

Technical data sheet – Multifunctional testbench

Workstation

Weight: ca 175kg

Maximum carry weight: 200kg

Maximum roller speed: 2000rpm

*Requires minimum 2 people for moving

Frame

Quantity: 7x6m

Provider: Smith stål

Type: Precision steel tube,
welded

Material: Steel (E235+CR1)

Density: 1,81Kg/m

Profile: 40x40x1,5mm

Standard: NS-EN 10305-5

12275 82 PREISJONSSTÅLRØR. SVEISTE E235+CR1
av varmvalset, beiset /koldvalset båndstål
Tol. iht. NS-EN 10305-5., lett oljet
Lengdetoleranse: -0/+50 mm



DIM. I MM					KG/M	LGD	DIM. I MM					KG/M	LGD
tykkelse							tykkelse						
15	15	1,50			0,64	6	30	30	2,00			1,79	6
16	16	1,50			0,70	6	35	35	1,50			1,60	6
20	20	1,25			0,74	6	35	35	2,00			2,11	6
20	20	1,50			0,89	6	40	40	1,50			1,81	6
20	20	2,00			1,14	6	40	40	2,00			2,43	6
25	25	1,50			1,12	6	45	45	2,00			2,67	6
25	25	2,00			1,47	6	50	50	2,00			3,07	6
30	30	1,50			1,37	6	60	60	2,00			3,64	6

Roller

Axel

- Material: Aluminium
- Thickness: 25mm

23050 201 ALUMINIUM RUND BOLT 6082-T6
Fra og med 10 mm, leveres med sert. 3.1 iht. NS-EN 10204
Lengdetoleranser: -0/+100mm



PVC pipe

- Material: PVC SN8
- Diameter: 200mm
- Thickness: 10mm

DIM. I MM					KG/M	LGD	DIM. I MM					KG/M	LGD
6					0,09	3/6	70					10,78	3/6
8					0,14	3/6	80					14,07	3/6
10					0,22	3/6	90					17,82	3/6
12					0,32	3/6	100					22,00	3/6
16					0,56	3/6	120					31,65	3/6
20					0,88	3/6	130					37,15	3/6
25					1,38	3/6	150					49,46	3/6
30					1,98	3/6	160					56,27	3/6
35					2,70	3/6	170					63,52	3/6
40					3,52	3/6	180					71,22	3
50					5,50	3/6	200					87,92	fabr
60					7,92	3/6	220					106,38	fabr

End pieces

- Aluminium round bolt
- Material: Aluminium (6082-T6)
- Diameter: 200mm
- Standard: NS-EN 10204

Addition information: The finished roller is not possible to disassemble.

Bearing

Manufacturer: SKF

Product id: SY 20 TF

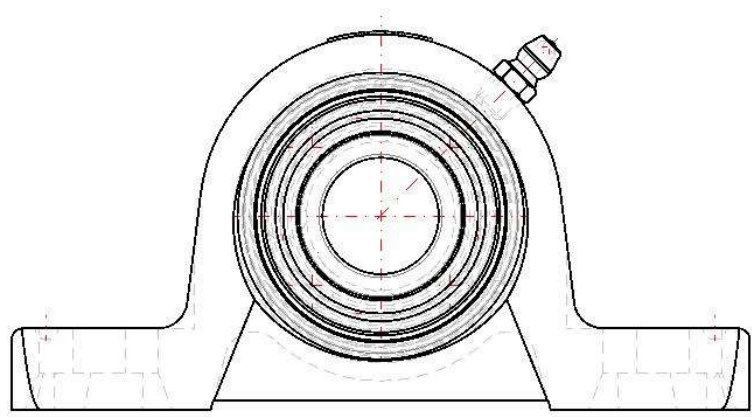
Type: Pillow block with set screw lock

Material: Cast iron housing

Dimensions:

- Shaft diameter: 20mm
- Width: 32mm
- Length: 127mm
- Height of shaft:

Additional information: Appendix 1



Lift

Quantity: 2

Manufacturer: Biltema

Official name: Miniløfter (Art.nr. 82-923)

Function: Lifting the car

Maximum capacity (each): 500Kg

Modifications:

- Mounting holes added/moved
- Internals flipped → stationary screw

Additional information: Appendix 2



Lift Motor

Quantity: 1

Manufacturer: TBD

Maximum torque: TBD

Electrical group must provide technical data sheet on this part.

