



***High Performance
Solid State D.C.
Geared Mid-Rise
Elevator System***





SERIES 90s™...blends with the proportions and personality of the building and people which it serves.

Passenger elevator cabs and hoistway entrances...designed and built by Montgomery...offer a nearly endless variety of aesthetic alternatives.



Products of Montgomery's technology leadership are at the core of **SERIES 90s™**.

MIPROM 21®: Advanced logic and motion control.

ULTRON®: Solid-State Variable Voltage/D.C. power technology.

Worm Geared Machines: Smooth, quiet ride is assured because of Montgomery's quality design and craftsmanship.

Mechanical & Electro-mechanical Components: Precisely tailored, by Montgomery engineering, to each system application.

THE EDGE®: Montgomery designed electronic door sensors for safety and traffic management efficiency.

Throughout the world, the demand for cost effective building alternatives has never been more acute! Success hinges on sound concepts and resource utility...without a sacrifice in quality or design latitude. Today's mid-rise structure must be affordable and **marketable**. Tenant satisfaction is fundamental. An essential part of a winning building equation is the right elevator *system*. It must be cost competitive, offer design flexibility and unquestioned quality. Advanced technology, assuring utmost safety and responsiveness, must be integral to the total design. Such a *system* must come from a company with a tradition of integrity, reliability and service.

SERIES 90s™...from Montgomery...fits this equation...**exactly!**



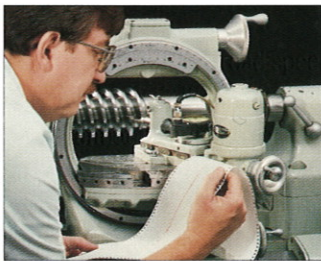
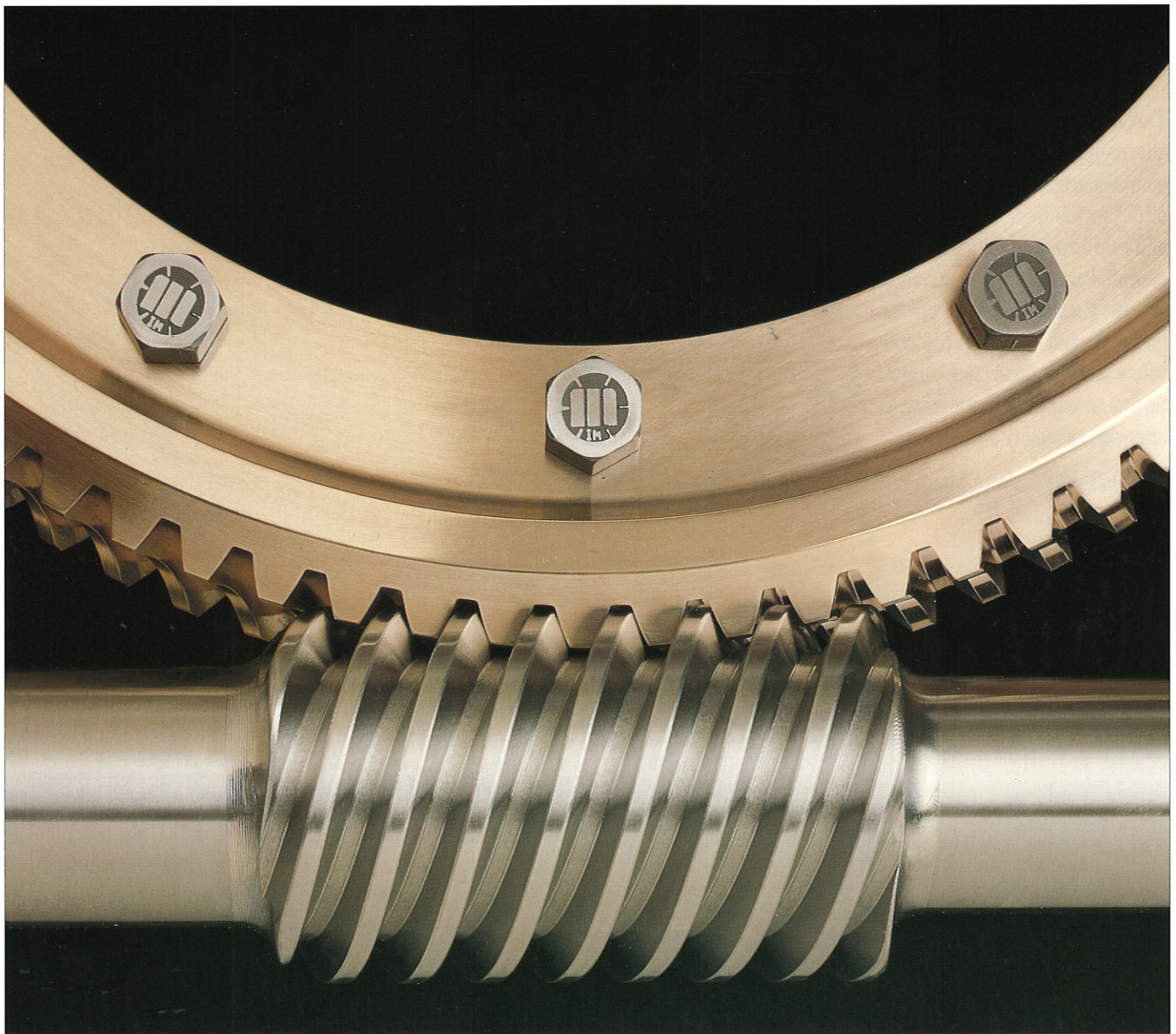
SERIES 90s™ was conceived by Montgomery to be a flexible application and design tool. This is an elevator system with few boundaries. Given the variables of an intended mid-rise project, the flexibility of **SERIES 90s™** permits a final installed design which is *exactly what is necessary*.

