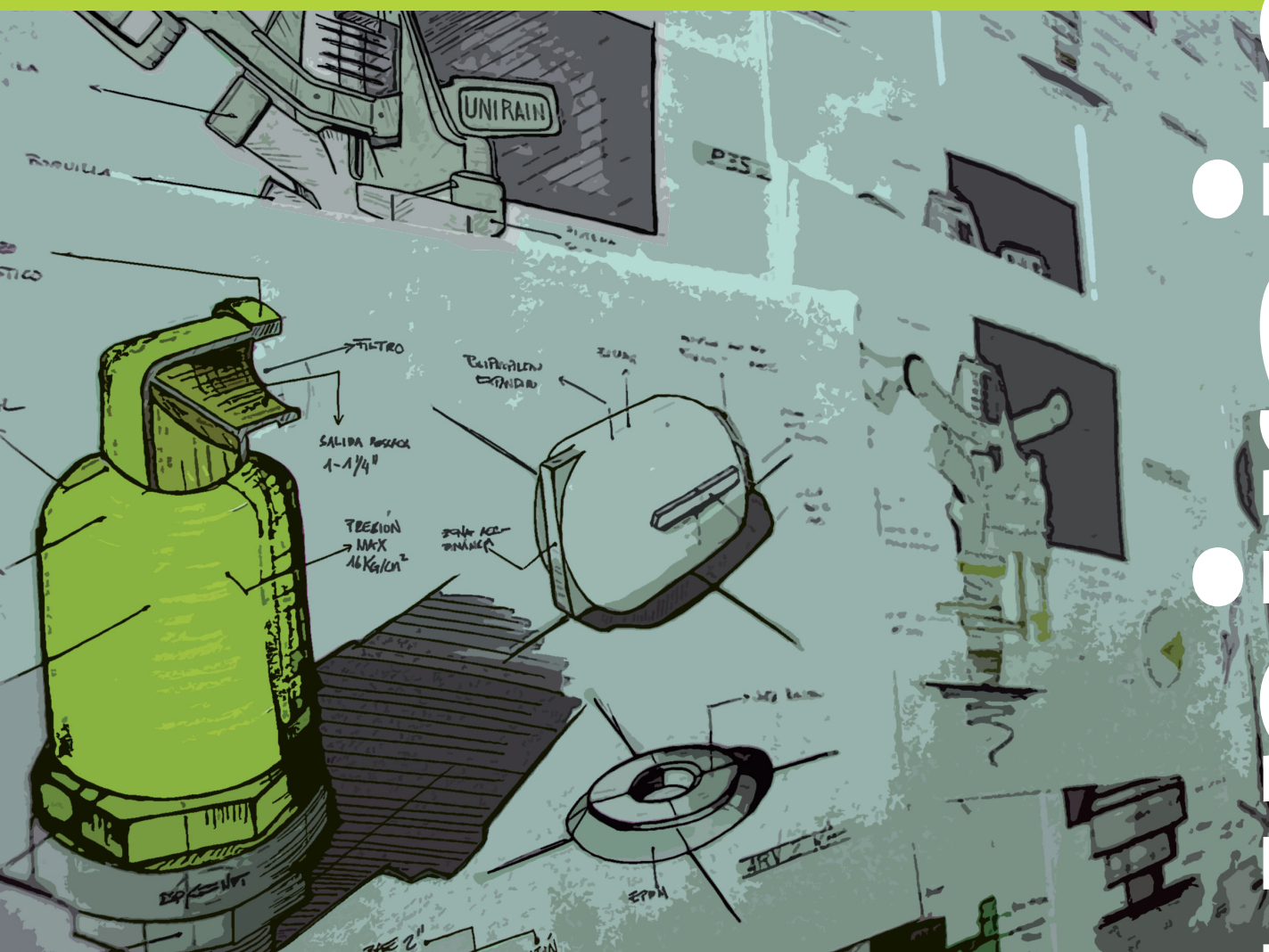


PRODUCT CATALOGUE



unirain



Coverage Irrigation Sprinkler

Low - Medium Flow	Brass	F30 - F30F	0901
	Plastic	F40 - F40F	0902
		P35	0906
		F26 - F26W	0907
		F2614 - F2614W	0908
		F44 - F44F	0909
		F46/F - F46L/F	0911
		F46/F PRO - F46L/F PRO	1302
		P45/F - P45L/F	0912
		P45/F PRO - P45L/F PRO	1303



Sprinklers Accesories

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	Plastic	3SN	0919
	Bayonet	PLUG	0919
	Thread	3Q	0920
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		PLUG	0920
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PIVOT Equipment

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Triple Acting		ARV-1"-KA	0939
		ARV-1"-KA(B)	0939
		ARV-2"-KA	0940
		ARV-2"-KA(B)	0940
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		ARV-Ø-(3G)-FLSW	1002
		ARV-Ø-(3G)-FLFP	1301



Coverage Irrigation Sprinkler

Introduction:

We must use water correctly, to optimize the harvest as well as to maintain the structure of the soil to cultivate. This kind of irrigation is to reduce the water jet droplet in order to have a suitable one for the crop. For this, it is necessary a sprinkler which gives fine droplets of water. Its mission is to distribute homogeneously the water, avoiding unwanted water areas or too much water in a field. That means a controlled use and profitable use of water, reducing unnecessary costs.

Advantages:

- Possibility to use fertilizers or cure diseases with fertigation.
- Homogeneous use of water, only the desired quantity to reduce costs.
- No deterioration of the ground as there are no more puddles or landslide.
- It is the best way to struggle against frost.
- It allows the washing of toxic bacterial leaf layer of the crop.
- It can be used from one crop to another.

Recommended uses:

Useful in tropical fields like in coffee or cocoa crops, which are very sensitive to low temperatures. It is proven that it is efficient in field crops and industrial crops like sugar beet, tobacco and cotton) or legumes crops such as beans and lentils.

Characteristics of sprinklers:

We differentiate sprinkler according to the dispersion angle, flow delivered (low-medium-high), scope of the droplet, the pressure and also the characteristics of the crop. Made in plastic and /or brass.

Flow: quantity of water that a sprinkler throws(l/h)

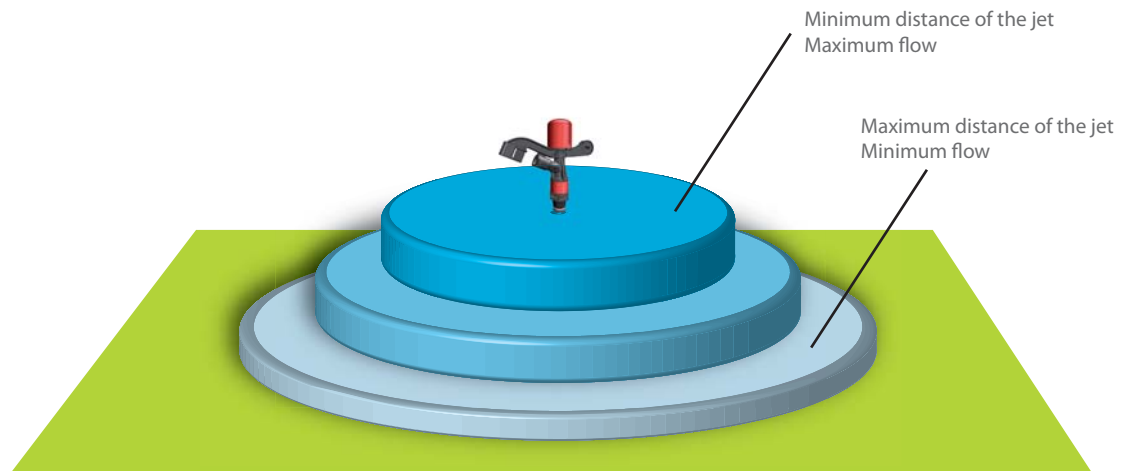
Water jet angle: the distance between the ground and the point from which water jet start flowing.

Scope: maximum extent of water distribution (m)

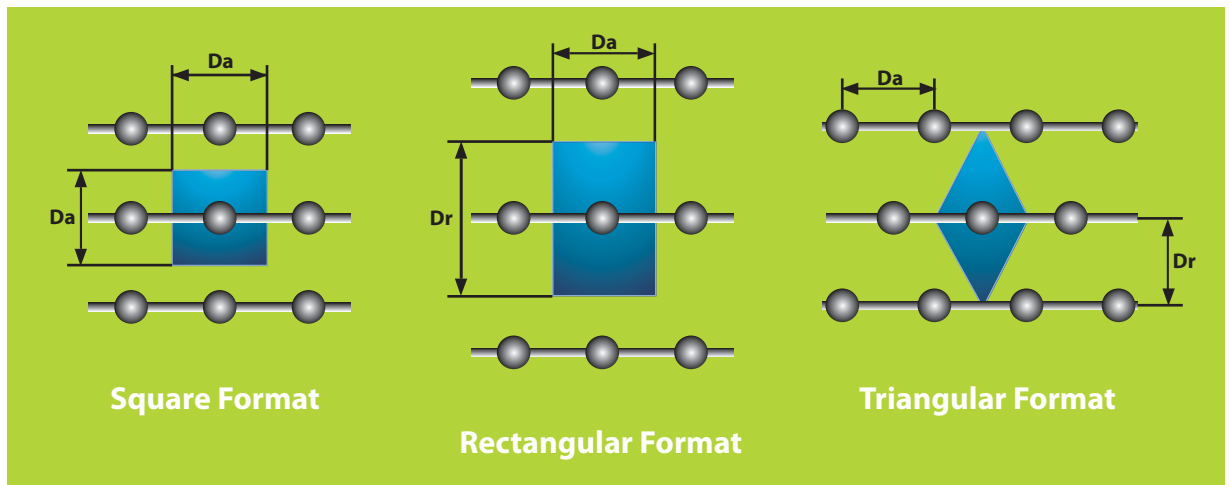
Pressure: pressure of the water jet (BAR, PSI)



Distribution of water in soils



Sprinkler Format



SPRINKLER IRRIGATED AREA
DISTANCE BETWEEN THE SPRINKLER x DISTANCE BETWEEN PIPES = $D_a \times D_r$

Maintenance

- **External Objects in the irrigation water:** Do not use wires to eliminate possible clogging.
- **Oil:** The sprinklers are lubricated with water, don't use any other element to lubricate.
- **Erroneous Pressure:** only use the pressure within the range of each sprinkler. Use of Pressure gauge recommended.

Unirain F30 - F30F

Full Circle Impact Sprinkler Low and Medium flow Brass



Application

Recommended for agricultural use, and medium flows, it is very suitable for removable pipe systems. It can be assembled with one or two nozzles. It is ideal for farmers, as it is a strong and durable product that reduces evaporation loss and wind effect thanks to its water jet throw radius. It can be assembled with female base thread in order to avoid waste of material.

Advantages

- Made of brass, its arm and body have a wide impact area that provides longer life.
- Its counterweighted arm provides a steady turn speed.
- It can be assembled with one or two nozzles.
- Three different vanes can be used to achieve the desired coverage and spray balance according to the available system pressure.

Technical specifications

- Full circle impact sprinkler
- 3/4" base thread male or female (F30F)
- Main and secondary nozzle
- 25° nozzle trajectory angle.
- Pressure range: 1.38 - 5.52 Bar
- Nozzle range: 9/64" (3,57mm) - 7/32" (5,6mm)
- Body, arm and bearing assembly made of brass.
- Fulcrum pin and springs made of stainless steel.
- Color-coded anti abrasive acetal resin nozzles carved in millimetres and inches for a better identification (brass nozzles to be optionally assembled).
- Backturn lock between the sprinkler body and the bearing spring.



F30

F30F

	Pressure (bar)	Nozzles	Vanes
HIGH	4.14	3PRN 6 3FCN	30 V
MEDIUM	2.76	3PRN 6 3FCN	WITHOUT VANE
LOW	2.07	3PRN	30RV
VERY LOW	1.38	3PRN	30BV

F30	PRESSURE (Bar)	NOZZLES 9/64" + 3/32"		NOZZLES 5/32" + 3/32"		NOZZLES 11/64" + 3/32"		NOZZLES 3/16" + 3/32"		NOZZLES 3/16" + 1/8"		NOZZLES 13/64" + 1/8"		NOZZLES 7/32" + 1/8"	
		L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)
TWO NOZZLES	1.38			979	12.0	1126	12.2	1285	12.4	1511	12.4	1697	12.5	1892	12.6
	1.72	949	12.2	1097	12.5	1261	12.6	1433	13.0	1681	13.0	1885	13.1	2101	13.4
	2.07	1040	12.3	1199	13.0	1379	13.4	1574	13.9	1851	13.9	2078	14.3	2317	14.6
	2.41	1124	12.5	1297	13.3	1492	13.7	1706	14.3	2005	14.3	2255	14.8	2521	15.2
	2.76	1201	12.6	1388	13.4	1597	14.0	1824	14.6	2149	14.6	2419	15.1	2703	15.5
	3.10	1274	12.8	1472	13.6	1694	14.3	1937	14.9	2283	14.9	2566	15.4	2873	15.8
	3.45	1342	13.0	1549	13.7	1787	14.5	2044	15.2	2407	15.2	2703	15.7	3032	16.2
	3.79	1408	13.1	1624	13.9	1874	14.6	2146	15.4	2521	15.4	2839	15.8	3180	16.3
	4.14	1472	13.3	1697	14.0	1953	14.8	2239	15.5	2635	15.5	2953	16.0	3293	16.5
	4.48	1533	13.4	1767	14.2	2028	14.9	2333	15.7	2748	15.7	3066	16.2	3407	16.6
	4.83	1590	13.6	1835	14.3	2101	15.1	2421	15.8	2839	15.8	3180	16.3	3509	16.8
	5.17	1647	13.7	1901	14.5	2171	15.2	2503	16.0	2930	16.0	3271	16.5	3611	16.9
	5.52	1701	13.9	1965	14.6	2242	15.4	2580	16.2	3009	16.2	3361	16.6	3702	17.1

F30P	PRESSURE (Bar)	NOZZLES 9/64"		NOZZLES 5/32"		NOZZLES 11/64"		NOZZLES 3/16"		NOZZLES 13/64"		NOZZLES 7/32"	
		L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)
ONE NOZZLE AND PLUG	1.38	584		714	12.0	861	12.2	1020	12.4	1205	12.5	1400	12.6
	1.72	654	12.2	799	12.5	963	12.6	1136	13.0	1340	13.1	1556	13.4
	2.07	715	12.3	874	13.0	1054	13.4	1249	13.9	1476	14.3	1715	14.6
	2.41	772	12.5	945	13.3	1140	13.7	1354	14.3	1601	14.8	1862	15.2
	2.76	827	12.6	1011	13.4	1220	14.0	1449	14.6	1715	15.1	1999	15.5
	3.10	877	12.8	1072	13.6	1295	14.3	1540	14.9	1817	15.4	2124	15.8
	3.45	924	13.0	1131	13.7	1365	14.5	1626	15.2	1919	15.7	2248	16.2
	3.79	970	13.1	1186	13.9	1431	14.6	1708	15.4	2010	15.8	2362	16.3
	4.14	1013	13.3	1238	14.0	1492	14.8	1783	15.5	2101	16.0	2442	16.5
	4.48	1056	13.4	1290	14.2	1551	14.9	1858	15.7	2180	16.2	2521	16.6
	4.83	1097	13.6	1340	14.3	1610	15.1	1931	15.8	2260	16.3	2589	16.8
	5.17	1136	13.7	1388	14.5	1667	15.2	1999	16.0	2328	16.5	2657	16.9
	5.52	1174	13.9	1431	14.6	1722	15.4	2065	16.2	2385	16.6	2725	17.1

F30V	PRESSURE (Bar)	NOZZLES 9/64" + 3/32"		NOZZLES 5/32" + 3/32"		NOZZLES 11/64" + 3/32"		NOZZLES 3/16" + 3/32"		NOZZLES 3/16" + 1/8"		NOZZLES 13/64" + 1/8"		NOZZLES 7/32" + 1/8"	
		L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)
TWO NOZZLES AND VANE TO HIGH RANGE	2.41	1123	13.5	1298	14.1	1494	14.5	1706	15.1	2010	15.1	2263	15.7	2528	16.0
	2.76	1201	13.9	1388	14.3	1597	14.6	1824	15.4	2149	15.4	2419	16.0	2703	16.2
	3.10	1274	14.0	1472	14.6	1694	14.9	1937	15.8	2283	15.8	2566	16.2	2873	16.5
	3.45	1342	14.2	1549	14.9	1787	15.2	2044	16.2	2407	16.2	2703	16.3	3032	16.8
	3.79	1408	14.3	1624	15.3	1874	15.5	2146	16.5	2521	16.5	2839	16.5	3180	17.1
	4.14	1472	14.5	1697	15.4	1953	15.7	2239	16.6	2635	16.6	2953	16.8	3293	17.4
	4.48	1533	14.6	1767	15.5	2028	15.8	2333	16.8	2748	16.8	3066	17.1	3407	17.7
	4.83	1590	14.8	1835	15.7	2101	16.2	2421	16.9	2839	16.9	3180	17.4	3509	18.0
	5.17	1647	14.9	1901	15.8	2171	16.5	2503	17.1	2930	17.1	3271	17.7	3611	18.3
	5.52	1701	15.2	1965	16.0	2242	16.8	2580	17.2	3009	17.2	3361	18.0	3702	18.6

F30PV	PRESSURE (Bar)	NOZZLES 9/64"		NOZZLES 5/32"		NOZZLES 11/64"		NOZZLES 3/16"		NOZZLES 13/64"		NOZZLES 7/32"	
		L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)
ONE NOZZLE, PLUG AND VANE TO HIGH RANGE	2.41	774	13.5	946	14.1	1141	14.5	1355	15.1	1604	15.7	1870	16.0
	2.76	827	13.9	1011	14.3	1220	14.6	1449	15.4	1715	16.0	1999	16.2
	3.10	877	14.0	1072	14.6	1295	14.9	1540	15.8	1817	16.2	2124	16.5
	3.45	924	14.2	1131	14.9	1365	15.2	1626	16.2	1919	16.3	2248	16.8
	3.79	970	14.3	1186	15.3	1431	15.5	1708	16.5	2010	16.5	2362	17.1
	4.14	1013	14.5	1238	15.4	1492	15.7	1783	16.6	2101	16.8	2442	17.4
	4.48	1056	14.6	1290	15.5	1551	15.8	1858	16.8	2180	17.1	2521	17.7
	4.83	1097	14.8	1340	15.7	1610	16.2	1931	16.9	2260	17.4	2589	18.0
	5.17	1136	14.9	1388	15.8	1667	16.5	1999	17.1	2328	17.7	2657	18.3
	5.52	1174	15.2	1431	16.0	1722	16.8	2065	17.2	2385	18.0	2725	18.6

Data obtained under ideal test conditions. It can be affected by wind, bad hydraulic conditions or other adverse factors. Highest point of the jet above the nozzle: 2.8 m (using standard nozzle 5/32" and a pressure of 3.45 Bar) Throw radius jets achieved with the 0.9m lift. Shaded areas not recommended. (*) Standard Nozzle.

Due to the large number of possible combinations of nozzles, only the most common ones are represented. To find information relating to other combinations, please advise factory.

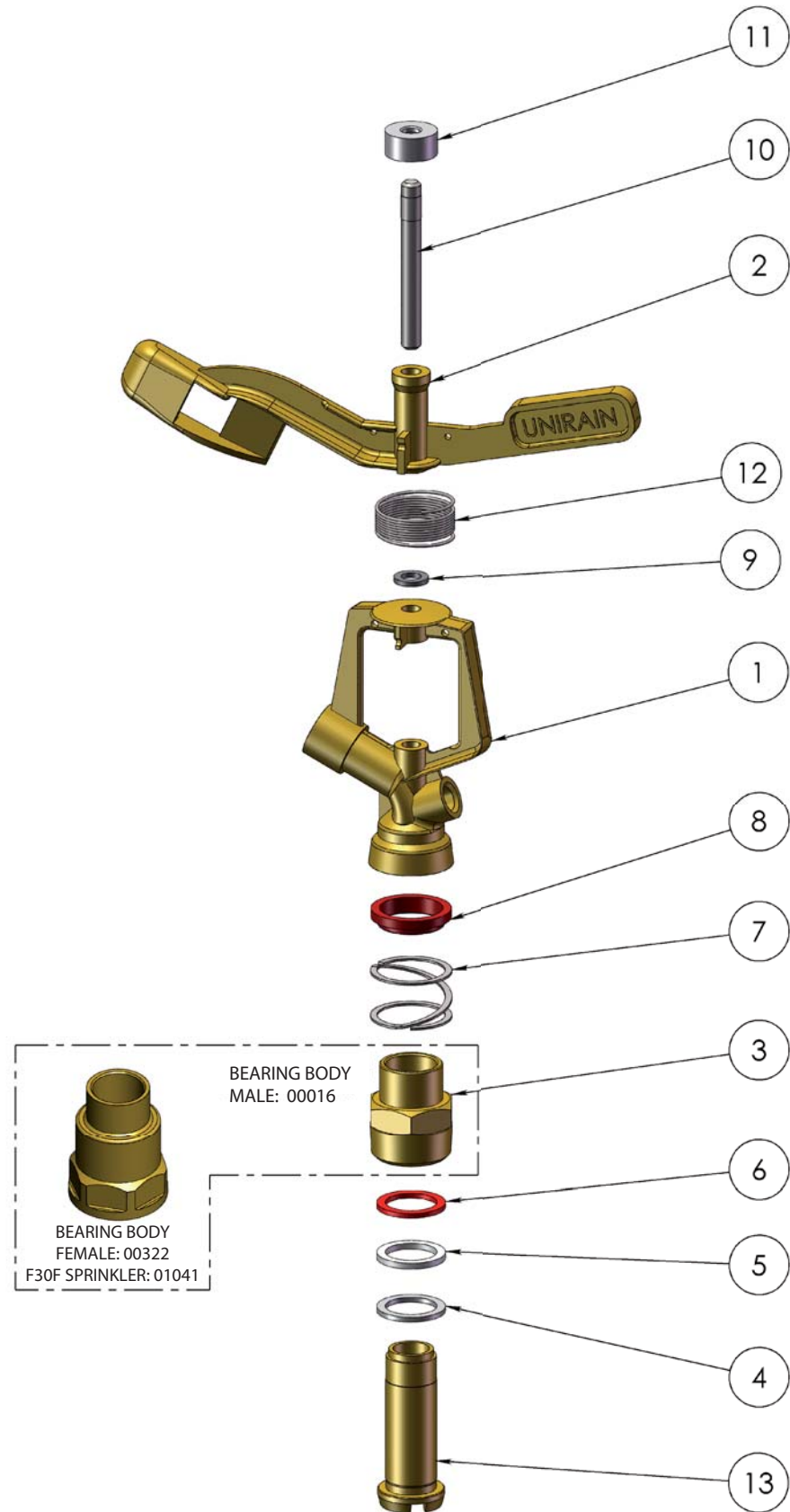
L/H: Liters Per Minute
R(m): Throw Radius (meter)

WARRANTY AND EXCLUSIONS

The manufacturer guarantees its products for direct customer against any defects in materials or manufacture for a period of two years from the original date of purchase, when the products have been used under normal operating conditions. The manufacturer assumes no responsibility for installation, removal or repairs carried out by unauthorised personnel. The manufacturer's liability under this warranty is limited to the replacement or repair of defective parts and the manufacturer does not accept responsibility for damages to crops or any other consequential damages deriving from defects in the products covered by this warranty.

THE PRESENT WARRANTY SUPERCEDES AND VOIDS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES OR ANY OTHER ATTRIBUTING LIABILITY TO THE MANUFACTURER.

No agent, employee or representative of the manufacturer is authorised to void, alter or add to the conditions contained in this warranty, nor to take responsibility for, nor to make guarantees not specified herein.



COMPONENT NUMBER	PART NUMBER	DESCRIPTION	MATERIAL	QUANTITY
1	00031	F30 Sprinkler Body	Brass	1
2	00029	F30 Sprinkler Arm	Brass	1
3	00016	F30 Bearing Body	Brass	1
4	07459	Bearing Lower Washer	NBR	1
5	06736	Bearing Intermediate Washer	High Density PE	1
6	00252	Bearing Upper Washer	Anti Hydrolysis PU	1
7	00018	Bearing Spring	Stainless Steel	1
8	00255	Bearing Body Lock	High Density PE	1
9	06162	Arm Support Washer	NBR	1
10	06163	Arm Shaft	Stainless Steel	1
11	06161	Arm Hat	Low/Medium Density PE	1
12	06183	3/4" Series Arm Spring	Stainless Steel	1
13	00017	F30 Bearing Shaft	Brass	1

Notes

Process/Manufacturer UNIRAIN	Size A3	Material --	Code 00150
	Scale 1:2	Name F30 Sprinkler	
PRIVATE AND CONFIDENTIAL THE INFORMATION CONTAINED ON THIS PLAN IS FOR UNIRAIN USE ONLY. FORBIDDEN CHANGE OR AMENDMENT OF VALUES OF THE PLAN WITHOUT A CONSENT IN WRITING.		15/05/09 E.G.B.	unirain IRRIGATION PRODUCTS

Unirain F40 - F40F

Full Circle Impact Sprinkler Low and Medium flow Brass



Application

Ideal for agricultural use, medium flows, and suitable for removable pipe systems. It can be assembled with one or two nozzles. Sturdy design confers resistance and a longer wear life. Suitable for farmers who look for a sturdy and durable product. Its angle water jet assures perfectly balanced performance of the sprinkler reducing evaporation losses and wind effect. It can be assembled with female base thread in order to avoid waste of material.

Advantages

- Made of brass, its arm and body share a wide impact area provides longer life.
- Its counterweighted arm provides a steady turn speed.
- It can be assembled with one or two nozzles.
- Three different vanes can be used to achieve the desired coverage and spray balance according to the available system pressure.

Technical specifications

- Full circle impact sprinkler
- 3/4" base thread male or female(F30F)
- Main and secondary nozzle
- 25° nozzle trajectory angle.
- Pressure range: 1,38 - 5.52 Bar
- Nozzle range: 9/64" (3,57mm)-7/32" (5,56mm)
- Body, arm and bearing assembly made of brass.
- Fulcrum pin and springs made of stainless steel.
- Color-coded anti abrasive acetal resin nozzles carved in millimetres and inches for a better identification (brass nozzles to be optionally assembled)
- Backturn lock between the sprinkler body and the bearing spring.



F40

F40F

	Pressure (bar)	Nozzles	Vanes
HIGH	4.14	3PRN 6 3FCN	30 V
MEDIUM	2.76	3PRN 6 3FCN	WITHOUT VANE
LOW	2.10	3PRN	30RV
VERY LOW	1.38	3PRN	30BV

F40	PRESSURE (Bar)	NOZZLES 5/32" + 3/32" L/H R(m)		NOZZLES 11/64" + 3/32" L/H R(m)		NOZZLES 3/16" + 3/32" L/H R(m)		NOZZLES 3/16" + 1/8" L/H (+) R(m)		NOZZLES 13/64" + 1/8" L/H R(m)		NOZZLES 7/32" + 1/8" L/H R(m)		NOZZLES 15/64" + 1/8" L/H R(m)		NOZZLES 1/4" + 1/8" L/H R(m)		NOZZLES 17/64" + 1/8" L/H R(m)		NOZZLES 9/32" + 1/8" L/H R(m)	
		TWO NOZZLES	1.38			1126	12.6	1285	12.8	1511	12.8	1697	12.9	1892	13.1	2072	13.2	2295	13.4	2539	13.5
	1.72	1097	13.0	1261	13.4	1433	13.7	1681	13.7	1885	13.9	2101	14.2	2317	14.3	2566	14.5	2839	14.6	3089	14.8
	2.07	1199	13.6	1379	14.0	1574	14.5	1851	14.5	2078	14.9	2317	15.2	2544	15.4	2816	15.5	3112	15.7	3384	15.8
	2.41	1297	14.0	1492	14.5	1706	14.9	2005	14.9	2255	15.4	2521	15.7	2748	16.0	3043	16.2	3361	16.3	3679	16.5
	2.76	1388	14.3	1597	14.8	1824	15.2	2149	15.2	2419	15.7	2703	16.2	2953	16.3	3271	16.6	3611	16.9	3952	17.1
	3.10	1472	14.5	1694	15.1	1937	15.5	2283	15.5	2566	16.0	2873	16.5	3134	16.8	3475	17.1	3816	17.4	4202	17.7
	3.45	1549	14.6	1787	15.2	2044	15.8	2407	15.8	2703	16.3	3032	16.8	3316	17.1	3657	17.4	4020	17.7	4429	18.1
	3.79	1624	14.8	1874	15.4	2146	16.2	2521	16.2	2839	16.6	3180	17.1	3475	17.4	3838	17.7	4224	18.0	4633	18.6
	4.14	1697	14.9	1953	15.5	2239	16.3	2635	16.3	2953	16.8	3293	17.2	3634	17.7	4020	18.0	4406	18.3	4838	18.9
	4.48	1767	15.1	2028	15.7	2333	16.5	2748	16.5	3066	16.9	3407	17.4	3770	17.8	4179	18.3	4565	18.6	5042	19.2
	4.83	1835	15.2	2101	15.8	2421	16.6	2839	16.6	3180	17.1	3509	17.5	3906	18.0	4315	18.4	4724	18.9	5201	19.5
	5.17	1901	15.4	2171	16.0	2503	16.8	2930	16.8	3271	17.2	3611	17.7	4020	18.1	4452	18.6	4883	19.1	5360	19.7
	5.52	1965	15.5	2242	16.2	2580	16.9	3009	16.9	3361	17.4	3702	17.8	4134	18.3	4588	18.7	5019	19.2	5519	19.8

F40P	PRESSURE (Bar)	NOZZLES 5/32" L/H R(m)		NOZZLES 11/64" L/H R(m)		NOZZLES 3/16" L/H R(m)		NOZZLES 13/64" L/H (+) R(m)		NOZZLES 7/32" L/H R(m)		NOZZLES 15/64" L/H R(m)		NOZZLES 1/4" L/H R(m)		NOZZLES 17/64" L/H R(m)		NOZZLES 9/32" L/H R(m)	
		ONE NOZZLE AND PLUG	1.38			861	12.6	1020	12.8	1205	12.9	1400	13.1	1585	13.2	1808	13.4	2031	13.5
	1.72	799	13.0	963	13.4	1136	13.7	1340	13.9	1556	14.2	1772	14.3	2021	14.5	2271	14.6	2544	14.8
	2.07	874	13.6	1054	14.0	1249	14.5	1476	14.9	1715	15.2	1953	15.4	2226	15.5	2498	15.7	2794	15.8
	2.41	945	14.0	1140	14.5	1354	14.9	1601	15.4	1862	15.7	2112	16.0	2407	16.2	2703	16.3	3021	16.5
	2.76	1011	14.3	1220	14.8	1449	15.2	1715	15.7	1999	16.2	2271	16.3	2589	16.6	2907	16.9	3248	17.1
	3.10	1072	14.5	1295	15.1	1540	15.5	1817	16.0	2124	16.5	2407	16.8	2748	17.1	3089	17.4	3452	17.7
	3.45	1131	14.6	1365	15.2	1626	15.8	1919	16.3	2248	16.8	2544	17.1	2907	17.4	3248	17.7	3634	18.1
	3.79	1186	14.8	1431	15.4	1708	16.2	2010	16.6	2362	17.1	2657	17.4	3043	17.7	3407	18.0	3816	18.6
	4.14	1238	14.9	1492	15.5	1783	16.3	2101	16.8	2442	17.2	2771	17.7	3157	18.0	3543	18.3	3975	18.9
	4.48	1290	15.1	1551	15.7	1858	16.5	2180	16.9	2521	17.4	2884	17.8	3293	18.3	3679	18.6	4111	19.2
	4.83	1340	15.2	1610	15.8	1931	16.6	2260	17.1	2589	17.5	2998	18.0	3407	18.4	3816	18.9	4247	19.5
	5.17	1388	15.4	1667	16.0	1999	16.8	2328	17.2	2657	17.7	3089	18.1	3520	18.6	3929	19.1	4361	19.7
	5.52	1431	15.5	1722	16.2	2065	16.9	2385	17.4	2725	17.8	3180	18.3	3634	18.7	4043	19.2	4474	19.8

F40V	PRESSURE (Bar)	NOZZLES 5/32" + 3/32" L/H R(m)		NOZZLES 11/64" + 3/32" L/H R(m)		NOZZLES 3/16" + 3/32" L/H R(m)		NOZZLES 3/16" + 1/8" L/H (+) R(m)		NOZZLES 13/64" + 1/8" L/H R(m)		NOZZLES 7/32" + 1/8" L/H R(m)		NOZZLES 15/64" + 1/8" L/H R(m)		NOZZLES 1/4" + 1/8" L/H R(m)		NOZZLES 17/64" + 1/8" L/H R(m)		NOZZLES 9/32" + 1/8" L/H R(m)	
		TWO NOZZLES AND VANE TO HIGH RANGE	2.41	1297	14.7	1492	15.0	1706	15.1	2005	15.1	2255	15.7	2521	15.9	2748	16.4	3043	16.7	3361	16.9
	2.76	1388	15.1	1597	15.7	1824	15.8	2149	15.8	2419	16.0	2703	16.9	2953	17.4	3271	17.8	3611	18.0	3952	18.3
	3.10	1472	15.2	1694	15.8	1937	16.2	2283	16.2	2566	16.2	2873	17.4	3134	17.8	3475	18.4	3816	18.6	4202	18.9
	3.45	1549	15.4	1787	16.0	2044	16.3	2407	16.3	2703	16.3	3032	17.8	3316	18.3	3657	18.9	4020	19.2	4429	19.5
	3.79	1624	15.5	1874	16.2	2146	16.5	2521	16.5	2839	16.5	3180	18.1	3475	18.6	3838	19.2	4224	19.7	4633	20.1
	4.14	1697	15.7	1953	16.3	2239	16.6	2635	16.6	2953	16.8	3293	18.4	3634	18.9	4020	19.5	4406	20.1	4838	20.7
	4.48	1767	15.8	2028	16.5	2333	16.8	2748	16.8	3066	17.1	3407	18.6	3770	19.2	4179	19.8	4565	20.6	5042	21.2
	4.83	1835	16.0	2101	16.6	2421	16.9	2839	16.9	3180	17.4	3509	18.7	3906	19.5	4315	20.1	4724	20.9	5201	21.6
	5.17	1901	16.2	2171	16.8	2503	17.1	2930	17.1	3271	17.7	3611	18.9	4020	19.7	4452	20.4	4883	21.2	5360	21.9
	5.52	1965	16.3	2242	16.9	2580	17.2	3009	17.2	3361	18.0	3702	19.1	4134	19.8	4588	20.7	5019	21.5	5519	22.3

F40PV	PRESSURE (Bar)	NOZZLES 5/32" L/H R(m)		NOZZLES 11/64" L/H R(m)		NOZZLES 3/16" L/H R(m)		NOZZLES 13/64" L/H (+) R(m)		NOZZLES 7/32" L/H R(m)		NOZZLES 15/64" L/H R(m)		NOZZLES 1/4" L/H R(m)		NOZZLES 17/64" L/H R(m)		NOZZLES 9/32" L/H R(m)	
		ONE NOZZLE, PLUG AND VANE TO HIGH RANGE	2.41	945	14.7	1140	15.0	1354	15.1	1601	15.4	1862	15.9	2112	16.4	2407	16.7	2703	16.9
	2.76	1011	15.2	1220	15.7	1449	16.0	1715	16.6	1999	17.1	2271	17.5	2589	18.1	2907	18.3	3248	18.6
	3.10	1072	15.4	1295	16.0	1540	16.3	1817	16.9	2124	17.7	2407	18.1	2748	18.7	3089	18.9	3452	19.2
	3.45	1131	15.5	1365	16.2	1626	16.6	1919	17.2	2248	18.1	2544	18.6	2907	19.2	3248	19.5	3634	19.8
	3.79	1186	15.7	1431	16.3	1708	16.8	2010	17.5	2362	18.4	2657	18.9	3043	19.5	3407	20.0	3816	20.4
	4.14	1238	15.8	1492	16.5	1783	16.9	2101	17.7	2442	18.7	2771	19.2	3157	19.8	3543	20.4	3975	21.0
	4.48	1290	16.0	1551	16.6	1858	17.1	2180	17.8	2521	18.9	2884	19.5	3293	20.1	3679	20.9	4111	21.5
	4.83	1340	16.2	1610	16.8	1931	17.2	2260	18.0	2589	19.1	2998	19.8	3407	20.4	3816	21.2	4247	21.9
	5.17	1388	16.3	1667	16.9	1999	17.4	2328	18.1	2657	19.2	3089	20.0	3520	20.7	3929	21.5	4361	22.3
	5.52	1431	16.5	1722	17.1	2065	17.5	2385	18.3	2725	19.4	3180	20.1	3634	21.0	4043	21.8	4474	22.6

Data obtained under ideal test conditions. It can be affected by wind, bad hydraulic conditions or other adverse factors. Highest point of the jet above the nozzle: 3 m (using standard nozzle 3/16" and a pressure of 3.45 Bar) Throw radius jets achieved with the 0.9 m lift. Shaded areas not recommended. (*) Standard Nozzle.

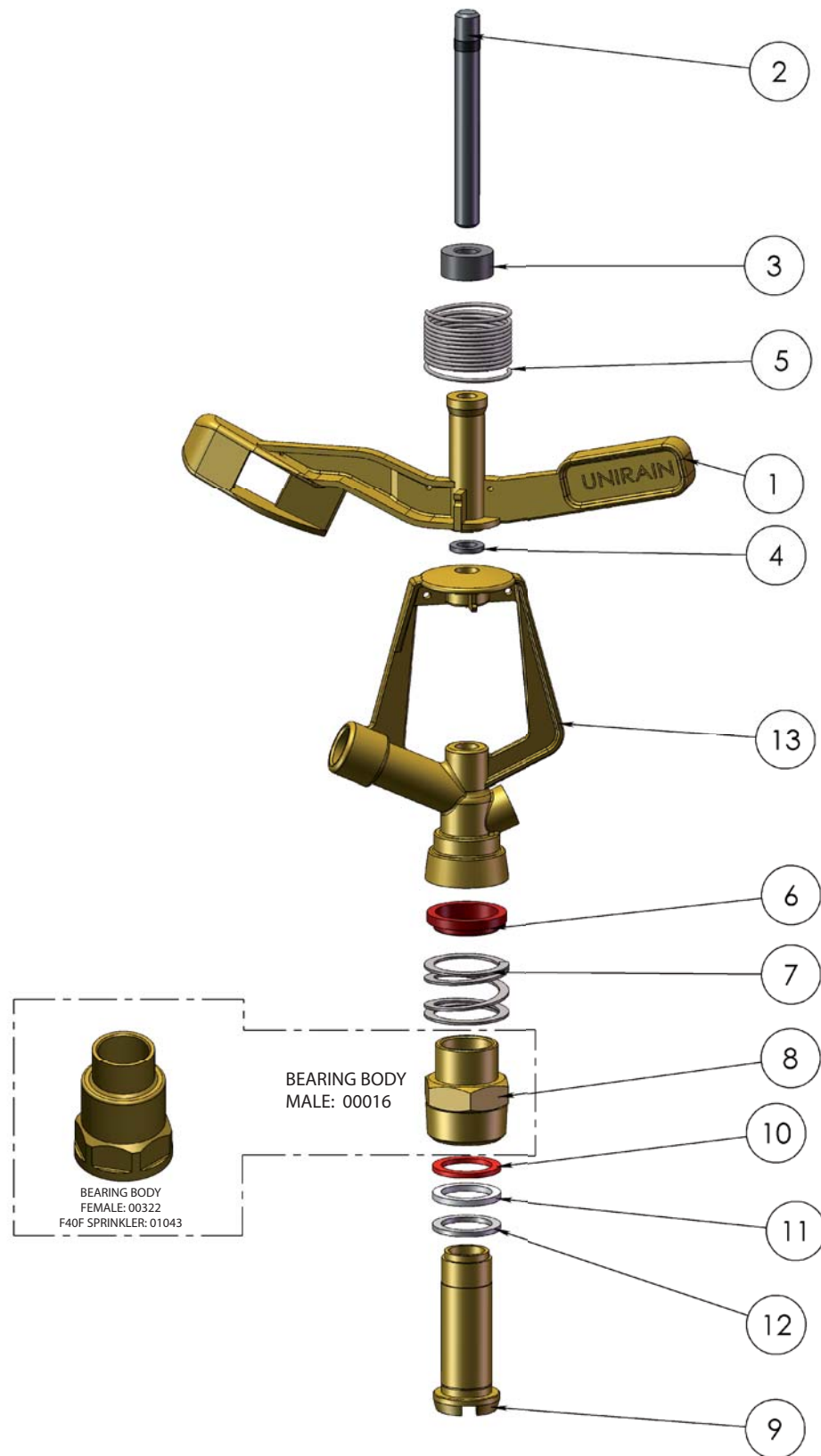
Due to the large number of possible combinations of nozzles, only the most common ones are represented. To find information relating to other combinations, please advise factory.

