

Made in the U.S.A.

**Direct Current Motors  
and Drives 1/50 - 600 Hp**

**BALDOR<sup>®</sup>  
MOTORS AND DRIVES**



## DC Motors & Controls for many different applications

Baldor offers the widest variety of DC Motors. From 1/50 to 600 horsepower, our rugged industrial designs may be used to power everything from a medical blood centrifuge to the printing press for your Sunday newspaper.

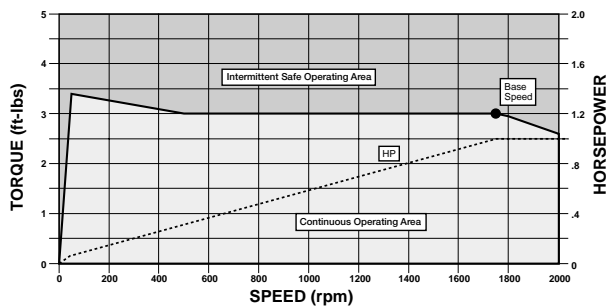
SCR-rated DC motors are available from stock in permanent magnet designs through 5 horsepower. Wound field designs are stocked through 500 HP. DC motors with special features are available from stock for special applications:

- Washdown Enclosures for food processing
- Metric mounting for replacement of motors built to IEC standards
- Permanent magnet motors with a built-in precision DC tachometer
- Right angle and parallel shaft gear motors
- 115 and 230 volt power motors built to IEEE 45 and USCG 259 standards for shipboard use

Custom motors are available with special voltages, base speeds, mountings and other options. With Baldor, building a custom motor to the specifications you require can eliminate assembly time, adapters, repainting and other costly operations. You buy only what you require, and we deliver when you need it.

## Matched Performance™

We know how our DC motors and controls perform when used together. This assured performance gives you the **Matched Performance™** that you need. The wide range of SCR controls we offer assures that we have the correct control for most applications. Let Baldor take the guesswork out of matching motors and controls.



