

DIVISION 8 – DOORS AND WINDOWS

SECTION 08710

DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes items known commercially as finish or door hardware that are required for swing, sliding, and folding doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed.
- B. This Section includes the following:
 - 1. Architectural Hinges
 - 2. Continuous Hinges
 - 3. Key Control System, Cylinders and Cores.
 - 4. Locksets, Latchsets and Deadbolts
 - 5. Panic Devices and Fire Rated Exit Devices
 - 6. Closers and Door Control Devices
 - 7. Overhead Door Stops and Holders
 - 8. Floor and Wall Stops
 - 9. Door Bolts and Coordinators
 - 10. Door Pulls, Push/Pull Plates and Push/Pull Sets
 - 11. Protective Plates
 - 12. Door Seals, Gasketing and Weatherstripping
 - 13. Thresholds
 - 14. Miscellaneous Door Control Devices
- C. Related Sections: The following Sections contain requirements that relate to the following sections.
 - 1. Section 081113: Hollow Metal Doors and Frames
 - 2. Section 081400: Wood Doors
 - 3. Section 083323: Coiling Doors
 - 4. Section 084113: Aluminum-Framed Entrances and Storefronts
- D. Products furnished but not installed under this Section to include:
 - 1. Cylinders for locks on entrance doors.
 - 2. Final replacement cores and keys to be installed by Owner.

1.3 REFERENCES

- A. Standards of the following as referenced:
 - 1. American National Standards Institute (ANSI)
 - 2. Door and Hardware Institute (DHI)
 - 3. Factory Mutual (FM)
 - 4. National Fire Protection Association (NFPA)
 - 5. Underwriters' Laboratories, Inc. (UL)
 - a. UL 10C - Fire Tests Door Assemblies
 - 6. Warnock Hersey
- B. Regulatory standards of the following as referenced:
 - 1. Department of Justice, Office of the Attorney General, *Americans with Disabilities Act*, Public Law 101-336 (ADA).
 - 2. CABO/ANSI A117.1: *Providing Accessibility and Usability for Physically Handicapped People*, 2010 edition.

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification sections.
- B. Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements. For items other than those scheduled in the "Headings" of Section 3, provide catalog information for the specified items and for those submitted.
- C. Final hardware schedule coordinated with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Final Hardware Schedule Content: Based on hardware indicated, organize schedule into vertical format "hardware sets" indicating complete designations of every item required for each door or opening. Use specification heading numbers with any variations suffixed a, b, etc. Include the following information:
 - a. Type, style, function, size, and finish of each hardware item.
 - b. Name and manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of each hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
 - e. Explanation of all abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for hardware.
 - g. Door and frame sizes and materials.
 - h. Keying information.
 - i. Cross-reference numbers used within schedule deviating from those specified.
 - 1) Column 1: State specified item and manufacturer.
 - 2) Column 2: State prior approved substituted item and its manufacturer.
 - 2. Submittal Sequence: Submit final schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work that is critical in the Project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by door hardware, and other information essential to the coordinated review of schedule.
 - 3. Keying Schedule: Submit separate detailed schedule indicating clearly how the Owner's final instructions on keying of locks has been fulfilled.
- D. Provide samples if requested of each type of exposed hardware unit in finish indicated and tagged with full description for coordination with schedule. Submit samples prior to submission of final hardware schedule.
 - 1. Samples will be returned to the supplier. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated in the Work, within

limitations of keying coordination requirements.

- E. Templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- F. Contract closeout submittals:
 - 1. Operation and maintenance data: Complete information for installed door hardware.
 - 2. Warranty: Completed and executed warranty forms.

