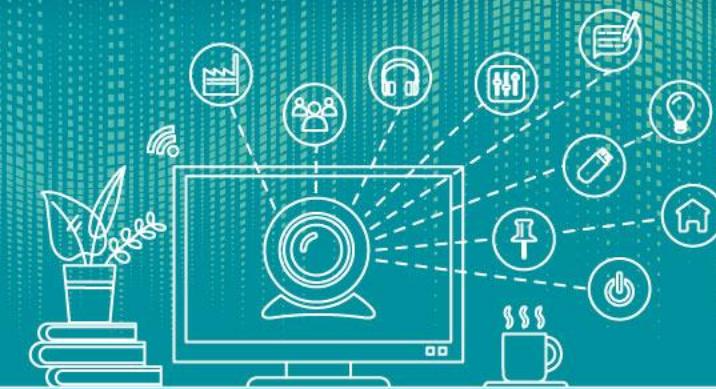
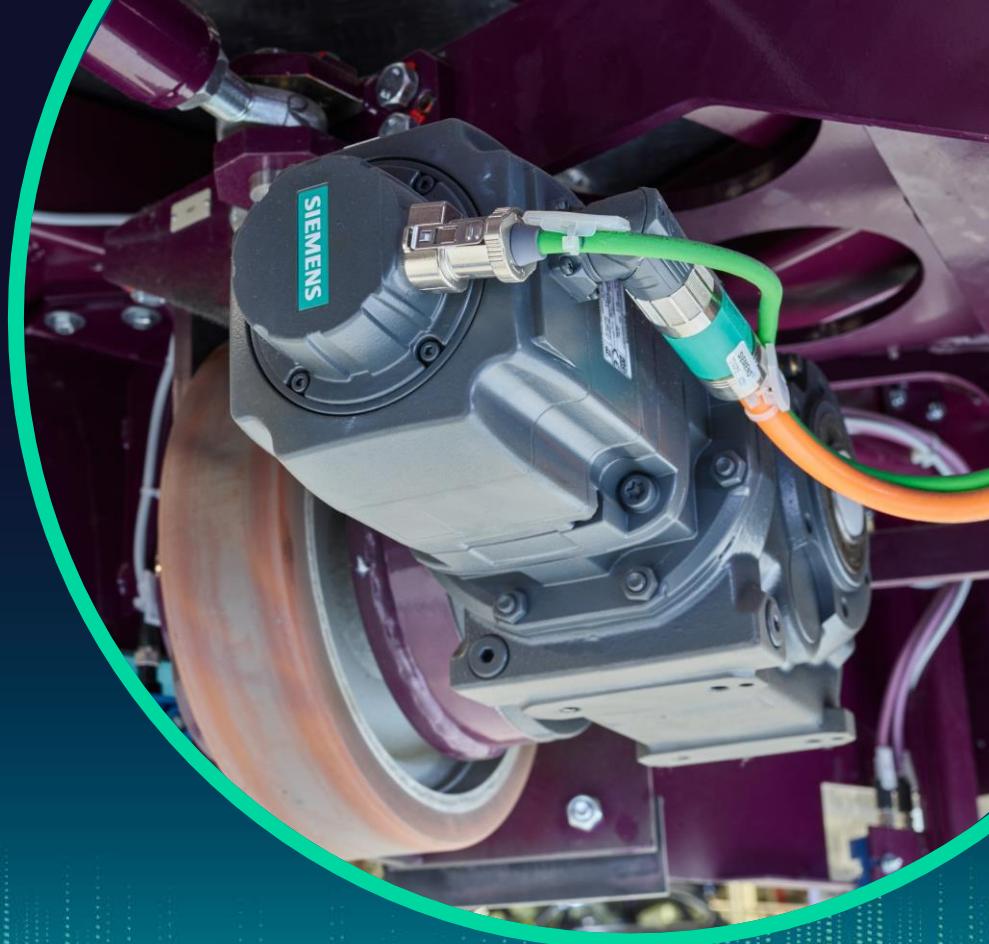


Hvor lang er en Newtonmeter?

Få det bedste resultat med servogear.

SIEMENS



Dagens værter

Jørn Lykke Sørensen, Technology Specialist
Simon Sonne, Technology Specialist



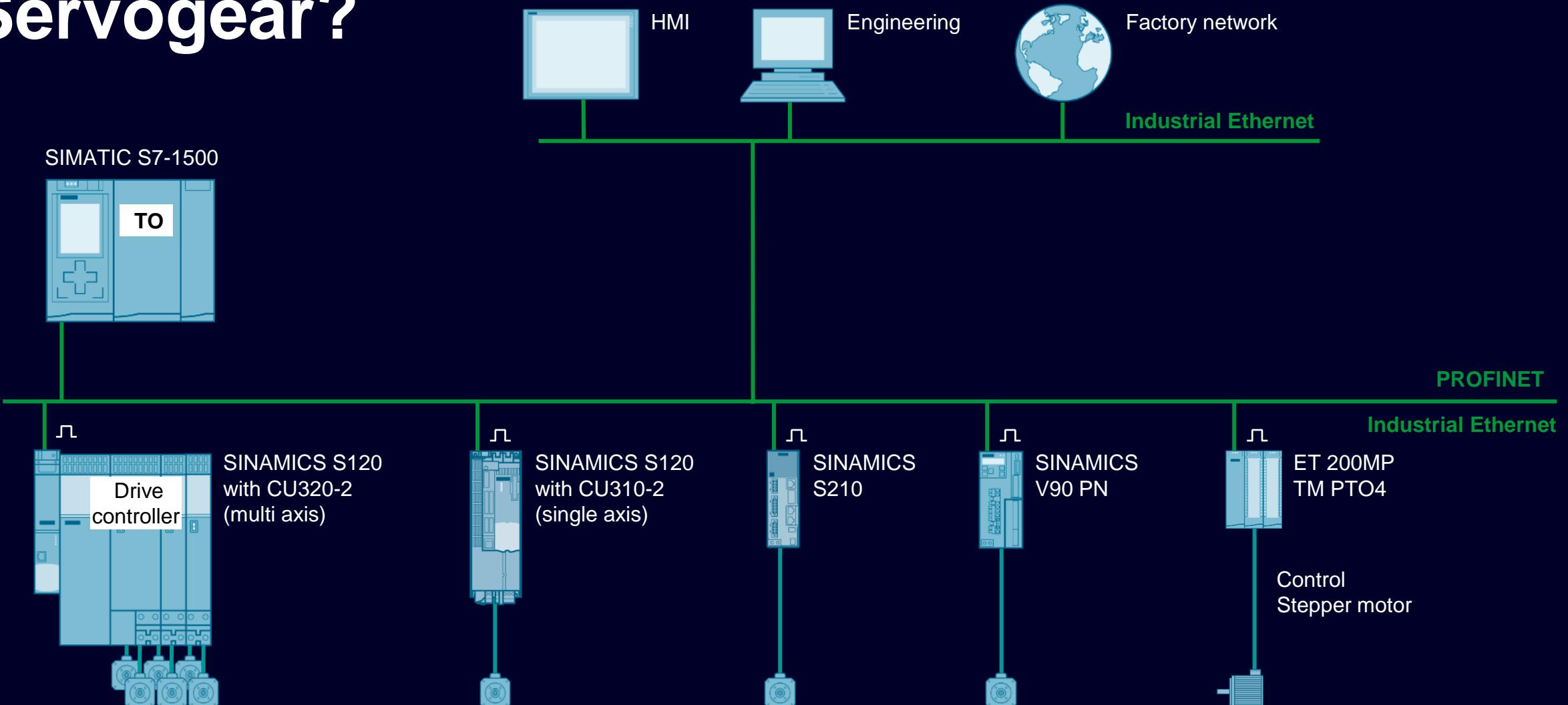
SIEMENS



Agenda

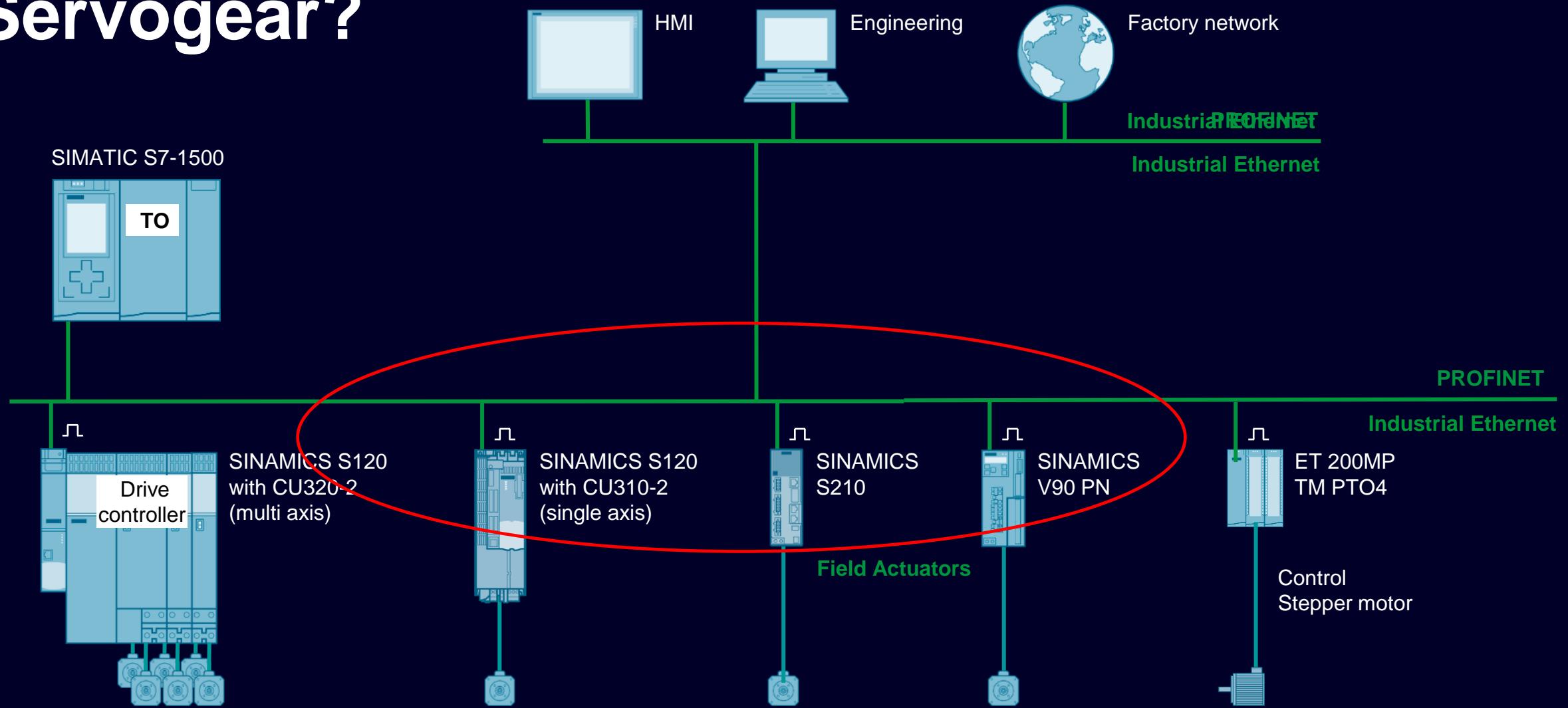
- Servogear i TIA Selection Tool (TST)**
- TST Mekanik**
- TST Kørselsprofil**
- TST Servogear**
- TST Resultat: Mall, Excel, Dokumentation, CAD-data**

Servogear?



SIEMENS

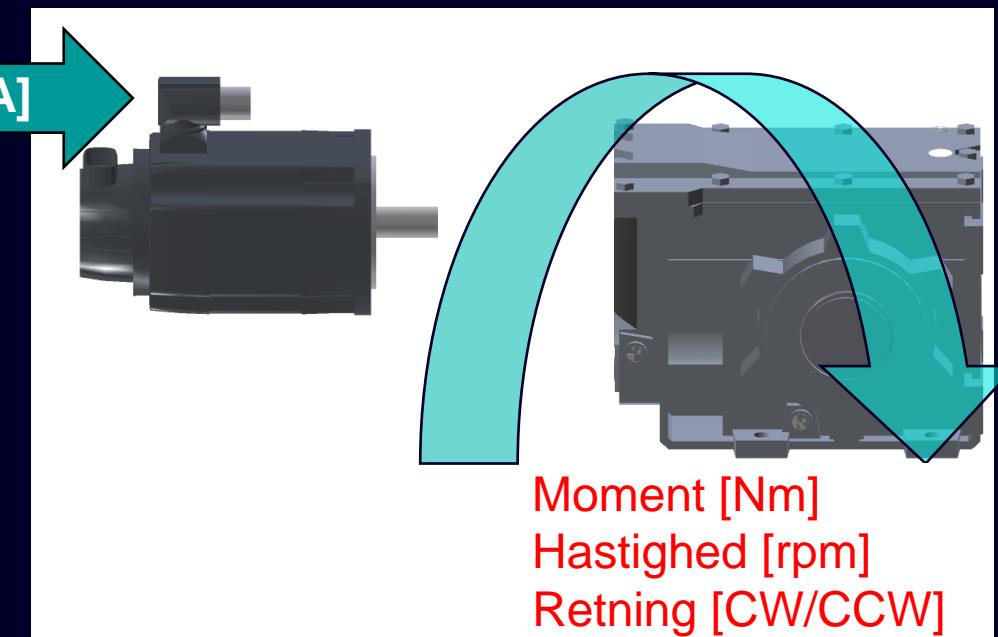
Servogear?



Servogear

Servogearet. En del af actuator-laget i systemet, og enheden, hvor meget kode, signaler og strømme til sidst omdannes til momenter med korrekt størrelse, retning og hastighed!

- Servogearet består af to hovedkomponenter
 - 1. En servomotor
 - 2. Et mekanisk gear
- Servomotor + mekaniskgear = servogear



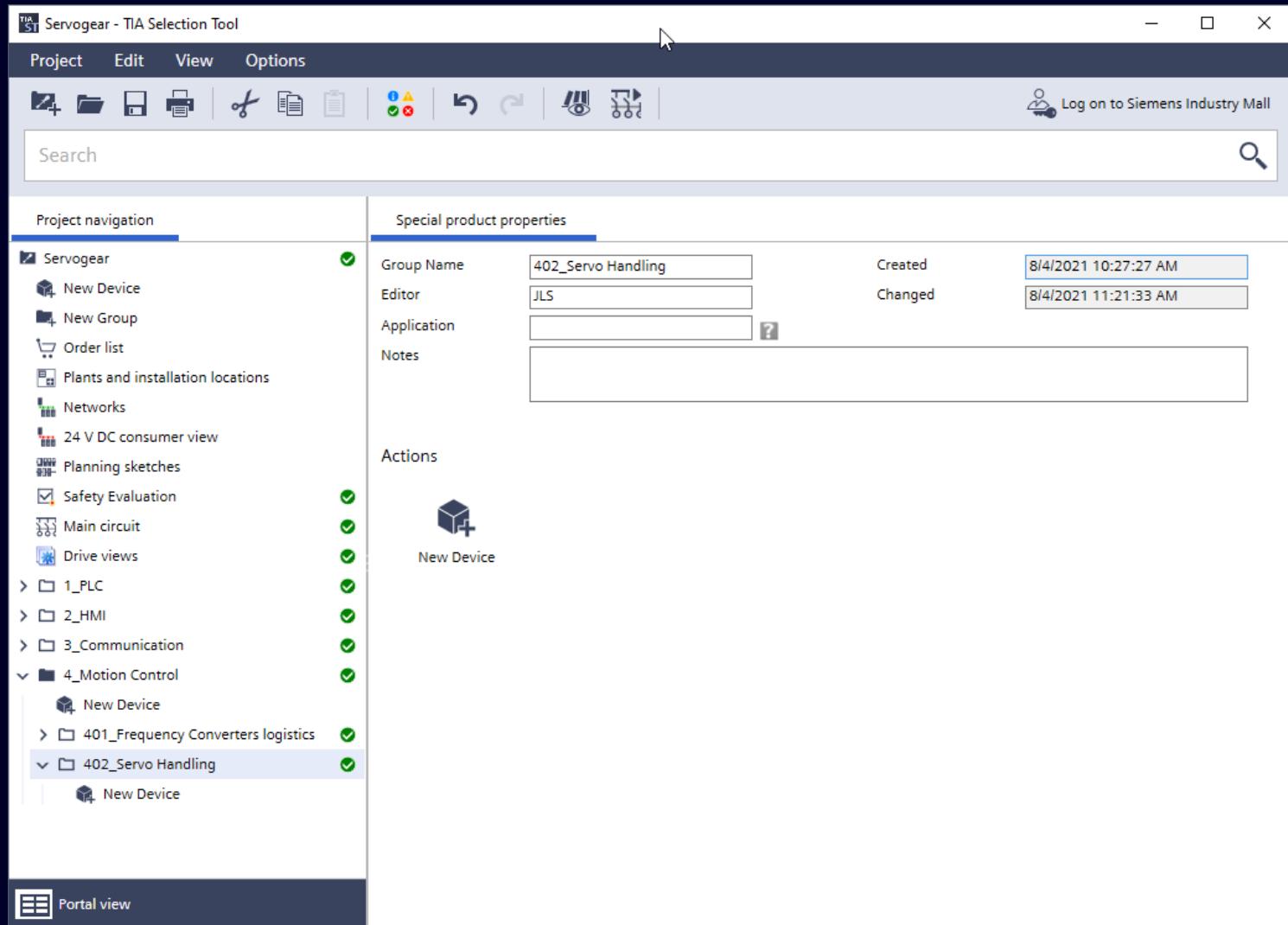
Geartyper - principper

1. Tandhjulsgear aka Helicalgear (skråtskårne)
2. Keglehjulsgear aka Bevelgear (spiralskårne)
3. Snekkegear aka Wormgear (snegleskåret)
4. Kombinationer af ovennævnte type f.eks
Parallelakselgear og tandhjulssnekkegear
5. Planetgear aka Planetary gears (skråtskårne)

