# TOOL CHANGER



# Modularity taken to the limit

## 3 drives - compatible and interchangeable

The new TKX product family revolutionizes the world of robot automation: Three drive technologies with endless application possibilities. In typical industrial applications as well as for use with light-weight robots and stationary applications, the new tool changers are the best choice. From now on, you can use a single system to equip every robot in your production – interchangeable and fully flexible. The universal tool side can be coupled with each of the three robot sides (pneumatic, electric, manual).

- Manual, electric and pneumatic robot side
- Easy teaching due to long guide pins
- Highest moment load capacity in its class enables maximum speeds
- Easily exchangeable pneumatic seals for compressed air and vacuum

#### **IPR - Intelligent Peripherals for Robots GmbH**

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Proven functional principle successful for 30 years and further improved with optimized kinematics for maximum locking force.



Changing with 24 V – no pneumatics necessary, therefore especially suitable for light-weight robots, cobots and environments without compressed air.



Change in the blink of an eye no power supply necessary, therefore especially suitable for applications with low replacement cycles.









#### **Technical data**

Item no.         150301250         150301476         150301378         150301246           Attachment         robot side		9	-		
Attachment         robot side         robot side         robot side         tool side           Type of actuation         pneumatic         electric         manual         -           Recommended payload         30 kg         -         -           Max. tensile/compressive force         6.000 N         -         -           Max. moment Mx, My         300 Nm         -         -           Max. moment Mz         815 Nm         -         -           Repeatability         0.02 mm         -         5         4         5           Number of mounting surfaces         5         5         4         5           Number of pneumatic/vacuum feedthroughs         6         6         4         5           Number of pneumatic/vacuum feedthroughs         6         8         4         6           Connection type internal bushings         MS         -         0.66 kg         0.41 kg           Locking/unlocking time         0.4 s         -         application-dependent         -           Self-hold         Stainless steel pressure spring         -         Kinematics         -           Optional sensors         Status query (locked/ unlocked/ presence mold side by means of attachment module)         -		TKP-030	TKE-030	TKM-030	TKT-030
Type of actuation pneumatic electric manual -  Recommended payload 30 kg  Max. tensile/compressive force 6.000 N  Max. moment Mx, My 300 Nm  Max. moment Mx, My 815 Nm  Repeatability 0.02 mm  Number of mounting surfaces 5 5 5 4 5 4 5 5  Number of mounting surfaces 5 5 5 4 5 4 5 5  Number of mounting surfaces 5 5 5 4 5 4 5 5  Number of mounting surfaces 5 5 5 4 5 4 5 5  Number of pneumatic/ vacuum feedthroughs 6 6 6 4 6 4 6 5  Number of pneumatic/ vacuum feedthroughs 6 6 6 4 0 6 4 6 6 6 6 6 6 6 6 6 6 6 6 6	Item no.	150301250	150301476	150301378	150301246
Max. tensile/compressive force	Attachment	robot side	robot side	robot side	tool side
Max. tensile/compressive force         6.000 N           Max. moment Mx, My         300 Nm           Max. moment Mz         815 Nm           Repeatability         0.02 mm           Number of mounting surfaces         5         5         4         5           Number of pneumatic/ vacuum feedthroughs         6         6         4         6           Connection type internal bushings         M5         M5         0.41 kg           Locking/unlocking time         0.45         application-dependent         -           Locking/unlocking time         0.45         application-dependent         -           Energy required for locking/unlocking         4 to 8 bar         application-dependent         -           Self-hold         Stainless steel pressure spring         Kinematics         -           Self-hold         Status query (locked/ unlocked/ presence mold side by means of attachment module)         -           Optional sensors         Presence mold side by means of attachment module)         -           Connection flange         ISO 9409-1-50-4-M6           Outer diameter (base body)         90 mm           Height (base body)         31 mm           Protection class         IP 54           Max. axis deviation in X/Y direction         +/-1.6	Type of actuation	pneumatic	electric	manual	-
Max. moment Mx, My         300 Nm           Max. moment Mz         815 Nm           Repeatability         0.02 mm           Number of mounting surfaces         5         5         4         5           Number of pneumatic/vacuum feedthroughs         6         4         5           Connection type internal bushings         M5         4         6           Connection type internal bushings         -         0.66 kg         0.41 kg           Locking Junlocking time         0.4 s         -         application-dependent         -           Energy required for locking/unlocking         4 to 8 bar         -         kinematics         -           Self-hold         Stainless steel pressure spring         -         Kinematics         -           Self-hold         Status query (locked/ unlocked/ presence mold side by means of attachment module)         -         -           Optional sensors         Status query (locked/ unlocked/ presence mold side by means of attachment module)         -         -           Connection flange         ISO 9409-1-50-4-M6         -         -           Outer diameter (base body)         31 mm         -           Protection class         IP 54         -           Max. axis deviation in X/Y direction         -	Recommended payload			30 kg	
