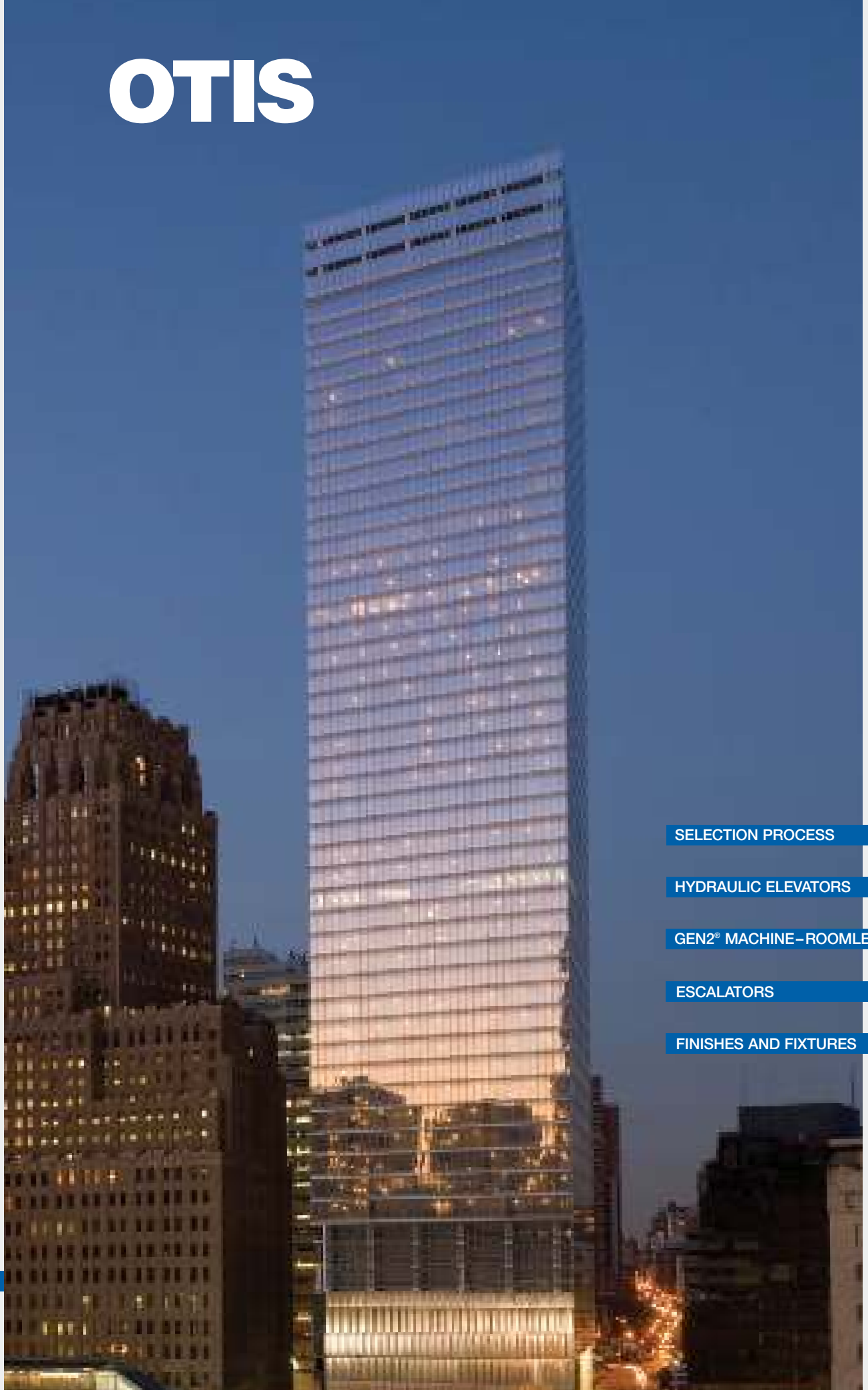
OTIS

14 20 00/OTI
BuyLine 1035

ELEVATOR PLANNING AND SELECTION GUIDE

2008



SELECTION PROCESS

HYDRAULIC ELEVATORS

GEN2® MACHINE–ROOMLESS ELEVATOR

ESCALATORS

FINISHES AND FIXTURES

Otis...the global leader in elevator and escalator systems

Planning and design programs to meet every need

Before You Begin:

Otis Elevator Company, the world's leading manufacturer of elevator and escalator systems, meets the most rigid demands of planning, building and design professionals. We offer you two easy-to-use planning and selection guides:

- Architect's Assistant—Available on Otis.com. This simple, online plug-and-play program will generate customized CSI specifications and CAD drawings. It will help you design and build an elevator that meets building specification and code requirements
- Our E-Z Elevator Selection Process

These two distinct planning and selection tools are designed to help you meet the most demanding project requirements quickly and cost-effectively.

