



VOITH

Torque-limiting Couplings

SafeSet, SmartSet and AutoSet





We are the experts in torque-limiting and connection couplings within Voith Turbo.

Voith Turbo, the specialist for hydrodynamic drive, coupling and braking systems for road, rail and industrial applications, as well as for ship propulsion systems, is a Group Division of Voith GmbH.

Voith sets standards in the markets energy, oil & gas, paper, raw materials and transportation & automotive. Founded in 1867, Voith employs almost 40 000 people, generates Euro 5.6 billion in sales, operates in about 50 countries around the world and is today one of the biggest family-owned companies in Europe.



The History of Voith Turbo Safeset

The history of Safeset began in 1972 at the KTH Royal Institute of Technology in Stockholm, where Curt Falk was studying. Curt constructed a miniature rolling mill. Therefore he needed a quick and reliable solution for connecting and fixing the roll neck. The result was that he developed an adjustable shrink connector (now called HyGrip) which was later developed into a torque limiter.

The old method of torque limitation with shear pins was not reliable enough. Curt's idea for creating a more reliable coupling was based on a permanent connection with a safety function – later called SafeSet.

In order to develop the invention into a commercial product, Curt rented a workshop to bring SafeSet to completion.

In 1978, Curt Falk took out a patent on the first SafeSet model.

In 1981, both patent and product were transferred to the company Metallform Safeset AB.

In 1982, production of SafeSet product began in Hudiksvall, 270 km north of Stockholm. At first the number of employees was just five persons, including Curt.

In 1987, sales of the SmartSet design began. This was a further development of the SafeSet principle and the first process improvement product.

In 1988, sales of AutoSet design began. The first process improvement product with fully automatic resetting capability.

In 1992, the German Voith Group bought the company. The company changed its name to Voith Turbo Safeset AB and the SafeSet product then became well-known in all the main industrialized countries of the world.

In 1997, a new factory in Hudiksvall was built.

2000 saw the development of HyCon, a tapered sleeve coupling with a high friction coating (HFC).

In 2011, the factory was again extended to include a new office section. The facility now consists of a workshop area of 1 700 m² and offices of 800 m². The company has more than 85 employees in Hudiksvall and around a further 25 employees in subsidiaries throughout the world.



Torque Limitation and Process Improvement

SafeSet, SmartSet, AutoSet

Harsh conditions of your production and high availability requirements. Production downtime, that costs a lot. It puts high performance demands on your drivetrain. You do not want a torque limiter that release unnecessarily. But above all, you do not want your drivetrain to fail.

Voith Turbo Safeset has developed the leading torque limiters to the industry for more than three decades. Our products are continuously adjustable for maximum optimization of the powertrain, the most accurate couplings and transfers the most torque in proportion to size. All the models can be customized to suit existing interface or a newly designed to optimize powertrain.

Safeset developed into the SmartSet and AutoSet which is process-enhancing couplings. They restrict short torque peaks in operation, without breaking transmission entirely thus protect the drive from overloads without that the production is interrupted. If a total stop occurs, the coupling release immediately. SmartSet is re-set as easily as SafeSet by changing the sheartube. AutoSet resets itself when the operation is stopped.



SafeSet

SafeSet is the most precise torque limiter available on the market. It is used in multiple applications such as steel mills, tunnel drilling machines, crushers and many many more, due to its

- Precise release point – enables highest possible utilization of the application
- No false releases due to fatigue – No production loss without an actual overload
- Adjustable release torque – Easy to use for safe commissioning or upgrade of the driveline

SmartSet

SmartSet is a development of the SafeSet with the additional ability to also slip without releasing to reduce short duration, dynamic peak torques. It is primarily used in compressor drives and refiners that are driven by synchronous motors, but has other possible industrial applications, due to its

- Ability to reduce transient torques at start-up – The driveline does not have to be dimensionend to cope with the extrem overloads it creates
- Accurate and constant release torque – Safe performance over time
- Adjustable release torque – Easy to use for safe commissioning or upgrade of the driveline

AutoSet

AutoSet handles short duration dynamic peak torques without releasing. It is primarily used in steel industry, particular levellers. It is completely automatic and resets itself and providing the following features and benefits.

- Is preset to the required slip torque – easy installation and ready-to-use
- Can slip approximately 180 degrees without fully releasing – thus cope with long duration overloads without interrupting the production
- It automatically resets itself to the preset torque level – No manual activity necessary to reactive the drive

Customized Solutions

Tailor-made customer solutions

To ensure the best possible functionality of the Safeset products, they are always specially adapted for the specific application intended. This applies to all Voith Turbo SafeSet couplings – SafeSet, SmartSet and AutoSet.

To identify the optimum solution for you as customer we often suggest a number of coupling types. This forms a basis for discussion and facilitates the decision-making process, as the advantages of the couplings are easy to compare. Next we adapt our existing couplings and prepare contract drawings.

Our sales engineers are involved in the whole process. They take responsibility for ensuring that both design and construction of the coupling fulfill the customer's needs and requirements with regard to application, performance and design. For example, if the space available for the coupling is limited, it will need to be adjusted in size. To maintain the same high performance level we adjust the choice of steel grade and design in relation to your application.



Benefits

With a customized coupling you always get the optimum process-improved solution.

+ Our products increase production

The narrow tolerance range of our products allows you to achieve the highest possible performance from your equipment.

+ Our products have short payback periods

SafeSet couplings are reliable and are only release when the set torque is exceeded. This minimizes operating stoppages and downtime, and as a result increase production up-time.

+ Our products improve processes

Our range allows you to improve the production process and downtime, and as a result increase production up-time.



Applications



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3



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1 Coal mining armored face conveyor (AFC)

SafeSets are installed on the low-speed side of the gearbox next to the chain drive, to provide optimal protection against brief torque spikes that could break the chains.

2 Mineral crushers

SafeSets are usually installed in combination with a flexible coupling which provide dampening and overload protection.

