

### REED PIPES

Reed Pipes are built from spotted metal (50% tin). Resonators longer than 2' C on Trumpets and Oboes are traditionally of two piece construction with spotted metal bells and zinc stems. Full length spotted metal resonators can be provided for 8' and ½L 16' Reeds. Full length 16' octaves are made from zinc with spotted metal bells. Common metal or antimonial lead can be used in place of spotted metal.

### RESONATOR LENGTH

Full length reed resonators in the 16' and 8' octaves are always preferable for complete development of sound, tonal weight and color. When a full length or mitered full length bass is not practical, ½L resonators are an option for brighter chorus reeds such as Trumpet, Trompette, Posaune, Fagotto and Oboe stops. ½L bases are not recommended for predominantly dark or full bodied reeds in the Trombone, Tromba or Tuba class. In most cases, a ½L bass will run from #1-12 with the break to full length at #13. Many times a break at #7, 18 or 20 can be more successful in disguising the tonal differences in the two constructions.

Harmonic length resonators (double length) are employed to strengthen the fundamental overtones of the treble range of chorus reeds. They are recommended on 4" and higher wind pressure. Normal break to harmonic resonators occurs at 1'F#, note #43 giving significant support to the higher notes of Trumpet solos. Special purpose reeds in the Tuba family will break at #19 or #31 or to your specifications.

### REED SHALLOTS

Reed shallots are made from brass tubing for French or parallel shallots, or formed brass sheet for other shallots. Shallot faces can be leathered where a smoother tone is required.

### BASS ASSEMBLY

- Blocks: All reed blocks are stepped style for added support of shallot.
- Wires: Made from spring temper phosphor bronze, tightly formed to provide maximum stability.
- Wedges: Made from rock maple and individually fitted to block and shallot. Brass Wedges available upon request.
- Tongues: Cut from reed brass, of appropriate thickness determined by wind pressure and type of sound.
- Ferrules (Sockets): Provided on all 16' and 8' octaves of full length and 16' ½L reeds for ease of service.
- Boots: Tapered zinc boots with lead toes provide maximum stability and support of reed block and resonator.

### TUNERS

Roll tuners are cut into the bells of Oboes and Trumpets. Slide tuners are provided for cylindrical reeds of the Clarinet, Krummhorn, and Rohr Shalmey family. Tuning caps are used for Vox Humana pipes. Adjustable length resonators with telescopic tubing at the bloc are provided for Posthorns.

### EN CHAMADE PIPES

Brushed, flamed, or polished copper or polished or aluminum lacquered zinc are visually effective for en Chamade reeds. Standard appointments for en Chamade reeds includes all zinc/copper construction with spotted metal tuning inserts.

### PIPE REPAIR

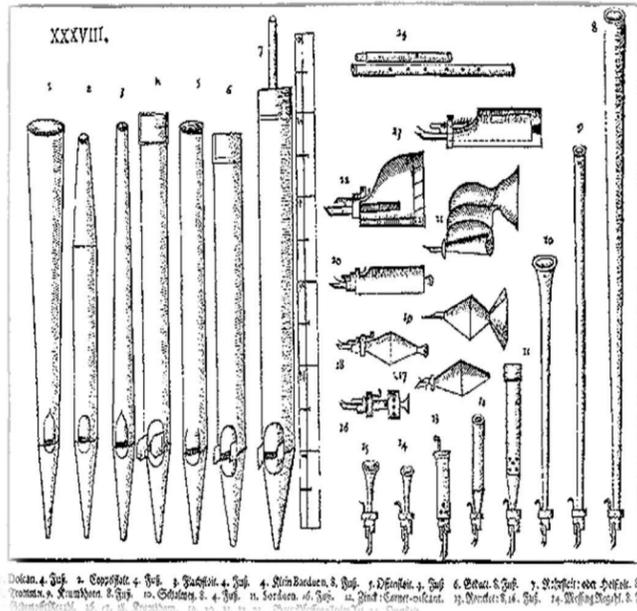
The OSI pipe shop is equipped to repair individual damaged metal flue, wood or reed pipes or to provide faithful replacement pipes for those missing from an incomplete set. When a pipe is to be repaired or replaced, the pipe on either side of the damaged or missing pipe is essential, along with operating wind pressure, so that a proper match for both scaling and voicing can be obtained.

