McSYS®

"Be the Highest of Standards"

HEAVY DUTY PINCH VALVE

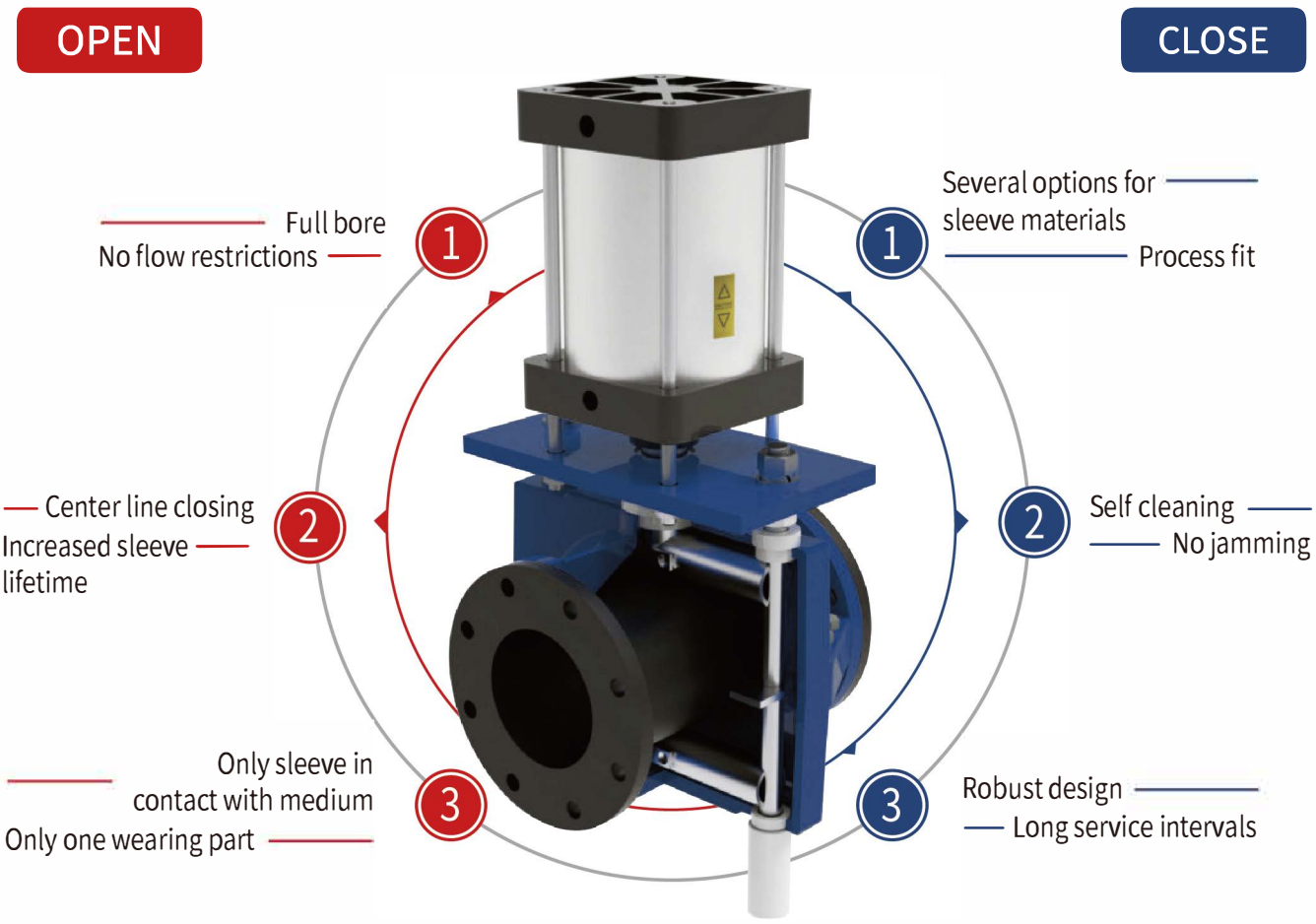
Designed for Harsh Working Conditions

INTRODUCTION

Mcsys heavy duty pinch valves are made to last and are ideal where shut-off and control applications involve abrasive or corrosive slurries, powders or coarse substances.

Heavy duty pinch valves are provide bubble tight shut-off even if solids have built up on the sleeve wall. When compressed, any crystallized particles flake off the sleeve surface. The full bore structure ensures free flow of the medium.The construction and materials of the three main components (sleeve, body and actuator) can be tailored to suit your process conditions.

