

PIPES & SUPPLIES

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 specifications 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.



METAL FLUE PIPES



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 reasons.

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 approximates the color of natural zinc. When zinc pipes are exposed or to be used in a facade, they can be finished in gold or aluminum colored lacquer or 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.

Mouth Inserts

The soldered-in mouth inserts for zinc or copper pipes are antimonial lead. Common metal, spotted metal, or 75% tin lips are options for visual reasons. Polished copper and polished zinc pipes are furnished with 75% tin upper and lower lips.

CONSTRUCTION DETAILS

Scaling

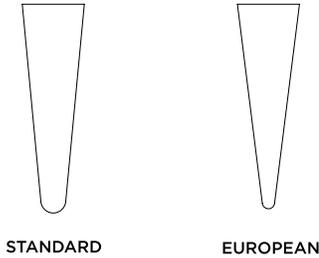
Scaling of organ pipes or the determination of pipe diameter is based on the 17th pipe being 1/2 the diameter of pipe #1 and is called normal 17th halving or Normalmensur, $1:\sqrt[17]{8}$. The 17th halving or Normalmensur chart shows the relationship between millimeters and corresponding scale numbers. All starting scales are based on this chart. 17th halving ratios are normal for Principals. Flutes and strings may use other ratios. When halving ratios other than 17th are requested, the halving begins with the dimension of C-1. Variable halving ratios are a viable alternative.

17th Halving or Normalmensur, $1:\sqrt[17]{8}$

	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

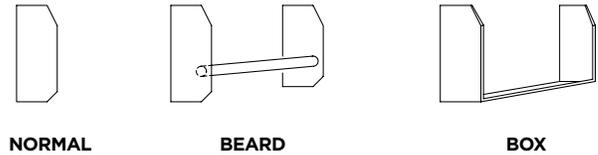
Feet

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.



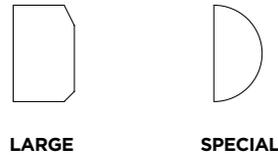
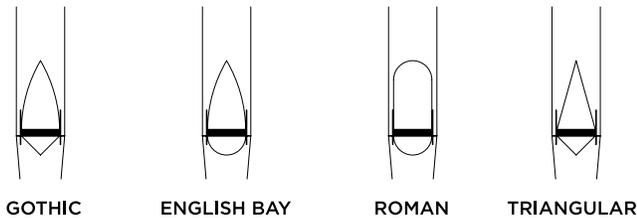
Ears

Ears are normally provided up to 1' E and come in several forms. The normal ear is illustrated first. 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.



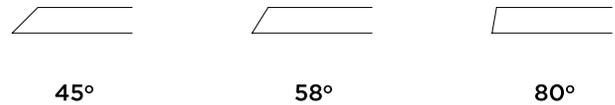
Mouth Style

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, Roman, and Triangular styles of mouth. These styles can also be provided with the upper and/or lower lip slightly raised.



Languids

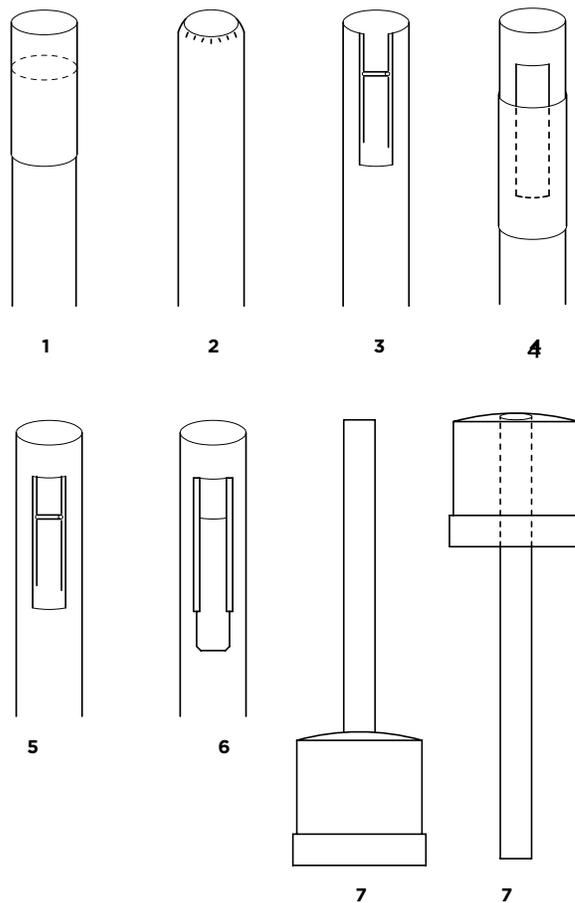
Normal languid bevel is 58°. Other languid bevels from 45° through 80° are available. Languid thickness is substantial and in direct proportion to the mouth width of the pipe.



