

ottobock.

Nexgear Tango Double Action Ankle Joint

Strong. Dynamic. Modular.

Quality for life





Introduction



“Nexgear Tango makes standing and walking as natural and safe as possible while conserving the user’s energy – whether on level surfaces or negotiating areas such as inclines or stairs. The Tango ankle joint is a major step in the direction for users who consider insufficient lower leg musculature one of their main problems.”

Heiko Drewitz, Certified Prosthetist/Orthotist (CPO)

The joint system enables a variable range of motion in the upper ankle and highly customized adjustment of the resistances for plantar flexion and dorsal extension. In addition to the noticeably dynamic end of the terminal stance/pre-swing phases, the user also benefits from a smooth transition, from the flexing to the extending action of knee movement.

The upper ankle joint motion of up to 20° dorsal extension offers tremendous relief compared to other orthosis systems, especially when walking uphill, and results in a nearly physiological load on the knee joint.

Improved fitting options with Nexgear



The Nexgear system joint line offers innovative fitting options for AFOs and KAFOs. Our goal is to combine the latest technologies and materials with modern design with nearly 30 years of development experience.

In the future, the Nexgear line will include advanced, combinable fitting solutions to improve mobility for patients with paralysis, or partial paralysis, of the leg muscles.

Indications

Partial or total paralysis of the leg muscles, particularly in neurological diseases including:

- Incomplete spinal cord injury (ISC)
- Traumatic brain injury
- Infantile cerebral palsy
- Stroke

Indications must be determined by the clinician.

Tango – one joint, many possibilities

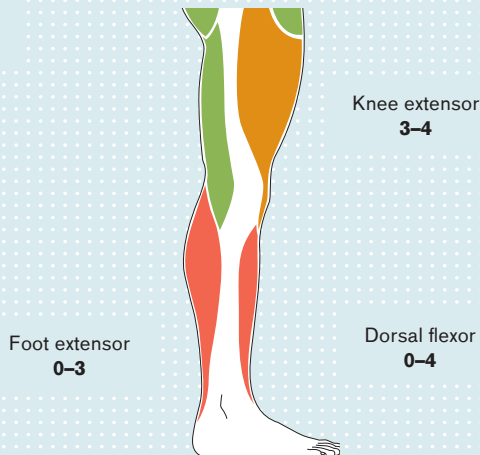
The Tango ankle joint is the first product in our Nexgear portfolio. The modular system offers a high level of energy return and the necessary dynamics for a more efficient and physiological gait. Three different removable modules enable a high degree of flexibility in functionality and design. These options allow you to customize the joint to a user's individual needs throughout the entire rehabilitation process.

The highly functional Reaction module uses ground reaction forces to influence the knee and ankle joint, dynamically controlling plantar flexion and dorsiflexion. The knee joint is also supported in stance phase. The module's different Reaction Springs optimize the required energy return on an individual basis. The Tango ensures the highest possible range of motion in the ankle, even with high spring force, resulting in a more dynamic and physiological gait pattern.

Benefits at a glance

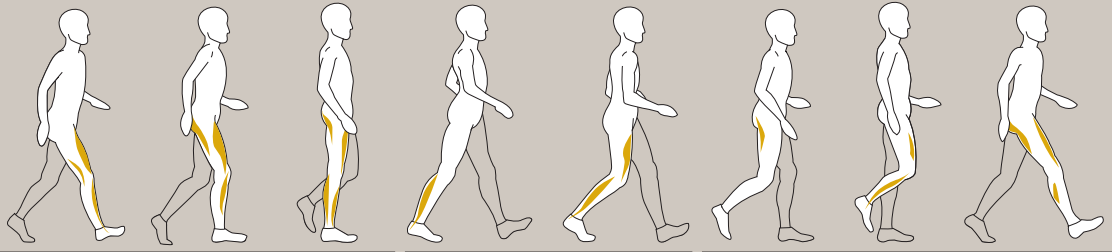
- ▶ Double action ankle joint with three function modules (Stop Module, Spring Module, Reaction Module)
- ▶ Removable module options allow for customization to the user's individual needs throughout the entire rehabilitation process
- ▶ Reaction Module
 - High level of energy return with maximum freedom of movement in the ankle
 - Dynamic control of plantar flexion and dorsiflexion, support for knee extension in the mid-stance phase, and support during toe-off/initiation of the swing phase
 - Separate static and dynamic settings
 - Dynamic adjustment (spring preload) to set a continuously variable dorsal or plantar stop
 - Two Reaction Spring options: Strong and Extra Strong
- ▶ Five size options based on weight classification for adults and children
- ▶ Unilateral or bilateral fittings
- ▶ Base body available in stainless steel or titanium

