

Selecting the Right Battery

How do you know which battery is right for your application?

Here are some quick tips to help you make the right choice.

Check your operators manual for the original equipment manufacturers recommendations for:

1) Battery Group Number

Battery Council International (BCI) is an international governing body that governs group number designations of batteries used in many industry applications. This guide only addresses Passenger Car and Light Commercial Batteries 12-volt (6 cells). It should be noted that the BCI (Battery Council International) Group Number does not designate a battery's capacity; it merely defines the physical characteristics.

The Battery Group Number indicated in your Operator's Manual best represents the best fit for the physical restrictions and mounting brackets for your application. More than one group size may fit so careful review of all the Battery Group Numbers will make you an educated buyer.

Battery Group Numbers may also contain letter suffixes.

If the positive terminal is located on the left front, a group number will be assigned consisting of numbers only (no letters).

If the positive terminal is located on the right front, a group number will be assigned consisting of numbers and the letter suffix "R".

**** After reviewing the current BCI Group Chart for Passenger Car and Light Commercial Batteries 12-volt (6 cells), I contacted the Battery Council International and requested definitions for other letter suffixes listed, I have attached that document as the last page, BCI's Historic Development of Letter Designations.

2) Cold Cranking Amps (CCA)

CRANKING AMPS (CCA)- The cold-crank rating is the primary rating presently used for automotive batteries. CCA's are the number of amperes a battery can deliver for 30 seconds at 0° F and still maintain a minimum voltage of 1.2 volts per cell (7.2 volts for a 12 volt battery).

3) Reserve Capacity (RC) for your application

RESERVE CAPACITY RATING- The time in minutes that the battery will deliver 25 amps at 80° F until it falls below 1.75 volts per cell (10.5 volts for a 12 volt battery). This rating represents the time the battery will continue to operate essential accessories during night driving if the alternator or generator fails.

In general for both CCA and RC, the higher the number the better. HOWEVER, if you live in a cold climate, the CCA rating should be an important consideration in choosing a battery. Conversely, if you live in a high heat climate, you don't need as much CCA.

Be careful of products that display only ratings such as Hot Cranking Amps (HCA) or Cranking Amps (CA). Products that display HCA or CA ratings are tested at higher temperatures, in the case of HCA — 80 degrees — so the resulting numbers appear higher. (CAs are tested at 30°F.)

Since these batteries are not as powerful as you might think, what looks like a "bargain" may end up costing you money. Make sure you are comparing apples to apples when looking at ratings.

The CCA and RC are the best measure of a battery's true power and create the best comparison when purchasing. Warranty duration also should play a role in your decision. Just to note, depending on your application, i.e., an automobile vs. a tractor the manufacturer's warranty duration may vary for that same battery.

BCI Group Number			
	Inches		
	L	W	H
PASSENGER CAR AND LIGHT COMMERCIAL_BATTERIES 12-VOLT (6 CELLS)			
21	8 -3/16	6-13/16	8-3/4
22F	9-1/2	6-7/8	8 -5/16
22HF	9-1/2	6-7/8	9
22NF	9 -7/16	5-1/2	8-15/16
22R	9	6-7/8	8 -5/16
24	10-1/4	6-13/16	8-7/8
24F	10-3/4	6-13/16	9
24H	10-1/4	6-13/16	9-3/8
24R	10-1/4	6-13/16	9
24T	10-1/4	6-13/16	9-3/4
25	9 -1/16	6-7/8	8-7/8
26	8 -3/16	6-13/16	7-3/4
26R	8 -3/16	6-13/16	7-3/4
27	12-1/16	6-13/16	8-7/8
27F	12-1/2	6-13/16	8-15/16
27H	11-3/4	6-13/16	9-1/4
29NF	13	5-1/2	8-15/16
33	13-5/16	6-13/16	9-3/8
34	10-1/4	6-13/16	7-7/8
34R	10-1/4	6-13/16	7-7/8
35	9-1/16	6-7/8	8-7/8
36R	10-3/8	7-1/4	8-1/8
40R	10-15/16	6-7/8	6-7/8
41	11-3/16	6-7/8	6-7/8
42	9 -5/16	6-13/16	6-13/16
43	13-1/8	6-7/8	8 -1/16
45	9-7/16	5-1/2	8-15/16
46	10-3/4	6-13/16	9
47	9-11/16	6-7/8	7-1/2
48	12-1/16	6-7/8	7-9/16
49	15	6-7/8	7-3/16

