

## **A HYBRID SOLUTION TO REDUCING POLLUTION IN VENICE**

**FREE**  
Giant 2017  
Wall Planner

Also in this issue

**BRECO OPEN ENDED BELTS**  
**INJECTION MOULDING**  
**HAUL-OFF SOLUTIONS**  
**CUSTOM GEARS**



32 million visitors per year  
1000's of powered private boats  
550 water taxis



**Venice suffers from alarming levels of air, noise pollution, and vibration. Power transmission specialist TransDev have become a key engineering partner and sponsor of a green project that hopes to transform marine transportation.**

REAPsystems based in Hampshire are creating a clean drop-in hybrid diesel electric engine that can be installed by any boat builder and fitted into all existing boats, starting with a Venice water taxi to demonstrate the technology.



This hybrid system uses the latest diesel engine technology paired with a high-power, compact and efficient electric motor & inverter. The electric engine utilises a high performance CONTI® SYNCHROCHAIN CARBON timing belt and specially manufactured pulleys from TransDev to drive the propeller. A Hybrid System Control Unit (HSCU) is connected to the clutch. The clutch is engaged when diesel operation is needed and disengaged when electric motor is needed.

*REAPsystems estimate an average fuel saving of at least 50%.*

Apart from the environmental benefits REAPsystems estimate an average fuel saving of at least 50%, if compared with current diesel engine boats. The short-term aim is to develop a hybrid electric taxi-boat prototype that will be demonstrated and endurance tested in Venice next year, then to influence the new regulation on vehicle emissions to be imposed by the Venetian local authority. Longer term the aim is for adoption in Venice with a roll-out to other applications to follow.



## Marine Hybrid Electric Engine

The hybrid system comprises two systems in one, hence, the operator will benefit from high reliability and a peace of mind backup/redundancy. In the city, the engine can be 'clutched out' to allow pure electric drive. Here, at low speed and where it matters most, users will benefit from all the advantages of the electric motor: no noise, no pollution, no vibrations and no fuel consumption.

*When it came to the drive belt and pulley solution REAPsystems turned to TransDev and ContiTech.*

## Creating a Compact Drive

As a drop-in and compact solution the hybrid electric drive-train can be installed into all existing diesel boats by any boat builder, either as a replacement or as an add-on to an existing diesel engine. There is virtually no compromise on passenger or cargo carrying capabilities.

When it came to the drive belt and pulley solution REAPsystems turned to TransDev and ContiTech. The high tear resistance and high dynamic load carrying capacity of the CONTI® SYNCHROCHAIN CARBON's high performance belt allows for synchronous drives even where boat engine compartment space is at a premium.

CONTI® SYNCHROCHAIN CARBON

Continental

ContiTech



## Power and Performance

This high-performance CONTI® SYNCHROCHAIN CARBON timing belt, with its CTD profile, also makes extreme applications such as the hybrid engine possible, providing harmonic tooth meshing and therefore ultra-smooth running. At the same time, it provides excellent protection against belt slip at high torque.





# TransDev Hopes Venice will REAP the Benefits of Hybrid Power

## Low and High Speed

The electric motor is very responsive; it can operate down to zero rpm and change smoothly from forward to reverse rotation. This gives the driver impressive manoeuvrability and more controlled and safe operation in the confined spaces of Venetian canals - all without gear changes.

CONTI® SYNCHROCHAIN CARBON timing belts were designed for applications with extremely high acceleration forces, as well as for the reliable transmission of high torque at low speeds. To deal with the impact loads occurring in the case of abrupt boat acceleration and deceleration, the belt employs a polyurethane compound, which absorbs even maximum surges and guarantees maintenance-free functioning in continuous service.

## A Tough Environment

Venice is a salt water lagoon whilst the city canals can suffer from a wide range of man-made pollutants, both domestic and industrial. The engine compartment of any boat is a challenge for belts and pulleys to operate in when you have the combination of cold, heat, oils, diesel, salt water and general contaminants.



