Customer Drawings Product Selection

Emerson offers a wide selection of drawing products; to include 2D drawings, 3D models, CAD files and Dimensional Data for Piping (DDP) to support all customer engineering, inspection and maintenance needs. This bulletin provides information and insight to help you select the correct Fisher Customer Drawing product properly to address your specific needs.

Drawing Levels

Traditional flat sheet Drawings are organized by drawing levels and content increases with successive drawing levels. Based on your needs, drawing products have been organized into four levels of 2D base drawings with each successive level showing an expanded set of details. The most basic information is included in Outline Drawings that are created on demand by Emerson Sales Office using Fisher First 2 Quote to Order tool (FF2). Other drawing levels need to be selected and ordered using the FF2 ordering process. Refer to table 1 for detailed information.

Outline Drawings

Outline Drawings are an exterior view drawing of Fisher valve product or product assembly up to valve, actuator, positioner and regulator (if selected with positioner component). These drawings are dimensioned to show necessary installation and "envelope" information needed to complete piping design work in projects or for final customer drawings direct from FF2. Users have the ability to insert any special notes and/or assign drawing number/revision as may be required per customer specification. Refer to figure 8 and 9 for sample Outline Drawings.



Note: Each higher level of drawing includes features from the lower levels.

Drawing levels are different from processing levels and the two are not inter-related.





Table 1. Drawing Selection Matrix

Drawing Content	Outline	Level 2	Level 3	Level 4
Outline Dimensions	√	1	1	1
Positioner Orientation	√	1	1	1
Actuator Clearance Height	√	1	√	1
Assembly Weight +/-10%	√	1	√	√
Standard Title Block	√	1	1	1
Drawing Number & Rev.	•	1	√	√
Customer Special Notes	•	1	√	√
Accessories		1	√	√
Pneumatic Hookup Schematic		1	√	√
Volume Tanks (w/o accessories)		1	√	√
High Level Component BOM		1	1	√
Serial Number		1	1	√
Center of Gravity		•	√	√
Cross Section Valve Body Assembly			1	1
BOM & RSPL Valve Body Assembly			√	√
Cross Section Fisher Actuator				√
BOM & RSPL Fisher Actuator				√
Special Butt Weld End Prep		•	•	•
Nameplate / Warning Tags		•	•	•
Lubricant Call-Outs			•	•
Volume Tank Accessories / Rep Accessories		•	•	•
Dual Dimensions		•	•	•
Customer Title Block		•	•	•
Other Languages		•	•	•
Wiring Diagram (Customer Provided)		•	•	•
After-Shipment Drawing Requests		•	•	•
 ✓ = Standard Content in Base Drawing ● = Content Available as Option 				

LEVEL 2 Drawings

Level 2 Drawings are an exterior view drawing of Fisher valve, actuator, positioner and other accessories (as ordered). This drawing also includes pneumatic hook up schematic, volume tank (if vol. tank accessories need to be shown in the drawing, appropriate option needs to be selected) and a high level BOM (list of components ordered in the assembly). Drawings are pictorially unique to the customer's order. Drawing number, revision levels and serial numbers are assigned in the title block. Refer to figure 10, 11, and 12 for sample Level 2 Drawings.

LEVEL 3 Drawings

In addition to details included in base Level 2 Drawings, these drawings include a cross-sectional view of valve body, bonnet, packing and trim parts including a BOM showing Fisher part numbers, part names and material specification for parts shown along with recommended spares. This drawing may be used for product/part traceability. Refer to figure 13 and 14 for sample Level 3 Drawings.

LEVEL 4 Drawings

In addition to details included in base Level 3 Drawings, these drawings include a cross-sectional view of Fisher actuator, BOM showing Fisher part numbers, part names and material specification along with recommended spares. This drawing may be used for product/part traceability. Refer to figure 15 and 16 for sample Level 4 Drawings.

Orderable Option Definitions

Center of Gravity: The point at which the entire weight of a body may be considered as concentrated so that if supported at this point the body would remain in equilibrium in any position. Refer to figure 1.





Special Butt Weld End Preparation:

ASME B16.25 covers the preparation of butt welding ends of piping components to be joined into a piping system by welding. It includes requirements for welding bevels. Options can be selected for any valve with Butt weld end connection to show the end preparation details. See figure 2.

Figure 2. Butt Weld End Preparation



Nameplate / Warning Tags:

Name plates, warning and caution tags added to drawing content. See figure 3.

Figure 3. Nameplates and Warning Tags



Lubricant Call-Outs:

Details marking the area for lubrication, this helps the user in correct application of lubricants. See figure 4.

Figure 4. Lubricant Call-Outs



Volume Tank Accessories

Details of connection sizes, mounted accessories - like safety relief valves and gauges. Mounting leg configuration details. See figure 5.





Dual Dimensions:

Standard drawing requests require users to specify either Metric or English/Imperial (inches) units for dimension markings. If this option is selected, dimensions will be provided in both metric and inches.

Customer Title Block:

Customer required title block can be added in addition to title block. Customer responsible to provide a CAD file with their title block format to be include in the drawing.

Other Languages:

Default language used in our drawings is English. Choices of other languages are offered through price book options.

Wiring Diagram (Customer Provided):

CAD file must be provided for wiring diagrams that need to be shown in the drawing. You are responsible for content and accuracy of information of the supplied CAD file. See figure 6.

STEAM SEAL FEED VALVES 10MAW20CG101 WHT/ORN 10MAW20AA071-S02 WHT/BRN ♦ POT-SFMV SFYCS WHT/YE 0 ORN თ BRN 😡 оит NCO NCO YEL BLU/WHT NOO NOO 9 NCO NCO RED/WHIT 3 14 15 16 BLU M NOQ NOQ 2 RED 0 12 = o, SYMBOL CONTACT OPEN CLOSE C-NC SFVCS C-NO Х

Figure 6. Customer Provided Wiring Diagram

Customer Drawings D104179X012

After Shipment Drawing Requests:

In case drawings need to be requested for hardware that has already shipped from factory, our after-shipment process may be used to request such drawings, contact your <u>Emerson sales office</u> or Local Business Partner for more details.