Tuning Methods

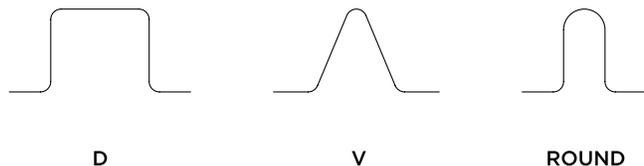
There are six basic styles of tuning devices for open flue pipes. They are:

1. Dead length with cylindrical tuner. On larger scaled pipes, springs are installed to add tension to tuner. Used on zinc, copper, and organ metal pipes.
2. Cone tuning for organ metal pipes. Normally from 2/3' G up.
3. Scroll tuner rolled from top of pipe. On zinc and copper pipes, an organ metal insert is provided in which slot is cut and rolled. On organ metal pipes, slot is cut and rolled in body up to 2/3' F#.
4. Slotted length with cylindrical tuner. Used on zinc and organ metal pipes.
5. Slotted length for roll tuning. An organ metal insert is provided in zinc and copper pipes in which a slot is cut and rolled. On organ metal pipes, slot is cut and rolled directly in body of the pipe.
6. Slotted length with track tuner. For zinc and copper pipes only, suggested for facade pipes that may be just out of reach.
7. Capped metal pipes have larger caps packed with felt. The smallest capped pipes are packed with paper. The tops of all capped flue pipes are slightly domed to provide rigidity and tuning stability.



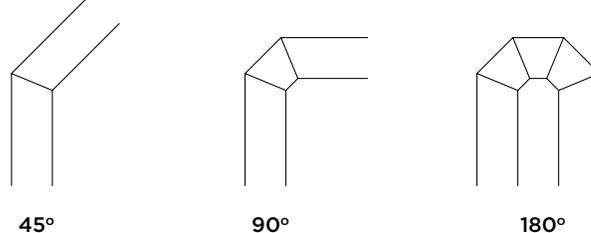
Pipe Hooks

Pipe hooks on larger pipes made of copper or zinc can be provided in three shapes: the D hook, the V hook (standard), and the round hook. Hooks are secured to zinc and copper pipes with pop rivets and soldered. On organ metal pipes, pipe hooks of the same metal are soldered on.



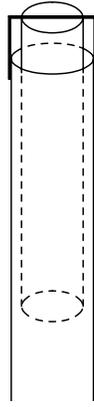
Mitering

Where sufficient height is not available, pipes can be mitered up to 180°. 90° miters are made with two cuts and 180° miters have four cuts and are securely braced. Good organ building practice suggests that the miter start no lower than 2/3 of body length. If a shorter pipe is required, a Haskell or stopped bass is an alternative.



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.



9075.02

Treble Pipes

When an existing stop is to be extended by several notes or several octaves, where possible, stock treble spotted metal pipes, complete with slide tuners, are used. Matching pipes of spotted metal, common metal, or 75% tin can be provided. For best tonal and scaling match, the last existing pipe and wind pressure on which it is voiced should be furnished.

Voicing

Pipes are provided voiced, pre-voiced (cutup 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.

9035.00

Pipe Repair

Our pipe shop is equipped to repair individual damaged metal flue 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. Pricing can be furnished after inspection of pipes to be repaired or replaced.

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° languid bevel, and standard feet.

Custom Pipe Construction

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

Flue Revoicing

9030.00 Older flue pipes in good physical condition can often be recycled and revoiced at a savings. Pipes will be accepted for revoicing provided they are of good manufacture, show no metal fatigue, and are not badly torn or mishandled. Pipes are washed and minor repairs are made. New tuning slides are installed as required and pipes are revoiced consistent with new tonal requirements, wind pressure, and customer instructions.

Mixture Compositions

The basic mixture formulas listed follow generally accepted norms and are based on 48 scale, 130.7 mm at 8' C. Mixtures with other formulas and scaling are easily provided.

II Mixture (12-15) No breaks

III Mixture (15-19-22)

#1-24	#25-48	#49-61
15	12	8
19	15	12
22	19	15

III Mixture (19-22-26)

#1-24	#25-36	#37-48	#49-61
19	15	12	8
22	19	15	12
26	22	19	15

III Mixture (22-26-29)

#1-12	#13-24	#25-36	#37-48	#49-61
22	19	15	12	8
26	22	19	15	12
29	26	22	19	15

IV Mixture (12-15-19-22)

#1-24	#25-48	#49-61
12	8	5
15	12	8
19	15	12
22	19	15

IV Mixture (15-19-22-26)

#1-24	#25-36	#37-48	#49-61
15	12	8	5
19	15	12	8
22	19	15	12
26	22	19	15

IV Mixture (19-22-26-29)

#1-12	#13-24	#25-36	#37-48	#49-61
19	15	12	8	5
22	19	15	12	8
26	22	19	15	12
29	26	22	19	15

V Mixture (15-19-22-26-29)

#1-12	#13-24	#25-36	#37-48	#49-61
15	12	8	5	1
19	15	12	8	5
22	19	15	12	8
26	22	19	15	12
29	26	22	19	15

