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## LIQUIP MANIFOLD VALVE

### DATA SHEET

**PART No: DM104**

**TITLE:** Manifold valve, pneumatically operated, to provide bottom loading, discharge and bolt-up modular assembly system. With Open/Closed Indicator

**OPERATION:** Manifold valves bolt directly to each other, one for each compartment, to form the manifold.

The upper gallery forms a Ø100mm pipe connecting a bolted-on API adaptor to the tanker pipework, so allowing completely normal bottom loading & gravity discharge of individual compartments.

A second, lower, gallery runs at right angles and when bolted together they form an Ø80mm pipe. Discharge from this lower gallery can be from an end fitting e.g., 80mm camlock adaptor on 100mm TTMA flange, part number MC3-V4 5° : or from any of the bottom outlets on each valve e.g., 80mm camlock on 75mm TTMA flange part number MC3-V3 5°.

To enable the manifold to drain, a special blank flange BF4-5, 100mm TTMA has a ¾" BSP port to allow fit of a vacuum breaker VB100U. It is preferable to mount the vacuum breaker at walkway level which is above the product level to prevent any leaks.

Alternatively a pneumatic valve can be placed in the system to operate during pump transfers. But if it is essential to direct mount the vacuum break to the manifold an isolation ball valve is required between the vacuum breaker and manifold.

The upper gallery is drained through to the lower gallery by pneumatic operation of the piston in the manifold valve.

Pneumatics allows user-choice of control e.g., valves may be interlocked to allow only one to open at a time, or to prevent any being open when bottom loading etc. Liquip MAC1XX is recommended as it also includes pump suction control.

**FEATURES:** Primary purpose is to provide a system allowing the use of a permanently attached hose for discharge of "split drops" by pump or gravity. Deleting the need to change over jumper hoses prevents spills and drips and also saves considerable driver time.

Incorporates mounting for future fitment of "Product return" system.

DM104 has an Open/Closed indicator mounted at the top of the pneumatic actuator. A red indicator marks closed position. In open position, a green sleeve covers the red closed position indicator.

**DISMANTLE:** Removing 8 off M8 setscrews allows entire air ram & poppet assembly to be removed.



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**ADJUSTMENT:** No periodic service is necessary, only checks to ensure poppet seals and opens and closes correctly.

**MOUNTING:** 100mm TTMA to tank  
100mm TTMA to API adaptor  
100mm TTMA side to side  
75mm TTMA bottom outlet  
Centre-to-centre distance is 282mm. Fit spacers for other pipe centres.

**TECHNICAL DATA:** Air ram operation is similar to ARO100, with some common parts.  
Tanker air pressure 600 kPa to 800 kPa to operate. Poppet lifts at 120 kPa back pressure against spring only.

Passed European CEN test for endurance to 25,000 cycles and subsequent leak test.

Body and cover Aluminium AA601  
Stainless steel spindle  
Bonded viton seal  
Spring steel, zinc plated  
8 kg each without end flanges but including bottom blank flange.

**ASSOCIATED EQUIPMENT:** BF4-5 blind flange with 3/4" BSP mount  
VB100U Vacuum breaker  
MC4-V4 5° camlock adaptor to flange  
MC3-V4 5° camlock adaptor to flange  
MC3-V3 5° camlock adaptor to flange  
DM105 Discharge Manifold (without Open/Closed indicator)  
PRF114 (1 1/4"), PRF112 (1 1/2") Product return Flange assemblies.  
MAC1XX pneumatic control system.

