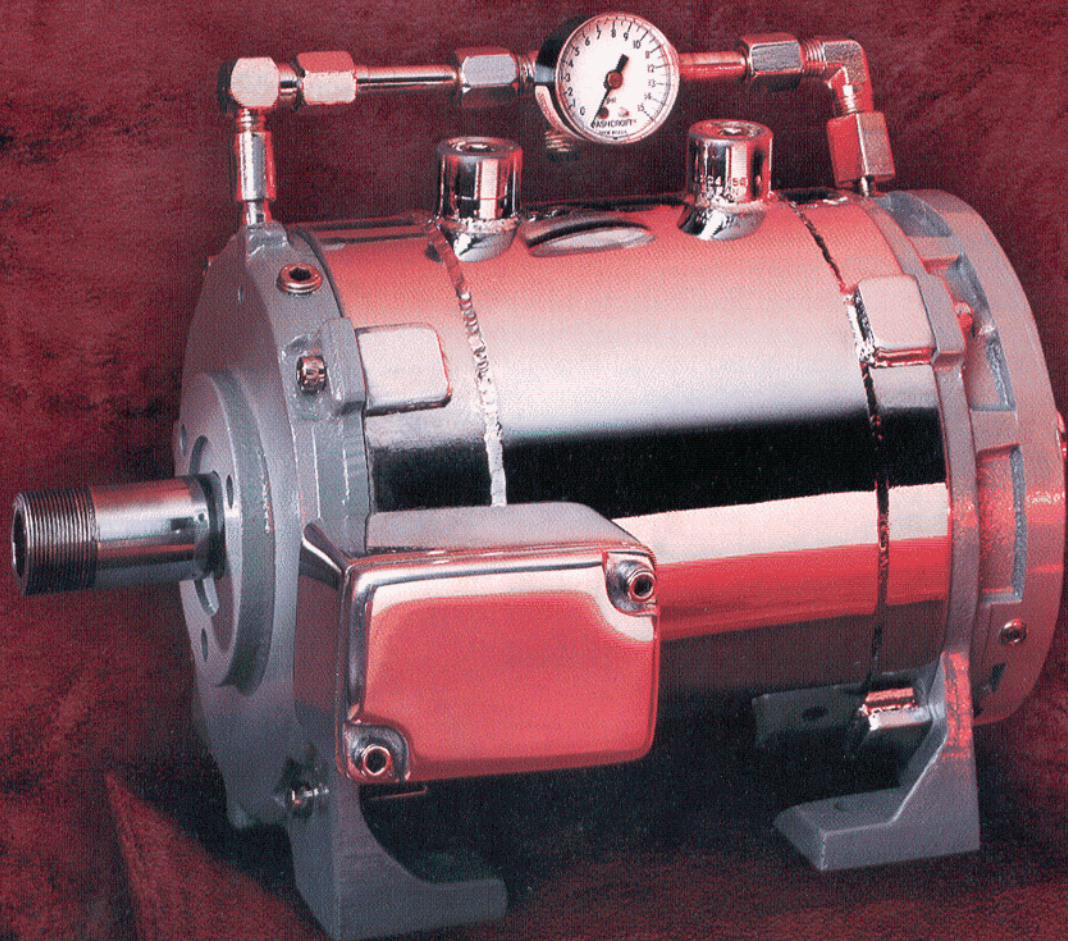
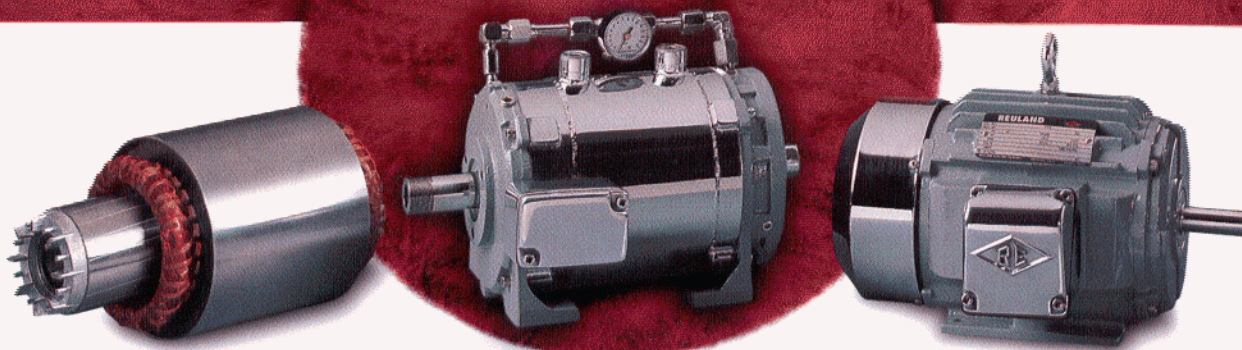


