Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 61 00 - Common Product Requirements.

.3 Section 01 78 00 - Closeout Submittals.

.4 Section 05 50 00 - Metal Fabrications: Metal fabricated framed openings, structural support framing for sloped glazing.

.5 Section 07 27 10 - Air Barriers - Descriptive or Proprietary.

.6 Section 07 84 00 - Firestopping: Fire safing between floor edge and curtain wall system.

.7 Section 07 92 10 - Joint Sealing: System perimeter sealant and back-up materials.

.8 Section 08 80 50 - Glazing.

.9 Section 09 91 23 - Interior Painting: Field painting of interior surface of infill.

1.2 REFERENCES

.1 Aluminum Association Designation System For Aluminum Finishes (AA)-[1997].

.1 DAF 45 [2003], Designation System For Aluminum Finishes.

.2 American Architectural Manufacturers Association (AAMA).

.1 AAMA CW-DG-1-[96], Aluminum Curtain Wall Design Guide Manual.

.2 AAMA CW-10-[97], Care and Handling of Architectural Aluminum From Shop to Site.

.3 AAMA CW-11-[85], Design Wind Loads for Buildings and Boundary Layer Wind Tunnel Testing.

.4 AAMA T1R-A1-[02], Sound Control for Fenestration Products.

.5 AAMA 501-[94], Methods of Test for Exterior Walls.

.6 AAMA 503-[92], Voluntary Specification for Field Testing of Metal Storefronts, Curtain Wall and Sloped Glazing Systems.

.7 AAMA 611-[98], Voluntary Specifications for Anodized Finishes Architectural Aluminum.

.8 AAMA 612-[02], Voluntary Specifications, Performance Requirements, and Test Procedures for Combined Coatings of Anode Oxide and Transparent Organic Coatings on Architectural Aluminum.

.9 AAMA 2603-[02], Voluntary Specification Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.

.10 AAMA 2604-[02], Voluntary Specification Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.

.3 American Society for Testing and Materials International, (ASTM).

.1 ASTM A36/A36M-[103a], Specification for Carbon Structural Steel.

.2 ASTM A123/A123M-[02], Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

.3 ASTM A167-[99], Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

.4 ASTM A653/A653M-[03], Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.5 ASTM B209-[02a], Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

.6 ASTM B221-[02], Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

.7 ASTM E283-[91(1999)], Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

.8 ASTM E330-[02], Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls, by Uniform Static Air Pressure Difference.

.9 ASTM E331-[00], Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform Static Air Pressure Difference.

.10 ASTM E413-[87(1999)], Classification for Rating Sound Insulation.

.11 ASTM E1105-[00], Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference.

.4 Canadian General Standards Board (CGSB).

.1 CAN/CGSB 1.108-[M89], Bituminous Solvent Type Paint.

.2 CAN/CGSB-12.20-[M89], Structural Design of Glass for Buildings.

.5 Canadian Standards Association (CSA International).

.1 CSA-G40.20/G40.21-[98(R2003)], General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steels.

.2 CAN/CSA-G164-[M92(R2003)], Hot Dip Galvanizing of Irregularly Shaped Articles.

.3 CSA-S136-[01], North American Specification for the Design of Cold-Formed Steel Structural Members.

.4 CAN3-S157-[M83(R2002)], Strength Design in Aluminum.

.5 CSA W59.2-[M1991(R2003)], Welded Aluminum Construction.

.6 Environmental Choice Program (ECP).

.1 CCD-45-[95], Sealants and Caulking Compounds.

.2 CCD-47-[1998], Surface Coatings.

.3 CCD-48-[95], Recycled Water-Borne Surface Coatings.

.7 Society for Protective Coatings (SSPC).

.1 SSPC - Paint 20 Zinc Rich Coating.

.2 SSPC - Paint 25 Alkyd, Zinc Oxide Linseed Oil and Primer for Use Over Hand Cleaned Steel Type 1 and Type 2.

1.3 SYSTEM DESCRIPTION

.1 Work included: Furnish labour, materials and other services to complete the fabrication and installation of the framing, including all materials and fitments required for the operation of any entrance units included, in the manner, direction and performance shown on the shop drawings and specified herein. Work not included: Structural support of framing, interior trims. Related work specified elsewhere.

1.4 QUALITY ASSURANCE

.1 Installation crews engaged or provided by the approved supplier shall have proven experience specifically trained and qualified in this work (written proof of minimum of five (5) years employment or service with the window manufacturer or similar manufacturer). Individuals are to be either employees of the manufacturer and/or workers approved by the manufacturer.

.2 Provide one (1) thoroughly experienced. reliable, qualified and competent foreman in charge of the work to be on site at all times when work is taking place. Individual to be designated in charge from start of activities on site until final deficiencies are complete. Foreman may only be changed by written approval *or request* of the Consultant or owner.

.3 Window supplier is to have adequate plant and skilled tradesmen and is known to have manufactured and installed similar windows for a minimum of five (5) years in the Province of Ontario.

1.5 PERFORMANCE REQUIREMENTS

.1 Structural performance shall be based on CSA standard CAN3-S157 "Strength Design in Aluminum" and a maximum deflection of 1/175 of the span.

.2 Air infiltration shall not exceed 0.06 cfm/ft2 (0.0003 m3/s-m2) when tested in accordance with ASTM E283 at a pressure differential of6.24p.s.f. (300 Pa.)

.3 There shall be no water infiltration when tested in accordance with ASTM E331 with a pressure differential of 15.0 p.s.f. (720 Pa.) Thermally, the grid members shall have a condensation resistance equal to or better than the area along the bottom of a 1" sealed glass unit with standard metal spacer edge construction.

.4 Size glass units and glass dimensions to limits established in CAN/CGSB-12.20.

.5 Provide system to accommodate, without damage to components or deterioration of seals:

.1 Movement within system.

.2 Movement between system and perimeter framing components.

.3 Dynamic loading and release of loads.

.4 Deflection of structural support framing.

.5 Shortening of building concrete structural columns.

.6 Creep of concrete structural members.

.6 Vapour seal with interior atmospheric pressure of 25 mm sp, 22 degrees C, 40% RH: No failure.

.7 Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to the exterior by a weep drainage network.

.8 Ensure no vibration harmonics, wind whistles, noises caused by thermal movement, thermal movement transmitted to other building elements, loosening, weakening, or fracturing of attachments or components of system occur.

1.6 PRODUCT DATA

.1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.

.2 Provide component dimensions; describe components within assembly, anchorage and fasteners, glass and infill, internal drainage details and water flow diagrams.

1.7 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.2 Indicate system dimensions, framed opening requirements and tolerances, internal million reinforcement, adjacent construction, anchor details anticipated deflection under load, affected related Work, weep drainage network, expansion and contraction joint location and details, and field welding required.

.3 Curtain wall shop drawings are to be approved for structural integrity by a Professional Engineer licensed to design structures in the Province of Ontario. Shop drawings are to bear Engineer's seal of approval.

1.8 SAMPLES

.1 Drawings and specifications for work of this section are based upon Thermawall 2600 series Curtain Wall system by Alumicor. For all approved products and acceptable alternatives, submit supporting technical literature, samples, drawings and performance data to meet or exceed these specifications.

.2 Submit two samples 800 x 800 mm in size illustrating prefinished aluminum surface, finish, colour, texture, specified glass units, insulated infill panels, glazing materials illustrating edge and corner.

1.9 DESIGN DATA

.1 Submit design data in accordance with Section 01 33 00 - Submittal Procedures.

.2 Provide framing member structural and physical characteristics, calculations, dimensional limitations, special installation requirements.

1.10 TEST REPORTS

.1 Submit test reports in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit substantiating engineering data, test results of previous tests by independent laboratory which purport to meet performance criteria, and supportive data.

1.11 REGULATORY REQUIREMENTS

.1 Conform to applicable code for acoustic attenuation, and sound transmission.

.2 Use the following paragraph for assessing full sized erected assemblies for review of construction, coordination of work of several sections, testing, or observation of operation. A mock-up may also be used for assessing field applied finishes.

1.12 MOCK-UP

.1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.

.2 Locate where directed.

.3 Allow 24 hours for inspection of mock-up Consultant before proceeding with work.

.4 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may not remain as part of finished work.

1.13 PRE-INSTALLATION MEETING

.1 Convene one week before starting work of this section.

1.14 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, store, handle and protect materials in accordance with Division 1 requirements.

.2 Handle work of this section in accordance with AAMA CW-10.

.3 Protect prefinished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.

1.15 ENVIRONMENTAL REQUIREMENTS

.1 Do not install sealants when ambient and surface temperature is less than 5 degrees C.

.2 Maintain this minimum temperature during and after installation of sealants.

1.16 SEQUENCING

.1 Coordinate work of this section with installation of fire stopping, air barrier placement, vapour retarder placement, flashing placement, installing ductwork to rear of louvers.

1.17 WARRANTY

.1 Submit a manufacturer's warranty against defects in materials and workmanship covering the components of the window system for a period of ten (10) years. The manufacturer shall supply a non-pro-rated warranty covering labour, materials, tools and equipment to repair and/or replace any materials defects at no additional cost, for a period of ten (10) years including defects or failures due to poor workmanship and installation.

.2 The supplier shall also submit a warrantee, in accordance with Section 088050-Glazing, for 10 years warranting the sealed units against defects.

1.18 MAINTENANCE DOCUMENTS AND MATERIALS

.1 Provide 2 copies of data for maintenance and routine cleaning.

.2 Provide 2 copies of final record reviewed shop drawings for owner's records.

.3 Contractor shall supply all accessories as may be required for the operation and performance of the windows system.

1.19 EXTRA MATERIALS

.1 Provide extra materials of glass units in accordance with Section 01 78 00 - Closeout Submittals.

.2 Provide protected and packaged in wood crates suitable for storage. Clearly identify each crate.

.3 Deliver Consultant, upon completion of the work of this section.

.4 Store where directed by Consultant.

1.20 WASTE MANAGEMENT AND DISPOSAL

.1 Remove from site and dispose of packaging materials at appropriate recycling facilities.

Part 2 Products

2.1 MATERIALS

.1 Drawings and Details are based on Thermawall 2600 series Curtain Wall by Alumicor (2 ½"- 63.5 mm x 149mm & 187mm – incl. glazing & cap).

.2 Curtainwall to be reinforced within mullion as required for proposed design.

.3 Must be designed to withstand a wind load of min. 30 psf.

.4 fixed (non opening) thermally broken anodized aluminum curtain wall system, glazed with tempered, insulating vision glass and tempered spandrel glass.

.5 Acceptable Materials : Curtain wall systems meeting or exceeding these specifications manufactured by:

.1 Alumicor
.2 Aerloc Industries
.3 Alwind Industries
.4 Kawneer Company of Canada
.5 Windspec Inc.

.6 Extrusions shall be 6063 T54 alloy and temper.

.7 Formed aluminum components shall be sheet of alloy and temper suitable for their purpose and finish.

.8 Fasteners shall be 300 series stainless steel or 400 series stainless steel cadmium plated and of sufficient size and quantity to perform their intended function.

.9 Weathering and glazing gaskets shall be extruded, black, closed cell or dense elastomer of durometer appropriate to the function.

.10 Provide glazed and aluminum spandrel sections where indicated on drawings.

.11 Provide structural silicone mullions where described on drawings.

.12 Refer to Section 08 80 50 – Glazing for information on tinted glazing sections. Refer to drawings for locations of tinted glazing.

.13 Manufacturer / Installer to determine if mullions require internal reinforcement to achieve specified load resistance.

2.2 FINISHES

.1 CLEAR ANODIZED.

.1 Exposed aluminum sections shall be given an anodic oxide treatment in accordance with Aluminum Association specification AA-M12C22A31: “Clear anodized”.

2.3 FABRICATION

.1 Fabricate aluminum work in accordance with reviewed shop drawings and manufacturer’s written instructions.

.2 Fabricate framing from extrusions of size and shape shown on shop drawings.

.3 Vertical and horizontal members shall be tubular extrusions designed for shear block comer construction.

.4 All joints shall be accurately machined, assembled and sealed to provide neat weather tight joints. Shielded drainage and pressure equalization vents shall be provided where required. AH horizontal members shall be sealed to vertical members to provide individual compartments within the system in accordance with the rain screen principle.

.5 Fabricate system components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.

.6 Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.

.7 Prepare components to receive anchor devices. Install anchors.

.8 Arrange fasteners and attachments to ensure concealment from view.

.9 Reinforce framing members for external imposed loads.

.10 Visible manufacturer's identification labels not permitted.

.11 Break shapes must be approved by the Consultant prior to use.

.12 At all curtain wall spandrel panels exposed on interior of building, curtain wall spandral panels shall be laminated w/ aluminum panel of same pre-finish as mullions with bent edges.

.13 Provide spandrel panels at locations of exterior light fixtures as shown on elevations. Coordinate with Div. 16 for lighting location and size of openings.

.14 All perimeter sections to be tubular/closed back sections for continuous adhesion and continuity of building envelope membrane.

.15 Spandrel panels:

.1 Fabricate insulated spandrel panel inner facing of 20 gauge aluminum sheet. Wrap edges with aluminum sheet, enabling installation and minor movement of perimeter seal.

.2 Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.

.3 Place insulation within panel, adhered to exterior face of interior panel sheet over entire area of sheet with impale fasteners.

.4 Provide integral reinforcing and stiffeners as required to reinforce panel against deflection caused by wind and suction loads.

.5 Provide non-metallic spacers as necessary to separate dissimilar metals.

.6 Ventilate and pressure equalize the air space outside the exterior surface of the insulation, to the exterior.

.7 Arrange fasteners and attachments to ensure concealment from view.

.8 Glass panels: Consists of spandrel glass in accordance with Section 08 80 00 to the exterior with insulated backpan to the inside. Interior face of panel to be finished with a pre-finished aluminum sheet of the same grade as the exterior, colour matching the exterior. Insulation thickness shall be as indicated, retained with stick clips. Seal all joints in shop with high grade butyl sealant, including perimeter seal at backpan. Colour to later selection by Consultant.

.9 Metal panels: Consists of an exterior prefinished flush aluminum panel with panel stiffeners as required, to match colour of window framing, with insulation

core thickness as indicated and galvanized sheet back-pan. Interior face of panel to be finished with a pre-finished aluminum sheet of the same grade as the exterior, colour matching the exterior.

Part 3 Execution

3.1 EXAMINATION

.1 Verify dimensions, tolerances, and method of attachment with other work.

.2 Verify wall openings and adjoining air barrier and vapour retarder materials are ready to receive work of this section.

3.2 INSTALLATION

.1 Framing shall be installed, glazed and adjusted by experienced personnel in accordance with the manufacturer's instructions and approved shop drawings. All items in this section shall be set in their correct location and shall be set level, square, plumb and at proper elevations and in alignment with other work.

.2 Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.

.3 Provide alignment attachments and shims to permanently fasten system to building structure. Clean weld surfaces; apply protective primer to field welds and adjacent surfaces.

.4 Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances and align with adjacent work.

.5 Provide thermal isolation where components penetrate or disrupt building insulation.

.6 Co-ordinate attachment and seal of perimeter air barrier and vapour retarder materials.

.7 Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

.8 Install fire-safing in areas as indicated.

3.3 FIELD QUALITY CONTROL

.1 Inspection will monitor quality of installation and glazing.

.2 Test to ASTM E1105, and AAMA 501.

.3 Evaluate installed system by thermo-photographic scan.

3.4 ADJUSTING

.1 Adjust operating sash for smooth operation.

3.5 CLEANING

.1 Remove protective material from prefinished aluminum surfaces.

.2 Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.

.3 Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.

3.6 PROTECTION

.1 Protect finished Work from damage.

.2 Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint."

END OF SECTION

.6 Sherwood Windows Ltd.

.7 Aluminum Window Designs Ltd.

Note: All window frames have been drawn to a std. framing depth of 5 1/4".
All curtain wall framing has been drawn to match windows so that curtain wall framing is inset 67 mm from the veneer face. Provide data at drawn sizes to design loads required.

.3 Design framing and glazing to withstand design loads as per Ontario Building Code with a maximum reflection of 1/200th of clear span.

.4 Work of this Section must be designed by and bear stamp of a Professional Engineer licensed to design structures in the Province of Ontario certifying their strength and safety.

.5 By submitting a price for supply and install, the Contractor, for Work to this Section, shall guarantee that he has carried products and pricing from one of the above approved manufacturers.

1.4 PERFORMANCE

.1 The overall thermal transmittance of fenestration assemblies shall be less than 0.81 Btu. Thermal transmittance for the fenestration shall be determined using ASHRAE 90.1 calculation procedures and shall include the effect of sash, frame, edge effect and spacer for multiple-glazed units.

.2 Fenestration shall meet CAN/CSA – A440 windows:

.1 Air Leakage: A3

.2 Water Leakage: B7

.3 Wind Load Resistance: C5

.4 Condensation Resistance Factor: fixed frame: 60 minimum

.5 Glass: 59 minimum

.3 Window shall also meet the requirements for blocked operation, ease of operation, sash strength, stiffness and resistance to forced entry.

.4 Submit manufacturer's certificate, certifying compliance with the above-noted requirements.

1.5 QUALITY ASSURANCE

.1 Installation crews engaged or provided by the approved supplier shall have proven experience specifically trained and qualified in this work (written proof of minimum of five (5) years employment or service with the window manufacturer or similar manufacturer). Individuals are to be either employees of the manufacturer and/or workers approved by the manufacturer.

.2 Provide one (1) thoroughly experienced. reliable, qualified and competent foreman in charge of the work to be on site at all times when work is taking place. Individual to be designated in charge from start of activities on site until final deficiencies are complete. Foreman may only be changed by written approval *or request* of the Consultant or owner.

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 11 – Final Cleaning.

.3 Section 08 80 50 – Glazing.

.4 Section 07 92 10 - Joint Sealing.

1.2 REFERENCES

.1 American Architectural Manufacturers Association (AAMA).

.1 AAMA 611-98, Voluntary Specifications for Anodized Finishes Architectural Aluminum.

.2 American Society for Testing and Materials International, (ASTM).

.1 ASTM B209-07, Specification for Aluminum and Aluminum Alloy Sheet and Plate.

.2 ASTMB221-08, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

.3 Canadian General Standards Board (CGSB).

.1 CAN/CGSB-19-GP-14M-1984, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing.

.4 Canadian Standards Association (CSA) International

.1 CSA-A440-00/A440.1-00 (R2005), A440-00 (R2005), Windows / Special Publication A440.1-00 (R2005), User Selection Guide to CSA Standard A440-00 (R2005), Windows.

1.3 DESIGN REQUIREMENTS AND PREQUALIFIED WINDOW SUPPLIERS

.1 Base performance standard: Products to be supplied from the list of acceptable manufacturers listed below shall meet or exceed the following performance standard product upon which this specification is largely based: 970 Series with 1350 Series Vents as manufactured by Alumicor Ltd.

.2 Acceptable Manufacturers/Suppliers: Aluminum Windows meeting this specification for this project shall be supplied by one of the following pre-approved suppliers:

.1 Aerloc Industries; (905) 628-6061

.2 Alumicor Ltd.; (416) 745-4222

.3 Alwind Industries; (905) 738-4266

.4 Kawneer Company of Canada; (416) 755-7751

.5 Windspec Inc.; (905) 738-8311

.3 Window supplier is to have adequate plant and skilled tradesmen and is known to have manufactured and installed similar windows for a minimum of five (5) years in the Province of Ontario.

.4 Mock-up: Construct a window mock-up in accordance with Section 01 45 00 – Quality Control. Allow 24 hours for inspection of mock-up by Consultant before proceeding with the Work. When accepted, mock-up will demonstrate minimum standard for this Work. Mock-up may not remain as part of finished Work.

1.6 SUBMITTALS

.1 Submittals:

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.2 Clearly indicate on shop drawings all materials and large scale details for head, jamb and sill as they will be installed in contact with building components for this project, profiles of components, elevations of unit, anchorage details, location of isolation coating, location of insulation to jambs head and sill, drainage locations, description of related components and exposed finishes and fasteners.

.3 Show paths of interior drainage and venting.

.2 Samples:

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit samples of each window hardware item for Consultant’s approval of type, finish and material.

.3 Certificates: Submit manufacturer's certificate, and test performance data certifying compliance with specification requirements, for:

.1 windows

.2 finishes.

.3 removable self framed insect screens.

.4 infiltration/exfiltration rates.

.5 thermal transfer resistance of frames.

.6 locking hardware

.7 vandal resistance

.4 Closeout submittals:

.1 Submit closeout submittals in accordance with Section 01 78 00.

.2 Provide 2 copies of data for maintenance and routine cleaning.

.3 Provide 2 copies of final record reviewed shop drawings for owner’s records.

.4 Contractor shall supply all accessories as may be required for the operation and performance of the windows system.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.2 Collect and separate for disposal recyclable packaging materials in appropriate on-site for recycling.

.3 Unused or damaged glazing materials are not recyclable and must not be diverted to municipal recycling programs.

.4 Divert unused or damaged wood materials from landfill to recycling facility approved by Consultant.

.5 Divert unused metal materials from landfill to metal recycling facility approved by Consultant.

.6 Divert unused caulking material from landfill to official hazardous material collections site approved by Consultant.

.7 Plastic caulking tubes are not recyclable and must not be diverted for recycling with other plastic materials.

1.8 WARRANTY

.1 Submit a manufacturer's warranty against defects in materials and workmanship covering the components of the window system for a period of ten (10) years. The manufacturer shall supply a non-pro-rated warranty covering labour, materials, tools and equipment to repair and/or replace any materials defects at no additional cost, for a period of ten (10) years including defects or failures due to poor workmanship and installation.

.2 The supplier shall also submit a warrantee, in accordance with Section 088050-Glazing, for 10 years warranting the sealed units against defects.

Part 2 Products

2.1 SYSTEMS AND MANUFACTURERS

.1 Drawings and Details are based on 970 Series with 1350 Series Vents as manufactured by Alumicor Ltd. (416) 745-4222.

.2 Approved exterior window systems meeting or exceeding these specifications by the following manufacturers will be considered:

.1 Alumicor
.2 Aerloc Industries
.3 Alwind Industries
.4 Kawneer Company of Canada
.5 Windspec Inc.

2.2 MATERIALS

.1 Extrusions shall conform to ASTM B221 and be AA6063 T54 alloy and temper for framing.

.2 Formed aluminum sheet and plate components shall be AA1100-H14 alloy and temper suitable for their purpose and finish.

.3 Exposed anodized sheet and plate shall conform to ASTM B209, to AA5005-H14 alloy and temper or AA1100-H14 alloy and temper (anodizing quality, 1.6 mm thickness).

.4 Non-exposed sheet and plate to AA3003-H14 alloy and temper, mill finish.

.5 Fasteners shall be 300 series stainless steel or 400 series stainless steel cadmium plated and of sufficient size and quantity to perform their intended function.

.6 Weathering and glazing gaskets shall be extruded, black, closed cell or dense elastomer of durometer appropriate to the function.

.7 Glass and glazing materials: In accordance with Section 08 80 50 – Glazing.

.8 Glazing tapes shall be preformed polyisobutylene-butyl glazing tape with integral shim strip, 10-15 durometer, hardness, paper release, black color. Acceptable materials: Tremco Polyshim II by Tremco Ltd.

.9 Exterior Sills: extruded aluminum, minimum 3 mm thick, complete with joint covers, complete with jamb drip deflectors on both sides of each sill (refer also to drawings for type), chairs, anchors, anchoring devices. All corners shall be ground or rounded to eliminate burrs and sharp edges. Submit details with shop drawings. Sills to be one continuous piece along sill of window.

.10 Sealants: ASTM C920, Type S, Grade NS, Class 100; One-part, Moisture -curing silicone, '790 Silicone Building Sealant' by Dow Corning Corporation or Spectrum 1 by Tremco. Colour: As selected by Consultant.