3 Rolling mills

SafeSets are usually installed on the motor shaft or integrated in the drive line of the rolling mill, to protect against overloads.

4 Straightening machines

AutoSets are installed between the distribution gearbox and the cardan shafts or gear spindles, to prevent roll slip, protect the drive-line and improve product quality.



1



1 High-speed trains

SafeSets are installed on each drive, to provide protection against injury as a result of a drive line failure.

2 Car crushers

SafeSets are installed in the drive line, often in combination with fluid or flexible couplings, to protect against overload.

3 Marine vessels

SafeSets are installed in the main propulsion drives, to protect the drive lines from damage as a result of grounding in shallow waters, or floating debris that entangles the propeller.

4 Gas turbines

SafeSets are integrated into the reduction gearboxes, to protect the gear and the turbine from short circuit reversal torques coming from the generator.

5 Compressors

SmartSet are installed on the motor shafts, to reduce the damaging torsional excitations that occur during the start-up phase.



SafeSet

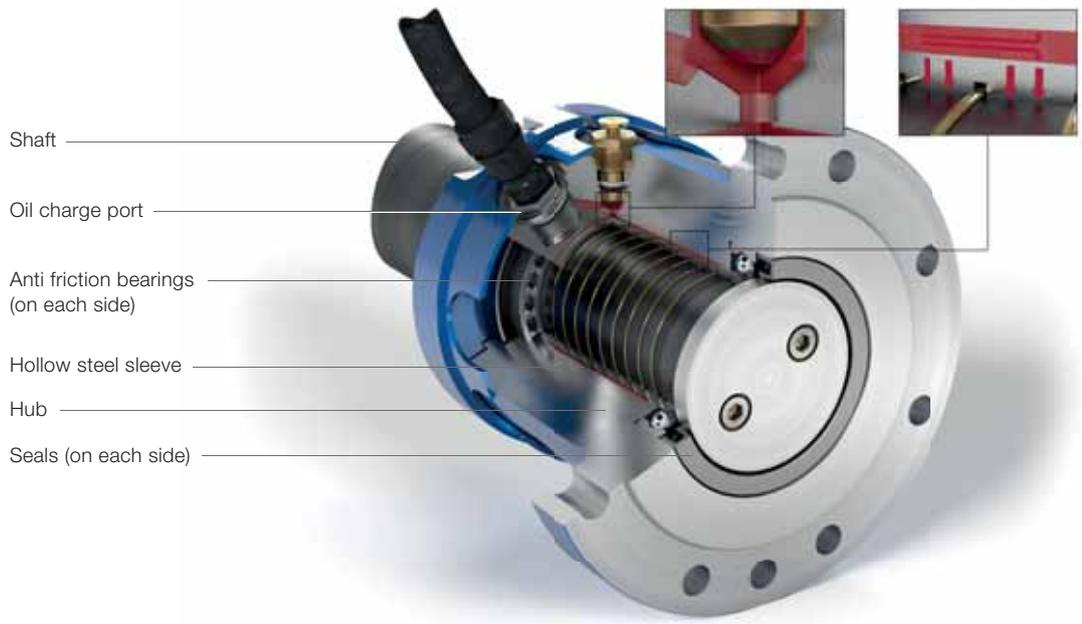
The Torque-limiting Safety Coupling

Features

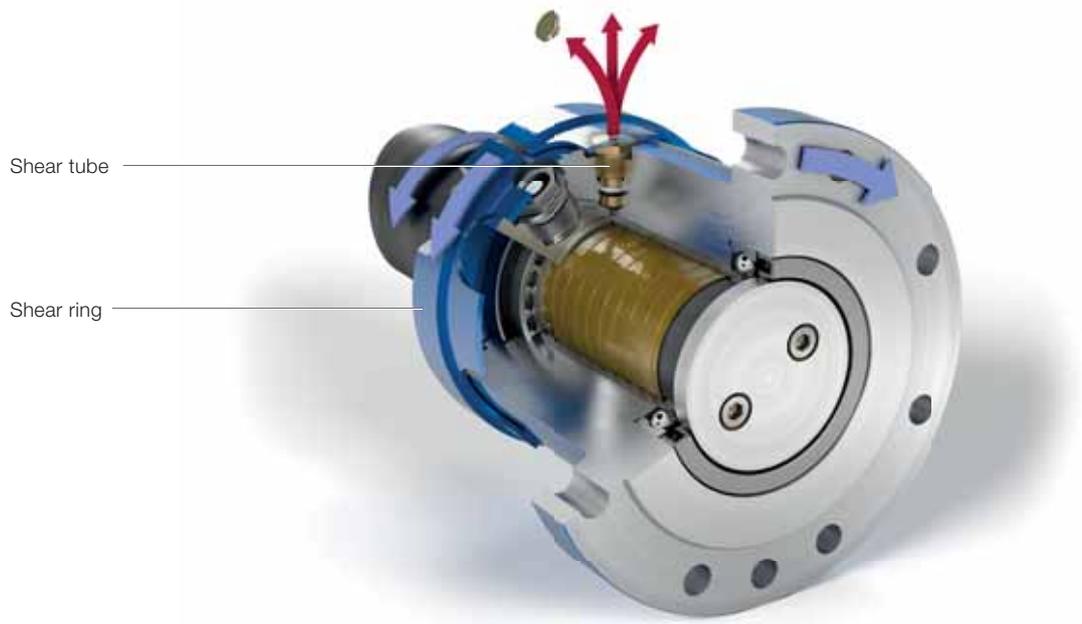
- Fully adjustable release torque
- Selected release torque remains constant
- Precise point of release
- Back-lash free power transmission
- Compact, low weight design
- Low moment of inertia

A hollow steel sleeve is expanded by oil under pressure; this produces a friction connection between a shaft and a hub. At overload the coupling instantaneously releases the oil pressure and interrupts the drive.

SafeSet being pressurized



SafeSet following a release



Function and Design of SafeSet

Operation

The set hydraulic pressure in the coupling generates a defined frictional force between the pressure sleeve and shaft. This pressure determines the maximum torque which can be transmitted (slip torque) through the coupling.

