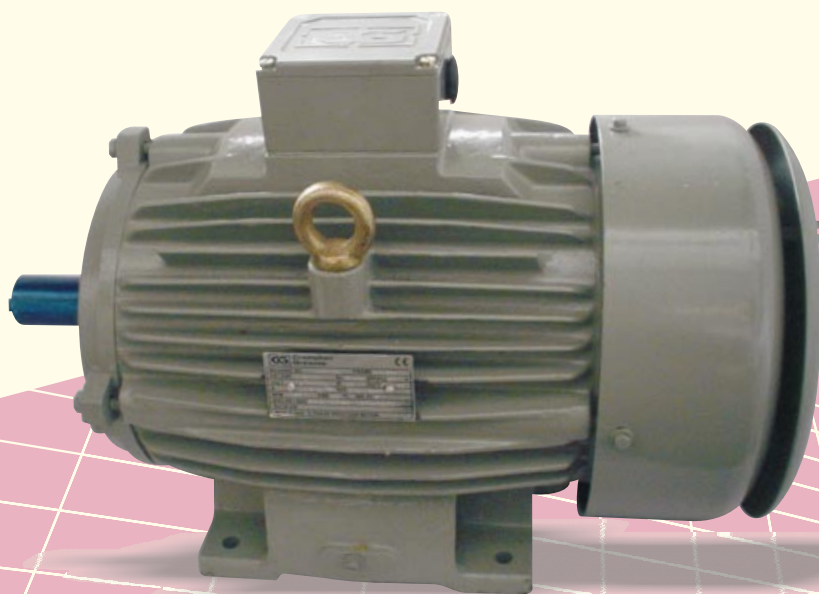


**Energy Saver  
Motors for  
TEXTILE  
MACHINERY**



## Crompton Greaves Motors for Textile Applications

Crompton Greaves Motors are available for all textile applications - right from ginning to processing of cloth. They are designed, both mechanically and electrically, to suit the characteristics of the driven machines and to give trouble-free and economical service, for a long time.

As the Textile Motors are expected to work continuously (24 X 7), Energy Efficient Motor usage will go a long way in saving Energy Bills. CGL Textile Motors are specifically designed to have Efficiency Level 1 or superior.

A distinctive design feature for textile motors is unique 'clean flow' construction except for loom & card motors which are naturally ventilated.

Textile motors normally operate in fluff-laden environments. It is therefore important to design cooling arrangement in such a way that the ventilation is not choked. This is achieved by CGL's unique Clean Flow Arrangement.

The 'Clean flow' construction of Crompton Greaves Textile motors prevents choking of the ventilation passages - ensures that the fluff sucked in from one end, comes out of the other. Wing-nuts (instead of conventional bolts) are provided on the enclosure-plate. So, whenever the need arises to clean the passages, the end-plate can be unscrewed with one's bare fingers.

### General Construction

#### Enclosure & Cooling

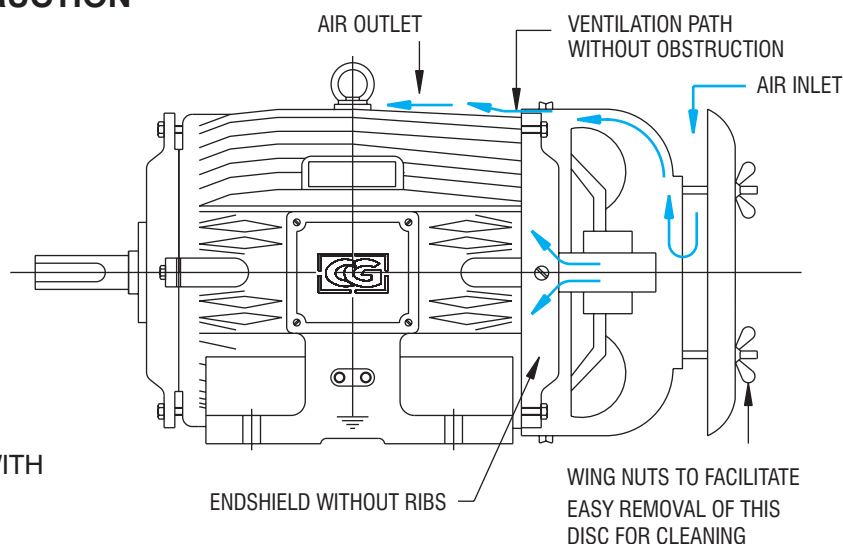
The windings and all working parts are completely enclosed in a high quality, cast iron enclosure. All motors (except for loom and card) are cooled by a current of air blown over the stator body by a fan,

mounted externally on the shaft and protected by a cover. Motors for loom and card have no cooling fan; cooling is effected only by natural convection. Motor feet are cast integral with motor frame. Motors fixing holes are circular to have perfect alignment for belt driven motors.