.11 Foam Backer Rod: to be extruded, closed cell foam, round polyethylene rope, minimum 25% wider than width of joint cavity to be caulked. To be compatible with primers and sealants.

.12 Void filler foam: one part expanding polyurethane closed cell foam by BASF, Hilti or approved alternate specifically designed for window applications. To be compatible with primers and sealers

.13 Bedding Compound: to CGSB 19-GP-14M.

.14 Isolation Coating: alkali resistant bituminous paint.

.15 Window hardware: Heavy duty roto operator window hardware to include all components as required for smooth, secure and complete operation and to be reviewed by the Consultant prior to ordering. Provide samples for Consultant's approval.

.16 All perimeter sections to be tubular/closed back sections for continuous adhesion and continuity of building envelope membrane.

.17 Window supplier / installer to provide and install continuous angles or clips as required for fastening windows to building structure.

2.3 FABRICATION

.1 Fabricate aluminum windows in accordance with reviewed shop drawings and manufacturer's written instructions.

.2 Fabricate in accordance with CSA-A440/A440.1 supplemented as follows:

.3 Fabricate framing from extrusions of size and shape shown on shop drawings. Interior and exterior extruded aluminum framing sections shall be integrated with a glass reinforced nylon thermal break to form a rigid composite assembly without the use of fasteners or other thermal bridging elements.

.4 Composite frame assembly shall have a minimum of 1100 lbf/4 in. (4815N/ 100 mm) resistance to shear between the aluminum and the thermal break materials.

.5 Dry shrinkage of the thermal break shall not exceed 0.1% of the framing member length.

.6 All framing joints shall be accurately machined, assembled, and sealed to provide neat weather tight connections. Coupling mullions shall be designed to provide a functional split to permit modular construction and allow for thermal expansion. Glass stops shall be lock-in screwless type.

.7 Elastomeric air seal gasket shall be installed around the full perimeter of glass and sealed at corners wit silicone sealant. Air seal gasket must provide adhesion with silicone sealant.

2.4 ALUMINUM FINISHES

.1 Exposed aluminum sections and infill panels or interior column covers, if any, shown on drawings be given an anodic oxide treatment in accordance with Aluminum Association specification AA-M12C22A31. and CAN/CSA-A440 clear anodized Class II, 10μm (.0004 inch.) in accordance with AAMA 611.

.2 For exterior spandrel panels –if required on the project, to be a clear anodized infill panel to match windows finish complete with solid support substrate and insulation layer, clear anodized aluminum smooth or textured finish to Consultant selection.

.3 If Colour finish other than anodized is indicated on drawings or required to match existing, enamel finish shall be PPG Duranar finish (minimum 8000 series) or approved alternate.

.4 Final approval of finish and colour to be made by Consultant.

2.5 HARDWARE

.1 Provide heavy duty roto operator hardware in conjunction with friction arms, aluminum hinges, and concealed allen key with removable type know handle and all required additional components. Provide samples for Consultant's approval.

.2 Limiting stops: All operable windows within reach of occupants to have limiting stops to each hinge to restrict the opening to a maximum of 225mm.

.3 Operating pole: Provide one varnish finished hardwood pole with blunt end hook suitable for spring catch latch, for each room in which operating hardware is more than 1800 mm from floor.

.4 Verify all site conditions regarding location and exact assembly requirements.

2.6 INSECT SCREENS

.1 Not required.

2.7 ISOLATION COATING

.1 Isolate aluminum from following components, by means of isolation coating:

.1 Dissimilar metals except stainless steel, zinc, or white bronze or small area.

.2 Concrete, mortar and masonry.

.3 Wood.

2.8 GLAZING

.1 Prepare windows to receive 25 mm thick double glazed insulating glass specified under Section 088050 – Glazing. Glaze windows in accordance with CSA-A440/A440.1.

2.9 THRU-WALL FLASHING

.1 Sub-sill flashings to be Blueskin SA by Bakor in locations shown on drawings. Adhere to substrate using primer approved by manufacturer. Ensure clean-up of excess primer and no visible edges of flashing upon completion of the work.

2.10 EXTRUDED SILLS

.1 Sills are to be a minimum of 7 degree (7°) downward slope and integral drip which extends a minimum of 25 mm from the face of the wall cladding.

.2 Install metal sills with uniform wash to exterior, level in length, straight in alignment with plumb upstands and faces. Break form shapes are not permitted.

2.11 ALUMINUM PANNING

.1 Panning to be extruded aluminum minimum 1.6 mm thick with pre-coated finish to be identical process and match to aluminum frames and sills. Break form shapes are not permitted.

.2 Submit samples of panning along with samples of other extrusions and materials.

.3 Metal panning to be designed to lock into new window frames and have true flat planes with no twists, buckles dents, “oil canning” or other similar visual defects caused by manufacturing or handling.

Part 3 Execution

3.1 PREPARATION

.1 Protect adjacent surfaces from damage resulting from work under this specification.

3.2 WINDOW INSTALLATION

.1 Install in accordance with CSA-A440/A440.1, reviewed shop drawings and manufacturer's written instructions.

.2 Coordinate with Section 08 80 50 as required for installation of glass and glazing materials.

.3 Arrange components to prevent abrupt variation in colour.

.4 Install the windows in accordance with the manufacturer's instructions. Install the windows plumb, level and true relative to building structure. Do not exceed 3mm in 3050 mm (1/8" in 10'0") variation from plumb and level. Foam insulate between the frame members and the window opening using a single component polyurethane foam, insulating sealant.

3.3 SILL INSTALLATION

.1 Install metal sills with uniform wash to exterior, level in length, straight in alignment with plumb upstands and faces. Ensure integral end caps are secured with no burrs or exposed sharp edges and do not require excessive caulking due to profiles at jamb. Break form shapes are not permitted.

3.4 CAULKING

.1 Seal joints between frame members and other non-operating components with sealant to provide weathertight seal at outside.

.2 Seal joints between windows and window sills with sealant. Bed sill expansion joint cover plates and drip reflectors in bedding compound. Caulk between sill upstand and window-frame. Caulk butt joints in continuous sills.

.3 Apply sealant in accordance with manufacturer's written instructions and additional requirements as outlined in Section 07 92 10 - Joint Sealing. Conceal sealant within window units except where exposed use is permitted by Consultant.

.4 Interior trims and sealant not to be applied until installed window has been inspected and approved by the Consultant.

3.5 ADJUSTING

.1 Adjust operable units to move smoothly, with proper tension, throughout their full range of motion and to fit tightly when closed and locked.

.2 Lubricate hardware in accordance with manufacturer's instructions.

.3 Ensure that weatherstripping makes weathertight contact and does not cause binding to affect closing and locking.

3.6 CLEAN UP

.1 Clean glass at the factory. For final cleaning of glass to remove job site soiling refer to Section 088050 - Glazing. Leave all surfaces clean, free from sealants, caulking or other foreign material. Remove all surplus materials and debris resulting from the work of this Trade.

.2 Refer to other sections for requirements to make good all finishes.

3.7 PROTECTION

.1 Aluminum shall be isolated from concrete, mortar, plaster or dissimilar metals with bituminous paint or epoxy solution. Framing shall be protected from other building materials during and after installation until acceptance.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Division 1

.2 Section 06 40 00 – Architectural Woodwork.

.3 Section 08 11 14 – Metal Steel Doors and Frames.

.4 Section 10 22 27 – Folding Partitions.

.5 Section 26: Electrical wiring for magnetic strikes, electric releases and electric locks.

1.2 SECTION INCLUDES

.1 For continuity and ready reference, this section includes hardware Supply, Installation and Inspection which in total will involve more than one contractor, as described following. The General Contractor will ensure in submitting his tender that specific roles and scope delineations are clear.

.2 Hardware Supply: It is the intention of this Section that Installation is by a specialist hardware supplier as prequalified herein for the following scope:

.1 Supply only of door hardware for exterior steel doors.
.2 Supply only of door hardware for interior steel doors.
.3 Supply of locksets for millwork units.
.4 Supervision of door hardware installation (Hardware Consultant).
.5 Supply and installation of automatic operators.

.3 Hardware Installation: It is the intention of this section that Installation is by the General Contractor if so qualified or qualified personnel appointed by the General Contractor for all systems and methods described herein.

.1 Scope: Installation of door hardware for all interior and exterior steel doors, locksets to teachers closets and coordination of installation of automatic operators with Division 26.

.4 Hardware Inspection: It is the intention of this section that Installation is by the General Contractor for all systems and methods described herein.

.1 Scope: inspection of installation of door hardware.

1.3 REFERENCES

.1 CAN/CGSB-69.17-M86 – Bored and Pre-assembled Locks and Latches

.2 CAN/CGSB-69.18-M90/ANSI/BHMA-A156.1-1981 – Butts & Hinges

.3 CAN/CGSB-69.19-M93/ANSI/BHMA-A156-3-1989 – Exit Devices

.4 CAN/CGSB-69.20-M90/ANSI/BHMA-A156-4-1986 – Door Controls (Closers)

.5 CAN/CGSB-69.29-93/ANSI/BHMA-A156-13-1930 – Mortise Locks & Latches

.6 CAN/CGSB-69.34-93/ANSI/BHMA-A156.18-1987 – Materials & Finishes

.7 Canadian Steel Door & Frame Manufacturers Association (CSDFMA),

.8 Canadian Metric Guide for Steel Doors & Frames (Modular Construction)

.9 NFPA 80-1995 – Fire Doors and Fire Windows

1.4 REQUIREMENTS FOR REQULATORY AGENCIES

.1 Hardware for doors in fire separations and exit doors shall be certified by a Canadian Certification Organization accredited by the Standards Council of Canada.

1.5 SUBMITTALS

.1 Samples:

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.1 Butt hinges

.2 Continuous hinges

.3 Door closers

.4 Exit devices

.5 Overhead stops

.6 Storeroom set with lever trim

.2 Identify each sample by a label indicating location for installation, applicable specification paragraph number, brand name and number, finish, and hardware package number.

.3 Samples will be retained by the Consultant during the initial review period, but not exceeding one month. Samples will be returned at that time and, if acceptable, they may be incorporated into the Work.

.4 Substitute new samples for those rejected by the Consultant.

.5 Do not supply door hardware to the site until all samples are approved by the Consultant.

.2 Hardware List:

.1 Submit contract hardware list in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit six copies of a detailed final door hardware list prepared by a qualified Architectural Hardware Consultant.

.3 List all items to be furnished and delivered under this section.

.4 Indicate door hardware proposed, identifying each item by manufacturer name, manufacturer's catalogue model number, material, function, finish, location, and other pertinent information.

.5 The list shall be in the same format as the door hardware list bound in this project manual.

.6 Approval of the Final Door Hardware List by the Consultant and the Owner shall not relieve the Contractor from responsibility for providing all required door hardware.

.3 Template:

.1 Within ten working days of being requested by the Consultant or the Contractor, submit templates for door and frame preparations and mounting of door hardware items.

.2 Identify each template by label indicating applicable specification paragraph number, brand name and number, door number, and hardware package number.

.3 Submit manufacturer's specifications, catalogue cuts, and other data required to identify individual components listed and to demonstrate compliance with specified requirements for items contained in the final door hardware list. Submission of manufacturer's full line brochures is not acceptable.

.4 Best Factory Order:

.1 Within 2 days of submitting the order for Best cylinders or locks, send one (1) copy of the order c/w the Approved hardware list to the Peel District School Board, Attention: Bob Thorpe, Maintenance Services – 933 Central Parkway West, Mississauga, ON L5C 2T9 (Fax:905-279-0859.)

1.6 DELIVERY, STORAGE, AND HANDLING

.1 Packing, Shipping, Handling and Unloading:

.1 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.

.2 Storage and Protection:

.1 Store finishing hardware in locked, clean and dry area.

1.7 WASTE DISPOSAL AND MANAGEMENT

.1 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.2 Dispose of [corrugated cardboard] [polystyrene] [plastic] packaging material in appropriate on-site bin for recycling.

1.8 MAINTENANCE DATA

.1 Provide parts list, manufacturers' instructions, and operation and maintenance data for each type of door hardware for incorporation into maintenance manual specified in Section 017800 – Closeout Submittals.

.2 Brief the Owner's maintenance staff regarding proper care, cleaning, and general maintenance of door hardware.

1.9 MAINTENANCE MATERIALS

.1 Supply four sets of wrenches for door closers, locksets, latchsets, and exit devices.

.2 Supply four sets of other special parts or tools required for proper maintenance and adjustment of door hardware (excluding tools required for keying.)

1.10 WARRANTY

.1 Submit a warranty for door hardware on a form approved by the Owner and in accordance with the General Conditions, but for a period of three (3) years unless specified otherwise. Where a manufacturer's standard warranty period exceeds three years it shall prevail.

.2 The warranty for both fire exit devices and power door operators shall be for a period of five (5) years.

.3 The warranty for door closers shall be for a period of ten (10) years.

.4 Provide a lifetime warranty for all mortise hinges.

.5 Door hardware warranties shall cover all defects in material and workmanship that become apparent during the warranty period and such defects shall be made good or the defective product shall be replaced, to the satisfaction of the Owner and at no cost to the Owner.

Part 2 Products

2.1 HARDWARE ITEMS

.1 Use one manufacturer's products only for similar items.

2.2 DOOR HARDWARE

.1 The hardware supplier shall thoroughly review the door hardware list included with this project manual, the architectural door and hardware schedules, and the drawings prior to preparing the final door hardware list.

.2 The base bid shall be based on the manufacturers and products specified and listed in the attached Door Hardware List and Article 2.02 below.

.3 Use one manufacturer's products only for all similar items.

.4 Ensure that the hardware specified is suitable in both dimension and function for the intended purpose and complies with building code requirements. Advise the Consultant of discrepancies or omissions.

.5 APPROVED HARDWARE SUPPLIERS – Door hardware shall be supplied ONLY by a Best approved dealer and is not limited to the list below:

.1 Commercial Doors & Hardware, Toronto 416 749-7231
.2 Upper Canada Hardware, East York, 416 696-8358
.3 Great Lakes Architectural Hardware, Hamilton 905 383-3334
.4 Regional Doors & Hardware, St. Catharines, 905 684-8161

.6 KEY CONTROL CABINET:

.1 Enamel finish steel cabinet

.2 Three-way cross reference index card system

.3 Provide all accessories to accommodate all keys

.4 Size cabinet to allow for 25% expansion

.7 KEYING:

.1 All locks shall be 7-Pin removable core by Best Locks.

.2 As part of the cost of this Section, the door hardware Subcontractor shall obtain brass construction cores for all locks from Best Locks.

.3 As part of the cost of this Section, all locks and cylinders are to include Best permanent cores great-grand master keyed to the Owner's requirements.

.8 STRIKES: ANSI with lip, except deadlock strikes which shall be ANSI without lip.

2.3 ACCEPTABLE MANUFACTURERS AND PRODUCTS

.1 The following tables list acceptable door hardware manufacturers and products.

.2 The tables may list acceptable equivalent products.

.1 Equivalent products are considered equal and may be substituted for the products listed in the attached Door Hardware List without further approval from the Owner.

.2 Where equivalent products are not listed, provide the named base bid products only.

.3 No other door hardware items other than those listed below will be accepted unless formal approval of an alternative is granted in writing by the Owner prior to the close of the Bid period.

.4 FINISH: Take special care to co-ordinate all of the various manufactured items furnished under this Section to ensure an acceptably uniform finish.

.5 HARDWARE FINISH CODES AND DESCRIPTIONS: Note: Not all of the codes listed in this table are necessarily used in the Work. Refer to the attached Door Hardware List for final finishes.

BHMA CODE	CANADIAN CODE	U.S. CODE	DESCRIPTION
600	CP	USP	Primed for paint (steel)
619	C15	US15	Satin nickel plated (brass bronze)
626	C26D	US28	Satin chromium plated (brass bronze)
628	C28	US32D	Satin aluminum, clear anodized
630	C23D, AL	-	Satin stainless steel
689	SB, AL	-	Aluminum plated
B	-	-	Brush

NEO	-	-	Neoprene
P	-	-	Pile
V	-	-	Vinyl

.3 MANUFACTURERS NAMES ABBREVIATIONS:

ABBREVIATION	MANUFACTURER NAME
BEST	Best Locks
CBH	Canadian Builders Hardware Mfg.Inc.
CORBIN	Corbin-Russwin Architectural Hardware (Yale-Corbin Canada)
DB	Dominion Brass
DORMA	Dorma Door Controls
GSH	Gallery Specialty Hardware
GJ	Glynn-Johnson (Ingersoll-Rand Architectural Hardware)
HAGER	Hager Hinge (Canada) Ltd.
KNC	K.N. Crowder Mfg. Inc.
LCN	LCN Closers (Ingersoll-Rand Architectural Hardware)
MARKAR	Markar Products Inc.
NORTON	Yale/Rixson Firemark Canada Ltd.
PEMKO	Pemko Mfg. Co.
RIXSON	Yale/Rixson Firemark Canada Ltd.
SARGENT	Sargent of Canada Ltd.
SCHLAGE	Schlage Lock Company (Ingersoll-Rand Architectural Hardware)
STANLEY	Stanley Hardware Canada
THOMAS	K.M. Thomas
VON-DUPRIN	Von-Duprin Inc. (Ingersoll-Rand Architectural Hardware)
YALE	Yale/Rixson Firemark Canada Ltd.
ZERO	Zero International Inc.

.4 HARDWARE LIST ABBREVIATIONS

ABBREVIATIONS	TERM
B/S	Back Set
CIF	Channel Iron frame
CTB	Counter-sunk Through Bolts
D/A	Double Acting
D/E	Double Egress
HMD	Hollow Metal Door

HMF	Hollow Metal Frame
H/O	Hold Open
LH	Left Hand
LHR	Left Hand Reverse
LS	Lead Shields
MFR	Minutes of Fire-Rating
MS	Machine Screws
NRP	Non Removable Pin
O/H	Over Head
O/S	Opposite Swing
PR.DRS	Pair of Doors
PSF	Pressed Steel frames
RH	Right Hand
RHR	Right Hand Reverse
SGL.DR.	Single Door
STS	Self-tapping Screws
TB	Through Bolts
TMS	Template Machine Screws
U/C	Undercut
WD	Wood Door
WDF	Wood Frame
WS	Wood Screws

.5 BUTT HINGES – FULL MORTISE:

ACCEPTABLE MANUFACTURERS	**ITEM**	**ITEM**	**ITEM**
HAGER	BB1168	BB1199	BB1279
STANLEY	FB 168	FBB199	FBB179

.1 Interior: 626 finish

.2 Exterior: 630 finish

.3 Non-removable pins at out-swinging exterior doors and all vestibule doors.

.4 Where doors are required to swing 180 degrees, furnish hinges of sufficient throw to clear trim.

.5 All full mortise hinges shall be ball bearing, standard duty or heavy duty as required.

.6 CONTINUOUS HINGES:

ACCEPTABLE MAUFACTURER	ITEM	ITEM
MARKAR	FM300	FM200
GSH	CH-951	CH0941

.1 Interior: 600 finish

.2 Exterior: 630 finish

.7 LOCKSETS: 630 FINISH

ACCEPTABLE MANUFACTURERS	ITEM	ITEM	ITEM	KNOB STYLE
BEST	35H7J	35H7EW	L-15-H	4A
SARGENT	8237	8204	LNL	LB
SCHLAGE	L9070	L9080	06B	42B

.1 Where lever handles are listed, they shall be solid, not hollow.

.2 All lever handles listed must be 630 finish. 626 finish will not be accepted.

.8 LATCHSETS: 630 FINISH

ACCEPTABLE MANUFACTURERS	ITEM	ITEM	ITEM
BEST	35H-N	35H-LF	L-15-H
SARGENT	8215	8265	LNL
SCHLAGE	L9010	L9040	06B

.1 Where lever handles are listed, they shall be solid, not hollow.

.2 All lever handles listed must be 630 finish. 626 finish will not be accepted.

.9 CYLINDERS AND 7-PIN REMOVABLE CORES & TEACHER'S CLOSET LOCKS: 626 FINISH

ACCEPTABLE MANUFACTURERS		ITEM	ITEM

BASE BID	**BEST**	1E74	1E72
NO EQUIVALENTS	NO ALTERNATES	---	---
	BEST	63K 7R 4C S3 X 626	**---**

.1 Removable and interchangeable 7-pin core design.

.2 Within 2 days of submitting the order for Best cylinders and locks, send one (1) copy of the order c/w the approved hardware list to Peel District School Board, Attention: Bob Thorpe, Maintenance Services- 933 Central Parkway West, Mississauga, ON L5C 2T9 (Fax 905-279-0859).

.10 DOOR PULLS: 630 FINISH

ACCEPTABLE MANUFACTURERS	**ITEM**
CBH	7009-1
GSH	1181-2
HAGAR	HA 12L

.1 All exterior doors requiring door pulls shall be supplied with 32 mm diameter solid stainless steel door pulls.

.2 All interior doors requiring door pulls shall be supplied with 25 mm diameter solid stainless steel door pulls.

.3 Offset door pulls shall be supplied on exterior doors equipped with night latch function exit devices to accommodate rim cylinders. Ensure that interior push pull doors are equipped with identical offset pulls to match.

.11 EXIT DEVICES- RIM TYPE: 626/630 FINISH

ACCEPTABLE MANUFACTURES	**ITEM**	**ITEM**
SARGENT	8810-F OR G	8804-F OR G
VON-DUPRIN	98EO	98NL-OP
YALE	7100-width	7100-width-521

.1 Use hex key and cylinder dogging at power operated doors only.

.2 Use hex bolts or through-bolts complete with sleeves for exit devices on mineral core doors.

.3 All exit device trim must be free-wheeling design.

.12 DOOR CLOSURE: 689 FINISH

ACCEPTABLE MANUFACTURERS	ITEM	ITEM
DORMA	4600	6600
LCN	1460	4110
NORTON	8501BF	7500
SARGENT	1430	350

.1 Where required, out swinging doors and interior doors shall have closures with parallel arms.

.2 Back checking feature shall be of a proper size to operate the door efficiently.

.3 All closures shall be complete with full cover of same design and manufacturer.

.4 All interior closers shall be reduced-force type.

.5 All interior doors for barrier-free use shall be delayed action and reduced-force type, meeting OBC requirements.

.6 Mount closures on interior room side of doors.

.7 All door closures shall be mounted with through-bolts.

.13 KICKPLATES: 630 FINISH

ACCEPTABLE MANUFACTURERS	SIZE (MM)	SIZE (MM)
CBH	200 X Length Listed	400 x Length Listed
DB	200 X Length Listed	400 x Length Listed
GSH	200 X Length Listed	400 x Length Listed

.1 Confirm kick plate sizes prior to ordering.

.2 Minimum thickness: 1.3 mm.

.3 Stainless steel: Type 304, No. 4 Finish-free from rough or sharp edges.

.4 Corners and edges shall be slightly rounded.

.5 Drill plates for countersunk fixing with stainless steel flathead screws flush with finished surface.

.14 PUSH PLATES: 630 FINISH

ACCEPTABLE MANUFACTURERS	ITEM
CBH	127 X Length Listed
DB	127 X Length Listed
GSH	127 X Length Listed

.1 Confirm kick plate sizes prior to ordering.

.2 Minimum thickness: 1.3 mm.

.3 Stainless steel: Type 304, No. 4 Finish-free from rough or sharp edges.

.4 Corners and edges shall be slightly rounded.

.5 Drill plates for countersunk fixing with stainless steel flathead screws flush with finished surface.

.15 OVERHEAD STOPS/HOLDERS: 626 FINISH

ACCEPTABLE MANUFACTURERS	ITEM	ITEM
GJ	104S	454S
RIXSON	1-336/436	10-336/446
SARGENT	693	1543

.1 Use appropriate overhead door stop & holder where wall stops cannot be used.

.2 Do not use floor stops.

