



## *CR Fans*



### **Phelps Fan, LLC**

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# CR Fans



*CR Impeller*

Rugged -- highly efficient



Phelps Fan certifies that the CR Fans shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

Phelps Model CR Industrial Backward Incline Fans

**Model CR** Industrial Fans have Backward Incline impellers which can provide non-overloading horsepower characteristics.  
Sizes are available with up to 95” diameter wheels.  
Airflow Capacities up to 500,000 CFM  
and Static Pressures capability over 20”SPWG.  
High temperature designs available for over 850 Degrees F.

Fans have heavy thickness housings reinforced for extra rigidity with continuous external airstream welds.  
Impellers are all welded.

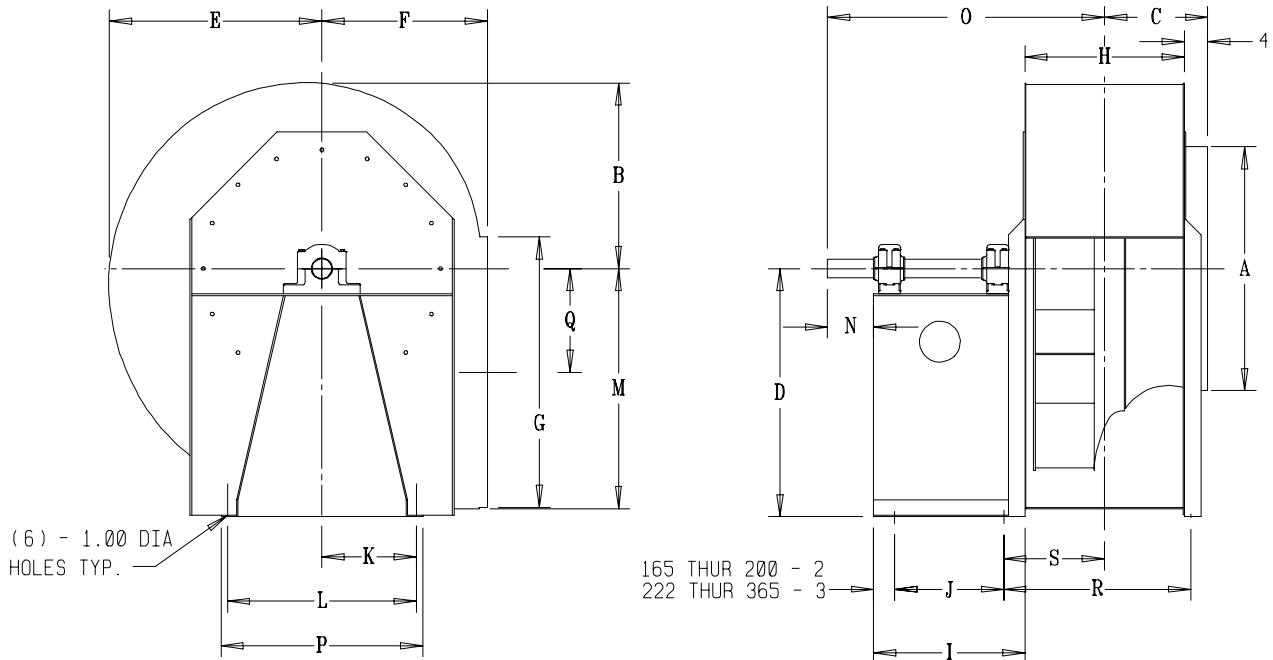
Impellers are balanced to ANSI / AMCA std. 204-96, or better.  
Completed fans are given a final “in-shop” vibration test to assure in tolerance vibration levels, where possible.

Available accessories include;  
Inlet and discharge flanges  
Split housings to facilitate impeller removal.  
Inspection / access doors  
Drains (NPT or Flanged)  
Shaft seals (plate, packing, or mechanical)  
Inlet Box  
Inlet vane dampers (external or nested in orifice)  
Inlet Box damper (parallel or opposed blade)  
Discharge damper (parallel or opposed blade)  
Control Actuator for damper (pneumatic or electric)  
C-channel unitary sub-bases for mounting motor and drive assembly  
Insulation (with light gage aluminum jacketing or “double wall” welded)  
Silencers (inlet or discharge)  
Inlet filters and rain hoods  
Safety equipment – Belt and shaft guards, coupling guards, cooling wheel guards, inlet and discharge screens\*  
Exotic alloys, or special coatings and linings for corrosion resistant service  
Spark resistant construction

\* **Safety Equipment**

All types of guards such as shaft, belt, cooling wheel, coupling, etc. are available and Phelps strongly suggests their use. Neither Phelps nor its sales representatives are in a position to judge the relative accessibility to rotating components, equipment location or proximity of adjacent components. It is therefore important that the system designer consider providing guards for all exposed moving parts as well as protection from access to high velocity airstreams. Users should read “recommended safety practices for air moving devices”, published by the Air Movement and Control Association, 30 West University Drive, Arlington Heights, Illinois 60004, which is included with the packing slip for all Phelps fans.