Nexgear Tango Muscle Status



Classification (Janda Approach)

- 0 No visible and/or palpable muscle contraction
- 1 Visible motoric and/or palpable muscle contraction with no motor effect
- 2 Distinct muscle contraction
- 3 Movement against gravity
- 4 Movement against low to medium resistance
- 5 Movement with normal strength



Physiological gait	<ul style="list-style-type: none"> • Initial heel strike • Plantar flexion • Knee extension 	<ul style="list-style-type: none"> • Loading of energy • Dynamic toe-off 	<ul style="list-style-type: none"> • Control of dorsal extension
Nexgear Tango supports	<ul style="list-style-type: none"> • Initial heel strike • Adjustable control of plantar flexion • Continuously variable, dynamic control of knee extension 	<ul style="list-style-type: none"> • Loading of energy • Dynamic toe-off 	<ul style="list-style-type: none"> • Continuously variable, strong support for dorsal extension
Double action ankle joints support	<ul style="list-style-type: none"> • Initial heel strike • Control of plantar flexion to limited extent • Continuously variable control of knee extension, not dynamic 	<ul style="list-style-type: none"> • No loading of energy • No dynamic toe-off 	<ul style="list-style-type: none"> • Continuously variable support for dorsal extension
Carbon springs support	<ul style="list-style-type: none"> • Initial heel strike • No dynamic control of plantar flexion • Dynamic control of knee extension, not adjustable 	<ul style="list-style-type: none"> • Loading of energy • Dynamic toe-off 	<ul style="list-style-type: none"> • Strong support for dorsal extension

Gait cycle with the Tango

Users with weakness or loss of the dorsal extensor muscle are unable to walk normally due to significantly restricted mobility. To achieve a largely physiological gait, they require an AFO with a high level of energy return that enables the following:

- ▶ Controlled plantar flexion
- ▶ Support for knee extension
- ▶ Dynamic toe-off
- ▶ Strong dorsal support

Nexgear Tango improves the motion sequences throughout the various gait phases, allowing walking to become more physiological, dynamic, and effective.

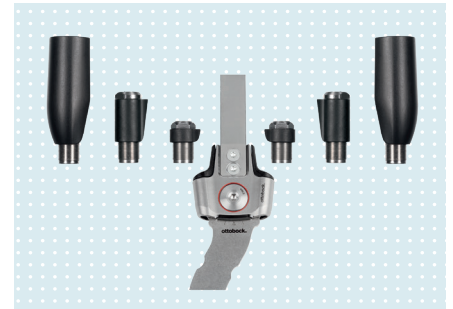


The versatile joint

The function and design of Nexgear Tango can be adapted at any point due to its three exchangeable modules — from continuously variable spring preload to swapping out the modules. Users are able to utilize the joint throughout the entire rehabilitation process, even as their needs change.

Modular Design

Select from three different modules to use with the base body: Stop Module, Spring Module, or Reaction Module.



17AD100=+ Joint Body



► The weight classification allows unilateral use for a user body weight up to 243 lbs and bilateral use for up to 353 lbs.

Article number	System width	Max. body weight	Material	Unit
17AD100=10	10 mm	33 lbs (unilateral)	Steel	Piece
17AD100=10-T		55 lbs (bilateral)	Titanium	
17AD100=12	12 mm	44 lbs (unilateral)	Steel	
17AD100=12-T		88 lbs (bilateral)	Titanium	
17AD100=14	14 mm	110 lbs (unilateral)	Steel	
17AD100=14-T		176 lbs (bilateral)	Titanium	
17AD100=16	16 mm	187 lbs (unilateral)	Steel	
17AD100=16-T		265 lbs (bilateral)	Titanium	
17AD100=20	20 mm	243 lbs (unilateral)	Steel	
17AD100=20-T		353 lbs (bilateral)	Titanium	

17AD100A=AS+ Stop Module



► Use the adjustable stop to set a continuously variable dorsal or plantar stop.

