

MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS (DTPW)

ADDENDUM NO. 5
September 19, 2023

PROJECT: Upgrade Chiller Units at William Lehman Center.

RPQ No: TP-0000017889
MCC 7360 Plan - CICC 7360-0/08

BID DUE DATE: September 27, 2023; 02:00 P.M.

FROM: Miami-Dade County DTPW
Capital Improvements Division
111 NW First Street, 14th Floor
Miami, FL 33128
305.375.2930

TO: Prospective Bidders and Interested Parties

This Addendum forms part of the project solicitation documents and will be incorporated into the Contract Documents, as applicable. Insofar as the Original Contract Documents, Drawings and Specifications are inconsistent, this Addendum shall govern. Please acknowledge receipt of this Addendum, at the time of bid submittal to Miami-Dade County, in the space provided on the "Acknowledgement of Addenda Form" provided with the project solicitation documents. Failure to acknowledge receipt of all addenda may be cause for disqualification.

CHANGES TO SPECIFICATIONS:

1. As to the "Special Provision" – Appendix A; Technical Specifications. Division 23 – Mechanical, Section 23 05 23. General-Duty Valves for HVAC Piping, Replace with the following information:

2.02 BALL VALVES

A. Manufacturers:

a. American Valve

b. Substitutions: Section 016000 – Material and Equipment Requirements & 016200 – Substitutions, and product options.

c. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of what is considered equal, based on the best interests of the County, and its decision in this regard shall be final.

B. BA-1 - 2 inches and Smaller: MSS SP 110, 400 psi WOG, two-piece bronze body, type 316 stainless steel ball, full port, teflon seats, blow-out proof stem, solder or threaded ends with union, locking lever handle with balancing stops.

C. BA-2 - 3 inches and larger: MSS SP 72, NSF/ANSI 61 & 372, 300 psi WOG, stainless steel body, stainless steel ball, full port, reinforced PTFE seats, blow-out proof stem, flanged ends, locking lever handle with balancing stops.

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CHANGES TO ENGINEERING DRAWINGS:

1. WLF-CV-6 is 3-Way Diverting size 1.5-Inch NPT Threaded Globe Valve Model G340B-N Belimo. Refer to revised schedule (M-9601).
2. WLF-CV-6 will be provided with modulating 24V Actuator Model SVB-24SR Belimo and shall be controlled via standalone 24V Modulating controller provided with WLF-FCU-1 including portable display mounted on wall, and integrated thermostat. Refer to revised schedule (M-9601, & M-9602).
3. WLF-CV-6 Model G340B-N Belimo, size 1.5-Inch. Refer to revised schedule (M-9601).
4. The previously scheduled DAIKIN Fan Coil Unit Model# LAH007A has been discontinued since the development of these documents. Please, refer to attached revised scheduled sheet M-9602, including revised DAIKIN Model, plus, associated information.
5. Replace Keynote 6 on E-9602 with the following: ***“Vendor furnished chiller control system components. Wire in compliance with manufacturers written requirements.”***
6. Fan coil unit control valve WLF-CV-6 to function via standalone 24 V controller with portable display and integrated Thermostat. Refer to Note 5 on revised M-9602 part of additional information included with previous RFI response.

END OF ADDENDUM NO. 5



Alfredo E. Muñoz, P.E.
Chief, Capital Improvements Division
Department of Transportation and Public Works (DTPW)

AM:mm

cc: Katherine Fernandez, DTPW	Marco Movilla, DTPW	Laurie Johnson, ISD
Ray Harding, DTPW	Renessa Gordon, DTPW	Caesar Suarez, ISD
Eric Perez, ISD	Project File	Clerk of the Board

**UPGRADE CHILLER UNITS AT WILLIAM
LEHMAN CENTER**

RPQ No. TP-0000017889

ADDENDUM NO.5

SPECIAL PROVISIONS

APPENDIX A - TECHNICAL SPECIFICATIONS

SECTION 23 05 23

GENERAL-DUTY VALVES FOR HVAC PIPING

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

BID DOCUMENTS

UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER

PROJECT NO. IRP171

RPQ NO. TP-0000017889

SPECIAL PROVISIONS

APPENDIX A - TECHNICAL SPECIFICATIONS

APPENDIX B - SMALL BUSINESS DEVELOPMENT PROJECT WORKSHEET

APPENDIX C - RESPONSIBLE WAGES & BENEFITS



TECHNICAL SPECIFICATIONS
UPGRADE CHILLER UNITS AT
WILLIAM LEHMAN CENTER

APPENDIX A

TECHNICAL SPECIFICATIONS



**MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION & PUBLIC WORKS (DTPW)
UPGRADE CHILLER UNITS AT WILLIAM LEHMAN CENTER**

RPQ No. TP-0000017889

IRP171

6601 NW 72ND AVE MIAMI, FL, 33166

TECHNICAL SPECIFICATIONS

BID SET SUBMITTAL

JANUARY 2023

WO-EDP-MT-IRP171

FOLIO # 30-3014-031-0010

Prepared For:



Department of Transportation & Public Works
701 NW 1 CT STE 1700
Miami, FL, 33136

Prepared By:



C.A. No. 2429
6303 Blue Lagoon Drive, Suite 305
Miami, FL 33126

MIAMI-DADE COUNTY DTPW

WILLIAM LEHMAN CENTER CHILLED WATER PLANT REPLACEMENT

DIVISION 01 – GENERAL REQUIREMENTS

011400	SITE WORK AND RESTRICTIONS
012613	REQUEST FOR INFORMATION
012973	SCHEDULE OF VALUES
013119	PROJECT MEETINGS
013216	PROJECT SCHEDULE
013310	SUBMITTALS
013323	SHOP DRAWINGS AND PRODUCT DATA
013330	WORKING DRAWINGS
013529	HEALTH, SAFETY, AND SECURITY PLAN REQUIREMENTS
014126	PERMITS
014300	QA REQUIREMENTS
014500	CONSTRUCTION CONTROL REQUIREMENTS
016000	PRODUCT MATERIAL AND EQUIPMENT REQUIREMENTS
016200	SUBSTITUTIONS AND PRODUCT OPTIONS
017113	MOBILIZATION
017300	OPERATING AND MAINTENANCE DATA
017329	CUTTING AND PATCHING
017400	CLEANING
017800	CONTRACT CLOSEOUT
017833	WARRANTIES AND BONDS
017839	PROJECT RECORD DOCUMENTS

DIVISION 02 – EXISTING CONDITIONS

020500	DEMOLITION AND MAINTENANCE OF SERVICE DURING CONSTRUCTION
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DIVISION 03-22 – NOT USED

DIVISION 23 – MECHANICAL

230513	COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT
230523	GENERAL-DUTY VALVES FOR HVAC PIPING
230529	HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT
230548	VIBRATION CONTROLS FOR HVAC
230553	IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT
230593	TESTING, ADJUSTING, AND BALANCING FOR HVAC
230700	HVAC INSULATION
230800	COMMISSIONING OF HVAC
230900	INSTRUMENTATION AND CONTROL FOR HVAC
232113	HYDRONIC PIPING
232116	HYDRONIC PIPING SPECIALTIES
232123	HYDRONIC PUMPS
232500	HVAC WATER TREATMENT
233100	HVAC DUCTS AND CASING

SECTION 23 05 23

GENERAL-DUTY VALVES FOR HVAC PIPING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Globe valves.
2. Ball valves.
3. Butterfly valves.
4. Check valves.

B. Related Sections:

1. Section 230503 - Pipes and Tubes for HVAC Piping and Equipment: Product and installation requirements for piping materials applying to various system types.
2. Section 230529 - Hangers and Supports for HVAC Piping and Equipment: Product and installation requirements for pipe hangers and supports.
3. Section 230700 - HVAC Insulation: Product and installation requirements for insulation for valves.
4. Section 232113 - Hydronic Piping: Product and installation requirements for piping used in hydronic piping systems.
5. Section 232116 - Hydronic Piping Specialties: Product and installation requirements for piping specialties used in hydronic piping systems.

1.02 REFERENCES

A. ASTM International:

1. ASTM A216/A216M - Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service.
2. ASTM D1785 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
3. ASTM D4101 - Standard Specification for Propylene Injection and Extrusion Materials.

B. Manufacturers Standardization Society of the Valve and Fittings Industry:

1. MSS SP 67 - Butterfly Valves.
2. MSS SP 70 - Cast Iron Gate Valves, Flanged and Threaded Ends.

1.08 WARRANTY

- A. Section 017833 - Execution and Closeout Requirements: Requirements for warranties.
- B. Furnish five year manufacturer warranty for valves excluding packing.

1.09 EXTRA MATERIALS

- A. Section 017800 - Execution and Closeout Requirements: Requirements for extra materials.
- B. Furnish two packing kits for each size valve.

PART 2 - PRODUCTS

2.01 GLOBE VALVES

- A. Manufacturers:
 - 1. Nibco.
 - 2. Substitutions: Section 016000 – Material and Equipment Requirements & 016200 – Substitutions, and product options.
 - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of what is considered equal, based on the best interested of the County, and its decision in this regard shall be final.
- B. GL-1 - 2 inches and Smaller: MSS SP 80, Class 125, bronze body, bronze trim, union bonnet, hand wheel, teflon composition disc, solder or threaded ends.
- C. **GL-2** - 2-1/2 inches and Larger: MSS SP 85, **Class 125**, cast iron body, bronze trim, hand wheel, outside screw and yoke, flanged ends. Furnish chain-wheel operators for valves 4 inches and larger mounted over 8 feet above floor.

2.02 BALL VALVES

- A. Manufacturers:
 - 1. Nibco.
 - 2. Substitutions: Section 016000 – Material and Equipment Requirements & 016200 – Substitutions, and product options .
 - 3. Furnish materials and equipment according to Miami Dade County Department of Transportation and Public Works standards. The County shall be the sole judge of what is considered equal, based on the best interested of the County, and its decision in this regard shall be final.
- B. BA-1 - 2 inches and Smaller: MSS SP 110, 400 psi WOG, two piece bronze body, type 316 stainless steel ball, full port, teflon seats, blow-out proof stem, solder or threaded ends with union, locking lever handle with balancing stops.

**UPGRADE CHILLER UNITS AT WILLIAM
LEHMAN CENTER**

RPQ No. TP-0000017889

ADDENDUM NO.5

ENGINEERING DRAWINGS

**REVISED SCHEDULE
M-9601**

WATER COOLED CHILLER SCHEDULE

MARK	LOCATION	TONS	COMPRESSOR			EVAPORATOR						CONDENSER				ELECTRICAL				MOTOR STARTER		WEIGHT (LBS.)	NPLV	IPLV	MANUFACTURER	MODEL	NOTES
			QTY	CONTROLS	REFRIG.	FLOW RATE (GPM)	MIN FLOW RATE (GPM)	EWT (°F)	LWT (°F)	FOULING FACTOR	WATER PD (FT)	FLOW RATE (GPM)	EWT (F)	LWT (°F)	WATER PD (FT WG)	VOLTS / PH / HZ	RLA (A)	MCA	MOCP	TYPE	ENCLOSURE						
WLF-CH-1	MECHANICAL ROOM	125	2	VFD / INLET GUIDE VANES	R-134a	315	160.0	54.5	45	0.000100	9.0	360	85	95	4.4	460 / 3 / 60	108	122	175	VFD	NEMA1	8209	.355	.357	DAIKIN	WMC036DDSNA	1,2,3,4,5,6,7,8
WLF-CH-2	MECHANICAL ROOM	125	2	VFD / INLET GUIDE VANES	R-134a	315	160.0	54.5	45	0.000100	9.0	360	85	95	4.4	460 / 3 / 60	108	122	175	VFD	NEMA1	8209	.355	.357	DAIKIN	WMC036DDSNA	1,2,3,4,5,6,7,8

NOTES:

1. PROVIDE SINGLE POINT POWER CONNECTION, MOTOR WITH OVERLOAD PROTECTION, GROUND FAULT PROTECTION, WIRED PASSIVE HARMONIC FILTER AND DISCONNECTS.
2. PROVIDE CERAMIC COATING TO EVAPORATOR CONDENSER HEADS, AND MARINE BOX.
3. PROVIDE MARINE WATER BOXES THAT ALLOW THE END PLATE OF THE WATER BOX TO BE REMOVED WITHOUT DISCONNECTING THE WATER PIPING FROM THE CHILLER.
4. PROVIDE RAISED FACE FLANGES ON BOTH EVAPORATOR AND CONDENSER WITH MATING FLANGES.
5. PROVIDE 1 1/2" THERMAL INSULATION ON EVAPORATOR SHELL / SUCTION PIPING, AND EVAPORATOR HEADS AND WATER BOXES.
6. PROVIDE EVAPORATOR, CONDENSER AND SUCTION NOZZLE RELIEF VALVES.
7. PROVIDE CAPABILITY TO RESTART AND REACH FULL LOAD IN THE EVENT OF POWER INTERRUPTION. THE COMPRESSOR SHALL BE CAPABLE OF RESTARTING WITHIN 43 SECONDS AFTER POWER IS RESTORED AND SHALL REACH 80% LOAD WITHIN 120 SECONDS.
8. PROVIDE CHILLERS WITH VIBRATION ISOLATOR PADS FOR FIELD INSTALLATION.

