W01 Rolled Steel

Three-Phase Steel Motor

Technical Catalogue
NEMA Market

W01 Rolled Steel
The new generation of WEG general purpose steel motors.

The motors of the W01 Rolled Steel line are the perfect option for applications where performance, robustness and light-weight are required in an all-in-one solution.

Presenting a whole new electrical and mechanical design, the new platform of Rolled Steel motors are made to run cooler, last longer and to be easier to install and maintain. The Premium Efficiency motors meet or exceed all NEMA Premium requirements for energy efficiency, while the High Efficiency motors meet or exceed the EPAct requirements certified by the Department of Energy. Available in two options, the TEFC motors are designed for operating in environments of dirt, dust and moisture, on indoor and outdoor applications, while the ODP motors are designed for environments where dirt and moisture are minimal.
With Design “B” torques and energy efficient designs from 143/5T through 254/6T frames, these motors are specifically designed to provide maximum ventilation and heat dissipation.
Also presenting a whole new NEMA 56 ODP Premium Efficiency line that meet or exceed the requirements of the Department of Energy (DOE) regulations, to be in course on 2015.
The scenario of increasing demand for more compact and efficient electric motors creates the need to develop new products with higher performance, quality, reliability and that exceed the requirements of customers. In accordance with this premise, WEG developed the new W01 Rolled Steel platform.

Main features and benefits of the W01 Rolled Steel motors

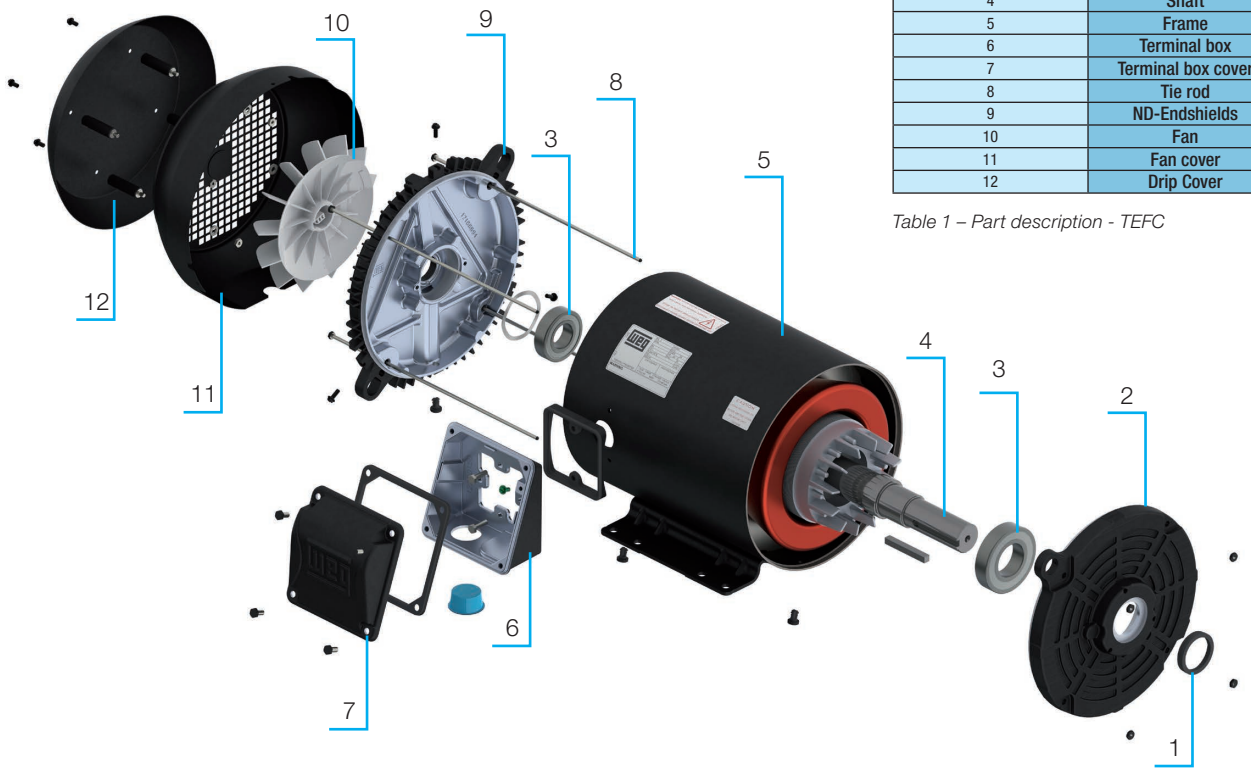
- New ventilation system for improved thermal performance
- Visual identity along the full scope and with internal bolts
- Robust feet design suitable for tougher applications (frames 182/4T and up)
- New and more robust eyebolts design, integrated to the endshields
- Oversized diagonally split aluminum terminal box that exceeds IP55 requirements and rotatable in 90º increments for flexibility during installation
- Option for internal AEGIS® SGR
- Suitable for VFD operation as per NEMA MG1 part 31.4.4.2
- Color coded/numbered leads as standard for easy wiring
- Regreasable ball bearings on 254/6T frame as standard
- Bearing cap as standard on all flanged motors
- Motor frame painting system resistant to a minimum of 500 hours minimum ASTM B117 salt spray

Visual index

TEFC

1	Sealing system
2	D-Endshield
3	Bearings
4	Shaft
5	Frame
6	Terminal box
7	Terminal box cover
8	Tie rod
9	ND-Endshields
10	Fan
11	Fan cover
12	Drip Cover

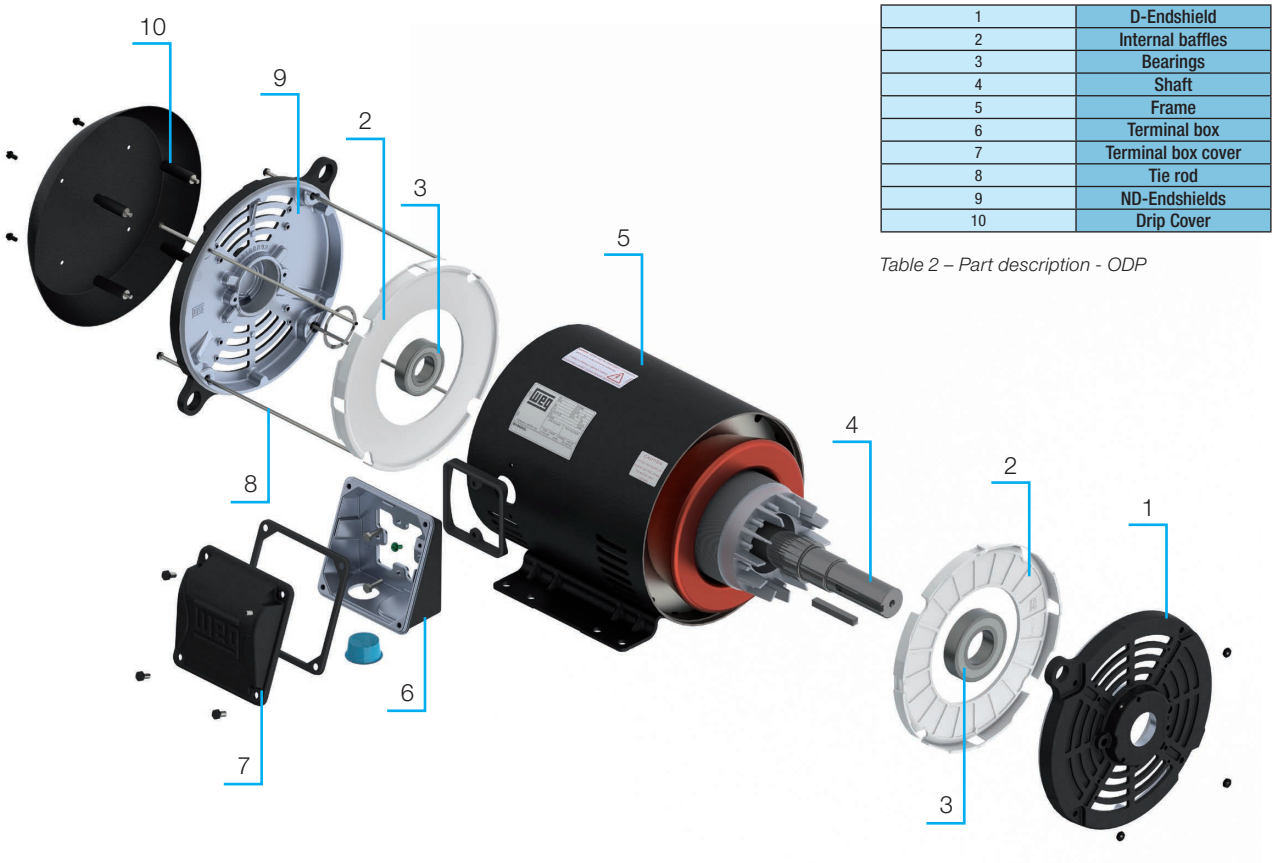
Table 1 – Part description - TEFC



ODP

1	D-Endshield
2	Internal baffles
3	Bearings
4	Shaft
5	Frame
6	Terminal box
7	Terminal box cover
8	Tie rod
9	ND-Endshields
10	Drip Cover

Table 2 – Part description - ODP



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1. Standards

The W01 Rolled Steel motors meet the requirements and regulations of the current versions of the following standards:

Standard	Title
NEMA MG 1	Motor and Generators
UL 1004-1	Rotating Electrical Machines – General Requirements
CSA C22.2 No 100	Motor and Generators
CSA C390	Test Methods, Marking Requirements and Energy Efficiency Levels for Three-Phase Induction Motors
IEEE STD 112	IEEE Standard Test Procedure for Polyphase Induction Motors and Generators

Table 3 – Standards observed in the motor design.

2. Construction Details

The information contained herein refers to the standard mounting features and the most common variants of the W01 Rolled Steel line.
Motors for special applications and/or customized are also available upon request. Please, contact the nearest WEG office.

2.1 Frame

Produced in steel plate SAE 1010, the frames of the W01 Rolled Steel motors are covered with a new nano-ceramic coating and painted with polyurethane base powder painting, independently of finishing painting plan, ensuring resistance to salt spray test, overcoming 500 hours according ASTM B117/03.

Frame	Steel thickness (mm)
56 – 143/5T	1.9
182/4T	3.0
213/5T	4.25
254/6T	4.75
IEEE STD 112	IEEE Standard Test Procedure for Polyphase Induction Motors and Generators

Table 4 – Steel thickness of frames

2.1.1 Feet

The all new designed feet on frames 182/4T up to 254/6T, welded to the frame, increases mechanical resistance and motor natural frequency, resulting in a more robust product with lower vibration levels on the application.

Figure 1 – Feet on frames 182/4T up to 254/6T

56 frames are available in two different feet designs. The use of one or the other changes the frame identification, being 56 used for the standard 56 feet and 56H used for motors with the double punched feet. The 56H has the same dimensions of a 143/5T feet.
For general purpose line motors, as standard, below there is the list of outputs and its feet size for NEMA 56 frames:

Speed (RPM)	HP	Feet size
3600	0.25	56
	0.33	
	0.5	
	0.75	
	1.0	
	1.5	
	2.0	56H
	3.0	
1800	0.25	56
	0.33	
	0.5	
	0.75	
	1.0	
	1.5	56H
	2.0	
1200	0.25	56
	0.33	
	0.5	
	0.75	56H
	1.0	

Table 5 – Feet sizes for frame 56

Figure 2 - Motor with 56 feet (left) and 56H feet (right)

2.2 Eyebolts

To improve handling and installation in the various mountings options available, the new W01 Rolled Steel motors now present eyebolts integrated to the endshields or threaded on the flanges as standard on frames 182/4T up to 254/6T. The two eyebolt lifting way promotes a better controlled and safer handling compared to one eyebolt systems. Also its design assures a minimum overall space required to accommodate the motor in the application.
On motors of frames 182/4T, two eyebolts, each one integrated on D endshield and ND endshield and on frames 213/5T and 254/6T, one eyebolt integrated on D endshield, plus two eyebolts diagonally positioned integrated to the ND endshield, making vertical lifting easier.

Figure 3 – Eyebolts on 213/5T and 254/6T frames.

Figure 4 – Threaded eyebolt on motors with flange.

Note:
For horizontal motors, lifting must happen simultaneously through the two eyebolts, one located on each endshield. For vertical motors, lifting must happen simultaneously through the two eyebolts located on the ND endshield (when available). Despite the eyebolts being engineered to support over-weight load, it is not allowed the use of them as the only device to lift motor coupled to the load.

2.3 Grounding terminals

The W01 Rolled Steel motors are fitted with grounding means inside the terminal box (see Figure 5). For frames 56 up to 213/5T, the grounding terminal is a green bolt. while for frames 254/6T a grounding lug for leads from AWG 18 up to AWG 8 is available as standard.

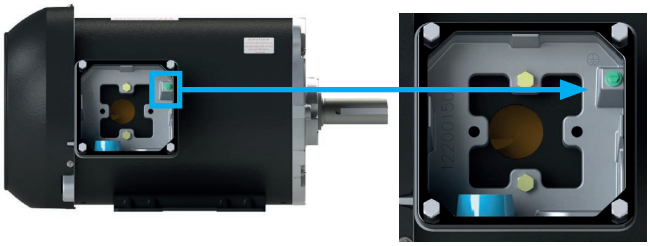


Figure 5 – Detail of the grounding terminal.

Note:
The incorrect/inadequate dimensioning or failure to use grounding devices can cause serious damage to the machine and people involved in the operation of the motor. Before powering up the motor, ensure that it is properly grounded and that all grounding components are in perfect operating conditions.

2.4 - Shaft Grounding device – AEGIS® SGR

W01 Rolled Steel motors, on all frames and configurations, can optionally be supplied with an AEGIS® grounding brush (see Figure 6) installed on the internal bearing cap, which prevents, when operated with VFDs, the discharge of electric current from the rotor to the motor frame through the bearings avoiding its premature wear.

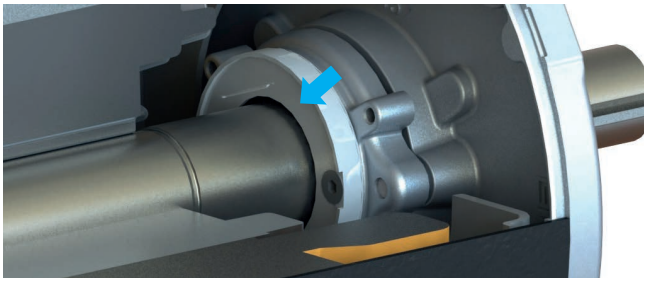


Figure 6 – AEGIS® grounding brush installed on the bearing cap.

2.5 Terminal box

Manufactured in die cast aluminum - SAE 305, the terminal box have internal space exceeding the requirements of NEMA MG 1 and designed so it can be rotated in steps of 90°, allowing more flexibility for the leads inlet positioning in a standard stock product. The ingress protection meets IP66 grade and following the W22 products, the terminal box is diagonally split for easier handling of leads and connections. As standard, the leads inlet is non-threaded, allowing the use of cable glands or clamp connectors from different gauges. Threaded inlets and two additional inlets are also available upon request.

Figure 7 – Terminal box components.

For ODP 56 frame motors, the terminal box is integrated to the ND endshield (see figure 8). Compared to the previous motor version, the internal volume and opening are also oversized, making the cable connections easier. The cable inlet is a threaded hole stamped on the frame shell, accommodating both NPT and NPS ½".

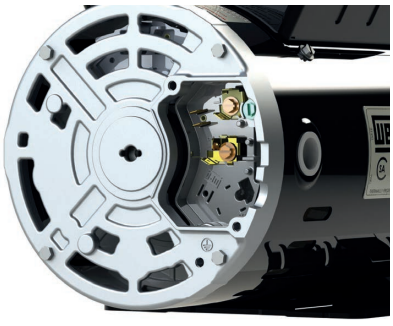


Figure 8 – ODP 56 frame terminal box.

2.6 Stator winding

The stator windings of the W01 Rolled Steel motors are supplied with Class F insulation with a class H impregnation varnish and temperature rise class B (80 K). Optionally, the motors can be supplied with insulation class H and temperature rise class B (80 K). Other combinations can also be provided on request.