Wheels

Quantity: 4

Manufacturer: AJ produkter

Materials: Rubber, steel, brass, plastic

Weight: 2,4Kg

Dimensions:

- Height: 240mm
- Bolt holes: 105x80mm
- Wheel diameter: 200mm

Functions: Swivel, brake, inflatable rubber wheel

Weight limit: 75 Kg



Measuring/braking motor

Quantity: 2

Manufacturer: Maxon

Model: RE50

Output power: 200W

Max. continuous torque: 0,405Nm

Max. radial load, 15mm from flange: 110N

Dimensions:

- Shaft diameter: 8mm
- Shaft length: 32mm
- Body diameter: 50mm
- Body length: 108mm

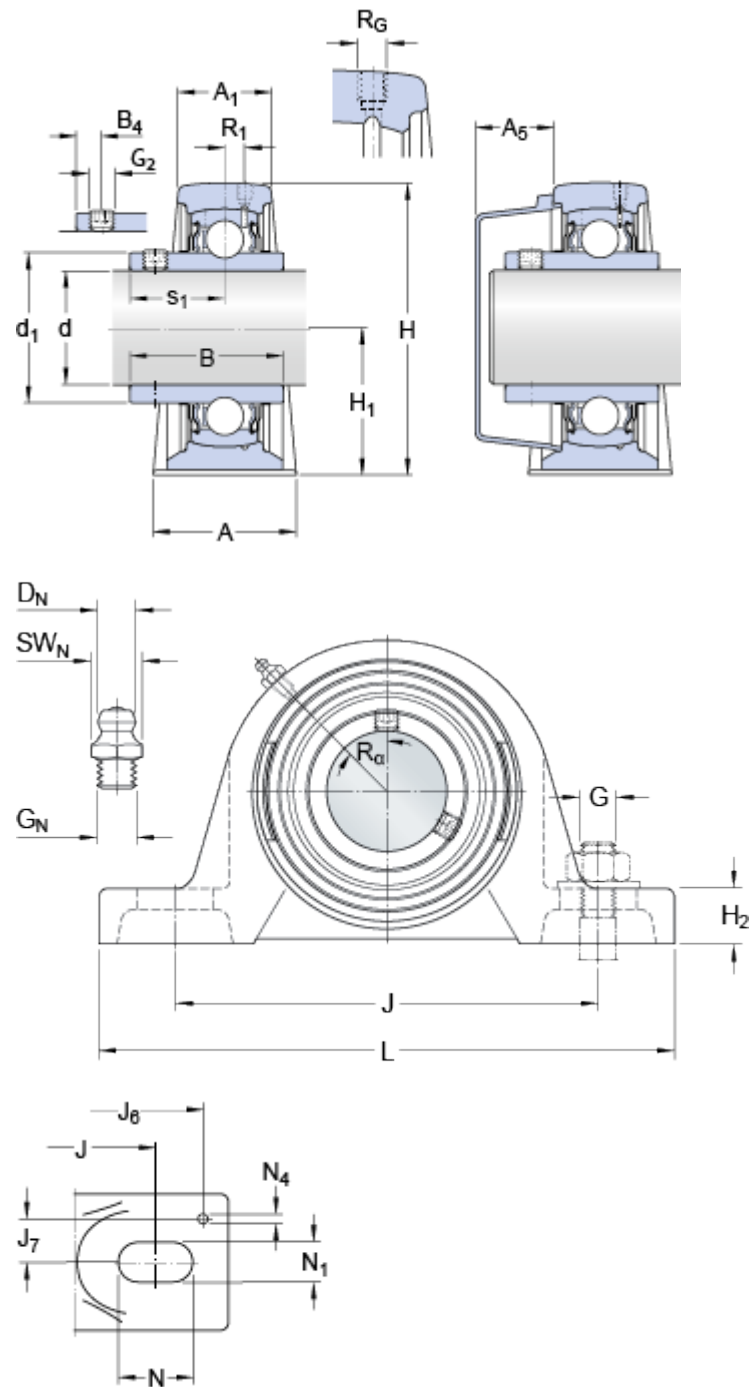
Additional information: Appendix 3



SY 20 TF

Compliance with standard	ISO
Housing material	Cast iron
Sealing solution	Standard seals with additional flingers