### Bearing Reference Chart

Application	Frame	Pole	Bearing Ref.	
			D.E.	N.D.E.
Ginning	ND100L	4	6206ZZ	6206ZZ
	ND112M	4	6306ZZ	6206ZZ
	ND132S	4	6308ZZ	6208ZZ
	ND132M	4	6308ZZ	6208ZZ
Carding	NR112M	6	6306Z	6306Z
	NR132S	6	6308Z	6308Z
Drawing Frame	ND112M	4	6306C3	6205C3
	ND132S	6	6308C3	6208C3
	ND132S	4	6308C3	6208C3
	ND132M	6	6308C3	6208C3
Speed Frame	ND132M	4	6308C3	6308C3
	ND160M	4	NU309C3	6209C3
Spinning & Doubling	ND160L	4	NU309C3	6209C3
	ND180M/L	4	NU310C3	6310C3
	ND200L	4	NU312C3	6312C3
	ND225S/M	4	NU313C3	6313C3
Loom Weaving	R112M	6	6307Z	6207Z
	R112M	8	6307Z	6207Z
	R132S	8	6208Z	6208Z
	R132S	6	6208Z	6208Z
	NR90L	6	6205Z	6205Z
Cone	ND112M	4	6306C3	6205C3

## CLEAN FLOW CONSTRUCTION



CROMPTON GREAVES  
TEXTILE MOTOR COMPLY WITH  
IS:1972 (PARTS I,II,&III)

## Bearings and Rotor

Carefully selected Ball and / or roller bearings are used in all motors. Grease nipples are also fitted for ease of greasing the bearings without dismantling the motor for frame 112 & above.

Greasing schedule also available for motors with regreasable bearings. A dynamically balanced rotor and a sturdy, one piece base eliminates vibration and prolongs bearing life. The bearings used have a high load capacity. This enables them to meet the arduous load conditions encountered in Textile Mills. Ginning Motors are provided with sealed bearings, lubricated for bearing life. Please refer Chart for bearing details. For motors in frame 160 and above, roller bearings are provided on driving end side.

## Mounting

Foot mounted (B3) or flange mounted (B5, V1) motors can be offered as per requirement.

## Terminal Box

The standard terminal box position is on top except for loom motors. However, terminal box on side (LHS or RHS when looking from driving end) can be given.

## Starting

All motors are suitable for DOL starting.

## Outstanding Features

- Energy Efficient motors.
- All ring frame & cone motors are meeting Energy Efficiency Level 1 as per IS 12615 as standard.
- For other applications, motors conform to Eff1 suitable for inverter duty. CGL provides special copper wire and insulation with trickle impregnation varnish so that motors used in all applications are suitable for inverter duty. Motors are with class F Insulation but with temperature rise restricted to class B insulation level.
- **Withstand Wide Voltage** : The in-built "cushion" on temperature rise makes Crompton Greaves motors capable of operating efficiently, economically over a wide voltage band.

