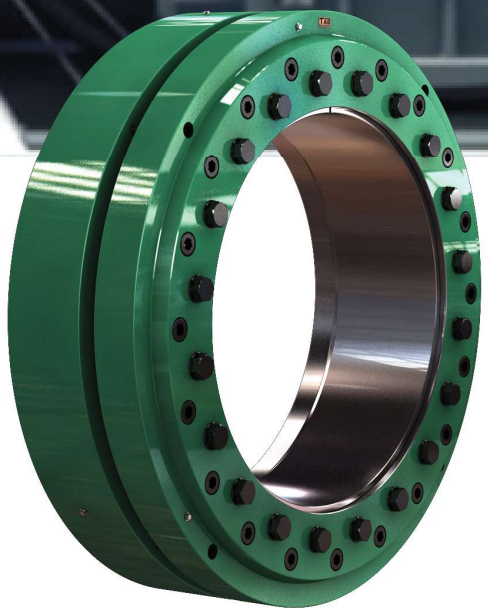
TAS SCHÄFER

Hydraulic Actuated Products



Hydraulic Shrink Discs

The hydraulic shrink discs from TAS Schäfer have been used in numerous application areas for many years. Hydraulically tensionable shrink discs of the „SHS“ design are used worldwide in wind turbines, cement production plants, hydraulic motors, roller crushers, and test benches. The primary function of a hydraulically tensionable shrink disc of the „SHS“ type is to securely connect a shaft to a hub by means of a friction fit.

Why a hydraulic instead of a mechanical shrink disc?

The main argument for a hydraulic shrink disc lies in the assembly time. Mechanical shrink discs are tensioned via bolted connections, whereas hydraulic shrink discs utilize oil pressure. This enables a reduction in assembly time of up to 95 percent compared to a mechanical shrink disc.

Is a hydraulic shrink disc worthwhile for my application?

Due to its fast and secure clamping, the hydraulic shrink disc is particularly suitable for assembly on test benches and the repetitive clamping operations carried out there. However, hydraulic shrink discs are also used worldwide in industrial applications where, for example, rapid disassembly and reassembly is required during a plant's maintenance process, in order to reduce downtime.

How do I find the right shrink disc for my application?

Companies face the challenge of selecting the right product for their specific requirements, as a multitude of factors need to be taken into account. In many cases, technical consultation is advisable. Please do not hesitate to contact our experienced team. Together, we will develop the best possible solution for your application.

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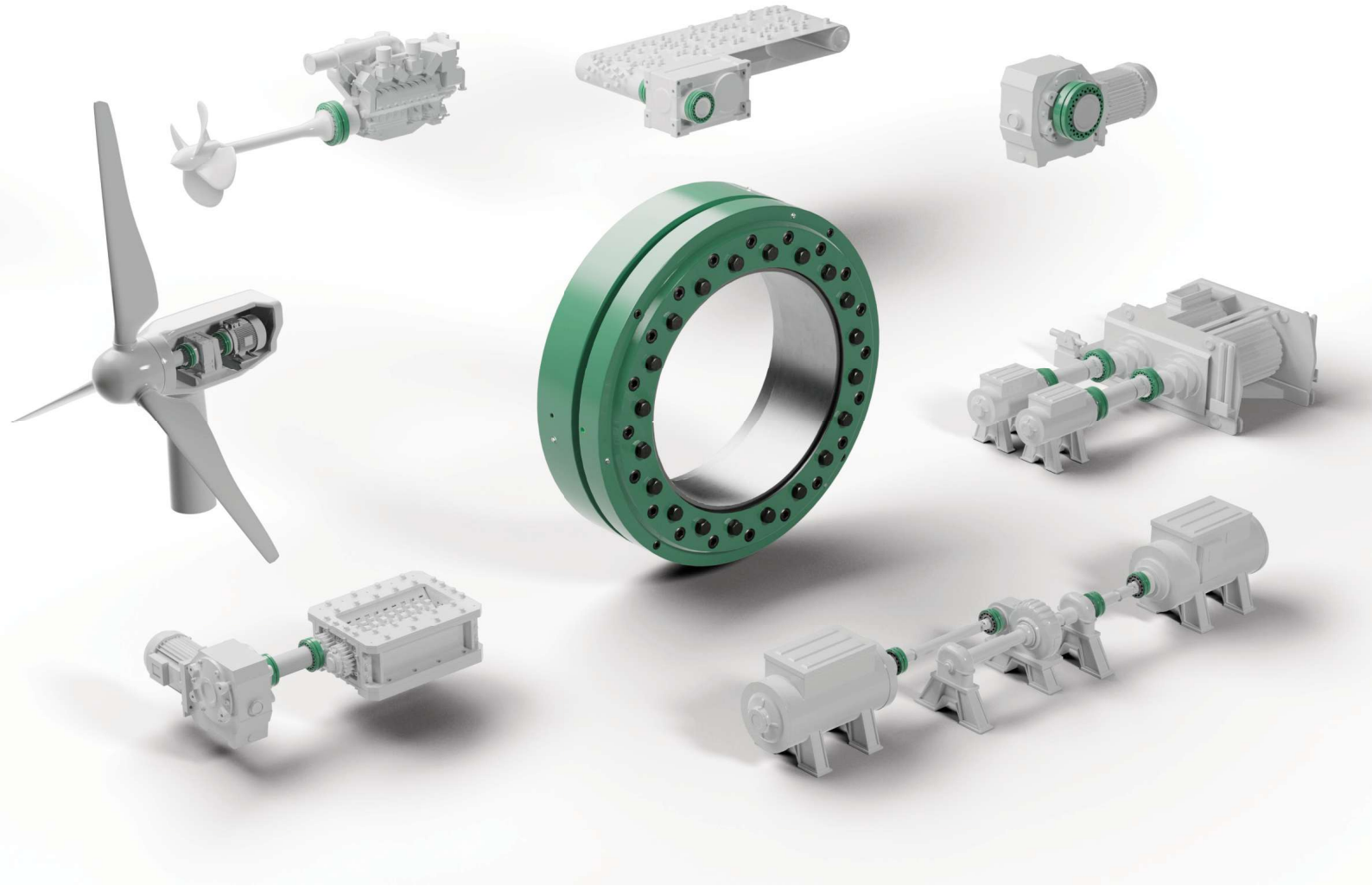


Applications of the Hydraulic Shrink Disc SHS

To meet the varying requirements, tailor-made solutions are necessary. Following exactly this principle, TAS Schäfer has developed two independent concepts for hydraulic shrink discs. The models SHS-P and SHS-PA were designed for use in test bench applications, where frequent clamping and releasing is an indispensable basic requirement. These designs enable fast, efficient, and reliable changeovers, ensuring smooth operation in testing processes where flexibility is paramount.

