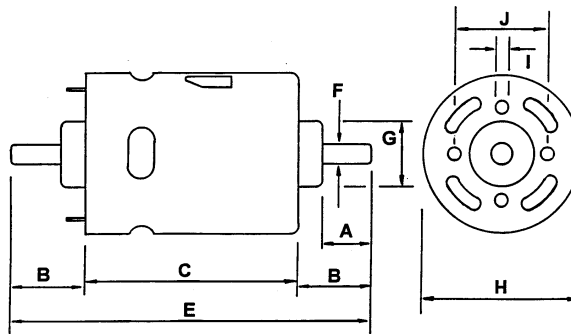


TORPEDO 800

Part No. 1114/1



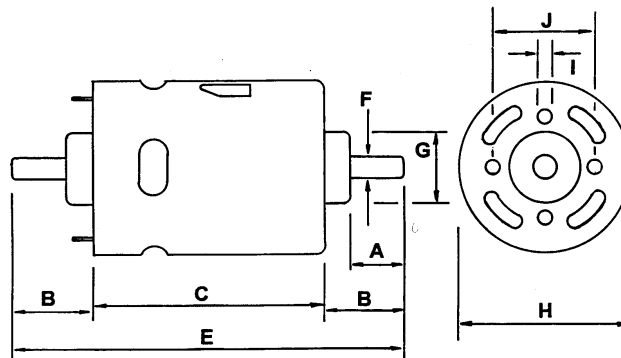
Weight 595g (approx)

DIMENSIONS	A	B	C	D	E	F	G	H	I	J	K
MILLIMETER	13.2	20.5	69.0		110.0	6.35	21.75	51.8	M5	32.0	
DECIMAL INCHES	0.520	0.810	2.720		4.330	0.250	0.860	2.040		1.260	

MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY						STALL TORQUE		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	EFF	STALL TORQUE		
			R.P.M.	A	R.P.M.	A	oz - in	mN-m	W	%	oz - in	mN-m	
RE - 800	12.0v	12.0v CONSTANT	5167	1.058	4289	5.28			82.08	36.88	58.2		482.8

TORPEDO 850

Part No. 1115/1



Weight 595g (approx)

DIMENSIONS	A	B	C	D	E	F	G	H	I	J	K
MILLIMETER	13.2	20.5	69.0		110.0	6.350	21.75	51.8	M5	32.0	
DECIMAL INCHES	0.520	0.810	2.720		4.330	0.250	0.860	2.040		1.260	

MODEL	VOLTAGE		NO LOAD		AT MAXIMUM EFFICIENCY						STALL TORQUE		
	OPERATING RANGE	NOMINAL	SPEED	CURRENT	SPEED	CURRENT	TORQUE		OUTPUT	EFF	STALL TORQUE		
			R.P.M.	A	R.P.M.	A	oz - in	mN-m	W	%	oz - in	mN-m	
RE - 850	12.0v	12.0v CONSTANT	9778	1.90	8311	10.82			92.13	80.16	61.74		614

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SPEED REGULATORS

PART NO. 919D2

- * *ALLOWS INFINITELY VARIABLE R.P.M. TO BE SET ON MFA/COMO DRILLS 919D SERIES GEARBOXES AND MOTORS.*
- * *OPERATES FROM INPUTS OF 6 - 15 VOLT*
- * *OUTPUT 0 - INPUT VOLTAGE*
- * *PULSE WIDTH MODULATION PROVIDES PROPORTIONAL OUTPUT CONTROL.*
- * *SMALL - COMPACT - ROBUST CONSTRUCTION FOR VERSATILITY AND RELIABLE SERVICE.*

SPECIFICATION:-

Min Input	6 volts	Input & output cables 21cm
Max Input	15volts	Insulated spade connectors fitted on input cables
Min Output	0 volts	Dims. 34 x 27 x 18 mm
Max Output	15 volts	Weight 30 gms approx.
Loading	3 amps continuous 5 amps peak only.	

Supply and output cables are trimmed to 21 cm to meet current EMC regulations.

Edge to edge frequency, min 1136 Hz, max 1250 Hz, average 1200 Hz. Mark to space varies motor speed.

ALSO AVAILABLE FOR COMO DRILLS 917D, 920D, 927D(12v), 918D, (918D - 12v), 940D, 941D & 950D SERIES GEARBOXES AND MOTORS.

