NG-Series

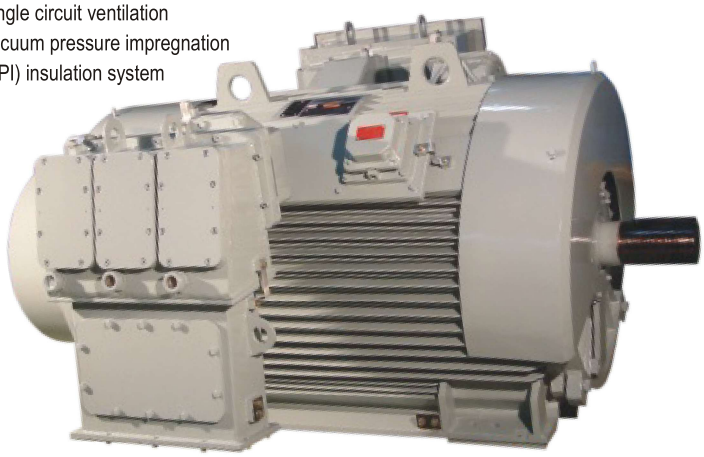
Global Series Energy Efficient Motors

Crompton Greaves G-Series (Global Series) Motors belong to family of energy efficient, Totally enclosed fan cooled (TEFC) state-of-art, squirrel cage motors. These motors are extremely efficient, even at partial load, and they have very low noise level. Efficiency is maximized by effectively utilizing materials, minimizing losses and optimized fin design. Further more ,due to reduced fan and core losses, there is no sharp drop in the efficiency curve at partial load.

The components are designed using finite element analysis of electromagnetic, structural, thermal and air flow, which ensures better stress distribution and high structural rigidity. Adequate steps have been taken in the electrical design process to make sure the natural frequencies of stator teeth and core remain well away from the field forcing frequency. Appropriate selection of tolerances and fits in addition to good manufacturing processes facilitates maintaining high level of quality. The rotor and fans are separately balanced on precision balancing machine to very stringent grades. All these put together, results in extremely low vibration levels.

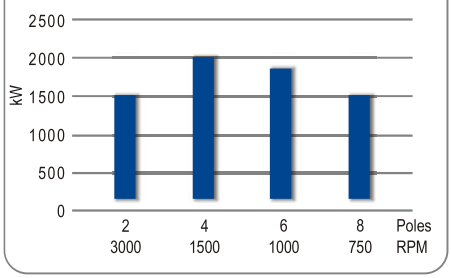
The motors are totally enclosed (IP55) surface cooled through a fan mounted on the shaft (IC4A1A1) or separately mounted (IC4A1A6) along with the following features

- Axial ventilation rotor design
- Machined stator
- Single circuit ventilation
- Vacuum pressure impregnation
- (VPI) insulation system

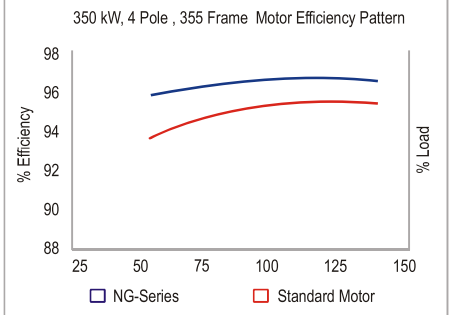


NG-Series Foot Mounted, 400M Frame Motor

NG-Series Output Chart, Upto 13.2KV, 50Hz



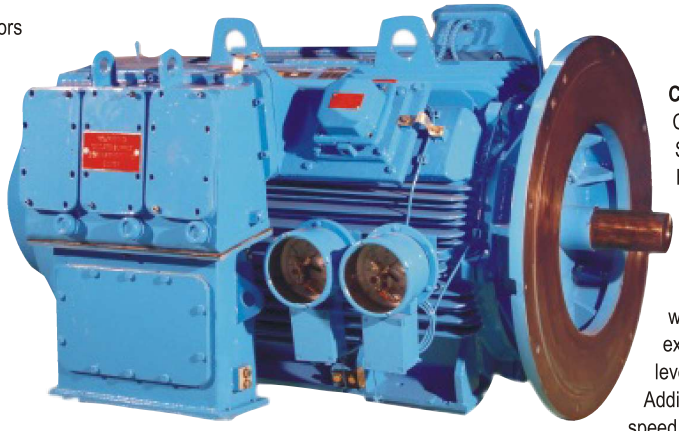
Value For Money



The efficiency curve of standard motor is droping in nature i.e. there is a sharp fall in efficiency at part loads. But NG-series motors have an almost flat efficiency curve. Hence fall in efficiency is marginal. Thus energy saving is significant even at part loads.