If the operating torque exceeds the set slip torque, the shaft rotates relative to the pressure sleeve. The shear ring that is fixed to the shaft, therefore also rotates relative to the pressure sleeve, which in turn breaks the tops of the installed shear tubes. As a result, there is an instantaneous drop in the oil pressure, which reduces the frictional force of the connection, and releases the coupling.

Resetting is a simple operation of replacing the broken shear tubes with new, and repressurizing the coupling, which can be done in minutes.

The permitted temperature range of the couplings is -20 to +60°C. Temperatures which exceed this range are possible with small design changes.

Design

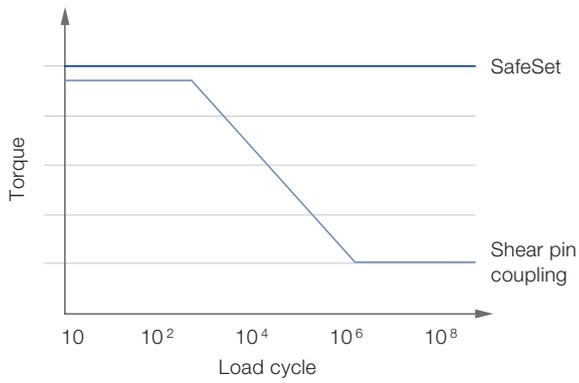
The SafeSet coupling design consists of a twin-walled pressure sleeve, which can be pressurized with oil up to 1 000 bar (14 500 psi), with the shear tube ensuring the system is completely sealed. Larger SafeSet couplings have more than one shear tube which come in four standard sizes L₂₈, L₃₉, L₅₄ and L₆₃.

The friction surfaces are specially treated to prevent any wear or pick-up during the initial slip phase of the coupling release. Once the coupling has released it rotates on bearing, thus preventing any wear on the friction surfaces.

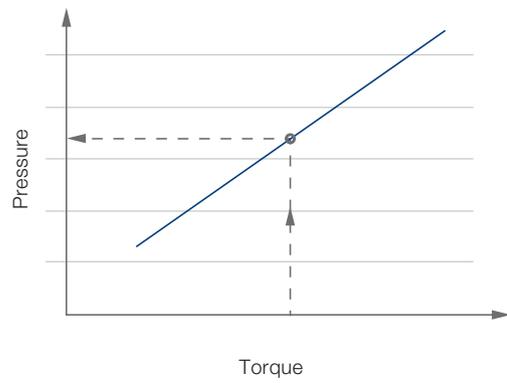
During normal operation the bearings remain static, only following a release do they rotate, which means the often referred to bearing life, is a minor factor in terms of the operational dependability of the coupling. To ensure the bearings do not overheat in a release condition, the coupling has a small amount of lubrication oil poured in, this equally ensures a constant friction coefficient across the friction surfaces, and as a result, the release torque is extremely precise.

SafeSet couplings are not influenced by material fatigue, i.e. S-N datas, which ensures the release torque remains constant over time.

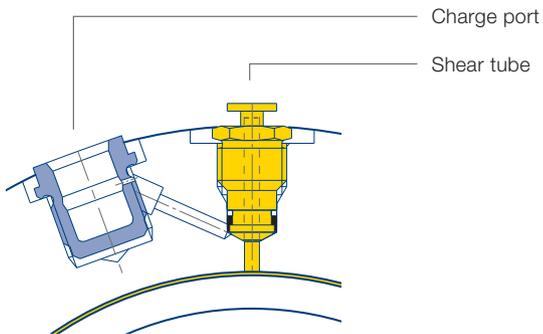
Fatigue curve (S-N curve)



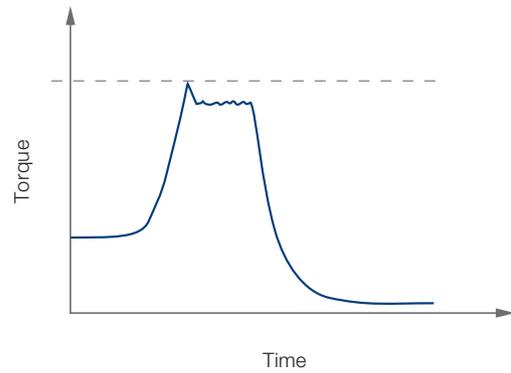
Calibration curve (Calibration diagram)



Shear tube illustration



Typical release curve



ST-B Series with plain Bearings

For installation between a plain shaft and a hub, with higher operating speeds.

Size ST-B	M_A [kNm]	d_1	d_2	d_3	d_4	L_1	L_2	L_3	M	m [kg]	J [kgm ²]
60	1.8 – 3.6	60	75	40	132	137	128	83	M6	5	0.01
70	2.7 – 5.4	70	90	50	144	150	140.5	92	M6	6.8	0.02
80	4 – 8	80	100	50	153	166	156.5	108	M6	7.8	0.03
90	5.5 – 11	90	110	65	164	184	170	123	M8	9.4	0.04
100	7.5 – 15	100	125	70	179	206	191	133	M8	13.5	0.06
110	9 – 18	110	140	80	197	208	193	137	M8	17	0.09
120	14 – 28	120	150	90	205	237	221	161	M8	20	0.12
130	18 – 36	130	160	100	214	250	234	174	M8	22	0.14
140	22 – 44	140	170	105	224	261	245	183	M10	24	0.18
150	27 – 54	150	180	115	234	275	259	195	M10	27	0.22
160	34 – 68	160	200	120	249	300	284	215	M10	37	0.34
170	39 – 78	170	210	130	254	300	282	213	M10	38	0.37
180	44 – 88	180	225	135	316	300	281	213	M10	45	0.49
190	58 – 116	190	240	145	316	350	332	260	M10	56	0.68
200	65 – 130	200	250	150	316	350	332	260	M10	61	0.81
220	82 – 164	220	270	175	316	350	332	260	M10	65	1

