

ODIS

IRRIGATION EQUIPMENT LTD.

AUTOMATIC CIRCULATING FILTERS

SERIES

8000

Registered Patent

APPLICATIONS

- Used as Control Filter in agriculture
- Automatic self cleaning filter
- Specifically designed for continuous trouble free operation



ODIS Filtration *is The Heart* of Every Irrigation System

DESCRIPTION

An automatic water screen filter specifically designed for trouble free operation. This Registered Patent filter continuously flushes the whole screen and keeps it clean during operation; as a result there is no increase in head loss during operation.

This is accomplished with a specially designed acceleration plate with four directional holes. The filter uses effectively the whole screen area due to the unique design of a spiral groove under the screen.

The filter includes a flushing controller activated at predetermined time intervals (field adjustable), to flush the residues accumulated in the collecting chamber.

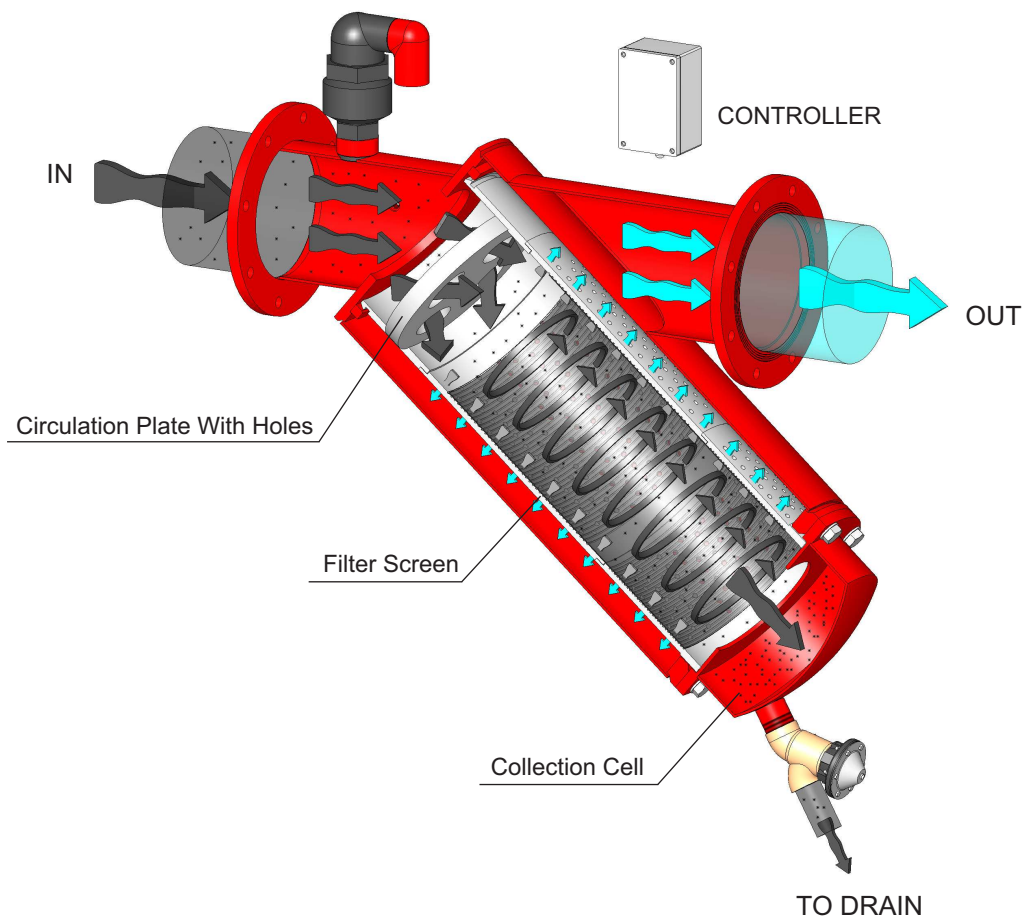
The residue collecting chamber is an integral part of the filter screen. It has a conical form which prevents back flow of the residues.

The lower recommended flow-rate can be adjusted by blocking one hole in the circulating plate with a rubber stopper.

Available in the following inlet sizes: 1½", 2", 3", 4", 6", 8", 10".

Available with three end connections: Thread (M), Flange (F), Victaulic (V).