PART NO. 917D9 (3 volt, 1.5 amp output)
 PART NO. 917D10 (1.5volt, 1.5 amp output)
 PART NO. 917D11 (4.5volt, 1.5 amp output)

Allows the above 1.5 - 4.5 volt gearboxes/motors to be powered from the more convenient range of 6 - 15 volt DC supplies (transformer/rectifier or battery) instead of a 1.5 - 4.5 volt battery.

Panel Mounted Variable Speed Regulator

Features

- * *Panel Mounted with external control knob.*
- * *Allows infinitely variable R.P.M. to be set on MFA/Como Drills. 919D, 927D, 918D (12v), 940D, 941D & 950D series gearboxes and motors.*
- * *Operates from inputs of 6-15 volt.*
- * *Output 0 - input voltage.*
- * *Pulse width modulated provides torque maintenance and proportional output control.*
- * *Small - compact - robust construction for versatility and reliable service.*

Specification:

Min Input	6 volts	Dims 62mm x 41mm x 25mm (approx)
Max Input	15 volts	Weight 32 gms approx
Min Output	0 volts	
Max Output	3 amps	
Loading	3 amps continuous 5 amps peak only	

Supply and output cables must be trimmed to 21cm to meet current EMC regulations.

Edge to edge frequency, min 1136 Hz, max 1250 Hz, average 1200 Hz. Mark to space varies motor speed.



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BATTERIES

As MFA 'TITAN' batteries are sealed-lead-acid rechargeable batteries, the problems of liquid leakage, gas discharge, and tedious maintenance from conventional lead acid batteries now have been solved. As a result, MFA 'TITAN' batteries can be used as a power source for hobby & toy use, portable instruments such as VTR's, vacuum cleaners, electric powered bicycles, and electromotive tools that must be lightweight, compact and powerful. They can also be used for power back-up of OA-FA, U.P.S., telecommunication and emergency facilities requiring long term reliability.

MFA 'TITAN' batteries are being used in a wide variety of applications in advanced high technical equipment.

FEATURES OF MFA 'TITAN' BATTERIES

The advantages of MFA 'TITAN' batteries over its conventional counterpart are numerous. They include:

- 1. Maintenance Free.** MFA 'TITAN' batteries have an excellent life with absolutely no maintenance required apart from routine charging.
- 2. No leakage of liquid or gas.** By a special sealing design, there is no leakage of liquid or gas, so it is safe for all applications, even when fully recharged, there is no possibility of leakage due to the recombination system which converts the gas into liquid. MFA 'TITAN' batteries can be installed safely in equipment with no leakage occurring.
- 3. Low in self-discharge rate.** MFA 'TITAN' batteries keep a low self-discharging rate and they also have a long life, because of using only specially selected lead, calcium-lead, and refined electrolytes.
- 4. Able to operate in a wide temperature range.** MFA 'TITAN' batteries can be used in temperatures ranging from as low as -20°C to as high as 50°C.
- 5. Economical and long life.** MFA 'TITAN' batteries are proven to have a longer life than conventional ones, due to improved durability from our specially selected Pb-Ca alloy.
- 6. Designed for high-discharging purpose.** MFA 'TITAN' batteries are designed especially for high-discharge current. They also have low internal resistance with stable voltage.
- 7. Available in any position.** Our special sealing design enables our batteries to operate in any position, even upside down.

Application of MFA 'TITAN' batteries.

Floating Application

- * Most Toy & hobby applications
- * Security & burglar systems
- * Automatic fire alarm devices
- * Telecommunication systems
- * All types of UPS
- * Electronic cash registers
- * Other memory backup devices etc

Cyclic Application

- * Portable video tape recorders
- * Communication and telephone equipment.
- * Medical electronics
- * Automatic fire alarm facilities
- * Cassette tape recorders
- * Cordless tools
- * Measuring equipment

CYCLON BATTERY 2V 2.5 AH. PT. NO. 444

Sealed lead acid battery. "D" cell.

CYCLON BATTERY 2V 5 AH. PT. NO. 444/1

Sealed lead acid battery. "D" cell.

