Process, Power and Marine Division

SP3D Piping Reference Data

5-Material Control Data and Operators

INTERGRAPH

Valve Operator Type

FabricationType	SupplyResponsibility	ReportingType	Quantity	GasketRequirements	BoltingRequirements	WeldingRequirement	LooseMaterialRequirements	SubstCapScrewsQuantity	SubstCapScrewCntrCommodityCode	SubstCapScrewDiameter	TappedHoleDepth	MultiportValveOpReq	ValveOperatorType	ValveOperatorGeoIndStd	ValveOperatorCatalogPartNumber	ReportableCommodityCode	PartDataSource	AltOrientationCommodityCode	HyperlinkToElectronicVendor	HyperlinkToElectronicManuals
7	10	5	1	5	5	50							3	1190	GAT-Bolted-150-3					
7	10	5	1	5	5	50							331	1190	VAAAHABAHADJADACFZZUS					
7	10	5	1	5	5	50							331	1250	VAAAHABAHADJADAHIZZUS					

	D	F
1		
2	ValveOperatorType ShortDescription	Codelist Number
7	Handwheel	3
8	Inclined handwheel	5
9	Short wrench	9
10	Long wrench	11
11	Lever	17
12	Short T-handle	19
13	Long T-handle	21
14	Special handwheel	251
15	Special wrench	271
16	Gear, top mounted handwheel Type 1	291
17	Gear, top mounted handwheel Type 2	292
18	Gear, top mounted inclined handwheel Type 1	311
19	Gear, side mounted handwheel Type 1	331
20	Gear, side mounted handwheel Type 2	332
21	Gear, side mounted handwheel Type 3	333
22	Gear, side mounted handwheel Type 4	334
23	Gear, side mounted inclined handwheel	351
24	Lever, quick-action	391
25	Handwheel, non-rising stem	1005
26	Handwheel, rising stem	1010
27	Handwheel, extended bonnet	1015

ValveOperatorType | ValveTrim | Vendor | WasherCre

This is an enumerated value representing the specific type of valve operator, actuator, or accessory (appurtenance).

Valve Operator Geometry Industry

FabricationType	SupplyResponsibility	ReportingType	Quantity	GasketRequirements	BoltingRequirements	WeldingRequirement	LooseMaterialRequirements	SubstCapScrewsQuantity	SubstCapScrewCntrCommodityCode	SubstCapScrewDiameter	TappedHoleDepth	MultiportValveOpReq	ValveOperatorType	ValveOperatorGeoIndStd	ValveOperatorCatalogPartNumber	ReportableCommodityCode	PartDataSource	AltOrientationCommodityCode	HyperlinkToElectronicVendor
7	10	5	1	5	5	50							3	1190	SAT-Bolted-150-3				
7	10	5	1	5	5	50							331	1190	YAAAHABAHADJADACFZ				
7	10	5	1	5	5	50							331	1250	YAAAHABAHADJADAHIZZUS				

ValveOperatorGeometricIndStd ShortDescription	Codelist Number	Sort Order
	1	
Undefined	1	
	5	
ANSI-B16.10	5	
	6	
Bonney Forge H9-16	1000	
Bonney Forge H9-36	1005	
Bonney Forge H9-56	1010	
Bonney Forge H9F-11	1015	
Bonney Forge H9F-19	1020	
Bonney Forge WL-41	1025	
Bonney Forge W9-39	1030	
Bonney Forge W9-49	1035	
Bonney Forge Y9-41	1040	

This is an enumerated value represents the geometric industry standard

Valve Operator Part Number

FabricationType	SupplyResponsibility	ReportingType	Quantity	GasketRequirements	BoltingRequirements	WeldingRequirement	LooseMaterialRequirements	SubstCapScrewsQuantity	SubstCapScrewCntrCommodityCode	SubstCapScrewDiameter	TappedHoleDepth	MultiportValveOpReq	ValveOperatorType	ValveOperatorGeoIndStd	ValveOperatorCatalogPartNumber	ReportableCommodityCode	PartDataSource	AltOrientationCommodityCode	HyperlinkToElectronicVendor	HyperlinkToElectronicManuals	PipingNote1	VendorPartNumber	ManufacturerPartNumber
7	10	5	1	5	5	50							3	1190	GAT-Bolted-150-3								
7	10	5	1	5	5	50							331	1190	VAAAHABAHADJADACFZZUS								
7	10	5	1	5	5	50							331	1250	VAAAHABAHADJADAHIZZUS								