### PIPE REVOICING

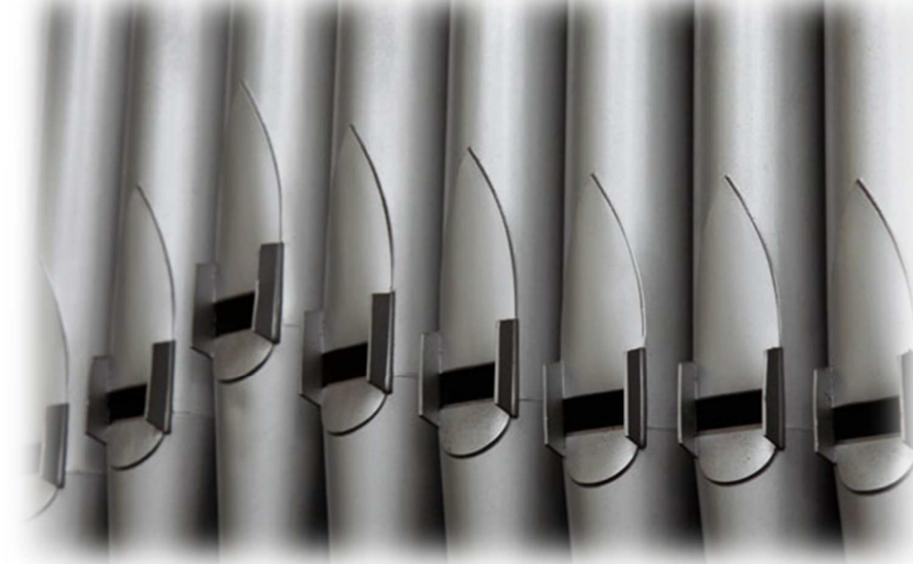
Older metal flue, wood or reed pipes in good physical condition can often be recycled and revoiced at a savings. Pipes will be accepted for revoicing provided pipes are of good manufacture, show no metal fatigue and are not badly torn or mishandled. Pipes are washed and minor repairs are made. New slide tuners are installed, reed tuning wires and tongues are replaced in keeping with the new tonal requirements, wind pressure, and customer instructions.

### CUSTOM PIPE CONSTRUCTION

All pipe work is handcrafted in our plant. Customization to provide special scaling and special constructions is easily accommodated to your specification for any pipework.



# ORGAN PIPES METAL FLUES, WOOD FLUES, AND REEDS



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**ORGAN PIPES**

Organ Supply Industries is justly proud of the high quality, American-made pipework we provide for our customers. Each pipe is carefully crafted to your specification by our experienced pipe makers in our Erie, PA workshop, then carefully voiced to your instructions. A Check Sheet is provided for Metal Flues, for Wood Pipes and for Reed Pipes to assist you in preparing your custom order. The following construction information outlines some of the many variations in details that can be provided for each kind of pipe.

**PIPE METAL ALLOYS**

Metal used for organ pipes consists of alloys of tin and lead in various percentages. The metal compositions used are selected for visual or tonal considerations.

The basic organ metal alloys are:

- A) 30% Tin, 70% Lead – Common Metal – Planed on top side.
- B) 50% Tin, 50% Lead – Spotted Metal – Planed on linen side.
- C) 75% Tin, 25% Lead – Plain Tin – Planed on both sides.
- D) Antimonial Lead – 94% Lead, 6% Antimony.

