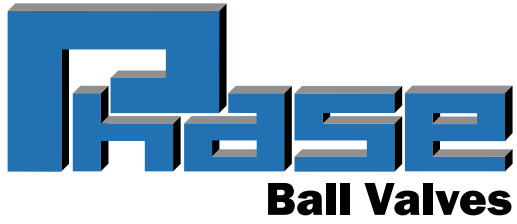


Intelligent Flow Management



Side Entry & Top Entry
Double Block & Bleed
Sizes 2" - 12"
ASME Class 600 - 2500



**Heap &
Partners Ltd**

Fluid control engineers since 1866

Introduction

Heap & Partners design, manufacture and distribute a comprehensive range of valves and ancillary equipment.

With Power & Process, Life Sciences and Oil & Gas divisions, we represent market leading manufacturers of some of the very best flow control products available and offer application engineering support to all our customers providing them with an unbiased valve and instrumentation recommendation. In addition we have our own Design and R&D departments enabling us to offer bespoke design solutions to resolve specific customer problems.

Services

Heap & Partners are not just a major distributor, we provide a range of specialised valve services and bespoke solutions for flow related issues all over the world, including;

- Stock management
- Project management
- Clean build for specialist purposes
- Design and consultancy
- Research and development

We also provide a design and manufacturing service for non-standard valve arrangements to meet customers' specific requirements;

- Valve actuation packages
- Safety interlocking
- Extended spindles
- Limit switches
- Clean build specialist paint finishes
- Special engineering

Industries

We supply customers in the Oil & Gas, Chemical, Petrochemical, Pharmaceutical, Power & Utilities, Nuclear, and Life Science industries with control and safety flow management equipment.

Quality Assurance

We hold the highest quality approval, ISO 9001:2008 audited and approved by Lloyds Register of Quality Assurance. We also hold PED approval for the manufacture, modification and assembly of valves. Prior to despatch, all our valves are assembled, tested and calibrated to meet specific process conditions.

Export

Our Export department has been shipping goods all over the world for more than 140 years. In the last 5 years alone, we have supplied equipment to over 80 different countries.

Associations

In addition to our LRQA approval, we are also members of the British Valve & Actuator Association (BVAA) and are registered and Verified with FPAL (First Point Assessment Limited), through Achilles.



Phase Ball Valve

Side Entry
Double Block & Bleed
Sizes 2" - 12"
ASME Class 600 - 2500



Phase Ball Valve

Heap & Partners trunnion mounted ball valve is an in-house development called Phase (an anagram of Heaps), which covers a range of Soft and Metal seated Side Entry ball valves for the oil and gas market.

This significant investment and commitment involved expanding the company's new headquarters to accommodate the production line.

Application

The safe isolation of pipeline production and process equipment for Offshore applications such as ESDV (Emergency Shut Down Valves), SDV (Shut Down Valves), HIPPS (High Integrity Pressure Protection System), MIV (Manual Isolation Valves) and MOV (Motor Operated Valves) are critical to all our customers and with this in mind, all our valves go through a rigorous review process prior to manufacture and dispatch.

The use of our equipment on sour and corrosive service leads to the requirements for all materials to be supplied fully in accordance with NACE MR-01-75 (ISO 15156) and the use of corrosion resistant Nickel (Inconel) and Chrome (Duplex and Super Duplex) alloys are also typical.

Considerable expertise has been gained in the use of Inconel 625 weld overlays clad on low alloy steels such as A350-LF2 and AISI 4130, this leads to more commercially attractive equipment which would otherwise be cast or forged in highly alloyed materials in order to counteract the corrosive properties of the production / process flows.

Our unique design with respect to the use of high integrity sealing in both elastomeric and polymeric materials is also well founded as is the use of Tungsten Carbide based metal to metal sealing technology on the ball to seat sealing surfaces. With this, our experience in the design and manufacturing processes required to obtain high pressure gas leakage within our customers' specified requirements has been developed and continues to improve.

Engineering capability

Phase is an engineered valve solution for High Criticality Topside Applications and is well proven in the arduous operating conditions of the UK sectors of the North Sea.