SERIES 90s™ ...structured by Montgomery
...designed by our Customers!



Montgomery's premiere elevator cab, the **STL®**, along with Montgomery designed and manufactured hoistway entrances, are available for application to **SERIES 90s™**. Where chosen, they produce a *design pallet* offering the greatest possible array of sizes, heights, materials, colors and finishes.





The smooth, quiet performance of Montgomery Worm Geared Machines makes **SERIES 90s™** the unobtrusive, dependable servant that our Customers demand and their tenants expect.

"Mid-Rise Building"...a term covering a broad spectrum of structures. Within this category is found a huge variety of building heights, sizes, usages and design concepts. In every case, today's commercial building environment requires the designer/developer to be cognizant of the needs of planned tenancy. Responsive and dependable elevator service is a prerequisite to the success of any new structure.

SERIES 90s™...the most desired capacities and geared speeds...elevator cabs and hoistway entrances which compliment and enhance virtually any decor...three distinct signal fixture product lines...the proven professionalism of expert project management...and over a century-long tradition of Montgomery quality and Customer Service.

SERIES 90s™...offered by Montgomery...to support our Customers' success.



SERIES 90s™ offers three distinctive Signal Fixture product lines. All provide great latitude in floor identification and device application along with full compliance with the ADA.

Conventional: Offering a traditional design...perfect for many basic applications.

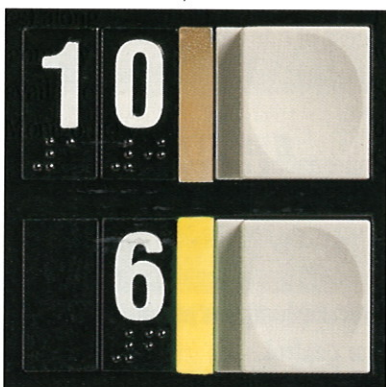
Vector®: The progressive look in today's fixtures, coupled with advanced graphics.

