

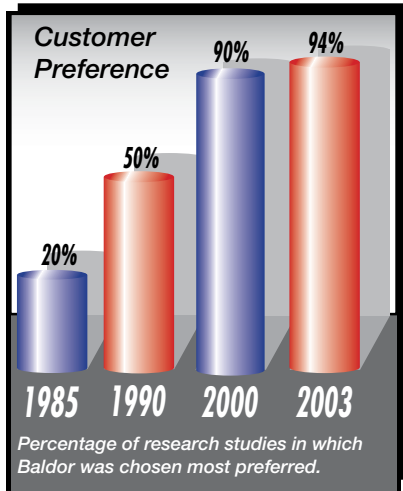
# Motors for the Oil and Gas Industry



**BALDOR**

## Why Baldor?

For more than 85 years, Baldor has strived to provide customers with the best value and reliability in industrial electric motors. That dedication shows in customer preference for Baldor motors. To be considered as the most preferred...



### Baldor offers the industry's broadest line of stock products.

Save valuable time with just one call to Baldor. We offer more than 7,000 stock motors, drives and gearboxes.

**Energy-efficiency leader.** We began lowering the energy consumption of our motors in the 1920s, long before others were even talking about it. Today, our expansive line of Super-E<sup>®</sup> premium-efficient motors ranges from 1 through 1250 Hp. Baldor's Super-E<sup>®</sup> line offers customers the highest overall efficiency levels in the industry.



### Baldor products are available at more locations than any other brand.

Our 35 district offices/warehouses across North America offer immediate availability of Baldor products to thousands of customers.

### Continuous innovation to improve reliability.

Baldor leads the motor industry in applying new technologies and materials to improve motor reliability. Recent product additions to our IEEE 841 Severe Duty motors are further proof that Baldor is the leader in motors for heavy processing and handling applications. These improvements are explained in detail on the following pages.



**Industry's best information.** Only Baldor offers customers so many choices for product information with a wide variety of catalogs and product brochures, a CD-ROM electronic catalog, the Baldor Web site ([www.baldor.com](http://www.baldor.com)), or you may talk to a Baldor customer service person at one of our sales offices.

### Industry's shortest lead times/Flexible manufacturing.

Baldor has the industry's shortest lead times on custom motors – just two weeks. Our unique FLEX FLOW manufacturing process lets us produce any order in any quantity, quickly and efficiently.

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## The Best Value in Severe Duty Motors for the Oil and Gas Industry

When Baldor introduced its first Chemical Processing motor nearly fifty years ago, the mission was clear: Provide a reliable and efficient motor, built rugged enough for a wide range of processing applications. Customer response was good, but many customers then came to Baldor for help in meeting the very specific challenges of their industry.

With that first Chemical Processing motor – and a long-standing commitment to listening to customers - Baldor's Severe Duty family has grown to include motors designed for a variety of processing industries worldwide.

### Over 400 Stock Motor Ratings

Today, Baldor offers customers a wide range of Severe Duty motors directly from stock, including your choice of premium efficient or standard efficient motors, in ratings from 1/2 to 500 horsepower. Non-stock motors to 1250 horsepower are delivered in just ten working days. All Baldor Severe Duty motors (except Explosion-Proof) are "Inverter-Ready."

### The Right Severe Duty Motor for your Application

Whether it's a Design D motor operating a beam pump, an explosion proof motor on a drill rig or an IEEE 841 motor operating continuously in a pump application, Baldor offers customers a variety of choices.

Baldor Standard Efficient Chemical Processing motors are designed for general processing industry applications requiring protection from severe environmental operating conditions. In applications where the motor works continually and energy efficiency is a consideration, Baldor Super-E® Severe Duty motors are available in TEFC ratings from 1 through 800 Hp. Cast-iron construction, two-part epoxy primer inside and out, and gaskets on all joints are some of the features of Baldor's Severe Duty motors.

For the ultimate in protection from severe environments where you need added insurance against downtime Baldor offers IEEE 841 motors. Delivering reliable, rugged performance with the industry's highest energy efficiencies, these motors exceed IEEE 841 – 2001 standards for severe duty TEFC induction motors.

Baldor also offers a variety of special-purpose severe duty motors, including Dirty Duty®, Explosion-Proof and Vertical Shaft Pump motors.



Baldor's high-slip oil well beam pumping motors are in use worldwide providing the quality, reliability, availability and energy efficient service you've come to expect from Baldor.

### Leadership in Premium Efficiency

The Consortium for Energy Efficiency (CEE) is a non-profit organization whose mission is to increase the use of energy-efficient products and services. In 1998, the CEE recognized Baldor's Super-E as the first premium efficient motor line to meet their stringent efficiency criteria, citing "For the first time, one manufacturer will carry all qualifying products."

As countries and regions across the world establish minimum efficiency levels for motors, more companies are turning to the Baldor Super-E. This includes plant and processing applications, as well as OEM products for shipment overseas. Super-E motors exceed the efficiency levels defined by the U.S. Department of Energy in the U.S., NRC in Canada, and CEMEP Eff1 in Europe. Baldor is a partner in the Energy Star™ program.

A wide selection of premium efficient motors, available from stock, manufactured and sold by a company committed to building better products for industries worldwide. No wonder, since 1920, Baldor is recognized as the leader in energy efficient motors and drives.



## Design D High Slip Motors Manufactured Specifically for Oil Well Pumping Applications

When it comes to oil well beam pumping motors, no other manufacturer provides you with the quality, service and availability you can expect from Baldor. Baldor beam pumping motors are designed to withstand the brutal punishment of the west Texas heat or the cold winds of Siberia. Baldor has off-the-shelf delivery from 3-150 Hp, and can design and build motors to customer specifications for special applications and environments. No one builds better motors than Baldor.



### Design Features

Electrical Features	Description
Voltage	460/796 VAC six leads or 230/796 VAC twelve leads. Delta-Wye or Delta-Delta-Wye
Frequency	60 Hz standard, 50 Hz derate capability, 50 Hz designs available.
Efficiency	High efficiency standard, Super-E premium efficiency available. Tested per IEEE 112b; CSA 390-93.
Service Factor	1.15 standard on cast iron frame motors. 1.0 standard on rolled steel frame motors.
Rating	Continuous duty 40 degrees C ambient temperature.
Winding Design	NEMA Design D, high torque-high slip (5-8%), ideal for use on beam pumping units. Coil endturns are lace and tied every slot to prevent movement of coils which could result in premature failure.
Magnet Wire	Premium 200 degrees C ISR (Inverter Spike Resistant) Moisture Resistant wire.
Insulation	Non-hygroscopic polyester high-temperature Class H varnish is used. Slot cell liners are extra heavy (15 mil) Class F Nomex-Mylar-Nomex.
Temperature Rise	Class B temperature rise maximum at full load, insuring longer motor life.
Phase Insulation	Phase insulation between winding phase groups give maximum power surge protection.
Lead Wire Material	Copper wire, insulated with Class F non-wicking cross-linked polymeric cover.
Thermostats	Normally-closed thermostats connected in series are embedded in the stator winding for over-temperature protection. (Connect in series with magnetic starter holding coil.)
Mechanical Features	
Construction	Cast iron frames on 254T thru 405T with TEFC enclosure. Choice of cast iron or rolled steel frames on 254T thru 326T, with open drip proof enclosure. Rolled steel frames on 213T with open drip proof enclosure.
Enclosure	Open drip-proof or TEFC enclosure. All ODP enclosures have rodent screen protection.
Conduit Box	Oversized, diagonally split, gasketed box mounted in the F-2 position. The box is rotatable 360 degrees in 90 degree* increments. Cast iron frame motors are field convertible to F-1 mount.
Nameplate	Aluminum with complete operating date in accordance with NEMA MG1.
Hardware	S.A.E. standard, zinc or cadmium plated steel.
Lifting Provisions	All motors are equipped with forged eyebolts for ease in handling.
Bearings	Oversized regreasable ball bearings standard. Drive-end bearings is positively locked on frames 284T and larger for maximum load capacity. Bearing provide L-10 rating of 26,280 hours minimum based on AFBMA9-1978 load rating and fatigue life for ball bearings.
Grease Provisions	Alemite grease fittings are provided for ease in maintenance. Special internal shaft seals prevent grease from entering the inside of the motor on frames 284T and larger.
Lubrication	Exxon Polyrex EM
Laminations	Low-loss electrical grade steel provides enhanced performance.
Rotor Construction	High-pressure die cast aluminum squirrel cage rotors are standard.
Shaft Material	C1035 cold rolled steel on frames 215T and smaller. C1137 hot rolled steel on frames 254T and larger.
Paint	Two part epoxy paint system with 4-6 mils thickness, suitable for extended operation outdoors in extreme conditions. Silver color for heat reflection.

\*Frames 213T-215T are rotatable 180 degrees only.

## Three Phase Oilfield Pump Motors



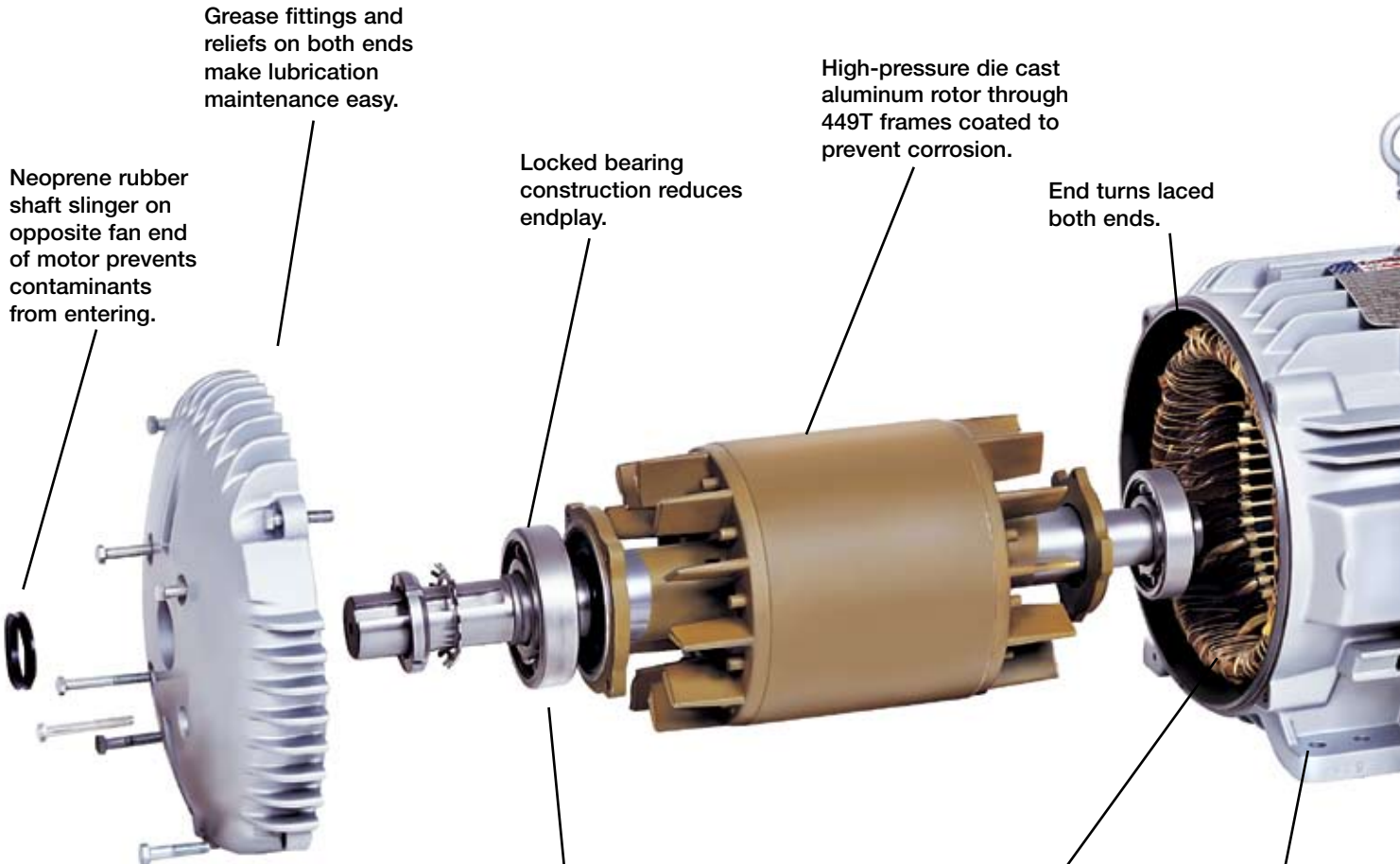
### Performance Data: TEFC - Totally Enclosed Fan Cooled and Open Drip Proof, Rigid Base Design D, High Slip

