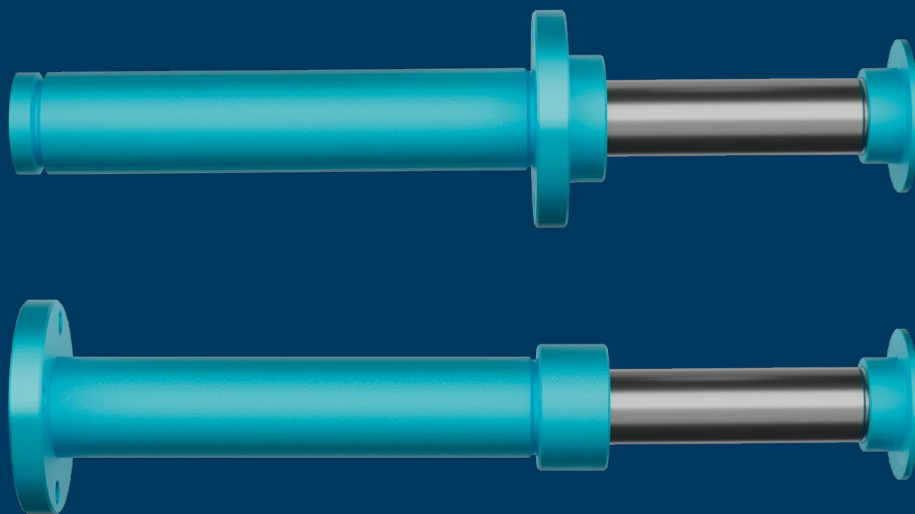




CERTUS

HYDRAULIC BUFFER

KHP 75 – KHP 175



GENERAL CATALOG



CERTUS

FOR SAFE AND SMOOTH CRANE APPLICATIONS

Maximum safety and performance with hydraulic buffers from the leading manufacturer Karl Georg. Custom-tuned damping properties and durable, corrosion-protected design for cranes and a variety of other applications.

AT A GLANCE



-30 °C TO +100 °C



UP TO 1,000 kN
BUFFER POWER



50 TO 1,600 mm
BUFFER STROKE



SIMPLE
INSTALLATION



HIGH
AVAILABILITY

ANY INDUSTRY – MANY APPLICATIONS



AUTOMOTIVE

Automotive manufacturing, autonomous driving and parts supply



ENERGY SECTOR

Wind power, solar energy, hydropower, geothermal power and biomass



PLANT ENGINEERING

Process engineering, power engineering, supply engineering and production engineering, etc.



MINING

Exploration, extraction and movement of mineral resources



ENTERTAINMENT

Commercial roofs, stage systems, stadium turf, etc.