Select®: Only from Montgomery! The design which proves the proposition that a high level of quality and finely finished beauty can be offered with minimum limitation of alternatives...a sophisticated product offering **real value!**

CONVENTIONAL



VECTOR®



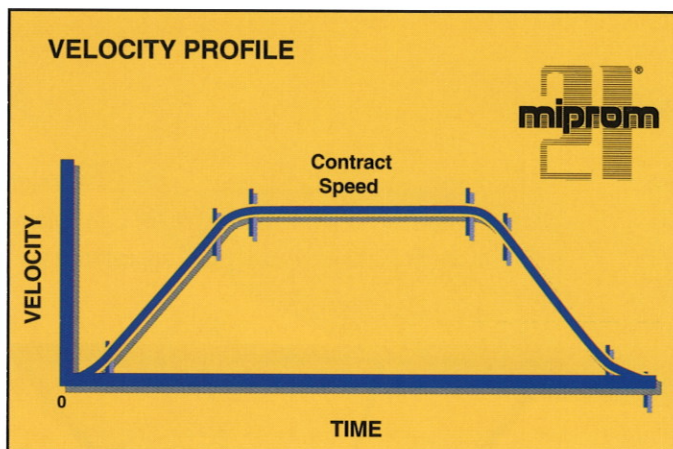
SELECT®



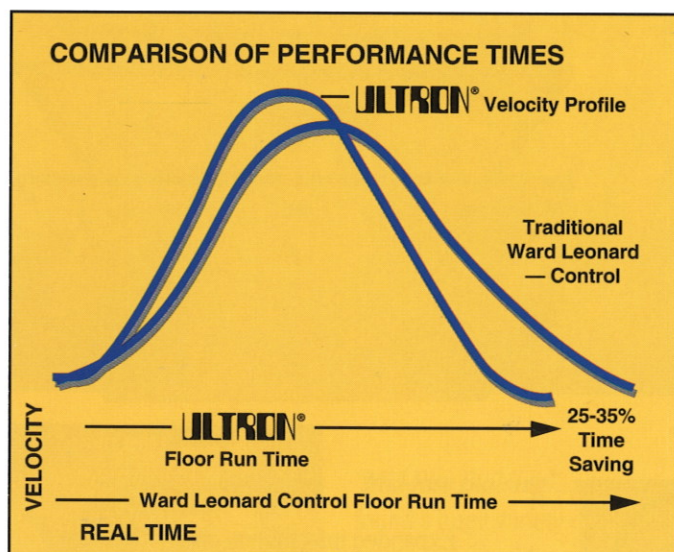
Montgomery's Elevator Cab Ceiling System is a design opportunity for use with the **STL®** Elevator Cab. Many choices of lighting, material usage and appearance are offered.



Expanded information on products from the Montgomery Architectural Products Division (Elevator Cabs and Hoistway Entrances) along with data on Montgomery Signal Fixtures is available directly from your Montgomery Sales Professional.

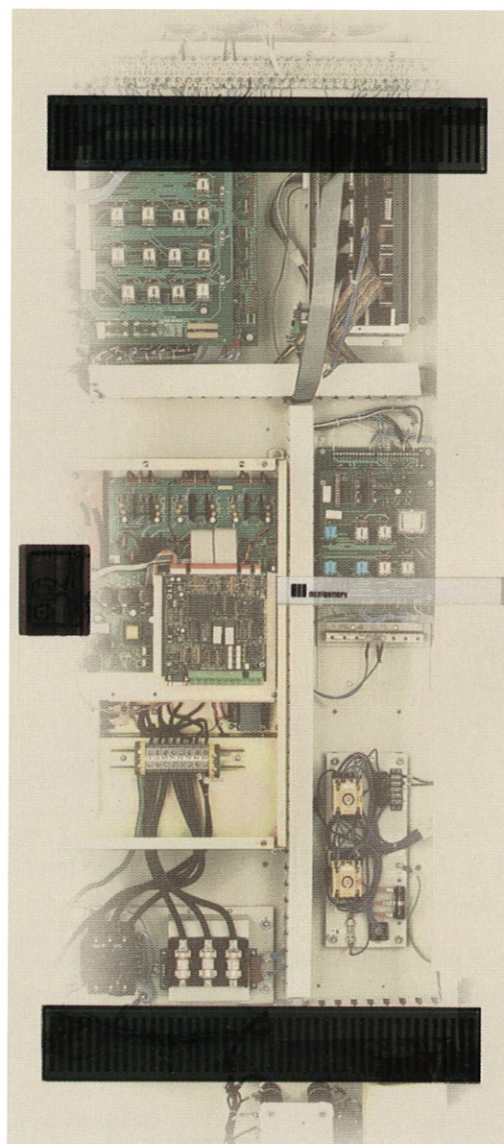


The **Miprom 21®** Velocity Profile is divided into seven separate regions of adjustable control. Four of these regions pertain to "jerk" which is an industry standard term referring to the "rate of change in acceleration". Within the last of these regions, several "regional parameters" permit fine tuning relating to floor approach, floor arrival and leveling accuracy. All four regions are analogous to primary "ride comfort zones". The remaining three regions of the Velocity Profile permit adjustment to acceleration, contract speed and deceleration.