.16 WALL STOPS: 626 FINISH

ACCEPTABLE MANUFACTURERS	ITEM

GSH	GSH 240
CBH	CBH 145

.1 Do not use floor stops.

.2 Do not use wall stops on non-masonry walls.

.17 WEATHERSTRIPPING: 628P FINISH

ACCEPTABLE MANUFACTURERS	ITEM	ITEM
KNC	W16P	W20P
PEMKO	309AP x Height	2891AP x Width
ZERO	98A x Height	---

.1 Install head weather-stripping uncut in one continuous length prior to installation of door closures or other hardware to the head of the door frame.

.2 Install jamb weather-stripping uncut in one continuous length, except that it may be cut at the strike location of surface mounted fire exit hardware.

.18 DOOR SWEEPS: 628NEO FINISH

ACCEPTABLE MANUFACTURERS	ITEM
KNC	W13S x Length
PEMKO	315CN x Length
ZERO	39A x Length

.19 THRESHOLDS: 628 FINISH

ACCEPTABLE MANUFACTURERS	ITEM	ITEM
HAGER	412SA	---
KNC	CT10	CT32

PEMKO	171A	---

.1 Confirm threshold sizes prior to ordering.

.20 POWER DOOR OPERATORS:

ACCEPTABLE MANUFACTURERS		**ITEM**	**ITEM**
BASE BID	HORTON	4100	4100
NO EQUIVALENTS &	NO ALTERNATES	---	---

.21 HOLD OPEN DEVICES:

ACCEPTABLE MANUFACTURERS		**ITEM**	**ITEM**
BASE BID	YALE-CORBIN	FM998 x Tri-volt	FM998 x Tri-volt
NO EQUILALANTS &	NO ALTERNATES	---	---

2.4 FASTENINGS

.1 Supply screws, bolts, expansion shields and other fastening devices required for the satisfactory installation and operation of hardware, and as recommended by the hardware manufacturers for long life under hard use.

.2 Exposed screws for installing hardware shall have Phillips or Robertson heads.

.3 Exposed fastening devices shall match the finish and material of hardware.

.4 Where a pull is scheduled on one side of a door and a push plate on the other side, supply fastening devices, and install so the pull can be secured through the door from the reverse side. Install the push plate to cover fasteners.

.5 Use fasteners compatible with material through which they pass.

.6 All door closers shall be through-bolt mounted.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Furnish door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware. Advise door and frame manufacturers to be aware that strike heights as listed in the table below are required for this project.

.2 Furnish manufacturers' instructions for proper installation of each hardware component.

3.2 INSTALLATION

.1 ALL DOORS, FRAMES, AND FINISHING HARDWARE SHALL BE INSTALLED BASED ON DHI INSTALLATION GUIDE FOR DOORS AND HARDWARE (ANSI/DHI A115.1G-1994 – Approved 8/19/94)

.2 Door hardware shall be installed by an approved Hardware Installer selected by the Hardware Supplier.

.3 Power door operators, complete with hook-up to power rough-in, low voltage control wiring, and exit device release, shall be installed by the manufacturers' recommended installer.

.4 Power door operators and **emergency assist devices** to be installed by hardware supplier. Low voltage control wiring to push button locations, exit device release, and 4" x 4" back boxes to be completed by Division 26 (Electrical Contractor.). **The low voltage wiring to be supplied by the Hardware Supplier to the Electrical Contractor for installation**.

.5 ARCHITECTURAL HARDWARE CONSULTANT:

.1 The hardware supplier shall have in its employ an Architectural Hardware Consultant who is a current member of the American Society of Hardware Consultants, and who shall be made available for consultation during the course of construction at no additional cost to the Owner.

.2 The Architectural Hardware Consultant must supervise hardware installation, provide assistance to the Hardware Installer, and carry out inspection and provide written certification of the finished door hardware installation.

.3 Allow for a minimum of three inspections during the course of hardware installation and one final inspection.

.4 Ten percent (10%) of this subtrade's contact will be considered as fair value for supervision and inspection with regard to progress certificates.

.5 Locate and mount hardware at standard location dimensions in accordance with CSDFMA, Canadian Metric Guide for Steel Doors and Frames (Modular Construction), and as indicated in the following table:

HARDWARE MOUNTING HEIGHTS	
HARDWARE ITEM	**DIMENSION ABOVE FINISHED FLOOR**

LOCKSET or LATCHSET	950 mm to Centreline of Strike
DEADLOCK	1200 mm to Centreline of Strike
EXIT DEVICE	950 mm to Centreline of Strike
PUSH PLATE/DOOR PULLS	900 mm to Centreline of Strike

.6 HARDWARE MOUNTING HEIGHTS

.1 The Hardware Installer shall carefully check manufacturer's installation instructions supplied with hardware products for conflicts with the above noted dimensions.

.2 The Hardware Installer shall use manual or "Yankee" screw drivers to turn screws into pre-drilled pilot holes for installation of hinges on mineral core fire protection rated doors. Please note that other methods of installation may void the door manufacturer's warranty.

.3 The recommended mounting heights shall be considered a general guide unless conditions such as intermediate rails and lines of glass dictate otherwise.

.4 Locate door stops to contact doors 75mm from latch edge.

.5 Install hardware and trim square and plumb to doors.

.6 Install mullion stabilizers at centre mullions at double doors and intermediate mullions on multiple door arrangements.

.7 Supply locksets to Section 064000 – Architectural Woodwork for 35mm and 45mm thick doors where such doors are a part of millwork units. Keying shall be in accordance with the building keying system for

3.3 ADJUSTING

.1 Adjust door hardware, operators, closures and controls for optimum, smooth operating condition, safety and for weather tight closure.

.2 Ensure doors with closers close firmly and against wind and building air pressure, and can be opened readily as suitable for installation.

.3 Inspection:

.1 The Hardware Supplier shall have in his employ an Architectural Hardware Consultant who is a current member of the American Society of Hardware Consultants, and who shall be made available for consultation during the course of construction at no additional cost to the Board.

.2 In addition to this available consultant, a Hardware Inspector shall be engaged upon recommendation to the Board by the Consultants and costs for inspection paid for from Cash Allowances.

.3 The Consultant shall advise the Contractor that Hardware Inspector shall be assigned to supervise the hardware installation, provide assistance to the Hardware Installer, and carry out inspection and provide written certification of the finished door hardware installation. Costs for this inspection shall be paid from the Cash Allowance. The Contractor shall notify the Hardware Inspector at least 72 hours prior to commencing the installation and cooperate with the advice of the inspector.

.4 Upon completion of door hardware installation, the Architectural Hardware Inspector shall conduct an inspection of all door hardware as installed, accompanied by the Consultant, the Owner's representative, and the Contractor.

.5 If requested by the Consultant, the manufacturer's technical representative for each make of the hardware used in the Work shall be in attendance during the hardware inspection.

.6 During the inspection, the Architectural Hardware Inspector shall note all unsatisfactory installations and products and re-inspect these items after re-adjustment or replacement to ensure all hardware is in optimum working condition and specified function.

.4 Upon completion of door hardware installation, the Hardware Supplier shall submit a written certificate that all hardware has been correctly supplied and installed in accordance with the drawings, specifications, schedules, and approved final door hardware list, for type, function, and location, and that door hardware has been checked and adjusted.

.5 Clean hardware after installation following the hardware supplier's recommendations.

.6 At project completion all items of door hardware shall be clean and free from disfigurement. The Contractor shall repair or replace hardware found to be defective.

3.4 CLEANING

.1 Perform cleaning after installation to remove construction and accumulated environmental dirt.

.2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacture's instructions.

.3 Remove protective material from hardware items where present.

.4 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

PART 1 - GENERAL

1.1 This hardware schedule has been prepared by:

Commercial Doors & Hardware.

2150 Winston Park Drive, Unit 16
Oakville, Ontario L6H 5V1

CONSULTANT
Ross Ruprecht, B.A., A.H.C.

PART 2 - FINISHING HARDWARE SCHEDULE

Refer to the Finishing Hardware List on the following pages.

Finishing Hardware Schedule 23-17RG

Allen A Martin P.S. Addition PDSB

Ogden Rd. Mississauga

Job No. 24126

Architect
Hossack Architecture.

Detailer: **Riley Rykhoff**
Consultant: **Ross Ruprecht B.A., A.H.C.**

Submittal Date: **Nov 28/24**

Manufacturers & Finishes

Manufacturers

Baron Metal
BEST
Camden
Camden Door Controls (Pgs 23-29)
Crowder
Gallery
GYRO-TECH
HES
K.N. Crowder
MISC
Norton Rixson
Precision
Rixson
Sargent
Standard Metal
Stanley
Von Duprin

Finishes

600 - Primed for painting
626 - Satin chromium plated over nickel
628 - Satin aluminum, clear anodized
630 - Satin stainless steel
689 - Aluminum painted
US26D - Satin chromium plated over nickel
US32D - Satin stainless steel
USP - Primed for painting

Openings Schedule

Opening Number(s)	Qty	Door Catalog	Location 1	To/ From	Location 2	Nominal Width	Nominal Height	Door Thickness	Hand	Label	Degree of Opening	Hardware Group	Door Nomenclature	Remarks	Heading Num.
A100A	1		EXTERIOR	TO	SPRINKLER RM	950	2150	45	RH		90°	EXT STORAGE SGL 900		EXTERIOR	1
A101A	1		CORR	TO	ORTHO WR	950	2150	45	LH	1 HR	90°	WR PDSB OHS		ADO, OH STOP, PTL, PB W LUMINATED DESIGN. GC TO PROVIDE LVW PER WIRING DIAGRAM PROVIDED BY HARDWARE SUPPLIER	2
A102A	1	<Aluminum>	EXTERIOR	FROM	CORR	1000, 1000	2150	45	LHRA/RHRA		110°	EXT PR,950 RM,MAIN, C/W BF		THERMAL BROKEN CURTAIN WALL, ADO , ES, GC TO PROVIDE LVW IN CONDUIT PER WIRING DIAGRAM PROVIDED BY HARDWARE SUPPLIER.	3
A102B	1		STAIR	FROM	CORR	950	2150	45	RHR	1 HR	90°	VEST SGL ULC		EMHO DEVICES	4
A104A	1		SUMP RM	FROM	ELEV MACH	950, 950	2150	45	RHRA		90°	STORAGE PA PR			5
A105A	1		EXTERIOR	FROM	SUMP RM	950	2150	45	RHR		110°	EXT STORAGE SGL 914 REV		EXTERIOR	6
A201A	1		CLASS RM	TO	STORAGE	950	2150	45	RH	1HR	90°	STORAGE,915 ,WS			7
A202A	1		CORR	TO	UNIV WR	950	2150	45	LH	1 HR	90°	WR PDSB OHS		ADO, OH STOP, PTL, PB W LUMINATED DESIGN. GC TO PROVIDE LVW PER WIRING DIAGRAM PROVIDED BY HARDWARE SUPPLIER	2
A203A	1		CORR	FROM	CORR	950, 950	2150	45	LHRA/RHRA	1 HR	160°	VEST PR,915,ULC.EMHO		EMHO DEVICES , FIXED HM MULLION	8
MISC	1														

GENERAL:

- HARDWARE SUPPLIER SECTION 08710 TO SUPPLY AND INSTALL AUTO DOOR OPERATORS. NO EXCEPTION .

-HARDWARE SUPPLIER TO PROVIDE WIRING/RISER DIAGRAM FOR EACH OPENING LISTED WITH AUTO OPERATOR.

-HARDWARE SUPPLIER TO INCLUDE FOR A PRE INSTALL SITE VISIT WITH GC/ELECTRICAL CONTRACTOR TO COORDINATE INSTALL OF AUTO OPERATORS.

Hardware Schedule

Heading #1 (Group: EXT STORAGE SGL 900)

Item #1 — 1 Single door A100A, EXTERIOR TO SPRINKLER RM — 90° RH

950 x 2150 x 45 - HM DR x HM FR

1		DOOR CONTACT BY DIV 16	
4	Standard Hinge	Stanley NRP-FBB199 4 1/2" x 4 1/2" US32D	US32D
1	Lockset	BEST 45H7TD (Std.) 4 H 630 RH VT	630
1	Cylinder	BEST 1E74(Std.) 626	626
1	Cylinder	Best Construction Core 1CA Brass	
1	Cylinder	Best Permanent Core 1C7N1 GMK 3 Keys	626
1	Surface Closer	BEST HD8016 AF80P 689 REG MTD	689
1	Kick Plate	Standard Metal K10A 200 X 910 C32D	US32D
1	Threshold	Crowder CT-45 M.F. X 1200MM	M.F.
1	Weatherstripping	K.N. Crowder W-20S-CA 48"	CA
1	Weatherstripping	K.N. Crowder W-24S- 1219 CA	CA
2	Weatherstripping	K.N. Crowder W-50S- 2150- CA	CA

Heading #2 (Group: WR PDSB OHS)

Item #2	1 Single door A101A, CORR TO ORTHO WR	90° LH
Item #3	1 Single door A202A, CORR TO UNIV WR	90° LH

950 x 2150 x 45 - HM DR x HM FR - 1 HR

INSTALL ADO AS PULL SIDE MTD .
INSTALL ELECTRIC STRIKE AS FAIL SECURE . OPENING IS 45 MIN RATED.

2		MISC PRE INSTALL SITE VISIT TO COORDINATE ADO INSTALL WITH ELECTRICAL CONTRACTOR	
8	Standard Hinge	BEST FBB168 (4 1/2" x 4 1/2") US26D	US26D
2	Lockset	BEST 45H7D (Std.) 15 H 630 LH	630
2	Cylinder	BEST 1E74(Std.) 626	626
2	Cylinder	Best Construction Core 1CA Brass	
2	Cylinder	Best Permanent Core 1C7N1 GMK 3 Keys	626
2	Electric Strike	HES 1006CS-630	630-LBSM
		FAIL SECURE	
2	Electronic Closer	GYRO-TECH OPERATOR 8710 X PULL SIDE MTD DR WIDTH HEADER 628 NO ALTERNATE WILL BE	628
4	Kick Plate	Standard Metal K10A 200 X 910 C32D	US32D
		MTD BOTH SIDES	
2	Overhead Door Stop	Rixson 1-336 630	630
2	Accessory	HES 2005M3 MUST BE INSTALLED WITH ES	
2	Accessory	Camden ACTUATOR CM-45/4 FLUSH MTD (2 X 4 BB)	
2	Accessory	MISC ESCUTCHEON SS PDSB STD X 1 ACTUATOR CUT OUTS C32D	
		INSTALL WITH CORR ACTUATOR	
2	Miscellaneous Hardware	Camden ACTUATOR CM-45/455/SE1 FLUSH MTD IN CORR -INSTALL WITH CUST SS ESCUTCHEON	
2	Miscellaneous Hardware	Camden CM-160/3 POS (MTD IN OP HEADER)	
		MOUNT IN OP HEADER	
2	Miscellaneous Hardware	Camden CM-331/43S-SGLR-WAVE TO LOCK FLUSH MTD (STD 2 X 4 BB))	
2	Miscellaneous Hardware	Camden CONTACT CX-MDA	
2	Miscellaneous Hardware	Camden (CAD) CX-IRB (FOR CUST WR KIT)	
2	Miscellaneous Hardware	Camden CX-TRX-4024 INSTALL IN OP HEADER	
2	Miscellaneous Hardware	Camden DEDICATED PS CX-PS13V3 INSTALL IN OP HEADER	
2	Miscellaneous Hardware	Camden EMERGENCY WR KIT CX-WEC10K2 (corr sgl gang, wr dbl gang)	
2	Miscellaneous Hardware	Camden RELAY CX-33	
2	Miscellaneous Hardware	MISC REMOTE EMERG CALL SYSTEM / ANNUNCIATOR / PS IN OFFICE BY ELECTRICAL	
2	Miscellaneous Hardware	MISC WIRING /RISER DIAGRAM BY HARDWARE SUPPLIER	

HARDWARE SUPPLIER TO SUPPLY AND INSTALL AUTO OPERATOR.

PDSB STD IS FOR ACTUATORS TO BE FLUSH MTD. ELECTRICAL CONTRACTOR TO HAVE STD 2 X 4 ELECTRICAL BB INSTALLED IN WALLS.

ELECTRICAL CONTRACTOR TO PROVIDE 120 VAC TO HEAD OF FRAME AND RUN LOW VOLTAGE WIRE TO PUSH BUTTON LOCATIONS AND ALL ELECTRICAL COMPONENTS LISTED. REFER TO WIRING DIAGRAM SUPPLIED BY HARDWARE SUPPLIER.

Heading #3 (Group: EXT PR,950 RM,MAIN, C/W BF)

Item #4 1 Pair of doors A102A, EXTERIOR FROM CORR 110° LHRA/RHRA

1000, 1000 x 2150 x 45 - AL DR x AL FR

REM HARDWARE MULLION WITH ELECTRICAL QUICK DISCONNECT BY 08710

1		MISC PRE INSTALL SITE VISIT TO COORDINATE ADO INSTALL WITH ELECTRICAL CONTRACTOR	
8	Standard Hinge	Stanley NRP-FBB199 4 1/2" x 4 1/2" US32D	US32D
1	Removable Mullion	Sargent EL980 USP	USP
1	Exit Device	Precision 3RO2101 x x 630 x	630
1	Exit Device	BEST 3RO2103 x x 630 x	630
1	Cylinder	Best 1E72S2RP 626	626
1	Cylinder	Best 1E7428(Std.)C4 RP 626	626
3	Cylinder	Best Construction Core 1CA Brass	
1	Cylinder	Best Key Switch Cyl. 1E74 C4	626
3	Cylinder	Best Permanent Core 1C7N1 GMK 3 Keys	626
1	Electric Strike	HES 9600-630-LBM- 9600-ASB-628 2005M3	630-LBM
2	Door Pull	Gallery GSH 1180-2 C32D 45	US32D
1	Surface Closer	Stanley HD8016 -SPA 689 SN	689
1	Electronic Closer	GYRO-TECH GT8710 X DR WIDTH HEADER 628 NO ALTERNATE WILL BE ACCEPTED	628
2	Kick Plate	Gallery GSH 80A 200 X 50MM LDW C32D	US32D
2	Overhead Door Stop	Norton Rixson 1-436 630	630
2	Accessory	Von Duprin (CAD) MULLION STABALIZER 154	600
2	Threshold	K.N. Crowder CT-45 x 1219mm	
2	Weatherstripping	K.N. Crowder W-20S- 1219 CA	CA
2	Weatherstripping	K.N. Crowder W-24S- 1219 CA	CA
4	Weatherstripping	K.N. Crowder W-50S- 2150- CA	CA
2	Miscellaneous Item	MISC DOOR CONTACT BY SECURITY CONTRACTOR	
2	Miscellaneous Hardware	Camden Actuator CM-60/4 FOR EXTERIOR INSTALL MTD IN VEST	
1	Miscellaneous Hardware	Camden CM-1190-7224 WALL MTD	
1	Miscellaneous Hardware	Camden CM-160/3 POS (MTD IN OP HEADER)	
1	Miscellaneous Hardware	Camden CX-TRX-2024 INSTALL IN OP HEADER	
1	Miscellaneous Hardware	Camden DEDICATED PS CX-PS13V3 INSTALL IN OP HEADER	
2	Miscellaneous Hardware	Camden Escutcheon CM-89S-89S-ADP1	
1	Miscellaneous Hardware	Camden RELAY CX-33	
1	Miscellaneous Hardware	MISC WIRING /RISER DIAGRAM BY HARDWARE SUPPLIER	

HARDWARE SUPPLIER SECTION 08710 TO SUPPLY AND INSTALL AUTO OPERATOR

ELECTRICAL CONTRACTOR TO PROVIDE 120 VOLT TO HEADER OF FRAME AND RUN ALL LVW IN CONDUIT TO PUSH BUTTONS,ELECTRIC STRIKES KEYSWITCH, VIDEO CAMERA & REMOTE RELEASE. GC TO PROVIDE 2 X 4 BACKBOXES FOR PUSHBUTTONS.

MODE OF OPERATION
UNLOCKED POSITION: EXIT DEVICES ARE DOGGED DOWN VIA DOGGING FEATURE. ACTUATOR BUTTON EITHER SIDE OPENS DOOR AUTOMATICALLY (WALL MTD. KEYSWITCH LED IS GREEN)

SECURED POSITION:DOORS ARE UNDOGGRED AND LOCKED WALL MTD KEYSWITCH CM 1210 SHUNTS POWER TO EXTERIOR ACTUATOR ONLY (LED IS RED) . INTERIOR ACTUATOR IS ALWAYS ACTIVE.

EGRESS IS ALWAYS FREE
3 POSITION KEYSWITCH TURNS UNIT ON/OFF/HOLDOPEN.

PREPARE DOOR AND FRAME FOR 4 HINGES

Heading #4 (Group: VEST SGL ULC)

Item #5 1 Single door A102B, STAIR FROM CORR 90° RHR

950 x 2150 x 45 - HM DR x HM FR - 1 HR

4	Standard Hinge	BEST FBB168 (4 1/2" x 4 1/2") US26D	US26D
1	Exit Device	Stanley 3ROFL2108 x V4908A x RHR x 630 x 950	630
1	Cylinder	Best 1E72S2RP 626	626
1	Cylinder	Best Construction Core 1CA Brass	
1	Cylinder	Best Permanent Core 1C7N1 GMK 3 Keys	626
1	Surface Closer	Stanley HD8016 -SPA 689 SN	689
1	Kick Plate	Standard Metal K10A 200 X 910 C32D	US32D
1	Electro-Magnetic Holder	Norton Rixson 998M 900 900-200 689	689
1	Weatherstripping	K.N. Crowder W-22-BL x 18'	BL

Heading #5 (Group: STORAGE PA PR)

Item #6 1 Pair of doors A104A, SUMP RM FROM ELEV MACH 90° RHRA

950, 950 x 2150 x 45 - HM DR x HM FR

APPR HARDWARE LOUVRE BY MECHANICAL.

6	Standard Hinge	Stanley FBB179 4 1/2" x 4" US26D	US26D
2	Flush Bolt	Gallery GSH 401 C26D	US26D
1	Lockset	BEST 45H7D (Std.) 15 H 630 RHR	630
1	Cylinder	BEST 1E74(Std.) 626	626
1	Cylinder	Best Construction Core 1CA Brass	
1	Cylinder	Best Permanent Core 1C7N1 GMK 3 Keys	626
1	Surface Closer	Stanley HD7016-SPA 689 SN ACT LEAF	689
2	Kick Plate	Standard Metal K10A 200 X 910 C32D	US32D
1	Wall Door Stop	Gallery GSH 240B C32D	US32D
1	Weatherstripping	K.N. Crowder W-8SP x 2150mm	

Heading #6 (Group: EXT STORAGE SGL 914 REV)

Item #7 — 1 Single door A105A, EXTERIOR FROM SUMP RM — 110° RHR

950 x 2150 x 45 - HM DR x HM FR

1		DOOR CONTACT BY DIV 16	
4	Standard Hinge	Stanley NRP-FBB199 4 1/2" x 4 1/2" US32D	US32D
1	Lockset	BEST 45H7TD (Std.) 4 H 630 RHR VT	630
1	Cylinder	BEST 1E74(Std.) 626	626
1	Cylinder	Best Construction Core 1CA Brass	
1	Cylinder	Best Permanent Core 1C7N1 GMK 3 Keys	626
1	Surface Closer	BEST HD8016 DA SDS SN134 689	689
1	Kick Plate	Standard Metal K10A 200 X 910 C32D	US32D
1	Threshold	Crowder CT-45 M.F. X 1200MM	M.F.
1	Weatherstripping	K.N. Crowder W-20S-CA 48"	CA
2	Weatherstripping	K.N. Crowder W-50S- 2150- CA	CA
1	Miscellaneous Item	Crowder W-24S C.A. X 1200MM	C.A.

