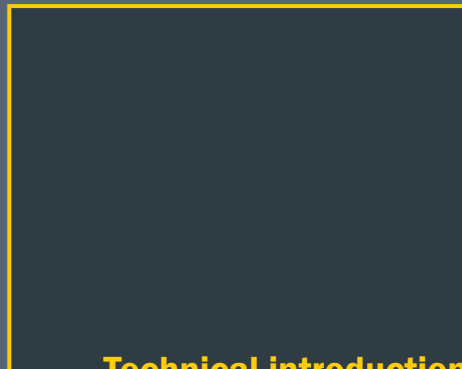
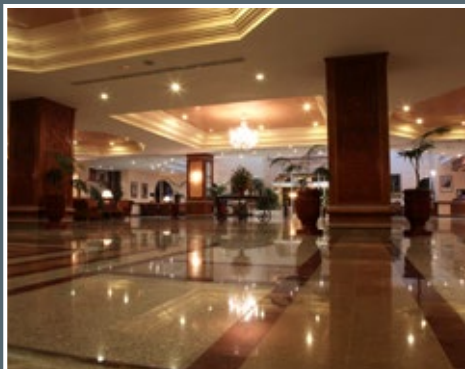


DRV RANGE

Energy Recovery Ventilator



Technical introduction



Introduction to DRV range of Energy Recovery Ventilators



DYNNAIR® is the industrial division of Maico Italia S.p.A. and is a well known brand name at global level in the industrial ventilation and plant engineering sector. Technological expertise, high production capacities, strong research and investment policies together with a personalized back-up service focused on customer needs have, for over 30 years, been the qualities that distinguish our company: Italian excellence renowned throughout the world and an industrial concern fortified by belonging to Maico Holding GmbH, the German group that leads the way in the ventilation industry.

Experience and high technology at your service

Living in a market in continuous evolution, DYNNAIR® bases its force on a step by step project follow-up in close collaboration with the customer to create tailored and highly reliable solutions.

The latest addition to the ever evolving DYNNAIR® range of products is the DRV range of Energy Recovery Ventilators.

Our Total Quality policy is ensured by standard working procedures, with tests and inspections during all production phases.



Maico Ventilation Pvt. Ltd is ISO 9001: 2015 company certified.

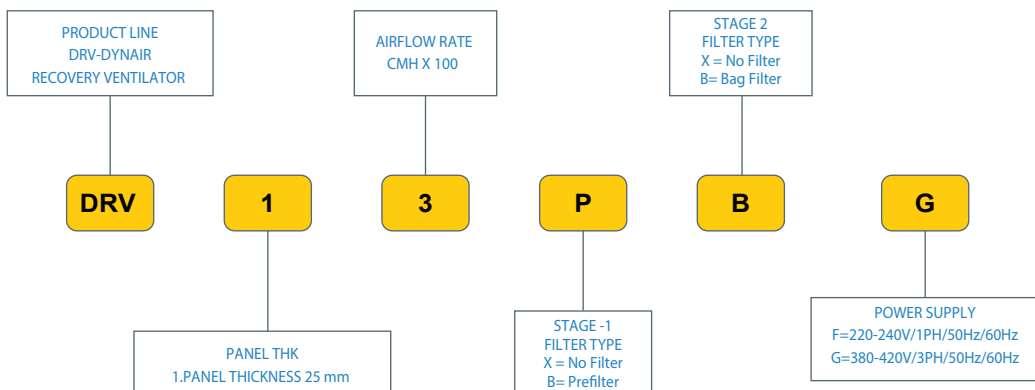
With our production capability, wide range of finished products and components warehouse, we ensure quick delivery to all our customers. Our staff is trained and dedicated to provide before and after technical plus sales services.

DRV Range



Home
Ventilation
&
Indoor
Air
Quality

NOMENCLATURE





FAN SECTION :

DRV Series 300 to 900

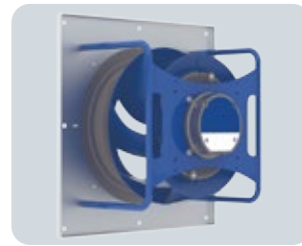
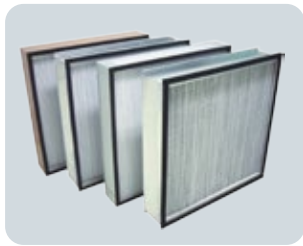
With external rotor AC motor.

