

DC Motors



- NEMA DC, explosion proof, SUB-FHP, washdown, IEC and low voltage motors available
- Permanent magnet designs
- PWM or SCR rated and low voltage input voltage designs
- Removable bolt-on base
- Oversized brushes for long brush life
- Easy access to brushes
- Constant torque throughout speed range
- DC Controls available to change the speed of the motors

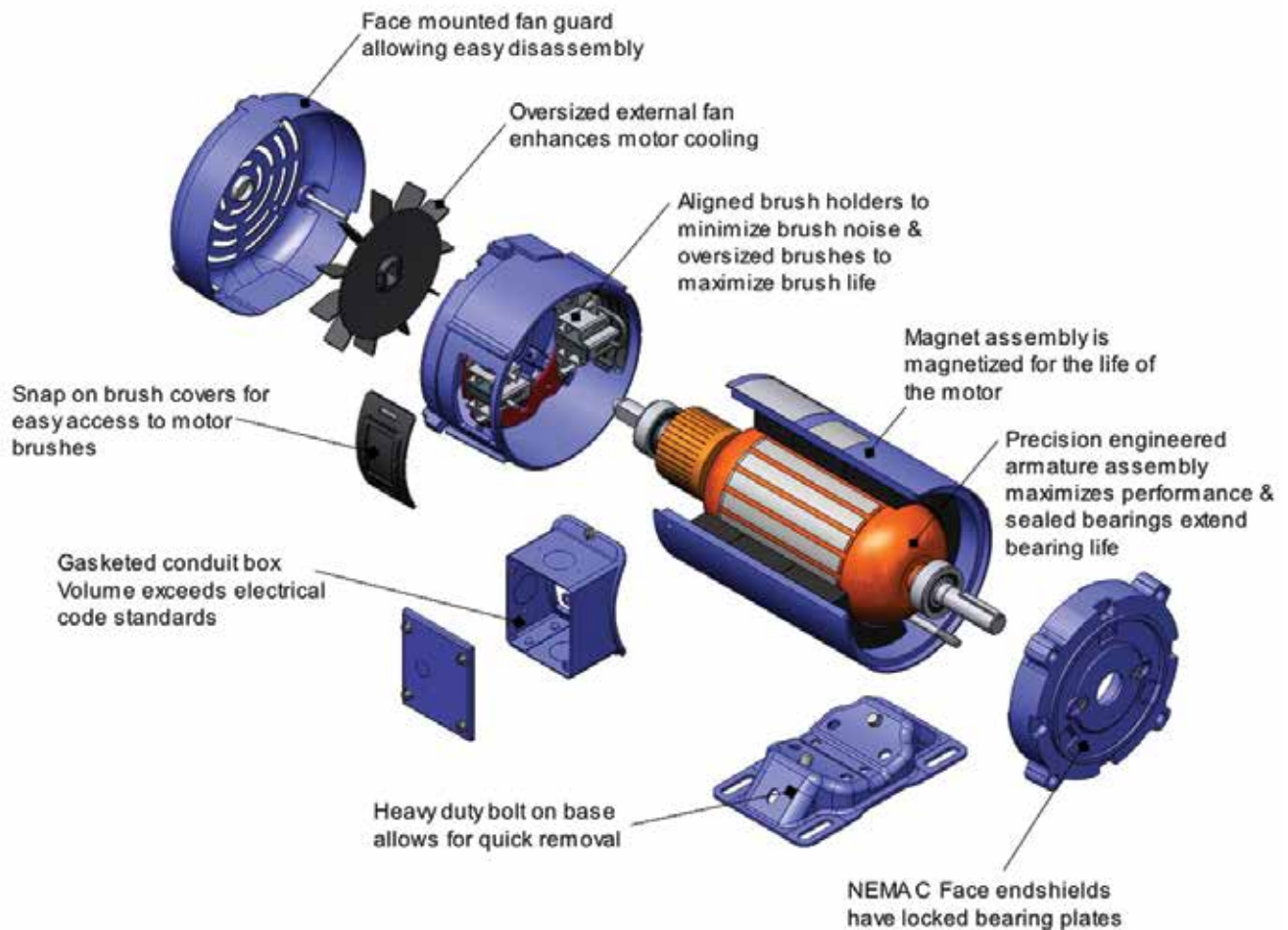
Applications:

DC motors are typically used in applications requiring motor speed adjustment, constant torque throughout the speed range and reversing capabilities. Applications would include: pumps, conveyors, turntables, textile machinery, treadmills, reeling equipment, sports equipment and medical equipment.



Mechanical/ Electrical Features:

- Brush holder design provides easy access to brushes
- Large oversized brushes assure long brush life
- Removable bolt-on base
- NEMA C face designs
- 115 or 230 volt input power ratings – 90 / 180 volt output
- Capable of dynamic braking
- PWM or SCR type controller rated
- High starting torque
- Permanently lubricated sealed bearings
- LEESON SCR controls available to power motors
- High starting torque
- Higher HP and speed achievable using PWM type DC controls
- UL and CSA Listed
- Meets NEMA MG1 standards
- Dynamically balanced armatures
- 30:1 constant torque operation