Salient Features

- Energy efficient surface cooled motors
- Robust steel frame
- Solid deep rotor bars in single cage
- Special double cage as per driven equipment requirement
- Antifriction bearings
- Dynamically balanced rotors
- Stringent quality checks
- Class 'F' insulation with class 'B' temperature rise
- High efficiency
- Low noise levels
- Low vibration levels
- Ease of maintenance



NG-Series Foot and Flange Mounted, 315M Frame Motor

CGL's Motor Solutions

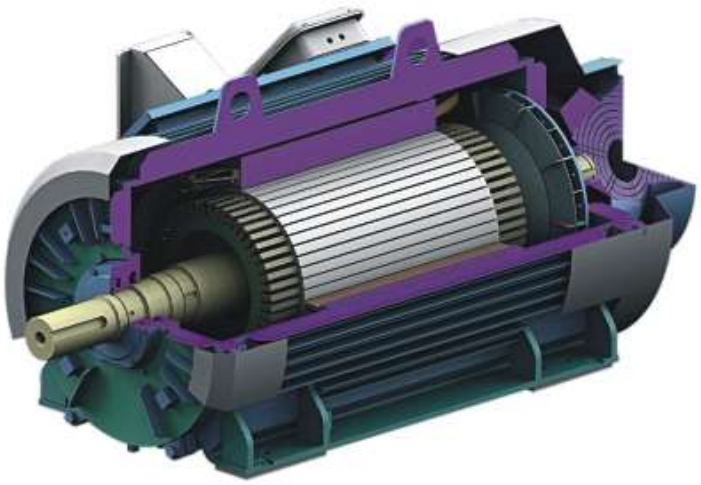
CG deliver variants of the NG-Series motor (with 13.2kV 60Hz. higher poles/low speed). Special mounting arrangement can also be built as per customer requirement. CG also supply configurations of G-Series motors with sleeve bearings, double shaft extension, low vibration, low noise levels , motors for hazardous areas. Additional sensors (vibration sensors, speed sensor, contact thermometer) can be provided to compliment motor monitoring and fault protection units.

For optimum performance and maximum life NG-Series motors are built with axial ventilation rotor design with machined stator core that improves heat transfer thereby giving excellent thermal performance. This is further aided by streamlined internal air circuit design & vacuum pressure impregnation (VPI) insulation scheme which meets the requirement of Thermal class F (temperature limit 155°c) though the motors are rated for class B temperature rise operation.

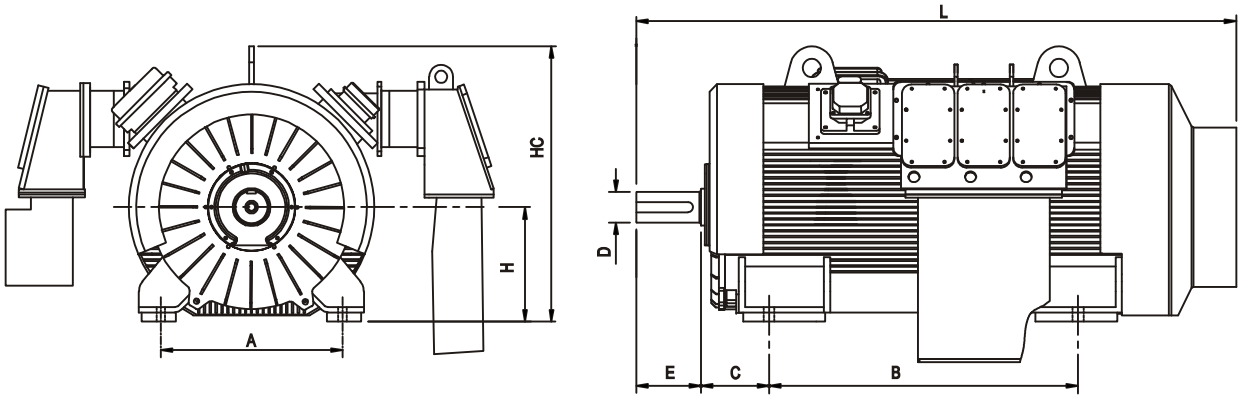
NG-Series

Standard Range

- Totally enclosed fan cooled (TEFC)
- 100 to 2000kW at 50 Hz
- Voltages from 380 V to 13200 V
- Shaft heights 315 - 630mm 12.4 - 22.0 inches
- Horizontal or vertical
- IP55/IP56, IC4A1A1 / IC4A1A6
- 2 Pole to 12 Pole
- Standards IEC60034 / IS325
- Motors for hazardous areas
- Motors for VFD application