CONVEYOR SYSTEMS

Upstream/downstream, onshore/offshore production, LNG/H² logistics



SMELTING WORKS

Steel/metal production and processing



CRANE ENGINEERING

Industrial cranes, process cranes, container handling

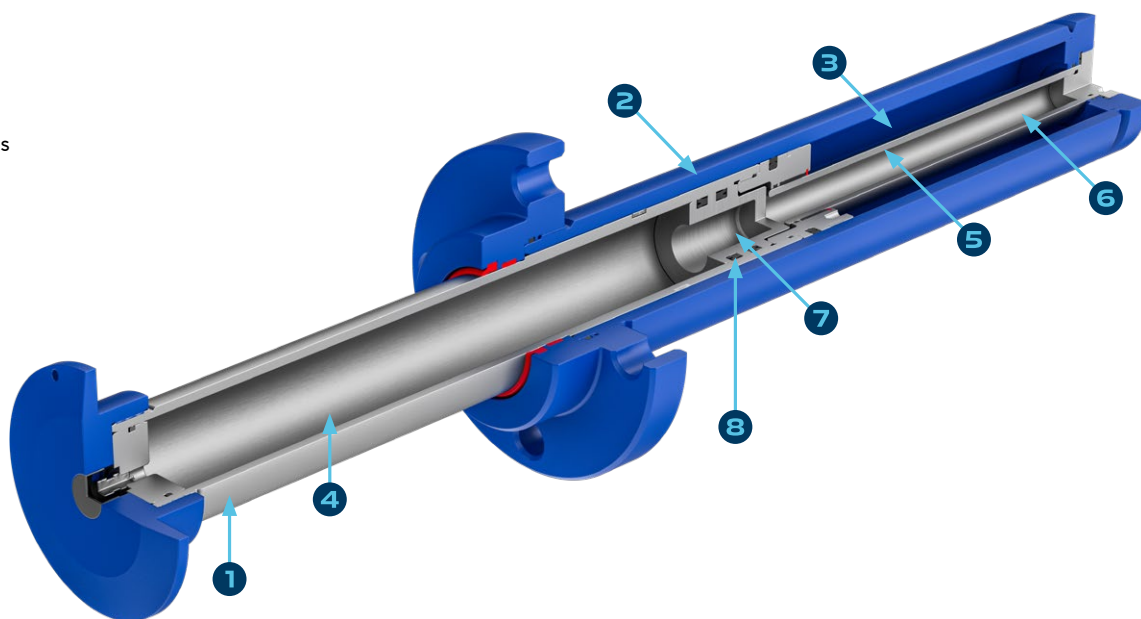
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DESIGN AND FUNCTION

1. Hollow piston rod
2. Hydraulic cylinder
3. Hydraulic oil
4. Gas reservoir
5. Restrictor openings
6. Restrictor tube
7. Gas piston
8. Sealing system



In the event of a buffer impact, the hollow piston rod (1) moves into a thick-walled hydraulic tube (2). The hollow piston rod simultaneously acts as a gas reservoir (4). The oil (3) inside the hydraulic cylinder is displaced through defined openings (5) in the throttle tube (6).

The displaced hydraulic oil flows into the newly formed

chamber within the hollow piston rod. This movement shifts the gas piston (7), which acts as a separating piston between the media. This shift compresses the gas inside the hollow piston rod.

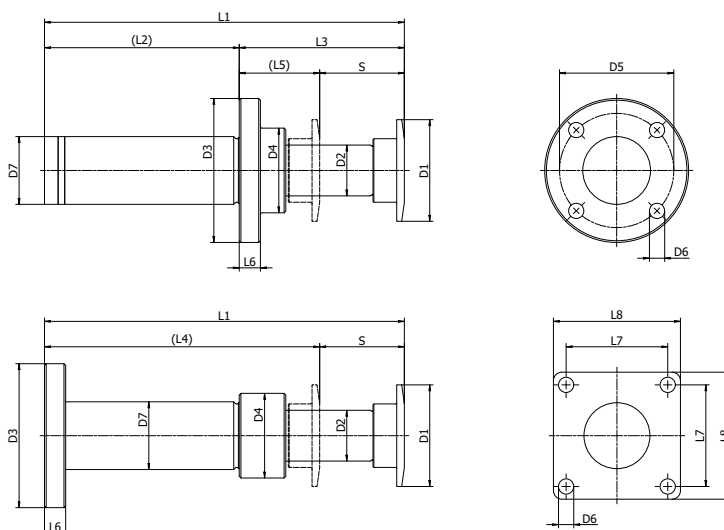
The increased pressure acts as a return force, bringing the hydraulic buffer back to its original position.