2.7 Endshields and Flanges

In accordance with market trends, the W01 Rolled Steel platform endshields are produced in die cast aluminum SAE 305, providing mechanical strength and lightweight. Flanges for frames 56 up to 143/5T are also produced in die cast aluminum and flanges for frames 182/4T up to 254/6T are produced in cast iron FC-200.

Figure 9 – ODP flange (left) and TEFC flange (right).

2.8 Drains

The TEFC Rolled Steel motors have drains which avoid the accumulation of condensed liquids or their ingress into the motor. Consequently these devices prevent corrosion or damage to internal parts of the motor. As standard, the drains are plugs made of rubber and assembled on the frames or flanges, depending on configurations.

Note:

The drains are factory assembled in the closed position (see Figure 10) as standard and must be opened periodically to remove condensed water. In environments with high condensation, IP55 motors can be installed with drains in the opened position. However, for IP56 motors, the drains must be kept closed, just opening it during maintenance.

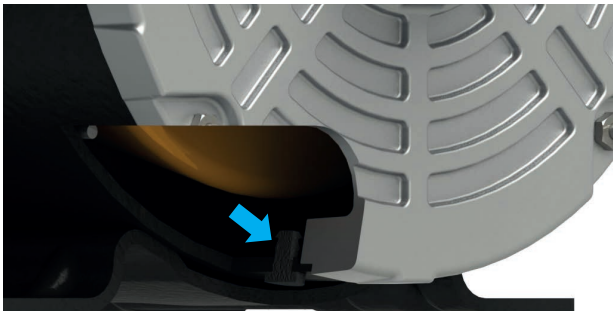


Figure 10 – Closed drain position (detail).

2.9 Ventilation System

The motors of the W01 Rolled Steel line comply with the specification of Totally Enclosed Fan Cooled (TEFC IC-411) or Open Drip Proof (ODP IC-01) according to NEMA MG-1 Part 6 standard.
Upon request, WEG can supply non-ventilated (TENV) and Air Over (TEAO) versions.

The ODP motors have internal radial fans composed by the aluminum fins on the rotor and internal baffles to guide the airflow. The air flows from outside through the endshields inlets going expelled by the frame outlets.
On the TEFC motors. an external radial fan made of polypropylene is mounted on the NDE shaft and protected by the fan cover. Both, ODP and TEFC ventilation system, were developed with computational fluid dynamics softwares and validated with prototypes in order to optimize the airflow through the frame and coil heads, reducing noise level and the output wasted with ventilation, while at the same time improving heat transfer.

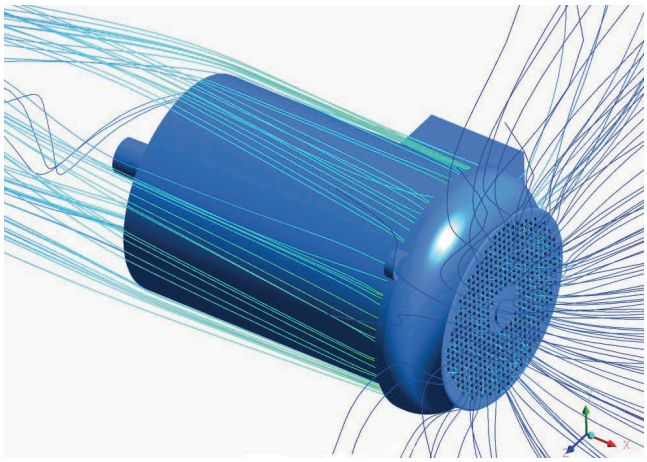


Figure 11 – Demonstration of the airflow – TEFC motor.

2.10 Fan cover

The fan covers are built in ABS plastic for frames 56 and 143/5T, which ensures rigidity in accordance with UL 1004-1 of 6.8 J, also providing painting adherence without any surface treatment, making it perfect for customers whom want to repaint the motor in the application. On these frames the new fan cover is also ready for the easy addition of a drip cover without any disassembly operation. Just screw tight the drip cover kit rods in the shown holes in the figure below.
For frames 182/4T up to 254/6T, the fan covers are made of steel plate painted with powder coating, ensuring resistance that overcomes 500 h in salt spray test.
For frames 254/6T, the fan cover has an aerodynamic profile, presenting high mechanical strength and high impact absorption, with significant reduction in the noise level and temperature (see Figure 13).

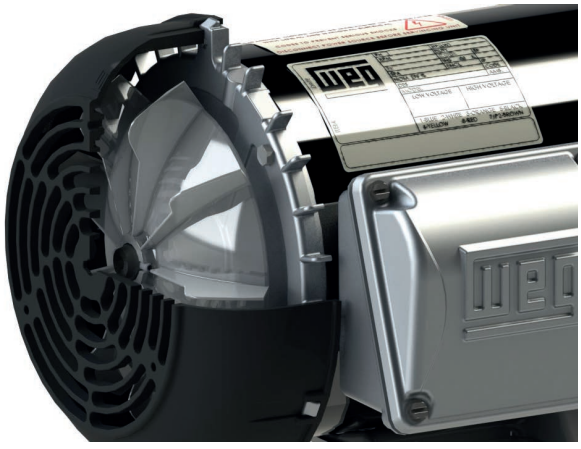


Figure 12 – Fan cover and drip cover (detail) – frames 56 up to 143/5T.

Figure 13 – Fan cover for frames 254/6T.

2.11 Nameplate

The nameplates are made of polyester and contain information describing the mounting features and motor performance. In addition, it also informs the serial number of the motor and its manufacturing date. Figure 14 shows the layout of the nameplate on the W01 Rolled Steel motor.

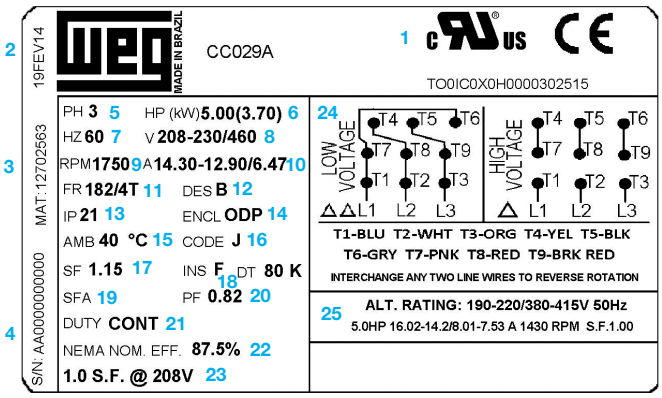


Figure 14- Nameplate.

1	Certifications
2	Manufacturing date
3	Motor Code
4	Serial number
5	Number of phases
6	Output power
7	Frequency
8	Rated voltage
9	Speed
10	Rated current
11	Frame model
12	Design code
13	Degree of protection
14	Enclosure type
15	Ambient temperature
16	NEMA code letters for locked-rotor kVA
17	Duty factor
18	Insulation class
19	Duty factor current
20	Power factor
21	Duty cicle
22	Efficiency level
23	Duty factor at specific voltage
24	Wiring diagram
25	Alternative rating data

Table 6 – Description of the data on the motor nameplate.

3. Shaft/Bearings/Stresses

3.1 Shaft

The shafts of the W01 Rolled Steel motors comply with NEMA MG 1 and undergo several numerical analyses until reaching the final dimensioning. Among the evaluation steps are: calculation of fatigue considering the stress concentration, torsion, bending and traction-compression efforts, stress and deformation, torsional and modal analysis.

The standard shaft material is AISI 1040/45 steel, and with an A type key provided. WEG can also provide motors with double-end shaft (upon request), shaft end with special dimensions, and shafts made of AISI 4140, the stainless steel grades AISI 304, AISI 316 and AISI 420, for highly corrosive environments, all upon request. The dimensions for the shaft and key can be found in section 13. Mechanical data.

3.2 Bearings

The standard on frames 56 up to 213/5T is double shielded ball bearings (ZZ type) and permanently lubricated. For frames 254/6T, a relubrication system consisted by grease fittings and single shielded ball bearings is provided as standard. For increased bearing life, this relubrication system can also be supplied on motors from frames 182/4T up to 213/5T as optional.

By default, the bearings are grease lubricated and have L10h lifetime of 26.280 hours, for the conditions and loads defined by NEMA MG 1 – part 14.42. The bearing lifetime depends on the type and size of the bearing, radial and axial loads they are subject to, the operating conditions (ambient temperature), the speed and grease life. Thus, its lifetime is closely related to its correct use, maintenance and lubrication. By respecting the amount of grease and lubrication intervals, the bearings can reach the lifetime values aforementioned.

The standard ball bearing sizes can be found in section 10. Construction Features.

Note:

The bearing lifetime, L10h, in terms of operating hour, is the life that 90% of bearings have reached or even exceeded when motors are operated in compliance with the data provided in this catalog.

The bearings lifetime can be reduced when the motors are fed by frequency inverters and operate at non-nominal high speed.

3.2.1 Bearing Lubrication

As mentioned, the bearings on motors from 56 to 213/5T frame are of the double-shielded type and are greased for its life, and motors on 254/6T frames are supplied with a lubrication system with grease fittings on the D and ND endshields. The lubrication intervals are informed on the motor nameplate, and can also be seen in Table 7.

Speed (RPM)	Bearing type	Lubrication Interval (h)
3600	6309	20.000
1800		25.000
1200		

Table 7 - Relubrication intervals for 254/6T frame.

It is extremely important to follow the lubrication intervals specified on the motor nameplate. The re-lubrication interval set on the motor plate considers the bearing temperature of 70°C. For different bearing temperatures the motor manual must be consulted. An excessive or insufficient lubrication may increase the bearing temperature during operation, resulting in premature wear of the bearings and consequent reduction of their useful life.
Mobil Polyrex EM is the standard lubricant used in the W01 Rolled Steel motors. Besides the grease mentioned, there are others that are compatible (mineral oil, polyurea-based) and can also be used. For these cases refer to the Installation. Operation and Maintenance Manual of the motor, available at www.weg.net/us

Notes:
For operation of the motors under other than normal operating conditions, such as: ambient temperature above 40°C, altitude higher than 1000 m (3,300 ft) above sea level and axial and/or radial load above the specified in the tables in this catalog imply on special lubrication interval. For these cases, please refer to WEG.
Bearing life may be reduced when a motor is driven by a VFD at speeds above nominal. Speed itself is one of the factors taken into consideration when determining motor bearing life.
Horizontal mounting motors that will be applied on vertical position must have the lubrication interval reduced by half.
The use of greases not recommended by WEG or in different quantities than the specification may result in loss of the motor warranty.

For compensation of axial displacements, the motors have spring washers as standard on the ND endshield. Also, all motors with flange have a locked D bearing by an internal bearing cap. Upon request, the bearing cap can be supplied as optional for all other mounting configurations. The bearing cap have an “U” format (see Figure 15) that allows easy installation in the field without the expense of removing the DE bearing in case where addition of flange is required on standard motors.

Figure 15 – “U” format bearing cap to fix DE bearing

Table 8 lists the materials of the bearing caps used in the W01 Rolled Steel motors.

Frame	DE Bearings	Material
56 – 143/5T	6203 / 6204 / 6205	Aluminum SAE 305
143/5JM / JP	6206	Cast iron FC-200
182/4T – 182/4JM / JP	6206 / 6207	Cast iron FC-200
213/5T – 213/5JM / JP	6208 / 6209	Cast iron FC-200
254/6T – 254/6JM / JP	6309	Cast iron FC-200

Table 8– Bearing cap specification.

3.3 Maximum radial loads

The table below show the maximum allowable radial loads for the W01 Rolled Steel motors. The values of the maximum load were calculated considering a L10h bearing lifetime of 26,280 h. The maximum radial load values consider the axial load equal to zero. For applications involving simultaeneously axial and radial load, refer to WEG on bearing lifetime.

3.3.1 Radial loads

The values shown in Table 9 for the maximum radial overhung loads consider the load application at center of the length of the shaft end (N-W Dimension) on horizontal mounting.

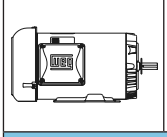
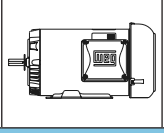
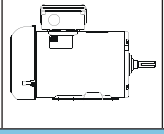
Maximum radial overhung loads (pounds)			
Frame	II poles	IV poles	VI poles
143/5T	109	154	176
182/4T	180	227	260
213/5T	230	300	350
254/6T	470	589	705

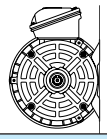
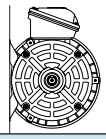
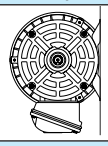
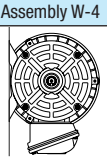
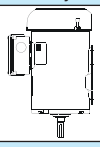
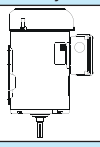
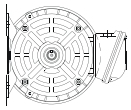
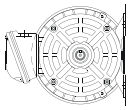
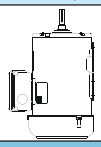
Table 9 – Maximum allowable radial loads at 60 Hz for ball bearings (According NEMA MG 1 – Table 14-1A).

Notes:
1 - All belt loads are considered to act in vertically downward direction.
2 - Overhung loads include belt tension and weight of sheave.
3 - For load at end of the shaft subtract 15%.
4 - Radial overhung load limits based on bearing L-10 life of 26.280 hours.
5 - Overhung load limits do not include any effect of unbalanced magnetic pull.

4. Mounting forms

The standard motors are supplied in the F1 mounting, with the terminal box on the left side of the frame, when looking at the drive end of the motor.
The mounting designation for the W01 Rolled Steel motors follows the NEMA MG-1 Part 4 standard. Different mounting forms can be provided, as shown in Table 10.

Floor mountings		
Assembly F-1	Assembly F-2	Assembly F-3
		

Wall mountings			
Assembly W-1	Assembly W-2	Assembly W-3	Assembly W-4
			
Assembly W-5	Assembly W-6	Assembly W-7	Assembly W-8
			
Assembly W-9	Assembly W-10	Assembly W-11	Assembly W-12
			

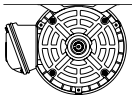
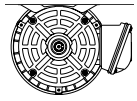
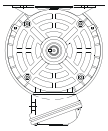
Ceiling mountings		
Assembly C-1	Assembly C-2	Assembly C-3
		

Table 10 – Mounting forms.

5. Degree of Protection, Bearing Sealing and Painting

5.1 Degree of Protection

The W01 Rolled Steel motors are provided with protection as specified by NEMA MG 1 Part 5 standard.

For the TEFC motors, the standard degree of protection is IP55, where:

- The first characteristic numeral 5 indicates that the enclosure provides protection against contact or approach to live or moving parts inside the enclosure. The ingress of dust is not totally prevented, but dust does not enter in quantity enough to interfere with the satisfactory operation of the machine.
- The second characteristic numeral 5 indicates that the motor is protected against water thrown by a nozzle from any direction and it cannot have harmful effect.

For the ODP motors, the degree of protection is IP21, where:

- The first characteristic numeral 2 indicates that the enclosure provides protection against contact or approach to live or moving parts inside the enclosure by fingers or solid objects greater than Ø 0.4724in.
- The second characteristic numeral 1: indicates that the motor is protected against vertically falling dripping water.

5.2 Bearing Sealing

The standard seal used on the D endshield in the TEFC motors are “V” Ring made of nitrile rubber, Optionally. the motors can be supplied with slinger, rubber lip seal or rubber oil seal.

Note:

For vertical mounting motors with shaft end to upwards, motors are supplied with slinger, in addition to the standard seal.

5.3 Painting

For standard 56 frame motors, just the steel parts are coated.

The painting plan of the motors from frames 143/5T up to 254/6T provides minimal resistance of 500 h to the salt spray test according to ASTM B117/03 standard and corrosion category C2, according to ISO 12944-2 standard. In the table below there are the standard painting plans for all W01 Rolled Steel motors:

Frame	WEG Painting Plan
143/5T	207N
182/4T	207A
213/5T	
254/6T	203A

Table 11 – WEG painting plans for W01 Rolled Steel motors

Plan	Recommended Use
207N	Regular environments, not too severe and sheltered, for domestic purpose, with low relative humidity and normal temperature variations
	Specific use recommendations: for application in motors with steel plate frames in which packaging process demands quick drying painting.
207A	Regular environments, not too severe, sheltered or not, for industrial application, with low relative humidity, normal temperature variations and SO_2 presence.
	Specific use recommendations: for application in motors with steel plate frames in which packaging process demands quick drying painting.
203A	Regular environments, not too severe, sheltered or not, for industrial application, with low relative humidity, normal temperature variations and SO_2 presence.