BCI GROUP	L	W	H
50	13-1/2	5	10
51	9-3/8	5-1/16	8-13/16
51R	9-3/8	5-1/16	8-13/16
52	7-5/16	5-13/16	8-1/4
53	13	4-11/16	8-1/4
54	7-5/16	6-1/16	8-3/8
55	8-5/8	6-1/16	8-3/8
56	10	6-1/16	8-3/8
57	8-1/16	7-3/16	6-15/16
58	10-1/16	7-3/16	6-15/16
58R	10-1/16	7-3/16	6-15/16
59	10-1/16	7-5/8	7-3/4
60	13-1/16	6-5/16	8-7/8
61	7-9/16	6-3/8	8-7/8
62	8-7/8	6-3/8	8-7/8
63	10-3/16	6-3/8	8-7/8
64	11-11/16	6-3/8	8-7/8
65	12-1/16	7-1/2	7-9/16
70	8-3/16	7-1/16	7-11/16
71	8-3/16	7-1/16	8-1/2
72	9-1/16	7-1/16	8-1/4
73	9-1/16	7-1/16	8-1/2
74	10-1/4	7-1/4	8-3/4
75	9-1/16	7-1/16	7-11/16
76	13-1/8	7-1/16	8-1/2
78	10-1/4	7-1/16	7-11/16
85	9 -1/16	6-13/16	8
86	9 -1/16	6-13/16	8
90	9-11/16	6-7/8	6-7/8
91	11	6-7/8	6-7/8
92	12-1/2	6-7/8	6-7/8
93	15	6-7/8	6-7/8
95R	15-9/16	6-7/8	7-1/2
96R	9-9/16	6-13/16	6-7/8
97R	9-15/16	6-7/8	7-1/2
98R	11-3/16	6-7/8	7-1/2

Note 1: The complete BCI listing includes several categories not included here: Heavy-Duty motor Coach and Bus batteries, and Special Tractor Batteries (6 and 12-volt). BCI provides configuration diagrams and performance ratings as well. Contact BCI, 401 N. Michigan Ave, Chicago IL 60611-4267, (312) 644-6610 for more information.

Note 2: The maximum height includes the terminal posts. Width and length measurements are generally to the widest point, including protruding flanges, except for hold-down flanges at the bottom of the battery. See the diagrams in the BCI battery Replacement Data Book for full detail

The following information was provided by:

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Historical Development of Letter Designations for BCI Group Sizes

<u>Example BCI Group Size</u>	<u>BCI Letter</u>	<u>Description / Application</u>
2B	B	Bus. SAE called this "G".
8D	D	Diesel Starting
2E	E	The cell assembly, rather than side by side, was end to end.
3EE	EE	See "E".
24F	F	Originally "Ford" then morphed into "Flange hold down". When it was originally "Ford" the cell assembly was reversed from the group designation without the "F" (example: 24 vs. 24F).
GC2	GC	Golf Car
24H	H	Higher than the original "Medium" height of 9-1/8"
19L	L	Lower than the original "Medium" height of 9-1/8".
	M	Medium height, which at that time was 9-1/8" overall. Currently the "M" suffix stands for Marine type battery with special terminals..
28N	N	(Narrow) The first batteries were side by side, which gave rise to the "S" designation used by SAE long ago. The narrow designation was for side by side (S) assembly when the container was narrower than the original 7-1/8" width of 6-volt groups 1 thru 5, which were in rubber containers at that time.
26R	R	Reverse assembly when compared to the group designation without the R. In recent years the stand alone "R" (w/o the group designation) has come to indicate that the positive terminal is on the right when the 12 volt terminals are on the side of the battery next to the viewer.
3ET	T	Transport or Tractor or Tall. Originally the "T" designation was applied to groups 1 thru 5 when they were used in "transport" applications. Coincidentally, these transport batteries at 10-1/2", were even taller than the "H" which were 9-3/8". Today, "T" typically means "Farm Tractor". Groups 3ET and 4DLT would suggest "tractor" rather than "transport".
U1	U	Utility. The common usage of this battery for lawn mowers and garden tractors lead to the compromise of "utility".

An explanation of some common multiple suffixes:

4DLT	DLT	Diesel, low, tractor
3ET	ET	End to end, tractor
22HF	HF	High, flange hold down, right front positive.
22NF	NF	Narrow, flange hold down, right front positive.
16TF	TF	Tractor, flange hold down

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