**ZINC**

Large bass pipes, customarily longer than 4' C, are generally made from organ quality zinc. Zinc can be finished in several ways depending on the visual result required. Zinc pipe standard finish is aluminum colored lacquer which approximated the color of natural zinc. When zinc pipes are exposed or to be used in a façade, they can be finished in various colored lacquers, including custom colors, or can be highly polished and lacquered to look comparable to polished tin pipes.

**COPPER**

Copper pipes can be used visually with great effect in the 16' and 8' range. Copper pipes can be finished in a number of ways; plain so that they develop their own patina, flamed and lacquered gives them a variegated and interesting pattern or they can be highly polished and lacquered.

**FEET**

Pipes are provided with standard feet. European style feet with a greater taper are available. Either of these styles can have open or closed toes. The 16' pipes are normally furnished with open toes and the 8' and 4' zinc or copper pipes with cast metal toes.

**MOUTH STYLE**

The upper and lower lips of organ metal pipes are pressed down (flattened). On zinc or copper pipes, the upper and lower lips are soldered in. The normal mouth form is Gothic. Other choices include: English Bay and Roman mouths. These styles can also be provided with the upper and/or lower lip slightly raised.

**EARS**

Ears are normally provided up to 1' F and come in several forms. On string pipes, beards or rollers are usually provided between the ears to stabilize pipe speech. For Quintadena pipes or small scale Flute basses, box beards are often provided. Rohrflutes and Gedeckts have large ears for stability of sound and/or tuning aids. For visual or aesthetic reasons, special shaped ears are also possible.

**LANGUIDS**

Normal languid bevel is 58 degrees. Other languid bevels from 45 degrees through 80 degrees are available. Languid thickness is substantial and in direct proportion to the mouth width of the pipe.

**17th Halving or Normalmensur, 1:√8**

	32'		16'		8'		4'		2'		1'		1/2'		1/4'		1/8'		1/16'	
	mm	scale	mm	scale	mm	scale	mm	scale	mm	scale	mm	scale	mm	scale	mm	scale	mm	scale	mm	scale
C 1	439.7	20	261.5	32	155.5	44	92.4	56	54.9	68	32.6	80	19.3	92	11.5	104	6.8	116	4.0	128
C# 2	421.2	21	250.4	33	148.9	45	88.5	57	52.6	69	31.3	81	18.6	93	11.0	105	6.5	117	3.9	129
D 3	403.2	22	239.8	34	142.6	46	84.7	58	50.4	70	29.9	82	17.8	94	10.5	106	6.3	118	3.7	130
D# 4	386.2	23	229.6	35	136.5	47	81.1	59	48.2	71	28.7	83	16.9	95	10.1	107	6.0	119	3.6	131
E 5	369.9	24	219.9	36	130.7	48	77.7	60	46.2	72	27.4	84	16.3	96	9.7	108	5.7	120	3.4	132
F 6	354.1	25	210.6	37	125.2	49	74.4	61	44.2	73	26.3	85	15.6	97	9.3	109	5.5	121	3.3	133
F# 7	339.1	26	201.6	38	119.9	50	71.3	62	42.3	74	25.2	86	14.9	98	8.8	110	5.2	122	3.1	134
G 8	324.7	27	193.1	39	114.8	51	68.2	63	40.5	75	24.1	87	14.3	99	8.5	111	5.0	123	3.0	135
G# 9	311.0	28	184.9	40	109.9	52	65.3	64	38.8	76	23.1	88	13.7	100	8.1	112	4.8	124	2.8	136
A 10	297.8	29	177.1	41	105.3	53	62.6	65	37.2	77	22.1	89	13.1	101	7.8	113	4.6	125	2.7	137
A# 11	285.2	30	169.5	42	100.8	54	59.9	66	35.6	78	21.1	90	12.6	102	7.4	114	4.4	126	2.6	138
B 12	273.1	31	162.3	43	96.5	55	57.4	67	34.1	79	20.2	91	12.0	103	7.1	115	4.2	127	2.5	139

**HASKELL PIPES**

Where height and depth is a problem, Haskell pipes can be provided. These pipes are essentially fractional length with an internal tube which allows the pipe to speak the pitch of a full length pipe. The tone is slightly altered by the internal tube, having a trace more string quality.

