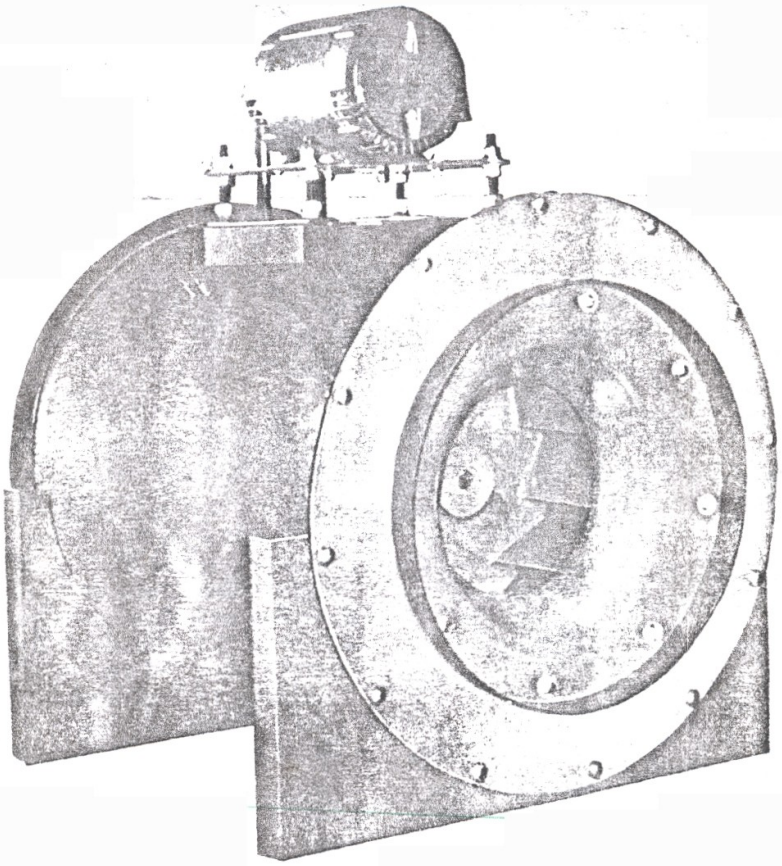
TAHVIEH HAMOON

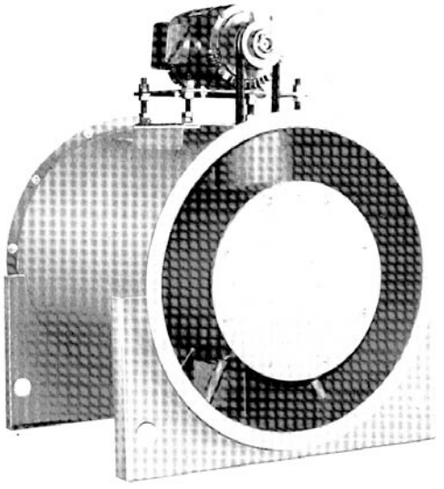
JET FAN

TUBULAR CENTRIFUGAL INLINE BLOWERS WITH BACKWARD INCLINED AIRFOIL WHEEL



ARRANGEMENT 9 (STYLE FM)
STANDARD CONSTRUCTION STEEL, ALUMINUM OPTIONAL

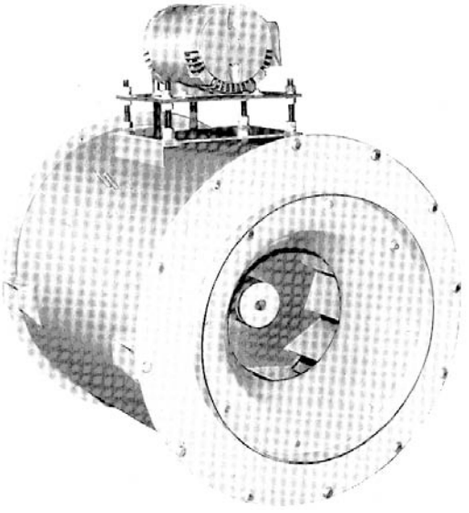
Arrangement No.9,shown from air discharge end , is available with floor mounting base as shown. Motor position may be varied as required for best placement of the fan. Lubricating tubes standard. Type CIC tubular centrifugal fans incorporate steel airfoil blower wheels. Access doors optional and are for access to wheel only.