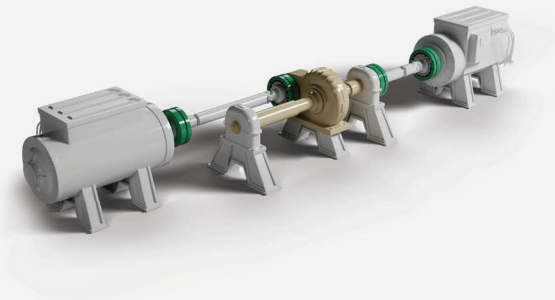
For classic industrial applications, we offer our customers the proven standard SHS series. Here, the focus is on a particularly robust design as well as the powerful and secure transmission of high loads. These characteristics make the standard SHS shrink discs the ideal solution for permanent and resilient connections in demanding industrial environments. At the same time, users benefit from a long-lasting design engineered for maximum reliability and minimal maintenance requirements.

Wide Range of Applications

The hydraulic shrink discs SHS from TAS Schäfer are found in a wide variety of applications, proving their strengths both on highly specialized test benches and The hydraulic shrink discs SHS from TAS Schäfer are found in a wide variety of applications, proving their strengths both on highly specialized test benches and in demanding continuous industrial operation. Whether in transmission or engine test benches, in paper and wood processing, or in energy generation - wherever precise power transmission, maximum reliability, and repeatable clamping are required, our solutions demonstrate their advantages. Through the combination of robust design and ease of handling, the SHS series provides the foundation for safe and efficient processes across a wide range of industries.

The areas of application are...

...on the test bench:



- Transmission test bench
- Generator test bench
- Resonance test bench
- Engine test bench
- Clutch test bench
- Brake test bench

...in industry:

- Paper manufacturing
- Roller presses
- Marine applications
- Wind turbines
- Hydraulic motors
- Wood processing
- Conveyor technology
- Energy generation

Test bench

Technical Properties

- Time-saving locking via bayonet ring
- Hydraulic release pistons for fast disassembly
- Adaptable to various inner diameters
- Requires low pressure for clamping
- Very fast clamping/releasing compared to mechanical shrink discs
- Hybrid design: mechanically releasable and clampable if hydraulics are unavailable, for example
- Maintenance and repair can be carried out by the customer
  Low follow-up costs

Functional Description

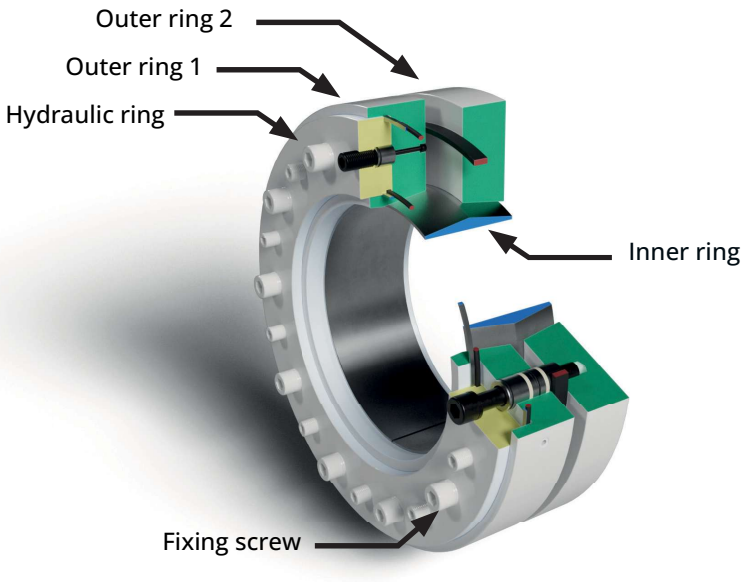
The hydraulic shrink disc from **TAS SCHÄFER** is based on the principle of the three-part shrink disc and consists of two pressure rings and an inner ring. In addition, the hydraulic shrink disc is equipped with an integrated hydraulic ring. When hydraulic pressure is applied, the two pressure rings move axially towards each other. Via conically designed contact surfaces, this generates a radial pressing force on the hub, which ensures a backlash-free and form-fitting connection between shaft and hub.

Depending on the specific design, the hydraulic shrink disc can also be equipped with a bayonet ring for quick locking, which significantly reduces the tensioning process.

Two different designs are available for use in test bench applications:

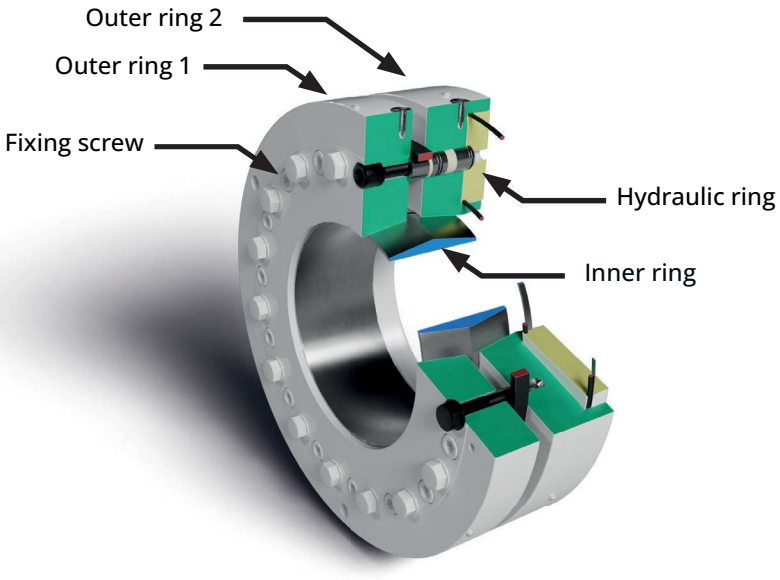
Design with hydraulic system frontside

This design is suitable for short hub lengths. It is hydraulically tensioned and can be released either mechanically or hydraulically depending on the version. Locking is achieved via fixing screws.



Design with hydraulic system backside

This variant requires a longer hub. It can be both hydraulically tensioned and released either hydraulically or mechanically. Locking can be carried out quickly and conveniently via a bayonet ring, which reduces the assembly process to a minimum.



