

THE COUPLING.

R+W
A POPPE + POTTHOFF COMPANY

TORQSET® SAFETY COUPLINGS
200 – 250,000 Nm

ST

**INDUSTRIAL
COUPLINGS**



TORQSET® SAFETY COUPLINGS

200- 250,000 Nm



GENERAL INFORMATION ABOUT R+W SAFETY COUPLINGS:



FIT CLEARANCE

Overall shaft / hub clearance of 0.02 - 0.07 mm

TEMPERATURE RANGE

-30 to +120° C

SPECIAL SOLUTIONS

Automatic re-engagement

ATEX (Optional)

For use in hazardous areas available upon request.

DISENGAGEMENT BEHAVIOR

Full disengagement / manual reset is standard.

TORQSET® SAFETY COUPLINGS 200 – 250,000 Nm

MODEL	FEATURES	
ST1 	with simple keyway mounting for indirect drives from 200 - 250,000 Nm ▶ compact, simple design ▶ precise overload protection ▶ torsionally stiff ▶ integral bearing for overhung load support	Page 44-45
STR 	with keyway mounting special robust version from 200 - 250,000 Nm ▶ compact, simple design ▶ precise overload protection ▶ torsionally stiff ▶ with heavy duty bearing for overhung load support	Page 46-47
STN 	with conical clamping ring for indirect drives from 200 - 165,000 Nm ▶ high shaft clamping pressure ▶ compact, simple design ▶ precise overload protection ▶ torsionally stiff ▶ integral bearing for overhung load support	Page 48-49
STF 	with flange mounting both sides from 200 - 45,000 Nm ▶ compact design with customer specified interface for torque transducers and other mounting flanges ▶ precise overload protection ▶ torsionally stiff ▶ with special bearing for high speeds	Page 50

MODEL

FEATURES

STE



with keyway mounting and elastomer coupling from 200 - 14,000 Nm

- ▶ vibration damping
- ▶ precise overload protection
- ▶ wear resistant
- ▶ press fit design

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ST2



with simple keyway mounting and elastic coupling from 200 – 165,000 Nm

- ▶ highly elastic damping
- ▶ compensation for misalignment
- ▶ precise overload protection
- ▶ elastomer segments resistant to oil and dirt
- ▶ press fit design

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ST4



with simple keyway mounting and crowned gear coupling from 200 – 250,000 Nm

- ▶ high power density
- ▶ compensation for misalignment
- ▶ precise overload protection
- ▶ low reaction loads on shaft bearings
- ▶ extremely wear resistant

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ST

Options / Special Solutions

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ACCESSORIES

Accessories for Safety Couplings

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ST1

WITH SIMPLE KEYWAY MOUNTING

200 - 45,000 Nm

PROPERTIES

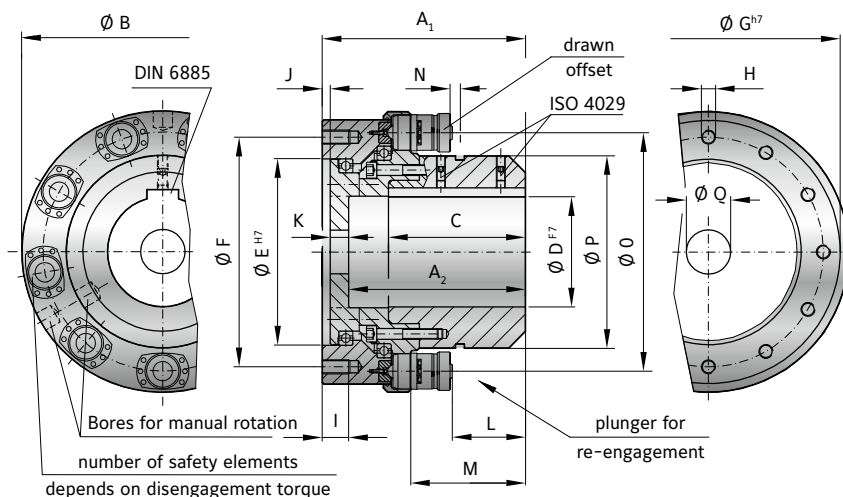
MATERIAL

Hardened steel (nitrocarburized surface)

- Driven side: output flange with 12x fastening threads and integral bearings

DESIGN

- Drive side: coupling hub with keyway connection (spline profile on request)
- Safety elements: evenly spaced around the circumference; externally adjustable



MODEL ST1 | SIZE 2 - 40

SIZE		2			5			10			25			40		
Adjustment range available from - to (KNm)		0.2-0.5	0.5-1.0	1.0-1.5	0.7-2	1.2-4	3.2-5	2-5	4-10	6-14	6-12	9-18	15-25	12-21	22-32	32-45
		3×ST10	6×ST10	6×ST10	3×ST15	6×ST15	6×ST15	3×ST15	6×ST15	9×ST15	6×ST15	9×ST15	12×ST15	6×ST30	6×ST30	9×ST30
Overall length	(mm)	A ₁	120			150			183			230			305	
Bore depth	(mm)	A ₂	100			124			158			200			210	
Outside diameter	(mm)	B	198			220			270			318			428	
Fit length	(mm)	C	100			121			120			155			210	
Bore diameter possible Ø to Ø F7	(mm)	D	30-75			40-90			40-110			60-140			90-170	
Flange centering diameter H7	(mm)	E	132			145			170			210			270	
Bolt circle diameter ±0.3	(mm)	F	162			170			220			260			330	
Flange outside diameter h7	(mm)	G	192			209			259			298			380	
Fastening threads	H	12xM10				12xM12			12xM16			12xM16			12xM20	
Thread depth	(mm)	I	15			20			25			30			35	
Fit length	(mm)	J	3.5			4			6			8			8	
Wall thickness	(mm)	K	15			21			17			20			28	
Distance	(mm)	L	10.5			16.5			45			80			102	
Distance	(mm)	M	51.5			66.5			95			130			170	
Actuation path	(mm)	N	3.5			4.5			4			4			7.5	
Mounting diameter - elements	(mm)	O	154			171			220			270			350	
Hub outside diameter	(mm)	P	104			120			170			218			265	
Bore for fastening screw	(mm)	Q	max. Ø 75			max. Ø 90			max. Ø 110			max. Ø 140			max. Ø 144	
Moment of inertia (approx.) D max. + max. sgmnt (10 ⁻³ kgm ²)			77			151			370			780			3570	
Speed max.	(rpm)		7000			6000			4200			3800			3000	
Allowable max. radial force standard*	(kN)		5			10			20			30			40	
Approx. weight at D max. + max. sgmnt	(kg)		15			24			40			63			166	

* larger radial loads possible with special bearings

ST1

WITH SIMPLE KEYWAY MOUNTING

11,000 - 250,000 Nm

PROPERTIES

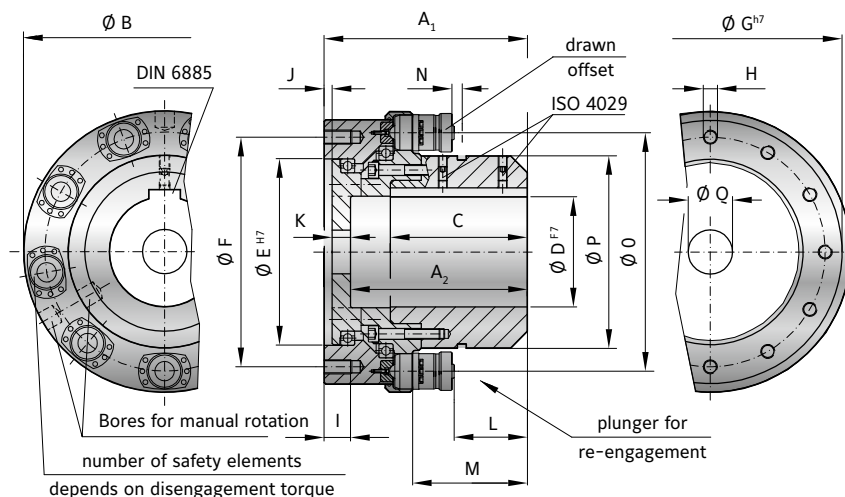
MATERIAL

Hardened steel (nitrocarburized surface)

- Driven side: output flange with 12x fastening threads and integral bearings

DESIGN

- Drive side: coupling hub with keyway connection (spline profile on request)
- Safety elements: evenly spaced around the circumference; externally adjustable

