



hybrd  
composite

**Mk.II / Mk.IV FLUSH DECK HATCHES**

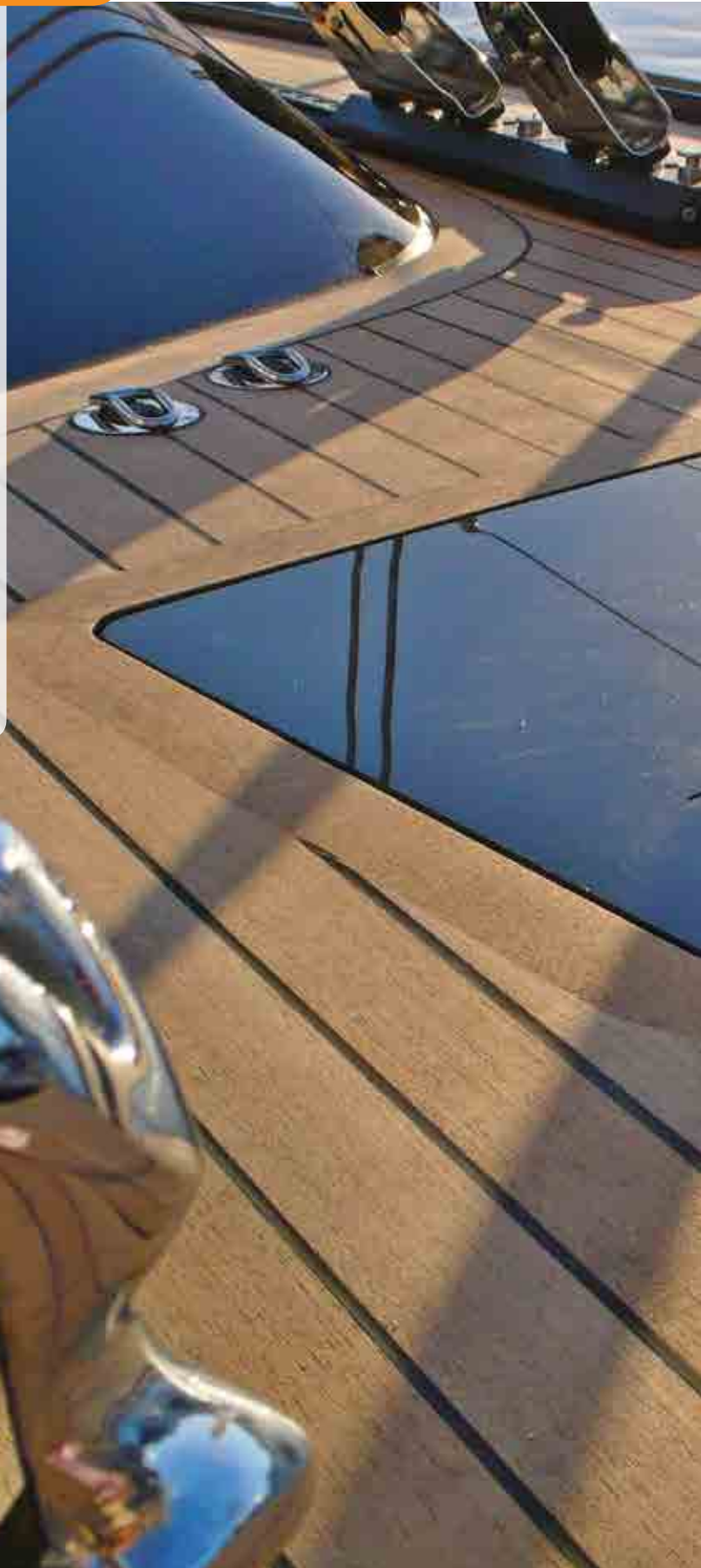
REGISTERED DESIGN MODEL 2009

## HYBRID COMPOSITE FLUSH DECK HATCHES

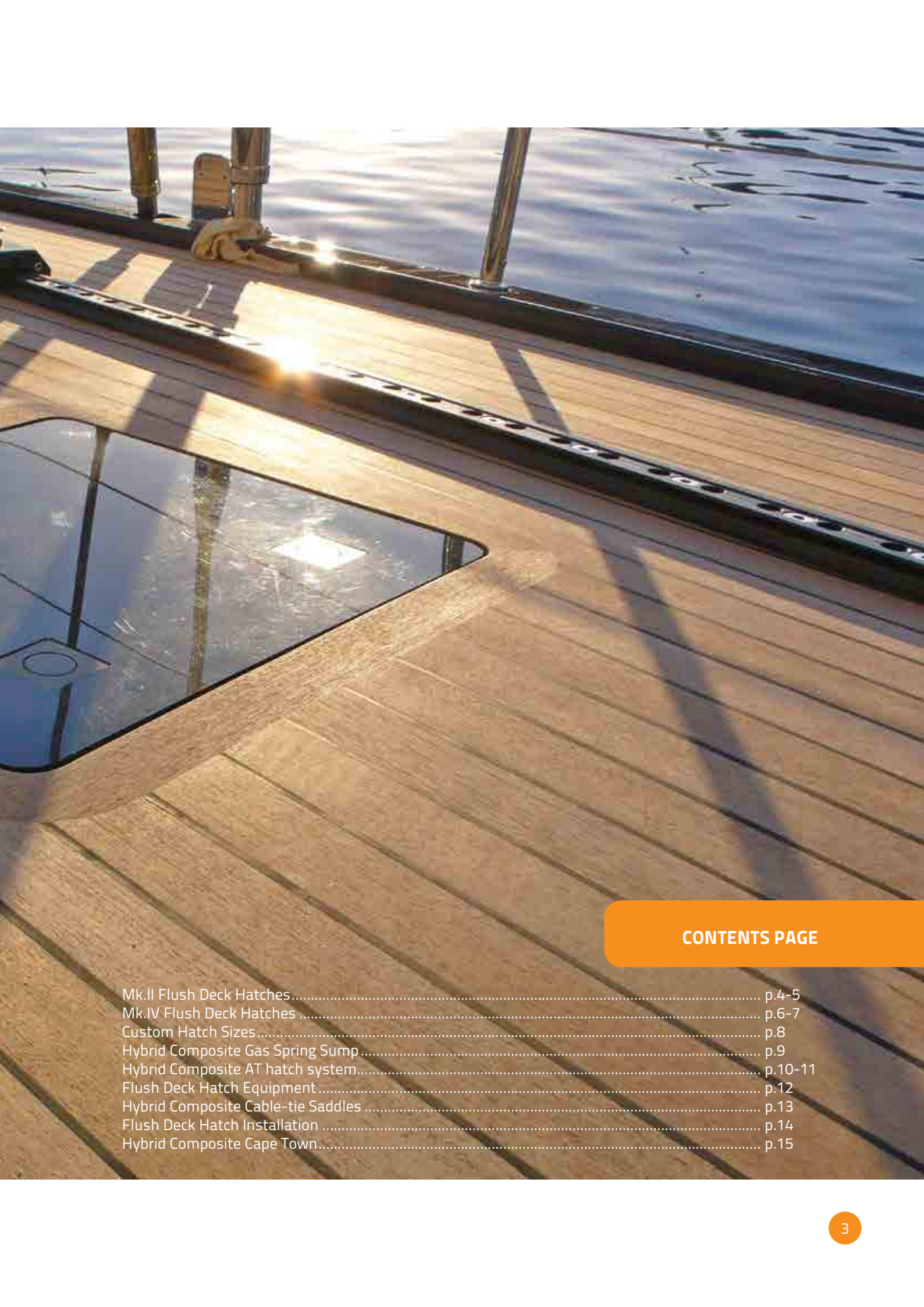
Hybrid Composite's hatch concept started with the conviction that marine deck hatches needed some renewal. Fresh thinking and an uncompromising design approach have produced a modern deck hatch, with concealed hinging as standard and a fully flush finish. The sharper corners and sleek looks make Hybrid Flush Deck Hatches the ideal choice for designers, yards or owners looking to break away from the trend.

Hybrid Composite produces an extensive range of hatches, conceived with both the builder and the end user in mind. With over 16 different standard sizes, 5 standard lid configurations, 2 types of construction and a variety of standard deck cambers to choose from, our products can be fitted to any project.

Our Flush Deck Hatches are built as standard in epoxy carbon/e-glass, using reliable and repeatable closed mould techniques. They are delivered fully equipped with integral gutter, drainage spigots, gas springs and lockable dog latches. All hatches are CE certified for fitment to 'Area Ila' and pressure tested for a 2m. head of sea water.







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## MK.II FLUSH DECK HATCHES

With Hybrid Composite's Mk.II line of hatches, concealed hinging has become mainstream. Our exclusive 'in-gutter' rotation system removes the hinges from the deck surface without the additional cost and complexity of large hinge pockets. An extensive range of sizes and cambers covers most requirements, from small ventilation hatches to large escape size openings. These models offer the most cost-effective and versatile solution for clear opening sizes up to 500x500mm. and over, depending on local deck camber.

### All models present to following features:

- concealed 'in-gutter' rotation system, allowing up to 95deg opening angle on all hatches
- high fiber weight fraction epoxy carbon/e-glass laminate, moulded on both faces providing for significant weight savings
- structural gutter and wide deck bond flange
- flush fit dog cleat for a snag-free clear opening and through-passage
- stainless steel gas springs
- HC Square dog handle, available in a range of anodized colours
- Ø20mm. drain spigots
- Multiple lid configurations