IEC Motors

DC Motors

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DC Motors

NEMA Frame - SCR Rated



TEFC - SCR Rated 90 & 180 Volts NEMA 56C - C Face With Removable Base

HP	Full Load RPM	NEMA Frame	Catalog Number	Stock	Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥Notes
1/4	1750	SS56C	098002.00	√	42D17FK2	19	90	115	2.5	10.81	S, US
	1750	SS56C	098003.00	√	42D17FK3	22	180	230	1.4	11.31	S, US
1/3	1750	SS56C	098004.00	√	42D17FK4	23	90	115	3.5	11.31	S, US
	1750	SS56C	098005.00	√	42D17FK5	23	180	230	1.7	11.31	S, US
	1140	S56C	109098.00	C/A	4D11FK5	32	90	115	3.5	12.81	S, US
1/2	2500	SS56C	098006.00	√	42D28FK1	22	90	115	5.0	10.81	S, US
	2500	SS56C	098007.00	√	42D28FK2	22	180	230	2.5	10.81	S, US
	1750	SS56C	098000.00	√	42D17FK1	26	90	115	5.0	11.81	S, US
	1750	S56C	108014.00	√	4D17FK1	29	90	115	5.0	12.82	S, US
	1750	SS56C	098008.00	√	42D17FK6	25	180	230	2.5	11.81	S, US
	1750	S56C	108015.00	√	4D17FK2	30	180	230	2.5	12.82	S, US
	1140	S56C	109099.00	√	4D11FK6	40	90	115	5.0	14.32	S, US
	3/4	2500	SS56C	098009.00	√	42D28FK3	26	90	115	7.6	11.81
2500		S56C	108016.00	√	4D28FK3	29	90	115	7.6	12.82	S, US
2500		SS56C	098010.00	√	42D28FK4	25	180	230	3.8	11.81	S, US
2500		S56C	108017.00	√	4D28FK4	29	180	230	3.8	12.82	S, US
1750		SS56C	098032.00	√	42D17FK7	36	90	115	7.6	13.81	S, US
1750		S56C	108018.00	√	4D17FK3	38	90	115	7.6	13.82	S, US
1750		SS56C	098069.00	√	42D17FK11	36	180	230	3.8	13.81	S, US
1750		S56C	108019.00	√	4D17FK4	35	180	230	3.8	13.82	S, US
1	1140	S56C	109100.00	√	4D11FK7	49	90	115	7.5	15.82	S, US
	2500	S56C	108020.00	√	4D28FK5	34	90	115	10.0	13.32	S, US
	2500	S56C	108021.00	√	4D28FK6	38	180	230	5.0	13.82	S, US
	1750	S56C	108022.00	√	4D17FK5	47	90	115	10.0	14.82	S, US
	1750	S56C	108023.00	√	4D17FK6	39	180	230	5.0	14.81	S, US
	1140	145TC	128023.00	C/A	C145D11FK1	82	90	115	11.0	18.84	S, US
1 1/2	2500	S56C	108265.00	√	4D28FK11	43	180	230	7.5	15.32	S, US
	1750	S56C	108092.00	√	4D17FK10	53	180	230	7.6	16.82	S, US
	1750	S56/145TC	108262.00	√	4D17FK19	54	180	230	7.6	17.39	S, US, 8
	1750	145TC	128000.00	√	C145D17FK2	70	180	230	7.5	18.34	S, US
2	2500	S56/145TC	108266.00	√	4D28FK12	51	180	230	8.6	17.89	S, US, 8
	1750	145TC	128010.00	√	C145D17FK3	83	180	230	9.5	19.34	S, US
3	1750	182/145TC	128001.00	√	C182D17FK3	84	180	230	9.5	19.34	S, US, 61
	1750	182/145TC	108502.00	√	182D17FK2	88	180	230	14.0	21.75	S, US, 61

If base is removed, do not reinstall bolts without using washers to compensate for thickness of base.

♥ Note listing on inside back flap

C/A - Check Availability

Specifications are subject to change without notice

DC Motors NEMA Frame - SCR Rated



TEFC - SCR Rated 90 & 180 Volts NEMA 56C - C Face Less Base*

HP	Full Load RPM	NEMA Frame	Catalog Number	Stock
1/4	1750	SS56C	098377.00	√
1/3	1750	SS56C	098378.00	√
1/2	1750	SS56C	098379.00	√
3/4	1750	SS56C	098380.00	√
1	1750	S56C	109096.00	√
	1750	S56C	109097.00	√

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥Notes
42D17FC29	19	90	115	2.5	10.81	S, US
42D17FC30	23	90	115	3.5	11.31	S, US
42D17FC31	29	90	115	5.0	11.81	S, US
42D17FC32	38	90	115	7.6	13.81	S, US
4D17FC42	47	90	115	10.0	14.82	S, US
4D17FC43	39	180	230	5.0	14.82	S, US

No tapped holes provided for attaching a bolt-on base.

♥ Note listing on inside back flap

Specifications are subject to change without notice

All necessary parts to mount listed tachometers to stock TEFC SCR motors. Consists of machined cast fan cover, coupling and hardware. Does not include tachometer. Tach adapter kit is not suitable for catalog number 108502.00.

Tachometer Mounting Kits For DC Motors

Tachometer Type	NEMA Frame	IEC Frame	Catalog Number	App. Wgt. (lbs)
GE 5PY Series	SS56	71	175156.00	5
	56/145	—	175158.00	5
Servo-tek	SS56	71	175157.00	8
SA740 Series	56/145	—	175159.00	8



No Kit available for S56C motors

Specifications are subject to change without notice

Motors with S56C or SS56C frame sizes may be converted to 42/48 C face using the following:

Modification Kits

Frame	Catalog Number
SS56C	175182.00
S56C	175082.00*
	175802.00*†

* Addition of base kit will result in non-NEMA BA dimension of 2 3/4". Addition of C face kit will result in conduit box located at 1 o'clock facing lead end.

† For S56 frame endshield mounted brush cover motors

Specifications are subject to change without notice

DC motors in NEMA S56C frame may be converted to 48 base using the following:

Frame	Catalog Number
S56C	175080.00*

* Addition of base kit will result in non-NEMA BA dimension of 2 3/4". Addition of C face kit will result in conduit box located at 1 o'clock facing lead end

† For S56 frame endshield mounted brush cover motors

Specifications are subject to change without notice



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DC Motors

Explosion-Proof - SCR Rated

Application Notes:

These motors must be applied in accordance with the National Electrical Code, Article #500. For a listing of explosive agents, consult NFPA Publication 497M.