HIGH-SPEED INVERTER DUTY A.C. MOTORS



REULAND ELECTRIC
Manufacturer of Electric Motors and Related Products



REULAND HIGH-SPEED INVERTER DUTY A.C. MOTORS: PRIME MOVERS FOR TODAY AND TOMORROW

Keeping OEMs Competitive In Changing Times

Demands for increased productivity across all industries and processes are pushing today's conventional prime mover beyond its electrical and mechanical limits. To answer this need, Reuland offers a new generation of Inverter Duty Motors providing greater speed, broader performance ranges and higher cycle times in innovative designs that set new benchmarks for quality, reliability and versatility.

Superior Performance By Design

Reuland Inverter Duty Motors maximize horsepower-to-frame ratios offering flexible design parameters that can be tailored to a wide variety of load/speed ranges. High torque at low speeds and wide constant horsepower ranges are assured, together with sustained speeds of 60,000 RPM and beyond using Reuland's industry-leading cooling and lubrication technology.

Liquid-Cooled, Air-Cooled And Partial Motor Configurations

Reuland Inverter Duty Motors are available in configurations to suit your specific performance and application requirements, including Liquid-Cooled, Air-Cooled and Partial Motor versions. Popular applications include machine tool centers, milling machines, grinders, pumps, test stands, index drives, centrifuge drives and rapid acceleration/deceleration drives. To make implementation efficient and cost-effective, Reuland Inverter Duty Motors retain familiar NEMA "T" frame dimensions for most applications (see NEMA tables, pages 4 & 5).

THE REULAND DIFFERENCE

Meeting the needs of today's industries and anticipating the engineering challenges of the future are Reuland's goals for every motor that leaves the factory. To achieve these goals, we work hand in hand with our customers through all phases of design, manufacture and implementation to ensure that our brilliant designs perform just as brilliantly on the job.

Product Quality Is Our Mirror

At Reuland, we believe that product quality most accurately reflects our pride, professionalism and commitment to our customers. As part of our "total ownership" approach to quality, we develop the design and produce the prototype. We even operate our own pattern shop. To provide optimum



electrical characteristics, we hand-wind every stator. To assure ultimate reliability, we painstakingly insulate every critical winding. Additionally, our digitally-controlled machining process assures accurate alignment and absolute product consistency.

We then subject every product to an exhaustive process of testing, retesting

and testing again. Of course, the ultimate validation of Reuland quality can be found in the many thousands of Reuland motors that flawlessly serve a wide array of industries and applications throughout the world every day.

Our Only Standard Is Excellence

Because there are no "standard customers" at Reuland, we have no "standard solutions" to a customer's needs. Every application is treated as a unique challenge by our team of electrical and mechanical designers, manufacturing engineers, quality control technicians, customer support staff and account managers. At Reuland, we succeed only to the degree to which we help our customers succeed. That's The Reuland Difference.

