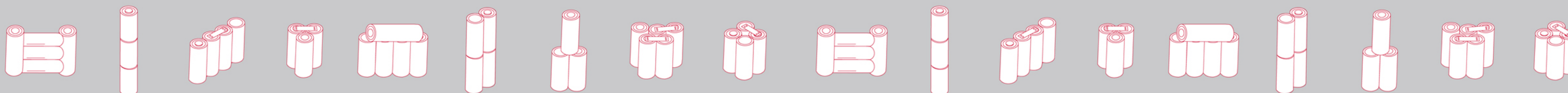


Nickel Cadmium Batteries
Nickel Metal Hydride Batteries



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Power Solution Supplier

As one of the professional power suppliers in South of China, MOTOMA power, established in 1994, a dynamic battery manufacturer and exporter in P. R. China.

we are engaged in the developing of battery production technology and environmental protection. we have developed different batteries for the different application purpose. high rate batteries, high capacity batteries, high temperature battery, sintered sub-C etc.

we have gained high reputation among our customers both domestic and abroad for our superior and reliable quality products, while offering reasonable and competitive prices with perfect after-sale service.

Worldwide distributors are welcome!



OEM/ODM service

Strong individual R/D service to customize your products, Professional packing designers, to ensure us offer perfect products, on-time delivery, low-cost co-operation and excellent service to Motoma business partners of worldwide.



Major Features

A. Long service life

Motoma batteries could offer more than 500-1000 charge/discharge cycles up to properly usage conditions.

B. High rate charge discharge characteristics:

With specified charger, 2 hrs full charge available for the motoma batteries. and the discharge rate could be up to 10C-15C

C. Excellent Discharger Performance.

With low internal resistance and high, flat voltage characteristics during high current discharge, motoma batteries offer a perfect discharger performance.

D. Wide Operating Temperature Range:

The operating temperature range of motoma batteries could be from -20°C to 70°C. max.-40°C also be available upon request.

E. Reliable Sealed

Leak proof construction, sealed construction, provides safety and maintenance-free service. The cell can be used in any desired position during charge, Discharge or storage conditions.

F. Safety:

Built-in high pressure release vent to avoid leakage, overcharge and explosion.

G. Excellent overcharge performance:

Motoma Ni-Cd batteries could be continuously charged at 0.1C-0.2C rate for one week without leakage or deformation.

H. No memory effect:

Unlike Nickel Cadmium batteries, Motoma Nickel metal hydride batteries have no memory effect. Discharge are no required before charging.

I: Motoma Ni-Mh battery can reduce waste (the amount of used batteries) than that of dry cell.

MOTOMA Ni-CD/Ni-Mh Rechargeable Batteries Major Applications

Power Tool



Electric Drills



Vacuun Cleaners



Power Assisted Bicycle



Shaver

Visual Equipment



Ca mcoorder



Camera



Game



Portable TV

Toys



Remote Control



Car Plane



Submarine



Robert

Audio Visual Equipment



Cass ette player



Ra diogram



Portable CD player



MP 3

Communication



Mobile Phone



Car Phone



Cordless Phone



Transceiver

Office Equipments Toys & Security



No tebook PC



Guide lights



POS






Emergency Light



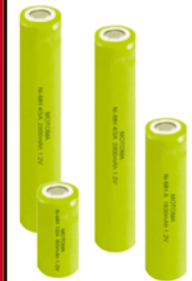




MOTOMA Nickel-Metal Hydride Batteries

Motoma Ni-Mh rechargeable batteries provide a high capacity application. f.g.Communications equipments, Audio and Video devices, Emergency lighting, Remote control & security systems, Toytes, tooth-brushes, handheld vacuum cleaners, power tools, memory back-up etc. The quality raw material and strictly control processing ensure the batteries could offer a perfect & reliable performance, high capacity, long cycle life and low self discharge rate.

Ni-MH Standard Series of Batteries (General use)

Cells	Model	Nominal Voltage (V)	Nominal Capacity (mAh)	Standard Charge		Fast Charge		Dimension(mm)		Weight(g) (Approx)
				Current (mA)	Time (h)	Current (mA)	Time (h)	Diameter (Max)	Height (Max)	
	NH-2/3AAAA200	1.2	200	20	15	200	1.2	8.5	29.0	5
	NH-AAAA350	1.2	350	35	15	350	1.2		42.5	7
	NH-5/4AAAA500	1.2	500	50	15	500	1.2		51.0	12
	NH-5/3AAAA600	1.2	600	60	15	600	1.2		66.5	13
	NH-1/4AAA80	1.2	80	8	15	80	1.2	10.5	10.5	5
	NH-1/3AAA120	1.2	120	12	15	120	1.2		14.5	6
	NH-2/3AAA300	1.2	300	30	15	300	1.2		28.5	7
	NH-4/5AAA500	1.2	500	50	15	500	1.2		35.5	9
	NH-AAA550	1.2	550	55	15	550	1.2		44.5	11
	NHAAA700	1.2	700	70	15	700	1.2		44.5	12
	NH-AAA800	1.2	800	80	15	800	1.2		44.5	12.5
	NH-AAA900	1.2	900	90	15	900	1.2		44.5	13
	NH-5/4AAA700	1.2	700	70	15	700	1.2		50.5	14
	NH-5/4AAA800	1.2	800	80	15	800	1.2		50.5	15
	NH-5/3AAA900	1.2	900	90	15	900	1.2		66.5	18
	NH-1/3N110	1.2	110	11	15	110	1.2	12.0	11.5	3.5
	NH-1/2N180	1.2	180	18	15	180	1.2		16.5	5.5
	NH-N350	1.2	350	35	15	350	1.2		29.5	8.5
	NH-N450	1.2	450	45	15	450	1.2		29.5	10
	NH-1/3AA300	1.2	300	30	15	300	1.2	14.5	17.0	8.5
	NH-1/2AA600	1.2	600	60	15	600	1.2		25.0	11
	NH-2/3AA700	1.2	700	70	15	700	1.2		28.5	14
	NH-4/5AA1000	1.2	1000	100	15	1000	1.2		43.0	24.5
	NH-4/5AA1200	1.2	1200	120	15	1200	1.2		43.0	25
	NH-AA1200	1.2	1200	120	15	1200	1.2		50.5	25.5
	NH-AA1300	1.2	1300	130	15	1300	1.2		50.5	26
	NH-AA1600	1.2	1600	160	15	1600	1.2		50.5	27
	NH-AA1800	1.2	1800	180	15	1800	1.2		50.5	27.5
	NH-AA2000	1.2	2000	200	15	1000	2.4		50.5	28
	NH-AA2200	1.2	2200	220	15	1100	2.4		50.5	29
	NH-AA2300	1.2	2300	230	15	1150	2.4		50.5	30
	NH-4/3AA2000	1.2	2000	200	15	1000	2.4		67.0	33

Ni-MH Standard Series of Batteries (General use)




