VALBRUNA GROUP
SYNERGIES FOCUSED ON THE FUTURE

aquaSHAFT®

STAINLESS STEEL FOR BOAT SHAFTING

Precision bars for boat shafting

WE ARE WHEREVER YOU NEED US TO BE

VALBRUNA GROUP
SYNERGIES FOCUSED ON THE FUTURE

Mills
- **ITALY:** Vicenza, Bolzano
- **USA:** Fort Wayne
- **CANADA:** Welland

ITALY
Ancona
Bologna
Brescia
Milano
Parma
Torino
Treviso

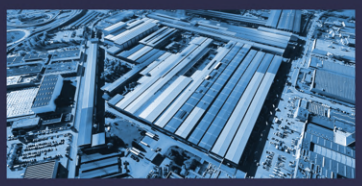
EUROPE
Czech Republic
Denmark
Finland
France
Germany
Ireland
Nederland
Norway
Poland
Spain
Sweden
Switzerland
United Kingdom

AMERICA
Canada
Mexico
United States

ASIA - OCEANIA
Australia
Hong Kong
India
Malaysia
Turkey
UAE

AFRICA
South Africa

Valbruna, founded in 1925 and leader in the production of Stainless steel and Nickel alloys long products, is underpinned by long experience and a highly qualified customer service.



Vicenza plant, ITALY
(Total surface: 294.608 m²)

Bolzano plant, ITALY
(Total surface: 197.049 m²)

Fort Wayne plant, IN-USA
(Total surface: 248.356 m²)

Welland plant, ON-CANADA
(Total surface: 339.288 m²)

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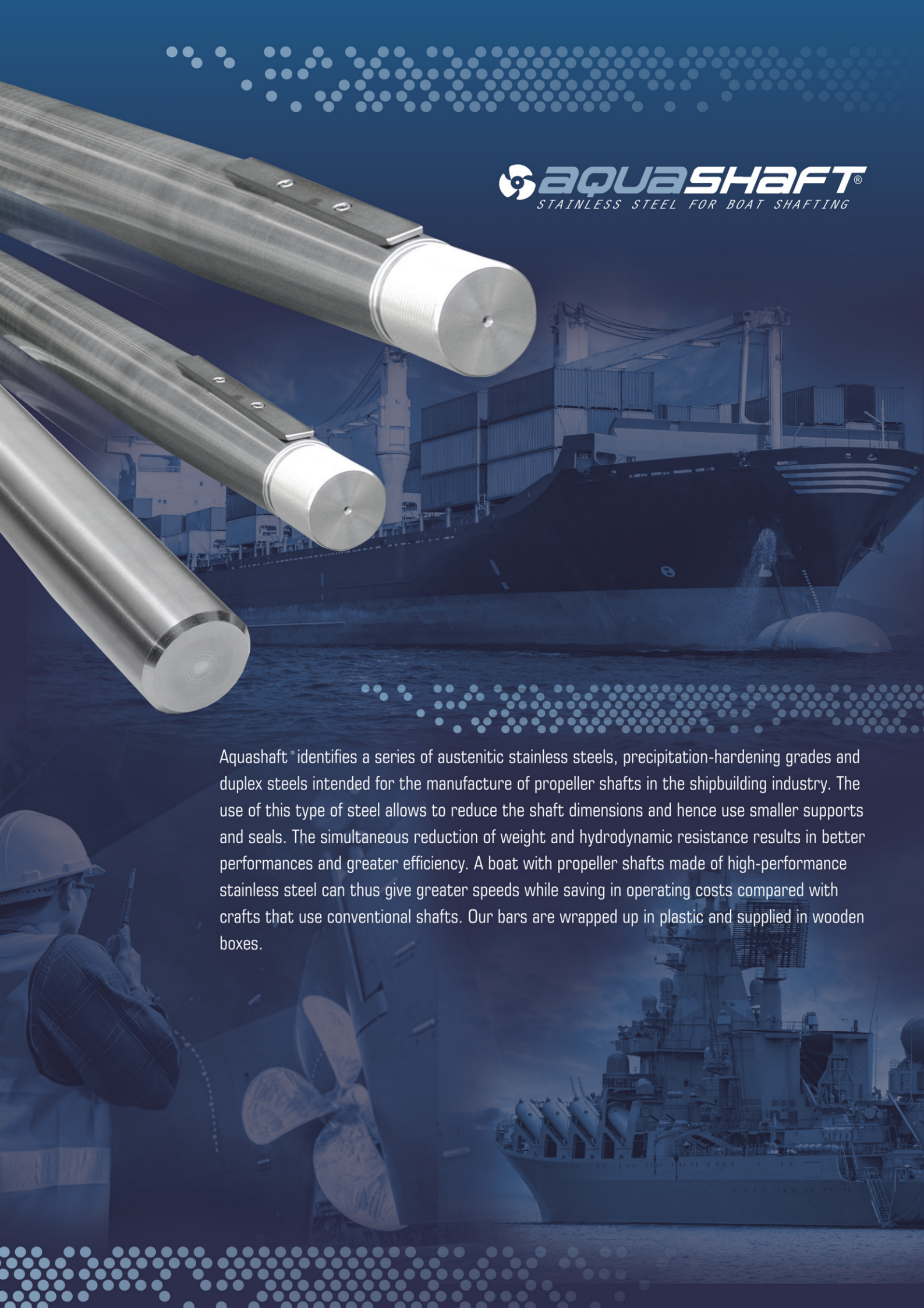

