



INDIA'S LARGEST
MOTOR
MANUFACTURER
OF HVAC APPLICATION



Designed in India, Made in India
LOVED BY THE WORLD

PICL (INDIA) Pvt. Limited
Plot No- 619, Sector 69, IMT, Faridabad-121009, Haryana, (INDIA)
E-mail : info@piclindia.com
Web: www.piclindia.com



FOR MORE INFORMATION SCAN THIS CODE

PRODUCT CATALOGUE

About Us

PICL India Private Limited, established in 2002 is a 100% Subsidiary of "Amber" Group, serving India and Global HVAC industry with Energy Efficient, Innovative and Reliable design of Motors for decades. We are one of the Largest FHP Motor manufacturer in India having 7 million Motors annual manufacturing capacity.

Vision :

- To be first choice of customers
- Add value to their business
- Through discipline and strong management principles

Mission :

- To be No. 1 OEM and parts manufacturing company
- Through excellent services to our customers
- Create growth for all associated with our organization

Philosophy :

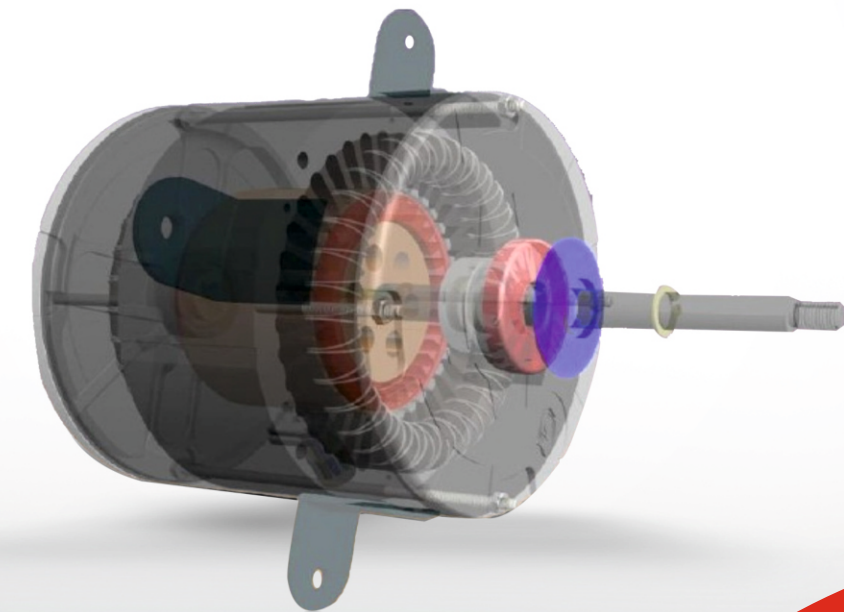
- Smart Working
- Innovation
- Happiness for all



At PICL, the motors are manufactured with the highest quality, efficiency and as per the customer's specifications.

Our Strength :

- Energy efficient products
- Strong R&D team to support customers
- Advance Technological Equipment
- Highest Quality Standard
- Cost-effective & innovative products
- Consistent performance with assured reliability to meet customer's demand
- Established supplier for global leaders of air conditioners
- Excellent lab facilities



PREFERRED COMPANY



What makes us "PREFERRED COMPANY"

- We, at PICL INDIA PVT. LTD., prioritize pollution avoidance and natural resource conservation through optimal utilization of resources and waste minimization.
- Our energy-efficient motors are manufactured with high quality components that exceed stringent manufacturing standards globally.
- Efficient electrical design and precision rotor-stator slot combination provide cool, quiet operation and lower input power which is our core strength.
- Precision machined surfaces for correct alignment of shaft and bearings which increases the motor life.
- We use highest quality oil with acid and oxidation inhibitors.
- Open and closed construction according to customers need.
- Inner and outer slingers return oil to wicks for longer life through greater oil retention.
- Two steel-backed tin-babbitt bearings minimize abrasive wear, permit accurate bearing tolerance.
- ISO 14001:2015 standard helps in identifying objectives and determining the processes and resources required to manage its environmental impact.
- Different levels of ingress protection are available, ranging from IP24 to IP55.
- Powder coated exterior to withstand tough outdoor conditions of rain, dust and humidity.
- Our motor solution, delivers the high level of performance and reliability for HVAC and Non-HVAC applications.
- Our R&D team equipped with world class equipment is 24X7 hours ready to support.

