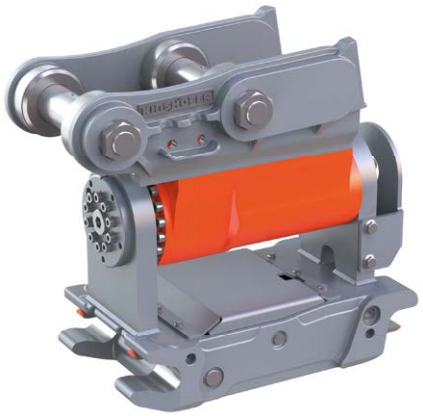
Tilt Couplers System S-Lock 1.0-14t / *2,200-30,800lbs* — TC S-Lock

The Kinshofer TC Tilt Couplers provide a tilting angle of up to 180°, increasing the flexibiliy and efficiency of all attachments to a maximum. Compatible with quick coupling system S-Lock.



- Compact design, **no cylinder.**
- **More flexibility.**
- **Low height –** thus **high breakaway force.**
- **Low maintenance.**
- **Optionally available:** a double unlockable non-return valve mounted to the motor provides a safe position of the TC tilt coupler across all angles.
- Fully comply with all applicable national and international standards and regulations, including **Machinery Directive 2006/42/EG, DIN EN 474-1, DIN EN 474-5, ISO13031 and SUVA.**

Mechanic Tilt Couplers TC KMS-S

Type	Rotary drive	Tilt angle	Locking	Weight (kg/lbs)	Operating weight (t/lbs)
TC02-180 KMS30S-150	RA02	2 x 90°	mechanic	49 / 107.8	1.0 - 2.0 / 2,200 - 4,400
TC02-180 KMS30S-180	RA02	2 x 90°	mechanic	49 / 107.8	1.0 - 2.0 / 2,200 - 4,400
TC03-180 KMS40S	RA03	2 x 90°	mechanic	49 / 107.8	2.0 - 2.9 / 4,400 - 6,380
TC045-180 KMS40S	RA045	2 x 90°	mechanic	72 / 158.4	2.4 - 4.5 / 5,280 - 9,900
TC07-180 KMS40S	RA07	2 x 90°	mechanic	80 / 176	4.3 - 7.0 / 9,460 - 15,400
TC07-180 KMS45S	RA07	2 x 90°	mechanic	102 / 224.4	4.3 - 7.0 / 9,460 - 15,400
TC10-180 KMS45S	RA10	2 x 90°	mechanic	130 / 286	6.0 - 10.0 / 13,200 - 22,000
TC14-140 KMS45S	RA14	2 x 70°	mechanic	195 / 429	8.6 - 14.0 / 18,920 - 30,800

Package consists of: upper bracket, rotary drive, mechanic quick coupler, socket

Hydraulic Tilt Couplers TC KHS-S

Type	Rotary drive	Tilt angle	Locking	Weight (kg/lbs)	Operating weight (t/lbs)
TC02-180 KHS30S-150	RA02	2 x 90°	hydraulic	49 / 107.8	1.0 - 2.0 / 2,200 - 4,400
TC02-180 KHS30S-180	RA02	2 x 90°	hydraulic	49 / 107.8	1.0 - 2.0 / 2,200 - 4,400
TC03-180 KHS40S	RA03	2 x 90°	hydraulic	49 / 107.8	2.0 - 2.9 / 4,400 - 6,380
TC045-180 KHS40S	RA045	2 x 90°	hydraulic	72 / 158.4	2.4 - 4.5 / 5,280 - 9,900
TC07-180 KHS40S	RA07	2 x 90°	hydraulic	80 / 176	4.3 - 7.0 / 9,460 - 15,400
TC07-180 KHS45S	RA07	2 x 90°	hydraulic	102 / 224.4	4.3 - 7.0 / 9,460 - 15,400
TC10-180 KHS45S	RA10	2 x 90°	hydraulic	130 / 286	6.0 - 10.0 / 13,200 - 22,000
TC14-140 KHS45S	RA14	2 x 70°	hydraulic	195 / 429	8.6 - 14.0 / 18,920 - 30,800