PUMP SCHEDULE

MARK	LOCATION	SERVICE	TYPE	GPM	TOTAL HEAD (FT.)	NPSH REQUIRED (FT.)	IMPELLER DIA. (INCHES)	MIN. EFF. %	DESIGN PRESS. (PSIG.)	MOTOR				TYPE SEAL	MANUFACTURER	MODEL	NOTES
										SPEED (RPM)	BHP	HP	VOLTS / PH / HZ				
WLF-CHWP-1	MECHANICAL ROOM	CHW	BASE MOUNT END SUCTION	315	115	7	10.75"	74	125	1760	12.39	20	460 / 3 / 60	STANDARD SEAL	TACO	FI-3011D	1,2,3,4,5,6,7
WLF-CHWP-3	MECHANICAL ROOM	CHW	BASE MOUNT END SUCTION	315	115	7	10.75"	74	125	1760	12.39	20	460 / 3 / 60	STANDARD SEAL	TACO	FI-3011D	1,2,3,4,5,6,7
WLF-CHWP-2	MECHANICAL ROOM	CHW	BASE MOUNT END SUCTION	315	115	7	10.75"	74	125	1760	12.39	20	460 / 3 / 60	STANDARD SEAL	TACO	FI-3011D	1,2,3,4,5,6,7
WLF-CWP-1	EXTERIOR	CW	BASE MOUNT END SUCTION	720	55	10	8.55"	83	125	1760	12.10	15	460 / 3 / 60	STANDARD SEAL	TACO	FI-4009D	1,2,3,4,5,6,8
WLF-CWP-2	EXTERIOR	CW	BASE MOUNT END SUCTION	720	55	10	8.55"	83	125	1760	12.10	15	460 / 3 / 60	STANDARD SEAL	TACO	FI-4009D	1,2,3,4,5,6,8

NOTES:

1. PROVIDE SINGLE POINT POWER CONNECTION, TEFC MOTOR WITH OVERLOAD PROTECTION, GROUND FAULT PROTECTION, AND DISCONNECTS.
2. PROVIDE VFD WITH NEMA 4X ENCLOSURE.
3. PROVIDE CORROSION RESISTANCE COATING PER ASTM B117, HERESITE PROTECTIVE COATING OR APPROVED EQUAL ON EXTERIOR CABINET AS WELL AS ALL INTERNAL COMPONENTS
4. PROVIDE HEAVY DUTY COUPLING WITH COUPLER GUARD PER ANSI 315.1 SECTION 8 AND OSHA 1910.219.
5. PROVIDE SUCTION DIFFUSER WITH PRESSURE / TEMPERATURE PORTS, STRAINER, STAINLESS STEEL DRIP PAN, AND STAINLESS STEEL SHAFT
6. PROVIDE REPLACEABLE BRONZE WEAR RING, DRILLED AND TAPPED FOR GAUGE PORTS AT BOTH THE SUCTION AND DISCHARGE CONNECTIONS AND FOR DRAIN PORT AT THE BOTTOM OF THE CASING.
7. PROVIDE CHILLED WATER PUMP WITH STAINLESS STEEL FLANGED CONNECTION SUCTION DIFFUSER TACO MODEL SD040040-5 OR APPROVED EQUAL.
8. PROVIDE CONDENSER WATER PUMP WITH STAINLESS STEEL FLANGED CONNECTION SUCTION DIFFUSER TACO MODEL SD060060-5 OR APPROVED EQUAL.

AIR SEPARATOR SCHEDULE

MARK	LOCATION	SERVICE	TYPE	SIZE				PRESSURE RATING (PSIG)	PRESSURE DROP (FT.)	POSITION	MANUFACTURER	MODEL	NOTES
				TANGENTIAL OPENINGS DIA. (IN.)	DIA. (IN.)	HEIGHT (IN.)	MAXIMUM FLOW RATE (GPM)						
WLF-AS-1	MECHANICAL ROOM	CHW	CENTRIFUGAL AIR & DIRT SEPARATOR	8	20	46	850	125	1.49	VERTICAL	TACO	AC08F-125	1,2

NOTES:

1. AIR AND DIRT SEPARATOR SHALL BE ASME CONSTRUCTED AND STAMPED SEC. VIII, DIV 1.
2. PROVIDE AIR AND DIRT SEPARATOR WITH BLOWDOWN VALVE AND AIR VENT.

EXPANSION TANK SCHEDULE

MARK	LOCATION	SERVICE	TYPE	SIZE			POSITION	MANUFACTURER	MODEL	NOTES
				DIA. (IN.)	HEIGHT (IN.)	TOTAL VOLUME (GAL)				
WLF-ET-1	MECHANICAL ROOM	CHW	BLADDER	24	58	80	VERTICAL	TACO	CA300300	1,2,3

NOTES:

1. EXPANSION TANK SHALL BE ASME CONSTRUCTED AND STAMPED SEC. VIII, DIV 1.
2. EXPANSION TANK SHALL BE CARBON STEEL CONSTRUCTED AND BLADDER SHALL BE HEAVY DUTY BUTYL RUBBER.
3. PROVIDE WITH INTEGRATED BLADDER INTEGRITY MONITOR AND FACTORY PRE CHARGE TO 12 PSI, ADJUSTABLE IN THE FIELD.

CHEMICAL POT FEEDER TANK SCHEDULE

MARK	LOCATION	SERVICE	TYPE	DIA. (IN.)	HEIGHT (IN.)	VOLUME (GAL)	PRESSURE RATING (PSI)	MANUFACTURER	MODEL	NOTES
WLF-CPFT-1	MECHANICAL ROOM	CHW	VERTICAL STYLE DISH BOTTOM OUT	10	29 3/4	5	300	NEPTUNE	DBFC-5	1,2,3,4

NOTES:

1. CHEMICAL POT FEEDER TANK SHALL BE CARBON STEEL CONSTRUCTED WITH CAST IRON CAP INCLUDING SQUARE SECTION O-RING SEAL.
2. PROVIDE WITH LEG EXTENSIONS AND FULL BOTTOM DRAIN.
3. PROVIDE WITH 5 MICRON PLEATED CARTRIDGE FILTER INCLUDING WITH SUPPORTS AND MOUNTING.
4. PROVIDE WITH FILTER BAG KITS INCLUDING BAG, BAG FRAME, TUBING AND CONNECTORS.

INFORMATION HAS BEEN UPDATED - SEE NOTES

CONTROL VALVE SCHEDULE

MARK	DESCRIPTION	LOCATION	SERVICE	TYPE	SIZE (IN.)	PRESSURE DROP	MAX PRESSURE (PSI)	CONTROL	VOLTAGE	MANUFACTURER	MODEL	NOTES
WLF-CV-1	TRIPLE DUTY	MECHANICAL ROOM	WLF-CHWP-1	FLANGED	4	3 FT.	175	MANUAL	-	TACO	MPV 040-4	1,2,3
WLF-CV-2	TRIPLE DUTY	MECHANICAL ROOM	WLF-CHWP-3	FLANGED	4	3 FT.	175	MANUAL	-	TACO	MPV 040-4	1,2,3
WLF-CV-3	TRIPLE DUTY	MECHANICAL ROOM	WLF-CHWP-3	FLANGED	4	3 FT.	175	MANUAL	-	TACO	MPV 040-4	1,2,3
WLF-CV-4	ISOLATION	MECHANICAL ROOM	WLF-CHWP-3	FLANGED	4	-	175	MANUAL	-	AMERICAN VALVE	4001	4
WLF-CV-5	ISOLATION	MECHANICAL ROOM	WLF-CHWP-3	FLANGED	4	-	175	MANUAL	-	AMERICAN VALVE	4001	4
WLF-CV-6	DIVERTING	MECHANICAL ROOM	WLF-FCU-1	THREADED	1.5	2 PSI	400	ACTUATED	24	BELIMO	G340B-N	5
WLF-CV-7	DIVERTING	MECHANICAL ROOM	WLF-CH-1	FLANGED	6	2.5 PSI	175	ACTUATED	24	BELIMO	G7150S	6
WLF-CV-8	DIVERTING	MECHANICAL ROOM	WLF-CH-2	FLANGED	6	2.5 PSI	175	ACTUATED	24	BELIMO	G7150S	6

NOTES:

1. TRIPLE DUTY CONTROL VALVE BODY SHALL BE CAST IRON CONSTRUCTED WITH BRONZE SEAT.
2. PROVIDE DISC WITH EPDM SEAT RING, STAINLESS STEEL STEM AND SPRING.
3. PROVIDE PRESSURE TEMPERATURE PORT, BRASS OR STAINLESS STEEL W/PT INSERT, CHECK VALVE AND GASKET.
4. VALVE BODY SHALL BE STAINLESS STEEL WITH STAINLESS STEEL BALL AND PTFE SEAT.
5. VALVE BODY SHALL BE BRONZE CONSTRUCTED WITH BRONZE SEAT AND STAINLESS STEEL STEM. PROVIDE MODULATING BELIMO ACTUATOR MODEL SVB24-SR OR APPROVED EQUAL. PROVIDE VALVE WITH MANUAL OVERRIDE. CONTROL SIGNAL FROM FAN COIL UNIT CONTROL PANEL.
6. VALVE BODY SHALL BE CAST IRON CONSTRUCTED WITH STAINLESS STEEL AISI 316 SEAT. PROVIDE DUAL MOUNT MODULATING BELIMO ACTUATOR MODEL GXK24-MFT-X1 OR APPROVED EQUAL. PROVIDE VALVE WITH MANUAL OVERRIDE. CONTROL SIGNAL FROM CHILLER CONTROL PANELS.

BACKFLOW PREVENTER SCHEDULE

Mark	LOCATION	SERVICE	MATERIAL	SIZE	MANUFACTURER	MODEL	NOTES
WLF-BFP-1	MECHANICAL ROOM	CHW	BRONZE	1"	WATTS	U009M2QT	-

TETRA TECH
ENGINEERING BUSINESS NO. 2429
www.tetra.tech.com
6303 BLUE LAGOON DRIVE, SUITE 305
MIAMI, FL 33126
TEL: (905) 908-1420 FAX: (305) 264-1805

BID SET

NOT FOR CONSTRUCTION

MARK	DATE	DESCRIPTION	BY
1	09/08/23	REF2	

MIAMI DADE COUNTY DTPW
WILLIAM LEHMAN CENTER
CHILLED WATER PLANT REPLACEMENT
MECHANICAL SCHEDULES

PROJ:	200-15769-22008
DESIN:	MGS
DRWN:	FFA
CHKD:	KPK

M-9601

**UPGRADE CHILLER UNITS AT WILLIAM
LEHMAN CENTER**

RPQ No. TP-0000017889

ADDENDUM NO.5

ENGINEERING DRAWINGS

**REVISED SCHEDULE
M-9602**

9/8/2023 6:42:50 AM BIM 360://200-15769-22008 WLF CHILLER REPLACEMENT\LEHMAN CHILLER-v2021.rvt

FAN COIL UNIT SCHEDULE

MARK	LOCATION	TYPE	AIR FLOW (CFM)	OUTSIDE AIR (CFM)	EXT. S.P. (IN.WG.)	FAN RPM	MOTOR		MBH		EAT DB (°F)	EAT WB (°F)	COOLING CAPACITY		FLOW RATE (GPM)	EWT (°F)	LWT (°F)	ROWS OF COIL	VOLTS / PH / HZ	MANUFACTURER	MODEL	WEIGHT (LBS.)	NOTES
							HP	FLA	TOTAL COOLING	SENS. COOLING			LAT DB (°F)	LAT WB (°F)									
WLF-FCU-1	MECHANICAL ROOM	INDOOR AIR HANDLER	3000	672	0.10	1225	2	2.8	118.3	83.3	80.0	67.0	54.6	54.2	24.0	45.0	54.9	4	460 / 3 / 60	DAIKIN	BCHD0301	547	1,2,3,4,5,6

NOTES:

1. PROVIDE SINGLE POINT POWER CONNECTION, GROUND FAULT PROTECTION, AND DISCONNECTS.
2. PROVIDE TEFC BLOWER MOTOR WITH OVERLOAD PROTECTION AND DRIVE KITS.
3. PROVIDE SUPPLY AIR DUCT WITH SMOKE DETECTOR.
4. PROVIDE 5000 HOURS CORROSION RESISTANCE WITH 1% MAXIMUM HEAT TRANSFER REDUCTION HEREIN. PROVIDE PROTECTIVE COATING OR APPROVED EQUAL ON EXTERIOR CABINET AS WELL AS ALL INTERNAL COMPONENTS.
5. PROVIDE MERV 8 AIR FILTERS WITH FILTER MOUNTING KITS, STAND ALONE 24V MODULATING 3-WAY DIVERTING VALVE CONTROLLER, WITH PORTABLE DISPLAY MOUNTED ON WALL, AND INTEGRATED 7 DAY PROGRAMMABLE THERMOSTAT.
6. PROVIDE DRAIN PAN WITH CONDENSATE OVERFLOW SWITCH.

