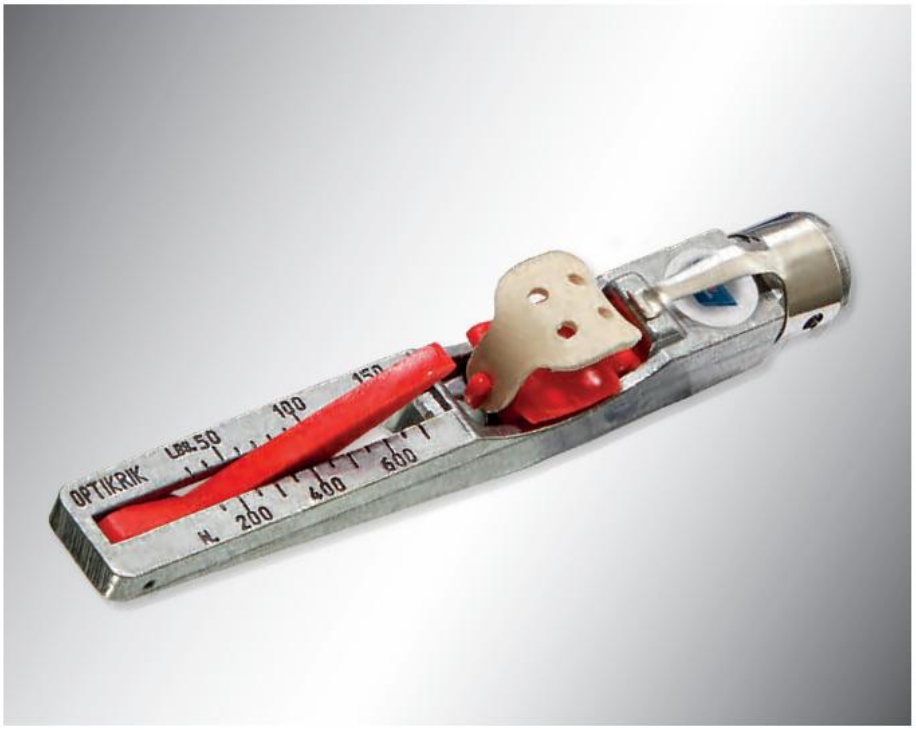
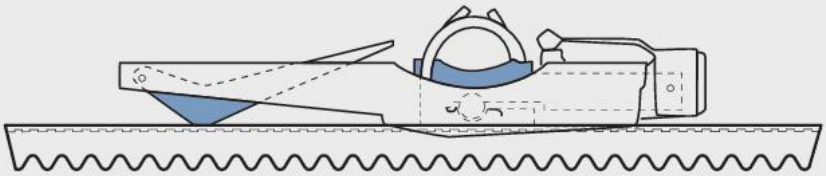
BELT TENSION

OPTIBELT TENSION TESTERS

optibelt OPTIKRIK

The **optibelt OPTIKRIK** is used to simplify the measurement of the belt tension or the static strand force of a two-pulley drive equipped with V-belts, kraftbands and V-ribbed belts. Default values for the static strand force of different profiles can be found on pages 8 and 9.





INSTRUCTIONS FOR USE

1. Drive must be unloaded.
2. The gauge is placed in the middle between the two pulleys on the back of the belt, the indicator arm must lie at the very bottom of the scale surface.
3. Lay the gauge loosely on the belt to be measured and press a finger slowly onto the pressure surface.
4. Try not to touch the gauge with more than one finger during the measuring process.
5. Once you hear or feel a definite click, immediately release pressure and the indicator arm will remain in the measured position.
6. Carefully lift the gauge without moving the indicator arm, read off the strand force (see fig.). Read off the measurement at the exact point where the top surface of the indicator arm crosses the scale surface, while observing the unit, such as here N.
7. Reduce or increase the belt tension according to the measurement result until the static strand force is shown. Default values, see pages 8 and 9.

OPTIBELT V-BELTS

PROFILE	DIAMETER OF THE SMALL PULLEY d_d [mm]	SIMPLIFIED DEFAULT VALUES OF THE STATIC STRAND FORCE [N]							
		RED POWER 3**		SK, VB		SUPER X-POWER M=S SUPER TX M=S		XE-POWER PRO M=S**	
		Initial installation new V-belts	New installation operation after running-in	Initial installation new V-belts	New installation operation after running-in	Initial installation new V-belts	New installation operation after running-in	Initial installation new V-belts	New installation operation after running-in
SPZ; 3V/9N; XPZ; 3VX/9NX	≤ 71	250	200	200	150	250	200	300	250
	> 71 ≤ 90	300	250	250	200	300	250	350	300
	> 90 ≤ 125	400	300	350	250	400	300	500	400
	> 125 *								
SPA; XPA	≤ 100	400	300	350	250	400	300	500	400
	> 100 ≤ 140	500	400	400	300	500	400	600	500
	> 140 ≤ 200	600	40	500	400	600	450	700	550
	> 200 *								
SPB; 5V/15N; XPB; 5VX/15NX	≤ 160	700	550	650	500	700	550	850	650
	> 160 ≤ 224	850	650	700	550	850	650	1000	800
	> 224 ≤ 355	1000	800	900	700	1000	800	1200	950
	> 355 *								
SPC; XPC	≤ 250	1400	1100	1000	800	1400	1100	1700	1300
	> 250 ≤ 355	1600	1200	1400	1100	1600	1200	1900	1550
	> 355 ≤ 560	1900	1500	1800	1400	1900	1500	2300	1800
	> 560 *								
Z/10; ZX/X10	≤ 50	–	–	90	70	120	90		
	> 50 ≤ 71			120	90	140	110		
	> 71 ≤ 100			140	110	160	130		
	> 100 *								
A/13; AX/X13	≤ 80	–	–	150	110	200	150		
	> 80 ≤ 100			200	150	250	200		
	> 100 ≤ 132			300	250	400	300		
	> 132 *								
B/17; BX/X17	≤ 125	–	–	300	250	450	350		
	> 125 ≤ 160			400	300	500	400		
	> 160 ≤ 200			500	400	600	450		
	> 200 *								
C/22; CX/X22	≤ 200	–	–	700	500	800	600		
	> 200 ≤ 250			800	600	900	700		
	> 250 ≤ 355			900	700	1000	800		
	> 355 *								

* Tension values for these pulleys must be calculated.

** Maintenance-free belts from Optibelt should be tensioned after at minimum approx. 10 min. running-in to the initial installation value. Further testing and re-tensioning after running-in is not necessary.

Tension gauges

OPTIKRIK 0	Measuring range:	70– 150 N
OPTIKRIK I	Measuring range:	150– 600 N
OPTIKRIK II	Measuring range:	500–1400 N
OPTIKRIK III	Measuring range:	1300–3100 N

The tension values (static strand force) are guideline values only, if no concrete default values for the drive are available, e.g. from the machine manufacturer and/or there is insufficient data for a CAP drive calculation. These relate to the maximum transfer capacity per V-belt.

Calculation basis

Wedge belts: speed v = 5 to 42 m/s
Classic V-belts: speed v = 5 to 30 m/s

Procedure

1. Determine the profile, product, condition (new/used), pulley diameter of the small pulley.
2. Read off the specified values of the static strand force from the table above.
3. Determining the existing static strand force and setting the default value such as by using **optibelt OPTIKRIK** as described on page 6.

Example

1. Product: SK, profile: SPZ, condition: new, Ø small pulley:	100 mm
2. Stat. strand force – initial installation	350 N
3. Stat. strand force – operation after running-in	250 N