MORE INFORMATION

Do you need more information on **CERTUS** hydraulic buffers?
You can find our product brochure at www.karl-georg.de





Performance data KHP75

Buffer design speed 0.5 to 4.0 m/s, lower or higher speed on request

Nominal- Ø (mm)	Stroke- S (mm)	max. Buffer force (kN)	max. working load/ Stroke ¹⁾ (kJ/Stroke)	max. working load/h ²⁾ (kJ/h)	Static restoring force		max. angular deviation ⁴⁾		Weight ca. (kg)
					Stroke start ³⁾ (kN)	Stroke end ³⁾ (kN)	F (°)	B (°)	
75	100	200	20	1300	1,4	13,5	4,3	3,2	22
	150	200	30	1850		17,5	3,2	2,4	24
	200	200	38	2500		17,2	2,5	1,9	26
	300	180	50	3350		16,4	2,0	1,5	28
	400	160	55	3700		15,2	1,7	1,3	30
	500	140	58	3900		13,8	1,6	1,2	32
	600	120	60	4000		13,6	1,5	1,1	36

¹⁾ for standard characteristic

²⁾ at 30 °C ambient temperature

³⁾ at 5 bar gas pressure

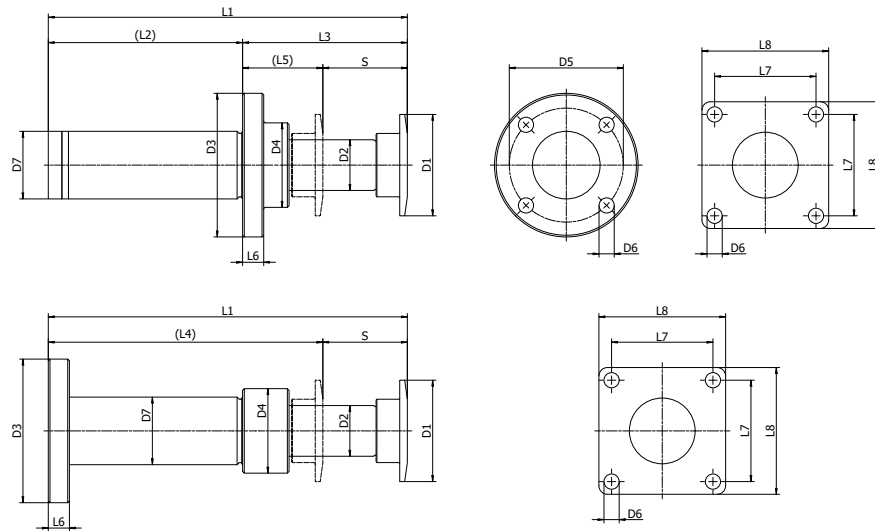
⁴⁾ at max. buffer force

Dimensions (mm)

Nominal- Ø	Stroke- S	D1	D2	D3	D4	D5	D6 ⁵⁾	D7	L1	L2 ⁵⁾	L3 ⁵⁾	L4	L5 ⁵⁾	L6	L7 ⁶⁾	L8 ⁶⁾
75	100								425	R 230 O 241	R 195 O 184	325	R 95 O 84			
	150								560	R 315 O 326	R 245 O 234	410	R 95 O 84			
	200								700	R 405 O 340	R 295 O 360	500	R 95 O 160			
	300	120	60	170	100	135	R 18 O 18	80	980	R 585 O 403	R 395 O 577	680	R 95 O 277	25	120	150
	400								1265	R 770 O 588	R 495 O 677	865	R 95 O 277			
	500								1555	R 960 O 723	R 595 O 832	1055	R 95 O 332			
	600								1840	R 1145 O 908	R 695 O 932	1240	R 95 O 332			

⁵⁾ Dimension assigned to flange R / flange O

⁶⁾ Dimension to flange O



Performance data KHP95

Buffer design speed 0.5 to 4.0 m/s, lower or higher speed on request

Nominal- Ø (mm)	Stroke- S (mm)	max. Buffer force (kN)	max. Working load/Stroke ¹⁾ (kJ/Stroke stroke)	max. Working load/h ²⁾ (kJ/h)	Static restoring force		max. Angular deviation ⁴⁾		Weight ca. (kg)
					Stroke start ³⁾ (kN)	Stroke end ³⁾ (kN)	F (°)	B (°)	
95	100	260	25	1600	2,3	12,8	5,0	4,4	23
	150	260	37	2300		15,8	4,5	3,3	26
	200	260	49	3100		15,0	4,0	2,6	30
	300	250	67	4100		18,0	3,0	1,9	36
	400	230	82	5100		21,0	2,5	1,6	41
	500	210	92	6100		20,3	2,2	1,5	46
	600	190	100	7100		20,0	2,1	1,4	53
	800	150	105	9100		19,0	2,0	1,3	67