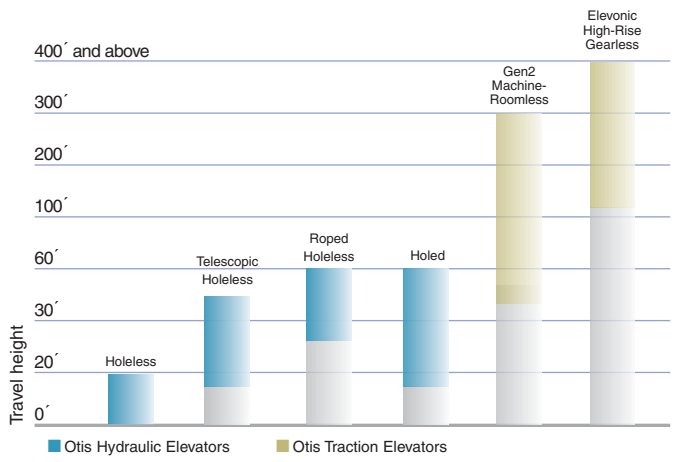
Otis E-Z Elevator Selection Process

Step 1: Travel Height

- Selecting the optimal elevator type for your project depends upon the elevator travel distance
- The chart below identifies Otis elevators most commonly selected for specific travel heights (see product pages in this guide for other criteria):

Elevator Selection Chart

Use this chart to determine which elevators are applicable for specific travel heights. Colors indicate recommended range of minimum and maximum travel height.



Step 2: Elevator Quantity and Size

- These are determined by floor population, building use or building type and national and local codes
- 3,500-lb capacity with center-opening door is common for mid- to high-rise buildings

Refer to Architect's Assistant at Otis.com for additional help in selecting proper size and number of elevators.

Step 3: Hoistway Requirements

- To accommodate heavier reinforcements to rails in seismic zones 2 or greater, additional hoistway space is required

Assess specific requirements by reviewing individual product pages in this guide.

Step 4: Machine/Control Room Requirements

Hydraulic Systems

- Separate machine room required at bottom landing
- Machine room can be located remotely or adjacent to hoistway at bottom landing

Gen2 Machine-Roomless System

- Requires separate control space/room
- Flexible control space/room placement—up to 150 feet away from top of hoistway (depending on wiring configuration within the building)

Required dimensions will be found on specific product pages in this guide. Consult your Otis representative for specific requirements.

Step 5: Car Design and Finishes

- Otis offers flexibility in designing and selecting car walls, ceilings, lighting, handrails, bumper rails and fixtures

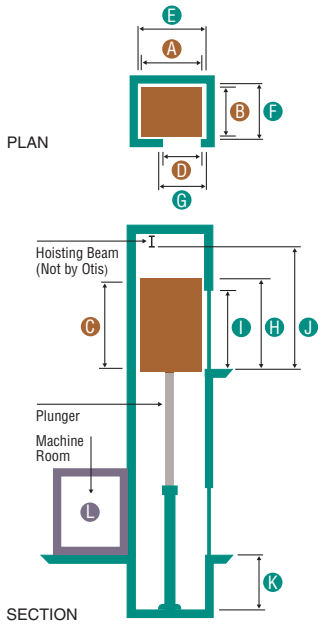
See page 7 for additional information.

