

## WASHGUARD MOTORS NOW AVAILABLE IN FIVE STYLES



### Maximum service in critically clean or corrosive environments

- All exterior components of stainless steel
  - Endshields o-ring sealed to frame
  - IEEE 841 severe-duty features standard
  - Meets demanding pharmaceutical requirements, also excellent for chemical-processing applications
  - Meets IP56 enclosure protection
  - Incorporates all WASHGUARD mechanical and electrical features, plus IRIS™ insulation system
  - IRIS™ insulation system
  - BISSC certified for baking industry
- AC motor catalog listings on page 37  
DC motor catalog listings on page 89



**WASHGUARD SST  
ALL-STAINLESS**

### Stainless Steel Tough for demanding washdown applications

- All exterior components of 300 series stainless steel, including motor frame, endshield and conduit box castings
  - Moisture resistant sealant between frame and endbells
  - Full-fact nameplate is laser-etched on the motor frame
  - Built to withstand the demanding washdown environments found in the food processing, chemical processing and beverage industries
  - No paint or coatings of any type are used on the exterior of the motor
  - Four locations for T-drains provided on each endshield
  - IRIS™ insulation system
  - Meets IP55 enclosure protection
  - Three phase motors are suitable for use on VFDs
  - 10:1 ratio for constant or variable torque at 1.0 SF
- Catalog listings on page 35



**WASHGUARD II  
STAINLESS FRAME**

### Superior, extended life in severe environments

- Paint-free exterior—stainless frame and conduit box lid, specially processed endshields and conduit box housing
  - Etched stainless steel nameplate
  - Proven WASHGUARD mechanical and electrical features
  - IRIS™ insulation system
  - BISSC certified for baking industry
  - Meets IP55 enclosure protection
  - Three phase motors are suitable for use on VFDs
  - 10:1 ratio for constant or variable torque at 1.0 SF
- Catalog listings on page 33



**WASHGUARD  
WHITE EPOXY**

### Enhanced performance in wet, humid areas

- Our original moisture-shedding “duck” motor
- Durable RUST-OLEUM® white epoxy coating
- Stainless steel shaft, conduit box cover, nameplate, fan guard
- Special gaskets, slingers and seals
- Four endshield drains
- Moisture-resistant interior components



- IRIS™ insulation system
  - Single-phase, three-phase and DC SCR models
  - Meets IP55 enclosure protection
  - Three phase motors are suitable for use on VFDs
  - 10:1 ratio for constant or variable torque at 1.0 SF
- Catalog listings on pages 30-32



**EXTREME  
DUCK**

### Revolutionary Designed Stainless Steel Motors are built to be the last Stainless Steel Washdown motors you will ever need!

- Meet EPACT for non-exempt when tested without shaft seals
  - Total winding encapsulation using an Epoxy Resin
  - LEESON's exclusive IRIS™ Inverter-Rated Insulation System
  - Motors are UL component recognized
  - CSA Energy Efficiency Verification
  - Construction is CSA Certified for safety
  - All exterior components are 300-Series stainless steel
  - Protech Bearing isolator used for the output shaft seal
  - Double Lip Viton shaft seal used on non-drive output shaft on TEFC motors
  - Minimal exterior fasteners, no through-bolt design and screw on conduit box covers
  - Pre-lubricated double-sealed bearings
  - Rotor/Cartridge, “Q-CAR,” for quick access to bearings
  - Rigid Cast Base for rugged applications
  - Full fact nameplate is laser etched
  - BISSC certified for baking industry
- Catalog listings on page 39

# WASHGUARD MOTORS ARE BUILT TO HANDLE HIGH-PRESSURE WASHDOWNS!\*

**Stainless-steel fan guard** on all WASHGUARD frames.

**Composite fan** is chemically-inert and static-free. Fan is positively positioned on shaft. On TEFC designs only.

**USDA-approved, white epoxy finish** for superior protection and resistance to caustic cleaning solutions.

**Encapsulated starting switch** (single-phase WASHGUARD motors) uses a patented, field-proven design that is immune to moisture, shock and vibration. No moving parts or exposed contacts to become corroded or inoperable.

**Stainless-steel, "full-fact" nameplate** includes information on motor efficiency and connections. Readable even after repeated washdowns.

**Moisture-resistant shaft system** includes 303 stainless-steel shaft and lubricated, spring-loaded contact seals in each endshield. Patented V-ring Forsheda seal on shaft end to deflect water (see inset). Double-sealed, oversized bearings lubricated with Exxon POLYREX® EM high temperature, moisture-resistant lubricant. Bearing cavities packed to further retard entrance of moisture.



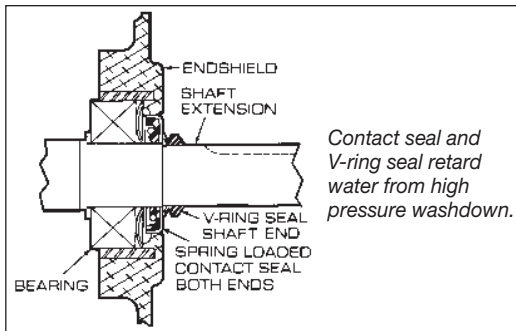
WASHGUARD White Epoxy Model Shown

**Cast, oversized conduit box** with tough, high-temperature nitrile gaskets and stainless-steel cover and hardware. Oversized design with threaded entrance. All machined fits are sealed and nylon gaskets are used under bolt heads.

**Interior coatings** protect against moisture and corrosion. Frame, base, endshields, rotor, and interior components are protected by enamel and polyester compounds of outstanding adhesion and resistance to moisture, acids, alkalis, and oils. Efficiencies meet EPACT mandates for covered motors when tested without shaft seals. High temperature, moisture resistant IRIS insulation system assures long life on inverter service. Windings are immersed and cured in polyester insulating compound.



**Four condensate drains** in each endshield (at three, six, nine, and twelve o'clock) purge condensate and water which may enter the motor.



\* Also excellent for applications requiring a motor that is "tropicalized"!