L/H: Liters Per Minute
R(m): Throw Radius (meter)

WARRANTY AND EXCLUSIONS

The manufacturer guarantees its products for direct customer against any defects in materials or manufacture for a period of two years from the original date of purchase, when the products have been used under normal operating conditions. The manufacturer assumes no responsibility for installation, removal or repairs carried out by unauthorised personnel. The manufacturer's liability under this warranty is limited to the replacement or repair of defective parts and the manufacturer does not accept responsibility for damages to crops or any other consequential damages deriving from defects in the products covered by this warranty.

THE PRESENT WARRANTY SUPERCEDES AND VOIDS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES OR ANY OTHER ATTRIBUTING LIABILITY



COMPONENT NUMBER	PART NUMBER	DESCRIPTION	MATERIAL	QUANTITY
1	00036	F40 Sprinkler Arm	Brass	1
2	06496	Arm Shaft	Stainless Steel	1
3	06494	Arm Hat	PE	1
4	06162	Arm Support Washer	NBR	1
5	06493	F40 Arm Spring	Stainless Steel.	1
6	00255	Bearing Body Lock	High Density PE	1
7	06151	Bearing Spring	Stainless Steel.	1
8	00016	F40 Bearing Body	Brass	1
9	00017	F40 Bearing Shaft	Brass	1
10	00252	Bearing Upper Washer	Anti Hydrolysis PU	1
11	06736	Bearing Intermediate Washer	High Density PE	1
12	07459	Bearing Lower Washer	NBR	1
13	00034	F40 Sprinkler Body	Brass	1

Notes

Process/Manufacturer Unirain	Size A3	Material	Code 00151
ASSEMBLY	Scale 1:2	Name F40 Sprinkler	
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Unirain P35

Part Circle Impact Sprinkler

Low and Medium Flow Brass



Application

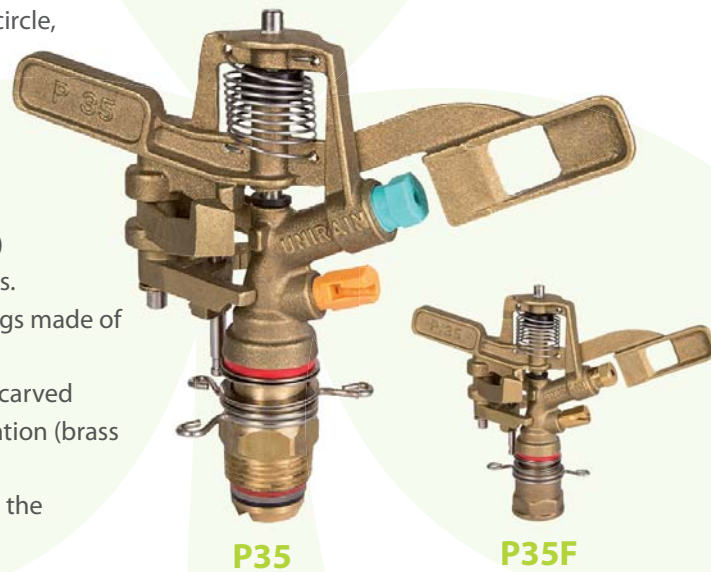
For agricultural use with medium flows, it has a sand-proof bearing system and can be assembled with one or two nozzles. High resistance with a compact design, its reversing system allows it to be changed in seconds into a full circle sprinkler. Suitable for areas bordering or near elements that should not get wet.

Advantages

- Made of brass, its arm and body share a wide impact area that provides longer life.
- Its counterweighted arm will provide a steady turn speed.
- Its exclusive reversing system is also sand-proof and can be easily disassembled for cleaning or maintenance when needed.
- It can be assembled with one or two nozzles.
- Three different vanes can be used to achieve the desired coverage and spray balance according to the available system pressure.

Technical specifications

- Double use impact sprinkler: 30° to 300° part circle, or full circle.
- 3/4" base thread male.
- Main and secondary nozzle
- 25° nozzle trajectory angle.
- Pressure range: 1.38 - 5.52 Bar
- Nozzle range: 9/64" (3,57mm) - 7/32" (5,56mm)
- Body, arm and bearing assembly made of brass.
- Fulcrum pin and cams, reversing pin and springs made of stainless steel.
- Color-coded anti abrasive acetal resin nozzles carved in millimetres and inches for a better identification (brass nozzles to be optionally assembled).
- Backturn lock between the sprinkler body and the bearing spring.



	Pressure (bar)	Nozzles	Vanes
HIGH	4.14	3PRN 6 3FCN	30 V
MEDIUM	2.76	3PRN 6 3FCN	WITHOUT VANE
LOW	2.10	3PRN	30RV
VERY LOW	1.38	3PRN	30BV



P35	PRESSURE (Bar)	NOZZLES 9/64" + 3/32"		NOZZLES 5/32" + 3/32"		NOZZLES 11/64" + 3/32"		NOZZLES 3/16" + 3/32"		NOZZLES 3/16" + 1/8"		NOZZLES 13/64" + 1/8"		NOZZLES 7/32" + 1/8"	
		L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)
TWO NOZZLES	1.38					1126	12.2	1285	12.4	1511	12.4	1697	12.5	1892	12.6
	1.72			1097	12.5	1261	12.6	1433	13.0	1681	13.0	1885	13.1	2101	13.4
	2.07			1199	13.0	1379	13.4	1574	13.9	1851	13.9	2078	14.3	2317	14.6
	2.41	1124	12.5	1297	13.3	1492	13.7	1706	14.3	2005	14.3	2255	14.8	2521	15.2
	2.76	1201	12.6	1388	13.4	1597	14.0	1824	14.6	2149	14.6	2419	15.1	2703	15.5
	3.10	1274	12.8	1472	13.6	1694	14.3	1937	14.9	2283	14.9	2566	15.4	2873	15.8
	3.45	1342	13.0	1549	13.7	1787	14.5	2044	15.2	2407	15.2	2703	15.7	3032	16.2
	3.79	1408	13.1	1624	13.9	1874	14.6	2146	15.4	2521	15.4	2839	15.8	3180	16.3
	4.14	1472	13.3	1697	14.0	1953	14.8	2239	15.5	2635	15.5	2953	16.0	3293	16.5
	4.48	1533	13.4	1767	14.2	2028	14.9	2333	15.7	2748	15.7	3066	16.2	3407	16.6
	4.83	1590	13.6	1835	14.3	2101	15.1	2421	15.8	2839	15.8	3180	16.3	3509	16.8
	5.17	1647	13.7	1901	14.5	2171	15.2	2503	16.0	2930	16.0	3271	16.5	3611	16.9
	5.52	1701	13.9	1965	14.6	2242	15.4	2580	16.2	3009	16.2	3361	16.6	3702	17.1

P35P	PRESSURE (Bar)	NOZZLES 9/64"		NOZZLES 5/32"		NOZZLES 11/64"		NOZZLES 3/16"		NOZZLES 13/64"		NOZZLES 7/32"	
		L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)
ONE NOZZLE AND PLUG	1.38					861	12.2	1020	12.4	1205	12.5	1400	12.6
	1.72			799	12.5	963	12.6	1136	13.0	1340	13.1	1556	13.4
	2.07			874	13.0	1054	13.4	1249	13.9	1476	14.3	1715	14.6
	2.41	772	12.5	945	13.3	1140	13.7	1354	14.3	1601	14.8	1862	15.2
	2.76	827	12.6	1011	13.4	1220	14.0	1449	14.6	1715	15.1	1999	15.5
	3.10	877	12.8	1072	13.6	1295	14.3	1540	14.9	1817	15.4	2124	15.8
	3.45	924	13.0	1131	13.7	1365	14.5	1626	15.2	1919	15.7	2248	16.2
	3.79	970	13.1	1186	13.9	1431	14.6	1708	15.4	2010	15.8	2362	16.3
	4.14	1013	13.3	1238	14.0	1492	14.8	1783	15.5	2101	16.0	2442	16.5
	4.48	1056	13.4	1290	14.2	1551	14.9	1858	15.7	2180	16.2	2521	16.6
	4.83	1097	13.6	1340	14.3	1610	15.1	1931	15.8	2260	16.3	2589	16.8
	5.17	1136	13.7	1388	14.5	1667	15.2	1999	16.0	2328	16.5	2657	16.9
	5.52	1174	13.9	1431	14.6	1722	15.4	2065	16.2	2385	16.6	2725	17.1

P35V	PRESSURE (Bar)	NOZZLES 9/64" + 3/32"		NOZZLES 5/32" + 3/32"		NOZZLES 11/64" + 3/32"		NOZZLES 3/16" + 3/32"		NOZZLES 3/16" + 1/8"		NOZZLES 13/64" + 1/8"		NOZZLES 7/32" + 1/8"	
		L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)
TWO NOZZLES AND VANE TO HIGH RANGE	2.41	1124	13.5	1298	14.1	1494	14.5	1706	15.1	2010	15.1	2263	15.7	2528	16.0
	2.76	1201	13.9	1388	14.3	1597	14.6	1824	15.4	2149	15.4	2419	16.0	2703	16.2
	3.10	1274	14.0	1472	14.6	1694	14.9	1937	15.8	2283	15.8	2566	16.2	2873	16.5
	3.45	1342	14.2	1549	14.9	1787	15.2	2044	16.2	2407	16.2	2703	16.3	3032	16.8
	3.79	1408	14.3	1624	15.3	1874	15.5	2146	16.5	2521	16.5	2839	16.5	3180	17.1
	4.14	1472	14.5	1697	15.4	1953	15.7	2239	16.6	2635	16.6	2953	16.8	3293	17.4
	4.48	1533	14.6	1767	15.5	2028	15.8	2333	16.8	2748	16.8	3066	17.1	3407	17.7
	4.83	1590	14.8	1835	15.7	2101	16.2	2421	16.9	2839	16.9	3180	17.4	3509	18.0
	5.17	1647	14.9	1901	15.8	2171	16.5	2503	17.1	2930	17.1	3271	17.7	3611	18.3
	5.52	1701	15.2	1965	16.0	2242	16.8	2580	17.2	3009	17.2	3361	18.0	3702	18.6

P35PV	PRESSURE (Bar)	NOZZLES 9/64"		NOZZLES 5/32"		NOZZLES 11/64"		NOZZLES 3/16"		NOZZLES 13/64"		NOZZLES 7/32"	
		L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)	L/H	R(m)
ONE NOZZLE, PLUG AND VANE TO HIGH RANGE	2.41	772	13.5	945	14.1	1140	14.5	1354	15.1	1601	15.7	1862	16.0
	2.76	827	13.9	1011	14.3	1220	14.6	1449	15.4	1715	16.0	1999	16.2
	3.10	877	14.0	1072	14.6	1295	14.9	1540	15.8	1817	16.2	2124	16.5
	3.45	924	14.2	1131	14.9	1365	15.2	1626	16.2	1919	16.3	2248	16.8
	3.79	970	14.3	1186	15.3	1431	15.5	1708	16.5	2010	16.5	2362	17.1
	4.14	1013	14.5	1238	15.4	1492	15.7	1783	16.6	2101	16.8	2442	17.4
	4.48	1056	14.6	1290	15.5	1551	15.8	1858	16.8	2180	17.1	2521	17.7
	4.83	1097	14.8	1340	15.7	1610	16.2	1931	16.9	2260	17.4	2589	18.0
	5.17	1136	14.9	1388	15.8	1667	16.5	1999	17.1	2328	17.7	2657	18.3
	5.52	1174	15.2	1431	16.0	1722	16.8	2065	17.2	2385	18.0	2725	18.6

Data obtained under ideal test conditions. It can be affected by wind, bad hydraulic conditions or other adverse factors.
 Highest point of the jet above the nozzle: 2.8 m (using standard nozzle 5 / 32 "to 3.45 Bar)
 Throw radius jets achieved with the 0.9m lift. Shaded areas not recommended.
 (*) Standard Nozzle.

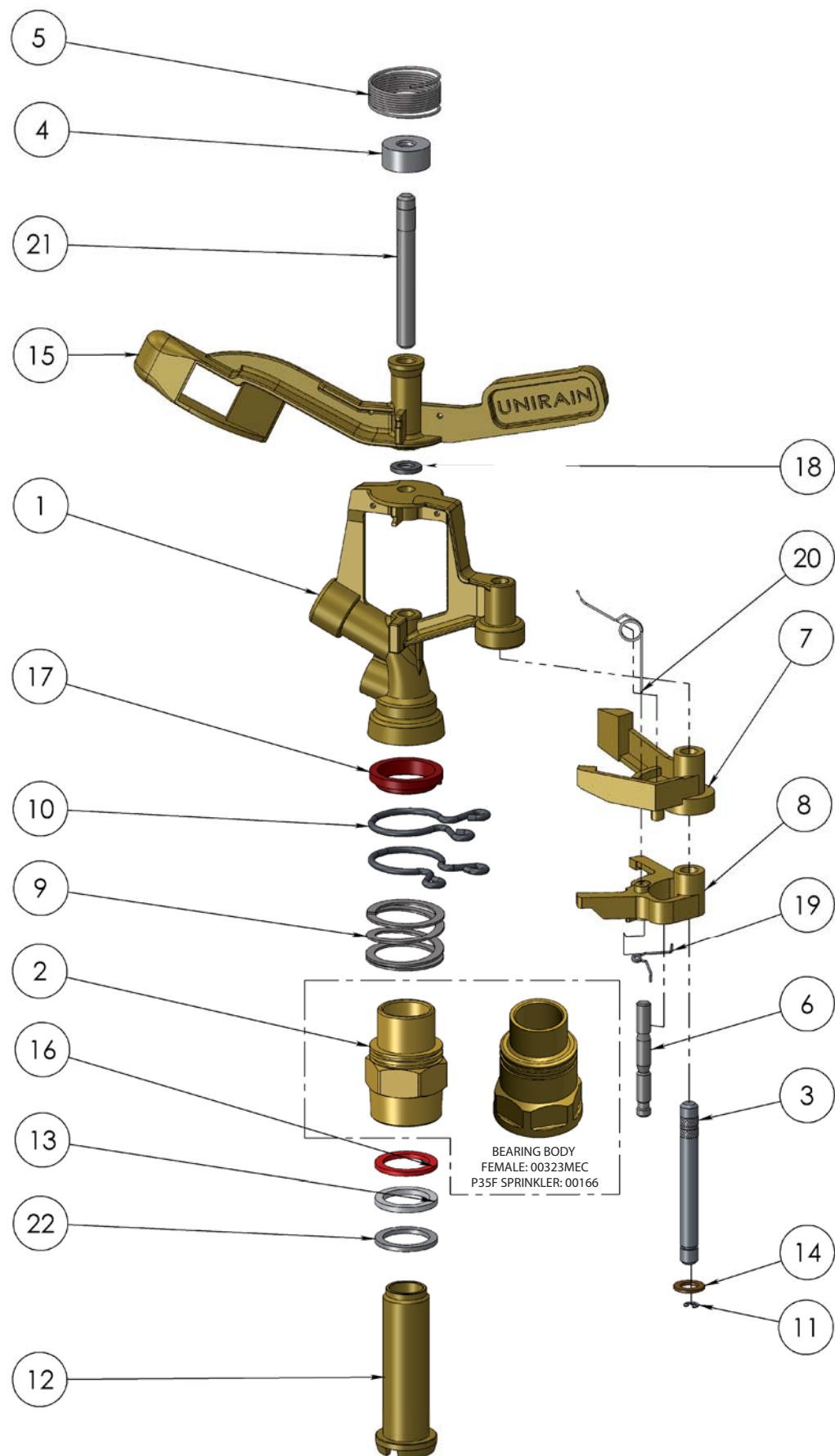
L/H: Liters Per Minute
 R(m): Throw Radius (meter)

WARRANTY AND EXCLUSIONS

The manufacturer guarantees its products for direct customer against any defects in materials or manufacture for a period of two years from the original date of purchase, when the products have been used under normal operating conditions. The manufacturer assumes no responsibility for installation, removal or repairs carried out by unauthorised personnel. The manufacturer's liability under this warranty is limited to the replacement or repair of defective parts and the manufacturer does not accept responsibility for damages to crops or any other consequential damages deriving from defects in the products covered by this warranty.

THE PRESENT WARRANTY SUPERCEDES AND VOIDS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES OR ANY OTHER ATTRIBUTING LIABILITY TO THE MANUFACTURER.

No agent, employee or representative of the manufacturer is authorised to void, alter or add to the conditions contained in this warranty, nor to take responsibility for, nor to make guarantees not specified herein.



COMPONENT NUMBER	PART NUMBER	DESCRIPTION	MATERIAL	QUANTITY
1	00813	P35 Sprinkler Body	Brass	1
2	06150	F35 Bearing Body	Brass	1
3	00817	Cams Shaft	Stainless Steel	1
4	06161	Arm Hat	PE	1
5	06183	3/4" Series Arm Spring	Stainless Steel	1
6	00816	P35 Inverter Shaft	Stainless Steel	1
7	00819	P35 Upper Cam	Brass	1
8	00821	P35 Lower Cam	Brass	1
9	06151	Bearing Spring	Stainless Steel	1
10	00815	Inverter Limit Spring	Stainless Steel	2
11	00824	Seal Clip	Stainless Steel	1
12	06147	Bearing Shaft	Brass	1
13	06736	Bearing Intermediate Washer	High Density PE	1
14	00822	Cams Washer	Brass	1
15	00811	P35 Sprinkler Arm	Brass	1
16	00252	Bearing Upper Washer	Anti Hydrolysis PU	1
17	00255	Bearing Body Lock	High Density PE	1
18	06162	Arm Support Washer	NBR	1
19	00823	Inverter Shaft Spring	Stainless Steel	1
20	01687	Inverter Spring	Stainless Steel	1
21	06163	Arm Shaft	Stainless Steel	1
22	07459	Bearing Lower Washer	NBR	1

Process/Manufacturer UNIRAIN	Size A3	Material	Code 00165
	Scale 1:2	Name P35 Sprinkler	
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	E.G.B.		

Unirain F26 - F26W

Full Circle Impact Sprinkler Low and Medium flow Plastic



Application

Full circle impact sprinkler. Output water jet : 23°. Very suitable for low (F26W) and medium flow (F26), for low growing corps, minimize evaporation losses and wind effect. The F26 model is also recommended for frost-proof irrigation thanks to its configuration and quality of materials. The F26W model is not recommended for frost-proof irrigation.

Sturdy in design, it features significant improvements, notably its durability and its protected bearing sleeve thread, eliminating the possibility of breakage after impact.

Its bearing sleeve thread is protected against breakage after impacts.

The protection of springs reduces the negative effects of ice.

Advantages

- Sturdy design. Protection cap for shock, dirt and ice.
- Due to an innovative system, the crown that holds the arm spring allows tension variation to adjust the sprinkler to extreme pressure or flow conditions.
- Bearing spring protector guided by the bearing to grant a correct sliding of the sprinkler body on the protector itself.
- Thanks to their bayonet coupling system, it is easy to change and clean the 3Q nozzles.
- Three different vanes can be used to achieve the desired coverage and pulverisation balance according to the available system pressure.

Technical specifications

- Full circle impact sprinkler.
- Frost protection irrigation (F26W not recommended).
- 1/2" Male base threaded.
- 23° Nozzle trajectory angle.
- Pressure range: 1.03 - 4.14 Bar.
- Nozzle range: 5/64" (2,98mm)-9/64" (3,57mm).
- High-resistance thermoplastics protected against UV radiation, and stainless steel.
- Color-coded anti abrasive acetal resin nozzles carved in millimetres and inches for a better identification.
- F26W (low pressure model)



Typical curves of range and distribution of water depending of the model of vane used



Units Conversion	
FLOW	PRESSURE
m ³ / h (metro cúbico por hora)	mca (metro de columna de agua)
l / h (litro por hora)	PSI (Pounds per Square Inch)
GPM (Gallons per Minute)	kg / cm ² (Kilogramo por centimetro cuadrado)
CFM (Cubic Feet per Minute)	
1 CFM = 1.699 m ³ / h	1 PSI = 0.70307 mca
1 GPM = 227.1192 l / h	1 kg / cm ² = 14,22 PSI

F26	PRESSURE (Bar)	NOZZLE 7/64"					NOZZLE 1/8"					NOZZLE 9/64"				
		Throw radius depending on vane (m)					Throw radius depending on vane (m)					Throw radius depending on vane (m)				
		L/H	30V	sin	30RV	30BV	L/H	30V	sin	30RV	30BV	L/H	30V	sin	30RV	30BV
ONE NOZZLE AND VANE TO HIGH RANGE	1.03	307	10.3	9.4	9.1	8.6	398	10.5	9.4	9.2	8.5	498	10.6	9.5	9.2	8.3
	1.38	354	11.2	10.0	9.8	9.1	460	11.5	10.0	9.8	9.0	576	11.6	10.1	9.9	8.7
	1.72	397	11.8	10.5	10.3	9.5	515	12.2	10.5	10.3	9.3	644	12.4	10.5	10.4	9.1
	2.07	435	12.2	10.8	10.7	9.8	565	12.7	10.9	10.7	9.6	706	13.0	10.9	10.7	9.4
	2.41	471	12.5	11.1	10.9	10.0	610	13.0	11.1	10.9	9.8	763	13.4	11.2	11.0	9.6
	2.76	504	12.8	11.3	11.2	10.2	653	13.4	11.4	11.2	10.0	816	13.8	11.5	11.3	9.8
	3.10	534	13.0	11.4	11.3	10.3	693	13.6	11.5	11.3	10.1	866	14.1	11.7	11.4	9.9
	3.45	564	13.2	11.5	11.4	10.4	731	13.8	11.7	11.5	10.2	913	14.4	11.9	11.6	10.0
	3.79	591	13.3	11.7	11.6	10.5	767	14.0	11.8	11.6	10.3	958				
	4.14	618	13.5	11.8	11.7	10.6	801	14.2	12.0	11.8	10.4	1001				

F26W	PRESSURE (Bar)	NOZZLE 5/64"					NOZZLE 3/32"				
		Throw radius depending on vane (m)					Throw radius depending on vane (m)				
		L/H	30V	sin	30RV	30BV	L/H	30V	sin	30RV	30BV
ONE NOZZLE AND VANE TO HIGH RANGE	1.03	153					227	10.1	9.4	9.0	8.6
	1.38	177	10.8	10.0	9.7	9.4	262	11.0	10.0	9.7	9.3
	1.72	199	11.3	10.4	10.1	9.8	293	11.6	10.5	10.2	9.8
	2.07	218	11.7	10.7	10.5	10.0	321	12.0	10.8	10.6	10.0
	2.41	237	11.9	10.9	10.7	10.2	347	12.3	11.0	10.9	10.2
	2.76	253	12.1	11.1	10.9	10.4	371	12.5	11.2	11.1	10.4
	3.10	269	12.3	11.2	11.0	10.5	394	12.6	11.3	11.2	10.5
	3.45	284					415	12.7	11.4	11.3	10.6
	3.79	298					435	12.8	11.5	11.5	10.7
	4.14	312					455				

Shaded areas not recommended to obtain a right distribution.

Throw distance obtained with sprinkler on a 0.9m lift.

Tested under ideal conditions. Results can be affected by wind, bad hydraulic conditions or any other adverse factors.

Three different kinds of vanes can be used to achieve the desired throw radius and pulverisation balance depending on the available system pressure. This Unirain exclusive system provides high uniformity.

- Vane 30V (white) It increases the sprinkler coverage radius to its maximum. To obtain a good grade of pulverisation, the system pressure must be high (from 4.14 Bar).
- Without vane Using the nozzle without any vane, the throw radius will be slightly reduced compared to the previous option, but it will improve the water distribution. Recommended for medium system pressures (2.76 Bar).
- Vane 30RV (Red) Its inner structure creates a slight rotation inside the nozzle, obtaining a good pulverisation grade, but reducing the throw distance. To be used under low pressure conditions (2.07 Bar).
- Vane 30BV (Blue) This combination will achieve the highest pulverisation grade, but will also provide the minimum coverage radius. It's used under extreme low pressures (1.38 Bar).

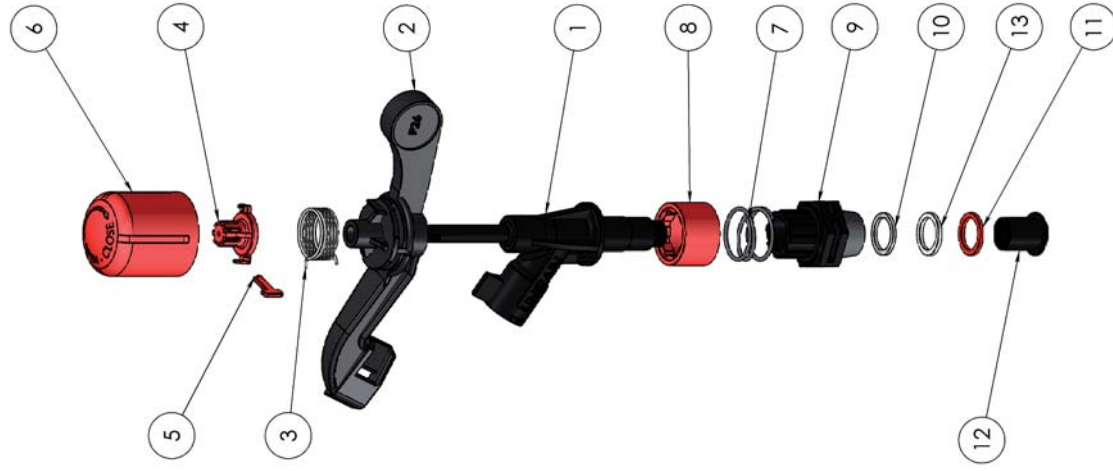
WARRANTY AND EXCLUSIONS


The manufacturer guarantees its products for direct customer against any defects in materials or manufacture for a period of two years from the original date of purchase, only when the products have been used under normal operating conditions. The manufacturer assumes no responsibility for installation, removal or repairs carried out by unauthorised personnel. The manufacturer's liability under this warranty is limited to the replacement or repair of defective parts and the manufacturer does not accept responsibility for damages to crops or any other consequential damages deriving from defects in the products covered by this warranty.

THE PRESENT WARRANTY SUPERCEDES AND VOIDS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES OR ANY OTHER ATTRIBUTING LIABILITY TO THE MANUFACTURER.

No agent, employee or representative of the manufacturer is authorised to void, alter or add to the conditions contained in this warranty, nor to take responsibility for, nor to make guarantees not specified herein.


COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	03001	Sprinkler Body F26	POM	1
2	03003	Sprinkler Arm F26	POM	1
3	03007	Spring Arm F26	Stainless Steel	1
4	03019	Castellated turnbuckle F26	POM	1
5	03027	Arm Pin F26	POM	1
6	03005	Arm Cap F26	POM	1
7	03011	1/2" Series Bearing Spring	Stainless Steel	1
8	03010	1/2" Series Bearing Body Lock	High Density PE	1
9	03012	Bearing Body F26	POM	1
10	03014	1/2" PE Bearing Washer	High Density PE	1
11	03013	1/2" Red PU Bearing Washer	Anti Hydrolysis PU	1
12	03016	Bearing Nut F26	POM	1
13	03018	1/2" PTFE Bearing Washer	PTFE	1



Process/Manufacturer		Size	Material	Code
UNIRAIN		A3		03901
		Scale	Name	
		14/04/09	F26 Sprinkler	
		J.N.E.		
		 unirain <small>IREGISTRATION PRODUCTS</small>		

COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	03002	Sprinkler Arm F26W	POM	1
2	03001	Sprinkler BodyF26	POM	1
3	03005	Arm Cap F26	POM	1
4	03007	Spring Arm F26	Stainless Steel	1
5	03010	1/2" Series Bearing Body Lock	High Density PE	1
6	03011	1/2" Series Bearing Spring	Stainless Steel	1
7	03012	Bearing Body F26	POM	1
8	03016	F26 Bearing Nut F26	POM	1
9	03019	Castellated turnbuckle F26	POM	1
10	03024	Arm Triangle F26W	POM	1
11	03025	F26W Triangle clamp	POM	1
12	03027	Arm Pin F26	POM	1
13	03013	1/2" Red PU Bearing Washer	Anti Hydrolysis PU	1
14	03014	1/2" PE Bearing Washer	High Density PE	1
15	03015	1/2" NBR Bearing Washer	NBR	1



Process/Manufacturer		Size	Material	Code
UNIRAIN		A3		03900
		Scale	Name	
		25/06/09	F26W Sprinkler	
		M.R.M.		
		 unirain <small>IREGISTRATION PRODUCTS</small>		

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Unirain F2614 - F2614W

Full Circle Impact Sprinkler Low and Medium flow Plastic



Application

Suitable for low and medium flow irrigation under trees.

Its lower jet radius doesn't directly reach foliage, avoiding fruit deterioration. Indicated also for nurseries and greenhouses.

Sturdy in design, it features significant improvements, notably its durability and its protected bearing sleeve thread, eliminating the possibility of breakage after impact.

Highly recommended for banana plantations for its angle of incidence, anti-UV treatment for exposed parts, protection of delicate parts and accessories, in particular the feed-tube. available in three formats and suitable for rapid installation anywhere.

Advantages

- Sturdy design. Protective cap against impact and dirt.
- Due to an innovative system, the crown that holds the arm spring allows tension variation to adjust the sprinkler performance to extreme pressure or flow conditions.
- Compression spring protector guided by the bearing to ensure correct sliding between the protector and the sprinkler body.
- Thanks to their bayonet coupling system, the nozzles are easy to change and clean.
- Three different types of water guide vane can be used to achieve the desired coverage and spray balance according to the available pressure.

Technical specifications

- Full circle impact sprinkler
- 1/2" male thread.
- 14° Nozzle trajectory angle
- Pressure range: 1,03-4,14 Bar
- Nozzle range: 5/64" (1,98mm) - 9/64" (3,57mm)
- High-resistance thermoplastics protected against UV radiation, and stainless steel.
- Color-coded anti abrasive acetal resin nozzles carved in millimetres and inches for a better identification.
- F2614W (low pressure model)



Typical curves of range and distribution of water depending on the model of vane used



Units Conversion	
FLOW	PRESSURE
m ³ / h (metro cúbico por hora)	mca (metro de columna de agua)
l / h (litro por hora)	PSI (Pounds per Square Inch)
GPM (Gallons per Minute)	kg / cm ² (Kilogramo por centimetro cuadrado)
CFM (Cubic Feet per Minute)	
1 CFM = 1.699 m³ / h	1 PSI = 0.70307 mca
1 GPM = 227.1192 l / h	1 kg / cm² = 14,22 PSI

F2614	PRESSURE (Bar)	NOZZLE 7/64"					NOZZLE 1/8"					NOZZLE 9/64"				
		Throw radius depending on vane (m)					Throw radius depending on vane (m)					Throw radius depending on vane (m)				
		L/H	30V	sin	30RV	30BV	L/H	30V	sin	30RV	30BV	L/H	30V	sin	30RV	30BV
ONE NOZZLE AND VANE TO HIGH RANGE	1.03	307	8.7	8.0	7.7	7.3	398	8.9	8.0	7.8	7.2	498	10.6	9.5	9.2	8.3
	1.38	354	9.6	8.6	8.4	7.8	460	9.9	8.6	8.5	7.8	576	11.6	10.1	9.9	8.7
	1.72	397	10.3	9.2	9.0	8.3	515	10.7	9.2	9.0	8.1	644	12.4	10.5	10.4	9.1
	2.07	435	10.9	9.6	9.5	8.7	565	11.3	9.7	9.5	8.6	706	13.0	10.9	10.7	9.4
	2.41	471	11.3	10.0	9.9	9.0	610	11.8	10.0	9.9	8.9	763	13.4	11.2	11.0	9.6
	2.76	504	11.8	10.4	10.3	9.4	653	12.3	10.5	10.3	9.2	816	12.9	10.7	10.6	9.1
	3.10	534	12.1	10.6	10.5	9.6	693	12.7	10.7	10.5	9.4	866	13.2	10.9	10.7	9.2
	3.45	564	12.3	10.7	10.6	9.7	731	12.9	10.9	10.7	9.5	913	13.5	11.1	10.8	9.3
	3.79	591	12.5	11.0	10.9	9.9	767	13.2	11.0	11.0	9.7	958				
	4.14	618	12.8	11.2	11.1	10.1	801	13.5	11.4	11.2	9.9	1001				

F2614W	PRESSURE (Bar)	NOZZLE 5/64"					NOZZLE 3/32"				
		Throw radius depending on vane (m)					Throw radius depending on vane (m)				
		L/H	30V	sin	30RV	30BV	L/H	30V	sin	30RV	30BV
ONE NOZZLE AND VANE TO HIGH RANGE	1.03	153					227	8.6	8.0	7.6	7.3
	1.38	177	9.2	8.5	8.3	8.0	262	9.4	8.6	8.3	8.0
	1.72	199	9.8	9.0	8.8	8.5	293	10.1	9.2	8.9	8.6
	2.07	218	10.3	9.5	9.3	8.8	321	10.7	9.6	9.4	8.9
	2.41	237	10.7	9.8	9.6	9.2	347	11.1	9.9	9.8	9.2
	2.76	253	11.0	10.1	9.9	9.5	371	11.5	10.3	10.2	9.5
	3.10	269	11.4	10.4	10.2	9.7	394	11.7	10.5	10.4	9.8
	3.45	284					415	12.0	10.8	10.7	9.9
	3.79	298					435	12.2	10.9	10.9	10.1
	4.14	312					455				

Shaded areas not recommended to obtain a correct distribution.

Throw distance obtained with sprinkler on a 0.9 m lift.

Tested under ideal conditions. Results can be affected by wind, bad hydraulic conditions or any other adverse factors.

Every model of Unirain sprinkler allows using three different kinds of vanes to achieve the desired throw radius and pulverisation balance depending on the available system pressure. This system, exclusively provided by Unirain, allows obtaining high uniformity.

- Vane 30V (white) It increases the sprinkler coverage radius to its maximum. To obtain a good grade of pulverisation, the system pressure must be high (from 2.76 Bar).
- Without vane Using the nozzle without any vane, the throw radius will be slightly reduced compared to the previous option, but it will improve the water distribution. Recommended for medium system pressures (2.07 Bar).
- Vane 30RV (Red) Its inner structure creates a slight rotation inside the nozzle, obtaining a good pulverisation grade, but reducing the throw distance. To be used under low pressure conditions (2.07 Bar).
- Vane 30BV (Blue) This combination will achieve the highest pulverisation grade, but will also provide the minimum coverage radius. It's used under extreme low pressures (1.38 Bar).

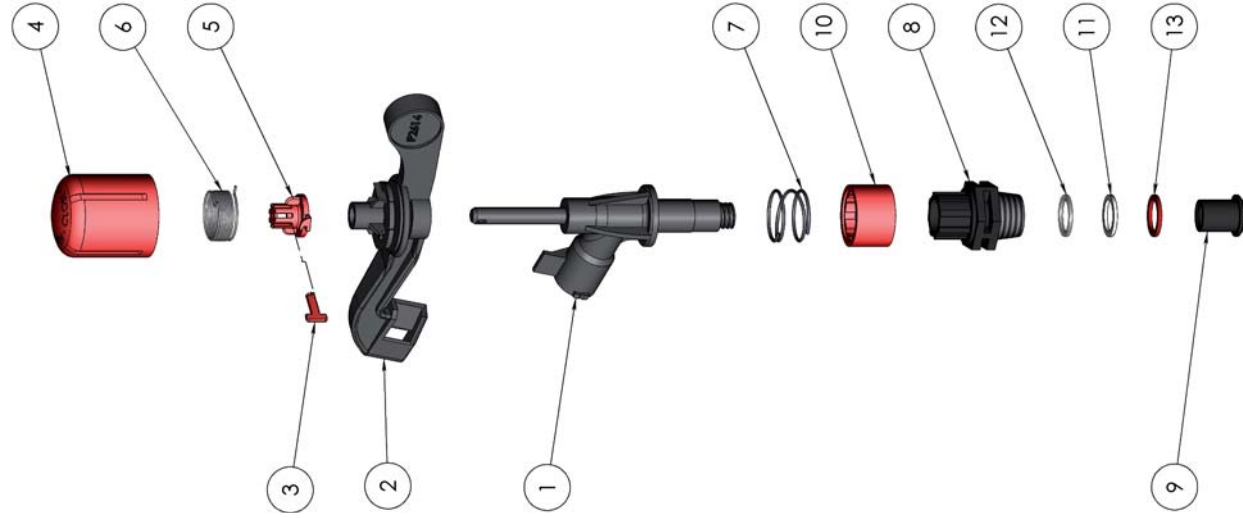
WARRANTY AND EXCLUSIONS

The manufacturer guarantees its products for direct customer against any defects in materials or manufacture for a period of two years from the original date of purchase, only when the products have been used under normal operating conditions. The manufacturer assumes no responsibility for installation, removal or repairs carried out by unauthorised personnel. The manufacturer's liability under this warranty is limited to the replacement or repair of defective parts and the manufacturer does not accept responsibility for damages to crops or any other consequential damages deriving from defects in the products covered by this warranty.

THE PRESENT WARRANTY SUPERCEDES AND VOIDS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES OR ANY OTHER ATTRIBUTING LIABILITY TO THE MANUFACTURER.

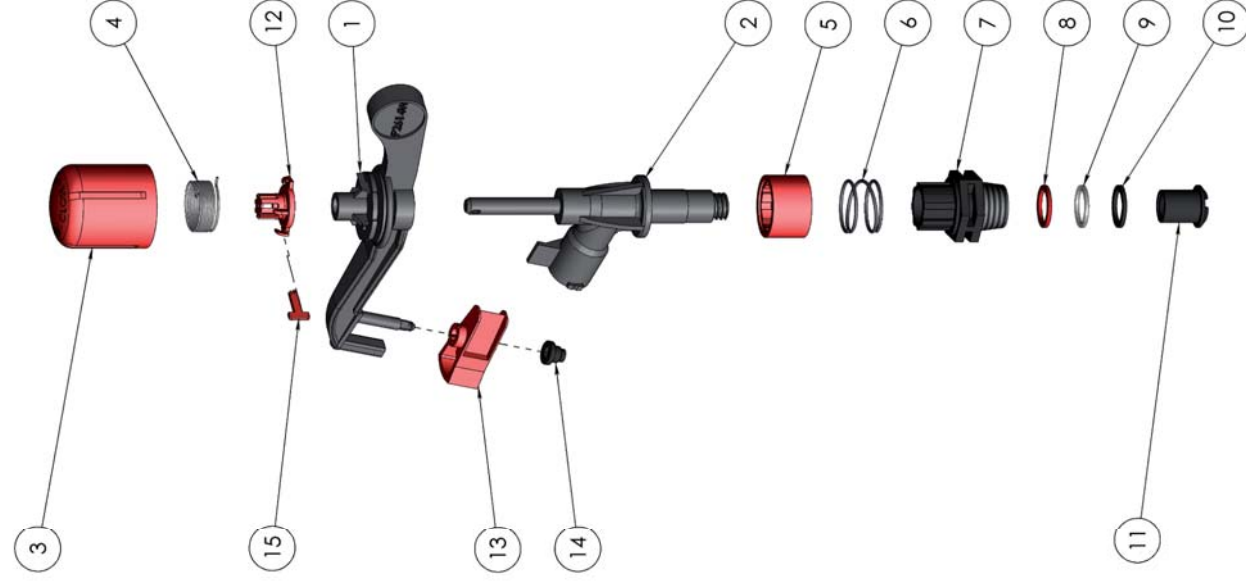
No agent, employee or representative of the manufacturer is authorised to void, alter or add to the conditions contained in this warranty, nor to take responsibility for, nor to make guarantees not specified herein.

COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	03020	Sprinkler Body F2614	POM + UV	1
2	03022	Sprinkler Arm F2614	POM + UV	1
3	03027	Arm Pin F2614	POM + UV	1
4	03005	Arm Cap F2614	POM + UV	1
5	03019	Castellated Turnbuckle	POM	1
6	03007	Spring Arm F2614	Stainless Steel	1
7	03011	Bearing Spring F2614	Stainless Steel	1
8	03012	Bearing Body F2614	POM + UV	1
9	03016	Bearing Nut F2614	POM + UV	1
10	03010	Bearing Body Lock	High Density PE	1
11	03018	1/2" PTFE Bearing Washer	PTFE	1
12	03014	1/2" PE Bearing Washer	High Density PE	1
13	03013	1/2" Red PU Bearing Washer	PU	1

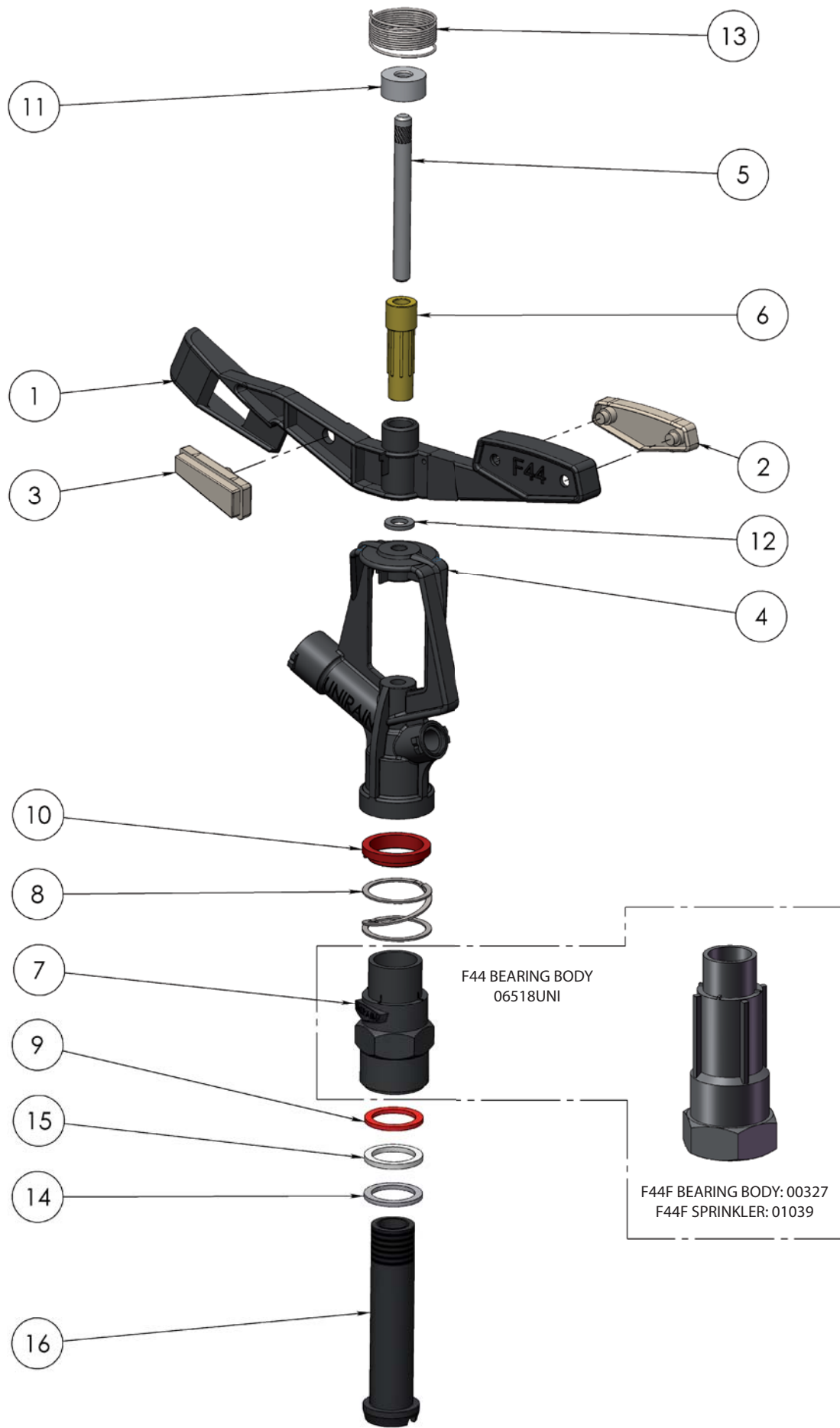


Process/Manufacturer UNIRAIN	Size	A3	Material	Code 03904UNI
	Scale	26/06/09 E.G.B.	Name	
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COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	03021	Sprinkler Arm F2614W	POM + UV	1
2	03020	Sprinkler Body F2614	POM + UV	1
3	03005	Arm Cap F2614	POM + UV	1
4	03007	Spring Arm F2614	Stainless Steel	1
5	03010	1/2" Series Bearing Body Lock	High Density PE	1
6	03011	Bearing Spring F2614	Stainless Steel	1
7	03012	Bearing Body F2614	POM + UV	1
8	03013	1/2" Red PU Bearing Washer	PU	1
9	03014	1/2" PE Bearing Washer	High Density PE	1
10	03015	1/2" NBR Bearing Washer	NBR	1
11	03016	Bearing Nut F2614	POM	1
12	03019	Castellated Turnbuckle	POM + UV	1
13	03024	triangle F2614W	POM + UV	1
14	03025	triangular clamp	POM + UV	1
15	03027	Arm Pin F2614	POM + UV	1



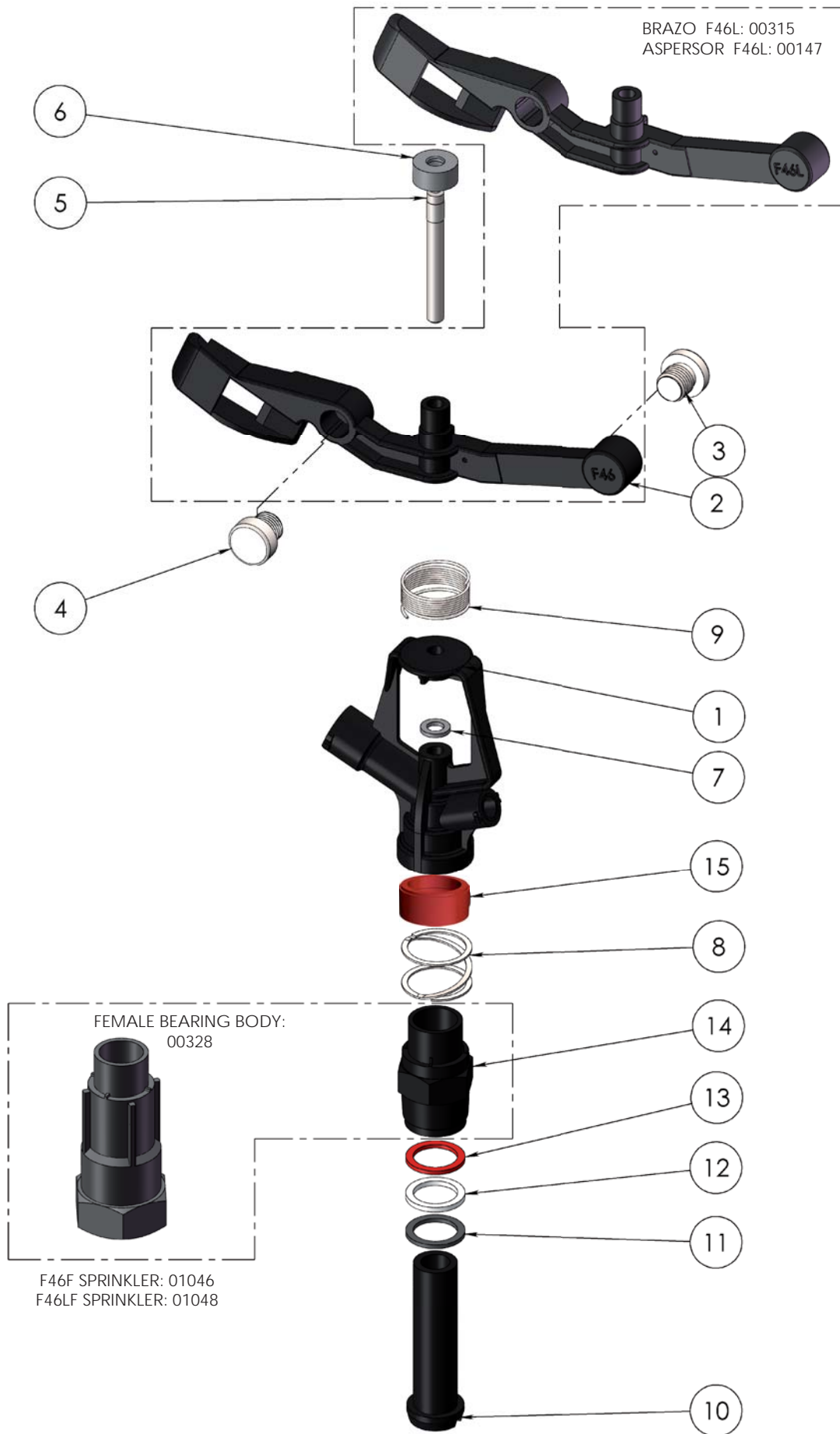
Process/Manufacturer UNIRAIN	Size	A3	Material	Code 03903
	Scale	26/06/09 E.G.B.	Name	
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COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	06514	Sprinkler Arm F44	PA6 + Fiber Glass	1
2	06516UNI	Unirain Back Counterweight	ZAMAK	1
3	06515	Front Counterweight	ZAMAK	1
4	06513UNI	Sprinkler Body F44	POM	1
5	06519	Swing Arm Pin	Stainless Steel	1
6	06636	Swing Arm Bearing	POM	1
7	06518UNI	Bearing body F44	POM	1
8	00018	Bearing Spring	Stainless Steel	1
9	00252	Bearing Upper Washer	Anti Hydrolisis PU	1
10	00255	Bearing Body Lock	Anti Hydrolisis PU	1
11	06161	Swing Arm Cap	PE	1
12	06162	Swing Arm Support Washer	NBR	1
13	06183	Arm Spring Series 3/4"	Stainless Steel	1
14	07459	Bearing Lower Washer	NBR	1
15	06736	Bearing Intermediate Washer	High Density PE	1
16	06517	Bearing Pin P45 / F44	POM	1

Notes

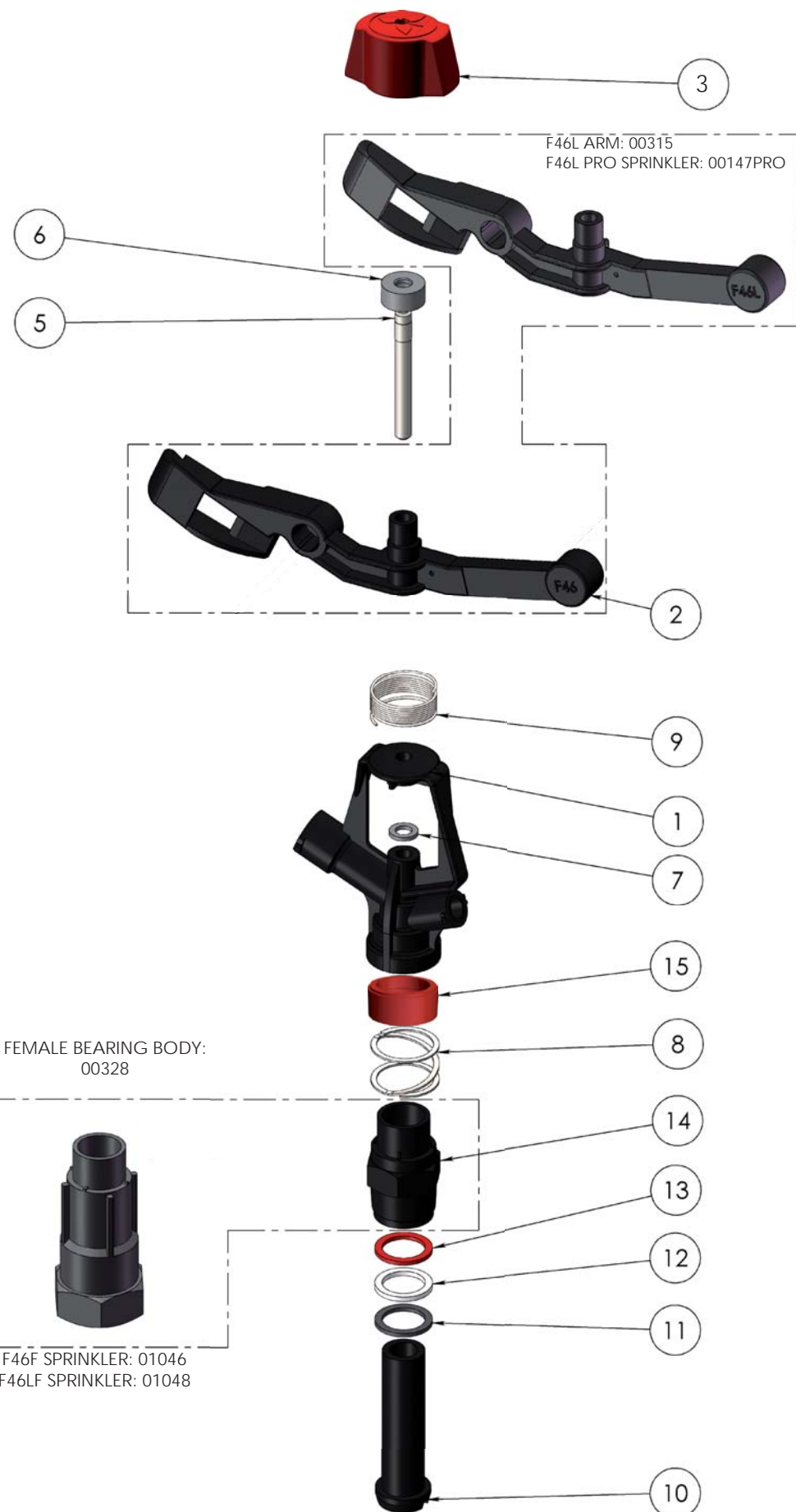
Process/Manufacturer UNIRAIN	Size A3	Material	Code 00094UNI
	Scale 1:2	Name UNIRAIN F44 Sprinkler	
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	E.G.B		



COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	00310	F46 Sprinkler Body	POM	1
2	00311	F46 Sprinkler Arm	POM	1
3	00316	Back Counterweight	ZAMAK	1
4	00314	Front Counterweight	ZAMAK	1
5	06163	Fulcrum Pin	Stainless Steel	1
6	06161	Swing Arm Cap	PE	1
7	06162	Swing Arm Support Washer	NBR	1
8	00018	Bearing Spring	Stainless Steel	1
9	06183	3/4" Series Arm Spring	Stainless Steel	1
10	00313	Bearing Pin F46	POM	1
11	07459	Bearing Lower Washer	NBR	1
12	06736	Bearing Intermediate Washer	High Density PE	1
13	00252	Bearing Upper Washer	Anti Hydrolisis PU	1
14	00312	F46 Bearing Body	POM	1
15	00256	Bearing Body Lock	High Density PE	1

Notes

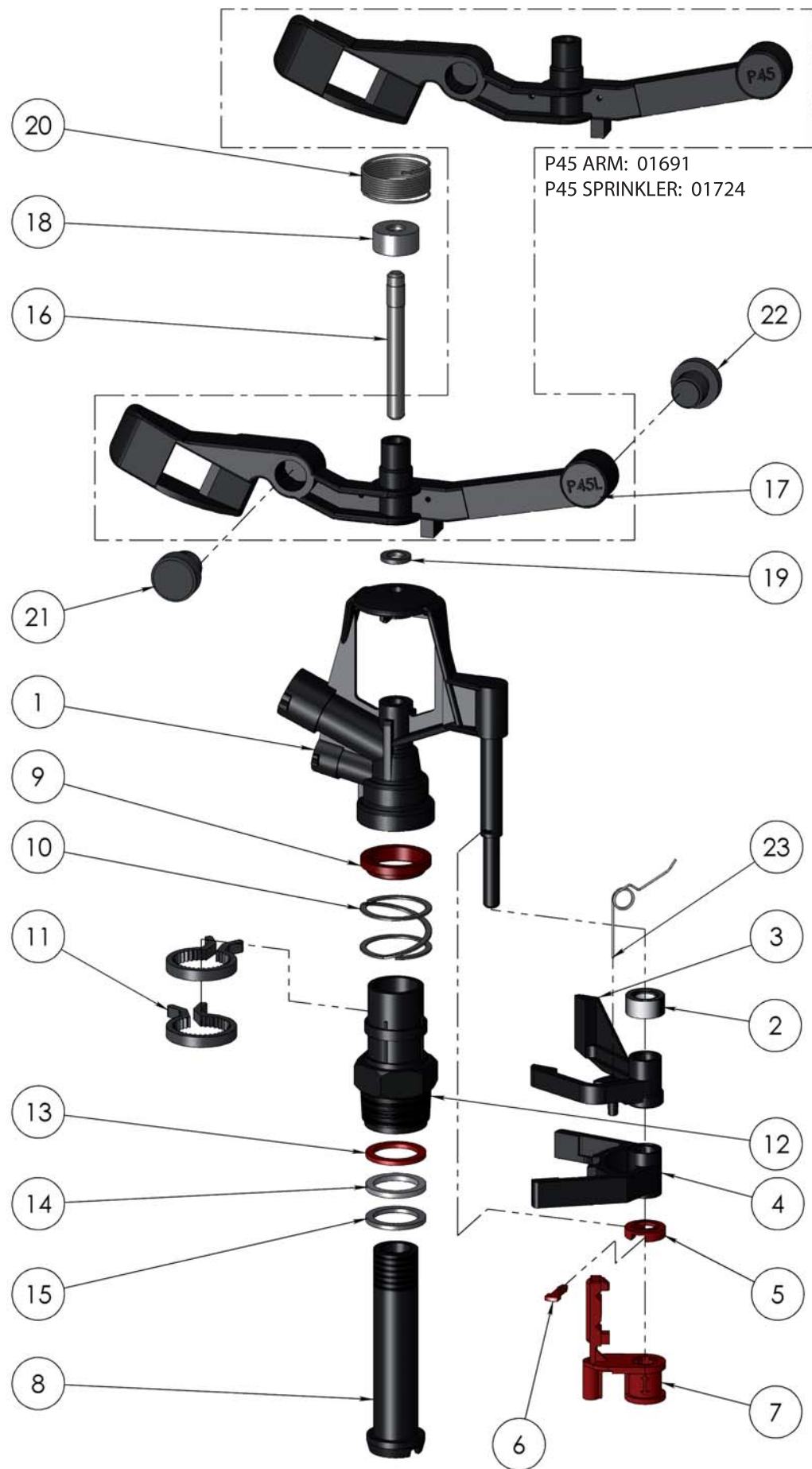
Process/Manufacturer Unirain	Size A3	Material	Code 00146
Assembly	Scale 1: 2	Name F46 Sprinkler	
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	E.G.B.		




COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	00310	Sprinkler Body F46	POM	1
2	00311	Sprinkler Arm F46	POM	1
3	00318	Protective Cap	High Density PE	1
5	06163	Fulcrum Pin	Stainless Steel	1
6	06161	Swing Arm Cap	PE	1
7	06162	Swing Arm Support Washer	NBR	1
8	00018	Bearing Spring	Stainless Steel	1
9	06183	Arm Spring Series 3/4	Stainless Steel	1
10	00313	Bearing pin F46	POM	1
11	07459	Bearing Lower Washer	NBR	1
12	06736	Bearing Intermediate Washer	High Density PE	1
13	00252	Bearing Upper Washer	Anti Hydrolisis PU	1
14	00312	Bearing Body F46	POM	1
15	00256	Bearing Body Protective Cap	High Density PE	1

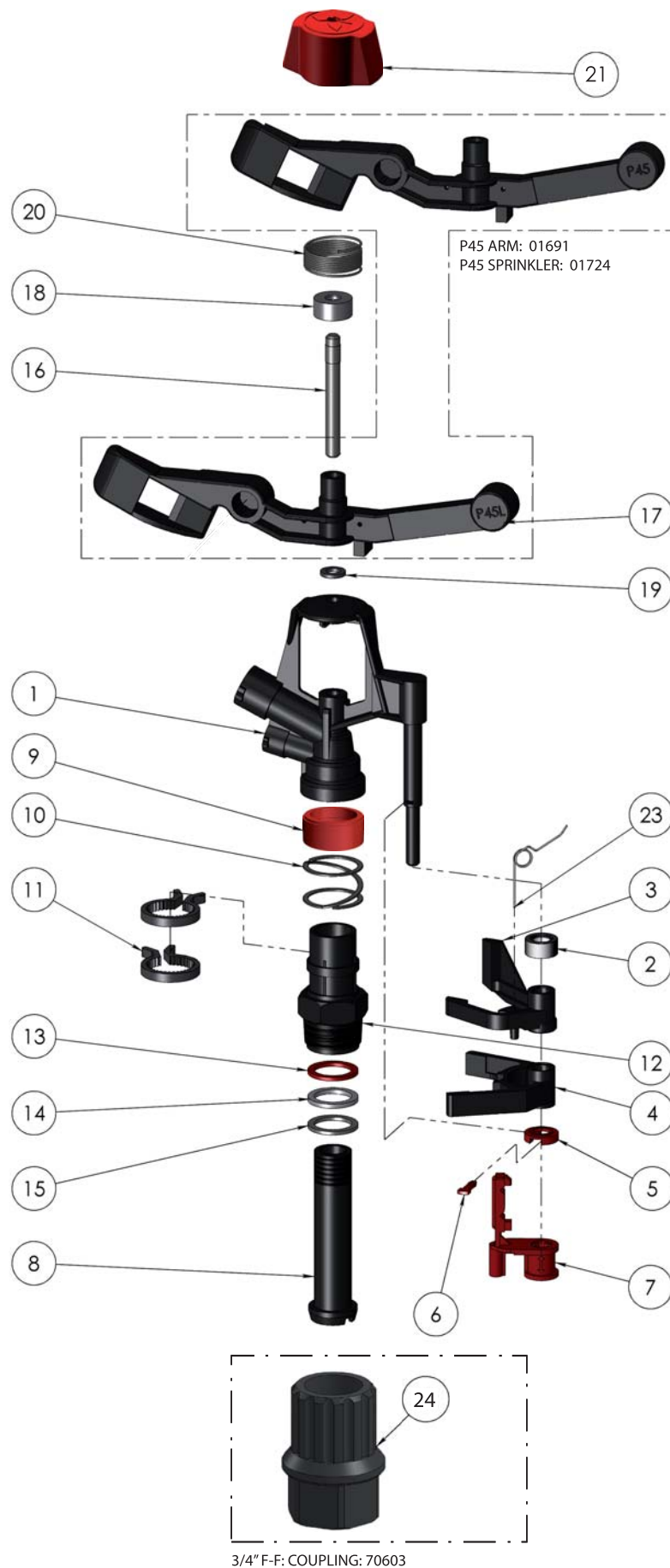
Notes

Process/Manufacturer Unirain	Size A3	Material	Code 00146PRO
Assembly	Scale 1:2	Name F46 Sprinkler	
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	E.G.B.		




COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	01681	Sprinkler Body P45	POM	1
2	01695	Reversing Cap	High Density PE	1
3	01685	Upper Cam	POM	1
4	01686	Lower Cam	POM	1
5	01688	Pin Washer	POM	1
6	01689	Pin	POM	1
7	01690	Inverter Latch	POM	1
8	06517	Bearing Pin P45 / F44	POM	1
9	00255	Bearing Body Lock	High Density PE	1
10	00018	Bearing Spring	Stainless Steel	1
11	01684	Cogged Sector	POM	2
12	01683	Bearing Body P45	POM	1
13	00252	Bearing Upper Washer	Anti Hydrolisis PU	1
14	06736	Bearing Intermediate Washer	High Density PE	1
15	07459	Bearing Lower Washer	NBR	1
16	06163	Fulcrum Pin	Stainless Steel	1
17	01692	Sprinkler Arm P45L	POM	1
18	06161	Swing Arm Cap	PE	1
19	06162	Arm Support Washer	NBR	1
20	06183	Arm Spring Series 3/4"	Stainless Steel	1
21	00314	Front Counterweight	ZAMAK	1
22	00316	Back Counterweight	ZAMAK	1
23	01687	Reversing Spring	Stainless Steel	1

Process/Manufacturer UNIRAIN	Size A3	Material	Code 01725
	Scale 1:2	Name P45L Sprinkler	
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	E.G.B.		



COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	01681	Sprinkler Body P45	POM	1
2	01695	Reversing Cap	High Density PE	1
3	01685	Upper Cam	POM	1
4	01686	Lower Cam	POM	1
5	01688	Pin Washer	POM	1
6	01689	Pin	POM	1
7	01690	Reversing Latch	POM	1
8	06517	Bearing Pin P45 / F44	POM	1
9	00256	Protective Bearing Body Lock	High Density PE	1
10	00018	Bearing Spring	Stainless Steel	1
11	01684	Cogged Sector	POM	2
12	01683	Bearing Body P45	POM	1
13	00252	Bearing Upper Washer	Anti Hydrolisis PU	1
14	06736	Bearing Intermediate Washer	High Density PE	1
15	07459	Bearing Lower Washer	NBR	1
16	06163	Fulcrum Pin	Stainless Steel	1
17	01692	Sprinkler Arm P45L	POM	1
18	06161	Swing Arm Hat	PE	1
19	06162	Swing Arm Support Washer	NBR	1
20	06183	Series Arm Spring 3/4"	Stainless Steel	1
21	00318	Protective Cap	High Density PE	1
23	01687	Protective Spring	Stainless Steel	1
24	70603	3/4" F-F Coupling	PA66 + Fiber Glass	1

Process/Manufacturer UNIRAIN	Size A3	Material	Code 01725PRO
	Scale 1:2	Name P45/45L Sprinkler	
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	E.G.B.		

Unirain P57 (Temporaly P46)

Part Circle Impact Sprinkler Low and Medium Flow Plastic



Application

Especially indicated for agricultural application in general, for areas bordering or close to elements that should not get wet.

Compact in design, it includes a sand-proof bearing system and reinforcing ribs on the sprinkler body. High resistance and durability, made of plastics and treated against the UV radiation. It is a very versatile sprinkler because of its reversing system and clip which allow the sprinkler switch from part to full circle and vice versa. Ideal for areas bordering or near elements that should not get wet.

The **P57PRO** model is a robust and durable model due to the **arm spring protection** which makes it valid for frost-proof irrigation

Advantages

- Maximum protection of the spring against impacts , dirt, foreign bodies, insects and animals, frost ...
- Increased frequency / speed of arm swing, improving irrigation uniformity.
- Sand-proof bearing system and reinforcing ribs on its body.
- Perfect inner finish
- Its exclusive reversing system is protected against sand and can be disassembled in seconds without any tools.
- We can use three types of water guide sheath to achieve the desired balance between range and spray, depending on available water pressure.

Technical specifications

- Dual-use impact sprinkler: part circle ranging (removing the clogged sectors pieces).
- 3/4" Male or female (F)base thread.
- Sprinkler arm **without counterweights** (Tread 3PRN or vane 3Q, in different sizes).
- 23° nozzle trajectory angle.
- Pressure range: 2,1 - 4,9 Bar.
- Nozzle range: 1/8" -3/16"
- Made of acetal resin with UV-protection treatment.
- Body and spring protective cap made of HDPE.
- Fulcrum pin and springs made of stainless steel.
- Expanded fulcrum, pin upper end diameter for a better fitting into the sprinkler body.
- Color-coded anti abrasive acetal resin nozzles carved in millimetres and inches for a clear identification.
- Reversing system protected.
- Female thread adapter made of fiber glass reinforced PA.
- Model P57PRO: with cap made of HDPE body and spring protector.



	Pressure (bar)	Nozzles	Vanes
HIGH	4.14	3PRN 6 3FCN	30 V
MEDIUM	2.76	3PRN 6 3FCN	WITHOUT VANE
LOW	2.10	3PRN	30RV
VERY LOW	1.38	3PRN	30BV

To configure the sprinkler please follow the **3 steps** indicated in the **SPRINKLER SET UP** chart

SET UP SPRINKLER	
1° Select a MODEL	2° Select a VARIANT
<input type="checkbox"/> P57	<input type="checkbox"/> Male thread
<input type="checkbox"/> P57PRO	<input type="checkbox"/> Female thread (F)
3° Select NOZZLE CONFIGURATION (DATA CHART)	

P57	PRESSURE (MCA)	NOZZLE 1/8"		NOZZLE 9/64"		NOZZLE 5/32"		NOZZLE 11/64"		NOZZLE 3/16"	
		L/H	R(m)	L/H	R(m)	L/H (*)	R(m)	L/H	R(m)	L/H	R(m)
NOZZLE WHITOUT VANE FOR LONG DISTANCE	14.1			585	11.9	714	12.6	855	13.1	1013	13.5
	17.6			654	12.3	799	13.0	963	13.4	1136	13.9
	21.1			715	13.0	874	13.6	1054	14.0	1249	14.5
	24.6	609	12.6	772	13.3	945	14.0	1140	14.5	1354	14.9
	28.1	652	12.8	827	13.6	1011	14.3	1220	14.8	1449	15.2
	31.6	693	13.0	877	13.7	1072	14.5	1295	15.1	1540	15.5
	35.2	731	13.1	924	13.9	1131	14.6	1365	15.2	1626	15.8
	38.7	768	13.3	970	14.0	1186	14.8	1431	15.4	1708	16.0
	42.2	802	13.4	1013	14.2	1238	14.9	1492	15.5	1783	16.2
	45.7	836	13.6	1056	14.3	1290	15.1	1551	15.7	1858	16.3
	49.2	868	13.7	1097	14.5	1340	15.2	1610	15.8	1931	16.5
	52.7	899	13.9	1136	14.6	1388	15.4	1667	16.0	1999	16.6
56.2	929	14.0	1174	14.8	1431	15.5	1722	16.2	2065	16.8	

P57V	PRESSURE (MCA)	NOZZLE 1/8"		NOZZLE 9/64"		NOZZLE 5/32"		NOZZLE 11/64"		NOZZLE 3/16"	
		L/H	R(m)	L/H	R(m)	L/H (*)	R(m)	L/H	R(m)	L/H	R(m)
NOZZLE WHIT VANE FOR LONG DISTANCE	24.6	609	13.4	772	14.1	945	15.0	1140	15.5	1354	15.9
	28.1	652	13.6	827	14.3	1011	15.2	1220	15.7	1449	16.2
	31.6	693	13.7	877	14.5	1072	15.4	1295	16.0	1540	16.5
	35.2	731	13.9	924	14.6	1131	15.5	1365	16.2	1626	16.8
	38.7	768	14.0	970	14.8	1186	15.7	1431	16.3	1708	16.9
	42.2	802	14.2	1013	14.9	1238	15.8	1492	16.5	1783	17.1
	45.7	836	14.3	1056	15.1	1290	16.0	1551	16.6	1858	17.2
	49.2	868	14.5	1097	15.2	1340	16.2	1610	16.8	1931	17.4
	52.7	899	14.6	1136	15.4	1388	16.3	1667	16.9	1999	17.5
	56.2	929	14.8	1174	15.5	1431	16.5	1722	17.1	2065	17.7

Data obtained under ideal test conditions. It can be affected by wind, bad hydraulic conditions or other adverse factors. Highest point of the jet above the nozzle: 2.5 m (using standard nozzle 5/32 " and a pressure of 3.45 Bar) Throw radius jets achieved with the 0.9m lift. Shaded areas not recommended. (*) Standard Nozzle.

L/H: Liters Per Minute
R(m): Throw Radius (meter)

Due to the large number of possible combinations of nozzles, only the most common ones are represented. To find information relating to other combinations , please advise factory.

P57L P57

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Sprinklers Accessories

Introduction:

To achieve a correct use of the sprinkler, there are some accessories which improve its performance fulfilling the needs of the farmer. With them, any specific use is achieved without any need to change the type of sprinkler.

Advantages:

- Ease of use of the sprinkler (different functions).
- In the case of bayonet assembly, manual calibration is easy.
- Perforated guard roads avoid the formation of puddles , stopping the water action.
- Easy and quick assembly of irrigation systems using set feedtube assembly (no necessary use of clamps)

Recommended uses :

Use of guard road in places next to roads or warehouses.
Use of bayonet nozzle for harsh water –or on sandy soils.
The installation of set feedtube assembly is necessary in fast growing crops and quick maturing crops (herbs type) where there is no need of a fixed installation of irrigation system.

Sprinkler accessories characteristics:

All models of sprinkler can be supplied with nozzles and plugs which determine the range of wet areas and there also exists different jet for a correct distribution of water.

There are brass and plastic nozzles and plugs.

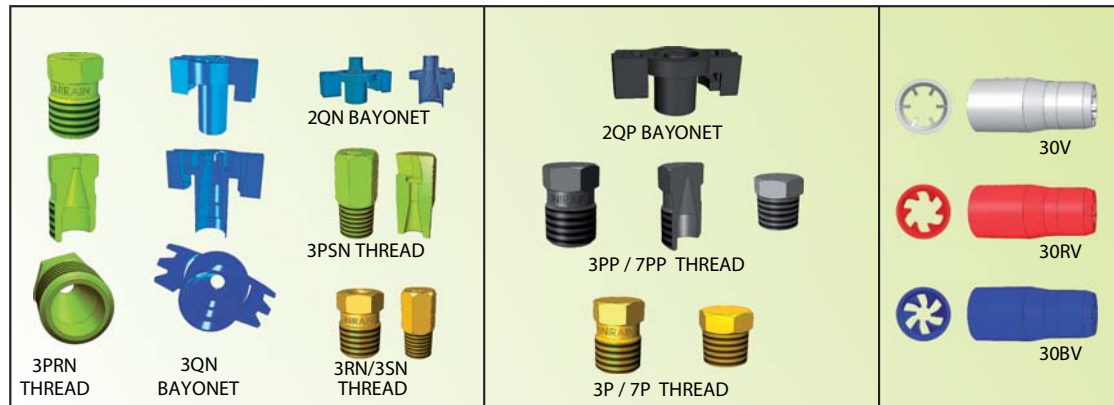
Threaded base sprinkler is commonly used, nevertheless there are plastic bayonet sprinklers.

There are vanes too which amplify the range and improve the repartition of droplets water.

Guardsroad are part of sprinkler, they can be perforated or without holes to avoid irrigation in undesired areas.

Set feedtube assemblies are part of sprinkler and they contribute to obtain better irrigation results.They are easy to install.

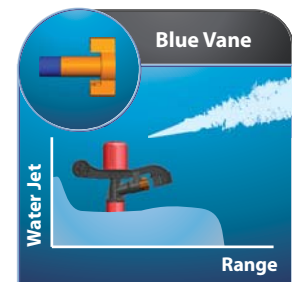
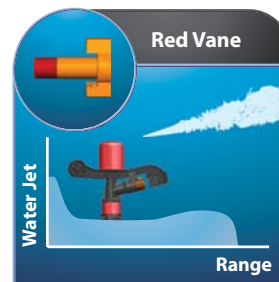
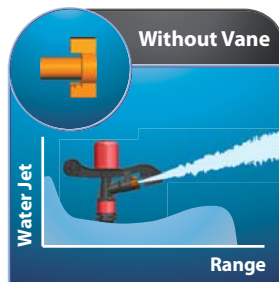




SPRINKLERS	NOZZLES						PLUGS					VANES		
	3RN Latón	3SN Latón	3PRN Plast.	3PSN Plast.	3QN Plast.	2QN Plast.	7P Latón	3P Latón	7PP Plast.	3PP Plast.	2QP Plast.	30V Plast.	30RV Plast.	30BV Plast.
F26	-	-	-	-	P	-	-	-	-	-	-	P	P	P
F26W	-	-	-	-	P	-	-	-	-	-	-	P	P	P
F2614	-	-	-	-	P	-	-	-	-	-	-	P	P	P
F2614W	-	-	-	-	P	-	-	-	-	-	-	P	P	P
F30	P	S	P	S	-	-	-	S	-	S	-	P	P	P
F40	P	S	P	S	-	-	-	S	-	S	-	P	P	P
F3030	P/S	-	P/S	-	-	-	S	-	S	-	-	P/S	P/S	P/S
P35	P	S	P	S	-	-	-	S	-	S	-	P	P	P
F44	P	S	P	S	P	S	-	S	-	S	S	P	P	P
F4444	P/S	-	P/S	-	P/S	-	S	-	S	-	-	P/S	P/S	P/S
F46/F46L	P	S	P	S	P	S	-	S	-	S	S	P	P	P
P45L/P45	P	S	P	S	P	S	-	S	-	S	S	P	P	P

P: Main sprinkler outlet.
S: Secondary sprinkler outlet.

Vanes



NOZZLES & PLUGS

Brass



Application

Nozzles and plugs are essential elements of sprinklers if the farmer wants to improve yield of crops, indeed they offer different possibilities to them.

They help choosing the flow morphology and extent of water without changing the type of sprinkler.

They fulfill the different needs of the farmer who elects them according to the soil, climate and the type of crop.

Advantages

- Made of brass, their precision machining grants their correct fitting into the sprinkler.
- They feature their outlet size carved in inches.
- The slotted design of the hole in secondary nozzle improves the watering near the sprinkler and increases the irrigation uniformity.

Technical specifications

- 3RN Principal Nozzle: $\frac{1}{4}$ "-18 NPSI Male thread.
(To sprinklers with $\frac{3}{4}$ " thread).
- 3SN Secondary Nozzle: $\frac{3}{8}$ "-24 UNF Male thread.
(To sprinklers with $\frac{3}{4}$ " thread).
- 3T Secondary plug: $\frac{3}{8}$ "- 24 UNF Male thread
(To use instead of secondary nozzle in sprinklers with $\frac{3}{4}$ " thread).
- 7T Secondary plug: $\frac{1}{4}$ "-18 NPSI Male thread
(To use instead of principal nozzle in sprinklers with 1", 1-1/4" thread).



3RN



3SN 1/8"-20°



3SN 3/32"-7°



7T



3T



3RN/3SN Brass

Male thread nozzles

Secondary Nozzle
3SN 3/32"-7°

Secondary Nozzle
3SN 1/8"-20°

Plug 1/4"

Plug 3/8"

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NOZZLES & PLUGS

Plastic



Application

Nozzles and plugs are essential elements of sprinklers if the farmer wants to improve yield of crops, indeed they offer different possibilities to them.

They help choosing the flow morphology and extent of water without changing the type of sprinkler .

They fulfill the different needs of the farmer who elects them according to the soil , climate and the type of crop.

Advantages

- Made of antiabrasive acetalic resin, their high wearing resistance makes them perfect for long working periods.
- Due to their color code, it's easy to identify them at a glance. Outlet size carved in inches and millimetres.
- The slotted design of the secondary spreader nozzle (3PSN) improves the watering of the sprinkler close-in area, increasing uniformity.
- The bayonet nozzle wears a coupling system which facilitates easy assembly and disassembly.

Technical specifications

- 3PRN Principal Nozzle: 1/4"-18 NPSI Male thread. (To sprinklers with 3/4" thread).
- 3PRN+V Principal Nozzle: 1/4"-18 NPSI Male thread. (To sprinklers with 3/4" thread). Includes 30V vane. It will increase the sprinkler coverage radius to its maximum. To obtain a right grade of pulverisation, the system pressure must be high (4.14 Bar).
- 3PSN Secondary Nozzle: 3/8"-24 UNF Male thread. (To sprinklers with 3/4" thread).
- 3PT Secondary plug: 3/8"- 24 UNF Male thread (To use instead of secondary nozzle in sprinklers with 3/4" thread).

Technical specifications (bayonet)

- 3Q Principal Nozzle. To sprinklers with 3/4" thread.
- 2Q Secondary Nozzle. To sprinklers with 3/4" thread.
- 2Q-P Secondary Plug. To sprinklers with 3/4" thread.