SAFETY COUPLINGS
ST

MODEL ST1 | SIZE 60 - 250

SIZE			60			100			160			250	
Adjustment range available from - to (KNm)			11-18	22-36	30-55	24-50	45-90	80-110	25-55	50-110	80-165	100-170	160-250
			3×ST 30	6×ST 30	9×ST 30	3×ST70	6×ST70	9×ST70	3×ST70	6×ST70	9×ST70	8×ST71	12×ST71
Overall length (mm)	A ₁		320			396			410			534	
Bore depth (mm)	A ₂		275			280			360			370	
Outside diameter	B		459			592			648			740	
Fit length (mm)	C		220			280			290			370	
Bore diameter possible Ø to Ø F7 (mm)	D		80-200			100-250			100-290			200-340	
Flange centering diameter H7 (mm)	E		300			390			450			508	
Bolt circle diameter ±0.3 (mm)	F		360			464			570			600	
Flange outside diameter h7 (mm)	G		418			530			618			680	
Fastening threads	H		12xM20			12xM24			12xM24			12xM36	
Thread depth (mm)	I		35			40			40			60	
Fit length (mm)	J		8			10			10			12	
Wall thickness (mm)	K		30			38			38			60	
Distance (mm)	L		99			128			135			135	
Distance (mm)	M		167			218			225			228	
Actuation path (mm)	N		7,5			10			10			10	
Mounting diameter - elements (mm)	O		376			490			532			630	
Hub outside diameter (mm)	P		295			380			418			508	
Bore for fastening screw (mm)	Q		max. Ø 200			max. Ø 216			max. Ø 290			max. Ø 290	
Moment of inertia (approx.) D max. + max. sgmnt (10 ⁻³ kgm ²)			4600			16850			24600			56800	
Speed max. (rpm)			2500			2200			2000			1200	
Allowable max. radial force standard* (KN)			50			60			100			120	
Approx. weight at D max. + max. sgmnt (kg)			179			403			463			850	

* larger radial loads possible with special bearings

STR

WITH SIMPLE KEYWAY MOUNTING, ROBUST

200 - 45,000 Nm



PROPERTIES

MATERIAL

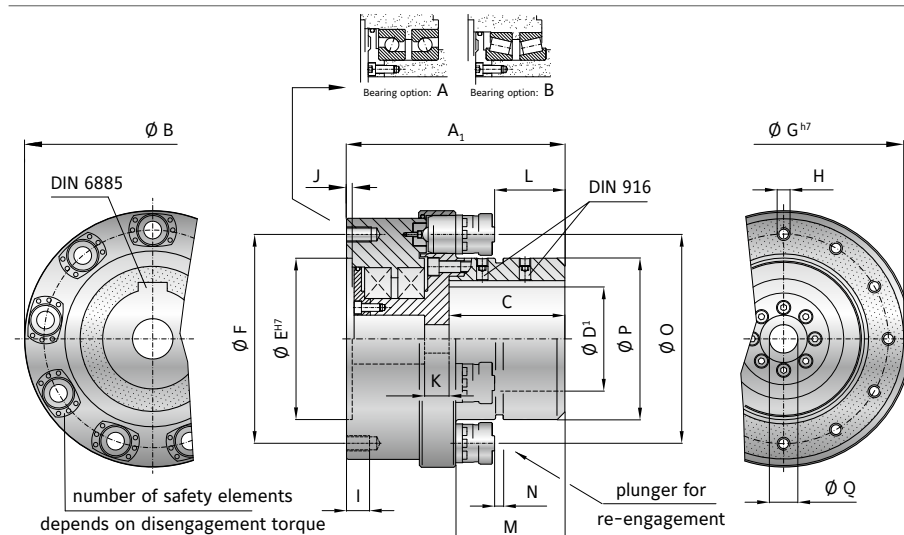
Hardened steel (nitrocarburized surface)

DESIGN

► Drive side: coupling hub with keyway connection (spline profile on request)

► Driven side: Output flange with attachment threads and reinforced bearings.

► Safety elements: evenly spaced around the circumference; externally adjustable



MODEL STR | SIZE 2 - 40

SIZE		2				4				5			10			25			40			
Adjustment range available from - to (KNm)		0.2-0.5	0.5-1.0	1.0-1.5	1.5-3.5	0.6-0.9	1.1-1.7	1.6-2.6	2.5-5.0	0.7-2	1.2-4	3.2-5	2-5	4-10	6-14	6-12	9-18	15-25	12-21	22-32	32-45	
		3× ST11	6× ST11	6× ST11	6× ST11	3× ST11	6× ST11	9× ST11	9× ST11	3× ST16	6× ST16	6× ST16	3× ST16	6× ST16	9× ST16	6× ST16	9× ST16	12× ST16	6× ST31	6× ST31	9× ST31	
Overall length	(mm)	A ₁	170				198				190			230			264			335		
Outside diameter	(mm)	B	198				211				220			270			318			428		
Fit length	(mm)	C	95				120				111			122			150			191		
Bore diameter possible Ø to Ø F7(mm)	D		30-80				40-100				40-90			40-110			60-140			90-170		
Flange centering diameter H7 (mm)	E		132				136				145			170			210			270		
Bolt circle diameter ±0.3 (mm)	F		162				164				170			220			260			330		
Flange outside diameter h7 (mm)	G		192				194				209			259			298			380		
Fastening threads	(mm)	H	12xM10				12xM12				12xM12			12xM16			12xM16			12xM20		
Thread depth		I	18				22				22			28			30			36		
Fit length	(mm)	J	4.5				3.5				3.5			6			8			6		
Wall thickness	(mm)	K	16				20				24			32			32			48		
Distance	(mm)	L	50.0				81.5				56.0			74			97			111		
Distance	(mm)	M	81.0				112.5				96.5			115			138			171		
Actuation path	(mm)	N	3.5				3.5				4.5			4.5			4.5			7.5		
Mounting diameter - elements (mm)	(mm)	O	154				174				171			220			270			350		
Hub outside diameter	(mm)	P	112				138				122			170			218			265		
Bore for fastening screw (mm)	(mm)	Q	max. Ø 17				max. Ø 22				max. Ø 25			max. Ø 26			max. Ø 32			max. Ø 38		
Moment of inertia (approx.) D max. + max. sgmnt (10 ⁻³ kgm ²)			103				130				168			484			1028			4107		
Speed max.	(rpm)		8500				6800				6300			5000			4000			3600		
Allowable max. radial force standard*	(KN)		10				14				20			40			60			80		
Approx. weight at D max. + max. sgmnt	(kg)		21				25				28			55			86			196		

* larger radial loads possible with special bearings

STR

WITH SIMPLE KEYWAY MOUNTING, ROBUST

11,000 - 250,000 Nm



PROPERTIES

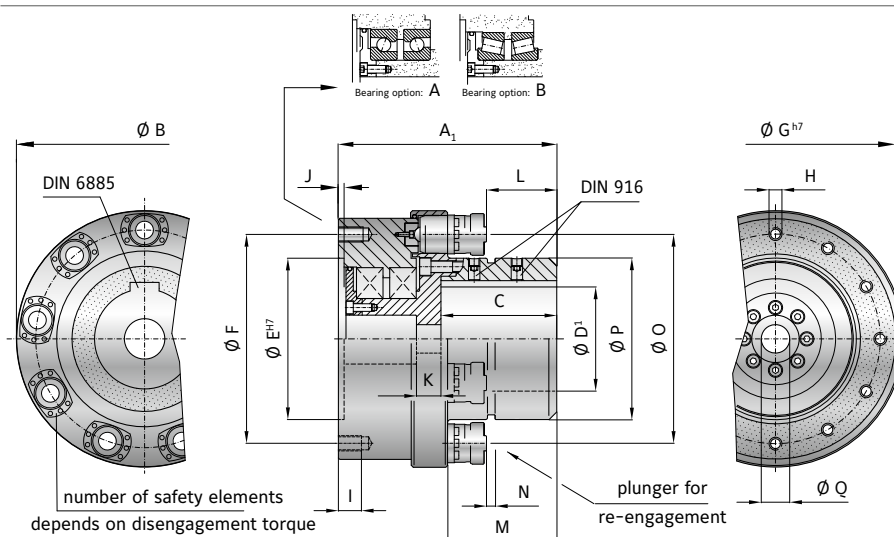
MATERIAL

Hardened steel (nitrocarburized surface)

DESIGN

- Drive side: coupling hub with keyway connection (spline profile on request)

- Driven side: Output flange with attachment threads and reinforced bearings.
- Safety elements: evenly spaced around the circumference; externally adjustable