### Further available options include:

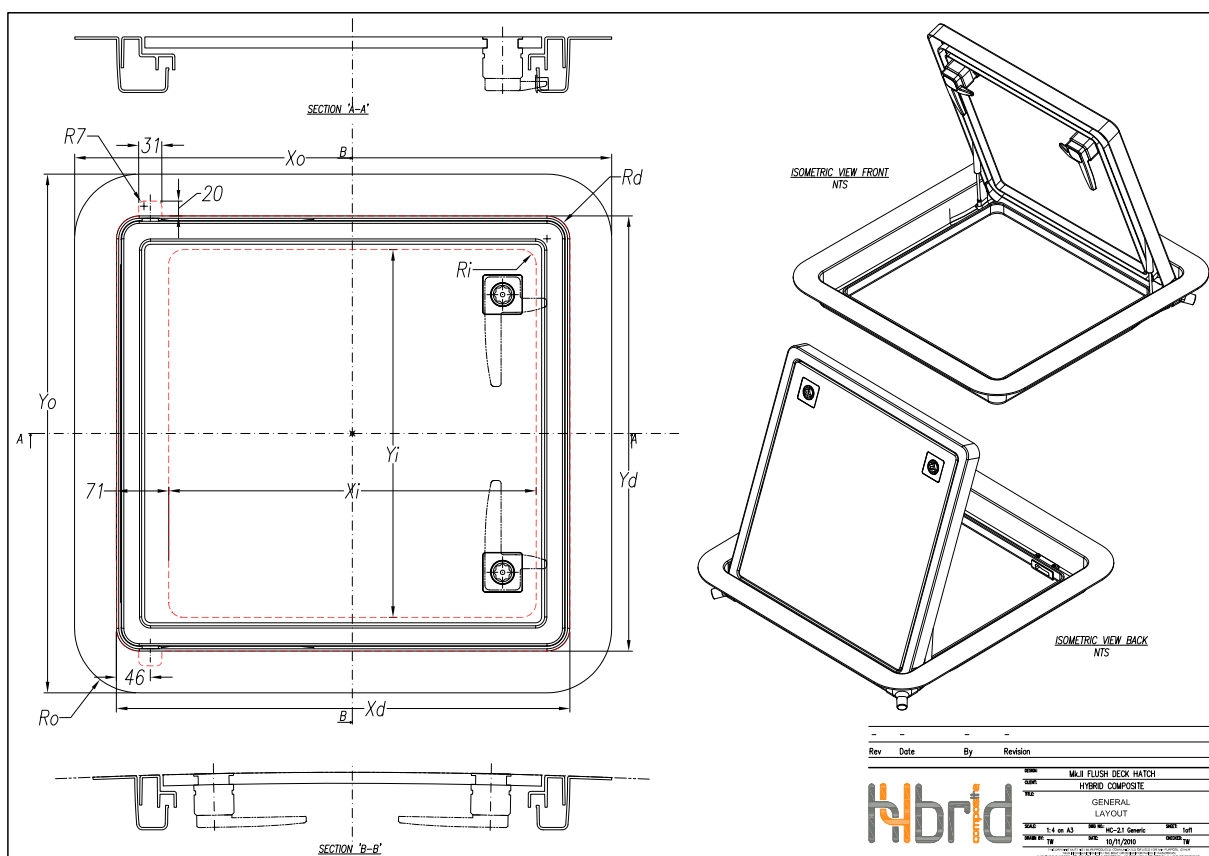
- Personalised handle engraving;
- Friction gas springs (brace the lid at any angle);
- Custom sizes on request

Contact us on [info@hybridcomposite.co.za](mailto:info@hybridcomposite.co.za) for further requests.





| Mk.II Flush Deck Hatch range: | Clear opening (mm.) |     |    | Deck cut-out (mm.) |     |    | Size overall (mm.) |     |    | Weight     |
|-------------------------------|---------------------|-----|----|--------------------|-----|----|--------------------|-----|----|------------|
|                               | Xi                  | Yi  | Ri | Xd                 | Yd  | Rd | Xo                 | Yo  | Ro | (avg, kg.) |
| HC-2.1_600x600                | 600                 | 600 | 20 | 719                | 694 | 32 | 831                | 806 | 88 | 13.4       |
| HC-2.1_500x500                | 500                 | 500 | 20 | 619                | 594 | 32 | 731                | 706 | 88 | 10.5       |
| HC-2.1_450x450                | 450                 | 450 | 20 | 569                | 544 | 32 | 681                | 656 | 88 | 10.1       |
| HC-2.1_350x430                | 350                 | 430 | 20 | 469                | 524 | 32 | 581                | 636 | 88 | 8.6        |
| HC-2.1_325x325                | 325                 | 325 | 20 | 444                | 419 | 32 | 556                | 531 | 88 | 5.9        |
| HC-2.1_320x720                | 320                 | 720 | 20 | 439                | 814 | 32 | 551                | 926 | 88 | 11.3       |
| HC-2.1_300x500                | 300                 | 500 | 20 | 419                | 594 | 32 | 531                | 706 | 88 | 7.8        |
| HC-2.1_300x200                | 300                 | 200 | 20 | 419                | 294 | 32 | 531                | 406 | 88 | 5.1        |
| HC-2.1_200x300                | 200                 | 300 | 20 | 319                | 394 | 32 | 431                | 506 | 88 | 4.5        |
| HC-2.1_143x268                | 143                 | 268 | 20 | 262                | 362 | 32 | 374                | 474 | 88 | 4.20       |



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## MK.IV FLUSH DECK HATCHES

The Mk.IV line of hatches is specifically designed for large deck openings spanning more than 600mm. and highly cambered deck geometry. A more classical concealed hinge system allows specification of additional hinging points to better support the lid and retain watertight integrity under load.

The hinge pocket however remains small (50x52mm.) compared to other systems on the market and all fit-out and maintenance is carried out on the 'wet' side. The thicker gutter section is ideally suited for high-traffic machinery and storage areas. Larger gas springs are also fitted as standard to compensate for larger lid area and weight. Despite these differences, the Mk.IV range is also regularly fitted with a clear lid and looks identical to the Mk.II from the deck side, ensuring the two can be specified along side on the same deck.