Article number	System width	Max. body weight	Unit
17AD100A=AS-10	10 mm	33 lbs (unilateral)	Piece
		55 lbs (bilateral)	
17AD100A=AS-12	12 mm	44 lbs (unilateral)	
		88 lbs (bilateral)	
17AD100A=AS-14	14 mm	110 lbs (unilateral)	
		176 lbs (bilateral)	
17AD100A=AS-16	16 mm	187 lbs (unilateral)	
		265 lbs (bilateral)	
17AD100A=AS-20	20 mm	243 lbs (unilateral)	
		353 lbs (bilateral)	

17AD100A=LS* Spring Module



▶ The Spring Module has a continuously variable compression spring for adjusting the dorsal support.

Article number	System width	Max. body weight	Unit
17AD100A=LS-10	10 mm	33 lbs (unilateral) 55 lbs (bilateral)	Piece
17AD100A=LS-12	12 mm	44 lbs (unilateral) 88 lbs (bilateral)	
17AD100A=LS-14	14 mm	110 lbs (unilateral) 176 lbs (bilateral)	
17AD100A=LS-16	16 mm	187 lbs (unilateral) 265 lbs (bilateral)	
17AD100A=LS-20	20 mm	243 lbs (unilateral) 353 lbs (bilateral)	

17AD100A=HS* Reaction Module



▶ The Reaction Module features high spring forces, along with dampened and controlled plantar flexion. The module offers dynamic control of the knee in the mid-stance phase, and a high level of energy return at the beginning of the swing phase.

Article number	System width	Max. body weight	Unit
17AD100A=HS-10	10 mm	33 lbs (unilateral) 55 lbs (bilateral)	Piece
17AD100A=HS-12	12 mm	44 lbs (unilateral) 88 lbs (bilateral)	
17AD100A=HS-14	14 mm	110 lbs (unilateral) 176 lbs (bilateral)	
17AD100A=HS-16	16 mm	187 lbs (unilateral) 265 lbs (bilateral)	
17AD100A=HS-20	20 mm	243 lbs (unilateral) 353 lbs (bilateral)	

▶ The Reaction Springs must be ordered separately for each module.

17AD100A=HS* Reaction Spring Strong



Article number	For	Unit
17AD100A=HS-12-1	17AD100A=HS-10 17AD100A=HS-12	Piece
17AD100A=HS-14-1	17AD100A=HS-14	
17AD100A=HS-20-1	17AD100A=HS-16 17AD100A=HS-20	

17AD100A=HS* Reaction Spring Extra Strong



Article number	For	Unit
17AD100A=HS-12-2	17AD100A=HS-10 17AD100A=HS-12	Piece
17AD100A=HS-14-2	17AD100A=HS-14	
17AD100A=HS-20-2	17AD100A=HS-16 17AD100A=HS-20	

The Reaction Spring for the Reaction Module is available in two different strengths: Strong or Extra Strong. Select the corresponding spring according to the individual spring force needed.

Benefits during the fitting process

Static and dynamic adjustment

The Nexgear Tango allows the clinician to take a systematic approach during the fitting process: First, the static alignment is adjusted. Then, the dynamic adjustment (spring preload) of the

Reaction Springs is set. Because of the unique design of the Reaction Module, the static alignment has no influence on the dynamic setting.



► **Static alignment**
Insert the dummy and adjust the stop in the Reaction Module



► **Dynamic adjustment**
Continuously variable adjustment of the Reaction Spring preload

17AD100A=FIT-KIT Fit Kit

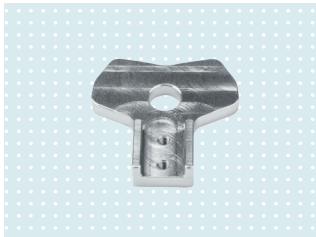
The Nexgear Tango fit kit makes selecting the right module and spring quick and simple. During the fitting process, the clinician can test all three modules and springs on the user to find the proper setting and alignment. The fit kit includes all three function modules in each size, all Reaction Springs, and the required tools, such as the mounting adapter, TORX® bits, and TORX® keys.