Hp	kW	RPM 60 Hz.	NEMA Frame	Catalog Number	Full Load Amps 460V	Eff @ Full Load	Volt Code	"C" Dimension	Ap'x. Shpg. Wgt.
<b>Totally Enclosed Fan Cooled - 230/460/796 Twelve Lead and 460/796 Six Lead</b>									
3	2.2	1125	213T	OF3764T	5.2	79.0	V	19.32	225
5	3.7	1125	215T	OF3768T	7.6	80.0	V	19.32	196
7 1/2	5.6	1125	254T	OF2276T	12.5	84.0	V	23.25	249
10	7.5	1125	256T	OF2332T	15.5	84.0	V	23.25	280
15	11.2	1125	284T	OF4100T	20.7	85.5	V	27.56	372
20	14.9	1125	286T	OF4102T	25.0	87.5	V	27.56	437
25	18.7	1125	324T	OF4111T	33.0	87.5	V	30.27	579
30	22.4	1125	326T	OF4117T	39.0	87.5	V1	30.27	630
40	30	1125	365T	OF4308T	51.0	88.5	V1	32.84	734
50	37	1125	404T	OF4312T	60.0	87.5	V1	38.03	1218
60	45	1125	405T	OF4403T	73.0	88.5	V1	38.03	1196
75	56	1125	444T	OF4404T	88.0	88.5	V1	44.24	1495
100	75	1130	445T	OF4409T	116	90.2	V1	47.74	1837
125	93.2	1140	447T	OF4411T	150	91.0	V1	52.68	2465
150	112	1140	447T	OF44156T	178	91.0	V1	52.68	2812
<b>Drip Proof with Screens - 230/460/796 VAC Twelve Lead</b>									
3	2.2	1125	213T	OF3303T	5.1	78.5	V	18.12	123
5	3.7	1125	215T	OF3305T	7.5	78.5	V	19.25	152
7 1/2	5.6	1125	254T	OF3307T	12.4	81.5	V	24.18	209
7 1/2	5.6	1125	254T	OF3407T	12.5	84.0	V	20.63	229
10	7.5	1125	256T	OF3310T	15.9	82.5	V	24.18	234
10	7.5	1125	256T	OF3410T	15.5	84.0	V	22.38	272
15	11.2	1125	284T	OF3315T	22.0	84.0	V	26.31	288
15	11.2	1125	284T	OF3415T	22.0	84.0	V	23.44	314
20	14.9	1125	286T	OF3320T	28.5	84.0	V	26.31	318
20	14.9	1125	286T	OF3420T	28.5	84.0	V	24.94	353
<b>Drip Proof with Screens - 460/796 VAC Six Lead</b>									
25	18.7	1125	324T	OF3325T	35.0	85.5	V	29.18	436
25	18.7	1125	324T	OF3425T	35.0	85.5	V	26.13	526
30	22.4	1125	326T	OF3330T	41.0	86.5	V1	29.18	437
30	22.4	1125	326T	OF3430T	44.0	86.5	V1	27.63	517
40	30	1125	365T	OF3340T	55.0	88.5	V1	29.94	553
40	30	1125	365T	OF3440T	54.0	87.5	V1	29.69	749
50	37	1125	404T	OF3350T	64.0	87.5	V1	34.00	981
60	45	1125	404T	OF3360T	74.0	87.5	V1	34.00	1047
75	56	1125	404T	OF3375T	91.0	88.5	V1	34.00	1153
100	75	1125	445T	OF33100T	123	87.5	V1	39.62	1352

**NOTE:** Voltage at 60 Hz: V = 230/460/796, V1 = 460/796 volts.  
 Custom TEFC motors available through 800 Hp; Open and WPIL motors through 1500 Hp.  
 Contact your Baldor Sales Representative.  
 See [www.baldor.com](http://www.baldor.com) or BR420 Severe Duty Motor brochure for more details.

Shaded ratings are cast iron frames.

## Reliability and performance you can count on...



Neoprene rubber shaft slinger on opposite fan end of motor prevents contaminants from entering.

Grease fittings and reliefs on both ends make lubrication maintenance easy.

Locked bearing construction reduces endplay.

High-pressure die cast aluminum rotor through 449T frames coated to prevent corrosion.

End turns laced both ends.

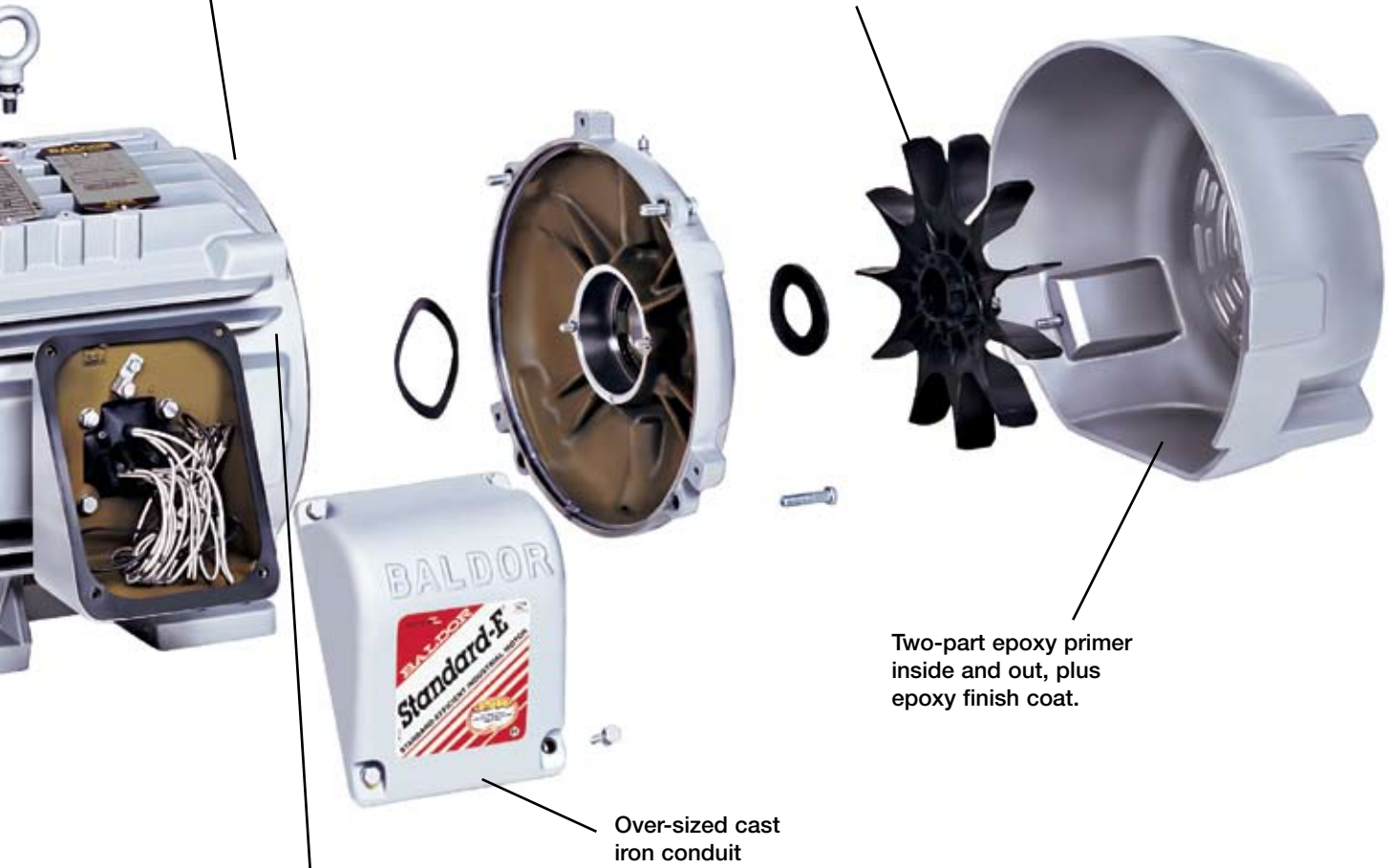
Baldor was the first motor manufacturer to use Exxon Polyrex<sup>®</sup> EM grease. Polyrex<sup>®</sup> EM protects motor bearings better, providing improved lubrication life, greater shear stability, and superior resistance to washout, rust and corrosion.

Baldor's exclusive ISR<sup>®</sup> (Inverter Spike Resistant<sup>®</sup>) magnet wire is up to 100 times more resistant to voltage spikes. High temperature (Class F) insulation systems.

Dual mounting foot holes, convertible from F-1 to F-2; especially convenient when mounting a motor for replacement duty.

All joints gasketed and sealed for added protection.

Fan and fan cover designed for maximum cooling and quieter operation.



Heavy duty cast iron frame, end-plates, fan cover and conduit box.

Over-sized cast iron conduit boxes, exceeding NEC standards, make connections easier. Neoprene rubber gaskets ensure a tight, waterproof seal.

Two-part epoxy primer inside and out, plus epoxy finish coat.

## Explosion-Proof Motors Meeting Industry Specifications and Beyond

When you specify a Baldor explosion-proof motor, you can trust that it meets your specifications, and more. Baldor follows the specs to the letter, and then takes it a step further. We listen to motor users and learn from their experiences. We design and build motors that deliver reliable performance. And we earn long-term customer relationships by exceeding their expectations.