General Specifications:

- Approved for application in hazardous environments where certain explosive gases or materials are present

Features:

- Rugged mechanical construction
- Meets all safety requirements
- UL and CSA listed
- Leads exit thru 3/4"-14NPT Pipe nipple at top of frame opposite shaft end
- Conduit box optional - see below
- Pilot duty thermostats -standard (connect to SCR control)
- Thermostats rated for continuous duty with full wave SCR(thyristor) controls.
- Double shielded, pre lubricated ball bearings - standard
- Easy brush access for field service

Explosion-Proof - Class I, Groups C & D – Class II, Groups F & G 90 & 180 Volt - TEFC - C Face With Removable Base

HP	Full Load RPM	NEMA Frame	Catalog Number	Stock
1/3	1750	S56C	118015.00	✓
1/2	1750	S56C	118016.00	✓
		S56C	118017.00	✓
3/4	1750	S56C	118018.00	✓
		S56C	118019.00	✓

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥Notes
C6D17EK1	27	90	115	3.5	13.41	S, US
C6D17EK2	30	90	115	4.7	14.41	S, US
C6D17EK3	32	180	230	2.5	14.41	S, US
C6D17EK4	40	90	115	7.1	16.41	S, US
C6D17EK5	36	180	230	3.3	16.41	S, US

Specifications are subject to change without notice

♥ Note listing on inside back flap

UL and CSA listed for Class I, Group C & D, and Class II, Groups F & G locations. Has grounding screw and all hardware provided. Mounts to motor by 3/4"-14NPT opening at rear of box. For NEMA 56 frame motors only.

Explosion-Proof Conduit Box

Catalog Number	App. Wgt. (lbs)
175026.00	2



Specifications are subject to change without notice

Nema Frame - Washguard® Duty - 90 & 180 Volts

General Specifications:

- Extended life in wet, high humid applications
- Design repels water from entering motor
- Internal components protected against rust and corrosion
- Frame, base, endshields, armature and interior components protected by enamel and polyester compounds of outstanding adhesion and resistance to moisture, acids, alkalis and oil



Features:

- 303 Stainless steel shaft resists corrosion
- Lubricated spring loaded contact seals prevent moisture from entering the motor
- Patented "V" ring forsheda seal deflects water
- Double sealed, Oversize bearings with high temp lubricant
- Exterior and interior components protected against moisture, acids, alkalis and oil
- Cast conduit box for superior sealing includes:
 - Threaded entrance
 - Drain holes
 - Nitrile gaskets
- 304 stainless steel conduit box cover and fan cover
- Re-positionable drain plugs for use in multiple mounting positions
- Nylon seals at bolt heads for superior sealing
- Machined fits throughout
- Stainless steel data plate
- Chemically inert, static free fan with positive mounting insures it wont move
- Stainless steel fan guard
- USDA Approved white epoxy finish

90 & 180 Volts - Totally Enclosed - C Face With Removable Base

HP	Full Load RPM	NEMA Frame	Catalog Number	Stock
1/4	1750	S56C	108423.00	✓
	1750	S56C	098375.00	CA
1/3	1750	S56C	108424.00	✓
	1750	S56C	098376.00	C/A
1/2	1750	S56C	108226.00	✓
	1750	S56C	108227.00	✓
3/4	1750	S56C	108228.00	✓
	1750	S56C	108229.00	✓
1	1750	S56C	108230.00	✓
	1750	S56C	108231.00	✓
1 1/2	1750	S56C	108232.00	✓

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥Notes
C4D17VK9	23	90	115	2.7	10.69	S, US
C42D17VK1	21	180	230	1.4	10.22	S, US
C4D17VK10	26	90	115	3.5	11.69	S, US
C42D17VK2	22	180	230	1.7	10.22	S, US
C4D17VK1	38	90	115	4.9	13.69	S, US
C4D17VK2	43	180	230	2.4	13.69	S, US
C4D17VK3	53	90	115	7.0	15.69	S, US
C4D17VK4	50	180	230	3.5	15.69	S, US
C4D17WK1	45	90	115	10.0	15.81	S, US
C4D17WK2	42	180	230	5.0	14.81	S, US
C4D17WK3	50	180	230	7.6	15.81	S, US

C/A - Check Availability

♥ Note listing on inside back flap

Specifications are subject to change without notice

Washguard® - IEC Frame - TENV IP55

180 Volts - TENV - B5 Flange With Removable Base

HP/kw	Full Load RPM	NEMA Frame	Catalog Number	Stock
1/2 - .37	1750	71	098040.00	C/A
3/4 - .55	1750	80	108407.00	C/A

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥Notes
42D17VD1	22	180	230	2.5	10.69	S, US
4D17VD1	52	180	230	3.5	16.02	S, US

If base is removed, do not reinstall bolts without using washers to compensate for the thickness of base. These WASHGUARD motors are modular design but stocked with B5 flange and B3 foot. The foot is removable. The B5 flange can be replaced with a B14 face or other diameter B5 flanges noted on page 306.

♥ Note listing on inside back flap

Specifications are subject to change without notice



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DC Motors

Sub-FHP - SCR Rated

General Specifications:

Precision subfractional horsepower DC permanent magnet motors designed for use with full wave non-filtered SCR controls for adjustable speed applications requiring dynamic braking and constant torque throughout the speed range.

Features:

- Compact, space saving design
- Ball bearing construction
- Long life brushes
- External access to brushes allows for easy replacement further prolonging motor life
- Conduit box standard on 31 and 34 frame models
- Continuous duty with full wave un-filtered rectified SCR (thyristor) controls
- Linear speed torque characteristics throughout the speed range
- High starting torques
- Reversible rotation



