FRANCE HELICES

Leader en propulsion marine | Leader in marine propulsion

Produits

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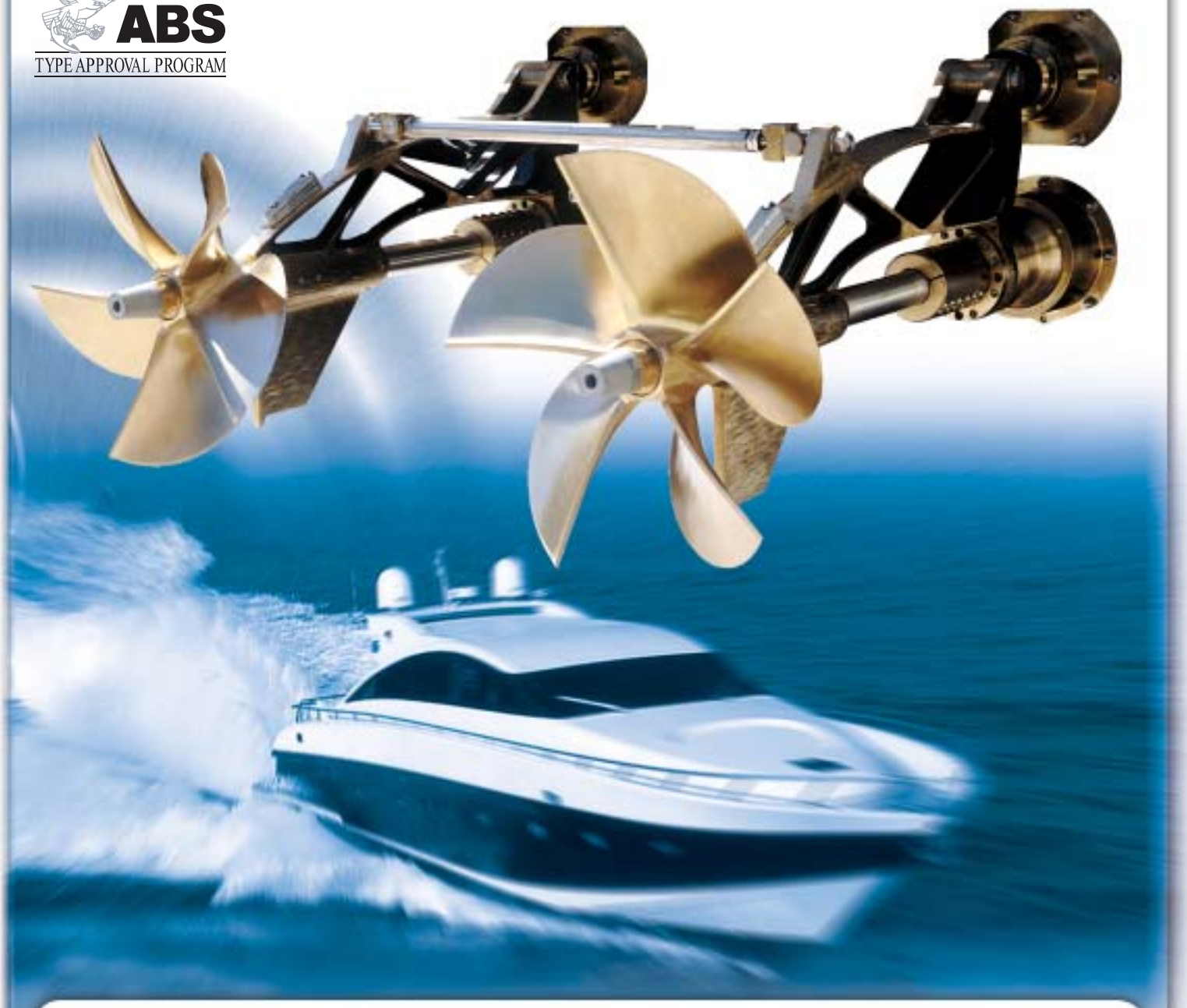
Surface Drive System

17-11-2004

ABS
TYPE APPROVAL PROGRAM



SDS

Surface Drive System

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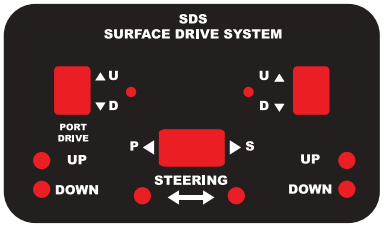
WHAT IS SDS ?