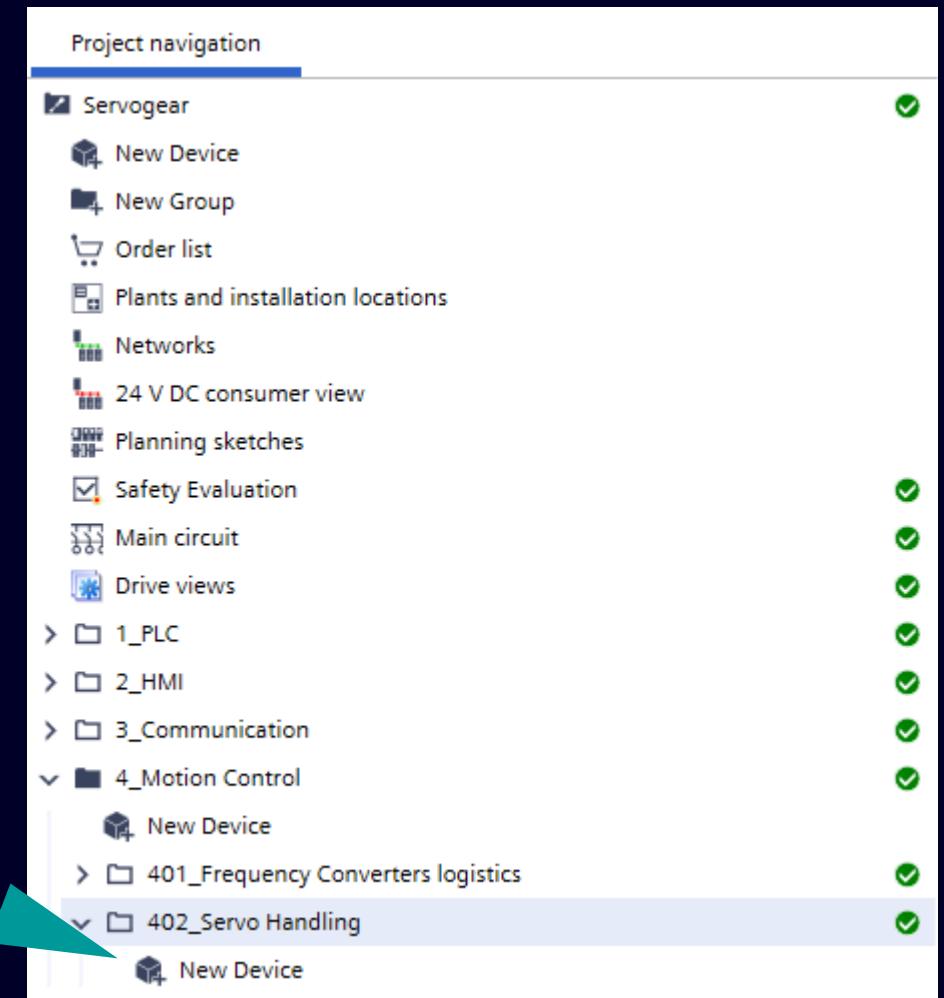


TIA Selection Tool

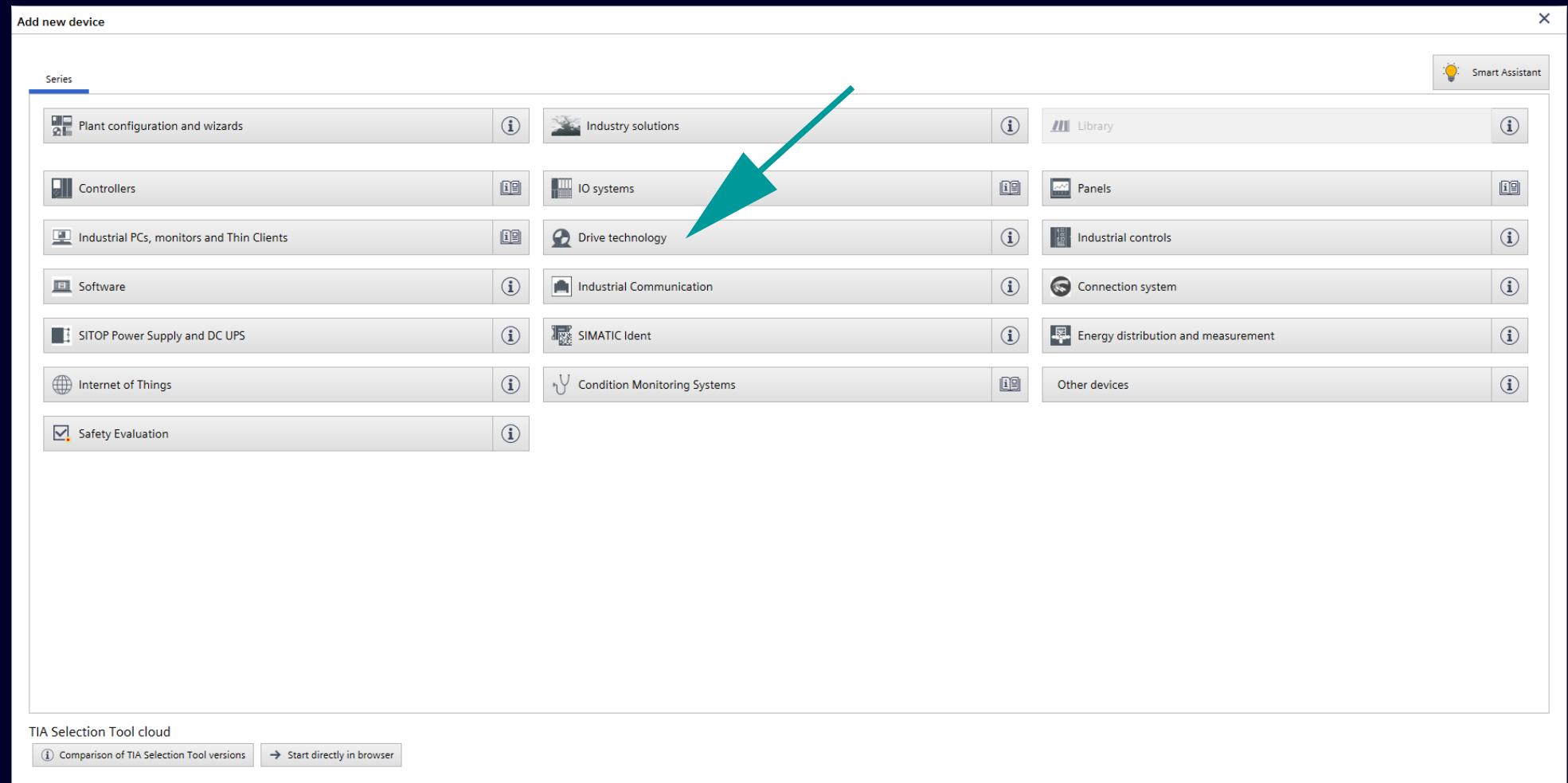
**TST er et projektværktøj,
der beregner og
dokumenterer vores valg**



Opret New Device



Vælg Drive technology



SIEMENS

Vælg Drive dimensioning med SIZER

Add new device

Series Drive technology

All devices

Search term: Name/Article number

Drive dimensioning (> 48 V with SIZER integrated in the TIA Selection Tool)

Drive dimensioning (>48V with SIZER 3 – additional installation required)

SIMATIC MICRO-DRIVE drive dimensioning (<= 48V)

Automatic door control system (SIDOOR)

Motors (SIMOTICS) with DT configurator

Frequency converter (SINAMICS) with DT configurator



Portfolio-valg i TIA Selection Tool ?

Screenshot of the Siemens TIA Selection Tool interface, showing the 'Portfolio selection' tab.

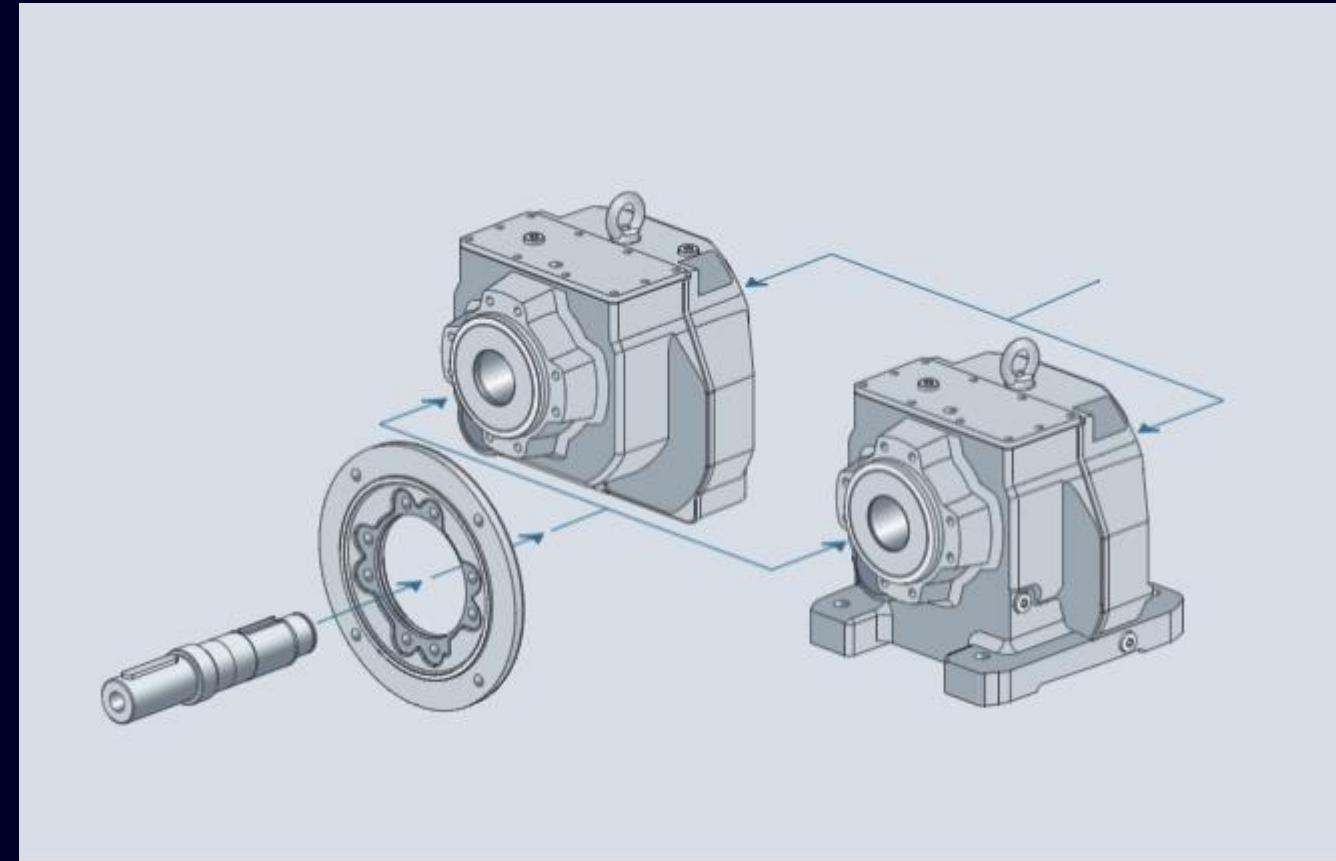
The interface is divided into several sections:

- Installation:** Options include "Cabinet unit" (selected) and "Distributed system".
- Motor:** Options include "Standard asynchronous motor solution", "Servo motor solution" (selected), and "Reluctance motor solution".
- Gearbox:** Options include "Standard gearbox" (selected) and "Planetary gearbox". Sub-options under "Gearbox type" are "Gearbox" (selected) and "Gearbox/motor coupling". Sub-options under "Standard gearbox" are "Direct" (selected) and "Via adapter".
- Technology requirements:** Fields include "Fieldbus interface" (Any), "Regenerative mode" (Any), "Safety Integrated Functions" (Any), "Motion control requirements" (Any), "Speed control mode (converter)" (Any), and "Direct machine encoder required" (Any).
- Ambient conditions:** Fields include "Installation altitude" (<= 1000 m), "Temperature" (<= 40 °C), "Explosion protection (gas)" (None), and "Explosion protection (dust)" (None).
- Load requirements:** Shows "No load available".
- Possible solutions:** Shows "No product series have been selected as solutions that should be considered for dimensioning." Sections for "Gearbox series", "Motor series", and "Frequency converter series" are listed with checkboxes for "Select all" and specific models.

SIEMENS

SIMOGEAR - servogear

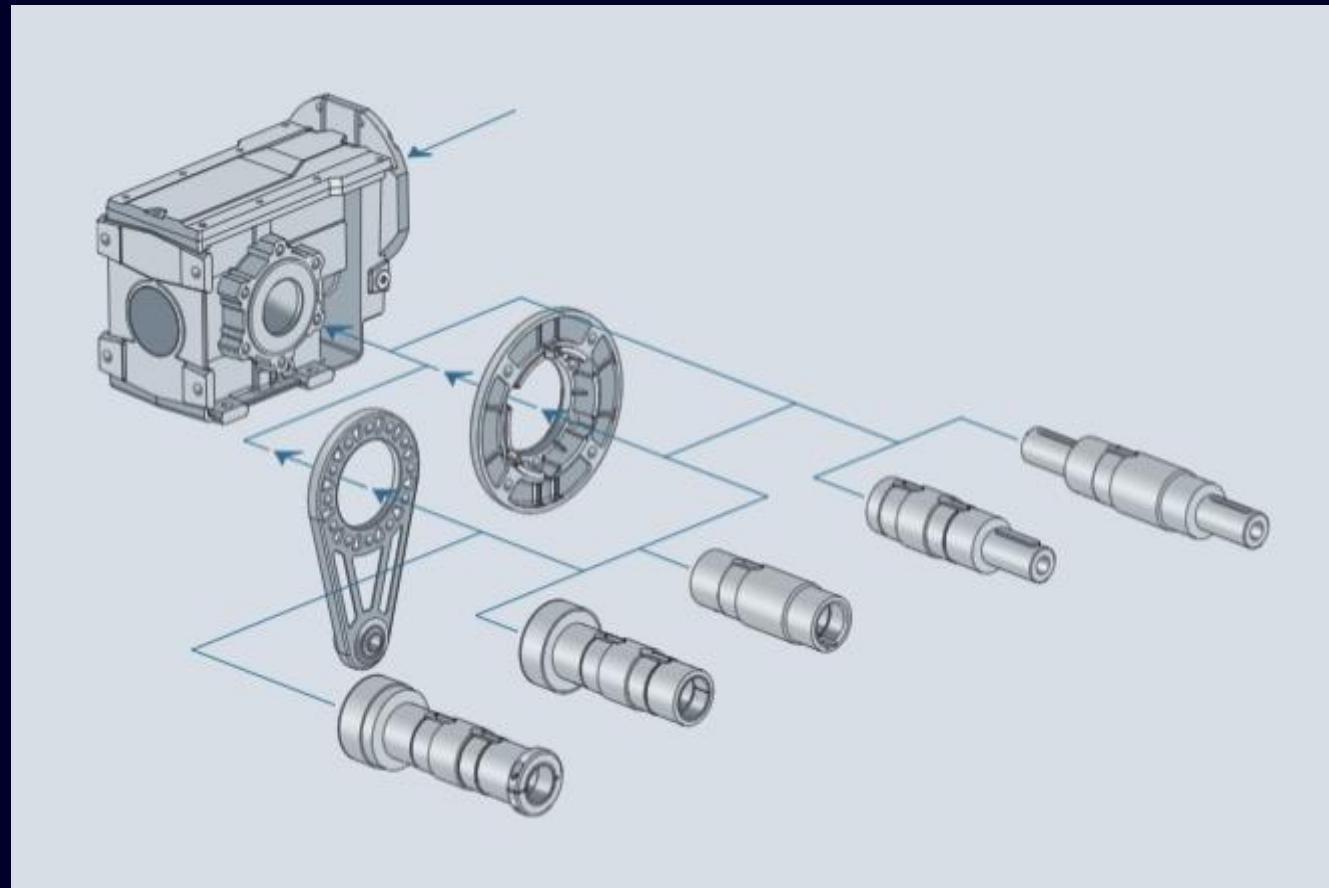
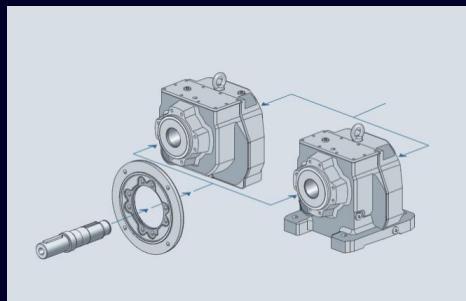
1. Tandhjulsgear < 19500 Nm