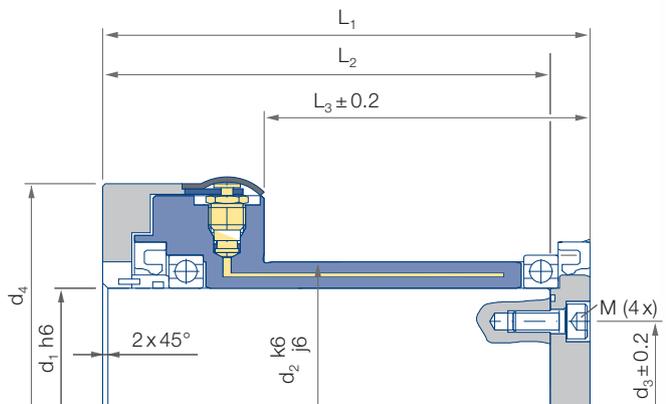
The coupling is a tailor-made product. The table shows some examples.

M_A : release torque – adjustment range

m: mass (weight)

J: mass moment of inertia

Dimensions in mm.



ST-KB Series with plain Bearings

For installation between a parallel keyed shaft, and hub, with higher operating speeds. The friction surface is between the coupling and the hub, the hub often being supplied by the customer.

Size ST-KB	M_A [kNm]	d_1^1	d_1^2	d_2	d_3	d_4	L_1	L_2	M	m [kg]	J [kgm ²]
60	1 – 2	41	44	60	123	134	112	73	M6	4.2	0.01
70	1.5 – 3	48	52	70	133	143	119	80	M6	5.1	0.01
80	2.1 – 4.2	55	62	80	141	152	124	85	M6	6.1	0.01
90	3 – 6	65	69	90	148	159	136	93	M6	7.5	0.02
100	3.9 – 7.8	71	77	100	158	169	140	97	M6	8.4	0.02
108	5 – 10	76	85	107.95	166	177	146	103	M6	9.9	0.03
120	7 – 14	86	95	120.65	174	185	160	117	M6	12	0.04
127	9 – 17	92	99	127	181	192	172	128	M6	14	0.05
140	10 – 20	100	110	139.7	193	204	176	132	M6	17	0.07
152	13 – 26	110	120	152.4	206	221	175	134	M8	18	0.09
165	17 – 34	120	130	165.1	220	233	194	150	M8	23	0.13
178	23 – 46	130	141	177.8	229	243	219	175	M8	29	0.18
203	35 – 70	150	161	203.2	262	277	253	210	M8	42	0.32
228	50 – 100	168	181	228.6	295	310	281	235	M8	63	0.62
254	70 – 140	193	209	254	318	333	303	256	M8	80	1
280	90 – 180	208	228	280	390	410	311	259	M8	96	1.4

The coupling is a tailor-made product. The table shows some examples.

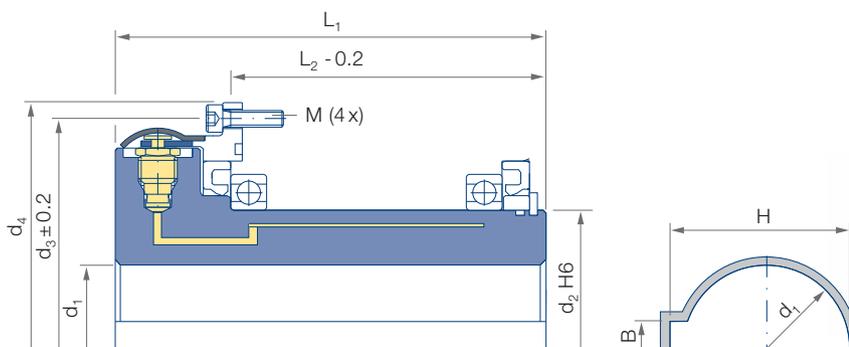
M_A : release torque – adjustment range

m: mass (weight)

J: mass moment of inertia

¹: Maximum shaft diameter with key according to DIN 6885; ²: Maximum shaft diameter with lowest possible key

Dimensions in mm.



SR-P Series with anti-friction Bearings

Compact 'sandwich' design, with connection flanges at each end, often in combination with a misalignment coupling, such as a gear coupling.

Size SR-P	M_A [kNm]	d_1	d_2	d_3	d_4	d_5	z	L_1	L_2	L_3	L_4	m [kg]	J [kgm ²]
60	1.6 – 3.2	94	122	152	96	11	8	115	19	2	15	11	0.02
80	2.9 – 5.8	115	150	178	122	13	6	113	19	2	18	15	0.05
100	5.4 – 10.8	140	184	213	150	17	6	135	22	2	22	25	0.11
110	8.2 – 16.4	163	208	240	174	17	8	161	22	2	–	36	0.19
130	12.6 – 25.2	188	242	280	200	21	8	173	28	2	–	53	0.38
160	20.5 – 41	222	280	318	234	21	8	193	28	2	–	76	0.72
190	28 – 56	245	305	347	262	21	10	199	28	3	–	99	1.1
203	39 – 78	273	345	390	306	21	10	206	38	3	–	138	2.1
228	58 – 116	310	368	425	332	21	14	240	38	3	–	185	3.2
254	111 – 222	331	406	457	355	25	14	330	26	4	–	280	5.1
300	142 – 284	371	460	527	404	25	16	309	28	6	–	400	11
356	244 – 488	451	530	591	472	32	14	385	33	6	–	670	24
406	290 – 580	483	580	640	522	32	18	387	38	6	–	800	34

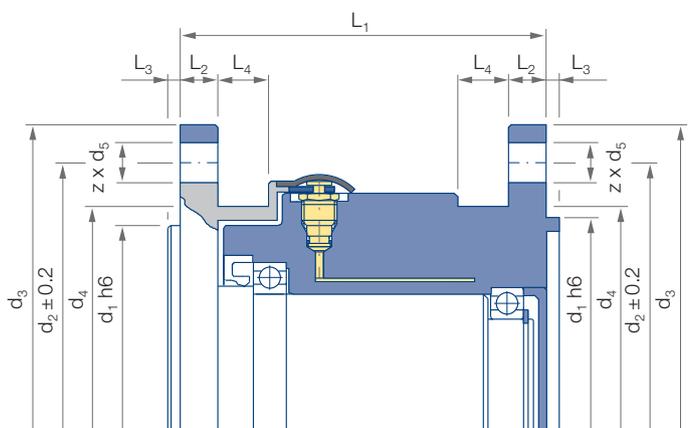
The coupling is a tailor-made product. The table shows some examples.