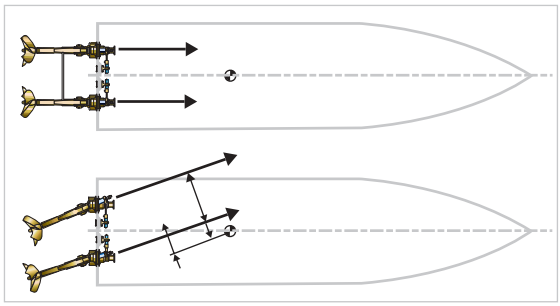
SDS IS A COMPLETE PROPULSION PACKAGE THAT INCLUDES :



INTEGRATED CONTROL PANEL

- Drives
- Propellers
- Hydraulics and steering equipment
- Emergency back up system
- Cardan shaft
- Coupling flanges
- Indicators and sensors

WITH PERFORMANCE RELIABILITY LOW MAINTENANCE COST

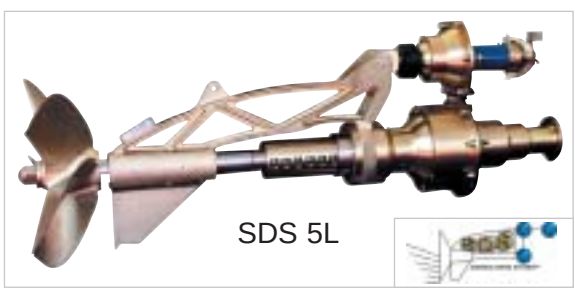


"Tremendous steering capacity at high speed"

"The ability to use the boat in shallow water"

WHAT ARE THE ADVANTAGES OF SDS SURFACE DRIVE compared to other conventional propulsion systems ?

- 15 % speed increase
- Tremendous steering capacity at high speed
- U turn in less than 2 boat lengths
- The ability to use the boat in shallow water
- Guaranteed performance
- The reduction of maintenance cost
- The opportunity to carry out the maintenance by oneself without qualified engeneering
- The small amount of spare parts to keep in the inventory
- A world wide assistance in 24 hours for spares and technicians



SDS 5L

INTEGRATED CONTROL PANEL

EMERGENCY HYDRAULIC UNIT

TRIM SENSOR

HISTORICAL BACKGROUND

Since its foundation in 1977, FRANCE HELICES has become one of the world's leading authorities in marine propulsion systems.
We are the only manufacturer in it market to control every aspect of production.

FRANCE HELICES facility is equipped with an in house foundry, where machinery is digitaly operated and where research teams continue to study new propellers in cavitation tunnels.

The state of the art equipement allows the different production sites to manufacture everthing from the coupling flange to the complete electronic dashboard, including the CNC machined 5 et 6 blades surface piercing propellers

RELIABILITY

ABS TYPE APPROVAL PROGRAM

Years of reasearch, development and rigorous testing have resulted in the development of SDS, the most reliable surface drive transmission package in the world.
Each piece used in its construction has safety factor rates of 7, which the company back with a 3000 hour warranty as part of the standard installation.