ENERGY EFFICIENT PSC MOTORS

NEMA FRAME 48/56



Specifications :

Single Phase PSC Motors, Ø140 Frame, 600-2900 RPM, 50/60 Hz, CAO Rating, Multi Speed, 93-1200Watt, 2,4,6 & 8 Pole, 90-115, 220-240, 415 and 575 Volt, Cu, Al and Hybrid Windings, Shell Construction, Open & Closed

Applications :

Window Air Conditioners, Commercial Air Conditioners, Furnace, Blowers, Commercial and Industrial Fans and Blowers, Heat Pumps, Packaged Air conditioner, Air handlers, Garage Heaters

Features :

- Ball Bearing/Sleeve Bearing
- RoHS, UL Compliance, CB Certification
- Compliance to IS/IEC Standards
- Efficiency up to 70%
- Automatic Reset Thermal Overload protected
- Available in insulation Class B, F and H
- Available in Single and Multiple speed
- P2 type capacitors
- Available in totally enclosed, Open type, Drip proof enclosures
- Available in Clockwise, Anti clockwise, and reversible rotations
- Suitable for ambient temperature from -10deg C to + 55Deg C





ENERGY EFFICIENT PSC MOTORS

NEMA FRAME 42



▲
End shield
Mounting

▲
Plate Mounting
with Lug

▲
Resilient Ring-Base
Mounting

▲
Lug
Mounting

▲
Pad
Mounting

▲
Clamp Bolt
Mounting

▲
Rubber
Mounting

Specifications :

Single Phase PSC Motors, Ø120 Frame, 600-2900 RPM, 50/60 Hz, 19-190 Watt, 2,4,6,8 Pole, 90-115, 220-240 Volt, Cu, Al, Hybrid Winding, Shell and Cap-can, Open and close construction

Applications :

Split - Air Conditioners, Window Air Conditioners, Furnace, Blowers, Air Curtain, Heat Pumps, Air-handlers, Garage Heaters, Air Cooler, Wet Rice Grinder

Features :

- Ball Bearing/Sleeve Bearing
- Shell type/Cap can construction
- Continuous Duty, Air over
- RoHS, UL Compliance, CB Certification
- Compliance to IS/IEC Standards
- Efficiency up to 65 %
- Automatic Reset Thermal Overload protected
- Available in insulation Class B, F and H
- Available in Single and Multiple speed
- P2 type capacitors
- Available in Clockwise, Anti clockwise, and reversible rotations
- Suitable for ambient temperature from -10deg C to + 55Deg C

ENERGY EFFICIENT PSC MOTORS

Cap-Can Motors



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Ø95

Specifications :

Single Phase PSC Motors, 600-1800 RPM, 50/60 Hz, 20-90 Watt, 4,6,8 Pole, 90-115, 220-240 Volt Cap-can construction, Closed, Cu, Al and Hybrid

Applications :

HVAC outdoor units (ODU), Blowers, Air Coolers, Mini split systems, Window AC

Features :

- Ball Bearing
- Continuous Duty, Air over
- RoHS, UL Compliance, CB Certification
- Compliance to IS/IEC Standards
- Efficiency up to 60 %
- Automatic Reset Thermal Overload protected
- Available in insulation Class B and F
- Available in Single and Multiple speed
- P2 type capacitors
- Available in totally enclosed
- Available in Clockwise, Anti clockwise, and reversible rotations
- Suitable for ambient temperature from -10 °C to + 55 °C



FRONT LOADING WASHING MACHINE BLDC MOTOR



Specifications :

BLDC Motor, Intermediate duty, 91V / 50W / 560rpm, 310V/350W/ 16300rpm, Class F insulation, Clock Wise & Counter clock wise rotation, Sensor less control.