SAFETY COUPLINGS
ST

MODEL STR | SIZE 60 - 250

SIZE			60			100			160			250	
Adjustment range available from - to (KNm)			11-18	22-36	30-55	24-50	45-90	80-110	25-55	50-110	80-165	100-170	160-250
			3×ST31	6×ST31	9×ST31	3×ST71	6×ST71	9×ST71	3×ST71	6×ST71	9×ST71	8×ST71	12×ST71
Overall length (mm)	A ₁		380			470			490			600	
Outside diameter (mm)	B		459			592			648			740	
Fit length (mm)	C		220			275			282			361	
Bore diameter possible Ø to Ø F7 (mm)	D		80-200			100-250			130-290			200-340	
Flange centering diameter H7 (mm)	E		300			390			450			508	
Bolt circle diameter ±0.3 (mm)	F		360			464			570			600	
Flange outside diameter h7 (mm)	G		418			530			618			680	
Fastening threads (mm)	H		12xM20			12xM24			12xM24			12xM36	
Thread depth (mm)	I		36			40			44			60	
Fit length (mm)	J		9			10			11			12	
Wall thickness (mm)	K		53.5			67.0			67.0			78.0	
Distance (mm)	L		143			179			189			273	
Distance (mm)	M		202.5			255			265			349	
Actuation path (mm)	N		7.5			10			10			10	
Mounting diameter - elements (mm)	O		376			490			532			630	
Hub outside diameter (mm)	P		295			380			420			508	
Bore for fastening screw (mm)	Q		max. Ø 44			max. Ø 44			max. Ø 52			max. Ø 52	
Moment of inertia (approx.) D max. + max. sgmnt (10 ⁻³ kgm ²)			5925			20000			31830			61300	
Speed max. (rpm)			3200			2200			2000			1800	
Allowable max. radial force standard* (KN)			100			130			200			240	
Approx. weight at D max. + max. sgmnt (kg)			244			502			636			978	

* larger radial loads possible with special bearings

PROPERTIES

MATERIAL

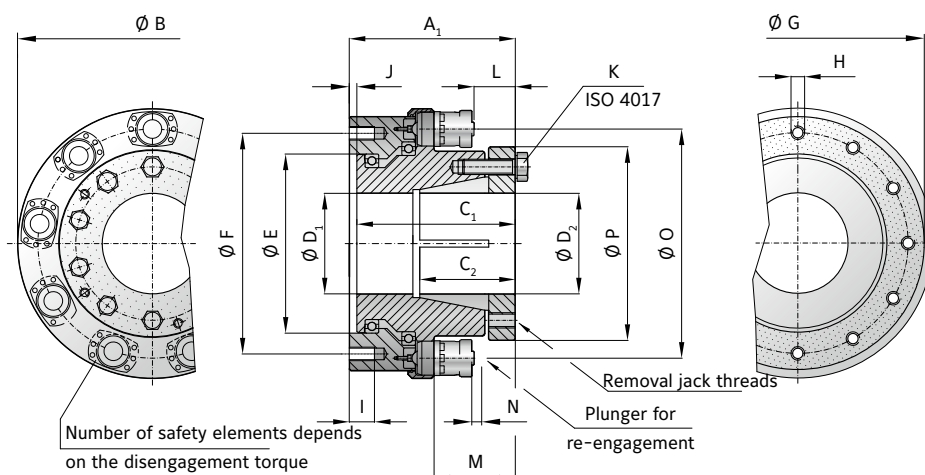
Hardened steel (nitrocarburized surface)

DESIGN

► Drive side: coupling hub with conical clamping bushing connection (spline profile on request)

► Driven side: output flange with 12x fastening threads and integral bearings

► Safety elements: evenly spaced around the circumference; externally adjustable



MODEL STN | SIZE 2 - 5

SIZE			2			5		
Adjustment range available from - to	(KNm)		0.2-0.5	0.5-1.0	1.0-1.5	0.7-2	1.2-4	3.2-5
			3×ST10	6×ST10	6×ST10	3× ST15	6× ST15	6× ST15
Overall length	(mm)	A ₁	124.5			160		
Flange outside diameter	(mm)	B	198			220		
Fit length / keyway length	(mm)	C ₁	118			155		
Effective clamping length	(mm)	C ₂	45			82		
Bore diameter possible Ø to Ø F7	(mm)	D ₂	45-70			40-80		
Bore diameter max. Ø F7 with keyway	(mm)	D ₂	60			70		
Flange centering diameter H7	(mm)	E	132			145		
Bolt circle diameter ±0.3	(mm)	F	162			170		
Outside diameter h7	(mm)	G	192			209		
Fastening threads	(mm)	H	12×M10			12×M12		
Thread depth	(mm)	I	15			20		
Fit length	(mm)	J	3			4		
Tightening screw ISO 4017		K	6×M10			6×M10		
Tightening torque	(Nm)		59			59		
Distance	(mm)	L	18			26.5		
Distance	(mm)	M	56			76.5		
Actuation path	(mm)	N	3.5			4.5		
Mounting diameter - elements	(mm)	O	154			170		
Hub outside diameter	(mm)	P	119			136		
Moment of inertia (approx.) D max. + max. sgmnt	(10 ⁻³ kgm ²)		77			151		
Speed max.	(rpm)		7000			6000		
Allowable max. radial force standard*	(KN)		5			10		
Approx. weight at D max. + max. sgmnt	(kg)		15			24		

* larger radial loads possible with special bearings

PROPERTIES

MATERIAL

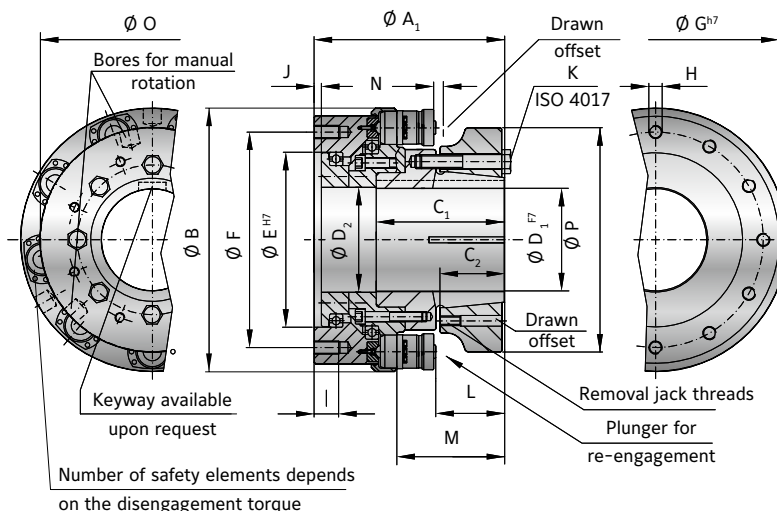
Hardened steel (nitrocarburized surface)

DESIGN

► Drive side: coupling hub with conical clamping ring connection (spline profile on request)

► Driven side: output flange with 12x fastening threads and integral bearings

► Safety elements: evenly spaced around the circumference; externally adjustable



MODEL STN | SIZE 10 - 160

SIZE		10			25			40			60			160		
Adjustment range available from - to (KNm)		2-5	4-10	6-14	6-12	9-18	15-25	12-21	22-32	32-45	11-18	22-36	30-55	25-55	50-110	80-165
		3×ST15	6×ST15	9×ST15	6×ST15	9×ST15	12×ST15	6×ST30	6×ST30	9×ST30	3×ST30	6×ST30	9×ST30	3×ST70	6×ST70	9×ST70
Overall length	(mm)	A ₁	210			227			286			318			425	
Flange outside diameter	(mm)	B	270			318			428			459			648	
Fit length / keyway length	(mm)	C ₁	147			152			191			218			305	
Effective clamping length	(mm)	C ₂	62			67			93.5			93			125	
Bore diameter possible Ø to Ø F7	(mm)	D ₁	65-110			70-150			110-170			80-200			140-290	
Bore diameter max. Ø F7 with keyway	(mm)	D ₁	100			140			160			180			270	
Flange centering diameter H7	(mm)	E	170			210			270			300			450	
Bolt circle diameter ±0.3	(mm)	F	220			260			330			360			570	
Outside diameter h7	(mm)	G	259			298			380			418			618	
Fastening threads	(mm)	H	12xM16			12xM16			12xM20			12xM20			12xM24	
Thread depth	(mm)	I	25			30			36			35			40	
Fit length	(mm)	J	6			8			9			8			11	
Tightening screw ISO 4017		K	8xM16			9xM16			11xM16			8xM20			8xM24	
Tightening torque	(Nm)		180			180			180			570			710	
Distance	(mm)	L	72			80			82.5			94			151	
Distance	(mm)	M	122			127			151			163			240	
Actuation path	(mm)	N	4			4			8			7.5			10	
Mounting diameter - elements	(mm)	O	220			270			350			376			532	
Hub outside diameter	(mm)	P	218			278			322			378			535	
Moment of inertia (approx.) D max. + max. sgmnt (10 ⁻³ kgm ²)			446			789			3570			5700			30700	
Speed max.	(rpm)		4200			3800			3000			2500			2000	
Allowable max. radial force standard*	(KN)		20			30			40			50			100	
Approx. weight at D max. + max. sgmnt	(kg)		50			65			166			200			550	