General Arrangement Drawing



Overall Dimensions of Motor

Type	Poles	A	B	C	ØD	E	H	HC	L
NG 315 S	2 - 6	508	800	216	70 - 95	140 - 170	315	790	1700
NG 315 M	2 - 6	508	900	216	70 - 95	140 - 170	315	790	1800
NG 315 L	2 - 6	508	1000	216	70 - 95	140 - 170	315	790	1900
NG 355 S	2 - 6	610	900	250	85 - 110	170 - 210	355	900	1845
NG 355 M	2 - 6	610	1000	250	85 - 110	170 - 210	355	900	1945
NG 355 L	2 - 6	610	1120	250	85 -110	170 - 210	355	900	2065
NG 400 S	2 - 8	686	900	280	85 - 120	170 - 210	400	1000	1980
NG 400 M	2 - 8	686	1000	280	85 - 120	170 - 210	400	1000	2080
NG 400 L	2 - 8	686	1120	280	85 - 120	170 - 210	400	1000	2220
NG 450 S	2 - 8	750	1000	315	85 - 125	170 - 210	450	1100	2150
NG 450 M	2 - 8	750	1120	315	85 - 125	170 - 210	450	1100	2325
NG 450 L	2 - 8	750	1250	315	85 - 125	170 - 210	450	1100	2525

All dimensions are in mm

† GD500, GD560 are also available on request

Note : Due to continuous improvements and developments, the above data is likely to be changed without prior notice.

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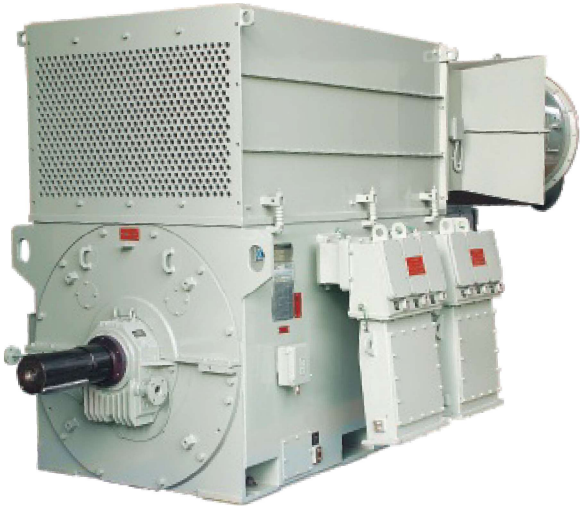
TP -Series

High Voltage Closed Air Circuit Air Cooled (CACA) TP Series Induction motors

The TPC range of induction motors comes under the offerings in squirrel cage rotor (SCR) design. These motors belong to TP range general purpose motors having totally enclosed construction. TPC range consist of foot mounted IMB3 IS 2253 / IEC 60034-7 totally enclosed IP55 IS4691 / IEC 60034-5 cooled with air to air IEC 60034-6 heat exchangers. VTPC range is a variant of the TPC range modular design with IMV1 flange mounted construction. CGL also offers robust design when used with variable voltage variable frequency drives, the BTPC range have blower mounted heat exchanger for most stringent applications and high output low speed designs. Heat exchangers for the BTPC range are built with IC6A1A6 or IC6A6A6 primary and secondary air circuits have either shaft mounted fans or separately mounted blowers.

The TP range of motors has been designed to meet varying application demands while maintaining the performance and high level of quality.

TP range meets requirement of various Industrial Sectors namely power, irrigation, oil & gas, cement, sugar, textile, steel, mining, chemical Industries.