Baldor explosion-proof motors feature cast-iron frames and endplates on NEMA 143T frame sizes and larger. NEMA 215T and smaller frames feature a rugged industrial rolled steel band construction with external through-bolts. Conduit boxes are UL and CSA approved for Class I – Group C & D, or Class II – Groups F and G. Motors are covered with a chemical resistant, two-part epoxy paint. ISR<sup>®</sup> Inverter Spike Resistant magnet wire on Inverter Duty specific designs, POLYREX EM<sup>®</sup> moisture resistant grease and low-loss electrical grade steel laminations are also standard features.



In applications where explosion-proof motors are operating for extended periods of time, the Baldor Explosion-Proof Super-E<sup>®</sup> premium efficient motor can significantly reduce your energy costs. See BR454 Explosion-Proof Motor brochure for more details.

### Baldor Explosion-Proof Motor Design Specifications

Specification	Description
Bearings	Anti-friction motor quality ball bearings standard.
Conduit Box	UL approved conduit boxes available for all motors. Class 1, Group C&D, Class 2 Groups F&G Leads "potted" in stator lead entry hole.
Construction	All cast iron construction on frames 143T and larger. Rolled steel band construction on frames 215T and smaller (when noted).
Efficiencies	All general-purpose, T-frame, single-speed, foot-mounted, polyphase NEMA Design A and B, motors operating on 230/460 volts and 60 hertz meet or exceed the efficiency standards set forth in the Energy Policy Act (EPA) of 1992.
Enclosure	Totally enclosed fan cooled.
External Cooling Fan	Non-sparking, non-corrosive glass-filled polypropylene.
Frequency	60 Hz standard. 50 Hz designs also stocked.
Ground Lug	Located inside conduit box.
ISR <sup>®</sup> Magnet Wire	Inverter Spike Resistant <sup>®</sup> 200°C moisture resistant copper wire is standard on 1hp and up. Coil endturns are laced and tied every slot for winding rigidity.
Insulation	Non-hygroscopic polyester high temperature varnish.
Laminations	Low-loss electrical grade steel for enhanced efficiency.
Lead Wire Material	Copper wire, insulated with a non-wicking cross-linked polymetric cover.
Lubrication	Exxon POLYREX <sup>®</sup> EM Grease.
Nameplate	UL nameplate with listing for Class, Group and Temperature Codes.
Paint	Motors are coated with two-part epoxy paint for corrosion protection.
Rating	Continuous duty in 40°C ambient temperature.
Rotor Construction	High-pressure die cast aluminum squirrel cage rotors, precision balanced.
Service Factor	1.00 S.F. standard. 1.15 S.F. motors available. See page 14.
Voltage	115/230 volt single phase; 230/460, and 575 voltages, Three phase standard. Other voltage ratings are available.
Winding Design	NEMA Design B torques.



## Drill Rig Explosion-Proof Motors Three Phase - 1.15 Service Factor - Rigid Base

Baldor has a family of explosion proof motors designed for on and off shore drill rig service, bulk fuel terminals, and transfer stations. For use in high humidity hazardous-duty applications driving pumps, compressors, blowers, fans, and many other loads that require 1.15 service factor explosion-proof motors. Designed with features for use in the petroleum industry. Includes Class 1, Group C & D approval for use in areas where hydrogen sulfide is present. These motors feature Labyrinth-type recessed shaft slinger for increased bearing protection. Explosion-proof breather/drain to prevent build up of condensation. Class F insulation. Corrosion resistant finish with two part epoxy coating. UL and CSA approved for Class I, Group C & D. 1.15 service factor.



### 3 thru 100 Hp NEMA 182T thru 405T

Hp	kW	RPM	Frame	Catalog No.	Amps @ High V		Full Load Torque Lb. Ft.	Efficiency %			Power Factor %			Bearings		Volt Code	"C" Dim.	Conn. Diag. No.
					Full Load	Locked Rotor		1/2	3/4	Full Load	1/2	3/4	Full Load	DE	ODE			
<b>Rigid Base</b>																		
3	2.2	1750	182T	M7042T-I	4.1	34.6	9.0	86.4	88.1	87.5	58	70	78	6206	6205	U	18.27	CD0005
3	2.2	1750	182T	M7042T-I-5	3.3	25.9	8.9	86.1	87.8	87.5	59	71	78	6206	6205	H	18.27	CD0006
5	3.7	1750	184T	M7044T-I	6.7	53.0	15.0	87.3	88.4	87.5	63	74	80	6206	6205	U	18.27	CD0005
5	3.7	1750	184T	M7044T-I-5	5.2	41.0	15.0	87.3	88.4	87.5	63	74	80	6206	6205	H	18.27	CD0006
7.5	5.6	1760	213T	M7047T-I	10.2	69.1	22.2	87.0	89.0	89.5	61	72	76	6307	6206	U	20.32	CD0005
7.5	5.6	1760	213T	M7047T-I-5	8.2	58.0	22.2	87.7	89.7	89.5	57	69	76	6307	6206	H	20.32	CD0006
10	7.5	1760	215T	M7170T-I	14.2	100	29.9	87.8	89.6	89.5	54	67	73	6307	6206	U	20.03	CD0005
10	7.5	1760	215T	M7170T-I-5	11.4	80.0	29.9	87.8	89.6	89.5	54	67	73	6307	6206	H	20.03	CD0006
15	11.2	1770	254T	M7054T-I	18	131	44.1	91.1	92.4	91.0	69	79	84	6309	6208	U	25.50	CD0005
15	11.2	1770	254T	M7054T-I-5	14.4	105	44.1	91.1	92.4	91.0	69	79	84	6309	6208	H	25.50	CD0006
20	14.9	1760	256T	M7056T-I	24	168	59.3	90.2	91.6	91.0	71	80	84	6309	6208	U	25.50	CD0005
20	14.9	1760	256T	M7056T-I-5	19.2	134	59.3	90.2	91.6	91.0	71	80	84	6309	6208	H	25.50	CD0006
25	18.7	1775	284T	M7058T-I	30.8	188	74.4	90.0	91.8	92.4	71	80	84	6311	6309	U	28.61	CD0005
25	18.7	1775	284T	M7058T-I-5	24.6	150	74.4	90.0	91.8	92.4	71	80	84	6311	6309	H	28.61	CD0006
30	22.4	1770	286T	M7060T-I	36	208	90.0	90.1	91.7	92.4	73	81	84	6311	6309	U	28.61	CD0005
30	22.4	1770	286T	M7060T-I-5	28.8	166	90.0	90.1	91.7	92.4	73	81	84	6311	6309	H	28.61	CD0006
40	30	1775	324T	M7062T-I	47	322	118	93.1	94.1	93.0	74	82	86	6312	6311	U	32.00	CD0180
40	30	1775	324T	M7062T-I-5	37.6	258	118	93.1	94.1	93.0	74	82	86	6312	6311	H	32.00	CD0006
50	37	1775	326T	M7064T-I	60	398	149	91.4	92.9	93.0	75	83	86	6312	6311	U	32.00	CD0180
50	37	1775	326T	M7064T-I-5	47.0	304	149	91.4	92.9	93.0	72	81	86	6312	6311	H	32.00	CD0006
60	45	1780	364T	M7066T-I	69	441	177	92.2	93.5	93.6	75	83	86	6313	6312	U	33.25	CD0180
60	45	1780	364T	M7066T-I-5	56.0	362	177	94.7	95.2	93.6	71	81	86	6313	6312	H	33.25	CD0006
75	56	1780	365T	M7068T-I	85	608	222	93.6	94.5	94.1	78	85	88	6313	6312	U	33.25	CD0005
75	56	1780	365T	M7068T-I-5	69.0	506	222	93.6	94.1	94.5	78	85	88	6313	6312	H	33.25	CD0006
100	75	1780	405T	M7090T-I	113	703	295	94.8	95.2	94.5	79	85	87	6316	6313	U	38.75	CD0180
100	75	1775	405T	M7090T-I-5	87.0	608	295	94.2	94.9	94.5	82	89	91	6316	6313	H	38.75	CD0006

### NEMA C-Face with Base, No Drip Cover

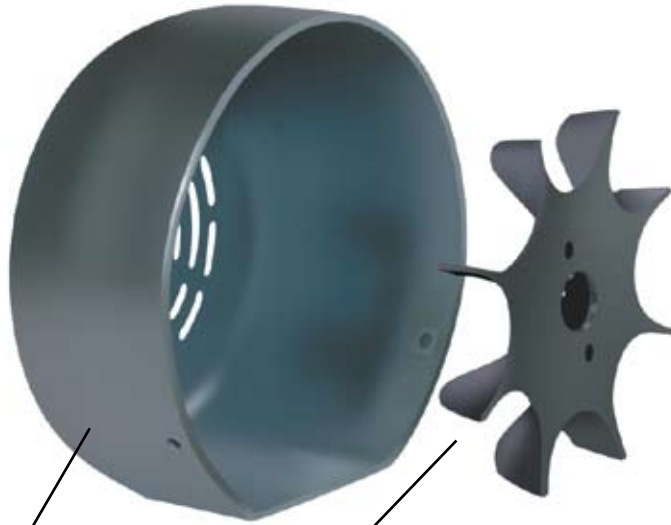
3	2.2	1750	182TC	CM7042T-I	4.1	34.6	9.0	86.4	88.1	87.5	58	70	78	6206	6205	U	19.59	CD0005
5	3.7	1750	184TC	CM7044T-I	6.7	53	15	87.3	88.4	87.5	63	74	80	6206	6205	U	19.59	CD0005
7.5	5.6	1760	213TC	CM7047T-I	10.2	69.1	22.2	87.0	89.0	89.5	61	72	76	6307	6206	U	21.07	CD0005
10	7.5	1760	215TC	CM7170T-I	14.2	100	29.9	87.8	89.6	89.5	54	67	73	6307	6206	U	20.77	CD0005
15	11.2	1770	254TC	CM7054T-I	18	131	44.1	91.1	92.4	91.0	69	79	84	6309	6208	U	26.00	CD0005
20	14.9	1760	256TC	CM7056T-I	24	168	59.3	90.2	91.6	91.0	71	80	84	6309	6208	U	26.00	CD0005
25	18.7	1775	284TC	CM7058T-I	30.8	188	74.4	90.0	91.8	92.4	71	80	84	6311	6309	U	28.61	CD0005
30	22.4	1770	286TC	CM7060T-I	36	208	90	90.1	91.7	92.4	73	81	84	6311	6309	U	28.61	CD0005
50	37.0	1775	326TC	CM7064T-I	60	398	149	91.4	92.9	93.0	75	83	86	6312	6311	U	32.00	CD0180

**NOTE:** Voltage @ 50//60 Hz: U= 190/380//230/460 volts, 50//60 Hz, H = 575 volts.  
See notes on pages 8 and 9, and inside back flap. Ⓢ = Class 1, Group C & D only, T3C.