3PRN



3Q



7PT

3PT

2QP

3PRN+V

3PSN 1/8" 20°

3PSN 3/32" 7°

2Q 1/8"-20°

2Q 3/32"-7°



3PRN/3PSN Plastic

MAIN NOZZLES 3PRN

7/64" (2.78 mm)	1/8" (3.18 mm)
9/32" (7.14 mm)	9/64" (3.57 mm)
17/64" (6.75 mm)	5/32" (3.97 mm)
1/4" (6.35 mm)	11/64" (4.37 mm)
15/64" (5.95 mm)	3/16" (4.76 mm)
7/32" (5.56 mm)	13/64" (5.16 mm)

Secondary Nozzle 3PSN 3/32"-7° (2.38 mm)

Secondary Nozzle 3PSN 1/8"-20° (3.18 mm)

Plug 1/4"

Plug 3/8"

Male thread nozzles

3Q/2Q Plastic

MAIN NOZZLES 3Q

5/64" (1.98 mm)	3/32" (2.38 mm)
9/32" (7.14 mm)	7/64" (2.78 mm)
17/64" (6.75 mm)	1/8" (3.18 mm)
1/4" (6.35 mm)	9/64" (3.57 mm)
15/64" (5.95 mm)	5/32" (3.97 mm)
7/32" (5.56 mm)	11/64" (4.37 mm)
13/64" (5.16 mm)	3/16" (4.76 mm)

Secondary Nozzle 2Q 3/32"-7° (2.38 mm)

Secondary Nozzle 2Q 1/8"-20° (3.18 mm)

Plug 2Q

Male bayonet thread nozzles

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VANES



Application

Every model of Unirain sprinkler allows using three different kinds of vanes to achieve the desired coverage and pulverisation balance according to the available system pressure. The Unirain exclusive system provides high uniformity coefficients.

Advantages

- Resin antiabrasive acetal (POM) vanes are particularly suitable for prolonged operations as they are highly resistant to erosion.
- Thanks to their color coding: red, white and blue, they can be easily identified .
- The design of the different vanes facilitates the change of morphology of water, improving the water distribution.
- Easy assembly.

Technical specifications

30V vane (White)

It will increase the sprinkler coverage radius to its maximum. To obtain a right grade of pulverisation, the system pressure must be high (4.14 Bar)

30RV vane (Red)

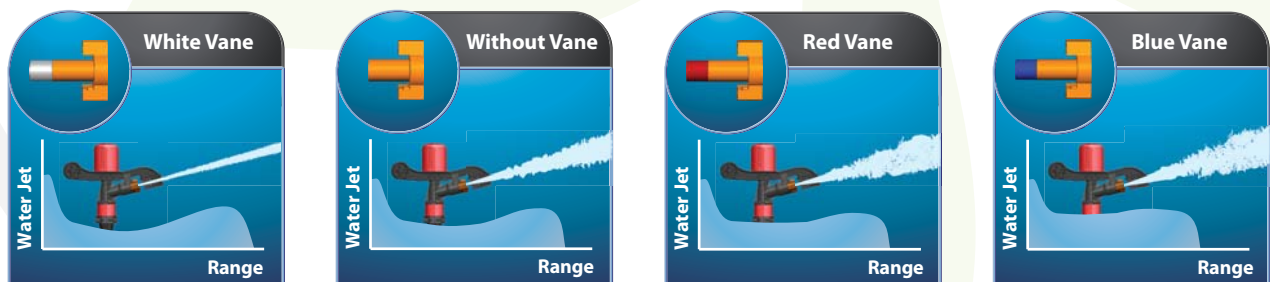
Its inner structure creates a slight water rotation inside the nozzle, bringing a good pulverisation grade but the throw distance will decrease. To be used under low pressure conditions (2.07 Bar)

30BV vane (Blue)

This combination will achieve the highest pulverisation grade available, but will provide the minimum coverage radius. It's used under extremely low pressures (1.38 Bar)



Vaness





Notes

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ROAD GUARD

Plastic



Application

The plastic Unirain road guard stands as an easy cheap and definitive solution for irrigation from the end line sprinklers, it reduces or eliminates the amount of water falling behind it.

Advantages

- The P4 surface holes diameter, density and thickness have been carefully studied to achieve the easiest water soil infiltration, what reduces considerably the amount of water falling under the road guard, it also provides an excellent water distribution behind it.
- The covered area behind the road guard will change according to the sprinkler main nozzle and the work pressure.
- The road guard angle, 140°, provides a correct irrigation on both sprinkler sides.
- The plastic unholed 140° Unirain P5 road guard prevents water from reaching behind.

Technical specification

- P4 Road Guard: 140° angle, perforated.
- P5 Road Guard: 140° angle, unperforated
- Made of reinforced Nylon 6 for greater performance and durability.
- Galvanized steel support
- A light and tough design makes easy coupling the road guard onto 1/2", 3/4" and 1" sprinklers.



Notes

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COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	-	P4 - Perforated Plastic Road Guard	PA6 + Fiber Glass	1
2	-	U-Bolt	Galvanized Steel	1
3	-	M8 Hex Nut		2



Process/Manufacturer UNIRAIN	Size A3	Material Code 00330
	Scale	Name P4 Plastic Road Guard
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	J.N.E.	

COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	-	P4 - Unerforated Plastic Road Guard	PA6 + Fiber Glass	1
2	-	U-Bolt	Galvanized Steel	1
3	-	M8 Hex Nut		2



Process/Manufacturer UNIRAIN	Size A3	Material Code 00331
	Scale	Name P5 Plastic Road Guard
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	J.N.E.	

Unirain FT102

Feedtube Assembly



Application

Because of its resistant and rugged design, it is specially suitable for irrigation coverage, either high or low crop. It can be adapted to the height required between 1, 1.2 or 1.5 meters.

This adjustment allows adaptation to the growth of the crop.

Built in solid material, it can remain a long time in the field or rather, because of its light weight, it can be mobilized on the ground.

Advantages

- Tough and reliable design feedtube assembly.
- Flexible PVC tube and zinc steel stake with both ends bevelled
- Its Lateral Takeoff fittings (LTO), with a minimum inner diameter of 0.315" (8mm), duplicates the section of any other of its kind, allowing a much higher flow per sprinkler, eliminating the need for higher water pressure, therefore saving energy.
- Owing to the three barbs that grip the tube, one internal and two external, its fittings need no ties, as undesired disassembling is virtually impossible. This will allow unplugging the assembly from the line just by pulling the tube.
- The red color of its female LTO fitting helps locating it on the pipe easily, and its flat and slim head design does not make winding the line back into the coil difficult after season use.

Technical specifications

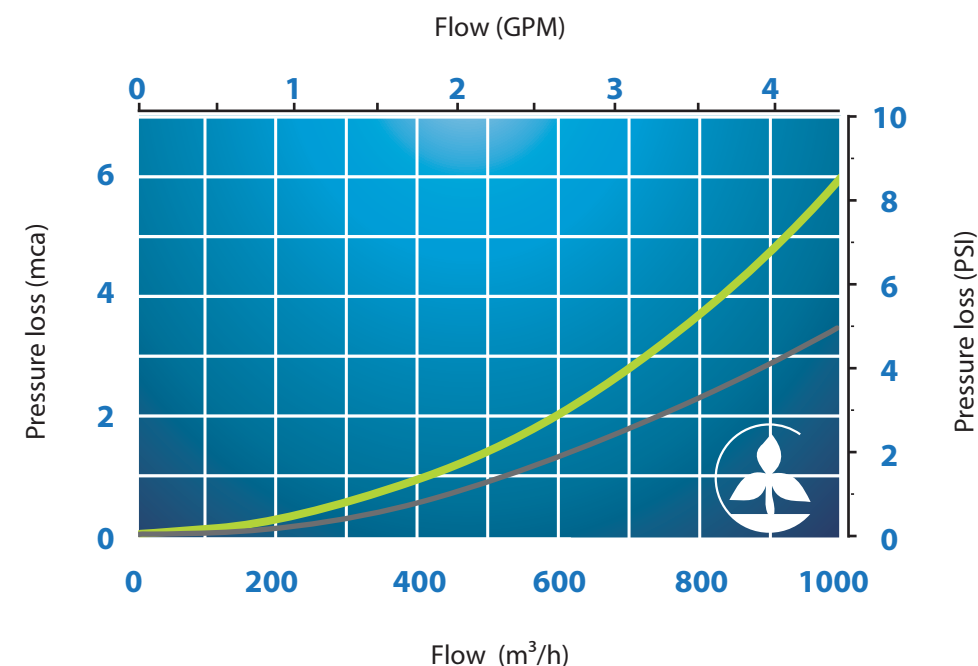
- Composed by three UV radiation protected polypropylene part plus a:
 - o 1/2" - Ø10mm x 8mm Female Adapter.
 - o Ø 10mm Male LTO fitting.
 - o Ø 10mm Female LTO fitting.
- Ø 13mm x 9.4mm flexible PVC tube, sizes: 1m, 1.2m, 1.5m.
- Ø 8mm zinc steel stake, sizes: 1m, 1.2m, 1.5m.
- Minimum inner diameter of LTO fittings or adapter is 0.315" (8mm).
- No ties needed. Tube gripped by one internal and two external barbs.
- Red color of female LTO fitting to make finding it on the line easy, and flat and slim head design to grant pipe winding back into coil.
- Ø10 mm plug (Optional).



new product

New adapter 3/4" H 010mm x 8mm specially indicated for spray Pivot MP5 assembly.

FT102 ASSEMBLY PRESSURE LOSS



— Pressure loss in a 47.2" (1.2 m) complete assembly with female and male fittings, flexible tube and 1/2" female adapter.

— Pressure loss per meter of feedtube (w/o fittings).

Notes

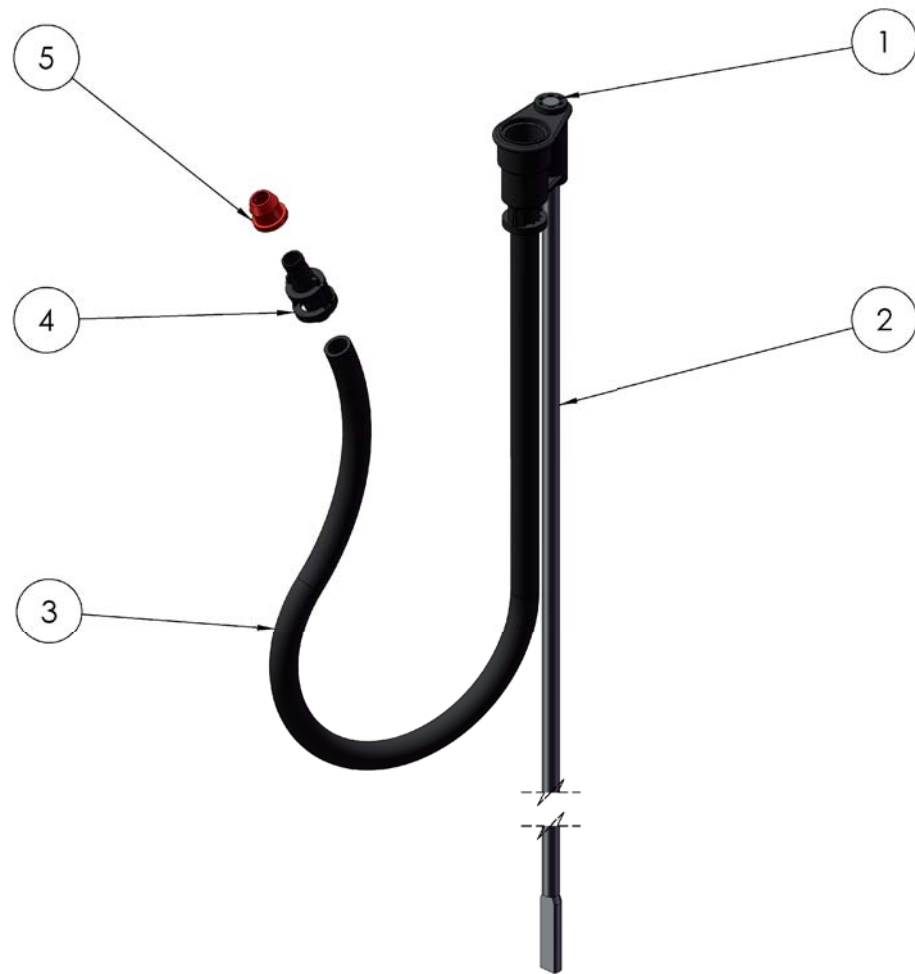
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COMPONENT NUMBER	MATERIAL	CODE	DESCRIPTION	QUANTITY
1	Polypropylene	03051	1/2"H-Ø10x8mm Adapter	1
2	Galvanized Steel	03057	Ø8 x 1000 mm Stake	1
3	PVC	03067	Ø13x9.4x1000mm Flexible Tube	1
4	Polypropylene	03050	Ø10 mm Male Fitting	1
5	Polypropylene + Fiber Glass	03052	Ø10 mm Female Fitting	1



Adapter options

Material	Code	Description
Polypropylene	03054	3/4" H - Ø10 x 8 mm Adapter

Stake options

Material	Code	Description
Galvanized Steel	03057	Ø8 x 1000 mm Stake
Galvanized Steel	03058	Ø8 x 1200 mm Stake
Galvanized Steel	03059	Ø8 x 1500 mm Stake

Tube options

Material	Code	Description
PVC	03068	13 x 9,4 x 1200 mm Flexible Tube
PVC	03069	13 x 9,4 x 1500 mm Flexible Tube
PVC	03070	13 x 9,4 x 100000 mm Flexible Tube

Notes

Process/Manufacturer UNIRAIN	Size A4	Material	Code 03071
	Scale 1:3	Name FT102 1m. Feed Tube Assembly	
PRIVATE AND CONFIDENTIAL THE INFORMATION CONTAINED ON THIS PLAN IS FOR UNIRAIN USE ONLY. FORBIDDEN CHANGE OR AMENDMENT OF VALUES OF THE PLAN WITHOUT A CONSENT IN WRITING.	12/03/09		
	J.N.E.		

UNIRAIN PRESSURE GAUGE

Pressure Gauges



Application

Professional pressure gauge allows the system manager to monitor the performance of the system and pinpoint any problems as soon as they occur. Drop in pressure at the inlet may indicate a broken pipe, too many zones running at the same time, or excessive discharge from the nozzles.

Advantages

- Reliable in most of its visible scale, the middle third is the most accurate area.
- It features two measuring scales, kg/cm² (black scale) and PSI (red scale).

Technical specifications

- 1.6 glycerine buffered pressure gauge.
- 2.5" (63mm) diameter.
- 1/4" male thread.
- Heavy duty stainless steel case suitable for adverse work conditions where pulsation or vibration exists.
- A needle intake available to make measuring easier in sprinkler nozzles. Supplied separately.
- The following scale range is available:
 - 2.5 kg/cm² - 3.56 PSI
 - 4 kg/cm² - 5.69 PSI
 - 6 kg/cm² - 8.53 PSI
 - 10 kg/cm² - 14.22 PSI
 - 16 kg/cm² - 22.76 PSI
 - 25 kg/cm² - 35.56 PSI



**PRESSURE
GAUGE**



Notes

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PIVOT Equipment

Introduction:

Pivot equipment is a system which works with a short rod or shaft on which a related part rotates or swings. It is useful for low pressure conditions of work and semi fixed systems of irrigation. The objective of such system is to obtain uniform and fine droplets, regulating the pressure and type of jet.

Advantages:

- Better storage of water because of protection against wind.
- Less evaporation as it is low flow irrigation and that allows humidity of soils.
- It avoids waste of water.
- It is not necessary to use a lot employees for large soils, and that saves costs.
- Easy to use
- Low investment costs
- Possibility to irrigate by night at less evaporation hours.

Recommended uses:

It is almost exclusively used for crops like corn, soybeans, potato or sunflower and also for forage crops such as alfalfa, or industrial plant use (cotton). It is more profitable to use pivot where there is not much slope.

Components:

Diffuser: water jet, circular small jet.

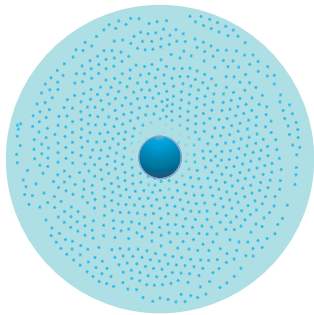
Spray: water jet around an axis forming a circle.

Rotational spray : water jet around an axis forming a complete circle.

Pressure regulator: mechanism that maintains constant pressure of the water contained in the installation of irrigation systems to obtain uniformity of jet water and to avoid over pressure in the pipes.



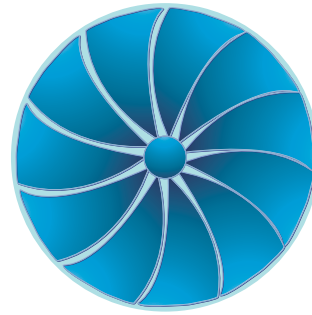
Wet area according to jet exit



DIFFUSER



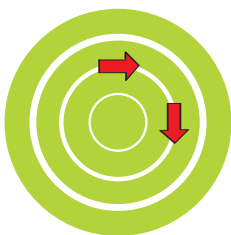
SPRAY



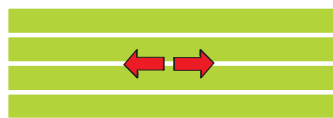
ROTATIONAL

Different types of Pivot irrigation

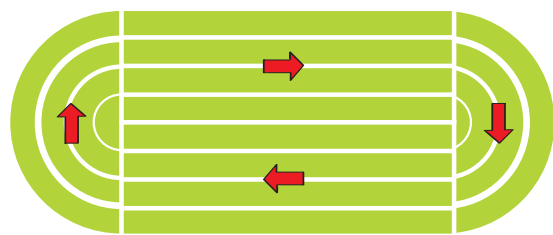
- **Central pivot:** the irrigated area forms a circle around a central axis, the water intake.
- **Lateral pivot:** the irrigated area looks like a rectangle
- **Racetrack shaped pivot:** the irrigated area looks like a racecourse, combining the two systems described before, with rotation and movement in a single irrigation system.



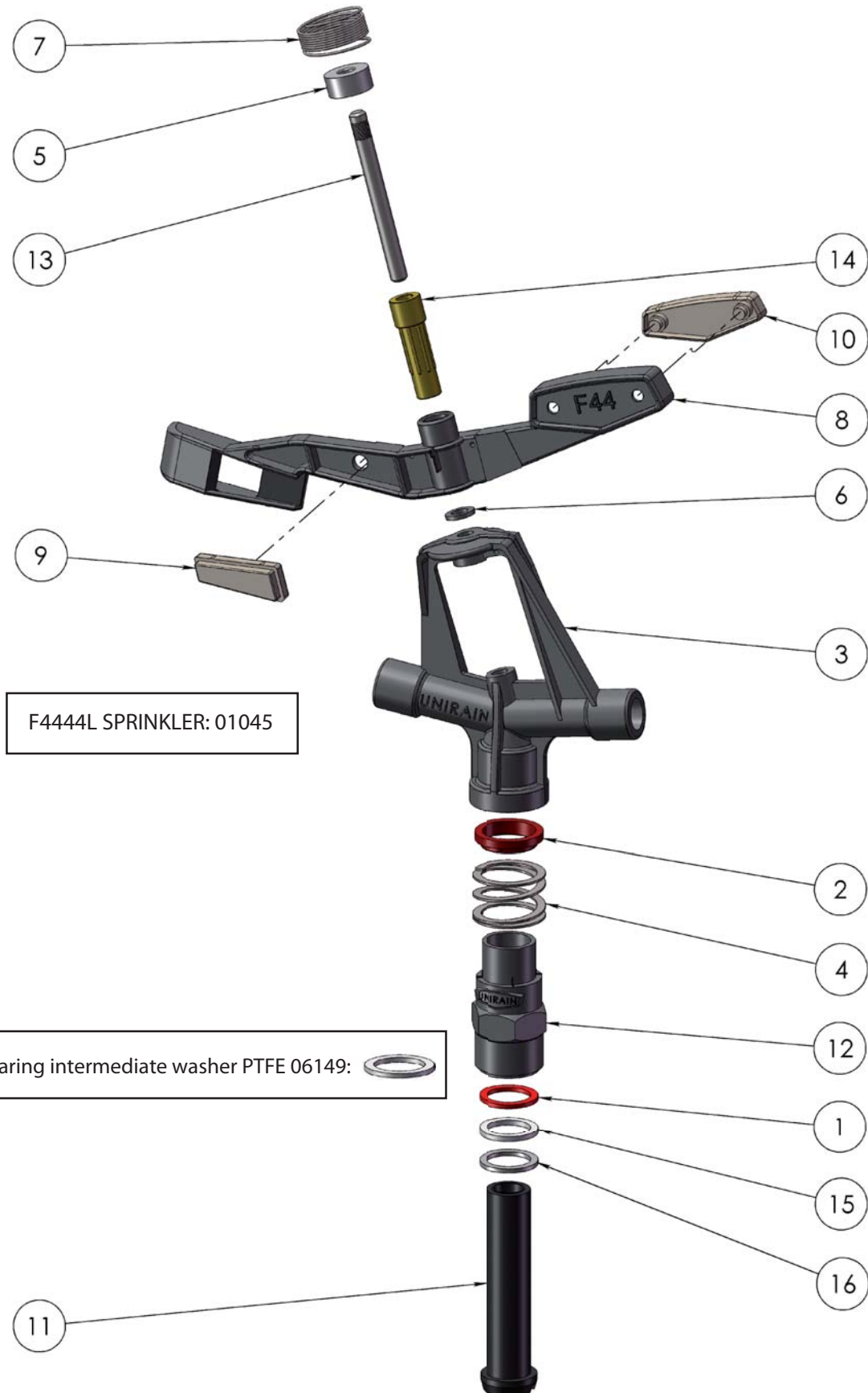
CENTRAL



LATERAL



RACETRACK



COMPONENT NUMBER	CODE	DESCRIPTION	MATERIAL	QUANTITY
1	00252	Bearing Upper Washer	Anti Hydrolisis PU	1
2	00255	Bearing Body Lock	High Density PE	1
3	00326	Sprinkler BodyF4444	POM	1
4	06151	Bearing Spring	Stainless Steel	1
5	06161	Swing Arm Cap	PE	1
6	06162	Swing Arm Support Washer	NBR	1
7	06183	Arm Spring 3/4" Series	Stainless Steel	1
8	06514	F44 Sprinkler Arm F44	PA6 + Fiber Glass	1
9	06515	Front Counterweight	ZAMAK	1
10	06516UNI	Unirain Back Counterweight	ZAMAK	1
11	06517	Bearing pin P45 / F44	POM	1
12	06518UNI	Bearing body F44	POM	1
13	06519	fulcrum pin	Stainless Steel	1
14	06636	Arm Bearing	POM	1
15	06736	Bearing Intermediate washer	High Density PE	1
16	07459	Bearing Lower washer	NBR	1

Notes

Process/Manufacturer UNIRAIN	Size A3	Material	Code 01044
	Scale 1:2	Name F4444 Sprinkler	
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		E.G.B.	

Senninger PSR & PSR-2

Pressure regulators PSR20; PSR-2-15 y PSR-2-30



Senninger pressure regulators maintain a constant preset outlet pressure that can be matched to the applicator design, regardless of variations in inlet pressure. This helps maintain sprinkler pattern integrity and performance.

The patented PSR-2 is ideal for systems pumping surface water.

Senninger introduced the first high-quality in-line pressure regulator to the irrigation industry in 1966.

FEATURES

- Flows: 0.5 to 15 gpm (114 to 3407 L/hr) allows the use of the same model along the entire machine.
- Each regulator maintains a constant preset outlet pressure based on its flow/inlet pressure.
- Outlet pressures: 6 to 50 psi (0.41 to 3.45 bar)
- Tamper-proof housing
- Very low hysteresis and friction losses
- 100% pressure tested to ensure quality and performance

APPLICATION INTENSITY

Uncontrolled pressure fluctuations in irrigation systems result in unwanted flow deviations and over and under-watering. These fluctuations occur with the cycling on/off of an end gun, activation of a corner arm, variations in field elevation or water supply. Proper use of pressure regulators helps maintain the overall efficiency.

PSR Y PSR-2 DESIGN CRITERIA	Preset Operating Pressure	Maximum Inlet Pressure	Flow Range	Outlet-Inlet Sizes
PSR-2-15	15 psi (1,03 bar)	95 psi (6,55 bar)	0,5 - 15 gpm 114 - 3407 L/hr	3/4"-3/4" Female NPT
PSR - 20	20 psi (1,38 bar)	100 psi (6,89 bar)		
PSR-2-30	30 psi (2,07 bar)	110 psi (7,58 bar)		

The pressure regulator shall maintain the predetermined operating pressure provided that the inlet pressure is at least 5 psi (0.34 bar) above the expected outlet pressure, but not exceeding the maximum inlet pressure as shown above.

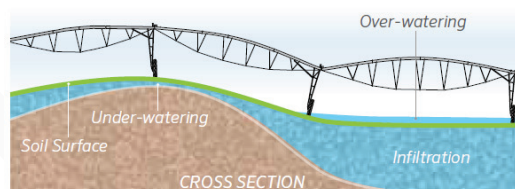
CAUTION: Always install downstream from all shut-off valves. Not NSF certified. Recommended for outdoor use only.

DESIGN PRESSURE	Pressure Variations			
	1 psi (0,69 bar)	2 psi (1,38 bar)	3 psi (2,07 bar)	5 psi (2,76 bar)
6 psi (0,41 bar)	8,3%	16,7%	25,0%	41,7%
10 psi (0,69 bar)	5,0%	10,0%	15,0%	25,0%
15 psi (1,03 bar)	3,3%	6,7%	10,0%	16,7%
20 psi (1,38 bar)	2,5%	5,0%	7,5%	12,5%
% Flow Variation				

Pressure regulators are recommended if there is a 10% pressure and/or a 5% flow variation. The lower a system's design pressure, the more critical it is to accurately control its pressure.

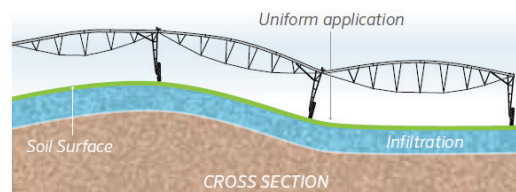
Without Pressure Regulators

Many irrigation systems have the potential to experience elevation and pressure changes, which cause flow fluctuations on unregulated systems.



With Pressure Regulators

Distribution remains uniform even as elevation changes.



Senninger PR>LF

Pressure Regulators



Application

Pressure Regulator is designed to automatically regulate water pressure in pipes or tubing downstream and it is ideal for installations such as solid set, drip or other low volume irrigation as well as center pivot and other mechanical-move systems.

The correct use of pressure regulators prevents pressure fluctuations and helps maintaining distribution uniformity, saving water and improving production.

Ideal for Flows: 0.1 to 8.0 gpm (22.7-1814.4L/hr) for installations as solid set, drip as well as center pivot and other mechanical-move systems.

Advantages

- Senninger regulators maintain a preset outlet pressure while handling constant inlet pressures.
- Very low hysteresis and friction
- Maximum flow path resistant to plugging
- 100% water-tested for accuracy. No adjustments ever needed
- Built for strength and durability using high impact engineering-grade thermoplastics
- Models are available for low, medium and high flow.
- Can be installed above or below ground.

Technical specifications

- Maintains a constant preset outlet pressure while handling varying inlet pressures.
- All Senninger pressure regulators are constructed of durable high-impact engineering-grade thermoplastics with a high quality stainless steel compression spring and securing screws.
- PRL-LF CMS models are designed specifically for mining applications where pH solutions are less than or equal to 4.0.
- PRL-LF EFF models (lavender top) are designed specifically for wastewater applications.



LF



LF-CMS



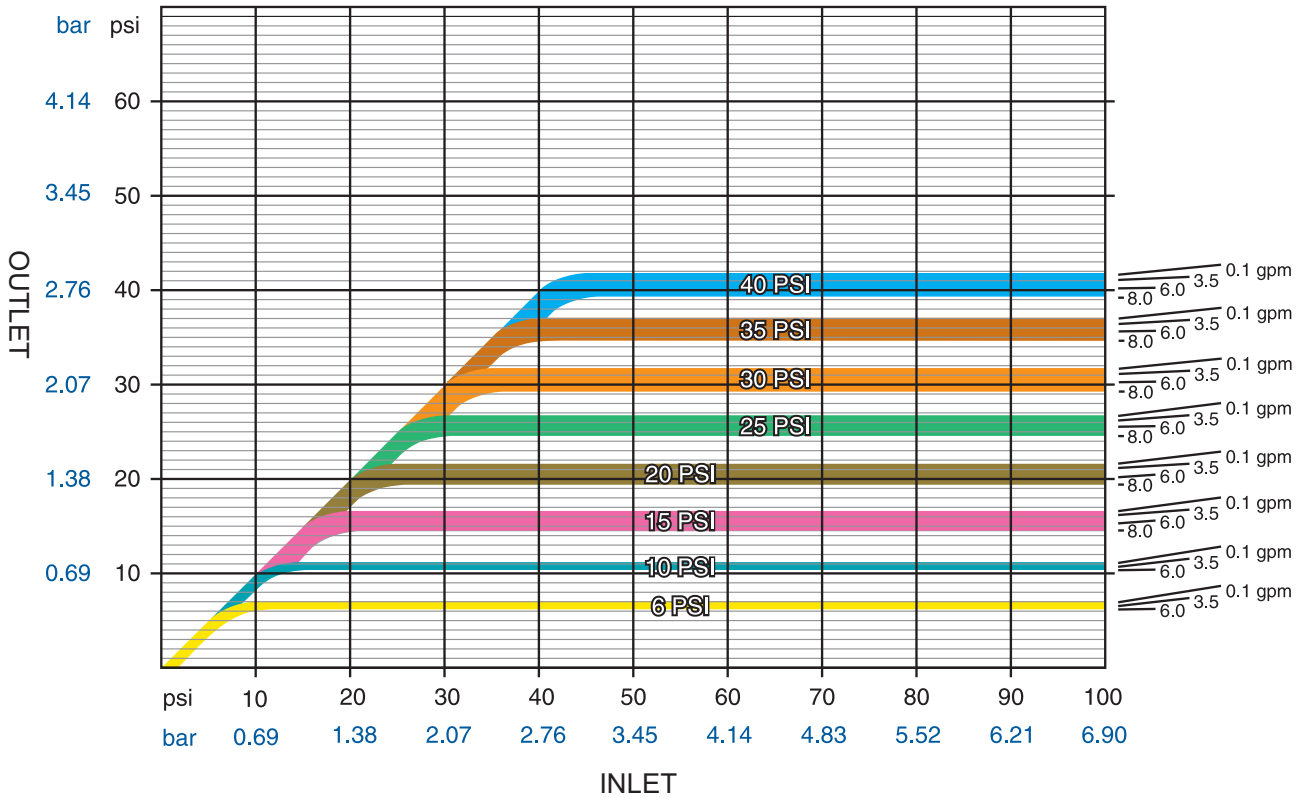
LF-EFF



Model	Preset operating pressure		Maximum inlet pressure		Flow Range		Inlet Sizes	Outlet Sizes
	PSI	bar	PSI	bar	gpm	L/hr		
PRL - 15 LF	15	1.04	150	10.35	0.1 - 8	22.7 - 1814.4	3/4" F NPT	3/4" F NPT
PRL - 20 LF	20	1.38	150	10.35	0.1 - 8	22.7 - 1814.4	3/4" F NPT	3/4" F NPT

Regulated pressure is 1/2 psi [0.03 bar] higher with increasing inlet pressure than with decreasing inlet pressure

Performance chart



WARRANTY, TERMS AND CONDITIONS

Senninger products are warranted for 2 years from date of original sale to be free of defective material and workmanship when used within the working specifications for which the products were designed and under normal use and Service.

The manufacturer assumes no responsibility for assembling, dismantling or repair by unauthorized personnel.

The manufacturer's liability under this warranty is limited to replacement or repair of defective parts and the manufacturer will not be liable for damage in crops or any other consequential damages resulting from misuse of the product covered by this warranty.

This warranty is expressly in lieu of all other warranty, expressed or implied, including the warranties of merchantability and fitness for particular purposes and of all other obligations or liabilities of the manufacturer.

No agent, employee or representative of the manufacturer has authority to change, alter or add to the provisions of this warranty nor to make any representations or warranty not stipulated herein.

Senninger PMR-MF

Pressure Regulators



Application

It is designed to automatically regulate water pressure in pipes or tubing downstream.

These regulators fit very well for low volume irrigation as well as center pivot and other mechanical-move systems.

Senninger pressure regulators maintain distribution uniformity by preventing pressure fluctuations. This helps save water and increase production.

Ideal for Flows: 2 to 20 gpm (453.6 - 4536.0 L/hr) for installations such as solid set, drip, center pivot and other mechanical-move systems.

Advantages

- Maintains a preset outlet pressure while handling constant inlet pressures
- Very low hysteresis and friction.
- Maximum flow path resistant to plugging
- 100% water-tested for accuracy. No adjustments ever needed
- Built for strength and durability using high impact engineering-grade thermoplastics material.
- Models are available for low, medium and high flow.
- Can be installed above or below ground.

Technical specifications

- Maintains a constant preset outlet pressure while handling varying inlet pressures.
- All Senninger pressure regulators are constructed of durable high-impact engineering-grade thermoplastics with a high quality stainless steel compression spring and securing screws.
- PMR-MF CMS models are designed specifically for mining applications where pH solutions are less than or equal to 4.0.
- PMR-MF EFF models (lavender top) are designed specifically for wastewater applications.



MF



CAUTION:
Always install
downstream
from all shut
off valves.



MF-CMS

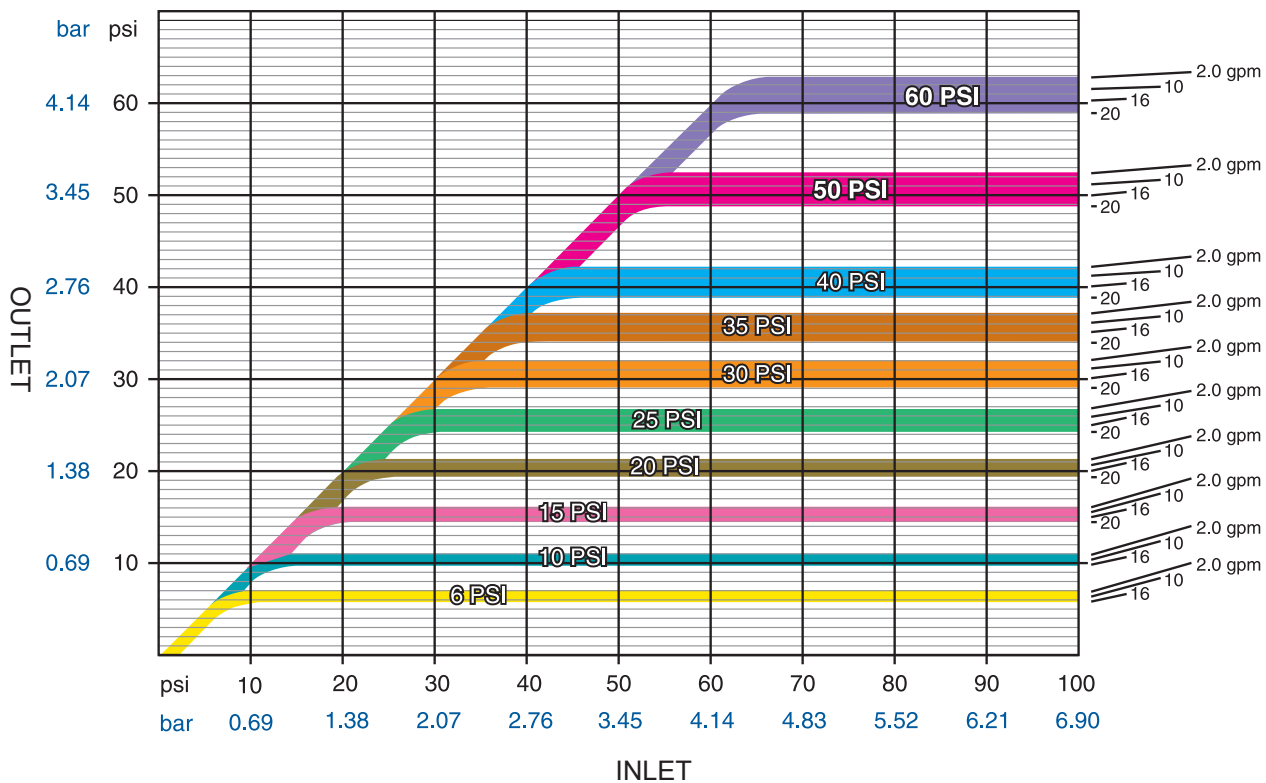


MF-EFF



Model	Preset operating pressure		Maximum inlet pressure		Flow Range		Inlet Sizes	Outlet Sizes
	PSI	bar	PSI	bar	gpm	L/hr		
PMR - 6 MF	6	0.41	100	6.90	4 - 16	907.2 - 3628.8	3/4" F NPT	3/4" F NPT
PMR - 10 MF	10	0.69	120	8.28	4 - 16	907.2 - 3628.8	3/4" F NPT	3/4" F NPT
PMR - 12 MF	12	0.83	135	9.31	2 - 20	453.6 - 4536.0	3/4" F NPT	3/4" F NPT
PMR - 15 MF	15	1.04	150	10.35	2 - 20	453.6 - 4536.0	3/4" F NPT	3/4" F NPT
PMR - 20 MF	20	1.38	150	10.35	2 - 20	453.6 - 4536.0	3/4" F NPT	3/4" F NPT
PMR - 20 MF	20	1.38	150	10.35	2 - 20	453.6 - 4536.0	1" F NPT	1" F NPT
PMR - 25 MF	25	1.73	150	10.35	2 - 20	453.6 - 4536.0	3/4" F NPT	3/4" F NPT
PMR - 25 MF	25	1.73	150	10.35	2 - 20	453.6 - 4536.0	1" F NPT	1" F NPT
PMR - 30 MF	30	2.07	150	10.35	2 - 20	453.6 - 4536.0	3/4" F NPT	3/4" F NPT
PMR - 30 MF	30	2.07	150	10.35	2 - 20	453.6 - 4536.0	1" F NPT	1" F NPT
PMR - 35MF	35	2.42	150	10.35	2 - 20	453.6 - 4536.0	3/4" F NPT	3/4" F NPT
PMR - 40MF	40	2.76	150	10.35	2 - 20	453.6 - 4536.0	3/4" F NPT	3/4" F NPT
PMR - 50 MF	50	3.45	150	10.35	2 - 20	453.6 - 4536.0	3/4" F NPT	3/4" F NPT
PMR - 60 MF	60	4.14	150	10.35	2 - 20	453.6 - 4536.0	3/4" F NPT	3/4" F NPT

Performance curves



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Senninger PR-HF

Pressure regulator



Application

It is designed to automatically regulate water pressure in pipes or tubing downstream.

These products are very effective for low volume manifolds and mechanical-move irrigation systems.

The correct use of Senninger pressure regulators helps maintaining distribution uniformity by preventing pressure fluctuations. This helps save water and increase production.

Ideal for Flows: 10 to 32 gpm (2271 - 7268 L/hr) including solid set, drip or other low volume irrigation as well as center pivot and other mechanical-move systems.

Advantages

- Maintains a preset outlet pressure while handling constant inlet pressures
- Very low hysteresis and friction losses
- Maximum flow path resistant to plugging
- 100% water-tested for accuracy. No adjustments ever needed
- Built for strength and durability using high impact engineering-grade thermoplastics material.
- Models are available for low, medium and high flow.

Technical specifications

- Maintains a constant preset outlet pressure while handling varying inlet pressures.
- All Senninger pressure regulators are constructed of durable high-impact engineering-grade thermoplastics with a high quality stainless steel compression spring and securing screws.
- Regulators pressure are necessary when it exists 10% of pressure and/or a 5% flow variation. The lower the system pressure is, more accurate must be the pressure control.



HF



CAUTION:
Always install
downstream
from all shut
off valves.