DRV Series 1100 to 1200

With highly efficient plug fans of the centrifugal series, directly connected to EC motor, which are principally intended for operation without scroll housing with low energy consumption. Complete motor/fan unit statically and dynamically balanced. The impellers are designed with backward curved blades to minimize the bearing load of the motor and to maximize the durability with high rotational velocity. The position of the impellers on the EC external-rotor motors has been optimised in terms of aerodynamics and installation requirements.

DRV series 1600 to 3000

Belt driven DIDW forward curved fans which are AMCA certified for Air and Sound Performance with class F, IP 55, TEFC motor as per IEC standards.



CONSTRUCTION

FILTER SECTION:

Supply Side :

Stage1:Polyfiber Pleated Filter: (50 mm)

1. EN 779 : G4
2. Arrestance (ASHRAE 52.1) : 90-94%
3. MERV Rating (ASHRAE 52.2) : MERV7
4. Eurovent : EU4
5. Dust Spot Efficiency (ASHRAE 52.1) : 30-35%

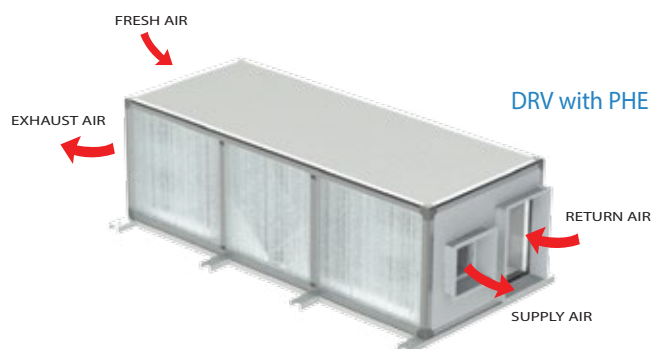
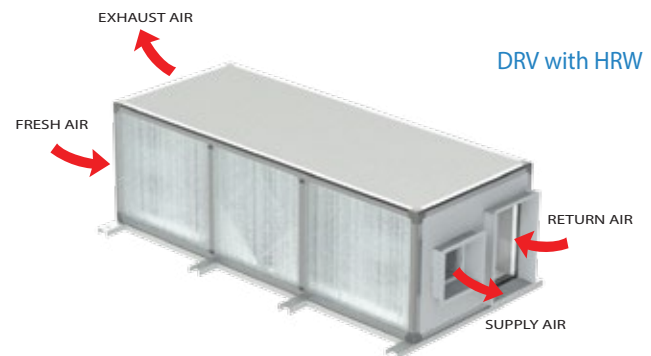
Stage2: Synthetic Bag Filter: (380 mm)

1. EN 779 : F7
2. Arrestance (ASHRAE 52.1) : 95%
3. MERV Rating (ASHRAE 52.2) : MERV13
4. Eurovent : EU7
5. Dust Spot Efficiency (ASHRAE 52.1) : 95%

Return Side :

Stage1:Polyfiber Pleated Filter: (50 mm)

1. EN 779 : G4
2. Arrestance (ASHRAE 52.1) : 90-94%
3. MERV Rating (ASHRAE 52.2) : MERV7
4. Eurovent : EU4
5. Dust Spot Efficiency (ASHRAE 52.1) : 30-35%



CONSTRUCTIONS:

DRV 300 to 3000

Pentapost design and have strong three way angel joints of reinforced nylon corners to form a rigid frame structure. Rigidframe work comprises an assembly of externally chamfered extruded aluminium profile and nylon corner joint, double skin, Inner skin G.I 0.5 and Outer skin pre painted G.I 0.5.

Note: DRV 300 & 600 with HRW exchanger are without profile.