Applications :

Front Load Washing Machine

Features :

- High efficiency and excellent controllability
- Wide range of operating speed
- Low cogging Torque
- Low noise and vibration
- Class F insulation
- Highly reliable



WASHING MACHINE MOTOR



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Auto Wash Motor



▲
Wash Motor



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Spin Motor

Specifications :

PSC, Single Phase- V230, 35-180 Watt, 1100-1700 RPM, 50/60 Hz, Open construction, Int. Duty, Top, Cu, Al, Hybrid

Applications :

Top loaded fully Automatic & Semi Automatic Washing Machine

Features :

- Ball Bearing/Bush Bearing construction
- RoHS, UL Compliance, CB Certification
- Compliance to IEC Standards
- Available in Clockwise, Anti clockwise, and reversible rotations
- Suitable for ambient temperature from -10deg C to + 50Deg C



KITCHEN HOOD (CHIMNEY) -MOTORS



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Lug Mounted



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Cover Mounted

Specifications :

850-2900 RPM, 50/60 Hz, 20-120 Watt, 2,4,6 Pole, 90-115, 220-240 Volt, Cu, Al, Hybrid

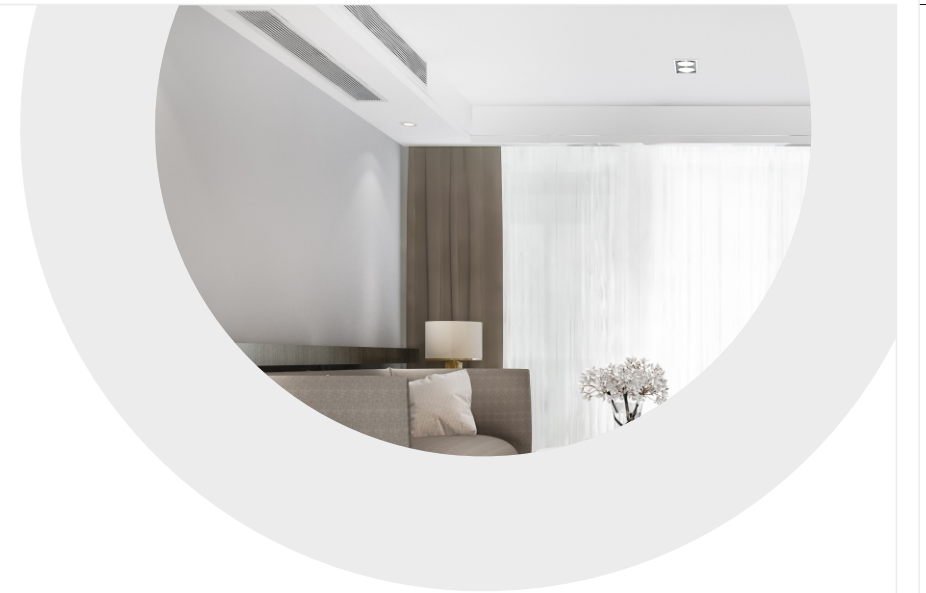
Applications :

Induced Draft & Hood type kitchen chimney

Features :

- Ball Bearing
- RoHS, UL Compliance, CB Certification
- Available in Single and Multiple speed
- Compliance to IEC Standards
- Automatic Reset Thermal Overload protected
- Available in insulation Class B, F and H
- Available in Open type enclosures
- Available in Clockwise & Anti clockwise
- Suitable for ambient temperature from -10deg C to + 55Deg C

FAN-DECK



Specifications :

Size	Freq(Hz)	Out put power	NEMA frame
18K	50	124	42
24K	50	124	42
30k	50	149	48
36k	50	210	48
42k	50	250	48
48k	50	373	48
60k	50	450	48
18K	60	100	42
24K	60	124	42
30K	60	149	48
36k	60	210	48
48k	60	373	48
60K	60	450	48

