

Načrtovanje elektro-mehanskih izdelkov

MEHANIZEM

termin 1

Sebastjan Šlajpah

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Zahteve naročnika

- 4WD platforma
- neodvisno zavijanje
- dimenzije: 800 mm x 1100 mm
- masa 150 kg
- hitrost 5 km/h
- velikost koles 16"
- naklon 30°

Izbira komponent

- Pogonski sklop:
 - motor (48 V)
 - reduktor
- Kriteriji za izbiro:
 - navor pogonskega sklopa
 - hitrost pogonskega sklopa
 - varnostni faktor

Izbira komponent

- Pogonski sklop:

- motor: DB80S048030-ENM05J

<https://en.nanotec.com/products/2391-db80s048030-enm05j>

TECHNICAL DATA

NEMA	-	Size	80 mm
Encoder	✓	Encoder Type	incremental
Rated Power	283 W	Rated Voltage	48 V
Rated Torque	90 Ncm	Peak Torque	250 Ncm
Rated Current	6.9 A	Rated Speed	3000 rpm
Torque Constant	13 Ncm/A	Rotor Inertia	544 gcm ²
Line to Line Resistance	0.28 Ohm	Line to Line Inductance	1.3 mH
Length "A"	87 mm	Weight	1.5 kg
Shaft	Keyway		



Izbira komponent

- Pogonski sklop:

- reduktor: GPLE60-2S-25-F80

<https://www.nanotec.com/eu/en/products/2192-gple60-2s-25-f80>

TECHNICAL DATA

Reduction Ratio	25	Rated Output Torque	40 Nm
Max. Output Torque	64 Nm	Efficiency	95 %
Max. Backlash	12 ' (arc minutes)	Length "L"	59.5 mm
Flange Length L1	41 mm	Weight	1.1 kg
IP-Protection Gearbox	IP54	Service Life	30000 h
For Motor Size	80 mm (BLDC)	Operating Temperature	-25 to +90 °C
Moment of Inertia	7.5 kg mm ²	Max. Input Speed	13000 rpm
Admissible Axial Shaft Load	450 N	Admissible Radial Shaft Load	340 N



Izbira komponent

- Pnevmatika: Carlisle Xtrac Tires 5170181
 - 16x6,5 - 8 (400 x 165)