Shaded ratings are cast iron frames.

**NOTE:** These motors expel condensation better than standard explosion proof designs. They are recommended for applications such as fuel transfer terminals and fuel truck loading facilities where motors may run intermittently, applications where explosion-proof motors are installed outdoors exposed to the environment, and may not be operated for extended periods of time. These explosion-proof motors are not suitable for use with adjustable speed drives inverter duty explosion-proof motors must be used. See page 163.

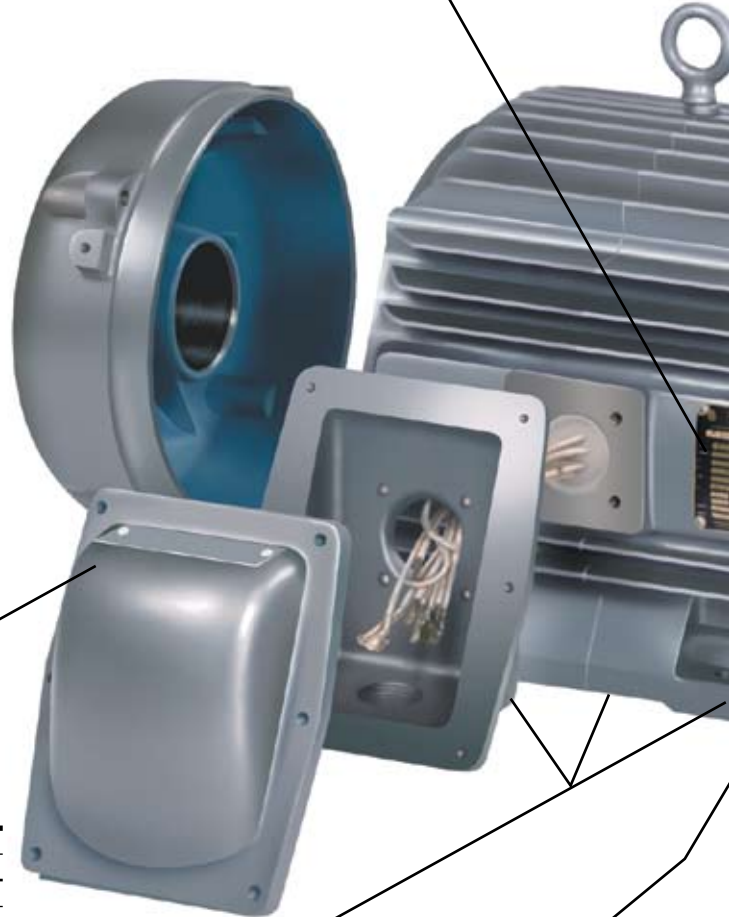
## Reliability and performance you can count on...



Fan and fan cover designed for maximum cooling and quieter operation

Oversize listed explosion-proof conduit box.  
Threaded conduit entrance.  
Simple F1 to F2 conversion on cast iron frame motors.

Brass UL/CSA nameplate and securing pins with complete information



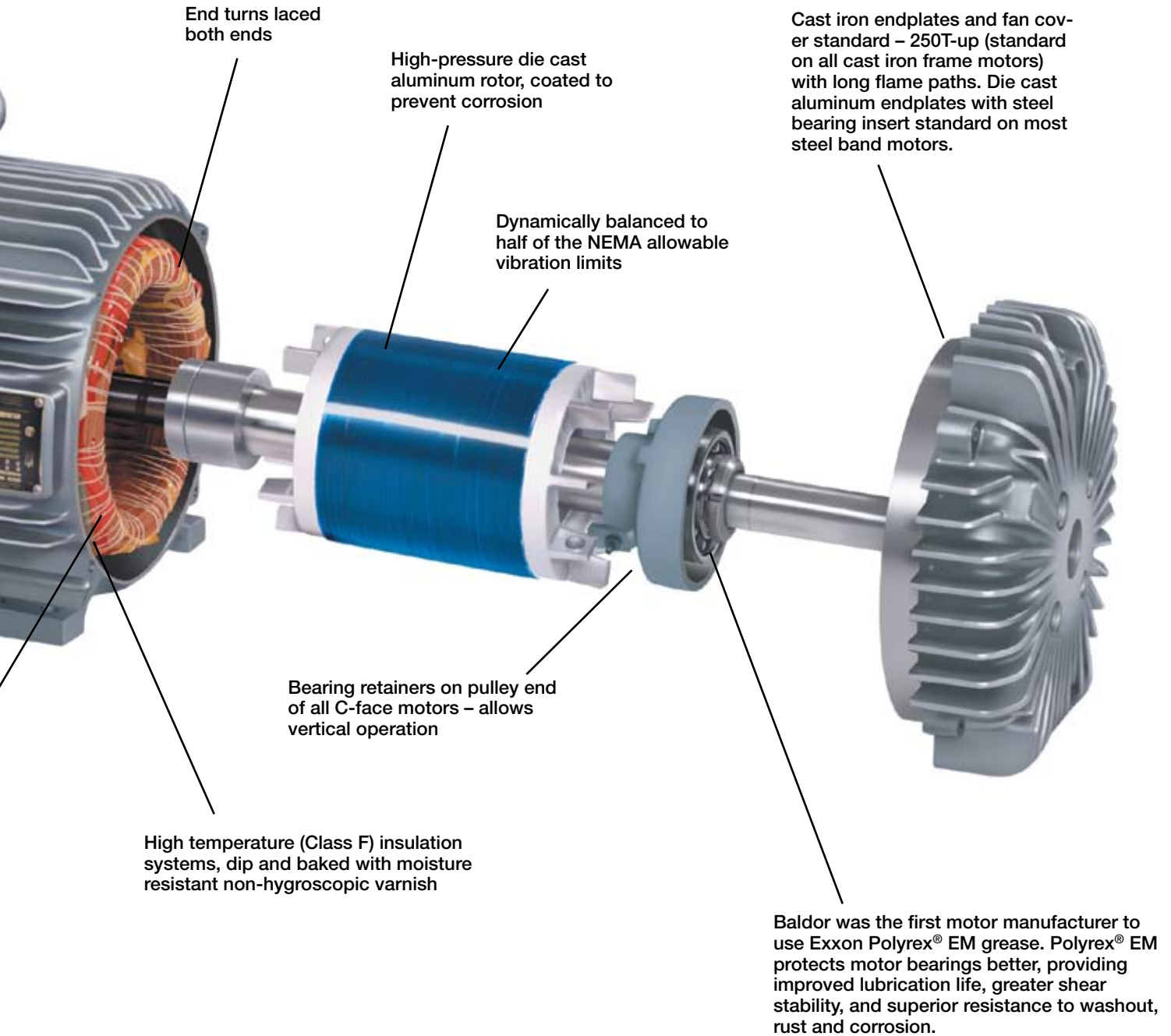
Multiple foot mounting holes for easier change-out

Baldor's exclusive ISR® (Inverter Spike Resistant) magnet wire is up to 100 times more resistant to voltage spikes on Inverter Duty specific designs

### From 1/4 Hp to 300 Hp, Baldor has your Explosion-Proof Motor

Hp	Frame Size			
	3600 RPM	1800 RPM	1200 RPM	900 RPM
1/4		48		
1/3		56	56	
1/2	56	48 or 56	56	143T
3/4	56	56	56 or 143T	145T
1	56	56, 143T or 182T	56 or 145T	182T
1 1/2	143T	56, 145T or 184	145T or 184T	184T
2	145T	56, 145T or 184	184T	213T
3	145T, 184T or 184	182T or 213	213T	215T
5	184T	184T or 215	215T	254T
7 1/2	184T or 213T	213T	254T	256T
10	215T	215T	256T	284T
15	254T	254T	284T	286T
20	256T	256T	286T	324T
25	284TS	284T	324T	326T
30	286TS	286T	286T or 326T	364T
40	324TS	324T	364T	365T
50	326TS	326T	365T	404T
60	364TS	364T	404T	405T
75	365TS	365T	405T	444T
100	405TS	405T	444T	445T
125	444TS	444T	445T	447T
150	445TS	445T	449T	449T
200	449TS	447T	449T	-
250	449TS	447T	449T	-
300	449TS	449T	-	-

**Bold** indicates ratings where Class I, Group C & D; Class II, Group F & G are available in this frame size from stock. Other ratings are available Class I Group C&D; Class II-Group F&G as customs with short lead times. Many ratings are available from stock as Class I-Group C & D or Class I-Group D; Class II-Group F&G. Class I, Groups C & D and Class II, Groups F & G are available in ALL sizes. Class I, Group D and Class II Groups E, F & G are available in Cast Iron, 182-4 frame and larger.



## Severe Duty Motor Construction

Baldor Severe Duty motors share a number of electrical and mechanical features that add up to outstanding value. "ECP" Chemical Processing motors provide an extra measure of weather and chemical protection in a premium energy efficient design. For the most extreme applications, where reliability and uptime are critical, Baldor "ECP-841" motors are ideal. These are premium efficient motors that exceed IEEE 841-2001 specifications. Standard efficient Severe Duty motors include "CP" Chemical Processing motors, and Dirty Duty® motors. The chart below lists standard features ("S") in Baldor Severe Duty motors. Horsepower ranges indicate where certain features are standard in stock products. Additional features are optional ("O") on built-to-order motors.

