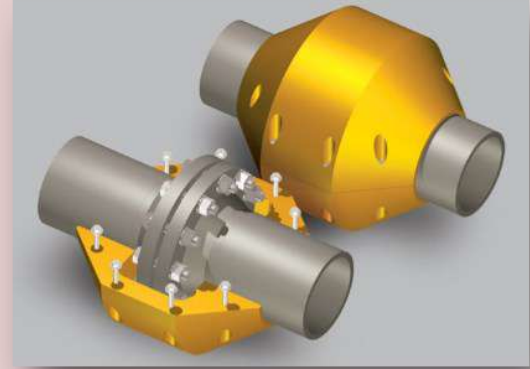




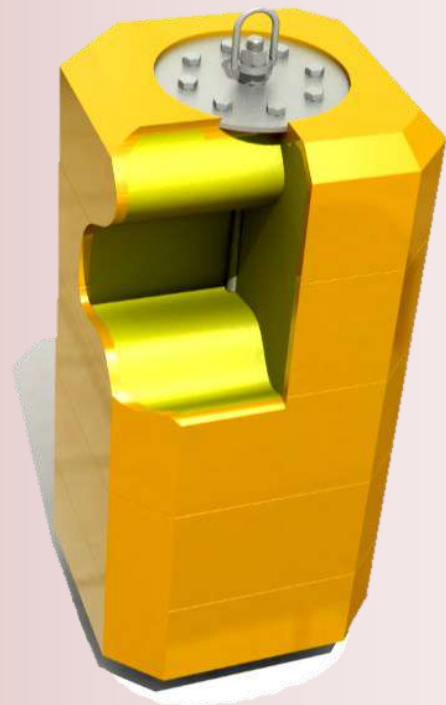
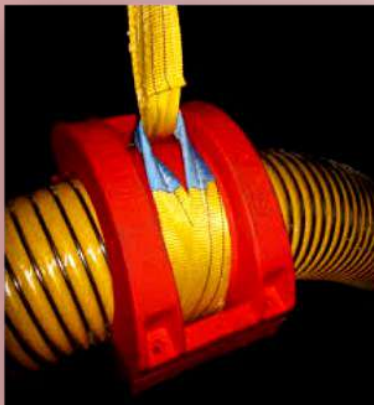
IOCS S.r.L.

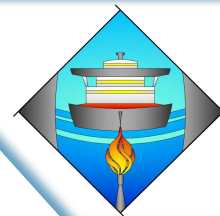
Hoses & Ancillaries Equipment Supply for Oil & Gas Industry

BUOYS & SUBSEA FLOATS



- **Modular Marker Buoys 6x6**
- **Modular Marker Buoys 7x7**
- **Modular Marker Buoys 14x14**
- **Flange Protectors**
- **Scuff Rings**
- **Subsea Floats**