*Overall dimensions shown on the drawing overleaf.*

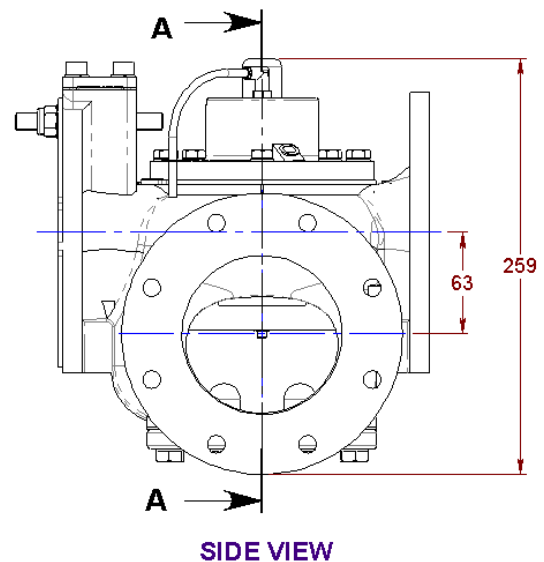
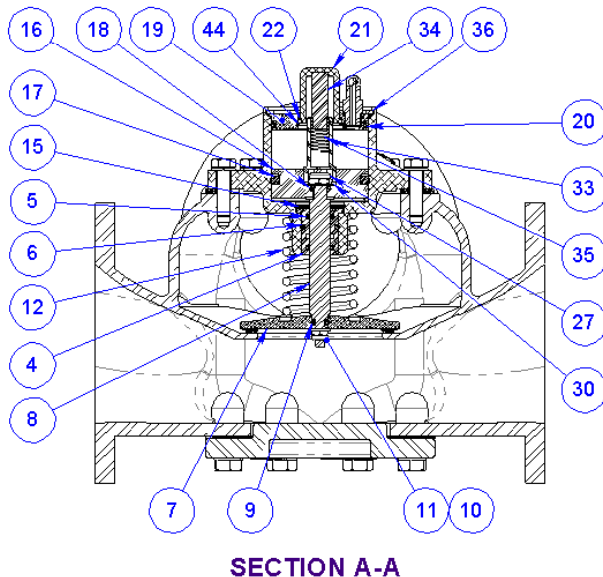
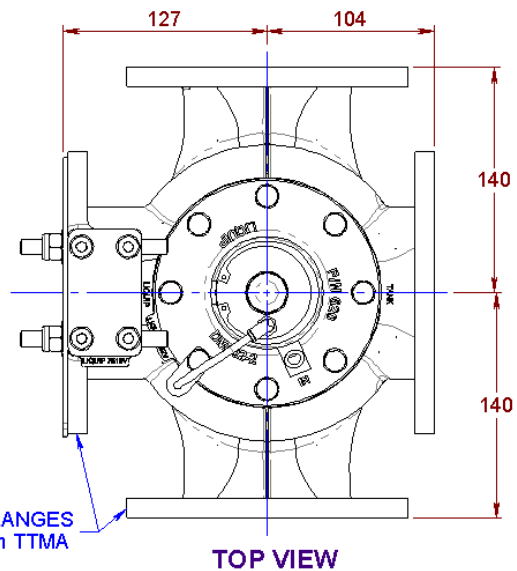
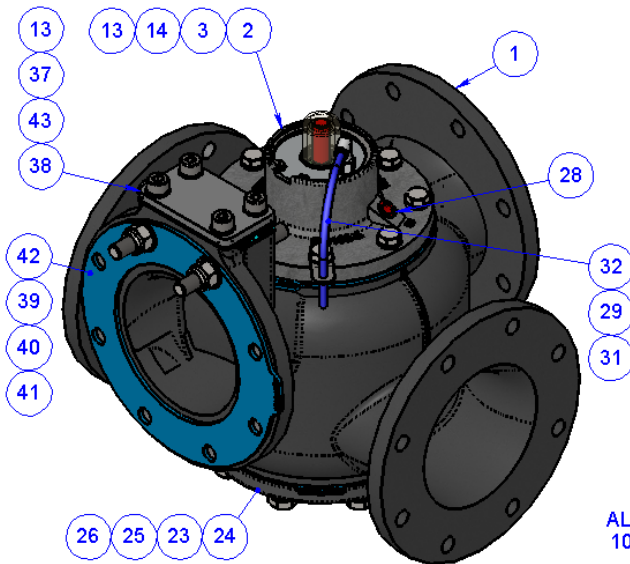