Max. moment Mz  Repeatability  O.02 mm  Number of mounting surfaces  5 5 5 4 5  Number of pneumatic/ vacuum feedthroughs  6 6 4 4 6  Connection type internal bushings  Weight  O.58 kg  - O.66 kg  O.41 kg  Locking/unlocking time  O.4 s  Energy required for locking/unlocking time  Self-hold  Stainless steel pressure spring  Status query (locked/ unlocked/ presence mold side by means of attachment module)  Connection flange  Outer diameter (base body)  Height (base body)  Protection class  Max. axis deviation in X/Y direction  Max. offset while locking  Coupling way  Air consumption per cycle  O.087 I - O.087 I	Max. tensile/compressive force	6.000 N			
Number of mounting surfaces 5 5 5 4 5 6 4 5	Max. moment Mx, My	300 Nm			
Number of mounting surfaces  Number of pneumatic/ vacuum feedthroughs  Solid  S	Max. moment Mz	815 Nm			
Number of pneumatic/ vacuum feedthroughs  Connection type internal bushings  Weight  O.58 kg  O.41 kg  Locking/unlocking time  O.4 s  Energy required for locking/unlocking  Self-hold  Stainless steel pressure spring  Status query (locked/ unlocked/ spresence mold side by means of attachment module)  Connection flange  Outer diameter (base body)  Height (base body)  Protection class  Max. axis deviation in X/Y direction  Max. offset while locking  Max. offset while locking  O.871	Repeatability	0.02 mm			
Connection type internal bushings  MS  MS  Weight 0.58 kg - 0.66 kg 0.41 kg  Locking/unlocking time 0.4 s - application-dependent - Energy required for locking/unlocking spring - Kinematics - Self-hold Stainless steel pressure spring - Kinematics - Self-hold Stainless steel pressure spring - Status query (locked/ unlocked/ presence mold side by means of attachment module) - Connection flange - ISO 9409-1-50-4-M6  Outer diameter (base body) - 90 mm  Height (base body) - 90 mm  Height (base body) - 31 mm  Protection class - IP 54  Max. axis deviation in X/Y direction - +/-1.6 mm  Max. offset while locking - 0.88 mm  Coupling way - 25.5 mm  Air consumption per cycle 0.087	Number of mounting surfaces	5	5	4	5
Weight 0.58 kg - 0.66 kg 0.41 kg  Locking/unlocking time 0.4 s - application-dependent -  Energy required for locking/unlocking Stainless steel pressure spring - Kinematics -  Optional sensors Status query (locked/ unlocked/ presence mold side by means of attachment module)  Connection flange ISO 9409-1-50-4-M6  Outer diameter (base body) 90 mm  Height (base body) 31 mm  Protection class IP 54  Max. axis deviation in X/Y direction  Max. offset while locking 0.88 mm  Coupling way 25.5 mm  Air consumption per cycle 0.087 l		6	6	4	6
Locking/unlocking time  O.4 s  - application-dependent		M5			
Energy required for locking/unlocking  Self-hold  Stainless steel pressure spring  Status query (locked/ unlocked/ presence mold side by means of attachment module)  Connection flange  Under diameter (base body)  Height (base body)  Protection class  Max. axis deviation in X/Y direction  Max. offset while locking  Coupling way  Air consumption per cycle  4 to 8 bar  - application-dependent - application-dependents - appl	Weight	0.58 kg	-	0.66 kg	0.41 kg
Self-hold Stainless steel pressure spring Status query (locked/ unlocked/ presence mold side by means of attachment module)  Connection flange Status query (locked/ unlocked/ presence mold side by means of attachment module)  Connection flange Status query (locked/ unlocked/ presence mold side by means of attachment module)  Connection flange Status query (locked/ unlocked/ presence mold side by means of attachment module)  Status query (locked/ unlocked/ presence mold side by means of attachment module)  Status query (locked/ unlocked/ presence module)  Status query (locked/ unlocked/ unlocked/ presence module)  Status query (locked/ unlocked/ unlocked/ presence module)  Status query (locked/ unlocked/ presence module)  Status query (locked/ unlocked/ unlocked/ unlocked/ presence module)  Status query (locked/ unlocked/ unl	Locking/unlocking time	0.4 s	-	application-dependent	-
Spring Status query (locked/ unlocked/ presence mold side by means of attachment module) -  Connection flange ISO 9409-1-50-4-M6  Outer diameter (base body) 90 mm  Height (base body) 31 mm  Protection class IP 54  Max. axis deviation in X/Y direction  Max. Offset while locking 0.8 mm  Coupling way Air consumption per cycle 0.087 l		4 to 8 bar	-	application-dependent	-
presence mold side by means of attachment module)  Connection flange ISO 9409-1-50-4-M6  Outer diameter (base body) 90 mm  Height (base body) 31 mm  Protection class IP 54  Max. axis deviation in X/Y direction  Max. offset while locking 0.8 mm  Coupling way 25.5 mm  Air consumption per cycle 0.087 l	Self-hold	•	-	Kinematics	-
Outer diameter (base body)  Height (base body)  Protection class  IP 54  Max. axis deviation	Optional sensors				
Height (base body)  Protection class  IP 54  Max. axis deviation	Connection flange	ISO 9409-1-50-4-M6			
Protection class IP 54  Max. axis deviation +/- 1.6 mm  Max. offset while locking 0.8 mm  Coupling way 25.5 mm  Air consumption per cycle 0.087 l	Outer diameter (base body)	90 mm			
Max. axis deviation	Height (base body)	31 mm			
in X/Y direction +/- 1.6 mm  Max. offset while locking 0.8 mm  Coupling way 25.5 mm  Air consumption per cycle 0.087 l	Protection class	IP 54			
Coupling way 25.5 mm Air consumption per cycle 0.087 l		+/- 1.6 mm			
Air consumption per cycle 0.087 l	Max. offset while locking	0.8 mm			
	Coupling way	25.5 mm			
<b>Ambient temperature</b> +5 to +80 °C +5 to +55 °C +5 to +80 °C +5 to +80 °C	Air consumption per cycle	0.0871	-	-	-
	Ambient temperature	+5 to +80 °C	+5 to +55 °C	+5 to +80 °C	+5 to +80 °C