## Characteristics of Squirrel Cage Induction Motors (Foot / Flange Mounted) Used for Textile Applications

Application	Indian Standard	kW Range	Pole	Enclosure	Starting Torque % FLT	Pull Out Torque % FLT	Remarks
Ginning	-	2.2 to 7.5	4	TEFC	200-225	250-275	Clean Flow Construction T. Box - Top
Carding	IS2972 (PartII)	1.1-2.2	6	TE	300	400	Naturally ventilated T. Box - Top
Drawing Frame	-	3.7, 5.5	4 or 6	TEFC	200	250-300	Efficiency I Motor, T. Box - Top
Speed Frame	-	7.5, 9.3	4	TEFC	175-250	225-300	
Spinning & doubling	IS 2972 Part (III)	11 to 22	4	TEFC	200	250	
Spinning & doubling long spindle		30 to 45	4	TEFC	250	300	
Loom	IS 2972 Part (II)	0.37 to 2.2	6 or 8	TE	200-250	275-300	Naturally ventilated T. Box - RHS
Weaving	IS 2972 Part (II)	0.37-2.2	4 or 6	TE	250	300-350	Naturally ventilated T. Box - RHS
Cone	-	3.7	4	TEFC	200	250	Efficiency I motor T. Box - Top
TFO	-	18.5 to 30	4	TEFC	200	250	-
Brake Motor	-	0.75 to 7.5	4, 6 or 8	TEFC	150-200	200-250	Special shaft & flange for Brake mounting

- **Weatherproof Enclosure** : Designed for use in very dusty, dirty and fluff-laden environments.
- **Proven Dependability** : Comply with the latest Indian and International standards. Better interchangeability - can effectively replace imported motors.
- **Wide Choice** : Available in a wide range of torque characteristics during starting, running, reversal and stopping, to suit different applications in Textile Industry.
- **Noise Level** : For listed motors, noise level is  $\leq 85$  dB(A) @ 1m
- **Service Factor** : Service Factor of 1.15 to 1.2 can be offered for compressor duty motors as per requirement.

### Motors for Ginning Applications

These motors are of the totally-enclosed, fan-cooled type, with 'clean-flow' construction. They are designed with adequate 'cushion' on temperature rise which enables them to withstand voltage fluctuations resulting in very satisfactory service.



### Motors for Combers and Lap Formers

These motors are of totally enclosed fan-cooled type, with torque requirements of standard motors. Since these motors are generally located beside a chamber, which restricts the motor ventilation, they need to have sufficient built-in thermal reserve.

### Motors for Draw Frames

In this application the motors are subjected to approximately 20 inching operations per hour. Also 'Dual speed speed motors can be offered for this application.

### Motors for Fly Frames or Speed Frames

These motors are with smooth acceleration characteristics. They are generally located in closed chamber where ambient temperature ranges upto 50°C. Thus due to restricted ventilation these motors are required to have built in thermal reserve.

### Motors for Carding Applications

Carding machines have a high moment of inertia. The motor must therefore have both high starting torque and adequate thermal capacity to withstand prolonged acceleration period.

Crompton Greaves carding motors, of totally enclosed construction (without fan cooling), are suitable for this purpose.

The motors comply with IS : 2972 (Part II). Motors are provided with 'ON-LINE' greasing as standard.



### Motors for Spinning Frames

Motors for this application need to have smooth and even acceleration to keep the thread breakages to a minimum.

Crompton Greaves Spinning Frame motors are specially designed with this characteristic. They are totally-enclosed and fan cooled with 'clean-flow' construction. The motors comply with IS : 2972 (Part III)

### Multi-Speed Motors for Ring Frames

In order to produce uniform quality of yarn on an economical basis, yarn must be held at constant tension throughout the cycle. This can be achieved by using Crompton Greaves two-speed motors which are normally 1500 / 1000 RPM or 1000 / 750 RPM. These motors are specially designed so that during changeover from one speed to the other, the change in torque is not excessive.

Another method of achieving this is by using two separate motors of 1500 RPM for driving the common pulley of the Ring Frame by means of a belt connecting the two motors and the machines. The diameters of the motor pulleys can be adjusted to obtain different values of high speed and low speed.

### Motors for Dry and Wet Processing Machines

Low speed standard motors or geared motors are used for bleaching, washing and drying machines. Motors for Dye jig and winch dyeing machines are with variable speed control for achieving constant



