

# Anti Capsize System (ACS)

Automatic sheet release

[www.ganovelli-concept.fr](http://www.ganovelli-concept.fr)

*winner all multihull class - Route du Rhum 2018*

*13 multihulls equipped - Route du Rhum 2022*



# ACS

The ACS is a automatic safety system designed to overcome the problem of multihull capsizes.



When a critical angle on the longitudinal or transversal axis is reached, the system automatically releases the sheet it is holding, either progressively, or all at once. The ACS is also autonomous, it depends on no external equipment instrumentation (electronic or computerized) thus ensuring an extreme reliability.



Custom-fitted aboard each vessel, the ACS offers indispensable automated safety in the search for extreme performance on multihulls.

It has 4 different versions with different release mechanisms :

- Harken's Cam-matic offshore.
- Constrictor textile clutch
- Spinlock XXclutch
- Hydraulic cylinder solenoid valve (specifically for captive reel or fixed mainsheet systems)

## The detection and control module :



Permanently installed in the cabin, it monitors the heeling and pitch poling of the vessel , buttons on the right part allow the user to adjust the angle values at which the system triggers, as well as the sensibility (release delay). When the pre-set angles are exceeded, the detection box activates the mechanical units which release the sheets. Its electrical consumption on standby is 0.01A, when it triggers the release module, it spikes up to 2A.

## The automated sheet release modules :



Cam cleat offshore

Constrictor

Clutch

Hydraulic

The cam cleat uses Harken's Offshore Cam-matic® which ensures reliability, it allows the user to use the cleat normally to secure the sheet. Automated, it will automatically release the sheet it secures even without sheet tension thanks to a spring loaded ejector.



# ACS

The constrictor module accepts heavier loads than the others, it will secure the mainsail, traveler, or fixed point release on its own.

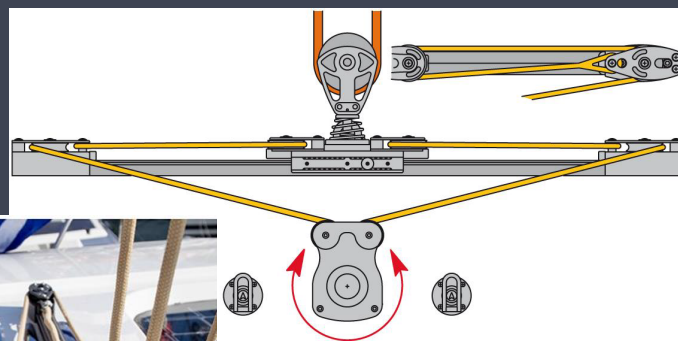
The clutch module allows progressive release of the sheet, it releases only the amount of sheet needed in order to regain the wanted trim. This module uses a Spinlock XX clutch.



The hydraulic system on the other hand does not secure a sheet, it is a valve electronically directed by the ACS, which controls the movement of the hydraulic cylinder (generally used for the mainsail) or of the captive reel winch.



## Hydraulic cylinders



## Line driver

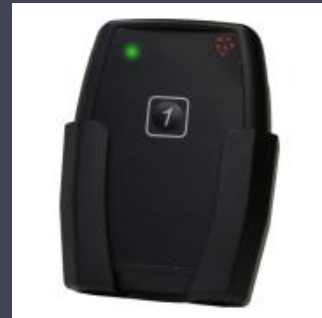


## Captive winch

## Manual release options :



Manual release of the sheets is possible by means of emergency cutout bracelets (panic button). This manual emergency override can be installed near the helm, at the foot of the mast, or wherever, depending on the needs of the skipper.



Waterproof remote control range up to 300m, allows the skipper to trigger the release module manually.