M_A : release torque – adjustment range

m : mass (weight)

J : mass moment of inertia

Dimensions in mm.



SR-N Series with integrated Flange

For installation between a parallel shaft and a universal joint shaft or other flange connection. Accordingly, flange dimensions can be modified to suit.

Size SR-N	M_A [kNm]	d_1	d_2	d_3	d_4	d_5	d_6	d_7	z	L_1	L_2	L_3	L_4	M	m [kg]	J [kgm ²]
60	1.8 – 3.6	60	180	110	155.5	14	40	132	8	136	12	2.3	128	M6	12	0.03
70	3 – 6	70	180	110	155.5	14	50	144	8	150	12	2.3	140	M6	13	0.04
80	3.9 – 7.8	80	225	140	196	16	50	153	8	166	15	4	156.5	M6	20	0.09
90	5 – 10	90	225	140	196	16	65	164	8	184	15	4	171	M8	27	0.11
100	7.5 – 15	100	250	140	218	18	75	179	8	203	18	5	190	M10	30	0.17

The coupling is a tailor-made product. The table shows some examples.

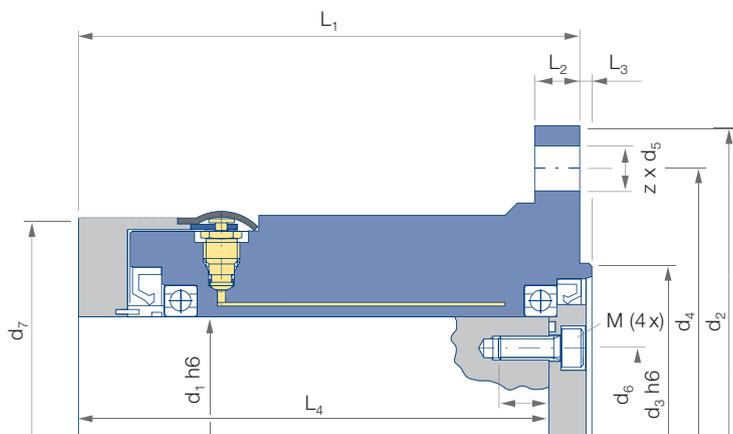
Other sizes and features are available upon request. Above size 120 the type SR-F is recommended.

M_A : release torque – adjustment range

m: mass (weight)

J: mass moment of inertia

Dimensions in mm.



SR-F Series for higher Torque Applications utilizing a Connection Flange

With this design the SafeSet pressure ring plays no active role in the torque transmission of the application. The ring merely exerts a static radial force onto a torque transmitting connection sleeve, pressing this against the shaft or shaft sleeve. As a result, higher dynamic bending moments and radial forces can be accepted by the SafeSet coupling.

Size SR-F	M_A [kNm]	d_1	d_2	d_3	d_4	d_5	d_6	d_7	z	L_1	L_2	L_3	L_4	M	m [kg]	J [kgm ²]
100	7.5 – 15	100	250	140	218	18	75	187	8	209	18	5	190	M8	34	0.22
110	10 – 20	110	285	175	245	20	80	197	8	208	20	6	198	M8	38	0.31
120	13 – 26	120	285	175	245	20	60	215	8	237	20	6	220	M10	47	0.38
130	17 – 33	130	315	175	280	22	100	230	8	250	22	6	234	M8	60	0.60
140	20 – 40	140	350	220	310	22	110	235	10	261	25	7	243	M10	64	0.78
150	25 – 50	150	350	220	310	22	115	247	10	305	25	7	270	M10	78	0.97
160	35 – 71	160	390	250	345	24	120	275	10	355	28	7	320	M10	130	1.5
180	49 – 98	180	435	280	385	27	135	320	10	300	40	8	282	M10	150	2.9

The coupling is a tailor-made product. The table shows some examples.

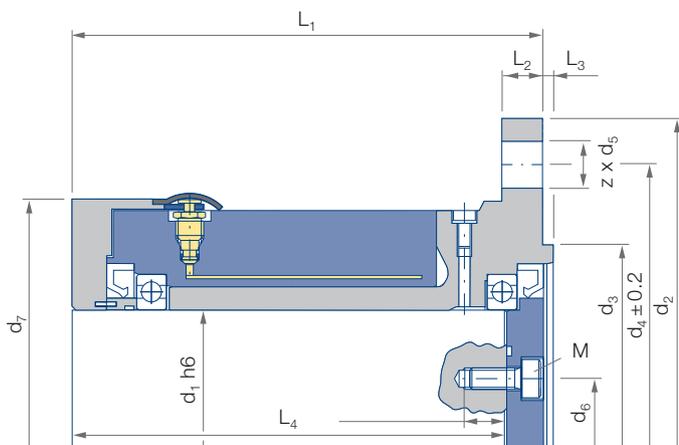
Other sizes and features are available upon request.

M_A : release torque – adjustment range

m : mass (weight)

J : mass moment of inertia

Dimensions in mm.



SR-F Series for Rolling Mill Main Drives

The couplings are designed and manufactured according to the customer's exacting specifications, and are often used in combination with universal joint shafts.