Dimensions



d	20	mm
d ₁	≈ 28.2	mm
A	32	mm
A ₁	21	mm
A ₅	20.5	mm
B	31	mm
B ₄	4.5	mm
H	64.5	mm
H ₁	33.3	mm
H ₂	14	mm
J	97	mm
J	max. 106	mm
J	min. 88	mm
L	127	mm
N	20.5	mm
N ₁	11.5	mm
s ₁	18.3	mm

Threaded hole

R _G	1/4-28 UNF	
R ₁	2	mm
R _α	45	°

Grease fitting

D _N	6.5	mm
SW _N	7	mm

	G _N	1/4-28 SAE-LT	
	Dowel pins		
	J ₆	118	mm
	J ₇	11.5	mm
	N ₄	2	mm
Calculation data			
Basic dynamic load rating	C	12.7	kN
Basic static load rating	C ₀	6.55	kN
Fatigue load limit	P _u	0.28	kN
Limiting speed		8500	r/min
with shaft tolerance h6			
Mass			
Mass bearing unit		0.56	kg
Mounting information			
Thread grub screw	G ₂	M6x0.75	
Hexagonal key size for grub screw	N	3	mm
Recommended tightening torque for grub screw		4	N·m
Recommended diameter for attachment bolts, mm	G	10	mm
Recommended diameter for attachment bolts, inch	G	0.375	in
Included products			
Housing		SY 504 M	
Bearing		YAR 204-2F	
Associated products			
End cover		ECY 204	

MINILIFT

INTRODUKTION

Denne manual indeholder vigtige informationer om maskinens anvendelse og sikkerhedsrisici m.m. Vær især opmærksom på følgende advarsler:

FARE! – Indikerer en risiko, som med stor sandsynlighed vil resultere i dødsfald eller alvorlig personskade, hvis den ikke undgås.

ADVARSEL – Indikerer en risiko, som sandsynligvis vil resultere i dødsfald eller alvorlig personskade, hvis den ikke undgås.

FORSIGTIG – Indikerer en risiko, som vil resultere i en mindre eller mindre omfattende personskade, hvis den ikke undgås.

Opbevar manualen et sikkert sted i forbindelse med maskinen. Ved eventuelt salg skal manualen følge maskinen.

TEKNISKE DATA

Maks. kapacitet. 500 kg
 Maks. højde. 400 mm
 Min. højde. 95 mm
 Platformens dimension. 450 x 150 mm
 Vægt 14,2 kg

ANVENDELSE

Beregnet til lave løft.

SIKKERHEDSFORSKRIFTER

- Læs altid manualen før brug, og gem den til senere brug.
- Overskrid aldrig den højst tilladte kapacitet, 500 kg.
- Produktet må ikke ændres eller ombygges.
- Flyt aldrig liften med last på.
- Køretøjet skal være låst fast, når liften løftes.
- Miniliften skal placeres på et plant, hårdt underlag.
- Liften må kun benyttes, når den fast monteret.
- Kontroller, at der ikke befinder sig personer i arbejdsområdet, når liften løftes og sænkes.
- Stå eller klatr ikke på produktet.

FORUDSIGELIG FORKERT ANVENDELSE

- Overskrid ikke miniliftens maks. kapacitet.
- Miniliften skal benyttes på et plant, stabilt underlag.



FARE!