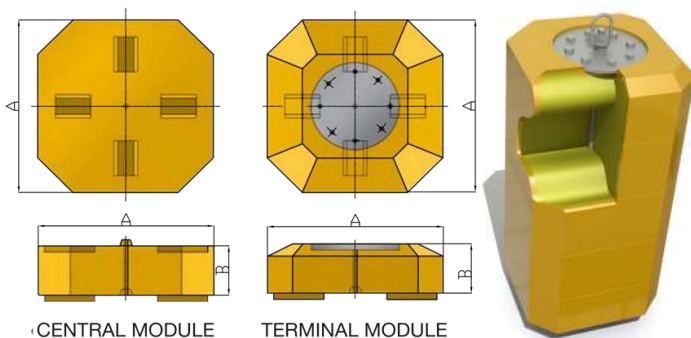




Prod. Code: 240

Modular Marker Buoys 6x6

Modular Marker Buoy and Pick-up Buoy

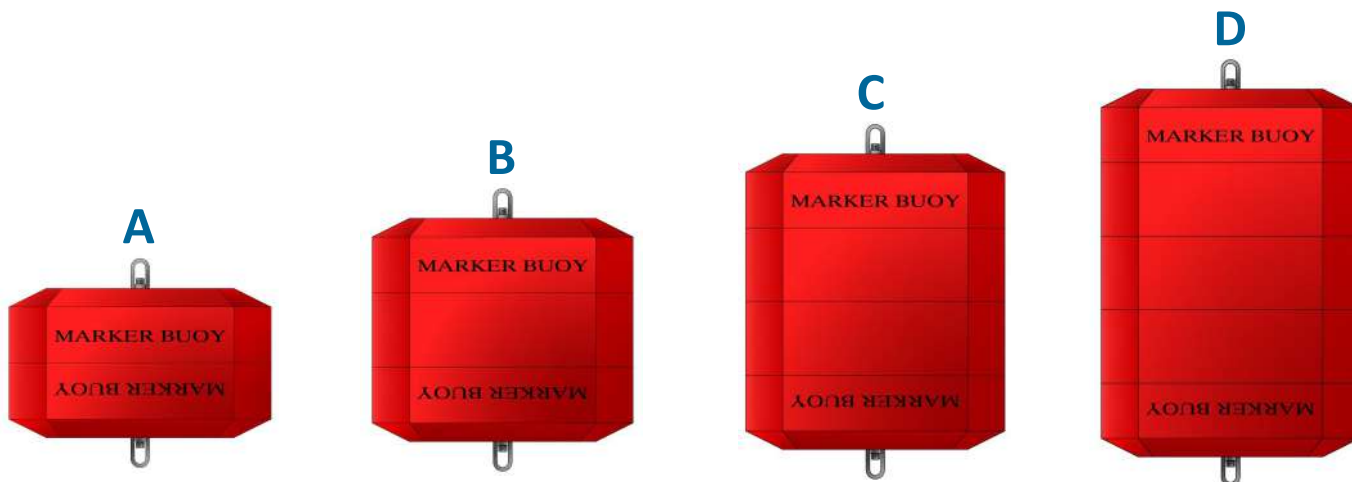


The new generation of Modular Marker & pick-up buoys have been designed to withstand the severe conditions associated with offshore operations.

The general construction scheme of in the inner part consist of shot blasted and galvanized steel structure. The outer shell is obtained by means of a rotomoulding system, using high impact resistant polyethylene white, red or orange coloured. The material used for the foam filling is rigid closed cell foam polyurethane.

Modular Marker & Pick-up Buoys are duly tested following our Quality Control procedures, as per GMPHOM 2009, OCIMF 5th Ed. 2009 specifications and requirements, and Test Certificates are issued after the satisfactory results. Upon customer 's request, our floats can also be inspected by 3rd party independent part of IACS member, Bureau Veritas (BV), American Bureau Shipping (ABS), Lloyd Register or Registro Italiano Navale (RINA), Det Norsk Veritas (DNV), etc.

TYPE	AxAxB (mm)	NB Kg	NB TOLERANCE %	WEIGHT Kg
C6x6	600x600x400	90	+/- 5%	25
T6x6	600x600x350	90	+/- 5%	20



TYPE	SHELL DIMENSIONS (mm)	NB (Kg)	TOLERANCE (%)	METAL PART WEIGHT (Kg)	SHELL WEIGHT (Kg)
A	600x600x700	154	+/- 5%	26	40
B	600x600x1050	242	+/- 5%	28	65
C	600x600x1400	330	+/- 5%	30	90
D	600x600x1750	418	+/- 5%	32	115

It is possible to provide other types of assemblies on request.

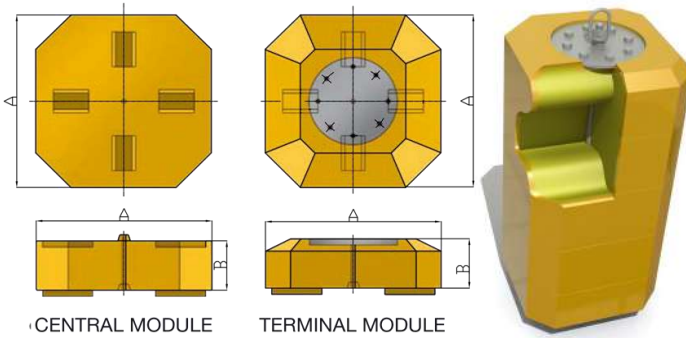
MATERIAL LIST		
ITEM	PART DESCRIPTION	MATERIAL DESCRIPTION
1	OUTER SHELL	HIGH DENSITY POLYETHYLENE (HDPE)
2	FLOATING MATERIAL	EXPANDED RIGID POLYURETHANE MONOCELLULAR FOAM
3	SWIVEL PRINCIPAL BOLTS & NUTS	STAINLESS STEEL AISI 316 - MA20