### All models present to following features:

- concealed hinge pocket rotation system, allowing up to 95deg opening angle on all hatches



- high fiber weight fraction epoxy carbon/e-glass laminate, moulded on both faces providing for significant weight savings
- reinforced gutter for high-traffic areas and wide deck bond flange

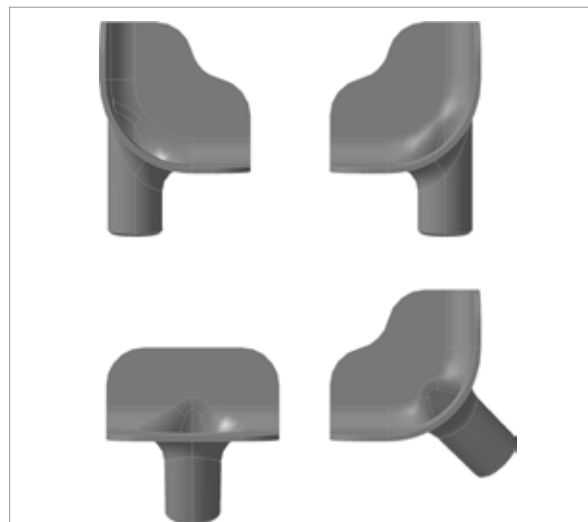
- flush fit dog cleat for a snag-free clear opening and through-passage



- heavy-duty Ø19 stainless steel gas springs on larger sizes
- HC Square dog latch for non-living spaces or standard handle



- Ø20mm. drain spigots, with a choice of 4 different draining angles
- Multiple lid configurations

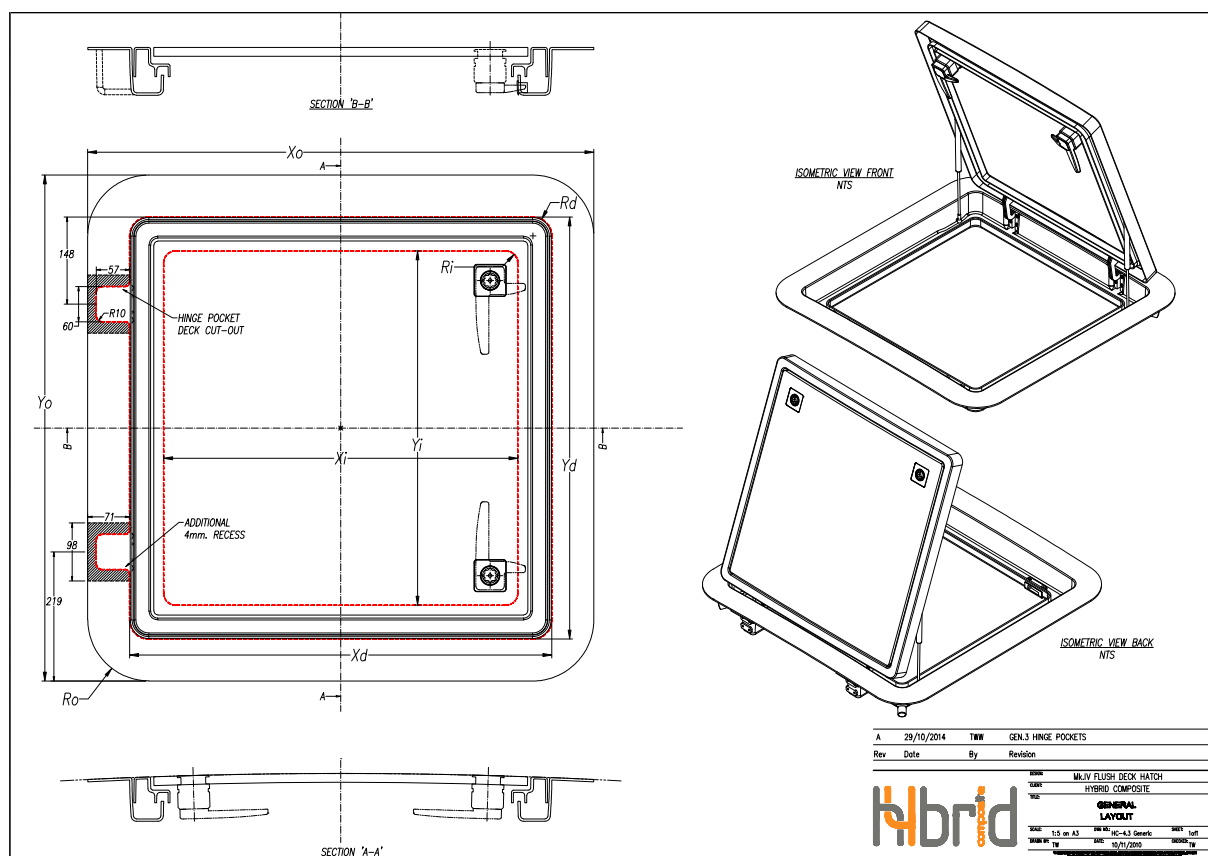


### Further available options include:

- Personalised handle engraving;
- Friction gas springs (brace the lid at any angle)
- Custom sizes on request

Contact us on [info@hybridcomposite.co.za](mailto:info@hybridcomposite.co.za) for further requests.

