



KLINGER FLUID CONTROL

KHA ball valve "Basic"

KHA BASIC

Agenda

- KHA variants
- Modular construction
- Structure sealing element
- Structure stuffingbox
- Common combinations
- P/T diagrams
- KHA DBB
- P/T diagram
- V-Port
- Features
- Advantages
- Model code



KLINGER BALLOSTAR KHA VARIANTS



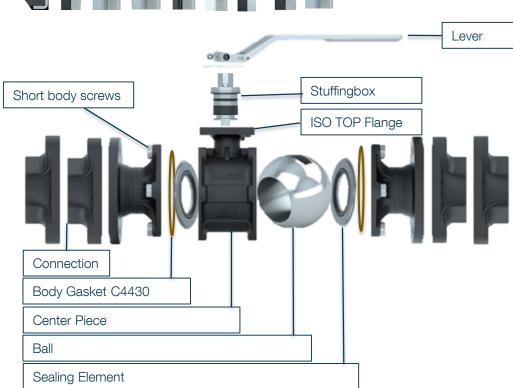
Standard design overview

Model	DN PN		Connection Face to Face		Body Material Ball Bearing & Version		°C	General		
KHA-F	15-125	16,25,40, 63,100 Size depending	Flanged EN1092-1	EN558-1, GR1		Bearing:				
	1/2" - 5"	CL150/300	Flanged ASME B16.5	ASME B16.10, CL300		Floating		ISO TOP Flange KACP corrosion protection		
KHA-S & SL	15-125	5-125 40,63,100 Weld en Size EN1262 depending		KHA-S: EN12982 row 67 KHA-SL DN15-40 acc. EN12982 row 68, the rest acc. manufacturer std.	1.0619 1.4408 Duplex	Trunnion (1.0619, 1.4408) Version: Solid full V-Port 10° V-Port 30°	Acc. P/T	Labelling acc. EN19 Full bore Certification Standard Version: Fire Safe acc. API607 and EN10497 TA-Luft		
KHA-G	1/2" – 2"	40,63,100 Size depending	Thread end Rp. EN10226	EN16722-114		V-Port 60° Slotted	diagram	VDI2440 ISO15848		
	1/2" – 2"	40,63,100 Size depending	Thread end NPT	ANSI B 1.20.1						
KHA-DBB	15-125	16,25,40	Flanged Flanged Weld end Thread end	EN558-1, GR1 ASME B16.10 EN12982-67 EN16722-114	1.0619 1.4408	Trunnion mounted Version: Solid full		DBB certificate		