Risiko for klemmeskade

MONTERING AF STØTTEKLODSE

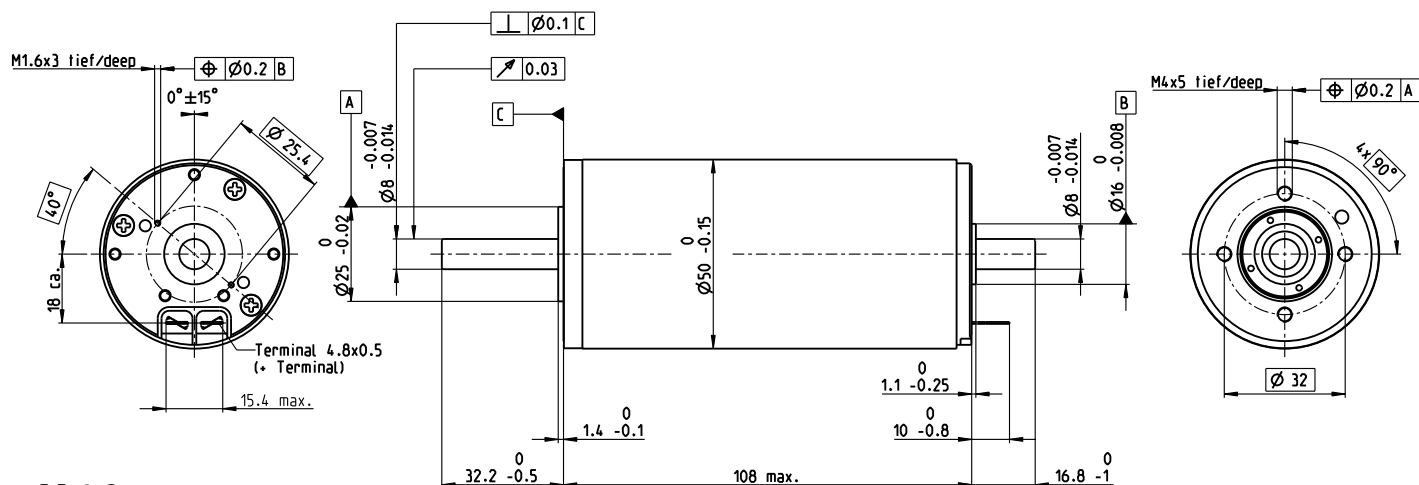
Før støtteklodserne ind på løfteplatformen, og spænd låseskruerne.



VEDLIGEHOLDELSE

- Hold liften ren, og tør eventuelt olie og fedt af. Smør alle bevægelige dele, og se regelmæssigt efter tegn på rust. Rengør udsatte dele med en ren, olieret klud.
- Kontroller alle dele inden brugen for at opdage evt. skader og slitage. Brug aldrig liften, hvis den er beskadiget eller har slidte dele. Eventuelle reparationer skal foretages af en autoriseret tekniker.
- Opbevar liften tørt og i laveste stilling.

RE 50 Ø50 mm, Graphite Brushes, 200 Watt



M 1:2

- Stock program
- Standard program
- Special program (on request)

Part Numbers

578296	578297	578298	578299
618570	618571	618572	618573

Industrial Version IP54*

Motor Data

Values at nominal voltage

	V	24	36	48	70
1 Nominal voltage	V	24	36	48	70
2 No load speed	rpm	5950	5680	4900	2760
3 No load current	mA	236	147	88.4	27.4
4 Nominal speed	rpm	5680	5420	4620	2470
5 Nominal torque (max. continuous torque)	mNm	405	418	420	452
6 Nominal current (max. continuous current)	A	10.8	7.07	4.58	1.89
7 Stall torque	mNm	8920	8920	7370	4340
8 Stall current	A	232	148	78.9	17.9
9 Max. efficiency	%	94	94	94	92

Characteristics

	Ω	0.103	0.244	0.608	3.9
10 Terminal resistance	Ω	0.103	0.244	0.608	3.9
11 Terminal inductance	mH	0.072	0.177	0.423	2.83
12 Torque constant	mNm/A	38.5	60.4	93.4	242
13 Speed constant	rpm/V	248	158	102	39.5
14 Speed / torque gradient	rpm/mNm	0.668	0.638	0.666	0.638
15 Mechanical time constant	ms	3.75	3.74	3.78	3.74
16 Rotor inertia	gcm ²	536	560	542	560

Specifications

Thermal data

17 Thermal resistance housing-ambient	3.8 K/W
18 Thermal resistance winding-housing	1.2 K/W
19 Thermal time constant winding	71.7 s
20 Thermal time constant motor	1370 s
21 Ambient temperature	-30...+100°C
22 Max. winding temperature	+125°C