Metal Flue Pipes

	Pitch/Stop	Normal Scale	Scale Range mm	Mouth Width	Halving	Number of Pipes Zinc	S.M.
Principals							
11600.00	16' Principal	30 - 38	286 - 202	1/4	17	12	
10800.00	8' Principal	42 - 50	170 - 120	1/4	17	12	49
10400.00	4' Octave	56 - 62	92 - 71	1/4	17		61
10220.00	2-2/3' Twelfth	64 - 70	65 - 50	1/4	17		61
10200.00	2' Fifteenth	70 - 76	50 - 39	1/4	17		61
10110.00	1-1/3' Quint	77	37	1/4	17		61
10100.00	1' Principal	84	27	1/4	17		61
Mixtures							
20020.00	II (12-15)	48 @ 8'	48-52 @ 8'	1/4	17		122
20030.00	III (15-19-22)	48 @ 8'		1/4	17		183
20030.00	III (19-22-26)	48 @ 8'		1/4	17		183
20030.00	III (22-26-29)	48 @ 8'		1/4	17		183
20040.00	IV (12-15-19-22)	48 @ 8'		1/4	17		244
20040.00	IV (15-19-22-26)	48 @ 8'		1/4	17		244
20040.00	IV (19-22-26-29)	48 @ 8'		1/4	17		244
20050.00	V (15-19-22-26-29)	48 @ 8'		1/4	17		305
Capped Flutes							
31600.00	16' Gedeckt	38 - 40	202 - 185	1/4	17	12	
31601.00	16' Quintadena	42 - 44	170 - 156	1/4	17	12	
30800.00	8' Gedeckt/Bourdon	48 - 52	131 - 110	1/4	20	12	49
30803.00	8' Rohrflöte	48 - 50	131 - 120	1/4	19	12	49
30801.00	8' Quintadena	54 - 56	101 - 92	1/4	18	12	49
30402.00	4' Koppelflöte	56 - 58	92 - 85	1/4	20	(5 Koppel Ged.)	61
30404.00	4' Spillflöte	61	75	1/5	20		61
30400.00	4' Gedeckt/Bourdon	56 - 64	92 - 65	1/4	20		61
30403.00	4' Rohrflöte	60 - 62	78 - 71	1/4	19		61
30401.00	4' Quintadena	66 - 68	60 - 55	1/4	18		61

	Pitch/Stop	Normal Scale	Range mm	Mouth Width	Halving	Taper	No. of Pipes Zinc	S.M.
Open Flutes								
40800.00	8' Harmonic Flute	46 - 48	143 - 131	1/5 - 2/9	18		12	49
10400.00	4' Nachthorn	56 - 58	92 - 85	1/5	19			61
40400.00	4' Harmonic Flute	58 - 60	85 - 78	1/5 - 2/9	18			61
10200.00	2' Piccolo	70	50	2/9	18			61
40200.00	2' Harmonic Piccolo	70 - 72	50 - 46	1/5 - 2/9	18			61
10130.00	1-3/5' Tierce	72 - 74	46 - 39	1/5	18			61
10110.00	1-1/3' Larigot	72 - 74	46 - 42	2/9	19			61
10100.00	1' Siffflöte	78	36	1/4	18			61
Strings								
51600.00	16' String	42 - 48	170 - 131	2/9 - 1/4	17		12	
50800.00	8' Viola	50 - 56	120 - 92	2/9 - 1/4	17		12	49
50800.00	8' Dulciana	54 - 58	101 - 85	2/9 - 1/4	17		12	49
50800.00	8' Gamba	56 - 58	92 - 85	2/9 - 1/4	18		12	49
50800.00	8' Salicional	58 - 60	85 - 78	2/9	18		12	49
50400.00	4' String	62 - 70	71 - 50	2/9 - 1/4	17 - 18			61
Tapered Stops								
61600.00	16' Gemshorn	38	202	2/9	17		12	
60800.00	8' Spitzprincipal/flöte	46	143	1/4	17	2/3 - 1/2	12	49
60800.00	8' Gemshorn	48 - 52	131 - 110	2/9	18	1/3 - 1/2	12	49
60800.00	8' Erzähler	50 - 52	120 - 110	1/5	18	1/3	12	49
60400.00	4' Blockflöte	54 - 56	101 - 92	1/5	19	1/2		61
60400.00	4' Spitzprincipal/flöte	58	85	1/4	17	2/3 - 1/2		61
60400.00	4' Gemshorn	60 - 64	78 - 65	2/9	18	1/3 - 1/2		61
60400.00	4' Erzähler	62 - 64	71 - 65	1/5	18	1/3		61
60220.00	2-2/3' Nazard	64 - 70	65 - 50	2/9	18	1/2		61
60200.00	2' Blockflöte	64 - 68	65 - 55	1/5	19	1/2		61
60200.00	2' Spitzprincipal/flöte	70	50	1/4	17	2/3 - 1/2		61

WOOD PIPES

Materials

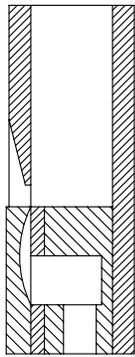
Wood pipes are constructed from top quality, clear poplar with hardwood windways and caps. They are provided unfinished, or finished clear lacquer, shellac, brown stain, or to a color sample. Wood pipes are available in most wood species and to custom scales.