Modular Marker Buoys 7x7

Modular Marker Buoy and Pick-up Buoy

Prod. Code: 241

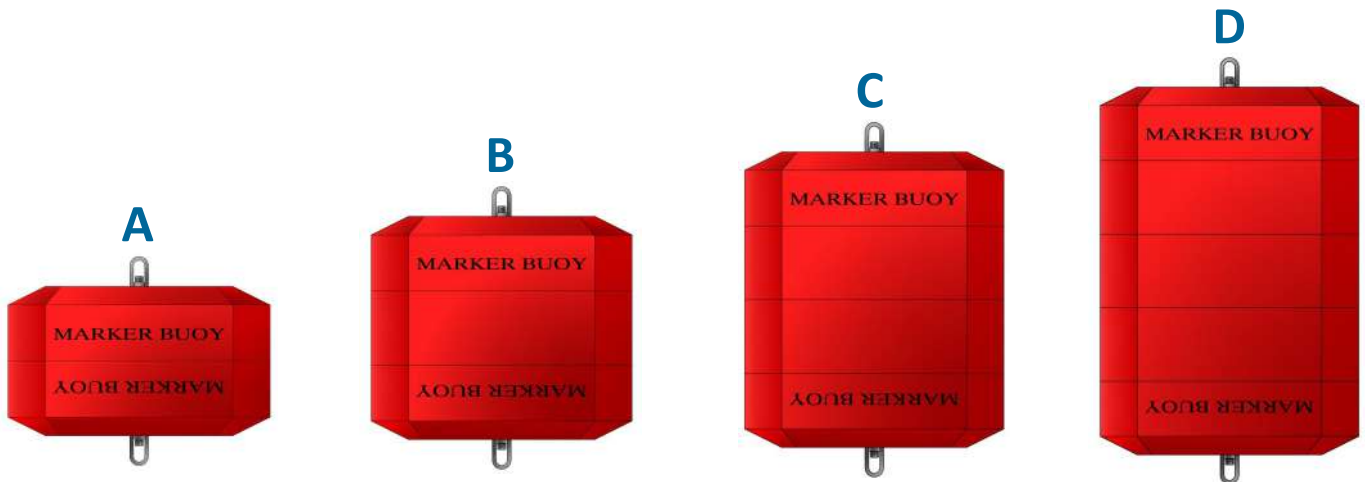


The new generation of Modular Marker & pick-up buoys have been designed to withstand the severe conditions associated with offshore operations.

The general construction scheme of the inner part consists of a shot blasted and galvanized steel structure. The outer shell is obtained by means of a rotomoulding system, using high impact resistant polyethylene white, red or orange coloured. The material used for the foam filling is rigid closed cell foam polyurethane.

Modular Marker & Pick-up Buoys are duly tested following our Quality Control procedures, as per GMPHOM 2009, OCIMF 5th Ed. 2009 specifications and requirements, and Test Certificates are issued after the satisfactory results. Upon customer's request, our floats can also be inspected by 3rd party independent part of IACS member, Bureau Veritas (BV), American Bureau Shipping (ABS), Lloyd Register or Registro Italiano Navale (RINA), Det Norsk Veritas (DNV), etc.

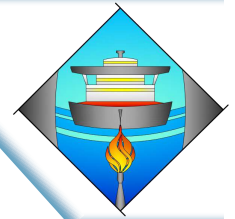
TYPE	AxAxB (mm)	NB Kg	NB TOLERANCE %	WEIGHT Kg
C7,5x7,5	750x750x350	130	+/- 5%	50
T7,5x7,5	750x750x350	130	+/- 5%	48



TYPE	SHELL DIMENSIONS (mm)	NB (Kg)	TOLERANCE (%)	METAL PART WEIGHT (Kg)	SHELL WEIGHT (Kg)
A	750x750x700	220	+/- 5%	40	96
B	750x750x1050	345	+/- 5%	45	146
C	750x750x1400	470	+/- 5%	50	196
D	750x750x1750	595	+/- 5%	55	246

It is possible to provide other types of assemblies on request.