Table 12 – Recommended use for WEG painting plans

Notes:

None of the painting plans mentioned are recommended for direct exposure to acid vapors, alkalis and solvents.

6. Voltage / Frequency

According to NEMA MG 1 Part 12, the motor shall operate successfully under running conditions at rated load with a variation in the voltage or the frequency up to the following:

- Plus or minus 10 percent of rated voltage, at rated frequency.
- Plus or minus 5 percent of rated frequency, at rated voltage.
- A combined variation in voltage and frequency of 10 percent (sum of absolute values) of the rated values, provided the frequency variation dos not exceed plus or minus 5 percent of rated frequency.

Performance within these voltage and frequency variations will not necessary be in accordance with the standards established for operation at rated voltage and frequency.

7. Environment

According to NEMA MG 1 Part 14 standard, the normal operating conditions of electric motors are:

- Ambient temperature not exceeding 40 °C;
- Altitude not exceeding 3300 feet (1000 m) above sea level.

The design of the equipment considers a reduction of 1°C in the thermal limit of the motor for each 100 m of elevation. For temperatures and altitudes other than those indicated above, use Table 11 to find the correction factor that must be used to define the available useful output power.

T (°C)	Altitude (m)								
	1000	1500	2000	2500	3000	3500	4000	4500	5000
10							0,97	0,92	0,88
15						0,98	0,94	0,90	0,86
20					1,00	0,95	0,91	0,87	0,83
25				1,00	0,95	0,93	0,89	0,85	0,81
30			1,00	0,96	0,92	0,90	0,86	0,82	0,78
35		1,00	0,95	0,93	0,90	0,88	0,84	0,80	0,75
40	1,00	0,97	0,94	0,90	0,86	0,82	0,80	0,76	0,71
45	0,95	0,92	0,90	0,88	0,85	0,81	0,78	0,74	0,69
50	0,92	0,90	0,87	0,85	0,82	0,80	0,77	0,72	0,67
55	0,88	0,85	0,83	0,81	0,78	0,76	0,73	0,70	0,65
60	0,83	0,82	0,80	0,77	0,75	0,73	0,70	0,67	0,62
65	0,79	0,76	0,74	0,72	0,70	0,68	0,66	0,62	0,58
70	0,74	0,71	0,69	0,67	0,66	0,64	0,62	0,58	0,53
75	0,70	0,68	0,66	0,64	0,62	0,60	0,58	0,53	0,49
80	0,65	0,64	0,62	0,60	0,58	0,56	0,55	0,48	0,44

Table 13 - Correction factors considering altitude and ambient temperature.

Notes:

Motor for special applications which will operate in temperatures under -20°C or over 40°C can be evaluated upon request.

8. Operation characteristics

During installation and any intervention on the machine, all recommendations for handling, lifting and maintenance must be observed.

8.1 Operation with frequency inverter

The W01 Rolled Steel motors have a design suitable for applications with variable speed. The exclusive insulation technology WISE® ensures high electrical insulation performance. The Table 14 defines the criteria for frequency inverter applications.

Voltage	Peak voltage on motor terminals	dV/dt* on motor terminals	Rise time*	Time between pulses
V≤ 460 V	≤ 1600 V	≤ 5200 V/µs	≥ 0.1 µs	≥ 6 µs
460 <V≤ 575 V	≤ 1800 V	≤ 6500 V/ µs		
575 <V≤ 690 V	≤ 2200 V	≤ 7800 V/ µs		

**According NEMA MG 1 – part 30 and 31.*
Table 14 – Frequency inverter application criteria for low voltage motors.

Notes:

1 - If any of the conditions listed in Table 14 is not met a filter must be installed at the inverter output.
2 - The maximum switching frequency recommended for the inverter is 5 kHz. Switching frequencies above this value can accelerate the degradation of the insulation system and cause damage to the bearings.
3 - General purpose motors with rated voltage greater than 460V and for which there was no indication of operation with frequency inverter at the purchase are suitable to handle the electrical features defined to the 575V. If such conditions are not fully met, filters must be installed at the inverter output.
4 - General purpose dual voltage motors (i.e. 380/660V and 400/690V) and for which there was no indication of operation with frequency inverter at the purchase, are suitable to handle the electrical features defined to higher voltage only if the defined limits to 460V were fully met. Otherwise, filters must be installed at the inverter output.

8.1.1 Influence of the Inverter on the Temperature Rise of the Motor

The induction motor may present a higher temperature rise when fed by a frequency inverter, than when fed with sine wave voltage. This over-rise in temperature is due to the combination of two factors: the increase of losses on the motor as a function of the harmonic components of the PWM voltage supplied by the inverter, and the reduction of the effectiveness of the cooling system when the self-ventilated motor operates at low frequencies. Basically the following solutions can be used to prevent the motor overheating:

- Reduction of the rated torque
- Use of an independent cooling system (forced ventilation)
- Use of the exclusive “Optimal Flow” WEG solution.

Criteria for torque reduction

In order to keep the temperature rise of WEG motors within acceptable levels, when under VSD supply, the speed range-related loadability limits established in table below must be respected.

Frames	Enclosure	Eff	Pole	Turndown Ratio		
				CT		VT
				<1HP	≥1HP	
143/5T up to 254/6T	TEFC	High	All	2:1		1000:1
		NEMA Premium	2	10:1		
			4-6	4:1		
	ODP	High	All	2:1		
		NEMA Premium	2	3:1		
			4-6	5:1		
56	TEFC	Std	2-4	10:1	5:1	
	ODP	Std	2-4	4:1	2:1	
		DOE	2	5:1	3:1	
			4	5:1	5:1	

Table 15 – Criteria for torque reduction

For more detailed information on motors operated with frequency inverter, refer to the Technical Guide - Induction motors fed by PWM frequency inverters, which can be found at *http://catalog.weg.net/files/wegnet/WEG-induction-motors-fed-by-pwm-frequency-converters-technical-guide-028- technical-article-english.pdf*

8.1.2 Common-mode voltages

The common mode voltages occur when the sum of the voltages at the inverter output is different from zero. They are the main reason why currents flow through the motor bearings driven by static inverter. Although not frequent on small motors, poorly made installations increase odds of its presence. These currents may cause premature wear in the rolling elements and ball bearing races, reducing the useful life of the bearings and causing machine faults. W01 Rolled Steel motors may be prepared to avoid the flow of this currents upon request (see item 2.4. AEGIS® Grounding brush).

9. Installation characteristics

A minimum distance between fan cover and wall must be taken into account when dimensioning the installations for the W01 Rolled Steel motors (see Figure 16 and minimum distance for W dimension in Table 16).

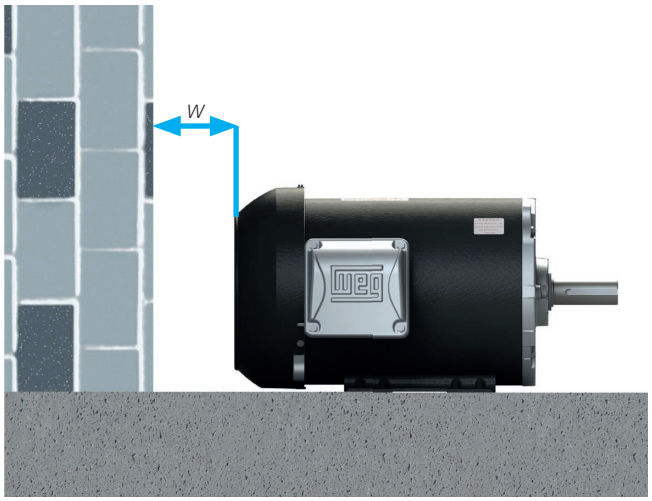
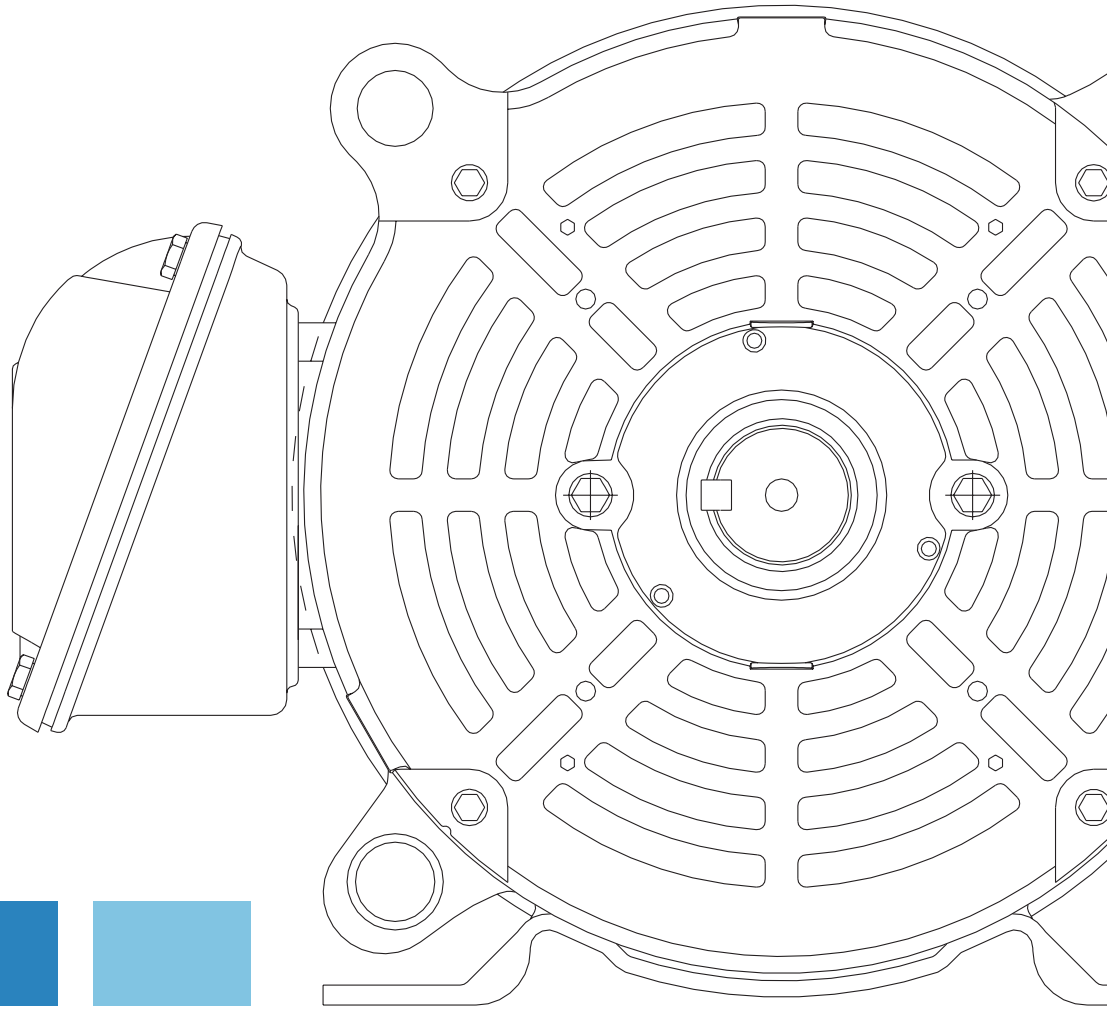


Figure 16 – Distance between fan cover and wall.

Frame	W
56	1.30
143/5T	
182/4T	1.61
213/5T	1.97
254/6T	2.56

Table 16 – Minimum distance between fan cover and wall



10. Construction Features

10.1 W01 Rolled Steel - TEFC

Frame			56	56H	143/5T	182/4T	213/5T	254/6T
Mechanical Features								
Nameplate Marking			CSA, cULus					
Mounting	Std, High, NEMA Premium Efficiency		F-1/B3R(D)					
Frame	Material		Steel plate					
Degree of Protection			IP55					
Grounding			Terminal box					Grounding lug
Cooling method			Totally enclosed fan cooled - TEFC					
Fan	Material		Plastic					
Fan cover	Material		Plastic			Steel plate		
Endshields	Material		Aluminium					
Flange	Material		FC-149 Aluminum / FC-95 Cast Iron		Aluminum	Cast Iron		
Drain plug			Automatic rubber drain plug					
Bearing	Shielded/clearance DE		ZZ / Normal					Z / C3
	Shielded/clearance NDE		ZZ / Normal					Z / C3
	Loacating bearing		W/O Lock on DE and spring washer on NDE					
	Drive end	2P	6203 up to 3/4HP 6204 - 1HP up to 3HP and FC-95	6203 up to 3/4HP 6204 - 1HP up to 3HP and FC-95	6205	6206	6208	6309
		4-6P						
	Non-drive end	2P	6202	6202	6203	6205	6206	6208
		4-6P						
Bearing seal	Drive end		V-ring					
	Non-drive end		W/O					
Joint seal			W/O					
Lubrification	Type of grease		Mobil Polyrex EM					
Grease fitting			W/O					With
Terminal block			W/O					
Terminal box	Material		Aluminium - Diagonal					
Additional Terminal box			W/O Additional Terminal Box					
Lead inlet	Main	Size	1 hole ø22,4 (for NPT 1/2")	1 hole ø22,4 (for NPT 1/2")	1 hole ø 28,4 (for NPT 3/4")	1 hole ø 28,4 (for NPT 3/4")	1 hole ø 35 (for NPT 1")	1 hole ø 44 (for NPT 1 1/4")
	Acessories		W/O					
	Plug		Stopping plug					
Shaft	Material		AISI 1040/45					
	Threaded hole		A3.15			A4		
	Shaft key		A key					
Vibration level (IEC)			Grade A					
Nameplate	Material		Mylar nameplate					
Painting	Painting plan		W/O		207N	207A		203A
	Color	Std Eff, High Eff	-		Munsell N1 - Flat			
		NEMA Premium	-		Munsell N1 - Flat			
Eye bolt			W/O			With - 2		
Electrical Features								
Design	Std Eff		A		-			
	High Efficiency		-		B			
	NEMA Premium Eff		-		B			
	NEMA Premium Eff - Single		up to 1/3HP Design N / 1/2HP and above Design L		L			-
Voltage	50Hz	Std Eff	220/380 w/ 6 term					
		Std Eff - Single	110/220V		-			
	60Hz	Std Eff, High Eff, NEMA Premium	208-230/460V w/ 9 term					208-230/460V w/ 12 term
		Std Eff - Single	115/208-230V			208-230/460V		-
Winding	Impregnation		Dip and Bake					
	Insulation class		F (DT 80K)					
	Leads		Color coded lead CSA/UL					
	Terminal Leads		Without terminal (Stripped wire)					
Service factor	50Hz	Std Eff - Three	1.00					
		Std Eff - Single	1.00					
	60Hz	Std Eff, High Eff, NEMA Premium	1.15 (208V - 1.0)					
		Std Eff - Monof	1.15 (208V - 1.0)					
Rotor			Aluminium die cast					
Thermal protection			W/O					
Space heaters			W/O					