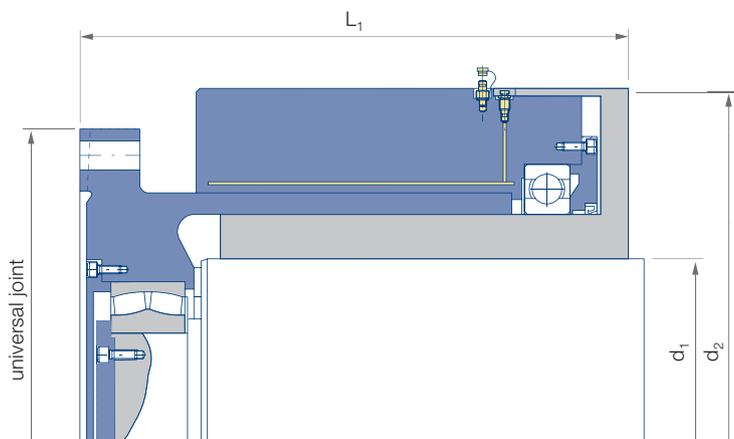
Size SR-F	M_A [kNm]	d_1	d_2	L_1	m [kg]
300	200 – 400	240	520	500	400
400	350 – 750	320	600	600	800
500	700 – 1400	400	750	750	1500
600	1000 – 2000	480	900	950	2200
710	1700 – 3500	570	1070	1150	3500
800	2500 – 5000	640	1200	1200	5000
900	3500 – 7000	720	1350	1350	7000
1000	5000 – 10000	800	1500	1500	10000

The coupling is a tailor-made product. The table shows some examples.

M_A : release torque – adjustment range

m: mass (weight)

Dimensions in mm.



SafeSet SR-F



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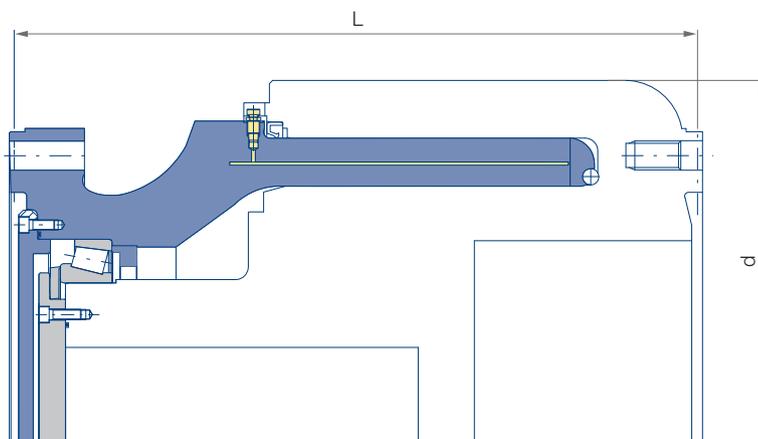
SR-PC Series

for high Torque Space Constraining Applications

The SR-PC series, has been specifically designed for those high torque applications, where the normal SR-F series coupling is simply too large for the available space.

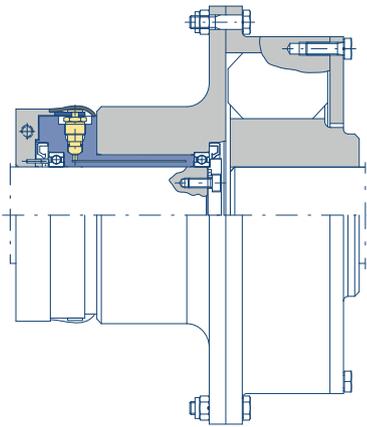
Size SR-PC	M_A [kNm]	d	L
520	750 – 1500	715	640
575	1000 – 2000	790	700
690	1750 – 3500	960	870
780	2500 – 5000	1070	1000
870	3500 – 7000	1200	1100
950	4500 – 9000	1300	1120

The coupling is a tailor-made product. The table shows some examples.
 M_A : release torque – adjustment range
Dimensions in mm.

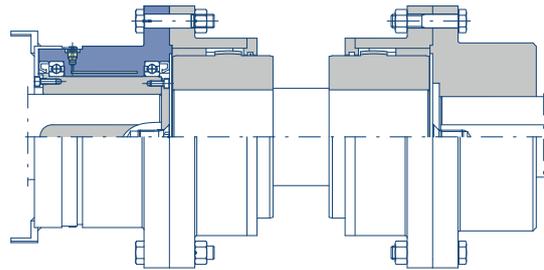


Installation Examples

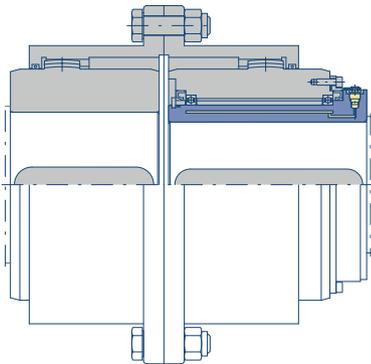
ST-B series,
in combination with a flexible rubber coupling



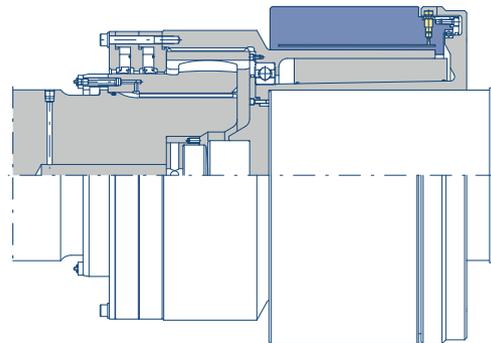
SR-N series, with spacer and gear couplings



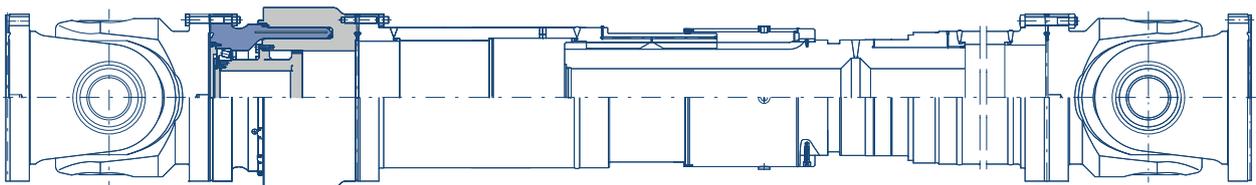
ST-KB series,
integrated into the inner gear of a gear coupling



SR-F series, integrated with a gear coupling



SR-PC series, integrated into a universal joint shaft



SafeSet Accessoires

Pumps

For pressurizing our coupling, we provide a complete range of hydraulic pumps, from manual versions, to powered variants. The size of the pump will be dependent on the size of the coupling to be pressurized.