## Arrangement 1



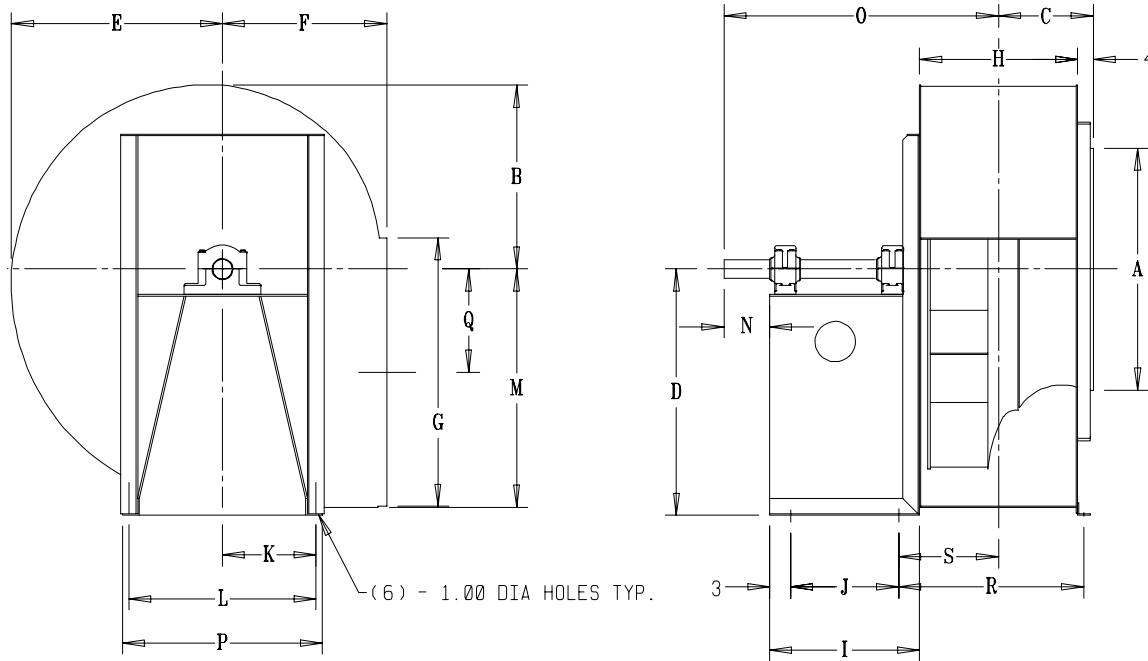
FAN SIZE	WHEEL DIA	A		B	CRN	C			D			E	F	G	H		
		ID.	OD.			CR	CRW	BH	TH	UB	CRN				CR	CRW	
165	16.50	17.88	18.25	13.44	9.25	9.88	10.56	22.38	16.44	18.44	15.41	12.73	19.88	10.50	11.75	13.13	
182	18.25	19.75	20.13	14.80	9.84	10.50	11.25	24.19	17.81	20.00	16.98	13.89	21.88	11.69	13.00	14.50	
200	20.00	21.63	22.00	16.25	10.38	11.13	11.94	26.00	19.25	21.69	18.65	15.13	24.00	12.75	14.25	15.88	
222	22.25	21.00	21.38	18.03	11.09	11.90	12.84	28.38	21.00	23.69	20.69	16.63	26.63	14.19	15.81	17.69	
245	24.50	26.50	26.88	19.88	11.78	12.69	13.69	30.75	22.88	25.81	22.84	18.21	29.38	15.56	17.38	19.38	
270	27.00	29.25	29.63	21.25	12.66	13.56	14.72	33.75	25.25	28.50	25.44	20.01	32.19	17.31	19.13	21.44	
300	30.00	32.50	32.88	24.63	13.59	14.81	15.91	36.88	27.63	31.38	28.22	22.81	35.88	19.19	21.63	23.81	
330	33.00	35.75	36.13	27.06	14.50	15.94	17.06	40.00	30.00	34.00	31.00	24.88	39.44	21.00	23.88	26.19	
365	36.50	39.50	40.00	30.25	15.63	16.94	18.44	43.63	33.25	37.50	34.50	27.06	43.63	23.25	25.88	28.88	