Package consists of: upper bracket, rotary drive, hydraulic quick coupler

Installation sets for hydraulic Tilt Couplers TC KHS-S

Type	Description
KHS03L HD-KHS08L installation set safety	incl. KHS Control unit
KHS03L HD-KHS08L installation set basic	incl. unlockable flip switch

Accessories

Type	Description
KM 685 06 KSW01 hook	load hook (1t / 2,200lbs load capacity) for KMS/KHS30S
KM 685 06 KSW03 hook 3t	load hook (3t / 6,600lbs load capacity) for KMS/KHS40S
KM 685 06 KSW08 hook	load hook (5t / 11,000lbs load capacity) for KMS/KHS45S and KMS/KHS50S

Technical data and hydraulics TC

Type	Breakout force max. (ISO) (kN/lbf)	Bucket width max. (mm/in)	Recommended oil flow rotate (l/min / GPM)	Hydraulic pressure rotate max. (bar/psi)
TC02-180	19 / 4,180	1,000 / 39.4	3 - 8 / 0.8 - 2.1	250 / 3,600
TC03-180	23 / 5,060	1,000 / 39.4	3 - 8 / 0.8 - 2.1	250 / 3,600
TC045-180	35 / 7,700	1,200 / 47.2	10 - 15 / 2.6 - 3.9	250 / 3,600
TC07-180	50 / 11,000	1,300 / 51.2	10 - 15 / 2.6 - 3.9	270 / 3,888
TC10-180	72 / 15,840	1,400 / 55.1	15 - 20 / 3.9 - 5.3	310 / 4,464
TC14-140	110 / 24,200	1,600 / 62.9	16 - 28 / 4.2 - 7.4	310 / 4,464

Requirements of carrier machine for TC KHS-S

	Quick coupler	Rotary drive
Hydraulic system:	one double acting hydraulic circuit for further data, see quick coupler KHS-S	one double acting hydraulic circuit
Note:	excavator needs to be equipped with quick coupler control quick coupling systems of different manufacturers available	

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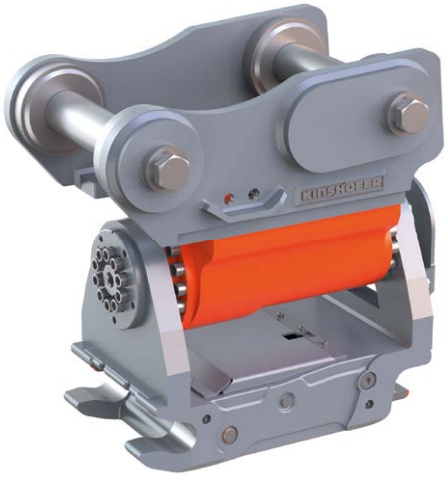
Tilt Couplers System S-Lock 8.6-23t / *18,920-50,600lbs* TC S-Lock

The Kinshofer TC Tilt Couplers provide a tilting angle of up to 140°, increasing the flexibiliy and efficiency of all attachments to a maximum. Compatible with quick coupling system S-Lock.



- **Counter-balance valve** mounted to the motor **retains a secure position** for the tilt coupler across the angle.
- Compact design, **no cylinder.**
- **More flexibility.**
- **Low height –** thus **high breakaway force.**
- **Low maintenance.**
- **Non-return valve set** is **optionally** available.
- Fully comply with all applicable national and international standards and regulations, including **Machinery Directive 2006/42/EG, DIN EN 474-1, DIN EN 474-5, ISO13031 and SUVA.**

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Mechanic Tilt Couplers TC KMS-S