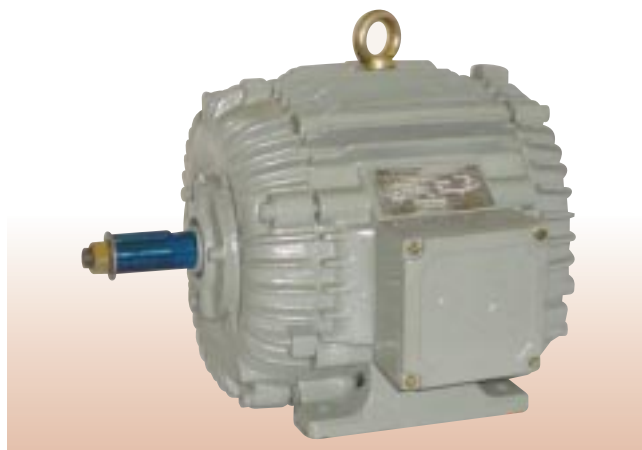
linear speed and tension. Crompton Greaves also manufactures motors for Calendars, Small Mangles, Cloth Printing Machines, Stentering ranges Sanforising machines, etc.

### Motors for Loom Applications

Looms are subjected to irregular and intermittent load variation with the result that the torque required to drive the loom also varies irregularly. This, in turn; leads to irregular variation of the full load current. Crompton Greaves Loom motors are compact, and are specially engineered for the application. In view of the presence of fluff and moisture in loom sheds, they are of totally-enclosed construction (without fan cooling), and are designed with high full load slip to function efficiently with this type of loads. They are available for driving plain, semi-automatic and automatic looms. Crompton Greaves loom motors comply with IS : 2972 (Part I). These motors are provided with 'ON-LINE' greasing arrangement and threaded shaft with lock nut.

### Motors for Winding, Warping and Sizing

Electromagnetic brakes are also used on warping machine motors. In case of cone winding, yarn



obtained from ring frame on "Pirn" bobbin is transferred on to cone shaped bobbins. This requires a momentary drop in speed by 100 RPM, which is achieved by "making and breaking" the motors contacts minute to minute. Thus these motors are very specially designed for the required characteristics.

**Output Table** Voltage 415  $\pm$  10%, 3 phase, 50 Hz,  $\pm$  5%, B3 mounting, Class F insulation, 45°C ambient, Continuous Rating, Duty S1

#### Loom Motors

kW	HP	Frame Size	
		6 Pole	8 Pole
0.75	1.00	NR 90 L	R 112 M
1.10	1.50	R 112 M	R 112 M
1.50	2.00	R 112 M	R 132 S
2.20	3.00	R132S	-

#### Card Motors

kW	HP	Frame Size
		6 Pole
1.10	1.50	R 112 M
1.50	2.00	R 112 M
2.20	3.00	N R132S

#### Ring Frame Motors



kW	HP	Frame Size	
		4 Pole	6 Pole
3.70	5.00	ND 112M	ND 132S
5.50	7.5	ND 132S	ND 132M
7.50	10.0	ND 132M	
9.3	12.5	ND 160M	
11.0	15.0	ND 160M	
13.0	17.5	ND 160L	
15.0	20.0	ND 160L	
18.5	25.0	ND 180M	
22.0	30.0	ND 180L	
30.0	40.0	ND 200L	
37.0	50.0	ND 225S	
45.0	60.0	ND 225M	

#### Ginning Motors

kW	HP	Frame Size
		4 Pole
2.20	3.00	ND 100L
3.00	4.00	ND 112M
3.70	5.00	ND 132S
5.50	7.50	ND 132S
7.50	10.00	ND 132M

