

All Wheels Recover Energy Some do it better . . .

More Fresh Air Better Humidity Control More Energy Recovery – thus, better **IAQ** at lower Energy cost



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ECOFRESH[®]
TOTAL ENERGY RECOVERY WHEEL
MOLECULAR SIEVE COATED



500mm - 2000mm

2200mm & above

All Wheels recover



ECO FRESH® Molecular Sieve
TOTAL ENERGY RECOVERY WHEEL
MOLECULAR SIEVE COATED



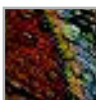
EcoFresh heat wheels 270 mm (MS 270) deep are ARI certified. ARI (Air-conditioning & Refrigeration Institute, www.ari.org) certification help ensure HVAC (Heating, Ventilation and Air-conditioning) products perform as rated. In order for a piece of equipment to be certified, its rating and performance must meet or exceed the applicable ARI Standard for Rating.



Certified for Zero Microbial Growth : *EcoFresh* Wheels are specially treated for prevention of any microbial growth on its surface and are certified by Shriram Labs. As per the DIN EN ISO 846 standard, showing 0% fungi and bacterial growth.



Certified for Zero Flame Spread : DRI conforms to NFPA - 90A certification for 0% Flame spread classification and is tested in accordance with NFPA 225 and ASTM – E84-95 *Standard Test Method for Surface Burning Characteristics of Materials*. Metallic construction, eliminates concerns about combustibility and flammability.



High Selectivity . . . Almost no cross contamination :

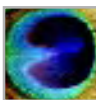
EcoFresh Heat Wheels MS 270 use desiccant Molecular Sieve 3Å* (*EcoSorb* 300) coated/used on aluminum substrate. This limits the cross contamination to absolute minimum and ensure exclusion of contaminants in the air streams, while transferring water vapour molecules.



In-built purge sector eliminates cross contamination :

Purge section provides strict separation of air flows, preventing carryover of bacteria, dust and pollutants from exhaust air to supply air.

Purge section and labyrinth sealing system limit cross contamination to .04% of the exhaust air concentration by volume.



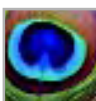
Structural rigidity :

- State-of-the-art winding technology and adhesives give *EcoFresh* rotors a high structural strength.
- *EcoFresh* is 270 mm deep which also gives it a higher structural strength.



Highly Polished Surface :

Vertical run out less than 1 mm per 1000 mm resulting in extremely low leakage across the seals.



Innovative manufacturing design :

- Segmented and non-segmented options
- Spoke structure also ensures easy removal of individual wheels sections for cleaning or repair/replacement (in case of segmented plus).
- Metallic construction, coupled with the robust spoke structure allows for projects to be specified for larger wheel diameters.



Industry's highest recovery/performance :

- High Desiccant loading / coating.
- Equal sensible and latent recovery, thus, comparatively higher sensible and latent recovery.
- Higher performance, lower pressure drops : 78% nominal at 700 FPM (3.5 m/s) and 0.67" w.c. (170 Pa) pressure drop.
- Laminar airflow due to thin aluminum substrate and uniform desiccant coating.
- Superior airflow characteristics allow design for higher velocities and flow rates.



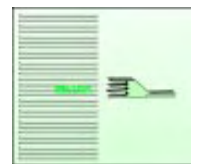
Seals* :

Non contact labyrinth

- No wear and tear.
- Effective sealing.
- Long life.

Brush seal

*Check with us for details.



No damage when exposed to freeze/thaw cycles

Wheel rotation speed control helps to limit frost formation by keeping the exhaust air temperature above the dew point.



Wide Range :

- Total energy recovery (Enthalpy) as well as sensible wheels.
- Customized Flute height and Rotor depth options.
- Cassette as well as Rotor options.
- Standard and Customized options.
- 500 mm to 5000 mm (dia.)
- Easy retrofit options.

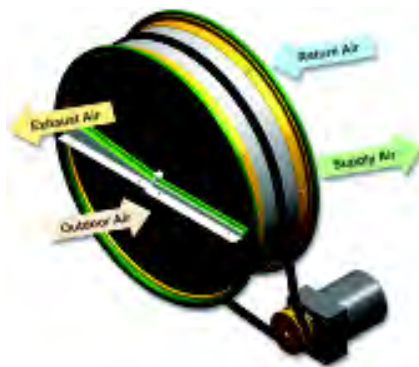
*MS 3Å coated (*EcoSorb* 300) wheels are not currently available in USA/Canada. Only MS 4Å coated (*EcoSorb* 400) wheels are currently offered for sale in USA/Canada.

er Energy – Some do it better !!