The **Miprom 21®** computed velocity profile pattern optimizes each flight pattern to achieve maximum velocity. **Miprom 21®**, in conjunction with **Ultron®** (Variable Voltage/D.C.) Power Control, provides the shortest possible run time within the adjusted acceleration and jerk settings. With **SERIES 90s™**, a sacrifice in performance, merely to obtain a low price, is an unnecessary compromise. Montgomery has developed this elevator system to be cost competitive... while remaining a performance leader.

SERIES 90s™...utilizing the superior motion control of **MIPROM 21®/ULTRON®**...reaffirms that Montgomery is...*excellence at every level!*



Montgomery's nationwide success in the high-rise, gearless elevator market has fostered geometric growth in the excellence and sophistication of Montgomery's *Elevator Control Science*. **MIPROM 21®** is the proven result of this leadership.

Our continued investment in product enhancement and application of advanced technologies merges the proven logic control of **MIPROM 21®** with Variable Voltage/D.C. Power Control (**ULTRON®**) to offer dependable and cost efficient elevator control. The smoothness of ride and precision control for which Montgomery has long been acclaimed is assured with Montgomery's **ULTRON®** drive.

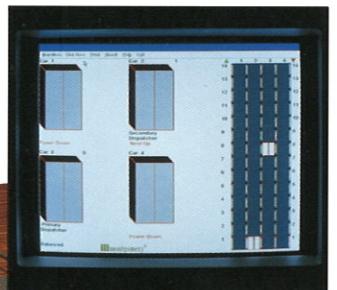
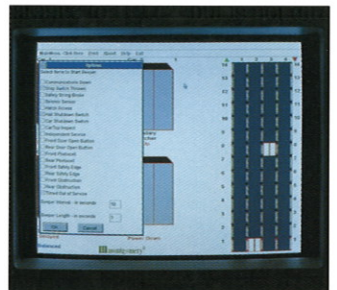
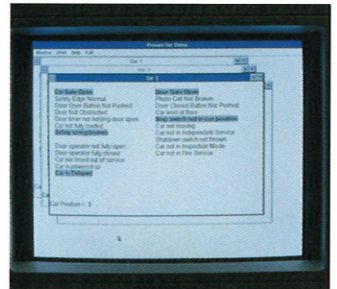
ULTRON® converts building alternating current to direct current and varies the D.C. current to the hoist motor providing smooth acceleration /deceleration regardless of elevator load. **MIPROM 21®/ULTRON®** offer field operational economies due to significant reduction in power consumption as compared with traditional Ward Leonard motor control.



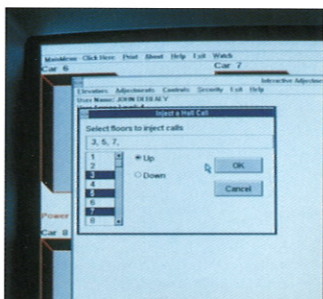
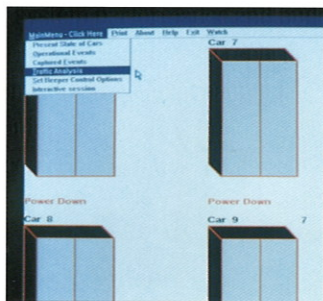
Because **SERIES 90s™** reasons using the latest in elevator intelligence, Montgomery can adjust virtually any performance criteria within the system. The adaptability of Montgomery designed and built hardware, coupled with Montgomery programmed software, offers expansive opportunities not only in system performance adjustment but also in areas such as building security and a wide range of other operational characteristics.