Type	Rotary drive	Tilt angle	Locking	Weight (kg/lbs)	Operating weight (t/lbs)
TC14-140 KMS60S	RA14	2 x 70°	mechanic	223 / 491	8.6 - 14.0 / 18,920 - 30,800
TC19-140 KMS60S	RA19	2 x 70°	mechanic	415 / 913	12.1 - 19.0 / 26,620 - 41,800
TC23-140 KMS70S	RA23	2 x 70°	mechanic	575 / 1,265	16.7 - 23.0 / 36,740 - 50,600

Package consists of: upper bracket, rotary drive, mechanic quick coupler, socket

Hydraulic Tilt Couplers TC KHS-S

Type	Rotary drive	Tilt angle	Locking	Weight (kg/lbs)	Operating weight (t/lbs)
TC14-140 KHS60S	RA14	2 x 70°	hydraulic	223 / 491	8.6 - 14.0 / 18,920 - 30,800
TC19-140 KHS60S	RA19	2 x 70°	hydraulic	415 / 913	12.1 - 19.0 / 26,620 - 41,800
TC23-140 KHS70S	RA23	2 x 70°	hydraulic	575 / 1,265	16.7 - 23.0 / 36,740 - 50,600

Package consists of: upper bracket, rotary drive, hydraulic quick coupler

Installation sets for hydraulic Tilt Couplers TC KHS-S

Type	Description
KHS03L HD-KHS08L installation set safety	incl. KHS Control unit
KHS03L HD-KHS08L installation set basic	incl. unlockable flip switch

Accessories

Type	Description
KM 685 06 KSW10 hook	load hook (8t/17,600lbs load capacity) for TC KMS/KHS60S
KM 685 06 KSW21 hook	load hook (10t/22,000lbs load capacity) for TC KMS/KHS70S
TC14-140 NRV	non-return valve kit for TC14-140
TC19-140 NRV	non-return valve kit for TC19-140
TC23-140 NRV	non-return valve kit for TC23-140

Technical data and hydraulics TC

Type	Breakout force max. (ISO) (kN/lbf)	Bucket width max. (mm/in)	Recommended oil flow rotate (l/min / GPM)	Hydraulic pressure rotate max. (bar/psi)
TC14-140	110 / 24,200	1,600 / 62.9	16 - 28 / 4.2 - 7.4	310 / 4,464
TC19-140	150 / 33,000	1,700 / 66.9	26 - 35 / 6.8 - 9.2	310 / 4,464
TC23-140	170 / 37,400	2,000 / 78.7	26 - 35 / 6.8 - 9.2	310 / 4,464

Requirements of carrier machine for TC KHS-S

	Quick coupler	Rotary drive
Hydraulic system:	one double acting hydraulic circuit for further data, see quick coupler KHS-S	one double acting hydraulic circuit
Note:	excavator needs to be equipped with quick coupler control quick coupling systems of different manufacturers available	

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Accessories for Quick Couplers, Tilt Couplers and Rotary Couplers

unlockable flip switch (hold to run)

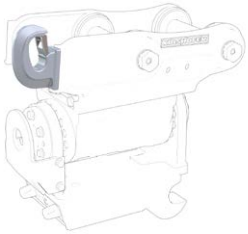
KHS Control

Installations sets for hydraulic quick couplers and tilt couplers

Type	Description
KHS01L-KHS03L installation set safety	incl. KHS Control unit
KHS01L-KHS03L installation set basic	incl. unlockable flip switch (hold to run)
KHS03L HD-KHS08L installation set safety	incl. KHS Control unit
KHS03L HD-KHS08L installation set basic	incl. unlockable flip switch (hold to run)

Non-return valve sets for hydraulic tilt couplers TC

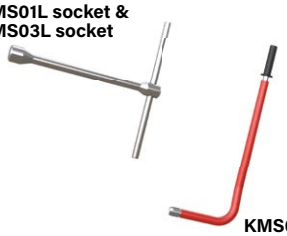
Type	Description
TC02-TC03-180 NRV	non-return valve set for TC02 and TC03
TC045-180 NRV	non-return valve set for TC045
TC07-180 NRV	non-return valve set for TC07
TC10-180 NRV	non-return valve set for TC10
TC14-140 NRV	non-return valve set for TC14