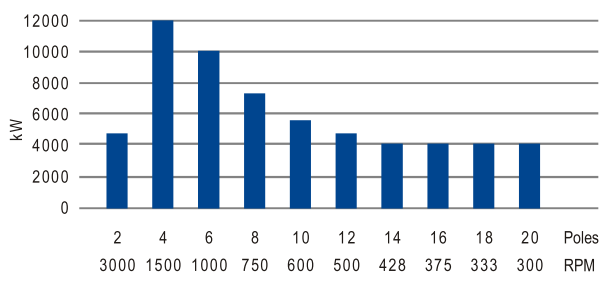
IC6A1A6 Cooling Type, Oil Lubricated 630G Frame CACA Motor

Low Vibration, Less Noise.....More Peace

CG TP series motors has been engineered using the latest technologies to achieve effective utilization of material for optimal performance. The heat exchangers have been thoroughly analyzed using advanced computational fluid dynamics ensuring better heat transfer for higher power output.The fan duct covers are internally lined with noise absorbing material to achieve lowest noise levels. TP range comply to IEC 60034-9 for noise and IEC 60034-14 for vibration standards.

Rotors are generally designed as rigid however flexible rotors are also offered depending on the applications. Rotor reliability is ensured by the use of latest design tools. Fabricated mild steel body structure ensures low vibration characteristics for longer life and maintenance free operations. TP range of CACA motors lends itself to highly versatile modular concept. Its heat exchangers can be easily switched over from Closed Air Circuit Air Cooled (CACA) to Closed Air Circuit water Cooled (CACW) enclosure to enhance the output of motor.

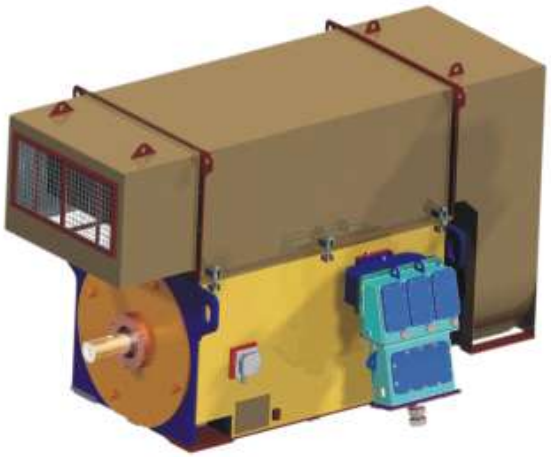
TP Series Output Chart, Upto 13.2KV, 50Hz



Motor of Choice

Crompton Greaves CACA range of motors are designed to deliver and perform in most demanding & strenuous operations. CG engineers use the latest technologies that help to build the motors with high commitment to performance, reliability and quality.

I6A1A1 Cooling Type, TPC 500 Frame with Silencer



CGL's Motor Solutions

CG deliver variants of the TP-Series motor (with 13.2KV 60Hz. higher poles/low speed). Special mounting arrangement can also be built as per customer requirement. CG also supply configurations of TP-Series motors with sleeve bearings, double shaft extension, low vibration, low noise levels & motors for hazardous areas. Additional sensors (vibration sensors, speed sensor, contact thermometer) can be provided to compliment motor monitoring and fault protection units.