Mechanical data

(preloaded ball bearings)

23 Max. speed	9500 rpm
24 Axial play at axial load < 11.5 N	0 mm
24 Axial play at axial load > 11.5 N	0.1 mm
25 Radial play	preloaded
26 Max. axial load (dynamic)	30 N
27 Max. force for press fits (static)	150 N
27 Max. force for press fits (static, shaft supported)	6000 N
28 Max. radial load, 15 mm from flange	110 N

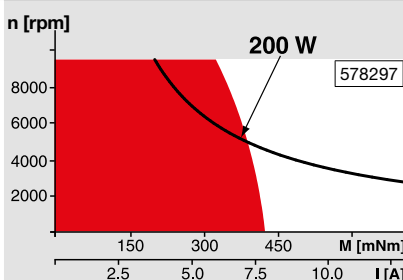
Other specifications

29 Number of pole pairs	1
30 Number of commutator segments	15
31 Weight of motor	1100 g

Values listed in the table are nominal.
Explanation of the figures on page 68.

* Industrial version with radial shaft seal ring (resulting in increased no load current).
IP54 protection only if mounted on brush side, in compliance with maxon modular system.

Operating Range



Comments

Continuous operation
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.

Short term operation
The motor may be briefly overloaded (recurring).

— Assigned power rating

maxon Modular System

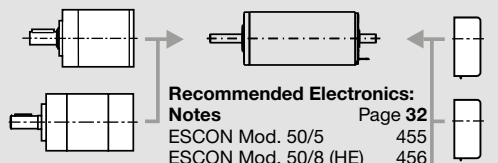
Details on catalog page 32

Planetary Gearhead

Ø52 mm
4 - 30 Nm
Page 366

Planetary Gearhead

Ø62 mm
8 - 50 Nm
Page 368



Recommended Electronics:

Notes Page 32

ESCON Mod. 50/5	455
ESCON Mod. 50/8 (HE)	456
ESCON 50/5	457
ESCON 70/10	457
EPOS4 50/5	463
EPOS4 Mod./Comp. 50/5	463
EPOS4 Module 50/8	465
EPOS4 Comp. 50/8 CAN	465
EPOS4 Module 50/15	466
EPOS4 Comp. 50/15 CAN	466
EPOS4 70/15	467
MAXPOS 50/5	473

Encoder HEDS 5540

500 CPT,
3 channels
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Encoder HEDL 5540

500 CPT,
3 channels
Page 443

Industrial Version IP54*

Encoder HEDL 9140

Page 448
Brake AB 44
Page 495

End cap

Page 496

Parts-list				
Part	Description	Quantity	Supplier	Comment
Frame Frame	40x40x1,5, L=6 m	7	Smith stål AS	
Lifts Scissor lift Weld piece Bolts, wood Bolts, frame Chain Spokes Wood Rubber	"Miniløfter"	2 8 4 8 1 2 2	Biltema Institutt for Maskinteknikk og Produksjon Institutt for Maskinteknikk og Produksjon Institutt for Maskinteknikk og Produksjon Institutt for Maskinteknikk og Produksjon Institutt for Maskinteknikk og Produksjon	
Wheels Wheels Wheel plates Bolts	 Air rubber, 75kg swivel with brakes 105*135*3mm Steel	 4 4 16	 Ajprodukter Institutt for Maskinteknikk og Produksjon Institutt for Maskinteknikk og Produksjon	
Dyno system Roller end blocks Roller bearings Roller axel Pulleys, rollers Pulleys, motors Rollers Belts	Alu bolt Ø200mm x 0,8m Alu Ø25mm x 0,Xm Alu bolt Ø200mm x 0,8m Alu bolt Ø200mm x 0,8m PVC Ø200mm x 0,Xm	1 4 2 2 2	Smith stål AS SKF Norge AS Institutt for Maskinteknikk og Produksjon Smith stål AS Smith stål AS Institutt for Maskinteknikk og Produksjon Biltema	Fabricated in our workshop Sponsor Fabricated in our workshop Fabricated in our workshop
Front wheels stand Discs Bearings	TBD	2 2	Fuel fighter Fuel fighter	3D-printed at our workshop