PART NO.	NOMINAL VOLTAGE	NOMINAL CAPACITY (AH)				DIMENSIONS								WEIGHT (APPROX)	
		20 HR	10 HR RATE	5 HR RATE	1 HR RATE	LENGTH		WIDTH		HEIGHT		HEIGHT OVER TERMINAL			
						(MM)	(INCH)	(MM)	(INCH)	(MM)	(INCH)	(MM)	(INCH)	(LB)	(KG)
178	2	10.5	-			54	2.13	57	2.24	95	3.74	101	3.98	1.54	0.70
629	6	3.0	-	2.60	1.80	134	5.28	34	1.34	60	2.36	66	2.61	1.43	0.65
177	6	4.0	3.80	3.60	2.40	70	2.76	47	1.85	102	4.02	108	4.25	1.72	0.78
1153	6	12.0	11.0	10.0	7.3	151	5.95	50	1.97	94	3.70	100	3.94	4.4	2.0
1095	12	1.2	1.13	1.1	0.72	99	3.9	48	1.9	52	2.05	58	2.3	1.26	0.57
1084	12	1.9	1.79	1.71	1.14	177	6.97	34	1.34	60	2.36	66	2.60	1.66	0.75
887	12	3.0	2.73	2.55	1.80	134	5.28	67	2.64	60	2.36	68	2.68	2.87	1.30
1113	12	7	6.44	6.30	4.20	151	5.95	65	2.56	94	3.70	100	3.94	6.06	2.75
1119	12	12				151		98		94					4.00

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BATTERY CHARGERS

2V - 6V - 12V CHARGER. Suitable for trickle charging 2, 6 or 12v lead acid batteries (wet or sealed dry type). Regulated at approx. 1/2 amp (recommended charge rate for most model size batteries). LED's indicate unit operation. Fused for overload protection. Size 128mm x 97mm x 58mm.

Part No. 229

'TITAN' PLUG IN CHARGER. For charging 12v lead-acid batteries. Plugs directly into mains wall socket. Charge rate 720 ma. approx. Features 'charge-complete' indicator. In line fuse and thermal fuse for safety. Instructions included.

PART NO. 827

'TITAN' PLUG IN CHARGER. For charging 6v lead-acid batteries. Plugs directly into mains wall socket. Charge rate 1/2 amp approx. Features 'charge-complete' indicator. In line fuse and thermal fuse for safety. Instructions included.

PART NO. 1077/5MOD

Variable speed transformer suitable as a 12volt power source (up to 15v on lower loads) for all Como Drills and 12V gearbox units. It is designed to maintain torque throughout the speed range. The unit is double insulated,protected by a thermal device and rated at 12v D.C. 36 VA.

Part No. 400DHD.

**New MFA 10W Solar Panel.
Part No. SP10**

In order to preserve our environment, the use of fossil fuels will need to be replaced by renewable power sources such as wind, solar, hydrogen etc. MFA/Como has introduced two high specification solar panels of practical size and output to aid research and development and power models.

The cells are sealed, weather and ultraviolet resistant and will operate effectively from -25 deg C to 90 deg C. They will operate up to 100 humidity. They are TUV approved and CE marked.

Typical applications include:-

REMOTE TELEMETRY
INSTRUMENTATION SYSTEMS
SECURITY SENSORS
LAND BASED NAVIGATION AIDS
EMERGENCY LIGHTING
POWER SOURCE FOR MODELS AND EDUCATIONAL PROJECTS
OFF GRID POWER SUPPLIES
POWER SOURCE FOR ELECTRIC FENCING.

Part No. SP10

Peak Power (W)	10W
Max. Current (ImP)	0.555A
Max. Voltage (Vmp)	18V
Short Circuit Current (Isc)	0.58A
Open Circuit Voltage (Voc)	21.6V
Dimensions	340 x 290 x 25mm
Weight	1.26kg

New MFA 30W Solar Panel.

Part No. SP30

Part No. SP30

Peak Power (W)	30W
Max. Current (ImP)	1.66A
Max. Voltage (Vmp)	18V
Short Circuit Current (Isc)	1.82A
Open Circuit Voltage (Voc)	21.8V
Dimensions	736 x 342 x 25mm
Weight	2.9kg

Solar Charging Regulator. Part No. SPM149.

This unit is an electronic switch that switches on the connection to the solar cells if the battery is empty and switches off again when the battery is fully charged. There is a charging LED and a battery full LED on the unit.

For use with a variety of applications including solar panels, 12v batteries, motorgearboxes etc.

CLOCKWORK TIMER. Pt. No. 618
Compact 30 minute clockwork timer supplied with an easy push fit knob with cursor indication. Unit is faced mounted by 4 only 4x1/4" self tapping screws. Dims 49 x 44 x 46mm. excluding knob shaft.

12volt FLUORESCENT LAMP. Pt. No. 1121/3
Energy saving lamp providing approx. 120w white light with power consumption of only 21w. E27 screw fitting. Ideal where no mains supply is available.

12V OPERATION ONLY
NOT TO BE USED WITH MAINS ELECTRICITY SUPPLY.

