

Rotary (R.E.B.) Union type B.E.

1. Adaptor, s.g. iron.
2. Bellows sub-assy, brazed stainless steel/carbon.
3. Gaskets.
4. Body, s.g. iron.
5. Seal ring, hardened stainless steel.
6. Locking screws, h.t. steel.
7. Locking ring-inner.
8. Ball bearings—shielded from the seal chamber.
9. Locking ring-outer.
10. Rotary spindle, steel.

※ THESE COMPONENTS ROTATE WITH THE SHAFT

The Rotary (R.E.B.) 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.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 5) 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 (R.E.B.) Union.

The bearings fitted to the Rotary (R.E.B.) Union are standard ball bearings which are given their initial lubrication after assembly. A shield is fitted to the seal chamber side of the ball bearings.

There are 3 variations of the stationary Adaptor end, diagrams on page 9 and described below:-

TYPE R.E.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 for this type is shown in page 3.

TYPE R.E.B./S.T

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

The Adaptor fitted to this Rotary (R.E.B.) Union is suitable for a rotating centre tube, which must be located and driven by the machine. Centre tubes are only provided if ordered. The centre tube rotates in a carbon 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

- Water, steam and mineral oil - 17 bar maximum.
- Heat transfer fluid - 17 bar maximum (5" and 6" 13 bar maximum.)
- Compressed air - 1 1/2" & 2" - 17 bar maximum
- 2 1/2" & 3" - 12.5 bar maximum
- 3 1/2" & 4" - 10 bar maximum
- 5" & 6" - On application

VACUUM

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

TEMPERATURE

- 20° to 180°C (with suitable effective lubrication 200°C).
- 20° to 120°C for sizes 125 (5") and 150 (6").

SPEED

600 r.p.m. maximum up to 50 (2") size, 500 r.p.m. for 65 (2 1/2") and 80 (3"), 400 r.p.m. for 90 (3 1/2") and 100 (4") and 300 r.p.m. for 125 (5") and 150 (6").

* 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 of 6 bar.

FLOW CAPACITY

Nominal Size	Type	Water*		Steam† kg/h	Air★ m³/h
		m³/h	l/min		
40 (1 1/2")	B.E.	10.4	173	381	364
	S.T. & R.S.	3.8	63	151	135
50 (2")	B.E.	19.5	325	717	684
	S.T. & R.S.	6.3	105	357	215
65 (2 1/2")	B.E.	30.5	508	1120	1069
	S.T. & R.S.	10.8	180	547	376
80 (3")	B.E.	41.6	693	1524	1455
	S.T. & R.S.	14.9	248	807	511
90 (3 1/2")	B.E.	57.0	950	2091	1996
	S.T. & R.S.	23.4	390	942	818
100 (4")	B.E.	76.6	1277	2807	2679
	S.T. & R.S.	27.6	460	982	937
125 (5")	B.E.	112.2	1870	4859	4639
	S.T. & R.S.	45.3	755	1617	1544
150 (6")	B.E.	166.3	2772	6997	6680
	S.T. & R.S.	73.7	1228	2892	2760