10.2 W01 Rolled Steel – ODP

Frame			56	56H	143/5T	182/4T	213/5T	254/6T
Mechanical Features								
Nameplate Marking			CSA, cULus					
Mounting	Std, High, NEMA Premium Efficiency		F-1/B3R(D)					
	Oil Well Pumping (Design D)		-			F-2/B3L(E)		
Frame	Material		Rolled Steel					
Degree of Protection			IP21					
Grounding			Terminal box					Grounding lug
Cooling method			ODP					
Fan	Material		W/O					
Fan cover			W/O					
Internal air baffle			Plastic (Nylon)					
Endshields	Material		Aluminum					
Flange	Material		FC-149 Aluminum / FC-95 Cast Iron		Aluminum	Cast Iron		
Drain plug			W/O					
Bearing	Shielded/clearance DE		ZZ / Normal					Z / C3
	Shielded/clearance NDE		ZZ / Normal					Z / C3
	Locating bearing		W/O Lock on DE and spring washer on NDE					
	Drive end	2P	6203 up to 3/4HP 6204 - 1HP to 3HP and FC-95	6203 up to 3/4HP 6204 - 1HP to 3HP and FC-95	6205	6206	6208	6309
		4-6P						
	Non-drive end	2P	6202	6202	6203 – 3ph 6202 – 1ph	6205	6206	6208
		4-6P						
Bearing seal	Drive end		W/O					
	Non-drive end		W/O					
Joint seal			W/O					
Lubrification	Type of grease		Mobil Polyrex EM					
	Grease fitting		W/O					With
Terminal block			W/O					
Terminal box	Material		W/O		Aluminum - Diagonal			
Additional Terminal box			W/O Additional Terminal Box					
Lead inlet	Main	Size	NPT 1/2"	NPT 1/2"	1 hole ø 28,4 (for NPT 3/4")	1 hole ø 28,4 (for NPT 3/4")	1 hole ø 35 (for NPT 1")	1 hole ø 44 (for NPT 1 1/4")
	Acessories		W/O					
	Plug		Stopping plug					
Shaft	Material		SAE 1040/45					
	Center hole		A3.15			A4		
	Shaft key		A key					
Balancing without/half/full key			A Grade					
Nameplate	Material		Mylar nameplate					
Painting	Painting plan		W/O		207N	207A		203A
	Color	Std Eff, High Eff	-		Munsell N1 - Flat			
		NEMA Pre-mium	-		Munsell N1 - Flat			
		Oil Well Pumping	-		RAL 9010			
Eye bolt			W/O			With - 2		
Electrical Features								
Design	Nenhum e Premium Efficiency		A		-			
	High Efficiency		-		B			
	NEMA Premium		-		B			
	Oil Well Pumping		-			D		
	Standard e Premium Efficiency - Single		up to 1/3HP Design N / 1/2HP and above Design L		L			-
Standard voltage	50 Hz	Std Eff	220/380 w/ 6 term					
		Std Eff - Single	110/220V		-			
	60 Hz	Std, High Eff, Premium Eff and NEMA Premium	208-230/460V w/ 9 term					208-230/460V w/ 12 term
		Std, Premium Eff - Single	115/208-230V			208-230/460V		-
Winding	Impregnation		Dip and Bake					
	Insulation class		F (DT 80K)					
	Leads		Color coded lead CSA/UL					
	Terminal Leads		Without terminal (Stripped wire)					
Service factor	Std and Premium Efficiency		According to "SF ODP" spread-sheet		-			
	High Eff and NEMA Premium Eff		-		1.15 (208V - 1.0)			
	Oil Well Pumping		-			1,00		
	Std e Premium Eff - Single		According to "SF ODP" spreadsheet					-
Rotor			Aluminium die cast					
Thermal protection			W/O					
Space heaters			W/O					

11. Optionals

11.1 W01 Rolled Steel - TEFC

Features	General Purpose										
	Single phase					Three phase					
	56	56H	143/5T	182/4T	213/5T	56	56H	143/5T	182/4T	213/5T	254/6T
Electrical Optionals											
Service factor (60Hz)											
Service factor 1.15	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Service factor 1.25	S	S	S	S	S	S	S	S	S	S	S
Service factor (50Hz)											
Service factor 1.00	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Service factor 1.15	S	S	S	S	S	S	S	S	S	S	S
Service factor 1.25	S	S	S	S	S	S	S	S	S	S	S
Voltage (60 Hz)											
208-230/460V - 9 leads	NA	NA	NA	NA	NA	SD	SD	SD	SD	SD	NA
208-230/460V - 12 leads	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SD
575V - 3 leads	NA	NA	NA	NA	NA	O	O	O	NA	NA	NA
575V - 6 leads	NA	NA	NA	NA	NA	O	O	O	O	O	O
230/460V - 9 leads	NA	NA	NA	NA	NA	O	O	O	O	O	NA
230/460V - 12 leads	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	O
200V - 6 leads	NA	NA	NA	NA	NA	O	O	O	O	O	O
200/400V - 9 leads	NA	NA	NA	NA	NA	O	O	O	O	O	NA
200/400V - 12 leads	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	O
480V - 3 leads	NA	NA	NA	NA	NA	O	O	O	NA	NA	NA
480V - 6 leads	NA	NA	NA	NA	NA	O	O	O	O	O	O
100/200V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
110/220V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
115/208-230V	SD	SD	SD	O	O	NA	NA	NA	NA	NA	NA
208-230V/460V	O	O	O	SD	SD	NA	NA	NA	NA	NA	NA
115/230V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
120/240V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
208-230V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
220V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
230V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
Voltage (50Hz)											
220/380V - 6 leads	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
230/400V - 6 leads	O	O	O	O	O	O	O	O	O	O	O
380V - 3 leads	O	O	O	NA	NA	O	O	O	NA	NA	NA
400V - 3 leads	O	O	O	NA	NA	O	O	O	NA	NA	NA
110/220V	SD	SD	SD	SD	SD	NA	NA	NA	NA	NA	NA
Insulation class											
F DT 80K	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
F DT 105K	O	O	O	O	O	O	O	O	O	O	O
H DT 80K	S	S	S	S	S	S	S	S	S	S	S
H DT 105K	S	S	S	S	S	S	S	S	S	S	S
H DT 125K	S	S	S	S	S	S	S	S	S	S	S
Space Heater											
110-127 V	O	O	O	O	O	O	O	O	O	O	O
200-240 V	O	O	O	O	O	O	O	O	O	O	O
Winding thermal protection											
Manual	S	S	S	S	S	S	S	S	S	S	S
Automatic	S	S	S	S	S	S	S	S	S	S	S
Bimetal thermal protector - 130°C Alarm	O	O	O	O	O	O	O	O	O	O	O
Bimetal thermal protector - 155°C Alarm	O	O	O	O	O	O	O	O	O	O	O
PTC Thermistor - 130°C - Alarm	O	O	O	O	O	O	O	O	O	O	O
PTC Thermistor - 155°C - Alarm	O	O	O	O	O	O	O	O	O	O	O
Bimetal thermal protector - 130°C Tripping	O	O	O	O	O	O	O	O	O	O	O
Bimetal thermal protector - 155°C Tripping	O	O	O	O	O	O	O	O	O	O	O
Bimetal thermal protector - 180°C Tripping	S	S	S	S	S	S	S	S	S	S	S
PTC Thermistor - 130°C - Tripping	O	O	O	O	O	O	O	O	O	O	O
PTC Thermistor - 155°C - Tripping	O	O	O	O	O	O	O	O	O	O	O
PTC Thermistor - 180°C - Tripping	S	S	S	S	S	S	S	S	S	S	S

Notes: Other optional features, on request.
Some combinations of optional features are not possible - please contact WEG.

SD – Standard
O – Optional
S – Special
NA – Not Available

Features	General Purpose										
	Single phase					Three phase					
	56	56H	143/5T	182/4T	213/5T	56	56H	143/5T	182/4T	213/5T	254/6T
Mechanical Optionals											
Flange											
Flange FF (IEC) or D (NEMA)	NA	NA	S	S	S	NA	NA	S	S	S	S
Flange C	O	O	O	O	O	O	O	O	O	O	O
Inferior C Flange	O	O	NA	NA	NA	O	O	NA	NA	NA	NA
Without flange	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Drip cover											
Drip cover	O	O	O	O	O	O	O	O	O	O	O
Degree of protection											
IP44	O	O	NA	NA	NA	O	O	NA	NA	NA	NA
IP55	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
IP56	O	O	O	O	O	O	O	O	O	O	O
Bearing Seal											
V'RING	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Nitrillic rubber lip seal	O	O	O	O	O	O	O	O	O	O	O
Nitrillic rubber oil seal	O	O	O	O	O	O	O	O	O	O	O
Painting Plan											
Without painting	SD	SD	S	S	S	SD	SD	S	S	S	S
207N	O	O	SD	NA	NA	O	O	SD	NA	NA	NA
207A	NA	NA	NA	SD	SD	NA	NA	NA	SD	SD	NA
203A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SD
Shaft Grounding											
AEGIS ring	NA	NA	NA	NA	NA	O	O	O	O	O	O
Grease fitting											
Carbon steel grease fitting	NA	NA	NA	O	O	NA	NA	NA	O	O	SD
Stainless steel grease fitting	NA	NA	NA	O	O	NA	NA	NA	O	O	O
Grease outlet											
Grease outlet by plastic plug	NA	NA	NA	O	O	NA	NA	NA	O	O	O
DE / NDE Bearing Type (Ball Bearing)											
2RS	O	O	O	O	O	O	O	O	O	O	O
ZZ	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	S
ZZ-C3	O	O	O	O	O	O	O	O	O	O	S
Z	NA	NA	NA	O	O	NA	NA	NA	O	O	S
Z-C3	NA	NA	NA	O	O	NA	NA	NA	O	O	SD
Bearing cap											
Without bearing cap	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	NA
Bearing cap	O	O	O	O	O	O	O	O	O	O	SD
Shaft Material											
SAE 1040/45	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
SAE 4140	O	O	O	O	O	O	O	O	O	O	O
AISI 304 (stainless steel)	O	O	O	O	O	O	O	O	O	O	O
AISI 316 (stainless steel)	O	O	O	O	O	O	O	O	O	O	O
AISI 420 (stainless steel)	S	S	S	S	S	S	S	S	S	S	S
Key											
B Key	S	S	S	S	S	S	S	S	S	S	S
Shaft											
Second Shaft End	S	S	S	S	S	S	S	S	S	S	S
Threaded center hole (shaft)	O	O	O	O	O	O	O	O	O	O	O
Cooling Method											
TEFC (fan cooled)	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
TEAO (air over)	S	S	S	S	S	S	S	S	S	S	S
TENV (non ventilated)	S	S	S	S	S	S	S	S	S	S	S
Fan											
Plastic	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Balance Type											
Normal balance with 1/2 key	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Normal balance without key	O	O	O	O	O	O	O	O	O	O	O
Normal balance with full key	O	O	O	O	O	O	O	O	O	O	O
Reduced balance with 1/2 key	O	O	O	O	O	O	O	O	O	O	O
Reduced balance without key	O	O	O	O	O	O	O	O	O	O	O
Reduced balance with full key	O	O	O	O	O	O	O	O	O	O	O
Terminal Box Optionals											
Plug											
Threaded plastic plug	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SD
Flat Plastic plug	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	NA
Cable Gland											
Plastic	O	O	O	O	O	O	O	O	O	O	O
Terminal Block											
BMC - 6 terminals	NA	NA	S	S	S	NA	NA	S	S	S	S

11.2 W01 Rolled Steel – ODP

Features	General Purpose										
	Single phase					Three phase					
	56	56H	143/5T	182/4T	213/5T	56	56H	143/5T	182/4T	213/5T	254/6T
Electrical Optionals											
Voltage (60 Hz)											
208-230/460V - 9 leads	NA	NA	NA	NA	NA	SD	SD	SD	SD	SD	NA
208-230/460V - 12 leads	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SD
575V - 3 leads	NA	NA	NA	NA	NA	O	O	O	NA	NA	NA
575V - 6 leads	NA	NA	NA	NA	NA	O	O	O	O	O	O
230/460V - 9 leads	NA	NA	NA	NA	NA	O	O	O	O	O	NA
230/460V - 12 leads	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	O
200V - 6 leads	NA	NA	NA	NA	NA	O	O	O	O	O	O
200/400V - 9 leads	NA	NA	NA	NA	NA	O	O	O	O	O	NA
200/400V - 12 leads	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	O
480V - 3 leads	NA	NA	NA	NA	NA	O	O	O	NA	NA	NA
480V - 6 leads	NA	NA	NA	NA	NA	O	O	O	O	O	O
100/200V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
110/220V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
115/208-230V	SD	SD	SD	O	O	NA	NA	NA	NA	NA	NA
208-230V/460V	O	O	O	SD	SD	NA	NA	NA	NA	NA	NA
115/230V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
120/240V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
208-230V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
220V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
230V	O	O	O	O	O	NA	NA	NA	NA	NA	NA
Voltage (50Hz)											
220/380V - 6 leads	NA	NA	NA	NA	NA	SD	SD	SD	SD	SD	SD
230/400V - 6 leads	NA	NA	NA	NA	NA	O	O	O	O	O	O
380V - 3 leads	NA	NA	NA	NA	NA	O	O	O	NA	NA	NA
380/660V - 6 leads	NA	NA	NA	NA	NA	O	O	O	O	O	O
400V - 3 leads	NA	NA	NA	NA	NA	O	O	O	NA	NA	NA
415V - 3 leads	NA	NA	NA	NA	NA	O	O	O	NA	NA	NA
440V - 3 leads	NA	NA	NA	NA	NA	O	O	O	NA	NA	NA
110/220V	SD	SD	SD	SD	SD	NA	NA	NA	NA	NA	NA
Class of Insulation											
F DT 70K	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F DT 80K	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
F DT 105K	O	O	O	O	O	O	O	O	O	O	O
H DT 80K	S	S	S	S	S	S	S	S	S	S	S
H DT 105K	S	S	S	S	S	S	S	S	S	S	S
H DT 125K	S	S	S	S	S	S	S	S	S	S	S
Space Heater											
110-127 V	O	O	O	O	O	O	O	O	O	O	O
200-240 V	O	O	O	O	O	O	O	O	O	O	O
Winding thermal protection											
Manual	O	O	O	O	O	S	S	S	S	S	S
Automatic	O	O	O	O	O	S	S	S	S	S	S
Bimetal thermal protector - 130°C Alarm	O	O	O	O	O	O	O	O	O	O	O
Bimetal thermal protector - 155°C Alarm	O	O	O	O	O	O	O	O	O	O	O
PTC Thermistor - 130°C - Alarm	O	O	O	O	O	O	O	O	O	O	O
PTC Thermistor - 155°C - Alarm	O	O	O	O	O	O	O	O	O	O	O
Bimetal thermal protector - 130°C Tripping	O	O	O	O	O	O	O	O	O	O	O
Bimetal thermal protector - 155°C Tripping	O	O	O	O	O	O	O	O	O	O	O
Bimetal thermal protector - 180°C Tripping	S	S	S	S	S	S	S	S	S	S	S
PTC Thermistor - 130°C - Tripping	O	O	O	O	O	O	O	O	O	O	O
PTC Thermistor - 155°C - Tripping	O	O	O	O	O	O	O	O	O	O	O
PTC Thermistor - 180°C - Tripping	S	S	S	S	S	S	S	S	S	S	S
Termocouple - Tripping	S	S	S	S	S	S	S	S	S	S	S

Notes: Other optional features, on request.
Some combinations of optional features are not possible - please contact WEG.

