DOOR HARDWARE

GENERAL INFORMATION

1.1 CU Morningside, Manhattanville, Nevis and Lamont Dougherty Campus’ have specific hardware requirements. Standardized door hardware, systems, and components are described herein. Any deviation from these standards must be approved in writing by Columbia University’s Facilities Management (CUF) prior to specifying. It is the intent of this section to provide guidelines to be coordinated with all applicable building codes, life safety codes, and ADA requirements.

1.2 The campus / facility keying system is maintained by CUF. New construction locksets are to be equipped with a removable construction core.

DESIGN REQUIREMENTS

2.1 Requests for substitutions may be granted at the discretion of a VP, CPM only. Formal submissions are to include:

- the reason for the substitution,
- comparative cost evaluation with CU standard products
- sufficient detail to enable a quality evaluation
- Finish selection shall be approved by Project Manager.

2.2 Warranties - Hardware manufacturers shall provide full replacement warranty as listed below. Replacement warranty shall not include any labor cost.

a. Locksets - 3 years
b. Balance of hardware 1 year
Hinges

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butt Hinges</td>
<td>Ives</td>
<td>5BB1</td>
<td>No Substitution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5BB1HW</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5BB1TW4/6/8</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
- NRP (non-removable pin) hinges on out-swinging doors with keyed locks.
- NRP and Security Stud hinges on exterior doors with butt hinges.
- 4 ½” x 4 ½” for doors up to 3’0” wide, 5” x 4 ½” for doors over 3’0” wide.
- Provide HW (heavy weight) hinges at high traffic doors.
- Electric transfer hinges for interior doors only.

Butt Hinges: Ives

5BB1 / 5BB1HW for high traffic doors

For outswinging doors
For exterior doors
For doors over 3’ wide
For doors up to 3’ wide
### Continuous Hinges: Ives

**224HD** for delivery doors and high traffic public spaces

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Hinges</td>
<td>Ives</td>
<td>224HD</td>
<td>No Substitution</td>
</tr>
</tbody>
</table>

**Notes:**
- For retrofitting new doors into existing frames.
- For doors in high traffic public spaces (e.g. corridor doors, delivery doors, etc.)
- Use 224HD-EPT prep where Von Duprin EPT-10 electric power transfer is used
- 90 minute fire rating
### Power Transfer

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
</table>

**Notes:**
- Provide at all new construction electrified hardware openings – frames must be appropriately prepped when manufactured. Coordinate with manufacturer for template requirements.

**Electric Power Transfer: Von Duprin**

EPT 10 for power transfer in new doors (do not use in historic wood doors)

![Harness options](image)

- **Harness options.**
  - **Pinned:** Wire harness shipped with Quick Connect at one end and exposed pin heads at the other. Recommended for applications requiring field installation of existing doors.
  - **E:** Wire harness shipped with Quick Connect at one end and stripped leads on the other. The “E” option makes final termination from the wire harness to the power source.
  - **Refer to the Quick Connect User Guide for more information.
## Locksets and Latchsets

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinders and Keying</td>
<td>Mul-T-Lock</td>
<td>225 ICC SH</td>
<td>BY OWNER, No Substitution</td>
</tr>
<tr>
<td>Cylinder Housing and Construction</td>
<td>Schlage</td>
<td>20-057 ICX Rim Cylinder</td>
<td>No Substitution</td>
</tr>
</tbody>
</table>

**Notes:**
- Facility keying system is maintained on-site. All cylinder and keying requirements must be coordinated through the Lock Shop and Manufacturers Representative.
- Locksets shown here are a representative sample depicting style and finish. Select proper lock function to suit the use.
- New locksets are to be equipped with a Schlage Interchangeable construction core.

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locks and Latches</td>
<td>Schlage</td>
<td>Mortise: L-Series (doors on public corridors)</td>
<td>No Substitution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cylindrical: ND-Series (moderate security required)</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- New construction locksets to be equipped with a removable construction core. (Schlage 20-057 ICX)
- Instructional classrooms require L9070 or L9071 Classroom Security function locksets. *(Note: Classroom security function locksets require two lock cylinders)*
- Lever style will be “06” for mortise locksets and “RHODES” for cylindrical locksets.

