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This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Manual of Practice*, including *MasterFormat*™, *SectionFormat*™ and *PageFormat*™. A MANU-SPEC is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

This MANU-SPEC specifies valves and accessories. These products are manufactured by Hayward Flow Control Systems. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

SECTION 23 05 23
GENERAL-DUTY VALVES FOR HVAC PIPING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
1. Ball Valves.
 2. Check Valves.
 3. Butterfly Valves.
 4. Swing Check Valve.
 5. Y Check Valves.
 6. Y Strainers.
 7. Basket Strainers.
 8. Bag Filters Housings.
 9. Filter Cartridges and Bags.
 10. Operating Handles.
 11. Electric Actuators.
 12. Pneumatic Actuators.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles in accordance with CSI *MasterFormat* and specifier's practice.

- B. Related Sections:
1. Section [_____].

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 01 Submittal Procedures Section.

1.02 SUBMITTALS





- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01 Submittal Procedures.
- B. Product Data: Submit manufacturer's complete product literature for specified valves, actuators and accessories, detailed installation diagrams and instructions, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Samples:

Specifier Note: Describe specific types and quantities of samples required to determine style, finish or other characteristics.

- 1. Submit [One] [_____] sample[s] of each type of valve, actuator and accessory.
 - 2. Identify each sample by label indicating applicable specification paragraph number, brand name and model number.
 - 3. After approval, samples will be returned for incorporation into work.
- D. Quality Assurance:
 - 1. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
 - 2. Manufacturer's Instructions: Manufacturer's installation instructions.

Specifier Note: Coordinate paragraph below with Part 3 Field Quality Requirements Article. Retain or delete as applicable.

- E. Manufacturer's Field Reports: Manufacturer's field reports specified.
- F. Closeout Submittals: Submit the following:
 - 1. Warranty: Manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
 - 2. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 01 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

1.03 QUALITY ASSURANCE

- A. Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 01 Regulatory Requirements Section. Repetitive statements should be avoided.

- B. Preinstallation Meetings: Conduct preinstallation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 01 Project Management and Coordination (Project Meetings).

1.04 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 01 Product Requirements.
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Delivery, Storage and Protection:
 - 1. Deliver, store and handle in accordance with Section [01 61 00 - Common Product Requirements] [_____].
 - 2. Deliver, store and handle materials in accordance with manufacturer's written instructions.
 - 3. Deliver in original packaging with labels and identification intact.
- D. Waste Management and Disposal:

Specifier Note: ENVIRONMENT: The disposal of packaging waste into landfill site demonstrates an inefficient use of natural resources and consumes valuable landfill space.





1. Separate waste materials for [Reuse] [And] [Recycling] [_____] in accordance with Section [01 74 19 - Construction Waste Management and Disposal] [_____].
2. Remove from site and dispose of packaging materials at appropriate recycling facilities.
3. Collect and separate for disposal [Paper] [Plastic] [Polystyrene] [Corrugated cardboard] [_____] packaging material [In appropriate onsite bins] [_____] for recycling.

1.05 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 01 Closeout Submittals (Warranty).

1.06 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents. Manufacturer's standard warranty:
- C. Warranty Period: [Specify term.] years commencing on Date of Substantial Completion.

1.07 MAINTENANCE

Specifier Note: Use the following article to specify extra materials for remote locations or where size and type of projects require spare parts stored at the project.

- A. Extra Materials:
 1. Furnish the following spare parts:
 - a. Valve Seats: One for every [10] [_____] valves each size, minimum [1] [_____].
 - b. Discs: One for every [10] [_____] valves, each size, minimum [1] [_____].
 - c. O-Rings: One for every [10] [_____] valves, each size, minimum [1] [_____].
 - d. Valve Handles: [2] [_____] of each size.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 VALVES AND ACCESSORIES

- A. Manufacturer: Hayward Flow Control Systems.
 1. Contact: 1 Hayward Industrial Drive, Clemmons, NC 27012; Telephone: (888) 429-4635, (336) 712-9900; Fax: (336) 712-9935; E-mail: hiflow@haywardnet.com; website: www.haywardflowcontrol.com.
- B. Proprietary Products/Systems: Hayward Flow Control Systems valves and actuators.
- C. Ball Valves (1/4 inch - 6 inches (6.4 - 152 mm)): Plastic, full port true union valves designed for easy service and automation with reversible PTFE seats, fine pitch seal retainer threads and double O-ring stem seals.
 1. Material: [PVC] [Corzan CPVC] [PPL].

