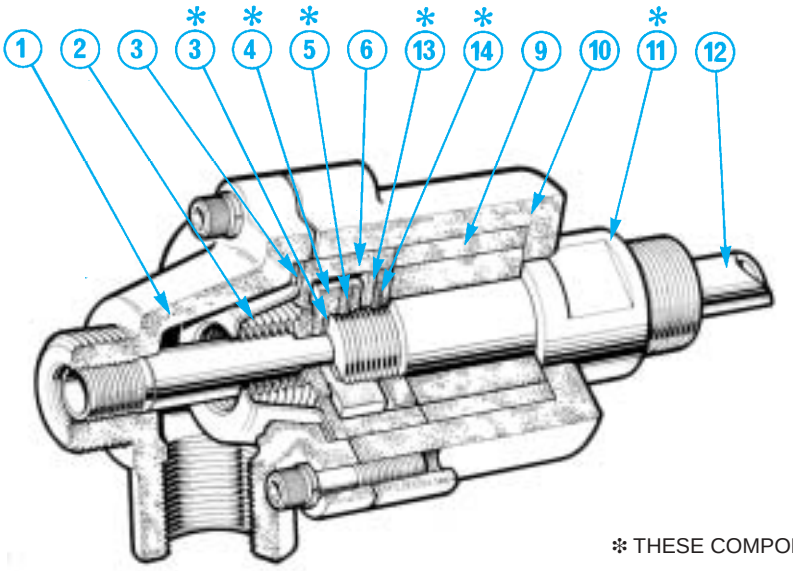
ROTARY (C.B.) UNIONS



Rotary (C.B.) Union type S.T.

1. Adaptor, high quality cast iron.
2. Bellows sub-assembly. brazed stainless steel.
3. Gaskets.
4. Seal ring sub-assembly, steel/carbon.
5. Locking screw, h.t. steel.
6. Spacer.
9. Bearing sub-assembly, steel/carbon.
10. Body, high quality cast iron.
11. Rotary spindle, steel.
12. Centre tube, if ordered, to your specification.
13. Thrust Pad, stainless steel.
14. Set screw, h.t. steel.

❇ THESE COMPONENTS ROTATE WITH THE MACHINE SHAFT

The Rotary (C.B.) Union is a self contained, self supporting rotary seal for the leak proof transfer of fluids (such as steam, hot water or oil) to and from rotating machine shafts.

The type of Rotary Seal fitted to the Rotary (C.B.) Union is a “FILTON BELLOWS SEAL’’ containing a flexible stainless steel bellows which is self adjusting, eliminating the maintenance common with conventional packed glands. Rotary sealing is created by relative rotation between extremely flat sealing faces (items 2 and 4) held in contact by the spring characteristics of the bellows with an additional sealing force created by pressure of the fluid passing through the Rotary (C.B.) Union. The bearing fitted to the Rotary (C.B.) Union is a cylindrical carbon combined journal and thrust bearing in which a hard chromed and ground spindle rotates.

There are 3 variations of the stationary Adaptor end, diagrams on page 11 and described below:-

TYPE C.B./B.E.

This is a single flow unit and is suitable for transferring fluid in to or out of rotating machines. A typical application is shown on page 3.

TYPE C.B./S.T.

This Rotary (C.B.) Union is fitted with an Adaptor suitable for double flow with a stationary centre tube. This gives flow areas through the centre tube and annulus. Centre tubes are only provided if ordered. The centre tube is fixed to the Rotary (C.B.) Union end by means of a screw thread shown as dimension ‘O’. Flow can pass in through the centre tube and return through the annulus or be reversed.

For steam applications, a typical example of which is shown on page 3, the centre tube is curved to reach the condensate in the bottom of the cylinder. At times the roll neck diameter to length ratio prevents a curved tube being used, in such cases we can provide a Syphon Elbow details of which are on page 20.

TYPE C.B./R.S.

