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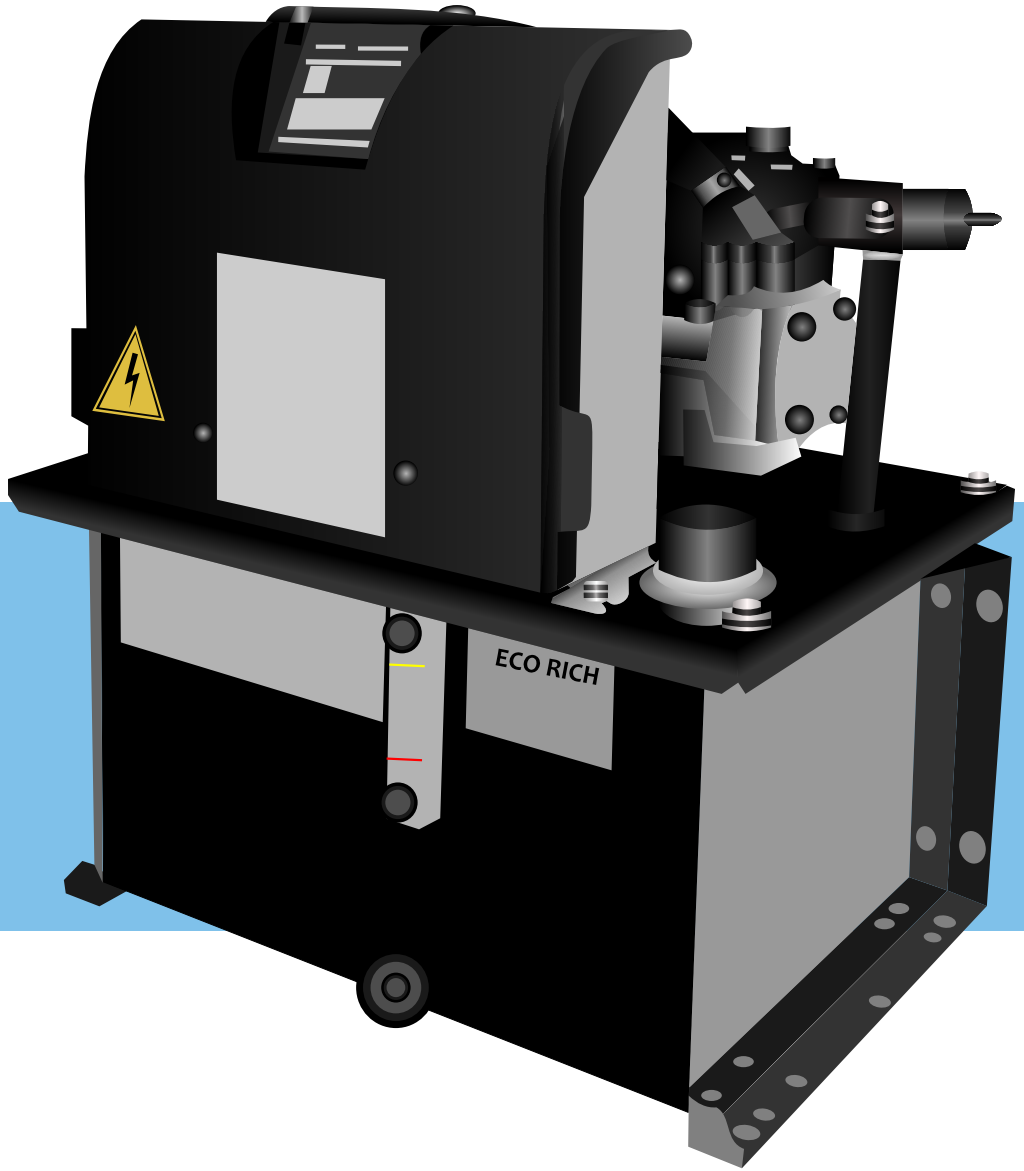
DAIKIN



ECO-RICH (EHU)

Hybrid Hydraulic Unit

Today's machine operators often have to face the harsh reality that their machines aren't operating at an optimal level, resulting in massive energy bills.

On a standard machining center or lathe, hydraulics consume **20-30%** of the entire machine center's energy consumption. The heat generation and tank dump waste of hydraulic units greatly contribute to the excessive operational costs and performance issues that continue to trouble users.

What if there was a better solution?

In the late 1990's engineers from **DAIKIN INDUSTRIES, LTD.**, the largest air conditioning manufacturer in the world, had an idea. What if their HVAC hybrid energy inverter technology could be used on oil hydraulics to create a more efficient method of hydraulic power?

Lengthy tests and specifications followed and soon Daikin's top engineers had designed a hybrid hydraulic unit that challenged the conventional hydraulic status quo; a unit so advanced that it could reduce footprint, oil waste, heat, and energy costs while retaining the capability to be a drop-in replacement for 80% of traditional hydraulic systems.

