seide

Engineered for Excellence, Built for Power!

HYDRAULIC CYLINDER CATALOG

2024

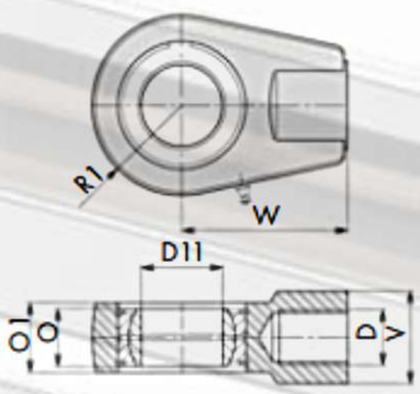
WWW.SEIDEMACHINE.COM

Superior Hydraulic
Systems for Tomorrow.

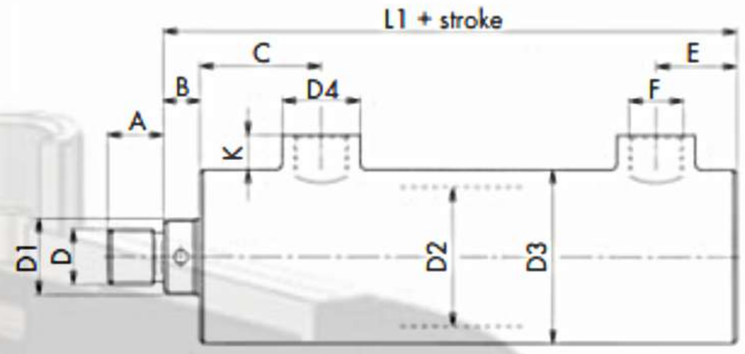
seide

CYLINDER MANUFACTURING

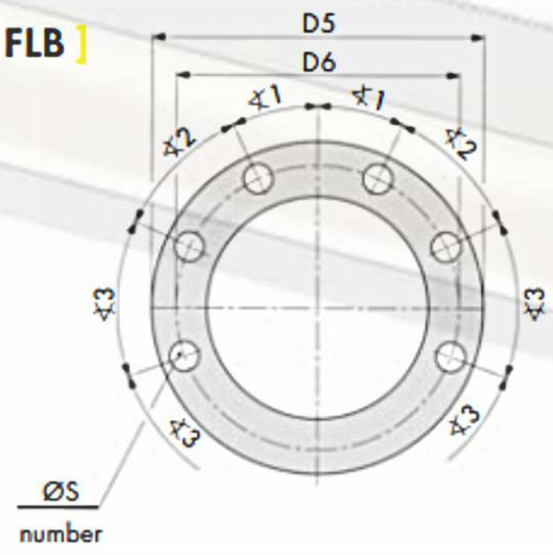
[SGK]

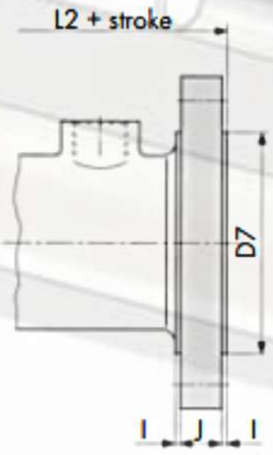


[Standard model]

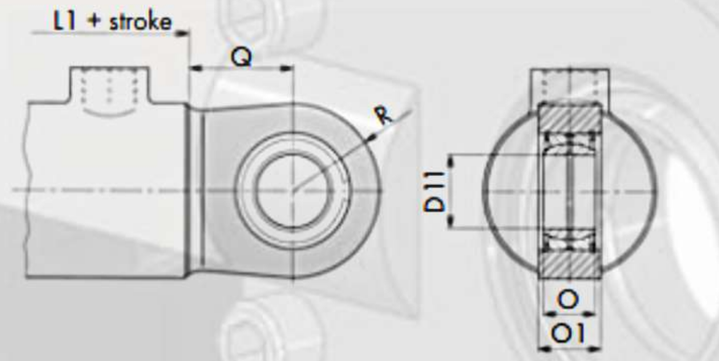


[FLB]

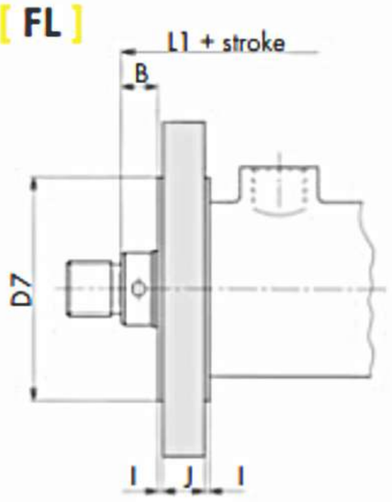


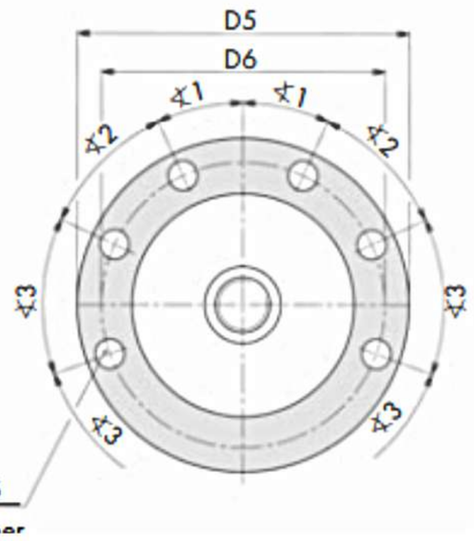


[BGK]