Drawing Formats:

Drawing Formats	Outline	Level 2	Level 3	Level 4
PDF (Electronic)	>	>	>	*
Paper Copies		>	>	*
2D CAD (.DWG or .DXF)	>	>	>	<
DDP (Standard)	>			
DDP (Special)	>			
3D CAD (.STP or other formats)	>			

Note

For most standard constructions, FF2 users will be able to self-serve Outline Drawings in PDF, 2D CAD or Standard DDP formats on demand. Non-standard constructions and other formats will have to be requested from a Fisher product factory.

Default and most popular format for all of our drawings is .PDF. Due to Adobe and other companies offering free PDF reader programs and the format's utility in preserving the graphic appearance in online and print versions, this format is widely used and acceptable to our customers. Our PDF drawings are searchable, allowing users to search for and locate any keyword in their drawing documents.

Paper Copies: You still have the option of ordering paper copies of Level drawings through Emerson if required.

2D CAD (.DWG or .DXF): For customers who may want to open and import our 2D drawings in their CAD software, they can order Level drawings in widely used .DWG or .DXF format. Refer to figure 17 for sample 2D CAD drawing.

DDP (Standard): In projects, many of our customers may be using a design solution like SmartPlant®

Instrumentation (or SPI). They may use a standard DDP (Dimensional Data for Piping) data file out of FF2 in .csv format. This output file also contains the control valve spec sheet data (as per SPI Form 90). Intergraph SPI/SPF/ S3D are pre-set up to easily import this standard DDP data and display 3D control valve shapes. Refer to figure 18 for sample DDP data file.

DDP (Special): It is possible for customers to be following different conventions for DDP depending on the particular design solution adopted by them. In this case, an Excel or a .csv data file and reference drawing(s) will be provided by the customer. The reference drawing defines each dimension variable. Fisher will manually populate the data file and return to customer.

3D Models: 3D envelope models may be requested for various Fisher components and assemblies to assist customers doing CAD work in 3D environment. Default output will be in .STP format but other formats may be supported on request. Refer to figure 7.

Figure 7. Sample 3D Model



Figure 8. OUTLINE Drawing - Sliding-Stem



Figure 9. OUTLINE Drawing - Rotary



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Figure 10. LEVEL 2 Drawing - Sliding-Stem (with Single-Acting Actuator)





Figure 11. LEVEL 2 Drawing - Sliding-Stem (with Double-Acting Actuator and Volume Tank)



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Figure 12. LEVEL 2 Drawing - Rotary (with Single-Acting Actuator)



Figure 13. LEVEL 3 Drawing - Rotary (Sheets 1 and 2)





Figure 14. LEVEL 3 Drawing - Rotary (Sheet 3)