90 & 180 Volt - TENV - Square Flange or C Face

HP	Full Load RPM	NEMA Frame	Catalog Number	Stock	Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	Notes
1/25	3500	25AS	M1110014.00	✓	980.533	3	90	115	0.5	S, US, 12
	1750	25CS	M1110003.00	✓	980.535	3	90	115	0.5	S, US, 12
1/15	3500	25CS	M1110015.00	✓	980.539	5	90	115	0.7	S, US, 12
	1750	31BS	M1120013.00	✓	M31D17NZ1	5	90	115	0.8	S, US, 12
1/10	1750	31BS	M1120039.00	✓	M31D17NZ5	7	180	230	0.4	S, US, 12
	3500	31BS	M1120060.00	✓	M31D35NZ4	5	90	115	1.3	S, US, 12
1/8	1750	31CS	M1120014.00	✓	M31D17NZ2	7	90	115	1.1	S, US, 12
	1750	31CS	M1120041.00	✓	M31D17NZ7	7	180	230	0.6	S, US, 12
	3500	31CS	M1120059.00	✓	M31D35NZ3	6	90	115	1.5	S, US, 12
1/6	1750	31ES	M1120027.00	✓	M31D18NZ10	7	90	115	1.3	S, US, 12
	1750	31ES	M1120045.00	✓	M31D17NZ11	7	180	230	0.7	S, US, 12
	1750	34D42CZ	M1130053.00	✓	CM34D17NC5	8	90	115	1.4	S, US, 12
	1750	34D42CZ	M1130118.00	✓	CM34D17NC8	7	180	230	0.7	S, US, 12
1/4	3500	31ES	M1120058.00	✓	M31D35NZ6	9	90	115	1.9	S, US, 12
	1750	31GS	M1120042.00	✓	M31D17NZ8	9	90	115	1.8	S, US, 12
	1750	31GS	M1120043.00	✓	M31D17NZ9	11	180	230	0.9	S, US, 12
	1750	34E56C	M1130054.00	✓	CM34D17NC6	11	90	115	1.7	S, US, 12
1/4	1750	34E56C	M1130119.00	C/A	CM34D17NC9	11	180	230	0.9	S, US, 12
	3500	31GS	M1120062.00	✓	M31D35NZ5	9	90	115	2.6	S, US, 12
	1750	34G56C	M1130055.00	✓	CM34D17FC2	13	90	115	2.7	S, US, 13
	1750	34G56C	M1130120.00	✓	CM34D17FC4	13	180	230	1.3	S, US, 13

B 25 frame motors have provisions for an optional conduit box catalog number M1760000.00, see page 346.

Note 13 - TEFC

Specifications are subject to change without notice

♥ Note listing on inside back flap



Application Notes:

LEESON Washguard® motors are designed for extended life in applications requiring regular washdown or otherwise wet environments. Washguard® motors retard the entrance of water. Extra protection for the motor's interior prevents rust and corrosion build-up and releases trapped moisture to insure a longer life than possible with a standard motor.

General Specifications:

Precision subfractional horsepower DC permanent magnet motors. Designed for use with fullwave nonfiltered SCR controls or battery supplied low voltage for adjustable speed applications requiring constant torque throughout the speed range.

Features:

- 303 Stainless steel shaft resists corrosion
- Lubricated spring loaded contact seals prevent moisture from entering the motor
- Double sealed, oversize bearings with high temp lubricant
- Exterior and interior components protected against moisture, acids, alkalies and oil
- Cast conduit box for superior sealing includes:
 - Threaded entrance
 - Drain holes
 - Nitrile gaskets
- 304 stainless steel conduit box cover
- Stainless steel hardware
- USDA approved white epoxy finish
- Nylon seals at bolt heads for superior sealing
- O ring sealed brush covers



90 Volt - TENV - Square Flange or C Face

HP	Full Load RPM	NEMA Frame	Catalog Number	Stock
1/8	1750	31S	M1120181.00	✓
1/6	1750	31S	M1120183.00	✓
1/4	2500	32F42CZ	M1120185.00	✓

Specifications are subject to change without notice

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	♥Notes
CM31D17V21	11	90	115	1.5	S, US
CM31D17V23	11	90	115	1.9	S, US
CM32D25VC1	13	90	115	1.9	S, US

♥ Note listing on inside back flap

12 Volt - TENV - Square Flange or C Face

HP	Full Load RPM	NEMA Frame	Catalog Number	Stock
1/8	1750	31S	M1120182.00	✓
1/6	1750	31S	M1120184.00	✓
1/4	2500	32F42CZ	M1120186.00	✓

Specifications are subject to change without notice

Model Number	App. Wgt. (lbs)	Arm. Volts DC	F. L. Amps DC	♥Notes
CM31D17VZ2	7	12	11	S, US
CM31D17VZ4	11	12	15	S, US
CM32D25VC2	13	12	20	S, US

♥ Note listing on inside back flap



DC Motors

METRIC (IEC) Frame - SCR Rated - IP54



Application Notes:

Please note that one or more of the mounting kits must be used with IEC motors of these frame sizes. See listing on next page for B5 flange and B14 face kits. B3 rigid base kits are listed below.

General Specifications:

- Built to IEC 34-1 Electrical and Mechanical standards
- IEC 63 and smaller frames supplied with an integral B5 Flange or B14 face
- Optional B3 Rigid base kit available
- IEC 71 frame and larger can be field modified for B3 Rigid Base, B5 Flange, or B14 face construction using conversion kits
- Tachometer mounting kits available for 71 and 80 frames only

Features:

- Cast aluminum conduit box
- Terminal board provided for connections
- All Metric fasteners
- Easy brush access for field service
- Oversize brushes for extended life
- High strength rolled steel frame
- Die cast aluminum endshields with steel bearing inserts
- Permanently lubricated sealed ball bearings
- Reversible rotation
- Simple 2 lead connection
- Convenient wiring access
- Tachometer mounting kits available for 71 and 80 frames only



180 Volts - Totally Enclosed - B5 Flange

HP/kW	Full Load RPM	IEC Frame	Catalog Number	Stock
0.06/1/12	1750	56	M1130146.00	C/A
0.09/1/8	3000	56	M1130150.00	√
	1750	56	M1130147.00	√
0.12/1/6	3000	56	M1130151.00	√
	1750	63	M1130148.00	√
0.18/1/4	3000	63	M1130152.00	√
	1750	63	M1130149.00	√
0.25/1/3	3000	63	M1130153.00	√

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥ Notes
CIM34D18ND1	8	180	230	0.5	6.24	S, US, 12
CIM34D30ND1	9	180	230	0.7	6.74	S, US, 12
CIM34D18ND2	10	180	230	0.7	7.55	S, US, 12
CIM34D30ND2	9	180	230	0.9	7.55	S, US, 12
CIM34D18FD1	7	180	230	0.9	8.30	S, US, 13
CIM34D30ND3	11	180	230	1.3	8.78	S, US, 12
CIM34D18FD2	13	180	230	1.3	9.50	S, US, 13
CIM34D30FD1	11	180	230	1.7	9.50	S, US, 13

These motors have accommodations for B3 base mountings with the kits listed on page 306.