The CONTI® SYNCHROCHAIN CARBON belt, consisting of polyurethane teeth and backing, carbon cord tension members and specially treated polyamide fabric, is highly resistant to oils, grease, fuel, UV and ozone; tropicalized and resistant to temperatures from -40 to +80 degrees centigrade.

## Bringing Peace to the Canals

Boats are an essential part of the private and commercial lives of many Venetians, but the sound of buzzing, growling, or throbbing engines often fills the air. Venice needs quiet, low vibration at low speed inside the canals of the city. CONTI® SYNCHROCHAIN CARBON's arch-shaped pulley-entry geometry, on the one hand, and the higher tooth, on the other, provide harmonic tooth meshing and therefore ultra-smooth running.

*The sound of buzzing, growling, or throbbing engines often fills the air.*

TransDev manufactured matching SYNCHROCHAIN pulleys for the hybrid drive from unalloyed medium carbon steel with through holes and flanges. The optimized sectional match between timing belt and pulley and a belt construction with a multiply treated polyamide fabric, plus a dramatic reduction in the required timing belt width that using CONTI® SYNCHROCHAIN CARBON high performance timing belts afford, all make for considerably less noise, even at high belt speeds.

## The Need for Reliability

A standard 9 metre water taxi typically has a long, hard 20 hour day. One of the reasons for the slow uptake of clean hybrid technologies in the marine market is the high reliance on the reliability of the engine. The CONTI® SYNCHROCHAIN CARBON belt is essentially maintenance-free. The precise tooth match between belt and drive pulley ensures a high degree of synchronicity and reliably prevents belt ratcheting. No lubricating or re-tightening is required.

## Next Steps

**Trials of the boat are expected to continue through the winter with a Venice debut in 2017. Learn more about CONTITECH belts, including SYNCHROCHAIN from TransDev overleaf.**







## Relax with BRECO® Open Ended Belting For Accurate Motion Control

This issue we are highlighting the versatility of BRECO® Polyurethane linear drive belts for accurate, motion control and power delivery. Open ended polyurethane timing belts are used extensively for linear drives, often replacing more expensive mechanical alternatives. They offer a host of user options, covering chemical and temperature resistance, tension cord types, conveying profiles, special backings and open lengths.

### In Operation

In operation the BRECO® Polyurethane linear drive belts provide speeds up to 80 m/sec and can operate at temperatures from -25°C to +110°C (dependent on special PU's). The belts offer high linear, positional and angular accuracy and are ideal for slipless, synchronous operation. BRECO® Polyurethane linear drive belts provide constant length with no post elongation and are extremely wear resistant. Users can benefit from up to 98% efficiency as well as maintenance-free operation. This is

ideal for applications where access is difficult or downtime is prohibitively costly for a business.

### Specifying

The belts can also be specified for special chemical resistance and are available in pitch length multiples to any desired length up to 150 metres. The ability to specify from a range of high strength tension cord types allows users to further tailor the belt to their specific application.

### Custom Backings & Profiles

As well as helping specify the 'base' BRECO® Polyurethane linear drive belts, TransDev offers multiple profiles and backing options to suit almost all applications. TransDev Special Belts division can modify the characteristics of BRECO® timing belts by applying one or more backings and enabling infinite different designs for applications such as conveying. TransDev can bond backing materials to virtually any BRECO® base belt and our technical experts are ready to assist specifiers with their specific requirements, or help develop a new solution.

@ Visit our website to read more blog posts about customer applications.



BRECO® Timing belts in continuous operation 24/7



BRECO® ATS 15 Polyurethane Timing Belts Go 11 Metres Up

## TransDev is an Authorised ContiTech Distributor

CONTI®-V  
CONTI®-V ADVANCE  
CONTI®-V POWER  
CONTI®-V PIONEER  
CONTI®-V GARDEN  
CONTI®-V DUAL  
CONTI®-V FO  
CONTI®-V MULTIRIB  
CONTI®-V MULTIBELTS  
CONTI®-V VARISPEED

CONTI® SYNCROBELT  
CONTI® SYNCHROFORCE  
CONTI® SYNCHROCOLOUR  
CONTI® SYNCHROTWIN  
CONTI® SYNCHROTRIB  
CONTI® SYNCHROCHAIN  
CONTI® SYNCHROFLEX  
CONTI® SilentSync



ContiTech



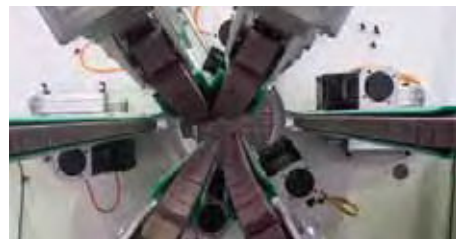
## HAUL-OFF FREE SITE SURVEYS

### TransDev offer the most comprehensive Haul-Off package for the Extrusion Industry

Haul-off/puller belts and attachment chain are mainly used in the plastics and cable industries to pull extruded profiles. TransDev offer the most comprehensive Haul-Off package for the Extrusion Industry, at competitive prices and with short lead times.

The characteristics of many TransDev timing belts can be modified by applying one or more backings and enabling infinite different designs for conveying applications. Our in-house designers can advise on the optimum solution, whether it uses belts or chain.

Specific haul-off belt properties, such as high or low coefficient of friction, soft, hard or compressible can all be achieved with our



comprehensive range of backings. Using a thick backing affects the flexibility and hence the minimum pulley diameter, but slotting the backing can improve the flexibility. We can bond our backing materials to virtually any base belt for use as haul-off belts and puller belts.

A haul-off package may also include lightweight aluminium base plates and TransDev manufactured belt pulleys. Our chain solutions include rubber topped chain and attachment chain from stock, complemented by sprockets, pads and chain guides.

To learn more book a **FREE Site Survey**, or to get a price please contact us on 01202 675 555.

**Trans-haul**  
THE COMPLETE EXTRUSION PACKAGE



**TransDev**  
MANUFACTURING



## UK Gear Manufacturing

TransDev supplies a complete range of gear types, covering both metric and imperial pitches. The standard stock is further supplemented by our Special Gear Manufacturing. If we don't stock it or it is a special design we can manufacture and rework to your specific requirements.

## Custom Gears

We can provide most quotations to drawing within 1 hour. Live work queues enable us to make real time changes, to assist your delivery requirements on existing orders in production. Our unparalleled precision cutter range ensure optimum meshing, even in small gear sizes. We are able to rework gears by either reborring, keywaying or using tapped holes.

### Materials

- Aluminium
- Steel
- Stainless Steel, Brass
- Cast Iron
- Plastics

### Capacity

- Diameters: from 3mm (0.125") to 1 metre (39")
- Face widths: up to 196mm (7.5")

Please contact our team at [sales@transdev.co.uk](mailto:sales@transdev.co.uk)

## Expanded Warehouse

TransDev supports British business with investment in new high level racking for its expanded warehouse.



## Time to Consider SilentSync Belts?

Take advantage of our technical and manufacturing expertise to see how a super quiet and low vibration drive can transform your drive solutions?

The CONTI SilentSync belt offers a powerful innovation in synchronous drive systems. With up to 25% more power capacity compared to previous generation products and static conductivity, it's a revolutionary upgrade and even more advanced than standard round-tooth belts and chain drives.

SilentSync's patented Helical Offset Tooth (H.O.T.) design merges belt and TransDev manufactured pulleys into the quietest, smoothest and one of the most compact synchronous drive packages available. The result is a continuous rolling tooth engagement that reduces vibration and improves the overall efficiency of your drive system.

