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This section includes editing notes to assist the user in editing the section to suit project requirements. These notes are included as hidden text, and can be revealed or hidden by the following method in Microsoft Word:

 Display the FILE tab on the ribbon, click OPTIONS, then DISPLAY. Select of deselect HIDDEN TEXT.

This guide specification includes LiftMaster’s commercial door operators for overhead coiling and sectional doors and grilles.

The following should be noted in using this specification:

Hypertext links to manufacturer websites are included after manufacturer names to assist in product selection and further research. Hypertext links are shown in blue text, e.g.:

www.acme.com

Optional text requiring a selection by the user is enclosed within brackets and shown in red text, e.g.: Color: [Red.] [Black.]"

Items requiring user input are enclosed within brackets and shown in red text, e.g.: "Section [\_\_ \_\_ \_\_ - \_\_\_\_\_\_\_\_]."

Optional paragraphs are separated by an "OR" statement shown in red text, e.g.:

 \*\*\*\* OR \*\*\*\*

For assistance on the use of the products in this section, contact LiftMaster by calling 800-528-5880 or visit their website at www.LiftMaster.com or visit https://www.liftmaster.com/for-businesses/commercial-door-operators to assist you in editing the below text.

This specification has been prepared based on SimpleSpecs™ specification templates. The SimpleSpecs™ Master Guide Specification system comprises a full architectural master specification that can be used to specify all project requirements. For additional information on SimpleSpecs™ products visit the ZeroDocs.com website at www.zerodocs.com.

**SECTION 08 71 23 – COMMERCIAL DOOR OPERATORS**

 GENERAL

 SUBMITTALS

 Action Submittals:

 Product Data: Manufacturer’s descriptive data and product attributes.

 Closeout Submittals:

 Operation and Maintenance Data.

 QUALITY ASSURANCE

 Manufacturer Qualifications: Meet specified requirements, and technical documentation.

 Installer Qualifications: Firm specializing in work of this Section, with minimum [2] [\_\_] years’ experience.

 WARRANTY

Model ATSW carries a 1 year warranty. All other models carry a 2 year warranty.

 Manufacturer’s [1] [2] year warranty against material and manufacturing defects.

 PRODUCTS

 MANUFACTURERS

 Contract Documents are based on products by LiftMaster. [www.LiftMaster.com](http://www.liftmaster.com)

 Substitutions: [Refer to Division 01.] [Not permitted.]

 MANUFACTURED UNITS

NEMA enclosures are rated as follows:

* NEMA1: Indoor installation, where it is not necessary to seal out dust, oil, and water (such as most warehouses).
* NEMA 4: Indoor installation to protect operator where pressurized water may be in use, where other activities involving wash-downs or machine tool cutter coolant takes place, or outdoors were protection from rain, sleet, or snow may be needed (such as car washes).
* NEMA 4X: In addition to what is required in NEMA 4; to protect against harsh environments, or where caustic cleaners, disinfectants, or corrosive materials are in widespread and repeated use (such as indoor pools).
* NEMA 7/9: To protect against explosive materials, gases, or vapors.

Retain the following for an apartment type trolley operator for high-cycle, standard lift sectional doors. Refer to LiftMaster technical literature for maximum door sizes and weights.

 Door Operators:

 Model: APT.

 Operation: Trolley.

 Drive type: V-belt primary reduction.

 Mounting: Ceiling.

 Disconnect for manual operation: Quick disconnect door arm.

 Rated duty cycle: Maximum 25 cycles per hour or 125 cycles per day.

 Meet UL 325.

 Motor: Listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 6 to 7 inches per second.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [One button DIP.] [Three button DIP.] [Two button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]
			4. Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]

 Track: Dual L-rail trolley track.

\*\*\*\* OR \*\*\*\*

Retain the following for an industrial, heavy-duty, gearhead trolley type operator for heavy, high-cycle standard lift sectional doors. Refer to LiftMaster technical literature for maximum door sizes and weights.

 Door Operators:

 Model: GT.

 Operation: Gearhead trolley.

 Drive type: Worm gear in sealed oil bath.

 Mounting: Ceiling.

 Disconnect for manual operation: Quick disconnect door arm.

 Rated duty cycle: Maximum 25 cycles per hour and 125 cycles per day.

 Meet UL 325.

 Motor: Listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA [1.] [4.] [4X.] [7/9.]

 Travel rate: 11 to 12 inches per second.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [One button DIP.] [Three button DIP.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+2.0] [Four button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]
			4. Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]

 Track: Dual L-rail trolley track.