Cells	Model	Nominal Voltage (V)	Nominal Capacity (mAh)	Standard Charge		Fast Charge		Dimension(mm)		Weight(g) (Approx)
				Current (mA)	Time (h)	Current (mA)	Time (h)	Diameter (Max)	Height (Max)	
	NH-1/3A450	1.2	450	45	15	450	1.2	17.0	17.0	11
	NH-1/2A600	1.2	600	60	15	600	1.2		22.0	14
	NH-2/3A1000	1.2	1000	100	15	1000	1.2		28.5	21
	NH-4/5A1500	1.2	1500	150	15	1500	1.2		43.0	26
	NH-4/5A1800	1.2	1800	180	15	1800	1.2		43.0	27
	NH-A1600	1.2	1600	160	15	1600	1.2		50.0	28
	NH-A1800	1.2	1800	180	15	1800	1.2		50.0	29
	NH-A2100	1.2	2100	210	15	1050	2.4		50.0	31
	NH-4/3A2800	1.2	2800	280	15	1400	2.4		67.0	40
	NH-4/3A3600	1.2	3600	360	15	1800	2.4		67.0	47
	NH-18670	1.2	4200	420	15	1680	3.0	18.5	67.0	62
	NH-18650	1.2	4000	400	15	1600	3.0		65.0	60
	NH-1/2SC1500	1.2	1500	150	15	1500	1.2	23.0	26.5	36
	NH-4/5SC1800	1.2	1800	180	15	1800	1.2		34.0	42
	NH-4/5SC2200	1.2	2200	220	15	1100	2.4		34.0	46
	NH-SC2300	1.2	2300	230	15	1150	2.4		43.0	56
	NH-SC2500	1.2	2500	250	15	1250	2.4		43.0	57
	NH-SC2800	1.2	2800	280	15	1400	2.4		43.0	59
	NH-SC3000	1.2	3000	300	15	1500	2.4		43.0	60
	NH-SC3300	1.2	3300	330	15	1650	2.4		43.0	62
	NH-1/3C1100	1.2	1100	110	15	1100	1.2	26.0	19.0	29
	NH-2/3C2100	1.2	2100	210	15	1050	2.4		30.0	54
	NH-C1800	1.2	1800	180	15	1800	1.2		50.0	42
	NH-C3500	1.2	3500	350	15	1750	2.4		50.0	72
	NH-C3800	1.2	3800	380	15	1900	2.4		50.0	73
	NH-C4000	1.2	4000	400	15	1600	3.0		50.0	75
	NH-C4500	1.2	4500	450	15	1800	3.0		50.0	77
	NH-1/2D2500	1.2	2500	250	15	1250	2.4	33.0	31.5	80
	NH-D4000	1.2	4000	400	15	1600	3.0		61.5	140
	NH-D6000	1.2	6000	600	15	1800	4.0		61.5	145
	NH-D7000	1.2	7000	700	15	2100	4.0		61.5	155
	NH-D8000	1.2	8000	800	15	1600	6.0		61.5	160
	NH-D9000	1.2	9000	900	15	1800	6.0		61.5	165
	NH-D10000	1.2	10000	1000	15	2000	6.0		61.5	170
	NH-F12000	1.2	12000	1200	15	2400	6.0	33.0	90.0	215
	NH-F13000	1.2	13000	1300	15	2600	6.0		90.0	225
	NH-9V140	8.4	140	14	15	70	2.4	17.5×26.5×48.5		40
	NH-9V160	8.4	160	16	15	80	2.4			41
	NH-9V180	8.4	180	18	15	90	2.4			42
	NH-9V220	8.4	220	22	15	110	2.4			44

Typical Ambient Temperature: Standard Charge: 0℃ to 45℃,Fast Charger : 10℃ to 45℃, Discharge: -20℃ to 45℃,Storage: -20℃ to 35℃.






MOTOMA Nickel Cadmium Rechargeable Batteries

Motoma Ni-Cd rechargeable battery generally provides a good solution for applications requiring a high rate of discharge or very frequent and numerous charge/discharge cycles such as Laptop computers, Communication call phone, Transceiver Cordless phone, Toys, Portable tool, Camcorder, Emergency light, Backup power etc. Foamed metal material negative and sintered production cell are available upon request.

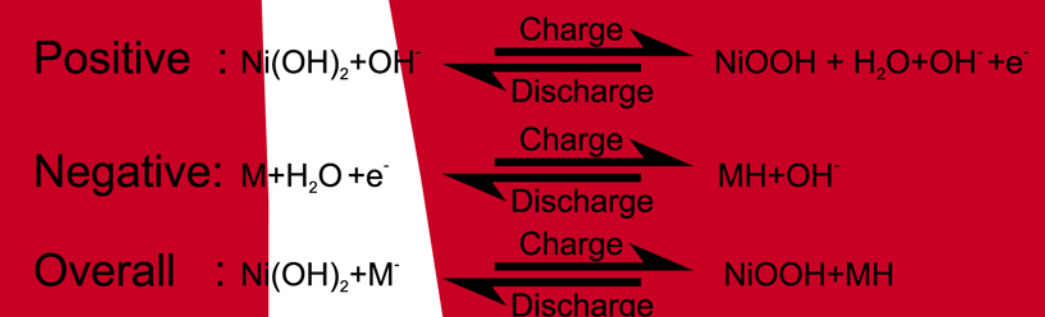
Ni-Cd Standard Series of Batteries (General use)

Cells	Model	Nominal Voltage (V)	Nominal Capacity (mAh)	Standard Charge		Fast Charge		Dimension(mm)		Weight(g) (Approx)
				Current (mA)	Time (h)	Current (mA)	Time (h)	Diameter (Max)	Height (Max)	
	NC-AAAA130	1.2	130	13	15	130	1.2	8.5	42.5	6
	NC-AAAA150	1.2	150	15	15	150	1.2		42.5	7
	NC-N180	1.2	180	18	15	180	1.2	12.0	29.5	8
	NC-N220	1.2	220	22	15	220	1.2		29.5	9
	NC-1/3AAA60	1.2	60	6	15	60	1.2	10.5	15.5	3
	NC-1/2AAA100	1.2	100	10	15	100	1.2		25.5	4
	NC-1/2AAA130	1.2	130	13	15	130	1.2		25.5	5
	NC-2/3AAA200	1.2	200	20	15	200	1.2		28.5	6
	NC-2/3AAA250	1.2	250	25	15	250	1.2		28.5	7
	NC-AAA250	1.2	250	25	15	250	1.2		44.5	10
	NC-AAA300	1.2	300	30	15	300	1.2		44.5	11
	NC-AAA350	1.2	350	35	15	350	1.2		44.5	12
	NC-AAA400	1.2	400	40	15	400	1.2		44.5	13
	NC-1/3AA150	1.2	150	15	15	150	1.2	14.5	17.0	7
	NC-1/3AA180	1.2	180	18	15	180	1.2		17.0	8
	NC-2/3AA300	1.2	300	30	15	300	1.2		28.5	12
	NC-2/3AA400	1.2	400	40	15	400	1.2		28.5	13
	NC-2/3AA500	1.2	500	50	15	500	1.2		28.5	14
	NC-4/5AA600	1.2	600	60	15	600	1.2		43.0	18
	NC-4/5AA700	1.2	700	70	15	700	1.2		43.0	19
	NC-4/5AA800	1.2	800	80	15	800	1.2		43.0	20
	NC-AA600	1.2	600	60	15	600	1.2		50.5	20
	NC-AA700	1.2	700	70	15	700	1.2		50.5	21
	NC-AA800	1.2	800	80	15	800	1.2		50.5	22
	NC-AA900	1.2	900	90	15	900	1.2		50.5	23
	NC-AA1000	1.2	1000	100	15	1000	1.2		50.5	24
	NC-AA1100	1.2	1100	110	15	1100	1.2		50.5	25
	NC-5/4AA1000	1.2	1000	100	15	1000	1.2		65.0	28
	NC-5/4AA1100	1.2	1100	110	15	1100	1.2		65.0	29
	NC-5/4AA1200	1.2	1200	120	15	1200	1.2		65.0	30
	NC-4/3AA1100	1.2	1100	110	15	1100	1.2		67.0	30
	NC-4/3AA1200	1.2	1200	120	15	1200	1.2		67.0	31
	NC-4/3AA1300	1.2	1300	130	15	1300	1.2		67.0	32