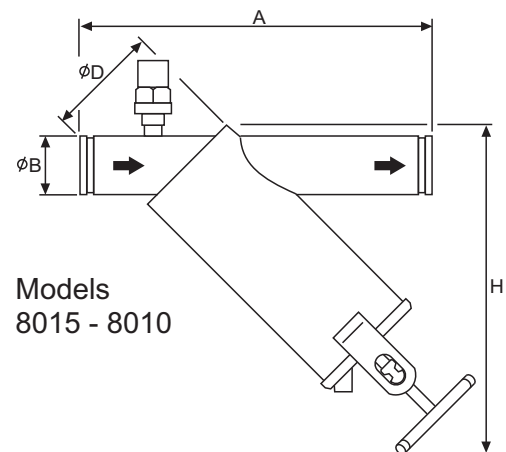
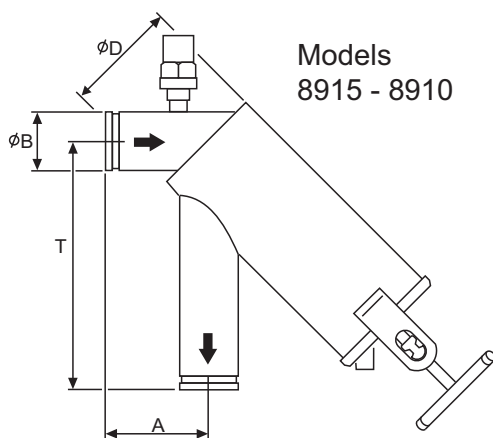
The filter has a 100 micron protective coating of extra durable polyester applied electrostatically and oven cured on a zinc-phosphate layer for maximal anti - corrosion protection.



Dimensions & Weight

Metric Units/ U.S. Units

| Model | B | | D | A | | T | | H | | Weight | |
|-------|-----|--------|------|------|------|------|-------|------|-------|--------|-----|
| | mm | inch | inch | mm | inch | mm | inch | mm | inch | kg | lbs |
| 8015 | 40 | 1 1/2" | 6" | 370 | 14.5 | - | - | 640 | 23.5 | 16 | 36 |
| 8020 | 50 | 2" | 6" | 400 | 15.7 | - | - | 640 | 25.25 | 17 | 38 |
| 8030 | 80 | 3" | 8" | 525 | 20.7 | - | - | 720 | 28.25 | 29 | 64 |
| 8040 | 100 | 4" | 8" | 565 | 22.3 | - | - | 900 | 35.3 | 35 | 78 |
| 8060 | 150 | 6" | 10" | 735 | 28.9 | - | - | 1200 | 47.25 | 56 | 123 |
| 8080 | 200 | 8" | 16" | 875 | 34.5 | - | - | 1050 | 41.3 | 130 | 287 |
| 8010 | 250 | 10" | 16" | 1195 | 47 | - | - | 1100 | 43.3 | 175 | 387 |
| 8915 | 40 | 1 1/2" | 6" | 110 | 4.5 | 265 | 10.5 | - | 23.5 | 16 | 36 |
| 8920 | 50 | 2" | 6" | 120 | 4.7 | 280 | 11 | - | 25.25 | 17 | 38 |
| 8930 | 80 | 3" | 8" | 160 | 6.3 | 370 | 14.5 | - | 28.25 | 29 | 64 |
| 8940 | 100 | 4" | 8" | 135 | 5.3 | 410 | 16.25 | - | 35.3 | 35 | 78 |
| 8960 | 150 | 6" | 10" | 245 | 9.5 | 540 | 21.25 | - | 47.25 | 56 | 123 |
| 8980 | 200 | 8" | 16" | 270 | 10.6 | 900 | 35.5 | - | 41.3 | 130 | 287 |
| 8910 | 250 | 10" | 16" | 500 | 19.7 | 1000 | 39.4 | - | 43.3 | 175 | 387 |



Recommended Flow Rates

Metric Units/ U.S. Units

| Models | Inlet / Outlet Diameters | | Recommended Flow Rate | | | |
|-----------|---------------------------------|-----|-----------------------|-------------|-------------------|-------------|
| | | | 3 Openings | | 4 Openings | |
| | inch | mm | m ³ /h | U.S. gpm | m ³ /h | U.S. gpm |
| 8015/8915 | 1 ¹ / ₂ " | 40 | 7 - 10 | 30 - 45 | 9 - 13 | 40 - 55 |
| 8020/8920 | 2" | 50 | 13 - 19 | 55 - 85 | 18 - 25 | 80 - 110 |
| 8030/8930 | 3" | 80 | 25 - 35 | 110 - 155 | 30 - 45 | 140 - 200 |
| 8040/8940 | 4" | 100 | 40 - 60 | 180 - 255 | 55 - 75 | 235 - 330 |
| 8060/8960 | 6" | 150 | 80 - 115 | 355 - 505 | 105 - 150 | 465 - 660 |
| 8080/8980 | 8" | 200 | 165 - 230 | 760 - 1010 | 210 - 300 | 990 - 1310 |
| 8010/8910 | 10" | 250 | 270 - 385 | 1270 - 1680 | 355 - 500 | 1650 - 2190 |

Technical Data

- Recommended head loss: 0.25 - 0.5 bar (4 - 7.5 psi).
- Filter screen: Single highly reinforced stainless steel screen.
- Acceleration plate: plate with 4 directional holes accelerating the water velocity to selfclean the screen during operation.
- Rubber stopper: one rubber stopper only, for optional adjusting the water velocity to the actual flow rate, see Head Loss/Flow Rate chart.
- Integral residue collecting chamber.
- Conical form inlet to collecting chamber prevents backflow of residues.
- Filtering continuously with no increase in head loss.
- Automatic flushing controller, field adjustable with valve, flushes the residue from the collecting chamber.
- Maximal exploitation of the screen area as a result of the proprietary spiral groove backing the screen.
- Max. recommended working pressure: 8 bar (120 psi).
- Max. pressure: 10 bar (150 psi).
- Horizontal inlet/outlet, Models 8015(1¹/₂"), 8020(2") , 8030(3"), 8040(4"), 8060(6"), 8080(8"), 8010(10").
- Horizontal inlet/vertical outlet, Models 8915(1¹/₂"), 8920(2"), 8930(3"), 8940(4"), 8960(6"), 8980(8"), 8910(10").