Heading #7 (Group: STORAGE,915 ,WS)

Item #8 — 1 Single door A201A, CLASS RM TO STORAGE — 90° RH

950 x 2150 x 45 - HM DR x HM FR - 1HR

3	Standard Hinge	BEST FBB168 (4 1/2" x 4 1/2") US26D	US26D
1	Lockset	BEST 45H7D (Std.) 15 H 630 RH	630
1	Cylinder	BEST 1E74(Std.) 626	626
1	Cylinder	Best Construction Core 1CA Brass	
1	Cylinder	Best Permanent Core 1C7N1 GMK 3 Keys	626
1	Surface Closer	Stanley HD7016-ARP FPC 689-REG MTD. SN	689
1	Kick Plate	Standard Metal K10A 200 X 910 C32D	US32D
1	Wall Door Stop	Gallery GSH 240B C32D	US32D

Heading #8 (Group: VEST PR,915,ULC.EMHO)

Item #9 1 Pair of doors A203A, CORR FROM CORR 160° LHRA/RHRA

950, 950 x 2150 x 45 - HM DR x HM FR - 1 HR

FIXED HM MULLION BY FRAME SUPPLIER

8	Standard Hinge	BEST FBB168 (4 1/2" x 4 1/2") US26D	US26D
2	Exit Device	Stanley 3ROFL2108 x V4908A x x 630 x	630
2	Cylinder	Best 1E72S2RP 626	626
2	Cylinder	Best Construction Core 1CA Brass	
2	Cylinder	Best Permanent Core 1C7N1 GMK 3 Keys	626
2	Surface Closer	Stanley HD8016 -SPA 689 SN	689
2	Kick Plate	Standard Metal K10A 200 X 910 C32D	US32D
2	Electro-Magnetic Holder	Norton Rixson 998M 900 900-200 689	689
2	Weatherstripping	K.N. Crowder W-22-BL x 18'	BL
2	Miscellaneous Item	Crowder W-24S C.A. X 1200MM	C.A.

BEST
dormakaba Group

40H Series

Heavy Duty Mortise Locks

by BEST

BEST: Setting the Standard for Security

40H Series - Standard Lever & Trims


Lever- 3
Rose - H

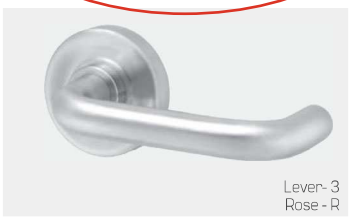

Lever- 12
Rose - H


Lever- 14
Rose - H


Lever- 15
Rose - H


Lever- 16
Rose - H


Lever- 17
Rose - H


Lever- 3
Rose - R


Lever- 12
Rose - R


Lever- 14
Rose - R


Lever- 15
Rose - R


Lever- 16
Rose - R


Lever- 17
Rose - R


Lever- 3
Rose - S


Lever- 12
Rose - S


Lever- 14
Rose - S


Lever- 15
Rose - S


Lever- 16
Rose - S

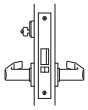
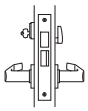
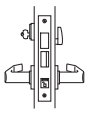
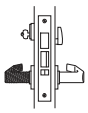
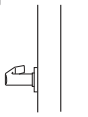
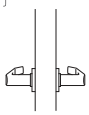
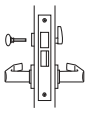

Lever- 17
Rose - S

CDH
Commercial Doors & Hardware Ltd.
2150 Winston Park Drive, Unit 16
Oakville, L6H 5V1

Allen A Martin P.S. Addition PDSB
Ogden Rd. Mississauga
Job No. 24126

Submittal Date: Nov 28/24

Functions

Function & Diag. (ANSI No.)	Description: Latch operated by	Description: Deadbolt operated by	Outside Lever or Knob: Locked by	Outside Lever or Knob: Unlocked by	Inside Knob/Lever: Locked by	Inside Knob/Lever: Unlocked by
Single keyed (continued)						
Classroom Holdback (RHB) F06 	Rotating inside lever Turning key in outside cylinder O/S lever except when locked by outside key Latchbolt held retracted by turning O/S key while holding up I/S lever.	N/A	Turning key in outside cylinder	Turning key in outside cylinder	Cannot be locked	Always unlocked
	The latchbolt is deadlocked with an auxiliary deadlatch					
Dormitory (T) F13 	Rotating inside lever Rotating outside lever—only when deadbolt is retracted Turning key in out side cylinder.	Turning key in outside cylinder; Inside turn lever Inside lever retracts deadbolt and latch simultaneously.	Turning key in outside cylinder Turning inside turn lever.	Turning key in outside cylinder Turning inside turn lever. Rotating inside lever	Cannot be locked	Always unlocked
Dormitory (TA) F12 	Rotating inside lever Rotating O/S lever only when locking toggle is in unlocked position and deadbolt is retracted, Turning key in outside cylinder	Turning key in outside cylinder Turning inside turn lever. (Rotating inside lever retracts deadbolt and latch simultaneously.)	Placing locking toggle in locked position Projecting deadbolt by key or turning inside turn lever.	Turning key in outside cylinder and placing locking toggle in unlocked position	Cannot be locked	Always unlocked
Dormitory (TD) 	Rotating inside lever Turning key in outside cylinder.	Turning inside turn lever Rotating inside lever retracts deadbolt and latch simultaneously.) Turning key in outside cylinder.	Always unlocked	Cannot be unlocked	Cannot be locked	Always unlocked
	The latchbolt is deadlocked with an auxiliary deadlatch					
Non-keyed						
Single Dummy Trim (1DT) 	This is a single, surface-mounted lever for an inactive door or a non-latching door					
Double Dummy Trim (2DT) 	This is a through bolt mounted pair of matching levers for an inactive door or a non-latching door					
L-Privacy (F19) 	Rotating inside lever Rotating outside lever only when deadbolt is retracted.	Turning the emergency key. Turning inside turn lever. (Rotating inside knob/lever retracts deadbolt and latch simultaneously.)	Turning inside turn lever Turning the emergency key.	Turning inside turn lever Rotating inside lever retracts latch and dead-bolt simultaneously Turning the emergency key.	Cannot be locked	Always unlocked

BEST
dormakaba Group

HD8000
HD7000
SL6000

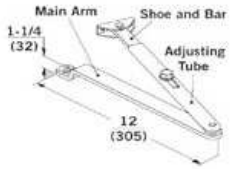
Surface Applied Door Closers

Technical Specifications

Features	SL6000	HD7000	HD8000
			
Spring sizes	1-4* & 3-6	1-6	1-6, 5-6 (w+50% pwr)
Non-handed	Standard	Standard	Standard
Full line of specialty function arms and plates	Standard	Standard	Standard
Backcheck positioning adjustment (POS)	N/A	Standard	Optional (AVB)
Controlled closing with two adjustment valves	180°–10° 10°–0°	180°–10° 10°–0°	180°–15° 15°–0°
Backcheck	Standard	Standard	Standard
Delayed action	Optional	Optional	Optional
Hold Open	Optional	Optional	Optional
Self-drilling & Self-tapping screws	Standard	Standard	Standard
Tamper-resistant TORX screws	Optional	Optional	Optional
Slim plastic cover	Optional	Optional	N/A
Full plastic cover	N/A	Standard	Standard
Over-sized plastic cover	N/A	N/A	Optional
Full metal cover	N/A	Optional	Optional
Lead-lined metal cover	N/A	Optional	Optional
Over-sized metal cover	N/A	N/A	Optional

* Meets 5 lb maximum opening force on 3'-0" wide interior doors.

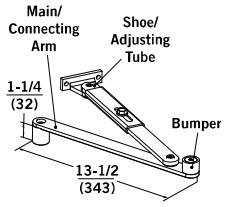
Arms



Flat Form Arm

AF80P (HD8000 only) — Parallel flat form arm complete (Tri-Pack) (0" - 4" [0 mm -102 mm] reveal). P80 included.

AF80J (HD8000 only) — Top jamp flat form arm complete (4" - 8" [102 mm to 203 mm] reveal).



Cushion IS Arm

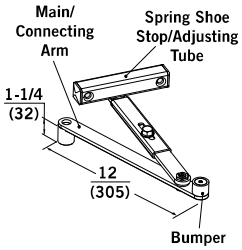
Provides a cushioned opening function for regular and top jamb applications at 85°, 90°, 95°, 100°, 105°, and 110°. Arm is non-handed.

IS — Cushion IS arm complete (0"– 3-1/2" [0 mm–89 mm] reveal).

ISJ — Cushion IS top jamb arm complete (3-1/2"–6-1/2" [89 mm–165 mm] reveal).

ISH — Cushion IS hold open arm complete (0"–3-1/2" [0–89 mm] reveal).

ISJH — Cushion IS top jamb hold open arm complete. (3-1/2"–6-1/2" [89 mm–165 mm] reveal).



Spring Stop IS Arm

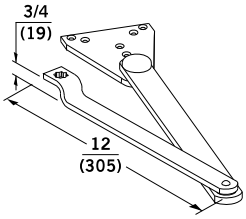
Provides a spring assisted dead stop function for regular and top jamb applications at 85°, 90°, 100°, and 110°. Arm is non-handed.

SIS — Spring stop IS arm complete (0"–3-1/2" [0 mm–89 mm] reveal).

SISH — Spring stop IS hold open arm complete (0"–3-1/2" [0 mm– 89 mm] reveal).

SISJ — Spring stop IS top jamb arm complete (3-1/2"–6-1/2" [89 mm–165 mm] reveal).

SISJH — Spring stop IS top jamb hold open arm complete (3-1/2"–6-1/2" [89 mm–165 mm] reveal).



Super Parallel Arm

Heavy-duty parallel arm. Available in non-hold open and thumb turn hold open. Units can be installed for maximum opening of 100° or 180°. Hold open units will hold open at 90° or 125°. Maximum opening is 180° (permitting). Arm is non-handed. Non-hold open arm illustrated.

SPA — Super parallel arm non-hold open.

SPA/R — Heavy duty parallel arm with LCN PA foot

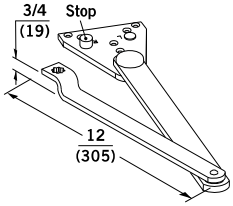
SPA/RCP — Heavy duty parallel arm with LCN PA foot & CP4040 conv. plate

SPA — Super parallel arm non-hold open.

SPAT — Super parallel arm thumb turn hold open.

SPAT/R — Heavy duty parallel arm, thumbturn hold open with LCN PA foot

SPAT/RCP — Heavy duty parallel arm, thumbturn hold open with LCN PA foot & CP4040 conv. plate



Door Saver Arm

Heavy-duty parallel arm with integral cushioned opening function. Available in non-hold open, thumb turn hold open, and hex key turn hold open. Units can be installed to achieve either stop or stop and hold open at 85°, 90°, 100°, and 110°. Maximum opening is 110° (conditions permitting). Arm is non-handed. Non-hold open arm illustrated.

DS — Door saver arm non-hold open.

DS/R — Heavy duty parallel arm, stop with LCN PA foot

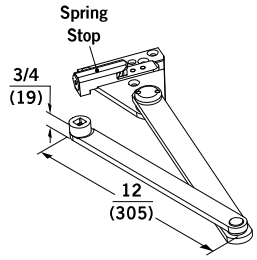
DS/RCP — Heavy duty parallel arm, stop with LCN PA foot & CP4040 conv. plate

DST — Door saver arm thumb turn hold open.

DST/R — Heavy duty parallel arm, hold open, stop with LCN PA foot

DST/RCP — Heavy duty parallel arm, hold open, stop with LCN PA foot & CP4040 conv. plate

Arms



Spring Stop Door Saver Arm

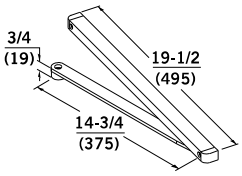
Heavy-duty parallel arm with spring assisted dead stop function. Available in non-hold open and thumb turn hold open. Units can be installed to achieve either stop at 85°, 90°, 100°, and 110° or stop and hold open function. Maximum opening is 110° (conditions permitting). Arm is non-handed. Non-hold open arm illustrated.

SDS – Spring stop door saver arm.

SDS/R – Heavy duty parallel arm, compression stop with LCN PA foot

SDS/RCP – Heavy duty parallel arm, compression stop with LCN PA foot & CP4040 conv. plate

SDST – Spring stop door saver arm thumb turn hold open.

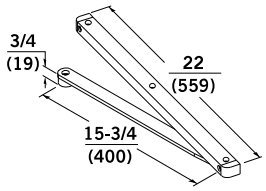


Track Arm

Provides slide track function for improved aesthetics and vandal resistance. Units can be installed to provide 85°, 90°, 110°, or 180° of door opening (conditions and application permitting). Arm is non-handed.

T – Track arm complete. Can be used on pull-side T applications (closer on door, track on frame) and JT applications (track on frame, closer on door). Can also be used with FT flush transom applications (closer on transom, track on door).

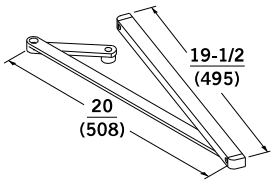
TH – Track hold open arm complete. Can be used in same applications as T arm. Range of hold open and maximum opening varies with mounting application.



Push Side Track Arm

PT – Push-side track arm complete. Used with PT track applications (closer on door, track on soffit).

PTH – Push-side track hold open arm complete. Used with PT track applications (closer on door, track on soffit).



TDE Track Arm

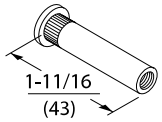
Provides slide track function for pull-side reveal conditions up to 3-1/2". Provides 117° of door opening (conditions permitting). Arm is handed. Also available with hold open option to provide selective single point hold open between 30° and 110°.

Arm requires a minimum 3-3/4" clearance between door face and wall when opened 90° and greater.

TDE – Double egress track arm complete.

TDEH – Double egress hold open track arm complete.

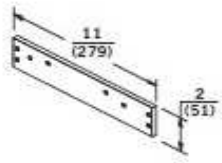
Accessories & Backplates



Sex Nuts (Included in SNDTPK)

Machine screws for 1-3/4" (44 mm) door

Required for use on unreinforced doors and wood or composite labeled fire doors for securely attaching hardware to the door.

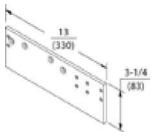


Backplate

BP60 – (SL6000) For top jamb mount when overhead ceiling clearance is less than 2-1/4" (57 mm).

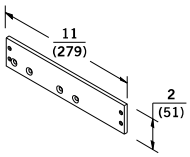
BP70 – (HD7000) For top jamb mount of when overhead ceiling clearance is less than 2-1/4" (57 mm) or for regular mount to clear a mortised stop/holder.

BP80 – (HD8000) For mounting top jamb when frame face is less than 2-7/8" (73 mm). Two sets of mounting holes accommodate 1-3/4" (44 mm) or 3-1/4" (83 mm) minimum ceiling clearance.* Top set of holes create top jamb drop application to clear a surface applied stop/holder. Can also be used for regular mount to clear a mortised overhead
stop/ holder



Backplate

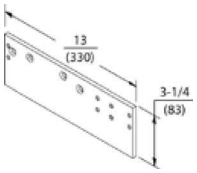
BP70FC – (HD7000) For top jamb mount with a full cover when overhead ceiling clearance is less than 2-1/4" (57 mm) or for regular mount to clear a mortised stop/ holder.



Backplate

BP60T – (SL6000) For use with pull-side track applications (closer on frame face, track on door) to permit installation on a standard 2" (51 mm) frame face.

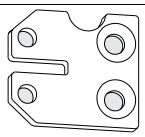
BP70T – (HD7000) For use with pull-side track applications (closer on frame face, track on door) to permit installation on a standard 2" (51 mm) frame face.



Backplate

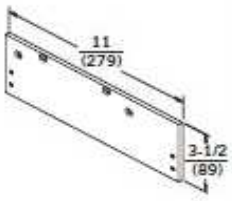
BP70TFC (HD7000) – For use with pull-side track applications with full cover (closer on frame face, track on door) to permit installation on a standard 2" (51 mm) frame face.

BP70FTFC (HD7000) – Required for track mount with full cover when being used on a flush transom (closer on transom, track on door). Mounting holes in the plate avoid rabbet on door.



Conversion Plate

SL640C – For regular, top jamb, or parallel arm mounts. Eliminates the need to re-machine the door and frame. Totally concealed when installed. Allows installation of SL6000 to retrofit into any closer with a 9-1/16" × 3/4" hole pattern.



Drop Plate

DP60 – (SL6000) For top jamb mount to clear a surface applied stop/ holder. Overhead ceiling clearance must be 1-3/4" (44 mm) or more. Permits parallel arm installation with minimum top door rail of 2-1/2" (64 mm) for non-hold open, 2-3/4" (70 mm) for friction hold open applications (assuming 5/8" (16 mm) stop dimension).

DP80 – (HD8000) For parallel arm installation when top door rail is less than 5-3/4" (146 mm) for non-hold open and plunger hold open. When top door rail is less than 6" (152 mm) for friction applications (assuming 5/8" (16 mm) stop dimension).

DP70 – (HD7000) For top jamb mount of with SPC, FPC and MC when overhead ceiling clearance is less than 1-7/8" (48 mm) or to provide clearance for a surface-applied stop/ holder. Permits parallel arm installation with a minimum top door rail of 2-1/2" (64 mm) for non-hold open, 2-5/8" (67 mm) for friction, fusible link and plunger hold open applications

5 Knuckle Full Mortise Hinges

Heavy Weight Ball Bearing

FBB168 – (ANSI A8111) Steel – polished and plated or phosphated and prime coated for painting

FBB199 – (ANSI A2111) Brass or bronze – polished and plated or painted

FBB199 (32) – (ANSI A5111) Stainless steel – highly polished

FBB199 (32D) – (ANSI A5111) Stainless steel – satin finish

- For use on heavy doors or doors where high frequency is expected such as entrance doors to office buildings, stores, public buildings and corridor entrance doors to offices
- All hinges have template screw hole location for use on either wood or hollow metal doors and frames
- Equipped with four Stanley permanently lubricated non-detachable ball bearings
- Pins in non-ferrous hinges are stainless steel
- Hole in bottom tip for easy pin removal
- Reversible flush tips and pins
- Hinges can be furnished as follows:
  - with raised barrel (RB)
  - with electric wires and/or switches (CE and/or CS)
  - with hospital tips (HT)
  - with decorative tips
  - with security studs
  - with non-removable pins (NRP)

Size Open		Gauge of Metal		Flat Head Screws Per Piece		Quantity Per		Case Weight		Case Weight	
						Box	Case	Bronze		Steel	
Inches	(mm)	Inches	(mm)	Machine	Wood	Each	Each	Lbs.	(Kg)	Lbs.	(Kg)
4-1/2 x 4-1/2	(114 x 114)	.180	(4.6)	8 - 12-24 x 1/2	8 - 12 x 1-1/4	3	30	45	(21)	42	(19)
5 x 4-1/2	(127 x 114)	.190	(4.8)	8 - 12-24 x 1/2	8 - 12 x 1-1/2	3	24	46	(21)	40	(18)
5 x 5	(127 x 127)	.190	(4.8)	8 - 12-24 x 1/2	8 - 12 x 1-1/2	3	24	50	(23)	46	(21)
6 x 4-1/2	(152 x 114)	.203	(5.2)	10 - 1/4 -20 x 1/2	10 - 14 x 1-1/2	3	24	63	(29)	53	(24)
6 x 5	(152 x 127)	.203	(5.2)	10 - 1/4 -20 x 1/2	10 - 14 x 1-1 /2	3	24	65	(30)	55	(25)
6 x 6	(152 x 152)	.203	(5.2)	10 - 1/4 -20 x 1/2	10 - 14 x 1-1/2	3	24	76	(35)	64	(29)
8 x 6*	(203 x 152)	.203	(5.2)	16 - 1/4 -20 x 1/2	16 - 14 x 1-1/2	3	12	57	(26)	51	(23)
8 x 8*	(203 x 203)	.203	(5.2)	16 - 1/4 -20 x 1/2	16 - 14 x 1-1/2	3	12	68	(31)	61	(28)

* Available in Steel only
Consult factory for other sizes not listed

BEST
dormakaba Group

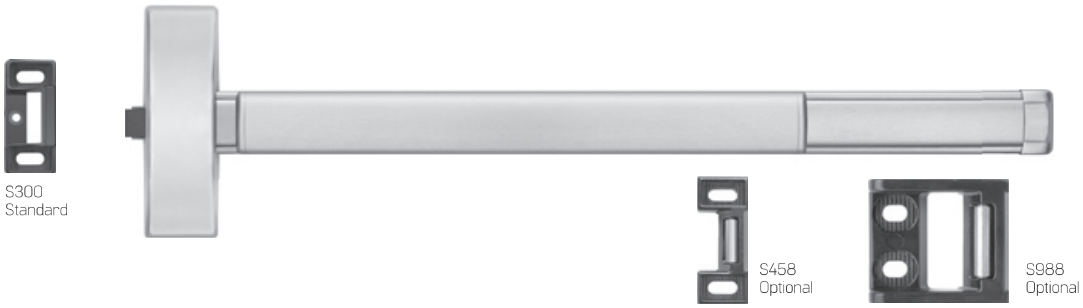
Precision 2000 Series

Touchbar Exit Devices

by BEST

Strength by design. Simply BEST.

Rim Exit Devices



S300
Standard

S458
Optional

S988
Optional

Precision 2100 Series - Reversible
Precision FL2100 Fire Exit Series - Reversible

Doors – For all types of single and double doors with a mullion. For mullions, see page 18. Available for 1-3/4" to 2-1/4" thick, up to 4'-0" wide opening. For thicker doors, consult factory. Furnished standard for 1-3/4" thick, 3'-0" wide opening.

Device – Covers ANSI A115.2 (Type 161), A115.18 cylinder lock and A115.1 (Type 86) Mortise Lock preparation.

Functions – Functions are field selectable except for the Double Cylinder option. The device is furnished for a desired function if specified. If not specified the "03" function is furnished standard.

Double Cylinder – Handed, "10" Function available. Requires two rim type cylinders, not furnished standard. See page 20.

Base Material – The Cover, Touchbar, Device Channel, Lock/Hinge Side Filler and End Cap are furnished of heavy wrought Brass, Bronze or Stainless Steel. 628 Devices are furnished with Aluminum, Brass, Bronze and Stainless Steel components. See "Finish & Base Material" chart page 3.

Chassis – Investment Cast Steel, Zinc Dichromated.

Latchbolt – Stainless Steel, Deadlocking, 3/4" throw.

Strikes – No. S300, Investment Cast Stainless Steel, Black Powder Coated furnished standard. No. S988, optional strike for use on Aluminum Door applications, please specify when ordering. No. S458, optional strike for use on Mullion applications, please specify when ordering. For optional strike information see page 35.

Dogging – 1/4" turn hex key dogging standard. NOT available on Fire Exit Hardware.

Touchbar Height – 39-15/16" from floor standard. May be varied as situation dictates.

Reversible – Reversible for all functions and Trims. Standard packaging RHRB.

UL Listed – Panic and Fire Exit Hardware. Conforms to UL10C and UBC 7-2.

ANSI/BHMA – Devices are BHMA certified for ANSI 156.3, Grade 1.

Finishes –

605	606	612	613	622
625	626W	628	630	690

For Finish description see page 3.

Cylinders – Rim Type, not furnished standard. Specify when required. For cylinder details see page 19.

Stile Width – See Stile Information on page 37.

Retrofit Applications – The 2100 and FL2100 Series Devices are designed to retrofit into other manufacturers' mounting hole locations. 1700 Series Pull Trim and 4900 Series Lever Trim may also be factory set for these applications by specifying prefix "R" (e.g. 2108 R4908A). Consult factory for details.

Precision 21 Series – Nonhanded
The 21 Series Device is designed to be compatible with many manufacturers' Access Control exterior trim. The device incorporates a center driven cam to receive the tailpiece of the access control product. The tailpiece rotation required to retract the latch is a minimum of 50 degrees. Consult factory for details.