Ni-Cd Standard Series of Batteries (General use)

Cells	Model	Nominal Voltage (V)	Nominal Capacity (mAh)	Standard Charge		Fast Charge		Dimension(mm)		Weight(g) (Approx)
				Current (mA)	Time (h)	Current (mA)	Time (h)	Diameter (Max)	Height (Max)	
	NC-1/3A250	1.2	250	25	15	250	1.2	17.0	17.0	15
	NC-2/3A600	1.2	600	60	15	600	1.2		28.5	20
	NC-4/5A1100	1.2	1100	110	15	1100	1.2		43.0	27
	NC-4/5A1200	1.2	1200	120	15	1200	1.2		43.0	28
	NC-A1200	1.2	1200	120	15	1200	1.2		50.0	33
	NC-A1400	1.2	1400	140	15	1400	1.2		50.0	34
	NC-2/3SC700	1.2	700	70	15	700	1.2	23.0	26.5	25
	NC-2/3SC800	1.2	800	80	15	800	1.2		26.5	26
	NC-4/5SC1100	1.2	1100	110	15	1100	1.2		34.0	40
	NC-4/5SC1200	1.2	1200	120	15	1200	1.2		34.0	41
	NC-SC1200	1.2	1200	120	15	1200	1.2		43.0	42
	NC-SC1400	1.2	1400	140	15	1400	1.2		43.0	43
	NC-SC1600	1.2	1600	160	15	1600	1.2		43.0	44
	NC-SC1800	1.2	1800	180	15	1800	1.2		43.0	47
	NC-SC2000	1.2	2000	200	15	1000	2.4		43.0	49
	NC-SC2100	1.2	2100	210	15	1050	2.4		43.0	50
	NC-SC2200	1.2	2200	220	15	1100	2.4	26.0	43.0	51
	NC-5/4SC2200	1.2	2200	220	15	1100	2.4		50.0	52
	NC-C1500	1.2	1500	150	15	1800	1.2		50.0	56
	NC-C2000	1.2	2000	200	15	2000	1.2		50.0	65
	NC-C2500	1.2	2500	250	15	1250	2.4		50.0	70
	NC-C2800	1.2	2800	280	15	1400	2.4		50.0	73
	NC-C3000	1.2	3000	300	15	1500	2.4	33.0	50.0	75
	NC-1/2D2200	1.2	2200	220	15	1100	2.4		31.5	75
	NC-D4500	1.2	4500	450	15	1800	3.0		61.5	140
	NC-D5000	1.2	5000	500	15	2000	3.0		61.5	145
	NC-D5500	1.2	5500	550	15	2200	3.0		61.5	150
	NC-F7000	1.2	7000	700	15	2100	4.0	33.0	90.0	195
	NC-F9000	1.2	9000	900	15	2700	4.0		90.0	210
	NC-9V100	8.4	100	10	15	50	2.4	17.5×26.5×48.5		38
	NC-9V120	8.4	120	12	15	60	2.4			40
	NC-9V130	8.4	130	13	15	65	2.4			41

Electrical Performance of Ni-MH Battery




MOTOMA Fast charge and high rate discharge batteries


Cells	Model	Nominal Voltage (V)	Nominal Capacity (mAh)	Standard Charge		Fast Charge		Dimension(mm)		Weight(g) (Approx)
				Current (mA)	Time (h)	Current (mA)	Time (h)	Diameter (Max)	Height (Max)	
	NC-AAA300P	1.2	300	30	15	300	1.2	10.5	43.0	11
	NC-AA600P	1.2	600	60	15	600	1.2	14.5	49.0	20
	NC-AA700P	1.2	700	70	15	700	1.2	14.5	49.0	21
	NC-AA800P	1.2	800	80	15	800	1.2	14.5	49.0	22
	NC-2/3SC700P	1.2	700	70	15	700	1.2	23.0	26.5	25
	NC-4/5SC1200P	1.2	1200	120	15	1200	1.2	23.0	34.0	41
	NC-SC1200P	1.2	1200	120	15	1200	1.2	23.0	43.0	42
	NC-SC1300P	1.2	1300	130	15	1300	1.2	23.0	43.0	43
	NC-SC1500P	1.2	1500	150	15	1500	1.2	23.0	43.0	45
	NC-SC1600P	1.2	1600	160	15	1600	1.2	23.0	43.0	47
	NC-SC2000P	1.2	2000	200	15	1000	2.4	23.0	43.0	50
	NC-SC2100P	1.2	2100	210	15	1050	2.4	23.0	43.0	51
	NC-SC2200P	1.2	2200	220	15	1100	2.4	23.0	43.0	52
	NC-4/3SC2200P	1.2	2200	220	15	1100	2.4	23.0	50.0	60
	NC-C2300P	1.2	2300	230	15	1150	2.4	26.0	50.0	70
	NC-D4000P	1.2	4000	400	15	1600	3.0	33.0	60.5	139
	NC-D4500P	1.2	4500	450	15	1800	3.0	33.0	60.5	142
	NC-D5000P	1.2	5000	500	15	2000	3.0	33.0	60.5	145
	NC-F6500P	1.2	6500	650	15	1950	4.0	33.0	90.5	185
	NH-AA1100P	1.2	1100	110	15	1100	1.2	14.5	49.0	25
	NH-4/5SC1800P	1.2	1800	180	15	1800	1.2	23.0	34.0	42
	NH-4/5SC2000P	1.2	2000	200	15	1000	2.4	23.0	34.0	44
	NH-4/5SC2200P	1.2	2200	220	15	1100	2.4	23.0	34.0	46
	NH-SC1600P	1.2	1600	160	15	1600	1.2	23.0	43.0	48
	NH-SC1800P	1.2	1800	180	15	1800	1.2	23.0	43.0	50
	NH-SC2200P	1.2	2200	220	15	1100	2.4	23.0	43.0	56
	NH-SC2500P	1.2	2500	250	15	1250	2.4	23.0	43.0	57
	NH-SC2600P	1.2	2600	260	15	1300	2.4	23.0	43.0	58
	NH-SC2800P	1.2	2800	280	15	1400	2.4	23.0	43.0	59
	NH-SC3000P	1.2	3000	300	15	1500	2.4	23.0	43.0	60
	NH-SC3300P	1.2	3300	330	15	1650	2.4	23.0	43.0	62
	NH-C3000P	1.2	3000	300	15	1500	2.4	26.0	50.0	72
	NH-D6500P	1.2	6500	650	15	1950	4.0	33.0	60.5	150
	NH-F9000P	1.2	9000	900	15	2700	4.0	33.0	90.5	200

Typical Ambient Temperature: Standard Charge: 0°C to 45°C, Fast Charge: 10°C to 45°C, Discharge: -20°C to 45°C, Storage: -20°C to 35°C.