Protective Coating

100 micron extra-durable polyester, applied electrostatically and oven-cured on a zinc-phosphate layer for maximal anti-corrosion protection.

Pressure Relief Valve

A pressure relief valve must be inserted before the filtering installation if pressure is not controlled effectively.

End Connections

Thread (M)
Flange (F)
Victaulic (V)

- Each filter is designed and manufactured in order to achieve the highest standard of quality and finish.

Stainless Steel Filter Screens Filtering Grades

| Mesh Grade | mm | micron | Effective Filtering Area (%) |
|------------|-------|--------|------------------------------|
| 40 | 0.435 | 435 | 47 |
| 60 | 0.225 | 225 | 31 |
| 80 | 0.178 | 178 | 31 |
| 100 | 0.139 | 139 | 30 |
| 120 | 0.122 | 122 | 33 |
| 140 * | 0.112 | 112 | 37 |
| 160 * | 0.094 | 94 | 35 |
| 200 * | 0.072 | 72 | 32 |

* Mesh grades 140, 160, 200 on special request.

NOTES:

- Filters are supplied with one reinforced stainless steel screen specially designed for automatic filters.
- Recommended screen mesh grade: 40 - 120.

How To Order Odis Automatic Filters

1. Type of filter required.
2. Catalog Number of filter.
3. Preferred mesh grade.
4. End connections: Thread (M)
Flange (F)
Victaulic (V)
5. Min. /max. pressure.
6. Maximal/Minimal Flow rate.
7. Additional accessories: Nipples/Valves/Non Return Valves/Gauges/Bleeder/Sediment Tank.
8. Filter arrays: see chapter 1.(*)
9. Other than standard material, required for filter body and cover.
10. Special Coating Requirements.

* An array of circulating filters is preferable in case that flow-rate is not constant.