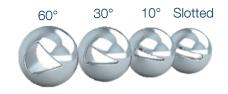
Modular construction







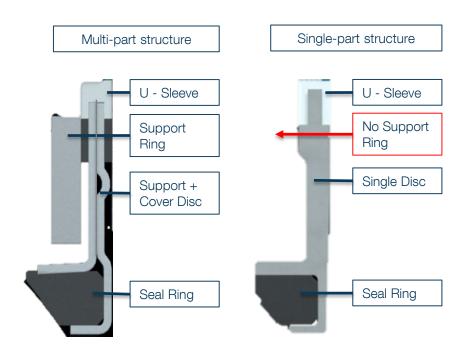






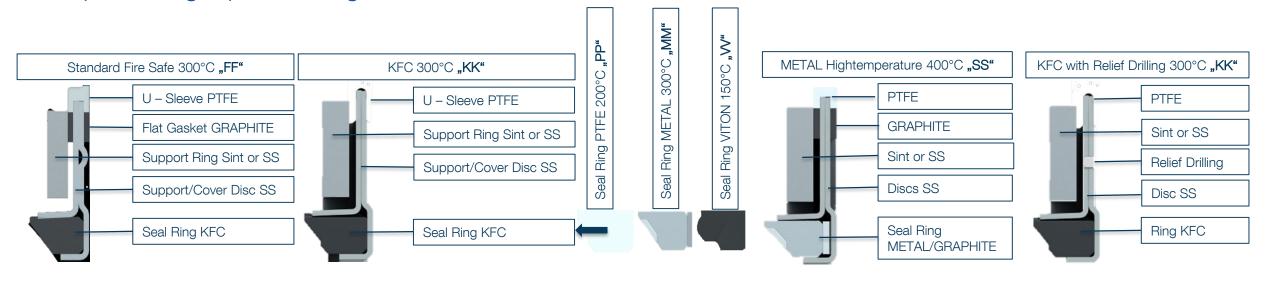
Structure sealing element

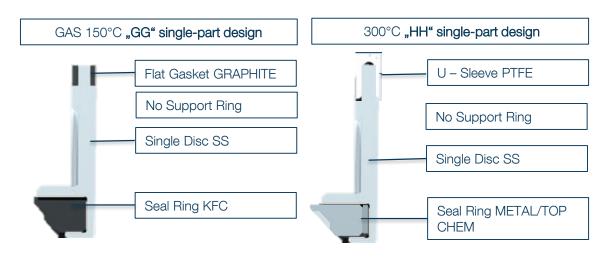






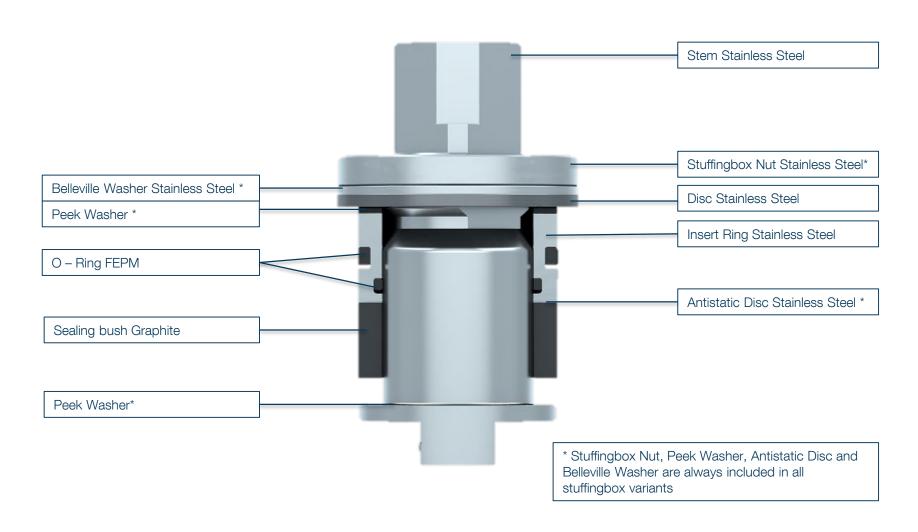
Multi-part / single-part sealing elements