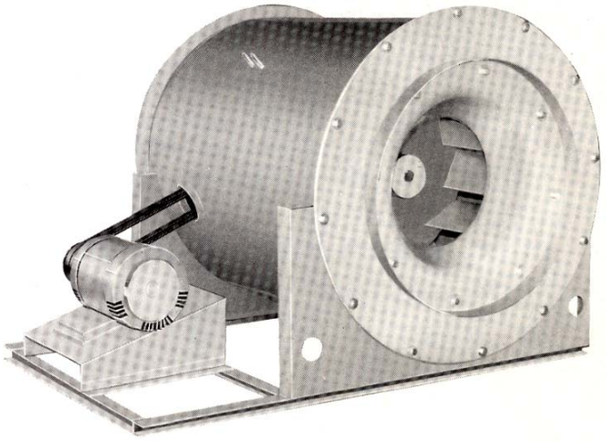
The CIC centrifugal inline blowers are standard with a steel airfoil wheel. Aluminum airfoil wheel is available as an option in sizes 12” to 49”. Class I and II only.

ARRANGEMENT 9 (STYLE CM)
STANDARD CONSTRUCTION STEEL, ALUMINUM OPTIONAL

Arrangement No. 9 is available with side brackets pre – drilled, shown, for ceiling suspension. The motor position can also be varies on this style CIC unit. Lubricating tubes standard. Type CIC tubular centrifugal fans incorporate steel airfoil blower wheels. Access doors are optional and are for access to wheel only.



ARRANGMENT 1
STANDARD CONSTRUCTION STEEL, ALUMINUM OPTIONAL

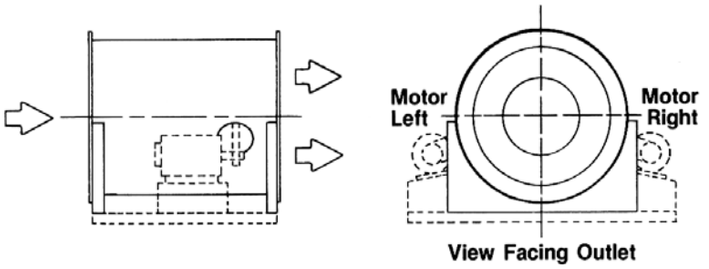


Arrangement No. 1 with motor mounted on the ruggedly constructed separate section of the base. The motor can be mounted on either side of the CIC assembly.
Lubricating tubes standard . Type CIC tubular centrifugal fans incorporate steel airfoil blower wheels. Access doors optional and are for access to wheel only.
The CIC centrifugal inline blowers are standard with a steel airfoil wheel. Aluminum airfoil wheel is available as an option in sizes 12” to 49”. Class I and II only.

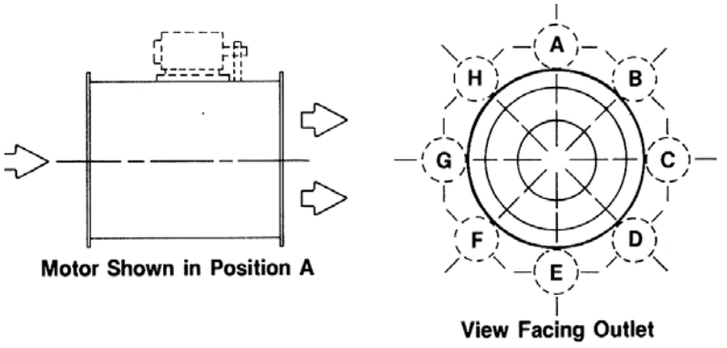
CIC TAPICAL SPECIFICATIONS

Centrifugal in – line blowers shall be of belt driven type. Blower housings shall be constructed of heavy gauge steel and all seams shall be continuously welded.
The CIC centrifugal in – line blower shall have a steel backwardly inclined airfoil blower wheel of the non-overloading type. Blades on all sizes shall be securely welded to both a deep spun inlet shroud and to the back plate. All wheels shall be carefully trued after assembly and dynamically balanced with balancing weights welded to the airfoil wheels. All wheels shall be keyed to the shafts in all classes.
The fan shafts shall be AISI C-1040 or C-1045 hot rolled and accurately turned and polished. Close tolerances shall be maintained where the shaft makes contact with the bearings.
All bearings on CIC centrifugal in-line blower in AMCA arrangements 1 and 9 shall be grease lubricated precision anti – friction ball, self aligning flange type. All motor drives shall be variable pitch thru 5 horsepower. Oil resistant non-static belts shall be provided.
All CIC centrifugal in – line blowers shall be licensed to bear the AMCA seal for both air and sound.
In general all CIC centrifugal in-line blowers shall include housing, wheel, fan shaft, bearings as a factory assembled unit. All steel and sheet metal parts shall be cleaned, conditioned and painted with enamel primer finish prior to final assembly. A final coat of gray enamel shall be applied to all exterior surfaces after assembly.