FEATURES



Designed for corrosive and abrasive working conditions!

The operating principle of Mcsys pinch valve is simple. In the open position, the valve is full bore with no flow restrictions. During closing, two pinch bars squeeze the valve sleeve shut to the centerline. The sleeve is naturally wear resistant and when particles hit the sleeve's rubber surface, the collision energy is absorbed and released when the rubber bounces back.

Application

01 Power Plant

- FGD system
- Scrubbing system
- Coal conveying device
- Fly ash control

02 Sewage treatment plant

- Sludge control
- Sand removal
- Raw sewage
- Lime, carbon slime

03 Mining

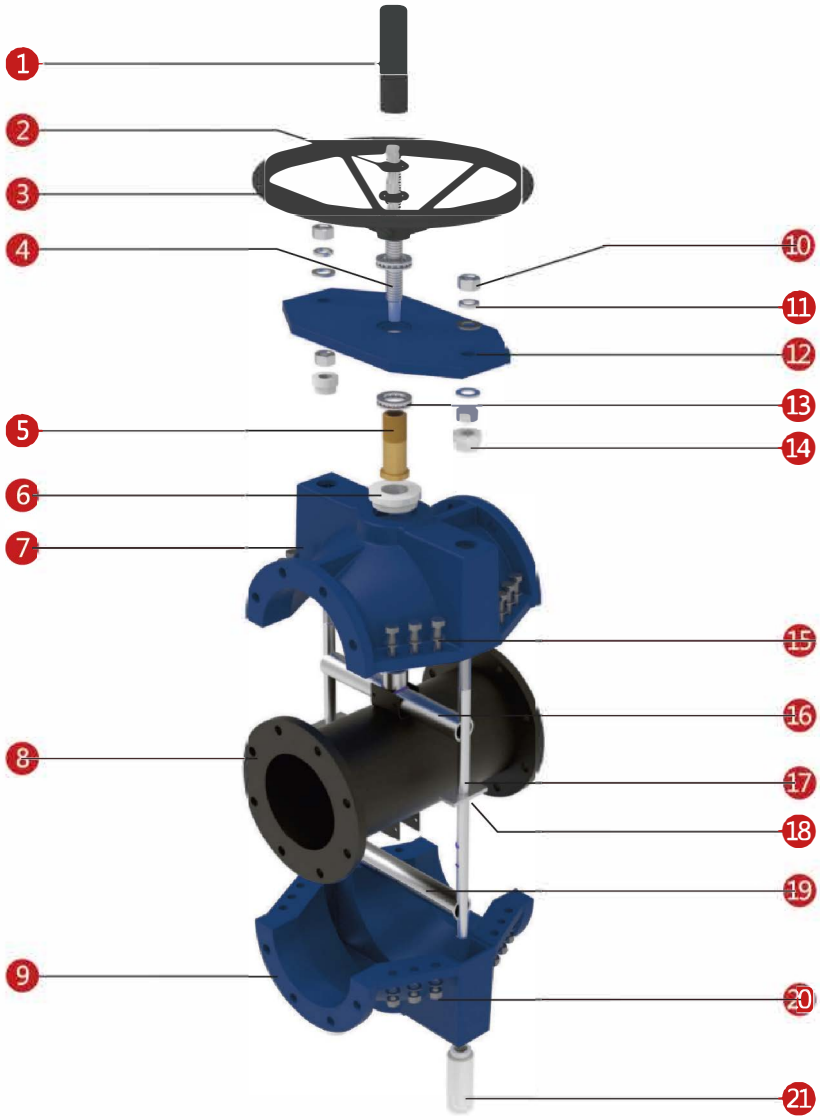
- Tailing disposal
- Flotation control
- Dredge pipeline
- Multiple mud control