INFORMATION HAS BEEN UPDATED - SEE NOTES

EXHAUST FAN SCHEDULE

MARK	LOCATION	AIR FLOW (CFM)	S.P. (IN.WG)	FAN RPM	VOLTS / PH / HZ	MOTOR SIZE (HP)	DRIVE	MANUFACTURER	MODEL	NOTES
WLF-EF-3	ROOF	2200	1.1	1164	208 / 1 / 60	2	DIRECT	GREENHECK	CUE-180HP-VG	1,2,3,4,5,6,7

NOTES:

1. FAN SHALL BE FLORIDA PRODUCT APPROVED WITH HIGH WIND RATING PER MANUFACTURER AND MIAMI DADE APPROVED WITH VALID NOA'S.
2. PROVIDE SINGLE POINT POWER CONNECTION, TEFC MOTOR WITH OVERLOAD PROTECTION, GROUND FAULT PROTECTION, EXTERNAL WIRING PIGTAIL AND NEMA-4X DISCONNECT SWITCH.
3. PROVIDE CORROSION RESISTANCE COATING PER ASTM B117, GREENHECK HI-PRO POLYESTER OR APPROVED EQUAL ON EXTERIOR CABINET AS WELL AS ALL INTERNAL COMPONENTS.
4. PROVIDE FAN WITH ALUMINUM CONSTRUCTION, WALL GRILLE, GRAVITY BACKDRAFT DAMPER, STAINLESS STEEL FASTENERS, AND ALUMINUM BIRD SCREEN.
5. PROVIDE CURB ADAPTOR SIZED ATTACHED TO EXISTING ROOF CURB. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY DIMENSIONS.
6. PROVIDE FAN WITH A TWO SPEED FACTORY MOUNTED CONTROLLER WITH 24 VDC TRANSFORMER ACCEPTING (2) DRY CONTACT INPUTS TO ALLOW LOW SPEED (OCCUPIED) AND HIGH SPEED (EMERGENCY PURGE VENTILATION) CONTROL.
7. BASIS OF DESIGN IS GREENHECK WITH APPROVED MIAMI DADE APPROVED WITH N.O.A. 22-0606.03.

GRAVITY HOOD SCHEDULE

MARK	LOCATION	AIR FLOW (CFM)	S.P. (IN.WG)	THROAT				MANUFACTURER	MODEL	NOTES
				WIDTH (IN.)	LENGTH (IN.)	AREA (FT2)	VELOCITY (FPM)			
WLF-GH-6	ROOF	2900	.06	32	32	7	408	GREENHECK	FGI	1,2,3,4,5,6

NOTES:

1. GRAVITY HOOD SHALL BE FLORIDA PRODUCT APPROVED WITH HIGH WIND RATING PER MANUFACTURER AND MIAMI DADE APPROVED WITH VALID NOA'S.
2. PROVIDE CORROSION RESISTANCE COATING PER ASTM B117, GREENHECK HI-PRO POLYESTER OR APPROVED EQUAL ON EXTERIOR CABINET AS WELL AS ALL INTERNAL COMPONENTS.
3. PROVIDE GRAVITY HOOD WITH ALUMINUM CONSTRUCTION, 12" BASE HEIGHT, GALVANIZED STEEL MESH BIRD SCREEN, AND GALVANIZED STEEL SUPPORT.
4. PROVIDE CURB ADAPTOR SIZED ATTACHED TO EXISTING ROOF CURB. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY DIMENSIONS.
5. PROVIDE TRANSITION FITTING FOR DUCTWORK CONNECTION AND LOW LEAKAGE MOTORIZED DAMPERS.
6. BASIS OF DESIGN IS GREENHECK WITH APPROVED MIAMI DADE N.O.A. 22-0606.01.

MOTORIZED DAMPER SCHEDULE

MARK	DESCRIPTION	ASSOCIATED EQUIPMENT	AIR FLOW (CFM)	VELOCITY (FPM)	SIZE (W X H)	MATERIAL	OPERATOR (VOLTS)	FAIL POSITION	MANUFACTURER	MODEL	NOTES
WLF-MOD-1	HEAVY DUTY CONTROL DAMPER	WLF-FCU-1	670	500	16X12	GALVANIZED	24	CLOSED	GREENHECK	HCD-230	1,2,3,4,5
WLF-MOD-2	HEAVY DUTY CONTROL DAMPER	WLF-GH-6	3500	500	32 X 32	GALVANIZED	24	CLOSED	GREENHECK	HCD-230	1,2,3,4,5

NOTES:

1. DAMPER SHALL BE EQUIPPED WITH BLADE AND JAMB SEALS FOR LOW LEAKAGE PERFORMANCE.
2. BLADE SEALS SHALL SILICONE RUBBER FOR 400°F (204°C) MAXIMUM TEMPERATURE.
3. JAMB SEALS SHALL BE FLEXIBLE STAINLESS STEEL.
4. TESTING AND RATINGS SHALL BE PER AMCA STANDARD 500-D.
5. PROVIDE MODULATING, NON-SPRING RETURN BELIMO ACTUATOR MODEL NMB24-SR OR APPROVED EQUAL.

REFRIGERANT GAS LEAK DETECTION SYSTEM SCHEDULE

MARK	DESCRIPTION	LOCATION	POWER REQUIRED	OUTPUT RATING	MANUFACTURER	MODEL	NOTES
WLF-RC-1	CONTROLLER	MECHANICAL ROOM	22-27 VAC	5A, 30 VDC	HONEYWELL	301EM-20	1
WLF-RCP-1	CONTROL PANEL	CORRIDOR	22-27 VAC	5A, 30 VDC	HONEYWELL	301EMRP-20	1

NOTES:

1. SYSTEM MUST BE CAPABLE OF PROVIDING ALARM OUTPUT DRY CONTACT TO THE EXHAUST FAN CONTROL PANEL. REFER TO THE CONTROL DRAWINGS FOR MORE INFORMATION.

TETRA TECH
ENGINEERING BUSINESS NO. 2428
www.tetratech.com
6303 BLUE LAGOON DRIVE, SUITE 305
MIAMI, FL 33126
TEL: (905) 908-1420 FAX: (305) 264-1805

BID SET
NOT FOR CONSTRUCTION

MARK	DATE	DESCRIPTION	BY
1	09/08/23	RF12	

MIAMI DADE COUNTY DTPW
WILLIAM LEHMAN CENTER
CHILLED WATER PLANT REPLACEMENT
MECHANICAL SCHEDULES

PROJ: 200-15769-22008
DESN: MGS
DRWN: FFA
CHKD: KPK

M-9602

FAN COIL UNIT SCHEDULE

MARK	LOCATION	TYPE	AIR FLOW (CFM)	OUTSIDE AIR (CFM)	EXT. S.P. (IN.WG.)	FAN RPM	MOTOR		COOLING CAPACITY									VOLTS / PH / HZ	MANUFACTURER	MODEL	WEIGHT (LBS.)	NOTES	
							HP	FLA	MBH		EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	FLOW RATE (GPM)	EWT (°F)	LWT (°F)						ROWS OF COIL
									TOTAL COOLING	SENS. COOLING													
WLF-FCU-1	MECHANICAL ROOM	INDOOR AIR HANDLER	3000	672	0.10	812	1.5	2.1	106.9	76.6	80.0	67.0	56.6	55.6	24.0	45.0	53.9	4	460 / 3 / 60	DAIKIN	LAH007A	625	1,2,3,4,5,6

INFORMATION HAS BEEN UPDATED - SEE REVISED SHEET

- NOTES:**
1. PROVIDE SINGLE POINT POWER CONNECTION, GROUND FAULT PROTECTION, AND DISCONNECTS.
 2. PROVIDE TEFC BLOWER MOTOR WITH OVERLOAD PROTECTION AND DRIVE KITS.
 3. PROVIDE SUPPLY AIR DUCT WITH SMOKE DETECTOR.
 4. PROVIDE 5000 HOURS CORROSION RESISTANCE WITH 1% MAXIMUM HEAT TRANSFER REDUCTION HERESITE PROTECTIVE COATING OR APPROVED EQUAL ON EXTERIOR CABINET AS WELL AS ALL INTERNAL COMPONENTS
 5. PROVIDE MERV 8 AIR FILTERS WITH FILTER MOUNTING KITS, AND 7 DAY PROGRAMMABLE THERMOSTATS.
 6. PROVIDE DRAIN PAN WITH CONDENSATE OVERFLOW SWITCH.

EXHAUST FAN SCHEDULE

MARK	LOCATION	AIR FLOW (CFM)	S.P. (IN-WG)	FAN RPM	VOLTS / PH / HZ	MOTOR SIZE (HP)	DRIVE	MANUFACTURER	MODEL	NOTES
WLF-EF-3	ROOF	2200	1.1	1164	208 / 1 / 60	2	DIRECT	GREENHECK	CUE-180HP-VG	1,2,3,4,5,6,7

- NOTES:**
1. FAN SHALL BE FLORIDA PRODUCT APPROVED WITH HIGH WIND RATING PER MANUFACTURER AND MIAMI DADE APPROVED WITH VALID NOA'S.
 2. PROVIDE SINGLE POINT POWER CONNECTION, TEFC MOTOR WITH OVERLOAD PROTECTION, GROUND FAULT PROTECTION, EXTERNAL WIRING PIGTAIL AND NEMA-4X DISCONNECT SWITCH.
 3. PROVIDE CORROSION RESISTANCE COATING PER ASTM B117, GREENHECK HI-PRO POLYESTER OR APPROVED EQUAL ON EXTERIOR CABINET AS WELL AS ALL INTERNAL COMPONENTS.
 4. PROVIDE FAN WITH ALUMINUM CONSTRUCTION, WALL GRILLE, GRAVITY BACKDRAFT DAMPER, STAINLESS STEEL FASTENERS, AND ALUMINUM BIRD SCREEN.
 5. PROVIDE CURB ADAPTOR SIZED ATTACHED TO EXISTING ROOF CURB. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY DIMENSIONS.
 6. PROVIDE FAN WITH A TWO SPEED FACTORY MOUNTED CONTROLLER WITH 24 VDC TRANSFORMER ACCEPTING (2) DRY CONTACT INPUTS TO ALLOW LOW SPEED (OCCUPIED) AND HIGH SPEED (EMERGENCY PURGE VENTILATION) CONTROL.
 7. BASIS OF DESIGN IS GREENHECK WITH APPROVED MIAMI DADE APPROVED WITH N.O.A. 22-0606.03.

GRAVITY HOOD SCHEDULE

MARK	LOCATION	AIR FLOW (CFM)	S.P. (IN-WG)	THROAT				MANUFACTURER	MODEL	NOTES
				WIDTH (IN.)	LENGTH (IN.)	AREA (FT2)	VELOCITY (FPM)			
WLF-GH-6	ROOF	2900	.06	32	32	7	408	GREENHECK	FGI	1,2,3,4,5,6

- NOTES:**
1. GRAVITY HOOD SHALL BE FLORIDA PRODUCT APPROVED WITH HIGH WIND RATING PER MANUFACTURER AND MIAMI DADE APPROVED WITH VALID NOA'S.
 2. PROVIDE CORROSION RESISTANCE COATING PER ASTM B117, GREENHECK HI-PRO POLYESTER OR APPROVED EQUAL ON EXTERIOR CABINET AS WELL AS ALL INTERNAL COMPONENTS.
 3. PROVIDE GRAVITY HOOD WITH ALUMINUM CONSTRUCTION, 12" BASE HEIGHT, GALVANIZED STEEL MESH BIRD SCREEN, AND GALVANIZED STEEL SUPPORT.
 4. PROVIDE CURB ADAPTOR SIZED ATTACHED TO EXISTING ROOF CURB. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY DIMENSIONS.
 5. PROVIDE TRANSITION FITTING FOR DUCTWORK CONNECTION AND LOW LEAKAGE MOTORIZED DAMPERS.
 6. BASIS OF DESIGN IS GREENHECK WITH APPROVED MIAMI DADE N.O.A. 22-0606.01.