Coated Heat Recovery Wheels

The **EcoFresh** Heat Recovery Wheel, recovers total energy (sensible as well as latent) to meet all the requirements of Indoor Air Quality (IAQ), humidity control and energy savings. Incorporation of **EcoFresh** Heat Wheels into the air-conditioning system means more outdoor air at lower energy cost (reduced chiller and boiler/exhaust load).

EcoFresh Heat Wheels use custom made metallic honey comb matrix coated with **EcoSorb** Molecular Sieve desiccant. In a typical installation, the wheel is positioned in duct so that it is divided into two half moon sections. Stale air from the conditioned space is exhausted through one half while outdoor air is drawn through the other half in a counter flow pattern. At the same time, the wheel is rotated slowly 20-25 rpm. Sensible heat is transferred as the metallic substrate rotates, picking up sensible load from one air stream and releasing it to the other. Similarly the latent heat is transferred as the desiccant picks up moisture from the moist air stream and releases to the drier exhaust stream.



Benefits of ... Beyond Payback

Better • Humidity Control • Energy Recovery



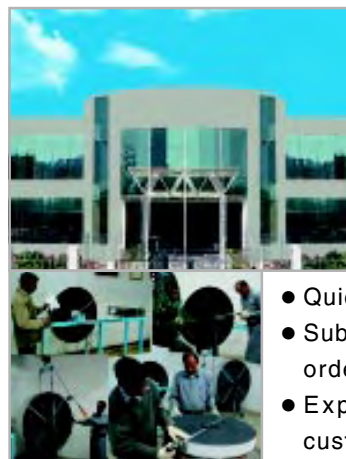
Thus, better and enhanced IAQ at lower Energy costs

- Pre-conditions incoming fresh air.
- Easily integrated/retrofitted into new/existing ventilation systems.
- Delivers fresh air throughout the year at conditions very near inside conditions.
- Helps to meet ventilation standard without raising energy cost.
- Maintains humidity conditions at no additional cost.
- Allows reduction in system capacity by 30 to 65%.



**Global Manufacturer of
Fluted Media Technology**

State-of-the-art Facilities



Fully integrated manufacturing facility for :

- Synthesizing / coating
- Winding
- Metal work
- Surface finishing including CNC fabrication & powder coating
- Quick response, fast delivery
- Substantial capacity to meet large orders
- Experience with strong OEMs customer base worldwide

World-class Test Facility

The first and only test facility of its kind in the entire Asia.

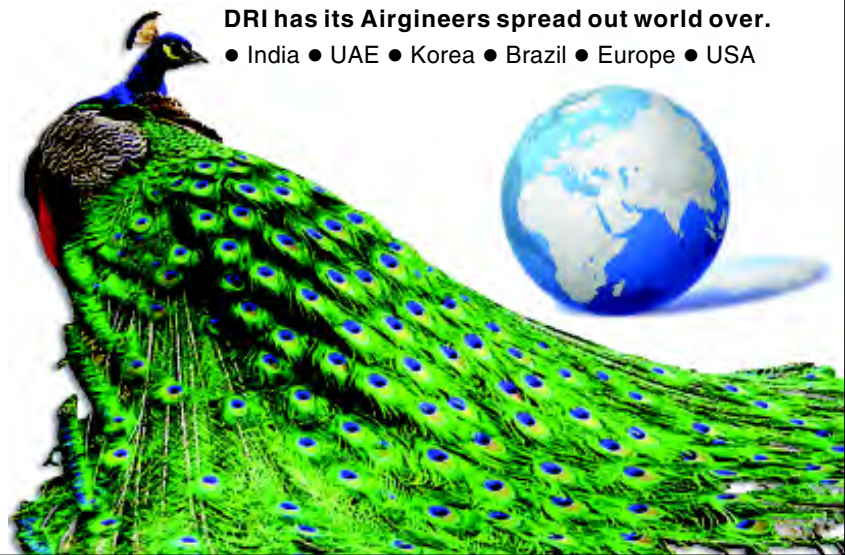


has set up a World-class Test Facility for performance evaluation of Enthalpy Wheels.

Worldwide Network

DRI has its Airingers spread out world over.