The future of hybrid technology had arrived.

SO HOW EXACTLY does the Eco-Rich create these amazing savings?

Through its unique design, the Eco-Rich provides five major factors that put money back into the pockets of manufacturing companies faced with the costs of daily operations.

ENERGY	Lower energy consumption through advanced inverter technology provides longer unit life, reduced energy cost, and sustainable savings. **Average reduction of 60%.**
HEAT	A reduction of heat generation creates longer life for machine components and reduces ambient workspace temperatures, resulting in reduced air conditioning demand and fewer opportunities for overheating. **Reduction from 104°F to 80°F.**
OIL	Conventional hydraulic units require larger capacity tanks to dissipate heat than the Eco-Rich, which reduces oil disposal. **Reduction of 33-80%.**
NOISE	Noise reduction creates a more comfortable and safe work environment, reducing worry and cutting cost on factory alarms. **Reduction from 75 dBA to 50 dBA.**
STOCK	Compatibility and adaptability creates less need for on-hand stock, as the Eco-Rich works as a drop-in replacement for the vast majority of hydraulic pumps and motors within the industrial marketplace.

ULTIMATELY THIS REDUCTION IN ENERGY, HEAT, SOUND, OIL, & STOCK CREATES INSTANT COST SAVINGS; ENOUGH THAT THE UNIT CAN PAY FOR ITSELF IN AS LITTLE AS 12 MONTHS OF OPERATION.

ENERGY

Primary energy savings comes through use of Daikin's patented SR motor control and inverter system. This system was specifically built to achieve 30% - 80%* of energy reduction just from standard usage.

When in use, the system's high-speed, reactive design responds in 1/10 of a second to perform the needed function in order to meet the demand; generating high torque at a low RPM.

As soon as the hydraulic operation is complete, the motor slows to save energy, holding minimum necessary rotating pressure until the next phase of usage commences to compensate for leakage in circuit.

* Per average usage on CNC machines running 24 hours per day, 350 days per year.

HEAT

Because of the unit's efficiency, there is a much lower level of heat emitted when compared to a conventional unit. The temperature of the unit is so low that you can actually rest your hand on the unit as it operates*.

The lower temperature creates two unique advantages for the manufacturer. The first being that all associated component and sealing parts wear is Minimized, leading to less breakdown and increased durability. Second, the overall footprint of the packaged unit is significantly smaller in size, promoting Increased adaptability within installation.

* The unit runs just a few degrees above facility's ambient temperature.

OIL

Because the unit is smaller and more efficient, it needs less oil that a conventional system to do the same amount of work. Conventional unit's tank sizes are usually double or triple the size of an Eco-Rich tank, used to displace the massive amount of heat that they generate.

This creates a ripple effect in cost savings- less oil will break down because less oil is needed for operation, and less oil will need to be disposed- all of which will save the manufacturer hundreds of dollars per year through annual purchasing and waste disposal costs.

NOISE

Operation efficiency also means less noise per machine. The Eco-Rich runs at nearly half the volume of a conventional unit, decreasing the environmental impact by 20-25 dBA when in operation.

This reduction of noise creates a safer and more worker friendly environment for operators and technicians alike.

STOCK

Crossing most hydraulic units depends on three factors: pressure, flow, and voltage. The majority of hydraulic units operating today run at or under these specific measurements: pressure- 1000 PSI, flow- 25 liters/minute, voltage- 200/220 volts.

The Eco-Rich is extremely adaptable and can adjust to any specifications within these standard boundaries making it a drop-in replacement for nearly all pumps and motors in industrial manufacturing. Because of this adaptability, having one or two Eco-Rich units in stock eliminates the need to source tens to hundreds of different options when different machines break down.

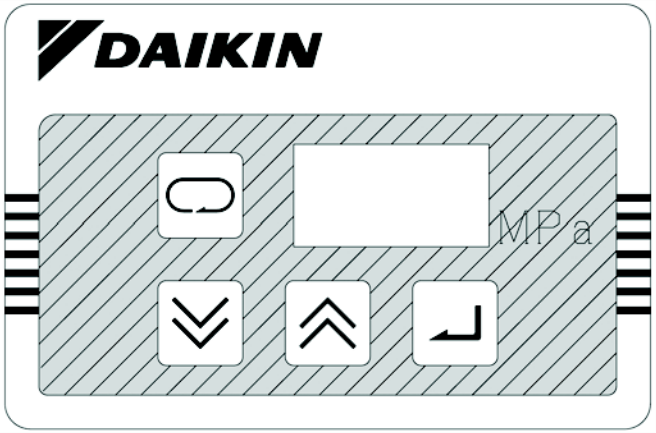
At further benefit to the customer, the Eco-Rich is always available and in-stock in North America and will ship out on the same day the order is processed.

TECHNOLOGY

While notably the most cost-saving unit in the market today, the Eco-Rich also boasts technological advancements in hydraulic technology that surpass any similar unit.