MOTORIZED DAMPER SCHEDULE

MARK	DESCRIPTION	ASSOCIATED EQUIPMENT	AIR FLOW (CFM)	VELOCITY (FPM)	SIZE (W X H)	MATERIAL	OPERATOR (VOLTS)	FAIL POSITION	MANUFACTURER	MODEL	NOTES
WLF-MOD-1	HEAVY DUTY CONTROL DAMPER	WLF-FCU-1	670	500	16X12	GALVANIZED	24	CLOSED	GREENHECK	HCD-230	1,2,3,4,5
WLF-MOD-2	HEAVY DUTY CONTROL DAMPER	WLF-GH-6	3500	500	32 X 32	GALVANIZED	24	CLOSED	GREENHECK	HCD-230	1,2,3,4,5

- NOTES:**
1. DAMPER SHALL BE EQUIPPED WITH BLADE AND JAMB SEALS FOR LOW LEAKAGE PERFORMANCE.
 2. BLADE SEALS SHALL SILICONE RUBBER FOR 400°F (204°C) MAXIMUM TEMPERATURE.
 3. JAMB SEALS SHALL BE FLEXIBLE STAINLESS STEEL.
 4. TESTING AND RATINGS SHALL BE PER AMCA STANDARD 500-D.
 5. PROVIDE MODULATING, NON-SPRING RETURN BELIMO ACTUATOR MODEL NMB24-SR OR APPROVED EQUAL.

REFRIGERANT GAS LEAK DETECTION SYSTEM SCHEDULE

MARK	DESCRIPTION	LOCATION	POWER REQUIRED	OUTPUT RATING	MANUFACTURER	MODEL	NOTES
WLF-RC-1	CONTROLLER	MECHANICAL ROOM	22-27 VAC	5A, 30 VDC	HONEYWELL	301EM-20	1
WLF-RCP-1	CONTROL PANEL	CORRIDOR	22-27 VAC	5A, 30 VDC	HONEYWELL	301EMRP-20	1

- NOTES:**
1. SYSTEM MUST BE CAPABLE OF PROVIDING ALARM OUTPUT DRY CONTACT TO THE EXHAUST FAN CONTROL PANEL. REFER TO THE CONTROL DRAWINGS FOR MORE INFORMATION.



www.tetratech.com
 6303 BLUE LAGOON DRIVE, SUITE 305
 MIAMI, FL 33126
 TEL: (305) 908-1420 FAX: (305) 264-1805

BID SET

NOT FOR CONSTRUCTION

BY

DESCRIPTION

DATE

MARK

MIAMI DADE COUNTY DTPW

WILLIAM LEHMAN CENTER
 CHILLED WATER PLANT REPLACEMENT
 MECHANICAL SCHEDULES

PROJ: 200-15769-22008

DESN: MGS

DRWN: FFA

CHKD: KPK

M-9602

18 of 28

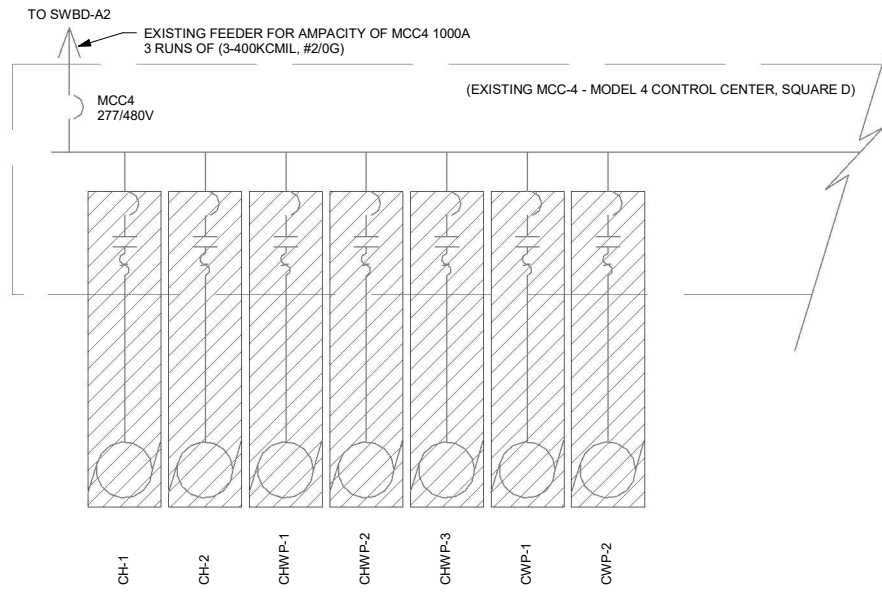
**UPGRADE CHILLER UNITS AT WILLIAM
LEHMAN CENTER**

RPQ No. TP-0000017889

ADDENDUM NO.5

ENGINEERING DRAWINGS

**REVISED SCHEDULE
E-9602**



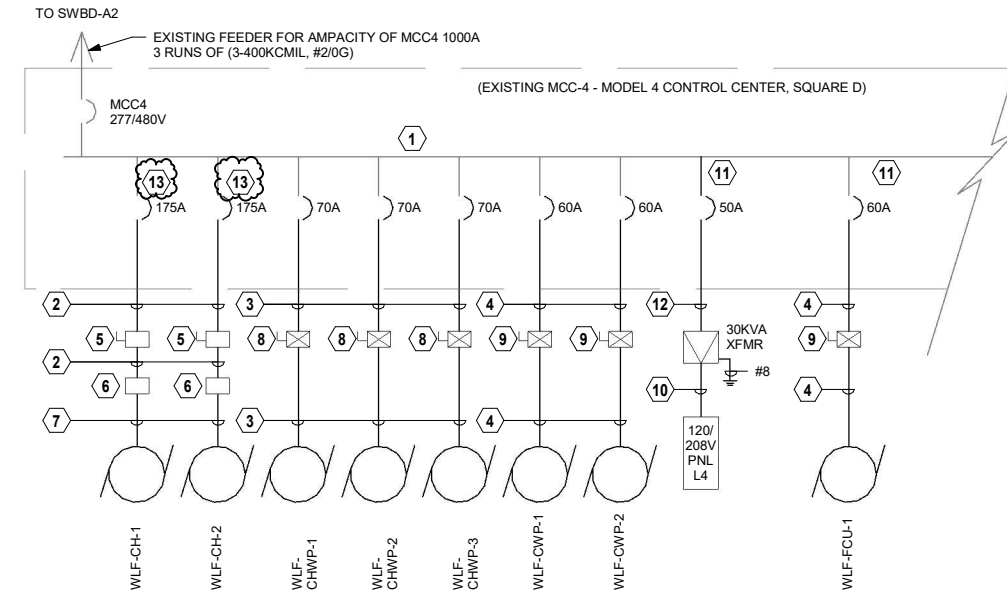
CONTRACTOR SHALL IDENTIFY ALL COMPONENTS WITHIN AFFECTED MCC BUCKET AND REMOVE COMPONENTS AS NECESSARY TO ACCOMMODATE NEW WORK. REMOVE ALL INDICATING LIGHTS, SWITCHES AND PUSHBUTTONS FROM AFFECTED MCC BUCKETS. LABEL REMOVED ITEMS AND PROVIDE TO OWNER. CONTRACTOR TO FIELD VERIFY NECESSARY SPACE FOR NEW EQUIPMENT AND PROVIDE MODIFIED MCC-4 SHOP DRAWINGS.

1 PARTIAL DEMOLITION SINGLE LINE - MCC4
E-9602 SCALE: NTS

**REPLACE WITH THE FOLLOWING:
KEYNOTE NO.6:
- VENDOR FURNISHED CHILLER CONTROL SYSTEM COMPONENTS. MOUNT AND WIRE IN COMPLIANCE WITH MANUFACTURERS WRITTEN REQUIREMENTS.**



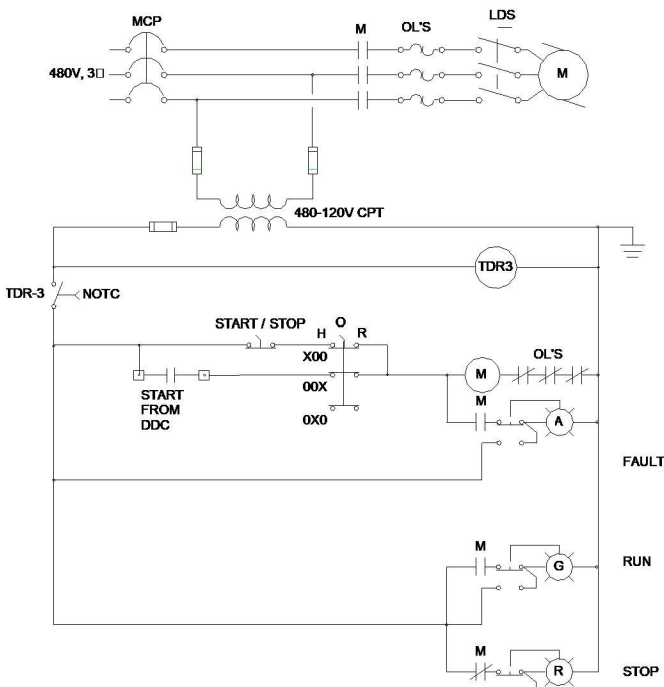
3 MCC-4 ELEVATION
E-9602 SCALE: NTS



KEYED NOTES:

- VERIFY LOCATION OF THE MCC BUCKET THAT SUPPLIES EACH PIECE OF MECHANICAL EQUIPMENT INDICATED FOR DEMOLITION. MODIFY AFFECTED MCC BUCKETS AS REQUIRED TO ACCOMMODATE NEW MECHANICAL EQUIPMENT. CONFIRM REQUIRED CIRCUIT BREAKER RATINGS AND REQUIRED ANCILLARY EQUIPMENT PRIOR WITH APPROVED MECHANICAL EQUIPMENT SUBMITTAL PRIOR TO ORDERING EQUIPMENT. PROVIDE ALL HARDWARE NECESSARY FOR A COMPLETE, FUNCTIONAL INSTALLATION. SEAL OPENINGS IN DOORS VACATED BY INDICATING LIGHTS, SWITCHES AND PUSHBUTTONS WHICH HAVE BEEN REMOVED. MODIFICATION OF MCC SHALL MAINTAIN EXISTING UL LISTING OF EQUIPMENT. COORDINATE MODIFICATION WITH EQUIPMENT MANUFACTURER (SQUARE D) AS REQUIRED TO MAINTAIN LISTING.
- 2"C(#10, #1G)
- 1"C(#8, #8G)
- 1"C(#10, #10G)
- 200A THREE POLE DISCONNECT SWITCH IN NEMA 3R ENCLOSURE.
- VENDOR FURNISHED CHILLER CONTROL SYSTEM COMPONENTS. MOUNT AND WIRE IN COMPLIANCE WITH MANUFACTURERS WRITTEN REQUIREMENTS.
- PROVIDE WIRING AND CONNECTIONS IN COMPLIANCE WITH MANUFACTURERS WRITTEN REQUIREMENTS. INSTALLATION SHALL COMPLY WITH NEC.
- COMBINATION STARTER/DISCONNECT SWITCH, 60A THREE POLE DISCONNECT SWITCH WITH NEMA SIZE 2 MOTOR STARTER IN NEMA 3R ENCLOSURE.
- COMBINATION STARTER/DISCONNECT SWITCH, 30A THREE POLE DISCONNECT SWITCH WITH NEMA SIZE 2 MOTOR STARTER IN NEMA 3R ENCLOSURE.
- 2"C(#3, #6G)
- PROVIDE NEW BREAKER IN SPARE BUCKET
- 1"C(#8, #8G)
- REPLACE EXISTING 225A BREAKER, OVERLOAD AND ASSOCIATED EQUIPMENT WITH NEW 175A BREAKER.

