

ARI Condensate pump (mechanical)

Volume 16.5 to 20 litres

**ARI-CONLIFT®**  
Condensate pump  
No electricity required /  
float-operated  
PN 16

- Body:  
Jacket P235GH-TC,  
Sockets / flanges P250GH,  
Plates P265GH
- Bonnet: P250GH
- Bolts: A4-70

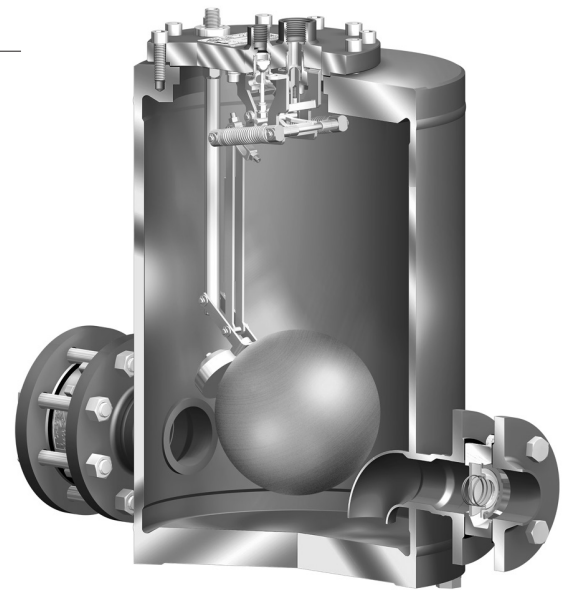
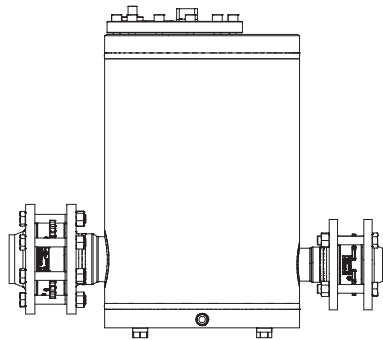


Fig. 691...1

**Features:**

- Automatic operation, adapts automatically to the condensate level
- Robust, durable design
- All internals made of stainless steel, wearing parts in hardened stainless steel
- High-endurance Inconel X-750 springs
- Body designed with high cycle fatigue strength
- No manual settings required
- Low filling head
- Works without electricity
- No leakage due to moving exterior parts
- Optional:  
L-section stand for mounting on frames, etc.

