BOOKS

The Art of Organ Building

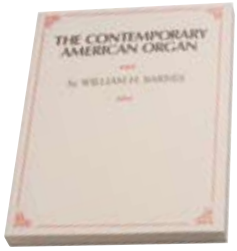
by George Ashdown Audsley

8001.00 Two volumes contain a comprehensive historical, theoretical and practical treatise on the tonal appointment and mechanical construction of concert room, church and chamber organs. Over 400 illustrations. Reprint.
Paperbound - 1358 pages.
6-1/2" x 9-1/4"

The Contemporary American Organ

by William H. Barnes

8002.00 The book chronicles the design, evolution, and construction of the American electro-pneumatic organ in the 20th century. It is profusely illustrated with action drawings and photographs of important consoles and organs. It has a supplement on electronic instruments. Reprint of the 8th edition, 1964.
Paperbound - 389 pages.
7-1/2" x 9-3/4"



Sensations of Tone

by Herman Helmholtz

8007.00 Contains a wealth of information on tone, acoustics and related matters.
Paperbound - 576 pages.
6-1/8" x 9-1/4"

The Organ Handbook

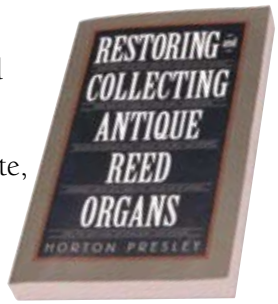
by Hans Klotz

8010.00 Combines the subjects of organ design and building with the liturgical use of the organ. Covers structure, design, maintenance, history and function of the organ.
Paperbound - 225 pages.
5-1/4" x 8-1/4"

Restoring and Collecting Antique Reed Organs

by Horton Presley

8011.00 Nuts and bolts restorer's road map to transforming old reed organs into beautiful antiques. How to find evaluate, buy and restore most reed organs.
Paperbound- 313 pages.
5" x 8-1/4"



Pulling Out All The Stops

by C. Fischer

Subtitled “An inside view of the Pipe Organ,” these three little volumes are a coffee table must for the organ lover. With cartoons full of whimsy and insight, Miss Fischer pokes fun at the pipe organ and all those who are connected with it. Each volume paperbound - 28 or 30 pages. 8-1/2" x 5-1/2"

8014.01 Vol. I
8014.02 Vol. II
8014.03 Vol. III

Organ Supply PCN Tour

8050.01 Guided tour of Organ Supply Industries that takes the viewer through each of the departments in the organization. Hosted by Randy Wagner and produced by the Pennsylvania Cable Network 2004.

TOOLS

OSI Pipe Scale Ruler

8090.00 A very practical 12" ruler with direct- reading metric and diameter pipe scales. It contains useful formulas for pipe scaling, wood to metal conversion and mouth widths.

Pipe Patterns

Pipe patterns for chest layout are provided with Normal 17th halving from 30 Scale (285.2 mm) to 90 Scale (19.3 mm). Each set of 61 patterns is engraved with crosshairs for alignment, scale number and diameter in mm. The durable ABS patterns have a 3/16" center hole for convenient stacking. A convenient hardwood storage base is available.

8095.00 Pipe Patterns
8095.01 Mounting stand

Wind Gauges

This compact dial wind pressure gauge is complete with 1/4" Ø foot and rubber toe ready to insert in rackboard or drilled wind hole. No water required. The small size makes it ideal for the toolbox. The unit is accurate to within 2% of full scale. Gauge has an aluminum die cast case with plastic face and is furnished complete with protective pouch.

2-5/8" Ø x 1-1/2" T x 9" L

8101.15 0" to 15" WP
8101.30 0" to 30" WP

The Magnahelic® pressure gauge is a larger easy to read unit suited for the shop and voicing room as well as service work. The case is die cast aluminum with a clear plastic face. The gauge is accurate to within 2% of full scale. A carrying case, hang/stand bracket and 9 feet of 3/16" ID rubber tubing complete the package.

4-3/4" Ø x 2-1/4" T

8102.10 0" to 10" WP
8102.20 0" to 20" WP

Wind Gauges (cont.)

8103.00 The handheld Digital Manometer measures positive, negative, and differential wind pressures. It is rugged and lightweight, easy to use. O" to 20" WP with calibration in English units only. Accuracy is 0.5% of full scale. 1/2" LCD display is easily read in poor light. A 9 volt battery provides up to 100 hours use. Connectors for 1/8" or 3/16" ID tubing provided. Instructions printed on rear of case. A tough gray nylon storage pouch is furnished.

8101.40 The remote sensing probe is a convenient accessory for any of the above wind gauges. The kit provides a weighted brass probe with rubber foot and 3 feet of 3/16" tubing.

Proportional Dividers & Case

8105.00 Aluminum with metal points. 185 mm long.

8105.01 Replacement tips (4 pieces).

Toe Cones

	Size	Material	Dia. Opening	Weight
8110.01	Small	Brass	1-7/8"	1 lb. 1 oz.
8110.02	Double	Brass	2" & 2-1/4"	1 lb. 8 oz.

Foot Hole Gauge

8115.00 Made of Brass, for measuring and opening foot holes.

290 mm L, 2-20 mm Ø O.D.

Pipe Toe Reamers

The three pipe toe reamers cut toe openings from zero to 20 mm. Each reamer is complete with handle.

	Size	Diameter	Reamer Ln.	O.A. Length
8120.01	Small	0-5 mm, 3/16”	30 mm	100 mm
8120.02	Medium	5-12 mm, 1/2”	90 mm	240 mm
8120.03	Large	5-20 mm, 3/4”	165 mm	310 mm

Nicking Tool

8125.00 Double edge steel blade on wood handle is **1-1/2" L, 5-7/16" O.A.**

Voicing Hook

8130.00 Steel, for pulling out upper lips of metal pipes, with handle. **145 mm L**

Voicing Drawknives

These drawknives are available in long shank for 16’ and 8’ pipes and a shorter version for pipes 4’ and under. Heat treated and ground tool steel blades tightly wedge into the steel shank and are secured by a thumb screw. The wedge design maintains blade alignment and stability through the life of the tool. Shank extends through the hardwood handle for balance, stiffness and control. Three blade sizes and one plow point hook are available in kits or individually.

Short knife **8” L**, Long Knife **12” L**

	Size	Blades
8132.01	Short	Small & medium blades, plus cutting hook
8132.02	Long	Large blade only
8132.11	Small Blade 1-11/16”	
8132.12	Medium Blade 2-7/16”	
8132.13	Large Blade 3-7/16”	
8132.15	Plow Point Pipe Hook 2-9/16”	
8132.21	Drawknife 8” handle only	
8132.22	Drawknife 12” handle only	

Lip Raisers

Polished steel, for adjusting mouths of metal pipes, shell handle.

	Size	Length
8135.01	Small	180 mm
8135.02	Medium	215 mm

Languid Depressors

Nickel plated steel.