Required Parts

After selecting the base body and modules, the following parts are necessary for joint fabrication.

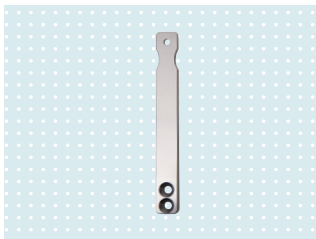
17AD100A=DY* Dummy



▶ The 17AD100A=DY*-P plastic cover is included with the 17AD100 base body.

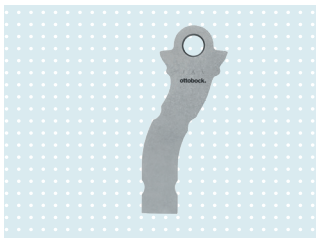
Article number	For
17AD100A=DY-10	17AD100=10 17AD100=10-T
17AD100A=DY-12	17AD100=12 17AD100=12-T
17AD100A=DY-14	17AD100=14 17AD100=14-T
17AD100A=DY-16	17AD100=16 17AD100=16-T
17AD100A=DY-20	17AD100=20 17AD100=20-T

17LS3=* Lamination Bar



Article number	For
17LS3=10	17AD100=10
17LS3=10-T	17AD100=10-T
17LS3=12	17AD100=12
17LS3=12-T	17AD100=12-T
17LS3=14	17AD100=14
17LS3=14-T	17AD100=14-T
17LS3=16	17AD100=16
17LS3=16-T	17AD100=16-T
17LS3=20	17AD100=20
17LS3=20-T	17AD100=20-T

17SF100=OS* Stirrup



Article number	For
17SF100=OS-10	17AD100=10 17AD100=10-T
17SF100=OS-12	17AD100=12 17AD100=12-T
17SF100=OS-14	17AD100=14 17AD100=14-T
17SF100=OS-16	17AD100=16 17AD100=16-T
17SF100=OS-20	17AD100=20 17AD100=20-T

17AD100A=MA* Mounting Adapter



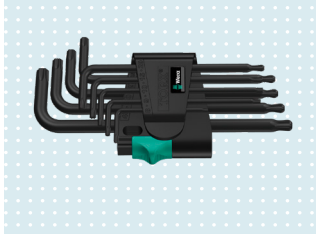
▶ Needed to assemble and disassemble all three function modules.

Article number	For
17AD100A=MA-10	17AD100A-AS=10 17AD100A-LS=10 17AD100A-HS=10
17AD100A=MA-12	17AD100A-AS=12 17AD100A-LS=12 17AD100A-HS=12
17AD100A=MA-14	17AD100A-AS=14 17AD100A-LS=14 17AD100A-HS=14
17AD100A=MA-20	17AD100A-AS=16 17AD100A-LS=16 17AD100A-HS=16 17AD100A-AS=20 17AD100A-LS=20 17AD100A-HS=20

Necessary Tools

The following tools are needed to assemble the joint.

709S530 TORX® Key Set



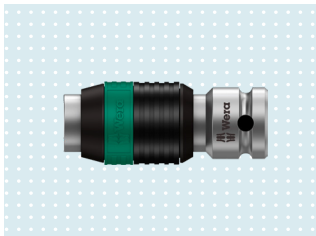
Article number	709S530
For	TORX® socket screws
Scope of delivery	9-piece set: <ul style="list-style-type: none"> • Without ball head on the long arm: 1x TX 8x76; 1x TX 9x79; 1x TX 10x85 • With ball head on the long arm: 1x TX 15x90; 1x TX 20x96; 1x TX 25x104; 1x TX 27x112; 1x TX 30x122; 1x TX 40x132
Version	TORX® on the short arm, TORX® ball head on the long arm

710D20 Torque Wrench, 1–25 Nm



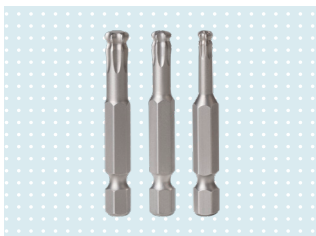
Article number	710D20
Version	1/4" square drive
Equipment	Adjustable and readable torque value, includes calibration certificate
Measurement range	1–25 Nm
Total wrench length	291 mm
Scope of delivery	Without hexagon bits