1 1 47667865882 Valve Boby MPS 6 CL300 FF V3009 V/0 TAP CCBM T MS206114 3 1 121066753332 SEAL PROTECTOR RING MPS 6 CL150-600,TGL,000 F-F CF3M, FMS208114 4 1 12086753082 SEAL PROTECTOR RING MPS 6 CL150-600,TGL,000 F-F CF3M, FMS208114 4 1 12086753032 DRIVE SHAFT 6 V150,V200,V300 S20910 FMS20821 4 6 137825073022 DRIVE SHAFT 6 V150,V200,V300 S20910 FMS20821 4 7 1186.61380012 SHAFT,FOLLOWER 6 S20910 FMS20821 4 10 2 727136X012 BEARING LING.COMPOSTE 6 S20910 FMS20821 4 11 1166733312 SHAFT,FOLLOWER 6 S20910 FMS20821 4 10 2 727136X012 BEARING LING.COMPOSTE FG1 T/35,LE=1.24 BBM CLASS 2 5 11 10 2 12.62852X.022 STGL, COMTINUOUS TIMEAD 3/6=16.020 S16-A FMS 20864 19 2 12.628533522 STGL, CANTRE 50CHET <	RSP	FIND NO.	QTY.	PART NUMBER	PART NAME	DESCRIPTION	MATERIAL			
• 2 1 CETIO73X312 VETE PALL CAM CONTOUR 6 RH/LILH MIC VIS0g/2008,0300B CCBM/CR PLATE • 4 1 128057X022 SCAL PROTECTOR RING NMPS 6.L150-600,TCM.3.00 F-F C73M, FAS2080114 • 4 1 128053X012 KKY, TAPER, W/HEAD 1.26 DEC X 1.86 R30006,FNS 31A1 • 6 1.3782507X022 DRIVE SHART /6 VIS0/2000 S31600 • 7 1 ISA6138X012 PNR, GROVE, TYPE 24 5/16X2.00 S31600 • 10 2 2787135X012 SKAT, FOLLOWER 6 VIS0/2000 PTEC/PEEK /MOS2 • 11 1 SA5419X112 SEAL, PROTECHORE 5/16X2.00 SA547002 • 11 1 15.8643X012 PACKING, SET 11X 3/6 • 17 126649X122 PACKING, SET 11X 3/6 SA164-7.4VIS02064 20 2 1A3755X012 <t< th=""><th></th><th>1</th><th>1</th><th>47B6786X862</th><th>VALVE BODY</th><th>NPS 6 CL300 RF V300B W/O TAP</th><th>CG8M FMS20B114</th></t<>		1	1	47B6786X862	VALVE BODY	NPS 6 CL300 RF V300B W/O TAP	CG8M FMS20B114			
3 1 21006750382 SEAL PROTECTOR RING NPS 6,CL150-600,TCM 9.00 F-F CFM, FMS208114 • 4 1 1296531X012 DRVK SHAFT 6 V150/220,V300 S20061 FMS20821 • 6 1 3782557X022 DRVK SHAFT 6 V150/220,V300 S20061 FMS20821 • 7 1 164.6138X012 SHAFT,FOLLOWER 6 S20061 FMS20821 • 9 1 110073X012 SHAFT,FOLLOWER 6 S20061 FMS20821 • 10 2 2797135X012 SEARING LINEQ,COMPOSITE 6,11 N. SHAFT,VLINE (8 SERIES) PTE/PECK • 11 13.06641X32 SCAL, BALL 6 V150/V200/V300 CRAFGIL,GTB • 16 1 12.08851X012 SCAKIT 6.1 N. SHAFT SCARET SCARET • 16 1 12.08407X012 PACKING FOLLOWER 1N SHAFT SCARET SCARET SCARET SCARET SCARET SCARET SCARET SCARET SCARET SCARE	*	2	1	GE11073X312	VEE-BALL,CAM CONTOUR	6 RH/LH MTG V150B,V200B,V300B	CG8M/CR PLATE			
• 4 1 1289531012 KEYT, TAPER, W/HEAD 1.26 DEC X 1.86 B30006, FMS 31A1 • 6 1 329210 S20010 S20010 S20010 S31600 • 7 1 18.61 38x012 PIN, GROOVE, TYPE 24 5/1582.00 S31600 • 9 1 180733X012 SHAFT, FLOLOWER 6 S20910 FMS20821 • 10 2 27871358X012 SEALT 6 VISO/V300 PTE/PEEK/MOS2 • 11 113.8219X112 SEALT 6 VISO/V300 PTE/PEEK/MOS2 • 15 1 1160681X032 GASKIT 6.7888.34X.01 GRAFOL, GTB • 16 1 12.8883X022 PACKING, SET 1 XI 3/8 1 • 17 1 26.46077X012 PACKING, SET 1 XI 3/8 1.75LE=1.24 BBM CLASS 2 2 20 2 1A385X022 SCREW, CAPLEX SOCKT 3/8-16X.02.0 SAGEF SAGEF 21		3	1	21B0678X982	SEAL PROTECTOR RING	NPS 6,CL150-600,TCM,9.00 F-F	CF3M, FMS20B114			
• 6 1 3782507X022 DRVK SHAFT 6 V150,V200,V300 S20010 FMS20821 • 7 1 1646138X012 SHAFT,FOLLOWER 6 S20010 FMS20821 • 9 1 1100733X012 SHAFT,FOLLOWER 6 S20010 FMS20821 • 10 2 2797158X012 SEARING LINEQ,COMPOSITE 6,11 N. SHAFT,VLINE (B SERES) PTE/PECK • 11 13A2619X112 SEAL, BALL 6 V150/V200/V300 CRAFGILG/GTB • 16 112A8832X022 PACKING, SET 11X 3/6 • 16 12A8832X022 STOU, CONTINUOUS THREAD 3/6-16X 1516-A S31600 • 19 2 12A8835X022 STOU, CONTINUOUS THREAD 3/6-16X S31600 S31600 • 19 12A8835X022 STOU, CONTINUOUS THREAD 3/6-14X S3160-A SST 21 2 1336412X012 SCREW, CAP,HEX HD 1/2-13X2.00 SACRE5/NCF3 24 1A3568X0382 <td>*</td> <td>4</td> <td>1</td> <td>12B9531X012</td> <td>KEY, TAPER, W/HEAD</td> <td>1.26 DEG X 1.86</td> <td>R30006,FMS 31A1</td>	*	4	1	12B9531X012	KEY, TAPER, W/HEAD	1.26 DEG X 1.86	R30006,FMS 31A1			
• 7 1 1846138012 PH.ORDOVE,TYPE 24 5/18X2.00 S31600 • 9 1 1103733012 BHART,KOLOWER 6 S20910 FMS20821 • 10 2 27871358012 BEARING LINED,COMPOSITE 6,1 IN. SHART,VULE S20910 FMS20821 • 11 1 132619X112 SEAL 6 VISO/V200/V300 PFFE/PEEK/M0S2 • 16 1 1136832X022 PACKING,STT 111 3/6	*	6	1	37B2507X022	DRIVE SHAFT	6 V150,V200,V300	S20910 FMS20B21			