Aquashaft® identifies a series of austenitic stainless steels, precipitation-hardening grades and duplex steels intended for the manufacture of propeller shafts in the shipbuilding industry. The use of this type of steel allows to reduce the shaft dimensions and hence use smaller supports and seals. The simultaneous reduction of weight and hydrodynamic resistance results in better performances and greater efficiency. A boat with propeller shafts made of high-performance stainless steel can thus give greater speeds while saving in operating costs compared with crafts that use conventional shafts. Our bars are wrapped up in plastic and supplied in wooden boxes.

AQUASHAFT®

STAINLESS STEEL FOR BOAT SHAFTING

Valbruna, international leader in the production of stainless steel bar products, presents a range of high quality boat shafting material.

TYPE	ASTM	TYPE	WERK.NR	CHEMICAL ANALYSIS %			
				C	Cr	Ni	Others
AQUASHAFT 17	A 564, S17400	630	1.4542	0.07 max	15.0 - 17.0	3.0 - 5.0	Nb+Ta 0.15 - 0.45
							Cu 3.00 - 5.00
AQUASHAFT 19	A 276, S30452	304N	-	0.08 max	18.0 - 20.0	8.0 - 10.5	N 0.20 - 0.30
AQUASHAFT 21	A 276, A 479, S31803	2205	1.4462	0.03 max	21.0 - 23.0	4.5 - 6.5	Mo 2.50 - 3.50
							N 0.08 - 0.20
AQUASHAFT 22 / 22HS	A 276, A 479, S20910	XM-19	-	0.06 max	20.5 - 23.5	11.5 - 13.5	Mo 1.00 - 3.00
							Mn 4.00 - 6.00
							V 0.10 - 0.30

SIZES	1" to 3-3/4" dia (upon request to 8" dia)		
TOLERANCE on diameter		Minus	Plus
	1" to 1-15/16" incl.	.000"	.0015"
	Over 1-15/16" to 3-1/8" incl.	.000"	.0020"
	Over 3-1/8" to 3-3/4" incl.	.000"	.0025"
	Over 3-3/4"	upon request	
LENGTH	Fixed from 12 ft up to 29 ft (upon request)		
STRAIGHTNESS	Lengths up to 22': 0.005" for each 3 feet Lengths over 22': 0.006" for each 3 feet		
SURFACE FINISH	Ra 0.8 μm max (equivalent to RMS 32 μinch. max)		
APPLICATION	Marine shafting for fishing and navy vessels, work and pleasure boats		

	AQUASHAFT 17	AQUASHAFT 19	AQUASHAFT 21	AQUASHAFT 22	AQUASHAFT 22HS
STRENGTH	*****	***	**	****	*****
TOUGHNESS	*	****	**	***	***
CORROSION RESIST.	*	**	***	*****	*****

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Physical and Minimum Mechanical Properties

	AQUASHAFT 17	AQUASHAFT 19	AQUASHAFT 21	AQUASHAFT 22	AQUASHAFT 22HS
Ultimate Tensile Strength					
		115 (to 2" dia)		135 (to 2" dia)	135 (to 2½" dia)
Ksi (min)	135	100 (2" < dia < 3")	90	115 (2" < dia < 3")	130 (2½" to 6")
		95 (over 3" dia)		100 (over 3" dia)	
0.2% YS Tension					
		85 (to 2" dia)		105 (to 2" dia)	
Ksi (min)	105	55 (2" < dia < 3")	65	75 (2" < dia < 3")	105
		50 (over 3" dia)		55 (over 3" dia)	
0.2% YS Torsion					
		57 (to 2" dia)		70 (to 2" dia)	
Ksi (min)	70	40 (2" < dia < 3")	50	50 (2" < dia < 3")	70
		35 (over 3" dia)		36 (over 3" dia)	
Elongation (in 2")					
				20 (to 2½")	
% (min)	16	35	25	25 (2½ to 3")	15
				30 (over 3)	
Reduction of area					
% (min)	50	55	60	55	45
Hardness					
Brinell (typical)	269-311	300	290 max	290 max	300 max
Impact Charpy V-Notch					
ft-lbs (typical)	50	100	110	100	100
Modulus of Elasticity Tension					
1,000,000 psi (typical)	29.1	29.0	27.4	28.0	28.0
Modulus of Elasticity Torsion					
1,000,000 psi (typical)	11.3	11.2	10.9	10.4	10.4
Density					
lb/in^3 at 68°F	0.280	0.286	0.282	0.285	0.285
Thermal Conductivity					
Btu/ft/h/°F	10.6	9.4	11.0	9.4	9.4
Electrical Resistivity					
$\mu\Omega*in$ at 68° F	2.032	1.830	2.159	2.083	2.083
Specific Heat					
Btu /lb*°F	0.11	0.12	0.10	0.12	0.12

www.valbruna-stainless-steel.com

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Global Links

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