## ARI-CONLIFT® Condensate pump

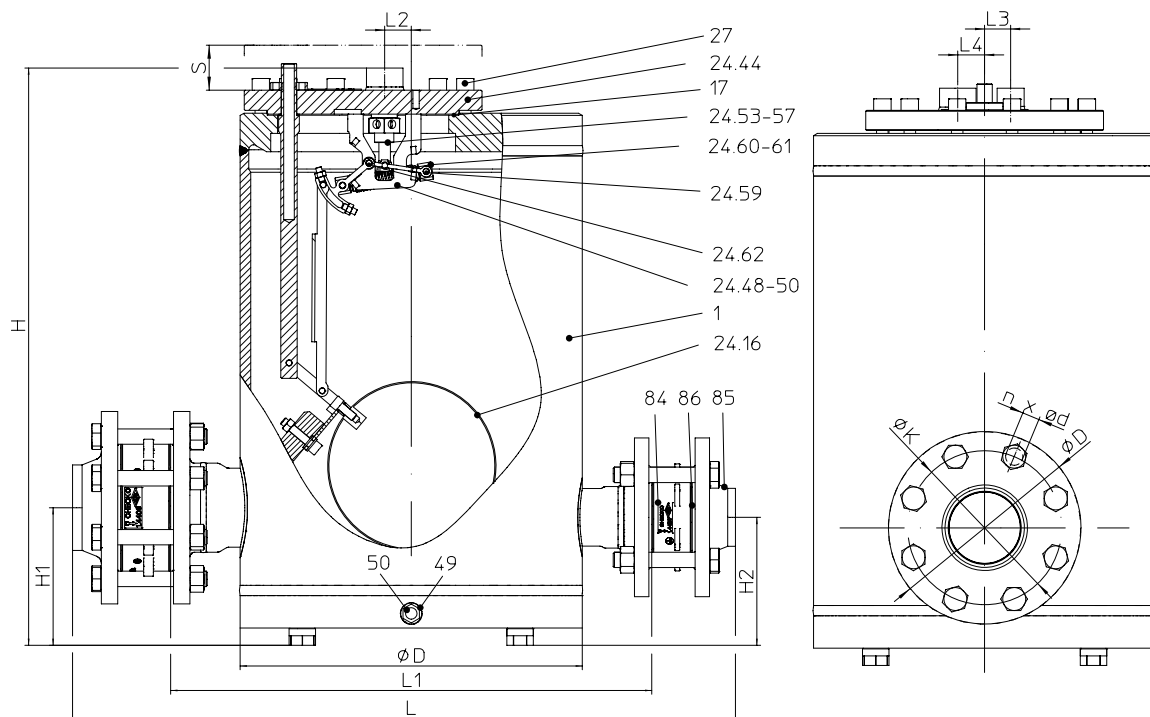
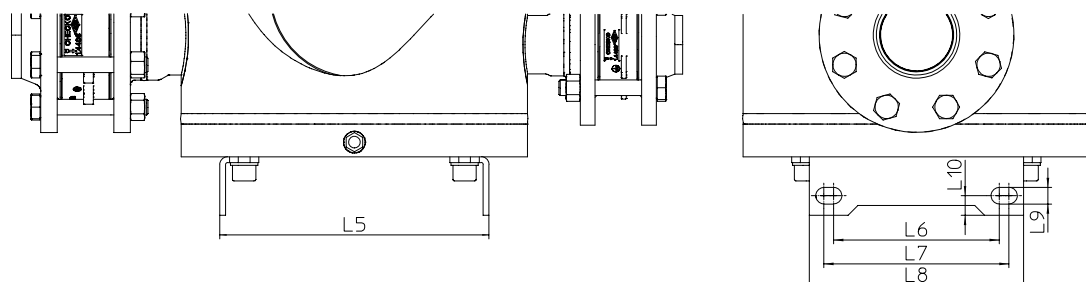


Fig. 691....1 with flanges



Optional: L-section stand

Figure	Nominal pressure	Material	Nominal diameter (input / output)	Operating pressure PS	Operating temperature TS	Allowable differential pressure ΔPMX	For controller
82.691	PN 16	Body: P235GH, P250GH, P265GH Bonnet: P250GH	25 / 25 40 / 40 50 / 50 80 / 50	Min. -0.8 barg Max. 10.0 barg	Min. -10°C Max. 200°C	10 bar	R10

**Types of connection** Other types of connection on request (other limits of use may apply)

- Flanges ....1 \_\_\_\_\_ acc. to DIN 2533 or DIN EN 1092-1 (PN16). On request: drilled acc. to ANSI Class 150
- Motive medium \_\_\_\_\_ acc. to EN 10226-1 Rp 1/2"
- Air vent \_\_\_\_\_ acc. to EN 10226-1 Rp 1"

**Features**

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**Fluids pumped**

- Group 2 fluids with a density of 0.85 to 1.15 kg/dm³

**Mounting position**

- |             |            |  |
|-------------|------------|--|
| • Standard: | Horizontal | Required filling head above pump footprint:<br>• 600 mm<br>• Optional: 640 mm with L-section stand |
|-------------|------------|--|

**Options** For options, refer to page 8

- L-section stand (for mounting on frames, etc.)
- Electronic stroke counter
- Insulating jacket