Specifier Note: Ball valves in PPL are available in sizes 1/2 inch - 2 inches (12.7 - 51 mm) only.

2. Size: [1/4 inch - 6 inches (6.4 - 152 mm)] [_____] inches (_____] mm).
3. End Connection:
 - a. 1/4 inch - 3/8 inch (6.4 - 9.5 mm): [Socket] [Threaded].
 - b. 1/2 inch - 4 inches (12.7 - 102 mm): [Socket] [Threaded] [Flanged].





- c. 1/2 inch - 2 inches (12.7 - 51 mm): [PPL] [Threaded].
- d. 6 inches (152 mm): Flanged.
- 4. Seals: [FPM] [EPDM].

Specifier Note: Select and specify options to suit valve function and project requirements. Coordinate lever handle assemblies and options with information specified for these items.

- 5. Options: Provide options as follows: [Stem extensions] [Lockouts] [2 inch (51 mm) square operating nuts] [Pneumatic actuators] [Electric actuators].
 - 6. Handle: [Manufacturer's standard] [Lever handle assembly {With} {Failsafe spring} {Failsafe spring and limit switch}] [Limit switch NEMA 4X] [Limit switch NEMA 4 and 7].
 - 7. Acceptable Material: Hayward Flow Control Systems True Union Ball Valves.
- D. Check Valves (1/4 inch - 6 inches (6.4 - 152 mm)): Plastic, full port, true union valves, designed for easy removal and plastic ball in elastomer square cut seat.
- 1. Material: [PVC] [Corzan CPVC] [PPL].

Specifier Note: Check valves in PPL are available in sizes 1/2 inch - 2 inches (12.7 - 51 mm) only.

- 2. Size: [1/4 inch - 6 inches (6.4 - 152 mm)] [_____ inches (_____ mm)].
- 3. End Connection:
 - a. 1/4 inch - 3/8 inch (6.4 - 9.5 mm): [Socket] [Threaded].
 - b. 1/2 inch - 4 inches (12.7 - 102 mm): [Socket] [Threaded] [Flanged].
 - c. 1/2 inch - 2 inches (12.7 - 51 mm): [PPL] [Threaded].
 - d. 6 inches (152 mm): Flanged.
- 4. Seals: [FPM] [EPDM].

Specifier Note: Select and specify options to suit valve function and project requirements.

- 5. Options: Foot valve screen.
 - 6. Acceptable Material: Hayward Flow Control Systems True Union Ball Check Valves.
- E. Butterfly Valves (1 1/2 inches - 12 inches (38 - 305 mm)): Plastic, rated to 150 psi (_____), 1-piece body with fully supported flanged bolt holes, integral mounting pad, blowout-proof stainless steel stem, full body liner with V-notch retention design, integrally molded face seal and lever handle with built-in lockout feature. Valves designed for easy fitting into metal piping system and are ready for actuation.
- 1. Material: [Corzan CPVC] [PVC] [PPL].
 - 2. Disks: [Corzan CPVC] [PVC] [PPL].
 - 3. Size: [1 1/2 inches (38 mm)] [2 inches (51 mm)] [3 inches (76 mm)] [4 inches (102 mm)] [6 inches (152 mm)] [8 inches (203 mm)] [10 inches (254 mm)] [12 inches (305 mm)].
 - 4. Liners: [FPM] [EPDM] [Nitrile].
 - 5. Operator: [Gear box] [Hand wheel] [Handle] [Electric] [Pneumatic] [_____].
 - a. Lever Operator [With stem extension, stem extension size {_____} inches (_____ mm)].

Specifier Note: Select and specify options to suit valve function and project requirements. Coordinate lever handle assemblies and options with information specified for these items.