Note 12 - TENV

C/A - Check Availability

Specifications are subject to change without notice

♥ Note listing on inside back flap



IEC Motors

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METRIC (IEC) Frame - SCR Rated - IP54



180 volts - Totally Enclosed - B14 Flange

HP/kW	Full Load RPM	IEC Frame	Catalog Number	Stock
0.06/1/12	3000	56	M1110024.00	✓
	1750	56	M1130136.00	✓
0.09/1/8	3000	56	M1130140.00	✓
	1750	56	M1130137.00	✓
0.12/1/6	3000	56	M1130141.00	✓
	1750	63	M1130138.00	✓
0.18/1/4	3000	63	M1130142.00	✓
	1750	63	M1130139.00	✓
0.25/1/3	3000	63	M1130143.00	✓

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥Notes
980.542	6	180	230	0.4	6.34	S, US, 12
CIM34D18NC5	8	180	230	0.5	6.24	S, US, 12
CIM34D30NC1	9	180	230	0.7	6.74	S, US, 12
CIM34D18NC6	14	180	230	0.7	7.55	S, US, 12
CIM34D30NC2	10	180	230	0.9	7.55	S, US, 12
CIM34D18FC1	8	180	230	0.9	8.30	S, US, 13
CIM34D30NC3	10	180	230	1.3	8.78	S, US, 12
CIM34D18FC2	10	180	230	1.3	9.50	S, US, 13
CIM34D30FC1	10	180	230	1.7	9.50	S, US, 13

Except for M1110024.00, these motors have accommodations for B3 base mountings with kits - see page 306.

♥ Note listing on inside back flap

Note 12 - TENV

C/A - Check Availability

Specifications are subject to change without notice



TEFC - SCR Rated 180 Volts - Round Body

HP/kW	Full Load RPM	IEC Frame	Catalog Number	Stock
0.25/1/3	1750	71	098014.00	✓
0.37/1/2	3000	71	098016.00	✓
	1750	71	098015.00	✓
0.55/3/4	3000	71	098017.00	✓
	1750	80	108369.00	✓
0.75/1	3000	80	108372.00	✓
	1750	80	108370.00	✓
1.1/11/2	3000	80	108373.00	✓
	1750	80	108371.00	✓
1.5/2	3000	90L	118007.00	✓
	1750	90L	118009.00	✓
2.2/3	3000	90L	118008.00	✓
	1750	90L	118010.00	✓
	1750	112M	118014.00	✓

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥Notes
42D17FT1	23	180	230	1.7	11.28	S, US
42D34FT1	21	180	230	2.5	10.78	S, US
42D17FT2	26	180	230	2.5	11.78	S, US
42D34FT2	24	180	230	3.6	11.78	S, US
4D17FT1	34	180	230	3.5	14.64	S, US
4D34FT1	45	180	230	4.9	14.64	S, US
4D17FT2	48	180	230	4.6	17.14	S, US
4D34FT2	47	180	230	7.1	16.14	S, US
4D17FT3	52	180	230	7.0	17.14	S, US
Ci6D17FT1	64	180	230	7.5	18.97	S, US
Ci6D34FT1	72	180	230	10.0	18.47	S, US
Ci6D17FT2	84	180	230	9.5	20.47	S, US
Ci6D34FT2	82	180	230	16.0	19.47	S, US
Ci6D17FK1	90	180	230	14.0	21.79	S, US

IMPORTANT: These round body motors require either a B3 rigid base, B14 face or B5 flange kit - see page 306. Catalog number 118014.00 comes complete with IEC 112 B14 face and B3 foot; shaft diameter is 24mm.

♥ Note listing on inside back flap

Specifications are subject to change without notice



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DC Motors

Metric (IEC) Frame - SCR Rated

(For DC Metric Motors Only)

All motors are stocked with provisions to accommodate B3 foot mountings with the packages noted below.

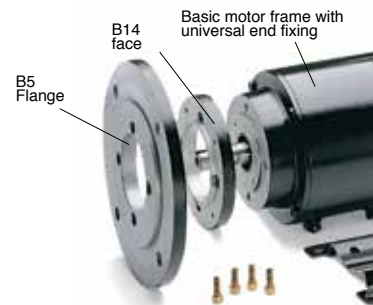
B3 Foot Mounting Kits

IEC Frame	Catalog Number
56	175142.00
63	175143.00
71	175144.00
80	175145.00
80	175784.00†
90	175146.00

† For endshield mounted brush cover motors

Flange Kits

Flange and face kits for DC Metric (IEC) frame motors
An advantage of LEESON'S modular design concept is the possible use of a different diameter B5 flange or B14 face than is normally assigned to a motor by IEC dimensional standards. This flexibility makes it possible to accommodate a wide variety of gear reducers, pumps and similar close coupled motor mounted loads.