SD – Standard
O – Optional
S – Special
NA – Not Available

Features	General Purpose										
	Single phase					Three phase					
	56	56H	143/5T	182/4T	213/5T	56	56H	143/5T	182/4T	213/5T	254/6T
Mechanical Optionals											
Flange											
Flange FF (IEC) or D (NEMA)	NA	NA	NA	S	S	NA	NA	S	S	S	S
Flange C	O	O	O	O	O	O	O	O	O	O	O
Inferior C Flange	O	O	NA	NA	NA	O	O	NA	NA	NA	NA
Without flange	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Drip cover											
Drip Cover	O	O	O	O	O	O	O	O	O	O	O
Degree of protection											
IP21	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Painting Plan											
Without painting	SD	SD	SD	SD	SD	SD	SD	S	S	S	S
207N	O	O	O	NA	NA	O	O	SD	NA	NA	NA
207A	NA	NA	NA	SD	SD	NA	NA	NA	SD	SD	NA
203A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SD
Shaft Grounding											
AEGIS ring	NA	NA	NA	NA	NA	O	O	O	O	O	O
Shaft											
Threaded center hole (shaft)	O	O	O	O	O	O	O	O	O	O	O
Grease fitting											
Carbon steel grease fitting	NA	NA	NA	O	O	NA	NA	NA	O	O	SD
Stainless steel grease fitting	NA	NA	NA	O	O	NA	NA	NA	O	O	O
Grease outlet											
Grease outlet by plastic plug	NA	NA	NA	O	O	NA	NA	NA	O	O	O
DE / NDE Bearing Type (Ball Berings)											
2RS	O	O	O	O	O	O	O	O	O	O	O
ZZ	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	S
ZZ-C3	O	O	O	O	O	O	O	O	O	O	S
Z	NA	NA	NA	O	O	NA	NA	NA	O	O	S
Z-C3	NA	NA	NA	O	O	NA	NA	NA	O	O	SD
Bearing cap											
Without bearing cap	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Bearing cap	O	O	O	O	O	O	O	O	O	O	O
Resilient base											
With	O	O	O	NA	NA	O	O	NA	NA	NA	NA
Shaft Material											
SAE 1040/45	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
SAE 4140	O	O	O	O	O	O	O	O	O	O	O
AISI 304 (stainless steel)	O	O	O	O	O	O	O	O	O	O	O
AISI 316 (stainless steel)	O	O	O	O	O	O	O	O	O	O	O
AISI 420 (stainless steel)	S	S	S	S	S	S	S	S	S	S	S
Key											
B Key	S	S	S	S	S	S	S	S	S	S	S
Shaft											
Second Shaft End	S	S	S	S	S	S	S	S	S	S	S
Balance Type											
Without balance (2 poles)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Normal balance with 1/2 key	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Normal balance without key	O	O	O	O	O	O	O	O	O	O	O
Normal balance with full key	O	O	O	O	O	O	O	O	O	O	O
Reduced balance with 1/2 key	O	O	O	O	O	O	O	O	O	O	O
Reduced balance without key	O	O	O	O	O	O	O	O	O	O	O
Reduced balance with full key	O	O	O	O	O	O	O	O	O	O	O
Vibration											
Grade B	O	O	O	O	O	O	O	O	O	O	O
Terminal Box Optionals											
Cable Gland											
Plastic	NA	NA	NA	O	O	NA	NA	O	O	O	O
Terminal Block											
BMC - 6 terminals	NA	NA	S	S	S	NA	NA	S	S	S	S
Single phase (terminal board)	O	O	NA	NA	NA	NA	NA	NA	NA	NA	NA

12. Electrical data

12.1 W01 Rolled Steel – TEFC – NEMA Premium Efficiency

Output		Frame	Full Load Torque (ft.lb)	Locked Rotor Current		Locked Rotor Torque TI/Tn	Break-down Torque Tb/Tn	Inertia J (sq. ft.lb)	Allowable locked rotor time (s)		Weight (lb)	Service Factor	460 V							
													Rated speed (rpm)	% of full load						Full load current In (A)
														Efficiency			Power Factor			
HP	kW			Code	II/In				Hot	Cold				50	75	100	50	75	100	
II Polos																				
1	0,75	143/5T	1,48	K	7,8	2,0	3,0	0,0643	22	48	26,2	1,15	3510	72,0	77,0	78,5	0,65	0,76	0,83	1,44
1,5	1,1	143/5T	2,21	L	9,1	2,3	3,0	0,1023	17	37	34,2	1,15	3520	80,0	82,5	84,0	0,71	0,82	0,88	1,87
2	1,5	143/5T	2,94	L	9,9	2,5	3,0	0,1279	13	29	40,1	1,15	3520	82,5	85,5	85,5	0,73	0,83	0,89	2,47
3	2,2	182/4T	4,42	K	8,8	2,2	3,0	0,1564	22	48	63,5	1,15	3515	84,0	86,5	86,5	0,71	0,82	0,87	3,67
5	3,7	182/4T	7,40	J	7,8	2,2	3,0	0,2079	17	37	78,5	1,15	3500	87,5	88,5	88,5	0,76	0,85	0,89	5,90
7,5	5,5	213/5T	11,0	H	7,6	2,6	3,0	0,5496	15	33	133	1,15	3530	87,5	88,5	89,5	0,76	0,85	0,89	8,67
10	7,5	213/5T	14,7	H	7,5	2,6	3,0	0,7188	12	26	161	1,15	3530	89,5	90,2	90,2	0,80	0,88	0,91	11,5
15	11	254/6T	22,0	H	7,0	2,0	3,0	0,8718	14	31	175	1,15	3525	89,5	91,0	91,0	0,73	0,83	0,87	17,4
20	15	254/6T	29,5	G	6,6	2,0	2,9	1,22	12	26	211	1,15	3515	90,0	91,0	91,0	0,81	0,88	0,91	22,7
25	18,5	254/6T	36,7	J	8,3	2,4	3,4	1,31	8	18	221	1,15	3530	91,0	91,7	91,7	0,77	0,85	0,89	28,5
High-Output Design																				
3	2,2	143/5T	4,44	K	9,5	3,0	3,8	0,1663	10	22	48,1	1,15	3500	84,0	86,5	86,5	0,78	0,87	0,91	3,51
7,5	5,5	182/4T	11,2	J	8,0	2,7	3,6	0,1913	19	42	79,4	1,15	3480	88,5	89,5	89,5	0,77	0,86	0,90	8,57
15	11	213/5T	22,1	J	8,2	2,8	3,3	0,6341	11	24	154	1,15	3520	90,2	91,0	91,0	0,76	0,85	0,89	17,0
IV Polos																				
1	0,75	143/5T	2,94	M	8,6	2,8	3,0	0,1232	19	42	37,9	1,15	1765	82,5	84,0	85,5	0,52	0,66	0,75	1,47
1,5	1,1	143/5T	4,44	K	8,2	2,7	3,0	0,1101	21	46	37,9	1,15	1750	85,5	86,5	86,5	0,59	0,72	0,79	2,02
2	1,5	143/5T	5,94	K	8,2	2,7	3,0	0,1296	15	33	42,3	1,15	1745	85,5	87,5	86,5	0,60	0,73	0,80	2,72
3	2,2	182/4T	8,81	K	8,8	2,2	3,0	0,4017	18	40	80,3	1,15	1765	87,5	88,5	89,5	0,61	0,74	0,81	3,81
5	3,7	182/4T	14,8	J	7,0	2,2	3,0	0,3080	16	35	71,4	1,15	1750	88,5	89,5	89,5	0,60	0,73	0,80	6,49
7,5	5,5	213/5T	22,0	H	7,3	2,6	3,0	0,9380	22	48	120	1,15	1770	90,2	91,0	91,7	0,64	0,76	0,82	9,07
10	7,5	213/5T	29,4	H	7,0	2,5	3,0	1,07	15	33	130	1,15	1760	91,0	91,0	91,7	0,67	0,78	0,84	12,2
15	11	254/6T	43,9	H	6,6	2,5	3,0	2,15	19	42	197	1,15	1770	91,0	92,4	92,4	0,64	0,76	0,82	18,2
20	15	254/6T	58,7	H	6,7	2,7	3,0	2,64	16	35	227	1,15	1765	91,7	92,4	93,0	0,66	0,77	0,82	24,7
VI Polos																				
1	0,75	143/5T	4,52	J	5,8	2,3	2,8	0,1597	31	68	38,6	1,15	1145	80,0	82,5	82,5	0,50	0,63	0,72	1,58
1,5	1,1	182/4T	6,64	K	6,9	2,4	3,4	0,2800	55	121	65,9	1,15	1170	84,0	86,5	87,5	0,50	0,63	0,71	2,22
2	1,5	182/4T	8,86	K	7,5	2,6	3,7	0,3424	44	97	76,1	1,15	1170	84,0	86,5	88,5	0,50	0,62	0,71	3,00
3	2,2	213/5T	13,2	H	6,4	2,3	2,9	1,08	46	101	130	1,15	1175	85,5	88,5	89,5	0,55	0,67	0,74	4,17
5	3,7	213/5T	22,0	H	6,0	2,2	2,5	1,26	30	66	144	1,15	1175	87,5	88,5	89,5	0,59	0,71	0,77	6,74
7,5	5,5	254/6T	33,1	G	5,4	2,0	2,3	2,34	42	92	204	1,15	1175	89,5	89,5	91,0	0,58	0,70	0,76	9,98
10	7,5	254/6T	44,1	G	5,4	2,1	2,3	2,83	30	66	234	1,15	1175	90,2	91,0	91,0	0,57	0,69	0,75	13,8

1) Values for three-phase 60Hz motors;

2) To obtain nominal current (In) in 230V. just multiply the current value by 2.

12.2 W01 Rolled Steel – TEFC – High Efficiency

Output		Frame	Full Load Torque (ft.lb)	Locked Rotor Current		Locked Rotor Torque Tl/Tn	Break-down Torque Tb/Tn	Inertia J (sq. ft.lb)	Allowable locked rotor time (s)		Weight (lb)	Service Factor	460 V							
													Rated speed (rpm)	% of full load						Full load current In (A)
														Efficiency			Power Factor			
HP	kW			Code	Il/In				Hot	Cold				50	75	100	50	75	100	
II Polos																				
1	0,75	143/5T	1,48	K	7,9	2,3	3,3	0,0275	22	48	26,2	1,15	3510	70,0	75,5	77,0	0,69	0,80	0,86	1,42
1,5	1,1	143/5T	2,23	K	8,1	2,7	3,0	0,0358	17	37	29,5	1,15	3480	77,0	81,5	82,5	0,72	0,83	0,88	1,90
2	1,5	143/5T	2,96	K	8,5	2,8	3,5	0,0465	14	31	35,7	1,15	3500	82,5	84,0	84,0	0,71	0,82	0,88	2,55
3	2,2	182/4T	4,43	K	8,3	2,3	3,5	0,1391	27	59	59,5	1,15	3510	82,5	85,5	85,5	0,69	0,80	0,85	3,80
5	3,7	182/4T	7,41	H	7,4	2,1	3,4	0,1739	16	35	68,6	1,15	3495	86,5	87,5	87,5	0,74	0,84	0,89	5,96
7,5	5,5	213/5T	11,0	H	7,0	2,4	3,1	0,4665	13	29	118	1,15	3525	86,5	88,5	88,5	0,75	0,84	0,89	8,76
10	7,5	213/5T	14,7	G	6,7	2,2	2,8	0,5496	10	22	133	1,15	3520	88,5	89,5	89,5	0,75	0,84	0,89	11,8
15	11	254/6T	22,1	H	6,6	1,9	2,8	0,7050	12	26	156	1,15	3520	87,5	89,5	90,2	0,68	0,79	0,85	18,0
20	15	254/6T	29,5	G	6,3	1,9	2,6	1,05	12	26	193	1,15	3515	90,2	91,0	90,2	0,78	0,86	0,89	23,5
25	18,5	254/6T	36,7	J	8,3	2,4	3,4	1,31	8	18	221	1,15	3530	91,0	91,7	91,0	0,77	0,85	0,89	28,7
High-Output Design																				
3	2,2	143/5T	4,47	J	8,4	2,7	3,3	0,1407	9	20	44,1	1,15	3480	84,0	85,5	85,5	0,78	0,87	0,91	3,55
7,5	5,5	182/4T	11,2	J	8,0	2,7	3,6	0,1913	19	42	79,4	1,15	3480	88,5	89,5	88,5	0,77	0,86	0,90	8,67
15	11	213/5T	22,1	J	8,2	2,8	3,3	0,6341	11	24	154	1,15	3520	90,2	91,0	90,2	0,76	0,85	0,89	17,2
IV Polos																				
1	0,75	143/5T	2,94	L	7,6	2,9	3,5	0,0973	18	40	32,2	1,15	1760	78,5	82,5	82,5	0,50	0,64	0,73	1,56
1,5	1,1	143/5T	4,42	K	7,8	2,7	3,4	0,1232	13	29	37,9	1,15	1760	81,5	84,0	84,0	0,53	0,67	0,76	2,16
2	1,5	143/5T	5,90	K	7,5	2,6	3,3	0,1419	10	22	42,3	1,15	1755	81,5	84,0	84,0	0,53	0,67	0,76	2,95
3	2,2	182/4T	8,83	K	7,7	2,4	3,5	0,2935	16	35	63,9	1,15	1760	85,5	87,5	87,5	0,58	0,71	0,78	4,05
5	3,7	182/4T	14,8	J	7,2	2,0	3,0	0,3695	8	18	76,5	1,15	1750	86,5	87,5	87,5	0,61	0,74	0,81	6,55
7,5	5,5	213/5T	22,0	H	7,1	2,3	2,9	1,07	11	24	122	1,15	1765	88,5	89,5	89,5	0,67	0,79	0,85	9,07
10	7,5	213/5T	29,5	H	6,8	2,1	2,6	1,29	8	18	140	1,15	1755	89,5	89,5	89,5	0,72	0,82	0,87	12,1
15	11	254/6T	44,2	H	6,4	2,2	2,8	1,65	11	24	169	1,15	1760	89,5	90,2	91,0	0,63	0,75	0,81	18,7
20	15	254/6T	58,9	G	5,9	2,1	2,7	2,15	12	26	197	1,15	1760	91,0	91,0	91,0	0,67	0,78	0,83	24,9
VI Polos																				
1	0,75	143/5T	4,52	K	6,3	2,7	3,2	0,1037	31	68	35,9	1,15	1145	77,0	80,0	80,0	0,49	0,62	0,71	1,66
1,5	1,1	182/4T	6,64	K	6,9	2,1	3,2	0,4786	32	70	71,0	1,15	1170	81,5	84,0	85,5	0,50	0,62	0,71	2,27
2	1,5	182/4T	8,86	M	8,4	2,6	3,7	0,5657	20	44	80,5	1,15	1170	82,5	85,5	86,5	0,47	0,60	0,69	3,15
3	2,2	213/5T	13,2	H	6,2	2,3	2,8	0,8104	36	79	101	1,15	1175	85,5	87,5	87,5	0,53	0,66	0,74	4,26
5	3,7	213/5T	22,0	J	6,4	2,5	2,8	1,08	20	44	122	1,15	1175	86,5	87,5	87,5	0,55	0,68	0,75	7,08
7,5	5,5	254/6T	33,1	G	5,5	2,2	2,4	1,84	27	59	179	1,15	1175	87,5	89,5	89,5	0,55	0,67	0,74	10,4
10	7,5	254/6T	44,1	G	5,5	2,2	2,4	2,17	20	44	196	1,15	1175	88,5	89,5	89,5	0,56	0,68	0,75	14,0

1) Values for three-phase 60Hz motors;

2) To obtain nominal current (In) in 230V. just multiply the current value by 2.

12.3 W01 Rolled Steel – TEFC – Standard Efficiency

Output		Frame	Full Load Torque (ft.lb)	Locked Rotor Current		Locked Rotor Torque Tl/Tn	Break-down Torque Tb/Tn	Inertia J (sq. ft.lb)	Allowable locked rotor time (s)		Weight (lb)	Service Factor	460 V							
													Rated speed (rpm)	% of full load						Full load current In (A)
														Efficiency			Power Factor			
HP	kW			Code	Il/In				Hot	Cold				50	75	100	50	75	100	
II Polos																				
0,25	0,18	56	0,370	L	6,4	2,5	3,0	0,0389	60	132	17,2	1,15	3475	46,0	52,5	57,5	0,75	0,82	0,86	0,457
0,33	0,25	56	0,490	L	6,4	2,5	3,0	0,0389	40	88	17,2	1,15	3485	48,0	57,5	62,0	0,72	0,79	0,84	0,602
0,5	0,37	56	0,740	L	7,0	2,6	3,0	0,0453	35	77	19,0	1,15	3500	55,0	62,0	68,0	0,67	0,75	0,81	0,843
0,75	0,55	56	1,12	K	7,0	2,5	2,9	0,0517	23	51	20,3	1,15	3475	62,0	68,0	72,0	0,70	0,79	0,85	1,13
1	0,75	56	1,49	K	7,2	2,4	2,9	0,0643	24	53	23,4	1,15	3480	66,0	72,0	74,0	0,68	0,79	0,84	1,51
1,5	1,1	56	2,25	J	7,2	2,4	2,7	0,0771	12	26	26,0	1,15	3460	72,0	75,5	77,0	0,76	0,85	0,90	1,99
2	1,5	56H	2,98	K	7,7	2,3	2,9	0,0963	11	24	30,9	1,15	3475	75,5	78,5	80,0	0,76	0,86	0,90	2,62
3	2,2	56H	4,47	K	8,5	2,7	2,8	0,1279	6	13	38,1	1,15	3480	80,0	81,5	81,5	0,76	0,86	0,90	3,76
IV Polos																				
0,25	0,18	56	0,730	M	6,3	2,4	3,0	0,0453	38	84	18,1	1,15	1765	57,5	66,0	70,0	0,43	0,54	0,62	0,521
0,33	0,25	56	0,970	M	7,1	2,3	3,0	0,0517	31	68	19,4	1,15	1765	64,0	72,0	74,0	0,47	0,58	0,68	0,624
0,5	0,37	56	1,47	L	7,0	2,4	3,0	0,0584	20	44	20,9	1,15	1760	68,0	74,0	77,0	0,48	0,61	0,70	0,862
0,75	0,55	56	2,21	K	6,9	2,4	3,0	0,0648	17	37	22,5	1,15	1755	72,0	77,0	78,5	0,48	0,61	0,72	1,22
1	0,75	56	2,94	M	7,7	2,7	3,0	0,0842	12	26	26,9	1,15	1760	74,0	78,5	80,0	0,48	0,62	0,71	1,66
1,5	1,1	56H	4,44	K	7,5	2,5	3,0	0,1037	9	20	31,3	1,15	1750	77,0	80,0	81,5	0,54	0,67	0,76	2,23
2	1,5	56H	5,94	K	7,3	2,4	2,7	0,1232	8	18	35,9	1,15	1745	80,0	81,5	82,5	0,58	0,72	0,80	2,85
VI Polos																				
0,25	0,18	56	1,12	K	5,1	2,3	3,0	0,0710	46	101	19,0	1,15	1160	55,0	64,0	68,0	0,41	0,52	0,61	0,545
0,33	0,25	56	1,47	L	5,5	2,4	3,0	0,0888	36	79	21,8	1,15	1160	59,5	68,0	70,0	0,42	0,53	0,62	0,723
0,5	0,37	56	2,23	K	5,4	2,1	3,0	0,1065	22	48	24,7	1,15	1160	64,0	70,0	72,0	0,44	0,56	0,65	0,992
0,75	0,55	56H	3,36	K	5,8	2,3	3,0	0,1331	21	46	29,5	1,15	1155	70,0	74,0	75,5	0,46	0,59	0,68	1,34
1	0,75	56H	4,52	J	5,6	2,1	2,6	0,1597	15	33	33,7	1,15	1145	72,0	75,5	77,0	0,50	0,63	0,73	1,67