### Design Features

Electrical Features	Premium Efficiency		Standard Efficiency	
	ECP	ECP - 841	CP	Dirty Duty
HP Range - Stock	1 - 500	1 - 250	1 - 100	1/2 - 10
HP Range - Custom	1/2 - 1250	1/2 - 1250	1 - 1250	1/2 - 10
NEMA Premium™ Efficiency	S	S		
Class F insulation with Class B rise	S	S		
1.15 Service factor	S	S	S	S
200°C Inverter Spike Resistant magnet wire	S	S	S	S
Phase insulation	S	S	S	S
Seamless compression type lead terminals		S		
Corona inception testing - meets NEMA MG1 Part 31.4.4.2	S	S	S	S
Double dip & bake with 100% solids	S	S	S	S
Document final motor tests - ship sheet with motor		S		
<b>Mechanical Features</b>				
NEMA Frame sizes	143T - 5812	143T - 5812	143T - 5812	56 - 447T
Steel Band - Cast Iron endplates, steel fan cover				S
Cast iron frame - cast iron endplates & fan cover	S	S	S	
Cast Iron conduit box	S	S	S	S
Threaded inlet hole in conduit box	S	S	S	S
Neoprene conduit box lid gasket & lead separator gasket	S	S	S	S
Seal endplate to frame joints	S	S	S	S
V-ring shaft seals - DE & ODE	S		S	S
Inpro/Seal VBX bearing isolators - DE & ODE		S		
Hardware - cad plated	S	S	S	S
Motor unfiltered vibration at rated voltage & frequency < 0.15 in/sec velocity	S		S	S
Motor unfiltered vibration at rated voltage & frequency < 0.08 in/sec velocity		S		
Test vibration on DE & ODE and document - ship with motor		S		
Low bearing temperature specs (IEEE 841)		S		
.005" Foot flatness; Shaft runout < NEMA		S		
Sound power level < 90 dBA		S		S
Grease inlet fitting - grease fitting				
Grease inlet with tube extension & grease fitting	S	S	S	
Grease outlet with screw-in plug				S
Grease outlet with tube extension & pressure relief	S	S	S	
Non-metallic external cooling fan	S	S	S	S
Painted with 2-part epoxy primer; dark grey epoxy finish coat	S	S	S	S
ASTM B117-90 96 hour salt spray tests	S	S	S	S
Embossed Stainless steel nameplate with NEMA data	S	S	S	S
2nd stainless steel nameplate with bearing and grease data	S	S	S	
416 Stainless steel material on shaft				S
Complies with IEEE 45 standards for Marine Duty			S	
Warranty	3 Years	5 years	18 Months	18 Months

**Note:** Contact your Baldor District Office for certified data, dimensions and features of a specific motor.

s = standard, o = optional



## TEFC - Severe Duty Stock and Custom HP/Frame Size Capabilities

Three Phase - Typical Frame Size / Speed - RPM				
Hp	3600	1800	1200	900
1	56	56, 143T or 182	56 or 145T	182T
1 1/2	143T	56, 145T or 184	145T or 182T	184T
2	145T	56, 145T or 184	184T	213T
3	145T, 182T or 184	182T or 213	213T	215T
5	184T	184T or 215	215T	254T
7 1/2	184T or 213T	213T	254T	256T
10	215T	215T	256T	284T
15	254T	254T	284T	286T
20	256T	256T	286T	324T
25	284TS	284T	324T	326T
30	286TS	286T	326T	364T
40	324TS	324T	364T	365T
50	326TS	326T	365T	404T
60	365TS	364T	404T	405T
75	365TS	365T	405T	444T
100	405TS	405T	444T	445T
125	444TS	444T	445T	447T
150	447TS or 5007SY	445T	447T	449T or 5007L
200	447TS or 5007SY	447T, 449T or 5007L	449T or 5007L	5007L or 5009L
250	449TS or 5007SY	449T or 5007L	449TY or 5009L	5009L, 5011LY or 5810
300	449TS or 5007SY	449TY or 5007L	449TY, 5009L or 5810	5011LY or 5810
350	449TS or 5007SY	449TY, 5007LY or 5011LY	5009L, 5011LY or 5810	5011LY or 5810
400	449TS or 5007SY	5007L, 5011LY or 5810	5011LY or 5810	5810
450	5007SY	5007L, 5011LY or 5810	5011LY or 5810	5810
500	5009SY	5009L, 5011LY or 5810	5011LY or 5810	5810 or 5812
600	5009SY	5011LY or 5810	5810	5812
700	5009SY	5810	5812	
800		5810		

**NOTE:** Shaded area denotes Stock motors. See Performance Data for voltage and frame availability.

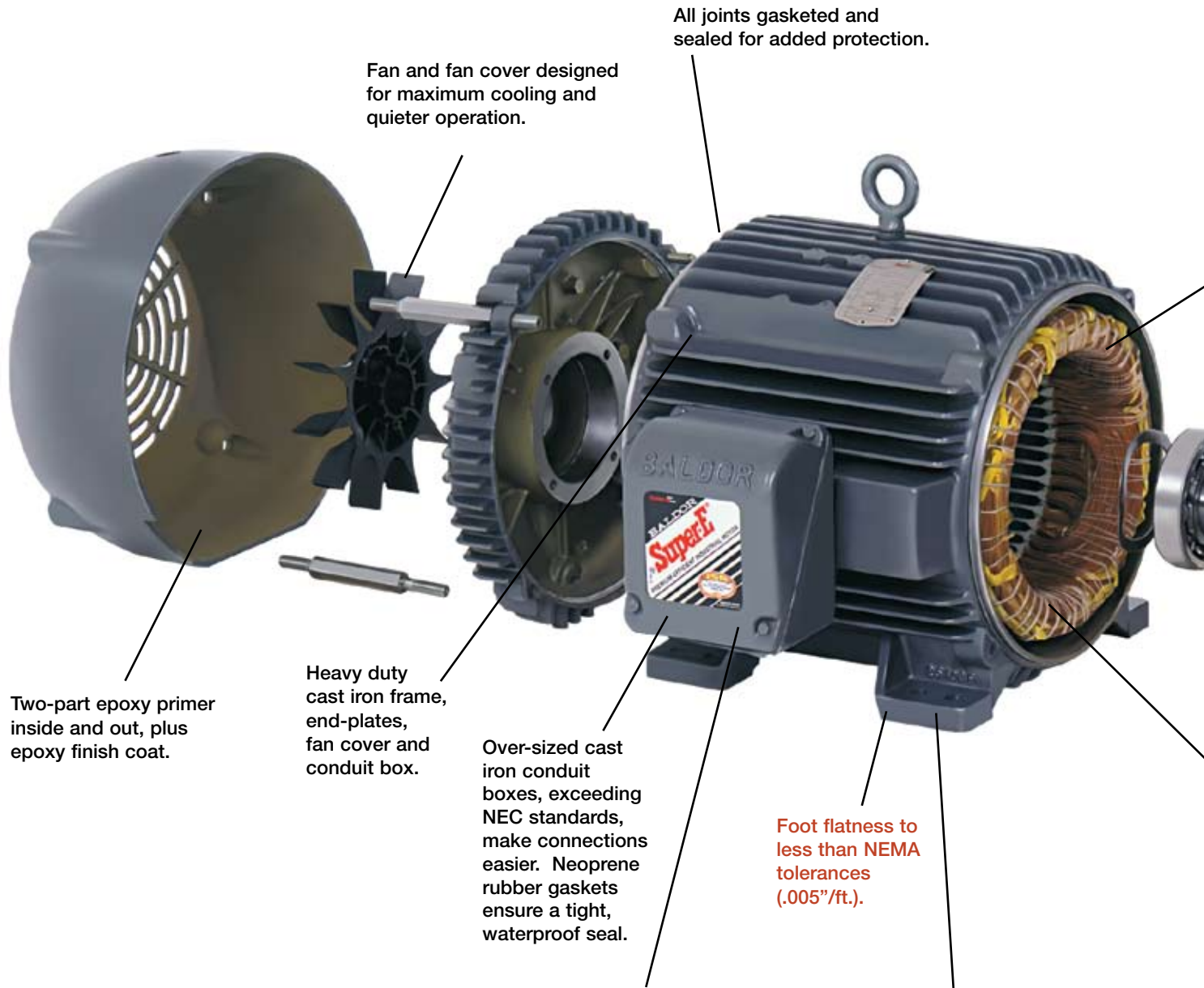
Motors listed with catalog numbers in this brochure are available from stock. Baldor lead times on non-stock motors are 10 working days, providing a spec already exists.

Performance data is subject to change. Drawings shown are for reference only. Please contact Baldor for current performance data or a detailed drawing on the specific motor you require. Data and drawings may be available from our CD-ROM or website at [www.baldor.com](http://www.baldor.com)

### Metric Frame Severe Duty Motors

Baldor Severe Duty motors are available in IEC frames 90 through 400 with base, B5 flange or B14 C-face. Motors can be supplied for 50 or 60 Hz operation. Contact your Baldor District Office for more information.

## Severe Duty Motors: Built for Reliable Performance



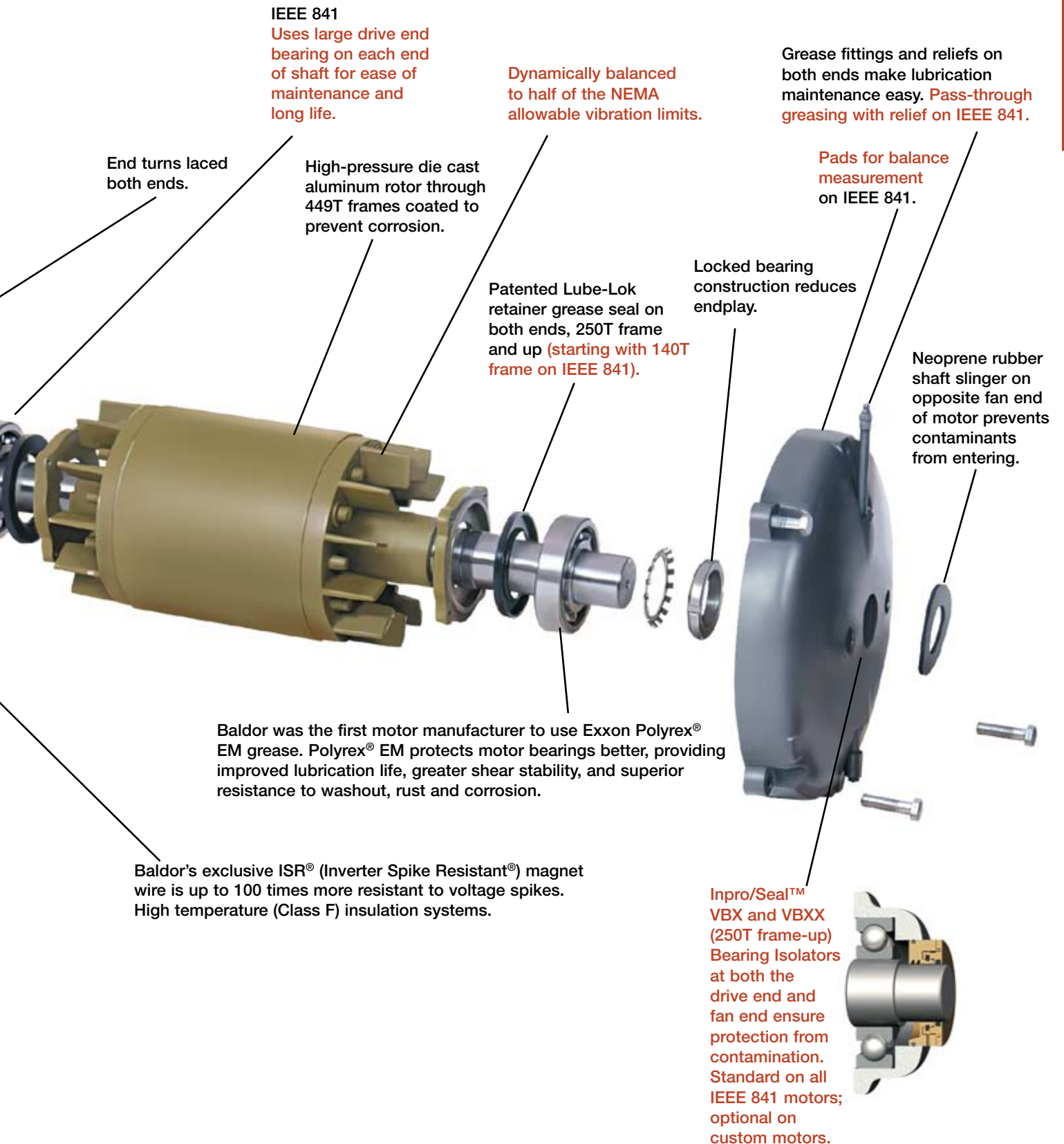
### Plus...