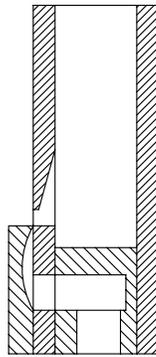
Mouth Style

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.



STANDARD

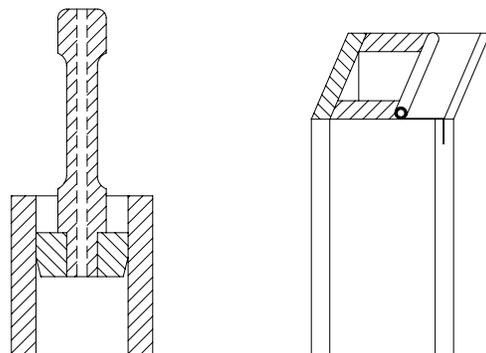


INVERTED

Tuning Methods

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 sealing of the stopper. Wood Rohrflöte 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 tuning. Overlength open wood pipes may be slotted and fitted with a wood slide for tuning.



Scaling

All standard scales are shown on the following chart. Dimensions are I.D. Special scales can be provided.

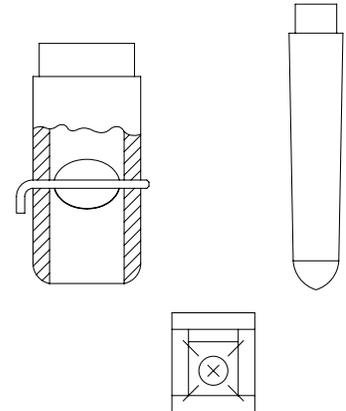
Scale	16' 1	8' 13 1	4' 25 13	2' 37 25	1' 49 37	1/2' 61 49	Comparable 8' Metal Scale
#1	8" x 9-1/2" 203.2 x 241.3	4-3/4" x 5-11/16" 120.7 x 144.5	2-13/16" x 3-7/16" 71.4 x 87.3	1-5/8" x 2" 41.3 x 50.8	1" x 1-1/4" 25.4 x 31.8	11/16" x 7/8" 17.5 x 22.2	44/45 149.7
#2	7" x 8-1/2" 177.8 x 215.9	4" x 5" 101.6 x 127	2-1/2" x 3-1/8" 63.5 x 79.4	1-3/4" x 1-15/16" 37.5 x 48.5	1" x 1-1/4" 25.4 x 31.8	11/16" x 7/8" 17.5 x 22.2	48/49 128.2
#3	6" x 7-1/2" 152.4 x 190.5	3-5/8" x 4-5/8" 92.1 x 117.5	2-1/4" x 3" 57 x 74	1-3/8" x 1-13/16" 35 x 46	15/16" x 1-3/16" 23 x 30	5/8" x 13/16" 15 x 20	50/51 117.4
#4	5-1/2" x 7" 139.7 x 177.8	3-3/8" x 4-1/2" 85.7 x 114.3	2" x 2-11/16" 50.8 x 68.3	1-13/16" x 1-9/16" 30.2 x 39.7	3/4" x 1" 19 x 25.4	9/16" x 11/16" 14.3 x 17.5	51/52 111.7
#5	5" x 6-1/2" 127 x 165.1	3" x 4" 76.2 x 101.6	1-13/16" x 2-3/8" 46 x 60.3	1-1/8" x 1-1/2" 28.6 x 38.1	3/4" x 15/16" 18 x 23.5	9/16" x 11/16" 13 x 17	54/55 99.3
#6	4-3/4" x 6" 120.7 x 152.4	2-3/4" x 3-3/4" 69.8 x 95.3	1-5/8" x 2-1/4" 43 x 57.2	1" x 1-3/8" 26 x 35	5/8" x 7/8" 16 x 21.5	3/8" x 11/16" 10.5 x 13.7	56 92.0
8' Melodia Hohlföte		3-3/8" x 4-1/2" 85.7 x 114.3	2-3/16" x 3" 55.6 x 76.2	1-5/16" x 1-13/16" 33 x 46	27/32" x 1-3/32" 21 x 28	9/16" x 3/4" 14.6 x 18.7	3/8" x 15/32" 10 x 11.7

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 are shown. Dimensions given are from the back of the pipe. Foot is centered side to side. Pipe feet locations can be provided per instructions.

Note	Foot Location From Back			Toe I.D.		
	#1 & 2	#3 & 4	#5	#1 & 2	#3 & 4	#5
#1 - 4	4-1/2"	4"	3-1/2"	2"	1-3/4"	1-1/2"
#5 - 6	4"	3-1/2"	3-1/2"	1-3/4"	1-1/2"	1-1/2"
#7 - 8	4"	3-1/2"	3"	1-3/4"	1-1/2"	1-1/4"
#9 - 12	3-1/2"	3"	3"	1-1/2"	1-1/4"	1-1/4"



Treble Pipes

9075.02 When an existing stop is to be extended by several notes or several octaves, where possible, stock treble spotted metal pipes, complete with slide tuners, are used. Special pipes of spotted metal, common metal, or 75% tin can be provided. For best tonal and scaling match, the last existing pipe and wind pressure on which it is voiced should be furnished.