	Size	Length
8140.01	Small	110 mm
8140.02	Large	150 mm

Burnishing Iron

8145.00 Steel plate for curving reed tongues. **245 mm L x 35 mm W**

Burnisher

8150.00 Steel with handle. **235 mm L**

Scroll Tuner Keys

The scroll tuner key is ergonomically designed to assist the flue and reed voicer in starting and rolling a tight tuning roll. The small size will accommodate pipe metal up to .040", and the medium size will accommodate pipe metal up to .057".

Small - **3/16" Ø x 4" L, handle 4" L**
Medium- **1/4" Ø x 5-1/2" L, handle 4-1/2" L**
Large - **1/2" Ø x 11-1/4" L, handle 6" L**

8152.01	Small
8152.02	Medium
8152.03	Large

Tuning Knives

Stainless steel.

8155.01 3mm x 15mm x 300mm
8155.02 3mm x 10mm x 500mm

8156.02 5mm x 15mm x 500mm

Tuning Iron

8157.01 The tonal department of C. B. Fisk, Inc. developed this new design as their solution to the challenges of pipe tuning. The 6 oz. iron simplifies the precise tuning of small pipes in awkward places and is long enough for normal tuning. Each head has a "V" groove in the upper surface to assist in raising slides and notched reed wires. The bottom face is smooth for moving slides and wires down. The heads are angled for optimum use and are hardened to maintain a sharp edge. The balanced handle is coated for easier grip and durability.
17-1/8" L

Tuning Forks

	Pitch	Plating
8165.01	A-440	Chrome
8165.02	Bb-466.2 (A440)	Chrome
8165.03	C-523.3 (A440)	Chrome

Double Tuning Cones

Polished Brass male and female cones.

	Size	I.D.	O.D.	O.A. Length
8160.01	Small	3/4"	7/8"	7-3/4"
8160.02	Medium	1-5/16"	1-7/16"	8-1/2"
8160.03	Large	1-1/2"	1-5/8"	8-7/8"
8160.04	Set of 3 sizes in canvas bag			

Peterson V-SAM™ Virtual Strobe/Audio Tuner with Metronome

8170.33 Programmable VIRTUAL STROBE tuner, AUDIO tone generator, and METRONOME in hand held format. Accuracy to 1/10 cent. Features include: Bright, high contrast display, selectable and user-defined temperaments (including historical), built-in speaker, built-in microphone, and automatic or manual note selection. Powered by 3 AA Batteries or Included 3 VDC Universal Adapter (90VAC-240 VAC). Protective rubber boot included.

Dimensions 7-1/2" T 4-1/4" D.
Weight (1.2 pounds/ approx. 0.5kg)

Optional external microphone and carrying case available through special order.

Temperaments include: Equal, Pythagorean, Just Major, Quarter Comma Mean-Tone, Kernberger III, Young and Kellner

Metric Arch Punches

Inside taper permits punching to clear barrel. Sizes to **50 mm** diameter are alloy steel, drop forged in one piece. All sizes feature polished barrels, black Japanned handles.

	Size
8190.04	4 mm
8190.06	6 mm
8190.08	8 mm
8190.10	10 mm
8190.12	12 mm
8190.14	14 mm
8190.16	16 mm
8190.18	18 mm
8190.20	20 mm
8190.22	22 mm
8190.24	24 mm
8190.26	26 mm
8190.28	28 mm
8190.30	30 mm
8190.32	32 mm
8190.34	34 mm
8190.36	36 mm
8190.38	38 mm
8190.40	40 mm
8190.50	50 mm

Punching Pad

8201.00 Resilient vinyl plastic pad used with arch punches, long wearing. Use both sides. **10" x 10" x 1/2"**

Arch Punches

Alloy steel, drop forged in one piece to **2"** diameter; **2-1/8" to 4"** sizes are two-piece welded construction. Inside taper permits punching to clear barrel. Polished barrel, black Japanned handle.

	Size
8200.01	3/16"
8200.02	1/4"
8200.03	5/16"
8200.04	3/8"
8200.05	7/16"
8200.06	1/2"
8200.07	9/16"
8200.08	5/8"
8200.09	11/16"
8200.10	3/4"
8200.11	13/16"
8200.12	7/8"
8200.13	15/16"
8200.14	1"
8200.15	1-1/16"
8200.16	1-1/8"
8200.18	1-1/4"
8200.20	1-3/8"
8200.22	1-1/2"
8200.24	1-5/8"
8200.26	1-3/4"
8200.28	1-7/8"
8200.30	2"
8200.31	2-1/8"
8200.32	2-1/4"
8200.33	2-3/8"
8200.34	2-1/2"
8200.36	2-3/4"
8200.38	3"
8200.40	3-1/4"
8200.42	3-1/2"
8200.44	3-3/4"
8200.46	4"

Hand Dust Bellows

8205.00 530 mm L x 70 mm Ø

Automatic Glue Pots

Designed to melt and hold hot hide glue at correct temperature. Thermostatically controlled, 140° - 150° F, 120 VAC.

	Size	Shipping Weight
8210.01	1 quart	7 lbs.
8210.02	2 quart	8 lbs.
8210.03	4 quart	10 lbs.

8211.01 1 quart replacement liner
8211.02 2 quart replacement liner

Rawhide Hammer

Useful with arch punches.

8215.00 2-1/4 lb. - 1-3/4" Ø face
8215.01 Replacement faces

Leather Knives

	Blade	Blade Length	Total Length
8220.01	Rigid	2-3/4"	6-7/8"

8220.02	Flexible	3-7/8"	8"

8220.03	Square point	6-7/8"	10-1/8"

Organ Knife

8225.00 3-7/8" blade, 8" L

Rotary Cutter

Perfect tool for cutting rubber cloth, felt and leather. Razor sharp, retractable blade rolls for effortless cutting. Replaceable blade can be mounted for left hand use. Contoured handle reduces fatigue. Convenient hang hole for storage. Easy to use.

8228.00 Rotary cutter
8228.01 Replacement rotary blade, **45 mm**

Skinning Knife

Skinning knife is a rugged tool with a sharp, detachable blade which may be reversed inside of hollow handle. Replacement blades available separately.

5" L open

8229.00 Skinning knife
8229.01 Skinning knife blade

Nut & Allen Key Spinner

8230.00 Hexagonal socket with handle for 4 mm hexagonal screws on ring terminals.

8-3/4" L

8230.01 Allen key with handle for 1.5 mm Allen set screws on ring terminals.

11-5/8" L

Pallet Spring Pliers

8235.00 Nickel plated steel. **320 mm L**

Pallet Spring Puller

8236.00 Phosphor Bronze pallet puller, **.250 Ø** Brass Handle,

429 mm L

Pin Vise

8240.00 Parallel, three jaw chuck on a knurled, hollow brass handle for use with long wires.

4.72" L O.A.
Chuck Capacity 0. - 0.10"

Keyless Chuck

8241.00 Parallel, three jaw chuck with hex shank for use with hex driver.

Threaded Insert Drive Tools

Recommended for installation of threaded inserts, these drive tools provide more positive engagement and efficient installation of inserts. Fits standard hex socket, most screw guns, or can be chucked in reversible drill.