HIGH-SPEED INVERTER DUTY A.C. MOTORS

Mechanical Features

Enclosures	Fan-Cooled (Totally Enclosed); Force-Ventilated (Totally Enclosed); Non-Ventilated (Totally Enclosed); Liquid-Cooled; Air-Purged Provisions; Partial Motor (Rotor/Stator Set).
Bearings	High-Precision to suit specific applications.
Bearing Lubrication	Pre-Lubricated Sealed or Shielded; Re-Greasable Open; Oil Jet; Mist-Lubricated with Reservoir, Regulator, Pressure Gauge and Manifold.
Materials	Stainless-Steel Liquid-Cooled Shells; Cast Aluminum; Cast Iron; Corrosion-Proof Features, where required.
Balance and Runout	Precision and/or NEMA Standard.
Speeds	9,000 RPM (449T Frame) to 40,000 RPM (145T Frame). Special designs available for speeds beyond this range.
Auxiliaries	Encoders; Resolvers; Gear and Probe Speed Pickups; Tachometer Generators.
Insulation	Class B, F, H and VPI.
Shafts	Standard NEMA T and TS; Taper; Straight; Solid or Hollow; Splined; Standard or Stainless. Special designs available.
Mounting	Foot or Footless; Precision Bracket Mounting; Conventional C or D Flange; Metric DIN Flanges.
Gear Reduction	All types available.

Electrical Features

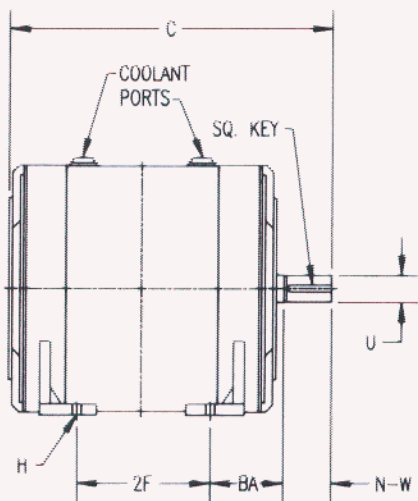
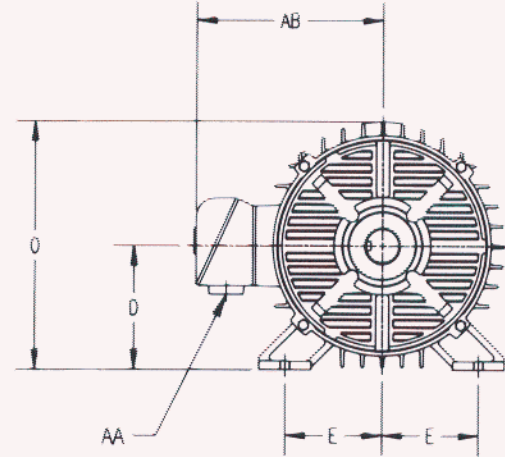
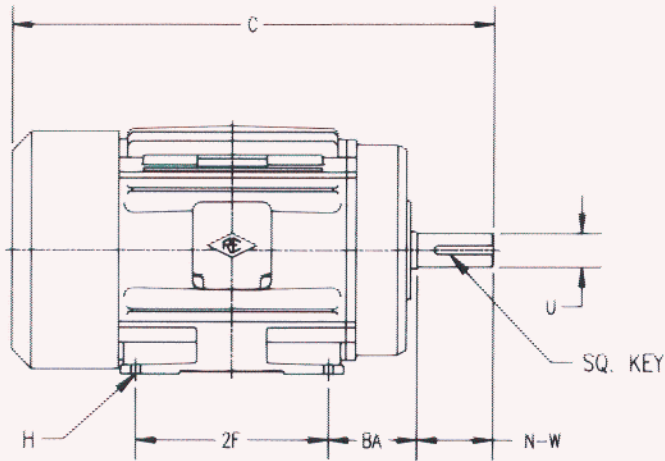
Voltage	Up to 600 VAC
Phase	3-Phase
Frequency	Up to 2000 Hz
Volts/Hertz Range	Per Customer Requirements
Number of Poles	2 to 36
Windings	Single or Multiple
Variable Frequency Control	Available to suit individual customer requirements.

Reuland Design Advantages

- **Advanced Electrical Design** supports frequencies above conventional 2000 Hz level.
- **Special Rotor Dynamics and Analysis Design** allows speeds beyond the peripheral speed of conventional cast rotors.
- **Advanced Lubrication** (oil-mist, oil-air, oil-jet or grease) supports greater bearing speeds and longer service life.
- **Auxiliary Cooling** using liquid or forced air systems reduces thermal limits associated with high RPM, extended constant horsepower ranges and low speed/high torque ranges.
- **High Power Density Design** maximizes horsepower-to-frame ratios, offers more compact packaging than conventional designs.