04 Chemical process control

- Corrosive and abrasive materials
- Powder
- Particle
- Waste treatment

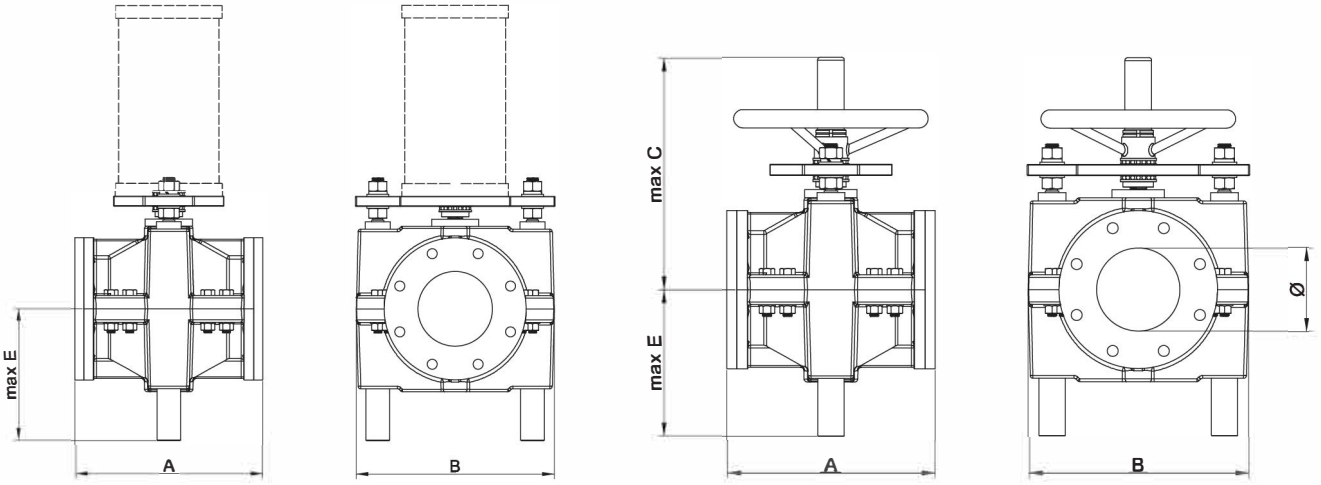
Technical Data

- ▷ Body Material: Aluminium
- ▷ Nominal Pressure: PN10 PN16 150LB
- ▷ Valve Type: Straight-through
- ▷ Connection: Flange
- ▷ Air press: 0.3Mpa~0.6Mpa
- ▷ Application: middle concentration acid, alkali salt of any concentration,slurry,medium that is easy to scale and with particle
- ▷ Size: DN25-DN1000
- ▷ Efective diameter: 25~1000mm
- ▷ Full stroke action time:≤3s
- ▷ Max. working pressure: 2.5Mpa
- ▷ Close differential press: 0.25Mpa
- ▷ Leakage grade: VI, accord with API598



Manual valve breakdown diagram

No	Part name	No	Part name	No	Part name
1	Protective cover	8	Sleeve	15	Bolt
2	Retaining ring	9	Lower body half	16	Upper pinch bar
3	Handwheel	10	Nut	17	Side guide
4	Stem	11	Gasket	18	Stopper
5	Stem nut	12	Bracket	19	Lower pinch bar
6	Centre bushing	13	Thrust bearing	20	Nut
7	Upper body half	14	Upper guide bushing	21	Lower guide bushing



Valve size (PVE) M&A	PN(bar)	A	B	C	E	Weight Manual valve (kg)		Weight Bare shaft valve (kg)	
						STEEL	AL	STEEL	AL
25	1-25	165	125	255	87	11	7	8	4
32	1-25	165	140	260	90	14	9	10	5
40	1-25	165	180	265	105	16	9	12	6
50	1-25	165	190	280	120	18	9	13	7
65	1-25	165	210	310	136	22	12	17	9
80	1-25	200	245	370	155	36	17	27	13
100	1-25	250	278	410	175	46	25	33	17
125	1-25	310	340	465	210	74	41	48	25
150	1-16	375	400	560	240	106	74	75	43
200	1-10	500	480	690	295	159	-	119	-
250	16	625	570	865	380	213	-	161	-
300	1	750	720	1020	445	279	-	212	-

* Larger sizes and higher pressures are available according to customer requirements.