1.5 QUALITY ASSURANCE

- A. Single Source Responsibility: Obtain each type of hardware (latch and locksets, hinges, closers, etc.) from a single manufacturer.
 - 1. Supplier Qualifications: Supplier must be a factory authorized distributor for the approved manufacturers. A recognized architectural door hardware supplier, with warehousing facilities in the Project's vicinity, that has a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that employs an experienced Architectural Hardware Consultant (AHC) who is available for consultation to Owner, Architect, and Contractor, at reasonable times during the course of the Work.
- B. Coordination Meetings:
 - 1. Contractor to set up and attend the following:
 - a. Lock distributor to meet with the Owner to finalize lock functions and keying requirements and to obtain final instructions in writing.
 - b. Lock distributor and lock, closer and exit device manufacturer to meet with the installer prior to beginning of installation of door hardware. Instruct installer on proper installation of specified products.
- C. Fire-Rated Openings: Provide door hardware for fire-rated openings that complies with NFPA Standard No. 80 requirements of authorities having jurisdiction.
 - 1. Provide only items of door hardware that are listed and tested by UL or Warnock Hersey for given type/size opening and degree of label. Provide proper latching hardware, door closers, approved-bearing hinges and seals whether listed in the Hardware Schedule or not. All hardware to comply with State and local codes and UL 10C.
 - 2. Where emergency exit devices are required on fire-rated doors, (with supplementary marking on doors' UL labels indicating "Fire Door to be equipped with Fire Exit Hardware") provide UL label on exit devices indicating "Fire Exit Hardware".
- D. All hardware is to comply with Federal and State Handicap laws.
- E. Substitutions: Request for substitutions of items of hardware other than those listed as "acceptable and approved" shall be made to the architect in writing no later than fourteen (14) days prior to bid opening. Approval of substitutions will only be given in writing or by Addenda. Requests for substitutions shall be accompanied by samples and/or detailed information for each manufacturer of each product showing design, functions, material thickness and any other pertinent information needed to compare your product with that specified. Lack of this information will result in a refusal.

1.6 PRODUCT HANDLING

- A. Tag each item or package separately with identification related to final hardware schedule, and include basic installation instructions with each item or package.
- B. Packaging of door hardware is responsibility of supplier. As material is received by hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.

- C. Inventory door hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.
- D. Deliver individually packaged door hardware items promptly to place of installation (shop or Project site).
- E. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.

1.7 WARRANTY

- A. Special warranties:
 - 1. Door Closers: Twenty Five-year period
 - 2. Exit Devices: Three-year period
 - 3. Locks and Cylinders: Three-year period

1.8 MAINTENANCE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions that are packed in hardware items for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

(*Denotes manufacturer referenced in the Hardware Headings)

- A. Architectural Hinges:
 - 1. Acceptable manufacturers:
 - a. Ives*
 - b. Bommer
 - c. McKinney
 - 2. Characteristics:
 - a. Templates: Provide only template-produced units.
 - b. Screws: Provide Phillips flat-head screws complying with the following requirements:
 - 1) For metal doors and frames install machine screws into drilled and tapped holes.
 - 2) For wood doors and frames install threaded-to-the-head wood screws.
 - 3) For fire-rated wood doors install #12 x 1-1/4 inch, threaded-to-the-head steel wood screws.
 - 4) Finish screw heads to match surface of hinges or pivots.
 - c. Hinge pins: Except as otherwise indicated, provide hinge pins as follows:
 - 1) Out-Swing Exterior Doors: Non-removable pins.
 - 2) Out-Swing Corridor Doors with Locks: Non-removable pins.
 - 3) Interior Doors: Non-rising pins.
 - 4) Tips: Flat button and matching plug. Finished to match leafs.
 - d. Size: Size hinges in accordance with specified manufacturer's published recommendations.
 - e. Quantity: Furnish one pair of hinges for all doors up to 5'-0" high. Furnish one hinge for each additional 2-1/2 feet or fraction thereof, unless otherwise specified in Hardware Headings.
- B. Continuous Geared Hinges:
 - 1. Acceptable manufacturers:
 - a. Ives*
 - b. Select Products
 - c. Markar