• 9 1 1180733X012 SHAT,FOLLOWER 6 S20910 FMS20912 • 10 2 277135X012 BEARING LINEQ.COMPOSITE 6,1 IN. SHAFT,VLINE (8 SERIES) PTFE/PEEK • 11 1 132618X112 SEAL, BALL 6, V150/V200/V300 PTFE/PEEK • 15 1 1106881X032 GASKET 6.28X8.34X.01 CRAFOL_GTB • 16 1 12A883X022 PACKING FOLLOWER 1N SHAFT 316-A FMS 20864 • 19 2 12A885X022 STUD, CONTINUOUS THREAD 3/8-16X 1.75,LE=1.24 86M CLASS 2 • 20 2 1375535252 NUTHEX 5/8-16 SS160 SS160 • 21 2 1368412X012 SCREW, CAP,HEX MO 3/8,44X10X06 SS1 S160 • 22 2 1A3756012 WASHER,PLAIN 3/8,44X10X06 SS1 S160 • 23 4 1A3516X0012 SCREW, CAP,HEX MO 1/2-13X2.00 SAE0R5/NCF3 </td <td>*</td> <td>7</td> <td>1</td> <td>18A6138X012</td> <td>PIN, GROOVE, TYPE 24</td> <td>5/16X2.00</td> <td>S31600</td>	*	7	1	18A6138X012	PIN, GROOVE, TYPE 24	5/16X2.00	S31600			
• 10 2 2787135X012 BEARING LINED.COMPOSITE 6,1 IN. SHAT/LVINE (@ SERIES) PTE//PECK • 11 1 13A2619X112 SEAL, BALL 6 V 150/V200/V300 PTE//PECK/MOS2 • 16 1 1130681X032 GASKET 6.28X8.34X.01 GRAFOIL_OTB • 16 1 12A8833X022 PACKING, SET 11X 3/8 • 16 1 12A8833X022 PACKING, SET 11X S/8 • 19 2 12A8835X022 STUD, CONTINUOUS THREAD 3/8-16 S31600 S31600 • 20 2 143753X5522 NUT, HCX 3/8-16 S31600 S31600 • 22 2 143755X0012 WASHEP, PLAN 3/8-14X1.00X.00 SAECR5/NCF3 • 23 4 143516X0062 WASHEP, PLAN 1/2-13 SAECR5/NCF3 • 24 4 143516X0062 NAKEPLAR LQE (LV300 IB-8 SST • 25 1	*	9	1	11B0733X012	SHAFT, FOLLOWER	6	S20910 FMS20B21			
• 11 1 13A2619X112 SELL BALL 6 V150/V200/V300 PTE/PEK/MOS2 • 15 1 1106681x032 GASKET 6.28X8.34X.01 GRANCLGTB • 16 1 12A8832X022 PACKING,SET 1X1<3/8	*	10	2	27B7136X012	BEARING LINED, COMPOSITE	6,1 IN. SHAFT,VLINE (B SERIES)	PTFE/PEEK			
• 15 1 1100681x032 CASKET 6.28X8.34X.01 CRAFOIL_CTB • 16 1 1248832x022 PACKING_SET 11 N SHAFT 316-A FWS 20864 • 16 1 1248832x022 STUD, CONTINUOUS 1 IN SHAFT 316-A FWS 20864 • 20 2 1437535522 NUT, HEX 3/8-16K 1.75, LE - 124 BM CLASS 2 • 21 2 1437535522 NUT, HEX 3/8-16K 531600 ST • 22 1.13756K0012 WASHR, PLAIN 3/8-16K 0.52 BUTTON HEAD SST • 23 4 1.43516K0062 SCREW, CAP, HEX HOD 1/2-13X2.00 SAECR5/NCF3 • 24 4 1.435612K0062 SCREW, ORIVE 2.23/16 18-8 SST • 24 4 1.4568228082 SCREW, ORIVE 2.23/16 18-8 SST • 30 1 1286402002 SEL MAREPLATE ENGL VI	*	11	1	13A2619X112	SEAL, BALL	6 V150/V200/V300	PTFE/PEEK/MOS2			
• 16 1 12A832X022 PACKING,SET 1X1 3/8 17 1 2646077X012 PACKING,SET 1X1 3/8 316-A FWS 20864 20 2 14375335252 NUT,HEX 3/8-16X 1.75,LE=1.24 B8M CLASS 2 21 2 1368412X012 SCREW,CAP,HEX S/8-16K 1.75,LE=1.24 B8M CLASS 2 21 2 1368412X012 SCREW,CAP,HEX S/8-16K 0.62 BUTTON HEAD SST 22 2 143758X0012 WASHER,PLAIN 3/8-16X 0.78 SST 23 4 1A3516X0062 SCREW, CAP,HEX ND 1/2-13X 0.00 SAECH5/NCF3 24 4 1A3772X0892 NUT,HEX,HEAY 1/2-13 SA194-2H/NCF2 Δ 26 1 1882294X012 TAG LABEL, V300 18-8 SST Δ 26 1 1386294X012 NAUFENTY EVACUAR EVACUAR Δ 31 1 1088294X012 SACHE, NORE EVACUAR STE MUTENTY 1/2-13 Δ 31 1 10884799012	*	15	1	11B0681X032	GASKET	6.28X8.34X.01	GRAFOIL,GTB			
17 1 26&6077X012 PACKING FOLLOWER 1 IN SHAFT 316-A F MS 20864 19 2 12&8835X022 STUD, CONTINUOUS THEAD 376-16K 1.75,LE=1.24 BBM CLASS 2 20 2 1.437535252 NUT,HEX 376-16K 1.75,LE=1.24 BBM CLASS 2 21 2 1.3358412X012 SCREW, CAP,HEX SOCKET 376-16K SS1600 223 2 1.437535252 NUT,HEX 376,44X1.00X.08 SS1 233 4 1.435615X0062 SCREW, CAP,HEX HD 1/2-13X2.000 SAEGR5/NCF3 24 4 1.43772X0892 NUT,HEX,HEAVY 1/2-13 SAI94-2H/NCF2 Δ 27 4 1.4366228922 SCREW, DRIVE ZAX/16 18-8 SST Δ 27 4 1.4366228922 SCREW, DRIVE ZAX/16 18-8 SST Δ 30 1 1286400X0A2 NAMEPLATE ENGLISH, FISHER SITE MUST PICK RCD PART NO. Δ 31 1 10884799012 SALA WIRE 1 Z LONG LEAD * 39 1 16&6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864	*	16	1	12A8832X022	PACKING,SET	1X1 3/8				
19 2 12A8835X022 STUD, CONTINUOUS THREAD 3/8-16 S31600 21 2 1A37535252 NUT,HEX S/8-16 S31600 21 2 1A37535252 SCREW, CAP,HEX SOCKET S/8-160.62 SST 22 2 1A375352012 WASHEP,PLAIN S/8-160.62 SST 23 4 1A3616X0062 SCREW, CAP,HEX SOCKET S/8-160.02 SAECR5/NCF3 24 4 1A3752X0892 NUT,HEX Y/2-13 SA194-2H/NCF2 Δ 26 1 1882249K012 TAG LABEL, V300 18-8 SST Δ 26 1 1482249K012 TAG LABEL, V300 18-8 SST Δ 30 1 1286402N0A2 NAMEPLATE ENGLISH, FISHER SITE MUST PICK REO PART NO. Δ 31 1 10884799012 SEAL & WIRE 12 LONG LEAD • 39 1 1646085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864		17	1	26A6077X012	PACKING FOLLOWER	1 IN SHAFT	316-A FMS 20864			
