

VOLUME DISPLACEMENT CALCULATIONS FOR SEA WATER DENSITY = 1023.6 kg/m ³ at 25 degrees C											
	SHAPE	L / (R)	W	H	MASS (kg)	VOLUME (m ³)	BOUYANCY BF (N)	WEIGHT WF (N)	NETT FORCE BF - WF (N)	NEUTRAL NBM (kg)	ADD/SUB MASS (kg)
ALUMINIUM PROFILES (20X40)											
LEFT BEAM	BOX	0.500	0.020	0.040	0.380	0.00040	4.017	3.727	0.290	0.409	0.029
RIGHT BEAM	BOX	0.500	0.020	0.040	0.380	0.00040	4.017	3.727	0.290	0.409	0.029
CROSS BEAM FRONT	BOX	0.250	0.020	0.040	0.195	0.00020	2.008	1.913	0.095	0.205	0.010
CROSS BEAM MIDDLE	BOX	0.250	0.020	0.040	0.195	0.00020	2.008	1.913	0.095	0.205	0.010
CROSS BEAM REAR	BOX	0.250	0.020	0.040	0.195	0.00020	2.008	1.913	0.095	0.205	0.010
THRUSTERS											
LEFT CYLINDER		0.040		0.080	0.285	0.00040	4.038	2.796	1.242	0.412	0.127
RIGHT CYLINDER		0.040		0.080	0.285	0.00040	4.038	2.796	1.242	0.412	0.127
CENTRE CYLINDER		0.040		0.080	0.285	0.00040	4.038	2.796	1.242	0.412	0.127
EC-BOX (ELECTRONICS)											
BOX WITH EC+BATTERY	BOX	0.255	0.175	0.080	1.400	0.00357	35.848	13.734	22.114	3.654	2.254
BALLAST TANK											
MAIN TANK	CYLINDER	0.047		0.150	0.208	0.00104	10.453	2.036	8.417	1.0655	0.858
SOLENOID VALVE	BOX	0.073	0.050	0.071	0.809	0.00026	2.602	7.936	-5.334	0.2653	-0.544
TOTAL					4.617	0.0075	75.074	45.286	29.788	7.653	3.036

L length
R radius
W width
H height

BF (N) upward bouyancy force
WF (N) downward force due to gravity
NMB (kg) neutral bouyancy mass for the object in sea water
ADD/SUB mass to be added or removed from object to achieve neutral bouyancy