\*\*\*\* OR \*\*\*\*

Retain the following for a light-duty dual-rated residential and commercial operator for standard lift sectional doors, measuring up to 14 feet high.

 Door Operators:

 Model: ATSW.

 Mounting: Ceiling.

 Drive type: Chain.

 Rated duty cycle: Maximum 8 cycles per hour and 25 cycles per day.

 Travel rate: 8 to 9 inches per second.

 Meet UL 325.

 Motor: 12 VDC, prewired, listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Single push button type] [Three push button type] in NEMA 1 enclosure.
			2. Remote controls: [Two button DIP.] [Four button DIP.] [Two button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			3. Entrapment protection: [Photo eyes.] [Light curtain.]
			4. Track: Steel, I-beam configuration, with automatic reconnect trolley.

\*\*\*\* OR \*\*\*\*

Retain the following for a medium-duty, jackshaft type operator for standard-lift sectional doors, measuring up to 14 feet high and 22 feet wide, maximum of 310 square feet.

 Door Operators:

 Model: MT.

 Operation: Trolley.

 Mounting: Suspended from ceiling.

 Manual operation: Trolley disconnect.

 Rated duty cycle: Maximum 12 cycles per hour and 50 cycles per day.

 Meet UL 325.

 Motor: 120 VAC, prewired, listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 8 to 10 inches per second.

 Radio receiver: Medium-duty logic on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [Three button DIP.] [Single button rolling code Security+.] [Three button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]

 Secondary non-monitored entrapment protection: Light curtain.

* + - 1. Trolley track: Dual L-rail.

\*\*\*\* OR \*\*\*\*

Retain the following for an industrial, standard-duty, trolley type operator for standard-lift sectional doors. Refer to LiftMaster technical literature for maximum door sizes and weights.

 Door Operators:

 Model: T.

 Operation: Trolley.

 Drive type: V-belt primary reduction.

 Mounting: Ceiling.

 Disconnect for manual operation: Quick disconnect door arm.

 Rated duty cycle: Maximum 25 cycles per hour and 90 cycles per day.

 Meet UL 325.

 Motor: Listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 11 to 12 inches per second.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [One button DIP.] [Three button DIP.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0] [Four button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]
			4. Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]

 Track: Dual L-rail trolley track.

\*\*\*\*OR\*\*\*\*

Retain the following for an industrial, standard-duty, hoist/jackshaft type operator for larger high-lift and vertical-lift sectional doors and overhead coiling doors and grilles that required a chain hoist for manual operation. Refer to LiftMaster technical literature for maximum door sizes and weights.

 Door Operators:

 Model: DHJ.

 Operation: Hoist/jackshaft.

 Drive type: V-belt primary reduction.

 Mounting: [Wall.] [Door hood.]

 Disconnect for manual operation: Floor level emergency release sash chain hoist with electric interlock.

 Rated duty cycle: Maximum 25 cycles per hour and 90 cycles per day.

 Meet UL 325.

 Motor: Listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 8 to 9 inches per second.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Sensing circuit to prevent door operation when door is locked.
			3. Remote controls: [One button DIP.] [Three button DIP.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			4. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]

 Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]

\*\*\*\* OR \*\*\*\*

Retain the following for an industrial, standard-duty, hoist type operator for larger high-lift and vertical-lift sectional doors and overhead coiling doors and grilles that require a chain hoist for manual operation. Refer to LiftMaster technical literature for maximum door sizes and weights.

 Door Operators:

 Model: H.

 Operation: Hoist.

 Drive type: V-belt primary reduction.

Operator mounts on wall for high-lift and vertical-lift doors. Operator may be wall or hood mounted on smaller doors and grilles.

 Mounting: [Wall.] [Door hood.]

 Disconnect for manual operation: Floor level emergency release sash chain hoist with electric interlock.

 Rated duty cycle: Maximum 25 cycles per hour and 90 cycles per day.

 Meet UL 325.

 Motor: Listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 8 to 9 inches per second.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

* + - 1. Internet connectivity: 50 channel FHSS myQ technology.
			2. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			3. Remote controls: [One button DIP.] [Three button DIP.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			4. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]
			5. Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]

\*\*\*\* OR \*\*\*\*

Retain the following for an industrial, heavy-duty, gearhead hoist type operator for larger and heavier, high-cycle sectional doors and rolling doors and grilles that require a chain hoist for manual operation. Refer to LiftMaster technical literature for maximum door sizes and weights.

