



LINATEX

**PINCH
VALVES**

INATEX

PINCH VALVES

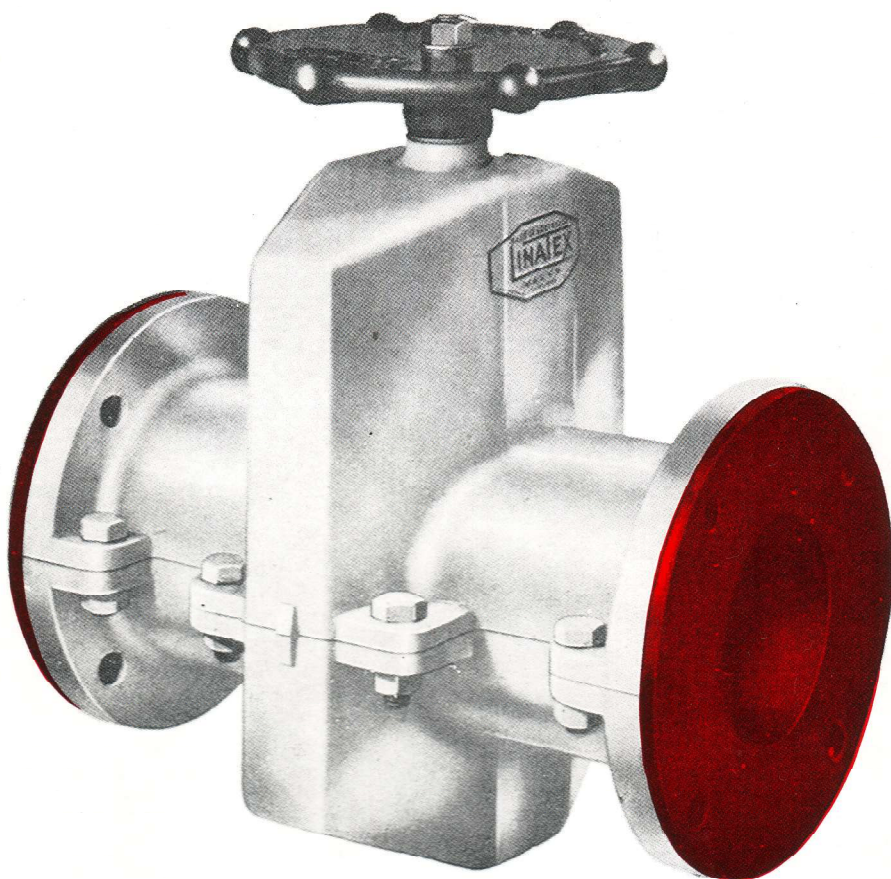
specifications

A totally enclosed pinch type valve, sleeve closure being effected by screw actuated clamps moving towards the centre line.

Standard bodies are cast from high grade aluminium. Where more robust construction is required, or where dictated by environment in which valve operates, cast iron bodies are available.

- **Full Bore**
Flow resistance is negligible.
- **Replaceable Sleeve**
Simple replacement gives new lease of life to valve.
- **Positive Sealing**
Resilient sleeve seals on solid particles.
- **Protected Mechanism**
Sleeve is the only part exposed to material handled.
- **Integral Sleeve Flanges**
No gaskets required.
- **Glandless**
No sealing problems.
- **Non Rising Spindle**
Facilitates fitting of chain-wheels, extension spindles etc.

Full bore, straight through,
abrasion and corrosion
resisting flanged type valve
valve range 1/2" to 14"



INATEX Valves designed to give simple and trouble free handling of corrosive liquids, abrasive slurries, gases, dry powders and chemical effluents.

INATEX Valves suitable for:

- ★ Mining of all types
- ★ Cement and asbestos works
- ★ Chemical plants
- ★ Pollution Control
- ★ Galvanising and steel plants
- ★ Paper mills
- ★ Breweries
- ★ Kaolin/china clay plants.



PINCH VALVES

SIMPLE HANDWHEEL CONTROL VALVES
LARGER SIZES OF HEAVY DUTY VALVES
LINAFLOW VALVES
MOTORISED VALVES
AIR OPERATED VALVES
FLOW CONTROL VALVES

For the control of Liquids and Solids

LINATEX VALVES are specially suited to handling abrasive slurries and powders. To provide a valve to give long trouble free service in such applications a lining possessing extreme resistance to abrasion is essential. Of equal importance is that the flow through the valve should be uninterrupted.

These features are built into the LINATEX VALVE first of all by using LINATEX rubber to make the liner or sleeve and secondly by employing the Warren Morrison* pinch valve principle. LINATEX has quite remarkable resistance to abrasion from solids in suspension in water and will outlast steel and other materials many times.

IMPORTANT NOTE : The Linatex Valve is not recommended for negative pressures as these cause the valve to close itself.

*British Patents Nos. 693028 and others pending.

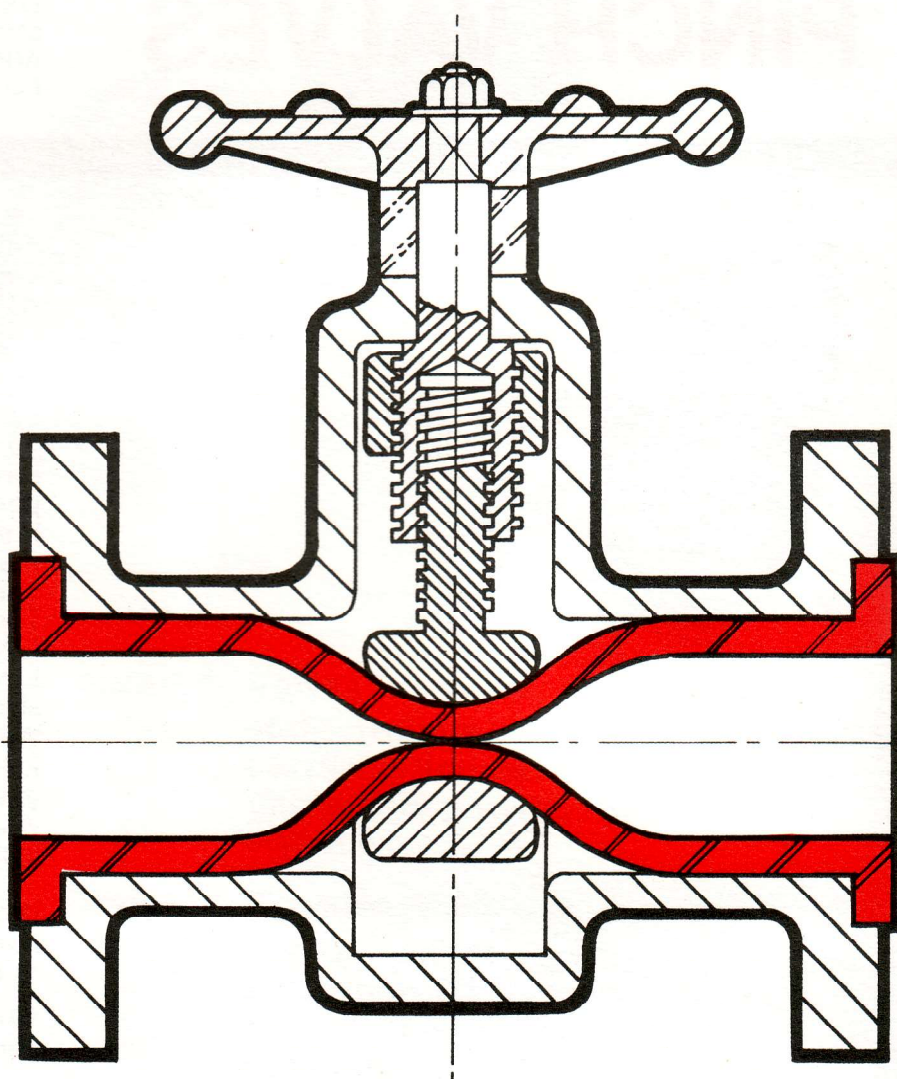
Linatex hand wheel control valve

Sizes from $\frac{1}{2}$ " (15mm) bore to $1\frac{1}{2}$ " (40mm) bore inclusive are closed by means of a single anvil thrusting down on top of the rubber sleeve. Larger sizes are closed by means of two anvils moving simultaneously to the centre line.

The high grade cast aluminium body and handwheel with metallic working parts are protected by the LINATEX sleeve. No pipe gaskets are required. The valve is glandless and packing problems are entirely eliminated. Normally aluminium bodies are used for working pressures up to 50 lbs. sq. in. (3.5 kg/cm²) and cast iron for pressures up to 100 lbs. sq. in. (7.0 kg/cm²). To meet the requirements of those handling acids, chemicals, effluent and other liquids outside the range of Linatex synthetic rubber sleeves are available and a guide to these is given on pages 16 17 and 18

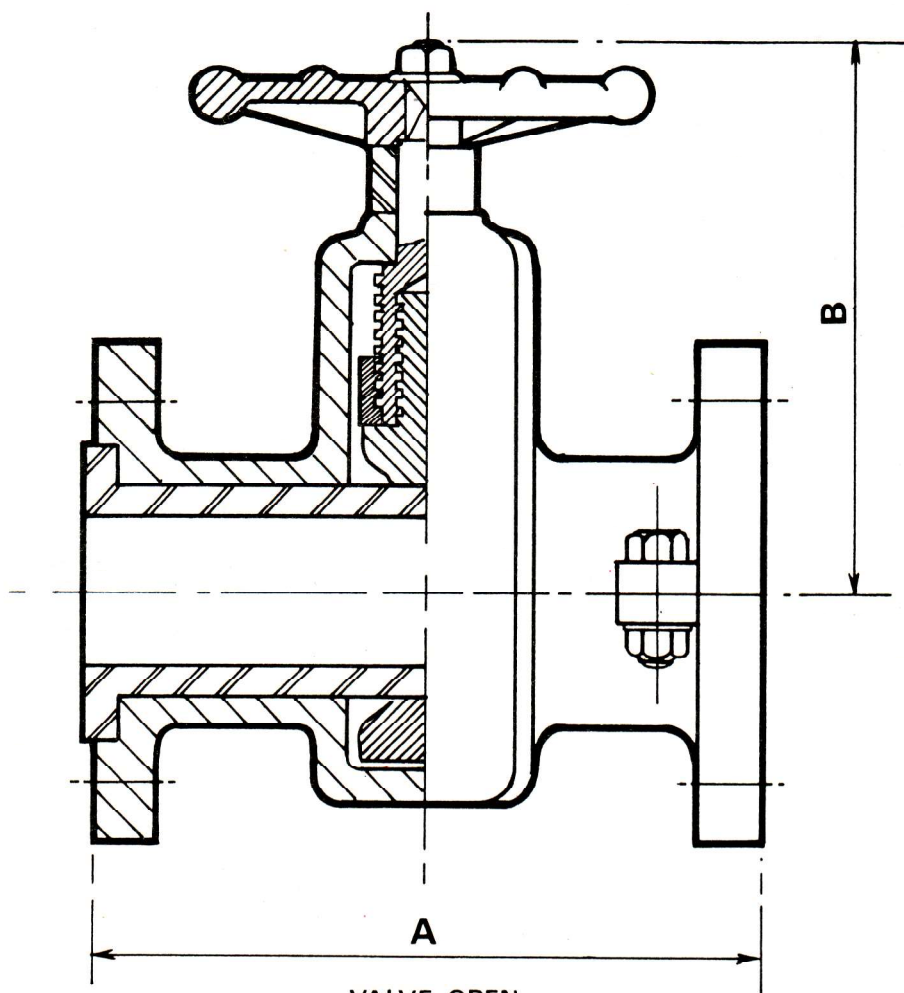
Spare Linatex or synthetic rubber sleeves are always available and are very easy to fit on the spot. Moreover a new sleeve will give the valve a new lease of life at a fraction of the cost of many other types of valve.