DIMENSIONS SHOWN ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES

FAN SIZE	I	J	K	L	M	N	O			P	Q	R			S		
							CRN	CR	CRW			CRN	CR	CRW	CRN	CR	CRW
165	23.00	19.00	9.50	19.00	17.39	5.00	33.44	34.06	34.75	21.00	7.45	14.19	15.44	16.81	7.44	8.06	8.75
182	23.00	19.00	9.50	19.00	19.17	5.00	34.03	34.69	35.44	21.00	8.23	15.38	16.69	18.19	8.03	8.69	9.44
200	23.00	19.00	9.50	19.00	21.05	5.50	35.06	35.81	36.63	21.00	9.05	16.44	17.94	19.56	8.46	9.31	10.13
222	26.50	20.50	11.75	23.50	23.35	5.50	39.28	40.09	41.03	26.00	10.03	18.88	20.50	22.38	10.28	11.09	12.03
245	26.50	20.50	11.75	23.50	25.75	6.00	40.47	41.38	42.38	26.00	11.06	20.25	22.06	24.06	10.97	11.88	12.88
270	26.50	20.50	11.75	23.50	28.69	6.50	41.84	42.75	43.91	26.00	12.34	22.00	23.81	26.13	11.84	12.75	13.91
300	30.00	24.00	14.50	29.00	31.82	7.00	46.78	48.00	49.09	32.00	13.64	23.88	26.31	28.50	12.78	14.00	15.09
330	30.00	24.00	14.50	29.00	34.97	7.50	48.19	49.63	50.75	32.00	15.00	25.69	28.56	30.81	13.69	15.13	16.25
365	30.00	24.00	14.50	29.00	38.63	7.50	49.31	50.63	52.13	32.00	16.56	27.94	30.56	33.56	14.81	16.13	17.63

\* NOTE: CONSULT FACTORY FOR SHAFT SIZES AND OTHER ROTATION DETAILS

## Arrangement 1



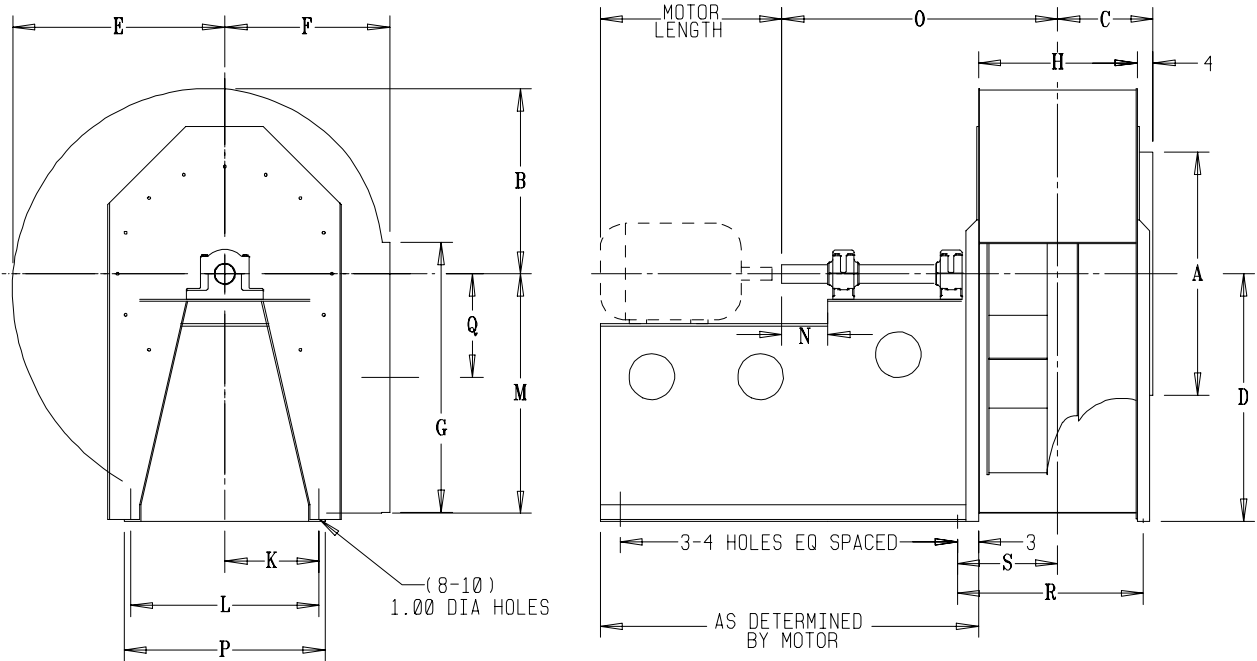
FAN SIZE	WHEEL DIA	A		B	CRN	C			D			E	F	G	H		
		ID.	OD.			CR	CRW	BH	TH	UB	CRN				CR	CRW	
402	40.25	43.63	44.06	32.88	16.81	18.25	19.91	47.50	35.88	40.75	37.69	29.53	48.13	25.63	28.50	31.81	
445	44.50	48.13	48.63	36.33	18.13	19.78	21.56	52.00	39.38	44.63	41.66	32.47	53.19	28.25	31.56	35.13	
490	49.00	53.00	53.50	39.95	19.55	21.38	22.31	56.50	43.00	48.88	45.84	35.56	58.56	31.09	34.75	36.63	
542	54.25	58.75	59.25	44.16	21.19	23.22	25.38	62.13	47.25	53.75	50.66	39.42	64.38	34.38	38.44	42.75	
600	60.00	65.00	65.50	48.89	23.06	25.22	27.69	68.38	52.00	59.13	56.09	43.43	71.56	38.13	42.44	47.38	
660	66.00	71.38	71.88	53.73	24.94	27.31	30.00	74.63	56.88	64.63	61.63	47.54	78.69	41.88	46.63	52.00	
730	73.00	79.00	79.50	59.38	27.13	29.75	32.75	82.00	62.50	71.00	68.13	53.34	87.00	46.25	51.50	57.50	
807	80.75	87.38	87.88	65.59	29.56	32.34	35.75	90.00	68.75	78.25	75.25	58.63	95.81	51.13	56.69	63.50	
890	89.00	96.38	96.88	72.28	32.13	35.34	39.00	99.63	75.50	86.00	82.94	64.31	105.94	56.25	62.69	70.00	