**QUICK REFERENCE**

**WASHGUARD WHITE EPOXY** . . . . . Page 30  
**WASHGUARD STAINLESS FRAME** . . . . . 33  
**WASHGUARD ALL-STAINLESS** . . . . . 35,37,39



# WASHGUARD MOTORS

WHITE EPOXY • SINGLE PHASE & DC



## SINGLE PHASE • TEFC • RIGID BASE

Featuring Electronic Solid State Encapsulated Switch

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	Over- load Prot.	F.L. Amps 230V	"C" Dim. (Inches)
1/2	1725	56	112431	\$514	A	24	115/208-230	None	4.4	10.81
3/4	1725	56	112432	604	A	31	115/208-230	None	5.4	11.31
1	1725	56	112626	692	A	33	115/208-230	None	6.4	11.81
	1740	143T	120589	692	B	34	115/208-230	None	6.4	12.25
1 1/2	1740	145T	120590	882	B	47	115/208-230	None	9.5	13.75
2	1740	182T	131571	1279	B	60	115/208-230	None	12.6	13.46

## SINGLE PHASE • TEFC • C FACE LESS BASE

Featuring Electronic Solid State Encapsulated Switch

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	Over- load Prot.	F.L. Amps 230V	"C" Dim. (Inches)
1/3	3450	56C	114310	\$504	A	25	115/208-230	None	2.6	10.69
	1725	56C	114311	511	A	27	115/208-230	None	3.2	10.69
1/2	3450	56C	114312	511	A	25	115/208-230	None	3.6	10.69
	1725	56C	114313	525	A	29	115/208-230	None	4.4	11.19
3/4	3450	56C	114314	514	A	31	115/208-230	None	5.0	11.69
	1725	56C	114315	606	A	31	115/208-230	None	5.4	11.69
1	3450	56C	114316	517	A	29	115/208-230	None	6.0	12.19
	1725	56C	114317	688	A	34	115/208-230	None	6.4	12.19
1 1/2	3450	56C	114318	764	A	36	115/208-230	None	8.5	12.69
	1725	56C	114319	882	A	43	115/208-230	None	9.5	13.69



## DC • SCR RATED 90 & 180 VOLTS

TENV • C FACE WITH REMOVABLE BASE

HP	Full Load RPM	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Arm. Volts DC	Control Volts AC	F.L. Amps DC	"C" Dim. (Inches)
1/4	1750	S56C	108423	\$636	A	23	90	115	2.7	10.69
	1750	S56C	098375	636	A	21	180	230	1.4	10.22
1/3	1750	S56C	108424	673	A	26	90	115	3.5	11.69
	1750	S56C	098376	673	A	22	180	230	1.7	10.22
1/2	1750	S56C	108226	754	A	38	90	115	4.9	13.69
	1750	S56C	108227	754	A	43	180	230	2.4	13.69
3/4	1750	S56C	108228	915	A	53	90	115	7.0	15.69
	1750	S56C	108229	915	A	50	180	230	3.5	15.69
1	1750	S56C	108230**	1116	A	45	90	115	10.0	15.81
	1750	S56C	108231**	1116	A	42	180	230	5.0	14.81
1 1/2	1750	S56C	108232**	1425	A	50	180	230	7.6	15.81

\*\* These motors are totally enclosed fan cooled.

All Washdown Duty motors have Class F Insulation.

## SINGLE PHASE • TEFC • C FACE WITH BASE

Featuring Electronic Solid State Encapsulated Switch

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	Over- load Prot.	F.L. Amps 230V	"C" Dim. (Inches)
1/3	3450	56C	113580	\$507	A	27	115/208-230	None	2.6	10.69
	1725	56C	112526	514	A	28	115/208-230	None	3.2	10.69
1/2	3450	56C	113581	514	A	25	115/208-230	None	3.6	10.69
	1725	56C	112527	532	A	28	115/208-230	None	4.4	11.19
3/4	3450	56C	113582	521	A	31	115/208-230	None	5.0	11.69
	1725	56C	112528	603	A	30	115/208-230	None	5.4	11.69
1	3450	56C	113583	523	A	31	115/208-230	None	6.0	12.19
	1725	56C	112529	694	A	33	115/208-230	None	6.4	12.19
1 1/2	3450	56C	113584	765	A	36	115/208-230	None	8.5	12.69
	1725	56HC	113300	886	A	45	115/208-230	None	9.5	13.69
2	3450	56HC	114637	882	A	43	115/208-230	None	10.0	13.69

**WASHGUARD MOTORS SHED WATER LIKE A DUCK!**





# WASHGUARD MOTORS

WHITE EPOXY • THREE PHASE & BRAKEKITS™



### THREE PHASE • TEFC • JM PUMP

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	F.L. Amps 230V	% F.L. Eff.	"C" Dim. (Inches)
1	1725	143JM	121579	\$891	B	37	208-230/460	3.1	82.5	15.75
1½	3450	143JM	121580	962	B	46	208-230/460	4.0	82.5	15.75
	1725	145JM	121581	987	B	53	208-230/460	4.4	84.0	15.75
2	3450	145JM	121582	1086	B	47	208-230/460	5.2	84.0	15.75
	1725	145JM	121583	1018	B	49	208-230/460	5.6	84.0	16.25
3	3450	145JM	121584	1166	B	45	208-230/460	7.6	85.5	16.25
	1760	182JM	131967	1295	B	79	208-230/460	8.2	87.5	16.13
5	3450	184JM	131968	1545	B	78	208-230/460	12.0	87.5	16.13
	1760	184JM	131969	1402	B	81	208-230/460	13.0	87.5	16.63
7½	3450	184JM	131970	1694	B	110	208-230/460	16.8	88.5	17.63
	1740	213JM	140733	1890	B	133	208-230/460	20.4	89.5	19.00
10	3450	215JM	140734	2328	B	135	208-230/460	24.0	89.5	21.70
	1740	215JM	140735	2200	B	142	208-230/460	26.0	89.5	20.00
15	3450	215JM	140736	2662	B	150	208-230/460	36.0	90.2	21.70