Easy handling - from assembly to disassembly

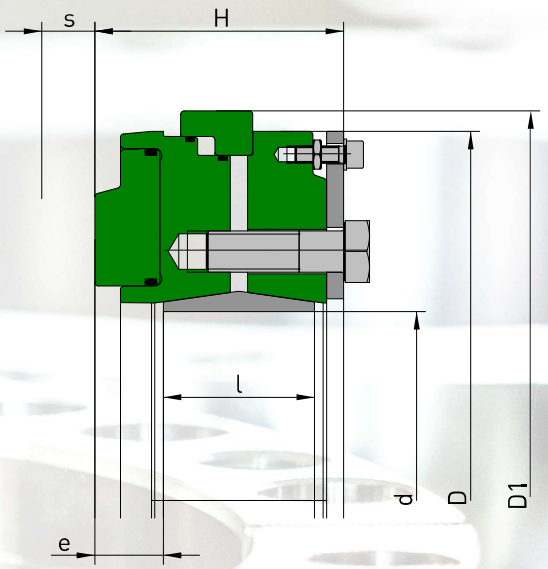
Regardless of the design, the hydraulic shrink disc is first positioned on the hollow shaft. The shaft is then inserted into the hub. To ensure proper function and a sufficiently high friction coefficient, the contact surfaces between shaft and hub must be grease-free, dry and clean. To facilitate assembly, the surfaces between the shrink disc and hub are lightly oiled.

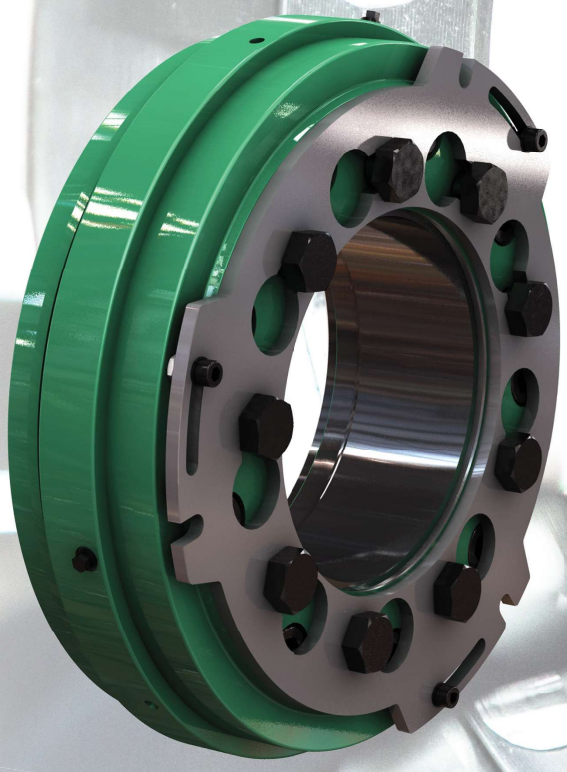
After positioning, the hydraulics are connected to tension the shrink disc. The shrink disc is then pressurized to between 180 and 200 bar, which causes the shrink disc to be tensioned.
Once the preload has been established, the shrink disc is fixed in its tensioned position - depending on the design, either by tightening the fastening screws or by rotating a bayonet ring. The hydraulic pressure is then released. The hydraulic oil contained in the shrink disc can either be completely removed or - to speed up later disassembly - left inside the shrink disc.

The hydraulic shrink disc is now ready for use. It generates the necessary contact pressure for a reliable connection between shaft and hub, but does not itself transmit any forces or torques and is therefore not in the force flow.

For disassembly, the procedure is carried out in reverse order. Depending on the design, the complete separation of the pressure rings is achieved either mechanically using screws or hydraulically by means of release pistons.

SHS-PA

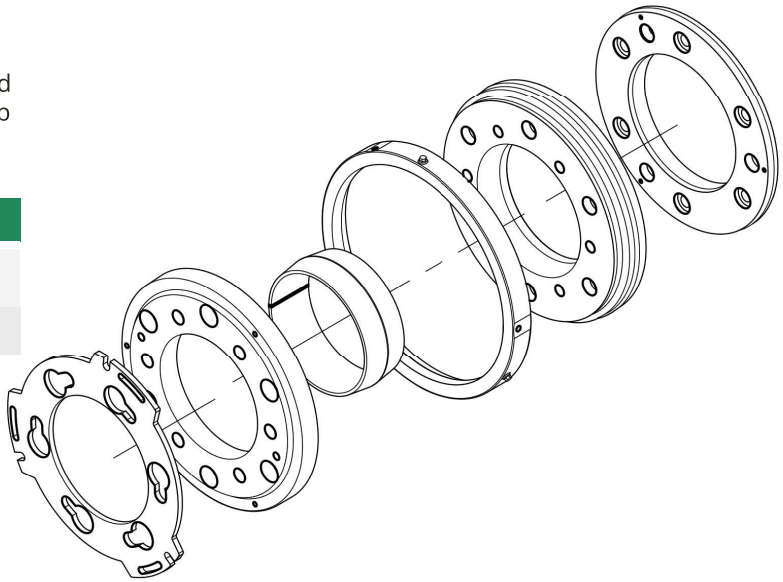




used symbols

d	[mm]	Nominal diameter of the shrink disc
d_W	[mm]	Shaft diameter
M_{max}	[mm]	Maximum transmittable torque
D	[mm]	Outer diameter of pressure rings
D_1	[mm]	Maximum outer diameter
l	[mm]	Length of the inner ring
e	[mm]	Excess length
s	[mm]	Maximum travel distance of the hydraulic ring
H	[mm]	Width of the shrink disc
Z		Number of fixing screws
S		Size of fixing screws
P	[bar]	Hydraulic pressure
n_{max}	[min-1]	Permissible rotational speed
p_N	[N/mm²]	Average pressure to the hub