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# LIQUIP

## DM104 DISCHARGE MANIFOLD



**X350704**

Issue: G

METERS - VALVES - VENTS - MANHOLES - PUMPS - HOSEREELS - OVERFILL PROTECTION - LOADING ARMS - ELECTRONIC DIPSTICKS



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## DM104 DISCHARGE MANIFOLD

ITEM	PART No.	DESCRIPTION	QTY	MATERIAL
1	DM104-1	100mm DISCHARGE MANIFOLD BODY	1	ALUMINIUM
2	DM102-2	AIR RAM CYLINDER BODY	1	ALUMINIUM
3	4282V	GASKET VITON	1	VITON A
4	ARO100-4	AIR RAM SHAFT BUSH	1	ACETAL
5	0244	O-RING	2	VITON A
6	0278	O-RING	1	VITON A
7	DM100-4	POPPET	1	ALUMINIUM
8	DM102-5	ACTUATING SPINDLE	1	ST STEEL
9	7008	O-RING	1	VITON A
10	5267	WASHER FLAT	1	Z/P STEEL
11	4400	NUT HALF NYLOC	1	Z/P STEEL
12	4483	SPRING COMPRESSION	1	SPRING STEEL
13	6586	WASHER SPRING	12	ST STEEL
14	4965	SETSCREW METRIC	8	Z/P STEEL
15	4546	CIRCLIP INTERNAL	1	Z/P STEEL
16	DM102-3	AIR RAM PISTON 60 mm	1	ACETAL
17	0218	O-RING	1	VITON A
18	4565	O-RING	1	VITON A
19	DM103-6	CAP PISTON OPEN/CLOSE INDICATOR	1	ALUMINIUM
20	0137	O-RING	1	VITON A
21	DM103-8	SIGHT GLASS OPEN/CLOSED INDICATOR	1	ACRYLIC
22	7536	O-RING	1	VITON A
23	0656V	GASKET VITON	1	VITON
24	BF3-7	BLANK FLANGE	1	ALUMINIUM
25	5261	WASHER SPRING	8	Z/P STEEL
26	4947	SETSCREW METRIC	8	Z/P STEEL
27	6625	NUT HALF NYLOC MET	1	Z/P STEEL
28	1310	CAP/PLUG	1	PVC RED
29	2221	AIR FITTING - ELBOW	1	BRASS
30	6620	WASHER FLAT	2	ST STEEL
31	DM102-7	BRACKET - AIR EXHAUST	1	ST STEEL
32	1961	AIR LINE	1	NYLON
33	DM103-9	INDICATOR OPEN GREEN	1	HDPE
34	DM103-10	INDICATOR CLOSED RED	1	HDPE
35	0315	SPRING COMPRESSION	1	ST STEEL
36	5848	CIRCLIP INTERNAL	1	Z/P STEEL
37	6582	CAPSCREW METRIC	4	ST STEEL
38	DM104-2	FLANGE BLANKING	1	ALUMINIUM
39	6673	STUD FOR DM104	2	STEEL
40	4981	NUT NYLOC	2	Z/P STEEL
41	5288	WASHER FLAT	2	Z/P STEEL
42	0657V	VITON GASKET TTMA 100mm (4")	1	VITON
43	7519V	GASKET VITON	1	VITON A
44	4346	CIRCLIP INTERNAL	1	ST STEEL