710Y19 Connection Piece



Article number	710Y19
For	1/4" hexagon bits according to DIN ISO 1173-C 6.3 and E 6.3
To be used for	710D20 Torque wrench
Version	Quick-release chuck for changing bits quickly, chrome-vanadium

710Y25 TORX® Bit Extensions



Article number	710Y25
For	TORX® socket screws
To be used for	710D20 Torque wrench
Version	With extended TORX® profile behind the ball head TORX® ball head enables screwing at an angle of up to 25°

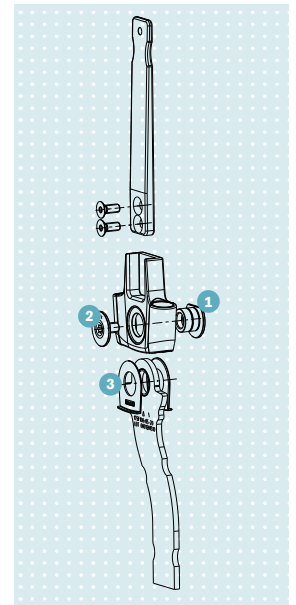
Service Sets

The following service sets provide spare parts for each of the modules and joint components.

For 17AD100=* Joint Body

17AD100S=* Joint Body and Axial Washers

Article number	Description	For	Includes
17AD100S=10		17AD100=10 17AD100=10-T	
17AD100S=12		17AD100=12 17AD100=12-T	
17AD100S=14	Service set for joint body	17AD100=14 17AD100=14-T	1x joint nut (1) 1x joint screw (2)
17AD100S=16		17AD100=16 17AD100=16-T	
17AD100S=20		17AD100=20 17AD100=20-T	
17AD100S=10-1		17AD100=10 17AD100=10-T	
17AD100S=12-1		17AD100=12 17AD100=12-T	
17AD100S=14-1	Service set axial washers	17AD100=14 17AD100=14-T	10x axial washers (3)
17AD100S=16-1		17AD100=16 17AD100=16-T	
17AD100S=20-1		17AD100=20 17AD100=20-T	



For 17AD100A=AS* Stop Module

17AD100S=AS* Stop and Cover

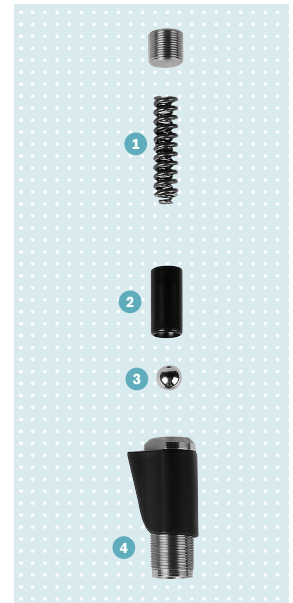
Article number	Description	For	Includes
17AD100S=AS-10-1		17AD100A=AS-10	
17AD100S=AS-12-1		17AD100A=AS-12	
17AD100S=AS-14-1	Service set for Stop Module	17AD100A=AS-14	1x stop (1)
17AD100S=AS-16-1		17AD100A=AS-16	
17AD100S=AS-20-1		17AD100A=AS-20	
17AD100S=AS-10-2		17AD100A=AS-10	
17AD100S=AS-12-2		17AD100A=AS-12	
17AD100S=AS-14-2	Cover for Stop Module	17AD100A=AS-14	1x cover (2)
17AD100S=AS-16-2		17AD100A=AS-16	
17AD100S=AS-20-2		17AD100A=AS-20	



For 17AD100A=LS* Spring Module

17AD100S=LS* Spring and Cover

Article number	Description	For	Includes
17AD100S=LS-10-1	Service set for Spring Module	17AD100A=LS-10	1x compression spring (1)
17AD100S=LS-12-1		17AD100A=LS-12	1x plastic sleeve (2)
17AD100S=LS-14-1		17AD100A=LS-14	1x ball (3)
17AD100S=LS-16-1		17AD100A=LS-16	
17AD100S=LS-20-1		17AD100A=LS-20	
17A100S=LS-10-2	Cover for Spring Module	17A100A=LS-10	1x cover (4)
17A100S=LS-12-2		17A100A=LS-12	
17A100S=LS-14-2		17A100A=LS-14	
17A100S=LS-16-2		17A100A=LS-16	
17A100S=LS-20-2		17A100A=LS-20	



