MARIN

Challenging wind and waves

Linking hydrodynamic research to the maritime industry

Client Specific Propeller Design

CSPDP

Covering industrial design and selection processes

This program has been developed apply to client specifications and to fulfil the requirements of integration in industrial design and manufacturing processes. It offers the user a quick design and selection tool for three types of propellers: Open propellers, Nozzle propellers and Tunnel thrusters.

Geometrical options

This program is able to calculate a propeller with the optimum efficiency and offers the designer a lot of selections to adapt geometrical aspects like skew, rake and pitch distribution (within limits).

Pitch distribution can be modified to unload tip and/or hub by adapting the idea of virtual pitch. The user is supplied with several geometrical data required for classification calculations as described in the so called ABS rules.

Geometrical output for drawing and milling

The resulting design is fully described in two ways: Standard Propeller File (2D) where the complete geometry is defined in tables and a 3D geometry file for fabrication processes. Both files are in ASCII format. The program also supplies the user with a script file to generate a propeller drawing with AUTOCAD (not part of this program).

The approach is founded on the direct use of several systematic MARIN propeller series. The Reynolds effect was assumed to be not useful due to uncertainty of the wake.

For more information please contact the Maritime Simulation & Software Group;

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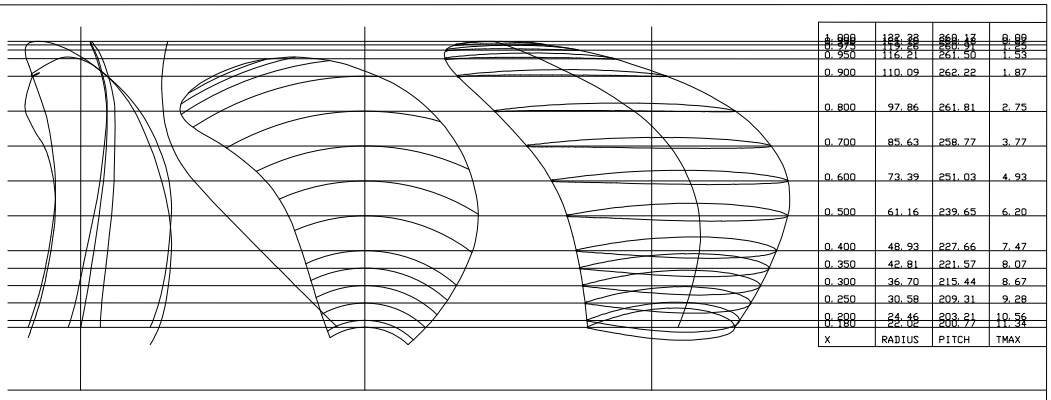


X	RADIUS	PITCH	TMAX
1.000	122.28	269.17	0.00
0.975	119.28	266.45	0.25
0.950	116.21	261.50	1.53
0.900	110.09	262.22	1.87
0.800	97.86	261.81	2.75
0.700	85.63	258.77	3.77
0.600	73.39	251.03	4.93
0.500	61.16	239.65	6.20
0.400	48.93	227.66	7.47
0.350	42.81	221.57	8.07
0.300	36.70	215.44	8.67
0.250	30.58	209.31	9.28
0.200	24.46	203.21	10.56
0.180	22.02	200.77	11.34

PARTICULARS OF PROPELLER

FULL SIZE					MODEL		
DIAMETER	D	=	8100	mm	MATERIAL:		MATERIAL:
P AT ROOT	PHUB	=	6746	mm	NI-AL-BRONZE		bronze
P AT 0.7 R	P0.7	=	8695	mm			DIAMETER = 244.64 mm
P AT BL. TIP	P1.0	=	8742	mm	DHUB/D	= 0.180	P AT ROOT = 200.77 mm
DISC AREA	AO	=	53.068	m2	P0.7/D	= 1.127	P AT 0.7R = 240.67 mm
EXP. BL. AREA	AE	=	49.250	m2	PVIRT/D	= 1.145	P AT TIP = 260.17 mm
PROJ. BL. AREA	AP	=	41.664	m2	AE/AO	= 0.928	
NO OF BLADES	Z	=	6		AP/AO	= 0.785	

NOTES

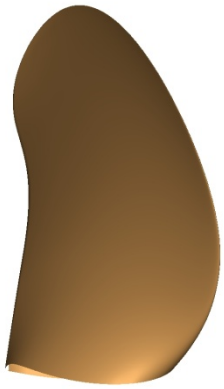
1 right hand propeller

PROP. MODEL NO.

SHIP MODEL NO.

SCALE

DRAWING NO.



Providing a script file for Autocad

V. 2010/05/06_MSG Soft. 10

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