2. Characteristics:
 - a. Continuous gear hinges to be manufactured of extruded 6063-T6 aluminum alloy with anodized finish, or factory painted finish as scheduled.
 - b. All hinges are to be manufactured to template. Uncut hinges to be non-handed and to be a pinless assembly of three interlocking extrusions applied to the full height of the door and frame without mortising.
 - c. Vertical door loads to be carried on chemically lubricated polyacetal thrust bearings. The door and frame leaves to be continually geared together for the entire hinge length and secured with a full cover channel. Hinge to operate to a full 180°.
 - d. Hinges to be milled, anodized and assembled in matching pairs. Fasteners supplied to be steel self-drilling, self-tapping 12-24 x 3/4" screws.
 - e. Provide UL listed continuous hinges at fire doors. Continuous hinges at fire doors (suffix -FR) to meet the required ratings without the use of auxiliary fused pins or studs.
- C. Key Control System, Cylinders and Cores:
1. Acceptable manufacturers:
 - a. Match existing keying system or establish new (Schlage Everest 29T) keying system per owner direction
 2. Characteristics:
 - a. New Keying System: Except as otherwise indicated, provide new master key system for project.
 - b. Provide construction keying as required.
 - c. Equip locksets with conventional cylinders featuring patented, restricted keys (Schlage Everest 29T) and auxiliary locking pin. Patented key and cylinder design to be valid until 2029.
 - d. Metals: Construct lock cylinder parts from brass or bronze, stainless steel, or nickel silver.
 - e. Comply with Owner's instructions for master keying and, except as otherwise indicated, provide individual change key for each lock that is not designated to be keyed alike with a group of related locks.
 - 1) Permanently inscribe each key with number of lock that identifies cylinder manufacturer's key symbol, and notation, "DO NOT DUPLICATE".
 - f. Key Material: Provide keys of nickel silver only.
 - g. Key Quantity: Furnish (3) change keys for each lock, (5) master keys for each master system, (5) grandmaster keys for each grandmaster system, (10) construction master keys, (2) construction Control Keys.
 - 1) Furnish one extra blank for each lock.
 - 2) Furnish construction master keys to General Contractor.
 - 3) Deliver keys to Owner.
 - h. Key Control Software: Schlage Sitemaster 200 for Windows or equivalent, supplied with factory bitting, and keyset symbols.
- D. Standard Duty Cylindrical Locks and Latches: as scheduled, fastened with through-bolts and threaded chassis hubs.
1. Acceptable manufacturers:
 - a. Schlage AL-Series*
 - b. Falcon B Series
 - c. Sargent 7 Series
 2. Required Features:
 - a. Chassis: Cylindrical design, corrosion-resistant plated cold-rolled steel.
 - b. Locking Spindle: Stainless steel, interlocking design.
 - c. Latch Retractors: Forged steel. Balance of inner parts: Corrosion-resistant plated steel or stainless steel.
 - d. Lever Trim: Accessible design, independent operation, spring-cage supported, minimum 2" clearance from lever mid-point to face of door.
 - e. Rosettes: Minimum 3-7/16" diameter for coverage of ANSI/DHI A115.18, 1994 door preparation, through-bolt lugs on both spring cages to fully engage this pattern.
 - f. Springs: Full compression type.