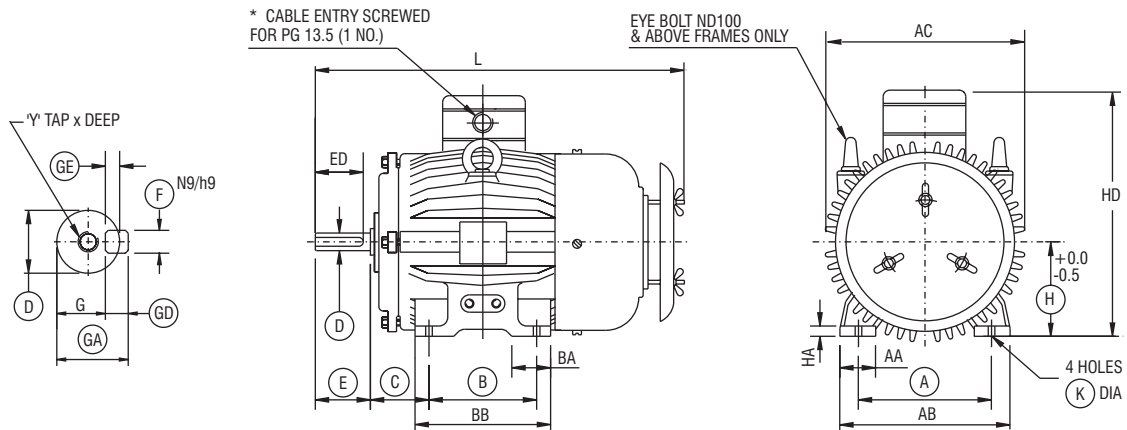
#### Cone Motors



kW	HP	Frame Size
		4 Pole
3.70	5.00	ND 112M

## DIMENSIONS

### FOOT MOUNTED WITH TB ON TOP METRIC MOTORS (CLEAN FLOW CONSTRUCTION)

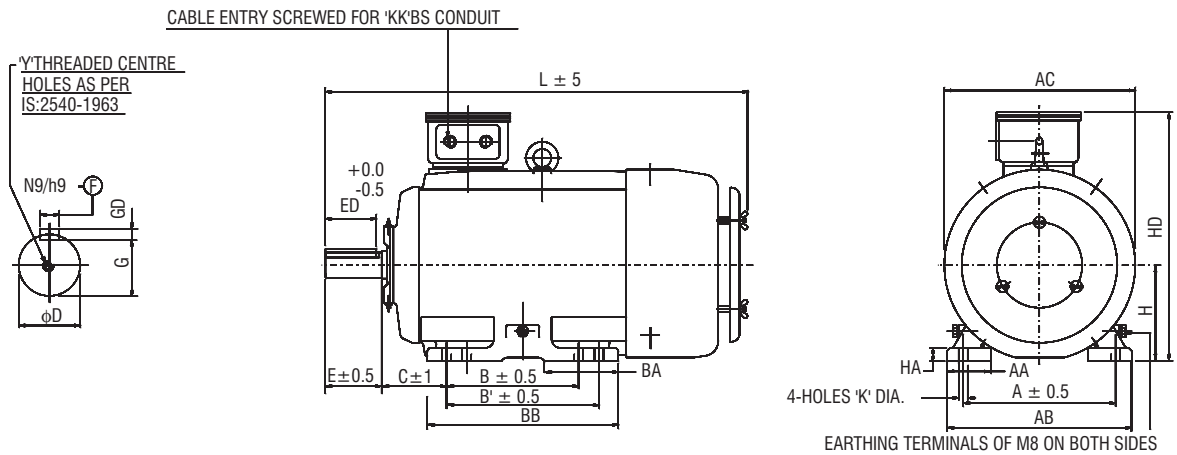


FRAME SIZE	FOOT FIXING										SHAFT AND KEY											OVERALL (MAX.)		
	A	B	C	H	AA	AB	BA	BB	K	HA	D	TOL	E	ED	F (Key way)	F (Key)	G	GA	GD	GE	'Y' x DEEP	AC	L	HD
ND80	125	100	50	80	35	152	45	124	10.0 9.964	11	19	+0.009 -0.004	40	27.0 27.2	6.0 6.03	6.0 5.97	15.5	21.5	6.0 5.997	3.5 3.6	M6 x 16	170	320	225
ND90S	140	100	56	90	35	168	40	127	10.0	13	24	+0.009 -0.004	50	36.0	8.0	8.0	20	27	7.0	4.0	M8 x 19	190	345	240
ND90L		125						9.964	152					9.964	7.964	7.964			6.91	4.2			370	
ND100L	160	140	63	100	36	192	45	170	12.0 12.043	13	28	+0.009 -0.004	60	44.0 44.3	8.0 7.964	8.0 7.964	24	31	7.0 6.91	4.0 4.2	M10 x 22	210	410	260
ND112M	190	140	70	112	36	222	50	170	12.0 12.043	13	28	+0.009 -0.004	60	44.0 44.3	8.0 7.964	8.0 7.964	24	31	7.0 6.91	4.0 4.2	M10 x 22	230	435	320
ND132S	216	140	89	132	48	254	54	178	12.0	16	38	+0.018 -0.002	80	60.0	10.2	10.0	33	41	8.0	5.0	M12 x 28	270	495	360
ND132M		178						12.043	216					9.964	9.994	7.91			5.2	535				

\* CABLE ENTRY:- 1 NO FOR D.O.L. STARTING & 2 NOS FOR 'STAR DELTA' STARTING MOTOR.