SIEMENS

SIMOGEAR - servogear

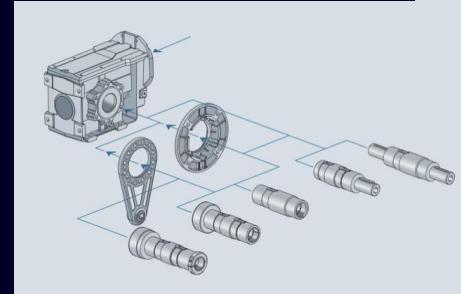
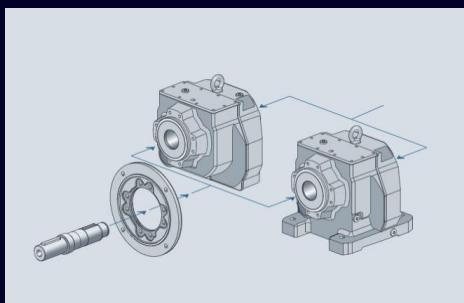
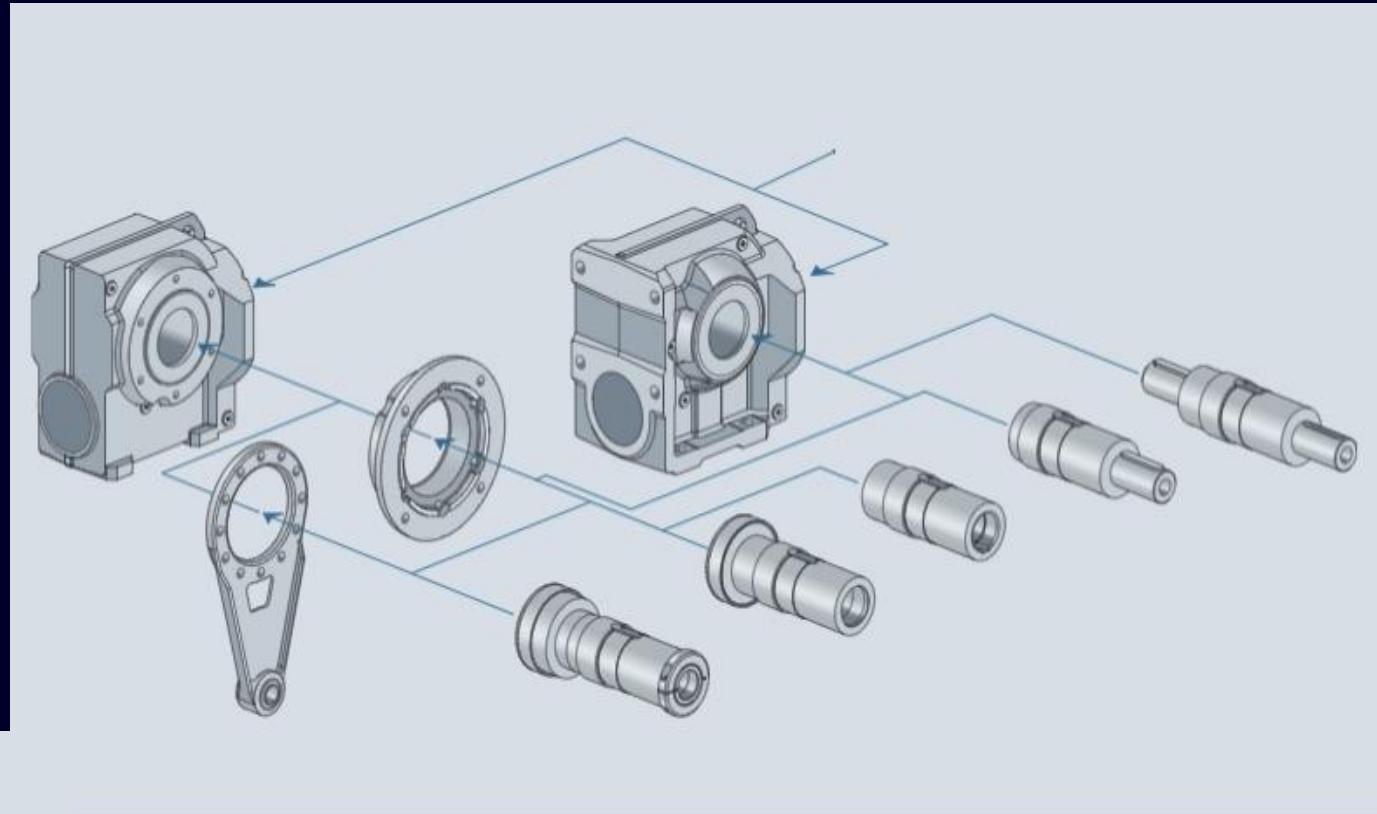
1. Tandhjulsgear < 19500 Nm
2. Keglehjulsgear < 19500 Nm



SIEMENS

SIMOGEAR - servogear

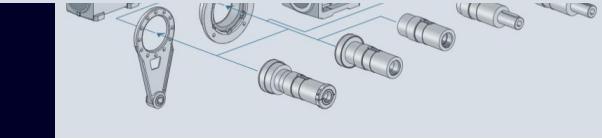
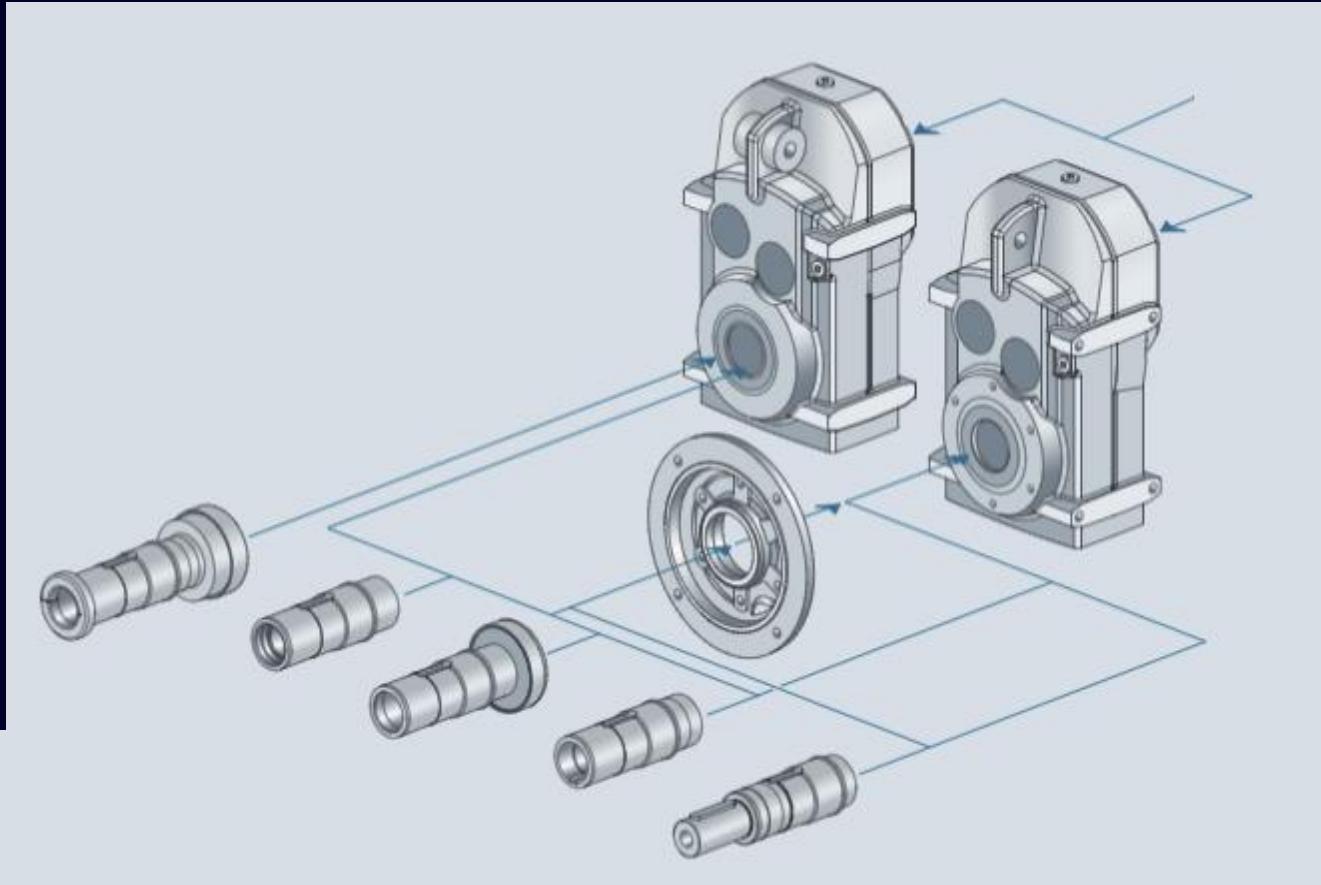
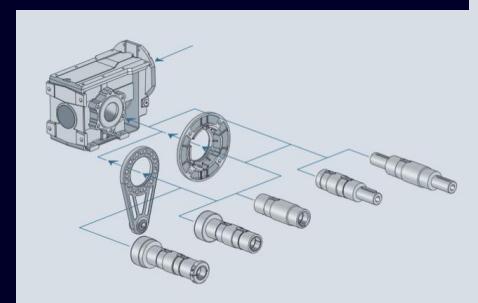
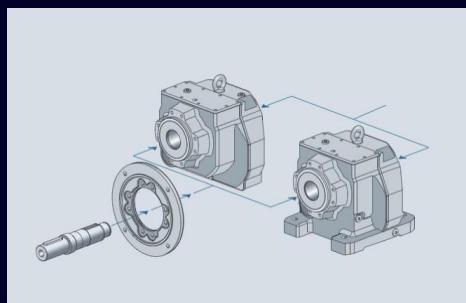
- | | |
|-------------------|------------|
| 1. Tandhjulsgear | < 19500 Nm |
| 2. Keglehjulsgear | < 19500 Nm |
| 3. Snekkegear | < 1450 Nm |



SIEMENS

SIMOGEAR - servogear

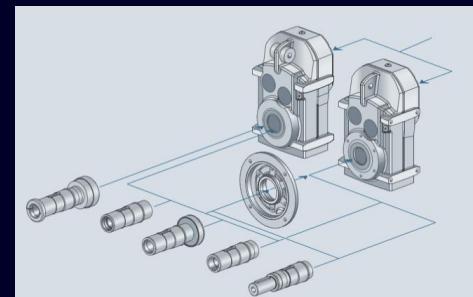
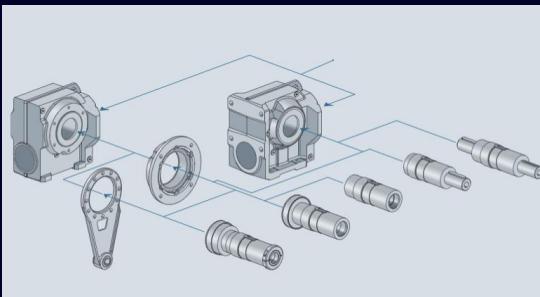
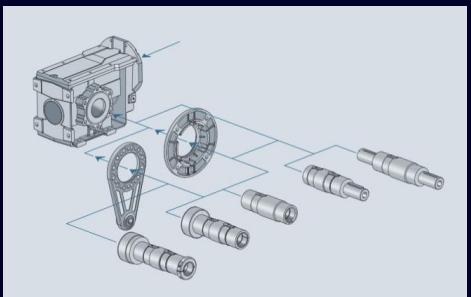
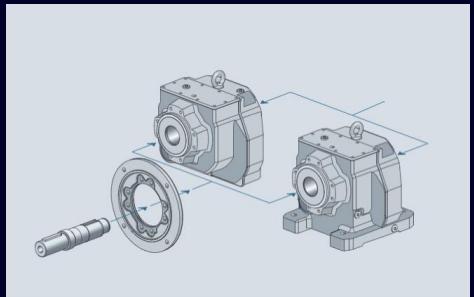
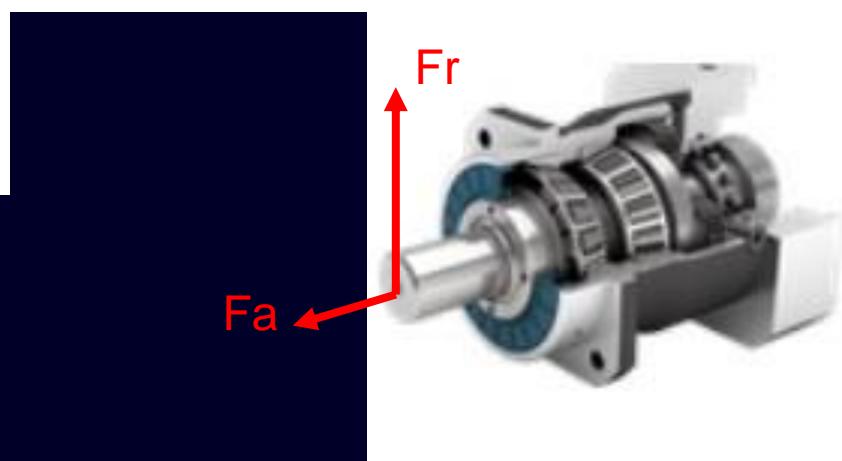
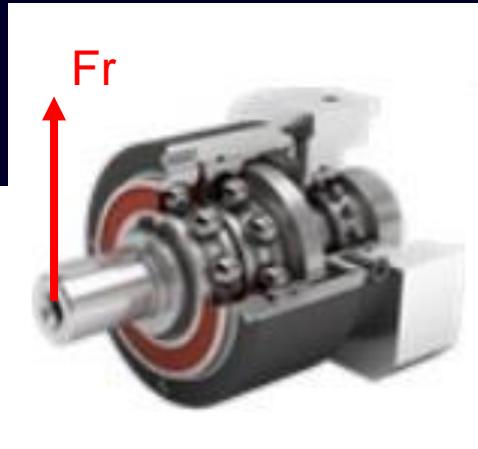
- | | |
|---------------------|------------|
| 1. Tandhjulsgear | < 19500 Nm |
| 2. Keglehjulsgear | < 19500 Nm |
| 3. Snekkegear | < 1450 Nm |
| 4. Parallelaksegear | < 19000 Nm |