- g. Strikes: 16 gage curved steel, bronze or brass with 1" deep box construction, lips of sufficient length to clear trim and protect clothing.
 - h. Lock Series and Design: Schlage AL Series, Neptune lever design.
 - i. Certifications:
 - 1) ANSI A156.2, 1994, Series 4000, Grade 2
 - 2) UL listed for A label single doors up to 4 ft x 8 ft.
- E. Deadbolts: as scheduled. Rotating cylinder trim rings of attack-resistant design. Mounting plates and actuator shields of plated cold-rolled steel. Mounting screws of 1/4" dia. steel and protected by drill-resistant ball bearings. Steel alloy deadbolt with hardened steel roller. Strike with 1/8" thick strike reinforcement and two 3" long screws. ANSI A156.5, 1992 Grade 1 certified.
- F. Exit Devices:
- 1. Acceptable manufacturers:
 - a. Von Duprin 98 Series*
 - b. Falcon 25 Series
 - c. Precision Apex 2100 Series
 - 2. Characteristics:
 - a. Exit devices to be UL Listed for life safety. Exit devices for fire rated openings to have "UL" labels for "Fire Exit Hardware."
 - b. Exit devices mounted on labeled wood doors to be mounted on the door per the door manufacturer's requirements.
 - c. All trim to be thru-bolted to the lock stile case.
 - d. Lever trim to be solid case material with a break-away feature to limit damage to the unit from vandalism. Lever design to match locksets.
 - e. All exit devices to be made of brass, bronze, stainless steel, or aluminum material, powder coated, anodized, or plated to the standard architectural finishes to match the balance of the door hardware.
 - f. Provide glass bead conversion kits to shim exit devices on doors with raised glass beads.
 - g. All exit devices to be one manufacturer. No deviation will be considered.
 - h. All series exit devices to incorporate a fluid damper, which decelerates the touchpad on its return stroke and eliminates noise associated with exit device operation. All exit devices to be non-handed. Touchpad to extend a minimum of 1/2 of the door width and to extend to the height of the cross rail housing for a "no pinch" operation. Plastic touchpads are not acceptable. All latchbolts to be the deadlocking type. Latchbolts to have a self-lubricating coating to reduce wear. Plated or plastic coated latchbolts are not acceptable. Plastic linkage and "dogging" components are not acceptable.
 - i. Surface vertical rod devices to be UL labeled for fire door applications without the use of bottom rod assemblies. Where bottom rods are required for security applications, the devices to be UL labeled for fire doors applications with rod and latch guards by the device manufacturer.
 - j. Exit devices to include impact resistant, flush mounted end cap design to avoid damage due to carts and other heavy objects passing through an opening. End cap to be of heavy-duty metal alloy construction and provide horizontal adjustment to provide alignment with device cover plate. When exit device end cap is installed, no raised edges will protrude.
 - k. Exit Device lever trim to match lockset lever design.
- G. Closers and Door Control Devices:
- 1. Acceptable manufacturers:
 - a. LCN Closers 1450 Series*
 - b. Falcon SC80 Series
 - c. Norton 8501 Series
 - 2. Characteristics:
 - a. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory.
 - b. Provide door closers with fully hydraulic, full rack and pinion action with cast aluminum cylinder.

- c. Closer Body: 1-1/4 inch (32 mm) diameter, with 5/8 inch (16 mm) diameter heat-treated pinion journal and full complement bearings.
- d. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
- e. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
- f. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and back check.
- g. Pressure Relief Valve (PRV) Technology: not permitted.
- h. Provide stick on and special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

H. Overhead Door Stops and Holders:

- 1. Acceptable manufacturers:
 - a. Glynn Johnson*
 - b. RixsonFiremark
- 2. Characteristics:
 - a. Provide heavy duty concealed door holders of stainless steel.
 - b. Provide heavy duty surface mounted door holders of stainless steel.
 - c. Concealed holders to be installed with the jamb bracket mortised flush with the bottom of the jamb. The arm and channel to be mortised into the door.
 - d. Surface holders to be installed with the jamb bracket mounted on the stop.

I. Floor Stops and Wall Bumpers:

- 1. Acceptable manufacturers:
 - a. Ives*
 - b. Trimco
 - c. Rockwood Manufacturing
- 2. Characteristics: Refer to Hardware Headings.

J. Door Bolts/Coordinators:

- 1. Acceptable manufacturers:
 - a. Ives*
 - b. Trimco
 - c. Rockwood Manufacturing
- 2. Characteristics:
 - a. Flush bolts to be forged brass 6-3/4" x 1", with 1/2" diameter bolts. Plunger to be supplied with milled surface one side that fits into a matching guide.
 - b. Furnish dust proof bottom strikes.