INSULATION:

DRV 300 to 3000

Double Skin 25mm PUF insulation with a density of 42 kg/m³ and thermal conductivity of 0.024 W/mk (according to ASTM C518)

HEAT RECOVERY WHEEL

Heat wheels are revolving cylinders consisting of an air permeable matrix with large interior surface. The matrix is cooled as cold air is passed through the wheel. This cools the fresh air stream when the cooled rotating wheel comes in line with the supply air stream.

Heat wheels recover both sensible heat and latent heat and gives efficiency as high as 85%. These are mainly used where there is a demand of high percentage of fresh air intake like in hospitals, research labs, school and pharmaceutical labs. Heat Recovery wheels are recommended to acquire green Building certification by LEED.

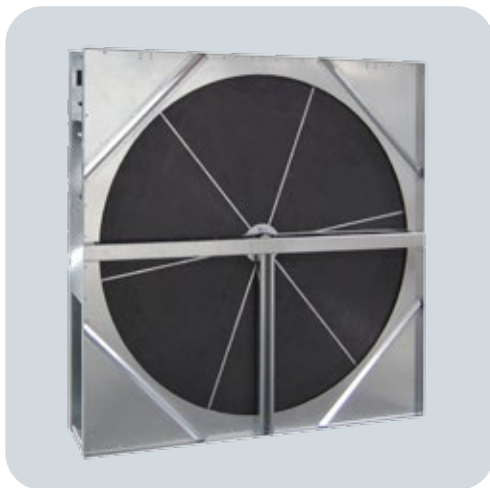
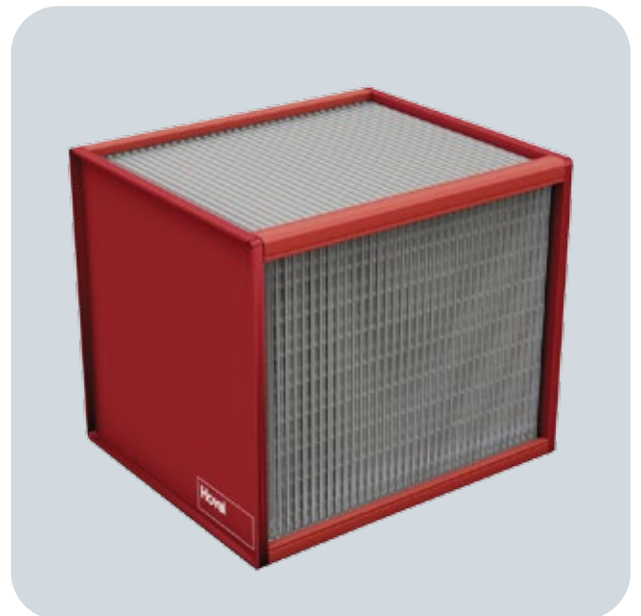


Plate Heat Exchangers

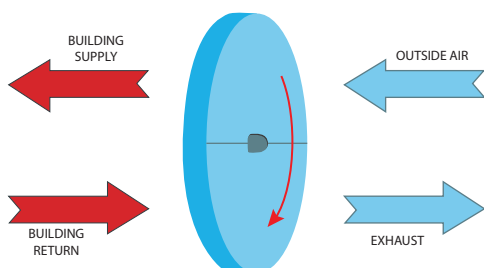
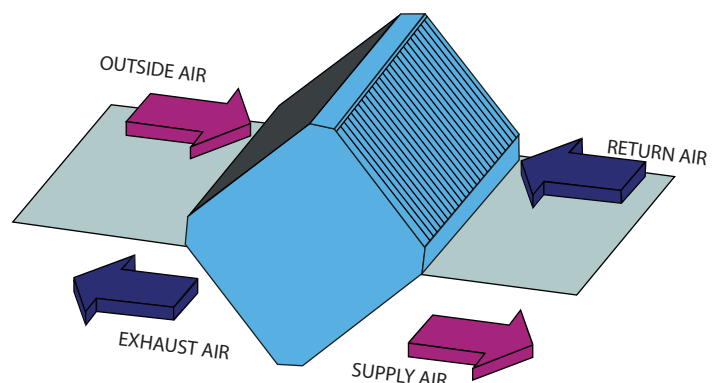
Plate heat exchangers have no moving parts. Their function requires no electrical connection. There are therefore no extra running cost or operation cost involved in such technology.