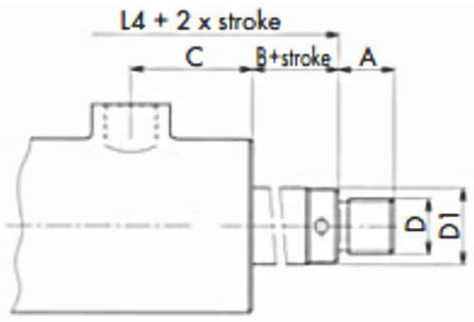


[FL]





[FLDK]



IMPORTANT TECHNICAL INFORMATION

- The regulations of the Technical Supervision, Social Insurance Against Occupational Hazards and the respective environmental regulations etc. must be observed.
- Plant driven by a cylinder must be laid out in such a manner that in case of technical or human failure there is no danger of injury or death.
- We reserve the right to alter or improve design specifi cations without prior notice.

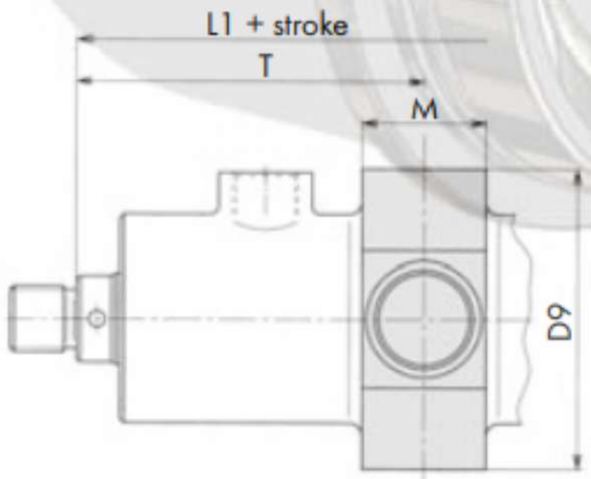
Superior Hydraulic
Systems for Tomorrow.

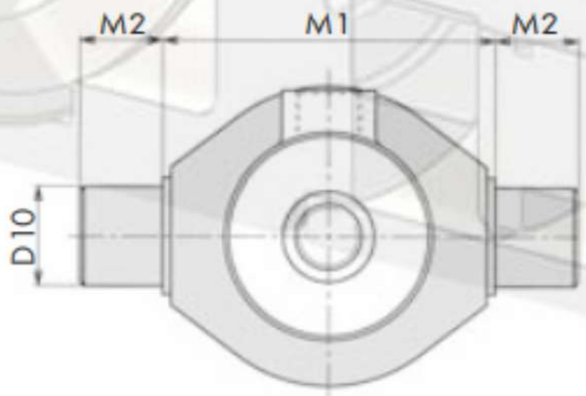
seide

HYDRAULIC CYLINDER EHZ

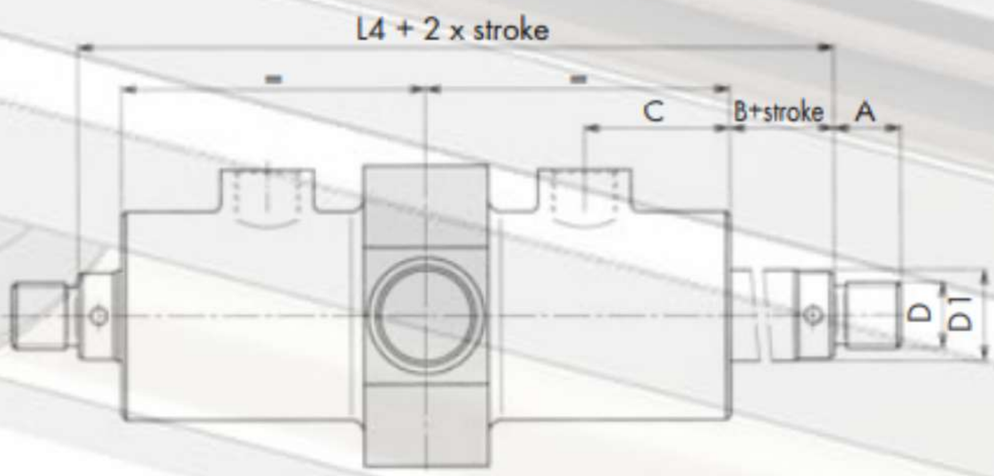
Size (piston-Ø) Ø D2	Hydraulic cylinder EHZ																				
	rod ø D1[1)]	A	B	C	D	ø D3	ø D4	ø D5	ø D6	ø D7 h11	ø D8	ø D9	ø D10 f7	ø D11 K7	E	F port size	G[1)]	H	H1	I	J
40	22	16	9	38	M16x1,5	50	30	96	82	64	13	68	20	25	27	G ½"	40	24	30	1,5	12
50	28	22	12	45	M22x1,5	65	30	114	100	85	17	90	32	30	29	G ½"	50	34	40	2	12
63	36	28	15	51	M28x1,5	78	35	128	114	100	20	103	40	35	32	G ¾"	60	38	48	2,5	15
80	45	35	15	62	M35x1,5	100	35	153	136	120	24	130	50	40	36	G ¾"	70	48	60	3	18
100	56	45	18	73	M45x1,5	125	45	190	170	150	30	155	63	50	46	G 1"	80	58	75	4	20
125	70	58	22	77	M58x1,5	150	45	220	200	180	33	185	80	60	51	G 1"	90	68	90	4	24
160	90	80	25	106	M80x2	190	55	285	258	230	45	235	100	80	59	G 1¼"	110	88	115	4	28
200	110	100	25	134	M100x2	245	55	350	315	280	58	280	125	90	65	G 1¼"	140	118	150	5	34