### Performance Specifications

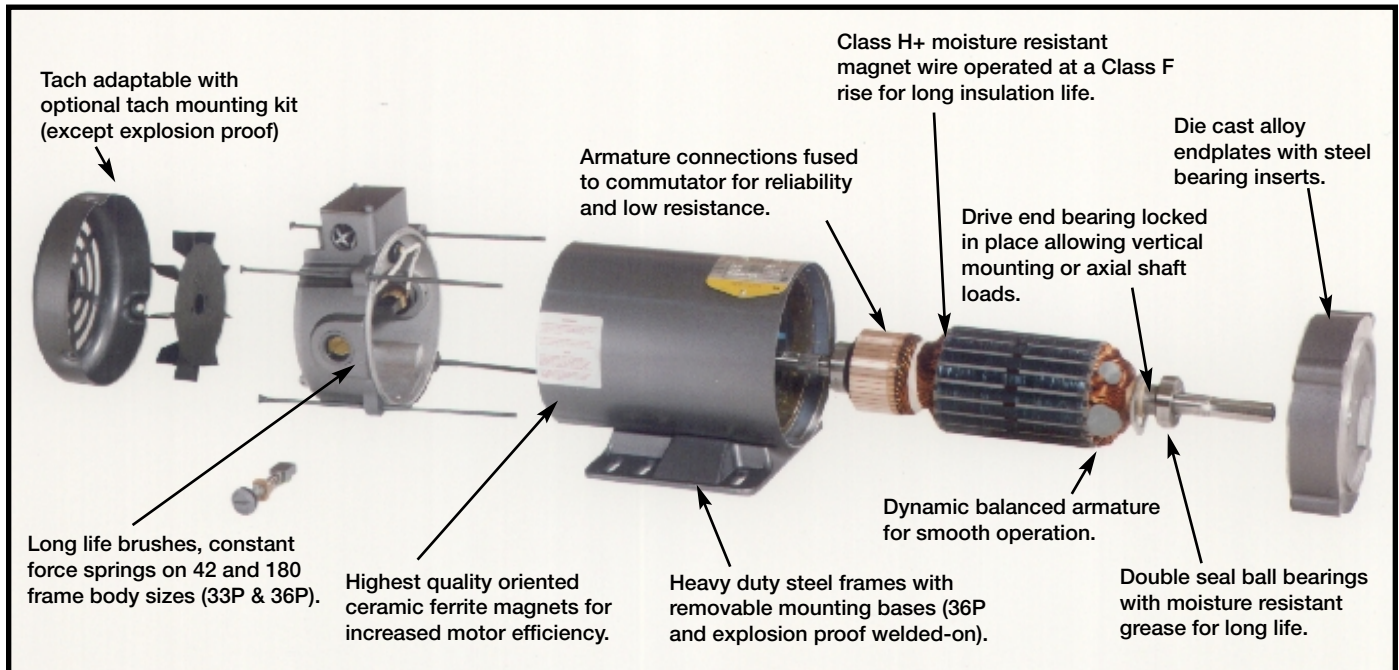
**BC140 Control**

**CDP3455 Motor 1HP**

- Input Voltage: . . . . .230V AC 50/60 Hz  
1 Phase
- Base Speed: . . . . .1750 RPM
- Operating Speed Range: . . . . .0-2000 RPM
- Constant Torque Speed Range: . . . . .90-1750 RPM
- Constant Horsepower Speed Range: . . . .1750-2000 RPM
- Speed Regulation Std. Feedback Type: . Armature  
1 % of Base Speed
- Opt. Feedback Type: . . . . .Tachometer  
1 % of Set Speed
- Motor Cooling: . . . . .TEFC

## Permanent Magnet DC Motors

At the heart of our DC motor lineup are the many sizes of our versatile permanent magnet DC motors. These range in output from 1/50 hp to the industry's only 5 horsepower. Ruggedness, dependability and ease of use are the reasons that Baldor PMDC motors are specified by more customers than any other.



## Permanent Magnet DC Motors

### • Typical Frame Sizes

Hp	Base Speed				
	1150	1750	2500	3500	5000
1/50		10-ABP-0	10-ABP-0	10-ABP-0	10-ABP-0
1/25		20-ABP-0	20-ABP-0	20-ABP-0	20-ABP-0
1/10		125-AH-0	115-AH-0	115-AH-0	115-AH-0
1/8	56C	56C	56C	56C	115-AH-0
1/6	56C	135-AH-0	125-AH-0	125-AH-0	115-AH-0
		56C	56C	56C	
1/4	56C	56C	135-AH-0	135-AH-0	135-AH-0
1/3	56C	56C	56C	56C	
1/2	56C	56C	56C	56C	
3/4	143-5TC	56C	56C	56C	
1	143-5TC	56C	56C	56C	
1-1/2	182-4TC	143-5TC	143-5TC	143-5TC	
2	182-4TC	143-5TC	143-5TC	182-4TC	
3	182-4TC	182-4TC	182-4TC	182-4TC	
5		1810ATC	182-4TC	182-4TC	

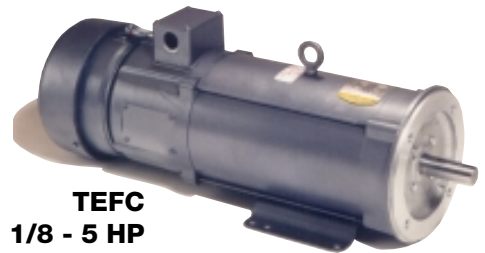
Ratings 2 HP and above designed for 180 Volts only.

## Baldor's Family of SCR - Rated Permanent Magnet DC Motors

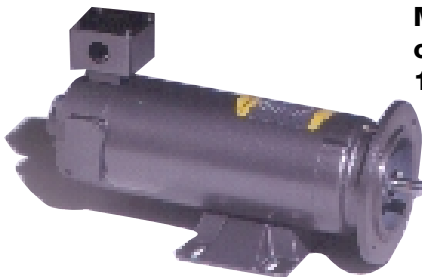
Baldor chooses to make a wide variety of SCR-Rated PMDC motors, each specifically designed to a horsepower range. This optimizes the motor's commutator, brushes and inertia to assure the best performance possible. We further modify these designs for specific applications, washdown, explosion proof, metric mountings and integral DC tachometer. Only Baldor offers the choice of such a wide range of DC motors from stock, so you can be assured of having the best motor for your application.



**TENV**  
1/8 - 1 HP



**TEFC**  
1/8 - 5 HP



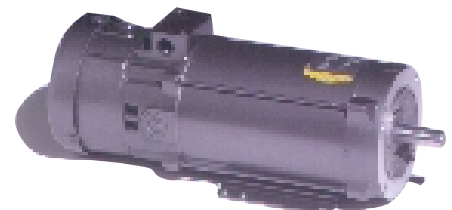
**Metric Face  
or Flange**  
1/5 - 5 HP



**Washdown**  
1/8 - 5 HP



**Explosion Proof**  
1/8 - 1-1/2 HP



**Integral DC Tach**  
1/8 - 5 HP

## Subfractional Horsepower Permanent Magnet DC Motors and Gearmotors

In addition to our larger DC motors, Baldor has a complete line of subfractional permanent magnet DC motors - alone or with either right angle or parallel shaft gear reduction. Both in SCR-Rated and low voltage designs.