DRIVE ARRANGEMENTS FOR TUBULAR CENTRIFUGAL FANS

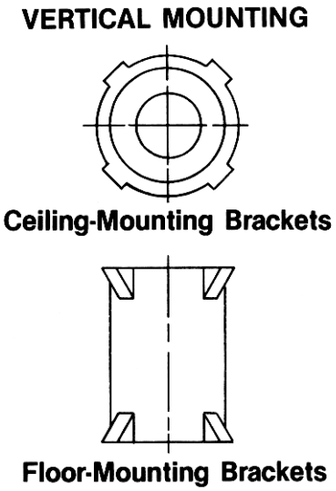


ARRANGEMENT 1
For belt drive. Impeller overhung on a shaft supported by bearings mounted within casing. Motor mounted Independent of casing. Horizontal discharge .



ARRANGEMENT 9
For belt drive . Impeller overhung on a shaft supported by bearings mounted within casing. Designed for mounting of motor on outside of casing in one of the standard locations shown . For horizontal discharge .

Arrow → designates the direction of airflow.
Rotation of fans is determined by viewing from the fan outlet end.
Specify either up blast or down blast discharge for vertically-mounted fans.
The locations of motors, supports, access doors, etc, are determined by viewing the outlet of the fan resting location E on the floor as shown for arrangement 9. Arrangement 9 can be furnished with supports for floor, wall or ceiling mounting. The position of these supports determines which motor locations are available for motor placement. Generally motor locations D,E and F are not available on floor, wall or inverted ceiling – mounted fans and motor locations B,C,G and H may not be Available for ceiling – hung fans.
Another method of mounting vertical fans is shown in the view on the right. Specify fan to be furnished with ceiling – mounting brackets, floor- mounting brackets or both.



ENGINEERING DATA

CLASSIFICATION FOR SPARK RESISTANT CONSTRUCTION

TYPE	CONSTRUCTION
A	All parts of the AMD in contact with the air or gas being handled shall be mode of non-ferrous material
B	The AMD shall have an entirely non-ferrous wheel or impeller and non- ferrous ring about the opening through which the shaft passes
C	The AMD shall be so constructed that a shift of the wheel or impeller or shaft will not permit two ferrous parts of the AMD to rub or strike.

WHEEL WEIGHTS AND WK² FOR CIC STEEL AND ALUMINUM WHEELS

UNIT SIZE	STEEL WHEEL					
	CLASS I		CLASS II		CLASS III	
	WHEEL WT.	WK²	WHEEL WT.	WK²	WHEEL WT.	WK²
120	26.9	2.2	29.9	2.7	-- --	-- --
135	31.4	3.4	35.3	4.2	-- --	-- --
150	35.6	5.0	40.6	6.2	-- --	-- --
165	40.5	7.1	46.6	8.9	-- --	-- --
180	47.6	10.6	54.8	13.2	54.8	13.2
195	53.7	14.3	62.3	17.9	62.3	17.9
210	61.0	19.6	71.1	24.4	70.1	24.4
225	68.1	25.5	79.7	31.8	78.7	31.8
245	80.6	35.4	94.3	44.2	93.1	44.3
270	94.3	51.5	111.3	64.6	110.0	64.6
300	117.6	77.5	138.5	97.3	137.1	97.4
330	139.0	116.0	165.3	144.9	163.8	144.9
365	203.9	215.7	238.9	265.8	235.2	265.9
402	242.7	315.9	285.4	389.7	281.5	389.8
445	301.3	467.8	351.5	578.4	246.7	578.6
490	362.1	700.2	423.6	862.5	418.5	862.6
540	496.0	1208.1	570.4	1447.6	563.9	1447.8
600	601.5	1821.2	694.2	2185.4	687.3	2185.7
660	735.0	2646.3	847.2	3179.9	839.0	3180.3
730	896.4	4018.4	1034.9	4816.9	1026.1	4817.3