- 6. Options: Provide options as follows [Stem extension] [Lug body design] [Titanium shaft] [2 inches (51 mm) square operating nut] [PVDF discs] [Pneumatic actuators] [Electric actuators].
 - 7. Acceptable Materials: Hayward Flow Control Systems Butterfly Valves 1 1/2 inches - 12 inches (38 - 305 mm).
- F. Large Diameter Butterfly Valves (14 inches - 24 inches (356 - 610 mm)): Plastic, 1-piece body, fully lined with full face liner, stainless steel, Type 316, stem isolated from process media and sphered disk seals. Provide 2 lifting lug/handles, slotted





bottom bolt holes and heavy duty, high torque gearbox. Valves designed for easy installation and operation and are ready for actuation.

1. Material: [Natural PPL] [PVDF].
2. Size: [14 inches (356 mm)] [16 inches (406 mm)] [18 inches (457 mm)] [20 inches (508 mm)] [24 inches (610 mm)].
3. Liner and Seals: [EPDM] [FPM] [Nitrile].
4. Operator: [Gear operator] [Electric] [Pneumatic] [_____].
5. Options: Lugs type 316 stainless steel.
6. Acceptable Materials: Hayward Flow Control Systems Butterfly Valves 14 inches - 24 inches (356 - 610 mm).

G. Butterfly Valve Options: Provide options to suit butterfly valves specified.

Specifier Note: Coordinate valve options with butterfly valves specified. Stem extension lengths vary from 24 inches - 120 inches (610 - 3048 mm) in 6 inch (152 mm) increments only. For other sizes, consult the factory. Select to suit project requirements.

Specifier Note: Lever handle operative stem extension available for butterfly valve sizes 1 1/2 inches - 8 inches (38 - 203 mm). Consult factory for option drawings for 14 inch - 24 inch (356 - 610 mm) size butterfly valves. Select to suit project requirements.

1. Lever handle operative stem extensions, [1 1/2 inches (12.7 mm)] [_____ inches (_____ mm)], length [_____ inches (_____ mm)].

Specifier Note: Stem extensions for gear operated butterfly valves vary from 1 1/2 inches - 12 inches (38 - 305 mm); select to suit project requirements.

2. Gear operative stem extensions with PVC housing, [1 1/2 inches (12.7 mm)] [_____ inches (_____ mm)], length [_____ inches (_____ mm)].

Specifier Note: Available on butterfly valves from 1 1/2 inches - 8 inches (38 - 203 mm). Consult factory for option drawings for 14 inch - 24 inch (356 - 610 mm) size butterfly valves. Select to suit project requirements.

3. Operating Nut: Non-locking, 2 inches (51 mm) square, [1 1/2 inches (38 mm)] [_____ inches (_____ mm)].

Specifier Note: Available on butterfly valves from 1 1/2 inches - 8 inches (38 - 203 mm); select to suit project requirements.

4. Operating Nut: 2 inches (51 mm) square, [1 1/2 inches (38 mm)] [_____ inches (_____ mm)].

Specifier Note: Available on butterfly valves from 1 1/2 inches - 12 inches (38 - 305 mm); select to suit project requirements.

5. Chain Operator: Size [1 1/2 inches (38 mm)] [_____ inches (_____ mm)].

Specifier Note: Available on butterfly valves from 1 1/2 inches - 12 inches (38 - 305 mm); select to suit project requirements.

6. Lug Mounts: Size [1 1/2 inches (38 mm)] [_____ inches (_____ mm)].
7. Acceptable Materials: Hayward Flow Control Systems Butterfly Valve Options.

H. Swing Check Valve: High temperature/pressure rated plastic valves with 2-in-1 seat design, built-in O-ring flange seals, 2 drain ports and self-aligning clapper seal.

1. Material: [PVC] [Corzan CPVC].
2. Size: [3 inches (76 mm)] [4 inches (102 mm)] [6 inches (152 mm)] [8 inches (203 mm)].
3. End Connection: [Flanged] [_____].
4. Seals: [FPM] [EPDM].
5. Options: Provide options as follows: [Counterweight for closing resistance] [Limit switch for position indicator] [Spring assist closure].
6. Acceptable Materials: Hayward Flow Control Systems Swing Check Valves.

I. Y Check Valves (1/2 inch - 4 inches (12.7 - 102 mm): PVC and Corzan CPVC construction with full flow design, FPM seals,