- Additional nameplate data including number of stator slots and rotor bars for use with vibration analyzers
- Documented motor performance and vibration test date shipped with motor
- Shaft run-out less than NEMA
- Sound power level less than 90 dBA
- Five-year warranty

Seamless compression type lead terminals.

Dual mounting foot holes, convertible from F-1 to F-2; especially convenient when mounting a motor for replacement duty.

	Features found in Chemical Processing and IEEE 841 motors.
	Features found only in IEEE 841 motors.



## IEEE 841 NEMA Premium® Efficient Motors

Baldor IEEE 841 motors deliver reliable, rugged performance with the industry's highest energy efficiencies. These motors exceed IEEE 841 – 2001 standards for severe duty TEFC induction motors. These motors contain all the standard features of our Chemical Processing motor, plus: Inpro/Seal® bearing isolators at both the drive end and fan end to ensure protection from contaminants; tighter dimensional tolerances for foot flatness and shaft diameter; Design B starting currents, certified performance and balance tests shipped with each motor; and a 5-year warranty.



### Performance Data: TEFC - Totally Enclosed Fan Cooled, Rigid Base 460 Volts, Three Phase, 1 through 75 Hp

Hp	kW	RPM	Frame	Catalog No.	Amps @ 460 V*		F.L. Torque Lb. Ft.	Efficiency %			Power Factor %			Bearings DE & ODE	"C" Dim.	Conn. Diag. No.
					F.L.	L.R.		1/2	3/4	F.L.	1/2	3/4	F.L.			
1	0.75	3450	143T	ECP83580T-4	1.4	12.1	1.5	80.5	83.6	84.5	65	77	82	6205	12.88	CD0006
1	0.75	1750	143T	ECP83581T-4	1.4	12.4	3.0	83.8	85.9	85.5	57	69	77	6205	12.88	CD0006
1	0.75	1150	145T	ECP83582T-4	1.8	9.6	4.5	82.3	84.0	82.5	42	55	63	6205	12.88	CD0006
1 1/2	1.1	3450	143T	ECP83583T-4	2.0	20.1	2.3	81.3	84.3	85.5	68	78	83	6205	12.88	CD0006
1 1/2	1.1	1740	145T	ECP83584T-4	2.0	16.8	4.5	86.4	87.6	86.5	61	73	80	6205	12.88	CD0006
1 1/2	1.1	1170	182T	ECP83667T-4	2.6	14.7	6.8	86.0	88.3	87.5	41	53	61	6206	15.93	CD0006
2	1.5	3450	145T	ECP83586T-4	2.5	30.0	3.0	83.8	86.2	86.5	70	80	85	6205	12.88	CD0006
2	1.5	1725	145T	ECP83587T-4	2.7	19.6	6.0	88.1	88.1	86.5	66	77	82	6205	12.88	CD0006
2	1.5	1170	184T	ECP83664T-4	3.5	20.9	9.0	86.7	88.6	88.5	41	52	61	6206	15.93	CD0006
3	2.2	3500	182T	ECP83660T-4	3.4	34.5	4.5	87.5	89.1	88.5	83	89	92	6206	15.93	CD0006
3	2.2	1760	182T	ECP83661T-4	4.0	32.0	9.0	89.1	90.0	89.5	58	71	80	6206	15.93	CD0006
3	2.2	1160	213T	ECP83764T-4	5.0	32.0	13.5	88.3	89.9	89.5	45	57	64	6307	19.32	CD0006
5	3.7	3500	184T	ECP83663T-4	5.7	62.0	7.5	88.2	89.8	89.5	77	86	90	6206	15.93	CD0006
5	3.7	1160	215T	ECP83768T-4	8.0	54.0	22.5	86.7	88.6	89.5	46	58	64	6307	19.32	CD0006
5	3.7	1750	184T	ECP83665T-4	6.5	54.0	15.0	89.7	90.7	90.2	62	74	80	6206	15.93	CD0006
7 1/2	5.6	3525	213T	ECP83769T-4	8.6	75.0	11.2	90.0	91.4	91.0	79	87	90	6307	19.32	CD0006
7 1/2	5.6	1770	213T	ECP83770T-4	9.8	67.0	22.2	90.7	91.9	91.7	56	68	76	6307	19.32	CD0006
7 1/2	5.6	1180	254T	ECP82276T-4	10.7	70.1	33.3	90.6	91.8	91.7	53	65	71	6309	25.06	CD0006
10	7.5	3500	215T	ECP83771T-4	11.2	120	15.0	92.7	92.9	91.7	82	89	92	6307	19.32	CD0006
10	7.5	1760	215T	ECP83774T-4	12.6	83.5	30.0	91.7	92.4	91.7	62	75	81	6307	19.32	CD0006
10	7.5	1180	256T	ECP82332T-4	14.2	93	44.4	90.2	91.6	91.7	55	66	72	6309	25.06	CD0006
15	11.2	3525	254T	ECP82394T-4	17.2	128	22.2	90.8	91.9	91.7	78	86	88	6309	25.06	CD0006
15	11.2	1765	254T	ECP82333T-4	18.5	122.9	44.6	91.9	92.6	92.4	66	77	82	6309	25.06	CD0006
15	11.2	1180	284T	ECP84100T-4	18.7	132	66.7	92.3	92.8	92.4	65	76	81	6311	28.61	CD0006
20	14.9	3540	256T	ECP84106T-4	23.0	201	29.7	91.1	92.3	92.4	74	84	89	6309	25.50	CD0006
20	14.9	1765	256T	ECP82334T-4	24.0	175.0	59.0	92.8	93.1	93.0	69	80	84	6309	25.50	CD0006
20	14.9	1180	286T	ECP84102T-4	25.0	178.0	89.0	92.3	92.9	92.4	65	75	81	6311	28.61	CD0006
25	18.7	3530	284TS	ECP84107T-4	28.0	196	37.0	92.4	93.2	93.0	82	89	91	6311	26.56	CD0006
25	18.7	1770	284T	ECP84103T-4	30.0	188	74.2	92.4	93.6	93.6	72	81	84	6311	28.61	CD0006
25	18.7	1180	324T	ECP84111T-4	32.0	228	112	92.3	93.1	93.0	65	75	80	6312	30.16	CD0006
30	22.4	3530	286TS	ECP84108T-4	33.0	225	44.6	93.0	93.5	93.0	82	88	90	6311	26.56	CD0006
30	22.4	1770	286T	ECP84104T-4	36.0	246	89.0	93.8	94.4	94.1	66	75	83	6311	28.61	CD0006
30	22.4	1180	326T	ECP84117T-4	39.0	285	134	92.4	93.2	93.0	61	72	79	6312	30.16	CD0006
40	30	3540	324TS	ECP84109T-4	45.0	286	59.5	93.9	94.4	93.6	82	88	90	6312	30.53	CD0006
40	30	1775	324T	ECP84110T-4	46.0	320	118	93.9	94.6	94.5	73	81	86	6312	30.16	CD0006
40	30	1185	364T	ECP84308T-4	50.5	355	177	93.3	94.3	94.1	62	73	79	6313	32.84	CD0006
50	37	3540	326TS	ECP84114T-4	54.2	422	74.0	93.8	94.4	94.1	85	90	92	6312	30.53	CD0006
50	37	1775	326T	ECP84115T-4	57.0	392	149	94.4	94.9	94.5	73	82	87	6312	30.16	CD0006
50	37	1185	365T	ECP84312T-4	61.0	409	221	93.8	94.3	94.1	67	77	81	6313	32.84	CD0006
60	45	3560	364TS	ECP84310T-4	67.0	580	88.5	92.6	94.0	94.1	78	86	90	6313	30.13	CD0006
60	45	1780	364T	ECP84314T-4	69.0	447	177	94.7	95.2	95.0	74	82	86	6313	32.84	CD0006
60	45	1185	404T	ECP84403T-4	72.5	455	265	94.0	94.7	94.5	69	78	83	6316	38.03	CD0006
75	56	3565	365TS	ECP84313T-4	83.0	740	111	93.4	94.6	94.5	81	87	90	6313	31.13	CD0006
75	56	1780	365T	ECP84316T-4	86.5	649	222	94.9	95.5	95.4	73	81	85	6313	32.84	CD0006
75	56	1185	405T	ECP84404T-4	88.0	579	331	94.3	95.1	95.0	72	80	84	6316	38.03	CD0006

NOTE: Efficiencies shown are nominal.

Shaded ratings are cast iron frames.

Data subject to change without notice. Contact Baldor for certified data.  
See [www.baldor.com](http://www.baldor.com) or BR420 Severe Duty Motor brochure for more details.



## IEEE 841 NEMA Premium® Efficient Motors



### Performance Data: TEFC - Totally Enclosed Fan Cooled, Rigid Base 460 Volts, Three Phase, 100 through 250 Hp

Hp	kW	RPM	Frame	Catalog No.	Amps		F.L. Torque Lb. Ft.	Efficiency %			Power Factor %			Bearings DE & ODE	"C" Dim.	Conn. Diag. No.
					F.L.	L.R.		1/2	3/4	F.L.	1/2	3/4	F.L.			
100	74.6	1780	405T	ECP84400T-4	109	790	295	95.2	95.6	95.4	83	89	90	6316	38.03	CD0006
100	74.6	3560	405TS	ECP84402T-4	110	777	148	93.9	94.9	95.0	81	87	89	6313	35.75	CD0006
100	74.6	1180	444T	ECP84409T-4	120	738	445	94.3	95.1	95.4	72	80	82	6319	44.25	CD0006
125	93.2	3570	444TS	ECP84412T-4	136	974	184	94.6	95.5	95.4	81	88	90	6314	40.50	CD0006
125	93.2	1780	444T	ECP84410T-4	139	960	369	94.7	95.4	95.4	78	85	88	6319	44.25	CD0006
125	93.2	1190	445T	ECP84411T-4	150	1007	552	94.6	95.4	95.4	68	78	82	6319	44.25	CD0006
150	112	3570	445TS	ECP84413T-4	165	1210	221	94.8	95.7	95.8	81	87	80	6314	40.50	CD0006
150	112	1785	445T	ECP84406T-4	173	1070	442	95.6	96.0	95.8	71	80	85	6319	44.24	CD0006
150	112	1190	447T	ECP844156T-4	173	1123	662	95.5	96.0	95.8	75	82	85	6319	47.74	CD0006
200	149.2	3570	447TS	ECP84416T-4	220	1565	294	94.8	95.7	95.8	82	87	89	6314	49.00	CD0006
200	149.2	1785	447T	ECP84407T-4	224	1595	588	95.8	96.3	96.2	77	84	87	6319	47.74	CD0006
200	149.2	1180	449T	ECP844206T-4	242	1647	890	94.5	95.2	95.8	70	80	81	6319	52.65	CD0006
250	186.5	3570	449TS	ECP844252T-4	272	2165	370	95.6	96.2	95.8	81	87	90	6314	49.00	CD0006
250	186.5	1785	449T	ECP84408T-4	275	1867	735	95.9	96.2	95.8	83	88	90	6319	52.65	CD0006
250	186.5	1180	449T	ECP844256T-4	294	1690	1105	95.0	95.6	95.8	73	80	83	6319	54.37	CD0006

Shaded ratings are cast iron frames.

