

# TR19NOX

# Tiltrotator

This cylinderless solution features a very compact design with a narrow width and without any protruding parts. The hydraulics are integrated into the solid cast housing and the entire installation is easy. The patented tilting function is provided by the elliptic piston design with only one thread. There is the option to attach a wide range of tools that require a high oil flow and a high pressure. Option: electrical swivel for the use of 2D/3D excavating systems and extra safety requiring couplers.



## Advantages:

- **Precision and safety** due to „smooth“ proportional control (optional).
- **High stability and long service life** thanks to special cast housing.
- **Low overall height** thanks to elliptic rotary actuator: large travel.
- **High and constant tilt force** due to cylinderless rotary actuator.
- **No protruding parts:** excavation with narrow bucket possible in small, deep canals, even under or in between existing tubes.
- **Low maintenance:** worm drive lubricated permanently (grease).
- **Option:** High-flow swivel up to 30 MPa / 4320 psi or electric swivel.

Tiltrotator Type	TR19NOX			
	unit	DF10	DF4	CSP
Machine size	t/lbs	14 - 19 / 30800 - 41800		
Breaking force max. (ISO)	kN/lbf	150 / 33000		
Bucket width max.	mm/in	1700 / 67		
Weight (from) <sup>1)</sup>	kg/lbs	580 / 1276		
Width A <sup>1)</sup>	mm/in	240 / 9.5		
Length B <sup>1)</sup>	mm/in	700 / 27.6		
Height C <sup>1)</sup>	mm/in	625 / 24.6		
Tilt angle	°	2 x 50		
Tilt torque	Nm/ft.lbs	34000 / 25075		
Rotation speed	1/min	8,5 at 50 l/min / 13.2 GPM		
Rotation torque	Nm/ft.lbs	7000 / 5162 at 360° continuous		
Oil flow extra function 1/2 max.	l/min / GPM	SD <sup>2)</sup> : 70/40 / 18.5/10.6 HF <sup>3)</sup> : 70/120 / 18.5/31.7	SD <sup>2)</sup> : 70/40 / 18.5/10.6	SD <sup>2)</sup> : 70/40 / 18.5/10.6 HF <sup>3)</sup> : 70/120 / 18.5/31.7
Hydraulic pressure max.	MPa/psi	rotation: 20 / 2880 tilt: 30 / 4320	rotation: 20 / 2880 tilt: 30 / 4320	rotation: 30 / 4320 tilt: 30 / 4320
Recommended pressure in return line	MPa/psi	2,5 / 360		
Number of swivel channels extra function	number	4		
Number of swivel channels quick coupler	number	2		
Number of channels separate drain line	number	1		
Electric swivel (optional)	channels x A	12 x 0,5		

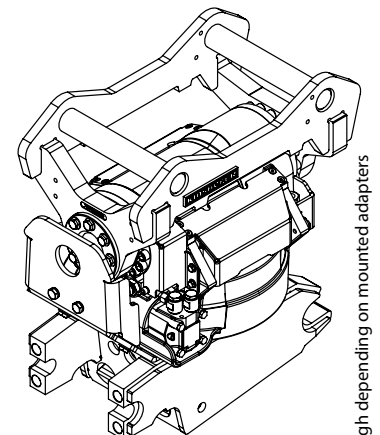
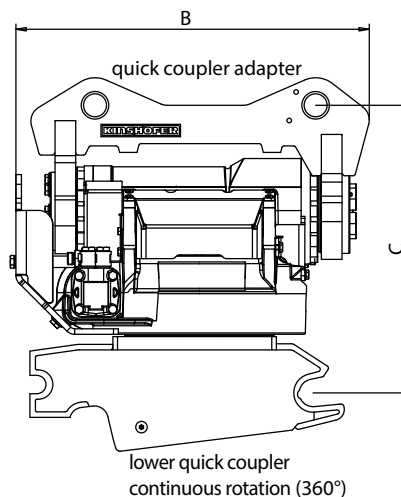
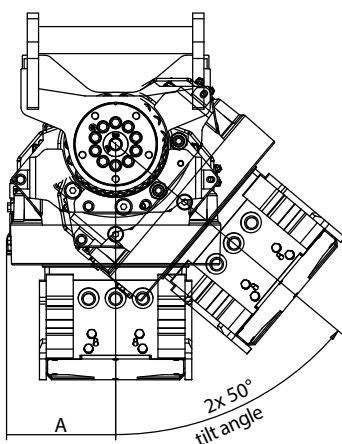
<sup>1)</sup> reference: TR19NOX S60/S60 <sup>2)</sup> SD = Standard-swivel <sup>3)</sup> HF = High-Flow-swivel