## DIMENSIONS

### FOOT MOUNTED WITH TB ON TOP METRIC MOTORS (CLEAN FLOW CONSTRUCTION)



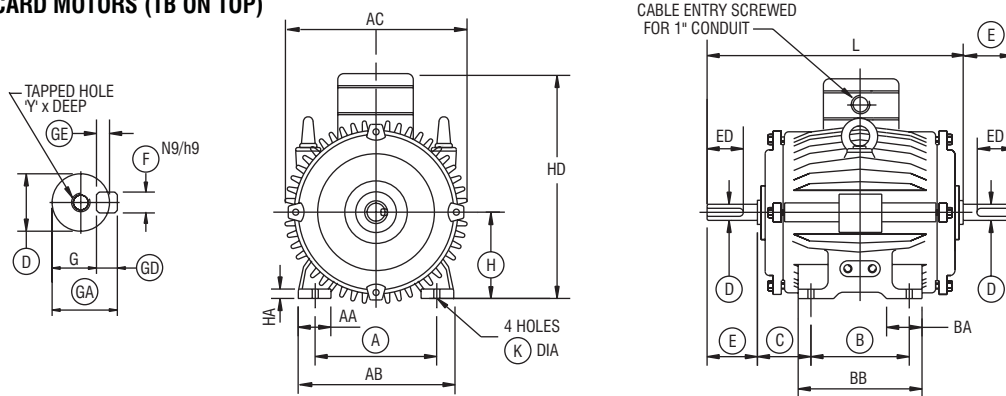
ALL DIMENSIONS ARE IN mm

FRAME SIZE	FOOT FIXING										SHAFT AND KEY *								OVERALL					
	A	B	B'	C	H Tol.	AA	AB	BA	BB	K Tol.	D Tol.	E	ED	F Tol.	GD Tol.	G	Y	AD	AC	L	HD	HA	KK	
ND160M	254	210	-	108	160.0	73	308	76	254	15.5	42.018	110	80	12.00	8.00	37.0	M16x32	-	318	665	435	22	2Nos-1"	
ND160L		254	-		159.5				298	15.0	42.002			11.957	7.91	36.8				709				
ND180M	279	241	-	121	180.0	84	348	95	323	15.5	48.018	110	80	14.00	9.00	42.5		-	352	775	475	22		
ND180L		279	-		179.5				15.0	48.002	13.957			8.91	42.3	775								
ND200L	318	305	-	133	200.0	64	381	104	356	19.5	55.030	110	80	16.00	10.00	49.0	M20x40	285	405	878	545	25	2Nos-1.5"	
				199.5	19.0					55.011	15.957			9.91	48.8	878								
ND225S	356	286	-	149	225.0	70	425	102	375	19.5	60.030	140	110	18.00	11.00	53.0		285	448	953	600	25		
ND225M		-	311		224.5					19.0	60.011			17.957	10.91	52.8				953				

1. DIMENSIONS COMPLY WITH IS :1231 AND ARE IN MM, EXCEPT CONDUIT ENTRY.
2. CABLE ENTRIES CAN BE TURNED THROUGH 360 Deg. IN STEP OF 90 Deg.

## DIMENSIONS

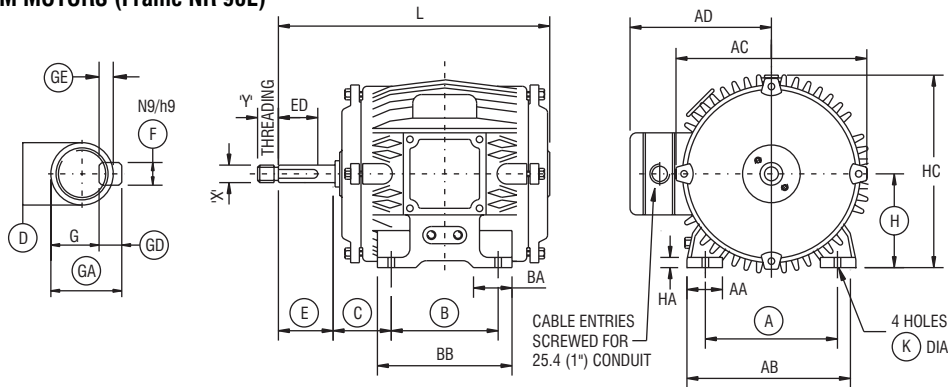
### FOOT MOUNTED CARD MOTORS (TB ON TOP)



