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- **Richter Pumps**: PFA/PTFE lined pumps
- **Goulds Pumps**: Metallic chemical-standard pumps
- **HT Pumps**: Special centrifugal pumps
- **Accessories**: Pump accessories
- **Richter Valves**: PFA/PTFE lined valves
- **Düker**: Enamelled valves and fittings
- **CT Valves**: Ball and Butterfly valves
- **Automation**: Actuators for valves
- **Schmidt-Bretten**: Plate heat exchangers
- **Striko**: Rupture disks and burst sensors
- **CT Glass**: Borosilicate glass and sight glasses
- **CT Gaskets**: PTFE enveloped gaskets
- **CT Aseptic**: PTFE hoses, valves, CIP components
- **CT Trading**: ANSI and industrial valves
Richter Sealless Chemical Pump Type MNK

with magnetic coupling
PFA/PTFE-Lined Chemical Magnetic Drive Standard Pumps
for aggressiv-corrosiv applications

MNK  Magnetic Drive Pump
sealless
PFA/PTFE – liner
0.1 to 600 m³/h

MNK-B  Magnetic Drive Pump
sealless
close-coupled design
PFA/PTFE – liner
0.1 to 90 m³/h

MDK
ISO Standard Chemical Pump
sealless
PFA/PTFE – liner
0.1 bis 95 m³/h
 Richter Chemical Pump Type SCK
with mechanical seal
PFA/PTFE-Lined Process- and Chemical-Pumps
for abrasive-corrosive applications

SCK  ISO Standard Chemical Pump
SDK-B Close-Coupled Pump
PFA/PTFE-liner
with single or double acting mechanical seals
0.1 – 300 m³/h

MNK-X, SCK-X Vortex - Pumps
PFA/PTFE-liner
magnetic drive
mechanical seal
0.1 - 200 m³/h

MNK-S, SDK-S
Self-Priming Process Pumps
PFA/PTFE and PE-liner
magnetic drive
mechanical seal
0.1 - 40 m³/h
Goulds® ISO Standard Pump Serie IC
with CYCLON - sealing
ICM  ISO-Chemical Pumps
ICMB  Close-coupled Pumps
     sealless with magnetic drive
     Stainless Steel, Hastelloy Titan
     etc.
     0.1 to 450 m³/h

IC  ISO-Chemical Pumps
ICB  Close-coupled Pumps
     with single or double acting
     mechanical seals
     Stainless Steel, Hastelloy Titan
     etc.
     0.1 bis 450 m³/h

VOGEL® Industrial Pumps
- Process Pumps
- Multistage Pumps
- In-Line Pumps
- Vertical Pumps
     0.1 to 20'000 m³/h
Special pumps for high requirements

Image: submersible pump for bromine
Special Centrifugal Pumps
for difficult fluids

**Type range**
- Horizontal pumps
- Self-regulating pumps
- Magnetic coupled pumps
- Vertical submerged pumps
- Vertical centrifugal pumps
- Vertical tank pumps

**Advantages**
- robust construction
- safe to run dry
- self-priming
- without bearing in the medium
- low maintenance

**Applications**
- media at boiling point
- gas-containing liquids
- abrasive media
- fluctuating inflow volume
- condensate pump

**Types MOS und UMOS**
non contacting hydrodynamic shaft seal
- no sealing liquids are required
- capable of dry running
- suitable for solids
- no rubbing seal faces with the governor version
SAFERUN
Pump Accessories

Richter SAFERUN
Pump Condition Monitoring
expandable for pumps type
MNK starting from year of
construction 2009

Variable Pump Performance
continuous speed controlling
device by frequency changers

Buffer Fluid Systems
closed circuit for single or
tandem mechanical seals
- thermosyphon system
- quench system
Richter Ball Valve Type KN
with ENVIPAK stem sealing acc. to TA-Luft VDI 2440

Ball versions
- 1-piece PFA ball/stem (plan/ball)
- ALD ceramic ball with zirconia stem (optional)
- Cavity-free PTFE ball for optimum draining and flushing (optional)
- V-control ball, high-quality low control, play-free (optional)

Pressure/temperature range
Operating pressures up to 26 bar on request

Body EN-281 249 (PFA/PTFE)
- Max. 125°C (257°F) - max. 200°C (392°F) max. 10 bar (150 psi) acc. to AD 2000

Bodies ASTM A351/F91
- Min. -2°C (-35°F) - max. 450°C (842°F) max. 250 bar (3600 psi) and acc. to ASME B16.42