2 PARTIAL PROPOSED SINGLE LINE - MCC4
E-9602 SCALE: NTS



4 STARTER WIRING DIAGRAM
E-9602 SCALE: NTS

BID SET
NOT FOR CONSTRUCTION

MARK	DATE	DESCRIPTION	BY
1	09/13/23	RFT#5	

MIAMI DADE COUNTY DPTW
WILLIAM LEHMAN CENTER
CHILLED WATER PLANT REPLACEMENT
ELECTRICAL SINGLE LINE -
DEMOLITION - PROPOSED

PROJ: 200-15769-22008
DESN: JGH
DRWN: RSP
CHKD: BW

E-9602

**UPGRADE CHILLER UNITS AT WILLIAM
LEHMAN CENTER**

RPQ No. TP-0000017889

ADDENDUM NO.5

AMERICAN VALVE

**ATTACHMENTS
(For Informational Purposes Only)**



STAINLESS STEEL FLANGED END BALL VALVE



AMERICANVALVE.COM



SPECIFICATIONS

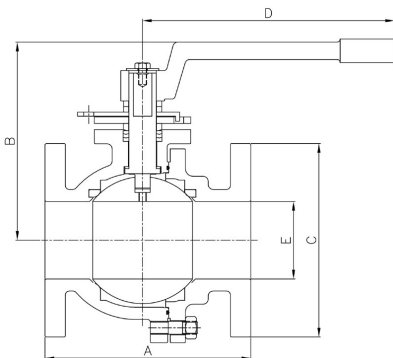
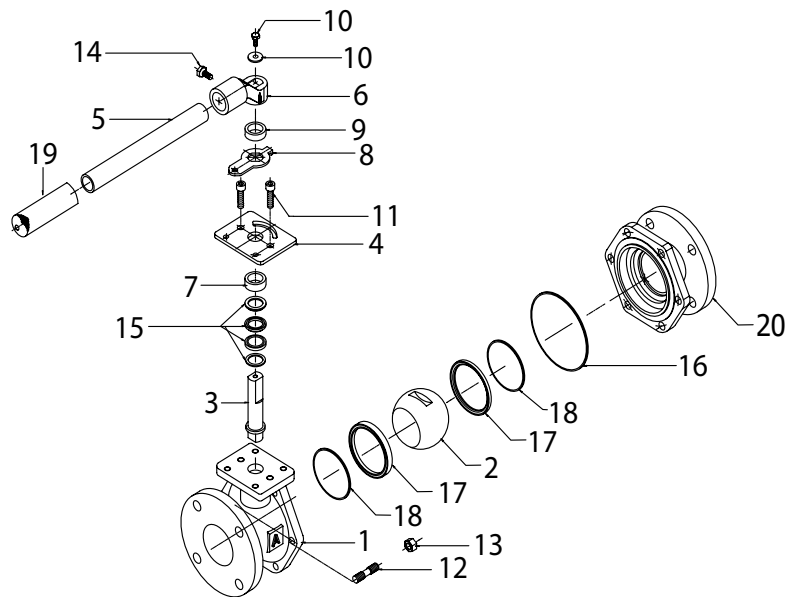
- Cast 316 Stainless Steel (CF8M)
- PFA* Fused Solid Stainless Steel Ball
- Blow-out Proof Stainless Steel Stem
- Reinforced PTFE Seats
- Full Opening for Unrestricted Flow
- Lockable in Full Open or Closed Positions
- API 607 Fire Safe Design
- Mounting Pad for Easy Actuation
- Adjustable Length/Removable Handles to fit into areas of limited space
- Certified to meet the requirements of NSF/ANSI 61 and NSF/ANSI 372 MSS SP-72

RATING

- 150 psi WSP
- 300 psi WOG
- 366° F

MATERIAL SPECIFICATIONS

	Part	Material	
1	Body	Stainless Steel	ASTMA351-CF8M
2	PFA* Fused Ball	Stainless Steel	ASTMA351-CF8M
3	Stem	Stainless Steel	ASTM A276-316
4	Gland Plate	Stainless Steel	ASTM A479-11
5	Handle	Stainless Steel	ASTM A312
6	Handle Bracket	Stainless Steel	ASTM A351 CF8
7	Packing Follower	Stainless Steel	ASTM A276-316
8	Stem Indicator	Stainless Steel	ASTM A479-11
9	Handle Bracket Spacer	Stainless Steel	ASTM A276-316
10	Stem Stud & Washer	Stainless Steel	ASTM 0193-B8
11	Gland Stud	Stainless Steel	ASTM 0193-B8
12	Body Stud	Stainless Steel	ASTM 0193-B8
13	Body Nut	Stainless Steel	ASTM 0193-B8
14	Handle Bracket Bolt	Stainless Steel	ASTM 0193-B8
15	Packing	PTFE	ASTM D3294
16	Body Gasket	PTFE	ASTM D3294
17	Seat Ring	RPTFE 15% GF	ASTM D4894
18	Back Seat O-Ring	PTFE	ASTM D3294
19	Handle Grip	Red Foam Rubber	ASTM D 749
20	Body Cap	Stainless Steel	ASTMA351-CF8M



DIMENSIONS

	1 1/2"	2"	2 1/2"	3"	4"	6"
A Face to Face	6.5"	7"	7.5"	8"	9"	10.5"
B Center of Port to Top	6"	6.5"	7.5"	8.25"	9"	12"
C Flange Diameter	5"	6"	7"	7.5"	9"	11"
D Center of Valve to Handle End	12.25"	12.25"	14"	14"	16"	30.5"
E Port Diameter	1.5"	2"	2.5"	3"	4"	6"
Bolt Holes	4	4	4	4	8	8
Weight lbs.	16	22	38	49	73	145
CV	260	500	750	1245	2500	5470
Mounting Pad	F07	F07	F10	F10	F10	F12

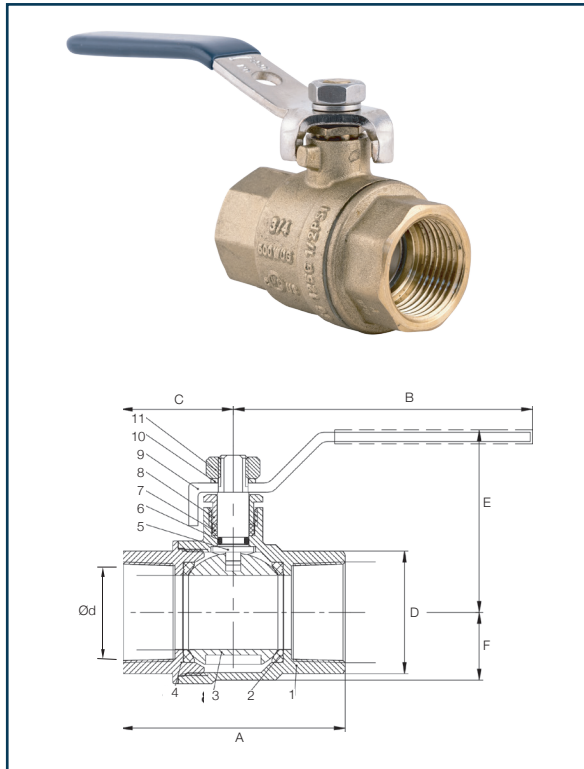
OPERATING TORQUES

Size	Torque (ft. lbs.)
3/8"	10
1/2"	10
1"	10
1 1/2"	20
2"	35
2 1/2"	48
3"	62
4"	130
6"	260
8"	360
10"	535

PROJECT:	SUBMITTED BY:

AMERICAN VALVE

4321 PIEDMONT PARKWAY, GREENSBORO, NC 27410
PHONE: 800-645-0101 • EMAIL: SALES@AMERICANVALVE.COM



FEATURES

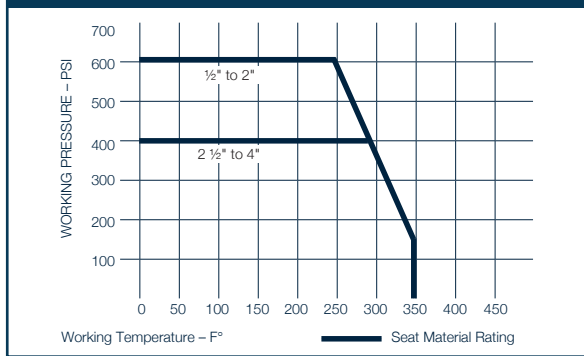
- 2-Piece Forged DZR Brass Body
- Full Port
- Blow-out proof stem
- Vacuum rated at 29 in-HG
- Available with Accessories: Locking Handle

APPROVALS



- UL Listed (1/4" - 2")
 - VQGU - Trim & Drain
 - VQGU7 - Trim & Drain Certified for Canada
- CSA Certified
 - ANSI Z21.15/CSA 9.1 (1/2 psig) 1/4" - 2"
 - ASME B16.44 (5 psig) 1/4" - 2"
 - ASME B16.33 (125 psig) 1/2" - 2"
 - CGA CR91-002 (5 psig) 1/4" - 2"
 - CSA 3.16 (125 psig) 1/4" - 2"
- FM Approval (1/4" - 2" 600WOG)
- IAPMO/ANSI Z1157 1/4" - 4"
- ANSI/NSF-61 1/4" - 4"
- ANSI/NSF 372 1/4" - 4"
- ANSI B1.20.1 1/4" - 4"
- MSS SP-110 1/4" - 4"

VALVE SEAT RATING



WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, and lead, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

MATERIAL SPECIFICATIONS

	PART	MATERIAL	SPECIFICATION
1	Housing (Body)	Lead-free DZR Brass	C46500
2	Seat	Hostaflon®	TFM1600
3	Ball	Stainless Steel	SS304
4	Bonnet	Lead-free DZR Brass	C46500
5	Stem	Lead-free Brass	C37700
6	O-Ring	Viton®	Viton®
7	Seal	Hostaflon®	TFM 1600
8	Gland Nut	Lead-free Brass	C37700
9	Handle	Seet, Zinc Plated	-
10	Washer	Steel	3Cr13
11	Lock Nut	Stainless Steel	SS304

DIMENSIONS IN INCHES

	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
A	1.71	1.73	2.11	2.39	2.93	3.31	3.65	4.17	5.34	6.02	7.23
B	3.88	3.88	3.88	4.25	4.65	5.24	6.30	6.30	9.84	9.84	9.84
C	0.87	0.87	1.06	1.20	1.48	1.65	1.83	2.07	2.68	3.01	3.68
D	0.69	0.85	1.04	1.30	1.57	1.97	2.26	2.76	3.44	3.98	5.12
E	1.50	1.58	1.78	1.94	2.37	2.57	3.02	3.34	4.72	5.12	6.00
F	0.42	0.42	0.55	0.72	0.88	1.08	1.32	1.66	2.02	2.32	3.03
Ød	0.39	0.39	0.59	0.79	0.98	1.26	1.57	1.97	2.56	2.95	3.90

PROJECT:

SUBMITTED BY:



4321 PIEDMONT PARKWAY,
GREENSBORO, NC 27410
PHONE: 800-645-0101
EMAIL: SALES@AMERICANVALVE.COM
WWW.AMERICANVALVE.COM

**UPGRADE CHILLER UNITS AT WILLIAM
LEHMAN CENTER**

RPQ No. TP-0000017889

ADDENDUM NO.5

BELIMO

**ATTACHMENTS
(For Informational Purposes Only)**



5-year warranty


Technical data

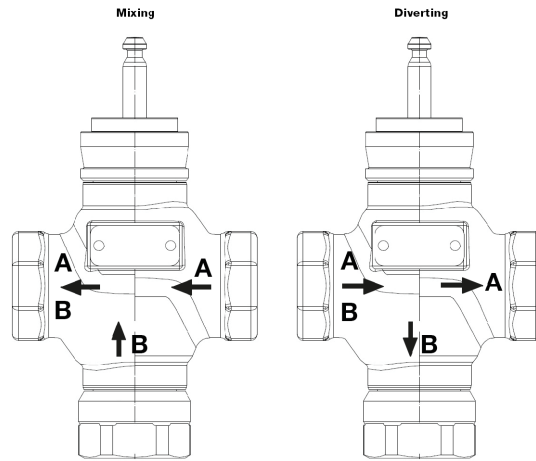
Functional data	Valve Size	1.5" [40]
	Fluid	chilled or hot water, up to 60% glycol
	Fluid Temp Range (water)	20...280°F [-7...138°C]
	Body Pressure Rating	ANSI Class 250, up to 400 psi below 150°F
	Flow characteristic	modified equal percentage, linear B – AB
	Servicing	repack kits available
	Rangeability Sv	A-port 100:1, B-port 50:1
	Flow Pattern	3-way Mixing/Diverting
	Leakage rate	ANSI Class VI
	Controllable flow range	stem up - open B – AB
	Cv	28
	ANSI Class	250
	Body pressure rating note	up to 400 psi below 150°F
Materials	Valve body	Bronze
	Valve plug	brass
	Stem seal	EPDM O-ring
	Seat	Bronze
	Pipe connection	NPT female ends
Suitable actuators	Non-Spring	SVB(X)
	Electronic fail-safe	SVKB(X)

Safety notes


- **WARNING:** This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to www.p65warnings.ca.gov
- The valve has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The valve does not contain any parts that can be replaced or repaired by the user.
- When determining the flow rate characteristic of controlled devices, the recognised directives must be observed.