¹⁾ for standard characteristic

²⁾ at 30 °C ambient temperature

³⁾ at 5 bar gas pressure

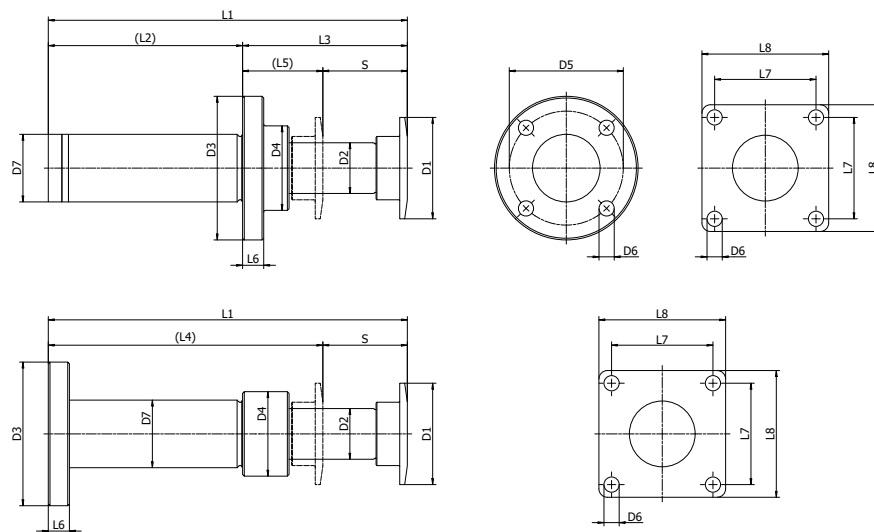
⁴⁾ at max. buffer force

Dimensions (mm)

Nominal- Ø	Stroke- S	D1	D2	D3	D4	D5	D6 ⁵⁾	D7	L1	L2 ⁵⁾	L3 ⁵⁾	L4	L5 ⁵⁾	L6	L7 ⁶⁾	L8 ⁶⁾
95	100								400	R 235 O 256	R 205 O 184	340	R 105 O 84			
	150								580	R 325 O 346	R 255 O 234	430	R 105 O 210			
	200								730	R 425 O 370	R 305 O 360	530	R 105 O 327			
	300	120	75	205	119	165	R 18 O 18	100	1010	R 605 O 433	R 405 O 577	710	R 105 O 277	25	O 120	O 150
	400								1285	R 780 O 608	R 505 O 677	885	R 105 O 277			
	500								1575	R 970 O 743	R 605 O 832	1075	R 105 O 332			
	600								1865	R 1160 O 933	R 705 O 932	1265	R 105 O 332			
	800								2450	R 1545 O 1535	R 905 O 915	1650	R 105 O 115			

⁵⁾ Dimension assigned to flange R / flange O / Flansch M

⁶⁾ Dimension to flange O / Flansch M



Performance data KHP115

Buffer design speed 0.5 to 4.0 m/s, lower or higher speed on request

Nominal- Ø (mm)	Stroke- S (mm)	max. Buffer force (kN)	max. working load/ Stroke ¹⁾ (kJ/Stroke)	max. working load/h ²⁾ (kJ/h)	Static restoring force		max. angular deviation ⁴⁾		Weight ca. (kg)
					Stroke start ³⁾ (kN)	Stroke end ³⁾ (kN)	F (°)	B (°)	
115	100	520	49	3150	3,7	16,4	5,0	4,5	44
	200	520	97	6150		19,3	3,9	3,1	56
	250	520	115	7650		21,2	3,2	2,6	62
	300	480	133	9150		21,6	3,0	2,4	68
	400	440	162	12150		22,1	2,5	2,0	81
	500	400	185	13600		23,1	2,2	1,8	90
	600	360	198	15100		25,9	2,1	1,7	98
	800	300	220	17100		26,4	1,9	1,5	130