REULAND HIGH-SPEED INVERTER DUTY A.C. MOTORS

NEMA Frame Tables

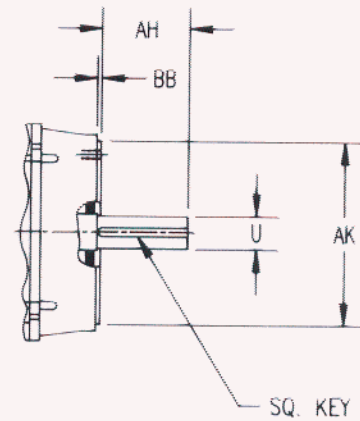
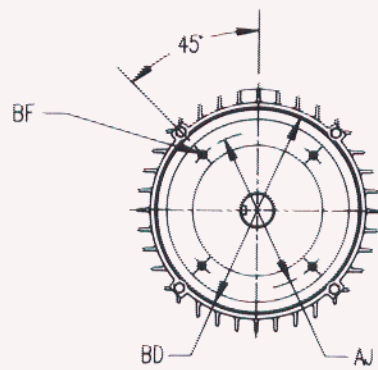
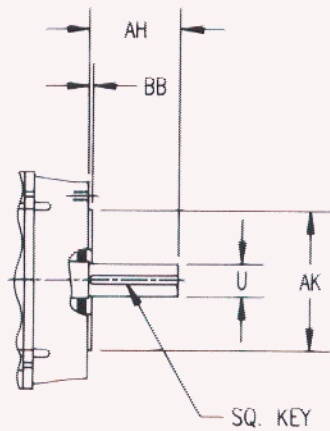


TENV (Totally Enclosed Non-Ventilated)
DPFC (Drip-Proof Fan Cooled)
DPAV (Drip-Proof Auxiliary Ventilated)
TEFC (Totally Enclosed Fan Cooled)
TEAV (Totally Enclosed Auxiliary Ventilated)
DP (Open Motor No Fan)
TELC (Liquid Cooled, Precision)

Standard NEMA

FRAME	C					D	E	2F	H	O	P	U	N-W	AB	BA	SQ. KEY	AA
	TELC	OPEN TENV	DPFC TEFC	DPFC TEAV	DPFC TEAV												
NEMA (IN.)	56	11.25	11.25	13.63	16.88	3.50	2.44	3.00	34 x .75	7.50	8.00	0.625	1.88	6.38	2.75	0.188	0.75
	56H	11.25	11.25	13.63	16.88	3.50	2.44	5.00	34 x .75	7.50	8.00	0.625	1.88	6.38	2.75	0.188	0.75
	145T	11.63	11.63	14.00	17.50	3.50	2.75	5.00	0.34	7.50	8.00	0.875	2.25	6.38	2.25	0.188	0.75
	184T	13.63	13.63	16.63	19.88	4.50	3.75	5.50	0.41	9.25	9.50	1.125	2.75	7.18	2.75	0.250	0.75
	215T	17.63	17.44	20.50	24.25	5.25	4.25	7.00	0.41	11.00	11.50	1.375	3.38	9.00	3.50	0.312	1.00
	256T	22.63	22.63	25.75	30.25	6.25	5.00	10.00	0.53	12.68	12.87	1.625	4.00	10.00	4.25	0.375	1.25
	286T	25.00	25.00	27.00	33.63	7.00	5.50	11.00	0.53	14.25	14.50	1.875	4.62	12.25	4.75	0.50	1.50
	326T	27.00	27.00	30.63	36.38	8.00	6.25	12.00	0.66	16.88	15.50	2.125	5.25	14.00	5.25	0.50	2.00
	365T	29.75	29.75	32.14	38.39	9.00	7.00	12.25	0.66	17.88	17.75	2.375	5.88	14.00	5.88	0.625	3.00
	405T	34.00	34.00	39.75	46.75	10.00	8.00	13.75	0.81	20.50	20.75	2.875	7.25	18.50	6.62	0.75	3.00
	445T	39.75	39.75	45.81	52.81	11.00	9.00	16.50	0.81	22.62	23.06	3.375	8.50	19.06	7.50	0.875	3.00
	449T	48.25	48.25	54.31	61.31	11.00	9.00	25.00	0.81	22.62	23.06	3.375	8.50	22.81	7.50	0.875	4.00