MOTOMA Ni-MH low self-discharge batteries



Cells	Model	Nominal Voltage (V)	Nominal Capacity (mAh)	Standard Charge		Fast Charge		Dimension(mm)		Weight(g) (Approx)
				Current (mA)	Time (h)	Current (mA)	Time (h)	Diameter (Max)	Height (Max)	
	NH-AAA750R	1.2	750	75	15	375	2.4	10.5	44.5	12
	NH-AAA800R	1.2	800	80	15	400	2.4	10.5	44.5	13
	NH-AA2000R	1.2	2000	200	15	1000	2.4	14.5	50.5	27
	NH-AA2100R	1.2	2100	210	15	1050	2.4	14.5	50.5	28

MOTOMA Ni-Cd high Temperature Batteries


Cells	Model	Nominal Voltage (V)	Nominal Capacity (mAh)	Standard Charge		Fast Charge		Dimension(mm)		Weight(g) (Approx)
				Current (mA)	Time (h)	Current (mA)	Time (h)	Diameter (Max)	Height (Max)	
	NH-4/5A2000H	1.2	2000	200	15	1000	2.4	17.0	43.0	32
	NH-A2100H	1.2	2100	210	15	1050	2.4	17.0	50.0	34
	NH-A2400H	1.2	2400	240	15	1200	2.4	17.0	50.0	41
	NH-5/4A3200H	1.2	3200	320	15	1600	2.4	17.0	65.0	48
	NC-SC1200H	1.2	1200	120	15	1200	1.2	23.0	43.0	43
	NC-SC1300H	1.2	1300	130	15	1300	1.2	23.0	43.0	44
	NC-SC1500H	1.2	1500	150	15	1500	1.2	23.0	43.0	46
	NC-C2300H	1.2	2300	230	15	1150	2.4	26.0	50.0	72
	NC-D4000H	1.2	4000	400	15	1600	3.0	33.0	60.5	140
	NC-D5000H	1.2	5000	500	15	2000	3.0	33.0	60.5	144
	NC-F6500H	1.2	6500	650	15	1950	4.0	33.0	90.5	185

Typical Ambient Temperature: Charge 0°C to 70°C, Discharge: -20°C to 70°C, Storage: -20°C to 35°C


MOTOMA Ni-MH / Ni-Cd button batteries

Cells	Model	Nominal Voltage (V)	Nominal Capacity (mAh)	Standard Charge		Trickle Charge Current(mA)	Dimension(mm)		Weight(g) (Approx)
				Current (mA)	Time (h)		Diameter (Max)	Height (Max)	
	NC-280K	1.2	280	28	15	8.4 ~14.0	25.1	8.6	11.5
	NC-170K	1.2	170	17	15	5.1 ~8.5	25.1	6.5	8.4
	NC-120K	1.2	120	12	15	3.6 ~6.0	23.5×15.0×5.5		5
	NC-100K	1.2	100	10	15	3.0 ~5.0	15.1	7.6	4
	NC-60K	1.2	60	6	15	1.8 ~3.0	15.1	6.2	3.1
	NC-30K	1.2	30	3	15	0.9 ~1.5	11.6	5.5	1.6
	NH-280H	1.2	330	33	15	9.9 ~16.5	25.1	8.6	12.5
	NH-170H	1.2	230	23	15	6.9 ~11.5	25.1	6.5	8.6
	NH-120H	1.2	160	16	15	4.8 ~8.0	23.5×15.0×5.5		5.3
	NH-100H	1.2	110	11	15	3.3 ~5.5	15.1	7.6	3.6
	NH-60H	1.2	80	8	15	2.4 ~4.0	15.1	6.2	3.2
	NH-30H	1.2	40	4	15	1.2 ~2.0	11.6	5.5	1.7
	NH-12H	1.2	15	1.5	15	0.45 ~0.75	11.6	3.3	1.2

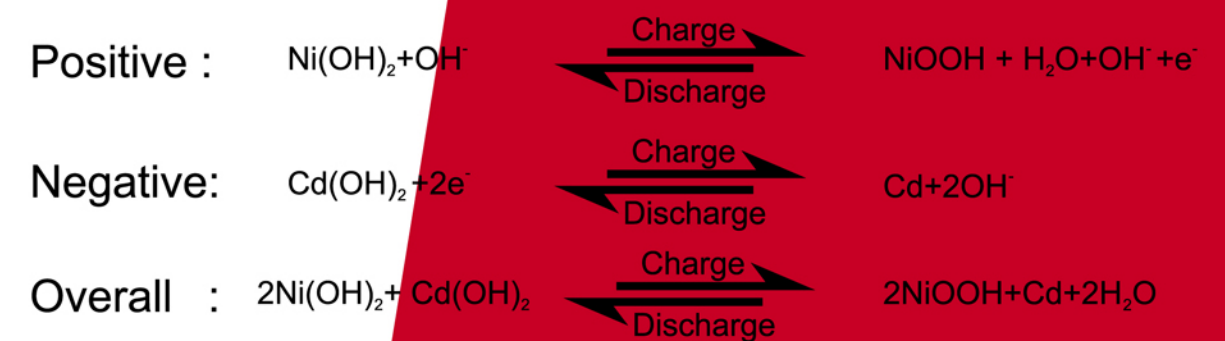
MOTOMA Ni-MH prismatic batteries

Cells	Model	Nominal Voltage (V)	Nominal Capacity (mAh)	Standard Charge		Fast Charge		Dimension(mm) (Max)	Weight(g) (Approx)
				Current (mA)	Time (h)	Current (mA)	Time (h)		
	NH-3/5F6-400	1.2	400	40	15	400	1.2	17.0×6.0×34.0	11
	NH-3/5F6-500	1.2	500	50	15	500	1.2	17.0×6.0×34.0	12.5
	NH-2/3F6-450	1.2	450	45	15	450	1.2	17.0×6.0×30.0	11.5
	NH-4/5F6-500	1.2	500	50	15	500	1.2	17.0×6.0×35.8	12.5
	NH-4/5F6-600	1.2	600	60	15	600	1.2	17.0×6.0×35.8	13
	NH-F6-750	1.2	750	75	15	750	1.2	17.0×6.0×47.8	18
	NH-7/5F6-1300	1.2	1300	130	15	1300	1.2	17.0×6.0×67.0	26
	NH-4/5F8-800	1.2	800	80	15	800	1.2	17.0×7.8×36.0	17
	NH-F8-1100	1.2	1100	110	15	1100	1.2	17.0×7.8×47.8	24