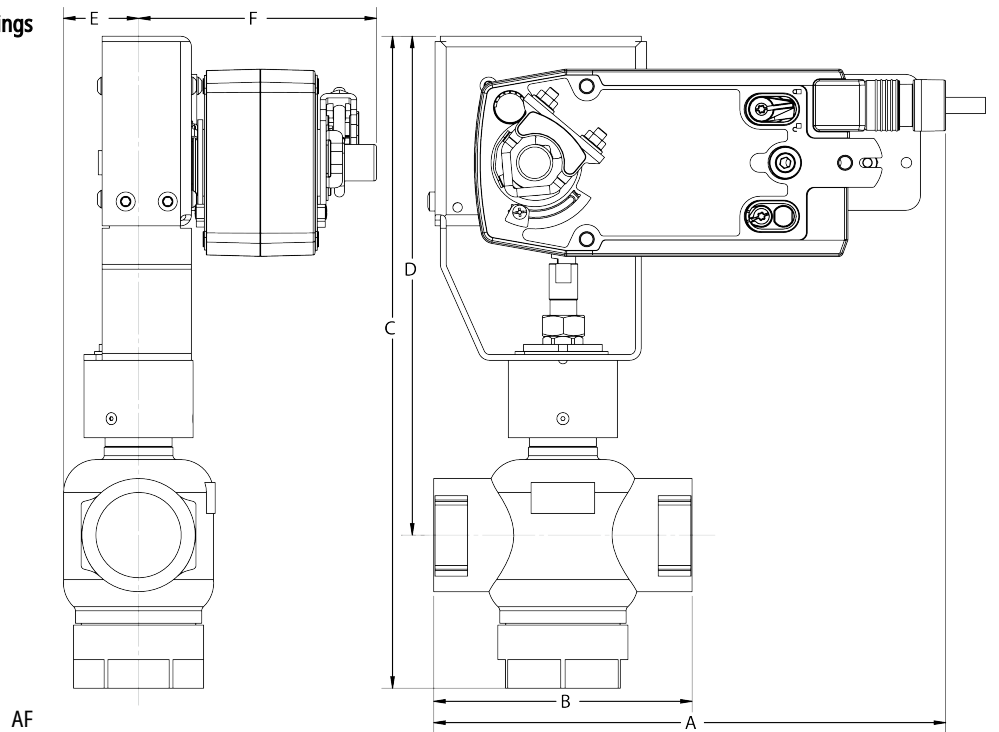
Product features

Flow/Mounting details

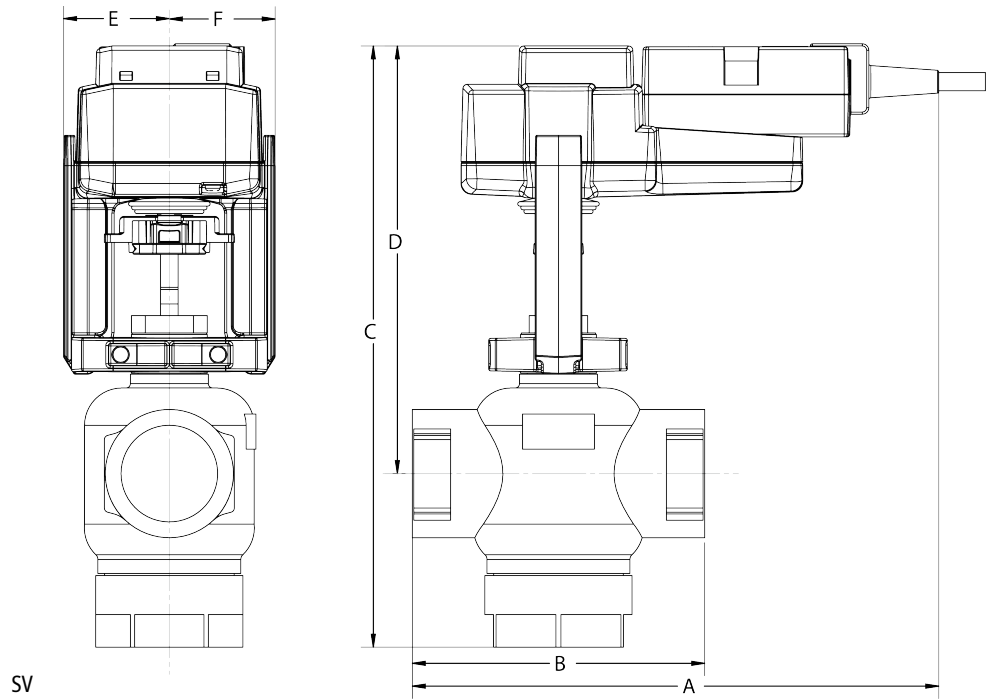


Dimensions

Dimensional drawings

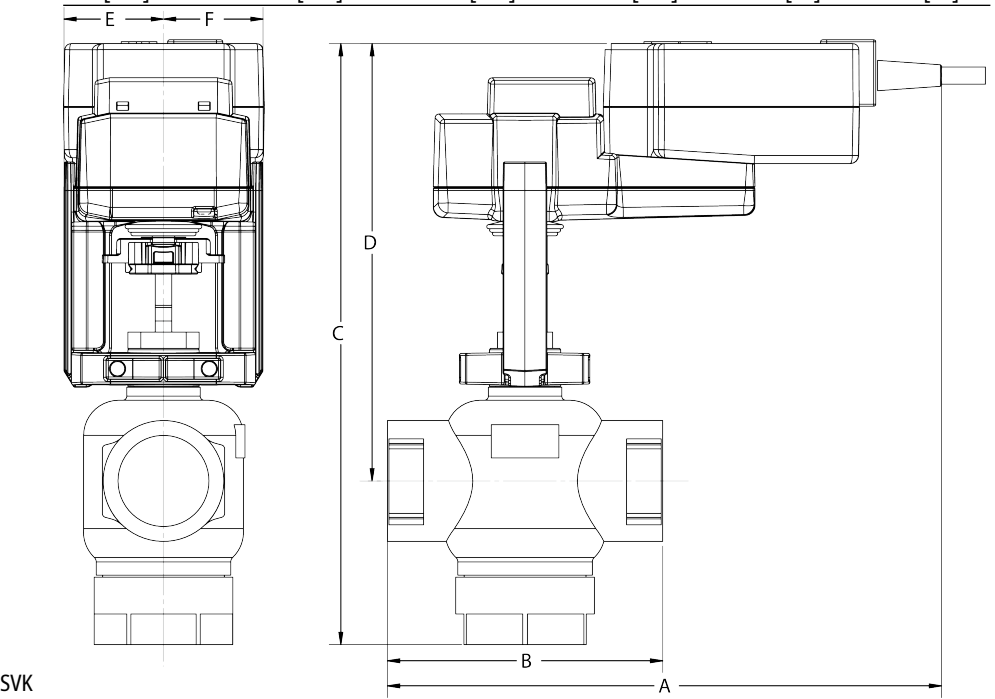


A	B	C	D	E	F
10.5" [267]	5.3" [135]	13.5" [342]	10.4" [264]	1.5" [39]	4.9" [125]



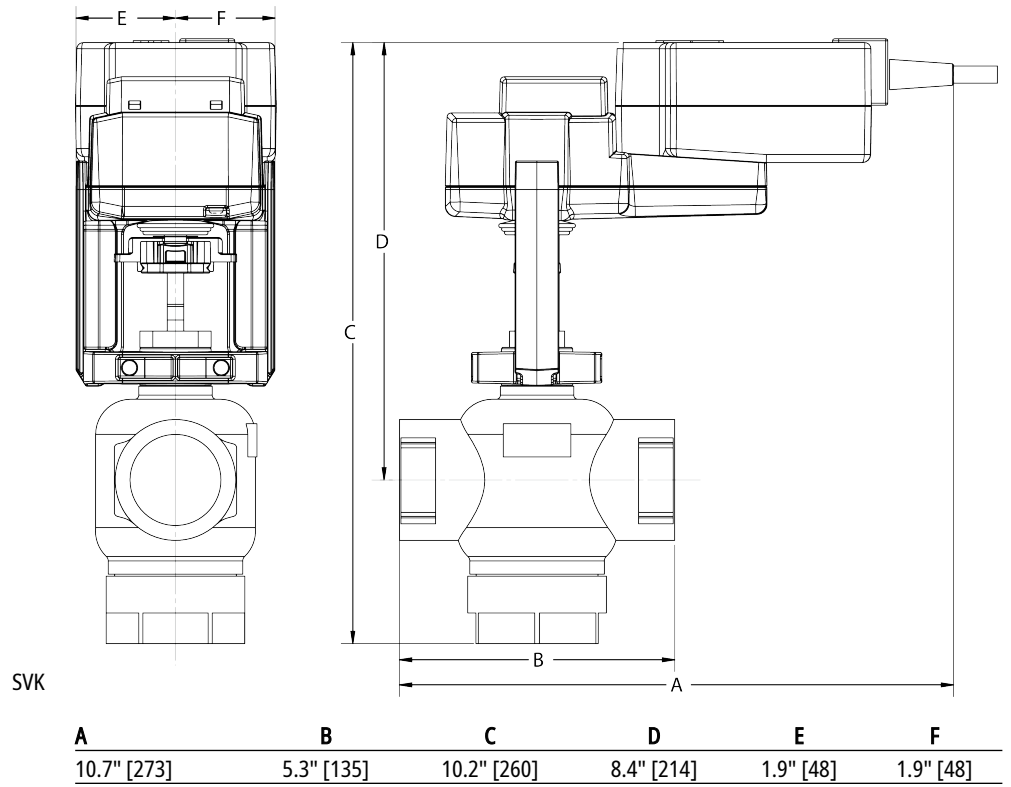
SV

A	B	C	D	E	F
9.6" [244]	5.3" [135]	10.3" [262]	7.8" [198]	1.9" [48]	1.9" [48]



SVK

A	B	C	D	E	F
10.7" [273]	5.3" [135]	10.2" [260]	8.4" [214]	1.9" [48]	1.9" [48]





5-year warranty



Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Power consumption in operation	1.5 W
	Power consumption in rest position	2 W
	Transformer sizing	4 VA (class 2 power source)
	Electrical Connection	18 GA plenum cable, 3 ft [1 m], with 1/2" conduit connector, degree of protection NEMA 2 / IP54
	Overload Protection	electronic throughout full stroke
Electrical Protection	actuators are double insulated	
Functional data	Actuating force motor	340 lbf [1500 N]
	Operating range Y	2...10 V
	Operating range Y note	4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)
	Input Impedance	100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA
	Position feedback U	2...10 V
	Direction of motion motor	selectable with switch
	Manual override	4 mm hex crank (shipped w/actuator)
	Stroke	0.75" [19 mm]
	Running Time (Motor)	90 s, constant, independent of load
	Running time motor note	constant, independent of load
	Noise level, motor	45 dB(A)
	Position indication	Mechanically, with pointer
Safety data	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2 UL Enclosure Type 2
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU
	Quality Standard	ISO 9001
	Ambient temperature	-22...122°F [-30...50°C]
	Storage temperature	-40...176°F [-40...80°C]
	Ambient humidity	max. 95% r.H., non-condensing
	Servicing	maintenance-free
Weight	Weight	2.87 lb [1.3 kg]
Materials	Housing material	Die cast aluminium and plastic casing

Safety notes



- PVC W/Shld for GV w/UGLK (GM)
- Battery Back Up System for SY(7~10)-110
- 120 to 24 VAC, 40 VA transformer.
- 50% voltage divider kit (resistors with wires).
- PC Tool computer programming interface, serial port.

NPT-Threaded Globe Valves

- chilled or hot water, up to 60% glycol
- ANSI Class 250, up to 400 psi below 150°F
- repack kits available
- ANSI Class VI



5-year warranty

Type overview

Type	DN
G340B-N	40

Technical data

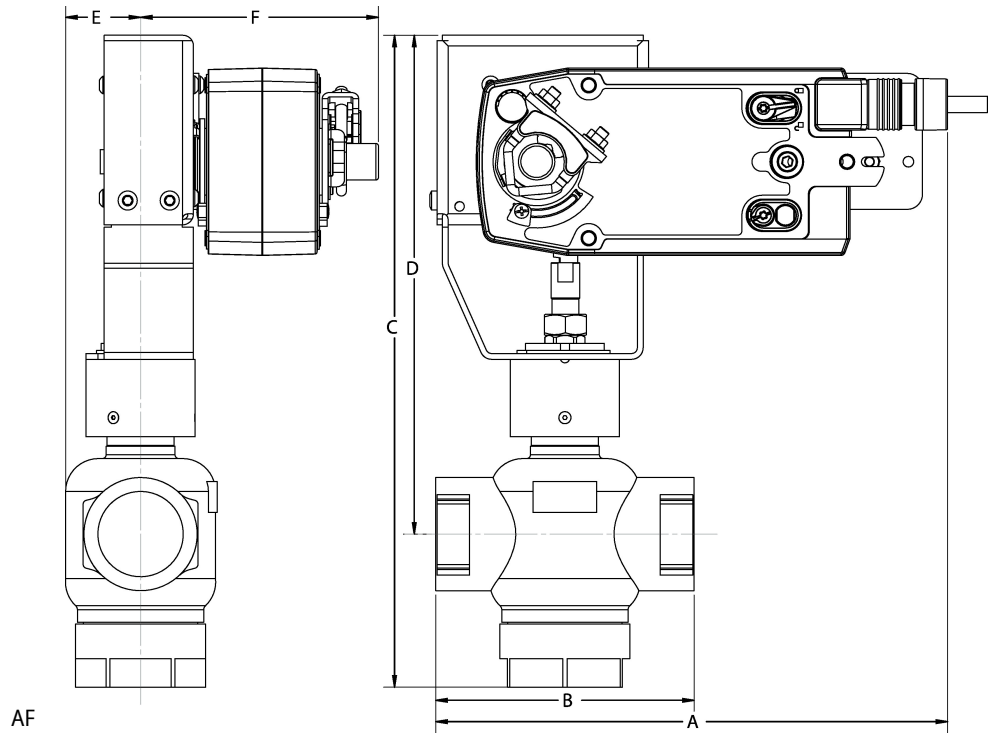
Functional data	Valve size [mm]	1.5" [40]
	Fluid	chilled or hot water, up to 60% glycol
	Fluid Temp Range (water)	20...280°F [-7...138°C]
	Body Pressure Rating	ANSI Class 250, up to 400 psi below 150°F
	Flow characteristic	modified equal percentage, linear B – AB
	Servicing	repack kits available
	Rangeability Sv	A-port 100:1, B-port 50:1
	Flow Pattern	3-way Mixing/Diverting
	Leakage rate	ANSI Class VI
	Controllable flow range	stem up - open B – AB
Cv	28	
Materials	Valve body	Bronze
	Valve plug	brass
	Stem	stainless steel
	Stem seal	EPDM O-ring
	Seat	Bronze
	Pipe connection	NPT
Suitable actuators	Non-Spring	SVB(X)
	Spring	AF
	Electrical fail-safe	SVKB(X)

Safety notes


- **WARNING:** This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to www.p65warnings.ca.gov
- The valve has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorized specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The valve does not contain any parts that can be replaced or repaired by the user.
- When determining the flow rate characteristic of controlled devices, the recognised directives must be observed.