All data apply at 6 bar nominal operating pressure.

Sensor kits can be ordered separately as an option.

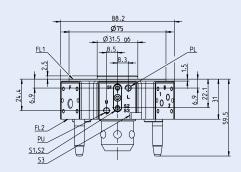


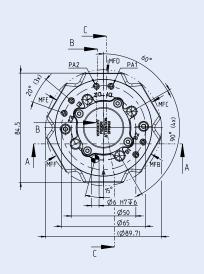


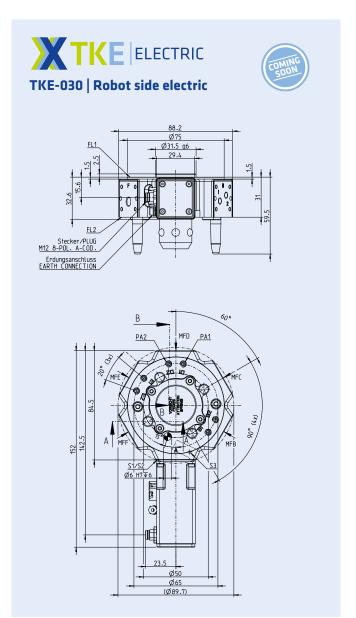
### **Technical drawings**



### TKP-030 | Robot side pneumatic

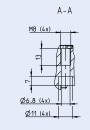


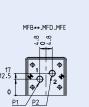


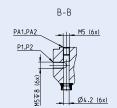


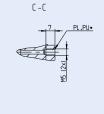
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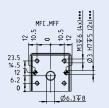
FL1	MOUNTING SURFACE
FL2	DOCKING SURFACE
MFB.MFC-MFF	MOUNTING SURFACE B-F F. OPT. MODULE
P1.P2.P3	AIR CONNECTION 1/2/3 ON MFBMFC-MFF
PA1.PA2.PA3	AIR CONNECTION 1/2/3 ALTERNATIVE F. MFBMFC-MFF
PL	AIR CONNECTION LOCK
PU	AIR CONNECTION UNLOCK
•	NOT FOR TKE.TKM
**	NOT FOR TKM
***	FOR ALL MOUNTING SURFACES EXCEPT A
	OPTION
S1	SENSOR LOCKING (UNLOCKED) ** / TKE ALLWAYS INSTALLED
S2	SENSOR LOCKING (LOCKED) / TKE ALWAYS INSTALLED
S3	SENSOR TOOL SIDE PRESENT. ON FL2











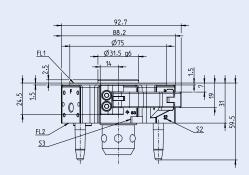


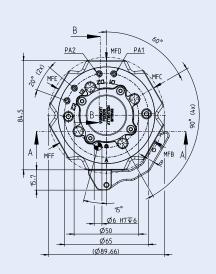
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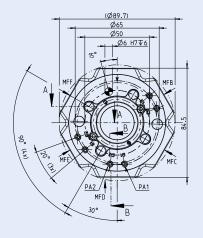


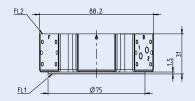






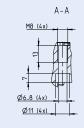
### TKT-030 | Tool side

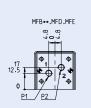


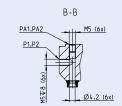


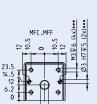
#### **Valid for all variants:**

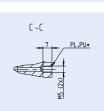
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**	NOT FOR TKM
•••	FOR ALL MOUNTING SURFACES EXCEPT A
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S1	SENSOR LOCKING (UNLOCKED) ** / TKE ALLWAYS INSTALLED
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S3	SENSOR TOOL SIDE PRESENT. ON FL2













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