30Y309=* Set Screw

Article number	Description	For	Includes
30Y309=10	Set screw	17AD100A=LS-10	1x set screw (1)
30Y309=12		17AD100A=LS-12	
30Y309=14		17AD100A=LS-14	
30Y309=16		17AD100A=LS-16	
30Y309=20		17AD100A=LS-20	



For 17AD100A=HS* Reaction Module

17AD100S=HS* Reaction Module and Cover

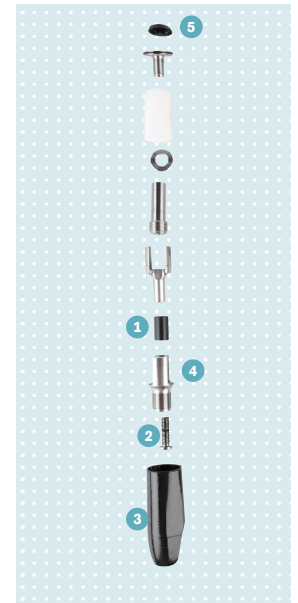
Article number	Description	For	Includes
17AD100S=HS-10-1	Service set for Reaction Module	17AD100A=HS-10	1x stop (1) 1x plastic sleeve (2)
17AD100S=HS-12-1		17AD100A=HS-12	
17AD100S=HS-14-1		17AD100A=HS-14	
17AD100S=HS-16-1		17AD100A=HS-16	
17AD100S=HS-20-1		17AD100A=HS-20	
17AD100S=HS-10-2	Cover for Reaction Module	17AD100A=HS-10	1x cover (3)
17AD100S=HS-12-2		17AD100A=HS-12	
17AD100S=HS-14-2		17AD100A=HS-14	
17AD100S=HS-16-2		17AD100A=HS-16	
17AD100S=HS-20-2		17AD100A=HS-20	

30Y444=* Spare Support

Article number	Description	For	Includes
30Y444=10	Spare support	17AD100A=HS-10	1x support element (4)
30Y444=12		17AD100A=HS-12	
30Y444=14		17AD100A=HS-14	
30Y444=20		17AD100A=HS-16 17AD100A=HS-20	

516K2=* Cover Cap

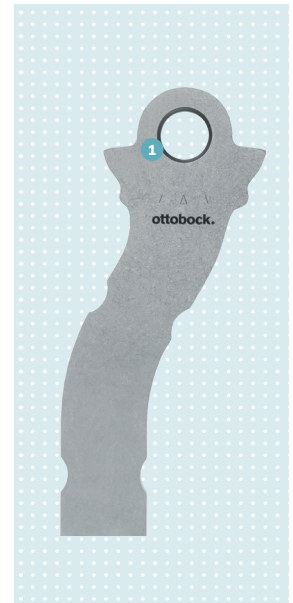
Article number	Description	For	Includes
516K2=25-7	Cover cap for Reaction Module	17AD100A=HS-10	1x cover cap (5)
516K2=30-7		17AD100A=HS-12	
		17AD100A=HS-14	
		17AD100A=HS-16 17AD100A=HS-20	



For 17SF100=OS* Stirrup

30Y306=* Plastic Bushing

Article number	Description	For	Includes
30Y306=10		17SF100=OS-10	
30Y306=12		17SF100=OS-12	
30Y306=14	Plastic bushing	17SF100=OS-14	1x plastic bushing (1)
30Y306=20		17SF100=OS-16	
		17SF100=OS-20	



For 17AD100A=DY* Dummy

17AD100A=* Dummy Cover

Article number	Description	For	Includes
17AD100A=DY-10-P		17AD100=10 17AD100=10-T	
17AD100A=DY-12-P		17AD100=12 17AD100=12-T	
17AD100A=DY-14-P	Dummy cover	17AD100=14 17AD100=14-T	1x dummy cover
17AD100A=DY-16-P		17AD100=16 17AD100=16-T	
17AD100A=DY-20-P		17AD100=20 17AD100=20-T	