The Adaptor fitted to this Rotary (C.B.) Union is suitable for a rotating centre tube, which must be located and driven by the machine. Centres tubes are only provided if ordered. The centre tube rotates in a bush. The centres tube “sealing” system allows a slight internal leakage between the supply and return lines. If these fluids must not mix then an alternative design can be provided. Please ask our Technical Department. Flow can pass through the centre tube with the return through the annulus or be reversed. A typical application is shown on page 3.

Operational Guidelines (For other conditions contact Filton Limited)

FLUIDS

Water, steam, mineral oils and heat transfer fluids (but use flanged connections when the temperature exceeds 180°C). All fluids should be clean and free from abrasive particles.

PRESSURE

17 bar maximum.

TEMPERATURE

100°C to 300°C (lower temperatures dependant on other conditions).

SPEED

500 r.p.m. maximum up to 25(1") size and 400 r.p.m. for 32 ($1^1/_4$").

* Flow in cubic metres/hour at a velocity of 3 metres/second. Applies also to other liquids.
† Flow in kilograms/hour at a velocitv of 30 metres/second and a pressure of 6 bar.

FLOW CAPACITY

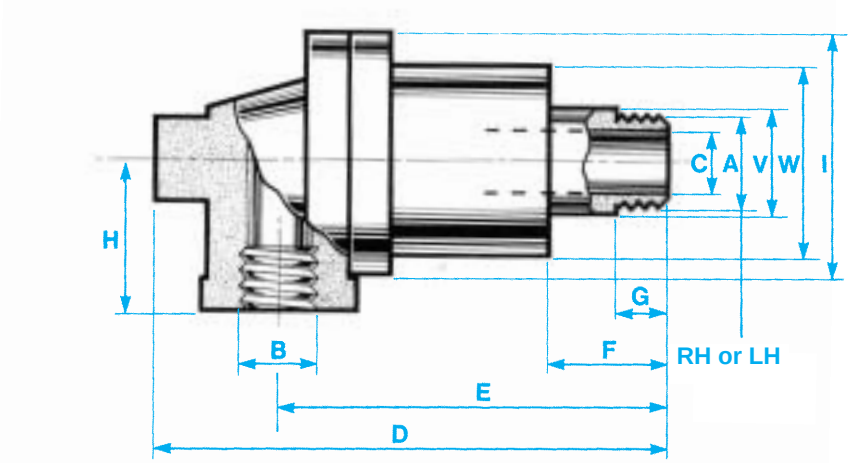
Nominal Size	Type	Water* m^3/h	Water* l/min	Steam† kg/h
8 ($^1/_4$")	B.E.	0.3	5	11
	S.T. & R.S.	0.05	0.8	3.4
10 ($^3/_8$")	B.E.	0.8	13.3	31
	S.T. & R.S.	0.1	1.7	16
15 ($^1/_2$")	B.E	1.7	28.3	61
	S.T. & R.S.	0.3	5	27
20 ($^3/_4$")	B.E.	2.7	45	101
	S.T. & R.S.	0.6	10	41
25 (1")	B.E.	4.1	68.3	151
	S.T. & R.S.	1.8	30	56
32 ($1^1/_4$")	B.E.	7.6	127	280
	S.T. & R.S.	2.1	35	133

