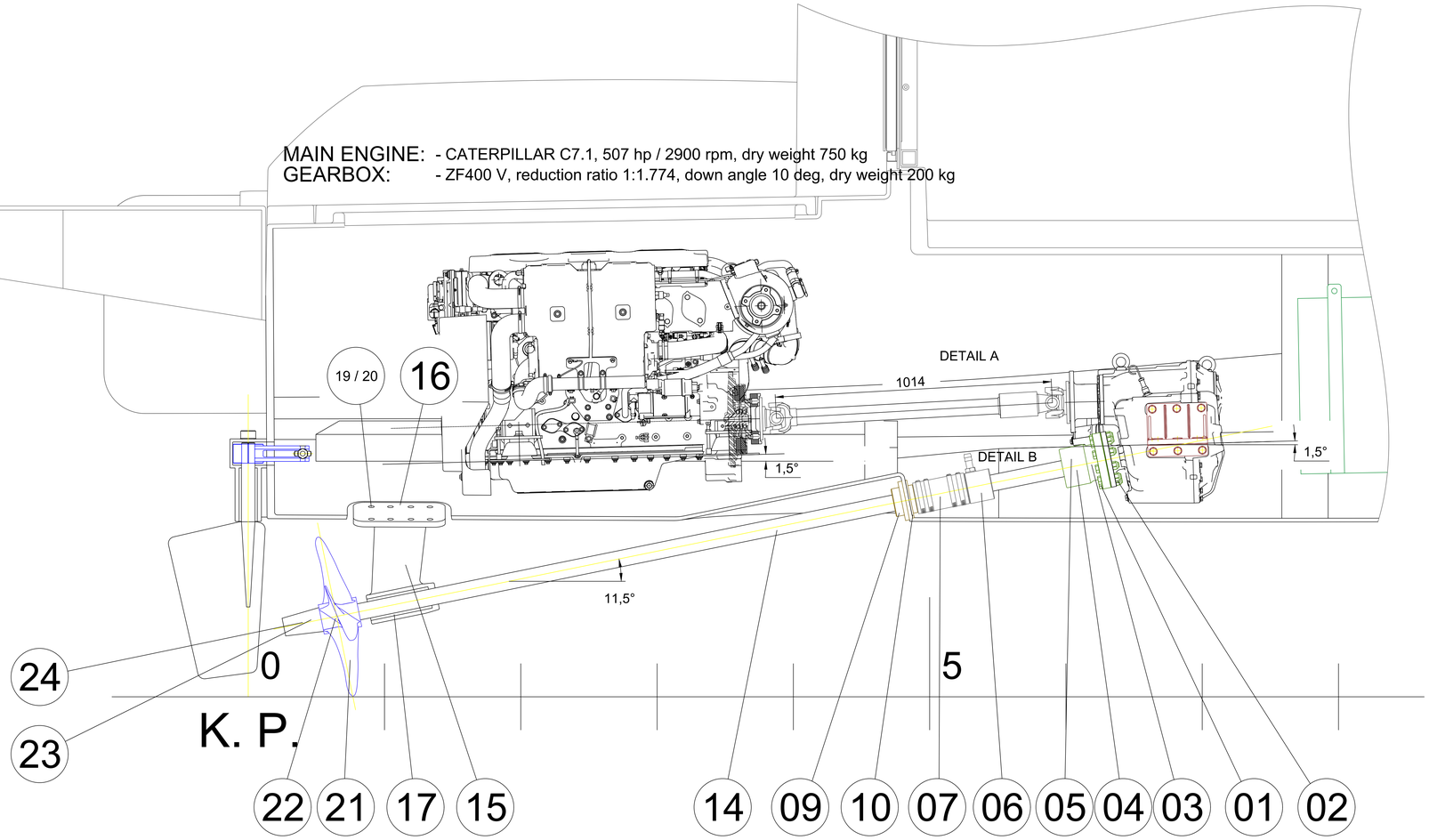
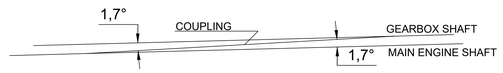
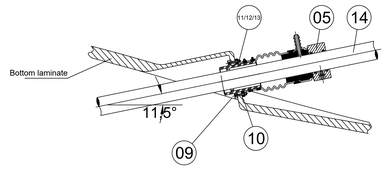
MAIN ENGINE: - CATERPILLAR C7.1, 507 hp / 2900 rpm, dry weight 750 kg
GEARBOX: - ZF400 V, reduction ratio 1:1.774, down angle 10 deg, dry weight 200 kg