Holeless Hydraulic

Travel Height – Maximum	**20 ft**
Maximum stops	**3**
Speed (ft/min)	**100, 125**

Key Attributes

- No need for well hole drilling and its associated costs
- Above-ground solution substantially reduces risk of soil and ground water contamination
- Applicable for:
  - Hazard-sensitive sites
  - Waterfront sites
  - Existing buildings
- Available in both passenger and service elevator configurations and capacities
- Solid-state starter improves performance through precise control of electric current
- Optional:
  - Front and rear entrances
  - Ceiling height of 9′-7″
  - 8′-0″ clear opening
  - Glassback
  - REM® remote elevator monitoring



Dimensions

	Passenger elevators				Service elevators			
Rated lbs.	2000	2100	2500	3000	3500	4500	5000	5000 AIA
Passenger Capacity[1]	13/12	13/12	16/15	20/18	23/21	30/28	33/31	33/31
Car[2]								
A Interior width	5′-8″	5′-8″	6′-8″	6′-8″	6′-8″	5′-8″	5′-11″	5′-8″
B Interior depth	4′-3″	4′-3″	4′-3″	4′-9″	5′-5″	7′-11″	8′-6″	9′-0″
C Interior height	8′-0″ (Optional 9′-7″)							
D Car door width	3′-0″	3′-0″	3′-6″	3′-6″	3′-6″	4′-0″	4′-6″	4′-0″
Hoistway								
E Width	7′-4″	7′-4″	8′-4″	8′-4″	8′-4″	7′-7″	8′-4″	7′-7″
Width in seismic zones[3]	7′-6″	7′-6″	8′-6″	8′-6″	8′-6″	7′-7″	8′-4″	7′-7″
F Depth[4]	5′-9″	5′-9″	5′-9″	6′-3″	6′-11″	9′-8″	10′-3″	10′-9″
G Rough opening width	4′-8″	4′-8″	5′-2″	5′-2″	5′-2″	5′-8″	6′-2″	5′-8″
H Rough opening height	7′-10″							
I Clear opening height	7′-0″ (Optional 8′-0″)							
J Clear overhead to hoist beam								
@ 100ft./min.	12′-4″	12′-4″	12′-4″	12′-4″	12′-4″	12′-4″	12′-5″	12′-4″
@ 125ft./min.	12′-8″							
K Minimum pit depth[5]	4′-0″ (5′-0″ for Canadian Province of Ontario) to 7′-6″ depending on rise							
Machine Room								
L Number of elevators in group	1		2		3		4	
Width x depth	5′-9″ x 7′-4″		11′-6″ x 8′-6″		17′-0″ x 8′-6″		22′-0″ x 8′-6″	

[1] Capacity code requirements: US/Canada.

[2] Interior dimensions may vary depending on interior finishes.

[3] In seismic zones 2 or greater.

[4] For cars with front and rear doors, add 9¼″ to depth for 2000 to 3500 lb. capacities; add 12¼″ for 4500 and 5000 lb. capacities.

[5] Pit depth changes based on speed: For 100 fpm, pit depth increases 1″ in depth for each 1″ increase in rise over 13′-7″ up to 20′-0″.

For 125 fpm, pit depth increases 1″ in depth for each 1″ increase in rise over 12′-8″ up to 20′-0″.

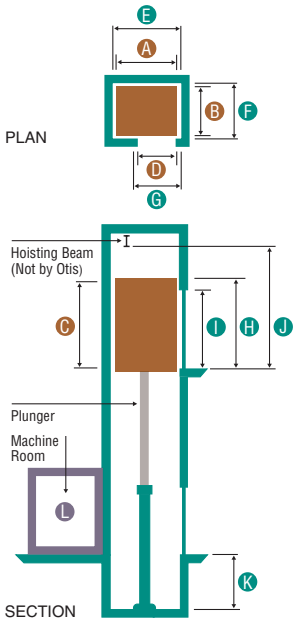
Visit www.otis.com for the latest information

Telescopic Holeless Hydraulic

Travel Height
– Maximum **44 ft 1 in**
Maximum stops **5**
Speed (ft/min) **100, 125**

Key Attributes

- No need for well hole drilling and its associated costs
- Above-ground solution substantially reduces risk of soil and ground water contamination
- Applicable for:
  - Hazard-sensitive sites
  - Waterfront sites
  - Existing buildings
- Available in passenger elevator configurations and capacities only
- Solid-state starter improves performance through precise control of electric current
- Optional:
  - Front and rear entrances
  - Ceiling height of 9′-7″
  - 8′-0″ clear opening
  - Glassback
  - REM® remote elevator monitoring



Dimensions Passenger elevators

Rated lbs.	2000	2100	2500	3000	3500
Passenger Capacity[1]	13/12	13/12	16/15	20/18	23/21
Car[2]					
A Interior width	5′-8″	5′-8″	6′-8″	6′-8″	6′-8″
B Interior depth	4′-3″	4′-3″	4′-3″	4′-9″	5′-5″
C Interior height			8′-0″ (Optional 9′-7″)		
D Car door width	3′-0″	3′-0″	3′-6″	3′-6″	3′-6″
Hoistway					
E Width (rise up to 30 ft 1 in)	7′-4″	7′-4″	8′-4″	8′-4″	8′-4″
Width (rise up to 30 ft 1 in) in seismic zones[3]	7′-6″	7′-6″	8′-6″	8′-6″	8′-6″
Width (rise over 30 ft 1 in)	7′-10″	7′-10″	8′-10″	8′-10″	8′-10″
F Depth[4]	5′-9″	5′-9″	5′-9″	6′-3″	6′-11″
G Rough opening width	4′-8″	4′-8″	5′-2″	5′-2″	5′-2″
H Rough opening height			7′-10″		
I Clear opening height			7′-0″ (Optional 8′-0″)		
J Clear overhead to hoist beam (rise up to 30 ft 1 in)					
@ 100ft./min.			12′-8″		
@ 125ft./min.			12′-11″		
Clear overhead to hoist beam (rise over 30 ft 1 in)					
@ 100ft./min.			13′-0″		
@ 125ft./min.			13′-2″		
K Minimum pit depth[5]	4′-0″ (5′-0″ for Canadian Province of Ontario) to 7′-6″ depending on rise				
Machine Room					
L Number of elevators in group	1	2	3	4	
Width x depth	5′-9″ x 7′-4″	11′-6″ x 8′-6″	17′-0″ x 8′-6″	22′-0″ x 8′-6″	

[1] Capacity code requirements: US/Canada.
[2] Interior dimensions may vary depending on interior finishes.
[3] In seismic zones 2 or greater. A 3-stage plunger may require extra hoistway width. Please consult your local Otis representative.
[4] For cars with front and rear doors add 9¼″ to depth.
[5] Maximum rise with 4′-0″ pit depth is 34′-4″. Consult Otis.com or your local Otis representative.

Visit www.otis.com for the latest information

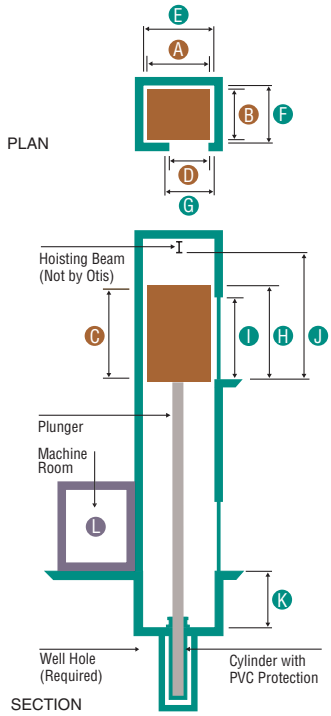
Holed Hydraulic

14 20 00/OTI
BuyLine 1035

Travel Height
– Maximum **60 ft**
Maximum stops **7**
Speed (ft/min) **100, 125, 150**

Key Attributes

- Well hole drilling required
- PVC protection surrounds wall and bottom of in-ground cylinder to prevent contact with underground contaminants
- Solid-state starter improves performance through precise control of electric current
- Available in both passenger and service elevator configurations and capacities
- Optional:
  - Front and rear entrances
  - Ceiling height of 9′-7″
  - 8′-0″ clear opening
  - Glassback
  - REM® remote elevator monitoring



Dimensions	Passenger elevators					Service elevators		
Rated lbs.	2000	2100	2500	3000	3500	4500	5000	5000 AIA
Passenger Capacity[1]	13/12	13/12	16/15	20/18	23/21	30/28	33/31	33/31
Car[2]								
A Interior width	5′-8″	5′-8″	6′-8″	6′-8″	6′-8″	5′-8″	5′-11″	5′-8″
B Interior depth	4′-3″	4′-3″	4′-3″	4′-9″	5′-5″	7′-11″	8′-6″	9′-0″
C Interior height	8′-0″ (Optional 9′-7″)							
D Car door width	3′-0″	3′-0″	3′-6″	3′-6″	3′-6″	4′-0″	4′-6″	4′-0″
Hoistway								
E Width	7′-4″	7′-4″	8′-4″	8′-4″	8′-4″	7′-5″	8′-2″	7′-5″
Width in seismic zones[3]	7′-6″	7′-6″	8′-6″	8′-6″	8′-6″	7′-7″	8′-4″	7′-7″
F Depth[4]	5′-9″	5′-9″	5′-9″	6′-3″	6′-11″	9′-8″	10′-3″	10′-9″
G Rough opening width	4′-8″	4′-8″	5′-2″	5′-2″	5′-2″	5′-8″	6′-2″	5′-8″
H Rough opening height	7′-10″							
I Clear opening height	7′-0″ (Optional 8′-0″)							
J Clear overhead to hoist beam								
@ 100 ft./min.	12′-0″	12′-0″	12′-0″	12′-0″	12′-0″	12′-0″	12′-5″	12′-0″
@ 125 ft./min.	12′-3″	12′-3″	12′-3″	12′-3″	12′-3″	12′-3″	12′-8″	12′-3″
@ 150 ft./min.	12′-3″	12′-3″	12′-3″	12′-3″	12′-3″	12′-3″	12′-8″	12′-3″
K Minimum pit depth	4′-0″ (5′-0″ for Canadian Province of Ontario)							
Machine Room								
L Number of elevators in group	1		2		3		4	
Width x depth	5′-9″ x 7′-4″		11′-6″ x 8′-6″		17′-0″ x 8′-6″		22′-0″ x 8′-6″	

[1] Capacity code requirements: US/Canada.

[2] Interior dimensions may vary depending on interior finishes.

[3] In seismic zones 2 or greater.

[4] For cars with front and rear doors, add 9¼″ to depth for 2000 to 3500 lb. capacities; add 12¼″ for 4500 and 5000 lb. capacities.

Visit www.otis.com for the latest information

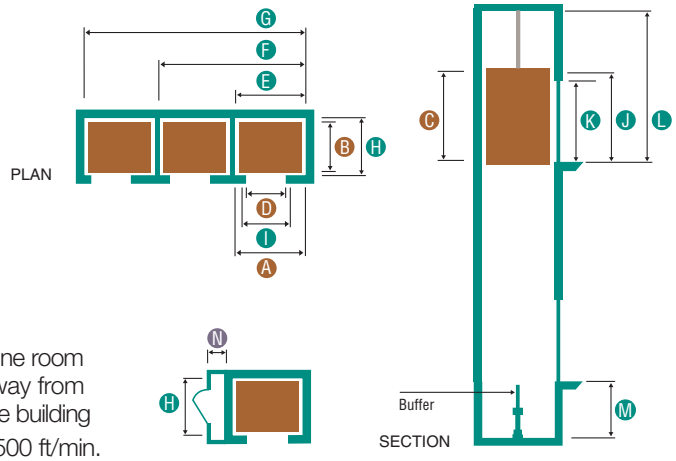
GEN2 Machine-Roomless Elevator

Travel Height
– Maximum 196 ft @ 200 (ft/min)
300 ft @ 350 (ft/min)
300 ft @ 400 (ft/min)

Maximum stops 30

Speed (ft/min) 200, 350, 400

IMPORTANT:
To assist in your planning, we recommend that you call your Otis representative at the beginning of the project.



Key Attributes

- Space-saving configuration eliminates the need for a machine room
- Flexible control space/room placement up to 150 feet away from top of hoistway (depending on wiring configuration within the building
- Machine room version of Gen2 available at speeds up to 500 ft/min.
- Available with Compass™ Destination Entry System

Dimensions[1]
Front Opening

	Passenger elevators					Service elevators			
Rated lbs.	2100[2]	2500	3000	3500	4000	4000H	4500H	5000H	5000H AIA
Passenger Capacity[3]	13/12	16/15	20/18	23/21	27/25	27/25	30/28	33/31	33/31
Car[4]									
A Interior width	5′-8″	6′-8 5/16″	6′-8 5/16″	6′-8 5/16″	7′-8 5/16″	5′-8 5/16″	5′-8 5/16″	5′-11 5/16″	5′-8 5/16″
B Interior depth	4′-3″	4′-3 3/8″	4′-9″	5′-5″	5′-5″	7′-5″	7′-11″	8′-6″	9′-0″
C Interior height[5]	8′-0″ (Optional 9′-7″)								
D Car door width	3′-0″	3′-6″	3′-6″	3′-6″	4′-0″	4′-0″	4′-0″	4′-6″	4′-0″
Hoistway									
Width									
E Single hoistway[6]	7′-4″	8′-4″	8′-4″	8′-4″	9′-4″	8′-2″	8′-2″	8′-5″	8′-2″
In seismic zones[6]	7′-4″	8′-6″	8′-6″	8′-6″	9′-6″	8′-4″	8′-4″	8′-7″	8′-4″
F Double hoistway[6]	15′-0″	17′-0″	17′-0″	17′-0″	19′-0″	16′-8″	16′-8″	17′-2″	16′-8″
In seismic zones[6]	15′-0″	17′-4″	17′-4″	17′-4″	19′-4″	17′-0″	17′-0″	17′-6″	17′-0″
G Triple hoistway[6]	22′-8″	25′-8″	25′-8″	25′-8″	28′-8″	25′-2″	25′-2″	25′-11″	25′-2″
In seismic zones[6]	22′-8″	26′-2″	26′-2″	26′-2″	29′-2″	25′-8″	25′-8″	26′-5″	25′-8″
H Depth	6′-7 1/2″	6′-7 1/2″	7′-1 1/2″	7′-10″	7′-10″	9′-2″	9′-8″	10′-3″	10′-9″
In seismic zones	6′-7 1/2″	6′-7 1/2″	7′-1 1/2″	7′-10″	7′-10″	9′-2″	9′-8″	10′-3″	10′-9″
I Rough opening width	4′-8″	5′-2″	5′-2″	5′-2″	5′-8″	5′-8″	5′-8″	6′-2″	5′-8″
J Rough opening height	7′-10″								
K Clear opening height[7]	7′-0″ (Optional 8′-0″)								
L Total overhead for 8′-0″ car									
@ 200 ft/min	14′-7″	14′-9 3/16″	14′-9 3/16″	14′-9 3/16″	14′-9 3/16″	14′-9 3/16″	14′-9 3/16″	14′-9 3/16″	14′-9 3/16″
@ 350 ft/min	15′-3 1/2″	15′-5 9/16″	15′-5 9/16″	15′-5 9/16″	15′-5 9/16″	15′-5 9/16″	15′-5 9/16″	15′-5 9/16″	15′-5 9/16″
@ 400 ft/min	–	16′-0″	16′-0″	16′-0″	16′-0″	–	–	–	–
Total overhead for 9′-7″ car									
@ 200 ft/min	–	16′-4 3/16″	16′-4 3/16″	16′-4 3/16″	16′-4 3/16″	16′-4 3/16″	16′-4 3/16″	16′-4 3/16″	16′-4 3/16″
@ 350 ft/min	–	17′-0 9/16″	17′-0 9/16″	17′-0 9/16″	17′-0 9/16″	17′-0 9/16″	17′-0 9/16″	17′-0 9/16″	17′-0 9/16″
@ 400 ft/min	–	17′-7″	17′-7″	17′-7″	17′-7″	–	–	–	–
M Minimum pit depth									
@ 200 ft/min	4′-11 1/4″								
@ 350 ft/min	5′-5 1/4″								
@ 400 ft/min	–	5′-8″	5′-8″	5′-8″	5′-8″	–	–	–	–
Control Space/Room									
N Control space–simplex	H x 2′-10″ width								
Control room–simplex	H x 5′-0″ width								
Control room–duplex	H x 7′-0″ width								