K. Door Pulls, Pull Plates and Push Pull Sets:

1. Acceptable manufacturers:
 - a. Ives*
 - b. Trimco
 - c. Rockwood Manufacturing
2. Characteristics:
 - a. Provide concealed thru-bolted trim on back to back mounted pulls, but not for single units.
 - b. Material to be forgedstainless steel.
 - c. Provide units sized as shown in Hardware Headings.

L. Push Plates:

1. Acceptable manufacturers:
 - a. Ives*
 - b. Trimco
 - c. Rockwood Manufacturing
2. Characteristics:
 - a. Exposed Fasteners: Provide manufacturers standard exposed fasteners.
 - b. Material to be forged stainless steel, per the Hardware Headings.
 - c. Provide plates sized as shown in Hardware Headings.

M. Protective Plates:

1. Acceptable manufacturers:
 - a. Ives*
 - b. Trimco
 - c. Rockwood Manufacturing
2. Characteristics:
 - a. Provide manufacturers standard exposed fasteners for door trim units consisting of either machine screws or self-tapping screws.
 - b. Materials:
 - 1) Metal Plates: Stainless Steel, .050 inch (U.S. 18 gage).
 - c. Fabricate protection plates not more than 2 inches less than door width on push side and not more than 1 inch less than door width on pull side. Provide counter sunk mounting holes. Provide bevel edges on all four sides.
 - d. Sizes:
 - 1) Provide as listed in headings.
 - 2) Kick plates and Mop plates to be 1" less than bottom rail height where applicable.

N. Door Seals/Gasketing/Weatherstripping:

1. Acceptable manufacturers:
 - a. Zero*
 - b. Pemko
 - c. Reese Industries
2. Types: Indicated in Hardware Headings.

O. Silencers:

1. Acceptable manufacturers:
 - a. Ives*
 - b. Steelcraft
 - c. Rockwood Manufacturing
2. Three for each single door; two for each pair of doors.

- P. Thresholds:
1. Acceptable manufacturers:
 - a. Zero*
 - b. Pemko
 - c. Reese Industries
 2. Types: Indicated in Hardware Headings.
- Q. Key Cabinet and System:
1. Acceptable manufacturers:
 - a. Telkee, Inc.
 2. Provide a key control system including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150 percent of the number of locks required for the project.
 - a. Provide complete cross index system set up by key control distributor, and place keys on markers and hooks in the cabinet as determined by the final key schedule.
 - b. Provide hinged-panel type cabinet for wall mounting.
 - c. Provide multiple-drawer type cabinet.

2.2 MATERIALS AND FABRICATION

- A. Manufacturer's Name Plate: Do not use manufacturers' products that have manufacturer's name or trade name displayed in a visible location (omit removable nameplates) except in conjunction with required fire-rated labels and as otherwise acceptable to Architect.
1. Manufacturer's identification will be permitted on rim of lock cylinders only.
- B. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable ANSI/BHMA A156 series standards for each type of hardware item and with ANSI/BHMA A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.
- C. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
1. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.
 2. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.
 3. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified are available with concealed fasteners.
 4. Do not use thru-bolts or sex bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of adequately fastening the hardware, or otherwise found in Headings. Coordinate with wood doors and metal doors and frames. Where thru-bolts are used, provide sleeves for each thru-bolt as a means of reinforcing the work, or use sex screw fasteners.

2.3 HARDWARE FINISHES

- A. Match items to the manufacturer's standard color and texture finish for the latch and lock sets (or push-pull units if no latch or lock sets).
- B. Provide finishes that match those established by ANSI or, if none established, match the Architect's sample.
- C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities

complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

- D. Provide protective lacquer coating on all exposed hardware finishes of brass, bronze, and aluminum, except as otherwise indicated. The suffix "-NL" is used with standard finish designations to indicate "no lacquer."
- E. The designations used to indicate hardware finishes are those listed in ANSI/BHMA A156.18, "Materials and Finishes," including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.
 - 1. All hardware is to have a dark bronze finish.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Mount hardware units at heights indicated in following applicable publications, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Architect.
 - 1. "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.
 - 2. "Recommended Locations for Builders Hardware for Custom Steel Doors and Frames" by the Door and Hardware Institute.
 - 3. NWWDA Industry Standard I.S.1.7, "Hardware Locations for Wood Flush Doors."
- B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.
- C. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- D. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- E. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant complying with requirements specified in Division 7 Section "Joint Sealers".
- F. Weatherstripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