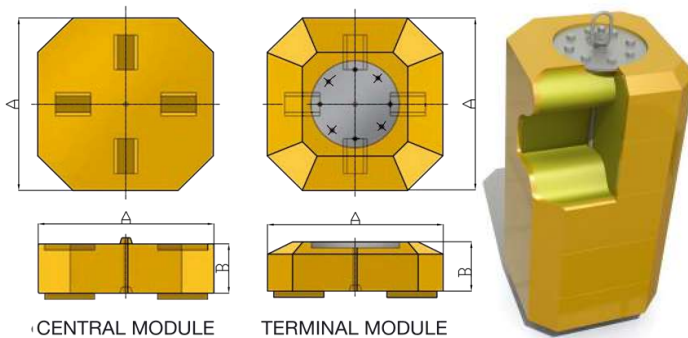
MATERIAL LIST		
ITEM	PART DESCRIPTION	MATERIAL DESCRIPTION
1	OUTER SHELL	HIGH DENSITY POLYETHYLENE (HDPE)
2	FLOATING MATERIAL	EXPANDED RIGID POLYURETHANE MONOCELLULAR FOAM
3	SWIVEL PRINCIPAL BOLTS & NUTS	STAINLESS STEEL AISI 316 - MA20



Prod. Code: 242

Modular Marker Buoys 14x14

Modular Marker Buoy and Pick-up Buoy

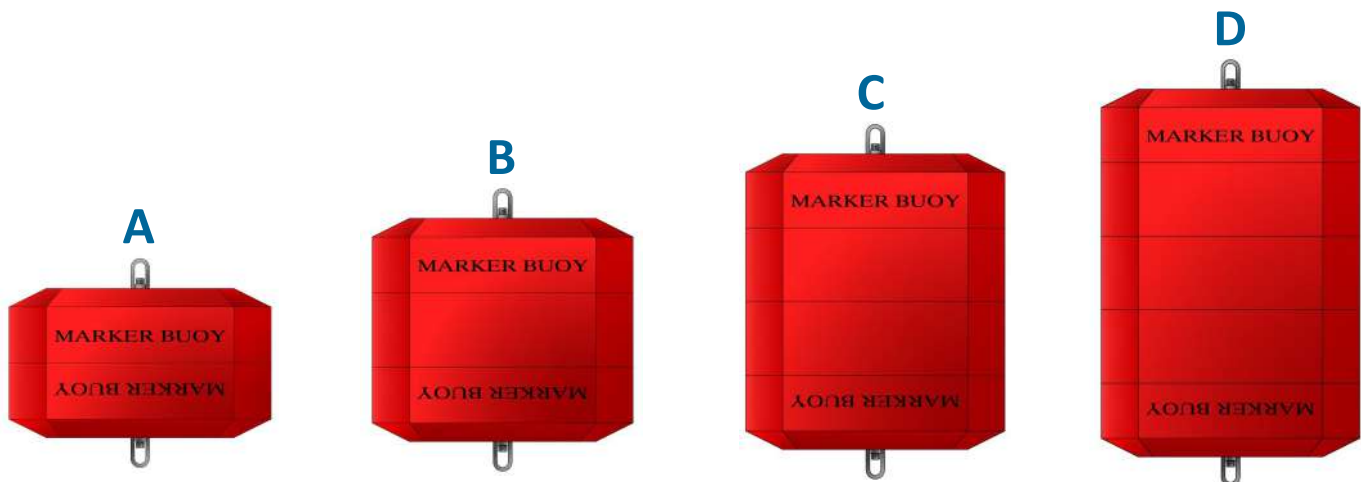


The new generation of Modular Marker & pick-up buoys have been designed to withstand the severe conditions associated with offshore operations.

The general construction scheme of in the inner part consist of shot blasted and galvanized steel structure. The outer shell is obtained by means of a rotomoulding system, using high impact resistant polyethylene white, red or orange coloured. The material used for the foam filling is rigid closed cell foam polyurethane.