### JET PUMP • THREADED SHAFT THREE PHASE • TEFC • C-FACE LESS BASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	F.L. Amps 230V	% F.L. Eff.	"C" Dim. (Inches)
3/4	3450	56J	116774	\$547	A	23	208-230/460	2.4	75.5	10.81
1	3450	56J	116775	636	A	35	208-230/460	3.2	77.0	10.81
1½	3450	56J	116776	676	A	42	208-230/460	4.2	81.5	11.81
2	3450	56J	116777	774	A	47	208-230/460	5.6	82.5	12.31
3	3450	56J	116778	812	A	49	208-230/460	7.6	84.0	13.25

### JET PUMP • THREADED SHAFT THREE PHASE • TEFC • C-FACE WITH BASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	F.L. Amps 230V	% F.L. Eff.	"C" Dim. (Inches)
3/4	3450	56J	116779	\$561	A	24	208-230/460	2.4	75.5	10.81
1	3450	56J	116780	652	A	36	208-230/460	3.2	77.0	10.81
1½	3450	56J	116781	707	A	43	208-230/460	4.2	81.5	11.81
2	3450	56J	116782	787	A	48	208-230/460	5.6	82.5	12.31
3	3450	56J	116783	838	A	50	208-230/460	7.6	84.0	13.25



### WASHGUARD • TENV/TEFC • C FACE WITH BASE

HP	RPM 60 Hz	NEMA Frame	Brake Rating (ft-lbs)	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	F.L. Amps 230V	% F.L. Eff.	"C" Dim. (Inches)
1/3	1725	56C	3	116466	\$1087	A	40	208-230/460	1.3	72.0	14.00
1/2	1725	56C	3	116467	1108	A	42	208-230/460	1.8	78.5	14.50
3/4	1725	56C	6	116468	1315	A	44	208-230/460	2.5	80.0	15.00
1	1725	56C	6	116469	1358	A	48	208-230/460	3.2	80.0	15.50
	1725	143TC	6	121616	1358	A	49	208-230/460	3.2	80.0	16.06
1½	1725	145TC	10	G121617	1883	A	50	208-230/460	4.4	84.0	19.01
2	1725	145TC	10	G121618	1952	A	62	208-230/460	5.6	84.0	19.01

### WASHGUARD • TENV/TEFC • C FACE LESS BASE

HP	RPM 60 Hz	NEMA Frame	Brake Rating (ft-lbs)	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	F.L. Amps 230V	% F.L. Eff.	"C" Dim. (Inches)
1/3	1725	56C	3	116462	\$1049	A	39	208-230/460	1.3	72.0	14.00
1/2	1725	56C	3	116463	1075	A	41	208-230/460	1.8	78.5	14.50
3/4	1725	56C	6	116464	1279	A	43	208-230/460	2.5	80.0	15.00
1	1725	56C	6	116465	1325	A	45	208-230/460	3.2	80.0	15.50
	1725	143TC	6	121613	1325	A	46	208-230/460	3.2	80.0	15.56
1½	1725	145TC	10	121614	1835	A	49	208-230/460	5.0	78.5	18.01
2	1725	145TC	10	121615	1888	A	61	208-230/460	6.2	81.5	18.51

All Washdown Duty motors have Class F Insulation.

### WASHGUARD COUPLER BRAKES

Solid die-cast aluminum Stearns NEMA 4X coupler brake converts any TEFC or TENV 56C thru 145TC motor to a fail-safe brakemotor by mounting between the C-face motor and driven equipment. Food safe white epoxy finish. BISSC Certified. Adds 5" to the overall length of 56C thru 145TC WASHGUARD TEFC or TENV motors. Includes all mounting components.



#### For Both Single and Three Phase Motors

Cat. No. 115/208-230V Single Phase	Cat. No. 208-230/460V Three Phase	Cat. No. 575V Three Phase	Brake Rating (ft-lbs)	Max. HP @ 1725 rpm	Mounts to NEMA Frame	Coupler Brake Output Shaft and Face	List Price	Disc. Sym.	App. Wt. (lbs.)
175566	175567	175568	3	1	56C	5/8", 56C	\$960	A	13
175572	175573	175574	6	2	56C/143-5TC	5/8", 56C	1033	A	14

Larger coupler brakes on page 43.

### WASHGUARD BRAKEKITS™

Kit of components including a Stearns NEMA 4X brake to convert 56 thru 145T frame stock TEFC only motors to fail-safe brakemotors. Food safe white epoxy finish. BISSC Certified. Adds 5 1/8" to the overall length of 56 thru 145T WASHGUARD TEFC motors.



WASHGUARD Brakekits™ have the same convenient assembly method as general purpose models.

#### For Both Three Phase and 230V Single Phase Motors

Brake Rating (ft-lbs)	Mounts to NEMA Frame	Max. HP @ 1725rpm	Cat. No. 208-230/460 V Brake Coil Voltage	List Price	Disc. Sym.	App. Wt. (lbs.)
3	56/143-5T	1	175616	\$1066	A	24
6	56/143-5T	2	175617	1125	A	36
10	56/143-5T	3	175618	1185	A	43

All three phase motors, 1 HP and above, are inverter rated. Refer to page 5 for speed ranges.

# WASHGUARD II MOTORS

STAINLESS FRAME • THREE PHASE



WASHGUARD

# Super Duck



**LEESON Severe Duty, stainless frame, WASHGUARD II** motors are designed for superior extended service in severe environments. Typical applications include food processing areas requiring frequent sanitation procedures using high pressure cleaning with concentrated caustic solutions, areas of high humidity and in chemical environments.

**Mechanical Protection Features**  
These motors have an entirely paint free exterior with 300 series stainless steel motor body, conduit box lid, shaft extension, hardware, fasteners and an etched motor data plate.

To enhance chemical and corrosion resistance, all surfaces of the endbells and conduit box are processed using a U.S. Department of Agriculture approved technique. This proprietary process has been tested and qualified for more than 2,500 hours of salt spray endurance for external surfaces, and 1,000 hours for internal surfaces. This process has proven successful in food washdown applications and has shown excellent corrosion resistance.