IPD™: This is the newest available option for interface with **MIPROM 21®**. This is truly an **interactive tool** operated via a keyboard or mouse.

Both **IPD™** as well as **T.E.D.®.9.3** are available with a high speed printer producing hard copy performance graphs and other useful statistical information.



IPD™ software design is based on a "windows environment" permitting cursor choice of a vast menu of real time and historical information. In addition, the **interactive capability** of **IPD™** permits direct access to **MIPROM 21®** for modification of a variety of elevator operational characteristics...*directly by our Customer.*




T.E.D.®.9.3 is another available option for **SERIES 90s™**. It also provides graphics based on a "windows environment" providing both real time and historical information so valuable to the overall evaluation of system performance and building tenancy movement characteristics. **T.E.D.®.9.3** is a reporting tool providing building management and preventive maintenance personnel with contemporary information. This optional device has similar hardware appearance to **IPD™** but is not directly interactive.





SERIES 90s™: The Geared Traction (D.C.) Elevator product conceived by Montgomery to be a flexible application and design tool. Here is an elevator system with few boundaries. Given the variables of an intended project, **SERIES 90s™** can be molded into **exactly** what is necessary. **SERIES 90s™** offers the most advanced elevator components coupled with the economies of pre-engineering, "off-the-shelf" product availability, shortened manufacturing lead time and field installation efficiencies creating an extremely cost competitive choice for the mid-rise elevator market.

SERIES 90s™ GENERAL INFORMATION

MAXIMUM FLOORS SERVED	Thirty-two (32) Landings
MAXIMUM TRAVEL	375'-0"
REVERSE OPENINGS	Available for 4000 pound and 4500 pound capacity Hospital/Service Shape Elevators only.
HOISTING MACHINE	Overhead only. WORM-GEAR with standard "soundproof" mounting.
HOIST ROPING	1-to-1 (Number and size varies based on Gross Load)
COMPENSATION	Whisperflex® (Application based on cab weight & elevator travel. Consult your Montgomery Sales Professional.)
POWER CONTROL	ULTRON® (Computerized Solid State D.C. Power Control)
LOGIC CONTROL	 Simplex (Selective Collective) 2 Car Group 3-to-8 Car Group
MACHINE ROOM MONITOR	Amber screen C.R.T. Standard: 3-to-8 Car Group Option: 2 Car Group Option: Simplex elevator
ROLLER GUIDES	Car and Counterweight
GUIDE RAILS	15 lb. (Car) and 8 lb. (Counterweight) NOTE: With Seismic or Counterweight Safety, Counterweight Rails are 15 lb. Hoistway size must conform to Montgomery standards when Counterweight Safeties are used. If bracket spacing exceeds 14'-0", intermediate structural support must be provided by others (NOT Montgomery).
HOISTWAY ENTRANCES	PROGRAM (APD) . . . or . . . Custom
DOOR OPERATION	Solid State Operator with THE EDGE®
CAB DESIGNS	STL® . . . or . . . Custom Designs
EMERGENCY EXITS	Side and/or top exits and contacts provided per applicable code.
SIGNAL FIXTURES	Conventional . . . VECTOR® . . . SELECT® . . . Custom Designs
MANUALS	(per Simplex or per Group): 2 - "I & M" MANUALS provided 1 - "OWNER'S MANUAL" provided
CAB WEIGHT STANDARDS	The maximum weight of the elevator cab, including all finish options and finished floor, may not exceed: 4000 lbs. (STL® application) or 4000 lbs. (Custom Cab application).