Load hook for quick couplers and tilt couplers

Type	Description
KM 685 06 KSW01 hook	load hook for system L-Lock (1t / 2,200lbs load capacity)
KM 685 06 KSW03 hook 2t	load hook for system L-Lock (2t / 4,400lbs load capacity)
KM 685 06 KSW03 hook 3t	load hook for system L-Lock (3t / 6,600lbs load capacity)
KM 685 06 KSW08 hook	load hook for system L-Lock (5t / 11,000lbs load capacity)

KMS01L socket & KMS03L socket



KMS08L socket

Sockets for mechanic quick couplers and tilt couplers

Type	Description
KMS01L socket	socket for mechanical System L-Lock (KMS01)
KMS03L socket	socket for mechanical System L-Lock (KMS03)
KMS08L socket	socket for mechanical System L-Lock (KMS08) and S-Lock

Quick coupling adapters for System L-Lock

Type	Description
KSW01 rigid	bolt-on adapter
KSW01 cardanic	adapter for cardanic suspension incl. suspension, w/o pendulum damper
KSW03 rigid	bolt-on adapter
KSW03 cardanic	adapter for cardanic suspension incl. suspension, w/o pendulum damper
KSW08 rigid	bolt-on adapter
KSW08 cardanic	adapter for cardanic suspension incl. suspension, w/o pendulum damper

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unlockable flip switch (hold to run)

KHS Control

Installations sets for hydraulic quick couplers and tilt couplers

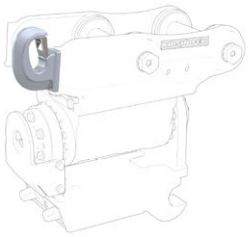
Type	Description
KHS03L HD-KHS08L installation set safety	incl. KHS Control unit
KHS03L HD-KHS08L installation set basic	incl. unlockable flip switch (hold to run)
KHS10L installation set safety	incl. KHS Control unit
KHS10L installation set basic	incl. unlockable flip switch (hold to run)
KHS21L installation set safety	incl. KHS Control unit
KHS21L installation set basic	incl. unlockable flip switch (hold to run)
KHS25L installation set safety	incl. KHS Control unit
KHS25L installation set basic	incl. unlockable flip switch (hold to run)

Locking sensor for hydraulic quick couplers and tilt couplers with System L-Lock

Type	Description
KHS-L-Sensor	2 sensors support the secure locking, only in combination with KHS10-25L installation set sensor
KHS10-25L installation set sensor	KHS-L installation set safety including cable loom for quick coupler sensors

Non-return valve sets for hydraulic tilt couplers TC

Type	Description
TC14-140 NRV	non-return valve set for TC14-140
TC19-140 NRV	non-return valve set for TC19-140
TC23-140 NRV	non-return valve set for TC23-140



Load hook for quick couplers and tilt couplers

Type	Description
KM 685 06 KSW10 hook	load hook (8t/17,600lbs load capacity)
KM 685 06 KSW21 hook	load hook (10t/22,000lbs load capacity)
KM 685 06 KSW25 hook	load hook (18t/39,600lbs load capacity)

Sockets for mechanic quick couplers and tilt couplers

Type	Description
KMS10L socket	socket for mechanical System L-Lock (KMS10L)
KMS21/25L socket	socket for mechanical System L-Lock (KMS21L/KMS25L)
KMS08L socket	socket for mechanical System S-Lock

Quick coupling adapters for System L-Lock

Type	Description
KSW10 rigid	bolt-on adapter
KSW10 cardanic	adapter for cardanic suspension incl. suspension, w/o pendulum damper
KSW21/25 rigid	bolt-on adapter
KSW21/25 cardanic	adapter for cardanic suspension incl. suspension, w/o pendulum damper

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