* larger radial loads possible with special bearings



WITH FLANGE MOUNTING

200 - 45,000 Nm



NEW

PROPERTIES

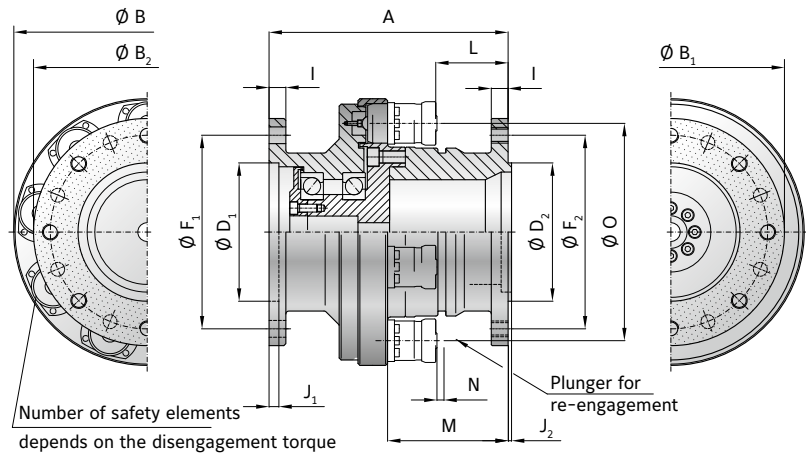
MATERIAL

Hardened steel (nitrocarburized surface)

DESIGN

► Drive side: Coupling hub with flange mounting

- Driven side: Mounting flange with fastening threads and integral bearing
- Safety elements: evenly spaced around the circumference; externally adjustable



MODEL STF | SIZE 2 - 40

SIZE			2			5			10			25			40		
Adjustment range available from to	(KNm)		0.2-0.5	0.5-1.0	1.0-1.5	0.7-2	1.2-4	3.2-5	2-5	4-10	6-14	6-12	9-18	15-25	12-21	22-32	32-45
			3×ST10	6×ST10	6×ST10	3×ST15	6×ST15	6×ST15	3×ST15	6×ST15	9×ST15	6×ST15	9×ST15	12×ST15	3×ST31	6×ST31	9×ST31
Overall length	(mm)	A	190			230			250			280			320		
Major outside diameter	(mm)	B	198			220			270			318			428		
Flange outside diameter	(mm)	B ₁	170			188			230			268			340		
Flange outside diameter	(mm)	B ₂	170			188			230			306			390		
Flange centering diameter H7	(mm)	D ₁	90			110			140			174			210		
Flange centering diameter h7	(mm)	D ₂	90			110			140			200			210		
Hole circle diameter	(mm)	F ₁	130			155.5			196			220			304		
Through hole diameter	(mm)	F ₁	8×Ø13			8×Ø15			8×Ø17			12×Ø19			16×Ø22		
Bolt circle diameter	(mm)	F ₂	130			155.5			196			270			350		
Thread size	(mm)	F ₂	8xM12			8xM14			8xM16			12xM18			16xM20		
Flange thickness	(mm)	I	14			17.5			20			22			25		
Fit length	(mm)	J ₁	3			4			5			5			6		
Fit length	(mm)	J ₂	2.5			3			3.5			4			4		
Distance	(mm)	L	45			63.5			75			83.5			105.5		
Distance	(mm)	M	83			113.5			125			124.5			165		
Actuation path	(mm)	N	3.5			4.5			4.5			4.5			7.5		
Moment of inertia (approx.) D max. + max. sgmnt	(10 ⁻³ kgm ²)	J.kst	83			150			380			830			3300		
Speed max.	(rpm)		9000			7500			6300			5000			3600		
Allowable max. radial force standard*	(KN)		7			12			17			22			30		
Approx. weight at D max. + max. sgmnt	(kg)	m.kst	20			30.4			50.3			73			180		

* larger radial loads possible with special bearings



NEW: ATEX

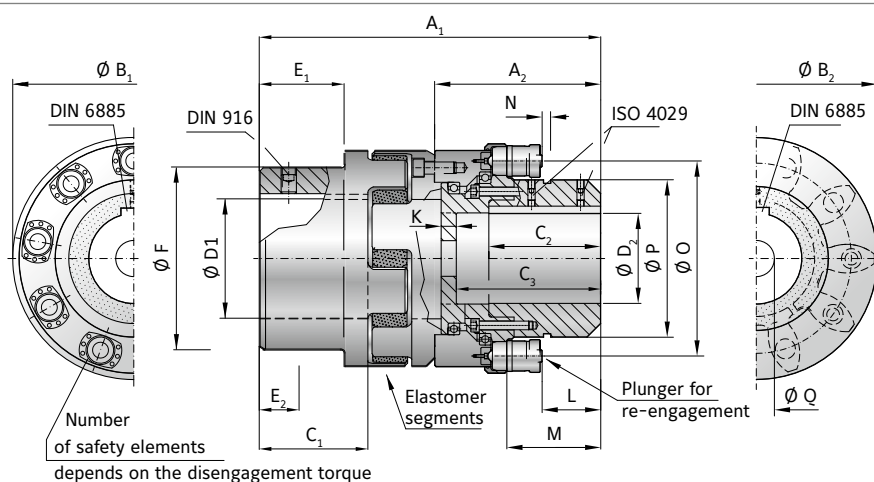
PROPERTIES

MATERIAL

- **Clutch segment:** hardened steel (nitrocarburized surface)
- **Elastomer segment:** TPU in various Shore hardnesses
- **Jaw coupling segments:** GGG40

DESIGN

- Drive side: coupling hub with simple keyway mounting
- Driven side: coupling hub with simple keyway mounting and elastomer segments
- Safety elements: evenly spaced around the circumference; externally adjustable



MODEL STE | SIZE 2 - 10

SIZE		2			4			5			10		
Adjustment range available from to (KNm)		0.2-0.5 3×ST11	0.5-1.0 6×ST11	1.0-1.5 6×ST11	0.6-0.9 3×ST11	1.1-1.7 6×ST11	1.6-2.6 9×ST11	0.7-2 3×ST16	1.2-4 6×ST16	3.2-5 6×ST16	2-5 3×ST16	4-10 6×ST16	6-14 9×ST16
Elastomer coupling size		2500			2500			4500			9500		
Elastomer insert type		A / B / D			A / B / D			A / B / D			A / B / D		
Overall length ±2 (mm)	A ₁	312			360			373			460		
Length of torque limiting portion (mm)	A ₂	170			198			190			230		
Flange outside diameter (ST portion) (mm)	B ₁	198			211			220			270		
Flange outside diameter (elastomer portion) (mm)	B ₂	160			160			225			290		
Fit length/keyway length D1 (mm)	C ₁	88			88			113			142		
Fit length/keyway length D2 (mm)	C ₂	85			120			100			122		
Bore depth (torque limiting portion) (mm)	C ₃	95			120			111			122		
Bore diameter (elastomer portion) Ø - Ø F7 (mm)	D ₁	30-95			30-95			40-130			50-170		
Bore diameter (torque limiting portion) Ø - Ø F7 (mm)	D ₂	30-80			40-100			40-90			40-110		
Length (mm)	E ₁	69			69			89			110		
Length (mm)	E ₂	36			36			47			57		
Hub diameter (mm)	F	154			154			190			240		
Wall thickness (mm)	K	16			20			24			32		
Distance (mm)	L	50			81.5			56			74		
Distance (mm)	M	81			112.5			97			115		
Actuation path (mm)	N	3.5			3.5			4.5			4.5		
Mounting diameter - elements (mm)	O	154			174			171			220		
Hub outside diameter (mm)	P	112			138			122			170		
Bore for fastening screw (mm)	Q	max Ø17			max Ø22			max Ø25			max Ø26		
Moment of inertia (approx.) D max. + max. sgmnt (10 ⁻³ kgm ²)		145			172			337			1145		
Speed max. (rpm)		8500			6800			6300			5000		
Approx. weight at D max. + max. sgmnt (kg)		35			39			47			110		
Axial (mm)		± 3			± 3			± 4			± 5		
Lateral Elastomer insert type A / B (mm)		0.5 / 0.3			0.5 / 0.3			0.5 / 0.3			0.6 / 0.4		
Angular Elastomer insert type A / B (degree)		1.5 / 1.0			1.5 / 1.0			1.5 / 1.0			1.5 / 1.0		
Dynamic torsional stiffness at T _{KN} (Elastomer insert type A / B) (10 ³ Nm/rad)		175 / 216			175 / 216			337 / 743			1180 / 1340		

For technical information about the elastomer insert segments see page 97.