20 2 14.375.35252 NUT, HEX 3/8-16 S31600 21 2 1.388412X012 SCREW, CAP, HEX SOCKET 3/8-16X0.62 SST SST 22 2 1.335632012 WASHER, PLAIN 3/8, 44X1.00X.08 SST 23 4 1.36163X0062 SCREW, CAP, HEX HD 1/2-13X2.00 SAECR5/NCF3 24 4 1.3772X0892 NUT, HEX, HEAVY 1/2-13 SA194-2H, /NCF2 A 26 1 188239282 SCREW, DRIVE 2X3/16 18-8 SST A 27 4 1.4358228982 SCREW, DRIVE 2X3/16 18-8 SST A 30 1 1286400X0A2 NAMEPLATE ENGLISH, FISHER SITE WUST PICK REQD PART NO. A 30 1 1286400X0A2 NAMEPLATE ENGLISH, FISHER SITE WUST PICK REQD PART NO. C 31 1 10884799012 SEL & WIRE 12 LONG LEAD • 39 1 166065X012 PACKING BOX RING <td< td=""><td></td><td>19</td><td>2</td><td>12A8835X022</td><td>STUD, CONTINUOUS THREAD</td><td>3/8-16X 1.75,LE=1.24</td><td>B8M CLASS 2</td></td<>		19	2	12A8835X022	STUD, CONTINUOUS THREAD	3/8-16X 1.75,LE=1.24	B8M CLASS 2			
21 2 1 338412X012 SCREW.CAP,HEX SOCKET 3/8-14X1.050.62 BUTTON HEAD SST 22 2 1 A3756X0012 WASHER,PLAIN 3/8.14X1.00X.08 SST 23 4 1A3757X0082 SCREW.CAP,HEX HD 1/2-13X2.00 SAE0R5/MCF3 24 4 1A377ZX0892 NUT,HEX,HEAVY 1/2-13 SA194-2H/NCF2 Δ 26 1 1882294X012 TAG LABEL, V300 18-8 SST Δ 27 4 138220802 SCREW.OR DIVE 2X3/16 18-8 SST Δ 30 1 1286407X02. NAMEPLATE ENGLISH, FISHER SITE MUST PICK REOD PART NO. Δ 31 1 10884799012 SEAL & WIRE 12 LONG LEAD * 39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 * 39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 CUST REF NO.: XXX -XXXXX TAG NO.: PO NUMBER V300 VALVE BODY SIZE 6 2052 ACTUATOR SIZE 2 CUST ITEM: 000001 S.NO.: FO009064 SCALE: NONE S		20	2	1A375335252	NUT,HEX	3/8-16	S31600			
22 2 1A3756X0012 WASHER,PLAIN 3/9,.4X1.00X.08 SST 23 4 1A3516X0062 SCREW,CAP,HE HD 1/2-13X2.00 SAC0R5/NCF3 24 4 1A3516X0062 SCREW,CAP,HE HD 1/2-13X2.00 SAC0R5/NCF2 A 26 1 1882294X012 TAG LABEL, V300 18-8 SST A 27 4 1A3568X0082 SCREW, ORIVE 2X3/16 18-8 SST A 30 1 128640X0A2 NAMEPLATE ENGLISH, FISHER SITE MUST PICK REOD PART NO. A 31 1 10884799012 SEAL & WIRE 12 LONG LEAD * 39 1 1646085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 * 39 1 1646085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 CUST: CUST NAME CUST ICUST NAME V300 VALVE BODY SIZE 6 2052 ACTUATOR SIZE 2 CUST ITEM: 000001 S.NO.: FO009002 SANO.: F0009001 S.NO.: F0009002 RICATE AS PER INSTRUCTION MANUAL EXT EXX - XXXXXX SCALE: NONE SCALE: NONE <td></td> <td>21</td> <td>2</td> <td>13B8412X012</td> <td>SCREW, CAP, HEX SOCKET</td> <td>3/8-16X0.62 BUTTON HEAD</td> <td>SST</td>		21	2	13B8412X012	SCREW, CAP, HEX SOCKET	3/8-16X0.62 BUTTON HEAD	SST			
23 4 IA3616X0062 SCREW,CAP,HEX H0 1/2-13 SAEGR5/NCF3 A 26 1 I882294X012 TAG LABEL, V300 I8-8 SST A 26 1 1882294X012 TAG LABEL, V300 I8-8 SST A 27 4 IA368228982 SCREW, DRIVE 2X3/16 I8-8 SST A 30 1 1286400X02 NAMEPLATE ENGLISH, FISHER SIE MUST PICK REOD PART NO. A 31 1 10884799012 SEAL & WIRE 12 LONG LEAD • 39 1 1666085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FM520864 • 39 1 1666085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FM520864		22	2	1A3756X0012	WASHER, PLAIN	3/8,.44X1.00X.08	SST			
24 4 IA372X0892 NUT,HEX,HEAYY 1/2-13 SA194-2H/NCF2 △ 26 1 IB82294012 TAG LABEL, V300 18-8 SST △ 27 4 IA368228982 SCREW, DRIVE 2X3/16 18-8 SST △ 30 1 1286400X0A2 NAMEPLATE ENGLISH, FISHER SITE MUST PICK REQD PART NO. △ 31 1 ID884799012 SEAL & WIRE 12 LORG LEAD • 39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864		23	4	1A3616X0062	SCREW,CAP,HEX HD	1/2-13X2.00	SAEGR5/NCF3			
∆ 26 1 1882294X012 TAG LABE, V300 18-8 SST ∆ 37 4 1A586228982 SCREW, DRIVE 2X3/16 18-8 SST ∆ 30 1 1286400X0A2 NAMEPLATE ENGLISH, FISHER SITE MUST PICK REQD PART NO. ∆ 31 1 ID884799012 SEAL & WIRE 12 LONG LEAD ▲ 39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 ▲ 39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864		24	4	1A3772X0892	NUT,HEX,HEAVY	1/2-13	SA194-2H/NCF2			