Full bore, straight through,
abrasion and corrosion
resisting flanged type valve



VALVE CLOSED

NO SEAT TO CLOG OR WEAR



VALVE OPEN

STRAIGHT THROUGH FLOW IN EITHER DIRECTION

To replace the rubber sleeve simply undo the bolts on the valve body. Remove the bottom casting, draw the old sleeve from between the anvils and insert the new sleeve.

When ordering valves please indicate:—

1. Nature and temperature of slurry, chemical or vapour to be handled.

2. Pressure at which valves are required to operate.

The non-rising spindle characteristic of the valve greatly facilitates arrangements for:—
Extension spindles and capstans, chain wheels, bevel gear drives.
The extensive engineering services of the Linatex organisation are at your disposal to provide complete valve units requiring ancillary operating gear of these types.

Leading dimensions (in inches)

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	3	4	5	6	8
A	$4\frac{1}{2}$	$4\frac{1}{4}$	$5\frac{1}{2}$	$6\frac{1}{2}$	$7\frac{1}{2}$	$10\frac{1}{2}$	$13\frac{1}{2}$	$17\frac{1}{2}$	21	$27\frac{1}{2}$
B	$3\frac{1}{2}$	$3\frac{1}{4}$	$4\frac{1}{2}$	6	$7\frac{1}{4}$	$8\frac{1}{2}$	$10\frac{1}{4}$	$12\frac{1}{2}$	$14\frac{1}{2}$	$18\frac{1}{2}$
Width of body	$2\frac{1}{2}$	$3\frac{1}{4}$	$3\frac{1}{2}$	$4\frac{1}{2}$	$6\frac{1}{4}$	8	$9\frac{1}{2}$	$11\frac{1}{2}$	$13\frac{1}{2}$	$18\frac{1}{2}$
Flange dia.	$3\frac{1}{2}$	4	$4\frac{1}{2}$	$5\frac{1}{2}$	6	$7\frac{1}{4}$	$8\frac{1}{2}$	10	11	$13\frac{1}{2}$
Bolt P.C.D.	$2\frac{1}{2}$	$2\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{1}{4}$	$4\frac{1}{2}$	$5\frac{1}{2}$	7	$8\frac{1}{2}$	$9\frac{1}{2}$	$11\frac{1}{2}$
Bolt dia.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$
No. of bolts	4	4	4	4	4	4	4	8	8	8
weight, lbs	Aluminium	$2\frac{1}{2}$	$3\frac{1}{2}$	5	$7\frac{1}{2}$	14	23	40	64	192
	Cast iron	$5\frac{1}{2}$	$7\frac{1}{4}$	$10\frac{1}{2}$	$15\frac{1}{2}$	$26\frac{1}{2}$	48	90	145	507

Leading dimensions (in millimetres)

Size	15	20	25	40	50	80	100	125	150	200
A	111	119	146	168	197	262	356	448	533	700
B	86	98	114	152	181	216	260	318	375	464
Width of body	64	84	92	117	159	203	248	295	343	464
Flange dia.	95	105	115	150	165	200	220	250	285	340
Bolt P.C.D.	65	75	85	110	125	160	180	210	240	295
Bolt dia.	12	12	12	16	16	16	16	16	20	20
No. of bolts	4	4	4	4	4	4	8	8	8	8
weight, kgs	Aluminium	1.1	1.6	2.3	3.5	6.4	10.5	18.2	29.1	87.4
	Cast iron	2.6	3.3	4.8	7.1	12.2	22.0	40.9	66.0	230

Types Available

Method of Operation H = Handwheel C = Chainwheel

Body Material 1 = Aluminium 2 = Cast Iron

Sleeve Material L = Linatex, up to 50 p.s.i. (3.5 kg/cm²) E = Linatex, 50 up to 100 p.s.i. (3.5 to 7.0 kg/cm²)
Y = Yellow Spot O = Orange Spot W = White Spot G = Green Spot

e.g. A 4" (100mm) bore valve having an aluminium body, chainwheel operated and having a standard Linatex-sleeve would be denoted:—Size 4" Type CIL (100 Type CIL).

Linatex heavy duty valves

This range of valves covering sizes from 10" (250mm) bore to 14" (350mm) bore inclusive has been designed to meet the requirements of those handling highly abrasive slurries.

The rugged cast iron construction with twin screw/chain-drive closing mechanism and the specially reinforced LINATEX sleeve is stressed to deal with pipe line pressures up to 100 lbs. sq. in. (7.0 kg/cm^2).

The diagram alongside shows details of the design and it should be noted that the standard handwheel unit is intended only to operate the valve when the pipe line is below 25 lbs. sq. in. (1.75 kg/cm^2).

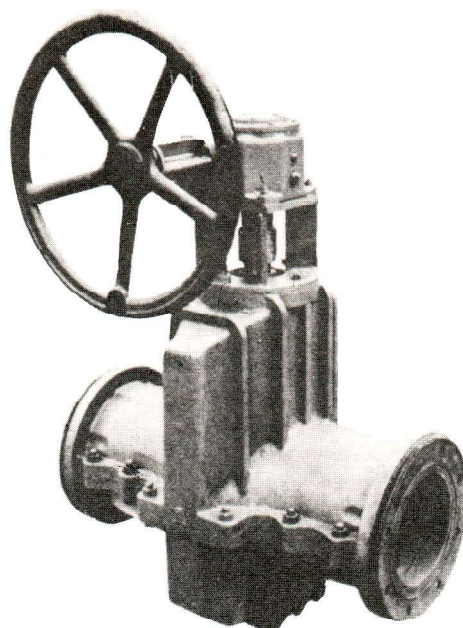
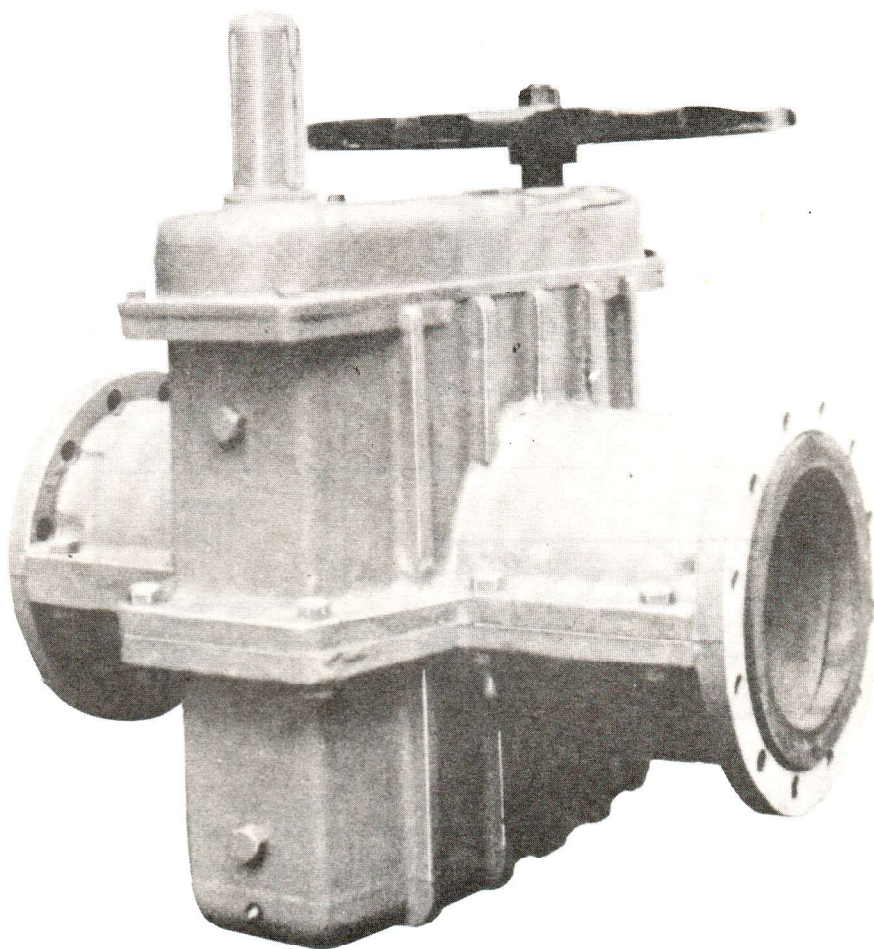
When closure is required against higher pressures in the pipeline a GEAR BOX is fitted. It will be understood that a large size valve working at normal pressures below 50 lbs. sq. in. (3.5 kg/cm^2) is subject to less exacting conditions than at 100 lbs. sq. in. (7.0 kg/cm^2). Therefore whilst the valve body and mechanism are standard, TWO different LINATEX SLEEVES are used.