DIMENSIONS SHOWN ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES

FAN SIZE	I	J	K	L	M	N	O			P	Q	R			S		
							CRN	CR	CRW			CRN	CR	CRW	CRN	CR	CRW
402	30.00	24.00	18.50	37.00	42.50	8.00	50.81	52.25	53.91	40.00	18.19	30.13	33.00	36.31	15.81	17.25	18.91
445	30.00	24.00	18.50	37.00	47.00	10.00	54.13	55.78	57.56	40.00	20.16	32.75	36.06	39.63	17.13	18.78	20.56
490	36.00	30.00	22.00	44.00	51.70	10.00	61.55	63.38	64.31	48.00	22.16	36.09	39.75	41.63	18.55	20.38	21.31
542	36.00	30.00	22.00	44.00	57.14	11.00	64.19	66.22	68.38	48.00	24.69	39.38	43.94	47.75	20.19	22.22	24.38
600	40.00	34.00	26.00	52.00	63.28	11.00	68.19	72.22	74.69	56.00	27.25	43.13	47.94	52.38	22.06	24.22	26.69
660	40.00	34.00	26.00	52.00	69.56	11.00	70.06	74.32	77.00	56.00	29.97	46.88	51.63	57.00	23.94	26.31	29.00
730	54.00	48.00	44.50	89.00	76.88	11.00	89.94	90.75	93.75	95.00	33.13	52.25	57.50	63.50	26.13	28.75	31.75
807	54.00	48.00	44.50	89.00	84.94	11.00	90.56	93.34	96.75	95.00	36.78	57.13	62.69	69.50	28.56	31.34	34.75
890	54.00	48.00	51.00	102.00	93.63	11.00	93.13	96.34	100.00	108.00	40.41	62.25	68.69	76.00	31.13	34.34	38.00