Modular Marker & Pick-up Buoys are duly tested following our Quality Control procedures, as per GMPHOM 2009, OCIMF 5th Ed. 2009 specifications and requirements, and Test Certificates are issued after the satisfactory results. Upon customer 's request, our floats can also be inspected by 3rd party independent part of IACS member, Bureau Veritas (BV), American Bureau Shipping (ABS), Lloyd Register or Registro Italiano Navale (RINA), Det Norsk Veritas (DNV), etc.

TYPE	AxAxB (mm)	NB Kg	NB TOLERANCE %	WEIGHT Kg
C14x14	1400x1400x400	700	+/- 5%	75
T14x14	1400x1400x400	700	+/- 5%	70



TYPE	SHELL DIMENSIONS (mm)	NB (Kg)	TOLERANCE (%)	METAL PART WEIGHT (Kg)	SHELL WEIGHT (Kg)
A	1400x1400x800	1304	+/- 5%	96	140
B	1400x1400x1200	1998	+/- 5%	102	215
C	1400x1400x1600	2693	+/- 5%	107	290
D	1400x1400x2000	3387	+/- 5%	113	365

It is possible to provide other types of assemblies on request.

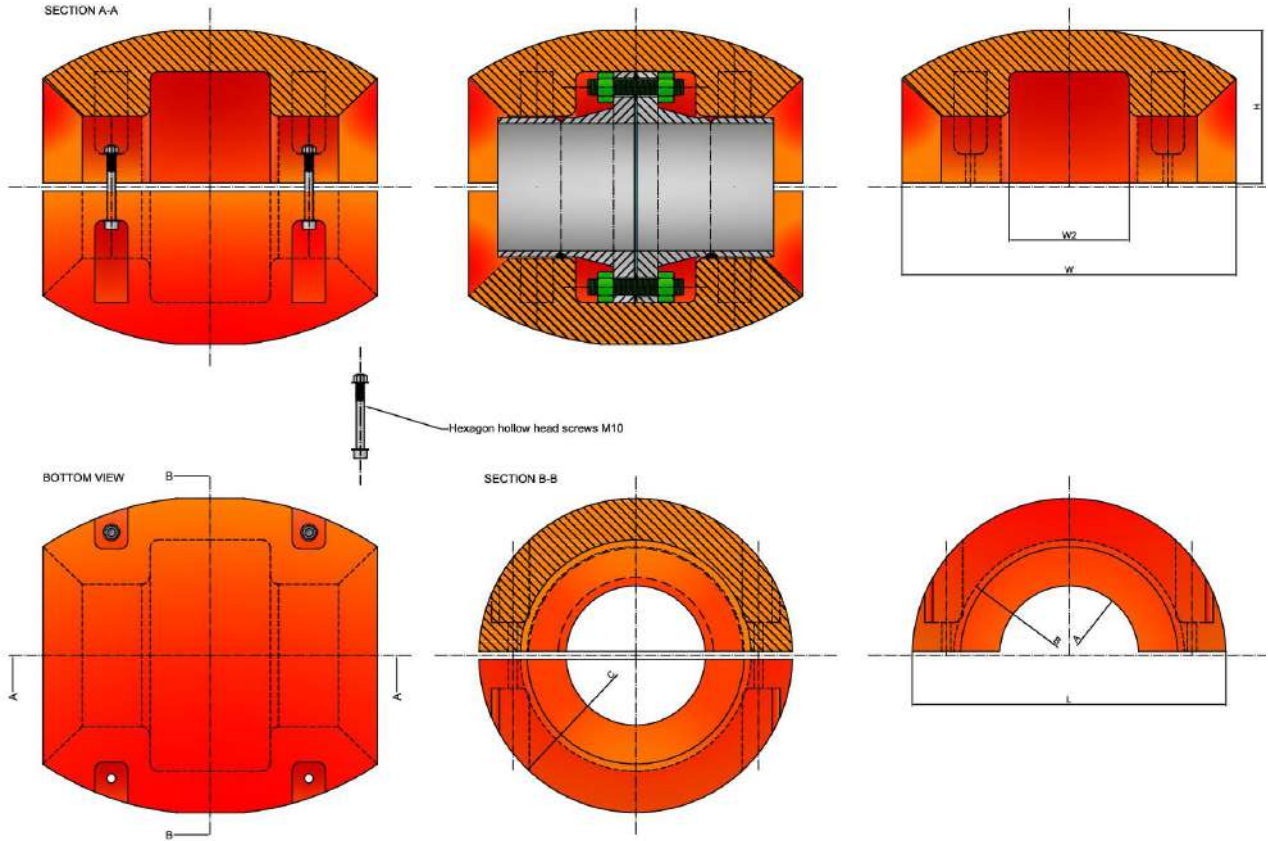
MATERIAL LIST		
ITEM	PART DESCRIPTION	MATERIAL DESCRIPTION
1	OUTER SHELL	HIGH DENSITY POLYETHYLENE (HDPE)
2	FLOATING MATERIAL	EXPANDED RIGID POLYURETHANE MONOCELLULAR FOAM
3	SWIVEL PRINCIPAL BOLTS & NUTS	STAINLESS STEEL AISI 316 - MA20