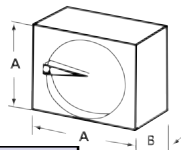
- India ● UAE ● Korea ● Brazil ● Europe ● USA





EcoFresh Heat Recovery Wheel - Performance Data

HRW Series (MS-270-1.9 mm)



Velocity	M/S FPM	1.0 200	1.5 300	2.0 400	2.5 500	3.0 600	3.5 700	4.0 800	4.5 900	5.0 1000	5.5 1100
Sensible	Effectiveness %	90	88	85	82	80	78	77	75	73	71
Latent (Winter Heating)		89	86	83	80	78	76	74	72	70	68
Latent (Summer Cooling)		89	86	83	80	78	76	74	72	70	68
Total (Winter Heating)		90	87	84	81	79	78	76	74	72	70
Total (Summer Cooling)		89	87	84	81	79	77	75	73	71	69
Pressure Drop	Pa	53	74	94	116	142	170	201	231	263	300
	in. w.c	0.21	0.29	0.37	0.46	0.56	0.67	0.79	0.91	1.03	1.18
Model Number	Air Volume										
HRW 500	CMH	273	409	546	682	765	955	1092	1228	1365	1501
	CFM	161	241	321	402	450	562	642	723	803	883
HRW 600	CMH	416	623	831	1039	1189	1454	1662	1870	2078	2286
	CFM	245	367	489	611	700	856	978	1100	1223	1345
HRW 700	CMH	586	879	1172	1465	1699	2051	2345	2638	2931	3224
	CFM	345	517	690	862	1000	1207	1380	1552	1725	1897
HRW 800	CMH	785	1177	1569	1962	2379	2746	3139	3531	3932	4316
	CFM	462	693	924	1154	1400	1616	1847	2078	2309	2540
HRW 900	CMH	1011	1517	2022	2528	3059	3539	4044	4550	5055	5561
	CFM	595	893	1190	1488	1800	2083	2380	2678	2975	3273
HRW 1000	CMH	1265	1898	2531	3164	3738	4429	5062	5695	6327	6960
	CFM	745	1117	1489	1862	2200	2607	2979	3351	3724	4096
HRW 1100	CMH	1548	2322	3096	3869	4588	5417	6191	6965	7739	8513
	CFM	911	1366	1822	2277	2700	3188	3643	4099	4554	5010
HRW 1200	CMH	1820	2730	3640	4550	5438	6371	7281	8191	9101	10011
	CFM	1071	1607	2142	2678	3200	3749	4285	4820	5356	5892
HRW 1300	CMH	2105	3157	4210	5262	6287	7347	8419	9472	10524	11576
	CFM	1239	1858	2477	3097	3700	4335	4955	5574	6193	6813
HRW 1400	CMH	2467	3701	4934	6168	7307	8635	9869	11103	12336	13570
	CFM	1452	2178	2904	3630	4300	5082	5808	6534	7260	7986
HRW 1500	CMH	2858	4286	5715	7144	8666	10002	11430	12859	14288	15717
	CFM	1682	2523	3363	4204	5100	5886	6727	7568	8409	9249
HRW 1600	CMH	3239	4859	6479	8099	9686	11338	12958	14577	16197	17817
	CFM	1906	2860	3813	4766	5700	6672	7626	8579	9532	10485
HRW 1700	CMH	3683	5524	7366	9207	11045	12890	14732	16573	18415	20256
	CFM	2167	3251	4335	5418	6500	7586	8670	9753	10837	11921
HRW 1800	CMH	4154	6232	8309	10386	12574	14540	16617	18695	20772	22849
	CFM	2445	3667	4890	6112	7400	8557	9779	11002	12224	13447
HRW 1900	CMH	4654	6981	9307	11634	13934	16288	18615	20942	23269	25595
	CFM	2739	4108	5477	6847	8200	9585	10955	12324	13694	15063
HRW 2000	CMH	5181	7771	10362	12952	15633	18133	20724	23314	25905	28495
	CFM	3049	4574	6098	7623	9200	10672	12196	13721	15245	16770
HRW 2200	CMH	6355	9532	12709	15887	19031	22241	25419	28596	31773	34951
	CFM	3740	5610	7479	9349	11200	13089	14959	16829	18699	20568
HRW 2400	CMH	7608	11413	15217	19021	22940	26630	30434	34238	38042	41846
	CFM	4478	6716	8955	11194	13500	15671	17910	20149	22388	24627
HRW 2600	CMH	8974	13461	17948	22435	27018	31409	35896	40383	44870	49357
	CFM	5281	7922	10562	13203	15900	18484	21125	23765	26406	29046
HRW 2800	CMH	10451	15677	20902	26128	31436	36579	41805	47030	52256	57481
	CFM	6150	9226	12301	15376	18500	21527	24602	27677	30752	33828
HRW 3000	CMH	12040	18060	24080	30100	36194	42140	48160	54180	60200	66220
	CFM	7086	10628	14171	17714	21300	24800	28342	31885	35428	38971
HRW 3200	CMH	13741	20611	27481	34352	41291	48093	54963	61833	68704	75574
	CFM	8086	12130	16173	20216	24300	28302	32346	36389	40432	44475
HRW 3400	CMH	15553	23330	31106	38883	46729	54436	62213	69989	77766	85542
	CFM	9153	13730	18306	22883	27500	32036	36612	41189	45765	50342
HRW 3600	CMH	17477	26216	34954	43693	52506	61170	69909	78648	87386	96125
	CFM	10285	15428	20571	25713	30900	35999	41141	46284	51427	56569
HRW 3800	CMH	19513	29270	39026	48783	58624	68296	78052	87809	97565	107322
	CFM	11483	17225	22967	28709	34500	40192	45934	51676	57417	63159
HRW 4000	CMH	21661	32491	43321	54152	65081	75812	86643	97473	108303	119134
	CFM	12747	19121	25495	31868	38300	44616	50989	57363	63737	70110
HRW 4200	CMH	23920	35880	47840	59800	71878	83720	95680	107640	119600	131560
	CFM	14077	21115	28154	35192	42300	49269	56308	63346	70384	77423
HRW 4400	CMH	26291	39436	52582	65727	79014	92018	105164	118309	131455	144600
	CFM	15472	23208	30944	38681	46500	54153	61889	69625	77361	85097
HRW 4600	CMH	28774	43161	57547	71934	86321	100708	115095	129482	143869	158256
	CFM	16933	25400	33867	42333	50800	59267	67733	76200	84667	93133
HRW 4800	CMH	31368	47052	62736	78421	94138	109789	125473	141157	156841	172525
	CFM	18460	27690	36920	46150	55400	64611	73841	83071	92301	101531
HRW 5000	CMH	34074	51112	68149	85186	102294	119260	136298	153335	170372	187409
	CFM	20053	30079	40106	50132	60200	70185	80211	90238	100264	110290

