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<u>Parts Bulletin</u>		
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Propeller Update, Calculation of Propeller Size of Folding Propellers

Models: Marine Transmissions

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The following example shows calculation of a 3-bladed folding and the principle is the same for a 4-bladed.

Attached are performance charts for both 3- and 4-bladed folding propellers.

CALCULATION OF PROPELLER SIZE OF 3-BLADED FOLDING

To select the right propeller size for both S-drive and shaft installations, a propeller selection chart has been developed. The propeller size decides as follows:

1. Gather engine data. Here we select as an example a D1-30 engine with a 130S sail drive:

Propeller shaft power 20.1 kW

Engine speed 3200 rpm

Gear ratio 2.19:1

2. Calculate propeller speed.

$$P_{propeller\ speed} = \frac{Engine\ speed}{Gear\ ratio} = \frac{3200}{2.19} = 1461\ rpm$$

3. Estimate boat speed in knots. A first approximation can be the length of the waterline of the boat, measured in meter. In our example the waterline length is about 7 m and we estimate:

Boat speed = 7 knots

4. Select propeller from propeller select diagram. From the diagram of a speed of advance of 7 knots the most suitable propeller is selected as follows:

