

Concert Hall Grand Organ

The Sydney Opera House Concert Hall grand organ is the world's largest known mechanical action organ. The instrument has 10,154 pipes, 200 pipe ranks and 131 speaking stops with electrical stop action.

The electronics of the organ were updated in 2002 with the installation of a MultiSystem high speed, bidirectional network (including MIDI compatibility) designed specifically for pipe organs. It was supplied by Solid State Logic Organ Systems of U.K. and installed by Pipe Organ Reconstructions of Sydney.

The instrument was originally designed and built by an Australian, Ronald Sharp of Sydney, assisted by a staff including Mark Fisher, Myk Fairhurst and Raymond Bridge. During the final months of construction, the Austrian organ-building firm of Gregor Hradetzky joined the team. The members of the Hradetzky team were Edward Bennett, Dietard Pemmer, Peter Bergler and Wolfgang Ostermann.

Sharp began planning the instrument in 1967, when the Concert Hall was under construction and intended to be a multi-purpose theatre. He was awarded the contract to build the organ in 1969.

Construction of the Sydney Opera House grand organ was completed on May 30, 1979, almost 6 years after the Concert Hall opened, and 10 years after Sharp received the commission for the instrument.

The organ, which was budgeted to cost \$400,000, was built under the supervision of the NSW Department of Public Works. By the time the instrument was handed over to the care of the Sydney Opera House management at midnight on May 30, 1979, the cost had escalated to \$1.2 million.

The first of an inaugural series of recitals featuring the organ was given by Melbourne organist Douglas Lawrence on June 7, 1979.

"I set out to build a musical instrument, not a piece of machinery," Ronald Sharp said after he completed the organ in 1979. "It is the largest mechanical-action organ known to exist, but my main concern has always been its sound not its size. I hope music lovers will like it."

Sydney Opera House - Grand Organ Specification

PEDAL

C1 – g32

29	Prinzipal	32
28	Holzprinzipal	16
27	Oktav	16
26	Violonbass	16
15	Subbass	16
14	Rohrquint	10 ² / ₃
25	Oktav	8
24	Violon	8
13	Gedackt	8
12	Grossterz	6 ² / ₅
23	Quint	5 ¹ / ₃
22	Oktav	4
11	Blockflöte	4
21	Terz	3 ¹ / ₅
20	Quint	2 ² / ₃
19	Septime	2 ² / ₇
10	Nachthorn	2
9	Bauernflöte	1
18	Rauschpfeife	III
17	Mixtur	V
16	Scharff	VII
8	Posaune	32
7	Posaune	16

6	Fagott	16
5	Trompete	8
4	Dulzian	8
3	Trompete	4
2	Singend Kornett	2
1	Glocken	4+2
30	Tremulant	

RÜCKPOSITIV

C1 – c61

138	Prinzipal	8
139	Fiffaro	8
153	Gedackt	8
154	Quintadena	8
137	Oktav	4
152	Nachthorn	4
151	Rohrflöte	4
150	Nasat	2 ² / ₃
136	Oktav	2
149	Spitzflöte	2
148	Terz	1 ³ / ₅
135	Quint	1 ¹ / ₃
147	Siffelöte	1 ¹ / ₃

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134	Oktav	1	56	Quint	$5 \frac{1}{3}$
133	Quint	$\frac{2}{3}$	41	Grossnasat	$5 \frac{1}{3}$
132	Oktav	$\frac{1}{2}$	55	Oktav	4
131	Quint	$\frac{1}{3}$	54	Gamba	4
130	Oktav	$\frac{1}{4}$	40	Spitzflöte	4
129	Quint	$\frac{1}{6}$	39	Grossterz	$3 \frac{1}{5}$
128	Oktav	$\frac{1}{8}$	53	Quint	$2 \frac{2}{3}$
146	Sesquialtera	II	38	Nasat	$2 \frac{2}{3}$
142	Ophicleide	16	52	Oktav	2
145	Rankett	16	37	Hohflöte	2
127	Ophicleide	8	36	Terz	$1 \frac{3}{5}$
143	Trompete	8	51	Piffaro	IV-VI
144	Dulzian	8	50	Terzian	II
141	Glocken	1	49	Kornett Mixtur	VI
140	Tremulant		48	Mixtur	VI
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HAUPTWERK			46	Zimbel	IV
C1 – c61			35	Kornett	VI
59	Prinzipal	16	34	Trompete	16
45	Gedackt	16	33	Trompete	8
58	Oktav	8	32	Trompete	4
57	Gamba	8	31	Glocken	2
44	Querflöte	8	60	Tremulant	
43	Holzflöte	8	<hr/>		
42	Rohrflöte	8			

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OBERWERK

C1 – c61

114	Holzprinzipal	16
113	Quintatön	16
112	Prinzipal	8
125	Salizional	8
126	Schwebung	8
124	Spillflöte	8
111	Oktav	4
123	Salizional	4
122	Waldflöte	4
121	Querflöte	2
110	Rauschpfeife	II
109	Terzian	II
108	Mixtur	V-VII
107	Scharff	IV
106	Terz Zimbel	III
120	Septimen Kornett	V
	C13	
119	Kopftrompete	16
118	Trompete	8
117	Oboe	8
105	Vox Humana	8
116	Schalmei	4
115	Tremulant	

