

## **PROPELLER TEST**

Page (1)

### **BOAT DATA:**

Discovery 57 Hull # 1

L.W.L.. 14.65 meter

Depl. 32.0 ton

### **ENGINE DATA:**

Volvo Penta D3-150

150 HP @ 3000 RPM

Gear ratio: 2.43:1

### **TEST PROPELLERS:**

4 Blade Varifold 24 x 17 RH

3 Blade Gori propeller 24 x 18 RH

### **COMMENTS:**

Speed measured by GPS

Engine rpm checked with tachometer on fly wheel,

### **TEST DATE & PLACE:**

December 4<sup>th</sup>. 2012, Hamble river, Southampton U.K.

### **TEST CONDITION:**

Sunny, 4 to 8 degrees Celsius, calm winds. Current/Tide

### **TEST RESULT NOTES:**

Engine instruments did not function, so all measures are taken with Tachometer on fly wheel, +/- 20 Rpm. and speed by GPS only ( Average of up and down the current )

3 Blade Gori propeller, was a little on the light side. Max. RPM in normal 3110, and in Overdrive 2717.

Crash stop time, from full speed ahead (8.5 knots) to stand still. 21 seconds with the 4 blade Varifold, and 16 seconds with the 3 blade Gori propeller.

### **PARTICIPANTS:**

Lars Østergaard, Gori propeller a/s  
Glen Print, Sillette Sonics Ttd.  
John Eustace, Discovery Yachts  
Andy Lock, Discovery Yachts

**TEST DATA:**

Discovery 57, Hull # 1, equipped with Volvo Penta D3-150

4 Blade Varifold propeller 24 x 17 RH

3 blade Gori propeller 24 x 18 RH

Engine Rpm.	Varifold:	Gori normal:	Gori Overdrive:
1000 Rpm +/- 20	4.0 Kn.	4.0 Kn.	
1200	4.7	4.7	5.5
1400	5.4	5.2	6.1
1600	6.2	6.0	6.9
1800	7,0	6.7	7.6
2000	7.5	7.0	8.3
2200	8.3	7.8	8.8
2400	8.5	8.2	8.9
2600	8.8	8.5	8.9
2800	8.8	8.6	N/A
3000		8.7	
2967 Max.	9.0		
3160 Max.		8.7	
2710 Max.			9.0

Stop length: Varifold propeller 21 seconds.

Stop length: Gori propeller 16 seconds

Test conditions were not optimized due to the tide and current. The speeds listed are the average of runs up and down the current, so it is not as accurate as wished, but do show the difference, as propellers were tested under the same terms and conditions.

Speed shown are GPS measurements, and are average of run against the current, and with the current.

4 blade Varifold has a speed advantage at lower rpm, due to a larger blade area, shows especially against the current.

4 blade Varifold had a smooth run up to 2400 Rpm, but extreme vibration occur in the rudder.

3 blade Gori propeller had a smooth run up to app. 2500 rpm, where cavitation started, and noise increased.

3 blade Gori propeller almost eliminated rudder vibration, even at higher rpm/speed

3 blade Gori propeller showed better manouverbility, better stop time, and hardly no prop walk.

3 blade Gori propeller has overdrive advantage, better speed at lower rpm. Less noise and better fuel economy.

3 blade Gori has less drag (Sailing)

Not a big advantage with a 4 blade propeller on this combination.

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