

Warp-Drive Race



“Warp-Drive is fast and powerful. My sails held their shape, and had smooth, clean leeches even in highest wind conditions. After 20 days on the brutal Route de Rhum the WD fabric looked as good as new.”

– Sir Robert Knox-Johnston
Open 60 Grey Power

Super Premium Radial Race

Made using Challenge’s patented process for weaving straight warp yarns in heavy fabrics.

Fill yarns take crimp during weaving and encapsulate the warp yarns.

Warp-Drive fabrics have zero-crimp warp yarns, which gives the performance of a laminate and the durability of a traditional woven. These fabrics will not mildew.

Warp-Drive dacrons are the best warp oriented wovens ever made.



Fabric ID	Warp DPI	Fabric Weight		Fabric Width	
		SM oz	gsm	in	cm
D4.11WD Race	19,000	4.5	192	54	137
D5.11WD Race	22,400	5.3	225	54	137
D6.11WD Race	27,000	6.0	257	54	137
D8.11WD Race	33,600	8.5	364	54	137
D10.11WD Race	51,000	10.0	428	54	137
D12.11WD Race	62,400	12.5	535	54	137

Warp-Drive Cruise

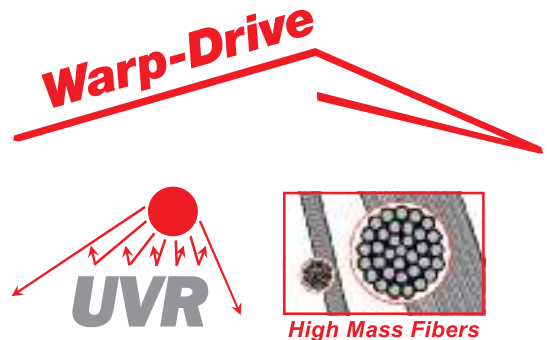


Super Premium Radial Cruise

Woven using the same process as Warp-Drive Race, but with larger fill yarns on the surface to increase durability and UV resistance.

Warp-Drive Cruise fabrics have low-crimp warp yarns, which gives the performance of a laminate and the durability of a traditional woven. These fabrics will not mildew.

Warp-Drive dacrons are the best warp oriented wovens ever made.



Fabric ID	Warp DPI	Fabric Weight		Fabric Width	
		SM oz	gsm	in	cm
D7.11WD Cruise	27,000	6.8	291	54	137
D9.11WD Cruise	33,600	9.1	390	54	137
D11.11WD Cruise	51,000	10.4	445	54	137
D13.11WD Cruise	62,400	13.5	578	54	137

CHALLENGE AIRCLOTH

Warp-Drive

Best Warp Dacron Ever
– Straight Warp Fibers
Very Low Warp Stretch
– Tight Weave

4.11, 5.11, 6.11; 8.11, 10.11, 12.11 *patented*

ID	WIDTH	ID	WIDTH
D4.11WD/36	36"	D7.11WD	54"
D4.11WD	54"	D8.11WD/36	36"
D5.11WD/36	36"	D8.11WD	54"
D5.11WD	54"	D10.11WD/36	36"
D6.11WD/36	36"	D10.11WD	54"
D6.11WD	54"	D12.11WD/36	36"
D7.11WD/36	36"	D12.11WD	54"

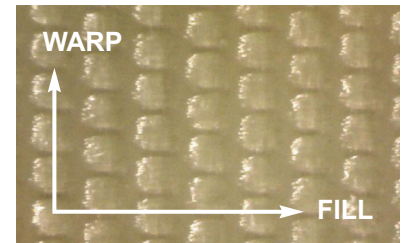
First conceived in the late 1990's, Challenge's new patented **Warp-Drive** is the first heavy woven sailcloth with straight warp yarns and a tight weave.

Traditional polyester crosscut sails have utilized sailcloth with relatively straight fill yarns and highly crimped warp yarns. This allows the sails to hold their shape very well when heavily loaded. Woven warp oriented sailcloth with straight warp yarns and highly crimped fill yarns was not available so crosscut sails have been the logical choice. Now low stretch, low warp crimp sailcloth is available. This makes the more efficient warp oriented radial sail construction the best choice for a high performance woven sail.

A major advantage of radial construction is that the warp yarns closely follow the load lines in the sail, so the stability of the air-foil depends much less on the bias strength of the cloth. This means that the sail doesn't rely on resin to maintain its camber, and as a result holds its shape much longer, long after the crosscut sail has been distorted. One can make a sail that holds its shape with a softer, easy to handle material.

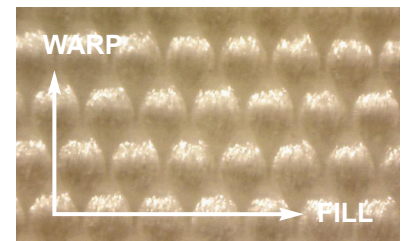
Previously, reasonably good warp fabrics were available in lightweight 4 oz sailcloth, but it was impossible to weave heavier low warp stretch sailcloth. Now 30, 40, 50, and 60' boats can have high performance radial sails made of durable woven polyester sailcloth.

A sail of woven **Warp-Drive** sailcloth holds its shape far longer than a crosscut woven sail. It is more economical than a cruising laminate sail, and it won't mildew as will a laminated sail. (Please note: it has a very high count of fine denier fibers. For optimum UV resistance, please use our Radial Weaves which have large warp yarns sitting on the surface exposed to the sun.)



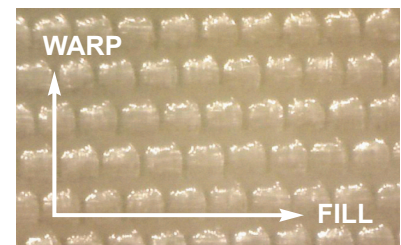
WARP-DRIVE

Warp-Drive, unlike other fabrics, has straight warp yarns with fill yarns crimped and woven tightly over and under them. For the first time ever, the fill yarns are on the surface.



OTHER WARP FABRIC

Competing warp fabrics use large warp yarns, still crimped and thus stretchy, and looser constructions.



HIGH ASPECT HIGH MODULUS – PREMIUM CROSSCUT WOVEN

Note that this looks just like the Warp Drive rotated 90°