	Insert Sizes	L
8246.10	10-24 & 10-32 & 12-24	1-7/8"
8246.16	1/4-20	1-15/16"

Fine Wood Backsaw

Reversible handle for push or draw operation.

8245.00 **Blade. 250 mm, 380 mm L**

Knob Handled Screw Driver

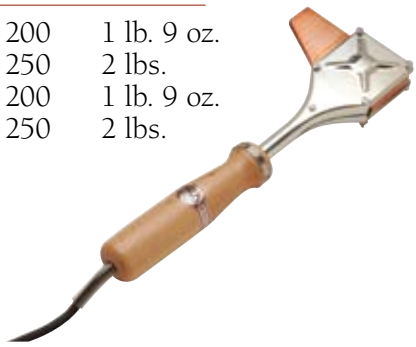
8250.00 Wood handle.

45 mm Ø x 50 mm L

Soldering Irons

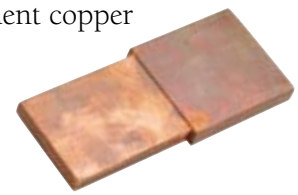
Designed for pipe making and repair.

	Volts	Watts	Net Wt.
8255.10	110	200	1 lb. 9 oz.
8255.12	110	250	2 lbs.
8255.20	220	200	1 lb. 9 oz.
8255.22	220	250	2 lbs.



8255.30 200W replacement elements
8255.35 250W replacement elements

8255.51 200W replacement copper
8255.52 250W replacement copper



Wire Twister

8260.00 Double ended.

7/64" & 5/32" I.D.s. 7" L

GlockenZimbel

GlockZimbel models are supplied with 20 or 40 solid aluminum chime bars of varying length. Rotation speed controlled by on board potentiometer. Volume easily regulated by striker height. Solid State control allows for latch reversible or on/off stop control on existing or new installations. **Operating voltage 10 to 16 VDC, 5 Amp. 12-7/8" O.A. Height, Top 10-1/2" Ø**

8508.11 GlockenZimbel 3/8", 40 Notes
8508.21 GlockenZimbel 1/2", 20 Notes

BLOWERS

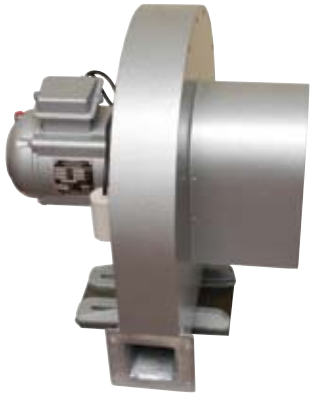
The Ventus and Ventola line of blowers are engineered to be truly quiet. Silence is in the details: close tolerance sleeve bearings, dynamically balanced rotors and impellers, intake manifolds with flap valves and meticulous engineering attention paid to avoiding or canceling natural resonance in housings and mounting frames. Though all motors are three phase, those of 1 HP or less allow single phase operation through capacitors. Instructions and high quality synthetic oil are furnished with each unit. All blowers carry the CE Mark, indicating they satisfy world standard electrical safety certification requirements.

Ventola Blower

The compact pancake design of this unit makes it the ideal choice for Portative or Positiv organs, anywhere space is a concern. The 120 VAC, single phase capable, flange mounted motor runs at 3360 RPM and is mounted on a cast aluminum housing. Unit is complete with grounded cord set.

Ventus Blower

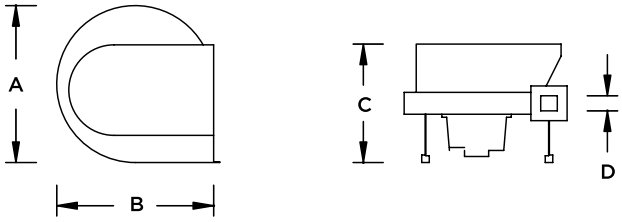
Available from .25 HP to 1 HP, these blowers supply most small to medium organ requirements. The 3360 RPM flange mounted motor is installed on a cast aluminum housing, furnished with a sound absorbant connecting flange. Blowers are shipped with capacitors for 120 or 240 VAC single phase operation, or for your specified voltage.



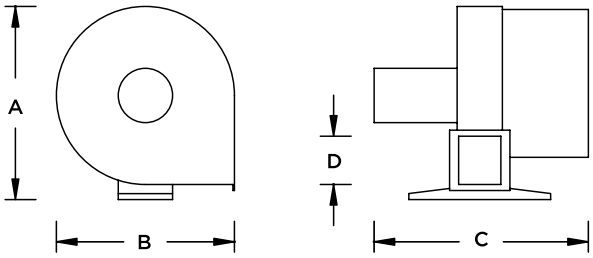
Ventus Slow Speed Blower

Where greater air volume is required for large instruments, the 2 HP and 3 HP slow speed blowers are advantageous. The rugged steel construction of the housing is supported on a welded steel frame. The 1680 RPM, 240 VAC motor is "ring" lubricated through a special oil reservoir equipped with a low oil warning indicator. THREE PHASE operation only.

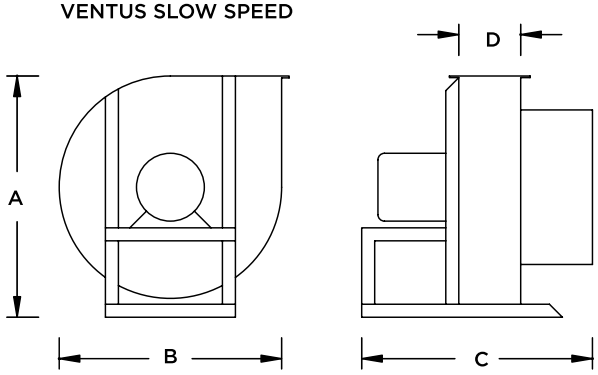
VENTOLA



VENTUS



VENTUS SLOW SPEED



Specifications

	HP	VAC	A	B	C	D W x H I.D.	Equivalent Ø	Net Wt. Lbs.
	Ventola - 3360 RPM							
8610.10	0.10	120	8-7/8"	8-7/8"	3-7/8"	1-5/16" Ø	1-1/4"	6-1/4
8618.10	0.18	120	12-1/2"	12-1/2"	9-5/8"	2-7/8" x 2-11/16"	3"	20
	Ventus - 3360 RPM							
8725.10	0.25	120	16-1/8"	14-11/16"	18-1/4"	3-1/2" x 4"	4"	48-1/2
8745.10	0.45	120	16-1/8"	14-5/8"	18-3/8"	4-1/8" x 4-1/16"	5"	50-1/2
8745.20	0.45	240	16-1/8"	14-5/8"	18-3/8"	4-1/8" x 4-1/16"	5"	50-1/2
8775.10	0.75	120	16-3/4"	14-5/8"	21-3/16"	4-15/16" x 4-7/16"	6"	77
8775.20	0.75	240	16-3/4"	14-5/8"	21-3/16"	4-15/16" x 4-7/16"	6"	77
8775.12	0.75	120	21"	18-7/8"	17"	2-3/4" x 3"	4"	75
8799.20	1.00	240	21"	19-1/4"	22-15/16"	5-7/16" x 5"	6"	105
	Ventus Slow Speed - 1680 RPM							
8820.20	2.00	240 3Ø	35"	32"	35-3/4"	7" x 9-5/8"	10"	255
8835.22	3.00	240 3Ø	37"	35-1/4"	34-5/8"	7" x 9-11/16"	10"	354