¹⁾ for standard characteristic

²⁾ at 30 °C ambient temperature

³⁾ at 5 bar gas pressure

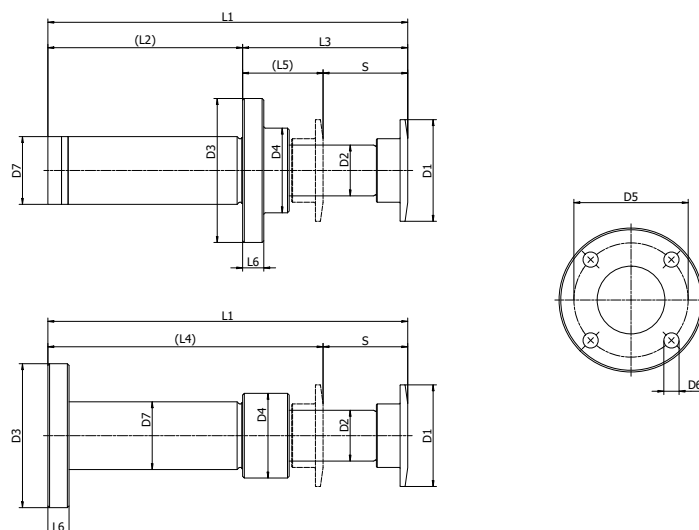
⁴⁾ at max. buffer force

Dimensions (mm)

Nominal- Ø	Stroke- S	D1	D2	D3	D4	D5	D6 ⁵⁾	D7	L1	L2 ⁵⁾	L3 ⁵⁾	L4	L5 ⁵⁾	L6	L7 ⁶⁾	L8 ⁶⁾
115	100								460	R 230 O 276	R 230 O 184	360	R 130 O 84			
	150								750	R 420 O 390	R 330 O 360	550	R 130 O 160			
	200								890	R 510 O 363	R 380 O 527	640	R 130 O 277			
	300	140	95	260	148	210	R 23 O 26	130	1035	R 605 O 458	R 430 O 577	735	R 130 O 277	30	O 210	O 270
	400								1325	R 795 O 648	R 530 O 677	925	R 130 O 277			
	500								1610	R 980 O 778	R 630 O 832	1110	R 130 O 332			
	600								1880	R 1150 O 948	R 730 O 932	1280	R 130 O 332			
	800								2450	R 1520 O 1535	R 930 O 915	1650	R 130 O 115			

⁵⁾ Dimension assigned to flange R / flange O / Flansch M

⁶⁾ Dimension to flange O / Flansch M



Performance data KHP135

Buffer design speed 0.5 to 4.0 m/s, lower or higher speed on request

Nominal- Ø (mm)	Stroke- S (mm)	max. Buffer force (kN)	max. working load/ Stroke ¹⁾ (kJ/Stroke)	max. working load/h ²⁾ (kJ/h)	Static restoring force		max. Angular deviation ⁴⁾		Weight ca. (kg)
					Stroke start ³⁾ (kN)	Stroke end ³⁾ (kN)	F (°)	B (°)	
135	200	700	127	8000	5,5	70	4,5	3,5	72
	300	650	177	12000		70	3,1	2,5	89
	400	650	236	15000		75	2,7	1,7	99
	600	550	300	17000		75	2,3	1,3	125
	800	450	327	19000		75	1,7	0,9	160
	1000	400	364	21000		75	1,3	0,7	192
	1200	400	436	23000		75	1,0	0,6	225