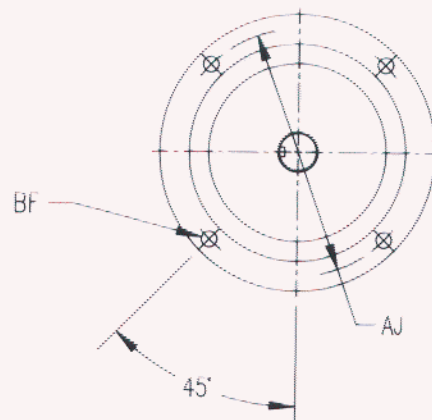
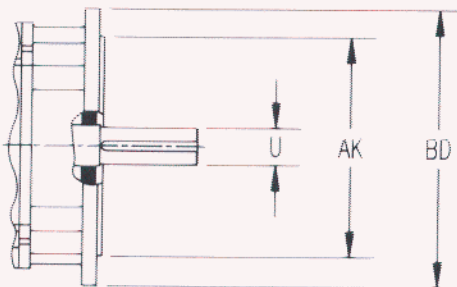
Please note: "C", "BA" and "O" dimensions may vary — consult factory.
 Data subject to change without notice.



NEMA "C" Flange

	FRAME	AH	AJ	AK	BB	BD	BF(4)
NEMA (IN.)	56C	2.06	5.875	4.50	0.16	6.50	3/8-16
	145TC	2.12	5.875	4.50	0.16	6.50	3/8-16
	184TC	2.62	7.25	8.50	0.25	9.00	1/2-13
	215TC	3.12	7.25	8.50	0.25	9.50	1/2-13
	256TC	3.75	7.25	8.50	0.25	10.00	1/2-13
	286TC	4.38	9.00	10.50	0.25	11.25	1/2-13
	326TC	5.00	11.00	12.50	0.25	14.00	5/8-11
	365TC	5.62	11.00	12.50	0.25	14.00	5/8-11
	405TC	7.00	14.00	12.50	0.25	15.50	5/8-11
	445TC	8.25	14.00	16.00	0.25	18.00	5/8-11

Data subject to change without notice.



NEMA "D" Flange

	FLANGE	AH	AJ	AK	BB	BD	BF(4)
NEMA (IN.)	56D	NOT AVAILABLE					
	145TD	2.25	10.00	9.00	0.25	11.00	0.53
	184TD	2.75	10.00	9.00	0.25	11.00	0.53
	215TD	3.38	10.00	9.00	0.25	11.00	0.53
	256TD	4.00	12.50	11.00	0.25	14.00	0.81
	286TD	4.62	12.50	11.00	0.25	14.00	0.81
	326TD	5.25	16.00	14.00	0.25	18.00	0.81
	365TD	5.88	16.00	14.00	0.25	18.00	0.81
	405TD	7.25	20.00	18.00	0.25	22.00	0.81
	N445TD	8.50	20.00	18.00	0.25	22.00	0.81

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REULAND HIGH-SPEED INVERTER DUTY A.C. MOTORS

Performance Table

3-PHASE
UP TO 600 VOLTS

Maximum horsepower at maximum speed requires adequate cooling and bearing lubrication.
Load horsepower may increase directly from base speed with constant volts/Hz with adequate cooling.