DESIGN PRESSURE	PRESSURE VARIATIONS				
	1 PSI (0,069 bar)	2 PSI (0,138 bar)	3 PSI (0,207 bar)	4 PSI (0,276 bar)	5 PSI (0,345 bar)
6 PSI (0,41 bar)	8.3	16.7	25.0	33.3	41.7
10 PSI (0,69 bar)	5.0	10.0	15.0	20.0	25.0
15 PSI (1,03 bar)	3.3	6.7	10.0	13.3	16.7
20 PSI (1,38 bar)	2.5	5.0	7.5	10.0	12.5

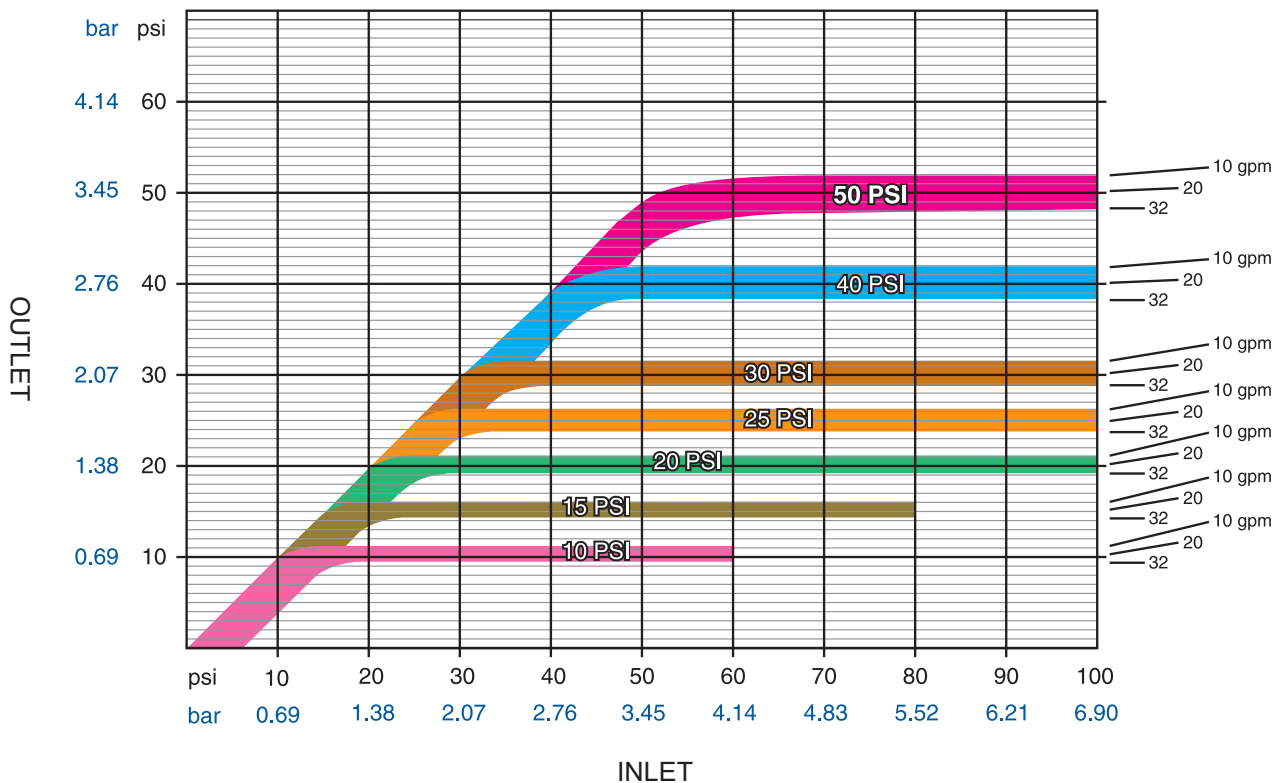
↑ % Flow Variation ↓



Model	Preset operating pressure		Maximum inlet pressure		Flow Range		Inlet Sizes	Outlet Sizes
	PSI	bar	PSI	bar	gpm	L/hr		
PR - 10 HF	10	0.69	60	4.14	10 - 32	2271 - 7268	1¼" F NPT	1" F NPT
PR - 15 HF	15	1.04	80	5.52	10 - 32	2271 - 7268	1¼" F NPT	1" F NPT
PR - 20 HF	20	1.38	100	6.90	10 - 32	2271 - 7268	1¼" F NPT	1" F NPT
PR - 25 HF	25	1.73	100	6.90	10 - 32	2271 - 7268	1¼" F NPT	1" F NPT
PR - 30 HF	30	2.07	100	6.90	10 - 32	2271 - 7268	1¼" F NPT	1" F NPT
PR - 40 HF	40	2.76	100	6.90	10 - 32	2271 - 7268	1¼" F NPT	1" F NPT
PR - 50 HF	50	3.45	100	6.90	10 - 32	2271 - 7268	1¼" F NPT	1" F NPT

Regulated pressure is 1/2 psi [0.03 bar] higher with increasing inlet pressure than with decreasing inlet pressure

Performance curves



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Unirain SP4

PIVOT Spray



Application

Fixed sprayhead designed to equip travelling irrigation systems, such as CENTER PIVOTS or LINEAR MOVES.

Advantages

- Nozzle system easy to change.
- Long wear life components.

Technical specifications

- It's composed by just three parts: body, wearpad and nozzle.
The body is made of fiber-glass reinforced polyamide and treated for protection against the UV radiation. The wearpad is made of antiabrasive polyurethane. It provides an almost unlimited durability. The nozzle is made of brass. A wide range on nozzle sizes will help achieving the desired flow.
- Large nozzle range.
- There are four different wearpads that can be used with the SP4, including 180° part circle one:
 - o Grooved Flat (PL/R): The standard wearpad can be used on drops or on top of the pipe. Up from 20 psi working pressure.
 - o Smooth Flat (PL/L): The alternative to the PL/R when the working pressure is not enough (10-15 psi).
 - o Smooth Convex (CVX/L): Just as the PL/L, this is the low pressure alternative to the CVX/R.
 - o 180° Grooved Flat (PL/R 180°): Half circle Grooved Flat wearpad. Perfect to prevent water from reaching control boxes or wheels.



SP4



PL-R



PL-L



CVX-L



PL-R 180°



3RN

Notes

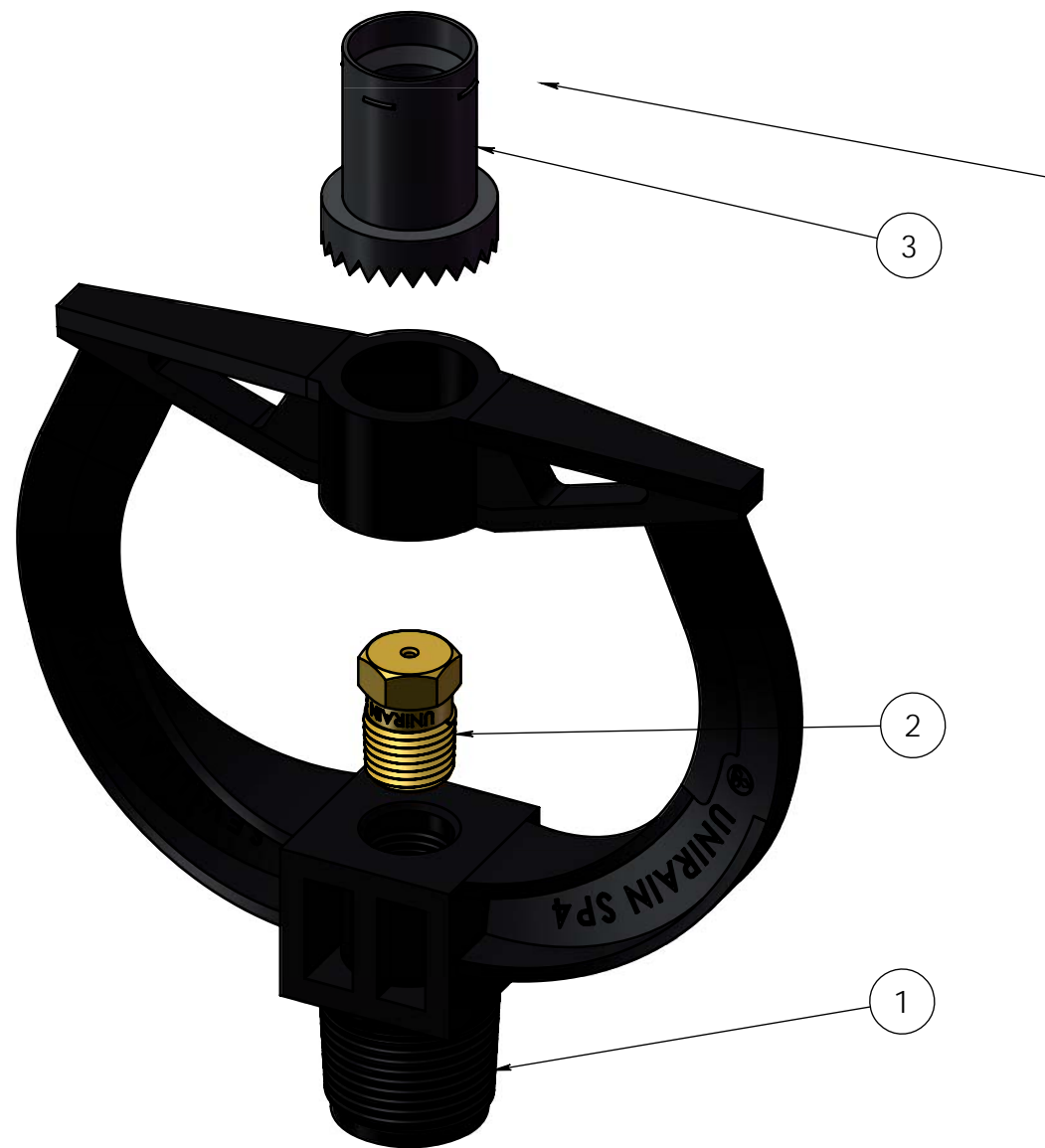
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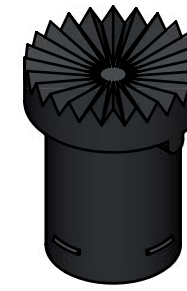
COMPONENT NUMBER	SPARE CODE	DESCRIPTION	MATERIAL	QUANTITY
1	00026	Body SP4 Unirain Spray	PA6+Fiber Glass+UV	1
2	00071	3RN Nozzle (#4 - #25)	Brass	1
3	00023	Grooved Flat Wearpad	Polyurethane (PU)	1



CVX/L
SMOOTH CONVEX WEARPAD
(00024)



PL/L
SMOOTH FLAT WEARPAD
(00022)



PL/R
GROOVED FLAT WEARPAD
(00023)



PL/R 180°
180° GROOVED FLAT
WEARPAD PL/R
(00027)

MODELS OF DEFLECTOR TO CHOOSE ACCORDING TO NEEDS

Notes

Process/Manufacturer <i>Unirain</i>	Size A3	Material	Code SP4
	Scale 1:1	Name SP4	
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	A.M.R		

Unirain MP5

PIVOT Spray



Application

Fixed spray head designed to equip self-propelled irrigation systems, such as CENTER PIVOTS or LATERAL. High resistance and durability, and excellent performance in adverse conditions. Thanks to its modularity, it can be adapted to various kind of crops just by changing the plate. It can also be installed in center pivots in which there are components or areas that must not get wet, with a plate limiting the irrigated area to 180°.

Advantages

- With a total of 45 available nozzle sizes, it guarantees the highest water application precision when preparing the Center Pivot or Lateral.
- Easy identification: each nozzle is identified by a colour and its size is carved in two of the three raised mould fins.
- the ring of the corresponding complementary colour is pre-fitted to the body of the nozzle, avoiding screen-printing, which disappears over time and with the action of sunlight.
- Thanks to his three-legged body, together with the leak-proof pads, greater distribution of water in the close-in area is achieved
- the plate-holder can hold a different plate on each side, allowing the water distribution pattern to be changed just by flipping the plate-holder.
- The pads have been designed for an efficient water distribution across the irrigation machines, combined with a wide range and unbeatable uniformity.

Technical specifications

- Modular Spray.
- 3/4" M base thread.
- Leak-Proof Pad.
- Pressure range: 6-50 PSI (0,42-4,14 kg/cm²).
- Nozzle range: #8(1/16"-1.59mm) - #52 (13/32"-10.32mm.)
- Three legged body.
- Highy-resistant UV-treated thermoplastic.
- Capacity to mount two plates on the same unit.
- Coarse Groove (RG) for a standard irrigation, and Smooth Groove (RF) for germination and sensitive crops that require smaller droplets.
- Easy identification of nozzle sizes.
- Easy maintenance required, can be disassembled without any tools.



MP5



	Description	Nozzles Range	Pressure	Assembly	Flow Range (ø)
Flat Smooth Groove Pad	Recommended for Germination and Irrigation. Working pressure: 10 - 30 PSI. Better water pulverization. Designed for drop or up-top mounting	#8-#52	10 - 30 PSI (0.7 - 2.1 bar)	with or without Drops	4.9 m-12.2 m
Concave Smooth Groove Pad	Recommended for Germination and Irrigation. Working pressure: 10 - 30 PSI. Designed for drop mounting.	#8-#52	15 - 40 PSI (1 - 2.8 bar)	with Drops	6 m-13 m
Flat Coarse Groove Pad	Recommended for Irrigation. This is the recommended standard pad. Longer throw radius. Working pressure: 15 - 40 PSI. Designed for drop or up-top mounting.	#8-#52	10 - 30 PSI (0.7 - 2.1 bar)	with or without Drops	4.9 m-12.2 m
Concave Coarse Groove Pad	Recommended for Irrigation. Working pressure: 15 - 40 PSI. Designed for drop mounting.	#8-#52	15 - 40 PSI (1 - 2.8 bar)	with Drops	6 m-13 m
180 Part Circle and Flat Smooth Groove Pad	Recommended for Germination and Irrigation. Working pressure: 10 - 30 PSI. Better water pulverization. To fix near towers and to avoid water on wheels path.	#10-#48	10 - 30 PSI (0.7 - 2.1 bar)	with Drops	4.5 m-8 m



Now with the 3/4 adapter for MP5, an improved irrigation coverage is possible.
The uniformity and performance of irrigation water can be optimized with it. It can be adapted to the required height:

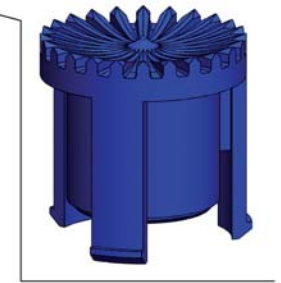
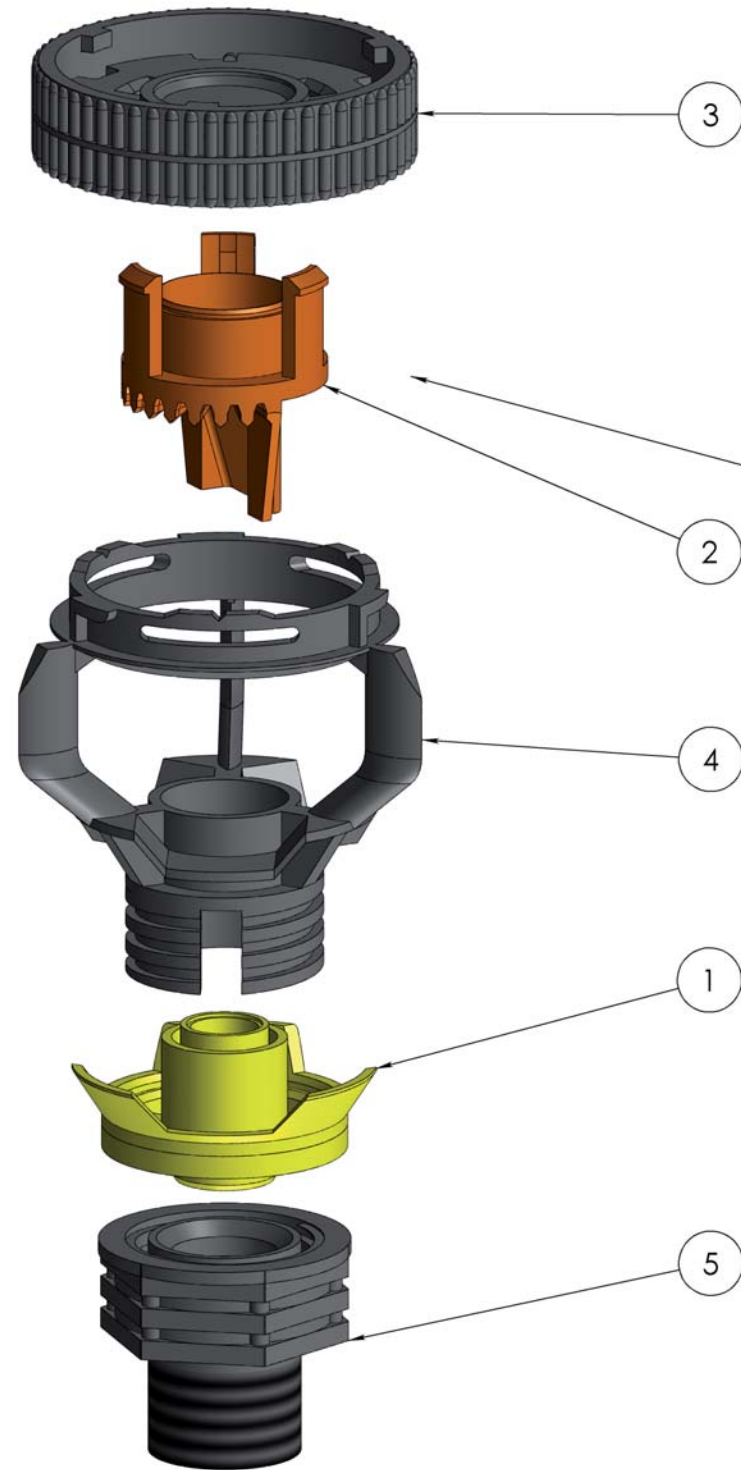
- 1 meter
- 1,2 meters
- 1,5 meters

WARRANTY AND EXCLUSIONS

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SEE THE MODELS IN THE TECHNICAL SHEET

COMPONENT NUMBER	PART NUMBER	DESCRIPTION	MATERIAL	QUANTITY
1	04308 - 04352	MP5 Full Nozzle (#8 - #52) Nozzle + Seal + O-Ring	Polypropylene/NBR	1
2	04226	180° Flat smooth Groove Pad	Polyoxymethylene (POM)	1
3	04210	MP5 Top	Polyoxymethylene (POM)	1
4	04201	Mp5 Spray Body	Polyoxymethylene (POM)	1
5	04000	MP5 Base Adapter	Polyoxymethylene (POM)	1

Notes

Process/Manufacturer UNIRAIN	Size A3	Material	Code
	Scale 1:1	Name MP5 Spray	
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	J.N.E.		

Unirain MP5

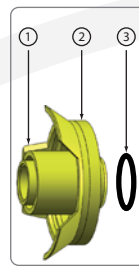
Nozzles



Features

Each nozzle has three elements:

- 1- Nozzle
- 2- Color coded ring
- 3- O-Ring



Made of anti-abrasive acetal resin and colour-coded with measurements in inches to a scale of 1/128" (0.198 mm). Covers the widest range of measurements in its category, from #8 (1/16" - 1.59 mm) to #52 (13/21" - 10.32 mm) consecutively.

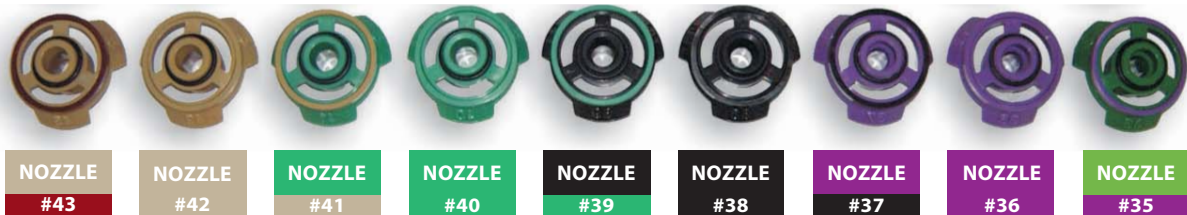
In addition a colour-coded ring identifies odd-numbered measurements, taking the colour of the measurement immediately above.

PRESSURE	NOZZLE #8	NOZZLE #9	NOZZLE #10	NOZZLE #11	NOZZLE #12	NOZZLE #13	NOZZLE #14	NOZZLE #15	NOZZLE #16	NOZZLE #17	NOZZLE #18	NOZZLE #19
Bar	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H
0,41	56	72	91	113	135	161	188	217	249	276	316	353
0,69	72	93	118	145	175	207	242	280	320	358	408	455
1,03	88	114	144	177	214	253	296	343	392	441	499	556
1,38	102	132	166	205	246	292	342	395	452	512	575	642
1,72	114	147	186	229	275	326	382	442	505	576	643	717
2,07	125	161	204	250	301	357	418	483	553	635	703	785
2,76	144	186	235	289	348	412	558	558	638	738	811	905
3,45	161	208	262	323	388	461	623	623	713	830	906	1011

PRESSURE	NOZZLE #20	NOZZLE #21	NOZZLE #22	NOZZLE #23	NOZZLE #24	NOZZLE #25	NOZZLE #26	NOZZLE #27	NOZZLE #28	NOZZLE #29	NOZZLE #30
Bar	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H
0,41	392	433	475	520	563	610	660	712	764	819	874
0,69	505	557	613	669	725	786	850	916	984	1054	1126
1,03	618	682	749	817	887	961	1039	1120	1203	1288	1376
1,38	712	786	864	942	1023	1108	1198	1292	1387	1485	1586
1,72	796	878	965	1051	1142	1238	1338	1442	1550	1659	1771
2,07	871	961	1056	1150	1250	1355	1465	1579	1696	1815	1938
2,76	1005	1109	1218	1325	1442	1563	1689	1820	1956	2093	2235
3,45	1122	1239	1360	1480	1610	1745	1887	2033	2184	2337	2496

PRESSURE	NOZZLE #31	NOZZLE #32	NOZZLE #33	NOZZLE #34	NOZZLE #35	NOZZLE #36	NOZZLE #37	NOZZLE #38	NOZZLE #39	NOZZLE #40	NOZZLE #41
Bar	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H
0,41	934	993	1055	1119	1185	1253	1322	1394	1467	1541	1619
0,69	1201	1278	1358	1440	1525	1612	1701	1793	1887	1983	2082
1,03	1468	1562	1660	1760	1863	1969	2078	2190	2304	2421	2542
1,38	1692	1801	1913	2029	2148	2270	2395	2524	2655	2790	2928
1,72	1889	2011	2136	2265	2398	2534	2674	2817	2964	3115	3268
2,07	2067	2201	2338	2479	2624	2773	2925	3082	3243	3407	3575
2,76	2382	2537	2695	2857	3024	3196	3371	3552	3737	3926	4120
3,45	2660	2833	3009	3190	3376	3568	3764	3965	4171	4383	4598

PRESSURE	NOZZLE #42	NOZZLE #43	NOZZLE #44	NOZZLE #45	NOZZLE #46	NOZZLE #47	NOZZLE #48	NOZZLE #49	NOZZLE #50	NOZZLE #51	NOZZLE #52
Bar	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H	L/H
0,41	1697	1777	1857	1937	2015	2092	2170	2252	2332	2413	2495
0,69	2182	2285	2387	2490	2589	2689	2789	2892	2996	3100	3205
1,03	2664	2790	2914	3040	3160	3281	3404	3528	3654	3781	3909
1,38	3070	3214	3356	3501	3639	3779	3920	4063	4207	4353	4500
1,72	3426	3587	3746	3907	4061	4216	4374	4532	4693	4856	5020
2,07	3748	3924	4097	4274	4441	4611	4783	4956	5132	5310	5489
2,76	4318	4520	4719	4923	5115	5311	5509	5707	5909	6114	6320
3,45	4819	5045	5266	5494	5707	5926	6147	6366	6592	6820	7051



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Unirain PIVOT-Drainage

Drain for PIVOT wheel Gearbox



Application

Drain Plug to join in the wheel gearboxes or in central gearmotors, to make easy the purge of condensed water. Thanks to its compact and strong design is not necessary to unscrew completely the drain cock, this is to avoid complications during the removal operation of accumulated water inside.

Advantages

- No need to remove the screw completely: This will prevent unwanted situations such as the screw loss in the farmlands or the repetition of the tapping operation.
- Minimum wear of the threads in the gearbox.
- Opening and Closing with a simple and quick movement.
- We can loosen and tighten the drain cock with the same wrench used for the nozzles (standard wrench 13mm).

Technical specifications

- Two parts: Drain Body and Drain cock.
- Two threads sizes available to join in the gearbox (1 / 2" or 3 / 4").
- Drain cock with hex head to use the 13 mm standard wrench or the same wrench used for sprinklers nozzles.



PIVOT-Drainage



assembly in wheel gearboxes

assembly in central gearmotor

Steps



Replace the standard plug of the wheel gearbox or central gearmotor by the PIVOT Drain Plug.



Unscrew the drain cock by hand or using a standard wrench (13mm) for the extraction of condensed water. **No need to remove the screw completely, just loosen the cock and the water will start to escape.**



Finally, just tighten with a standard wrench (13) the drain cock when oil starts to escape.

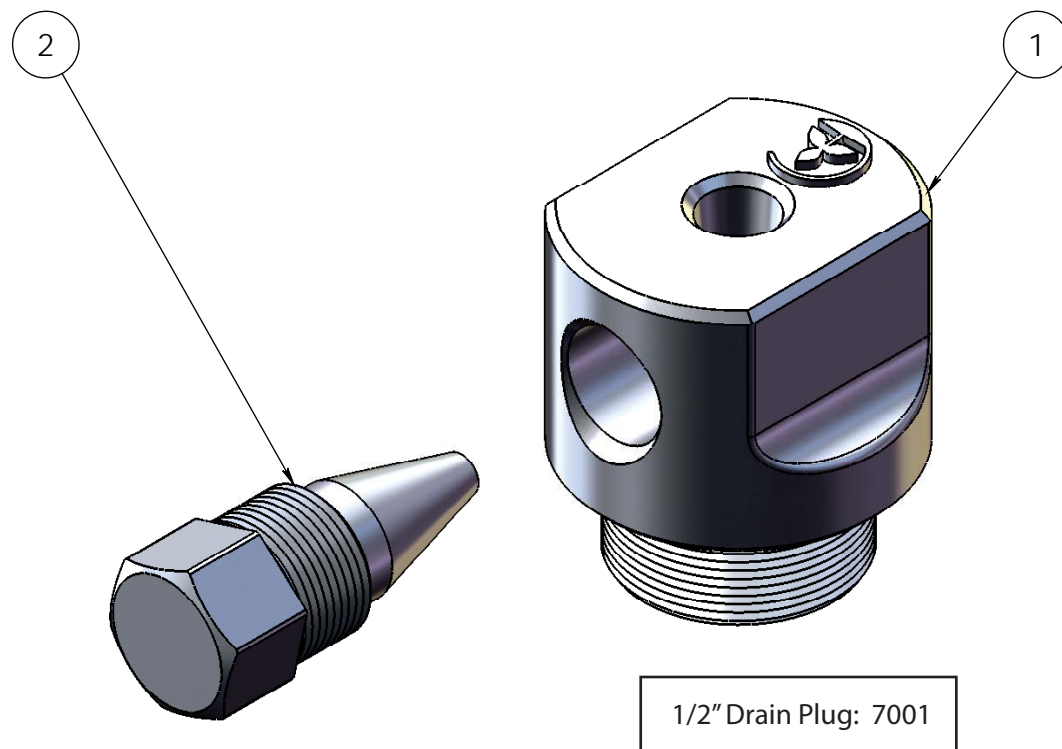
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PART NUMBER	CODES	DESCRIPTION	MATERIAL	QUANTITY
1	07002	3/4" Drain Body	Aluminium	1
2	07000	Drain cock (locking screw)	Aluminium	1



Notes

Process/Manufacturer UNIRAIN	Size A3	Material Aluminium	Code 07010
	Scale 3:2	Name Unirain PIVOT-Drainage	
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	E.G.B.		



Air Release Valves

Introduction:

Air release valves objective is to release air from pipelines at irregular ground as it may appear air bag provoking damages to pipes.

They are also used to bring pressure to pipes whose pressure is lower than barometric one.

Advantages:

- They prevent from breakage in pipes because of overpressure.
- Avoid stagnant water.
- Increase the efficiency of water transport
- Reduce the pressure drop in pipes

Recommended uses:

Simple acting air release valves for areas where it is needed a better removal of undesired elements, for abrupt slopes and every 500 m pipe.

Double or triple acting air release valves: to help filling the pipes, before and after a regulator system and pumping system and every 1000m .

More information about the air release valves:

They can be simple acting valves protecting from or eliminating excess of air in the water or double acting ones which purge air and eliminate trapped air from a piping system introducing fresh air as soon as they are lack of pressure.

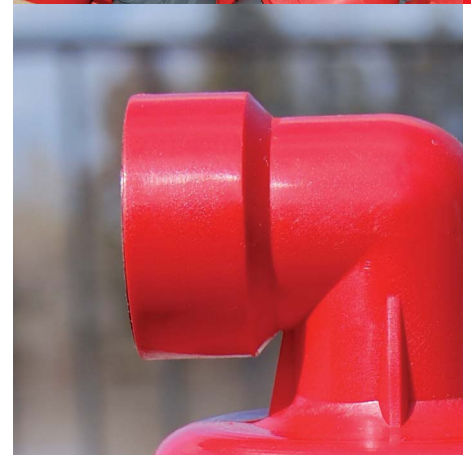
Triple acting air valves, release air from overpressure pipelines and provide air when there is lack of pressure and maintain automatically its mission.

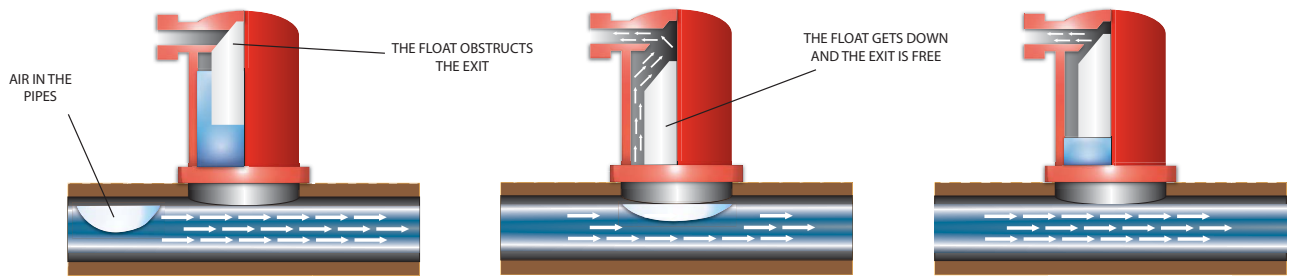
Drop of speed: it is the drop of running speed of water in the pipe, because of friction with the walls of the pipe.

Barometric pressure: Es la presión que ejerce la atmósfera sobre una masa de agua al aire libre.

Overpressure: pressure increase of water in the pipeline system

Lack of pressure: pressure decrease of water in the pipes.



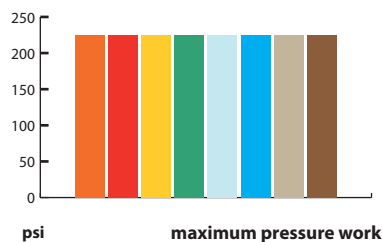
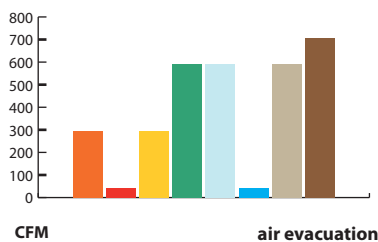
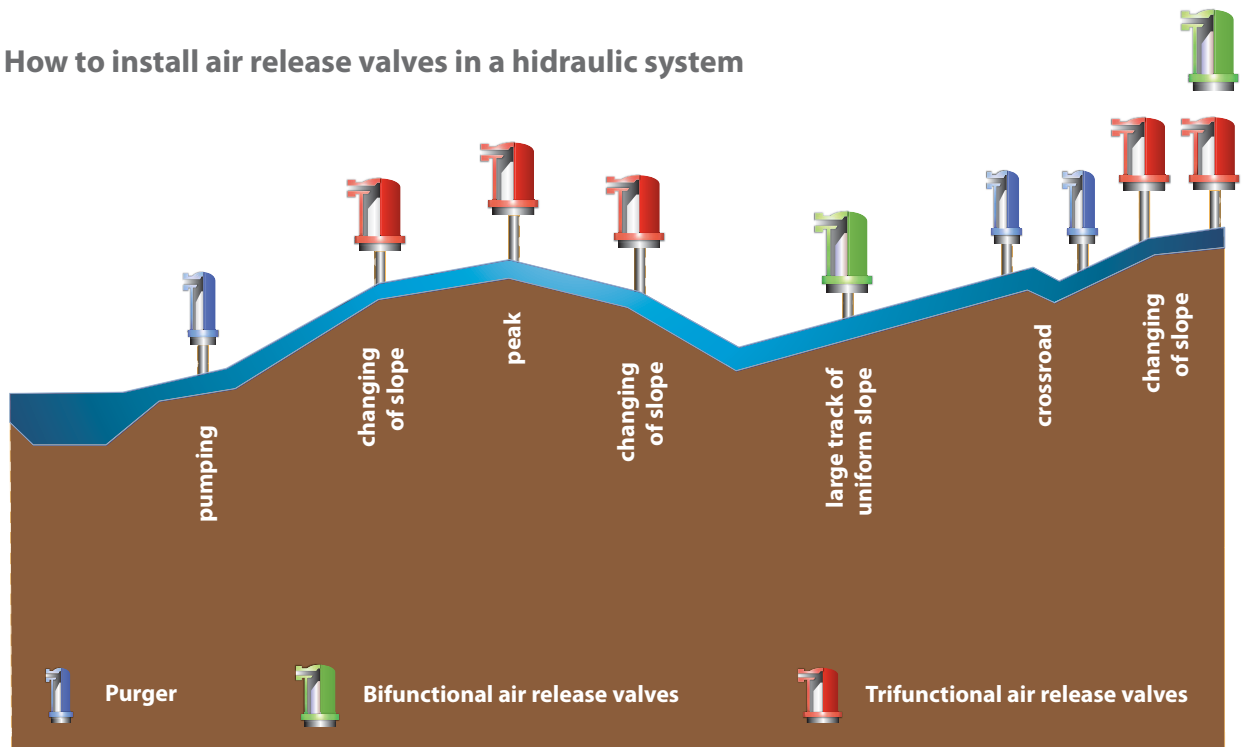


NORMAL POSITION OF A FLOAT

OPENING TRACK FLOAT

RELEASE AIR FLOAT

How to install air release valves in a hidraulic system



ARV 1" K - ARV 1" K(B)	
ARV 1" A - ARV 1" A(B)	
ARV 1" KA - ARV 1" KA(B)	
ARV 2" K - ARV 2" K(B)	
ARV 2" KA - ARV 2" KA(B)	
ARV 1" A(3G)	
ARV Ø (3G) FL	
ARV Ø (3G) FLSW	

UNIRAIN ARV-Mini-In

Vacuum Breaker Air Valve



Units Conversion	
FLOW	PRESSURE
m ³ / h (cubic metres per hour)	mWa (metres of water column)
l / h (litres per hour)	PSI (pounds per square inch)
GPM (gallons per minute)	
CFM (cubic feet per minute)	
1 CFM = 1.699 m³ / h	1 PSI = 0.70307 mWa
1 GPM = 227.1192 l / h	

Application

Vacuum breaker air valve, designed to effectively admit air at high flow rates during drainage and in case of pumping interruption or water column separation
Recommended as safety valve in drip irrigation systems, breaking the system vacuum and preventing dirt suction into the drippers.

For correct operation, the valve should always be in a vertical position.

It is recommended to install a manual ball valve under the ARV, in order to make maintenance and repair operations easier without shutting the whole system*.

Advantages

- The valve has a large hole, with a special seal system, capable of admitting high air flow rates.
- Simple in design, with only 5 parts, it's easy to disassemble for maintenance and cleaning when needed.
- Its body features a built-in filter to prevent objects, such as insects and leaves, from getting into the valve through the outlet.
- Owing to a perfect fit, the valve is totally sealed at low pressures .

Technical specifications

- Performance as vacuum breaker.
- It admits air flows rates up to 185 m³/h (109 CFM).
- Maximum working pressure 12 bar (174 PSI).
- Body and base made of fiberglass-reinforced polyamide.
- Treated for protection from UV radiation.
- Base available in 3/4" male thread.
- Optional BSP or NPT thread.
- Built-in filter in body hole.



BASE
3/4" Male Thread
Available
BSP & NPT

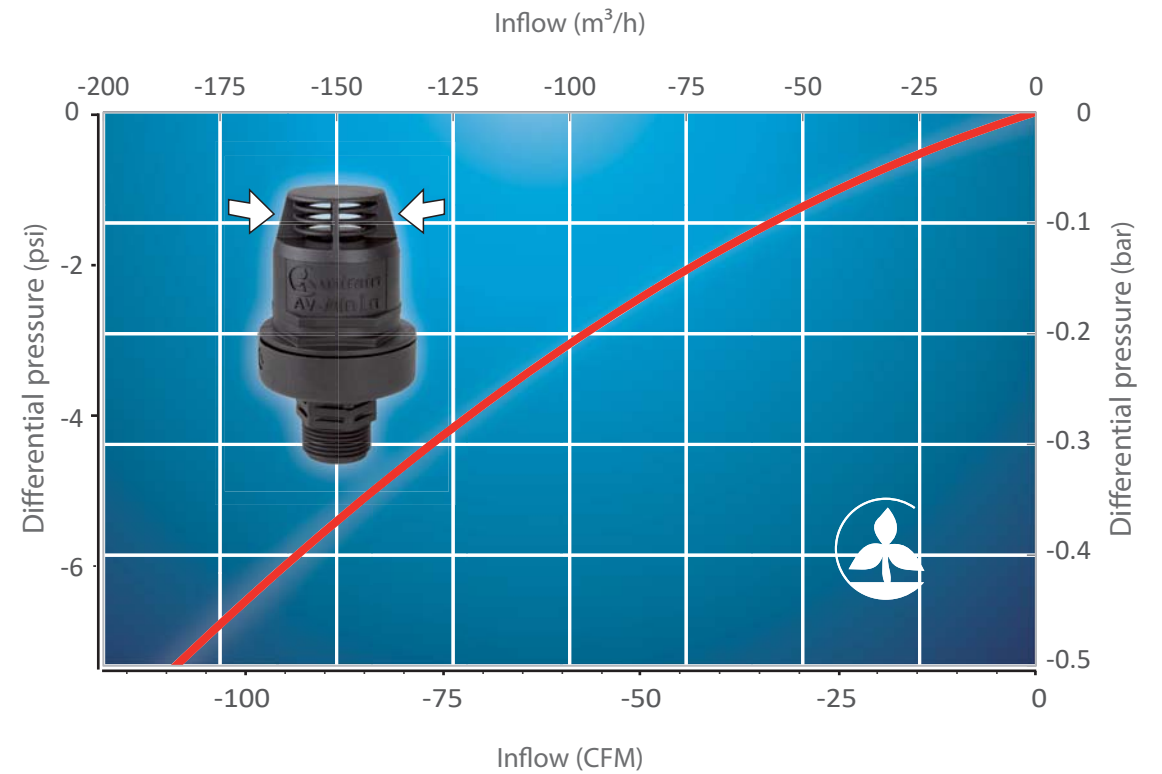
ARV-Mini-In

Performance

Prevents pipes from collapsing (**Vacuum**). At the smallest decrease in pressure, the float drops and opens the seal allowing outside air to enter the pipe immediately.

In drip irrigation systems, this performance helps avoiding dirt suction into the drippers.

Inflow



Normal Conditions Flow
(P= 1 atm, T= 293.15 K)

*Normal conditions of use, service and maintenance.

This product has been tested at low pressure (0.5 bar) and high pressure (12 bar) with satisfactory results.

For correct operation, valves must undergo regular routine checks. The check should include the cleaning of the internal components and inspection of the seal conditions. For more detailed information about the use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION MANUAL".

For specific uses, please consult the technical department.