Flange Protectors

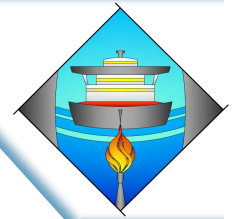
To Prevent Damage From Accidental Impact

Prod. Code: 250



DIMENSIONS FOR CLASS 150lb FLANGE									
Ø HOSE (Inch / mm)	L (mm)	H (mm)	W (mm)	W2 (mm)	A (mm)	B (mm)	C (mm)	APPROXIMATIVE SHELL WEIGHT (Kg)	APPROXIMATIVE TOTAL WEIGHT (Kg)
6" / 150	379.6	184.8	404.5	135	86.2	139.8	189.8	N.A.	N.A.
8" / 200	443	216.5	430.9	140	111.6	171.5	221.5	N.A.	N.A.
10" / 250	506.6	248.3	444.1	155	138.6	203.3	253.3	N.A.	N.A.
12" / 300	582.6	286.3	457.3	155	164	241.3	291.3	N.A.	N.A.
16" / 400	697	343.5	496.7	170	205.2	298.5	348.5	N.A.	N.A.
20" / 500	798.6	394.3	559.5	190	256	349.3	399.3	N.A.	N.A.

DIMENSIONS FOR CLASS 300lb FLANGE									
Ø HOSE (Inch / mm)	L (mm)	H (mm)	W (mm)	W2 (mm)	A (mm)	B (mm)	C (mm)	APPROXIMATIVE SHELL WEIGHT (Kg)	APPROXIMATIVE TOTAL WEIGHT (Kg)
6" / 150	417.6	203.8	466.8	165	86.2	158.8	208.8	N.A.	N.A.
8" / 200	481	235.5	516.2	180	111.6	190.5	240.5	N.A.	N.A.
10" / 250	544.6	267.3	568.9	200	138.6	222.3	272.3	N.A.	N.A.
12" / 300	620.6	305.3	595.3	210	164	260.3	310.3	N.A.	N.A.
16" / 400	747.6	368.8	648.1	230	205.2	323.8	373.8	N.A.	N.A.
20" / 500	874.3	432.3	690.7	280	256	387.3	437.3	N.A.	N.A.



Scuff Rings

Anti Abrasion Collar & Hose Suspension Saddle

Abrasion Prevention:

Hose contact with the ground or foreign objects is minimized.

Improved hose handling:

Can be used to lift or move the hose thereby greatly reducing the risk of hose damage due to excess bending, kinking or cutting.

Applications:

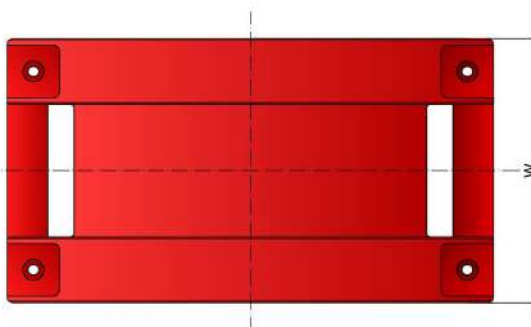
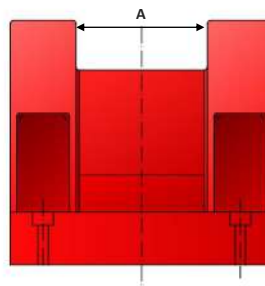
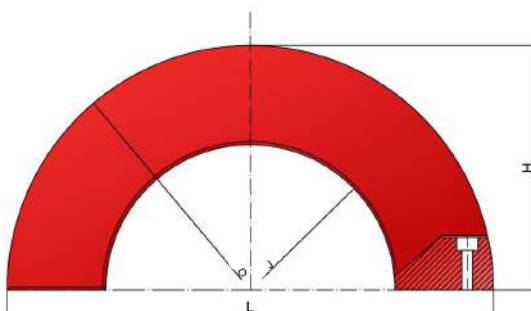
Dock hose, vapour recovery hose or any size hose from 6" to 12" internal diameter.