FRAME SIZE	FOOT FIXING											SHAFT AND KEY										OVERALL (MAX.)		
	A	B	C	H	AA	AB	BA	BB	K	HA	D	TOL	E	ED	F	G	GA	GD	GE	Y" x DEEP	AC	L	HD	
NR112M	190	140	70	112	36	222	50	170	12	13	28	+0.009 -0.004	60	44	8	24	31	7	4	M10 x 22	230	340	320	
NR132S	216	140	89	132	48	254	54	178	12	16	38	+0.018	80	60	10	33	41	8	5	M12 x 28	270	398	360	
NR132M		216						-0.002				426												

1. DIMENSIONS COMPLY WITH IS : 1231 AND ARE IN MM, EXCEPT CONDUIT ENTRY. 2. CABLE ENTRIES CAN BE TURNED THROUGH 360° IN STEP OF 90°.
3. CABLE ENTRY:- 1 NO FOR D.O.L. STARTING AND 2 NOS FOR 'STAR DELTA' STARTING MOTOR.

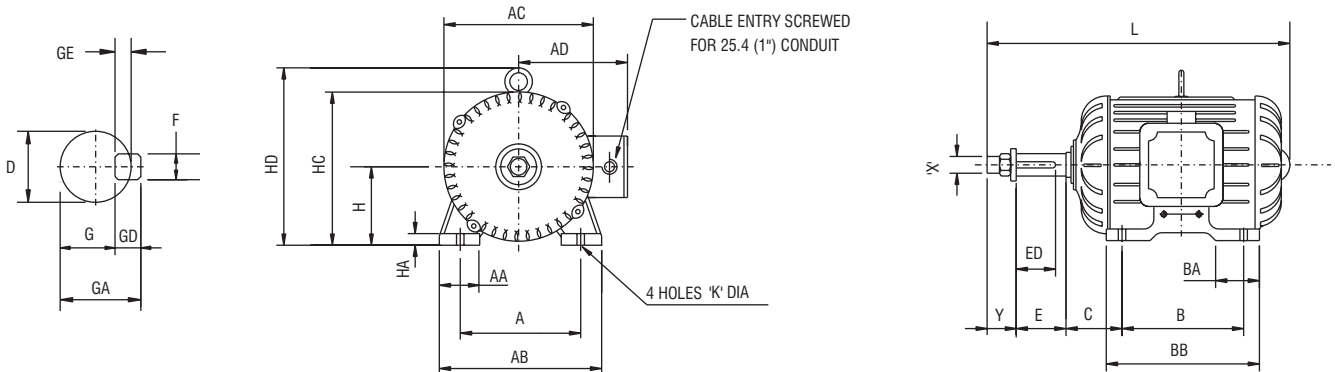
### FOOT MOUNTED LOOM MOTORS (Frame NR 90L)



NOTE :- DIMENSIONS COMPLY WITH IS : 1231 AND ARE IN MM EXCEPT CONDUIT ENTRY.

FRAME SIZE	FOOT FIXING										SHAFT AND KEY								THREADING		OVERALL (MAX.)				
	A	B	C	H	AA	AB	BA	BB	K	HA	D	E	ED	F (key Way)	F (key)	G	GA	GD	GE	X	Y	AD	AC	L	HD
NR90L	140	125	56	89.5 90.0	35	168	40	152	10.0 9.964	13	24.009 23.996	50	36.0 36.3	8.0 7.964	8.0 7.964	20	27	7.0 6.91	4.0 4.002	M16	18	150	177	287	185