B5 Flange Kits (For DC Metric Motors Only)

IEC Frame	Catalog Number	App. Wgt. (lbs)	AK Register (mm)	BF Hole (mm)	AJ Bolt Circle (mm)	BD Flange Dia. (mm)
71	175106.00	2	110	9	130	160
80	175108.00	3	130	12	165	200
90S/90L	175108.00	3	130	12	165	200
100L/112M	175137.00	5	180	15	215	250



Specifications are subject to change without notice

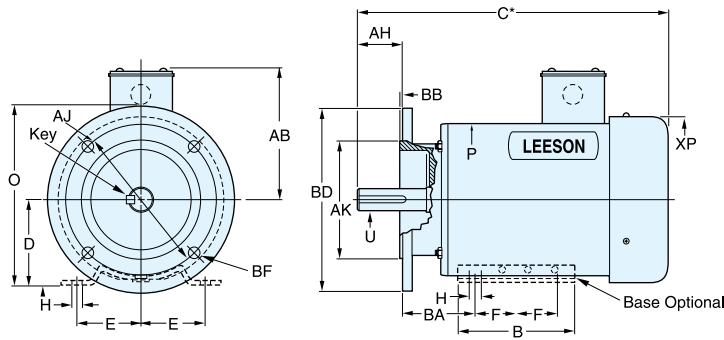
B14 Face Kits (For DC Metric Motors Only)

IEC Frame	Catalog Number	App. Wgt. (lbs)	AK Register (mm)	BF Hole (mm)	AJ Bolt Circle (mm)	BD Flange Dia. (mm)
71	175107.00	1	70	6	85	105
80	175109.00	1	80	6	100	120
90S/90L	175129.00	1	95	6	115	140
100L/112M	175130.00	2	110	6	130	160

Specifications are subject to change without notice

DC Motors

Metric (IEC) Frame - SCR Rated



*For overall length, see motor listing.

IEC Frame Dimensions (Millimeters)

IEC Frame	Mounting			Shaft							B14 Face/B5 Flange					General				
	2E	2F	BA	D	H	U	AH [◇]	KEY	S	R	TAP	AJ	AK	BD	BF	BB	AB	XP	B	O
56	90	71	36	56	6	9	20	15	3	7.0	M3	65 100	50 80	80 120	M5 7	2.5 2.5	83	96	90	99
63	100	80	40	63	7	11	23	19	4	9.0	M4	75 115	60 95	90 140	M5 9	2.5 3.0	116	96	96	108
71	112	90	45	71	7	14	30	26	5	11.5	M5	85 130	70 110	105 160	M6 9	2.5 3.5	114	130	105	132
80	125	100	50	80	10	19	40	33	6	16.0	M6	100 165	80 130	120 200	M6 12	3.0 3.5	124	149	127	151
90S	140	100	56	90	10	24	50	36	8	20.5	M8	115 165	95 130	140 200	M8 12	3.0 3.5	135	182	152	173
90L	140	125	56	90	10	24	50	36	8	20.5	M8	115 165	95 130	140 200	M8 12	3.0 3.5	135	182	152	173
100L	160	140	63	100	12	28	60	41	8	24.5	M10	130 215	110 180	160 250	M8 15	3.5 4.0	135	182	176	173
112M	190	140	70	112	12	28	60	41	8	24.5	M10	130 215	110 180	160 250	M8 15	3.5 4.0	162	231	176	225

◇ Without face or flange AH shaft dimension is 12mm longer.
Specifications are subject to change without notice



IEC Motors

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DC Motors

NEMA Frame - Low Voltage 12, 24, 36 & 48 VOLTS

General Specifications:

- Low voltage PMDC design suitable for battery, solar powered or generator supplied low voltage applications

Features:

- Oversized brushes for long life
- External access to brushes allows for easy replacement further prolonging motor life
- Heavy-duty, stamped steel, bolt on base (Removable)
- NEMA C face mounting flange at no additional cost
- High strength rolled steel frame
- Rugged die cast endshields with steel bearing inserts
- Permanently lubricated sealed ball bearings
- Convert to NEMA 48 frame base dimensions or NEMA 42/48 frame C face dimensions with modification kits shown below
- High starting torques for heavy load applications
- Linear speed torque characteristics throughout the speed range
- Capable of dynamic braking for faster stops
- Reversible rotation
- Simple two lead connection



12, 24, 36 & 48 Volts - TENV / TEFC - C Face With Removable Base

HP	Full Load RPM	NEMA Frame	Catalog Number	Stock	Model Number	App. Wgt. (lbs)	Arm. Volts DC	F. L. Amps DC	"C" Dim. (Inches)	♥Notes
1/4	1750	S56C	108045.00	✓	4D17NK5	21	12	21.0	10.27	S, US, 12, 15
1/3	1750	S56C	108046.00	✓	4D17NK6	24	12	27.0	10.77	S, US, 12, 15
	1750	S56C	108050.00	✓	4D17NK9	22	24	13.5	10.77	S, US, 12, 15
1/2	1750	S56C	108047.00	✓	4D17NK7	29	12	39.0	11.77	S, US, 12, 15
	1750	S56C	108051.00	✓	4D17NK10	29	24	20.0	11.77	S, US, 12, 15
	1750	SS56C	098381.00	✓	42D18FK6	29	36	13.5	10.81	S, US
	1750	SS56C	098382.00	✓	42D18FK7	29	48	11.0	10.81	S, US
3/4	1750	S56C	108048.00	✓	4D17FK7	30	12	58.0	13.82	S, US, 35
	1750	S56C	108052.00	✓	4D17FK8	30	24	29.0	12.82	S, US
1	1750	S56C	108322.00	✓	4D17FK28	39	12	80.0	13.81	S, US, 35
	1750	S56C	108053.00	✓	4D17FK9	37	24	39.0	13.82	S, US, 35
	1750	S56C	109101.00	✓	4D18FK1	37	36	25.5	13.81	S, US
	1750	S56C	109102.00	✓	4D18FK2	37	48	18.5	13.81	S, US
1 1/2	1750	S56CZ	109103.00	✓	4D18FK3	39	24	60.0	15.25	S, US, 35, 9
	1750	S56CZ	109104.00	✓	4D18FK4	37	36	36.0	17.38	S, US, 35, 9
	1750	S56CZ	109105.00	✓	4D18FK5	37	48	27.0	17.38	S, US, 35, 9
2	1750	S56CZ	109106.00	✓	4D18FK6	42	24	70.0	16.74	S, US, 35, 9
	1750	S56CZ	109107.00	✓	4D18FK7	42	36	49.0	16.74	S, US, 35, 9
	1750	S56CZ	109108.00	✓	4D18FK8	42	48	38.0	16.74	S, US, 35, 9

If base is removed, do not reinstall bolts without using washers to compensate for thickness of base.