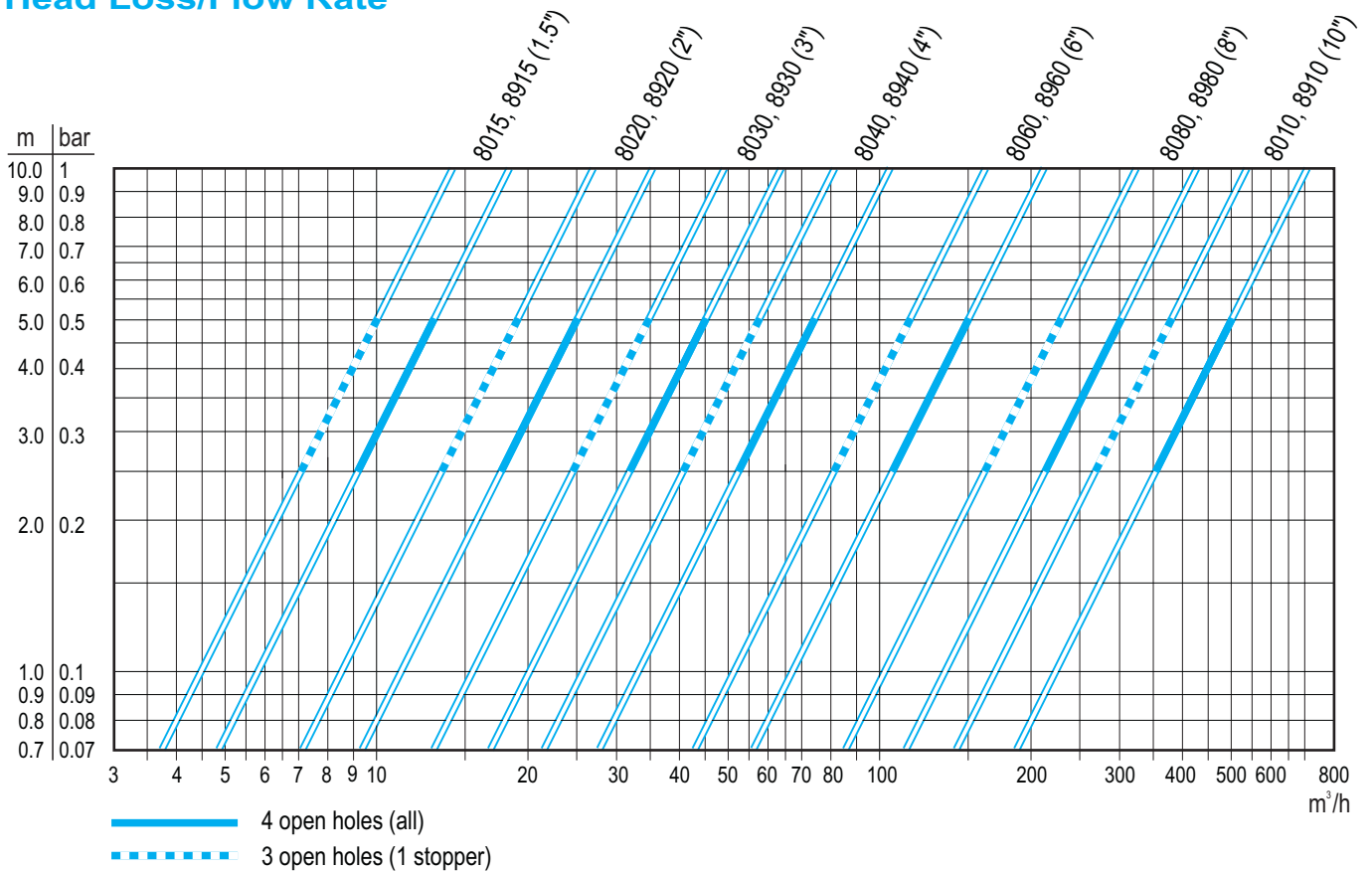
HEAD LOSS/ FLOW RATE

Metric Units

Head Loss**

| Models | Head Loss dP (bar) | | | | | | Head Loss dP (bar) | | | | | |
|--------------------------|---------------------------------|-----|------|-----|-----|--------------------------|---------------------------------|-----|-----|-----|------|------|
| | 0.25 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.25 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 |
| | Flow rate Q (m ³ /h) | | | | | | Flow rate Q (m ³ /h) | | | | | |
| 8015/ 8915 | 9 | 10 | 11.5 | 13 | 14 | 15.5 | 7 | 7.5 | 9 | 10 | 10.5 | 11.5 |
| 8020/ 8920 | 18 | 19 | 22 | 25 | 27 | 30 | 13 | 15 | 17 | 19 | 21 | 22 |
| 8030/ 8930 | 32 | 35 | 40 | 45 | 49 | 53 | 25 | 27 | 31 | 35 | 38 | 41 |
| 8040/ 8940 | 53 | 58 | 67 | 75 | 82 | 89 | 41 | 45 | 52 | 58 | 64 | 69 |
| 8060/ 8960 | 106 | 116 | 134 | 150 | 164 | 177 | 81 | 89 | 103 | 115 | 126 | 136 |
| 8080/ 8980 | 210 | 230 | 270 | 300 | 330 | 355 | 165 | 180 | 205 | 230 | 255 | 275 |
| 8010/ 8910 | 355 | 390 | 450 | 500 | 550 | 590 | 270 | 295 | 345 | 385 | 420 | 455 |
| Recommended Range | | | | | | Recommended Range | | | | | | |
| 4 Open holes (all) | | | | | | 3 Open holes (1 Stopper) | | | | | | |