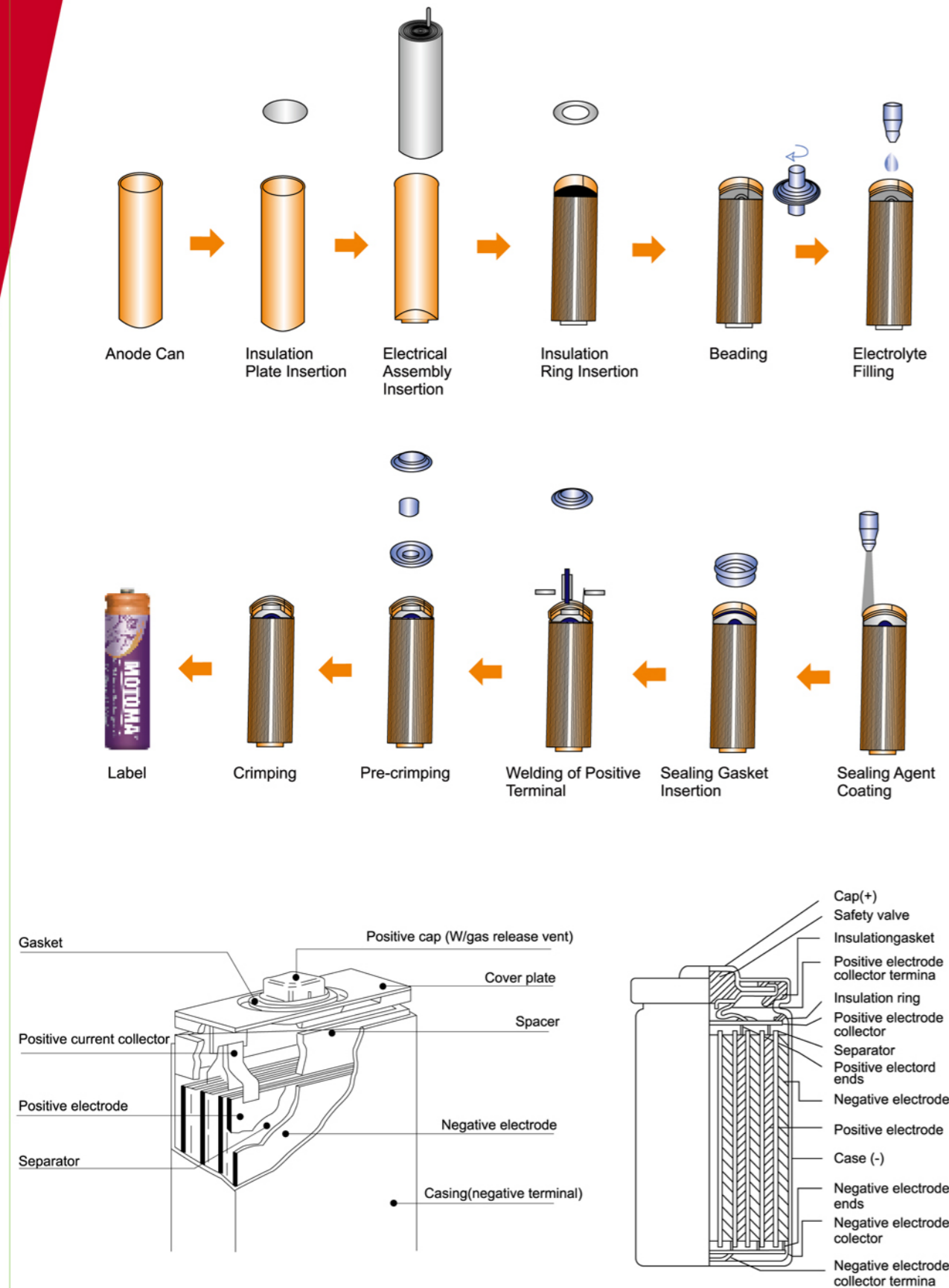
MOTOMA Ni-MH high capacity batteries

Cells	Model	Nominal Voltage (V)	Nominal Capacity (mAh)	Standard Charge		Fast Charge		Dimension(mm)		Weight(g) (Approx)
				Current (mA)	Time (h)	Current (mA)	Time (h)	Diameter (Max)	Height (Max)	
	NH-AAA800C	1.2	800	80	15	400	2.4	10.5	44.5	12.5
	NH-AAA900C	1.2	900	90	15	450	2.4			13
	NH-AAA1000C	1.2	1000	100	15	500	2.4			13.5
	NH-AA2200C	1.2	2200	220	15	1100	2.4	14.5	50.5	27.5
	NH-AA2300C	1.2	2300	230	15	1150	2.4			28
	NH-AA2400C	1.2	2400	240	15	1200	2.4			28.5
	NH-AA2500C	1.2	2500	250	15	1250	2.4			29
	NH-C4500C	1.2	4500	450	15	1800	3.0	26.0	50.5	88
	NH-C4800C	1.2	4800	480	15	1920	3.0			90
	NH-D7000C	1.2	7000	700	15	2100	4.0	33.0	61.5	150
	NH-D9000C	1.2	9000	900	15	2700	4.0			170

Electrical Performance of Ni-Cd Battery

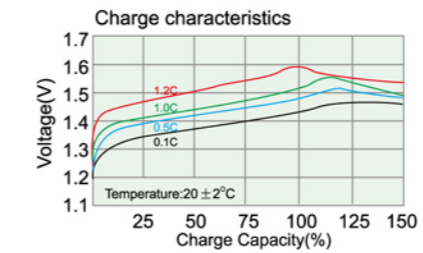


Processing Flow Diagram of MOTOMA SIZE AA Ni-Cd Rechargeable Battery



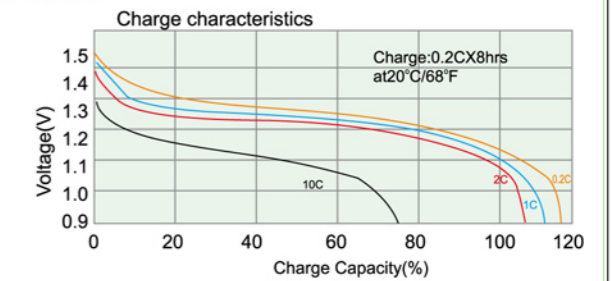
Charge characteristics

During charging, the cell voltage of the batteries increases as charging proceeds. It then decreases slightly in the final stage due to heat generation within the cell, eventually reaching an equilibrium. The cell voltage also varies widely according to the ambient temperature.



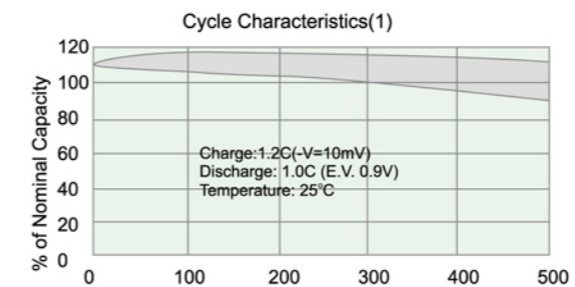
Discharge characteristics

the operating voltage of the batteries varies slightly depending on the discharge current, it is maintained at approximately 1.2V for 80% of the discharge period.



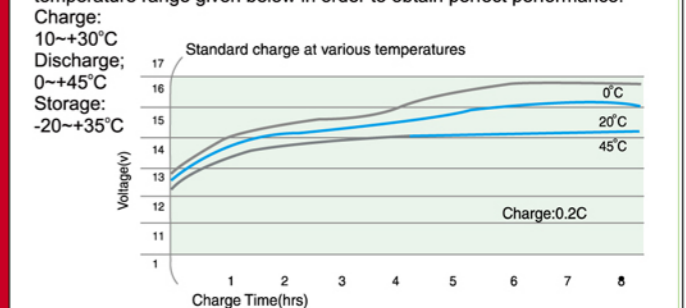
Cycle characteristics(1)

It is difficult to correctly measure the service life of a battery since this depends on the conditions of use. However, under normal usage conditions, standard batteries can withstand over 500 charge/discharge cycles.



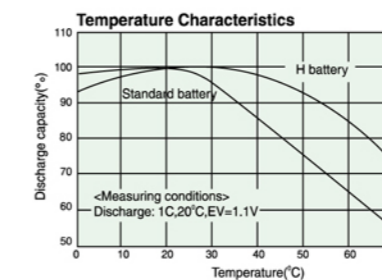
Temperature characteristics

The batteries can be used over a wide temperature range. As cell characteristics vary slightly depending on the temperature, use within the temperature range given below in order to obtain perfect performance.



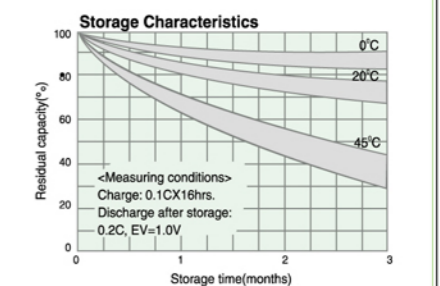
Storage characteristics

Self-discharge accelerates as the temperature increases. However, the batteries have minimal deterioration in battery performance even after longterm storage. Moreover, the cell capacity decreased through discharging during storage can easily be restored to its original level by recharging.