 Door Operators:

 Model: GH.

 Operation: Gearhead hoist.

Operator mounts on wall for high-lift and vertical-lift doors. Operator may be wall or hood mounted on rolling doors and grilles.

 Mounting: [Wall.] [Door hood.]

 Drive type: Worm gear in sealed oil bath.

 Disconnect for manual operation: Floor level emergency release sash chain hoist with electric interlock.

 Rated duty cycle: Maximum 25 cycles per hour and 125 cycles per day.

 Meet UL 325.

 Motor: Listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA [1.] [4.] [4X.] [7/9.]

 Travel rate: 8 to 9 inches per second.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [One button DIP.] [Three button DIP.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]
			4. Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]

\*\*\*\* OR \*\*\*\*

Retain the following for a medium-duty, hoist type operator for high-lift and vertical-lift sectional doors and overhead coiling doors and grilles where a manual hoist is required, measuring up to 14 feet high and 22 feet wide, maximum of 320 square feet.

 Door Operators:

 Model: MH.

 Operation: Jackshaft.

 Mounting: Wall.

 Manual operation: Floor level chain hoist with electric interlock.

 Rated duty cycle: Maximum 12 cycles per hour and 50 cycles per day.

 Meet UL 325.

 Motor: Sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 8 to 9 inches per second.

 Radio receiver: 315 MHz receiver; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [Three button DIP.] [Two button Security+.] [Single button rolling code Security+] [Three button rolling code Security+.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]

 Secondary non-monitored entrapment protection: [Light curtain.] [Pneumatic sensing edge.]

\*\*\*\* OR \*\*\*\*

Retain the following for a medium duty, hoist type operator for rolling steel sheet doors and grilles that require slower speeds and a manual hoist, measuring up to 14 feet high and 22 feet wide, maximum of 320 square feet.

 Door Operators:

 Model: MHS.

 Operation: Jackshaft.

 Mounting: Wall.

 Manual operation: Floor level chain hoist with electric interlock.

 Rated duty cycle: Maximum 12 cycles per hour and 50 cycles per day.

 Meet UL 325.

 Motor: Sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 4 to 5 inches per second.

 Radio receiver: 315 MHz receiver; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

* + - 1. Control station: [Three push button type] [Single button rolling code Security+.] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [Three button DIP.] [Three button rolling code Security+.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]

 Secondary non-monitored entrapment protection: [Light curtain.] [Pneumatic sensing edge.]

\*\*\*\* OR \*\*\*\*

Retain the following for an industrial, standard-duty, door lock jackshaft type operator for high-lift and vertical-lift sectional doors and overhead coiling doors and grilles requiring a floor level disconnect for manual operation. Refer to LiftMaster technical literature for maximum door sizes and weights.

 Door Operators:

 Model: DJ.

 Operation: Jackshaft with door lock.

 Drive type: V-belt primary reduction.

 Mounting: [Wall.] [Door hood.]

 Disconnect for manual operation: Floor level emergency release sash chain.

 Rated duty cycle: Maximum 25 cycles per hour and 90 cycles per day.

 Meet UL 325.

 Motor: Listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 8 to 9 inches per second.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Sensing circuit to prevent door operation when door is locked.
			3. Remote controls: [One button DIP.] [Three button DIP.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			4. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]
			5. Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]

\*\*\*\* OR \*\*\*\*

Retain the following for an industrial, standard-duty, jackshaft type operator for high-lift and vertical-lift sectional doors and overhead coiling doors and grilles requiring a floor level disconnect for manual operation. Refer to LiftMaster technical literature for maximum door sizes and weights.

 Door Operators:

 Model: J.

 Operation: Jackshaft.

 Drive type: V-belt primary reduction.

Operator mounts on wall for high-lift and vertical-lift doors. Operator may be wall or hood mounted on smaller doors and grilles.

 Mounting: [Wall.] [Door hood.]

 Disconnect for manual operation: Floor level emergency release chain sash.

 Rated duty cycle: Maximum 25 cycles per hour and 90 cycles per day.

 Meet UL 325.

 Motor: Listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 8 to 9 inches per second.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [One button DIP.] [Three button DIP.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]
			4. Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]

\*\*\*\* OR \*\*\*\*

Retain the following for a medium-duty, jackshaft type operator for high-lift and vertical-lift sectional doors and overhead coiling doors and grilles that require gearhead reduction, measuring up to 14 feet high and 22 feet wide, maximum of 320 square feet.

 Door Operators:

 Model: MGJ.

 Operation: Jackshaft.