Head Loss/Flow Rate**



** For a clean filter and 120 mesh screen.

■ 1 bar=100 kPa=1.02 kg/cm²=10.2 m (W.C)=14.5 psi

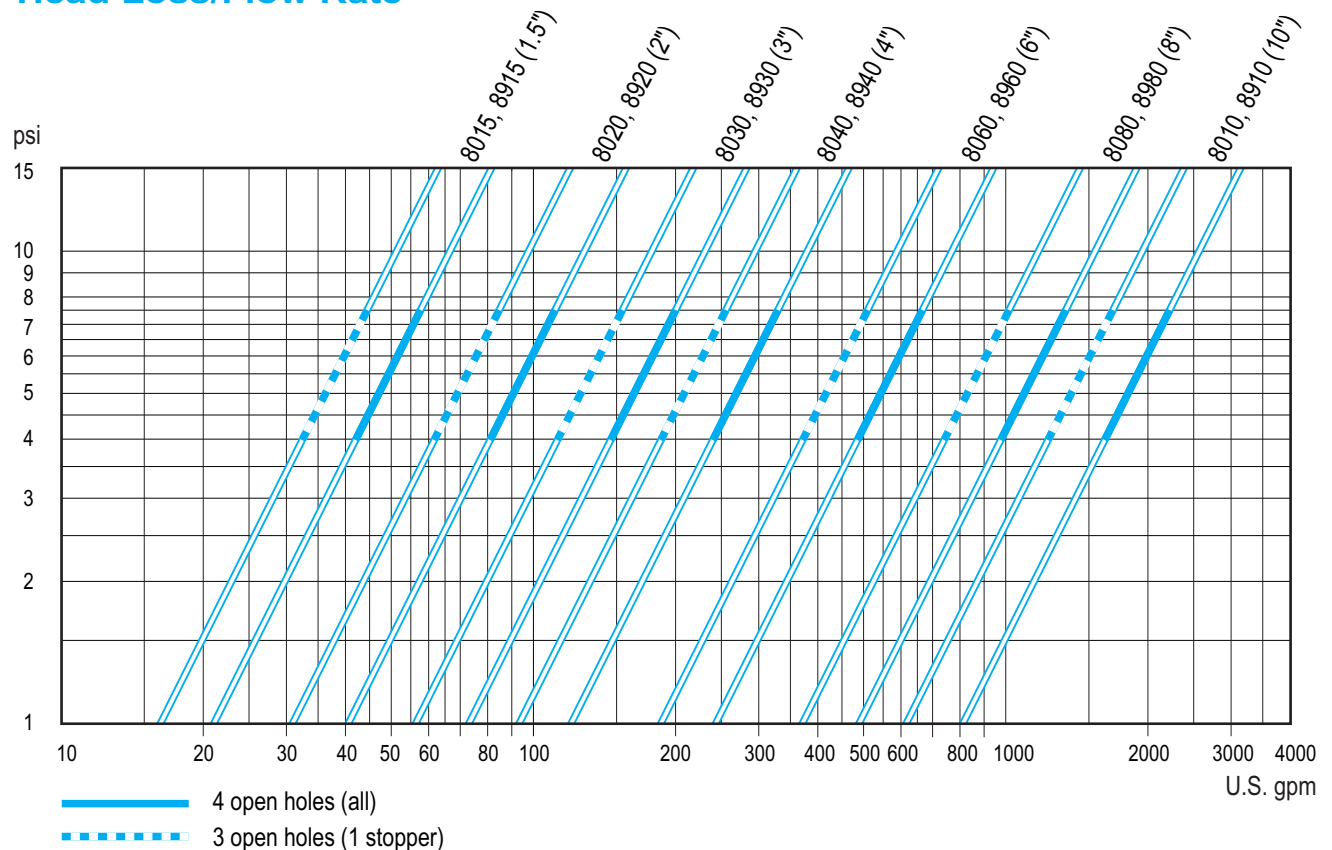
HEAD LOSS/ FLOW RATE

U.S. Units

Head Loss **

| Models | Head Loss dP (psi) | | | | | | Head Loss dP (psi) | | | | | |
|------------|--------------------------|------|------|------|------|------|--------------------------|------|------|------|------|------|
| | 4 | 5 | 6 | 7 | 8 | 10 | 4 | 5 | 6 | 7 | 8 | 10 |
| | Flow Rate Q (U.S. gpm) | | | | | | Flow Rate Q (U.S. gpm) | | | | | |
| 8015/ 8915 | 44 | 48 | 52 | 56 | 60 | 65 | 33 | 35 | 39 | 42 | 45 | 50 |
| 8020/ 8920 | 75 | 85 | 100 | 110 | 125 | 130 | 60 | 65 | 75 | 85 | 95 | 100 |
| 8030/ 8930 | 140 | 135 | 180 | 202 | 220 | 240 | 105 | 120 | 140 | 155 | 170 | 185 |
| 8040/ 8940 | 230 | 260 | 300 | 336 | 370 | 400 | 175 | 200 | 230 | 260 | 285 | 300 |
| 8060/ 8960 | 460 | 520 | 600 | 670 | 735 | 795 | 350 | 400 | 460 | 515 | 565 | 610 |
| 8080/ 8980 | 990 | 1110 | 1210 | 1310 | 1400 | 1570 | 760 | 850 | 930 | 1010 | 1080 | 1210 |
| 8010/ 8910 | 1650 | 1850 | 2020 | 2190 | 2340 | 2610 | 1270 | 1420 | 1550 | 1680 | 1790 | 2010 |
| | Recommended Range | | | | | | Recommended Range | | | | | |
| | 4 Open holes (all) | | | | | | 3 Open holes (1 Stopper) | | | | | |