ST2

WITH SIMPLE KEYWAY MOUNTING

200 – 25,000 Nm

**NEW: ATEX**

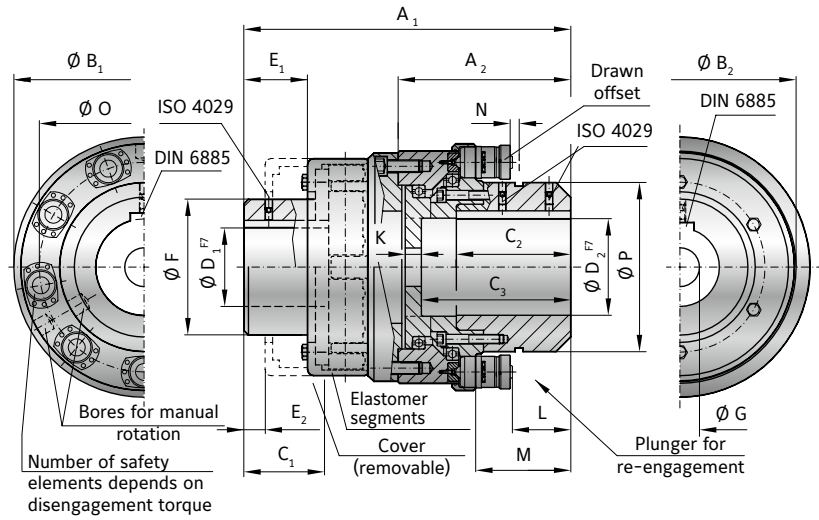
PROPERTIES

MATERIAL

- **Safety coupling portion:** hardened steel (nitrocarburized surface)
- **Elastomer segments:** precision molded, wear resistant rubber compound (75-80 Shore A)
- **Elastomer coupling:** hubs made from coated high strength cast steel

DESIGN

With keyway connection (spline profile on request). Elastomer segments compensate for misalignment and absorb vibration. Safety elements evenly spaced around the circumference. Field adjustable within the specified range.



MODEL ST2 | SIZE 2 - 25

SIZE			2			5			10			25		
Adjustment range available from - to (KNm)			0.2-0.5	0.5-1.0	1.0-1.5	0.7-2	1.2-4	3.2-5	2-5	4-10	6-14	6-12	9-18	15-25
			3×ST10	6×ST10	6×ST10	3×ST15	6×ST15	6×ST15	3×ST15	6×ST15	9×ST15	6×ST15	9×ST15	12×ST15
Overall length ±2 (mm)	A ₁		264			313			360			437		
Length of torque limiting portion (mm)	A ₂		120			150			183			230		
Flange outside diameter (ST portion) (mm)	B ₁		198			220			270			318		
Flange outside diameter (elastomer portion) (mm)	B ₂		221			250			290			330		
Fit length/keyway length D1 (mm)	C ₁		82			89			97			116		
Fit length/keyway length D2 (mm)	C ₂		100			121			120			155		
Bore depth (torque limiting portion) (mm)	C ₃		100			124			158			200		
Bore diameter (elastomer portion) Ø - Ø F7 (mm)	D ₁		30-80			40-100			40-105			60-130		
Bore diameter (torque limiting portion) Ø - Ø F7 (mm)	D ₂		30-75			40-90			40-110			60-140		
Length to cover (mm)	E ₁		65			70			70			87		
Length to (cover removed) (mm)	E ₂		24			23			22			26		
Hub diameter (mm)	F		130			145			160			200		
Bore for fastening screw (mm)	G		max. Ø 75			max. Ø 90			max. Ø 110			max. Ø 140		
Distance (mm)	L		10.5			16.5			45			80		
Distance (mm)	M		51.5			66.5			95			130		
Actuation path (mm)	N		3.5			4.0			4			4		
Mounting diameter - elements (mm)	O		154			171			220			270		
Hub outside diameter (mm)	P		104			120			170			218		
Moment of inertia (approx.) D max. + max. sgmnt (10 ⁻³ kgm ²)			152			289			854			1850		
Speed max. (rpm)			3400			3000			2400			2000		
Approx. weight at D max. + max. sgmnt (kg)			29			43.7			93			115		
Axial (mm)			1.5			1.5			1.5			1.5		
Lateral (mm)			0.3			0.4			0.4			0.5		
Angular (degree)			1			1			1			1		
Dynamic torsional stiffness at T _{KN} (Standard A Insert) (10 ³ Nm/rad)			58			92			145			230		

* larger bore diameters upon request. | For technical information about the elastomer insert segments see page 29.

ST2

WITH SIMPLE KEYWAY MOUNTING

12,000 – 165,000 Nm



NEW: ATEX

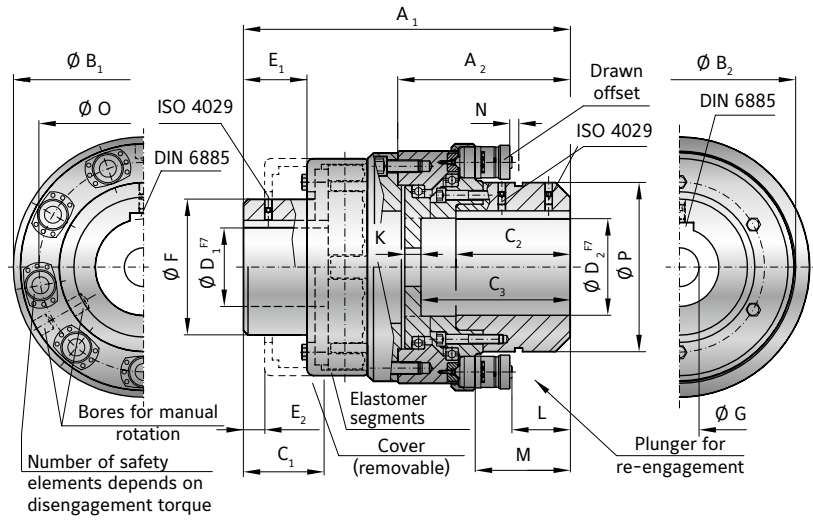
PROPERTIES

MATERIAL

- **Safety coupling portion:** hardened steel (nitrocarburized surface)
- **Elastomer segments:** precision molded, wear resistant rubber compound (75-80 Shore A)
- **Elastomer coupling:** hubs made from coated high strength cast steel

DESIGN

With keyway connection (spline profile on request). Elastomer segments compensate for misalignment and absorb vibration. Safety elements evenly spaced around the circumference. Field adjustable within the specified range.



SAFETY COUPLINGS
ST

MODEL ST2 | SIZE 40 - 160

SIZE		40			60			100			160		
Adjustment range available from - to (KNm)		12-21	22-32	32-45	11-18	22-36	30-55	24-50	45-90	80-110	25-55	50-110	80-165
		6×ST30	6×ST30	9×ST30	3×ST 30	6×ST 30	9×ST 30	3×ST70	6×ST70	9×ST70	3×ST70	6×ST70	9×ST70
Overall length ±2 (mm)	A ₁	565			580			716			730		
Length of torque limiting portion (mm)	A ₂	305			320			396			410		
Flange outside diameter (ST portion) (mm)	B ₁	428			459			592			648		
Flange outside diameter (elastomer portion) (mm)	B ₂	432			432			553			553		
Fit length/keyway length D1 (mm)	C ₁	160			160			230			230		
Fit length/keyway length D2 (mm)	C ₂	170			220			280			290		
Bore depth (torque limiting portion) (mm)	C ₃	210			275			280			360		
Bore diameter (elastomer portion) Ø - Ø F7 (mm)	D ₁	90-170			80-160			100-200			100-200		
Bore diameter (torque limiting portion) Ø - Ø F7 (mm)	D ₂	90-170			80-200			100-250			100-290		
Length to cover (mm)	E ₁	113			112			152			152		
Length to (cover removed) (mm)	E ₂	39			39			65			65		
Hub diameter (mm)	F	255			255			300			300		
Bore for fastening screw (mm)	G	max. Ø 144			max. Ø 200			max. Ø 216			max. Ø 290		
Distance (mm)	L	102			99			128			135		
Distance (mm)	M	170			167			218			225		
Actuation path (mm)	N	7.5			7.5			10			10		
Mounting diameter - elements (mm)	O	350			376			490			532		
Hub outside diameter (mm)	P	265			295			380			418		
Moment of inertia (approx.) D max. + max. sgmnt (10 ⁻³ kgm ²)		6010			8960			21890			36858		
Speed max. (rpm)		1800			1800			1500			1500		
Approx. weight at D max. + max. sgmnt (kg)		271			287			642			729		
Axial (mm)		2			2			2.5			2.5		
Lateral (mm)		0.6			0.6			0.7			0.7		
Angular (degree)		1			1			1			1		
Dynamic torsional stiffness at T _{KN} (Standard A Insert) (10 ³ Nm/rad)		500			580			850			1000		

* larger bore diameters upon request. | For technical information about the elastomer insert segments see page 29.