This is an optional string, although required for valves, that represents a unique identification of the catalog data and the material control data for the valve operator.

Table Look Up for Valve Operator

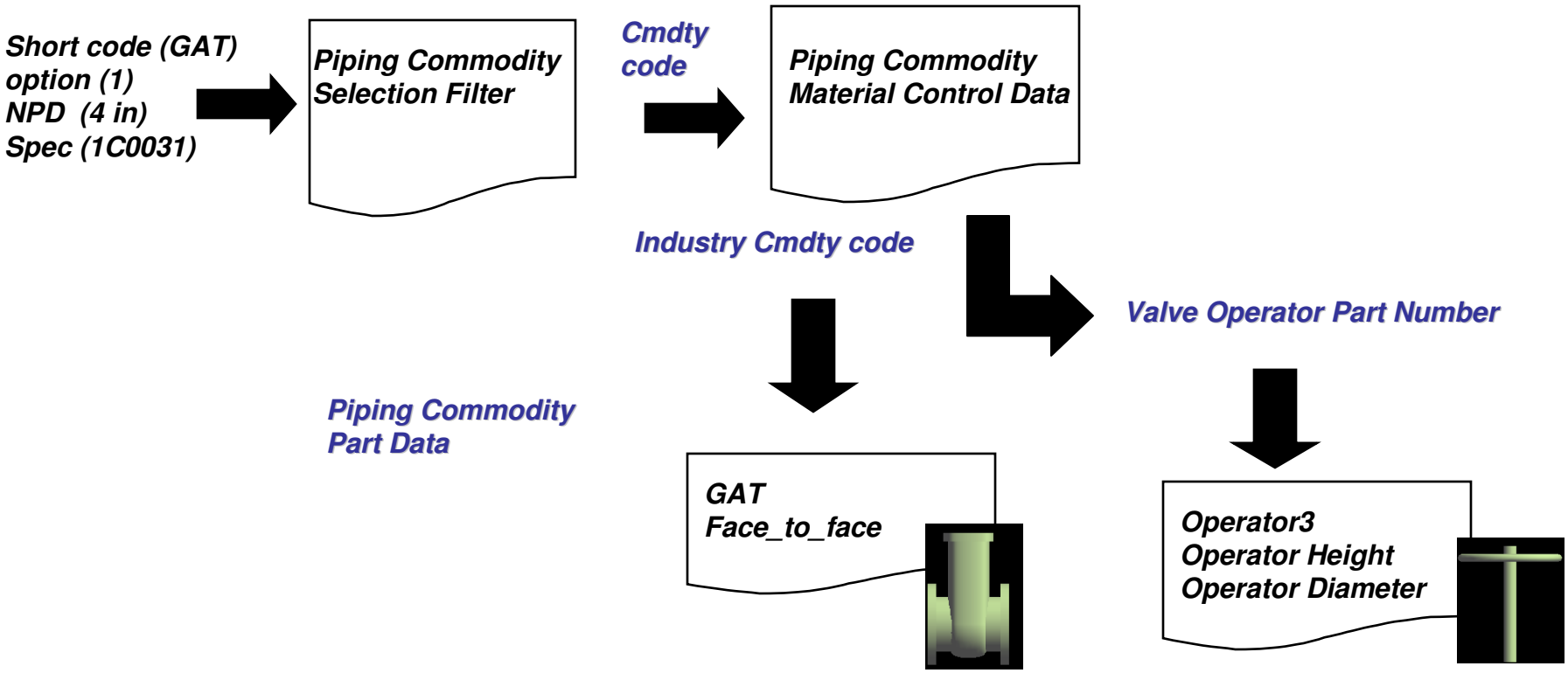


Table Look Up for Valve Operator

Piping Commodity

Selection Filter

SpecName	ShortCode	FirstSizeFrom	FirstSizeTo	FirstSizeUnits	CommodityCode
1.7.1	1.7.2	1.7.3	1.7.4	N/A	1.7.15
1C0031					
	Valves				
	Gate Valve	2	12	in	VAABAHCCAA