Device Options

Prefix	Description	Page
C	Quick Connect Plugs	40
DE	Delayed Egress	25
E	Electric Device	29
ELR	Electric Latch Retraction	23
HC	Windstorm and Hurricane Code Device	21
LDS	Latchbolt Monitoring Double Switch	30
LS	Latchbolt Monitoring Switch	30
MLR	Motorized Latch Retraction	41
Q	Wireless Access Management System	31
TDS	Touchbar Monitoring Double Switch	30
TS	Touchbar Monitoring Switch	30
WTDS	Weatherized Touchbar Mon. Dbl. Switch	30
WTS	Weatherized Touchbar Monitoring Switch	30

To specify add Prefix to Device No. (e.g. TS2103)

Suffix	Description	Page
ALK	Exit Alarm: battery operated	28
ALW	Exit Alarm: remote power	28
BRL	Braille Touchbar	36
CD	Cylinder Dogging	19
DS	Door Position Monitoring Switch	30
LD	Less Dogging	19
SEC	Security Screws	3
SNB	Sex Nut and Bolt	3
WALW	Weatherized Exit Alarm: remote power	28

To specify add Suffix to Device No. (e.g. 2103CD)

Trims

1. All Trims are furnished with wrought plates and extruded or cast solid grips.
2. Specify Grip Design (A,B,C) ("A" Grip furnished standard for 1700 Series Trim, "C" Grip furnished standard for 2000 Series Trim)
3. 630 Trim is furnished for 628 Devices.
4. 626 Trim is furnished for 626W Devices.

Retrofit Applications
The R1700 Series Trim is designed to retrofit into other manufacturers' installations when used with the wide stile Precision Series Devices. Consult factory for details.

1700A "A" Grip | 1700B "B" Grip | 1700C "C" Grip | 2000C "C" Grip

V4908A Vandal Resistant Trim
A heavy duty lever trim designed to withstand abuse and vandalism. Composed of extra strength shock-absorbing "overload" springs and heavy duty investment cast stainless steel internal components. Lever returns to the "home" position eliminating the need to reset the lever.

Retrofit Applications
The R4900 Series Trim is designed to retrofit into other manufacturers' installations when used with the wide stile Precision Series Devices.
Consult factory for details.

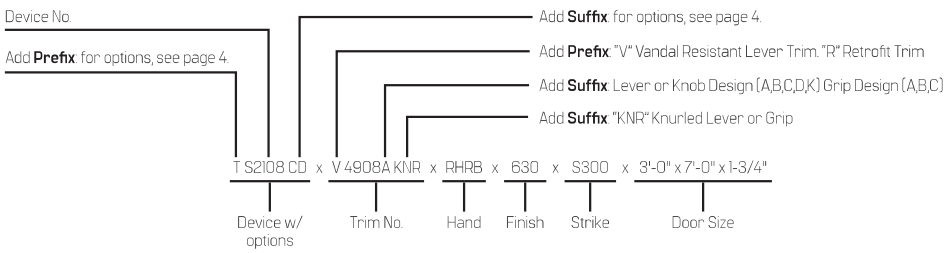
4900A "A" Lever | 4900B "B" Lever | 4900C "C" Lever | 4900D "D" Lever | 4900K "K" Knob

- For Trim dimensions see page 39.
- Trims are BHMA certified for ANSI 156.3, Grade 1.
- Trims are through bolted and will cover 161 and 86 cutouts (except for 2000C Trim).
- Cylinder, Rim Type, not furnished standard. For cylinder details see page 19.

1. All the escutcheons and levers are castings or forgings.
2. Specify Lever or Knob Design (A,B,C,D,K) and Handing ("A" Lever x RHRB furnished standard)
3. 626 Trim furnished for 626W, 628 and 630 Devices

ANSI Function	01 Exit Only (cover plate)	02 Dummy Trim	03 Key Retracts Latchbolt	05 Key Locks/ Unlocks Thumbpiece	08 Key Locks/Unlocks Lever/Knob	10* Double Cylinder Inside Key Locks/Unlocks Lever/Knob	14 No Cylinder Lever/Knob Always Active	15 No Cylinder Thumbpiece Always Active
Device Nos.	2101 FL2101	2102	2103** FL2103**	2105 FL2105	2108 FL2108	2110 FL2110	2114 FL2114	2115 FL2115
Trim Nos.	1701, R1701, 2001, 4901, R4901	1702A, R1702A, 2002C, 4902A, R4902A	1703A, R1703A, 2003C, 4903A, R4903A	1705A, R1705A, 2005C	4908A, V4908A, R4908A, RV4908A	4908A, V4908A, R4908A, RV4908A	4914A, R4914A	1715A, R1715A, 2015C

Device with Trim:



Device Only: Device no, hand, finish, strike, and door size including thickness (e.g. TS2108CD x RHRB x 630 x S300 x 3'-0" x7'-0" x 1-3/4")
Trim Only: Trim no, hand, finish, strike, and door size including thickness (e.g. V4908A x RHRB x 626 x 1-3/4")
* "10" Function is handed
** 2103 & FL2103 x Cylinder Only Application includes Cylinder Attachment Kit "CA-03"

CX-33: ADVANCED LOGIC RELAY

CX-33 *is a 'state of the art' door controller designed for 'universal' operation in virtually any automatic door application. This compact unit is small enough to fit inside most door operator cases. It provides a large 3 segment LED and simple push buttons for the easiest programming, and supports illuminated signage in restroom applications. It also leads the market with a range of exclusive operating features, including time duration in airlock applications and protection of automatic door operators when utilizing magnetic locks.*

Features

- 15 operating modes with sub-modes
- Easily sequence multiple inputs with multiple maintain and hold outputs
- New V3.2 Features Include:
  - Lock Down Mode
  - Delayed Relay Activation
  - Selectable N.O or N.C. Inputs
- Large 3 segment (blue) LED display
- Outstanding power filtering and surge protection
- Selectable time delays with delay on input activation
- Larger terminal strips
- 12V to 24V AC/DC
- 3 year warranty

MODEL	
CX-33	Advanced Logic Relay

Specifications

Voltage:	12V to 24V AC/DC
Current Draw:	105mA Typical, 320mA Max
Response Time:	0.5 Seconds
Display:	Blue Multi-Segment LED
Input:	4 x Dry 1 x Wet: min. 5V AC/DC N/O or N/C Selectable
Output:	3 x Form C (SPDT)
Contact Rating:	3A @ 30 VDC
Temp Range:	-22°F to +185°F (-30°C to +85°C)
Time Delay:	Hold 1 timer: 0-50 Seconds Delay 1 Timer: 0-15 Seconds Hold 2 timer: 0-50 Seconds Delay 2 timer: 0-60 Seconds Hold 3 Timer: 0-50 Seconds Delay on Activate: 0-10 Seconds
Dimensions:	2"H x 6"W x 7/8"D (51mm x 152mm x 22mm)

CX-33PS: ADVANCED LOGIC RELAY, POWER SUPPLY AND CABINET

The industry leading ***CX-33*** *Advanced Logic Relay is available in a metal cabinet that centralizes all door control system components; a 12/24 VDC power supply module, and color coded termination blocks for quick and easy installation.*

Features

- Rugged and compact metal cabinet
- Pre-wired with large terminal block for easy access
- Removable door with option for cabinet lock
- Five convenient conduit knockouts; one per side
- 12/24V DC power supply, 2 Amp. (UL listed)
- Available as part of Camden Restroom Control Kits (See pages 34-37).
- Short circuit and thermal overload protection
- 3 year warranty

MODEL	
CX-33PS	Advanced Logic Relay, 2 Amp, Power Supply Cabinet and Transformer
Option	
'L'	Add suffix '**L**' to model number for Cabinet Lock

Specifications

Voltage:	16V to 28V AC/DC
Output:	12V or 24 VDC
Current:	2 Amps
Temp Range:	32°F to +120°F (0°C to +49°C)
Dimensions:	11-1/16" H x 7-7/8"W x 2-13/16"D 281mm x 200mm x 72mm)

CX-PS13 V3: VARIABLE OUTPUT LINEAR POWER SUPPLY

*The low cost **CX-PS13** linear power supply is designed to provide regulated low voltage power for electrified locks, MProx™ card access systems, washroom control packages and other electronic devices. A 120 VAC transformer with a 6 to 26 VAC output is required. Recommended for use with electric strikes.*

Features

- Low cost linear power supply
- Compact board-only design
- Input voltage: 6 - 26 VAC, depending on output voltage selected
- Self-resetting smart fuse protection
- Input voltage transformer required. See manual for specification
- 3 year warranty

Specifications

Voltage:	6-26 VAC
Output Voltage:	6,12, 24 VDC Selectable or 2-24 VDC if ADJ is selected
Output Protection:	PPTC Resettable Fuse
Output Power:	800mA, 200mA Charging Current
Ripple:	<40mV
Efficiency:	12 VDC = 85% , 24 VDC = 90%
Dimensions:	2-3/4"H x 1-1/2"W x 1-3/4"D (69mm x 38mm x 46mm)

MODEL

CX-PS13V3	Variable Output Linear Power Supply

TRANSFORMERS AND RECTIFIERS

*Camden offers a range of 12 VAC to 24 VAC standard, plug-in and panel (nipple) mount transformers to support any low voltage system application. The **CX-5024** rectifier is used to convert AC power for use with DC powered devices.*

Features

- AC and DC models
- Standard mount & plug-in models
- Fused model for additional circuit protection

MODELS

Panel (Nipple) Mount	
CX-TRN-2024*°	24 VAC, 20VA panel (nipple) mount transformer
Standard Mount	
CX-TRX-2012*°	12 VAC, 20VA standard mount transformer
CX-TRX-4024*°	24 VAC, 40VA standard mount transformer
CX-TRX-5024°^	24 VAC, 50VA standard mount transformer
Fused Standard Mount	
CX-TRX-2024*°	24 VAC, 20VA, fused, standard mount transformer
Plug-in	
CX-TRP-4016°	16 VAC, 40VA plug-in transformer
Rectifier	
CX-5024	Rectifier (AC-DC) 50 VA
CX-TRK-2450	24 VAC, 40VA standard mount transformer and AC to DC Rectifier

Specifications

Input Voltage:	120 VAC 60H
Output Voltage:	12-24 VAC

CX-TRX-2012

Dimensions:

CX-TRN-2024:
2"H x 2-3/8"W x 2-1/4"D
(51mm x 60mm x 57mm)

CX-TRX-2012:
3"H x 2"W x 2-1/8"D
(76mm x 51mm x 54mm)

CX-TRN-2024

CX-TRX-4024:
2"H x 2-3/8"W x 2-1/2"D
(51mm x 60mm x 64mm)

CX-TRX-5024:
2-1/8"H x 3-1/8"W x 2-5/16"D
(54mm x 80mm x 60mm)

CX-TRX-5024

CX-TRX-2024:
2"H x 2-3/8"W x 2-1/2"D
(51mm x 60mm x 64mm)

CX-TRP-4016:
3-1/2"H x 2-1/2"W x 2-1/8"D
(89mm x 64mm x 54mm)

CX-TRP-4016

CX-5024:
1"H x 3/4"W x 1/4"D
(25mm x 19mm x 6mm)

WWW.CAMDENCONTROLS.COM

ACTIVE INFRARED HANDS-FREE SWITCHES

RoHS COMPLIANT

ADA Compliant

SureWave™ *touchless switches include exclusive features not available elsewhere, including an extended range (up to 6 ft.), the option for wireless or hybrid wireless / wired operation and 'short range' activation designed to reduce false activation from highly reflective surfaces! CM-333 and CM-336 models are supplied with (2) 'AA' alkaline batteries.*

Outdoor Applications: *Lithium batteries recommended for environments below 32°F (0°C). Rain Hood recommended when installed with direct exposure to rain or snow.*

Hands-Free Features

- A wide range of wired, wireless and battery powered models
- Adjustable operating range 1" - 6 ft.
- Adjustable time delay
- Super-fast activation response
- Heavy duty relays, for use with all automatic operators and electrified locks
- Narrow, single or double gang faceplates, stainless steel or polycarbonate

Specifications - All Models

Technology:	Active Infrared with Micro Burst
Temp Range:	-4°F to 153°F (-20°C to +85°C)
Security:	Fail Secure or Fail Safe

NOTE: See page 62 for faceplate, graphic and light ring options

CM-331: WIRED, 1 RELAY

Features

- Standard Operating range, 1"- 28"
- Extended Range up to 6 ft.
- Adjustable time delay 1 - 30 seconds
- (5) Selectable operating modes
- Inputs for REX and door contact
- Option for light ring (stainless steel faceplates only)
- Option for plug-in wireless transmitter

MODEL	
CM-331	Hands-free switch, wired, with 1 relay

1 SPDT

Specifications

Sensors: (2)	Voltage: 12/24V AC/DC
Current Draw:	40mA
Relay Outputs:	(1) Form 'C', 3A @ 30 VDC
Active Output:	9-12V
Inputs:	REX and Door Contact
Operating Modes:	Momentary, Momentary with Alarm, Maintained, Toggle, Extended Range

CM-332: WIRED, 2 RELAY

Features

- Advanced switch with Door Control Functions
- Standard operating range, 1" - 28"
- Extended Range up to 6 ft.
- Adjustable time delay 1 - 30 seconds
- (7) Selectable operating modes
- Inputs for REX and door contact
- Option for light ring (stainless steel faceplates only)
- Option for plug-in wireless transmitter

MODEL	
CM-332	Hands-free switch, wired, with 2 relays

2 SPDT

Specifications

Sensors: (2)	Voltage: 12/24V AC/DC
Current Draw:	40 mA
Relay Outputs:	(2) Form 'C', 3A @ 30 VDC
Active Output:	9-12V
Inputs:	REX and Door Contact
Operating Modes:	Momentary, Momentary with Alarm, Maintained, Toggle, Security, Extended Range, and Sequence

KINETIC BY CAMDEN VERSIONS AVAILABLE

CM-40, CM-41 & CM-60 SERIES: ROUND PUSH PLATE SWITCHES

UL Listed Components ADA Compliant

CM-40, CM-41 and CM-60 *Series 'All-Active' push plate switches are heavy-duty, ADA-compliant door controls. Faceplates are stainless steel or solid brass, and the assembly is designed for easy installation. The CM-41 4-1/2" square stainless steel backplate is large enough to cover a poorly installed electrical box. Also fits Camden 4-1/2" square surface boxes.*

CM-40/2

CM-41/3

CM-60/4

Features

- Durable stainless steel or brass construction
- 4 stud switch design and rubber dampers for quieter operation
- All-Active design requires minimal actuation force
- Weather resistant boot included
- Large variety of graphics options
- Available in a range of architectural finishes
- 3 year 'Camden Tough' warranty with '2 for 1' replacement

Specifications

Voltage:	12/24V AC/DC
Contact Rating:	15A @ 30 VDC
Contact Type:	SPDT Form 'C'
Mounting:	**CM-40/41:** Single Gang **CM-60:** Single/Double Gang or 4 x 4
Switch Type:	Momentary
Std. Finish:	US32 / 630
Dimensions:	**CM-40:** 4-1/2" Diameter x 1-3/4"D (114mm x 44mm) **CM-41:** 4-1/2"H x 4-1/2"W x 1-3/4"D (114mm x 114mm x 44mm) **CM-60:** 6" Diameter x 1-1/8"D (152mm x 28.6mm)

ROUND SWITCHES

CM-40	4-1/2" Round push plate switch, brushed stainless steel finish
CM-41	4-1/2" Round push plate switch, with square back plate, brushed stainless steel finish
CM-60	6" Round push plate switch, brushed stainless steel finish

NO-BATTERY KINETIC BY CAMDEN™ WIRELESS ROUND SWITCHES with built-in transmitter. Receiver required.

CM-40K	4-1/2" Round push plate switch, brushed stainless steel finish
CM-41K	4-1/2" Round push plate switch, with square back plate, brushed stainless steel finish
CM-60K	6" Round push plate switch, brushed stainless steel finish

OPTIONS (Add suffix to model above)

Faceplate Graphic Options

CM-xx/1

CM-xx/2

CM-xx/A2

CM-xx/2AL

CM-xx/2AR

CM-xx/3

CM-xx/3F

CM-xx/4

CM-xx/A4

CM-xx/4AL

CM-xx/4AR

CM-xx/4F

CM-xx/8

CM-xx/8B

CM-xx/8F

CM-xx/8D

Architectural Finishes		Water Tight Option	Contact Option
CM-xxx-AB Antique Brass	CM-xxx-OB Oil Rub Bronze	CM-xxx-WT Boot & watertight coating	CM-xxx-DP DPDT switch instead of SPDT
CM-xxx-SB Satin Brass	CM-xxx-PB Polished Brass		

WWW.CAMDENCONTROLS.COM

CDH

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Oakville, L6H 5V1

Allen A Martin P.S. Addition PDSB
Ogden Rd. Mississauga
Job No. 24126

Submittal Date: Nov 28/24

CM-54, CM-55 & CM-57 SERIES: ILLUMINATED PUSH PLATE ENCLOSURES & SWITCH KITS

*Aura™ **CM-54** (surface square) **CM-55** (flush square) and **CM-57** (flush round) illuminated push plate enclosures and switch kits provide high visibility and enhanced user convenience in ADA compliant automatic door and other applications.*

***Features include:** selection of backlight color activation, an audible sounder that confirms switch activation, and Form 'C' contacts used to switch your device.*

Aura™ illuminated mounting boxes are compatible with the widest range of 4-1/2" all-active push plate switches in the industry. Options include a complete selection of stock and custom graphic designs, architectural finishes (including polished brass and bronze) and water tight models.

UL Listed Components · ADA Compliant · RoHS COMPLIANT

CM-45/454 *CM-45/455*

CM-40/4GRF

Features

- Illuminated surface and flush mount box compatible with any CM-40, CM-45 or CM-46 'All Active' push plate switch
- High efficiency LED technology
- Improves switch visibility, even in daylight
- Flame and impact resistant polycarbonate construction
- Selectable 12/24V, AC/DC

AURA™ ILLUMINATED ENCLOSURES	
CM-54i	Surface, 4-1/2" Square, Aura™ illuminated. Red, Green, Blue
CM-55i	Flush, 4-1/2" Square, Aura™ illuminated. Red, Green, Blue
CM-57GR	Flush, 4-1/2" Round (Illuminated Red/Green)
AURA™ ILLUMINATED SWITCH KITS - SURFACE MOUNT	
CM-45/x54	4-1/2" Square push plate (concealed screws)
CM-46/x54	4-1/2" Square push plate (exposed screws)
AURA™ ILLUMINATED SWITCH KITS - FLUSH MOUNT	
CM-40/x57	4-1/2" Round push plate
CM-45/x55	4-1/2" Square push plate
CM-46/x55	4-1/2" Square push plate

NOTES:

- DPDT Contacts: CM-40, CM-45 or CM-46 'DP' option cannot be used with Aura™ illuminated enclosures

- See Page 70 for faceplate graphic options and suffix to replace "x" in above models

Specifications

Voltage:	12/24V AC/DC
Current Draw:	130 mA. max.
Lumina:	**Red:** 5760 MCD **Green:** 3780 MCD
Contact Type:	1 Form 'C'
Contact Rating:	3A @ 24V AC/DC
Sounder:	85 DB @ 10cm
Dimensions:	**CM-54:** 5-1/4"H x 5-1/4"W x 2-1/8"D (133mm x 133mm x 54mm) **CM-55:** 6-1/2"H x 6-1/2"W x 2"D (165mm x 165mm x 51mm) **CM-57:** 6-5/8" Dia. x 2"D (168mm x 51mm)

CM-49, 79, 59S AND 89S: SURFACE AND FLUSH MOUNT ESCUTCHEONS (FOR ROUND PUSH PLATE SWITCHES)

*Camden offers a range of **flame and vandal resistant** low profile escutcheons for mounting 4-1/2" and 6" round push plate switches. ABS escutcheons feature a patented 2-piece design and may be ordered as complete 'kits' or individual parts. Stainless steel escutcheons feature one piece heavy gauge construction.*

Features

- Exclusive 2 piece ABS escutcheons can be surface mounted or mounted on in-wall single gang, double gang or 4" square electrical boxes
- Heavy gauge stainless steel escutcheons provide an attractive, rugged look
- ABS models are designed for use with Lazerpoint RF™ 915 Mhz. wireless wall switch transmitters

FOR 4-1/2" ROUND SWITCH - STAINLESS STEEL ESCUTCHEON	
CM-59S	Surface, Round, Standard Depth. Heavy gauge stainless steel, 7-3/4" x 1-1/18"D
FOR 4-1/2" ROUND SWITCH - ABS SPACESHIP ESCUTCHEON	
CM-49	Surface/Flush Mount Kit, includes **CM-49A, CM- 49B, CM-49C & CM-49G,** 8-3/4" x 2"D
CM-49A	Flush enclosure only (fits single gang box), 7" x 13/16"D
CM-49AK	Flush Mount Kit, includes **CM-49A, CM-49C & CM-49G,** (fits single, double and 4 x 4 boxes), 7" x 13/16"D
CM-49B	Surface mount enclosure only (must be used with **CM-49A**), 8-3/4" x 1"D
CM-49C	Adapter plate for mounting on double gang or 4" Square box, 4" x 1/16"D
CM-49G	Gasket for **CM-49A** OR **CM-49B**, 6-1/4" x 1/8"D
FOR 6" ROUND SWITCH - STAINLESS STEEL ESCUTCHEON	
CM-89S	Surface, round standard depth. Heavy gauge stainless steel, 9-5/8" x 1-1/2"D
FOR 6" ROUND SWITCH - ABS SPACESHIP ESCUTCHEON	
CM-79	Surface/Flush Mount Kit, includes **CM-79A, CM-79B, CM-49C & CM-79G,** 9-5/8" x 2"D
CM-79A	Flush enclosure only (fits single gang box), 8" x 3/4"D
CM-79AK	Flush Mount Kit, includes **CM-79A, CM-49C & CM-79G,** (fits single, double and 4 x 4 boxes), 8" x 3/4"D
CM-79B	Surface mount enclosure only (must be used with **CM-79A**), 9-5/8" x 1-1/8"D
CM-79G	Gasket for **CM-79A or CM-79B**, 7-1/4" x 1/8"D

CM-59S

CM-49A *CM-49B*
(Shown with TX-9 Transmitter)

CM-89S

CM-79A *CM-79B*
(Shown with TX-9 Transmitter)

CM-160 / 170 / 180 SERIES: KEY SWITCHES

***Key switches** for automatic doors are designed for mounting on the door operator cabinet or door frame, and are available in a range of 2 or 3 position momentary or maintained models. The key cylinder and 2 keys are included.*

Features

- Black lamacoid (plastic) or stainless steel faceplates
- Key removable in all maintained positions
- 2, 3, 4 position maintained and 2 position momentary models
- All switches are keyed alike

MODELS

CM-160	Key switch with plastic lamacoid (mini) faceplate
CM-170	Key switch with stainless steel (narrow stile) faceplate
CM-180	Key switch with stainless steel (single gang) faceplate

OPTIONS (Add suffix to model above)

Faceplate Graphics

MOMENTARY	MAINTAINED	MAINTAINED	MAINTAINED	MAINTAINED
OFF, OPEN	OFF, AUTO	AUTO, OFF, HOLD OPEN	DAY, OFF, NIGHT	EXIT, AUTO, OFF, HOLD OPEN
CX-xx/20	*CX-xx/21*	*CX-xx/22*	*CX-xx/23*	*CX-xx/24*

Extra Keys

CM-A126	(2) Extra keys for CM-160, 170 and 180 series key switches

Listed Components

CM-160/23

CM-170/21

CM-180/23

Specifications

Voltage:	12/24 VDC
Contact Rating:	4A @ 28 VDC
Switch Life:	100,000 cycles
Dimensions:	**CM-160:** 3"H x 1-11/16"W x 1-3/8"D (76mm x 42mm x 35mm) **CM-170:** 4-1/2"H x 1-3/4"W x 1-3/8"D (114mm x 44mm x 35mm) **CM-180:** 4-1/2"H x 2-3/4" W x 1-3/8" D (114mm x 70mm x 35mm)

CM-190 SERIES: TOGGLE SWITCH

***CM-190 Series** maintained toggle switches are designed to control automatic door operators, featuring a choice of faceplates, for mounting on the operator cabinet/wall.*

Features

- Mini metal faceplate designed to install on door operator cabinet or door frame
- 2 or 3 position maintained operation
- Single gang faceplate for mounting on standard electrical box
- Heavy duty 6 Amp. contacts

MODELS

CM-190	Mini aluminum faceplate
CM-195	Single gang stainless steel faceplate

OPTIONS (Add suffix to model above)

Faceplate Graphics

ON, OFF	*CX-xx/30*
AUTOMATIC, OFF, OFF, HOLD OPEN	*CX-xx/31*

Listed Components

CM-190/30

CM-195/31

Specifications

Voltage:	12/24 VDC
Contact Rating:	6A @ 30 VDC
Switch Life:	50,000 cycles
Temp Range:	-4°F - 185°F (-20°C - 85°C)
Dimensions:	**CM-190:** 2-5/8" H x 1-1/2" W x 2"D (59mm x 38mm x 51mm) **CM-195:** 4-1/2" H x 2-3/4" W x 2"D (114mm x 70mm x 51mm)

GSH 1180 - (1, 2, 3 OR 4) 12" C/C

Gallery™
specialty hardware ltd.