| Hybrid composite<br>Mk.IV Hatch range | Clear opening (mm.) |      |    | Deck cut-out (mm.) |      |    | Size overall (mm.) |      |     | Weight     |
|---------------------------------------|---------------------|------|----|--------------------|------|----|--------------------|------|-----|------------|
|                                       | Xi                  | Yi   | Ri | Xd                 | Yd   | Rd | Xo                 | Yo   | Ro  | (avg, kg.) |
| HC-4.3_900x1200                       | 900                 | 1200 | 20 | 1016               | 1316 | 32 | 1160               | 1460 | 105 | 24,9       |
| HC-4.3_1000x1000                      | 1000                | 1000 | 20 | 1116               | 1116 | 32 | 1260               | 1260 | 105 | 22,8       |
| HC-4.3_900x900                        | 900                 | 900  | 20 | 1016               | 1016 | 32 | 1160               | 1160 | 105 | 21,1       |
| HC-4.3_800x800                        | 800                 | 800  | 20 | 916                | 916  | 32 | 1060               | 1060 | 105 | 18,6       |
| HC-4.3_700x700                        | 700                 | 700  | 20 | 816                | 816  | 32 | 960                | 960  | 105 | 14,6       |
| HC-4.3_600x600                        | 600                 | 600  | 20 | 716                | 716  | 32 | 860                | 860  | 105 | 17,9       |
| HC-4.3_520x940                        | 520                 | 940  | 20 | 636                | 1056 | 32 | 780                | 1200 | 105 | 16,6       |



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## CUSTOM HATCH SIZES

To suit the most customised designs, for a tailored fit or simply to maximise your hatch clear opening, custom size hatches can solve many deck layout problems.

Based on your clear opening or deck cut-out dimensions, Hybrid Composite will produce a custom sized flush fit hatch based on either the Mk.IV or Mk.II range. All custom tooling is CNC cut to ensure your exact dimensions are adhered to. The same lines and features will be retained, ensuring your custom size model will match any standard size hatch specified on the same deck. All custom size hatches will be tested to CE/ISO 12216 standard and pressure tested to 2m. head of sea water, guaranteeing strength and watertight integrity.

For a quotation on your custom size hatch, contact us on [info@hybridcomposite.co.za](mailto:info@hybridcomposite.co.za) with your deck cut-out or clear opening dimensions, desired lid configuration and deck camber.

**Some of our previously produced custom hatch sizes are shown below**

- HC-2.1\_438x842 Trapezoidal, produced for Metur Yachts, Turkey. Based on the MkII model, the trapezoidal shape was adapted to be parallel with the toerail, match the local deck camber and provide access to the forepeak.



- HC-4.3\_600x600 Double Camber, produced for Mboats, Argentina. Based on the Mk.IV model, gutter, lid and clear PMMA were moulded to accurately fit the compound curvature of the coach roof.



- HC-4.3\_658x1412, produced for the Baltic 108' WinWin. The central lazarette access hatch fits between the retractable gangway hatch (also produced by Hybrid Composite) and a bulkhead below deck. Designed to suit the maximum allowable deck cut-out, the hatch retains clear opening to suit goods passing from the storage area below.

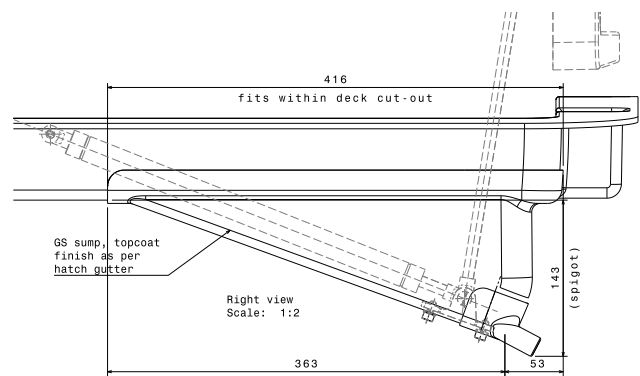




## HYBRID COMPOSITE GAS SPRING SUMP

The Hybrid Composite GS Sump system re-positions the gas springs for a more constant support of large hatch lids, throughout the lid opening angle. The result for the end user is a lid that feels lighter, handles more easily and doesn't slam open or closed.

The concept is fairly simple: increase the lid opening torque by increasing the lever arm, rather than gas spring pressure. This means less stress on the spring end fittings and hinges, resulting in less life-time wear and tear. The gas spring seals are also better lubricated due to the more vertical stowed (lid closed) spring angle, resulting in longer spring service life.