Advantage: This is how valves work

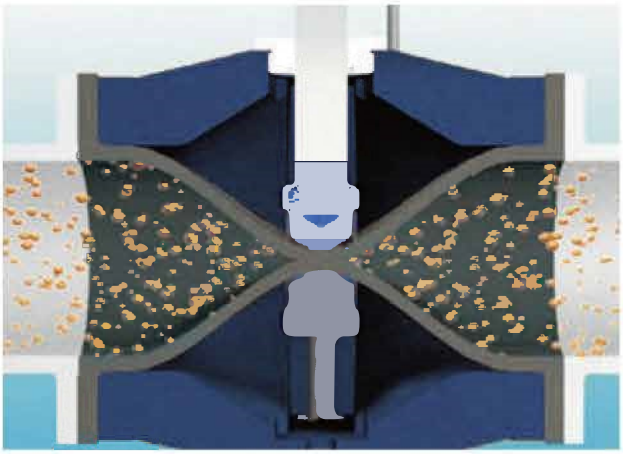


Image: During closing, two pinch bars squeeze the valve sleeve shut on the centerline.

01 Suitable for powder and partice applications

Long life time 02

03 Close with medium inside without blocking

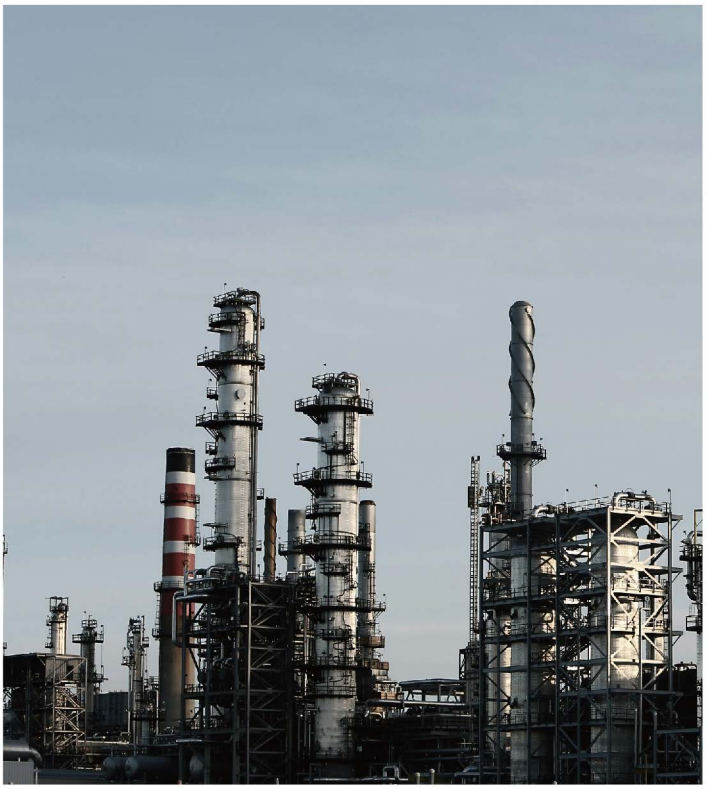
Low maintenance cost 04

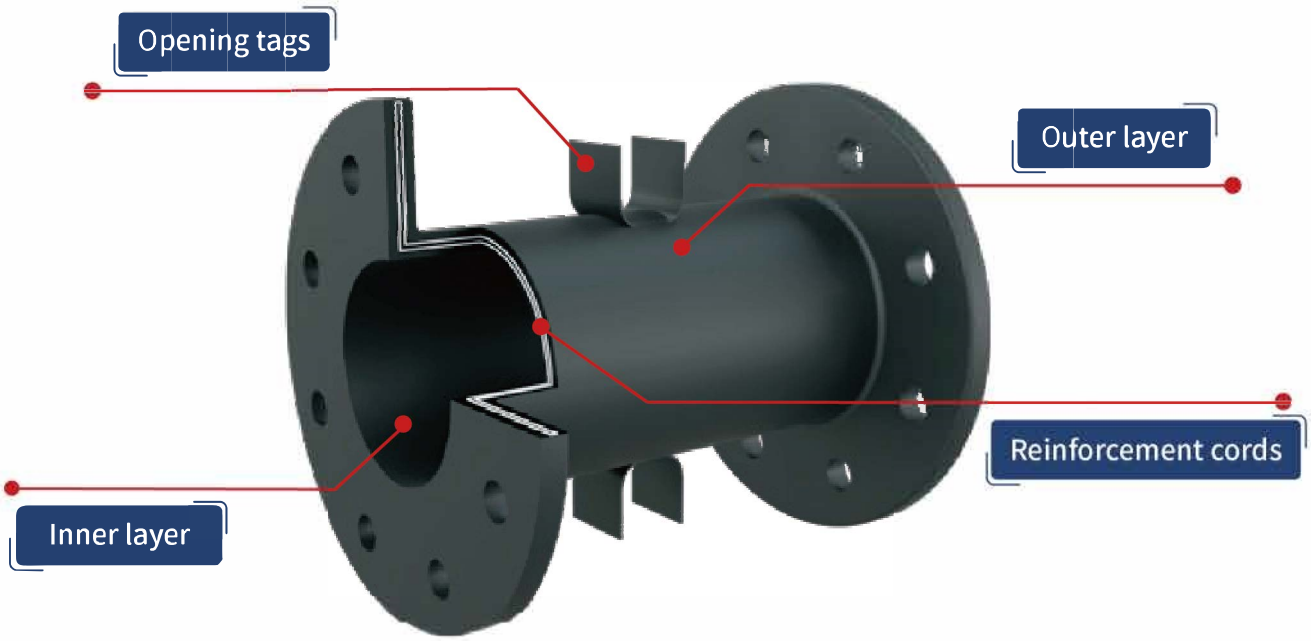
05 Only one wearing part

Sleeve Design

The core of Mcsys heavy duty pinch valves is the elastic sleeve, which is the only part in contact with the medium. The full bore sleeve integrates the valve perfectly to the pipeline,eliminates turbulence and minimizes pressure losses. Technologically advanced sleeves guarantee high wear and corrosion resistance, a trouble free operation and extended lifetime.

High grade sleeve materials range from wear resistant styrene butadiene to numerous other elastomers and rubber combounds. They are highly resistant to abrasive/corrosive slurries powders and granular substances.





Opening tags	ensures the valve can be fully opened in any case
Outer layer	protects the sleeve
Reinforcement cords	gives the sleeve its pressure retraining capabilities
Inner layer	resistant to wear and chemicals

PRODUCT FEATURES

- Only the sleeve is in contact with the medium
- Numerous elastomer compounds