12volt LAMP HOLDER. Pt. No. 1121/5
Plastic construction with aluminium alloy E27 screw socket. Two fixing holes. Ideal for use with 12v fluorescent lamp. Mounting ring dia. 63mm.

12V OPERATION ONLY.
NOT TO BE USED WITH MAINS ELECTRICITY SUPPLY

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The MFA/Como Drills

40

Mini Drill Kit

Part No. 399DPLUS

**DRILLS
CUTS
POLISHES
ENGRAVES
SANDS
CARVES
ETC.**

**WOOD
PLASTIC
METALS
COMPOSITES
GLASS
CERAMICS
ETC.**

- * Includes new "MicroTurbo 1 plus" handset.
- * Powerful, precise and very compact mini drill.
- * 16 piece toolkit includes drills, burrs, abrasives, brushes, cutting disc, mop, etc.
- * carry case with rigid plastic workstation insert.
- * 220/240v input, 12 volt output, variable speed transformer with electronic (torque maintained) circuitry.

**MAKES LIGHT WORK OF THOSE MORE DIFFICULT INTRICATE TASKS
IN THE HOME AND WORKSHOP.**

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Thunderbolt 41

Powercuts! - Emergency lighting a problem?

In inaccessible areas the MFA/Como Thunderbolt Rechargeable Freestanding Lamp is your answer

MFA/Como set new standards with the

MK2 'THUNDERBOLT STAND-ALONE LAMP'

now 1.1/2Kg (3lbs) LIGHTER with VARIABLE LIGHT OUTPUT (via dimmer).

- * Ultra bright 21W flourescent light.
- * Long duration.
 - up to 10 hours on max,*
 - up to 15 hours on mid,*
 - up to 24 hrs low setting.*
- * Rechargeable.
- * Rugged and stable.
- * Weather resistant.
- * Removeable reflector for all round lighting.
- * Internal circuit protection.
- * Spares and service readily available
- * Now just 4 kgs.



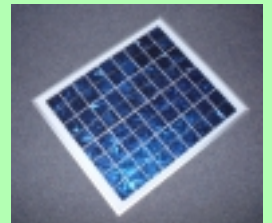
Includes advanced 3 stage charger
(allows continuous connection for battery charging when lamp not in use)

OPTIONAL EXTRA.

To recharge your Thunderbolt Lamp in remote situations Fishing, Camping etc.

MFA SOLAR PANEL.(Part No. SP10T.)

12 volt 10 watt output. In average sunlight conditions will re-charge Thunderbolt battery in approx 10 hours from battery low condition.



Spares readily available.

Part No. 1122

NO RISK OF PETROL/PARAFFIN CONTAMINATION - NO MANTLE PROBLEMS

includes the advanced 3 stage charger.

MFA '3 watt' LED HEADLAMP. Part No. 1077MK4COMP



**'3'
watt
LED

NEW
FOR
2006**

**PROVIDES APPROX. 5 - 25 HOURS OF
USABLE LIGHT FROM A FULL CHARGE
(DEPENDING ON SWITCH MODE)**



**'3 watt' LED
HEADLAMP COMPLETE.
Part No. 1077MK4COMP**

**This kit consists of the
headlight, pre-wired extendable curly coil lead,
pre-charged 6v 4ah battery including
'splash-proof' battery pouch,
plug-in wall battery charger.**

MFA 2'n'1 DUAL ZOOM HALOGEN & 3 LED HEADLAMP
Part No. 1077MK3COMP

2 'n' 1 Dual Zoom

Proven Halogen high intensity bulb.
ZOOM facility gives flood - to - beam

White led's giving low intensity
pre-focused beam.

A
combination giving
exceptional
endurance.
7.5 to 45
hours per charge
dependant on low/
high switch
selection

Also available as separate options:-
BASE HEADLAMP (Pt. No. 1077/27)
EXTENDED DURATION KIT (Pt. No. 1077D)

All spares readily available

LED HEADLIGHT Pt.No. 1158**LOOK!
NOT ONE, BUT
'3' LED'S****Tilt & rotate****ULTRA-BRIGHT LED HEADLIGHT**

- * SMALL**
- * COMPACT**
- * VERSATILE**
- * WATERPROOF**
- * LONG ENDURANCE**
- * 360 DEGREE TILT & ROTATION**
- * DETACHABLE LAMP**

**Includes 3
high power
batteries.**

Suitable for close range illumination where high intensity white light is required. Bulb life is around 100,000 hours and the unit will run up to 80 hours on three AAA 1.5 batteries. Ball jointed for 360 degree rotation & tilt. Fully detachable for hand held, or mounting on wrist or rods, tent shelters etc.