UNIT SIZE	ALUMINUM WHEEL			
	CLASS I		CLASS II	
	WHEEL WT.	WK²	WHEEL WT.	WK²
120	10.6	0.9	11.1	1.1
135	12.2	1.3	12.9	1.7
150	14.6	2.1	15.6	2.7
165	16.6	3.1	17.8	3.7
180	18.6	4.2	20.0	5.3
195	20.9	5.7	22.6	7.2
210	23.7	7.8	25.7	9.8
225	28.4	11.2	30.8	13.8
245	34.1	16.1	36.9	19.8
270	39.9	23.4	43.4	28.8
300	49.3	35.0	53.6	42.9
330	57.7	50.3	63.0	62.4
365	76.2	78.9	84.5	101.4
402	89.9	115.2	100.1	148.4
445	112.3	169.7	124.1	219.3
490	132.3	246.9	146.9	320.2

For proper motort selection you must give consideration to starting torque requirements along with operating BHP. The above chart lists the WK^2 factor for
different wheel sizes. In some cases it may be necessary to provide a larger horsepower motor, even though it may not be indicated by
operating BHP, in order to bring the fan to speed.

The following formula can be applied to determine the required motor starting torque:

where: WK^2M_ the moment of inertia required at the motor shaft, LB-Ft^2.

$$WK^2M = WK^2F(FRPM/MRPM)^2 \quad (1.1)$$

WK^2F _ the moment of inertia of the fan. LB-FT^2.
FRPM_ fan RPM
MRPM_ motor RPM

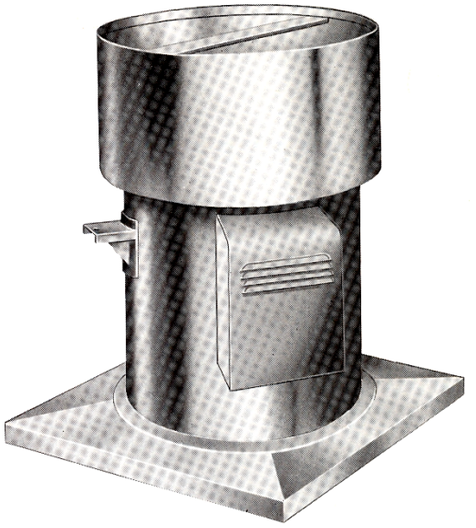
Motor starting torque can vary greatly among motor manufacturers, the available WK^2M at the motor should be obtained from the motor
manufacturer.

MATERIAL GAUGES AND SHAFT DIAMETERS FOR CIC BLOWERS

UNIT SIZE	CIC ARRANGEMENT 1,9				
	OUTER HOUSING		SHAFT DIAMETER		
	STEEL	ALUM.	CLASS I	CLASS II	CLASS III
120	14 GA.	.080	1-7/16	1-7/16	--
135	12 GA.	.250			--
150					--
165					--
180					1-11/16
195					
210				1-11/16	1-15/16
225					
245			1-11/16	1-15/16	2-3/16
270					

UNIT SIZE	CIC ARRANGEMENT 1, 9				
	OUTER HOUSING		SHAFT DIAMETER		
	STEEL	ALUM.	CLASS I	CLASS II	CLASS III
300	12 GA.	.250	1-15/16	2-3/16	2-7/16
330					
365			2-3/16	2-7/16	2-15/16
402					
445	10 GA.	.3125	2-7/16	2-15/16	3-7/16
490					
540		NA	2-15/16	3-7/16	3-15/16
600		NA			
660		NA	3-7/16	3-15/16	4-7/16
730		NA			

UCIC CENTRIFUGAL UP - BLAST
BELT DRIVE

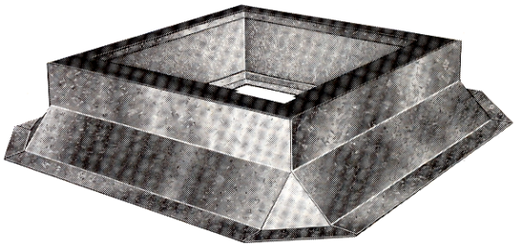


TYPE UCIC UP – BLAST

The type UCIC up – blast roof ventilator is designed for use on high pressure duct systems where exhausting is required through the roof . It eliminates unsightly goosenecks and provides a vertical discharge ejecting the exhausted air into the atmosphere. The UCIC is compact in design and versatile in usage and performance. It extends the range of the UCIC blower into many areas in both new and modification of existing buildings.