Height and Width "A" mm Inches	Depth in Flow Direction "B" mm Inches	Net Weight Kg. Pounds
700	365	63
27.6	14.4	139
800	365	71
31.5	14.4	156
850	365	79
33.5	14.4	174
950	365	90
37.4	14.4	198
1030	365	103
40.6	14.4	227
1130	365	113
44.5	14.4	249
1230	365	153
48.4	14.4	337
1330	365	169
52.4	14.4	372
1430	365	199
56.3	14.4	439
1530	365	221
60.2	14.4	487
1630	365	239
64.2	14.4	527
1730	395	276
68.1	15.6	608
1830	395	318
72.0	15.6	701
1930	395	342
76.0	15.6	754
2030	395	365
79.9	15.6	804
2130	395	392
83.9	15.6	864
2400	530	772
94.5	20.9	1701
2600	530	851
102.4	20.9	1876
2800	530	932
110.2	20.9	2054
3000	530	1016
118.1	20.9	2239
3200	530	1105
126.0	20.9	2435
3400	584	1453
133.9	23.0	3202
3600	584	1565
141.7	23.0	3449
3800	584	1680
149.6	23.0	3703
4000	584	1799
157.5	23.0	3965
4200	584	1922
165.4	23.0	4236
4400	584	2569
173.2	23.0	5662
4600	584	2722
181.1	23.0	5999
4800	584	2878
189.0	23.0	6343
5000	584	3038
196.9	23.0	6696
5200	584	3175
204.7	23.0	6998

Note: (1) 2200 mm diameter and above rotor are available with removable segmented media. Half Moon Cassettes complete with half moon rotors for containerisation and ease of shipping are available as options. Dimensions and weight shall vary in such cases.
 (2) Because of our policy of continuous product improvements, specifications are subject to change without notice.

DESICCANT ROTORS INTERNATIONAL Pvt. Ltd.

(Formerly Arctic India Engineering Pvt. Ltd.)

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