Types of connection		Flange connections			
DN input / DN output		25 / 25	40 / 40	50 / 50	80 / 50
NPS input / NPS output		1 / 1	1 1/2 / 1 1/2	2 / 2	3 / 2
<b>Volume</b>					
Displacement	(l)	16.5	16.5	20	20
<b>Face-to-face acc. to data sheet or as specified by customer</b>			For standard flange dimensions, refer to page 8		
L	(mm)	604	637	674	689
L1	(mm)	480	480	500	500
L2	(mm)	12	12	28	28
L3	(mm)	27	27	27	27
L4	(mm)	28	28	28	28
Optional: L-section stand	L5	(mm)	255	255	276
	L6	(mm)	140	140	170
	L7	(mm)	160	160	190
	L8	(mm)	190	190	220
	L9	(mm)	17	17	17
	L10	(mm)	20	20	20
<b>Dimensions</b>					
H	(mm)	600	600	600	600
H1	(mm)	118	128	133	143
H2	(mm)	118	128	133	133
S	(mm)	300	300	300	300
D	(mm)	324	324	356	356
Optional: L-section stand	H	(mm)	642	642	642
	H1	(mm)	160	170	175
	H2	(mm)	160	170	175
<b>Weights</b>					
Fig. 691, complete	(approx.) (kg)	95	101	121	126
Fig. 691, pump only	(approx.) (kg)	91	93	112	113
Optional: L-section stand	Fig. 691, complete (approx.) (kg)	96	103	123	128
	Fig. 691, pump only (approx.) (kg)	93	95	114	115

No.	Spare	Description	Material
1		Body (jacket, sockets / flanges, plates)	P235GH-TC1, 1.0345; P250GH, 1.0460; P265GH, 1.0425
17	x	Gasket	Graphite (CrNi laminated)
24.16	x (Controller, complete)	Ball float	X5CrNi18-10, 1.4301
24.44		Bonnet	P250GH, 1.0460
24.48 - 24.50		Switch frame, shift lever	GX22CrNi17, 1.4059
24.53 - 24.57		Seat, stem, stem nut	X20Cr13+QT, 1.4021+QT; X39CrMo17-1+QT, 1.4122+QT
24.60 - 24.61		Spring support, tension spring	X20Cr13+QT, 1.4021+QT; Inconel X-750
24.59		Bolt	X20Cr13+QT, 1.4021+QT
24.62		Bolt (release lever)	X20Cr13+QT, 1.4021+QT
27			Cheese head screw
49	x	Sealing ring	Stainless steel
50		Screw plug	5.6
84	x	CHECKO-D (disc check valve)	GX5CrNiMo 19-11-2, 1.4408
85		Flange	P250GH, 1.0460
86	x	Gasket	Graphite (CrNi laminated)
		L Spare parts	

Additional information / restrictions in technical regulations must be observed!

Please check the stability and suitability of the materials or contact the manufacturer (refer to the product overview and resistance list).

Operating and installation instructions can be downloaded from [www.ari-armaturen.com](http://www.ari-armaturen.com).

### Applications

The ARI-CONLIFT® - BR691 is a float-operated condensate pump operating without electricity.

It is used to pump fluids from a point at a low level or a system with low pressure to a point at a higher level or a system with high pressure.

The condensate pump works according to the positive displacement principle.

Steam, compressed air or inert gas can be used as the motive medium. Pressurised steam and gas spaces, or steam and gas spaces which are under vacuum or subject to changing pressures, can be drained depending on the installation.

### Notes

We recommend limiting the operating pressure of the motive medium 2 bar higher than the expected back pressure, to enable the energy contained in the medium to be optimally utilised.

If cold condensates are pumped using compressed air, icing may occur in the vented pipe at low ambient temperatures. The flow rate could be reduced as a result.

### Sizing

The following information is required in order to determine the minimum size of the condensate pump:

- Flow capacity
- Type of motive medium
- Motive medium pressure
- Filling head
- Total back pressure

The following information is required in order to calculate the total back pressure:

- Height difference between the pump and the manifold to which the condensate is supplied
- Overpressure in the manifold
- Resistance in the feed pipe

The volume flow per delivery cycle which is necessary to calculate the **resistance in the feed pipe** can be assumed as follows:

The lower of the two values applies:

- Condensate pump DN25/25:	9 m³/h	}	or	{	6 x condensate quantity in m³/h
- Condensate pump DN40/40:	18 m³/h				
- Condensate pump DN50/50:	33 m³/h				
- Condensate pump DN80/50:	33 m³/h				

If the resistance in the feed pipe is higher than the desirable level, we recommend selecting a larger nominal diameter or using a shorter pipe.