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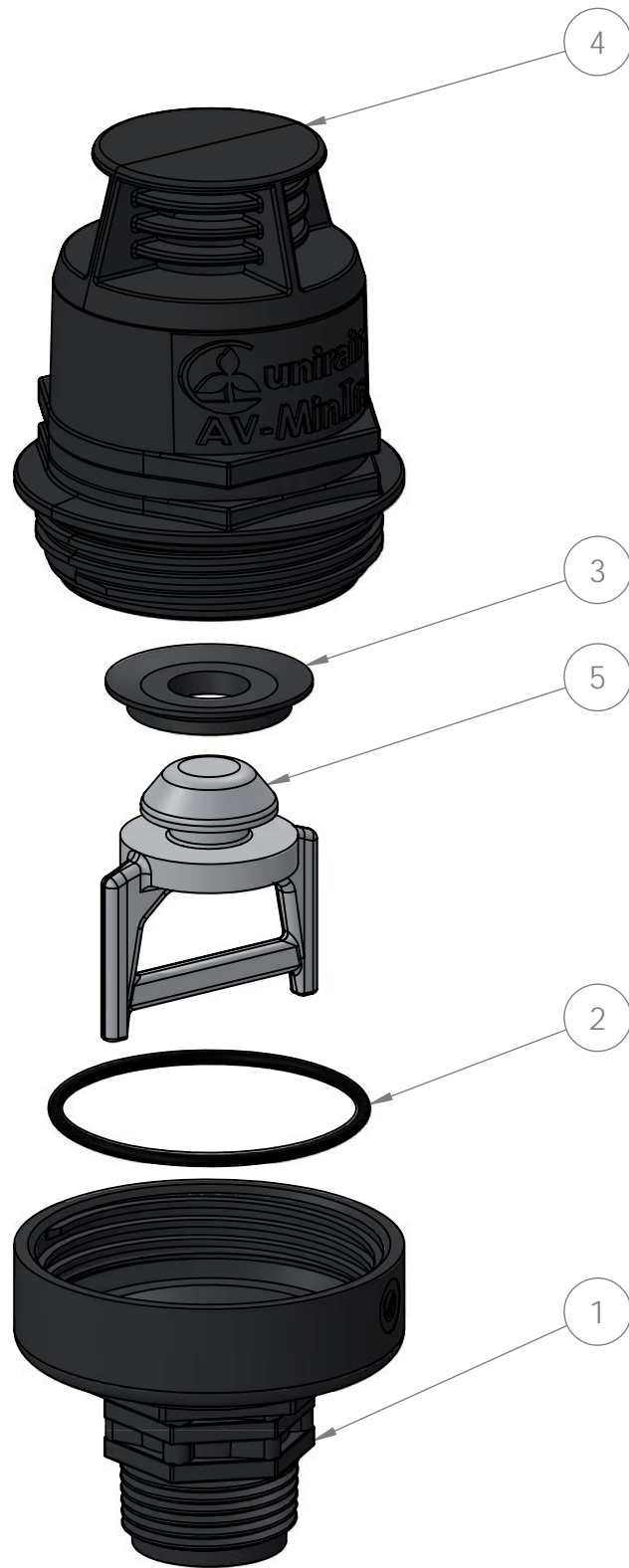
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COMPONENT NUMBER	SPARE CODE	DESCRIPTION	MATERIAL	QUANTY
1	----	ARV Mini 3/4" BSP Base	PA6+Fiberglass	1
2	01748	ARV-Mini 43x2 O-Ring	NBR	1
3	01769EPD	ARV 1"-3/4" Main Seal	EPDM	1
4	----	ARV MinIn body	PA6+Fiberglass	1
5	----	Float ARV-MinIn	Expanded PP	1

Notes

Process/Manufacturer UNIRAIN	Size A3	Material	Code 02334UNI
	Scale 1:1	Name ARV-Mini-In	
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	P.M.M.		

UNIRAIN ARV-Kinetic

Kinetic Air Valve

Available with 1" & 3/4" thread



Units Conversion	
FLOW	PRESSURE
m ³ / h (cubic metres per hour)	mWa (metres of water column)
l / h (litres per hour)	PSI (pounds per square inch)
GPM (gallons per minute)	
CFM (cubic feet per minute)	
1 CFM = 1.699 m³ / h	1 PSI = 0.70307 mWa
1 GPM = 227.1192 l / h	

Application

Designed to efficiently extract air trapped in pipes, filters, tanks and other places where unwanted air might cause performance problems.

The release valves are located at the outlet of pipes whose slope varies according to the hydraulic gradient, in areas where pipes are located above ground level, in long pipes with uniform slope, at the input of measuring instruments, the output of reducing valves, in diameter reductions, pumps, filtration systems, and on both sides of a subterranean crossing road.

For correct operation, the valve should always be in a vertical position.

It is recommended to install a manual ball valve under the ARV, in order to make maintenance and repair operations easier without shutting the whole system*.

Advantages

- Owing to a perfect fit, the valve is totally sealed, even at very low pressures.
- With just five parts, it's easy to disassemble for cleaning when needed.
- Its neck features a built-in filter to prevent objects, such as insects and leaves, from getting into the valve through the outlet.
- Due to its exclusive internal design, the float is not dragged up by the air stream, even when air is faster than the speed of sound at the outlet. Only water will shut the valve.

Technical specifications

- Kinetic function.
- At least 800 m³/h (471 CFM) of air released without shutting the valve in the absence of water.
- Released air volume is at least 130 m³/h (76.5 CFM) at 0.4 bar (5,8 PSI).
- Maximum working pressure 16 bar (232 PSI).
- Body and base made of fibreglass-reinforced polyamide.
- Treated for protection from UV radiation.
- Base available in 1" M and 3/4" M thread.
- Optional BSP or NPT thread.
- 3/4" Female threaded outlet includes filter.

Performance

- **Extracts** the air trapped in pipes as they fill. When water reaches the inside of the valve, the float rises, shutting the outlet.
- **Prevents** pipes from collapsing. At the smallest decrease in pressure, the float drops and opens the seal allowing outside air to enter the pipe immediately.



AVAILABLE BASES

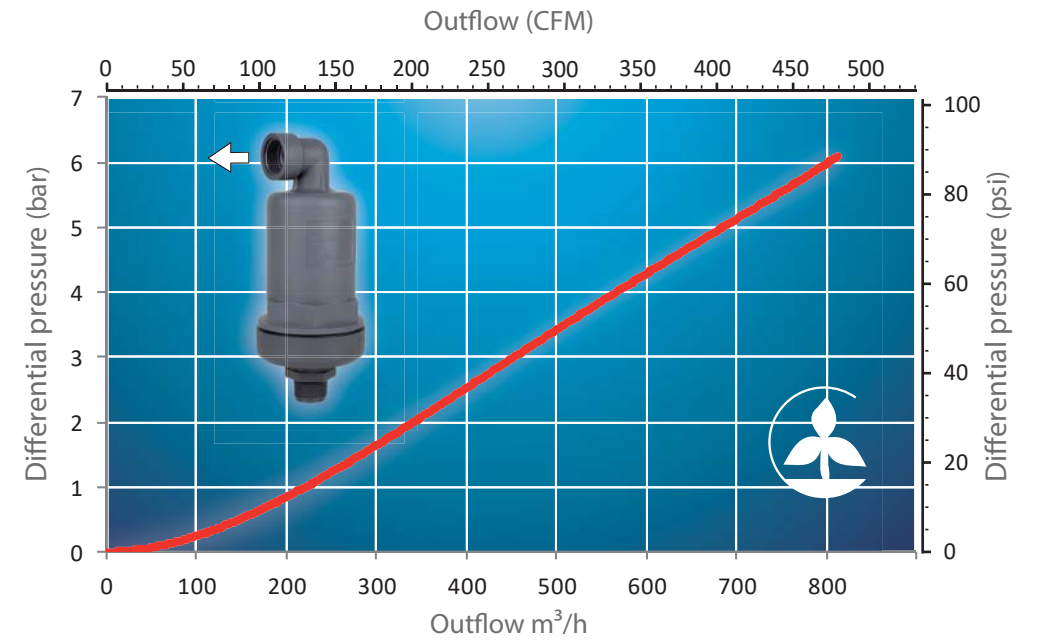


ARV-1"-K
BSP/NPT

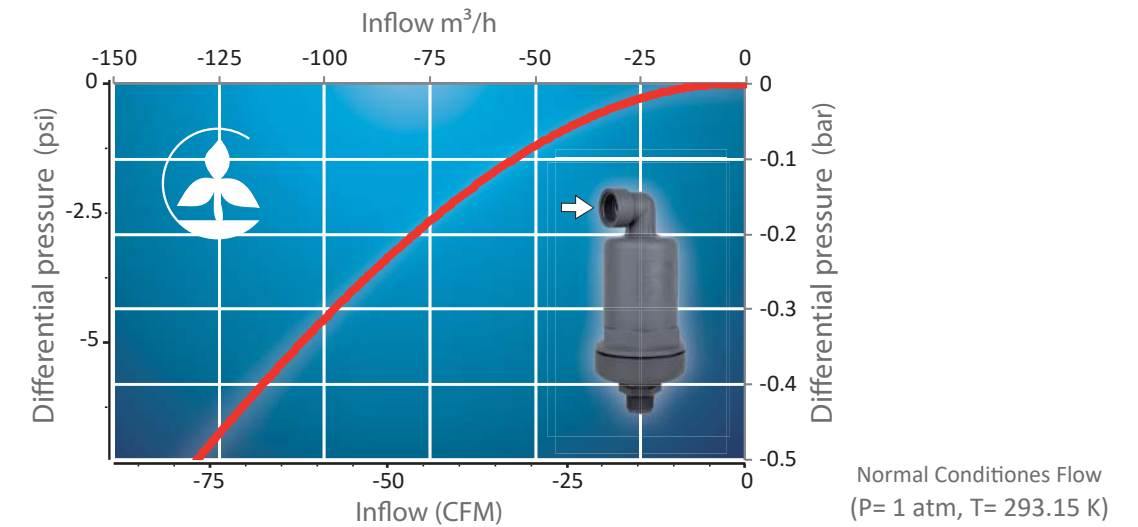


ARV-3/4"-K
BSP/NPT

Caudal expulsado



Caudal admitido



Normal Conditions Flow
(P= 1 atm, T= 293.15 K)

*Normal conditions of use, service and maintenance.

This product has been tested at low pressure (0.5 bar) and high pressure (16 bar) with satisfactory results.

For correct operation, valves must undergo regular routine checks. The check should include the cleaning of the internal components and inspection of the seal conditions. For more detailed information about the use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION MANUAL".

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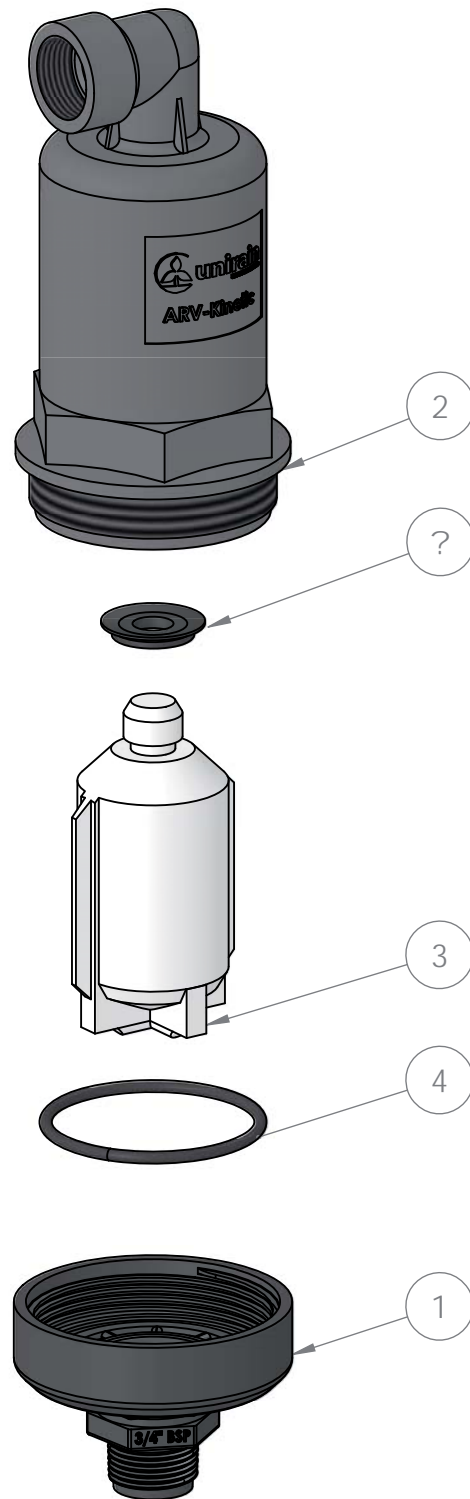
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Plastic base 3/4" BSP / NPT
Plastic base 1" BSP / NPT

COMPONENT NUMBER	SPARE CODE	DESCRIPTION	MATERIAL	QUANTY
1	----	3/4" BSP Valve Base	PA6 + Fiber Glass	1
2	----	ARV-Kinetic Valve Body	PA6 + Fiber Glass	1
3	----	ARV 1"-3/4"K Float	Expanded PP	1
4	01765ANC	NBR	1"-3/4" O-Ring	1
5	01769EPD	ARV 1"-3/4" Main Seal	EPDM	1

Process/Manufacturer UNIRAIN	Size A3	Material	Code ---
	Scale 1:2	Name ARV-Kinetic	
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	P.M.M.		

UNIRAIN ARV-2"-K / K(B)

Kinetic Air Valve



Units Conversion	
FLOW	PRESSURE
m ³ / h (cubic metres per hour)	mWa (metres of water column)
l / h (litres per hour)	PSI (pounds per square inch)
GPM (gallons per minute)	
CFM (cubic feet per minute)	
1 CFM = 1.699 m³ / h	1 PSI = 0.70307 mWa
1 GPM = 227.1192 l / h	

Application

Designed to efficiently extract air trapped in medium-sized pipes, large filters, tanks and other places where the absence of air is required for correct functioning.

The release valves are located at the outlet of pipes whose slope varies according to the hydraulic gradient, in areas where pipes are located above ground level, in long pipes with uniform slope, at the input of measuring instruments, the output of reducing valves, in diameter reductions, pumps, filtration systems, on both sides of a subterranean crossing road.

For correct operation, the valve should always be in a vertical position.

It is recommended to install a manual ball valve under the ARV, in order to make maintenance and repair operations easier without shutting the whole system*.

Advantages

- Owing to a perfect inner finish, the valve is totally sealed even at very low pressures.
- With just five parts, it's very easy to disassemble when it needs to be cleaned.
- Its outlet features a threaded elbow to provide a wider range of connection possibilities, as it's easily detachable, offering a vertical outlet.
- Owing to its exclusive internal design, the air stream will not drag the float up, even when air is faster than the speed of sound at the outlet. Only water will cause the float to rise.

Technical specifications

- Kinetic air valve.
- At least 2000 m³/h (1177 CFM) of air released without having the valve shut while no water present.
- Released air volume is at least 500 m³/h (294 CFM) at 0,6 bar (8.7 PSI).
- Maximum working pressure 16 bar (232 PSI).
- Body and base made of fibreglass reinforced polyamide.
- Treated for protection from UV radiation.
- 2" M base thread. Optional base in BSP or NPT & Plastic or Brass ARV-2"-K(B).
- Threaded elbow outlet.



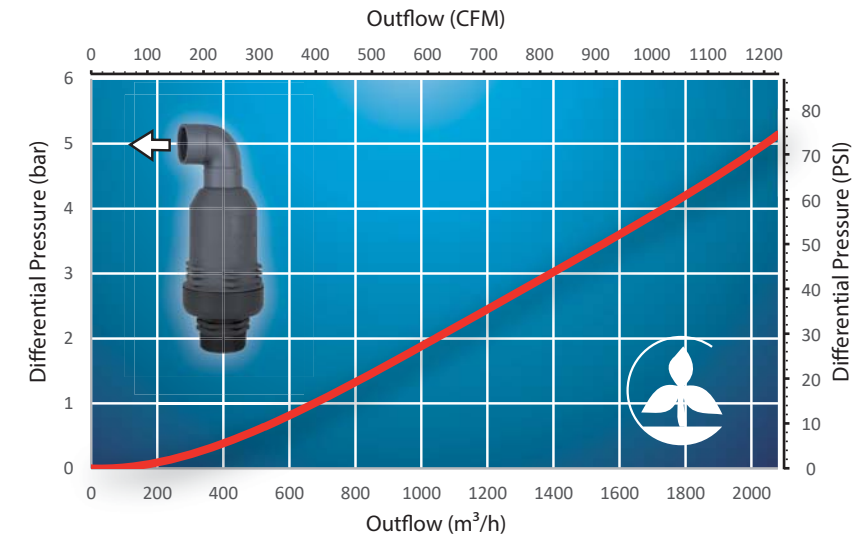
ARV-2"-K

ARV-2"-K(B)

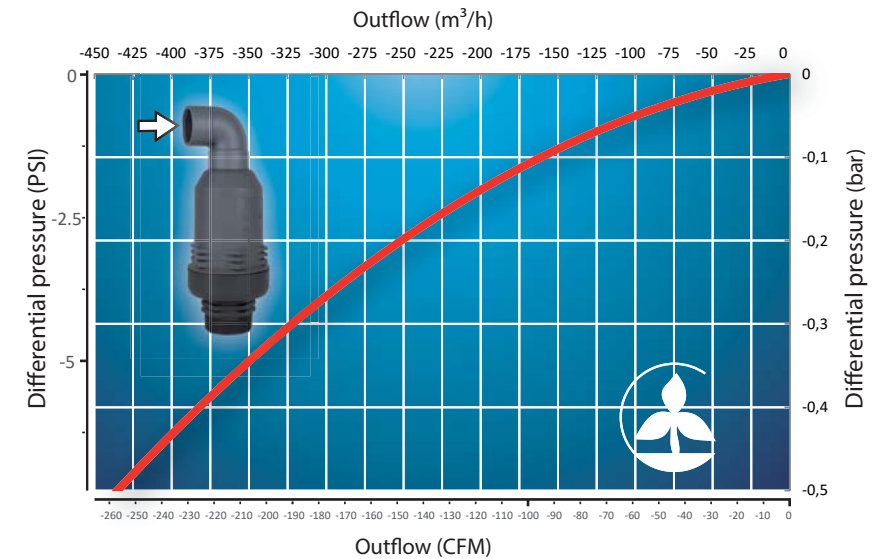
Performance

- **Extracts** the air trapped in pipes as they fill. When water reaches the inside of the valve, the float rises, shutting the outlet (KINETIC).
- **Prevents** pipes from collapsing. At the smallest decrease in pressure, the float drops and opens the seal allowing outside air to enter the pipe immediately (AIR VACUUM RELIEF)..

Kinetic Outflow



Kinetic Inflow



*Normal conditions of use, service and maintenance.

This product has been tested at low pressure (0.5 bar) and high pressure (16 bar) with satisfactory results.

For correct operation, valves must undergo regular routine checks. The check should include the cleaning of the internal components and inspection of the seal conditions. For more detailed information about the use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION MANUAL".

For specific uses, please consult the technical department.

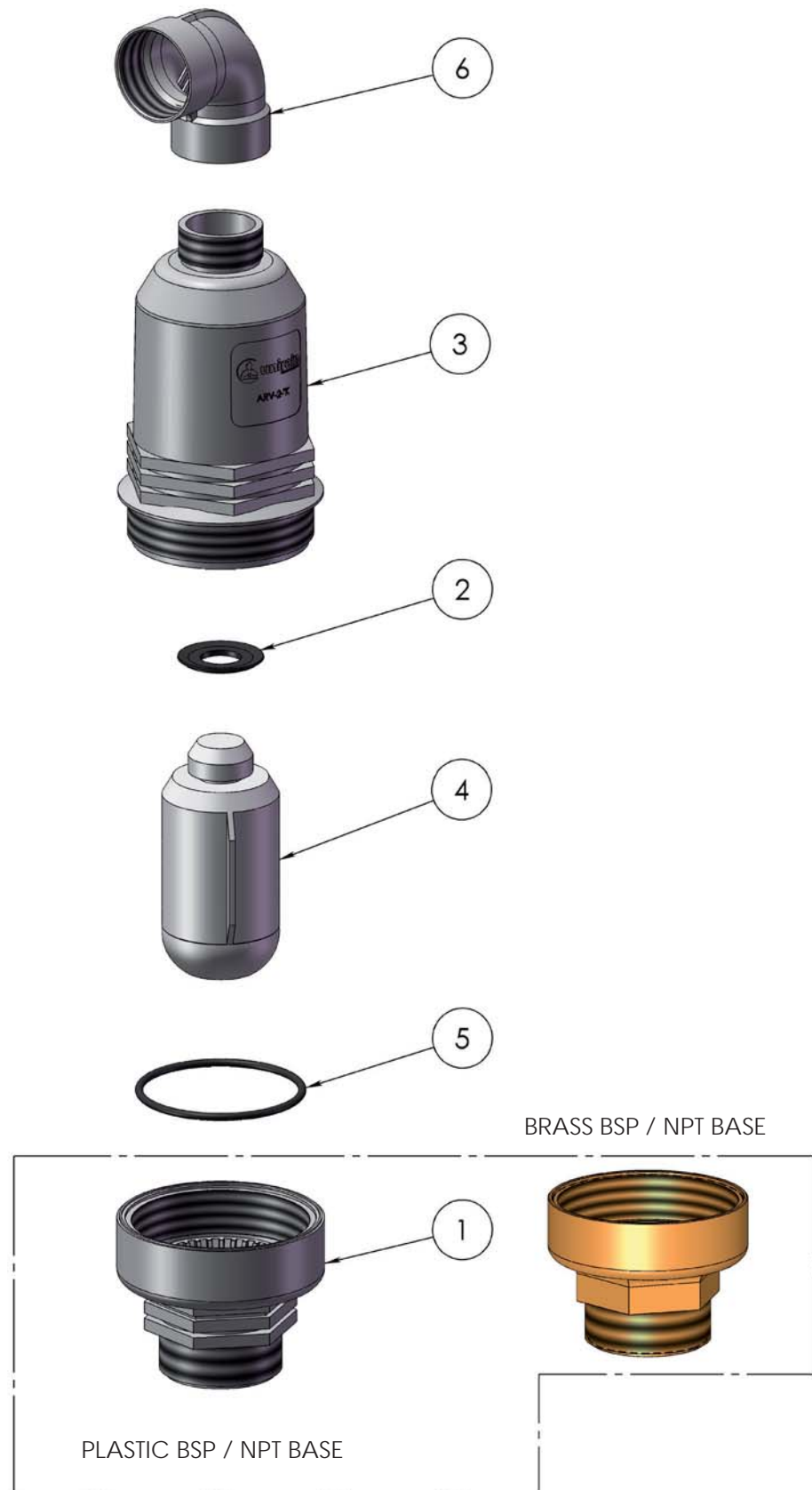
WARRANTY AND EXCLUSIONS

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ELEMENT NO	SPARE CODE	DESCRIPTION	MATERIAL	QUANTITY
1	----	2" BSP Valve Base	PA6 + Fiber Glass	1
2	01785	ARV 2" Main Seal	EPDM	1
3	----	ARV 2"-K Valve Body	PA6 + Fiber Glass	1
4	----	ARV 2"-K Float	Expanded PP	1
5	01787	2" O-Ring	NBR	1
6	----	ARV 90 ° Elbow	PP + Fiber Glass	1

Notes

Process/Manufacturer UNIRAIN	Size A3	Material	Code 02120
	Scale 1:3	Name ARV 2"-K	
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		J.N.E.	

UNIRAIN ARV-2"-K-Compact

Combination Air Valve



Units Conversion	
FLOW	PRESSURE
m ³ / h (cubic metres per hour)	mWa (metres of water column)
l / h (litres per hour)	PSI (pounds per square inch)
GPM (gallons per minute)	
CFM (cubic feet per minute)	
1 CFM = 1.699 m³ / h	1 PSI = 0.70307 mWa
1 GPM = 227.1192 l / h	

Application

Designed to efficiently extract air trapped in medium-sized pipes, large filters, tanks and other places where the absence of air is required for correct functioning.

The release valves are located at the outlet of pipes whose slope varies according to the hydraulic gradient, in areas where pipes are located above ground level, in long pipes with uniform slope, at the input of measuring instruments, the output of reducing valves, in diameter reductions, pumps, filtration systems, on both sides of a subterranean crossing road.

For correct operation, the valve should always be in a vertical position.

It is recommended to install a manual ball valve under the ARV, in order to make maintenance and repair operations easier without shutting the whole system*.

Advantages

- New compact design more sustainable and competitive with similar quality and performance as the rest of our air valves.
- Owing to a perfect inner finish, the valve is totally sealed even at very low pressures.
- With just five parts, it's very easy to disassemble when it needs to be cleaned.
- Its outlet features a threaded elbow to provide a wider range of connection possibilities, as it's easily detachable, offering a vertical outlet.
- Owing to its exclusive internal design, the air stream will not drag the float up, even when air is faster than the speed of sound at the outlet. Only water will cause the float to rise.
- Includes an internal grille in the elbow to prevent foreign bodies from entering the valve.

Technical specifications

- Kinetic air valve.
- At least 1700 m³/h (1000 CFM) of air released without having the valve shut while no water present.
- Released air volume is at least 260 m³/h (153 CFM) at 0.4 bar (5.8 PSI).
- Maximum working pressure 16 bar (232 PSI).
- Body and base made of fibreglass reinforced polyamide.
- Treated for protection from UV radiation.
- 2"M base thread. Optional base in BSP or NPT thread.
- 1-1/4" F threaded outlet with grille.

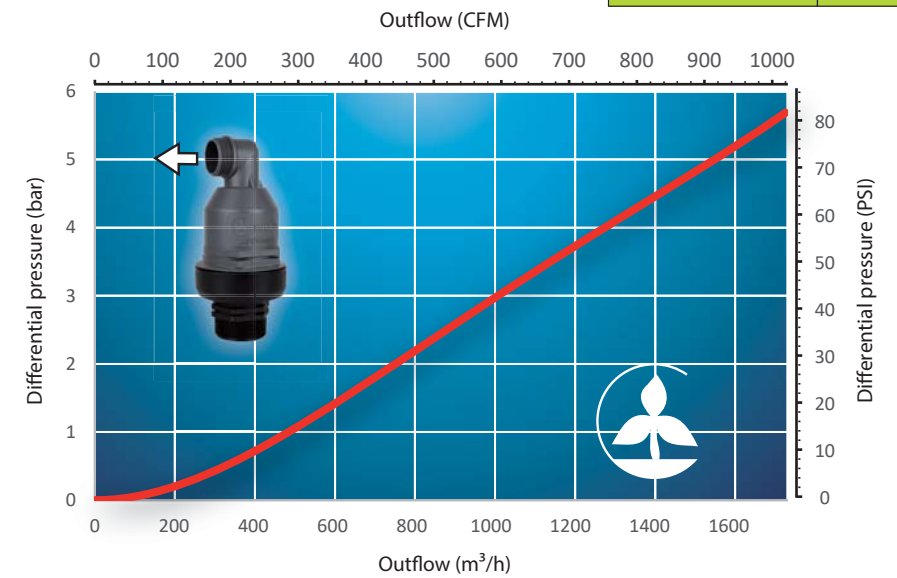


ARV-2"-K-Compact

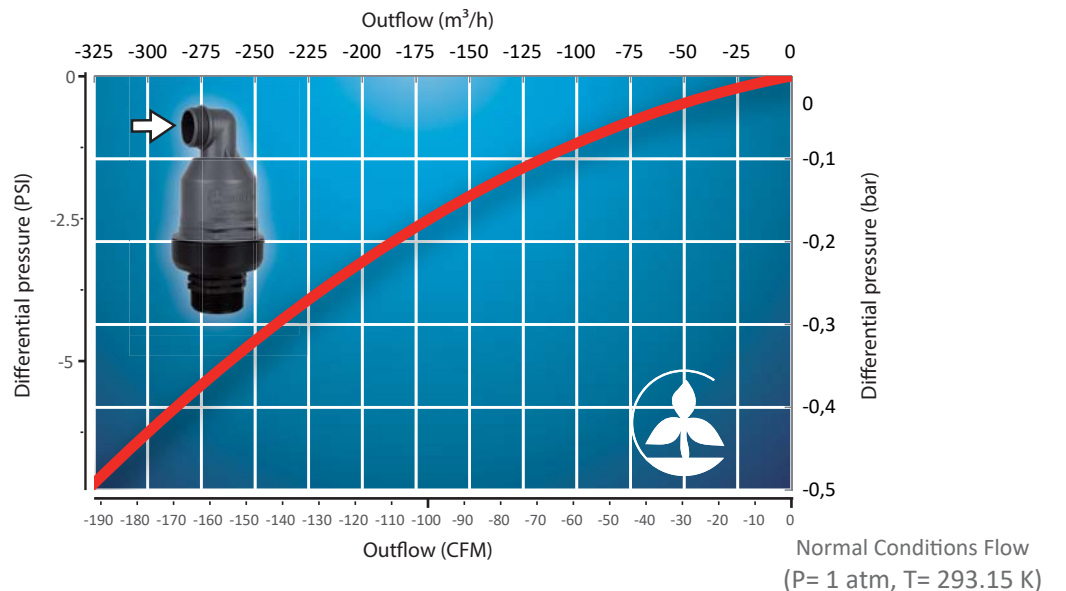
Performance

- **Extracts** the air trapped in pipes as they fill. When water reaches the inside of the valve, the float rises, shutting the outlet (KINETIC).
- **Prevents** pipes from collapsing. At the smallest decrease in pressure, the float drops and opens the seal allowing outside air to enter the pipe immediately (AIR VACUUM RELIEF).

Kinetic Outflow



Kinetic Inflow



*Normal conditions of use, service and maintenance.

This product has been tested at low pressure (0.5 bar) and high pressure (16 bar) with satisfactory results.

For correct operation, valves must undergo regular routine checks. The check should include the cleaning of the internal components and inspection of the seal conditions. For more detailed information about the use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION MANUAL".

For specific uses, please consult the technical department.

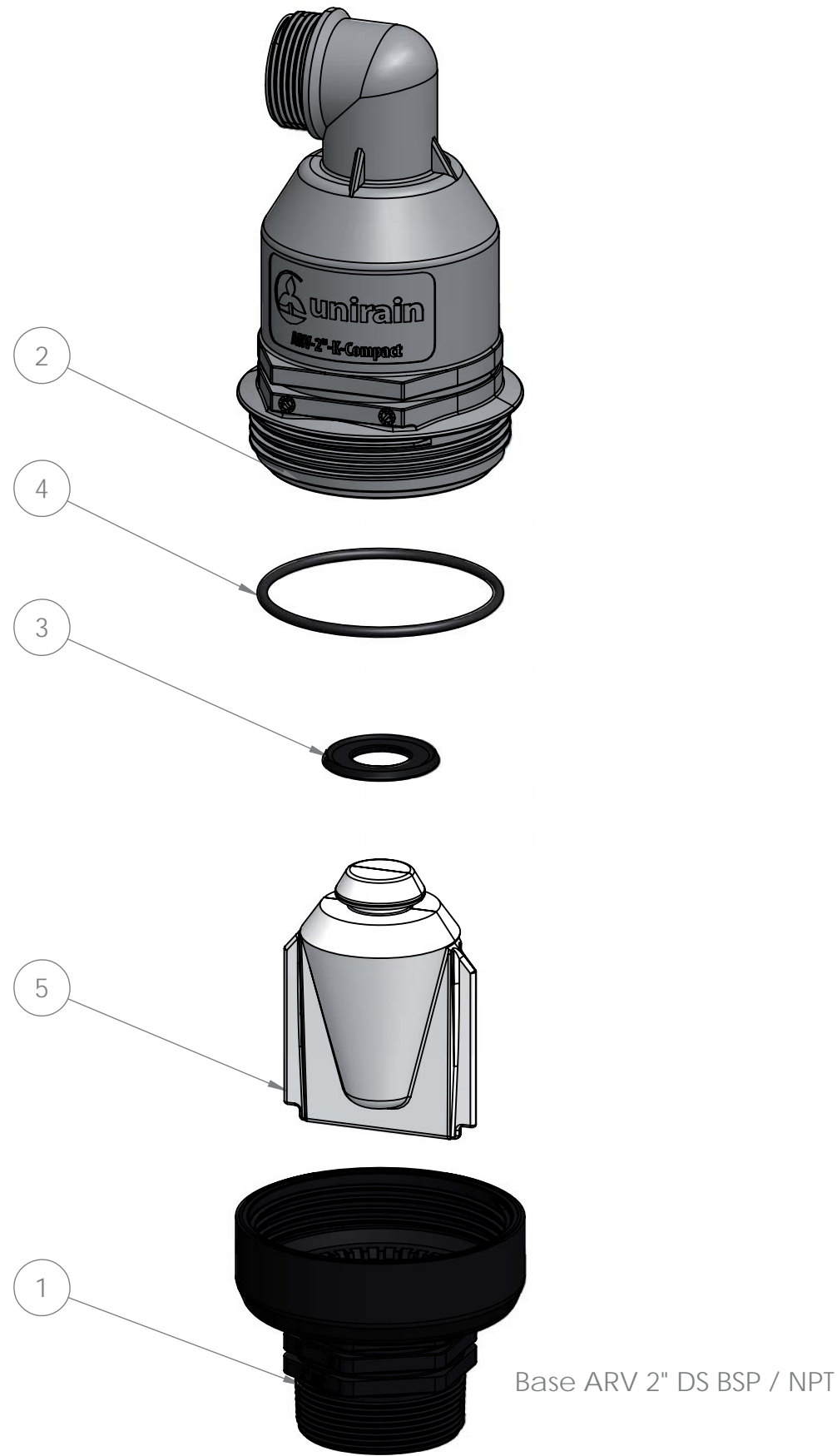
WARRANTY AND EXCLUSIONS

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COMPONENT NUMBER	SPARE CODE	DESCRIPTION	MATERIAL	QUANTY
1	01782BDS	ARV-2" (BSP) DS Base	PA6 + Fiber Glass	1
2	01782BDS	ARV 2"-K Compact Gray Valve Body	PA6 + Fiber Glass	1
3	01785SPU	ARV 2" Main Seal SPU	EPDM	1
4	01787DNS	2" DNS O-Ring	NBR	1
5	01793COM	ARV 2"-K-Compact Float	Expanded PP	1

Anotaciones

Process/Manufacturer UNIRAIN	Size A3	Material	Code
	Scale 1:2	Name ARV-2"K-Compact	
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	P.M.M.		

UNIRAIN ARV-Automatic

Automatic Air Valve

Available with in 1" & 3/4" thread



Units Conversion	
FLOW	PRESSURE
m ³ / h (cubic metres per hour)	mWa (metres of water column)
l / h (litres per hour)	PSI (pounds per square inch)
GPM (gallons per minute)	
CFM (cubic feet per minute)	
1 CFM = 1.699 m³ / h	1 PSI = 0.70307 mWa
1 GPM = 227.1192 l / h	

Application

Designed to efficiently extract air trapped in pipes, filters, tanks and other places where unwanted air might cause performance problems.

The air release valves are located at the outlet of pipes whose slope varies according to the hydraulic gradient, in areas where pipes are located above ground level, in long pipes with uniform slope, at the input of measuring instruments, the output of reducing valves, in diameter reductions, pumps, filtration systems, and on both sides of a subterranean crossing road.

For correct operation, the valve should always be in a vertical position.

It is recommended to install a manual ball valve under the ARV, in order to make maintenance and repair operations easier without shutting the whole system*.

Advantages

- The valve has one seal, which expels both kinetic and residual air automatically, and this function is not affected by water pressure.
- Simple in design, with only 5 parts, it's easy to disassemble for maintenance and cleaning when needed.
- Its exclusive Y-shaped discharge outlet design allows a much greater air flow than other valves of this type, in both the discharge and the intake phases.
- Owing to a perfect fit, the valve is totally sealed, even at very low pressures.
- The body is red, making it easily visible.

Technical specifications

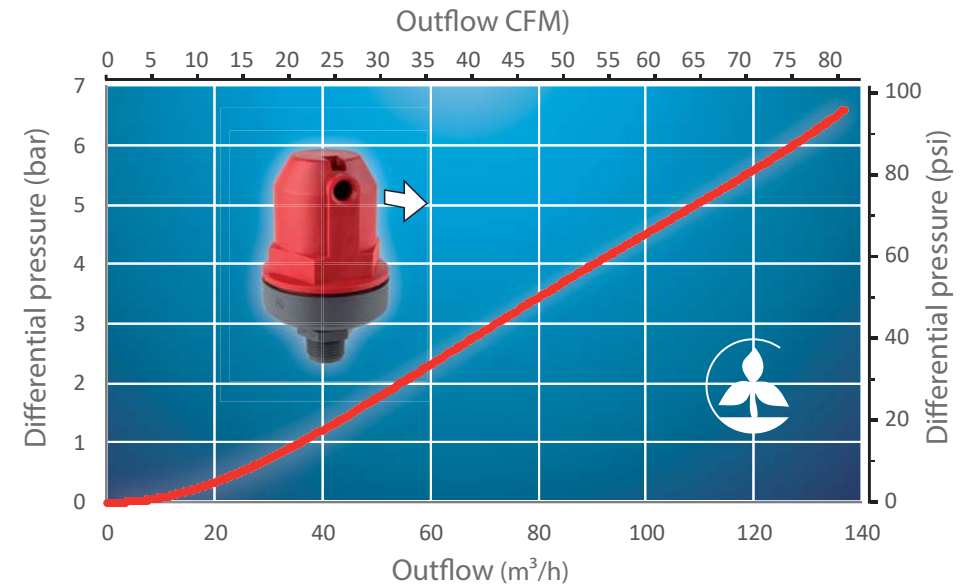
- Continuous and automatic operation.
- At least 136 m³/h (80 CFM) of air released without shutting the valve in the absence of water
- Released air volume is at least 35 m³/h (20.6 CFM) at 1bar (14.5 PSI).
- Maximum working pressure 16 bar (232 PSI).
- Body and base made of fibreglass-reinforced polyamide.
- Treated for protection from UV radiation.
- Base available in 1" and 3/4" thread.
- Optional BSP or NPT thread.
- Filter included in the base.



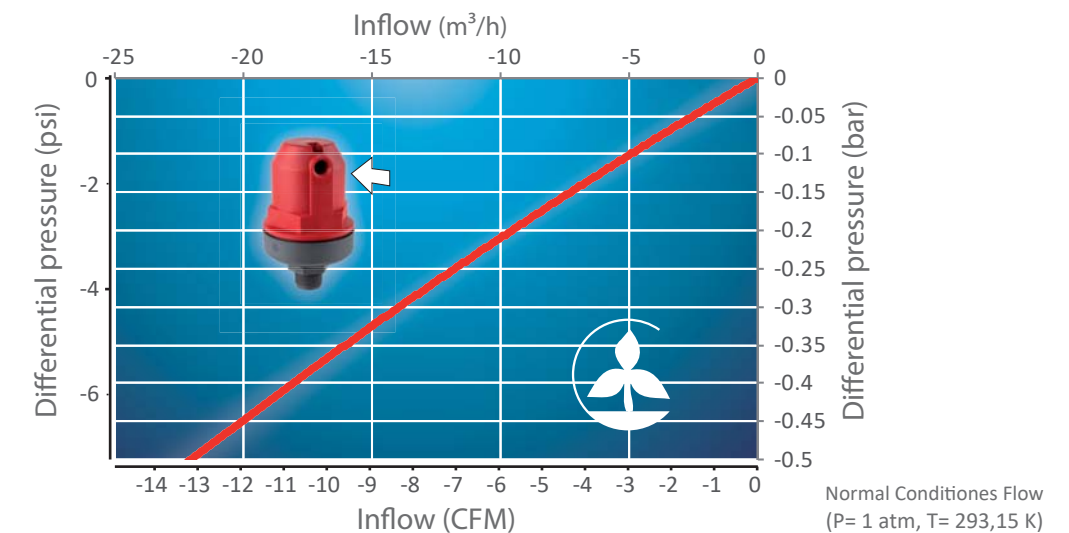
Performance

- **Extracts** air from small pipes as they fill. When water reaches the inside of the valve, the float rises and seals the discharge outlet.
- **Maintains** automatically and continuously its function of eliminating any residual air pockets reaching the valve, as the float immediately drops and the closure outlet is partly or totally opened. Water pressure does not interfere with this function.
- **Prevents** small pipes from collapsing. At the smallest decrease in pressure, the float drops and opens the seal allowing outside air to enter the pipe immediately.

Outflow



Inflow



*Normal conditions of use, service and maintenance.