High-temperature batteries for trickle charge use (H series)

With improved trickle-charge characteristics at high temperatures, high-temperature the batteries feature superior charge efficiency and discharge capacity, in addition to an impressively increased service life.



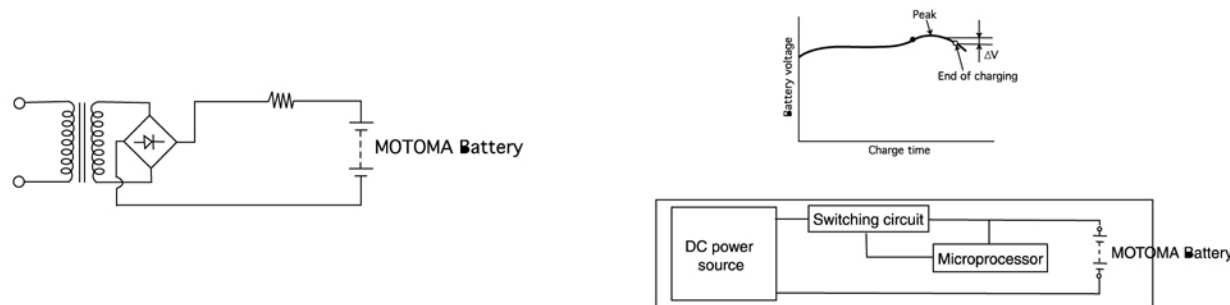
Specifications are subject to change without prior notice

Standard Charging

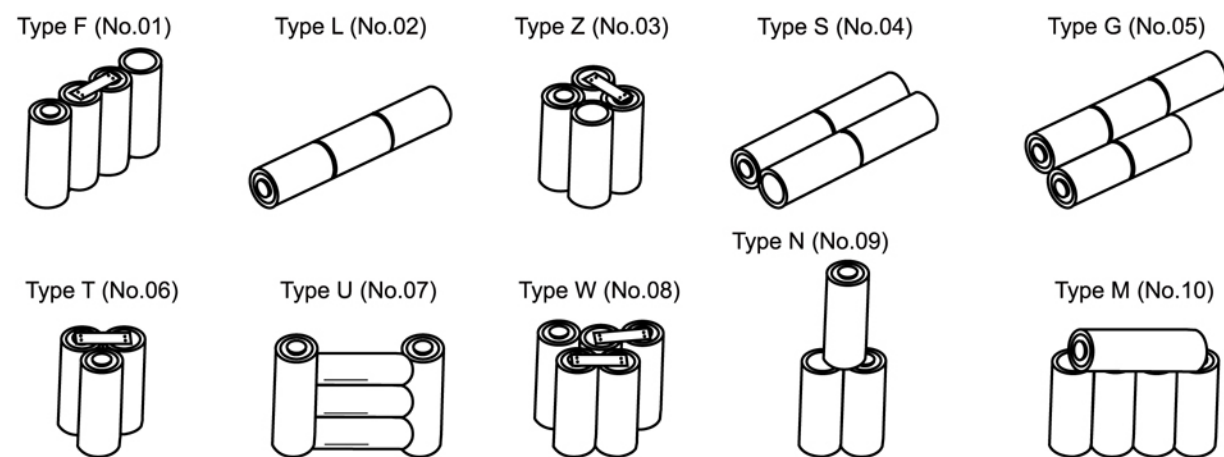
Quasi-constant current charging. With this method, nearly constant is produced by inserting resistance between the DC power supply and the cell in series, which in turn increases the impedance of the charging circuit. The value of the resistance should be adjusted so that the charge current at the end of charging does not exceed the specified current value. Quasi-constant current is widely used in charging the batteries because the circuit configuration is simple and therefore relatively inexpensive. In devices using batteries, the DC component of AC/DC current is sufficient as a charging circuit, eliminating the need for a special charger.

-ΔV Sensor fast-charging circuit

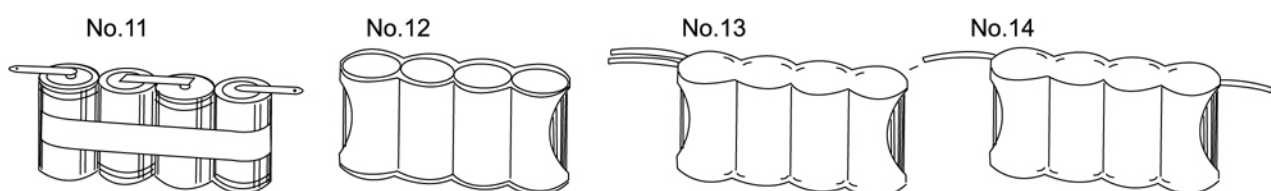
When the batteries are being charged, the charge voltage increases up to the peak level at the end of charging, then starts to decrease. At the point where the voltage drops by ΔV charging is terminated automatically, with this system approximately 100% charge capacity (normal) is secured in a wide temperature range ($0^{\circ}\text{C}\sim 45^{\circ}\text{C}$). This allows safe and accurate charging.