SERIES 90s™ GENERAL APPLICATION DATA

	PASSENGER SHAPE												HOSPITAL/SERVICE SHAPE					
STANDARD CAPACITIES	2000 lbs.			2500 lbs.			3000 lbs.			3500 lbs.			4000 lbs.			4500 lbs.		
PLATFORM WIDTH	6'-0"			7'-0"			7'-0"			7'-0"			6'-0"			6'-0"		
PLATFORM F-to-B (SINGLE ENDED CAR)	5'-0"			5'-0"			5'-6"			6'-2"			8'-4"			8'-10"		
PLATFORM F-to-B (DOUBLE ENDED CAR)	N/A			N/A			N/A			N/A			8'-11½"			9'-5½"		
ENTRANCE WIDTH	3'-0"			3'-6"			3'-6"			3'-6"			4'-0"			4'-0"		
ENTRANCE TYPE	Single Slide (L/H) Single Slide (R/H) —			Single Slide (L/H) Single Slide (R/H) Center Opening			Single Slide (L/H) Single Slide (R/H) Center Opening			Single Slide (L/H) Single Slide (R/H) Center Opening			Two Speed (L/H) Two Speed (R/H) —			Two Speed (L/H) Two Speed (R/H) —		
HOISTWAY WIDTH	7'-4"①			8'-4"②			8'-4"②			8'-4"②			8'-1"③⑥			8'-1"③⑥		
HOISTWAY F-to-B (SINGLE ENDED CAR)	6'-7"④⑥			6'-7"④⑥			7'-1"④⑥			7'-9"④⑥			9'-2"④			9'-8"④		
HOISTWAY F-to-B (DOUBLE ENDED CAR)	N/A			N/A			N/A			N/A			10'-3"⑤			10'-9"⑤		
SPEEDS AVAILABLE (fpm)	200	350	450	200	350	450	200	350	450	200	350	450	200	350	450	200	350	450
BUFFER TYPES	Spring	Oil	Oil	Spring	Oil	Oil	Spring	Oil	Oil	Spring	Oil	Oil	Spring	Oil	Oil	Spring	Oil	Oil
MOTOR HORSEPOWER	10	20	25	15	25	30	15	25	40	20	30	40	20	40	50	25	40	50
CLEAR OVERHEAD (minimum) (STANDARD CAR HEIGHT)	14'-8"	15'-4"	16'-6"	14'-8"	15'-4"	16'-6"	14'-8"	15'-4"	16'-6"	14'-8"	15'-4"	16'-6"	14'-8"⑦	15'-4"⑦	16'-6"⑦	14'-8"⑦	15'-4"⑦	16'-6"⑦
CLEAR OVERHEAD (minimum) (TALL CAR OPTION)	16'-8"	17'-4"	18'-6"	16'-8"	17'-4"	18'-6"	16'-8"	17'-4"	18'-6"	16'-8"	17'-4"	18'-6"	16'-8"⑦	17'-4"⑦	18'-6"⑦	16'-8"⑦	17'-4"⑦	18'-6"⑦
PIT DEPTH	4'-3"	5'-0"	6'-0"	4'-3"	5'-0"	6'-0"	4'-3"	5'-0"	6'-0"	4'-3"	5'-0"	6'-0"	4'-3"	5'-0"	6'-0"	4'-3"	5'-0"	6'-0"

Because *SERIES 90s™* uses Montgomery Universal Rail Brackets, hoistway dimensions may vary from data above (as follows):

- ① Hoistway width may be from 7'-2"...to...8'-8" (2000 lbs.)
- ② Hoistway width may be from 8'-2"...to...9'-8" (2500 lbs., 3000 lbs. and 3500 lbs.)
- ③ Hoistway width may be from 8'-0"...to...9'-6" (4000 lbs. and 4500 lbs.)
- ④ Hoistway front-to-back dimensions shown above (front opening cars only) **may not be reduced...**but...**may be increased** up to 5" for all capacities shown.
- ⑤ Hoistway front-to-back dimensions shown above for double ended Hospital/Service Shape cars **may not** be modified.
- ⑥ Where a counterweight safety is required, the hoistway dimensions with this notation may require adjustment. Consult your Montgomery Sales Professional for specific dimension required.
- ⑦ Add 2'-0" to overhead minimums for Seismic application.

SPECIAL NOTE: If the proposed hoistway(s) do not meet the dimension criteria explained above, *SERIES 90s™* elevators are not applicable.

STREAMLINED PROCEDURES:

- Through the use of clear, concise approval documents, a *SERIES 90s™* project moves quickly and accurately through the Montgomery computerized national manufacturing scheduling system directly to Montgomery manufacturing division . . . committed to on-time shipment.
- Streamlined procedures exist throughout the Montgomery manufacturing cycle assuring the fastest possible leadtime in the final fabrication and shipment of *SERIES 90s™* equipment direct to the jobsite.