IT IS NOT ADVISABLE TO COMBINE MAXIMUMS

ROTARY (C.B.) UNIONS

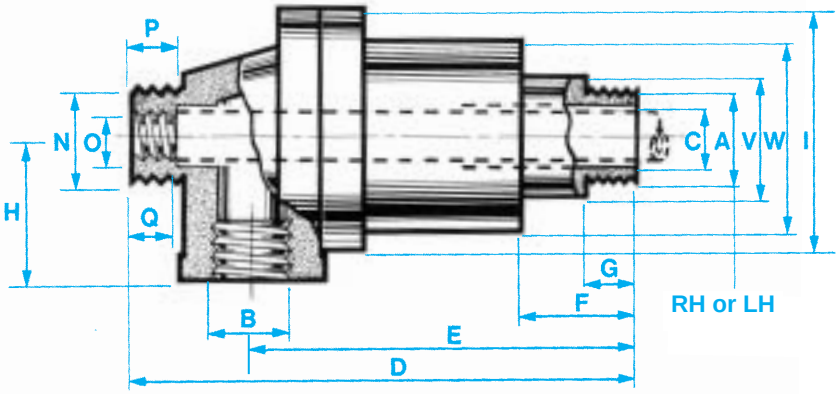
For single flow type C.B./B.E.

Nominal Size	Part No.	
8 (1/4")	14645	R or L
10 (3/8")	14639	R or L
15 (1/2")	14554	R or L
20 (3/4")	14524	R or L
25 (1")	14545	R or L
32 (1 1/4")	14546	R or L



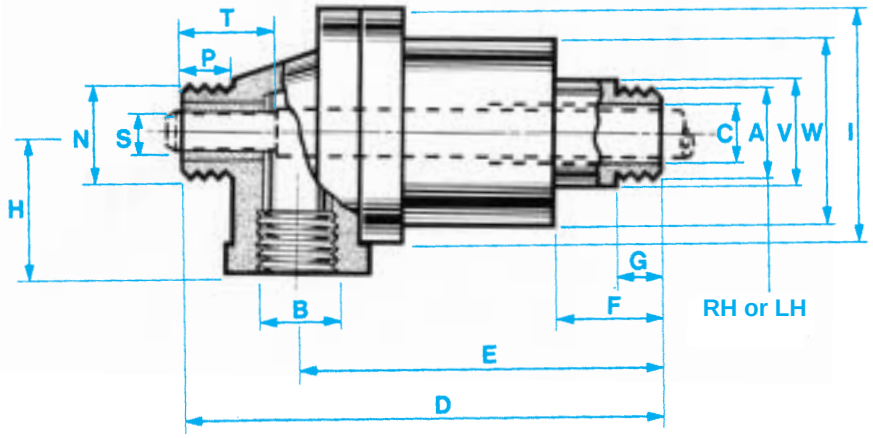
For double flow (stationary centre tube) type C.B./S.T.

Nominal Size	Part No.	
8 (1/4")	14646M	R or L
10 (3/8")	14640M	R or L
15 (1/2")	14525	R or L
20 (3/4")	14523	R or L
25 (1")	14386	R or L
32 (1 1/4")	14488	R or L



For double flow (rotary centre tube) type C.B./R.S.

Nominal Size	Part No.	
8 (1/4")	17215	R or L
10 (3/8")	17216	R or L
15 (1/2")	16658	R or L
20 (3/4")	16660	R or L
25 (1")	16662	R or L
32 (1 1/4")	16664	R or L



Dimensions in millimetres

Nominal Size	A B & N	C	D	E	F	G & P	H	I	O	Q	S	T	V	W
8 (1/4")	G.1/4"	6	117	94	22	11	30	57	M5 x 0.8	6	4.75/ 4.72	25	24	44
10 (3/8")	G.3/8"	10	121	97	25	13	30	57	M6 x 1.0	6	6.35/ 6.32	25	24	44
15 (1/2")	G.1/2"	13	167	130	29	16	44	83	G.1/8"	6	9.52/ 9.50	40	38	63
20 (3/4")	G.3/4"	18	173	133	32	19	44	83	G.1/4"	10	12.70/ 12.67	40	38	63
25 (1")	G.1"	22	210	162	48	22	54	105	G.3/8"	10	15.87/ 15.85	45	43	83
32 (1 1/4")	G.1 1/4"	30	238	181	51	25	70	121	G.1/2"	13	19.05/ 19.02	50	55	95

'G' is the designation for parallel pipe threads to BS.2779 and ISO 228/1.

SEE PAGE 28 FOR INSTALLATION INSTRUCTIONS