Minimum yield strength $R_{p0,2}$	N/mm²
Solid shaft	350
Hub	450

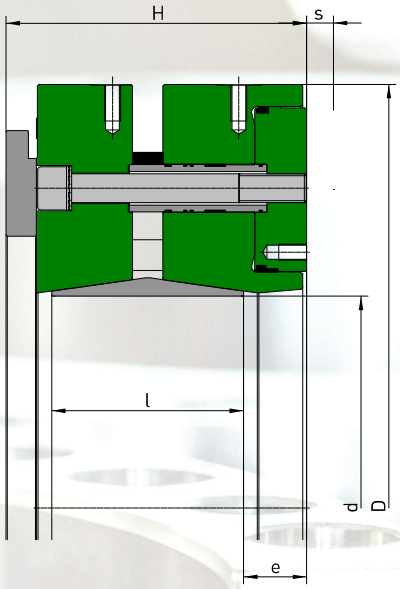


Type	d mm	d_w mm	M_{max}* kNm	D mm	D_1 mm	L mm	e mm	s mm	H mm	Z	S	P bar	n_{max} min-1	p_N N/mm²	Weight kg
SHS-165 PA	155	100	29,8	320	344	56	45	5	113	9	M16	200	1700	270	48
		110	37												
		120	45												
SHS-165 PA	165	110	34,2	320	344	56	45	5	113	9	M16	200	1700	254	47
		120	41,6												
		130	49,5												
SHS-185 PA	175	120	51,2	355	379	71	41	5	128	9	M16	200	1600	249	67
		130	60,7												
		140	71,8												
SHS-185 PA	185	130	56,5	355	379	71	41	5	128	9	M16	200	1600	235	68
		140	66,9												
		150	77,4												
SHS-200 PA	195	130	57,7	385	409	71	41	5	128	6	M24	200	1400	242	78
		140	68,3												
		150	78,7												
SHS-200 PA	200	140	66,1	385	409	71	41	5	128	6	M24	200	1400	236	76
		150	76,1												
		160	88,3												
SHS-220 PA	220	150	97,3	430	454	88	40	5	145	6	M24	200	1300	247	109
		160	112												
		170	129												
SHS-240 PA	240	170	130	465	489	92	40	5	149	9	M24	200	1100	241	130
		180	147												
		190	165												
SHS-260 PA	260	180	158	510	534	103	43	6	160	9	M24	200	1100	235	169
		190	177												
		200	199												
SHS-280 PA	280	200	198	535	559	114	42	6	171	9	M24	200	1100	216	195
		210	221												
		220	246												
SHS-300 PA	300	220	246	561	585	122	42	6	184	9	M24	200	1100	218	222
		230	272												
		250	328												

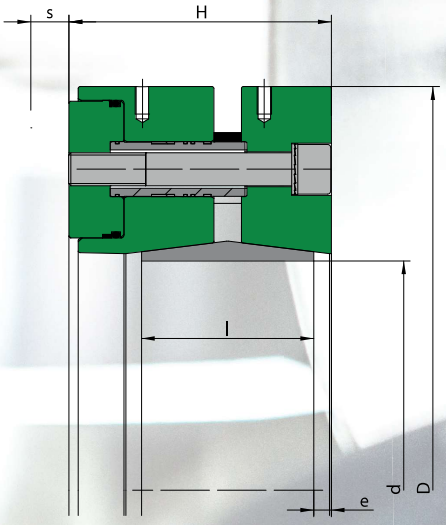
* Calculated with a friction coefficient of 0.14


DIGI-MITT

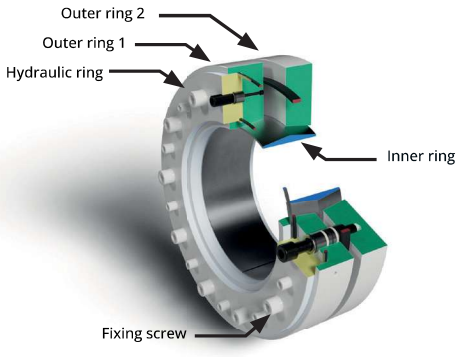
SHS-P



Design with hydraulic system backside

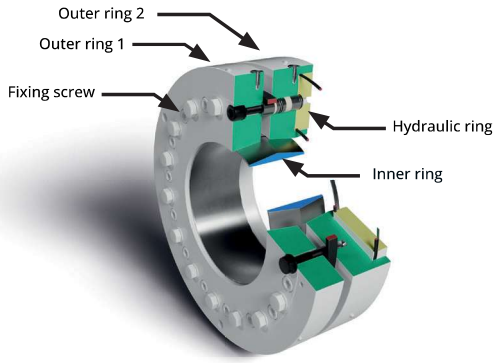


Design with hydraulic system frontside



Symbols Used

d	[mm]	Nominal diameter of the shrink disc
d_W	[mm]	Shaft diameter
M_{max}	[mm]	Maximum transmittable torque
D	[mm]	Outer diameter
l	[mm]	Length of the inner ring
e	[mm]	Excess length
s	[mm]	Maximum travel distance of the hydraulic ring
H	[mm]	Width of the shrink disc
Z		Number of fixing screws
S		Size of fixing screws
P	[bar]	Hydraulic pressure
n_{max}	[min-1]	Permissible rotational speed
p_N	[N/mm²]	Average pressure to the hub



Typ	d mm	dw mm	M_{max}* kNm	D mm	l mm	e mm	s mm	H mm	Z	S	Design	Locking	Release pistons	P bar	n_{max} min^{-1}	p_N N/mm^2	Weight kg
SHS-220 P	220	160	98,6	430	88	10,5	11	147	6	24	Hydr. front	Screws	No	180	1777	226	107,7
SHS-220.1 P	220	160	109,2	430	88	10,5	11	147	8	24	Hydr. front	Screws	No	180	1777	255	107,7
SHS-220.3 P	220	160	109,1	430	88	10,5	11	147	6	24	Hydr. front	Screws	No	180	1777	226	108,4
SHS-240 P	240	180	104,1	445	92	11,5	11	147	8	24	Hydr. front	Screws	No	180	1717	195	111,3
SHS-240.2 P	240	180	104,1	445	92	11,5	11	147	8	24	Hydr. front	Screws	No	180	1717	195	111,2
SHS-260 P	260	200	150,5	480	103	10,5	12	158	8	24	Hydr. front	Screws	No	180	1592	190	139,5
SHS-260.1 P	260	190	158	540	136	78	20	207	10	24	Hydr. back	Screws	No	160	1415	180	254,2
SHS-280 P	280	220	181,8	515	114	8	12	175	8	24	Hydr. front	Screws	No	180	1483	178	177,3
SHS-300 P	300	220	240,8	540	122	8	12	191	8	24	Hydr. front	Screws	No	180	1415	209	206,4
SHS-300.2 P	300	240	232,8	540	85	65	15	147	10	24	Hydr. back	Screws	No	180	1415	251	156,8
SHS-320 P	320	260	327,6	580	140	14,5	18	214	8	30	Hydr. front	Screws	No	180	1317	183	269,4
SHS-320.1 P	320	250	320,8	640	170	83	30	255	12	30	Hydr. back	Screws	No	180	1194	166	397,1
SHS-320.1 P (BR)	320	250	320,8	640	170	83	30	290	12	30	Hydr. back	Bayonet ring	No	180	1194	166	429,4
SHS-340 P	340	260	344,9	610	134	15	16	214	10	24	Hydr. vorne	Screws	No	180	1252	197	297,7
SHS-360 P	350	280	303,9	630	140	12,5	15	210	8	30	Hydr. front	Screws	No	180	1213	146	307,4
SHS-360.1 P	360	280	628,5	730	160	90	25	248	10	30	Hydr. back	Screws	No	180	1046	254	539,2
SHS-360.2 P	360	280	405,8	630	140	15	20	219	8	30	Hydr. front	Screws	No	180	1213	190	314
SHS-360.3 P	360	280	645,1	730	160	16,5	22	240	10	30	Hydr. front	Screws	No	180	1046	261	521,1
SHS-420 P	420	320	520,2	740	164	15,5	22	249	8	30	Hydr. front	Screws	No	180	1032	164	502,3
SHS-440.2 P	440	340	348,6	705	144	9	15	212	8	30	Hydr. front	Screws	No	180	1084	137	346,7
SHS-440.3 P	440	340	800,9	880	220	100	35	318	12	36	Hydr. back	Bayonet ring	Yes	180	868	181	1057,2
SHS-460 P	460	360	768,3	810	177	16,5	23	266	8	36	Hydr. front	Screws	No	180	943	177	642,2
SHS-480 P	480	380	963,4	855	188	17	21	285	9	36	Hydr. front	Screws	No	180	894	185	785
SHS-480.2 P	480	380	963,4	855	188	17	21	285	9	36	Hydr. front	Screws	Yes	180	894	185	784,9
SHS-530 P	530	440	1467,8	940	215	15,5	29	299	10	36	Hydr. front	Screws	No	180	813	180	980,4