Manufacturing:

The two shells are made of anti-abrasion and anti-shock polyurethane.

Installation:

Be easily to assembled on-site using the stainless steel bolt and nuts provided with assembly kit, by simply placing the Scuff Ring at the desired interval distance on the hose and then tighten the bolts.



N.D.	H	W	L	A	J	O	APPROXIMATE SHELL WEIGHT	APPROXIMATE TOTAL WEIGT
6" / 150	185	200	370	100	84	185	2,8	5,6
8" / 200	185	200	370	100	110	185	2,15	4,3
10" / 250	235	300	470	200	135	235	5,2	10,4
12" / 300	235	300	470	200	160	235	3.9	7.8



Subsea Floats

Subsea Floats Buoyancy Systems for Submarine Hose

Prod. Code: 270

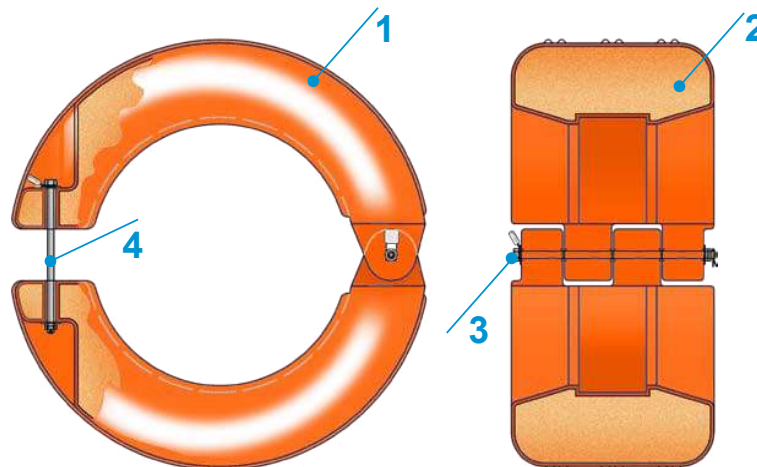
Subsea floats are designed to provide buoyancy to submarine hose systems in order to maintain the required configuration.

The float consists of two halves bolted together at one side, and hinged at the other one. The outer shell is obtained by means of a rotomoulding system, using high impact resistant and UV-stabilized virgin polyethylene, white, red or orange coloured.

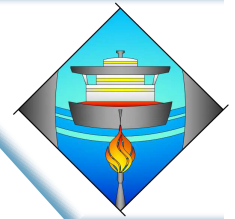
The material used to fill the shell is rigid closed cell foam polyurethane with a density to satisfy the operational water depth of the floats, the polyurethane applied by a computer controlled injection filling machine. Each float is clearly marked and registered as per required inspection procedure. The polyurethane foam ensure great resistance to the leakage of air or water, ensuring unsinkability to the buoy also in case of accidental breaks of the outer shell.

Metal parts are in AISI 316 stainless steel, and the installation of the floats is very easy, also while the hose are under the water level. Floats are duly tested following our Quality Control procedures, as per GMPHOM 2009, OCIMF 5th Ed. 2009 specifications and requirements, and Test Certificates are issued after the satisfactory results.

Upon customer's request, our floats can also be inspected by 3rd party independent part of IACS member, Bureau Veritas (BV), American Bureau Shipping (ABS), Lloyd Register or Registro Italiano Navale (RINA), Det Norske Veritas (DNV), etc.