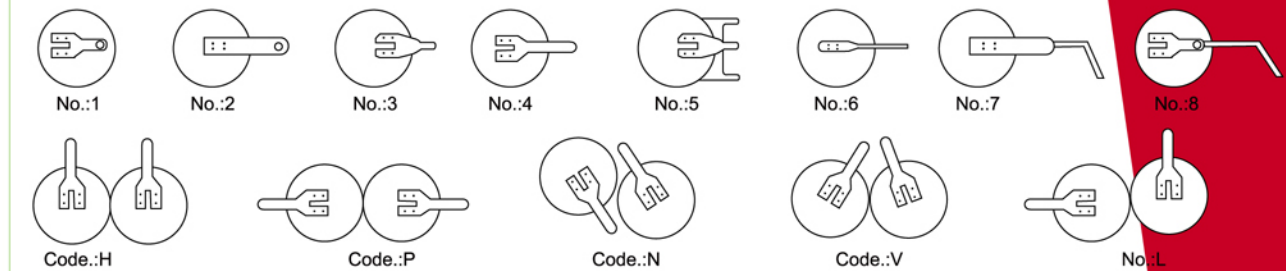
Configurations of battery packs



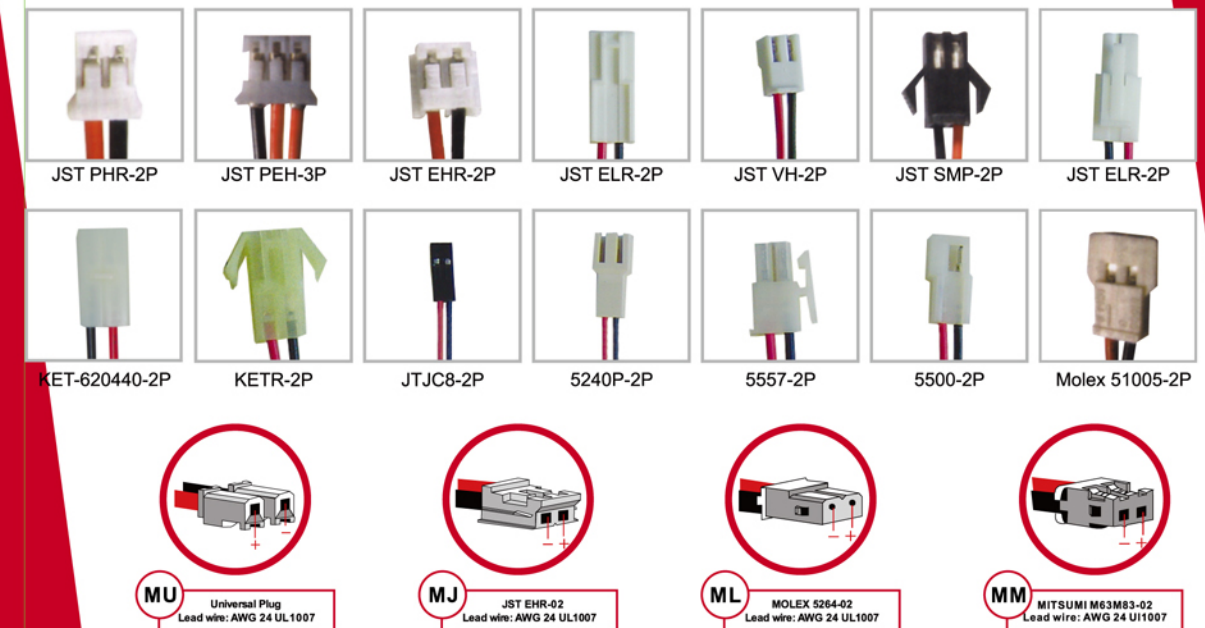
Standard terminals/leaders



Terminals



Standard connectors



Terminal Material: Nickel

No.	Dimensions(mm)			Applicable battery size	Configuration
	δ	W	L		
1	0.1~0.12	3~4	15	AA, AAA	
2	0.12~0.15	4~5	15	A size	
3	0.12~0.15	4~5	20	SC size	
4	0.12~0.2	4~6	25	C size	
5	0.12~0.2	5~8	30	D,F	

Applicable Battery size	Lead Wires			Lead Wires	Configuration
	Size	Length(L)	Specification		
SIZE AAA	UL1007 AWG26	50-200mm	300V 105°C		
SIZE AA	UL1007 AWG24	50-200mm	300V 105°C		
SIZE A	UL1007 AWG22	50-200mm	300V 105°C		
SIZE SC	UL1007 AWG20	100-300mm	300V 200°C		
SIZE C	UL1007 AWG18	100-300mm	600V 300°C		
SIZE D,F	UL1007 AWG16	100-300mm	600V 300°C		