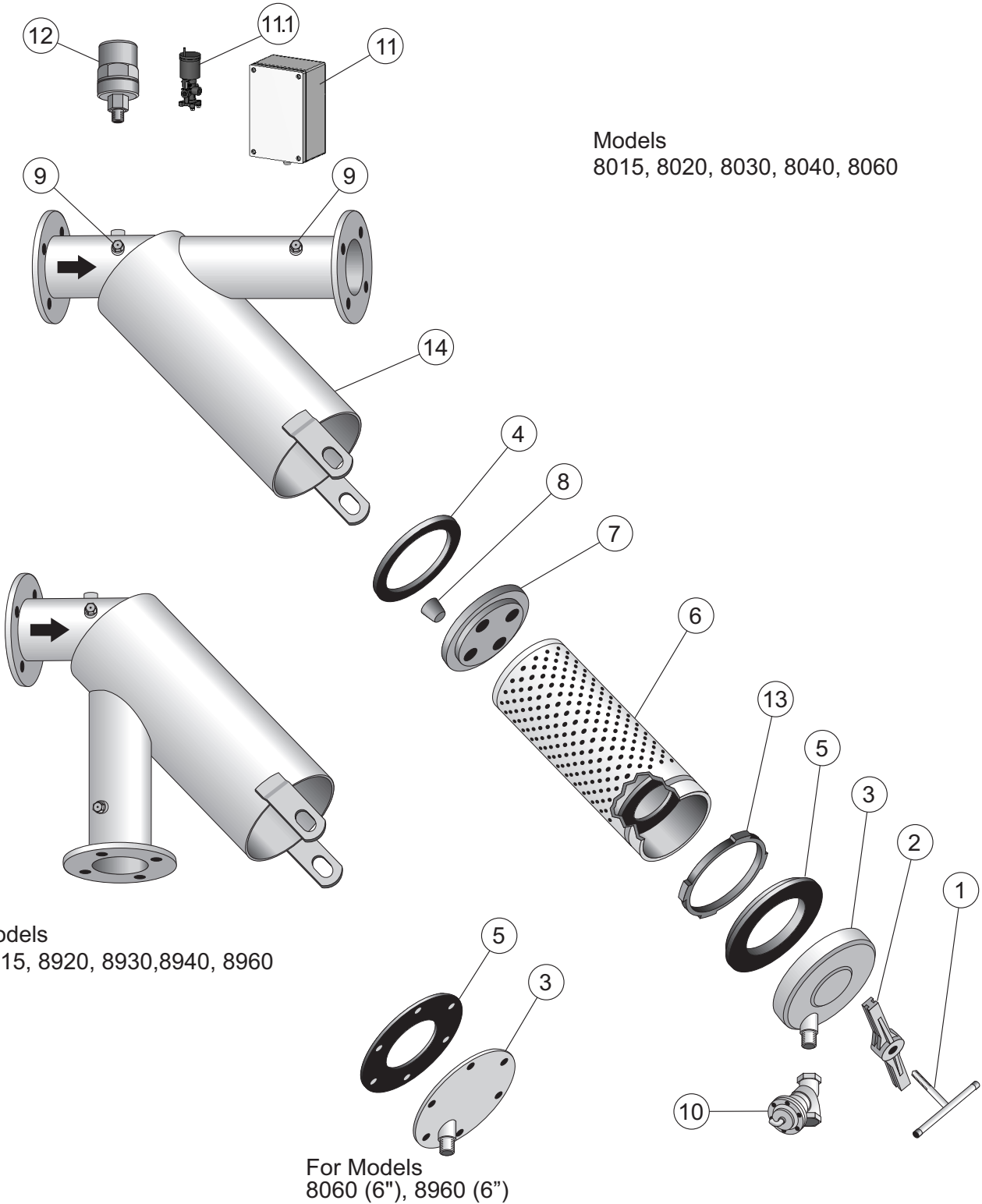
Head Loss/Flow Rate **



** For a clean filter and 120 mesh screen.

■ 1 psi=0.069 bar=6.9 kPa=0.07 kg/cm²=0.7 m (W.C)