¹⁾ for standard characteristic

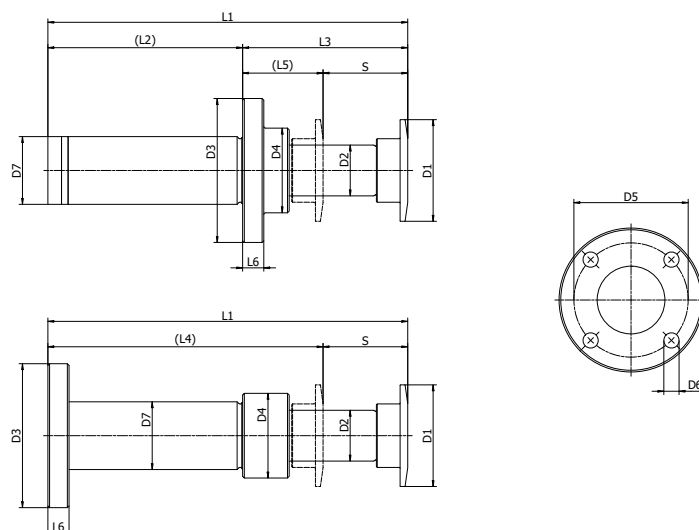
²⁾ at 30 °C ambient temperature

³⁾ at 5 bar gas pressure

⁴⁾ at max. buffer force

Dimensions (mm)

Nominal- Ø	Stroke- S	D1	D2	D3	D4	D5	D6	D7	L1	L2	L3	L4	L5	L6
135	200	177	115	300	185	245	27	156	750	395	335	550	155	35
	300								1035	580	455	735		
	400								1325	770	555	925		
	600								1880	1125	755	1280		
	800								2450	1495	955	1650		
	1000								3020	1865	1155	2020		
	1200								3590	2235	1355	2390		



Performance data KHP175

Buffer design speed 0.5 to 4.0 m/s, lower or higher speed on request

Nominal- Ø (mm)	Stroke- S (mm)	max. Buffer force (kN)	max. working load/ Stroke ¹⁾ (kJ/Stroke)	max. working load/h ²⁾ (kJ/h)	Static restoring force		max. angular deviation ⁴⁾		Weight ca. (kg)
					Stroke start ³⁾ (kN)	Stroke end ³⁾ (kN)	F (°)	B (°)	
175	200	1000	182	8000	9,5	80	6,0	5,0	105
	400	950	345	14400		80	5,0	4,0	165
	500	900	409	17500		90	4,5	3,5	195
	600	860	469	20500		95	4,0	3,0	230
	800	750	545	25000		100	3,0	2,0	290
	1000	600	545	28000		110	2,3	1,3	350
	1200	500	545	28000		110	1,7	0,8	410
	1600	400	582	32000		110	1,5	0,6	530

¹⁾ for standard characteristic

²⁾ at 30 °C ambient temperature

³⁾ at 5 bar gas pressure

⁴⁾ at max. buffer force

Dimensions (mm)

Nominal- Ø	Stroke- S	D1	D2	D3	D4	D5	D6	D7	L1	L2	L3	L4	L5	L6
175	200	210	150	350	230	265	27	206	860	420	440	660	240	50
	400								1485	845	640	1085		
	500								1765	1025	740	1265		
	600								2065	1225	840	1465		
	800								2360	1620	1040	1860		
	1000								3225	1985	1240	2225		
	1200								3815	2375	1440	2615		
	1600								4995	3155	1840	3395		





EG-Einbauerklärung Declaration of Incorporation

im Sinne der EG-Richtlinie 2006/42/EG, Anhang II B für unvollständige Maschinen
according to EC directive 2006/42/EC, Annex II B, in respect of incomplete machinery

Name und Anschrift des Herstellers / Name and address of the manufacturer:

Karl Georg GmbH
Karl-Georg-Straße 3
D - 57612 Ingelbach-Bahnhof

Hiermit erklären wir, dass die nachstehend beschriebene unvollständige Maschine:
Herewith we declare, that the partly completed machinery described below:

Produktbezeichnung / product denomination : **Hydraulikpuffer CERTUS**
Hydraulik buffers Certus

Serien- / Typenbezeichnung / model / type : **KHP/ 75/ 95/ 115/ 135/ 175**

Baujahr/ Year of manufacture : **2024**

alle grundlegenden Anforderungen der Maschinenrichtlinie 2006/42/EG erfüllt, soweit es im Rahmen des Lieferumfangs möglich ist. Ferner erklären wir, dass die speziellen technischen Unterlagen gemäß Anhang VII Teil B dieser Richtlinie erstellt wurden.
is complying with all essential requirements of the Machinery Directive 2006/42/EC, as far as the scope of delivery allows. Additional we declare that the relevant technical documentation is compiled in accordance with part B of Annex VII.

Folgende harmonisierte Normen sind angewandt / the following harmonized standards have been applied:

- DIN EN ISO 12100, Sicherheit von Maschinen/ *Safety of Machinery*
- EN ISO 4413, Fluidtechnik-Allgemeine Regeln / *Fluid technology – general rules*
- DIN EN 13001 Teil 3-6, Krane - Konstruktion allgemein -Hydraulikzylinder/ *Cranes - general design -hydraulic cylinder*
- DIN EN 13135, Krane - Sicherheit - Konstruktion, / *Cranes -Safety -Design - Requirements for equipment of cranes*

Der Hersteller verpflichtet sich die technische Dokumentation zur unvollständigen Maschine einzelstaatlichen Stellen auf begründetes Verlangen in PDF-Form zu übermitteln.

The manufacturer undertakes to submit the technical documentation relating to the incomplete machine to the relevant national authorities in PDF format on request.

Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen (EU-Adresse):
The person authorised to compile the relevant technical documentation (must be established within EU):

Herr (Mr.) Michael Kubalski, QM (Quality Department)

Die unvollständige Maschine darf erst dann in Betrieb genommen werden, wenn festgestellt wurde, dass die Maschine oder Anlage, in welche die unvollständige Maschine eingebaut werden soll, den Bestimmungen der Richtlinie 2006/42/EG über Maschinen entspricht und die EG-Konformitätserklärung gemäß Anhang II A ausgestellt ist.

The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Directive 2006/42/EC on Machinery, where appropriate, and until the EC Declaration of Conformity according to Annex II A is issued.