The current range of ball valve products available from Heap & Partners includes:

- Ball Valves – Side and Top Entry
- Double Block & Bleed Ball Valves

The Phase range has been through extensive prototype testing which includes;

- Extended Shell and Seat testing.
- Cyclic Temperature testing.
- High Pressure Gas testing
- Fire Testing

The company has recently completed an extensive Fire Testing programme - (in accordance with ISO 10497) to support the Phase range of valves in respect of seat styles, seal types and materials of construction.

The full range of ball valves are available in both metal to metal and soft seated designs, our standard specification for metal to metal seats can use either HVOF or CVD Tungsten Carbide or alternative Stellite based fusion bonded coating. These offer excellent resistance to applications with Solids / Abrasive flows.

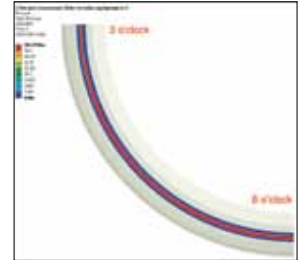
To further complement our Design and Manufacturing capability, we have also recently invested in our own PMI (Positive Material Identification) Gun to ensure that we can further verify the exact materials of construction.

All valves can be manufactured in a full range of exotic materials to EN 10204 3.1 and 3.2.

Design and Analysis

Our Ball valves are manufactured and tested in accordance with API 6D (ISO 14313) and API 6A (ISO 10423), all valves generally designed in accordance with ASME B16.34 / ASME VIII and supplied with application specific end connections which include flanges in accordance with ASME B16.5, BWE connections and hubbed connections are also available to recognised industry profiles.

The valves are designed using Autocad Inventor which is a 3D drafting system integrated with ANSYS Structural & Designspace 9.1 for Finite Element Analysis to be undertaken where desired.



Set Up & Testing

Set-up and testing services are provided to ensure that when it comes to on-site installation, you are safe in the knowledge that the equipment we have supplied will work in your environment.

Our test facilities can accommodate valve sizes ½” up to 24” with pressures from vacuum and low pressure to high pressures of 15,000 psi in our custom-made bays with remote monitoring from anywhere in the world. Clients are provided with login credentials giving them remote control of four CCTV cameras that deliver real-time video as well as information from the Data Logger displaying Hydrostatic Pressure, Low Air Test Pressure, Temperature, and Seat Leakage rate.



Options and Operating Philosophy

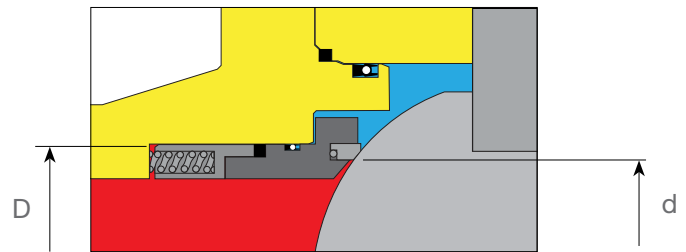
Our product can be tailored to meet the most exacting specifications currently available with; application specific sealing, seating and other requirements such as special overlays, end connections and these features combined with single and double piston metal seated solutions on Topside equipment.

Heap & Partners have now supplied standard equipment specified with nylon seats and elastomeric sealing. However, we have also supplied bespoke equipment specified with polymeric seals and seats (PTFE and PEEK respectively) on critical high pressure gas applications.

Where piping debris or particulates are specified within the process stream, the use of Tungsten Carbide coated balls and seats are required, these must meet and exceed customers leakage requirements and remain maintenance free for the lifetime of the product when specified.

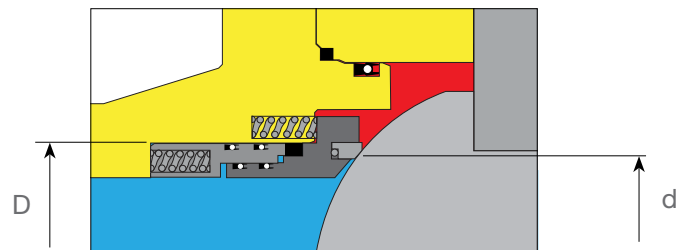
Single Piston Effect Seat (SPE)

The seat operates in the direction of pressure, which amplifies the differential annular area. As pressure increases, so too does the load.