50°C AMBIENT

FRAME	SYN RPM 60 HZ BASE SPEED	60 HZ "MAXIMUM HP AND ENCLOSURE" STD. LAMINATION					"HIGH SPEED LIQUID COOLED"			ULTRA HIGH SPEED	
		DPFV	DPFC	TEFV	TEFC	TENV	MAX. SPEED STD. MOTOR	CONT. DUTY MAX HP* AT MAX SPEED	HERTZ AT MAX. SPEED	RPM	HP
145T	3600	5	5	4	4	2	25,000	25	416	40,000	75
	1800	5	4.5	4.5	4	2	21,000	25	700	33,000	75
	1200	4	2.75	2.75	2.5	1.5	19,000	25	950	30,000	75
	900	2	1.75	1.75	1.5	1	19,000	20	1266	30,000	50
	600	1.25	1	1	0.75	0.5	19,000	20	1900	30,000	50
184T	3600	12	12	10	10	4	19,000	35	316	30,000	110
	1800	12	11	11	10	4	16,500	35	550	25,000	110
	1200	5	4.5	4.5	4	3	15,000	35	750	23,000	110
	900	5	4.5	4.5	4	2	15,000	30	1000	23,000	100
	600	2.5	2.3	2.3	2	1	15,000	30	1500	23,000	100
215T	3600	23	23	18	18	6	15,500	50	258	28,000	160
	1800	23	20	20	18	6	14,000	50	466	21,000	160
	1200	12	10	10	9	5	12,500	50	625	19,000	160
	900	8.5	7	7	6	3	12,500	45	833	19,000	150
	600	5	4.5	4.5	4	3	12,500	45	1250	19,000	150
256T	3600	37	37	30	30	10	14,000	75	233	21,000	200
	1800	37	33	33	30	10	12,500	75	416	19,000	200
	1200	25	22	22	20	8	11,000	75	550	17,000	200
	900	20	17	17	15	7	11,000	70	733	17,000	180
	600	10	8	8	7	4	11,000	70	1100	17,000	180
286T	3600	62	62	50	50	15	12,000	100	200	19,000	250
	1800	62	55	55	50	15	11,000	100	366	17,000	250
	1200	37	33	33	30	12	10,000	100	500	15,000	250
	900	25	22	22	20	10	10,000	90	666	15,000	220
	600	16	14	14	12	7	10,000	90	1000	15,000	220
326T	3600	75	75	60	60	18	11,000	150	183	17,000	300
	1800	75	65	65	60	18	10,000	150	333	15,000	300
	1200	50	45	45	40	15	8,750	150	428	13,000	300
	900	37	33	33	30	10	8,750	140	583	13,000	275
	600	23	20	20	17	8	8,750	140	875	13,000	275
365T	3600	90	90	75	75	20	10,000	200	166	15,000	350
	1800	90	80	80	75	20	8,750	200	291	13,000	350
	1200	65	55	55	50	17	8,000	200	400	12,000	350
	900	50	45	45	40	12	8,000	180	533	12,000	320
	600	30	27	27	25	10	8,000	180	800	12,000	320
405T	3600	150	150	100	100	30	8,750	250	145	13,000	450
	1800	150	110	110	100	30	7,800	250	260	12,000	450
	1200	90	80	80	75	25	7,200	250	360	11,000	450
	900	75	65	65	60	20	7,000	200	466	11,000	400
	600	45	40	40	35	15	6,800	200	680	11,000	400
445T	3000	N/A	N/A	200	200	40	7,200	400	120	11,000	650
	1800	N/A	N/A	220	300	40	6,500	400	216	10,000	650
	1200	N/A	N/A	140	125	35	5,600	400	280	8,000	650
	900	N/A	N/A	115	100	30	5,500	350	366	8,000	500
	600	N/A	N/A	55	50	25	5,500	350	550	8,000	500
449T	3600	N/A	N/A	250	250	50	7,200	500	120	11,000	750
	1800	N/A	N/A	275	250	50	6,500	500	216	10,000	750
	1200	N/A	N/A	220	200	45	5,600	500	280	8,000	750
	900	N/A	N/A	175	150	40	5,500	400	366	8,000	600
	600	N/A	N/A	100	85	35	5,500	400	550	8,000	600

*Maximum HP at maximum speed requires adequate cooling and bearing lubrication.

Load HP may increase directly from base speed with constant Volts/Hz if cooling is adequate.

Next smaller NEMA frame mounting available by shifting back foot hole forward to NEMA 2F dimension.

Where drive requires more than 1000 Hz, special ultra-high frequency lamination is available.

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REULAND ELECTRIC

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