 Mounting: Wall.

 Emergency disconnect: Floor level disconnect.

 Rated duty cycle: Maximum 12 cycles per hour and 50 cycles per day.

 Meet UL 325.

 Motor: Sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 8 to 9 inches per second.

 Radio receiver: 315 MHz receiver; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [Three button DIP.] [Single button rolling code Security+.] [Three button rolling code Security+.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]

 Secondary non-monitored entrapment protection: [Light curtain.] [Pneumatic sensing edge.]

\*\*\*\* OR \*\*\*\*

Retain the following for a medium-duty, jackshaft type operator for small rolling steel doors and grilles and high or vertical lift sectional overhead doors, measuring up to 14 feet high and 22 feet wide, maximum of 320 square feet.

 Door Operators:

 Model: MJ.

 Operation: Jackshaft.

 Mounting: Wall.

 Emergency disconnect: Floor level.

 Rated duty cycle: Maximum 12 cycles per hour and 50 cycles per day.

 Meet UL 325.

 Motor: Sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 8 to 9 inches per second.

 Radio receiver: 315 MHz receiver; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [Three button DIP.] [Single button rolling code Security+.] [Three button rolling code Security+.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]

 Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]

\*\*\*\* OR \*\*\*\*

Retain the following for a light-duty, jackshaft type operator for high-lift or standard lift sectional doors with torsion assemblies measuring up to 14 feet high or 18 feet wide, maximum 180 square feet, weighing maximum 650 pounds.

 Door Operators:

 Model: LJ8900W.

 Operation: Jackshaft.

 Mounting: Wall.

 Rated duty cycle: Maximum 10 cycles per hour and 25 cycles per day.

 Meet UL 325.

 Motor: 12 VDC, prewired, listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [One push button type.] [Two push button type.] [Three push button type.]
			2. Remote controls: [Three button DIP.] [One button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes.] [Light curtain.]

 Secondary non-monitored entrapment protection: [Photo eyes.] [Light curtain.]

* + - 1. Cable tension monitor: Reverse door if excess cable slack is detected.

Following accessories are available as options. Refer to LiftMaster technical literature for assistance in selecting accessories.

* + - 1. Automatic power door lock.
			2. Battery backup system.
			3. Alternate mounting kit.
			4. MyQ remote LED light.
			5. [KPW5] [KPW250] wireless keypad,

\*\*\*\* OR \*\*\*\*

Retain the following for a light-duty operator for coiling doors and grilles with torsion assemblies, measuring up to 14 feet high or 18 feet wide, maximum of 180 square feet, weighing maximum 300 pounds.

 Door Operators:

 Model: LJ8950W.

 Operation: Jackshaft.

 Mounting: Wall.

 Rated duty cycle: Maximum 10 cycles per hour and 25 cycles per day.

 Meet UL 325.

 Motor: 12 VDC, prewired, listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [One push button type.] [Two push button type.] [Three push button type.]
			2. Remote controls: [Three button DIP.] [One button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes.] [Light curtain.]

 Secondary non-monitored entrapment protection: [Photo eyes.] [Light curtain.]

Following accessories are available as options. Refer to LiftMaster technical literature for assistance in selecting accessories.

* + - 1. Chain guard.
			2. Battery backup system.
			3. Heavy duty chain.
			4. Remote LED light.
			5. [KPW5] [KPW250] wireless keypad.

\*\*\*\* OR \*\*\*\*

Retain the following for a light-duty, jackshaft type operator for vertical-lift or high-lift sectional doors with torsion assemblies, measuring up to 14 feet high or 18 feet wide, maximum of 180 square feet, weighing maximum 300 pounds.

 Door Operators:

 Model: DDO8900W.

 Operation: Jackshaft.

 Mounting: Wall.

 Rated duty cycle: Maximum 10 cycles per hour and 25 cycles per day.

 Meet UL 325.

 Motor: 12 VDC, prewired, listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

 Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.

* + - 1. Remote controls: [One button DIP.] [Three button DIP.] [Two button Security Plus.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			2. Primary monitored entrapment protection: [Photo eyes.] [Light curtain.]

 Secondary non-monitored entrapment protection: [Photo eyes.] [Light curtain.]

 Cable tension monitor: Reverse door if excess cable slack is detected.

Following accessories are available as options. Refer to LiftMaster technical literature for assistance in selecting accessories.