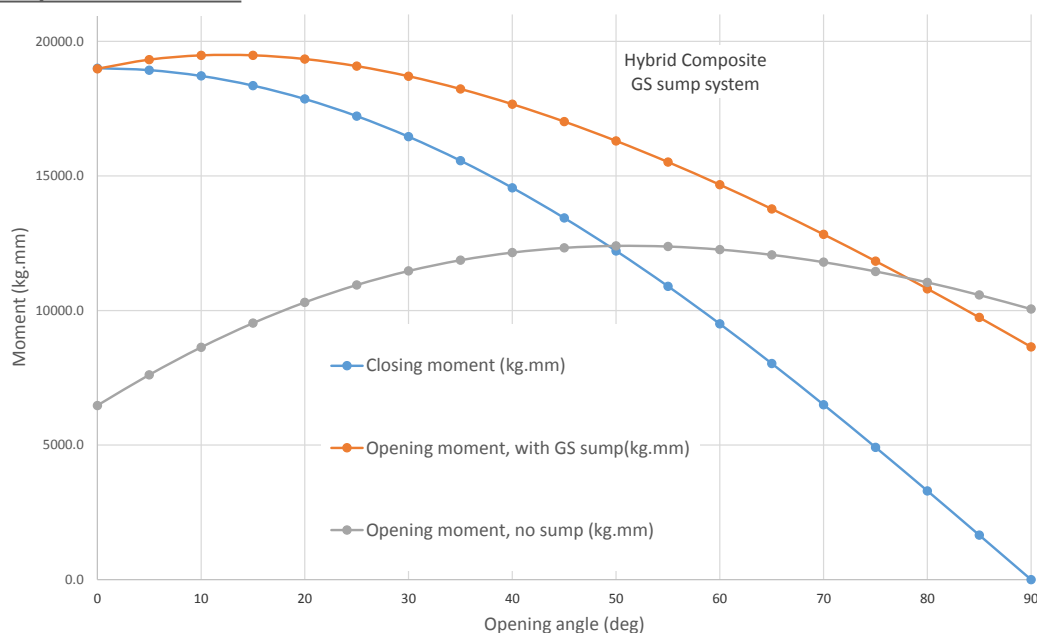


GS Sump space requirements below deck



This layout is an optional feature for all Mk.IV series hatches and now fitted as standard to sizes 900x900mm and over. The only design constraint is intrusion into space below deck, typically not a concern on large scale hatch layouts (sail locker, for example). The resulting gas spring sump protrudes  $\pm 130\text{mm}$  below the gutter and fits between the deck cut-out and clear opening so as to have no impact on hatch installation.

### Lid Open/Close Moments



## HYBRID COMPOSITE "AT" HATCH SYSTEM

The AT Hatch system brings AuTomed lid actuation to any Mk.II hatch. As yacht size increases and foredeck hatch dogs start falling out of reach, hatch automation becomes a consideration. The advent of push button sailing, on-board automation or even the necessity to operate multiple hatches remotely all contribute to an increased demand for automated actuation.



Originating as a custom client request, the Hybrid Composite AT system is now in its third evolution, integrating client and end-user feedback from multiple projects. The result is a system with market exclusive user-safety features and improved ease of installation for the builder.

In addition to these benefits, the Hybrid Composite AT Hatch System is completely flush: the closing can be completed without dogs and the gutter is devoid

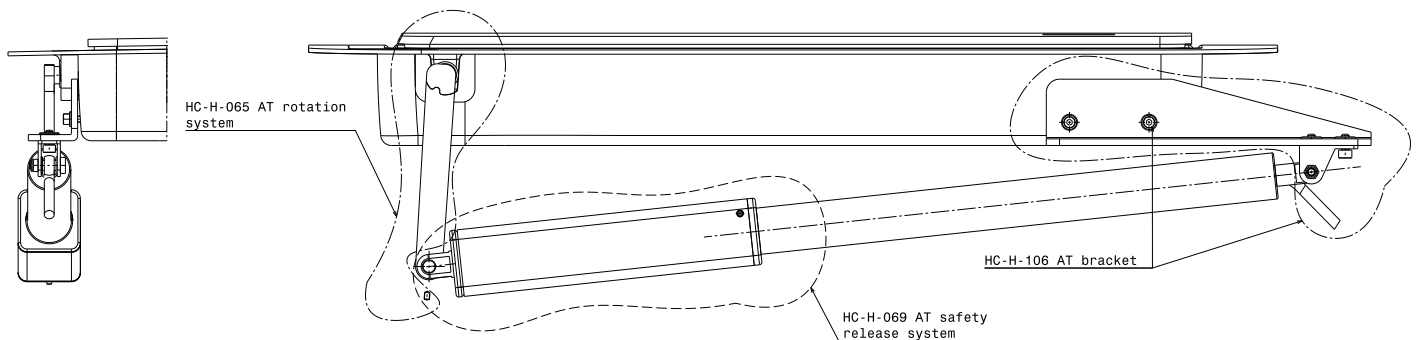


## HYBRID COMPOSITE "AT" HATCH SYSTEM

of any gas springs, struts or alternative supports. All of the system is housed below deck, in the dry area, providing enhanced accessibility and reduced environmental ageing on moving parts.

The AT Hatch System is also fully electronically integrated, allowing operation and monitoring through any 'Bus' based control system.

With so many features available, custom configurations possible and growing market trends in automation, we encourage any potential client to consider the upgrade to the Hybrid Composite AT Hatch System.





## FLUSH DECK HATCH EQUIPMENT

Hybrid Composite Flush Deck Hatches are dry assembled and tested at the factory prior to dispatch. Each hatch is then delivered fully assembled to the client for fitment.

**The following equipment is fitted as standard to all models.**

- Integrated hinging system in stainless steel 316, including fasteners.
- Hollow expanded silicone rubber D-seal. Also available as spare length extrusion, or hatch-size specific replacement kits.
- Stainless steel 316 gas springs; length and travel specified to suit lid opening angle and pressurized for lid weight.