This product has been tested at low pressure (0.5 bar) and high pressure (16 bar) with satisfactory results.

For correct operation, valves must undergo regular routine checks. The check should include the cleaning of the internal components and inspection of the seal conditions. For more detailed information about the use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION MANUAL".

For specific uses, please consult the technical department.

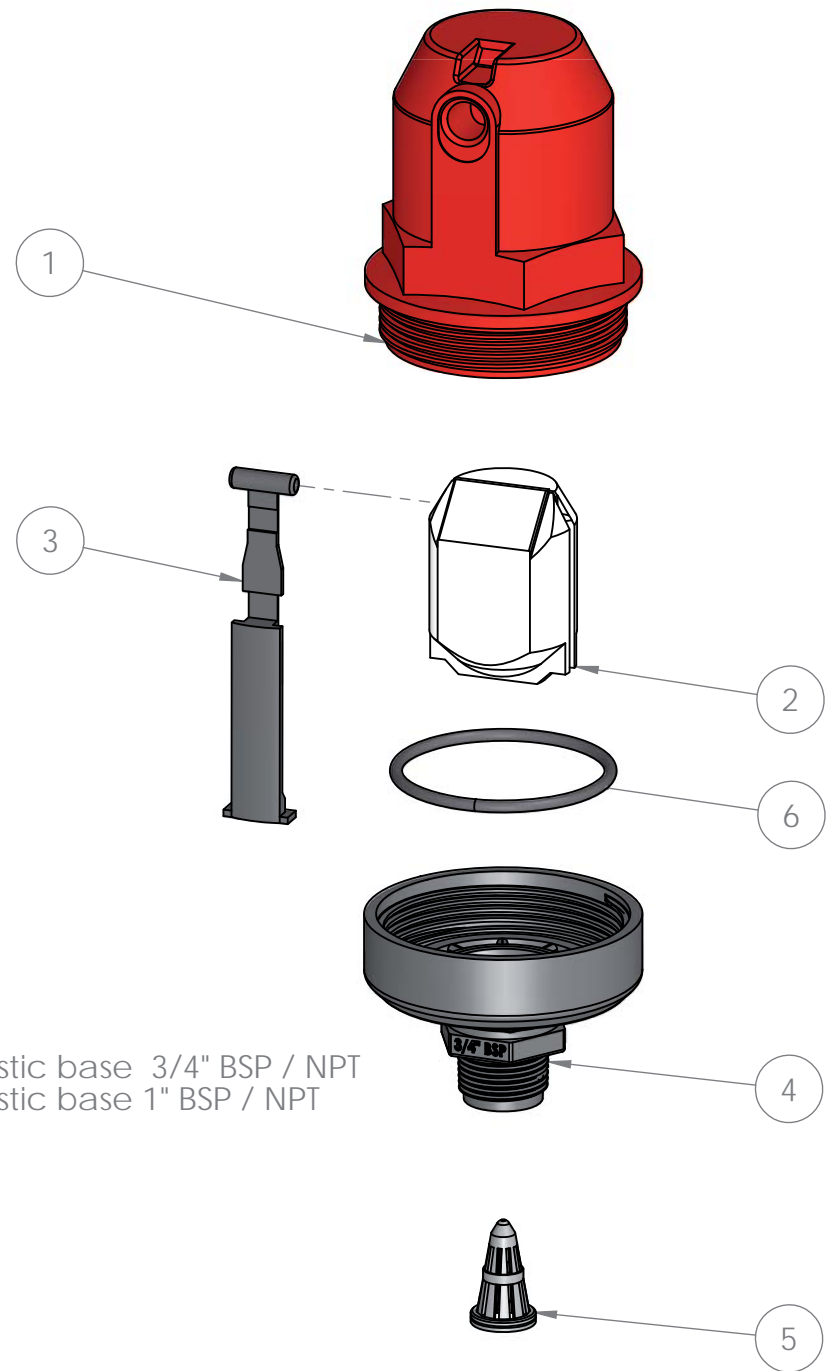
WARRANTY AND EXCLUSIONS

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COMPONENT NUMBER	SPARE CODE	DESCRIPTION	MATERIAL	QUANTY
1	----	ARV-Automatic Valve Body	PA6 + Fiber Glass	1
2	----	ARV-Automatic Float	Expanded PP	1
3	01764	ARV-Automatic Seal	EPDM	1
4	----	3/4" BSP Valve Base	PA6 + Fiber Glass	1
5	01752	1"-3/4" Valve base filter	PP	1
6	01765ANC	NBR	1"-3/4" O-Ring	1

Notes

Process/Manufacturer UNIRAIN	Size A3	Material	Code
	Scale 1:2	Name ARV-Automatic	
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	P.M.M.		

UNIRAIN ARV-1"-A(3G)

Automatic Air Release Valve



Units Conversion	
FLOW	PRESSURE
m ³ / h (cubic metres per hour)	mWc (metres of water column)
l / h (litres per hour)	PSI (pounds per square inch)
GPM (gallons per minute)	
CFM (cubic feet per minute)	
1 CFM = 1.699 m ³ / h	1 PSI = 0.70307 mca
1 GPM = 227.1192 l / h	

Application

Designed to efficiently extract air trapped in pipes, filters, tanks and other places where unwanted air might cause performance problems.

The air release valves are located at the outlet of pipes whose slope varies according to the hydraulic gradient, in areas where pipes are located above ground level, in long pipes with uniform slope, at the input of measuring instruments, the output of reducing valves, in diameter reductions, pumps, filtration systems, and on both sides of a subterranean crossing road.

For correct operation, the valve should always be in a vertical position.

It is recommended to install a manual ball valve under the ARV, in order to make maintenance and repair operations easier without shutting the whole system*.

Advantages

- The valve has one seal, which expels both kinetic and residual air automatically, and this function is not affected by water pressure.
- Simple in design, with only 5 parts, it's easy to disassemble for maintenance and cleaning when needed.
- Its exclusive Y-shaped discharge outlet design allows a much greater air flow than other valves of this type, in both the discharge and the intake phases.
- Owing to a perfect fit, the valve is totally sealed, even at very low pressures.
- The base and body are made of nodular cast iron GGG-40 with EPOXY cover, so you get great strength and durability.

Technical specifications

- Continuous and automatic operation.
- At least 70 m³/h (41,2 CFM) of air released without shutting the valve in the absence of water.
- Released air volume is at least 15 m³/h (8,8 CFM) at 10 mWc (14,2 PSI).
- Maximum working pressure 16 kg/cm² (225 PSI).
- Body and base made of ductile iron GGG-40.
- Inner body made of fibreglass-reinforced polyamide.
- Float made of expanded polypropylene and seals made of EPDM.
- Covering of body and base made of baked EPOXY.
- 1" M base thread. Optional base in BSP or NPT thread.
- Fasteners made of stainless steel AISI 304, A2-70 quality.

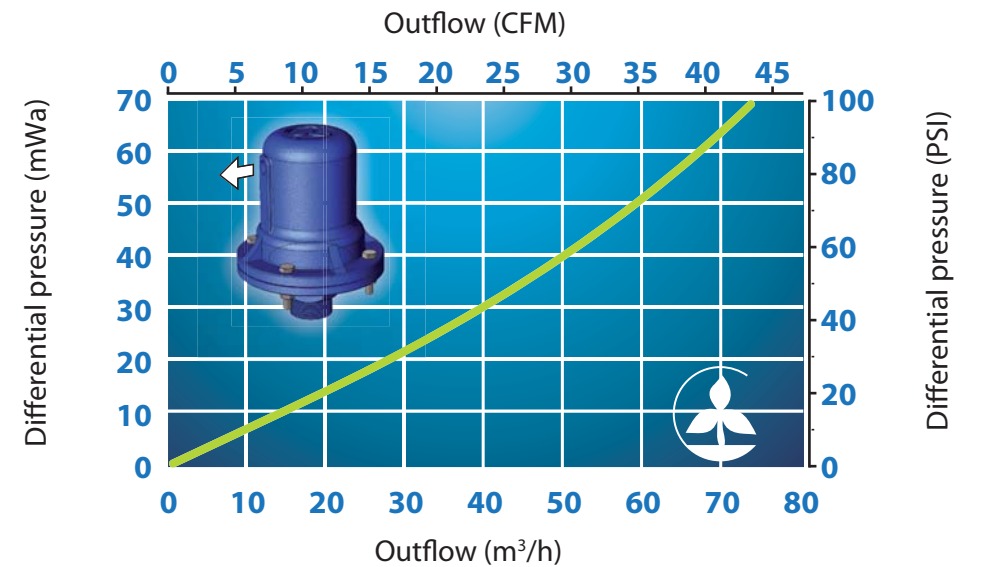


ARV-1"-A (3G)

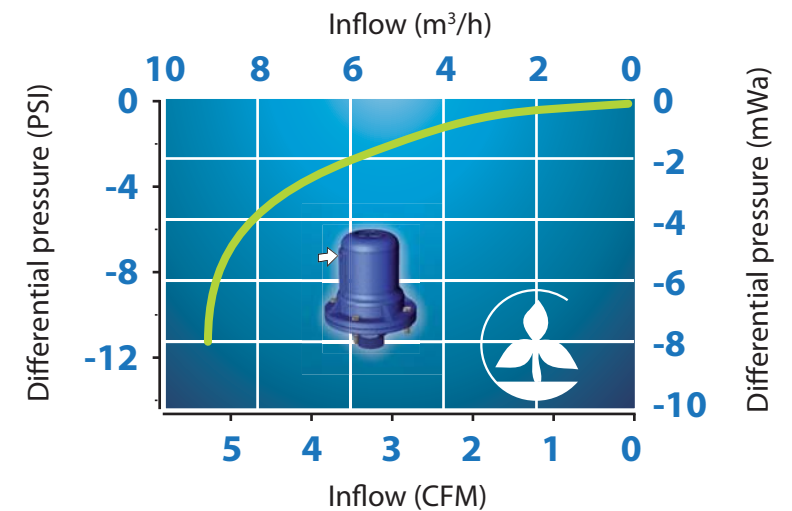
Performance

- **Extracts** air from small pipes as they fill. When water reaches the inside of the valve, the float rises and seals the discharge outlet.
- **Maintains** automatically and continuously its function of eliminating any residual air pockets reaching the valve, as the float immediately drops and the closure outlet is partly or totally opened. Water pressure does not interfere with this function.
- **Prevents** pipes from collapsing. At the smallest decrease in pressure, the float drops and opens the seal, allowing outside air to enter the pipe immediately.

Outflow



Inflow



*Normal conditions of use, service and maintenance.

This product has been tested at low pressure (0.5 bar) and high pressure (16 bar) with satisfactory results.

For correct operation, valves must undergo regular routine checks. The check should include the cleaning of the internal components and inspection of the seal conditions. For more detailed information about the use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION MANUAL".

For specific uses, please consult the technical department.

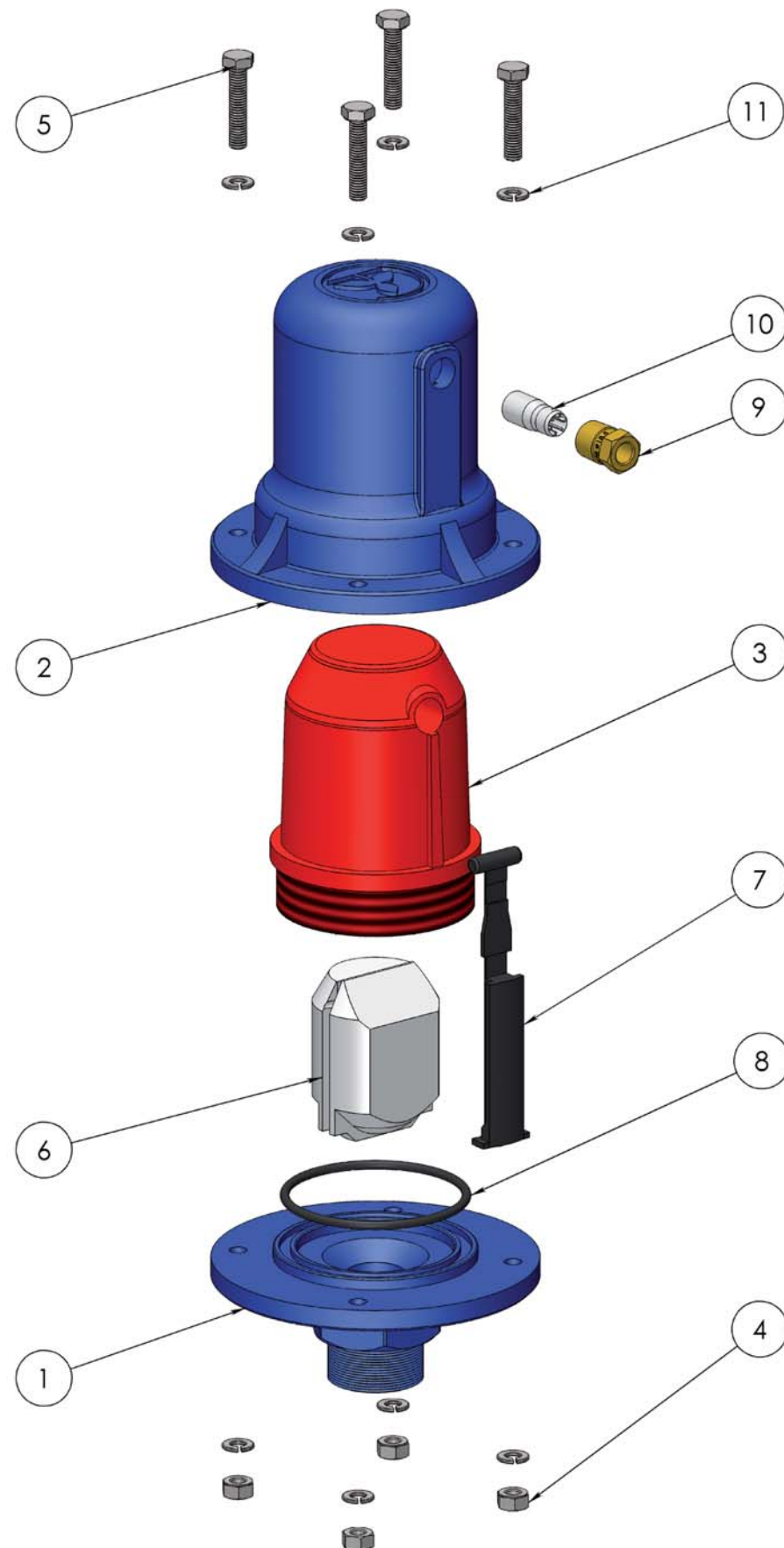
WARRANTY AND EXCLUSIONS

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ELEMENT NO.	PART CODE	MATERIAL	DESCRIPTION	QUANTITY
1	01757BSP / 01757NPT	Nodular Cast Iron GGG-40	ARV 1" -A (3G) BSP/NPT Valve Base	1
2	01754UNI	Nodular Cast Iron GGG-40	ARV 1" -A (3G) Valve Body	1
3	01761MEC	PA6 + Fiber Glass	ARV 1" -A Valve Body	1
4	01776	Stainless Steel	DIN 934-M6 Hex Nut A2-70 Quality	4
5	01775	Stainless Steel	DIN 933-M6 Screw A2-70 Quality	4
6	01763	Expanded PP	ARV 1" -A Float	1
7	01764	EPDM	ARV 1" -A Seal	1
8	01765	NBR	1" O-Ring	1
9	---	Brass	Optional Nozzle	1
10	---	Polyoxymethylene (POM)	Optional Vane	1
11	01777	Stainless Steel	DIN-125 M6 Washer	8

Notes

Process/Manufacturer	Size	Material	Code
UNIRAIN	A3		06010
	Scale	Name	
	1:2	ARV 1" -A (3G)	
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UNIRAIN ARV-Kinetic Automatic

Combination Air Valve

Available with 1" & 3/4" thread



Application

Valve designed to extract air from pipes, large filters, tanks or any other similar equipment which must work without the presence of air.

The air release valves are located at the outlet of pipes whose slope varies according to the hydraulic gradient, in areas where pipes are located above ground level, in long pipes with uniform slope, at the input of measuring instruments, the output of reducing valves, in diameter reductions, pumps, filtration systems, on both sides of a subterranean crossing road.

For correct operation, the valve should always be in a vertical position.

It is recommended to install a manual ball valve under the ARV, in order to make maintenance and repair operations easier without shutting the whole system*.

Advantages

- An exclusive double seal system, together with a low density float for kinetic function and automatic control, make the valve completely watertight when the pipe is being pressurized or emptied, no matter how slowly these operations are carried out.
- Its new inner design gets the float to resist the air stream even when the flow velocity is faster than the speed of sound at the outlet. The valve will only shut by the action of water.
- Its outlet elbow features an internal filter to prevent debris from entering inside the valve.

Technical specifications

- Combination air valve.
- At least 800 m³/h (471 CFM) of air released without having the valve shut while no water present.
- Released air volume is at least 130 m³/h (76.5 CFM) at 0.4 bar (5.8 PSI).
- Maximum working pressure 16 bar (232 PSI).
- Body and base made of fibreglass reinforced polyamide.
- Treated for protection from UV radiation.
- Base available in 1" M and 3/4" M thread.
- Optional BSP or NPT thread.
- 3/4" Female threaded outlet includes filter.



AVAILABLE BASES



ARV-1"-K
BSP/NPT



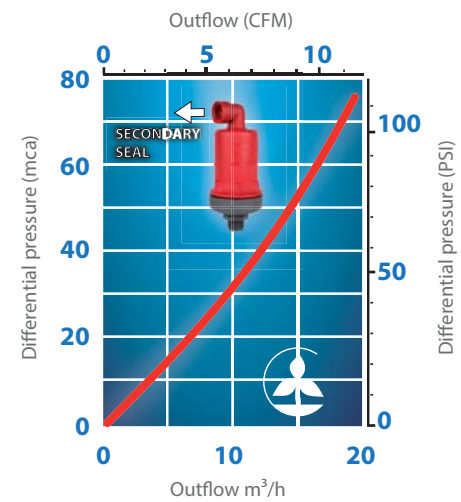
ARV-3/4"-K
BSP/NPT

Performance

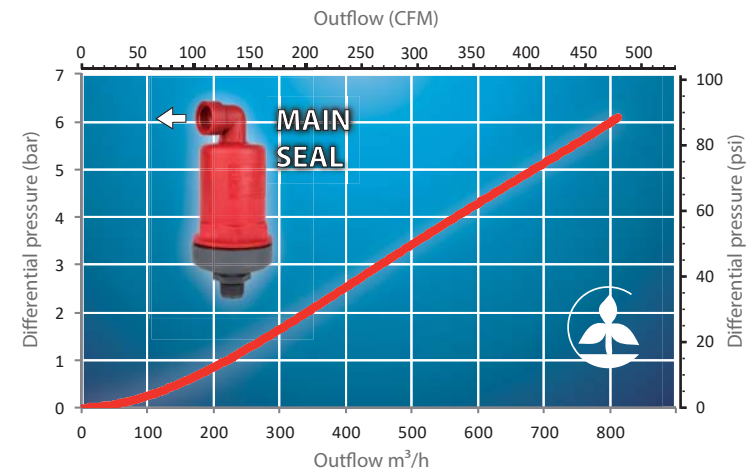
- **Extracts** air from pipes as they fill. When water reaches the inside of the valve, the float rises and seals the discharge outlet (KINETIC).
- **Maintains** automatically and continuously its function of eliminating any residual air pockets reaching the valve, as the float immediately drops and the closure outlet is partly or totally opened. Water pressure does not interfere with this function (AUTOMATIC).
- **Prevents** pipes from collapsing. At the smallest decrease in pressure, the float drops and opens the seal allowing outside air to enter the pipe immediately (AIR VACUUM RELIEF).



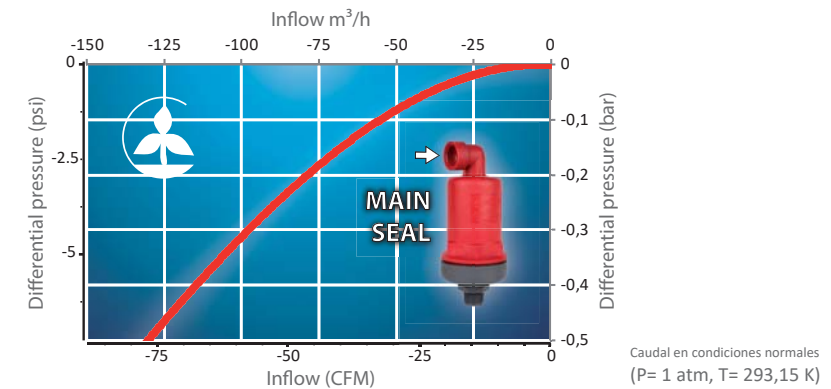
Automatic Outflow



Outflow



Inflow



Units Conversion

FLOW	PRESSURE
m ³ / h (cubic metres per hour)	mWc (metres of water column)
l / h (litres per hour)	PSI (pounds per square inch)
GPM (gallons per minute)	
CFM (cubic feet per minute)	
1 CFM = 1.699 m³ / h	1 PSI = 0.70307 mWc
1 GPM = 227.1192 l / h	

*Normal conditions of use, service and maintenance.

This product has been tested at low pressure (0.5 bar) and high pressure (16 bar) with satisfactory results.

For correct operation, valves must undergo regular routine checks. The check should include the cleaning of the internal components and inspection of the seal conditions. For more detailed information about the use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION MANUAL".

For specific uses, please consult the technical department.

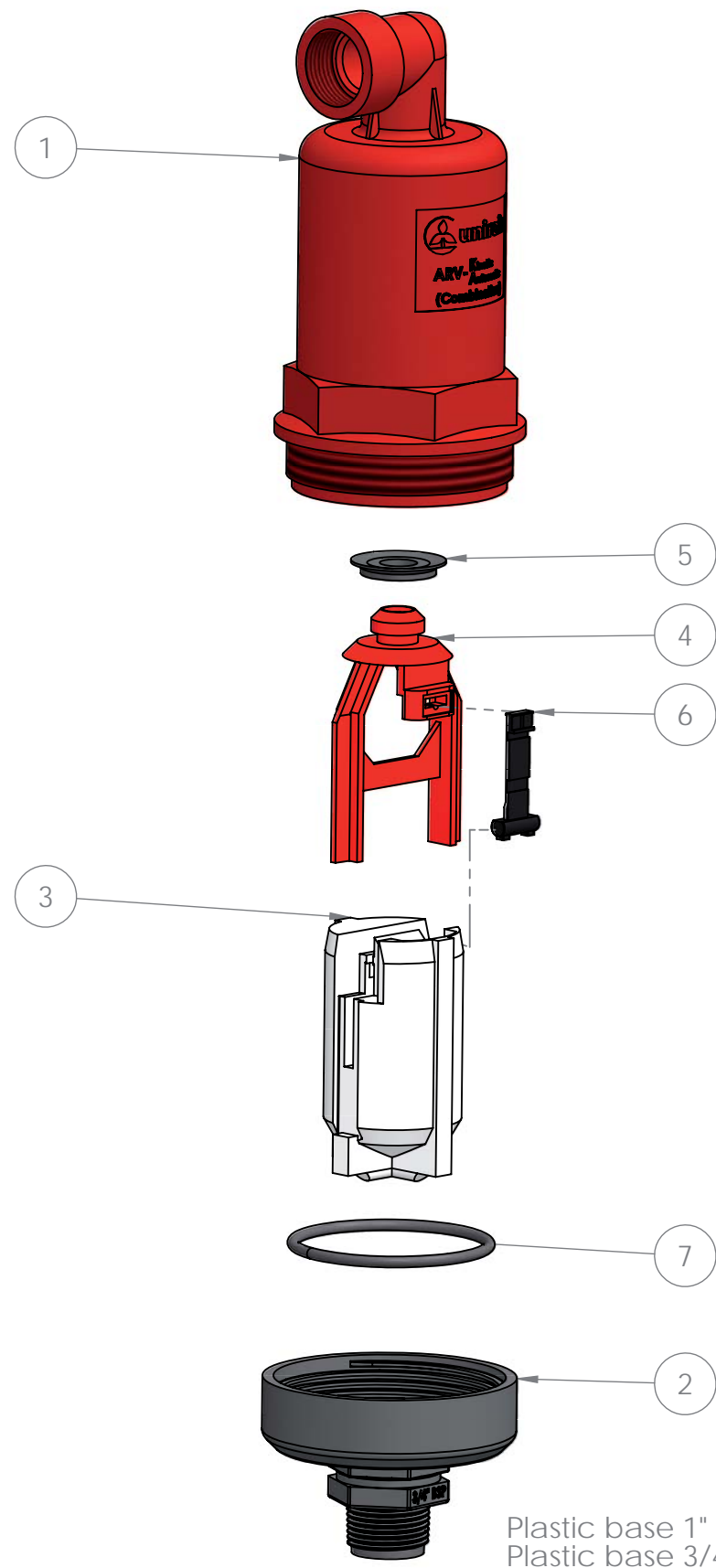
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Plastic base 1" BSP/NPT
Plastic base 3/4" BSP/NPT

COMPONENT NUMBER	SPARE CODE	DESCRIPTION	MATERIAL	QUANTY
1	---	ARV- Kinetic Automatic Body	PA6+Fiber Glass	1
2	---	3/4" BSP Valve Base	PA6 + Fiber Glass	1
3	---	ARV 1"-3/4" KA Float	Expanded PP	1
4	---	ARV 1"-3/4" KA Yoke	PA6+Fiber Glass	1
5	01769EPD	ARV 1"-3/4" Main Seal	EPDM	1
6	01786	ARV KA Secondary Seal	EPDM	1
7	01765ANC	NBR	1"-3/4" O-Ring	1

Process/Manufacturer UNIRIAN	Size A3	Material	Code ---
	Scale 1:2	Name ARV-Kinetic Automatic (Combination)	
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	P.M.M.		

UNIRAIN ARV-2"-KA / KA(B)

Combination Air Valve



Application

Valve designed to extract air from pipes, large filters, tanks or any other similar equipment which must work without the presence of air.

The air release valves are located at the outlet of pipes whose slope varies according to the hydraulic gradient, in areas where pipes are located above ground level, in long pipes with uniform slope, at the input of measuring instruments, the output of reducing valves, in diameter reductions, pumps, filtration systems, and on both sides of a subterranean crossing road.

For correct operation, the valve should always be in a vertical position.

It is recommended to install a manual ball valve under the ARV, in order to make maintenance and repair operations easier without shutting the whole system*.

Advantages

- Its exclusive independent double seal system, one for kinetic function and the other for automatic function, as well as the low density of its float, make the valve completely watertight when the pipe is being pressurized or emptied, no matter how slowly these operations are carried out.
- Its new inner design allows the float to resist the air stream even when the flow velocity is faster than the speed of sound at the outlet. The valve will only shut by the action of water.
- Includes an internal grille in the elbow to prevent foreign bodies from entering the valve.

Technical specifications

- Combination air valve.
- At least 2000 m³/h (1177 CFM) of air released without having the valve shut while no water present.
- Released air volume is at least 450m³/h (265 CFM) at 0,6 bar (8,7 PSI).
- Maximum working pressure 16 bar (232 PSI).
- Body and base made of fibreglass reinforced polyamide.
- Treated for protection from UV radiation.
- 2" M base thread. Optional base in BSP or NPT & Plastic or Brass ARV-2"-KA(B).
- 1-1/4" F threaded outlet with grille.



ARV-2"-KA

ARV-2"-KA(B)

Performance

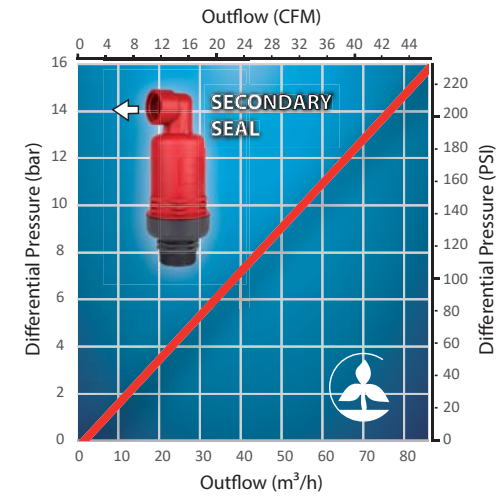
- **Extracts** air from pipes as they fill. When water reaches the inside of the valve, the float rises and seals the discharge outlet (KINETIC).
- **Maintains** automatically and continuously its function of eliminating any residual air pockets reaching the valve, as the float immediately drops and the closure outlet is partly or totally opened. Water pressure does not interfere with this function (AUTOMATIC).
- **Prevents** pipes from collapsing. At the smallest decrease in pressure, the float drops and opens the seal allowing outside air to enter the pipe immediately (AIR VACUUM RELIEF).

ARV-2"-KA DATA SHEET Versión 02

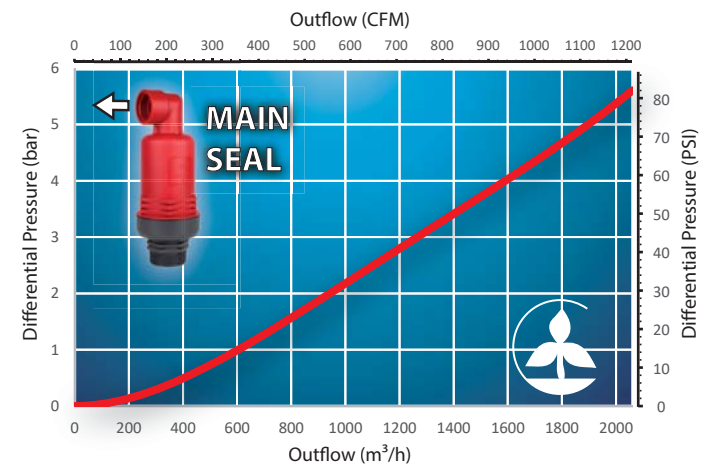
The current final version will always be published on the official Unirain website www.unirain.com



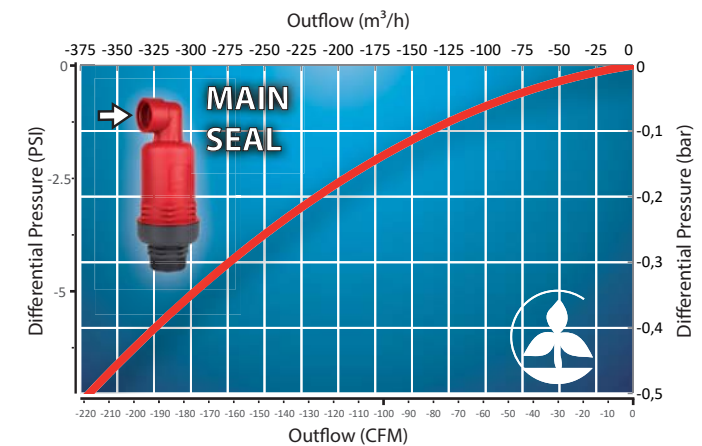
Outflow



Outflow



Inflow



Units Conversion

FLOW	PRESSURE
m ³ / h (cubic metres per hour)	mWa (metres of water column)
l / h (litres per hour)	PSI (pounds per square inch)
GPM (gallons per minute)	
CFM (cubic feet per minute)	
1 CFM = 1.699 m³ / h	1 PSI = 0.70307 mWa
1 GPM = 227.1192 l / h	

*Normal conditions of use, service and maintenance.

This product has been tested at low pressure (0.5 bar) and high pressure (16 bar) with satisfactory results.

For correct operation, valves must undergo regular routine checks. The check should include the cleaning of the internal components and inspection of the seal conditions. For more detailed information about the use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION MANUAL".

For specific uses, please consult the technical department.

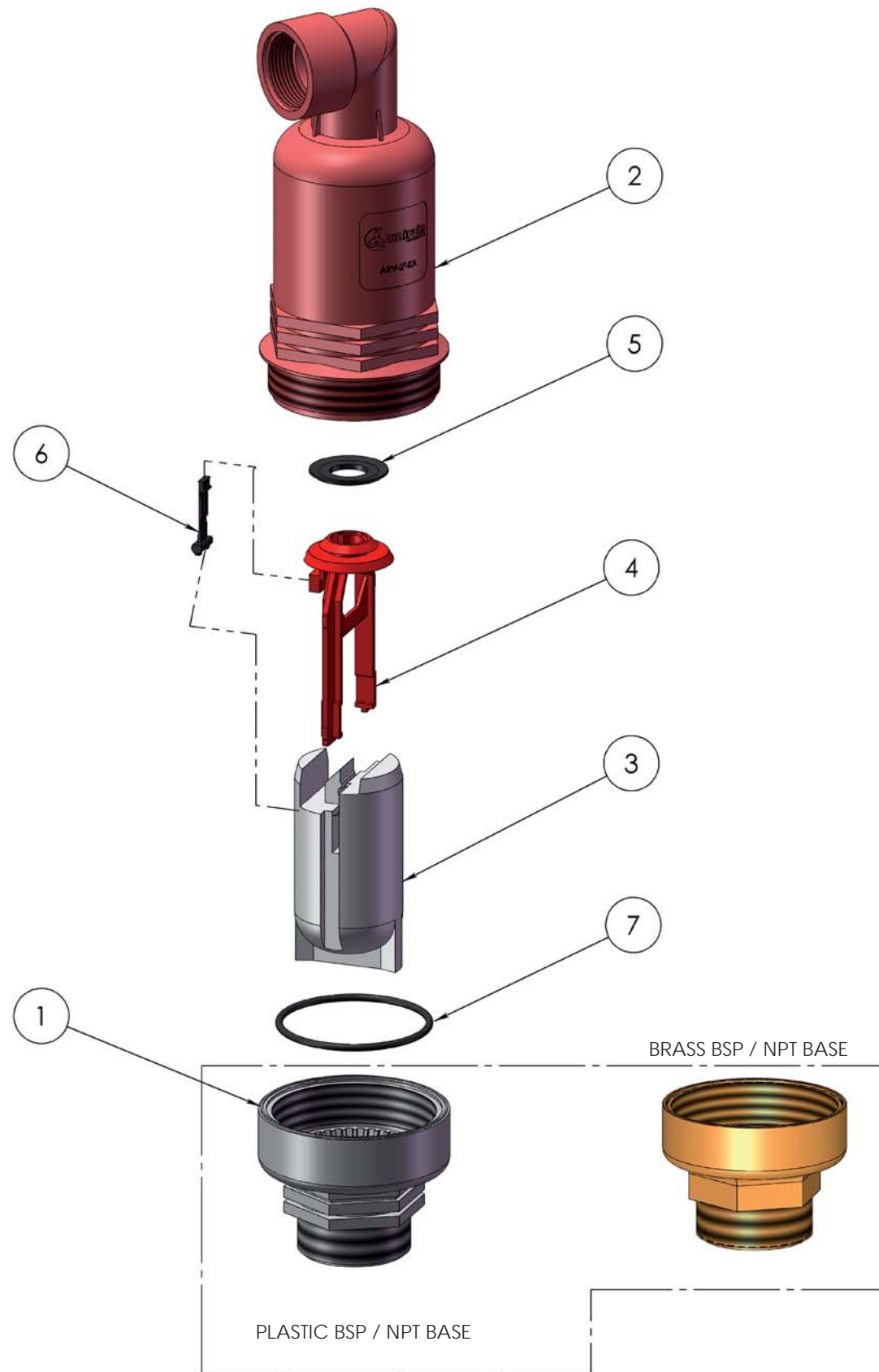
WARRANTY AND EXCLUSIONS

The manufacturer guarantees its products for direct customers against any defects in materials or manufacture for a period of two years from the original date of purchase, when the products have been used under normal operating and service conditions. The manufacturer assumes no liability for installation, removal or repairs carried out by unauthorised personnel. This warranty is limited to the replacement or repair of defective parts. The manufacturer does not accept liability for damage to crops or any other consequences damages deriving from defects in the products covered by this warranty.

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UNIRAIN S.A. reserves the right to amend any of the technical features of this product.



ELEMENT NO	SPARE CODE	DESCRIPTION	MATERIAL	QUANTITY
1	----	2" BSP Valve Base	PA6 + Fiber Glass	1
2	----	2"-KA Valve Body	PA6 + Fiber Glass	1
3	----	2"-KA Float	Expanded PP	1
4	----	ARV 2"-KA Yoke	PA6 + Fiber Glass	1
5	01785	ARV 2" Main Seal	EPDM	1
6	01786	ARV KA Secondary Seal	EPDM	1
7	01787	2" O-Ring	NBR	1

Notes

Process/Manufacturer UNIRAIN	Size A3	Material	Code 02020
	Scale 1:3	Name ARV 2"-KA	
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	J.N.E.		

UNIRAIN ARV-2"-KA-Compact

Combination Air Valve



Application

Valve designed to extract air from pipes, large filters, tanks or any other similar equipment which must work without the presence of air.

The air release valves are located at the outlet of pipes whose slope varies according to the hydraulic gradient, in areas where pipes are located above ground level, in long pipes with uniform slope, at the input of measuring instruments, the output of reducing valves, in diameter reductions, pumps, filtration systems, and on both sides of a subterranean crossing road.

For correct operation, the valve should always be in a vertical position.

It is recommended to install a manual ball valve under the ARV, in order to make maintenance and repair operations easier without shutting the whole system*.

Advantages

- New compact design more sustainable and competitive with similar quality and performance as the rest of our air valves.
- Its exclusive independent double seal system, one for kinetic function and the other for automatic function, as well as the low density of its float, make the valve completely watertight when the pipe is being pressurized or emptied, no matter how slowly these operations are carried out.
- Its new inner design allows the float to resist the air stream even when the flow velocity is faster than the speed of sound at the outlet. The valve will only shut by the action of water.
- Includes an internal grille in the elbow to prevent foreign bodies from entering the valve.

Technical specifications

- Combination air valve.
- At least 1800 m³/h (1060 CFM) of air released without having the valve shut while no water present.
- Released air volume is at least 400 m³/h (235 CFM) at 0.6 bar (8 PSI).
- Maximum working pressure 16 bar (232 PSI).
- Body and base made of fibreglass reinforced polyamide.
- Treated for protection from UV radiation.
- 2" M base thread. Optional base in BSP or NPT thread.
- 1-1/4" F threaded outlet with grille.



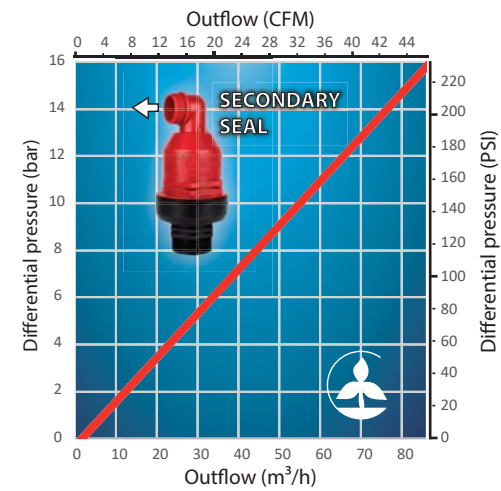
ARV-2"-KA-Compact

Performance

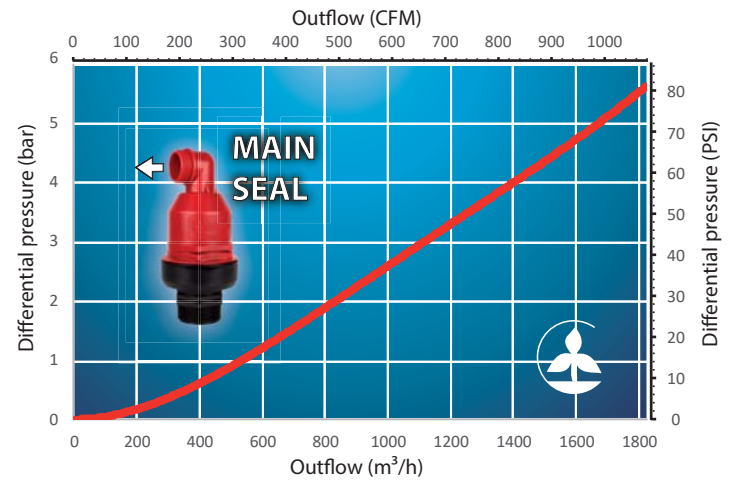
- **Extracts** air from pipes as they fill. When water reaches the inside of the valve, the float rises and seals the discharge outlet (KINETIC).
- **Maintains** automatically and continuously its function of eliminating any residual air pockets reaching the valve, as the float immediately drops and the closure outlet is partly or totally opened. Water pressure does not interfere with this function (AUTOMATIC).
- **Introduces** air into the pipes to prevent collapse. At the smallest decrease in pressure, the float drops and opens the seal allowing outside air to enter the pipe immediately (AIR VACCUM RELIEF).