Double Piston Effect Seat (DPE)

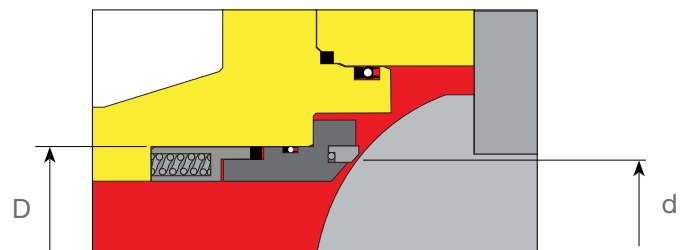
The DPE seat works in both directions (double piston) by design. The seat is fitted with bi-directional sealing and the configuration of the two piece seat allows it to work in either direction since the annular area is amplified by the pressure to effect a seal. This seat does not cavity relieve.



Single Piston Effect Seat (SPE) cavity relieving with pressure

In the reverse pressure direction (pressurised from the cavity), the single piston effect seat will pressure relieve when the reverse load overcomes the spring force and pushes the seat away from the ball.

$$Load = \frac{\pi \times D^2}{4} - \frac{\pi \times d^2}{4} \times P$$



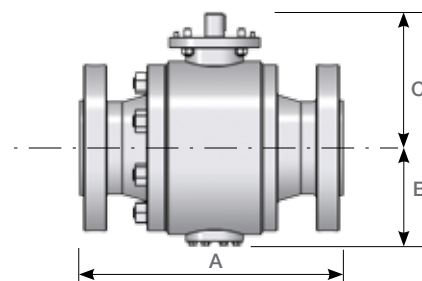
Manufacturing capability

Heap & Partners stock and manufacture a complimentary range of products to support our Phase Ball valves.

Whilst the Phase product is aimed at the high pressure applications (#600 through 2500), we hold stocks of Hindle Floating Ball valves to cover ASME 150 / 300 applications.

We also manufacture our own range of Mounting Kits which are designed to exacting specifications and verified by our in-house FEA capability.

Side Entry Ball valve class & size tables



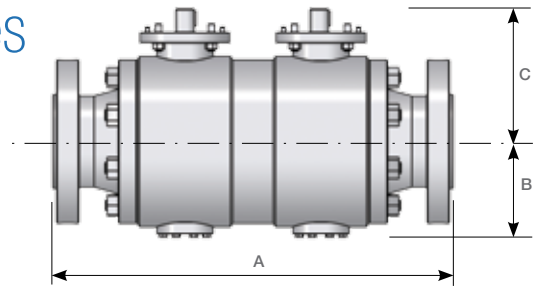
ASME 600			A		RTJ		B		C		WEIGHT	
SIZE	RF		BWE		RTJ		B		C		WEIGHT	
Ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	Kg	lbs
2"	292	11½	292	11½	295	11⅝	109	4⅝	126	4⅞	43	99
3"	356	14	356	14	359	14⅞	144	5⅞	160	6⅞	78	172
4"	432	17	432	17	435	17⅞	157	6⅞	177	7	127	280
6"	559	22	559	22	562	22⅞	196	7¾	247	9¾	295	651
8"	660	26	660	26	664	26⅞	261	10¼	298	11¾	512	1129
10"	787	31	787	31	791	31⅞	286	11¼	328	12¾	820	1808
12"	838	33	838	33	841	33⅞	321	12⅝	380	14⅞	1200	2646

ASME 900			A		RTJ		B		C		WEIGHT	
SIZE	RF		BWE		RTJ		B		C		WEIGHT	
Ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	Kg	lbs
2"*	368	14½	368	14½	371	14⅝	118	4⅝	136	5⅝	68	150
3"*	381	15	381	15	384	15⅞	152	6	166	6⅞	86	190
4"*	457	18	457	18	460	18⅞	168	6⅝	190	7½	262	578
6"	610	24	610	24	613	24⅞	226	8⅞	252	9⅞	406	895
8"	737	29	737	29	740	29⅞	262	10⅞	297	11⅞	891	1965
10"	838	33	838	33	841	33⅞	280	11⅞	370	14⅞	1200	2646
12"	965	38	965	38	968	38⅞	350	13⅞	402	15⅞	1360	2998