[SZ]

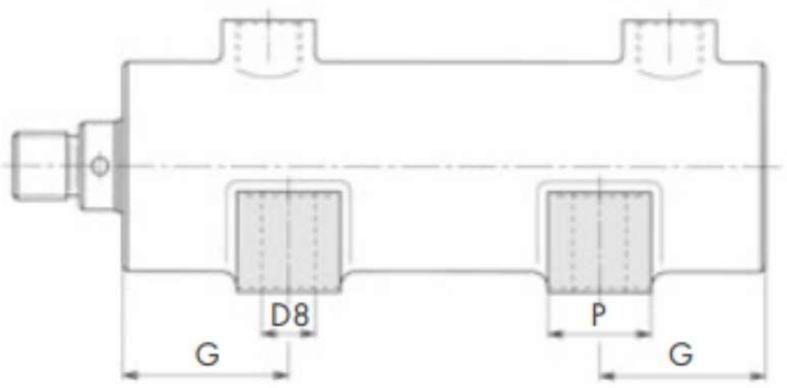


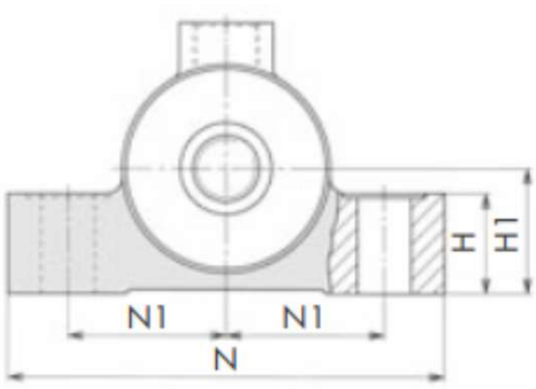


[SZDK]

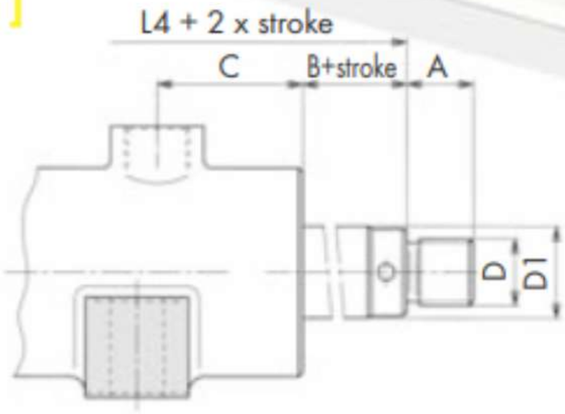


[FU]





[FUDK]



Superior Hydraulic
Systems for Tomorrow.

seide

ORDERING CODE

EHZ . **SGK** . **80** - **45** - **530** . **FL**

- EHZ — Eckart-Hydraulic cylinder
- SGK — spherical bearing (only if necessary)
- 80 — size (piston-Ø)
- 45 — rod diameter
- 530 — stroke
- FL — flange mounting
- FLB — flange mounting, bottom side
- BGK — spherical bearing, bottom side
- FU — foot monting
- SZ — center trunnion
- FLDK — flange mounting, double ended rod
- FUDK — foot mounting, double ended rod
- SZDK — center trunnion, double ended rod

1) Non-standard options on request
2) Tolerance of bottom swivel eye clevis according to EN 29-69
- Max. stroke 4000 mm, from 900 mm pleace consult factory
- Please find all other dimensions at drawing standard model.

Hydraulic cylinder EHZ																					Size (piston-Ø) Ø D2
K	L1 + stroke	L2 + stroke	L4 + 2xstroke	M	M1 h13	M2 js16	N	N1	O	O1[2]	P	Q	R	R1	ØS /number	∢1	∢2	∢3	T mind.[1]	V	W	
16	114	127	148	43	90	16	105	38	20	23	25	45	27,5	30	8,5/6	40	50	60	100	25	50	**40**
16	130	145	174	53	112	25	135	50	22	28	35	51	32,5	34	8,5/8	35	32,5	45	115	32	60	**50**
18	150	168	205	63	125	32	160	60	25	30	40	61	41,5	42	8,5/8	40	27,5	45	132	40	70	**63**
18	167	188	230	67	150	40	200	75	28	35	50	69	50	50	11/8	35	32,5	45	145	49	85	**80**
20	200	225	266	87	180	50	240	90	35	40	60	88	61,5	63	14/8	30	37,5	45	172	61	105	**100**
20	218	247	298	107	224	63	300	115	44	50	70	100	70	70	14/12	25	20	30	190	75	130	**125**
23	264	297	370	127	280	80	380	145	55	60	90	141	90	95	18/12	25	20	30	238	102	170	**160**
23	303	344	432	157	335	100	460	175	60	65	120	150	113	112	22/12	25	20	30	281	124	210	**200**