L90 060A
**Item Description** | **Manufacturer** | **Catalog Series** | **Notes**
--- | --- | --- | ---
Locks and Latches | SDC | MLR Z7600 Series (doors on public corridors) | For doors where motorized latch retraction is needed to meet code and Public Safety requirements. No Substitution

**Notes:**
- New construction locksets to be equipped with a removable construction core.
- Lever style to match Schlage “RHODES”.

![Locks and Latches Image]
### Design Requirements

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand-alone electronic Access Control Locks</td>
<td>Schlage Electronics</td>
<td>AD-200</td>
<td>No Substitution</td>
</tr>
</tbody>
</table>

**Notes:**

- **Stand-alone electronic access control locks are not supported by CUF.**
- Use keypad + proximity reader head unless otherwise specified by Facilities Department.
- Lever style will be “RHODES”; JD full size removable core less core.
- Product requires Schlage SMS Express Software (or higher version).

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand-alone Electronic Access Control Software</td>
<td>Schlage Electronics</td>
<td>SMS-Express</td>
<td>No Substitution</td>
</tr>
</tbody>
</table>

**Notes:**

- AD and CO Series offline electronic locks require Schlage Security Management Software (SMS Express) for programming and administration.
- SMS Express software allows only one administrator to be signed on to the system at any given time. User Names and Passwords will be determined and assigned by Facilities Management.
- SMS Express software shall be installed on a local host computer only.
Exit Devices

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit Devices</td>
<td>Precision</td>
<td>2200 Series</td>
<td>No Substitution</td>
</tr>
</tbody>
</table>

Notes:
- Provide rim devices on single door application.
- Provide rim devices and keyed removable mullions on paired doors applications.
- Use surface mounted vertical rod devices, less bottom rod, on cross-corridor pairs of doors.
- Provide cylinder dogging on non-fire rated doors that require exit devices.

**2200 Apex Surface Vertical Rod Series**

*Figure 2.2  2200 Apex Surface Vertical Rod (SVR) Exit Device*
Removable Mullions

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removable Mullions</td>
<td>Von Duprin</td>
<td>KR4954/9954</td>
<td>No Substitution</td>
</tr>
</tbody>
</table>

**Notes:**
- Lockable, steel, key removable. Key is not required to reinstall mullion.
- Provide mullion stabilizers at each opening.
- Provide Von Duprin MT-54 storage kit for each mullion to secure device when removed from the opening.
- Provide manufacturer’s quick-connection fittings when electric or monitor strikes are used for mullion removal without damaging electrical connections.

**Keyed Removable Steel Mullions** makes removal faster and easier by a single operation of the mortise cylinder. Once mullion is removed, large equipment or furniture can freely pass through the opening. The unit will self lock when reinstalled, without use of the cylinder key. Uses a 1 3/8” mortise cylinder with a straight cam.

Standard mortise cylinder for use with exit hardware such as Adams Rite style deadlatch hardware and exit device trim that requires a standard mortise cylinder.
Magnetic Locks

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetic Locks</td>
<td>Schlage Electronics</td>
<td>450 Series</td>
<td>No Substitution</td>
</tr>
</tbody>
</table>

Notes:
- By special permission only. Obtain approval from Lock Shop, Public Safety, and the Fire Safety Director prior to specifying.
- Lifetime Warranty
- Auto Voltage Selection
- For all exterior doors when emergency backup power is available and for interior secured doors. Connect to Class E Fire Alarm System.

Magnetic Locks: Schlage

450 Series

6000 SERIES ELECTRIC STRIKE FINISHES

<table>
<thead>
<tr>
<th>US Number</th>
<th>BHMA Number</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>US3</td>
<td>605</td>
<td>Brass, polished</td>
</tr>
<tr>
<td>US4</td>
<td>606</td>
<td>Brass, dull</td>
</tr>
<tr>
<td>US10</td>
<td>612</td>
<td>Bronze, dull</td>
</tr>
<tr>
<td>US10B</td>
<td>640</td>
<td>Brass, dull (oxidized)</td>
</tr>
<tr>
<td>US32</td>
<td>629</td>
<td>Chrome, polished</td>
</tr>
<tr>
<td>US32D</td>
<td>630</td>
<td>Chrome, dull</td>
</tr>
</tbody>
</table>
Electric Strikes

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Strikes</td>
<td>Von Duprin</td>
<td>6000 Series</td>
<td>Select product series appropriate for the application.</td>
</tr>
</tbody>
</table>

Electric Strike: Von Duprin

6000 Series
Door Closers

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Closers</td>
<td>LCN</td>
<td>9530 (Pull side) 9540 (Push side)</td>
<td>No Substitution</td>
</tr>
</tbody>
</table>

Notes:
- For power actuated doors
- Provide non-sized closers, to meet maximum opening force requirements of ADA.
- Provide rocker switch for On/Off/Hold-open operation.
- Connect to emergency power for all egress doors.
- Mount closers on non-corridor side of openings for interior doors.
- Mount closers on inside of exterior doors.
- Use handing specific closers for all new construction applications.