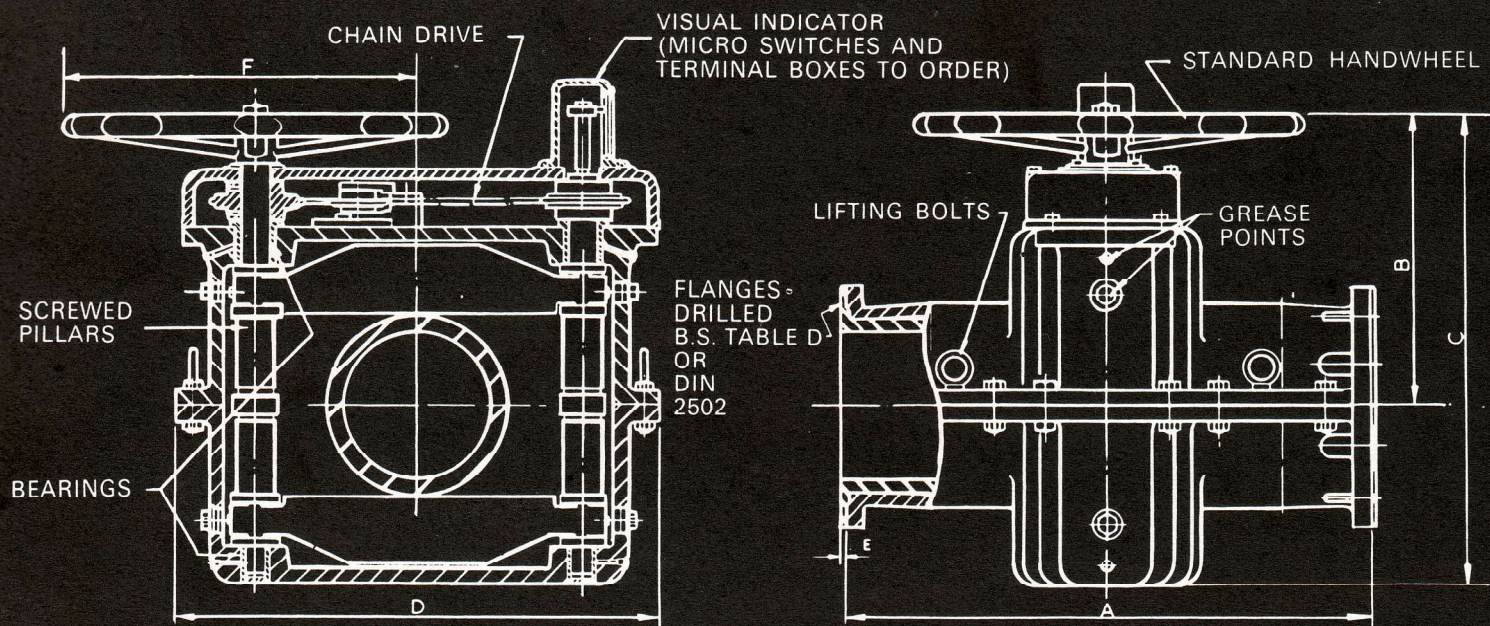
—One rated for 50 lbs. sq. in. (3.5 kg/cm^2) max. working pressure.

—One rated for 100 lbs. sq. in. (7.0 kg/cm^2) max. working pressure.

Details of the purpose for which the valve is required should be carefully stated when ordering.

Extension spindles, chain wheels and other ancillary equipment are available to meet individual requirements.





BRITISH STANDARD FLANGE TABLE "D"

Size	A	B	C	D	E	F				
10	34 $\frac{1}{8}$	18 $\frac{1}{4}$	30	31	$\frac{1}{4}$	22 $\frac{1}{2}$	16	14	$\frac{3}{4}$	8
12	41 $\frac{5}{8}$	21	34 $\frac{1}{2}$	32 $\frac{1}{8}$	$\frac{7}{8}$	31 $\frac{1}{4}$	18	16	$\frac{7}{8}$	12
14	48	23	38 $\frac{1}{2}$	38	$1\frac{1}{2}$	34 $\frac{1}{2}$	20 $\frac{1}{4}$	18 $\frac{1}{2}$	$1\frac{1}{8}$	12

Leading dimensions (in millimetres)

DIN 2502

Size	A	B	C	D	E	F	Flange Dia.	Bolt P.C.D.	Bolt Dia.	No. of Bolts
250	864	464	762	787	6	573	405	355	27	12
300	1056	533	883	816	8	794	460	410	27	12
350	1219	584	978	965	9	876	520	470	27	16

Types available

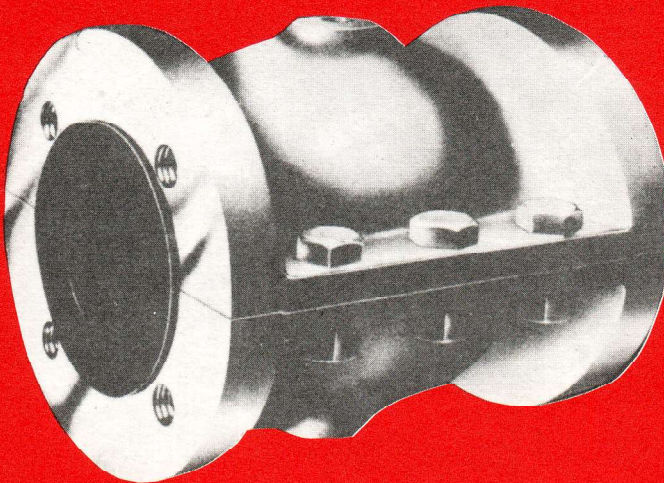
Method of Operation H = Handwheel C = Chainwheel X = Geared Handwheel

Body Material 2 = Cast Iron

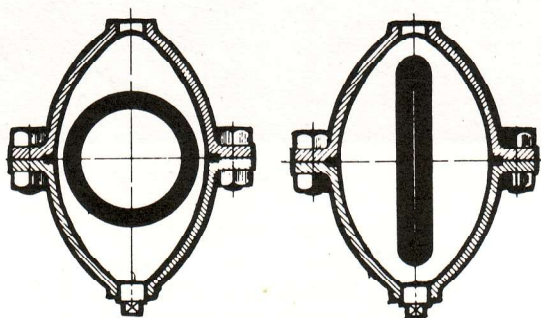
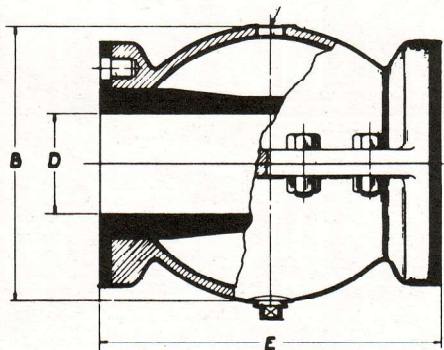
Sleeve Material L = Linatex, up to 50 p.s.i. (3.5 kg/cm²) E = Linatex, 50 up to 100 p.s.i. (7.0 kg/cm²)

e.g. 10" (250mm) bore valve operated by means of a geared handwheel and having a standard Linatex sleeve would be denoted:—Size 10" Type X2L (250 Type X2L).

Linaflow valves



Air inlet size C (B.S.P.)



Valve Open

Valve Closed

Outstanding features of this simple and efficient valve :—

- Flow in either direction.
- Unobstructed full bore flow.
- Only one wearing part.
- Blow-out protection.
- Large sealing surface.
- No gland or spindle.
- Requires no lubrication.
- Can be installed in cramped situations.
- Handles abrasive and corrosive slurries and liquids up to 65°C.
- Pipe-line pressures up to 50 lbs per square inch (3.5 kg/cm²).

Linaflow valves are specially suited to handling abrasive slurries and powders because they are fitted with Linatex liners possessing extreme resistance to abrasion. Linaflow valves may be controlled from a simple hand-operated air valve or from a solenoid-operated air valve to provide electrical control and/or interlocking with other equipment. Please consult us for any special applications you require.

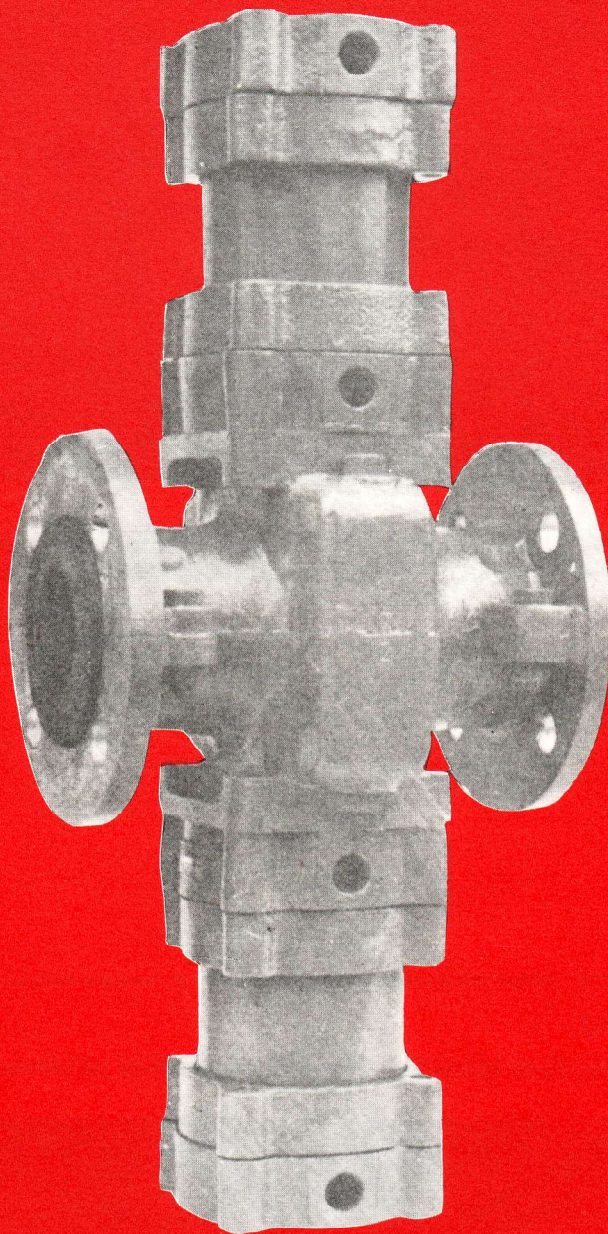
DIMENSIONS (in inches)

Valve Bore "D"	Length "E"	Overall Heights "B"	Air Inlet "C" (B.S.P.)	British Standard Flange Table "D" Flange Dia.	P.C.D.	Studs Dia.	Numl of Stu
1/2	4 1/2	3 1/2	1/4	3 1/2	2 3/8	1/2	4
3/4	4 1/2	4	1/2	4	2 7/8	1/2	4
1	5	4 3/8	1/4	4 1/2	3 1/4	1/2	4
1 1/2	6	4 1/2	1/4	5 1/2	3 7/8	1/2	4
2	7 1/2	6	1/2	6	4 1/2	5/8	4
3	9 3/8	8 1/2	1/4	7 1/4	5 3/4	3/4	4
4	13	10	3/8	8 1/2	7	3/4	8
5	16 7/8	11	1/2	10	8 1/2	3/4	8
6	19 1/4	13 1/2	1/2	11	9 1/4	3/4	8
8	23	16 1/2	1/2	13 1/4	11 1/2	3/4	8

DIMENSIONS (in millimetres)

Valve Bore "D"	Length "E"	Overall Heights "B"	Air Inlet "C" (B.S.P.)	DIN 2502 Flange Dia.	P.C.D.	Studs Dia.	Numl of Stu
15	114	95	1/4	95	65	12	4
20	121	101	1/4	105	75	12	4
25	127	111	1/4	115	85	12	4
40	152	121	1/4	150	110	16	4
50	184	152	1/4	165	125	16	4
80	244	210	1/4	200	160	16	4
100	330	254	3/8	220	180	16	8
125	429	279	1/2	250	210	16	8
150	489	337	1/2	285	240	20	8
200	584	425	1/2	340	295	20	8

Linaflow Valves comprise a reinforced Linatex natural rubber sleeve surrounded by a high grade aluminium body. Certain sizes are available with butyl or neoprene synthetic rubber sleeves for special applications. When compressed air is introduced the sleeve is flattened in the manner illustrated above forming a complete and effective seal. To operate the valve the applied air pressure must be not less than 25 p.s.i. greater than the pressure against which the valve is required to close. The maximum designed line pressure is 50 p.s.i. At this pressure a supply of air at not less than 75 p.s.i. is required to close the valve. Most compressed air lines are at a pressure of 80 to 100 p.s.i. and are therefore a convenient means of operating the valve. To ensure economy of compressed air and maximum sleeve life it is essential to restrict the air supply pressure to a Linaflow valve to the minimum required to effect closure under working conditions. For this reason a pressure regulator should always be fitted. The air control may be remote from the Linaflow Valve.