Piping Commodity

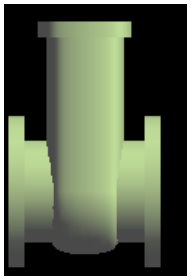
Material Control Data

SecondSizeUnits	MultisizeOption	IndustryCommodityCode	ValveOperatorType	ValveOperatorGeometricIndStd	ValveOperatorPartNumber
N/A	1.9.6	1.9.7	1.9.32	1.9.33	1.9.36
		VAABAHCCAA	3	40	GAT-BLT-150-3

Piping Commodity

Part Data

IndustryCommodityCode	CommodityType	GraphicalRepresentationOrNot	SymbolDefinition	Npd[1]:Primary	NpdUnitType[1]	Npd[2]:Secondary	NpdUnitType[2]	FacetoFace
VAABAHGGAA	GAT		GSCADGateValve.CGateValve150	4	in	4	in	9in



Face_to_face

Table Look Up for Valve Operator

Piping Commodity

Selection Filter

SpecName	ShortCode	FirstSizeFrom	FirstSizeTo	FirstSizeUnits	CommodityCode
1.7.1	1.7.2	1.7.3	1.7.4	N/A	1.7.15
1C0031					
	Valves				
	Gate Valve	2	12	in	VAABAHCCAA

Piping Commodity

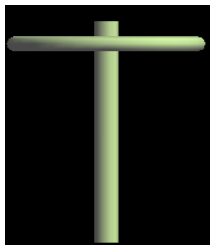
Material Control Data

SecondSizeUnits	MultisizeOption	IndustryCommodityCode	ValveOperatorType	ValveOperatorGeometricIndStd	ValveOperatorPartNumber
N/A	1.9.6	1.9.7	1.9.32	1.9.33	1.9.36
		VAABAHCCAA	3	40	GAT-BLT-150-3

Piping Commodity

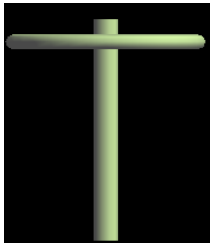
Part Data

ValveOperatorNumber	SymbolDefinition	ValveSize	ValveSizeUnits	OperatorHeight	OperatorDiameter
GAT-BLT-150-3	SP3DOP3.COP3	4	in	28.188in	13.75in



Operator Height
Operator Diameter

Table Look Up for Valve Operator



Operator Height
Operator Diameter

Piping Commodity

Material Control Data

SecondSizeUnits	MultisizeOption	IndustryCommodityCode	ValveOperatorType	ValveOperatorGeometricIndStd	ValveOperatorPartNumber
N/A	1.9.6	1.9.7	1.9.32	1.9.33	1.9.36
		VAABAHCCAA	3	40	GAT-BLT-150-3