ST4

WITH SIMPLE KEYWAY MOUNTING

200 – 25,000 Nm



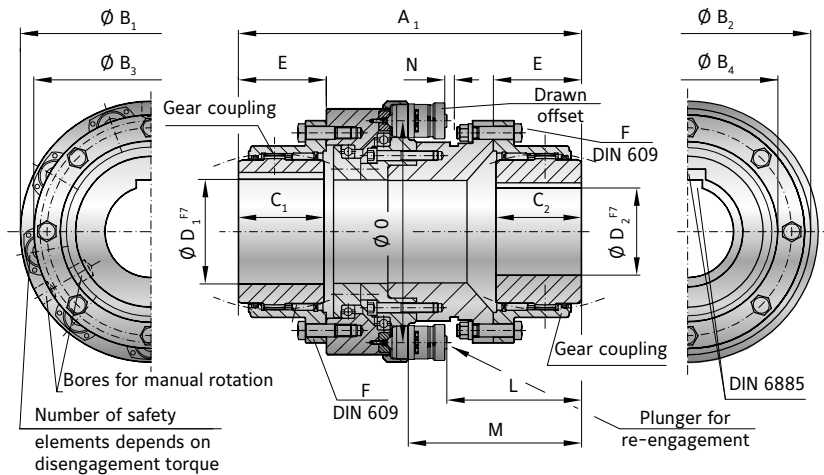
PROPERTIES

MATERIAL

- **Safety coupling portion:** hardened steel (nitrocarburized surface)
- **Gear coupling portion:** wear resistant high strength alloy steel (nitrocarburized surface)

DESIGN

With keyway connection (spline profile on request). Gear coupling for misalignment compensation. Safety elements evenly spaced around the circumference. Field adjustable within the specified range.



MODEL ST4 | SIZE 2 - 25

SIZE			2			5			10			25		
Adjustment range available from - to	(kNm)		0.2-0.5	0.5-1.0	1.0-1.5	0.7-2	1.2-4	3.2-6	2-5	4-10	6-14	6-12	9-18	15-25
			3×ST10	6×ST10	6×ST10	3×ST15	6×ST15	6 ST15	3×ST15	6×ST15	9×ST15	6×ST15	9× ST15	12×ST15
Overall length	(mm)	A ₁	280			350			390			460		
Flange outside diameter (ST portion)	(mm)	B ₁	198			220			270			318		
Mounting flange outside diameter (ST portion)	(mm)	B ₂	192			209			259			300		
Flange outside diameter (gear coupling)	(mm)	B ₃	168			200			225			265		
Hub diameter (gear coupling)	(mm)	B ₄	130.5			158.4			183.4			211.5		
Fit length/keyway length	(mm)	C _{1/2}	62			76			90			105		
Bore diameter Ø to Ø F7	(mm)	D _{1/2}	30-78			32-98			42-112			46-132		
Length	(mm)	E	63.5			78.5			92.5			108		
Screw	(mm)	F	6×M8			10×M12			12×M12			12×M16		
Tightening torque	(mm)		18			65			65			150		
Distance	(mm)	L	110			138			159.5			202		
Distance	(mm)	M	148			188			209.5			252		
Actuation path	(mm)	N	3.5			4.5			4.5			4.5		
Mounting diameter - elements	(mm)	O	154			171			220			270		
Moment of inertia (approx.) D max. + max. sgmnt	(10 ⁻³ kgm ²)		108			244			529			1117		
Speed max.	(rpm)		4000			3900			3700			3550		
Approx. weight at D max. + max. sgmnt	(kg)		25			45			65			100		
Axial	(mm)		1.5			2.5			2.5			3		
Angular	(Degrees)		2×0.35°			2×0.35°			2×0.35°			2×0.35°		

* larger bore diameters upon request. | For technical information about the gear coupling segments see page 19.

ST4

WITH SIMPLE KEYWAY MOUNTING

12,000 - 250,000 Nm



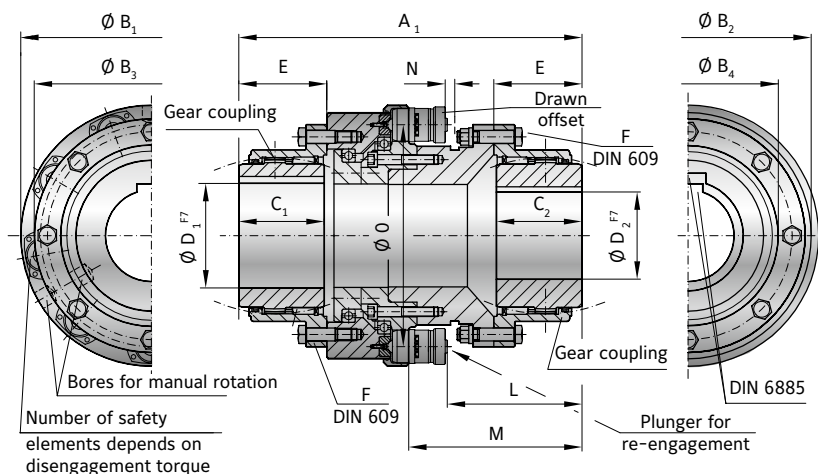
PROPERTIES

MATERIAL

- **Safety coupling portion:** hardened steel (nitrocarburized surface)
- **Gear coupling portion:** wear resistant high strength alloy steel (nitrocarburized surface)

DESIGN

With keyway connection (spline profile on request). Gear coupling for misalignment compensation. Safety elements evenly spaced around the circumference. Field adjustable within the specified range.



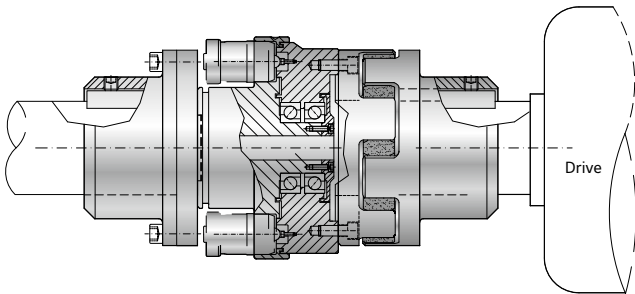
SAFETY COUPLINGS
ST

MODEL ST4 | SIZE 40 - 250

SIZE			40			60			100			160			250	
Adjustment range available from - to	(kNm)		12-21	22-32	32-45	11-18	22-36	30-55	24-50	45-90	80-110	25-55	50-110	80-165	100-170	160-250
			6×ST30	6×ST30	9×ST30	3×ST30	6×ST30	9×ST30	3×ST70	6×ST70	9×ST70	3×ST70	6×ST70	9×ST70	8×ST71	12×ST71
Overall length	(mm)	A ₁	580			650			780			860			1060	
Flange outside diameter (ST portion)	(mm)	B ₁	428			459			592			648			740	
Mounting flange outside diameter (ST portion)	(mm)	B ₂	399			418			560			618			724	
Flange outside diameter (gear coupling)	(mm)	B ₃	330			370			438			525			639	
Hub diameter (gear coupling)	(mm)	B ₄	275.5			307			367			423			553	
Fit length/keyway length	(mm)	C _{1/2}	135			150			190			220			290	
Bore diameter Ø to Ø F7	(mm)	D _{1/2}	60-174			70-190			110-233			120-280			200-340	
Length	(mm)	E	139			154			194			225			296	
Screw	(mm)	F	14×M16			14×M18			14×M22			16×M24			22×M24	
Tightening torque	(mm)		150			220			400			520			670	
Distance	(mm)	L	238			275			318			360			458	
Distance	(mm)	M	306			343			408			450			534	
Actuation path	(mm)	N	8			8			10			10			10	
Mounting diameter - elements	(mm)	O	350			376			490			532			630	
Moment of inertia (approx.) D max. + max. sgmnt	(10 ⁻³ kgm ²)		4363			6650			20611			33820			84926	
Speed max.	(rpm)		2750			2420			1950			1730			950	
Approx. weight at D max. + max. sgmnt	(kg)		225			293			570			718			1280	
Axial	(mm)		4			4			4			5			6	
Angular	(Degrees)		2×0.35°			2×0.35°			2×0.35°			2×0.35°			2×0.35°	