Δ 27 4 14368228982 SCREW, DRIVE 2X3/16 18-8 SST Δ 30 1 1286400X0A2 NAMEPLATE ENGLISH, FISHER SITE MUST PICK REQD PART NO. Δ 31 1 10884799012 SEAL & WIRE 112 LONG LEAD • 39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 • 39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 • 39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 • 0IMENSIONS CERTIFIED CORRECT BY FISHER CONTROLS FISHER © Fisher Centrols Init. LLC 2015 CUST: CUST NAME CUST: CUST NAME CUST REF NO.: PO NUMBER V300 VALVE BODY SIZE 6 CUST REF NO.: PO NUMBER FISHER REF NO.: XXX -XXXXXX TAG NO.: 2-HW-110 PROJECT NAME: PROJECT NAME: CUST ITEM: 000001 S.NO.: F000902 RICATE AS PER INSTRUCTION MANUAL ERV DATE ONLING APPD. SCALE: NONE	Δ	26	1	18B2294X012	TAG	LABEL, V300	18-8 SST			
A 30 1 1286400X0A2 NAMEPLATE ENCLATE ENCLATE SITE MUST PICK REOD PART NO. A 31 1 10884790012 SEAL & WIRE 12 LONG LEAD * 39 1 1666085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 * 39 1 1666085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 * 39 1 166085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 * CUST CUST CUST CUST NAME CUST CUST NAME V300 VALVE BODY SIZE 6 CUST REF NO.: 20 NUMBER FISHER REF NO.: 20 NUMBER V300 VALVE BODY SIZE 6 2052 ACTUATOR SIZE 2 FISHER REF NO.: 2-HW-110 PROJECT NAME: CUST ITEM: 000001 S.NO.: F0009002 RICATE AS PER INSTRUCTION MANUAL EXT DIME SCALE: NONE	Δ	27	4	1A368228982	SCREW, DRIVE	2X3/16	18-8 SST			
A 31 1 ID884799012 SEAL & WIRE 12 LONG LEAD * 39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 * 39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 * 39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864 * 01MENSIONS CERTIFIED CORRECT BY FISHER CONTROLS Fisher Centrols Int. LLC 2015 CUST: CUST NAME CUST: CUST NAME V300 VALVE BODY SIZE 6 CUST REF NO.: YO NUMBER FISHER REF NO.: XXX -XXXXXX V300 VALVE BODY SIZE 6 CUST ITEM: 000001 S.NO.: F00090E CUST ITEM: 000001 S.NO.: F00090E	Δ	30	1	12B6400X0A2	NAMEPLATE	ENGLISH, FISHER	SITE MUST PICK REQD PART NO.			
39 1 16A6085X012 PACKING BOX RING 1 SHAFT X 1 3/8 316-A FMS20864	Δ	31	1	1D884799012	SEAL & WIRE	12 LONG	LEAD			
DIMENSIONS CERTIFIED CORRECT BY FISHER CONTROLS FISHER: © Fisher Controls Init. LLC 2015 CUST: CUST NAME CUST: REF NO.: XXX - XXXXXXX TAG NO.: 2-HW-110 PROJECT NAME: V300 VALVE BODY SIZE 6 2052 ACTUATOR SIZE 2 CUST: TEM: 000001 S.NO.: F000900 SCATE AS PER INSTRUCTION MANUAL REV DATE		55		16A6085X012	PACKING BOX RING	1 SHAFT X 1 3/8	316-A FMS20864			
CUST: CUST NAME CUST REF NO.: PO NUMBER FISHER REF NO.: XXX - XXXXXXX TAG NO.: 2-HW-110 PROJECT NAME: V300 VALVE BODY SIZE 6 2052 ACTUATOR SIZE 2 CUST ITEM: 000001 S.NO.: F000900 RICATE AS PER INSTRUCTION MANUAL REV DATE CUST ITEM: 000001 S.NO.: F000900				1646085x012	PACKING BUX KING	1 SHAFT X 1 3/8	316-A FMS20B64			
RICATE AS PER INSTRUCTION MANUAL REV DATE DWK. [24K0, APY0.] S.R.O.: F000902 RICATE AS PER INSTRUCTION MANUAL REV DATE DWK. [24K0, APY0.] SCALE: NONE			I	16A6085X012	DIMENSIONS CE	I SHAFT X 1 3/8	316-A FMS20864 NTROLS FISHER: © Fisher Controls Intil, LLC 2015			
RICATE AS PER INSTRUCTION MANUAL				1646085X012	DIMENSIONS CE CUST: CUST N. CUST REF NO. FISHER REF NO. TAG NO.: 2-HT PROJECT NAME	IT SHAFT X 1 3/8 ERTIFIED CORRECT BY FISHER COM AME PO NUMBER XXXX -XXXXXX V-110 :	316-A FMS20864 NTROLS FISHER: © Fisher Controls Intl. LLC 2015 V300 VALVE BODY SIZE 6 2052 ACTUATOR SIZE 2			
X 10-M07-10 AD3				1646085X012	DIMENSIONS CE CUST: CUST N CUST REF NO. FISHER REF NO TAG NO.: 2-H PROJECT NAME	II SHAFT X 1 3/8 THIFIED CORRECT BY FISHER COM AME PO NUMBER .: XXX - XXXXXX V-110 :	316-A FMS20864 NTROLS FISHER: © Fisher Controls Intl. LLC 2015 V300 VALVE BODY SIZE 6 2052 ACTUATOR SIZE 2 CUST ITEM: 000001 S.NO.: F00090822			
		E AS PER I JENDED SP MITS	NSTRU ARE P	ITEABUSSX012	DIMENSIONS CE CUST: CUST N CUST REF NO. FISHER REF NO. TAG NO. 2 -HT PROJECT NAME	II SHAFT X 1 3/8 ERTIFIED CORRECT BY FISHER COM AME PO NUMBER 2: XXX - XXXXX V=110 : REV DATE X 10-Wor-11 -	316-A FMS20864 NTROLS Filsher © Fisher Controls Intl. LLC 2015 V300 VALVE BODY SIZE 6 2052 ACTUATOR SIZE 2 CUST ITEM: 000001 S.NO.: F0009082 SCALE: NONE SCALE: NONE PUR. NO. EMERSION			