Superior Hydraulic
Systems for Tomorrow.

seide

FUNCTION AND FEATURES EHZ

✓ The rod seals are according to ISO-standard. The piston seal is tried and tested since two decades
✓ Piston and rod diameter according to DIN-ISO 3320
✓ Area proportion ☒1.4 according to DIN-ISO 7181
✓ Five different mounting possibilities for a wide range of applications
✓ Compact and robust design
✓ Simple accurate contour
✓ Non-standard options on request

piston-Ø:	40 to 200 mm
operating pressure:	250 bar
test pressure:	375 bar
stroke:	up to 4000 mm
time of stroke:	0,3 m/s *higher on request*
medium:	mineral oil of group HLP/DIN 51524, page 2 and VDMA page 24318
	others on request
temperature range:	-25°C to +75°C *higher on request*
seal:	NBR, PU (Standard)
	PTFE and Viton® (special design)
tube:	St-52 honed - tolerance H8
rod:	Ck-45 hard chromed, thickness 0,025 mm
	diameter tolerance ISO f7
	options: NIKROM treatment, hardend surface, stainless steel
mounting:	basic design, flange, foot, spherical bearing,
	clevis, center trunnion at different positions

Superior Hydraulic
Systems for Tomorrow.

seide

KEY FEATURES OF CYLINDER MANUFACTURING

- ***Hydrostatic Testing up to 1500 Bar: Each hydraulic cylinder is tested up to 1500 bar, ensuring high pressure resistance and reliability.***

- *Testing with NAS 5 Filtered Hydraulic Oil: We use NAS 5 standard filtered hydraulic oil in our testing process, ensuring optimal cleanliness and efficiency of the system.*

- ***Reduced Seal Wear During Storage: When storing cylinders, we minimize seal wear and tear, ensuring long-term performance and reducing the risk of leakage.***

- *Robotic Welding to Minimize Defects: By utilizing robotic welding technology, we reduce defects and imperfections, enhancing the overall quality of our products.*

- ***Product Traceability through Unique Coding: We apply unique codes to each product, allowing us to track and trace each cylinder and its production history. This ensures effective monitoring and research capabilities.***

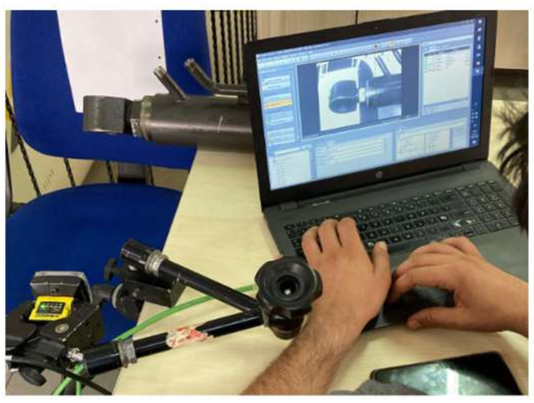
Superior Hydraulic Systems for Tomorrow.

seide

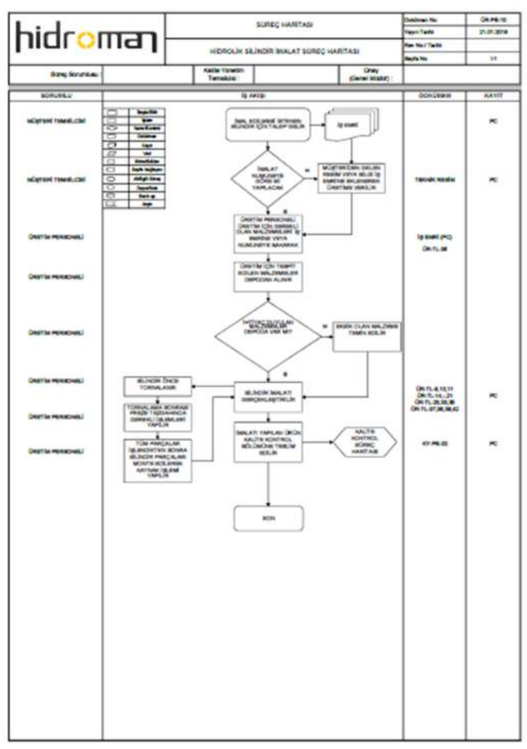
UP TO NAS 5 FLUSHING

%100 TESTING FOR PREMIUM QUALITY

PACKAGING

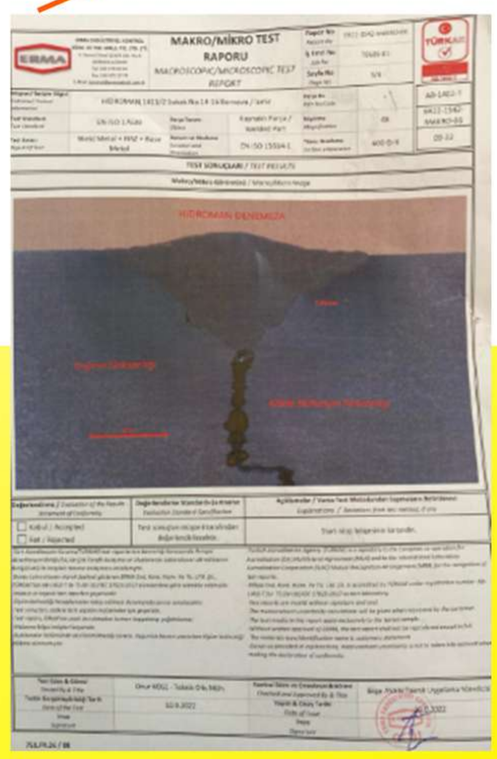


%100 CONTROL ON QUALITY



PRODUCTION PART APPROVAL PROCESS (PPAP)