Flue Revoicing

9230.00 Older wood 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, and are not badly mutilated or mishandled. Pipes are washed and minor repairs are made. The stoppers are repacked as required and pipes are revoiced consistent with new tonal requirements, wind pressure, and customer instructions.

Pipe Repair

9235.00 Our pipe shop is equipped to repair individual damaged wood flue 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. Prices can be furnished after inspection of pipes to be repaired or replaced.

Wood Pipes

	Pipes Pitch/Stop	Scale	I.D. Inches	I.D. mm	Metal Ø		Number of	
					mm	Metal Sc	Wood	S.M.
73200.00	32' Bourdon	#1	13" x 17"	330 x 432	426	21	12	
71604.00	16' Wood Open	#1	10" x 13"	254 x 330	327	27	12	
71600.00	16' Bourdon	#1	8" x 9-1/2"	203 x 241	250	33	12	
		#2	7" x 8-1/2"	178 x 216	221	36	12	
		#3	6" x 7-1/2"	152 x 191	192	39	12	
		#4	5-1/2" x 7"	140 x 178	178	41	12	
		#5	5" x 6-1/2"	127 x 165	163	43	12	
70800.00	8' Gedeckt	#1	4-3/4" x 5-11/16"	121 x 145	150	45	49	12
		#2	4" x 5"	102 x 127	128	48	49	12
		#3	3-5/8" x 4-5/8"	92 x 118	117	50	49	12
		#4	3-3/8" x 4-1/2"	86 x 114	118	52	49	12
		#5	3" x 4"	76 x 102	99	54	49	12
		#6	2-3/4" x 3-3/4"	70 x 95	92	56	49	12
70805.00	8' Ludwigtone	#4	1-3/4" x 4-1/4"	45x108	79	60	42	38
70403.00	4' Flute d'Amour	#3	2-3/16" x 3"	56 x 73	73	61	37	24
70403.00	4' Rohrflöte	#3	2-3/16" x 3"	56 x 73	73	61	37	24
70801.00	8' Melodia	#4	3-3/8" x 4-1/2"	86 x 114	118	52	61	
70801.00	8' Hohlflöte	#4	3-3/8" x 4-1/2"	86 x 114	118	52	61	
70802.00	8' Harmonic Flute	#4	3-3/8" x 4-1/2"	86 x 114	118	52	61	
70401.00	4' Melodia	#3	2-3/16" x 3"	56 x 76	73	61	49	12
70402.00	4' Harmonic Flute	#3	2-3/16" x 3"	56 x 76	73	61	49	12

8' Gedeckt #1-49 Stopped Wood, #50-61 Open Metal
 4' Gedeckt #1-37 Stopped Wood, #38-61 Open Metal
 8' Ludwigtone #1-12 Stopped Wood, #13-42 Open Wood, #43-61 S.M. (Double Pipes)

4' Rohrflöte #1-37 Stopped Wood with Pierced Stoppers, #38-61 Open Metal

8' Melodia/Hohlflöte #1-12 Stopped Wood, #13-61 Open Wood

4' Melodia/Hohlflöte #1-49 Open Wood, #50-61 Open Metal

8' Harmonic Flute #1-12 Stopped Wood, #13-36 Open Wood, #37-61 Harmonic Wood

4' Harmonic Flute #1-24 Open Wood, #25-49 Harmonic Wood, #50-61 Harmonic Metal

For 8' or 4' ranks an additional octave of wood treble pipes can be supplied.

REED PIPES

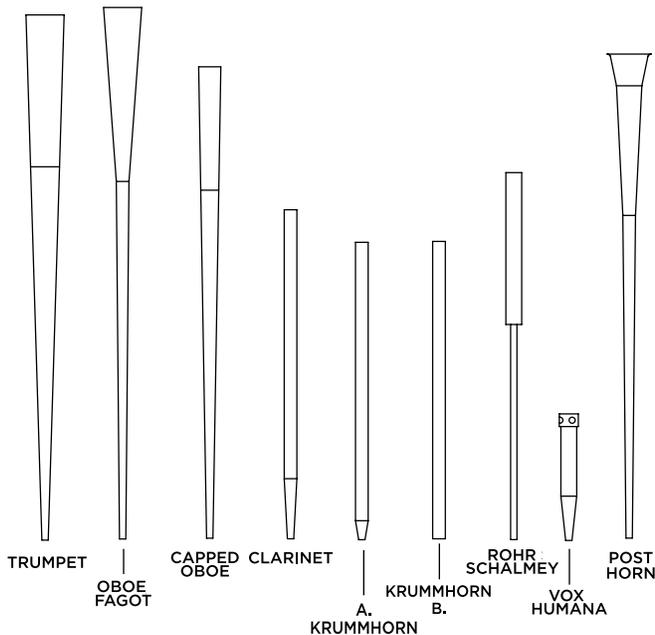
Materials

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 1/2L 16' reeds. Full length 16' octaves are made from zinc with spotted metal tuner inserts. Spotted metal bells can be provided. Common metal or antimonial lead can be used in place of spotted metal.