SIEMENS

SIMOGEAR - servogear

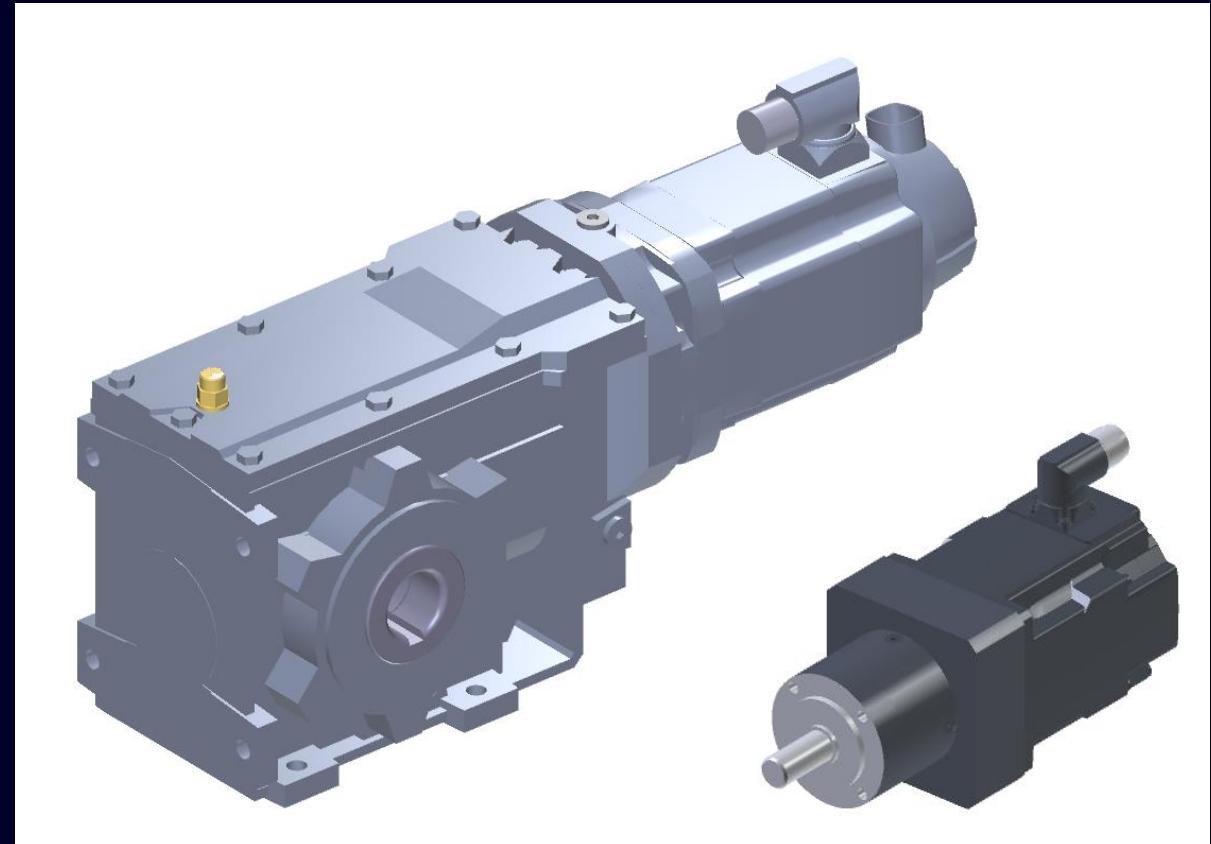
1. Tandhjulsgear < 19500 Nm
2. Keglehjulsgear < 19500 Nm
3. Snekkegear < 1450 Nm
4. Parallelaksegear < 19000 Nm
5. Planetgear NRB NRK NLC <1280/736/416 Nm



SIEMENS

SIMOGEAR - integrerede servogear

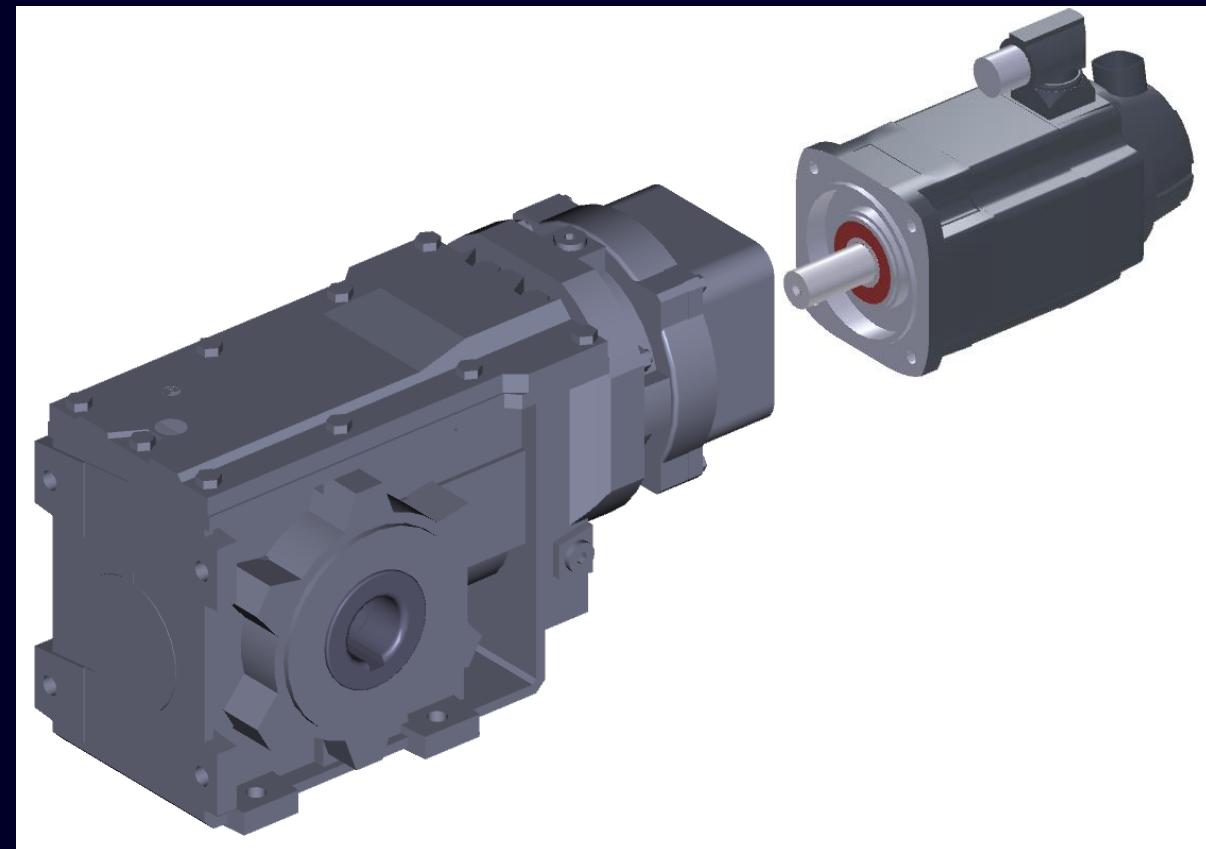
- 1. SIMOGEAR-løsning
1FK7 motorer integreret med
SIMOGEAR
1FG1..... 19-19500 Nm
0,3-7,4 kW
- 2. Planetgears-løsning
1FK2..... 8-1280 Nm
0,05-7,1 kW



SIEMENS

SIMOGEAR - servogear med adapter

- 1FK7, 1FT7, 1PH8, 1FK2 motorer
- + tilhørende adapter
19 -19500 Nm 0,3 – 200 kW



SIEMENS

Properties Portfolio selection **Portfolio selection** Motion control

Installation

Cabinet unit Distributed system




Motor

Motor solution Servo motor solution Reluctance motor solution

Gearbox

Gearbox Gearbox type

Standard gearbox Planetary gearbox




Direct Via adapter

Technology requirements

Fieldbus interface	Any
Regenerative mode	Any
Safety Integrated Functions	
Motion control requirements	Any
Speed control mode (converter)	Any
Direct machine encoder required	Any

Ambient conditions

Installation altitude	≤ 1000 m
Temperature	≤ 40 °C
Explosion protection (gas)	None
Explosion protection (dust)	None

Load requirements

No load available

Possible solutions

⚠ No product series have been selected as solutions that should be considered for dimensioning.

Gearbox series

(Select all) SIMOTICS S - 1FG1

Motor series

(Select all) SIMOTICS S - 1FG1

Frequency converter series

(Select all) SINAMICS S110 SINAMICS S120 AC/AC

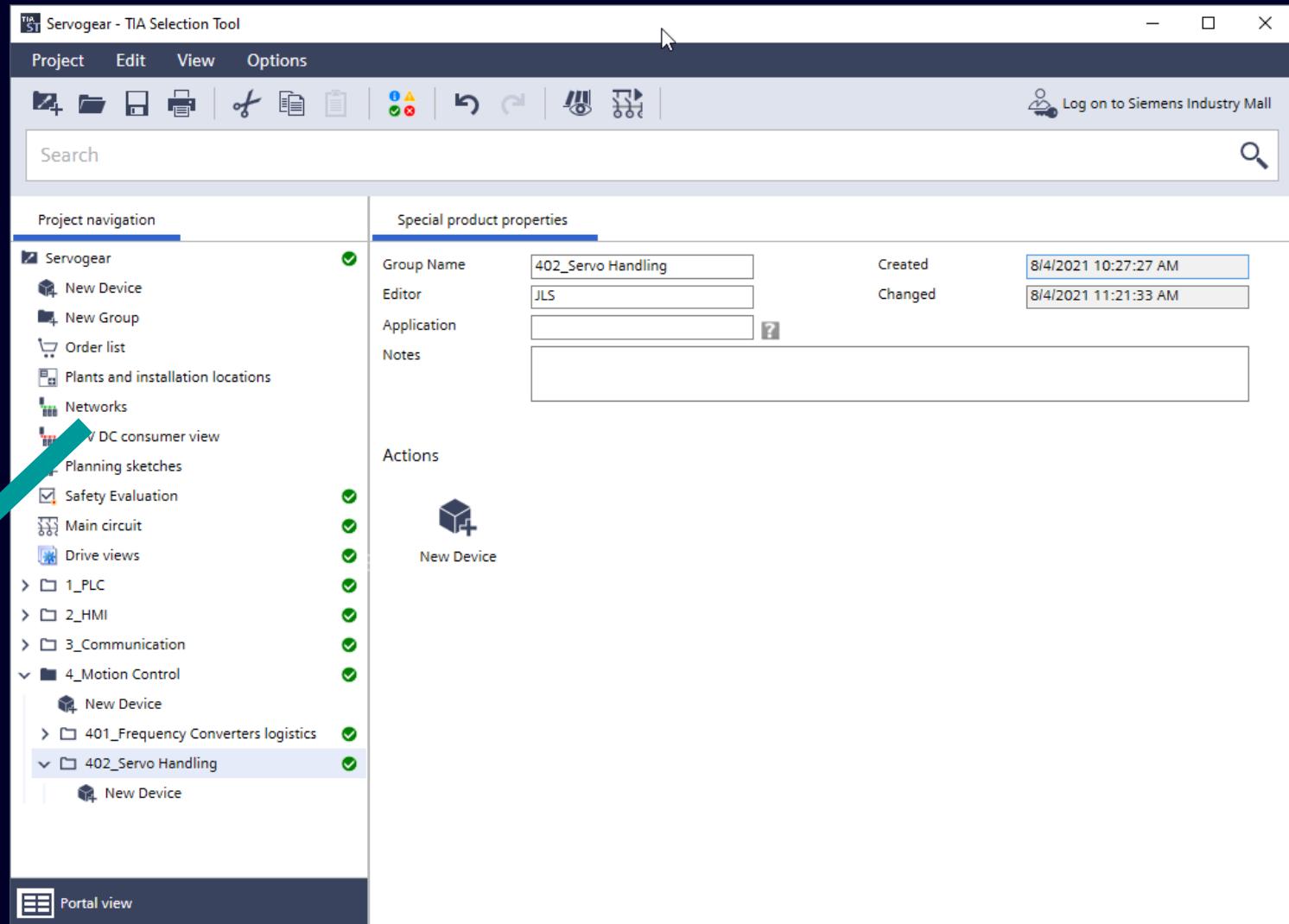
SIEMENS

TIA Selection Tool

Vi dimensionerer
servogear ud fra:

- Indbygning ✓
- Hvor mange kræfter? ✓
- Hvor hurtig? ✓
- Inertiforhold

SIEMENS



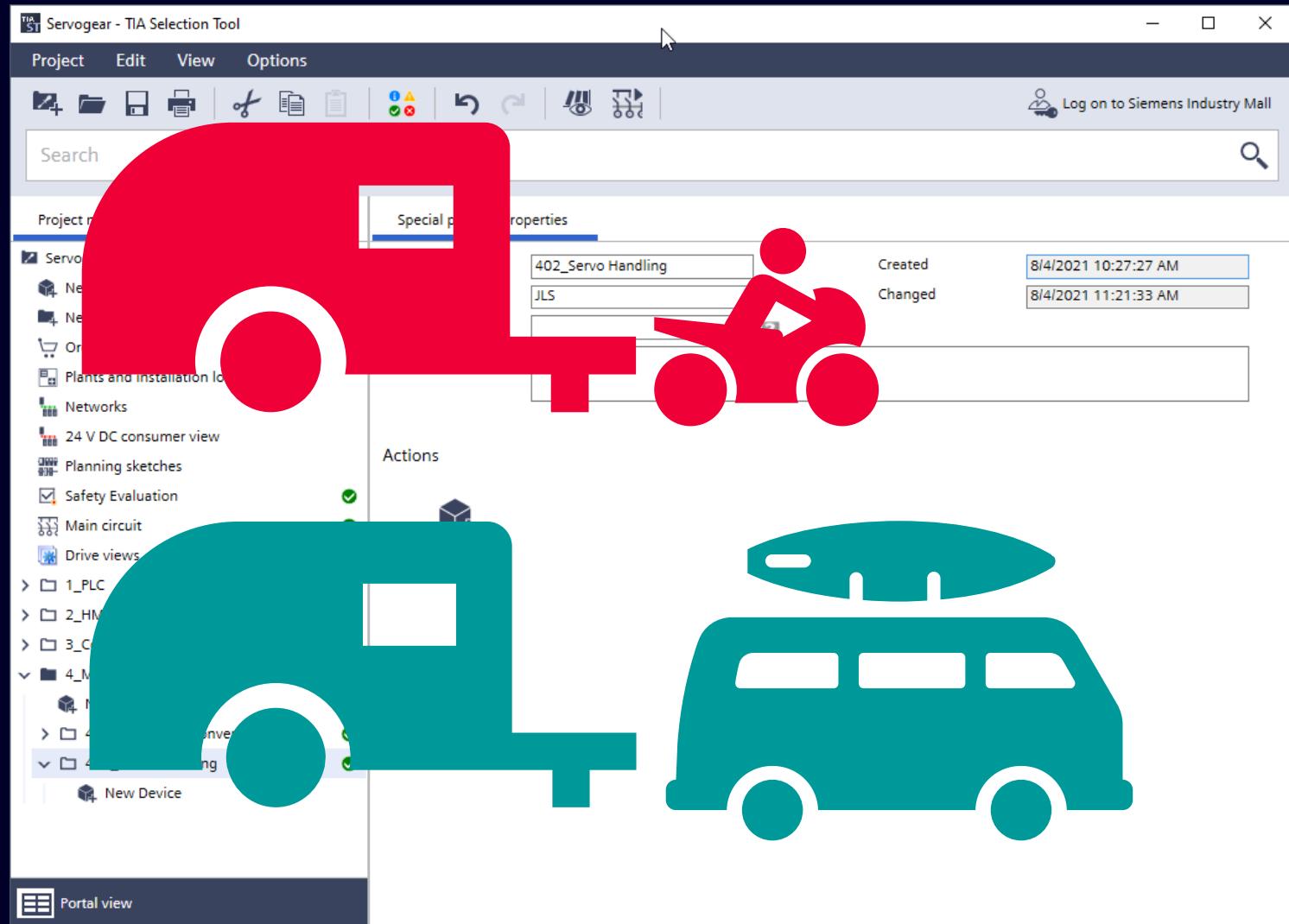
TIA Selection Tool

Inertiforhold

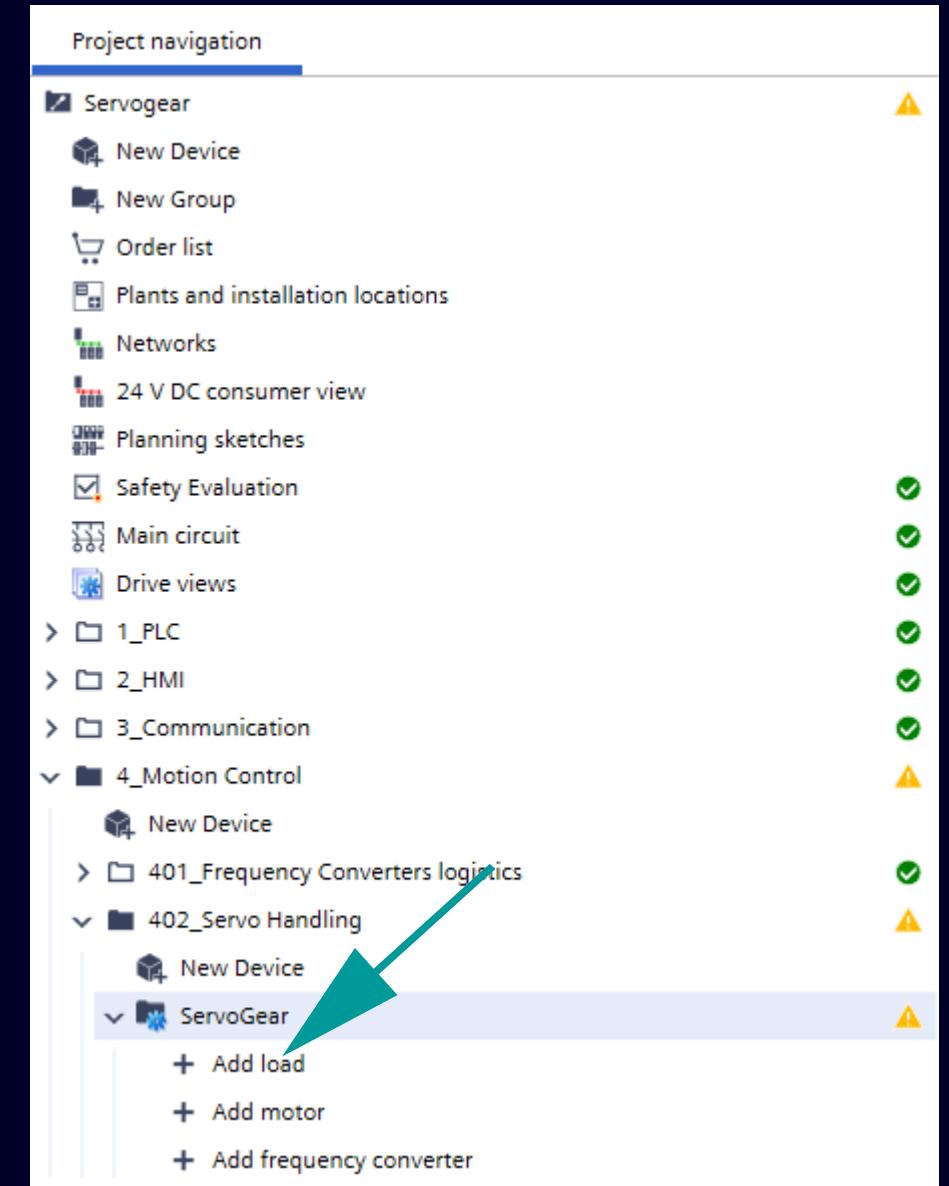
Vægt på last

Vægt på motor

SIEMENS

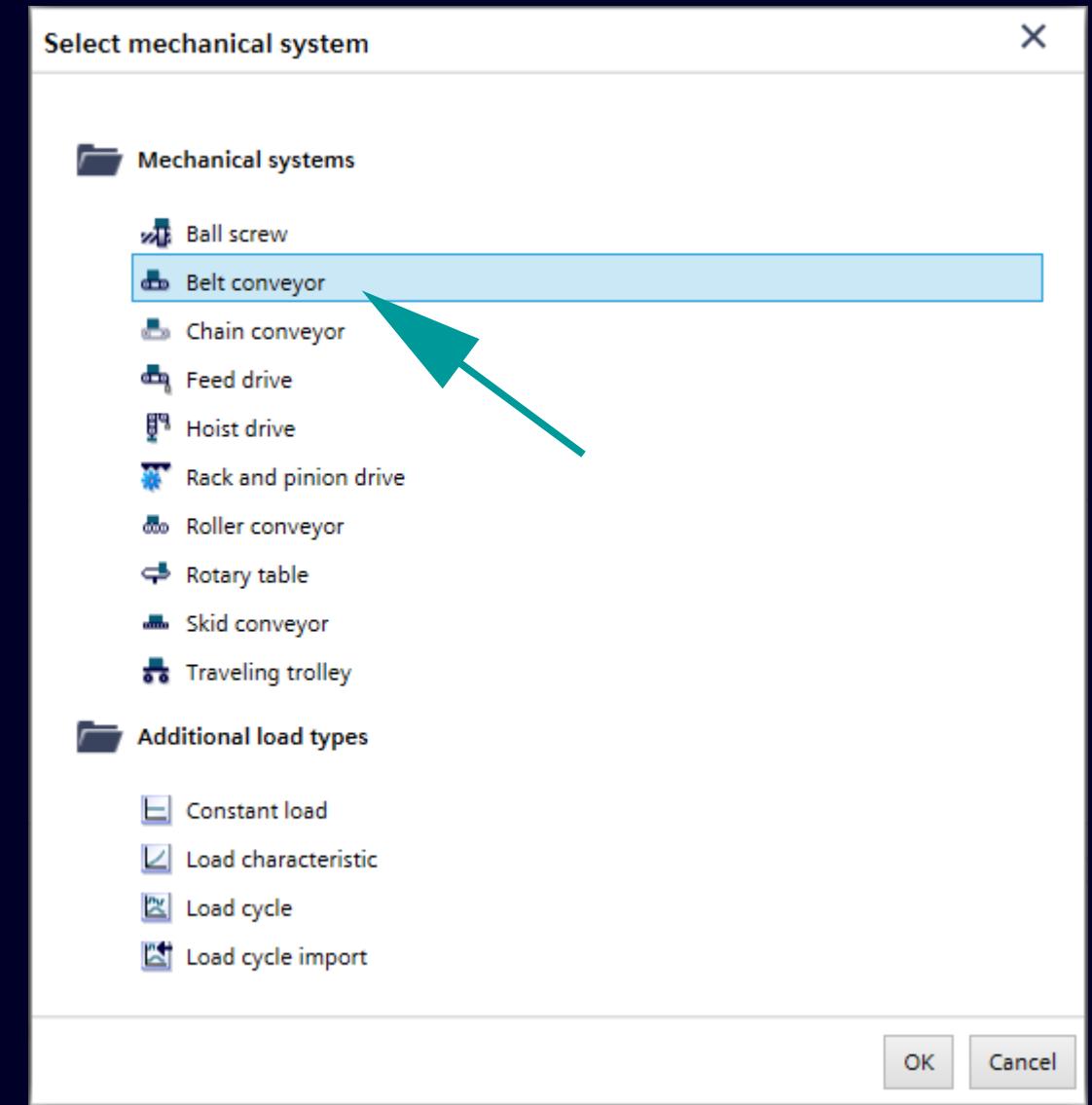


Add load



Vælg Drive dimensionering

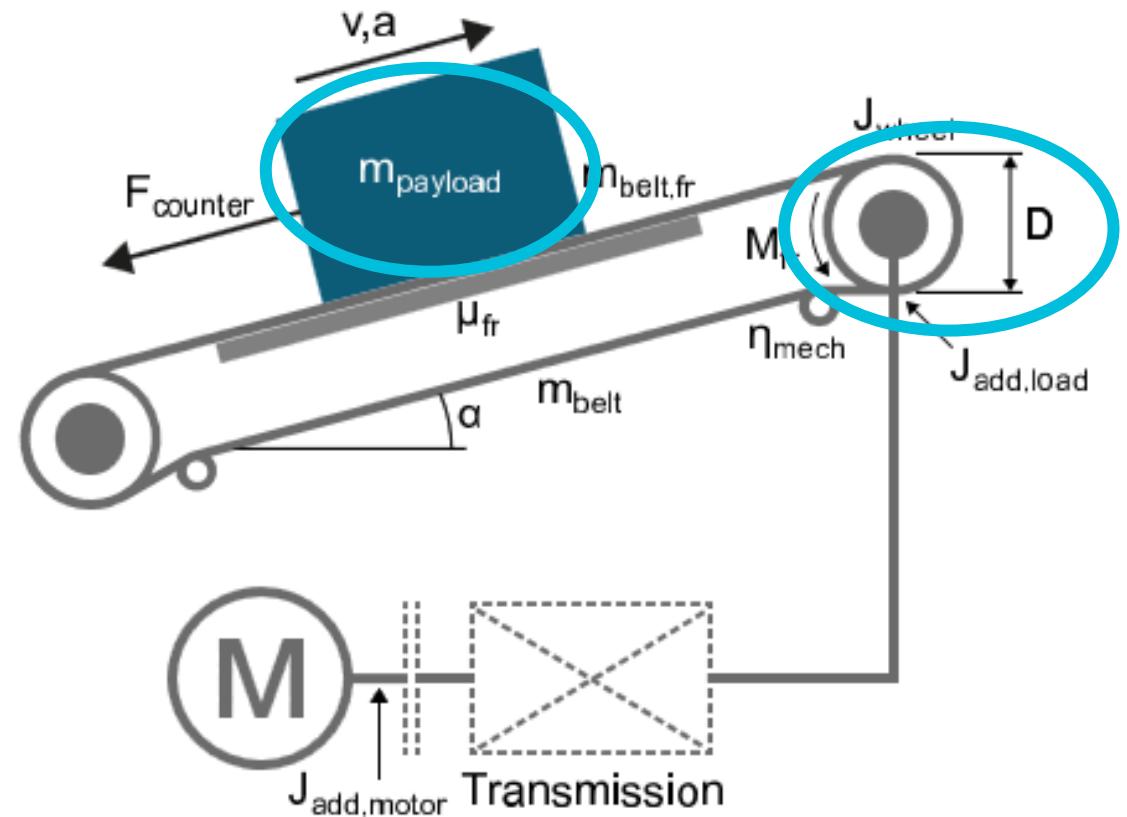
Mekanisk model



Mekanik

Vi bygger en simpel model

Mechanical model: belt conveyor



Mekanik

Vi bygger en simpel model

Mechanical model: belt conveyor

Masses

m _{payload}	Steady payload Required	<input type="text" value="1000"/> kg
m _{belt}	Mass of the conveyor belt	<input type="text" value="5.00"/> kg
m _{belt,fr}	Belt mass contributing to sliding friction	<input type="text" value="2.50"/> kg
f _{sliding}	Ratio of belt mass contributing to sliding friction	<input type="text" value="0.500"/>

Moments of inertia

J _{wheel}	Moment of inertia of one wheel	<input type="text" value="0.0200"/> kg m ²
N _{wheel}	Number of wheels	<input type="text" value="2"/>
J _{add,load}	Additional moment of inertia in relation to load	<input type="text" value="0.00"/> kg m ²
J _{add,motor}	Additional inertia in relation to motor	<input type="text" value="0.00"/> kg m ²

Mechanics

D	Diameter of the drive wheel Required	<input type="text" value="80.0"/> mm
α	Angle of inclination	<input type="text" value="0.00"/> °

Friction

M _{fr}	Friction torque at drive wheel	<input type="text" value="0.00"/> Nm
F _{counter}	Additional counter force	<input type="text" value="0.00"/> N
η _{mech}	Efficiency of the mechanical system	<input type="text" value="0.750"/>
μ _{fr}	Coefficient of friction	<input type="text" value="0.200"/>

Opret Kørselsprofil

SIEMENS

Project navigation

- Servogear
 - New Device
 - New Group
 - Order list
 - Plants and installation locations
 - Networks
 - 24 V DC consumer view
 - Planning sketches
 - Safety Evaluation
 - Main circuit
 - Drive views
- 1_PLC
- 2_HMI
- 3_Communication
- 4_Motion Control
 - New Device
 - 401_Frequency Converters logistics
 - 402_Servo Handling
 - New Device
 - ServoGear
 - Load
 - Belt conveyor mechanics [Mechanics]
 - + Add motion profile
 - + Add motor
 - + Add frequency converter

Kørselsprofil

Fastlæggelse af accelerationer og hastigheder

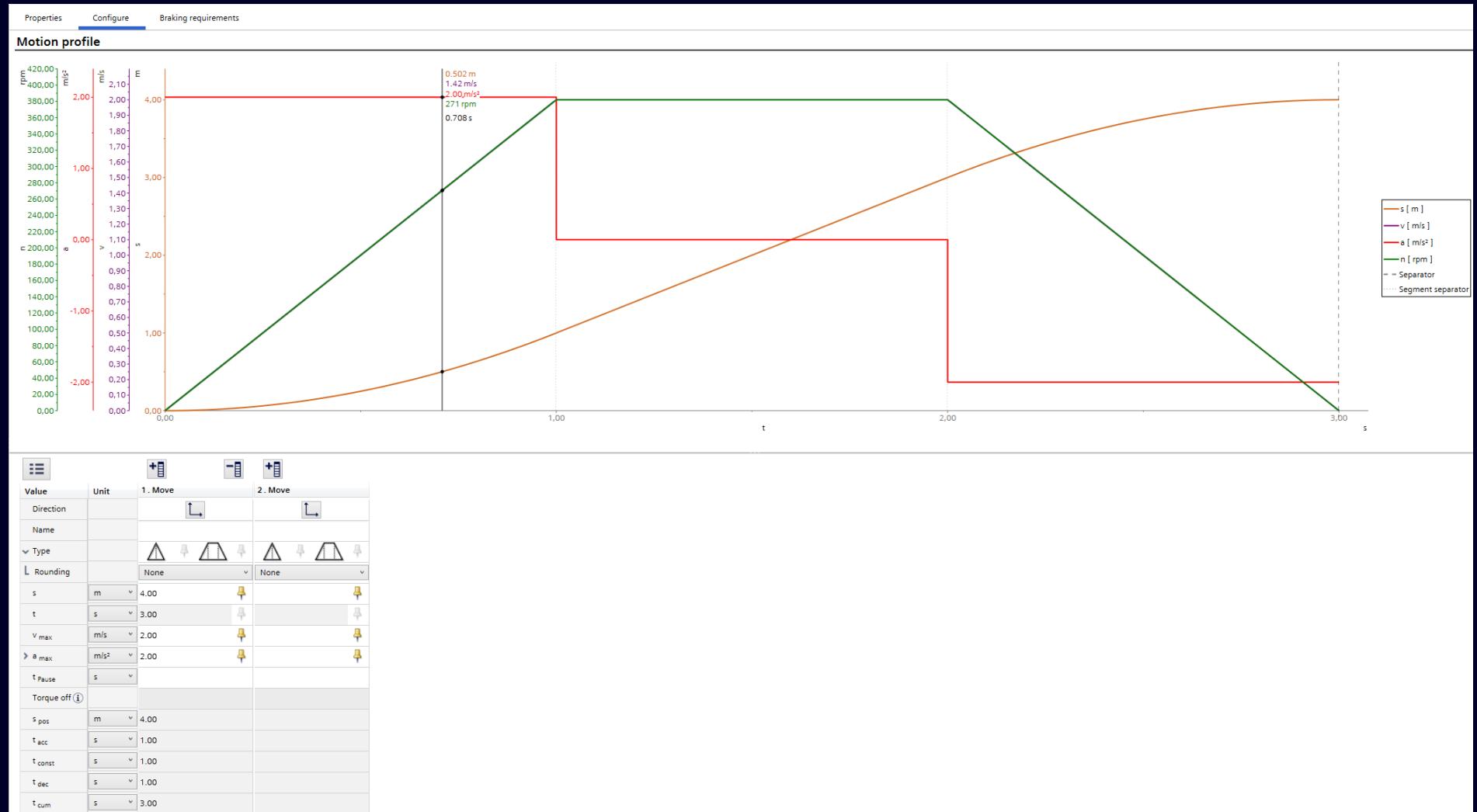
Skitser, tabeller, beskrivelser af funktionen