ABS TYPE APPROVAL PROGRAM

N°ABS APPROVAL MF369216X 18/07/2008




SAFETY

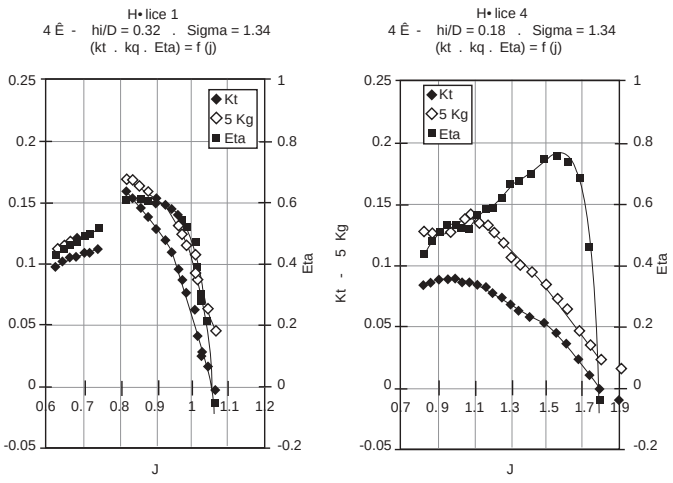


With the SURFACE DRIVE SYSTEM, all of the vital components are protected from salt and water corrosion. All of the cables, sensors, hydraulics, hoses, and electric connections are situated inside the engine room, away from the harsh marine environment.
All of the bronze aluminium and stainless steel. Materials are cast and machined with NATO classification.

RESEARCH

The constant effort in research and development carried by FRANCE HELICES has improved the efficiency of the surface propellers by 10 % during the last decade.
The total overall propulsive coefficient can reach up to 70 % when the application is under the control of the FRANCE HELICES engineering team. The new serie F5SSP show an efficiency above 75 % in cavitation tunnel test.

Typical Kt, Kq, Eta curves issued from cavitation tunnel for the F5SSP series



DCN cavitation tunnel in Val de Reuil used for testing our propellers

HOW TO DETERMINE WHICH MODEL IS SUITABLE FOR YOUR APPLICATION

1-ENGINE TORQUE CALCULATION

All engine manufacturers supply the engine power curve, look at the maximum power and maximum revolution.
Example : 420 horsepower @ 3300 rpm.

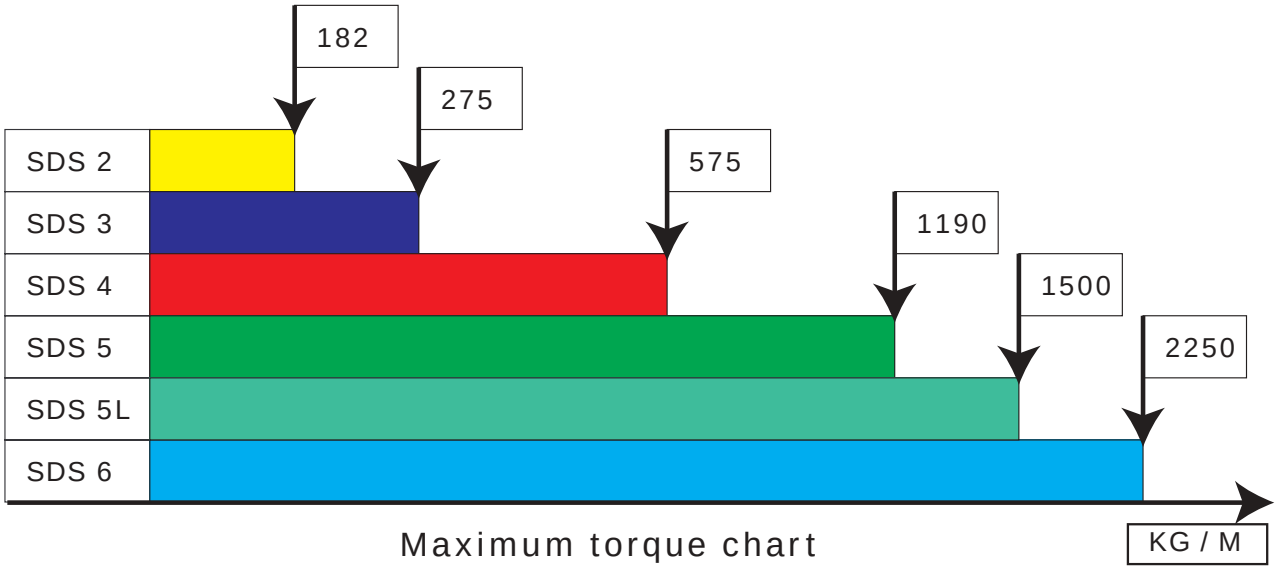
The torque is : T (kg/m) = 716,2 X Power (hp) / Revolutions (revs/min)
In that case the engine torque is : T = 716,2 X 420 / 3300 = 91,15 kg / m