Shaft seals, slingers and one-way stainless steel drains retard entrance of contaminants and water into the motor. Multiple, repositional drains provided for all angle mounting, release any water that does enter the motor from hose downs or condensation. Chemically resistant, tough nitrile gaskets and a threaded entrance for power connection also restrict entrance to the motor's interior. Nylon gaskets are used to seal bolt heads.

Bearings used are double sealed and prelubricated with moisture resistant Exxon POLYREX® EM high temperature lubricant.

**Electrical Performance and Protection Features**  
Efficiencies meet EPACT mandates for covered motors when tested without shaft seals. High temperature, moisture resistant IRIS insulation system assures long life on inverter service. Windings are immersed and cured in polyester insulating compound. All Washdown Duty motors have Class F Insulation.

**Standards and Approvals**  
UL component recognized, file number E57948, guide number PRGY2. Energy efficiency ratings are verified by an independent testing laboratory. CSA Energy Efficiency Verification Program, report number EEV 78720-1. Construction is CSA Certified for safety report number LR33543.

**WASHGUARD II** motors are certified to the Baking Industry Sanitation Standard #29 and listed under BISSC authorization number 769.



## STAINLESS FRAME • TENV > • C FACE LESS BASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	FL Amps 230V	% F.L. Eff.	"C" Dim. (Inches)
1/2	1725	56C	114394	\$641	A	30	208-230/460	1.6	78.5	11.06
3/4	1725	56C	114395	742	A	34	208-230/460	2.3	80.0	11.56
1	1725	56C	114437	769	A	44	208-230/460	3.0	81.5	12.06
	1725	143TC	121109	769	B	40	208-230/460	3.0	81.5	12.13
1 1/2	1725	56C	114581>	806	A	45	208-230/460	4.4	84.0	12.69
	1725	145TC	121350>	806	B	40	208-230/460	4.4	84.0	12.75
2	1725	56C	114582>	916	A	51	208-230/460	5.6	84.0	13.69
	1725	145TC	121351>	916	B	51	208-230/460	5.6	84.0	13.75

> All ratings TENV except 1 1/2 & 2 HP, which is TEFC with stainless steel fan cover and chemically inert fan.



## STAINLESS FRAME • TENV > • C FACE WITH BASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	FL Amps 230V	% F.L. Eff.	"C" Dim. (Inches)
1/2	1725	56HC	114560□	\$647	A	34	208-230/460	1.6	78.5	11.56
3/4	1725	56HC	114561□	748	A	38	208-230/460	2.3	80.0	12.06
1	1725	56HC	114562□	777	A	45	208-230/460	2.3	81.5	12.06
	1725	143TC	121165	777	B	45	208-230/460	2.3	81.5	12.13
1 1/2	1725	145TC	G121166>	812	B	42	208-230/460	4.4	84.0	13.25
	1725	145TC	G121167>	950	B	51	208-230/460	5.6	84.0	13.75

> All ratings TENV except 1 1/2 & 2 HP, which is TEFC with stainless steel fan cover and chemically inert fan.  
□ Combination 56H base motors have mounting holes for NEMA 56 and NEMA 143-145T and standard NEMA 56C face and shaft.

## CHEMICAL RESISTANCE RATING CHART

CHEMICAL	CONCENTRATION	COMPONENT-RESISTANCE	
		STAINLESS STEEL PARTS	ENDBELLS & CONDUIT BOX
<b>WATER:</b>			
De-Ionized Boiling	100%	Excellent	Excellent
Salt (Immersed)	30%	Excellent	Excellent
Salt (Spray)	5%	Excellent	Excellent
Tap - 250°F/120°C @ 10,000 PSI	100%	Excellent	Excellent
<b>ACIDS:</b>			
Hydrochloric	35%	Poor	Very Good
Sulfuric	25%	Poor	Excellent
Nitric	35%	Excellent	Good
Picric	Saturated Solution	Excellent	Very Good
<b>BASE:</b>			
Caustic	100%	Excellent	Excellent
Caustic	12.5 pH	Excellent	Excellent
Caustic - 125°F/50°C	9.5 pH	Excellent	Excellent
<b>SOLVENTS:</b>			
	--	Excellent	Excellent



All three phase motors, 1 HP and above, are inverter rated. Refer to page 5 for speed ranges.

Catalog numbers in green are EPACT motors.