D-57612 Ingelbach/Bhf., 09.08.2024

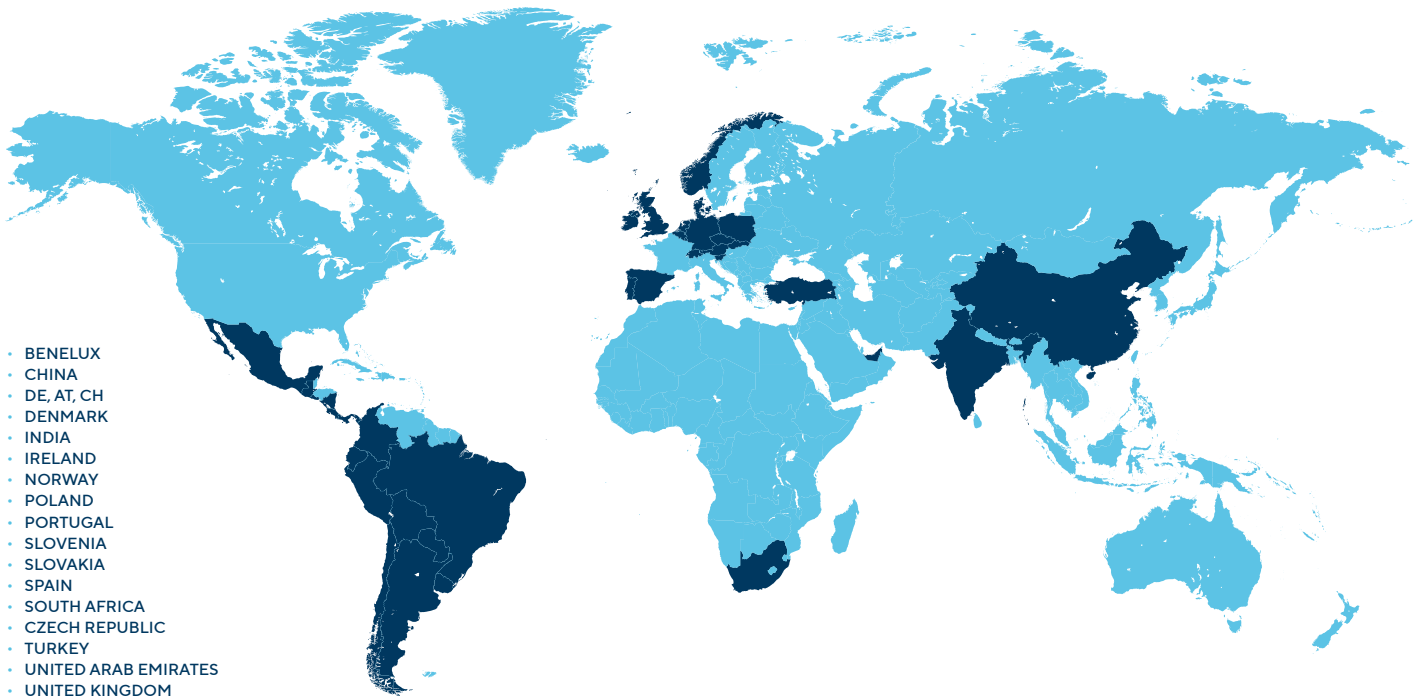
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Winkel, Tim, GF
Müller, Kevin, GF

Ort, Datum
Place, Date

Name, Vorname, Funktion
surname, first name, function

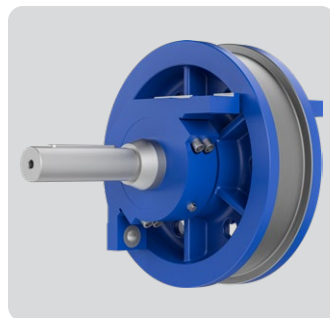
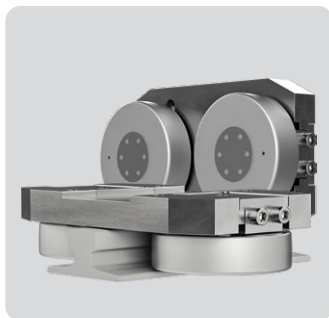
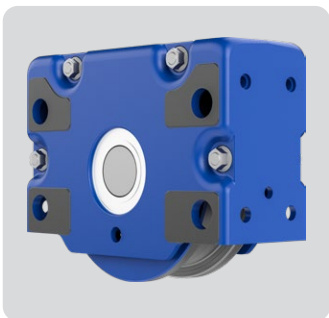
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Signature

Notes



- BENELUX
- CHINA
- DE, AT, CH
- DENMARK
- INDIA
- IRELAND
- NORWAY
- POLAND
- PORTUGAL
- SLOVENIA
- SLOVAKIA
- SPAIN
- SOUTH AFRICA
- CZECH REPUBLIC
- TURKEY
- UNITED ARAB EMIRATES
- UNITED KINGDOM

FURTHER INFORMATION



FOR MORE
INFORMATION, PLEASE
VISIT OUR WEBSITE AT
KARL-GEORG.DE



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www.karl-georg.de

WE HAVE DIN
ISO 9001, ISO 14001
AND DIN EN 16247-1
CERTIFICATION.



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