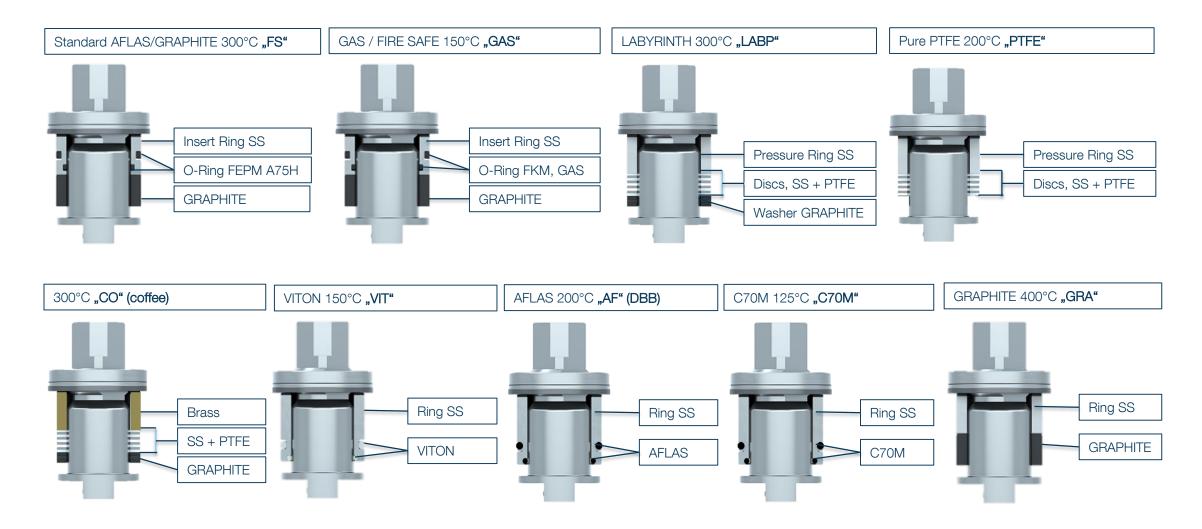


Basic structure stuffingbox





Stuffingbox variants



Common combinations

Model	Sealing Element Type	Stuffingbox Type	Temperature Range	Application				
KHA-F,S,G	Standard FIRE SAFE "FF"	Standard AFLAS/GRAPHITE "FS"	-20°C to +300°C For Carbon and Stainless Steel Body	Clear liquids and gases without solids, acids and alkalis, Fire Safe Applications, applications with high operating cycles. Certification Standard Version: Fire Safe acc. API607/ EN10497, TA-Luft, VDI2440, ISO15848				
	KFC "KK"	Labyrinth "LABP"	Carbon Steel Body: -20°C to +300°C Stainless Steel Body: -60°C to +300°C	Clear liquids and gases without solids, acids, alkalis and Oxygen. Certification: TA-Luft VDI2440				
	PTFE "PP"	Labyrinth "LABP"	Carbon Steel Body: -20°C to +200°C Stainless Steel Body: -60°C to +200°C	Chemical Applications Clear liquids and gases without solids, acids and alkalis. Certification: TA-Luft VDI2440				
	PTFE "PP"	Pure PTFE "PTFE"	Carbon Steel Body: -20°C to +200°C Stainless Steel Body: -60°C to +200°C	Chemical Applications Clear liquids and gases without solids, acids and alkalis. Application where PTFE is not permitted. Certification: TA-Luft VDI2440				

Common combinations

Model	Sealing Element Type	Stuffingbox Type	Temperature Range	Application					
KHA-F,S,G	METAL "MM"	Labyrinth "LABP"	Carbon Steel Body: -20°C to +300°C Stainless Steel Body: -60°C to +300°C	For solid containing and abrasive medias. Certification: TA-Luft VDI2440					
	METAL High temperature "SS"	GRAPHITE "GRA"	Carbon Steel Body: -20°C to +400°C Stainless Steel Body: -60°C to +400°C	For solid containing, abrasive medias and high temperature applications until +400°C.					
	VITON "VV"	VITON "VIT"	Carbon Steel Body: -15°C to +150°C Stainless Steel Body: -15°C to +150°C	For low vacuum. Certification: TA-Luft VDI2440 For gas applications (natural gas). Certification: DVGW Fire Safe acc. API607/ EN10497					
	GAS "GG"	GAS FIRE SAFE "GAS"	Carbon Steel Body: -15°C to +150°C Stainless Steel Body: -15°C to +150°C						

Common combinations

Model	Sealing Element Type	Stuffingbox Type	Temperature Range	Application				
KHA-F,S,G	KFC w. Relief Drilling "KK"	C70M "C70M"	Carbon Steel Body: -20°C to +125°C Stainless Steel Body: -35°C to +125°C	For ammonia applications. Upstream sealing element with pressure relief drilling.				
	"HH"	"CO"	Only Stainless Steel Body: -60°C to +300°C	For coffee powder, solid containing, abrasive media and high operating cycles				
KHA - DBB	KFC "KK"	AFLAS "AF"	For Carbon and Stainless Steel Body: DN15-40: -10°C to +235°C DN50-125: -10°C-230°C	For Double Block & Bleed" applications (clear liquids or gases). Certification: Certificate of DBB functionality				

