

Safe and sound the world over



Your ship:	50-70 ft motoryacht with all the comforts
Use:	Extended voyages without shore power
Details:	Luxury onboard facilities

Your sailing profile

As you explore the world for weeks or even months at a time, shore power is in general not available. Nonetheless, you are not prepared to economise on luxury onboard facilities. Due to the high consumption of onboard items such as the air conditioning we have selected a generator that can easily supply all AC consumers. When the generator is not switched on, for example at night, the batteries supply the required capacity. The size of the battery set depends on your specific requirements. The robust Mass battery chargers and Mass Sine inverter ensure a professional and reliable system that will guarantee you a memorable trip.

Your onboard consumers include:

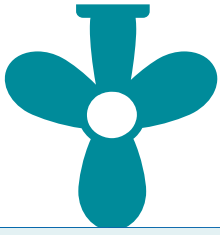
DC consumers during inverter use:

description	total x capacity x hour	daily consumption
Navigation and deck lighting	8 x 25 Watt x 8 hour	= 1.60 kWh
Navigation and communication equipment	6 x 40 Watt x 12 hour	= 2.88 kWh
Interior lighting	30 x 20 Watt x 4 hour	= 2.40 kWh
Water, shower, toilet and bilge pumps	12 x 250 Watt x 0.5 hour	= 1.50 kWh
Large refrigerator(s)	2 x 80 Watt x 8 hour	= 1.28 kWh
Freezer(s)	2 x 80 Watt x 8 hour	= 1.92 kWh
Mooring winch	1 x 2000 Watt x 0.2 hour	= 0.40 kWh
Several small consumers	20 x 20 Watt x 4 hour	= 1.60 kWh

AC consumers during inverter use:

TV/entertainment	2 x 350 Watt x 2 hour	= 1.40 kWh
Audio	1 x 250 Watt x 2 hour	= 0.50 kWh
Coffee/espresso machine	1 x 1500 Watt x 0.1 hour	= 0.15 kWh

Total DC and AC consumers during inverter use: = 15.6 kWh



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AC consumers during generator use:

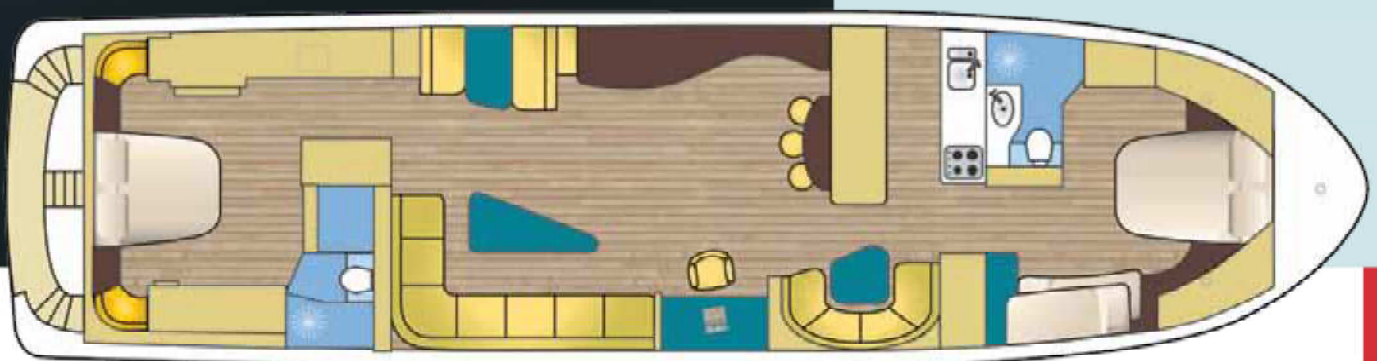
description	total x capacity
Audio system	1 x 250 Watt
Microwave/oven combination	1 x 3000 Watt
Electric cooking	1 x 7000 Watt
Coffee/espresso machine	1 x 1200 Watt
Dishwasher	1 x 1000 Watt
Washing machine	1 x 2500 Watt
Air conditioning (only on generator, shore power or engine)	1 x 14000 Watt
Several appliances	10 x 200 Watt
TV	3 x 350 Watt
Boiler	1 x 4000 watt
Wine cooler	1 x 300 Watt
Battery charger	4 x 2500 Watt

**Total AC consumers
during generator use:**

46.6 kW

The Basics

- All Mastervolt systems have been designed for faultless operation and complete user friendliness. Their reliability is unprecedented and on the rare occasions when something does go wrong our worldwide service network will quickly find a solution.
- You charge your batteries with the heavy alternators on the main engine and via your generator. You are totally independent from shore power.
- Your navigation station is very comprehensive. Your yacht has several pumps, including for water, shower, toilet and bilge.
- You expect the best possible centrally located controls.
- Your yard has designed a custom switchboard that meets your specific needs and demands.





The best **system choice**

Batteries: 12 x MVSV 1250 Ah

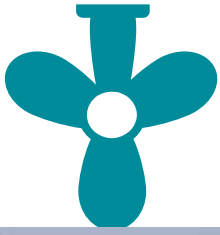
- The DC and AC consumers require during inverter use around 15 kWh a day. Totally discharging the batteries is not advisable so opt for a maximum of 50% discharge, i.e. around 30 kWh.
- Taking all consumers into account we chose a 24 V system.
- The required battery capacity is therefore $30.000 \text{ Wh}/24 \text{ V} = 1250 \text{ Ah}$.
- Twelve 2 V MVSV batteries ensure that you 1250 Ah onboard.
- 4 x Mastervolt gel batteries as (emergency) power supply for the navigation and communication equipment.

Generator, battery chargers, inverter and alternators

- As simultaneous use of all AC equipment is rarely required, we chose a 30 kW generator, 230 V/50 Hz, 1500 rpm. The low rpm ensures less vibration and noise pollution.
- 3 x Mastervolt Mass 24/100 battery chargers for charging the service battery.
- 1 x Mass 24/100 battery charger for charging the (emergency) power supply.
- 1 x Mastervolt Mass Sine 24/10 kW inverter for AC consumers.
- 2 x Mastervolt Alpha 24 V 110 A alternators.

Other system components

- 2 x Mastervolt shore connection set 32 A.
- 2 x 2 Mastervolt Mass GI 3.5 kVA/16 A. This lightweight isolation transformer for safely using shore power is vital for steel or aluminium vessels to avoid electrolysis and corrosion.
- 1 x MasterView System touch screen control panel for operating and monitoring your entire system from one central station. Instead of separate panels spread around the boat you have a clear overview with intuitive operation. Also offers features such as an integrated tank level meter.
- 6 x Mastervolt Digital DC 10x10A each with 10 outputs for all possible DC consumers.
- 2 x Mastervolt MasterShunt 500 battery monitors.
- 4 x Mastervolt DC Distribution with 4 fuses.
- Mastervolt MasterBus cables.
- Several different input devices are used for local operation of your system, such as the Switch Input 4 PCB and the Digital Input.



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1



2



4



5



4



1

MasterView System

2

30 kW generator

3

Custom made switchboard

4

Shore power connection

5

Mass GI isolation transformer

6

Mass Sine inverter

7

Mass battery charger

8

Service battery 12 x 2 V gel

9

MasterShunt, DC Distribution

10

MasterShunt, 2 x DC Distribution, Digital DC

11

Digital DC

12

DC Distribution, Digital DC

13

MVG gel battery as (emergency) power

14

Alternators

15

Switch Input 4 PCB

7



15





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