Applications :

Fan-coil Unit

Features :

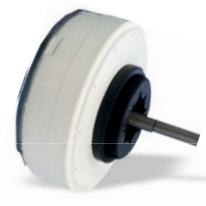
- Available in Copper, Aluminum, Hybrid winding
- Ball Bearing/Sleeve Bearing
- Shell type construction
- Continuous Duty, Air over
- RoHS, UL Compliance, CB Certification
- Compliance to IS/IEC Standards
- Efficiency up to 65 %
- Automatic Reset Thermal Overload protected
- Available in insulation Class B, F and H
- Available in Multiple speed
- Available in totally enclosed, Open type, Drip proof enclosures
- Available in Clockwise, Anti clockwise, and reversible rotations
- Suitable for ambient temperature from -10deg C to + 55Deg C
- Available in 4/6/8 Pole

ENERGY EFFICIENT BLDC MOTORS

FLUXON SERIES



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OD88



▲
ID88

Specifications :

BLDC MOTORS, Resin Pack 280-350V DC, 300- 1800RPM, 15-90W, 8 & 10 poles, E Class, 12/4PPR, CW / CCW, Copper & Aluminium Windings

Applications :

Residential Air conditioners – Indoors & Outdoors units, TTW Units, Mini- Split, Coolers, Air Purifiers

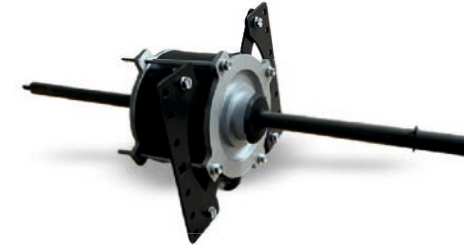
Features :

- . High efficiency, high operating voltage range
- . Low noise
- . Less vibrations
- . Less cogging torque
- . Electronically protected
- . Less Temperature rise
- . Over current & Temperature Protection
- . Ball Bearings
- . Sensored / Sensor less control
- . Drive / Driverless motors



ENERGY EFFICIENT BLDC MOTORS

FLUXON SERIES



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WAC88



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CA88

Specifications :

BLDC MOTORS, 280-350V, 300-1400RPM, 50-180W, 8 & 10 Poles, E-class, 12/4PPR, CW / CCW, Copper & Aluminium Windings

Applications :

Residential Window Air Conditioners, Cassette, Mini- Cassette

Features :

- . High Efficiency
- . Less Temperature Rise
- . High Operating Voltage range
- . Electronic protection against Over voltage
- . Over current & Temperature protection
- . Low Cogging torque
- . Less Noise & vibration



ENERGY EFFICIENT BLDC CEILING FAN



Specifications :

Motor Specification	
Motor Speed (RPM)	360 -400
Power consumption (W)	<32
Voltage range (V)	90 -280
Power Factor	>0,9
Blade sweep size (mm)	1200
Air flow (CMM)	>210
Service value	>6
Number of speed setting	5
Star rating	5
THD(%)	<5

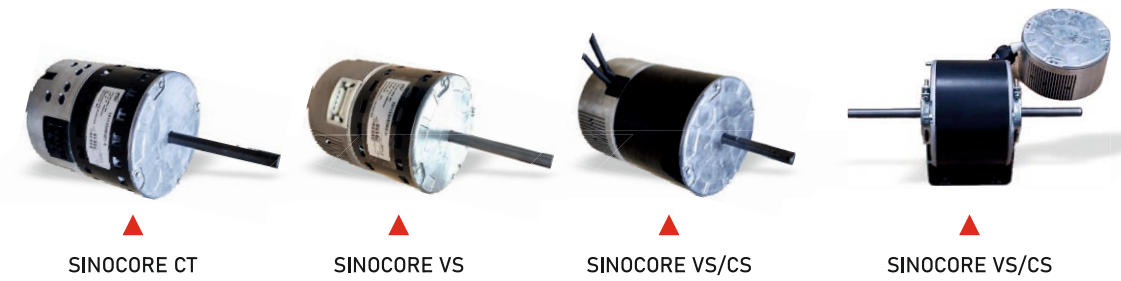
Features :