#### PED 97/23/EC

Assessment as per PED 97/23/EC (Group 2 fluids)

EC declaration of conformity / manufacturer's declaration: Refer to the last page of the current Operating Instructions for information on the above-mentioned EU directives.

Please request a copy of the Operating Instructions by phone (+49 52 07) 944-0 or by fax (+49 52 07) 994-297.

**Correction factor: Motive medium**

The capacities indicated in the table below apply when steam is used as the motive medium.

If the motive medium is compressed air or inert gas, the values contained in the "Flow rate" table must be multiplied by the correction factor given in the table below.

Back pressure as a percentage of the motive medium pressure								
Back pressure	20%	30%	40%	50%	60%	70%	80%	90%
Correction factor	1.04	1.07	1.1	1.13	1.17	1.22	1.28	1.35

**Consumption: Motive medium**

Steam / compressed air consumption per 1000 litres of fluid pumped							
Back pressure		0.5 bar	1.0 bar	2.0 bar	3.5 bar	5.0 bar	8.0 bar
Steam consumption	(kg)	3.8	4.3	5.3	6.7	8.2	11.1
Air consumption	(m <sup>3</sup> in normal operation)	4.5	5.4	7.2	9.9	12.6	18

DN input / DN output		Filling head															
		25 / 25				40 / 40				50 / 50				80 / 50			
Standard	(mm)	600	800	1000	1200	600	800	1000	1200	600	800	1000	1200	600	800	1000	1200
Optional: L-section stand	(mm)	640	840	1040	1240	640	840	1040	1240	640	840	1040	1240	640	840	1040	1240