Available pumps:

- P115 series for coupling sizes 30 to 220
- P240 series for coupling sizes 200 to 300
- P500 series for coupling sizes 300 to 400
- P1000 series for coupling sizes over 400

The P115 and 240 are manually operated versions, and the P500 and P1000 are pneumatically operated.

For special applications, electrically driven pumps or custom solutions are available upon request.

Service boxes

To operate our couplings, additional tools and equipment are often needed, such as torque wrenches, allen keys, and plug pullers to name a few. Our service boxes include all these necessary tools, to operate and maintain our couplings. Variations may exist on older units, in which case, please contact Voith directly.

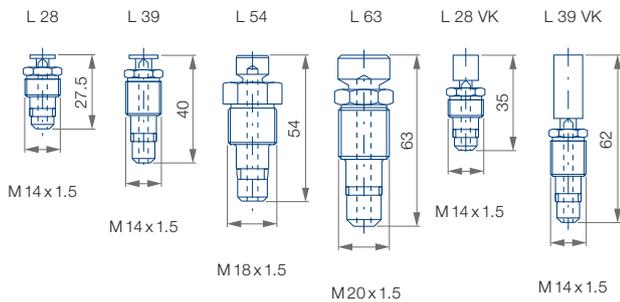
Digital manometers are available as an option for demanding applications. It ensures a more exact pressure setting, thus a more precise release point.



Pump P500

Service boxes P115 and P240

Shear tubes

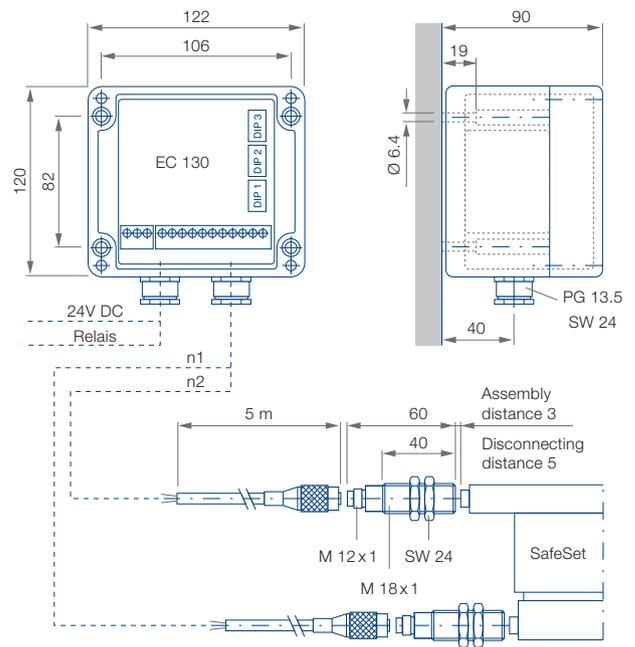


Shear tubes

Depending on the size of the coupling and its application, the coupling could have between 1 to 12 shear tubes of a suitable size installed.

On coupling where external release capability is required such as engine test benches, extended head shear tubes are also available. (VK model)

Release monitoring



Electronic release indicator ESC 130

SafeSet couplings can be equipped with an electronic release indicator, which indicates when the SafeSet coupling has released.

By monitoring the input and output speed with proximity sensors, should the SafeSet release, then the speeds will no longer be synchronous. The indicator recognizes this, and triggers an alarm warning the machine operators. In cases where the speed differential can not be measured, then the SafeSet can be equipped with a mechanical visual release indicator.



Slip and Release Coupling

AutoSet

In straightening machines, the plate material speed is continuously changing during the operation. As the rolls work with the same rotational speed, this can lead to some of the rolls slipping, which creates slippage marks on the plate material, or increased wear of the rolls themselves. In order to reduce this problem, the plastic deformation done by the rolls, is limited, and accordingly the machines capacity is not fully utilized. A poorly performing straightening machine can result in reduced product quality, increased downtime due to component wear and fatigue, and in addition, reduced capacity throughput.

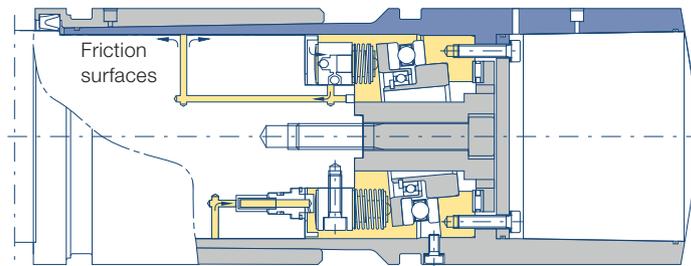
These problems can be solved with the AutoSet slip and release coupling. For example, in a Swedish steel mill, the standstill time at the straightening machine was reduced from 63 hours per year to 0, following installation of AutoSet coupling in the roll drives. In addition, further financial gains were achieved due to the lower scrap rate, higher finished product quality, and reduced roll wear.

AutoSet benefits

- + Improved product quality, due to reduction of slippage marks.
- + Reduced wear on the drive spindles, while also providing overload protection.
- + More equal torque distribution, improves the whole levelling process.
- + Installation of AutoSets eliminates the need for direct roll control, which is expensive.
- + Reduction in slippages between plate material and work rolls, reduces the wear on the rolls themselves.