Resonator Shapes

The shape of the reed resonator has a great effect on the development of harmonics and the type of tone color. The following proportioned drawings illustrate the shapes of standard reeds.



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, 1/2L resonators are an option for brighter chorus reeds such as Trumpet, Trompette, Posaune, Fagotto and Oboe stops. 1/2L basses are not recommended for predominantly dark or full bodied reeds in the Trombone, Tromba, or Tuba class. In most cases, a 1/2L 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 3" 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. Seven (7) different types are illustrated.



Base 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.

Tongues: Cut from reed brass, of appropriate thickness determined by wind pressure and type of sound.

Ferrules: Provided on all 16' and 8' octaves of (Sockets) full length and 16' 1/2 L 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 Schalmey family. Tuning caps are used for Vox Humana pipes. Adjustable length resonators with telescopic tubing at the block 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.

Voicing

OSI is acutely aware that the organ is ultimately judged by the color and quality of the reed stops. All reed pipes are provided voiced to your particular requirements. Fill in all information on the Reed Pipe Check Sheet. This includes starting scale, material of the pipes, wind pressure, pitch, shallot style, chest type and voicing instructions, including placement, room size, and any other information about the instrument that would be helpful to the voicer. We work together with you to create a finished reed product worthy of your trust.

Treble Pipes

9075.02

When an existing stop is to be extended by several notes or several octaves, where possible, stock treble spotted metal pipes, complete with slide tuners, are used. Special pipes of spotted metal, common metal, or 75% tin can be provided. For best tonal and scaling match, the last existing pipe and wind pressure on which it is voiced should be furnished.

Reed Revoicing

9130.00

Older reeds in good physical condition can often be recycled and revoiced at a savings. Reed 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. The tuning wires are replaced as required and new tongues provided consistent with new tonal requirements, wind pressure, and customer instructions. Changing shallot styles (taper to parallel) is not recommended.

9135.00

Pipe Repair

Our pipe shop is equipped to repair individual damaged 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. Prices can be furnished after inspection of pipes to be repaired or replaced.

Reed Pipes

	Pitch/Stop	Normal Scale Range		Zinc	Number of Pipes	
		Scale	mm		Reeds	Flues
81600.00	16' Trumpet	4-1/2" - 8"	114 - 203	12		
81600.00	16' Trumpet 1/2L	4" - 6"	102 - 152	12		
80800.00	8' Trumpet	3" - 5"	76 - 127		49 - 54	12 - 7
80400.00	4' Clarion	2-3/16" - 3-7/8"	56 - 98		37 - 42	24 - 19
81601.00	16' Fagotto/Oboe	5"	127	12		
81601.00	16' Fagotto/Oboe 1/2L	4-1/2"	114	12		
80801.00	8' Oboe/Hautbois	3-1/2"	89		49	12
80401.00	4' Oboe/Hautbois	2-3/4"	70		37	24
80802.00	8' Capped Oboe	2-1/4"	57		49	12
80402.00	4' Capped Oboe	1-3/4"	45		37	24
80806.00	8' French Horn	5"	127		49	12
80807.00	8' Cor Anglais	4-3/4"	121		49	12
80807.00	8' English Horn	3-5/8"	92		49	12
80809.00	8' Post Horn (Gottfried)	SPEC			49 - 54	12 - 7
81603.00	16' Clarinet	2-1/2"	64	12		
80803.00	8' Clarinet	1-1/2" - 2"	38 - 51		49	12
80403.00	4' Clarinet	1-5/16" - 1-1/2"	33 - 38		37	24
80804.00	8' Krummhorn	1" - 1-1/4"	25 - 32		49	12
80805.00	8' Rohr Schalmey	1-1/2"	38		49	12
80405.00	4' Rohr Schalmey	1-1/4"	32		37	24
80808.00	8' Vox Humana	1-1/2"	38		49	12

Stock Treble Pipes

Stock treble pipes are used for replacement of missing or damaged pipes and as treble extensions for existing stops. They are spotted metal with a 1/4 mouth and furnished with slide tuners, unvoiced. 180 mm foot length.

I.D.	Body Length	Max. Pitch
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9075.92	19.3 mm	150 mm	1/2' - C
9075.93	18.6 mm	150 mm	
9075.94	17.8 mm	150 mm	
9075.95	16.9 mm	150 mm	
9075.96	16.3 mm	150 mm	
9075.97	15.6 mm	150 mm	
9075.98	14.9 mm	150 mm	
9075.99	14.3 mm	150 mm	

9076.00	13.7 mm	150 mm	1/2' - D
9076.01	13.1 mm	150 mm	
9076.02	12.6 mm	150 mm	
9076.03	12.0 mm	150 mm	
9076.04	11.5 mm	125 mm	
9076.05	11.0 mm	125 mm	
9076.06	10.5 mm	125 mm	
9076.07	10.1 mm	125 mm	

9076.08	9.7 mm	125 mm	1/2' - F#
9076.09	9.3 mm	125 mm	
9076.10	8.8 mm	100 mm	
9076.11	8.5 mm	100 mm	
9076.12	8.1 mm	100 mm	
9076.13	7.8 mm	100 mm	
9076.14	7.4 mm	100 mm	
9076.15	7.1 mm	100 mm	