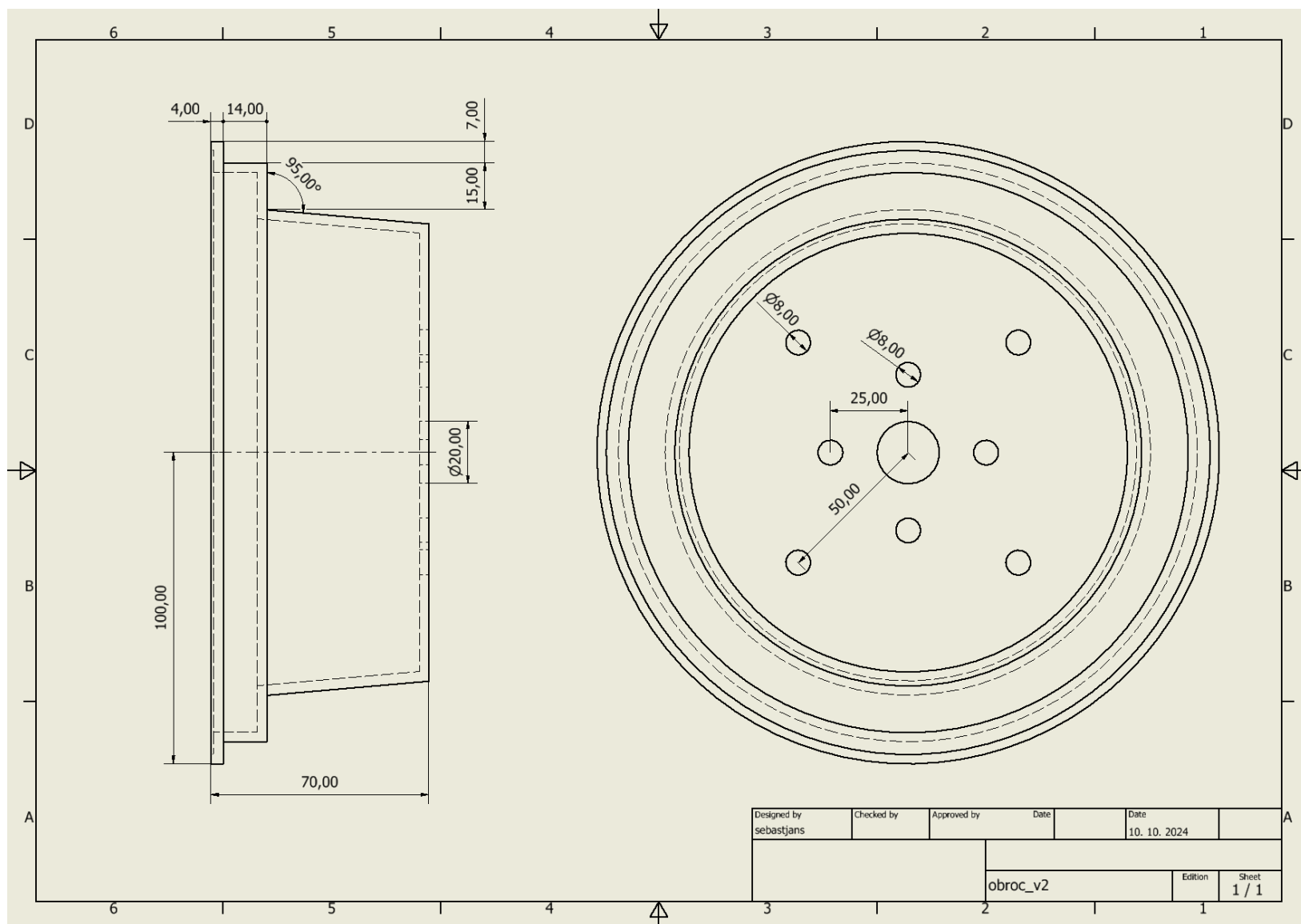
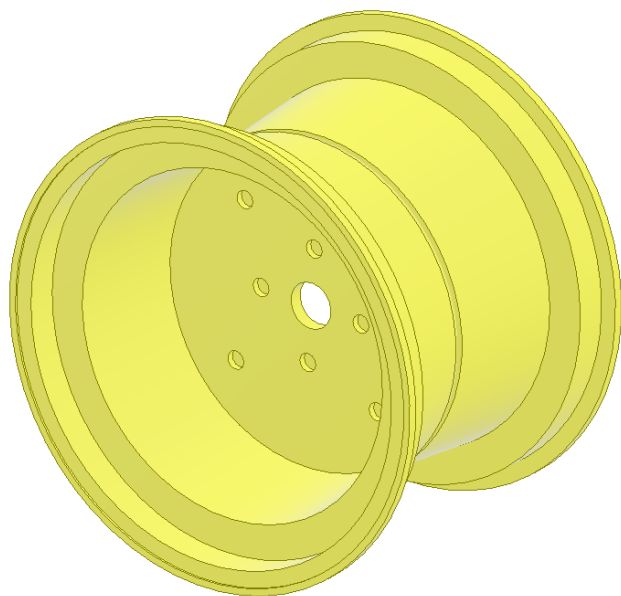


Autodesk Inventor

- Nov projekt
- Nastavitve:
 - Application options >> File >> Configure default template [mm, ISO]
 - Application options >> Display >> Settings... >> Visual style [Shaded with edges]
 - Application options >> Display [Use application settings]

Platišče

- Dvodelno
- število lukenj - parameter



Pnevmatika