- Multilayer construction
- Special sleeve designs
- Self-cleaning
- 100% tight
- Full bore
- Flexible

RUBBER OPTIONS

- Natural rubber
- Viton
- Chloroprene rubber
- EPDM
- Hypalon
- Neoprene rubber
- Good grade rubber
- NBR

Drive Method

Product Features

Manual

High wear resistance and corrosion resistance

Can withstand all kinds of medium concentration of acid and arbitrary concentration of alkali salt solution can transport pulp, dry and wet powder and crystalline material medium.

Full diameter

When the pinch valve is in the state of opening, its overall structure can be completely integrated with the pipeline system, will not change the pipe diameter and structure, has no influence on the structure of the flow medium in the pipeline.

Pneumatic

Can be closed with particles

As the valves are self-cleaning, even if any solids are accumulated in the sleeve wall, it breaks away when the valve is operated. This is due to the flexibility of the sleeve, making the valve lifetime longer than many other competing products on the market.

Low maintenance cost

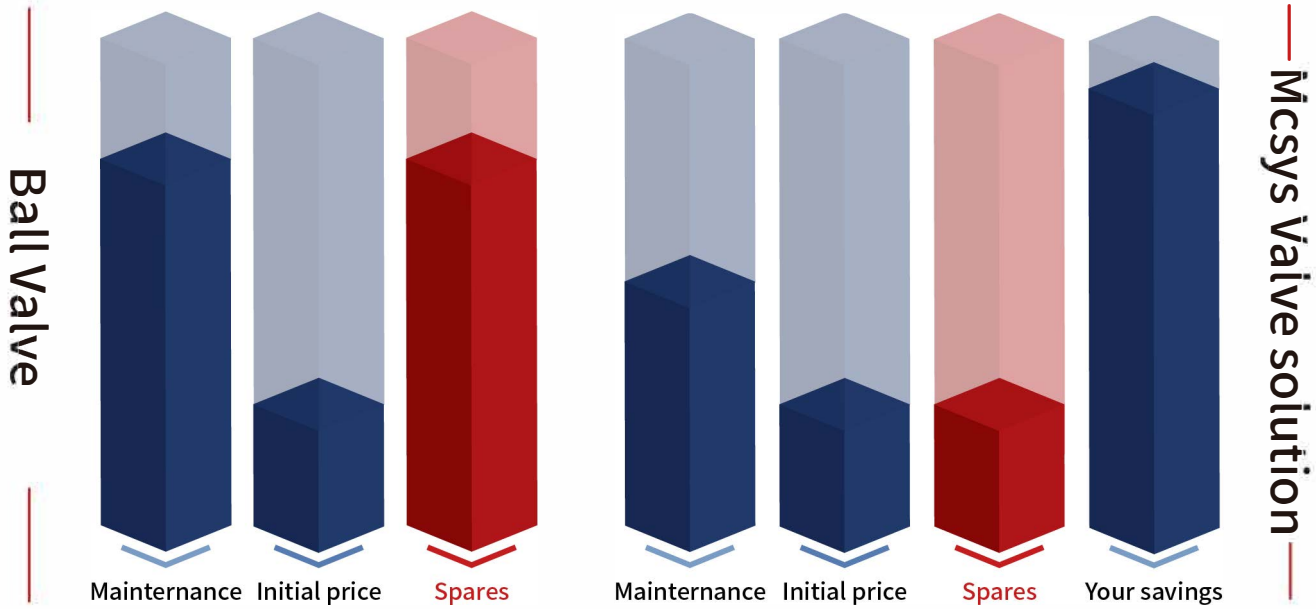
Pinch valves do not have seats, packing, rings or telescopic tubes that need to be replaced regularly. Thesleeve is the only component that needs to be replaced. Once the sleeve is replaced, the valve will be as good as new.