WELDING PROCEDURE SPECS (WPS)



TRACEABILITY

ROBOTIC WELDING

WWW.SEIDEMACHINE.COM

Superior Hydraulic
Systems for Tomorrow.

seide

HYDROSTATIC TESTING

Hydraulic cylinders are vital components in hydraulic systems, widely used in industries such as construction, manufacturing, and aerospace. These cylinders operate under high pressure, making it essential to ensure their durability and safety through comprehensive testing. Hydrostatic testing is a key method for verifying the cylinder's ability to handle pressures beyond its normal operating range. In this case, a testing pressure of 1500 bar is applied, which is often higher than the typical working pressure to ensure the cylinder can withstand extreme conditions without failure.

Testing Process and Methodology
The hydrostatic testing procedure with a pressure of 350 bar follows these general steps:

Preparation: The hydraulic cylinder is securely mounted to a testing fixture, and all connections are checked for safety. The cylinder is filled with water or another incompressible fluid to avoid potential air pockets.

Pressure Application: The cylinder is pressurized to 350 bar, which is above its normal operational pressure, to simulate extreme working conditions. This ensures the cylinder’s integrity under high-stress situations.

Monitoring: The cylinder is carefully monitored for any signs of failure, including leaks, cracks, or deformation at the seals and joints. Continuous pressure monitoring is performed to ensure stability throughout the test.

Evaluation: After the test, the cylinder is inspected for any issues that may indicate weaknesses in the design, material, or manufacturing process. If any defects are found, the cylinder is either reworked or replaced.

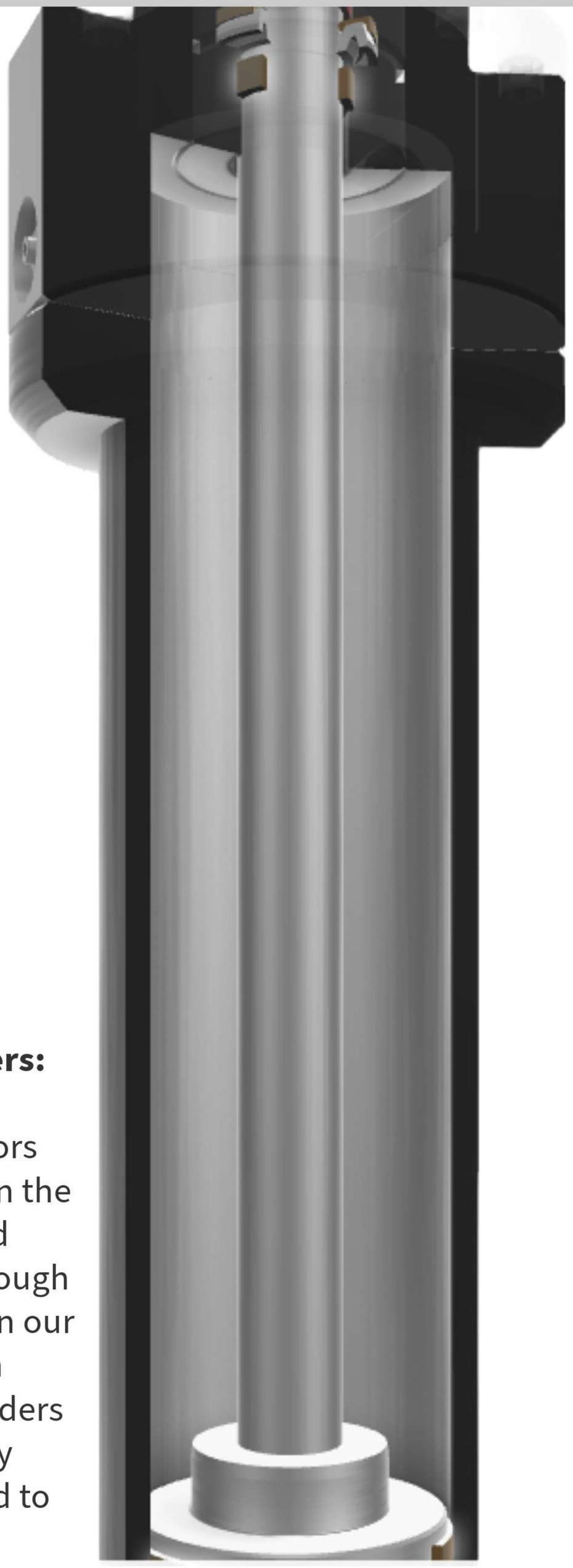
Superior Hydraulic
Systems for Tomorrow.

seide

Hydraulic Cylinder Testing with Filtration Systems

At **Seide**, we prioritize both the performance and longevity of the hydraulic cylinders we produce. To ensure maximum operational efficiency, we perform rigorous testing using hydraulic fluid that is fully filtered and free of particulate contamination. The hydraulic oil used in our testing processes is of the NAS 5 grade, a high-quality fluid that guarantees superior cleanliness standards.