Plate heat exchangers are extraordinarily resistant to dirt build up, therefore no special maintenance is required.



ACCESSORIES:

- 1) Light switch
- 2) View port and marine light
- 3) Fresh Air & Return Air Damper



| MODEL | Unit | DRV 300 | DRV 600 | DRV 900 | DRV 1100 | DRV 1200 | |
|--|--|---|-----------------------|-----------------------|-----------------------|---|-----------|
| Supply / Exhaust Airflow Rate | CMH | 300/270 | 600/540 | 900/810 | 1100/990 | 1200/1080 | |
| Maximum ESP Range | Pa | 200 | 200 | 200 | 300 | 300 | |
| Panel | 0.5 mm. GI painted (white-RAL 9002) | | | | | | |
| Insulation | CFC & HCFC Free, 25mm PUF Insulation (Inside Density 42kg/m ³) | | | | | | |
| Filter | Dust Spot Eff. (ASHRAE 52.1) | 80 to 90% | | | | | |
| | Arrestance Eff. (ASHRAE 52.1) | 98 to 99% | | | | | |
| | MERV Rating (ASHRAE 52.2) | MERV 13 | | | | | |
| | EN779 | F7 | | | | | |
| | Eurovent | EU7 | | | | | |
| Total Heat Recovery Effectiveness Range | Total Eff. | 76.8 | 68.4 | 70.6 | 70.9 | 73.4 | |
| | Diameter | 300 | 350 | 450 | 500 | 550 | |
| Certification | Eurovent Certified | | | | | | |
| | Model | 280 / 280T | 280 / 280T | 280 / 280T | 310 | 310 | |
| Fan | Type | Direct driven backward curved centrifugal fan with AC motor | | | | Direct driven backward curved centrifugal fan with EC motor | |
| | Power input | W | 500 ± 10% / 710 ± 10% | 500 ± 10% / 710 ± 10% | 500 ± 10% / 710 ± 10% | 440 ± 16% | 440 ± 16% |
| Motor | Rated current | A | 2.2 ± 10% / 1.4 ± 10% | 2.2 ± 10% / 1.4 ± 10% | 2.2 ± 10% / 1.4 ± 10% | 1.9 ± 16% | 1.9 ± 16% |
| | Phase | Ø | 1/3 | 1/3 | 1/3 | 1 | 1 |
| | Voltage | V | 220-240 / 400 | 220-240 / 400 | 220-240 / 400 | 220-240 | 220-240 |
| | Frequency | Hz | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 |
| | Speed | rpm | 2750 / 2700 | 2750 / 2700 | 2750 / 2700 | 2700 | 2700 |
| Pre Filter | (G4) - 2" Deep) | (W X H X Qty.) mm. | 300X450X2 | 300X500X2 | 300X500X2 | 450X500X2 | 450X500X2 |
| | (F7 - 15" Deep) | (W X H X Qty.) mm. | 300X450X1 | 300X500X1 | 300X500X1 | 450X500X1 | 450X500X1 |
| Sound Pressure Level @ 3m (Free Field Condition) | | dB(A) | 66/87 | 66/87 | 66/87 | 64 | 64 |
| | Dimensions | Height, H | mm | 600 | 650 | 620 | 650 |
| Width, W | | mm | 850 | 850 | 800 | 1050 | 1050 |
| Length, L | | mm | 1200 | 1200 | 1600 | 1650 | 1650 |
| Weight, Approx | Kg | 180 | 180 | 225 | 255 | 260 | |

Note 1: Noise level are radiated at 3m distance from the unit, when both ends are ducted (@ free Field Condition).

Note 2: Consider 50 mm extra in height for channel / base frame.

Note 3: Considered supply air temp is 46.1db° c / 30% RH, Return air temp is 24 db° c / 49% RH.