\* NOTE: CONSULT FACTORY FOR SHAFT SIZES AND OTHER ROTATION DETAILS

## Arrangement 8



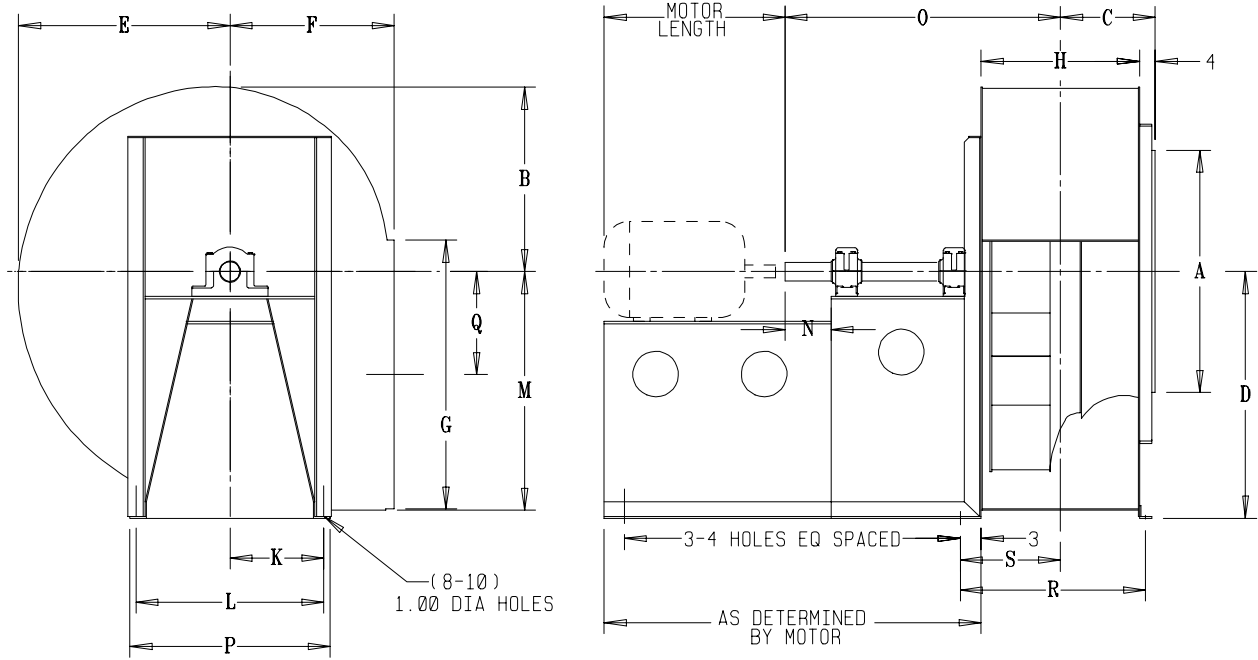
FAN SIZE	WHEEL DIA	A		B	C			D			E	F	G	H		
		ID.	OD.		CRN	CR	CRW	BH	TH	UB				CRN	CR	CRW
165	16.50	17.88	18.25	13.44	9.25	9.88	10.56	22.38	16.44	18.44	15.41	12.73	19.88	10.50	11.75	13.13
182	18.25	19.75	20.13	14.80	9.84	10.50	11.25	24.19	17.81	20.00	16.98	13.89	21.88	11.69	13.00	14.50
200	20.00	21.63	22.00	16.25	10.38	11.13	11.94	26.00	19.25	21.69	18.65	15.13	24.00	12.75	14.25	15.88
222	22.25	21.00	21.38	18.03	11.09	11.90	12.84	28.38	21.00	23.69	20.69	16.63	26.63	14.19	15.81	17.69
245	24.50	26.50	26.88	19.88	11.78	12.69	13.69	30.75	22.88	25.81	22.84	18.21	29.38	15.56	17.38	19.38
270	27.00	29.25	29.63	21.25	12.66	13.56	14.72	33.75	25.25	28.50	25.44	20.01	32.19	17.31	19.13	21.44
300	30.00	32.50	32.88	24.63	13.59	14.81	15.91	36.88	27.63	31.38	28.22	22.81	35.88	19.19	21.63	23.81
330	33.00	35.75	36.13	27.06	14.50	15.94	17.06	40.00	30.00	34.00	31.00	24.88	39.44	21.00	23.88	26.19
365	36.50	39.50	40.00	30.25	15.63	16.94	18.44	43.63	33.25	37.50	34.50	27.06	43.63	23.25	25.88	28.88

DIMENSIONS SHOWN ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES

FAN SIZE	K	L	M	N	O			P	Q	R			S		
					CRN	CR	CRW			CRN	CR	CRW	CRN	CR	CRW
165	9.50	19.00	17.39	5.00	33.44	34.06	34.75	21.00	7.45	14.19	15.44	16.81	7.44	8.06	8.75
182	9.50	19.00	19.17	5.00	34.03	34.69	35.44	21.00	8.23	15.38	16.69	18.19	8.03	8.69	9.44
200	9.50	19.00	21.05	5.50	35.06	35.81	36.63	21.00	9.05	16.44	17.94	19.56	8.46	9.31	10.13
222	11.75	23.50	23.35	5.50	39.28	40.09	41.03	26.00	10.03	18.88	20.50	22.38	10.28	11.09	12.03
245	11.75	23.50	25.75	6.00	40.47	41.38	42.38	26.00	11.06	20.25	22.06	24.06	10.97	11.88	12.88
270	11.75	23.50	28.69	6.50	41.84	42.75	43.91	26.00	12.34	22.00	23.81	26.13	11.84	12.75	13.91
300	14.50	29.00	31.82	7.00	46.78	48.00	49.09	32.00	13.64	23.88	26.31	28.50	12.78	14.00	15.09
330	14.50	29.00	34.97	7.50	48.19	49.63	50.75	32.00	15.00	25.69	28.56	30.81	13.69	15.13	16.25
365	14.50	29.00	38.63	7.50	49.31	50.63	52.13	32.00	16.56	27.94	30.56	33.56	14.81	16.13	17.63