- HC Square dog handles, machined from Aluminium 6061. Designed specifically for our deck hatches, the same handle adapts to all lid configurations and is also sold separately. Each handle is available with:
  - solid or winch socket core.



Hybrid Composite keeps stock of all standard parts listed above. Next day dispatch via DHL, to anywhere in the world, is possible on any item held in stock. Non-listed custom parts can be identified in the owner's manual using their unique design part number and re-manufactured to order.

- natural anodized finish, or a range of alternative anodizing colours



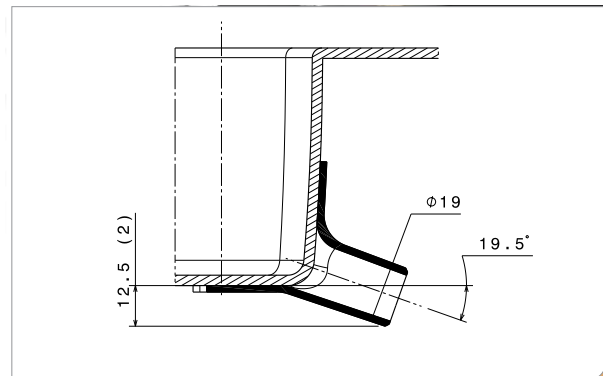
- long (125mm.) or short (90mm.) handle levers, or dog latch for machinery areas



- Flush fit, snag-free acetal cleats and locks



- FRP drainage spigot Ø20mm. These can be either in line with the gutter edge or at 45deg, mounted adhesively to the gutter.



## HYBRID COMPOSITE CABLE-TIE SADDLES

Once our products are delivered, we're aware of the value of easy fitment: our drain spigots are a testament to this. The next step in this process is the HC Cable-tie Saddle.

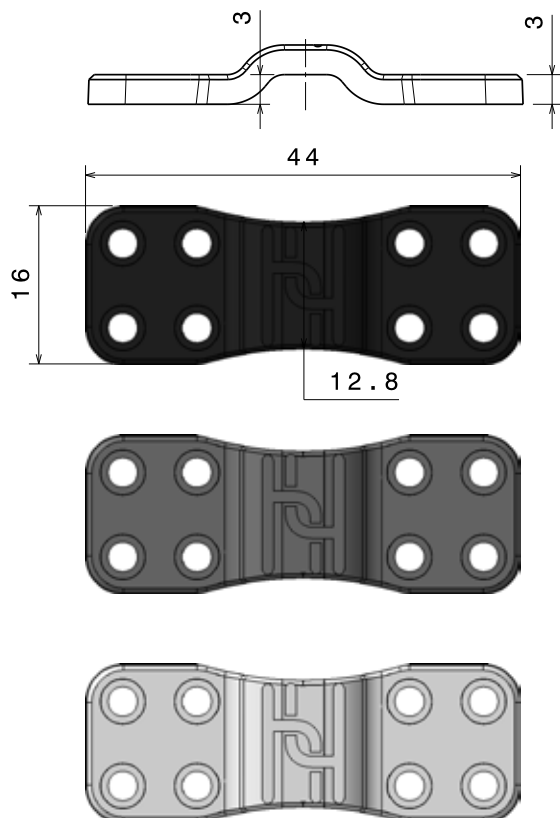
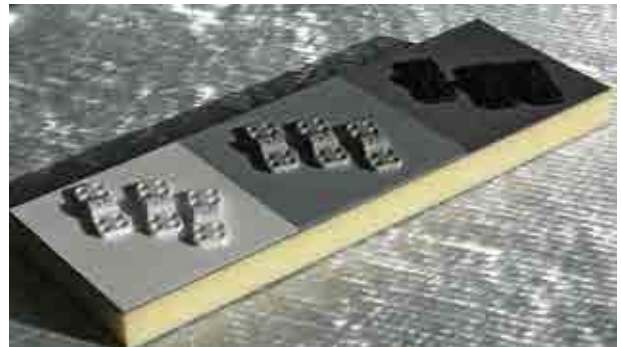
The HC Cable-tie Saddle is a light-weight and versatile solution for running the hatch drain pipes along the deck inner skin. The system is compatible with a variety of drain pipe sizes and types used by our clients and can be fitted reliably to virtually any substrate such as epoxy or VE/PE laminates, PUR primers or paints as well as steel or aluminium alloys.

Made from ABS, the HC Cable-tie Saddle is adhesively bonded into place using a quick cure methacrylate-based adhesive. A cable-tie is then passed through the saddle and around drain pipes or cables, ensuring these runs can be completed within minutes. The part is specially designed to achieve maximum adhesive strength for the small bonding area, in a consistent and reliable manner.

As a result, the HC Cable-tie Saddle can replace bulky pipe clamps and can also support electrical cable looms, tank breather pipes and many other system runs on board.