Technical Output Of DRV With HRW (Technical Specification)



| MODEL | | Unit | DRV 1600 | DRV 1900/2000 | DRV 3000 |
|--|-------------------------------|--|---|---------------------------|-----------|
| Supply / Exhaust Airflow Rate | | CMH | 1600/1440 | (1900/1710) / (2000/1800) | 3000/2700 |
| Maximum ESP Range | | Pa | 300 | 300 | 300 |
| Panel | | 0.5 mm. GI painted (white-RAL 9002) | | | |
| Insulation | | CFC & HCFC Free, 25mm PUF insulation (Inside,Density 42kg/m ³) | | | |
| Filter | Dust Spot Eff. (ASHRAE 52.1) | | 80 to 90% | | |
| | Arrestance Eff. (ASHRAE 52.1) | | 98 to 99% | | |
| | MERV Rating (ASHRAE 52.2) | | MERV 13 | | |
| | EN779 | | F7 | | |
| | Eurovent | | EU7 | | |
| Total Heat Recovery Effectiveness Range | Total Eff. | % | 70.6 | 70.4/69.3 | 69.5 |
| | Diameter | mm | 600 | 650 | 800 |
| | Certification | | Eurovent Certified | | |
| Fan | Type | | DIDW forward curved, Belt driven centrifugal type | | |
| | Model | | 160 | 180 | 225 |
| Motor | Rating | Kw | 1.1 | 1.1 | 1.5 |
| | Rated current | A | 2.5 | 2.5 | 3.4 |
| | Phase | Ø | 3 | 3 | 3 |
| | Voltage | V | 380-420 | 380-420 | 380-420 |
| | Frequency | Hz | 50/60 | 50/60 | 50/60 |
| | Speed | rpm | 2780/3380 | 2780/3380 | 2780/3380 |
| Pre Filter | (G4) - 2" Deep | (W X H X Qty.) mm. | 400x485x2 | 400x485x2 | 515x535x2 |
| Bag Filter | (F7 - 15" Deep) | (W X H X Qty.) mm. | 400x485x1 | 400x458x1 | 515x535x1 |
| Sound Pressure Level @ 3m (Free Field Condition) | | dB(A) | 60 | 60 | 62 |
| Dimensions | Height, H | mm | 700 | 700 | 700 |
| | Width, W | mm | 900 | 900 | 1130 |
| | Length, L | mm | 2175 | 2175 | 2360 |
| Weight, Approx | | Kg | 350 | 350 | 400 |

Note 1: Noise level are radiated at 3m distance from the unit, when both ends are ducted (@ free Field Condition).

Note 2: Consider 50 mm extra in height for channel / base frame.

Note 3: Considered supply air temp is 46.1db°c / 30% RH, Return air temp is 24 db°c / 49% RH.

| MODEL | Unit | DRV 300 | DRV 600 | DRV 900 | DRV 1100 | DRV 1200 | |
|--|---|---|-----------------------|------------|-----------------------|---|-----------|
| Supply / Exhaust Airflow Rate | CMH | 300/270 | 600/540 | 900/810 | 1100/990 | 1200/1080 | |
| Maximum ESP Range | Pa | 200 | 200 | 200 | 300 | 300 | |
| Panel | 0.5 mm. Gl painted (white-RAL 9002) | | | | | | |
| Insulation | CFC & HCFC Free, 25mm PUf Insulation (Inside, Density 42kg/m ³) | | | | | | |
| Filter | Dust Spot Eff. (ASHRAE 52.1) | 80 to 90% | | | | | |
| | Arrestance Eff. (ASHRAE 52.1) | 98 to 99% | | | | | |
| | MERV Rating (ASHRAE 52.2) | MERV 13 | | | | | |
| | EN/79 | F7 | | | | | |
| Plate Heat Exchanger Temp Efficiency Range | Eurovent | EU7 | | | | | |
| | Temp Eff. | 51 | | 48.5 | | 48.3 | |
| | Length | 200 | | 225 | | 300 | |
| Fan | Certification | Eurovent Certified | | | | | |
| | Model | 250 | | 280 / 280T | | 280 / 280T | |
| Motor | Type | Direct driven backward curved centrifugal fan with AC motor | | | | Direct driven backward curved centrifugal fan with EC motor | |
| | Power Input | 176 | 500 ± 10% / 710 ± 10% | | 500 ± 10% / 710 ± 10% | | 440 ± 16% |
| | Rated current | A | 2.2 ± 10% / 1.4 ± 10% | | 2.2 ± 10% / 1.4 ± 10% | | 1.9 ± 16% |
| | Phase | Ø | 1/3 | | 1/3 | | 1 |
| | Voltage | V | 220-240 | | 220-240 / 400 | | 220-240 |
| | Frequency | Hz | 50/60 | | 50/60 | | 50/60 |
| | Speed | rpm | 2237 | | 2750 / 2700 | | 2700 |
| | Pre Filter | (G4) - 2" Deep | 300X500X2 | | 450X550X2 | | 450X550X2 |
| | Bag Filter | (F7 - 15" Deep) | 300X500X1 | | 450X550X1 | | 450X550X1 |
| | Sound Pressure Level @ 3m (Free Field Condition) | dB(A) | 59 | 66/87 | | 66/87 | |
| Dimensions | Height, H | 700 | | 700 | | 700 | |
| | Width, W | 800 | | 800 | | 1050 | |
| | Length, L | 1650 | | 1650 | | 1800 | |
| Weight, Approx | Kg | 205 | | 205 | | 255 | |