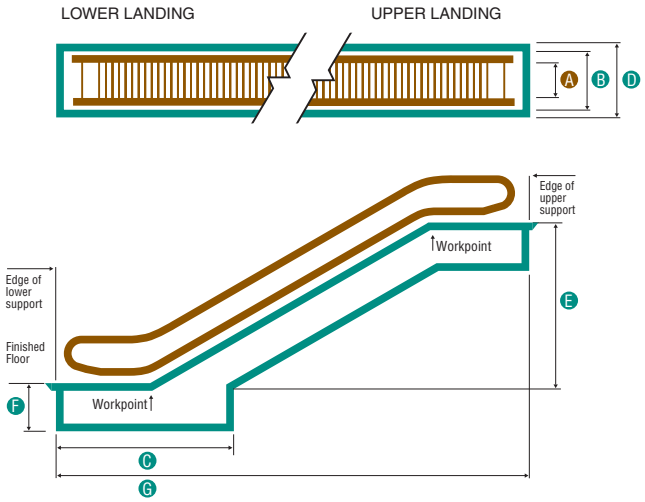
[1] For glassback dimensions visit Otis.com or contact your Otis representative.
[2] Maximum travel for 2100 lb. car is 196 ft. @ 200 fpm and 164 ft. @ 350 fpm.
[3] Capacity code requirements: US/Canada.
[4] Interior dimensions may vary depending on interior finishes.
[5] The 9′-7″ car interior height does not apply to the 2100 lb. duty.
[6] For elevators with occupied space below, this dimension may change. Consult your Otis representative for dimensions.
[7] The 8′-0″ height does not apply to the 2100 lb. duty.

Visit www.otis.com for the latest information

Maximum rise **21 ft 4 in (NCE model)**

Key Attributes

- Quiet and smooth operation ensured by hypoid helical gear drive, which produces lower noise levels [maximum 55 dB(A)] and uses less energy than conventional worm-gear machines
- Guardian® skirt panels with extremely low coefficient of friction to reduce risk of objects becoming entrapped
- Rigid impact-resistant stainless steel profile



ELEVATION

Dimensions[1]

NCE Model	50632	50640	50648
A Step width	24″	32″	40″
B Finish width	3′-9″	4′-5″	5′-1″
C Minimum pit opening	14′-7 3/16″	14′-7 3/16″	14′-7 3/16″
D Minimum rough opening	4′-0 1/8″	4′-8 1/8″	5′-4 1/8″
E Maximum rise	21′-4″	21′-4″	21′-4″
Minimum rise	4′-11 1/16″	4′-11 1/16″	4′-11 1/16″
F Minimum pit depth	3′-5 5/8″	3′-5 5/8″	3′-5 5/8″
G Beam-to-beam calculation	1.732 x E +17′-10 3/8″	1.732 x E +17′-10 3/8″	1.732 x E +16′-2 11/16″

[1] Dimensions listed assume 2 flat steps and escalator is installed under non-seismic conditions.

Finishes and Fixtures

No matter what your most critical design criteria—aesthetic, budgetary, maximum durability—Otis offers an exceptional degree of flexibility in the selection of:

- Entrance frames and doors
- Car interior surfaces
- Car ceilings and lighting solutions
- Handrails and bumper rails
- Car and hall fixtures, including operating panels, hall lanterns and position indicators

In addition to a broad palette of standard interior finishes, Otis also works with architects to create virtually unlimited custom car finishes to ensure that elevator systems coordinate seamlessly with any design concept.

Contact your Otis representative to explore the full range of finishes and fixtures through our Architectural Design catalogue and Finishes brochure.