Detail A



Detail B

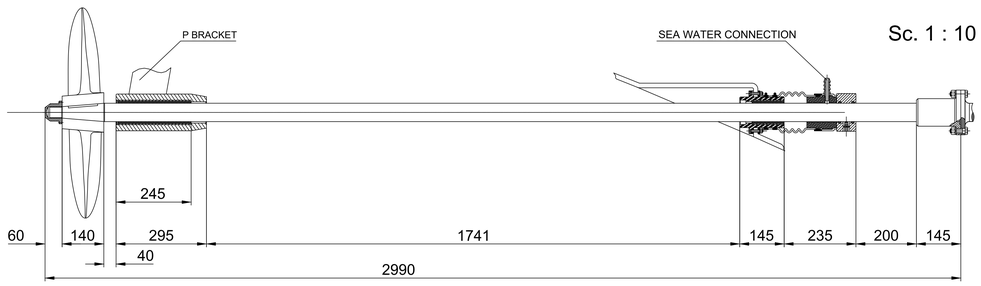


HRVATSKI REGISTAR BRODOVA
ODOBRENO
APPROVED
BR. 0113299
No.
DNE. 23-10-2024
DATE
34

POS.	ITEM	SIZE	MATERIAL	STANDARD / NOTE	PCS
01	Screw	M16 x 50	Č.4731	DIN 931	6
02	Nut	M16	Č.4731	DIN 934	6
03	Nut	M36 x 3	Č.4731		1
04	Flange	Ø150 x 150	Č.1531		1
05	Wedge	14 x 22 x 109	Č.1731		1
06	Water Seal	Ø60		SURESEAL FSKM-60M-102M	1
07	Rubber Bearing	Ø60 x 100	RUBBER/BRONZE	DURAMAX 870604100	1
08	Screw	M6 x 8	AISI 316	DIN 914	1
09	Ring	Ø140 x 10	AISI 316		1
10	Ring	Ø140 x 143	AISI 316		1
11	Screw	M8	AISI 316	DIN 963	6
12	Safety Nut	M8	AISI 316	DIN 985/6	6
13	Washer	Ø8,5	AISI 316	DIN 125 A	6
14	Propeller Shaft	Ø60 x 2985	AISI 630		1
15	P Bracket	vareni dio	AISI 316		1
16	Base Plate	560 x 150 x 10	AISI316		1
17	Rubber bearing	Ø60 x 200	RUBBER/BRONZE	DURAMAX 870604100	1
18	Screw	M6 x 8	AISI 316	DIN 914	2
19	Screw	M10 x 75	AISI 316	DIN 963	12
20	Screw with washer	M10	AISI316	DIN 934	12
21	Propeller	prop 27 x 19.5	Ni Br Al		1
22	Propeller wedge	14 x 22 x 134	AISI 316		1
23	Propeller nut	Ø60 X 32	CuAl10Ni5Fe4		1
24	Screw with washer	M6 x 12	AISI 316	DIN912	1

NAPOMENA
- Water seal producer: SURESEAL FSKM-60M-102M, shaft diameter Ø60 mm
- Rubber bearing producer: DURAMAX 870604100, shaft diameter Ø60 mm

PROPULSION SHAFT ARRANGEMENT



HRVATSKI REGISTAR BRODOVA
CROATIAN REGISTER OF SHIPPING
ELEKTRONIČKO ODOBRENJE / ELECTRONIC APPROVAL

Ovaj dokument je pregledan. Za status odobrenja i primjedbe vidjeti pismo odobrenja oznake:
Subject document has been reviewed. For its approval status and remarks refer to approval letter ref. No.:
2789/TSE/AV/0113299

Datum pisma odobrenja / Date of letter of approval:
23-10-2024

_A	–	–	_B	–	–
REV.	CHANGED	DATE/SIGN.	REV.	CHANGED	DATE/SIGN.

APPROVALS: _APPR.4 _APPR.3 _APPR.2 _APPR.1 DATE

PROJECT_NAME: SHADOW_PATROL_47

PROPULSION_SHAFT_ARRANGEMENT

DATE: 15.07.2024 | CHECKED: NAV.ARCH | SCALE: 1/10 A2 | CUSTOMER: SHADOW_NAUTICS_D.O.O.

