ready files include dwg, dxf, xt and we can provide other files on request from our AutoDesk suite of Cad/Cam software.

The files are provided by download.

The license is for the turbine blueprints only, and does not include any support (optional).

If you would like system blueprints (bill of materials, heat exchangers, pump/motor, frame, piping, etc.) for our Supercritical CO<sub>2</sub> or standard R245fa, or R134a, please contact Infinity.

## IT10 kW ORC System

Waste Heat Power: For years we've been hearing requests from customers who would like to use their waste heat to generate power, both on land and marine applications. To meet that demand, we formed Infinity Turbine LLC in 2008 and developed the IT10, the worlds first production 10 kw ORC (Organic Rankine Cycle) waste heat to power generator.

New developments in CO2 Brayton Cycle may allow efficiencies to reach 30-50 percent, but only for high grade heat (way above 300 F). This is a huge increase from the legacy ORC process which has a system efficiency (bottoming cycle) of 5-15 percent). We now offer a CO2 Turbine Development Platform for educators and energy developers.

Revenue based on gross sales or grid savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT10 (24 hours x 365 days per year x 10 kWh = 87,600 kWh per year):  
at \$.20 per kWh = \$17,520 USD per year  
at \$.40 per kWh = \$35,040 USD per year  
at \$.80 per kWh = \$70,080 USD per year

# IT10 System Plans

IT10 ORC Plans • System Blueprints (combine with turbine generator)

The plans include images of each component in (jpg/png) and .pdf views.

The machine ready files include dwg, dxf, xt and we can provide other files on request from our AutoDesk suite of Cad/Cam software. The files are provided by a FTP download. The license is for the system blueprints only, and does not include any support (optional).

Revenue based on gross sales or grid savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT10 (24 hours x 365 days per year x 10 kWh = 87,600 kWh per year):

at \$.20 per kWh = \$17,520 USD per year

at \$.40 per kWh = \$35,040 USD per year

at \$.80 per kWh = \$70,080 USD per year

## ROT12 Radial Outflow Turbine DC Generator

The ROT12 Radial Outflow Turbine with DC Generator was designed for the IT10 system.

IT10 Revenue based on gross sales or grid savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT10 (24 hours x 365 days per year x 10 kWh = 87,600 kWh per year):

at \$.20 per kWh = \$17,520 USD per year

at \$.40 per kWh = \$35,040 USD per year

at \$.80 per kWh = \$70,080 USD per year

## IT 10 Redstone Turbine

The IT 10 Redstone Turbine is an experimental turbine designed for small scale power production for the home or low power applications (IT10 1-10 kW).

Project Goals: Integrate a liquid pump into one rotating element. Instead of a common shaft driven feedpump, make the turbine counter-rotating in one piece.

Working Fluid: R-245fa, R-134, Compressed Air, pressurized water, and a Stainless Steel version with CO2.

Modular Block Assembly: Used since 2008, our Modular Block concept has been used in hundreds of turbine prototypes and production assemblies. This version uses square blocks with 3/8 fasteners and threaded bores.

Purpose: Small power production without the need for a external feed pump.

Rapid-Configuration: This assembly allows you to quickly configure turbines and test various working fluids and heat sources. The basic design is for 300 psi or less, which is determinant on the back magnetic coupling block which is made from HDPE. If you can make from nonmagnetic metal or composite fiber for a thicker (stronger) back, then you can use flows with greater pressure.

Magnetic Coupling: The design has a basic 6 inch diameter magnetic coupling and follower, which allows you to have a generator or drive unit mounted exterior.

IT10 Revenue based on gross sales or grid savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT10 (24 hours x 365 days per year x 10 kWh = 87,600 kWh per year):  
at \$.20 per kWh = \$17,520 USD per year  
at \$.40 per kWh = \$35,040 USD per year  
at \$.80 per kWh = \$70,080 USD per year

## Radial Outflow 1MW Turbine AC Induction Generator Plans and Blueprints

Infinity Turbine now has available blueprints for a 1 megawatt ORC radial outflow turbine.

IT1000 (2 MW) Revenue based on gross sales or savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT250 (24 hours x 365 days per year x 1000 kWh = 8,760,000 kWh per year):

at \$.20 per kWh = \$1,752,000 USD per year

at \$.40 per kWh = \$3,504,000 USD per year

at \$.80 per kWh = \$7,008,000 USD per year

## Radial Inflow 12 Inch Turbine

The IT 10 Redstone Turbine is an experimental turbine designed for small scale power production for the home or low power applications (IT10 1-10 kW).