2-DRIVE INPUT TORQUE

The torque to be used for drive selection is the input torque, so the engine torque has to be MULTIPLIED by the gear ratio.

T final = ENGINE TORQUE x GEAR RATIO

3-CHECK IN THE TABLE FOR THE SUITABLE MODEL



Maximum torque chart

SOME RULES TO GET THE FULL BENEFIT OF A SURFACE DRIVE SYSTEM

THE HULL

The hull form must be planning type

> Monohedron type
> Warped type

THE ENGINE (power source)

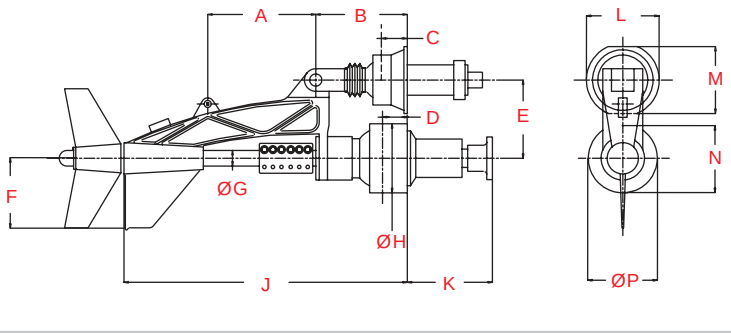
Many engines are available on the market, the *SDS surface drive system* can be coupled to :

> Diesel engine
> Gasoline engine
> Turbine

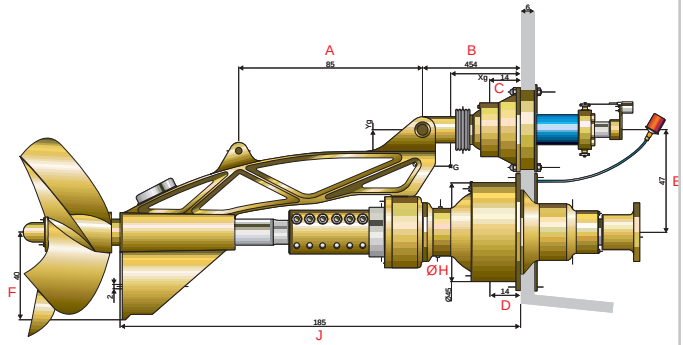
POWER / WEIGHT RATIO

To improve speed, compared to conventional propulsion, the targeted must be above 25 Knots and the power / weight ratio must be above 50 horsepower per tons