### Performance Data: TEFC - Totally Enclosed Fan Cooled, Rigid Base 575 Volts, Three Phase, 1 through 250 Hp

Hp	kW	RPM	Frame	Catalog No.	Amps		F.L. Torque Lb. Ft.	Efficiency %			Power Factor %			Bearings DE & ODE	"C" Dim.	Conn. Diag. No.
					F.L.	L.R.		1/2	3/4	F.L.	1/2	3/4	F.L.			
1	0.75	1750	143T	ECP83581T-5	1.1	9.8	3.0	83.8	85.9	85.5	57	69	77	6205	12.88	CD0006
1 1/2	1.1	1740	145T	ECP83584T-5	1.6	12.5	4.5	86.6	87.4	86.5	65	76	82	6205	12.88	CD0006
2	1.5	1725	145T	ECP83587T-5	2.2	15.7	6.0	88.1	88.1	86.5	66	77	82	6205	12.88	CD0006
3	2.2	1760	182T	ECP83661T-5	3.2	26.0	9.0	89.1	90.0	89.5	58	71	77	6206	15.93	CD0006
5	3.7	1750	184T	ECP83665T-5	5.2	44	15.0	89.7	90.7	90.2	62	74	80	6206	15.93	CD0006
7 1/2	5.6	1770	213T	ECP83770T-5	8	53.6	22.2	90.7	91.9	91.7	56	68	76	6307	19.32	CD0006
10	7.5	1760	215T	ECP83774T-5	10	66.8	30.0	91.7	92.4	91.7	62	75	81	6307	19.32	CD0006
15	11.2	1765	254T	ECP82333T-5	14.8	99	44.5	91.3	92.5	92.4	67	78	82	6309	25.50	CD0006
20	14.9	1765	256T	ECP82334T-5	19.2	140	59	92.8	93.1	93.0	69	80	84	6309	25.50	CD0006
25	18.7	1770	284T	ECP84103T-5	23.9	188	74.2	92.4	93.6	93.6	72	81	84	6311	28.61	CD0006
30	22.4	1770	286T	ECP84104T-5	29	197	89	93.8	94.4	94.1	66	75	83	6311	28.61	CD0006
40	30	1775	324T	ECP84110T-5	36.8	259	118	93.9	94.6	94.5	70	79	86	6312	30.16	CD0006
50	37	1775	326T	ECP84115T-5	45.6	318	149	94.4	94.9	94.5	81	80	87	6312	30.16	CD0006
60	45	1780	364T	ECP84314T-5	55	375	177	93.6	94.8	95.0	73	81	86	6313	32.84	CD0006
75	56	1780	365T	ECP84316T-5	68	519	222	94.9	95.5	95.4	73	81	85	6313	32.84	CD0006
100	74.6	1780	405T	ECP84400T-5	87	634	295	95.2	95.6	95.4	84	89	90	6316	38.03	CD0006
125	93.2	1780	444T	ECP84410T-5	112	768	369	94.7	95.4	95.4	78	85	88	6319	44.24	CD0006
150	111.9	1785	445T	ECP84406T-5	141	892	442	95.6	96.0	95.8	70	79	85	6319	44.24	CD0006
200	149.2	1785	447T	ECP84407T-5	179	1340	587	94.9	95.8	96.2	75	83	87	6319	47.74	CD0006
250	186.5	1785	449T	ECP84408T-5	220	1496	735	95.6	95.8	95.8	83	88	90	6319	52.65	CD0006

Shaded ratings are cast iron frames.

## IEEE 841 NEMA Premium® Efficient Motors



**Performance Data: TEFC - Totally Enclosed Fan Cooled, C-Face, Rigid Base, 460 Volts, Three Phase, 1 through 75 Hp**

Hp	kW	RPM	Frame	Catalog No.	Amps		F.L. Torque Lb. Ft.	Efficiency %			Power Factor %			Bearings DE & ODE	"C" Dim.	Conn. Diag. No.
					F.L.	L.R.		1/2	3/4	F.L.	1/2	3/4	F.L.			
1	0.75	3450	143TC	CECP83580T-4	1.4	12.1	1.5	80.5	83.6	84.5	65	77	82	6205	13.25	CD0006
1	0.75	1750	143TC	CECP83581T-4	1.4	14.0	3.0	83.8	86.2	86.5	54	72	78	6205	13.25	CD0006
1 1/2	1.1	3450	143TC	CECP83583T-4	2.0	20.1	2.3	81.3	84.3	85.5	68	78	83	6205	13.25	CD0006
1 1/2	1.1	1740	145TC	CECP83584T-4	2.0	16.8	4.5	86.4	87.6	86.5	61	73	80	6205	13.25	CD0006
2	1.5	3450	145TC	CECP83586T-4	2.5	30.0	3.0	83.8	86.2	86.5	70	80	85	6205	13.25	CD0006
2	1.5	1725	145TC	CECP83587T-4	2.7	19.6	6.0	88.1	88.1	86.5	66	77	82	6205	13.25	CD0006
3	2.2	3500	182TC	CECP83660T-4	3.4	34.5	4.5	87.5	89.1	88.5	83	89	92	6206	16.69	CD0006
3	2.2	1760	182TC	CECP83661T-4	4.0	32.0	9.0	89.1	90.0	89.5	58	71	80	6206	16.69	CD0006
5	3.7	3500	184TC	CECP83663T-4	5.7	62.0	7.5	88.2	89.8	89.5	77	86	90	6206	16.69	CD0006
5	3.7	1750	184TC	CECP83665T-4	6.5	54.0	15.0	89.7	90.7	90.2	62	74	80	6206	16.69	CD0006
7 1/2	5.6	3525	213TC	CECP83769T-4	8.6	75.0	11.2	90.0	91.4	91.0	79	87	90	6307	20.06	CD0006
7 1/2	5.6	1770	213TC	CECP83770T-4	9.5	77.0	22.2	90.0	91.6	91.7	63	75	80	6307	20.06	CD0006
10	7.5	3500	215TC	CECP83771T-4	11.2	120	15.0	92.7	92.9	91.0	82	89	92	6307	20.06	CD0006
10	7.5	1760	215TC	CECP83774T-4	12.6	89.5	30.0	91.2	92.4	91.7	62	75	81	6307	20.06	CD0006
15	11.2	3525	254TC	CECP82394T-4	17.2	128	22.2	90.8	91.9	91.7	78	86	88	6309	26.00	CD0006
15	11.2	1765	254TC	CECP82333T-4	18.5	122.9	44.6	91.9	92.6	92.4	66	77	82	6309	26.00	CD0006
20	14.9	3540	256TC	CECP84106T-4	23	201	29.7	91.1	92.3	92.4	74	84	89	6309	26.00	CD0006
20	14.9	1765	256TC	CECP82334T-4	24.0	175.0	59.0	92.8	93.1	93.0	69	80	84	6309	26.00	CD0006
25	18.7	3530	284TSC	CECP84107T-4	28.0	196	37.2	92.4	93.2	93.0	82	89	91	6311	27.24	CD0006
25	18.7	1790	284TC	CECP84103T-4	30.0	189.6	74.2	92.4	93.6	93.6	72	81	84	6311	28.61	CD0006
30	22.4	3530	284TSC	CECP84108T-4	33	237	44.6	93.0	93.5	93.0	82	88	90	6311	27.24	CD0006
30	22.4	1770	286TC	CECP84104T-4	36.0	246	89.0	93.8	94.4	94.1	66	75	83	6311	28.61	CD0006
40	30	3540	324TSC	CECP84109T-4	45.0	286	59.5	93.9	94.4	93.6	82	88	90	6312	30.50	CD0006
40	30	1775	324TC	CECP84110T-4	46.0	320	118	93.9	94.6	94.5	73	81	86	6312	30.16	CD0006
50	37	3540	326TSC	CECP84114T-4	54.2	422	74.0	93.8	94.4	94.1	85	90	92	6312	30.50	CD0006
50	37	1775	326TC	CECP84115T-4	57.0	392	149	94.4	94.9	94.5	73	82	87	6312	30.16	CD0006
60	45	3560	364TSC	CECP84310T-4	67.0	580	88.5	92.6	94.0	94.1	78	86	90	6313	31.13	CD0006
60	45	1780	364TC	CECP84314T-4	69.0	441	177	94.7	95.2	95.0	74	82	86	6313	32.84	CD0006
75	56	3565	365TSC	CECP84313T-4	83.0	740	111	93.4	94.6	94.5	81	87	90	6313	31.13	CD0006
75	56	1780	365TC	CECP84316T-4	86.5	649	222	94.9	95.5	95.4	73	81	85	6313	32.84	CD0006

**NOTE:** Efficiencies shown are nominal.

Shaded ratings are cast iron frames.

Data subject to change without notice. Contact Baldor for certified data.

## The Best Value in Large Frame Motors

Years ago, when Baldor began making large frame AC motors and drives, we spent a lot of time in the field. We talked in depth with plant maintenance and design engineers. We asked about tough environments such as mining, pulp and paper manufacturing, and chemical processing. We took the opportunity to learn in great detail what capabilities and characteristics people like and need. And most important, we learned what not to do.

One of the frequent suggestions was the need for better structural integrity and rigidity. And many wanted motors that were tough enough to withstand the rigors of even the most extreme applications.

Today, Baldor makes tough, reliable motors up to 1,250 HP for a wide variety of applications. And we continue to listen and follow through on what customers want. That's why you can count on Baldor for superior value.

Baldor large frame motors feature:

- Choice of all popular enclosures, voltages and frequency, custom orders are no problem.
- Choice of Baldor Super-E® NEMA Premium® efficiency or high efficiency designs.
- Extra heavy-duty cast iron frames, endplates and stiff foot structures, to minimize potential vibration problems.
- Premium rotor system design, to operate below the 1st critical design speed by at least a 15% safety margin — can be operated from a adjustable speed control through entire speed range.
- Choice of standard high-pressure die-cast aluminum rotors or fabricated copper bar rotors.
- Precision dynamic balanced with state-of-the-art equipment, to ensure finished motors meet NEMA vibration standards.