ILLUSTRATED PARTS BREAKDOWN



Catalog Numbers

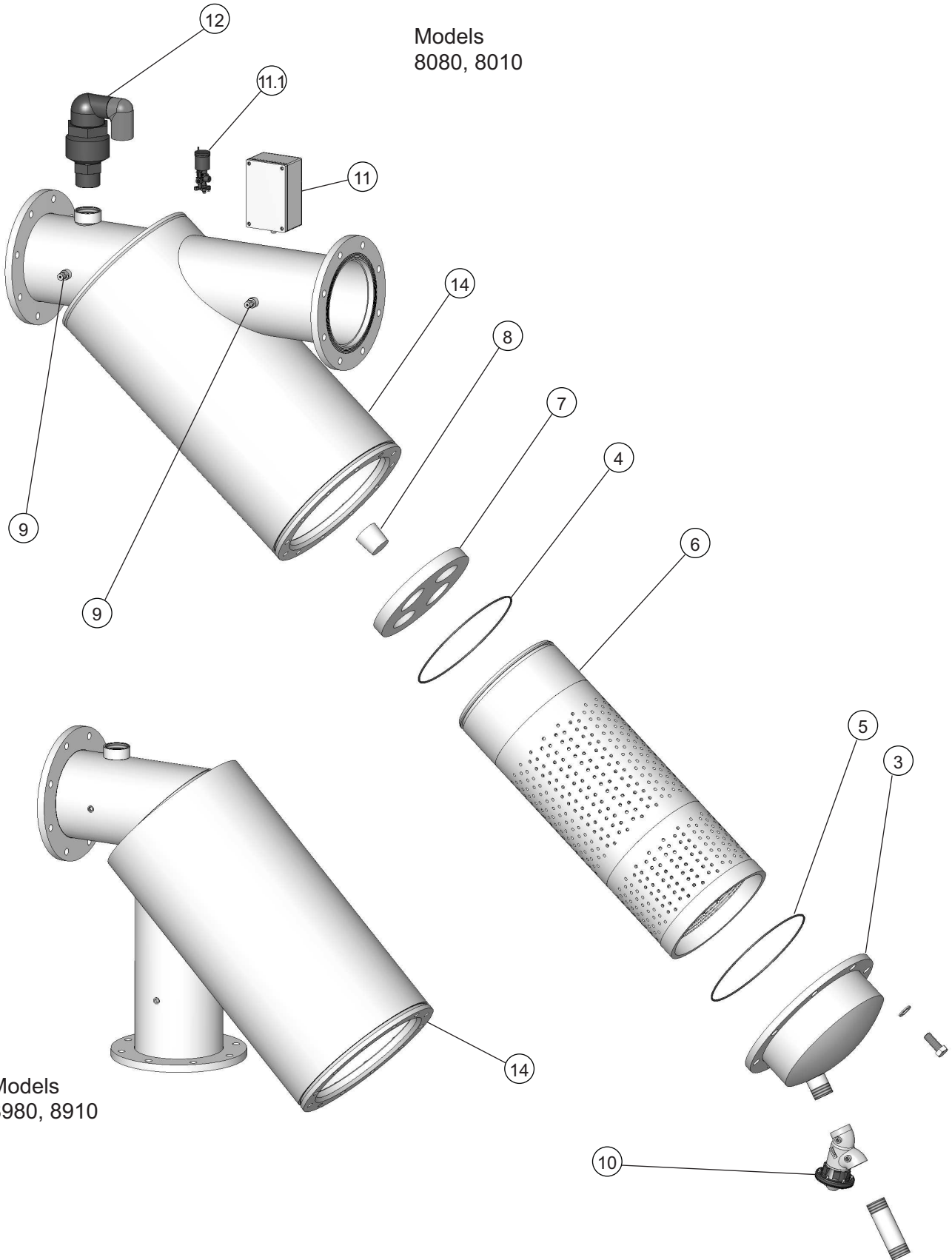
| Part No. | Description | Model | | | | |
|----------|---------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|
| | | 8015 (1½") 8915 (1½") | 8020 (2") 8920 (2") | 8030 (3") 8930 (3") | 8040 (4") 8940 (4") | 8060 (6") 8960 (6") |
| 1 | Handle | E 000 100 | E 000 100 | E 000 100 | E 000 100 | - |
| 2 | Tightening Bracket | E 000 216 | E 000 216 | E 000 218 | E 000 218 | - |
| 3 | Cover | E 008 260 | E 008 260 | E 008 280 | E 008 280 | E 806 200** |
| 4 | Neoprene Inner Gasket | E 000 820 | E 000 820 | E 000 830 | E 000 830 | E 000 860 |
| 5 | Neoprene Cover Gasket | E 000 920 | E 000 920 | E 000 930 | E 000 930 | E 000 960 |
| 6 | Filter Screen * | E 000 481 | E 000 482 | E 000 483 | E 000 484 | E 000 486 |
| 7 | Acceleration Plate | E 000 581 | E 000 582 | E 000 583 | E 000 584 | E 000 586 |
| 8 | Rubber Stopper | E 315 700 | E 320 700 | E 340 700 | E 350 700 | E 370 700 |
| 9 | Pressure Testing Port | E 000 800 | E 000 800 | E 000 800 | E 000 800 | E 000 800 |
| 10 | Hydraulic Drain Valve | NB30001501T (1½") | NB30001501T (1½") | NB30001501T (1½") | NB30001501T (1½") | NB30001501T (1½") |
| 11 | Flushing Controller 12VDC | N53102FT01 | N53102FT01 | N53102FT01 | N53102FT01 | N53102FT01 |
| 11.1 | Solenoid 12VDC -Latch | N 512006 | N 512006 | N 512006 | N 512006 | N 512006 |
| 12 | Air Valve | E 000 910 (½") | E 000 910 (½") | N 12402 (2") | N 12402 (2") | N 12402 (2") |
| 13 | Centering Piece | - | - | E 007 391 | E 007 391 | E 007 392 |
| 14 | Filter Body | A 8015 A 8915 | A 8020 A 8920 | A 8030 A 8930 | A 8040 A 8940 | A 8060 A 8960 |

* **When ordering, please specify screen mesh.**

** Models 8060, 8960 are supplied with bolted covers.

■ Aimed at continued improvement, ODIS reserves the right to change specifications without prior notice.

ILLUSTRATED PARTS BREAKDOWN



Models
8080, 8010

Models
8980, 8910

Catalog Numbers

| Part No. | Description | Model | |
|----------|--------------------------|-------------------------|--------------------------|
| | | 8080 (8") 8980 (8") | 8010 (10") 8910 (10") |
| 3 | Cover | E 808 001 | E 808 001 |
| 4 | Inner Gasket | ER 05026 | ER 05026 |
| 5 | Cover Gasket | ER 06072 | ER 06072 |
| 6 | Filter Screen * | E 000 487 | E 000 488 |
| 7 | Acceleration Plate | E 000 587 | E 000 588 |
| 8 | Rubber Stopper | E 370 710 | E 370 711 |
| 9 | Pressure Testing Port | E 000 800 | E 000 800 |
| 10 | Hydraulic Drain Valve | NB 300 015 01T (1½") | NB 300 015 01T (1½") |
| 11 | Flushing Controller - DC | N 531 02F T01 | N 531 02F T01 |
| 11.1 | Solenoid 12V-DC- Latch | N 512 006 | N 512 006 |
| 12 | Air Valve | N 12402 (2") | N 12402 (2") |
| 14 | Filter Body | A 8080 A 8980 | A 8010 A 8910 |

* **When ordering, please specify screen mesh.**

** Model 8960 is supplied with bolted covers.

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GENERAL INSTRUCTIONS

Operation

- Optimal filtration is achieved at the correct flowrate (see page 4), when the pressure difference between inlet and outlet is 0.25 - 0.5 bar (4 - 7.5 PSI).
- Measure the pressure difference on the filter during irrigation by inserting pressure gauge with needle into pressure testing ports in inlet and outlet.
- If pressure difference is too low, block one hole in the circulating plate with the included rubber stopper.
- Adjust the flushing controller according to its instructions.
Recommended time intervals:
Flushing duration: 10 -25 seconds
Between flushings: 30 - 120 minutes
When residue quantities are high, shorten the time between flushings.
- Verify that the controller is operational by activating it manually.