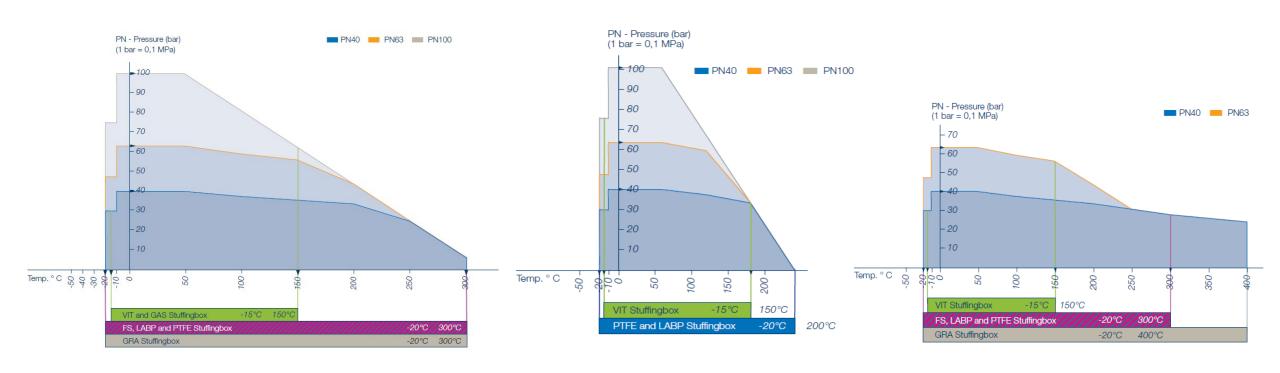


P/T diagram for carbon steel

PT diagram for sealing elements: FF, KK, GG and MM

PT diagram for sealing elements: PP

PT diagram for sealing elements: SS



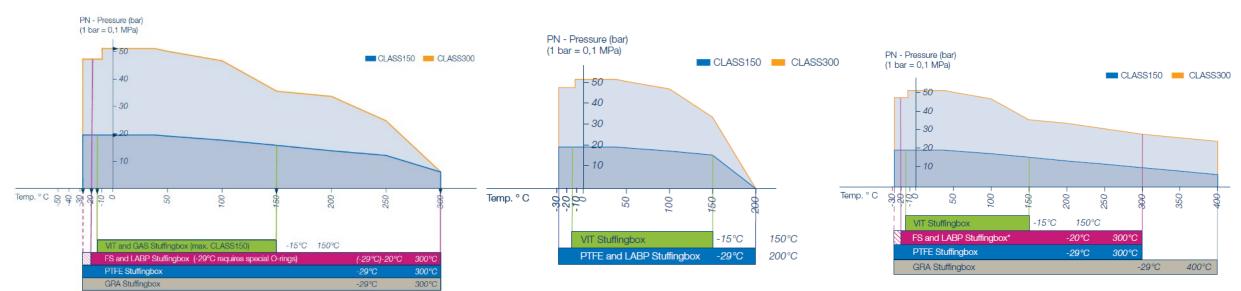


P/T diagram for carbon steel ANSI

PT diagram for sealing elements: FF, KK, GG and MM

PT diagram for sealing elements: PP

PT diagram for sealing elements: SS



*) (-29°C requires special O-rings)