Note 1: Noise level are radiated at 3m distance from the unit, when both ends are ducted (@ free Field Condition).

Note 2: Consider 50 mm extra in height for channel / base frame.

Note 3: Considered supply air temp is 46.1db°c / 30% RH, Return air temp is 24 db°c / 49% RH.

Technical Output Of DRV With PHE (Technical Specification)



| MODEL | | Unit | DRV 1600 | DRV 1900/2000 | DRV 3000 |
|--|-------------------------------|--|---|---------------------------|-----------|
| Supply / Exhaust Airflow Rate | | CMH | 1600/1440 | (1900/1710) / (2000/1800) | 3000/2700 |
| Maximum ESP Range | | Pa | 300 | 300 | 300 |
| Panel | | 0.5 mm. GI painted (white-RAL 9002) | | | |
| Insulation | | CFC & HCFC Free, 25mm PUF insulation (Inside,Density 42kg/m ³) | | | |
| Filter | Dust Spot Eff. (ASHRAE 52.1) | | 80 to 90% | | |
| | Arrestance Eff. (ASHRAE 52.1) | | 98 to 99% | | |
| | MERV Rating (ASHRAE 52.2) | | MERV 13 | | |
| | EN779 | | F7 | | |
| | Eurovent | | EU7 | | |
| Plaat Heat Exchanger Temp Efficiency Range | Temp Eff. | % | 48 | 48.1/48.2 | 48.1 |
| | Length | mm | 475 | 600 | 850 |
| | Certification | | Eurovent Certified | | |
| Fan | Type | | DIDW forward curved, Belt driven centrifugal type | | |
| | Model | | 160 | 180 | 225 |
| Motor | Rating | Kw | 1.1 | 1.1 | 1.5 |
| | Rated current | A | 2.5 | 2.5 | 3.4 |
| | Phase | Ø | 3 | 3 | 3 |
| | Voltage | V | 380-420 | 380-420 | 380-420 |
| | Frequency | Hz | 50/60 | 50/60 | 50/60 |
| | Speed | rpm | 2780/3380 | 2780/3380 | 2780/3380 |
| Pre Filter | (G4 - 2" Deep) | (W X H X Qty.) mm. | 350x500x2 | 350x500x2 | 450x500x2 |
| Bag Filter | (F7 - 15" Deep) | (W X H X Qty.) mm. | 350x500x1 | 350x500x1 | 450x500x1 |
| Sound Pressure Level @ 3m (Free Field Condition) | | dB(A) | 60 | 60 | 62 |
| Dimensions | Height, H | mm | 700 | 700 | 700 |
| | Width, W | mm | 900 | 900 | 1130 |
| | Length, L | mm | 2175 | 2175 | 2360 |
| Weight, Approx | | Kg | 300 | 300 | 350 |