ASME 1500			A		RTJ		B		C		WEIGHT	
SIZE	RF		BWE		RTJ		B		C		WEIGHT	
Ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	Kg	lbs
2"	368	14½	368	14½	371	14⅝	118	4⅝	203	8	75	166
3"	470	18½	470	18½	473	18⅞	154	6⅞	190	7½	140	309
4"	546	21½	546	21½	549	21⅞	190	7½	227	8⅞	281	620
6"	705	27¾	705	27¾	711	28	237	9¾	266	10½	514	1134
8"	832	32¾	832	32¾	841	33⅞	321	10¼	331	16¾	785	1731
10"	991	39	991	39	1000	39⅞	352	13⅞	528	20⅞	1800	3968
12"	1130	44½	1130	44½	1146	45⅞	423	15	510	22	3645	8036

ASME 2500			A		RTJ		B		C		WEIGHT	
SIZE	RF		BWE		RTJ		B		C		WEIGHT	
Ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	Kg	lbs
2"	451	15¾	451	17¾	454	17⅞	118	4⅝	160	5¾	116	256
3"	578	22¾	578	22¾	584	23	194	6¾	215	10⅞	251	554
4"	673	26½	673	26½	683	26⅞	217	7½	256	10⅞	280	618
6"	914	36	914	36	927	36½	302	9½	318	17½	963	2123
8"	1022	40¼	1022	40¼	1038	40⅞	392	11⅞	403	19½	1642	3620
10"	1270	50	1270	50	1292	50⅞	402	15⅞	668	26⅞	3560	7849
12"	1422	56	1422	56	1445	56⅞	414	18⅞	627	32⅞	4610	10164

Double Block & Bleed class & size tables



ASME 600			A		RTJ		B		C		WEIGHT	
SIZE	RF		BWE		RTJ		B		C		WEIGHT	
Ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	Kg	lbs
2"*	511	20 ¹ / ₈	511	20 ¹ / ₈	516	20 ⁵ / ₁₆	109	4 ³ / ₄	126	4 ⁷ / ₈	46	102
3"*	623	24 ¹ / ₂	623	24 ¹ / ₂	628	24 ³ / ₄	144	5 ¹¹ / ₁₆	160	6 ¹ / ₁₆	82	181
4"*	756	29 ³ / ₄	756	29 ³ / ₄	761	30	157	6 ³ / ₁₆	177	7	206	454
6"	978	38 ¹ / ₂	978	38 ¹ / ₂	984	38 ³ / ₄	196	7 ³ / ₈	247	9 ⁵ / ₈	310	684
8"	1155	45 ¹ / ₂	1155	45 ¹ / ₂	1162	45 ³ / ₄	261	10 ³ / ₄	298	11 ³ / ₄	490	1080
10"	1377	54 ¹ / ₄	1377	54 ¹ / ₄	1384	54 ¹ / ₂	286	11 ⁵ / ₁₆	328	12 ¹⁵ / ₁₆	910	2006
12"	1467	57 ³ / ₄	1467	57 ³ / ₄	1472	58	321	12 ⁵ / ₈	380	14 ¹⁵ / ₁₆	1058	2333