One of the key benefits of utilizing this filtration system is the elimination of particulate contamination within the hydraulic fluid, ensuring that our cylinders are exposed only to clean, contaminant-free oil during testing. This results in cylinders that not only meet but exceed industry standards for performance and reliability. The use of NAS 4 grade hydraulic oil further supports the achievement of longer service life and maximum operational efficiency by preventing wear and maintaining the integrity of internal components.



Minimized Risk of Seal Damage in Long-Storage Cylinders:

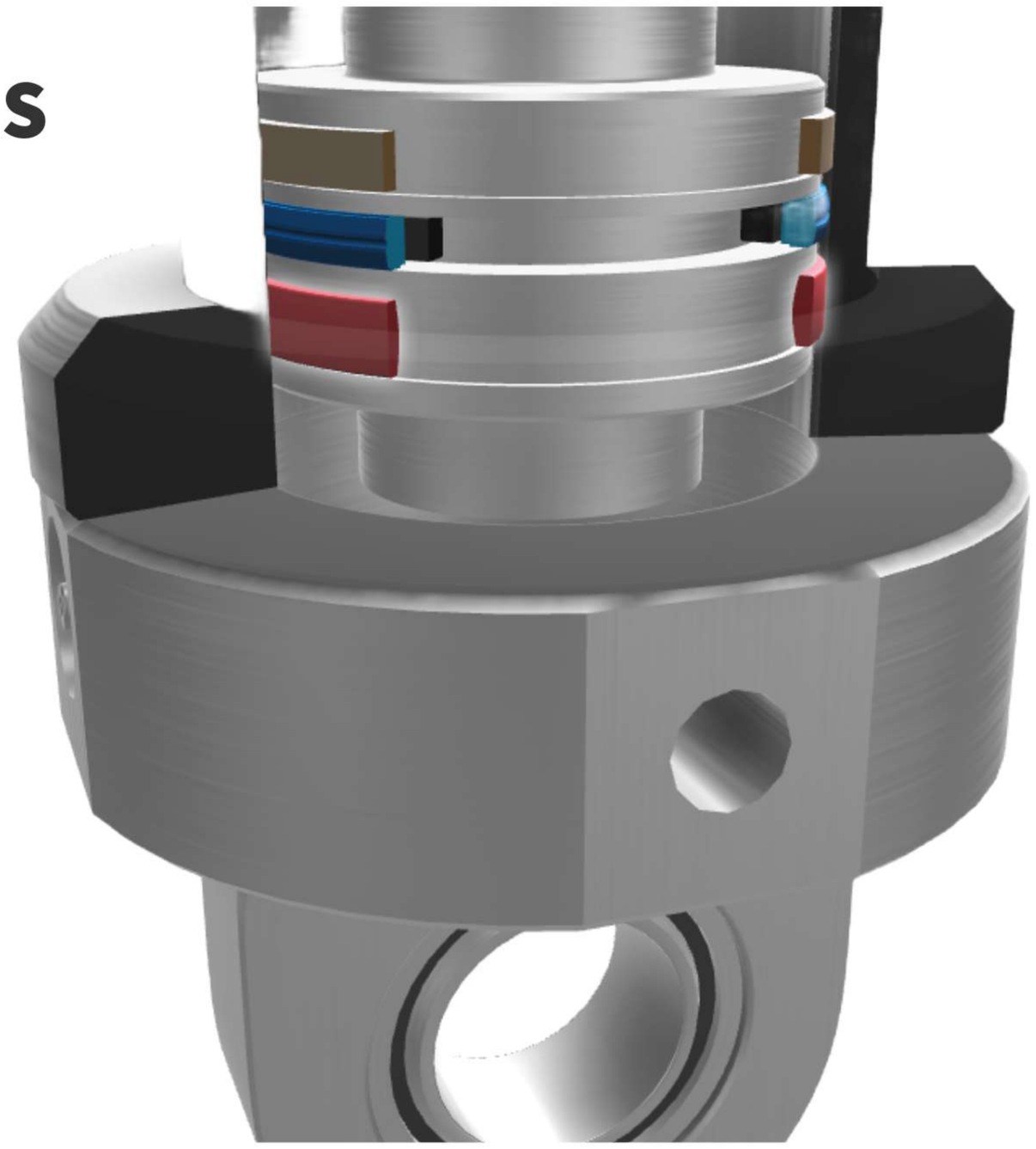
Hydraulic cylinders that are stored for long periods in sectors requiring stockpiling will typically retain a thin film of oil on the piston rod. This oil film protects the seals from dryness and prevents seal failure caused by dehydration. With our thorough filtration process and the use of NAS 4 grade oil, the seals in our cylinders remain lubricated and in optimal condition, even during extended periods of storage. As a result, these cylinders will not suffer from the dryness-related issues that typically affect seals, ensuring smooth operation when reintroduced to service.

Superior Hydraulic
Systems for Tomorrow.

seide

ROD AND PISTON SEALS

The quality of piston and rod seals in hydraulic cylinders is a fundamental factor in ensuring optimal performance, safety, and longevity of the hydraulic system. By selecting high-quality seals that are tailored to the specific requirements of the application—taking into account factors such as material, design, surface finish, and environmental conditions—operators can significantly reduce the risk of leaks, contamination, and excessive wear. Ultimately, investing in the right seals contributes to lower maintenance costs, higher system efficiency, and increased operational reliability.