Features

- Coupling is preset to the required slip torque.
- When the preset torque is exceeded, the coupling can slip approximately half a turn without releasing.
- If the torque peak has a longer duration, the AutoSet will release entirely and work just as a torque limiter, providing protection against a catastrophic failure.
- Coupling automatically resets itself to the full preset torque, once the drive has been stopped and the hydrodynamic bearing oil allowed to drain back into the swash plate pump.



Function and Design

Without AutoSet

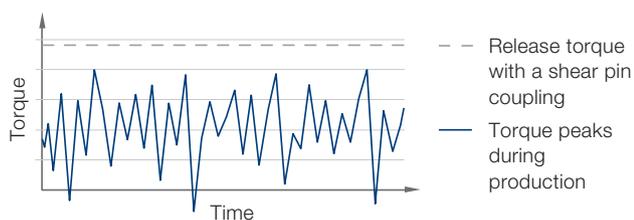
The drive spindles and the gearbox are subjected to continuous torque peaks which are a result of the levelling process. In spite of high safety margins on the equipment, production is still subjected to frequent stoppages.

With AutoSet

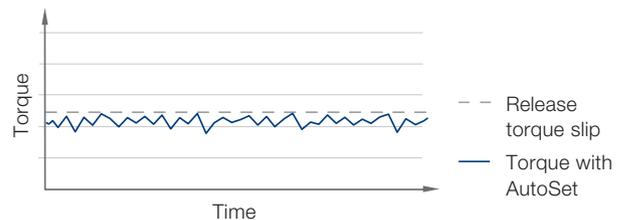
AutoSet evens out the torque distribution between the gearbox, and the work rolls. Production quality is significantly improved due to the reduced number of slippage marks on the finished product. Drive spindles are also isolated from the continuous torque peaks, which in addition increases their reliability and life.

In the event of a total operating stoppage, the AutoSet releases completely, allowing no torque to be transmitted at all. Once the drive is brought to rest, the coupling will reset itself automatically in a matter of minutes, to allow production to start once again, without a single hand being placed on the coupling.

Without AutoSet



With AutoSet



For larger outer diameter than 280 mm universal joints are normally used. In such cases AutoSet would be installed on the output shaft of the gearbox. See example on the next page. Technical details on request.

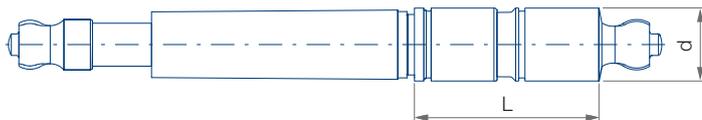


SA-I Series Slip and Release Coupling

The SA-I series integrates the AutoSet principle into the drive spindle itself, which is typically performed on gear spindles. The table below details examples of the typical dimensions.

Size SA-I	M_A [kNm]	d	L
38	0.3 – 0.72	48	250
45	0.8 – 1.6	60	260
57	1.2 – 2.5	76	270
73	3 – 7.4	98	310
95	6 – 12	119	350
120	12 – 24	155	450
130	16 – 33	175	470
150	22 – 45	200	530

The coupling is a tailor-made product. The table shows some examples.
 M_A : release torque – adjustment range
 Dimensions in mm.





SA-P Series Slip and Release Coupling

The SA-P series, integrates the AutoSet principle into the gearbox or drive spindle companion flange itself, enabling the existing drive spindles to be re-used.

Nominal torque range is 0.4 – 275 kNm.



AutoSet SA-P



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Service and Maintenance

Correct servicing and maintenance is all-important to ensure reliable performance, and maximum useful life of all mechanical drive components. In this respect Voith Turbo SafeSet products are no different, to ensure maximum return on investment.

Service intervals are product specific, and are listed in the serialized product manual.

Correct installation, and training of maintenance personnel is equally important to ensure maximum reliability, whether it be a rolling mill, a stone crusher or a high speed train.

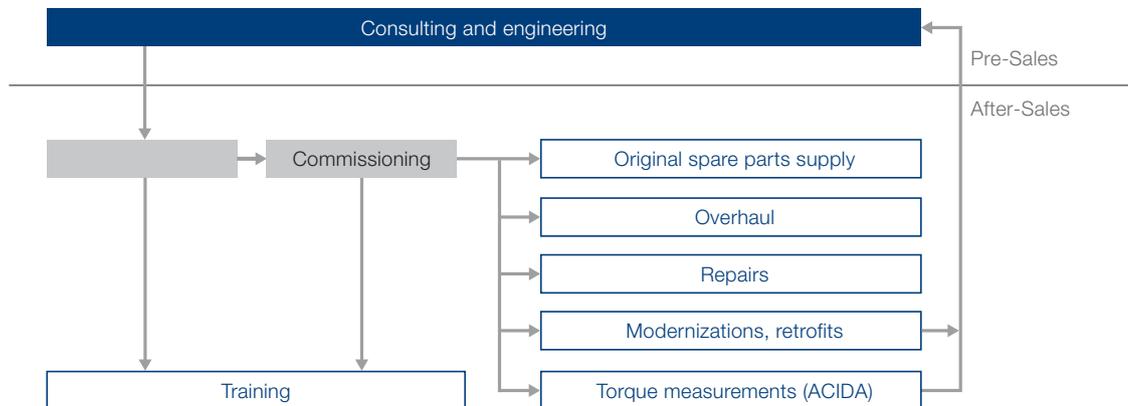
For total peace of mind, we recommend our service personnel to be present during installation, initial start-up and final commissioning. At the same time, we will train your personnel how to operate the couplings, and how to optimize its setting to ensure maximum reliability, and ensure the product meets its designed potential fully. We carry out scheduled servicing and repairs on our couplings in order to reduce life cycle costs, and guarantee it continuous operating performance.

We are happy to recommend spare parts requirements, and suggest planned maintenance schedules, to avoid unplanned stoppages, and reduce production downtime.

Voith Turbo Safeset has regional service centers in Europe, North and South America, and China. In addition, field service capability is available from most of our worldwide marketing companies.



Voith Turbo Safeset Service





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