The 9530 SENIOR SWING by LCN is an ADA door operator that is a two-in-one swing door operator. SENIOR SWING operators when activated, opens doors automatically for wheelchair access, yet allows for manual operation for regular pedestrian traffic.

- Push 'N Go permits non-switch activation
- Power Boost provides additional latching force
- Electromechanical unit with microprocessor control
- Digital keypad for easy setup
- Meets International Building Code requirements and ANSI A156.19
- UL approved for fire doors
### DESIGN REQUIREMENTS

**Notes:**
- For non-power actuated doors
- Provide cast iron body, forged arms and parallel arms, and non-ferrous covers.
- Provide non-sized closers to meet maximum opening force requirements of ADA.
- Provide drop plates, brackets or adapters for closer arms as required.
- Mount closers on non-corridor side of openings for interior doors.
- Mount closers on inside of exterior doors.
- Use Spring Cush (SCUSH) arm where stop arm is specified.

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Closers</td>
<td>LCN</td>
<td>4011 (Pull side)</td>
<td>No Substitution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4111 (Push side)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4510 (Pull side)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4210 (Push side)</td>
<td></td>
</tr>
<tr>
<td>Concealed Door Closer</td>
<td>LCN</td>
<td>3130 (Concealed)</td>
<td>By VP approval only</td>
</tr>
</tbody>
</table>

**LCN 4011/4111/4510/4210**

**LCN 3130**
Notes:

- Provide aluminum extrusion, 1” wider than door frame depth.
- Provide saddle-type wherever possible.
- Provide gasketing as required for smoke and fire-rated doors.

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thresholds and</td>
<td>NGP</td>
<td></td>
<td>Pemko</td>
</tr>
<tr>
<td>Gasketing</td>
<td></td>
<td></td>
<td>Reese</td>
</tr>
</tbody>
</table>

Notes:

- Provide 4” x 16” minimum plate size, except when limited by door stile width.
- Use concealed type mounting method wherever possible.
### DESIGN REQUIREMENTS

**Notes:**
- Touch pads - 4” x 4” preferred size, 1 ½” x 4” allowed when 4” style is impractical.
- Blue faceplate for high contrast required.
- Use concealed type mounting method wherever possible
- Touch column – for interior use only

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADA Actuators</td>
<td>MS Sedco Touch</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pad</td>
<td>59H</td>
<td>Or equal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>59J</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NexGen Series</td>
<td></td>
</tr>
<tr>
<td>MS Sedco Touchless Pad</td>
<td></td>
<td>482AA36</td>
<td></td>
</tr>
<tr>
<td>SDC Touch Column</td>
<td></td>
<td>484AA36</td>
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</tbody>
</table>

Notes:
## DESIGN REQUIREMENTS

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall / Floor Stops</td>
<td>Ives</td>
<td>WS400</td>
<td>No Substitution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FS430</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>WS40</td>
<td></td>
</tr>
</tbody>
</table>

**FS430 Dome Stop**

**Features:**
- For doors without threshold.
- Heavy Duty Cast Dome Stops constructed of brass, bronze or aluminum.
- Gray, non-marging rubber bumper.
- Packed with wood screw and plastic anchor, specify Tamper (TPW) or lead expansion shield (LS), if required.
- Meets ANSI/BHMA A156.6, L12141 for brass or bronze and L32141 for aluminum.

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Overall Height</th>
<th>Base Height</th>
<th>Base Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS430</td>
<td>1&quot;</td>
<td>3/16&quot;</td>
<td>1-3/4&quot; x 2&quot; Oal</td>
</tr>
</tbody>
</table>

**R435 Riser**

**Features:**
- Extruded aluminum, mill finish.
- For conversion of FS430 Dome Stop to carpet installation.
- Packed with wood screws, lead shield and stud. Specify Tamper (TPW) if required.