Note 12 - TENV

Note 15 - Built in conduit box

Note 35 - Terminal studs at 12:00

Specifications are subject to change without notice

♥ Note listing on inside back flap



General Specifications:

- Built to IEC 34-1 Electrical and Mechanical standards
- IEC 63 and smaller frames supplied with an integral B5 Flange or B14 face
- Optional B3 Rigid base kit available
- IEC 71 frame and larger can be field modified for B3 Rigid Base, B5 Flange, or B14 face construction using conversion kits
- Tachometer mounting kits available for 71 and 80 frames only

Features:

- Cast aluminum conduit box
- Terminal board provided for connections
- All Metric fasteners
- Easy brush access for field service
- Oversize brushes for extended life
- High strength rolled steel frame
- Die cast aluminum endshields with Steel bearing inserts
- Permanently lubricated sealed ball bearings
- Reversible rotation
- Simple 2 lead connection
- Convenient wiring access
- Tachometer mounting kits available for 71 and 80 frames only



24 Volt - TEFC/TENV - Modular Design

HP/ kW	Full Load RPM	IEC Frame	Catalog Number	Stock
0.06/1/12	3000	56	M1110025.00	√
	1750	56	M1110026.00	√
0.18/1/4	3000	63	M1130206.00	√
	3000	63	M1130296.00	√
	1750	63	M1130207.00	√
	1750	63	M1130297.00	√
	1750	71	098065.00	√
0.37/1/2	3000	71	098066.00	√
	1750	71	098067.00	√
0.75/1	3000	80	108456.00	√
	1750	80	108455.00	√
1.1/1/2	3000	80	108457.00	√
1.5/2	3000	80	108458.00	√

Model Number	App. Wgt. (lbs)	DC Voltage	F.L. Amps VDC	"C" Dim. (Inches)	♥ Notes
980.543	5	24	3.3	5.34	S, US, 12, >
980.544	6	24	3.4	6.34	S, US, 12, >
CIM34D30FD2	13	24	11.0	7.75	S, US, ♣
CIM34D30FC7	9	24	11.0	7.75	S, US, >
CIM34D18FD6	13	24	10.0	8.75	S, US, ♣
CIM34D18FC10	9	24	10.0	8.75	S, US, >
42D17FT6	19	24	11.0	10.77	S, US
42D34FT7	23	24	20.0	11.27	S, US
42D17FT7	23	24	20.0	12.27	S, US
4D34FT5	33	24	40.0	14.14	S, US, 35
4D17FT6	52	24	39.0	14.64	S, US, 35
4D34FT6	33	24	65.0	15.64	S, US, 35
4D34FT7	43	24	78.0	17.14	S, US, 35

Note 12 - TENV

Note 35 - Terminal bolts at 12:00

IMPORTANT: IEC 71 and 80 frame motors in this chart are round body and require either B14 face, B5 flange or B3 foot from kits shown on page 306.

Note ♣ - Dedicated B5 Flange

Note > - Dedicated B14 Face

Specifications are subject to change without notice

♥ Note listing on inside back flap



DC Motors

SUB-FHP Low Voltage Motors

General Specifications:

- Low voltage PMDC design suitable for battery, solar powered or generator supplied low voltage applications

Features:

- Compact, space saving design
- Standard conduit box simplifies connections
- Ball bearing construction
- Long life brushes
- External access to brushes allows for easy replacement further prolonging motor life
- High starting torques
- Linear speed torque characteristics throughout the speed range
- Capable of dynamic braking for faster stops
- Reversible rotation
- Simple two lead connection
- Class F insulated with high temperature welded commutators.



12 & 24 Volts - TENV - Square Flange

HP	Full Load RPM	IEC Frame	Catalog Number	Stock
1/20	1750	25CS	M1110006.00	✓
1/10	4200			
1/14	1750	31AS	M1120040.00	✓
1/7	4200			
1/7	1750	31ES	M1120044.00	✓
1/4	3500			
1/6	1750	31GS	M1120046.00	✓
1/3	3900			

Model Number	App. Wgt. (lbs)	Arm. Volts DC	F. L. Amps DC	♥Notes
980.536	3	12	4.4	S, US, *
		24	4.4	
M31D17NZ6	4	12	7.7	S, US
		24	7.7	
M31D17NZ10	9	12	13.0	S, US
		24	13.0	
M31D17NZ26	8	12	14.0	S, US
		24	14.0	

These motors may be operated at 12, 24V, or at intermediate voltages between 12 and 24V, within horsepower ranges noted.

♥ Note listing on inside back flap

Note * - Provision for optional conduit box - M1760000.00

Specifications are subject to change without notice



Low Voltage Commercial Duty Metric (IEC) Frame Motors

Features:

- Specially designed low voltage DC for use in OEM applications
- Combination of features and low cost make these ideal for many uses
- IP44(TENV) enclosure
- Dedicated B14 face mount
- Continuous duty
- Zinc plated steel frame construction



12, 24V & 90 Volt - TENV - B14 Mount

HP	Full Load RPM	IEC Frame	Catalog Number	Stock
1/15	3000	56	980.159	✓
	3000	56	980.143	✓
	3000	56	980.549	✓
1/8	3000	56	970.600	✓
	3000	56	970.601	✓
	3000	56	970.576	✓
1/6	3000	56	970.620	✓
	3000	56	970.621	✓
	3000	56	970.577	✓

Specifications are subject to change without notice

Model Number	App. Wgt. (lbs)	Arm. Volts DC	F. L. Amps DC	♥Notes
980.159	2.3	12	6.4	S, US
980.143	2.3	24	3.2	S, US
980.549	2.3	90	0.8	S, US
970.600	3.0	12	12.0	S, US
970.601	3.0	24	5.3	S, US
970.576	3.0	90	1.2	S, US
970.620	3.5	12	13.1	S, US
970.621	3.5	24	6.8	S, US
970.577	3.5	90	1.6	S, US

