

Comparison Chart

Engines

RVCRC I.C. Engines	Conventional Engines
1 Runs on any fuel of choice (LPG/	Cannot change over fuel during operation from gas to diesel
2 Runs on single and dual stroke (High power density)	2 or 4 strokes required
3 Compression ratio control reduces fuel consumption at all loads	Cannot vary compression ratio hence not as fuel efficient as VCR
4 No reciprocating piston, gudgeon, connecting rod required	Piston, gudgeon, con rod essential, hence large weight and size.
5 Eliminates reversal of inertia and out of balance forces	Reversal of mass causes vibration, slapping, wear tear.
6 Elimination of out of balance forces means no more multi cylinder required. One unit engine for any size	Above 500 cc all automotive engines require multiple pistons. Multiples of requisite components, more weight, larger size
7 No fly wheel required hence engine still lighter and compact.	Fly wheel essential biggest contributor to weight and metal cost
8 No crank case required. Hence volume of engine further reduced	Large crankcase increases size and explosion risks
9 No liner replacement, doughnut liner reconditioning possible	Replacement of liner a major cost factor
10 All external bearings hence life increased multi fold	Life limited by exposure to heat and vibration
11 Third dimension by the way of radius available for size.	Only bore and stroke ratio and size available

Wind Power Generator

RVCRC Wind Power Generator	3-Blade Wind Turbine
1 Energy Capture Positive Displacement Mechanism	Less efficient Rotary axial flow mechanism
2 No high elevation placement of generator	Generator placed at high elevations above the ground level
3 No Yaw gearbox (Position independent of wind direction)	Complicated & Costly Yaw gearbox required
4 No Synchronous gearbox required	Costly & Complicated Synchronous gearbox required
5 Smaller diameter Vanes, Lesser Stress Level on components	Large turbine blade span, High Stress levels on turbine blade roots
6 Easy Roto-dynamic Variable Expansion	Complicated Variable pitch mechanism
7 Simplified Metallurgy & lower material costs	Costly Material of turbine blades
8 Lesser rotating components, No bird hazards, lesser loss	Large moving parts, high Frictional losses and bird hazard
9 Embedded Installation possible	Standalone installation
10 Easy transportation, Quick installation & dismantling.	Heavy foundation, Elongated transportation & installation time
11 Installation at power demand location & reduced losses	Greater transmission losses by longer transmission
12 Easy and low-cost maintenance	High maintenance costs
13 Quieter operation, Airflow control, No lock-down required	Noisy Operation, No Wind Control & lock-down during storm
14 No Large Centrifugal forces & Gyroscopic effect eliminated	Large Centrifugal forces & Severe Gyroscopic effect