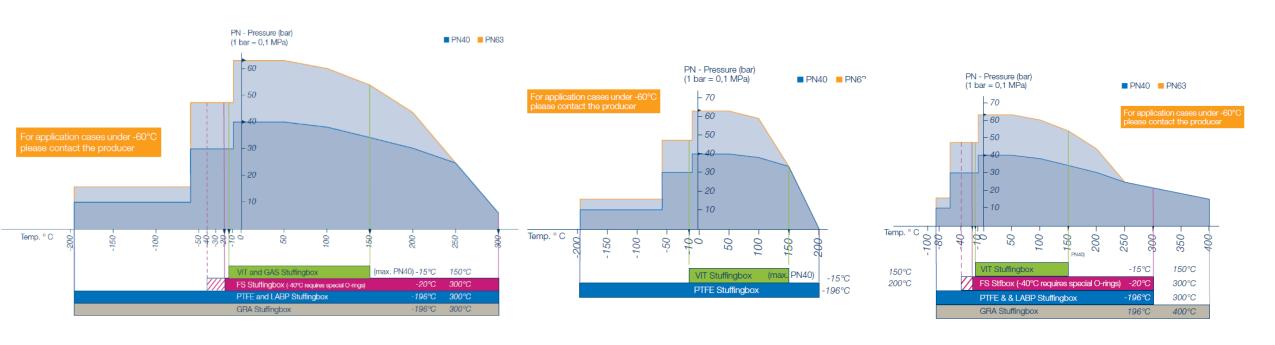


P/T diagram for stainless steel

PT diagram for sealing elements: FF, KK, GG and MM

PT diagram for sealing elements: PP

PT diagram for sealing elements: SS



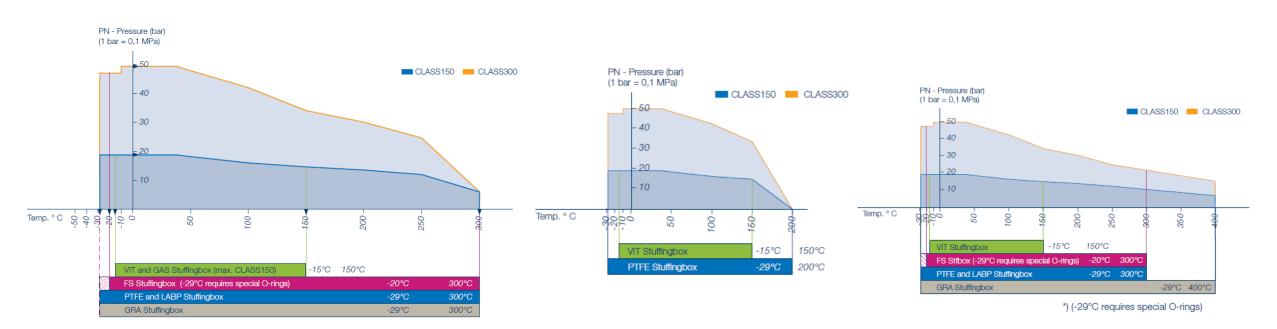


P/T diagram for stainless steel ANSI

PT diagram for sealing elements: FF, KK, GG and MM

PT diagram for sealing elements: PP

PT diagram for sealing elements: SS





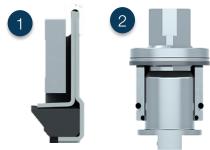
Double block & bleed

DBB option for all sizes and models

- » DN15 to DN125
- » Trunnion mounted ball
- » (1) Two part sealing element KFC
- » (2) Aflas stuffingbox
- » C4430 gaskets on housing pitch
- » With drain / test cock in different versions
- » Available housing materials 1.0619, 1.4408
- » Available with all process connections: flanged, weld ends and threaded ends

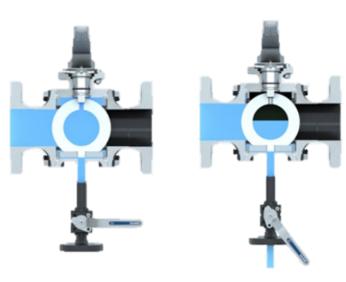
Trunnion mounted option for all sizes and models

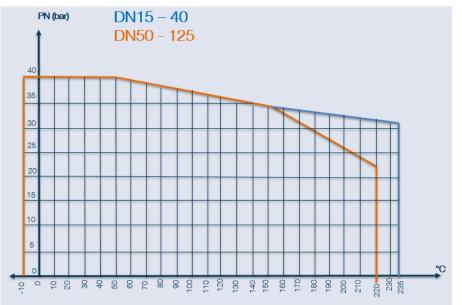
- » Trunnion mounted ball
- » DN15 to DN125
- » Available housing materials 1.0619, 1.4408
- » Available with all process connections: flanged, weld ends and threaded ends
- » Available for all sealing element and stuffingbox combinations