Impact of Seal Quality on Hydraulic Cylinder Performance

Leakage Prevention
The most immediate effect of poor-quality piston and rod seals is leakage. Inadequate sealing allows hydraulic fluid to escape, leading to pressure drops, loss of system efficiency, and contamination of the hydraulic fluid. Continuous leakage can also lead to excessive fluid consumption and higher maintenance costs.

System Efficiency and Power Loss
Seals with high friction or poor sealing capability reduce the overall efficiency of the hydraulic system. Increased friction leads to higher energy consumption and wear on the moving components. Poor-quality seals may also fail to maintain proper pressure, resulting in sluggish or inconsistent cylinder movement.

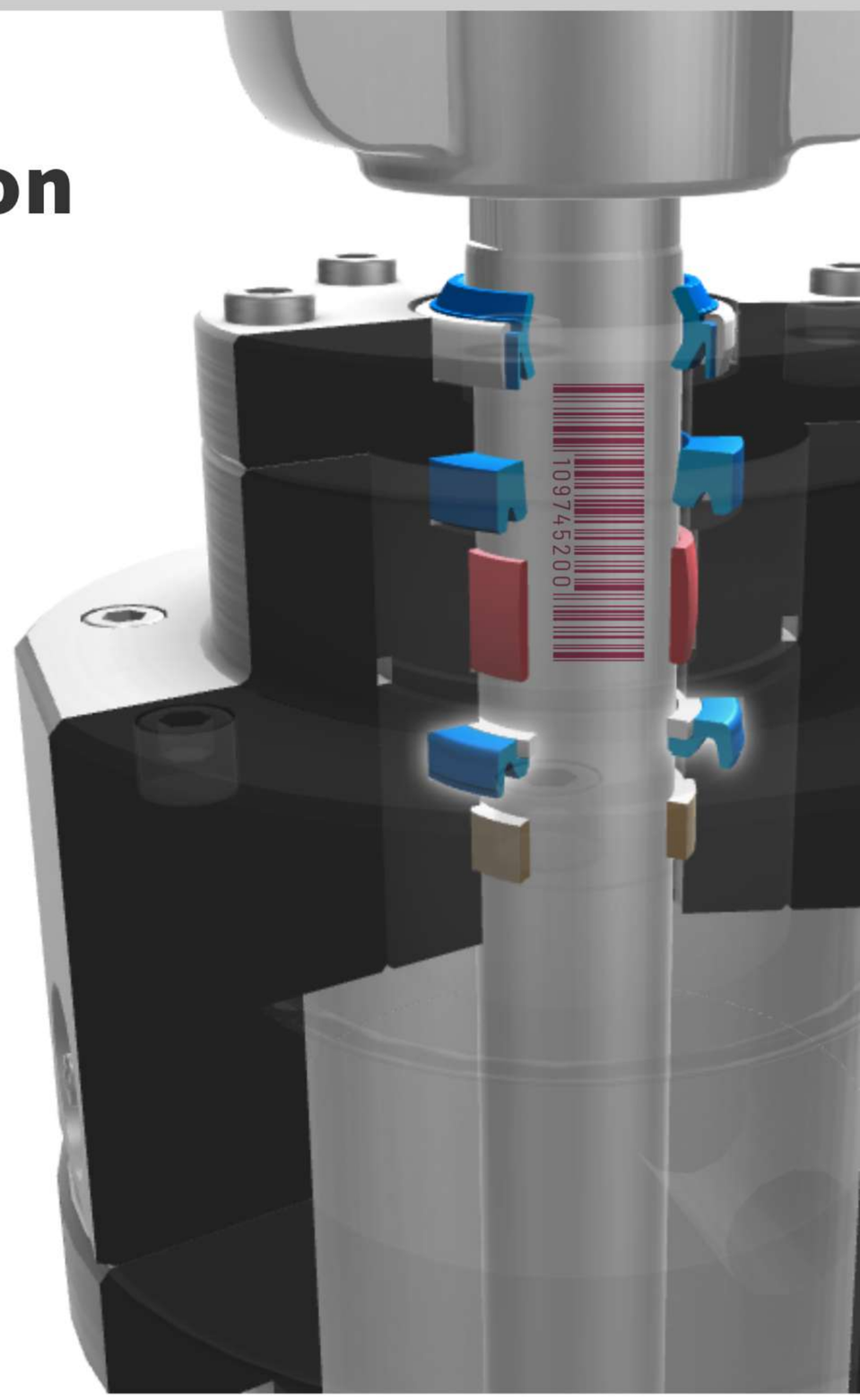
Durability and Maintenance Costs
The quality of seals directly influences the lifespan of the hydraulic cylinder. High-quality piston and rod seals reduce the frequency of breakdowns, extending the overall life of the cylinder and reducing the need for costly repairs. Conversely, poor-quality seals can result in early failure of the cylinder components, leading to increased downtime and maintenance costs.

Contamination Control
Rod seals play a crucial role in preventing contamination, which is one of the primary causes of hydraulic system failure. Seals that do not provide an adequate barrier against dust and dirt can lead to internal abrasion, reduced lubrication, and eventual component failure. This can result in costly repairs and operational disruptions.