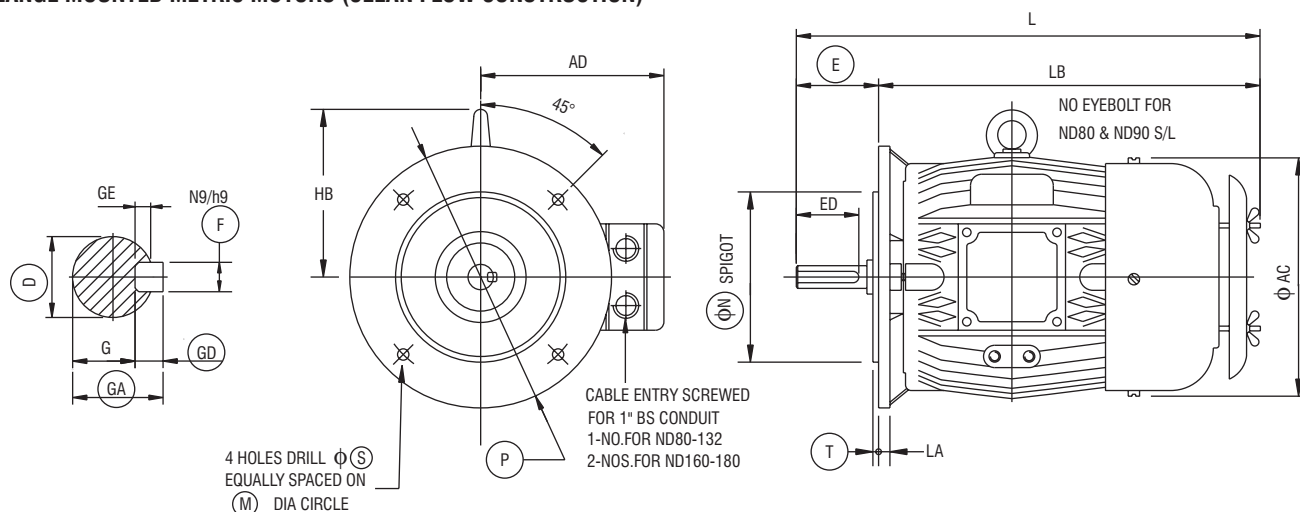
### FOOT MOUNTED LOOM MOTORS (Frame R 112M & R 132S)



FRAME SIZE	FOOT FIXING											SHAFT AND KEY								THREADING		OVERALL (MAX.)					
	A	B	C	H	AA	AB	BA	BB	K	HA	D	E	ED	F	G	GA	GD	GE	X	Y	AD	AC	L	HC	HD		
R112M	190	140	70	112	38	228	57	171	12	14	28	60	44	8	24	31	7	4	M16	23	205	270	365	244	268		
R132S	216	140	89	132	41	254	64	178	12	16	38	80	60	10	33	41	8	5	M16	21	190	320	425	292	375		

## DIMENSIONS

### FLANGE MOUNTED METRIC MOTORS (CLEAN FLOW CONSTRUCTION)



FRAME SIZE	FLANGE FIXING							SHAFT AND KEYWAY									OVERALL (MAX.)					
	M	N	P	R	S	T	LA	D	E	ED	F	G	GA	GD	GE	YxDEEP	AD	AC	L	LB	HB	KK
ND80	165	130	200	0	12	3.5	10	19	40	27	6	15.5	21.5	6	3.5	M6x16	134	170	310	270	-	3/4"
ND90S ND90L	165	130	200	0	12	3.5	10	24	50	36	8	20	27	7	4	M8x19	150	190	360 385	310 335	-	1"
ND100L	215	180	250	0	15	4	11	28	60	44	8	24	31	7	4	M10x22	160	210	405	345	150	
ND112M	215	180	250	0	15	4	11	28	60	44	8	24	31	7	4	M10x22	170	230	430	370	160	
ND132S	265	230	300	0	15	4	14	38	80	60	10	33	41	8	5	M12x28	190	270	495	415	190	
ND132M																			535	455		
ND160M ND160L	300	250	350	0	19	5	18	42	110	80	12	37	45	8	5	M16x32	275	318	660 705	213 235	216	
ND180M ND180L								48	110	80	14	42.5	45	9	5.5	M16x32	295	352	746 784	242 260	238	

Continuous development of products entitles us to change specification details without notice.



## EVERYDAY SOLUTIONS

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