DRAWN: NAV.ARCH | PLOTTED: –

SHADOW

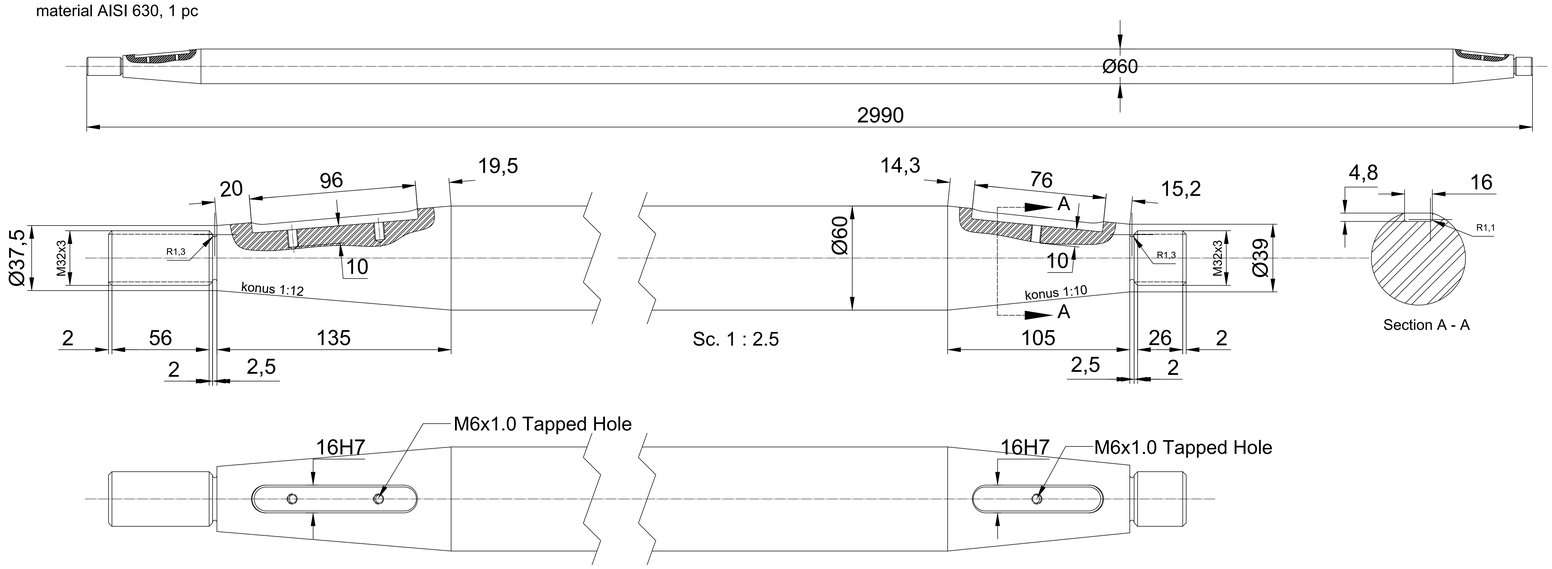
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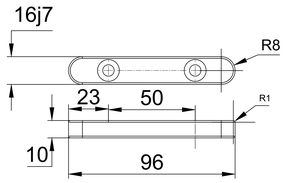
Position 14, propeller Shaft, Sc. 1:2.5/1:7.5

material AISI 630, 1 pc



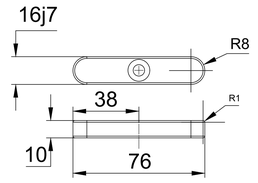
Position 22, wedge (propeller), Sc. 1:2.5

material AISI 316, 1 pc.