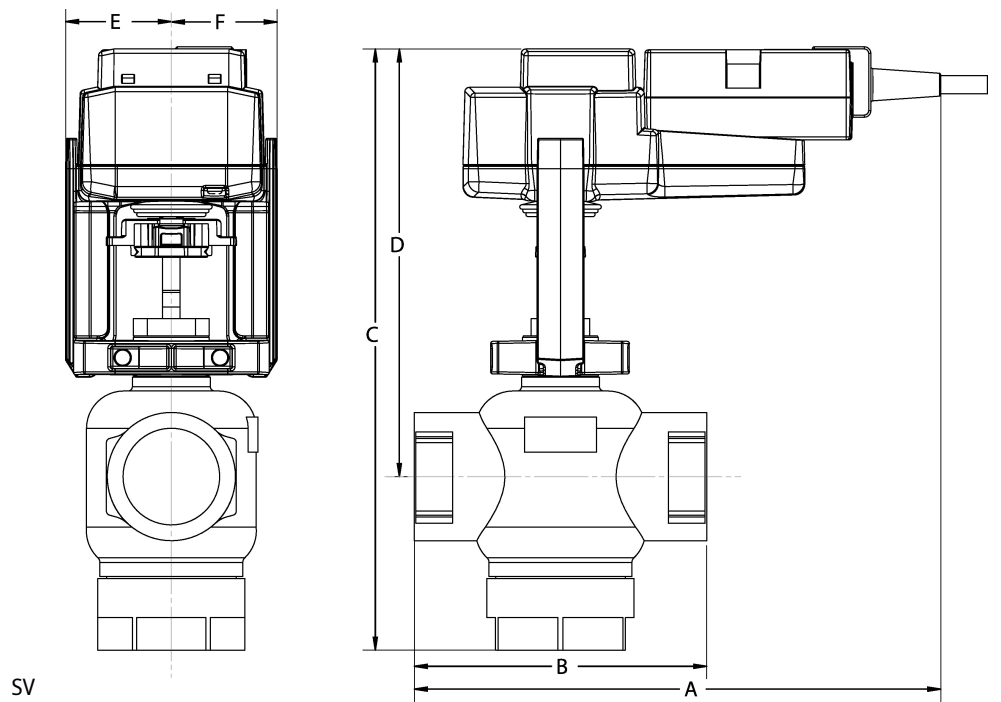
Dimensions

Type	DN	Weight
G340B-N	40	4.3 lb [1.9 kg]



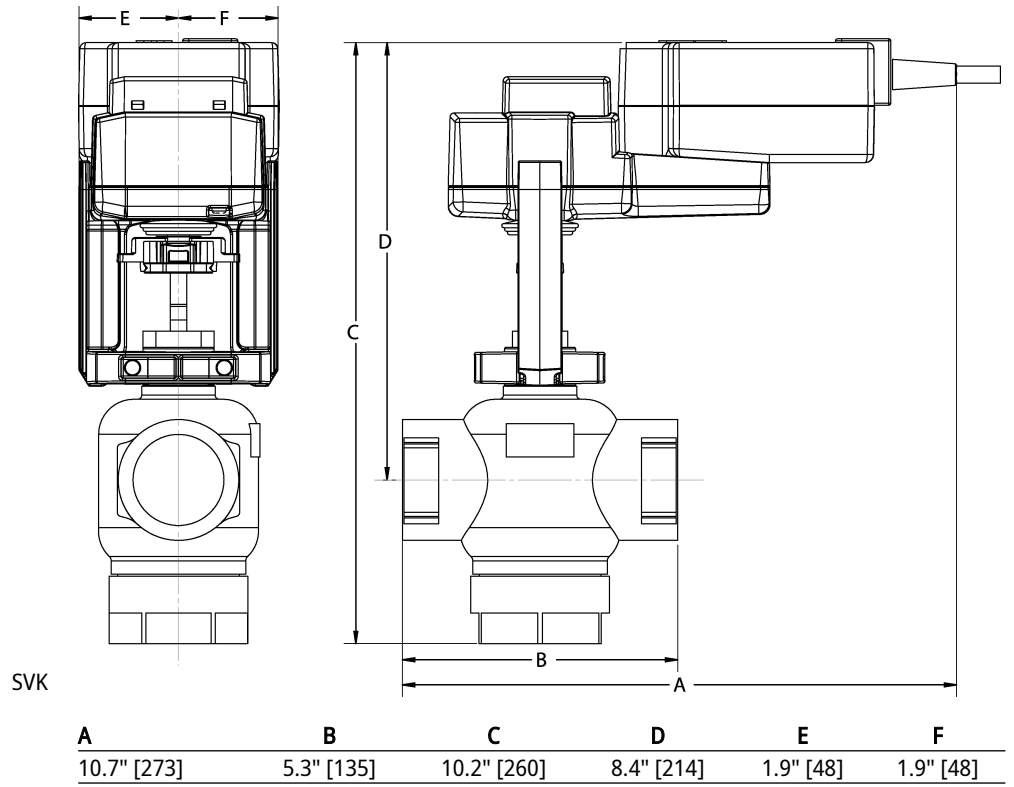
AF

A	B	C	D	E	F
10.5" [267]	5.3" [135]	13.5" [342]	10.4" [264]	1.5" [39]	4.9" [125]



SV

A	B	C	D	E	F
9.6" [244]	5.3" [135]	10.3" [262]	7.8" [198]	1.9" [48]	1.9" [48]





5-year warranty



Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	1.5 W
	Power consumption in rest position	2 W
	Transformer sizing	4 VA
	Electrical Connection	18 GA plenum cable, 1 m, with 1/2" NPT conduit connector, degree of protection NEMA 2 / IP54
	Overload Protection	electronic throughout full stroke
Electrical Protection	actuators are double insulated	
Functional data	Actuating force motor	1500 N [340 lbf]
	Operating range Y	2...10 V
	Operating range Y note	4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)
	Input impedance	100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA
	Position feedback U	2...10 V
	Position feedback U note	Max. 0.5 mA
	Direction of motion motor	selectable with switch
	Manual override	4 mm hex crank (shipped w/actuator)
	Stroke	0.75" [19 mm]
	Running Time (Motor)	90 s /
	Running time motor note	constant, independent of load
	Noise level, motor	45 dB(A)
	Position indication	Mechanical, with pointer
Safety data	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2
	Enclosure	UL Enclosure Type 2
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU
	Quality Standard	ISO 9001
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-22...122°F [-30...50°C]
	Storage temperature	-40...176°F [-40...80°C]
	Servicing	maintenance-free
Weight	Weight	[]
Materials	Housing material	Die cast aluminium and plastic casing

Footnotes † Use flexible metal conduit. Push the listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control pollution degree 3.

Electrical installation

INSTALLATION NOTES

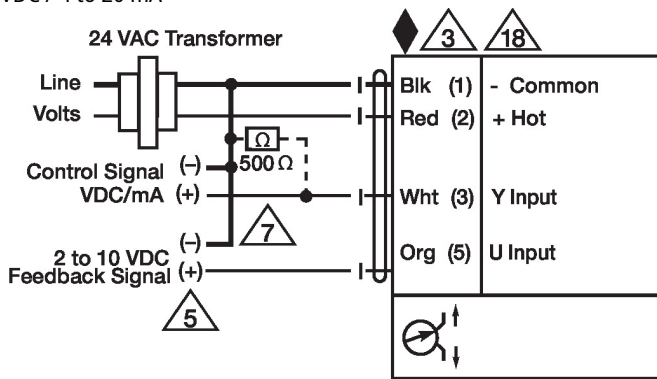
- Actuators may also be powered by DC 24 V.
- Only connect common to negative (-) leg of control circuits.
- A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
- Actuators with plenum cable do not have numbers; use color codes instead.
- Meets cULus requirements without the need of an electrical ground connection.

Warning! Live electrical components!

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

Wiring diagrams

VDC / 4 to 20 mA



**UPGRADE CHILLER UNITS AT WILLIAM
LEHMAN CENTER**

RPQ No. TP-0000017889

ADDENDUM NO.5

DAIKIN MODEL

**ATTACHMENTS
(For Informational Purposes Only)**

Job Information		Technical Data Sheet
Job Name	William Lehman Maintenance Facility	
Date	9/7/2023	
Submitted By	David Diaz	
Software Version	06.21	
Unit Tag	WLF-FCU-1	



Unit Overview				
Model Number	Voltage V/Hz/Phase	Airflow CFM	External Static Pressure inH ₂ O	Design Cooling Capacity Btu/hr
BCHD0301	460/60/3	3000	0.10	118316

Unit	
Model Number:	BCHD0301
Unit Arrangement:	Horizontal
Altitude:	0 ft

Physical				
Dimensions and Weight (wet)				
Length	Height	Width	Weight	
38 in	26.0 in	49.0 in	547 lb	
Construction				
Insulation and Liners:	1" Injected Foam, R-6, Galvanized Steel Liner			

Electrical			
Field Connection	MCA	MROPD	SCCR
Disconnect Switch	3.5	15	5 kA

Filter			
Filter Access	Filter Depth	MERV Rating	(Quantity) Height x Width x Depth
Side	2 in	MERV 8	(2) 25.38 x 21.88

Primary Hydronic Coil

Physical					
Fins per Inch	Rows	Casing Material	Face Area ft ²	Face Velocity ft/min	
16	4	Stainless Steel	6.0	497.1	
Connection					
Size		Type	Location		
1.38		F-SWT	Right Hand		
Drain Pan					
Material			Connection		
Stainless Steel			0.75 in		
Performance					
Capacity		Air Temperature			
Total Btu/hr	Sensible Btu/hr	Entering		Leaving	
		Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F
118316	83298	80.0	67.0	54.6	54.2
Fluid					
Type	Entering Temperature °F	Leaving Temperature °F	Flow Rate gpm	Pressure Drop ft H ₂ O	
Water	45.0	54.9	24.0	9.52	
Valve					
Type	Size in	Cv	Valve Water Pressure Drop ft H ₂ O		
3-Way	0.00	0.00	0.00		

Supply Fan

Performance							
Airflow	Total Static Pressure	Fan Speed	Controller Input Signal	Brake Horsepower	Total Input Power	Fan Energy Index	Altitude
3000	0.96 inH ₂ O	1225 rpm	6.8 VDC	1.38 HP	1.57 HP	0.894	0 ft
Motor							
Type	Horsepower	Motor Control				FLA	
FC Direct Drive NEMA Premium Efficiency Motor	2.0 Hp	0-10V Modulating				2.8 A	

Unit Discharge Conditions

Air Temperature			
Motor Heat Btu/hr	Unit Leaving Dry Bulb °F	Unit Leaving Wet Bulb °F	Unit Leaving Dewpoint °F
4287	55.9	54.7	53.8


Internal Pressure Drop Calculation

External Static Pressure:	0.10 inH ₂ O
Filter:	0.18 inH ₂ O
Chilled Water Coil:	0.67 inH ₂ O
Total Static Pressure:	0.96 inH ₂ O

Sound Power								
Sound Power (db)								
Frequency	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	86	83	74	71	75	69	68	56
Discharge	94	90	83	80	81	77	76	70
Radiated	75	71	61	56	61	59	46	36

Options	
Controls	
Overflow Switch:	Factory mounted Overflow Switch
Changeover/Pipe Sensor:	Factory mounted Changeover/Pipe Sensor

Warranty	
Parts:	Standard warranty

AHRI Certification	
	All equipment is rated and certified in accordance with AHRI 430.

Notes

Accessories	
Mandatory	
Part Number	Description
107201601	Changeover Water Temperature Sensor
910392744	Remote Space Integrated Thermostat
910403294	Portable User Interface + Ethernet Cable
Optional	
Part Number	Description
250803500	BACnet t-stat MIT-FA-005 (Low Voltage only)

**UPGRADE CHILLER UNITS AT WILLIAM
LEHMAN CENTER**

RPQ No. TP-0000017889

ADDENDUM NO.5

**ATTACHMENTS
(For Informational Purposes Only)**

For Commercial and Industrial Applications

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

G2 Series LFB6080-G2-SS, LFB6081-G2-SS 2-Piece, Full Port, Lead Free* Bronze Ball Valves with Stainless Steel Trim

Sizes: 1/4" – 4"

The G2-SS series ball valves are a 2-Piece, Full Port, Lead Free, Bronze valve with Stainless Steel trim. These products are ideal for potable water, commercial, and industrial applications. These valves feature a blowout proof stem, as well as a full-port design which ensures minimal pressure drop. The G2-SS series offers multiple models for solder and NPT end-connections with NSF-61G certification.