TP -Series

General Arrangement Drawing

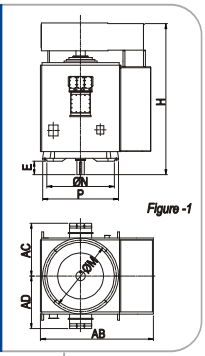


Figure -1

General Arrangement Drawing

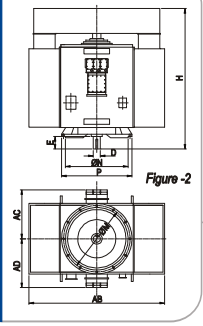


Figure -2

Overall Dimensions of Motor

Type	Poles	D	E	ØM	ØN	P	H	AB	AC	AD
VTPC 740 C	4 - 6	100	210	740	680	800	2200	1500*	925	925
VTPC 740 D	4 - 6	100	210	740	680	800	2400	1500*	925	925
VTPC 940 D	4 - 10	125	210	940	880	1000	2550	2050*	1000	1000
VTPC 940 E	4 - 10	125	210	940	880	1000	2750	2050*	1000	1000
VTPC 1080 D	4 - 10	125	210	1080	1000	1150	2550	2350*	1000	1000
VTPC 1080 E	4 - 10	125	210	1080	1000	1150	2750	2350*	1000	1000
VTPC 1080 F	4 - 10	125	210	1080	1000	1150	2950	2350*	1000	1000
VTPC 1220 D	4 - 12	125 - 140	210 - 250	1220	1120	1320	2750	2550^	1125	1125
VTPC 1220 E	4 - 12	125 - 160	210 - 250	1220	1120	1320	2950	2550^	1125	1125
VTPC 1220 F	4 - 12	140 - 160	210 - 250	1220	1120	1320	3150	2550^	1125	1125
VTPC 1700 E	4 - 12	180 - 200	300	1700	1600	1800	3525	3150^	1275	1275
VTPC 1700 F	4 - 12	180 - 200	300	1700	1600	1800	3725	3150^	1275	1275
VTPC 1700 G	4 - 12	200	300	1700	1600	1800	3925	3150^	1275	1275
VTPC 2000	6 - 14	200 - 250	300 - 350	2000	1900	2200	4000	4000	1600	1600

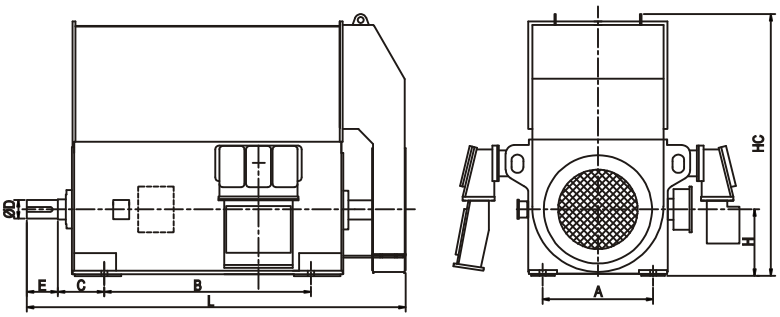
*All dimensions are in mm * Refer figure -1 ^Refer figure -2*

† VTPC2000 is also available on request

Technical Specification

Shaft Height IMB3	: 355 - 1120 mm
Frame Size IMV1	: 740 to 2000
Type of Mounting	: IMB3,IMV1
Cooling	: IC6A1A1/ IC6A1A6 / IC6A6A6
Frame Construction	: Fabricated Steel
Rotor Construction	: Squirrel Cage
Insulation	: Class H,F with VPI
Standards	: IEC 60034 / IS:325
Enclosures	: Totally Enclosed Air Cooled
Degree of Protection	: IP55 as per IS:4691

General Arrangement Drawing



Overall Dimensions of Motor

Type	Poles	A	B	C	ØD	E	H	HC	L
TPC 355 D	2 - 6	610	1000	315	85 - 100	170 - 210	355	1450	2050 - 2250
TPC 400 E	2 - 6	686	1250	315	85 - 110	170 - 210	400	1800	2300 - 2425
TPC 450 E	2 - 10	750	1250	315	85 - 125	170 - 210	450	1775 - 2130	2375 - 2550
TPC 450 F	2 - 10	750	1400	315 - 570	85 - 125	170 - 210	450	1775 - 1950	2375 - 2550
TPC 500 F	2 - 10	850	1400	335 - 570	110 - 140	210 - 250	500	1900 - 2150	2650 - 3250
TPC 500 H	2 - 10	850	1800	335 - 570	110 - 140	210 - 250	500	1900 - 2150	3050 - 3650
TPC 560 F	2 - 12	950	1400	355 - 570	125 - 160	210 - 250	560	2250 - 2500	2700 - 3275
TPC 560 G	2 - 12	950	1600	355 - 570	125 - 160	210 - 250	560	2250 - 2500	2900 - 3475
TPC 630 F	2 - 12	1060	1400	375 - 570	140 - 160	250 - 300	630	2300 - 2600	2400 - 2775
TPC 630 G	2 - 12	1060	1600	375 - 570	140 - 180	250 - 300	630	2300 - 2600	2600 - 2975
TPC 630 H	2 - 12	1060	1800	375 - 570	140 - 180	250 - 300	630	2300 - 2600	2800 - 3175
TPC 710 G	2 - 12	1180	1600	375 - 630	160 - 180	250 - 300	710	2400 - 2600	2925 - 3650
TPC 710 H	2 - 12	1180	1800	375 - 630	160 - 200	300 - 350	710	2400 - 2600	3125 - 3800
TPC 800 H	2 - 12	1400	1800	375 - 630	200 - 350	300 - 350	800	2800 - 3000	3125 - 3900
TPC 900 J	4 - 12	1600	2200	375 - 630	200 - 350	300 - 350	900	3000 - 3200	3200 - 4000
TPC 1000 J	4 - 12	1800	2200	375 - 630	200 - 350	300 - 350	1000	3200 - 3500	3300 - 4200

All dimensions are in mm

† TPC800 and TPC900 are also available on request

Note : Due to continuous improvements and developments, the above data is likely to be changed without prior notice.