The Eco-Rich is the only cost effective hybrid unit in the world that can be adjusted through an easy-to-use keypad design located on the front of the unit. The keypad serves a diagnostic tool that lets the user manually adjust pressure and flow settings for each machine for unparalleled efficiency. The keypad also uses smart technology to alert the user of any problems or failures and will actually shut the unit off before a catastrophic failure occurs, drastically reducing maintenance times.

Eco-Rich users also have the benefit of monitoring common (N) parameters to better understand previous and potential failures through the use of this diagnostic tool.



INSTALLATION

Because the footprint of the unit is smaller, set-up takes only a fraction of the time that it would take to install a conventional hydraulic unit.

The only required tools needed to set-up the unit's flow and pressure are a wrench and a screwdriver.

ENVIRONMENTAL

Average environmental benefits from standard usage reveal massive results at an average of 60% per unit. Annual average energy savings are equivalent to:

Planting 101 trees per year.
-or-
Turning off 42,945 light bulbs a year.
-or-
3117.9 lbs of CO_2 reduction per year.*

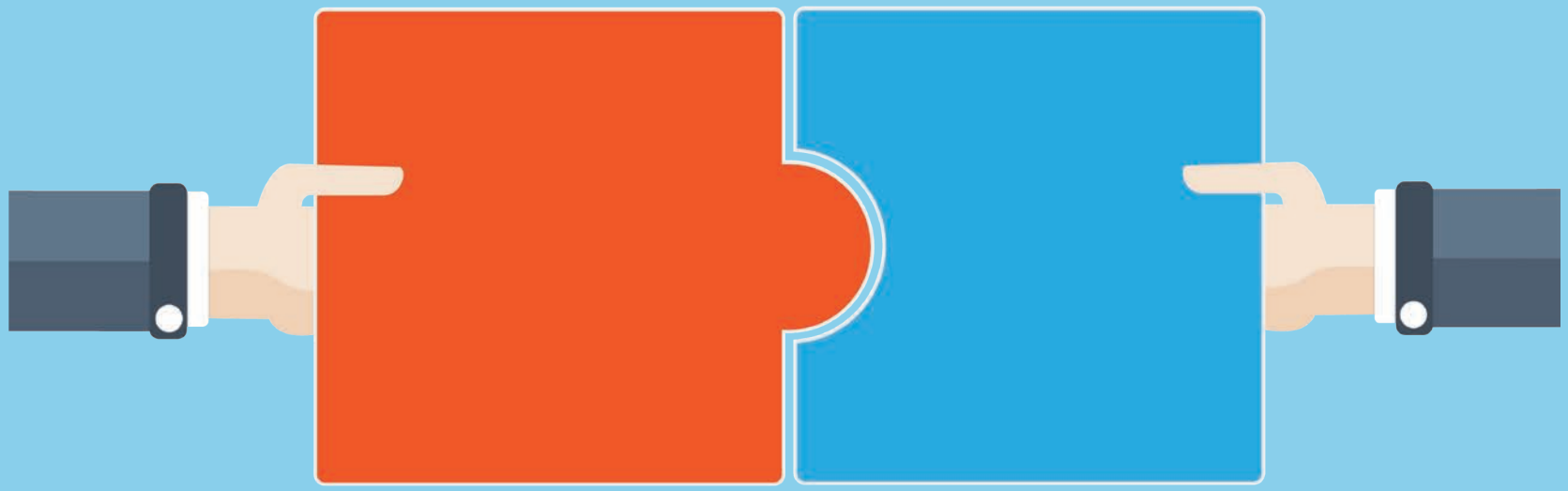
All World has run extensive tests proving the incredible energy savings. These power studies can be found on our website at:
www.allworldmachinery.com/us/about/blog

* Per average operation calculated at 8400 hours per year.

COMPATIBILITY

The Eco-Rich is compatible with most standard CNC machines. The list below breaks down specifications and compatibilities for most industrial applications.

Eco-Rich Unit (EHU/EHU-R)	Max Pressure		Max Flow		Voltage	Motor Cap
	(PSI)	*(MPa)*	*(GPM)*	*(LPM)*	*(V)*	*(kW)*
EHU14-L04-A-30	580	4.0	3.7	14.0	200 / 220	0.75
EHU25-L07-A-30	1000	7.0	6.6	25.0	200 / 220	2.2
EHU30-M04-A-30	870	6.0	7.5	28.5	200 / 220	2.8
EHU40R-M07-A-10	1000	7.0	10.6	40.0	200 / 220	3.7



COST

Set at an extremely competitive price with so much value added, the Eco-Rich's forward thinking hybrid technology can decrease a manufacturer's operational costs with its energy efficient and ergonomic design.

A more efficient machine equals more for your bottom line.

Why not pay less to get more? Click or call today for a quote or to set-up a complimentary power study with one of our qualified engineers or technicians.