OperatorPartNumber	ShortMatlDescription
GAT-BLT-150-3	Handwheel

Valve Operator

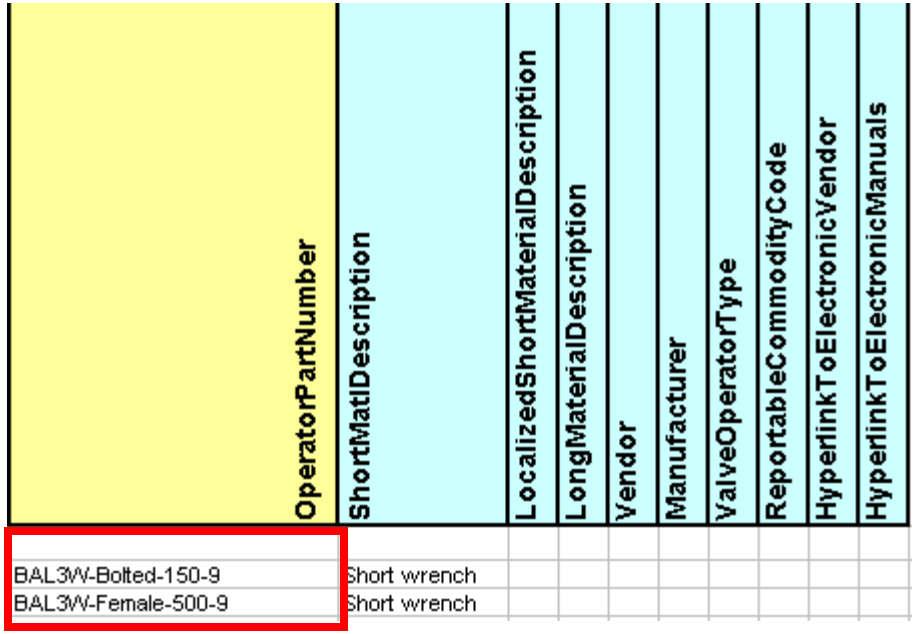
Material Control Data

Valve Operator Material Control Data

- The Valve Operator Material Control Data sheet defines the valve operator material control data for the piping specification. This information does not vary per piping materials class.

OperatorPartNumber	ShortMatlDescription	LocalizedShortMaterialDescription	LongMaterialDescription	Vendor	Manufacturer	ValveOperatorType	ReportableCommodityCode	HyperlinkToElectronicVendor	HyperlinkToElectronicManuals
BAL3W-Bolted-150-9	Short wrench								
BAL3W-Female-500-9	Short wrench								

Operator Part Number



OperatorPartNumber	ShortMatlDescription	LocalizedShortMaterialDescription	LongMaterialDescription	Vendor	Manufacturer	ValveOperatorType	ReportableCommodityCode	HyperlinkToElectronicVendor	HyperlinkToElectronicManuals
BAL3W-Bolted-150-9	Short wrench								
BAL3W-Female-500-9	Short wrench								

This is a string that represents a unique identification of the catalog data for the valve operator, including the name of the manufacturer and the manufacturer's part number.

Operator Material Description

OperatorPartNumber	ShortMatlDescription	LocalizedShortMaterialDescription	LongMaterialDescription	Vendor	Manufacturer	ValveOperatorType	ReportableCommodityCode	HyperlinkToElectronicVendor	HyperlinkToElectronicManuals
BAL3W-Bolted-150-9	Short wrench								
BAL3W-Female-500-9	Short wrench								

This is a string representing the short description of the item

Valve Symbols

```
' Insert your code for output 7 (Valve Operator)
    Dim oSymbolHelper As IJSymbolGeometryHelper
    Set oSymbolHelper = New SP3DSymbolHelper.SymbolServices
    oSymbolHelper.OutputCollection = m_OutputColl

    On Error Resume Next
    Dim oDirX As IJDVector
    Dim oDirY As IJDVector
    Dim oDirZ As IJDVector
    Set oDirX = New DVector
    Set oDirY = New DVector
    Set oDirZ = New DVector

    oDirX.Set Cos(parHandwheelAngle), 0, Sin(parHandwheelAngle)
    oDirY.Set 0, 1, 0
    oDirZ.Set -Sin(parHandwheelAngle), 0, Cos(parHandwheelAngle)

    Dim oPipeComponent As IJDPipeComponent
    Set oPipeComponent = oPartFclt
    On Error GoTo ErrorLabel
    Dim oOperatorPart As IJDPart
    Dim oOperatorOcc   As IJPartOcc
    If Not oPipeComponent Is Nothing Then
        Set oOperatorPart = oPipeComponent.GetValveOperatorPart
        If Not oOperatorPart Is Nothing Then
            Dim OpOrigin As IJDPosition
            Set OpOrigin = New DPosition
            OpOrigin.Set 0, 0, 0
            Set oOperatorOcc = oSymbolHelper.CreateChildPartOcc("ValveOperator", _
                    oOperatorPart, OpOrigin, oDirX, oDirY, oDirZ)

        End If
    End If
```