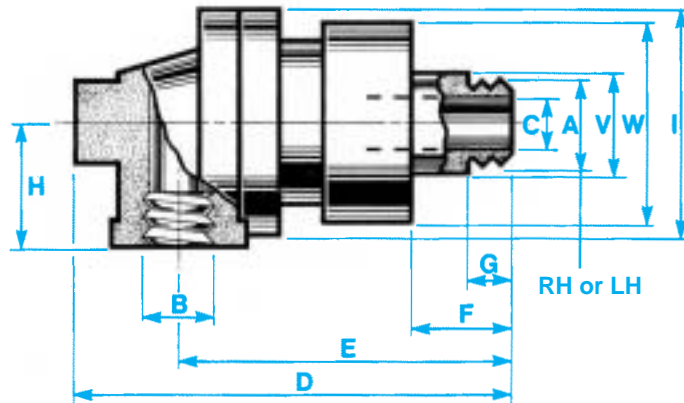
IT IS NOT ADVISABLE TO COMBINE MAXIMUMS

ROTARY (R.E.B.) UNIONS



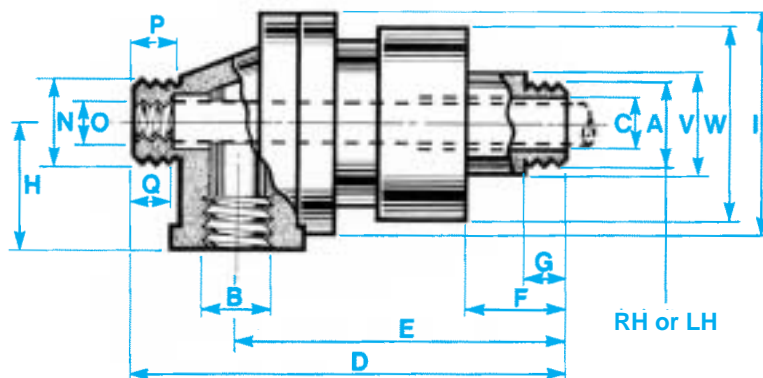
For single flow type R.E.B./B.E.

Normal Size	Part No.	
40 (1 1/2")	18104	R or L
50 (2")	17350	R or L
65 (2 1/2")	18131	R or L
80 (3")	17265	R or L
90 (3 1/2")	17421	R or L
100 (4")	17424	R or L
125 (5")	17634.SF	R or L
150 (6")	17637.SF	R or L



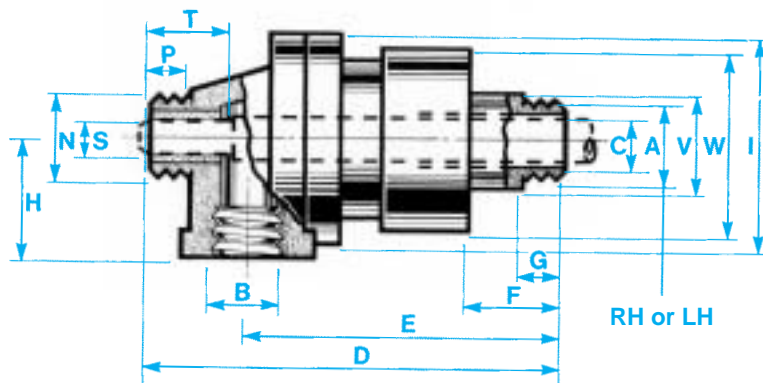
For double flow (stationary centre tube) type R.E.B./S.T.

Nominal Size	Part No.	
40 (1 1/2")	18105	R or L
50 (2")	17238	R or L
65 (2 1/2")	18132	R or L
80 (3")	17266	R or L
90 (3 1/2")	17422	R or L
100 (4")	17425	R or L
125 (5")	17635.SF	R or L
150 (6")	17638.SF	R or L



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

Nominal Size	Part No.	
40 (1 1/2")	18106	R or L
50 (2")	17351	R or L
65 (2 1/2")	18133	R or L
80 (3")	17263	R or L
90 (3 1/2")	17423	R or L
100 (4")	17426	R or L
125 (5")	17636.SF	R or L
150 (6")	17639.SF	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
40(1 1/2")	G.1 1/2"	G.1 1/2"	35	268	212	52	25	72	128	G.3/4"	14	25.4,f8	50	64	108
50(2")	G.2"	G.2"	48	293	226	55	28	83	137	G.1"	19	31.8,f8	60	76	127
65(2 1/2")	G.2 1/2"	G.2 1/2"	57	357	279	67	30	102	186	G.1 1/4"	25	40,f8	55	90	150
80(3")	G.3"	G.3"	70	409	324	77	30	120	200	G.1 1/2"	25	45,f8	70	110	180
90(3 1/2")	G.3 1/2"	G.4"	82	519	406	95	40	130	250	G.2"	30	60,f8	60	140	240
100(4")	G.4"	G.4"	95	519	406	95	40	130	250	G.2 1/2"	30	75,f8	60	140	240
125(5")	●	G.5"	115	688	543	115	45	167	325	G.3"	40	88,f8	70	192	290
150(6")	●	G.6"	140	688	543	115	45	167	325	G.3 1/2"	40	100,f8	70	192	290

● Flanged, see page 23.

* The tolerance f8 is to I.S.O. 286-2 and BS.EN 20286-2

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

SEE PAGE 28 FOR INSTALLATION INSTRUCTIONS