9076.16	6.8 mm	85 mm	1/2' - A
9076.17	6.5 mm	85 mm	
9076.18	6.3 mm	85 mm	
9076.19	6.0 mm	85 mm	
9076.20	5.7 mm	85 mm	
9076.21	5.5 mm	85 mm	
9076.22	5.2 mm	75 mm	
9076.23	5.0 mm	75 mm	

9076.24	4.8 mm	75 mm	1/4' - C
9076.25	4.6 mm	75 mm	
9076.26	4.4 mm	75 mm	
9076.27	4.2 mm	75 mm	
9076.28	4.0 mm	75 mm	
9076.29	3.9 mm	65 mm	
9076.30	3.7 mm	65 mm	
9076.31	3.6 mm	65 mm	

9076.32	3.4 mm	65 mm	1/4' - D#
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WurliTzer™ Tibia Treble Pipes

WurliTzer™ replacement treble pipes for 10" and 15" scale 8' Tibia available in Antimonial lead. These pipes are capped metal #50-55 and open from #56-85. Pipes provided voiced to your samples.

9080.50	#50-61
9080.62	#62-73
9080.74	#74-85

Pipe Making Supplies

Material	Form
9001.00	Gum Arabic Powder
9002.00	Whiting Powder
9003.00	Pipe Sizing Recipe
9004.00	Stearine Candles Candle

Solder

Pure tin and lead are alloyed to provide flux free solder. Use Stearine Candle 9004.00 for flux. Sold by the pound.

Composition Ø

9010.01	63/37	1/8"
9010.02	63/37	3/16"
9010.03	75/25	1/8"

Cast Toe Points

O.D. Wall

9050.01	2-1/4"	Heavy
9050.02	2-1/16"	Heavy
9050.03	1-7/8"	Heavy
9050.04	1-13/16"	Heavy
9050.05	1-3/4"	Heavy
9050.06	1-11/16"	Heavy
9050.07	1-5/8"	Heavy
9050.08	1-3/8"	Heavy

9055.11	1-9/16"	Light
9055.12	1-3/8"	Light
9055.13	1-3/16"	Light
9055.14	1-1/16"	Light
9055.15	15/16"	Light
9055.16	7/8"	Light
9055.17	13/16"	Light
9055.18	3/4"	Light

Reed Pipe Parts

Block	Wedge	Boot	Size	Pitch/ Amount
9100.02	9101.02	9103.02	2	16'-6
9100.03	9101.03	9103.03	3	6
9100.04	9101.04	9103.04	4	8'-8
9100.05	9101.05	9103.05	5	8
9100.06	9101.06	9103.06	6	8
9100.07	9101.07	9103.07	7	8
9100.08	9101.08	9103.08	8	8
9100.09	9101.09	9103.09	9	9

Reed Tuning Wire

Phosphor bronze wire.

Size	Wire Size	Wire Ga.	O.A. Length	Pitch/ Amount	
9102.02	2	.129	8	10-3/4"	16'-6
9102.03	3	.114	9	9"	6
9102.04	4	.102	10	7-1/4"	8'-8
9102.05	5	.091	11	6-1/2"	8
9102.06	6	.091	11	6-1/4"	8
9102.07	7	.080	12	5-3/4"	8
9102.08	8	.080	12	5-1/2"	8
9102.09	9	.071	13	4-1/4"	9
9102.10	10	.064	14	4"	
9102.11	11	.055	15	4"	
9102.20	Custom reed tuning wire				



Reed Shallots

Description

9150.00 16' Tapered - small scale

9151.00 8' Tapered - small scale



9155.00 16' Tapered - large scale

9156.00 8' Tapered - large scale



9160.00 16' French - small scale

9161.00 8' French - small scale



Reed Tongues

Reed tongues are furnished to your dimensions and thickness, unpolished.

9175.00 16' Reed tongues, unpolished

9176.00 8' Reed tongues, unpolished

Wood Toe Pipe Feet

6" or 18" long with butterfly valves. 1" Tenon. Finished yellow shellac. Special length pipe feet custom made.

I.D.	Tenon O.D.	Length	Scale #1-2	Used for 16'	
				Scale #3-4	Scale #5
9200.10	1"	1-3/8"	6"		
9200.11	1-1/4"	1-5/8"	6"	4	6
9200.12	1-1/2"	2"	6"	4	6
9200.13	1-3/4"	2-1/4"	6"	4	
9200.14	2"	2-1/2"	6"	4	
9200.15	2-1/4"	2-3/4"	6"		
9200.16	2-1/2"	3"	6"		
9200.17	2-3/4"	3-1/4"	6"		
9200.18	3"	3-1/2"	6"		
9200.99	Special Wood Toe Pipe Feet				



9202.10	1"	1-3/8"	18"
9202.11	1-1/4"	1-11/16"	18"
9202.12	1-1/2"	1-7/8"	18"
9202.13	1-3/4"	2-1/8"	18"
9202.14	2"	2-3/8"	18"

Metal Toe Pipe Feet

Metal toe pipe feet 6" or 18" long. 3/4" Tenon. Lead toes are cast on wood feet. Finished yellow shellac. Special length pipe feet custom made.