* + - 1. Automatic power door lock.
			2. Battery backup system.
			3. Alternate mounting kit.
			4. MyQ remote LED light.
			5. [KPW5] [KPW250] wireless keypad,

\*\*\*\* OR \*\*\*\*

Retain the following for an industrial, heavy-duty, gearhead slide operator for single slide and biparting doors. Refer to LiftMaster technical literature for maximum door sizes and weights.

 Door Operators:

 Model: GSD.

 Operation: Gearhead slide.

 Drive type: Worm gear in sealed oil bath.

 Mounting: Wall.

 Disconnect for manual operation: Floor level emergency release sash chain.

 Rated duty cycle: Maximum 25 cycles per hour and 125 cycles per day.

 Meet UL 325.

 Motor: Listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA [1.] [4.] [4X.] [7/9.]

 Travel rate: 11 to 12 inches per second.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [One button DIP.] [Three button DIP.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]
			4. Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]
			5. Track: Dual L-rail trolley track.

\*\*\*\* OR \*\*\*\*

Retain the following for an industrial, standard-duty operator for single and biparting slide doors. Refer to LiftMaster technical literature for maximum door sizes and weights.

 Door Operators:

 Model: SD.

 Operation: Slide.

 Drive type: V-belt primary reduction.

 Mounting: Wall.

 Disconnect for manual operation: Floor level emergency release sash chain.

 Rated duty cycle: Maximum 25 cycles per hour and 90 cycles per day.

 Meet UL 325.

 Motor: Listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Travel rate: 11 to 12 inches per second.

 Radio receiver: Logic 5.0 on-board; accept Security+ rolling code technology remote controls and trinary DIP switch remote controls.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [One button DIP.] [Three button DIP.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]
			4. Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]
			5. Track: Dual L-rail trolley track.

\*\*\*\* OR \*\*\*\*

Retain the following for a front-of-hood mount, variable speed operator with floor level controls for rolling steel doors and grilles. Refer to LiftMaster technical literature for maximum door sizes and weights.

 Door Operators:

 Model: VFOH.

 Operation: Gear reduced.

 Mounting: Front of hood.

 Rated duty cycle: Continuous duty, maximum 200 cycles per day.

 Operator speed: Variable, up to 12 inches per second.

 Meet UL 325.

 Motor: Prewired, listed by Underwriters laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [One button DIP.] [Three button DIP.] [Two button learning Security+ 2.0.] [Four button learning Security+ 2.0.] [Single button rolling code Security+ 2.0.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.]

 Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Light curtain.] [Retro-reflective sensor system.] [Sensing edge system.] [Optical edge sensing system.] [Pneumatic sensing edge.]

\*\*\*\* OR \*\*\*\*

Retain the following for a heavy high cycle type operator for standard lift overhead doors and gates measuring up to 16 feet wide, weighing maximum 1000 pounds.

 Door Operators:

 Model: HCTDCUL.

 Operation: Gear reduced.

 Rated duty cycle: Continuous.

 Operator speed: Adjustable, up to 11 inches per second opening speed.

 Automatic closing if door is pushed off closed position.

 Battery backup.

 LED diagnostics display.

 Meet UL 325.

 Motor: 24 VDC, prewired, listed by Underwriters Laboratories, sized to door conditions.

 Enclosure: NEMA 1.

 Internet connectivity: 50 channel FHSS myQ technology.

* + - 1. Control station: [Three push button type] [Three position key operated type] in NEMA [1] [4] [4X] [7/9] enclosure.
			2. Remote controls: [One button DIP.] [Three button DIP.] [Two button Security+.] [Two button rolling code Security+ 2.0.] [Three button rolling code Security+ 2.0.] [Four button rolling code Security+ 2.0.]
			3. Primary monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Retro-reflective sensor system.] [Through-beam photo eyes.]
			4. Secondary non-monitored entrapment protection: [Photo eyes, rigid housing.] [Photo eyes, flexible housing.] [Retro-reflective sensor system.] [Through-beam photo eyes.]

Following accessories are available as options. Refer to LiftMaster technical literature for assistance in selecting accessories.

* + - 1. Wireless keypad.
			2. Red/green traffic light.
			3. Connected access portal.
			4. Commercial access control receiver.
			5. Passport receiver.
			6. Passport one button [mini] remote control.

 Single access remote control keypad and proximity reader.

 EXECUTION

 INSTALLATION

 Install in accordance with manufacturer’s instructions.

 CLOSEOUT ACTIVITIES

* + 1. Test and adjust operators for proper operation.

 Demonstration: Demonstrate operation and programming of operators to Owner.

END OF SECTION