12.4 W01 Rolled Steel – ODP – NEMA Premium Efficiency

Output		Frame	Full Load Torque (ft.lb)	Locked Rotor Current		Locked Rotor Torque Tl/Tn	Break-down Torque Tb/Tn	Inertia J (sq. ft.lb)	Allowable locked rotor time (s)		Weight (lb)	Service Factor	460 V							
													Rated speed (rpm)	% of full load						Full load current In (A)
														Efficiency			Power Factor			
HP	kW			Code	Il/In				Hot	Cold				50	75	100	50	75	100	
II Polos																				
1	0,75	143/5T	1,48	L	8,3	2,1	3,3	0,0643	22	48	25,4	1,15	3510	74,0	78,5	80,0	0,66	0,78	0,85	1,38
1,5	1,1	143/5T	2,21	K	8,6	2,1	3,3	0,0835	19	42	29,3	1,15	3510	81,5	84,0	84,0	0,73	0,83	0,89	1,85
2	1,5	143/5T	2,95	K	8,9	2,2	3,3	0,1151	14	31	36,8	1,15	3510	84,0	85,5	85,5	0,77	0,86	0,91	2,42
3	2,2	143/5T	4,47	J	8,0	2,3	3,0	0,1279	9	20	39,9	1,15	3480	84,0	85,5	85,5	0,76	0,86	0,90	3,59
5	3,7	182/4T	7,38	J	7,6	1,9	3,0	0,1386	12	26	58,7	1,15	3510	85,5	86,5	86,5	0,73	0,83	0,88	6,10
7,5	5,5	182/4T	11,1	H	7,4	1,8	2,9	0,1818	10	22	69,9	1,15	3500	88,5	88,5	88,5	0,76	0,85	0,90	8,67
10	7,5	213/5T	14,7	H	6,8	2,0	2,8	0,4651	11	24	117	1,15	3535	88,5	89,5	89,5	0,74	0,84	0,88	12,0
15	11	213/5T	22,0	H	6,9	2,1	2,8	0,5512	8	18	131	1,15	3535	90,2	90,2	90,2	0,77	0,86	0,89	17,2
20	15	254/6T	29,4	G	6,0	1,8	2,4	0,7848	13	29	151	1,15	3525	90,2	91,0	91,0	0,76	0,83	0,87	23,8
25	18,5	254/6T	36,7	G	6,3	1,8	2,9	0,9155	9	20	174	1,15	3530	91,0	91,7	91,7	0,73	0,83	0,87	29,1
IV Polos																				
1	0,75	143/5T	2,94	L	8,0	2,9	3,6	0,1101	22	48	34,4	1,15	1760	81,5	84,0	85,5	0,51	0,65	0,73	1,51
1,5	1,1	143/5T	4,42	L	8,7	2,8	3,3	0,1426	15	33	41,9	1,15	1760	84,0	86,5	86,5	0,56	0,69	0,77	2,07
2	1,5	143/5T	5,96	K	7,7	2,6	3,2	0,1168	17	37	39,0	1,15	1740	85,5	86,5	86,5	0,61	0,74	0,81	2,69
3	2,2	182/4T	8,81	K	8,4	2,2	3,3	0,3092	15	33	65,9	1,15	1765	87,5	88,5	89,5	0,60	0,73	0,80	3,86
5	3,7	182/4T	14,7	J	7,2	2,0	3,1	0,4003	12	26	79,8	1,15	1760	88,5	88,5	89,5	0,63	0,76	0,82	6,33
7,5	5,5	213/5T	22,0	J	7,3	2,4	3,2	1,03	13	29	116	1,15	1770	89,5	90,2	91,0	0,65	0,77	0,82	9,25
10	7,5	213/5T	29,3	H	7,0	2,5	3,5	1,30	14	31	137	1,15	1770	90,2	91,0	91,7	0,64	0,77	0,83	12,4
15	11	254/6T	43,8	H	6,7	2,4	3,0	1,82	17	37	175	1,15	1775	91,7	92,4	93,0	0,62	0,73	0,80	18,6
20	15	254/6T	58,5	G	6,3	2,4	2,9	2,23	15	33	198	1,15	1770	92,4	92,4	93,0	0,63	0,74	0,81	25,0
VI Polos																				
1	0,75	143/5T	4,51	K	6,1	2,5	3,0	0,1419	24	53	35,3	1,15	1150	78,5	81,5	82,5	0,47	0,60	0,69	1,65
1,5	1,1	182/4T	6,67	J	6,5	2,0	3,1	0,2178	46	101	56,0	1,15	1165	84,0	85,5	86,5	0,51	0,63	0,71	2,25
2	1,5	182/4T	8,89	J	6,6	2,0	3,0	0,2800	33	73	66,1	1,15	1165	85,5	86,5	87,5	0,53	0,66	0,73	2,95
3	2,2	213/5T	13,2	H	5,9	2,1	2,6	0,8104	39	86	98,3	1,15	1175	86,5	87,5	88,5	0,56	0,68	0,75	4,16
5	3,7	213/5T	22,0	H	5,9	2,2	2,5	1,08	29	64	118	1,15	1175	88,5	89,5	89,5	0,58	0,70	0,77	6,74
7,5	5,5	254/6T	33,1	F	5,1	2,0	2,3	2,00	37	81	187	1,15	1175	88,5	90,2	90,2	0,56	0,68	0,75	10,2
10	7,5	254/6T	43,9	G	5,3	2,1	2,3	2,50	34	75	209	1,15	1180	91,0	91,7	91,7	0,56	0,68	0,74	13,9

1) Values for three-phase 60Hz motors;

2) To obtain nominal current (In) in 230V. just multiply the current value by 2.

12.5 W01 Rolled Steel – ODP – High Efficiency

Output		Frame	Full Load Torque (ft.lb)	Locked Rotor Current		Locked Rotor Torque Tl/Tn	Break-down Torque Tb/Tn	Inertia J (sq. ft.lb)	Allowable locked rotor time (s)		Weight (lb)	Service Factor	460 V							
													Rated speed (rpm)	% of full load						Full load current In (A)
														Efficiency			Power Factor			
HP	kW			Code	Il/In				Hot	Cold				50	75	100	50	75	100	
II Polos																				
1	0,75	143/5T	1,48	K	7,5	2,4	3,2	0,0278	27	59	25,4	1,15	3490	77,0	80,0	80,0	0,69	0,80	0,87	1,35
1,5	1,1	143/5T	2,22	J	7,8	2,4	3,2	0,0358	22	48	29,3	1,15	3495	81,5	82,5	82,5	0,73	0,84	0,89	1,88
2	1,5	143/5T	2,96	K	8,0	2,5	3,4	0,0439	17	37	34,0	1,15	3500	82,5	84,0	84,0	0,74	0,84	0,89	2,52
3	2,2	143/5T	4,47	J	7,8	2,5	3,1	0,0496	12	26	37,0	1,15	3475	84,0	84,0	84,0	0,73	0,84	0,89	3,69
5	3,7	182/4T	7,38	H	7,0	1,8	2,9	0,1217	15	33	53,4	1,15	3510	85,5	86,5	85,5	0,71	0,82	0,87	6,24
7,5	5,5	182/4T	11,1	H	7,0	1,8	2,8	0,1559	8	18	62,8	1,15	3500	87,5	88,5	87,5	0,74	0,84	0,89	8,86
10	7,5	213/5T	14,7	G	6,4	1,8	2,6	0,3816	8	18	103	1,15	3530	87,5	88,5	88,5	0,72	0,83	0,87	12,2
15	11	213/5T	22,0	G	6,5	1,9	2,6	0,4651	6	13	117	1,15	3525	88,5	89,5	89,5	0,73	0,83	0,88	17,5
20	15	254/6T	29,4	G	6,0	1,8	2,4	0,6974	9	20	151	1,15	3520	88,5	89,5	90,2	0,75	0,84	0,88	23,7
25	18,5	254/6T	36,7	G	6,2	1,8	2,8	0,8718	9	20	169	1,15	3530	90,2	91,0	91,0	0,75	0,84	0,88	29,0
IV Polos																				
1	0,75	143/5T	2,94	L	7,4	2,8	3,3	0,0907	0	0	30,0	1,15	1760	77,0	81,5	82,5	0,46	0,60	0,70	1,63
1,5	1,1	143/5T	4,43	K	7,6	2,7	3,5	0,1168	12	26	35,9	1,15	1755	80,0	84,0	84,0	0,52	0,65	0,75	2,19
2	1,5	143/5T	5,94	K	7,4	2,6	3,1	0,1296	10	22	39,0	1,15	1745	81,5	84,0	84,0	0,55	0,69	0,77	2,91
3	2,2	182/4T	8,81	J	6,8	2,2	2,9	0,2164	0	0	50,7	1,15	1765	85,5	86,5	86,5	0,59	0,72	0,79	4,04
5	3,7	182/4T	14,8	J	7,0	2,0	2,8	0,3080	9	20	66,4	1,15	1750	86,5	87,5	87,5	0,62	0,75	0,82	6,47
7,5	5,5	213/5T	22,1	H	6,5	2,0	2,6	0,8040	10	22	101	1,15	1760	87,5	88,5	88,5	0,67	0,79	0,84	9,29
10	7,5	213/5T	29,4	H	6,5	2,1	2,7	1,03	8	18	116	1,15	1760	89,5	90,2	89,5	0,68	0,79	0,85	12,4
15	11	254/6T	44,2	G	6,0	1,9	2,3	1,22	13	29	152	1,15	1760	90,2	91,0	91,0	0,66	0,77	0,82	18,5
20	15	254/6T	59,0	F	5,5	1,9	2,2	1,28	12	26	166	1,15	1755	91,0	91,0	91,0	0,67	0,78	0,81	25,5
VI Polos																				
1	0,75	143/5T	4,51	K	5,9	2,2	2,9	0,1296	19	42	38,1	1,15	1150	77,0	80,0	80,0	0,47	0,60	0,69	1,71
1,5	1,1	182/4T	6,64	K	6,8	2,0	3,1	0,3918	29	64	61,5	1,15	1170	81,5	84,0	84,0	0,49	0,62	0,71	2,31
2	1,5	182/4T	8,86	K	6,9	2,1	3,1	0,4786	24	53	71,0	1,15	1170	82,5	85,5	85,5	0,51	0,64	0,72	3,06
3	2,2	213/5T	13,2	J	6,5	2,3	2,7	0,9029	19	42	107	1,15	1180	84,0	85,5	86,5	0,52	0,66	0,74	4,31
5	3,7	213/5T	22,1	G	5,5	2,1	2,4	0,9006	23	51	109	1,15	1170	86,5	87,5	87,5	0,58	0,70	0,77	6,89
7,5	5,5	254/6T	33,1	G	5,0	2,0	2,3	1,50	30	66	157	1,15	1175	86,5	88,5	88,5	0,53	0,65	0,72	10,8
10	7,5	254/6T	43,9	G	5,2	2,1	2,4	2,00	28	62	184	1,15	1180	88,5	90,2	90,2	0,53	0,66	0,73	14,3

1) Values for three-phase 60Hz motors;

2) To obtain nominal current (In) in 230V. just multiply the current value by 2.

12.6 W01 Rolled Steel – ODP – Premium Efficiency (DOE)

Output		Frame	Full Load Torque (ft.lb)	Locked Rotor Current		Locked Rotor Torque Tl/Tn	Break-down Torque Tb/Tn	Inertia J (sq. ft.lb)	Allowable locked rotor time (s)		Weight (lb)	Service Factor	460 V							
													Rated speed (rpm)	% of full load						Full load current In (A)
														Efficiency			Power Factor			
HP	kW			Code	Il/In				Hot	Cold				50	75	100	50	75	100	
II Polos																				
0,25	0,18	56	0,370	M	6,9	2,4	3,3	0,0389	0	0	16,1	1,35	3525	55,0	64,0	65,6	0,56	0,66	0,75	0,459
0,33	0,25	56	0,490	L	6,7	2,5	3,2	0,0389	0	0	16,3	1,35	3520	57,5	66,0	69,5	0,54	0,65	0,74	0,610
0,5	0,37	56	0,740	K	6,2	2,3	2,8	0,0389	0	0	16,5	1,25	3490	64,0	70,0	73,4	0,57	0,69	0,78	0,811
0,75	0,55	56	1,11	J	6,5	2,4	2,8	0,0453	0	0	18,3	1,25	3485	68,0	74,0	76,8	0,57	0,70	0,79	1,14
1	0,75	56	1,49	J	6,4	2,3	2,6	0,0517	0	0	19,6	1,25	3470	70,0	75,5	77,0	0,60	0,73	0,81	1,51
1,5	1,1	56	2,21	K	8,6	2,1	3,3	0,0835	19	42	29,3	1,15	3510	81,5	84,0	84,0	0,73	0,83	0,89	1,85
2	1,5	56H	2,95	K	8,9	2,2	3,3	0,1151	14	31	36,8	1,15	3510	84,0	85,5	85,5	0,77	0,86	0,91	2,42
3	2,2	56H	4,47	J	8,0	2,3	3,0	0,1279	9	20	39,9	1,15	3480	84,0	85,5	85,5	0,76	0,86	0,90	3,59
IV Polos																				
0,25	0,18	56	0,730	M	5,9	2,3	3,3	0,0389	0	0	15,7	1,35	1765	57,5	64,0	69,5	0,41	0,52	0,61	0,533
0,33	0,25	56	0,970	L	6,2	2,3	3,3	0,0453	0	0	17,4	1,35	1765	62,0	70,0	73,4	0,44	0,55	0,64	0,668
0,5	0,37	56	1,47	L	7,2	2,4	3,3	0,0584	0	0	20,3	1,25	1765	70,0	75,5	78,2	0,47	0,60	0,69	0,861
0,75	0,55	56	2,21	K	7,3	2,5	3,0	0,0712	0	0	23,4	1,25	1760	74,0	78,5	81,1	0,52	0,65	0,74	1,15
1	0,75	56	2,94	L	7,6	2,8	3,2	0,0842	0	0	26,2	1,15	1760	78,5	82,5	83,5	0,49	0,63	0,72	1,57
1,5	1,1	56H	4,42	L	8,8	2,9	3,5	0,1296	0	0	36,8	1,15	1760	84,0	85,5	86,5	0,53	0,66	0,76	2,10
2	1,5	56H	5,96	K	7,7	2,6	3,2	0,1168	17	37	35,5	1,15	1740	85,5	86,5	86,5	0,61	0,74	0,81	2,69
3	2,2	56H	8,96	K	7,6	2,7	3,0	0,1419	0	0	43,0	1,15	1735	86,5	86,5	86,9	0,59	0,72	0,80	3,97
VI Polos																				
0,25	0,18	56	1,12	K	4,8	2,1	2,8	0,0622	0	0	17,0	1,35	1160	55,0	64,0	67,5	0,41	0,52	0,61	0,549
0,33	0,25	56	1,47	K	5,0	2,1	2,8	0,0710	0	0	18,3	1,35	1160	59,5	66,0	71,4	0,42	0,53	0,63	0,698
0,5	0,37	56	2,24	J	5,1	2,0	2,6	0,0888	0	0	21,2	1,25	1155	68,0	74,0	75,3	0,43	0,56	0,66	0,934
0,75	0,55	56H	3,35	J	5,9	2,2	2,8	0,1685	0	0	34,4	1,15	1160	75,5	80,0	81,7	0,45	0,58	0,67	1,26
1	0,75	56H	4,47	K	6,2	2,4	3,0	0,1951	0	0	38,8	1,15	1160	77,0	81,5	82,5	0,45	0,58	0,68	1,68