**WASHGUARD ALL-STAINLESS MOTORS**  
**ALL-STAINLESS • THREE PHASE**

# WASHGUARD SST

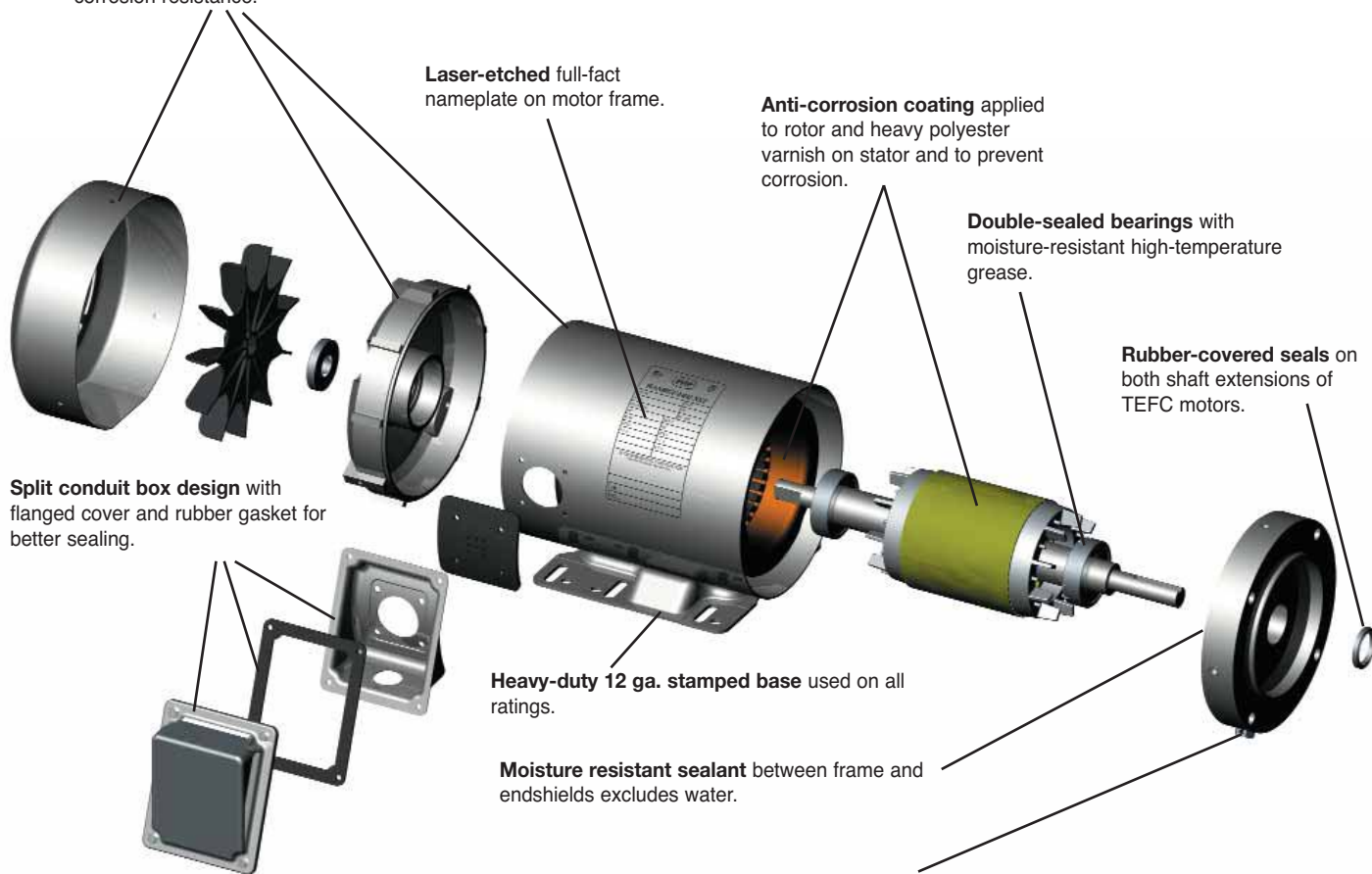
*This member of LEESON's family of tough ducks is designed for long life in demanding washdown applications. LEESON's FHP WASHGUARD SST All-Stainless motors are Stainless Steel Tough!*

Built with all stainless steel external components to prevent corrosion and well sealed against moisture and condensation to protect internal components, the Washguard SST all-stainless motors are able to withstand the severe washdown environments found in the food processing, chemical processing, and beverage industries.

**CHEMICAL RESISTANCE RATING CHART**

CHEMICAL	CONCENTRATION	ALL STAINLESS COMPONENTS
<b>WATER:</b>		
De-Ionized Boiling	100%	Excellent
Salt (Immersed)	30%	Excellent
Salt (Spray)	5%	Excellent
Tap - 250°F/120°C @ 10,000 PSI	100%	Excellent
<b>ACIDS:</b>		
Hydrochloric	35%	Poor
Sulfuric	25%	Poor
Nitric	35%	Excellent
Picric	Saturated Solution	Excellent
<b>BASE:</b>		
Caustic	100%	Excellent
Caustic	12.5 pH	Excellent
Caustic - 125°F/50°C	9.5 pH	Excellent
<b>SOLVENTS:</b>		
	-	Excellent

300-Series stainless steel exterior components – frame, base, endshields, shaft extension, fan guard, hardware, conduit box and cover – for maximum corrosion resistance.



**Four condensate drains** in each endshield (at three, six, nine and twelve o'clock) provide locations to purge condensate and water, which may enter the motor.  
**T-drains provided for effective drainage** without allowing water to splash inside the motor. T-drain for opposite shaft end is installed at six o'clock position (and can be relocated easily). T-drain for shaft end is shipped loose for customer installation at low point of motor.

# WASHGUARD ALL-STAINLESS MOTORS

## ALL-STAINLESS • SINGLE-PHASE & THREE-PHASE



# WASHGUARD SST

### Mechanical Protection Features:

All exterior components – frame, base, endshields, fan guard, shaft, hardware, conduit box and cover – are made from 300 series stainless steel for maximum corrosion resistance. Nameplate data is permanently laser-etched into the motor frame – no Mylar nameplate that can wash off or riveted metal nameplate to trap dirt. No paint or any type of coating is used on the exterior of the motor.

Sealant is applied to endshield and frame fits before assembly to prevent water entry. Shaft seals on both ends of TEFC motors – shaft end only on TENV. Double-sealed bearings have high performance Exxon Polyrex EM grease. Conduit box is fully gasketed half-split design with flanged cover and body gasket with lead separator. Anti-corrosion coating on rotor prevents corrosion. Four quadrant drain locations on each endbell allow drainage of condensation in any mounting position. Stainless steel T-drains are provided to prevent liquids from splashing into the drain locations. Motors are shipped with a T-drain assembled in the six o'clock position on the opposite endshield. Another T-drain is shipped loose in the conduit box for installation at the lowest point of the shaft-end endshield. For a totally sealed motor, a spare pipe plug is included to replace the pre-installed T-drain.

Mechanical performance is further enhanced by over-sized bearings, heavy 12 gauge base, shaft-end bearing is locked internally to limit axial endplay, and specially designed shaft extension resists breakage at bearing journal.

### Electrical Performance and Protection Features:

FHP Washguard SST full load efficiencies meet EPACT standards for non-exempt motors when tested without shaft seals. For extra moisture resistance, windings are immersed and cured in polyester insulating varnish. LEESON's exclusive IRIS™ Inverter-Rated Insulation System provides extra protection and long life, especially in inverter driven applications.