TYPE VCG ROOF CURB

The type VCG prefabricated curb is constructed of spot – welded galvanized steel. The inside of the curb is insulated with a special fiberglass board which provides thermal insulation and prevents condensation. A sponge rubber mounting pad provides a positive weather seal and dampens mechanical vibrations.



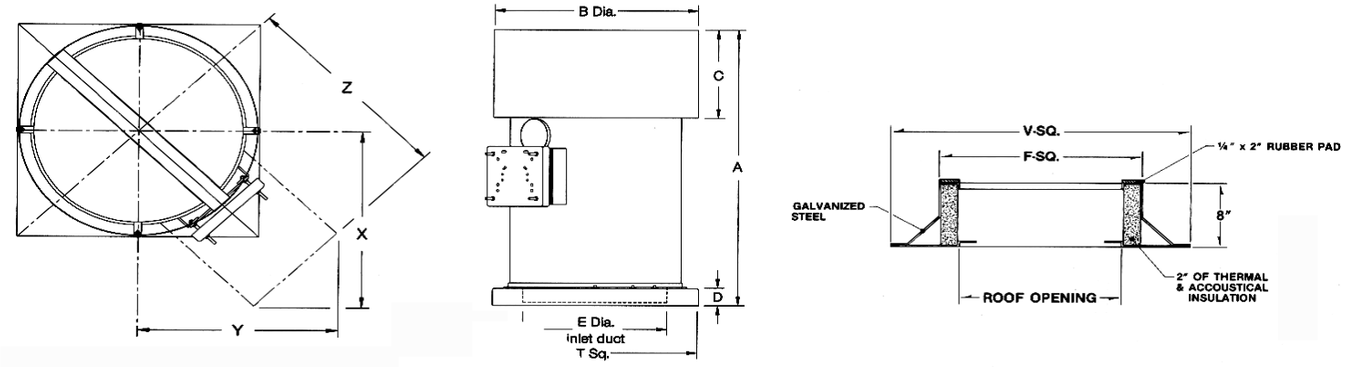
FEATURES

Type UCIC features all steel housing with a steel airfoil wheel. The belt drive assembly is completely weatherproof and has a removable motor cover for inspection. **LUBRICATION** the UCIC is equipped with extended lubricating tubes for external lubrication of the fan bearing. **NON – OVEROADING CENTRIFUGAL WHEEL** the specially designed impeller with its airfoil centrifugal blades has a non – overloading horsepower characteristic. **EASLY INSTALLED** the UCIC mounts over a standard roof curb. A cook VCG prefabricated curb can be used. **NO BACKDARFT DAMPERS REQUIRED** built – in butterfly dampers prevent back draft when unit is not in operation.

SPECIFICATIONS

Furnish and install cook UCIC tubular centrifugal up-blast roof ventilator of the size and capacity shown on the fan schedule.
Each unit shall employ the standard CIC belt drive system.
Construction shall have a centrifugal steel airfoil wheel, welded with non – overloading characteristics. Straightening vanes will be an integral part of the unit at the discharge to eliminate turbulence, having a straight airflow for maximum exhaust.
Dampers shall open automatically when the fan is energized and closed by means of gravity.
Belt drive units will have the motor externally mounted with adjustable motor sheaves thru 5 HP and base, lubricating tubes shall be provided from the shaft bearing to UCIC housing for lubrication.
Weatherproof motor cover shall be standard on all belt drive units.