Linatex air operated valves

Valve closure is effected by bringing together simultaneously the two clamping anvils by means of two air cylinders. On valves up to 1½" (40mm) bore, only one anvil is used and therefore one air cylinder. The standard air operated LINATEX valve is essentially for ON/OFF duties.

Various sizes of air cylinders are fitted to each size of valve having regard to the purpose against which the valve is required to close and the air supply pressure available. Valve bodies are cast from high grade aluminium and the precision made air cylinder units are of the double acting type.

Types available

Method of Operation

Body Material

Sleeve Material

A = Air Cylinder S = Air Cylinder Spring to Return (Up to 1½" (40mm) size only)
 1 = Aluminium
 L = Linatex, up to 50 p.s.i. (3.5 kg/cm²)
 E = Linatex, 50 to 100 p.s.i. (7.0 kg/cm²)
 Y = Yellow Spot R = Red Spot
 O = Orange Spot W = White Spot
 G = Green Spot

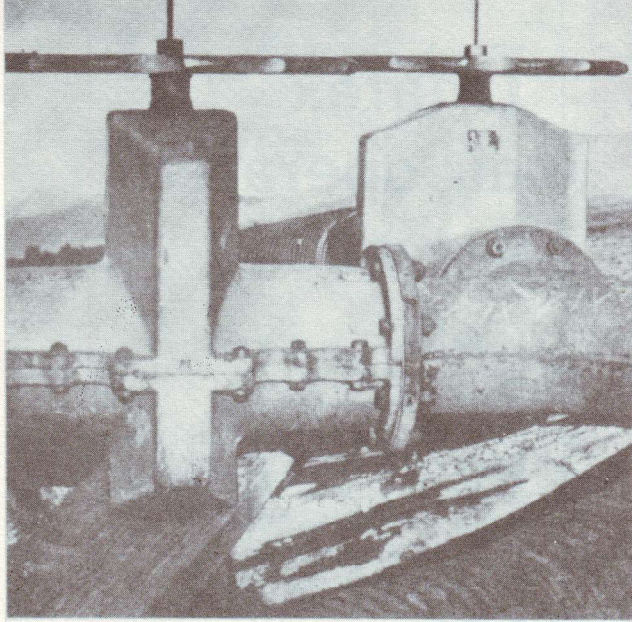
e.g. A 4" (100mm) bore air cylinder operated valve having aluminium body and red spot sleeve would be denoted :—Size 4" Type AIR (100 Type AIR).

The chart (page 12) gives details of air cylinders fitted for various conditions. Example :—

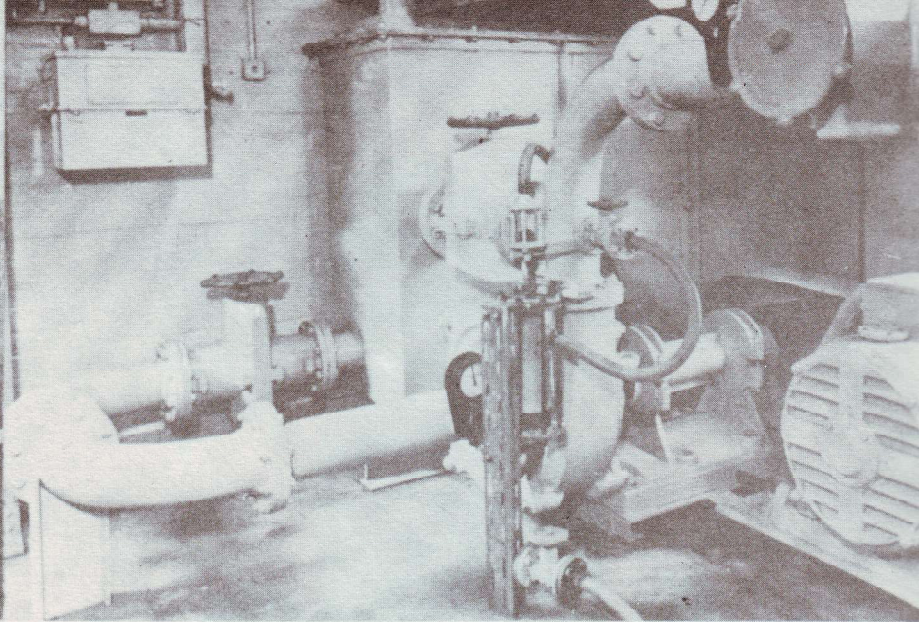
(a) 1" valve in pipeline working at 30 p.s.i. with available air pressure of 80 p.s.i. :—chart reading 3" air cylinder. Note only ONE air cylinder involved.

(b) 4" valve in pipeline working at 40 p.s.i. with available air pressure of 60 p.s.i. :—chart reading 6" air cylinders. Note TWO air cylinders are involved.

The diagrams on page 13 give principal dimensions of the units. Remote control of valves is readily arranged, using electrically operated air pilot valves as in the standard layout also shown.

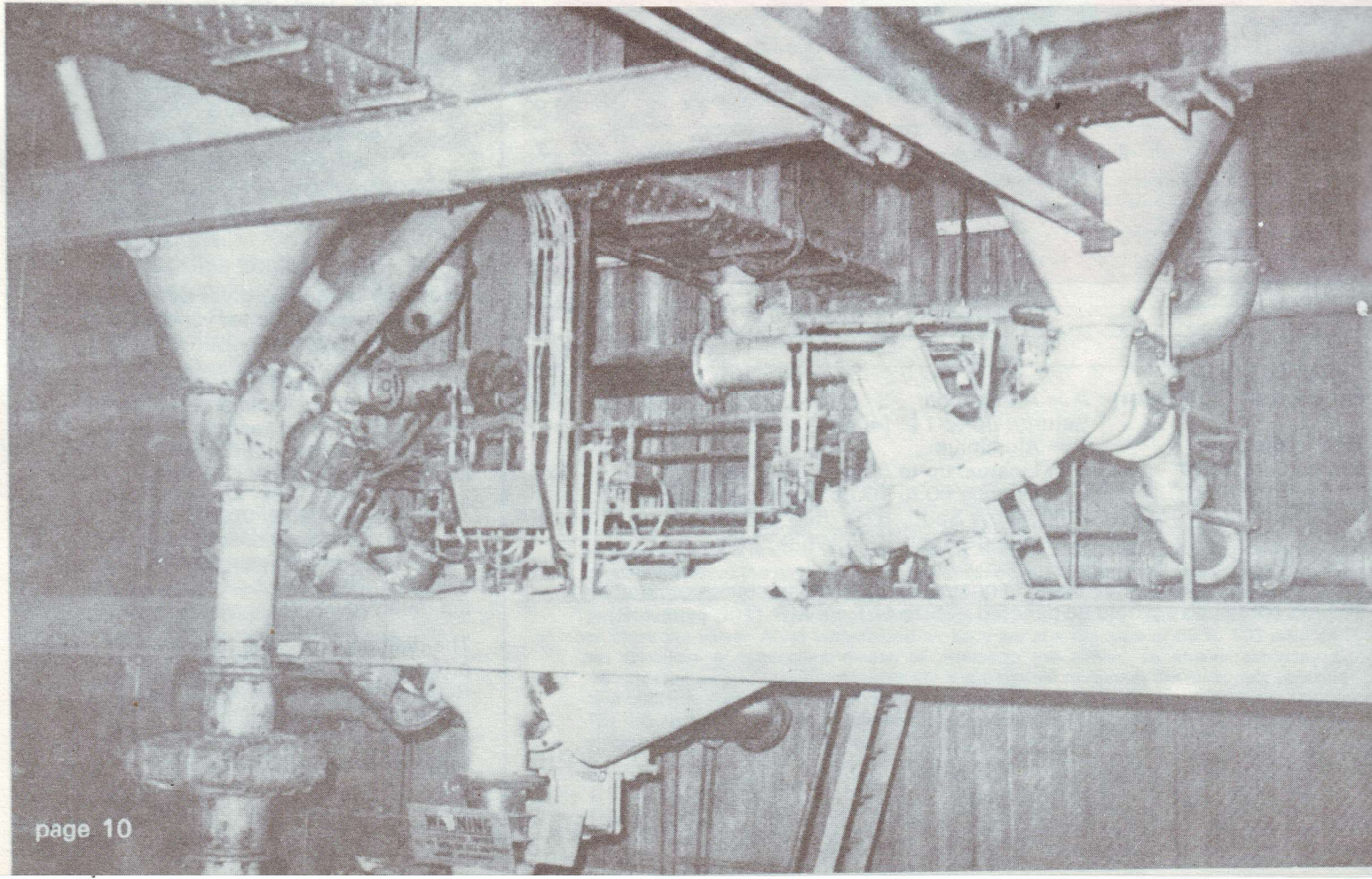


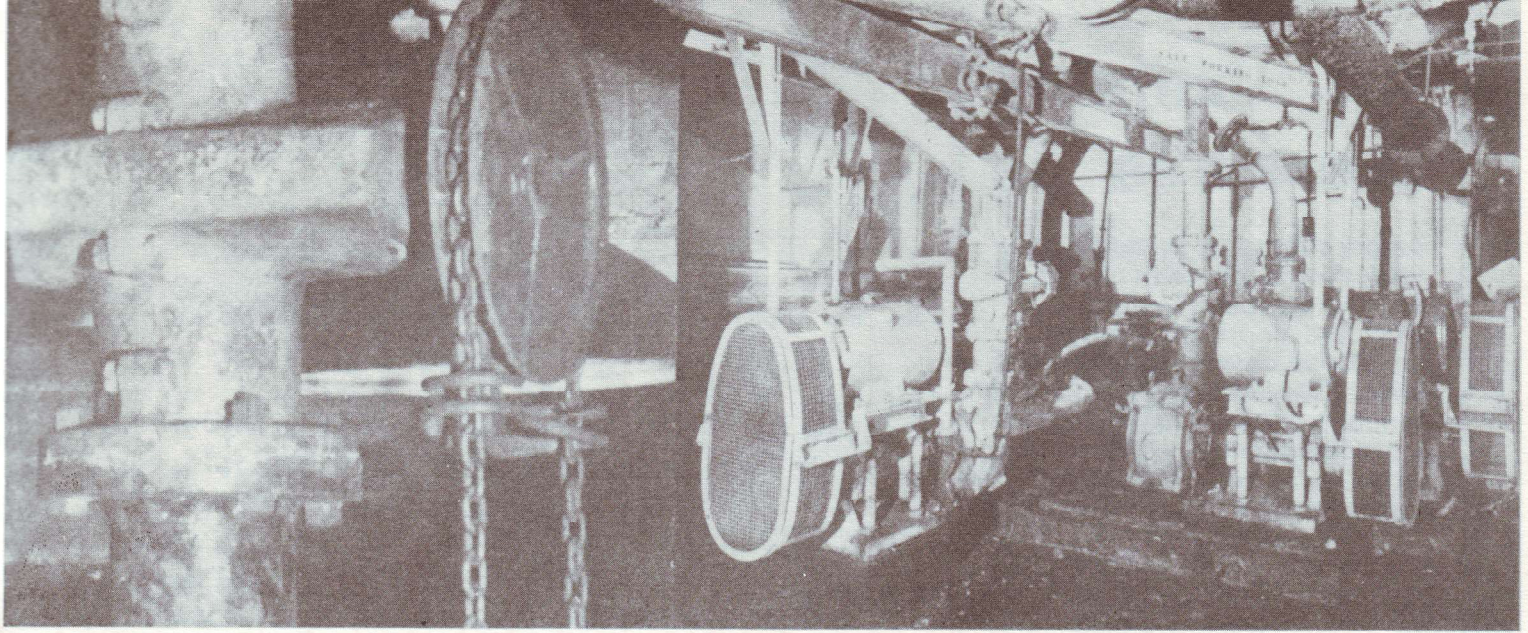
8" Bore LINATEX VALVES handling sand and gravel dredged from Loch Lomond.