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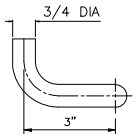
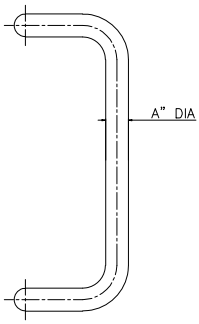
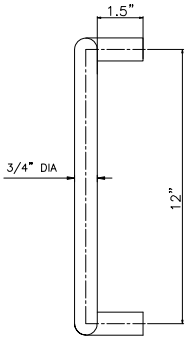
- Wrought Brass, Bronze, Aluminum and Stainless Steel
- Fasteners for 1 3/4" Door provided
- C3, C4, C9, C10, C10B, C14, C15, C26, C26D, C28 and C32D
- 1=3/4" DIA
- 2=1" DIA
- 3=1-1/4" DIA
- 4=1-1/2" DIA







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Tel: 416.667.9593 Fax: 416.667.0806
Email: info@galleryspecialty.com

The 1006 Series is also available in a **Complete One Box Solution**

HES® 1006 Electric Strike

Works with all cylindrical and mortise locksets with or without a deadbolt

The strongest, most versatile electric strike available.

The 1006 series is the strongest and most versatile electric strike available. The dual interlocking plunger design and heavy duty stainless steel construction, enables it to exceed every standard developed for electric strikes. With multiple faceplate options, the 1006 will fully accommodate every lock designed to work within an ANSI 4-7/8" strike plate. Tested to exceed 3,000 lbs of static strength, 350 ft-lbs of dynamic strength and factory tested to exceed 1 million cycles of operation, the 1006 is in a class of its own.

Features

Standard Features

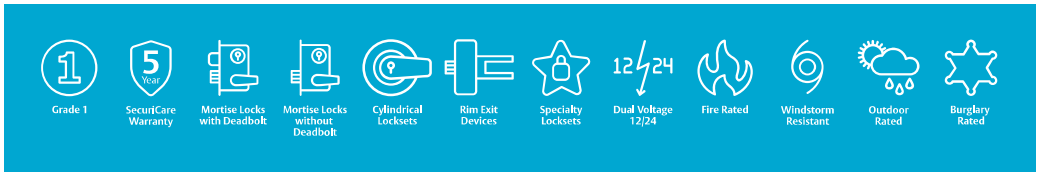
- Stainless steel construction
- Tamper-resistant
- Static strength 2,500 lbs
- Dynamic strength 350 ft-lbs (fail secure)
- Endurance 1 million cycles
- Fail secure (Standard)
- Non-handed
- Accommodates up to 1" deadbolt
- Plug-in connector
- Full keeper shims for horizontal adjustment
- Trim enhancer
- Strike body depth 11/16"
- SecuriCare five-year, no fault, no questions asked warranty

Optional Features

- **LBM** Latchbolt monitor
- **LBSM** Latchbolt strike monitor
- Fail safe
- Interchangeable faceplates
- Monitor switches may not work with all faceplate options

Accessories

- **1000-102** Rain guard
- **1006-103** Full keeper shims
- **1000-104** Lip extension trim adapter
- **1006-105** Trim enhancer BLK (goof plate)
- **1006-109** Trim adapter
- **1000-110** Replacement strike plate
- **1000-130** KD filler plate
- **150** Strike latch guard
- **HESCUT-MTK** Metal template kit
- **2005M3** SMART Pac® III



The global leader in door opening solutions

ASSA ABLOY

CDH

Commercial Doors & Hardware Ltd.
2150 Winston Park Drive, Unit 16
Oakville, L6H 5V1

Allen A Martin P.S. Addition PDSB
Ogden Rd. Mississauga
Job No. 24126

Submittal Date: Nov 28/24

HES® 9600 Surface Mounted Electric Strike

Works with rim exit devices up to a 3/4" throw latchbolt

The stylish windstorm-rated, surface mounted solution.

The 9600 series is a windstorm-rated, surface mounted electric strike designed to accommodate rim exit devices with a 3/4" throw Pullman latchbolt. All components are completely encased within its 3/4" thick stainless steel housing, so no cutting on the frame is required for installation. Simply place the electric strike on the surface of the frame, align it with the exit latchbolt and install. Adjustments have never been easier as the base is now separate from the cover. It is field selectable for fail secure or fail safe operation, and for 12 or 24 VDC.

The 9600 is a surface mounted electric strike designed with the strength and durability required to exceed the severe forces of ANSI Windstorm testing.

Features

Standard Features

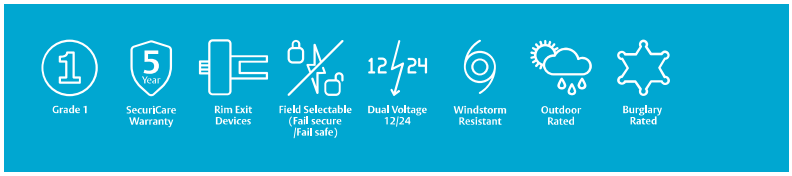
- Installs in metal or wood frames
- Wood screws not provided
- Separate base and decorative cover for easy adjustments
- Stainless steel construction
- Tamper-resistant
- Static strength 2,000 lbs
- Dynamic strength 120 ft-lbs
- Endurance 1 million cycles
- Field selectable fail secure/fail safe
- Horizontal adjustment
- Non-handed
- Internally mounted solenoid
- Accommodates up to 3/4" Pullman latch
- SecuriCare five-year, no fault, no questions asked warranty

Optional Features

- **LBM** Latchbolt monitor
- **LBSM** Latchbolt strike monitor

Accessories

- **9000-108** Spacer plate (black or 630 finish)
- **9000-MTK** Metal template kit
- **SMB** Surface mounting box
- **2001M** Plug-in bridge rectifier
- **2004M** ElectroLynx adapter
- **2005M3** SMART Pac III
- **2006M** Plug-in buzzer



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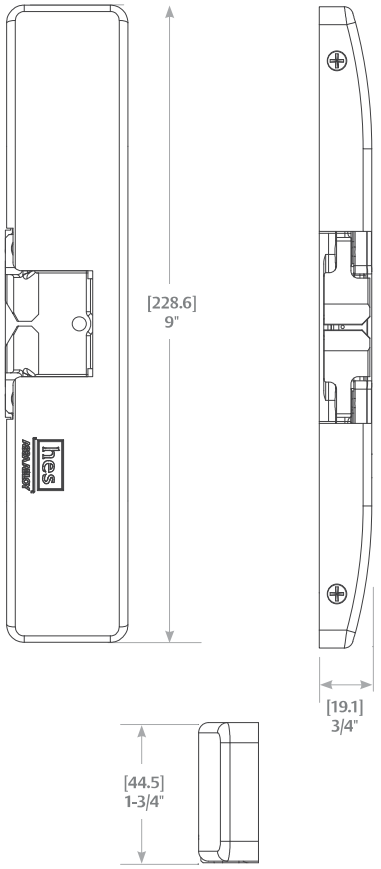
Submittal Date: Nov 28/24

Dimensions



Specifications

Certifications

- ANSI/BHMA A156.31, Grade 1
- UL 1034 burglary-resistant listed and suitable for outdoor use
- UL 294 (6th Edition) listed
- RoHS compliant
- ANSI/SDI A250.13 windstorm resistant
- Florida Building Code approved TAS 201, 202, 203
- ANSI-ASTM E330

Frame Application

- Metal
- Wood

Electrical (DC Continuous Duty)

- Dual voltage 12/24 VDC
- 450 mA at 12 VDC/250 mA at 24 VDC

How to Order

Series	Finish*	Option (s)
9600	– 630	– LBM
9600 Surface-Mounted Electric Strike; no faceplates required	**605** Bright Brass	**LBM** Latchbolt Monitor
	606 Satin Brass	**LBSM** Latchbolt Strike Monitor
	612 Satin Bronze	
	613 Bronze Toned	
	613E Dark Oxidized Satin Bronze	
	629 Bright Stainless Steel	
	630 Satin Stainless Steel	

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10027 S. 51st Street Phoenix, AZ 85044 USA

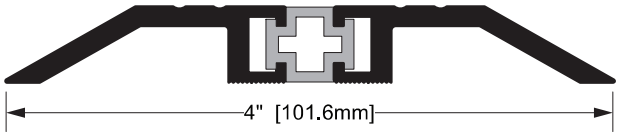
Patent pending and/or patent
assaabloydss.com/patents

Accessories

Item	Accessory	Description
	**2001M** Plug-in bridge rectifier	Converts AC to unfiltered DC. Rated 35 V, 1 Amp Includes MOV and self-resettable fuse Not recommended for 1006 Electric Strike
	**2001-1** Wire-in bridge rectifier	Converts AC to unfiltered DC. Rated 35 V, 2 Amp Not recommended for 1006 Electric Strike
	**2004M** ElectroLynx® adapter	Adapter between existing HES electric strikes and ElectroLynx® connectors
	**2005M3** SMART Pac® III Addition of Smart Pac to any electric strike extends the 5-year "No Fault" warranty to a 10-year "No Fault" warranty.	In-line power controller able to receive input voltages from 12- 32V AC or DC. Built-in bridge rectifier. Reduces initial voltage by 25% to extend the life of the electric strike. Includes built-in resettable fuse, MOV, voltage regulation and input voltage level indicating and unit status For use with 1006, input voltage must be DC
	**2006M** Plug-in buzzer	Audible operation indicator. At 24 VDC, 75db at 11-3/4"
	**2007M** Plug-in pigtail connectors	With 4" wire leads
	**150** Strike latch guard	Stainless steel. Installed at the edge of the door to cover the lock and electric strike
	**310-2-3** Astragal strike latch guard	Designed to prevent tampering with the latchbolt, as well as the latchbolt keeper. Prevents one door from being open before the other.
	**7000-SMB** Surface mounting box	Installs on inactive door of pair of doors to accommodate rim-exit devices. To be used with the 7000 (783S and 789S), 9400, 9500, 9600 and 9700 series. Available in black finish only

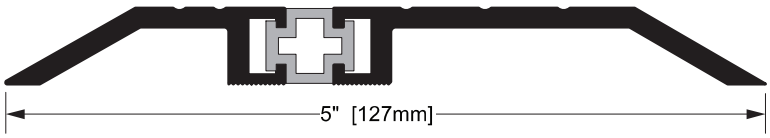
1/2” THERMAL BREAK THRESHOLDS

CT-44
EXTRUDED ALUMINUM
WITH RIGID P.V.C.

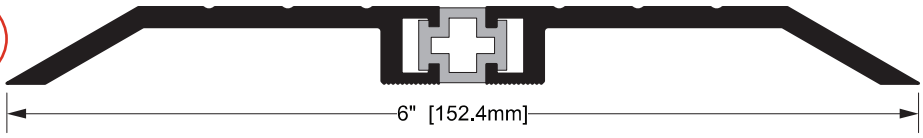


ALL PRODUCTS ON THIS PAGE

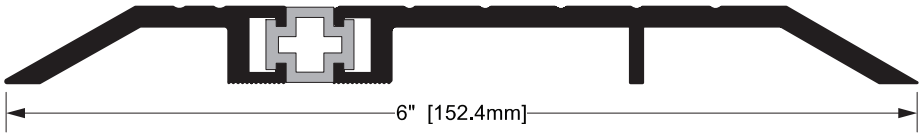
CT-45
EXTRUDED ALUMINUM
WITH RIGID P.V.C.



CT-46
EXTRUDED ALUMINUM
WITH RIGID P.V.C.

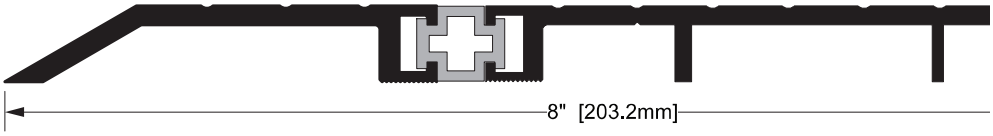


CT-44-1
CT-42-1
FROST INSERT



CT-44-1
CT-43-1
FROST INSERT

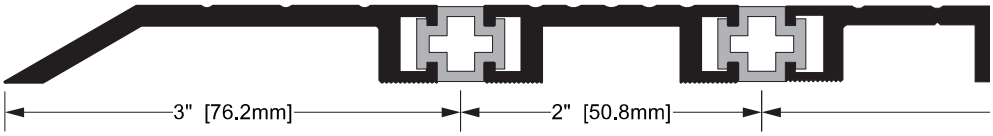
CT-45-1
CT-43-1
FROST INSERT



CT-42-1
CT-43-1
FROST INSERT

CT-43-1
CT-43-1
FROST INSERT

CT-45-1
CT-41-1
CT-43-1
FROST INSERT



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Submittal Date: Nov 28/24

SWEEPS

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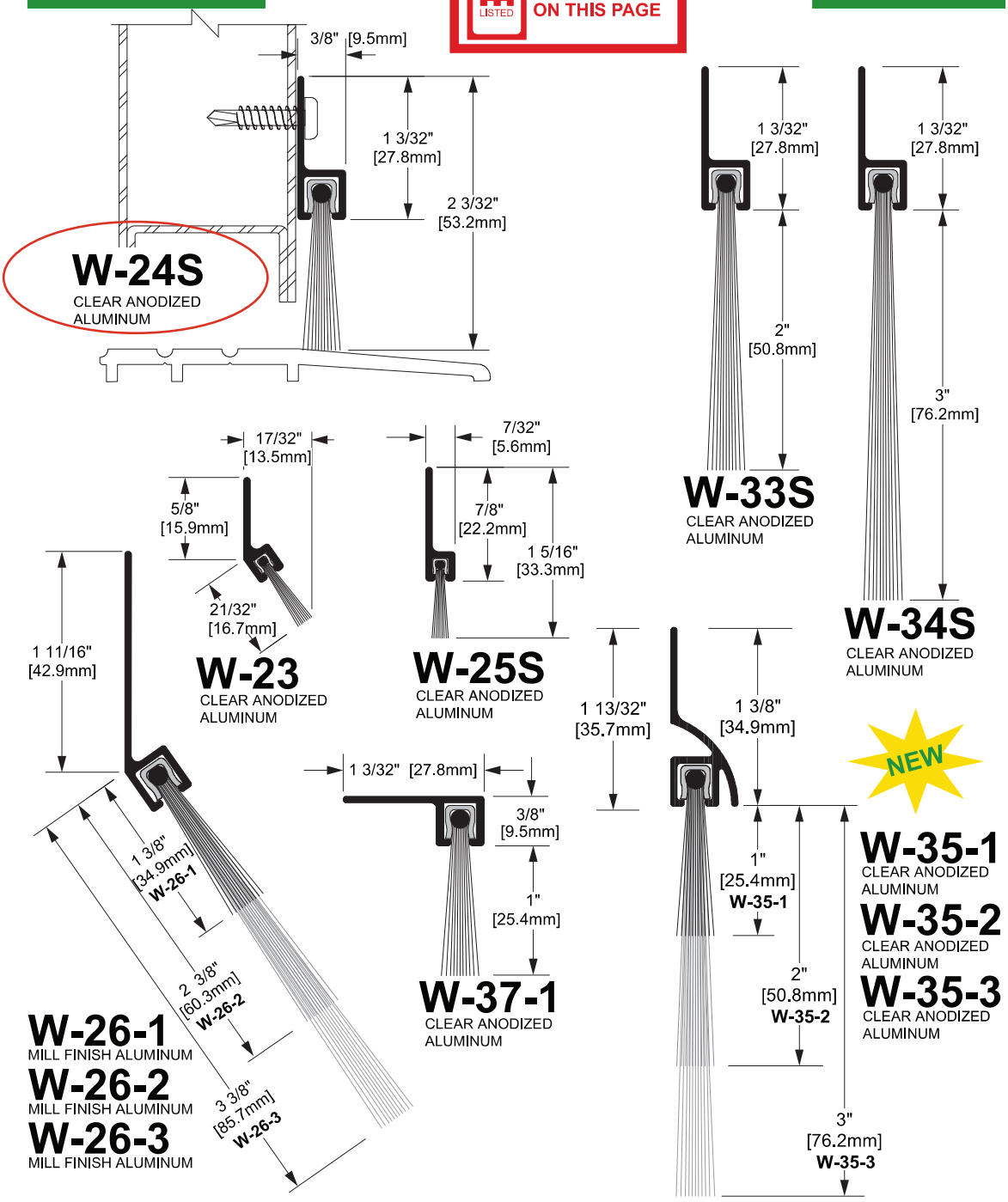

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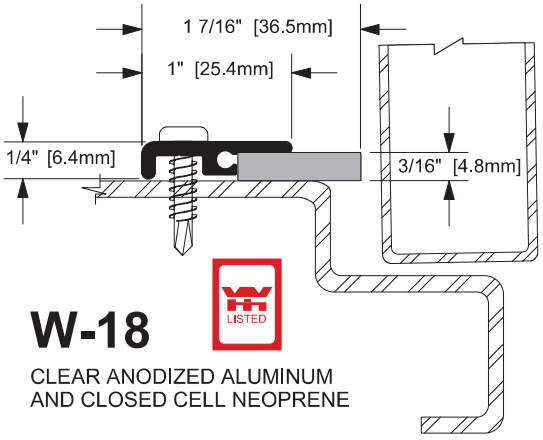
2150 Winston Park Drive, Unit 16
Oakville, L6H 5V1

Allen A Martin P.S. Addition PDSB
Ogden Rd. Mississauga
Job No. 24126

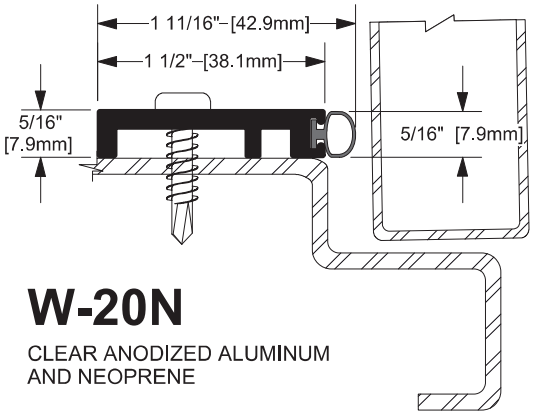
Submittal Date: Nov 28/24

WEATHERSTRIP



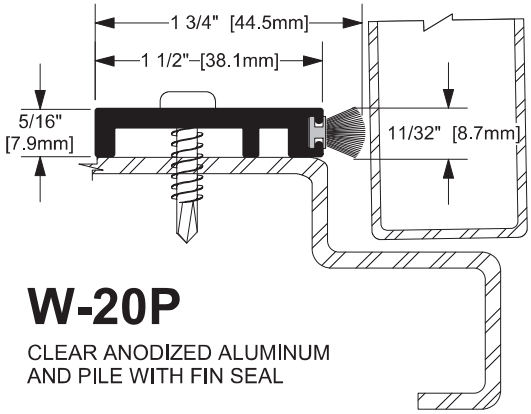
W-18

CLEAR ANODIZED ALUMINUM
AND CLOSED CELL NEOPRENE



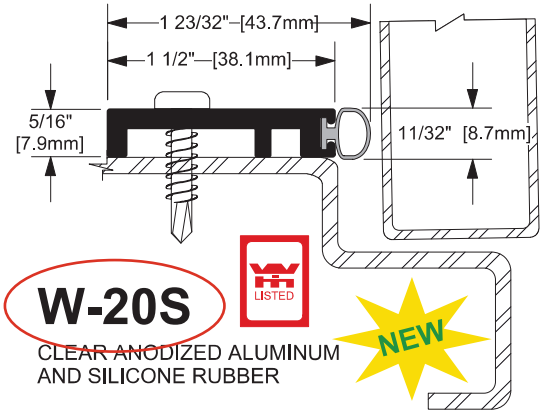
W-20N

CLEAR ANODIZED ALUMINUM
AND NEOPRENE



W-20P

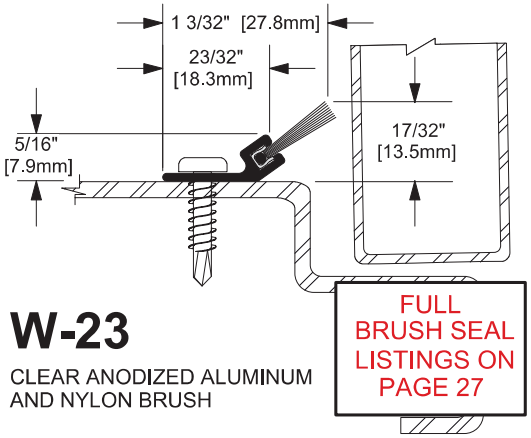
CLEAR ANODIZED ALUMINUM
AND PILE WITH FIN SEAL



W-20S

CLEAR ANODIZED ALUMINUM
AND SILICONE RUBBER

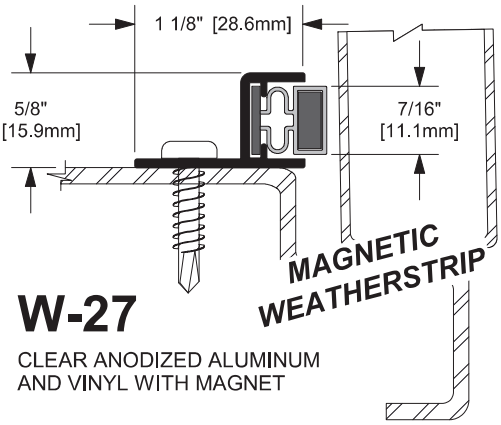
NEW



W-23

CLEAR ANODIZED ALUMINUM
AND NYLON BRUSH

FULL BRUSH SEAL LISTINGS ON PAGE 27



W-27

CLEAR ANODIZED ALUMINUM
AND VINYL WITH MAGNET

MAGNETIC WEATHERSTRIP

CDH

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Oakville, L6H 5V1

Allen A Martin P.S. Addition PDSB
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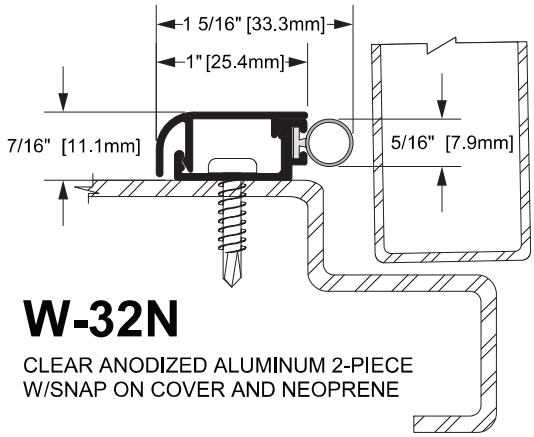
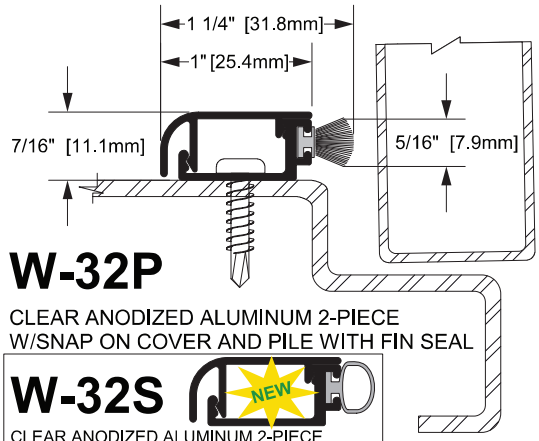
WEATHERSTRIP