Type	d mm	dw mm	M_{max}* kNm	D mm	l mm	e mm	s mm	H mm	Z	S	Bauform	Ver-riegelung	Ab-drück-kolben	P bar	n_{max} min^{-1}	p_N N/mm^2	Gewicht kg
SHS-530.1/2,8 P	530	440	2383,8	1100	280	22,5	40	405	18	36	Hydr. front	Screws	Yes	180	694	235	2051,2
SHS-530.2/2,5 P	530	430	1965,8	1060	240	100	32	341	15	36	Hydr. back	Screws	Yes	180	721	223	1550
SHS-530.2/2,5 P-BR	530	430	1965,8	1060	240	100	32	379	15	36	Hydr. back	Bayonet ring	Yes	180	721	223	1621
SHS-530.3 P	530	420	1112,5	920	200	15	22	284	10	36	Hydr. front	Screws	Yes	180	830	165	886
SHS-530.3/2,5 P	530	440	1815	990	240	15	40	322	12	36	Hydr. front	Screws	No	180	772	199	1210,4
SHS-560.4 P	560	470	2219	1100	240	100	38	340	15	36	Hydr. back	Bayonet ring	Yes	180	694	217	1722,9
SHS-590.1 P	590	500	2444	1100	250	100	40	365	15	36	Hydr. back	Screws	Yes	180	694	199	1696,9
SHS-620 P	620	510	1316	1020	235	15	35	327	12	36	Hydr. front	Screws	Yes	180	749	118	1124,8
SHS-640 P	640	520	1368	1040	235	15	35	327	12	36	Hydr. front	Screws	Yes	180	735	118	1180
SHS-640/620 P	620	510	1302	1040	235	15	35	327	16	36	Hydr. front	Screws	Yes	180	735	122	1216,4
SHS-640.1 P	640	520	2782	1180	250	112	40	358	18	36	Hydr. front	Screws	Yes	180	647	207	1892
SHS-640.1/620 P	620	510	2611	1180	250	112	40	358	18	36	Hydr. front	Screws	Yes	180	647	205	1931
SHS-640.2/620 P	620	510	3520	1260	340	28	45	482	16	42	Hydr. front	Screws	Yes	180	606	206	3100
SHS-660 P	660	530	2453	1130	260	20	35	383	14	36	Hydr. front	Screws	No	180	676	170	1733
SHS-660/640 P	640	520	2342	1130	260	20	35	383	14	36	Hydr. front	Screws	No	180	676	175	1774
SHS-660.1 P	660	530	2427	1130	225	18	35	328	14	36	Hydr. front	Screws	No	180	676	199	1497
SHS-720.1 P	720	585	2924	1180	210	105	33	320	16	36	Hydr. back	Screws	No	180	647	174	1516
SHS-720.3 P	720	575	3000	1240	250	19	34	354	16	36	Hydr. front	Screws	Yes	180	616	187	1943
SHS-720.3/700 P	700	560	2972	1240	250	19	34	354	16	36	Hydr. front	Screws	Yes	180	616	191	1986
SHS-720.4 P	720	530	3560	1400	290	30	45	447	18	42	Hydr. front	Screws	Yes	180	546	237	3474
SHS-750 P	750	600	3968	1350	280	25	45	432	24	36	Hydr. front	Screws	Yes	180	566	208	2921
SHS-750.3 P	750	540	2921	1280	280	23	40	397	20	36	Hydr. front	Screws	No	180	597	189	2308
SHS-750.4 P	750	625	5013	1370	300	33	50	447	18	42	Hydr. front	Screws	Yes	180	558	221	3144
SHS-750.6 P	750	600	2676	1210	210	104	33	320	16	36	Hydr. front	Screws	No	180	631	180	1564
SHS-800.1 P	800	695	4968	1390	280	130	45	458	18	42	Hydr. back	Bayonet ring	Yes	180	550	210	2897

Type	d mm	dw mm	M_{max}* kNm	D mm	l mm	e mm	s mm	H mm	Z	S	Bauform	Ver-riegelung	Ab-drück-kolben	P bar	n_{max} min^{-1}	P_N N/mm^2	Gewicht kg
SHS-800.2 P	800	695	5648	1390	280	23	40	398	20	36	Hydr. front	Screws	Yes	180	550	207	2750
SHS-800.2/750 P	750	620	4758	1390	280	23	40	398	20	36	Hydr. front	Screws	Yes	180	550	221	2893
SHS-800.3 P	800	695	4968	1390	280	130	45	458	18	42	Hydr. back	Bayonet ring	Yes	180	550	210	2902
SHS-800.4 P	800	695	6141	1430	300	33	50	448	18	42	Hydr. front	Screws	Yes	180	534	209	3351
SHS-800.5 P	800	650	4104	1360	260	92	32	400	18	42	Hydr. back	Bayonet ring	Yes	200	562	193	2360
SHS-850.1/820 P	820	660	5177	1480	280	120	45	398	24	36	Hydr. back	Screws	Yes	180	516	212	3199
SHS-900.1/890 P	890	790	8832	1580	420	135	50	612	24	42	Hydr. back	Bayonet ring	Yes	180	484	169	5226
SHS-900/890 P	890	790	6852	1500	320	131	45	496	18	42	Hydr. back	Bayonet ring	Yes	180	509	171	3598
SHS-950 P	950	790	5209	1500	300	135	40	417	20	36	Hydr. back	Screws	Yes	180	509	145	3004
SHS-950.2 P	950	790	7592	1610	320	30	55	462	21	42	Hydr. vorne	Screws	Yes	180	474	189	4164
SHS-1000.6/980 P	980	820	5430	1500	320	120	40	477	20	36	Hydr. back	Bayonet ring	Yes	190	509	128	3075
SHS-1000.6/990 P	990	830	5360	1500	320	120	40	477	20	36	Hydr. back	Bayonet ring	Yes	190	509	127	3036
SHS-1000.7/980 P	980	820	9352	1740	340	130	50	522	28	42	Hydr. back	Bayonet ring	Yes	180	439	201	5216
SHS-1000.8/980 P	980	820	6892	1540	300	120	40	459	20	36	Hydr. back	Bayonet ring	Yes	190	496	168	3100
SHS-1000/990 P	990	820	4805	1500	320	120	40	437	20	36	Hydr. back	Screws	Yes	180	509	117	2933
SHS-1050 P	1050	880	13279	1900	420	140	50	563	34	42	Hydr. back	Screws	Yes	160	402	198	7610
SHS-1050.1 P	1050	835	7112	1620	320	135	45	497	24	36	Hydr. back	Bayonet ring	Yes	180	472	162	3758
SHS-1050.2 P	1050	940	13211	1730	420	140	55	612	24	42	Hydr. back	Bayonet ring	Yes	200	442	179	5817
SHS-1050.3 P	1050	890	9447	1880	380	150	50	523	28	42	Hydr. back	Bayonet ring	Yes	160	406	176	5318
SHS-1050.4 P	1050	890	9740	1750	350	33	50	502	21	42	Hydr. front	Screws	Yes	180	437	174	5349