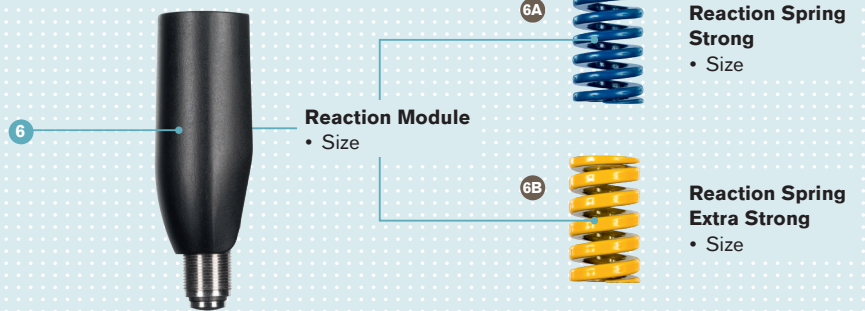
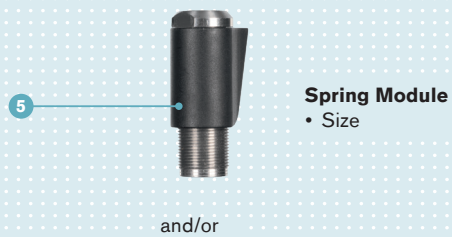
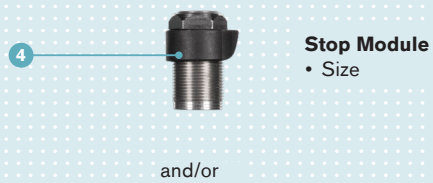
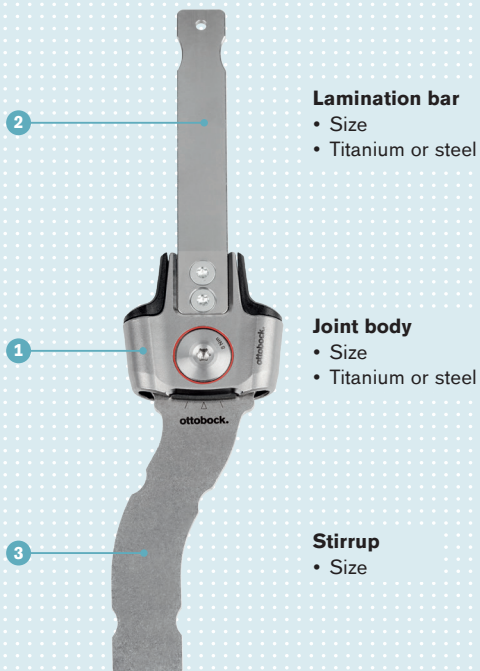
501F9=* Dummy Screw

Article number	Description	For	Includes
501F9=M4x20		17AD100A=DY-10 17AD100A=DY-12	
	Dummy screw	17AD100A=DY-14	1x screw
501F9=M6x25-1		17AD100A=DY-16 17AD100A=DY-20	