- Super-efficient BLDC motor for less power consumption
- Improved reliability and longer lifetime due to less temperature rise
- Low noise with improved design
- Wide operating voltage gives constant output with fluctuating voltage
- Remote control with IR or RF sensor



ENERGY EFFICIENT EC MOTORS

NEMA FRAME 48



Specifications :

EC Motors, 140 frame, 300-1800RPM, 115V / 208-230V AC, 50/60Hz, 100W-750W, 10 Poles, B-Class, CW / CCW, Copper & Aluminium Windings, Constant torque / variables speeds / constant speed motors
Shell type construction

Applications :

Furnaces, Air Handlers, Outdoor units, Fan coil units

Features :

- Electronically protected
- 6kv Surge protection
- Encapsulated electronics for superior moisture protection
- Constant torque rotors with programmable / Torque at 5Taps
- Easy integration into Furnace/Air handlers/Outdoor Units/ FCU applications
- Maintain system efficiency at variable static pressures
- Efficient motors for AO applications
- PWM optimisable for Speed/Torque
- Programmable ON/OFF delay option
- Variable mounting options as per requirement



ENERGY EFFICIENT EC MOTORS

NEMA FRAME 42



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MAXFLUX CS/VS



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MAXFLUX CS/VS

Specifications :

EC Motors, Ø120 frame, 300-1800RPM, 115V / 208-230V AC, 50/60Hz, 50W-350W, 10 Poles, B-Class, CW / CCW, Copper & Aluminium Windings, Variables speed / constant speed motors Shell type construction.

Applications :

HVAC Outdoor units, Fan coil units, Commercial & Industrial Fans & Blowers, Window Air Conditioners, Air Curtains.

Features :

- . Electronically protected.
- . Encapsulated electronics for superior moisture protection.
- . Compact motor with best Efficiency.
- . Variable Mounting options as per system.
- . High Efficiency motor at different speed levels.
- . Constant & variable speed control options.
- . IP protected motor.
- . Options to refit against induction motor to improve motor efficiency.
- . Controller remote mounting options available.



REVIVE-CT MOTORS

NEMA FRAME 48



Specifications :

EC Motors, Ø120 frame, 300-1800RPM, 115V / 208-230V AC, 50/60Hz, 50W-350W, 10 Poles, B-Class, CW / CCW, Copper & Aluminium Windings, Variables speed / constant speed motors Shell type construction.

Applications :

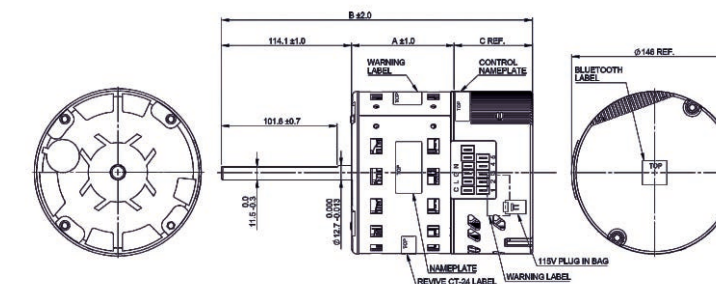
HVAC Outdoor units, Fan coil units, Commercial & Industrial Fans & Blowers, Window Air Conditioners, Air Curtains.

Features :

- . Electronically protected
- . Encapsulated electronics for superior moisture protection
- . Compact motor with best Efficiency
- . Variable Mounting options as per system
- . High Efficiency motor at different speed levels
- . Constant & variable speed control options
- . IP protected motor
- . Options to refit against induction motor to improve motor efficiency.
- . Controller remote mounting options available.