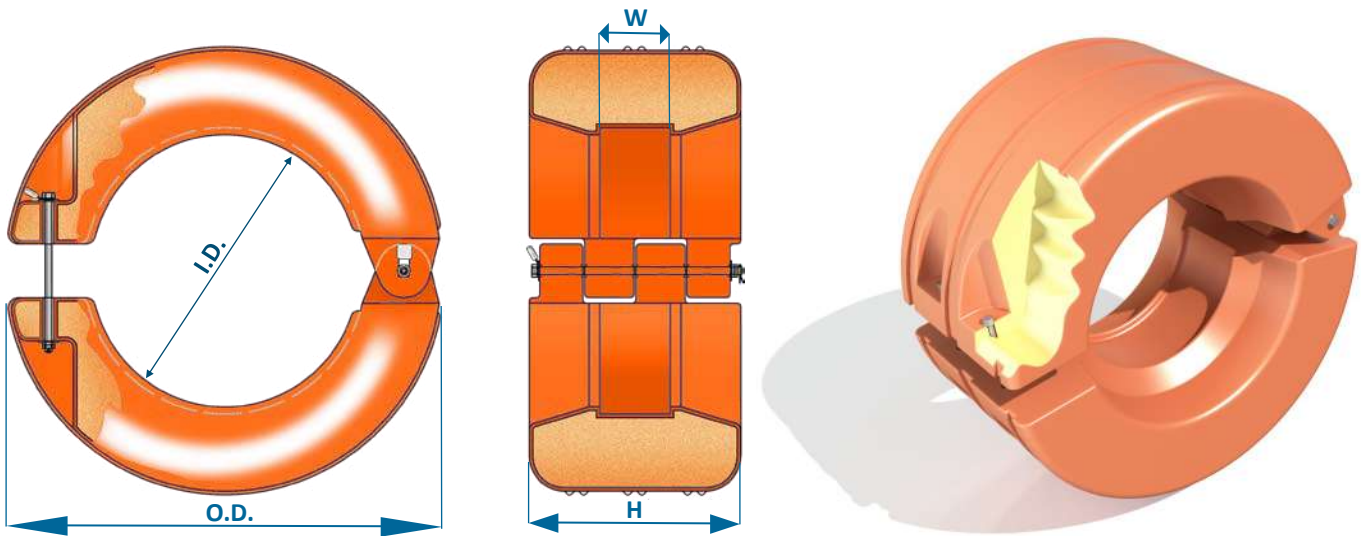
MATERIAL LIST		
ITEM	PART DESCRIPTION	MATERIAL DESCRIPTION
1	OUTER SHELL	HIGH DENSITY POLYETHYLENE (MDPE)
2	FLOATING MATERIAL	EXPANDED RIGID POLYURETHANE MONOCELLULAR FOAM
3	PRINCIPAL BOLTS & NUTS	STAINLESS STEEL AISI 316 - MA20
4	CLAMPED BOLTS & NUTS	STAINLESS STEEL AISI 316 - MA20



Subsea Floats

Subsea Floats Buoyancy Systems for Submarine Hose

Prod. Code: 270



TYPE & SIZE		DIMENSIONS (mm)				TOLERANCE +/- (%)	WATER DEPTH 0 - 40 m		WATER DEPTH 40 - 80 m	
TYPE	HOSE COLLAR (Inch)	I.D. (mm)	O.D. (mm)	H (mm)	W (mm)		WEIGHT (Kg)	NET BUOYANCY (Kg)	WEIGHT (Kg)	NET BUOYANCY (Kg)
A	6" HB	250	580	400	200	+/- 5 %	28	46	30	44
B	6" HE / 8" HB	310	580	400	200	+/- 5 %	23	47	27	43
C	8" HE / 10" HB	370	650	400	200	+/- 5 %	26	56	31	51
D	10" HE / 12" HB	420	720	550	200	+/- 5 %	37	71	43	65
E	12" HB-E	471	720	550	200	+/- 5 %	38	70	44	64
F	16" HE-S	581	1050	550	200	+/- 5 %	74	215	93	196
G	20" HE	697	1130	600	200	+/- 5 %	84	230	102	212
H	20" HE-S / 24" HB	799	1230	600	200	+/- 5 %	94	270	110	254
I	24" HE	876	1350	600	200	+/- 5 %	114	350	139	325
L	24" HE-D	946	1350	800	200	+/- 5 %	140	427	172	395
M	24" HE-S	1050	1470	800	200	+/- 5 %	140	468	180	428