## Technical specifications:

- ❖ Detection module :  
(detection box + junction box)  
weight 400g  
Electrical consumption on standby 10 mA ;  
Electrical consumption when releasing up to 5A (depending on the number of release modules and their type).  
Fonctions :
  - ✓ Release delay setting, from 0 to 6 seconds.
  - ✓ 11 presets for pitch angle.  
4/7/10/13/16/19/22/25/30/35/40OFF » in degrees(tolerance  $\pm 2^\circ$  )
  - ✓ 11 presets for heeling angle.  
2/4/6/8/10/12/14/16/18/20/25/OFF » in degrees (tolerance  $\pm 2^\circ$  )
  - ✓ 3 outputs for panic button type switches.  
1 on the box; 3 other on free positionning»
  - ✓ 2 outputs for release system  
(Release 1 and 2 ).
  - ✓ 1 switch 3 positions to select *manual* , *automatic* or *OFF*
  - ✓ 2 switches to select active sheet release module
  
- ❖ Release modules :
  - Automation with hydraulic actuator « spinlock XX clutch »: electrical consumption spikes up to 2A.  
polarised plugging  
weight 800g
  - Automation with hydraulic actuator « Harken Cam Matic » : electrical consumption spikes up to 2A.  
polarised plugging  
Weight 500g
  - Hydraulic actuator solenoid valve (normally closed) : electrical consumption spikes up to 2A.  
(polarized plugging and ground return to prevent core corrosion)  
weight 300g
  - Constrictor textile blocker automated by hydraulic actuator:  
electrical consumption spikes up to 1A  
polarised plugging  
Weight 930g
  
- ❖ Miscellaneous :
  - ✓ Silver lined copper wiring
  - ✓ 10A fuses ( $\varnothing 6 \times 32$ )
  - ✓ fireproof plastic cases (ABS et PVC).
  - ✓ Outside system weather and water proof (Hydraulic actuator IP68 with additionnal fairing ; 316L stainless steel and 5086 treated alluminium parts )