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RVCRC TECHNOLOGY

The Birth of New Age Machines

RVCRC PRODUCTS

Transportation & Power

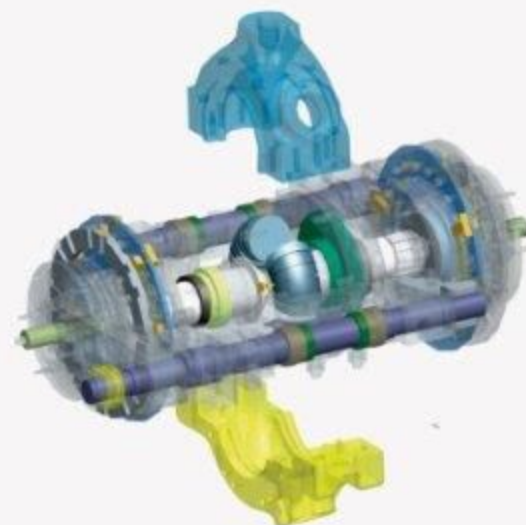
- > I.C. Engines
- > EMD Prime Mover

Renewable Power Generators

- > Wind Motors (In Pipeline)
- > Water Motors

Utility Machines

- > Pumps (Planned)
- > Compressors



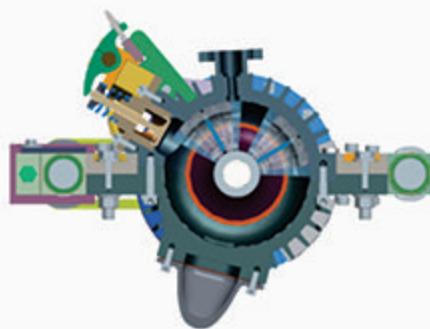
Granted patents in 49 Countries



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World Energy Scenario

Global environmental concerns has led researchers worldwide to devise alternate avenues of energy generation and defining optimum levels of energy use etc. Hybrid and fully electric vehicles have been available for some time in the transport industry and so are replacements to fossil fuel by bio fuel, gas, solar based algae fuel etc. However, these solutions are not able to provide a concrete alternative to the fossil fuel industry because alternative technology solutions are not significantly efficient or mature enough to suffice for ever growing energy demands. They are costly, limited to regions or applications and commercially unviable.



RVCr Technology Solution

The solution is a technology capable of being adopted by oil industry ecosystem, use fossil fuel evermore efficiently, reduce emission and yet be easily adaptable to convert into zero emissions machines. RVCr Technology is this gradual transition solution to cleaner, greener industry and the core to this is a new Engineering mechanism. It is invented and developed in India by engineer and scientist Das Ajeet Kamath. It is a novel 'alternative' to 'reciprocating piston-crank mechanism', which has been the base mechanism of the industrial machines since early 20th century. (Compressors, pumps, and general fluid handling machines and most importantly I.C.Engines used in transportation, power generation, mining, agriculture, stand-alone machine drive prime movers and numerous such applications)

RVCr Mechanism:

The mechanism is a seed mechanism that replaces the crank mechanism where ever it is applied and results in energy efficient products in various facets and verticals in the industry like I.C.Engines, pumps, compressors and specially for wind power generation. The invention application is not localized but applicable across industry and is easier for industry to adopt the technology to conform for ever-stricter emission norms without forcible deviation from the current production lines.

Awards:

Gold Medalist IIGP 2013 National Competition by DST Lockheed Martin (USA)
Selected Winner by IC2 Institute University of Texas (Austin) for Mentoring

Our Technology Acquisition Services

Helping New Technology

New Technology acquisition is a complex and mammoth task to be undertaken by clients. We have devised stepwise interactive processes for easing out the difficulties you would face with new technology adoption. We conduct various assessment and analysis of technology suitability for your business.

We have flexible & elaborate mechanisms for joint assessments & evaluations for RVCr technology products involving management & technical teams, of client & include training that benefit client's technology assessment capabilities.

The services include those listed below:

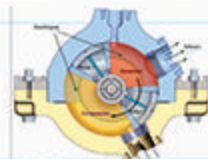
1. Technology business case analysis

- ✓ Tangibles (Product value analysis, Manufacturing and material gains, Operating cost savings & gains, Inventory cost savings, Energy Efficiency gains,
- ✓ Intangibles (Economic, Environmental, Disruptive technology strategic gain, Market Lead gains)



2. Technology Assessment

- ✓ Technology Engineering Analysis
- ✓ Application specific Product Technical Analysis
- ✓ Segment viability Analysis (Marine, Automotive, Aviation, special purpose applications)



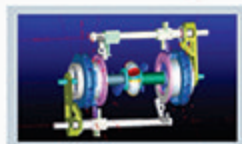
3. Proof of Concept

- ✓ Preliminary low-cost static model
- ✓ Scaled/Pilot Product Model



4. Engineering Services

- ✓ Design & FMEA, Virtual Modeling, Assembly & Animation, Rapid Prototyping (Scaled down models)
- ✓ Virtual Engineering Analysis (MBD, FEA, CFD)
- ✓ Design of Manufacture, Manufacture, QC
- ✓ Assembly & Calibration, Testing, Design validation
- ✓ Trials and Regulatory Validation



5. Pilot product management

- ✓ Budgeting, Project Planning, Resource mapping
- ✓ Scheduling & Time estimation,
- ✓ Facilities Integration & centralization



6. Commercial Product realization

- ✓ Mass Manufacture Optimization
- ✓ NDA, License & Cross-border Agreements

"Delivering Complete Technology solution for 21st Century Energy Ecosystem"