Position 5, wedge (flange), Sc. 1:2.5

material Č 1731, 1 pc



2.4.1. Shaft Diameter Calculation

Shaft diameter can not be less than:

$F_p := 100$ propulsion coefficient based on engine type

$k_p := 1.26$ coefficient based on propulsion arrangement

$P := 367$ kW maximum engine power

$n_m := 2900 \frac{o}{min}$ engine rpm at maximum power

$i := 1.77$ gearbox ratio

$n := \frac{n_m}{i}$ $n = 1638$ propeller shaft rpm

$d_{up} := 0$ mm shaft inner diameter

$d_{vp} := 1$ mm shaft outside diameter

$R_{mp} := 1100 \frac{N}{mm^2}$ material ultimate strength (AISI 630)

$$d_p := F_p \cdot k_p \cdot \sqrt[3]{\left(\frac{P}{n}\right) \cdot \left[\frac{1}{1-\left(\frac{d_{up}}{d_{vp}}\right)^4}\right] \cdot \left(\frac{560}{R_{mp}+160}\right)}$$ $d_p = 58.4$ mm calculated shaft diameter

SELECTED DIAMETER: 60 mm, material AISI 630, $R_{mp} := 1100 \frac{N}{mm^2}$

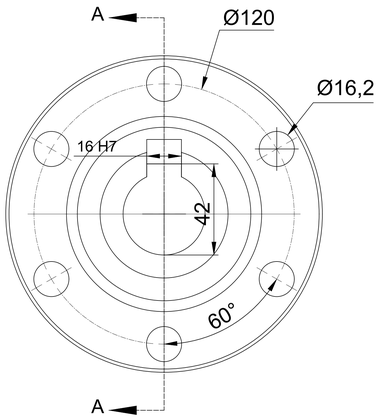
2.4.2. Konus vratila brodskog vijka za spoj

2.4.2.1. Wedge propeller/shaft 1:12, Wedge shaft/flange 1:10

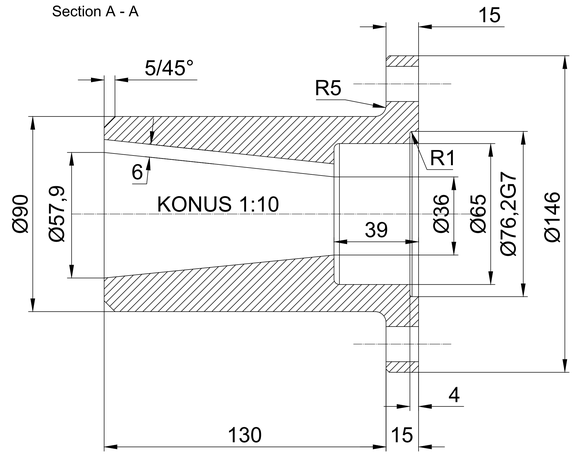
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_APPR.4	_APPR.2	_APPR.2	_APPR.1	APPROVALS	PROPULSION_SHAFT_ARRANGEMENT				
					DATE: 15.07.2024	CHECKED: NAV.ARCH	SCALE: 1/1 A2	CUSTOMER: SHADOW_NAUTICS_D.O.O.	
					DRAWN: NAV.ARCH	PLOTTED: –			
SHADOW								FILE NAME: –	
								PAGE: 2/4	REV. 0
								NAVARCH DRAWING NO.: 631–002	