W-32N

CLEAR ANODIZED ALUMINUM 2-PIECE
W/SNAP ON COVER AND NEOPRENE



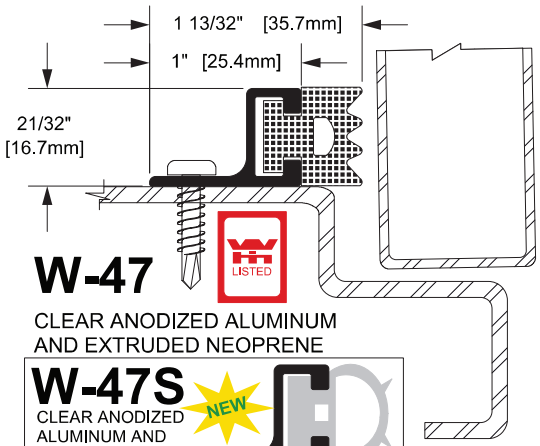
W-32P

CLEAR ANODIZED ALUMINUM 2-PIECE
W/SNAP ON COVER AND PILE WITH FIN SEAL

W-32S

NEW

CLEAR ANODIZED ALUMINUM 2-PIECE
W/SNAP ON COVER AND SILICONE



W-47

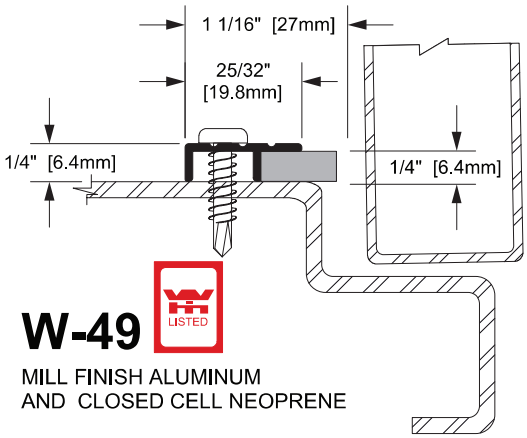
LISTED

CLEAR ANODIZED ALUMINUM
AND EXTRUDED NEOPRENE

W-47S

NEW

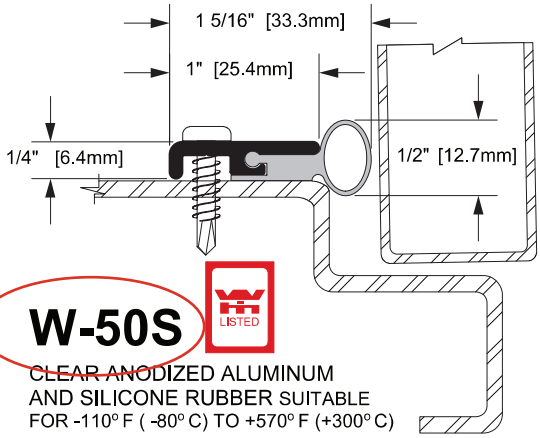
CLEAR ANODIZED
ALUMINUM AND
SILICONE



W-49

LISTED

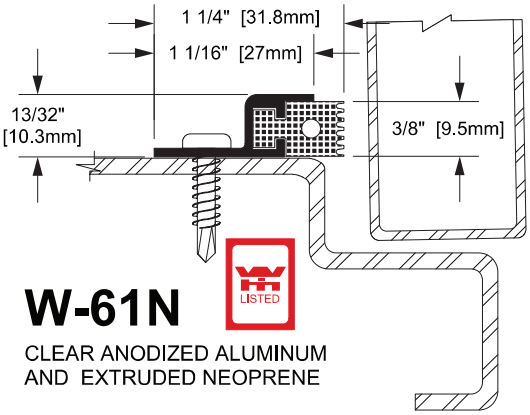
MILL FINISH ALUMINUM
AND CLOSED CELL NEOPRENE



W-50S

LISTED

CLEAR ANODIZED ALUMINUM
AND SILICONE RUBBER SUITABLE
FOR -110° F (-80° C) TO +570° F (+300° C)



W-61N

LISTED

CLEAR ANODIZED ALUMINUM
AND EXTRUDED NEOPRENE

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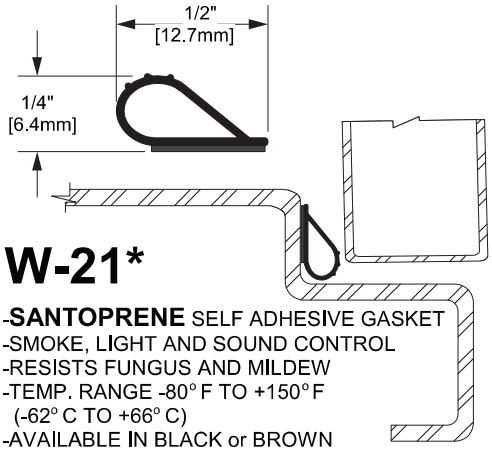
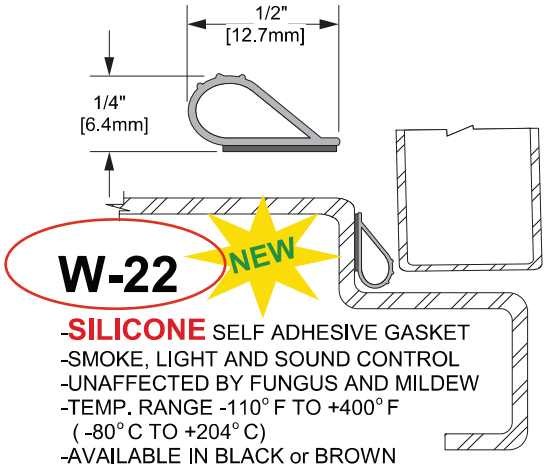
SELF ADHESIVE WEATHERSTRIP



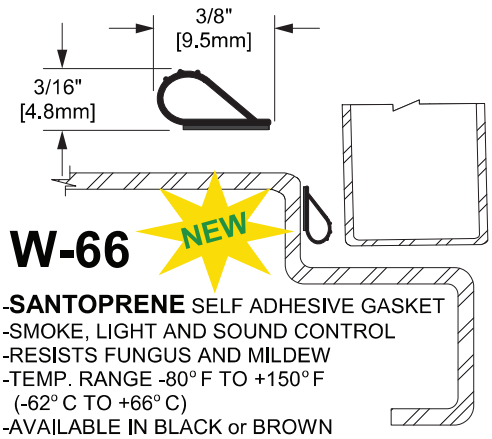
W-21*

-**SANTOPRENE** SELF ADHESIVE GASKET
-SMOKE, LIGHT AND SOUND CONTROL
-RESISTS FUNGUS AND MILDEW
-TEMP. RANGE -80° F TO +150° F
(-62° C TO +66° C)
-AVAILABLE IN BLACK or BROWN



W-22 NEW

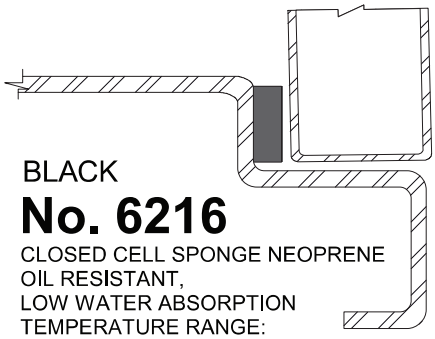
-**SILICONE** SELF ADHESIVE GASKET
-SMOKE, LIGHT AND SOUND CONTROL
-UNAFFECTED BY FUNGUS AND MILDEW
-TEMP. RANGE -110° F TO +400° F
(-80° C TO +204° C)
-AVAILABLE IN BLACK or BROWN



W-66 NEW

-**SANTOPRENE** SELF ADHESIVE GASKET
-SMOKE, LIGHT AND SOUND CONTROL
-RESISTS FUNGUS AND MILDEW
-TEMP. RANGE -80° F TO +150° F
(-62° C TO +66° C)
-AVAILABLE IN BLACK or BROWN

* W-21 is approved for use with 90 minute rated mineral core wood, plastic lamfaced fire doors & wood veneered steel frames.



BLACK

No. 6216

CLOSED CELL SPONGE NEOPRENE
OIL RESISTANT,
LOW WATER ABSORPTION
TEMPERATURE RANGE:
-70° TO +250° F (-57° C TO +121° C)

ADHESIVE BACKED NEOPRENE WEATHERSTRIP

1/16" x 3/8"	3/16" X 1/4"	3/8" X 1/2"
1/16" x 1/2"	3/16" X 3/8"	3/8" X 3/4"
1/8" x 1/4"	3/16" X 1/2"	1/2" X 1/2"
1/8" x 3/8"	1/4" X 3/8"	1/2" X 3/4"
1/8" x 1/2"	1/4" X 1/2"	
	1/4" X 3/4"	

OTHER SIZES/COLOURS, SPECIAL ORDER: CONTACT OFFICE

CDH

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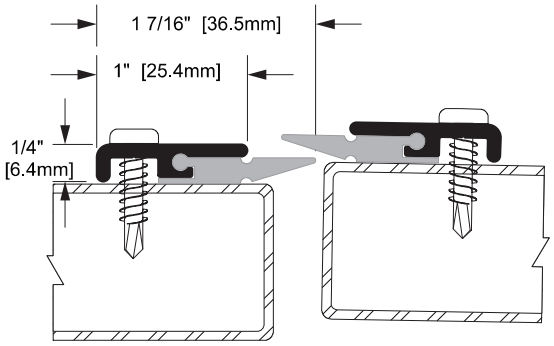
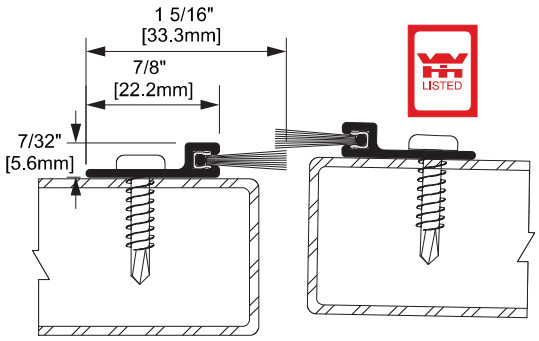
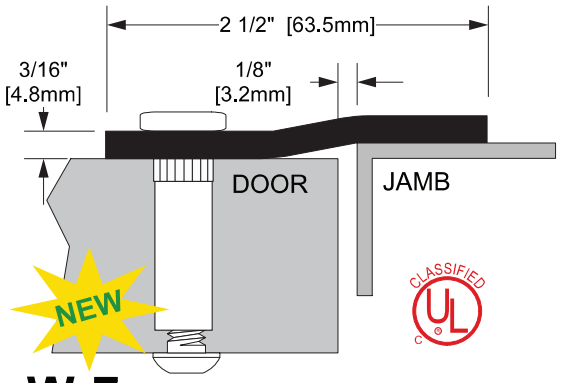
ASTRAGALS



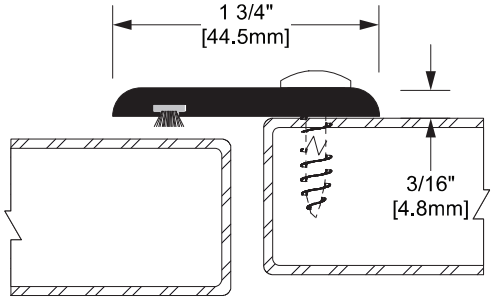
W-5 CLEAR ANODIZED ALUMINUM AND VINYL



W-25 CLEAR ANODIZED ALUMINUM AND NYLON BRUSH



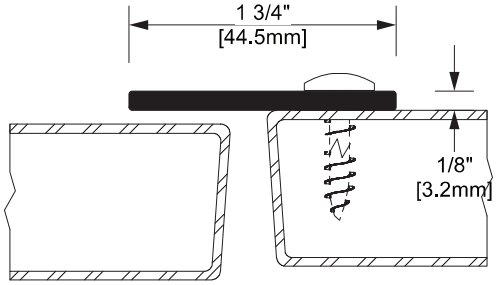
W-7 SECURITY ASTRAGAL
PRIMED C.R. STEEL c/w SECURITY SLEEVE



W-8 EXTRUDED ALUMINUM

W-8P EXTRUDED ALUMINUM WITH PILE

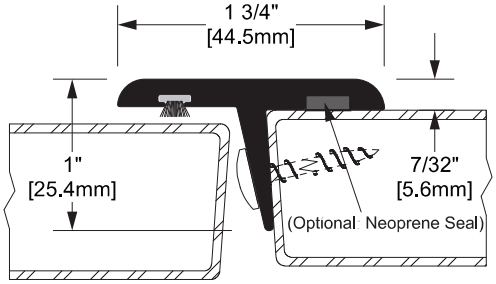
W-8SL EXTRUDED ALUMINUM WITH SILICONE



W-8S C.R. STEEL WITH CONDITIONED EDGES

W-8SP AS ABOVE, PRIMED FINISH

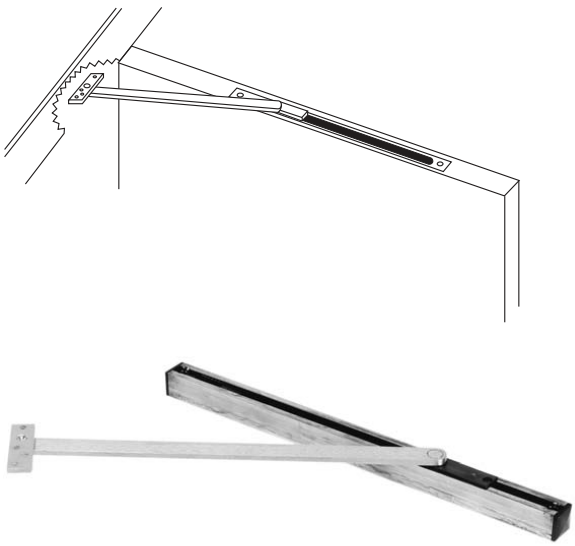
W-8SS STAINLESS STEEL, SEE PG. 20



W-9 EXTRUDED ALUMINUM WITH PILE

W-9S EXTRUDED ALUMINUM WITH SILICONE

1 Series



Application
- Interior or exterior doors
- Single or double acting
- Non-handed
- Recommended for high traffic, heavy abuse installations

Features
- Heavy-duty
- Slide track design
- Stop, friction stay or hold open functions
- 1-3/4" minimum door thickness. For thicker doors, specify when ordering
- 110° maximum opening
- Heavy shock absorber spring provides 5-7° compression before dead stop
- LS option omits spring for special applications
- Durable slider cam and shock block
- Surface on/off knob on hold open models
- 1-3/16" square channel
- Complete screw packet for installation in wood and machine screws for door and frame.
- For security areas, Torx® screws available for exposed fasteners
- Hanging means other than standard butts or offset pivots require special templating and pricing. Consult factory
- Standard architectural finishes

Compliance
- Stop function UL listed for fire door assemblies
- ANSI: C01531 (Friction)
  C01511 (HO)
  C01541 (Stop)

Door Opening Chart (in inches)

Butts Offset Pivots	Center Hung Pivots	Model Number		
		Friction	H.O.	Stop
*24 - 28	—	1-116	1-126	1-136
28-1/16 - 33	30 - 36	1-216	1-226	1-236
33-1/16 - 38	36-1/16 - 41	1-316	1-326	1-336
38-1/16 - 43	41-1/16 - 46	1-416	1-426	1-436
43-1/16 - 48	46-1/16 - 50	1-516	1-526	1-536

Butt hung only on this size door. No swing clear hinges.

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ASSA ABLOY

ASSA ABLOY, the global leader in door opening solutions

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Job No. 24126

Submittal Date: Nov 28/24

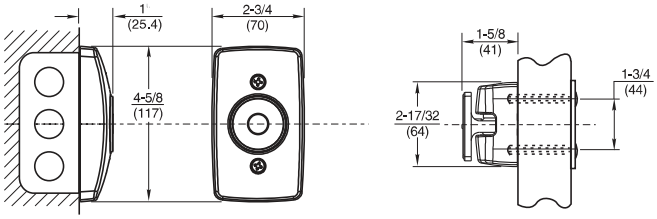
Model 997M

Application
- Wall mount
- Concealed wiring
- Shipping weight: 2 lbs. (0.9 kg)

Features
- Total projection: 2-5/8" (67mm)
- Mounting requirements: 2" x 4" x 1-3/4" (51 x 102 x 45mm) outlet box
- Wall must be properly reinforced and outlet box adequately fastened
- 2 year limited warranty

Compliance
- ANSI/C00011

Electrical Data
- Voltage and current:
  120VAC, 60Hz., .020 amp
  24VAC/DC, 60Hz., .020 amp
  12VDC, .040 amp
- For 50-55 lbs. of holding force, specify voltage
  120VAC, 60Hz .017 amp
  24VAC, 60Hz .080 amp
  24VDC, .068amp
  12VDC, .180amp
  240VAC, 50/60Hz. .009 amp



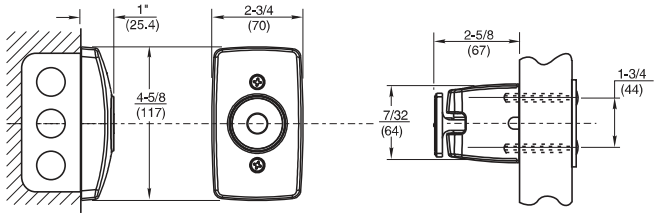
Model 998M

Application
- Wall mount
- Concealed wiring
- Shipping weight: 2-1/2 lbs. (1.1 kg)

Features
- Total projection: 3-5/8" (92mm)
- Mounting requirements: 2" x 4" x 1-3/4" (51 x 102 x 45mm) outlet box
- Wall must be properly reinforced and outlet box adequately fastened
- 2 year limited warranty

Compliance
- ANSI/C00011

Electrical Data
- Voltage and current:
  120VAC, 60Hz., .020 amp
  24VAC/DC, 60Hz., .020 amp
  12VDC, .040 amp
- For 50-55 lbs. of holding force, specify voltage
  120VAC, 60Hz .017 amp
  24VAC, 60Hz .080 amp
  24VDC, .068amp
  12VDC, .180amp
  240VAC, 50/60Hz. .009 amp



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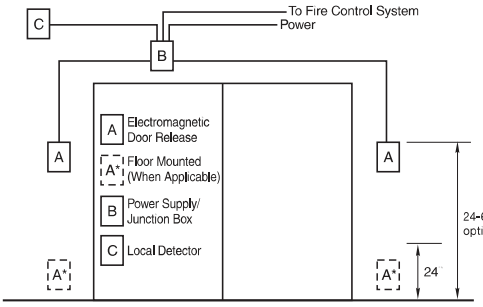
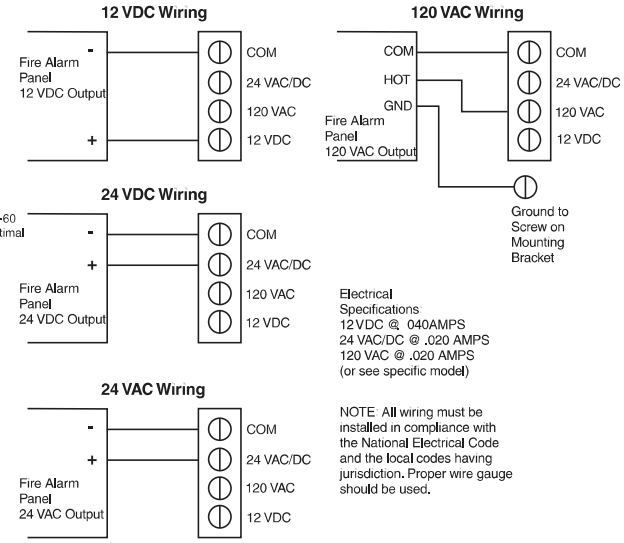
Schematics





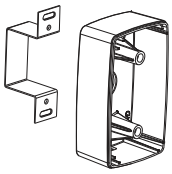
Electrical
Specifications
12 VDC @ 040AMPS
24 VAC/DC @ .020 AMPS
120 VAC @ .020 AMPS
(or see specific model)

NOTE: All wiring must be installed in compliance with the National Electrical Code and the local codes having jurisdiction. Proper wire gauge should be used.

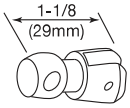
Operation Narrative

Doors are to be normally held open. The electromagnetic door releases will be energized with the voltage shown (at right) in the hardware set for this opening. Power shall be controlled by the fire control system. It will interrupt the power if alarmed, causing the doors to be released, thus allowing the door closers to close the doors. When power is restored the magnets will re-energize, permitting the doors to be manually returned to their held open position.

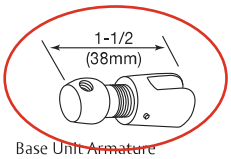
Accessories



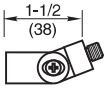
1-1/2" (38mm) Extension (for use only with Models 997M, 998M & 994M) Mounts behind wall cover.
XK996M
Part# 996631M-*



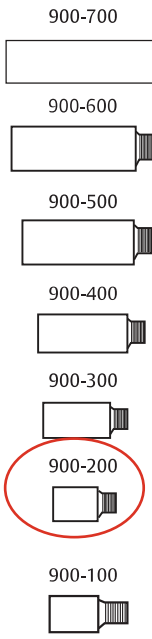
994M Swivel Armature (cannot be used with extension spacers)
Part# 900-3



Base Unit Armature Extension Mounts between armature and contact plate.
Part# 900
Cannot be used with model 994M



Armature Extension 90° Bend
Part# 900-Z
Must be used with 900 base unit. Those two pieces will extend armature 3" longer than the contact plate.



Spacer lengths – must be used with 900 base

For dimensions, see chart below

Extension pieces must be used in conjunction with 900 Base Unit
Part# 900-700 = 7"
Part #900-600 = 6"
Part# 900-500 = 5"
Part# 900-400 = 4"
Part# 900-300 = 3"
Part# 900-200 = 2"
Part# 900-100 = 1"
Part# 900-75 = 3/4"
Part# 900-50 = 1/2"

*specify finish

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Mullions and Door Kits

20 Series Exit Device

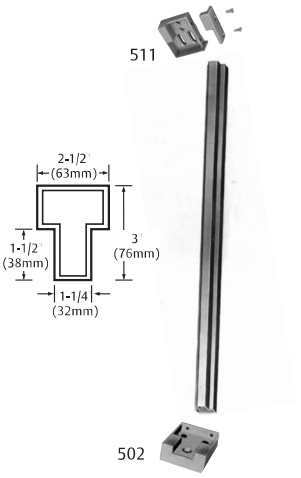
SARGENT
ASSA ABLOY

980 Removable Mullion

980 Extruded Aluminum (prime coat)
980A Aluminum (US28)

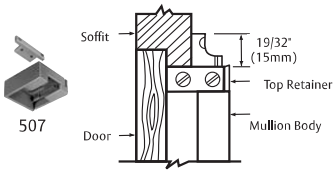
Consists of:

- Mullion
- 511 Top retainer
- 502 Bottom retainer
- 96" (2438mm) stock size; 120" (3000mm) available



507 Adapter for Narrow Transom Bars

- Available with 980 and 980A
- Required when soffit is 1-1/4" (32mm) to 2" (51mm) wide



12-980 Mullion (96" maximum)

For 12-2828

2" x 3" Channel Iron. Malleable iron top and bottom retainers.