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High Voltage Closed Air Circuit Water Cooled (CACW) UW Series Induction motors

The UWC range of induction motors comes under the offerings in squirrel cage rotor (SCR) design. These motors belong to UW range general purpose motors having totally enclosed construction. The UWC range consist of foot mounted IMB3 15: 2253 / IEC 60034-7 totally enclosed self cooled IP55 IS4691 / IEC 60034-5 cooled with air to water IC 8AIW7- IEC 60034-6 heat exchangers.

VUWC range is a variant of the UW range modular design with IMV1 flange mounted construction.

The UWR range of induction motors are slip ring design offerings

The UW range of motors has been designed to meet varying application demands while maintaining the performance and high level of quality. TP range meets requirement of various Industrial Sectors namely oil & gas, cement, sugar, textile, steel, mining, chemical Industries.

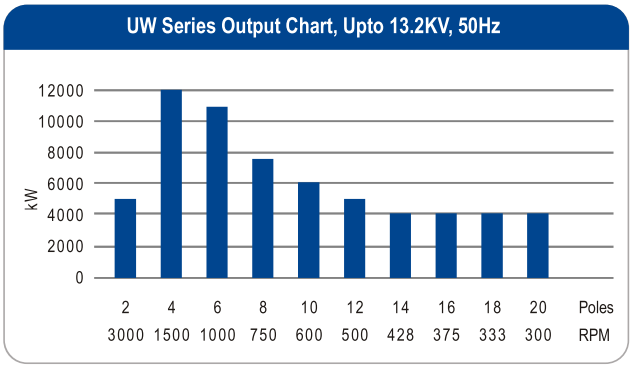
VUWC-Series, 500M Frame Motor

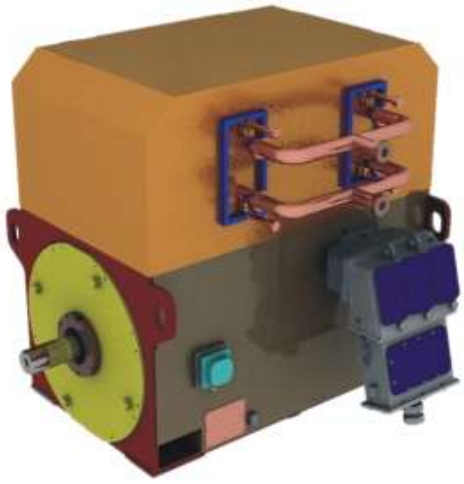
Work Horse for the Industry

CG UW Series packs high power densities i.e these motors are characterized by high power to weight ratio. These motors have fabricated steel stator frame unit with twin circuit internal air paths.

Ensuring a very low vibration level enhances the life of motor, this is achieved through a sturdy construction and careful three stage balancing of rotor to very high accuracy as per ISO 1940 Shafts are subjected to stringent stage wise quality checks after fabrication & machining UW range comply to IEC 60034-9 and IEC 60034-14 noise and vibration standards.

Rotors are generally designed as rigid however flexible rotors are also offered depending on the application. Rotors reliability is ensured by the use of latest design tools. Fabricated mild steel body structure ensures low vibration characteristics for longer life and maintenance free operations. UW range of motors lends itself to highly versatile modular concept.





Motors that you can depend on

CG CACW range of motors are designed to deliver and perform in most demanding & strenuous operations. CG engineers use the latest technologies that help build motors with high commitment to performance, reliability and quality.

CG's Motor Solutions

CG deliver variants of the UW-Series motor (with 13.2KV 60Hz. higher poles/low speed). Special mounting arrangements can also be built as per customer requirement. CG also supply configurations of UW-Series motors with sleeve bearings, double shaft extension, low vibration, low noise levels , motors for hazardous areas. Additional sensors (Water leakage detector, water flow detector, vibration sensors, speed sensor, contact thermometer) can be provided to compliment motor monitoring and fault protection units.