Cap Screws

Cap Screw Qty

	B	D
2	BoltingRequirements ShortDescription	Codelist Number
5	Undefined	1
6	Reportable bolts required	5
7	Complete cap screw substitution for threaded holes	10
8	Complete cap screw substitution for tapped holes	15
9	Partial cap screw substitution for threaded holes	20
10	Partial cap screw substitution for tapped holes	25
11	Bolts included	30
12	Bolts not applicable	35
13	Complete cap screw substitution for threaded holes for second size end	40
14	Complete cap screw substitution for tapped holes for second size end	45
15	Partial cap screw substitution for threaded holes for second size end	50
16	Partial cap screw substitution for tapped holes for second size end	55

BoltingRequirements | BoltType | BranchReportingOwn

ContractorCommodityCode	FirstSizeFrom	FirstSizeTo	FirstSizeUnits	ShortMaterialDescription	GeometricIndustryStandard	FabricationType	SupplyResponsibility	ReportingType	Quantity	GasketRequirements	BoltingRequirements	WeldingRequirement	SubstCa	SubstCa	SubstCa	Tappedh	ValveOp	ValveOp	ValveOp
VBDAFBCAOACSABAAMZZUS				Butterfly valve, CL125, FFTBE, wafer,	3525	7	10	5	1	10	20	50	4	BCZZZZZZZAAYBETZZUS			331	2105	VBDAFBCAOACSABAAMZZUS

This is an enumerated value that represents the requirements for any bolts with the piping commodity, if one or more bolted ends apply.

Cap Screw Qty

SubstCapScrewsQuantity	SubstCapScrewCntrCommodityCode	SubstCapScrewDiameter	TappedHoleDepth	ValveOperatorType	ValveOperatorGeoIndStd	ValveOperatorCatalogPartNumber
4	BCZZZZZZZAAYBETZZUS			331	2105	VBDAFBCAOACSABAAMZZUS

This is an integer value that represents the quantity of machine bolts or studs that are being replaced by cap screws at each bolted end, if applicable, when partial substitution applies.

Cap Screw Commodity Code

SubstCapScrewsQuantity	SubstCapScrewCntrCommodityCode	SubstCapScrewDiameter	TappedHoleDepth	ValveOperatorType	ValveOperatorGeoIndStd	ValveOperatorCatalogPartNumber
4	BCZZZZZZAAYBETZZUS			331	2105	VBDAFBCAOACSABAAMZZUS

This represents the engineering contractor's commodity code, if different from the client's commodity code, for any optional substitution cap screws.

Cap Screw Diameter

SubstCapScrewsQuantity	SubstCapScrewCntrCommodityCode	SubstCapScrewDiameter	TappedHoleDepth	ValveOperatorType	ValveOperatorGeoIndStd	ValveOperatorCatalogPartNumber
4	BCZZZZZZZAAYBETZZUS			331	2105	VBDAFBCAOACSABAAMZZUS

This is a unitted value that represents the diameter of any substitution cap screws, if applicable.

Tapped Hole Depth

SubstCapScrewsQuantity	SubstCapScrewCntrCommodityCode	SubstCapScrewDiameter	TappedHoleDepth	ValveOperatorType	ValveOperatorGeoIndStd	ValveOperatorCatalogPartNumber
4	BCZZZZZZZAAYBETZZUS			331	2105	VBDAFBCAOACSABAAMZZUS

This is a unitted value that represents the depth of the tapped hole in the valve or fitting that requires substitution cap screws, if applicable. This value will be used to compute the length of the cap screw.