Calculated with a friction coefficient of 0.14

Industrial applications

Technical Properties

- Adaptable to various inner diameters
- Strong corrosion protection if required
- High functional reliability
- Suitable for high torques
- Requires low pressure for clamping
- Very fast clamping/releasing compared to mechanical shrink discs
  Maintenance and repair can be carried out by the customer
- Low follow-up costs

Functional Description

The hydraulic shrink disc from TAS SCHÄFER is based on the principle of the three-part shrink disc and consists of two pressure rings and an inner ring.

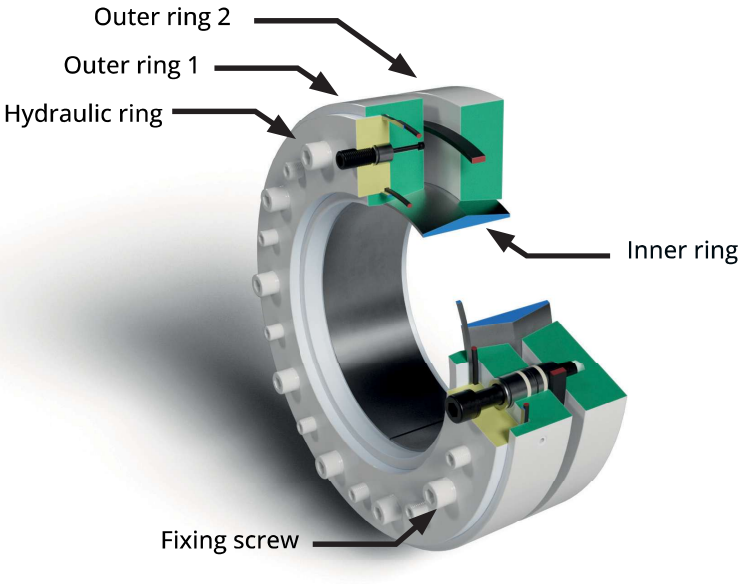
In addition, the hydraulic shrink disc is equipped with an integrated hydraulic ring. When hydraulic pressure is applied, the two pressure rings move axially towards each other.

Via conically designed contact surfaces, this generates a radial pressing force on the hub, which ensures a backlash-free and form-fitting connection between shaft and hub.

Two different designs are available for industrial applications, however due to the nature of the application, the design with hydraulics at the front is predominantly used here.

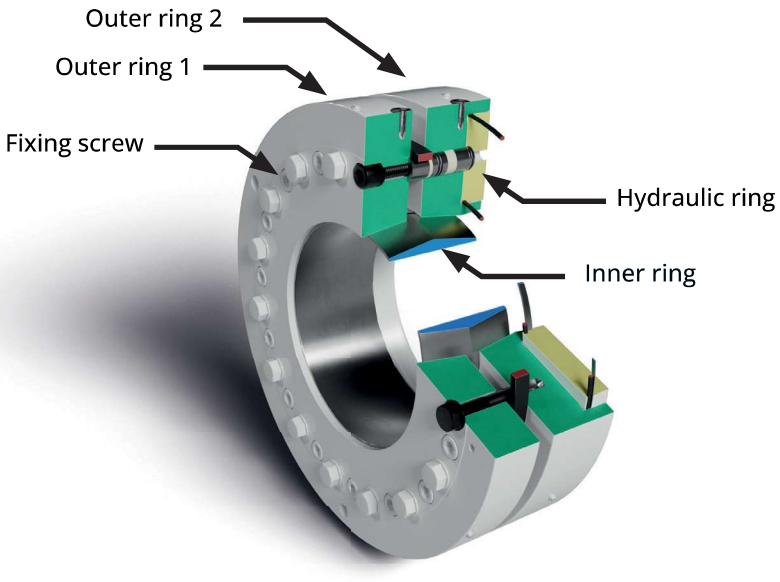
Design with hydraulic system frontside

This design is suitable for short hub lengths. It is hydraulically tensioned and can be released either mechanically or hydraulically depending on the version. Locking is achieved via fixing screws.



Design with hydraulic system backside

This variant requires a longer hub. It is hydraulically tensioned and can be released either mechanically or hydraulically depending on the version. Locking is achieved via fixing screws.