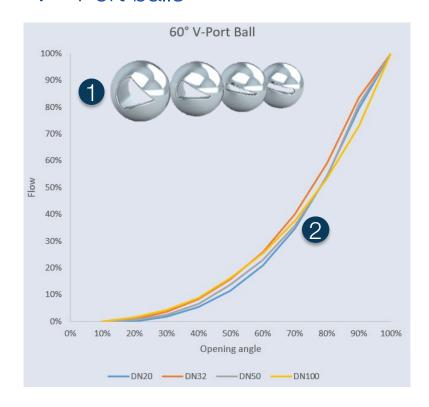


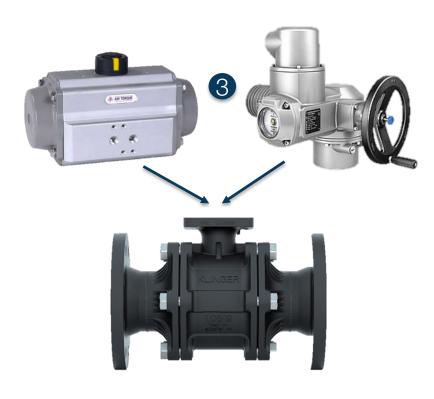






V – Port balls





V – port balls:

- » (1) For flow control and regulating applications, the ball valve model KHA is available with different V port balls and are applicable for clear (also abrasive and corrosive) and solid containing medias until 230°C. For clear media, KFC sealing elements and for solid containing, metal sealing elements are used. By using of metal sealing elements, the V-port ball is chrome coated.
- » V-Port ball versions are available with 10°, 30°, 60° angled and slottet cutting.
- » (2) The different ball cuttings are available for all line sizes and show different flow and regulation characteristics.
- » (3) Combinable with pneumatic (single and double acting from AIR TPRQUE with positioner) or electric regulation actuators (24V, 230V, 380V, 400V from AUMA).



Features



KACP = Klinger Advanced Corrosion Protection

Properties:

This KACP coating consists of a finely crystalline gloss zinc layer formed from a thin zinc metal layer with a layer thickness of 10 μm . This firmly adhering zinc metal layer, or top layer, consists preferably of zinc oxide, zinc hydroxide, zinc carbonate, sometimes also of zinc sulfate or zinc chloride and protects the underlying steel surface against corrosive attack in the best possible way. The typical black appearance and the excellent corrosion protection of the KACP coating are achieved with a liquid passivation containing chromium(III) and a specially adjusted post dipping bath.

The KACP coating is examined in a corrosion test in an artificial atmosphere in accordance with EN ISO 9227:2017 (neutral salt spray test). As a result, the KACP coating showed high resistance against aggressive atmosphere in this test.

For comparison:

- » Phosphating 20 hours
- » Standard painting 100 hours
- » KACP 400 hours



KHA stem extension:

- Without protection pipe, material1.4021, length 150mm
- With protection pipe, material1.4404. length 150mm
- » Installation on already existing KHA afterwards possible
- » Version with protection pipe is equipped with ISO TOP flange for gear / actuator installation



Complete standard-compliant (EN19) laser marking of the valve



Advantages









(1) Sealing elements:

- High temperature range -196°C 400°C → achievable with different sealing element versions
- » Wide range of different sealing element types → easy adatpable for many different applications
- » Design is elastic, robust, reliable and insensitive to impurities and pressure shocks → high lifetime
- » Additional C4430 gaskets on housing pitch → improved tightness to atmosphere

(2) Stuffingboxes:

- » Wide range of different stuffingbox types → easy adatpable for many different applications
- Easy combinable with all types of sealing elements in one valve construction
- » New aflas / graphite stuffingbox → Fire safe and TA Luft / ISO15848 approved

(3) Ball:

- Standard ball made of stainless steel 1.4401 or 1.4408 → high resistance to chemical media and mechanical loads
- » By using of metal sealing elements, the ball is chrome coated → Insensitive for solids, no sticking of media particles on the surface
- » Cylindrical bore → No turbulences, laminar flow, low pressure drop
- Different ball bearings → floating ball or trunnion mounted
- » V port balls in 10°, 30°, 60° and slotted cutting on demand → for control applications with different flow characteristics