Vej/tid diagrammer

Hastigheden → bestemmer udvekslingen i servogearet

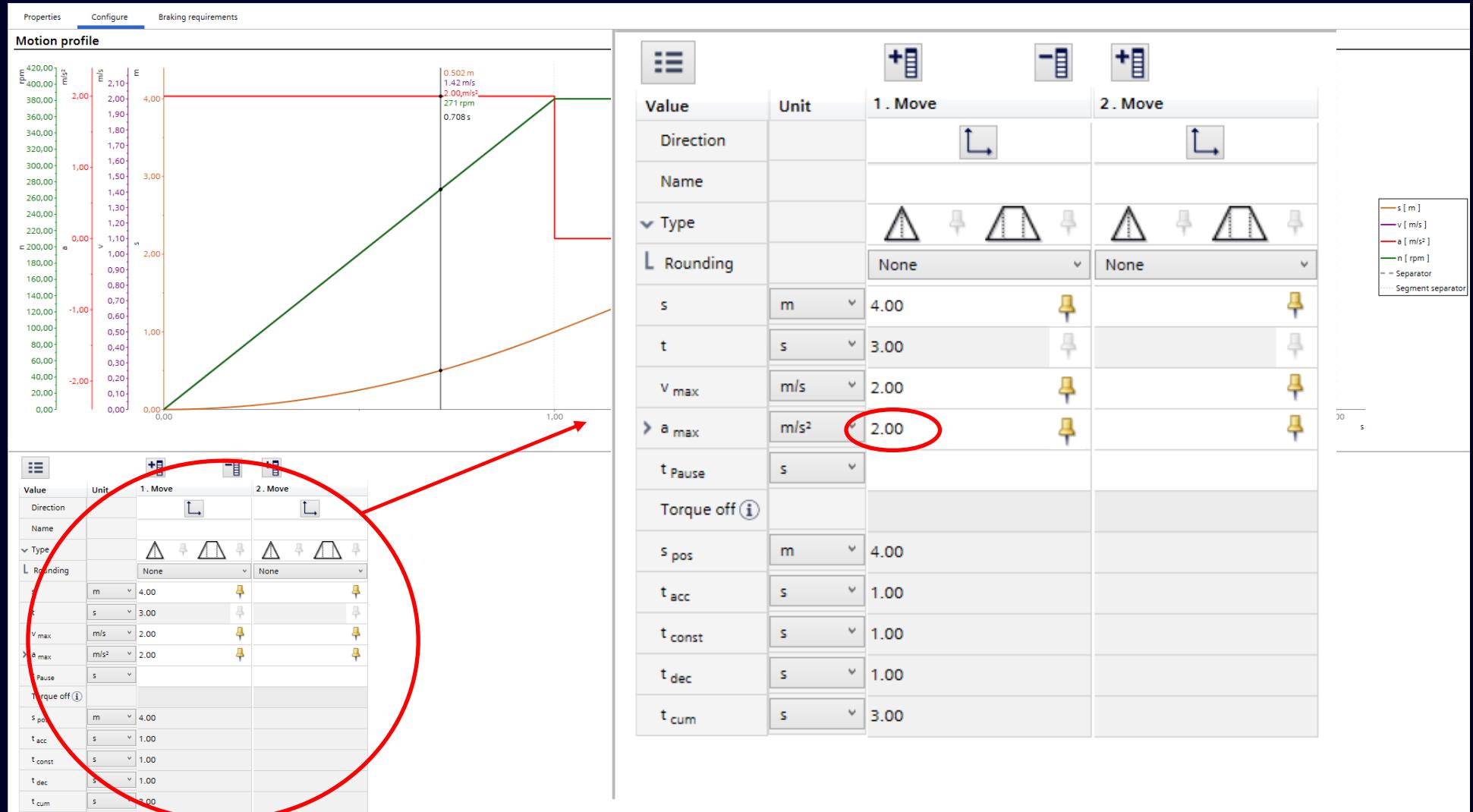
Accelerationen → bestemmer moment-behovet fra motoren

Profilgenerator i TIA Selection Tool



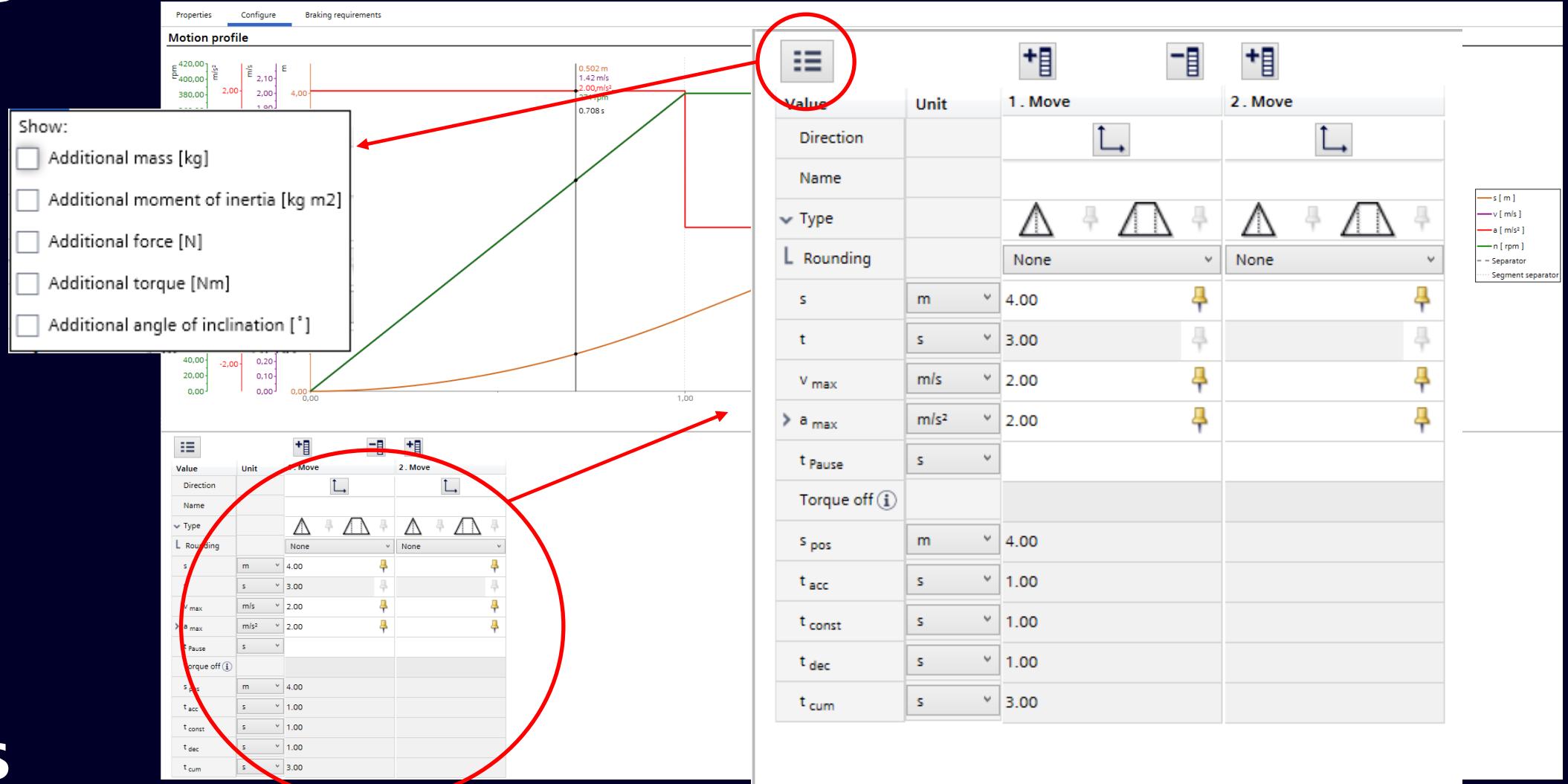
SIEMENS

Profilgenerator i TIA Selection Tool

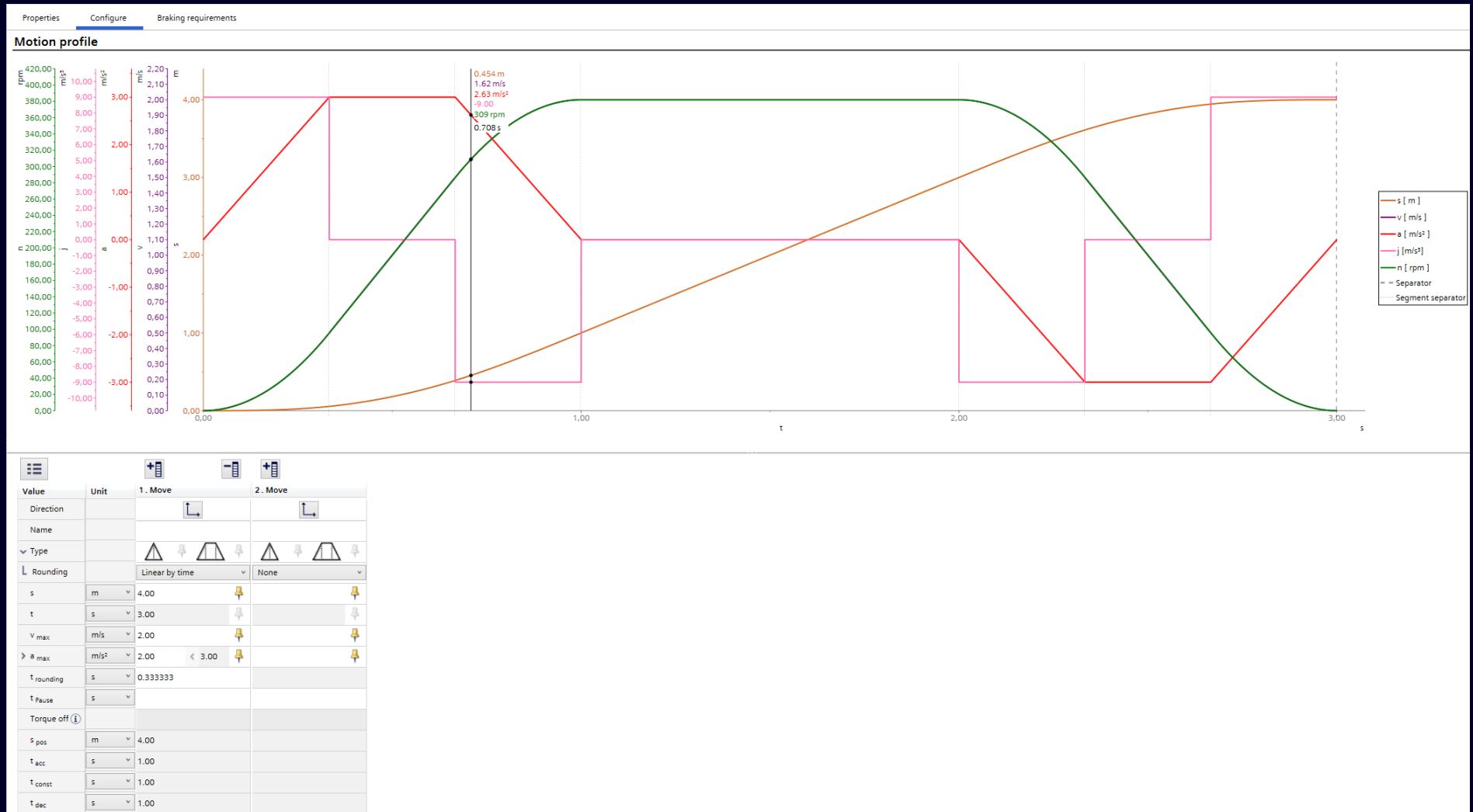


SIEMENS

Profilgenerator i TIA Selection Tool

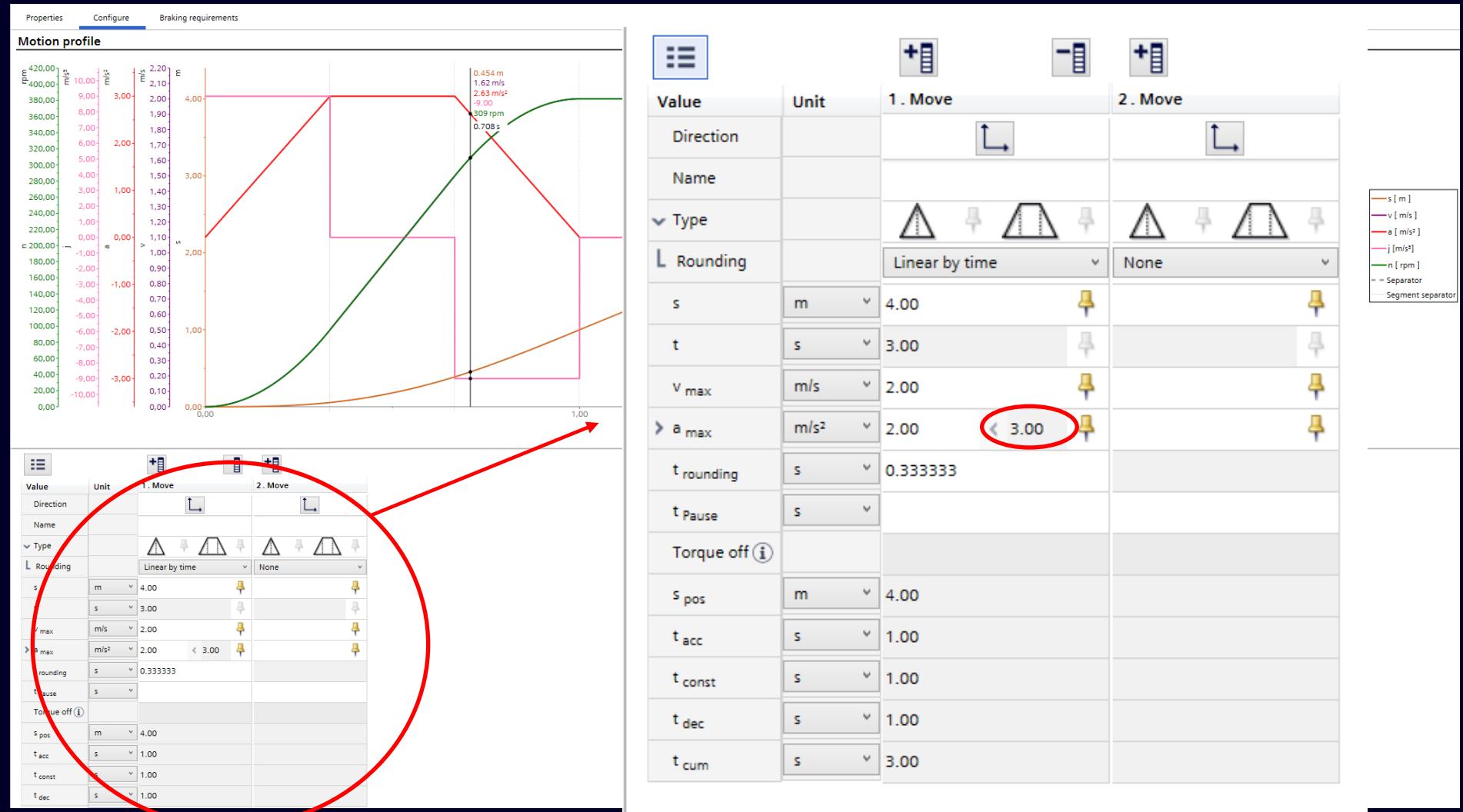


Profilgenerator i TIA Selection Tool



SIEMENS

Profilgenerator i TIA Selection Tool



SIEMENS

Profilgenerator i TIA Selection Tool

	A	B	C	D	E	F
1	A	B	C	D	E	F
2	1 Duration	EndSpeed	StartTorque	EndTorque	Inertia	
3	2 [s]	[rpm]	[Nm]	[Nm]	[kgm^2]	
4	3					
5	4					
6	5					
7	6					
8	7					
9	8					
10	9					