I.D.	Tenon O.D.	Length	Rackboard Ø	Used for 8'	
				Scale #1-4	Scale #5-6
9205.01	3/16"	3/8"	6"	9/16"	
9205.02	1/4"	7/16"	6"	5/8"	9
9205.03	5/16"	1/2"	6"	11/16"	4
9205.04	3/8"	9/16"	6"	3/4"	4
9205.05	7/16"	5/8"	6"	13/16"	6
9205.06	1/2"	11/16"	6"	7/8"	6
9205.07	5/8"	7/8"	6"	1-1/8"	6
9205.08	3/4"	1"	6"	1-1/4"	6
9205.09	7/8"	1-3/16"	6"	1-7/16"	6
9205.10	1"	1-3/8"	6"	1-5/8"	6
9205.11	1-1/4"	1-5/8"	6"	1-7/8"	
9205.99	Special Metal Toe Pipe Feet				

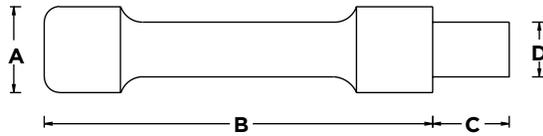
9210.06	1/2"	11/16"	18"	7/8"
9210.07	5/8"	7/8"	18"	1-1/8"
9210.08	3/4"	1"	18"	1-1/4"
9210.09	7/8"	1-3/16"	18"	1-7/16"
9210.10	1"	1-3/8"	18"	1-5/8"



Wood Stopper Handles

Unfinished hardwood, available in 12 sizes. For new or replacement work.

	A	B	C	D	Used For	
					#1 Sc	#2-5 Sc
9220.01	1-1/2"	7-3/8"	1-1/2"	1"	6	
9220.02	1-1/2"	6-7/8"	1-1/2"	1"	6	6
9220.03	1-5/16"	6-3/8"	1-1/4"	7/8"		6
9220.04	1-5/16"	5-7/8"	1-1/4"	7/8"	8'	6
9220.05	1-1/8"	5-1/4"	1-1/8"	3/4"		6
9220.06	1"	4-3/4"	1-1/8"	3/4"		6
9220.07	7/8"	4-1/4"	1"	5/8"		6
9220.08	11/16"	3-3/4"	7/8"	1/2"		6
9220.09	1/2"	3-1/4"	3/4"	3/8"		6
9220.10	3/8"	2-11/16"	5/8"	1/4"		6
9220.11	5/16"	2-3/16"	1/2"	3/16"		6
9220.12	5/16"	1-5/8"	1/2"	3/16"		6



Tallow

Rendered lamb fat used for lubricating wood pipe stoppers.

9250.01	1/2 lb. can
9250.02	1 lb. can

Slide Tuners

Stock coke tin or aluminum slide tuners are made using Normalmensur or 17th halving. Coke tin will be provided unless otherwise specified. Please provide stop name and starting pitch, give number of tuners, the starting pipe I.D. in inches, millimeters or scale numbers and provide diameter of all "C" pipes for the best fit. The 8090.00 Pipe Scale Ruler is a handy tool for this operation. Indicate breaks for harmonic pipes and mixtures. Standard tuner length is approximately two times the diameter. Standard tuning slides are made with overlap. All slide tuners are carefully rolled, but must be individually fit to pipes

Custom made slide tuners for tapered pipes require the diameter at tuning length and at the languid for each "C" pipe. Specify dead length or slotted length. Tapered slide tuners and extra length tuners are custom-made. 16' and 8' octaves are available with coil tension springs.

A slide tuner order form is available for your use.

- 9310.00** Coke Tin
- 9320.00** Aluminum
- 9330.00** Custom Slide Tuners



Slide Tuner Stock

Aluminum

Thickness	Sheet Size	Suggested Scales	
9300.10	.010"	12" x 24"	110-up
9300.12	.012"	12" x 24"	86-109
9300.16	.016"	24" x 36"	77-85
9300.20	.020"	24" x 36"	67-76
9300.25	.025"	24" x 36"	56-66
9300.32	.032"	24" x 36"	55

Coke Tin

Thickness	Approximate Sheet Size	Suggested Scales	
9301.08	.008"	24" x 30"	80-85
9301.10	.010"	24" x 30"	59-67
9301.15	.015"	24" x 30"	37-41
9301.20	.020"	24" x 30"	33-36

Organ Pipe Metal

Cast and planed organ pipe metal from .015" to .050" is available by the full or partial sheet. Sheet size is 31" x 96". Zinc is 27" wide by coil and is available from 11 ga. to 18 ga. All pipe metals sold by the pound. Custom cut metal per your specifications.

Material

- 9400.00** Common metal 35/65
- 9500.00** Spotted metal 50/50
- 9600.00** 75% Tin 75/25
- 9800.00** Antimonial lead
- 9900.00** Zinc