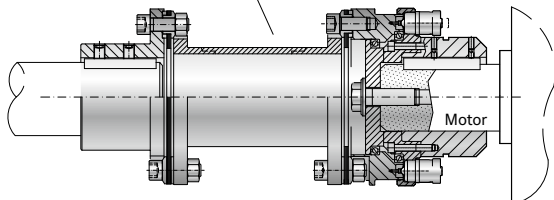
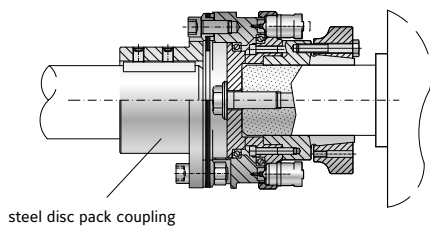
* larger bore diameters upon request. | For technical information about the gear coupling segments see page 19.

SAFETY COUPLINGS - FURTHER POSSIBILITIES



FOR EXTRUDER APPLICATIONS

- ▶ with elastic jaw coupling
- ▶ precise overload protection
- ▶ removable center section for lateral mounting

WITH TORSIONALLY STIFF
DISC PACK COUPLING

- ▶ single or double flex
- ▶ high torsional stiffness
- ▶ disc packs from highly elastic spring steel

WITH TORSIONALLY STIFF
BELLOWS COUPLING

- ▶ with clamping hubs, keyway mounting or flange mounting
- ▶ compensation for misalignment
- ▶ bellows made from highly elastic stainless steel



FOR HIGH SPEED APPLICATIONS

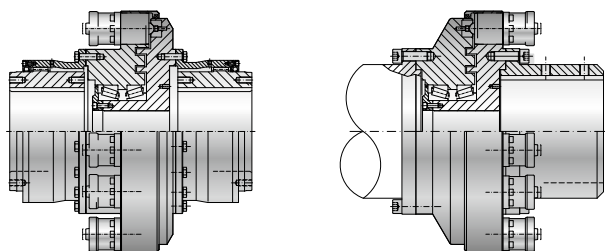
- ▶ integral ball-plunger system
- ▶ extremely compact with a low moment of inertia
- ▶ balanced for high speed



**BUREAU
VERITAS**

BUREAU VERITAS CERTIFIED

- ▶ for inland and offshore applications
- ▶ customized solutions
- ▶ rugged and special design for direct use in ship powertrains



MORE DESIGNS AVAILABLE

- ▶ for 1,000,000 Nm and more
- ▶ customer specified solutions
- ▶ for all branches and industries

TORQSET® SAFETY COUPLINGS ACCESSORIES

PROPERTIES

MATERIAL

Hardened steel (nitrocarburized surface)

DESIGN

Two part assembly for installation into prefabricated coupling components.

Part 1: detent receptacle

Part 2: self-contained, spring loaded plunger module.

The spring force setting is adjustable in the field, with the settings clearly marked on an adjustment scale.

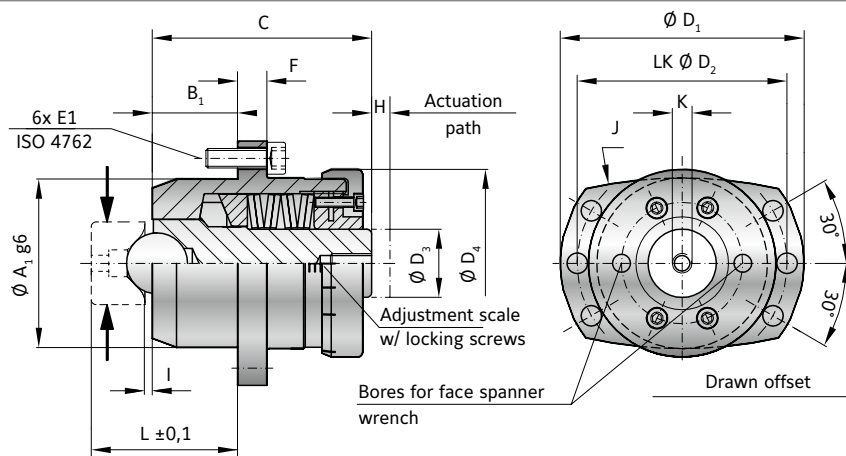
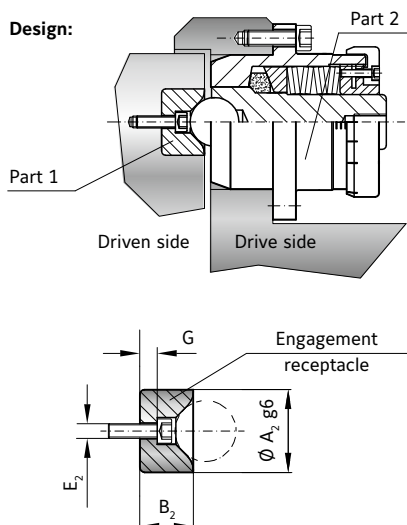
FIT TOLERANCE

For insertion of the safety elements H7 precision holes should be used for all centered components.

RE-ENGAGEMENT

When properly located over the detent receptacle the safety element can be re-engaged through the application of pressure to the back side of the plunger core.

Design:



MODEL ST | SIZE 10 - 70

SIZE		10	15	30	70
Tangential force (KN) Adjustment range available from - to (ranges)	1	0.8-2.2	1-4	5-10	8-20
	2	-	2-8	10-20	15-40
	3	2.0-3.3	6-20	20-30	30-70
Centering diameter of safety element g6 (mm)	A ₁	28	40	70	90
Centering diameter engagement receptacle g6 (mm)	A ₂	18	24	34	44
Centering length of safety element (mm)	B ₁	15	20	35	45
Centering length engagement receptacle (mm)	B ₂	13.5	14	22	30
Overall length (mm)	C	56	70	103	135
Outside diameter (mm)	D ₁	45	59	100	129
Bolt circle diameter (mm)	D ₂	37.5	50	86	110
Diameter plunger (mm)	D ₃	8	16	28	35
Diameter adjustment nut (mm)	D ₄	32	44	75	92
Screw / Tightening torque ISO 4762 (mm)	E ₁	6 x M4 x 12 / 4.5 Nm	6 x M5 x 16 / 10 Nm	6 x M8 x 25 / 40 Nm	6 x M12 x 35 / 120 Nm
Screw / Tightening torque ISO 4762 (mm)	E ₂	M3 x 20 4.5 Nm	M4 x 14 4.5 Nm	M6 x 20 15.5 Nm	M8 x 25 38 Nm
Flange thickness (mm)	F	5	7	12	16
Distance (mm)	G	6.5	5	8	10
Actuation path (mm)	H	3	4	7.5	10
Distance (mm)	I	1.5	2	3	4
Radius (mm)	J	100	110	200	250
Inner thread (mm)	K	M5 x 10	M8 x 15	M10 x 25	M16 x 30
Distance ± 0,1 (mm)	L	30	36	60	79
Weight (kg)		0.26	0.65	2.7	6

axial spring force = tangential force/1.4

ORDERING EXAMPLE	ST	30	2	12	XX
Model	●				
Size		●			
Adjustment range 1/2/3			●		
Tangential force (KN)				●	
For custom features place an XX at the end of the part number and describe the special requirements (e.g. ST / 30 / 2 / 12 / XX)					

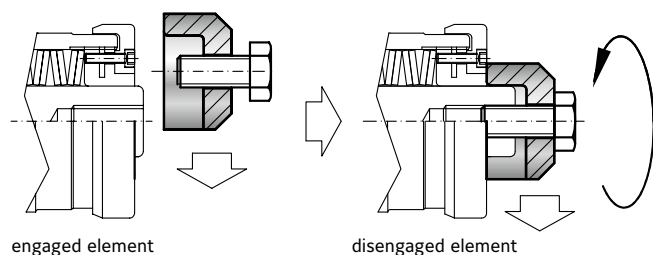
Special designation only (e.g. stainless steel)