Back pressure pG (bar)	Motive medium pressure pT (bar)		Flow rate															
			25 / 25				40 / 40				50 / 50				80 / 50			
1.0	1.5	l/h	473	692	763	843	670	984	1090	1171	1056	1483	1819	1829	1590	2154	2310	2789
1.0	2.0	l/h	588	860	948	1047	821	1207	1337	1437	1676	2352	2778	3020	2262	3186	3445	3857
1.0	2.5	l/h	674	986	1087	1201	950	1396	1546	1662	1915	2688	3203	3516	2590	3648	4288	4382
1.0	3.0	l/h	740	1083	1194	1320	1030	1513	1677	1802	2124	2981	3505	3849	2874	4049	4676	4928
1.0	4.0	l/h	817	1196	1318	1457	1140	1675	1855	1994	2300	3229	3749	4119	3061	4271	4874	5298
1.0	5.0	l/h	860	1259	1388	1533	1215	1785	1977	2125	2456	3448	3922	4310	3138	4334	5095	5317
1.0	6.0	l/h	895	1310	1444	1596	1278	1878	2081	2236	2550	3579	4049	4450	3204	4380	5254	5482
1.0	7.0	l/h	911	1333	1470	1624	1316	1933	2141	2301	2562	3596	4101	4509	3216	4394	5326	5500
1.0	8.0	l/h	931	1362	1501	1659	1342	1971	2184	2347	2569	3607	4114	4523	3234	4418	5355	5529
1.5	2.0	l/h	469	687	757	836	649	954	1057	1136	987	1386	1701	1710	1474	1931	2032	2345
1.5	2.5	l/h	588	860	948	1047	807	1186	1314	1412	1566	2199	2597	2824	2021	2847	2924	3275
1.5	3.0	l/h	670	981	1081	1195	917	1348	1493	1605	1774	2490	2967	3227	2278	3238	3451	3755
1.5	3.5	l/h	729	1066	1176	1299	1000	1470	1628	1750	2011	2823	3319	3580	2520	3483	3899	4239
1.5	4.0	l/h	766	1121	1236	1366	1058	1554	1722	1850	2147	3013	3499	3743	2625	3628	4144	4592
1.5	5.0	l/h	825	1207	1331	1470	1136	1669	1849	1987	2341	3286	3738	4036	2801	3946	4604	4946
1.5	6.0	l/h	852	1247	1375	1519	1203	1768	1959	2105	2421	3398	3844	4189	2911	4022	4833	5140
1.5	7.0	l/h	884	1293	1426	1575	1248	1834	2032	2184	2441	3426	3908	4259	2981	4119	4949	5315
1.5	8.0	l/h	895	1310	1444	1596	1278	1878	2081	2236	2452	3442	3926	4317	3027	4223	5025	5396
2.0	2.5	l/h	466	682	751	830	639	939	1041	1118	944	1325	1626	1634	1321	1612	1918	2245
2.0	3.0	l/h	577	844	930	1028	779	1145	1268	1363	1478	2075	2604	2665	1708	2406	2680	3075
2.0	3.5	l/h	628	919	1014	1120	892	1310	1452	1560	1690	2372	3001	3074	2070	2784	3281	3557
2.0	4.0	l/h	709	1038	1144	1264	967	1421	1574	1692	1830	2568	3177	3316	2244	3105	3668	3896
2.0	5.0	l/h	778	1139	1255	1387	1069	1570	1740	1870	2064	2898	3509	3697	2506	3468	4062	4352
2.0	6.0	l/h	817	1196	1318	1457	1132	1664	1843	1981	2156	3026	3589	3784	2665	3786	4360	4712
2.0	7.0	l/h	848	1242	1369	1512	1185	1741	1928	2072	2202	3091	3644	3844	2740	3859	4564	4931
2.0	8.0	l/h	860	1259	1388	1533	1222	1796	1989	2138	2210	3102	3657	3857	2790	3930	4690	5067
2.0	9.0	l/h	864	1264	1394	1540	1241	1823	2020	2171	2210	3102	3657	3857	2848	3941	4788	5173
2.5	3.0	l/h	462	676	746	824	589	866	959	1031	839	1177	1444	1466	1189	1459	1672	2026
2.5	3.5	l/h	573	838	924	1021	723	1062	1177	1265	1316	1848	2397	2417	1520	2034	2384	2872
2.5	4.0	l/h	632	925	1020	1127	837	1230	1363	1464	1489	2090	2777	2808	1790	2475	2917	3253
2.5	4.5	l/h	694	1015	1119	1237	915	1345	1490	1601	1673	2349	3050	3115	1994	2757	3317	3654
2.5	5.0	l/h	727	1064	1173	1296	968	1422	1576	1693	1780	2499	3174	3272	2147	2970	3542	3933
2.5	6.0	l/h	766	1121	1236	1366	1047	1538	1703	1831	1875	2632	3298	3405	2343	3271	3867	4180
2.5	7.0	l/h	794	1161	1280	1415	1095	1609	1782	1916	1933	2713	3378	3490	2466	3444	4073	4478
2.5	8.0	l/h	813	1190	1312	1450	1132	1664	1843	1981	1945	2730	3399	3511	2565	3550	4236	4618
2.5	9.0	l/h	825	1207	1331	1470	1159	1702	1886	2027	1945	2730	3399	3511	2625	3698	4335	4683
3.0	3.5	l/h	459	671	740	818	559	821	910	978	726	1019	1250	1269	952	1310	1482	1939
3.0	4.0	l/h	554	811	894	988	688	1011	1120	1203	1183	1660	2136	2171	1300	1812	2028	2415
3.0	4.5	l/h	628	919	1014	1120	790	1161	1286	1382	1369	1922	2533	2582	1602	2106	2526	2910
3.0	5.0	l/h	671	981	1082	1195	860	1263	1399	1504	1481	2079	2742	2757	1812	2436	2871	3261
3.0	6.0	l/h	716	1047	1154	1275	957	1406	1557	1674	1560	2189	2824	2866	2048	2860	3317	3752
3.0	7.0	l/h	747	1093	1205	1331	1020	1499	1661	1785	1629	2286	2887	2957	2195	2984	3625	3986
3.0	8.0	l/h	759	1110	1224	1352	1058	1554	1722	1850	1652	2319	2887	2982	2294	3204	3826	4094
3.0	9.0	l/h	766	1121	1236	1366	1088	1598	1770	1902	1652	2319	2887	2982	2345	3274	3909	4147