**PALMARES - ACS Ganovelli**  
*Concept 21 years of performance*

2022	ROUTE DU RHUM :(GClass) <ul style="list-style-type: none"> <li>• 4<sup>th</sup> IDEC SPORT Francis JOYON</li> <li>• 8<sup>th</sup> Use It Again! Romain Pillard</li> </ul> ROUTE DU RHUM :(Multi 50) <ul style="list-style-type: none"> <li>• 3<sup>rd</sup> Primonial Seb Rogues</li> <li>• 5<sup>th</sup> Petits Doudou Armel Tripon</li> </ul>		
2021	TRANSAT JACQUE VABRE :(Multi 50) <ul style="list-style-type: none"> <li>• 1<sup>st</sup> Primonial Seb Rogues</li> <li>• 4<sup>th</sup> Solidaire Thibaut Vauchel</li> <li>• 5<sup>th</sup> Petits Doudou Armel Tripon</li> </ul>		
2018	ROUTE DU RHUM :(GClass) <ul style="list-style-type: none"> <li>• 1<sup>st</sup> IDEC SPORT Francis JOYON</li> <li>• 4<sup>th</sup> REMADE Romain PILLARD</li> </ul> ROUTE DU RHUM :(Multi50) <ul style="list-style-type: none"> <li>• 1<sup>st</sup> Réauté chocolat Armel TRIPON</li> <li>• 3<sup>rd</sup> Solidaire Thibaut VAUCHEL CAMUS</li> <li>• Arkema Lalou ROUCAYROL</li> </ul> ROUTE DU RHUM :(Class Rhum) <ul style="list-style-type: none"> <li>• TS52 Gerald BIBOT</li> <li>• Outremer 5X Yann MARILLEY</li> <li>• A capella Charlie CAPELLE</li> <li>• ORMA 40 Gilles BUCKENHOUT</li> </ul>		
2017	JULES VERNE TROPHY : IDEC IDEC SPORT (GClass) Francis JOYON Single-handed transatlantic sailing record.	2009	IDEC (GClass) Francis JOYON Record FRANCE/ILE MAURICE DOUBLE-HANDED TRANSAT JACQUE VABRE :(Multi 50) 3 <sup>rd</sup> REGION AQUITAINE Lalou ROUCAYROL
2014	ROUTE DU RHUM :(GClass) <ul style="list-style-type: none"> <li>• MOD 70 /PAPREC Yann Elies</li> <li>• IDEC Francis JOYON</li> </ul> ROUTE DU RHUM :(Multi50) <ul style="list-style-type: none"> <li>• 2<sup>nd</sup> Lalou Roucayrol</li> <li>• 4<sup>th</sup> Yves le Blevec</li> </ul> ROUTE DU RHUM :(Class Rhum) <ul style="list-style-type: none"> <li>• 1<sup>st</sup> ANEO Anne Cazeneneuve</li> </ul> 7eme Acapella Charlie Capelle	2008	IDEC (GClass) Francis JOYON Discovery Route Record IDEC (GClass) Francis JOYON Single-handed World Tour Record
2013	IDEC 2 (GClass) Francis JOYON Single-handed transatlantic sailing record.	2007	DOUBLE-HANDED TRANSAT JACQUE VABRE :(ORMA) <ul style="list-style-type: none"> <li>• 1<sup>st</sup> GROUPAMA 2 Franck CAMMAS</li> <li>• 3<sup>rd</sup> BANQUE POPULAIRE Pascal BIDEGORRY</li> <li>• 4<sup>th</sup> BROSSARD Yvan BOURGNON</li> <li>• 5<sup>th</sup> SOPRA GROUP Antoine KOCH</li> </ul> DOUBLE-HANDED TRANSAT JACQUE VABRE :(Multi 50) <ul style="list-style-type: none"> <li>• 3<sup>rd</sup> REGION AQUITAINE Lalou ROUCAYROL</li> </ul> IDEC (GClass) Francis JOYON Record de traversée de la Manche
2010	ROUTE DU RHUM :(GClass) <ul style="list-style-type: none"> <li>• 1<sup>st</sup> GROUPAMA 3 Franck CAMMAS</li> <li>• 2<sup>nd</sup> IDEC Francis JOYON</li> </ul> ROUTE DU RHUM :(Multi 50) <ul style="list-style-type: none"> <li>• 2<sup>nd</sup> REGION AQUITAINE LalouÁ ROUCAYROL</li> <li>• 7<sup>th</sup> NAVIGUEZ ANNE CAZENEUVEÁ Anne CAZENEUVE</li> <li>• 9<sup>th</sup> NOOKTA Gilles BUEKENHOUT</li> </ul> ROUTE DU RHUM :(Class RHUM) <ul style="list-style-type: none"> <li>• 4<sup>th</sup> ACAPELLA Charlie CAPELLE</li> </ul> VENDEE / SAINT PETERSBOURG (Multi 50) <ul style="list-style-type: none"> <li>• 1<sup>st</sup> ACTUAL Yves LE BLEVEC</li> <li>• 4<sup>th</sup> REGION AQUITAINE LalouÁ ROUCAYROL</li> </ul>	2006	ROUTE DU RHUM :(Classe ORMA) <ul style="list-style-type: none"> <li>• 2<sup>nd</sup> BANQUE POPULAIRE Pascal BIDEGORRY</li> <li>• 5<sup>th</sup> GROUPAMA 2 Franck CAMMAS</li> <li>• 6<sup>th</sup> BROSSARD Yvan BOURGNON</li> <li>• 8<sup>th</sup> REGION GUADELOUPE</li> <li>• 9<sup>th</sup> SOPRA GROUP Antoine KOCH</li> </ul> HYDRAPLANEUR Yves PARLIER <ul style="list-style-type: none"> <li>• Sailing Distance Record /24h(60feet/equip.)</li> </ul> Record tour de Gran Canaria
		2005	IDEC (GClass) Francis JOYON Single-handed transatlantic sailing record.
		2004	GROUPAMA 2 (ORMA) Franck CAMMAS Champion ORMA