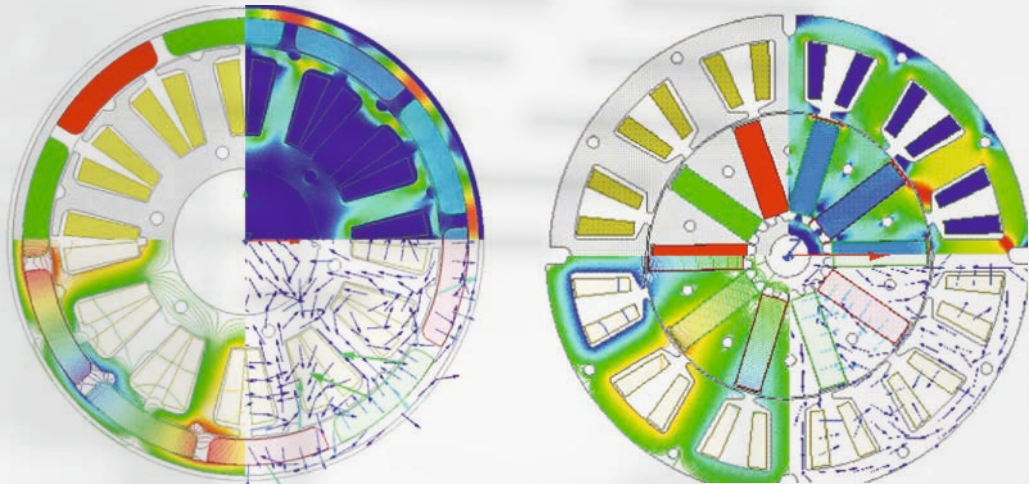


Catalogue No.	HP	Voltage (V)	RPM/Speeds	Current (A)	Rotation	Tap Voltage(V)
REVIVE CT-24	1	115/208~230	1050/Var	10.6/ 6.5	CW/CCW	24
REVIVE CT-24	3/4	115/208~230	1050/Var	9.3/6.2	CW/CCW	24
REVIVE CT-24	1/2 - 1/3	115/208~230	1050/Var	6.4/4.4	CW/CCW	24
REVIVE CT-230	1	115/208~230	1050/Var	10.6/ 6.5	CW/CCW	230
REVIVE CT-230	3/4	115/208~230	1050/Var	9.3/6.2	CW/CCW	230
REVIVE CT-230	1/2 - 1/3	115/208~230	1050/Var	6.4/4.4	CW/CCW	230



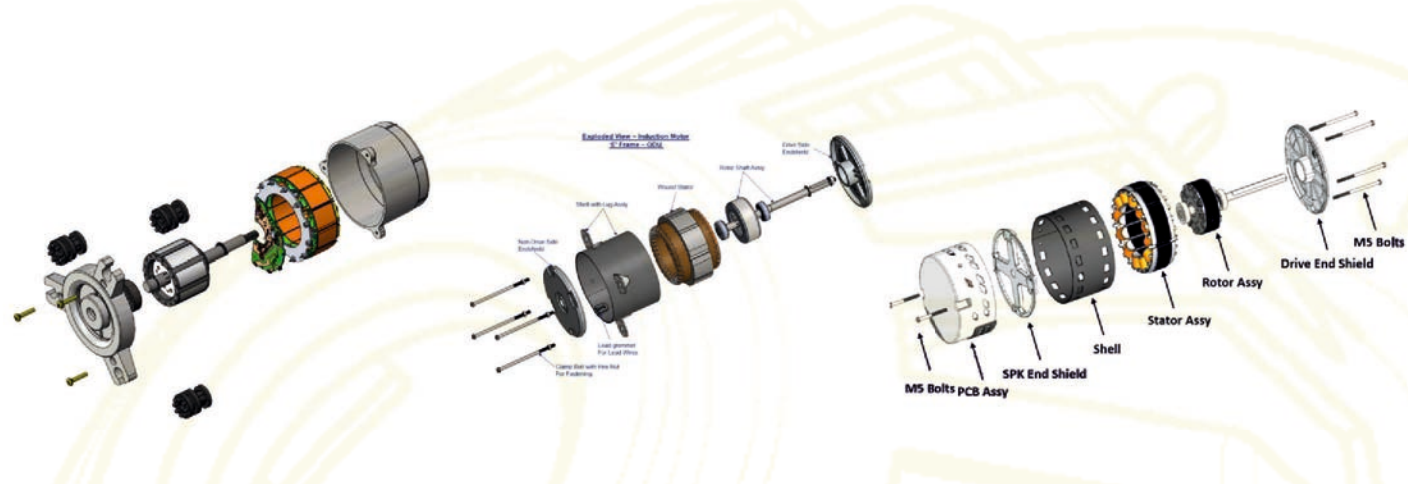
HP	DIM. A	DIM. B	WEIGHT (Kg)
1/2 - 1/3	89.8	273.1	4.1
3/4 1	15.2	298.5	5
1	115.2	298.5	5.8