Kørselsprofil

Sikrer, at anlægget kan opfylde specifikationerne

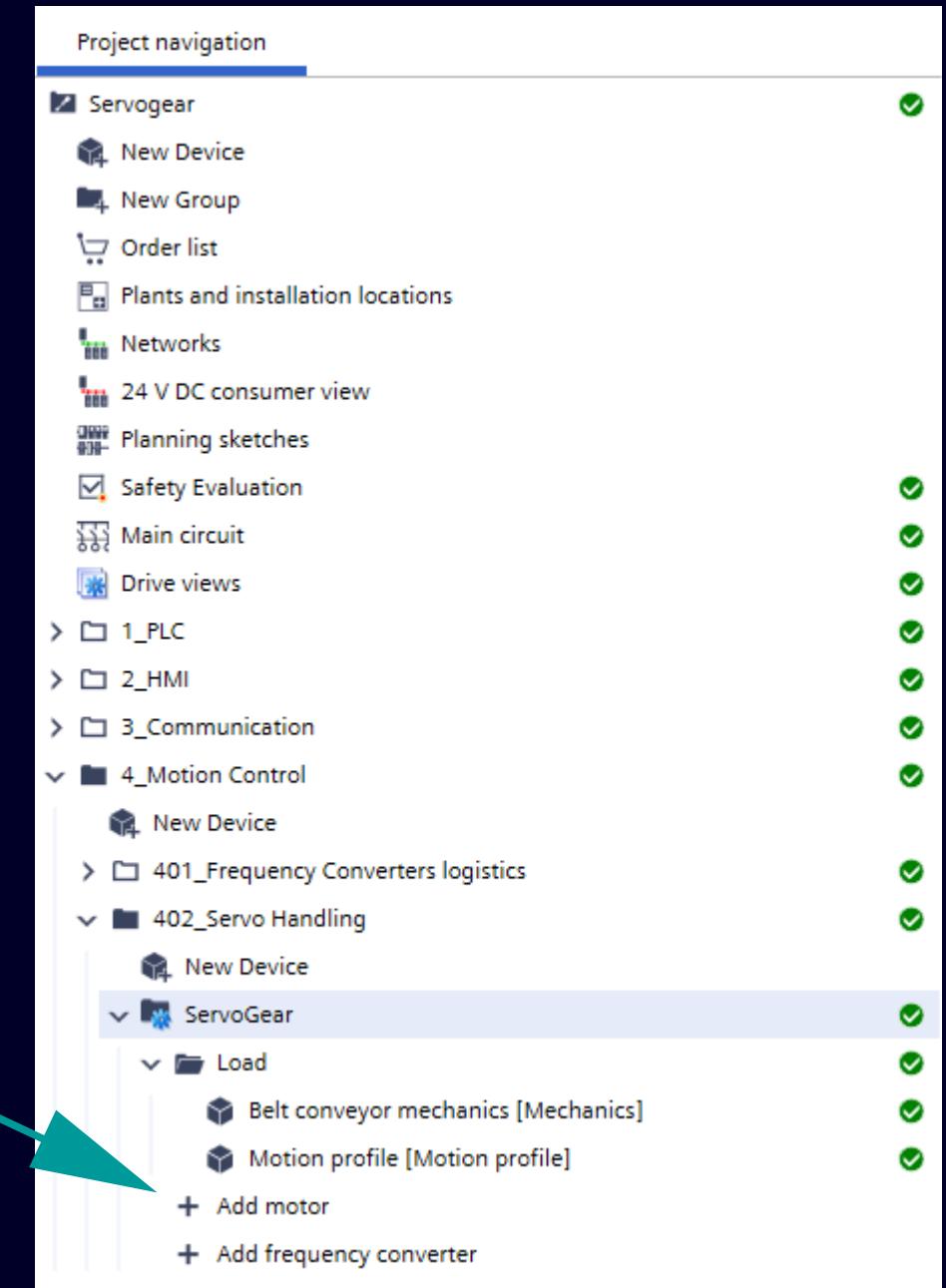
Basis for beregninger er forventet cyklustid på anlægget / maskinen
f.eks. prod/time, meter/sekund, omdrejninger

Mekaniske modeller og softwaren parameteres ud fra aktuelle design-beslutninger
f.eks. diameter på maskinkomponenter, inertier, vægte, masser, placering, friktioner, hældninger

Der bruges de samme værdier for laster og kræfter, som der bruges i design-fasen
f.eks maksimale accelerationsværdier eller ønskede hastigheder.
grænseværdier for momenter eller omdrejninger osv.

Opret Servogear

SIEMENS



Valg af servogear

Type af gear, bremse, køling...

Gearing ud fra behov

Application requirements for motor

Effective torque and average speed	106 Nm	47.7 rpm	Max. load moment of inertia	1.65 kg m ²
Maximum torque at speed	160 Nm	@ 49.8 rpm	Torque off in pause	No
Required maximum speed		49.8 rpm	Max. static load torque	105 Nm
Required effective power	530 W			

Dimensioning specifications

Rated speed	Any	Cooling method	Self-cooling
Inertia class	Any	Brake	No
Gearbox settings	Bevel gear, M1, A	Inertia ratio warning limit	7.00

Selected geared motor

No motor selected

Filter (1) Only show optimal gearbox ratio

SIMOTICS S - 1FG1	0.524 kW	2.50 Nm	2000 rpm	Compact	1.45 A	B39	250 Nm	125 Nm	2.90 kg cm ²
1FG1502-..D22-2.W1 with SINAMICS S120 AC/AC	48.0 mm	10.5 Nm	9000 rpm	Self-cooling	5.60 A	44.00	250 Nm	250 Nm	2.97
		2.85 Nm	8		1.55 A	2	425 Nm	102 rpm	2190 rpm

SIMOTICS S - 1FG1	0.524 kW	2.50 Nm	2000 rpm	Compact	1.45 A	K39	220 Nm	121 Nm	2.90 kg cm ²
1FG1504-..D22-2.V1 with SINAMICS S120 AC/AC	48.0 mm	10.5 Nm	9000 rpm	Self-cooling	5.60 A	42.41	220 Nm	220 Nm	3.24
		2.85 Nm	8		1.55 A	3	374 Nm	106 rpm	2110 rpm

SIMOTICS S - 1FG1	0.524 kW	2.50 Nm	2000 rpm	Compact	1.45 A	B49	450 Nm	131 Nm	2.90 kg cm ²
1FG1503-..D22-2.A2 with SINAMICS S120 AC/AC	48.0 mm	10.5 Nm	9000 rpm	Self-cooling	5.60 A	45.83	450 Nm	450 Nm	2.80
		2.85 Nm	8		1.55 A	2	765 Nm	98.2 rpm	2280 rpm

SIMOTICS S - 1FG1	0.524 kW	2.50 Nm	2000 rpm	Compact	1.45 A	K49	420 Nm	127 Nm	2.90 kg cm ²
1FG1505-..D22-2.T1	48.0 mm	10.5 Nm	9000 rpm	Self-cooling	5.60 A	44.63	420 Nm	420 Nm	3.08

Val not suitable **Shaft height** **gear**

Type Gearbox size øling...

Search parameters	
<input checked="" type="checkbox"/> suitable	<input type="checkbox"/> not suitable
Shaft height	
<input type="text"/>	mm
<input type="text"/>	mm
Power	
<input type="text"/>	kW
<input type="text"/>	kW
Thermal utilization	
<input type="text"/>	%
<input type="text"/>	%
Gearbox size	
<input type="text"/> 39	-
<input type="text"/> 39	
Gearbox transmission ratio	
<input type="text"/> 30.0	-
<input type="text"/> 40.0	
Rated output torque	
<input type="text"/>	Nm
<input type="text"/>	Nm
Set motor speed	
<input type="text"/>	rpm
<input type="text"/>	rpm
Inertia ratio	
<input type="text"/>	-
<input type="text"/>	
Product series	
<input type="checkbox"/> SIMOTICS S - 1FG1	

Effective torque and average speed 106 Nm 47.7 rpm

Maximum torque at speed 160 Nm @ 49.8 rpm

Required maximum speed 49.8 rpm

Required effective power 530 W

Application requirements for motor

Effective torque and average speed	106 Nm	47.7 rpm
Maximum torque at speed	160 Nm	@ 49.8 rpm
Required maximum speed		49.8 rpm
Required effective power		530 W

Dimensioning specifications

Rated speed	Any	Cooling method	Self-cooling
Inertia class	Any	Brake	No
Gearbox settings	Bevel gear, M1, A	Inertia ratio warning limit	7.00

Selected geared motor

No motor selected

1500/50=30
2000/50=40

Available geared motors

Prated Shaft height	Mrated Mmax Mo	Prated Nm Number of poles	Version Cooling method	Irated Imax Io	Gearbox i Stages	M2rated M2max M2dyn,max M2max	M20 M2dyn,max n2max	Jint (Jext / Jint) n1req,max	Suitability
SIMOTICS S - 1FG1 1FG1502-..D22-2.W1 with SINAMICS S120 AC/AC	0.524 kW 48.0 mm	2.50 Nm 10.5 Nm 2.85 Nm	2000 rpm 9000 rpm 8	Compact Self-cooling	1.45 A 5.60 A 1.55 A	B39 44.00 2	250 Nm 250 Nm 425 Nm	125 Nm 250 Nm 102 rpm	2.90 kg cm ² 2.97 2190 rpm
SIMOTICS S - 1FG1 1FG1504-..D22-2.V1 with SINAMICS S120 AC/AC	0.524 kW 48.0 mm	2.50 Nm 10.5 Nm 2.85 Nm	2000 rpm 9000 rpm 8	Compact Self-cooling	1.45 A 5.60 A 1.55 A	K39 42.41 3	220 Nm 220 Nm 374 Nm	121 Nm 220 Nm 106 rpm	2.90 kg cm ² 3.24 2110 rpm
SIMOTICS S - 1FG1 1FG1503-..D22-2.A2 with SINAMICS S120 AC/AC	0.524 kW 48.0 mm	2.50 Nm 10.5 Nm 2.85 Nm	2000 rpm 9000 rpm 8	Compact Self-cooling	1.45 A 5.60 A 1.55 A	B49 45.83 2	450 Nm 450 Nm 765 Nm	131 Nm 450 Nm 98.2 rpm	2.90 kg cm ² 2.80 2280 rpm
SIMOTICS S - 1FG1 1FG1505-..D22-2.T1	0.524 kW 48.0 mm	2.50 Nm 10.5 Nm	2000 rpm 9000 rpm	Compact Self-cooling	1.45 A 5.60 A	K49 44.63	420 Nm 420 Nm	127 Nm 420 Nm	2.90 kg cm ² 3.08

Value gear

Type...
Gearing...

Gear

The screenshot shows the SIMATIC Manager software interface for selecting a geared motor. A large orange arrow points from the 'Available geared motors' table on the left to the 'Selected geared motor' table on the right. A teal arrow points from the 'Selected geared motor' table back to the 'Available geared motors' table.

Effective torque and average speed 106 Nm 47.7 rpm
Maximum torque at speed 160 Nm @ 49.8 rpm
Required maximum speed 49.8 rpm
Required effective power 530 W

Application requirements for motor

Parameter	Value	Unit
Effective torque and average speed	106 Nm	Nm
Maximum torque at speed	160 Nm	Nm
Required maximum speed	49.8	rpm
Required effective power	530	W

Dimensioning specifications

Parameter	Value	Unit
Rated speed	Any	rpm
Inertia class	Any	
Gearbox settings	Bevel gear, M2	
Cooling method	Self-cooling	
Max. load moment of inertia	1.65 kg m ²	
Torque off in pause	No	
Max. static load torque	105 Nm	Nm

Selected geared motor

Parameter	Value	Unit
Gearbox ratio	30.0	
Rated shaft height	39	mm
I _{max}	7.00	
M ₂ rated	250 Nm	Nm
M ₂ max	250 Nm	Nm
M _{2Em.off}	425 Nm	Nm
i	30.0	
Stages	2	

Available geared motors

Motor Type	Shaft Height	Power	Torque	RPM	Ratio
SIMOTICS S - 1FG1	48.0 mm	0.524 kW	250 Nm	1500 rpm	B39 (44.00)
SIMOTICS S - 1FG1	48.0 mm	0.524 kW	220 Nm	2000 rpm	K39 (42.41)
SIMOTICS S - 1FG1	48.0 mm	0.524 kW	450 Nm	1500 rpm	B49 (45.83)
SIMOTICS S - 1FG1	48.0 mm	0.524 kW	420 Nm	2000 rpm	K49 (44.63)
SIMOTICS S - 1FG1	48.0 mm	0.524 kW	250 Nm	1500 rpm	B39 (44.00)
SIMOTICS S - 1FG1	48.0 mm	0.524 kW	220 Nm	2000 rpm	K39 (42.41)
SIMOTICS S - 1FG1	48.0 mm	0.524 kW	450 Nm	1500 rpm	B49 (45.83)
SIMOTICS S - 1FG1	48.0 mm	0.524 kW	420 Nm	2000 rpm	K49 (44.63)

Optimal gearbox ratio

Parameter	Value	Unit
I _{max}	7.00	
M ₂ rated	250 Nm	Nm
M ₂ max	250 Nm	Nm
M _{2Em.off}	425 Nm	Nm
i	30.0	
Stages	2	

Calculation Results:

$$1500/50=30$$

$$2000/50=40$$

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Valg af servogear

Type af gear, bremse, køling...

Gearing ud fra behov

Application requirements for motor

Effective torque and average speed	106 Nm	47.7 rpm	Max. load moment of inertia	1.65 kg m ²
Maximum torque at speed	160 Nm	@ 49.8 rpm	Torque off in pause	No
Required maximum speed		49.8 rpm	Max. static load torque	105 Nm
Required effective power	530 W			

Dimensioning specifications

Rated speed	Any	Cooling method	Self-cooling
Inertia class	Any	Brake	No
Gearbox settings	Bevel gear, M1, A	Inertia ratio warning limit	7.00

	Prated Shaft height	Mrated Mmax M ₀	Drated Dmax Number of poles	Version Cooling method	Irated I _{max} I ₀	Gearbox i Stages	Mrated M _{2max} M _{2Em,Off}	M ₂₀ M _{2dyn,max} M _{2max}	Jint λ (Jext / Jint) n _{req,max}	Suitability
Selected geared motor										

SIMOTICS S - 1FG1
1FG1504-..E02-2.U1
with SINAMICS S120 AC/AC

0.932 kW	4.45 Nm	2000 rpm	Compact	2.55 A	K39	220 Nm	204 Nm	7.70 kg cm ²
63.0 mm	18.0 Nm	7200 rpm	Self-cooling	10.7 A	38.48	220 Nm	220 Nm	1.49
	5.30 Nm	8		2.85 A	3	374 Nm	117 rpm	1920 rpm

Available geared motors

Filter (3)	Sorting according to:	Motor size	Only show optimal gearbox ratio	Select motor					
SIMOTICS S - 1FG1 1FG1502-..D44-4.V1 with SINAMICS S120 AC/AC	1.178 kW	2.50 Nm	4500 rpm	Compact	3.45 A	B39	230 Nm	162 Nm	1.26 kg cm ²
	48.0 mm	11.3 Nm	9000 rpm	Self-cooling	14.1 A	40.00	230 Nm	230 Nm	8.26
		4.05 Nm	6		5.10 A	2	391 Nm	113 rpm	1990 rpm
SIMOTICS S - 1FG1 1FG1504-..D44-4.U1 with SINAMICS S120 AC/AC	1.178 kW	2.50 Nm	4500 rpm	Compact	3.45 A	K39	220 Nm	156 Nm	1.26 kg cm ²
	48.0 mm	11.3 Nm	9000 rpm	Self-cooling	14.1 A	38.48	220 Nm	220 Nm	9.11
		4.05 Nm	6		5.10 A	3	374 Nm	117 rpm	1920 rpm
SIMOTICS S - 1FG1 1FG1502-..E02-2.V1 with SINAMICS S120 AC/AC	0.932 kW	4.45 Nm	2000 rpm	Compact	2.55 A	B39	230 Nm	212 Nm	7.70 kg cm ²
	63.0 mm	18.0 Nm	7200 rpm	Self-cooling	10.7 A	40.00	230 Nm	230 Nm	1.35
		5.30 Nm	8		2.85 A	2	391 Nm	113 rpm	1990 rpm
SIMOTICS S - 1FG1 1FG1504-..E02-2.U1	0.932 kW	4.45 Nm	2000 rpm	Compact	2.55 A	K39	220 Nm	204 Nm	7.70 kg cm ²
	63.0 mm	18.0 Nm	7200 rpm	Self-cooling	10.7 A	38.48	220 Nm	220 Nm	1.49

Valg af servogear

Type af gear, bremse, køling...

Gearing ud fra behov

▼ Application requirements for motor

Effective torque and average speed	106 Nm	47.7 rpm	Max. load moment of inertia	1.65 kg m ²
Maximum torque at speed	160 Nm	@ 49.8 rpm	Torque off in pause	No
Required maximum speed		49.8 rpm	Max. static load torque	105 Nm
Required effective power	530 W			

▼ Dimensioning specifications

Rated speed	Any	Cooling method	Jint	Suitability
Inertia class	Any	Brake	$\lambda (J_{ext} / J_{int})$	
Gearbox settings	Bevel gear, M1, A	Inertia ratio warn	$n_{1req,max}$	

🔍

Prated Shaft height	Mrated Mmax Mo	Rated nmax Number of poles
63.0 mm	18.0 Nm	7200 rpm
	5.30 Nm	8

▼ Selected geared motor

SIMOTICS S - 1FG1 1FG1504-..E02-2.U1 with SINAMICS S120 AC/AC	0.932 kW	4.45 Nm	2000 rpm
	63.0 mm	18.0 Nm	7200 rpm
		5.30 Nm	8

▼ Available geared motors

Filter (3)	Sorting according to:	Motor size	
SIMOTICS S - 1FG1 1FG1502-..D44-4.V1 with SINAMICS S120 AC/AC	1.178 kW	2.50 Nm	4500 rpm
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	63.0 mm	18.0 Nm	7200 rpm
		5.30 Nm	8
SIMOTICS S - 1FG1 1FG1504-..E02-2.U1	0.932 kW	4.45 Nm	2000 rpm
	63.0 mm	18.0 Nm	7200 rpm

Jint **Suitability**

$\lambda (J_{ext} / J_{int})$

$n_{1req,max}$

Select motor

1.26 kg cm² 9.11 1920 rpm	
7.70 kg cm² 1.35 1990 rpm	
7.70 kg cm² 1.49 1920 rpm	
7.70 kg cm² 8.26 1990 rpm	
7.70 kg cm² 9.11 1920 rpm	

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Valg af servogear

Type af gear, bremse, køling...