UCIC CENTRIFUGAL UP - BLAST
BELT DRIVE - DEMENSION DATA



UCIC DIMENSION DATA

SIZE	T SQ.	CURB	A	B DIA	C	D	E	X&Y MAX.	Z MAX.	MAX. MTR. FRAME	MAX HP	SHIP WT.
120	24	VCGHL-22	36-½	24-⅜	11-¼	3	16-⅛	22-¾	24-¼	184T	5	150
135	28	VCGHL-26	41-⅜	26-¾	13	3	17-⅝	27-¼	26-¼	184T	5	186
150	30	VCGHL-28	44-¾	28-⅛	14-½	3	19-⅛	28-¼	28	184T	5	230
165	30	VCGHL-28	48-⅝	31-½	15-½	3	21-3/16	29-¼	29-½	184T	5	285
180	36	VCGHL-34	53-⅝	34-⅝	20-¼	3	22-11/16	34-¾	33	215T	10	350
195	38	VCGHL-36	56-⅞	37	21	3	24-3/16	35-¾	34-½	215T	10	410
210	42	VCGHL-40	61-½	39-7/16	22-15/16	3	25-15/16	42-¼	36-½	256T	15	507
225	42	VCGHL-40	66-5/16	41-13/16	24-⅞	3	27-7/16	43-¼	38-½	256T	15	605
245	48	VCGHL-46	70-⅝	45	25-½	3	29-7/16	44-¼	41-½	256T	15	750
270	54	VCGHL-52	75-⅛	48-½	27-¼	3	31-15/16	48-½	43-¾	286T	20	900
300	54	VCGHL-52	80-¾	52-¾	29-⅜	3	35	50-¼	46-¾	286T	20	1015
330	60	VCGHL-58	88-⅜	56-⅞	31-½	3	38	51-¾	49-¼	324T	25	1320
365	62	VCGHL-60	99-⅛	61-15/16	35	3	41-½	53-¾	52-½	326T	30	1620
402	72	VCGHL-70	102-1/16	67-5/16	37-⅝	3	45-¼	58-¼	55-¼	364T	40	1910
445	76	VCGHL-74	114-7/16	73-5/16	40-⅝	3	49-½	60-½	59	364T	40	2380
490	84	VCGHL-82	124-15/16	80-⅜	44-¼	4	55	66-¼	65-¼	365T	50	2850
540	92	VCGHL-90	134-3/16	87-⅜	47-⅝	4	60	68-¾	69-¼	365T	50	3450
600	98	VCGHL-96	148-13/16	95-⅞	52	4	66	71-¾	74	365T	50	4772

DIMENSION ARE IN INCHES. WEIGHT IS IN POUNDS.

UCIC CURB DIMENSION

SIZE	CURB		GALV.	ALUM.	F SQ.	V SQ.	ROOF	SHIP WT.	SHIP WT.
	GALV.STL.	ALUM.	STL.GA.	THICKNS.			OPENNING	ALUM	STEEL
120	VCGHL-22	VCGHL-22	20	0.080	22-½	33-½	18-½	32	38
135	VCGHL-26	VCGHL-26	20	0.080	26-½	37-½	22-½	35	42
150	VCGHL-28	VCGHL-28	20	0.080	28-½	39-½	24-½	38	46
165	VCGHL-28	VCGHL-28	20	0.080	28-½	39-½	24-½	38	46
180	VCGHL-34	VCGHL-34	18	0.100	34-½	45-½	30-½	58	70
195	VCGHL-36	VCGHL-36	18	0.100	36-½	47-½	32-½	61	73
210	VCGHL-40	VCGHL-40	18	0.100	40-½	51-½	36-½	69	83
225	VCGHL-40	VCGHL-40	18	0.100	40-½	51-½	36-½	69	83
245	VCGHL-46	VCGHL-46	18	0.100	46-½	57-½	42-½	79	95
270	VCGHL-52	-- --	16	-- --	52-½	63-½	48-½	-- --	124
300	VCGHL-52	-- --	16	-- --	52-½	63-½	48-½	-- --	124
330	VCGHL-58	-- --	14	-- --	58-½	69-½	54-½	-- --	167
365	VCGHL-60	-- --	14	-- --	60-½	71-½	56-½	-- --	171
402	VCGHL-70	-- --	12	-- --	70-½	81-½	66-½	-- --	229
445	VCGHL-74	-- --	12	-- --	74-½	85-½	70-½	-- --	266
490	VCGHL-82	-- --	12	-- --	82-½	93-½	78-½	-- --	293
540	VCGHL-90	-- --	12	-- --	90-½	101-½	86-½	-- --	341
600	VCGHL-96	-- --	12	-- --	96-½	107-½	92-½	-- --	353

DIMENSIONS ARE IN INCHES. WEGHT IS IN POUNDS.