(4) Body

- » Compact casted center piece → Insensitive to pipeline forces
- » Short housing screws → high mechanical stability at thermal expansion due to temperature changes
- » ISO TOP flange for every line size → Easy installation of additional equipment like gears and actuators
- » Valve could be installed in any position \rightarrow easy handling
- » Modular valve construction \rightarrow Max. flexibility to adopt the valve to many different applications

(5) Quality

- » In standard version fire safe and TA Luft / ISO15848 approved
- » Inline service possible → service and cost efficient
- » Long service life → Reduction of maintenance costs
- » Spare parts are quick available
- Double block & bleed version for all sizes → TÜV confirmed, max. safety for maintenance, drainage of the cavity in closed position



Model code

	ODE MAIN ESSAGE	D0.145	FF F0 F:															
SAMPLE CODE: KHA F 50 V0 P3 M1 FF FS PW																		
Туре	Connection	DN	Ball	Material	PN	Pressure sta	Body	Material	Sealing elements	s Type	Stuffingbox	Туре	Actuation	n Version	Special 1	Description	Special 2	! Description
CHA	E	15	V0	Full bore SS		PN16	MI	1.0619	up / downstream		FS	AF-GRAPHITE-PEEK (FS	FV	bare stem	АМ	Ammonia version KLN2414/8	BL	Painting Azure - RAL5015
	F	20	VI	V-Port 101	P2	PN25	M2	1.4408	FF	FS (Standard	LABP	ST/PTFE/Peek	на	lever	во	Vent drilling upstream- KLN2414/8	C3	Coating EN 12944 - C3 middle 160µm
	G	25	V3	V-Port 301	P3	PN40	МЗ	1.4462	мм	Metal	GRA	GRAPHITE	IV	Isolation extension FW	DBB	Trunnion mounted with drain valve	C4	Coating EN 12944 - C4 middle 200µm
	N	32	V6	V-Port 60°	P4	PN63			SS	MES	PTFE	PURE PTFE	IH	Isolation extension + lever	GAS	ÖVGW /certified	C5I	Coating EN 12944 - C5-I middle 240-280µm
	S	40	VS	V-Port Slot	P5	PN100			PP	Pure PTFE	VIT	Viton	IG	Isolation extension + gear	PL	Drain with plug	C5M	Coating EN 12944 - C5-M middle 240-280µп
	S-F	50	C0	Full 30µm chromed	P6	(ANSI 150)		Section 1	VV	Viton	CO	ST/MS/PEEK	IA	Isolation extension + actuato	TM	Trunnion mounted	GE	Painting yellow - RAL1023
	F-S	65	C1	10130µm chromed	P7	ANSI 300			нн	Metal CO	C70M	C70M	ко	Bracket	TT	Low temperature version until -196°C	02	Oxygen version KLN840 oil & grease free
	S-G	80	C3	30°30μm chromed	PX	Special	╛		KK	KFC	AF	AFLAS O - Rings	GE	Gear	VL.	Special body length	OF	Oil and grease free
	G-S	100	C6	60° 30μm chromed			1		UU	PE-UHVM	UHVM	PE-UHVM	AN	Actuator	sc	Spring close (pneum. Actuator)	OFS	Oil, grease and silicone free
	F-G	125	CS	Slot 30µm chromed	1			0-	GG	GAS-FS	Y71C	V71C/GRAPHITE		_	so	Spring open (pneum, Actuator)	SV	Painting Black RAL9017
	G-F	1/2"	D0	Full duplex				7 22	TT	PTFE-FS	GAS	GAS/GRAPHITE			DA	Double acting (pneum, Actuator)	GR	Grounded RAL7001
	SL V E long	3/4"	D1	V-Port 10 duplex			1 1		all of all	=01					SQ	Electric Actuator		
	MST	17	D3	V-Port 30 duplex				-m-			all like			(11 1)	PF	Profox AUMA		
	(A)	5/4"	D6	V-Port 60' duplex						크림					K1 - K99	Special Customer Designs		
		6/4"	DS	V-Port Slot duplex				9										
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THANKS FOR YOUR ATTENTION!

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