ACCESSORIES ST

TORQSET® SAFETY COUPLINGS

ENGAGEMENT AND DISENGAGEMENT

ST

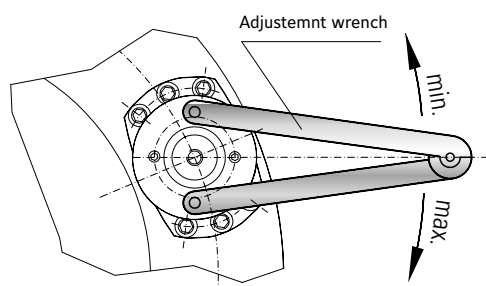


ORDER NUMBER

SIZE	ENGAGEMENT / DISENGAGEMENT TOOL
10	Order number AV / 0010
15	Order number AV / 0015
30	Order number AV / 0030
70	Order number AV / 0070

ADJUSTMENT WRENCH

ST

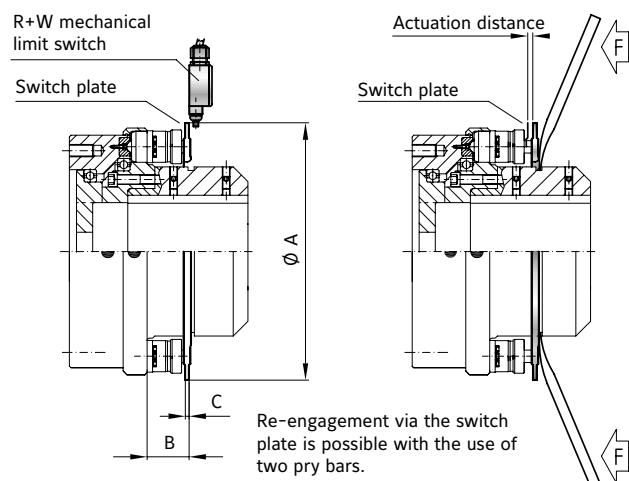


ORDER NUMBER

SIZE	ADJUSTMENT WRENCH
10	Order number SLS / 0010
15	Order number SLS / 0015
30	Order number SLS / 0030
70	Order number SLS / 0070

SWITCH PLATE

ST



Switch plates are available on request for all sizes and SIZES.

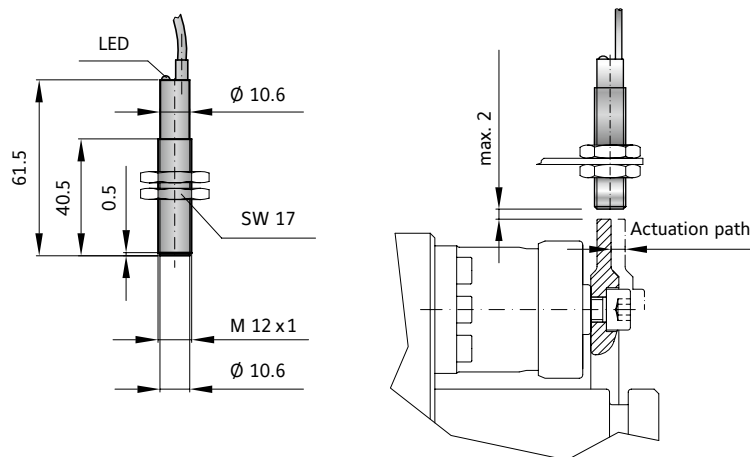
Contact R+W for more information.

ACCESSORIES ST

TORQSET® SAFETY COUPLINGS

PROXIMITY SWITCH

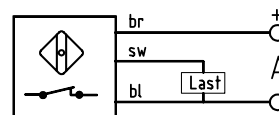
ST



ORDER NUMBER 650.2703.001

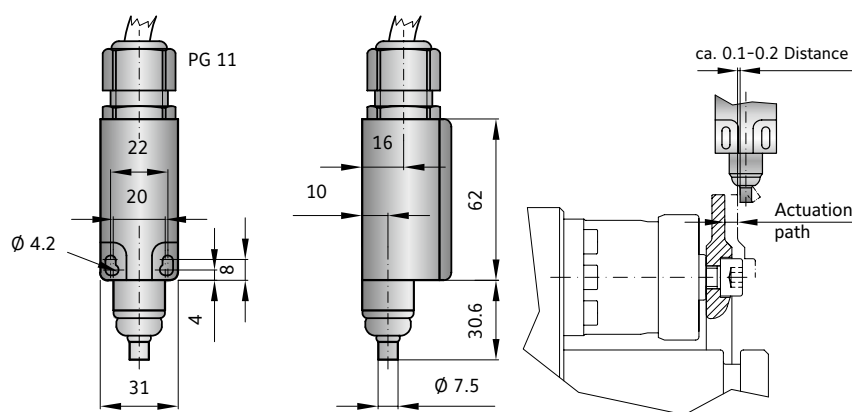
TECHNICAL DATA	ST
Voltage	10 to 30 V DC
Max. output current	200 mA
Max. switch frequency	800 KHz
Temperature range	-25° to +70° C
Protective system	IP 67
Switch type	normally open
Max. detection gap	max. 2 mm

SWITCH DIAGRAM ST



MECHANICAL LIMIT SWITCH

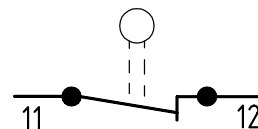
ST



ORDER NUMBER 618.6740.644

TECHNICAL DATA	ST
Max. voltage	250 V AC
Max. constant current	2.5h A
Protective system	IP 65
Contact system	Opener (forced separating)
Temperature range	-30° to +80° C
Actuation	Plunger (metal)

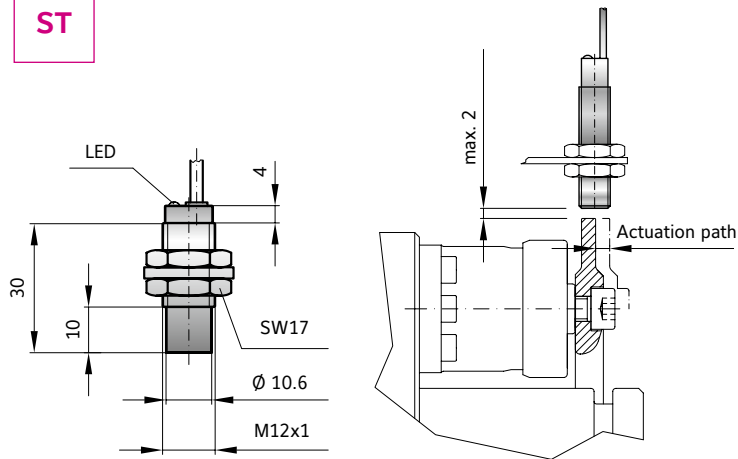
SWITCH DIAGRAM ST



The switch plunger (pictured above and right) should be located as close to the actuation ring / limit switch plate as possible (approximately 0.1-0.2mm).

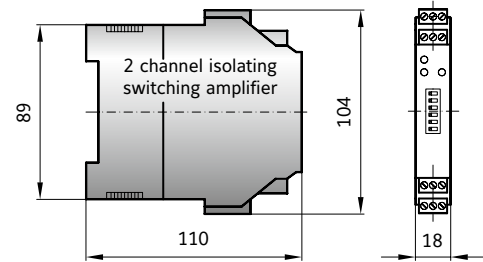
ATEX LIMIT SWITCH

ST

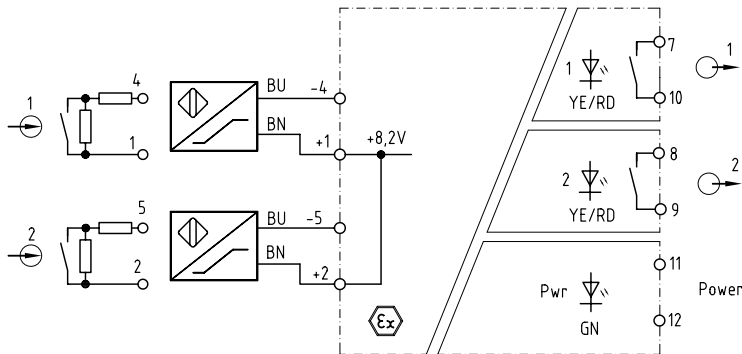


ORDER NUMBER

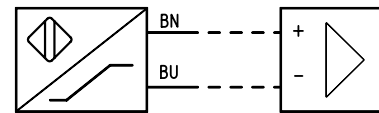
EEX. 1624.004



SAFETY COUPLINGS
ST



SWITCH DIAGRAM



Technical data on request.