5" Bore LINATEX VALVES incorporated in LINATEX Test plant made for a Government Research Establishment

HEAVY DUTY LINATEX VALVES ON ASH HANDLING PLANT AT KINCARDINE POWER STATION. This section is equipped with— 6 × 14" valves : 8 × 10" valves : 3 × 10" air operated valves

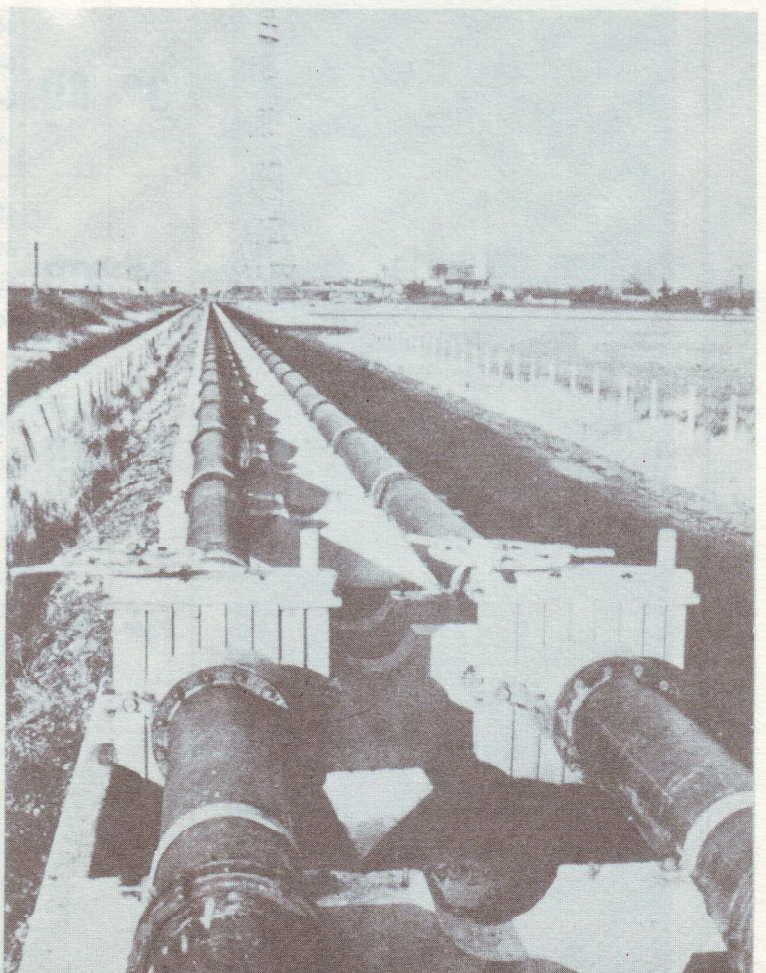
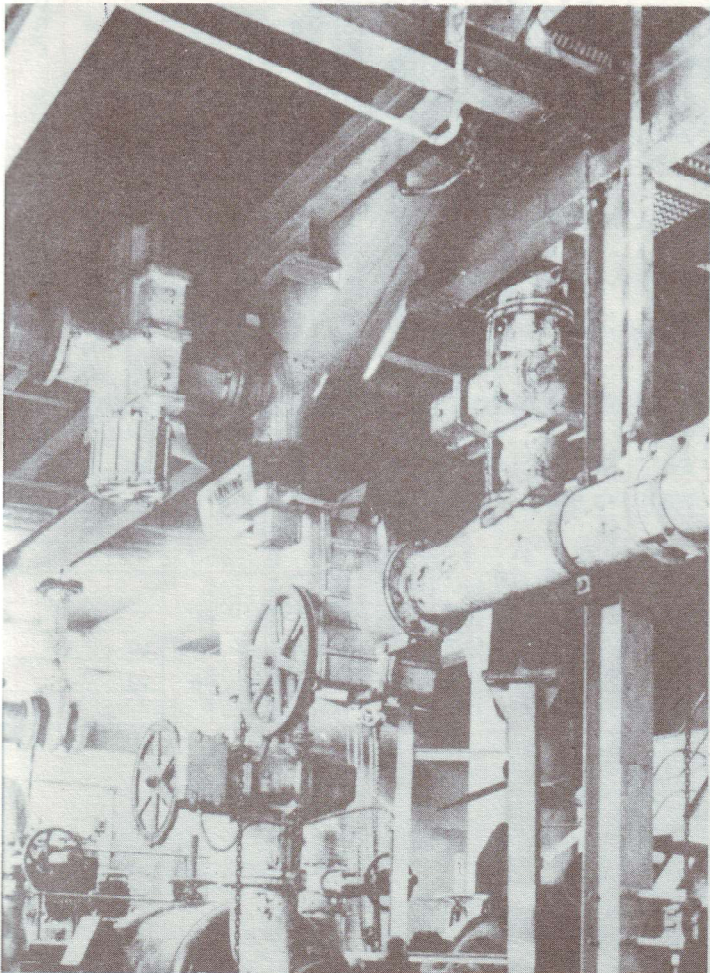




Chain wheel operated LINATEX valves at N.C.B. colliery handling dense medium (magnetite).

Some of the LINATEX valves fitted at Pilkington Brothers Ltd.

Micro switches and terminal boxes for signalling and interlocking circuits are fitted to certain of the valves.



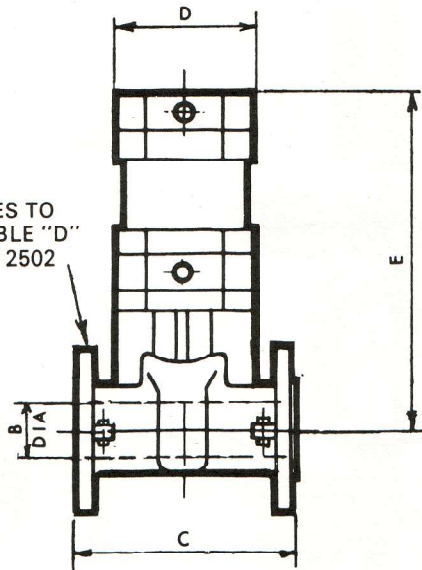
Air pressures

Larger sizes of air operated valves are available to order depending upon the duty. Standard air operated valves sizes $\frac{1}{2}$ " to $1\frac{1}{2}$ " can be made with a "Spring to close" function. For larger sizes incorporating "Spring to close" refer to Flow Control Valves.

		Pipe line pressure															
Valve size		Air pressure		10	20	30	40	50	60	70	80	90	100	lb./in ²	kg/cm ²	ONE AIR CYLINDER	STANDARD AIR CYLINDER BORE SIZES IN INCHES
inch	mm	lb/in ²	kg/cm ²	0.7	1.4	2.1	2.8	3.5	4.2	4.9	5.6	6.3	7.0				
$\frac{1}{2}$ "	15	40	2.8	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	3	3	3	3	3			ONE AIR CYLINDER BORE SIZES IN INCHES	
		60	4.2	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	3	3	3				
		80	5.6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	3				
		100	7.0	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$				
$\frac{3}{4}$ "	20	40	2.8	3	3	3	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$				
		60	4.2	2 $\frac{1}{8}$	3	3	3	3	3	3	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$				
		80	5.6	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	3	3	3	3	3	3				
		100	7.0	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	3	3	3	3				
1"	25	40	2.8	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6				
		60	4.2	3	3	3	3	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$				
		80	5.6	2 $\frac{1}{8}$	3	3	3	3	3	3	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$				
		100	7.0	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	3	3	3	3	3	3	3				
$1\frac{1}{2}$ "	40	40	2.8	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6	6	6	6	6				
		60	4.2	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6				
		80	5.6	3	3	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$				
		100	7.0	3	3	3	3	3	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$				
2"	50	40	2.8	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6	6	6				
		60	4.2	3	3	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$				
		80	5.6	3	3	3	3	3	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$				
		100	7.0	2 $\frac{1}{8}$	2 $\frac{1}{8}$	3	3	3	3	3	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$				
3"	80	40	2.8	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6	6	6	8	8	8	8				
		60	4.2	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6	6	6	6	6				
		80	5.6	3	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6	6	6				
		100	7.0	3	3	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6				
4"	100	40	2.8	4 $\frac{1}{4}$	6	6	8	8	8	8	10	10	10				
		60	4.2	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6	6	8	8	8	8	8				
		80	5.6	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6	6	6	8	8	8				
		100	7.0	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6	6	6	6	6				
5"	125	40	2.8	6	6	8	8	10	10	—	—	—	—				
		60	4.2	4 $\frac{1}{4}$	6	6	6	8	8	8	10	10	10				
		80	5.6	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6	6	8	8	8	8	10				
		100	7.0	3	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6	6	8	8	8	8				
6"	150	40	2.8	6	8	8	10	10	10	—	—	—	—				
		60	4.2	4 $\frac{1}{4}$	6	8	8	8	10	10	10	—	—				
		80	5.6	4 $\frac{1}{4}$	6	6	8	8	8	8	10	10	10				
		100	7.0	4 $\frac{1}{4}$	4 $\frac{1}{4}$	6	6	8	8	8	8	8	10				

