

Standards up – costs down

Words: Dr. Til Assmann, Sales Team Leader, UPDRAFT LS

Dr. Til Assmann and Stella Göttel, tells PES about the benefits of using UPDRAFT LS lifting slings. They are strong, precise, lighter, last longer and cost in total, less than traditional lifting slings..



Stella Göttel and Dr. Til Assmann

UPDRAFT LS lifting slings provide the strength and precision of heavy wire rope lifting slings at just a fraction of the weight, impress with textile handling characteristics and boast a greater service life. These are clear advantages that contribute to reducing costs – especially in the construction of wind power plants. Vestas saved 8% in costs during wind turbine construction with updraft LS lifting slings.

The wind energy industry is booming – and Vestas is at the forefront of this development. The construction of the giant plants by the industry leader is a logistical process that has been optimised right down to the smallest detail. UPDRAFT LS lifting slings made of Dyneema® play a key role in this respect. The lightweight lifting gear is already fitted ex works and remains on the completely prefabricated nacelle – from its transportation until it has been hoisted onto the tower. The textile lifting sling material inflicts no damage to the nacelle and makes the implementation of heavy adapters superfluous,” explains

Gunnar K. Storgaard Pedersen, Specialist Transport and Handling Tools at Vestas Wind Systems. “Construction staff needn’t even leave the nacelle at the end of work to unfasten the slings: that’s done through hatches from the inside making the process significantly safer and faster. The same advantaged these slings cover during the erection of tower; where for special slings are constructed and constantly developed.

A summary of the advantages during operations can be made as follows:

- Ultra-light (up to 1/10 of steel wire)
- Easy handling on fields
- Very small bearing surface
- Flexible use for various operations
- Precise lifting from the first moment on through minimal elongation during lifting (max. 1.8%)
- High safety level (for instance no snap back under failure)

Production of UPDRAFT LS series textile lifting slings is made possible through the implementation of the high-performance Dyneema® fibre from technology leader DSM Dyneema. Gleistein Ropes in Bremen, Germany, processes the high quality raw material into DynaOne® HS, a pure, braided wire-rope replacement, which is condensed and optimised via a special heat setting process. DynaOne® HS boasts the same performance data of present-day wire rope of equal diameter, yet hits the scales at just up to a tenth of the weight! This incredible performance is in no small part also attributable to the precision splice, which ensures virtually no loss of strength and allows precisely defined final lengths to be manufactured. And this has a great bearing on the construction process – f.i. next to towers: as only if the nacelle is hanging perfectly level, can it precisely be lowered on the mounting flange. UPDRAFT LS lifting slings are manufactured in accordance with DIN EN 1492-4 and feature the GS mark for quality.

“Overall, we save 8% of costs during construction compared to conventional wire slings”

Overview on technical information:

- Load bearing element made from Dyneema® SK78 high modulus Polyethylene 12 plait with GeoThane coating, heat set
- Possible loads from 10 – 100 t (WLL), special products up to 400t
- Effective working lengths incl. eyes from 2.3 m
- Small diameter with heavy loads
- Smallest production tolerances f.i. between +/- 15mm and 40mm for loads between 15to and 100to, a level what is lower than the norm asks for
- Certified in accordance with DIN EN 1492-4, LA3 of DNV GL, GS-Label

“Vestas has switched completely to UPDRAFT LS lifting slings for the installation of nacelles. “Overall, we save 8% of costs during construction compared to conventional wire slings,” says Storgaard Pedersen. “And because we only need to transport just a fraction of the conventional tonnage it’s also good news for the environment.”

Cost benefits in a nutshell:

- One-time investment for extreme precise lengths instead of purchasing various PET-round slings to get exact same lengths for lifting
- Lower personnel costs by a minimum of staff needed
- Shorter set-up times by easy handling
- Long life time by top protection against the elements and abrasion
- Less demand for lifting gears as of shackles or other connecting straps
- 10 times more liftings before end of life time compared to steel ropes ■

UPDRAFT HD – FROM 100T WLL							
TECHNICAL DATA							
NAME	TYPE	ROPE Ø	MIN. LENGTH	WEIGHT MIN. LENGTH	SWL SFT	SWL tPS	BREAK LOAD
UPDRAFT HD 135T	R2	80 mm	8,2 m	121,4 kg	125 t	175 t	926 t
UPDRAFT HD 150T	R2	88 mm	9,0 m	160,8 kg	150 t	220 t	1100 t
UPDRAFT HD 175T	R1	116 mm	11,5 m	250,0 kg	175 t	245 t	1225 t
UPDRAFT HD 200T	R1	124 mm	12,2 m	303,1 kg	200 t	280 t	1400 t
UPDRAFT HD 225T	R1	132 mm	12,9 m	363,6 kg	225 t	315 t	1575 t
UPDRAFT HD 250T	R1	140 mm	13,6 m	431,3 kg	250 t	350 t	1750 t
UPDRAFT HD 300T	R2	120 mm	11,8 m	458,4 kg	300 t	420 t	2100 t
UPDRAFT HD 325	R2	128 mm	12,6 m	556,2 kg	325 t	455 t	2275 t
UPDRAFT HD 350T	R2	132 mm	12,9 m	606,1 kg	350 t	490 t	2450 t
UPDRAFT HD 400T	R2	140 mm	13,6 m	718,8 kg	400 t	560 t	2800 t

UPDRAFT LS – UP TO 100T WLL							
TECHNICAL DATA							
NAME	TYPE	ROPE Ø	MIN. LENGTH	WEIGHT MIN. LENGTH	SAFE WORKING LOAD	BREAK LOAD	
UPDRAFT LS 10T	R1	24 mm	2,3 m	2,6 kg	10 t	70 t	
UPDRAFT LS 15T	R1	28 mm	2,3 m	3,4 kg	15 t	105 t	
UPDRAFT LS 30T	R2	28 mm	2,5 m	9,5 kg	30 t	210 t	
UPDRAFT LS 50T	R2	40 mm	2,8 m	13,4 kg	50 t	350 t	
UPDRAFT LS 70T	R2	48 mm	3,0 m	21,1 kg	70 t	490 t	
UPDRAFT LS 90T	R2	56 mm	5,0 m	43,9 kg	90 t	630 t	
UPDRAFT LS 100T	R2	64 mm	5,0 m	59,0 kg	100 t	700 t	

updraft GmbH
Dr. Til Assmann
Heidlerchenstr. 7
28777 Bremen
Phone: +49 (0)421 69049-10
Fax: +49 (0)421 69049-99
 ✉ assmann@updraft.eu
 🌐 www.updraft.eu

UPDRAFT is a supplier of superior lifting slings manufactured using high performance DynaOne® rope made with Dyneema® synthetic fibres. The slings are produced primarily for deployment during the installation of wind power plants. UPDRAFT is a subsidiary of German-based rope maker “Geo. Gleistein & Sons” (Gleistein Ropes). Gleistein has produced ropes in Bremen since 1824 and today manufactures on 21,000m2 incl. its second fully equipped plant in Slovakia. In total, 240 employees work in the areas of Management, R&D, Sales, Production and Administration.