Nexgear Tango

Selecting and ordering



Nexgear Tango

Order form

Company		
Technician		Date
Customer no.		Signature

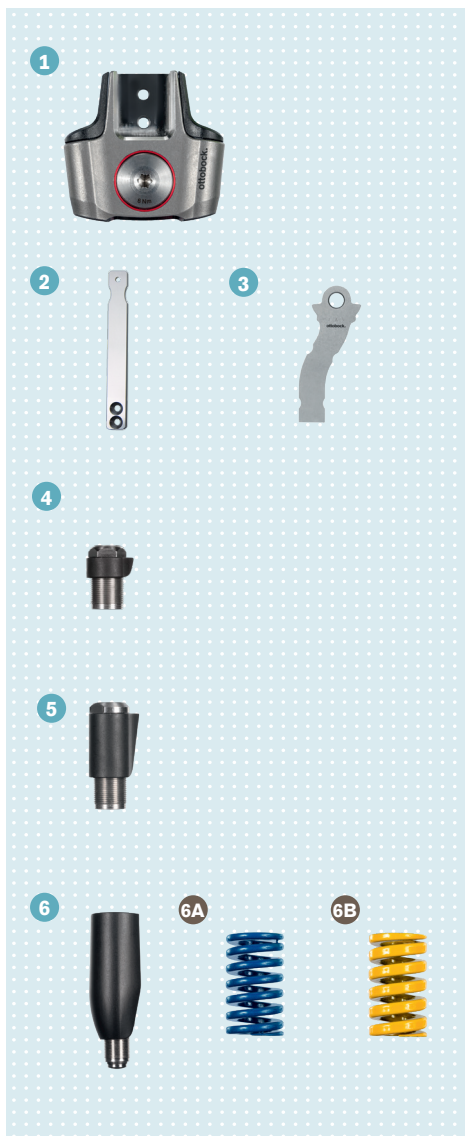
User information

Full Name Weight

Age Indication

Side Unilateral Bilateral

The size chosen depends on the patient's weight and the conditions of use. The 17AD100 Nexgear Tango can be equipped with up to two modules. Please enter the required quantity in the field provided.



1 Joint Body

<input type="text"/>	pc(s) 17AD100=10	<input type="text"/>	pc(s) 17AD100=10-T
<input type="text"/>	pc(s) 17AD100=12	<input type="text"/>	pc(s) 17AD100=12-T
<input type="text"/>	pc(s) 17AD100=14	<input type="text"/>	pc(s) 17AD100=14-T
<input type="text"/>	pc(s) 17AD100=16	<input type="text"/>	pc(s) 17AD100=16-T
<input type="text"/>	pc(s) 17AD100=20	<input type="text"/>	pc(s) 17AD100=20-T

2 Lamination Bar

<input type="text"/>	pc(s) 17LS3=10
<input type="text"/>	pc(s) 17LS3=12
<input type="text"/>	pc(s) 17LS3=14
<input type="text"/>	pc(s) 17LS3=16
<input type="text"/>	pc(s) 17LS3=20

3 Stirrup

<input type="text"/>	pc(s) 17LS3=10-T	<input type="text"/>	pc(s) 17SF100=OS-10
<input type="text"/>	pc(s) 17LS3=12-T	<input type="text"/>	pc(s) 17SF100=OS-12
<input type="text"/>	pc(s) 17LS3=14-T	<input type="text"/>	pc(s) 17SF100=OS-14
<input type="text"/>	pc(s) 17LS3=16-T	<input type="text"/>	pc(s) 17SF100=OS-16
<input type="text"/>	pc(s) 17LS3=20-T	<input type="text"/>	pc(s) 17SF100=OS-20

4 Stop Module

<input type="text"/>	pc(s) 17AD100A=AS-10
<input type="text"/>	pc(s) 17AD100A=AS-12
<input type="text"/>	pc(s) 17AD100A=AS-14
<input type="text"/>	pc(s) 17AD100A=AS-16
<input type="text"/>	pc(s) 17AD100A=AS-20

5 Spring Module

<input type="text"/>	pc(s) 17AD100A=LS-10
<input type="text"/>	pc(s) 17AD100A=LS-12
<input type="text"/>	pc(s) 17AD100A=LS-14
<input type="text"/>	pc(s) 17AD100A=LS-16
<input type="text"/>	pc(s) 17AD100A=LS-20

6 Reaction Module

<input type="text"/>	pc(s) 17AD100A=HS-10
<input type="text"/>	pc(s) 17AD100A=HS-12
<input type="text"/>	pc(s) 17AD100A=HS-14
<input type="text"/>	pc(s) 17AD100A=HS-16
<input type="text"/>	pc(s) 17AD100A=HS-20

6A Reaction Spring Strong

<input type="text"/>	pc(s) 17AD100A=HS-12-1
<input type="text"/>	pc(s) 17AD100A=HS-14-1
<input type="text"/>	pc(s) 17AD100A=HS-20-1

6B Reaction Spring Extra Strong

<input type="text"/>	pc(s) 17AD100A=HS-12-2
<input type="text"/>	pc(s) 17AD100A=HS-14-2
<input type="text"/>	pc(s) 17AD100A=HS-20-2

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