♥ Note listing on inside back flap

IEC Motors

DC Motors

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DC Motors - Washguard® Motors

NEMA and IEC Washguard®

All-Stainless DC Motors - SCR Rated



TEFC - SCR Rated 90 & 180V - NEMA - C Face With Base

HP	Full Load RPM	NEMA Frame	Catalog Number	Stock
1/4	1750	S56C	109065.00	√
1/3	1750	S56C	109066.00	√
	1750	S56C	109067.00	√
1/2	1750	S56C	109069.00	√
	1750	S56C	109070.00	√
3/4	1750	S56C	109072.00	√
	1750	S56C	109073.00	√
1	1750	S56C	109075.00	√
	1750	S56C	109076.00	√

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥Notes
4D17VK24	38	90	115	3.1	11.81	S, US, 12
4D17VK25	44	90	115	3.8	12.81	S, US, 12
4D17VK26	44	180	230	1.9	12.81	S, US, 12
4D17WK9	46	90	115	5.2	13.87	S, US, 13
4D17WK10	46	180	230	2.7	13.87	S, US, 13
4D17WK13	47	90	115	7.5	15.37	S, US, 13
4D17WK14	48	180	230	3.7	15.37	S, US, 13
4D17WK16	51	90	115	9.5	16.37	S, US, 13
4D17WK17	50	180	230	5.0	16.37	S, US, 13

Base is welded to frame and not removable
Note 12 - TENV

Specifications are subject to change without notice

♥ Note listing on inside back flap



TEFC - SCR Rated 90 & 180V - NEMA - C Face Less Base

HP	Full Load RPM	NEMA Frame	Catalog Number	Stock
1/4	1750	S56C	109078.00	√
1/3	1750	S56C	109079.00	√
	1750	S56C	109080.00	√
1/2	1750	S56C	109082.00	√
	1750	S56C	109083.00	√
3/4	1750	S56C	109085.00	√
	1750	S56C	109086.00	C/A
1	1750	S56C	109088.00	√
	1750	S56C	109089.00	√

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥Notes
4D17VC5	38	90	115	3.1	11.81	S, US, 12
4D17VC6	44	90	115	3.8	12.81	S, US, 13
4D17VC7	44	180	230	1.9	12.81	S, US, 13
4D17WC2	46	90	115	5.2	13.87	S, US, 13
4D17WC3	46	180	230	2.7	13.87	S, US, 13
4D17WC5	47	90	115	7.5	15.37	S, US, 13
4D17WC6	48	180	230	3.7	15.37	S, US, 13
4D17WC8	51	90	115	9.5	16.37	S, US, 13
4D17WC9	50	180	230	5.0	16.37	S, US, 13

C/A - Check Availability

Note 12 - TENV

Specifications are subject to change without notice

♥ Note listing on inside back flap

IEC Motors

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DC Motors - Washguard® Motors

Metric (IEC) Frame PMDC Motors

TEFC - SCR Rated 90 & 180V - All Stainless Steel - C Face With Base

HP/kW	Full Load RPM	IEC Frame	Catalog Number	Stock
1/3 - 0.25	1750	80D	109068.00	✓
1/2 - 0.37	1750	80D	109071.00	✓
3/4 - 0.55	1750	80D	109074.00	✓
1 - 0.75	1750	80D	109077.00	✓

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥ Notes
4D17VK27	44	180	230	1.9	12.81	S, US, 12
4D17WK11	46	180	230	2.7	13.87	S, US, 13
4D17WK15	48	180	230	3.7	15.37	S, US, 13
4D17WK18	50	180	230	5.0	16.37	S, US, 13

Note 12 - TENV

Base is welded to frame and not removable

Specifications are subject to change without notice

♥ Note listing on inside back flap

TEFC - SCR Rated 90 & 180V - Metric (IEC) - All-Stainless Steel - C Face Less Base

HP/kW	Full Load RPM	IEC Frame	Catalog Number	Stock
1/3 - 0.25	1750	80D	109081.00	✓
1/2 - 0.37	1750	80D	109084.00	✓
3/4 - 0.55	1750	80D	109087.00	✓
1 - 0.75	1750	80D	109090.00	✓

Model Number	App. Wgt. (lbs)	Arm. Volts DC	Control Volts AC Input	F. L. Amps DC	"C" Dim. (Inches)	♥ Notes
4D17VC8	44	180	230	1.9	12.81	S, US, 12
4D17WC4	46	180	230	2.7	13.87	S, US, 13
4D17WC7	48	180	230	3.7	15.37	S, US, 13
4D17WC10	50	180	230	5.0	16.37	S, US, 13

Specifications are subject to change without notice

♥ Note listing on inside back flap

Flange And Face Kits for DC Metric (IEC) Frame Motors

The modular design concept of LEESON's other metric DC motors has been applied to the all-stainless metric motors. Any flange or face kit can mount on any motor. This allows the greatest flexibility from the smallest inventory of motors.

B5 Flange Kits (For Stainless DC Metric Motors)

IEC Frame	Catalog Number
71	175593.00
80	175594.00
90S/90L	175594.00
100L/112M	175595.00

App. Wgt. (lbs)	BD Flange Dia. (mm)	AK Register (mm)	BF Hole (mm)	AJ Bolt Circle (mm)
2	110	9	130	160
3	130	12	165	200
3	130	12	165	200
5	180	15	215	250

Specifications are subject to change without notice

♥ Note listing on inside back flap

B14 Flange Kits (For Stainless DC Metric Motors)

IEC Frame	Catalog Number
71	175596.00
80	175597.00
90S/90L	175598.00
100L/112M	175599.00

App. Wgt. (lbs)	BD Flange Dia. (mm)	AK Register (mm)	BF Hole (mm)	AJ Bolt Circle (mm)
1	70	6	85	105
1	80	6	100	120
1	95	6	115	140
2	110	6	130	160

Specifications are subject to change without notice

♥ Note listing on inside back flap



IEC Motors

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