12.7 W01 Rolled Steel – ODP – Standard Efficiency

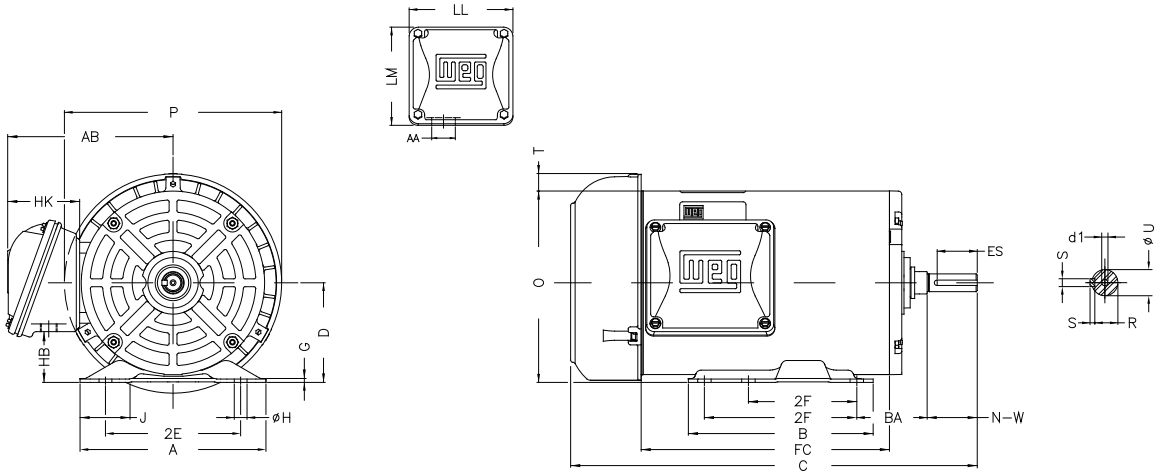
Output		Frame	Full Load Torque (ft.lb)	Locked Rotor Current		Locked Rotor Torque Tl/Tn	Break-down Torque Tb/Tn	Inertia J (sq. ft.lb)	Allowable locked rotor time (s)		Weight (lb)	Service Factor	460 V							
													Rated speed (rpm)	% of full load						Full load current In (A)
														Efficiency			Power Factor			
HP	kW			Code	Il/In				Hot	Cold				50	75	100	50	75	100	
II Polos																				
0,25	0,18	56	0,370	M	7,0	2,8	3,6	0,0389	48	106	16,1	1,35	3520	52,5	62,0	64,0	0,53	0,64	0,72	0,490
0,33	0,25	56	0,490	M	6,5	2,5	3,3	0,0389	38	84	16,1	1,35	3515	55,0	62,0	66,0	0,52	0,63	0,72	0,660
0,5	0,37	56	0,740	L	6,0	2,4	2,8	0,0389	34	75	16,3	1,25	3495	57,5	64,0	68,0	0,49	0,62	0,72	0,949
0,75	0,55	56	1,12	K	6,2	2,3	2,6	0,0453	31	68	18,3	1,25	3480	64,0	70,0	72,0	0,53	0,67	0,76	1,26
1	0,75	56	1,49	K	6,3	2,3	2,5	0,0517	23	51	19,6	1,25	3470	66,0	72,0	74,0	0,58	0,70	0,79	1,61
1,5	1,1	56	2,24	J	6,6	2,3	2,5	0,0648	17	37	22,5	1,15	3465	72,0	75,5	77,0	0,63	0,75	0,83	2,16
2	1,5	56H	2,99	J	7,0	2,3	2,5	0,0840	10	22	27,1	1,15	3470	77,0	78,5	78,5	0,66	0,79	0,85	2,82
3	2,2	56H	4,51	J	7,0	2,2	2,5	0,0959	8	18	30,2	1,15	3450	80,0	81,5	81,5	0,70	0,82	0,87	3,89
IV Polos																				
0,25	0,18	56	0,740	M	5,9	2,3	3,5	0,0389	33	73	15,7	1,35	1760	55,0	62,0	66,0	0,41	0,51	0,60	0,571
0,33	0,25	56	0,970	L	5,5	2,0	3,1	0,0389	29	64	15,7	1,35	1755	57,5	64,0	68,0	0,43	0,54	0,64	0,721
0,5	0,37	56	1,48	L	6,0	2,2	2,9	0,0453	23	51	17,4	1,25	1755	64,0	70,0	72,0	0,43	0,56	0,66	0,977
0,75	0,55	56	2,21	K	6,3	2,3	3,0	0,0584	13	29	20,3	1,25	1755	66,0	72,0	75,5	0,45	0,58	0,68	1,34
1	0,75	56	2,96	L	6,6	2,5	2,9	0,0712	10	22	23,4	1,15	1750	68,0	74,0	77,0	0,44	0,58	0,68	1,80
1,5	1,1	56H	4,45	K	6,9	2,5	2,8	0,0907	10	22	27,6	1,15	1745	75,5	78,5	80,0	0,51	0,65	0,75	2,30
2	1,5	56H	5,96	K	6,7	2,4	2,5	0,1037	7	15	30,6	1,15	1740	75,5	78,5	78,5	0,54	0,68	0,77	3,11
3	2,2	56H	8,96	K	7,1	2,4	2,7	0,1554	7	15	37,0	1,15	1735	80,0	81,5	81,5	0,57	0,71	0,79	4,29
VI Polos																				
0,25	0,18	56	1,12	K	4,5	2,1	3,0	0,0622	37	81	17,0	1,35	1160	52,5	60,0	64,0	0,41	0,51	0,59	0,598
0,33	0,25	56	1,47	L	5,1	2,2	3,1	0,0710	30	66	18,3	1,35	1160	59,5	64,0	68,0	0,41	0,52	0,61	0,756
0,5	0,37	56	2,24	K	5,3	2,2	3,0	0,0888	23	51	21,2	1,25	1155	64,0	70,0	72,0	0,43	0,55	0,65	0,992
0,75	0,55	56H	3,38	J	5,4	2,0	2,7	0,1153	20	44	25,6	1,15	1150	70,0	74,0	75,5	0,48	0,61	0,71	1,29
1	0,75	56H	4,52	J	5,6	2,2	2,7	0,1419	16	35	30,0	1,15	1145	72,0	75,5	77,0	0,49	0,63	0,72	1,70

1) Values for three-phase 60Hz motors;

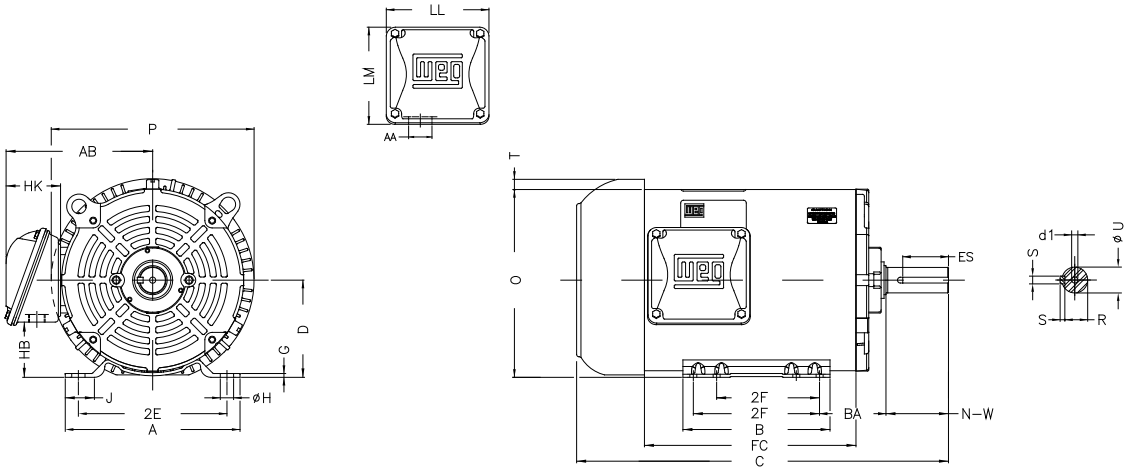
2) To obtain nominal current (In) in 230V. just multiply the current value by 2.

13. Mechanical data

13.1 Frames 56 up to 143 - TEFC



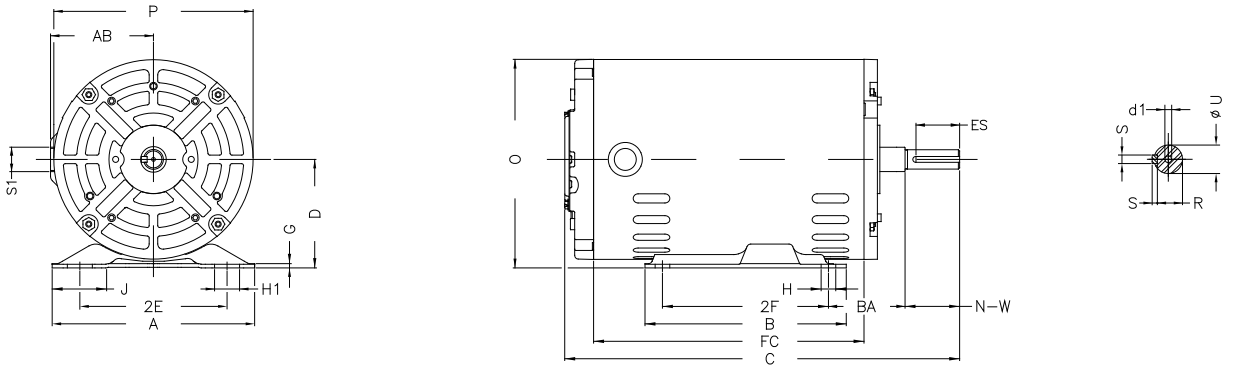
13.2 Frames 182 up to 254 - TEFC



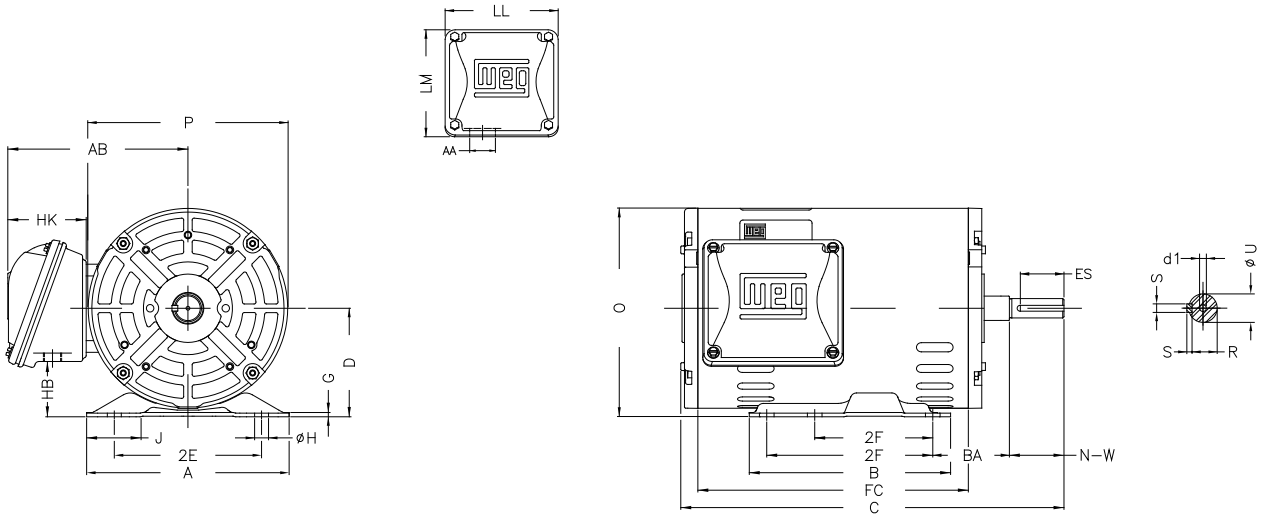
Frame	2E	2F	A	AA	AB	B	BA	D	G	HB	HK	Hole H	J	LL
56	4.874	3.000	6.535	0.881	5.873	4.016	2.750	3.500	0.118	1.784	2.629	0.343	1.734	4.563
56H		3.000/5.000				6.496							1.593	
143/5T	5.500	4.000/5.000	6.535	1.118	5.873	6.496	2.250	3.500	0.118	1.784	2.629	0.343	1.722	4.563
182/4T	7.500	4.500/5.500	8.661	1.118	6.696	6.299	2.750	4.500	0.167	2.784		0.406	1.299	
213/5T	8.500	5.500/7.000	9.449	1.377	7.973	7.953	3.500	5.250	0.167	2.982	3.022		1.575	5.551
254/6T	10.000	8.252/10.000	11.417	1.732	9.448	11.417	4.250	6.250	0.187	3.631	3.645	0.530	1.693	6.299

Frame	LM	O	P	T	Shaft end						Bearings	
					d1	ES	N-W	R	S	U	D.E.	N.D.E.
56	4.090	6.723	7.638	0.604	A 3.15	1.417	1.874	0.517	0.187	0.6250	6203ZZ	6202ZZ
56H											6204ZZ	
143/5T	4.090	6.723	7.638	0.604	A 3.15	1.417	2.250	0.766	0.187	0.8750	6205 ZZ	6203 ZZ
182/4T		8.557	9.435	0.661	A 4	1.969	2.750	0.984	0.250	1.125	6206 ZZ	6205 ZZ
213/5T	5.250	10.144	11.306	0.761		2.480	3.380	1.203	0.313	1.375	6208 ZZ	6206 ZZ
254/6T	6.017	12.010	13.180	0.830		2.756	4.000	1.406	0.375	1.625	6309 Z-C3	6208 Z-C3

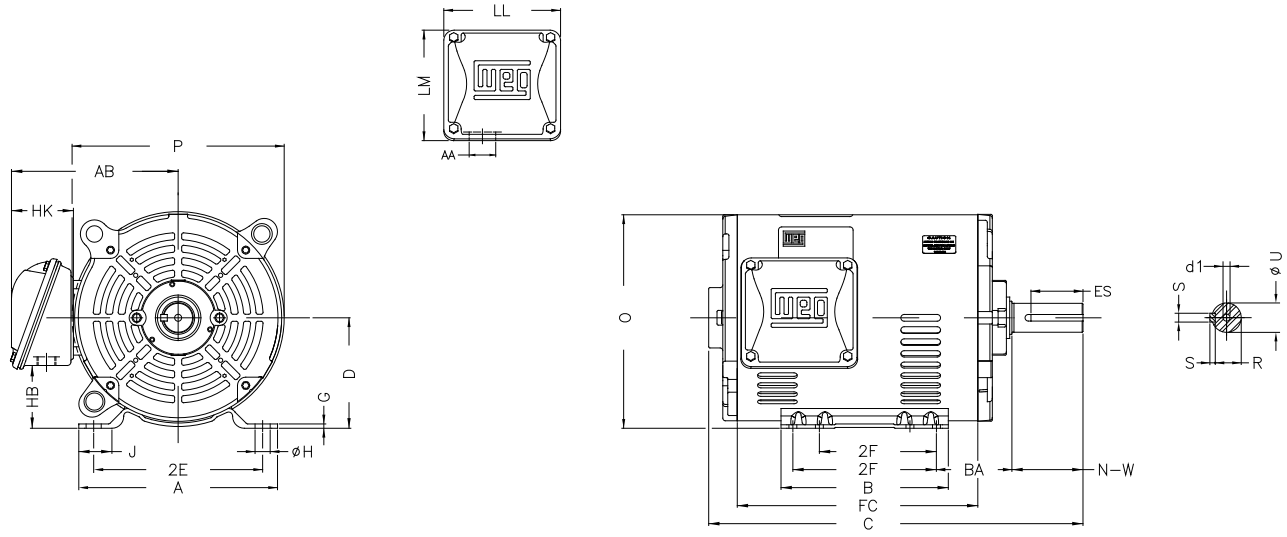
13.3 Frames 56 and 56H – ODP



13.4 Frame 143 – ODP



13.4 Frames 182 up to 254 - ODP



Frame	2E	2F	A	AA	AB	B	BA	D	G	HB	HK	Hole H	J	LL
56	4.874	3.000	6.535	-	3.323	4.016	2.750	3.500	0.118	-	-	0.343	1.734	-
56H		3.000/5.000				6.496							1.593	
143/5T	5.500	4.000/5.000		1.118	5.873		2.250			1.784	2.629		1.725	4.563
182/4T	7.500	4.500/5.500	8.661		6.696	6.299	2.750	4.500	0.167	2.784		0.406	1.299	
213/5T	8.500	5.500/7.000	9.449	1.377	7.973	7.953	3.500	5.250		2.982	3.022		1.575	5.551
254/6T	10.000	8.252/10.000	11.417	1.732	9.448	11.417	4.250	6.250	0.187	3.631	3.645	0.530	1.693	6.299

Frame	S1	LM	O	P	Shaft end						Bearings	
					d1	ES	N-W	R	S	U	D.E.	N.D.E
56	NPT 1/2”	-	6.723	6.456	A 3.15	1.417	1.874	0.517	0.187	0.6250	6203ZZ	6202ZZ
56H											6204ZZ	
143/5T	-	4.090					2.250	0.766		0.8750	6205 ZZ	6203 ZZ
182/4T			8.557	8.114	A 4	1.969	2.750	0.984	0.250	1.125	6206 ZZ	6205 ZZ
213/5T		5.250	10.144	9.846		2.480	3.380	1.203	0.313	1.375	6208 ZZ	6206 ZZ
254/6T		6.017	12.010	11.558		2.756	4.000	1.406	0.375	1.625	6309 Z-C3	6208 Z-C3

13.5 “C” and “FC” Dimensions

The motor and the frame length (respectively C and FC dimensions) are specified below, accordingly the frame size and output power.