Blower Performance Chart

	HP Ventola	Static Wind Pressure	CFM at Wind Pressure 2"	3"	4"	5"	6"	7"	8"	9"	10"	11"
8610.10	0.10	2"	36									
8618.10	0.18	3-1/8"	171	106								
	Ventus											
8725.10	0.25	4-1/2"	320	227	169							
8745.10	0.45	5-1/2"	472	431	318	233						
8745.20	0.45	5-1/2"	472	431	318	233						
8775.10	0.75	5-3/4"	873	773	578	458	392					
8775.20	0.75	5-3/4"	873	773	578	458	392					
8775.12	0.75	12-3/4"	443	288	216	173	144	124	108	96	87	79
8799.20	1.00	7-1/2"	1062	1002	919	746	604	512				
	Ventus Slow Speed											
8820.20	2.00	9"		1948	1461	1169	974	835	730			
8835.22	3.00	10-3/4"				1813	1511	1295	1133	1007	907	824

Ventus Current Requirements

Motor HP	Start 120 VAC	Run 120 VAC	Start 240 VAC	Run 240 VAC
0.10	0.6	0.4	-	-
0.18	2.0	0.9	-	-
0.22	5.2	1.9	4.3	0.9
0.25	5.5	2.1	4.5	1.0
0.45	9.0	3.1	5.0	1.4
0.75	18.0	6.6	11.0	3.0
1.00	28.0	9.2	22.0	5.0
2.00			26.0	5.5
3.00			40.0	8.1

Capacitors For Ventus Blowers

The Ventus and Ventola high speed blowers employ three phase motors. For these blowers to run on single phase current, an appropriate start/run capacitor is installed in the circuit to provide a phantom third leg to assist the blower to start.

Each blower is furnished with the correct capacitor(s) for voltage ordered. Changing voltages without changing the matching capacitor(s) value will result in damage to the motor. Values of capacitors are additive when connected in parallel.

To select the correct capacitor(s) for your voltage, find your horsepower on the left and voltage across the top. Where that column and row cross is your capacitance range in microfarads (MFD). That number will lead you to the correct part number in the second chart.

		MFD at Voltage			
Motor HP	110 VAC	120 VAC	208 VAC	220 VAC	240 VAC
0.10	8-10	8-10	-	-	-
0.18	16	16	-	-	-
0.22	34-36	34-36	12	10	8
0.25	34-36	34-36	12	10	10
0.45	50-56	50-54	16	16	14
0.75	75-85	75-82	20	20	20
1.00	130	120	40	35	30

	MFD		MFD		MFD
8701.04	4	**8701.20**	20	**8701.40**	40
8701.10	10	**8701.25**	25	**8701.50**	50
8701.12	12	**8701.30**	30	**8701.60**	60
8701.14	14	**8701.35**	35	**8701.80**	80
8701.16	16				

Blower Oil

8900.02 Synthetic oil - 50 ml. for sleeve motors
8900.05 Oil for ring lubrication - 1 liter

Baffle Boxes

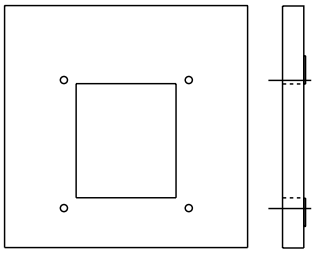
Attach directly to 3360 RPM Ventus blowers to quiet output turbulence.

	Blower Size	H x W x D	Outlet Dia.
8901.25	.25 HP	11-1/2" x 11-1/2" x 9-1/4"	4"
8901.45	.45 HP	11-1/2" x 11-1/2" x 9-1/4"	5"
8902.75	.75/1.00 HP	14-1/2" x 14-1/2" x 10-1/4"	6"
8902.76	.75 HP High Pressure	11-1/2" x 11-1/2" x 9-1/4"	4"

Ventus Adaptor Plates

Output plates attach directly to the Ventus blower outlet and permit the direct installation of PVC or Cast Aluminum flanges. Each adaptor plate is drilled and corked, ready to install on output hole of the blower.

	Blower Size	Flange Size	O.A. Dimensions
8910.25	.25 HP	4" to 6"	8-1/2" x 8-1/2" x 3/4"
8910.45	.45 HP	6"	8-1/2" x 8-1/2" x 3/4"
8910.75	.75 HP	8"	11" x 11" x 3/4"
8910.76	.75 HP High Pressure	4" to 6"	8-1/2" x 8-1/2" x 3/4"
8910.99	1.00 HP	8" to 10"	12-3/4" x 12-3/4" x 3/4"
8911.00	2.00 & 3.00 HP	10" to 12"	14-1/2" x 14-1/2" x 3/4"



Blower Sizing

Calculating the size of the blower for a pipe organ is based on the number of ranks in the organ and wind pressure of each division.

Each independent rank of pipes, manual or pedal, for calculation purposes is assumed to have 61 or more pipes and is counted as one (1) rank. Mixtures of II or more ranks are counted as one (1) rank. Celeste stops on one channel board with II ranks are counted as one (1) rank. For ranks of more than 61 pipes, use the following rank unit values.

61 notes or less. . . . . 1.00 rank
73 notes or less . . . . . 1.60 ranks
85 notes or less . . . . . 2.00 ranks
97 notes or less. . . . . 2.36 ranks

The following chart lists Cubic Feet per Minute or CFM for each unit or rank of 61 pipes at various wind pressures. It also lists nominal number of ranks that each blower can handle at different wind pressures. These values take into consideration normal sub and super couplers. The chart assumes that the blower will be located at sea level.

Wind Pressure	Average CFM/Rank	Ventus HP vs. Number of Rank Units					
		.25 HP	.45 HP	.75 HP	1 HP	2 HP	3 HP
3"	45	5	8	17	22	43	
3-1/2"	50	4	7	14	20	35	45
4"	54	4	6	11	17	27	40
4-1/2"	57		5	9	15	23	35
5"	60		4	8	12	20	30
6"	65			6	9	15	23
7"	68				8	12	19
8"	73			1 *		10	16
10"	80			1 *			11
12"	85			1 *			

* **.75 HP** 12-3/4" Static Pressure Blower

Note: Allowance should be made in the calculation for excessive wind leakage, large windways, large scaling, and consoles or swell shutter motors that may require pressures higher than pipes. For elevations over 1000 ft. above sea level, add an additional 1" of static wind pressure for each 2500 feet.

The sample stoplist which follows illustrates how the required CFM is calculated.