For applications at low temperatures, please observe the local regulations!
Operating temperatures below -10°C (-14°F), special material for ball stem core
PFA/PTFE-Lined Chemical Ball Valves
for abrasive-corrosive Applications

KN Ball Valve
ENVIPACK stem sealing
one-piece PFA ball stem
- floating ball
- TF-ball, clearance volume-free
- ball from oxyde ceramic
- HD-Liner 5 mm thickness
- execution S for clean-rooms
DN 15 bis 200 , PN 16

BV Ball Valve
PTFE stuffing box
one-piece ball stem
reduced bore
DN 15 to 200 , PN 16

KK Compact Ball Valve
assembly between two flanges
particularly for glass plant
special designs
DN 15 bis 100 , PN 16
Richter Chemical Control Valve RSS

with detail V-cone
PFA / PFA-Lined Chemical Control Valves
for abrasive-corrosive applications

RSS Control Valve
HD bellows sealed by DN 25 -100
with safety stuffing box
V-plug for small volume
rangeability 1:100
$K_v100 \leq 0.01 \text{ to } 360 \text{ m}^3/\text{h}$
DN 15 to 150, PN 16

KNR Control Ball Valve
ENVIPAK steam sealing
one-piece PFA ball stem
rangeability 1:25
$K_v250 \leq 0.8 \text{ to } 800 \text{ m}^3/\text{h}$
DN 15 to 150, PN 16

GU Overflow Valve
KSE Safety Relief Valve
bellow sealed
one-piece valve body
hermetic tight
TUEV-construction unit-examined

DN 50 to 100, PN 16
Richter sampling valve PA
bellow-sealed and with exhaust port
PFA/PTFE-Lined Sampling Valve
PFA/PTFE-Lined Tank Bottom Valves

PA Sampling Valves
- top-entry design
- different bottle-adapters
- optionally bellow-sealed
  - body from stainless steel with flanges or welding ends
  - pneumatic or electric Actuators
- DN 25 and 50, PN 16

BAV Tank Bottom Valve
- mounted plug
- bellows seated
- hand operated available
- bottom-flange ISO 7005-2 Typ B
- DN 80/50 to 150/100, PN 16

KA-N Tank Bottom Ball Valve
- ENVIPACK stem sealing
- one-piece PFA ball stem or ceramic
- pneumatic or electric actuators
- bottom-flange ISO 7005-2 Typ B
- DN 50/25 to 150/100, PN 16
PFA/PTFE-Lined Shut-Off Valves

NK Butterfly Valve
Lug, Wafer u. double flange design
one piece disc/ stem unit PFA-lined or
stainless steel 1.4408
optional safety stuffing box
DN 50 to 600 , PN 10/16

MV Diaphragm Shut-Off and
Control Valve
clearance volume-free
stroke indicator
pneumatic or electric actuators
DN 15 to 200 , PN 16

HV Bellow Sealed Valve
manual operated
safety stuffing box
available as control valve
control characteristic equal percentage
and linear
DN 15 to 100 , PN 16
PFA/PTFE-Lined Valves

CV Ball Check Valve
GR Check Valve
for horizontal, inclination and vertical flow
also with integrated sight glasses
DN 15 to 150, PN 10 and 16

PSG Sighth Glasses
2 and 3-way design
doubled sight glasses disks
Borosilicast glasses DIN 7080

SGS Tube Sight Glass
clearance volume-free optional
DN 15 to 200 (300), PN 6 to 16

GSO Pipeline Strainer
optional body from stainless steel
filterweb ETFE 85 to 2000 μm
DN 15 to 100, PN 16
Düker TE – Technical Enamel

email250light, email350, email80, email850P
Enamelled Valves and Fittings
for the chemical, pharmaceutical and food industries

Tank Bottom Valves
Compliant to TA-Luft, FDA und GMP
- low dead volume
- manually operated or automated
- body available in stainless steel or Hastelloy

Valves
- Diaphragm valves
- Oblique-seat valves
- Sight glasses
- Phase separating valves

Pipe shaped pieces
- Elbows and Tees
- Customised collectors
- according to DIN, ANSI or factory standard
CT Process and Industrial Valves
Process Ball Valves
2 and 3-Piece Body with Top Flange ISO 5211

Flanges Ball Valves
Acc. to standards BCI, BASF, Clariant etc.
maintenance-free stem packing
anti-static, fire-safe acc. to API-607
TA-Luft VDI 2440,
seats and seals PTFE, TFM 1600
DN 15 to 200 , PN 10/40