3.2 ADJUSTING, CLEANING, AND DEMONSTRATING

- A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made.
 - 1. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to function properly with final operation of heating and ventilating equipment.
- B. Clean adjacent surfaces soiled by hardware installation.
- C. Door Hardware Supplier's Field Service:
 - 1. Inspect door hardware items for correct installation and adjustment after complete installation of door hardware.

2. Instruct Owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes.
3. File written report of this inspection to Architect.

3.3 HARDWARE SCHEDULE

3.4 Hardware Group No. 1

3.5 For use on Door #(s):

1

3.6 Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112XY	313AN	IVE
1	EA	PANIC HARDWARE	25-C-C	313AN	FAL
1	EA	PANIC HARDWARE	25-C-EO	313AN	FAL
1	EA	CYLINDER	RIM OR MORTISE AS REQUIRED	613	SCH
2	EA	SURFACE CLOSER	1450 SCUSH STD	695	LCN
2	EA	CUSH SHOE SUPPORT	1450-30 (AS REQ)	695	LCN
2	EA	BLADE STOP SPACER	1450-61 (AS REQ)	695	LCN
1	SET	SET DOOR SEALS	MANUF. STD(SUPPLIED BY DOOR PROVIDER)		
1	SET	DOOR BOTTOM SEAL	MANUF. STD(SUPPLIED BY DOOR PROVIDER)		
1	EA	THRESHOLD	MANUF. STD(SUPPLIED BY DOOR PROVIDER)		

3.7

3.8 Hardware Group No. 2

3.9 For use on Door #(s):

2

3

4

5

3.10 Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	313AN	IVE
1	EA	PANIC HARDWARE	24-R-NL/OP	313	FAL
1	EA	CYLINDER	AS REQUIRED	613	SCH
1	EA	SURFACE CLOSER	1450 SCUSH STD	695	LCN
1	EA	DOOR PULL	8190-0	613	IVE
1	EA	CUSH SHOE SUPPORT	1450-30 (AS REQ)	695	LCN
1	EA	BLADE STOP SPACER	1450-61 (AS REQ)	695	LCN
1	SET	SET DOOR SEALS	MANUF. STD(SUPPLIED BY DOOR PROVIDER)		
1	SET	DOOR BOTTOM SEAL	MANUF. STD(SUPPLIED BY DOOR PROVIDER)		
1	EA	THRESHOLD	MANUF. STD(SUPPLIED BY DOOR PROVIDER)		

3.11

3.12

3.13

3.14

3.15 Hardware Group No. 3

3.16 For use on Door #(s):
6

3.17 Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 x 4.5 NRP	613	IVE
1	EA	STOREROOM LOCK	ALX80PD-SAT	613	SCH
1	EA	OVERHEAD STOP	900S	613	IVE
1	EA	SEALS	8303D	DKB	ZER
1	EA	THRESHOLD	65D-223	DKB	ZER
1	EA	DOOR SWEEP	39D	DKB	ZER
1	EA	RAIN DRIO	142D	DKB	ZER

3.18

3.19 Hardware Group No. 4

3.20 For use on Door #(s):
16

3.21 Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1 NRP (SIZE AS REQ)	640	IVE
2	EA	MANUAL FLUSH BOLT	FB458	US10B	IVE
1	EA	DUST PROOF STRIKE	DP2 (NO THRESHOLD)	US10B	IVE
1	EA	CLASSROOM LOCK	ALX70P6 SAT	613	SCH
1	EA	MEETING STILE	383D	D	ZER
2	EA	SILENCER	SR64/65	GRY	IVE