A wide variety of styles and mounting configurations of right angle gearmotors cover the range from 1/50 to 1/3 horsepower. Sealed housings with lifetime lubrication allow mounting in any position. Their compact design and broad selection of speeds make these units ideal for direct coupling to the load. In many cases, additional equipment such as chain and sprockets can be eliminated. These units are well suited for all types of conveyerized equipment, mixers, feeders, gate and door operators and many other applications.

Standardized mountings and optional bases make parallel shaft gearmotors ideal for original equipment as well as replacement applications. These compact efficient gearmotors provide high output torque in a small package. They are well suited to many applications such as all kinds of conveyerized equipment, food processing, printing and packaging machines.



**Subfractional  
HP Motors  
1/100 - 1/4 HP**



**Right Angle  
Gearmotors  
Output Torques to  
175 lb-in.**



**Parallel Shaft  
Gearmotors  
Output Torques to  
350 lb-in.**



**Low Voltage  
1/50 - 1/4 HP**

## Baldor's Family of Wound Field DC Motors

Baldor also makes a wide variety of wound field SCR-Rated DC motors. These range from a 48 frame 1/8 HP motor to a large 5011AT 600 HP size. We know that some customers still prefer the reliable Baldor wound field motors that have been available for over 75 years. Baldor continues to expand our product range so we can be your primary supplier of DC motors and drives.

Low voltage Baldor wound field motors are available with either a series or compound wound field. Special designs are available for traction applications or hydraulic pumps. Power motors are designed for operation from a generator or batteries.

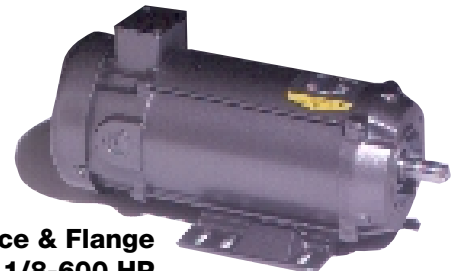


**TEFC**  
**1/8-75 HP**  
**TEAO**  
**5-100 HP**  
**TEUC**  
**15-500**

**DPFG-Drip Proof**  
**Fully Guarded**  
**1-400 HP**  
**DPBV-Drip Proof**  
**Blower Vented**  
**1-600 HP**



**Textile Applications**  
**DPFG-Drip Proof Fully Guarded**  
**240A/240F**  
**1-300 HP**



**Metric Face & Flange**  
**1/8-600 HP**



**Explosion Proof**  
**1/2-3 HP**

# Baldor's Extensive Line of Integral HP Wound Field DC Motors

DC motors continue to be an important product at Baldor. Our extensive stock of Integral HP ratings allows you to get the motor required from our inventory. If the motor isn't available from stock, our new large DC motor plant has the capability to build it with the industry's shortest lead times.

The following chart shows Baldor's Integral Hp manufacturing capabilities.