Superior Hydraulic
Systems for Tomorrow.

Traceability in Cylinder Production

In hydraulic cylinder manufacturing, traceability is vital for quality control, safety, and efficiency. At Seide, we achieve traceability by assigning each cylinder a unique number throughout production. This numbering system links every cylinder to specific production data, including materials used, production dates, and inspection results.



Key Benefits of Unique Numbering

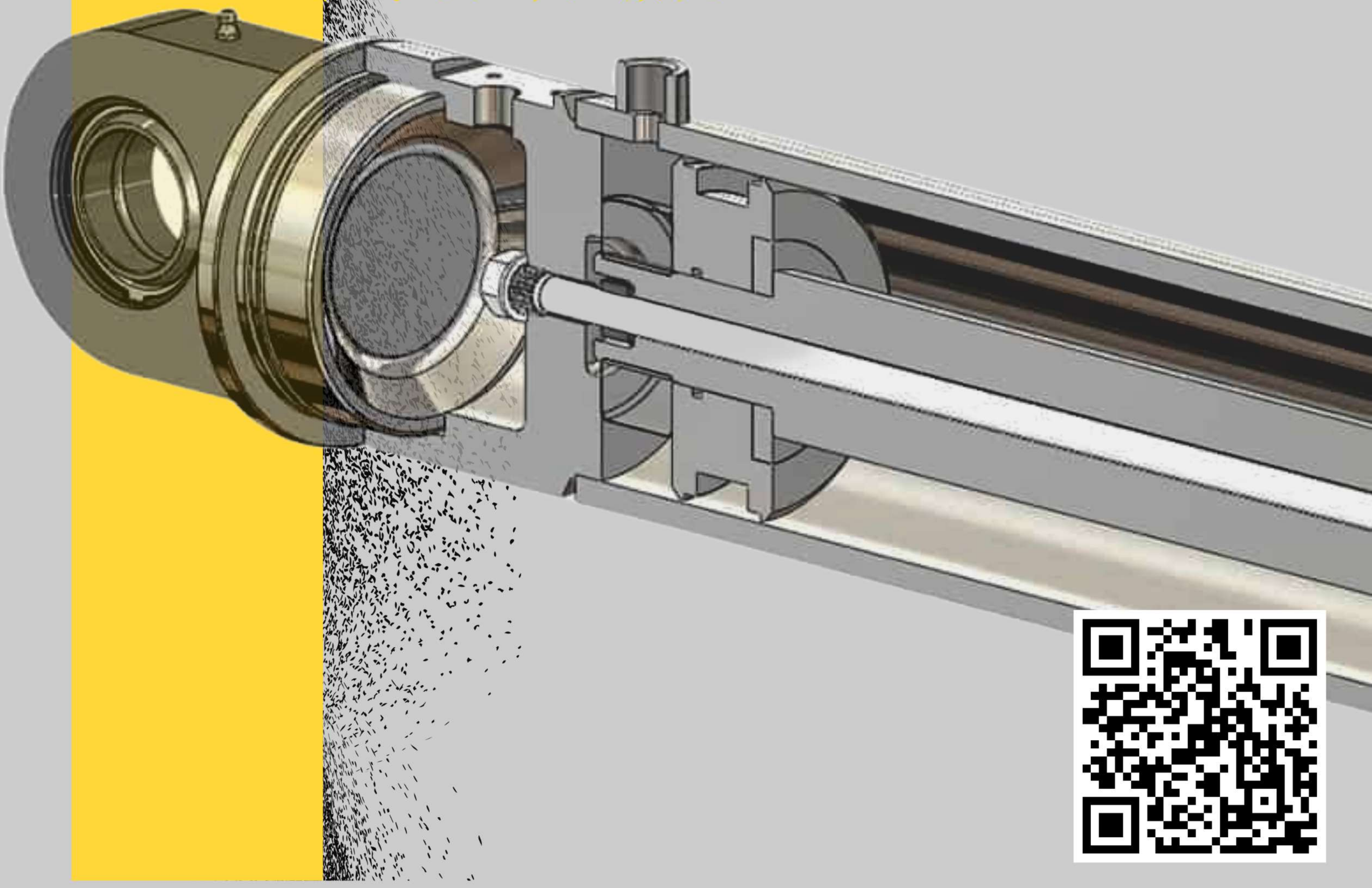
Quality Assurance: Our system allows precise quality checks, ensuring all cylinders meet Seide's high standards.

Efficient Recalls: If defects occur, affected cylinders can be quickly identified and recalled with minimal disruption.

Process Improvement: Production data linked to each cylinder provides insights for ongoing improvements.

As Lewis & Taylor (2021) highlight, "unique numbering supports traceability, helping companies improve both product quality and process efficiency" (p. 97). Seide's dedication to traceability ensures that our hydraulic cylinders meet the highest levels of reliability and durability, reinforcing our commitment to quality and customer satisfaction.

seide



CONTACT

0232 479 15 50

0232 479 15 60

sales@hidroman.com.tr

Center Office 1411/2 Street No:14-16 Bornova / İzmir / Turkey

Izmir Production Naldoken 129/24 Street. No:6/C Bornova / İzmir / Turkey

seide

WWW.SEIDEMACHINE.COM

Superior Hydraulic Systems for Tomorrow.