LOGIC CONTROL FEATURES (STANDARDS AND OPTIONS)

FEATURE	SIMPLEX	2 CAR GROUP	3-TO-8 CAR GROUP
Hall Button Protection — Auxiliary Dispatch	N/A	■	■
Fireman's Control:			
[Main Floor & Car Key Switches, Sensor Circuits and Alternate Return Floor]	■	■	■
LODE-MASTER® (by-pass hall calls only)	■	■	■
Anti-Nuisance Feature	■	■	■
Door Obstruction Feature	■	■	■
Door Protection Cutout Switch (or Button)	■	■	■
Multiple Door Timing	■	■	■
Early Door Closing	■	■	■
Reduced Speed Closing	■	■	■
Nudging	■	■	■
Independent Service	■	■	■
Independent Freight Service with Separate PB Riser	◇	◇	◇
Hospital Emergency Service	◇	◇	◇
Medical Emergency Recall	◇	◇	◇
Home Landing	■	N/A	N/A
Main Lobby Preference	N/A	■	■
Two Dispatch Floors	N/A	◇	◇
Zoned Access Switches	■	■	■
Machine Room Monitor (amber screen C.R.T.)	◇	◇	■
Coincidental Calls	N/A	■	■
Long Wait Hall Calls	N/A	■	■
Quickest Time To Call	N/A	■	■
UP Peak and DOWN Peak	N/A	■	■
Sequence Starting	N/A	■	■
Controller Shut Down Switch	★	★	★
Emergency Power (TYPE "C")	★	★	★
Miprom® Security	◇	◇	◇
T.E.D.® System	◇	◇	◇
I.P.D.™ System	◇	◇	◇
Floor Key Switch Lockouts	◇	◇	◇
Card Reader Interface (not integral in Vector®)	◇	◇	◇
Future Car(s)/Future Floor(s):			
Card Rack Space Only	◇	◇	◇
Selected Floor Parking	★	★	★
Fire Status Panel	★	★	★

SYMBOL KEY: ■ STANDARD FEATURE.
 ◇ FEATURE AVAILABLE AT ADDITIONAL COST.
 ★ LOGIC INCLUDED IN CONTROL. FIXTURE AVAILABLE AT ADDITIONAL COST.

HOISTWAY ENTRANCES:

- STANDARD HEIGHT = 7'-0" (Montgomery Architectural Products Division — Program Entrances)
- TALL DOORS:
 - Entrances with heights in six inch increments (i.e. 7'-0", 7'-6", 8'-0", 8'-6", 9'-0") may be used with STL® or Custom Cabs.
 - Entrances with heights of "any dimensions" (i.e. from 7'-1", 7'-2", 7'-3"...to...9'-0") may be used with **Custom Cabs only**.
- ENTRANCE OPTIONS: All standard "APD" PROGRAM Entrance Options may be chosen...including use of extended head, inset or flush transoms and/or "sub-frames". Custom entrances at one or more floors may be chosen but must conform to *SERIES 90s™* application parameters.

CAB DESIGNS:

- DESIGNS AVAILABLE: Montgomery designed and manufactured STL®. Custom Cab Designs may also be used.
- HEIGHTS AVAILABLE:
 - Standard Height (8'-2" to outside top of canopy)
 - STL® Tall Cab Option with heights in six inch increments (i.e. 8'-8", 9'-2", 9'-8", 10'-2" to outside top of canopy).
 - Custom cabs may have any height to a maximum of 10'-2" to outside top of canopy.
- WEIGHT RESTRICTIONS:
 - Total Cab Weight = (Cab Weight) + (Weight of All Cab Options) + (Finished Flooring Weight)
 - SERIES 90s™ has important Total Cab Weight Restrictions:
 - Total Cab Weight may not exceed 4000 lbs. (STL® or Custom Cab application)