**Assumptions:**

- Fluid pumped: Hot steam condensate (90 to 94°C).
- Inlet pipe: ARI CHECKO-D disc check valves and ARI strainer (standard screen).

The actual values may deviate from those given above if other operating conditions apply or other valves are used.

Intermediate values may be interpolated.

DN input / DN output		Filling head															
		25 / 25				40 / 40				50 / 50				80 / 50			
Standard	(mm)	600	800	1000	1200	600	800	1000	1200	600	800	1000	1200	600	800	1000	1200
Optional: L-section stand	(mm)	640	840	1040	1240	640	840	1040	1240	640	840	1040	1240	640	840	1040	1240

Back pressure pG (bar)	Motive medium pressure pT (bar)		Flow rate															
			25 / 25				40 / 40				50 / 50				80 / 50			
3.5	4.0	l/h	455	666	734	811	536	787	872	937	668	938	1198	1211	831	1097	1357	1682
3.5	4.5	l/h	554	811	894	988	670	985	1091	1173	1042	1462	1851	1878	1180	1524	1822	2280
3.5	5.0	l/h	609	892	983	1086	764	1123	1244	1337	1239	1739	2237	2275	1415	2012	2252	2571
3.5	5.5	l/h	651	953	1050	1161	841	1236	1369	1471	1350	1895	2423	2491	1621	2283	2671	2917
3.5	6.0	l/h	680	995	1098	1213	886	1301	1442	1549	1436	2016	2601	2617	1728	2499	2958	3110
3.5	7.0	l/h	716	1047	1154	1275	957	1406	1557	1674	1494	2097	2648	2667	1858	2640	3296	3404
3.5	8.0	l/h	739	1081	1192	1317	1005	1477	1636	1759	1523	2138	2662	2727	1954	2776	3406	3579
3.5	9.0	l/h	747	1093	1205	1331	1043	1532	1697	1824	1531	2149	2675	2764	2014	2837	3481	3626
3.5	10.0	l/h	751	1098	1211	1338	1061	1560	1728	1857	1531	2149	2675	2764	2014	2862	3481	3626
4.0	4.5	l/h	444	650	716	791	474	696	772	829	661	927	1185	1198	751	1017	1225	1646
4.0	5.0	l/h	531	777	857	947	598	879	974	1046	972	1364	1797	1849	1027	1447	1596	2010
4.0	5.5	l/h	595	870	959	1060	715	1051	1164	1251	1130	1586	2124	2188	1193	1697	2015	2324
4.0	6.0	l/h	628	919	1014	1120	783	1150	1274	1369	1274	1788	2359	2433	1338	1976	2378	2526
4.0	7.0	l/h	680	995	1097	1212	878	1290	1429	1535	1399	1963	2533	2615	1511	2187	2658	2770
4.0	8.0	l/h	703	1029	1134	1253	940	1381	1530	1645	1440	2021	2553	2637	1611	2330	2833	2926
4.0	9.0	l/h	715	1046	1153	1274	988	1451	1608	1728	1460	2050	2553	2659	1679	2407	2927	3023
4.0	10.0	l/h	722	1057	1165	1287	1003	1473	1632	1754	1460	2050	2553	2659	1694	2449	2927	3050
5.0	5.5	l/h	426	623	687	759	446	656	727	781	581	815	1042	1053	619	872	990	1336
5.0	6.0	l/h	515	754	831	919	593	871	964	1036	803	1127	1485	1527	799	1160	1364	1601
5.0	6.5	l/h	567	830	915	1011	684	1005	1113	1196	957	1344	1800	1854	938	1283	1635	1801
5.0	7.0	l/h	600	878	968	1070	750	1102	1221	1313	1045	1467	1936	1997	1021	1438	1779	1921
5.0	8.0	l/h	647	947	1044	1154	826	1214	1345	1445	1107	1554	2005	2069	1069	1519	1879	1992
5.0	9.0	l/h	663	970	1069	1181	870	1278	1416	1522	1140	1600	2020	2087	1078	1546	1913	2027
5.0	10.0	l/h	670	981	1081	1195	888	1305	1446	1554	1156	1622	2020	2104	1078	1559	1913	2061
6.5	7.0	l/h	409	598	659	728	420	617	684	735	485	681	847	923	585	732	883	1111
6.5	7.5	l/h	501	733	808	893	541	795	880	946	808	1098	1420	1532	722	996	1233	1326
6.5	8.0	l/h	548	803	885	978	609	895	992	1066	859	1177	1536	1643	820	1133	1444	1533
6.5	9.0	l/h	600	878	968	1070	678	996	1104	1186	894	1234	1598	1726	871	1192	1518	1596
6.5	10.0	l/h	621	908	1001	1106	717	1054	1167	1254	901	1255	1612	1741	887	1204	1518	1596
8.0	8.5	l/h	401	587	647	715	410	602	667	716	423	593	750	817	556	730	871	1047
8.0	9.0	l/h	481	704	776	857	460	675	748	804	634	875	1132	1233	633	901	1069	1151
8.0	9.5	l/h	523	765	843	931	493	724	802	862	734	1014	1334	1428	685	965	1137	1233
8.0	10.0	l/h	549	804	886	979	515	756	838	900	740	1030	1345	1441	705	974	1160	1245