20:1 Constant Torque Operation

### Standards and Approvals:

UL component recognized, file number E57948, guide number PRGY2. Energy efficiency ratings are verified by an independent testing laboratory.

CSA Energy Efficiency Verification Program, report number EEV 78720-1.

Construction is CSA Certified for safety report number LR33543.

Motor is CE marked for European acceptance.



### SINGLE-PHASE • TENV/TEFC • C FACE W/BASE

HP	RPM	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	FL. Amps 230V	"C" Dim. (Inches)
1/2	3600	56C	191474	\$548	A	29.5	115/208-230	3.1	11.1
	1800	56C	191475	617	A	31.5	115/208-230	4.1	11.1
3/4	3600	56C	191476	602	A	31.5	115/208-230	4.5	11.8
	1800	56C	191477	713	A	39.0	115/208-230	4.9	11.8
1	3600	56C	191478	708	A	39.0	115/208-230	6.2	12.3
	1800	56C	191479	743	A	42.5	115/208-230	6.8	12.3
1½	3600	56C	191480	779	A	42.5	115/208-230	8.8	13.2
	1800	56C	191481	776	A	52.5	115/208-230	9.5	13.2
2	3600	145TC	191482	1005	A	64.5	115/208-230	10.8	14.2
	1800	145TC	191483	985	A	64.5	115/208-230	9.0	14.2

Numbers in green are EPACT motors.  
Numbers in blue are available 4th Quarter 2008.

All three phase motors, 1 HP and above, are inverter rated. Refer to page 5 for speed ranges.



### THREE-PHASE • TENV/TEFC • C FACE WITH BASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	FL. Amps 230V	% F.L. Eff.	"C" Dim. (Inches)
1/3	3450	56C	191200	\$525	A	29	208-230/460	1.0	74.0	9.78
	1750	56C	191201	587	A	30	208-230/460	1.3	78.5	9.78
1/2	3450	56C	191203	537	A	32	208-230/460	1.5	77.0	9.78
	1750	56C	191204	605	A	33	208-230/460	1.6	81.5	9.78
	1140	56C	191414	659	A	36	208-230/460	2.0	78.5	9.76
3/4	3450	56C	191206	590	A	33	208-230/460	2.0	78.5	9.78
	1750	56C	191207	697	A	38	208-230/460	2.3	82.5	9.78
	1140	56C	191415	758	A	49	208-230/460	3.0	80.0	11.30
1	3450	56HC	191209	692	A	41	208-230/460	2.6	80.0	13.77
	3450	143TC	G191210	744	B	42	208-230/460	2.6	80.0	13.62
	1750	56C	191291	727	A	46	208-230/460	3.0	81.5	11.00
	1750	56HC	191211	727	A	47	208-230/460	3.0	82.5	13.77
	1750	143TC	G191212	781	B	48	208-230/460	3.0	82.5	13.62
	1140	56HC	191417	792	A	49	208-230/460	3.8	82.5	13.10
1140	145TC	191418	851	B	49	208-230/460	3.8	82.5	13.20	
1½	3450	56HC	191215	763	A	48	208-230/460	3.8	82.5	13.77
	3450	143TC	G191216	821	B	49	208-230/460	3.8	82.5	13.62
	1750	56HC	191217	758	A	48	208-230/460	4.8	84.0	13.77
	1750	145TC	G191218	814	B	49	208-230/460	4.8	84.0	13.62
2	3450	56HC	191221	846	A	49	208-230/460	5.0	84.0	13.77
	3450	145TC	G191222	983	B	50	208-230/460	5.0	84.0	13.62
	1750	56HC	191223	865	A	52	208-230/460	5.8	84.0	13.77
	1750	145TC	G191224	966	B	53	208-230/460	5.8	84.0	13.62
3	3450	145TC	G191293	1055	B	62	208-230/460	7.4	85.5	14.12

- These motors are totally enclosed, non-ventilated – Others are fan cooled.
- Combination 56H base motors have mounting holes for NEMA 56 and NEMA 143-5T and a standard NEMA 56 shaft.
- ① 10:1 Constant Torque Operation



### THREE-PHASE • TENV/TEFC • C FACE LESS BASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	Disc. Sym.	App. Wgt. (lbs.)	Voltage	FL. Amps 230V	% F.L. Eff.	"C" Dim. (Inches)
1/3	1750	56C	191202	\$583	A	30	208-230/460	1.3	78.5	9.78
	1750	56C	191205	597	A	33	208-230/460	1.6	81.5	9.78
1/2	1140	56C	191419	650	A	35	208-230/460	2.0	78.5	9.76
	1750	56C	191208	695	A	38	208-230/460	2.3	82.5	9.78
3/4	1140	56C	191420	756	A	47	208-230/460	3.0	80.0	11.30
	1750	56C	191290	725	A	45	208-230/460	3.0	81.5	11.00
1	1750	56C	191213	725	A	47	208-230/460	3.0	82.5	13.77
	1750	143TC	191214	746	B	47	208-230/460	3.0	82.5	13.62
	1140	56C	191421	790	A	47	208-230/460	3.8	82.5	13.10
1½	1750	56C	191219	756	A	48	208-230/460	4.8	84.0	13.77
	1750	145TC	191220	778	B	48	208-230/460	4.8	84.0	13.62
2	1750	56C	191225	862	A	52	208-230/460	5.8	84.0	13.77
	1750	145TC	191226	888	B	52	208-230/460	5.8	84.0	13.62

- These motors are totally enclosed, non-ventilated – Others are fan cooled.





# WASHGUARD ALL-STAINLESS MOTORS

ALL-STAINLESS • SINGLE PHASE • THREE PHASE

## PREMIUM STAINLESS STEEL DUCK



### General Specifications:

Designed specifically to meet the demanding sanitation requirements of the pharmaceutical, food processing and beverage industries. These motors are also ideal in clean room and severe chemical-processing applications involving frequent washdown with nitric acid and caustic lye. In fact, WASHGUARD All-Stainless Motors include IEEE 841 severe-duty features right out of the box! Motors have been tested to and passed the IEC IP-56 test requirements.