**X350704**

Issue: G

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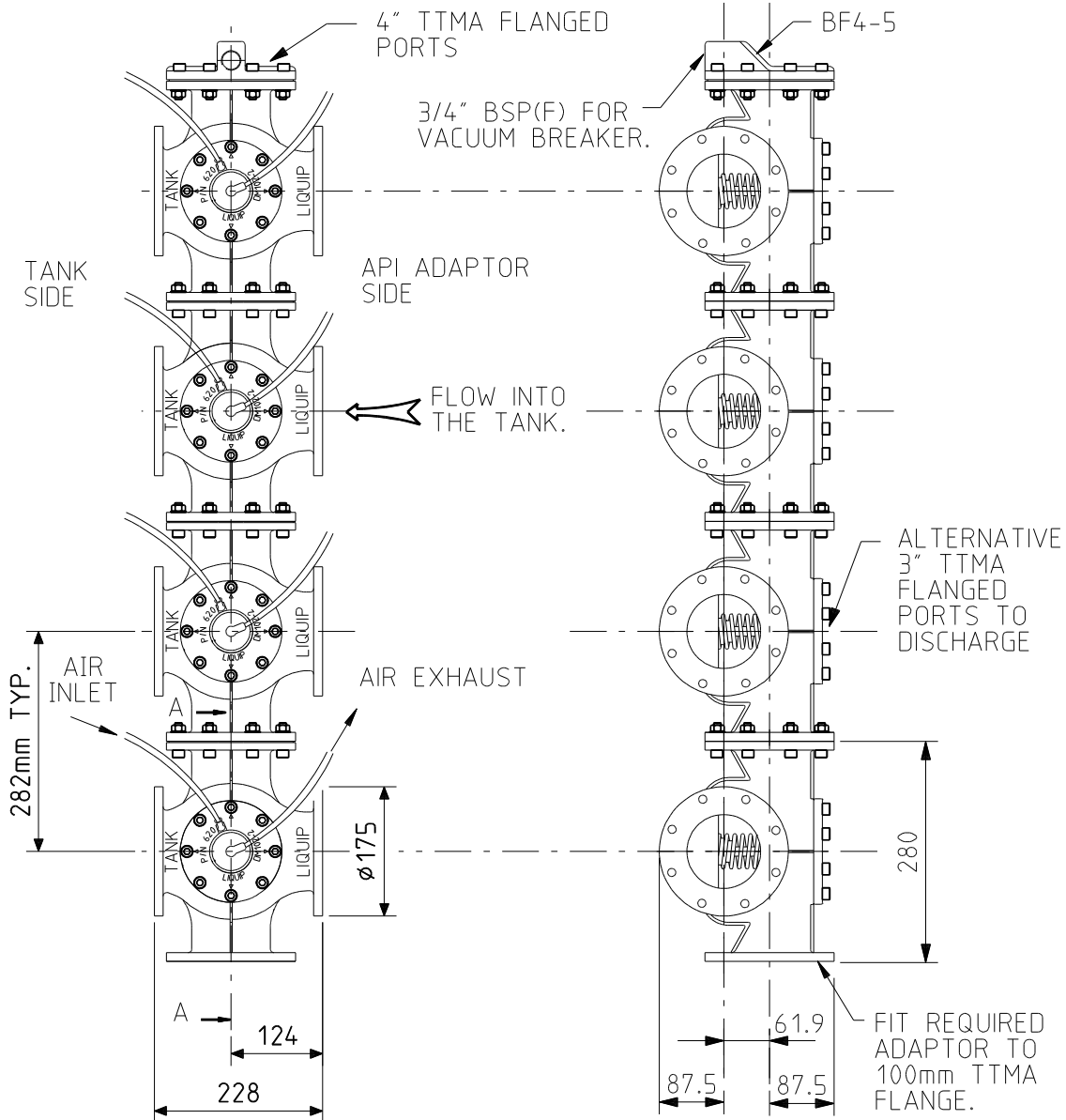


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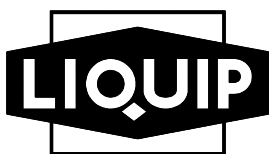
DM104



X352903

Issue: A

METERS - VALVES - VENTS - MANHOLES - PUMPS - HOSEREELS - OVERFILL PROTECTION - LOADING ARMS - ELECTRONIC DIPSTICKS



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