TEFC – Standard Efficiency

Frame	Output		Poles	C	FC
	HP	kW			
56	0.25	0.18	2	11.142	5.512
			4		
			6	11.535	5.906
	0.33	0.25	2	11.142	5.512
			4	11.535	5.906
			6	11.929	6.299
	0.5	0.37	2	11.535	5.906
			4		
			6	12.323	6.693
	0.75	0.55	2	11.535	5.906
			4	11.929	6.299
56H			6	12.717	7.087
56	1	0.75	2	11.929	6.299
			4	12.323	6.693
56H			6	13.504	7.874
56	1.5	1.1	2	12.323	6.693
			4	13.110	7.480
56H	2	1.5	2		
			4	13.504	7.874
	3	2.2	2	13.898	8.268

TEFC – NEMA Premium Efficiency

Frame	Output		Poles	C	FC
	HP	kW			
143/5T	1	0.75	2	13.189	7.480
			4	13.583	7.874
			6		
	1.5	1.1	2	13.189	7.480
			4	13.583	7.874
182/4T			6	16.339	8.661
143/5T	2	1.5	2	13.976	8.268
			4		
182/4T			6	17.126	9.449
143/5T	3	2.2	2	16.339	8.661
182/4T			4	17.913	10.236
213/5T			6	19.291	10.630
182/4T	5	3.7	2	17.913	10.236
			4		
213/5T			6	20.079	11.417
182/4T	7.5	5.5	2		
213/5T			4	18.898	10.236
254/6T			6	22.559	12.992
213/5T	10	7.5	2	21.654	12.992
			4	19.291	10.630
254/6T			6	23.346	13.780
213/5T	15	11	2	22.559	12.992
			4		
254/6T	20	15	2	23.346	13.780
			4		
	25	18.5	2		

TEFC – High Efficiency

Frame	Output		Poles	C	FC
	HP	kW			
143/5T	1	0.75	2	13.189	7.48
			4		
			6		
	1.5	1.1	2		
			4	13.583	7.874
182/4T			6	17.126	9.449
143/5T	2	1.5	2	13.583	7.874
			4	14.37	8.661
182/4T			6	17.913	10.236
	3	2.2	2	16.339	8.661
			4		
213/5T			6	18.898	10.236
182/4T	5	3.7	2	16.732	9.055
			4	17.913	10.236
213/5T			6	19.291	10.63
	7.5	5.5	2		
			4		
254/6T			6	22.559	12.992
213/5T	10	7.5	2	20.079	11.417
			4	20.472	11.811
254/6T			6	22.559	12.992
	15	11	2		
			4		
	20	15	2		
			4		
	25	18.5	2	23.346	13.78

ODP – NEMA Premium Efficiency

Frame	Output		Poles	C	FC
	HP	kW			
143/5T	1	0.75	2	11.181	7.480
			4		
			6		
	1.5	1.1	2		
			4	12.362	8.661
182/4T			6	13.976	7.874
143/5T	2	1.5	2	11.969	8.268
			4	12.362	8.661
182/4T			6	14.764	
143/5T	3	2.2	2	12.362	
182/4T			4	15.157	9.055
213/5T			6	16.575	10.236
182/4T	5	3.7	2	14.764	8.661
			4	16.339	10.236
213/5T			6	16.969	10.630
182/4T	7.5	5.5	2	15.157	9.055
213/5T			4	16.575	10.236
254/6T			6	20.472	12.992
213/5T	10	7.5	2	16.969	10.630
			4	17.756	11.417
254/6T			6	20.472	12.992
213/5T	15	11	2	17.756	11.417
254/6T			4	20.472	12.992
	20	15	2		
			4		
	25	18.5	2		

ODP – Premium Efficiency (DOE)

Frame	Output		Poles	C	FC
	HP	kW			
56	0.25	0.18	2	10.315	6.299
			4	9.921	5.906
			6	10.315	6.299
	0.33	0.25	2		
			4		
			6		
	0.5	0.37	2		
			4	10.709	6.693
			6		
	0.75	0.55	2		
			4	11.102	7.087
56H			6	12.677	8.661
56	1	0.75	2	10.709	6.693
			4	11.495	7.48
56H			6	13.071	9.055
56	1.5	1.1	2	11.889	7.874
			4	13.071	9.055
56H	2	1.5	2	12.677	8.661
			4	12.283	8.268
	3	2.2	2	13.071	9.055
			4		

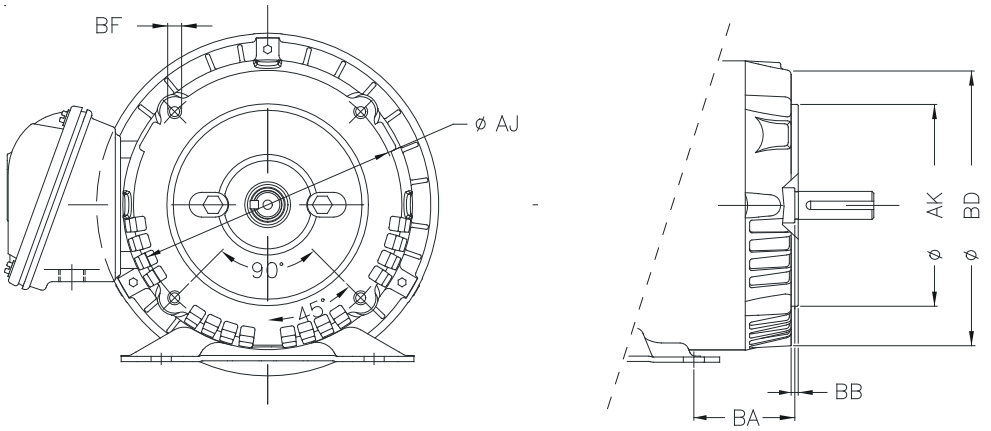
ODP – High Efficiency

Frame	Output		Poles	C	FC
	HP	kW			
143/5T	1	0.75	2	11.181	7.480
			4		
			6	11.969	8.268
	1.5	1.1	2	11.181	7.480
			4	11.575	7.874
182/4T			6	14.764	8.661
143/5T	2	1.5	2	11.575	7.874
			4	11.969	8.268
182/4T			6	15.551	9.449
143/5T	3	2.2	2	11.969	8.268
182/4T			4	13.976	7.874
213/5T			6	16.575	10.236
182/4T	5	3.7	2	13.976	7.874
			4	15.157	9.055
213/5T			6	16.575	10.236
182/4T	7.5	5.5	2	14.764	8.661
213/5T			4	16.575	10.236
254/6T			6	20.472	12.992
213/5T	10	7.5	2	16.575	10.236
			4		
254/6T			6	20.472	12.992
213/5T	15	11	2	16.969	10.630
254/6T			4	20.472	12.992
	20	15	6		
			4		
	25	18.5	2		

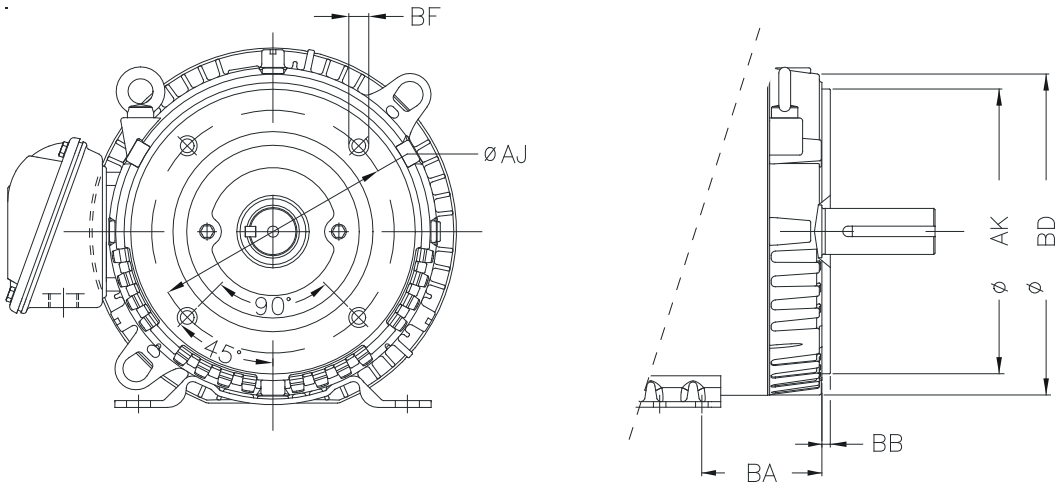
ODP – Standard Efficiency

Frame	Output		Poles	C	FC
	HP	kW			
56	0.25	0.18	2	10.315	6.299
			4	9.921	5.906
			6	10.315	6.299
	0.33	0.25	2		
			4	9.921	5.906
			6	10.315	6.299
	0.5	0.37	2		
			4		
			6	10.709	6.693
	0.75	0.55	2		
			4		
56H			6	11.496	7.48
56	1	0.75	2	10.709	6.693
			4		
56H			6	11.89	7.874
56	1.5	1.1	2	11.102	7.087
			4	11.496	7.48
56H	2	1.5	2		
			4	11.89	7.874
	3	2.2	2	12.283	8.268
			4		

Flange “C”
Frames 56 up to 143 - TEFC



Flange “C”
Frames 182 up to 256 - TEFC



Frame	BA	Flange					
		AJ	AK	BB	BD	BF	AH
56C	2.750	5.874	4.500	0.157	6.028	UNC 3/8”x16	2.062
56HC							
143/5TC							2.129
182/4TC	3.500	7.250	8.500	0.250	8.858	UNC 1/2”x13	2.620
213/5TC	4.309				9.401		3.129
254/6TC	4.750				11.084		3.750

14. Drip cover

Both configurations, ODP and TEFC motors, can be supplied with drip cover. Also there are add on kits available for the standard motor. The additional in the overall motor length can be seen in the table below:

Frame	CH	
	TEFC	ODP
56 up to 143/5T	1.30	1.30
182/4T	1.34	1.34
213/5T	1.93	1.26
254/6T	2.16	1.39

Table 17 – Drip cover length.

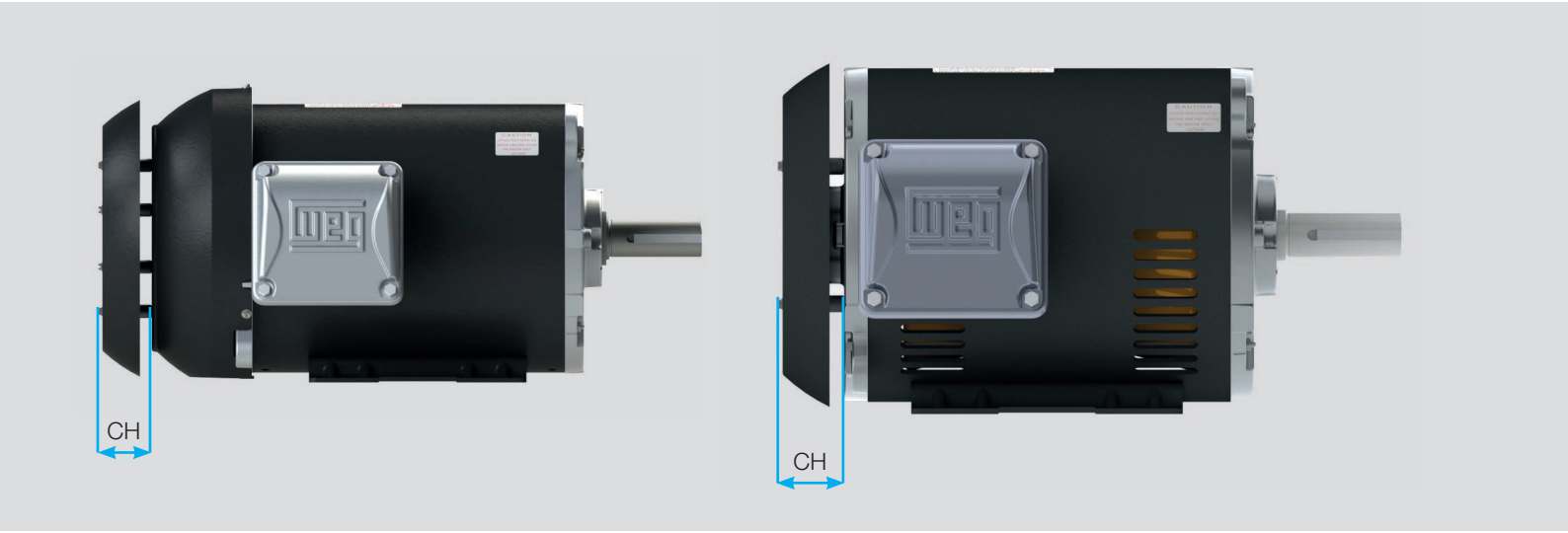


Figure 17 – TEFC and ODP motors with drip cover.

15. Packaging

W01 motors in frames 56 to 213/5T are packaged in cardboard boxes (see figure 18).

Figure 18 – Cardboard box.

For frame 254/6T, the motors are packaged in wooden crates (see figure 19).

Figure 19 – Wooden crates.

Packaging dimensions, weights and volumes are in tables opposite.

ODP					
Frame	External height (in)	External width (in)	External lenght (in)	Weight (lbf)	Volume (ft^3)
56	8.661	8.661	14.370	2.623	0.636
56H	9.055	8.661	17.323	2.370	0.777
143/5T	9.055	11.811	17.795	1.334	1.095
213/5T	14.173	16.260	23.622	9.467	3.355
254/6T	15.867	20.157	29.133	21.713	5.378

TEFC					
Frame	External height (in)	External width (in)	External lenght (in)	Weight (lbf)	Volume (ft^3)
56	9.252	12.402	15.669	2.734	1.024
56H	9.055	11.811	17.795	1.334	1.095
143/5	10.039	13.386	21.260	2.767	1.660
213/5	14.173	16.260	25.197	4.636	3.355
254/6	15.827	20.157	29.134	21.713	5.378

Note: values to be added to the net motor weight.

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