Compact Ball Valves
Wafer Type Ball Valve
top flange acc. to ISO 5211
anti-static, anti-blow-out
TA-Luft acc. to VDI 2440
seats and seals PTFE, PTFE-R
DN 15 to 100 , PN 10/40

3-Piece Ball Valves
with threatened ends
with welding ends
anti-static, anti-blow-out
TA-Luft acc. to VDI 2440
seats and seals PTFE, PTFE-R
DN 1/4 to 4" , PN 100/63/40
Multi-Way Ball Valve
3, 4 and 5-Way Ball Valve
top flange acc. to ISO 5211
TA-Luft DIN 2440
DN 15 to 150, PN 10/40

High Pressure Ball Valve
3-Piece High-Pressure Ball Valve
top flange acc. to ISO 5211
both sides spring loaded seat rings
metal seated
trunnion mounted ball
DN 15 to 100, PN 160 to PN 325

Tank Bottom Ball Valve
TA-Luft VDI 2440,
metal seated, clearance volume-poor
available with actuators
bottom-flange DIN 28140 u. 28117
special designs
DN 80 to 300, PN 10/40
Process Ball Valves
petrochemical, gaz, energy

Fully welded Ball Valves
- gas
- district Heating
- underground service

API and ANSI Ball Valves
- chemistry
- petrochemistry
- energy
- nuclear technology

Full Material Ball Valves
- very low-temperature- and cryotechnology
- clean products
- chemistry and pharmaceutical
Elastomer Butterfly Valves
- centric valve disk
- wafer design
- lug design
- double flanges
DN 40 to 600, PN 10 to 16

High Performance Butterfly Valves
- double and triple eccentric valve disk
- wafer and flange design
- soft and metal seated
- special materials
DN 50 to 1400, PN 10 to 160

Tilting Check Valves
- double eccentric
- flange design
- with counterbalance
- with hydraulic damping
DN 100 to 1600, PN 10 to 40
Automation
actuators and remote effect technology for valves

Rotary Actuators
- pneumatic
- hydraulic
- electric

Linear Actuators
- open/close actuators
- regulating actuators
- pneumatic
- electric

Remote Effect Systems
- optical position indicators
- limit switch box
- electropneumatic positioner
- BUS-systems
Plate Heat Exchanger Plant
Plate Heat Exchanger

food, pharmaceutical, process and energy applications

Sigma
Sealed plate heat exchanger
- SIGMAFIX gasket system
- different plate coinages
- SIGMATWIN double-walled plates
special materials

Sigmawig
Sigmawig Titan
WIG welded plate heat exchanger
- without welding-rod materials
- different plate coinages
special materials

Sigmashell
Laser welded plate heat exchanger
- round compact design
- full-welded
- bolted body
- counter, direct or cross flow
- vacuum to 150 bar
Reverse Acting Rupture Disk with V-Strut

in holder SU-Pro with leakage monitoring
Graphite Rupture Disks
Rupture Disk Monitoring

Graphite Rupture Disk
- Flat Graphite Rupture Disk
- Monobloc Graphite Rupture Disk
- special equipment
DN 25 to 600, 0.07 to 83 bar

Rupture Disk Holders
for graphite rupture disks
- special materials
- PTFE-lined
- vacuum support

Rupture Disk Monitoring
- burst sensor
- full metal burst sensor
- leak sensor
DN 8 to 600
Metal Rupture Disks
Rupture Disk Holder

**Metal Rupture Disk**
- Flat Rupture Disk
- Forward Acting Disk
- Reverse Acting Disk
- V-Strud Rupture Disk
- Sanitary Rupture Disk

DN 4 to 800, 0.02 to 1200 bar

**Standard Disk Holder**
not pre-mounted metallic seal
- special materials
- PTFE-lined
- leak sensoric

DN 20 to 250

**Pro Disk Holder—**
pre-mounted metallic seal
- control and cleaning without solve the metallic seals

DN 20 to 150
Static Mixers

- mix
- disperse
- emulsify
- reactors

DN 1.6 to 2000

Mixing Elements

food, pharmaceutical, chemistry, petrochemistry, laboratory
- liquids
- gaz
- pastes

Heat Exchangers

- Tube Bundle Heat Exchanger
- Double Jacket Heat Exchanger

integrated mixing elements for high viscose rayon media

viscosity up to 50'000 mPas
capacity up to 2500 kW
Technical Glasses
Sight Glasses

Round Sight Glasses
Long Sight Glasses
Reflex Sight Glasses
Glass Tubes
- Borosilicate glass DIN 7080