## Integral HP Custom Motor Capabilities

- DPFG and DPBV Enclosure
- 500V Armature
- Typical Frame Sizes

hp	BASE SPEED								
	300	400	500	650	850	1150	1750	2500	3500
1					L186AT #	L182AT #	L182AT #	L182AT #@	L182AT #@
1.5					L186AT #	L186AT #	L182AT #	L182AT #	L182AT #
2					L186AT	L186AT	L186AT	L182AT	L182AT
3	328AT #	288AT #	259AT #	2110AT #	218AT	L186AT	L186AT	L186AT	L182AT
5	365AT #	328AT #	288AT #	259AT #	2110AT	219AT	L186AT	L186AT	L186AT
7.5	368AT	366AT	328AT	288AT	259AT	2110AT	218AT	L186AT	L186AT
10	407AT	366AT	328AT	328AT	288AT	258AT	219AT	218AT	1810AT
15	409AT	407AT	368AT	365AT	328AT	288AT	258AT	219AT	218AT
20	407AT@	368AT@	366AT@	366AT	328AT	328AT	259AT	2110AT	219AT
25	508AT	409AT	368AT@	366AT@	366AT	328AT	288AT	258AT	258AT
30	506AT	506AT	407AT	366AT@	366AT	328AT@	288AT	259AT	259AT
40	508AT	504AT	504AT	368AT@	366AT@	365AT@	328AT	287AT@	288AT
50	508AT	506AT@	506AT	409AT	368AT@	366AT@	328AT	288AT	288AT@
60	506AT@	506AT@	506AT	504AT	368AT@	368AT	366AT	328AT	328AT@
75	508AT@	506AT@	506AT@	504AT@	407AT@	368AT@	366AT	329AT	328AT@
100	5011AT@	5010AT@	508AT@	506AT@	409AT@	407AT@	368AT	366AT@	366AT@
125		5010AT@	508AT@	506AT@	506AT	409AT@	368AT@	368AT@	366AT@
150		5010AT@	508AT@	506AT@	506AT@	506AT	407AT@	407AT@	366AT @
200			5011AT@	508AT@	506AT@	506AT@	409AT@	409AT@	
250			5012AT@	5011AT@	5010AT@	506AT@	504AT@		
300			5012AT@	5011AT@	5010AT@	508AT	506AT@		
400				5012AT@	5012AT@	5010AT@	508AT@		
500					5012AT@	5011AT@	5010AT @		
600						H5011AT@	H508AT@		

# 240 VOLT ARMATURE ONLY

@ BLOWER REQUIRED (DPBV)

Totally Enclosed designs also available.

## Low Voltage DC Motors 12-72 VDC

More and more vehicles are being powered from batteries. Baldor is a long-time supplier of energy efficient DC motors for electric vehicles.



**Wound Field  
Motors  
1/4 - 10 HP**

## DC Power Motors

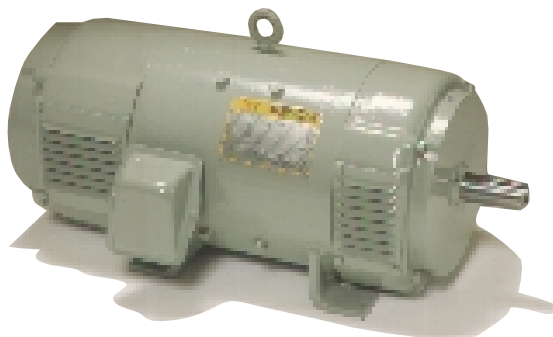
Some applications require a DC motor to operate from a NEMA Type A power supply, a DC generator or back-up battery system. For these jobs, Baldor makes a lineup of DC Power Motors for either a 115 or 230 volts DC. These motors are typically compound wound, but are available in shunt or series construction. Some ratings are also available as permanent magnet.



**DC Power Motors  
1/50 - 500 HP**

## Lifting Magnet Generators

Baldor's rugged industrial DC motors are used as the basis for our 230V DC lifting magnet generators. This provides a heavy duty generator with cast iron endplates and a thick steel housing. Oversized brushes and commutators, sealed ball bearings and corrosion-resistant epoxy paint ensure long life and minimum service requirements. These generators are self-excited and have a drooping voltage characteristic. These are stocked with choice of base mounting or base with C-face. Larger custom ratings are also available.



**5-40 kW**

## DC Generators

DC Generators are available using our rugged Integral HP DC Motor frames. These can be designed with either external or self-excited fields. Standard output voltages are 120 or 250 DC, other voltages are available.



**3/4-200 kW**

## Tachometers

Baldor offers a wide range of tachometers to meet almost any application that you may have. DC, AC and Digital Encoder-based tachs are available either as stand-alone products or mounted to permanent magnet or wound field motors.

Baldor tachometers are used in elevators, plastic extruders, printing presses, antenna drives and many other diverse applications.

Our most popular XPY DC tach is available in flange or foot mounting, in standard TENV or washdown enclosures; all from stock.

Our newest PY style DC tach, the XPYII, is the Shorty. This tach is only short in length, but full-featured in performance. Its rugged cast iron housing is suited for mill applications and has better electrical shielding. The output signal has very low ripple current. We even have a version that uses a metric mounting flange and can be made with either IP54 or IP65 enclosure.

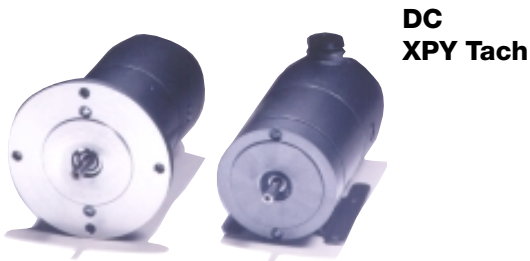
XC tachs are used when a rugged DC tach is required. Many mill applications utilize these tachs because of their voltage stability with temperature extremes, excellent output signal and cast iron construction.