### SilentSync Advantages:

- Up to 25% more power capacity
- Static conductivity
- Up to 19dB quieter than straight tooth belts
- Over 1,500 possible pulley combinations
- Rated for continuous service at 200°F
- Up to 98% energy efficiency
- Matched TransDev manufactured pulleys

Challenge your design with a **FREE** TransDev drive review and technical consultation.  
Call on 01202 675 555

### CONTI® SilentSync answers the market's needs

- Noise reduction
- Reduced maintenance
- Reduced drive width and weight
- Energy efficiency
- Reduced vibration
- Reduced downtime
- Increased horsepower





## TRANSFORM YOUR PROJECTS

TransDev Plastics provides an economical, easy and flexible injection moulding service.

### Technology and Expertise

- State of the art machinery
- 3D CAD modelling
- Expert sales and engineering contacts
- In-house design
- Manufactured in the UK

### Rapid Prototyping & Production

- CAD to prototyping
- Testing to tooling
- Production to delivery

### Injection Moulding Services

- Contract moulding
- Modular tooling

Ask your TransDev Sales Representative



**Trans-mould**  
VERSATILE INJECTION MOULDING SERVICES



### Indulge in Perspex® Sweet Pastels



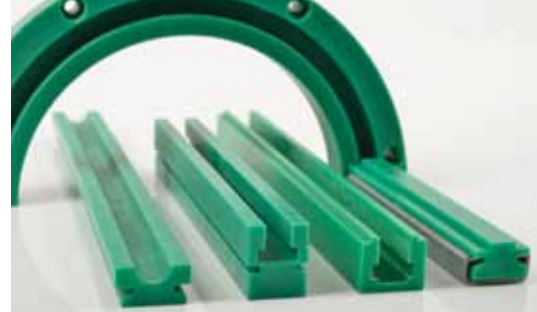
Perspex® Sweet Pastels is a newly developed cast acrylic sheet collection made up of eight vibrant pastel colours and is available now from TransDev.

This selection of fresh colours are set to tempt sign makers and designers by offering a Pick 'n' Mix of mouth-watering vibrant flavours, from Lemon Bonbon to Parma Violet.

Eight pastel shades are available in a standard 3m x 2m sheet size with 3mm thickness. An additional benefit of each sheet is that it offers the best of both worlds with a different finish on each side, offering both matt and gloss surfaces all in one sheet. These unique colours have been developed within the Perspex® colour lab in Lancashire and all sheets are manufactured here in the UK. Technical experts within the colour lab will produce colour matches based on pantone, light source and end application.

Perspex® Sweet Pastels have all the excellent physical properties of standard cast acrylic sheet. All 8 delicious colours were specifically developed with bright signage and retail display in mind; lightweight and easy to install for pop up displays, yet strong durable and hard wearing for those more demanding interior needs.

To learn more about Sweet Pastels contact TransDev Plastics Sales on 01202 675 555



### Guides and Wear Strips

#### Extruded Profiles

TransDev Plastics have one of the largest range of extruded profiles in Europe. We hold a vast range of extruded profiles in stock and can extrude to your particular requirements.

#### Belt Guides

TransDev machine a range of standard profiles for Flat, Round and V belts. We also machine special types of belt guides.

Working closely with our Technical Belt Team we can service your design requirements.

#### Chain Guides

TransDev machine all the standard profiles for chain for our extensive stock range.

TransDev supplies standard chains as well as manufacturing "special" chains with attachments and work closely with TransDev Plastics to meet special design requirements for Chain guides.

- Extruded profiles
- Belt guides
- Chain guides
- Special profiles
- Scrolls/Feedworms
- Corner bends and starwheels

E-mail: [sales@transdev.co.uk](mailto:sales@transdev.co.uk) for a quotation.

### Injection Moulded Belt Profiles



TransDev timing belts with welded on profiles (e.g. with dogs or cams on the back of the belt) offer unlimited possibilities to the designer.