Visit www.otis.com for the latest information

Office Locations

United States

Alabama	Birmingham	(205) 982-8000
Alaska	Anchorage	(907) 278-4575
Arizona	Phoenix	(602) 431-1181
Arkansas	Little Rock	(501) 312-7600
California	Anaheim	(714) 758-9593
	North Highlands	(916) 344-2080
	Pasadena	(626) 396-6260
	San Diego	(858) 560-5881
	San Francisco	(415) 546-0880
	Sunnyvale	(408) 328-0330
Colorado	Denver	(303) 298-9300
Connecticut	East Hartford	(860) 289-7600
	Shelton	(203) 944-0160
Delaware	Wilmington (Moorestown, NJ)	(856) 924-0369
Florida	Ft. Lauderdale / W. Palm Beach	(954) 485-6501
	Jacksonville	(904) 296-6847
	Miami Lakes	(305) 816-5740
	Orlando	(407) 438-3633
	Pensacola	(850) 473-1244
	Sarasota	(941) 342-4900
	Tampa	(813) 251-1841
Georgia	Atlanta	(404) 355-1991
	Savannah	(912) 201-0461
Hawaii	Honolulu	(808) 599-1111
Illinois	Chicago	(312) 454-1616
	Lombard	(630) 889-2800
	Peoria	(309) 693-8131
Indiana	Evansville	(812) 471-9770
	Indianapolis	(317) 347-2015
Iowa	Urbandale	(515) 270-2066
Kansas	Kansas City	(913) 621-8800
	Wichita	(316) 682-6886
Kentucky	Louisville	(502) 491-3636
Louisiana	Metairie	(504) 846-2300
	Shreveport	(318) 636-7422
Maine	Westbrook	(207) 856-2737
Maryland	Landover	(301) 324-4140
	Linthicum (Baltimore)	(410) 636-5700
Massachusetts	Needham	(781) 433-8600
Michigan	Farmington Hills	(248) 473-4530
	Grand Rapids	(616) 975-3022
Minnesota	Roseville	(651) 697-7800
Missouri	Kansas City	(913) 621-8800
	St. Louis	(314) 533-7070
Nevada	Las Vegas	(702) 740-4777
	Reno	(775) 322-5411
New Jersey	Fairfield	(973) 575-8670
	Moorestown	(856) 235-5200
New Mexico	Albuquerque	(505) 345-8189
New York	Albany	(518) 426-4006
	Buffalo	(716) 686-5370
	East Syracuse	(315) 463-6615
	New York	(917) 339-9600
	Plainview	(516) 349-9225
	Yonkers	(914) 375-7800
North Carolina	Charlotte	(704) 519-0100
	Raleigh	(919) 781-1555
North Dakota	Fargo	(701) 232-3385
Ohio	Cincinnati	(513) 531-7888
	Cleveland	(216) 573-2333
	Columbus	(614) 777-6500
Oklahoma	Oklahoma City	(405) 947-1401
	Tulsa	(918) 584-3678
Oregon	Portland	(503) 639-7045
Pennsylvania	Allentown	(610) 266-8970
	Harrisburg	(717) 238-7248
	Philadelphia (Moorestown, NJ)	(856) 235-5200
	Pittsburgh	(412) 281-9292
Rhode Island	Smithfield	(401) 232-7282
South Carolina	Myrtle Beach	(843) 448-4471
	North Charleston	(843) 529-9502
	West Columbia	(803) 739-8013
Tennessee	Knoxville	(865) 525-0282
	Memphis	(901) 527-0291
	Nashville	(615) 254-3496
Texas	Dallas	(214) 741-6207
	Fort Worth	(817) 284-6434
	Houston	(713) 524-8486
	San Antonio	(210) 490-4960
Utah	Salt Lake City	(801) 486-9295
Virginia	North VA (Landover, MD)	(301) 324-4140
	Richmond	(804) 213-0975
	Roanoke	(540) 983-4640
	Virginia Beach	(757) 456-0801
Washington	Seattle	(206) 243-8100
	Spokane	(509) 483-7328
Washington D.C.	D.C. (Landover, MD)	(301) 324-4140
West Virginia	Charleston	(304) 965-2780
Wisconsin	Kaukauna	(920) 766-2900
	Milwaukee	(262) 240-3400

Bahamas

	Nassau	(242) 393-1885

Canada

Alberta	Calgary	(403) 244-1040
	Edmonton	(780) 444-2900
British Columbia	Vancouver	(604) 412-3400
Manitoba	Winnipeg	(204) 783-0464
New Brunswick	St. John	(506) 634-1393
Newfoundland	St. John's	(709) 576-4110
Northwest Territories	Ottawa	(613) 737-7709
Nova Scotia	Dartmouth	(902) 481-8200
Ontario	Hamilton	(905) 587-6277
	Mississauga	(905) 276-5577
	Ottawa	(613) 737-7670
Prince Edward Island	Dartmouth	(902) 481-8200
Quebec	Montreal	(514) 489-9781
	Ste-Foy	(418) 687-4848
Saskatchewan	Saskatoon	(306) 664-2939

Guam

	Tamuning	(671) 647-6847

Puerto Rico

	San Juan	(787) 765-4969

Otis
A United Technologies Company

On the cover:
7 World Trade Center
Photograph by David Sundberg/ESTO,
courtesy of Silverstein Properties

www.otis.com

GEN-1127 (1007)