Linatex air operated valves

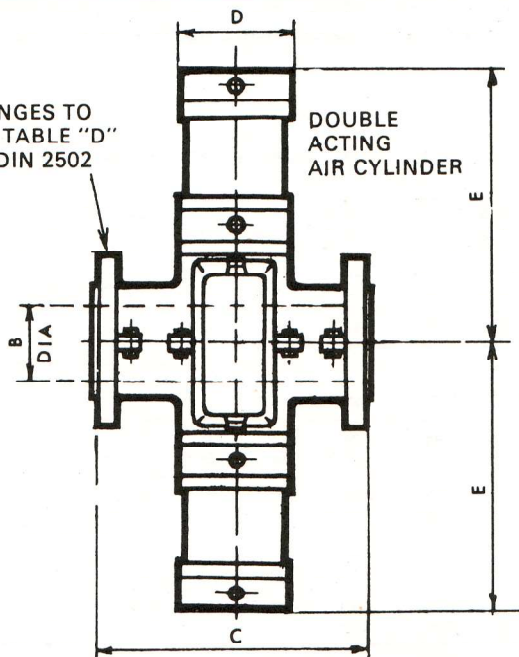
FLANGES TO
B.S. TABLE "D"
OR DIN 2502



Linatex air operated valves $\frac{1}{2}$ " to $1\frac{1}{2}$ " (15mm to 40mm) bore

			AIR CYLINDER BORE											
millimetres			inches			1½		2½		3		4½		
Size	B	C	Size	B	C	D	E	D	E	D	E	D	E	
15	15	111	½	½	4⅜	2	6⅜	2½	7⅜	3½	8⅜			
20	20	119	¾	¾	4⅞	2	7	2½	8	3½	9	5⅜	9½	
25	25	146	1	1	5½	2	7¾	2½	8½	3½	9½	5⅜	10½	
40	40	168	1½	1½	6⅜			2½	10½	3½	11½	5⅜	12⅞	

FLANGES TO
B.S. TABLE "D"
OR DIN 2502



Linatex air operated valves 2" to 6" (50mm to 150mm) bore

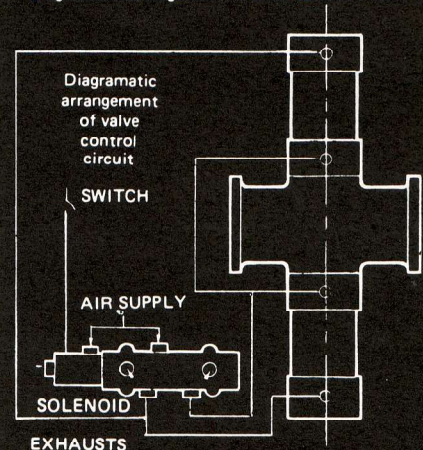
			AIR CYLINDER BORE														
millimetres			inches			2½		3		4½		6		8		10	
Size	B	C	Size	B	C	D	E	D	E	D	E	D	E	D	E	D	E
50	50	197	2	2	7½	2¼	8½	3½	9½	5⅜	10						
80	80	262	3	3	10⅞	2¼	9½	3½	10⅞	5⅜	11½	7½	12⅞				
100	100	356	4	4	13⅞			3½	12½	5⅜	13⅞	7½	14⅞	9⅞	16⅞		
125	125	448	5	5	17⅞			3½	13½	5⅜	15⅞	7½	16⅞	9⅞	18⅞	12	17½
150	150	533	6	6	21			3½	16⅞	5⅜	17⅞	7½	18⅞	9⅞	20⅞	12	19

Many applications for valves in automatically operated systems call for signalling arrangements or interlocking with other units.

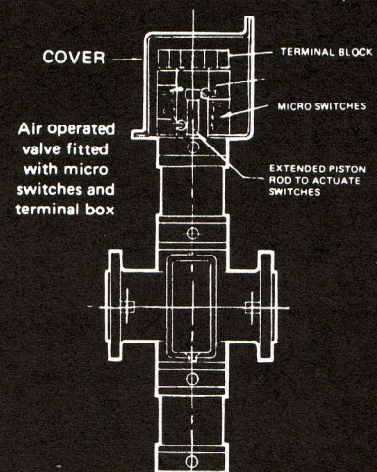
The diagrams below show a simple remote control system using a solenoid operated air pilot valve and a valve fitted with micro switches.

In the case of the latter, by appropriate wiring arrangements the switches can be made to switch ON or switch OFF in circuit with signal lights or relays to start or stop other equipment.

Diagrammatic arrangement of valve control circuit



Air operated valve fitted with micro switches and terminal box

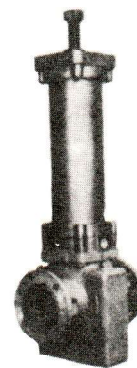
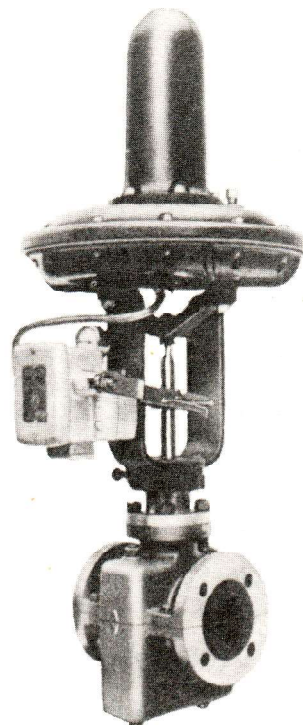


Linatex flow control valves

The flow characteristics of a valve for process control may be said to be ideal when equal increments of valve settings produce corresponding equal changes in the rate of flow. The design of the method of closure in the LINATEX FLOW CONTROL valve has been established after considerable development work to provide the nearest approach to "proportional flow" whilst retaining the simple and reliable pinch valve performance.

The bringing together of the anvils is effected by a linkage which also gives considerable mechanical advantage towards the closed position. Because the anvils are linked, thrust from the closing force is required only on the top anvil. The LINATEX FLOW CONTROL VALVE is available up to 4" (100mm) bore and is normally fitted with a "Foxboro" diaphragm top with positioner as shown. Other proprietary makes of diaphragm top are readily fitted to order.

Sometimes air operated valves are fitted to bin outlets and in other situations where air failure might be troublesome or even dangerous. The smaller sizes of valve $\frac{1}{2}$ " to $1\frac{1}{2}$ " (15mm to 40mm) having ONE air cylinder are readily arranged with the "Spring to close" function for this type of installation. For larger valves 2" to 4" (50mm to 100mm) bore the "Spring to close" function is obtained by using the FLOW CONTROL VALVE since, like the smaller sizes, this can be operated by ONE air cylinder.



Types Available

Method of Operation

Body Material

Sleeve Material

D = Diaphragm Mtr.

1 = Aluminium

L = Linatex, up to 50 p.s.i. (3.5 kg/cm²)

Y = Yellow Spot R = Red Spot

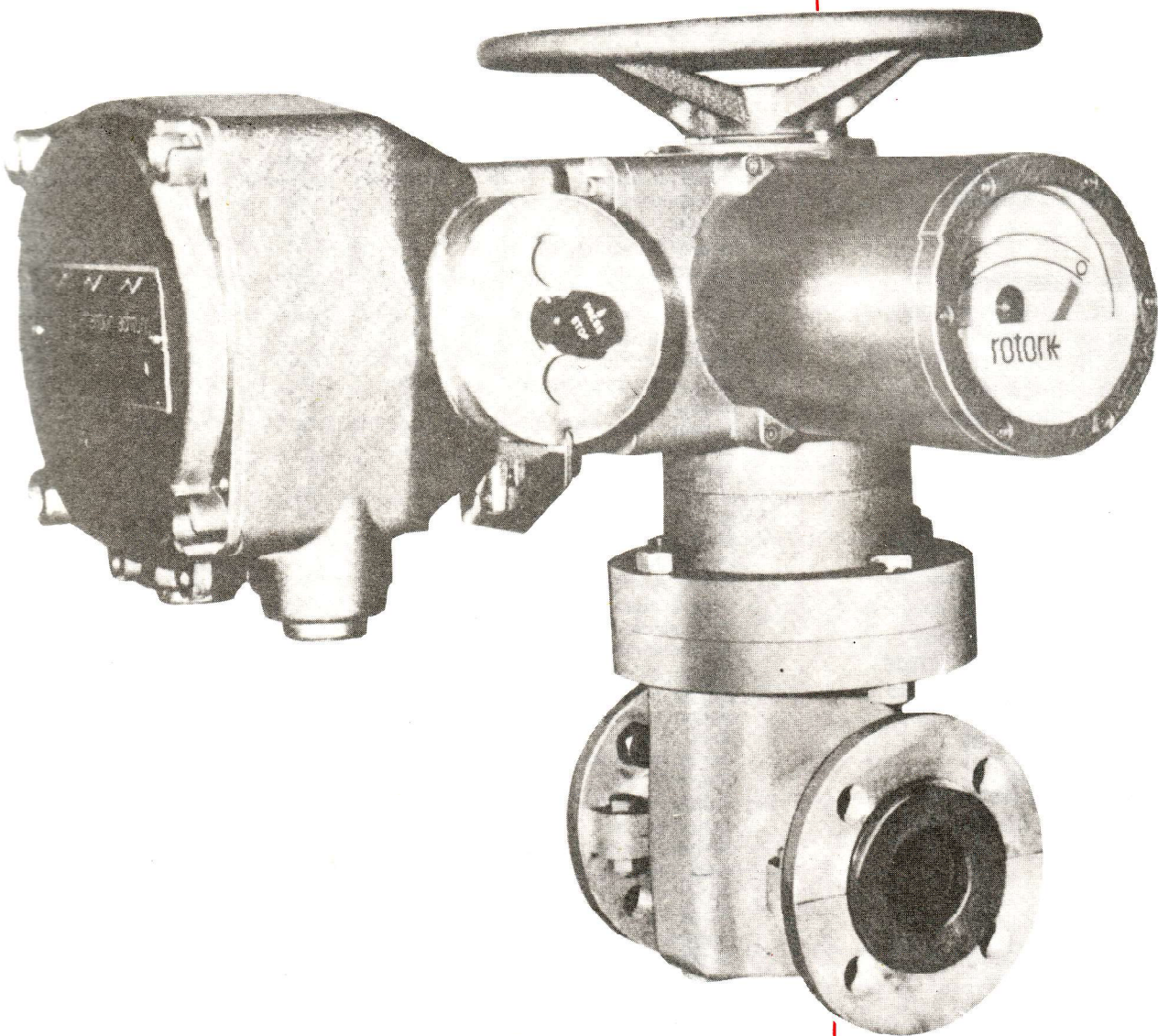
O = Orange Spot W = White Spot

G = Green Spot

e.g. A 3" (80mm) bore valve having a white spot sleeve and being operated by a diaphragm motor would be denoted :—Size 3" Type DIW (80 Type DIW).