\* NOTE: CONSULT FACTORY FOR SHAFT SIZES AND OTHER ROTATION DETAILS

## Arrangement 8



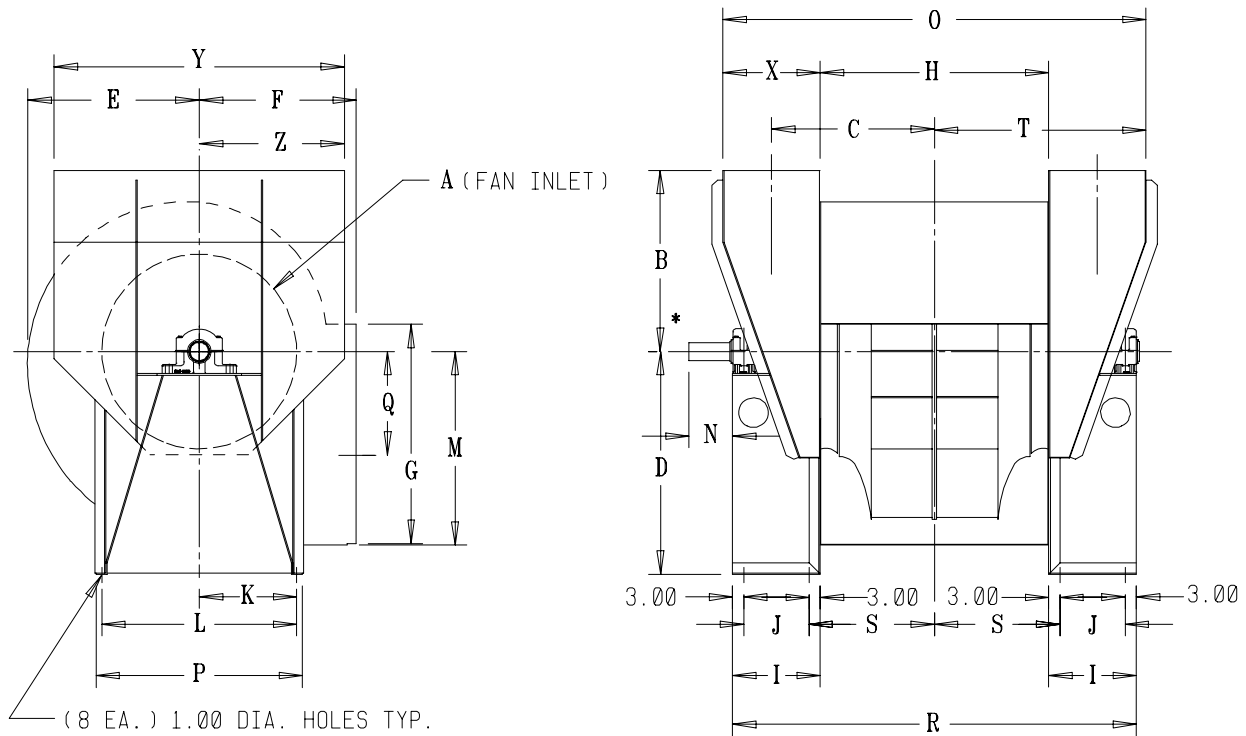
FAN SIZE	WHEEL DIA	A		B	CRN	C			D			E	F	G	CRN	H		
		ID.	OD.			CR	CRW	BH	TH	UB	CR					CR	CRW	
402	40.25	43.63	44.06	32.88	16.81	18.25	19.91	47.50	35.88	40.75	37.69	29.53	48.13	25.63	28.50	31.81		
445	44.50	48.13	48.63	36.33	18.13	19.78	21.56	52.00	39.38	44.63	41.66	32.47	53.19	28.25	31.56	35.13		
490	49.00	53.00	53.50	39.95	19.55	21.38	22.31	56.50	43.00	48.88	45.84	35.56	58.56	31.09	34.75	36.63		
542	54.25	58.75	59.25	44.16	21.19	23.22	25.38	62.13	47.25	53.75	50.66	39.42	64.38	34.38	38.44	42.75		
600	60.00	65.00	65.50	48.89	23.06	25.22	27.69	68.38	52.00	59.13	56.09	43.43	71.56	38.13	42.44	47.38		
660	66.00	71.38	71.88	53.73	24.94	27.31	30.00	74.63	56.88	64.63	61.63	47.54	78.69	41.88	46.63	52.00		
730	73.00	79.00	79.50	59.38	27.13	29.75	32.75	82.00	62.50	71.00	68.13	53.34	87.00	46.25	51.50	57.50		
807	80.75	87.38	87.88	65.59	29.56	32.34	35.75	90.00	68.75	78.25	75.25	58.63	95.81	51.13	56.69	63.50		
890	89.00	96.38	96.88	72.28	32.13	35.34	39.00	99.63	75.50	86.00	82.94	64.31	105.94	56.25	62.69	70.00		

DIMENSIONS SHOWN ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES

FAN SIZE	K	L	M	N	CRN	O			P	Q	CRN	R			CRN	S		
						CR	CRW	CR				CR	CRW	CR		CR	CRW	
402	18.50	37.00	42.50	8.00	50.81	52.25	53.91	40.00	18.19	30.13	33.00	36.31	15.81	17.25	18.91			
445	18.50	37.00	47.00	10.00	54.13	55.78	57.56	40.00	20.16	32.75	36.06	39.63	17.13	18.78	20.56			
490	22.00	44.00	51.70	10.00	61.55	63.38	64.31	48.00	22.16	36.09	39.75	41.63	18.55	20.38	21.31			
542	22.00	44.00	57.14	11.00	64.19	66.22	68.38	48.00	24.69	39.38	43.94	47.75	20.19	22.22	24.38			
600	26.00	52.00	63.28	11.00	68.19	72.22	74.69	56.00	27.25	43.13	47.94	52.38	22.06	24.22	26.69			
660	26.00	52.00	69.56	11.00	70.06	74.32	77.00	56.00	29.97	46.88	51.63	57.00	23.94	26.31	29.00			
730	44.50	89.00	76.88	11.00	89.94	90.75	93.75	95.00	33.13	52.25	57.50	63.50	26.13	28.75	31.75			
807	44.50	89.00	84.94	11.00	90.56	93.34	76.75	95.00	36.78	57.13	62.69	69.50	28.56	31.34	34.75			
890	51.00	102.00	93.63	11.00	93.13	96.34	100.00	108.00	40.41	62.25	68.69	76.00	31.13	34.34	38.00			