DIMENSIONS AND WEIGHT TABLE



SDS 2,3,4,5,6



SDS 5L

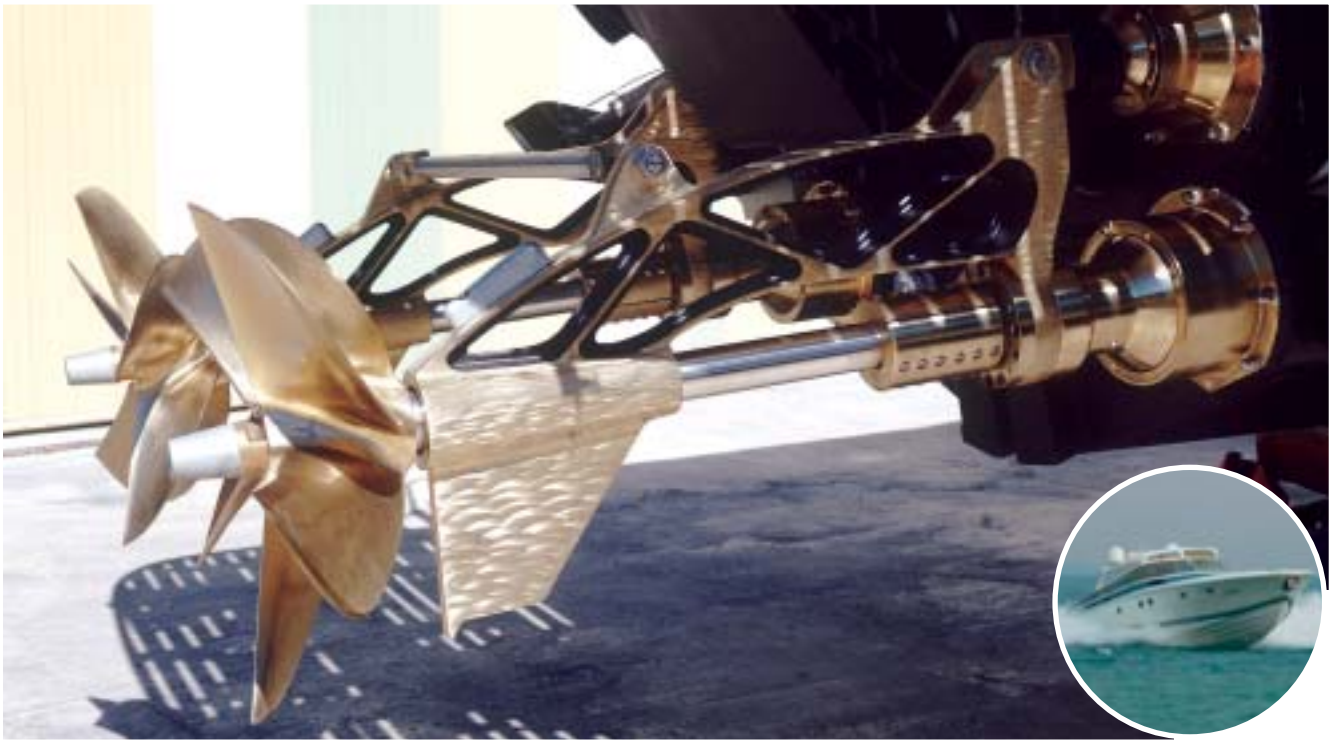
	SDS 2	SDS 3	SDS 4	SDS 5	SDS 5L	SDS 6
A	451	588	722	852	850	767
B	295	347	408	413	454	643
C	68	101	118	131	140	168
D	67	100	117	130	140	167
E	300	400	460	475	470	550
F	242	288	355	405	400	505
ØG	50	65	82.5	90	-	110
ØH	222	295	314	380	450	548
J	1286	1260	1550	1815	1850	2000
K	272	323	364	489	-	601
L	271	400	400	445	-	640
M	240	350	350	391	-	520
N	303	377	400	462	-	548
ØP	303	400	400	465	-	548

All dimensions are in millimeters

SDS Model	SDS 2	SDS 3	SDS 4	SDS 5	SDS 5L	SDS 6
Drive	150	252	435	620	980	1250
Steering Cylinder	18	18	35	34	34	45
Oil Tank	2.5	2.5	2.5	2.5	2.5	2.5
Gas Amortizer	8	12	12	14	14	14
Hydrolic Power Unit	30	30	36	36	36	36
Propeller	19	30	45	68	85	90

All weight are in Kgs

INSTALLATION



Each set of drives is provided with a complete installation manual, on request the installation can be made by SDS technicians. For shipyards a special 2 days training on site is provided with the first installation.
All electrical and electronics are delivered prewired and tested before delivery.
All schematics are provided under paper format and an Autocad CD rom is also provided at delivery.

FRANCE

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Toute la gamme de nos produits est disponible sur notre site Internet
All our products are available on our web site

www.francehelices.fr