Pedal–32 notes, 4" wind pressure

			Units
16' Bourdon		44 pipes	1
16' Gedeckt	from Swell		
8' Principal		56 pipes	1
8' Bourdon	from 16'		
8' Gedeckt	from Swell		
4' Principal	from 8'		
4' Gedeckt	from Swell		
2' Principal	from 8'		
16' Trumpet		32 pipes	1
			3 units x 54 CFM = 162 CFM @ 4" WP

Great–61 notes, 3" wind pressure

			Units
8' Principal		61 pipes	1
8' Hohlflöte		73 pipes	1.6
8' Dulciana		61 pipes	1
4' Octave		61 pipes	1
4' Hohlflöte	from 8'		
2' Principal		61 pipes	1
IV Mixture		244 pipes	1
8' Trumpet		61 pipes	1
			7.6 units x 45 CFM = 342 CFM @ 3" WP

Swell–61 notes, 3" wind pressure

			Units
16' Gedeckt		97 pipes	2.36
8' Gedeckt	from 16'		
8' Viola		61 pipes	1
8' Celeste, tc		49 pipes	1
4' Spitzprincipal		73 pipes	1.6
4' Gedeckt	from 16'		
2-2/3' Gedeckt	from 16'		
2' Spitzprincipal	from 4'		
1' Gedeckt	from 16'		
8' Oboe		61 pipes	1
4' Clarion		61 pipes	1
			7.96 units x 45 CFM = 359 CFM @ 3" WP
			836 CFM

The example shows a total of 863 CFM required with the highest wind pressure of 4" and the lowest at 3". The majority of the requirement is 3" at 342 CFM + 359 CFM = 701 CFM. From the Blower Performance Chart on page 8-12, the blower most suited for this application would be the 1 HP Ventus. This blower produces 1002 CFM @ 3" WP and 919 CFM @ 4" WP. There is a sufficient volume of CFM @ 4" WP to support the Pedal. The static pressure of 7-1/2" is 3-1/2" above the required 4" wind pressure for the Pedal.

CHIMES

Craftsmanship and precision tuning of Mayland and Deagan Chimes have helped to set the standards for unsurpassed bell-like tone quality and purity of tone with a steady fundamental.

The layout of the action mounting bar is flexible and the many attractive or utilitarian arrangements of the individual notes are restricted only by your imagination.

Custom actions can be provided for existing Mayland and Deagan chimes with graduated tube diameters other than the standard 1-1/4" diameter tube. The largest and smallest tube diameters determine the size of the individual note actions and the length of the mounting rail.

Specifications

Range:	21 note, A-22 to F-43 chromatic. 25 note, G-20 to G-44 chromatic. Custom actions as required.
Tuning:	A = 440 Hz standard. Special pitch available at no additional cost.
Layout:	The standard configuration is the diatonic or "W" formation. Custom layouts per specifications.
Parts:	All parts and chime tubes available separately.

DEAGAN CHIMES

Quality craftsmanship and precision harmonic tuning have been hallmarks of Deagan tubular chimes since 1868, providing traditional bell-like tonal quality and purity of tone.

The individual chime tubes are of highly polished seamless brass alloy, carefully lacquered for long lasting appearance. The tubes are suspended from an integrated, all-electric, solenoid note action. The built-in passive damper permits a natural bell-tone decay.

The layout of the action mounting bar is flexible and can provide many attractive visual or utilitarian arrangements of the individual notes, restricted only by your imagination. When the chimes are installed in the church sanctuary, an attractive, easily removable, medium oak canopy is available to cover the chime striking mechanism and mounting brackets. The canopy, also available in custom woods and colors, serves as mechanical protection and as a dust cover.

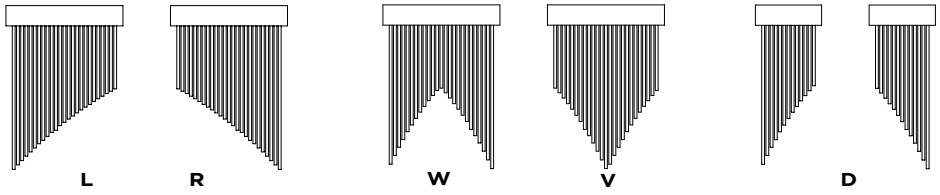
Deagan chimes are available in several attractive packages that are wired and ready to install. The packages start as small as just chime tubes, striking mechanism and power supply with volume control switch. Pre-wired cable of appropriate length can be added to this basic package. The other end of the cable can be wired to a free-standing chime keyboard, underkey contacts, or a multi-functional solid state relay.

Custom actions can be provided for existing Deagan chimes with graduated tube diameters other than the standard 1-1/4" diameter tube. The largest and smallest tube diameters determine the size of the individual note actions and the length of the mounting rail.

Individual components are available for replacement needs. Single elements allow you to customize any installation for your particular needs.

Specifications

Range:	21 note, A-22 to F-43 chromatic. 25 note, G-20 to G-44 chromatic. Custom actions as required.
Chimes:	1-1/4" bell metal seamless tubular brass.
Finish:	Highly polished with a high quality clear lacquer finish.
Tuning:	A = 440 Hz standard. Special pitch available at no additional cost.
Dimensions:	21 note set: 68" H x 44" W x 8" D includes canopy. 25 note set: 72" H x 51" W x 8" D includes canopy.
Layout:	The standard configuration is the diatonic or "W" formation. The reverse diatonic or "V" formation, the left to right "L," the right to left "R," and the divided "D" configurations are also available. Custom layouts per specifications.
Parts:	All parts and chime tubes available separately.



MAYLAND CHIMES

Since 1866, Mayland Chimes craftsmanship and precision tuning have set the standard for unsurpassed bell-like tone quality with a steady fundamental.

The individual chime tubes are of special bell alloy solid aluminum bar, gold lacquered for long lasting appearance. The tubes are suspended from an integrated, all-electric, solenoid note action with side hangers. The built-in passive damper permits a natural bell-tone delay.

The layout of the action mounting bar is flexible and the many attractive or utilitarian arrangements of the individual notes are restricted only by your imagination. When the chimes are installed in a visible location, a decorative and easily removable medium oak canopy is available to cover the chime-striking mechanism and mounting brackets. The canopy, also available in custom woods and colors, serves as both a mechanical protection and a dust cover.

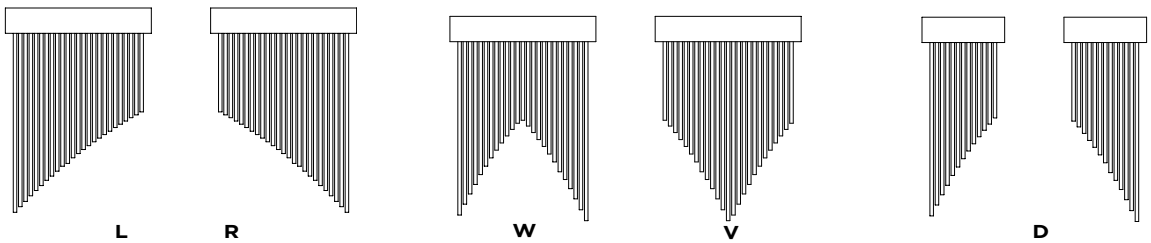
Mayland chimes are available in several attractive packages that are wired and ready to install. The packages start as small as just chime tubes, striking mechanism, and power supply with volume control switch. Pre-wired cable of appropriate length can be added to this basic package. The other end of the cable can be wired to a free-standing chime keyboard, underkey contacts, or a multi-functional solid state relay.