Figure 15. LEVEL 4 Drawing - Sliding-Stem (Sheets 1 and 2)



Figure 16. LEVEL 4 Drawing - Sliding-Stem (Sheets 3 and 4)



							FEATURES PICTORIALLY TYPICAL		n	DIENT	ATTON MAY	DIFFFP			
Г							PENTORES FIGTORIALET TIFICAL		0	ALC:NI	MITON NMI	DIFFER			
l r	-	_							—	_		I			
	RSP 7	IND VO.	QTY.	PART NUMBER	PART NAME	DESCRIPTION	MATERIAL	RSP		50 QTY.	PART	PART NAME	DESCRIPTION	MATERIAL	
H	-	A1	1	4004252X012	CYLINDER	8/25 60.4 TVL1/4 TOP.1/4 BOT	403560/304/349	H	- 01		32405580042	VALVE BODY	1206300 885	SA2170RADEWC9	
11	-	A2	14	1A771132982	SCREW.CAP.HEX SOCKET	1/2-13x1.25	A574/12.9/NCF1	l.	0:	2 1	2186184X012	PLUGBAL	7 ORF.1L7500	541600 FCS288	
11	-	A3	1	2H865807062	PISTON	SIZE 46.60	A03560/3C4/3A9	÷	0.	3 1	23A7191X012	CAGE, WHISPER 1	12x6.7 ORF.4 TVL	C87CU-1.H900	
11	-	A4	1	1R234924112	NUTHEX	7/8/2009	SA194-2H/ZN PL	·	8	2 1	10293835162	VALVE PLUG STEM	SCIL7500.3/4X16.75.4.25THD	531600.R . CAP	
11		AB	1	3N2178X0012	YOKE	SIZE 60-68,2 & 4 TVL,3	65-45-12 DI	l.	BI	8 1	1v326035072	PIN.GROOVE.FLAT END	3/16x1.06	ASMESA479531600.22HRC(256HB)MAX	
11	•	A7	1	1H862306992	0-RNG	B 1/4X8 1/2X1/8	NITRILE-DS52-1	F.	0	9 1	GC10637x012	REAT RING	EXE 2PORT MATM. 200EC SEAT	CA15 ECS 208	
11	•	AB	1	1H862406992	O-RNG	BX81/2X1/4	NITRILE=DS52=4	÷	B1	0 2	1U5081X0052	CASKET	7.69X9.17X.03	CRAPH/SST.17F46	
11	•	49	1	15736906992	0-RING	1 1/481 1/281/8	NITRILE-DS52-4	÷	012	20 1	10508599442	CASKET SPIEAL WOUND	7 75x8 50x0 175PR0	NO6600(INCONELALLOY600) /CRAPHITE	OM\$12N3
11	- 17	A12	1	18A1685X012	STEM CONNECTOR ASSY	60.3/4 STEM	STL/ZN PL	÷	812	20 1	11/044109442	CASKET SPIRAL WOUND	C1.900.7.56X8.06X0.175	N06600 /17N3	
l ł	-12	A15	2	1435110062	HEX NUT	3/4-16	SAE OR SINCES	E	101	5 12	10568720192	STUD CONT. THD /STOP	-8V5 251E=1 310	54193-07 AVE?	
11		1.0	2	10031130002	KODEW SELE TAD	B Y 0.75 DND ND DNUUDS	ALA SCT	-	01	6 12	14440000752			ARVERANDARDADERU AIOEREEADA	
11	- 13	10	1	111322238082	SCALE TRAVEL IND	6/2C 20	A_A CCT	÷	01	0 12	11/10/03/80/52	ADDOW D. OW. DIDECTION	1-0	A - 8 517	
11	* H	20	6	4368228082	KODEW DOWE	011.06	A A CT	÷	01	0 0	14769539902	CODEWOODLE	1/2-0	10-0 331	
Ιŀ	- 12	120	-	18450804043	NAMEDIATE SE ACT	EXTENSION DECK DECK DART NO.	10-0 331	÷	- 01	9 0	1000220902	DURG WUND YE	2X3/10	10-0 351	005
Ιŀ	- 13	0.0.0		1000000000	TAG WARPER IN A THE T	THE BOST FICK REQUIREMENT NO.		F.		10 1	10420434022	SEAL HING/SPRICALIAL	PRO- SPRENT 10.7247.0440.18	RIG2707PTPEGCASS,MOLTBOERGWOISG	744
11	÷ (22	1	14867692082	TAG, WARRING, ACTUATOR	STE MUST PICK REQUIPART NO.		⊢.	8.3	52 1	10A8757X342	SPACER,BONNET	12 X 6,0L600	SA217 GRADE WC9	
11	- /	24		1011000012	CORRECTION OF COMPANY	LOBRIPLATE MAG-T	1000 F 0000 1	÷			10419424012	UNDER DE CE DECL	711716481773241732	B31800A3ME5A-280	
1 k	- 13	27	-	10348306992	D-RING	1 1/2X1 3/4X1/8	N1190LE-US32-1	H.	85	94 1	18A5087X0A2	NAMEPLATE, SS BODY	SITE MUST PICK REQD PART NO.		
11		32	1	16832838992	DISC, TRAVEL IND	657 SIZE 50-60 3 5/8 DIA	543000	Ľ^	80	0 1	10884799012	SEAL & WHELEAD	12 LONG	PURCHASED PART	
11	- 1	-33	1	12833538992	NUT,TWIN SPIELD	SIZE NO. 8	551	⊢	C	1 1	3U5092x0742	BONNET	6,3 9/16YB,PBS13A0750	SA217 GRADE WC9	
14	A /	170	1	1M3099X0012	SEALANT, PERMATEX #2	FORM-A-GASKET,11 OZ TUBE	MENDOR		C.	3 1	1F380435072	FLANGE, PACKING	3/4 STEM	316-A FMS 20864	