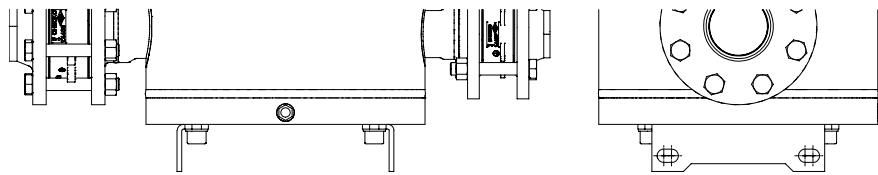
**Assumptions:**

- Fluid pumped: Hot steam condensate (90 to 94°C).
- Inlet pipe: ARI CHECKO-D disc check valves and ARI strainer (standard screen).

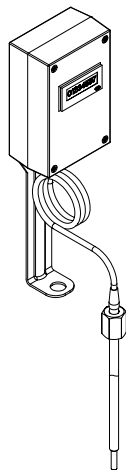
The actual values may deviate from those given above if other operating conditions apply or other valves are used.  
Intermediate values may be interpolated.

Standard flange dimensions to DIN 2533 or DIN EN 1092-1						
DN	(mm)	25	40	50	80	
NPS	(inch)	1	1 1/2	2	3	
PN 16	ØD	(mm)	115	150	165	200
	ØK	(mm)	85	110	125	160
	n x Ød	(mm)	4 x 14	4 x 18	4 x 18	8 x 18

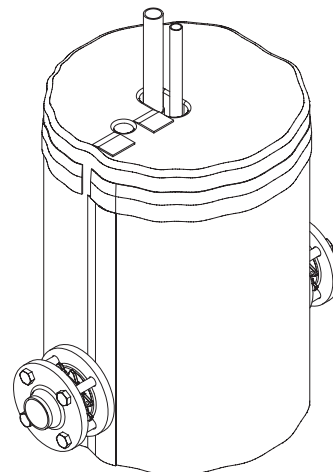
**Options**



L-section stand (for mounting on frames, etc.)



Electronic stroke counter



Insulating jacket