Custom actions can be provided for existing Mayland chimes with graduated tube diameters other than the standard 1-1/4" diameter tube. The largest and smallest tube diameters determine the size of the individual note actions and the length of the mounting rail.

Individual components are available for replacement needs. Single elements allow you to customize any installation for your particular needs.

Specifications

Range:	21 note, A-22 to F-43 chromatic. 25 note, G-20 to G-44 chromatic. Custom actions as required.
Chimes:	1-1/4" solid alloy aluminum Bar.
Finish:	Brilliant gold lacquer finish is standard. Satin silver or highly polished with a high quality clear lacquer finish available on special order.
Tuning:	A = 440 Hz standard. Special pitch available at no additional cost.
Dimensions:	21 note set: 71" H x 44" W x 8" D includes canopy. 25 note set: 76" H x 51" W x 8" D includes canopy.
Layout:	The standard configuration is the diatonic or "W" formation. The reverse diatonic or "V" formation, the left to right "L," the right to left "R," and the divided "D" configurations are also available. Custom layouts per specifications.
Parts:	All parts and chime tubes available separately.



DEAGAN and MAYLAND Chime Packages

The basic chime package provides the materials necessary to install a Deagan or Mayland 21 or 25 note chime set. Included are the chime tubes, hanging cords, and electric action assemblies mounted on an oak rail, wired out with 50 feet of chime cable. A universal 120 VAC transformer with bridge rectifier is wired 6 feet to the volume control switch. Complete installation instructions are included with each package.

These packages may be further enhanced with essential keying systems including underkey contacts for mechanical action or pneumatic instruments, a standard keyboard for a stand-alone installation, or an electro-mechanical or solid state note relay for electric action or solid state controlled instruments. Additionally, both a solid state and electro-mechanical transformer relay are available where remote location and switching of the transformer output taps is desirable. Wall brackets simplify installation. The standard canopy adds the finishing touch to a visual installation.

Custom packages are designed for your particular requirements.

8321.01 21 note Deagan class "M" chime package
8421.01 21 note Mayland 1-1/4" chime package

8325.01 25 note Deagan class "M" chime package
8425.01 25 note Mayland 1-1/4" chime package

Unwired packages include chime tubes, hanging cords, electric action assembly, universal 120 VAC transformer, bridge rectifier and volume control.

8321.03 21 note Deagan class "M" chime package, unwired
8421.03 21 note Mayland 1-1/4" chime package, unwired

8325.03 25 note Deagan class "M" chime package, unwired
8425.03 25 note Mayland 1-1/4" chime package, unwired

Chime Tubes

21-note, 25-note, and custom chime tube sets are available, as are individual tubes. Deagan chime tubes are 1-1/4" diameter polished and lacquered brass. Hole for hanging cord is 1" from top of tube. Mayland chime tubes are 1-1/4" solid aluminum bar that are lacquered brilliant gold. Hole for hanging cord is 2-1/2" from top of tube. Chime cords are furnished with sets and with individual tubes.

Chime Tube Sets

8321.50 21 note Deagan class "M" chime set, A to F
8325.50 25 note Deagan class "M" chime set, G to G

8421.50 21 note Mayland 1-1/4" chime set, A to F
8425.50 25 note Mayland 1-1/4" chime set, G to G

Individual Chime Tubes

	Deagan Tube Pitch	Nominal O.A. Length
8325.20	low G	66-7/8"
8325.21	low G#	64-15/16"
8325.22	low A	63"
8325.23	low A#	61-1/8"
8325.24	low B	59-5/16"
8325.25	low C	57-1/2"
8325.26	low C#	55-7/8"
8325.27	low D	54-3/16"
8325.28	middle D#	52-1/2"
8325.29	middle E	51-1/16"
8325.30	middle F	49-1/2"
8325.31	middle F#	48-1/16"
8325.32	middle G	46-9/16"
8325.33	middle G#	45-1/4"
8325.34	middle A	43-15/16"
8325.35	middle A#	42-9/16"
8325.36	middle B	41-1/4"
8325.37	high C	40"
8325.38	high C#	38-7/8"
8325.39	high D	37-11/16"
8325.40	high D#	36-9/16"
8325.41	high E	35-3/8"
8325.42	high F	34-5/16"
8325.43	high F#	33-1/4"
8325.44	high G	32-1/4"

	Mayland Tube Pitch	Nominal O.A. Length
8425.20	low G	70-7/8"
8425.21	low G#	68-7/8"
8425.22	low A	67"
8425.23	low A#	65"
8425.24	low B	63-1/8"
8425.25	low C	61-3/8"
8425.26	low C#	59-1/2"
8425.27	low D	58"
8425.28	middle D#	56-1/4"
8425.29	middle E	54-1/2"
8425.30	middle F	53-1/2"
8425.31	middle F#	51-1/2"
8425.32	middle G	50"
8425.33	middle G#	48-9/16"
8425.34	middle A	47-3/16"
8425.35	middle A#	45-13/16"
8425.36	middle B	44-1/2"
8425.37	high C	43-1/4"
8425.38	high C#	42-1/16"
8425.39	high D	40-3/4"
8425.40	high D#	39-9/16"
8425.41	high E	38-7/16"
8425.42	high F	37-1/4"
8425.43	high F#	36-1/4"
8425.44	high G	35-3/16"

Chime Twine

8500.63 Chime twine is furnished with chime packages and with chime tube sets. It is made from nylon filament to prevent elongation and is pre-cut to overlength dimension. Cut ends can be stabilized with a heat gun or soldering iron.