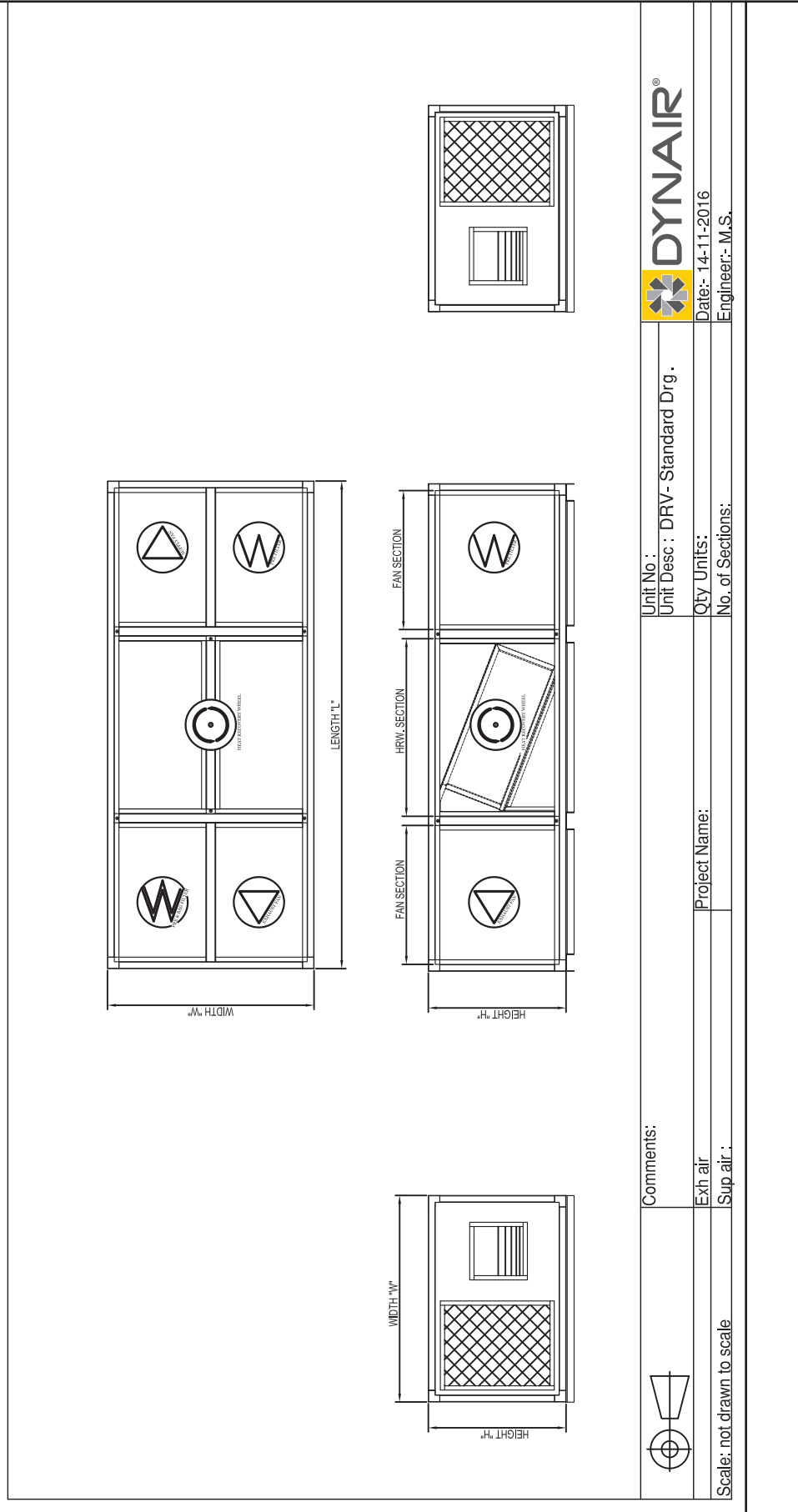
Note 1: Noise level are radiated at 3m distance from the unit, when both ends are ducted (@ free Field Condition).



Note 2: Consider 50 mm extra in height for channel / base frame.

Note 3: Considered supply air temp is 46.1 db°c / 30% RH, Return air temp is 24 db°c / 49% RH.