<div>Power into the future</div>		<div>MOTOMA®</div>	
<div><div>Heat-shrink PVC tube</div><div>Heat-shrink tubes made of polyvinylchloride are used on many packs as the external cover. Tube thickness ranges from 0.1 mm to 0.2 mm depending on battery type and configuration.</div><div>Protective components</div><div>Thermal protectors to prevent overcharge and over-heat, PTC elements, temperature fuses, current fuses, and other protective components, either singly or combination, are connected via a direct-line circuit to the batteries. Upon request, Motoma battery can provide the necessary components for protection both the battery pack and the device in which it is used.</div><div>Terminal Plates</div><div>Because the lead wires are soldered to the terminal plates, the terminal plates must be made of a material that has good solderability, that can be securely spot-welded to the cells, and that is highly electron-conductive and alkaline-resistant. The most common material used is high-quality nickel plate.</div><div>Handling Book</div><div><div>Precautions for handling Motoma Ni-Cd & Ni-Mh Batteries.</div><div>Please carefully read the "Handling Book" entirety and its contents fully understood before handling or using Motoma rechargeable Ni-cd & Ni-Mh Batteries for the first time. Save this manual for future reference.</div><div>Please carefully evaluate the information in this section when using mtoma batteries (Single cell or packed cells) or when using or manufacturing equipment incorporat- ing mtoma batteries. Customers incorporating Motoma battery into their equipment must assure that their completed product has been properly designed, manufac- tured and tested. End users of equipment incorporating Motoma batteries should also be provided with sufficient warnings and instructions on their safe operation. As appropriate, some or all of the following warnings and information should be incorporated by you into the instruction manual accompanying your equipment. If there are any questions, please contact your local motoma power agents/ distributors.</div><div>Due to the potential energy stored in the batteries, improper handling or use of the batteries by not observing the precautions listed in the document may result in bodily injury caused by electrolyte leakage, heat generation, bursting, fire or explosion.</div><div><div>I. DANGER:</div><div>Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.</div><div>II. WARNING:</div><div>Indicates a potentially hazardous situation which, if not avoided, could result in death or injury.</div><div>III. CAUTION:</div><div>Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or damage to equipment.</div><div>IV. RECOMMENDATION</div><div>Recommended course of action to prevent a situation that could result in damage of quality, performance or reliability of the batteries, should they be mishandled.</div><div>1 Even in cases where the batteries are handled improperly, a situation that will result in the immediate death of the users is highly unlikely. However, we have assumed the higher DANGER level situation instead of the WARNING and CAUTION levels because the energy stored in batteries still implies a possibility of extreme hazard which might lead to serious injury.</div><div>2 Serious injury here would include injury, loss of eyesight, burns, fire, electric shocks, bone fractures and poisoning that will cause permanent damage or require hospitalization or intensive treatment over an extended period. Minor injury includes slight burns and electric shock. Property damage means damage to buildings and household effects including livestock and pets.</div><div>3 Recommendation refers to the suggested means by which to protect batteries from impaired quality, performance and reliability.</div></div><div>I.DANGER!</div><div><div>1. Failure to carefully read the following procedures and precautions can result in leakage of battery fluid (electrolyte), heat generation, bursting, fire and serious personal injury.</div><div>2. Never dispose of Motoma battery in a fire or heat them. Doing so may melt the insulation, damage the gas release vents or protective device, ignite hydrogen gas. cause leakage of battery fluid (electrolyte).heat generation, bursting and fire.</div><div>3. Do not connect the positive(+) and negative(-) terminals of Motoma batteries together with electrically conductive materials, including lead wires. Do not transport or store Motoma batteries with their uncovered terminals or connected with a metal necklace or other conductive material. Doing so may short circuit a battery, which would result in excessive current flow and possibly cause leakage of battery fluid, heat generation and fire. When carrying or storing batteries, use a special case.</div><div>4. Only charge Motoma batteries using the specific chargers that satisfy Motoma specifications. Only charge batteries under the conditions specified by Motoma battery. Failure to follow proper charging procedures may cause excessive current flow, loss of control during charging, leakage of battery fluid, heat generation, bursting and fire.</div><div>5. Never disassemble Motoma batteries. Doing so may cause an internal or external short circuit or result in exposed material of battery reacting chemically with the air. It may also cause heat generation, bursting and fire. Also, this is dangerous as it may cause splashing of alkaline fluid.</div><div>6. Never modify or reconstruct Motoma batteries. Protective devices to prevent danger are built into batteries (single cell or packed cells). If these are damaged, excessive current flow may cause loss of control during charging or discharging of the battery, leakage of battery fluid, heat generation, bursting and fire.</div><div>7. Never solder lead wires directly on to Motoma batteries.</div><div>The heat of the soldering operation may melt the insulation, damage the gas release vents or protective devices, cause leakage of battery fluid .heat generation, bursting and fire.</div><div>The positive(+) and negative(-) terminals of Motoma batteries are predetermined.</div><div>8. Do not force the terminals can not be easily connected to the charger or equipment, check if the positive(+) and negative(-) are correctly positioned. If the terminals are reversed, during charging the battery may be discharging rather than charge. Furthermore, reversed connections may cause abnormal chemical reaction in the battery, the flow of abnormal currents, leakage of battery fluid, heat generation, bursting and fire.</div></div></div></div>		<div><div>9. The gas release vent which release internal gas is located in the +(positive)terminal of the Motoma battery .For this reason, never deform this section or cover or obstruct its gas release structure. If this section is deformed or covered or obstructed, the gas release vent will not function properly, possibly causing leakage of battery fluid, heat generation, bursting and fire.</div><div>10. Do not directly connect Motoma batteries to a direct power source or the cigarette lighter socket in a car. High voltage may cause excessive current flow, leakage of battery fluid, heat generation, bursting and fire.</div><div>11. Do not use Motoma batteries in any equipment other than those specified by Motoma. Depending on equipment being used, doing so may cause abnormal current flow, leakage of battery fluid, heat generation, bursting and fire.</div><div>12. Motoma batteries contain the strong colorless alkaline solution (electrolyte).The alkaline solution is extremely corrosive and will cause skin damage. If any fluid from Motoma battery comes in contact with a user's eye and wash them thoroughly with clean water enough from the tap and another source and consult a doctor urgently. The strong alkaline solution can damage eyes and lead to permanent loss of eyesight.</div><div>13. When Motoma batteries are to be incorporated in equipment or housed within a case, avoid air-tight structures as this may lead to the equipment or case being damaged or maybe harmful to users.</div><div>II.WARNING!</div><div><div>1. Do not apply water, seawater or other oxidizing reagents to Motoma batteries. If a battery becomes rusted, the gas release vent may no longer operate, and can result in bursting.</div><div>2. Do not connect more than 20 Motoma Ni-Cd or Ni-Mh batteries in series, as this may cause electrical shocks, leakage of battery fluid and heat generation.</div><div>3. Keep Motoma batteries or the equipment out of the reach of babies and small children, in order to avoid them to swallow batteries. In the event the batteries are swallowed, consult a doctor immediately.</div><div>4. Do not charge or use Motoma batteries with the(+)and (-) terminals reversed. Charging batteries with the terminals reversed may discharge rather than charge the batteries, or it may cause abnormal chemical reaction in the batteries. Using batteries with the terminals reversed may discharge with a abnormal current, leakage of battery fluid, heat generation, bursting and fire.</div><div>5. Do not over-charge Motoma batteries by exceeding the predetermined charging period specified by the battery charge's instructions or indicator. If Motoma batteries are not fully charged after the battery charge's predetermined charging period has elapsed, stop the charging process. Prolonged charging may cause leakage of battery fluid, heat generation, bursting. Be sure to handle recharged batteries carefully as they may be hot</div><div>6. Do not remove the outer tube from a battery or damage it. Doing so will expose the battery to the risk of a short circuit, and may cause leakage of battery fluid, heat generation, bursting and fire.</div><div>7. If Motoma battery leak fluid, change color, change shape, or change in any other way, do not use them, otherwise they may cause heat generation, bursting and fire.</div><div>8. Motoma batteries contain the strong colorless alkaline solution (electrolyte). If the skin or clothing comes in contact with fluid from Motoma batteries, thoroughly wash the area immediately with clean water from the tap or another source. Battery fluid can irritate the skin.</div><div>III.CAUTIONS</div><div><div>1.Charge should be carried out at an ambient temperature of 0℃ to 40℃ (degrees Celsius). The ambient temperature will effect to charge efficiency. The most efficient temperature range is +10℃ to +30℃</div><div>2.Discharge Temperature. The recommended temperature range is 0℃ to 40℃ . When used or store at temperatures outside this range (0℃ to 40℃), such as in strong direct sunlight. in cars during hot weather, or directly in front of a heater. the batteries may cause leakage of battery fluid of heat generation. It could also impair performance or shorten service life of Motoma batteries.</div><div>3.Charge at the specified current for the specified length of time. Repeat overcharge may cause a deterioration of battery performance. Means to continue to charge the battery after it has been fully charged.</div><div>4.Storage at a temperature of -20℃ to +45℃ in a location that is low in humidity and free of corrosive gases. Motoma recommends a temperature range from -20℃ to 30℃ for longer service life).</div><div>Be sure to turn off the equipment after use of Motoma batteries, as this may result in leakage of battery fluid.</div><div>When storing for more than 6 months, recharge at least once a year (once every 6 months if possible)to prevent self-discharge from causing a drop in battery performance or electrolyte leakage. If corrosion, heat generation or other abnormalities with new Motoma batteries are detected. Immediately stop using them and return them to the store that they were purchased from.</div><div>After they have been removed from equipment, store Motoma batteries in a dry place and within the recommended storage temperature range. This will help preserve the batteries' performance and durability and to minimize the possibility of leakage of battery fluid or corrosion.</div><div>5.Never dispose of batteries in afire or expose to high temperatures.</div><div>6.Never short-circuit the battery. Doing go could cause damage to the device in which the battery is used and the heat generated by the battery could cause burn injury. Do not transport or store batteries with their uncovered terminals or connected with a metal necklace or other conductive material.</div><div>7.Never disassemble, modify or reconstruct batteries. Do not strike or drop Motoma batteries. Sharp impacts or concussions to Motoma batteries may cause leakage of battery fluid. heat generation, bursting and fire.</div><div>8.Never solder lead wires directly on to batteries.</div><div>9.The positive (+) and negative (-) polarities of batteries are predetermined. Do not force the terminal connection to a charger or equipment. If the terminals cannot be easily connected to the charger or equipment, check if the (+) and (-) terminals are correctly positioned.</div><div>If the Motoma battery terminals become dirty, clean them with a soft dry cloth prior to use. Dirt on the terminals can result in poor contact with the equipment, loss of power, or inability to charge.</div><div>10.Do not directly connect batteries to a direct power source or the cigarette lighter outlet in a car.</div><div>11.The gas release vent is located at the positive (+) section of batteries. Never deform this section or cover or obstruct the gas release vent is located at this section.</div><div>12.If any Liquid from a battery comes in contact with a user's eyes, they should immediately flush their eyes with clean water enough and consult a doctor.</div><div>13.When motoma batteries are to be incorporated in equipment or housed within a case, avoid sealed structures as this may lead to the equipment or case being damaged or maybe harmful to users.</div><div>14.Do not apply water, seawater or other oxidizing agents to batteries, as this can cause rust and heat generation. If a battery becomes rusted, the gas release vent may no longer operate, and can result in bursting.</div><div>15.Never use batteries if they are leaking, deformed, discolored, damaged or otherwise differ from their normal condition, External damage to the batteries can be a sign of a malfunction.</div><div>16.Do not damage or remove the external tube of motoma batteries, as this may cause leakage, heat generation or bursting.</div><div>17.Not only should Ni-Cd batteries never be used together with conventional dry-cell or with Ni-Mh batteries. But mixing together new and old batteries or different makes of batteries should also be avoid. Differences in characteristics could result in damage to the batteries or to the device in which they are used. This may also cause leakage of battery fluid and heat generation</div><div>18.Consult motoma power or your local agent if customer of designing of battery pack containing more than 20 cells.</div><div>19.When the usage time for a battery becomes extremely short after charging, its operating life has ended and it should be replaced.</div><div>20.Keep the equipment or batteries out of the reach of small children, in order to avoid them to swallow batteries. When charging or using a battery, do not let babies or small children remove the battery from the charge or the equipment being used. In the event the batteries are swallowed, consult a doctor immediately.</div><div>21.The performance and cycle life of batteries are affected by the manner in which the batteries are used. In the event the batteries are swallowed, consult a doctor immediately.</div><div>22.If Motoma batteries do not perform or function well with certain equipment, refer to the instruction manual or warnings of the subject equipment.</div><div>23.The performance and cycle life of batteries are affected by the manner in which the batteries are used.</div></div><div>All descriptions are subject to modification without notice.</div></div></div>	
<div>17</div>		<div>18</div>	