ASME 900			A		RTJ		B		C		WEIGHT	
SIZE	RF		BWE		RTJ		B		C		WEIGHT	
Ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	Kg	lbs
2"*	644	25 ³ / ₈	644	25 ³ / ₈	649	25 ⁵ / ₈	118	4 ¹ / ₄	136	5 ⁵ / ₈	58	128
3"*	667	26 ¹ / ₄	667	26 ¹ / ₄	672	26 ⁵ / ₈	152	6	166	6 ⁹ / ₁₆	88	194
4"*	800	31 ¹ / ₂	800	31 ¹ / ₂	805	31 ³ / ₄	168	6 ⁵ / ₈	199	7 ⁷ / ₈	262	578
6"	1068	42	1068	42	1073	42 ¹ / ₄	226	8 ³ / ₄	252	9 ¹⁵ / ₁₆	360	794
8"	1290	50 ³ / ₄	1290	50 ³ / ₄	1295	51	262	10 ⁵ / ₁₆	297	11 ¹¹ / ₁₆	572	1261
10"	1467	57 ³ / ₄	1467	57 ³ / ₄	1472	58	280	11 ¹ / ₁₆	370	14 ⁹ / ₁₆	992	2187
12"	1689	66 ¹ / ₂	1689	66 ¹ / ₂	1694	66 ³ / ₄	350	13 ³ / ₄	402	15 ⁷ / ₈	1342	2959

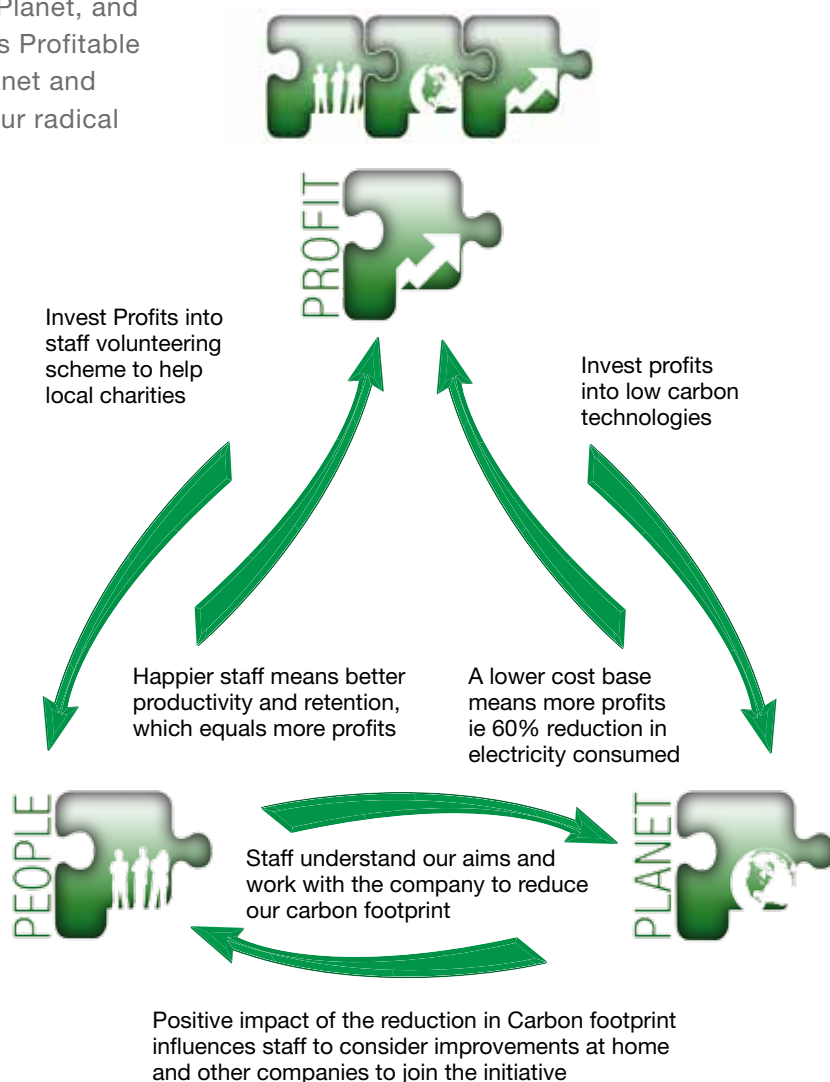
ASME 1500			A		RTJ		B		C		WEIGHT	
SIZE	RF		BWE		RTJ		B		C		WEIGHT	
Ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	Kg	lbs
2"*	644	25 ³ / ₈	644	25 ³ / ₈	649	25 ⁵ / ₈	118	4 ¹ / ₈	203	8	88	194
3"*	823	32 ³ / ₈	823	32 ³ / ₈	828	32 ⁵ / ₈	154	6 ¹ / ₁₆	190	7 ¹ / ₂	122	269
4"*	956	37 ⁵ / ₈	956	37 ⁵ / ₈	961	37 ⁷ / ₈	190	7 ¹ / ₂	227	8 ¹⁵ / ₁₆	198	437
6"	1234	48 ⁹ / ₁₆	1234	48 ⁹ / ₁₆	1244	49	237	9 ⁵ / ₁₆	266	10 ¹ / ₂	490	1080
8"	1456	57 ⁵ / ₁₆	1456	57 ⁵ / ₁₆	1472	58	321	9 ⁵ / ₈	331	13 ¹ / ₁₆	780	1720
10"	1734	68 ¹ / ₄	1734	68 ¹ / ₄	1750	68 ¹⁵ / ₁₆	352	13 ⁷ / ₈	528	20 ³ / ₄	1382	3047
12"	1978	77 ⁷ / ₈	1978	77 ⁷ / ₈	2006	79	423	16 ⁵ / ₁₆	510	20 ¹ / ₁₆	2012	4436