The HC Cable-tie Saddle is available in 3 different colours to suit your substrate, be it white paint, raw carbon, or bilge area grey



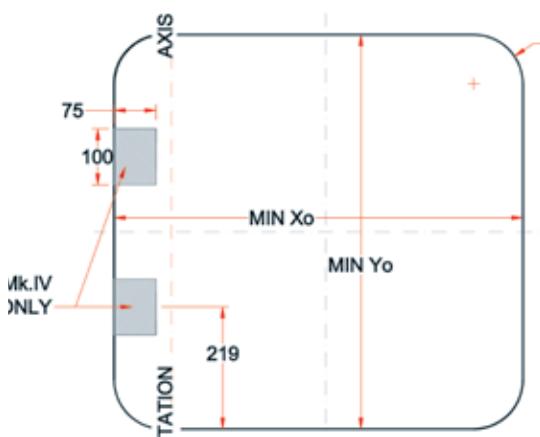
## FLUSH DECK HATCH INSTALLATION

Hybrid Composite Flush Deck Hatches are designed for quick and simple fitment. Paper, CAD or plywood templates are available to assist in the installation procedure. With the correct preparation, the structural bond to the deck can be completed with epoxy adhesive alone.

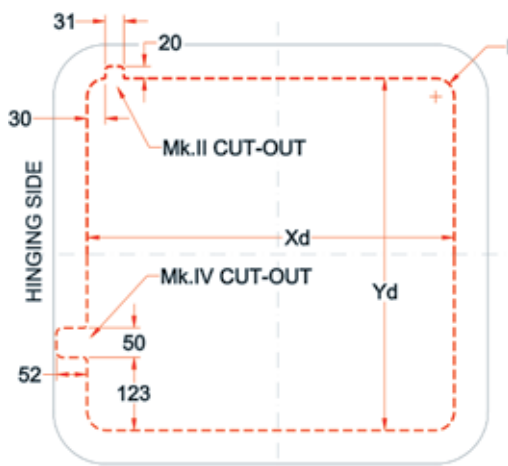
### THE STEPS BELOW DETAIL THE PROCEDURE FOR A STANDARD COMPOSITE DECK INSTALLATION:

- 1 Mould the deck shell providing an outer skin recess to suit the hatch bonding flange, as per diagram below (refer to individual hatch specification for exact dimensions).

| HATCH SIZE (CLEAR OPENING)           | MINIMUM RECESS DEPTH: |
|--------------------------------------|-----------------------|
| 500x500mm. and smaller               | 5mm.                  |
| Over 500x500mm.                      | 8mm.                  |
| Mk.IV hinge pocket additional recess | 4mm.                  |

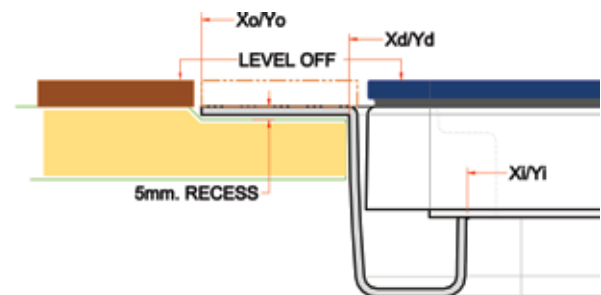


- 2 Trim away deck shell to suit chosen hatch position as per diagram below

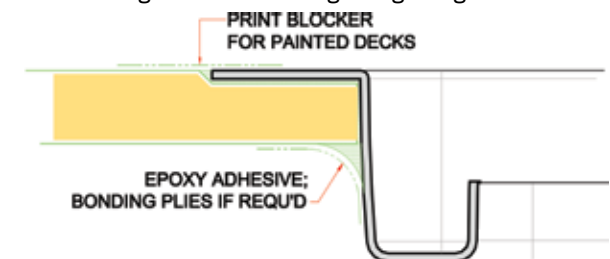


- 3 Glue the gutter bonding flange into the deck recess with epoxy adhesive or equivalent. Check the hatch seating depth, levelling and position against relevant deck references before completing the inner bonding.

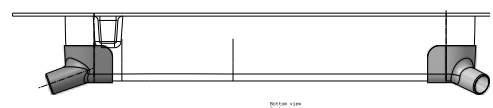
Note: always bond the gutter into the deck recess with the lid fitted, gas springs removed and equal size spacers fitted all around the lid-gutter gap.



- 4 Complete any secondary bonding required by structural engineers or to prevent print through at the bonding flange edge.



- 5 Bond on drain spigots at chosen locations using silicone or polyurethane adhesive.



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## HYBRID COMPOSITE CAPE TOWN

Hybrid Composite is a South African based producer of semi-custom composite parts for the marine and allied industries. We provide all services from your design brief through to tooling and product delivery. Our existing portfolio of innovative products puts strong emphasis on R&D, design simplicity and product efficiency.

Behind our extensive and versatile production of flush fit deck hatches lies a network of highly skilled and committed people.

**Available inhouse, we make use of the following services for our own products, custom projects or for client's use:**

- 2d and 3d CAD design and draughting
- 3-axis CNC machining, operating envelope 2750x1825x275mm.
- 120deg C composites curing oven
- Mould/tooling preparation
- Composite production in gelcoat-polyester, epoxy-vacuum consolidated, RTM light or pre-preg.

Staff members at Hybrid Composite bring together over 40 years of cumulative experience in the marine industry and up-to-date knowledge of composite build techniques and engineering. Strong links with the European market ensure that we remain in touch with developments in the composites world and that our products remain competitive on a global scale.

Contact us with your challenges, enquiries or simply feedback on our products:

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Baltic Yachts 130' "My Song" /  
Nauta Yachts/photo: Carlo Borlenghi