ELECTRICAL DESIGN CAPABILITIES

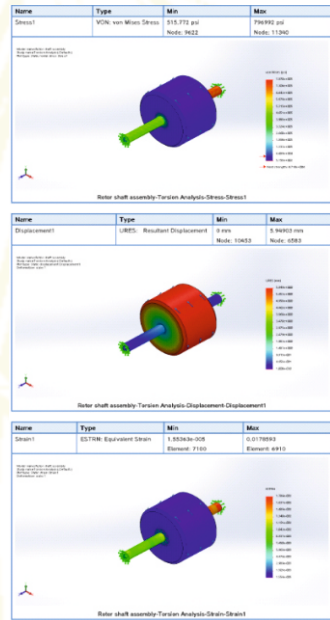


- Electromagnetic design simulations performed by Ansys maxwell and J-mag
- Motor lamination optimization
- Cogging torque optimization to meet low noise
- Power balance and efficiency mapping to identify Max Effi points
- Torque ripple improvement for constant operation
- Demagnetization Effect to ensure the Magnetic field reliability
- Thermal analysis to identify hotspots and temperature effect
- Ld/Lq inductance plot for better controlling of IPM motors
- Eccentricity simulations

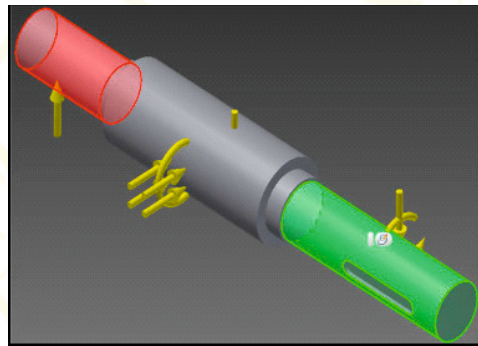
MECHANICAL DESIGN CAPABILITIES



Rotor Shaft Subassembly torsion analysis



Rotor Shaft Subassembly Modal Analysis



TESTING CAPABILITIES ENRICHED WITH US

Electrical Testing :

- Dynamometer Testing
- Lock Rotor Testing setup
- High Voltage Test Facility
- Draught Free Oven
- Climatic Chamber
- Salt Spray Test Apparatus
- Semi Anechoic Chamber
- Surge Test
- Thermal Shock Chambers



TESTING CAPABILITIES ENRICHED WITH US

Mechanical Testing :

- 3D Vision Measuring Equipment for small clearances
- Real time Noise Analysis
- Vibration FFT Analysis
- Surface Roughness Testing
- Thermal Imaging Instruments



MANUFACTURING CAPABILITIES

PICL has set up flexible production lines to manufacture around 250 + SKUs, with an installed capacity of 7 million motors/annum



CERTIFICATIONS

Quality management certifications such as ISO9001, ISO14001, ISO45001, UL, CB , IEC and others give the organization a competitive advantage