### Mechanical Protection Features:

- All exterior components are 300-series stainless steel.
- Nothing on the motor's exterior is painted or coated in any way.
- All sealing components are Viton® for superior chemical resistance.
- Full fact nameplate is laser etched on the motor frame – no separately attached nameplate to trap dirt or contaminants.
- Endshields are O-ring sealed to the frame.
- Double lip shaft seals on both ends of TEFC motors (shaft end only on TENV motors).
- Removable hydrophobic breathers in opposite shaft endbell and conduit box equalize pressure without allowing moisture to enter.
- Exterior fastener use minimized reducing the number of entry points for moisture. There are no holes in the frame for attaching a nameplate. Bearing lock screws are located inside the motor and the conduit box mounted screws have been eliminated.
- Double-sealed bearings are pre-lubricated with moisture-resistant high-temperature grease for long life.
- Interior coatings applied to rotor and stator protect against corrosion.
- New conduit box mounting system provides optimum sealing.
- Ease to clean construction is BISSC Certified for bakery applications..

### CHEMICAL RESISTANCE RATING CHART

CHEMICAL	CONCENTRATION	ALL STAINLESS COMPONENTS
<b>WATER:</b>		
De-Ionized Boiling	100%	Excellent
Salt (Immersed)	30%	Excellent
Salt (Spray)	5%	Excellent
Tap - 250°F/120°C @ 10,000 PSI	100%	Excellent
<b>ACIDS:</b>		
Hydrochloric	35%	Poor
Sulfuric	25%	Poor
Nitric	35%	Excellent
Picric	Saturated Solution	Excellent
<b>BASE:</b>		
Caustic	100%	Excellent
Caustic	12.5 pH	Excellent
Caustic - 125°F/50°C	9.5 pH	Excellent
<b>SOLVENTS:</b>		
	-	Excellent



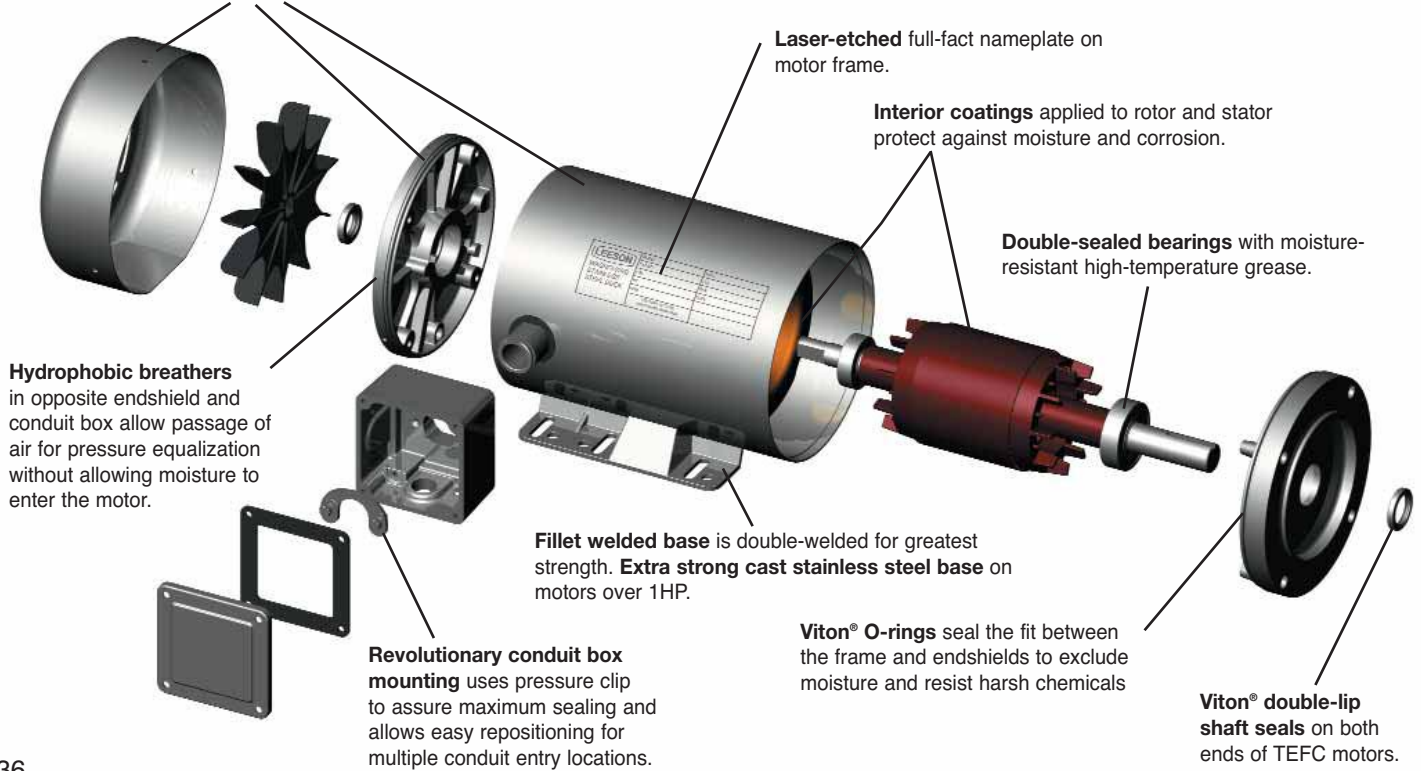
### Electrical Performance and Protection Features

- WASHGUARD efficiencies meet EPACT mandates for non-exempt motors when tested without shaft seals.
- Windings are immersed and cured in polyester insulating varnish for extra moisture-resistance.
- LEESON's exclusive IRIS™ Inverter-Rated Insulation System provides extra protection and long life, especially in inverter-driven applications.
- Single-phase motors use Solid State Sinpac® switch – no mechanical switch contacts to corrode and fail.
- All Washdown Duty motors have Class F Insulation.