3.22

3.23 Hardware Group No. 5

3.24 For use on Door #(s):

11

3.25 Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 x 4.5	640	IVE
1	EA	PANIC HARDWARE	F-25-R-L-DANE	313	FAL
1	EA	CYLINDER	RIM OR MORTISE AS REQUIRED	613	SCH
1	EA	SURFACE CLOSER	1450 SCUSH STD	695	LCN
1	EA	KICK PLATE	8400 10" B-CS	US10B	IVE
1	EA	GASKETING	488SBK PSA	BK	ZER

3.26

3.27 Hardware Group No. 6

3.28 For use on Door #(s):

14

3.29 Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 x 4.5	640	IVE
1	EA	STOREROOM LOCK	ALX80P6 SAT	613	SCH
1	EA	SURFACE CLOSER	1450 SCUSH STD	695	LCN
1	EA	GASKETING	488SBK PSA	BK	ZER

3.30

3.31 Hardware Group No. 7

3.32 For use on Door #(s):

7

3.33 Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	640	IVE
1	EA	STOREROOM LOCK	ALX80P6 SAT	613	SCH
1	EA	WALL STOP	WS406CCV	613	IVE
3	EA	SILENCER	SR64/65	GRY	IVE

3.34

3.35 Hardware Group No. 8

3.36 For use on Door #(s):

10 15

3.37 Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 (SIZE AS REQ)	640	IVE
1	EA	CLASSROOM LOCK	ALX70P6 SAT	613	SCH
1	EA	OH STOP	450S	US10B	GLY
3	EA	SILENCER	SR64/65	GRY	IVE

3.38

3.39 Hardware Group No. 9

3.40 For use on Door #(s):

9 17

3.41 Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	640	IVE

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CLASSROOM LOCK	ALX70P6 SAT	613	SCH
1	EA	WALL STOP	WS406/407CVX	US10B	IVE
3	EA	SILENCER	SR64/65	GRY	IVE
3.42					
3.43		Hardware Group No. 10			
3.44		For use on Door #(s):			
8					
3.45		Provide each SGL door(s) with the following:			
QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 x 4.5	640	IVE
1	EA	STOREROOM LOCK	L9480P 06A OS-OCC	613	SCH
1	EA	SURFACE CLOSER	1450 REG	695	LCN
1	EA	WALL STOP	WS406/407CVX	US10B	IVE
3	EA	SILENCERS	SR64/65	GRY	IVE
3.46					
3.47		Hardware Group No. 11			
3.48		For use on Door #(s):			
12		13			
3.49		Provide each SGL door(s) with the following:			
QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
4	EA	HINGE	5BB1 4.5 X 4.5	640	IVE
1	EA	PUSH PLATE	8200 4" X 16"	US10B	IVE
1	EA	PULL PLATE	8303-8" 4" X 16"	US10B	IVE
1	EA	SURFACE CLOSER	1450 REG	695	LCN
1	EA	KICK PLATE	8400 10" B-CS	US10B	IVE
1	EA	MOP PLATE	8400 4" B-CS	US10B	IVE
1	EA	WALL STOP	WS406/407CVX	US10B	IVE
3	EA	SILENCER	SR64/65	GRY	IVE
3.50					
3.51					

MANUFACTURERS SPECIFIED

HINGES:	IVES
EXIT DEVICES:	FALCON
LOCKSETS / CYL.:	SCHLAGE
CLOSERS:	LCN
AUXILLARY HDW:	IVES
THRESHOLD/SEALS:	ZERO

APPROVED MANUFACTURERS

BEST	McKINNEY
PRECISION	SARGENT
BEST	SARGENT
BEST	SARGENT
TRIMCO	ROCKWWOD
REESE	PEMKO

OTHER MANUFACTURERS ACCEPTABLE ONLY WITH PRIOR APPROVAL BEFORE BID DATE.