Features

- Lead Free*, forged bronze body and adapter
- Full-port flow
- Full range of sizes from 1/4" – 4"
- Certified to NSF/ANSI/CAN 61 & NSF/ANSI/CAN 372
- 316 Stainless steel ball and stem
- Minimal pressure drop due to large ports
- Blowout proof, pressure retaining stem
- Adjustable stem packing gland
- White handles for easy Lead Free* identification
- 100% Factory tested in USA

Models

LFB6080 G2-SS 1/4" – 4" 316 stainless steel ball and stem threaded NPT end connections

LFB6081 G2-SS 3/8" – 3" 316 stainless steel ball and stem solder end connections

Please refer to watts.com for BAA information on specific models.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.



Pressure – Temperature

Temperature Range:

0°F - 400°F (-18°C – 205°C) @ 50psi (3.4 bar)

Pressure Range:

1/4" – 2" 600psi (41 bar) WOG, non-shock;
150psi (10.3 bar) WSP

2 1/2" – 4 400psi (27.5 bar) WOG, non-shock;
125psi (8.6 bar) WSP

Specifications

A 2-piece full port Lead Free* bronze ball valve to be installed as indicated on the plans. Valves with top loaded stems or valves without adjustable packing are not acceptable. Pressure up to 600psi for 1/4" to 2" and 400psi for 2 1/2" to 4". The valve shall be constructed using Lead Free* bronze. Lead Free* ball valves shall comply with state codes and standards, where applicable, requiring reduced lead content. Valve must conform to NSF-61G and shall be a Watts Series LFB6080G2-SS (threaded) or LFB6081G2-SS (solder).

Standards

Tested and Certified by NSF International
NSF-61 Potable Water and NSF 372 low lead.
Complies with MSP-110



Applications

- Full range of fluids
- Hydronic Heating (90% glycol max)
- Low Pressure Steam, 15 psi max
- Not applicable for flammable gas installations
- Not compatible with soft annealed copper tubing

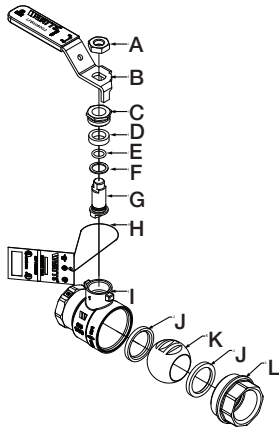
*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

NOTICE

For soldered versions, heat **MUST** be directed **AWAY** from the center of the valve body as excessive heat harm the seats. After soldering, the packing nut may have to be tightened.

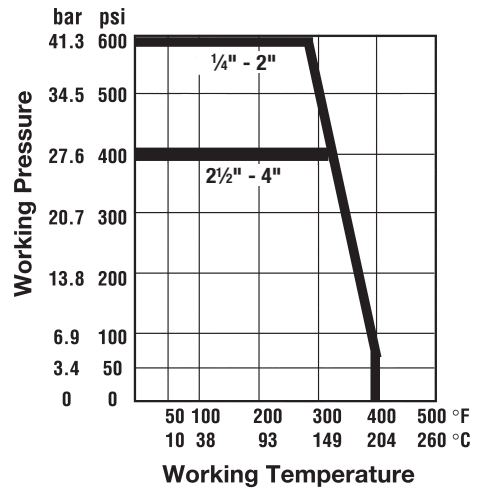
The Watts logo consists of a stylized blue 'W' followed by the word 'WATTS' in a bold, black, sans-serif font. A registered trademark symbol (®) is located to the upper right of the word 'WATTS'.

Materials

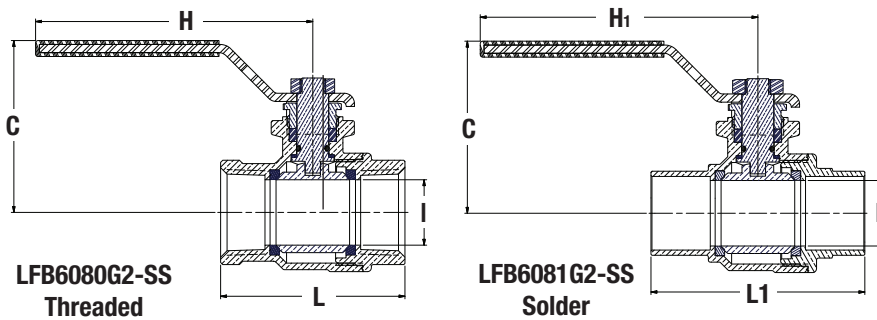


- A. Handle Nut Zinc-plated carbon steel
- B. Handle Assembly Zinc-plated carbon steel with vinyl insulator
- C. Packing Nut Brass
- D. Stem Packing Virgin PTFE
- E. O-ring Fluorocarbon elastomer (FKM)
- F. Thrust Washer Virgin PTFE
- G. Stem 316 Stainless Steel
- H. Tag Cardboard, Mylar coated both sides
- I. Body Forged Lead Free* bronze
- J. Seats Virgin PTFE
- K. Ball 316 Stainless Steel
- L. Adapter Forged Lead Free* bronze

Temperature – Pressure



Dimensions – Weights



SIZE	DIMENSIONS										WEIGHT			
	C			H, H1		I		L		L1		LFB6080G2		LFB6081G2
in	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg	lb	kg
1/4"	1 ¹³ / ₁₆	46	3 ⁷ / ₁₆	87	7 ¹ / ₁₆	11	1 ³ / ₄	47	-	-	0.4	0.2	-	-
3/8"	1 ¹³ / ₁₆	46	3 ⁷ / ₁₆	87	1/2	13	1 ⁷ / ₈	48.3	1 ¹⁵ / ₁₆	49	0.4	0.2	0.4	0.18
1/2"	1 ¹³ / ₁₆	46	3 ⁷ / ₁₆	87	1/2	13	2	57	2 ¹ / ₈	54	0.5	0.22	0.4	0.18
3/4"	2 ¹ / ₄	58	3 ⁹ / ₁₆	101	3/4	19	2 ¹ / ₄	58	3	76	0.9	0.41	0.8	0.36
1"	2 ⁵ / ₈	67	4 ¹ / ₄	108	1	26	3	77	3 ¹ / ₂	89	1.4	0.65	1.3	0.57
1 ¹ / ₄ "	2 ¹³ / ₁₆	72	4 ¹ / ₄	108	1 ¹ / ₄	32	3 ³ / ₈	86	3 ³ / ₈	98	2.1	0.94	1.8	0.82
1 ¹ / ₂ "	3 ³ / ₁₆	80	5 ⁵ / ₁₆	135	1 ¹ / ₂	38	3 ¹ / ₁₆	93	4 ⁵ / ₁₆	109	3.1	1.4	2.7	1.23
2"	3 ¹ / ₂	89	6	153	2	51	4 ¹ / ₄	108	5 ³ / ₈	136	4.9	2.25	4.4	2.02
2 ¹ / ₂ "	4 ¹ / ₁₆	104	7 ³ / ₈	187	2 ¹ / ₂	63.6	5 ⁹ / ₁₆	134	6 ¹ / ₄	158	9.0	4.1	8.2	3.7
3"	4 ¹ / ₂	114	7 ³ / ₄	197	3	76.3	6 ¹ / ₁₆	154	7 ³ / ₈	185	13.9	6.3	12.9	5.9
4"	5 ³ / ₈	136	9 ⁵ / ₈	245	7 ¹ / ₁₆	189	7 ¹ / ₁₆	189	-	-	27.7	12.6	-	-

Ordering Chart

	Valve				Locking Handle Kit			Stem Extension	
	Ordering Code	Description	Connection Type	EDP	Description	Size	EDP	Description	Size
LFB6080G2-SS	0450115	1/4 LFB6080G2-SS	Threaded	88005484	#1 LL-HK LFB6080/1 G2-SS	Fits 1/4" - 1/2"	0789542	SXI-HK-1A StemExtension	1/4"-1/2" 3C/3CM1/G2
	0450116	3/8 LFB6080G2-SS	Threaded	88005484	#1 LL-HK LFB6080/1 G2-SS	Fits 1/4" - 1/2"	0789542	SXI-HK-1A StemExtension	1/4"-1/2" 3C/3CM1/G2
	0450117	1/2 LFB6080G2-SS	Threaded	88005484	#1 LL-HK LFB6080/1 G2-SS	Fits 1/4" - 1/2"	0789542	SXI-HK-1A StemExtension	1/4"-1/2" 3C/3CM1/G2
	0450118	3/4 LFB6080G2-SS	Threaded	88005485	#2 LL-HK LFB6080/1 G2-SS	Fits 3/4"	0789550	SXI-HK-9A StemExtension	3/4" 3C/G2
	0450119	1 LFB6080G2-SS	Threaded	88005486	#3 LL-HK LFB6080/1 G2-SS	Fits 1" - 1 1/4"	0789551	SXI-HK-10A StemExtension	1" - 1 1/4" 3C/G2
	0450120	1 1/4 LFB6080G2-SS	Threaded	88005486	#3 LL-HK LFB6080/1 G2-SS	Fits 1" - 1 1/4"	0789551	SXI-HK-10A StemExtension	1" - 1 1/4" 3C/G2
	0450121	1 1/2 LFB6080G2-SS	Threaded	88005487	#4 LL-HK LFB6080/1 G2-SS	Fits 1 1/2"	0789552	SXI-HK-11A StemExtension	1 1/2" 3C/G2
	0450122	2 LFB6080G2-SS	Threaded	88005488	#5 LL-HK LFB6080/1 G2-SS	Fits 2"	0789546	SXI-HK-5A StemExtension	2" 3C/3CM1/G2
	0422015	2 1/2 LFB6080G2-SS	Threaded	88005490	#6 LL-HK LFB6080/1 G2-SS	Fits 2 1/2"	0789547	SXI-HK-6A StemExtension	2 1/2" 3C/3CM1/G2
	0422016	3 LFB6080G2-SS	Threaded	88005491	#7 LL-HK LFB6080/1 G2-SS	Fits 3"	0789548	SXI-HK-7A StemExtension	3" 3C/3CM1/G2
0422017	4 LFB6080G2-SS	Threaded	88005492	#8 LL-HK LFB6080/1 G2-SS	Fits 4"	0789549	SXI-HK-8A StemExtension	4" 3C/3CM1/G2	
LFB6081G2-SS	0450123	3/8 LFB6081G2-SS	Solder	88005484	#1 LL-HK LFB6080/1 G2-SS	Fits 1/4" - 1/2"	0789542	SXI-HK-1A StemExtension	1/4"-1/2" 3C/3CM1/G2
	0450124	1/2 LFB6081G2-SS	Solder	88005484	#1 LL-HK LFB6080/1 G2-SS	Fits 1/4" - 1/2"	0789542	SXI-HK-1A StemExtension	1/4"-1/2" 3C/3CM1/G2
	0450125	3/4 LFB6081G2-SS	Solder	88005485	#2 LL-HK LFB6080/1 G2-SS	Fits 3/4"	0789550	SXI-HK-9A StemExtension	3/4" 3C/G2
	0450126	1 LFB6081G2-SS	Solder	88005486	#3 LL-HK LFB6080/1 G2-SS	Fits 1" - 1 1/4"	0789551	SXI-HK-10A StemExtension	1" - 1 1/4" 3C/G2
	0450127	1 1/4 LFB6081G2-SS	Solder	88005486	#3 LL-HK LFB6080/1 G2-SS	Fits 1" - 1 1/4"	0789551	SXI-HK-10A StemExtension	1" - 1 1/4" 3C/G2
	0450128	1 1/2 LFB6081G2-SS	Solder	88005487	#4 LL-HK LFB6080/1 G2-SS	Fits 1 1/2"	0789552	SXI-HK-11A StemExtension	1 1/2" 3C/G2
	0450129	2 LFB6081G2-SS	Solder	88005488	#5 LL-HK LFB6080/1 G2-SS	Fits 2"	0789546	SXI-HK-5A StemExtension	2" 3C/3CM1/G2
	0422021	2 1/2 LFB6081G2-SS	Solder	88005490	#6 LL-HK LFB6080/1 G2-SS	Fits 2 1/2"	0789547	SXI-HK-6A StemExtension	2 1/2" 3C/3CM1/G2
	0422022	3 LFB6081G2-SS	Solder	88005491	#7 LL-HK LFB6080/1 G2-SS	Fits 3"	0789548	SXI-HK-7A StemExtension	3" 3C/3CM1/G2



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