Position 4, flange, Sc. 1:2

material Č 1531, 1 pc



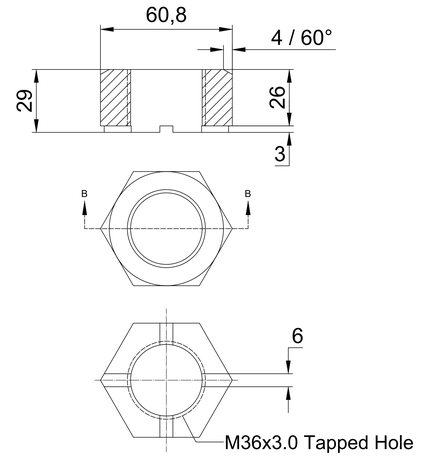
Section A - A



Position 3, Flange Nut, Sc. 1:2

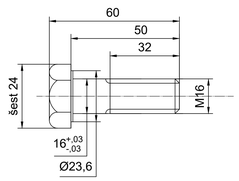
material Č 4731, kom. 1

Section B - B



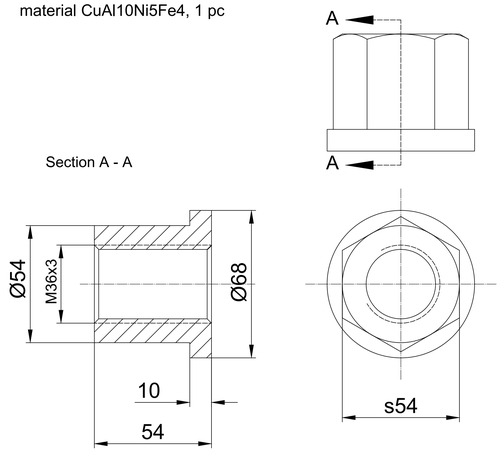
Position 1, Screw, M 1:2

material Č 4731, 6 pcs



Position 23, Nut, Sc.1:2

material CuAl10Ni5Fe4, 1 pc



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_APPR.4	_APPR.2	_APPR.2	_APPR.1	APPROVALS	DATE
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PROJECT_NAME: SHADOW_PATROL_47

PROPULSION_SHAFT_ARRANGEMENT

DATE:	CHECKED:	SCALE:	CUSTOMER:
15.07.2024	NAV.ARCH	1/1 A2	SHADOW_NAUTICS_D.O.O.
DRAWN: NAV.ARCH	PLOTTED: –		

SHADOW

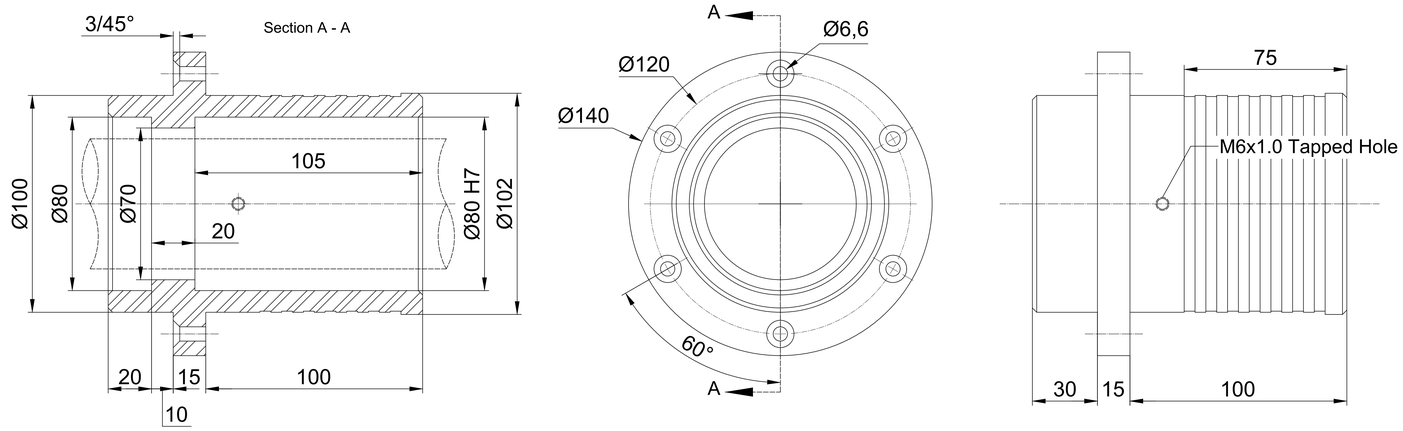
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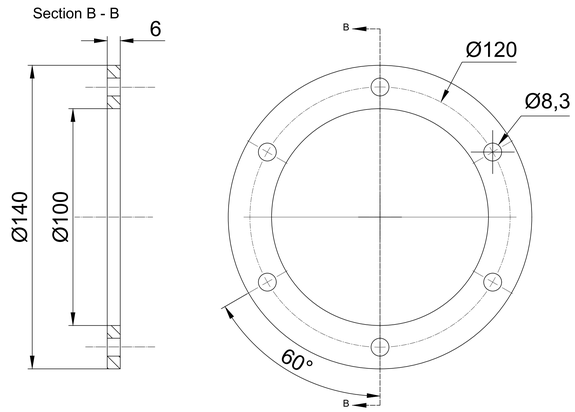
Position 9, Bushing, Sc 1:2

material AISI 316, 1 pc



Position 10, Ring, Sc. 1:2

material AISI 316, 1 pc



_A	–				–	_B	–		–
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				DATE	PROJECT_NAME: SHADOW_PATROL_47				
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					DATE: 15.07.2024	CHECKED: NAV.ARCH	SCALE: 1/1 A2	CUSTOMER: SHADOW_NAUTICS_D.O.O.	
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SHADOW								FILE NAME: –	
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