Bore Valve	Cv	Pd	1.0 PSI	2.0 PSI	3.0 PSI	4.0 PSI	5.0 PSI	6.0 PSI	7.0 PSI	8.0 PSI	9.0 PSI	10 PSI
$\frac{1}{2}$ "	12	Max. Min.	9.0 1.2	11.75 1.7	15.6 2.0	18 2.4	20 2.7	22 2.95	24 3.2	25.6 3.4	27 3.6	28.5 3.8
$\frac{3}{4}$ "	21	Max. Min.	15 2.1	21.25 3.0	26 3.6	30 4.2	33.5 4.7	37 5.15	40 5.6	42.5 5.9	45 6.3	47.5 6.6
1"	32	Max. Min.	24 3.2	34 4.6	41.5 5.5	48 6.4	53.5 7.2	58.5 7.9	62 8.5	68 9.1	72 9.6	76 10.0
1½"	85	Max. Min.	64 8.5	90 12	110 14.7	128 17.0	143 19.0	157 21.8	170 22.5	182 24	192 25.5	203 26.7
2"	170	Max. Min.	130 17.0	184 24.0	224 29.3	260 34	290 38.0	320 41.6	345 45.0	370 48.0	390 51.0	410 53.5
3"	355	Max. Min.	265 35.0	373 49.5	455 60.0	530 70.0	590 78.0	650 86.0	700 93.0	750 99.0	795 105	840 110
4"	640	Max. Min.	480 64.0	680 93.0	830 110	960 128	1070 145	1170 156	1270 170	1370 182	1440 192	1520 203
6"	1350	Max. Min.	1000 135	1410 190	1730 233	2000 270	2240 300	2450 330	2650 360	2830 380	3000 405	3160 425
Bore Valve	Cv	Pd	11 PSI	12 PSI	13 PSI	14 PSI	15 PSI	16 PSI	17 PSI	18 PSI	19 PSI	20 PSI
$\frac{1}{2}$ "	12	Max. Min.	30 4.0	31.2 4.2	32.5 4.3	33.8 4.5	34.8 4.6	36 4.8	37.2 4.95	38.3 5.1	39.2 5.25	40.1 5.3
$\frac{3}{4}$ "	21	Max. Min.	50 7.0	52 7.3	54 7.6	56.2 7.8	57.8 8.2	60 8.4	62 8.7	64 8.9	66 9.2	67 9.4
1"	32	Max. Min.	80 10.7	83 11.2	86 11.6	90 12.0	92.8 12.4	96 12.8	99 13.2	102 13.6	105 14.0	107 14.3
1½"	85	Max. Min.	214 28.3	222 29.5	230 30.6	240 32	247 32.7	256 34	264 35	272 36.4	279 37.5	286 38.0
2"	170	Max. Min.	430 56.7	450 59.0	470 61.5	486 63.8	500 66.0	520 68.0	536 70.0	550 72.2	565 74.2	580 76.0
3"	355	Max. Min.	882 117	920 122	975 126	990 131	1020 135	1060 140	1090 145	1125 149	1160 153	1180 156
4"	640	Max. Min.	1610 214	1670 222	1780 230	1800 240	1850 247	1920 254	1980 265	2040 272	2090 280	2140 285
6"	1350	Max. Min.	3320 450	3460 467	3600 484	3740 505	3870 522	4000 540	4120 558	4240 575	4360 590	4470 600

Linatex motorised valves



Valve bore	No. turns	Pressure in valves p.s.i.g.	Torque in lb ft required to close	Recommended Electric Actuator*
$\frac{1}{8}$ "	3.75	0-100	20	ROTORK 6A
$\frac{1}{4}$ "	5.0	0-100	20	ROTORK 6A
1"	7.5	0-100	20	ROTORK 6A
1 $\frac{1}{2}$ "	10.0	0-100	25	ROTORK 6A
2"	6.5	0-100	25	ROTORK 6A
3"	9.7	0-50	25	ROTORK 6A
		50-100	60	ROTORK 12A
4"	13.0	0-50	45	ROTORK 12A
		50-100	70	ROTORK 14AR
5"	10.75	0-50	110	ROTORK 14AR
		50-100	150	ROTORK 16AR
6"	12.5	0-50	175	ROTORK 16AR
		50-100	325	ROTORK 30AR
8"	13.0	0-50	300	ROTORK 30AR
		50-100	650	ROTORK 40AR
10"	21.0	0-50	550	ROTORK 40AR
		50-100	900	ROTORK 70AR
12"	25.0	0-50	750	ROTORK 70AR
		50-100	1200	ROTORK 90AR

*Based on 440 volts 3-phase 50 cycles supply.

All sizes of Linatex Pinch Valves can be supplied fitted with electric actuators. The type and size of the actuator depends on the size of valve and working pressure against which it must be closed. A table alongside shows the number of turns and the torque required to close each size of valve, and guide is given as to a recommended actuator as supplied by Rotork Controls Limited, Bath, BA1, 3JQ. Any other proprietary actuator can also be fitted to customers' choice.

Guide to chemical properties of valve sleeve and lining materials

It should be noted when studying the following lists that not all valves are available with every type of sleeve. This is because although a material may have satisfactory chemical resistance, the mechanical or processing properties may exclude their use for certain sizes and types of valve. No other material is the equal of LINATEX for resistance to abrasive slurries and it may also be used for a wide range of chemicals as shown in the lists.

The following guide to maximum working temperatures and notes on general properties should also be borne in mind.

LINATEX—Special form of natural rubber, exceptional resistance to abrasion. Max. temp. 65°C.

YELLOW SPOT—Neoprene base rubber, satisfactory with oils and acids. Suitable with foodstuffs and occasional steam sterilising. Max. temp. 120°C.

RED SPOT—Butyl base rubber, resists acids and alkalis. Max. temp. 120°C.

ORANGE SPOT—Hypalon base rubber, high resistance to acids and alkalis. Max. temp. 120°C.

WHITE SPOT—Nitrile base rubber for mineral and vegetable oils and hydrocarbon solvents. Max. temp. 120°C.

GREEN SPOT—Heat resistant rubber compounded especially for handling hot powders. Max. temp. 100°C.

DEGREE OF RESISTANCE: A = Good. F = Fair.
C = Depends on conditions.
X = Unsuitable.

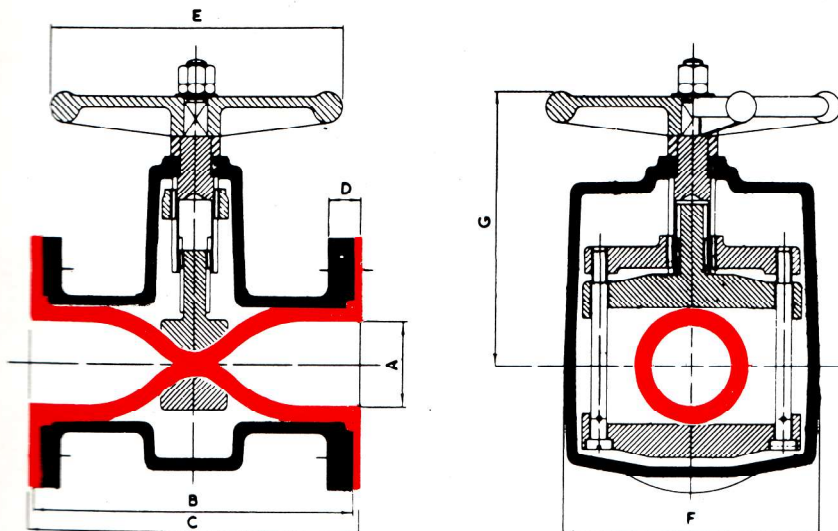
CHEMICAL	Linatex	Yellow Spot Neoprene	Red Spot Butyl	Orange Spot Hypalon	White Spot Nitrile
Acetaldehyde	—	F	A	—	X
Acetic acid	X	A	A	A	X
Acetic anhydride	X	A	C	A	C
Acetone	F	A	A	A	X
Acetylene	A	A	A	A	A
Air	A	A	A	A	A
Aluminium chloride	A	A	A	A	A
Aluminium fluoride	A	A	A	A	A
Aluminium sulphate	A	A	A	A	A
Alums	A	A	A	A	A
Ammonia gas cold	A	A	A	A	A
Ammonia liquid	X	A	F	F	F
Ammonia carbonate	—	—	—	—	C
Ammonium chloride	A	A	A	A	A
Ammonium hydroxide	C	F	A	F	C
Ammonium nitrate	A	A	A	A	A
Ammonium phosphate	A	A	A	A	A
Ammonium sulphate	A	A	A	A	A
Amyl acetate	C	C	A	C	X
Amyl alcohol	A	A	A	A	A
Aniline, aniline oil	X	C	A	F	X
Barium chloride	A	A	A	A	A
Barium hydroxide	A	A	A	A	A
Barium sulphide	C	A	C	C	F
Beer	X	A	X	X	X
Beet sugar liquors	A	A	A	A	A
Benzaldehyde	X	F	A	F	X
Benzene, benzol	X	C	X	C	C
Benzyl alcohol	F	F	A	F	X
Benzyl chloride	X	F	A	F	X
Blast furnace gas	C	A	C	C	C
Bonderite	A	A	A	A	—
Borax	A	A	A	A	F
Boric acid	A	A	A	A	A
Butane	X	A	X	A	A
Butyl acetate	F	C	F	F	X
Butyl alcohol, butanol	A	A	A	A	A
Calcium bisulphate	C	A	C	C	A
Calcium chloride	A	A	A	A	A
Calcium hydroxide	A	A	A	A	A
Calcium hypochlorite	X	F	C	A	X
Calcium nitrate	A	—	—	—	A
Calcium sulphide	—	—	—	—	A
Cane sugar liquors	A	A	A	A	A
Carbolic acid, phenol	X	—	A	—	X
Carbon dioxide	A	A	A	A	A
Carbon monoxide, hot	C	C	A	A	C
Carbon tetrachloride	X	X	X	X	C
Castor oil	X	A	X	A	A
Caustic soda	C	A	A	A	C
Chlorine, dry	C	—	F	—	F
Chlorine, wet	X	X	X	X	X
Chloroacetic acid	X	F	X	F	X
Chromic acid	X	X	C	A	X
Citric acid	A	A	F	A	F
Coke oven gas	C	A	C	A	C
Copper chloride	F	A	A	A	F
Copper sulphate	A	A	F	A	A
Cotton seed oil	X	A	X	X	A
Croesote	X	—	X	—	A
Cresols, cresylic acid	X	C	X	—	F
Demineralised water	A	A	A	A	A
Dibutyl Phthalate	—	X	F	X	X
Diocetyl Phthalate	—	X	F	X	A
Ethanolamine	A	A	A	A	A

