

SECTION 087100 - FINISH HARDWARE

PART I - GENERAL

1.01 WORK INCLUDED

- A. The work in this section shall include furnishing of all items of finish hardware as hereinafter specified or obviously necessary to complete the building, except those items that are specifically excluded from this section of the specification.

1.02 DESCRIPTION OF WORK

- A. Furnish labor and material to complete hardware work indicated, as specified herein, or as may be required by actual conditions at building.
- B. Include all necessary screws, bolts, expansion shields, other devices, if necessary, as required for proper hardware application. The hardware supplier shall assume all responsibility for correct quantities.
- C. All hardware shall meet the requirements of Federal, State and Local codes having jurisdiction over this project, notwithstanding any real or apparent conflict therewith in these specifications.
- D. Fire-Rated Openings:
 1. Provide hardware for fire-rated openings in compliance with A.I.A. (NBFU) Pamphlet No. 80, NFPA Standards NO. 101, UBC 702 and UL10C. This requirement takes precedence over other requirements for such hardware. Provide only hardware that has been tested and listed by UL for the types and sizes of doors required, and complies with the requirements of the door and door frame labels.
 2. Where panic exit devices are required on fire-rated doors, provide supplementary marking on door UL label indicating Fire Door to be equipped with fire exit hardware and provide UL label on exit device indicating "Fire Exit Hardware".
- E. Fasteners:
 1. Hardware as furnished shall conform to published templates generally prepared for machine screw installation.
 2. Furnish each item complete with all screws required for installation. Typically, all exposed screws installation.
 3. Insofar as practical, furnished concealed type fasteners for hardware units which have exposed screws shall be furnished with Phillips flat heads screws, finished to match adjacent hardware.
 4. Door closers and exit devices to be installed on wood or composite fire doors shall be attached with closed head through bolts (sex bolts).

1.03 QUALITY ASSURANCE

- A. The supplier to be a directly franchised distributor of the products to be furnished and have in their employ an AHC (Architectural Hardware Consultant). This person is to be available for consultation to the architect, owner and the general contractor at reasonable times during the course of work.

- B. The finish hardware supplier shall prepare and submit to the architect six (6) copies of a complete schedule identifying each door and each set number, following the numbering system and not creating any separate system himself. He shall submit the schedule for review, make corrections as directed and resubmit the corrected schedule for final approval. Approval of schedule will not relieve Contractor of the responsibility for furnishing all necessary hardware, including the responsibility for furnishing correct quantities.
- C. No manufacturing orders shall be placed until detailed schedule has been submitted to the architect and written approval received.
- D. After hardware schedule has been approved, furnish templates required by manufacturing contractors for making proper provisions in their work for accurate fitting, finishing hardware setting. Furnish templates in ample time to facilitate progress of work.
- E. Hardware supplier shall have an office and warehouse facilities to accommodate the materials used on this project. The supplier must be an authorized distributor of the products specified.
- F. The hardware manufactures are to supply both a pre-installation class as well as a post-installation walk-thru. This is to insure proper installation and provide for any adjustments or replacements of hardware as required.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Wrap, protect finishing hardware items for shipment. Deliver to manufacturing contractors hardware items required by them for their application; deliver balance of hardware to job; store in designated location. Each item shall be clearly marked with its intended location.

1.05 WARRANTY

- A. The material furnished shall be warranted for one year after installation or longer as the individual manufacturer's warranty permits.
- B. Overhead door closers shall be warranted in writing, by the manufacturer, against failure due to defective materials and workmanship for a period of ten (10) years commencing on the Date of Final Completion and Acceptance, and in the event of failure, the manufacture is to promptly repair or replace the defective with no additional cost to the Owner.

PART II - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. To the greatest extent possible, obtain each kind of hardware from one manufacturer only.
- B. If material manufactured by other than that specified or listed herewith as an equal, is to be bid upon, permission must be requested from the architect seven (7) days prior to bidding. If substitution is allowed, it will be so noted by addendum.

2.02 HINGES AND PIVOTS:

- A. Hinges on all out swinging doors shall be furnished with non-removable pins (NRP).

2.03 KEYING:

- A. Locks and cylinders shall be Schlage Lock. All bittings shall be issued by lock manufacturer in order to create a grand master key system.
- B. Locks and cylinders to be construction master keyed in a manner that does not require the cylinders to be removed.
- C. Provide Two (2) each change keys per lock and Six (6) each construction master keys.

2.04 DOOR CLOSERS:

- A. Door closer cylinders shall be of high strength cast construction to provide low wear operating capabilities of internal parts throughout the life of the installation. All door closers shall be tested to ANSI/BHMA A156.4 test requirements by a BHMA certified testing laboratory.
- B. Door closers shall utilize temperature stable fluid capable of withstanding temperature ranges of 120 degrees Fahrenheit to -30 degrees Fahrenheit, without requiring seasonal adjustment of closer speed to properly close the door. Closers for fire-rated doors shall be provided with temperature stabilizing fluid that complies with the standards UBC 7-2 (1997) and UL 10C.
- C. Door closers shall incorporate tamper resistant non-critical screw valves of V-slot design to reduce possible clogging from particles within the closer. Closers shall have separate and independent screw valve adjustments for latch speed, general speed, and hydraulic backcheck. Backcheck shall be properly located so as to effectively slow the swing of the door at a minimum of 10 degrees in advance of the dead stop location to protect the door frame and hardware from damage. Pressure relief valves (PRV) are not acceptable.