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>R435</td>
<td>1&quot; x 1-3/8&quot; Oal</td>
</tr>
</tbody>
</table>
WS401 CVX & WS402 CVX
WS401 CCV & WS402 CCV

Features:
• Constructed in heavy-duty cast brass or aluminum base.
• Special retainer cup makes rubber tamper resistant.
• The WS401CVX unit is designed with a convex rubber bumper, packed with wood screw and plastic anchor.
• The WS401CCV unit is designed with a concave rubber bumper which avoids damage to locks with projecting buttons, packed with wood screw and plastic anchor.
• The WS402CVX unit is designed with a convex rubber bumper packed with screw and drywall anchor.
• The WS402CCV unit is designed with a concave rubber bumper which avoids damage to locks with projecting buttons, packed with screw and drywall anchor.
• The WS401CVX & WS402CVX meets ANSI/BHMA A156.16 L12101 for brass and L32101 for aluminum.
• The WS401CCV & WS402CCV meets ANSI/BHMA A156.16 L12251 for brass and L32251 for aluminum.

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Manufacturer</th>
<th>Catalog Series</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetic Door Holder</td>
<td>LCN</td>
<td>SEM7840</td>
<td>No Substitution</td>
</tr>
</tbody>
</table>

Notes:
• If used on fire doors, must be connected to Class E system.
CONSTRUCTION REQUIREMENTS

3.1 Submittals:

a. Product Data: Submit two (2) copies of the manufacturer's data for each item of hardware. Include all information necessary to show compliance with requirements.

b. Hardware Schedule: Submit three (3) copies of the hardware schedule [architect, project manager, Lock Shop]. Follow Door and Hardware Institute (DHI) guidelines for schedule format. At the end of the schedule list each door number with appropriate heading number and hardware set number. Allow 5 work days for Lock Shop review. Furnish final schedule after samples, manufacturer's data sheets have been approved.

c. Keying Schedule: Provide a key schedule to the CU Lock Shop showing all key numbers and the spaces to which each permits entry. Lock Shop will review within 5 working days. After final approval has been received, the schedule along with the key gathering envelopes containing keys for each lock endorsed with lock number and space designation shall be turned over to the CU Lock Shop.

d. Samples: Prior to submittal of the final hardware schedule, submit one (1) sample of each exposed hardware unit for Architect and CU Lock Shop review.

3.2 Supplier:

a. Finish hardware shall be furnished by those having a minimum of 5 years of builders hardware experience and shall have in their employ at least one certified Architectural Hardware Consultant (AHC) to correctly interpret the plans, detailed drawings and specifications.

MAINTENANCE GUIDELINES

4.1 General Notes

a. All door frame modifications, such as cutting frames for electrified strikes, recessed door contacts, and butt transfer hinges must comply with NFPA 80 Standards.

b. All other electrified hardware devices shall be maintained by CUF, such as door closers, hinges, etc.

4.2 Electrified mortise locksets

a. Installation: CUF Operations, CPM and DPS.

b. Maintenance: Department of Public Safety (DPS) services and replaces existing locksets and Card Access System application maintenance. Any replacements will be “in kind” and covered under a DPS maintenance program.

c. Note: All electrified Mortise locks shall be installed as provided by the manufacturer with no modifications.
4.3 Non-electrified exit devices
   a. Installation: CUF Operations or CPM
   b. Maintenance: CUF services and replaces “in kind” if needed.

4.4 Electrified exit devices
   a. Installation: CUF Operations or CPM
   b. Maintenance: CUF services and replaces mechanical components and electrical components of the exit device. Electronic components of the access control system including power supply repair and replacement is covered under a DPS maintenance program.

4.5 Electric strikes
   a. Installation: CUF Operations or CPM; DPS. All new installations are to be reviewed by Design and Compliance for egress code compliance.
   b. Maintenance: DPS services and replaces existing electric strikes. Any replacements will be “in kind” and covered under a DPS maintenance program.

4.6 Magnetic locks
   a. Installation: CUF Operations or CPM. Magnetic locks may only be used on exterior doors when generator power is available for emergency backup.
   b. Maintenance: Magnetic locks are not covered under any service agreement. Repair and/or replacement is by CUF.