\* NOTE: CONSULT FACTORY FOR SHAFT SIZES AND OTHER ROTATION DETAILS

### Arrangement 3 DWDI



FAN SIZE	WHEEL DIA	A		B		C	D		E	F	G	H	I	J
		ID.	OD.	BH	TH		BH	TH						
200	20.00	21.63	22.00	20.25	25.05	17.69	26.00	19.25	18.65	20.75	24.00	24.93	14.00	10.00
222	22.25	21.00	21.38	22.03	27.35	19.80	28.38	21.00	20.69	22.63	26.63	27.91	15.00	9.00
245	24.50	26.50	26.88	23.88	29.75	21.50	30.75	22.88	22.84	24.50	29.38	30.27	16.00	10.00
270	27.00	29.25	29.63	25.25	32.69	24.19	33.75	25.25	25.44	26.63	32.19	34.02	17.50	11.50
300	30.00	32.50	32.88	28.63	35.82	26.50	36.88	27.63	28.22	28.88	35.88	37.21	20.00	14.00
330	33.00	35.75	36.13	31.06	38.97	29.13	40.00	30.00	31.00	31.13	39.44	40.89	21.50	15.50
365	36.50	39.50	40.00	34.25	42.63	32.25	43.63	33.25	34.50	34.13	43.63	45.13	23.50	17.50