BRUSTWERK

C1 – c61

91	Gemshorn	8
92	Unda Maris	8
104	Offenflöte	8
103	Gedackt	8
90	Prinzipal	4
102	Quintadena	4
101	Nasat	2 ² / ₃
89	Flachflöte	2
100	Terz	1 ³ / ₅
88	Quint	1 ¹ / ₃
99	Septime	1 ¹ / ₇
87	Schwiegel	1
98	None	⁸ / ₉
86	Glöckleinton	II
85	Scharff	II
84	Zimbel	I
97	Musette	16
96	Krummhorn	8
83	Regal	8
95	Trompetenregal	4
94	Glocken	¹ / ₂
170	Glockenspiel	
171	Glockenspiel Reiterate	

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172 Kuckuckflöte

93 Tremulant

KRONWERK

C1 – c61

65 Kornett VIII-XII

64 Trompete 16

63 Feldtrompete 8

75 Vox Humana 8

62 Helltrompete 4

74 Ophicleide 16

73 Ophicleide 8

61 Glocken 2

76 Tremulant

ANCILLARIES

173 Kuckuck

174 Nachtigall

175 Zymbelstern

176 Tympanon

Glocken-Zymbelstern

Bronze Hand Bells

Tympanon

Soft Bass Drum Roll

COUPLERS

Drawstops

72 Oberwerk to Rückpositiv

70 Rückpositiv to Hauptwerk

69 Oberwerk to Hauptwerk

68 Brustwerk to Hauptwerk

67 Kronwerk to Hauptwerk

71 Kronwerk to Rückpositiv

66 Brustwerk to Oberwerk

82 Rückpositiv to Pedal

81 Hauptwerk to Pedal

80 Oberwerk to Pedal

79 Brustwerk to Pedal

77 Kronwerk to Pedal 4

78 Kronwerk to Pedal

COUPLERS

Rocking tablets

155 Rückpositiv to Rückpositiv 16

156 Rückpositiv to Rückpositiv 4

157 Oberwerk to Oberwerk 16

158 Oberwerk to Oberwerk 4

159 Brustwerk to Brustwerk 16

160 Brustwerk to Brustwerk 4

161 Kronwerk to Kronwerk 16

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162	Kronwerk to Kronwerk	4	1	Oberwerk to Hauptwerk	
163	Rückpositiv to Hauptwerk	16	1	Brustwerk to Hauptwerk	
164	Rückpositiv to Hauptwerk	4	1	Kronwerk to Hauptwerk	
165	Oberwerk to Hauptwerk	16	1	Kronwerk to Rückpositiv	
166	Oberwerk to Hauptwerk	4	1	Brustwerk to Oberwerk	
167	Kronwerk to Hauptwerk	16	1	Rückpositiv to Pedal	
168	Kronwerk to Hauptwerk	4	1	Hauptwerk to Pedal	
169	Hauptwerk and Pedal Pistons		1	Oberwerk to Pedal	
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ADJUSTABLE PISTONS					
General Pistons					
15	General duplicated by Toe Studs		1	Brustwerk to Pedal	
			1	Kronwerk to Pedal	4
			1	Kronwerk to Pedal	
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Departmental Pistons

9	Rückpositiv	
9	Hauptwerk	
9	Oberwerk	
9	Brustwerk	
9	Kronwerk	
9	Pedal duplicated by Toe Studs	

Reversible Pistons

Duplicated by Toe Studs		
1	Oberwerk to Rückpositiv	
1	Rückpositiv to Hauptwerk	

ACCESSORIES

- 100 Levels of memory available for each piston
- A Piston Sequencer is fitted to the capture system
- Programmable crescendo pedal
- 4 (3 adjustable) Crescendos for each memory level
- 1 Tutti piston programmable for each memory level
- Channels of MIDI per department
- The scope of any departmental, general or reversible piston is alterable
- Tremulant speed and depth controls
- Glocken-Zymbelstern speed and key controls

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ACTION

- Mechanical Key Action
- Electrical Stop Action
- Couplers 79-82, 66 - Mechanical
- Couplers 67-72, 77, 78, 155-169 - Electrical
- S.S.L. CFM 300 Capture System
- Electric action to percussions and playback
- Wind Supply is by 9 Ventus Blowers

SUMMARY OF PIPES AND STOPS

- 131 speaking stops
- 200 pipe ranks
- 10,154 pipes
- Front pipes 95% tin

RECORDING AND PLAYBACK

The Organ is fitted with a performance recording and playback facility for the performer's use in evaluating registration; and for organ demonstrations, where the playback unit can be operated from 3 locations within the Concert Hall.

CONSOLE

- 5 manual and pedal drawstop console
 - Concave – Radiating pedal board
 - Adjustable bench and music desk
 - Oberwerk main and echo swell pedals
 - Brustwerk swell pedal
 - Infinite speed and gradation crescendo pedal
 - 172 stops
 - 107 Thumb pistons
 - 43 toe pistons
 - 12 MIDI pistons
 - 2 Closed Circuit TV screens (front view of stage and close up view of conductor)
 - Speaker – to organist from stage
 - Telephone – organist / Stage Manager
 - Microphone – Organist to PA system
 - Performance cueing lights (Ready/Not ready & Stand-by/Go)
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