1/8" Ø x 18" L

Spacer Block

8500.87 The spacer block is used to tie the chime cords prior to hanging chimes.

1-1/2" W x 1-1/2" L x 15/16" H

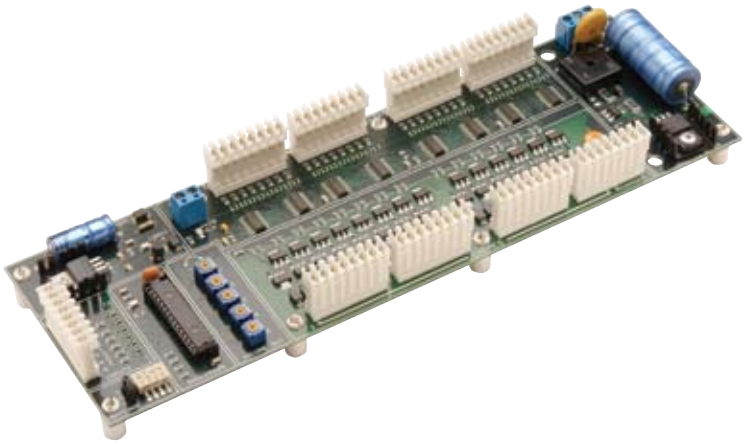
CHIME RELAYS

Solid State Chime Relay

The new concept 28 note chime relay design integrates previously separate chime system components with new capabilities providing unsurpassed installation flexibility. A 30 VAC transformer or the highest tap from an existing chime transformer provides power to the onboard rectifier. Key, volume, and stop inputs can be activated from organ contacts, multiplex systems, or from a chime keyboard powered by the onboard 12 VDC source. Chime board output can be switched on/off by a conventional volume control switch, an onboard stop setting, or by a stop control in the console. Input from the key commands the processor to deliver a constant voltage pulse to the chime coil. Pulse duration determines volume level. Up to five independent board adjustable volume levels can be selected through a traditional console mounted rotary switch. The processor controlled pulsed note output renders the system chord and held-note tolerant. Self-resetting circuit breakers eliminate fusing. Six mounting holes are provided for the No. 6 x 1" mounting screws.

3-1/2" W x 10-3/4" L x 1-3/8" H

8510.25 Solid State Chime Relay, 28 notes
0280.261 8 Position IDC Chime Relay Connector
0280.262 Connector Cap



Electro-Mechanical Chime Relay

Electro-mechanical, single pole, single throw relays are mounted on a PC board with input and output mains installed. The 25 note relays have a fused 12 VDC input and 5A 12-25 V output contacts. Six mounting holes are provided for No. 8 x 1" mounting screws.

4-1/4" W x 9-1/8" L x 1-1/8" H

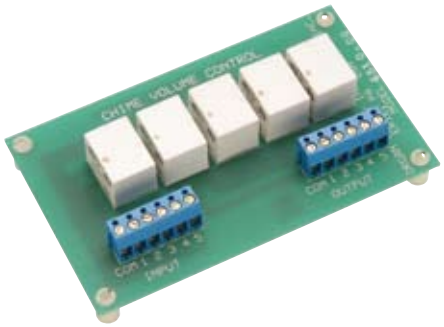
The five-note electro-mechanical volume control relay is used in installations where the organ is multiplexed and volume control must be mounted in the console. This allows the transformer to be installed and switched in the organ. Transformer is disconnected from the chimes when organ is "off." Four mounting holes are provided for No. 8 x 1" mounting screws.

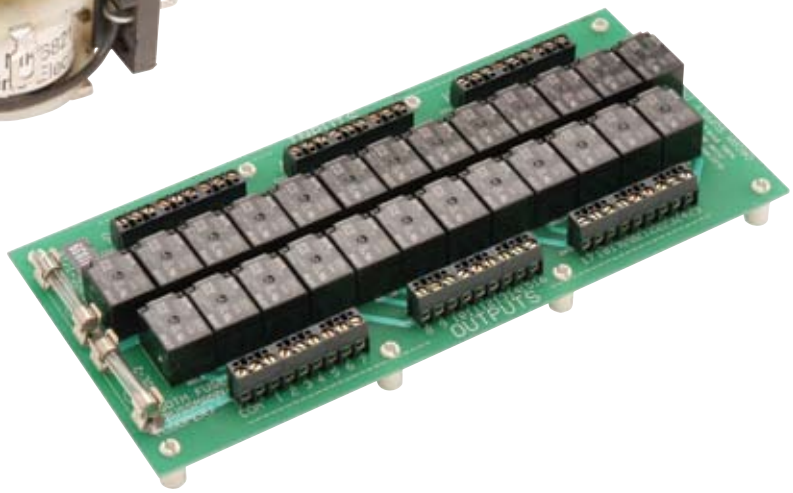
3" W x 5" L x 1-1/8" H

Individual electro-mechanical relays are available for replacement use.

1-11/16" L x 1" W x 1-5/16" H

8510.00 Individual mechanical relay
8510.06 Mechanical volume control relay, 5 note
8510.26 Mechanical relay assembly, 25 note
5051.01 AGC .1 Ampere Fuse





Electric Chime Actions

The Deagan and Mayland chime actions are of electric solenoid design. The spring-returned, chrome plated striking core is attached to an adjusting screw at the back of the assembly to facilitate smooth regulation. The retaining screw and striking assembly are easily removed by depressing the retaining clip. The passive, weighted felt damper matches the chime tube diameter for correct tonal decay. The 5/16" chime tip is constructed for optimum tonal production. Two mounting holes accept No. 8 x 3/4" screws. The 5 ohm DC coil has a 220 ohm resistor installed for arc suppression. Wiring is terminated on the brass nut terminals. Actions are mounted on a 1-1/4" x 3-1/2" finished oak beam. The Deagan and Mayland chime tube hanging holes are located in different positions. Therefore the hanging arrangement of the two units is different. The Mayland unit adds a hanging cord standoff on either side of the standard 1-1/4" tube.

Custom electric chime actions are available for existing chime sets having diameters other than 1-1/4". For larger tube diameters, the Deagan action is utilized with the addition of a hanging plate and a passive damper for the corresponding tube sizes. Diameters and pitches of the largest and smallest tubes are required when ordering custom actions.

Deagan individual chime action is **1-3/4" W x 4-3/4" L x 2-3/8"** above mounting rail with **1-1/4"** below front of mounting rail.

Mayland individual chime action is **1-3/4" W x 4-3/4" L x 2-3/8"** above mounting rail, with **1/4"** below front of mounting rail.

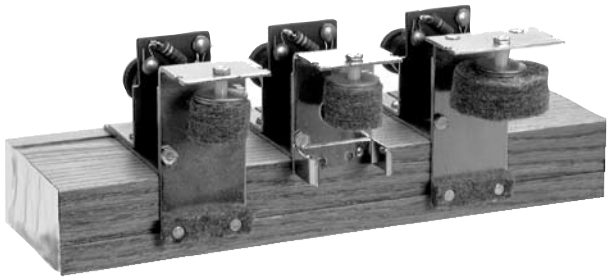
Custom individual Deagan chime actions range up to **2-1/2" W x 5-1/2" L x 2-3/8"** above mounting rail, with **1-1/4"** below mounting rail.