The high levels of automation required today means the designer is often called upon to come up with an innovative solution. Standard belt profiles can be injection moulded out of polyurethane for ranges such as BRECO® Linear open ended belts. Standard profiles can also be modified by drilling or grinding.

#### Profiles Selection

Both the type of product to be conveyed and the method of transportation will influence the choice of profiles.

E-mail: [sales@transdev.co.uk](mailto:sales@transdev.co.uk) for a quotation.



## Running Total

North Devon AONB (FULL 26.2 mile) Marathon 2016 on 26/06/2016 to raise money for North Devon Hospice.



Anthony (and son) cross the line!

You may remember in the last issue **Anthony Baker** from the Estimating Department was running an extreme trial 26.2 miles coastal marathon for charity. Just to update you he raised a whopping **£350** and crossed the line in 4 hours 59 minutes. Thank you to all of those who donated and supported his effort.



## How do I get the TransDev Catalogue?



- Belts
- Pulleys
- Chain
- Sprockets
- Gears
- Hardware
- Plastics



Ask your TransDev sales contact or visit [www.transdev.co.uk/catalogue](http://www.transdev.co.uk/catalogue) to order yours!

## 2016-2017 CHRISTMAS & NEW YEAR SHUTDOWN

	Admin, Sales & Technical	Despatch Status	Earliest Arrival Day/Date
<b>Thursday 22nd Dec 2016</b>	Normal hours 9.00 - 5.00	Normal Post	Friday 23rd December
<b>Friday 23rd Dec 2016</b>	Normal hours 9.00 - 5.00	Normal Post	Wednesday 28th December
<b>24th Dec - 2nd Jan</b>	Closed	Closed	N/A
<b>Tuesday 3rd Jan 2017</b>	Normal hours 9.00 - 5.00	Normal Post	As Normal



We are closed from 5:00pm Friday 23rd December 2016

and go back to work on

9:00am Tuesday 3rd January 2017

### Breakdown Service

During the shutdown period our 24/7 Premium Callout Service will be operating as usual on 07850 548351 (Operator is unable to progress orders).

We would also like to take this opportunity to wish you, your family and your colleagues a Merry Christmas and a happy, healthy and prosperous New Year from everyone here at TransDev.

## 3 Ways to follow TransDev Online

# 1



SCAN THIS CODE TO CONNECT WITH US ON LINKEDIN

# 2



SCAN THIS CODE TO JOIN THE CONVERSATION

# 3



SCAN THIS CODE TO WATCH MORE VIDEOS



TransDev is a sponsor of the REAPsystems Venice Water Taxi and it's ground breaking hybrid engine (see main feature). You can learn more about them on the TransDev YouTube channel, along with many other product stories and applications.





# HOWEVER THEY DRESS IT UP. IT'S JUST NOT BRECO®

## What is the true cost of a belt failure?

Belt failure is a major cause of unwanted cost to many businesses, so choosing the right belt is more than just about the initial purchase price.

Substituting high quality belts, such as BRECO®, for alternatives that under-perform or fail at critical moments, can turn small belt purchase savings into considerable losses, in a matter of minutes.

BRECO® and BRECOFLEX® timing belts are developed by the most innovative producer in the field of polyurethane timing belt technology worldwide.

When it comes to BRECO® belts we believe that there is no substitute for the real thing. We are proud that thousands of businesses around the world rely on BRECO® quality.

To all those businesses that have chosen BRECO® we say *'Thank you and Happy Christmas'*.

If you have yet to discover what BRECO® can save you then we invite you to experience the difference at [www.transdev.co.uk/breco](http://www.transdev.co.uk/breco)

**BRECO® Keeps You Moving**

**Because a belt isn't  
just for Christmas!**

[transdev.co.uk](http://transdev.co.uk)

To order or for more information:

**+44 (0)1202 675 555**

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