Project name:
Quotation no. :



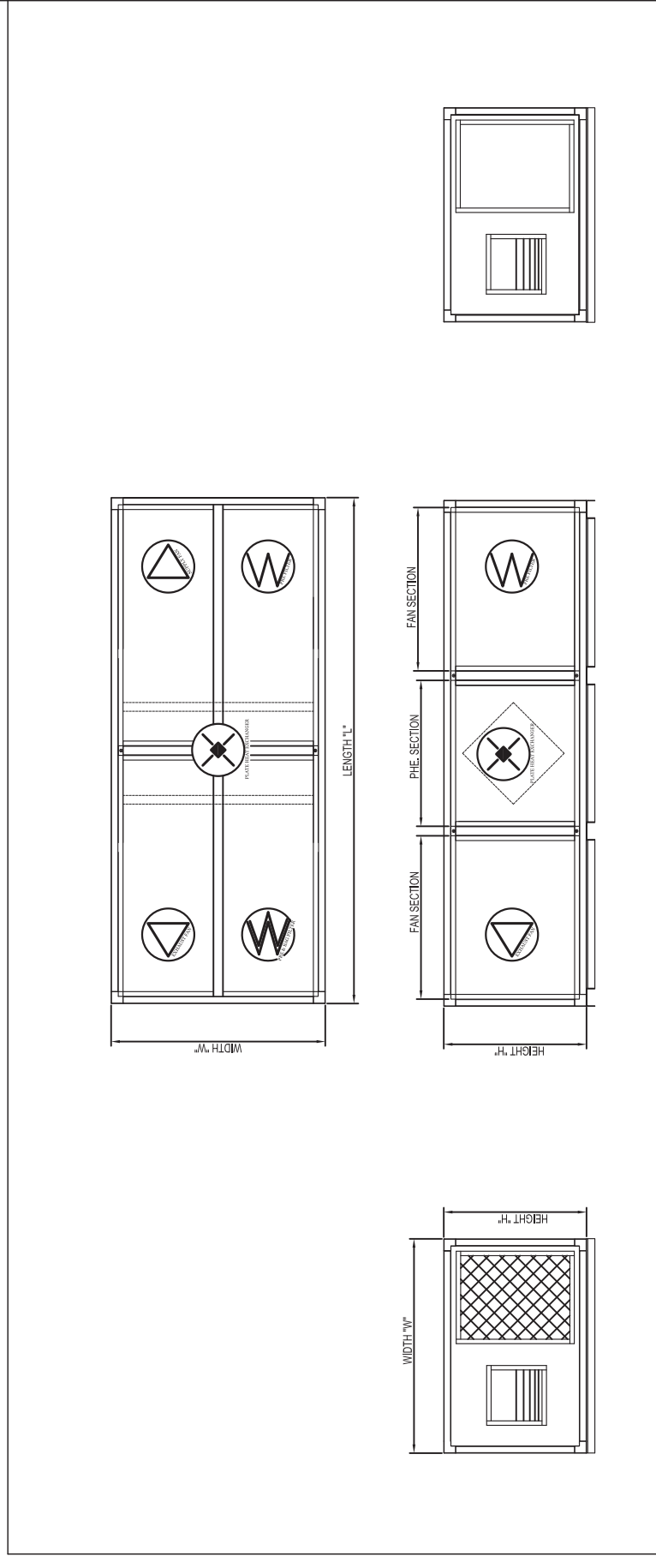
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|--|----------------------------------|--|
|  DYNAIR® | Unit No. : | |
| | Unit Desc : DRV - Standard Drg . | |
|  DYNAIR® | Qty Units: | |
| | Date:- 14-11-2016 | |
| | No. of Sections: | |
| | Project Name: | |
| | Exh air | |
| | (Sup air : | |
| | Scale: not drawn to scale | |



Comments:

Exh air
(Sup air :



Project name:
Quotation no.:



| | | |
|---|---|---|
|  | Comments: |  DYNAIR[®] |
| | Unit No.: Unit Desc : P-DRV- Standard Drg. | Date:- 14-11-2016 Engineer:- M.S. |
| Exh air Sup air : | Project Name: No. of Sections: | Qty Units: No. of Sections: |
| Scale: not drawn to scale | | |



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