Pancake tachs with either DC, AC or Digital outputs are available for applications where space is at a premium.

Encoder-based digital tachs are available with a standard PY mounting flange for applications where new digital SCR controls are used. These easily mount to existing PY mounting adapters.

Our BTG1000 provides a 50 volt/1000 RPM DC output. This low cost tach provides basic speed indication.

Modular DC tachs are also available for OEMs that can mount them as an integral part of their products.



## DC SCR Controls

Baldor now offers a wide range of SCR controls to meet most applications. Both standard and line regenerative designs are available. Our line of single phase input controls are available for chassis mounting or with NEMA 1 or NEMA 4X enclosures. Baldor's controls for three phase input are available as standard or line regen designs with common keypad language and set up like our Inverters and Vector controls.

When you specify a Baldor SCR control along with your DC motor, you are assured of Matched Performance™. We know what performance you will get with the combination of our motor and control.

Accessory boards are also available to customize the control to meet your particular application requirements. This may range from following a process signal, leader/follower applications, serial interfaces and many more.

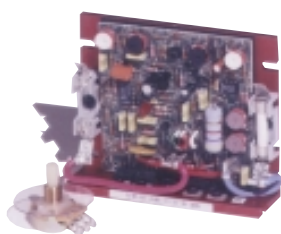
## Standard SCR Controls



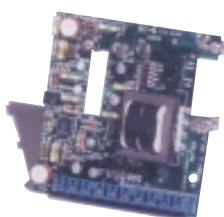
**NEMA 1**  
120/230,  
120 & 230 VAC 1Ø  
1/50-2 HP



**Washdown**  
**NEMA 4X**  
120/230 VAC 1Ø  
1/25-3 HP



**Chassis Mount**  
120 & 230 VAC 1Ø  
1/50-5 HP



**Accessory  
Boards**

**Series 19H Digital**  
**Chassis Mount**  
230/460 VAC 3Ø  
3-300 HP



## Regen Controls



**Chassis Mount**  
120/230 VAC 1Ø  
1/25-5 HP

**Series 20H Digital**  
**Chassis Mount**  
230 & 460 VAC 3Ø  
5-600 HP



## Other quality products from Baldor to serve your Motor and Drive needs.

**No one offers a broader line of motors and controls than Baldor—no one!**



### Baldor Inverter Drive Motors

Baldor Inverter Drive Motors are designed for the tough application requirements found in today's industrial environment. Premium efficiency designs increase energy savings, lower temperature rise and increase motor life. Standard features include:

- TENV and TEBC enclosures
- Full class H insulation
- Stock ratings of 1/3 to 200 HP
- Standard foot and C-Face mounting
- Precision Balance to 6000 RPM (1/3-10HP) and to 3600 RPM (15-200HP)



### Solid State Soft Starters

Baldor stocks starters for motors 1 thru 700 HP in a variety of types and enclosures for retrofit and new applications. Features include:

- Control of inrush current to minimize stress on the electrical system, as

well as on the motor and driven equipment

- Ramp start and stop to prevent damage or spillage of product
- Easy installation and setup



### Baldor Premium Efficiency Super-E® Motors

Baldor's Premium Efficiency Super-E® Motors are designed for applications where savings in operating cost are high enough to result in a "payback" within a relatively short period of time. Super-E® Motor features include:

- More copper, larger wire, more iron, thinner laminations, and premium grade electrical steel
- Precision air gap between stator and rotor
- Premium anti-friction bearings
- Low loss cooling fan design
- 200°C moisture resistant wire laced at every slot to prevent endturn movement
- Better rotor construction



### Vector Drive

Baldor Vector Controls provide precise speed and torque control. The unique "Auto Tune" feature enables the control to adjust itself to the motor using only the motor nameplate information. Features of the vector controls include:

- Speed Range: 4000:1
- Constant Torque: 0-1800 RPM
- Constant HP: 1800-4000 RPM
- Stepless Accel-Decel
- Homing/Orientation
- No Cogging at low speeds

### Three Phase Line Reactors

Baldor offers three phase line reactors for use on the input or output of AC Controls:

- Open construction with terminals
- Harmonic compensated
- 3% impedance rating
- Stock ratings of 1 to 500 HP
- Optional NEMA 1 enclosures

Baldor Electric Company

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