11	A /	90	3	10466236962	NPPLE,PIPE,NPT	1/4-18 SCH 80 X 1.50	316	⊢	10	4 2	1E944935222	STUD BOLT, CONT THO/S	9/16=12X 3.25,LE=1.3	RBM CLASS 2	
11	- 1	491	2	1P506938982	TEE	1/4 NPT,2000 LB	316 SST 20815		C 2	5 2	1E944635252	NUT,HEX	9/16 -12	531600	
11	• /	192	1	1F2159XD012	VALVE, NEEDLE, ANGLE	25011279100010051	316 SST 20815	Ŀ	a	6 1	1R290401012	PACKING,SET	3/4x13/8	PTFE,FMS17D7	
11		100	1	3282663x012	CYLINDER FLANGE	SIZE 60	ASTMA126-CCI		α	8 1	1F125637012	SPRING, PACKING	3/4STEM	316	
11	- 1	104	1	3481202X012	SLEEVE ASSY	SIZE 60,4 TVL,W/INT HDJK	STEEL/S41600		C1	0 1	1F125036042	WASHER, SPCL	3/4STEM0(1.38	316-AFMS20864	
11	• •	110	1	1H865114042	BUSHING, SEAL	30-100	C95400	Ŀ	C1	11 1	1J873335072	PACKING BOX RING	3/4STEM0:13/8	TYPE316	
	^	113	1	1282661X012	BEARING RETAINER	SIZE30-64	ASTMA48-30ACI	Ŀ	C1	2 1	1J872806332	MIPER, UPPER	3/4STEM	FELTSADF3	
11	- 4	114	1	2282662X012	BEVEL GEAR-LH	30-60	ASTMA126-CCI		C1	13 1	1E944735072	PACKING FOLLOWER	3/4STEM	TYPE316	
11	- 1	115	2	1292711x012	BALL RETAINER	9/2E30-64	CAR9STEEL-PL		Ć1	5 1	1E832723062	YOKE LOCKNUT	3/4STEM_39/16YOKEBOSS	BA105/NCF	
11	A	116	1	2,464335132	BEVEL PINION	SIZE30-64	410/41620864								
1 [117	1	1J4634000A2	EXTENSION	SIZE 30-64									
[A	118	1	1J463819042	HANDWHEEL	8 00,5/8 SQ SHAFT	ASTM A48-30A CI								
[A	119	5	1A3524X0082	HEX NUT, JAM	1/2/2013	SAE GRADE 8/ZN								
1 [120	1	1A4878X0012	WASHER, LOCK SPRING	1/2.REGULAR	CARBSTEEL-PL								
[121	1	10385124092	SPRING CAP	SIZE 45-50-60 MO	STL,20813/ZN PL								
1 [A	122	1	00005916012	SPRING, COMPENSATOR		PHBRZ C51000								
11	A	123	1	1A342732992	BALL	1/2INDIA	ALLOYSTEEL								
11	• •	124	1	1J465599012	BEARING, COMBINATION	7/8x1 11/16x15/32	MENDOR								
11		125	4	1,3501428992	HEXAGON SOCKET SET	1/2-13X1.75 FLAT POINT	ALLOY STEEL								
11		129	1	1,461535132	POINTER		410/41620864								
11		130	1	2283560x012	NDICATOR	40-60 4 1/8 TVL 475-7	18-8 SST								
11	- 1	131	1	1J464046172	LOCKING PIN		\$41600FC\$298								
11	4	132	1	1,1460738992	READ CHAIN & COUP	9/25 30-100	rss t								
11		133	2	1,1494728992	ROUND HEAD DRIVE	6X3/8	CARRSTEEL-PL								
1 ł		130	1	18856828992	SCREW SETHEX SOCKET	10-24X0 25 CUP PT	CARBON STEEL								
11	A 4	145	1	14034863012	TAC CAUTION	SIZE 4 LAMINATED, MANUAL	PLASTIC			_					
11	A 4	146	2	AM5775X0012	CABLE DES PLASTIC	6225 5 13/16 SCOT	MINDOR			D	IMENSIONS C	ERTIFIED CORRECT BY	FISHER CONTROLS FISH	4ER' © Faber Castrals left, LLC 205	1
14	- 1-		-							C	UST: CUST N	AME		EWT VALVE BODY SIZE 12X6	
1										C	UST REF NO.	PO NUMBER		585C ACTUATOR SIZE 60	
1										E	ISHER REF N	O.: XXX -XXXXXX			
lμ	BRIC	ATE .	AS P	PER INSTRUC	TION MANUAL					1	AG NO.: PV-	1501			
										- 1'	ROJECT NAMI	G			
•	RECO	MM	NDE	D SPARE PA	RTS					- I				CUET ITTHE COCCOL SINCE FOR	646150
	LUBR	CAN	TS C							- H			100 AUX 000 000 1000		
1	PART	5 N	21 52	HOWN									X 14-Mgr-16 ADS	SCALE: NON	(@⊙]
A-	ACTU	ATC	RC	OMPONENTS										DWG. MO.	REV.
18	BON	IET	COMPO	PONENTS										EMERSON. AAB12	345 ¥
Ď.	INST	RÜMI	INTS										BILL OF MATERIAL	Process Management SHEET 4 C	F 4 ^
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Figure 17. LEVEL 2 Drawing (2D CAD) - Rotary (with Single-Acting Actuator)

Figure 18. DDP (Dimensional Data for Piping)



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