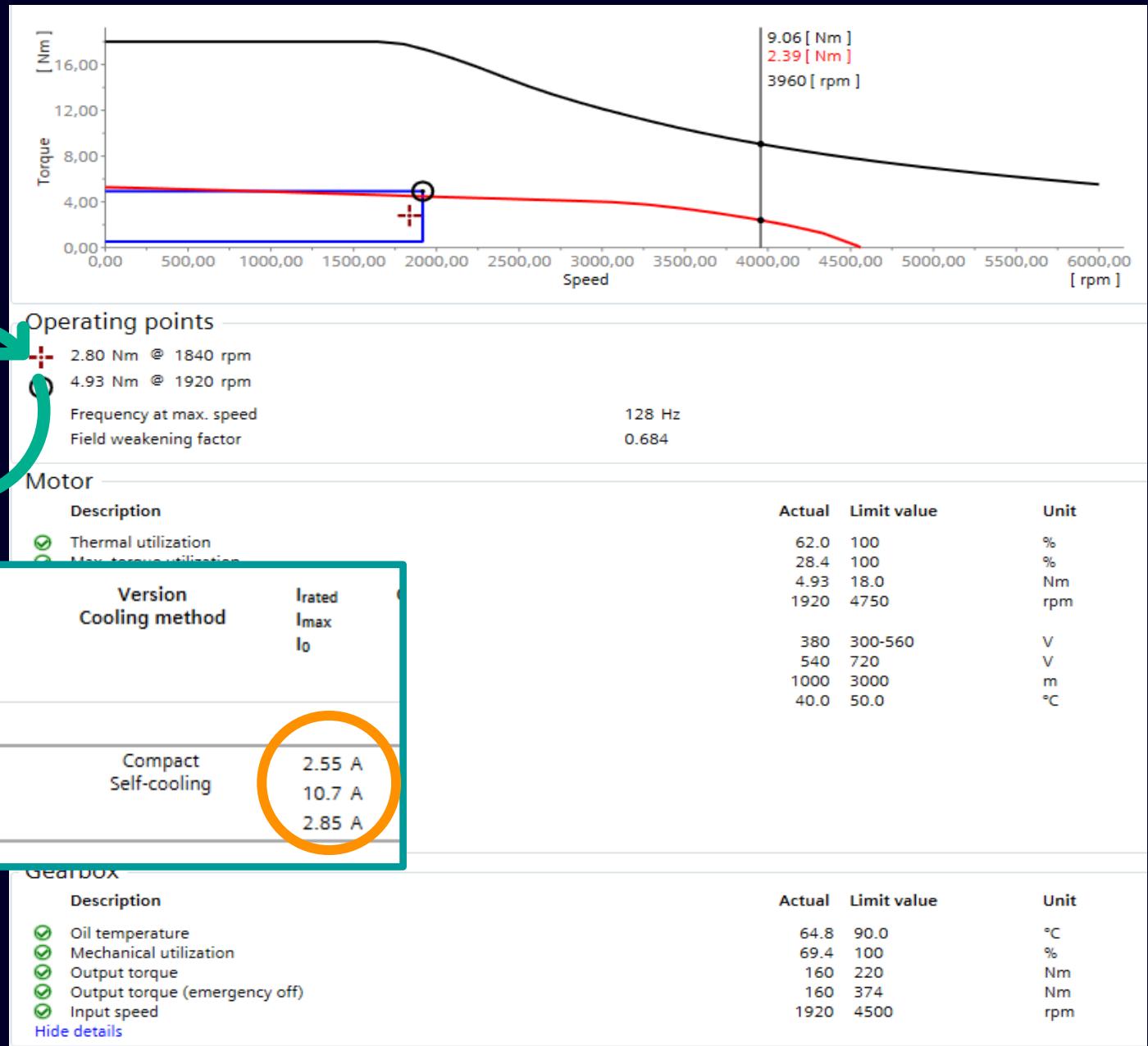
Gearing ud fra behov



Valg af servogear

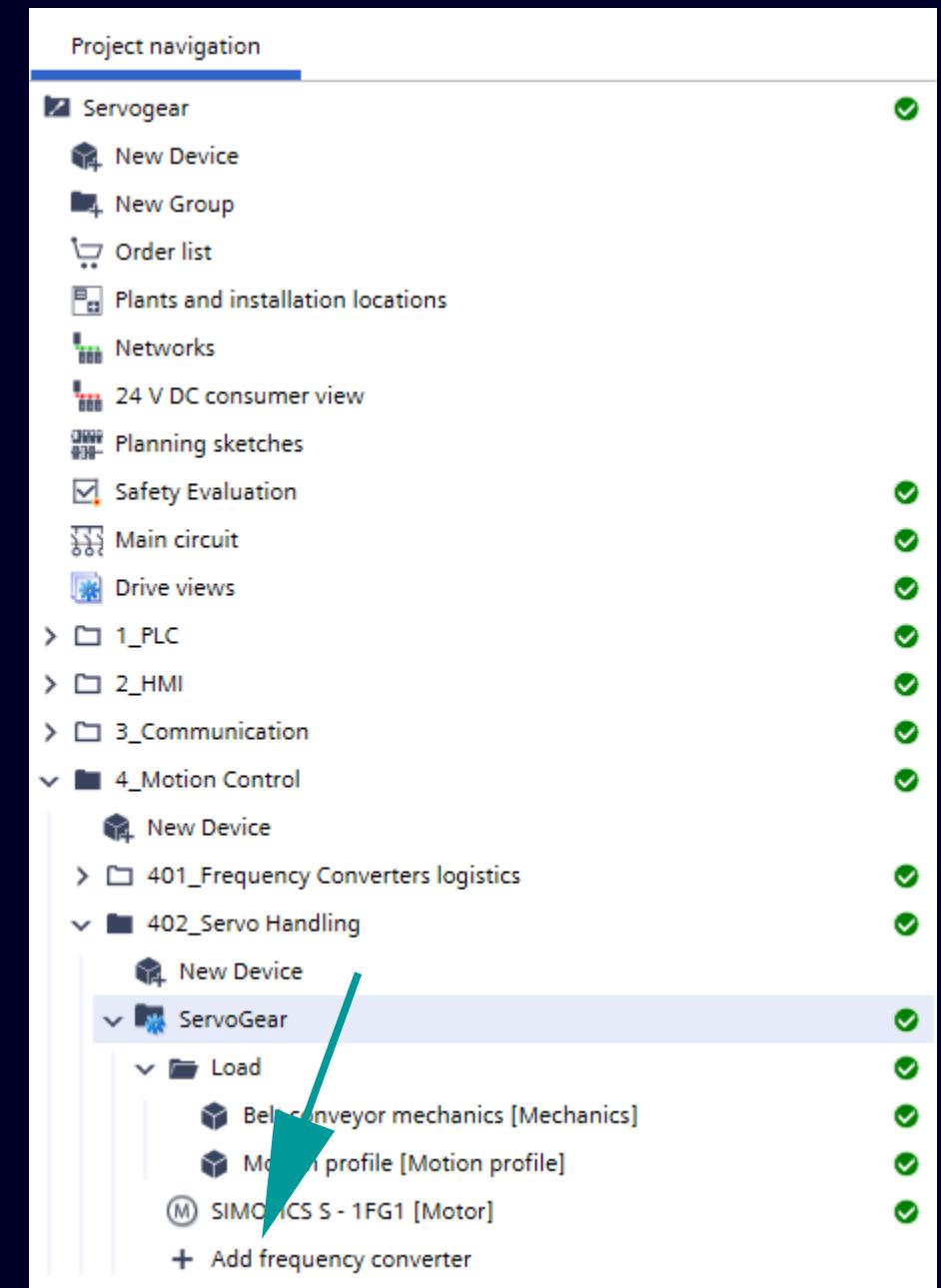
Type af gear, bremse, køling...

Gearing up



Opret servodrevet

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Servodrevet

Valg af drev, motorkabler og udstyr til mellemkreds

- Servodrev dimensioneres typisk ud fra stømmenes størrelse og ikke effekter
- Bremse-effekter og bremse-modstande
- Eventuel regenerering Sizer
- Feedback, oplosning, nøjagtigheder, typer, incremental, absolut single-multi

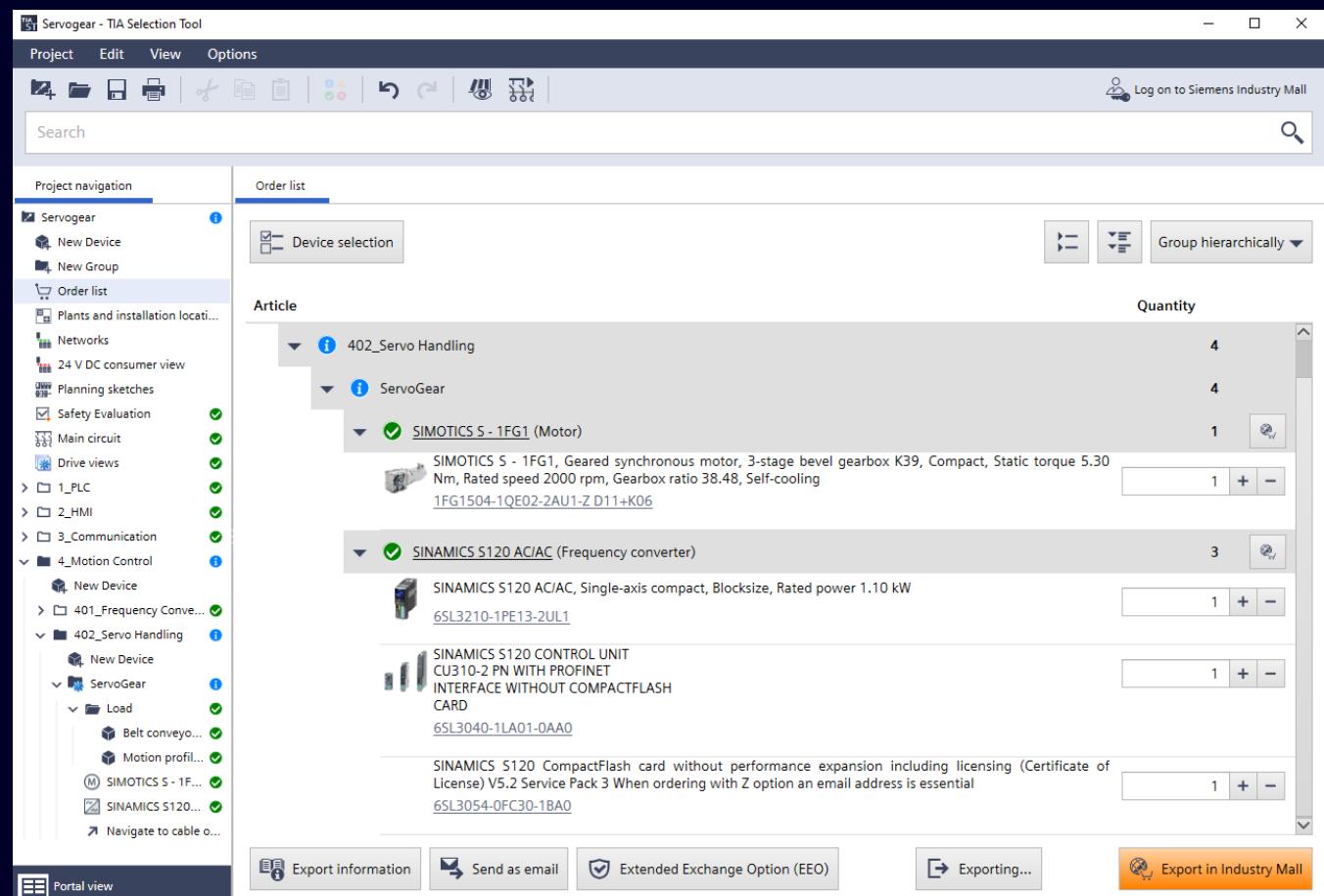
Konfigurationen afsluttet

Project navigation

- Servogear i
- New Device
- New Group
- Order list
- Plants and installation locations
- Networks
- 24 V DC consumer view
- Planning sketches
- Safety Evaluation ✓
- Main circuit ✓
- Drive views ✓
- > 1_PLC ✓
- > 2_HMI ✓
- > 3_Communication ✓
- > 4_Motion Control i
 - New Device
 - > 401_Frequency Converters logistics ✓
 - > 402_Servo Handling i
 - New Device
 - > ServoGear i
 - > Load ✓
 - Belt conveyor mechanics [Mechanics] ✓
 - Motion profile [Motion profile] ✓
 - SIMOTICS S - 1FG1 [Motor] ✓
 - SINAMICS S120 AC/AC [Frequency converter] i
 - Navigate to cable overview

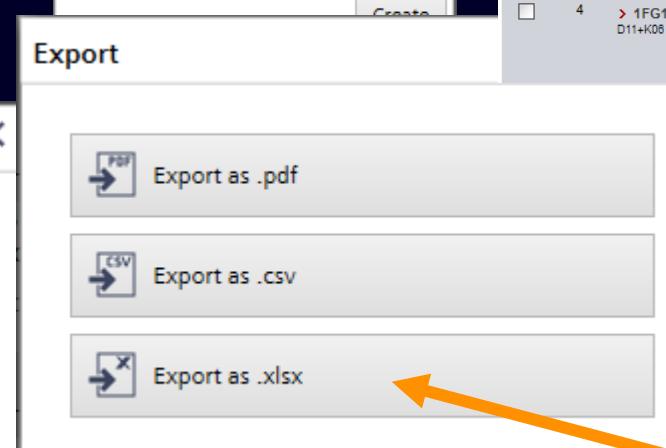
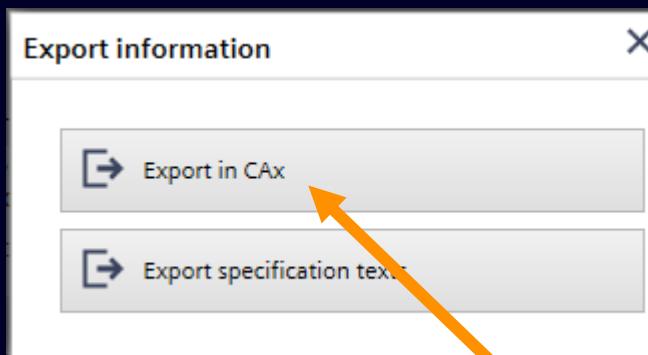
TST-resultat: Mall, Excel, Dokumentation, CAD-data

Du får en fuld dokumentation
af beregninger og valg



TST-resultat: Mall, Excel, Dokumentation, CAD-data

CTRL + P



The page shows a shopping cart with the following items:

Nr.	Produkt-ID	Mængde	Beskrivelse
1	6SL3210-1PE13-2UL1	1	SINAMICS Power Module PM240-2 unfiltered with integrated braking chopper 380-480 V 3 AC +10/-10% 47-63 Hz Power high overload: 0.75kW at 200% 3s, 150% 57s, 100% 240 s; Ambient temperature -10 to +50 °C, power low overload: 1.1kW at 150% 3s, 110% 57s, 100% 240 s; Ambient temperature -10 to +40 °C 196x73x165 (HxWxD), FSA Degree of protection IP20 without Control Unit and operating unit Released as of CU firmware version V4.6
2	6SL3054-0FC30-1BA0	1	SINAMICS S120 CompactFlash card without performance expansion including licensing (Certificate of License) V5.2 Service Pack 3 When ordering with Z option an email address is essential
3	6SL3040-1LA01-0AA0	1	SINAMICS S120 CONTROL UNIT CU310-2 PN WITH PROFINET INTERFACE WITHOUT COMPACTFLASH CARD
4	1FG1504-1QE02-2AU1-Z D11-K08	1	SIMOTICS S-1FG1 Synchronous servo geared motor Bevel gearbox K39 Motor type CT 600V AH63 Mmax=18 Solid shaft with keyway V25x 50 ABSOLUTE ENCODER SINGLETURN 20 BIT WITH DRIVE-CLIQ INTERFACE (ENCODER AS20QI) FOOT-MOUNTED TYPE GEAR RATIO: 38.47 N1MAX=4500 RPM N2MAX=117 RPM, M2MAX=225 NM MOUNTING POSITION M1-A OIL CLP VG220

SIEMENS

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