2.05 DOOR SILENCERS:

- A. Furnish rubber door silencers for all new interior hollow metal frames, (2) per pair and (3) per single door frame.
 - 1. Product and Manufacturer: SR64; Ives

PART III - EXECUTION

3.01 INSTALLATION:

- A. All hardware shall be applied and installed in accordance with the Finish Hardware schedule. Care shall be exercised not to mar or damage adjacent work.
- B. Contractor to provide a secure lock-up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items that are not immediately replaceable, so that the completion of the work will not be delayed by hardware losses both before and after installation.
- C. No hardware is to be installed until the hardware manufactures have provided a pre-installation class. This is to insure proper installation of the specified products.

3.02 ADJUSTING AND CLEANING:

- A. Contractor shall adjust all hardware in strict compliance with manufacturer's instructions. Prior to turning project to owner, contractor shall clean and make any final adjustments to the finish hardware.

3.03 PROTECTION:

- A. Contractor shall protect hardware as it is stored on construction site in a covered and dry place.
- B. Contractor shall protect exposed hardware installed on doors during the construction phase.

3.04 KEY CABINET:

- A. Set up and index one (1) Key Cabinet that allows room for expansion for 150% of the number of keys for the project.

3.05 HARDWARE SCHEDULE:

- A. The following schedule is furnished for whatever assistance it may afford the contractor; do not consider it as entirely inclusive. Should any particular door or item be omitted in any scheduled hardware group, provide door or item with hardware same as required for similar purposes. Quantities listed are for each pair of doors; or for each single door.
- B. This hardware schedule prepared by.

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HARDWARE GROUP NO. 1:

Provide each pair of doors with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224HD	628	IVE
1	EA	CONT. HINGE	224HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	PANIC HARDWARE	3547A-DT	626	VON
1	EA	ELEC PANIC HARDWARE	QEL-3547A-L-06-CON 24 VDC	626	VON
1	EA	MORTISE CYLINDER	20-060 X K510-711 XQ11-949	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
2	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	65A-223	A	ZER
2	EA	WIRE HARNESS	CON-12		SCH
2	EA	WIRE HARNESS	CON-32		SCH
1	EA	MULTITECH READER	MT11 12 VDC	BLK	SCE
1	EA	POWER SUPPLY	PS902 120/240 VAC	LGR	SCE

**BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER. COORDINATE
ELECTRIC HARDWARE WITH DIVISION 28**

HARDWARE GROUP NO. 1:

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	224HD	628	IVE
1	EA	PANIC HARDWARE	3547A-DT	626	VON
1	EA	PANIC HARDWARE	3547A-L-06	626	VON
1	EA	MORTISE CYLINDER	20-060 X K510-711 XQ11-949	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
2	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	65A-223	A	ZER

~~BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER~~

HARDWARE GROUP NO. 2:

Provide each door with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	EU STOREROOM LOCK	ND80JDEU RHO CON 12V/24V DC	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
1	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	GASKETING	31BK-S	BK	ZER
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	65A-223	A	ZER
1	EA	WIRE HARNESS	CON-32		SCH
1	EA	MULTITECH READER	MT11 12 VDC	BLK	SCE
1	EA	POWER SUPPLY	PS902 120/240 VAC	LGR	SCE

WHEN AUTHORIZED CREDENTIAL IS PRESENTED THIS WILL RELEASE THE LOCK AND ALLOW FOR ENTRY. IMMEDIATE EGRESS ALWAYS AVAILABLE

HARDWARE GROUP NO. 3:

Provide each door with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	ELEC PANIC HARDWARE	QEL-35A-NL-CON 24 VDC	626	VON
1	EA	MORTISE CYLINDER	20-060 X K510-711 XQ11-949	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	65A-223	A	ZER
1	EA	WIRE HARNESS	CON-12		SCH
1	EA	WIRE HARNESS	CON-32		SCH
1	EA	MULTITECH READER	MT11 12 VDC	BLK	SCE
1	EA	POWER SUPPLY	PS902 120/240 VAC	LGR	SCE

BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER. COORDINATE ELECTRIC HARDWARE WITH DIVISION 28.

~~HARDWARE GROUP NO. 3:~~

QTY	EA	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224HD	628	IVE
1	EA	PANIC HARDWARE	35A-NL	626	VON
1	EA	MORTISE CYLINDER	20-060 X K510-711 XQ11-949	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	65A-223	A	ZER

~~BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER~~

HARDWARE GROUP NO. 4:

Provide each door with the following:

QTY	EA	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	EU STOREROOM LOCK	ND80JDEU RHO CON 12V/24V DC	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
1	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	GASKETING	8144SBK PSA	BK	ZER
1	EA	WIRE HARNESS	CON-32		SCH
1	EA	MULTITECH READER	MT11 12 VDC	BLK	SCE
1	EA	POWER SUPPLY	PS902 120/240 VAC	LGR	SCE

WHEN AUTHORIZED CREDENTIAL IS PRESENTED THIS WILL RELEASE THE LOCK AND ALLOW FOR ENTRY. IMMEDIATE EGRESS ALWAYS AVAILABLE

HARDWARE GROUP NO. 5:

Provide each door with the following:

QTY	EA	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	ND80JD RHO	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ TBSRT	689	LCN
1	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	8144SBK PSA	BK	ZER

HARDWARE GROUP NO. 6:

Provide each door with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK	ND40S RHO	626	SCH
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ TBSRT	689	LCN
1	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	8144SBK PSA	BK	ZER

HARDWARE GROUP NO. 7:

Provide each door with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	ND10S RHO	626	SCH
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ TBSRT	689	LCN
1	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	8144SBK PSA	BK	ZER

HARDWARE GROUP NO. 8:

Provide each RU door with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
HARDWARE BY DOOR MANUFACTURER					

END OF SECTION 087100