### Standards and Approvals

- Single and three phase motors are UL component recognized – file number E57948, guide number PRGY2.
- CSA Energy Efficiency Verification Program, report number EEV 78720-1.
- Construction is CSA Certified for safety report number LR33543 and listed under BISSC authorization number 769.

**300-Series stainless steel** exterior components – frame, base, endshields, shaft extension, fan guard, hardware, conduit box and cover – for maximum corrosion resistance.







## WASHGUARD ALL-STAINLESS MOTORS

ALL-STAINLESS • THREE PHASE



# EXTREME DUCK

**NEW!**

### General Specifications:

These Revolutionary Designed Stainless Steel Motors are built using our “Voice of the customer” design criteria to withstand extreme washdown and sanitation requirements of the food processing, pharmaceutical, packaging and beverage industries. Our Innovative Hydro Sealed System “HS” protects from the “outside-in” by reducing entrance points of contaminants and eliminates the need for drain plugs and breathers. This proven process also minimizes exterior hardware, which may trap application elements. Our unique Rotor/Cartridge Seal System, “Q-CAR” gives quick access to the interior of the motor should the need arise. 300-Series Stainless Steel used on all exterior surfaces gives ideal protection against severe chemical-processing applications and frequent washdown processes using Salt water, Nitric Acids and Solvents. These motors meet IEC IP-67 test requirements, though they are not designed to run immersed in water.

### Mechanical Protection Features:

- All exterior components are 300-Series stainless steel
- Protech Bearing isolator used for the output shaft seal
- Double Lip Viton shaft seal used on non-drive output shaft on TEFC motors
- Minimal exterior fasteners due to no through-bolt design and screw on conduit box covers reduces surface areas that may trap contaminants
- Double-sealed bearings are pre-lubricated with moisture resistant, high temperature grease for long life
- Rotor/Cartridge, “Q-CAR,” design for quick access to motor interior (patent pending).
- O-ring sealed openings on conduit box covers and Rotor/Cartridge cover
- Rigid Cast Base for rugged applications
- Conduit box lead hole location rotatable on TEFC designs
- Full fact nameplate is laser etched to the motor frame making frame surface smooth, which eliminates areas that trap contaminants
- Ease of clean construction is BISSC certified for bakery applications and motors meet Pharmaceutical Duty specifications

### Electrical Performance and Protection Features

- Motors meet EPACT mandates for non-exempt motors when tested without shaft seals
- Total winding encapsulation using an Epoxy Resin.
- LEESON's exclusive IRIS™ Inverter-Rated Insulation System provides extra protection and long life, especially when used in applications driven by an Inverter.
- 3 year warranty
- 10:1 constant torque operation

### Standards and Approvals

- Motors are UL component recognized – file number E57948, guide number PRGY2
- CSA Energy Efficiency Verification Program, report number EEV 78720-1
- Construction is CSA Certified for safety, report number LR33543 and listed under BISSC authorization number 769
- 3 year warranty



### CHEMICAL RESISTANCE RATING CHART

CHEMICAL	CONCENTRATION	ALL STAINLESS COMPONENTS
<b>WATER:</b>		
De-Ionized Boiling	100%	Excellent
Salt (Immersed)	30%	Excellent
Salt (Spray)	5%	Excellent
Tap - 250°F/120°C @ 10,000 PSI	100%	Excellent
<b>ACIDS:</b>		
Hydrochloric	35%	Poor
Sulfuric	25%	Poor
Nitric	35%	Excellent
Picric	Saturated Solution	Excellent
<b>BASE:</b>		
Caustic	100%	Excellent
Caustic	12.5 pH	Excellent
Caustic - 125°F/50°C	9.5 pH	Excellent
<b>SOLVENTS:</b>		
	-	Excellent

# WASHGUARD ALL-STAINLESS MOTORS

ALL-STAINLESS • THREE PHASE



WASHGUARD



## THREE PHASE • TENV/TEFC • C FACE WITH BASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	App. Wgt. (lbs.)	Voltage	FL. Amps 230V	"C" Dim. (Inches)
1/2	3450	56C	117118●	\$1171	39	208-230/460	1.6	10.47
	1750	56C	117119●	1231	40	208-230/460	1.6	10.72
3/4	3450	56C	117120●	1211	46	208-230/460	2.4	10.47
	1750	56C	117121●	1279	47	208-230/460	2.3	11.22
1	3450	56C	117122●	1301	48	208-230/460	2.6	10.97
	1750	56C	117123●	1309	50	208-230/460	3.0	11.97
1½	3450	143TC	G121748	1381	54	208-230/460	4.0	11.00
	1750	145TC	G121749	1376	56	208-230/460	4.4	11.25
2	3450	145TC	G121739	1595	56	208-230/460	5.2	12.50
	1750	145TC	G121740	1613	57	208-230/460	5.6	12.50

● These motors are totally enclosed, non-ventilated — Others are fan cooled.

Catalog numbers in green are EPACT motors.

## THREE PHASE • TENV/TEFC • C FACE LESS BASE

HP	RPM 60 Hz	NEMA Frame	Catalog Number	List Price	App. Wgt. (lbs.)	Voltage	FL. Amps 230V	"C" Dim. (Inches)
1/2	3450	56C	117126●	\$1148	38	208-230/460	1.6	10.47
	1750	56C	117127●	1209	39	208-230/460	1.6	10.72
3/4	3450	56C	117128●	1188	45	208-230/460	2.4	10.47
	1750	56C	117129●	1256	46	208-230/460	2.3	11.22
1	3450	56C	117130●	1278	47	208-230/460	2.6	10.97
	1750	56C	117131●	1287	50	208-230/460	3.0	11.97
1½	3450	143TC	121750	1358	53	208-230/460	4.0	11.00
	1750	145TC	121751	1354	55	208-230/460	4.4	11.25
2	3450	145TC	121742	1573	55	208-230/460	5.2	12.50
	1750	145TC	121743	1590	56	208-230/460	5.6	12.50

● These motors are totally enclosed, non-ventilated — Others are fan cooled.