Electric

No leak

With rubber flange at both ends of sleeve, there is no need to add seal gasket when the valve is connected with the pipe, the valve channel and control medium space is in a completely isolated state, there will never be internal and external leakage, so as to fundamentally eliminate running, risk, drop, leakage, etc..

WE PROVIDE THE OPTIONAL SOLUTION:



▷ The shown comparison of cost over a period of 5 years on a 4" pinch valve feeding abrasive slurry,
The valve operates 4- 6 times/hour.
The conventional valve is a stainless ball valve with PTFE seats.

YOUR BENEFITS

- Minimized downtime
- Low operating costs
- Low Total Cost of Ownership
- Long service intervals
- Improved process performance
- Heavy duty design

STANDARD SLEEVE MATERIALS

Rubber quality	Application examples	Temperature range	Typical media
SBRT Styrene Butadiene	Heavy wearing High cycle frequency	-40°C-+110°C	Abrasive materials, diluted acid, alkali and chemical applications
EPDM Ethylene Propylene	Chemical applications Applicable to 75% of all industrial chemical applications	-40°C-+120°C	Concentrated and oxidizing chemicals
NBR Nitrile Rubber	Applications involving oils, fats and hydrocarbon	-30°C-+100°C	Oils, fats, fuels hydrocarbon, lubricants
NR Natural Rubber	High wear applications	-50°C-+75°C	Abrasive materials, diluted acids, alkali & chemicals
HNBR Hydrogenated Nitrile	High temperature applications	-30°C-+160C	Oils, fats,fuels hydrocarbon, lubricants
NRF Natural Rubber Foodstuff Quality White inner lining	Foodstuff applications Fulfils FDA (Food and Drug Administration) requirements	-40°C-+75°C	Media used in food and other CIP (clean-in-place) processes alcohol

Rubber quality	Application examples	Temperature range	Typical media
NBRF Nitrile Rubber White inner lining	Applications involving fatty foodstuff Fulfils FDA (Food and Drug Administration) requirements	-30°C-+100°C	Vegetable and animal oils and fats
EPDM/B Ethylene Propylene	Pulp and paper industry's green liquor application	-40°C-+100°C	Green liquor,alkaline and extraneous matter in green liquor processes
CR Chloroprene Rubber	Special-purpose chemical applications Resilient to ozone and averse weather	-40°C-+100°C	Chemicals,acids, several solvents, aliphatic oils, fats, lubricants
FPM Fluorine Rubber (Viton®)	Special-purpose chemical applications Resilient to ozone and averse weather	-20°C-+120C	Chemicals, aliphatic oils,aromatic and halogenated hydrocarbon
CSM Chloro-sulphone-ethylene (Hypalon®)	Special-purpose chemical applications Resilient to ozone and averse weather	-40°C-+100°C	Chemicals, acids, several solvents, aliphatic oils, fats, lubricants
IIR Butyl	Special-purpose chemical applications Impermeable to gas	-40°C-+100°C	concentrated and acidic chemicals, vegetable oils
PU Polyurethane with PU lining	Abrasive media applications	-10°C-+80°C	Abrasive materials, diluted chemicals, hydrocarbon, oils, lubricants