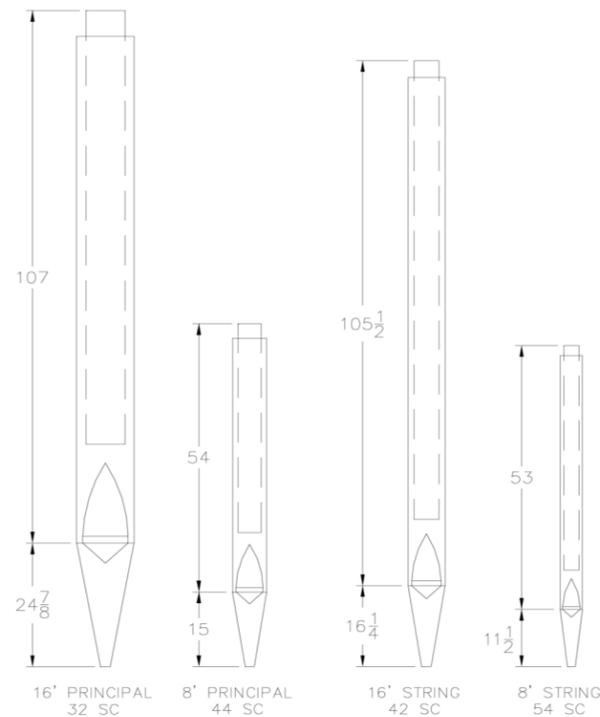
**VOICING**

Pipes are provided voiced, pre-voiced (cut up only), or unvoiced. Fill in all information requested on the Metal Pipe Check Sheet. This includes starting scale, material of the pipes, wind pressure, pitch (A=440 Hz), open or closed toes, chest type and voicing instructions including placement, room size and any other information that would be helpful to the voicer.

**STANDARD PIPE CONSTRUCTION**

Standard pipe construction includes zinc pipes with Gothic mouths, slide tuners or caps, finished in standard aluminum lacquer. Spotted metal pipes have pressed down (flattened) mouths and slide tuners or caps. All standard pipework employs an appropriate halving ratio, 58 degree languid bevel, and standard feet.

**Shortest Lengths for Haskell Pipes**



**WOOD PIPES**

Wood pipes are constructed from top quality, clear poplar with hardwood windways and caps. They are provided unfinished or finished clear lacquer, shellac, brown stain or to a color sample. Wood pipes are available in most wood species and to custom scales.

**MOUTH STYLE**

Standard or English mouths are customarily used on stopped wood pipes in conjunction with a flat or level block. The windway is normally cut in the cap. Inverted mouths are generally used on open wood pipes in conjunction with sunken block. The windway is cut in the cap.

**TUNING METHOD**

Stopped wood pipes have a turned handle attached to an end grain stopper in 4' pitch and smaller pipes. For larger pipes, plywood is employed for the stopper. Stoppers from 4' and smaller are leathered. For pipes longer than 4' pitch, the leather has a felt backing to assist fitting of the stopper. Wood Rohrflote pipes have pierced (drilled) stopper handles. Tuning open wood flutes is by a piece of common metal attached across the top of the pipe and rolled for pitch. Overlength open wood pipes may be slotted and fitted with a wood slide for tuning.

**FEET**

Wood pipes of 32' and 16' pitch have wood toe pipe feet with a butterfly valve for wind regulation. Metal toe pipe feet, regulated by the size of the hole in the lead toe, are normally furnished on pipes of 8' pitch and smaller.

Placement of feet in wood pipes, when not specified, on 8' and 4' sets, is in the center of the pipe measured without the cap. Standard foot locations for 16' stopped wood pipes can be located in the Organ Supply Industries Catalog, page 9-12.