700 Hp Baldor WP11 (weather protected) motor driving a transfer pump.

- Class H-rated vacuum pressure impregnated (VPI) insulation system with surge rings on all end turns to minimize risk of premature failure.
- Electrical grade steel laminations, to minimize eddy currents and hysteresis losses, results in cooler operation and more efficiency.
- Upgraded low loss electrical grade core plates, to reduce core losses for the life of the motor (others offer as low as C-3, standard).
- Ability to meet many industry standard specifications such as IEEE 841 or company-specific specs.

There are many other advantages to specifying Baldor large frame motors.

Take a look. Talk to your Baldor distributor. If you don't see what you need, ask us about custom capabilities. See BR435 Large Frame Motor brochure for more details. You can likely have it on your floor in three weeks or less.

## Large Frame AC Motors: Built for Reliable Performance

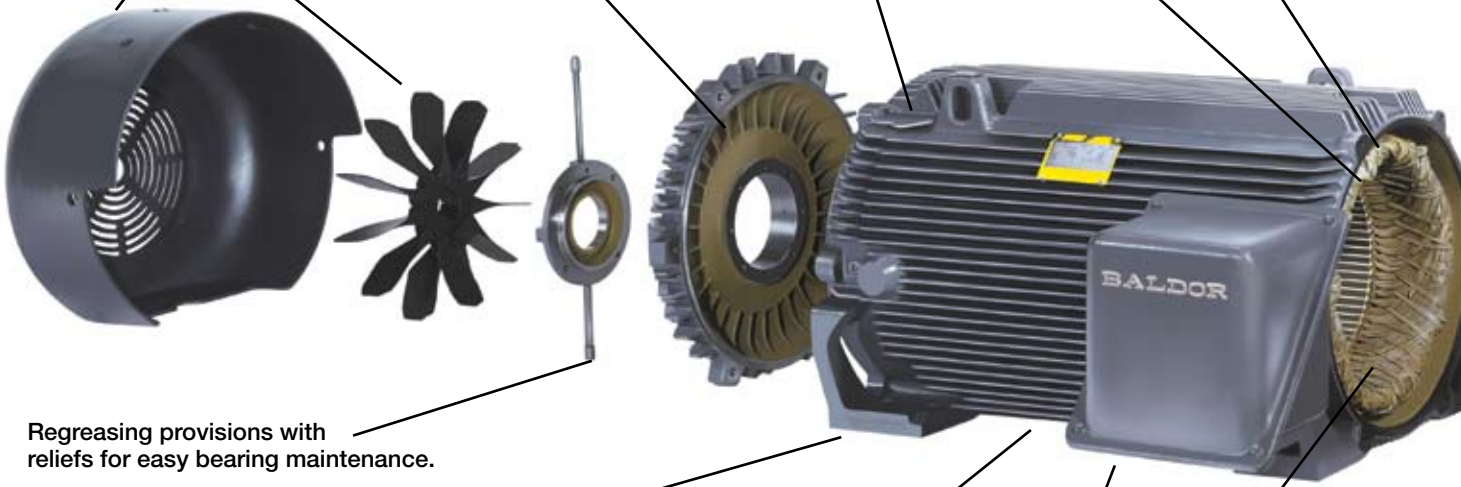
Fan and fan cover designed for maximum cooling and quieter operation.

Two-part epoxy primer inside and out; two-part epoxy finish paint on severe duty motors.

Class F (or better) insulation system allows winding to withstand higher temperatures resulting in longer life. Medium voltage motors feature formed copper coils with glass mica-wrapped magnet wire, further insulated with Nomex<sup>®</sup> tape. Baldor ISR (Inverter Spike Resistant<sup>®</sup>) copper magnet wire on low voltage motors (<600V).

Stator and rotors utilize premium plate core providing low core losses for the life of the motor.

Standard surge ropes on end turns.



Regreasing provisions with reliefs for easy bearing maintenance.

Dual mounting foot holes, especially convenient when mounting a motor for replacement duty.

Rugged cast iron frames, endplates and conduit boxes for greater strength and stiffness, resulting in lower vibration and longer life.

Standard vacuum pressure impregnation (VPI) using 100% epoxy solids for long life and greater protection.

Diagonally split oversized cast iron conduit box exceeding NEC standards makes connections easier. Rotatable in 90° increments and is easily converted from F-1 to F-2 mounting. Provision for grounding in conduit box and on the ODE mounting foot.



Auxiliary conduit box on medium voltage ratings for winding RTD's and space heaters.

High-pressure die cast aluminum rotor through 449T frame; fabricated copper bar rotor on larger sizes for increased efficiency. Precision balanced for smooth operation and longer bearing life.

Locked bearing construction reduces endplay. Convertible to roller bearing for belted loads. Optional sleeve bearings available.

Operates below the first critical speed by at least a 15% margin - allows operation throughout entire speed range with adjustable speed control.

High strength shaft steel.

## Generalized Ranges

Enclosure	Frame Sizes		
	449T	5000	5800
TEFC	250-400 HP	400-600 HP	400-800 HP
ODP	200-450 HP	500-800 HP	500-1250 HP
WPI		500-800 HP	500-1250 HP
WPIL		500-800 HP	500-1250 HP
Inverter/ Vector	250-350 HP	400-600 HP	400-800 HP
Explosion Proof	250-300 HP		

Typical 4-Pole HP ranges.

## Large Frame Motors Design Characteristics

Electrical Specifications	Description	Low Voltage	Medium Voltage
Voltage	460 or 575 volts, random-wound	S	
	950 volts, random-wound		
	2300, 3300, 4160 or 2300/4160 volts, formed-coil		S
	460, 950 or 6600 volts, formed-coil		
Frequency	60 Hz standard, 50 Hz optional	S	S
Service Factor	1.15 standard	S	S
Ratings	NEMA Design B	S	S
	NEMA Design C (contact Baldor for frame size)		
	NEMA Design D (contact Baldor for frame size), 1.0 S.F.		
	Crusher Duty (high pull-out, pull-up and locked rotor torques)		
Duty Cycle	Continuous Duty	S	S
	Special Duty Cycles		
Ambient Temperature	40°C ambient temperature	S	S
	Higher or lower ambient temperatures		
Temperature Rise	Class B rise (80°C) at 1.0 service factor, Class F rise at 1.15SF	S	S
Laminations	Low-loss electrical grade steel	S	S
Windings	Class H+ (200°C) ISR (Inverter Spike Resistant) <sup>®</sup> copper magnet wire	S	
	Class H+ (200°C) Copper form-wound coils wound with mica tape and VPI epoxy impregnated		S
Insulation Class	Class F, Non-hygroscopic epoxy VPI	S	S
	Class H, Non-hygroscopic epoxy VPI		
End Turn Bracing	Surge rings laced to end-turns and VPI epoxy impregnated for structural integrity	S	S
Stator Insulation	Nomex <sup>®</sup> Class H slot liner	S	S
	Woven Class H glass phase insulation		S
	Epoxy impregnated blocking felt between coils		S
Lead Material	Non-wicking cross-linked polyethylene material	S	S
Thermal Protection	Thermostats	S	
	RTDs with separate conduit box 100Ω platinum standard, 10Ω copper or 120Ω nickel optional; (RTDs standard in stock TEFC and ODP motors 300 Hp and up)		
	Thermistors		
Space Heaters	120 volt standard, other voltages optional (Strip space heaters standard in stock TEFC motors 300 Hp and up)		
Feedback Devices	1024 PPR Electrically isolated BEI optical encoder standard on Baldor Vector Drive <sup>®</sup> motors (other PPR available)		
	NorthStar <sup>®</sup> (LakeShore) or Avtron <sup>®</sup> pulse generators available		
	Resolvers available		
Testing	Standard test supplied with motor (Balance test, winding resistance, no-load, full load, amps and speed, power factor, torque and hi-pot test per NEMA MG-1)	S	S
	Heat run and complete efficiency testing at temperature		
	Either of above tests as witnessed		
Approvals	CSA recognized components through 449T (File LR2262) 5000 and 5800 TEFC frame through 600 HP and up to 600 volts; 500 HP and up to 4160 volts (File LR36841)	S	S

S = Standard O = Optional

## Large Frame Motors Design Characteristics

Mechanical Specifications	Description	Low Voltage	Medium Voltage
Frame Dimensions	NEMA	S	S
	IEC Metric		
Construction	Complete cast iron frame, endplates, conduit box and fan cover (5800 frame has steel fan cover)	S	S
Multiple Mounting Holes in Base	Multiple mounting holes standard. Dowel pin holes standard on all 5000 and 5800 frames.	S	S
Face mounting	C-face, D-flange, P-base available		
	Custom mounting configurations available		
Nameplate	Stainless steel, Complete operating data in accordance with NEMA MG-1. Bearing identification numbers included	S	S
Conduit Box	Oversized cast iron, diagonally split box, rotatable in 90° increments. Gasketed lid and gaskets between frame and box. NPT threaded opening. F-1 orientation standard, convertible to F-2 (top-mount conversion available on 5800 frame)	S	S
	Extra-large oversized conduit boxes available		
Slinger & Seals	Forsheda® V-type neoprene slinger each (Chemical Process motors only)	S	S
	Inpro seal® on shaft		
Drains	One-way drain and breather located at lowest point of motor when mounted in a horizontal position		
Hardware	Grade 5, U.S. Standard, zinc dichromate or cadmium-plated steel	S	S
	Stainless steel hardware		
Ground Lug	Located in conduit box. Silicon-bronze stud-type.	S	S
Lifting Provisions	Integrally-cast lifting lugs – motor can be lifted with any enclosure in tact	S	S
Enclosure	TEFC, Open Drip-proof, WPI, WPII, TEBC, TEWAAC		
Cooling Fan	TEFC & TEBC — Non-sparking	S	S
	Non-sparking metal		
Rotor Construction	High pressure die-cast aluminum (through 449)	S	S
	Fabricated copper bar construction (5000 up)	S	S
Balance	Dynamically balanced better than NEMA MG1 specs	S	S
Shaft Material	1045 high strength steel (through 5000 frame)	S	S
	4140 high strength steel (5800 frame - up)	S	S
	Other high strength alloys or forged shafts		
Paint	Grey lacquer over primer coat	S	S
	Two-part epoxy system with 4-6 mils build (Chemical Process motors)	S	S
	Customer specified paint		
Bearings	Premium grade vacuum-degassed ball bearings	S	S
	Roller bearing on drive end		
	Renk sleeve bearings (5000-up)		
	Electrically isolated bearings		
	Bearing temperature RTDs		
Lubrication	Vibration monitors		
	Exxon Polyrex® EM grease (or equivalent)	S	S
	Oil lube for sleeve bearings	S	S
	Customer specified grease		
Grease Provisions	Oil mist lubrication		
	NPT fittings installed in endplate with pressure relief fittings on drain lines	S	S
	Oil sight gauges for sleeve bearings	S	S
Engineering Specifications	IEEE 841- 2001		
	Customer specific requirements		
Limited Warranty	3 years on Super-E®, 24 months on Standard-E™, 18 months most other motors	S	S

S = Standard

## Contact your nearest Baldor District Office at these World Wide locations, or visit [www.baldor.com](http://www.baldor.com)

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