Installation

- The filter's body should point downwards with its drain valve at its lowest point.
- Install the filter paying special attention to the correct flow of water (inlet, outlet), as indicated by the direction arrows.
- Install the integrated air relief-vacuum breaker valve.
- If back flow occurs (i.e. when the pump has stopped or the field elevation is higher than the filter), install a quick-acting (mechanical) non-return valve.
- If more than one filter are installed (filters' array), leave sufficient space between the units to facilitate the maintenance.
- Specially designed ODIS manifolds (Series 9000) are available for mounting filtration arrays.
- If the pressure is not controlled effectively and might increase above 8 bar, a pressure relief valve must be installed before the filter's installation.
- Insert the batteries inside the flushing controller and close the cover tightly.

Periodic Cleaning

Clean the filter screen (6) every month, at the end of the irrigation season or when the filter is clogged as a result of incorrect operation.

- Close valve at the inlet of filter.
- Open drain valve (10) manually to release pressure within filter and drain.
- Remove cover (3) and gently remove screen (6).
- Rinse filter screen thoroughly with clean water, using a brush to remove particles from screen (**do not use a wire brush**).
- Verify that filter screen is intact and undamaged.

After cleaning assemble as follows:

- Place acceleration plate (7) in its location on the screen.
- Place inner gasket (4) on the plate.

Periodic Cleaning

For Models 8015 (1½"), 8020 (2"), 8915 (1½"), 8920 (2")

- Place cover gasket (5) on the other edge of the screen.
- Carefully replace assembly into filter housing and tighten cover gasket to housing.
- Place cover (3) and tighten properly.

For Models 8030 (3"), 8040 (4"), 8060 (6"), 8930 (3"), 8940 (4"), 8960 (6")

- Place centering piece (13) in its groove.
- Carefully replace assembly into filter housing, rotate slightly till centering piece is retained on step and tighten cover gasket to housing.
- Place cover gasket (5).
- Place cover (3) and tighten properly.

For Models 8080 (8"), 8010 (10"), 8980 (8"), 8910 (10")

- Inner gasket (4) is located in a groove on the screen edge, and the cover gasket (5) is located in a groove inside the cover.
- Place carefully screen assembly into filter's body.
- Place cover (3) verify that covers gasket (5) is in its groove, and tighten the cover properly.

WARNING

- Do not tighten or open cover during operation or under pressure.

Maintenance

- Each filter is supplied with maintenance instructions, as well as assembly, installation and operation instructions.
- Apply a layer of grease to thread of handle (1) or to bolt threads - Models 8060, 8960 (6"), 8080, 8980 (8"), 8010, 8910 (10").
- Any damage to the protective coating of filter must be repaired without delay.
- Prior to the application of the protective paint, thoroughly clean the damaged spot with wire brush.

PACKING / SHIPPING DATA

Metric Units

| Model | Inlet / Outlet (inch) | Gross* Weight (kg) | Packaging | Gross Volume (m ³) |
|------------|-----------------------|--------------------|--------------------|--------------------------------|
| 8015/ 8915 | 1½" | 18 | Packed in a carton | 0.078 |
| 8020/ 8920 | 2" | 19 | Packed in a carton | 0.078 |
| 8030/ 8930 | 3" | 31 | Packed in a carton | 0.110 |
| 8040/ 8940 | 4" | 37 | Packed in a carton | 0.144 |
| 8060/ 8960 | 6" | 58 | Packed in a carton | 0.280 |
| 8080/ 8980 | 8" | 173 | Packed on a pallet | 1.1 |
| 8010/ 8910 | 10" | 238 | Packed on a pallet | 1.6 |

U.S. Units

| Model | Inlet / Outlet (inch) | Gross Weight (lbs) | Packaging | Gross Volume (cu.ft) |
|------------|-----------------------|--------------------|--------------------|----------------------|
| 8015/ 8915 | 1½" | 40 | Packed in a carton | 2.78 |
| 8020/ 8920 | 2" | 42 | Packed in a carton | 2.78 |
| 8030/ 8930 | 3" | 68 | Packed in a carton | 3.9 |
| 8040/ 8940 | 4" | 82 | Packed in a carton | 5.1 |
| 8060/ 8960 | 6" | 128 | Packed in a carton | 10.0 |
| 8080/ 8980 | 8" | 381 | Packed on a pallet | 39 |
| 8010/ 8910 | 10" | 525 | Packed on a pallet | 57 |

* Gross weight includes packaging materials.