Glass Tubes
- tubes
- capillaries
- round rods
from borosilicate glass

Welding Sight Glasses
- round and long sight glasses
- with screen wiper
- with window light
- manholes
Sight Glasses

Flow Sight Glass
- Borosilicatglass DIN 7080
- 2 and 3-way
- with visual indicator
- Flanges or welding ends

Welding Sight Glasses
- round and long sight glasses
- with screen wiper
- with ligth
- manholes

Tube – Sight Glasses
- flange design
- welding ends
- PTFE lined
- enamelled
- low dead volume
PTFE Gaskets and formed parts
PTFE Enveloped Gaskets
Form Seals for Clamp, Camlock and DIN 11851

Enveloped Gasket BUR-TA
- PTFE Dyneon TFM 1600
- 2 Inserts Bluftex 3000™
- Corrugated ring 1.4571
- Earthing Clip
TA Luft VDI 2440
FDA 21 CFR Ch. 1 compliant

Bluftex 3000™
Aramid fiber gasket
- Asbestos-free
- DIN DVGW for gas
- Food approvals

CLAMP Gaskets
CAMLOCK Gaskets
Inserts of elastomers
EPDM, Silicon, Viton etc.
- USP Classe VI
- 3A Sanitary Standard
- FDA CFR 2
BIOFLEX

smooth bore

Stainless Steel Wire Braid

Ferrule, crimped to secure braid to spigot

Swivelling Flange

Spigot, usually with an internal thread which screws onto the convolutions, securing the hose liner to the spigot.

PTFE liner tube extended through the end fitting, then flared out to form the sealing face

Bioflex PTFE liner tube:
- externally convoluted
- smooth bore, with slight ripples
- internal surface finish is 'mirror smooth', generated by hot polishing during manufacture
PTFE Hoses acc. to FDA
chemistry, pharmaceutical, food

Bioflex
PTFE-smooth hose
- self-cleaning
- full bore
- highly flexible
- break and vakuum resistant
DN 10 to 50

Pharmaline
PTFE-smooth hose
- RE-LINK-AF end fittings
- self assembly
- highly flexible
- break and vakuum resistant
DN 6 to 50

Coroflion
PTFE low convoluted hose
- self-cleaning
- highly flexible
- full bore
- break and vakuum resistant
DN 15 to 150
Aseptic Valves and Stainless Steel Products
biotechnology, pharmaceutical, food

Sanitary Ball Valves
- CIP able
- scrapper cleanable
- automatable

Sanitary Disk Valve
FDA conformal, CIP able
- DIN 11850 and 11864 connections
- clamp
- welding ends
DN 20 to 150, PN 10

Sanitary Rupture Disk
- vacuum-tight
- clamp-holder
- aseptic union holder
CIP Cleaning Heads
- Static Spray Heads
- Rotating Spray Heads
- Jet Cleaners
- different spray pattern

TANKO Jet - Cleaning System
- medium-driven
- external drive
- magnetic coupled
- different numbers of nozzles

CIP – Cleaning Units
- trolley or stationary
- CIP-Monitoring
CT Commercial Products
ANSI Small Valves

### PRODUCT RANGE

**TYPE**
- GATE - GLOBE - BALL, PISTON, SWING
- CHECK VALVES

**SIZES**
- FROM ¼" TO 4"

**CLASSES**
- 150 - 300 - 600 - 800 - 1500 - 2500 - 4500 LBS

**ENDS**
- SOCKET WELDING AS PER ANSI B16.11
- N.P.T. AS PER ANSI B12.20.1
- BUTT WELDING AS PER ANSI B16.5
- INTEGRALLY FLANGED AS PER ANSI B16.10
- & ANSI B16.5 SPECIAL CLAMP

**EXECUTIONS**
- BOLTED & WELD BONNET - PRESSURE SEAL - REDUCE & FULL PORT - BELLOWS SEAL - CRYOGENIC TYPE - EXTENDED BODY - "Y" PATTERN - INSIDE SCREW STEM

**MATERIALS**
- CARBON STEEL
- LOW CARBON STEEL
- ALLOY STEEL
- AUSTENITIC STEEL
- DUPLEX STEEL
- HIGH AUSTENITIC STEEL
- SUPER ALLOY
- ASTM A105
- ASTM A350 GR. LF2
- ASTM A182 F5, F11, F22, F9
- ASTM A182 F316, F316L, F304, F304L, F321, F347
- ASTM A182 F51, F53, F55
- ASTM F44
- MONEL, INCONEL, INCOLOY, HASTELLOY, TITANIUM

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