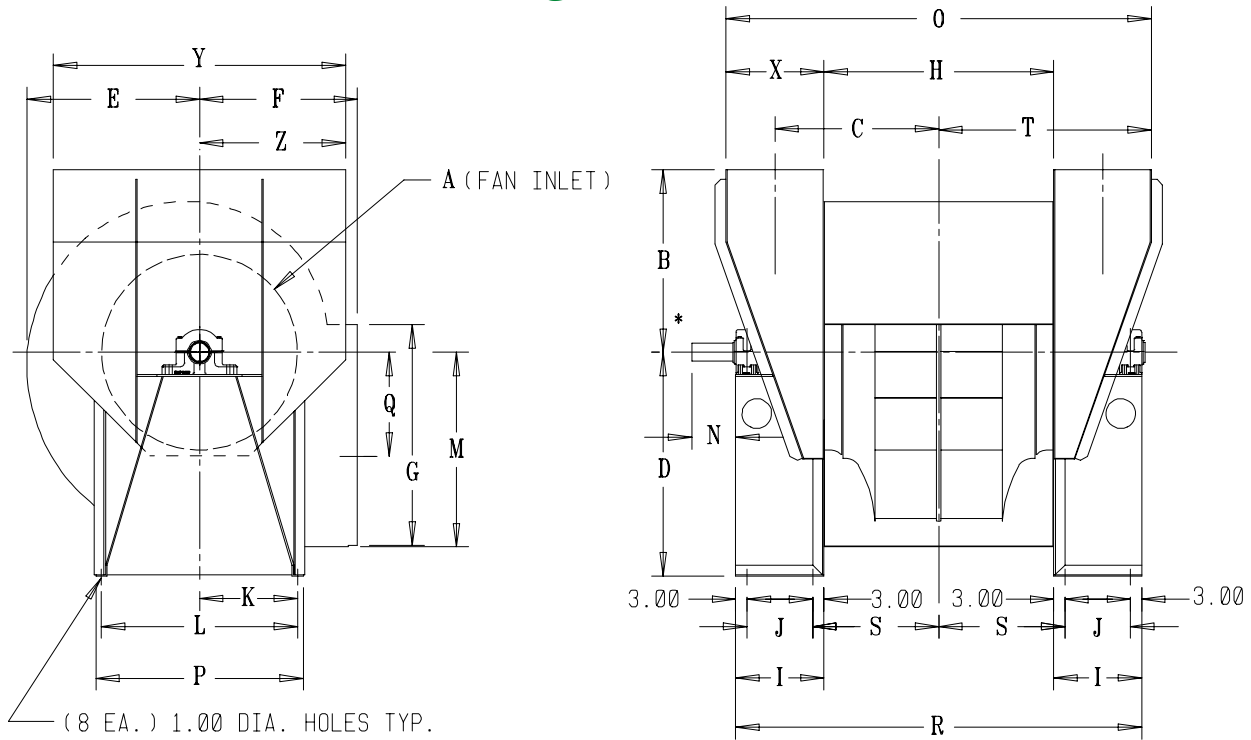
DIMENSIONS SHOWN ARE NOT TO BE USED FOR CONSTRUCTION

FAN SIZE	K	L	M	N	O	P	Q	R	S	T	X	Y	Z
200	9.50	19.00	21.05	5.50	39.69	21.00	9.05	52.93	28.93	23.46	11.19	32.81	16.41
222	11.75	23.50	23.35	5.50	44.30	26.00	10.03	57.91	33.91	26.21	12.44	36.56	18.28
245	11.75	23.50	25.75	6.00	48.13	26.00	11.06	62.27	36.27	28.44	13.50	40.31	20.16
270	11.75	23.50	28.69	6.50	54.06	26.00	12.34	69.02	40.02	31.25	15.13	44.63	22.31
300	14.50	29.00	31.82	7.00	59.38	32.00	13.64	77.21	43.21	35.06	16.63	49.13	24.56
330	14.50	29.00	34.97	7.50	65.00	32.00	15.00	83.89	46.89	38.39	18.13	53.63	26.81
365	14.50	29.00	38.63	7.50	72.13	32.00	16.56	92.13	51.13	42.50	20.13	59.63	29.81

\* NOTE: CONSULT FACTORY FOR SHAFT SIZES AND OTHER ROTATION DETAILS



### Arrangement 3 DWDI



FAN SIZE	WHEEL DIA	A		B		C	D		E	F	G	H	I	J
		ID.	OD.	BH	TH		BH	TH						
402	40.25	43.63	44.06	38.88	48.50	35.88	47.50	35.88	37.69	37.50	48.13	50.25	26.00	20.00
445	44.50	48.13	48.63	42.31	53.00	39.47	52.00	39.38	41.66	40.50	53.19	55.44	28.00	22.00
490	49.00	53.00	53.50	45.94	57.44	43.16	56.50	43.00	45.84	44.06	58.56	60.94	31.00	25.00
542	54.25	58.75	59.25	50.16	63.13	48.06	62.13	47.25	50.66	48.38	64.38	67.38	33.00	27.00
600	60.00	65.00	65.50	54.91	69.28	53.09	68.38	52.00	56.09	52.88	71.56	74.44	36.00	30.00
660	66.00	65.00	65.50	59.88	75.56	58.22	74.63	56.88	61.63	57.28	78.69	81.75	39.00	33.00
730	73.00	79.00	79.50	65.53	82.88	65.09	82.00	62.50	68.13	65.06	87.00	90.31	45.00	39.00
807	80.75	87.38	87.88	72.75	90.94	71.03	90.00	68.75	75.25	68.63	95.81	99.81	47.00	41.00
890	89.00	96.38	96.88	78.50	99.63	78.34	98.63	75.50	82.94	75.38	105.94	109.91	52.00	46.00

DIMENSIONS SHOWN ARE NOT TO BE USED FOR CONSTRUCTION

FAN SIZE	K	L	M	N	O	P	Q	R	S	T	X	Y	Z
402	18.50	37.00	42.50	8.00	93.75	40.00	18.19	102.25	28.13	46.88	22.00	65.00	32.50
445	18.50	37.00	47.00	10.00	102.94	40.00	20.16	111.44	30.72	51.47	24.00	71.00	35.50
490	22.00	44.00	51.70	10.00	113.19	48.00	22.16	122.94	33.47	56.59	26.38	78.13	39.06
542	22.00	44.00	57.14	11.00	125.38	48.00	24.69	133.38	36.69	62.69	29.25	86.75	43.38
600	26.00	52.00	63.28	11.00	138.44	56.00	27.25	146.44	40.22	69.22	32.25	95.75	47.88
660	26.00	52.00	69.56	11.00	151.63	56.00	29.97	159.75	43.88	75.81	35.19	104.60	52.28
730	44.50	89.00	76.88	11.00	170.56	95.00	33.13	180.31	48.16	85.28	40.38	120.10	60.06
807	44.50	89.00	84.94	11.00	184.81	95.00	36.78	193.81	52.91	92.41	42.75	127.30	63.63
890	51.00	102.00	93.63	11.00	203.94	108.00	40.41	213.84	57.97	102.00	47.25	140.10	70.38

\* NOTE: CONSULT FACTORY FOR SHAFT SIZES AND OTHER ROTATION DETAILS

CR-AR3 8-31-92

# Performance Curves

**CR-165**

**CR-182**

**CR-200**

**CR-222**

**CR-245**

**CR-270**

**CR-300**

**CR-330**

**CR-365**

**CR-402**

**CR-445**

**CR-490**

**CR-542**

**CR-600**

**CR-660**

**CR-730**

**CR-807**

**CR-890**