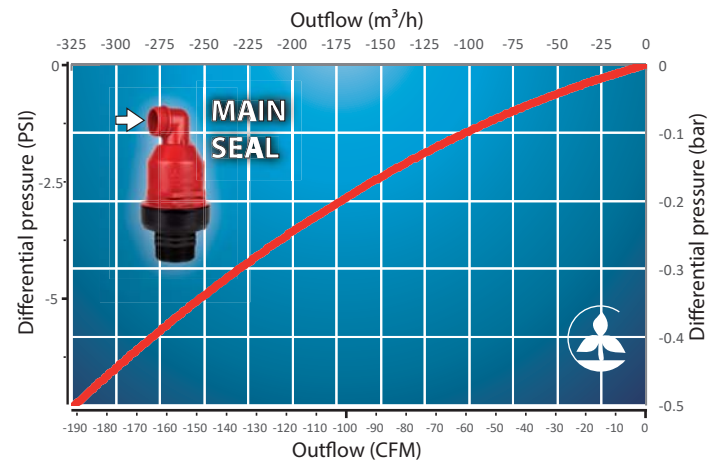
Automatic Outflow



Kinetic Outflow



Kinetic Inflow



Units Conversion	
FLOW	PRESSURE
m ³ / h (cubic metres per hour)	mWa (metres of water column)
l / h (litres per hour)	PSI (pounds per square inch)
GPM (gallons per minute)	
CFM (cubic feet per minute)	
1 CFM = 1.699 m³ / h	1 PSI = 0.70307 mWa
1 GPM = 227.1192 l / h	

Normal Conditions Flow
(P= 1 atm, T= 293.15 K)

*Normal conditions of use, service and maintenance.

This product has been tested at low pressure (0.5 bar) and high pressure (16 bar) with satisfactory results.

For correct operation, valves must undergo regular routine checks. The check should include the cleaning of the internal components and inspection of the seal conditions. For more detailed information about the use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION MANUAL".

For specific uses, please consult the technical department.

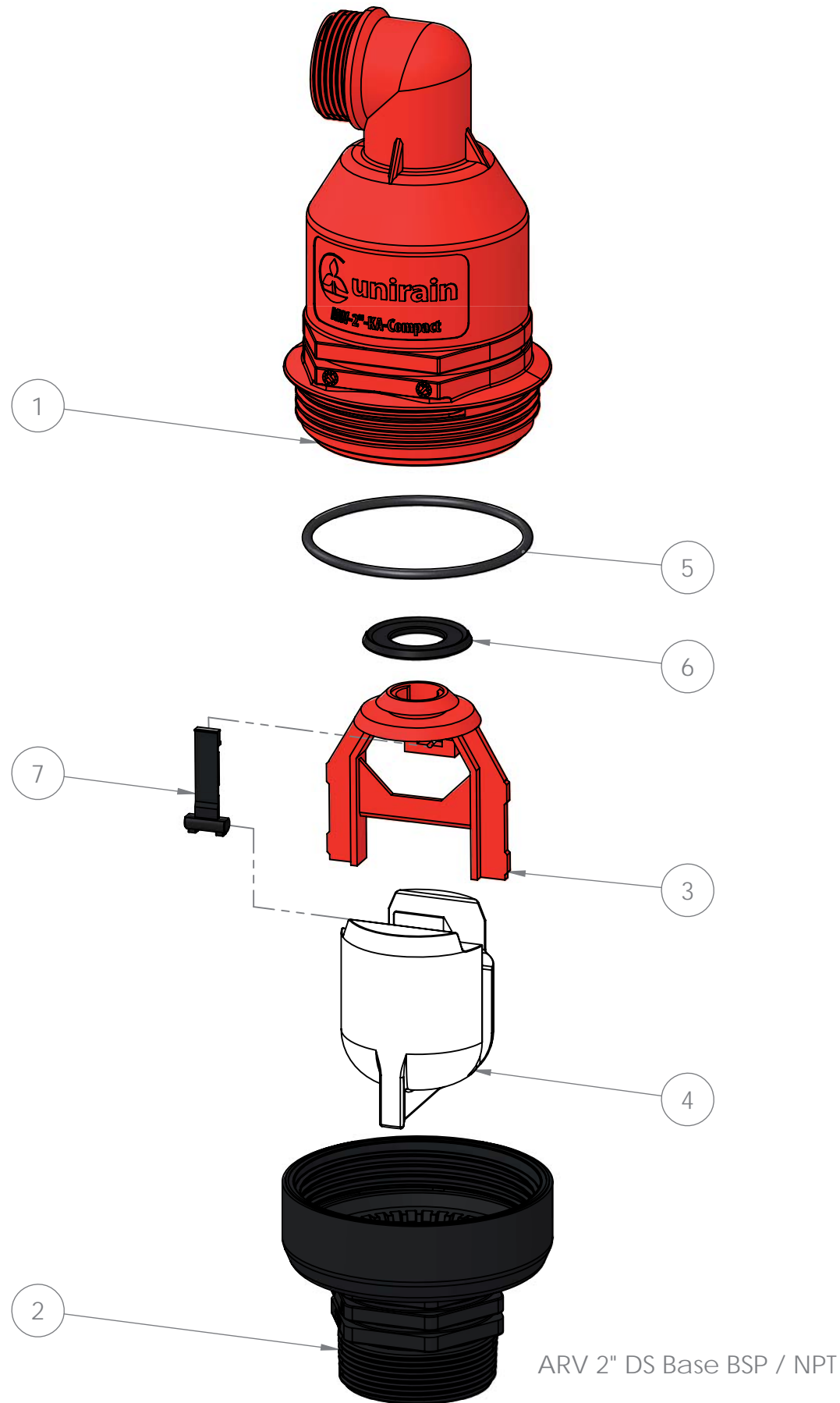
WARRANTY AND EXCLUSIONS

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UNIRAIN S.A. reserves the right to amend any of the technical features of this product.



COMPONENT NUMBER	SPARE CODE	DESCRIPTION	MATERIAL	QUANTY
1	----	ARV-2"-KA Compact Valve Body	PA6 + Fiber Glass	1
2	----	ARV-2" (BSP) DS Base	PA6 + Fiber Glass	1
3	----	ARV-2"-KA-Compact Yoke	PA6 + Fiber Glass	1
4	----	ARV 2"-KA-Compact Float	PA6 + Fiber Glass	1
5	01787DNS	2" DNS O-Ring	NBR	1
6	01785SPU	ARV 2" Main Seal SPU	EPDM	1
7	01786	ARV KA Secondary Seal	EPDM	1

Process/Manufacturer UNIRAIN	Size A3	Material	Code
	Scale 1:2	Name ARV-2"-KA-Compact	
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	P.M.M.		

UNIRAIN ARV-Ø-(3G)-FL

Metal flanged Air Release Valve with double or triple acting



Units Conversion	
FLOW	PRESSURE
m ³ / h (metro cúbico por hora)	mca (metro de columna de agua)
l / h (litro por hora)	PSI (Pounds per Square Inch)
GPM (Gallons per Minute)	
CFM (Cubic Feet per Minute)	
1 CFM = 1.699 m ³ / h	1 PSI = 0.70307 mca
1 GPM = 227.1192 l / h	

Application

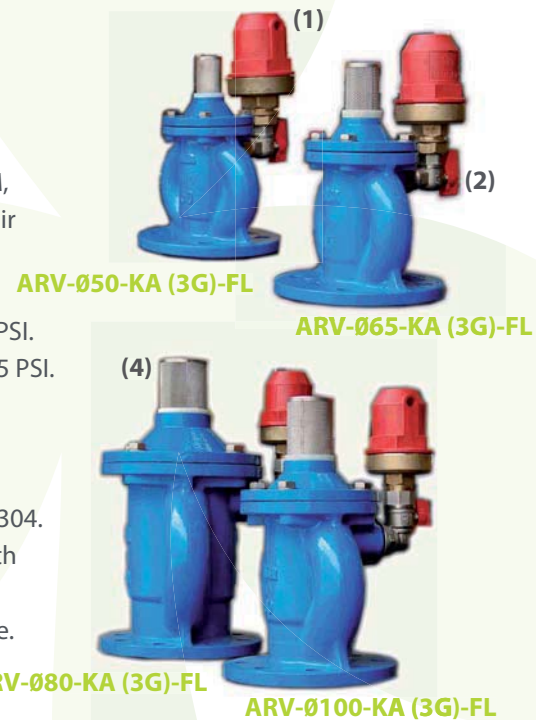
The Air Release Valves (ARV) are used for extraction and intake of air in pipes, avoiding breakages due to the overpressure and depression. The ARV-Ø-(3G)-FL is designed only for clean water in systems with flanged assemblies. Suitable for a wide range of pipe depending on diameter 200-800 mm (see table).

Advantages

- Virtually maintenance free, works automatically.
- The air filter (4) prevents the penetration of foreign bodies and small animals that can nest in the closing hole.
- Easy to clean. The triple acting valve incorporates a small purge valve. In case of obstruction by dirt in the 1" purge valve (1), the procedure is simple: close the stopcock (2), remove small valve, clean and assemble it again. Turn the stopcock (2) to the vertical position. Clean the big valve while the purge valve is disassembled and the stopcock is closed.
- There are no variations in performance thanks to the interaction between the ball of polypropylene (hard material) and the dome of vulcanized neoprene (soft material) at closing. Perfect closed position due to the contact between spherical-conical surfaces.

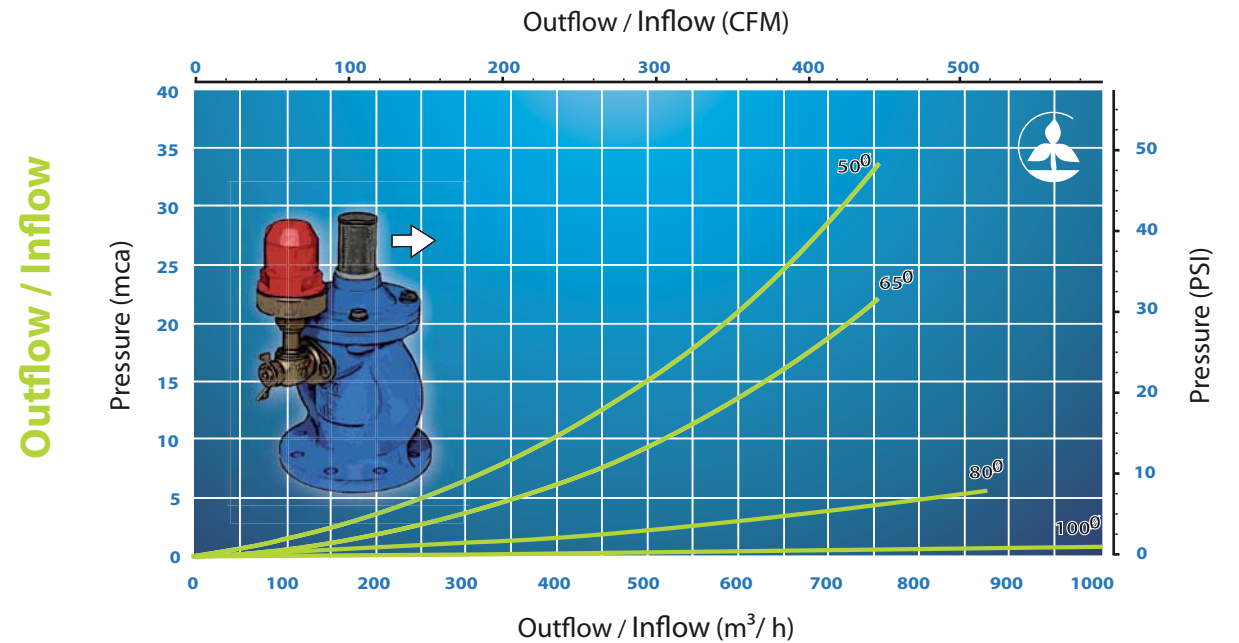
Technical specifications

- Kinetic and automatic (optional) operation.
- Minimum evacuation (according to model): Ø50= 441 CFM, Ø65 = 441 CFM, Ø80 = 500 CFM, Ø100 = 588 CFM liters of air without causing the closure of the valve (while no water present).
- Maximum working pressure for TRIPLE ACTING Valve: 225 PSI.
- Maximum working pressure for DOUBLE ACTING Valve: 355 PSI.
- Body and dome made of nodular cast iron GGG-40 with EPOXY cover.
- Flange for assembly and installation.
- Output with filter and screws made of stainless steel AISI 304.
- Purge valve with a body made of polyamide reinforced with fiberglass and brass base.
- Stopcock made of chrome plated brass with sphere closure.



Performance

- It **extracts** the air from pipes as they fill. This stage ends when water reaches the inside of the valve, raising the float and closing the main discharge outlet.
- Using the purge valve, the ARV exerts continuous **automatic control**, eliminating any residual pocket of air that might reach the valve, as when it happens, the float drops partially or totally and opens the discharge outlet. Water pressure will not prevent this function from being carried out.
- It **prevents** pipe collapse. At the least decrease in pressure, the float drops and opens the main seal, allowing outside air to enter in the pipe.



UTILIZATION CRITERIA

Pipe diameter	Valve type
200-250	Ø50
250-300	Ø65
300-450	Ø80
450-800	Ø100

Diameter of pipes and valves in mm.

*Normal use, service and maintenance conditions.

This product has been tested at low pressure (8 psi) and high pressure (225 psi) with satisfactory results.

For the correct running of valves they must be regularly checked. The checking should include the cleaning of the internal components and a control of the seal conditions. For more detailed information about use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION".

For specific uses, please check the technical department.

WARRANTY AND EXCLUSIONS

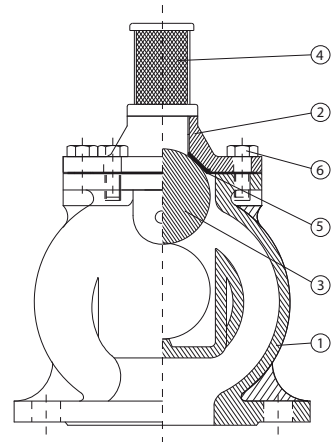
The manufacturer guarantees its products for direct customer against any defects in materials or manufacture for a period of two years from the original date of purchase, when the products have been used under normal operating conditions. The manufacturer assumes no responsibility for installation, removal or repairs carried out by unauthorized personnel. The manufacturer's liability under this warranty is limited to the replacement or repair of defective parts and the manufacturer does not accept responsibility for damages to crops or any other consequential damages deriving from defects in the products covered by this warranty.

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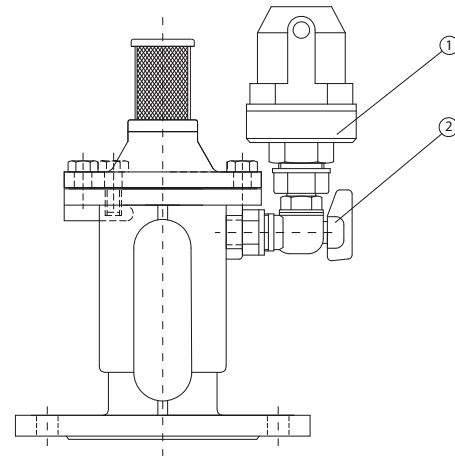
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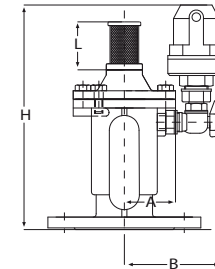
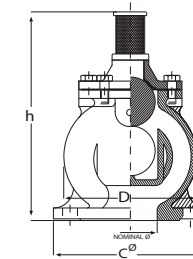
AIR RELEASE VALVES DN 50-65



DOBLE ACTING		
Ref	Description	Material
1	BODY	Nod Cast Iron GGG-40
2	DOME	Nod Cast Iron GGG-40
3	CLOSURE BALL	Polypropylene d=0.9
4	AIR FILTER	Stainless steel mesh
5	VULCANIZED	Neoprene 65° Shore
6	SCREWS	Stainless steel

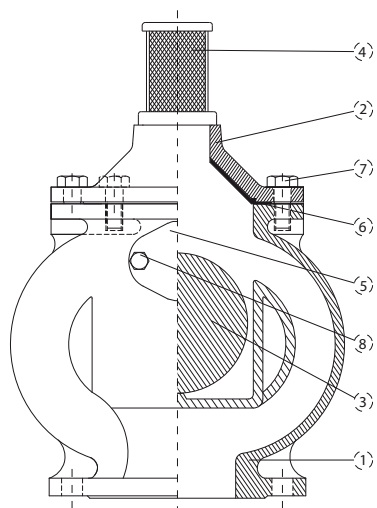


TRIPLE ACTING		
Ref	Description	Material
1	PURGE VALVE 1"	Polyamide+Fibrer Glass METALIC BASE (brass)
2	STOPCOCK	Chrome-plated brass

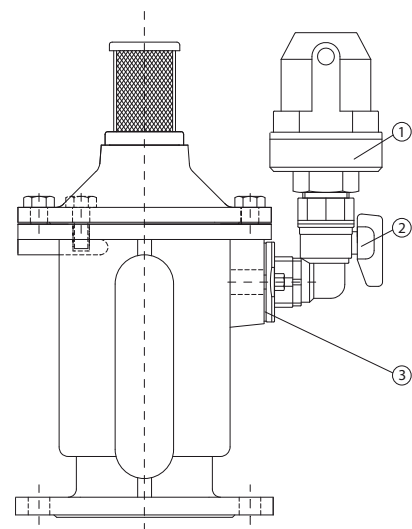


General Dimensions			DOBLE ACTING			TRIPLE ACTING			
Ø NOMINAL	C ^Ø	D	L	h	A	WEIGHT (Kg)	H	B	WEIGHT (Kg)
40	150	125	40	200	51	4	---	---	-
50	165	160	50	235	54	6	285	123	7
65	185	170	60	260	56	8	295	130	9
80	200	214	72	325	81	13	340	155	15
100	220	291	72	395	108	23	395	180	25

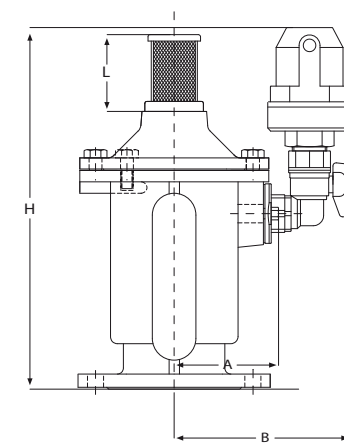
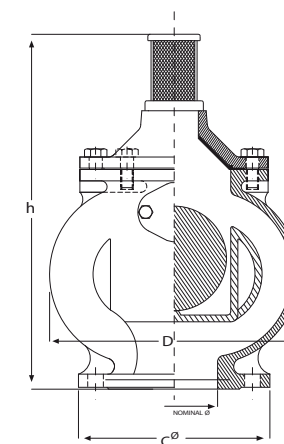
AIR RELEASE VALVES DN 80-100




DOBLE ACTING		
Ref	Description	Material
1	BODY	Nod Cast Iron GGG-40
2	DOME	Nod Cast Iron GGG-40
3	CLOSURE BALL	Polypropylene d=0.9
4	AIR FILTER	Stainless steel mesh
5	COVER (Double acting)	Cadmium-plated steel
6	VULCANIZED	Neoprene 65° Shore
7	SCREWS	Stainless steel
8	COVER SCREWS	Stainless steel



TRIPLE ACTING		
Ref	Description	Material
1	PURGE VALVE 1"	Polyamide+Fibrer Glass METALIC BASE (brass)
2	STOPCOCK	Chrome-plated brass
3	SEAL	Pressed Leather



Process/Manufacturer	Size	Material	Code
	A3		
UNIRAIN	Escala	Name	
		ARV-Ø-KA (3G)-FL	
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	E.G.B.		

UNIRAIN ARV-Ø-(3G)-FLSW

Metal flanged Air Release Valve with double or triple acting



Units Conversion	
FLOW	PRESSURE
m ³ / h (metro cúbico por hora)	mca (metro de columna de agua)
l / h (litro por hora)	PSI (Pounds per Square Inch)
GPM (Gallons per Minute)	
CFM (Cubic Feet per Minute)	
1 CFM = 1.699 m³ / h	1 PSI = 0.70307 mca
1 GPM = 227.1192 l / h	

Application

The Air Release Valves are used for extraction and intake of air in pipes, avoiding breakages due to the overpressure and depression. Suited for both clean water and greywater. This is an improved model of the ARV-Ø-(3G)-FL that increases air flow intake / evacuation and expands its uses.

Advantages

- Virtually maintenance free, works automatically.
- The air filter (4) prevents the penetration of foreign bodies and small animals that can nest in the closing hole.
- Easy to clean. The triple acting valve incorporates a small purge valve. In case of obstruction by dirt in the 1" purge valve (1), the procedure is simple: close the stopcock (2), remove small valve, clean and assemble it again. Turn the stopcock (2) to the vertical position. To clean the big valve (always with purge valve disassembled) attach the hose to stopcock (3) (see technical drawing), open the stopcock and introduce pressured water.
- There are no variations in performance thanks to the interaction between the ball of polypropylene (hard material) and the dome of vulcanized neoprene (soft material) at closing. Perfect closed position due to the contact between spherical-conical surfaces.

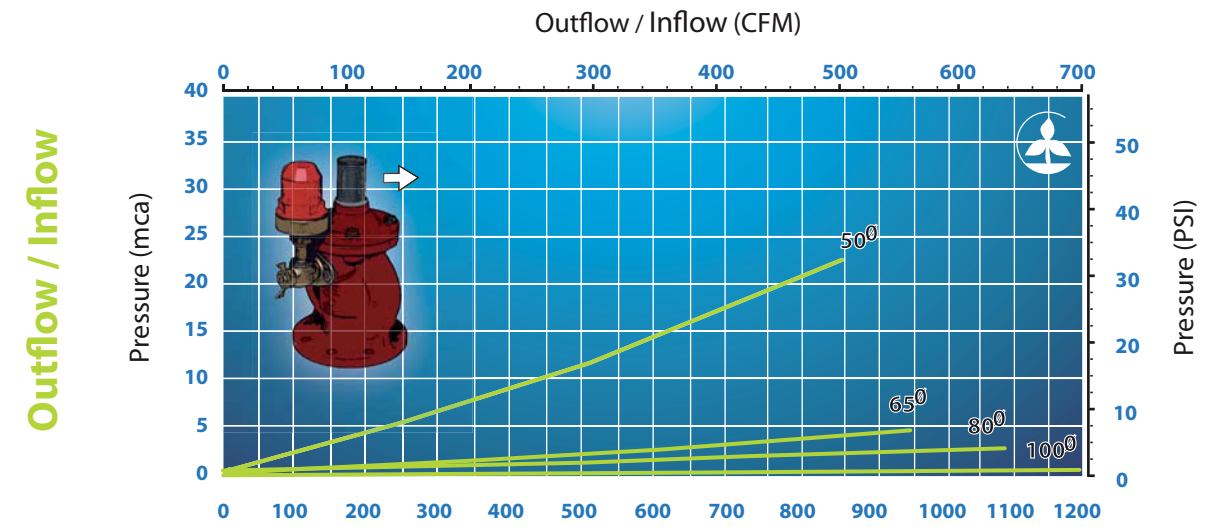
Technical specifications

- Kinetic and automatic (optional) operation.
- Minimum evacuation (according to model): **Ø50**= 500 CFM, **Ø65** = 559 CFM, **Ø80** = 688 CFM, **Ø100** = 706 CFM liters of air without causing the closure of the valve (while no water present).
- Maximum working pressure for TRIPLE ACTING Valve: 225 PSI.
- Maximum working pressure for DOUBLE ACTING Valve: 355 PSI.
- Body and dome made of nodular cast iron GGG-40 with EPOXY cover.
- Flange for assembly and installation.
- Purge valve with a body made of polyamide reinforced with fiberglass and brass base.
- Output with filter and screws made of stainless steel AISI 304..
- Stopcock made of chrome plated brass with sphere closure.
- Stopcock (valve ball) for easy cleaning inside the valve.



Performance

- It **extracts** the air from pipes as they fill. This stage ends when water reaches the inside of the valve, raising the float and closing the main discharge outlet.
- Using the purge valve, the ARV exerts continuous **automatic control**, eliminating any residual pocket of air that might reach the valve, as when it happens, the float drops partially or totally and opens the discharge outlet. Water pressure will not prevent this function from being carried out.
- It **prevents** pipe collapse. At the least decrease in pressure, the float drops and opens the main seal, allowing outside air to enter in the pipe.



Vertical axis: differential pressure (psi).
Horizontal axis: Air flow evicted.
Absolute values of pressure and flow.

UTILIZATION CRITERIA

Pipe diameter	Valve type
200-250	Ø50
250-300	Ø65
300-450	Ø80
450-800	Ø100

Diameter of pipes and valves in mm.

Normal use, service and maintenance conditions.

This product has been tested at low pressure (8 psi) and high pressure (225 psi) with satisfactory results.

For the correct running of valves they must be regularly checked. The checking should include the cleaning of the internal components and a control of the seal conditions. For more detailed information about use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION".

For specific uses, please check the technical department.

WARRANTY AND EXCLUSIONS

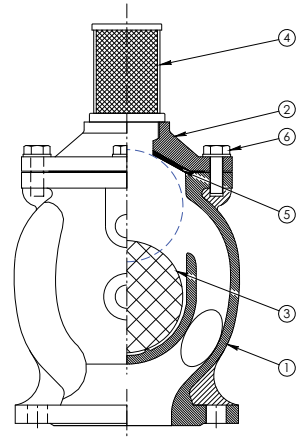
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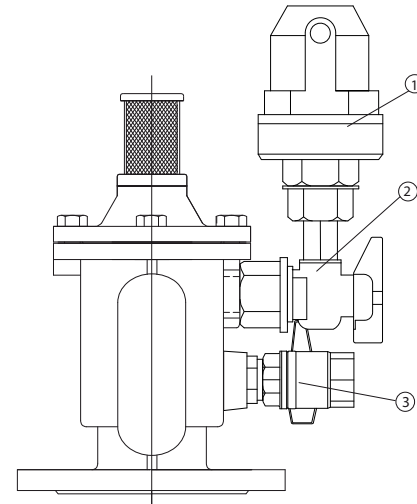
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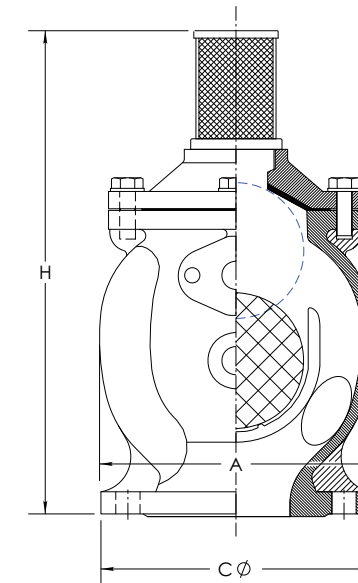
AIR RELEASE VALVES DN 50-65



DOBLE ACTING		
Ref	Description	Material
1	BODY	Nod Cast Iron GGG-40
2	DOME	Nod Cast Iron GGG-40
3	CLOSURE BALL	Polypropylene d=0.9
4	AIR FILTER	Stainless steel mesh
5	VULCANIZED	Neoprene 65° Shore
6	SCREWS	Stainless steel

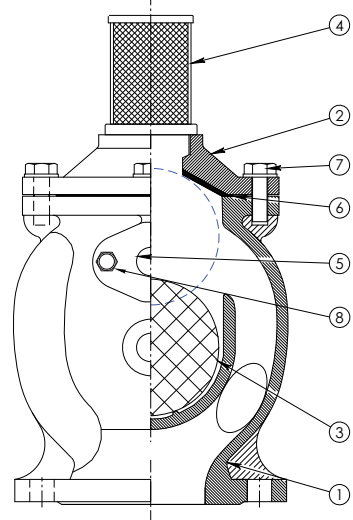


TRIPLE ACTING		
Ref	Description	Material
1	PURGE VALVE 1"	Polyamide+Fibrer Glass METALIC BASE (brass)
2	STOPCOCK	Chrome-plated brass
3	STOPCOCK (Cleaning)	Chrome-plated brass

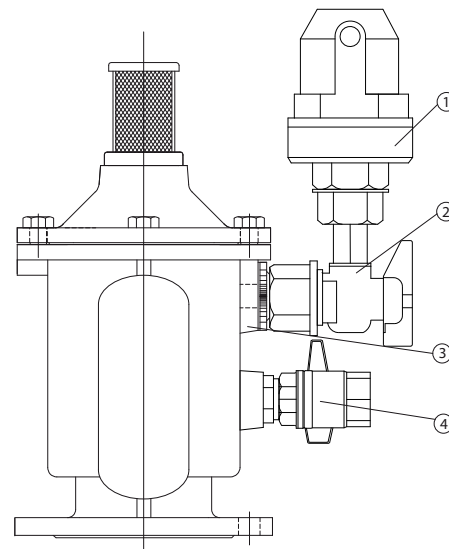


Generals Dimensions		DOBLE ACTING			TRIPLE ACTING		
Ø NOMINAL	C°	A	H	WEIGHT (Kg)	MAXIMUN WIDE	MAXIMUN HIGH	WEIGHT (Kg)
50	165	150	255	7	200	305	8
65	185	180	300	11	220	325	12
80	200	205	360	16	270	360	18
100	220	260	450	23	300	450	25

AIR RELEASE VALVES DN 80-100



DOBLE ACTING		
Ref	Description	Material
1	BODY	Nod Cast Iron GGG-40
2	DOME	Nod Cast Iron GGG-40
3	CLOSURE BALL	Polypropylene d=0.9
4	AIR FILTER	Stainless steel mesh
5	COVER (Double acting)	Cadmium-plated steel
6	VULCANIZED	Neoprene 65° Shore
7	SCREWS	Stainless steel
8	COVER SCREWS	Stainless steel



TRIPLE ACTING		
Ref	Description	Material
1	PURGE VALVE 1"	Polyamide+Fibrer Glass METALIC BASE (brass)
2	STOPCOCK	Chrome-plated brass
3	SEAL	Pressed Leather
4	STOPCOCK (Cleaning)	Chrome-plated brass

Process/Manufacturer	Size	Material	Code
	A3		
UNIRAIN	Escala	Name	
		ARV-Ø-KA (3G)-FLSW	
PRIVATE AND CONFIDENTIAL THE INFORMATION CONTAINED ON THIS PLAN IS FOR UNIRAIN USE ONLY. FORBIDDEN CHANGE OR AMENDMENT OF VALUES OF THE PLAN WITHOUT A CONSENT IN WRITING.	09/05/2010		
	E.G.B.		

UNIRAIN ARV-Ø-(3G)-FLFP

Metal flanged Air Release Valve with double or triple acting



Technical features

The water supply through closed pipes involves several inconveniences to ensure an efficient and safe work. One of these problems is the air presence in the pipes, either in-

cluded in the water or introduced during the filling and emptying. During these processes it's necessary to place devices capable of allowing the air inlet and outlet in a safe form.

The air valves are the indicated device to kill the air in the pipes thanks to their operation based on the float closing.

In the moments of filling and emptying of the pipe, the water column pushes out or takes in large quantities of air that have to go across the air valve. The filling is the more critical process as it is necessary to evacuate a large quantity of air at high speed.

The traditional air valve designs have outlet diameters smaller than the inlet, this feature causes an

excessive increase of the air speed that can generate an early closing of the valve due to the drag over the floating ball.

The FLFP air valve design is based on keeping a constant flow section from the input to the exit. This property provides the valve with a high coefficient of flow output and provides the plant with the necessary safety level, preventing air overloads which can collapse the pipes or bubble accumulation which could damage the pumping equipment.



Air valve

cluded in the water or introduced during the filling and emptying.

- Large air evacuation
- Internal design optimized for avoid early closing.
- Seal ring designed for low load closing
- Floating ball with density 0,9 for progressive closing
- Air filter
- Suitable for SEWAGE
- EPOXY/CERAMIC coating

ADVENTADGES

Settings

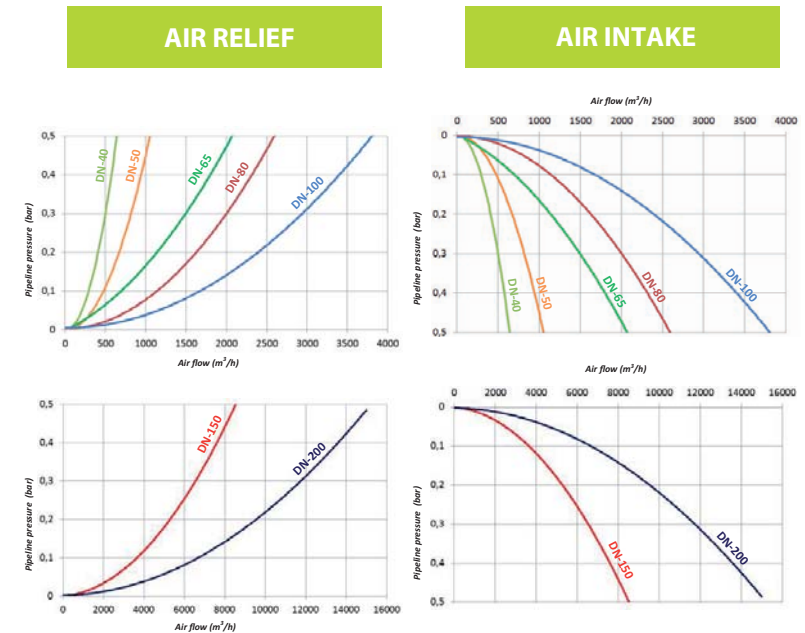
Double effect: FLFP air valve of nodular cast iron for inlet and outlet of larger air quantities in the filling and emptying of the pipes.

Triple effect: FLFP air valve of nodular cast iron for inlet and outlet of larger air quantities. Automatic 1" air valve for air expulsion with the pipes loaded, avoiding performance losses and wrong measures in measuring equipment.

Triple effect with bleeder valve: FLFP air valve of nodular cast iron. Equipped with a bleeder valve to ease the maintenance tasks. Available for diameter 65, 80, 100, 150 and 200mm.

PN-25: under request, any model is supplied suitable for nominal pressure PN-25.

Air flow performance charts



Selection criteria

When the air flow or pipeline pressure are not available, UNIRAIN recommends using the following selection chart. The valve size is related to the pipe diameter in a simple way. In a doubt situation, always take the higher size for security. The air flow performance of the UNIRAIN FLFP air valve is so high, don't use this criteria with other air valve models.

Pipe diameter (mm)	Air Valve diameter (mm)
0-200	40
200-300	50
300-400	65
400-500	80
500-800	100
800-1200	150
1200-1600	200

*Normal use, service and maintenance conditions.

This product has been tested at low pressure (8 psi) and high pressure (225 psi) with satisfactory results.

For the correct running of valves they must be regularly checked. The checking should include the cleaning of the internal components and a control of the seal conditions. For more detailed information about use and maintenance of valves, please check the document called "Unirain ARV: INSTALLATION AND OPERATION".

For specific uses, please check the technical department.

WARRANTY AND EXCLUSIONS

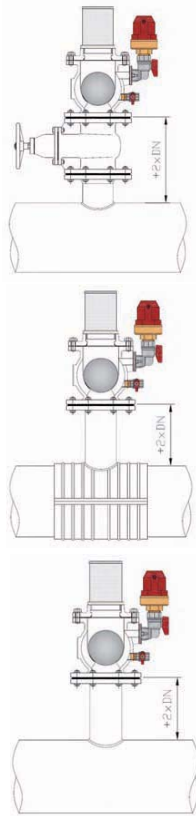
The manufacturer guarantees its products for direct customer against any defects in materials or manufacture for a period of two years from the original date of purchase, when the products have been used under normal operating conditions. The manufacturer assumes no responsibility for installation, removal or repairs carried out by unauthorized personnel. The manufacturer's liability under this warranty is limited to the replacement or repair of defective parts and the manufacturer does not accept responsibility for damages to crops or any other consequential damages deriving from defects in the products covered by this warranty.

THE PRESENT WARRANTY SUPERCEDES AND VOIDS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES OR ANY OTHER ATTRIBUTING LIABILITY TO THE MANUFACTURER.

No agent, employee or representative of the manufacturer is authorized to void, alter or add to the conditions contained in this warranty, nor to take responsibility for, nor to make guarantees not specified herein.

UNIRAIN S.A. reserves the right to amend any of the technical features of this product.

Assembly recommendations



For to get a good working of the air valve, an uniform flow water is needed. We recomend a minimal straight pipe piece (length=2xNominal Diameter) from the flange of the valve to the general pipe.

In the pattern are shown different ways to install the valve:

- A) On a gate valve.
- B) On an intake ring.
- C) On a welded flange.

In any case, the specified distance must be used, getting the stability of the flow water.

During the air output process and until the closing time, a little water quantity is ejected trough the upper exit of the valve. In plants where exist electric devices or similar near the valve, it's recommended to protect them properly.

FEATURES

ACID RESISTANT

Hold on with several acids and chemical agents.

RUST RESISTANT

The ceramic enamel doesn't get oxidation.

ABRASION RESISTANT

Its hard finish resists cutting, scratching and cleaning products.

FIRE RESISTANT

Doesn't flare up or get burned.

HIGYENIC FINISH

Free of germs. Sterile, odorless and easy cleaning.

LONG LIFE COLOUR

Keeps the original color and shine, without pale or discoloration.

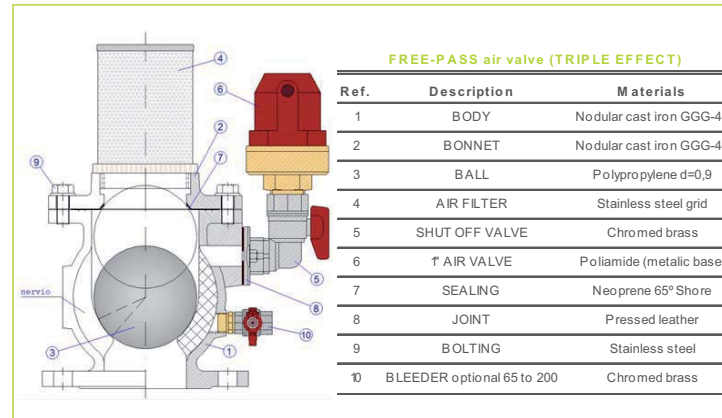
PAINTING RESISTANCE

Non-porous easy cleaning surfaces.

Ceramic enamel coating*

Under request, the FLFP air valve is supplied with special ceramic enamel coating, both internal and external. The ceramic enamel is a long-life inorganic coating in boron-aluminium silicates which are obtained by high temperature melting with the steel, in one or several layers, from a mixture of basic and acid oxides. The result is a high protection quality, keeping a perfect preserving of the valve.

Components

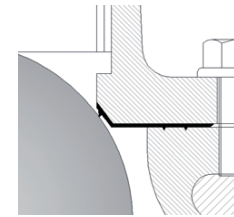


Special closing system

The special closing system is designed for provide a perfect sealing in each situation.

Its profile with sensible-contact area gets a ideal sealing line at the lowers pressures.

The polypropylen closing ball doesn't allow deformations and its density similar to the water produces a slow elevation of the ball during the closing, avoiding the generation of a water hammer inside the own valve.



FLFP air valve

- Large air evacuation
- Internal design optimized for avoid early closing.
- Seal ring designed for low load closing
- Floating ball with density 0,9 for progressive closing
- Air filter
- Suitable for SEWAGE
- EPOXY/CERAMIC coating



* Ceramic enamel coating

General dimensions

* length in millimeters
Weight in kilograms

dimension	signal	DN						
		40	50	65	80	100	150	200
flange bore	C	150	165	185	200	220	285	340
output bore	-	40	50	65	80	100	150	200
to axis width	A	135	145	165	180	195	236	300
max. Width	-	210	228	258	280	305	390	480
max. Height	H	230	250	285	335	390	455	670
filter height	L	71	88	110	125	135	100	155
weight	-	4	7	9	15	20	46	72

