

Rotary (R.E.) 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.
7. Circlip.
8. Ball bearings.
9. Body high quality cast iron.
10. Rotary spindle, steel.
11. Centre tube, if ordered, to customers specification.

※THESE COMPONENTS ROTATE WITH THE MACHINE SHAFT

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

The type of Rotary Seal fitted to the Rotary (R.E.) 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 characteristic of the bellows with an additional sealing force created by pressure of the fluid passing through the Rotary (R.E.) Union. The bearings fitted to the Rotary (R.E.) Union are standard ball bearings which are given their initial lubrication before despatch.

There are 3 variations of the stationary Adaptor end, diagrams on page 5 and described below:-

TYPE R.E./B.E.

This Rotary (R.E.) Union is a single flow unit and is suitable for transferring fluid in to or out of rotating machines. A typical application for this type is shown in page 3.

TYPE R.E./S.T.

This Rotary (R.E.) 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 (R.E.) 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 R.E./R.S.

The Adaptor fitted to this Rotary (R.E.) Union is suitable for a rotating centre tube, which must be located and driven by the machine. Centre tubes are only provided if ordered. For the type R.E./R.S. the centre tube rotates in a bush. The centre 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 in 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, heat transfer fluids and compressed air (lubricated). All fluids should be clean and free from abrasive particles.

PRESSURE

17 bar maximum.

VACUUM

740 mm Hg. maximum (specify vacuum and we will test for this).

TEMPERATURE

-20° to 180°C (with suitable effective lubrication 200°C).

SPEED

1000 r.p.m. maximum up to 25(1") r.p.m. and 800 r.p.m. above.

* Flow in cubic metres/hour at a velocity of 3 metres/second. Applies also to other liquids

† Flow in kilograms/hour at a velocity of 30 metres/second and a pressure of 6 bar.

★ Flow in cubic metres/hour free air at a velocity of 15 metres/second and a pressure bar of 6 bar.

FLOW CAPACITY

Nominal Size	Type	Water*		Steam†	Air★
		m ³ /h	l/min		
8 (1/4")	{ B.E.	0.3	5	11	11
	{ S.T. & R.S.	0.05	0.8	3.4	2
10 (3/8")	{ B.E.	0.8	13.3	31	29
	{ S.T. & R.S.	0.1	1.7	16	4
15 (1/2")	{ B.E.	1.7	28.3	61	58
	{ S.T. & R.S.	0.3	5	27	10
20 (3/4")	{ B.E.	2.7	45	101	96
	{ S.T. & R.S.	0.6	10	41	22
25 (1")	{ B.E.	4.1	68.3	151	144
	{ S.T. & R.S.	1.8	30	56	44
32 (1 1/4")	{ B.E.	7.6	127	280	267
	{ S.T. & R.S.	2.1	35	133	74

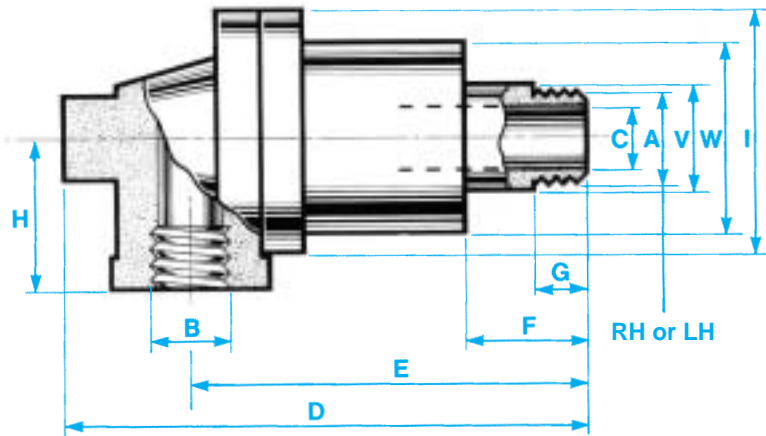
IT IS NOT ADVISABLE TO COMBINE MAXIMUMS

ROTARY (R.E.) UNIONS



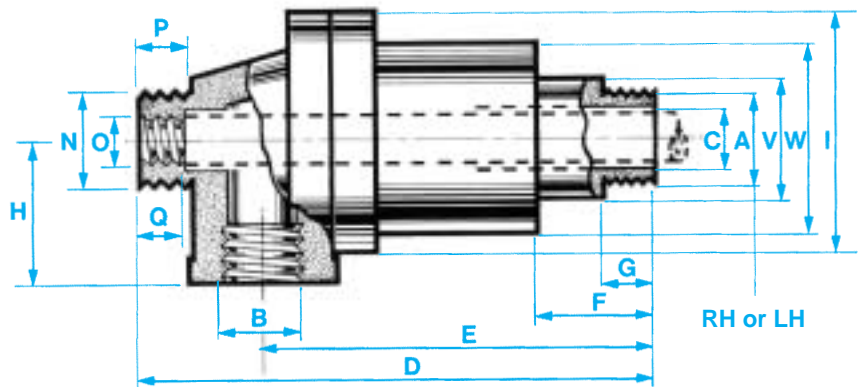
For single flow type R.E./B.E.

Nominal Size	Part No.	
8 (1/4")	14642	R or L
10 (3/8")	14636	R or L
15 (1/2")	14536	R or L
20 (3/4")	14460	R or L
25 (1")	14396	R or L
32 (1 1/4")	14377	R or L



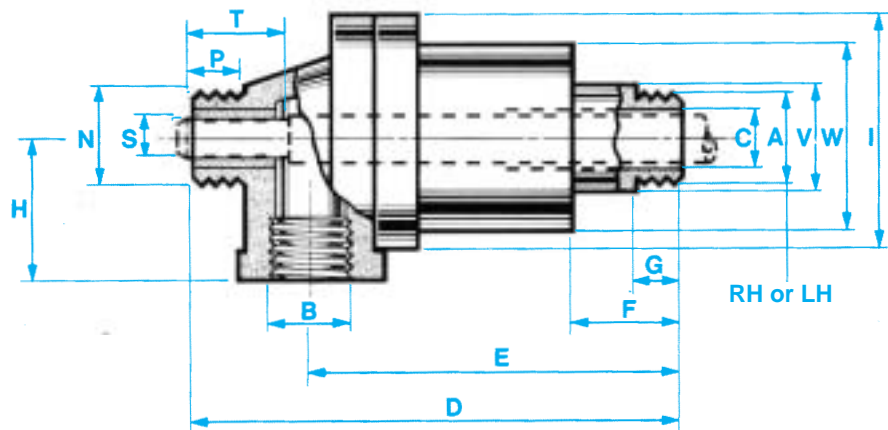
For double flow (stationary centre tube) type R.E./S.T.

Nominal Size	Part No.	
8 (1/4")	14643M	R or L
10 (3/8")	14637M	R or L
15 (1/2")	14535	R or L
20 (3/4")	14534	R or L
25 (1")	14542	R or L
32 (1 1/4")	14379	R or L



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

Nominal Size	Part No.	
8 (1/4")	17196	R or L
10 (3/8")	17197	R or L
15 (1/2")	16657	R or L
20 (3/4")	16659	R or L
25 (1")	16661	R or L
32 (1 1/4")	16663	R or L



Dimensions in millimetres

Nominal Size	A & 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	197	149	48	22	54	105	G.3/8"	10	15.87/ 15.85	45	43	83
32 (1 1/4")	G.1 1/4"	30	227	170	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