DEGREE OF RESISTANCE—*continued*

CHEMICAL	Linatex	Yellow Spot Neoprene	Red Spot Butyl	Orange Spot Hypalon	White Spot Nitrile
Ethers	C	X	C	X	C
Ethyl acetate	X	F	F	—	X
Ethyl alcohol	F	A	F	F	F
Ethyl chloride	A	X	A	X	X
Ethylene dichloride	X	X	X	X	X
Ethylene glycol	A	A	A	A	A
Ferric chloride	A	A	A	A	A
Ferric sulphate	A	A	A	A	A
Ferrous sulphate	A	A	A	A	X
Formaldehyde	A	A	A	A	A
Formic acid	X	A	A	A	X
Freon	X	A	F	A	A
Fuel oil	X	A	X	A	A
Furfural	X	F	A	F	X
Gas (town)	C	—	X	—	A
Gasoline, sour	X	F	X	F	A
refined	X	F	X	—	A
Gelatine	A	A	A	A	A
Glucose	A	A	A	A	A
Glue	F	A	F	A	A
Glycerine, glycerol	A	A	A	A	A
Green sulphate liquor	A	A	A	A	A
Hexane	X	A	X	A	A
Hydrobromic acid	A	F	A	F	C
Hydrochloric acid	A	F	F	F	C
Hydrocyanic acid	F	F	A	F	F
Hydrofluoric acid, cold					
up to 65%	F	F	A	A	C
over 65%	X	C	F	A	X
Hydrofluosilicic acid	A	—	A	—	A
Hydrogen gas	F	A	A	A	A
Hydrogen peroxide	F	A	A	A	A
Hydrogen sulphide	C	A	C	A	C
Lactic acid	C	A	A	A	C
Lead fluoborate	X	—	A	—	X
Linseed oil	C	A	C	A	A
Lubricating oils	X	F	X	F	A
Magnesium chloride	A	A	A	A	A
Magnesium hydroxide	A	A	A	A	A
Magnesium sulphate	A	A	A	A	A
Mercuric chloride	A	A	A	A	A
Mercury	—	A	A	—	A
Methylated spirits, methanol	A	A	A	A	A
Methyl chloride	C	X	F	X	C
Methyl ethyl ketone	X	X	F	—	X
Milk	X	A	X	A	X
Mineral oils	X	A	X	A	A
Nickel chloride	A	A	A	A	A
Nickel plating solution	X	—	A	—	X
Nickel sulphate	A	A	A	A	A
Nitric acid	X	A	A	A	X
Nitrobenzine	X	X	A	X	X
Oleic acid	F	C	A	C	F
Oleum spirits	X	—	C	A	A
Oxalic acid	F	A	A	A	F
Oxygen	C	A	A	A	C
Palmitic acid	F	F	A	F	A
Phenol	X	—	A	—	X
Phosphoric acid up to 50%	C	C	A	F	C
Phosphoric acid over 50%	C	—	C	F	C
Picric acid	C	F	F	F	A
Potassium acetate	A	—	—	—	A
Potassium chloride	A	A	A	A	A
Potassium cyanide	A	A	A	A	A
Potassium hydroxide	A	A	A	A	A
Potassium nitrate	A	A	A	A	A
Potassium silicate	A	A	A	A	A

DEGREE OF RESISTANCE—*continued*

CHEMICAL	Linatex	Yellow Spot Neoprene	Red Spot Butyl	Orange Spot Hypalon	White Spot Nitrile
Potassium sulphate	A	A	A	A	A
Producer gas	X	A	X	A	A
Propane	X	A	X	F	A
Propyl alcohol	A	A	—	A	A
Sewage	C	A	X	A	A
Silver nitrate	X	C	A	C	X
Soap solutions	A	A	A	A	A
Soda ash, sodium carbonate	A	A	A	A	A
Sodium aluminate	A	A	A	A	A
Sodium bicarbonate					
baking soda	A	A	A	A	A
Sodium bisulphate	A	A	A	A	A
Sodium borate	A	A	A	A	A
Sodium carbonate	A	A	A	A	A
Sodium chloride	A	A	A	A	A
Sodium cyanide	A	A	A	A	A
Sodium fluoride	X	—	A	A	F
Sodium hydroxide					
(caustic soda)	A	A	A	A	F
Sodium hypochlorite	F	F	F	A	F
Sodium metaphosphate	A	A	A	A	A
Sodium nitrate	C	A	A	A	C
Sodium perborate	C	A	A	A	C
Sodium peroxide	C	A	A	A	C
Sodium phosphate	A	A	A	A	A
Sodium silicate	A	A	A	A	A
Sodium sulphate	A	A	A	A	A
Sodium sulphide	A	A	A	A	A
Sodium thiosulphate "hypo"	A	A	A	A	A
Soyabean oil	C	A	A	F	A
Stannic chloride	A	A	A	A	A
Steam (120 °C) intermitt	C	A	C	C	C
Stearic acid	C	F	A	F	A
Styrene	X	X	X	X	X
Sulphur	F	A	A	F	A
Sulphur chloride	X	F	X	F	F
Sulphur dioxide, dry	F	A	A	A	F
Sulphur trioxide, dry	F	X	A	F	F
Sulphuric acid,					
up to 10% cold	—	A	A	A	A
up to 10% hot	—	C	A	A	A
10—75% cold	—	C	A	A	C
hot	—	C	C	C	C
75—95% cold	—	X	C	C	X
hot	—	X	C	C	X
fuming	—	X	X	X	X
Sulphurous acid	C	C	A	C	C
Tannic acid	C	A	A	A	C
Tar	X	F	X	F	C
Tartaric acid	A	A	A	A	C
Teepol	A	A	A	A	A
Toluene	X	X	X	X	C
Tributyl phosphate	X	X	F	A	X
Trichloroethylene	X	X	X	C	X
Tricresyl Phosphate	A	A	A	F	X
Triethanolamine	—	F	A	F	A
Turpentine	C	F	X	F	A
Urea	A	A	A	A	A
Vegetable oils	X	F	F	F	A
Vinegar	C	A	A	A	C
Water, acid mine	A	A	A	A	A
Water, fresh	A	A	A	A	A
Distilled lab. grade	A	A	A	A	A
Water, seawater	A	A	A	A	A
Whisky and wines	X	A	X	X	X
White spirit	X	A	X	F	A
Zinc chloride	A	A	A	A	—
Zinc sulphate	A	A	A	A	A



Leading dimensions (in inches)
(in millimetres)

SIZE	A	B	C	D	E	F	G	BRITISH STANDARD TABLE 'D'				APPROX. WEIGHT	
								FLANGE DIA.	BOLT P.C.D.	BOLT DIA.	No. OF BOLTS	ALU- MINIUM	CAST IRON
1/2"	1/2" 12.70	4 3/8" 111.13	4 5/8" 117.48	3/4" 19.05	4 1/16" 119.06	2 3/8" 60.33	4 1/8" 115.89	3 3/4" 95.25	2 5/8" 66.66	1/2"	4	2 1/2 lb. 1.13	3 1/2 lb. 1.59
3/4"	3/4" 19.05	4 1/16" 19.06	4 1/8" 125.41	5/8" 15.88	4 1/16" 119.06	3 1/8" 79.38	3 7/8" 98.43	4" 101.6	2 7/8" 73.03	1/2"	4	3 1/2 lb. 1.59	6 lb. 2.72
1"	1" 25.40	5 3/4" 146.05	6" 152.40	5/8" 15.88	4 1/16" 119.06	3 3/8" 90.49	4 29/32" 124.61	4 1/2" 114.30	3 1/4" 82.56	1/2"	4	5 lb. 2.27	8 1/2 lb. 3.86
1 1/2"	1 1/2" 38.10	6 5/8" 168.28	6 7/8" 174.63	3/4" 19.05	4 1/16" 119.06	4 5/8" 117.48	6 3/8" 161.93	5 1/4" 133.34	3 3/8" 98.43	1/2"	4	7 1/2 lb. 3.40	12 lb. 5.44
2"	2" 50.80	7 3/4" 196.85	8 1/8" 206.38	20.64	6 1/2" 165.10	6 5/8" 155.58	7 7/8" 180.98	6" 152.40	4 1/2" 114.30	5/8"	4	14 lb. 6.35	26 3/4 lb. 12.13
2 1/2"	2 1/2" 63.50	9 1/8" 236.54	9 1/16" 246.06	20.64	6 1/2" 165.10	7 1/16" 188.91	7 7/8" 200.03	6 1/2" 165.10	5" 127.00	5/8"	4	19 lb. 8.62	32 1/4 lb. 14.63
3"	3" 76.20	10 1/4" 260.34	10 5/8" 269.88	23.81	6 1/2" 165.10	8 1/4" 209.55	8 1/4" 209.55	7 1/4" 184.15	5 3/4" 146.05	5/8"	4	23 lb. 10.43	48 1/2 lb. 22.00
4"	4" 101.60	13 5/8" 346.08	14" 355.60	28.58	8 1/4" 209.55	10 1/8" 255.59	10 1/4" 260.34	8 1/2" 215.90	7" 177.80	5/8"	4	40 lb. 18.14	90 lb. 40.823
5"	5" 127.00	17 5/8" 447.68	18" 457.20	28.58	13" 330.20	11 3/4" 298.45	12 1/2" 317.50	10" 254.00	8 1/4" 209.55	5/8"	8	64 lb. 29.03	145 lb. 65.77
6"	6" 152.40	20 3/8" 528.64	21 1/8" 536.58	29.35	13" 330.20	14 1/16" 366.71	14 3/4" 374.65	11" 279.40	9 1/4" 234.95	5/8"	8	92 lb. 41.73	217 lb. 98.53
8"	8" 203.20	27 1/2" 698.50	28 3/8" 714.38	36.51	23 1/4" 590.50	18 1/4" 463.55	18 7/8" 479.43	13 1/4" 336.55	11 1/2" 292.10	5/8"	8	192 lb. 87.09	507 lb. 229.97

Types Available

Method of Operation

Body Material

Sleeve Material

H = Handwheel C = Chainwheel

1 = Aluminium 2 = Cast Iron

L = Linatex, up to 50 p.s.i. (3.5 kg/cm²)

E = Linatex, 50 up to 100 p.s.i. (3.5 to 7.0 kg/cm²)

LINATEX

VALVES CAN BE SUPPLIED AS FOLLOWS:—

SUITABLE FOR 50 P.S.I. OR 100 P.S.I.

HANDWHEEL OR CHAIN WHEEL OPERATED.

EXTENSION SPINDLES.

MOTORISED BY EITHER ELECTRIC OR AIR UNITS.

AIR OPERATED, CYLINDERS CAN BE SPRING OPENING, SPRING CLOSING, OR DOUBLE ACTING.

DETAILS OF LINATEX 10," 12" AND 14" PINCH VALVES CAN BE FURNISHED ON REQUEST.

SAMPLES OF LINATEX PINCH VALVE SLEEVES ARE AVAILABLE FOR TEST PURPOSES, AND OUR TECHNICAL REPRESENTATIVES WOULD BE PLEASED TO STUDY ANY PROBLEMS AND FURNISH RECOMMENDATIONS WITH QUOTATIONS.

When ordering please indicate:

1. Nature and temperature of slurry, chemical solutions, powders, vapours, etc., to be handled.
2. Maximum size of particles.
3. Pressure at which valves are required to operate.
4. In the case of air-operated valves — the available pressure in the air supply line.

To replace the rubber sleeve simply undo the bolts on the valve body. Remove the bottom casting, draw the old sleeve from between the anvils and insert the new sleeve.

Note:

1. Not recommended for negative pressures.
2. Not recommended for severe throttling duties.
3. Linatex sleeves are designed for pressures up to 100 p.s.i. When closure is required against high pressures, close valve before pressure introduced into line.