Project Goals: Make turbine fabrication simple by cutting 2D parts via waterjet or laser, then bolt to plates to form a complete assembly.

Working Fluid: R-245fa, R-134, Compressed Air, pressurized water, and a Stainless Steel version with CO2.

Rapid-Configuration: This assembly allows you to quickly configure turbines and test various working fluids and heat sources. The basic design is for 300 psi or less.

Magnetic Coupling or Large Diameter Gruklok Pipe Housing Assembly: The unique design has a basic 12 inch diameter which allows for direct-to-motor generator mounting or magnetic coupling and follower, which allows you to have a generator or drive unit mounted exterior.

IT10 Revenue based on gross sales or grid savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT10 (24 hours x 365 days per year x 10 kWh = 87,600 kWh per year):

at \$.20 per kWh = \$17,520 USD per year

at \$.40 per kWh = \$35,040 USD per year

at \$.80 per kWh = \$70,080 USD per year

## IT XR Turbine

The IT XR 6 inch diameter turbine is an experimental turbine designed for small scale power production for the home or low power applications (IT10 1-10 kW).

**Project Goals:** Make turbine fabrication simple by 3D printing a one part turbine with perimeter bearings and back mounted magnetic coupling for generator coil or exterior shaft drive or motor generator.

**Common Shaft Drive:** The magnetic coupler is bored into the rotor assembly, which allows coil power generation, or a magnetic follower disc for touchless shaft drive, or exterior motor generator options.

**Working Fluid:** R-245fa, R-134, Compressed Air, pressurized water, and a Stainless Steel version with CO2.

**Rapid-Configuration:** This assembly allows you to quickly configure turbines and test various working fluids and heat sources. The basic design is for 300 psi or less.

**Magnetic Coupling or Large Diameter Gruvlok Pipe Housing Assembly:** The unique design has a basic 6 inch diameter which allows for direct-to-motor generator mounting or magnetic coupling and follower, which allows you to have a generator or drive unit mounted exterior.

IT10 Revenue based on gross sales or grid savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT10 (24 hours x 365 days per year x 10 kWh = 87,600 kWh per year):

at \$.20 per kWh = \$17,520 USD per year

at \$.40 per kWh = \$35,040 USD per year

at \$.80 per kWh = \$70,080 USD per year



## **Modular Block**

The modular fluid handling device has a central bore with fluid passages that extend between block faces, both horizontally and vertically. The blocks can be stacked horizontally, vertically, or both. Rotating elements can be configured in any of the passages for the purpose of pumping, extraction, or power production.

Purpose: The functionality of the blocks is to perform rapid prototyping by deploying modular construction of systems using bolts.

Standard Blocks: 3 inch size with 10/32 inch fasteners. 1 inch center bore and 1/4 and 1/2 inch horizontal bores.

Larger Blocks: 6 inch size with 3/8 inch fasteners. 3 inch center bore and 1/4, 3/8, and 1/2 inch horizontal bores.

Patents (I and II) cover all sizes and most applications.

## **Supercritical CO2 10L Extractor System Licensing**

Supercritical CO2 Extractor 10L system for botanical oil extraction.

This system is built like a tank. Powder coated caster beams with 5 inch heavy duty casters for easy movement.

This system is compact and will fit through any standard door, hallway, or elevator.

System operation is manually set parameters, with automatic feedback PID to maintain temperature and pressure. Set it and watch the extraction.

System is designed for maximum 2,000 psi operation. Most processors use 1,400 psi or less.

Terpene extraction can be done running cold prior to turning on the heat for FSO extraction. This system is great for lavender, vanilla, pinene, and other valuable terp extractions.

## **Magnetic Coupling**

High torque contactless magnetic coupling for shaft drive applications.

Plans and licensing available.

## Magnetic Gear

High torque contactless magnetic coupling for shaft drive applications. Built and tested working (2:1 gear ratio). Video available.

Plans and licensing available.

## Heat Exchanger 3D Metal Printed

High torque contactless magnetic coupling for shaft drive applications. Built and tested working (2:1 gear ratio). Video available.

Plans and licensing available.