ASME 2500			A		RTJ		B		C		WEIGHT	
SIZE	RF		BWE		RTJ		B		C		WEIGHT	
Ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	mm	ins.	Kg	lbs
2"	789	31 ¹ / ₁₆	789	31 ¹ / ₁₆	795	31 ⁵ / ₁₆	118	4 ⁵ / ₈	160	6 ⁵ / ₁₆	160	353
3"	1012	39 ¹³ / ₁₆	1012	39 ¹³ / ₁₆	1022	40 ¹ / ₄	194	7 ⁵ / ₈	215	8 ¹ / ₂	278	613
4"	1178	46 ³ / ₈	1178	46 ³ / ₈	1195	47	217	8 ⁹ / ₁₆	256	10 ¹ / ₁₆	358	790
6"	1600	63	1600	63	1622	63 ⁷ / ₈	302	11 ¹⁵ / ₁₆	318	12 ¹ / ₂	802	1768
8"	1789	70 ⁷ / ₁₆	1789	70 ⁷ / ₁₆	1817	71 ¹ / ₂	392	15 ⁷ / ₁₆	403	15 ⁷ / ₈	3050	6724
10"	2223	87 ¹ / ₂	2223	87 ¹ / ₂	2261	90	402	15 ¹³ / ₁₆	668	26 ⁵ / ₁₆	3580	7893
12"	2489	98	2489	98	2529	99 ¹ / ₂	414	16 ⁵ / ₁₆	627	24 ¹¹ / ₁₆	4442	9793

Heap & Partners initiative for a greener world

We believe that profitable growth is vital; not to simply fund business as usual but to enable it to do its part in solving some of the problems the world faces.

Heap & Partners are to present our 3Ps Program. The 3Ps take into consideration People, Planet, and Profit. This three pronged initiative covers Profitable growth, minimising our impact on the Planet and helping local and overseas People with our radical volunteering program.



Head office:

Canada Works
Corporation Road
Birkenhead
Wirral
CH41 8FA

Birmingham office:

Bradford Court
Bradford Street
Birmingham
B12 0NS

London office:

Unit 12, Bourne Court
Southend Road
Woodford Green
Essex IG8 8HD
United Kingdom

Teesside office:

Empire Buildings
Dukes Way
Teesside Industrial Estate
Thornaby
Cleveland TS17 9LT

Tel: +44 (0) 151 488 7222
Fax: +44 (0) 151 488 7223
Email: info@heaps.co.uk

Tel: +44(0)121 753 4680
Fax: +44(0)121 753 2698
Email: birmingham@heaps.co.uk

Tel: +44(0)208 550 3300
Fax: +44(0)208 550 5030
Email: london@heaps.co.uk

Tel: +44(0)1642 750 606
Fax: +44(0)1642 750 102
Email: teesside@heaps.co.uk

For more information visit our web site at www.heaps.co.uk