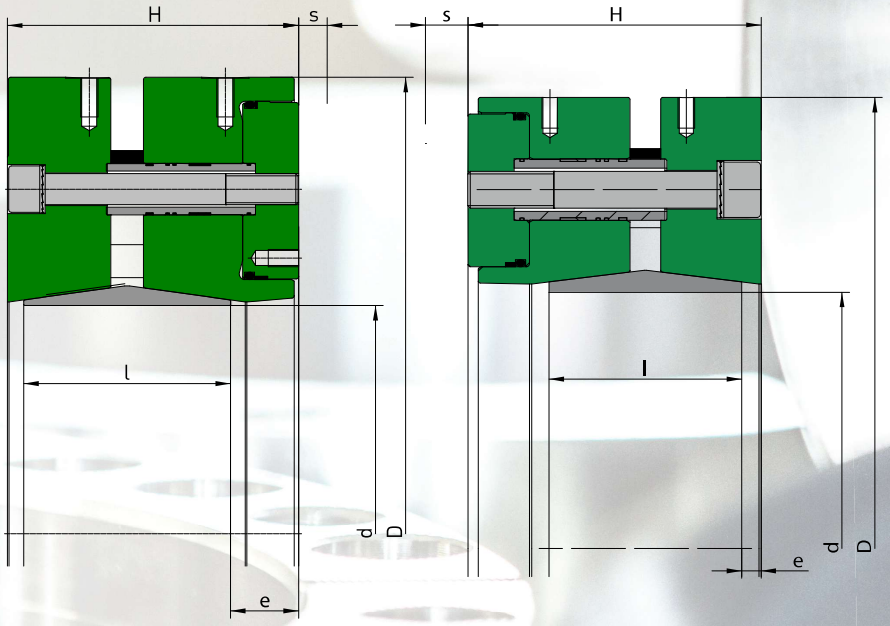
Assembly, Operation and Disassembly in Detail

Regardless of the design, the hydraulic shrink disc is first positioned on the hollow shaft. The shaft is then inserted into the hub. To ensure proper function and a sufficiently high friction coefficient, the contact surfaces between shaft and hub must be grease-free, dry and clean. To facilitate assembly, the surfaces between the shrink disc and hub are lightly oiled.

After positioning, the hydraulics are connected to tension the shrink disc. The shrink disc is then pressurized to between 180 and 200 bar, which causes the shrink disc to be tensioned.
Once the preload has been established, the shrink disc is fixed in its tensioned position by tightening the fastening screws. The hydraulic pressure is then released. The hydraulic oil contained in the shrink disc can either be completely removed or - to speed up later disassembly - left inside the shrink disc.
The hydraulic shrink disc is now ready for use. It generates the necessary contact pressure for a reliable connection between shaft and hub, but does not itself transmit any forces or torques and is therefore not in the force flow.

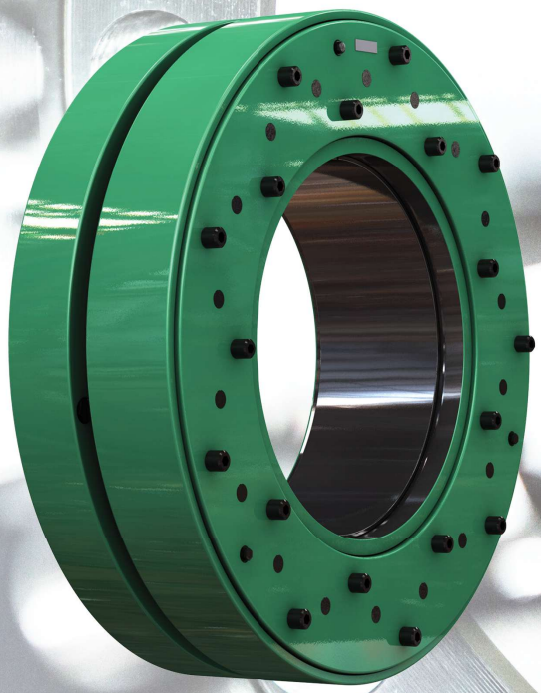
For disassembly, the procedure is carried out in reverse order. In industrial plants, assembly processes for shrink discs often take place only during maintenance procedures and initial installations. The hydraulic shrink discs then remain in operation for many years. For this reason, a stable design and a long service life are the primary focus. The complete separation of the pressure rings in this design is usually achieved mechanically using screws. Upon customer request, it is also possible to equip these series with hydraulic release pistons to simplify the disassembly process.

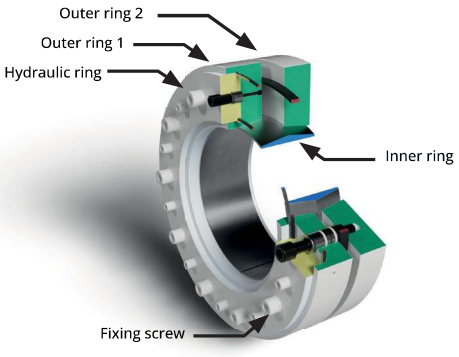
SHS



Design with hydraulic system backside

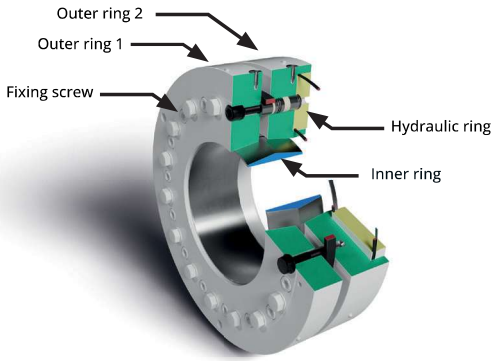
Design with hydraulic system frontside





Symbols Used

d	[mm]	Nominal diameter of the shrink disc
d_W	[mm]	Shaft diameter
M_{max}	[mm]	Maximum transmittable torque
D	[mm]	Outer diameter
l	[mm]	Length of the inner ring
e	[mm]	Excess length
s	[mm]	Maximum travel distance of the hydraulic ring
H	[mm]	Width of the shrink disc
Z		Number of fixing screws
S		Size of fixing screws
P	[bar]	Hydraulic pressure
n_{max}	[min-1]	Permissible rotational speed
p_N	[N/mm²]	Average pressure to the hub