## Controls

Type	Description
CSP <sup>4)</sup>	SVAB RT controller, tilt and rotation are controlled by proportional solenoid valves and can be run simultaneously, extra function and
SVAB	quick coupler are controlled by on/off valves
CSP <sup>4)</sup>	NOXPROP controller, tilt, rotation and extra function are controlled by proportional solenoid valves and can be run simultaneously,
NOXPROP	quick coupler is controlled by on/off valves, separate display module, easy and fast installation
DF4 <sup>5)*</sup>	- tilt function, extra 1 (extra 2 as an option) and quick-coupler are controlled by changing over between the functions of circuit 1
	- rotation function is controlled by circuit 2
DF10 <sup>6)</sup>	for each function (rotate, tilt, quick change, extra 1, extra 2) separate double acting hydraulic circuit on excavator dipper

\* two hydraulic circuits needed; <sup>4)</sup> installation of **KINSHOFER** comfort control <sup>5)</sup> installation of control; original joysticks remain <sup>6)</sup> original excavator control remains

**Control System CSP consists of:** controlbox, 2 joystick grips, wiring from joysticks to Tiltrotator, proportional pressure control valve, display



total height depending on mounted adapters

# Attachments / Sets / Mounting Options

# TR19NOX

Especially adapted to the TR19NOX, there are different attachments and sets available.

Below you will find a set of the most common buckets used on the TR19NOX as well as the different available mounting options.

In combination with the **NOX** Tiltrotator, a large variety of possibilities is provided to make your carrier machine work more efficiently - in more than 3 dimensions ...

Find different tool examples on the last pages.

For more possible tool combinations, please see our catalogs

- ① CONSTRUCTION - GENERAL CONSTRUCTION
- ② CONSTRUCTION - LANDSCAPING & SNOW REMOVAL

### Gripper

- Always mounted to the tiltrotator, no dismantling necessary when working with other attachments.
- For handling posts, tubes, pallets, rocks, sewer cover, etc.
- Available for **S60 lower quick coupler** (others on request).



### Bucket Set includes

- **SKP Grading Bucket** cleans up and shapes sites.
- **SKD Backhoe Bucket** for trenching.
- **SKK Trench Bucket** for narrow cable channels.

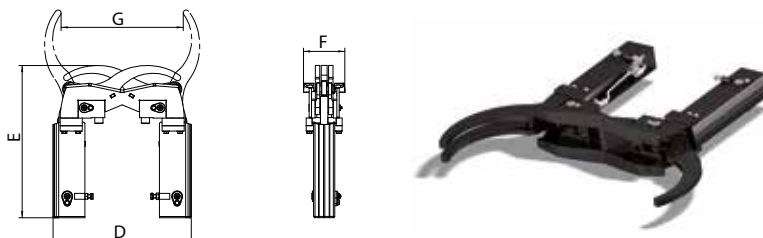


### Gripper

Type	Lower quick coupler	Self weight (approx. kg/lbs)	Dimensions D x E x F (mm/in)	max. Opening width G (mm/in)	Closing time <sup>1)</sup> (sec.)	Closing force (kN/lbf)	Load capacity (kg/lbs)
TRG18	S60	113 / 249	470 x 515 x 140 / 18.50 x 20.28 x 5.51	713 / 28.07	1.7	18 / 3960	900 / 1980

<sup>1)</sup> at 25 l/min. / 6.61 GPM

### Technical Drawing



### Bucket Set incl. SKP 18 / SKD 18 / SKK 22

Type	Self weight (approx. kg/lbs)	Width (mm/in)	Volume (litre/c.y.)	with Quick change adapter
SKP 18 Grading Bucket	380 / 836	1700 / 66.93	750 / 0.98	S60
SKD 18 Backhoe Bucket (incl. teeth)	400 / 880	900 / 35.43	650 / 0.85	S60
SKK 22 Trench Bucket	270 / 594	400 / 15.75	340 / 0.44	S60

### Tiltrotator TR19NOX Mounting Options

Type	Upper bracket	Lower quick coupler
S-Coupler S-Lock	direct mount or S60	S60
Oilquick	direct mount or OQ60-5	OQ60-5
Oilquick	direct mount or OQ65	OQ65
Oilquick	direct mount or OQ70/55	OQ70/55
Volvo/Bofors	direct mount or S1/NTP10/B20	S1/NTP10/B20
Kinshofer L-Lock	direct mount or KSW10	KMS10
Kinshofer L-Lock	direct mount or KSW10	KHS10
Kinshofer X-Lock	direct mount or CMX	CMX
Verachtert	direct mount or CW20/CW30	CW20/30
Atlas	direct mount or T-620	T-620
Martin	direct mount or MH18/MH20	MH18/MH20
Liebherr	direct mount or SW33	SW33
Liebherr	direct mount or SW48	SW48