8500.83 Individual Deagan action w/passive damper

8500.84 Individual Mayland action w/passive damper

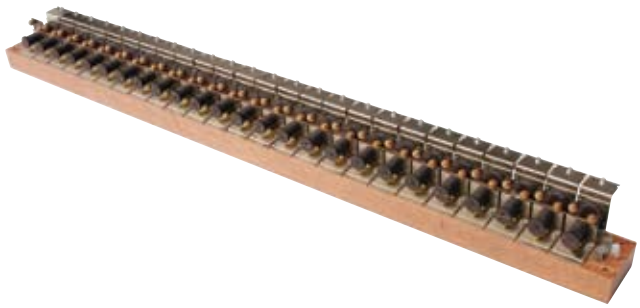
8500.85 Custom individual Deagan action w/ passive damper

8500.82 Individual striker tip. **.310" Ø x 1/4" T**



Deagan **Mayland** **Custom**

	Description	Total Length
8583.20	20 note Deagan	40-7/8"
8584.20	20 note Mayland	40-7/8"
8585.20	20 note Deagan Split Rail	22-1/8" x 2
8586.20	20 note Mayland Split Rail	22-1/8" x 2
8583.21	21 note Deagan	42-3/4"
8584.21	21 note Mayland	42-3/4"
8585.21	21 note Deagan Split Rail	24" x 2
8586.21	21 note Mayland Split Rail	24" x 2
8583.25	25 note Deagan	50-1/4"
8584.25	25 note Mayland	50-1/4"
8585.25	25 note Deagan Split Rail	27-3/4" x 2
8586.25	25 note Mayland Split Rail	27-3/4" x 2
8583.30	Custom Action	

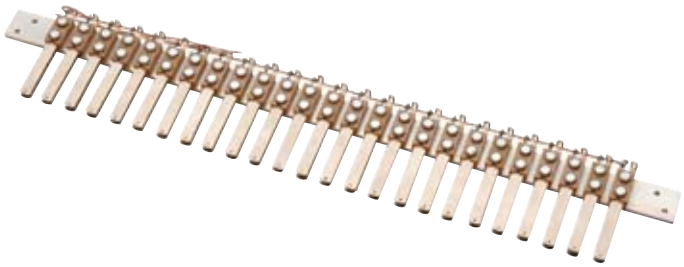


Underkey Contacts

Underkey contact assemblies are designed for use on mechanical or pneumatic action keyboards where external contacts must be added to play the chimes from the organ keyboard. The underkey contacts can also be mounted under electric or electronic action keyboards where extra contacts are required or when it is appropriate to isolate the chime circuits. The sturdy leaf switches are capable of handling a 5 ohm load. Installation usually requires an adjusting screw be installed on the underside of each key in the chime range. These felted screw heads depress the leaf spring contacts of the assembly.

15-3/16" L x 2-5/16" D x 3/8" T

8520.21 21 note key contact assembly
8520.25 25 note key contact assembly



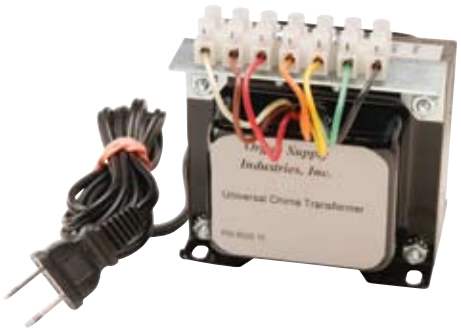
8520.00 Single note key contact unit

Multi-Tap Transformer

Power for organ chimes is provided by a universal multi-tap, multi-voltage 120 VAC transformer. This unit, much like a door bell transformer, is designed to be plugged in and left running at all times. The universal 10-28 VAC transformer is furnished with the chime packages. Each transformer has 6 selectable voltage taps. A 6' cord set is provided.

3-3/4" W x 4" D (including lugs)
x 3-1/8" H

8530.15 Universal 120 VAC transformer, 10-28 VAC output



Chime Transformer

8530.14 30 Volt, 5 AMP Transformer for use with Solid State Chime Relay

15-3/16" L x 2-5/16" D x 3/8" T

Bridge Rectifier

8530.20 A full-wave bridge rectifier is used on the secondary side of the transformer. DC current provides a more powerful stroke on the chime solenoid. The bridge rectifier is furnished as standard equipment with all chime packages and is recommended for use when new actions are installed on older chime tubes. Unit is provided with a center screw mounting hole and four spade terminals.

1-1/8" x 1-1/8" (including lugs) **x 11/16" H**

Volume Control Switch

8530.05 The attractive volume control switch with gold colored plate permits the organist to choose among one of 5 power levels and "off." This unit is used to switch the appropriate voltage taps of the chime transformer. It is furnished with a black knob and either a Deagan or Mayland switch plate. Unwired.

Chime Keyboards

Where it is not convenient to connect the chimes to the organ keyboard, a free-standing keyboard with built-in volume control is available. This unit can be furnished independently or wired to a chime package. It is mounted on an aluminum plate designed to be secured under an existing keyboard or attached to an external frame. The case is medium rubbed walnut. The 3-1/2" synthetic keys activate sturdy leaf switches capable of handling a 5 ohm load. 21 note unit is **15-1/2" L x 6-5/8" D** (includes 1-7/8" mounting plate) **x 2-3/8" T.** 25 note unit adds 1-3/4" to length, all other dimensions remain the same.

8540.21 21 note keyboard with volume control
8540.25 25 note keyboard with volume control

Chime Canopy

Made from select oak veneers, the chime canopy provides a handsome cap or finish to an exposed set of chimes. The standard canopy is finished in medium oak and is complete with either of the attractive Deagan or Mayland nameplates. The canopy is designed to be used in conjunction with the heavy duty wall brackets 8570.10. The canopy simply sits on and is supported by the brackets. Custom-built canopies are provided in your choice of wood and finish.

8560.21 Standard 21 note canopy

44-3/8" L x 9" H x 8-1/4" D

8560.25 Standard 25 note canopy

51-7/8" L x 9" H x 8-1/4" D

8560.10 Custom canopy finished to sample

Wall Brackets

Welded steel wall brackets are provided in two sizes, for use with and without canopy. All brackets are constructed from 1/8" x 1-1/4" painted steel and are configured so that chimes mount in correct relationship to the wall and to the chime canopy, if used. Four 1/4-20 x 2-1/4" mounting bolts and two No. 8 x 3/4" RHWS furnished.

8570.00 Standard wall brackets (w/o canopy use)

8-1/2" H x 6-1/8" D

8570.10 Heavy duty wall brackets (for canopy use)

8-1/2" H x 7-3/16" D

Chime Cable

Because of the greater current requirements of chime coils, all chime cables are specially constructed from 18 or 22 gauge wire. All wire is color coded for ease of installation.
It is recommended that this cable be used between chime actions and keyboard, underkey contacts or relay assemblies to avoid line voltage drop and soft chime notes.

	Description	No. Conductors	B & S Gauge
5160.08	Volume control/ transformer cable	8	18
5160.21	21 note cable	25	22
5160.25	25 note cable	30	22
5160.40	25 note cable	40	22

Floor Stand

8580.00 A floor stand is available for situations where permanent installation of chimes on existing walls or organ structure is not practical. The floor stand provides an alternative method of display. The attractive, massive oak stand is finished in medium oak and matches the standard canopy. The floor stand comes in one size and will accommodate 20, 21, or 25 note chime sets. It is shipped knocked down and is easily assembled. 8570.10 heavy duty wall brackets must be ordered separately when used for canopy support. Unit is 74-1/2" H to the top of the action rail and occupies a floor footprint of 17" D x 39-3/4" W.