Type	d mm	d_W mm	M_{max}* kNm	D mm	l mm	e mm	s mm	H mm	z	S	Design	Locking	P bar	n_{max} min^{-1}	p_N N/mm^2	Weight kg
SHS-100	100	80	8,4	190	38	2	5	46	-		Hydr. front	Screws	180	4021	150	7,3
SHS-165	165	120	31,3	320	56	8,5	11	98	6	16	Hydr. front	Screws	180	2387	225	38,9
SHS-165/155	155	110	27,3	320	56	8,5	11	98	6	16	Hydr. front	Screws	180	2387	239	40
SHS-165 MD DT	165	120	26,9	320	56	8,5	11	98	6	16	Hydr. front	Screws	180	2387	233	38,9
SHS-175	175	130	48	340	56	8,5	11	98	8	16	Hydr. front	Screws	180	2247	224	44
SHS-185	185	125	34,7	355	71	8,5	10	107	6	20	Hydr. front	Screws	180	2152	253	52,9
SHS-185 MD DT	185	125	35,9	355	71	8,5	11	107	6	20	Hydr. front	Screws	180	2152	253	52,9
SHS-195	195	145	76,4	390	71	8	11	118	8	20	Hydr. front	Screws	180	1959	267	71,8
SHS-200	200	150	84,1	390	71	8	11	118	6	20	Hydr. front	Screws	180	1959	256	70,5
SHS-200 MD DT	200	150	63,8	390	71	8	11	118	6	20	Hydr. front	Screws	180	1959	244	70,5
SHS-220	220	165	133,6	430	88	10,5	11	147	6	24	Hydr. front	Screws	180	1777	268	108
SHS-240	240	180	128,5	445	92	11,5	11	147	8	24	Hydr. front	Screws	180	1717	218	112
SHS-240 MD DT	240	180	113,9	445	92	10,5	11	147	8	24	Hydr. front	Screws	180	1717	237	113
SHS-240.1 MD DT	240	180	101,7	445	92	9	10	135	8	24	Hydr. front	Screws	180	1717	218	113
SHS-260	260	190	154,8	480	103	10,5	12	158	8	24	Hydr. front	Screws	180	1592	180	140
SHS-260 MD DT	260	180	101,2	470	103	10,5	11	158	8	24	Hydr. front	Screws	180	1625	194	140
SHS-280	280	220	194,8	515	114	8	12	175	8	24	Hydr. front	Screws	180	1483	178	178
SHS-300	300	220	267,7	540	122	8	12	191	8	24	Hydr. front	Screws	180	1415	214	207
SHS-320	320	260	293,1	555	122	11	12	191	8	24	Hydr. front	Screws	180	1376	176	213
SHS-320 MD DT	320	230	198,4	555	122	8	12	191	8	24	Hydr. front	Screws	180	1376	193	213
SHS-340	340	260	410,6	610	134	15	16	214	10	24	Hydr. front	Screws	180	1252	216	298
SHS-340 MD DT	340	260	268	590	134	15	12	214	8	24	Hydr. front	Screws	180	1295	175	271
SHS-360	360	280	303,9	630	140	11	15	220	8	30	Hydr. front	Screws	180	1213	146	317
SHS-390	390	310	525,6	705	144	11,5	15	225	8	30	Hydr. front	Screws	180	1084	183	416
SHS-420	420	340	529,7	715	164	14	10	236	8	36	Hydr. front	Screws	180	1068	136	434
SHS-420.1 MD DT	420	330	601,9	750	164	11,5	15	236	8	30	Hydr. front	Screws	200	1019	193	498
SHS-420 MD DT	420	330	512	750	164	11,5	15	236	8	30	Hydr. front	Screws	180	1019	174	501
SHS-420.3	420	330	714,2	750	164	14	15	236	8	30	Hydr. front	Screws	180	1019	192	498
SHS-420.3/390	390	310	681,1	750	164	14	15	236	8	30	Hydr. front	Screws	180	1019	207	522
SHS-425 MA DT	425	340	671,9	800	226	7	15	302	10	30	Hydr. front	Screws	180	955	150	768
SHS-440	440	350	784,2	785	177	18	25	268	8	36	Hydr. front	Screws	190	973	178	601
SHS-440/420	420	330	727,1	785	177	18	25	268	8	36	Hydr. front	Screws	190	973	186	620
SHS-460	460	360	906,9	810	177	18	25	268	8	36	Hydr. front	Screws	180	943	188	643
SHS-480	480	380	1142,8	855	188	17	22	288	9	36	Hydr. front	Screws	180	894	201	791
SHS-480/460	460	370	1135	855	188	17	22	288	9	36	Hydr. front	Screws	180	894	209	813
SHS-480.3/460	460	370	1047,9	855	188	17	26	288	9	36	Hydr. front	Screws	180	894	193	813
SHS-500	500	400	1513,5	880	188	17	22	286	10	36	Hydr. front	Screws	200	868	238	821
SHS-500/480	480	380	1419,9	880	188	17	22	286	10	36	Hydr. front	Screws	200	868	248	844
SHS-500.1	500	400	1555,4	880	188	19	30	288	10	36	Hydr. front	Screws	200	868	230	816
SHS-500/1,7	500	410	1539,8	880	188	19	28	286	10	36	Hydr. front	Screws	200	868	230	816
SHS-530	530	430	1295,5	940	215	14	28	300	10	36	Hydr. front	Screws	200	813	156	969
SHS-530/2,5 R2	530	440	2318,4	990	215	14	33	295	12	36	Hydr. front	Screws	180	772	248	1089
SHS-560	560	460	1940,6	980	240	13	25	320	12	36	Hydr. front	Screws	200	780	181	1124

Type	d mm	d_W mm	M_{max}* kNm	D mm	l mm	e mm	s mm	H mm	z	S	Design	Locking	P bar	n_{max} min^{-1}	p_N N/mm^2	Weight kg
SHS-560 MD DT	560	460	1448,5	980	240	13	25	320	12	36	Hydr. front	Screws	180	780	161	1133
SHS-560.3	560	480	2798,6	1100	280	23	40	408	18	36	Hydr. front	Screws	180	694	201	1980
SHS-590	590	470	1759,7	1020	240	13	25	320	12	36	Hydr. front	Screws	180	749	160	1202
SHS-590.2 MD DT	590	460	2656	1200	310	26	45	453	16	42	Hydr. front	Screws	Yes	637	230	2634
SHS-590.3	590	500	3294,4	1160	280	23	40	407	18	36	Hydr. front	Screws	180	659	219	2203
SHS-620	620	510	2185,1	1020	235	17	30	328	12	36	Hydr. front	Screws	200	749	171	1125
SHS-640	640	520	1844,2	1040	235	17	30	328	12	36	Hydr. front	Screws	200	735	136	1180
SHS-660	660	540	2699,4	1130	260	20	35	383	14	36	Hydr. front	Screws	180	676	170	1733
SHS-660.1	660	530	2600,7	1130	225	18	35	328	14	36	Hydr. front	Screws	180	676	199	1497
SHS-700.1	700	560	3568,7	1250	275	16	30	358	18	36	Hydr. front	Screws	180	611	196	2107
SHS-700.1/660	660	530	3410	1250	275	16	30	358	18	36	Hydr. front	Screws	180	611	208	2199
SHS-720	720	630	2207,7	1100	250	8	22	367	12	36	Hydr. front	Screws	200	694	108	1240
SHS-720.2/700	700	585	4942,5	1320	280	118	40	397	24	36	Hydr. back	Screws	180	579	238	2642
SHS-750	750	620	5202,6	1350	280	25	40	432	24	36	Hydr. back	Screws	180	566	230	2919
SHS-1050.5	1050	890	7895	1620	300	110	40	407	24	42	Hydr. back	Screws	180	472	157	3315
SHS-1050.5/980	980	820	7173,8	1620	300	110	40	407	24	42	Hydr. back	Screws	180	472	167	3577

Calculated with a friction coefficient of 0.15
Type MD DT calculated with a friction coefficient of 0.12