- 96" (2438mm) stock size; 120" (3000mm) available
- 120" Mullions do not carry UL Fire label

Top Retainer Shim Kit - 601

543 Stock Hollow Metal Door Kit

Kit consists of a 649 Strike Shim, a 161F Lock Front Filler, and a 86S Strike Filler for applying a 2828 Series Exit Device on doors prepared with Fed. Type 161 cutouts, and frames prepared for ANSI A115-2 Strikes.

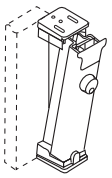
The 649 strike shim is 1/8" (3mm) thick and is used to obtain the correct distance between the exit device case and the 649 surface applied strike, when the stop is 1/2" (13mm) high.

649 Strike Shim

161 Lock Front Filler

86S Strike Filler

L980 Lockable Mullion



- Aluminum Prime Coat
- Specify: "L980A" Anodized Aluminum
  Specify: "L980A x10B" for 313AN to match 10B
- Used for non fire rated applications
- 96" (2438mm) stock size
- 120" (3000mm) available
- Standard #41 cylinder (1-1/8")
- Cylinder options: Signature, XC-, Schlage Keyways SC- & SE- available
- Wall Mount Kit 98-2578
- Top Ret Pack 98-2526
- Bottom Ret Pack 98-2525
- Cylinder Kit must be ordered separate (980C1)

12-L980 Lockable Mullion

- Steel
- Fire rated for 8'0" x 8'0" (2438mm x 2438mm) paired openings
- 96" (2438mm) Stock Size
- 120" (3000mm) (non fire rated) available
- #41 cylinder standard
- Cylinder options: Signature, XC-, Schlage Keyways SC- & SE- available
- Top Retainer Shim Kit - 601
- Cylinder Kit must be ordered separate (980C1)

EL980 Electric Lockable Mullion

- Steel
- For use with monitor or electric strikes
- Quick-Connect wiring supplied
- 96" (2438mm) stock size
- 120" (3000mm) available
- Requires a #46 cylinder
- Top Retainer Shim Kit - 601
- Not available in 12- option
- Cylinder Kit must be ordered separate (980C2)

Mullion Accessories

RK980
Latchbolt assembly retrofit kit with top and bottom retainers for 980 mullion

Retainer Packs

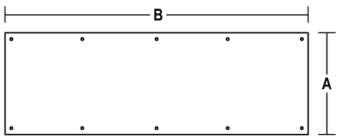
Product #	Description
98-2526	Top Ret. pack for L980
98-2525	Bottom Ret. pack for L980
98-2558	Top Ret. pack for 12-L980
98-2556	Bottom Ret. pack for 12-L980
98-2559	Top Ret. pack for EL980

Note: For complete listing of available mullions, see the 80 Series Catalog

CDH
Commercial Doors & Hardware Ltd.
2150 Winston Park Drive, Unit 16
Oakville, L6H 5V1

Allen A Martin P.S. Addition PDSB
Ogden Rd. Mississauga
Job No. 24126

Submittal Date: Nov 28/24

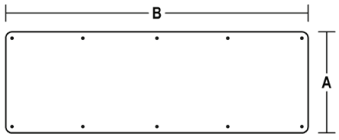


K10
METAL DOOR PLATE

NO.	A	B (GRAIN DIRECTION)
K10	SPECIFY	SPECIFY

FEATURED FINISHES: Flat Black (19), Satin Stainless (32D), Antimicrobial (AM)
FINISHES: Standard & Custom Available (See Pages 14 & 15)
MATERIALS: Aluminum, Brass, Bronze, Stainless Steel
NOTES: Countersunk Screw Holes, Protective Plastic Film
MOUNTING OPTIONS: SMS **(Standard)**, MS, TEK (SDS), Torx, Tape, No Holes/No Tape

PRODUCT OPTIONS:
- **FIRE RATED 18GA AVAILABLE:** Use suffix code F (K10F)
- **MATERIAL THICKNESS:** K10A = 0.050", K10B = 0.062", K10C = 0.10"
- **ESCUTCHEON CUT OUTS:** Specify hole diameter and location
- **ENGRAVING:** Specify type and location



K10R
METAL DOOR PLATE
W/ RADIUS CORNERS

NO.	A	B (GRAIN DIRECTION)
K10R	SPECIFY	SPECIFY

FEATURED FINISHES: Flat Black (19), Satin Stainless (32D), Antimicrobial (AM)
FINISHES: Standard & Custom Available (See Pages 14 & 15)
MATERIALS: Aluminum, Brass, Bronze, Stainless Steel
NOTES: Countersunk Screw Holes, Protective Plastic Film
MOUNTING OPTIONS: SMS **(Standard)**, MS, TEK (SDS), Torx, Tape, No Holes/No Tape

PRODUCT OPTIONS:
- **FIRE RATED 18GA AVAILABLE:** Use suffix code F (K10RF)
- **MATERIAL THICKNESS:** K10A = 0.050", K10B = 0.062", K10C = 0.10"
- **ESCUTCHEON CUT OUTS:** Specify hole diameter and location
- **ENGRAVING:** Specify type and location

GT710/8710

Low-Energy
ADA Swing Door Operator

Where SOLUTIONS are AUTOMATIC

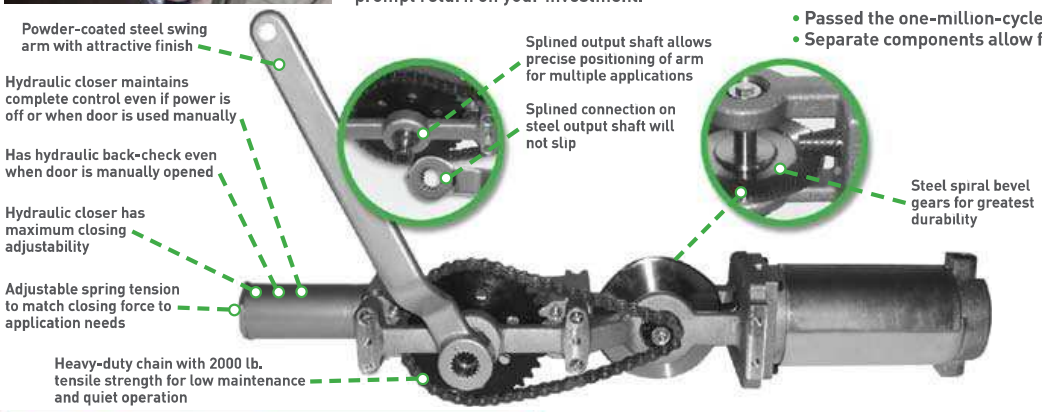
Product Features and Benefits

- Hydraulic design offers **proven reliability**
- Adjustable closing speeds to **enhance energy savings**
- Manual mode requires very little pressure to open **promoting ease of operation**
- Approved on fire door assemblies rated up to 3 hours, **maintaining security and safety**
- Hydraulic back-check during windy conditions **protects the door and operator from damage**

GT710/8710 Low-Energy ADA Swing Door Operator

The NABCO GT710/8710 Low-Energy Operator is engineered for interior and exterior use, and designed to automate essentially any new or existing door frame. The GT710/8710 operates in both automatic and manual modes with a hydraulic back-check that protects the door and mechanical operator from damage when forced open in windy conditions or when manually operated. The GT710/8710 Operator has been approved for use on fire door assemblies rated up to 3 hours. The low-energy performance, combined with the adjustable opening and closing speeds, reduces energy consumed, which offers a prompt return on your investment.

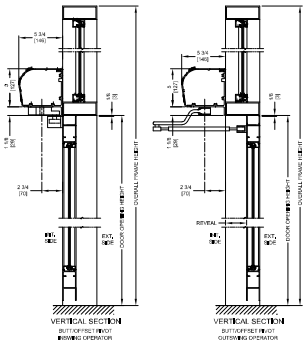
- Passed the one-million-cycle endurance test
- Separate components allow for lower repair costs



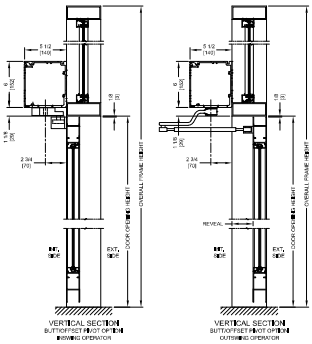
PRODUCT INFORMATION

Header dimensions	**Side load - 5" H X 5 3/4" D** (GT710) **curved header** **Side load - 6" H X 5 1/2" D** (GT8710)
Standard finish	**Clear and dark bronze anodized**
Optional finishes	**Painted, clad, special anodized**
Mounting	**Surface applied or overhead concealed**
Installation types	**Push or pull**
Operating voltage	**120 VAC @ <5 amps**
Auxiliary power output	**12VDC 750mA**
Operator drive	**Electro-hydraulic**
Motor voltage	**Pulse width modulated**
Motor type	**1/8th HP @ peak**
Control type	**Microprocessor**
Door panel weight	**300 lbs.**
Adjustable open	**Force and speed**
Adjustable close	**Force and speed**
Closing method	**Spring/hydraulic** (with selectable power assist)
Adjustable opening angle	**Up to 145º**
Power boost close	**Selectable**
Basic features	**Low-energy operation** **Push and go** **Obstacle detection in opening and closing cycles** **Sequential or timer mode operation** **LCD display for programming and diagnostics** **Open- or closed-circuit safety inputs** **Momentary or maintained activation**
Switch modes	**On, off, hold-open**
Opening and closing speed	**Adjustable**
Hold-open time	**Adjustable** (0-30 seconds)
Code compliances	**ANSI A156.19/ANSI A117.1**
Approvals	**UL, ULC**

GT710 Operator



GT8710 Operator



CONFIGURATIONS:
The GT710/8710 is available for multiple configurations, such as single doors, simultaneous pairs, and dual-egress, as well as the Opman configuration, which is a single continuous header for a pair of doors containing a manual closer on one side and an automatic operator on the other.

NABCO Service and Specifications

Along with the NABCO factory branches, NABCO has the largest independently owned network of automatic door distributors in North America. Their friendly, qualified installers and technicians always strive to exceed your expectations from install to after-sales service. NABCO's factory branches and independent distributors provide AAADM-certified technicians to ensure your doors meet all ANSI A156.10/A156.19 standards.

Complete three-part specifications and CAD drawings are available on the NABCO website.

NABCO
Member of the Nabtesco Group

Member AAADM

NABCO ENTRANCES INC.
S82 W18717 Gemini Drive | Muskego, WI 53150 | 877-622-2694 | Fax 888-679-3319
www.NABCOentrances.com | Email info@nabcoentrances.com

Distributed by:

06/15

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 11 – Final Cleaning.

.3 Section 01 78 00 - Closeout Submittals

.4 Section 08 11 14 – Metal Doors and Frames.

.5 Section 08 50 50 – Aluminum Windows.

.6 Section 07 92 10 - Joint Sealing: caulking of joints between frames and other building components.

.7 Section 10 28 10 – Toilet, Bath and Laundry Accessories.

1.2 REFERENCES

.1 American National Standards Institute (ANSI).

.1 ANSI/ASTM E330-[02], Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

.2 American Society for Testing and Materials International, (ASTM).

.1 ASTM C542-[94(1999)], Specification for Lock-Strip Gaskets.

.2 ASTM D790-[02], Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

.3 ASTM D1003-[00], Test Method for Haze and Luminous Transmittance of Plastics.

.4 ASTM D1929-[96(R2001)e1], Test Method for Determining Ignition Temperature of Plastics.

.5 ASTM D2240-[02b], Test Method for Rubber Property - Durometer Hardness.

.6 ASTM E84-[01], Test Method for Surface Burning Characteristics of Building Materials.

.7 ASTM F1233-[98], Test Method for Security Glazing Materials and Systems.

.3 Canadian General Standards Board (CGSB).

.1 CAN/CGSB-12.1-[M90], Tempered or Laminated Safety Glass.

.2 CAN/CGSB-12.2-[M91], Flat, Clear Sheet Glass.

.3 CAN/CGSB-12.3-[M91], Flat, Clear Float Glass.

.4 CAN/CGSB-12.4-[M91], Heat Absorbing Glass.

.5 CAN/CGSB-12.5-[M86], Mirrors, Silvered.

.6 CAN/CGSB-12.6-[M91], Transparent (One-Way) Mirrors.

□

.7 CAN/CGSB-12.8-[97], Insulating Glass Units.

.8 CAN/CGSB-12.9-[M91], Spandrel Glass.

.9 CAN/CGSB-12.10-[M76], Glass, Light and Heat Reflecting.

.10 CAN/CGSB-12.11-[M90], Wired Safety Glass.

.11 CAN/CGSB-12.12-[M90], Plastic Safety Glazing.

.12 CAN/CGSB-12.13-[M91], Patterned Glass.

.13 CAN/CGSB-12.1-M90 Tempered or Laminated Safety Glass

.14 CAN/CGSB-12.3-M76 Glass, Polished Plate or Float, Flat, Clear

.4 Canadian Standards Association (CSA International).

.1 CSA A440.2-[98], Energy Performance Evaluation of Windows and Sliding Glass Doors.

.2 CSA Certification Program for Windows and Doors [2000].

.5 Environmental Choice Program (ECP).

.1 CCD-045-[95], Sealants and Caulking.

.6 Flat Glass Manufacturers Association (FGMA).

.1 FGMA Glazing Manual - [1997].

.7 Laminators Safety Glass Association (LSGA).

.1 LSGA Laminated Glass Design Guide [2000].

1.3 SAMPLES

.1 Submit a 300 x 300 sample of all glass products in accordance with Section 01 33 00 - Submittal Procedures.

1.4 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 013300 – Submittal Procedures. Co-ordinate location with Consultant.

1.5 WARRANTY

.1 Contractor hereby warrants glass against defects and failure, including leakage, under normal conditions of use, in accordance with the Contract, but for ten (10) years total, as follows:

.2 Supplier shall submit a written warranty from the insulated glass manufacturer to replace or repair any defects in materials or sealed units for a period of ten (10) years from the date of Substantial Completion.

.3 Mirrors:

.1 Submit a warranty for mirrors, covering the repair or replacement of defective work in accordance with the Contract, but for five (5) years total.

.2 Warranty shall apply against defects in workmanship and materials and, against silver deterioration and loosening of fastenings.

□

1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.2 Collect and separate for disposal [paper] [plastic] [polystyrene] [corrugated cardboard] packaging material [in appropriate on-site] for recycling.

.3 Unused or damaged glazing materials are not recyclable and must not be diverted to municipal recycling programs.

.4 Divert unused or damaged wood materials from landfill to [recycling] [reuse] [composting] facility approved by Consultant.

.5 Divert unused metal materials from landfill to metal recycling facility approved by Consultant.

.6 Divert unused caulking material from landfill to official hazardous material collections site approved by Consultant.

.7 Plastic caulking tubes are not recyclable and must not be diverted for recycling with other plastic materials.

Part 2 Products

2.1 MATERIALS

.1 Acceptable Manufacturers:

.1 AFG Glass Inc

.2 Libby-Owens Ford

.3 PPG Industries

.2 Exterior Tempered Safety Glass: All exterior Vision Glass to exterior windows, curtain wall and non-fire-rated screens to be sealed insulated units conforming to CAN/CGSB-12.8. Exterior lite 6mm tempered clear glass, Solarban 67 Low Emmissivity Coating on inner pane (2nd surface), 13mm Argon filled air space, inner lite 6 mm clear tempered glass.

.1 All tempered glass to conform to CAN2-12.1 M-90 Type 2 tempered glass, Class B Double glazed units to have an integral non-metallic space creating a 13 mm hermetically sealed Argon filled air space. Spacers shall be continuous with butt joints (if any) at corners only. Pieces are not permitted. Butyl based spacers are not permitted.

.2 Interior Tempered Safety Glass: All interior Vision Glass to non-fire rated interior doors and screens to be tempered 6 mm clear float glass complete with etched tempered glass designation visible.

.3 Spandrel Glass (SP): CAN/CGSB-12.9-M, 6 mm thick unless otherwise indicated, with water-based silicone emulsion coating applied to backside, ‘Opaci-Coat 300' by ICD High Performance Coatings or approved alternative. Colour: To be selected by the Consultant.

□

.4 Polished Plate or Float Glass: To CAN/CGSB-12.3 clear.

.5 Fire Rated Glazing ('FRG' or 'GW' or 'FR'): Fire rated glazing to be min. 8mm thick, impact safety rated, intumescent laminated glazing to meet required fire resistance rating. Refer to drawing "A01 Fire Separations & OBC Data Matrix" for fire separation ratings. Intumescent laminated glazing to be supplied by:

.1 Fireswiss by Glas Trosch
.2 Pyrostop by Pilkington
.3 Pyrobel by AGC
.4 ContraFlam by VetroTech/St-Gobain

.6 No georgian-wired glazing is to be used on this project.

.7 Impact/safety film for all Fire Rated Glazing is to be approved and factory applied by manufacturer/distributor.

.8 Locations: as required on drawings to fire rated doors and screens.

.9 Mirrors: Refer to Section 10 28 10 Washroom Accessories.

.10 Setting blocks: neoprene, 80 durometer hardness, 102 mm x 6 mm width to suit glass to extend from the fixed stop to the opposite face of the glazing unit.

.11 Spacer Blocks: neoprene, thickness to provide a minimum glass to face clearance of 3mm.

.12 Glazing tape**:** preformed polyisobutylene-butyl glazing tape with integral shim strip, 10-15 durometer, hardness, paper release, black color. Acceptable materials**:** Tremco Polyshim II by Tremco Ltd. or approved alternate.

.13 Gasket: black neoprene "U" cavity type with lock strip.

.14 Sealant: one component silicone, Spectrem 2 by Tremco Ltd. Refer to Section 07900.

.15 Display cases: shelves to be 13mm tempered glass with polished rounded edges. Doors to be tempered 8mm tempered glass. Coordinate sizes and provide to Section 06 40 00 for installation.

2.2 FABRICATION

.1 Fabricate in accordance with CSA-A440/A440.1 supplemented as follows:

.2 Make field measurements before cutting and assembling materials.

.3 Maintain minimum bite or lap of glass as recommended by the glazing unit manufacturer.

.4 Each glass lite shall be labeled with the name of the product, weight and quality and year manufactured.

□

.5 If requested, provide owner or consultant access to the plant or shop to review fabrication. Consultant or owner to provide 24 hour advance notice of visit.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 EXAMINATION

.1 Verify that openings for glazing are correctly sized and within tolerance.

.2 Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

3.3 PREPARATION

.1 Clean contact surfaces with solvent and wipe dry.

.2 Seal porous glazing channels or recesses with substrate compatible primer or sealer.

.3 Prime surfaces scheduled to receive sealant.

3.4 INSTALLATION:

.1 Inspect all glazing channels prior to application. All openings in joints and channels to be sealed shall be clean, dry and free of dust, oil, grease, loose mortar or any foreign material.

.2 All surfaces to receive glazing tape shall be wiped dry with a clean rag dampened in Xylol, followed by a dry wipe.

.3 Examine all sashes prior to glazing to determine if the openings are square and plumb. Any butt and miter joints which are open shall be sealed prior to glazing. Adjust all operating sashes and glaze in the closed position.

.4 Compression Glazing:

.1 When butt joint is in a vertical direction, the glazier shall first run the tape on the head and sill members while going over the joint. If joints at the sash run horizontally, the tape must be applied first to the jambs so that it crosses over the joint.

.2 When an offset condition exists at each corner where a horizontal member passes behind vertical mullions, two different sized tapes shall be used to equalize the pressure seal. The thinner tape is to applied first on the glazing leg closest to the interior. The thicker tape shall be cut to the length between the two tapes and applied.

□

.3 Each section of tape shall butt the adjoining tape and be united with a tool to eliminate any openings. Lapping of the adjoining tapes at the corners is not permitted.

.4 Remove paper backing just prior to setting glass and apply a toe bead of sealant 150 mm long in each of the corners.

.5 Position one setting block at the quarter point of each corner on the sill members or as recommended by IGMA guidelines.

.6 Set the glass on the setting blocks and press firmly in place. Snap in the interior glazing stops.

.7 Set the spacer blocks to prevent any “walking” of the lite.

.5 Mirrors:

.1 Install mirrors by means of concealed vandalproof clips If clips are used, install cushioning tape completing around perimeter of mirror back, set in concealed location within 25 mm of edge. Install fixed mirrors in washrooms at two different heights as indicated on drawings.

.2 Follow manufacturer’s installation recommendations.

.6 Install any wired glass with the wire parallel to the opening.

.7 Replace any loose glazing stops and tighten all screws.

.8 Contractor shall include for needle point (cap beads) at all lower horizontal rail joints of all sash/glazing units at the discretion of and as may be requested by the Consultant or owner.

3.5 CLEANING

.1 Perform cleaning after installation to remove construction and accumulated environmental dirt.

.2 Remove traces of primer, caulking.

.3 Remove glazing materials from finish surfaces.

.4 Remove labels after work is complete.

.5 Immediately upon job completion and when sealants have cured, remove any temporary protection and clean all exposed interior and exterior surfaces. Use proper cleaning materials only which will not harm the window components or any adjacent surfaces.

.6 Ensure all temporary labels have been removed and fully cleaned.

.7 Mirrors:

.1 Clean mirrors using non-abrasive soap or detergent and rinse with clean water. Leave in clean, polished condition for Owner occupancy.

□

3.6 INSPECTION

.1 Where inspection is called for elsewhere in the specification, perform Window air and water leakage test to ensure installation meets performance requirements stated herein. Should test fail, take remedial measures and re-test a different location at not additional cost to the owner until the test passes.

END OF SECTION

□

1 General

1.1 **SECTION INCLUDES**

.1 Labour, Products, equipment and services necessary for terrazzo restoration Work in accordance with the Contract Documents.

1.2 **REFERENCES**

.1 CSA A23.1, Concrete Materials and Methods of Concrete Construction/Methods of Test for Concrete.

.2 CAN/CSA A3000, Cementitious Materials Compendium.

.3 TTMAC, Terrazzo, Tile and Marble Association of Canada

1.3 **SUBMITTALS**

.1 Product data:
- .1 Submit duplicate copies of manufacturer's Product data in accordance with Section 01 33 00 indicating:
  - .1 Performance criteria, compliance with appropriate reference standard(s), characteristics, limitations, and trouble-shooting protocol.
  - .2 Product transportation, storage, handling and installation requirements.

.2 Shop drawings:
- .1 Submit shop drawings in accordance with Section 01 33 00 indicating:
  - .1 Terrazzo layout.
  - .2 Perimeter conditions, junctions with dissimilar materials.
  - .3 Setting details.

.3 Certificates: Submit manufacturer's certificates stating that materials supplied are in accordance with this specification.

.4 Closeout submittals: Submit recommended maintenance instructions and listing of recommended maintenance Products for incorporation into Operations and Maintenance Manuals in accordance with Section 01 78 23.

1.4 **QUALITY ASSURANCE**

.1 Installers qualifications: Perform Work of this Section by a company that has a minimum of five years proven experience in the installation of terrazzo units of a similar size and nature and that is approved by manufacturer. Submit to Consultant, applicator’s current certificate of approval by the material manufacturer as proof of compliance.