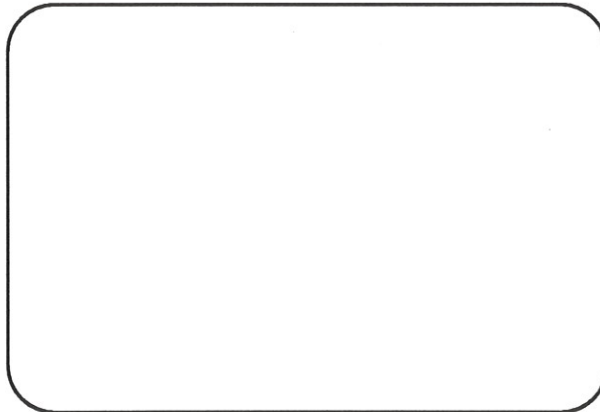
SIGNAL FIXTURES:

- DESIGNS AVAILABLE:
 - Conventional...Vector® ...Select® ...or...Custom
 - For more complete information and specific literature on Montgomery's complete Signal Fixture Product line, consult your Montgomery Sales Professional.
- FIXTURE STANDARDS (Refer to individual Montgomery Fixture literature for more complete information):
 - Conventional...Vector® ...Select®
 - Main Car Operating Panel
 - Service Cabinet (Option if Conventional or Select®)
 - Telephone Cabinet
 - Emergency Light
 - Digital Car Position Indicator (fluorescent dot-matrix, green display—depending upon fixture design chosen)
 - Hall Pushbutton Stations (one station per landing/per group)
 - METAL AND FINISH: #4 (brushed) Stainless Steel
- FIXTURE OPTIONS:
 - Conventional...Vector® ...Select®
 - Auxiliary Car Station
 - Car Direction Sign(s)
 - Additional Hall Pushbutton Stations (per floor...or...for opposed reverse openings)
 - Digital Hall Position Indicator(s) (fluorescent dot-matrix, green display—depending upon fixture design chosen)
 - Hall Lantern(s)
 - Scrolling Message Center, green display—depending upon fixture design chosen (Including P.C. Command Console)
 - Fire Status Panel
 - Fire Status Panel includes (per car):
 - Digital Position Indicator (fluorescent dot-matrix, green display)
 - Controller Shutdown Key Switch and Pilot Light
 - Emergency Power Key Switch and Pilot Light (if required)
 - Fire Status Panel includes (per group):
 - Phase I Fire Key Switch and Pilot Light
 - Fireman's Phone Jack
 - METAL AND FINISH OPTIONS:
 - #8 (mirror) Stainless Steel
 - Satin (brushed) Bronze (60-40 muntz)
 - Polished (mirror) Bronze (60-40 muntz)
- CUSTOM FIXTURES:
 - Custom fixture designs and additional custom options are also available.

SERIES 90s™

MISCELLANEOUS DATA:

- Maximum number of elevators in a SERIES 90s™ Group is EIGHT (8) including any future cars.
- A SERIES 90s™ Group may include elevators of various sizes and/or different landings, where **all cars** individually fit SERIES 90s™ parameters.
- Occupied space below hoistway(s) permitted with application of Counterweight Safety(s).
- A SERIES 90s™ elevator **may not** be added to an "existing group".
- A Custom elevator **may not** be added to a SERIES 90s™ Group.
- SERIES 90s™ elevator(s) will not be shown on the same layout with non-SERIES 90s™ elevators, or be in the same hoistway.

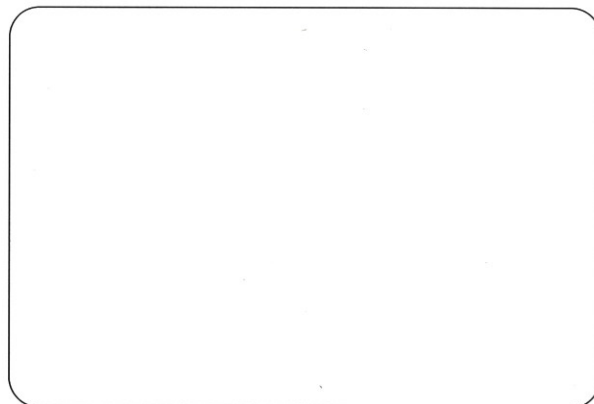


montgomery®

ELEVATORS ESCALATORS POWER WALKS POWER RAMPS

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